Tumaker
Connected 3D Printers Company

TUMAKER PRINTERS

USER MANUAL

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VIDEO - TUTORIALS

PRINTER SPECIFICATIONS

- Filamento
- Pellet
- Simple
- Dual

Direct Drive HR

Specifications	NX Pro	BIGFOOT 200 Pro	BIGFOOT 350 Pro	BIGFOOT 500 Pro
Printer volume:	295x185x200mm	500x470x200mm	500x470x350mm	500x470x500mm
Printer dual:	-	-	-	-
Copy printer	-	-	-	-
Printer size:	550x440x410mm	860x720x510mm	860x720x660mm	860x720x810mm
Package size:	605x501x500mm	1006x940x735mm	1006x940x885mm	1006x940x1035mm
Printer weight:	30kg	68kg	75kg	82kg
Package weight:	32	100kg	120kg	140kg

Pellet

Specifications	NX Pro	BIGFOOT 200 Pro	BIGFOOT 350 Pro	BIGFOOT 500 Pro
Printer volume:	295x185x200mm	500x470x200mm	500x470x350mm	500x470x500mm
Printer dual:	-	-	-	-
Copy printer	-	-	-	-
Printer size:	550x440x410mm	860x720x510mm	860x720x660mm	860x720x810mm
Package size:	605x501x500mm	1006x940x735mm	1006x940x885mm	1006x940x1035mm
Printer weight:	30kg	68kg	75kg	82kg
Package weight:	32kg	100kg	120kg	140kg

Dual: Direct Drive HR – Direct Drive HR

Specifications	NX Pro	BIGFOOT 200 Pro	BIGFOOT 350 Pro	BIGFOOT 500 Pro
Printer volume:	270x185x200mm	495x470x200mm	495x470x350mm	495x470x500mm
Printer dual:	235x185x200 mm	475x470x200mm	475x470x350mm	475x470x500mm
Copy printer	147x185x200 mm	250x470x200mm	250x470x350mm	250x470x500mm
Printer size:	550x440x460mm	860x720x510mm	860x720x660mm	860x720x810mm
Package size:	605x501x500mm	1006x940x735mm	1006x940x885mm	1006x940x1035mm
Printer weight:	31kg	68kg	75kg	82kg
Package weight:	33kg	100	120kg	140kg

Dual: Direct Drive HR - Pellet

Specifications	NX Pro	BIGFOOT 200 Pro	BIGFOOT 350 Pro	BIGFOOT 500 Pro
Printer volume:	290x185x200mm	490x470x200mm	490x470x350mm	490x470x500mm
Printer dual:	280x165x200mm	475x450x200mm	475x450x350mm	475x450x500mm
Copy printer	147x185x200mm	250x470x200mm	250x470x350mm	250x470x500mm
Printer size:	550x440x410mm	860x720x510mm	860x720x660mm	860x720x810mm
Package size:	605x501x500mm	1006x940x735mm	1006x940x885mm	1006x940x1035mm
Printer weight:	30kg	68kg	75kg	82kg
Package weight:	32kg	100kg	120kg	140kg

Dual: Pellet - Pellet

Specifications	NX Pro	BIGFOOT 200 Pro	BIGFOOT 350 Pro	BIGFOOT 500 Pro
Printer volume:	250x185x200mm	480x470x200mm	480x470x350mm	480x470x500mm
Printer dual:	205x185x200mm	455x470x200mm	455x470x350mm	455x470x500mm
Copy printer	147x185x200mm	250x470x200mm	250x470x350mm	250x470x500mm
Printer size:	550x440x410mm	860x720x510mm	860x720x660mm	860x720x810mm
Package size:	605x501x500mm	1006x940x735mm	1006x940x885mm	1006x940x1035mm
Printer weight:	30kg	68kg	75kg	82kg
Package weight:	32kg	100kg	120kg	140kg

GENERIC SPECIFICATIONS

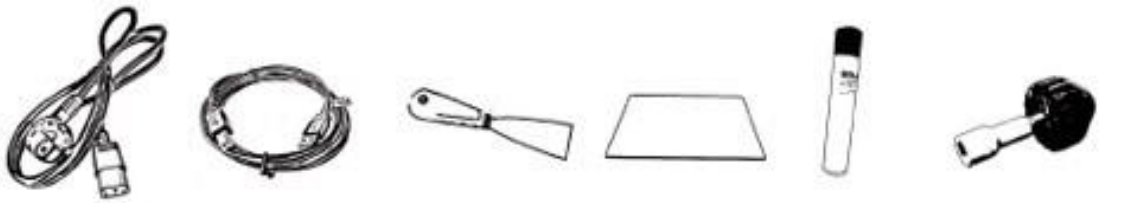
- Filamento
- Pellet
- Simple
- Dual

SPECIFICATIONS	DETAILS
Optimized filaments:	ABS, ASA, NYLON, PET-G, PLA, PP, XT-CF20, TPU, PLA-3D870, PVA
Recommended pellets:	3-5mm circular
Filament nozzle:	0.25 - 0.4 - 0.6 - 0.8 mm
Pellet nozzle:	0.4 – 0.6 – 0.8 – 2.0 – 4.0 – 5.0mm
Nozzle temperature:	45° - 300°
Layer resolution:	10µm
Build plate levelling:	Semi-automatic and manual
Heated bed:	45° - 120°
Energy:	Power rating: 500W (NX PRO) & 950W (BF PRO) Noise level: 44 dB (closed door, 40dB)
Display:	5" colour touch screen Modo de control: Web
Software:	Software Professional Simplify3D
Connectivity:	Wi-Fi, micro-SD card, USB, Ethernet (optional)
Warranty:	1 year limited warranty

ELEMENTS INCLUDED IN THE PRINTER

- Filament
- Pellet
- Simple
- Dual

Make sure the following items have been delivered to you with the printer. If not, please contact us.



UNPACKING METHOD RANGE BF

- Filament
- Pellet
- Simple
- Dual

STEP 1
Unscrew the screws on the box that are rounded off with a felt-tip pen.

STEP 2
Remove any parts of the housing that have been unscrewed.

STEP 3
Remove the upper protective materials.

STEP 4
Carefully remove the machine from the box, with the help of another person, by grasping the upper part as shown in the picture.

STEP 5
With the help of another person, move the machine to the desired working place, holding the machine at the bottom, as shown in the picture.

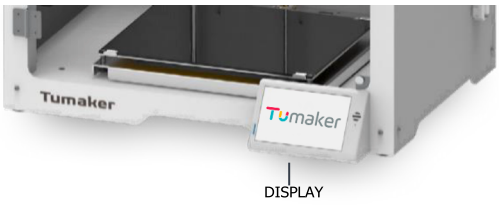
STEP 5
Place the machine on a safe and level site.

INSTALLATION AND SET UP

- Filament
- Pellet
- Simple
- Dual

DISPLAY

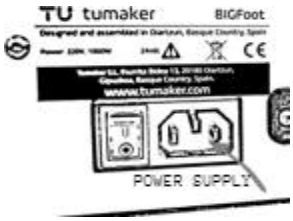
The light indicator will stay on while the printer is on.



DISPLAY

WIRING

To start with the installation and set-up, connect the power cable to the slot on the back of the printer and plug it into the power socket. Switch on the printer by pressing thebutton.



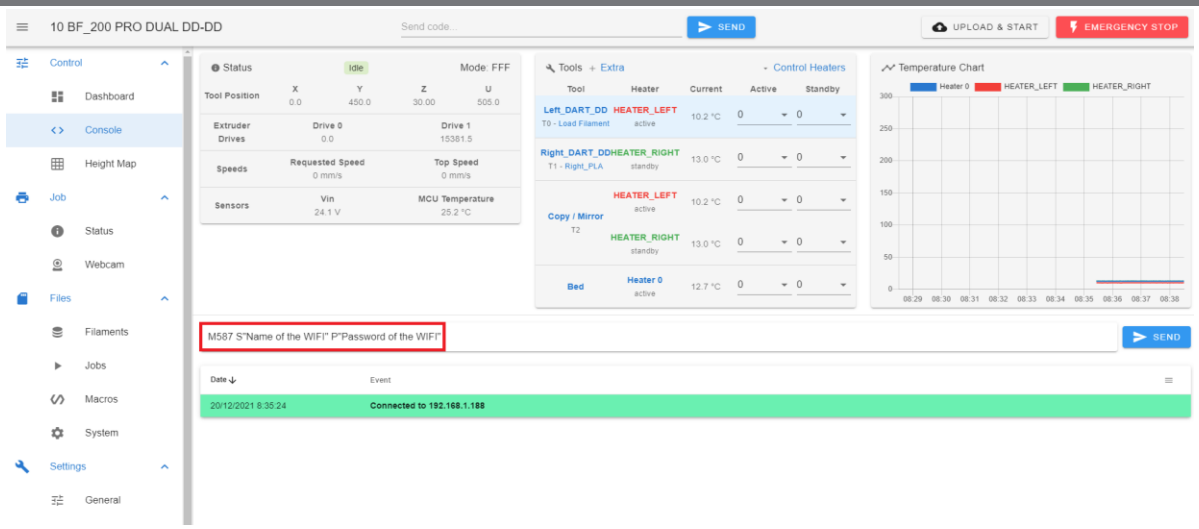
Connect your device to the network of the printer.

- WifiSSID: INDART3D_XXXXXX
- Password: indart3d
- Access IP: 192.168.1.114

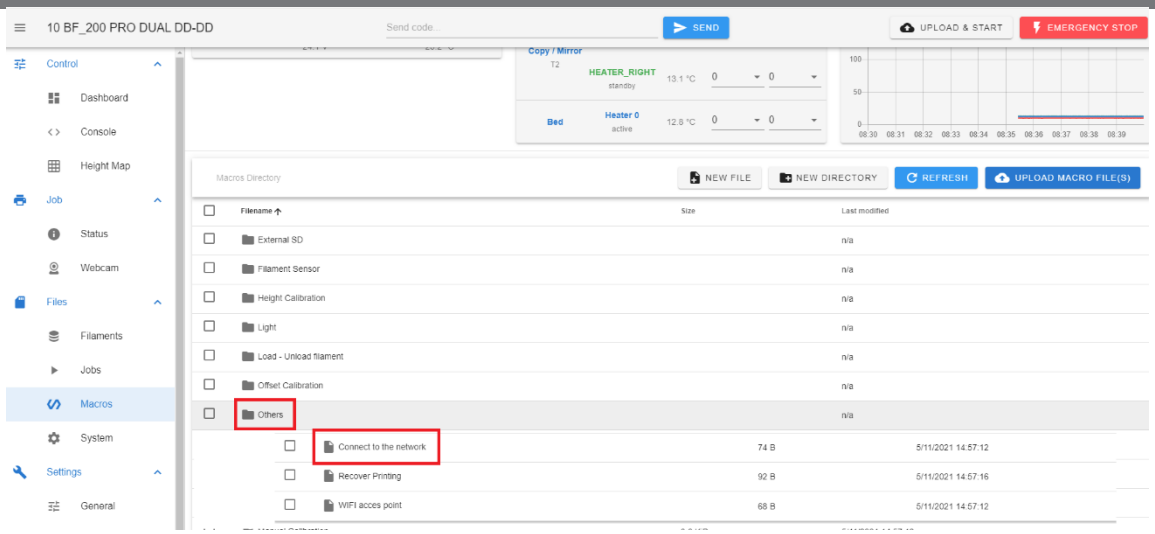
Access the web interface through the access IP in your browser.

OPTIONAL: Connect the printer to the local network
If you want to put the printer on the network and access it from any device on the same network, follow the next step.
Go to Console, type and send: M587 S "Name of your Wi-Fi" P "password of your Wi-Fi"

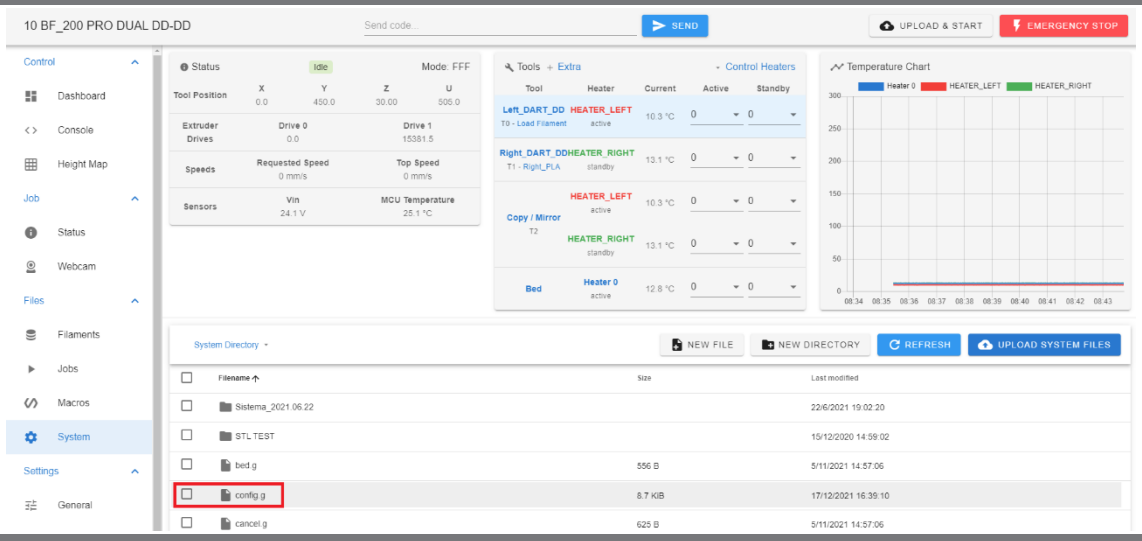
If you know a free IP on your network, you can add the following commands after the password, leaving a space: Ixxx.xxx.x.xxx otherwise the router will assign a random IP.



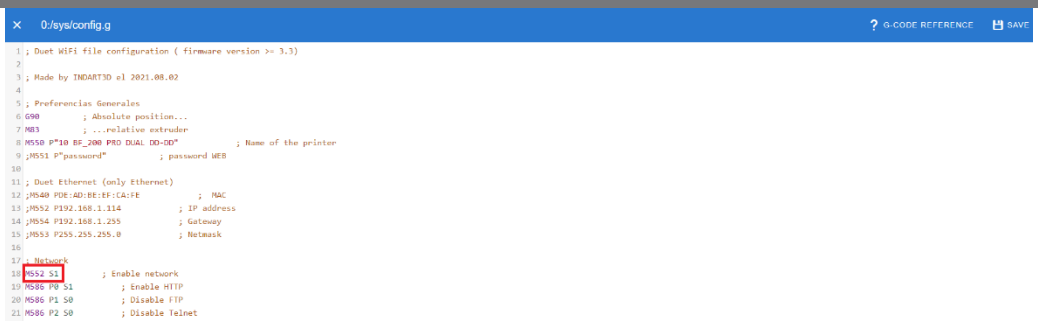
Access the Macros / Others / Connect to the NET section and run it. Next, on the printer screen you will see the assigned IP.



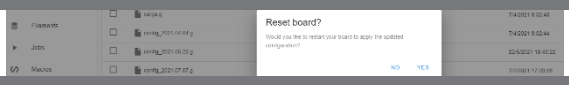
If you already have your IP, access from it, go to System and open the config.g file
ATENTION changing parameters not indicated in this file may imply the malfunction of the machine.



In the Network section replace: M552 S2 for M552 S1.
Click Save



Press YES to reset the board



I have the IP

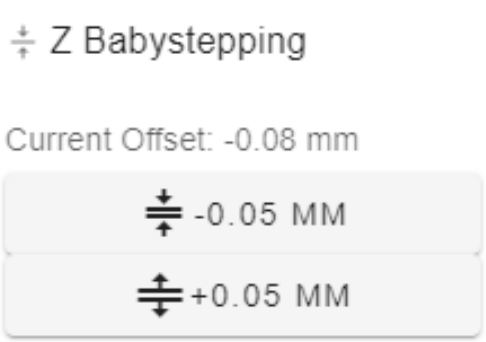
- You can now access the printer from any device connected to this network.
- If you have not entered the IP by command in the console, it is recommended to do so, so that the router does not change it: M587 S "Wi-Fi name " P " Password" I192.168.X.XXX
- If you have not obtained the IP or have any other problem, do not hesitate to consult at:https://tumaker.com/en/technical-support/

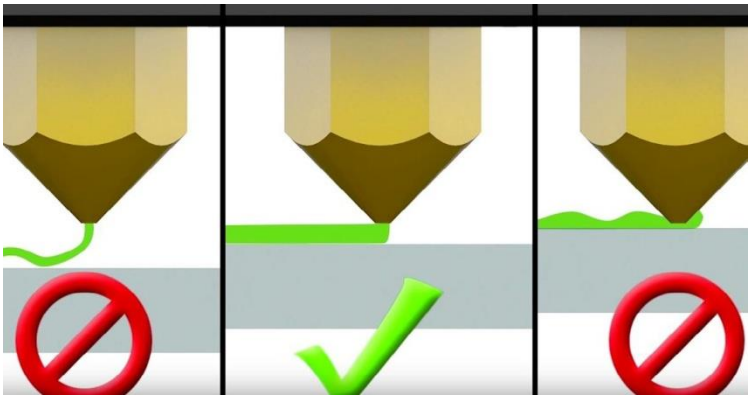
QUICK GUIDE

- Filament
- Pellet
- Simple
- Dual

Level the Build Plate

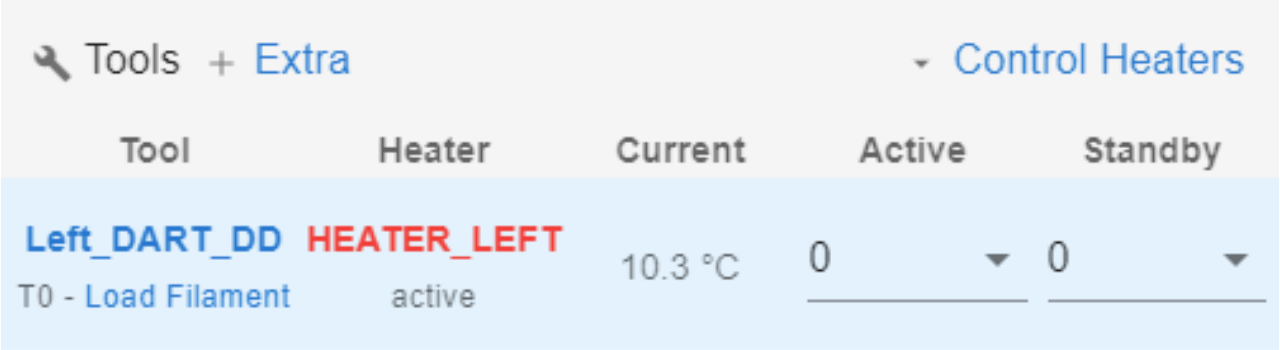
- Heat the base to the temperature you want to print at
- Make sure you have a clean tip.
- Execute the calibration process found in the Macros "Calibration" section and follow the steps.
- Use the knurled nuts on the base to fit the Nozzle to the Build Base.
- If it was your first calibration you may have to repeat this process.
- During printing, fine-tune using Z Baby stepping until proper adhesion is achieved.





Load Filament

- Before loading make sure you have the base separated from the nozzle (min 10mm).
- Press Load Filament and select the material to use.
- Follow the steps indicated on the screen.



Load Pellet

The 3D printing of pellets is characterized by being a type of manufacturing different from the printing process with filament spools.

- First, introduce the pellets into the hopper manually.
- The pellets will begin to fall through the hopper and will melt inside the extruder.
- The molten material will be ejected from the nozzle and will begin to adhere to the build platform.

Load G-Code / Print

- In Jobs select: UPLOAD FILE (S) TO G-CODE and upload your ".gcode" file
- With the left button click on the file you want to print
- With the right button select more options
- You can create folders to organize your files by clicking 

SEMI-AUTOMATIC CALIBRATION

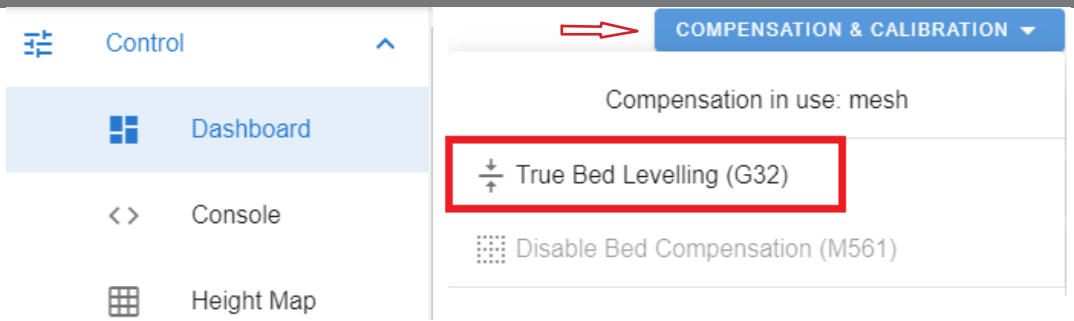
- Filamento
- Pellet
- Simple
- Dual

Level the Build Plate

- Make sure you have a clean tip.
- Execute the calibration process found in the Macros "Calibration" section and follow the steps.
- Use the knurled nuts on the base to fit the Nozzle to the Build Base.
- If it was your first calibration you may have to repeat this process.
- If you already have your base level, you can skip this step.

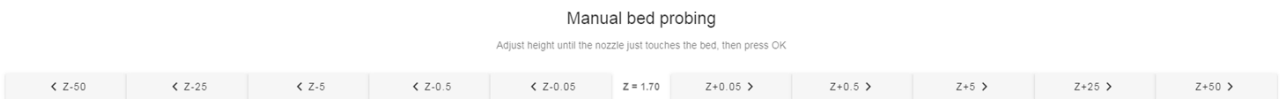
Semi-Automatic Levelling

- To perform the semiautomatic calibration, go to Machine Control / Dashboard / Compensation and Calibration / Real Bed Compensation (G32).



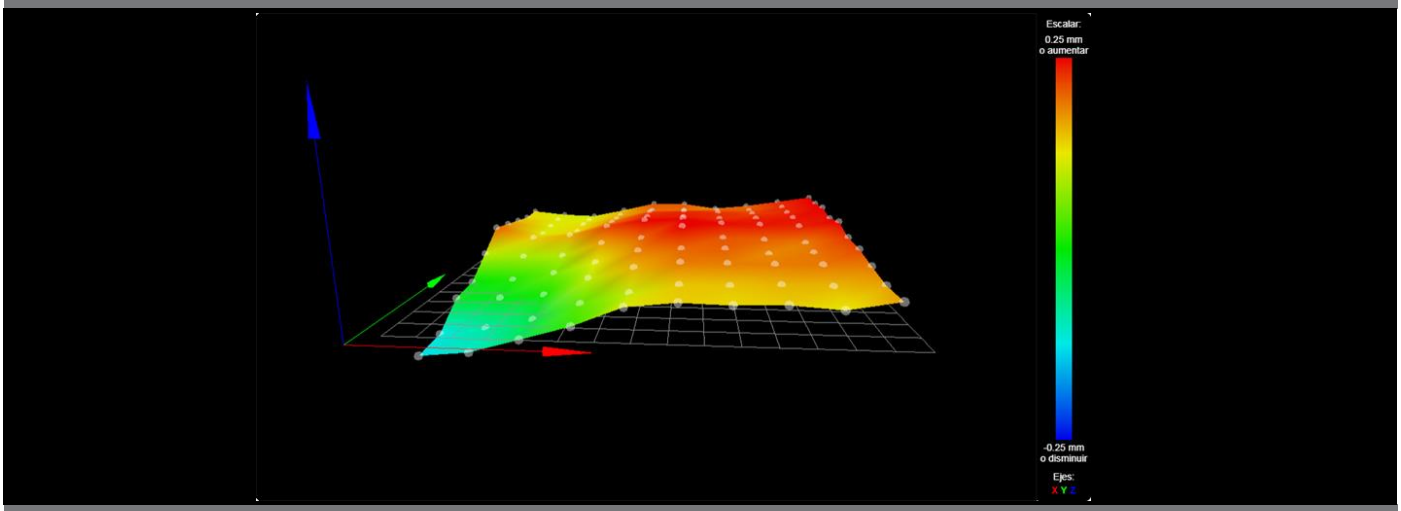
True Bed Compensation (G32)

- Heat the base to the printing temperature that you intend to use.
- Adjust the height of the nozzle from the base to the desired height.
- Use only the panel shown on the screen.
- You can use a gauge or a sheet if you want.



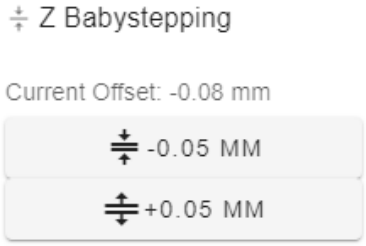
Height Map

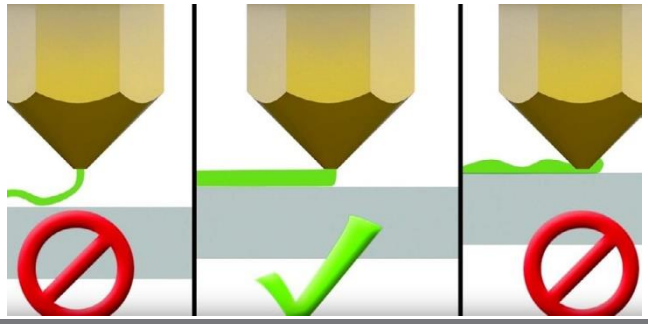
- Once the Height Compensation is done in the Height Map you will see something similar to this.



Print Bed Setting

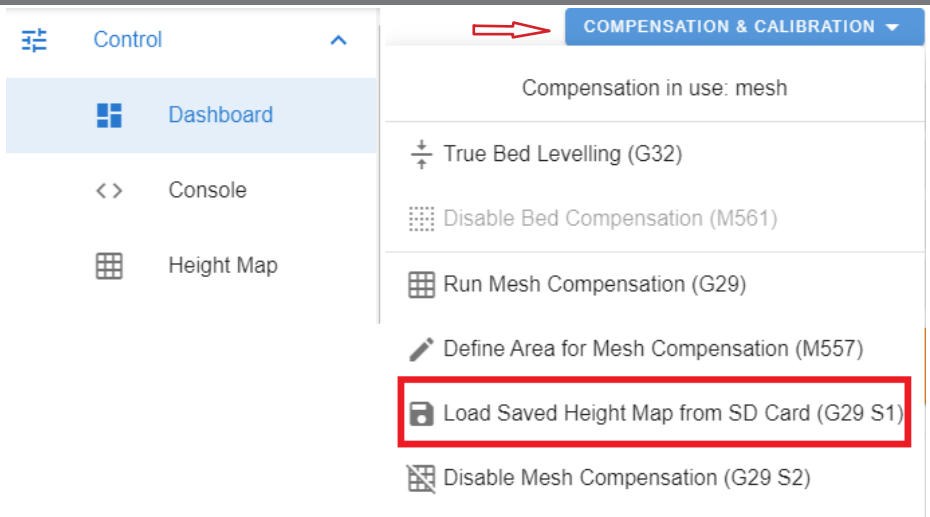
- During printing, fine-tune using Z Baby stepping until proper adhesion is achieved.





Load Compression Map

- If you have restarted the printer, you must load the Height Map again, to do this, execute Load Height Compensation Map saved in the SD card (G29 S1).



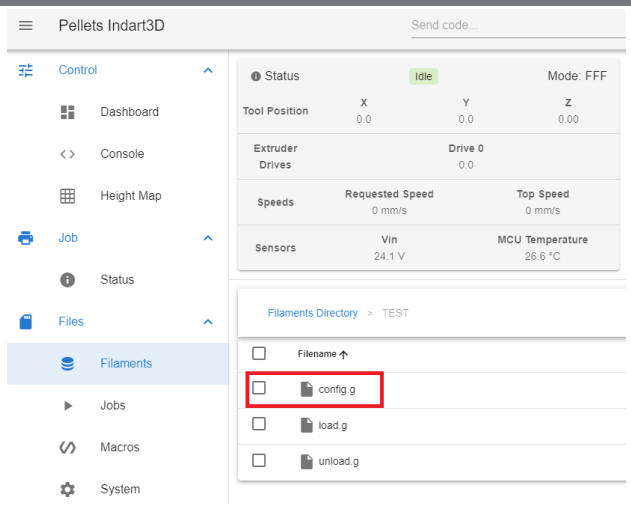
Advanced

- If you want to modify the number of points to be polled, you can make the changes from System / Config.g
- Go to; Probe Z and change the P parameter of the following command M557 X15:215 Y15:195P3:3
- You can also download or edit your heihtmap.csv file to correct any point or to save different height maps created.

ADJUST THE PELLET EXTRUSION

- ✗ Filament
- ✓ Pellet
- ✓ Simple
- ✓ Dual

Open the material config.g



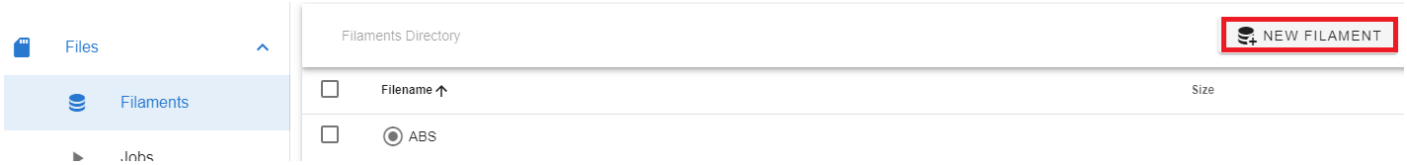
In config.g you can change the flow rate, the temperature of the two measurement points and the bed

0:/filaments/TEST/config.g

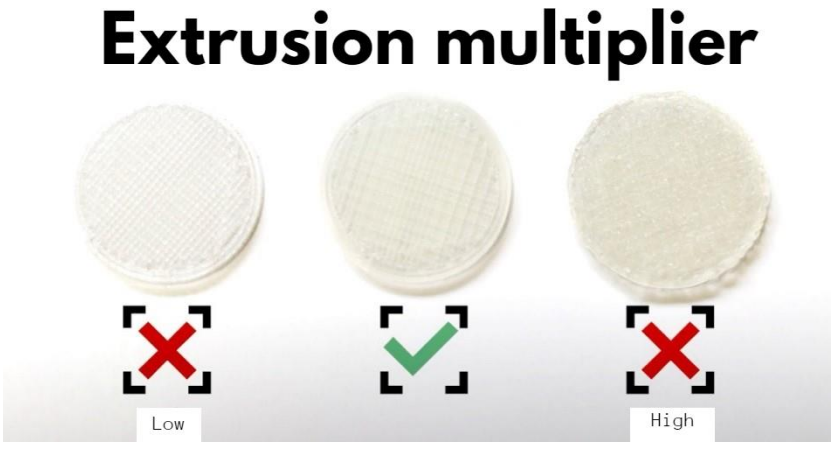
```
; Material parameters configuration
;   NOTE1: The material must be loaded from the panel control
;       NOTE2: The temepratures should be established here
;           NOTE3: For more extrusion material increase E, for less material decrease E
M106 P0 S1 H1 T45                   ; Active the frontal fan
M92 E450                            ; E values
G10 S340:300                        ; Hotend temperarures
M140 S100                           ; Bed temperature
```

New material

Once created, copy the config.g from a previous material and edit the necessary parameters.



In file manager / Macros / Extrusion calibration / Select the model you want to print. Modify the flow until you have an optimal result.

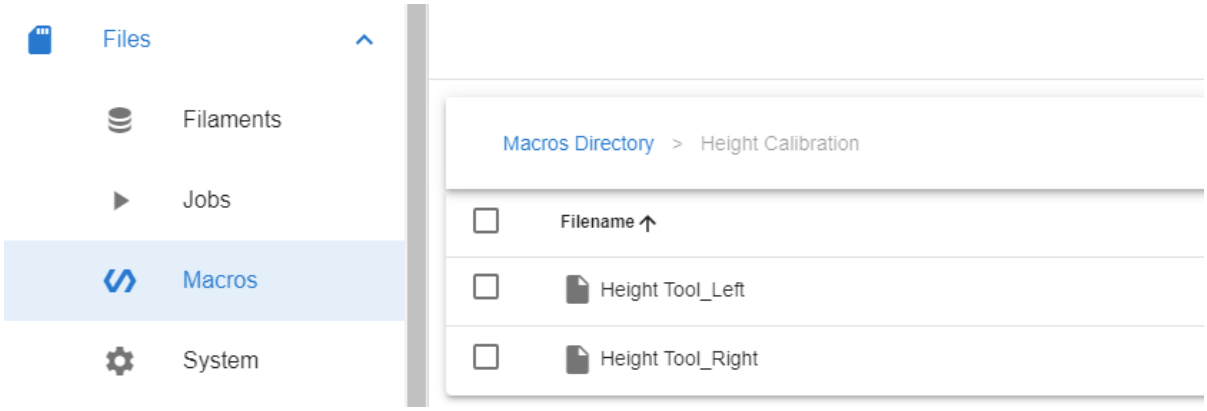


CALIBRATE DUAL HEIGHT

- ✔ Filamento
- ✔ Pellet
- ✘ Simple
- ✔ Dual

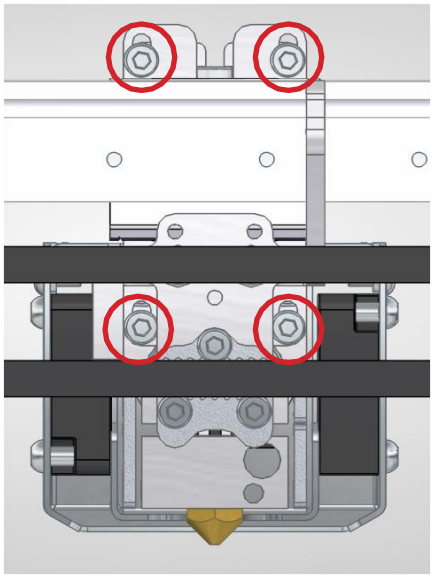
Step 1

- Access the web interface of the machine.
- In File Manager / Macros / Height Calibration select DART_Left Height.
- Calibrate the base to the desired height.
- Now click on Height DART_Right.



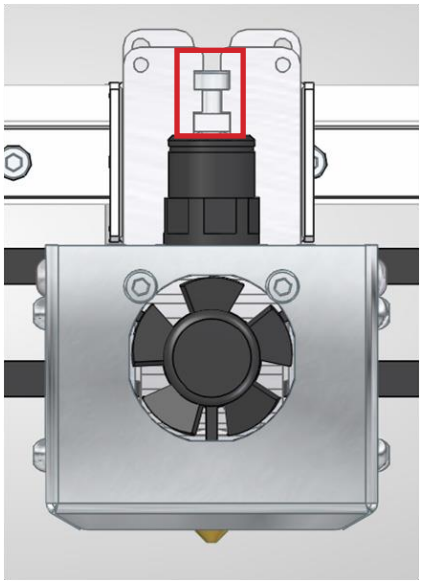
Step 2

If the Right head is not at the same height, we must loosen (a quarter of a turn) the four screws that are on the back of the head (Allen key 2,5)



Step 3

Once the four screws are loosened, we will use the central screw to raise or lower our head, once we have it at the correct height, we will tighten the 4 screws that we loosened in the previous step



Step 4

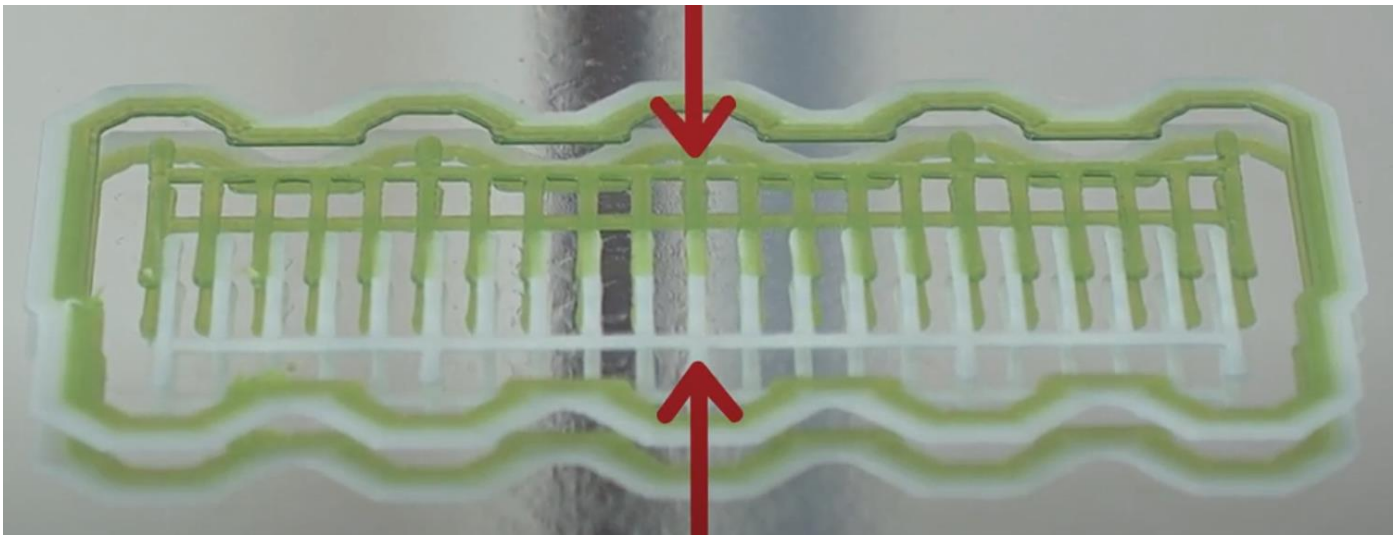
- After tightening the 4 screws we will check that they are at the same height by alternating the macros Height DART_Left and Height DART_Right.
- If they are not at the same height, repeat steps 2 and 3.
- You can use a gauge or a sheet of paper if it is more comfortable for you.
- Remember that to carry out this process the tips must be clean.
- Make this check if you change tips.

CALIBRATE OFFSET U AND Y

- ✔ Filamento
- ✔ Pellet
- ✘ Simple
- ✔ Dual

Step 1

- Print the calibration object. Use the macro "offset calibration"



Step 2

- Once printed, the centre lines must match.
- In case they do not match, find the two lines that do
- Once found, count the distance from the centre, 0.1 per line. Being left value + and right -.

Step 3

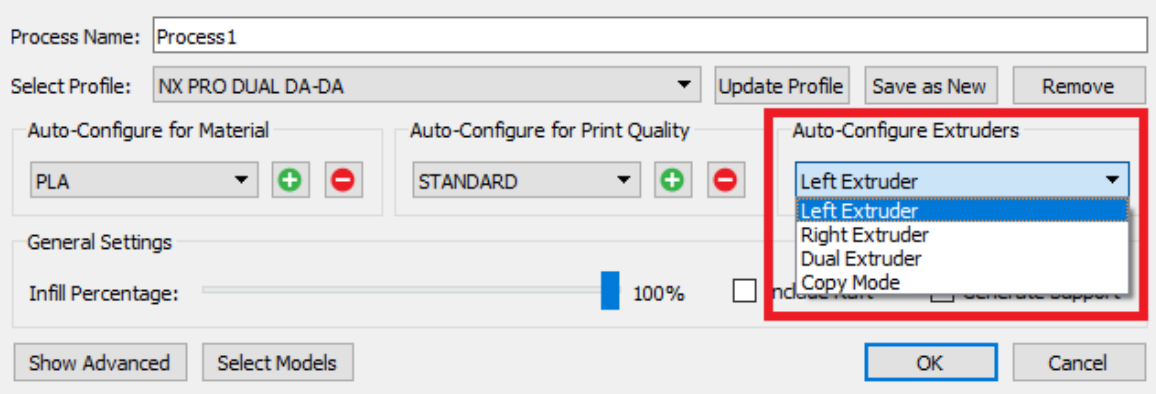
- Continue with the step of the macro.
- Until both lines are match, the process will be repeated automatically

DUAL OPTION

- Filamento
- Pellet
- Simple
- Dual

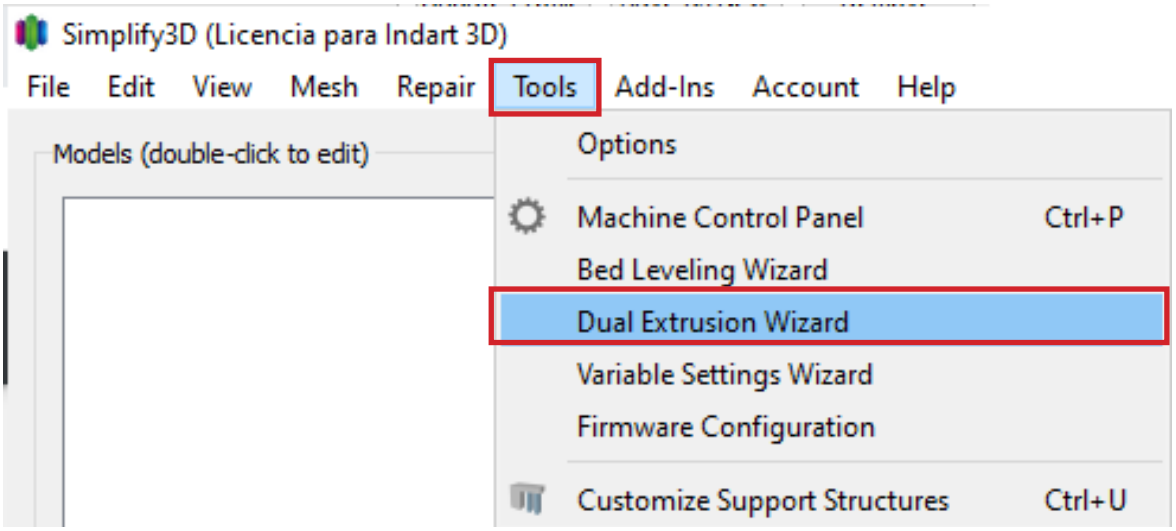
Print Mode Selection

- To print with the Left head, we will select "Left Extruder Only".
- To Print with the Right head, we will select "Right Extruder Only".
- If we want to print with a double head, either a two-colour piece or a single piece and a support material, we will use "Dual Extruder".
- If we want to replicate a piece with the second head, we will use "Mirror Mode" this will replicate everything that the Left head prints.

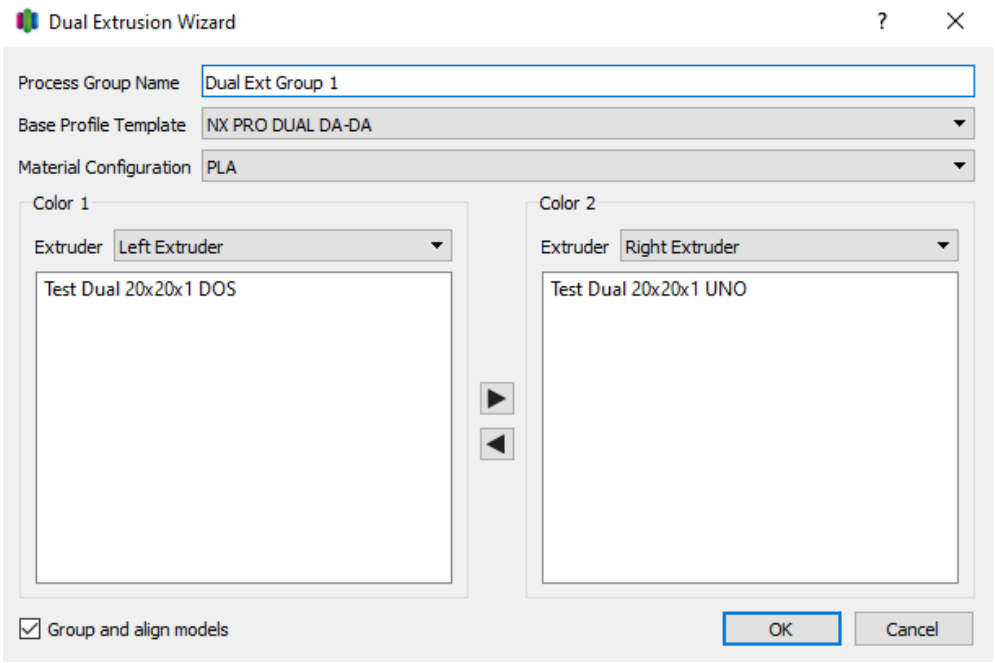


Dual Extruder

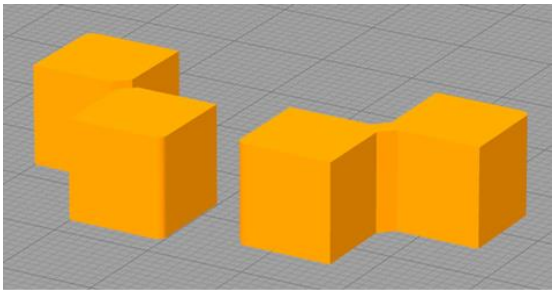
- Import the two files to print in Dual and click Tools / Dual Extrusion Assistant

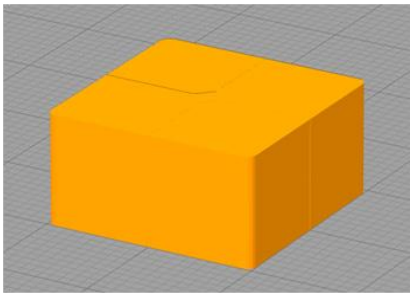


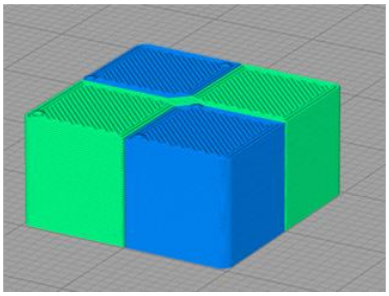
- Select the base profile template if you have more than one.
- Configure the material to be used.
- Place the files in the corresponding Header.



- If the .stl are well designed they will have been placed in their corresponding place.
- Save the file and upload it to your machine.
- This is what the result should look like.







NOZZLE CHANGE

- Filamento
- Pellet
- Simple
- Dual

Bellow we Will explain how to correctly change the nozzle.

1. Remove the material from the head.
2. With The hotend cold, remove the nozzle with your hand
3. Putt he new nozzle
4. Make sure the tip is firmly attached to the head.
5. If the diameter of the nozzle is different, change it in the slicer.

EXTERNAL SD CARD

- Filamento
- Pellet
- Simple
- Dual

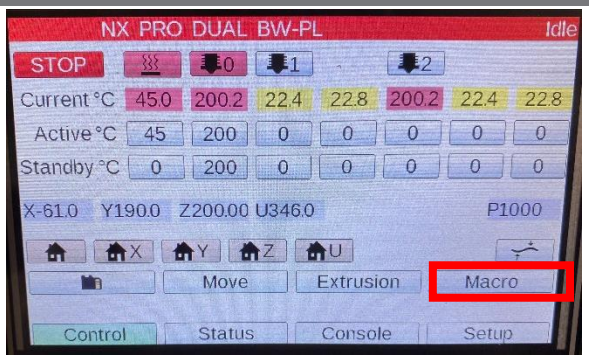
BF RANGE

In the BF range you will find the external SD card slot on the back of the printer.

NX RANGE

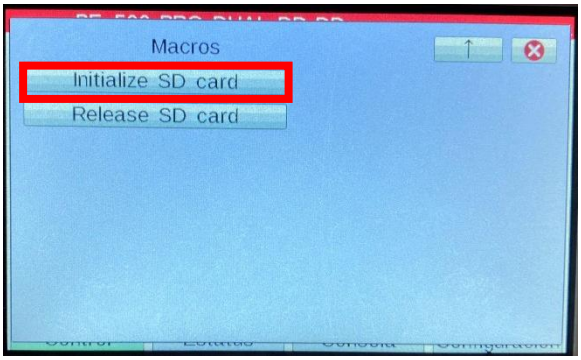
In the NX range you will find the external SD card slot on the front of the printer.

STEP 1
On the printer home screen, press MACRO, in order to initialise the external SD card.

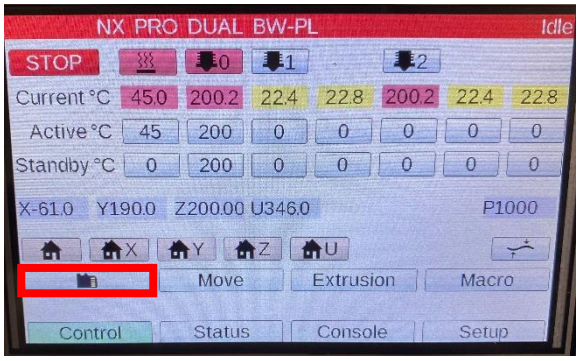


STEP 2
On the next screen click on EXTERNAL SD.

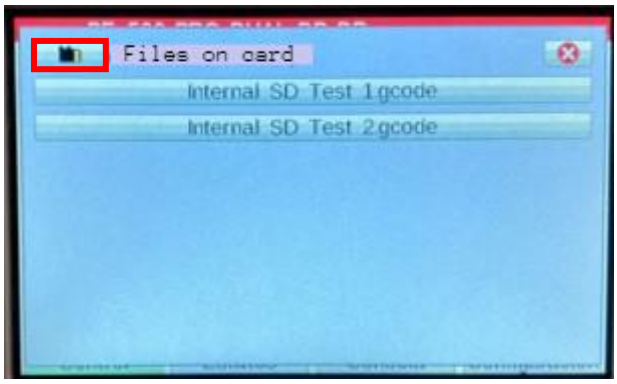
STEP 3
Click on INITIALIZE SD CARD, to activate the external SD card and access to your files later.



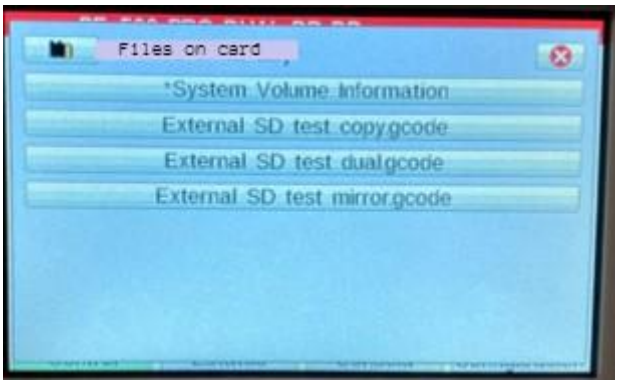
STEP 4
Once these steps have been completed, return to the home screen and click on the card button to access both the external SD card and the SD card (built into the main board).



STEP 5
Here you can access to the documents on both cards. In this screen, press the card button again to access to the external SD card.



STEP 6
Here you Will have access to all documents on the external SD card.

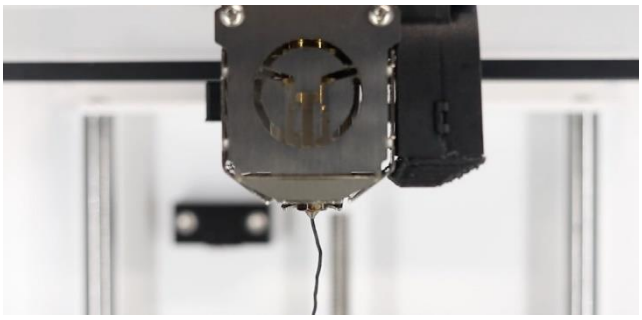


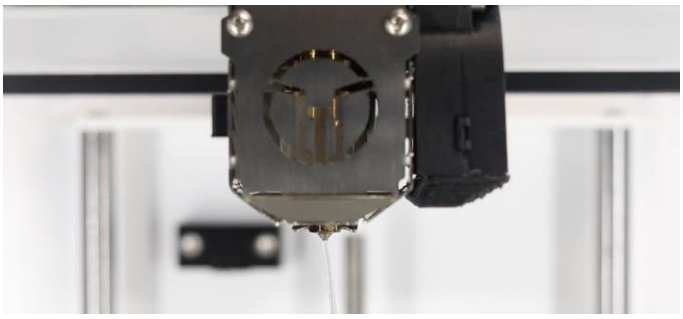
HEAD CLEANNING

- ✗ Filamento
- ✓ Pellet
- ✓ Simple
- ✓ Dual

260º: Use ABS or materials with a similar melting temperature range for materials over 260º. Start extruding until no trace of the previously used material remains. Once this point is reached, progressively lower the temperature to 250º.

260º: Use polypropylene for materials less than 260º. Start extruding until no trace of the previously used material remains. Once at this point, progressively lower the temperature to 210º.





SOFTWARE DE IMPRESIÓN SIMPLIFY 3D

- ✓ Filamento
- ✓ Pellet
- ✓ Simple
- ✓ Dual

Indart 3D's 3D printing stations include the Simplify3D™ professional manufacturing suite, a software with all the advanced and optimized characteristics to create the most complex objects in the highest quality. It includes a powerful simulator to make you more productive, visualizing the result of the printing strategy you're working on before you start manufacturing

You will be able to repair the imported designs in Simplify3D itself and you will love the intelligent support option. Spectacular functionality with which the software will create the right support for the most complex parts.

If you have any questions about the use of the software, please consult the following page:**https://www.simplify3d.com/support/**

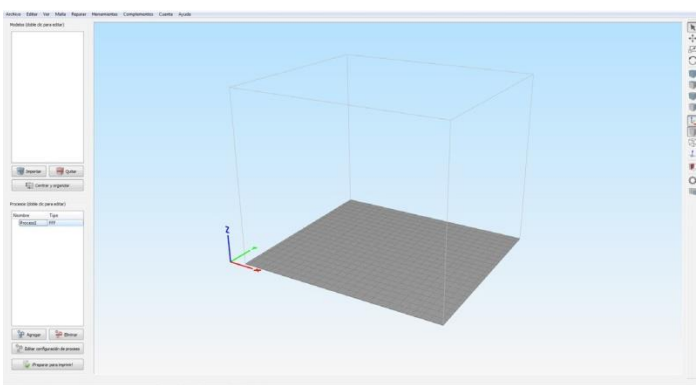
If you have any doubt, you can check the videos

https://tumaker.com/en/knowledge-base/

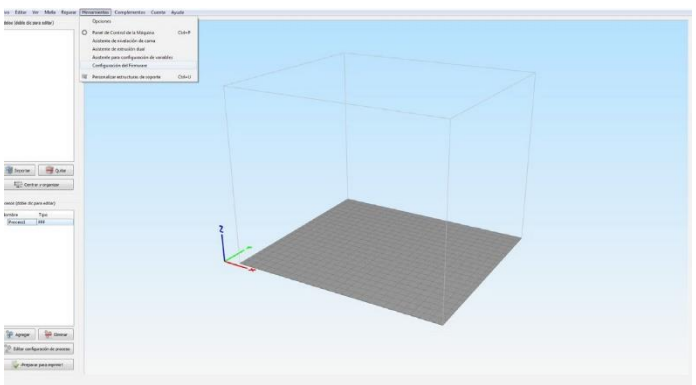
SIMPLIFY 3D LOADING PROFILES

- ✓ Filamento
- ✓ Pellet
- ✓ Simple
- ✓ Dual

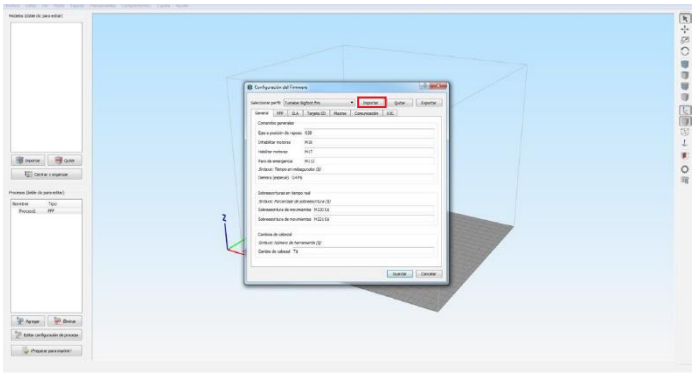
Open Simplify3d



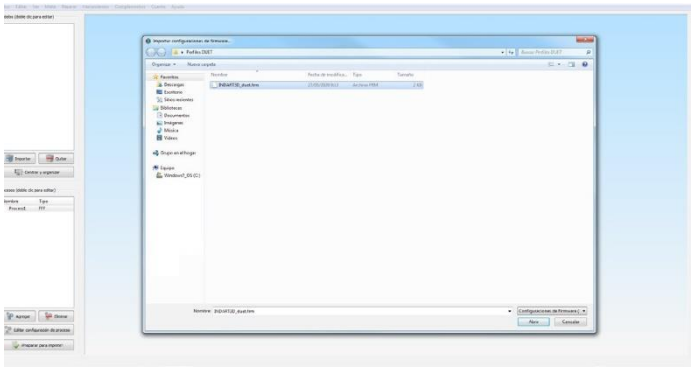
In Tools go to Firmware Configuration



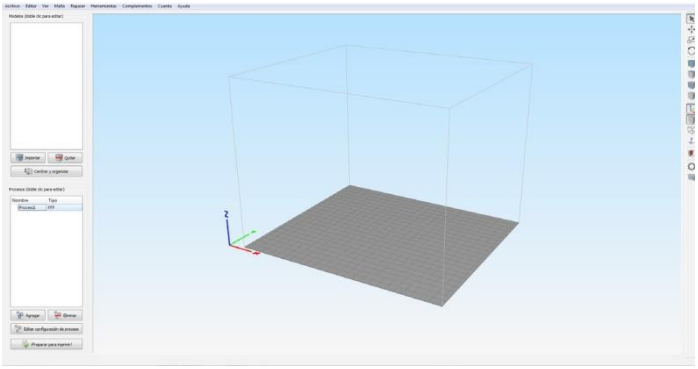
Click on Import



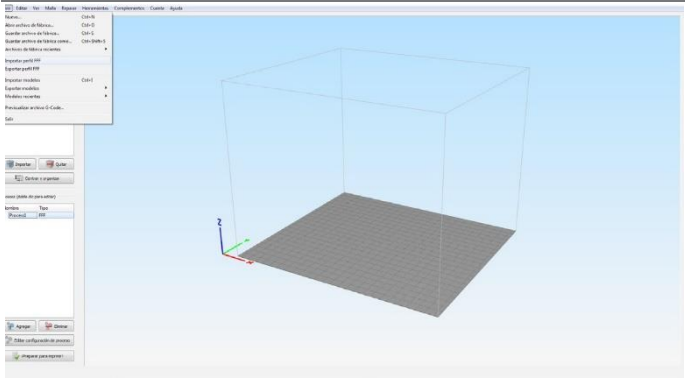
Select the .frm file



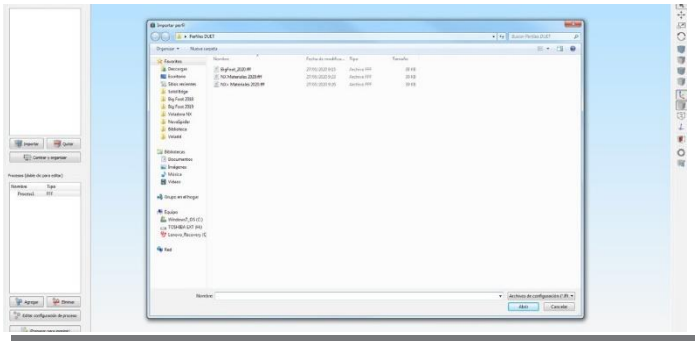
Click save



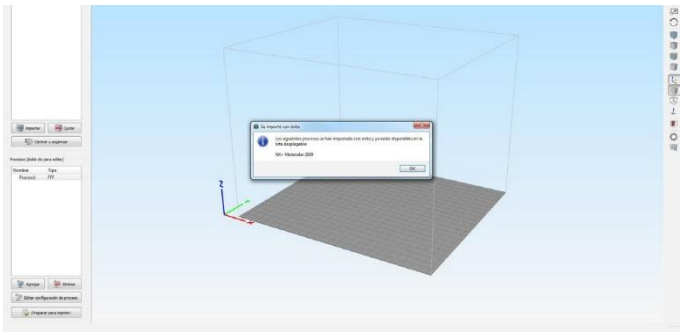
In File go to Import FFF profile



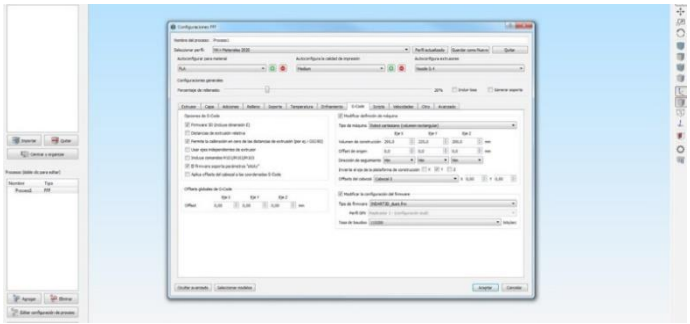
Select the .fff file you want to import



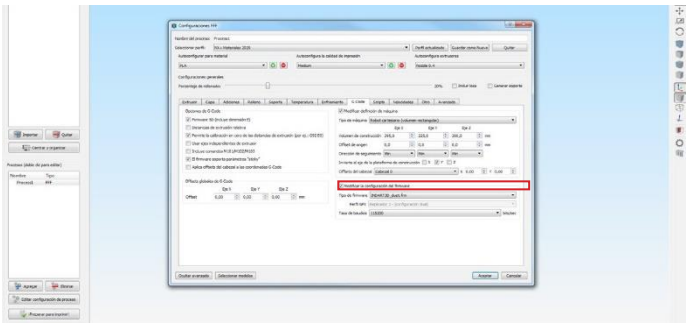
It will show a message like this



In the Process select the imported profile



Make sure that the imported .frm appears in the G-Code tab



SECURITY

- Filament
- Pellet
- Simple
- Dual

ATTENTION, HOT SURFACE

The platform and nozzle of the head can be heated up to 120ºC and 300ºC depending on the printing material, therefore caution is recommended.

RISK OF ENTRAPMENT

Do not handle any mechanical parts of the printer while it is in operation.

BASIC RECOMMENDATIONS

- Filament
- Pellet
- Simple
- Dual

- Place the printer on a firm Surface without vibration.
- Place the printer in a draft-free environment with an ambient temperature between 15ºC – 25ºC.
- Follow the printer installation and power-up instructions.
- Always use the machine in a ventilated area.
- If there is any unusual operation, please go to: **https://tumaker.com/en/technical-support/**
- Use materials recommended by Tumaker to ensure proper printer operation.
- General cleaning and greasing of the printer every 6 months are recommended.
- Cleaning the head every 100h of printing. Depending on the material it would be advisable to do it more regularly.
- It is advisable to change the nozzle periodically, every time you change spools or material. Write us and we will provide them to you.
- Make your prints by following the recommendations and parameters given by Tumaker.
- Follow the maintenance recommendations for optimal printer operation and durability.
- At the end of the machine's service life, we recommend you to contact us.

WARRANTY

- Filamento
- Pellet
- Simple
- Dual

Tumaker provides this Limited Warranty to purchasers of the Tumaker product(s) included in the sales package ("Product"). Tumaker warrants to you that, during the warranty period, Tumaker or a service company authorized by Tumaker will, within a commercially reasonable time, remedy defects in materials, design, and workmanship by repair or, if Tumaker deems it necessary in its sole discretion, replacement of the Product in accordance with this Limited Warranty (except as otherwise provided by law). This Limited Warranty shall only be valid and enforceable in the country in which you purchased the Product as long as Tumaker has intended the Product for sale in that country. However, if you purchased the Product in a member state of the European Union, this Limited Warranty is valid and in force.

Some limitations may apply to the service covered by the warranty due to the country-specific elements present in the Products. Tumaker's obligation with respect to its products under warranty is limited to replacement of parts or repair at its discretion and at the premises of Tumaker or a dealer authorized by Tumaker. In the case of requiring the replacement of parts at the customer's home, will be made upon acceptance of travel budget and labour. The configured and manipulated products and accessories that had to be assembled will not be covered by this warranty.

Warranty period

The warranty period shall commence at the time of the original purchase of the Product by the first end user. Tumaker products are not consumer items. They are oriented elements for professional and industrial use. Tumaker offers a **warranty period of 1 year** valid only if it has not been misused or if the maintenance and periodic revisions required by the product for proper operation have not been carried out correctly. This warranty will not be valid in the cases specified in the "What is not covered by the limited warranty?" section.

To the extent permitted by the law of your country, the Warranty Period will not be extended or renewed or otherwise affected by the subsequent resale, repair or replacement of the Product authorized by Tumaker.

However, repaired part(s) or replacement products supplied during the Warranty Period will be warranted for the remainder of the original Warranty Period. Optional "warranty extensions" are available to the buyer, extending the warranty coverage.

How to obtain warranty service

If you wish to make a claim under this Limited Warranty, please send your Product (or the affected part when it is not the entire Product) to a service company authorized by Tumaker. For more information on how to make a claim, see https://tumaker.com/en/contact/.

Information on Tumaker authorized customer service centres and service companies can be found in the Tumaker sales package or on local Tumaker website.

Any claim made under this Limited Warranty shall be subjected to your notice of the alleged defect to Tumaker or to a service company authorized by Tumaker within a reasonable time of discovery and in any event not later than the expiration date of the Warranty Period. When making a claim under this Limited Warranty you must provide (a) the Product (or affected part) and (b) the original proof of purchase, clearly indicating the name and address of the seller, the date and place of purchase, the type of product, and the serial number.

What is not covered by the Limited Warranty?

1. User manuals or third party software, content, data or links, configuration, included in or downloaded from the Product or during installation, assembly or shipment, as well as those incorporated at any other time in the delivery chain or otherwise acquired in any way and in any form by you. Tumaker does not warrant that Indar3D's software will meet your needs, work in combination with any hardware or software provided by an independent vendor, or resell, repair, or replace the Product authorized by Tumaker.

2. Normal wear (including, but not limited to, wear of moving parts). Defects caused by improper handling (including, but not limited to, defects caused by sharp elements, bending, compression or dropping, etc.). Defects or damage caused by misuse of the Product, including use contrary to instructions provided by Tumaker (for the Product). Other acts beyond Tumaker's reasonable control.

3. Defects or alleged defects caused by the fact that the Product was used with, or in connection with, any product, equipment, software and/or service not manufactured or supplied by Tumaker or was used in a manner other than for its intended use.

4. The deterioration of the Product if it has been exposed to inadequate environmental conditions, humidity or extreme atmospheric or thermal conditions or to rapid changes thereof, to corrosion, oxidation, spillage of food or liquids or to the influence of chemical products.

5. A different firmware than the one provided nor the use of a different printing base than the one recommended.

6. Direct or indirect damage resulting from the use of a third-party printing material (one that has not been supplied by Tumaker) or from the use of a consumable in an unsuitable condition (with adhering elements, grease residues or other similar incidents).

7. It does not cover damage caused by improper transport: use of packaging other than the original.

8. It does not cover the connection at a voltage other than that set by the manufacturer.

9. It does not cover if Tumaker products have been repaired or altered by personnel other than Tumaker or personnel not authorized by Tumaker.

10. It does not cover if the documentation and information requested by Tumaker is not submitted.

11. It does not cover if the elements which by their nature require periodic maintenance have not been carried out.

12. It does not cover if the lack of functionality is a consequence of the lack of knowledge on the part of the buyers.

13. It does not cover machine failures caused by the use of materials not recommended in this manual.

Returns

You have 7 business days to return a Tumaker product. This period applies from the day you receive the order, and the postmark or transport company's stamp will be used to check the return date.

• The product must be in its original packaging, in new and complete condition (with all accessories, manuals, cables, etc.) and accompanied by the invoice or delivery note.

• The goods must be returned in perfect condition. Items sent or returned incomplete, damaged or deteriorated will not be accepted.

• Loss of the item or damage occurring during a shipment shall be the responsibility of the customer. We recommend that you return the items by registered mail or courier service and with insurance for the value of the product.

If all these requirements are met, the amount of the returned item will be reimbursed or, always through the same form of payment in which you paid the order and excluding the shipping costs of the return and what was paid for training, installation or other services.
If the device is damaged, the amount of the repair will be deducted from the amount of the return. If a technical analysis of the product is carried out within the framework of the right of withdrawal.

Tumaker will make every effort to reimburse the customer as soon as possible.

Responsibility

Tumaker shall not be liable to the Buyer for the failure or inability of Tumaker products to function properly. Nor for any loss, damage, injury or expense of any kind or nature caused directly or indirectly by Tumaker's products. If for any reason it is necessary to ship the Product to Tumaker's facilities, it is recommended that the Product be shipped under insurance to cover possible loss or damage. In any case, any incident related to transport will be the responsibility of the buyer. Likewise, Tumaker is not responsible for its stations not being able to print geometries not previously analysed by its technical service.

Anex A

The following list corresponds to some elements that are not covered by the limited warranty.

Consumable elements

• Filaments for 3D printing
• Printing platform
• Hotend set:
- Fans
- Sensors
- Resistances
- Heating bolck
- Nozzles
- Straight adjustor
• Bowden tube
• Accesories