UltiMaker S8

Installation and user manual

S8-EN-03/2025-v1.1

Disclaimer

This manual sets out the instructions on how to install and operate the UltiMaker S8. Please read and understand the contents of this installation and user manual carefully. Failure to read the manual may lead to personal injury, inferior print results, or damage to the UltiMaker printer or its accessories.

Always make sure that anyone who uses this 3D printer knows and understands the contents of the manual to make the most out of the UltiMaker printer.

Upon delivery of the product, installation shall be done in accordance with the instructions in this user manual. The handling, storage, use, and disposal of the device are beyond our control and are for your sole responsibility. We do not assume responsibility and expressly disclaim liability for loss, injuries, damage, or expense arising out of or in any way connected with the handling, storage, use, or disposal of the product.

The information within this document has been collected and represented with great care and is considered accurate. In case inconsistencies or inaccuracies are observed, those are unintentional and UltiMaker welcomes to be made aware of those. Submit your feedback to UltiMaker via support.ultimaker.com.

This installation and user manual is available in several languages. In case of discrepancies between the original English version and the translated text, the English version is leading. Please contact UltiMaker support if you notice any inaccuracies, or in case of questions or concerns.

Intended use

UltiMaker 3D printers are designed and built for fused filament fabrication mainly within a commercial, professional, or industrial environment. The mixture of precision and speed makes UltiMaker 3D printers very suitable for concept models, functional prototypes, and small series production.

UltiMaker 3D printers, including the UltiMaker S8, are compatible with an increasing range of materials available in our Marketplace and optimized for usage with UltiMaker materials. While being an open material platform, the best results will be achieved with UltiMaker materials, as effort has been made to match material properties with machine settings.

Although we achieved a very high standard in the reproduction of 3D models with the usage of UltiMaker Cura, the user remains responsible for qualifying and validating the application of the printed object for its intended use. This is especially critical for applications in strictly regulated areas like medical devices and aeronautics.

Tip: See **section 2.1** for a description of the UltiMaker S8 and its components.

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1. Safety and compliance

Read the important notices in this chapter to ensure the safety of the UltiMaker S8 and its operators. Additionally, this chapter contains compliance and regulatory information.

1.1 Safety messages

This document contains tips and notes:

Tip: Additional information that is helpful to do a task or learn more.

Note: Important information to avoid problems.

The following ISO warning symbols are also used in this document and on the printer:

Read the user manual (ISO 7010-M002). Before using this product, read the complete user manual to learn about all its features and safety-related information. This symbol is placed on the front panel of the printer.

Warning (ISO 7010-W001). Warns of a situation that may cause material damage or injuries if the safety instructions are not followed.

Magnetic field (ISO 7010-W006). This product contains magnets. Magnets are used in the build plate, print head, and Material Station door. Ensure a distance of > 4 cm from sensitive electronic equipment and any implanted electronic medical devices.

Electricity hazard (ISO 7010-W012). This printer uses mains power, which is hazardous when touched. This symbol is placed on the power supply cover or module.

Hot surface (ISO 7010-W017). The print cores and build plate of this product can reach high temperatures. Always allow the machine to cool down before reaching inside. This symbol is placed on the print head and build plate.

Crushing of hands (ISO 7010-W024). This product contains moving components. Never reach inside the printer while it is in operation. This symbol is placed underneath the build plate.

1.2 General safety information

Intended use and required skill level

- UltiMaker products shall only be used by persons who have carefully read and understood the user manual and the safety provisions in it.
- UltiMaker S series products are intended for professional and/or light industrial use and can be used by ordinary, instructed, and skilled persons. The user manual describes operations that may require different levels of qualifications to ensure safety. See definitions below.
- Unless stated otherwise in the respective (maintenance) instructions, maintenance activities shall only be carried out by skilled or instructed persons. Where stated so, specific activities can also be carried out by ordinary persons.
- This product is not intended for use by children. When using this product, children should be under constant supervision of an adult who is responsible for their safety. Maintenance actions shall only be performed by an adult, following the provided instructions.
- UltiMaker products are not intended for use by persons with reduced physical and/or mental capabilities, or persons with a lack of experience and knowledge, unless they are supervised or have been given instructions concerning the use of the product by a person responsible for their safety.

Definitions of ordinary, instructed, and skilled persons:

- **Ordinary person.** A person other than an instructed or skilled person. Ordinary persons can start and remove print jobs and perform basic operations such as loading material or changing print cores, provided they have read and understood the manual and safety instructions. Performing other actions is only allowed when explicitly stated in the respective manuals (including e.g. maintenance instructions).
- **Instructed person.** Someone who has been instructed and trained by a skilled person. Instructed persons are allowed to perform the same actions as an ordinary person, plus maintenance actions as indicated in the manuals. Can perform actions of a skilled person when supervised by a skilled person who is responsible for the instructed person's safety, e.g. as part of a training to become a skilled person.
- **Skilled person.** A term applied to persons who have been trained or have experience in the equipment technology, particularly in knowing the various energies and energy magnitudes employed in the equipment. Skilled persons are expected to use their training and experience to recognize energy sources capable of causing pain or injury and to take action for protection from injury from those energies.

General safety notices

- Choose a suitable location to install the UltiMaker S series product. Ensure the printer is installed safely and securely, and take proper measures to prevent the printer from falling.
- UltiMaker 3D printers generate high temperatures and have hot moving parts that can cause injury. Never reach inside UltiMaker 3D printers while they are in operation. Control the printer using the touchscreen, power switch, or via UltiMaker Digital Factory.
- Allow the UltiMaker 3D printers to cool down sufficiently before reaching inside, unless explicitly stated otherwise for certain (maintenance) processes. Always wait until the display indicates that the build plate has cooled down to a safe temperature.
- Do not change or adjust any parts of the product unless the change or adjustment is authorized by UltiMaker.
- Do not store items inside UltiMaker products, except compatible material spools in the Material Station.
- When performing maintenance procedures, follow the guided procedures in the printer's firmware where possible. Otherwise, turn off the printer to ensure new print jobs cannot start unexpectedly.
- For safety, always close the printer door immediately after opening it for print removal, configuration adjustments, maintenance, or repairs. Leaving the door open increases the risk of accidental impacts, which could cause the printer to shift or fall, damage the door hinges, or shatter the safety glass panel.
- Always close the Material Station door immediately after loading or changing material spools. Leaving the door open may increase humidity levels and pose safety risks, as accidental impacts could shift or destabilize the printer or damage the glass door. Never store items on the opened Material Station door.

1.3 Hazards

Electrical safety

⚠ The UltiMaker S series 3D printers and Material Station are powered by mains voltage, which is hazardous when touched. The power supply and electronics are located at the bottom of the machine. Only skilled and instructed persons should remove the bottom cover of the printer. Always check local regulations.

⚠ A mains socket with a protective earth/ground terminal must be used. Make sure that the building installation has dedicated means of over-current and short-circuit protection. Use a circuit breaker with a current rating not exceeding 16A (for 220-240 VAC circuits) or 20A (for 100-120 VAC circuits).

⚠ **Warning:** Only use the original power cable supplied with the device. Do not damage, cut, or repair the cable. A damaged cable should be immediately replaced with a new original one.

⚠ **Warning:** Always unplug the product before performing maintenance or modifications, unless explicitly stated otherwise for certain (maintenance) processes.

Mechanical safety

Pinching and entanglement hazard. Do not reach into the top area of the printer during operation due to a pinching hazard. Do not lean over the printer or gantry during operation due to the risk of entanglement of hair, jewelry, and/or scarves. This may cause minor pain, but no significant injury to the user is expected from pinching or entanglement by the drive belts.

Crushing or pinching hazard. The force of the build plate is limited but may cause minor injury, so stay out of the reach of the build plate during operation. For maintenance processes, always follow the instructions on the display.

Note: Keep the door closed during operation unless explicitly stated otherwise for certain (maintenance) processes.

Risk of burns

Hot surface hazard. There is a potential risk of burns: the print cores of UltiMaker 3D printers can reach temperatures above 200 °C, while the heated bed can reach temperatures above 100 °C. Do not touch hot parts with your bare hands. This symbol is placed on the print head and the build plate to warn the user about this hazard.

Warning: Allow UltiMaker 3D printers to cool down sufficiently before reaching inside, or performing maintenance or modifications, unless explicitly stated otherwise for certain processes. Always wait until the display indicates that the build plate has cooled down to a safe temperature.

Emission hazard

During 3D printing, Ultrafine Particles (UFPs), Volatile Organic Compounds (VOCs), and other chemical substances may be emitted. Above certain concentrations (Threshold Limit Values, TLV), these emissions can pose a risk. Concentrations are influenced by the filament and adhesive used, print conditions (e.g. print temperature), room volume, Air Exchange Rate (AER), and number of printers in a room.

The UltiMaker S8 has an integrated Air Manager, which filters Ultrafine Particles generated during the 3D printing process.

UltiMaker products are designed for use with UltiMaker materials and are open for use with materials from third-party suppliers.

Safe use information for UltiMaker materials
UltiMaker materials can be printed safely without any additional filtering using the recommended temperatures and settings in a well-ventilated area (minimum refresh rate or AER of 1.8 for a room size of 30.6 m3). When multiple UltiMaker 3D printers are operated in a contained environment, concentrations of UFPs and/or VOCs will increase. Depending on the specific situation, please consider other safety measures, such as a dedicated ventilation system.

Safe use information for third-party materials
Make sure to check with your material supplier whether additional risks and safety measures apply. Additional safety measures may be required for the safe usage of such materials. Always take the relevant information provided by the supplier of third-party materials into account for safe operation. Please check the safety data sheet of each specific material for information. UltiMaker cannot be held responsible for any adverse effects from the use and/or performance of third-party materials.

Magnetic field

Static magnetic field hazard. Due to the static magnetic field caused by the magnets in the printer, keep a distance of at least 4 cm (1.5 in) between these magnets and any implanted electronic medical devices and implants containing ferromagnetic materials. Magnets are used in the build plate, print head, feeders, and Material Station door.

1.4 Personal protective equipment

The following items are recommended for safely working with UltiMaker S series products, particularly during maintenance:

- **Tweezers.** Required for safely removing material residue from the nozzle tips.
- **Pliers.** When performing the hot and cold pull procedure to clean the print cores, use pliers to hold the filament. This prevents hand injury in case the material breaks.
- **Thermal gloves.** Recommended when cleaning the nozzle, as the nozzle will be hot during these procedures.
- **Protective gloves.** Recommended when removing brims or support structures from the printed parts, or when using tools to remove objects from the build plate.
- **Safety glasses.** Recommended when removing support structures, performing certain post-processing tasks, or in other situations with an increased risk of injury.

Note: Situations where personal protective equipment is recommended are referenced throughout this user manual, or visit ultimaker.com/s-series-safety-compliance.

1.5 Regulatory information

This section contains regional regulatory and compliance notices.

Tip: See the compliance label at the back of the printer for regional certification labeling or visit ultimaker.com/s-series-safety-compliance for additional compliance information.

EU and UK

EC Declaration of Conformity
The UltiMaker S8 is compliant towards the essential requirements and other relevant provisions of:

- Machinery Directive 2006/42/EC,
- EMC Directive 2014/30/EU,
- RED 2014/53/EU,
- RoHS Directive 2011/65/EU,
- WEEE Directive 2012/19/EU

RED regulatory notices
1. Wi-Fi Frequency Bands and Maximum RF Output Power

This device operates on both 2.4 GHz and 5 GHz Wi-Fi frequency bands in compliance with the Radio Equipment Directive (RED) 2014/53/EU. The following table outlines the frequency ranges and maximum power:

Frequency Band (MHz)	Usage	Max Output Power (EIRP)
2412 – 2484	Indoor and outdoor use*	15.14 mW (11.80 dBm)
5150 – 5725	Indoor use only	18.62 mW (12.70 dBm)

Wi-Fi regulatory notices:

- **2.4 GHz Wi-Fi:** Allowed for indoor and outdoor use across all EU countries.
- **5 GHz Wi-Fi:** 5150 – 5350 MHz: Restricted to indoor use only to prevent interference with satellite and radar systems.

*** Note:** The UltiMaker S8 is not intended for outdoor use.

2. RFID Frequency Band and Maximum field strength

This device operates in the ISM frequency band at 13.56 MHz and complies with the Radio Equipment Directive (RED) 2014/53/EU under ETSI EN 300 330. The following table outlines the frequency ranges and maximum power:

Frequency Band (MHz)	Usage	Max Output Power (EIRP)
13.553 – 13.567	Indoor and outdoor use*	1.656 µA/m at 10 meters

This device operates in the ISM frequency band at 13.56 MHz and complies with the Radio Equipment Directive (RED) 2014/53/EU under ETSI EN 300 330.

*** Note:** The UltiMaker S8 is not intended for outdoor use.

USA

FCC Supplier's Declaration of Conformity
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

FCC Caution
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. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

FCC RF Exposure Warning:
This product complies with the FCC radiation exposure limits set forth for an uncontrolled environment with a minimum 8 inches spacing requirement between the transmitter and a person's body during wireless modes of operation.

Canada

Innovation, Science, and Economic Development Canada Compliance Statement

English
This Class A digital apparatus complies with Canadian ICES-003. 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

Caution: The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

Radiation Exposure Statement:

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 22 cm between the radiator and your body.

French
Cet appareil contient des émetteurs / récepteurs exempts de licence qui sont conformes au (x) RSS (s) exemptés de licence d'Innovation, Sciences et Développement économique Canada. L'opération est soumise aux deux conditions suivantes:

(1) Cet appareil ne doit pas causer d'interférences

(2) Cet appareil doit accepter toute interférence, y compris les interférences pouvant provoquer un fonctionnement indésirable de l'appareil

Avertissement: Les dispositifs fonctionnant dans la bande de 5150 à 5250MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

Déclaration d'exposition aux radiations:

Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 22cm entre le radiateur et votre corps.

Mexico

IFT (México): La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Certifications

This product complies with IEC 62368-1 with CB Certification for the following countries:

- USA/Canada - CSA/UL 62368-1:2019 + cDEKRAus Certification
- EU - EN IEC 62368-1:2020+A11:2020
- UK - BS EN IEC 62368- 1:2020+A11:2020
- Australia - AS/NZS 62368.1:2022
- Saudi Arabia - SASO-IEC 62368-1:2020
- China - GB 4943.1-2022
- Japan - J62368-1(2023)
- Korea - KC 62368-1(2021-08)

This product has RF Device modular certification for the following countries:

- Japan
- Korea
- Taiwan

This product has in-country homologation certification for the following countries:

- Israel
- Qatar
- Saudi Arabia
- UAE
- Mexico
- Korea

2. Introduction

In this chapter, you will be introduced to the parts and specifications of the product. Getting to know the main components and their names is helpful during the installation and operation of the UltiMaker S8.

2.1 Product explanation

The UltiMaker S8 is a dual-extrusion 3D printer based on fused deposition modeling (FDM) technology. Designed for precision and efficiency, the UltiMaker S series creates 3D objects from a wide range of polymers. Whether printing with a single material, multiple materials or colors, or combining a build material with a dedicated support material, the S8 offers versatile capabilities for complex applications.

The S8 delivers up to four times the productivity of its predecessor while enhancing print quality. This performance boost is achieved through a revolutionary new motion planner, high-flow cores, and an optimized feeder system. When paired with advanced dual extrusion and an open material platform, it enables the rapid production of intricate multi-material parts.

For streamlined workflows, the S8 integrates seamlessly with the Material Station. This automatic material handling solution supports up to six spools, enabling quick loading and rapid material changes—even during a print, where it automatically switches to an alternate spool if needed.

> Instructions specific to the UltiMaker S8 when used with the Material Station are marked with the Material Station icon throughout this manual.

Prepare your 3D models with UltiMaker Cura, our free slicing software that converts models into printer-ready instructions with optimized material settings and print profiles for a variety of applications. Additionally, the UltiMaker Digital Factory provides a cloud-based platform for monitoring print jobs and managing your digital library, further enhancing operational efficiency.

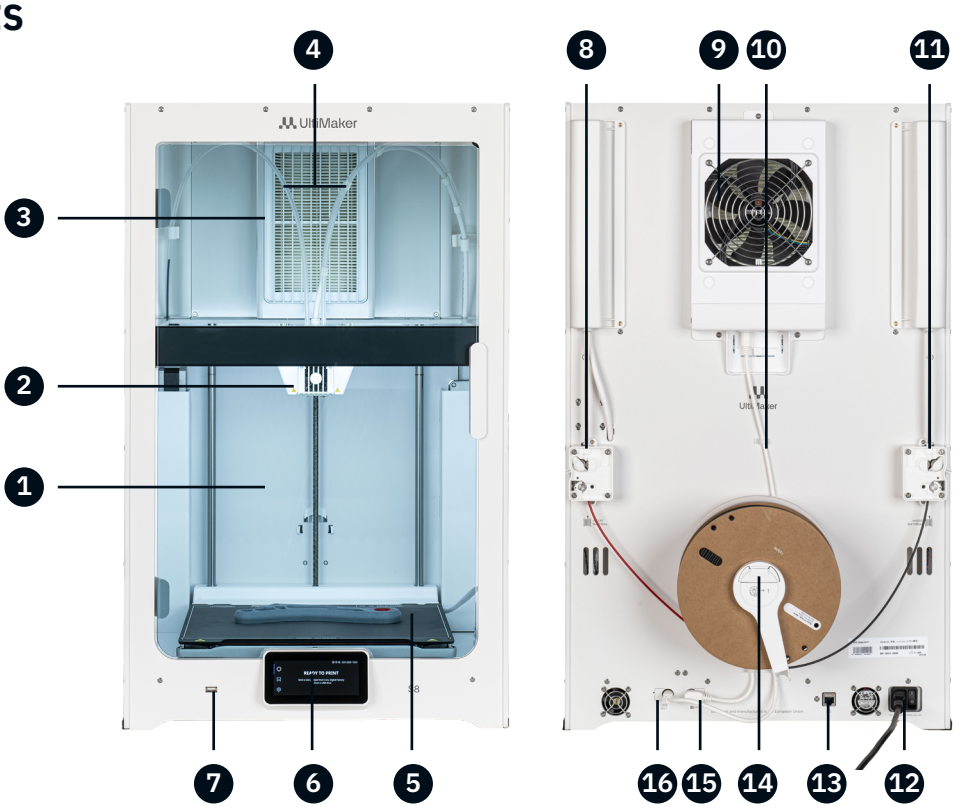
2.2 Main components

Front

1. Glass door
2. Print head
3. Air Manager filter
4. Bowden tubes
5. Z-stage with flexible build plate
6. Touchscreen
7. USB port

Back

8. Feeder 2
9. Air Manager fan
10. Air Manager cable
11. Feeder 1
12. Power socket and switch
13. Ethernet port
14. Spoolholder with filament guide
15. NFC port
16. UMB OUT port



2.3 Specifications

Printer and printing properties	Technology	Fused Deposition Modeling (FDM)
	Print head	Dual-extrusion print head with a unique auto nozzle-lifting system, flood detection. and inductive probing
	Feeder type	Dual gripper feeder with tension adjustment, release functionality and filament feed-rate control
	Motion planner	UltiMaker Cheetah, the world's first and only jerk limited 3D printer motion planner, with third order continuous, smooth motion, and corner blending algorithm
	Filament diameter	2.85 mm
	Compatible print cores	Print cores AA+ 0.4 and CC+ 0.4 *(included)* Print cores BB 0.4 and DD 0.4 *(sold separately)*
	Nozzle temperature	Up to 340 °C *(644 °F)*
	Dimensional accuracy	± 0.15 mm ± 0.15% feature nominal length* **Typical accuracy based on selected geometries, materials, and randomly selected machines*
	Build plate	Heated flexible PEI build plate. Up to 120 °C *(248 °F)*
	Build volume (XYZ)	330 x 240 x 300 mm *(~ 13 x 9.4 x 11.8 in)*
	Build volume temperature	Enclosed build volume < 50 °C *(122 °F)* open-loop temperature control
	Layer resolution	Supported profiles: 0.1 - 0.2 mm Custom range: 0.06 - 0.4 mm *(depending on nozzle size)*
	Extrusion flow	Up to 35 mm^3/s
	XY speed, acceleration, jerk	Speed: Up to 500 mm/s, Acceleration: Up to 50 000 mm/s^2, Jerk: Up to 100 000 000 mm/s^3
	Air manager	Removes up to 95% of UFPs
	Material handling	Dual spool holder with NFC recognition With Material Station: 6 material bays with NFC recognition
	Display	Fast responsive color touchscreen
	Monitoring	Full HD HDR camera
	System on module	ARM cortex quadcore at 1.8 GHz
	Real-time controller	600 MHz Arm-cortex M7
	Connectivity	Wi-Fi 2.4 & 5 GHz: IEEE 802.11a/b/g/n/ac LAN: Gigabit Ethernet USB: 2.0
Physical dimensions	Dimensions	495 x 585 x 800.5 mm *(~ 19.5 x 23 x 31.5 in)* (incl spool holder)
	Dimensions with Material Station	495 x 488 x 1187.5 mm *(~ 19.5 x 19.2 x 46.8 in)*
	Net weight	30 kg *(66 lbs)*
	Net weight with Material Station	48 kg *(106 lbs)*
Ambient conditions	Operating temperature	15 - 32 °C *(59 – 90 °F)*, 10 - 90 % RH non-condensing
	Non-operating temperature	0 - 32 °C (32 – 90 °F), 10 - 90 % RH non-condensing
Software	Print preparation	UltiMaker Cura 5.10 or newer
	Printer management	UltiMaker Digital Factory
	Supported OS	MacOS, Windows och Linux
Warranty	Warranty period	12 months

2.4 Software and accounts

Use UltiMaker's software and cloud solutions in combination with your UltiMaker S8 for an integrated digital workflow.

Tip: You can already download the software and set up your account before unboxing the printer for a more efficient getting-started experience.

Digital Factory

UltiMaker Digital Factory is a cloud software solution that helps you manage your UltiMaker 3D printers while also streamlining your organization's entire 3D printing process. Slice and organize your files, manage roles, monitor your prints, and analyze your results. All of that and more can be done easily and securely using Digital Factory.

Set up your free account at digitalfactory.ultimaker.com or visit the UltiMaker website to learn more about the different subscription plans.

Tip: Each UltiMaker S8 includes a 60-day trial license for Digital Factory Studio. See the leaflet in the accessory box for information and activation instructions.

UltiMaker Cura

UltiMaker Cura is free, easy-to-use 3D printing software trusted by millions of users. Fine-tune your 3D model with 400+ settings for the best slicing and printing results.

The UltiMaker Cura desktop application integrates seamlessly with UltiMaker hardware products and Digital Factory. Preparing prints can be quick and simple – Cura offers intent profiles for specific applications at the click of a button. Or switch to the Custom mode which gives over 400 settings for granular control.

The UltiMaker S8 is compatible with UltiMaker Cura version 5.10 (and later). For the best printing results, always use the latest version of UltiMaker Cura. Download UltiMaker Cura for free from ultimaker.com/cura.

Tip: For more information about UltiMaker Cura and system requirements, please consult the UltiMaker Cura support pages at support.ultimaker.com.

3. Set up for first use

In this chapter, you will learn how to unbox your new printer and set it up for first use. This includes installing some hardware components, completing the welcome setup, and ensuring that you have the necessary software and accounts to start printing.

3.1 Location

Before unboxing, choose a suitable location to install the UltiMaker S8. Take the following into consideration:

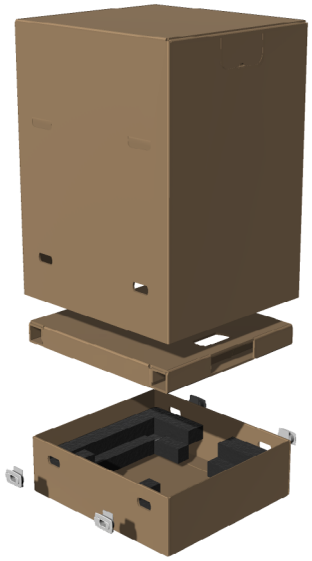
- Install the product on a flat, level, and stable surface that is capable of carrying the printer's weight (~ 35 kg / 77 lbs). Take proper measures to prevent the printer from falling.

In combination with the Material Station, the total weight is up to 57 kg / 126 lbs).

- The UltiMaker S8 must be positioned out of direct sunlight when in use.
- Ensure there is at least 10 cm of space behind the UltiMaker S8 for unrestricted airflow.
- The ambient conditions must be well controlled and never exceed the maximum recommended operating temperature. When the printer is used in ambient temperatures outside of the recommended range, optimal performance cannot be guaranteed.

3.2 Unboxing

The UltiMaker S8 is delivered in durable packaging, specifically designed to protect your 3D printer. Follow the steps below to properly unpack your new UltiMaker printer.



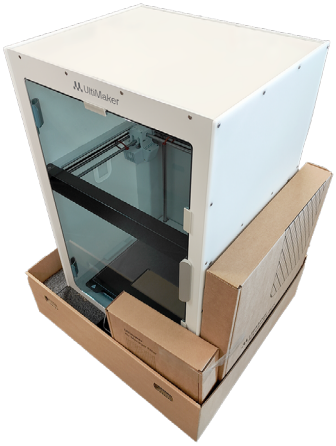
Warning: The UltiMaker S8 must be lifted by at least two people during unboxing and installation.

Tip: It is recommended to remove the packaging materials with the box placed on the floor.

1. Remove the four plastic locking clips at the bottom of the box.

Note: Do not cut open the box at the top.

2. Slide the outer box straight upward off the printer.
3. Take out the accessory box (right) and Air Manager filter (front) and place them aside.
4. Lift the printer out of the bottom tray. This must be done by at least two people. Each person places one hand in the handle in the side panel, and another on the back panel for stabilization.
5. Place the printer on the floor, or onto a flat, level, and stable surface (see **section 3.1**).



For the Pro Bundle: You can install the S8 directly on the Material Station, or temporarily place it on a desk first to remove the other packaging materials.

6. Remove the rubber door seals and open the glass door.
7. Use wire cutters to remove the two cable ties that secure the print head in the back left corner.
8. Remove the black lens cap from the camera in the front right corner.

Note: Please retain all packaging materials for warranty purposes.

3.3 Included components

The UltiMaker S8 is shipped with several accessories, tools, and consumables:

Accessories

1. Print core CC+0.4[*1]
2. Print core AA+0.4[*1]
3. Flexible build plate[*2]
4. Spool holder with material guide[*3]
5. Anti-slip rubber feet (4x)[*3]
6. Power cable
7. Ethernet cable
8. USB stick
9. Air Manager filter

Tools & maintenance

10. Nozzle cover (3x)
11. Oil
12. Grease
13. Hex screwdriver 2 mm
14. XY calibration sheet

Materials

15. Spool PET-CF 750g
16. Spool TPU 95A 700g

Documentation

17. Quick start guide
18. Safety and warranty information
19. Flexible build plate maintenance instructions
20. Digital Factory leaflet with free trial
21. Composite materials leaflet

[*1] The print cores are already installed in the print head.
[*2] The flexible build plate is already installed on the build platform.
[*3] The spool holder and anti-slip feet are not required in combination with the Material Station.

3.4 Installation

After unboxing, complete the hardware setup by installing several of the hardware accessories before powering on the printer for the first time. The installation steps are different if the printer will be used in combination with the Material Station. Select your configuration and follow the steps below.

Tip: The print cores and flexible build plate are already installed on the printer.

Setup without Material Station

Take the following steps to install the UltiMaker S8 without the Material Station. You will need the anti-slip feet, Air Manager filter, spool holder, and power cable. If necessary, move the printer to its final installation surface. Always lift and move the UltiMaker S8 with at least two people.

1. Carefully tilt the printer and place the anti-slip feet around the bottom of the frame panels.

2. Open the door, align the Air Manager filter with the housing, and gently push it into place.

3. At the back of the printer, connect the Air Manager cable to the **UMB OUT** port.

4. Insert the spool holder into the back panel and push until it snaps into place.

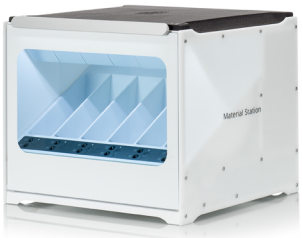
5. Connect the spool holder cable to the NFC socket and secure it behind the cable clips.

6. Connect the power cable to the printer and the other end to a power outlet.

Setup with Material Station

If the UltiMaker S8 is going to be used in combination with the Material Station, you do not need the spool holder, but you need several accessories included with the Material Station instead.

Tip: Consult the Material Station quick start guide for additional installation information.



1. First place the Material Station on the installation surface.

2. With two people, lift the UltiMaker S8 and place it on top of the Material Station.

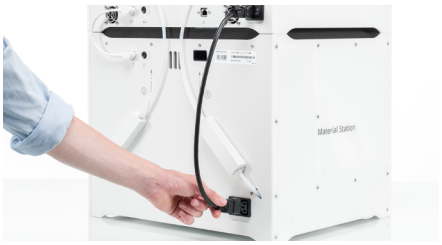
3. Open the door, align the Air Manager filter with the housing, and gently push it into place.

4. Insert the tube coupling collets and Material Station Bowden tubes into the UltiMaker S8 feeders.

5. Place the spool holder cap into the hole for the spool holder in the S8 back panel.

6. Connect the short Material Station cable from **UMB IN** on the Material Station to **UMB OUT** on the printer.

7. Connect the Air Manager cable to the **UMB OUT** port on the Material Station.



8. Connect the power extension cable to the UltiMaker S8 and the Material Station.

9. Connect the power cable to the Material Station and the other end to a power outlet.

Warning: A mains socket with a protective earth/ground terminal must be used. Make sure that the building installation has dedicated means of over-current and short-circuit protection. Use a circuit breaker with a current rating not exceeding 16A (for 220-240 VAC circuits) or 20A (for 100-120 VAC circuits).

3.5 Welcome setup

Turn on the printer using the power switch at the back. When you power on the UltiMaker S8 for the first time, you will first be asked to select your preferred language. After this, the welcome setup will appear on the display.

Tip: You can always change the language again later from the **Options** menu (gear icon), under **Settings**.

Note: The first UltiMaker S8 printers are shipped from the factory with a blocking firmware. The printer must first be updated via USB (ultimaker.com/s8-firmware). After updating, you can complete the welcome setup.

During the welcome setup, you will load material, connect the printer to the network, and add it to your Digital Factory workspace. The printer will guide you through the steps.

4. Operation

This chapter explains exactly how to use the UltiMaker S8, from material handling and printing to changing the configuration and calibrations.

4.1 Touchscreen

You can control the UltiMaker S8 by using the touchscreen at the front of the printer.

The main menu offers several options, represented by the following icons:

The **Status** overview lets you start a print from USB or view the progress of the print while printing.

The **Configuration** overview shows which print cores are installed, which materials are preloaded in the Material Station, and you can change the configuration.

The **Options** overview consists of three sub-menus: **Settings**, **Maintenance**, and **Network**:
In the **Settings** menu, you can change general settings such as the language or lighting.
In the **Maintenance** menu, you can perform the most important maintenance, calibration, and diagnostics procedures.
The **Network** menu allows you to change network settings or to perform the Wi-Fi setup.

Tip: The **Settings** menu also shows pending printer tasks, if there are any. This can include installing new firmware or performing recommended calibrations.

4.2 Materials

Material compatibility

The UltiMaker S8 supports all UltiMaker 2.85 mm materials that are currently available, except UltiMaker PPS CF.

Tip: Find an overview of the complete S8 and S series material compatibility on support.ultimaker.com.

All UltiMaker materials have been extensively tested and have optimized profiles in UltiMaker Cura to ensure the best print results. Therefore, it is advised to use one of the default profiles in UltiMaker Cura for the highest reliability. Using UltiMaker materials will also allow you to benefit from the NFC detection system. UltiMaker spools will be automatically recognized by the material bays. This information is directly transferred to UltiMaker Cura when connected to a network, for a seamless connection between the printer and UltiMaker Cura software.

The UltiMaker S8 has an open material system that also allows printing with third-party materials. Visit the UltiMaker Marketplace to find and download compatible material profiles. These profiles are extensively tested by our material partners for optimal print results.

Note: The UltiMaker S8 is only compatible with 2.85 mm materials.

Spools with the following dimensions are compatible with the Material Station:
Width: 50 – 70 mm
Diameter: 197 – 203 mm
Core diameter: > 98 mm

Print recommendations

Each material requires different settings for optimal results. When using UltiMaker Cura and UltiMaker materials, the print settings are automatically updated based on the selected print cores and material(s).

Tip: For detailed instructions on which settings and adhesion methods to use per UltiMaker material, visit the material support pages on support.ultimaker.com.

When using third-party materials, check the UltiMaker Marketplace for the latest print profiles. Synchronize installed profiles with your printer via Digital Factory or USB.

For the UltiMaker S8 Pro Bundle setup (with Material Station:
To benefit from the automatic material switching during a print when a spool runs out, it is recommended to have at least two spools of the same material loaded into the Material Station.

4.3 Print cores

The UltiMaker S8 uses two print cores in the print head, which can easily be changed. There are different types of print cores. See which types are supported on the UltiMaker S8 in the overview below:

Supported

- **Print core AA+:** Designed for high-speed, high-flow printing, the AA+ print core increases productivity and ensures reliable, high-accuracy prints across a wide range of materials.
- **Print core CC+:** Featuring a wear-resistant hardened steel nozzle and optimized melt zone, the CC+ print core is engineered for printing abrasive composite materials at high speeds.
- **Print core BB:** This print core is optimized for printing support materials, including PVA and Breakaway.
- **Print core DD:** This core is used specifically for printing Ultrafuse® Support Layer material in combination with the Metal Expansion Kit (only available in selected regions).

Not supported

- **Print core AA:** Compatible with a wide range of (build) materials, but not optimized for high flow.
  UltiMaker Cura does not support this configuration.
  This print core can be used on S8, but only for pre-sliced print jobs (S7).
- **Print core CC:** Intended for abrasive composite materials, but not optimized for high flow.
  UltiMaker Cura does not support this configuration.
  This print core can be used on S8, but only for pre-sliced print jobs (S7).
- **Print core HT:** Intended for high-temperature materials such as UltiMaker PPS CF (only for Factor series).

The print cores contain information on a small chip so that the printer always knows which print cores are installed and which materials can be used with these cores.

Tip: Learn more about print cores and their compatibility on support.ultimaker.com.

4.4 Preparing a print

Use UltiMaker Cura, UltiMaker's powerful and user-friendly desktop slicing application, to prepare your print jobs. UltiMaker Cura is free to download and use. Prepare your 3D model for print in minutes with recommended settings; simply choose speed and quality settings, and you can start printing.

Add your printer

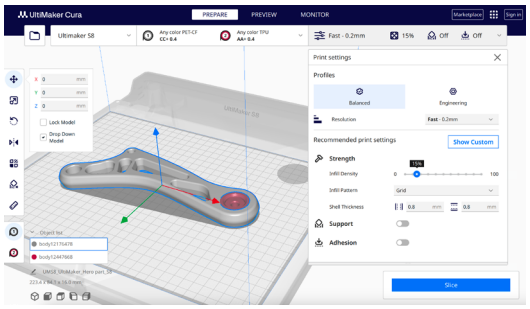
After installing the software, complete the first-run experience. If you sign in to your UltiMaker Account, you can add any printers already connected to your Digital Factory workspace. If your UltiMaker S8 is not connected yet, set it up via the Digital Factory option on the printer.

Tip: Create a new UltiMaker Account if you don't have an UltiMaker Digital Factory workspace yet.

When your printer is not connected to a network, you can also add it manually from the list of non-networked printers.

Prepare

Take the following steps to prepare your model(s) for 3D printing:



1. Load the 3D model(s) by clicking the 'open file' folder icon.
2. In the configuration panel, select your print cores and materials.
3. Use the adjustment tools on the left side to position, scale, and rotate the model as desired.
4. Select your intent profile, resolution, and desired settings in the print settings panel on the right side.
5. Press the "Slice" button in the action panel.

Preview

The preview stage allows you to see exactly how your model will be printed. Use the different color schemes to get various information about your model. You can view the different line types, differentiate infill from skin, or use the X-Ray view to detect gaps within your model.

Note: Previewing the model can be skipped, but is highly recommended to validate your print strategy and prevent problems before starting the print.

Start the print

When slicing is complete, you can start the print via the action panel. There are several ways to start or save your print file. Press the arrow icon next to the 'Print' button to see all options:

- **Print via cloud:** Send your print job via cloud directly to the printer or the printer's queue if the printer is connected to the Digital Factory.
- **Print over network:** Send the print job to the printer via local network if the printer is connected via LAN.
- **Save to Library:** If the printer is connected to Digital Factory, but you want to save it for later or share it with team members, save the print file to a Digital Library project.
- **Save to USB:** For offline workflows, you can save the file to a USB drive for printing with offline printers.
- **Save to Disk:** Store the print file on your computer if you want to save it for later.

Tip: Learn more about UltiMaker Cura, including the interface options and all available settings, at support.ultimaker.com. Release notes for new versions can be found on GitHub.

4.5 Printing process

This section describes the various steps taken by the printer and/or the operator during all stages of the printing process.

Pre-print

When a print job is selected, either remotely or via USB, the UltiMaker S8 will automatically prepare for printing. This can take several minutes and includes the following processes:

- **Configuration check.** The printer will check if the printer has the right configuration for the selected print job (print cores and materials). If so, the print preparation will proceed. If not, the printer will show a configuration change request.
- **Preheating.** The print cores and build plate will heat up according to the material settings.
- **Active leveling.** The print cores will probe the build plate in several locations to create a detailed height map. This information will be used to ensure optimal adhesion of the print.

In combination with a Material Station, all materials are in a pre-loaded state. When a print job is started, the required materials are automatically forwarded to the print head. The UltiMaker S8 will prime the materials.

Printing

After preparation, the print will start. Normally, no interaction is required during the printing process.

However, the print could be interrupted by a flow sensor trigger. If the printer detects a problem with material flow, the print will be paused. This can be because the material has run out or is tangled on the spool. You can then load a new material spool to continue the print.

In combination with a Material Station, the UltiMaker S8 can automatically change to a new spool if the active material runs out. There must be a second spool of the same material loaded to benefit from this feature. If there is no other compatible spool available, the print will pause until a new spool is placed in a material bay.

Keep the door closed during printing for safety and optimal air management. Never reach into the UltiMaker S8 while the printer is in operation.

Note: If something goes wrong during printing, pause or abort the print job via the display or Digital Factory.

Post-print

When the print is done, the printer will cool down and lower the build plate. It is recommended to keep the door closed until the cooldown process has finished for optimal air filtering.

Hot surface warning: Always wait until the build plate has cooled down to a safe temperature (the display will indicate a hot build plate with an orange warning bar).

Open the door and take the build plate out of the printer to remove the print. Once the build plate has been cleared and placed back in the printer, select **Confirm removal** on the display. This will allow the next print job to start.

4.6 Remove the print

Once your 3D print is finished, it must be removed from the build plate. The UltiMaker S8 has a convenient flexible build plate, which makes removing prints quick and simple.

1. Wait for the build plate to cool down before opening the door. The display will indicate when it is safe to remove the build plate.

Hot surface warning: Never remove the build plate when it is still hot to prevent burning your hands. The build plate can reach temperatures of over 100 °C.

2. Hold the flexible build plate at the tabs at the front, lift it up, and slide it out of the printer.
3. Carefully bend the plate underneath the printed object until it detaches from the build plate.

Tip: Take measures to prevent the printed object from falling and getting damaged when removing it from the flexible build plate.

If the object does not detach by bending the plate, you can use a spatula or scraper. Carefully insert the spatula or scraper under the print, parallel to the build plate, and apply some force to remove the print.

Warning: Only use plastic tools with round edges. Metal tools may damage the surface of the flexible build plate. The edges of the model or brim can be sharp. Wear protective gloves to prevent injury.

Once the print has been removed and the build plate is placed back in the printer, select **Confirm removal** on the display or via Digital Factory.

4.7 Remove support material

If your object was printed using support materials, these need to be removed. How to remove support structures depends on the material used. Also remove any brims with a deburring tool.

Warning: Always be careful when working with sharp tools and also note that the edges of the model can be sharp. Wear protective gloves to prevent injury.

PVA support material

PVA support structures can be removed easily by dissolving the PVA in water and leave no trace afterward. Dissolving PVA can take up to several hours.

Tip: Experience quicker and easier post-processing when using PVA support material with the UltiMaker PVA Removal Station. The PVA Removal Station removes PVA up to 4x faster compared to motionless water. Learn more here.

1. Submerge the print in water to let the PVA dissolve.
2. Rinse the print with clean water to remove any excess PVA.
3. Let the print dry completely.
4. Dispose of the wastewater.

Note: PVA is a biodegradable material. However, please check local regulations for more comprehensive guidance on wastewater disposal.

It is possible to use the water for more than one print, but this might extend the dissolving time. Through repeated use, water becomes saturated with PVA. For the quickest result, fresh water is recommended.

Build material support

Removing non-soluble supports can be more work than removing PVA, depending on the materials, settings, and chosen support structure type. In UltiMaker Cura, you can select Normal or Tree support.

⚠ **Warning:** Support structures may have sharp edges. To prevent injury, wear protective gloves, especially when handling larger models. Additionally, use safety glasses, as small fragments can break off unexpectedly and pose a risk to your eyes.

Normal support
This structure type support places a straight block under the areas that need support. This is very sturdy, but can use a lot of material and may be very difficult to remove.

Use pliers to snap off larger sections of the support structure. Cutting pliers can help break the support into smaller pieces for easier removal. If an interface layer was used, grip it firmly and pull it away from the model. Continue removing smaller sections until all support material is gone. If needed, use a file or sandpaper to smooth any surface marks left by the support structures.

Tree support
Tree support structures will start out small on the build plate, and will grow branches towards the parts of the print that need supporting. This uses a lot less material and often leaves a better surface quality. However, this structure type might not be optimal for all materials or models.

Because of the small contact areas and the (by default) hollow structures, the supports can usually easily be snapped off. If necessary, use pliers and/or cutting pliers, and use a file or sandpaper to smooth any surface marks left by the support structures.

4.8 Change configuration

The UltiMaker S8 is compatible with several print core types and a wide variety of materials. Changing the configuration to print different applications is quick and simple, and no tools are necessary. Select the “Change” option in the Configuration menu and the printer will guide you through the steps.

Tip: If you want to change both the print core and the material for one of the extruders, change the print core first. Some configurations are not allowed; changing the material first might block the process. This only applies if the UltiMaker S8 is used without a Material Station.

Change print cores

Print cores can be easily changed on the UltiMaker S8 by using the procedure from the menu. You can also choose to only load or unload a print core. The printer will guide you through the steps.

1. In the **Configuration** menu, select the print core you want to change and select **Change**.
2. The UltiMaker S8 (without a Material Station) will first slightly pull back the material so that the print core can be removed. Wait for the print head to stop moving before opening the glass door of the build chamber.
3. Gently open the print head bracket. Select **Confirm** when completed.
4. Squeeze the black clip upward and slide the print core out of the print head.

Note: Do not touch the contact points on the back side of the print core with your fingers. Always only hold the print core at the front grips.

5. Insert a different print core by squeezing the black clip upward and sliding the core into the print head slot until you hear a click.
6. Close the bracket and select **Confirm** when completed.

Note: Keep hands out of the build chamber after selecting **Confirm** as the print head will move back to its home position.

7. Close the build chamber door again.

Tip: The printer will automatically detect the type of print core that was installed.

Note: If the current print core and material configuration is not allowed (e.g. print core AA+ with PVA material), the printer will prompt you to also change the material. This only applies if the UltiMaker S8 is used without a Material Station.

Change materials

The process for changing materials on the UltiMaker S8 depends on whether the printer is used with or without the Material Station.

Tip: When removing a spool that is not yet empty, put the end of the filament through the small hole in the spool to prevent unwinding. Store the material according to the recommended storage conditions as described in **section 5.2**.

Without Material Station (spool holder)

The UltiMaker S8 has an assisted process for changing materials. You can also choose to only load or unload a material.

Tip: Make sure compatible print cores are installed before you insert materials.

In the **Configuration** menu, select material 1 or 2 and press **Change**.

1. The printer will start unloading the material while heating up the print core.
2. Remove the material from the feeder and spool holder.
3. Place the new material spool on the spool holder (for extruder 2) or the filament guide (for extruder 1) and press **Confirm** to continue.
4. Wait until the UltiMaker S8 detects the material.

Tip: When using a third-party material, you can select the material type manually. Ensure you have installed the correct material profile first, or choose a generic material profile.

5. Insert the end of the material into the feeder and gently push it until the feeder grips it and the material is visible in the Bowden tube just above the feeder. Press **Confirm** to continue.
6. The UltiMaker S8 will now forward the material to the print head. Wait until it reaches the print core.
7. When the new material is extruding consistently, press **Confirm** to complete the process.

Tip: When switching to a different material type or color, allow the printer to extrude for a while until the old material is fully flushed out.

With Material Station

Changing materials in the Material Station is easy and intuitive. This is possible for pre-loaded materials during printing as well as in an idle state.

Note: You can only change or remove material spools that are not currently active. Active spools are indicated with a blue light on the Material Station.

Changing materials in the UltiMaker Factor 4 is easy and intuitive. This is possible for pre-loaded materials during printing as well as in an idle state.

Tip: You can select **Load** or **Unload** for the relevant material bay in the **Configuration** menu to see instructions on the display.

1. Open the glass door of the Material Station.
2. Press the eject button of the corresponding material bay to eject the pre-loaded filament.
3. Remove the material spool from the material bay. Put the end of the filament through one of the holes in the spool to prevent unwinding.
4. Take a new spool and use the wire cutters to ensure the filament has a short, sharp tip before loading the filament.
5. Place the spool of filament into the material bay with the NFC tag on the left side.
6. Insert the tip of the material into filament entry port 1 or 2 until the prefeeder grabs the material.
7. Wait for the Material Station to detect the material and select **Confirm** to continue.

Tip: When using a third-party material, you can select the material type manually.

8. Close the Material Station door again.

The materials will remain pre-loaded in the Material Station and will be automatically forwarded to the print head when a print is started.

Tip: You can pre-load any material, even if no compatible print core is currently installed in the print head. You can change the print core type later. The printer will show a configuration change prompt when a print job is started.

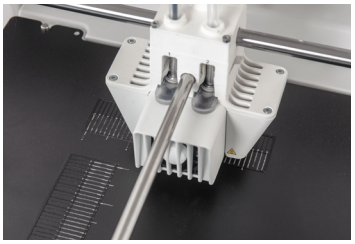


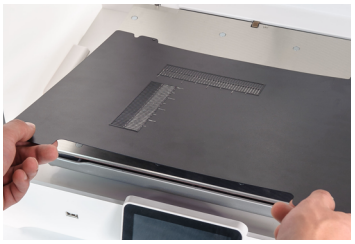

4.9 Calibrations

The UltiMaker S8 is a high-speed dual-extrusion printer with a unique nozzle lifting system. For accurate dual-extrusion prints, the XY offset and the position of the switch bay must be calibrated. Additionally, this printer features an accurate active leveling system for optimal Z calibration. This section contains information about all calibration processes.

⚠ **Caution:** When performing any of these calibration procedures, always keep hands clear of the build volume until all components have stopped moving.

XY calibration

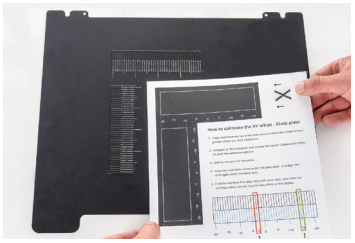




The horizontal distance between the nozzles of the two print cores in the X and Y directions needs to be configured. A correct XY calibration will ensure that the two colors or materials align well. The print cores that are supplied with the UltiMaker S8 are already calibrated. For any new combination of print cores, an XY offset calibration must be performed. The printer will then store this calibration value internally.

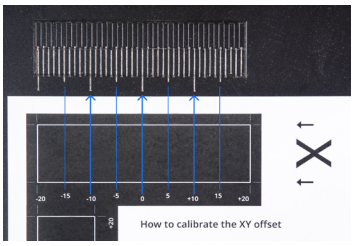
Ensure two print cores and materials are installed before starting the calibration. You will also need the XY calibration guide as a reference.

For the Material Station, ensure there is at least one material pre-loaded for each extruder.



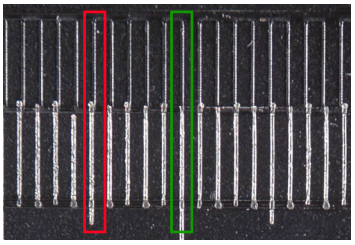
Start this calibration when prompted, or, in the **Options** menu, go to **Maintenance → Print head → Calibrate XY offset** and select **Start calibration**. The display and the calibration sheet provide instructions, or go to ultimaker.com/xycalibration to learn more about this process.

1. The UltiMaker S8 will print a grid pattern with both extruders. Wait until it is complete.
2. When the print is finished and the build plate has cooled down, remove the flexible build plate from the printer.



Tip: See the XY calibration sheet as a reference; it shows which grids correspond to X and Y and indicates the numbers for the printed lines.

3. Find the best-aligned lines on the printed X grid and note which number corresponds to these lines. Enter this number as the X offset value on the display.
4. Repeat this for the Y grid and enter the value on the display.
5. After completing the XY calibration, place the flexible build plate back into the printer.



Note: It is important that the printed XY offset pattern adheres well to the build plate and shows no signs of under-extrusion. If it did not print well, it is recommended to repeat the calibration print.

Lift switch calibration

The switch bay is located in the back right corner. It enables the second print core to be lifted and lowered. During nozzle switching, the print head will move toward the switch bay and move the lift switch at the side of the print head either forward (to lift print core 2) or backward (to lower print core 2).

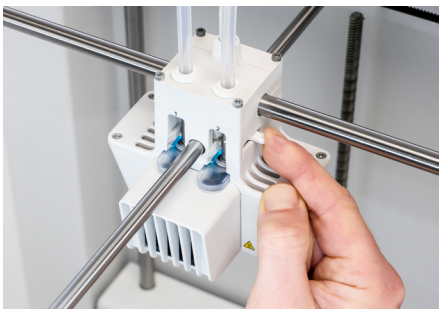
It is important that print core switching functions well for active leveling and a correct nozzle alignment in dual-extrusion prints. The lift switch is already calibrated at the factory, but calibration can also be performed manually if needed.

Tip: You can recalibrate the lift switch after making changes (repairs or maintenance) to the print head or gantry, or as a troubleshooting option in case of problems with active leveling or layer shifts.

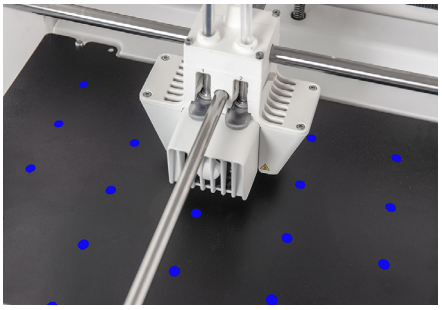
1. In the **Options** menu, go to **Maintenance → Print head → Calibrate lift switch** and select **Start calibration**.
2. Move the lift switch on the side of the print head forward (toward you). Select **Confirm** to continue.
3. Move the print head so that the lift switch fits in the switching bay. Select **Confirm** when completed.

Note: For successful and reliable switching, ensure that the lift switch fits firmly in the switch bay.

4. Wait for the print head to go to the home position and test the lift switch. Carefully observe.
5. Did the lift switch lower and raise the print core? If so, press **Yes** to complete the calibration. If not, select **No** to perform the calibration again.



Active leveling



The UltiMaker S8 does not require manual build plate calibration, as the build plate is fixed in place. To maintain an accurate distance between the nozzle and the flexible build plate across its entire surface, the UltiMaker S8 uses an active leveling process, automatically performed at the start of each print. This ensures optimal adhesion on the large build surface.

During the active leveling process, which is part of the print preparation, the print cores probe the build plate at multiple points to create a detailed height map. The following information is captured:

- The vertical (Z) offset between the two print cores
- The high and low points on the build plate, relative to the print head's position in the gantry
- The tilt of the build plate in both the X and Y directions

This data is then used to adjust the Z stage position throughout the print, ensuring both optimal adhesion and print accuracy based on the measurements and the position of the print head.

5. Maintenance

The UltiMaker S8 is designed for high accuracy and high speeds, with a future-proof new electronics platform. Learn how to keep your printer up to date and perform regular preventive maintenance to ensure your printer remains in optimal condition.

5.1 Update the firmware

Periodically, a new firmware version is released. To ensure that your UltiMaker S8 is equipped with the latest features, it is recommended to keep the firmware updated.

Note: The first UltiMaker S8 printers are shipped from the factory with a blocking firmware. The printer must first be updated via USB; follow the instructions below.

Update over the network

If the UltiMaker S8 is connected to a network, it automatically checks for available firmware updates. When new firmware is available, the printer will prompt you to download and install it via the touchscreen interface. Alternatively, check for updates manually in the **Options** menu: **Maintenance → Update firmware**.

Note: Do not power off the printer during the firmware installation.

Update using a USB stick

If the UltiMaker S8 is not connected to a network, you can update to the latest firmware via USB.
The firmware files are found on the UltiMaker website:

1. Navigate to ultimaker.com/firmware, and select your printer.
2. Download the firmware file and store it in the root directory of your USB stick.
3. Insert the USB stick into the USB port of the printer.
4. In the **Options** menu, go to **Maintenance → Update firmware** and select the new firmware.

Note: Wait for the firmware installation to complete. Never remove the USB stick or power off the printer during the installation.

5.2 Material handling and storage

Opened material spools must be stored properly when not in use. If material is stored incorrectly, its quality and usability may be affected.

The storage temperature ranges for UltiMaker materials are as follows:

- PLA, Tough PLA, PETG, PET CF, PPS CF, CPE, CPE+, PC, Nylon, Nylon CF Slide, PP, TPU 95A, and Breakaway: -20 °C to +30 °C
- ABS: +15 °C to +25 °C
- PVA: +10 °C to +30 °C

Tip: Normal office conditions / room temperatures are recommended.

Furthermore, a relative humidity of below 50% is recommended for PVA, Nylon, Nylon CF Slide, and TPU 95A. If these materials are exposed to higher humidity, the quality of the material can be affected.

Store all materials cool and dry, out of direct sunlight, and in a re-sealable bag with the silica gel desiccant provided. Store PVA immediately after use to minimize moisture uptake.

The Material Station can be used to store up to six spools of material. While the Material Station receives power and the door is closed, the relative humidity is kept below 35%. This means opened spools can be safely stored in the Material Station.

Tip: For detailed information about material handling and storage, refer to the material's SDS or visit support.ultimaker.com.

5.3 Preventive maintenance schedule

Only a few regular maintenance actions are required for optimal performance of the printer. The following preventive maintenance schedule is based on 1500 printing hours per year.

Tip: If the usage frequency is higher, we recommend performing more frequent maintenance on your printer to ensure optimal printing results.

Note: Maintenance actions shall only be performed by an adult. Carefully follow the provided instructions. Ensure the printer is unable to accept new print jobs while performing maintenance.

Every month (or when necessary)	Clean the printer	Keep the printer clean for optimal reliability and print results. This includes cleaning the flexible build plate, outside of the nozzles, inside of the Bowden tubes, and the build chamber.
	Lubricate the axles	Apply a small drop of oil to the gantry axles. Move the print head to distribute the oil equally. The Z shafts may only require relubrication once every three to six months.
Every 3 months (or 300-400 printing hours)	Check the short belts	The short belts attached to the X and Y motors should be tight to correctly transfer the movement to the print head. If the belt tension is too low, reposition the motor.
	Check the nozzle cover	The nozzle cover shields the print cores from cold airflow from the fans. Check both sides of the cover for tears or damage from heat. If it is damaged, replace the nozzle cover.
	Lubricate the lead screw	Clean the lead screw using a cloth or paper towel, then re-apply a small amount of grease. Move the build plate up and down to equally distribute the grease.
Every 6 months (or 700-800 printing hours)	Check for play on the axles	The X and Y axles in the frame should only rotate, not move back and forth. Firmly attempt to move the axles individually. If there is play, adjust the pulleys.
	Clean the feeders	Small filament particles can gather on the feeder's knurled wheel. Unload the materials and open the feeders to clean the inside with a small brush.
Every year (or 1500 printing hours)	Lubricate the feeder gear	Remove the feeder from the back panel to access the feeder gear. Clean it first, then apply a small amount of grease to the gear. Reinstall the feeder to continue printing.
	Check the Bowden tubes	Materials can slightly scratch the inside of the Bowden tubes and the ends of the tubes can get damaged by the tube coupling collets. Check them once a year and replace them when they are damaged.
	Replace the air filter	The Air Manager filter should be replaced after 1500 hours. Directly place the used filter in a (resealable) bag and close it.

Tip: For detailed instructions on how to perform each maintenance action, visit support.ultimaker.com or go to the UltiMaker Digital Factory.

5.4 Flexible build plate maintenance

Keep the surface of the flexible build plate clean for the best results. Clean the surface of the flexible build plate using a (microfiber) cloth and > 95% isopropyl alcohol (IPA). Always let the plate cool down before cleaning.

Caution: IPA (CAS nr. 67-63-0) is a hazardous, highly flammable substance. Keep away from heat, sparks, static discharge, and other potential ignition sources. Ensure good ventilation and avoid inhaling vapor. Read the SDS from your IPA supplier to learn more about the risks and safety precautions.

Important notes for cleaning:

- Do not use other cleaning agents, such as acetone, petrol, or thinner for cleaning. This will permanently damage the surface of the flexible build plate.
- Do not clean the flexible build plate with water. Thoroughly dry the plate with a (microfiber) cloth if it has come into contact with water.
- Do not use scouring pads or other tools that may scratch the surface of the flexible build plate.

Tip: For more information about the flexible build plate, including handling and maintenance, go to ultimaker.com/flexplate.

5.5 Print core maintenance

UltiMaker print cores should be cleaned periodically for optimal print results. Material can sometimes get stuck inside the nozzle and degrade. This can cause extrusion problems, or even completely block the print core. Some materials are more prone to degradation and blocking the nozzle, such as PVA and composite materials.

Tip: The recommended frequency for cleaning the print cores depends on the type of core and the materials used. For an overview per print core type, visit support.ultimaker.com.

The printer contains a guided process for cleaning the print core. This is also referred to as the 'hot and cold pull' process. During the cleaning steps, you will remove the Bowden tube, manually insert filament into the print core, and pull out any dirt and carbonized material from the top.

You will need UltiMaker cleaning filament (alternatively, you can use PLA), pliers, and wire cutters. In the **Options** menu, navigate to **Maintenance → Print head → Print core cleaning** to get started. Follow the instructions on the display.

Hot surface warning: Do not touch the nozzles during this process as they will become hot.

6. Troubleshooting

If you encounter issues with your UltiMaker S8, comprehensive online troubleshooting resources are available to assist you. If you need further help, contact our technical support team.

6.1 UltiMaker support

For assistance with an UltiMaker product, visit our knowledge base at support.ultimaker.com. It offers a wealth of information on UltiMaker hardware, software, materials, and more. Simply navigate to your product page for detailed guides or use the search bar to quickly find relevant articles by typing in your question or topic.

If you can't resolve the problem with our support articles, get in contact with our support team. Submit a support case and describe the situation. A support agent will help to quickly resolve the issue. Include as much relevant information about your product and issues as possible, such as:

- **Serial number.** This starts with BPP- and is found on the printer's back panel.
- **Log files.** In the **Options** menu, go to **Maintenance → Diagnostics → Save log files to USB**.
- **Error message(s).** If applicable, include the ER code or the message on the display.

6.2 Error messages

When the UltiMaker S8 detects that something is wrong, or when it reads values outside of the allowed range, an error will occur. The display will give a short description of the detected issue along with its unique error code.

Scan the QR code or navigate to the specified page to learn more and for troubleshooting tips.

Note: Not all messages that pop up on the display have an error code. Some are just warnings or notes, for example, for incompatible configurations.

6.3 General recommendations

To ensure optimal performance of the UltiMaker S8 and to prevent problems, note the following:

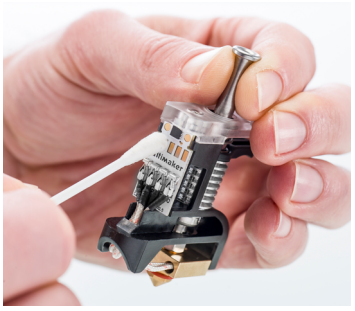
- **Maintenance.** Perform all preventive maintenance actions timely and correctly, following the provided schedule and instructions. See **section 5.3**.
- **Calibrations.** Ensure the UltiMaker S8 is correctly calibrated. Perform calibrations when prompted by the printer, or as described in the repair or maintenance instructions. See **section 4.9**.
- **Firmware.** New firmware versions will be released periodically. Keep your printer's firmware updated to ensure the UltiMaker S8 is equipped with the latest operation and safety features. See **section 5.1**.
- **Materials.** Store opened material spools well when not in use. Only use high-quality materials that can be printed within the limitations of the printer. Check the Marketplace for compatible profiles. See **sections 4.2 and 5.2**.
- **Software.** UltiMaker Cura has preset, tested profiles for all UltiMaker materials, and additional profiles for third-party materials can be downloaded from the Marketplace. Revert back to one of the standard profiles in case of print quality issues. See **section 4.4**.

6.4 Print core troubleshooting

Blocked print core

If you experience extrusion issues or the flow sensor pauses the print despite the spool not being empty, the print core may be blocked. Degraded material inside the nozzle can be removed using the hot and cold pull method. To start the assisted cleaning procedure, go to the Options menu and navigate to **Maintenance → Print head → Print core cleaning**. Follow the on-screen instructions to complete the process.

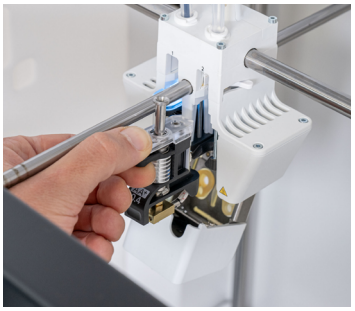
Print core not recognized



Print cores are typically recognized automatically. However, if the printer cannot read the chip information, dirty contact points on the PCB at the back of the print core may be the cause. Clean the contact points with a cotton swab and isopropyl alcohol (IPA).

Note: Do not touch the contact points on the back of the print core with your fingers.

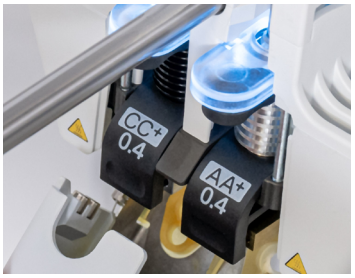
Print core and printer compatibility



The UltiMaker S8 is compatible with the AA+ and CC+ print cores, which are optimized for high-flow, high-speed printing. Additional print cores can be used on the S8 for specific applications: BB for PVA (water-soluble support material) and DD for Ultrafuse® Support Layer material.

Although the regular AA and CC cores can be used on the UltiMaker S8, there are no profiles to support this configuration in UltiMaker Cura.

Print core and material compatibility



If the printer displays an incompatibility warning, the selected print core is not supported for the loaded material. To proceed, replace either the print core or the material with a compatible option.

Note: The CC+ print core is optimized for composite materials. While it can be used with standard, non-abrasive materials, using PLA in a CC+ print core is not recommended, as it may cause severe under-extrusion.

6.5 Print quality issues

This section covers several potential print quality and print process problems, with some tips on how to resolve or prevent them.

Build plate adhesion

A poor adhesion of the print to the glass build plate can lead to warping, print shifts, or the print detaching completely. Take the following actions:

- **Material settings:** Ensure that the correct material temperatures (print core and build plate) and adhesion helpers (e.g. brim) were used.
- **Print settings:** Check the print settings in UltiMaker Cura and try one of the default profiles instead.
- **Clean the build plate:** Thoroughly clean the flexible build plate with IPA. Only apply glue if specifically recommended for this material.
- **Active leveling:** Ensure that the nozzle tips (and the build plate) are clean before starting the leveling process and the print.

Extrusion

If the filament is not extruding consistently, this can cause holes in the print, a rough outer surface, or flow sensor errors that pause the print. Extrusion problems can have different causes:

- **Material quality:** Dry the material if it has absorbed moisture. Always store the material properly, following the storage condition recommendations.
- **Friction in the extrusion path:** Apply proper and timely maintenance to keep the extrusion path clean and prevent excessive friction. This includes the feeders, the Bowden tubes, and the print cores.
- **Print settings:** The high-speed profiles are carefully tuned and tested. If extrusion issues appear when using custom settings, first try one of the default UltiMaker Cura profiles instead.
- **Configuration:** Only the AA+ and CC+ print cores are optimized for high-speed printing. The same productivity cannot be achieved with other print core types, despite the improved motion planner. Do not use PLA in the CC+ print core.

Accuracy

You expect your printed part to be as close as possible to the 3D model. Deviations may appear as incorrect dimensions, skewed angles, or vibrations on the surface. Try the following tips to improve the printer's accuracy:

- **Short belt tension:** If the belts connected to the X and Y motors are too loose, the movements of the print head will not be accurate. Tighten the belts by adjusting the motor position.
- **Print head alignment:** The shafts that go through the print head should be perpendicular to each other and the gantry axles. If they are skewed, adjust the position of the pulleys in the gantry.
- **Gantry maintenance:** Ensure that all the axles in the gantry system are clean and well-lubricated. Only use the supplied oil; never use the grease on the smooth axles in the gantry system.
- **Calibrations:** If the materials do not align well in dual-extrusion prints, perform the XY calibration to set the right offset. If there is a layer shift in a dual-extrusion print, perform the lift switch calibration.
- **Environment:** Ensure that the printer is used in the recommended ambient operating conditions. The printer must be placed on a flat, stable surface to prevent vibrations. Check if the rubber anti-slip feet are installed (if the printer is used without a Material Station). Do not place the UltiMaker S8 in direct sunlight as this may cause sagging in overhangs and other quality issues.

Tip: For additional help on print quality problems, error messages, or any other problem you might experience with your UltiMaker S8, go to support.ultimaker.com or submit a support case.

7. Limited Warranty

UltiMaker offers a limited warranty on new units of UltiMaker S series 3D printers and peripherals. Find all the terms and conditions here.

7.1 General

This limited warranty (“**Limited Warranty**”) applies to UltiMaker S series 3D printers and S series compatible add-ons, the Air Manager and Material Station (“**Product**”), in the country where the Product was purchased.

UltiMaker warrants to the first end user (“**End User**”) that the Product conforms to the Product specifications published in the user manual, and is free from defects in material, design, and workmanship for a period of twelve (12) months from the date the Product is delivered to the End User (the “**Warranty Period**”). Only the End User is eligible to submit a warranty claim.

For a warranty claim to be valid: (i) notification must be made during the Warranty Period, (ii) the claim must be substantiated with the original customer’s purchase invoice, and (iii) the serial number sticker must still be on the Product(s).

This Limited Warranty does not affect an End User’s statutory warranty or guarantee rights; it is granted in addition thereto. The End User may claim the rights to which they are entitled under the Limited Warranty without prejudice to their rights or claims in accordance with the law.

7.2 Conditions

The Limited Warranty applies to a Product under the following conditions:

- The Product was sold, delivered, and assembled by UltiMaker or a recognized UltiMaker reseller (collectively “**Authorized Party**” or “**Authorized Parties**”). See ultimaker.com/resellers for a list of authorized resellers of UltiMaker products.
- The Product was newly manufactured on the date of purchase and not sold as used, refurbished, or manufacturing seconds.
- UltiMaker’s latest software was installed and used in and with the Product.
- UltiMaker installation and maintenance instructions as described in the manual for the Product have been observed.

If a part of the Product is repaired or replaced during the Warranty Period, the remaining Warranty Period for the Product applies. However, repair and/or replacement will not extend the Warranty Period for the part or Product.

7.3 Claim handling

Any notification on the basis of this Limited Warranty must be made to the Authorized Party from whom the Product was originally purchased, even if this is not in the customer’s present country of residence.

UltiMaker or its authorized reseller will assess warranty claims to determine their validity. If the claim is justified, UltiMaker or the reseller shall rectify the defects by repairing or replacing the non-conforming or damaged part(s) of the Product in a commercially reasonable time. If repair is not feasible, the reseller will replace the Product with an identical one, or if unavailable, with a similar Product of equal value, or offer a suitable refund.

Only ship the Product in its original packaging if it must be returned for warranty purposes. It is advised to retain all packaging materials. If the original packaging is not available anymore, replacement packaging can be purchased from a recognized UltiMaker reseller.

Please note that the Limited Warranty may not cover expenses associated with shipping Product(s) for inspection and/or repair, on-site visits for inspection and/or repair, or shipping replacement or repaired Product(s) to the End User.

7.4 Exclusions

This Limited Warranty does not apply to and therefore does not cover:

- Any defect or damage caused by inappropriate, incorrect, or improper use, installation, maintenance, operation, and cleaning, or normal wear and tear. For correct use, reference is made to the manual of the Product.
- Consumables, such as the print cores (when the issue is caused by user error or regular wear) and the Bowden tubes.
- Damage caused by third-party software, materials, or add-ons*.
- Any other event, act, default, or omission outside UltiMaker's control.

This Limited Warranty does not extend to products purchased from unauthorized resellers.

* Users are permitted to use third-party materials and accessories without voiding the Limited Warranty. However, if any damage to the product arises from the use of third-party elements, the affected part(s) will be excluded from Limited Warranty coverage.

7.5 Limitations and disclaimers

THIS LIMITED WARRANTY IS THE END USER'S SOLE AND EXCLUSIVE REMEDY AGAINST ULTIMAKER WHERE PERMITTED BY LAW. EXCEPT FOR THIS LIMITED WARRANTY, ULTIMAKER MAKES NO OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED BY LAW, COURSE OF DEALING, COURSE OF PERFORMANCE, USAGE OF TRADE OR OTHERWISE, WITH REGARD TO THE PERFORMANCE OF ANY PRODUCT. WITHOUT LIMITATION OF THE FOREGOING, ALL IMPLIED WARRANTIES, INCLUDING WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED. ULTIMAKER WAIVES ALL LIABILITY FOR ANY INDIRECT, INCIDENTAL, COLLATERAL, EXEMPLARY, PUNITIVE, SPECIAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF USE OR LOSS OF PROFITS, EVEN IF ULTIMAKER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH CLAIMS OR DAMAGES. ULTIMAKER'S LIABILITY IS LIMITED TO THE PURCHASE VALUE OF THE PRODUCT.

7.6 Applicable law and competent court

This Limited Warranty is exclusively governed by Dutch law. Any dispute arising out of or in connection with this Limited Warranty will be exclusively submitted to the jurisdiction of the court (Rechtbank) of Midden-Nederland, location Utrecht.

Contact and links

Do you have a question about the UltiMaker S8 or compatible products? Find a list of links below with more information or submit a support case.

Support

support.ultimaker.com

Visit our knowledgebase for information about all UltiMaker products. You can also contact our support team by submitting a case.

Resellers

ultimaker.com/resellers

Find a reseller near you to buy an UltiMaker product or receive support in your language.

Compliance and regulatory information

ultimaker.com/compliance

Find and download important compliance information about UltiMaker hardware, software, and materials.

UltiMaker.com

ultimaker.com/contact-us

Visit the UltiMaker website for general enquiries or sales information, find our business information, or fill out the contact form.