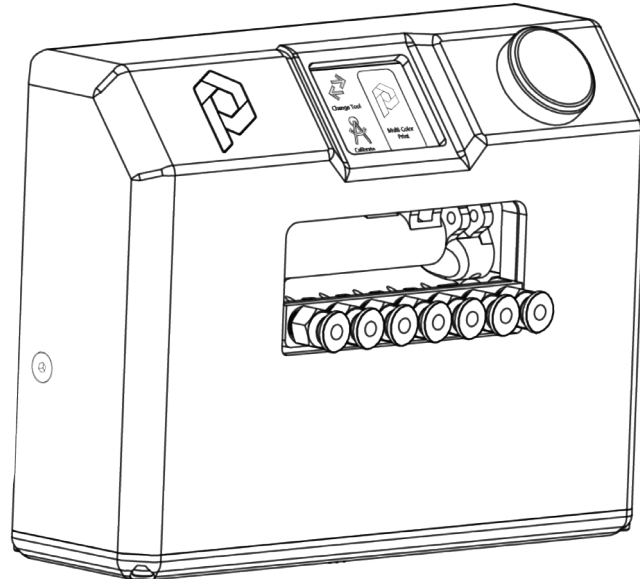# Co Print

Multi-Filament Module

User Manual

V1.0

Content

Dear Customers,
Thank you for choosing our products. For the best experience, please read the instructions before using the Co Print multi-filament module. Our support teams will always be ready to render you the best services. Please contact us by web site, and e mail adresses provided at the end when you encounter any problem with the Co Print.

For a better experience in using our product, you can look our web site guides and youtube channel for instruction videos.

Visit our offical web site (www.coprint3d.com) and Youtube channel (youtube.com/coprint3d).

1 ## How to setup?
Steps to connect the module to your 3d printer

2 ## How to Slice?
instructions on how to color your model

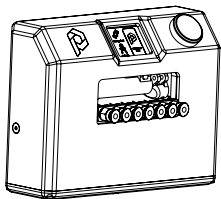**3** ## How to Print?
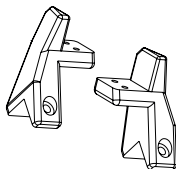Instructions for how to take multicolor print

4 ## FAQ?
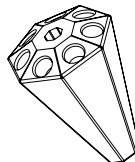Information for frequently encountered problems

Part List What's in the box?

1 Multi-Filament Module │ x 1

2 Left & Right Connection Legs │ x 1

3 7in1 Module │ x 1

4 PTFE Tubes │ x 1

5 M6 Fittings │ x 15
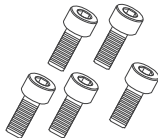
6 Connection Leg Screws │ x 6
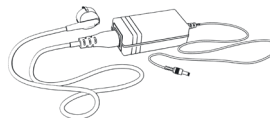
7 Power Adapter │ x 1
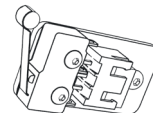
8 Y Switch │ x 1
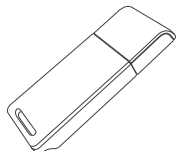
9 Sd Card Reader │ x 1
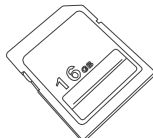
10 Sd Card 16 GB │ x 1
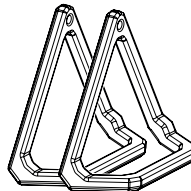
11 Filament Holder Legs │ x 2

12 Filament Tubes │ x 2

1 Place the Co Print on Your 3D Printer

Before use Co Print you have to plug the Co Print on your printer.
Co Print can be fixed to the top of your 3D prin- ter with the help of T-nuts and Allen key.

Needed parts for this step
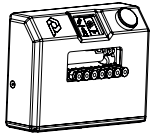
1 Multi-Filament Module
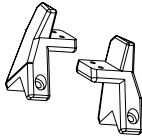
2 Left & Right Legs

6 Screw and Nuts

M5 X10

M5 T NUTS

1

6

2
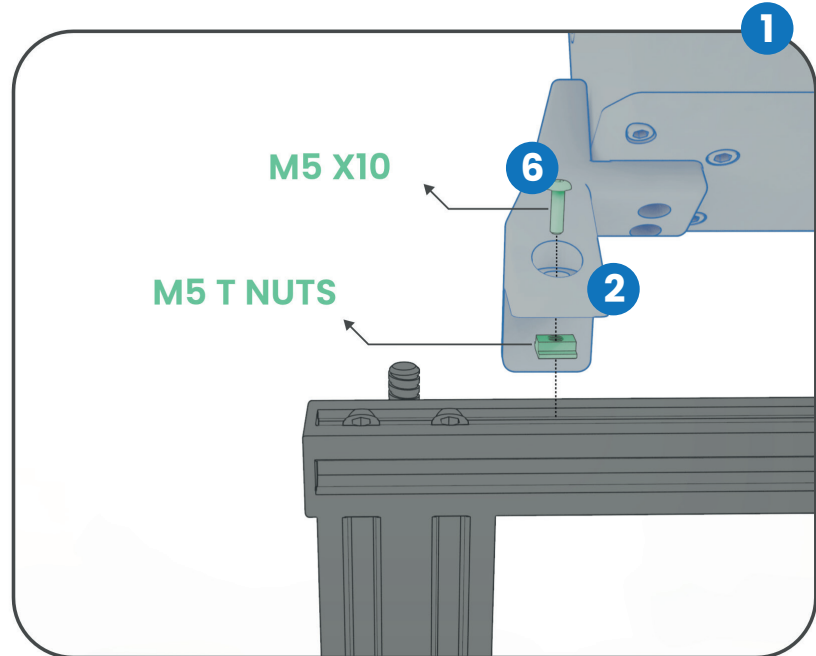
2 Insert the Fittings on 7 in 1 and Plug The Printer

PTFE pipes should be inserted into the Co Print, 7-in-1 and your 3D printer(Hotend). But first, the PTFE pipe that your printer currently has, must be removed For removing the old PTFE pipe from your printer, firstly the filament should be removed. Therefo- re, the hotend must be heated up to 200 degrees Celsius. After removing the filament, the PTFE pipe can be removed easily by pres- sing the white part of the pipe coupling that can be seen in the picture.

Needed parts for this step
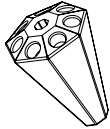
3 7 in 1 module

5 M6 Fittings

4 PTFE Pipes

Fittings

5

3

7 IN 1

⚠️ Keep in mind that the new PTFE pipe must be inserted all the way inside the hotend.
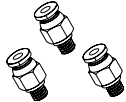
Fittings
On your printer
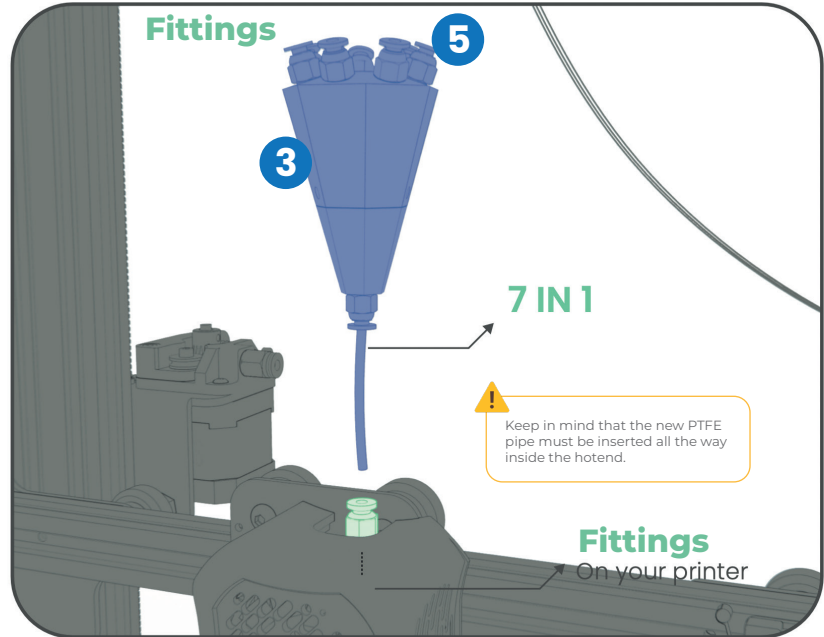
3 Attach PTFE Pipes to Co Print

Cut the PTFE pipe that comes with Co Print into suitable lengths and insert them among Co Print and the coupling pieces. For attaching the PTFE pipes to the couplings, you have to press the plastic part on it and unlock it.

Needed parts for this step

5

M6 Fittings

4

PTFE Pipes

⚠️ Pipe lengths and sequence are important for print quality. Place the pipes in order starting from one.
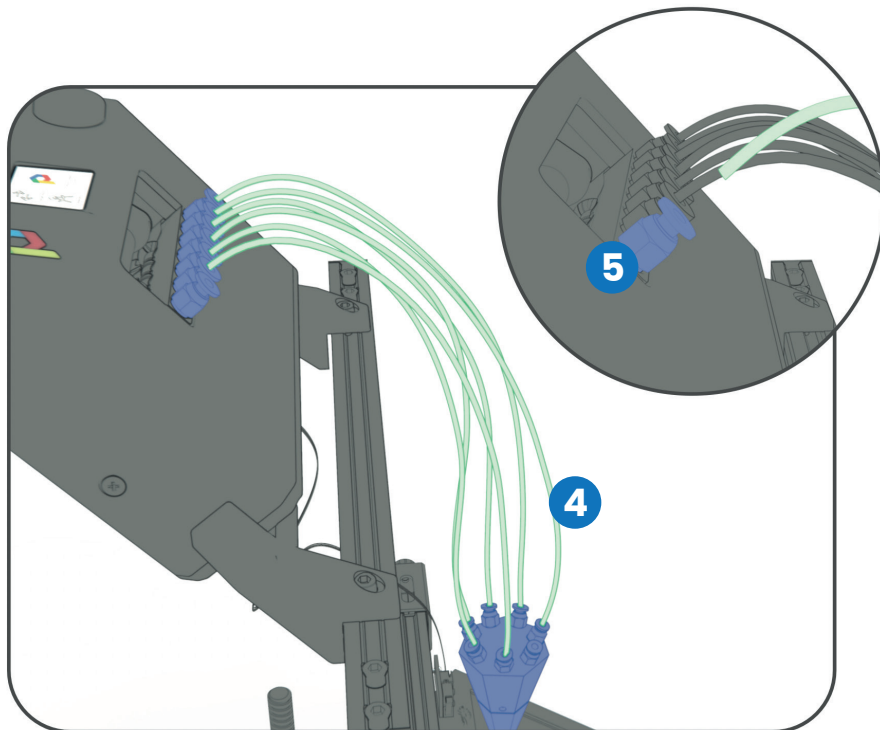
4 Plug the Motor Cable

The extruder mechanism in Co Print is contro- lled by the 3D printer, so you need to connect the cable of your 3D printer's extruder motor to the motor in Co Print.

⚠️ If the length of the motor cable is not sufficient, you can use the extension cable included in the co print.

The motor cable must not be taut. If the motor cable is too tight, the cable may come off during printing and the printing may be distorted.

⚠️ You must plug in the motor cable before powering your printer.

Plug out your Z Motor cable

Plug in Co Print
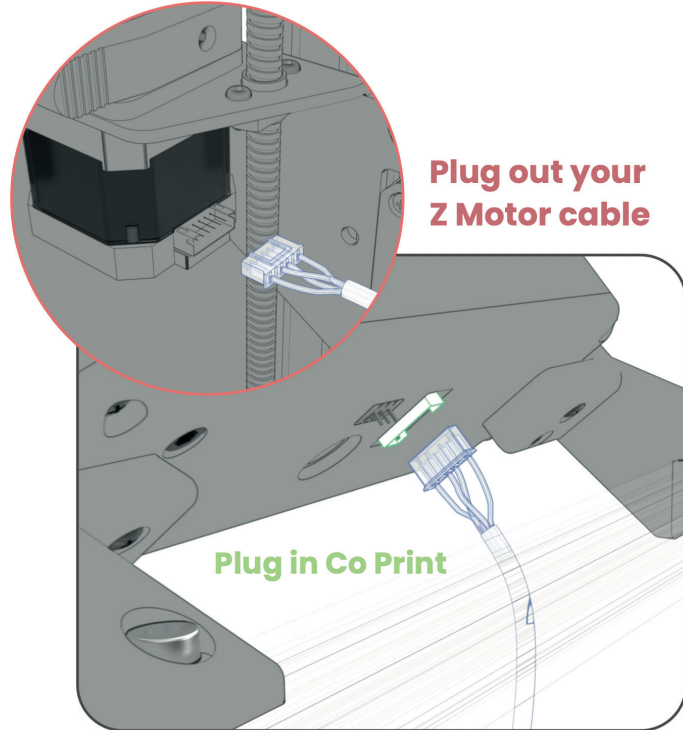
5 Place Limit Switch at X of the 3D Printer

The limit switch that comes with Co Print is the part that communicates with the 3D Printer by notifying Co Print of the filament change during printing. Therefore, it should be placed at 215 mm level on the X-axis. (This value may change in the application where print files are being edited.)

M5 T-NUT
LIMIT SWITCH
M5 X10
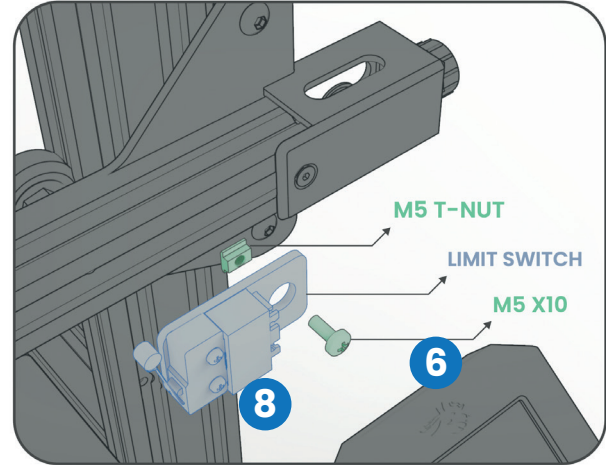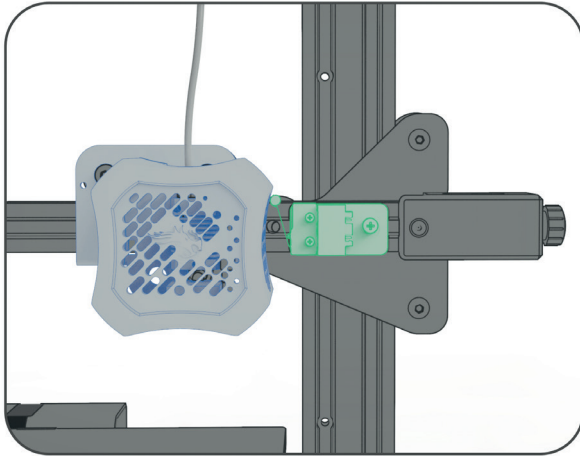
Needed parts for this step
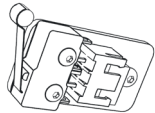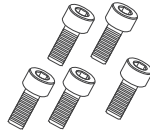
Switch

Screws & T nut

The limit switch that comes with Co Print is the part that communicates with the 3D Printer by notifying Co Print of the filament change during printing. Therefore, it should be placed at 215 mm level on the X-axis. (This value may change in the application where print files are being edited.)

6 Extruder Calibration

Extruder calibration is necessary before using Co Print. The reason for that is, the step motor of the extruder mechanism is changed with Co Print

The limit switch that comes with Co Print is the part that communicates with the 3D Printer by notifying Co Print of the filament change during printing. Therefore, it should be placed at 215 mm level on the X-axis. (This value may change in the application where print files are being edited.)

You can reach this setting by following the steps of Control -> Motion -> E/Step -> Extruder on your 3D Printer. As a result of our calculations and tests, this value is 328.0

After changing this value in the settings as 328.0 in your own 3D Printer, you can reach more accurate results by extruding 100 mm filament and measuring the extruded filament length. This value can be determined by you, via using this formula.

(Old E/Step value *100/Measured length)
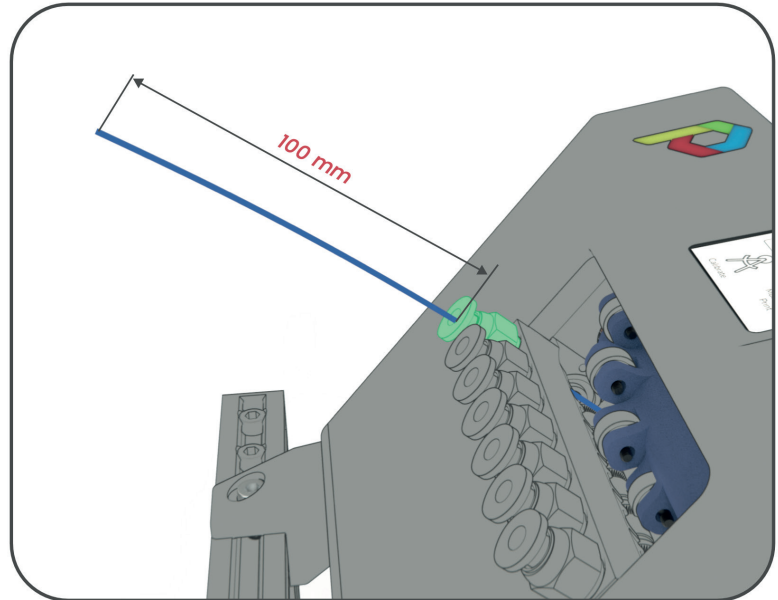
7 Plug the Power Cable

Complete the setup steps by plugging the power adapter cable.

Needed parts for this step

7

Power Adapter

⚠️ Check if the adapter complies with the power standards of the country you live in.

⚠️ You can use a converter according to the socket type used in your country.
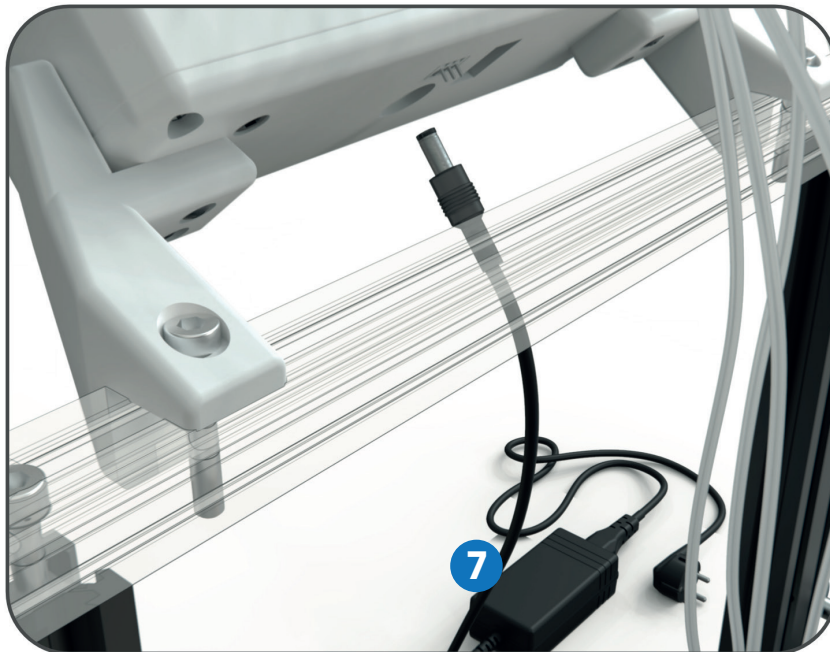
8 How Can I Use Co Print Interface

Co Print can be controlled with its 1.8" coloured TFT Screen and control knob.
This screen inter- face of Co Print includes Calibration, Manuel Filament Change and Multicolour Printing func- tions. This screen is controlled with a knob that Co Print has.
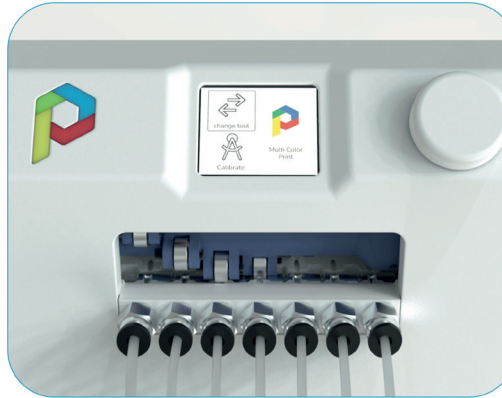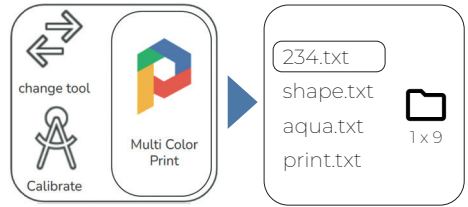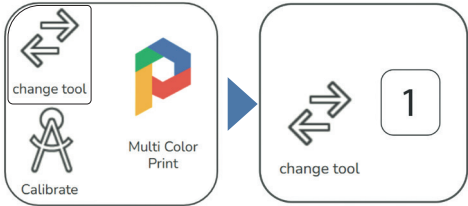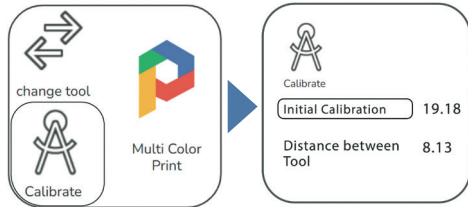
Change Tool Function

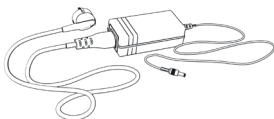Co Print can be controlled with its 1.8" coloured TFT Screen and control knob. This screen inter- face of Co Print includes Calibration, Manuel Filament Change and Multicolour Printing func- tions. This screen is controlled with a knob that Co Print has.

Calibration Function

2.1- Co Print calibrates itself when power input is connected. In this calibration, the selective drive first bearing is aligned with the first extruder gear.
2.2- The turning amount of selective drive is adjusted to maintain the same alignment between bearings and extruder gears. (Co Print will arrive with all calibrations are adjusted.)

Multi-Color Printing Function

Multicolour Printing Function
Starting multicolour print requires this function. Firstly, the print should be selected from the 3D printer. After that, the same file should be selected from the Co Print via using the Multi- colour Printing function.

9 Extruder (MK8) Calibration

Extruder calibration is the adjustment of the necessary alignment to drive the filament.
You can slide the gears on the shaft by loosening the screws with a metric 2 Allen screwdriver.

**The Correct
Extruder MK8 Alligment**
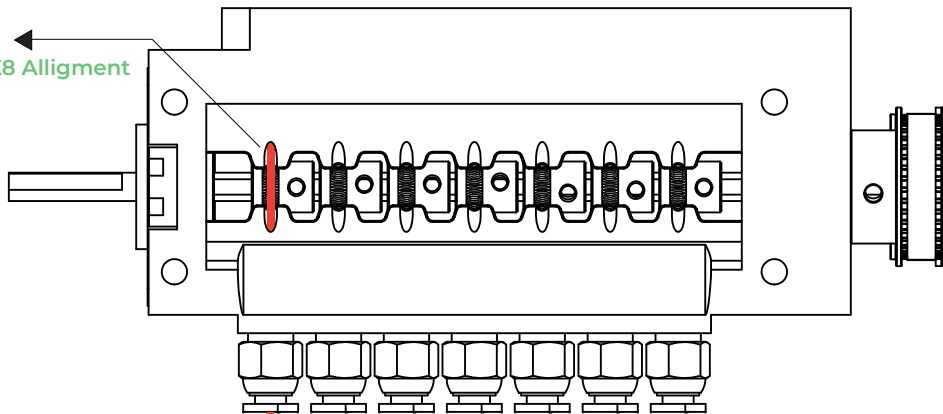
Co print comes extruder calibrated and tested at the factory. However, the calibration may be broken during shipping or printing, although it is rare. If your filaments have excessive deformation, please check your extruder calibration.

In order to best calibrate the extruder, you must separate the lower part from the upper part.
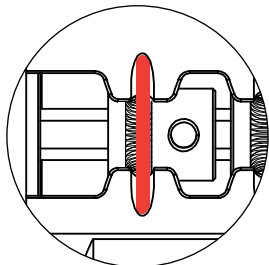
Misalignment. If it is pressed in this way, the filament will be deformed.

The gears lined up on the shaft must be aligned with the filament inlet and outlet ends of the plastic part exactly as shown in the picture.

If the gear alignment is done incorrectly, the filament starts to deform during printing.
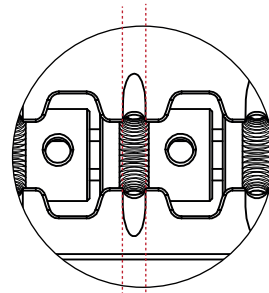
10 Rulman Calibration

In order for the filament to be driven correctly, the selective roller and gears must be aligned with each other and the tool change distance must be adjusted.

For 1. Extruder
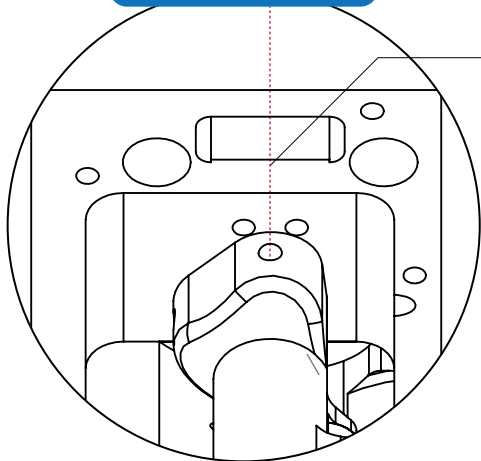
The Correct First
Rulman Calibration

For 7. Extruder
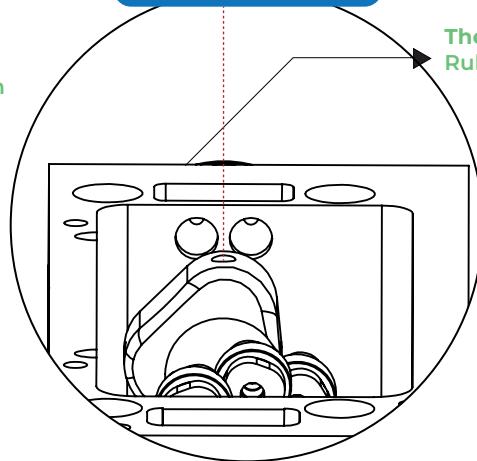
The Correct
Rulman Calibration
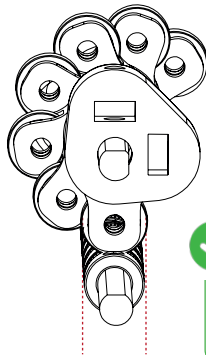
✓ The bearing and gear must be aligned when viewed from the side so that the filament can be driven easily.

10 How to remove top cover?

In cases such as cleaning or calibrating Co Print, it may be necessary to open the top cover and access the inside of the machine. You can easily open the top cover in 11 steps.

1   Step 1. Remove the fittings

Remove the fittings
You can use spanner

2   Step 2. Remove right screw

3   Step 3. Remove left screw

4   Step 4. Remove the hex screw in the upper right corner

5   Step 5. Remove the hex screw in the lower right corner.

Remove the bolt
with the allen key
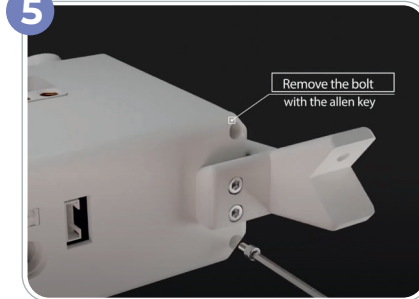
6   Step 6. Remove the hex screw in the lower left corner
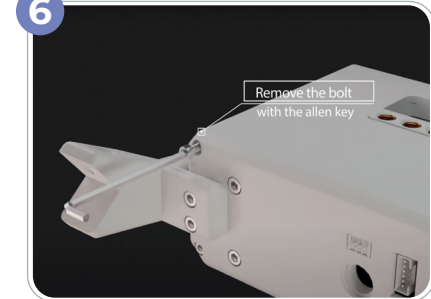
Remove the bolt
with the allen key

Step 7. open the lower left hex screw

7

Remove the bolt
with the allen key

Step 8. Remove the key by pulling it upwards

8

Plug out the button

Step 9. Bend the cover for release

9

Bend the cover
to release it from the tab

Step 10. Remove the top cover

10

Step 11. It's done the case is open

11
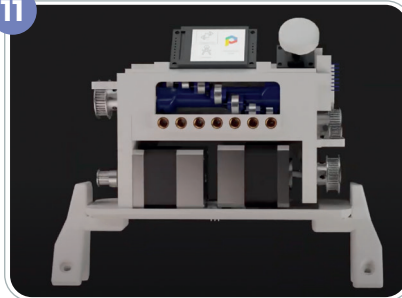
Read the qr code for the detailed cover removal video on our youtube channel.

How to Paint and Slice Models?

The setup is done. Now lets learn how to paint and slice your models. Prusa Slicer can be use for slicing and painting prosses.

Supported Model Files

.stl   **.obj**   **.3dm**

We need 3D model for painting

Open Prusa Slicer

Slicer settings are an important aspect when you are 3d printing. However, it is more crucial while printing multicolour with Co Print. Co Print is currently compatible with Prusa Slicer but Cura settings will be shared soon.

Click to printer settings

| Plater | Print Settings | Filament Settings | Printer Settings |

General
Custom G-code
Machine limits
Extruder 1
Extruder 2
Extruder 3
Extruder 4
Extruder 5
Extruder 6
Extruder 7
Single extruder MM setup

Size and coordinates

● Bed shape: Set ...
● Max print height: 210 mm
● Z offset: 0 mm

Capabilities

● Extruders: 7
● Single Extruder Multi Material: ✓

Extruder Color Set

Click on the Extruders tab from the menu on the right. Change the extruder color. Assign 7 extruder for different color one by one.

General
Custom G-code
Machine limits
Extruder 1
Extruder 2
Extruder 3
Extruder 4
Extruder 5
Extruder 6
Extruder 7
Single extruder MM setup
Notes
Dependencies

Preview

● Extruder Color: 🔒 • 🟧   ↺ Reset to Filament Color

Click on the General tab from the menu on the right. We set the extruder number to 7 from the Capabilities menu. 7 different extruders are created in the side menu.

2 Color your models

Now the prusa slicer settings done. Lets color our models using painting tools.

Multimaterial painting [N]

Left mouse button:	First color
Right mouse button:	Second color
Shift + Left mouse button:	Remove painted color

First color   Extruder 1 ▼

Second color   Extruder 2 ▼

Tool type
- ● Brush
- ○ Smart fill
- ○ Bucket fill

Brush shape
- ● Sphere
- ○ Circle
- ○ Triangles

Brush size: 2.00

☑ Split triangles

Clipping of view: 0.00

Clear all

After opening the model on the prusa slicer and assigning an extruder, you can access the Extruder colors by using the "Multimaterial Painting" menu at the bottom left. By assigning different colors to the right and left click of the mouse, you can paint on the model using 3 different ways. One of them is the "Brush" feature, where you can paint freely, and the other is the "Smart fill" tool that can choose according to angles and topology. The last is the Bucket fill tool, with which you can paint pre-split models with one click.
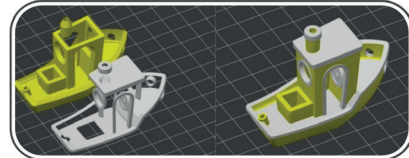
3 Add Cleaning Tower or Add Infill Cleaning

Adding a cleaning tower to your slicer is automatically done by Prusa Slicer. After painting the model in the Prusa Slicer, a cleaning tower will be added automaticaly.
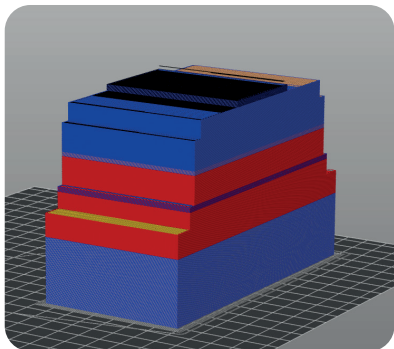
What is the cleaning tower?

The cleaning tower is the injection of the filament in one area of the tray for a certain period of time so that the colors do not mix.

The size of the cleaning tower can be adjusted from the 'Purging Volume' setting. However, keep in mind that smaller cleaning towers can cause colour mixtures in your main model. That is why the size of the cleaning tower should be adjusted properly.

Instead of wasting material in the cleaning tower, the cleaning process can be done by using other models or infill of the main model. Unfortunately, these solutions are not solving the cleaning tower problem. In all cases, the cleaning tower must be printed.

You can change the ratio of the cleaning tower according to the colors in the "Wipe Tower" menu. For example, you can increase the number of cleanings when changing from very dark colors to light colors.
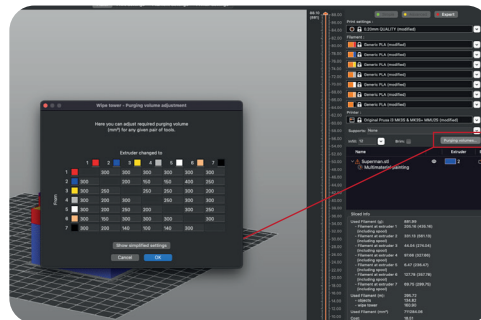
How to use Co Print App?

1

Co Print uygulaması üzerinden Prusa Slicer ile boyanan ve dilimlenen dosyalarınızı Co Print ile uyumlu hale getirip ayarlamalar yapabilirsiniz.

Co Print
Gcode Editing App

1 Step 1. Import your sliced Gcode file

Import Gcode File

By dragging your files to this area you can perform the installation.

/...　　　　　　Select

Import the Gcode

2 Step 2. Enter your settings adn export your file.

Advanced

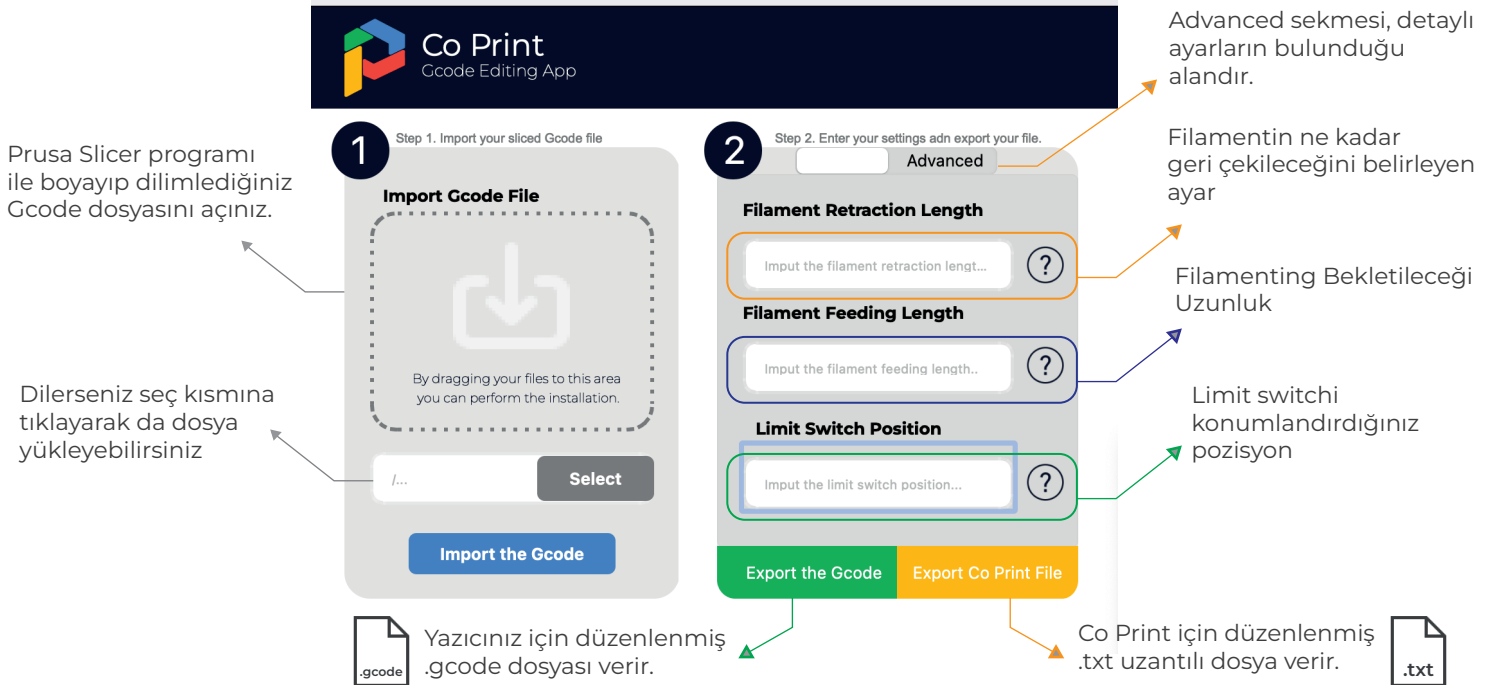**Filament Retraction Length**

Input the filament retraction lengt...　(?)

Filament Feeding Length

Input the filament feeding length..　(?)

Limit Switch Position

Input the limit switch position...　(?)

Export the Gcode　　Export Co Print File

Prusa Slicer programı ile boyayıp dilimlediğiniz Gcode dosyasını açınız.

Dilerseniz seç kısmına tıklayarak da dosya yükleyebilirsiniz

Advanced sekmesi, detaylı ayarların bulunduğu alandır.

Filamentin ne kadar geri çekileceğini belirleyen ayar

Filamenting Bekletileceği Uzunluk

Limit switchi konumlandırdığınız pozisyon

.gcode　Yazıcınız için düzenlenmiş .gcode dosyası verir.

Co Print için düzenlenmiş .txt uzantılı dosya verir.　.txt

Frequently Asked Questions

Co Print kullanırken sıkça karşılaşabileceğiniz problemler ve bu problemlerin çözümleri hakkında bilgiler

Co Print'in filament sürücü dişlilerini nasıl temizleyebilirim?

Dişlileri Co Print'in kapağını açmadan bir saç kurutma makinesi veya bir süpürge yardımı ile temizledikten sonra kulak çubuğu kullanarak detaylarını temizleyebilirsiniz.

Baskı üzerindeki ipçiklenme sorununu nasıl azaltabilirim?

Baskı üzerinde ipçiklenme olduğu durumlarda prusaslicer programı üzerinden filament çekme ayarlarında düzenleme yaparak ipçik sorununun önüne geçmek mümkün. Bu problemi gidermek için önerdiğimiz değer (x.xxx)'dir. Bu değeri yükselterek veya düşürerek baskı yüzeyindeki ipçiklenmeyi minimuma düşürebilirsiniz.

Aynı zamanda temizleme kulesinin konumu da baskı üzerindeki ipçiklenmeye etken faktörlerden biridir. Temizleme kulesini modelinizin minimum detay bulundurduğu tarafa doğru konumlandırmanız tavsiye edilir.

Making Turkish Coffee
What is Required?

1
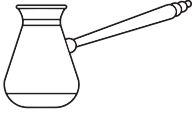
Coffee Pot | 1x

2

Coffee Cup | 1x

3

Turkish Coffe | 1x

How is Turkish coffee prepared?

Cezveye su ve şekerleri koyun. Ardından kahveyi ekleyin. Kaşık yardımı ile iyici karıştırın.

Daha sonra cezveyi ocağa koyun. Kısık ateş üzerinde pişirin. Kahveniz kaynayıp, köpürmeye başladığı an ateşten alın. Az miktarda fincana dökün. Daha sonra cezveyi tekrardan ocağa koyun. Kaynama aşamasına gelip, kabardığı an ateşten alın. Yavaşça fincanda dökün.

Kahveniz hazır keyifle içebilirsiniz!

Co Print Engineering Inc.

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Istanbul Office: Technopark Istanbul No:¼ No:Z08 Turkey

Email: info@coprint3d.com
Web: www.coprint3d.com

Co Print
3D Printing Technologies

CE RoHS FC ♻