MAKE
SOMETHING
WONDERFUL

$$\int_0^{\text{Wonderful}} \text{make}(x)dx = \text{snapmaker}$$

"We are all in the gutter, but some of us are looking at the stars."
— Oscar Wilde

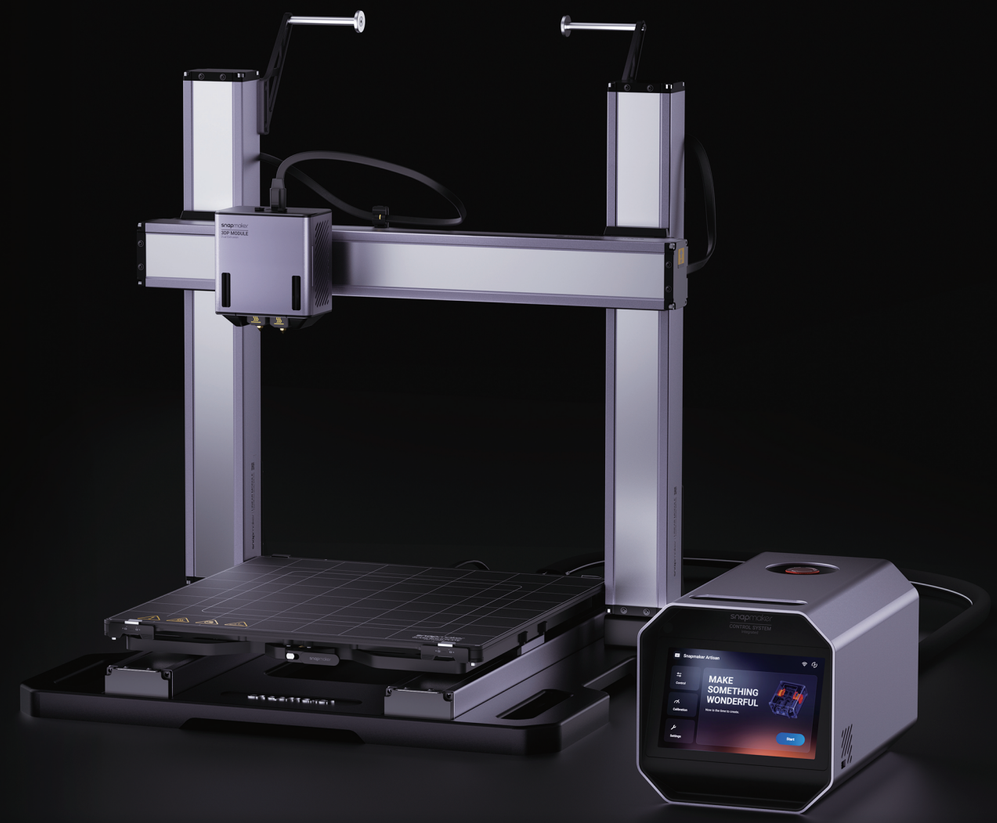
Y.3.B.A.0098-01 V1.0.0

snapmaker

Artisan 3D Printer

QUICK START GUIDE

3D Printing



Make Something Wonderful

We made our debut on Kickstarter in 2017 with Snapmaker Original 3-in-1 3D printer, innovatively integrating three fabrication methods—3D Printing, Laser Engraving and Cutting, and CNC Carving into the body of one machine.

Over these years, we have witnessed so many users deeply love and benefit from the design of 3-in-1. At the same time, we have recognized the need for better performance of each module, even higher quality, and a more user-friendly experience. Therefore, after releasing Snapmaker 2.0 in 2019, we started to plan on a product that can redefine the capability of a 3-in-1 3D printer. And we brought Artisan to the table—the strongest 3-in-1 3D printer in Snapmaker history.

Ideal for beginners and professionals at all levels, Artisan is the result of 516 days of work vastly improving Snapmaker's flagship product Snapmaker 2.0. It can meet the needs of different fabrication scenarios and truly turn your desktop into a workshop. The high quality and excellent performance that Artisan has to offer can unleash your creativity.

Some of you might be curious about why we named our latest generation of 3-in-1 3D printer as Artisan. For us, Artisan stands for an attitude of exquisite workmanship. To be an Artisan, one has to have the wildest ideas. To be an Artisan, one also has to be down to earth. Snapmaker's mission and vision is to enable everyone to create freely in the real world. We believe our users value the ability to "make" as much as we do. We believe Artisan can be a versatile helper by your side and make you an Artisan of our time.

As creatives, we all desire to make something wonderful, and creativity makes us feel alive. Congratulations on becoming part of the Snapmaker community! Tens of thousands of people like you are using the Snapmaker to explore, make, and share in the world of making. We believe that wonderful things will happen when creative minds meet the ideal tools. Have fun making and see you in our community!

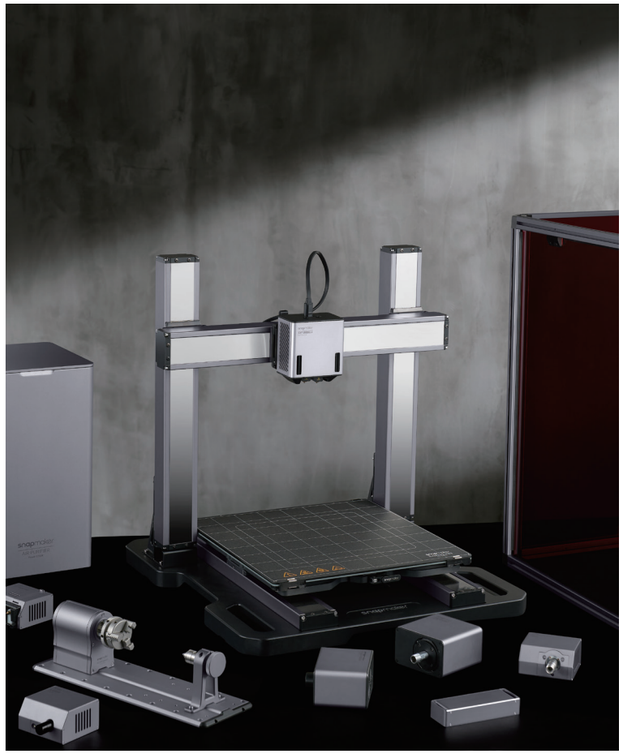
Snapmaker Team

Happy Making

This machine is built for innovators. Our goal is to assist you in making the world a better place with a machine we built with love. The project could be as small as a Christmas gift, or as ambitious as exploring unknown territories of our mankind. Dream big and make it happen.

Modular Design

It is not only a 3D printer, but also a powerful machine that you can customize with the provided toolheads and newly-released addons. You can equip your Artisan with a Rotary Module to explore the magic of the 4-axis machining, an Air Purifier for a safer creating experience, or a CAN Hub to enable much more addons to work simultaneously... You define your Artisan the way you like.



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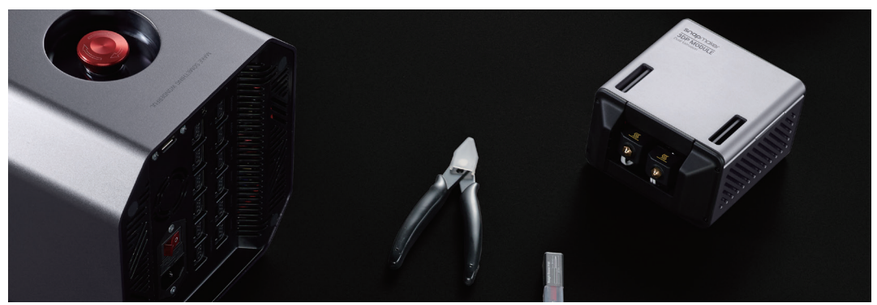
Before You Start



1.1 Disclaimer

Make sure that anyone who uses this product knows and understands the contents of the Quick Start Guide. Failure to observe this guide may lead to personal injury, inferior results, or damage to the Snapmaker products. Snapmaker does not assume responsibility and expressly disclaims liability for any personal injury, inferior results, or damage to the product arising out of or in connection with your improper operations or failure to follow the instructions of the guide.

When using Snapmaker products, you should comply with the following requirements:
- Follow the instructions of this guide, the applicable laws and regulations, and the safety regulations in the assembly, handling, storage, use, maintenance, or disposal of this product.
- Ensure there is no infringement on any third-party intellectual property rights or violation of any applicable laws or regulations when making objects using this product.

The conditions or methods of using Snapmaker products are beyond the control of Snapmaker. For this reason, Snapmaker does not assume responsibility and expressly disclaims liability for any consequences resulting from:
- your improper methods, failure to follow the instructions of this guide or impacts of other uncertain factors when operating this product;
- your infringement on any third-party intellectual property rights or violation of any applicable laws or regulations when making objects using this product;
- personal injury, inferior results, or damage to the product arising out of or in connection with the assembly, handling, storage, use, maintenance, or disposal of this product.

All the Snapmaker filaments and materials are compatible with this product and have been tested for safety. If you use this product with third-party filaments or materials, Snapmaker does not assume responsibility and expressly disclaims liability for any adverse effects from the use or performance of these filaments and materials.

This guide is provided for reference purposes only. We do not warrant the absolute accuracy or completeness of the information provided by this guide. No part of this guide may be reproduced, edited, or revised by any means without the prior written permission of Snapmaker. We reserve the right to modify or revise this guide in our sole discretion at any time without notice. You can download the most up-to-date version of this guide at our Support Center (https://support.snapmaker.com/): select **Snapmaker Artisan** > **Quick Start Guide**.

1.2 Intended Use

Snapmaker modular 3D printers are intended for use under the guidelines provided in this guide. When making objects using Snapmaker modular 3D printers, users remain responsible for qualifying and validating the application of the created object for its intended use, especially for applications in strictly regulated areas like medical devices and aeronautics..

1.3 Safety Information & Compliance

1.3.1 General Safety Information

- Follow the applicable local laws and regulations in the operation and application of this product.
- Follow the instructions of the guide to use and maintain this product for safety purposes.
- Do not expose this machine to rain or wet conditions.
- Always operate this machine indoors on a solid horizontal table or workbench.
- Minors are only allowed to use this product under adult supervision and assistance.
- Ensure that bystanders also read and understand all the safety notes of this product and keep bystanders away while operating this product for safety purposes.
- Stay alert, watch what you are doing, and pay attention to the surrounding environment when operating this product.
- Do not use this product while you are tired or under the influence of drugs, alcohol, or medication.
- Do not reach inside the product or touch the moving parts while the product is still in operation.
- Do not leave the product unattended while it is still powered on.
- Always unplug the power cable from the electrical outlet before performing maintenance or modifications.

In all EU member states and the UK, operation of 5150-5250 MHz is restricted to indoor use only.

UK

BE	BG	CZ	DK	DE	EE	IE	EL
ES	FR	HR	IT	CY	LV	LT	LU
HU	MT	NL	AT	PL	PT	RO	SI
SK	FI	SE	NO	IS	LI	CH	TR

Turn off the machine immediately and stop using this product if any of the following occurs:
- You smell burning in this product at any point.
- You see any damage to the interior components of this product.
- The machine stops working unexpectedly.
- Unusual lights, sparks, or sounds come out of this product which has never occurred previously.

1.3.2 3D Printing Safety Information

- Do not touch the hot end, the nozzle, the glass build plate, and the heated bed when the machine is printing, heating, or just finished printing.
- Use this product in combination with air purifying devices or in a well-ventilated environment, for some filaments and materials may release toxic odors or fumes when melted.
- Always check the safety data sheet of each specific filament and material for safety information before use. You might need to take additional safety measures when using this product with third-party filaments or materials.

1.3.3 Precautions and Emergency Measures

3D Printing

Burns from Hot Surface

Touching hot surfaces (including the heated nozzle, hot end, heated bed, glass build plate, and melting filament) could cause skin burns. If you are burnt, take the following measures immediately:
1. Get yourself away from the heat source.
2. Immediately rinse your burnt area with cool running water.
3. Remove any clothing or jewelry near your burnt area.
4. Wrap the burnt area with a clean, dry bandage.

5. If necessary, use pain relievers or seek medical help immediately.

Inhalation of Fumes and Granules

- Printing with certain filaments will emit fumes or produce granules, which may irritate your respiratory system. Therefore, we recommend using this product with air-purifying devices or in a well-ventilated environment. Wear protective masks if necessary.
- In case of respiratory irritation or other similar symptoms, immediately expose the patient to fresh air and arrange for medical attention in time.

Exposure to Irritants

Some soluble filaments might be irritating to the human body. Before exposing yourself to such filaments, always check the safety data sheet (SDS) provided by their manufacturers and take safety precautions.

1.3.4 FCC Compliance

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

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

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

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

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

Caution: Changes or Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

1.3.5 ISEDC Compliance

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference.

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Operation of 5150-5250 MHz is restricted to indoor use only.

The device complies with RF exposure guidelines, users can obtain Canadian information on RF exposure and compliance. The minimum distance from the body to use the device is 20 cm.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

(1) L'appareil ne doit pas produire de brouillage.

(2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Le fonctionnement de 5150-5250 MHz est limité à une utilisation en intérieur uniquement.

Le présent appareil est conforme Après examen de ce matériel aux conformité ou aux limites d'intensité de champ RF, les utilisateurs peuvent sur l'exposition aux radiofréquences et la conformité and compliance d'acquérir les informations correspondantes. La distance minimale du corps à utiliser le dispositif est de 20 cm.

1.3.6 EC DECLARATION OF CONFORMITY

Snapmaker
EC DECLARATION OF CONFORMITY

PRODUCT INFORMATION	
Product	3D Printer
Model	Artisan
Function	Snapmaker Modular 3-in-1 3D Printer with 3D Printing, Laser Engraving & Cutting, and CNC Carving and Cutting functions

MANUFACTURER

Shenzhen Snapmaker Technologies Co., Ltd.
4F, Building 13, Pingshan First Road, Nanshan District, Shenzhen, China
Post Code: 518000
(86) 0755-26926117

YEAR OF AFFIXING CE MARKING: 2022

We hereby declare under our sole responsibility that the product above is in compliance with the essential requirements of the Machinery Directive (2006/42/EC), EMC Directive (2014/30/EU), Radio Equipment Directive (2014/53/EU), WEEE Directive 2012/19/EU, ROHS Directive (2011/65/EU), Amendment Directives (2015/863/EU) and REACH.

By application of:

STANDARDS	TITLES
EN 55032:2015+A11:2020	EN 55032, Electromagnetic compatibility of multimedia equipment-Emission
EN 55035:2017+A11:2020	EN 55035, Electromagnetic compatibility of multimedia equipment-Immunity
EN IEC 61000-3-2: 2019+A1:2021	EN 61000-3-2, Limits for harmonic current emissions
EN 61000-3-3:2013+A1:2019	EN 61000-3-3, Limits Section 3 (EMC)
EN IEC 62311:2020 BS EN IEC 62311:2020	RED Article 3.1(a), Health (RED)
ETSI EN 301 489-1 V2.2.3 (2019-11) ETSI EN 301 489-3 V2.1.1 (2019-03) ETSI EN 301 489-17 V3.2.4 (2020-09)	RED Article 3.1(b), EMC (RED)
ETSI EN 300 328 V2.2.2 (2019-07) ETSI EN 301 893 V2.1.1 (2017-05) ETSI EN 300 440 V2.2.1 (2018-07)	RED Article 3.2, Radio (RED)

EC/EN 60825-1:2014 (Edition 3.0)	IEC/EN 60825-1:2014, Safety of laser products-Part 1: Equipment classification and requirements, RED Article 3.1(a), Safety (RED) (Only applicable to laser function products)
EN 62368-1:2020+A11:2020	RED Article 3.1(a), Safety (RED)
Council Directive 2006/42/EC, Annex I	Council Directive 2006/42/EC, Annex I Essential health and safety requirements relating to the design and construction of machinery; (MD)
EN 60204-1:2018	EN 60204-1:2018, Safety of machinery - Electrical equipment of machines, Part 1: General requirements (MD)
ISO 13849-1:2015	ISO 13849-1:2015, Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (MD)
EN ISO 12100:2010	EN ISO 12100:2010, Safety of machinery - General principles for design - Risk assessment and risk reduction (MD)
Directive 2011/65/EU	A RoHS Directive 2011/65/EU and amendment directives (EU) 2015/863 on Lead, Cadmium, Mercury, Hexavalent Chromium, PBBs & PBDEs, Phthalates(DBP, BBP, DEHP, DIBP) content (RoHS)
Directive 2012/19/EU	WEEE Directive 2012/19/EU (WEEE)
(EC) No 1907/2006	European Chemicals Agency (ECHA) regarding Regulation (EC) No 1907/2006 and its amendment directives concerning the REACH. (REACH)

The technical documentation is kept at the Manufacturer's address.

chen Xuedong.

Shenzhen Snapmaker Technologies Co., Ltd.
CHEN XUEDONG / CEO
Date of issue: 11/30/2022
Place of issue: SHENZHEN, CHINA

CE

1.4 Safety Labels on Your Snapmaker

Label	Warning	Location
	Avoid contact with hot surfaces.	On the Dual Extrusion Module, glass build plate, and heated bed
	Take care to avoid crushing your hands.	On the Dual Extrusion Module
	Beware of potential hazards.	On the glass build plate and heated bed
	Avoid touching the object when printing or when the object has not cooled down after a print.	On the glass build plate and heated bed
	Take care when handling fragile objects.	On the glass build plate
	Do not print directly on this surface.	On the heated bed
	Do not plug or unplug the cable when the machine is powered on.	On the heated bed cable

* The photographs in this guide take the safety label required in the EU region as an example.
* The same label on different locations may vary in color or texture.

1.5 Specifications

Machine	
Dimensions (W × D × H)	580 mm × 620 mm × 634 mm
Minimum Footprint	920 mm × 660 mm × 800 mm
Supported Software	Snapmaker Luban and third-party software
Data Transmission	Wi-Fi, USB cable, USB flash drive
Linear Module	
Motor Driver Chip	TMC2209

Repeatability	± 0.05 mm		
Lead	X axis: 40 mm	Y axis: 40 mm	Z axis: 8 mm
Stroke	X axis: 400 mm	Y axis: 400 mm	Z axis: 400 mm

Integrated Controller

Dimensions (W × D × H)	189 mm × 300 mm × 191 mm
Touchscreen	Size: 7 in. Resolution: 1280 × 800 pixels
Rated Voltage	AC 100 V-240 V, 50 Hz/60 Hz
Rated Current	8.3 A Max.
Rated Power	750 W
Memory	1GB RAM, 8GB eMMC
OS	Android 10.0
Wi-Fi	Protocol: 802.11a/b/g/n20/n40 Frequency Range: 2412-2462 MHz (USA & Canada), 2412-2472 MHz (EU) 5150–5250 MHz, 5725–5850 MHz (USA, Canada & EU) Transmitter Power (EIRP): 2.4 GHz: < 20.51 dBm (USA & Canada), < 16.94 dBm (EU) 5.2 GHz: < 17.21 dBm (USA & Canada), < 16.06 dBm (EU) 5.8 GHz: < 15.09 dBm (USA & Canada), < 12.92 dBm (EU)
Bluetooth	Protocol: BT 2.1 + EDR/3.0 Frequency Range: 2402 MHz–2480 MHz Transmitter Power (EIRP): < 3.68 dBm (USA & Canada), < 2.28 dBm (EU)

3D Printing

Build Volume (X × Y × Z)	Dual Nozzle: 350 mm × 400 mm × 400 mm Left Nozzle: 375 mm × 400 mm × 400 mm Right Nozzle: 400 mm × 400 mm × 400 mm
Dimensional Accuracy[1]	± 0.1 mm
Nozzle Diameter	0.4 mm (included) 0.2 mm, 0.6 mm, 0.8 mm (sold separately)
Nozzle Material	Brass (included) Hardened steel (sold separately)
Max. Nozzle Temp.	300°C
Max. Printing Speed	180 mm/s
Build Plate	PEI/Glass Double-sided Plate
Inner Zone	260 mm × 260 mm
Max. Heated Bed Temp.	Inner Zone Heated Only: 110°C Whole Bed Heated: 80°C
Supported Materials[2]	PLA, Breakaway Support for PLA, TPU90, TPU95, High Flow TPU95, TPU-Foam, PVA, ABS, PETG, ASA, HIPS, CoPA, PA12-CF, PA6-CF, PA6-GF
Supported Material Diameter	1.75 mm
Operating Sound	≤ 55 dBA（distance: 1 m）

Snapmaker Luban

Supported OS	Windows, macOS, Linux
Supported File Formats	3D Printing: .stl, .obj Laser Engraving and Cutting: .stl, .svg, .png, .jpg, .jpeg, .bmp, .dxf CNC Carving and Cutting: .stl, .svg, .png, .jpg, .jpeg, .bmp, .dxf
Generated File Formats	3D Printing: .gcode Laser Engraving and Cutting: .nc CNC Carving and Cutting: .cnc

[1] The test result was obtained by printing a 100 mm × 100 mm × 100 mm cube with PLA filament and the 0.4 mm nozzle. Dimensional accuracy may vary depending on the testing conditions and product iteration and is for reference only.
[2] The hardened steel nozzle should be used when printing with CoPA, PA12-CF, PA6-CF and PA6-GF.

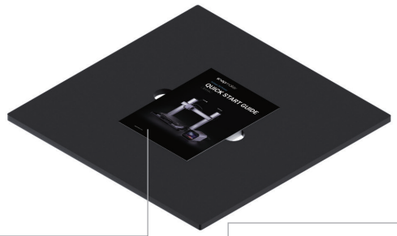
* The specifications above are subject to change as we improve the product.

1.6 Parts List

Quick Start Guide
× 1

Wiping Cloth
× 1

Calibration Card
× 1

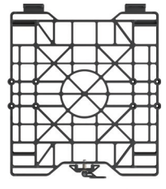


X-axis Linear Module
× 1

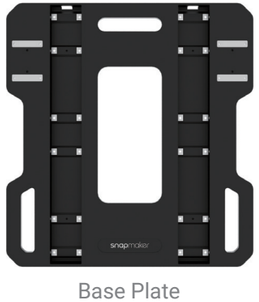
Y-axis Linear Module
× 2

Z-axis Linear Module
× 2

3D Printing Platform
× 1



Support Platform
× 1



Base Plate
× 1

Diagonal Pliers
× 1

Tweezers
× 1

USB Flash Drive
× 1

H3.0/H2.5/H2.0/H1.5 Hex Key × 4

Palette Knife
× 1

Wire Brush
× 1

AC Power Cable
× 1
(under the Tool Box)

Integrated Controller
× 1

Dual Extrusion Module
× 1

Z-axis Holder
× 2

PLA
× 1

Left Filament Holder
× 1

Right Filament Holder
× 1

X-axis Connector
× 2

Breakaway Support for PLA
× 1

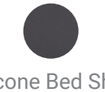
Heated Bed Cable
× 1

Toolhead Cable
× 1

Toolhead Bracket
× 1

Cable Collector
× 1

USB Cable
× 1



Silicone Bed Shim
× 4

Cable Clip
× 4

M5 × 12 Screw
× 60

M5 × 16 Low Head Cap Screw × 18

M5 × 16 Flat Head Screw
× 5

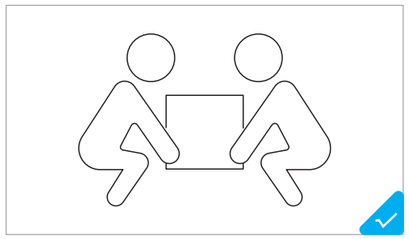
* The appearance of certain parts may change with product iterations, while their functionalities in offering a reliable user experience will remain unaffected.
* The color of the provided filament that you receive might differ from illustrations in this guide.

1.7 Assembly Instructions

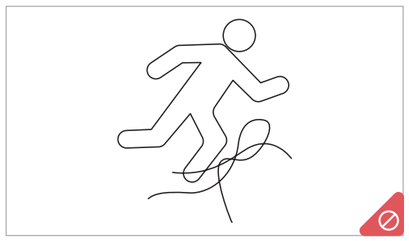
1.7.1 Video Tutorial

Please go to our YouTube channel @**Snapmaker** to watch the video tutorial and complete the assembly.
To avoid missing any important details, please play the videos on a device with a large screen.
If you've purchased the 3-in-1 version of Artisan, we recommend that you assemble in the following order to minimize the assembly time and effort:
Machine > **Enclosure** > **3D Printer/Laser Engraver and Cutter/CNC Carver and Cutter**

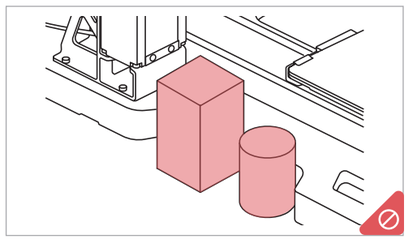
1.7.2 Tips & Notes



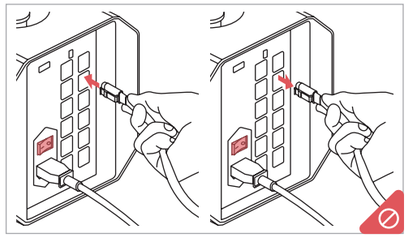
At least two people are required to assemble and lift the machine.



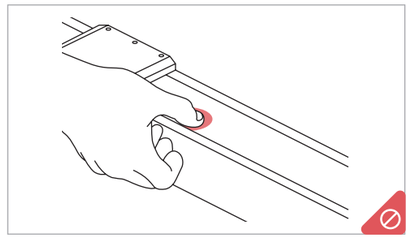
Collect and sort the cables in time lest anyone should trip over them.



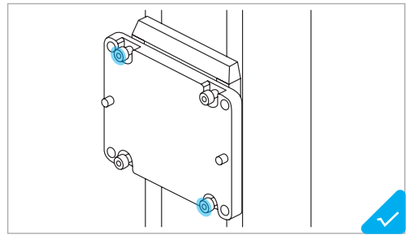
Do NOT place any object near the left or the right side of the base plate to avoid interfering with the movement of the Linear Modules and the work platforms.



Do NOT plug or unplug any cables when the machine is powered on.

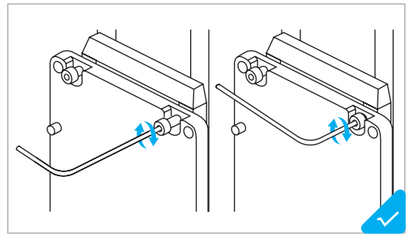


Do NOT press the steel strip. If the steel strip comes out, flatten it by hand from either end of the linear module to the other end.



To install multiple screws in one step:
1. Pre-tighten the screws at the outermost corner;
2. Pre-tighten the remaining screws;
3. Tighten all the screws in the pre-tightening order.

* Pre-tighten: To screw the screw into the hole, yet not fully tighten it.



To install screws with the provided hex key:
1. Screw the screw into the hole with the long handle;
2. Tighten the screw with the short handle.

1.8 Common Operations

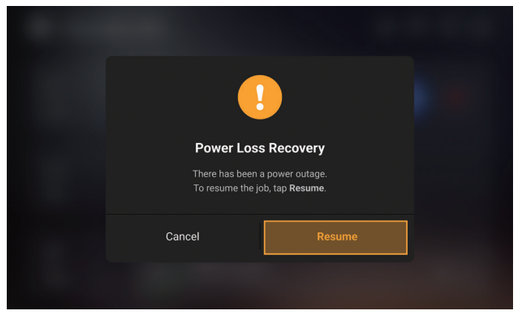
1.8.1 Power Loss Recovery & Filament Runout Recovery

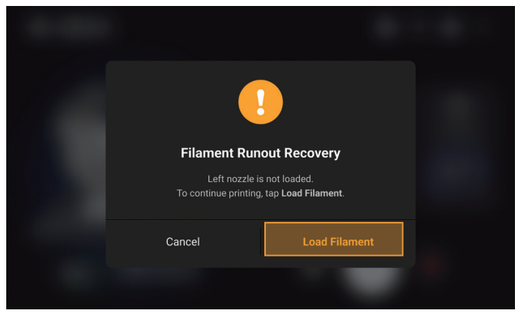
Your printer supports Power Loss Recovery and Filament Runout Recovery, so you don't need to worry about unexpected disruption anymore!

In case of power loss during a job, you can choose to resume or cancel the job on the Touchscreen after the machine is powered on again.

The cooling down of the heated bed before the machine is powered on again will weaken the adhesion between the print and the platform, which might result in failure of recovery.

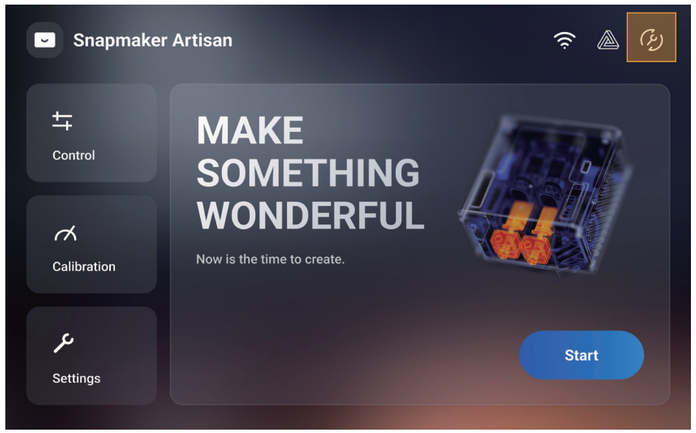
When the filament runs out, you can tap **Load Filament** on the pop-up window and follow the on-screen instructions to load the new filament and resume printing.

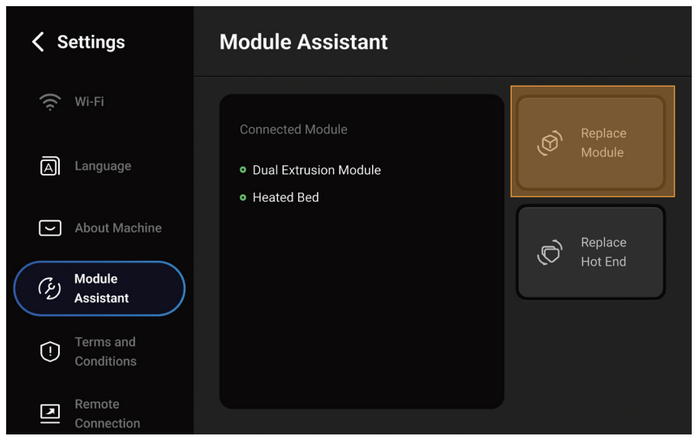




1.8.2 Module Replacement

To replace modules, remove or add addons, tap > **Replace Module** and follow the on-screen instructions to complete the operations without turning off the power switch.





You can also tap **Settings** > **Module Assistant** > **Replace Module**.

You can also turn off the power switch first and then replace modules, remove or add addons.

1.8.3 Firmware Update

You can update the firmware via Wi-Fi or a USB flash drive. When a new firmware version is available, the machine will remind you to update when connected to a Wi-Fi network. We recommend that you always update the firmware to the latest version.

Update via Wi-Fi:

1. Connect the machine to a Wi-Fi network;
2. On the Home Screen, tap **Settings** > **Firmware Update**;
3. If there is a new firmware version, click **Download**;
4. After the firmware download is finished, click **Update**.

Update via USB Flash Drive:

1. Go to our Support Center (https://support.snapmaker.com) > **Snapmaker Artisan**, then download and save the latest firmware to a USB flash drive;
2. Insert the USB flash drive into the Integrated Controller;
3. On the Home Screen, tap **Settings** > **Firmware Update** > **Local Update**;
4. Select the newly downloaded firmware version and tap **Update** in the pop-up window.

1.9 Used Symbols

	WARNING	Failure to observe this instruction may lead to damage to the product or personal injury.
	CAUTION	Details you should pay attention to when using the printer.
	TIPS	Provides convenient operations or extra choices.

1.10 About This Guide

This Quick Start Guide is intended to guide you through the first-time operation of 3D printing with concise instructions and graphics. The workflows described in this guide are what we consider to be the most convenient ones for you to quickly get started. For other workflows and more information, refer to our online User Manual in Snapmaker Wiki (https://wiki.snapmaker.com).

3D Printing

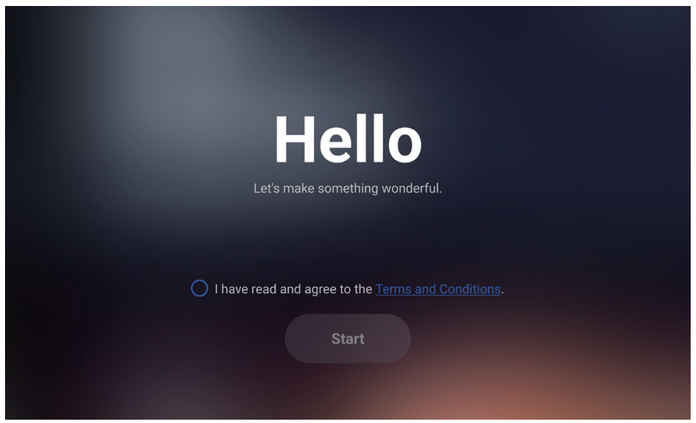
2.1 Preparations

2.1.1 Set Up the Machine

1. Turn on the power switch on the back of the Integrated Controller.

To restart your machine, wait for at least 5 seconds after power-off.

2. Follow the on-screen instructions to set up the machine: Read the **Terms and Conditions** > Choose the language > Name the machine > Connect to a Wi-Fi network.

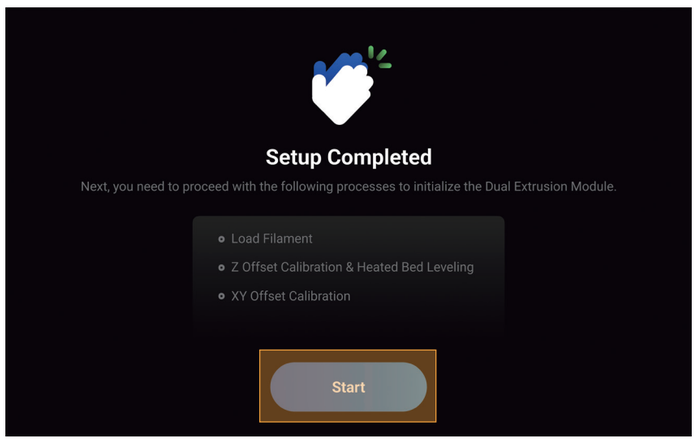


This initial setup wizard appears only the first time you turn on the machine. To change these settings later, tap **Settings** on the Home Screen and select **Wi-Fi**, **Language**, or **About Machine**.

2.1.2 Calibrate the Dual Extrusion Module

For the first-time use of the 3D printing function, the Touchscreen will walk you through the necessary calibration processes so that the Dual Extrusion 3D Printing Module can work properly.

You will have to complete three processes following the calibration wizard: Load Filament, Z Offset Calibration & Heated Bed Leveling, and XY Offset Calibration. Before you start the calibration, we recommend that you read this section to learn about each process.



This calibration wizard appears only the first time you use the Dual Extrusion Module. To redo the calibrations later, tap **Calibration** on the Home Screen and select the corresponding process.

1. Load Filament

The filament is fed into the module via the filament entry, passed by the extruder to the hot end, and extruded out of the nozzle after being heated. Our Dual Extrusion Module adopts the design of the dual-gear extruder, which features better extruding force, achieves stable and smooth loading and unloading, and can effectively avoid filament break and nozzle jam.

Make sure to load the provided PLA filament into the left nozzle and the Breakaway Support filament into the right nozzle, which is required to print the test model of Snapmaker Luban in later sections.

If the filament has a bent or curled end, cut it off before loading.

Do NOT touch the nozzle with bare hands during the filament loading process, as the nozzle will be heated to an extremely high temperature.

To change the filament later, take the following steps:
1. Tap **Control** > **Filament**;
2. Select the target nozzle, set the temperature, and tap **Heat**;
3. When the heating completes, tap **Unload** and pull the filament out of the nozzle;
4. Insert the new filament into the module, and tap **Load** until the new filament extrudes successfully.

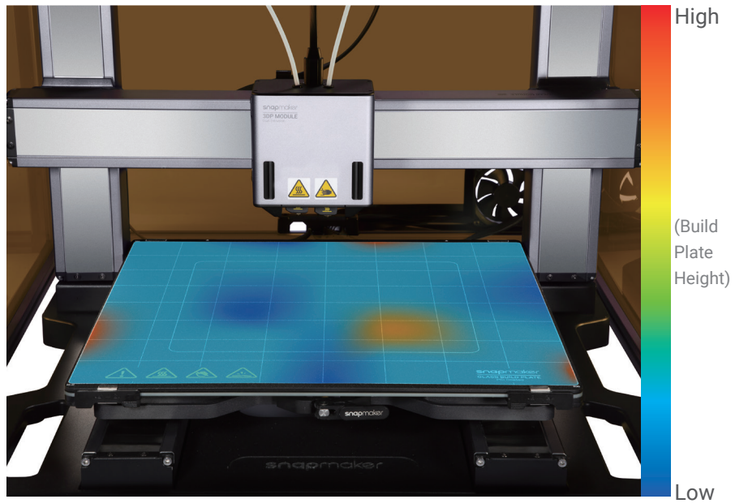
2. Z Offset Calibration & Heated Bed Leveling

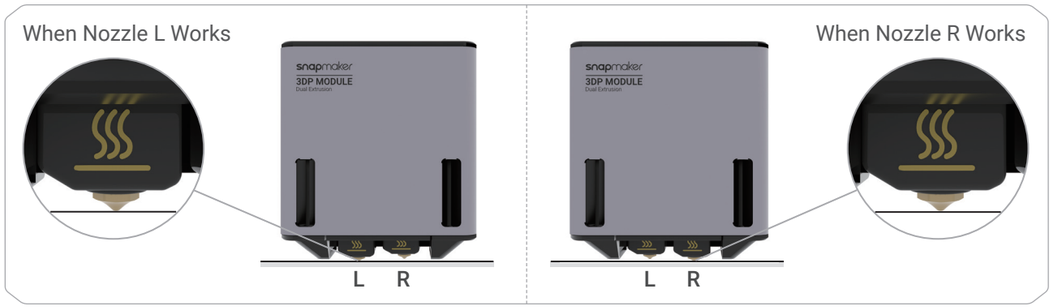
Brief Introduction

The Dual Extrusion Module features a smart sensor that can be used to automatically level the build plate and adjust the distance between the two nozzles and the build plate. In this way, the machine ensures both nozzles always extrude at a proper and consistent height throughout the printing process to avoid poor first-layer adhesion, build plate abrasion, and collision.

How It Works

In the Z Offset Calibration, the two nozzles will move in turn to obtain the Z-axis height of the module when the nozzle just touches the build plate. In the subsequent Heated Bed Leveling process, the left nozzle will repeat the above steps at specific points on the build plate to obtain the whole flatness data. With the collected data, the machine will make real-time compensation for the build plate undulations by adjusting the Z-axis movements of the module during printing.





Before doing the Z Offset Calibration and the Heated Bed Leveling, ensure that the surface of both nozzles is clean.

Every time after you have reassembled the module or machine, redo the Z Offset Calibration and Heated Bed Leveling: tap **Calibration** on the Home Screen > **Z Offset Calibration** or **Heated Bed Leveling**.

Every time after you have replaced the hot end, you only need to redo the Z Offset Calibration.

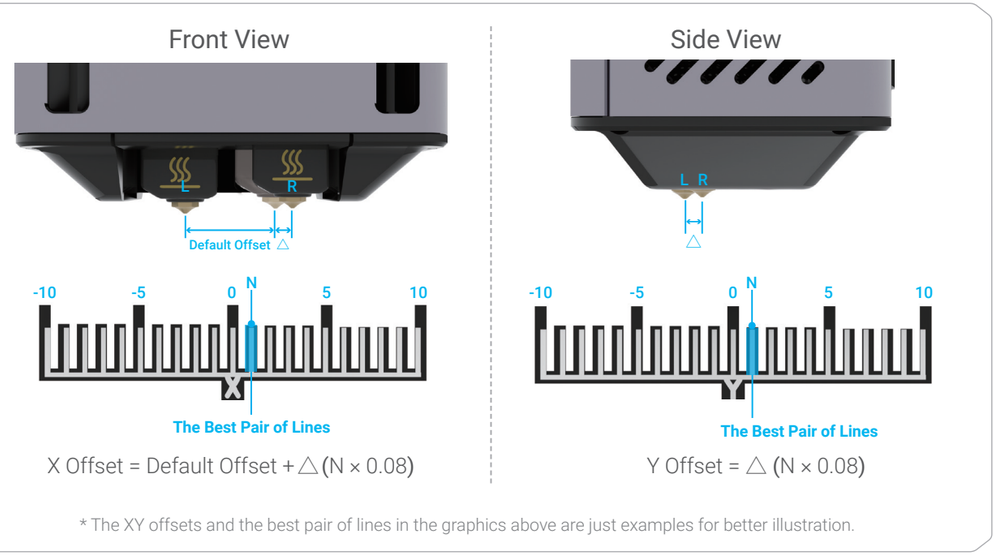
3. XY Offset Calibration

Brief Introduction

Calibrating the offsets of the two nozzles in the X and Y orientations can achieve the optimal print quality of both nozzles in the horizontal direction and avoid crossovers between different colors and materials.

How It Works

The machine will print a calibration model in the X and Y orientations, respectively. After you have selected the best pair of lines (where the top line is most horizontally centered on the bottom line) in the two models, the machine will automatically calibrate the X and Y offsets of the two nozzles accordingly by making real-time compensation.



X Offset = Default Offset + △(N × 0.08)

Y Offset = △ (N × 0.08)

* The XY offsets and the best pair of lines in the graphics above are just examples for better illustration.

Before doing the XY Offset Calibration, ensure that the glass build plate is clean.

Every time after you have replaced the hot end, you need to redo the XY Offset Calibration: tap **Calibration** on the Home Screen > **XY Offset Calibration**.

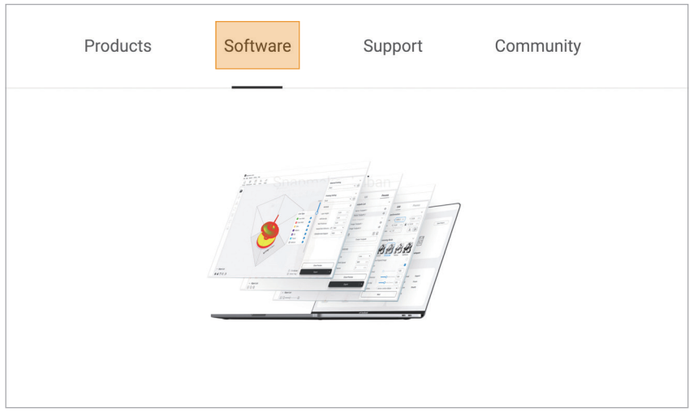
Congrats!

You are now ready to print.

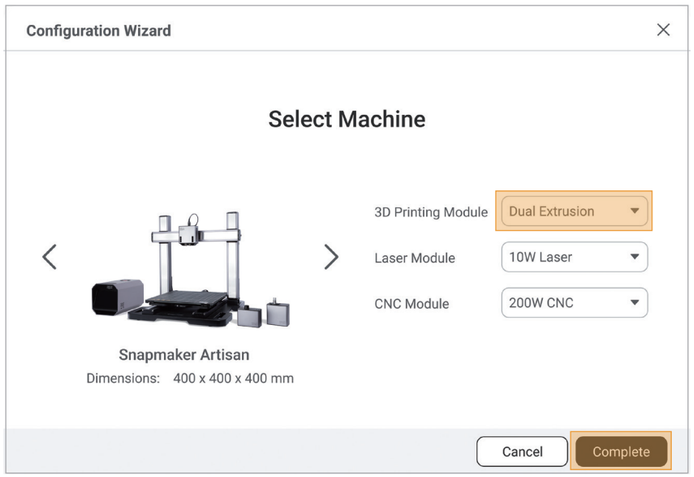
2.2 Getting Started

2.2.1 Install Snapmaker Luban

1. On the Snapmaker official website, click **Software** in the navigation bar. Then, download and install our tailor-made software Snapmaker Luban (hereafter Luban).



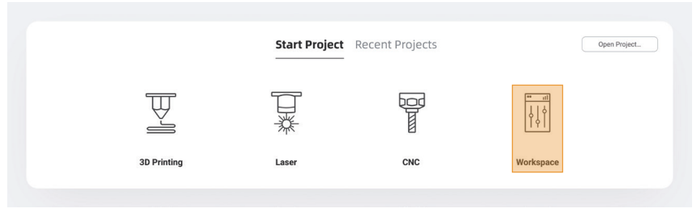
2. Launch Luban, select the language, machine model, and module type, and then click **Complete** to save the settings.

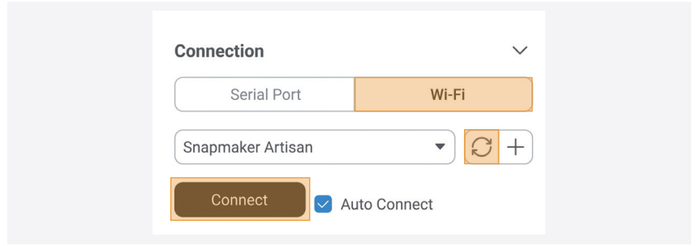


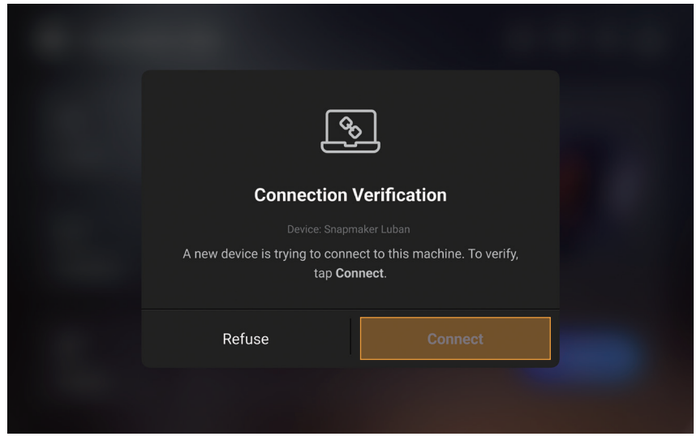
To change these settings later, click **Settings** > **Preferences** in the menu bar.

3. Ensure that your computer and machine are connected to the same Wi-Fi network, and take the following steps to connect Luban with your machine:

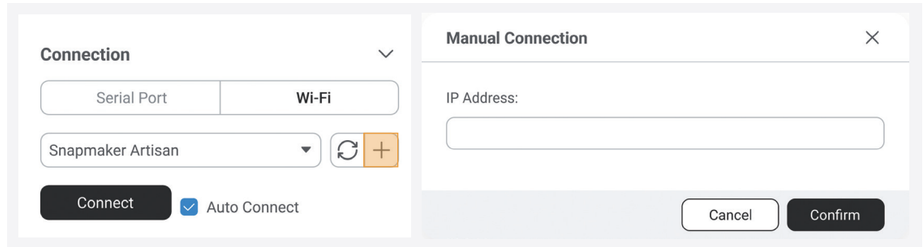
a. On the Home page of Luban, click to enter **Workspace**;
b. On the **Connection** panel at the top left corner, click **Wi-Fi**;
c. Click , select your machine from the drop-down list, and click **Connect**;
d. Tap **Yes** on the Touchscreen to allow the connection.





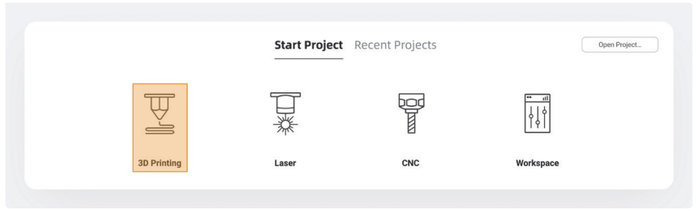


You can also click + and enter the IP address of your machine to manually connect it with Luban. To check the IP address, tap **Settings** > **About Machine** on the Touchscreen.



2.2.2 Generate the G-code File

1. At the top-left corner of **Workspace**, click **Back** to return to the Home page. Then, click **3D Printing** to enter the **3D Printing G-code Generator**.

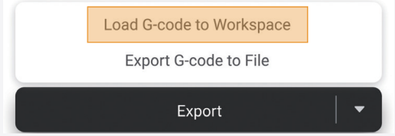


2. Follow the Beginner's Guide to get familiar with the basic operations. During this process, Luban will automatically load the test model and generate the G-code file.

If the Beginner's Guide does not pop up or quits unexpectedly, you can click **Help** > **Beginner's Guide** in the menu bar.

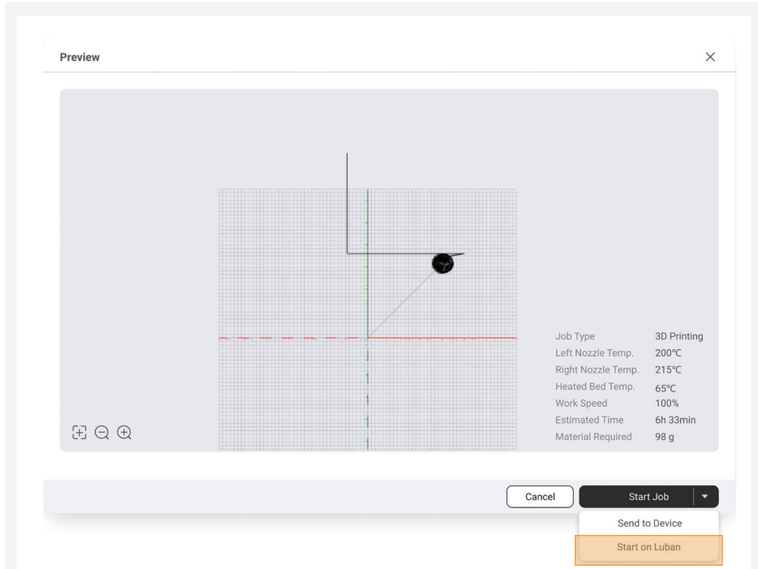
You can also click to import your own files and configure the parameters.

3. After the G-code file is generated, click **Export** > **Load G-code to Workspace** at the bottom-right corner.



2.2.3 Start Your First Print

1. In the **Preview** window, click **Start Job** > **Start on Luban** to create your first print! If the Wi-Fi network is unstable or disconnected during the printing, the ongoing printing process will not be affected.



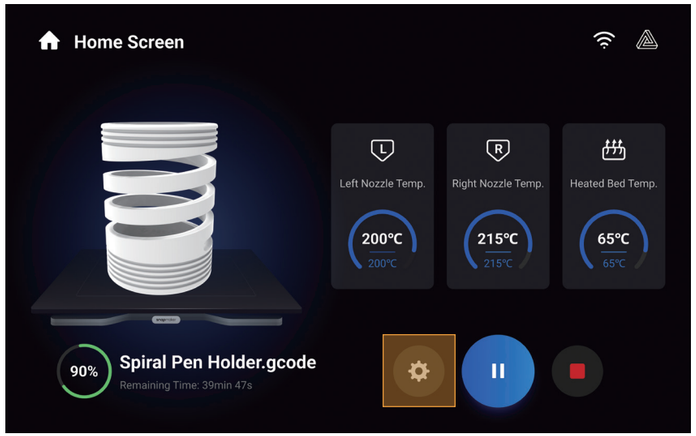
In case of an emergency, press the emergency stop button on top of the Integrated Controller to stop the printing immediately. After you have handled the emergency, you can release the emergency stop button by rotating it clockwise.

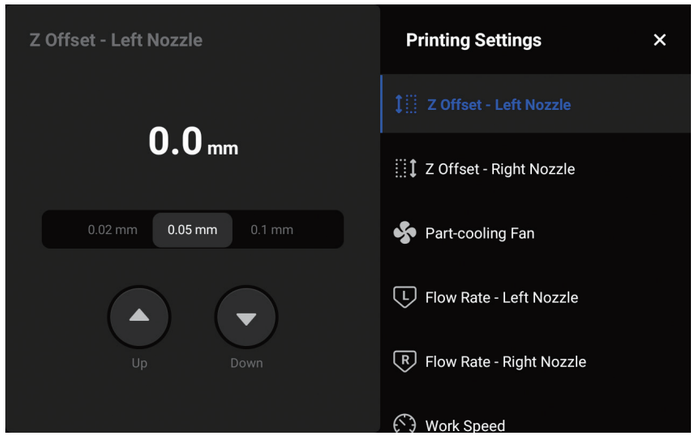
Keep the front cover of the Dual Extrusion Module closed throughout the printing process.

You can also send the G-code file to your machine at **Workspace** or via the USB flash drive.

For more detailed information, refer to our online User Manual in Snapmaker Wiki (https://wiki.snapmaker.com).

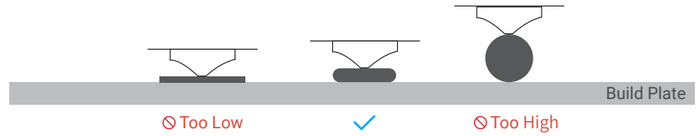
After the printing starts, you need to pay close attention to the first layer adhesion to detect any problems in time to avoid wasting filaments. During the printing, you can tap ⚙ to adjust the parameters such as the Z Offset, Work Speed, and Flow Rate, and configure the settings of Enclosure, Air Purifier, and other addons.



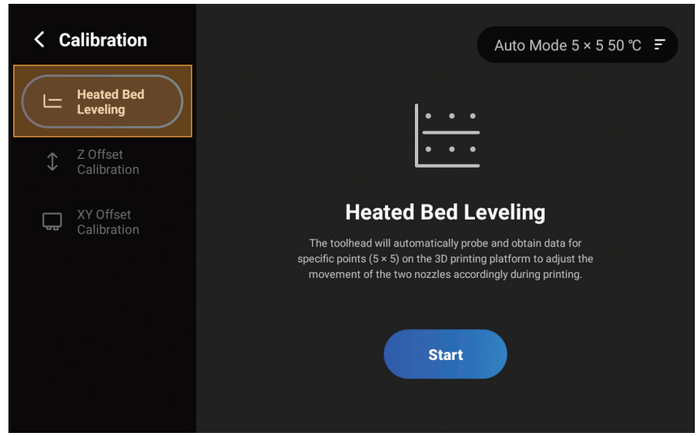


In case of poor adhesion, you can try the following solutions:

Solution 1: Adjust the Z Offset during printing to slightly reduce the distance between the nozzle and the build plate. However, please note that the nozzle may fail to extrude successfully or even damage the build plate and itself if too close to the build plate.



Solution 2: Stop the current printing and remove the print from the glass build plate. Then, tap **Calibration** on the Home Screen and redo the Z Offset Calibration and Heated Bed Leveling. The machine will run the calibration processes in Auto Mode by default.



If the calibration results remain unsatisfactory, you can try the following operations:

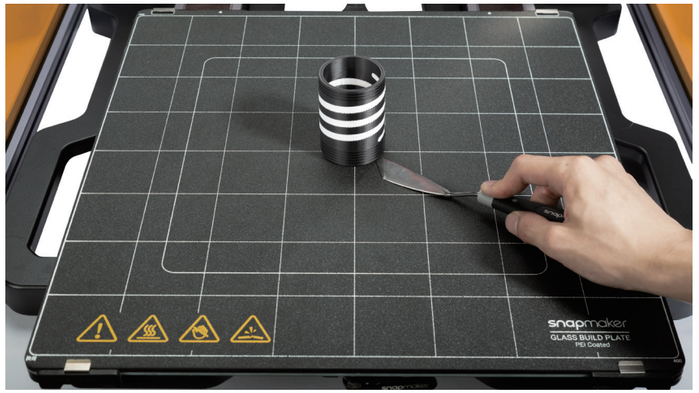
Z Offset Calibration: Tap the top-right corner of the Calibration screen to select a different mode, and then redo the calibration.
Heated Bed Leveling: Tap the top-right corner of the Calibration screen to select **Manual Mode**, increase the calibration points or the bed temperature, and then redo the calibration.

For more detailed introductions to the 3D printing calibrations, refer to our online User Manual in Snapmaker Wiki (https://wiki.snapmaker.com).

Solution 3: Apply an even layer of water-soluble adhesive (like PVP glue sticks) on the printing area to improve the first layer adhesion. After the printing you can wet the cloth with water to wipe off the residual adhesive on the glass build plate.

2.2.4 Remove the Print

Wait for the nozzles and the heated bed to cool down, and use the palette knife to remove the print from the glass build plate.



Do NOT touch the nozzles and the heated bed with bare hands, as they are still extremely hot right after the printing.

Be careful with the palette knife!

Do NOT scrape or poke the PEI coating of the glass build plate with sharp objects.

You can also take out the glass build plate first, and remove your print from it.

Share!

Share your print in our Facebook group and our forum.

2.3 Maintenance

2.3.1 Clean the Glass Build Plate

Remove the Filament Residues

Why

If the filament you use is highly viscous or the distance between the nozzle and the build plate is too close during printing, the filament might stick to the build plate surface. If not removed in time, it could affect your next print. As the residues build up, the build plate will also become more challenging to clean.

When

After each print.

How

1. Prepare the cleaning tool: the palette knife;

2. Gently scrape the filament residues from the glass build plate with the palette knife.

When scraping, the angle between the palette knife and the glass build plate should be less than 30°, so as not to damage the surface of the printing plate.

If the filament residues are difficult to remove even with the palette knife, you can tap **Control** > **Heated Bed** on the Touchscreen, heat the bed to 50°C, and try scraping again. To prevent burns, it is recommended to wear gloves before scraping.

Remove the Adhesive

Why

Applying an appropriate amount of water-soluble adhesive on the glass build plate before printing can enhance the first layer adhesion of the print. However, if not removed after printing, the residual adhesive on the build plate might affect your next print.

When

Every time after you apply the adhesive on the build plate.

How

1. Prepare the cleaning tool: water and the wiping cloth (in the Quick Start Guide kit);

2. Power off the machine;

3. Moisten the wiping cloth with water and wipe off the adhesive from the build plate.

Remove the Grease and Dust

Why

Our hands or other body parts might leave a small amount of natural oil and dust on the plate surface when touching the glass build plate. Besides, the dust in the air will also adhere to the plate. If not removed in time, the first layer adhesion of the print might be weakened.

When

At least once every two weeks.

How

1. Prepare the cleaning tool: water and the wiping cloth (in the Quick Start Guide kit);

2. Power off the machine;

3. Moisten the wiping cloth with water and gently wipe the build plate surface until there is no obvious grease, dust, or other stains.

If it is difficult to remove the grease with water, you can try the ethyl alcohol.

2.3.2 Clean the Dust Screen

Why

The dust in the air will adhere to its dust screen on both sides of the Dual Extrusion Module in daily use. If not removed in time, the accumulated dust may hinder heat dissipation and affect the working efficiency of the module.

When

At least once every two weeks.

How

1. Prepare the cleaning tool: a cotton swab (or tissues) and water;

2. Power off the machine and detach the Dual Extrusion Module from the machine;

3. Moisten a cotton swab with water, and stick it inside the air inlet to clean the dust screen until there is no dust or water.

The cotton swab is a single-use tool. If there is still dust remaining on the dust screen after you clean it once, take a new cotton swab and repeat Step 3 to clean it again.

2.3.3 Clean the Nozzle

Why

During the 3D printing process, some of the extruded filament may stick to the nozzle surface. After the nozzle cools, these filament residues will solidify on its surface. If not cleaned in time, they may cause nozzle jams or leave dark marks on your next print.

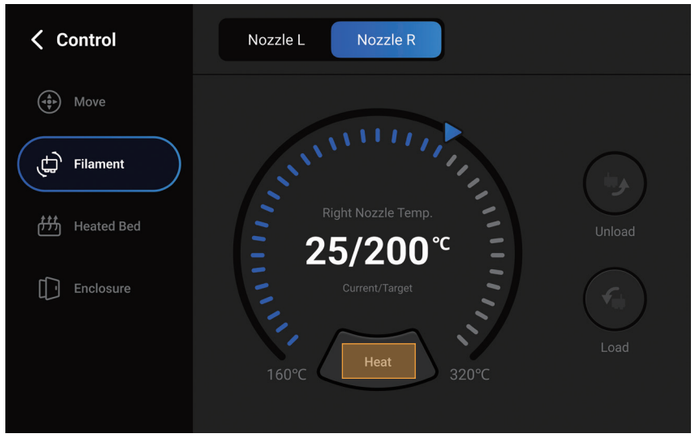
When

At least once every two weeks.

How

1. Prepare the cleaning tool: the wire brush;

2. Power on the machine, tap **Control** > **Filament** on the Touchscreen, and heat the target nozzle to 200°C ;



3. After the nozzle is heated, scrape off the filament residue from the nozzle surface with the wire brush.

Be careful of the hot nozzle surface!

Do NOT scrape against the black thermal insulating casing during cleaning.

2.3.4 Clean the Extruder Gears

Why

Strong friction will be generated between the extruder gears and the filament during printing, due to which lots of small shavings will be ground away from the filament. If not cleaned regularly, the teeth of the extruder gears may be flattened by the accumulated shards and particles, which will inhibit the gears from gripping and pushing the filament through the hot end and finally affect the printing results.

When

At least once every two weeks.

How

1. Prepare the cleaning tool: a banister brush (not provided);

2. Unload the filament from the module;

3. Power off the machine, open the front cover of the module, and press the extruder buckle downwards to expand the dual-gear extruder;

4. Clean the filament shavings from the extruder gears with the banister brush.

2.3.5 Store the Filament

Most 3D printing filaments (especially PA, PVA, and PETG) absorb moisture from the air, while printing with wetted filament is likely to clog the nozzles or affect the printing quality. Therefore, the filament should be used up within one month once unpacked.
If a spool of filament will be left unused for a long time, take the following steps to store it properly:

1. Unload the filament from the module;

2. Store the filament in a vacuum-sealed bag filled with desiccant;

3. Mark the unpacking date on the bag.

Resources

You can learn more about the usage, maintenance, and troubleshooting of your printer in Snapmaker Wiki:
https://wiki.snapmaker.com

We are here for you whenever you need support:
https://support.snapmaker.com

For any sales inquiries:
sales@snapmaker.com

For product purchases:
https://shop.snapmaker.com

Share anything you want with other Snapmaker users in our forum:
https://forum.snapmaker.com