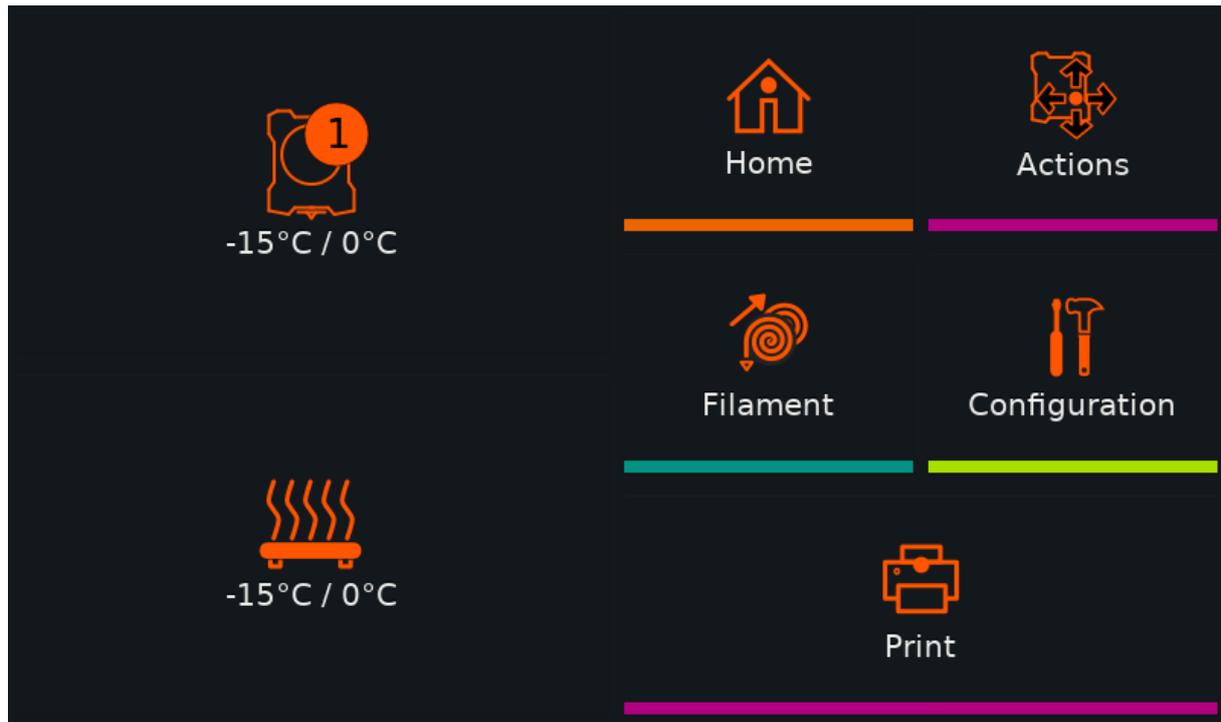


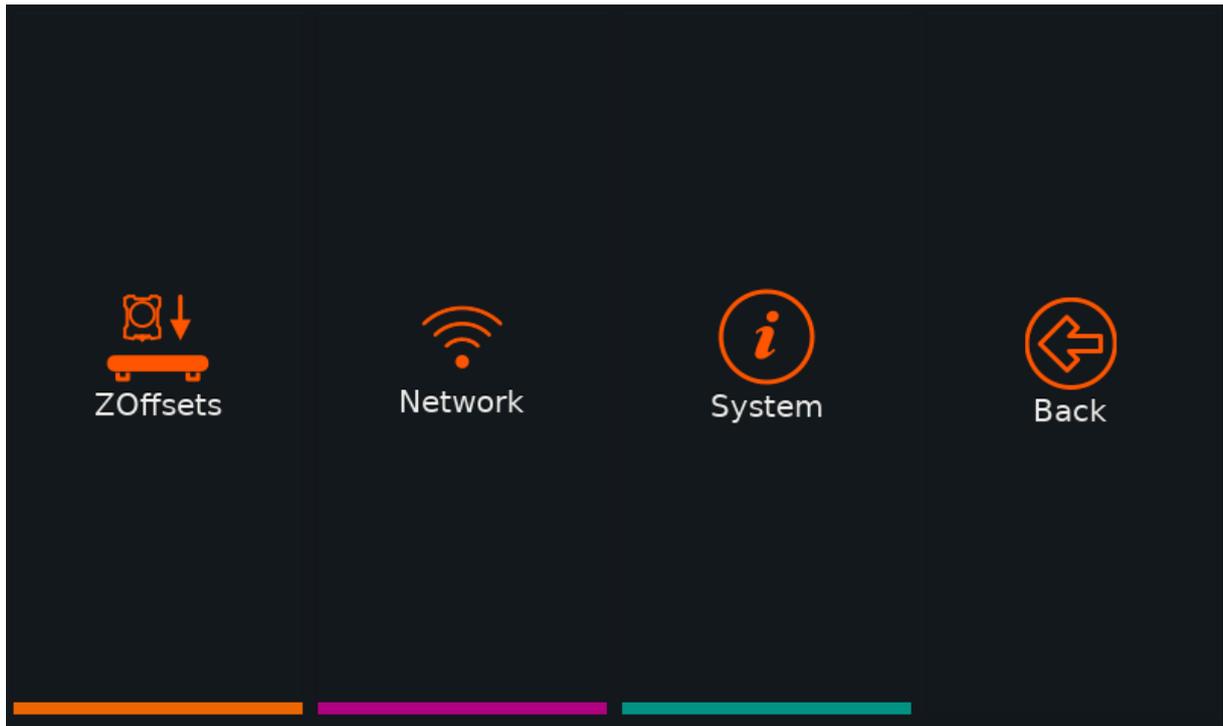
# Setup & Calibration Instruction

## Step 1: Setup of the internet connection

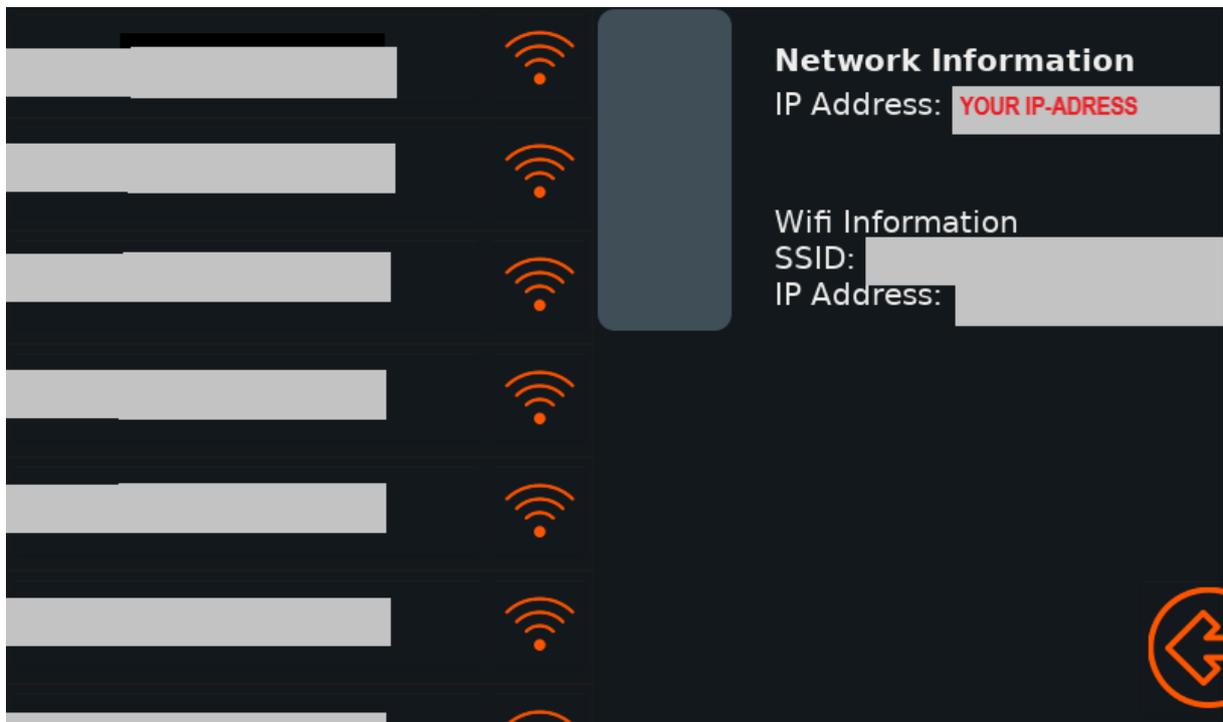
- Switch on the power of the printer
- You should see the following screen:



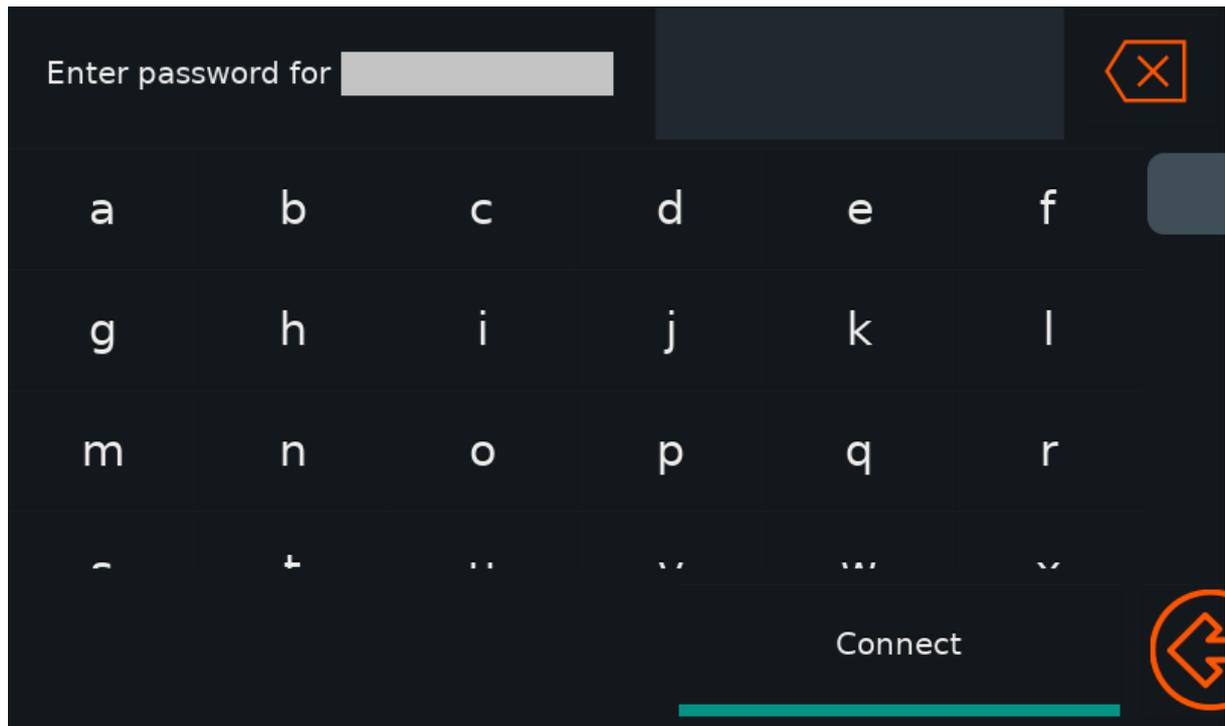
- Choose „Configuration“



- Choose „Network“



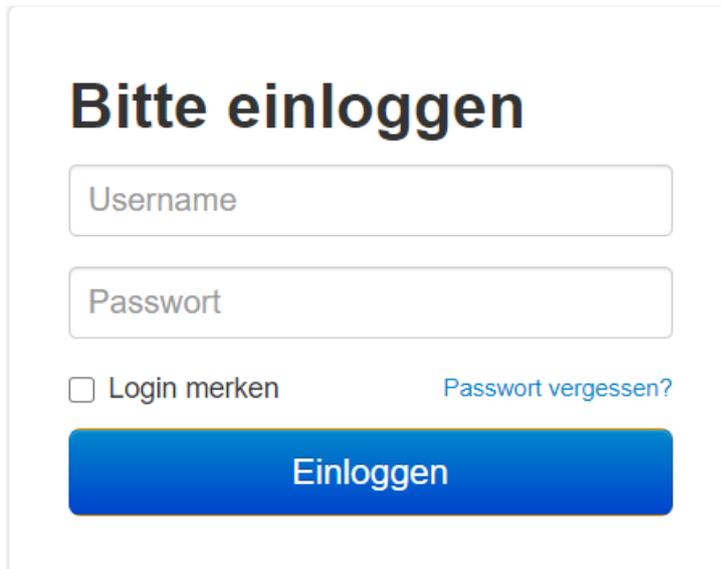
- Choose your Wi-Fi from the list on the left



- Enter your Wi-Fi credentials
- Press „Connect“
- When the connection has been established you can see your IP under „Network“

## **Step 2: Setup of the Web-Interface**

- Type in your IP address in the address bar of your browser
- The following window should appear:



**Bitte einloggen**

Username

Passwort

Login merken [Passwort vergessen?](#)

**Einloggen**

- Use the login data:

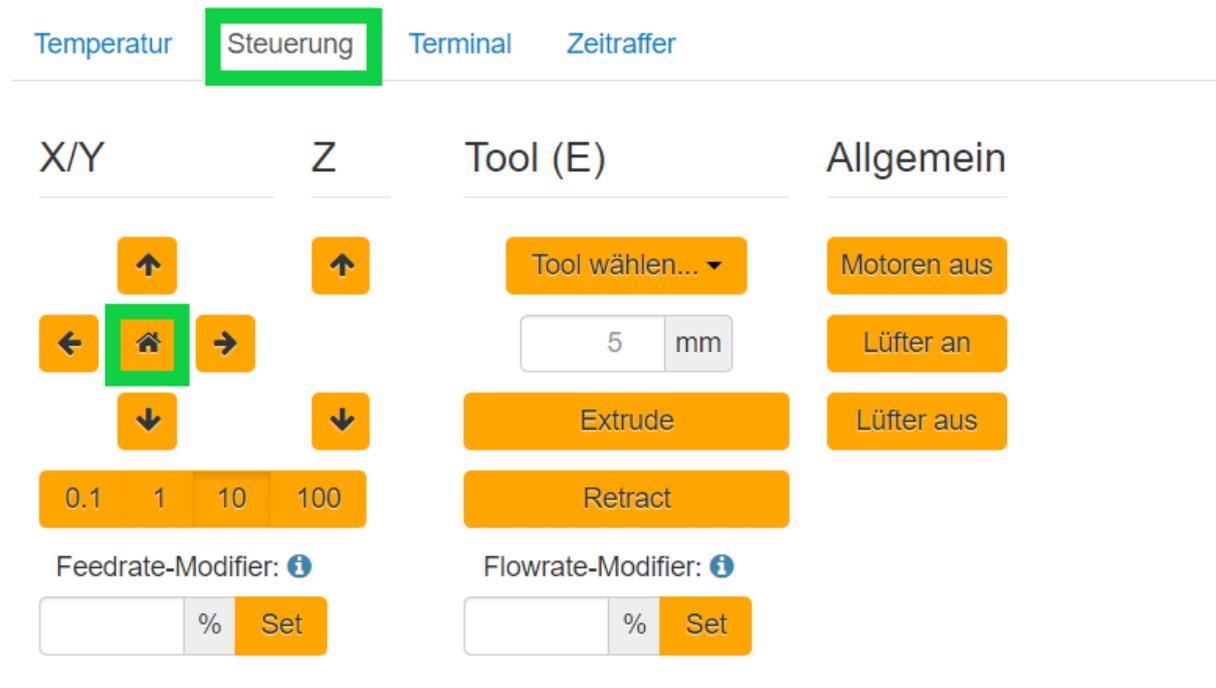
Username: ifactory3d

Password: ifactory3d

### Step 3: Set up of the distance to the bed

The printer has been preset to a certain distance between nozzle and belt but needs to be recalibrated because of variations in the assembly.

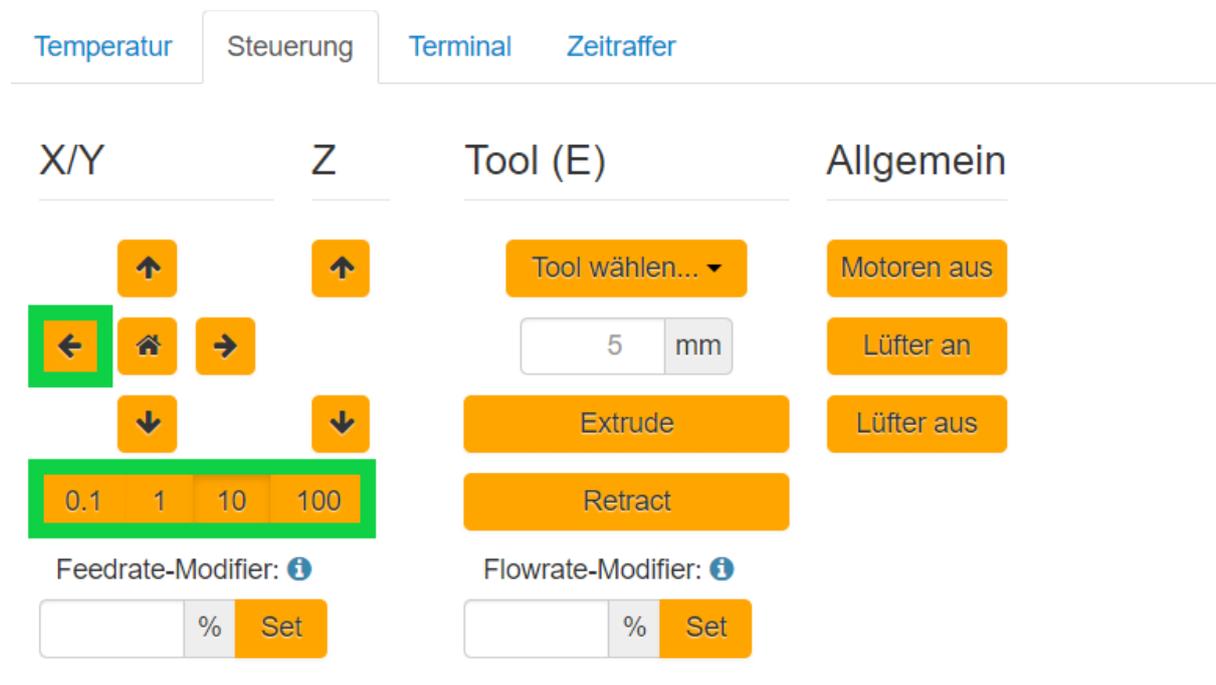
-open „Control“



The screenshot shows the printer's control interface. At the top, there are four tabs: 'Temperatur', 'Steuerung', 'Terminal', and 'Zeitraffer'. The 'Steuerung' tab is highlighted with a green box. Below the tabs, the interface is divided into four main sections: 'X/Y', 'Z', 'Tool (E)', and 'Allgemein'. In the 'X/Y' section, there are directional buttons (up, down, left, right) and a central 'Home' button (house icon) which is highlighted with a green box. Below these buttons are four buttons labeled '0.1', '1', '10', and '100'. In the 'Z' section, there are up and down buttons. In the 'Tool (E)' section, there is a 'Tool wählen...' dropdown menu, a text input field containing '5' and 'mm', and two buttons labeled 'Extrude' and 'Retract'. In the 'Allgemein' section, there are three buttons labeled 'Motoren aus', 'Lüfter an', and 'Lüfter aus'. At the bottom of each section, there are 'Feedrate-Modifier' and 'Flowrate-Modifier' controls, each consisting of a text input field, a '%' button, and a 'Set' button.

- Click on „Home Y/X“

- Choose a suitable value between 0.1 and 100 mm movement.

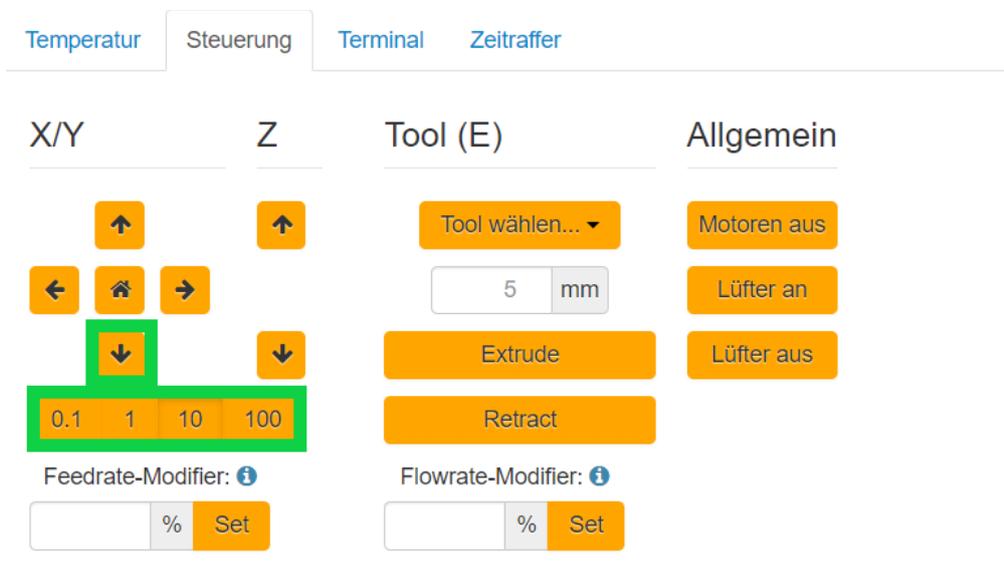


This screenshot is similar to the previous one, but with different highlights. The 'Steuerung' tab is still highlighted. In the 'X/Y' section, the directional buttons (left, home, right) and the '0.1', '1', '10', and '100' buttons are all highlighted with a green box. The 'Home' button is also highlighted with a green box. The rest of the interface remains the same as in the previous screenshot.

- Put a calibration card (iFactory3D-Dollar / Paper) to the edge at the end of the heated bed.



- Move the nozzle close to the calibration card by pushing the down arrow key.



- First choose a large value for the movement after that smaller values to get closer to the calibration card.

- Lower the nozzle so far that you can rub the paper against the nozzle. The nozzle should leave a little mark on the dollar.



-Open up „Terminal“

Temperatur Steuerung **Terminal** Zeitraffer

```
Recv: T:-15.00 /0.00 B:-15.00 /0.00 @:0 B@:0
```

Senden

Autoscroll zeige 704 Zeilen (Zum Ende scrollen) [Alles kopieren](#)

Suppress temperature messages [Alles leeren](#)

Suppress SD status messages

Suppress wait responses

► Erweiterte Optionen

- send „M114“

M114 Senden

- Remember the Y-value if the answer:

Recv: X:150 Y:49.5 Z:0

- Send “M206 Y-49.5”

M206 Y-49.5 Senden

Don't forget the minus, and replace the “49.5” with your individual value

- Save with “M500”

M500 Senden

If you want to change the start height afterwards, you must first retrieve the current value with the command "M503".

 Senden

In the terminal, this command displays all the settings of the printer. Note the Y value from the M206 line.

Temperatur Steuerung Terminal Zeitraffer Continuous Print

```
Recv: echo: M149 C ; Units in Celsius
Recv:
Recv: echo:; Filament settings: Disabled
Recv: echo: M200 S0 D1.75
Recv: echo:; Steps per unit:
Recv: echo: M92 X160.00 Y160.00 Z275.82 E840.00
Recv: echo:; Maximum feedrates (units/s):
Recv: echo: M203 X300.00 Y300.00 Z30.00 E25.00
Recv: echo:; Maximum Acceleration (units/s2):
Recv: echo: M201 X1500.00 Y1500.00 Z100.00 E5000.00
Recv: echo:; Acceleration (units/s2): P<print_accel> R<retract_accel> T<travel_accel>
Recv: echo: M204 P1500.00 R1500.00 T1500.00
Recv: echo:; Advanced: B<min_segment_time_us> S<min_feedrate> T<min_travel_feedrate> J<junc_dev>
Recv: echo: M205 B20000.00 S0.00 T0.00 J0.01
Recv: echo:; Home offset:
Recv: echo: M206 X0.00 Y-41.45 Z0.00
Recv: echo:; Auto Bed Leveling:
```

Autoscroll zeige 306 Zeilen (Zum Ende scrollen) Alles kopieren Alles leeren

Suppress temperature messages  
 Suppress SD status messages  
 Suppress wait responses  
▶ Erweiterte Optionen

If you want to print higher, the number must be increased.

If you want to print lower, the number must be decreased.

Example:

Current the current start value is -41.45. If you want to print 0.2mm higher you have to change the value to -41.65.

If you want to print 0.2mm lower, the number must be decreased to -41.25.

You can send the values to the printer with the command M206 (don't forget to save the value with M500 afterwards).

## **Step 4: calibration of the printer**

- The iFactory One comes precalibrated but values might differ because of the assembly.

The standard values for the steps/mm are:

-X/Y: 160 → We do not recommend calibrating these values. If you do, the values for X and Y must be the same.

-Z: 333

-E: 840

Z-Motors and Extruder should be calibrated:

### **Z-Motors:**

- Mark the belt at the edge at the back of the heatbed with a tape.

- Move the belt (z-axis) 330mm:

Web interface-Terminal:

G91

G1 Z330 F200

This should move the object to the front edge of the heatbed

If the mark is not at the other end of the heatbed, follow the steps below:

- Measure the driven distance

- Subtract from the standard value: Standard-Measured=Deviation

- Calculate an optimized Z value:  $Z_{new} = Z_{old} * \frac{Standard - Deviation}{Standard}$

(If the object moved to far the new value should be smaller if it moved not far enough it should get bigger)

- Send the new Z-value to the printer (Web interface-Terminal):

(exchange 280 with your calculated value)

Save the setting with the command "M500"

## Extruder-calibration:

- Put filament in the extruder and make a mark 120 mm before the entry into the extruder (permanent marker)

- Heat up the nozzle:

Temperatur Steuerung Terminal Zeitraffer

	Ist	Soll	Offset
Tool	-15.0°C	230 °C	0 °C
Bett	-15.0°C	Aus °C	0 °C

Tighten the nozzle again while it is hot.

- extrude 100mm:

-open the Terminal and give the following commands:

G91

g91| Senden

G1 E100 F200

G1 E100 F200| Senden

- measure the distance between your mark and the extruder entry

- Calculate the difference: Difference=measured value-20.

- The new E value is calculated as following:  $E_{new} = E_{old} * \frac{100 - Difference}{100}$

(If the extruder moved a too small distance the value should become higher if the extruder moved too far it should become smaller)

- Send the new E value to the printer (Webinterface-Terminal):

M92 E840 Senden

(exchange 840 with the optimized value)

**IMPORTANT:** Save everything with M500!

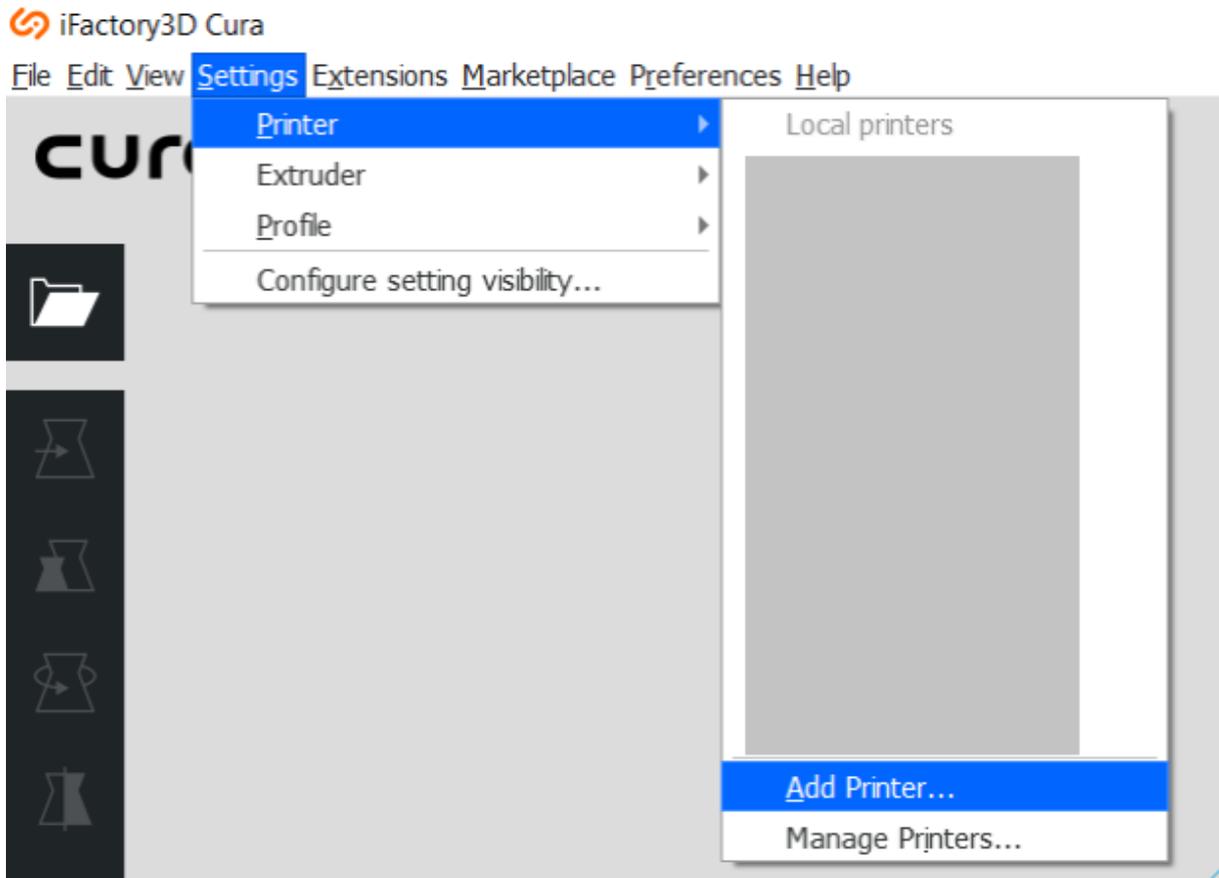
M500 Senden

You can check your values with an „M503“command:

```
Recv: echo:; Filament settings: Disabled
Recv: echo: M200 S0 D1.75
Recv: echo:; Steps per unit:
Recv: echo: M92 X160.00 Y160.00 Z280.00 E840.00
Recv: echo:; Maximum feedrates (units/s):
Recv: echo: M203 X300.00 Y300.00 Z30.00 E25.00
Recv: echo:; Maximum Acceleration (units/s2):
Recv: echo: M201 X1500.00 Y1500.00 Z100.00 E5000.00
```

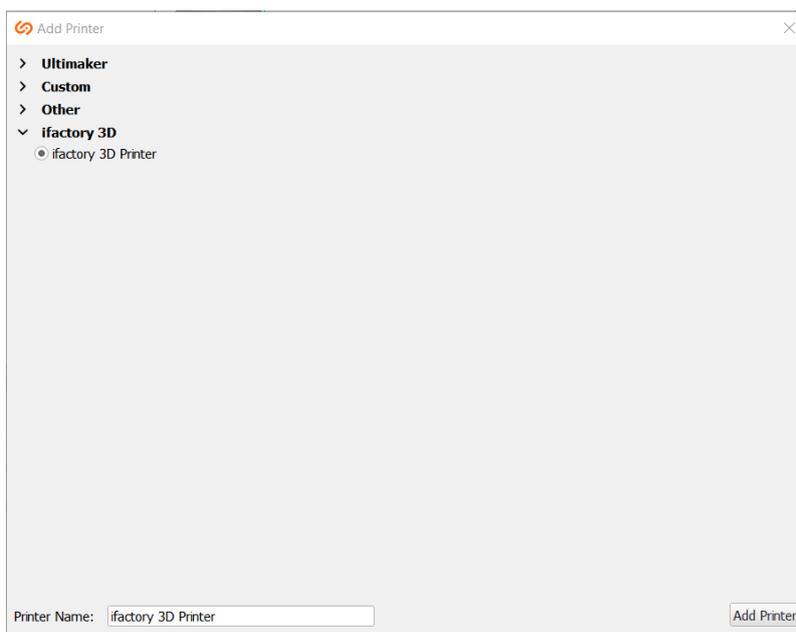
## 5. Step: Set up the Slicer (Cura)

- install and open iFactory3D-Cura <https://ifactory3d.com/downloads/>



- Go to “Settings” → “Printer” → “Add Printer”

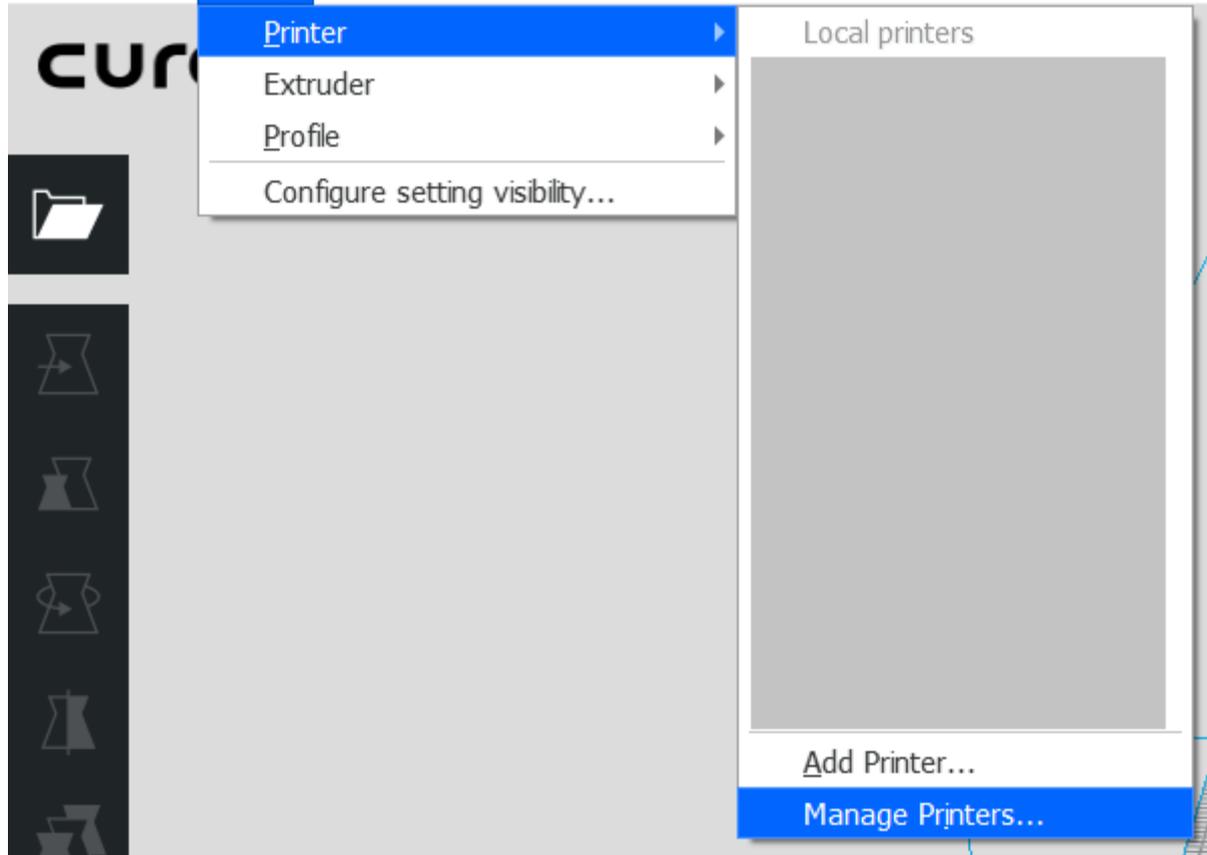
-Choose „iFactory 3D Printer“



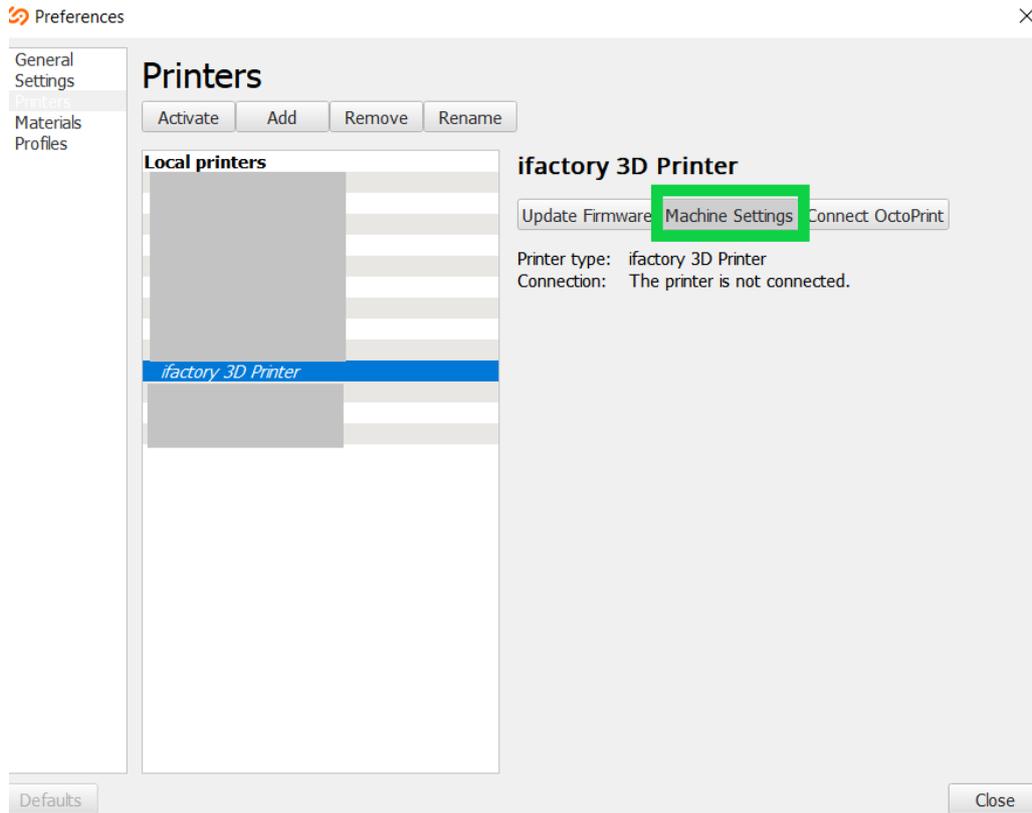
- Choose „Manage Printers“

iFactory3D Cura

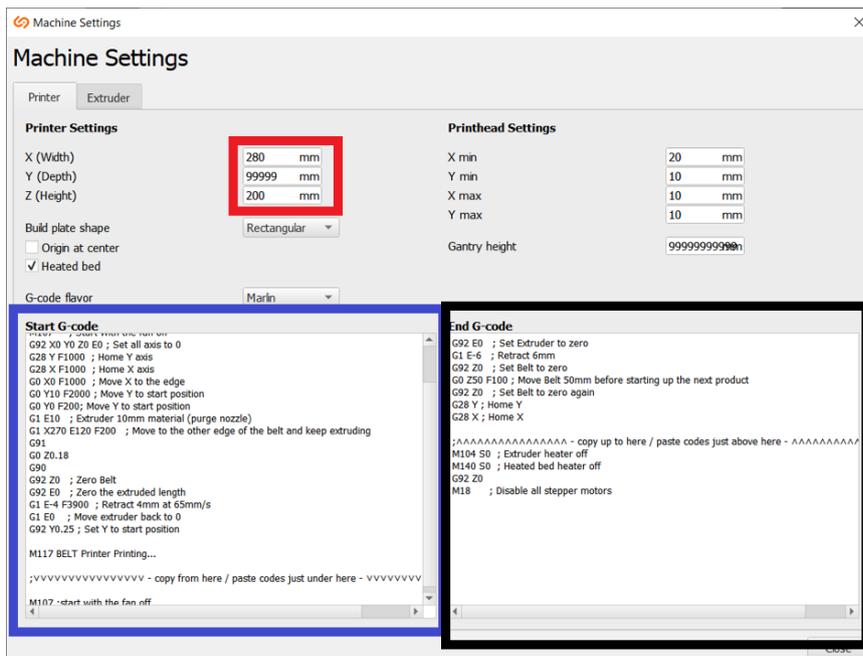
File Edit View Settings Extensions Marketplace Preferences Help



-Choose „Machine Settings“



- Change the x-value to 280 (red)
- Change the y-value to 200 (red)
- Copy the start g-code (blue) and the end g-code (black) from the next page or from this Link <https://ifactory3d.com/downloads/>



- You can close the window the settings are saved automatically.

## Start G-Code

```
G90      ; Set to Absolute Positioning
M82      ; Set extruder to absolute mode
G21      ; Metric values
M107     ; Start with the fan off
G92 X0 Y0 Z0 E0 ; Set all axis to 0
G28 Y F1000 ; Home Y axis
G28 X F1000 ; Home X axis
G0 X0 F1000 ; Move X to the edge
G0 Y10 F2000 ; Move Y to start position
G0 Y0 F200 ; Move Y to start position
G1 E10 ; Extruder 10mm material (purge nozzle)
G1 X270 E120 F200 ; Move to the other edge of the belt and keep extruding
G91
G0 Z0.18
G90
G92 Z0 ; Zero Belt
G92 E0 ; Zero the extruded length
G1 E-4 F3900 ; Retract 4mm at 65mm/s
G1 E0 ; Move extruder back to 0
G92 Y0.25 ; Set Y to start position

M117 BELT Printer Printing...

;vvvvvvvvvvvvvvvvvvvv - copy from here / paste codes just under here -
vvvvvvvvvvvvvvvvvvvv

M107 ;start with the fan off
```

## End G-Code

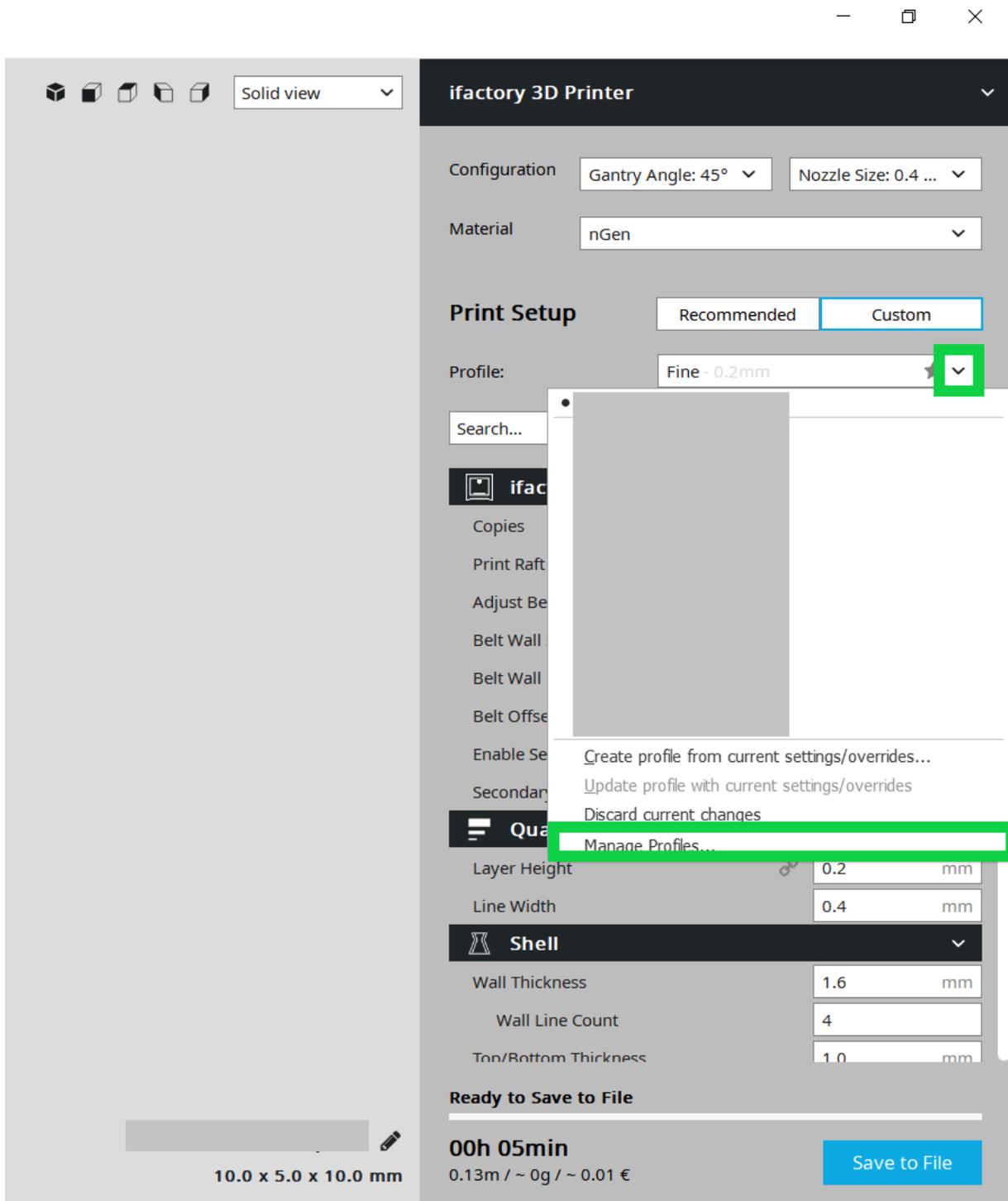
```
G92 E0 ; Set Extruder to zero
G1 E-6 ; Retract 6mm
G92 Z0 ; Set Belt to zero
G0 Z50 F100 ; Move Belt 50mm before starting up the next product
G92 Z0 ; Set Belt to zero again
G28 Y ; Home Y
G28 X ; Home X

;^^^^^^^^^^^^^^^^^^^^ - copy up to here / paste codes just above here -
^^^^^^^^^^^^^^^^^^^^

M104 S0 ; Extruder heater off
M140 S0 ; Heated bed heater off
G92 Z0
M18 ; Disable all stepper motors
```

## Add material profile:

- Open „Manage Profiles“:



The screenshot displays the 'ifactory 3D Printer' software interface. The main window is titled 'ifactory 3D Printer' and features a 'Print Setup' section. In this section, the 'Profile' dropdown menu is set to 'Fine - 0.2mm'. A green box highlights the dropdown arrow next to this profile name. A context menu is open over the dropdown arrow, listing several options: 'Create profile from current settings/overrides...', 'Update profile with current settings/overrides', 'Discard current changes', and 'Manage Profiles...'. The 'Manage Profiles...' option is highlighted with a green box. The interface also shows configuration settings for 'Gantry Angle: 45°' and 'Nozzle Size: 0.4 ...', and a 'Material' dropdown set to 'nGen'. At the bottom, there is a 'Ready to Save to File' status bar with a 'Save to File' button.

- Select „Import“:

