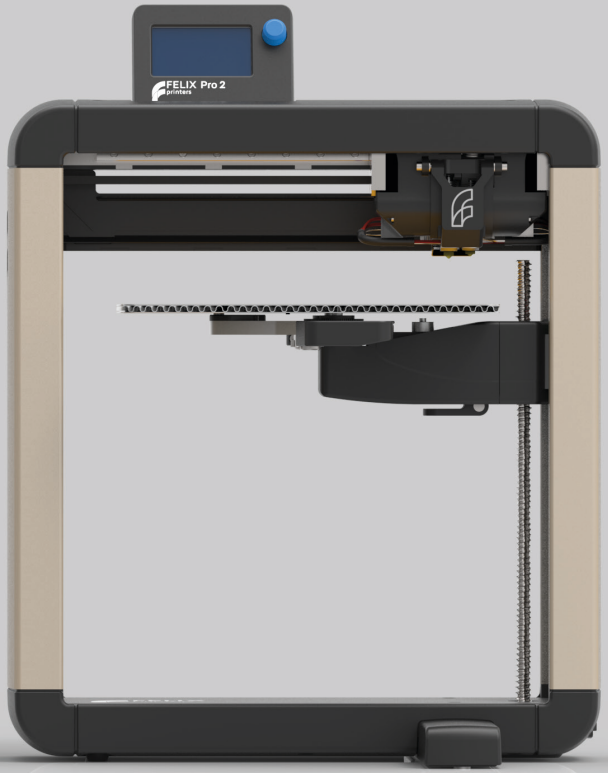
FELIX printers

Quick Start Guide

Pro 2



Safety

General safety

Keep children under the age of 14 out of reach of the printer.
FELIXprinters are only suitable for professional use.

Considerations when in operation

Do not lean on the printer.
Be careful with long hair and loose clothes.
Do not transport the printer while working.
Make sure all moving parts can move without any obstructions.
Do not remove any objects from the hot plate while printing.
Caution with any moving parts that move in the X, Y and Z direction. At the end of each moving part there is a pinching hazard.

Electronic safety

Only use the power supplies and cables supplied by FELIXprinters. Always turn off and unplug the printer before doing maintenance or modifications.

The power supply meets all CE mark regulations and is protected against short-circuit, overload, over voltage and over temperature.

Printer placement

Place the FELIXprinter on a stable table/desk.
This will keep it safe from small children.
Use the FELIXprinter in a dry environment.

Ventilate

Good ventilation while printing is advised though printing pure PLA is considered safe. When printing ABS, small concentrations of Styrene vapour can be released. This can (in some cases) cause headaches, fatigue, dizziness, confusion, drowsiness, malaise, difficulty in concentrating, and a feeling of intoxication.

We recommend using filament types shown on the FELIXprinters website. Examples PLA, PETG, ABS, Glassbend etc. Other types may be toxic. Please follow instructions from the filament supplier.

Caution with heater elements

There is a potential risk of injury, as the print head can reach temperatures of up to 275°C and the heated bed of up to 100°C. Don't place objects on the heated bed that are not being printed, not even when the printer is turned off.

Always let the printer cool down for at least 10 minutes before doing maintenance or modifications.

We do not recommend to leave the printer unattended for a very long period of time. If you do, it is recommended to leave it in a properly conditioned room with distance from highly flamable objects.

INTRODUCTION & CONTENT

Thank you for choosing FELIX Pro 2.

This Quick Start guide contains the following information for you to familiarize yourself with your 3D printer, to use it to its best advantages and to benefit fully from all the functions and the technical developments it incorporates.

It is well worth taking a few minutes to read this guide to familiarize yourself with the information and guidelines it contains about the machine and its functions.

More manuals and tutorials can be found on www.felixprinters.com/support

Require additional support?
Have a look at www.felixprinters.com/support
or at our user forum.

Specs

FELIX Pro 2

System Specifications
- Printer dimensions (L, W, H) 420 x 400 x 550 mm
- Weight 11.5 kg
- Power requirements: 220 V

Capabilities
- Build volume Single mode (L, W, H) 237 x 245 x 235 mm
- Build volume Dual mode (L, W, H) 237 x 245 x 235 mm
- Layer height range 0.05 - 0.25 mm
- Bed temperature: max. 100 °C

Extruders
- Diameter nozzle: 0.35 mm (optional 0.5mm)
- Nozzle temperature: max. 275 °C
- Full metal hot-ends

Print materials
- Open source 1.75 mm filaments
- Tolerance: ± 0.15 mm
- PLA, PET(G), Flex, ABS, PVA, Wood, Glassbend

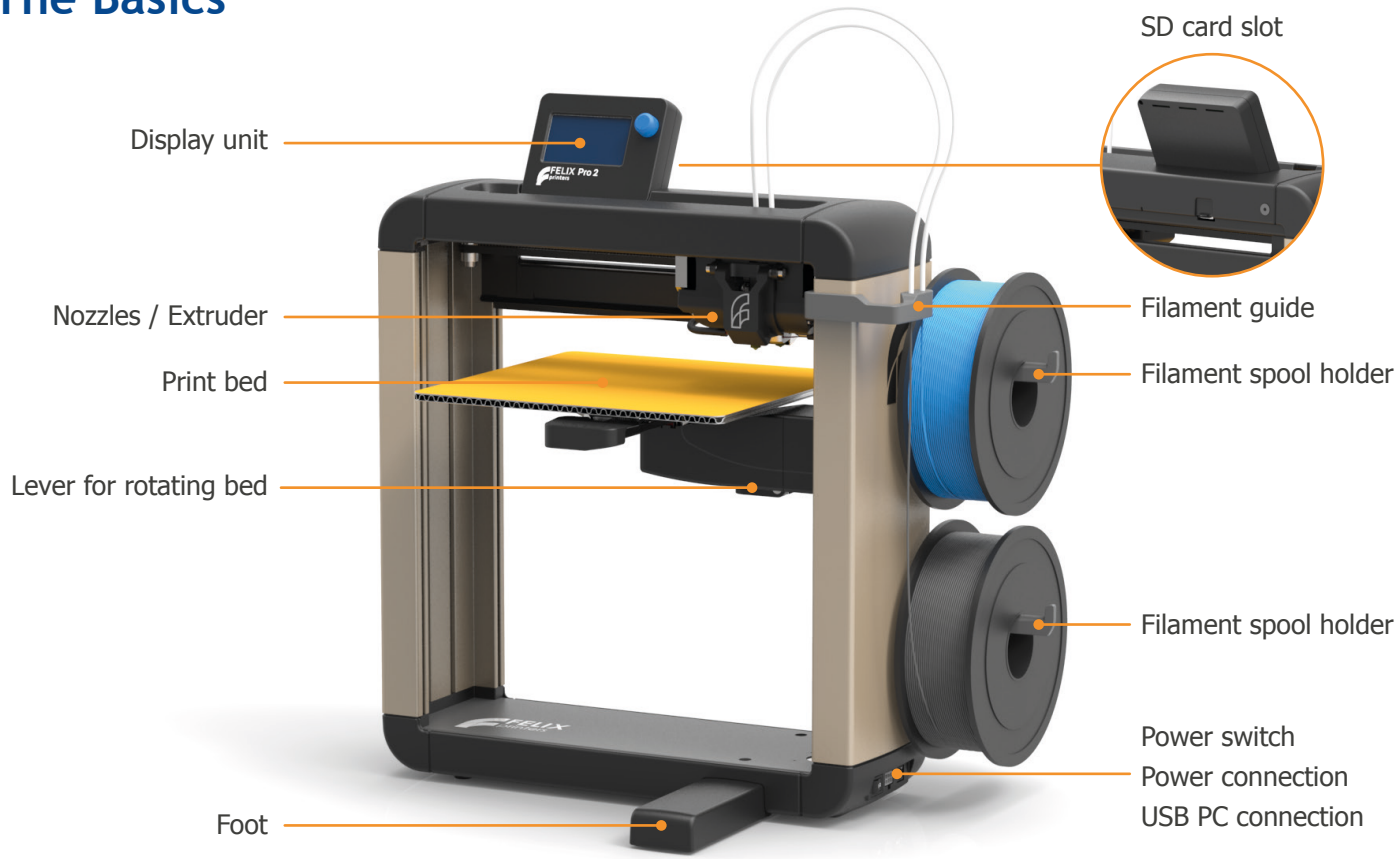
Connectivity
- Stand-alone micro-SD card printing
- USB cable connection
- Optional WiFi (external unit)

Software
- Including one-year licence for Simplify3D or FELIXbuilder
- Support for open source Repetier Host for FELIXprinters

Contact
info@FELIXprinters.com
Zeemanlaan 15, 3401 MV IJsselstein, The Netherlands

Website
www.FELIXprinters.com

The Basics


SD card slot
Display unit
Nozzles / Extruder
Print bed
Lever for rotating bed
Foot
Filament guide
Filament spool holder
Filament spool holder
Power switch
Power connection
USB PC connection

1.1 What's in the box?

A 1 x Allen key

B 1 x Tweezers

C 1 x USB flash drive

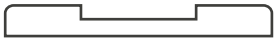
D 2 x M4x20 bolts

E 2 x Filament holder

F 1 x Filament guide

F 2 x Teflon tubes

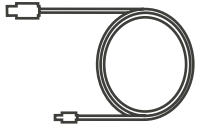
F 1 x Foot bracket



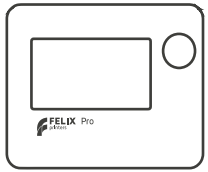
I 1 x Power cable

J 1 x Power unit

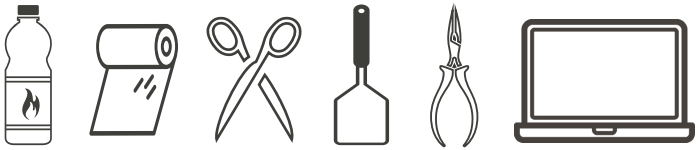
K 1 x USB cable



F 1 x Display unit

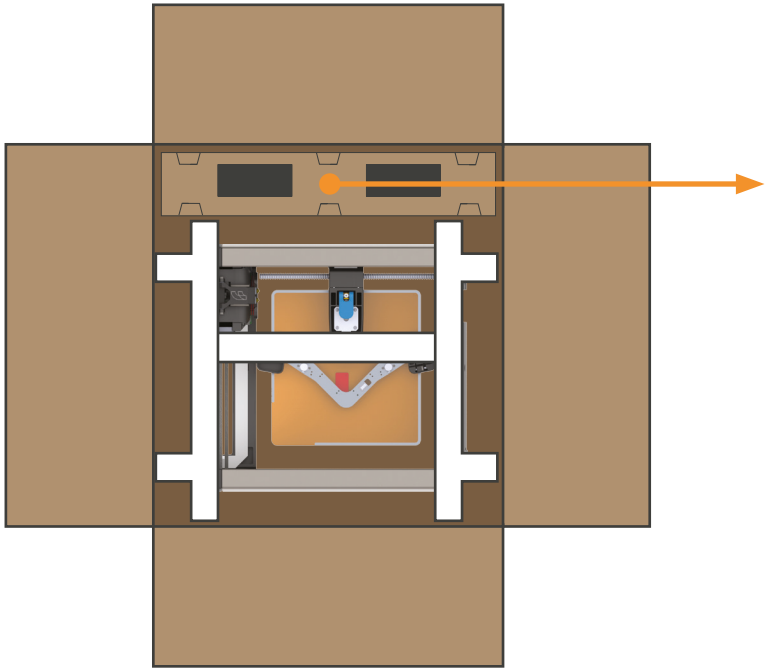


Recommended tools:

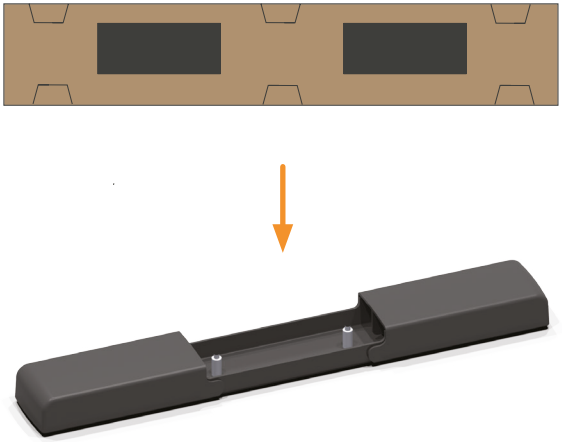


The box could contain extra materials like filament you have ordered.
We recommend to use the following tools: small pliers, scissors, (plastic) spatula, detergent like alcohol, paper towel or cloth.

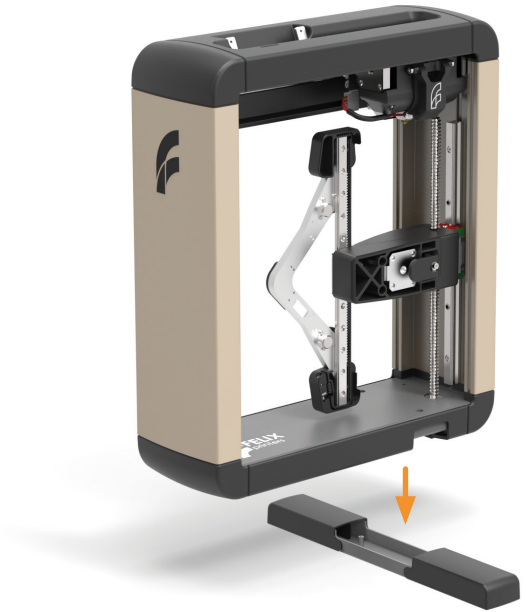
1.2 Installing the foot bracket



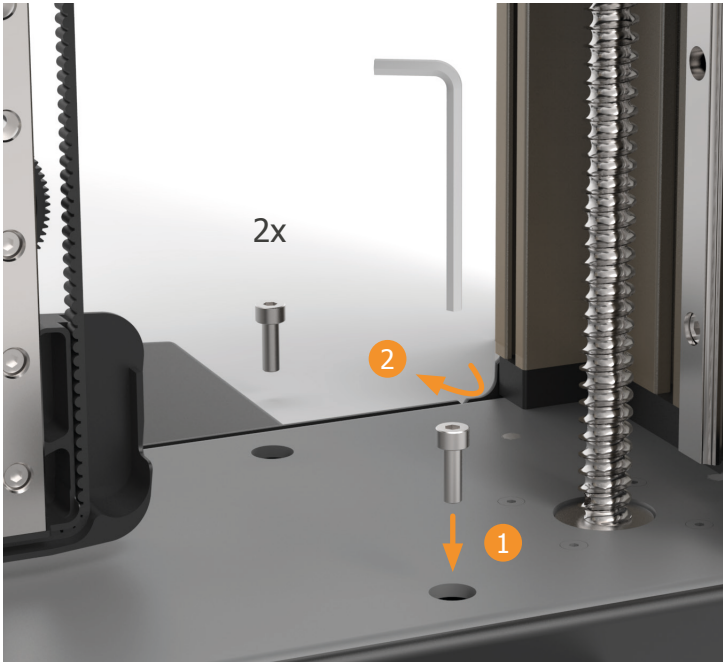
Take out the foot bracket. Leave the printer frame in the box for now.



Place the foot bracket on a stable and flat surface.

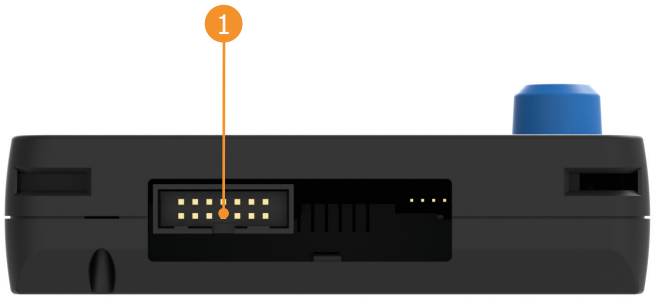


Remove the foam protection from the printer frame and place the frame on the foot bracket.



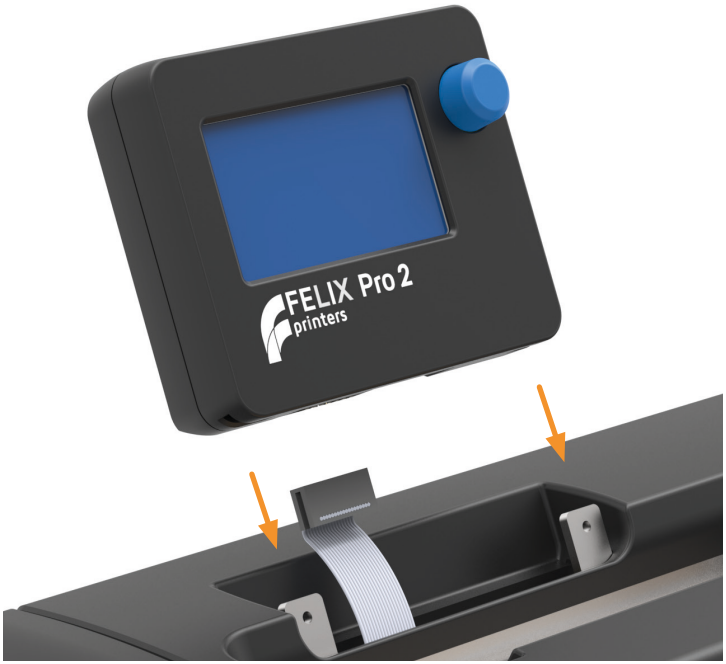
Fix the printer frame onto the foot bracket with the supplied M4x20 screws using the provided Allen key.

1.3 Installing the display unit



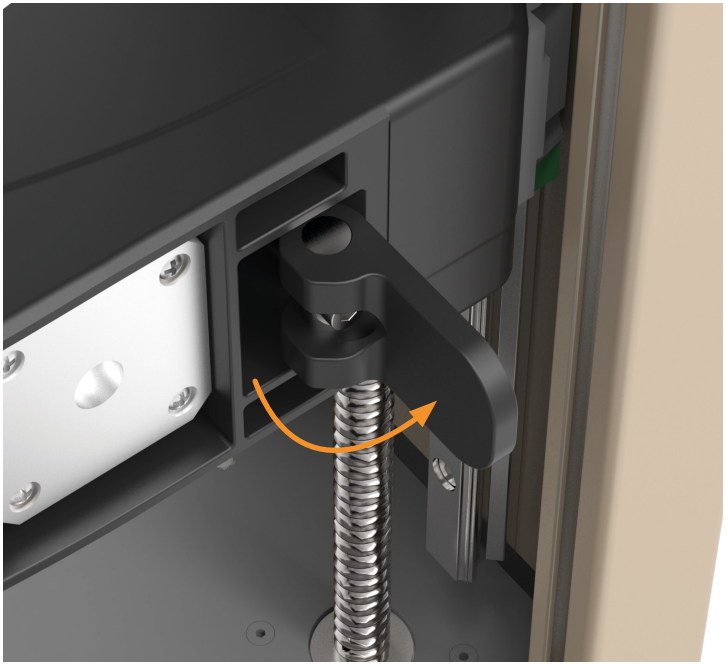
Connect the cables from the printer with the display unit.

Make sure the power is turned off when connecting the display. Failing to do so could cause serious damage.

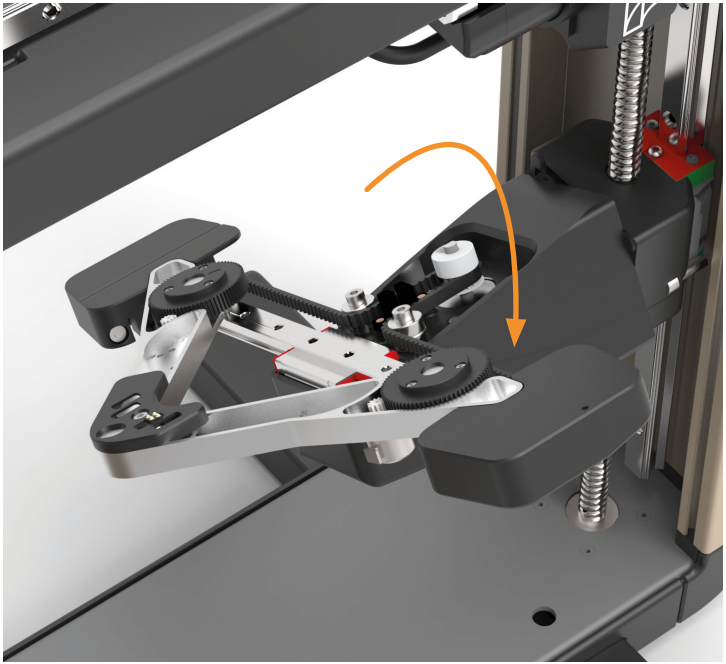


Plug in the connector into the display unit, then slide the display onto the metal pins. Do not turn on power just yet.

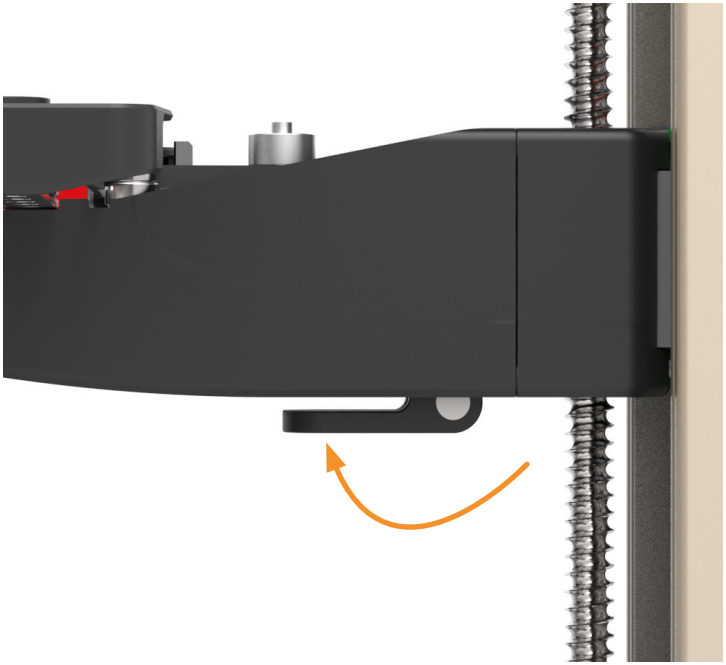
2.1 Preparing the print bed



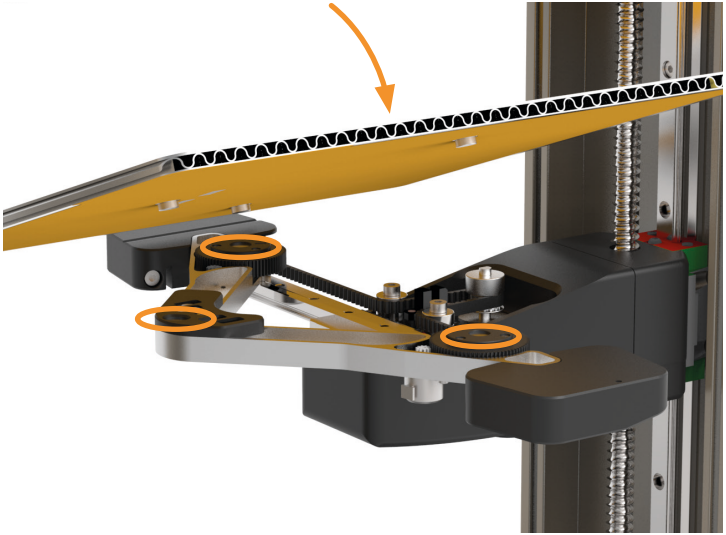
Flip out the lever.



Turn the print bed. This might require a little force.



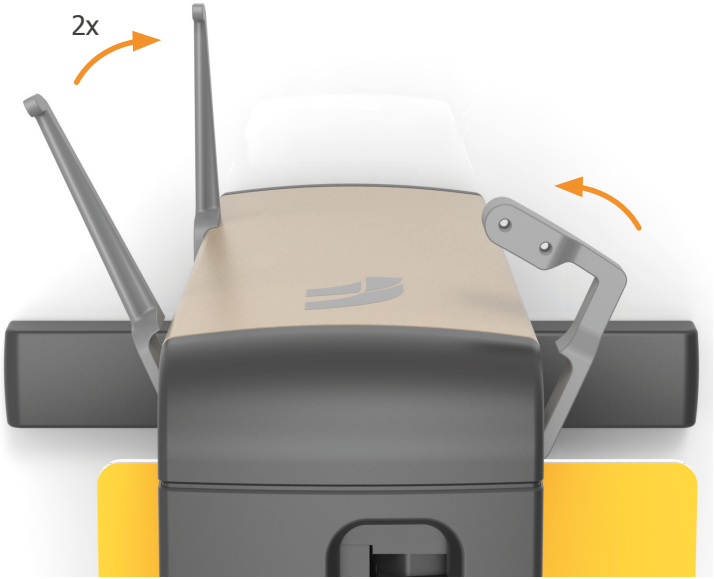
Flip back the lever.



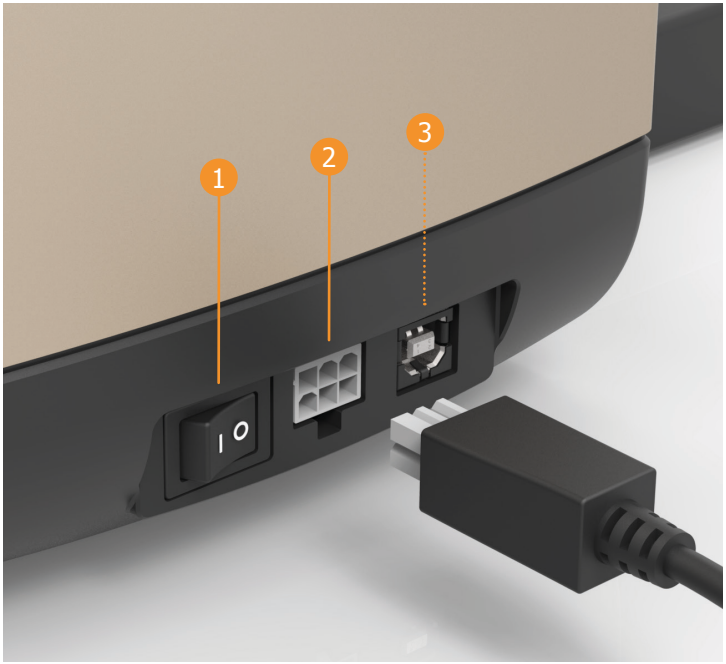
It is important that the bed is placed properly to prevent damage to the heater.

Lower the bed until the three magnets match the positions on the bracket.

2.2 Installing filament accessoires and cables



Snap on the two spool holders onto the right back side of the frame and the filament guide on the right front side of the frame.

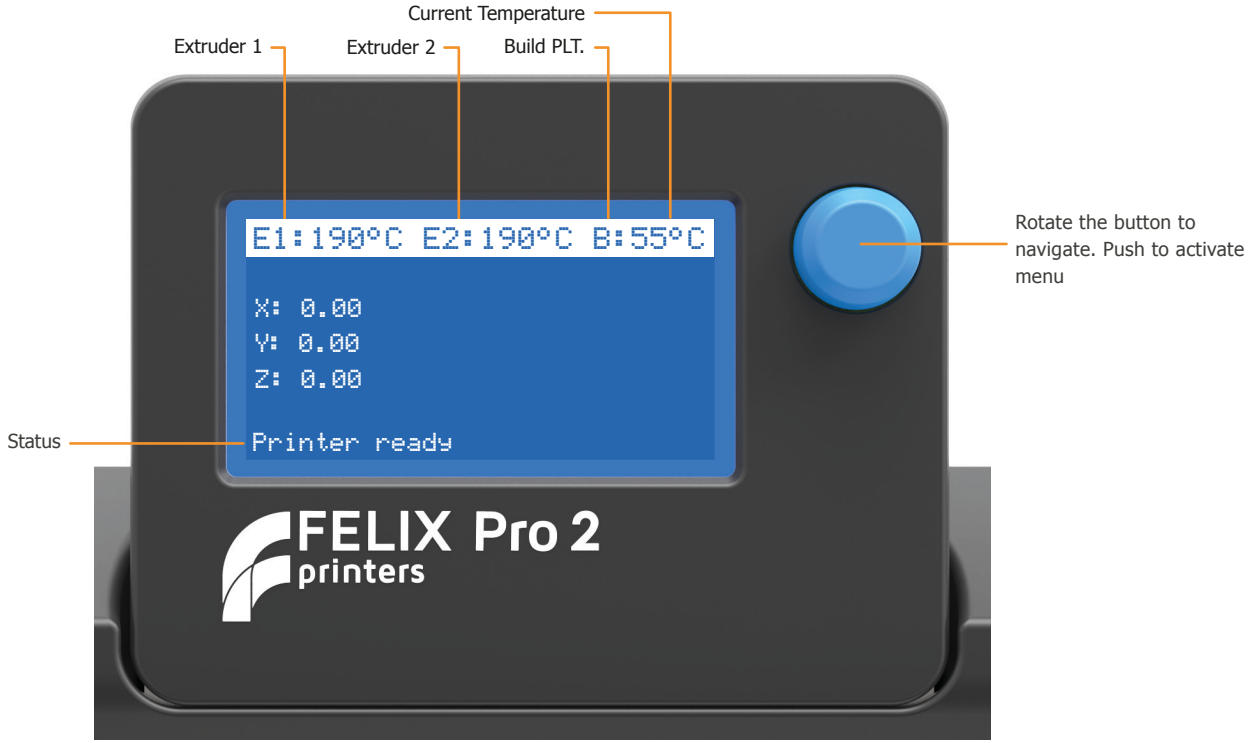


1. Make sure the power switch is turned off.
2. Insert power cable into the printer and into a power outlet.
3. Insert USB when using a PC

2.3 Power on

The unboxing is done.
Turn on the on/off switch and continue to the next step to make your first print!

3.1 Display overview



The rotary button can be used to control the Pro 2 through the display unit.
Use the button to navigate through the menu and push the button to execute a command.

3.2 Print bed calibration

1. Click once onto the button to activate the main menu.
2. Scroll to 'Control'. Click once to access the menu.

Scroll down to 'Level Build PLT' and click once to access the menu.

Click once onto the button to activate the print bed calibration.

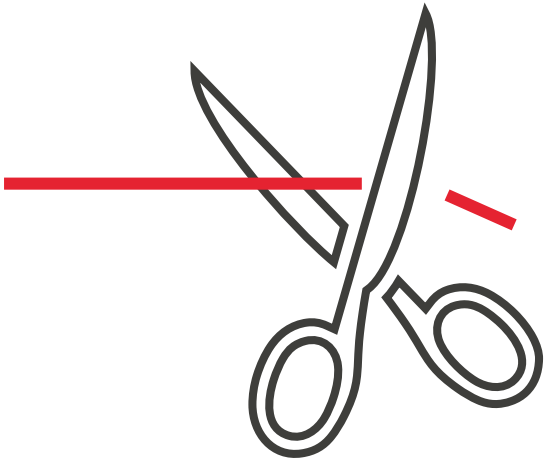
Calibration is only necessary when:

- Noticing an uneven first print layer
- Folding the bed for easy transport
- Replacing the print bed
- Replacing the hot-ends

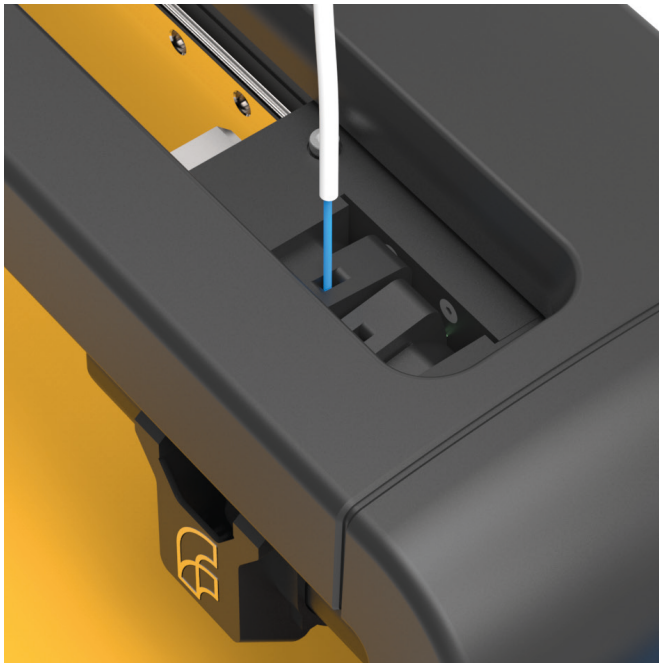
Calibrating hot-ends

Hot-ends only need to be calibrated after replacing or after (partial) disassemblage. For more information please refer to the user manual or: www.felixprinters.com/support

3.3 Loading filament



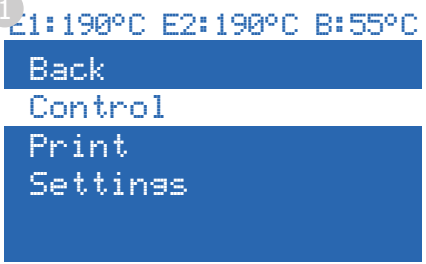
Take the end of the filament from the spool and cut a small piece off and throw it away.



Guide the filament through the teflon tube and insert the filament into the left opening on top of the extruder. Feed through untill the filament is blocked from moving any further.

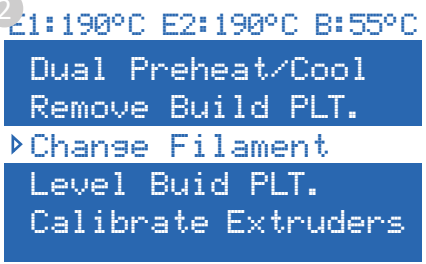
Loading filament - left extruder

1



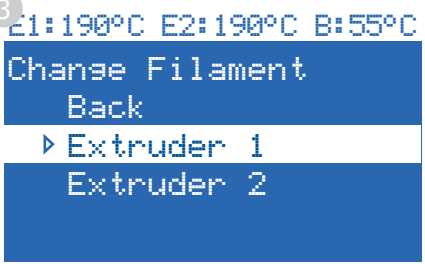
Enter the menu by pressing the rotary button once and select the 'control' menu.

2



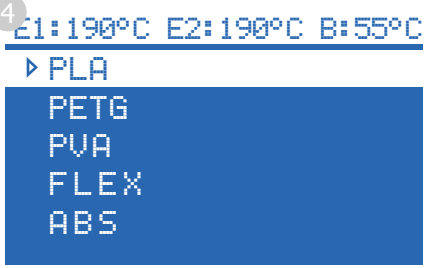
Scroll down to 'Change Filament' and click once to access the menu.

3



Click on 'Extruder 1'

4

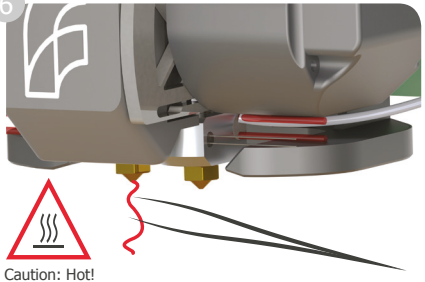


Scroll down to the material you want and click once to select it.

5

Rotate the button clockwise to feed filament into the extruder. Using this feature counter clockwise will unload the filament.

6

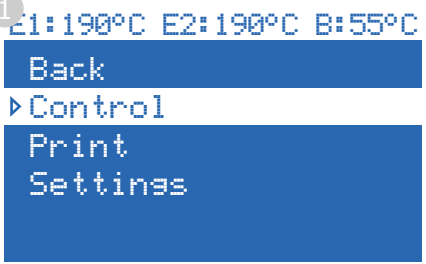


Caution: Hot!

Keep rotating button until a small thread comes out of the extruder. Use the supplied tweezers to remove this thread.

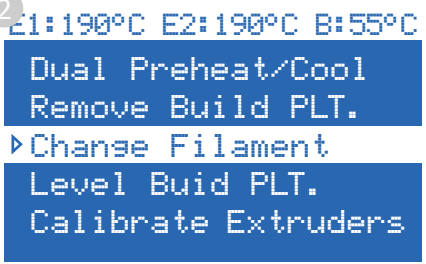
Loading filament - Right extruder

1



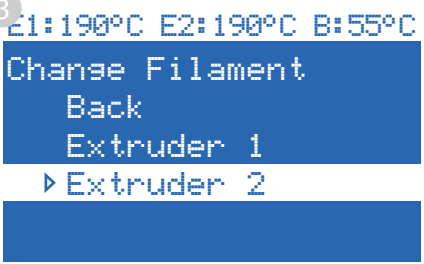
Enter the menu by pressing the rotary button once and select the 'control' menu.

2



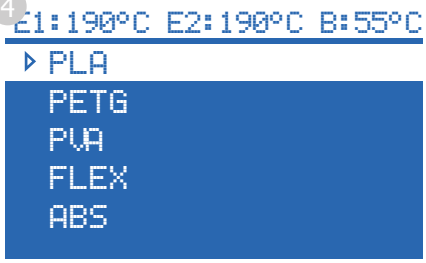
Scroll down to 'Change Filament' and click once to access the menu.

3



Click on 'Extruder 1'

4

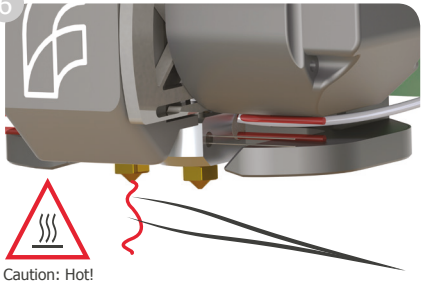


Scroll down to the material you want and click once to select it.

5

Rotate the button clockwise to feed filament into the extruder. Using this feature counter clockwise will unload the filament.

6

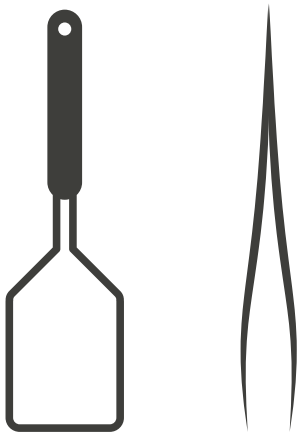


Caution: Hot!

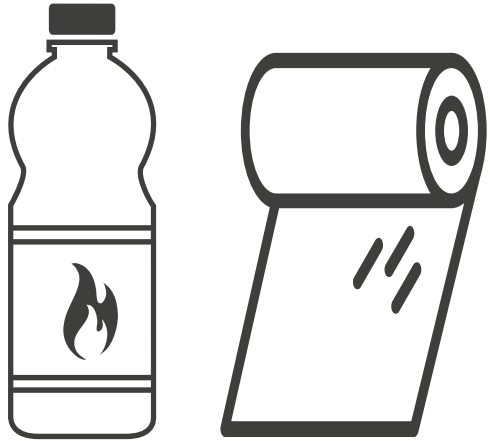
Keep rotating button until a small thread comes out of the extruder. Use the supplied tweezers to remove this thread.

3.4 Cleaning the print bed

To improve print quality it is strongly recommended to start every print job with a clean print bed.



Remove plastic residue from a previous print job from the print bed with a (plastic) spatula or carefully use the supplied tweezers for smaller particles.



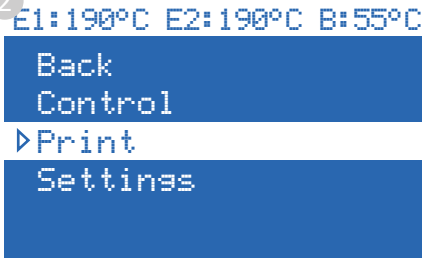
Degrease the print bed with a detergent like alcohol, blue spirit or acetone by putting it on a cloth or paper towel and gently rubbing the print bed surface.

4.1 Print stand alone with a micro SD card

1

Make sure the provided SD card is inserted into the FELIX Pro 2.

2

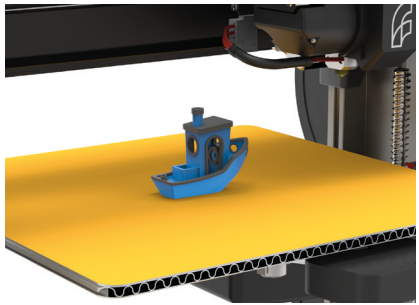


Enter the menu by pressing the rotary button once and select the 'Print' menu.

4

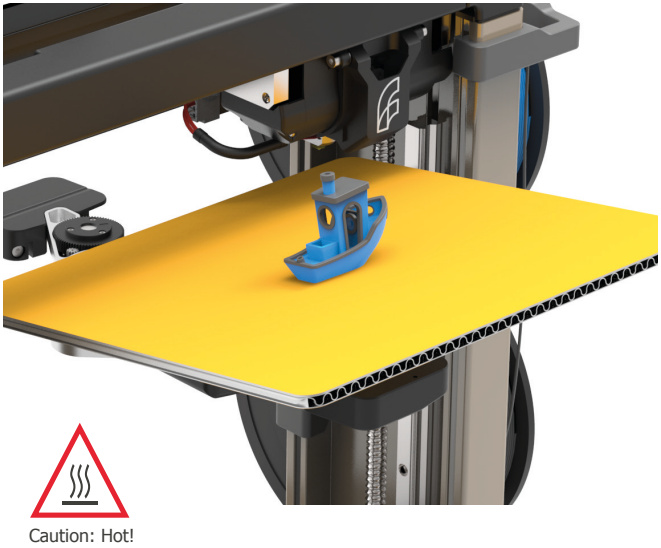
Select 'Benchy Dual PLA-PLA for a dual extrusion sample, this will take 2 hr. Select the Benchy Single PLA if you want to print a quicker single extrusion sample of 50 min.

5



The print will start automatically and the FELIX gadget will be printed.

4.2 When a print has finished

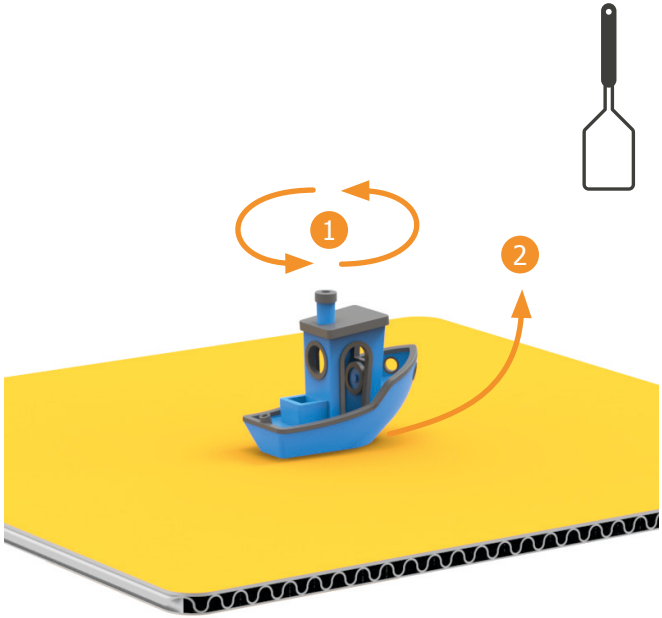


Caution: Hot!

Make sure the heaters are less than 100°C before turning off the printer to prevent overheating. When the print has finished the display will indicate 'print finished'. The 3D printer will automatically cool down when a print has finished.

Before removing the object it is recommended to let the bed cool down to 30 °C. To remove large objects it is recommended to take off the print bed.

4.3 Remove and finish a printed object



Don’t pull the object straight up, but twist it and start peeling at the edges or use a spatula.

Remove support material with small pliers, or if you are using PVA dissolve it in water.

5.1 Software

Simplify3D

Simplify3D is the recommended software to operate the FELIX Pro 2.

Repertier

For experienced users who love to tweak we also support this open source 3D software.

5.2 Tips and tricks

Before starting a print

- Make sure the print bed is properly placed on its base.
- Make sure filament is guided properly through the filament guide and filament spool holders.
- Clean the print bed before starting every print.
- Clean the nozzles with the supplied tweezers before starting a print.

During a print

- Make sure the first layer is printed properly before leaving the printer unattended. The first layer is the most important layer and the basis of a print job. When this layer fails to be printed properly, the object could detach and cause damage to the printer.

After the print job is finished

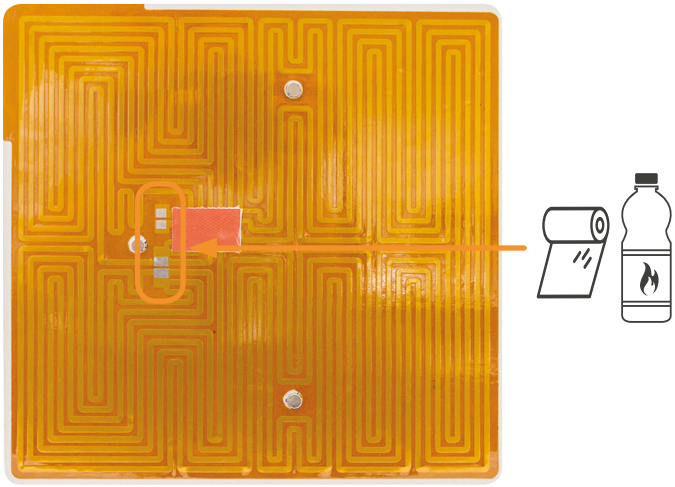
- Do not pull off an object from the print bed in a straight manner, always twist it from the build plate or use a tool. For large objects it is recommended to take off the printbed and start peeling at the corners of the object.
- Let the print bed cool down to about 30-40 ^{0}C before removing an object, sometimes an object can pop off the print bed by just cooling down the print bed.

Other

- Never remove the heated print bed while the printer is heating.
- Never disconnect the display unit, while the printer is still on.
- When turning off the printer, make sure the heaters are cooled down below 100 ^{0}C.

Print bed contact points & Pins

Make sure to keep the contact points on the bottom of the print bed clean. Use a detergent like alcohol and rub gently with a paper towel or cloth.



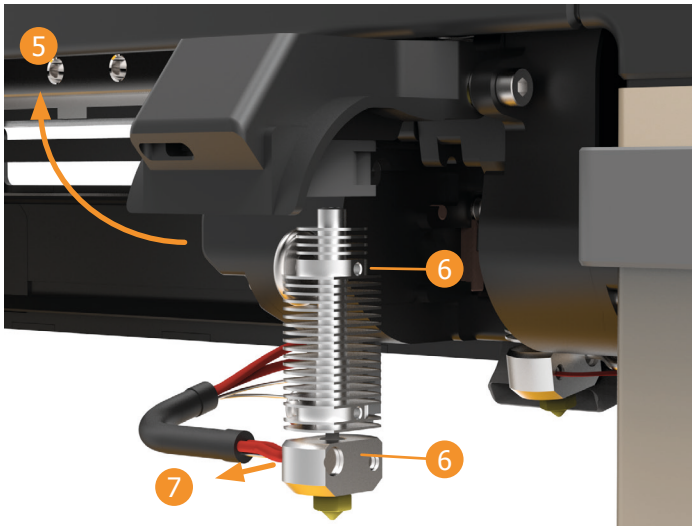
Dust cleaners

Filament attracts a lot of dust and small particles.
Make sure the filament enters the filament holder through the dust cleaner. After a while replace the dust cleaners.

5.3 Maintenance

Replace a hot-end

Because the nozzles are consumable parts, they eventually need replacement after hours of printing. There is a potential risk of injury, as the nozzle can reach temperatures of up to 275°C, so wait till temperature drops before handling.



1. Retract the filament from the hot-end.
2. Let the hot-end cool down.
   The hot-end can reach 275°C so it is essential to do this step poperly to avoid risk of injury.
3. Turn off the printer.
4. Remove the edge connector of the hot-end.
5. Open the fan cover.
6. Put the tweezer in the top hole of the hot-end and take the bottom of the hot-end with the other hand.
7. Now gently pull out the hot-end forwards.

For maintenance tips - have a look at www.felixprinters.com and go to the 'maintenance and repair' section.

5.4 Display messages

Filament Jam / Click to Reheat

The flow detection system is triggered – the printer moves to it's idle position waiting for user action.
The flow detection system is triggered when there is no more filament going through the extruder or when the filament is not extruding at the expected rate. Go to www.felixprinters.com/support to learn more.

Z-sensor triggered

The z-sensor triggered message should appear only when the tip of the hot-end touches the print bed.
If the message is displayed continuously go to www.felixprinters.com/support to find out how to solve this issue.

DEF error

Extruder: the sensor is defect or not connected properly. Please check if the connector is placed correctly and is clean on the inside.

Heated bed: please check if the bed is placed properly on all 3 magnet points.

DEC error

Extruder: the heater or sensor are giving improper values. Please check if the connector is placed correctly and is clean on the inside.

Heated bed: please check if the contact pins underneath the print bed are ok.

G32 leveling failed

The z-sensor triggered falsely during the leveling routine or measured probe values are out of their boundaries.
Go to www.felixprinters.com/support and look for the 'z-sensor triggered' topic.

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