SIGMA PRO 500Z

Quick Start Guide

SIGMA PRO 500Z

# SUMMARY

Presentation and content

Presentation

We will begin by unpacking the printer and correctly installing its components. Next, we'll cover getting started, including the basic functions of the printer and how to prepare it for its first print.
It's important to follow these steps in order when you turn on the printer.

Content

WITH THE PRINTER YOU RECEIVED:

1. Power cord
2. 6 Magnetic arms
3. removable tray (buildgrip - PEI)
4. Spatula
5. SD/USB adapter + SD card
6. 2.5mm allen screwdriver
7. Cutting pliers
8. Belt tensioning accessory
9. Cleaning wipe
10. A 0.4mm brass nozzle head for pla
11. A 0.4mm steel nozzle head for abrasive filaments
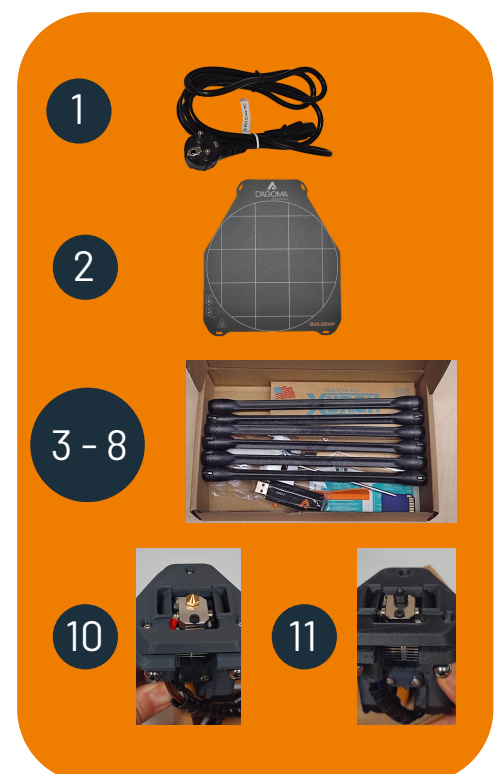
SIGMA PRO 500Z

Unpacking

Carefully remove the SIGMA PRO 500Z printer, as it weighs 16 kilograms. Consider seeking assistance from a colleague if needed.

Place the printer on a safe, flat, and stable surface. Remove the upper and lower foam, accessory boxes, heads, and the power socket. Finally, remove the protective films from the casing and the front glass.

Preparation

Connect the power supply connector, ensuring it aligns with the key slot.
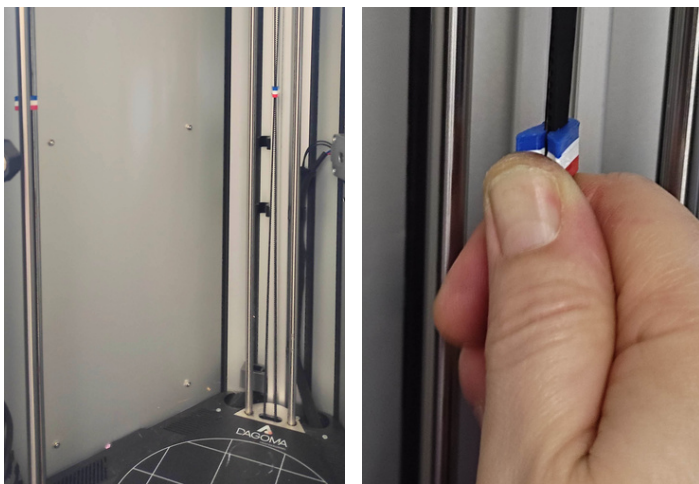It can only be inserted in one direction.
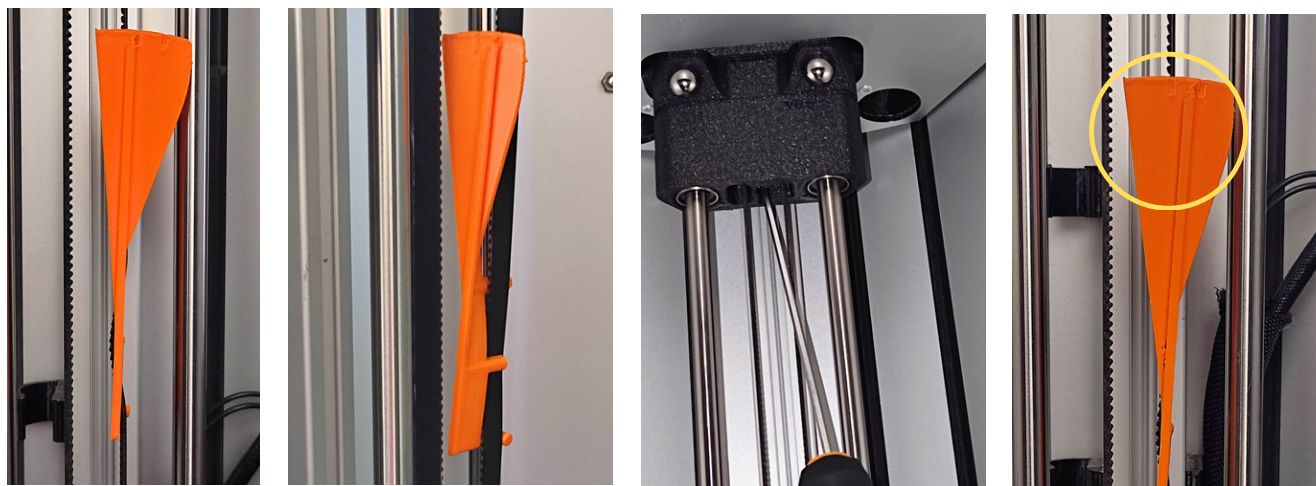
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Preparation

Remove the 3 belt block clips.

Check the belt tension using the tensioner.

If the rod is not positioned between the two lines, use the 2.5mm Allen screwdriver to adjust the tension.
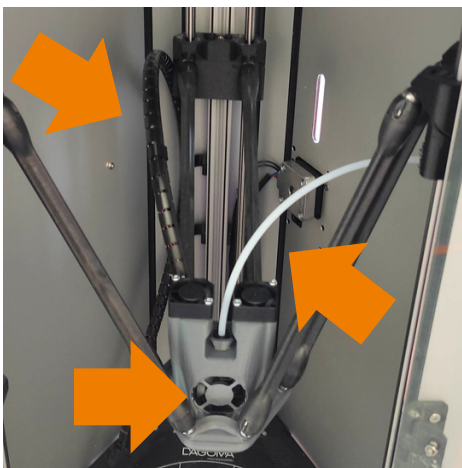
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Preparation

Attach the 6 magnetic arms to the carts.

Attention:
Ensure that the sheath is fully pushed to the marker. This prevents excessive stress on the sheath during its movement.

Position the head in the correct orientation on the magnetic arms.

Attention :
The cable sheath should pass behind the left trolley, while the PTFE tube should pass behind the right trolley.
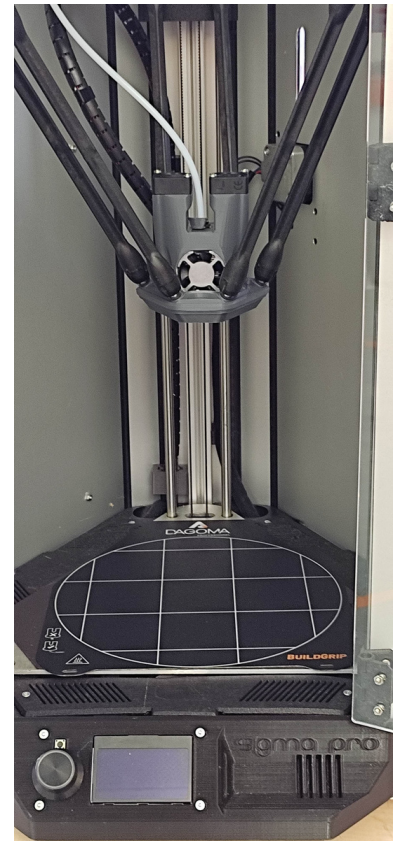
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Preparation

Connect the power supply connector, ensuring it aligns with the key slot. Place the sheath in the two clips at the back.

Thread the PTFE tube into the groove. Remove the PTFE clip, push the PTFE tube in, and then replace the PTFE clip.

Attention :

The PTFE clip is crucial as it prevents the tube from detaching from the extruder.

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Startup

Plug the cord into the power supply and the socket into the mains (220v).

Turn on the printer from the power button.

Attention :

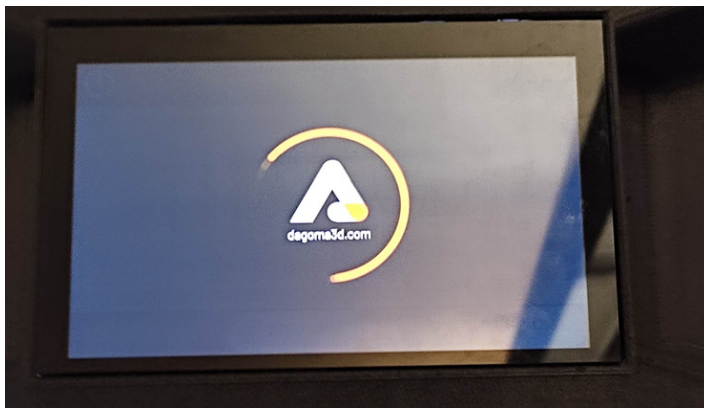**The initial startup may take a few minutes. Please be patient and wait.**

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Startup

The screen above may take longer to start. Please wait, and press 'Connection' once prompted on the screen.
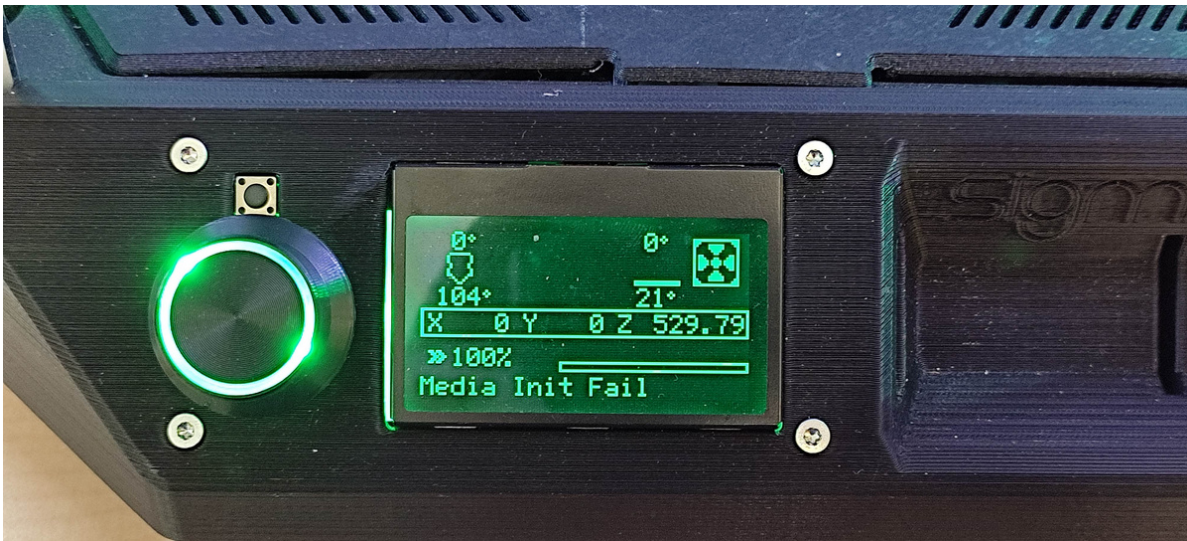

Press the connection button

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Startup

The bottom screen will display the message: 'Media Init Fail'. This is completely normal and the message will disappear once an SD card is inserted.
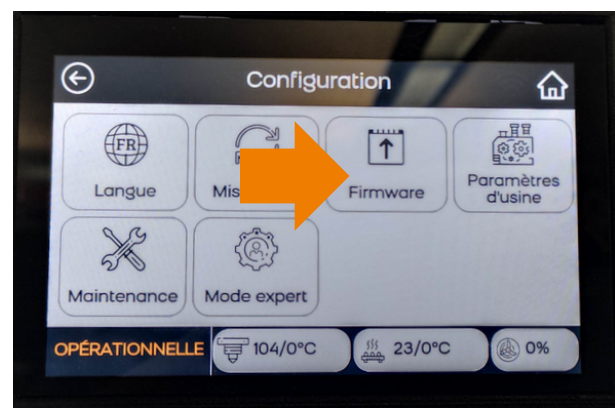
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Startup

> **Attention :**
> **Ensure that the firmware used is compatible with your type of print head: Brass head for standard Bowden, Steel head for high temperature. If necessary, install the correct firmware and perform a 'factory reset'.**

1- Click on the gear.

2- Click on "Firmware".

3- Check or flash.

3- Perform "Factory settings".

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Calibration

Prior to initiating your first print, it's essential to calibrate your printer.

> **Attention:**
> **Before initiating any calibration or printing, it is essential to ensure that the pressure sensors are functional and within the correct tolerance.**

Ensure the build plate is clear of any objects, then navigate to the 'Controler' > 'Z-offset' menu.

The FSR value should fall between 1000 and 3500. Restart the search if necessary. If the value is incorrect, please contact Dagoma's after-sales service before proceeding with any further adjustments.

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Calibration

Perform homing (calculate printer marks).

Navigate to the 'Controler' menu > 'Axes' > click on the 'House' icon surrounded by arrows.

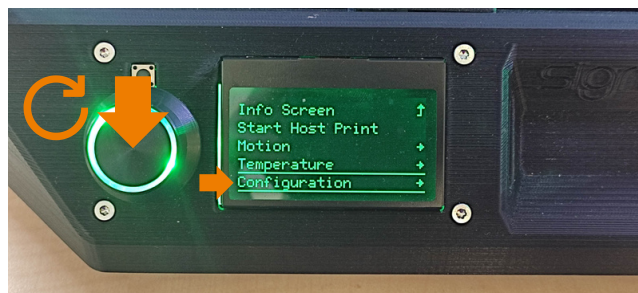The head will automatically rise and settle.

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Calibration

Warning: the initial calibration must always be performed from the bottom screen.

1

1 - Press the button to enter the menu.

2

2 - Navigate downwards to 'Configuration' and press to confirm.

3

3 - Scroll down to 'Delta Calibration' and press to confirm.

4

4 - Scroll down to 'Auto Calibration' and press to confirm.

The calibration will be performed automatically and may take up to ten minutes.
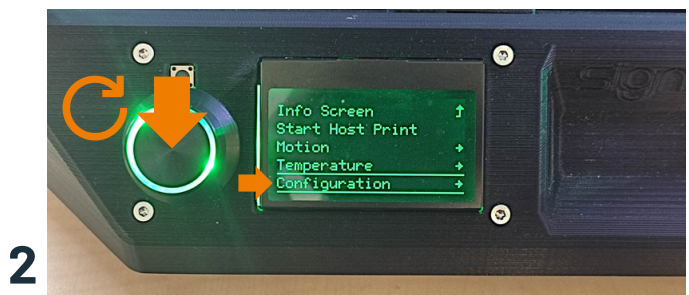
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Calibration

Attention :
After completing the initial calibration, you must save the calculated value.

1

Press the button to enter the menu.

2
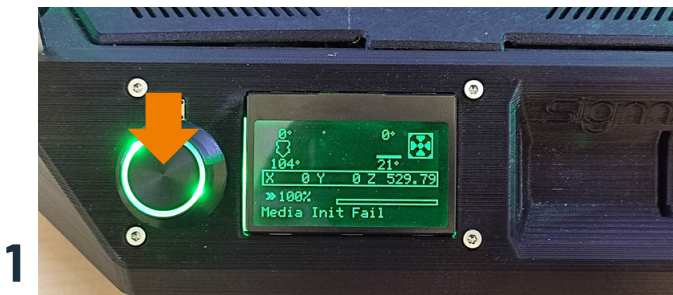
Scroll down to 'Configuration' and press to confirm.

3

Scroll down to 'Delta Calibration' and press to confirm.

4

Scroll down to 'Store Settings' and press to confirm. You will hear a sound.

Axis movement

You can move the print head using the 'Control' and 'Axis' commands. The interface consists of clickable arrows.

Select the movement step (1) from 1 mm to 100 mm, then position the head around the house:
Use the left and right arrows (2) to move along the x-axis (left or right).
Use the up and down arrows (3) to move along the y-axis (front or back).
Use the up and down arrows on the right side of the screen (4) to move along the z-axis (up or down).
The 'Motor' button (5) unlocks the print head for manual movement.
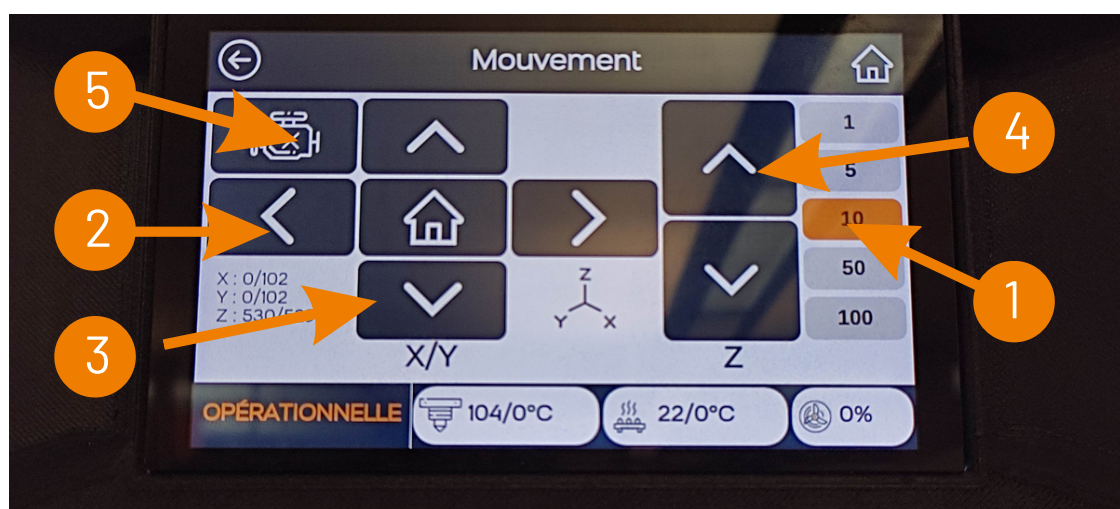
Insert your filament

Attention :
The filament insertion procedure differs depending on whether you're using the bottom or top screen. Follow the recommendations carefully.

Prerequisites

Cut the filament at an angle.
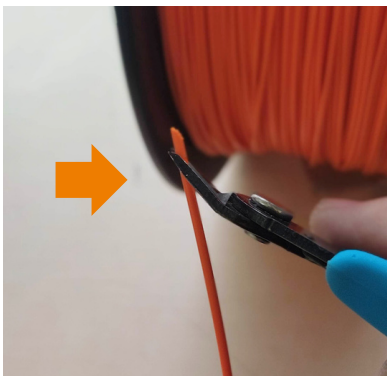
Activate the arm and insert the filament from the bottom, pushing it in 2-3 cm. The filament should be visible from the PTFE tube.
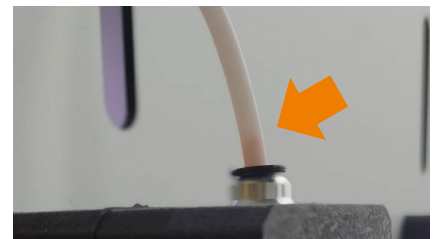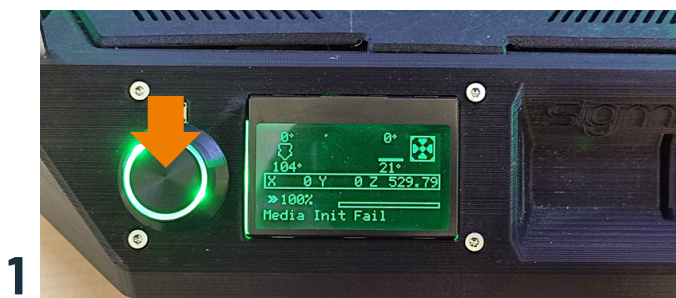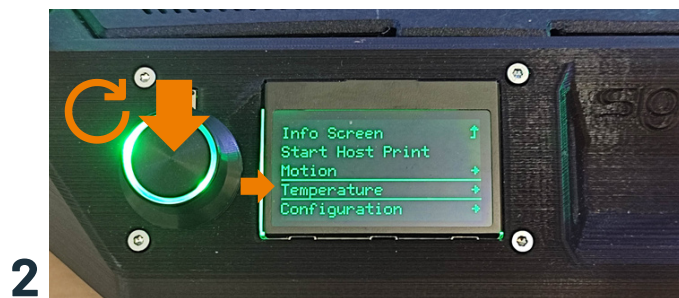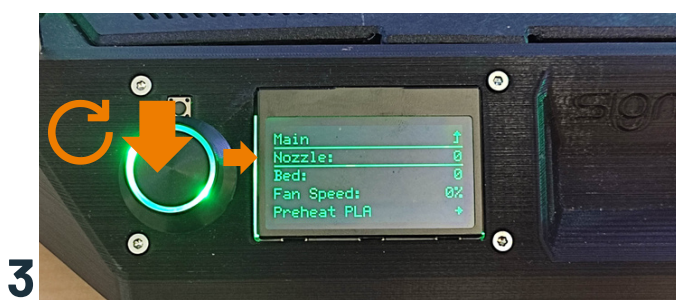
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Insert your filament
From the bottom screen

1

1Press the button to enter the menu.

2

Scroll down to 'Temperature' and press to confirm.

3

Scroll down to 'Nozzle' and press to confirm.

The nozzle will heat up to 200°C. The axial fan is activated once the temperature reaches 50°C.

Return to the main menu by turning the button and selecting 'Main', then 'Info Screen'.

4

Scroll down to '200 degrees' and press to confirm.

5

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Insert your filament
From the bottom screen

6

Press the button to enter the menu.

7

Scroll down to 'Change Filament' and press to confirm.

8

Scroll down to 'Load Filament' and press to confirm.

9
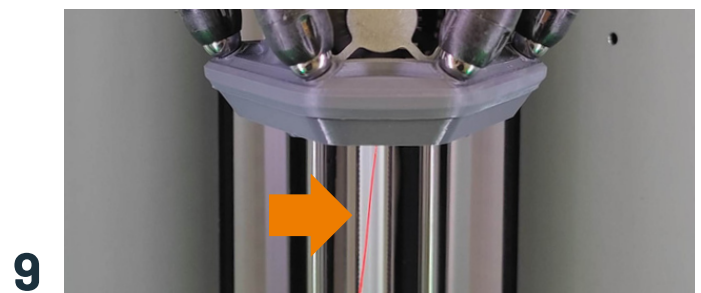
The filament will be inserted and purged continuously.

10

Click to stop purging.

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Insert the filament From the top screen

1 Press the "Control" button.

2 Press the "Filament" button.

3 Press the "Modify" button.

4 Check the filament, select 'No' and then confirm.

5 Press the "Insert" button.
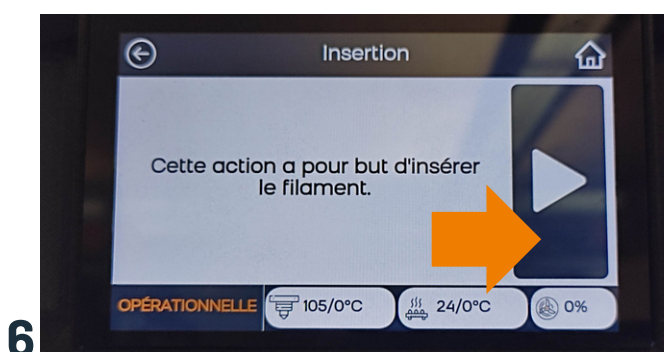
6 The filament will be inserted, purged, and retracted.

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Installation of Cura by Dagoma

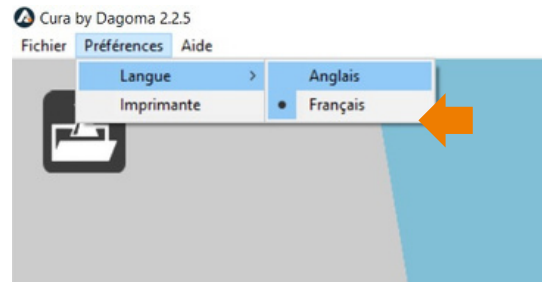To assist you in quickly using your SIGMA PRO 500Z, Dagoma has developed simplified software (slicer). You can download it here.

https://github.com/dagoma3d/CuraByDagoma/releases/tag/2.2.5

Choose the version that corresponds to your operating system (windows: .exe, mac: dmg, linux: .deb)
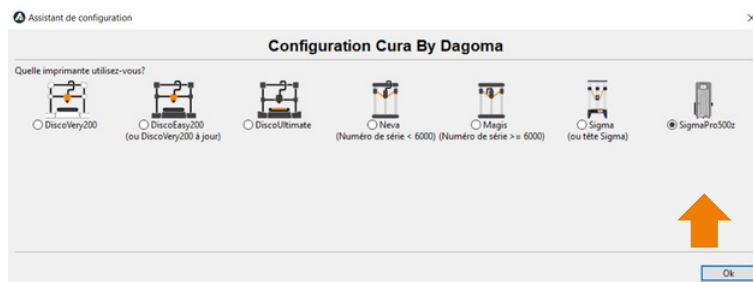
Be sure to choose the right printer : SIGMA PRO 500Z

The language can be changed to English (ENG).
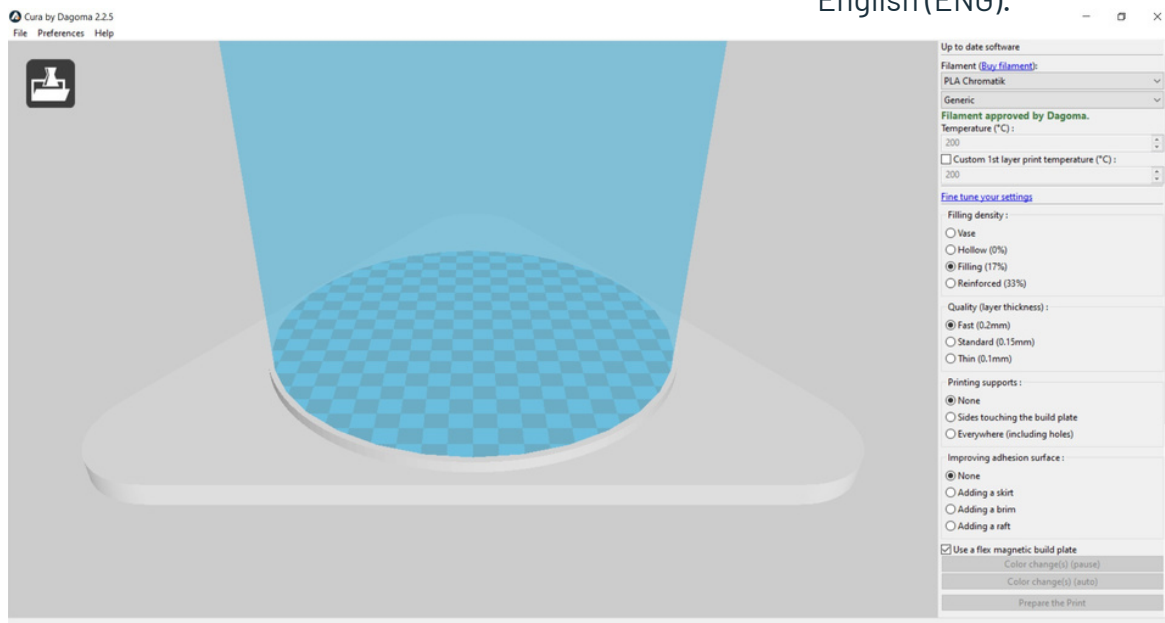
Refer to the guide for an easy start : https://start.dagoma3d.com/cura-by-dagoma The English version is available. Press 'en' on the top right of the page. You can print your first model (badge) that appears on the bed.

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Installation of Cura Ultimaker

Download and install Cura Ultimaker from the website:
https://ultimaker.com/software/ultimaker-cura/#downloads

Our last tested version is Cura 5.4. You can download this version here:
https://github.com/Ultimaker/Cura/releases/
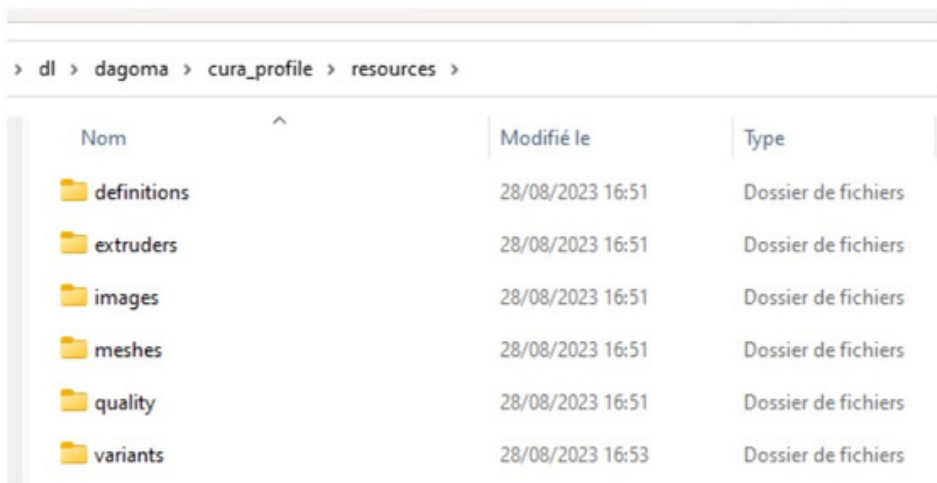
Profile installation for Cura Ultimaker

At the moment, we are waiting for our profile in Ultimaker Cura. We have to manually push the printer profiles.

Introduction

The resources.zip file contains the SIGMA PRO profile files https://drive.google.com/file/d/1Q6N-7OCc30dLmCe88jarmqKdUBJouB2z/view?usp=sharing

Content

Please download the file and then unzip it. The contents of the extracted folder should appear like this:

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Profile installation for Cura Ultimaker

Installation

Please copy the extracted folder to the appropriate Ultimaker Cura installation directory.

MacOS: (find the resources folder in the application directory) Windows: C:\Program Files\UltiMaker Cura 5.4.0\share\cura\resources

All you have to do is open the software and add SIGMA PRO 500Z.

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Profile installation for Cura Ultimaker

Uninstall or update

If you want to uninstall everything or perform a clean update, please delete all files starting with 'dagoma_sigma_pro' in the following subfolders:

- resources/definitions
- resources/extruders
- resources/images
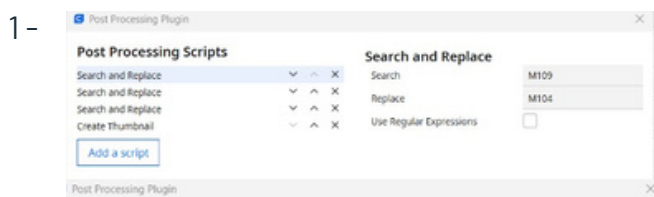- resources/meshes
- resources/quality
- resources/variants

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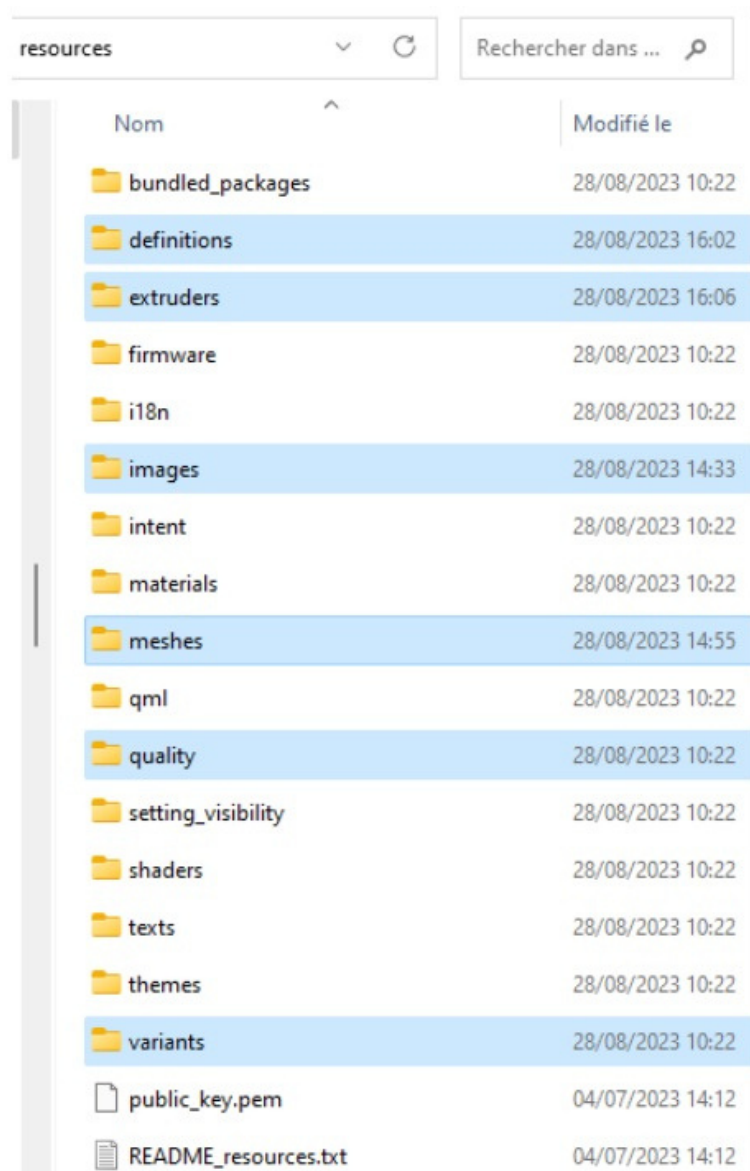
Profile installation for Cura Ultimaker

Definition of Post-processing (be carefull 1-3 for dual only)

Be careful to respect the modification order
1. M109=>M104 (For Dual only)
2. M104 T0 S0 => ; (For Dual only)
3. M104 T1 S0 => ; (For Dual only)
4. Thumbnails in 252 by 252 (For all SIGMA PRO)
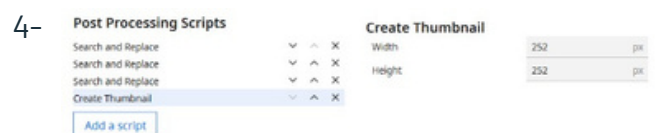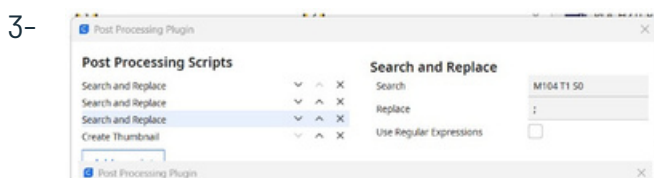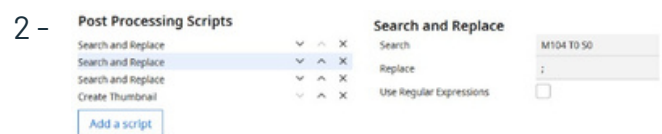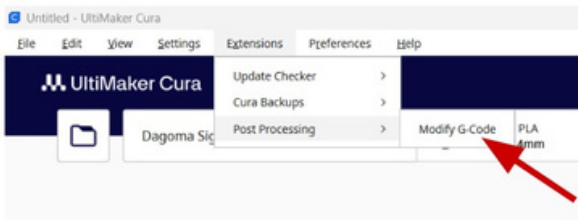
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Printing

> **Attention :**
> If you print from an SD card through the bottom screen, you will still need to use the bottom screen to interact with the print: pause, change the filament, stop printing, change settings during printing.
> The same applies to the top screen. If you start printing from the top screen, it is advisable to interact with the top screen.
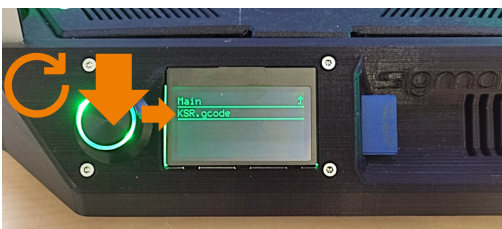> This will prevent communication latency and potential malfunctions.

Printing from the bottom screen

1 - Insert the SD card including the G-code
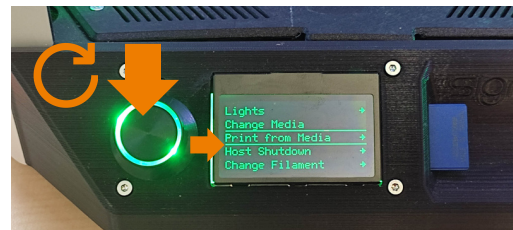
2 - Enter the menu and navigate to 'Print from Media'

3 - Select your file (G-code) to print

4- Start printing by confirming 'Print'
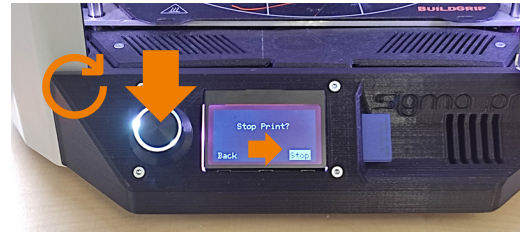

5- Printing starts

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Stop and Pause Print
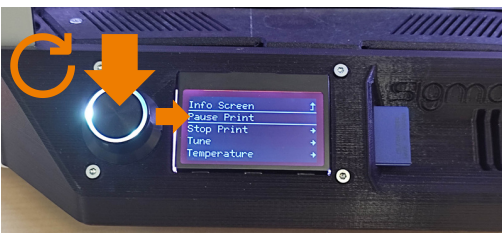
Stop printing from the bottom screen
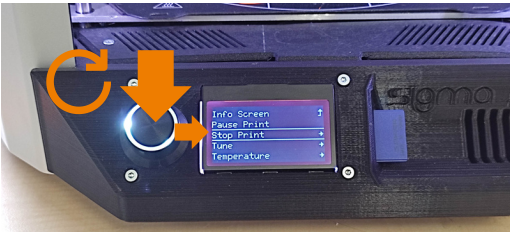
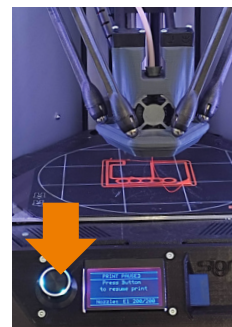1 - Enter the menu and navigate to 'Stop Print'

2 - Confirm 'Stop Print'

Pause while printing from the bottom screen

1 - Enter the menu and navigate to 'Pause Print'

2 - Printing will pause

3 - Press the button to resume printing. The print head will heat up if it is not up to temperature
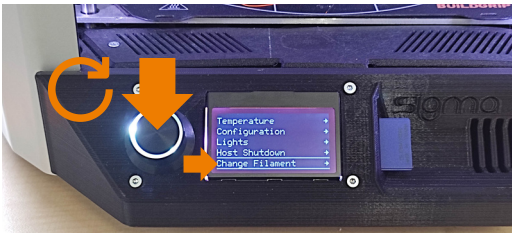
Change Filament

Change filament when printing from the bottom screen
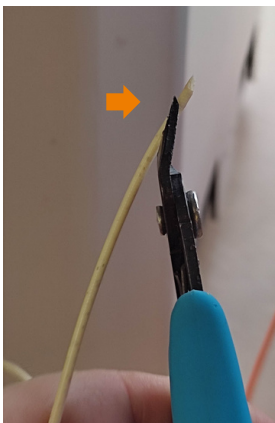
1 - Enter the menu and navigate to 'Change Filament'


2 - Confirm 'Change Filament

3 - The printer pauses and the filament is extruded. Activate the extruder arm to remove the filament. A fine thread may be present; gently pull the filament

4 - Cut the filament at an angle before inserting it. Activate the arm and push the filament so that it is visible from the PTFE tube

5 - Press the button to resume printing. The print head will heat up, and the filament will be inserted automatically
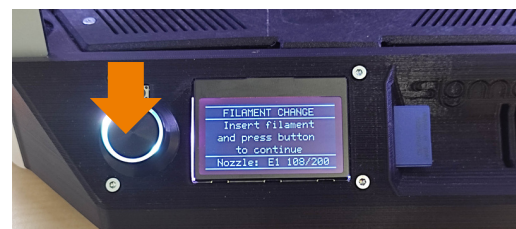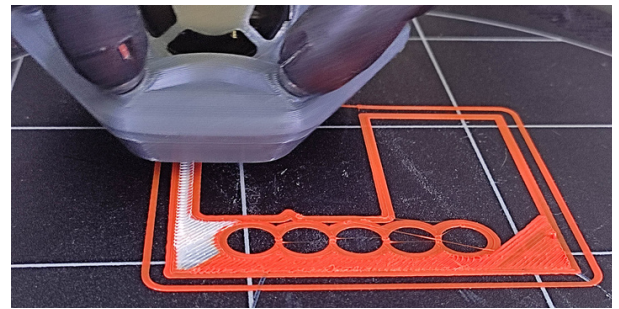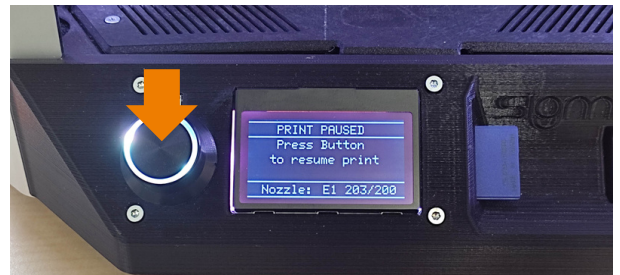
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Change Filament

Change filament when printing from the bottom screen

6 - Click to stop the purge

7 - Click to restart printing

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Printing

Printing from the top screen 1/2

1-Enter the print menu

2 - Insert the key into the USB port on the left side of the screen, wait for 20 seconds, then press USB

3 - Press the '+' button to transfer the file to the screen

4 - Once the file is loaded, it is analyzed, we recommend returning to the main menu (house icon at the top right)

5- Start printing from local

6- Choose your file

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Printing

Printing from the top screen 2/2

1 -Start printing

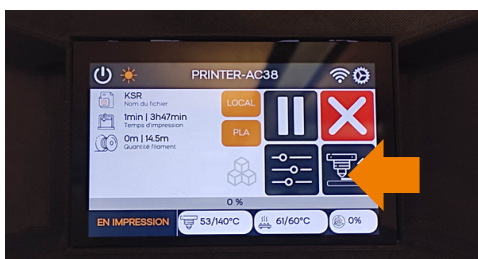2 - Confirm from the key on the right

3 - Printing starts

Once printing has started, the nozzle will heat up to 120°C and perform an automatic calibration then start printing.

Pay attention to the first layer; you can adjust it using babystepping

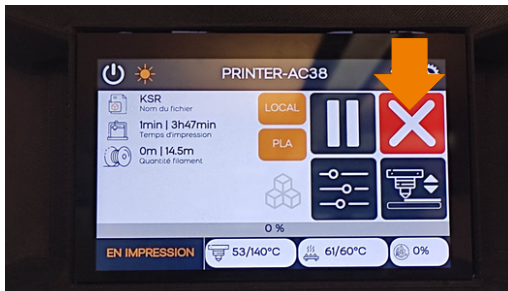When the first layer seems suitable to you, return using the arrow at the top left

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Stop and Pause Print

Stop printing from the top screen

1 - Press the red cross

2 - Confirm to stop

Pause while printing from the top screen

1 - Press the white lines

2 - Confirm to pause

3 - Confirm to resume printing

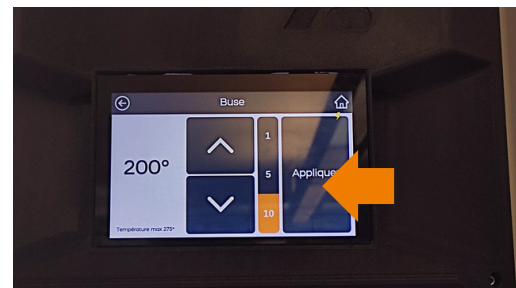# SIGMA PRO 500Z

Settings

Adjust the nozzle temperature

1 - Press the menu

2 - Press the nozzle icon

3 - Choose the temperature using the arrows

4 - Confirm with 'Apply

Settings

Adjust the platen temperature

1 - Press the settings menu

2 - Press the heating plate icon

3 - Choose the temperature using the arrows
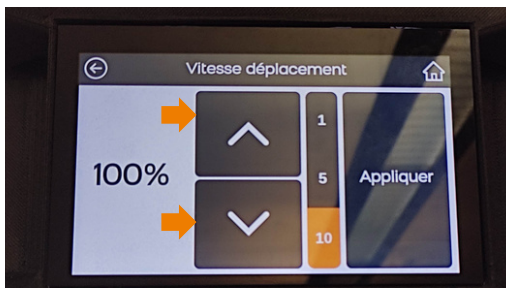

4 - Confirm with 'Apply'

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Settings

Adjust movement speed

1 - Press the settings menu

2 - Press the movement speed icon

3 - Choose the movement speed using the arrows
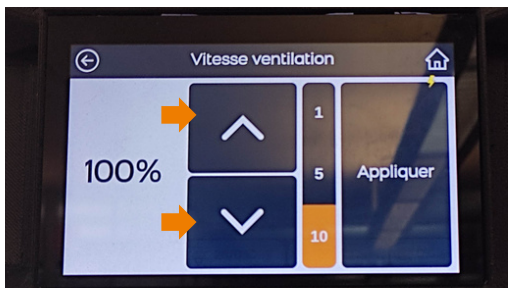

4 - Confirm with 'Apply'

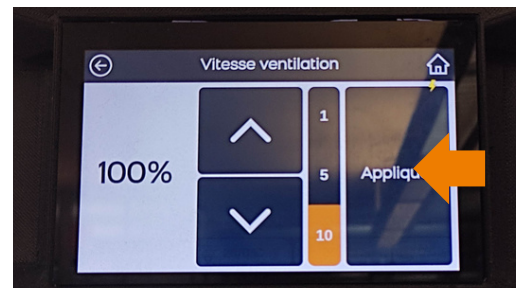# SIGMA PRO 500Z

Settings

Adjust the fan speed

1 - Press the settings menu

2 - Press the ventilation speed icon

3 - Choose the fan speed using the arrows

4 - Confirm with 'Apply'

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Settings

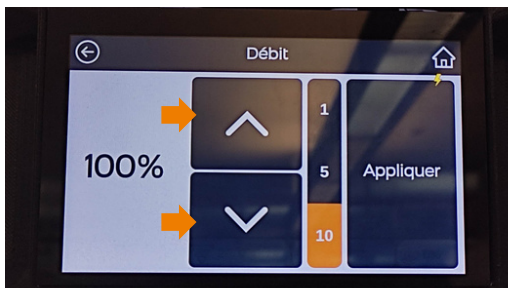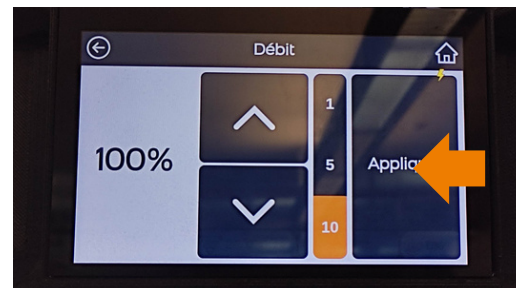### Adjust the flow

1 - Press the settings menu

2 - Press the flow icon

3 - Choose the flow rate using the arrows

4 - Confirm with 'Apply'
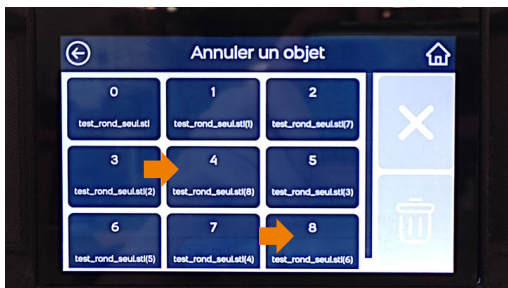
SIGMA PRO 500Z

Settings

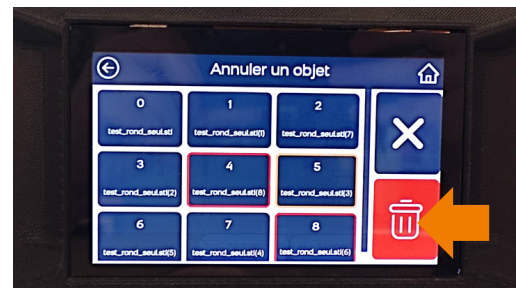### Cancel printing of one or more objects

1 - Press the settings menu

2 - Press the icon to cancel an object
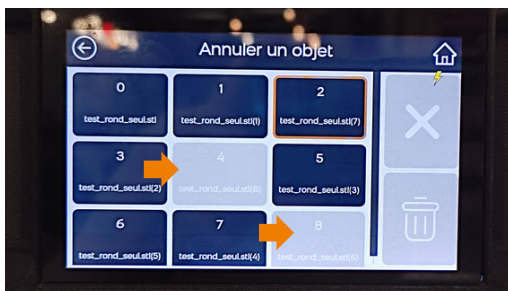

3 - Choose the item or items to cancel

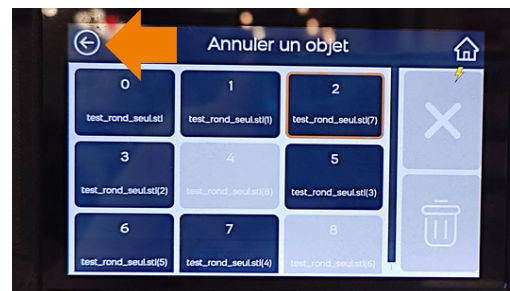4 - Confirm by clicking on the trash can icon

Settings

Cancel printing of one or more objects

5 - Notice that the objects are indeed canceled

6 - Press the return icon