

makeblock

Makeblock Co., Ltd.

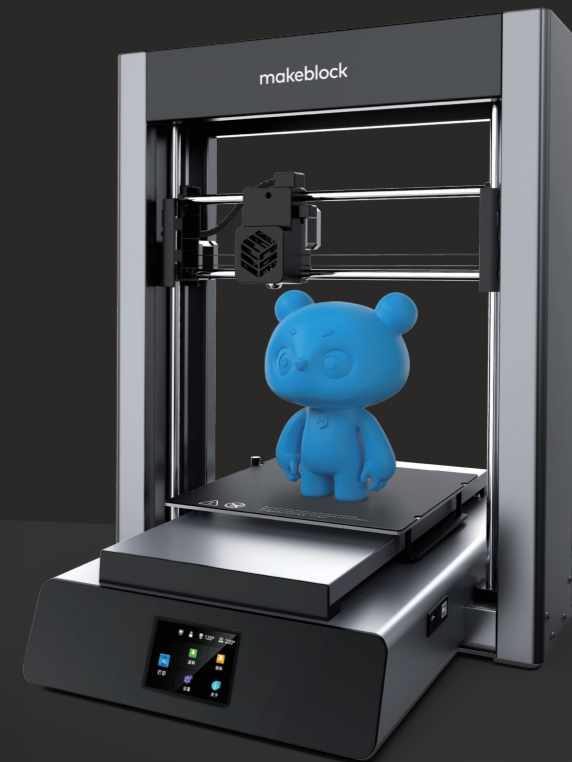
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makeblock

mCreate

User Manual



Disclaimer

Welcome! Thank you for choosing Makeblock!

Before installing and operating mCreate for the first time, read all the accompanying written materials carefully for a better experience with it. Makeblock Co., Ltd. (Shenzhen) will not be liable for any loss caused by failure to operate mCreate as instructed and required in this Manual or improper operation due to misunderstanding, except for such loss due to improper installation or operation by Makeblock professional maintenance personnel.

Makeblock Co., Ltd. (Shenzhen) has taken much care to ensure the accuracy of this Manual, but cannot guarantee it is completely free from errors or omissions.

Makeblock Co., Ltd. (Shenzhen) is committed to continuously improving the products and services, and therefore reserves the right to change any product or software program described in the Manual and the contents of the Manual at any time without prior notice.

This Manual is intended to help you use the product properly and does not include any description of the product hardware and software configuration. For product configuration, refer to the relevant contract (if any) and packing list, or consult your distributor. Pictures in the Manual are for reference only and the actual product may vary.

Protected by copyright laws and regulations, the Manual shall not be reproduced or transcribed in any way, or be transmitted on any wired or wireless network in any manner, or be translated into any language without the prior written authorization of Makeblock Co., Ltd. (Shenzhen).

Makeblock Services

Please contact us if you find the actual product is inconsistent with the Manual during operation, or if you want to get the latest information, or have any questions or suggestions.

Technical support: support@makeblock.com

Note: The above information may be subject to change due to objective factors. Refer to the latest release of Makeblock. If you use the Internet or phone call to get our support, additional fees may apply.

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Safety First (Important)

The nozzle and the build plate of mCreate have warning labels on them. These labels indicate any potential hazard that may cause injury to you or others, or damage to the product or property.



DO NOT touch any part inside the mCreate, including but not limited to the nozzle and build plate, when the printer is in operation.



Hot parts! Burned fingers when handling the parts. Wait one-half hour after switching off before handling parts.



Keep your hands away from the build plate until mCreate cools down.

1. General safety

Read and get familiar with all safety protocols and procedures before operating mCreate. You shall strictly follow all safety precautions and ensure that the mCreate is properly assembled and in working order.

[Please observe the following operating principles:](#)

- Be sure to check mCreate for damage every time before use. DO NOT operate any damaged or defective mCreate in any way.
- Please keep the workspace clean, flat and stable. Any shake during operation may lead to a lower printing accuracy or even layer shifting.
- Operate mCreate in a well-ventilated area.
- Assemble mCreate as instructed in this Manual. DO NOT disassemble or change the printer's structure in any other way; and DO NOT modify or decompile the operating system of mCreate on your own.
- DO NOT leave mCreate unattended for a long time when the printer is in operation.
- Children under 12 years old shall use the printer under adult supervision.

2. Electrical safety

[Read the following warnings and suggestions carefully:](#)

- ONLY use mCreate with the power cables supplied by Makeblock!
- Make sure mCreate is grounded when you use it. Avoid placing the printer in a humid environment. Improper grounding or operating the mCreate in a humid environment will increase the risk of currents leakage.
- DO NOT use mCreate during a thunderstorm.
- Turn off and unplug mCreate when it is not intended to be used for a period of time.

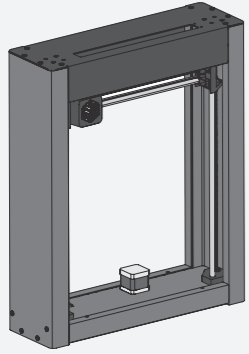
3. Operational safety

- Keep your hands away from any moving parts when mCreate is in operation.
- When using mCreate, DO NOT wear a scarf, gloves, jewelry or other things that are easily sucked into the printer.
- Always turn off and unplug mCreate and make sure it cools down before you change any component or part.

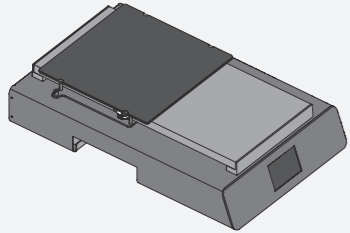
4. Warnings

- DO NOT touch the nozzle or build plate when mCreate is printing.
- DO NOT touch the nozzle or build plate immediately after a 3D print job is done because they may still be hot. View the current temperature of the nozzle and build plate shown on the touch screen. Always let them cool down completely before doing anything to them.
- Use the 3D printing materials recommended by Makeblock. Improper 3D printing materials may clog the nozzle.
- Unload the filament and turn off mCreate before removing the 3D printing nozzle. Be careful when removing the nozzle because it may still be hot.
- When mCreate is laser engraving a project, wear the goggles to avoid eye damage that may be caused by looking directly at the laser dot.
- mCreate may generate a small amount of smoke or smell during laser engraving. We recommend you operate the printer in a well-ventilated area.

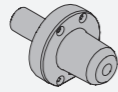
List of Items



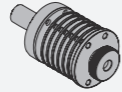
Frame



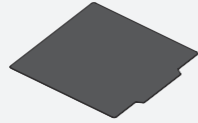
Base



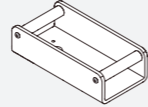
Nozzle



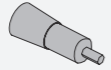
Laser Head (Optional)



Build Plate



Filament Support



Steel Wire Brush



USB Flash Drive



Power Cable



Data Cable



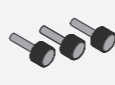
Needle



Hex Key



Screw ①



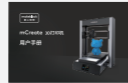
Screw ②



Goggles(Optional)



PLA Filament

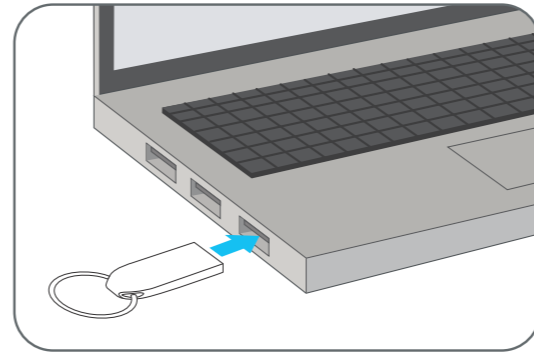


User Manual

Assembly Guide

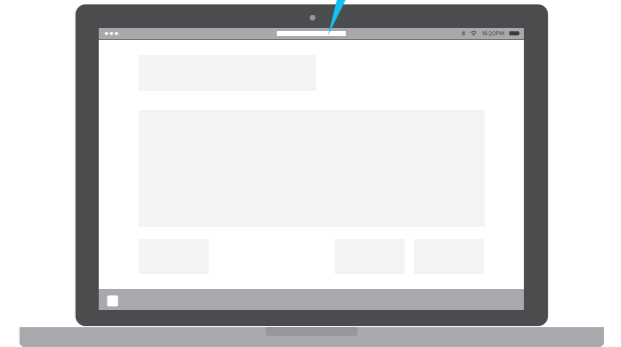
The USB flash drive included in the package has assembly videos and other tutorials. Use the USB flash drive or go to the website to see how to assemble your mCreate!

Option 1 Open the USB flash drive.

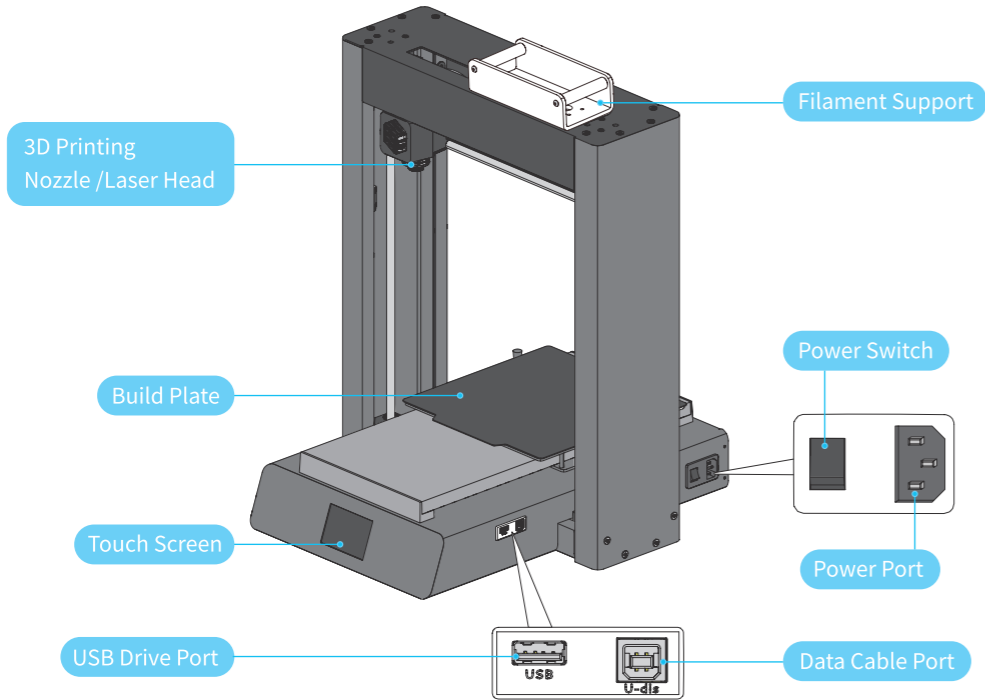


Option 2 Go to the website.

<https://www.makeblock.com/mcreate-video>



Components of mCreate



Download Software

Download and install the software below before you use the 3D printing or laser engraving feature to make projects:

3D printing: Ultimaker Cura and Makeblock plugin

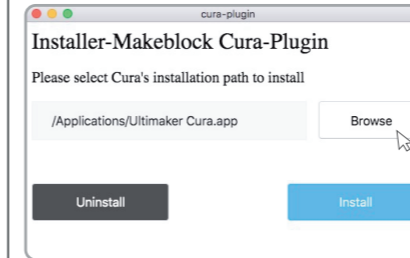
Laser engraving: Laserbox for mCreate

The USB flash drive includes installation packages that are necessary for 3D printing and laser engraving. Open the USB flash drive or go the website below to download the software:

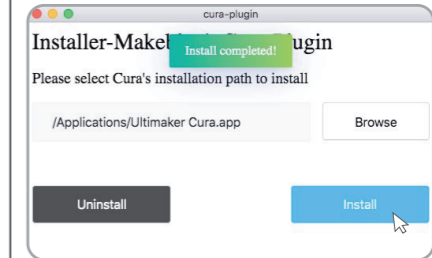
<https://www.makeblock.com/mcreate>

How to install Makeblock Cura plugin:

- 1 Double-click the downloaded plugin installer.
- 2 Click **Browse** in the prompt window to select an installation path.

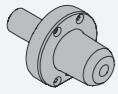


- 3 Click **Install**. When installation is done, a "Install completed!" prompt will pop up.

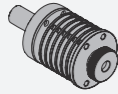


Auto-recognition of Operating Mode

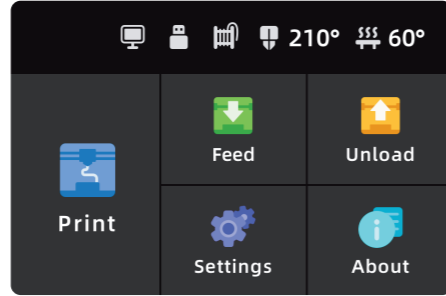
mCreate provides two operating modes: 3D printing and laser engraving. Once a 3D printing nozzle or laser head is installed, the printer will automatically recognize which has been installed and display an operating interface accordingly.



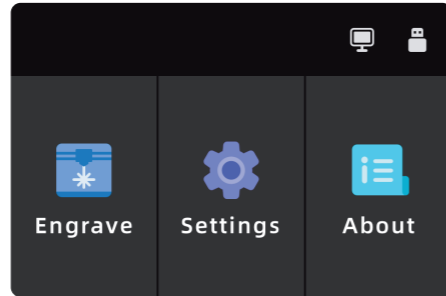
Nozzle



Laser Head



3D Printing Home Screen



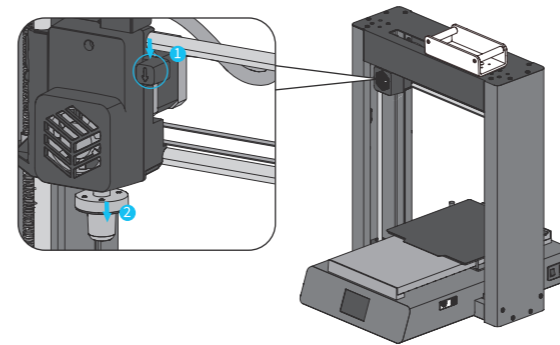
Laser Engraving Home Screen

How to replace the tool head?

Note: Unload the filament before removing the 3D printing nozzle. To see how to unload the filament, refer to the "More about 3D Printing" chapter.

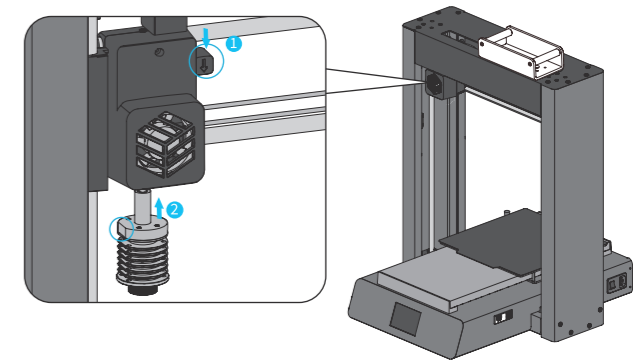
1 | Turn off mCreate.

2 | Remove the tool head.



- 1 Press down.
- 2 Take the tool head out.

3 | Install another tool head.



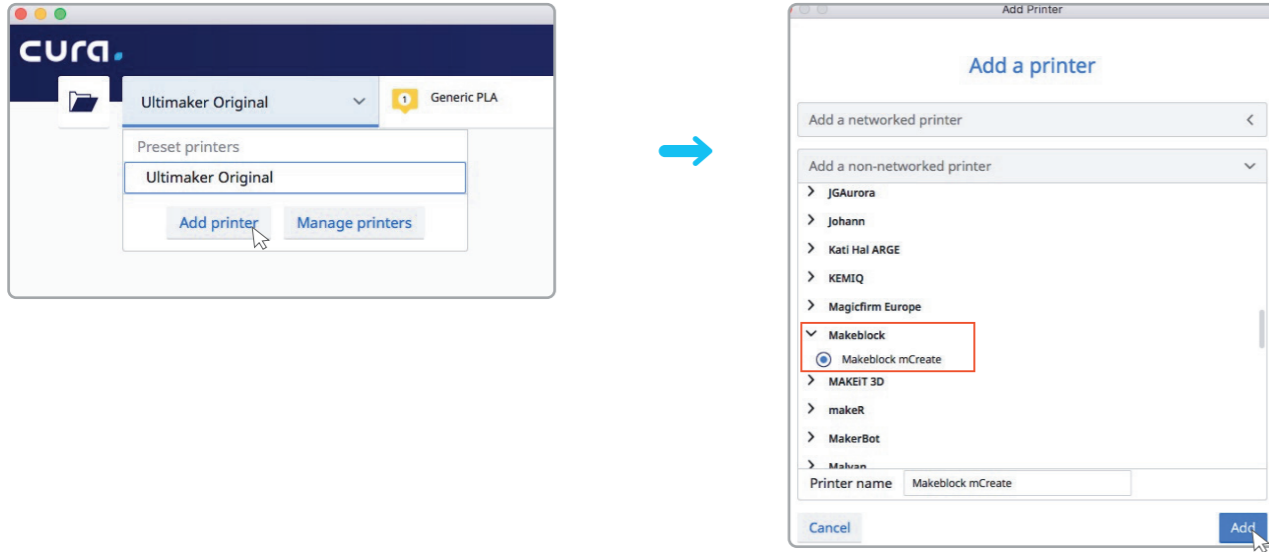
- 1 Press down and hold.
- 2 When installing a tool head, make sure its flat side faces to the left.

3D Printing – Quick Start Guide

Note: Make sure Ultimaker Cura software and Makeblock Cura plugin are installed on your computer before starting a 3D printing task.

Step 1 Process a 3D file

1 Run the Cura Software, click **Add printer**, select "Makeblock mCreate", then click **Add**.

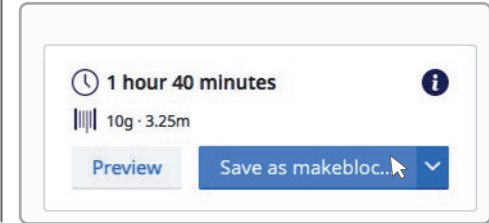


2 Drag a 3D file into Cura.

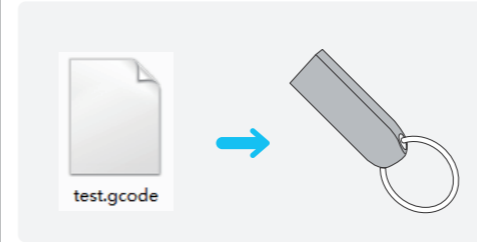
3 Click **Slice** at the bottom right corner to start slicing.



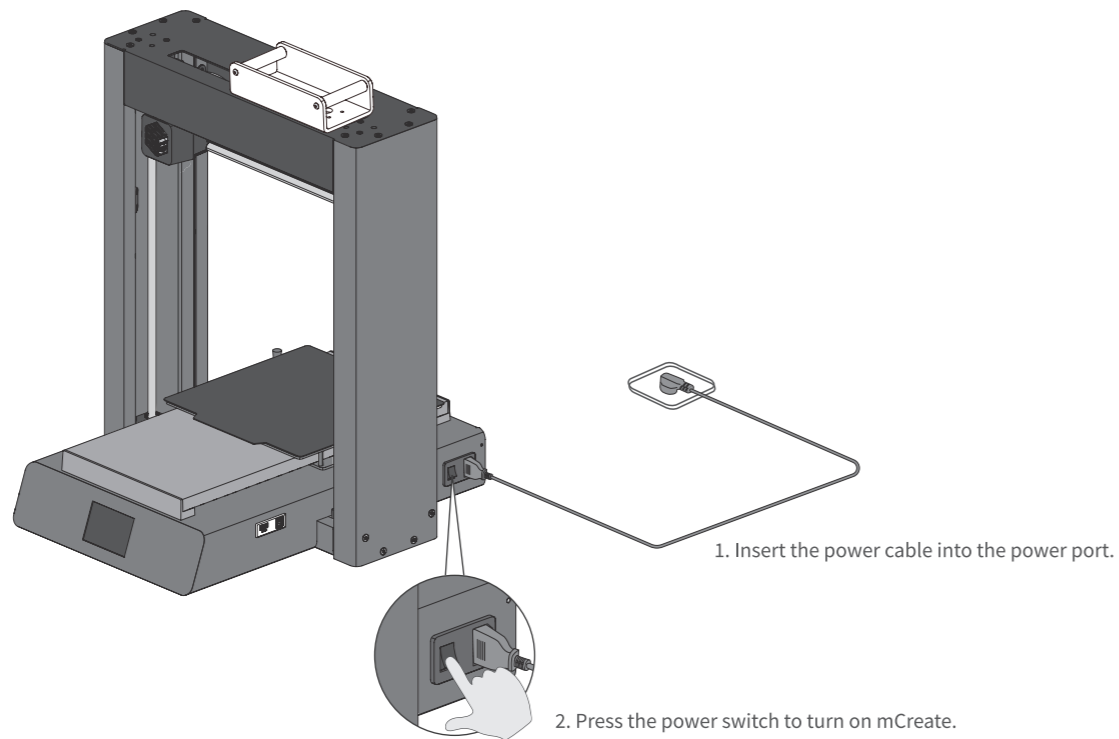
4 You can preview the printing result after slicing is done. Then click **Save as makeblock format** to save your file.



5 Copy the saved file to the USB flash drive.

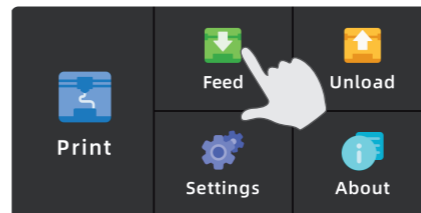


Step 2 Plug in and power on

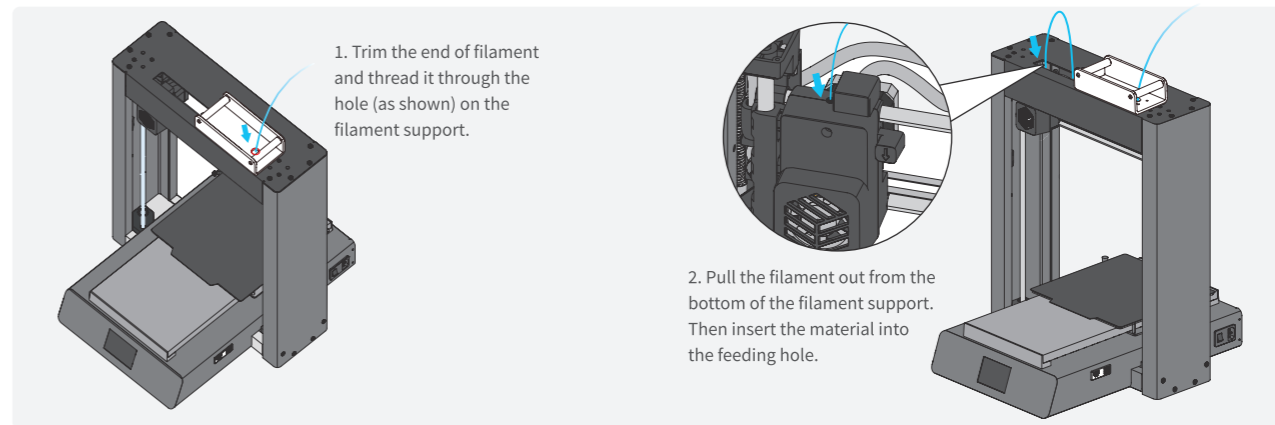


Step 3 Load the filament

1 Tap **Feed** on the touch screen. Then the nozzle will start heating.

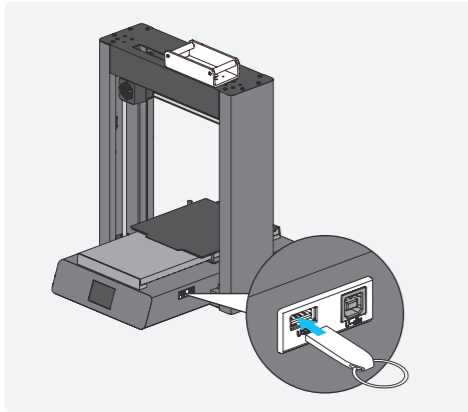


2 When the nozzle is fully heated, the touch screen will prompt you to load the filament. Trim the end of the filament before inserting it through the hole on the Filament Support. Tap **Complete** when you see the filament coming out of the nozzle to complete the feeding procedure.

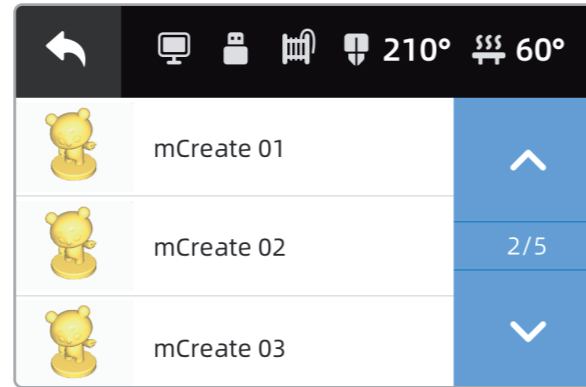


Step 4 Start printing

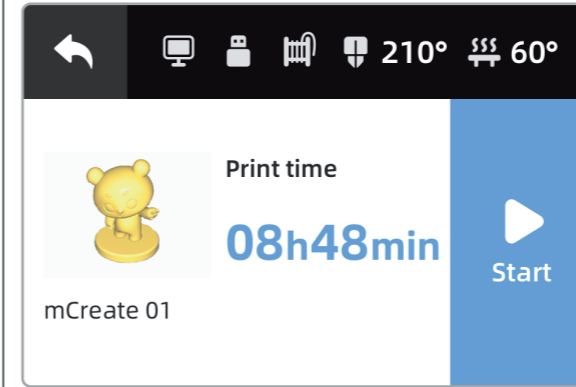
- 1 Insert the USB flash drive into the USB Drive Port of mCreate.



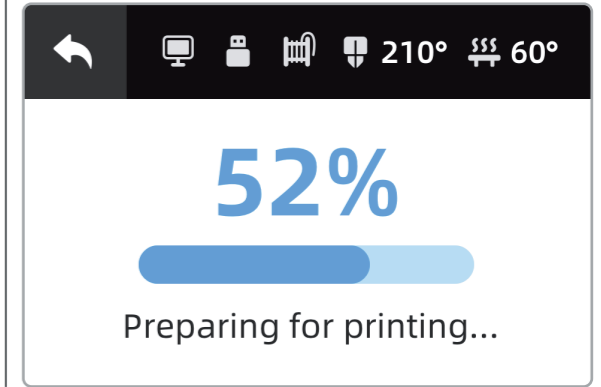
- 2 Select the file. Tap **Print** on the 3D printing home screen, and select the file you want to print. Tap the **▼** or **▲** icons on the right-hand side to scroll the file list.



- 3 Start printing. When you select a file, its file name, model preview and estimated print time will be displayed on the touch screen. Tap **Start** to start printing.




- 4 Preparing for printing. Before printing, mCreate has to be prepared by:
①Resetting the nozzle; ②Heating the nozzle and the build plate to the target temperature. You can view the current temperature in the status bar on the touch screen.

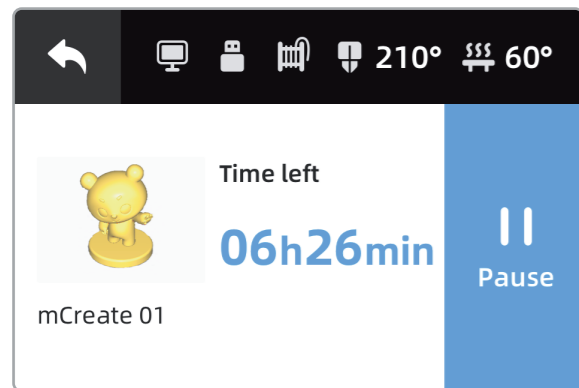


5

During printing. You can pause or cancel the task during the printing process:

Pause – Tap **Pause** to stop the print task. The nozzle and build plate will remain hot so that you can resume the print task any time.

Cancel – Tap  to cancel the current task.

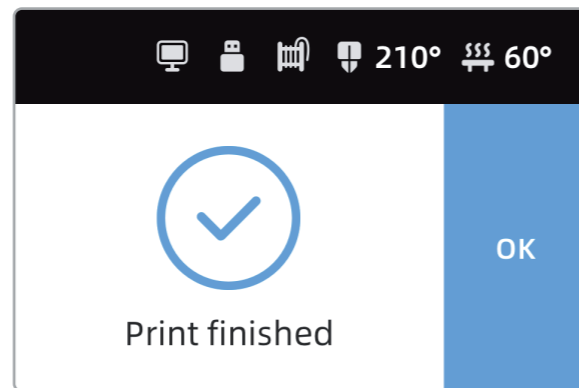


6

Print finished.

Before taking out your print, check the temperature of the build plate. When the build plate cools down, take out both the print and the build plate. Gently twist the build plate to get your print off it.

Note: Clean the build plate before next print.



More about 3D Printing

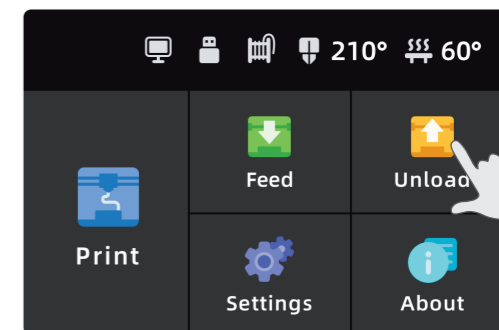
Display status

The status bar on the top of touch screen displays the current state of mCreate.



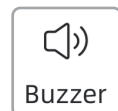
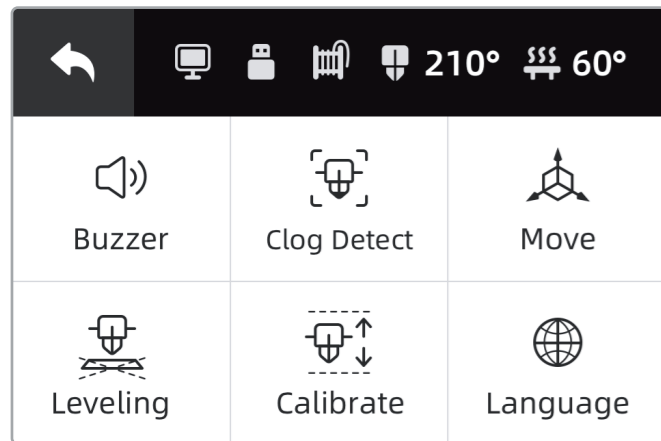
- 1 Already connected to computer
- 2 USB flash drive already inserted
- 3 Filament already inserted
- 4 Nozzle temperature
- 5 Build plate temperature

Unload filament

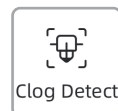


- 1 Tap **Unload** on the touch screen. Wait for the nozzle to finish heating up and mCreate will automatically unload the filament.
- 2 When the touch screen displays **Unload Finished**, you can pull the filament out of the feeder to finish unloading.

Settings



mCreate comes with a buzzer that can give a notification sound when a task is completed. Tap **Buzzer** to turn on/off the buzzer.



mCreate can automatically detect clogging. When mCreate detects the nozzle being clogged or filament entangled, it will automatically stop working to prevent possible damage to the machine. Tap **Clog Detect** to turn on/off the feature.



Tap **Move** to enter the nozzle control interface. On this interface, you can:
(1) Change the position of nozzle on the XYZ axes. (2) Reset the position of nozzle.

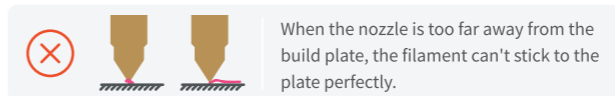
Tip: When movement disorder happens during the process of printing (for example, nozzle fails to go down on the z axle), you can use the **Move** feature to test whether motors on each axle are working well.



If the filament is unevenly distributed on the build plate when mCreate is printing the first layer, it means you need to level your mCreate. To ensure the best levelling accuracy, make sure the nozzle has no filament inside. You can refer to the **Unload** section in this chapter to unload the filament.



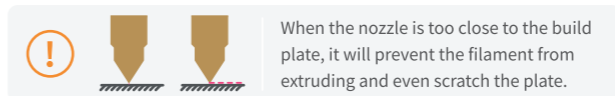
Tap **Calibrate** to calibrate the position of nozzle on the z axle. When printing the first layer: If the nozzle is too far away from the build plate, you should lower the calibration value; If the nozzle is too close to the build plate, you should increase the calibration value.



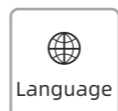
When the nozzle is too far away from the build plate, the filament can't stick to the plate perfectly.



The filament is distributed evenly and it can perfectly stick to the build plate.



When the nozzle is too close to the build plate, it will prevent the filament from extruding and even scratch the plate.



Change the language of the interface of touch screen.

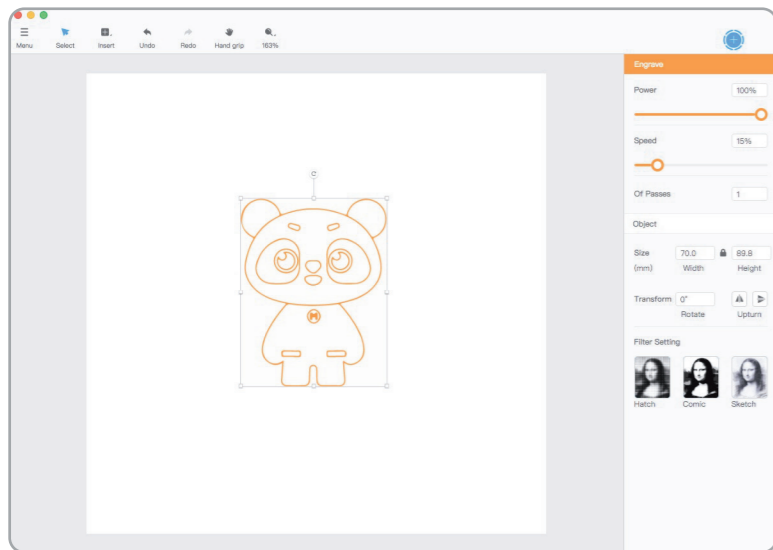
Laser Engraving – Quick Start Guide

Note: Make sure you download Laserbox for mCreate before you laser-engrave your project.

Step 1 Edit the file you want to engrave

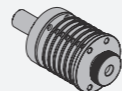
1 | Run Laserbox for mCreate, go to "Menu ->Import" or directly drag a picture to import the file.

2 | On the right-hand tool bar, you can define the parameters or select a filter effect.



3 | Go to "Menu->Export", save your file with the suffix ".lbx" and copy it to the USB flash drive.

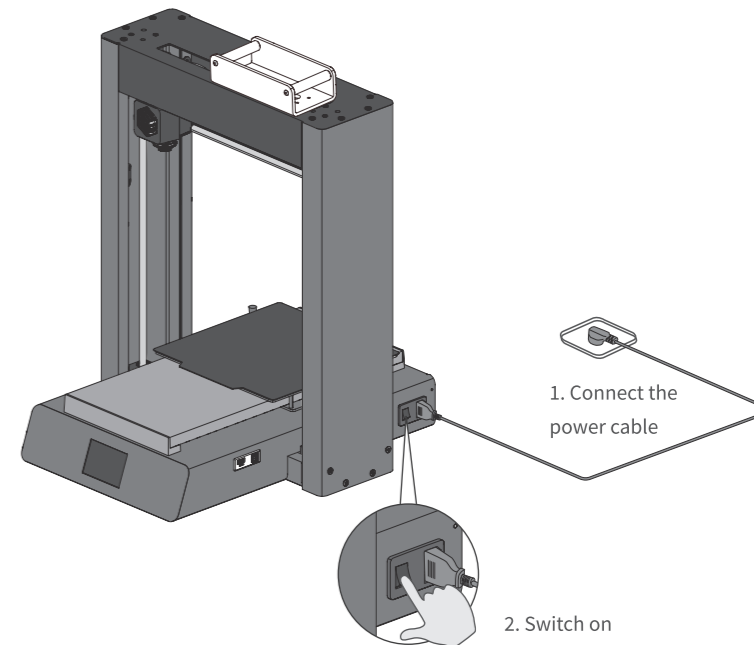
Step 2 Install the laser head



Laser head

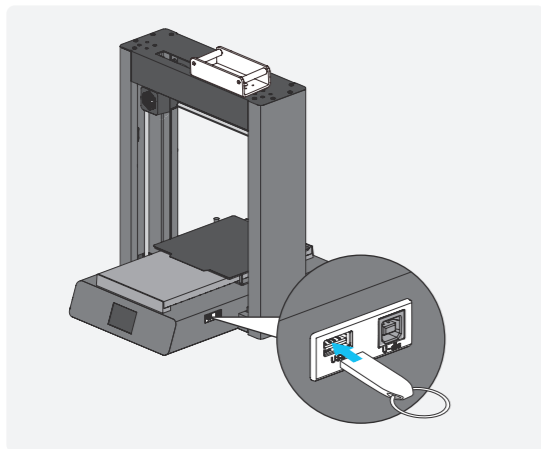
Make sure the nozzle has no filament inside. Then replace the nozzle with the laser head (refer to **Auto-recognition of Operating Mode** chapter). Be careful when removing the nozzle because it may still be hot.

Step 3 Connect the power cable and turn on power

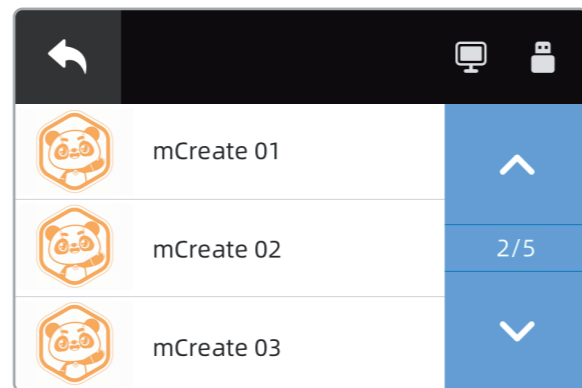


Step 4 Start engraving

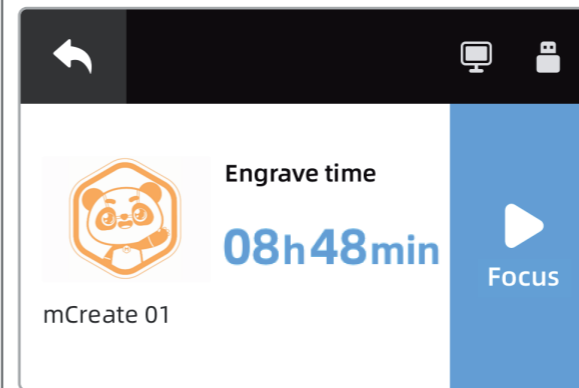
- 1 Insert the USB flash drive into the USB drive port.



- 2 Select the file. On the operation interface, tap **Engrave** to select the file you want to engrave. Use **▼** or **▲** to scroll the file list.

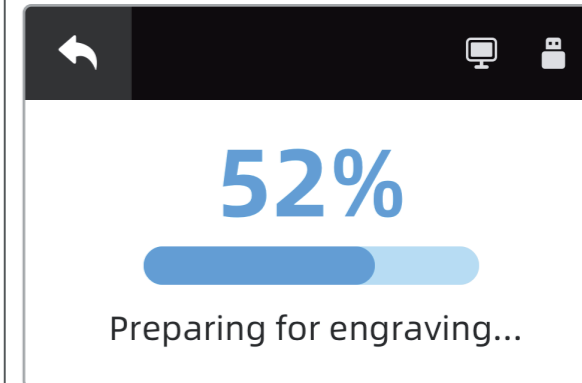


- 3 Focusing. After the file is selected, the interface will display many information, including file name, file to be engraved and estimated engrave time. Before engraving, you should put the item you want to engrave on the central area of the build plate and tap **Focus**.



- 4 Preparing for engraving. Before engraving, mCreate has to be prepared by:

- ① Resetting the laser head ② Automatically focusing



Tip: mCreate can automatically finish the focusing procedure. Before engraving, the laser head will move to the center of the build plate to start focusing (measure the height of the object to be engraved and automatically adjust the focal length until it arrives at the position as defined). So make sure you put the object on the central area of the plate before engraving.

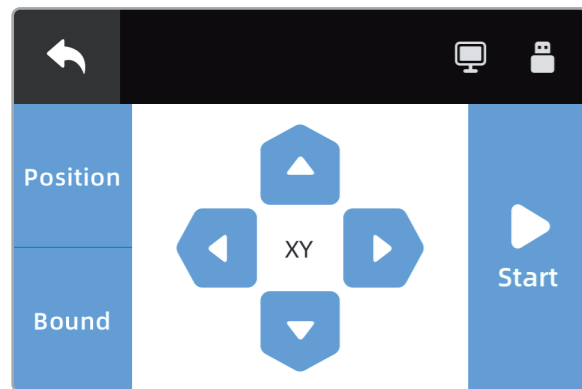
5

Position and Bound. With these two features, you can define where to engrave on the item:

Arrow keys – Move the laser head;

Position – Locate the laser head and use the current position as the initial point where bounding begins;


Bound – Indicate the area to be engraved for the current file. After defining the position and area where you want to engrave, tap **Start** to begin the engraving task.

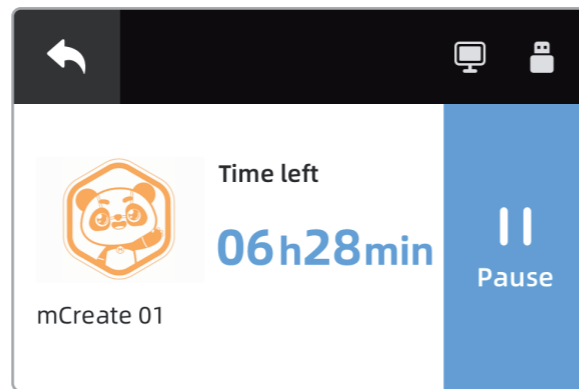


6

Engraving... You can pause or cancel the task during the engraving process:

Pause – If you tap **Pause**, the laser head will stop moving. Of course, you can resume the task anytime;

Cancel – Tap  to cancel the current task.



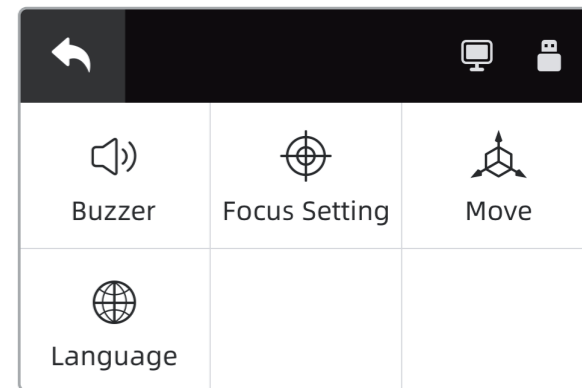
More about Laser Engraving

Set up focal length

The interface for the engraving mode is slightly different from the 3D printing mode because it has a **Focus Setting** option. By setting up the focal length, you can let mCreate automatically focus as defined.

[How to do it:](#)

- 1 Use a piece of white paper to cover the whole working area of mCreate.
- 2 Tap **Focus Setting**, and wait for mCreate to finish engraving. The interface will display 5 numbers.
- 3 Choose the number indicating the best and thinnest engraving outcome on the paper to complete the auto focus procedure.



Factory Reset and Update

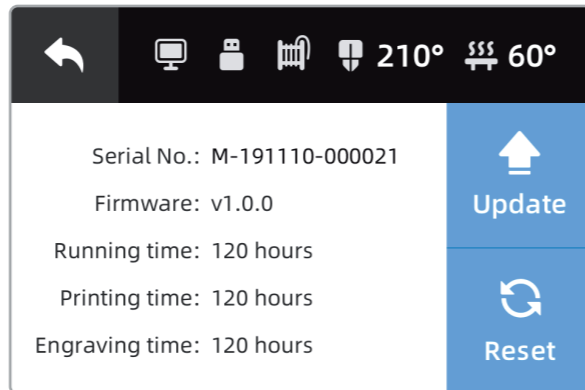
In the operation interface, tap **About** to see information, such as serial number, firmware version, running time and more. Also, you can restore your mCreate to the factory settings or update it here. How to do it:

Factory reset

Tap **Reset** to restore all data (leveling, calibration and focusing), buzzer and clog detect settings to factory settings.

Update

1. Go to Makeblock's official website or ask our after-sale specialists to get the latest firmware file.
2. Copy the file to the root directory of the USB flash drive. Do not change the file name.
3. Insert the USB flash drive to mCreate. Tap **Update**. Wait for mCreate to update its firmware.



Note

1. After the update is complete, mCreate will delete the firmware file in the USB flash drive. If necessary, you can have a backup of it.
2. If the USB flash drive is inserted to mCreate when it's powered off, then update will automatically begin when the printer is powered on.

Specifications

3D Printing	Technology	Fused Deposition Modeling (FDM)
	Build dimensions	220 × 220 × 295 mm
	Layer resolution	50-300 μm
	Printer slicing software	Cura
	Import file types	STL / OBJ / X3D / 3MF / JPG / PNG / GIF/ BMP ...
	Export file types	GCODE
	Supported material types	PLA / TPU / PP / PVA ...
	Material diameter	1.75mm
	Nozzle temperature	260°C (highest)
Build plate temperature	80°C (highest)	
Laser Engraving	Engraving area	225 × 225 mm
	Output power	500 mW
	Laser engraving software	Laserbox for mCreate
	Supported image types	DXF / SVG / JPG / PNG / BMP / CR2 ...
	Supported material types	cardboard/woodboard/bamboo/rubber/leather/fabric/acrylic/ anodized metal/metal with lacquer finish/plastic...

Unclog the Nozzle

If mCreate gives a prompt indicating nozzle being clogged, follow the procedure below:

- 1 Check the filament to see whether it prevents feeding. Make sure no particle is blocking the nozzle to prevent feeding. Then tap Feed to feed the filament to see whether it comes out of the nozzle;
- 2 If filament fails to come out of the nozzle, then observe the nozzle temperature on the touchscreen. Wait for the temperature to cool down to the room temperature and turn off the printer. Then remove the nozzle;
- 3 Situation A: If you fail to remove the nozzle or the filament is pulled apart, contact our after-sale service for help;
- 4 Situation B: The nozzle is removed and the filament is pulled out, you should:
 - a. Cut off the filament and trim the end that is connected to the nozzle to make it as short as possible;
 - b. Pull the filament out of the feeder hole. Install the nozzle on the printer. Turn on the printer and tap Unload;
 - c. When the touch screen displays Unload Finished, power off the printer and use oven gloves or towels to remove the nozzle. DO NOT touch the metal part of the nozzle;
 - d. Insert the needle into the feeding end of the nozzle to push the clogged filament out;
 - e. Observe the length of the section of the needle inserted into the nozzle. If it's as long as the nozzle, then it means the nozzle is unclogged, and you can start feeding; if it's much shorter than the nozzle, contact our after-sale service for a new nozzle.

Product Warranty Information

Warranty coverage	Part name	Warranty period
Main parts	Metal structural parts, PCB parts, motor, touch screen, and other parts except consumable parts and filaments.	12 months
Consumable parts	Nozzle, laser head, guide rail, conveyer belt and more.	3 months
Consumable materials	PLA filament, power cable, data cable, build plate, USB flash drive, hex key, steel wire brush, needle, filament support, user manual, package and more.	No warranty period (It can be replaced free of charge in case of factory damage)

Notes and instructions: The "warranty period" above starts from the date you receive the product, with the invoice date as a reference. Please keep your purchase invoice on record. In the absence of a valid invoice, the warranty period will be counted from the ex-factory date.

Beyond warranty coverage

- The warranty has expired for the products or parts;
- Failure or damage caused by incorrect or improper use, maintenance or storage, such as: improper handling; use for purposes not as properly intended; improper insertion and removal of external equipment; drop or improper external force extrusion; contact or exposure to inappropriate temperature, solvent, acid, alkali, water immersion and other environments; and breaking & cracking, rusting and damage of products or parts (such as casing, components, and circuits etc.) due to insect, rat bites, or any foreign materials;
- Failure or damage due to installation, repair, alteration, addition or removal by any agency or personnel not authorized by Makeblock;
- The original identification information of products or parts is modified, altered or removed;
- No valid purchase invoice or warranty card, except as otherwise provided herein;
- Failure or damage caused by the use of software that is not legally authorized, non-standard or non-publicly released;

- Failure or damage due to virus infection, hacker attack or other malicious infringements;
- Other failure or damage due to non-quality factors of the products;
- Failure or damage due to force majeure or accident;
- Damage occurred on the product's way back to Makeblock for repair;
- Including but not limited to other non-design, technical, manufacture, quality issue;
- Products can run without interruption or error.

If you run into issues above, please contact relevant parties for solutions, for which Makeblock is not held reliable.

Special Notes

- The packing of the product, free gifts, consumable parts, and accessories do not apply to this Warranty. If you find any damage upon receiving, Makeblock will provide you free replacement. Please check timely the product after the receipt thereof. Makeblock will charge certain fees if you would add packaging, accessories or require refurbishment service.
- None of any warranty service made by an authorized distributor is covered by this warranty policy, and Makeblock shall not be held liable. In order to receive any benefits from the distributor's warranty and/or other policies, please keep any documents obtained during the purchase.
- In terms of discontinued products or the products which are going to be discontinued, Makeblock will publish relevant announcement and inform authorized distributors to notify customers of the deadline of the Warranty Period. Makeblock and its authorized distributors will terminate the warranty service after the deadline of the Warranty Period.
- The Limited Warranty does not apply to products that were resold by unauthorized resellers.
- To the extent other warranty agreements are made during the purchase, those contracts confirmed by Makeblock shall prevail.

Makeblock reserves the right, at its sole discretion, to interpret and amend this warranty policy at any time.



DECLARATION OF CONFORMITY

Declaration of conformity Hereby, Makeblock Co., Ltd., declares that this product is in compliance with the essential requirements and other relevant provisions of Directive RED 2014/53/EU and the RoHS directive 2011/65/EU