

## About this User Manual







This User Manual is the initial version, and the text (the English version is temporarily translated by software, and will be revised manually later), drawings, and typesetting are not the final version.


This book will be updated from time to time, please pay attention to our latest version.

# Security summary

This chapter provides important information about security. Read and follow the guidelines carefully before starting to use the Snapmaker J1 3D printer.





## Safety label

	Be careful, there may be potential danger.
	Do not touch the surface during printing or until it has cooled completely after printing.
	The PEI glass platform is fragile, so please handle it carefully. To remove it, place it in a safe area.
	Do not print directly on this surface or the heated bed will be damaged.
	Be careful of hot surfaces. Do not touch hot surfaces with your hands during printing or before they have cooled completely.
	Be careful to press your hand. When the moving parts of the machine move, do not touch or block them with your hands to avoid pinching.

	<p>Do not pile up objects here, otherwise it may cause collision during the operation of the machine.</p>
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## Identification symbol

The following identification symbols are used in this manual:

	<p><b>CAUTION</b></p>	<p>Failure to follow these instructions may result in a malfunction of the machine or injury to the user.</p>
	<p><b>NOTE</b></p>	<p>Details you should pay attention to during the installation and use of the printer.</p>
	<p><b>TIPS</b></p>	<p>It provides you with convenient operation guidance and additional options.</p>
	<p><b>EXPLANATION</b></p>	<p>To provide you with background information to help you understand the instructions.</p>

# Safety instructions

## General safety information

- The use of this product and the specific use should comply with the laws and regulations of the user's location.
- This product is for indoor use only. Do not place this product in rain or moisture.
- Prepare a table or work surface that is stable and level for the use of this product.
- When operating this product, minors must be supervised and assisted by an adult.
- When operating this product, make sure that bystanders also read and understand the safety instructions and keep bystanders at a safe distance.
- When operating this product, please keep concentrated attention and pay close attention to the progress of work and the changes in the surrounding environment.
- It is strictly prohibited to operate this product in a state of fatigue or under the influence of drugs, alcohol and drugs.
- When the product is in operation, do not touch the inside of the machine or any moving parts, otherwise it may cause personal injury.
- When the product is turned on, please ensure that the machine is attended by a special person.

Shut down and stop using the product immediately if:

- You can smell the burning smell of the machine.
- You notice that the components inside the machine are damaged.
- The machine stops working unexpectedly;
- The machine makes unusual noises, lights, sparks, or anything else you notice about the machine that has never been seen before.

## 3D Printing Safety Information

- Do not touch the nozzle, PEI glass platform and heated bed when the machine is printing or heating.
- Be sure to turn off the machine and unplug the power cable before servicing the machine.
- Place the machine in a well-ventilated area. Some materials may release toxic and harmful substances when they are melted.

- Additional safety measures may be required when using materials other than those provided with the Snapmaker J1. Before use, be sure to review the Safety Data Sheet (SDS) for each specific material for appropriate safety guidance.

## **Emergency measures**

### **Burns from hot surfaces**

Touching hot surfaces (including hot nozzles, hot ends, heated beds, PEI glass platforms, and uncured filaments) can burn the skin. If you are burned, take the following measures in time:

- (1) Keep away from heat.
- (2) Immediately wash the burned area with running cold water.
- (3) Remove any clothing or jewelry near the burn area.
- (4) Cover the burn with a clean, dry bandage.
- (5) Use pain relievers if necessary.
- (6) Seek immediate medical attention if necessary.

### **Inhalation of smoke and particulates**

Printing with some filaments may emit fumes or produce particles that may irritate the respiratory system. Therefore, we recommend that you place the machine in a well-ventilated place when printing, or use it with air purification equipment, and wear a protective mask if necessary.

In case of respiratory irritation, let the victim breathe fresh air immediately and arrange for medical treatment immediately.

### **Contact with irritant substances**

Some soluble filaments may be irritating to humans. Always consult the manufacturer's Safety Data Sheet (SDS) and take appropriate safety precautions when handling such filaments.

# Product introduction

Meet your Snapmaker J1 3D printer.

## Function introduction

The Snapmaker J1 3D printer uses Fused Filament Fabrication (FFF) technology, is equipped with high-speed Independent Dual Extruders (IDEX), has strong filament compatibility, and uses industrial-grade drive technology to ensure superior print quality. Its left and right extruders can work independently and at the same time, helping you unlock more ways to play: when printing with two different materials, fine structures such as hollowing can be achieved with the help of soluble/dissolvable support materials; You can also print two identical or symmetrical models at once to double the efficiency.

First of all, you need to prepare a 3D model for printing, which can be downloaded from the model website or designed by yourself. Next, slice the model in the slicing software and generate G-code, which tells Snapmaker J1 how to behave. Finally, the G-code is transferred to the Snapmaker J1 and printing begins on the printer. Snapmaker J1 will heat the molten material and extrude it onto the PEI glass platform and stack it layer by layer to create a 3D object corresponding to the model.

## Specifications

Print properties	
Technology	Fused Filament Fabrication (FFF)
extruder	Independent Dual Extruders (IDEX)
Print mode	<ol style="list-style-type: none"><li>1. Default mode</li><li>2. Backup mode</li><li>3. Copy mode</li><li>4. Mirror mode</li></ol>

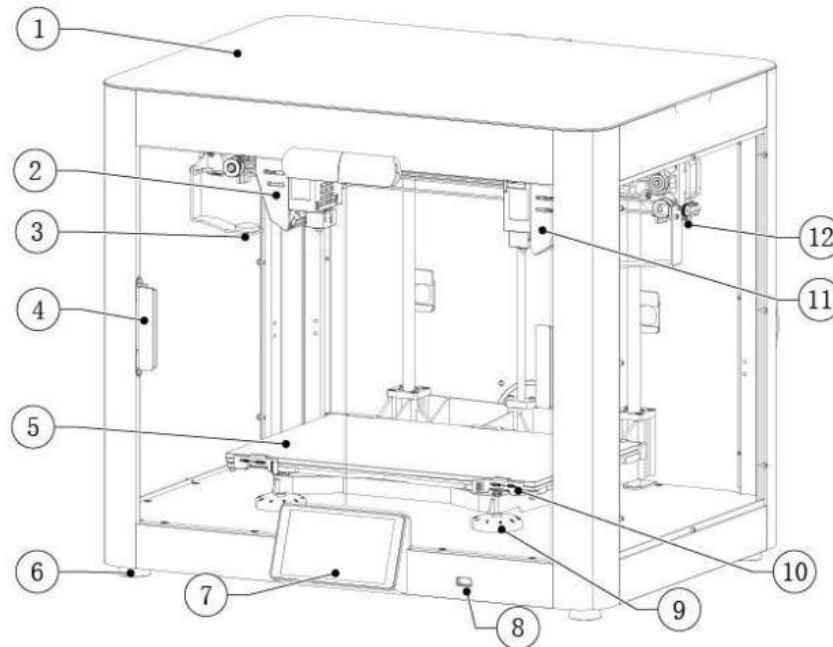
Molding size (length × width × height)	Default mode, Backup mode:  300mm × 200mm × 200mm
	Copy mode: 160mm × 200mm × 200mm
	Mirror mode: 150mm × 200mm × 200mm
Print speed	10mm/s to 350mm/s
Acceleration	10000mm/s <sup>2</sup>
Layer height (when 0.4 mm nozzle is used)	0.05mm to 0.3mm
Print platform	PEI Glass Platform
Maximum temperature of heated bed	100°C
Nozzle diameter	Provided: 0.4mm  Purchase separately: 0.2mm, 0.4mm (hardened steel), 0.6mm, 0.8mm
Maximum nozzle temperature	300°C
Filament diameter	1.75mm
Supporting filaments	PLA、ABS、HIPS、PC、TPU、TPE、PETG、ASA、PP、PVA、PA、PA-GF、PA-CF

Connection mode	Wi-Fi, USB cable, USB flash drive
Operating noise	< 50dBA
<b>Machine properties</b>	
Overall dimensions (L × W × H)	539mm × 401mm × 464mm
Net weight	25kg
touchscreen	Size: 5 inches (12.7 cm) System: Android Resolution: 1280 × 720 pixels
Memory	1GB RAM, 8GB eMMC
<b>Work environment</b>	
Printing environment	Temperature: 10°C to 35°C Relative humidity: 10% -90% (no condensation)
Storage environment	Temperature: -20 °C to 55 °C Relative humidity: 10% -90% (no condensation)
<b>Power source</b>	



Input	Rated voltage: AC 100V-240V, 50Hz/60Hz Rated current: 4.4A (maximum)
Output	DC 24V, 400W (Max)
<b>Wi-Fi</b>	
Agreement	802.11a/b/g/n20/n40
Operating frequency	2.400GHz-2.482GHz 5.150GHz-5.250GHz 5.725GHz-5.850GHz
Transmit Power (EIRP)	2.4GHz: < 17.05 dBm (US, Canada), < 17.24 dBm (EU) 5.2GHz: < 11.96 dBm (US, Canada), < 15.09 dBm (EU) 5.8 GHz: < 6.00 dBm (US, Canada), < 11.16 dBm (EU)
<b>Software</b>	
Supporting software	Snapmaker official software (supports other third-party slicing software)
Operating systems are supported	Windows、macOS
File formats are supported	STL、OBJ、3MF
Output file format	G-code

## Machine diagram

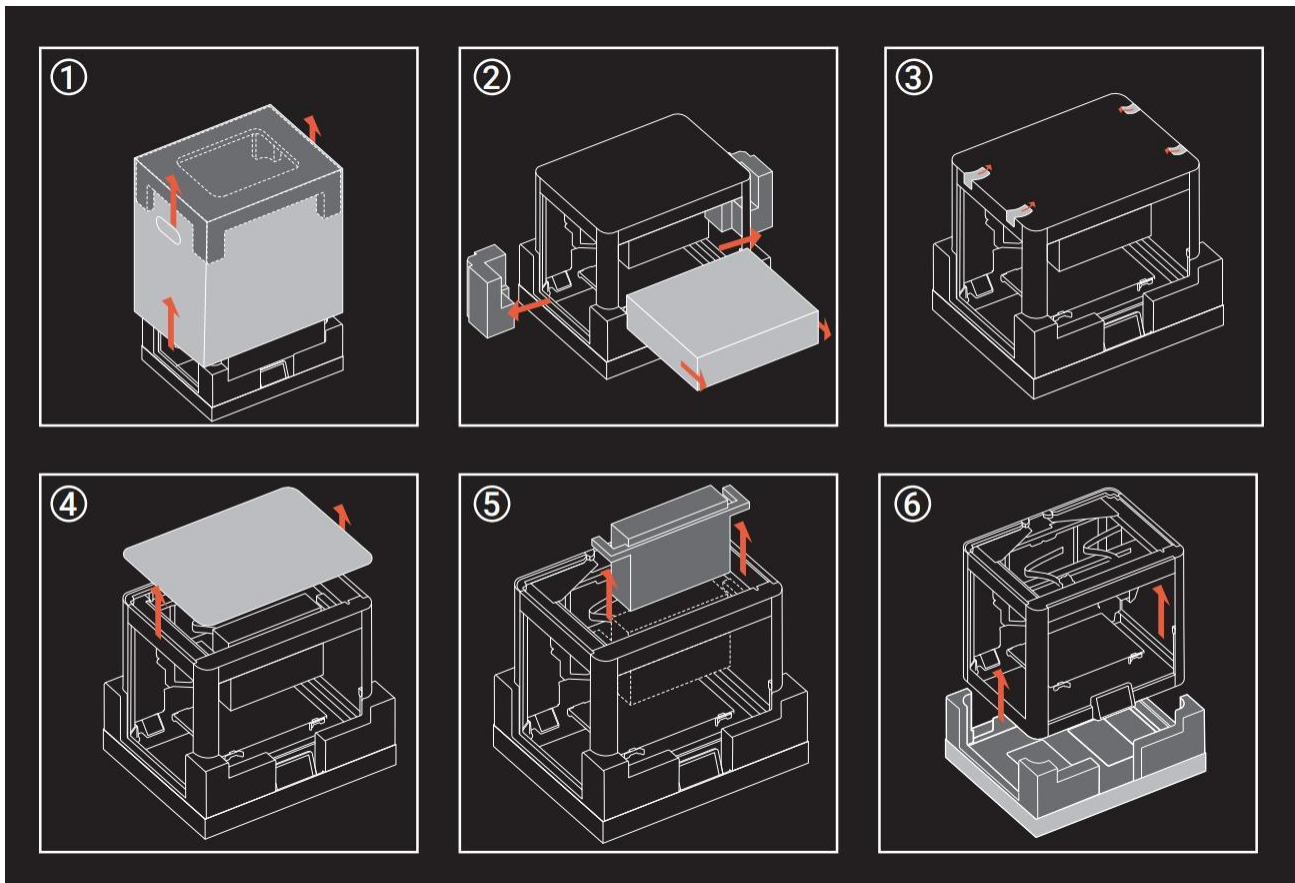


1. Top panel
2. Left extruder
3. Nozzle wiper
4. Enclosure door
5. PEI Glass Platform
6. Foot
7. touchscreen
8. USB flash drive port
9. Leveling wheel
10. Plate clamp
11. Right extruder
12. Side panels

# First use

When using the Snapmaker J1 3D printer for the first time, you need to complete the hardware installation and initial setup of the touchscreen as described in this chapter.

## Unpacking steps



# Packing list



1. Snapmaker J1 3D Printer × 1
2. Quick Start Guide × 1
3. Safety Guidelines × 1

4. Calibration Card × 1

Used for heated bed leveling and Z-axis offset calibration (in manual mode).

5. Wiping Cloth × 1

And is use for daily cleaning of that print.

6. Filaments × 2

Materials needed for 3D printing.

7. Left Door × 1

8. Right Door × 1

9. Side Panels × 2

10. PEI Glass Platform × 1

A printing platform on which the filament is formed.

11. Tool Box × 1

a. USB Flash Drive × 1

b. Tweezers × 1

Used to grip excess filament  
extruded from the nozzle.

c. Power Cable × 1

d. Palette Knife × 1

Used to remove the print from  
the PEI glass platform.

e. Wire Brush × 1

For cleaning the nozzle.

f. Diagonal Pliers × 1

Used to cut filaments and remove supports.

g. Filament Holder × 2

For hanging filaments

h. USB-B Cable × 1

Used to connect a printer to a computer.

i. M3 × 6 Screw × 16

j. M4 × 8 Screw × 4

k. Hot End Sock × 2

Silicone sock wrapped around the hot end to maintain a stable printing temperature and prevent bleeding contamination.

l. Hex Key × 4

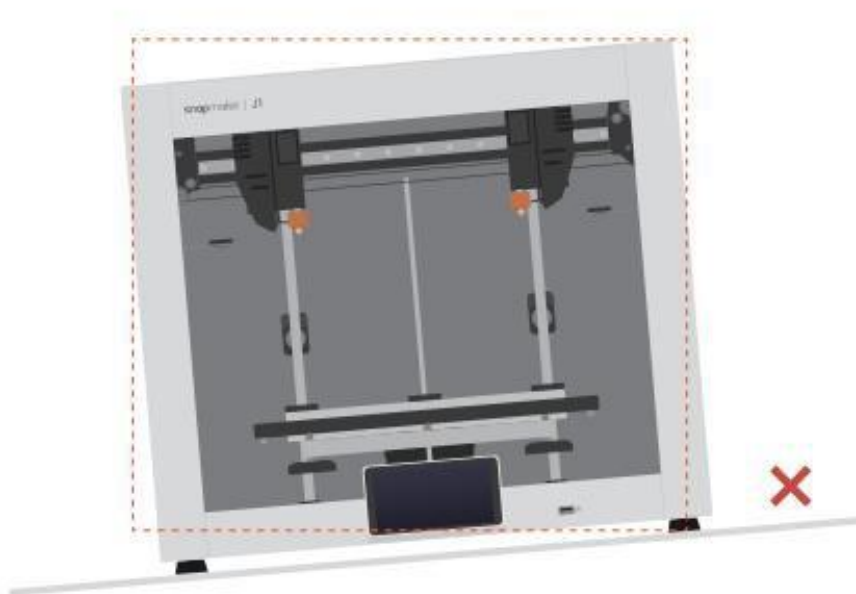
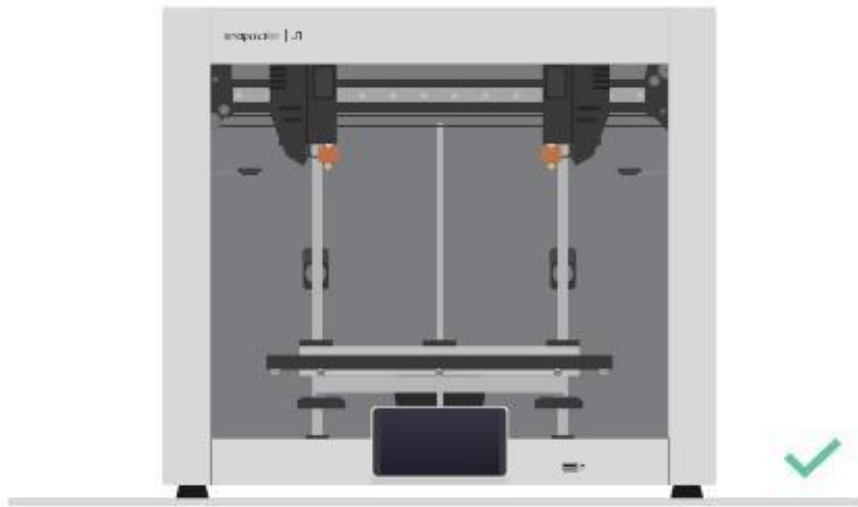
Used to install the enclosure door and side panels, and to maintain the extruder.

m. 5.5mm Wrench × 1

Used to adjust the tension of the belt.

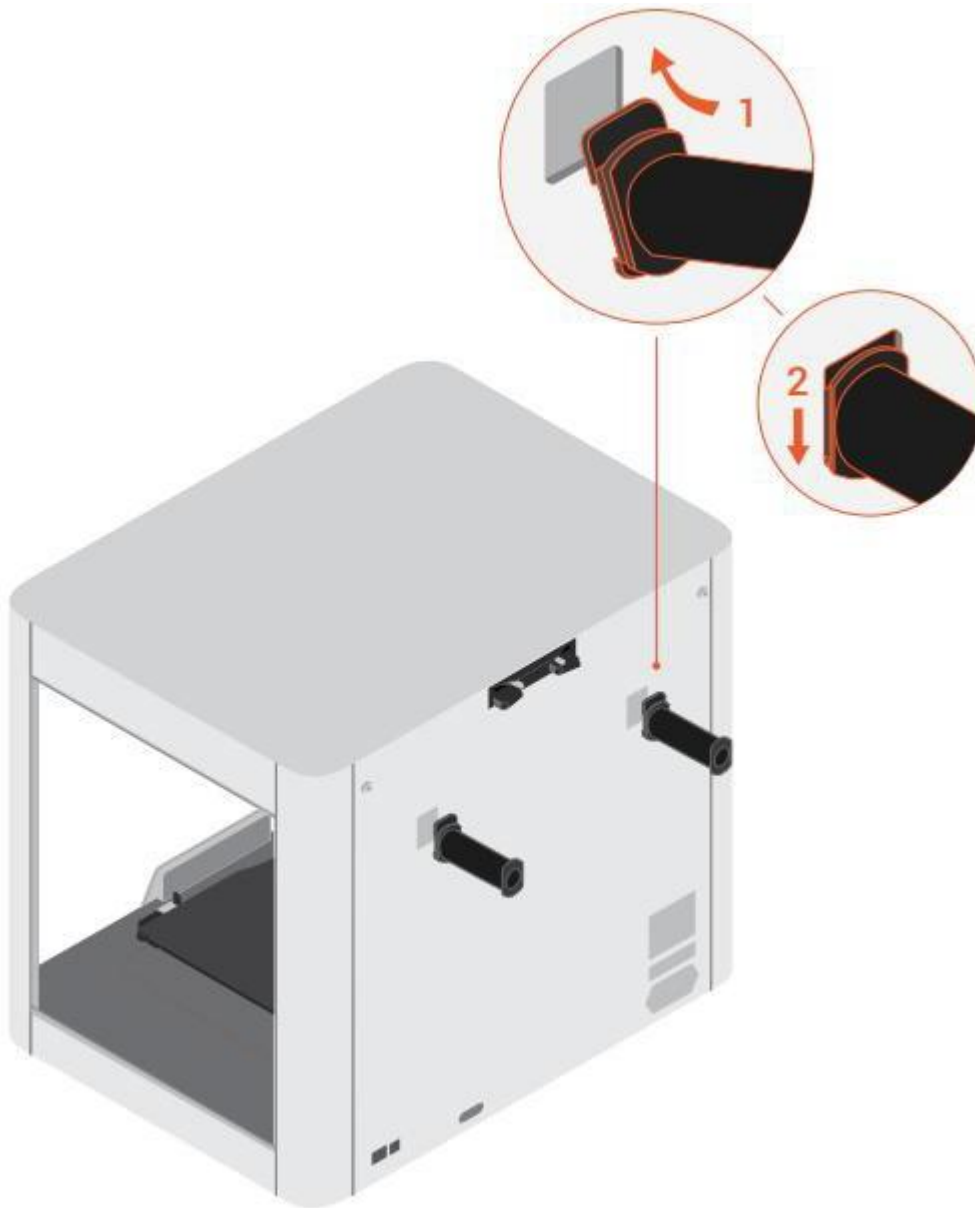
## Hardware installation

1. Place the printer on a horizontal desktop.



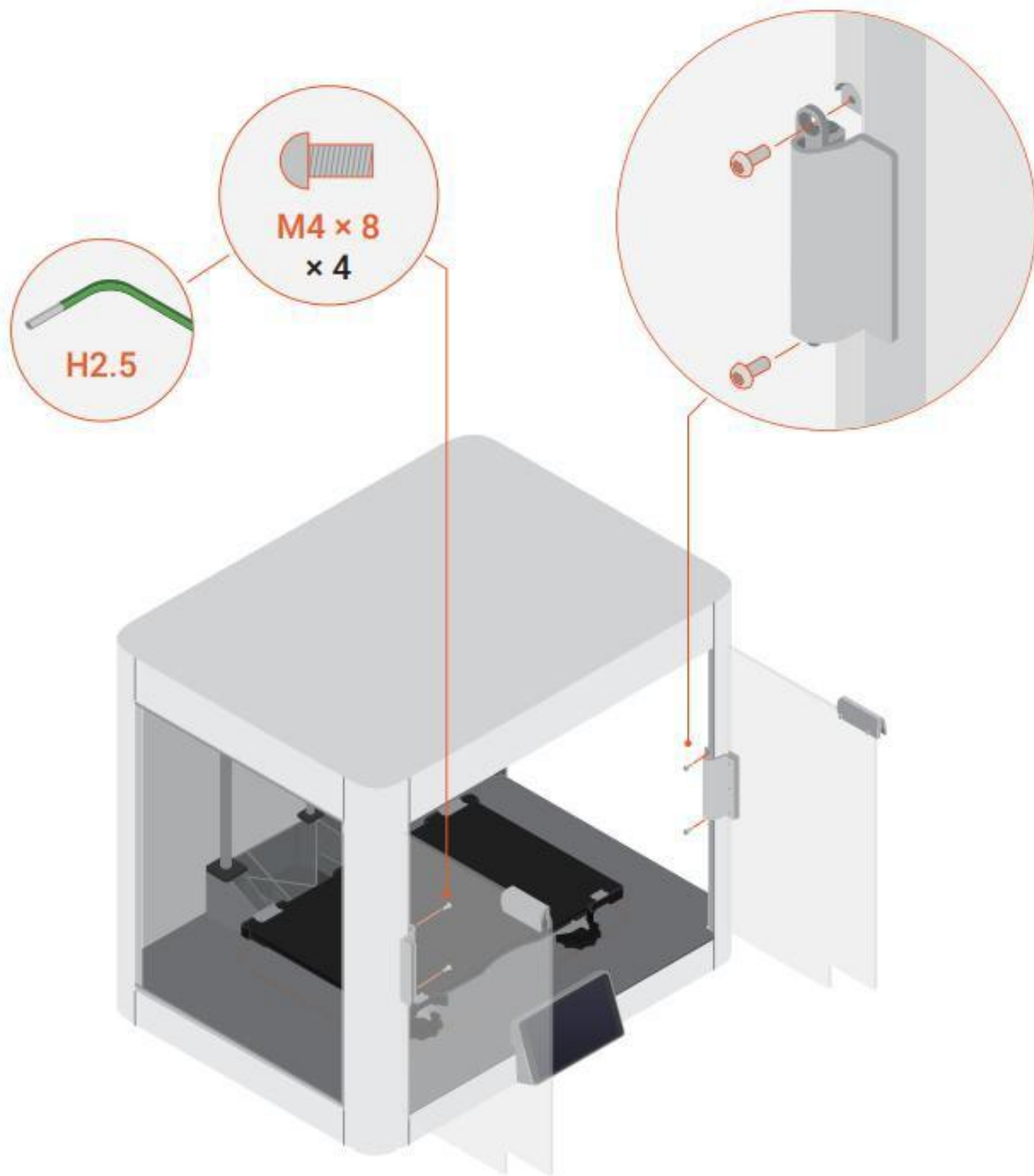
In order to facilitate refueling, it is recommended to leave a space of more than 30 cm around the fuselage.

2. Install the filament holder.



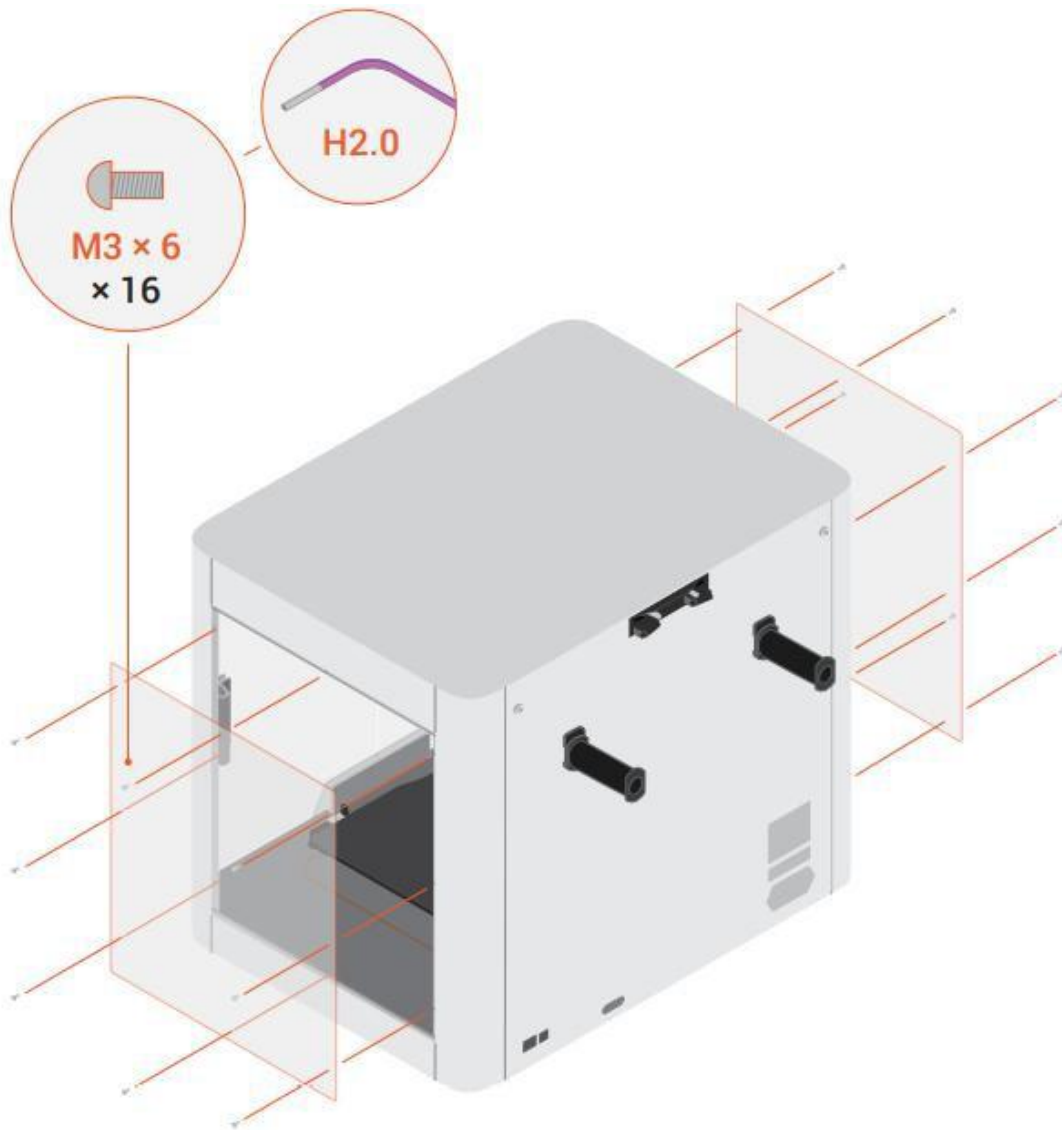
3. Install the enclosure door with the provided green hex key (specification: H2.5) and M4 × 10 screws in the tool box.





When using an hex key, you can hold the longer end first to loosen the screw, and then switch to the shorter end to unscrew the screw quickly.

4. Install the left and right side plates with the provided pink hex key (specification: H2.0) and M3 × 6 screws in the tool box.



5. Install the PEI glass platform.



The PEI glass platform is fragile, so please handle it carefully.

6. Make sure the power switch is off, and then connect the power cable.



Make sure the power switch is turned off before connecting the power cable, or the printer may be damaged.

## touchscreen initial settings

When you first boot the Snapmaker J1, you need to complete a series of initial settings under the guidance of the touchscreen. Turn on the power switch on the back of the fuselage, and the touchscreen will automatically run the initial setup process.



To re-enter the wizard, click Setup > Machine Setup > Wizard.

### General Initial Settings

When you first turn on the computer, you need to complete the following general initial settings:

- ◆ Select the machine language
- ◆ Read Terms of Use & User Experience Program
- ◆ Name your J1
- ◆ Connect to a Wi-Fi network

### Guide

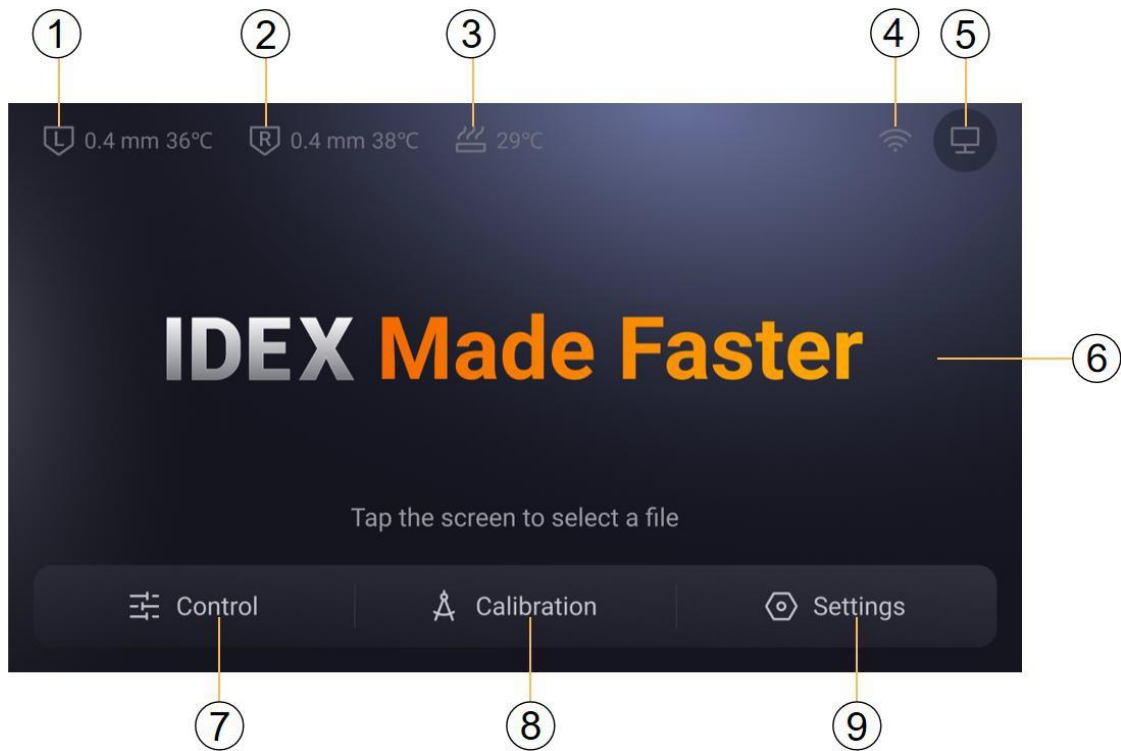
After completing the generic initial setup, the wizard will guide you through the following steps to prepare for printing:

- ◆ heated bed leveling
- ◆ Z-axis offset calibration
- ◆ XY axis offset calibration
- ◆ Offset Calibration Verification
- ◆ Vibration compensation calibration

# touchscreen

With the touchscreen, you can control the Snapmaker J1 and manage its printing process.

## Main interface



1. Left Nozzle Type & Temperature
2. Right Nozzle Type & Temperature
3. heated bed temperature
4. Wireless network
5. Connection status with Snapmaker software
6. Click to select a file to start printing
7. Control page: set the extruder temperature, feed & Unload, control the movement, set the heated bed temperature, switch the motor
8. Calibration page: Level the heated bed, calibrate the Z-axis offset, and calibrate the XY-axis offset
9. Settings page: update firmware, connect to wireless network, set language, view local information, change machine settings

Set, View Terms of Use

Control page

## Load Filament & Unload Filament

### Load Filament


Refer to Load Filament.

### Unload Filament

Refer to Unload Filament.

## Moving the extruder and the heated bed

Click Control > Move, and then click the button in the corresponding direction to control the movement of the left and right extruders and the heated bed in the X, Y, and Z directions.

To move the extruder and heated bed to their home positions, click the Home  button in the upper right corner of the interface. The left extruder will move to the left front corner, the right extruder will move to the right front corner, and the heated bed will move down to the lowest point.


### Set the heated bed temperature

Click Control > heated bed, then slide to the target heated bed temperature.

### Turn on and off the motor

Click Control > Motor and then click to toggle it on and off. When the motor is turned off, you can move the extruder by hand for manual loading and manual Unloadion (see Loading and Replacing filaments).



When the motor is off, click Home Button  before using the screen to control extruder movement.

## Calibration page

### leveling heated bed

See [Leveling the heated bed](#).

### Calibrate the Z-axis offset

See [Calibrating the Z-Axis Offset](#).

### Calibrate the XY axis offset

See [Calibrating XY Offset](#).

### Verify the calibration results

See [Verifying the Calibration Results](#).

### Calibrate vibration compensation

### Set up the page

### Update the firmware

See [Updating Firmware](#).

### Connect to a wireless network

Tap [Settings](#) > [Wi-Fi](#), select an available wireless network, and enter a password.

### Set the language

Click [Settings](#) > [Language](#), and then select the language you want to set.

### View machine information

Click [Settings](#) > [About](#) to view the name, model, molding size, IP address, MAC address and storage space of the machine



Room, system log, and compliance statement.

- To change the machine name, click the machine name and enter the new name.
- To export the system log, scroll down and find the system log column, click Export, and then click the export method you want.

## Change the machine settings

- To re-enter the wizard process, click Setup > Machine Setup > Wizard.
- To turn on or off the stock break detection for a extruder, click Settings > Machine Settings, and then click to toggle it on or off.



When the cut-off detection is turned on, if the machine detects that there is no filament in the extruder or the filament can not be

- To turn the lighting on or off, click Settings > Machine Settings and then click the button on the right to toggle it on or off.
- To restore the factory settings, click Settings > Machine Settings > Restore Factory Settings.

## Review the Terms of Use

Click Settings > Terms of Use to view the details.

## Print menu

When printing, click Pause or Resume in the print menu interface to pause or resume printing. Click Stop to stop printing, which cannot be restored.



When printing, click Adjust Parameters in the print menu interface to enter the print parameter setting page.

- To adjust the extruder temperature, tap extruder > Slide to Target Temperature > tap Heat.
- To adjust the hotbed temperature, click on the hotbed > slide to target temperature > click on heat.
- To adjust the Z-axis offset, click the Z-axis offset and then click + 0.05mm or -0.05mm to lower or raise the heated bed.



As you increase the Z offset, the heated bed will drop a corresponding distance, and vice versa.

- To adjust the working speed, tap the working speed and slide to the target speed.
- To adjust the output of the filament, click Flow and then slide to the target flow.
- To adjust the fan speed, tap Fan Speed and then slide to the target speed.
- To adjust the lighting level, click Lighting, and then click the level you want.
- To turn the standby mode on or off, tap Standby Mode, and then tap to toggle it on or off. When the standby mode is turned on, the machine will continue printing with the standby extruder if the working extruder filaments are used up.



Standby mode is only available when printing with a single extruder.

Printing Adjust the parameters



# Filaments

This chapter describes the common filaments supported by the Snapmaker J1 3D printer, including their physical characteristics, as well as their use with the Snapmaker J1

Recommended printing parameters for use.

## Filament warehouse

The filaments supported by Snapmaker J1 3D printer include PLA, ABS, HIPS, PC, TPU, TPE, PETG, ASA, PP, PVA, PA (Nylon), PA-GF, PA-CF, and more are being tested.

You can go to our [Online filaments warehouse](#) Choose and buy all kinds of filaments.

filaments	Characteristic	Application
PLA	Easy to print, environmentally friendly, degradable, food safety grade, high tensile strength, low shrinkage, color diversity	Medical equipment, food containers, packaging, automotive components
ABS	Hard, heat-resistant, impact-resistant, wear-resistant, high shrinkage	Home Appliances, Building and Construction, Commodities, Plumbing, Automotive Components, Electronics
TPU	Transparent, elastic, wear-resistant, oil-resistant, grease-resistant, high shrinkage	Automotive components, sports equipment, medical equipment, housings, seals, gaskets, pipes, hoses
PETG	Easy to print, strong, transparent, heat resistant, waterproof, chemical resistant, recyclable, high tensile strength, low shrinkage	Food and beverage containers, medical and pharmaceutical equipment, machine protection
PVA	Soluble in water, easily affected with moisture, colorless	Paper industry, textile processing
PA	Wear and impact resistance, high tensile strength, heat and chemical resistance	Engineering construction, mechanical equipment, medical equipment, household appliances, automotive components, textile

The data provided in this manual is for reference and comparison only, and the actual performance of filaments varies according to printing conditions. When using, please make your own judgment.

Applicability of filaments under specific conditions.

## PLA

Filament characteristics	
Diameter	1.75mm
Density	1.17 G/cm <sup>3</sup> at 23 ° C
Melt index	7-11 G/10 min
Glass transition temperature	61°C
Melting temperature	150°C
Tensile strength	46.6 ± 0.9MPa
Flexural modulus	3283 ± 132MPa
Flexural strength	85.1 ± 2.9MPa
Elongation at break	1.90 ± 0.21%
Impact strength	2.68 ± 0.16KJ/m <sup>2</sup>

Recommended printing parameters	
Drying temperature & duration	55°C, 6h
Print temperature	190°C–220°C
heated bed temperature	50°C–60°C
Print speed	100mm/s–200mm/s
Retraction distance	0-2mm
Retraction speed	20-50mm/s
Fan	Open
Standby temperature	160°C
filaments are recommended	PLA, easy-peel PLA, PVA



When printing with PLA, it is recommended to remove the top cover of the printer.

## Easily stripped PLA

filament characteristics	
Diameter	1.75mm
Density	1.22 G/cm <sup>3</sup> at 23 ° C
Melt index	3-6g/10min
Recommended printing parameters	
Drying temperature & duration	55°C, 6h
Print temperature	220°C-230°C
heated bed temperature	25°C-60°C
Retraction distance	0-2mm
Retraction speed	20-50mm/s
Print speed	20mm/s-40mm/s
Fan	Open

Standby temperature	120°C
filaments are recommended	PLA、PC、PVA、TPU



Easy-Peel PLA can be easily peeled off after molding, making it ideal for print support.

## ABS

filament characteristics	
Diameter	1.75mm
Density	1.12 G/cm <sup>3</sup> at 23 ° C
Melt index	9-14 G/10 min
Glass transition temperature	101.1°C
Tensile strength	33.3 ± 0.8MPa
Flexural modulus	2844 ± 411MPa
Flexural strength	72.8 ± 0.7MPa



Elongation at break	$2.7 \pm 0.4\%$
Impact strength	$12.6 \pm 1.1\text{KJ/m}^2$
Recommended printing parameters	
Print temperature	$245^{\circ}\text{C}-265^{\circ}\text{C}$
heated bed temperature	$90^{\circ}\text{C}-100^{\circ}\text{C}$
Retraction distance	0-2mm
Retraction speed	20-50mm/s
Print speed	30mm/s-50mm/s
Fan	Close
Standby temperature	$160^{\circ}\text{C}$
filaments are recommended	ABS




ABS produces smoke and particulate matter that is harmful to the human respiratory system when printing. Please use this kind of filaments in a well-ventilated place or with air purification equipment.

## TPU95

filament characteristics	
Diameter	1.75mm
Density	1.20-1.24 G/cm <sup>3</sup> at 23 ° C
Melt index	3-6g/10min
100% modulus	9.4 ± 0.3MPa
Elongation at break	330.1 ± 14%
Shore hardness	95A
Recommended printing parameters	
Storage Ambient Temperature & Humidity	Room temperature, relative humidity < 25%
Drying temperature & duration	65°C, 8h
Operating ambient temperature & humidity	Room temperature, relative humidity < 25%
Print temperature	210°C-230°C

heated bed temperature	25°C–60°C
Retraction distance	0-1mm
Retraction speed	10-30mm/s
Print speed	20mm/s–40mm/s
Fan	Open
Standby temperature	120°C
filaments are recommended	Easily stripped PLA, TPU, PVA


	TPU absorbs moisture from the air very easily. Store it in a dry place.
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### High flow TPU95

filament characteristics	
Diameter	1.75mm

Density	1.16g/cm <sup>3</sup> at 23 ° C
Melt index	9.3g/10 min
Tensile strength	23.11 ± 0.63MPa
100% modulus	13.24 ± 0.29MPa
Elongation at break	462.3 ± 21.1%
Shore hardness	95A
Recommended printing parameters	
Storage Ambient Temperature & Humidity	Room temperature, relative humidity < 25%
Drying temperature & duration	70°C, 8h
Operating ambient temperature & humidity	Room temperature, relative humidity < 25%
Print temperature	200°C - 220°C
heated bed temperature	25°C - 50°C
Retraction distance	0-2mm

Retraction speed	20-50mm/s
Print speed	40mm/s - 100mm/s
Fan	Open
Standby temperature	120°C
filaments are recommended	Easily stripped PLA, TPU, PVA

	TPU absorbs moisture from the air very easily. Store it in a dry place.
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## PVA

filament characteristics	
Diameter	1.75mm
Density	1.37 G/cm <sup>3</sup> at 21.5 ° C
Melt index	7.8g/10 min
Recommended printing parameters	

Storage Ambient Temperature & Humidity	Room temperature, relative humidity < 25%
Drying temperature & duration	80°C, 12h
Operating ambient temperature & humidity	Room temperature, relative humidity < 25%
Print temperature	215°C - 225°C
heated bed temperature	25°C - 60°C
Retraction distance	0-1mm
Retraction speed	10-30mm/s
Print speed	30mm/s - 40mm/s
Fan	Close
Standby temperature	100°C
filaments are recommended	PLA, PETG, TPU, PA, PA-CF, PA-GF



PVA is soluble in water, making it ideal for use as a print support (see Dissolving PVA Supports for details).

PVA absorbs moisture from the air very easily, so store it in a dry place.

## PETG

filament characteristics	
Diameter	1.75mm
Density	1.25 G/cm <sup>3</sup> at 21 ° C
Melt index	10.8g/10 min
Glass transition temperature	81° C
Tensile strength	31.9 ± 1.1MPa
Flexural modulus	1174 ± 64MPa
Flexural strength	53.7 ± 2.4MPa
Elongation at break	6.8 ± 0.9%
Impact strength	5.1 ± 0.3KJ/m <sup>2</sup>
Recommended printing parameters	

Drying temperature & duration	65°C, 6h
Print temperature	230°C - 240°C
heated bed temperature	70°C - 80°C
Retraction distance	0-2mm
Retraction speed	20-50mm/s
Print speed	30mm/s - 50mm/s
Fan	Close
Standby temperature	140°C
filaments are recommended	PVA, PETG


## PA (Nylon)

filament characteristics	
Diameter	1.75mm
Density	1.12 G/cm <sup>3</sup> at 23 ° C



Melt index	12 G/10 min
Glass transition temperature	67° C
Melting temperature	190° C
Tensile strength	66.2 ± 0.9MPa
Flexural modulus	1667 ± 118MPa
Flexural strength	97 ± 1.1MPa
Elongation at break	9.9 ± 1.5%
Impact strength	9.6 ± 1.4KJ/m <sup>2</sup>
Recommended printing parameters	
Drying temperature & duration	100°C, 8h
Print temperature	250°C - 270°C
heated bed temperature	25°C - 50°C
Retraction distance	0-2mm


Retraction speed	20-50mm/s
Print speed	30mm/s - 60mm/s
Fan	Close
Standby temperature	180°C
filaments are recommended	PVA, PA

	PA absorbs moisture from the air very easily. Store it in a dry place.
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## How to store filaments

Most filaments absorb moisture from the air, particularly PVA and PA. Wet filaments are likely to affect print quality or clog the nozzle.

- After unpacking, store the filament in a vacuum-sealed bag with desiccant, or in an optional filament drying oven.
- The recommended storage temperature is -20 °C to 30 °C.
- The recommended storage humidity is below 50%.

	The appropriate storage temperature and humidity for each filament may vary. It is recommended to consult the information provided by the filament manufacturer for more detailed guidance.
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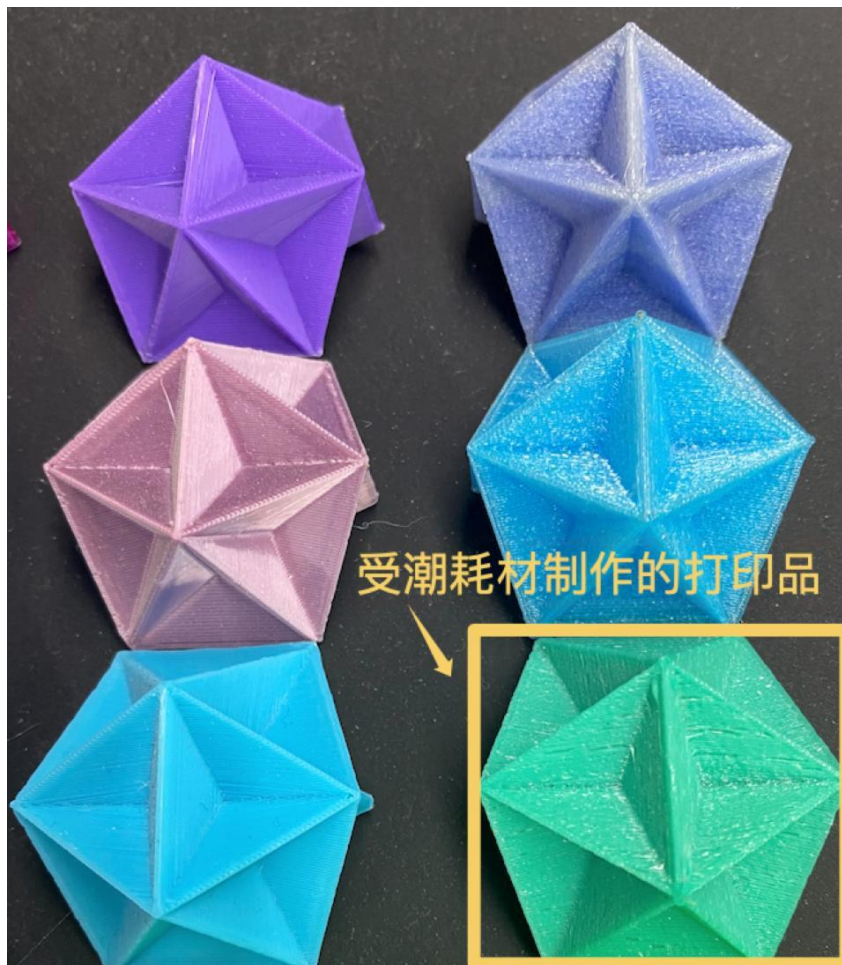
- Avoid direct sunlight.
- In order to ensure the ideal printing effect, it is recommended to use up the unpacked filaments within one month. Vacuum sealed filaments can be stored for approx.

24 months.

## How to identify damp filaments

You can check and confirm according to the following three descriptions. If you meet any of the requirements, it means that your filaments have been accepted.  
Tide:

1. filaments become brittle and easier to break;
2. When the filaments are squeezed out, there is a cfilament holderling sound—the sound of boiling and evaporation of water, at this time, the surface of the printed product is prone to small bubbles;
3. When printing, there is still obvious wiredrawing when the drawback is set.



## How to dry filaments

Use a filament dryer

Put the damp filament into the filament dryer, and set the appropriate drying temperature and drying time. After the dryer has completed its work, recheck that the filament is sufficiently dry.



Please note that drying temperatures and drying times vary by filament type, brand and quantity. Before drying, consult the filament manufacturer's literature for more detailed instructions.

# 3D printing operation

This chapter takes the complete workflow of 3D printing as the context, and introduces the operation steps of each link in detail.

## 3D Printing Workflow

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	<p>c. Adjust the parameters</p> <p>a) <a href="#">See Print Menu</a></p>
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## 01 Check the working environment

### 1.1 Temperature & humidity

#### 1.1.1 Recommended temperature

Fused Filament Fabrication (FFF) technology is very sensitive to temperature. To ensure ideal printing results, place the 3D printer at the recommended ambient temperature. The Snapmaker J1 has a recommended operating ambient temperature of 10 ° C to 35 ° C (50 ° F to 95 ° F)

If the ambient temperature is too high, it may affect the printing effect of some filaments (such as PLA), and there is a risk of damaging the 3D printer components. If necessary, use a fan or air conditioner to reduce the ambient temperature.

If the ambient temperature is too low, it may also affect the printing results of some filaments (such as ABS and PA). Another adverse effect is that prints are prone to edge warping: under the action of cold air, the top layer of extruded filaments will shrink; The bottom layer, which is continuously heated by the heated bed, expands and warps. If necessary, use the air conditioner to increase the ambient temperature.



The temperature and humidity of the working environment suitable for each filament may vary. It is recommended to consult the information provided by the filament manufacturer for more detailed guidance.

#### 1.1.2 Recommended humidity

The recommended operating environment for Snapmaker J1 is 10% -90% relative humidity (no condensation). In extremely humid environments, 3D printers can be damaged by moisture in their components. In an extremely dry environment, a 3D printer that is subject to static interference may perform the wrong operation. If necessary, use a dehumidifier or humidifier to keep the relative humidity within the recommended range.

### 1.2 Workbench

Place the Snapmaker J1 on a firm, level workbench.

Fumes and particles that are harmful to the human respiratory system are generated when printing with certain filaments such as ABS. Please place the workbench in a well-ventilated place or use it with air purification equipment.

Keep the workbench clean and dry.

## 02 Calibration

### How it works

The heated bed and the PEI glass platform on it are the basis for the formation of prints. By leveling the heated bed, you can ensure that the print adheres smoothly to the PEI glass platform.

By calibrating the Z-axis offset, you can ensure that the left and right printheads always work at the correct and consistent height during printing, avoiding problems such as poor first-layer adhesion, nozzle scraping the platform, and head bumping.

By calibrating the XY axis offset, it can ensure that the left and right extruders always keep the correct relative position in the horizontal direction during the printing process, so as to avoid problems such as staggered layers between different materials.

You will need to recalibrate in the following scenarios:

- When it is found that the printing effect is not good, such as the first layer can not adhere to the glass platform, and the phenomenon of staggered layers occurs when using double materials for printing.
- After each removal of the hot end or nozzle;
- After adjusting the tension of the belt;
- After transporting the printer over a long distance.

### Level the heated bed

The heated bed and its PEI glass platform are the basis for the formation of the print. To ensure that the print will adhere smoothly to the PEI glass platform, you need to level the heated bed.

#### Auxiliary mode

1. Click **Calibration > heated bed Leveling > Start**.
2. Rotate the leveling wheel at the bottom of the heated bed to calibrate the Z-axis offset of the left extruder at two points on the heated bed, following the prompts on the touchscreen.

### Calibrate the Z-axis offset

To ensure that the left and right extruders print at the correct and consistent height, you need to calibrate the Z-axis offset.



## Auxiliary mode

1. Click **Calibrate > Z-Offset Calibration > Start**.
2. Rotate the thumb wheel of the right printhead to align the Z-axis offset of the right printhead according to the prompts on the touchscreen.

### **Calibrate the XY axis offset**

To ensure that the left and right printheads work at the correct distance in the horizontal direction, you need to calibrate the XY offset.

## Auxiliary mode

1. Click **Calibrate > XY Offset Calibration > Start**.
2. The left and right extruders will automatically touch the heated bed in turn and automatically calibrate their offset in the X and Y directions.

### **Verify the calibration results**

You can determine the success of each calibration by printing the built-in verification model.

1. Click **Offset Calibration Verification > Start**.
2. According to the prompt on the touchscreen, after the verification model is printed, observe the verification model and judge whether the calibration is successful.

### **Calibrate vibration compensation**

You can calibrate the vibration compensation frequency to improve the print quality of the model after turning on the suppression compensation.

1. Click **Calibrate > Vibration Compensation Calibration > Start**.
2. According to the prompt on the touchscreen, after the calibration model is printed, observe the calibration model and select the best area to complete the vibration compensation calibration.

## **03 Load Filament**

Before you can start printing with Snapmaker J1, you need to load the printer. filaments need to enter the extruder inside the extruder and be extruded from the nozzle after being heated by the heating block.

Snapmaker J1 supports two loading modes – auxiliary loading and manual loading.

## Auxiliary loading

In the auxiliary loading mode, the motor will automatically start to extrude after the filament is inserted into the extruder and engaged. To perform an auxiliary loading, proceed as follows:

1. Tap Control > extruder > Slide to Target Temperature > Tap Heat.



By default, the nozzle will be heated to 200° C (392° F). The Load button can only be clicked when the nozzle has been heated to around the preset temperature.

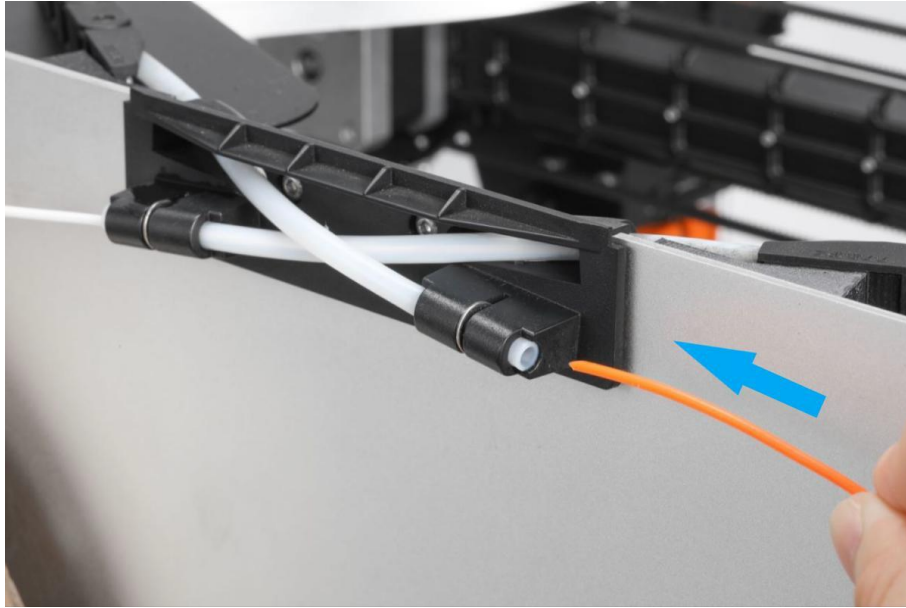


Different filaments require different heating temperatures. If the temperature is not matched, the filament may not be extruded smoothly. It is recommended to consult the information provided by the filament manufacturer for more detailed guidance.

2. Remove the top panel and hang the filaments on the filament holder.
3. Trim the filament ends with diagonal pliers to form a sharp angle of about 45° .

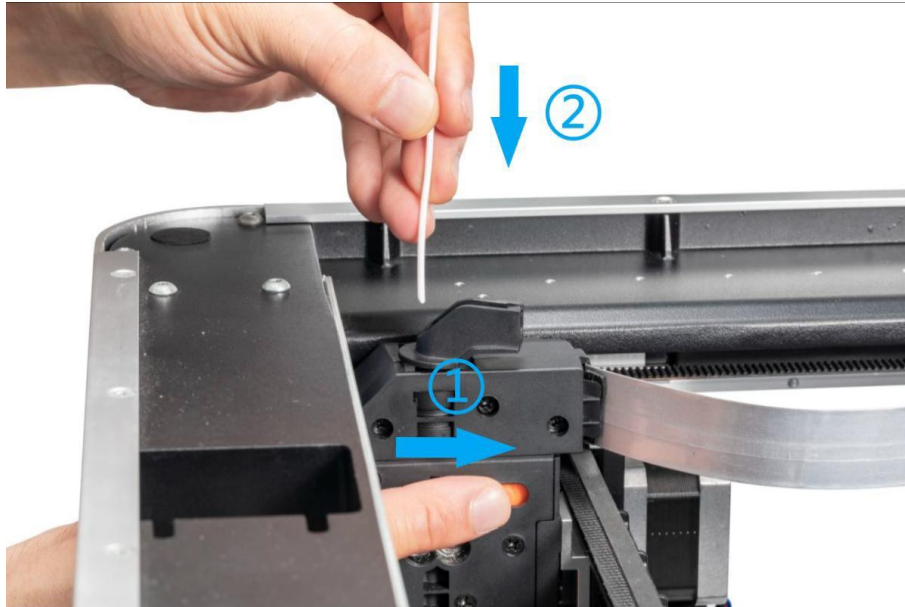


4. Insert the filament into the filament entry until it protrudes from the other end of the guide tube.



The filament entry of the left extruder is located on the right side of the body, and the filament entry of the right extruder is located on the left side.

5. Push and hold the toggle on the side of the printhead outward, insert the filament into the printhead until resistance is felt, and then release the toggle.

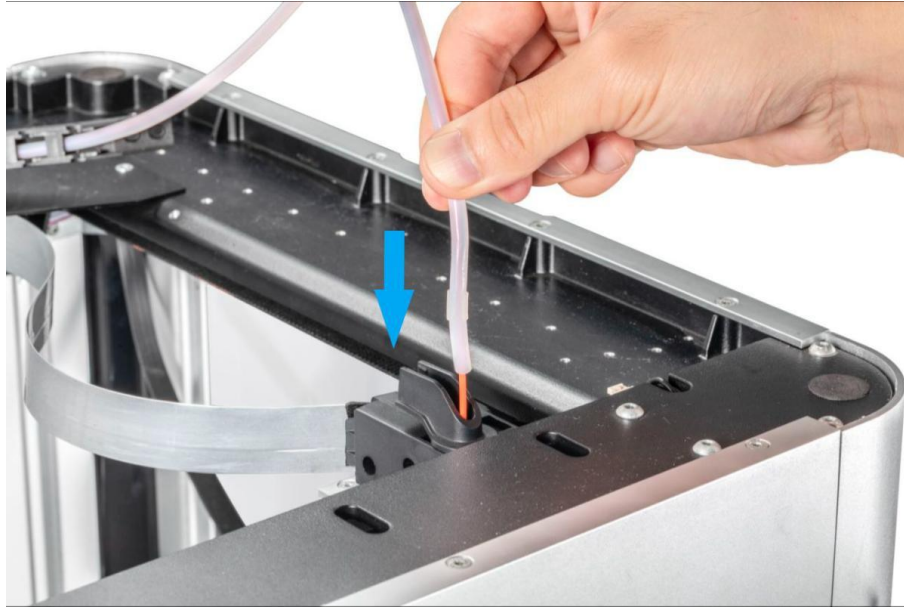


Use care to avoid contact with hot nozzles, which may result in burns. It is recommended to wear insulated gloves for operation.

6. When the extruder reaches the target temperature, click Feed until the filament flows out of the nozzle, and then click Stop Feed.



7. Insert the guide tube into the extruder and snap into the tube clip. Then re-fix the top panel.



8. Clean excess filaments from the nozzle with a wire brush.



## Manual loading

In manual loading mode, after the filament is inserted into the extruder and engaged, you need to continue to insert the filament manually and forcefully until the filament flows out of the nozzle. To perform manual loading, proceed as follows:

1. Click Control > Motor, then click to turn off the motor.
2. Manually move the extruder out of the position above the nozzle wipe carriage.



3. Tap Control > extruder > Slide to Target Temperature > Tap Heat.





By default, the nozzle will be heated to 200° C (392° F). The Load button can only be clicked when the nozzle has been heated to around the preset temperature.

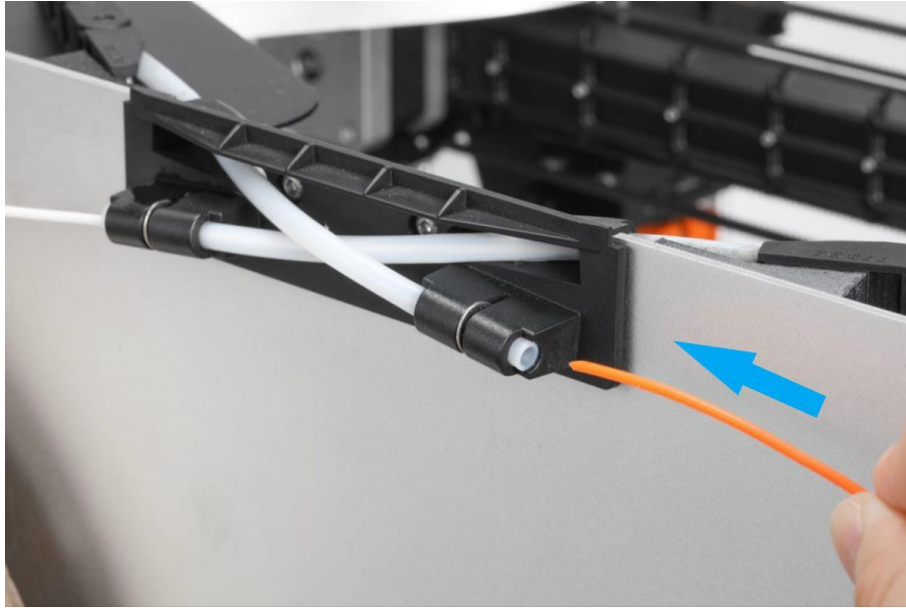


Different filaments require different heating temperatures. If the temperature is not matched, the filament may not be extruded smoothly. It is recommended to consult the information provided by the filament manufacturer for more detailed guidance.

4. Remove the top panel and hang the filaments on the filament holder.
5. Trim the filament ends with diagonal pliers to form a sharp angle of about 45° .



6. Insert the filament into the filament entry until it protrudes from the other end of the guide tube.



The filament entry of the left extruder is located on the right side of the body, and the filament entry of the right extruder is located on the left side.

7. Press down on the idler latch on the front of the printhead to Unload it.





Use care to avoid contact with hot nozzles, which may result in burns. It is recommended to wear insulated gloves for operation.

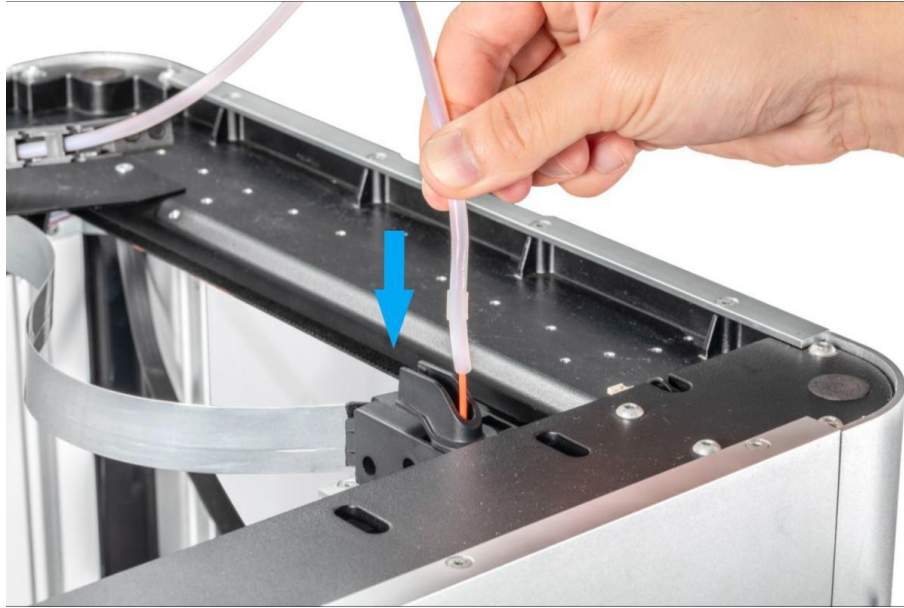
8. When the extruder reaches the target temperature, insert the filament into the extruder until the filament flows out of the nozzle.





9. Close the idler latch on the front of the printhead. Insert the guide tube into the extruder and snap into the tube clip. Then re-fix the top panel.



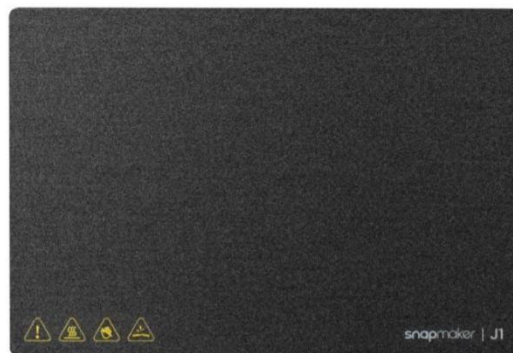


10. Clean excess filaments from the nozzle with a wire brush.



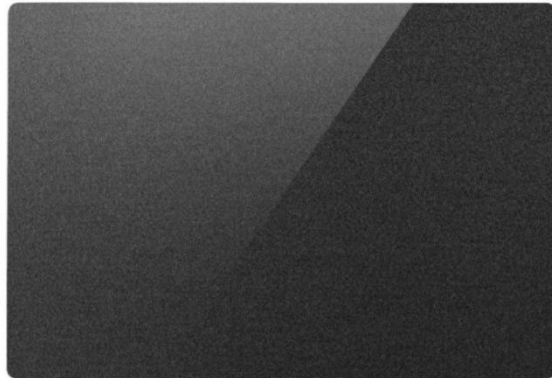
## 04 Select the Glass Platform Print Side

The PEI glass platform is made of glass, with the side bearing the Snapmaker J1 logo covered by a PEI coating. In general, it is recommended to print with a PEI coated surface.



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You can use a PEI-free coating surface in the following scenarios:



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- It is necessary to obtain the printing effect of the bottom surface of the model which is extremely flat;
  - The adhesion effect of some filaments (such as PA and PA filaments) on the PEI coating surface may not be ideal. In this case, the non-PEI coating surface can be used for printing.
  - When you notice that the PEI coating has been damaged, it may affect the printing effect.

When printing with a PEI-free coating surface, it is recommended to apply a solid adhesive (provided, see tool box) to the glass surface to strengthen the adhesion of the first layer.



## 05 Prepare G-code files

### Prepare the model file

Before generating the G-code file, you need to prepare the 3D model file for printing. You can get the model file in the following ways:


- Use the models provided in the Snapmaker software's case library.
- Design 3D models using 3D modeling software such as SketchUp and Fusion 360.
- Visit websites such as thingiverse. Com and myminifactory. Com to download free and high-quality 3D models online.
- A 3D scanner is used to 3D scan models of various real objects.



Snapmaker software supports model files in STL, OBJ, 3MF formats, and more formats to be added.

### Generate G-code files

To slice the model and generate a G-code file in the Snapmaker software, follow these steps:


1. Install the Snapmaker software and connect to Snapmaker J1.
2. Click the Import  button on the left side of the interface To import the model.
3. Configure print parameters.
4. Click the Generate Print command to generate the G-code.
5. Depending on the printing method, choose to start printing directly on the Snapmaker software or print via USB stick.

## 06 Start printing

### Print on Snapmaker software

When Snapmaker J1 and the computer running the Snapmaker software are connected to the same network, you can slice in the Snapmaker software and start printing directly.



1. After generating the G-code file in the Snapmaker software, click Send to Workspace.
2. Click the Run button  to start printing.



After printing, please pay close attention to the printing of the first layer of the model, so as to find problems in time and avoid wasting filaments. If the first layer does not adhere to the glass platform, stop printing and see First layer does not adhere.



If the Snapmaker software is disconnected from the printer after printing has started, the print job is not interrupted.

## Print via USB drive

1. Insert the USB stick into the computer.
2. After generating the G-code file in the Snapmaker software, click Download to Removable Disk.
3. Insert the USB stick into the USB port on the printer.
4. On the main screen of the touchscreen, click the blank space to enter the file manager.
5. Locate the G-code file, preview the file, check the print settings, and click Start to begin printing.

## 07 Remove the print

When the print is complete, the print is removed from the PEI glass platform.

### Wait for cooling

Allow the glass platform and print to cool down to room temperature. As the temperature drops, the filament itself shrinks, making it easier to remove the print from the glass platform.

### Use the Palette knife

If the print is still attached to the glass platform after cooling, you can use the provided Palette knife in the tool box to remove the print.

After the glass platform has cooled to room temperature, remove the glass platform and print from the printer. Insert the edge of the spatula between the print and the glass platform, and then gently pry to remove the finished product. Try to keep the angle between the Palette knife and the glass platform less than 30 ° to avoid damaging the PEI coating of

the glass platform. The direction of force should be away from the body to prevent printing from the edge of the Palette knife or falling off.



Scratch on the edge of the product.



The edge of the Palette knife is sharp. Be careful during operation to prevent scratches.

## Rinse with cold water

If the glass platform and print have cooled to room temperature and cannot be easily removed with a spatula, you can wash the glass platform with cold water to help it cool quickly.

Remove the glass platform and print from the printer and rinse the back of the glass platform with cold water. When washing, it is necessary to avoid cold water touching the connection between the glass platform and the printed product, otherwise it may cause excessive shrinkage and deformation of the printed product.



Remove the glass platform from the printer before rinsing with water. Water can cause damage to the printer.



Before removing the glass platform, please make sure that the glass platform has been cooled to room temperature to prevent hot hands.

## Soak in warm water

If solid glue is applied to the glass platform when printing, you can use warm water to dissolve the adhesive.

After the glass platform is cooled to room temperature, take the glass platform and the printing product out of the printer, and then soak them in warm water to ensure that the connection between the printing product and the printing platform is immersed in water. After a few minutes, the glue dissolves and the print can be removed more easily.



Before removing the glass platform, please make sure that the glass platform has been cooled to room temperature to prevent hot hands.

If a PVA filament print support is used, simply immerse the glass platform and print in warm water to dissolve the PVA, making it easier to remove the print.

## 08 Remove the support

Some model files print without support structure, but most models require support

structure. For models that include a support structure, it is necessary to remove the support structure from the print after it is removed.

## Dissolve the PVA support

If a PVA filament print support is used, warm water can be used to dissolve the PVA. The dissolution process may take several hours.

1. Manually remove the part of the support structure that is easier to peel off (see Removing the Support Manually).
2. Immerse the print in warm water and the PVA filaments will slowly dissolve. The dissolution process can be accelerated by using warmer water or changing the water regularly.



When PVA and PLA filaments are used for printing at the same time, do not soak the print in hot water higher than 50 °C, or the PLA may be deformed due to heat. This temperature value is for reference only. It is recommended to consult the information provided by the PLA filament manufacturer for more detailed guidance.

3. After the PVA support is completely dissolved, rinse the print thoroughly with clean water to remove the remaining PVA.
4. Dry the print.
5. Waste water treatment.



Wastewater containing PVA solution may require special treatment. Refer to the literature provided by the PVA filament manufacturer or consult your local wastewater (sewage) disposal authority for more comprehensive guidance.

## Manual removal

You can remove the support manually with the help of the following tools. When removing, please carefully control the force and direction to avoid being scratched by sharp structures in tools or prints.

### Diagonal pliers

Provided, see tool box. Diagonal pliers with wide jaws are often used to remove support structures at the periphery, but are less suitable for removing structures embedded deep in the print.

Needle-nose pliers

Not provided. Long, narrow needle-nose pliers can penetrate deep into the print, but are less suitable for removing finer structures.

Carving knife

Not provided. The burin has a sharp edge and can be used to cut small structures that require precise control.



Be careful when using a carving knife to prevent cuts. It is recommended to wear protective gloves.

## Power off and continue to play

To resume a print job if the Snapmaker J1 unexpectedly loses power during printing:

3. Make sure the power cable is plugged in correctly, and then turn on the power switch.
4. When the printer restarts, click Restore on the touchscreen.

## Replace the filaments

To replace a filament, remove the current filament (i.e., Unload Filament) and then load the new filament (i.e., Load Filament).

Snapmaker J1 supports two modes of refueling – secondary and manual.

## Auxiliary Loading

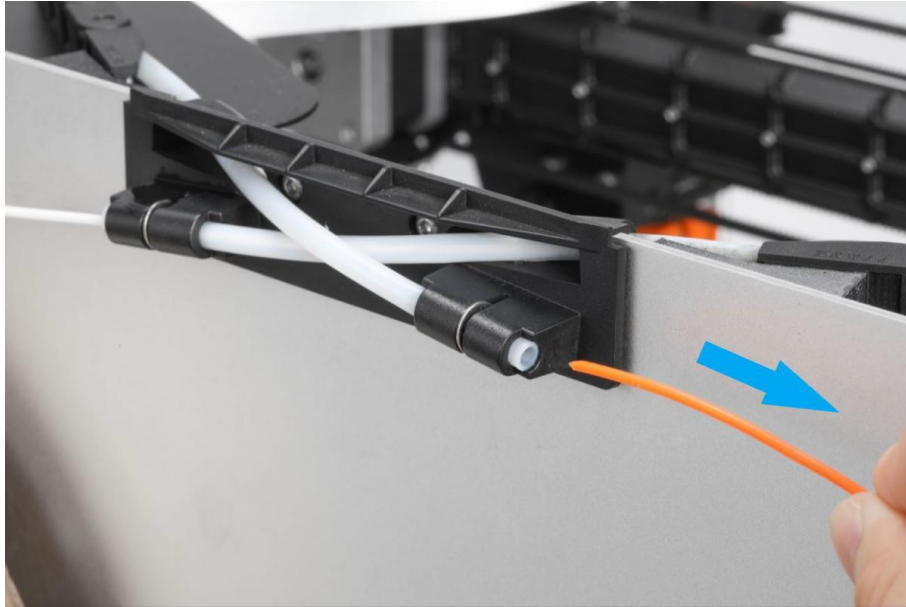
### Auxiliary Unload Filament

1. Tap Control > extruder > Slide to Target Temperature > Tap Heat.



By default, the nozzle will be heated to 200° C (392° F). The Unload and Load buttons can only be clicked when the nozzle has been heated to approximately the preset temperature.

2. When the extruder reaches the target temperature, click Unload. Wait for about 20 seconds, and then click Stop Unloading.
3. Pull the filament out of the guide tube and remove it from the filament holder.



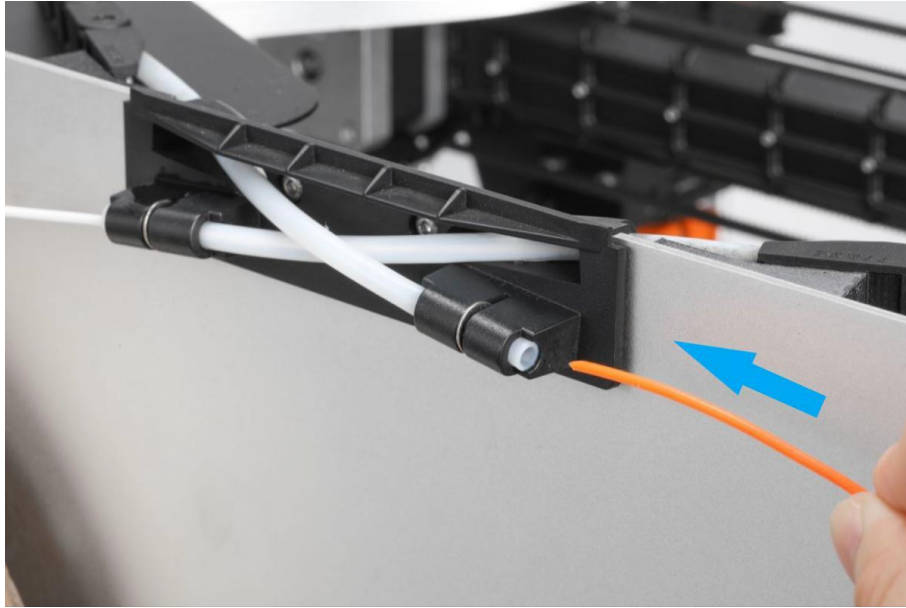
### Auxiliary loading

After the material is returned, load the material according to the following steps:

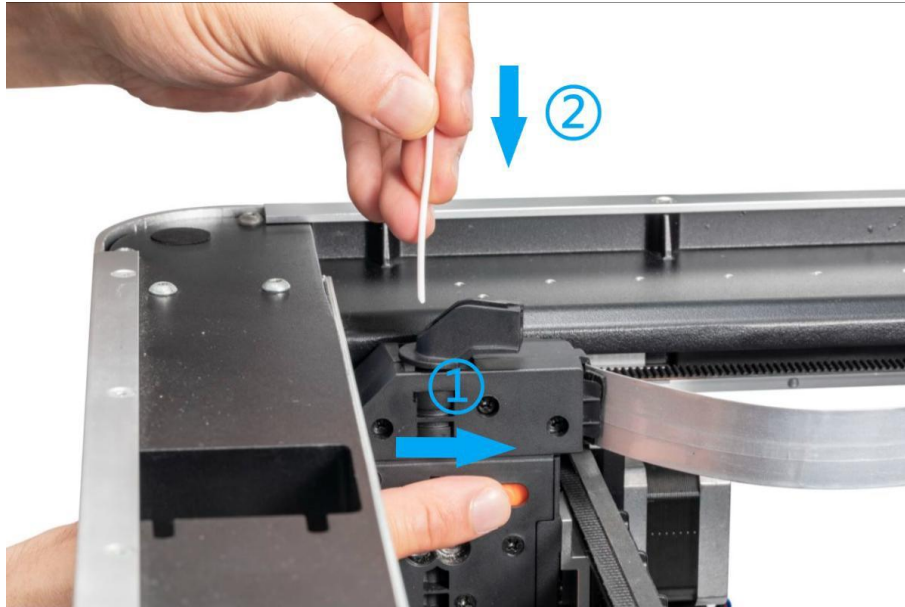
1. Remove the top panel.
2. Hang the new filament on the filament holder and trim the end of the filament with diagonal pliers to form a sharp angle of about  $45^\circ$  .



3. Insert the filament into the filament entry until it protrudes from the other end of the guide tube.



4. Slide on the touchscreen to the target temperature for heating the filament.
5. Push and hold the toggle on the side of the extruder outward, and insert the filament into the feed port until you feel resistance, and then release the toggle.



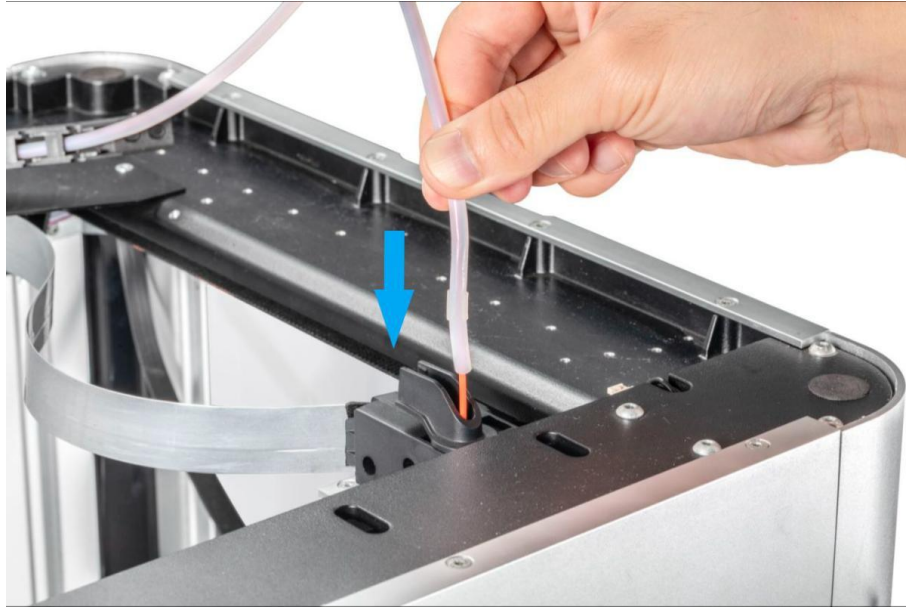
Use care to avoid contact with hot nozzles, which may result in burns. It is recommended to wear insulated gloves for operation.

6. When the extruder reaches the target temperature, click Feed until the filament flows out of the nozzle, and then click Stop Feed.



7. Insert the guide tube into the extruder and snap into the tube clip. Then re-fix the top panel.





8. Clean excess filaments from the nozzle with a wire brush.



## Manual Loading

### Manually Unload Filament

1. Tap Control > extruder > Slide to Target Temperature > Tap Heat.



By default, the nozzle will be heated to 200° C (392° F). The Unload and Load buttons can only be clicked when the nozzle has been heated to approximately the preset temperature.



Different filaments require different heating temperatures. If the temperature does not match, the filaments may not be removed smoothly. It is recommended to consult the information provided by the filament manufacturer for more detailed guidance.

2. Remove the guide tube from the tube clip.

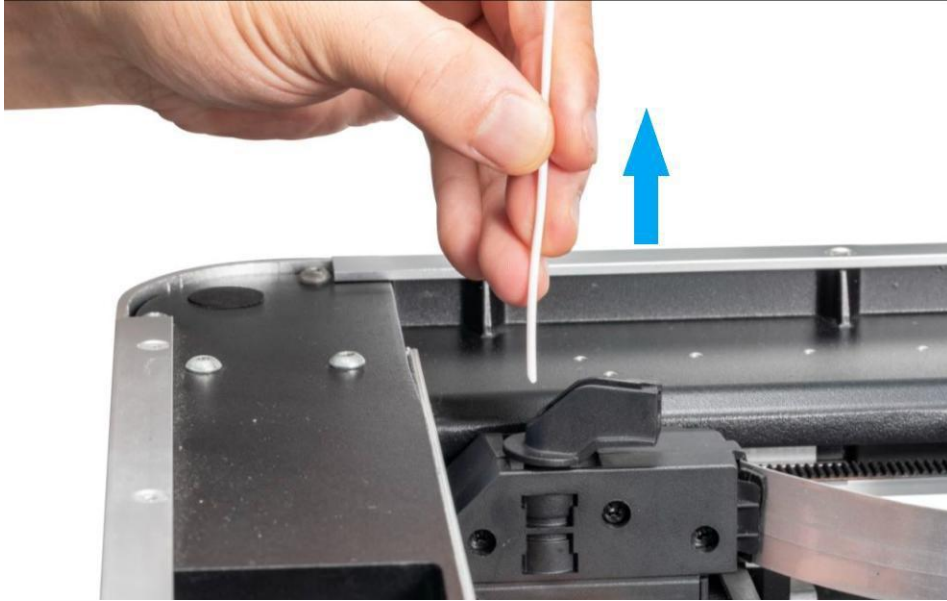


3. Press down on the idler latch on the front of the printhead to Unload it.

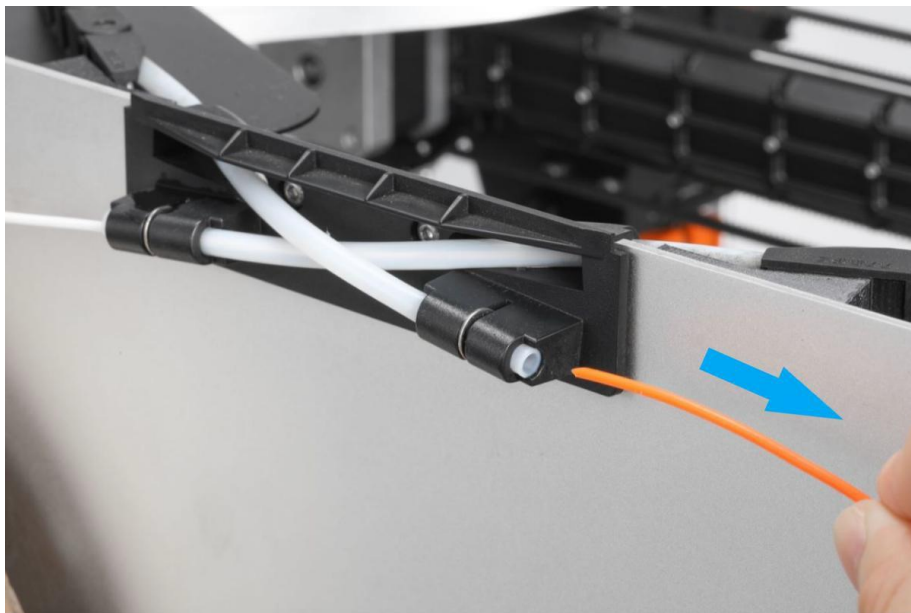


Use care to avoid contact with hot nozzles, which may result in burns. It is recommended to wear insulated gloves for operation.

4. When the extruder reaches the target temperature, remove the filaments from the extruder.



5. Pull the filament out of the guide tube and remove it from the filament holder.



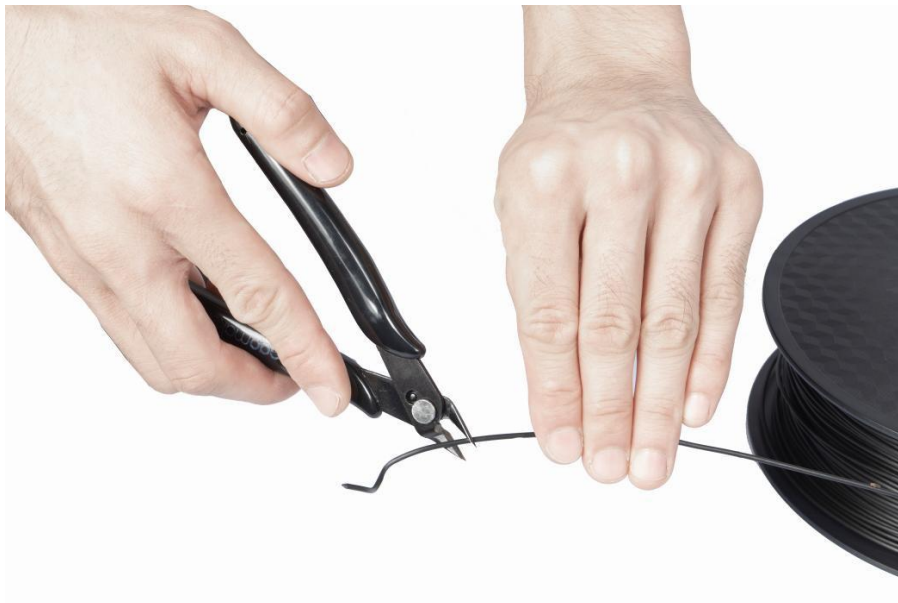
### Manual loading

After the material is returned, load the material according to the following steps:

1. Remove the top panel.
2. Click Control > Motor, then click to turn off the motor.
3. Manually move the extruder out of the position above the nozzle wipe carriage.

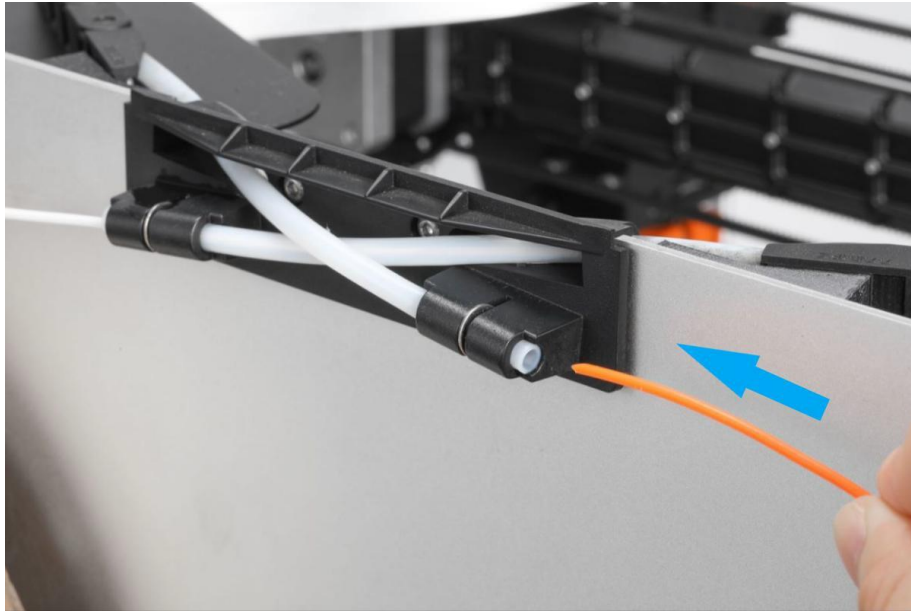


4. Hang the new filament on the filament holder and trim the end of the filament with diagonal pliers to form a sharp angle of about  $45^\circ$  .

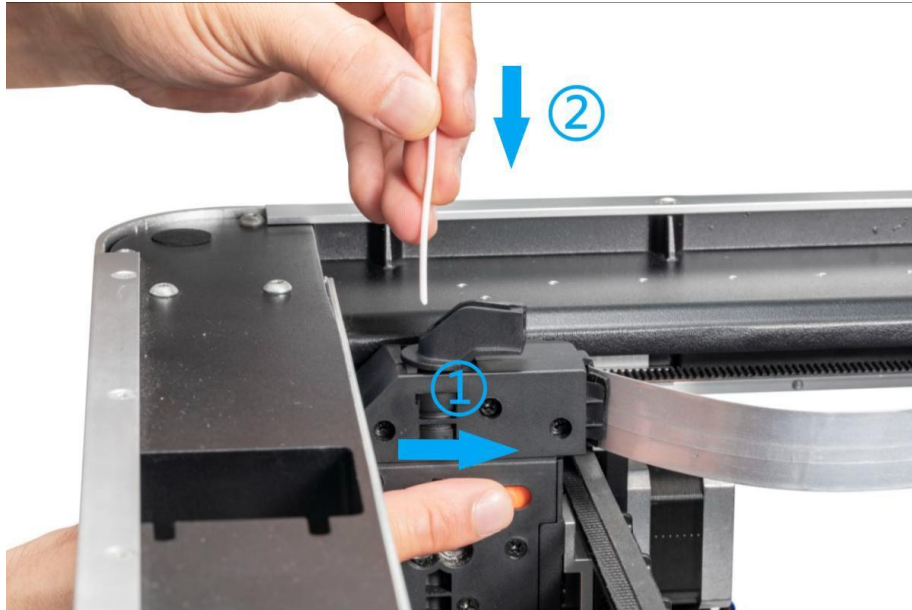


5. Insert the filament into the filament entry until it protrudes from the other end of the guide tube.



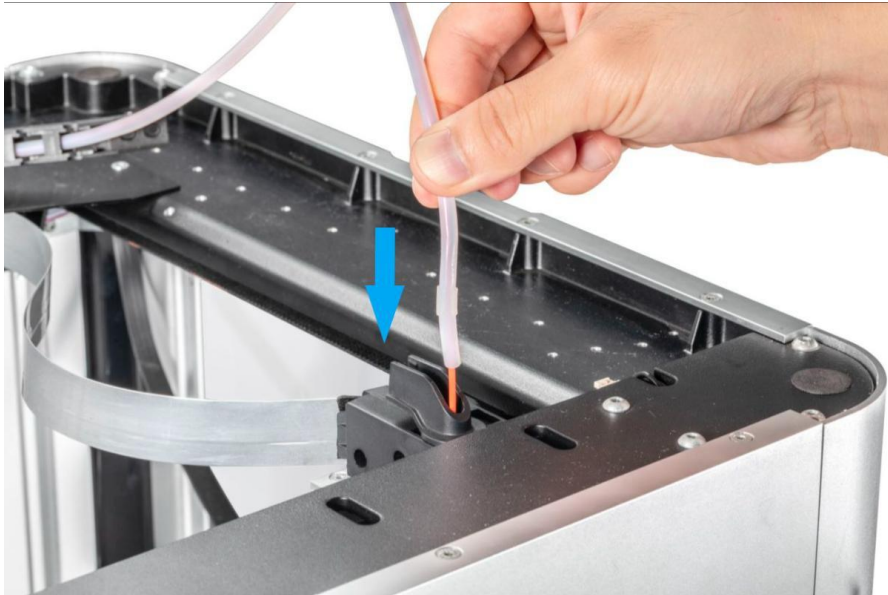


6. On the touchscreen, slide to the temperature required to heat the filament.
7. When the extruder reaches the target temperature, push and hold the toggle on the side of the extruder outward, insert the filaments into the feed port until the filaments flow out of the nozzle, and then release the toggle.



Use care to avoid contact with hot nozzles, which may result in burns. It is recommended to wear insulated gloves for operation.

8. Close the idler latch on the front of the printhead. Insert the guide tube into the extruder and snap into the tube clip. Then re-fix the top panel.







9. Clean excess filaments from the nozzle with a wire brush.



## Replace the hot end

The Snapmaker J1's hot end is highly integrated and can be easily replaced. To buy a hot end, go to Snapmaker official [Mall](#).

### Left extruder

To replace the hot terminal of the left printhead:

1. Unload (see Auxiliary Unload or Manual Unload).

2. Wait for the current nozzle temperature displayed on the touchscreen to drop to room temperature.



The nozzle temperature can be as high as 300 °C. Make sure that the nozzle has cooled to room temperature before proceeding, otherwise burns may result. It is recommended to wear insulated gloves for operation.

3. Loosen the two screws on the side of the extruder with the provided pink hex key (size H2.0) in the tool box without unscrewing.



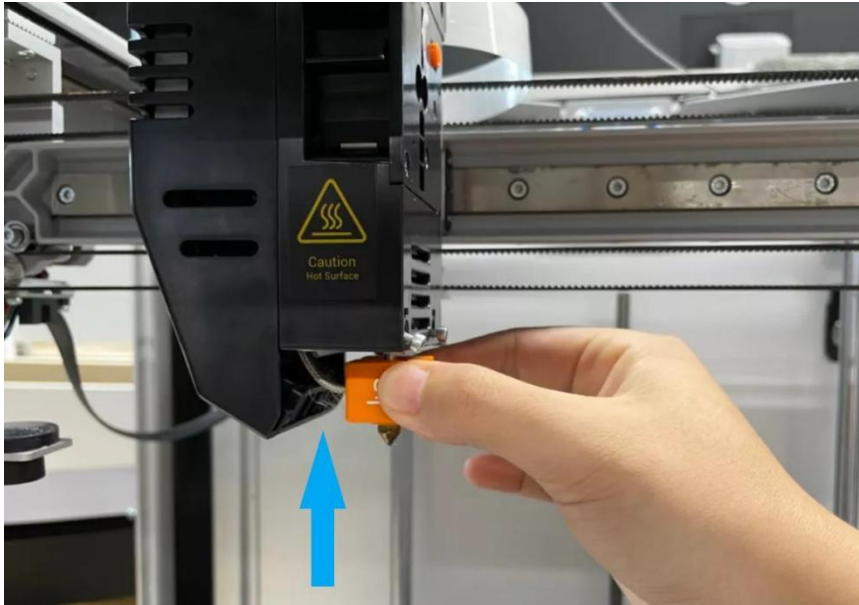
4. Gently pull outward to open the side cover of the extruder.



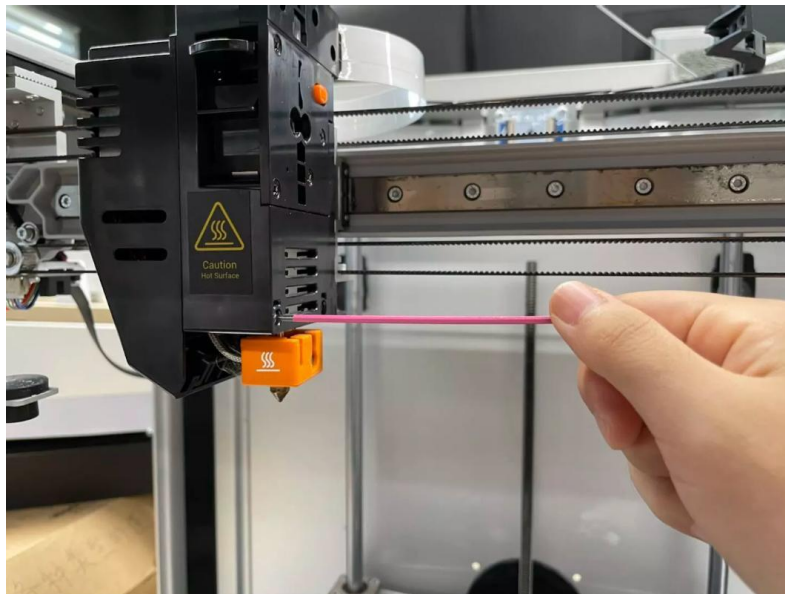
5. Pinch the hot end sleeve and gently push down to remove the hot end.

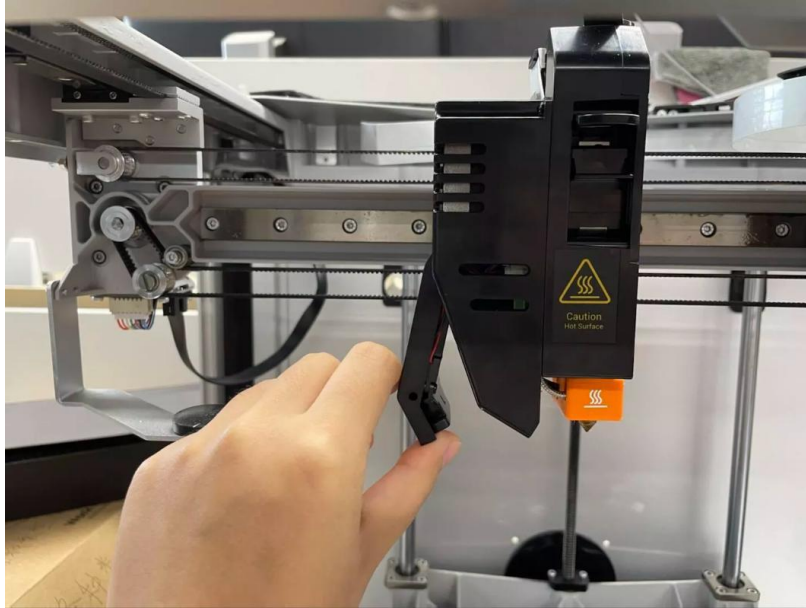


6. Clip in the new hot end upwards.



7. Tighten the two screws on the printhead with an hex key, and then close the side cover of the printhead.





8. Redo the heated bed leveling, Z offset calibration, and XY offset calibration.

#### Right extruder

To replace the hot junction of the right printhead:

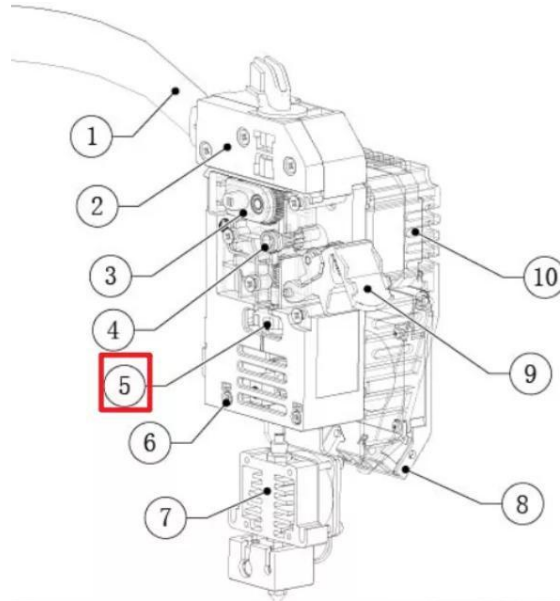
1. Unload (see Auxiliary Unload or Manual Unload).
2. Wait for the current nozzle temperature displayed on the touchscreen to drop to room temperature.



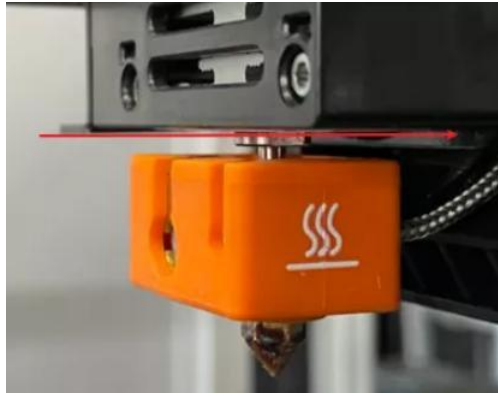
The nozzle temperature can be as high as 300 °C. Make sure that the nozzle has cooled to room temperature before proceeding, otherwise burns may result. It is recommended to wear insulated gloves for operation.

3. Loosen the two screws on the side of the extruder with the provided pink hex key (size H2.0) in the tool box without unscrewing.
4. Gently pull outward to open the side cover of the extruder.
5. Hold the hot end sleeve with one hand and gently force it down, and turn the thumb wheel on the right extruder counterclockwise with the other hand to adjust it to a relaxed state until you can remove the hot end.





6. Snap the new hot end up (the standard position after the hot end is secured is that the heat block is barely exposed) and turn the thumb wheel clockwise to secure the hot end.



7. Tighten the two screws on the printhead with an hex key, and then close the side cover of the printhead.
8. Redo the heated bed leveling, Z offset calibration, and XY offset calibration.

# Waste disposal

Waste disposal laws and regulations vary by country and region. When you dispose of any waste, you should comply with local laws, regulations, rules or requirements regarding waste disposal.

## Packing

The packing box of Snapmaker J1 is made of corrugated cardboard, and the filling inside the packing box is EPP (expanded polypropylene) and EPE.

(Expanded Polyethylene). These materials are recyclable and environmentally friendly.

You can save the packing material for future shipment. You can also use your imagination to create with these materials.

DIY project.

## Discarded filaments

Do not discard non-degradable filaments or failed prints in nature. Please throw them in the designated trash can.

## Electronic products

When you no longer need an electronic product or it is nearing the end of its useful life, you can donate it to a trusted charity, give it to a recycling agency for recycling, or dispose of it at a designated location in accordance with local regulations.



# Machine maintenance

To ensure that your Snapmaker J1 is in top condition, follow the guidelines in this chapter to maintain the printer regularly to achieve the desired print results.

## Update the firmware

### Maintenance scenario

To ensure that your Snapmaker J1 is in top working condition, keep the machine firmware up to date.

Maintenance frequency

At least once every

three months.

### Maintenance method

You can update via Wi-Fi or USB stick.

#### Wi-Fi

Open the machine > Connect the machine to Wi-Fi > Click Settings > Firmware Update > Download > Update > Done.

#### USB flash drive

Download the firmware from the Snapmaker website > Insert the USB disk into the machine > Open the machine > Click the blank area on the main interface of the touchscreen > Click USB > Click the firmware file to update.

## Clean the nozzle

### Maintenance scenario

During the calibration process, some extruded filaments may adhere to the nozzle surface and make the nozzle surface black. If it is not cleaned in time, it may affect the calibration results.

After the printing is completed and the nozzle is cooled, the residue of filaments extruded in the printing process will also solidify and be difficult to remove. If it is not cleaned in time, it may cause the nozzle to clog or leave a dark mark on subsequent prints.

### Maintenance frequency

At each calibration and before each print.



During calibration, the nozzle shall rebound quickly after touching the calibration point on the heated bed surface. If the nozzle does not rebound quickly, clean the nozzle and recalibrate.

#### Maintenance method

1. Prepare the cleaning tool: wire brush (provided, see tool box).
2. Start the printer, then on the touchscreen, click Control > extruder and heat the extruder to be cleaned to 200 ° C.
3. After heating, gently scrape the surface of the nozzle with a wire brush along the front, back, left and right directions until there is no visible residue. Try to avoid scraping the end of the nozzle with a wire brush to avoid wearing the nozzle.





The nozzle is hot, so be careful during operation to prevent burns. It is recommended to wear insulated gloves for operation.

## Maintenance

### Scenario of cleaning glass platform and removing filament residues

If you use highly sticky 3D printing filaments, or the nozzle is too close to the glass platform when printing, some filaments may still adhere to the surface of the glass platform after removing the print. If it is not cleaned up in time, it may affect the effect of the next printing. As the residue continues to pile up, the glass platform will also become more difficult to clean.

### Maintenance frequency

At least once a month, or when you notice filament residue on the surface of the glass platform.

#### Maintenance method

1. Prepare the cleaning tool: Palette knife (provided, see tool box).
2. Use a spatula to gently scrape off the filament residue on the glass platform. The angle between the Palette knife and the glass platform should be less than  $30^{\circ}$  to avoid damaging the PEI coating on the surface of the glass platform.
3. Scrape until there is no filament residue on the board surface, and then the cleaning is completed.



If it is difficult to remove the residue, you can click Control > heated bed on the touchscreen, heat the heated bed to 50°C and then try to scrape it. It is recommended to wear insulated gloves to avoid hot hands.

## Remove the solid glue

### Maintenance scenario

Before printing, apply a proper amount of solid glue on the glass platform to improve the adhesion effect of the first layer. However, after printing, if the residual solid glue on the surface of the platform is not cleaned in time, the effect of the next printing may be affected.

### Maintenance frequency

At least once a month, or after each time you apply solid glue to the glass platform.

### Maintenance method

1. Prepare cleaning tools: wiping cloth (provided, see tool box) and clean water.
2. Turn off the printer and turn off the power.
3. Wipe the residual solid glue on the glass platform with a wiping cloth dipped in a proper amount of water until there is no visible residue on the surface of the platform.



If it is difficult to remove the solid glue, you can click Control > heated bed on the touchscreen, heat the heated bed to 50°C and then try to scrape it off. It is recommended to wear insulated gloves to avoid hot hands.

## Remove grease and dust

### Maintenance scenario

When the skin of human hands or other parts touches the glass platform, a small amount of natural oil may be left on its surface. Some dust in the air will also adhere to the glass platform. Over time, the adhesion of the first layer of the glass platform may be affected.

### Maintenance frequency

At least once a month, or when you find that the first layer of adhesion is not good.

Maintenance method

1. Prepare the cleaning tool: wiping cloth (provided, see tool box).
2. Lift the glass platform out of the printer.



Before removing the glass platform, please make sure that the glass platform has been cooled to room temperature to prevent hot hands.

3. Wash the glass platform with clean water and clean the surface of the glass platform with wiping cloth until the surface of the platform is free of visible grease, dust or other impurities. When finished, rinse the glass platform again with clean water.



If it is difficult to remove it with clean water, you can use a wiping cloth dipped in a proper amount of alcohol to try to remove it again. After cleaning, wash the glass platform again with clean water.

4. Install the glass platform to the printer.
5. On the touchscreen, click Control > heated bed, slide to set the heating temperature to 60°C, and click Heat to dry the glass platform.

## Clean the heated bed

### Maintenance scenario

When calibrating, the machine will automatically calculate the offset when printing according to the thickness of the glass platform after obtaining the data of the heated bed leveling point. Foreign matter such as filament debris on the heated bed may cause the calibration to fail.

### Maintenance frequency

At least once a month.

### Maintenance method

1. Prepare the cleaning tool: wiping cloth (provided, see tool box).
2. Turn off the printer and turn off the power.
3. Remove the glass platform and place it in a safe place.
4. Gently wipe the heated bed with a cloth until there is no visible foreign material on the heated bed.

5. Install the glass platform.

## Clean the extruder gear

### Maintenance scenario

When extruding the filament, the gear needs to rub and engage the filament, which will produce waste in the process. With the accumulation of waste materials, the friction between filaments and gears decreases, and the extrusion efficiency will also decrease, or even can not be extruded. In addition, accumulated waste material may fall into the nozzle and clog it. Therefore, you need to clean the gears inside the extruder regularly.

### Maintenance frequency

At least once a month.

### Maintenance method

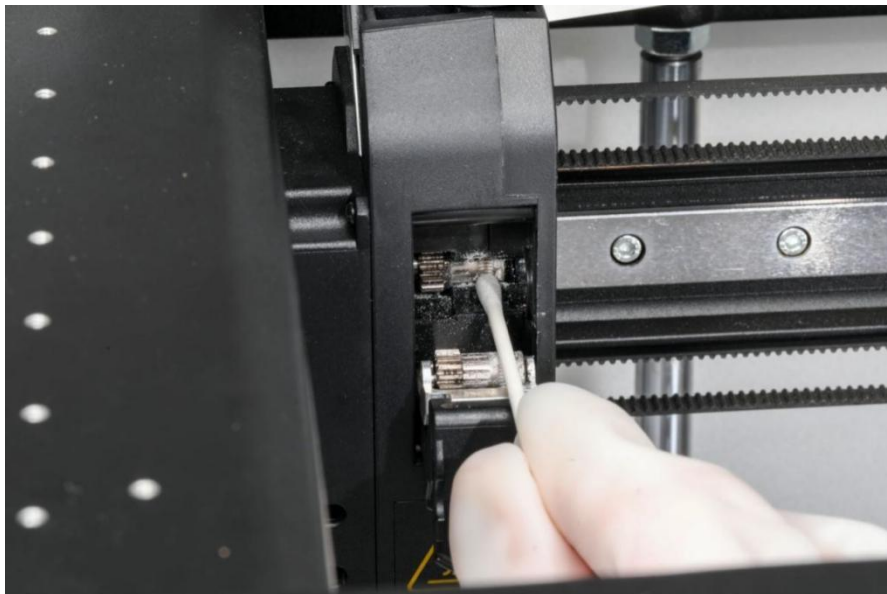
1. Prepare the cleaning tool: cotton swab.
2. Push down on the idler latch on the front of the printhead to Unload it.



3. Use a cotton swab to remove the waste material from the idler gear until there is no visible residue.



4. Remove the waste material from the drive gear with a cotton swab until there is no visible residue, and then close the idler latch.







## Clean the bottom plate


### Maintenance scenario

During everyday use of the printer, some of the filament debris or small parts collect on the backplane. Accumulated filament debris may prevent the printer from working properly if it is not cleaned in time.

### Maintenance frequency

At least once a month.

### Maintenance method

1. On the touchscreen, tap Control > Move, then tap the  button in the Z direction to raise the heated bed.
2. Clean the printer backplane with a cloth to remove any visible dirt or foreign material. Pay special attention to the area near the Z-axis lead screw, where the accumulation of impurities may prevent the heated bed from moving properly.



Do not place sundries on the bottom plate, otherwise the heated bed will not return to the correct position.

## Adjust the tension of the belt

### Maintenance scenario

Belt is an important part of printer transmission system. If the belt is too loose, it may affect the printing effect; If it is too tight, it may affect the life of the belt.

### **Maintenance frequency**

At least once every three months, or when you:

- When it is found that the printing effect is not good, such as the first layer can not adhere to the glass platform, and the phenomenon of staggered layers occurs when using double materials for printing.
- It is found that the belt makes abnormal noise during printing;
- After transporting the printer over a long distance.

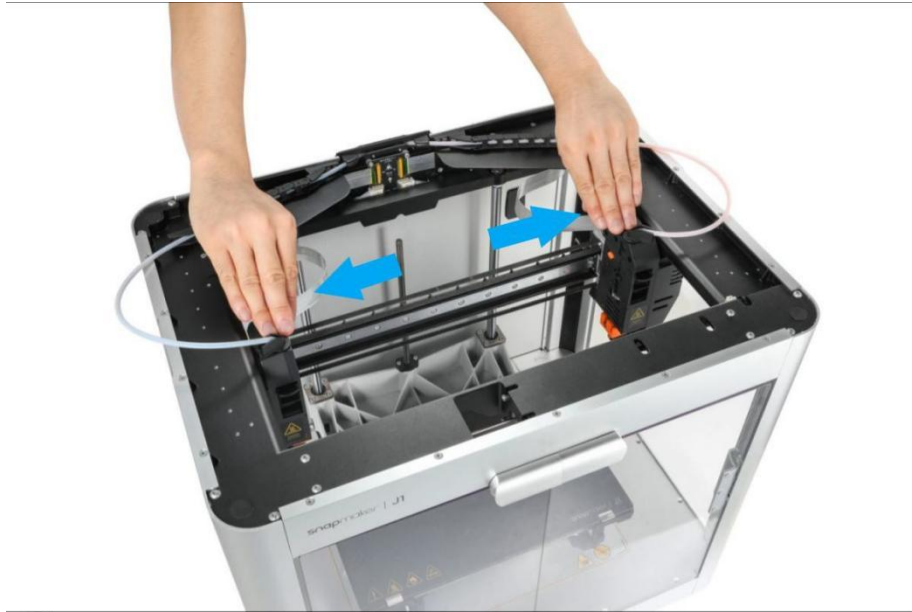
### **Maintenance method**

X-axis

1. Have a 5.5mm wrench and a pink hex key ready (both provided, see tool box).
2. For firmware V2.2.2 and above, obtain the G code in the Local folder of the screen and print the X-axis belt tension gauge using the PLA filaments.



3. On the touchscreen, tap Control > Motor, and tap to turn off the motor.
4. Turn the printer off and power off.
5. Manually push the left extruder to the leftmost side and the right extruder to the rightmost side.



6. Respectively remove the left and right side plates with an hex key.

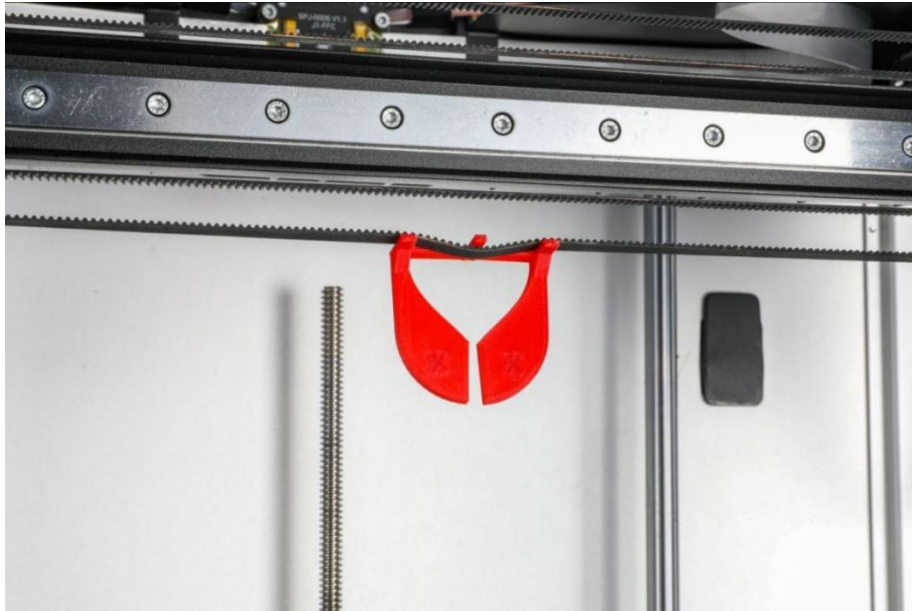
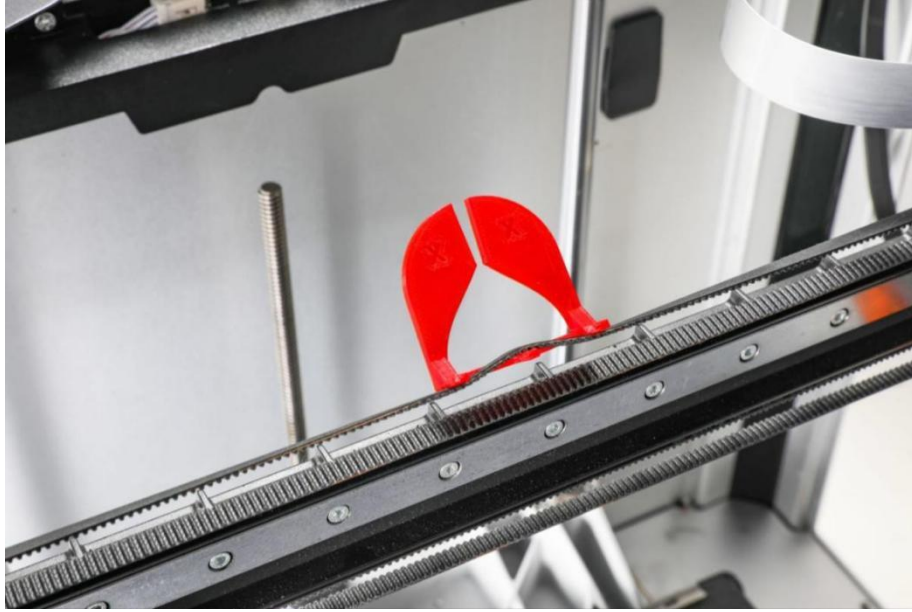




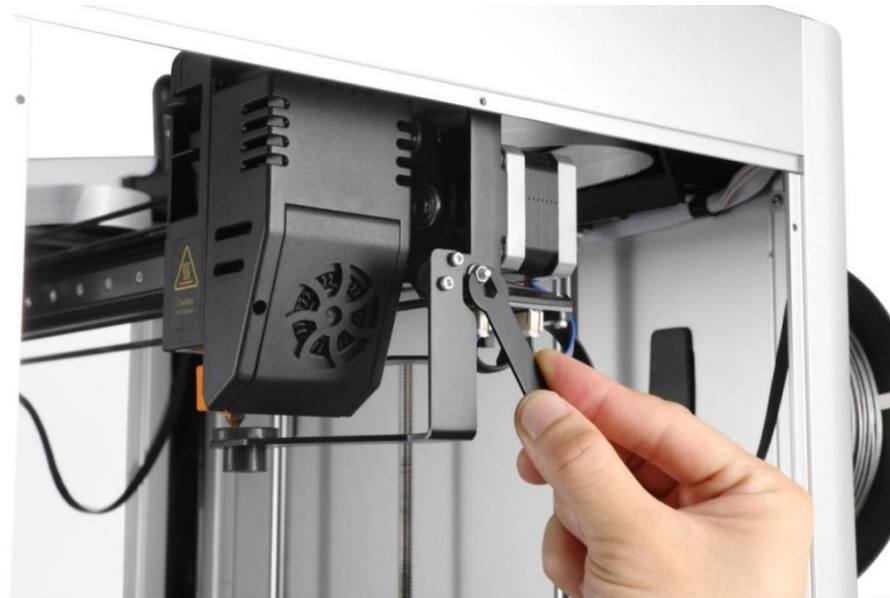
When using an hex key, you can hold the longer end first to loosen the screw, and then switch to the shorter end to unscrew the screw quickly.



7. Clip the measuring device onto the X-axis belt in turn as shown in the figure.



8. Use a 5.5mm wrench to adjust the hexagon screws at the left and right ends of the X-axis linear rail in turn until the two sides of the measuring instrument are closed and there is no obvious gap.







9. Reinstall the left and right side plates with an L-type wrench.

#### Y-axis

1. For firmware V2.2.2 and above, obtain the G code in the Local folder of the screen and print the Y-axis belt tension gauge using the PLA filaments.



2. On the touchscreen, tap Control > Motor, and tap to turn off the motor.
3. Turn the printer off and power off.
4. Manually push the left extruder to the leftmost side and the right extruder to the rightmost side, and then push the X-axis linear rail to the innermost side.



5. Respectively remove the left and right side plates with an hex key.
6. Clip the measuring device into the Y-axis belt on the left side as shown in the figure.



7. Turn the screw in the upper left corner on the back of the printer by hand until the two sides of the measuring instrument are closed and there is no obvious gap.





8. Remove the measuring unit and clip it onto the right-hand Y-axis belt in the same way.



9. Turn the screw in the upper right corner of the back of the printer by hand until the two sides of the measuring instrument are closed and there is no obvious gap.



## Shaft lubrication

### Maintenance scenario

To ensure smooth movement of the extruder and heated bed, the shaft needs to be lubricated regularly, otherwise the printing results may be affected.

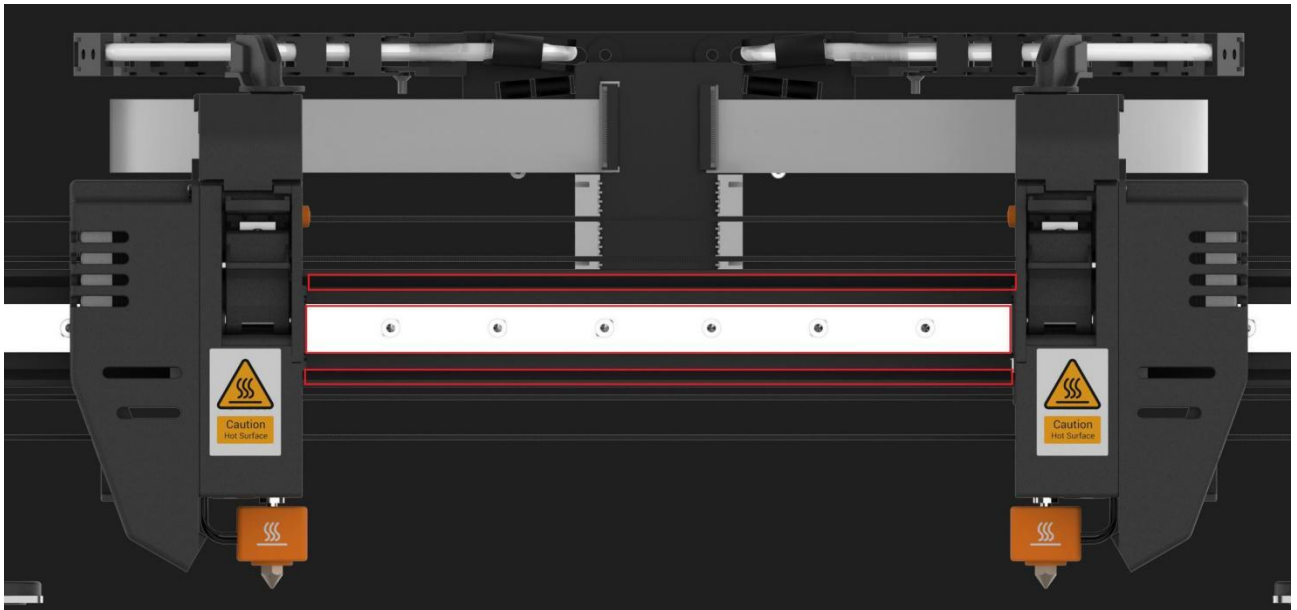
### Maintenance frequency

Once every three months.

## Maintenance method



### X-axis and Y-axis

1. Prepare lubricant and tools by yourself:
  - a) High temperature resistant solid grease;
  - b) Brush.
2. Start the printer, click Control > Motor on the touchscreen, and click to turn off the motor for subsequent manual movement of the extruder.
3. Turn the printer off and power off.
4. Dip a proper amount of lubricating grease with a brush and apply it to the grooves on the upper and lower sides of the X-axis linear rail and the steel belt on the front of the guide rail.



5. Manually move the extruder left and right to distribute the grease evenly.
6. Use a brush to dip a proper amount of lubricating grease into the grooves on the left and right Y-axis linear rails.
7. Manually move the X-axis linear rail back and forth to distribute the grease evenly.

### Z-axis

1. Apply solid grease to the Z-axis lead screw.
2. On the touchscreen, click Control > Move, and then tap the  and  buttons in the Z direction to move the heated bed up and down.

Distribute the grease evenly.

## Replace the hot end sleeve

### Maintenance scenario

The hot end sleeve is a silicone sleeve that wraps around the heating block, which helps the hot end maintain a stable temperature during printing and prevents the leakage of filaments from contaminating the heating block.

### Maintenance frequency


When the hot end sleeve has obvious damage or dirt that is difficult to remove.

### Maintenance method

1. Prepare new hot end sleeves (provided, see tool box).
2. Turn off the printer and remove the power.
3. Make sure that the hot end has cooled to room temperature.



The temperature of the hot end can be as high as 300 deg C. Make sure that the hot end is cool before proceeding, or burns may result.

4. Remove the current hot end sleeve, then put the new hot end sleeve so that the logo  is facing the body side.

## Check Nozzle Wiper Position


### Maintenance scenario

When the extruder is homed, it will stay on the nozzle wiper, which can effectively prevent the extruder in standby state from overflowing when printing. The nozzle wiper may deviate from the standard position after long-term use or under external force, thus affecting the printing effect. Therefore, its position needs to be checked regularly.

### Maintenance frequency

Once every three months.

### Maintenance methods

1. Start the machine, click Control > Move on the touchscreen, and then tap Home Button .
2. After the left and right extruders have returned to their original positions, observe whether the nozzle end has completely entered the wiping pad and is pressed into the wiping pad for about 1mm-2mm.
3. If yes, the nozzle wiper is already in the standard position; If not, break the nozzle wiper by hand until it returns to the standard position.

## Check the glass platform plate clamp

### Maintenance scenario

The fixture used to fix the glass platform may deviate from the standard position after long-term use or external force, resulting in the glass platform can not be fixed correctly, thereby affecting the printing effect. Therefore, its position needs to be checked regularly.

### Maintenance frequency

Once every three months.

### Maintenance methods

1. Ensure that the glass platform and heated bed have cooled to room temperature.
2. Open and close the clamps on both sides of the glass platform, push the glass platform around by hand, and observe whether it moves.
3. If the platform is not moved, the fixture is already in the standard position; If the platform can be moved, adjust the clamp position by hand, and then repeat step 2 until the clamp returns to the standard position.

## Maintenance schedule

Before each print	Clean the nozzle
Every month	Remove filament residue from glass platform
	Remove the solid glue on the glass platform

	Remove grease and dust from the glass platform
	Clean the extruder gear
	Clean the bottom plate
Every three months	Update the firmware
	Adjust the tension of the belt
	Shaft lubrication
	Check Nozzle Wiper Position
	Check the glass platform plate clamp

# Troubleshooting

While using the Snapmaker J1, you may encounter some 3D printing related issues. This chapter describes some of these common problems and provides solutions. If you have problems that are not listed here, feel free to contact us for technical support at [support@snapmaker.com](mailto:support@snapmaker.com), or visit [support.snapmaker.com](http://support.snapmaker.com).

## System Log Export

System log is a file that records all kinds of important information during the operation of the operating system. When printing problems are encountered, the system log can assist in locating the problem points.

To get the system log, on the touchscreen, click Settings > About, click Export in the System Log column, and you can choose to export to a USB stick or Snapmaker software.

You can determine the problem by yourself based on the exception information recorded in the system log, or you can send the problem description and system log to our technical support ([support@snapmaker.com](mailto:support@snapmaker.com)).



## Common printing problems

### First layer not adhered

First layer non-adhesion is one of the most common problems in 3D printing. Just as the foundation of a house is not stable when it is built, when the first layer of the print is not successfully adhered to the glass platform, the printing task will probably fail.

## Possible causes

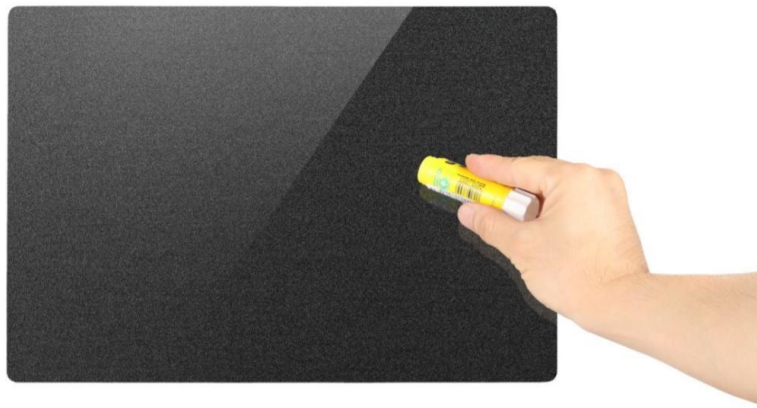
1. Calibration was not successful.
2. There is dust or stain on the surface of the glass platform.
3. filament residue on the nozzle.
4. There is foreign matter on the heated bed surface.
5. Incorrect print parameters.
6. The quality of filaments is not up to standard.

## Solution

1. Re-level the heated bed.
  - a) On the touchscreen, click Calibration > heated bed Leveling to re-level the heated bed.
  - b) After the leveling is completed, click Calibrate > Calibrate Verification, and print the calibration model to judge whether the calibration is successful. If unsuccessful, repeat the previous step.
2. Clean the glass platform.
3. Clean the nozzle.
4. Clean the heated bed.
5. Reset the following print parameters on the Snapmaker software:
  - a) Sets the print deck attachment type to Single Adhesion. Single-layer adhesion can effectively improve the adhesion of the first layer. You can also increase the trace count at the same time to further improve adhesion.
  - b) Reduce the printing speed of the start layer.
  - c) Increase the starting floor height.
  - d) Increase the trace width of the start layer.
  - e) Set the appropriate printing temperature and heated bed temperature according to the requirements of each filament.



- f) Orient and angle the model to maximize its contact area with the glass platform.
  6. Check the filaments for quality problems such as moisture (see How to identify damp filaments). If any, dry the filament or replace it with a new filament and try again.
  7. If there is still no improvement in the adhesion of the first layer, apply a thin layer of solid glue on the glass platform before printing (provided, see tool box).
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## Edge warping

Under the influence of cold air, the top layer of extruded filaments will shrink, while the bottom layer of filaments continuously heated by the heated bed will expand, and its edge will easily tilt up or even break away from the glass platform. The light one will cause the bottom of the print to be deformed, and the heavy one will cause the print to fail.

### Possible causes

1. Improper setting of printing parameters.
2. Ambient temperature is too low.

### Solution

1. Refer to the information provided by the filament manufacturer to set the correct printing parameters, including:
  - a) heated bed temperature;
  - b) Single-layer adhesion or multi-layer adhesion needs to be set when some models are printed;

- c) The model cooling fan cannot be turned on when some models are printed.
2. Some filaments require high ambient temperature during printing, so the cover door should be closed and the top panel should be fixed during printing.

## Filaments can not be extruded or extruded insufficiently

The nozzle may be partially or completely blocked when the filament cannot be extruded from the nozzle at all (at this time, the touchscreen may pop up a window indicating "unable to extrude"), the extruded filament is thinner than usual, or the surface of the filament is uneven.

### Possible causes

1. The quality of filaments is not up to standard.
2. An unsupported filament type was used.
3. Improper setting of the printing temperature.
4. Nozzle and extruder gear are not cleaned in time during daily use.
5. Inner cavity temperature is too high when printing with PLA filaments.

### Solution

1. You can take the following measures to avoid nozzle clogging:
  - a) Before printing, check the filaments for quality problems such as moisture (see How to identify damp filaments). If any, dry the filament or replace it with a new filament and try again.
  - b) Before printing, check if the filaments used for printing are within the support range of Snapmaker J1 (refer to the filaments library).
  - c) Set the correct printing temperature according to the information provided by the filament manufacturer.
  - d) [Periodically clean the nozzles and the extruder gears.](#)
  - e) The heat distortion temperature of most PLA filaments is between 50 °C and 60 °C. When using PLA filaments for printing, it is necessary to remove the top panel, otherwise the temperature in the inner cavity of the printer may be too high, which will cause the filaments to soften in advance and can not be extruded smoothly.
2. When the nozzle has been blocked, you can take the following methods to dredge:
  - a) Have a needle with a diameter smaller than the current nozzle diameter. The provided nozzle diameter is 0.4mm.

- b) Start the printer, click Control > extruder on the touchscreen, and heat the nozzle to 200 ° C (392 ° F).



Set the correct heating temperature according to the information provided by the filament manufacturer.

- c) After the nozzle reaches the target temperature, insert the needle into the end of the nozzle from the bottom and carefully unclog it up and down until the blockage is removed.



The nozzle is hot, so be careful during operation to prevent burns. It is recommended to wear insulated gloves for operation.

- d) Reload and observe the extrusion. If no filament is extruded or the extruded filament is fine, repeat the first two steps. If the filament is successfully extruded, the nozzle has been successfully unblocked.
- e) If the blockage in the nozzle cannot be removed after repeated attempts, replace the hot end.

## Overflow or wire drawing

Filamentous filaments sometimes appear on 3D printed products, usually because the filaments are still flowing out when the extruder is empty.

### Possible causes

1. The print temperature is too high.

2. filaments are damp.
3. Retraction is not set during slicing.

**Solution**

1. Set the correct printing temperature according to the information provided by the filament manufacturer.
2. Check if the filament has become damp (see How to identify a damp filament).
3. When slicing in the Snapmaker software, the Retraction is set, and the filament will be actively retracted for a certain distance when the extruder is empty, so as to improve the flash or wiredrawing. The same effect can be achieved by using the mixed color mode (support, two-color) and checking the enable of the loading tower.

# Service and support Warranty Policy

For more information on Snapmaker J1 warranty policy and service, please visit our Support Center.

## Technical support

Snapmaker [Support Center](#) A rich collection of product resources, including frequently asked questions, video tutorials, Snapmaker Academy and so on.

In addition, we are committed to providing you with timely and friendly technical support. If you have any problems with the Snapmaker J1, feel free to contact us through [support@snapmaker.com](mailto:support@snapmaker.com).