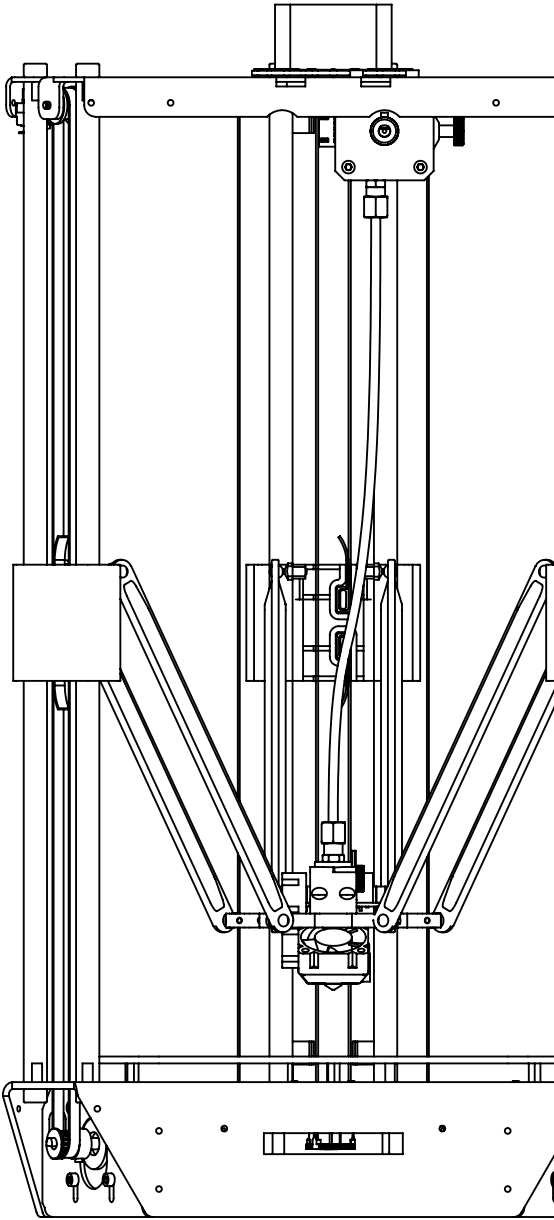# micro Delta REWORK

motion TECH

ASSEMBLY INSTRUCTIONS

INTRODUCTION

INTRODUCTION

• Target :

Propose a visual assembly instruction guide of the MicroDelta Rework.

• Designers of the MicroDelta Rework :

eMotion Tech : http://www.emotion-tech.com

Hugo FLYE
Mohamad KOUBAR
Thibault MOREL

• Authors of this document :

eMotion Tech : http://www.emotion-tech.com

Mohamad KOUBAR
Anthony BERNA
Hugo FLYE

• Photographics credits :

Pictures and 3D representations made by eMotion Tech : http://www.emotion-tech.com

• Sources :

http://reprap.org/wiki/reprap

• Licenses :

MicroDelta Rework : CC BY-NC-SA 4.0
This document : CC BY-NC-SA 4.0
http://creativecommons.org/licenses/by-nc-sa/4.0/

• Update :

Last update : 13/12/2017

• Links :

You can find more informations on the following links :

eMotion Tech's website : http://www.emotion-tech.com
RepRap community : http://reprap.org/wiki/reprap

SUMMARY

MICRODELTA REWORK INTRODUCTION

The MicroDelta Rework is developed by eMotion Tech. This new 3D printer is easy to assemble and to operate without loss of performances.

Data sheet :

DATAS

• Printing surface : Ø150x200mm
• Layer height : [0.1 - 0.4]
• Electronic type : eMotronic (32 bits, 96 MHz)
• Motors : NEMA 17
• Belt type : GT2
• Extrusion Head : Hexagon 0.4
• Dimensions : Height 440mm, Width 250mm, Depth 250mm
• Nominal printing speed : 80mm/s
• Max speed : 200mm/s
• Nominal travel speed : 150mm/s
• Average precision (X,Y) : 100 microns
• Average precision (Z) : 50 microns
• Operating system : Windows, Linux and Mac OS
• Consumable : PLA 1.75mm (or ABS and others plastics with heated bed option)
• Provided with Repetier-Host pre-configured for µdelta
• Connectivity : USB
• Power supply provided : 24V, 150W

STRUCTURE

• Upper and lower plates made of bended stainless steel
• Machined aluminium core
• 10mm rectified Smooth rods
• Plastic injected sliders

ERGONOMY

Easy to mount : A 3D printer kit with an intuitive assembly
• Simple electronic, no soldering
• Easy wiring and assembly
• Belt adjustment with ergonomic belt tensioners

Easy to calibrate : A simplified software
• Fully software calibration
• Pre-configured open-source software (no firmware upload required, Repetier Host and Slic3r pre-configured)

Easy to maintain
• Quick height adjustement with the software
• Easy to reload the filament

Documents and guides

User guide

How to use the MicroDelta Rework ?

Under Windows and Linux : Windows / Linux User Guide

Under Mac OS X : MAC OS X User Guide

Other ressource

Configuration files

Path :
MicroDelta Rework > Logiciels-Software > Configuration

3D ressources

Differents 3D printed parts are availables for the MicroDelta Rework.

Path :
MicroDelta Rework > Ressources_3D >

IN CASE 0F TROUBLE

Frequently Asked Questions

Path : «Support» section.

Link : Frequently Asked Questions

AVAILABLE OPTIONS

In order to upgrade your printer to make its use more pleasant, it is possible to add different elements :

• Heating bed kit up to 110°C
• LCD controller screen to print without a computer

Coming soon :

• Lighting LED designed for the Micro Delta Rework
• Dual extrusion head for bi-color printing

SAFETY INSTRUCTIONS

General safety instructions

> NEVER LEAVE THE PRINTER WORKING WITHOUT SUPERVISOR.

The nozzle can reach 270°C, do not touch the nozzle while the printer is working.

A supervisor is needed when the printer is used with young people.

KEEP PRINTER AWAY FROM CHILDREN AND ANIMALS

Operate in a ventilated room. Plastic vapors effets are not known. In case of use in a closed room, we recommend the use of an extractor fan.

The addition of protections is your own responsibility. Safety can be improved by :

• An emergency stop button
• Housing protection
• Smoke detector

Electrical safety

The power supply provided is labelled CE. The power supply is protected against short-circuit and do not need any modification. The µdelta operate at 12V and is not concerned by the low voltage directives.

Further informations

Informations above are not exhaustive.

We used sources of informations that we consider reliable. However, we cannot guarantee that all these informations are true and complete.

We assume no liability for loses, injuries or damages due to assembly, transporting, storage or removal of the product.

ASSEMBLY

BILL OF MATERIALS

A. Metal parts
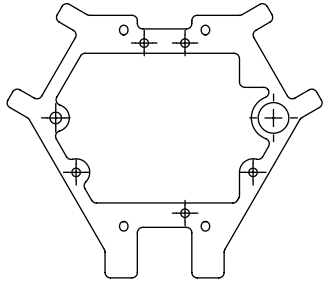
1 x Core
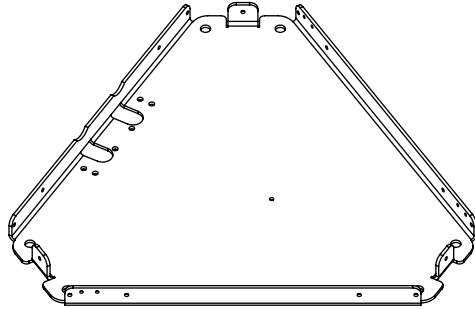
1 x Upper plate
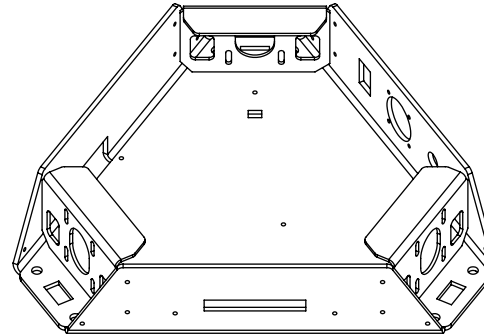
1 x Lower plate

6 x Ø 8 x 430mm
smooth rod
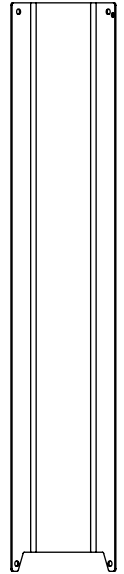
1 x Cowling

B. Plastic parts
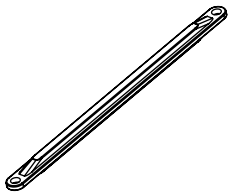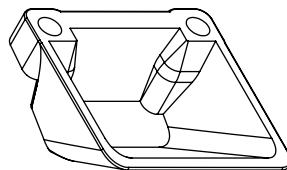
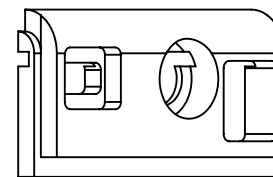6 x Connecting rod

3 x Slider
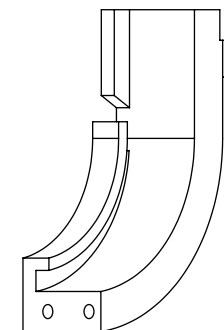
ASSEMBLY
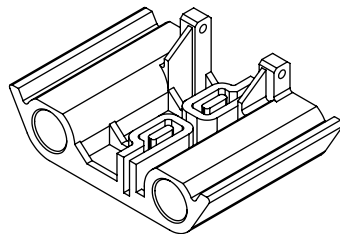
C. Printed parts
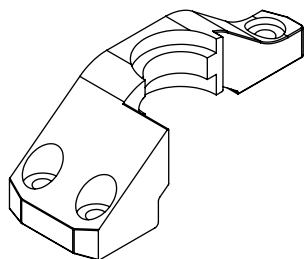
1 x Hexagon Holder
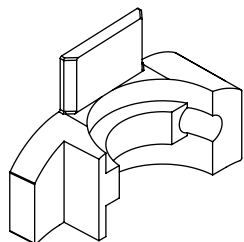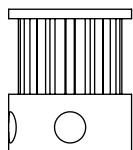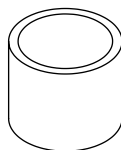
1 x Hexagon bracket

2 x Fan duct
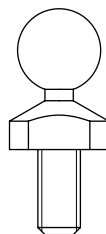
1 x Board cover

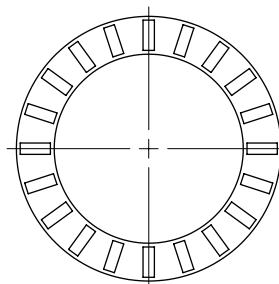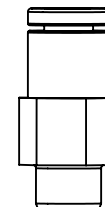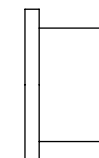1 x Leveling sensor holder

D. Mechanical parts

3 x GT2 Pulley

3 x GT2 belt

12 x Plain bearing

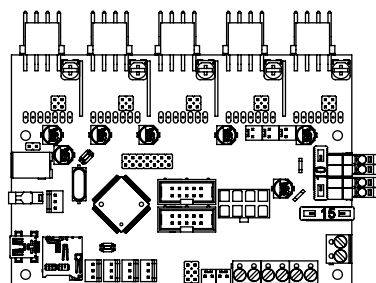12 x Ball joint

1 x thrust roller bearing AXK5070

2 x Pneufit
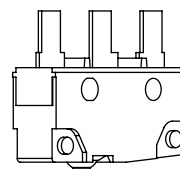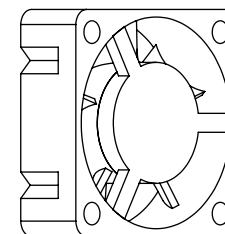
3 x Idler pulley 623zz kit

E. Hardware
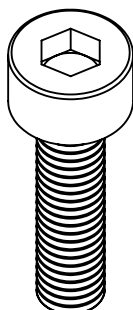
6 x M2.5x8 Screw
2 x M2.5x12 Screw
29 x M3x8 Screw
14 x M3x12 Screw
4 x M3x20 Screw
12 x M6x16 Screw
16 x M3 Washer
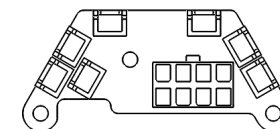2 x M3 Knurled nut
1 x M5x12 Knurled screw
10 x 3mm Spacer

ASSEMBLY

F. Electronic
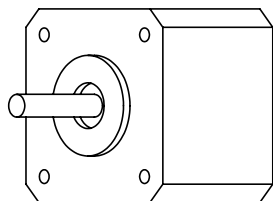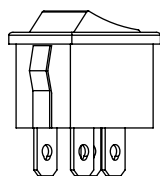
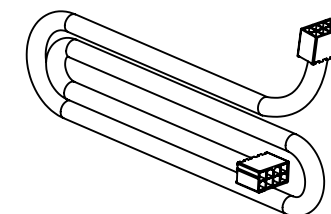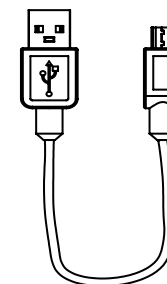|					
1 x eMotronic	3 x Short motor (34 mm)	1 x Long motor (48 mm)	3 x endstop (color connectors)	4 x 3 cm fan	1 x Interfacing board
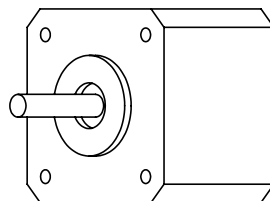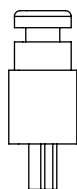
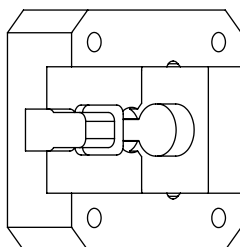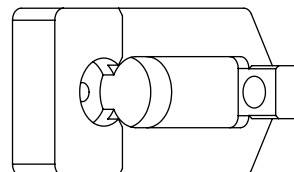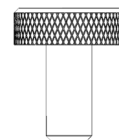|				
1 x ON/OFF Switch	1 x Reset button	1 x Power supply	1 x Bed leveling sensor	1 x Core extension cable
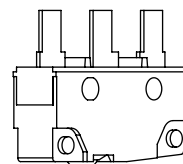
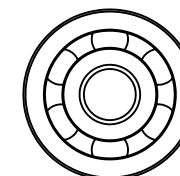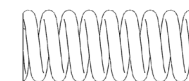1 x USB Cable

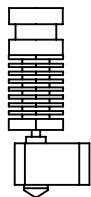## G. Kit Extruder
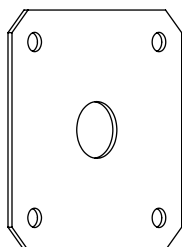
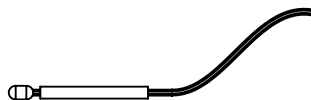|						
1 x Extruder cover	1 x Body extruder	1 x Mobile extruder	1 x Knurled screw M5x12 mm	1 x Driving wheel	1 x 693zz bearing	1 x Spring
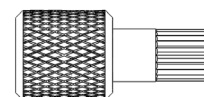
H. Kit Hexagon (printhead)

1 x Hexagon hotend

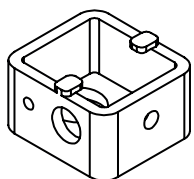1 x Cartridge heater 100mm

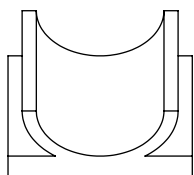1 x Thermistor

1 x Allen key 3

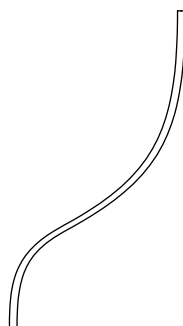1 x wrench 4.5

1 x Silicone cap

H. Other

12 x Cable clamp

6 x Rubber foot

1 x PTFE Tube

3 x Elastic band

1 x Threadlock

LIST OF NEEDED TOOLS

- Wrench 8; 9; 10.
- A set of allen key
- Cutting pliers
- WD40 (penetrating oil)
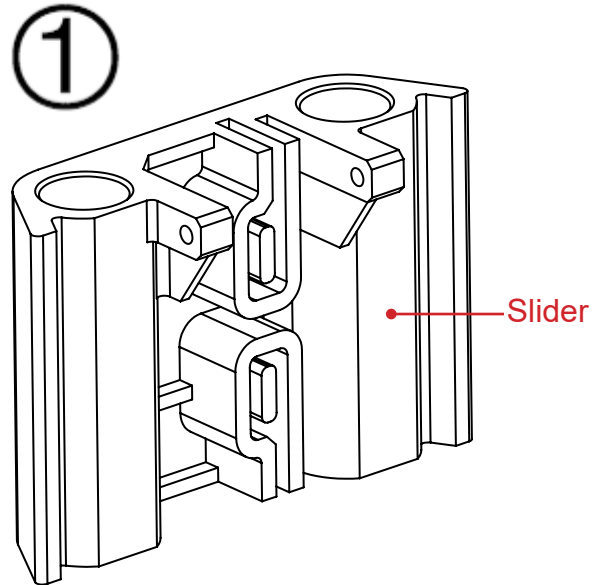- Methylated spirit

MECHANICAL ASSEMBLY

SLIDERS ASSEMBLY

Needed parts :

- 3 x Slider
- 6 x Rod ball
- 12 x Plain bearing

Target : screw the 6 ball joints (2 per slider) as shown in the following figures.

🔴 = add some threadlock to the thread

①

Slider

②

Rod ball
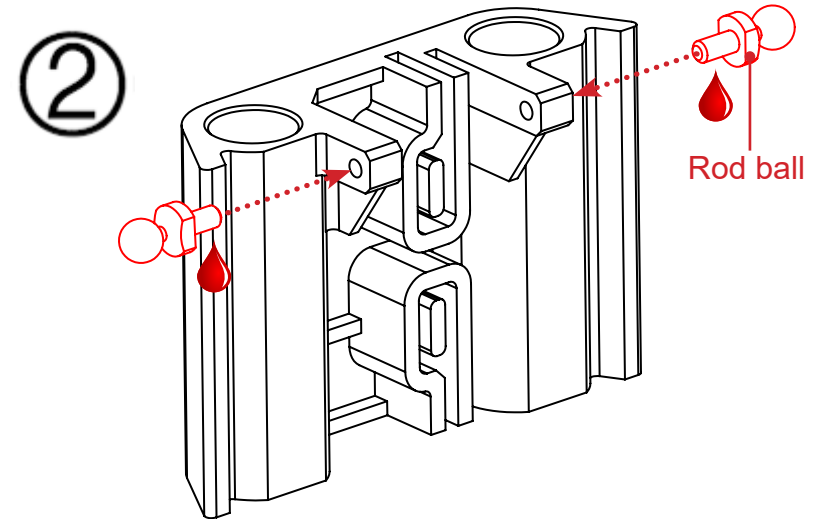
Do not over tighten as this may damage the thread.

Result

✔

3X*

* : do the same for all sliders.

MECHANICAL ASSEMBLY
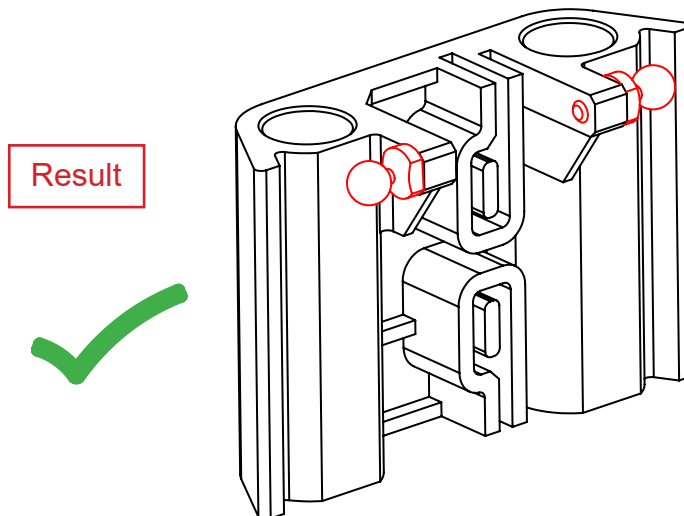
Target : insert the plain bearings in their housing as shown below (4 pieces per slider).

③

Plain bearing

Slider

Result

3X*

* : do the same for all sliders.

MECHANICAL ASSEMBLY
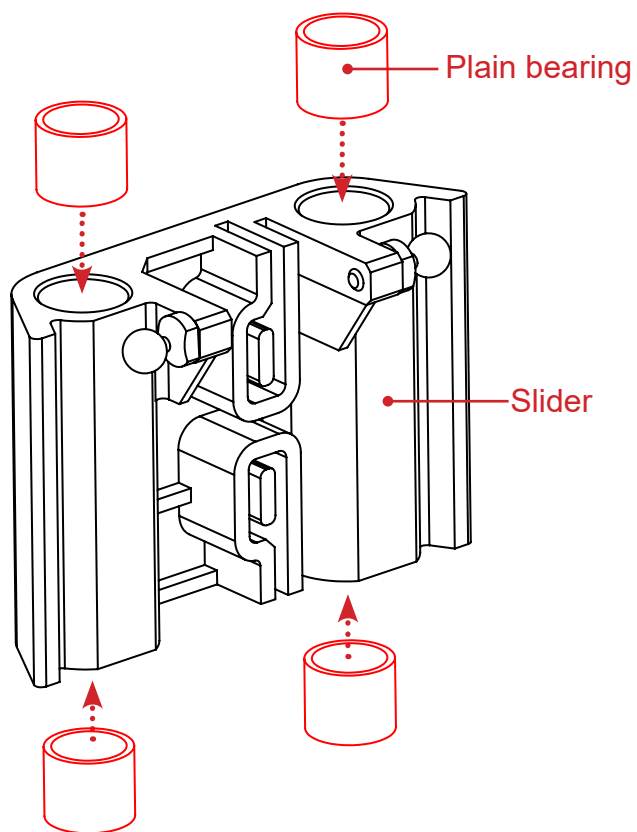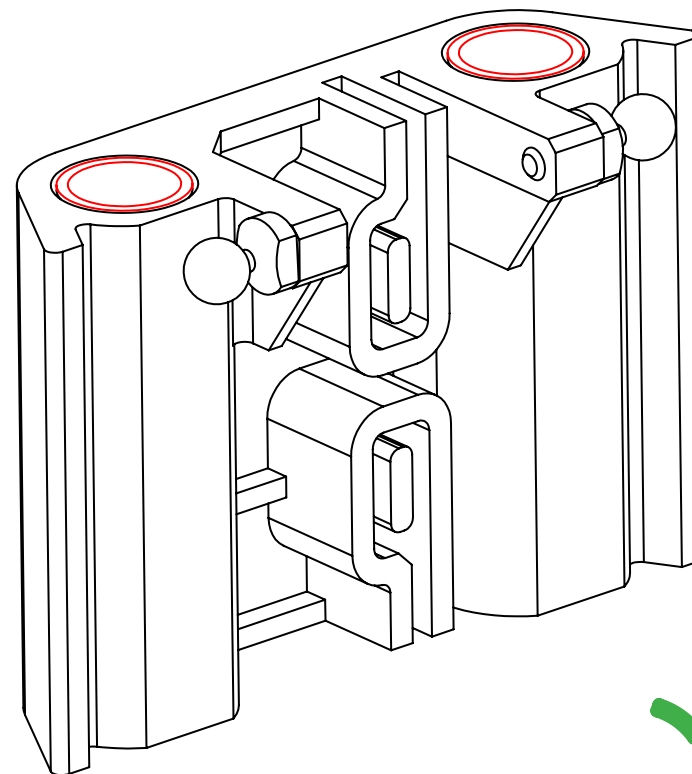
PRINTHEAD ASSEMBLY

1°) thermistor into the heating block
(fold the thermistor's cables)

2°) silicon sleeve on to the heating block

3°) heater cartridge into the heating block

4°) grub screw in the heating block

5°) Remove the brass insert (not used)

**Caution ! If the thermistor goes out of the hot end,
your printer could be damaged.**

⑤

check screw tightening gently

① ③ ④ ② ②

MECHANICAL ASSEMBLY

Result

Thermistor

Heating cartridge
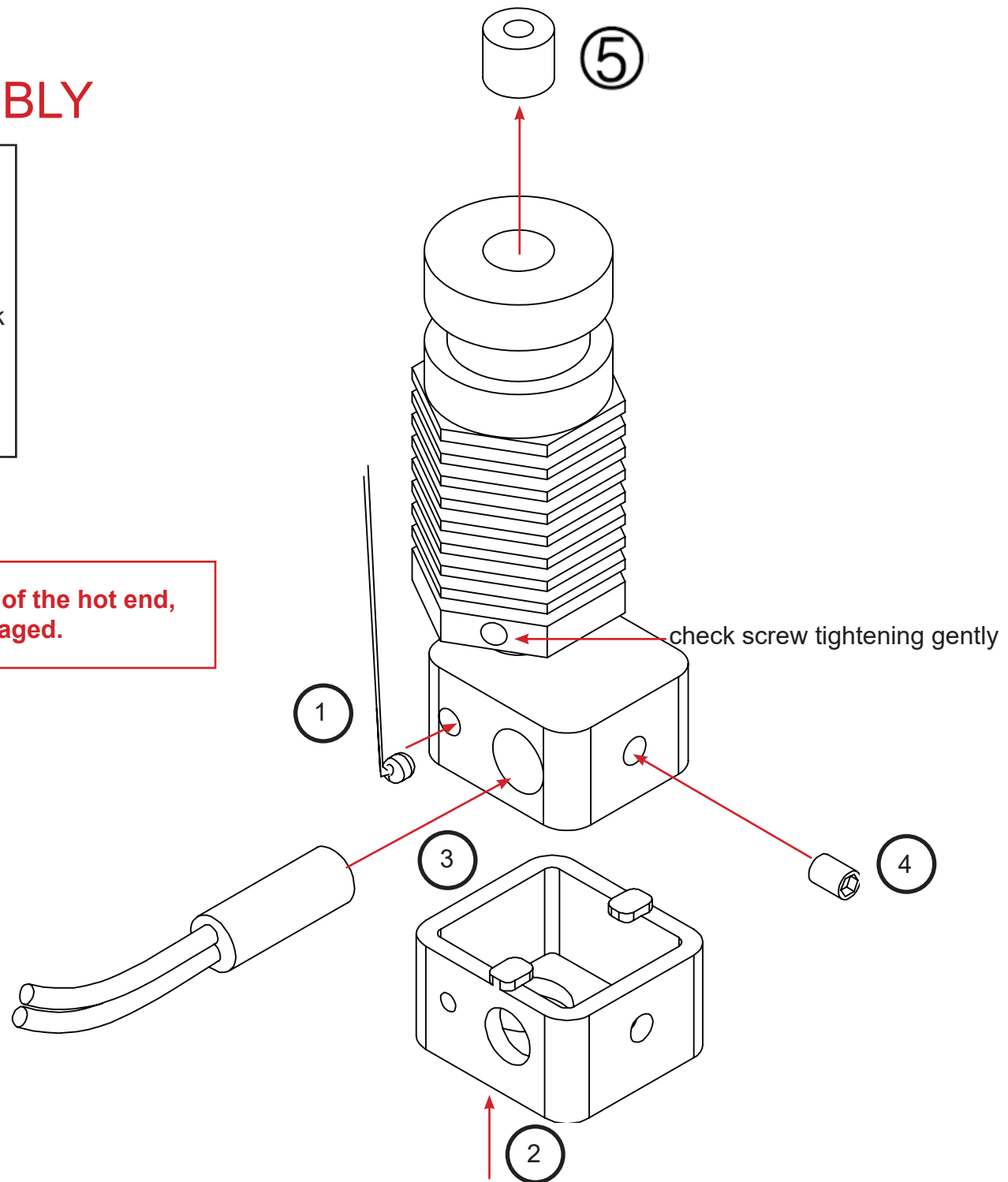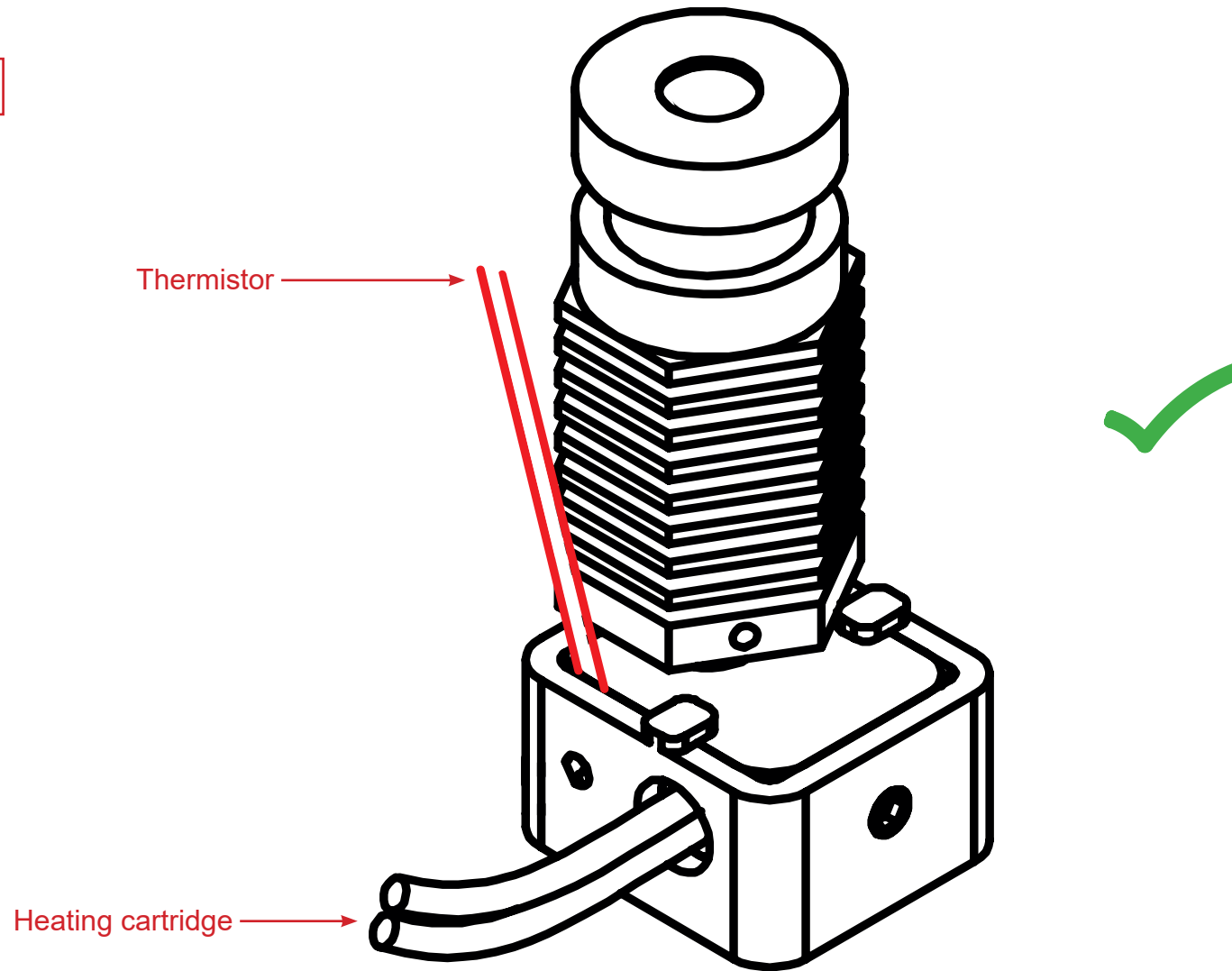
UPPER PLATE ASSEMBLY

Needed parts :
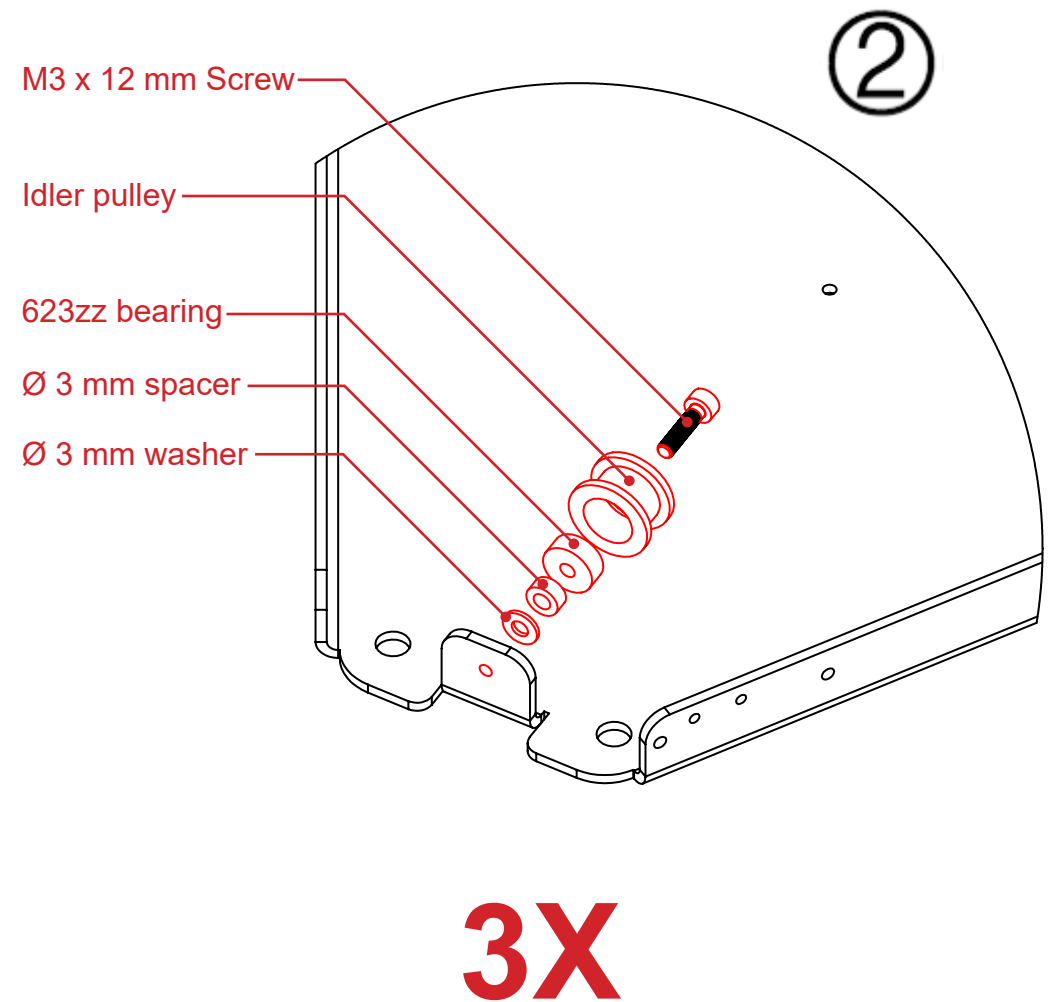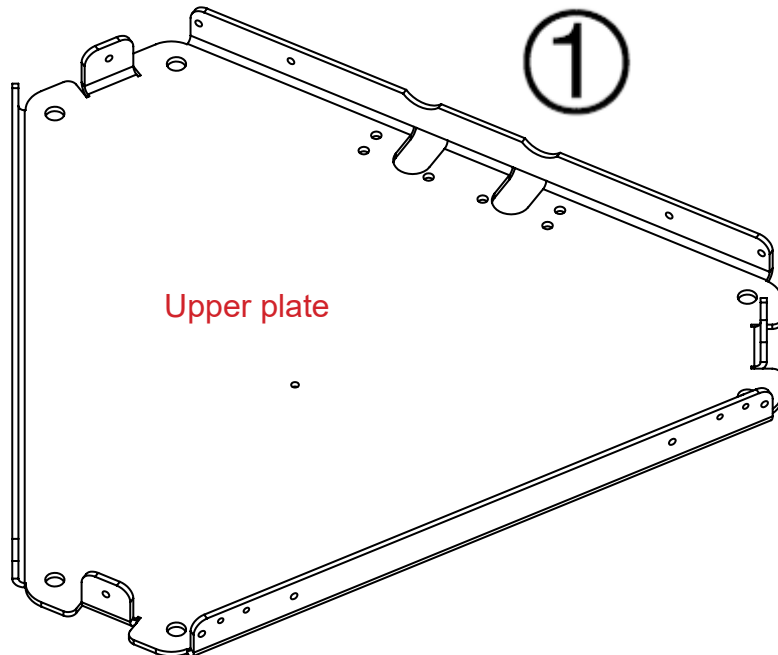
- 1 x Upper plate
- 3 x Idler pulley
- 3 x Endstop
- 3 x Ø 3 mm spacer
- 3 x Ø 3 mm washer
- 3 x M3 x 12 mm screw
- 3 x 623zz bearing
- 6 x M2,5 x 8 mm

Target : mount the pulleys on the upper plate

①

Upper plate

②

M3 x 12 mm Screw

Idler pulley

623zz bearing

Ø 3 mm spacer

Ø 3 mm washer

3X

Version 1.4.29

MECHANICAL ASSEMBLY
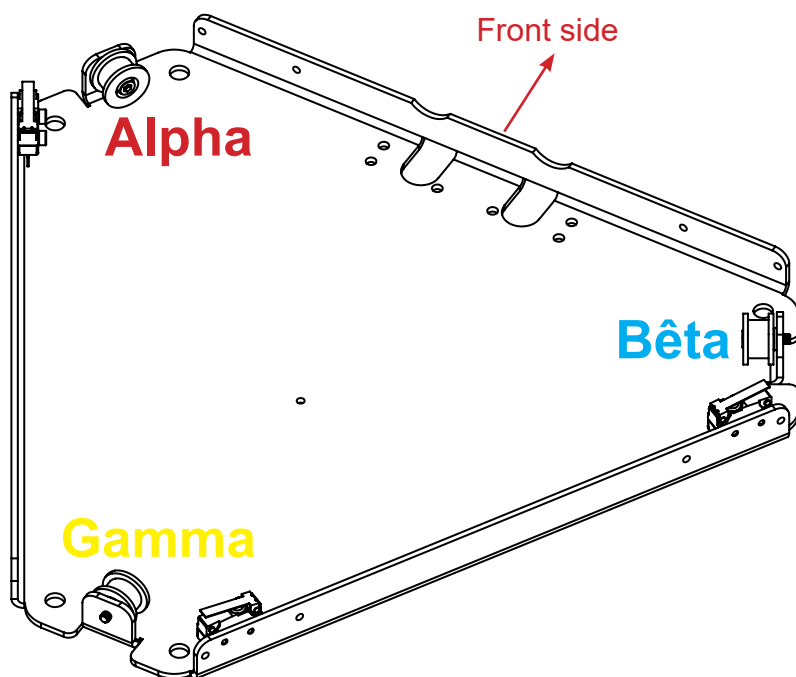
Target : mount the endstops on the upper plate

Each endstop connector has a different color :

- Alpha axis endstop : red
- Bêta axis endstop : blue
- Gamma axis endstop : yellow

Be sure to mount each endstop on its dedicated location.
Respect the color code.

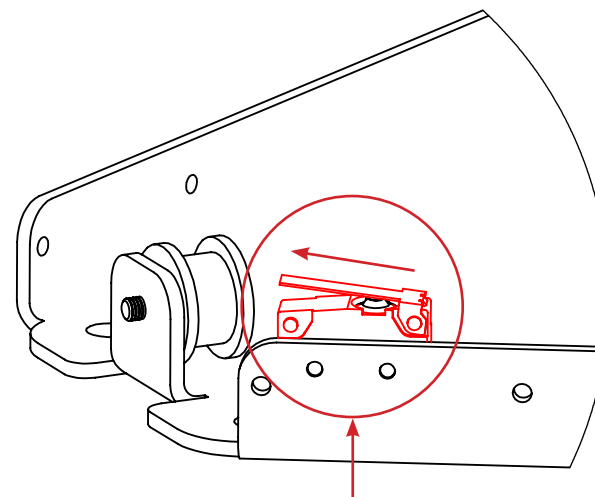Pay attention to the direction of mounting.

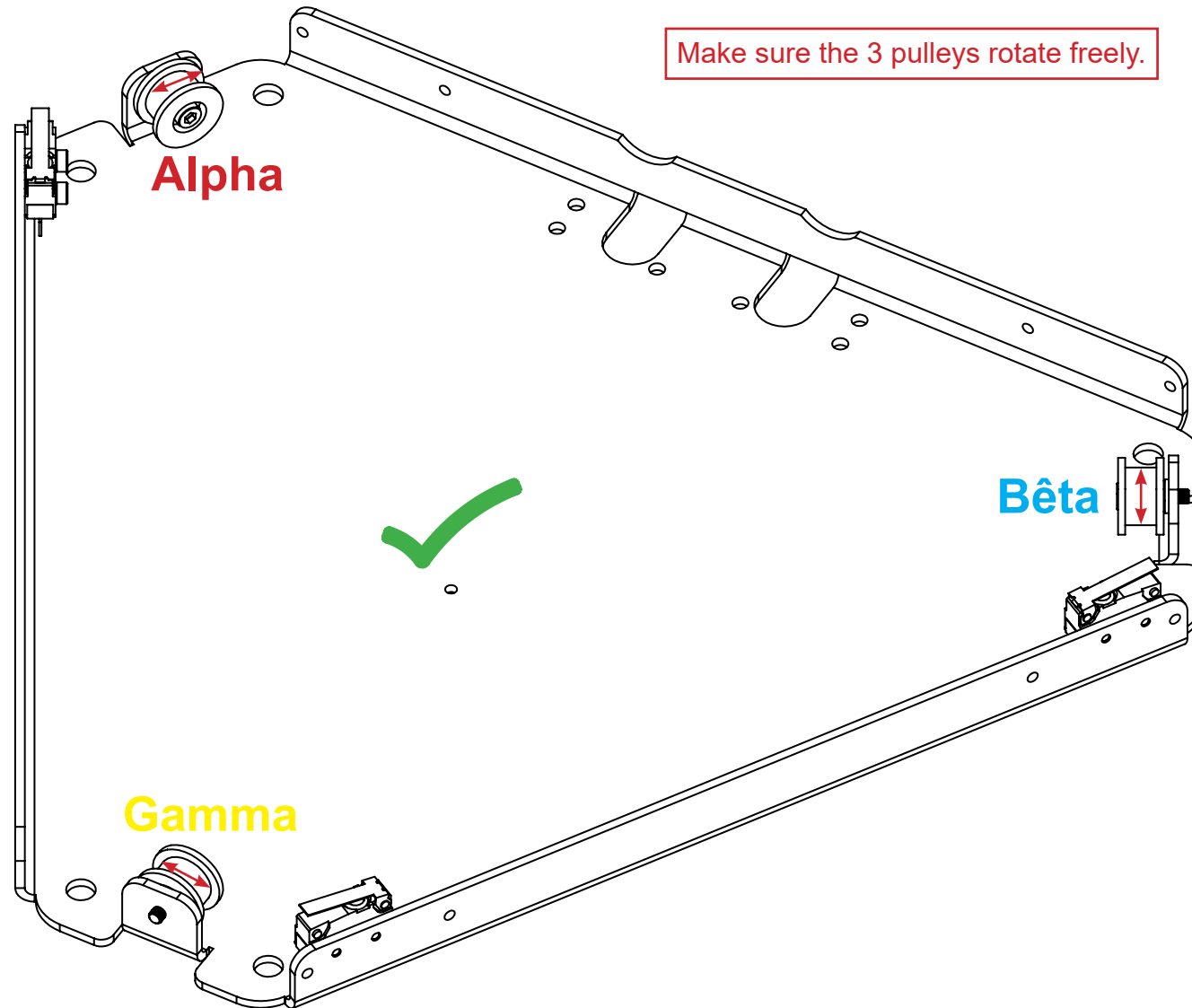Front side

Alpha

Bêta

Gamma

③

3X

M2,5 x 8 mm screw

Endstop

Endstop's steel blade should be directed outward from the plate.

MECHANICAL ASSEMBLY

Result

Make sure the 3 pulleys rotate freely.

Alpha

Bêta

Gamma

If you have the HeatBed option, please go to the page 71 to mount this element !

LOWER PLATE ASSEMBLY

Needed parts :

- 1 x Lower plate
- 3 x Short motor
- 16 x M3 x 8 mm screw
- 12 x Ø 3 mm washer
- 3 x GT2 pulley
- 4 x M3 x 12 mm screw
- 1 x 3 cm fan
- 1 x On/Off switch
- 1 x «Reset» button
- 4 x Ø 3 mm spacer
- 1 x eMotronic board

Target : mount the stepper motors on the lower plate

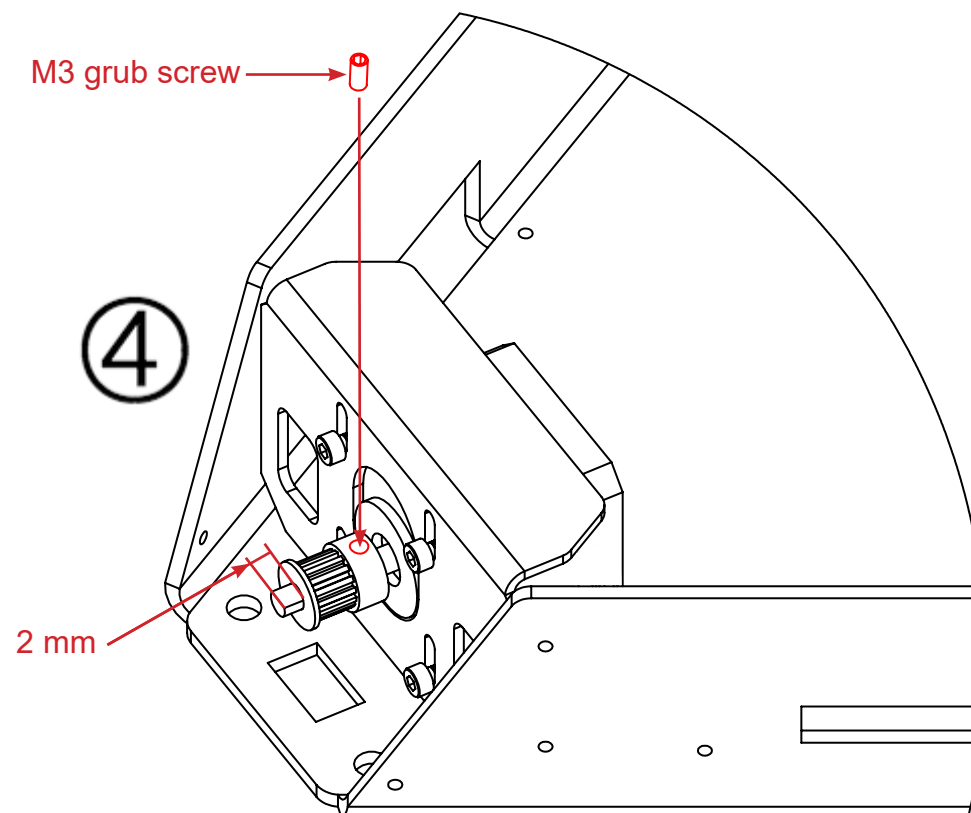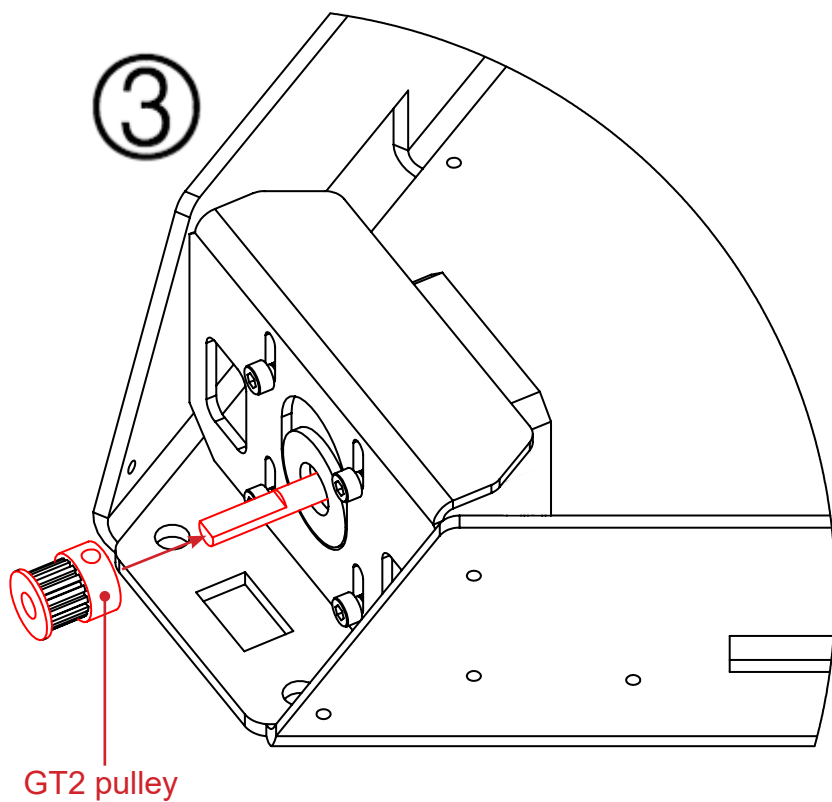Short motor

Ø 3 mm washer

M3 x 8 mm screw
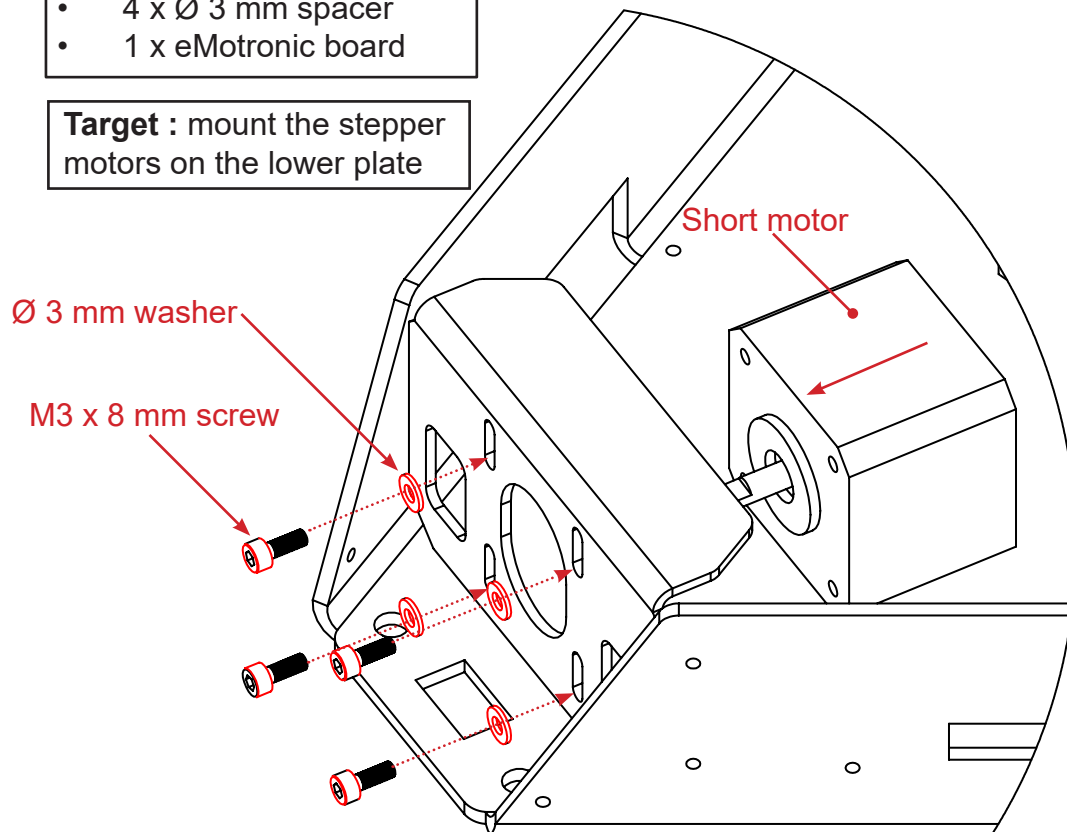
② Repeat the operation on the two other towers & **check the motor's orientation using the connectors as reference**
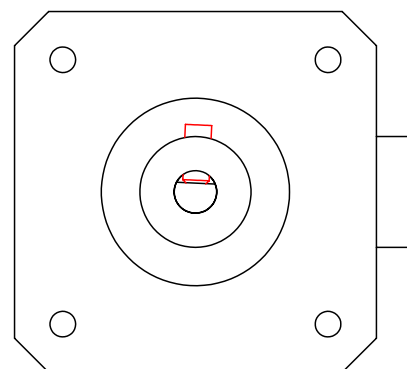
Gamma

Motor's connector

Bêta

Alpha
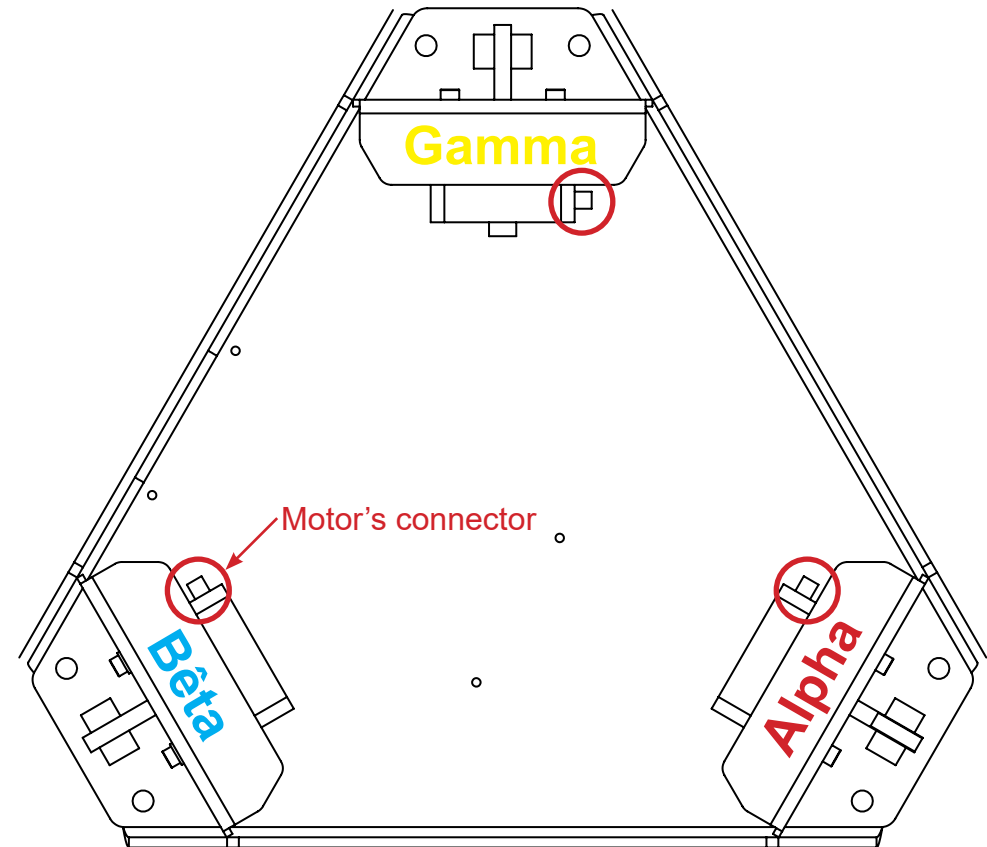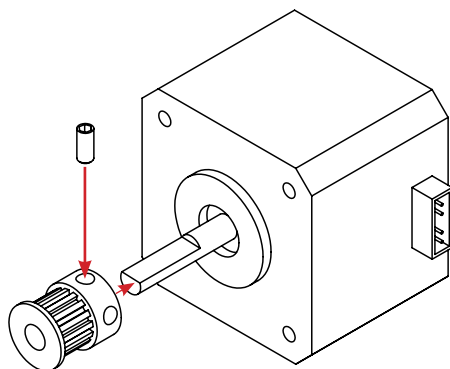
Allow gravity to drop the motor to the bottom of the notch and pre-tighten a single screw to hold the motor in this position.

MECHANICAL ASSEMBLY

Target : mount GT2 pulleys on the motor's axis

③

GT2 pulley

M3 grub screw

④

2 mm

The grub screw must be in contact with the flat side of the axis.

MECHANICAL ASSEMBLY

Target : repeat steps 2, 3 and 4 on the other two peaks of the lower plate.

Result

MECHANICAL ASSEMBLY
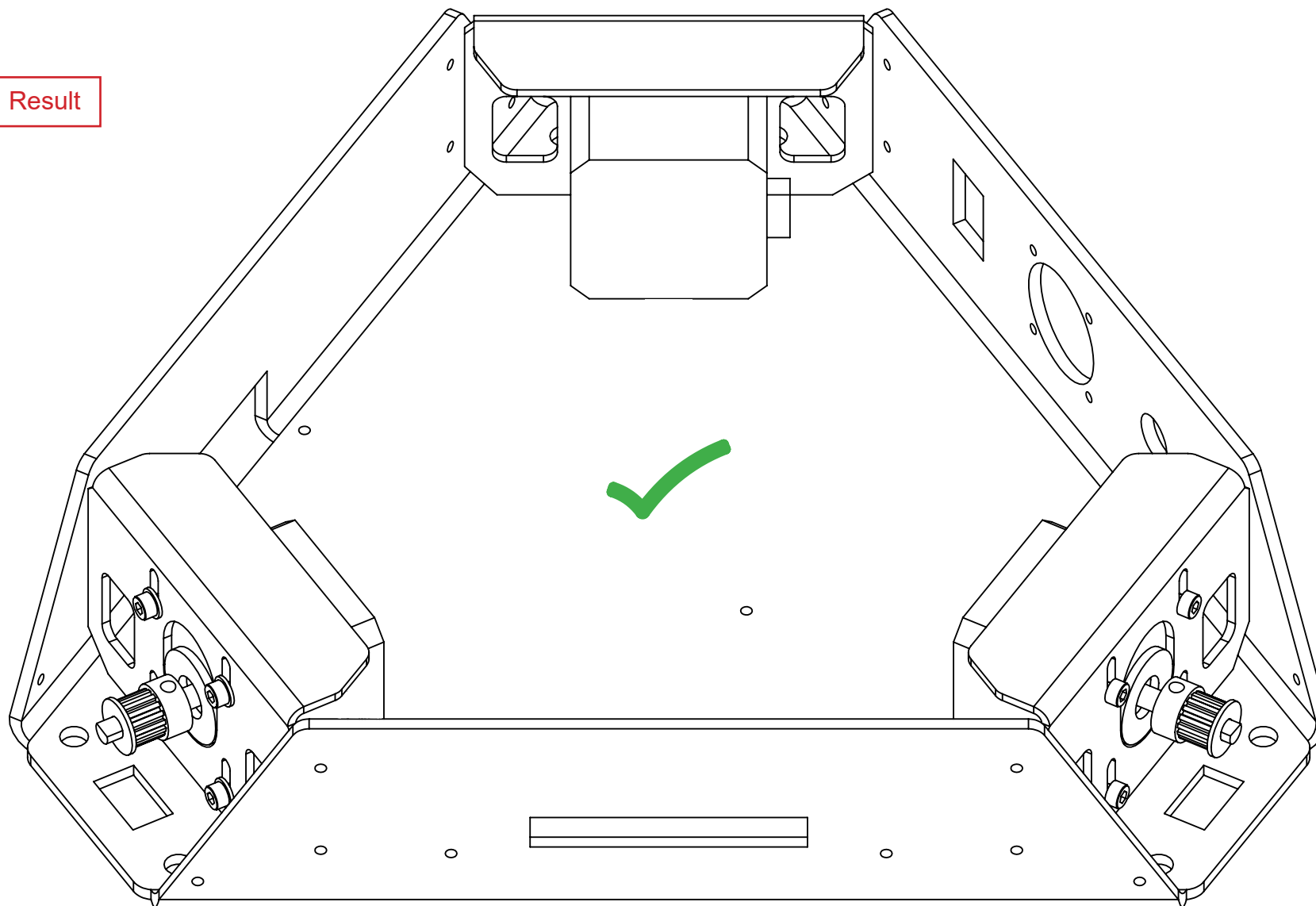
Target : fix the electronic board fan like shown below

⑤

Pay attention to the mounting direction of the fan, for proper orientation use the notches as reference.

M3 x 12 mm screw

3 cm fan

MECHANICAL ASSEMBLY
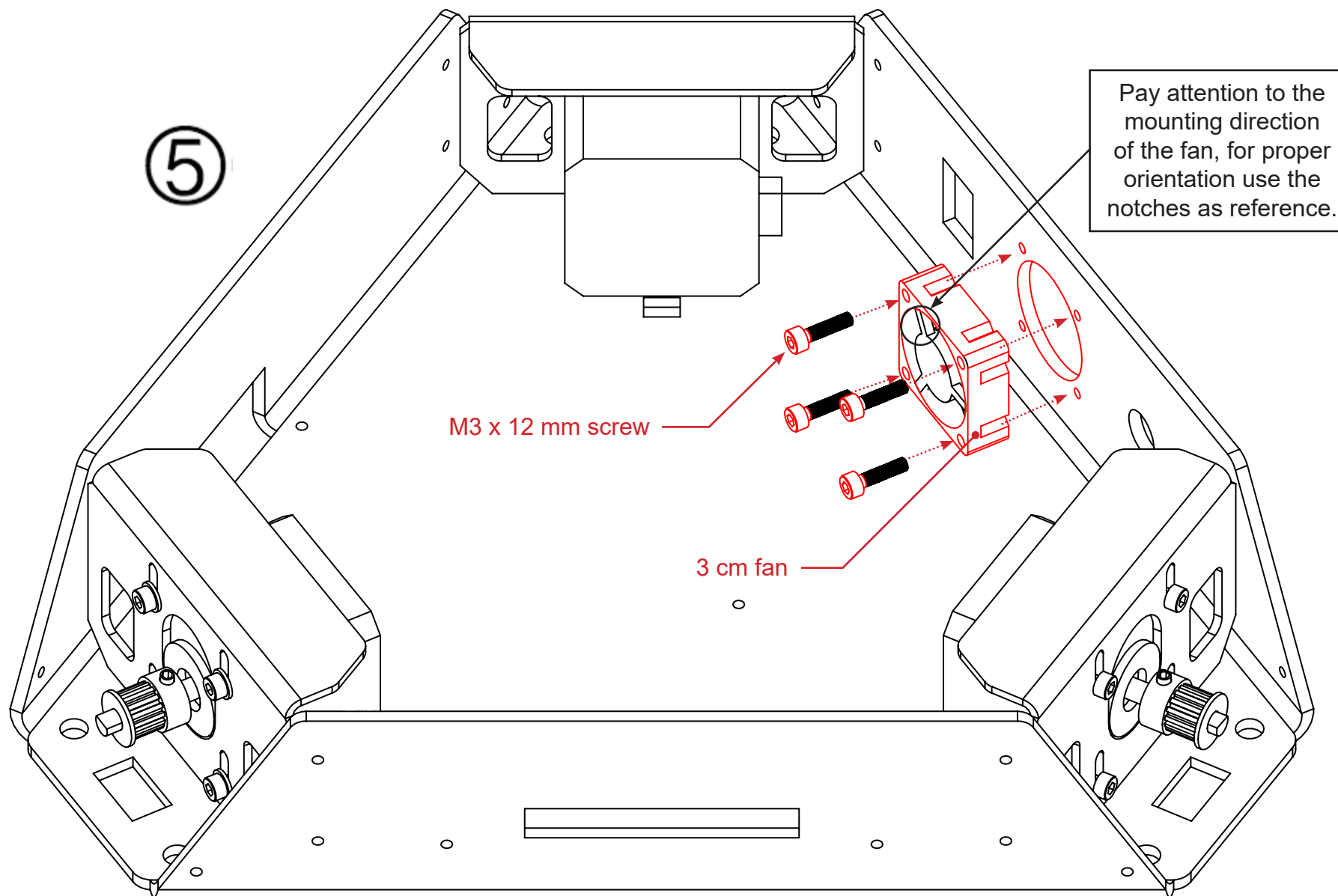
Target : mount the On/Off switch and the «Reset» button on the lower plate

⑥

On/Off switch

«Reset» button

«Reset» switch nut

Result

MECHANICAL ASSEMBLY
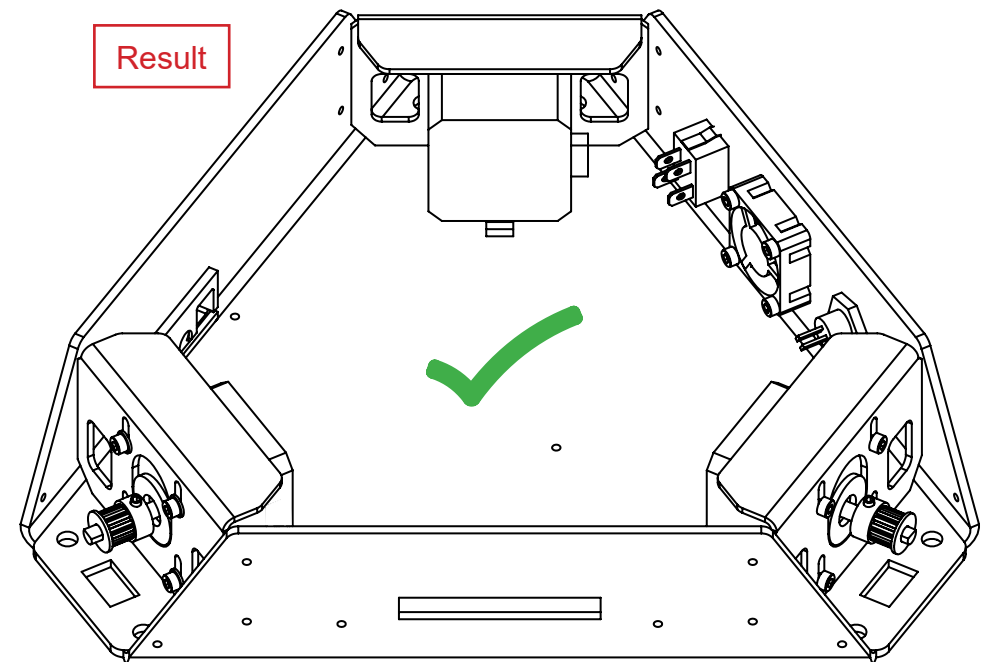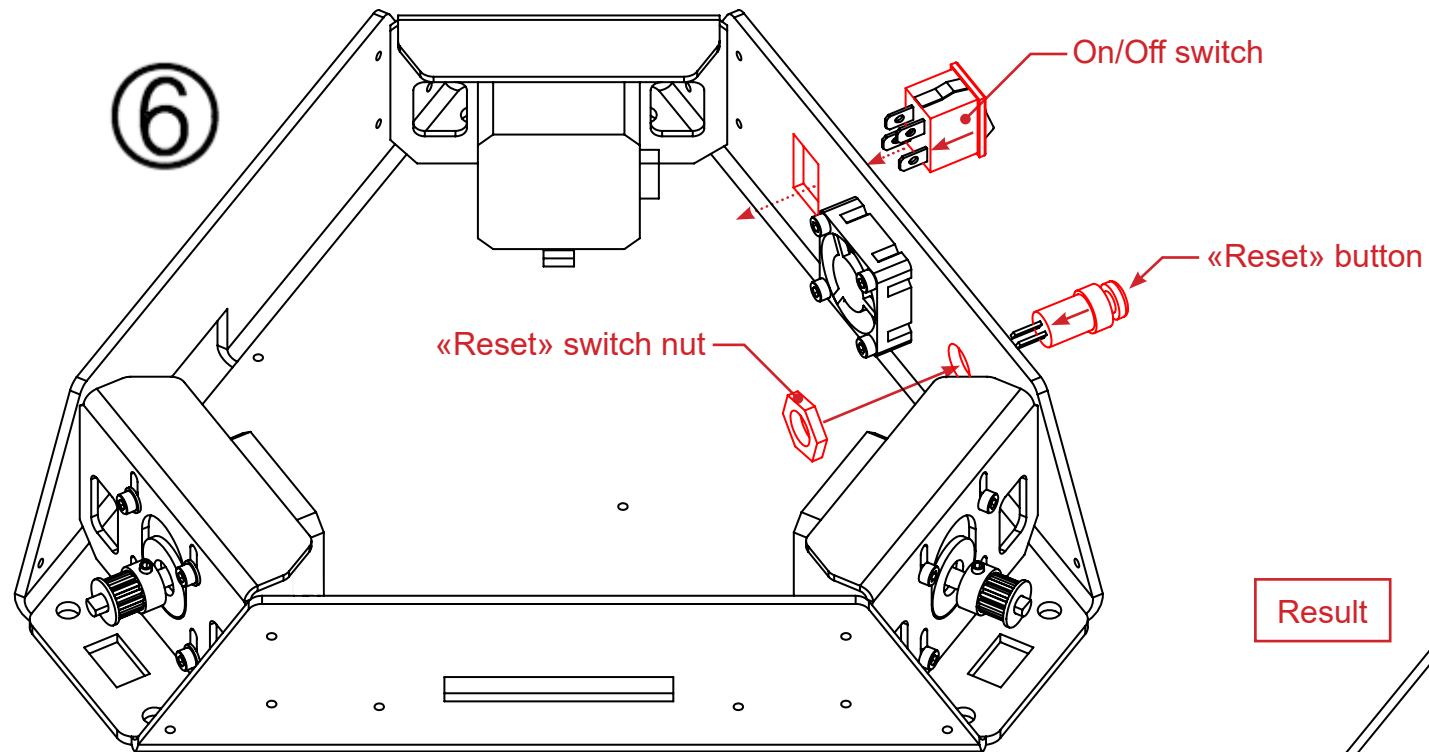
Target : install the eMotronic board and its protective cover

⑦

Board cover

⑧

M3 x 8 mm screw
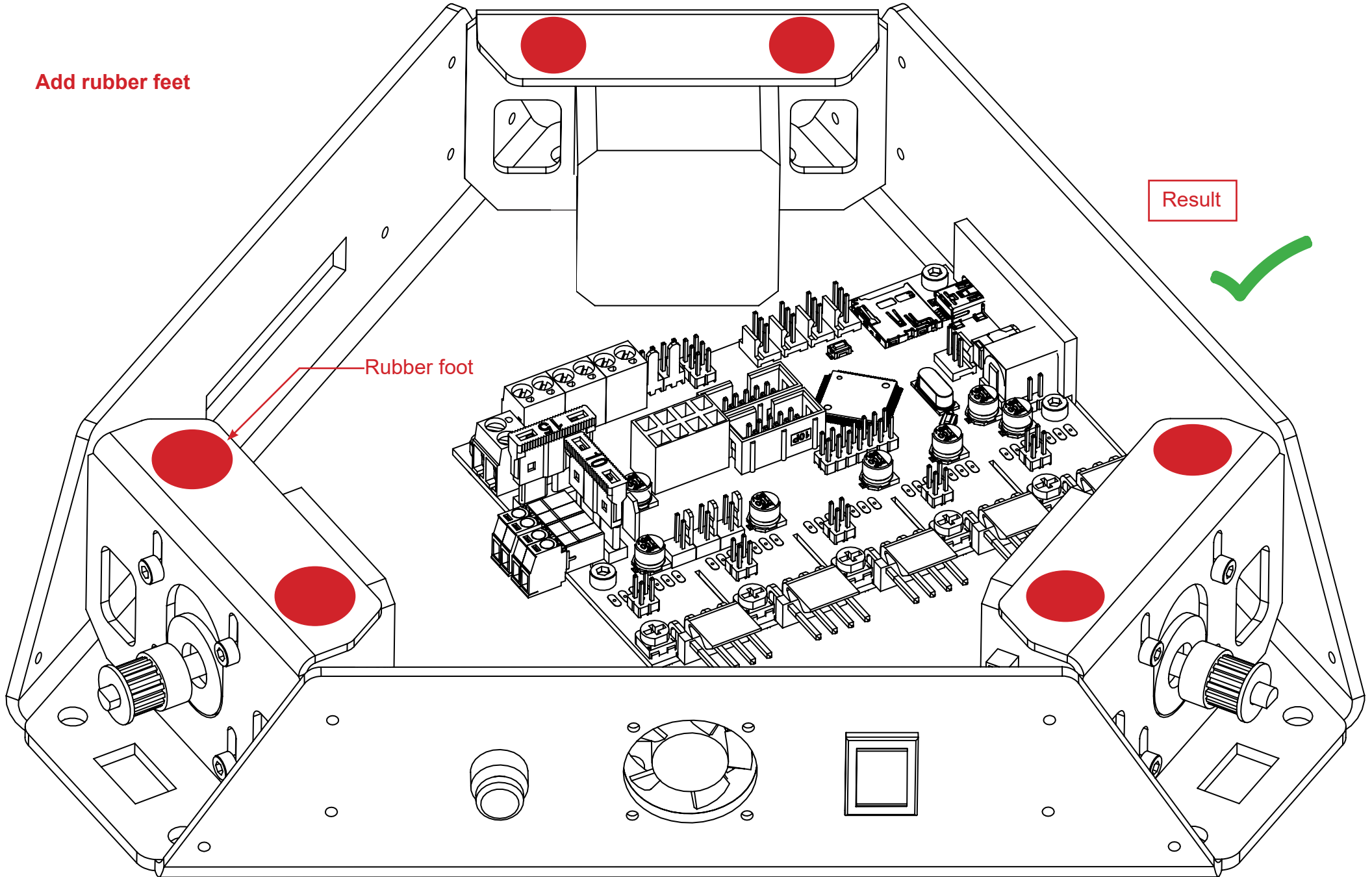
Spacer
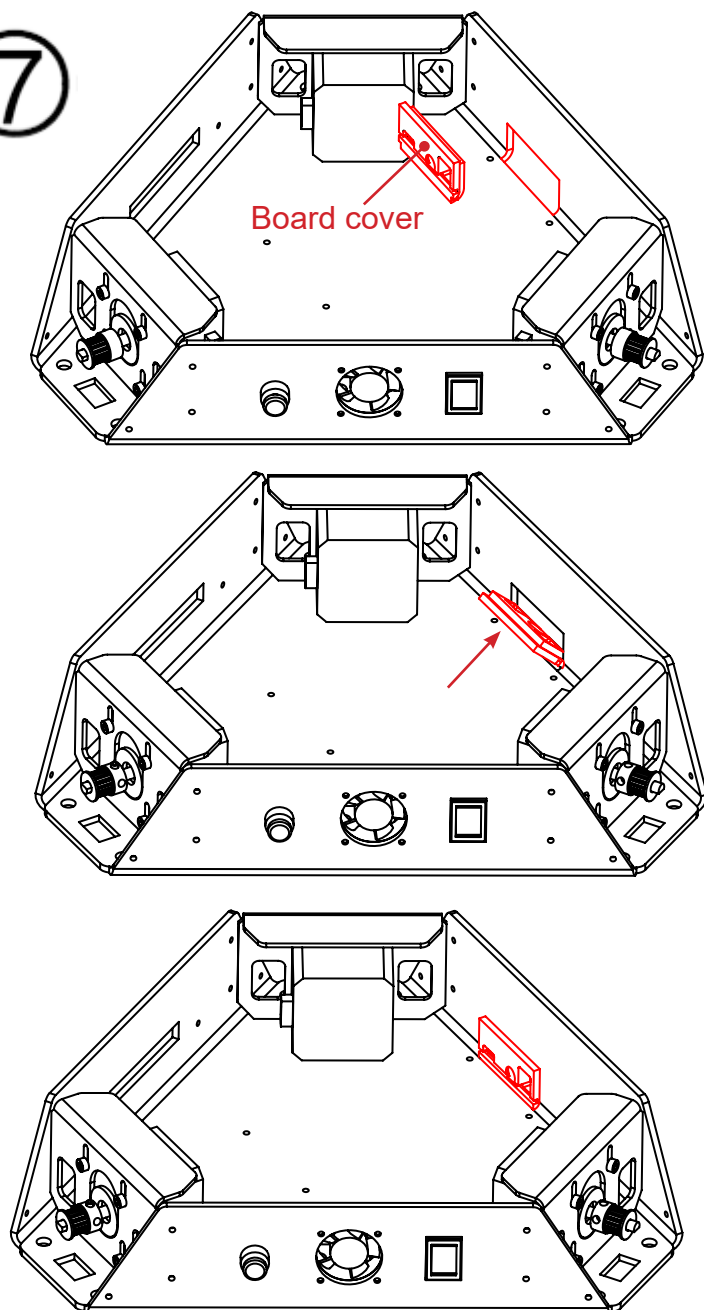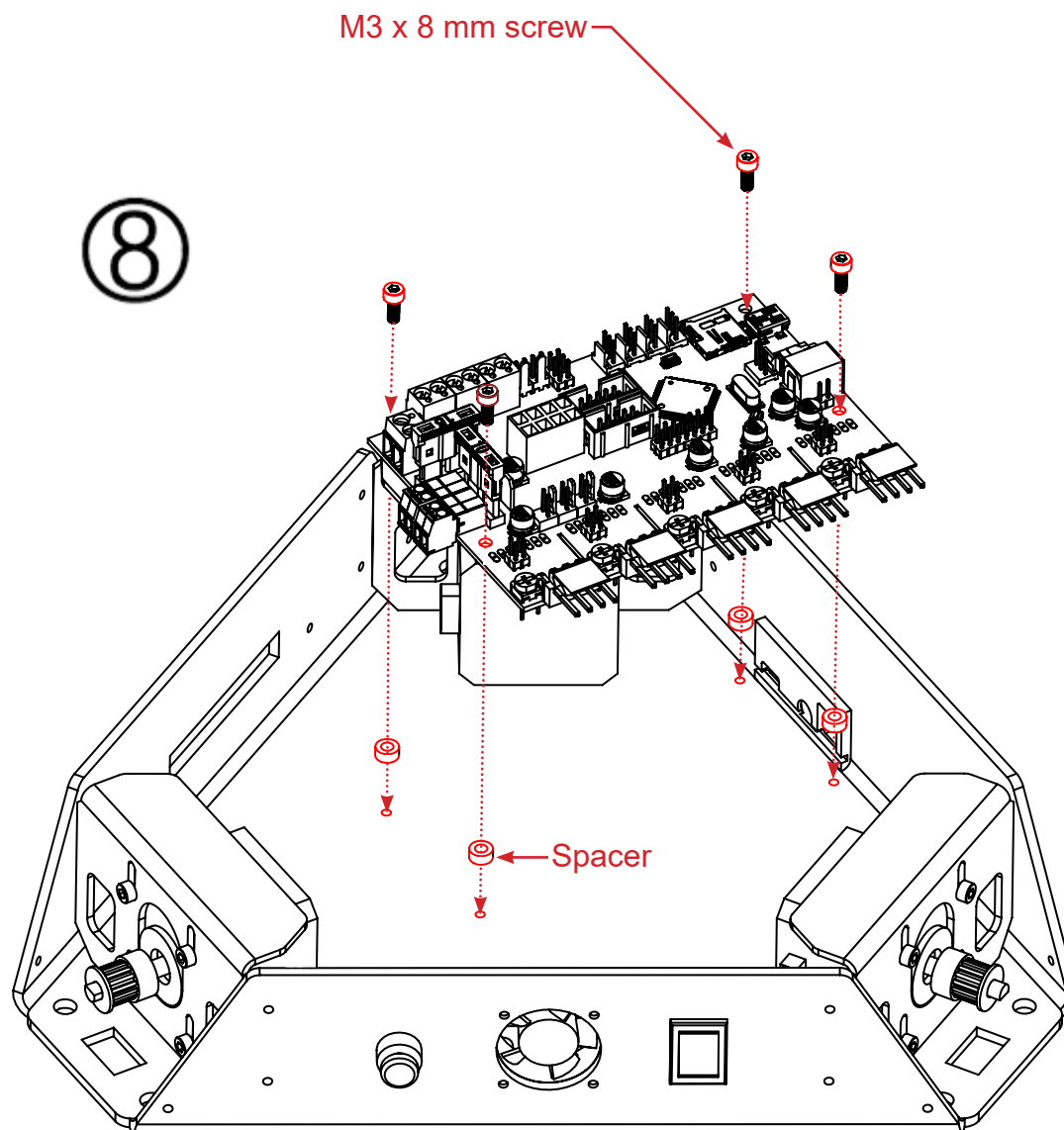
Add rubber feet

Rubber foot

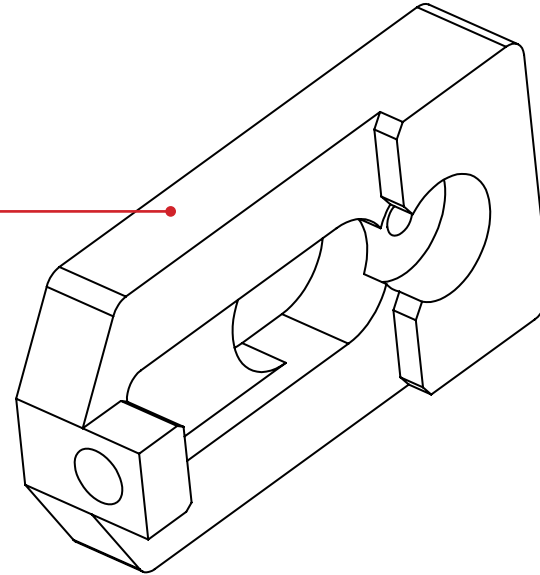Result ✔

EXTRUDER ASSEMBLY

Needed parts :

- 1 x Extruder cover
- 1 x Body extruder
- 1 x Extruder mobile
- 1 x Driving wheel
- 1 x M5 x 12 mm Knurled screw
- 1 x Ø 3 mm washer
- 1 x 693zz bearing
- 1 x M3 x 8 mm screw
- 4 x M3 x 20 mm screw
- 1 x Long motor
- 1 x Spring
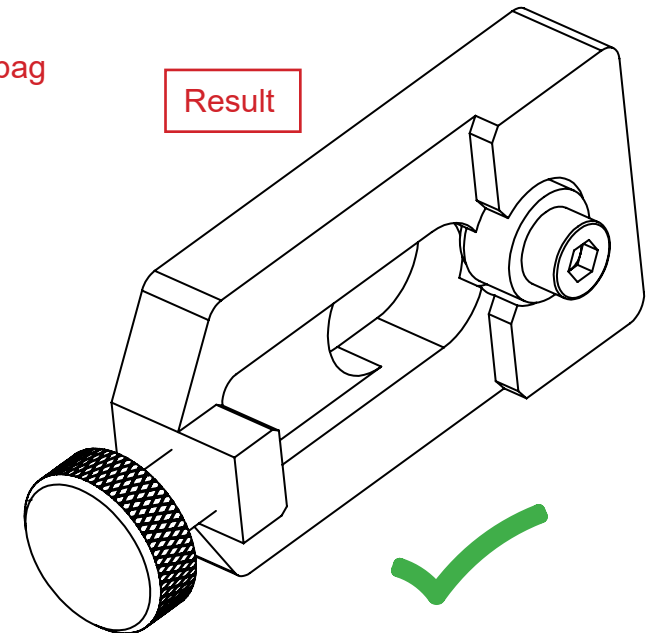
Target : mount the extruder

Extruder Mobile
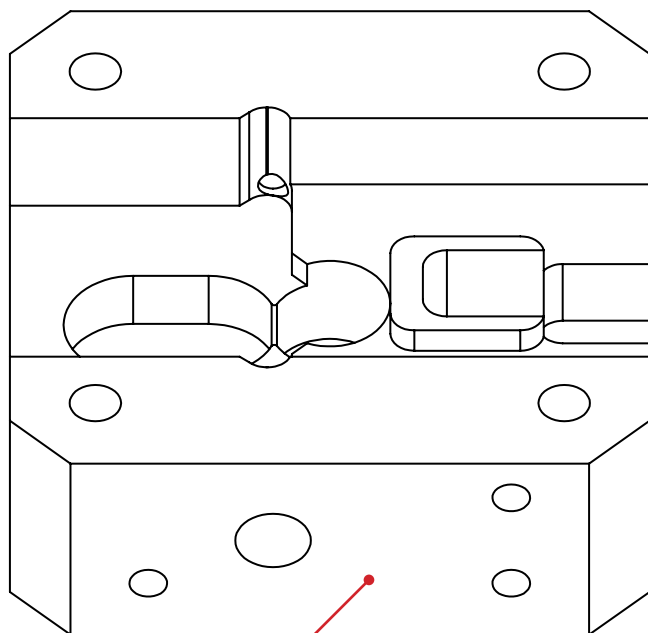
①

②

Ø 3 mm washer supplied in the bag
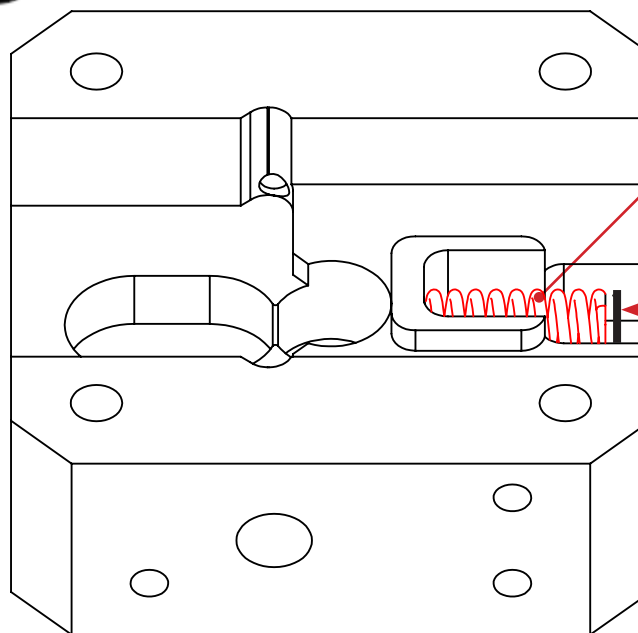
693zz bearing

M3 x 8 mm screw

Knurled screw

Result

MECHANICAL ASSEMBLY
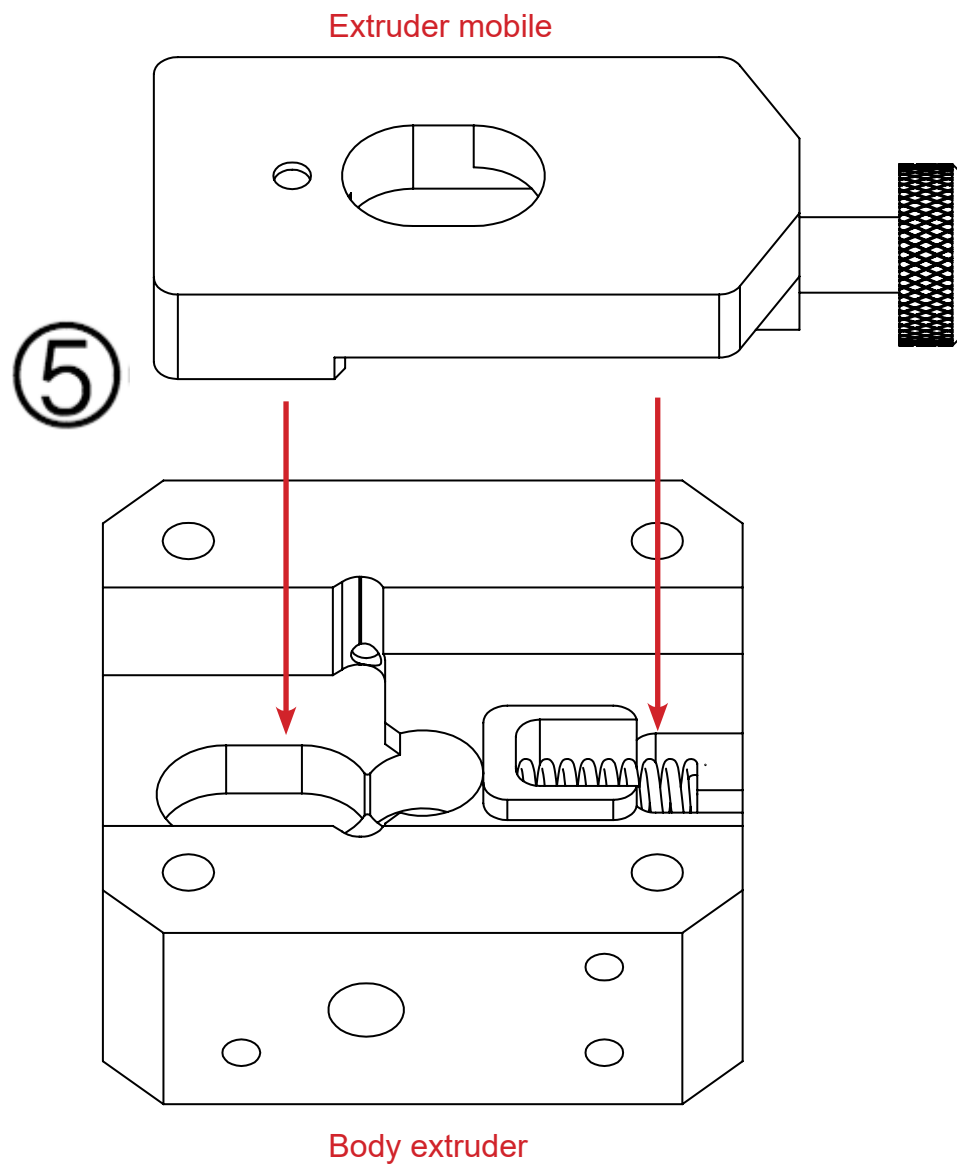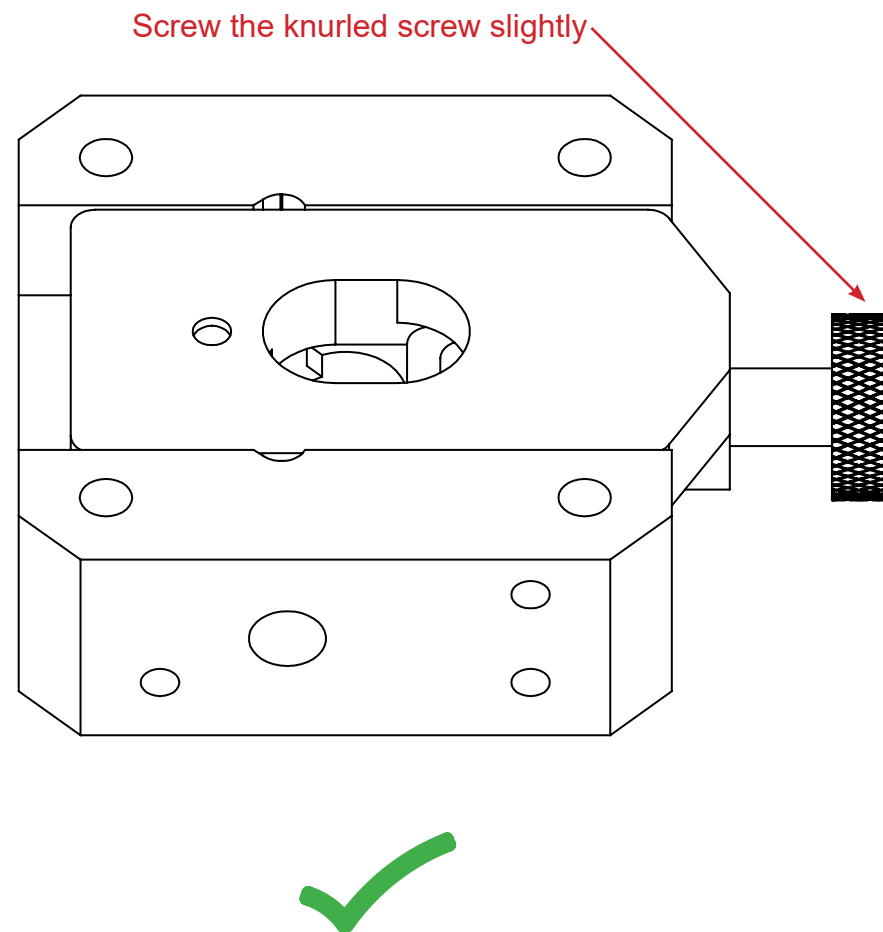
③

④

Spring

Ø 3 mm Washer

Body extruder

MECHANICAL ASSEMBLY
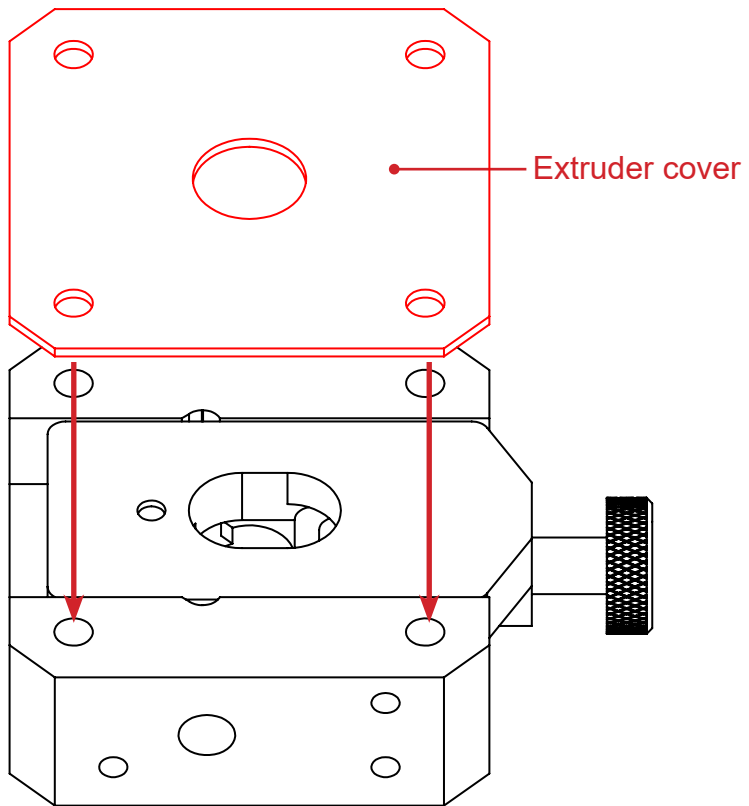
Place «Extruder Mobile» on «Body extruder.»
The spring should remain in its place.

Result

Extruder mobile

⑤

Body extruder

Screw the knurled screw slightly

⑥

Extruder cover

Result

⑦

Long motor

M3 x 20 mm screw

Extruder assembly

Check the
connector's orientation

Result

⑧

Driving wheel

Result

⑨

M3 grub screw

approximately 0,5 mm
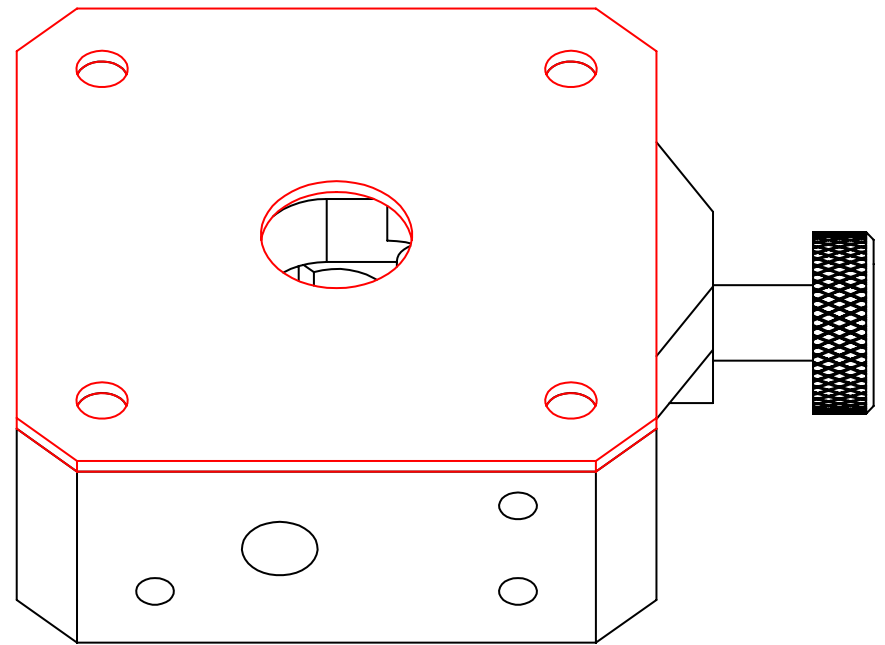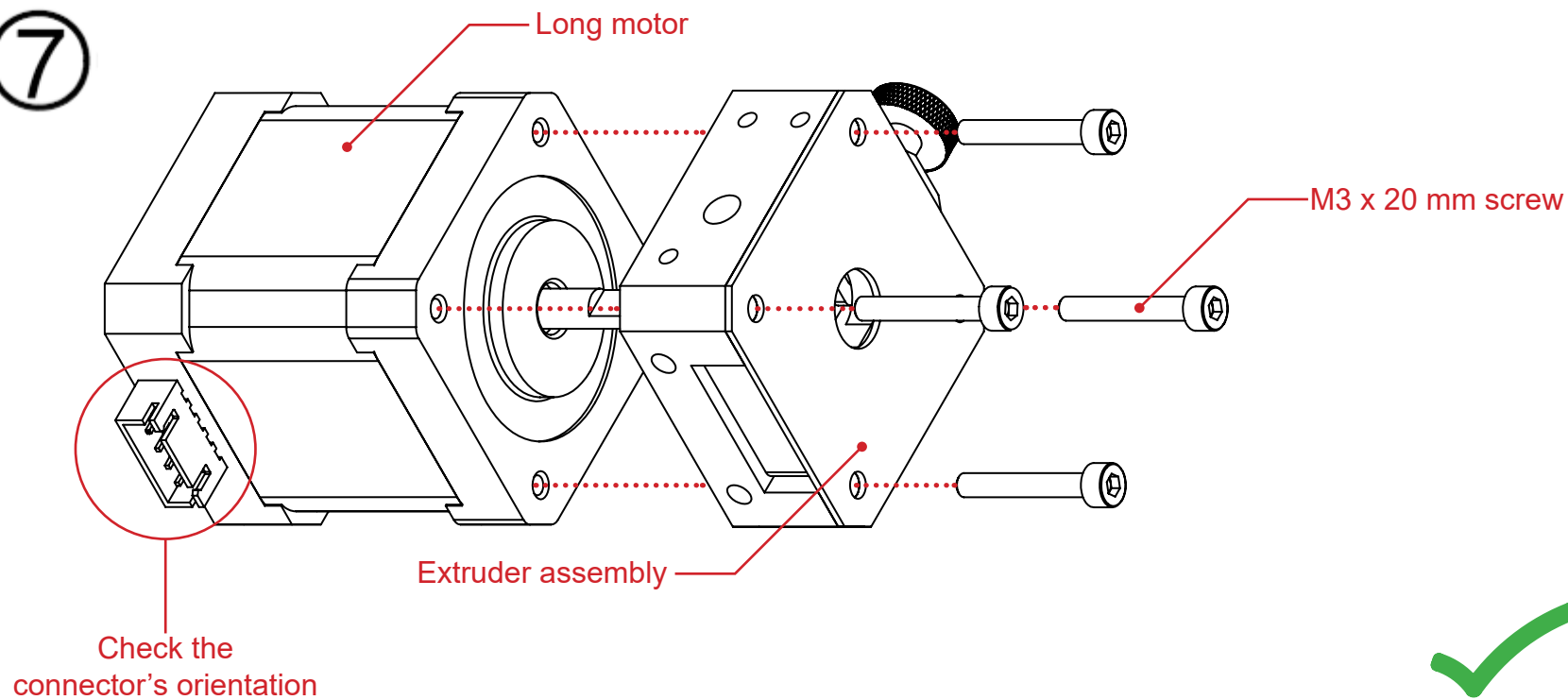
The grub screw must be in contact with the flat side of the axis.

CORE ASSEMBLY

Needed parts :

- 1 x Core
- 6 x ball joints
- 3 x 3 cm fan
- 4 x M3 x 8 mm screw
- 3 x M3 x 12 mm screw
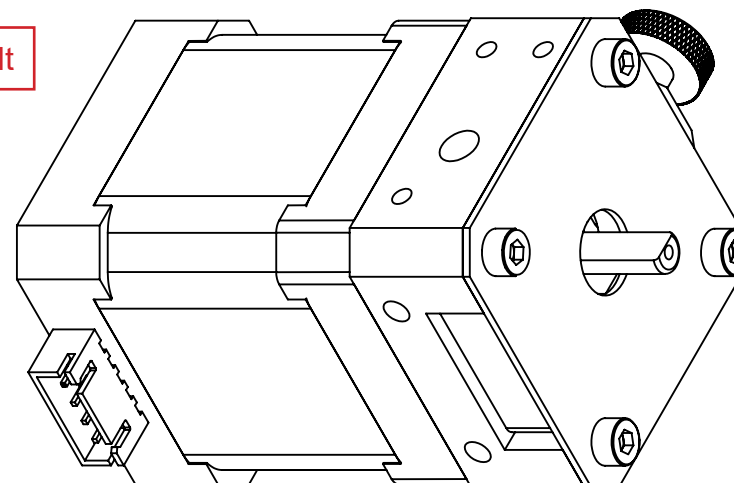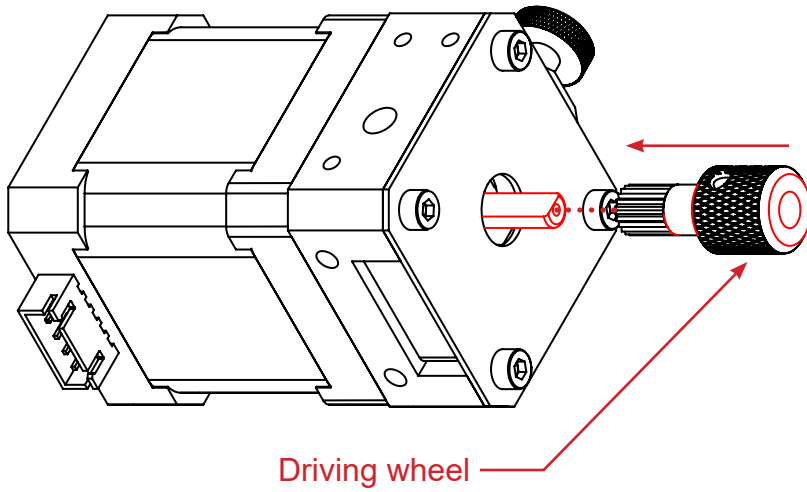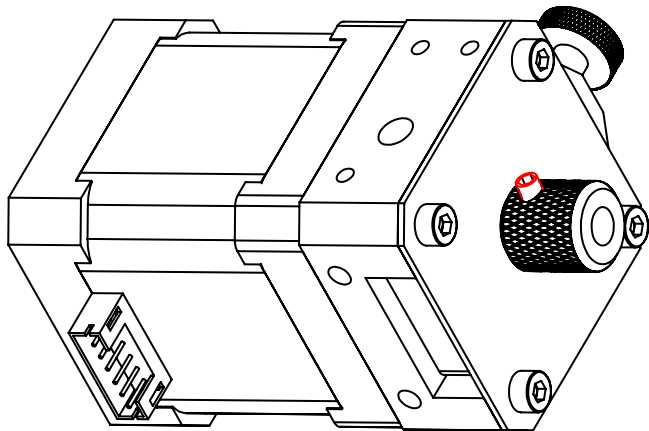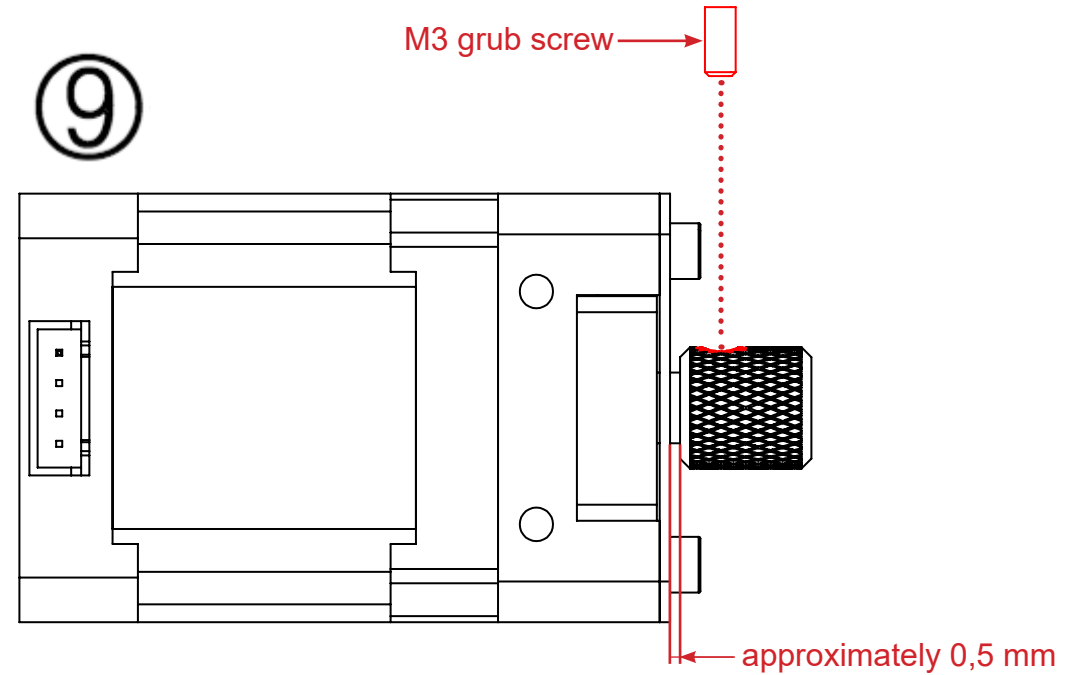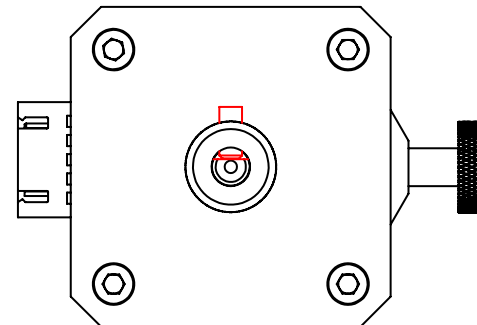- 5 x M3 x 20 mm screw
- 2 x Fan duct
- 3 x Ø 3 mm spacer
- 1 x Hexagon holder
- 1 x Hexagon bracket

Target : mount the ball joints on the core

① Ball joint

Core

Result ✔

 = add some threadlock to the thread

Target : mount the prinhead's fan

② 3 cm Fan

Ø 3 mm washer *
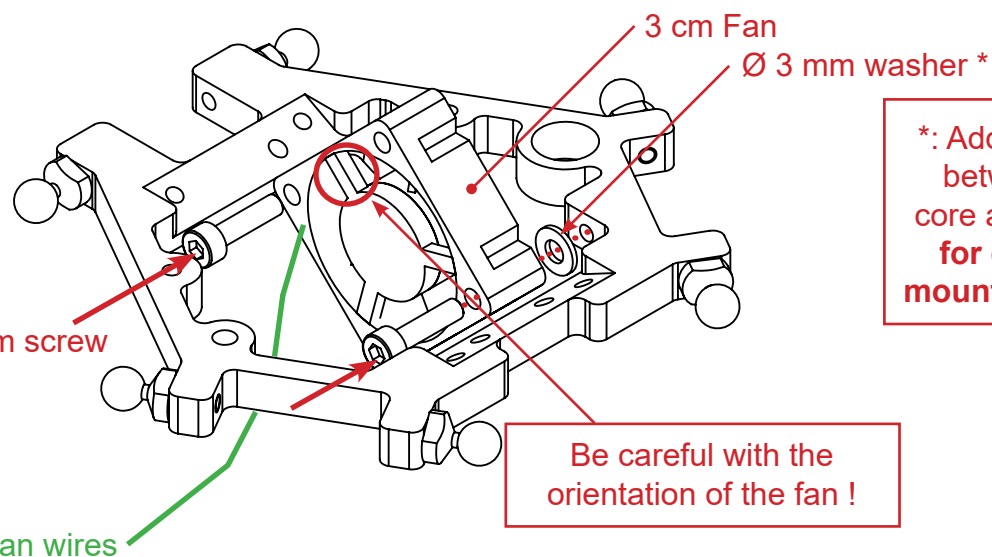
*: Add a washer between the core and the fan **for each fan mounting screw.**

M3 x 20 mm screw

Be careful with the orientation of the fan !

Fan wires

Result ✔

Version 1.4.29

MECHANICAL ASSEMBLY
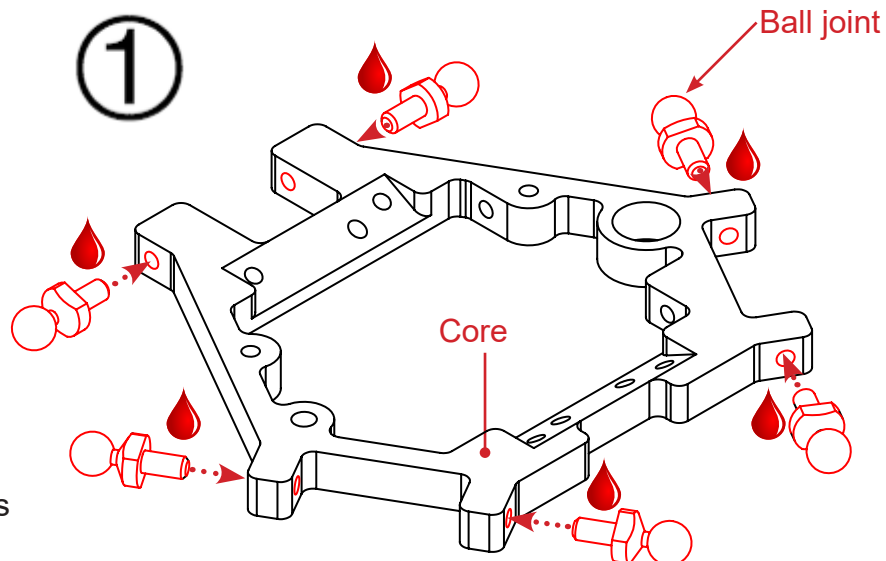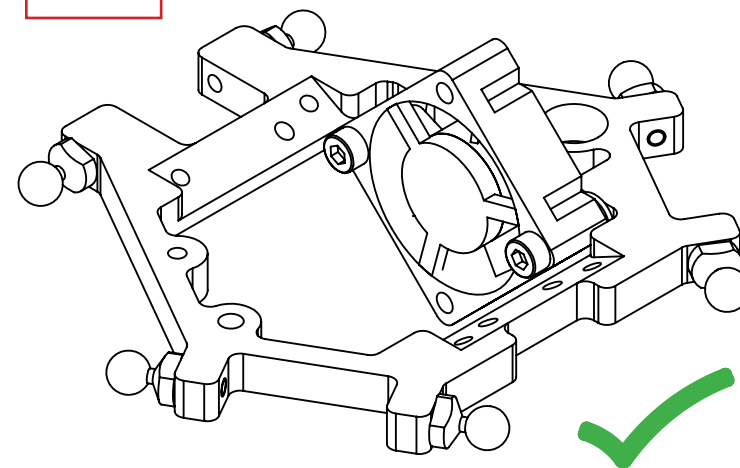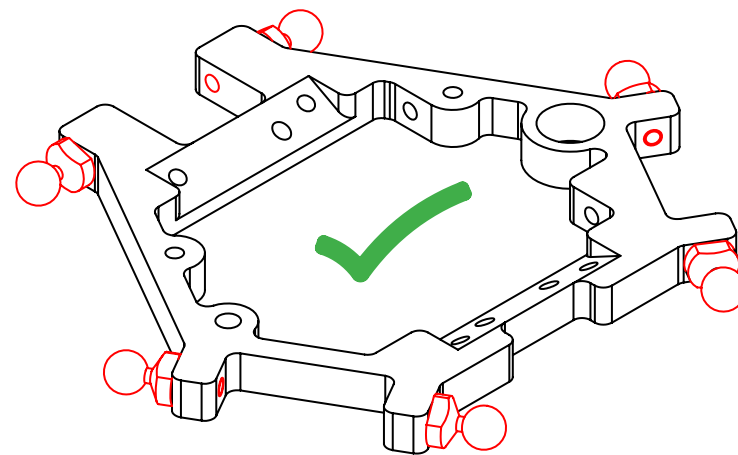
Target : mount the 2 other fans
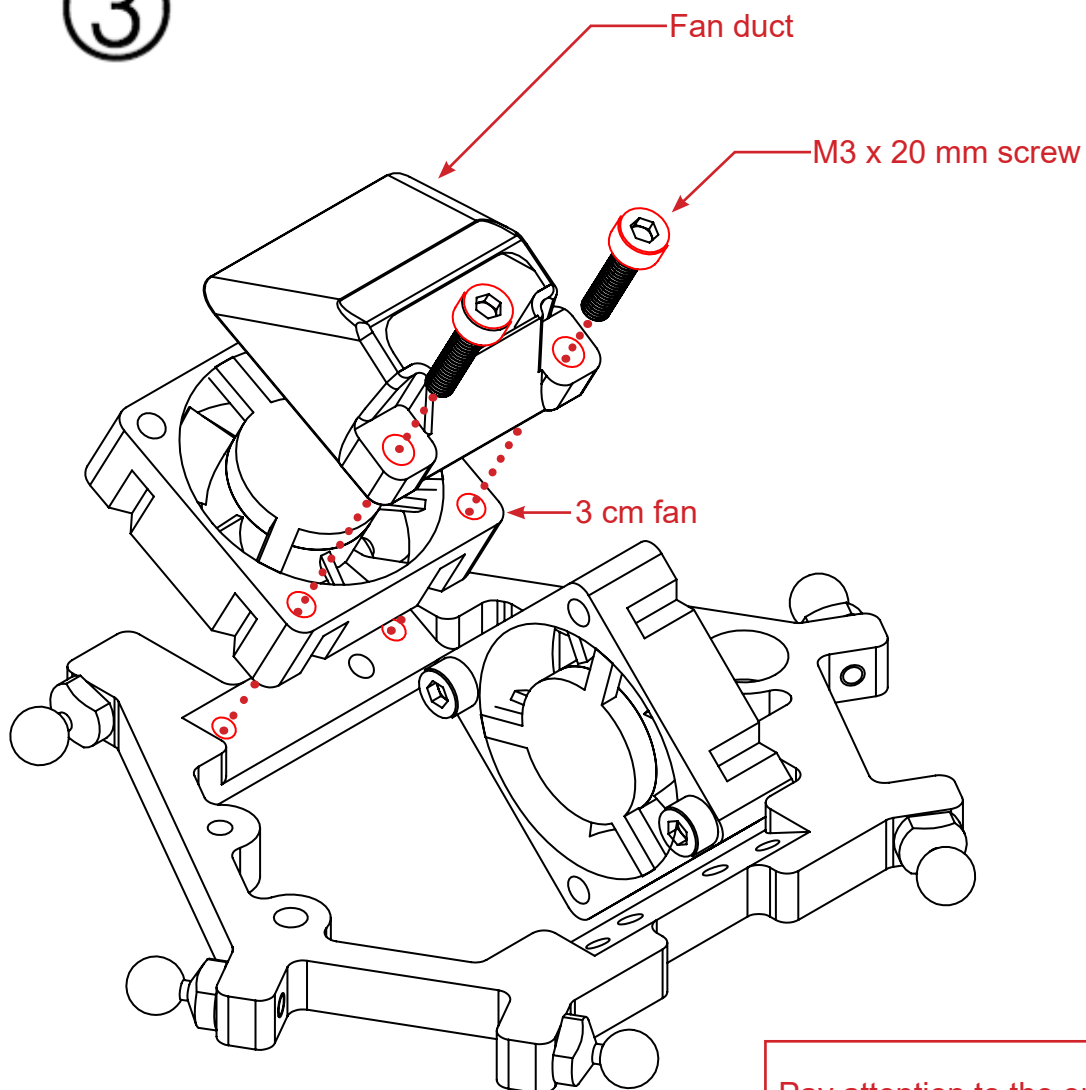
CAUTION: If you have the LED option, please refer to page 95 of this guide to mount the option now.

③

Fan duct

M3 x 20 mm screw

3 cm fan

Result

✔

Fan cables

Fan cables

3 cm fan
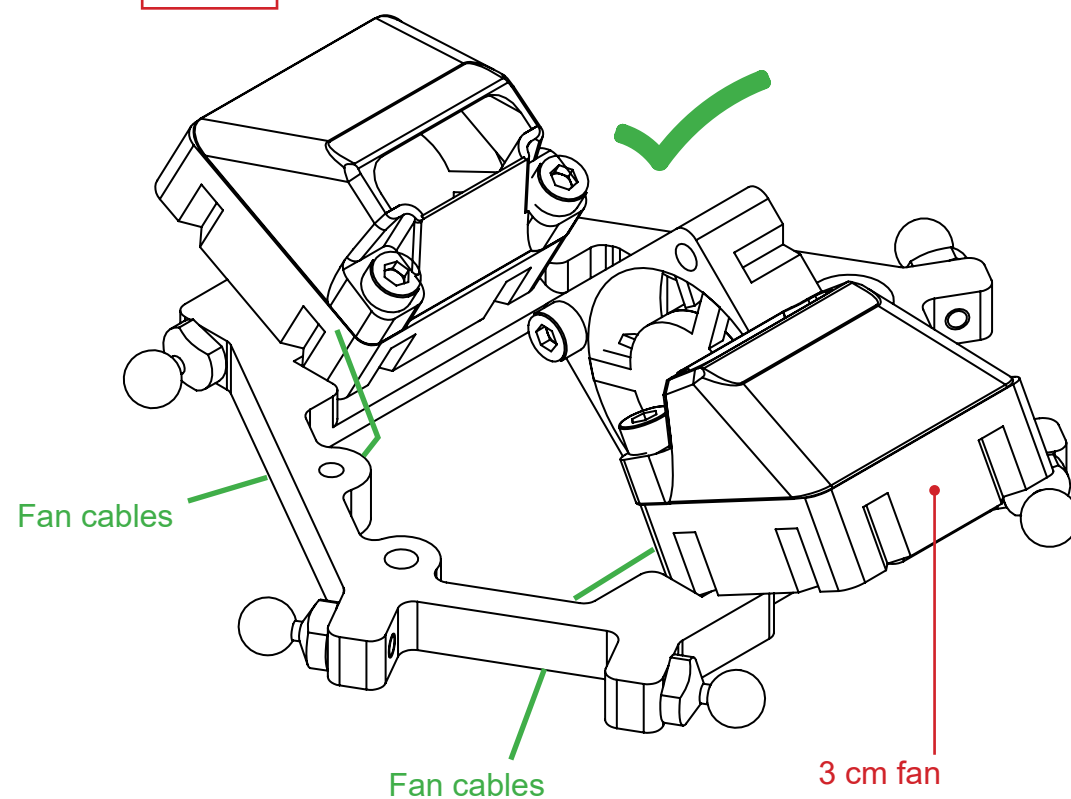
Pay attention to the orientation of the fans.

MECHANICAL ASSEMBLY

Target : mount the interface board on the core

Ø 3 mm spacer

④

Result

⑤

M3 x 8 mm screw

Interface board

Result

MECHANICAL ASSEMBLY
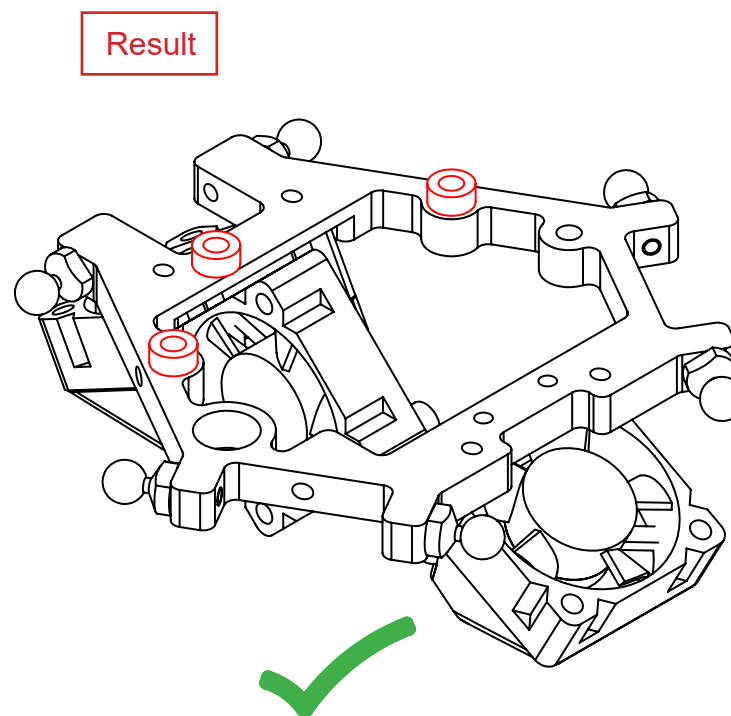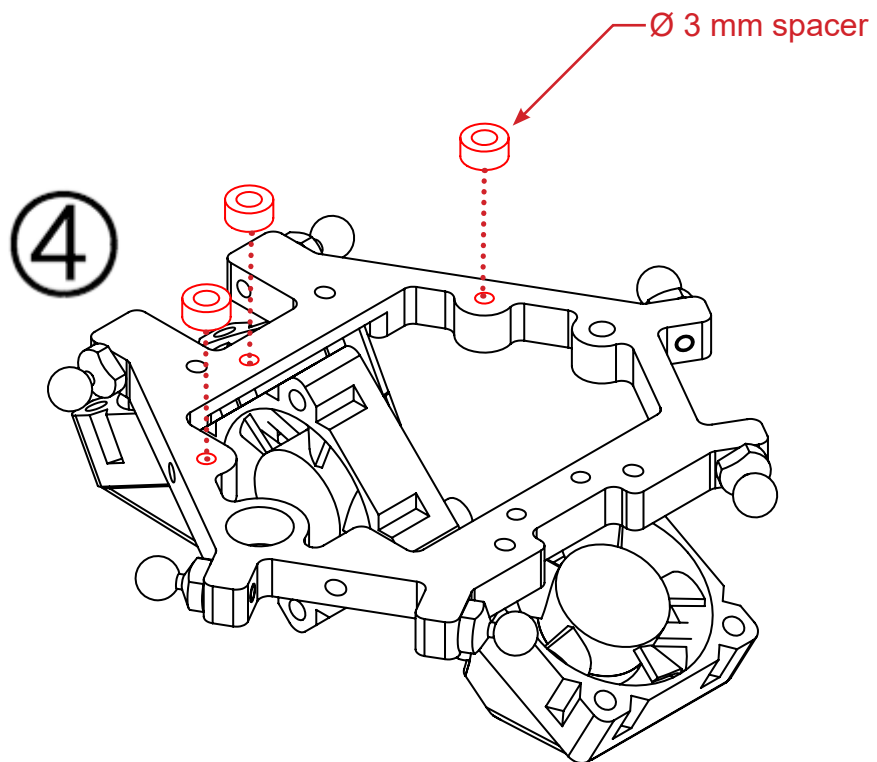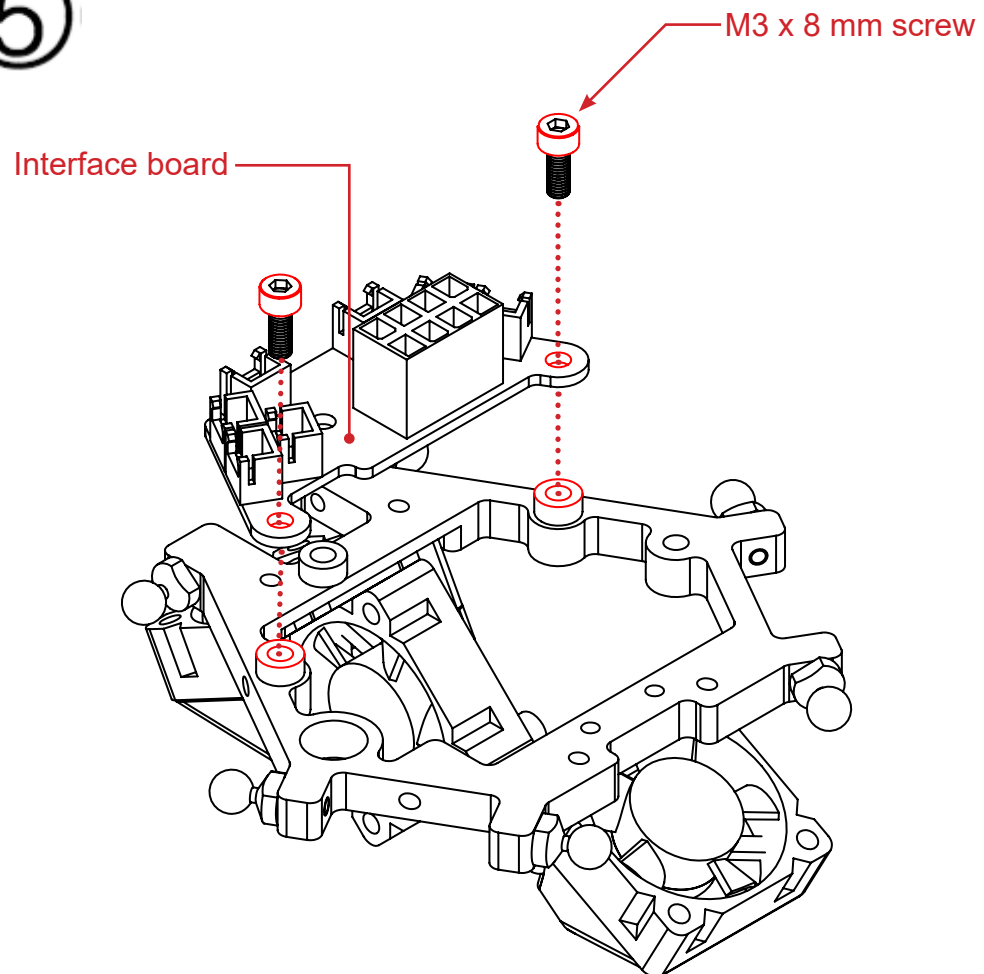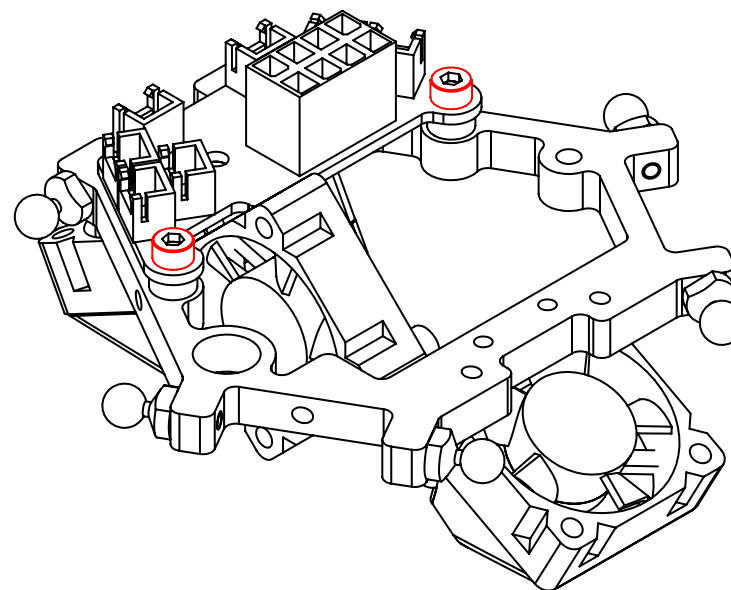
Target : mount the Hexagon holder on the core

⑥

M3 x 12 mm screw

M3 x 8 mm screw

Hexagon holder

Result

MECHANICAL ASSEMBLY
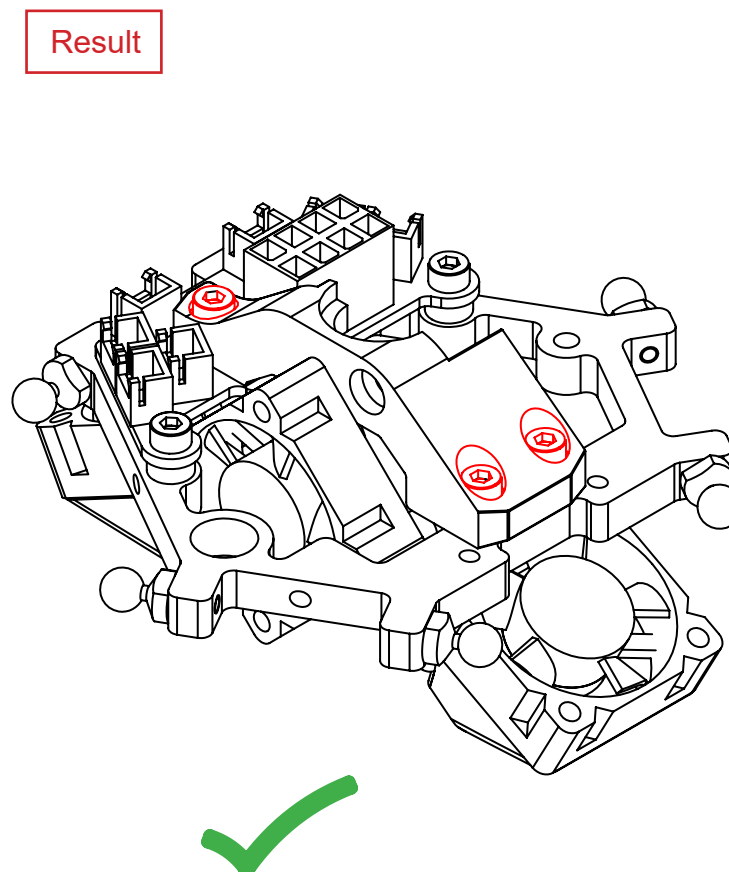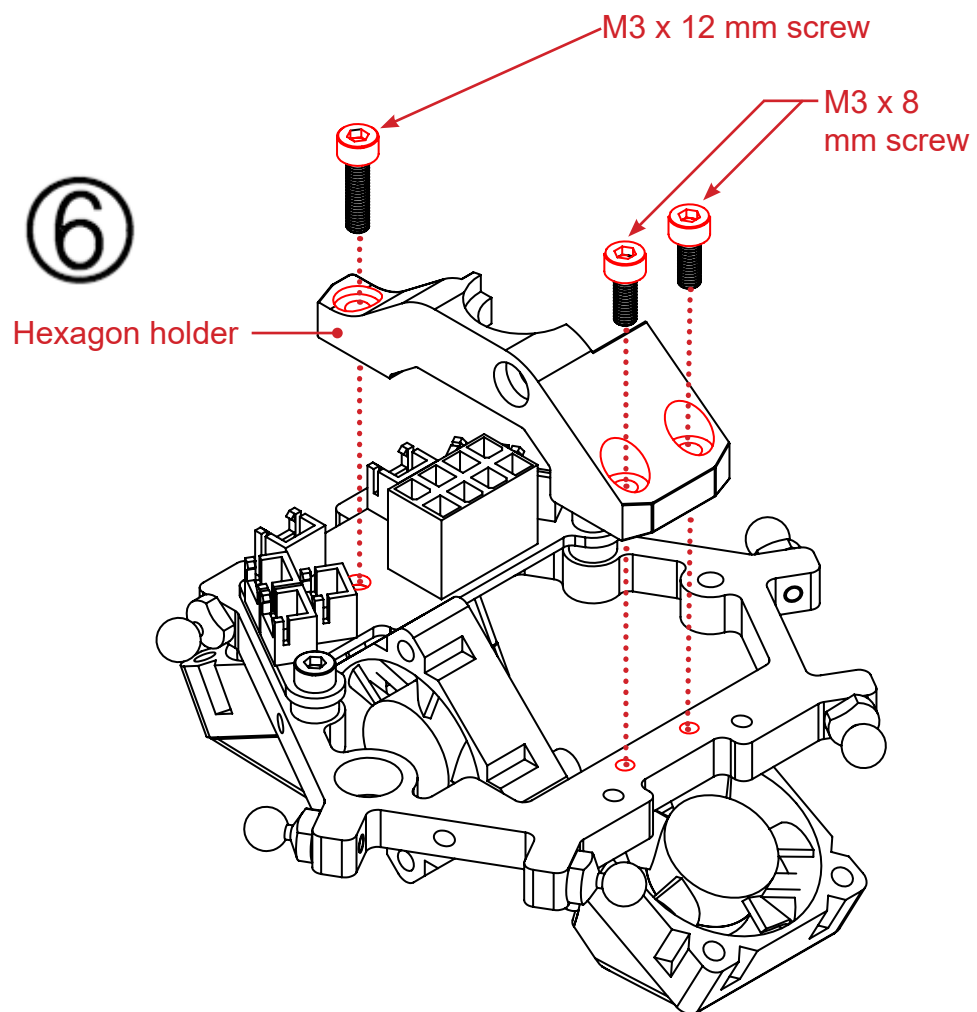
Target : mount the printhead and the bracket

⑦

Hexagon printhead

Hexagon bracket
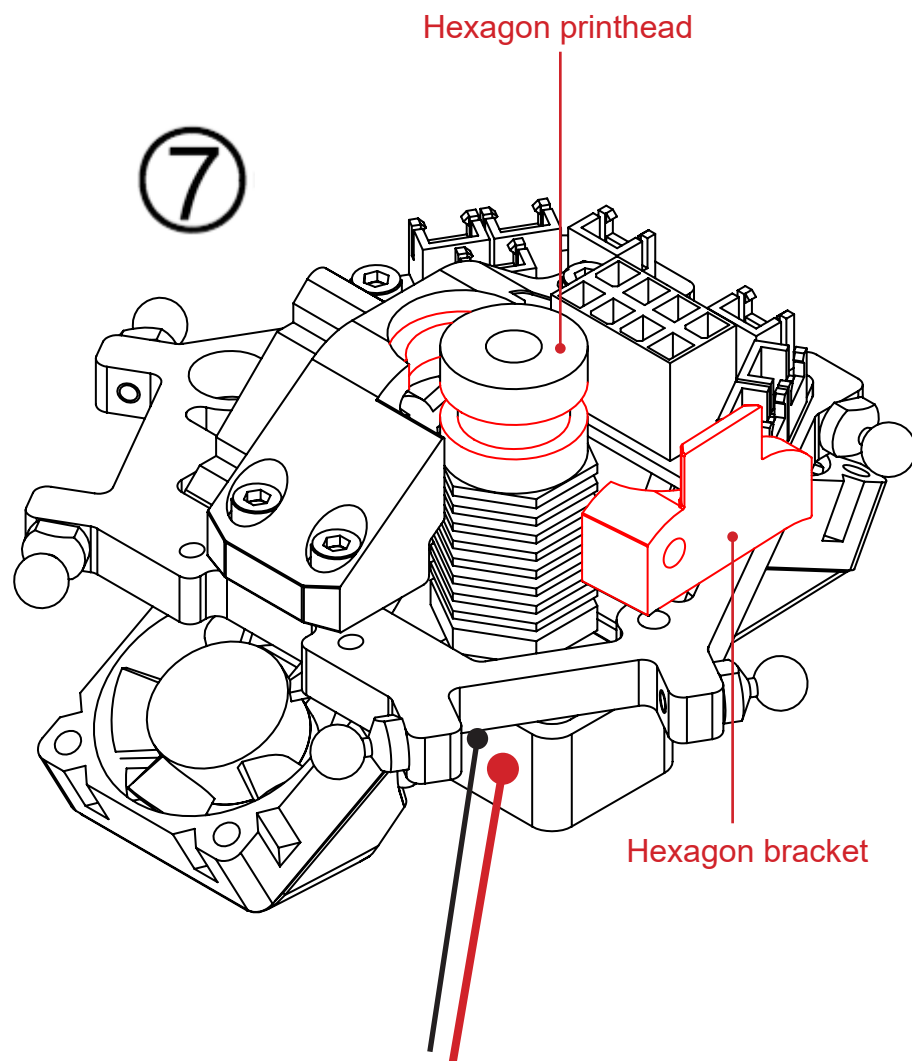
Printhead cables side (thermistor and heating cartridge). To use as reference for the printhead orientation.

Result

Printhead cables routing

⑧

Knurled nut

M3 x 20 mm screw

Result

✓

MECHANICAL ASSEMBLY
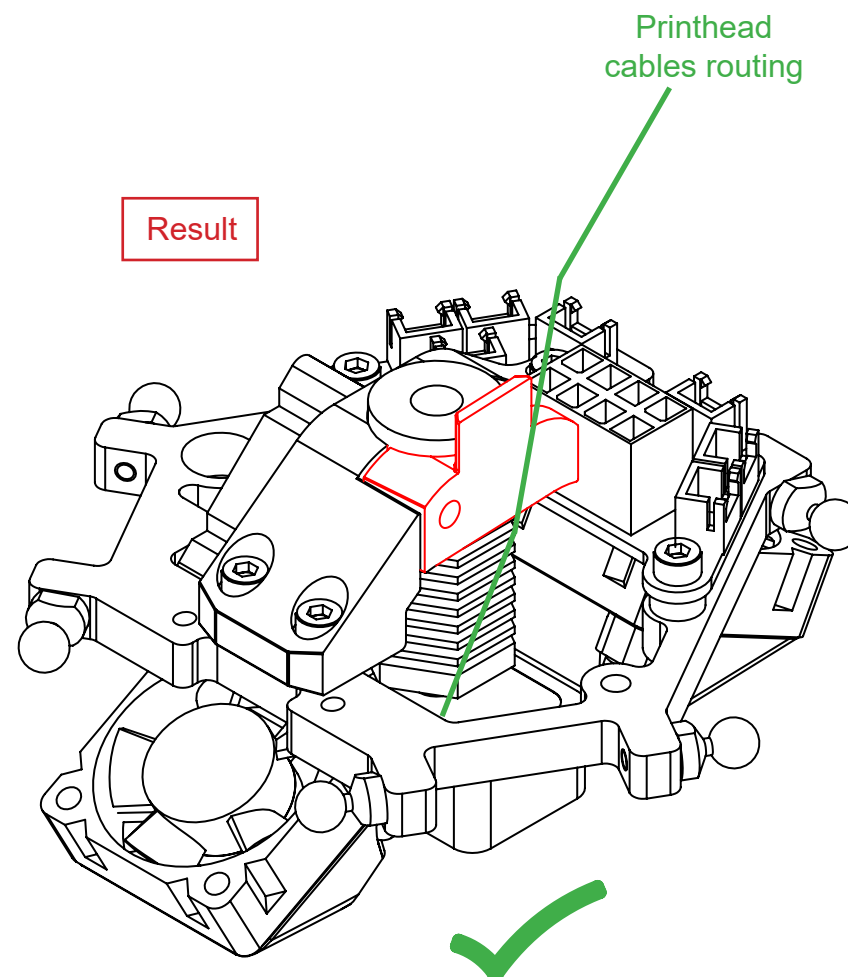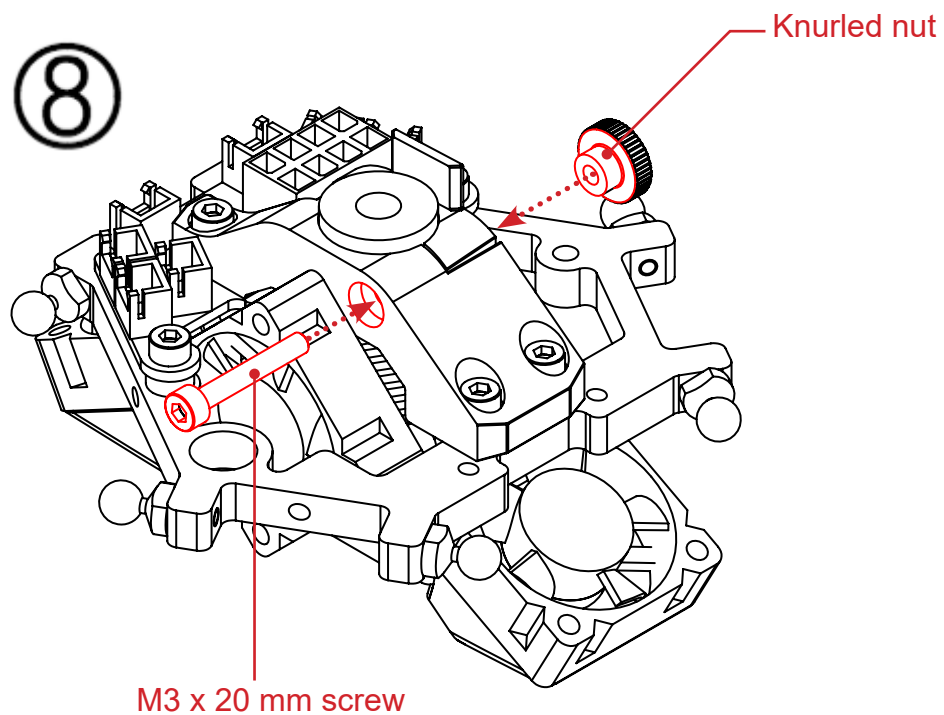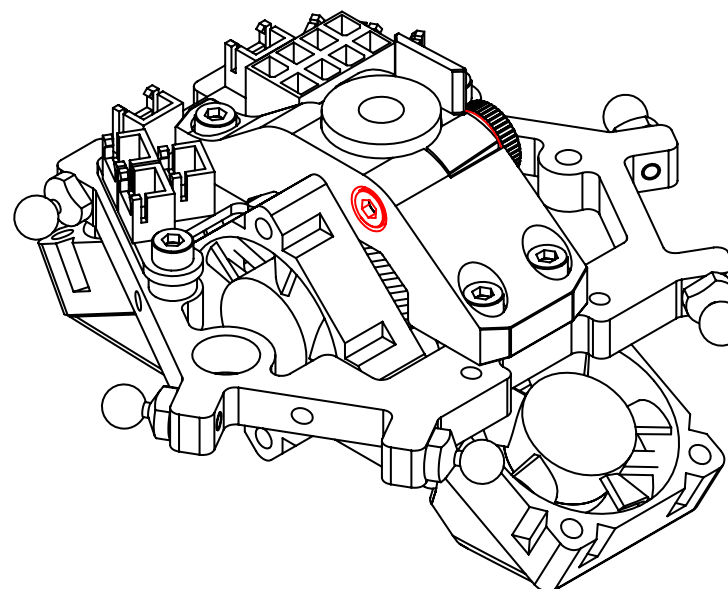
Target : connect core's components on the interface board

Secondary fan 1

Secondary fans

Heating cartridge

Thermistor

Don't use these connectors

Printhead fan

Printhead fan

Secondary fan 2
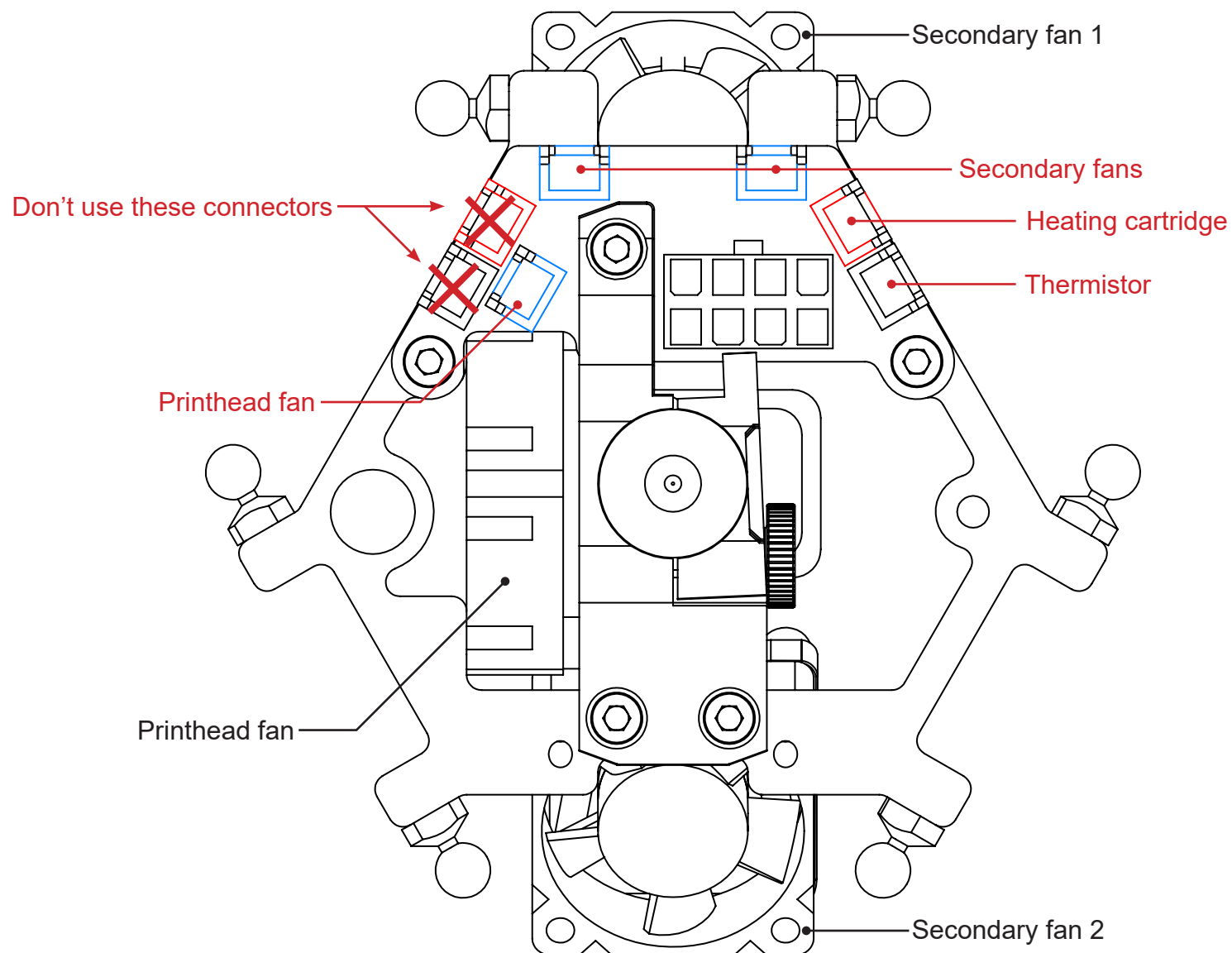
FINAL ASSEMBLY

Needed parts :

- 1 x Lower plate
- 1 x Upper plate
- 1 x Cowling
- 6 x Smooth rod
- 12 x M6 x 16 mm screw
- 7 x M3 x 8 mm screw
- 3 x Slider
- 1 x Extruder
- 1 x Core extension
- 3 x GT2 belt
- 11 x Cable clamp
- 6 x Connecting rod
- 1 x PTFE tube
- 2 x Olive compression fittings
- 3 x Elastic band

Target : assemble the machine and each of the pre-assembled elements

①

Do not tighten the screws yet.

Smooth rod

Lower plate

M6 x 16 mm screw

🔴 = add one drop of threadlocker to each thread

②

③

④

💧 = add some threadlock to the thread

M6 x 16 mm screw

Result ✓

Do not tighten the screws yet.
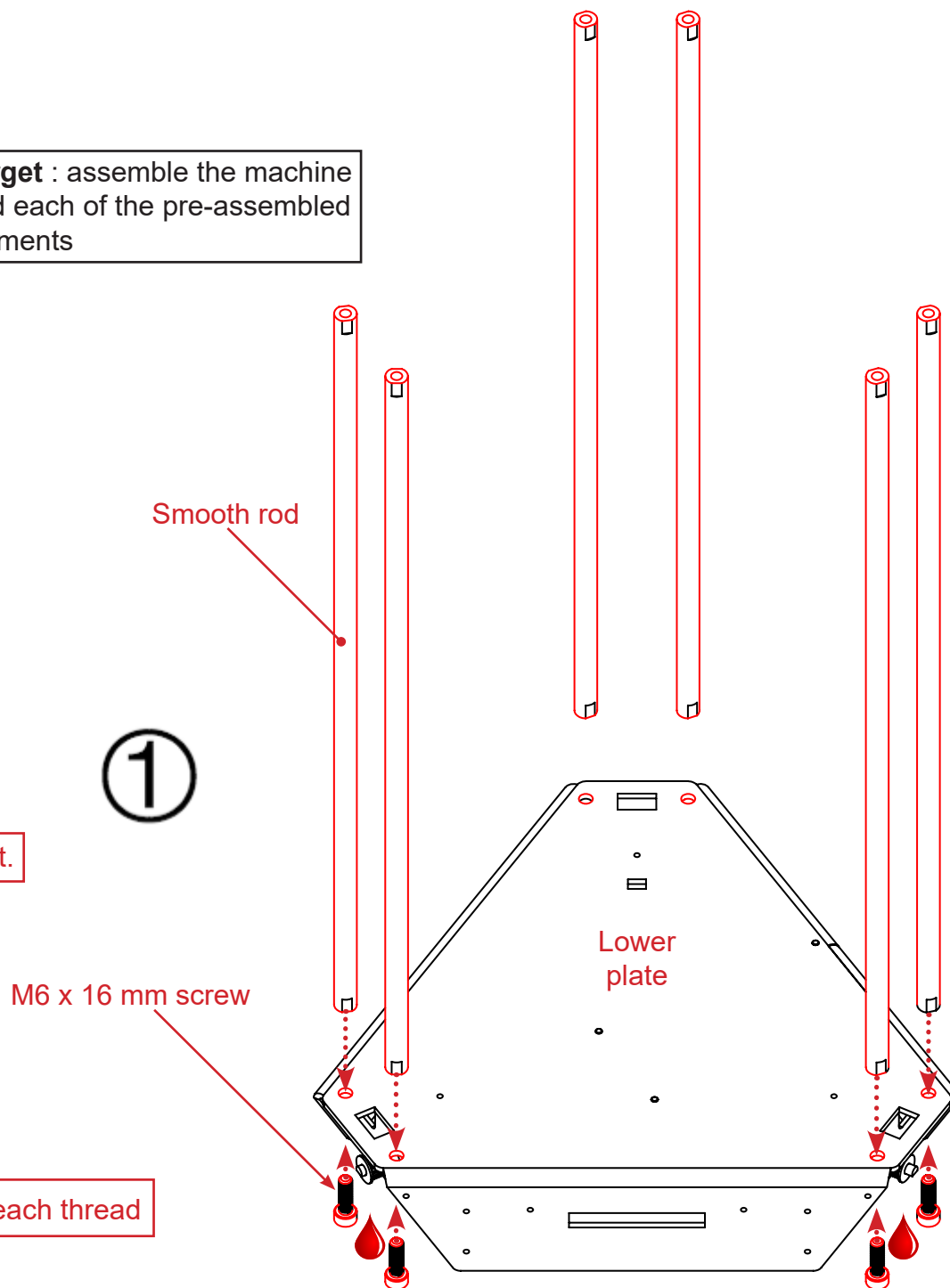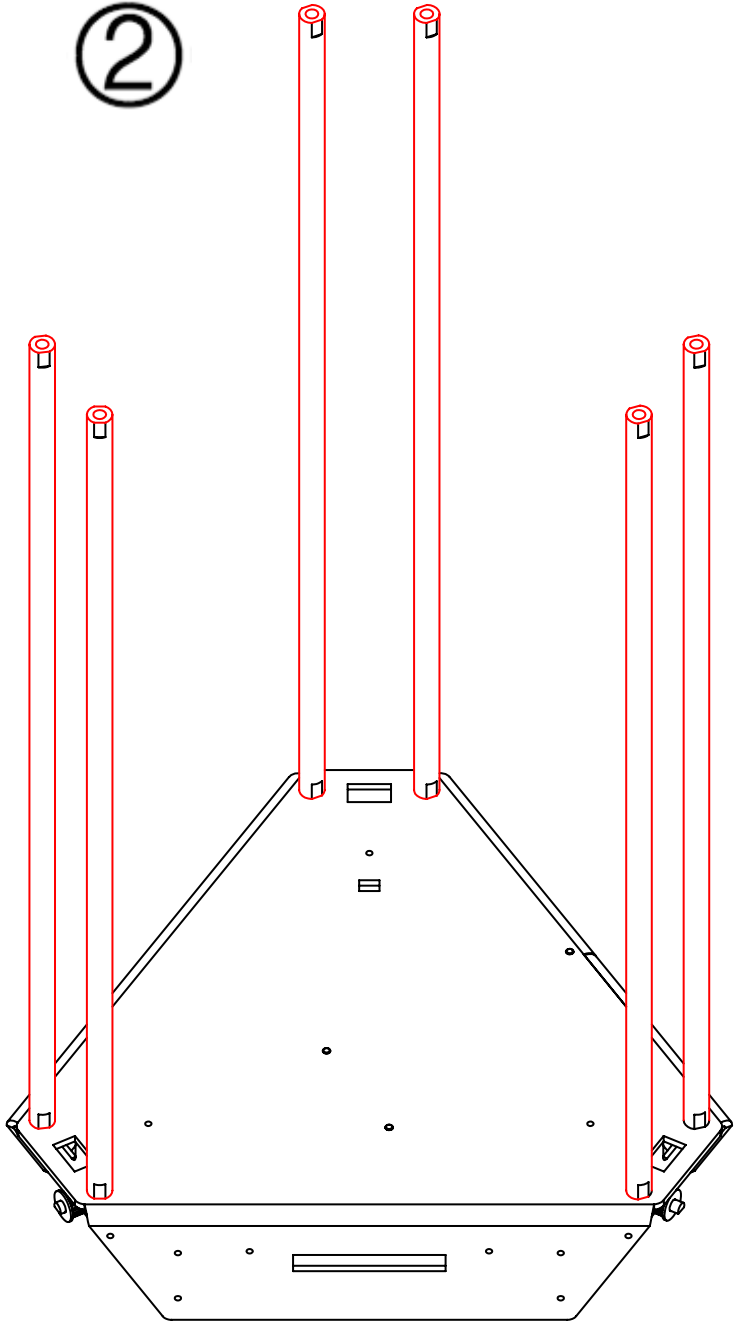
Target : tighten the smooth rods and check that sliders slide as free as possible.

Warning: this step is very important. It is imperative for the proper functioning of translations in order to obtain the best printing quality.
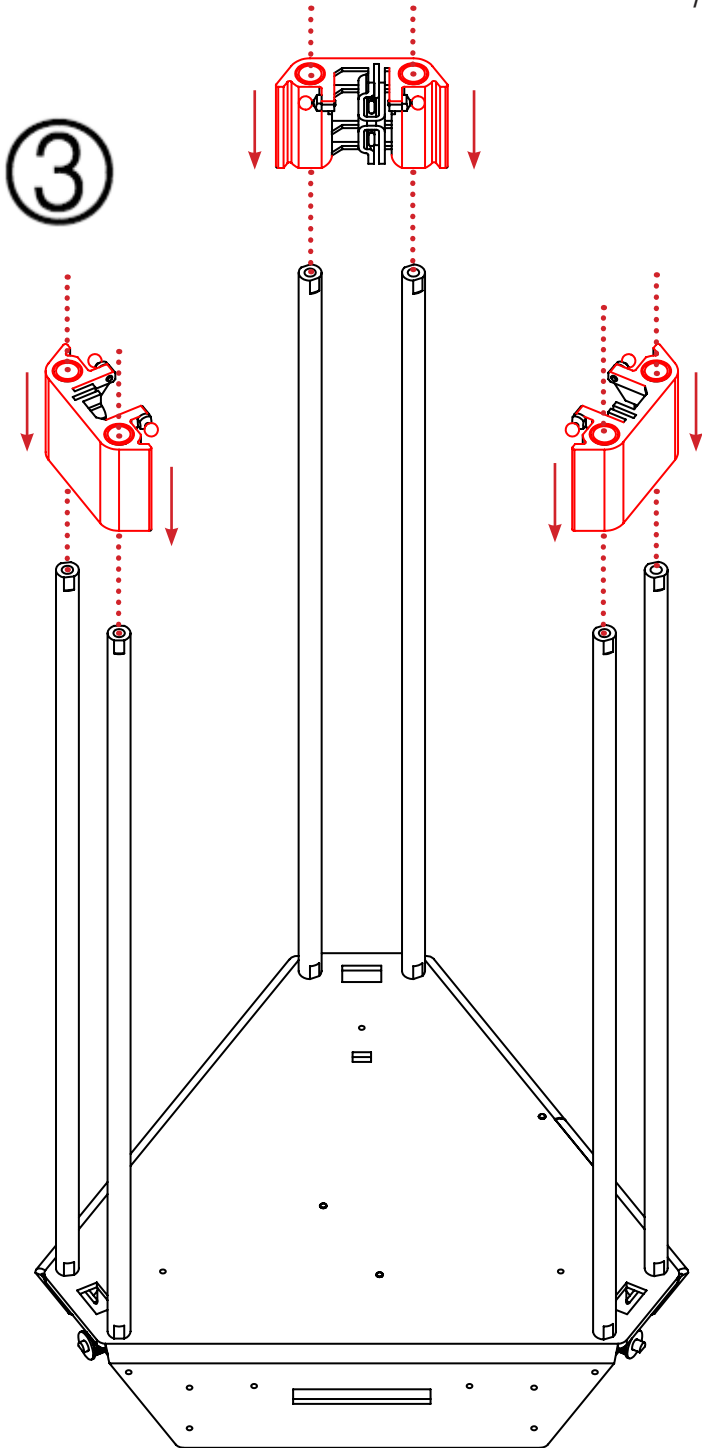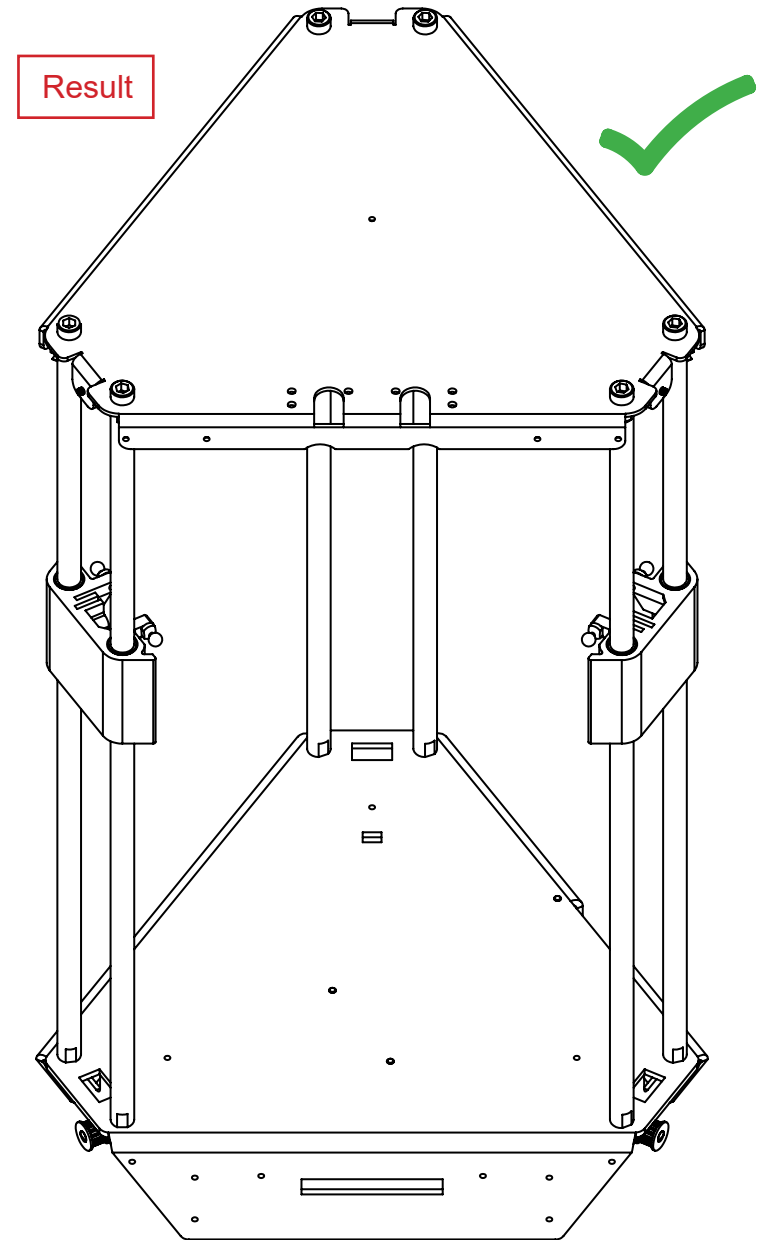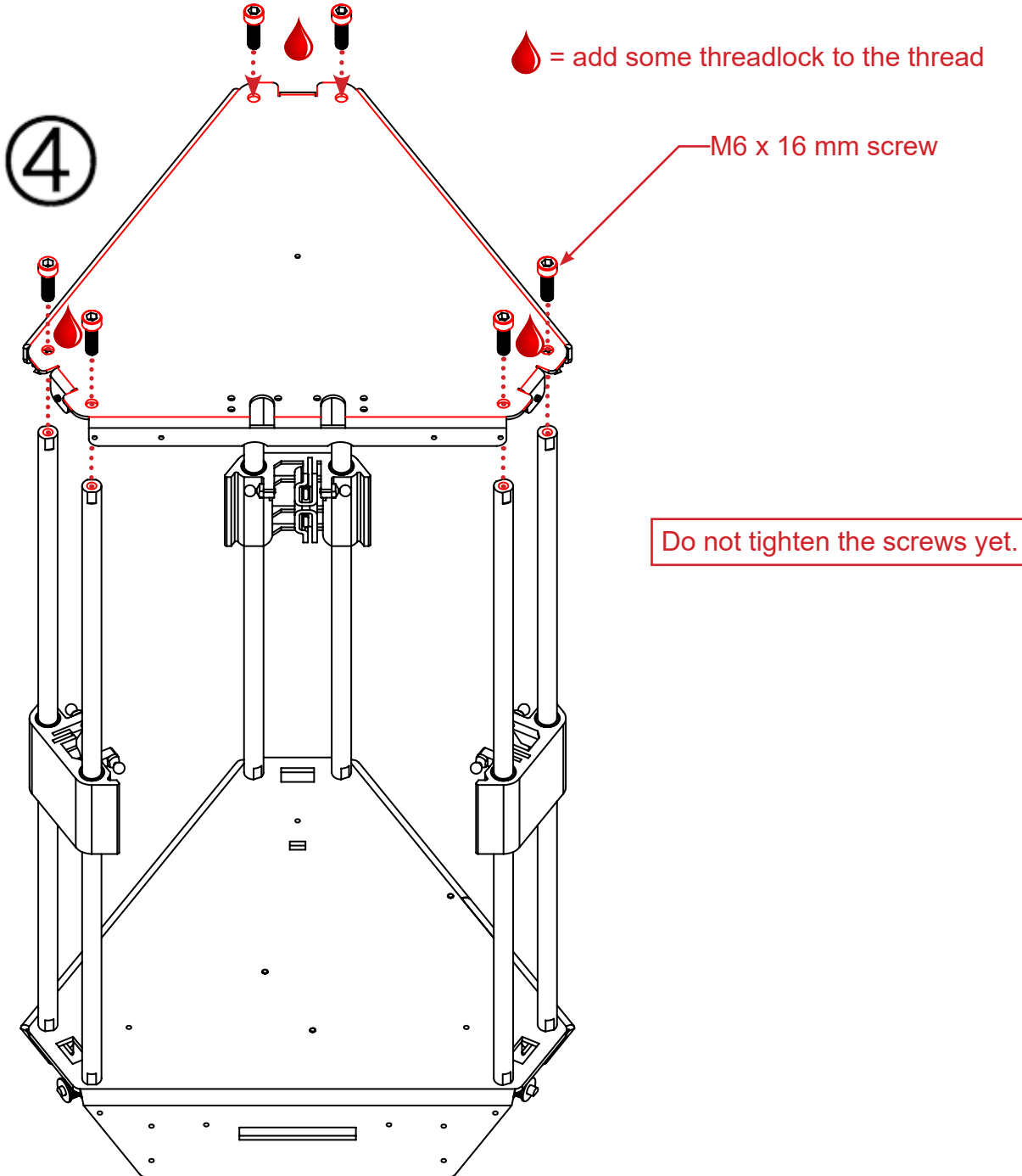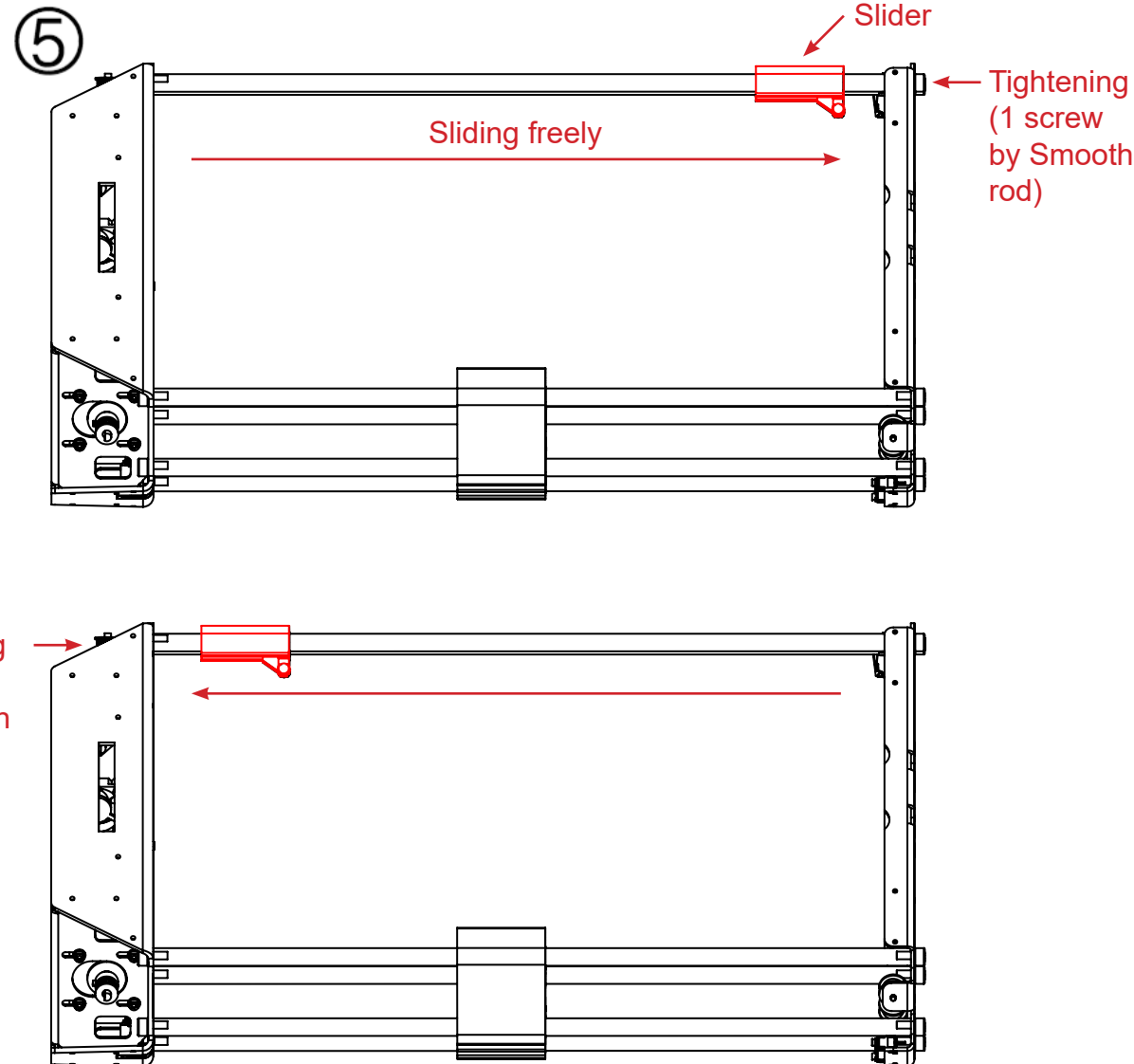
Adding WD40 to the rods and plain bearings will greatly assist sliding.
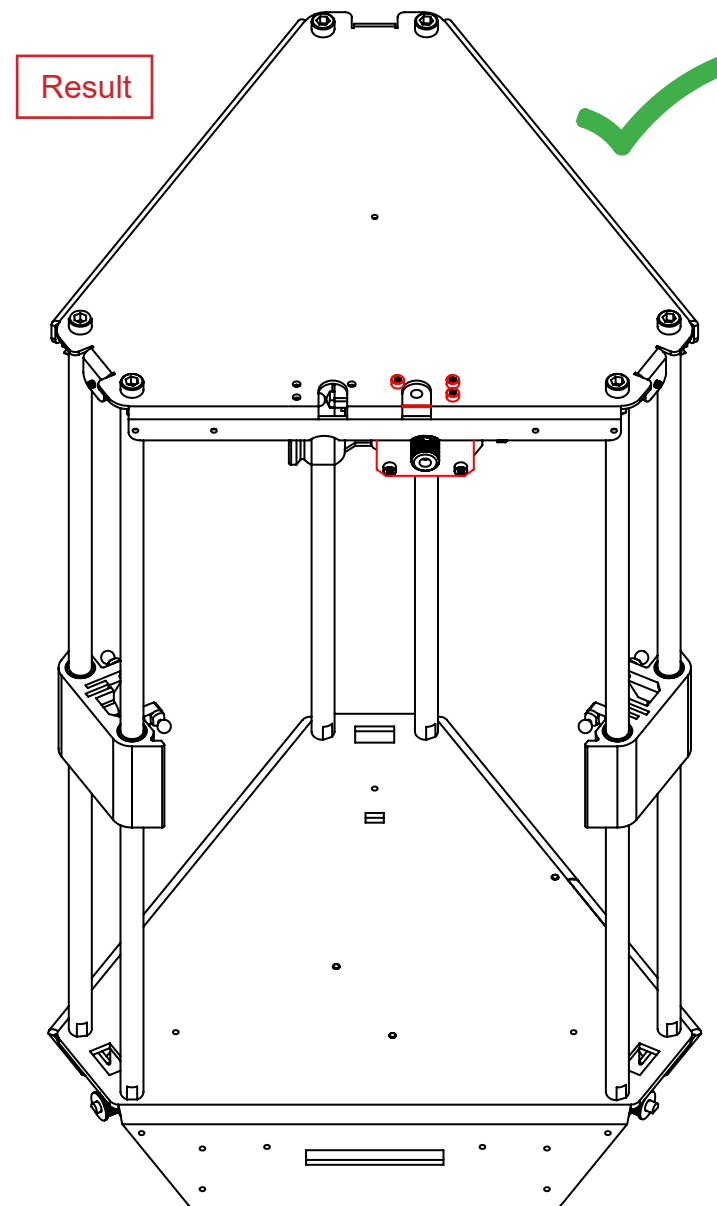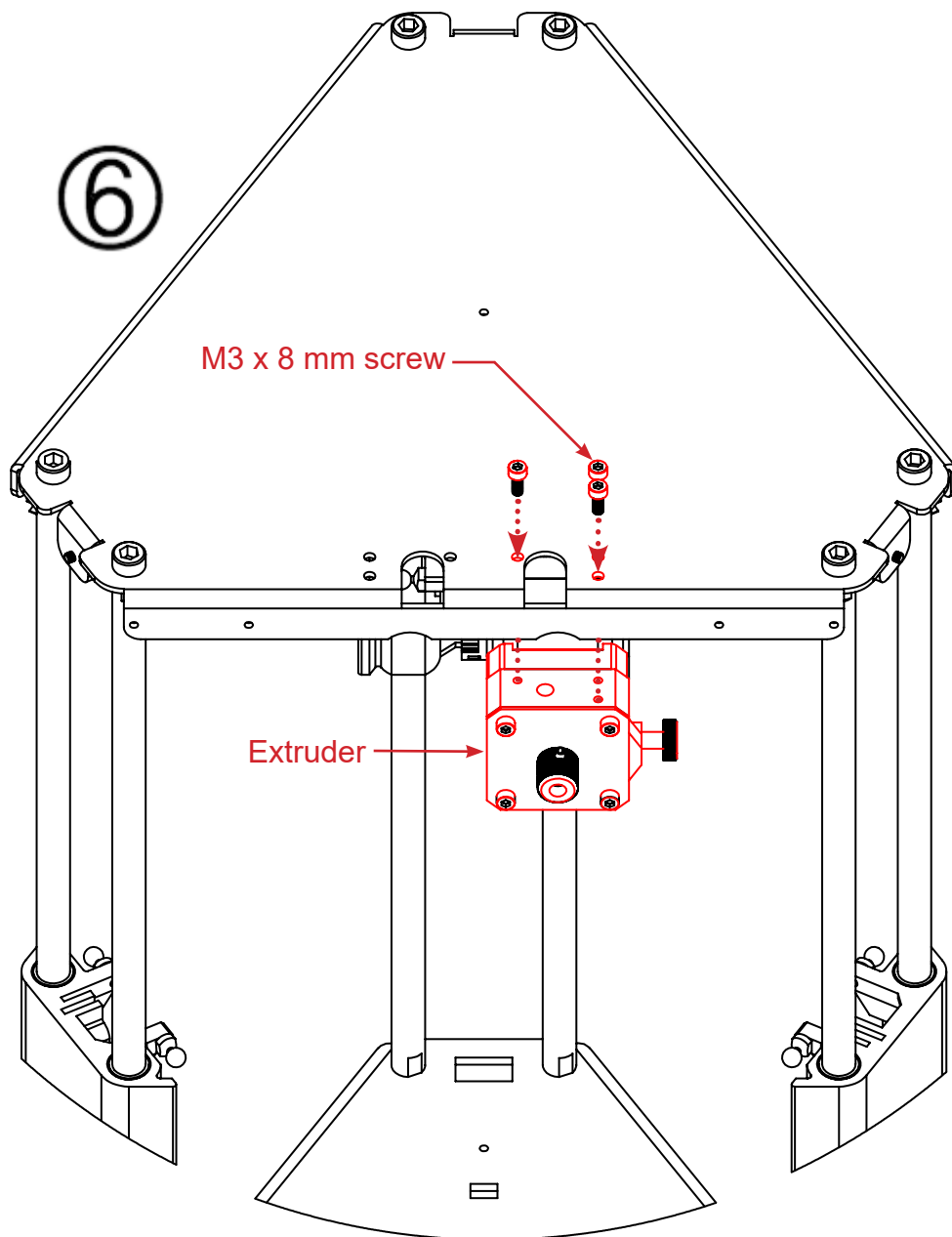
Process description

1) Lay the printer on its side as shown in Figure # 5.

2) Push the slider to the far right and tighten screws on this side.

3) Push the slider to the far left and tighten the screws on the **left side**.

4) Push the slider again **to the far right** and check that it slides well. If it is not the case, loosen the right screws and re-tighten.

5) Push the slider again to the left and check that it slides well. If this is not the case, loosen the left screws and re-tighten.

6.) Repeat this process as many times as necessary until the slider slide freely. Low resistance on the left side is ok (next to the bottom plate).

Repeat this process for each axis.

Note: if the sliding of a slider forces: you may need to remove one plane bearing of the 4 in the slider.

⑤

Slider

Tightening (1 screw by Smooth rod)

Sliding freely

Tightening (1 screw by Smooth rod)

MECHANICAL ASSEMBLY

Target : mount the filament driving system on the upper plate
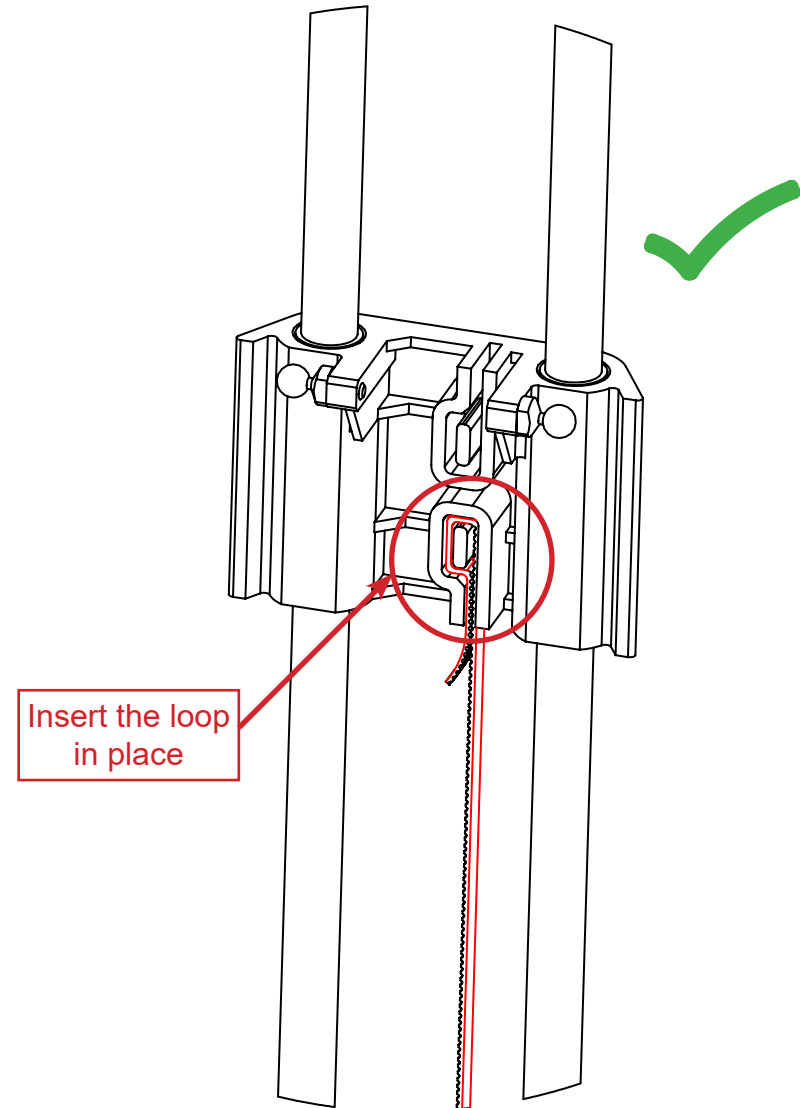
⑥

M3 x 8 mm screw

Extruder

Result ✓

MECHANICAL ASSEMBLY

Target : mount the belts on each sliders

⑦

Form a loop as shown in the illustration.

Teeth on this side

GT2 belt

Result

Insert the loop in place

⑧

Slider

GT2 belt

Pulley's and belt's teeth aligned

GT2 pulley

⑨

Wrap the belt around the idler pulley

Idler pulley

Make a loop and insert it into the slot.
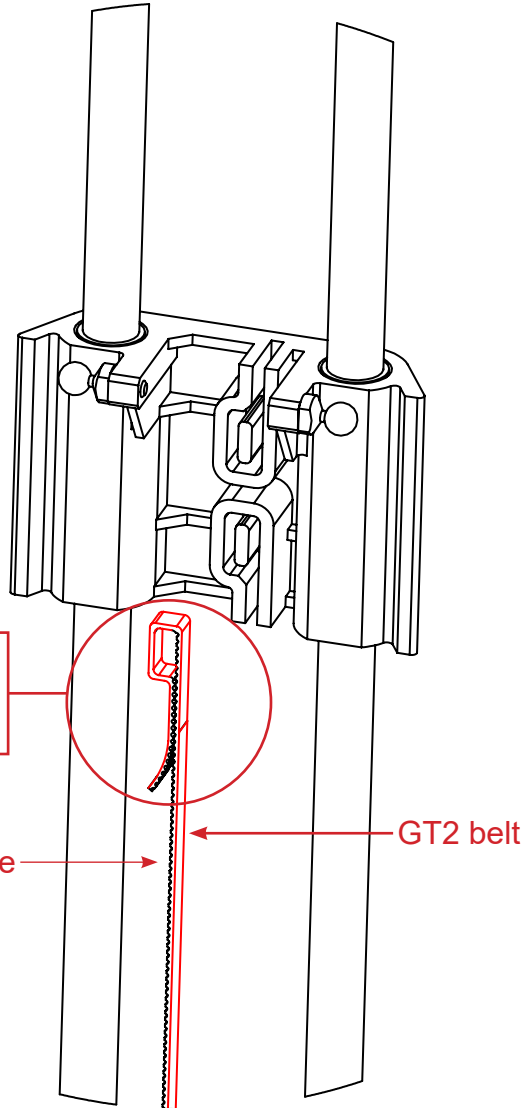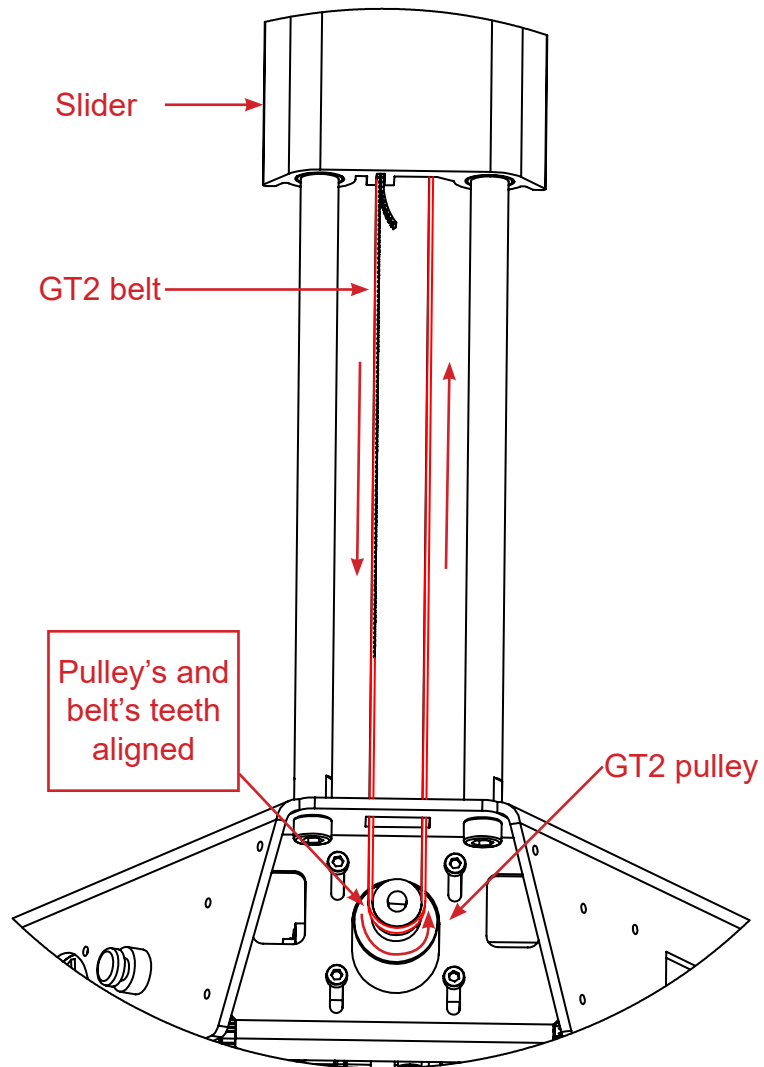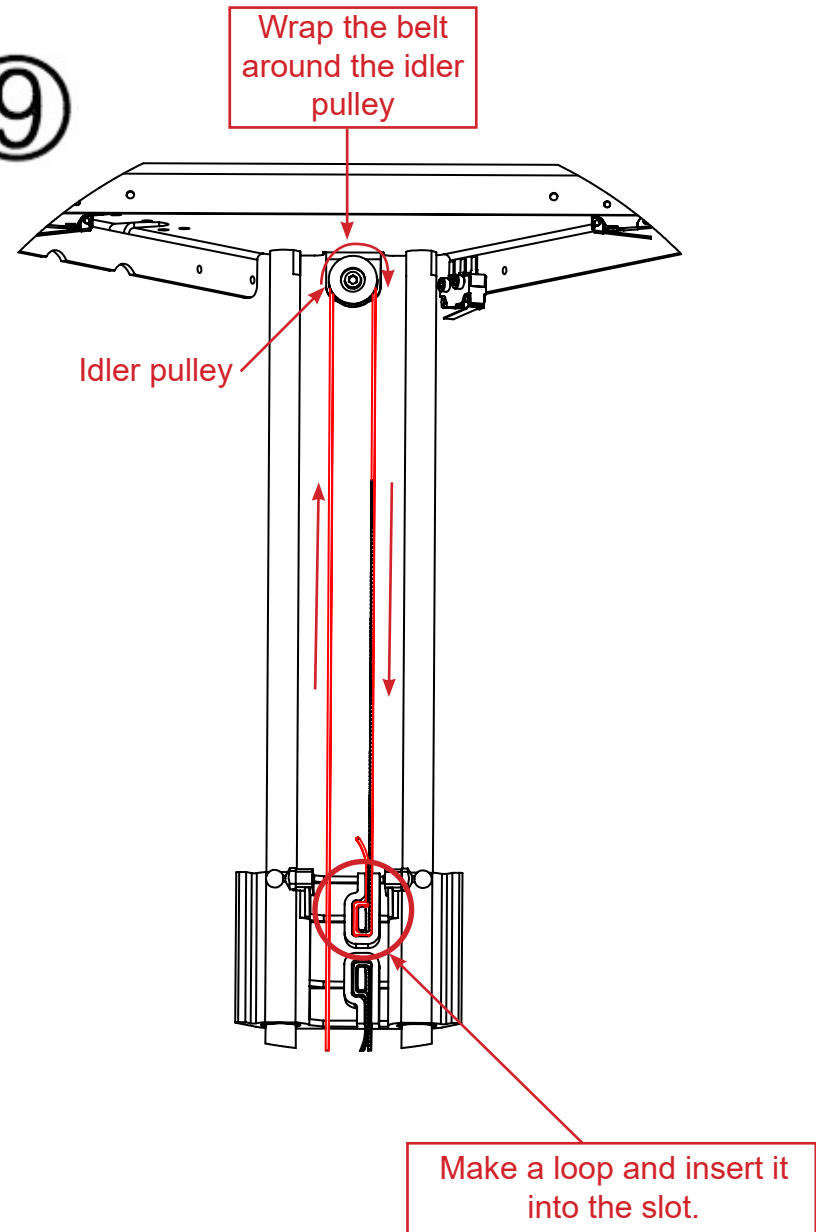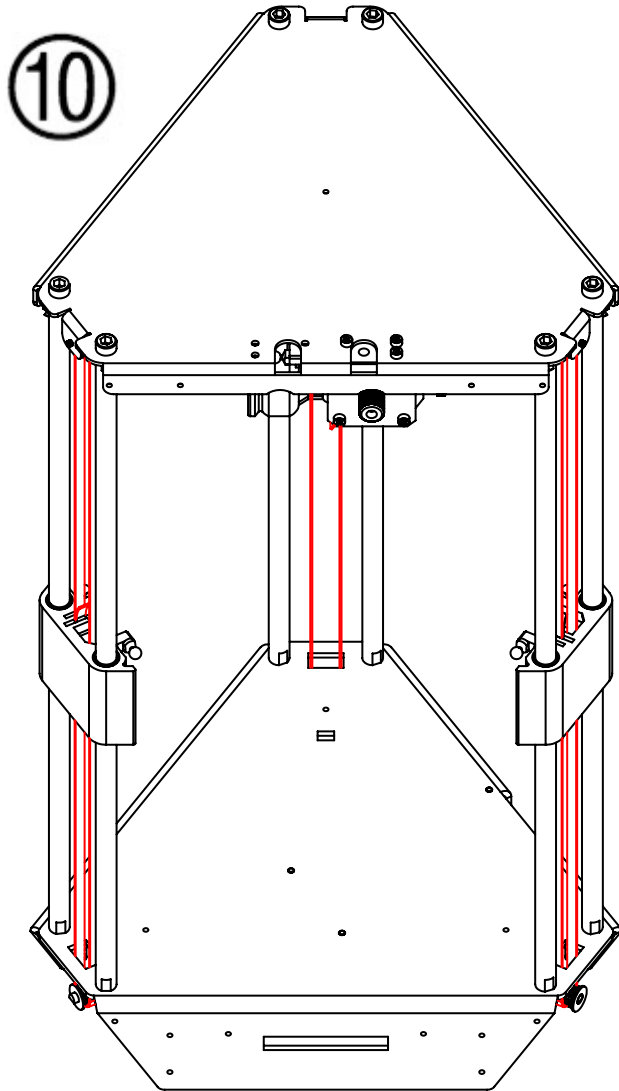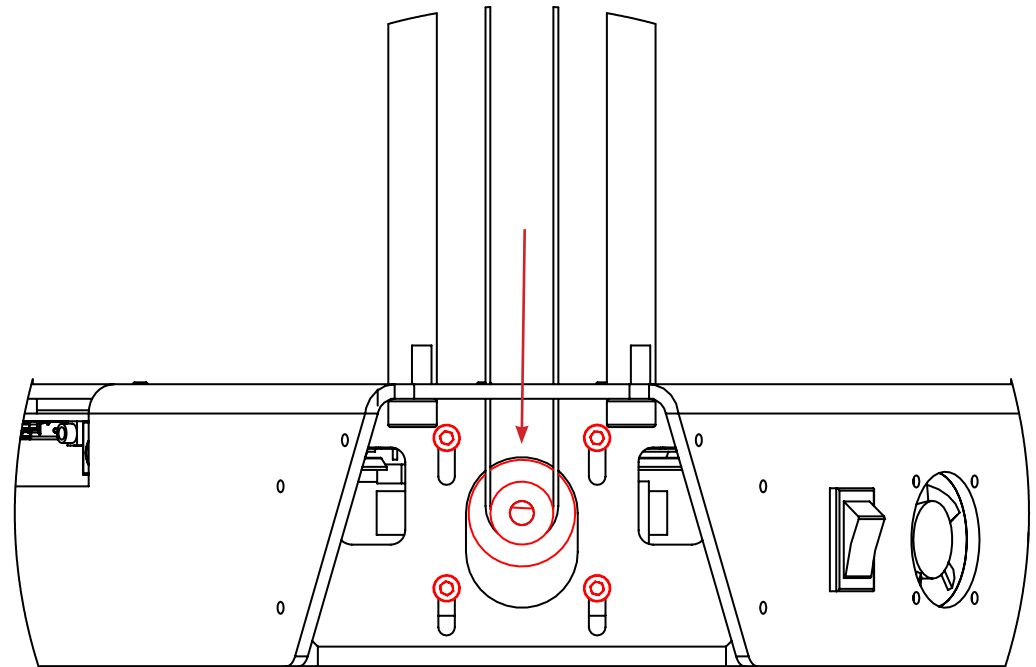
Mount a belt on each axis.

1) Loosen the screw holding the motor

2) Press the motor down **for tensioning the belt**

3) Tighten the four screws

MECHANICAL ASSEMBLY

Target : clip the connecting rods on the sliders ball joints
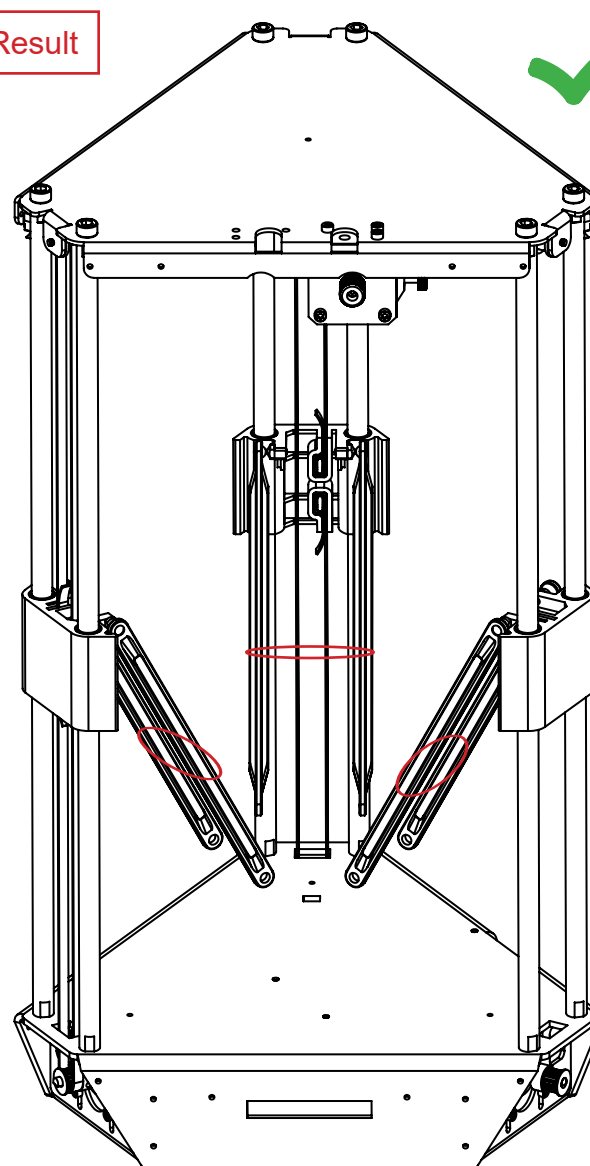
⑫

Ball joint

Connecting rod

Elastic

Result

✔

3X*

- Clip the connecting rods on the ball joints
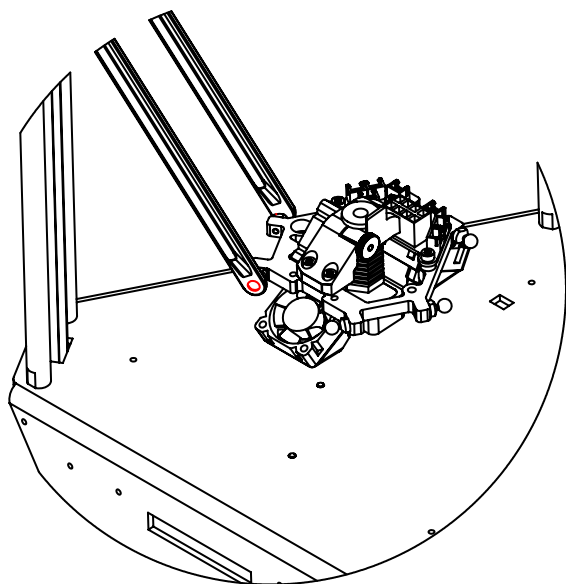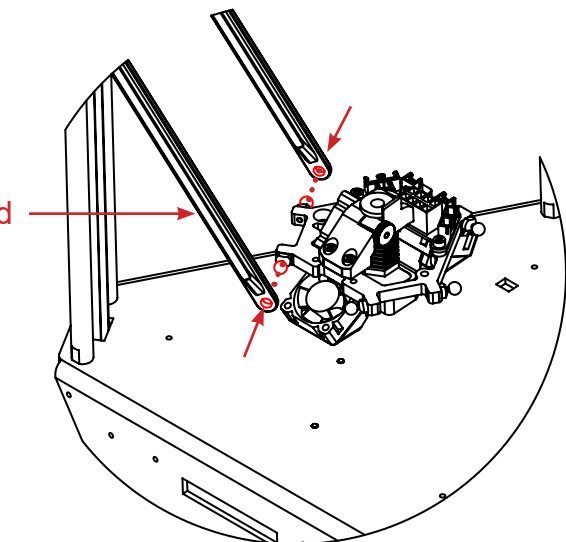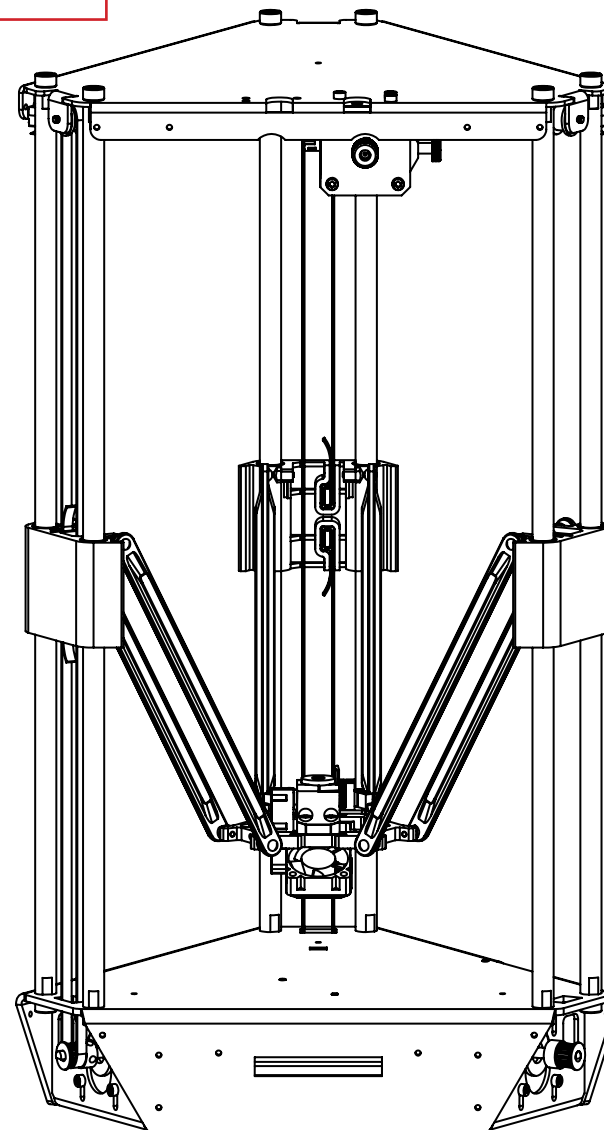- Put the 3 elastic bands around the connecting rods.

MECHANICAL ASSEMBLY

Target : clip the connecting rods on the ball joints of the core

⑬

Connecting rod

Result

✓

MECHANICAL ASSEMBLY

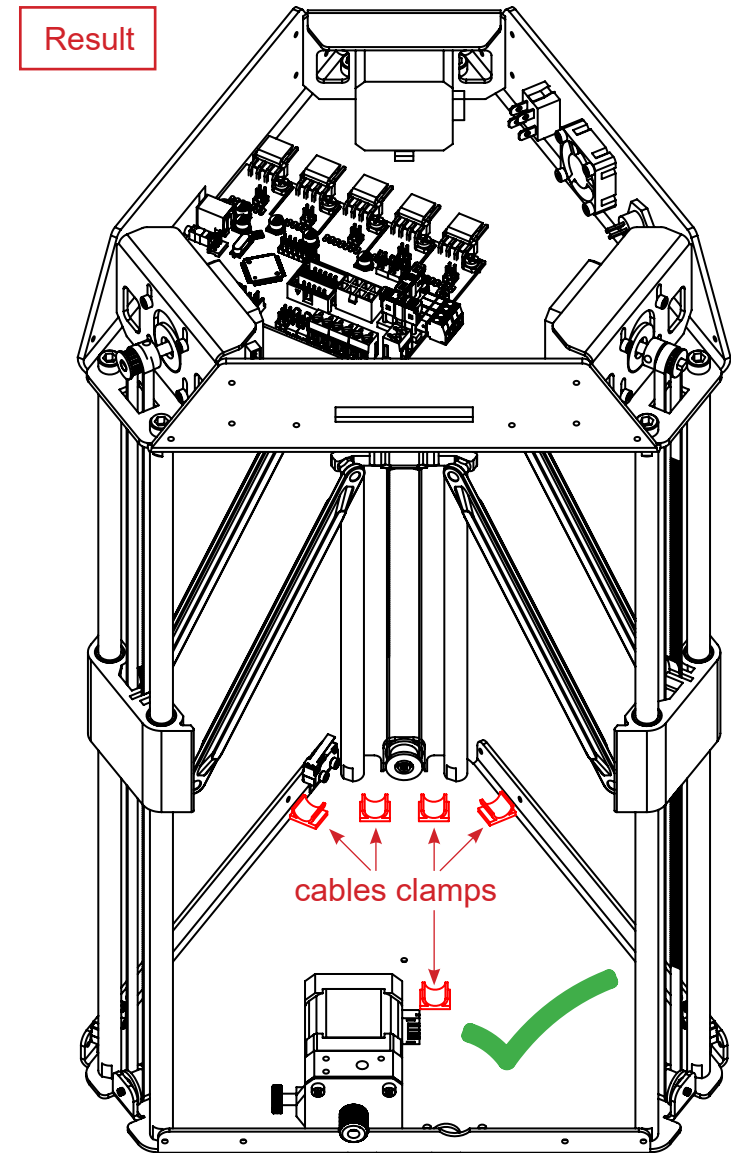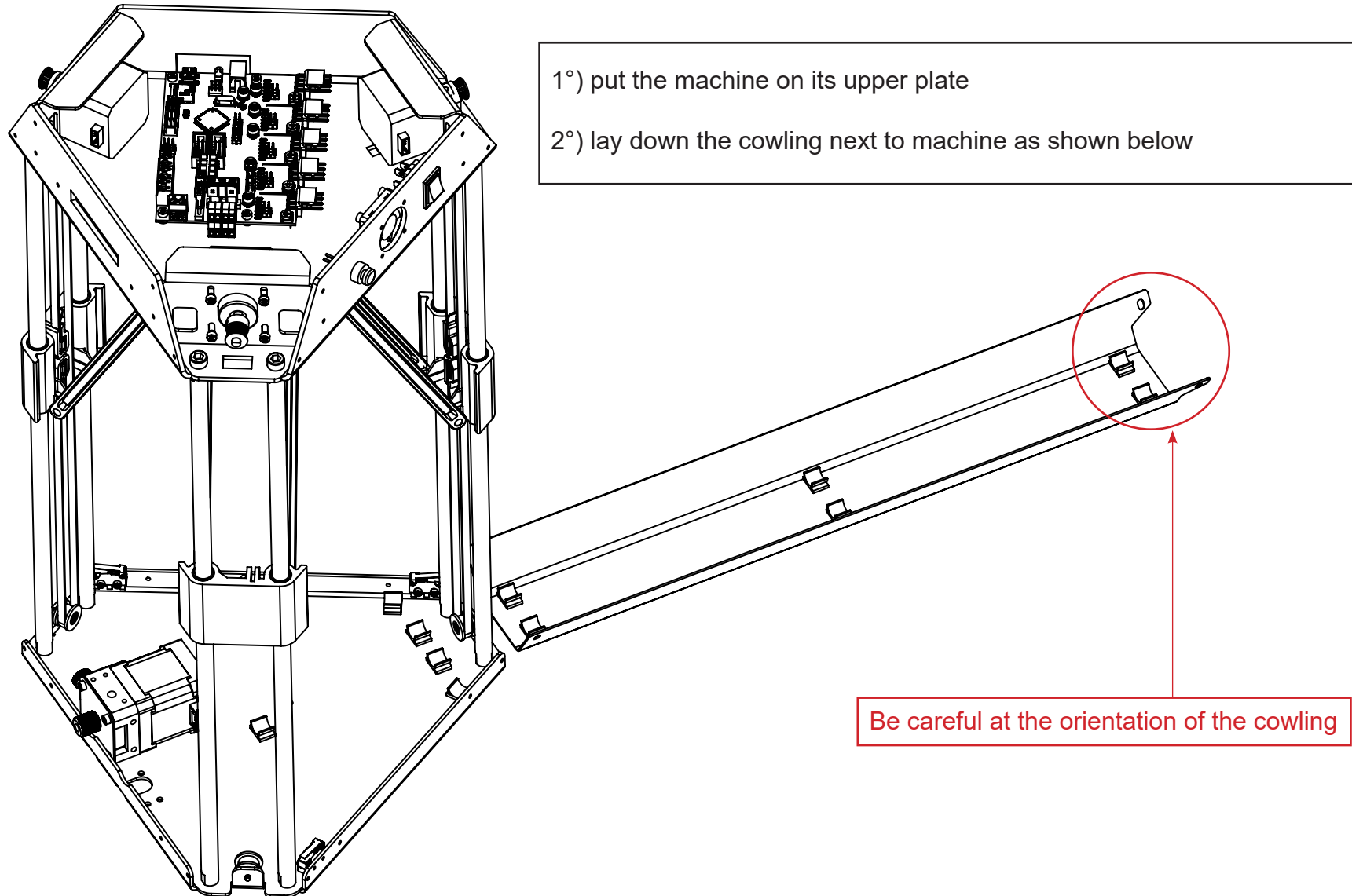**Target** : stick cable clamps on the cowling
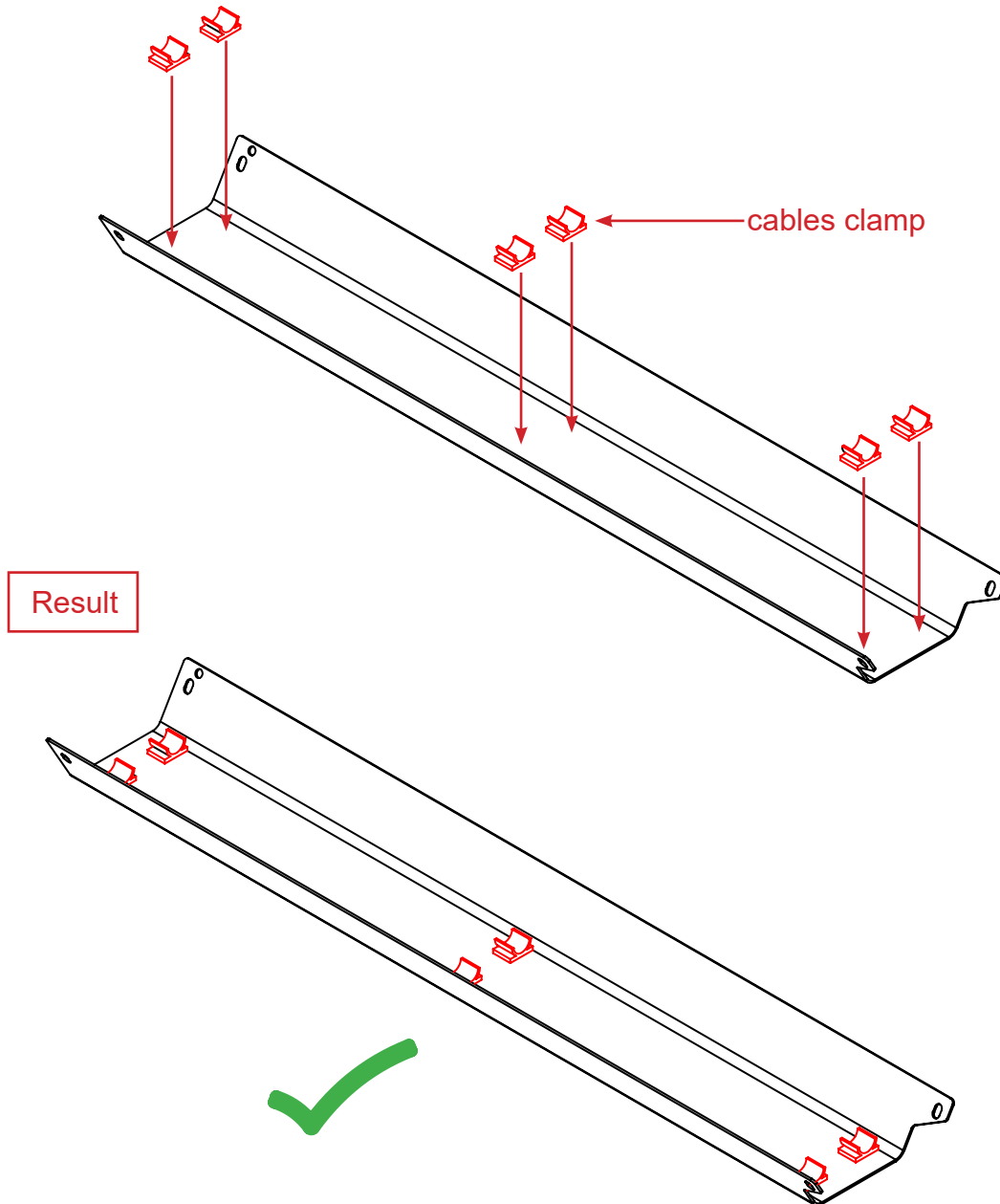
Target : stick the cable clamps on the upper plate

cables clamp

Result

Result

cables clamps

MECHANICAL ASSEMBLY

Target : prepare the machine and the cowling before wiring

1°) put the machine on its upper plate

2°) lay down the cowling next to machine as shown below

Be careful at the orientation of the cowling

MECHANICAL ASSEMBLY

Target : organize the cables from the upper plate through the cowling

The core's extension must exceed 30 cm from this level.

30 cm

Red : Alpha axis endstop

Blue : Bêta axis endstop

Yellow : Gamma axis endstop

Purple : core's extension

Green : extrusion motor wire

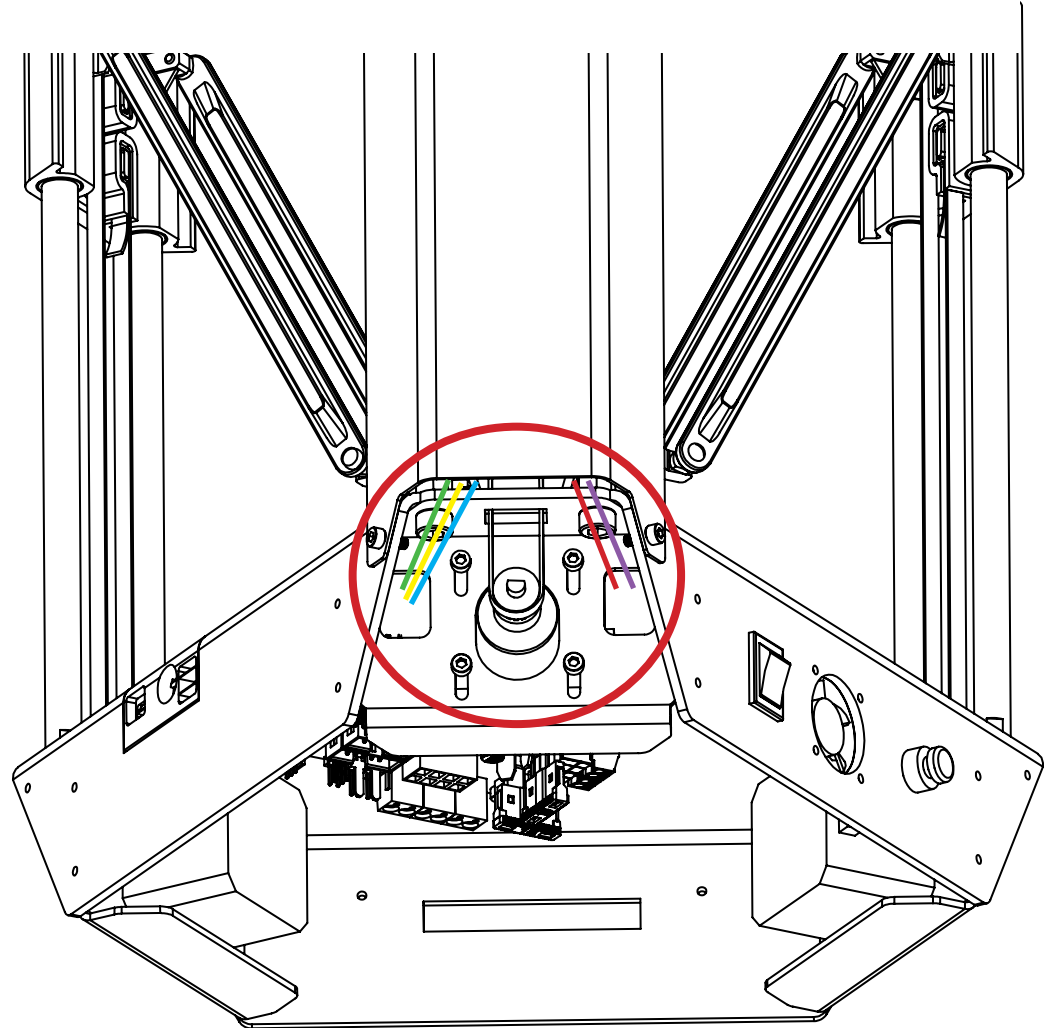The colors are purely indicative. No cables are colored. Only some connectors are to facilitate further assembly.
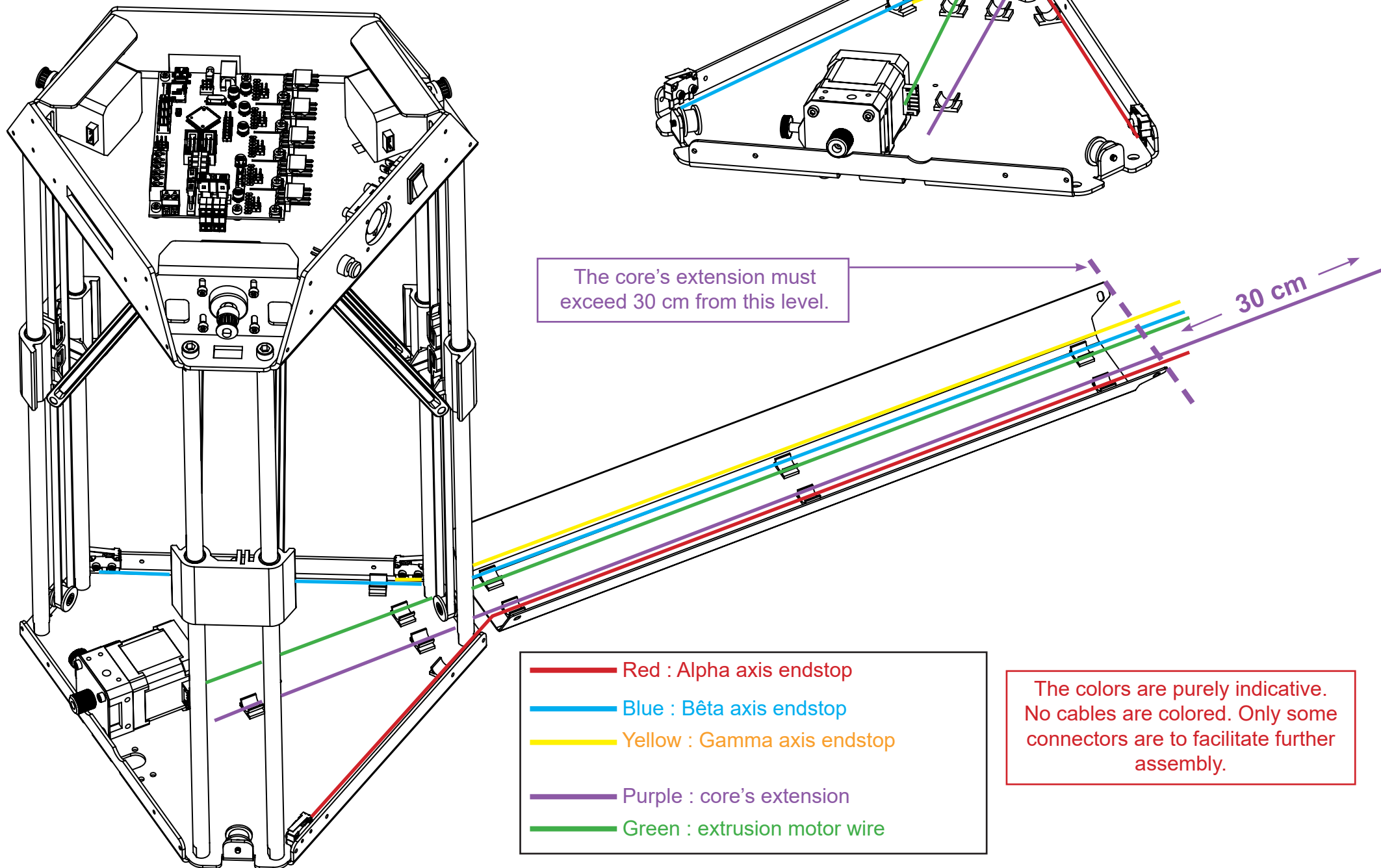
Stand up the cowling along the Z axis
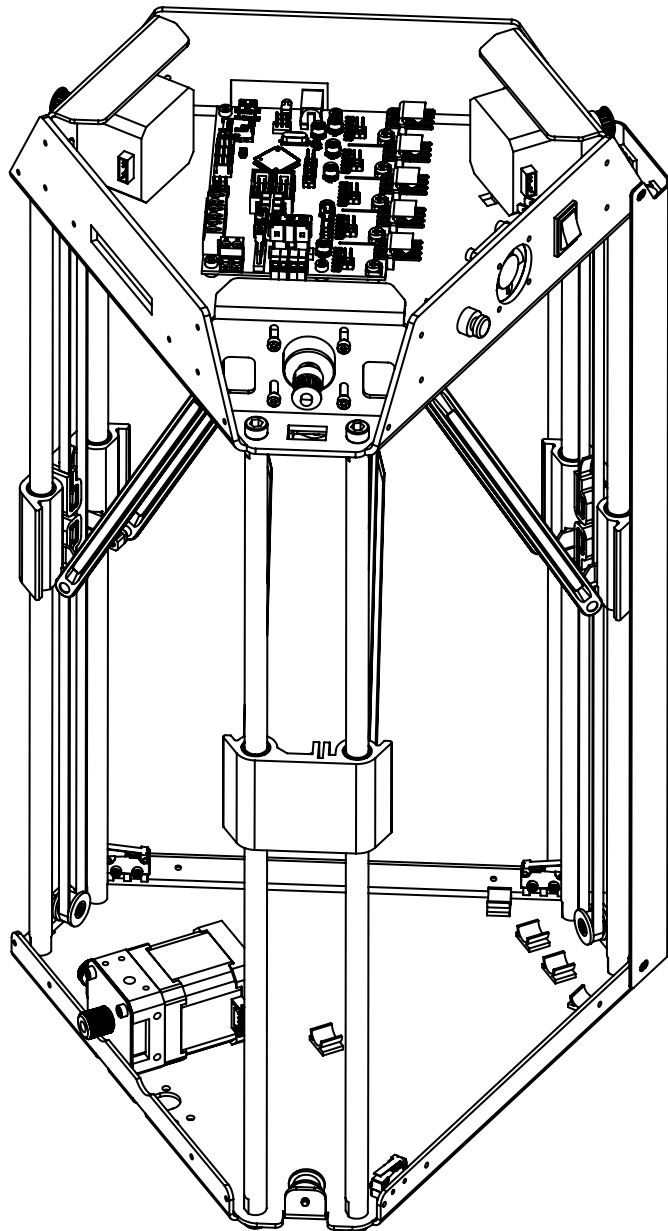
Route the cables through the two dedicated holes as shown above.
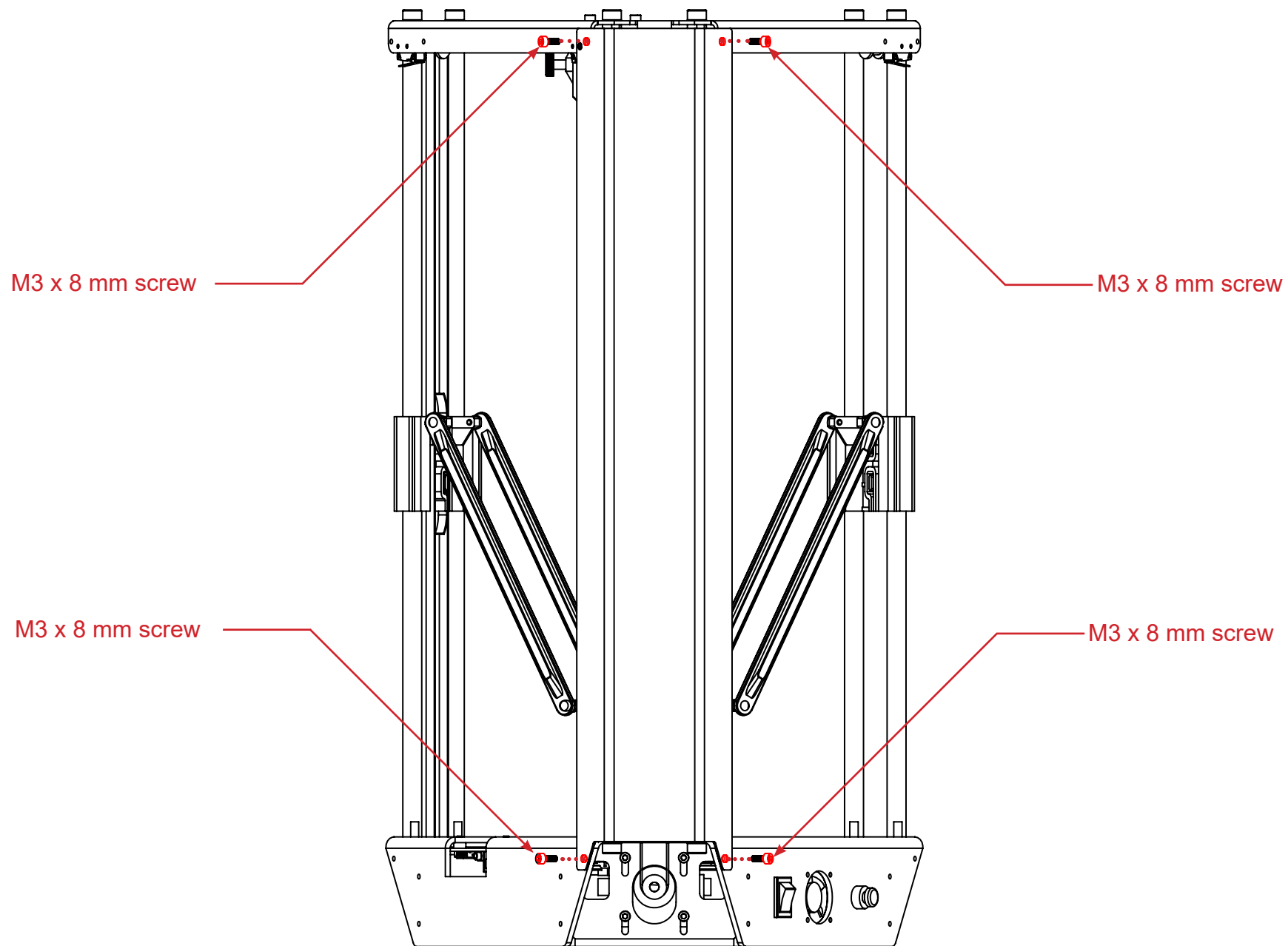
MECHANICAL ASSEMBLY

Target : Fix the cowling to the machine

M3 x 8 mm screw

M3 x 8 mm screw

M3 x 8 mm screw

M3 x 8 mm screw

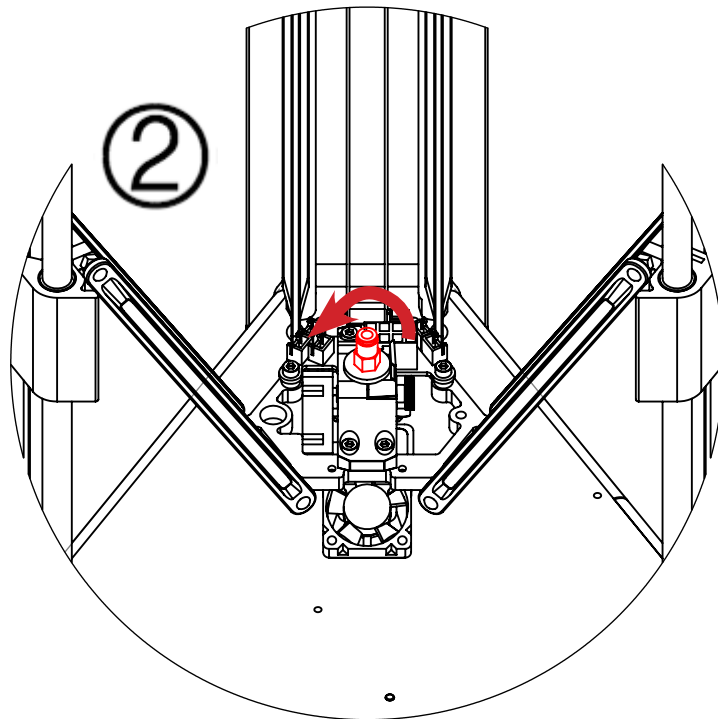# MECHANICAL ASSEMBLY

Target : install the PTFE tube and pneufits on the 3D printer

① Pneufit

②
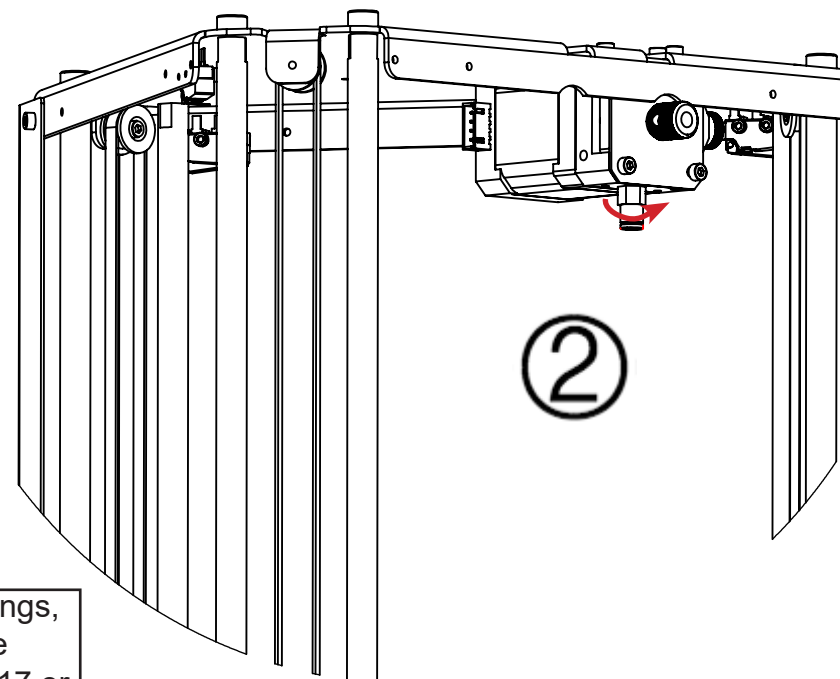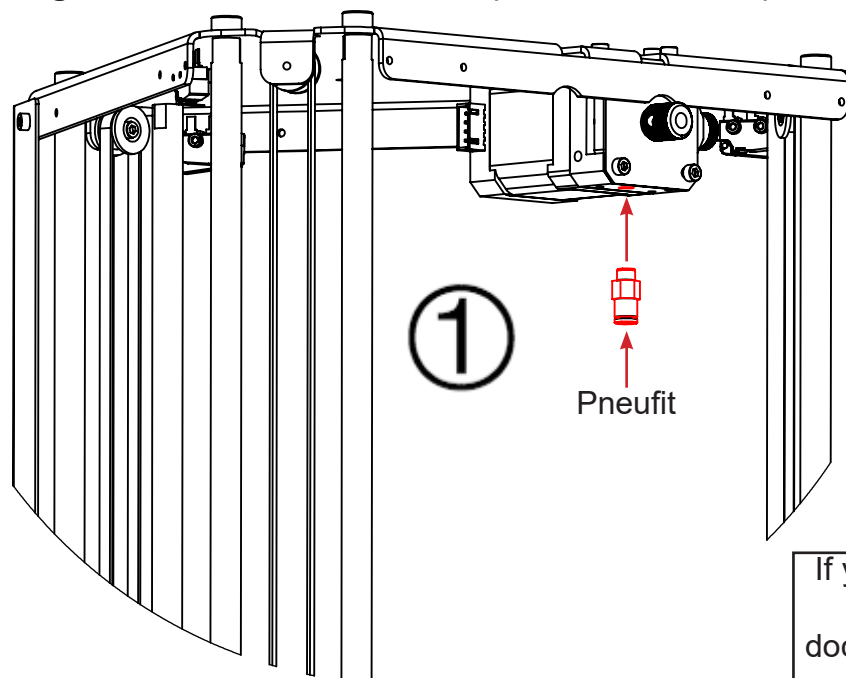
If you have olive fittings, please follow the documentation v1.1.17 or lower

③ Push before insert

PTFE tube

Result

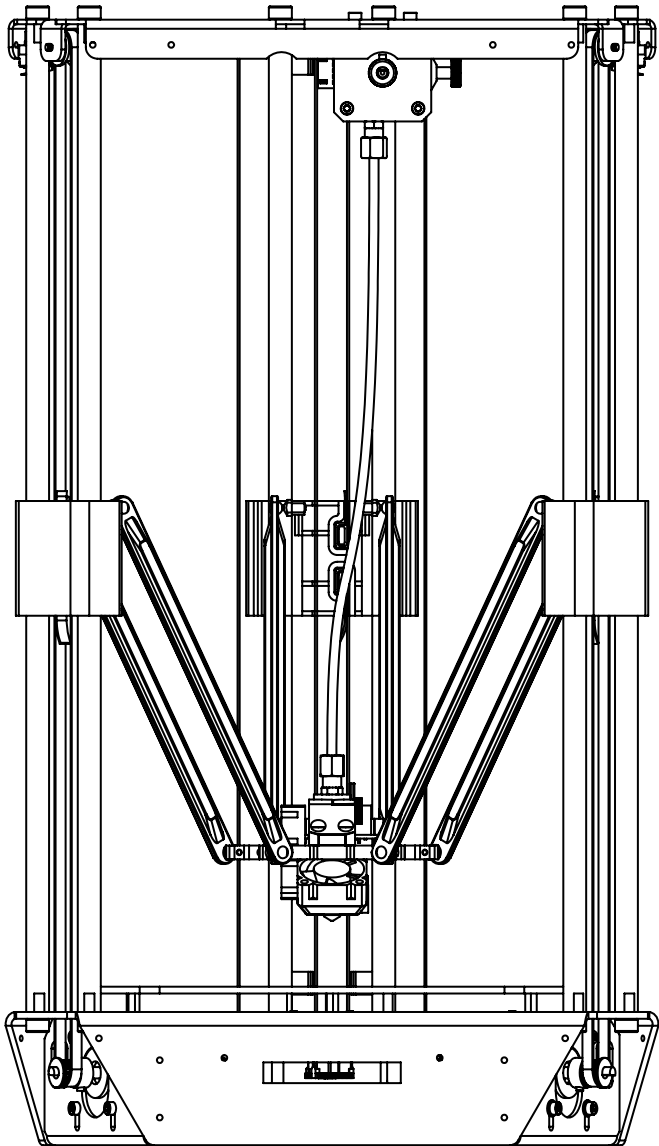# MECHANICAL ASSEMBLY

① Pneufit

②

Result
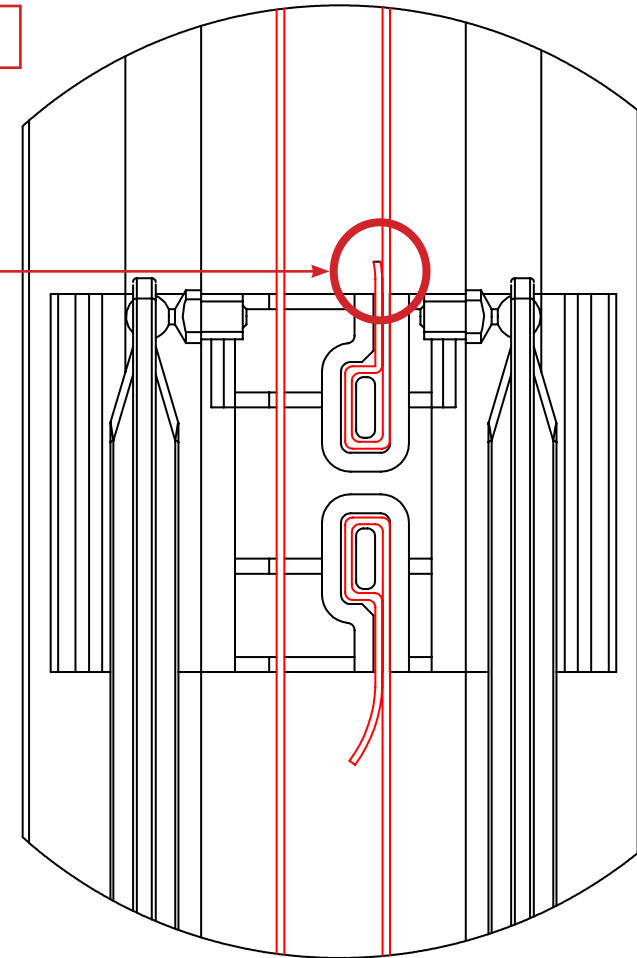
MECHANICAL ASSEMBLY
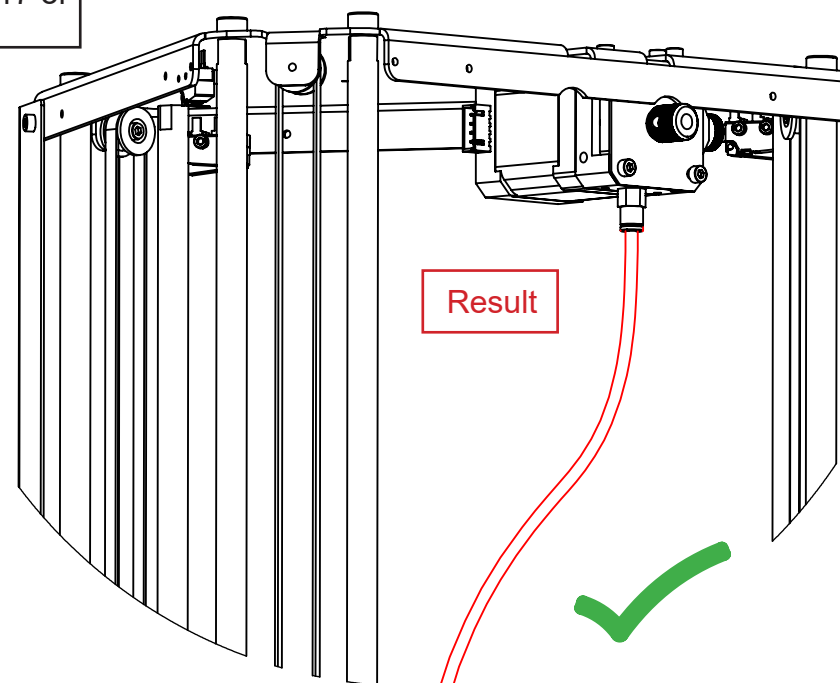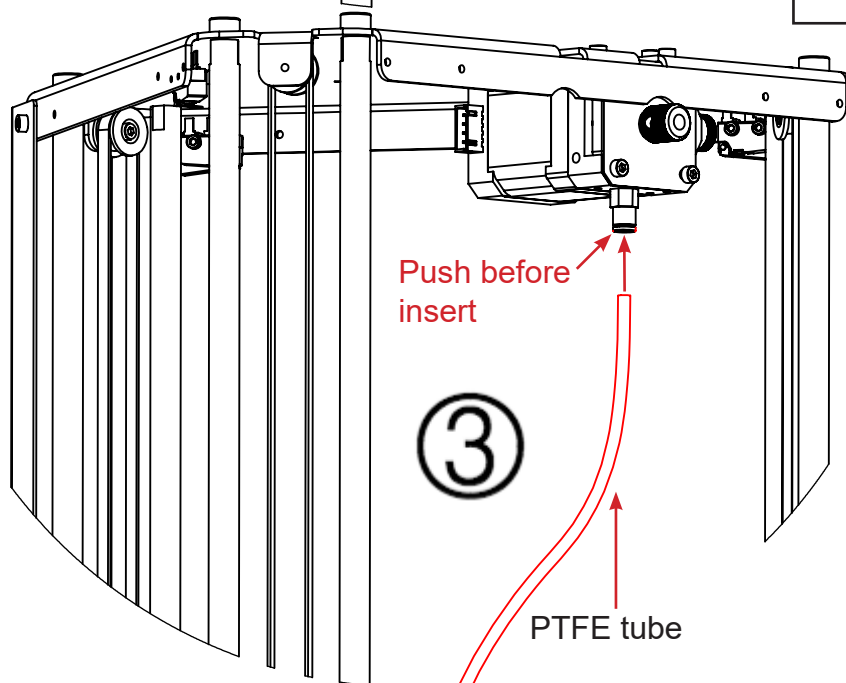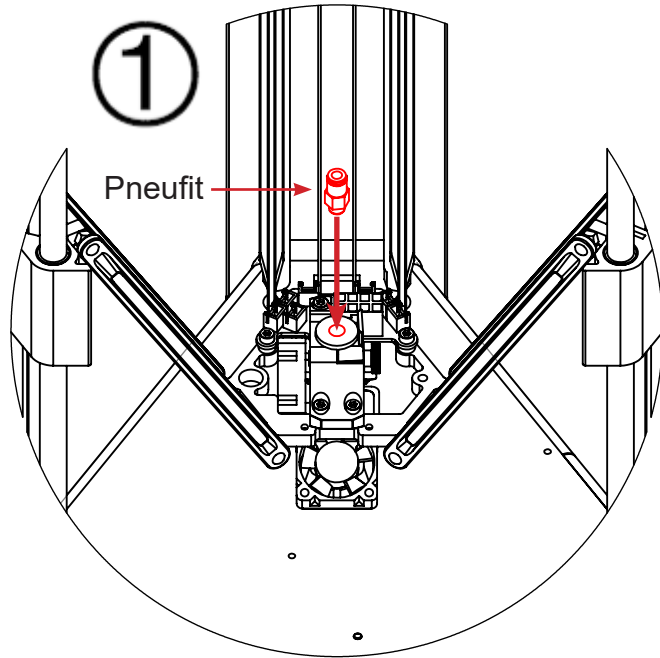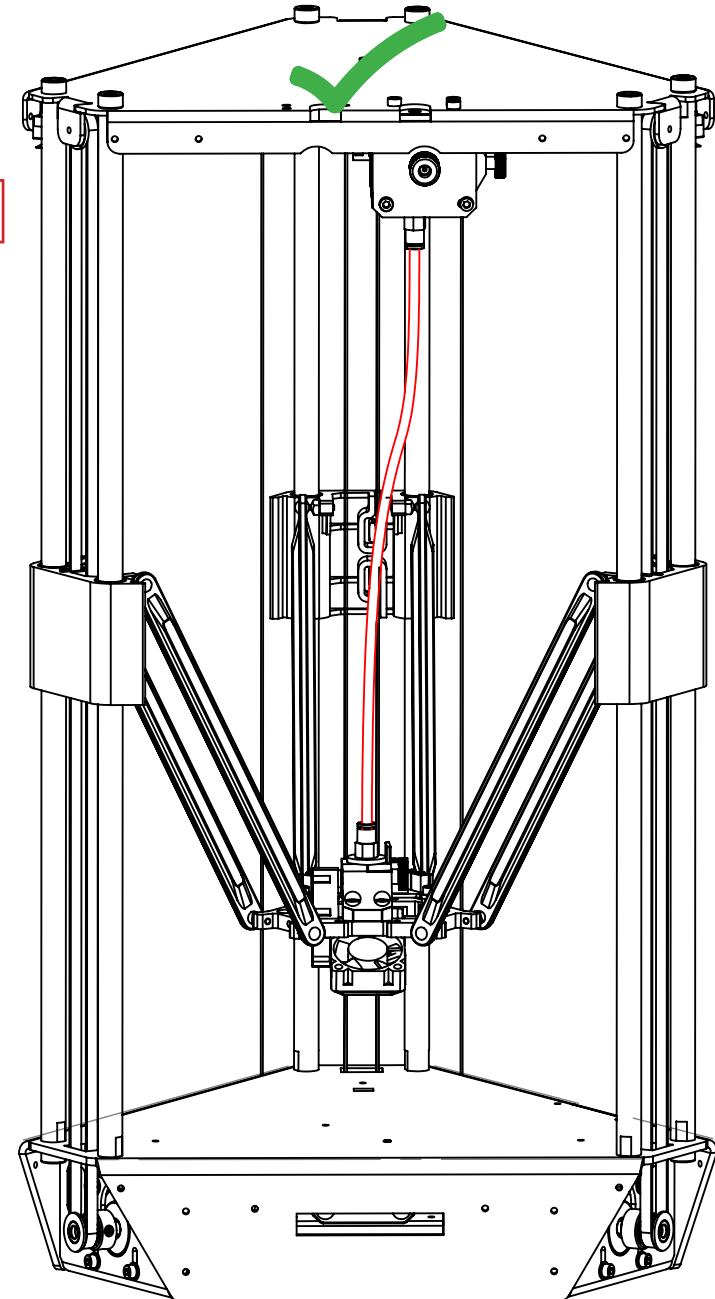
Target : cut the belt to prevent it stucking in the idler pulley

Result

Cut the belt as much as you can of the exceeding belt Maximum 5mm should be left.
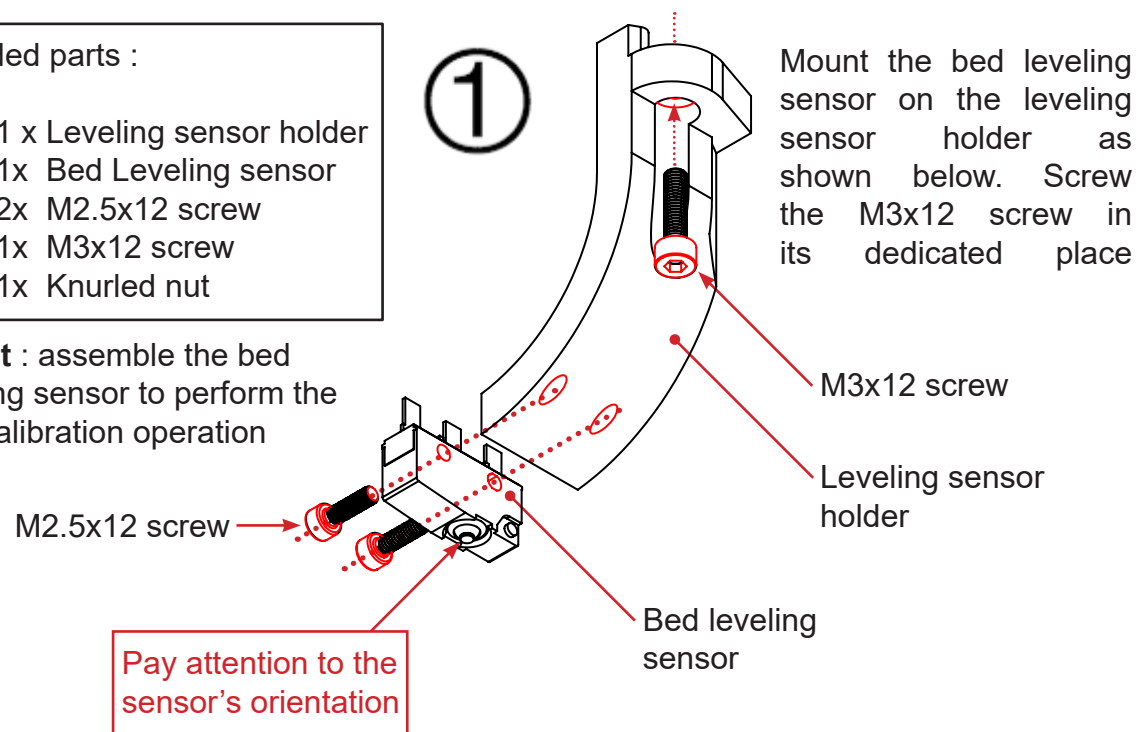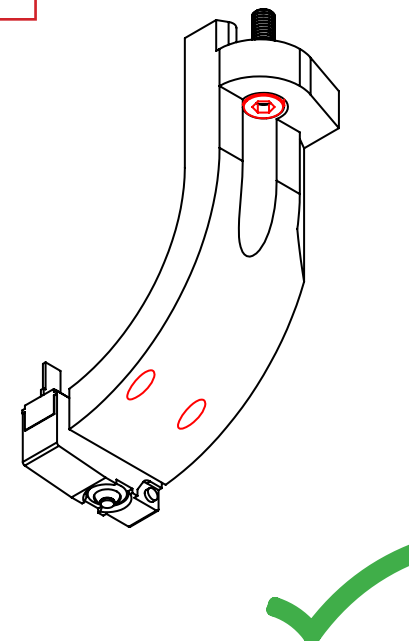
BED LEVELING SENSOR ASSEMBLY

Needed parts :

- 1 x Leveling sensor holder
- 1x Bed Leveling sensor
- 2x M2.5x12 screw
- 1x M3x12 screw
- 1x Knurled nut

Target : assemble the bed leveling sensor to perform the bed calibration operation

① Mount the bed leveling sensor on the leveling sensor holder as shown below. Screw the M3x12 screw in its dedicated place

M3x12 screw

Leveling sensor holder

M2.5x12 screw

Pay attention to the sensor's orientation
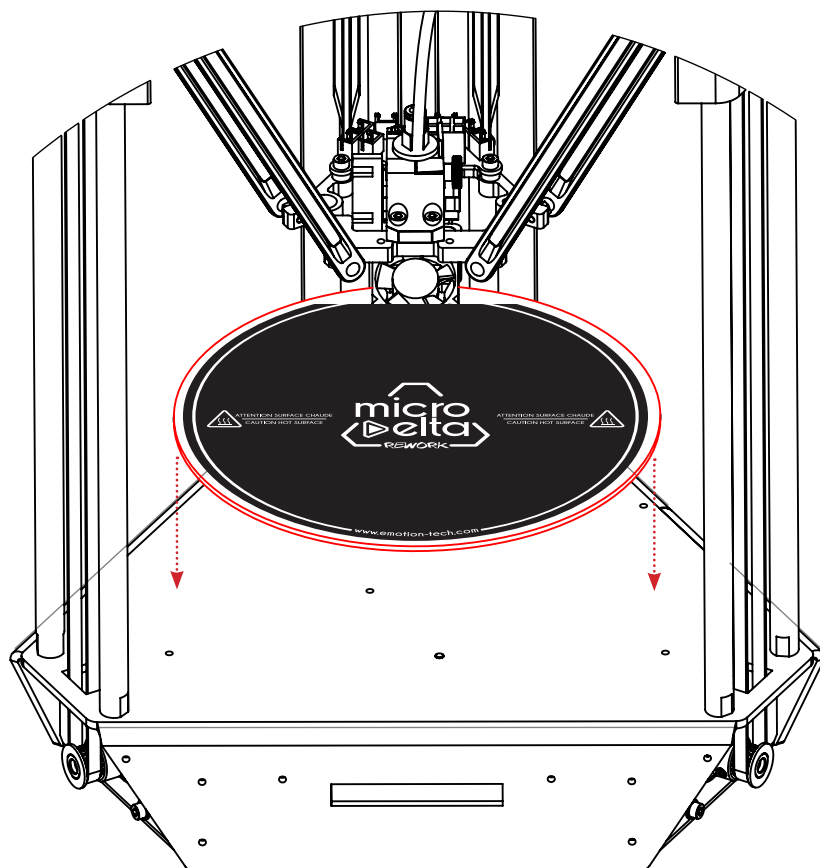
Bed leveling sensor

Result

---

② Route the sensor's cable through its dedicated slots on the leveling sensor holder.
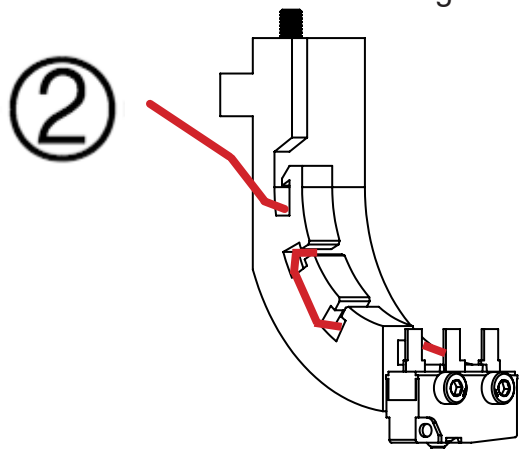
NOTE:
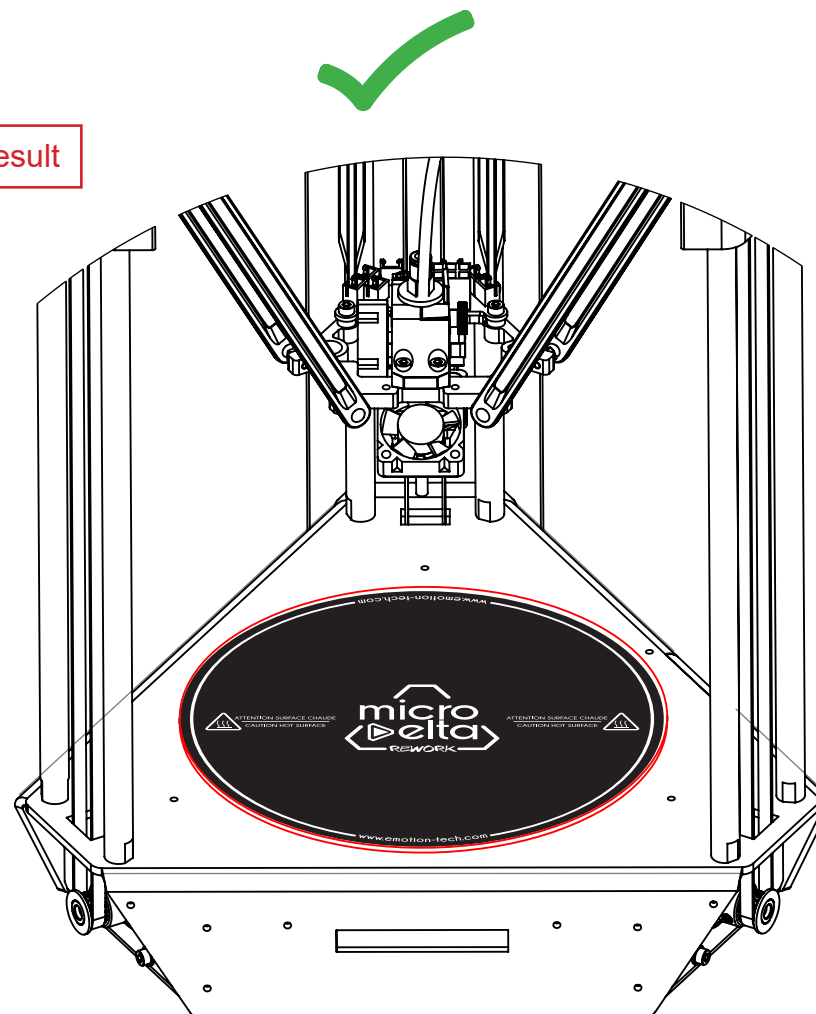This assembly will subsequently be used to calibrate the printer, more precisely to level the printing surface in order to obtain an identical first layer height over the entire printing plate. Instructions of use of this item will be detailed in the user's guide.

MECHANICAL ASSEMBLY

Target: fixation and orientation of the 3dBedFix (in the case of a printer without heabed)
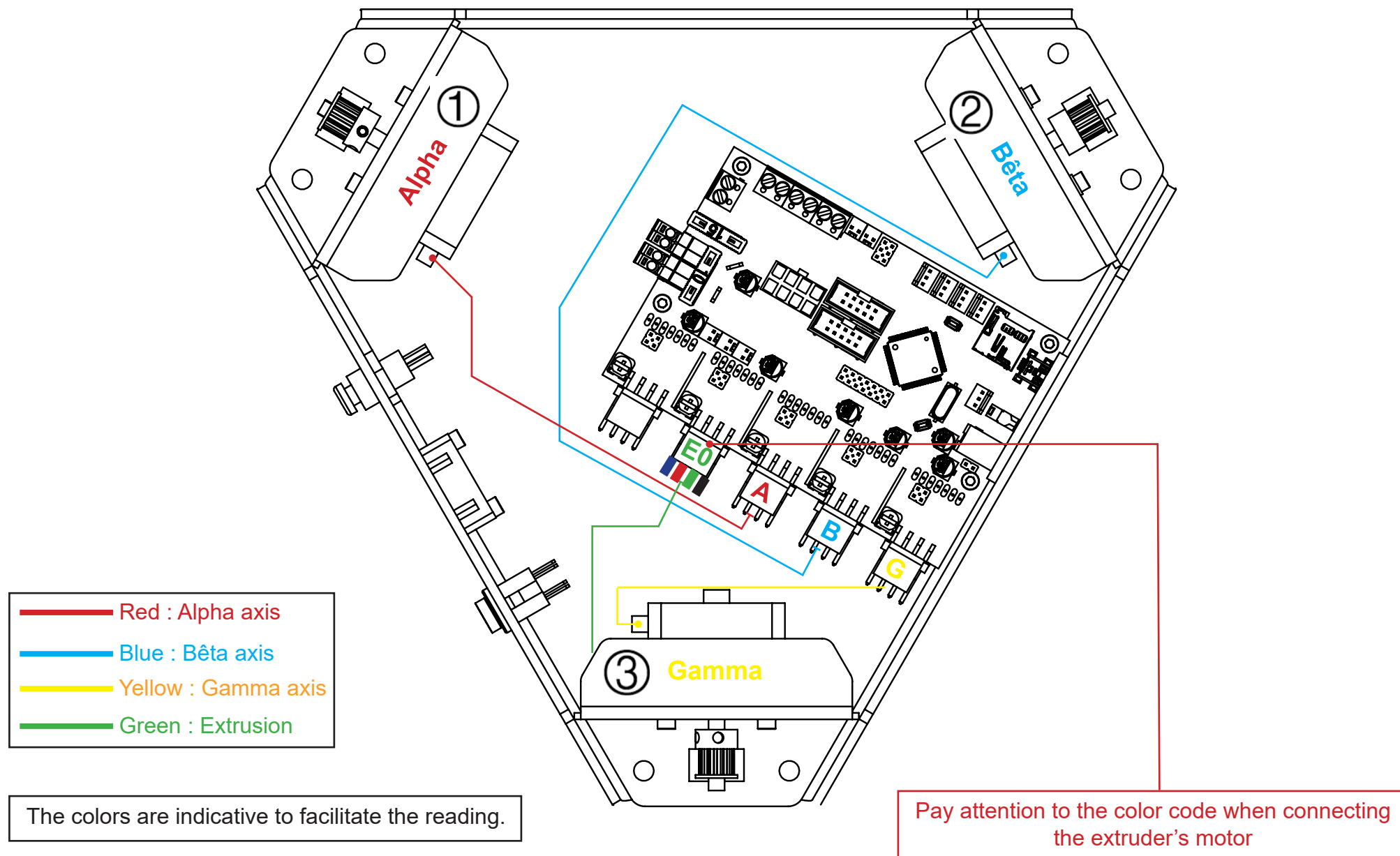
Result

ELECTRONIC ASSEMBLY

ELECTRONIC ASSEMBLY

Target : connect the stepper motors to the eMotronic

Red : Alpha axis
Blue : Bêta axis
Yellow : Gamma axis
Green : Extrusion

The colors are indicative to facilitate the reading.

Pay attention to the color code when connecting the extruder's motor

Version 1.4.29

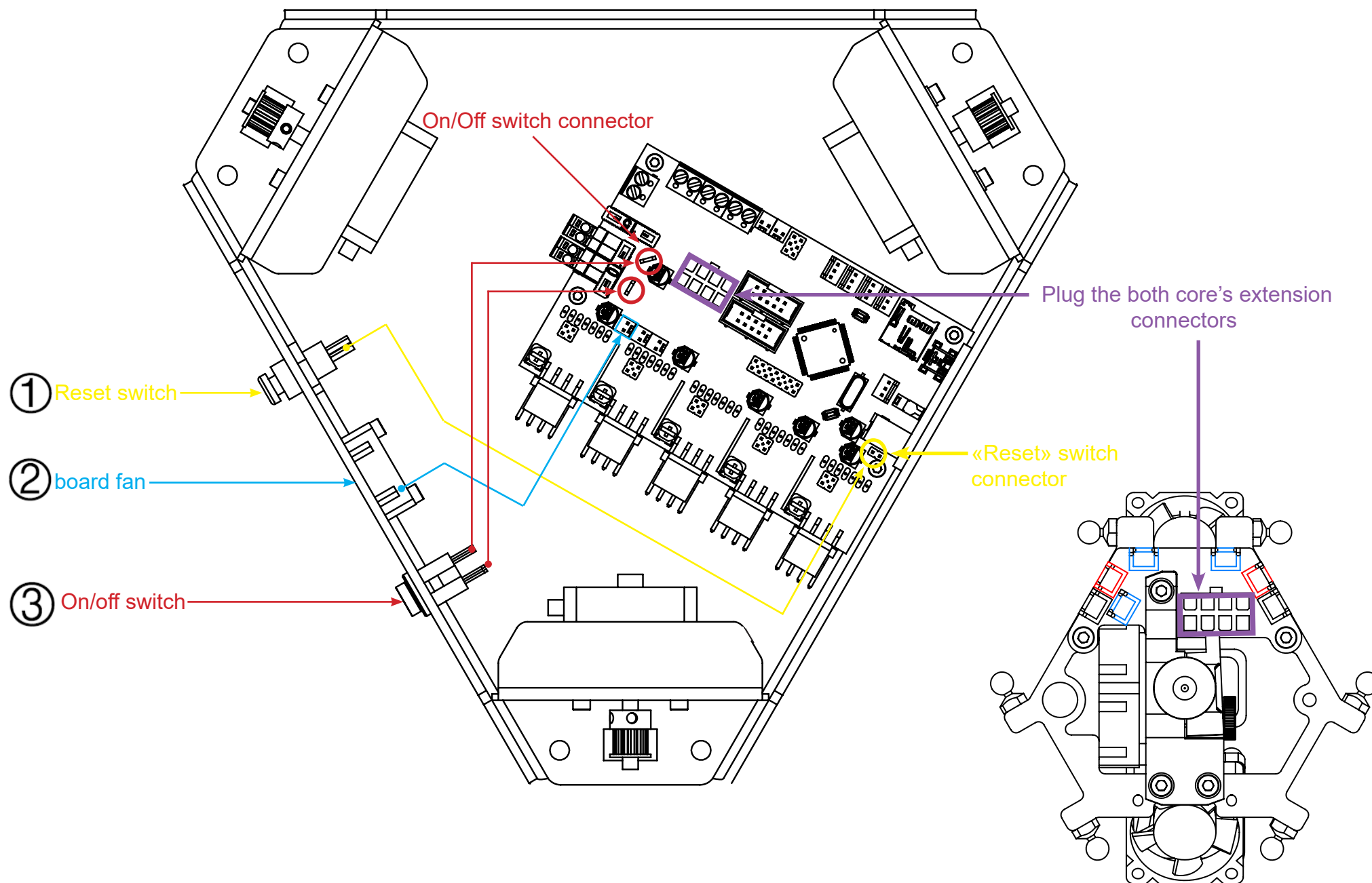# ELECTRONIC ASSEMBLY

Target : connect the endstops to the eMotronic board

endstops connectors

Alpha

Bêta

Gamma
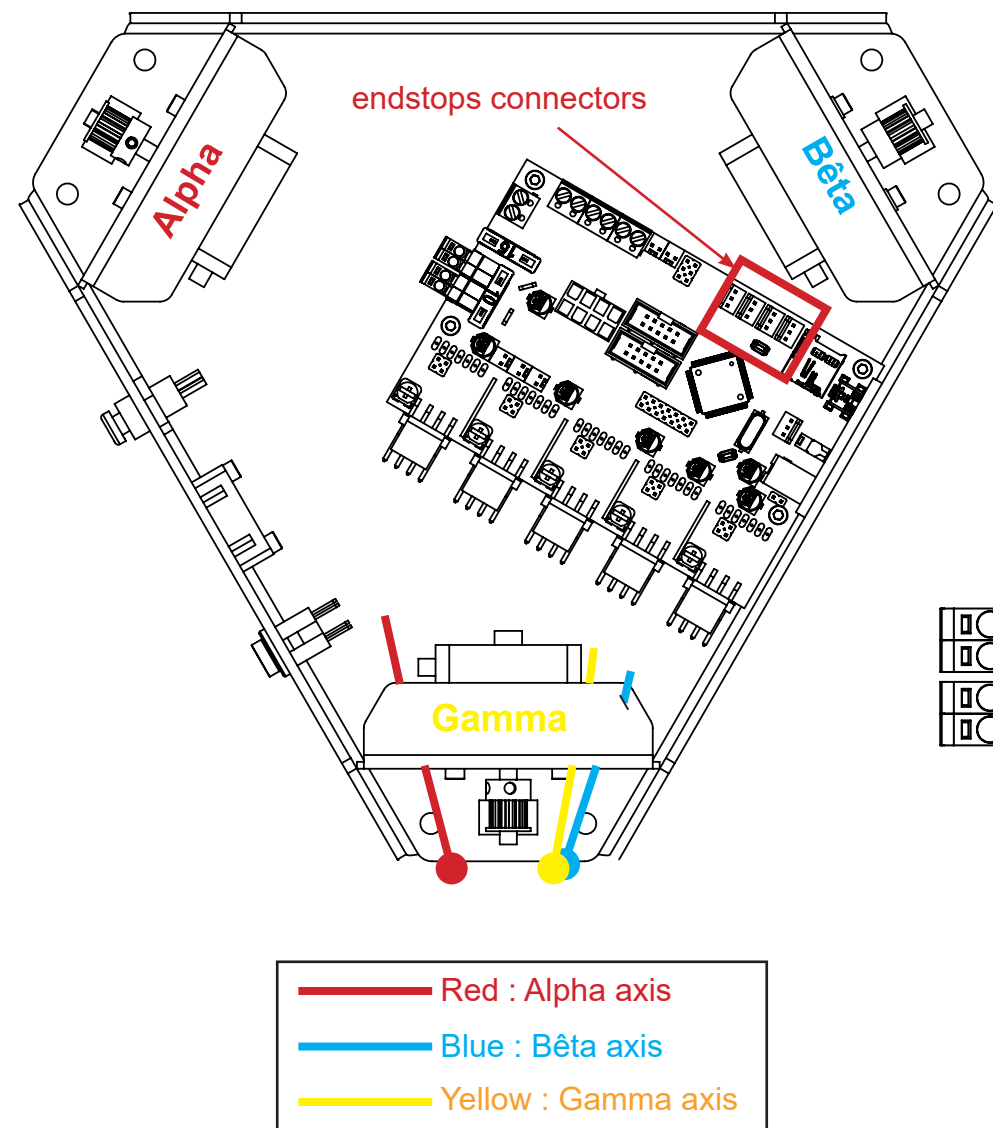
Plug each endstop to its corresponding connector on the board. Respect the color code.

① ② ③

Gamma

Bêta

Alpha

—— Red : Alpha axis

—— Blue : Bêta axis

—— Yellow : Gamma axis

ELECTRONIC ASSEMBLY
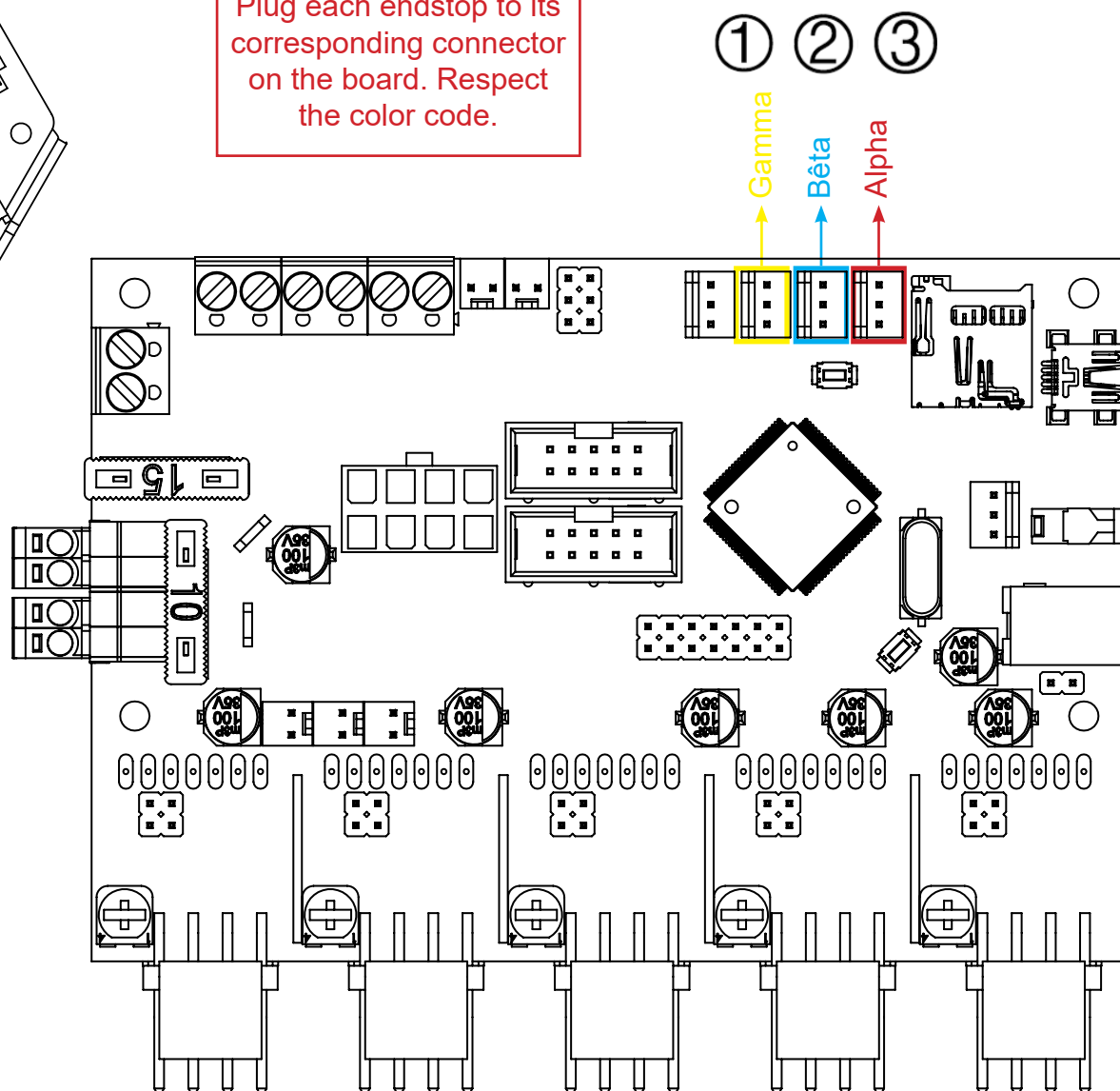
Target : connect the core's extension cable, the «Reset» button, the On/Off switch and the board fan

On/Off switch connector

Plug the both core's extension connectors

① Reset switch

② board fan

③ On/off switch

«Reset» switch connector

CONGRATULATIONS !
Your 3D printer is now functional !

If you have options > please follow the dedicated section in the annexe.
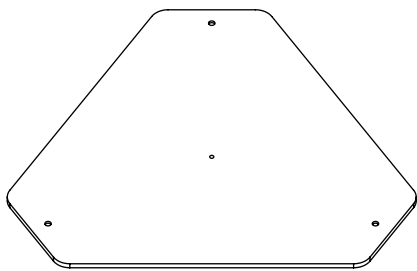**If not, you can go to the user guide.**
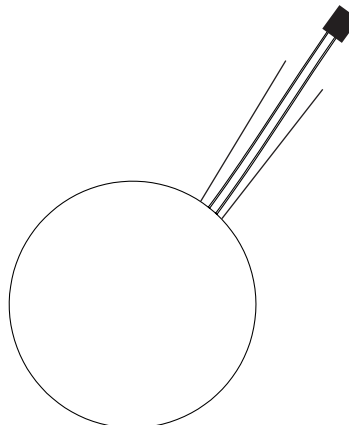
ANNEXE

HEATING BED

Needed parts :

- 1 x Lower plate
- 1 x Heating patch
- 1 x Aluminium plate
- 3 x M3 x 8 mm countersunk screw
- 3 x Standoff spacer
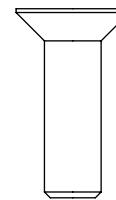- 1 x Adhesive patch«3dBedFix»
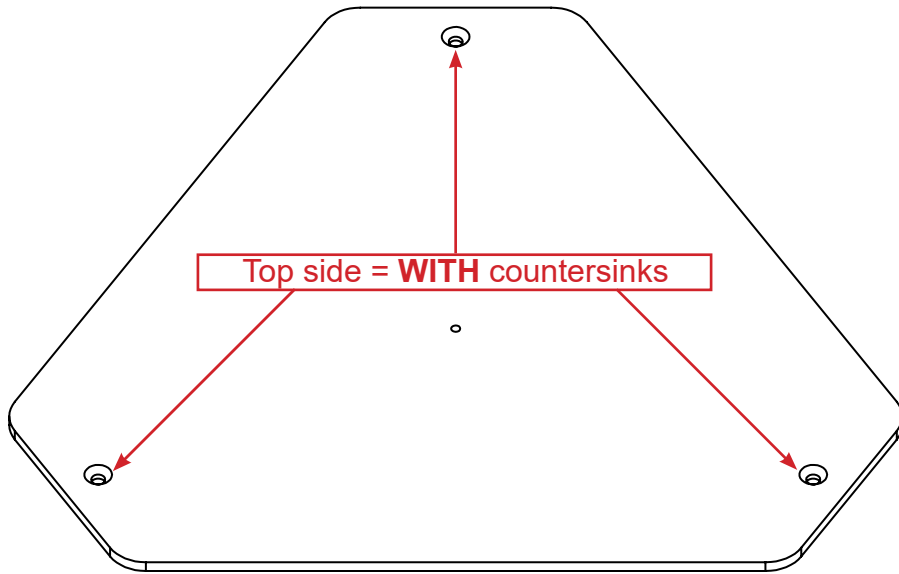
1 x Aluminium plate

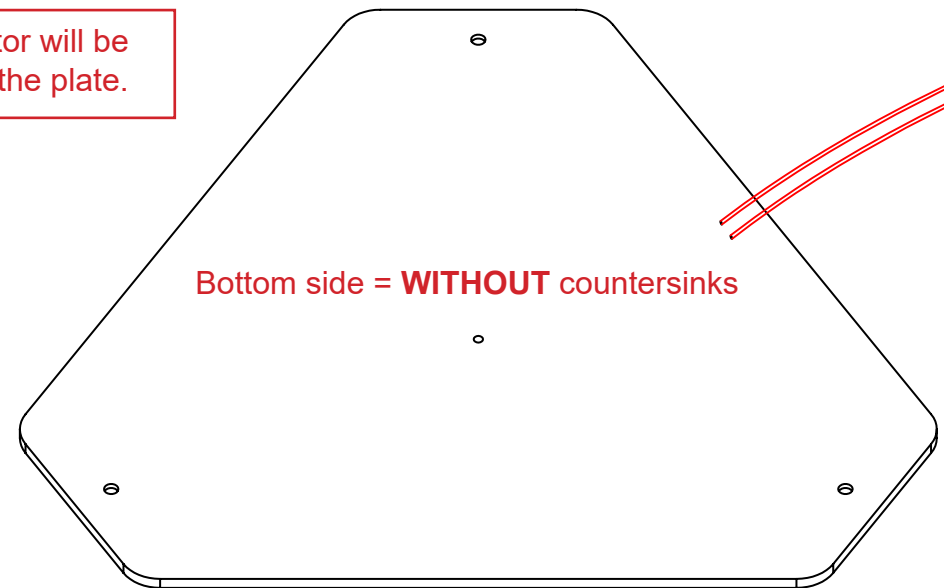3 x Standoff spacer

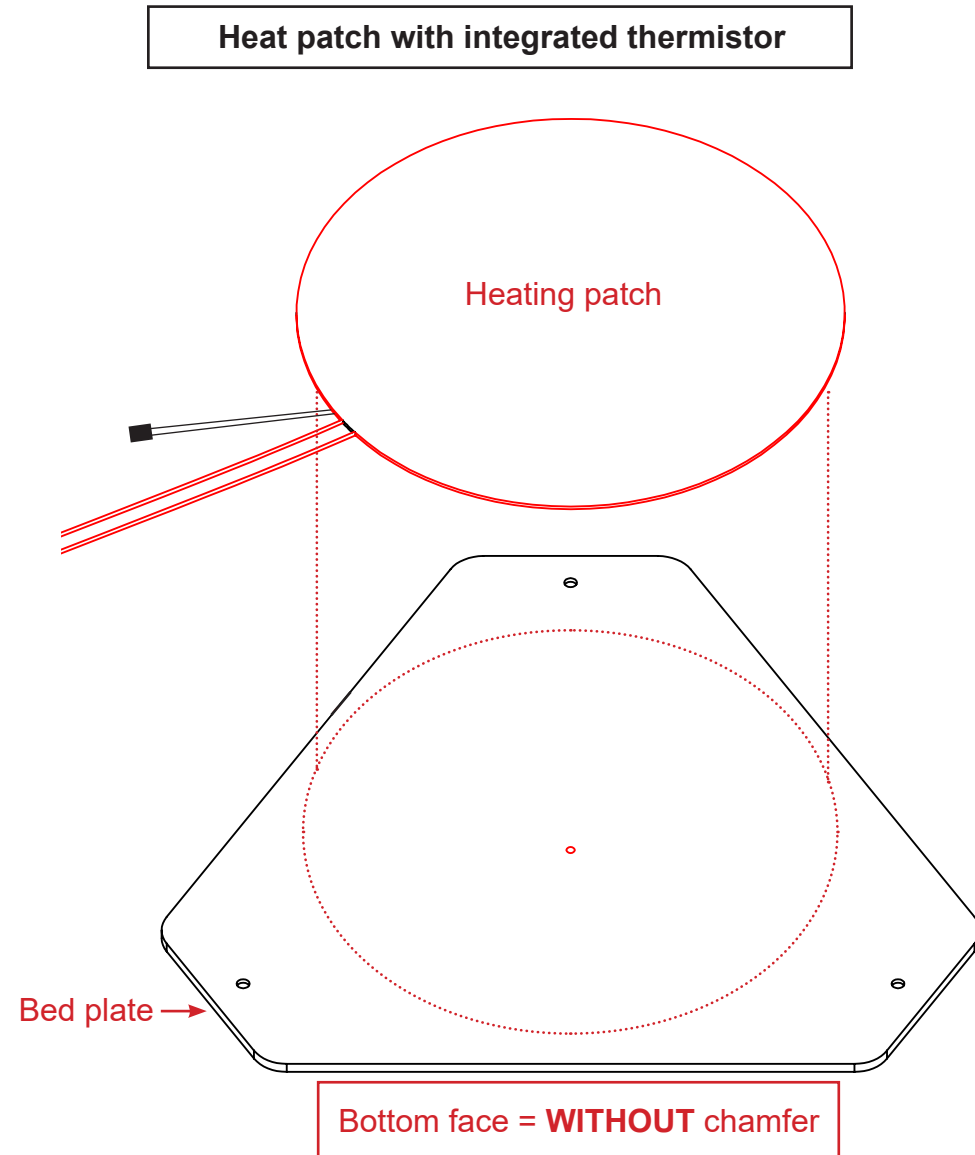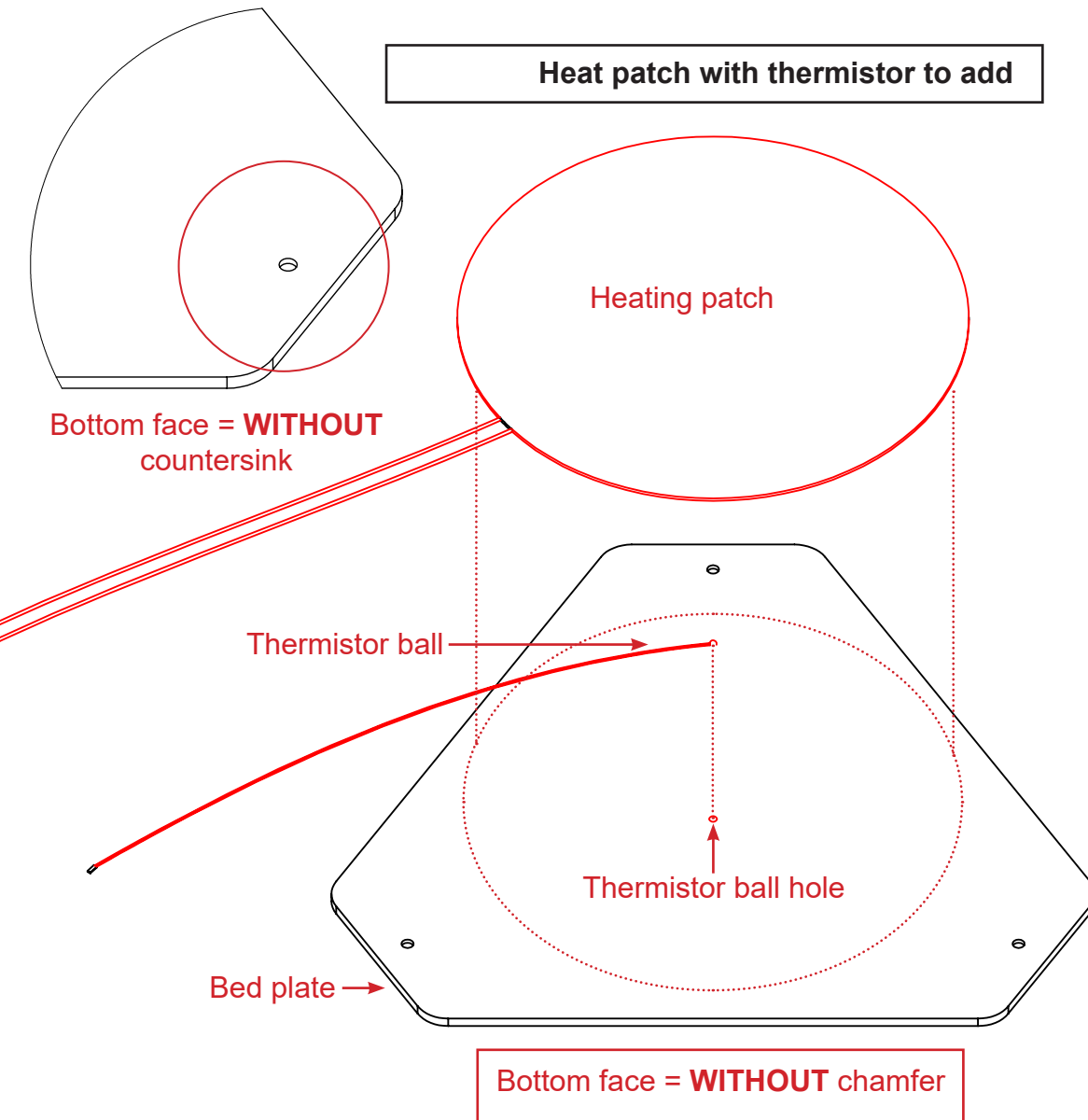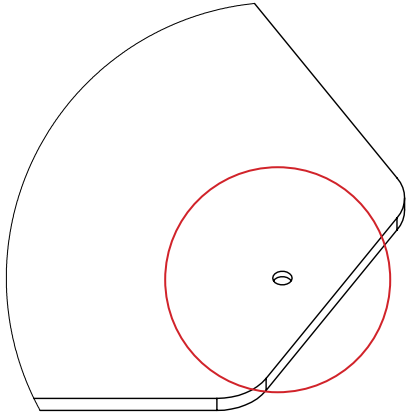1 x Heating patch

3 x M3 x 8 mm Counter-sunk screws

1 x 3DBedFix

Top side = **WITH** countersinks

Heating patch and the thermistor will be fixed against the lower side of the plate.

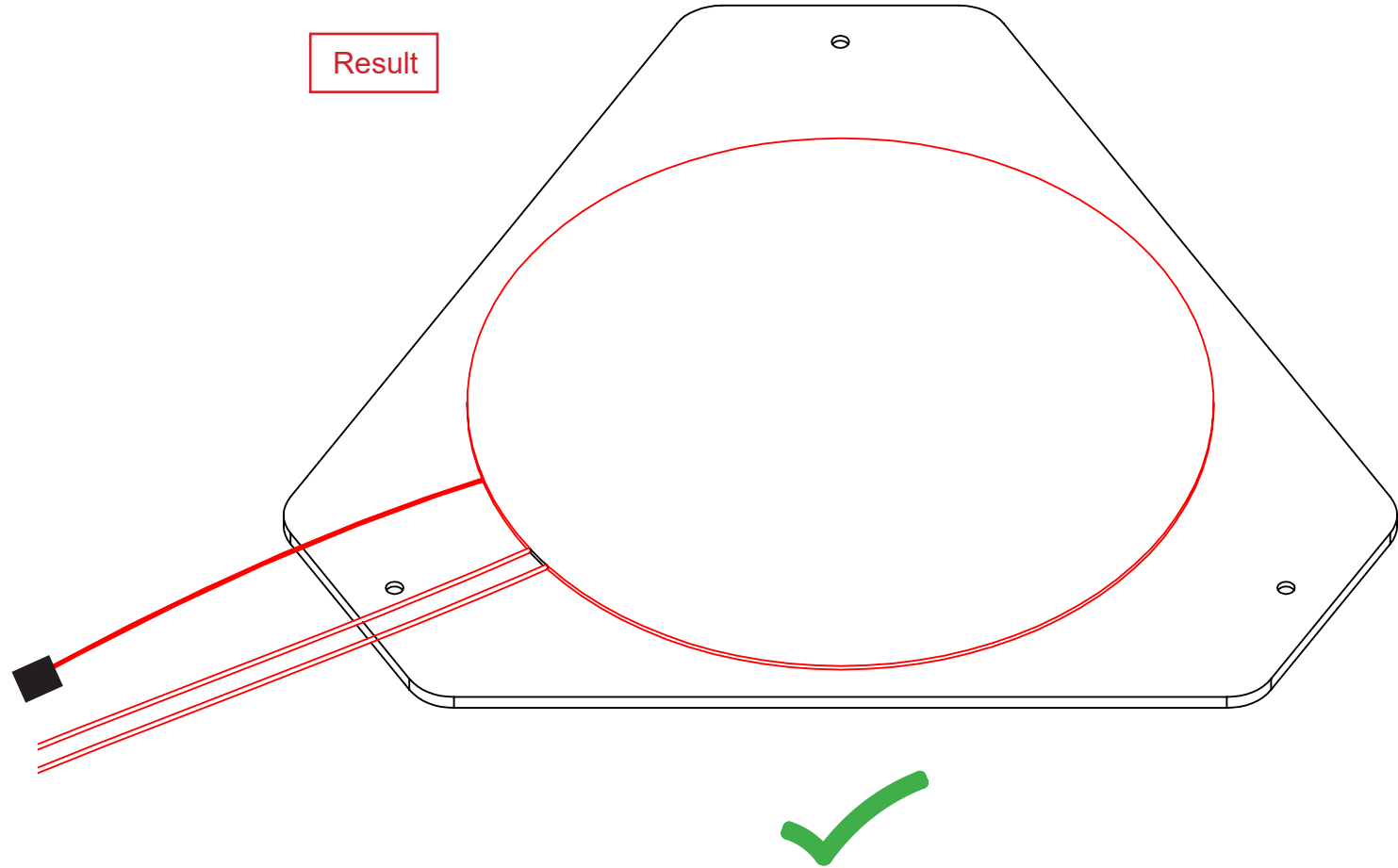Bottom side = **WITHOUT** countersinks

ANNEXE

Target : assemble the aluminium plate, the heating patch and the thermistor (2 cases)

Heat patch with thermistor to add	Heat patch with integrated thermistor

Heating patch

Bottom face = **WITHOUT** countersink

Thermistor ball

Thermistor ball hole

Bed plate

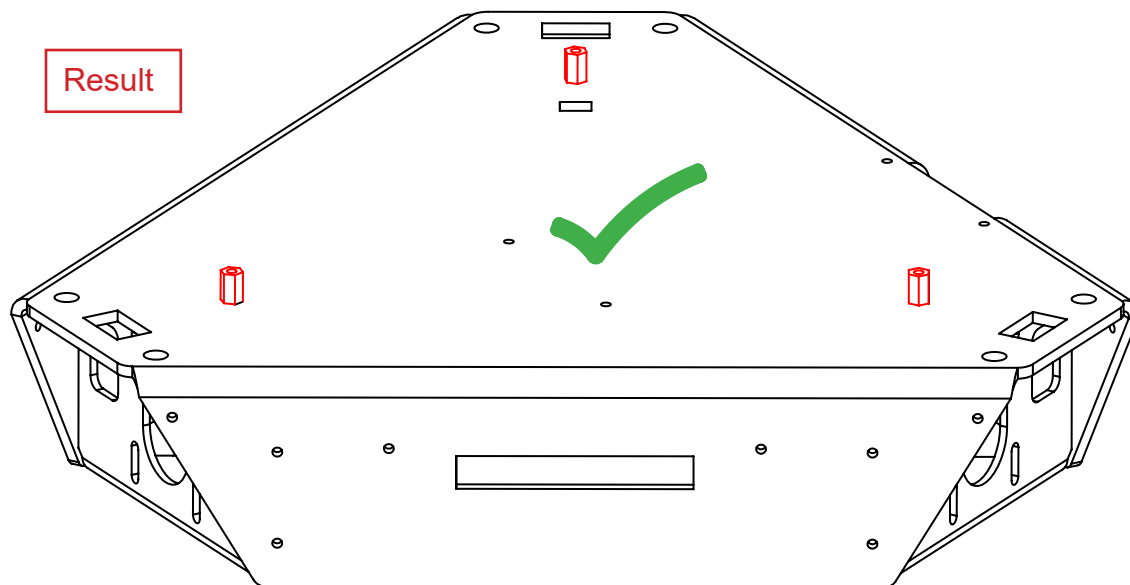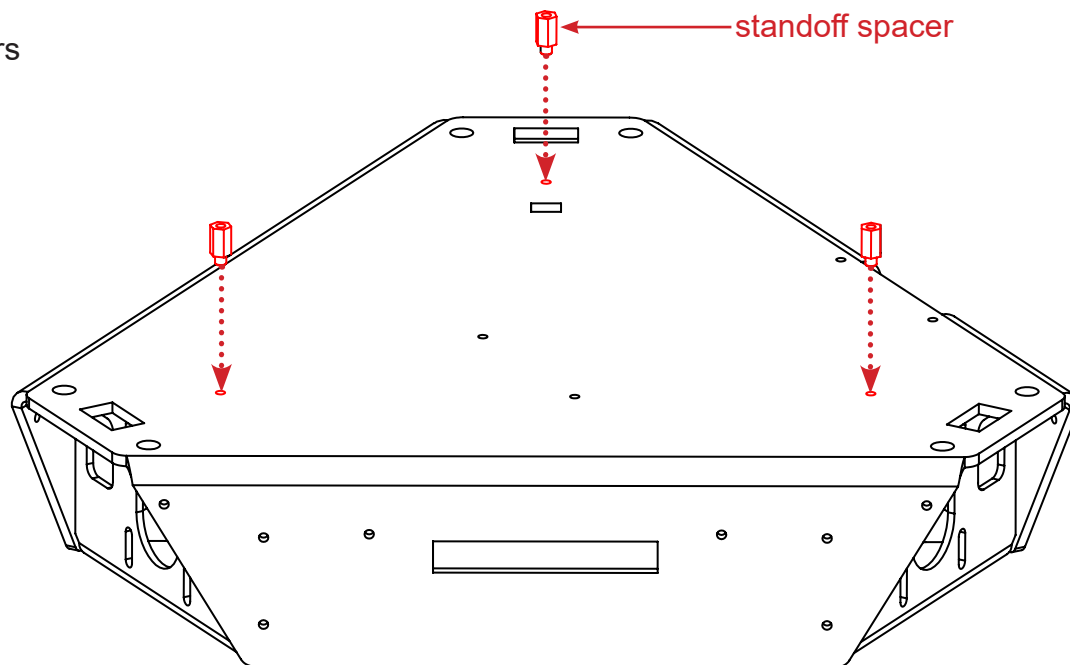Bottom face = **WITHOUT** chamfer

Heating patch

Bed plate
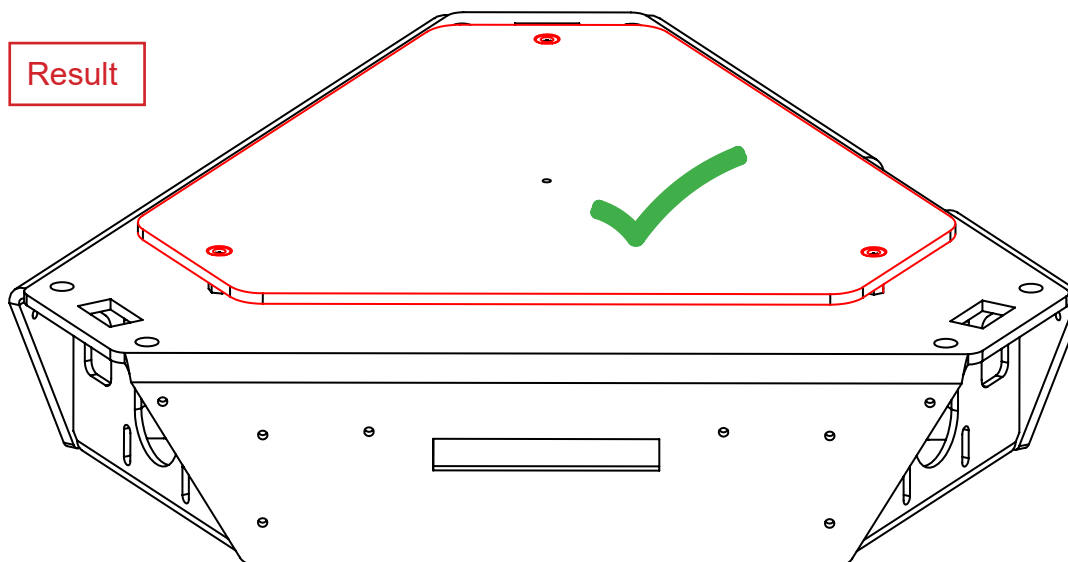
Bottom face = **WITHOUT** chamfer

Result

Bottom face = **WITHOUT** countersink

ANNEXE

Target : mount the standoff spacers

standoff spacer

Result

ANNEXE

Target : screw the heated bed on the lower plate

plate bed
upper side

M3 x 8 mm countersunk screw

Way for patch's cables

Lower plate

Result

ANNEXE
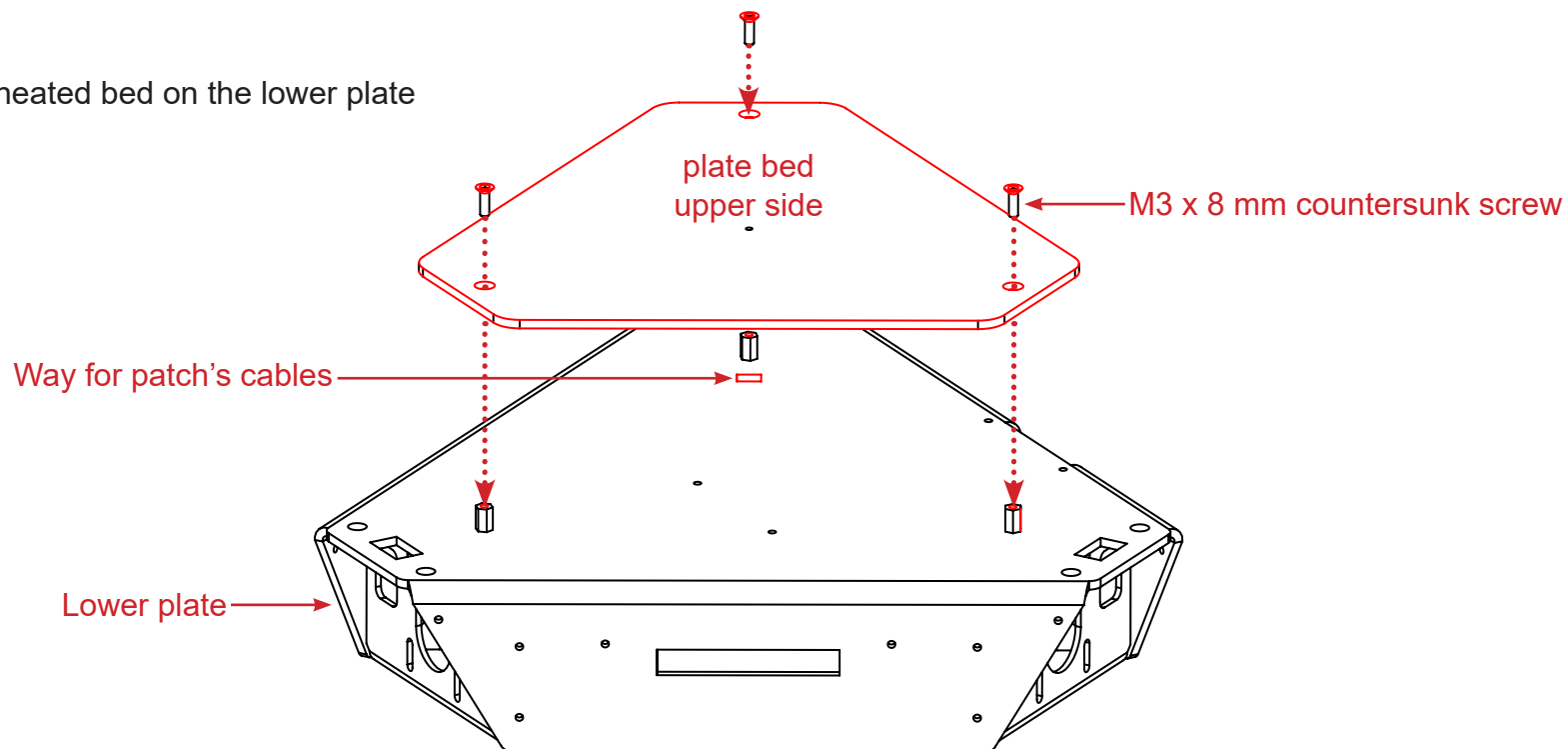
Target : Apply the adhesive patch «3DBedFix» on the heated bed

Adhesive patch 3dBedFix

Result

ANNEXE
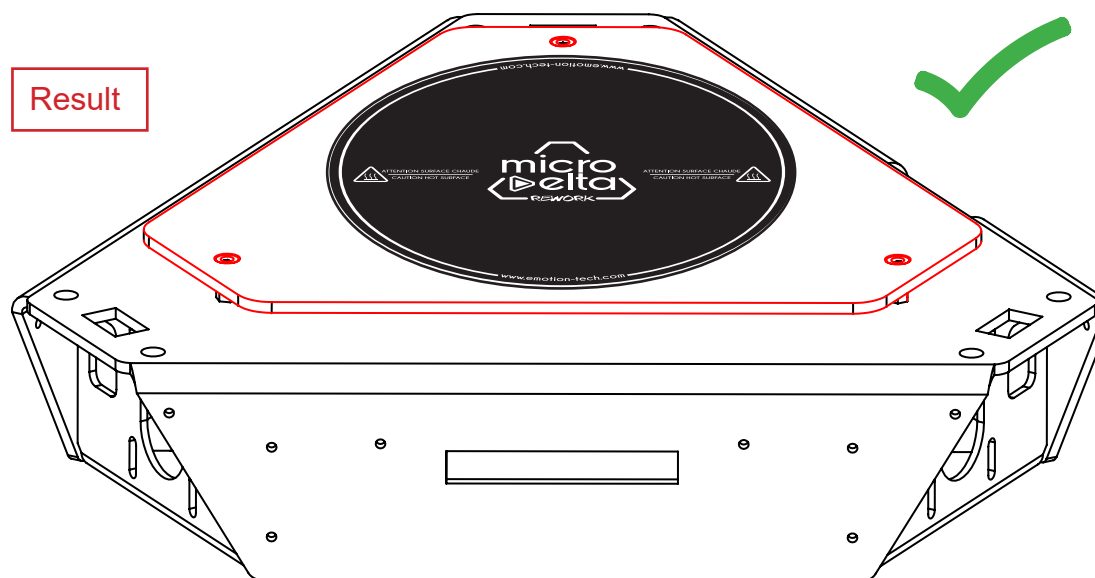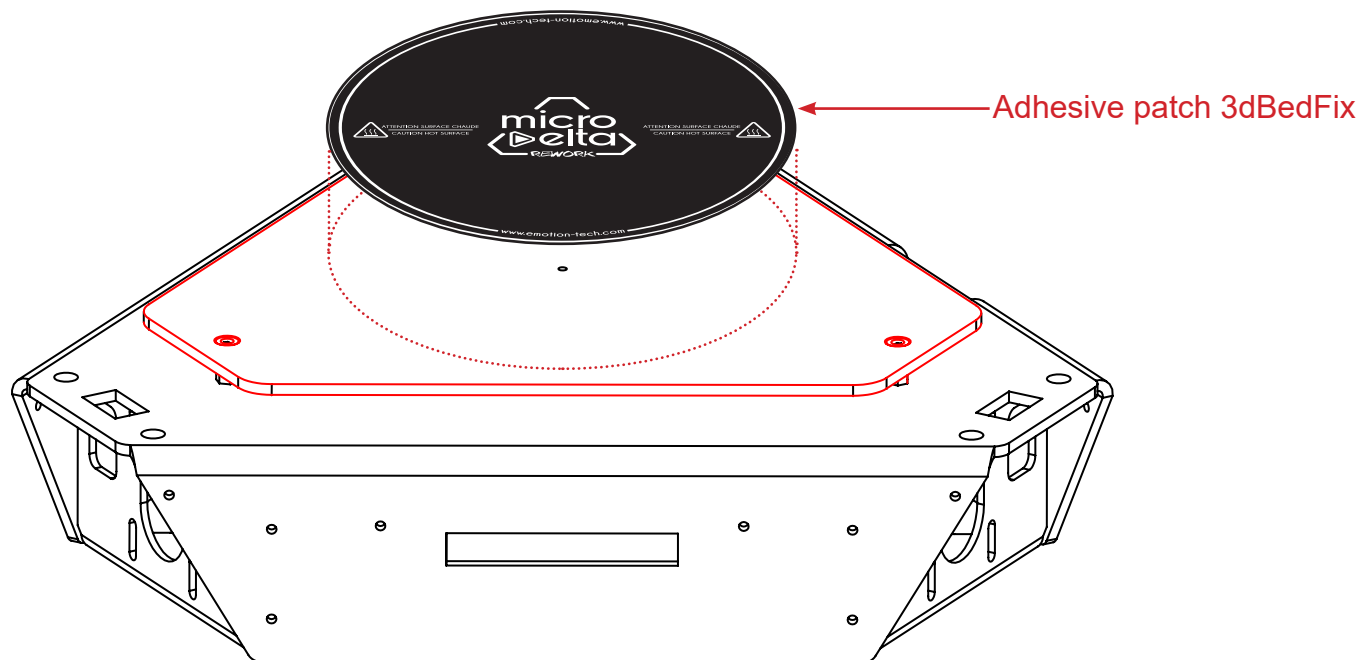
Target : plug the heating patch and the thermistor of the heating bed

Heating patch with connector

Heating patch without connector

Thermistor
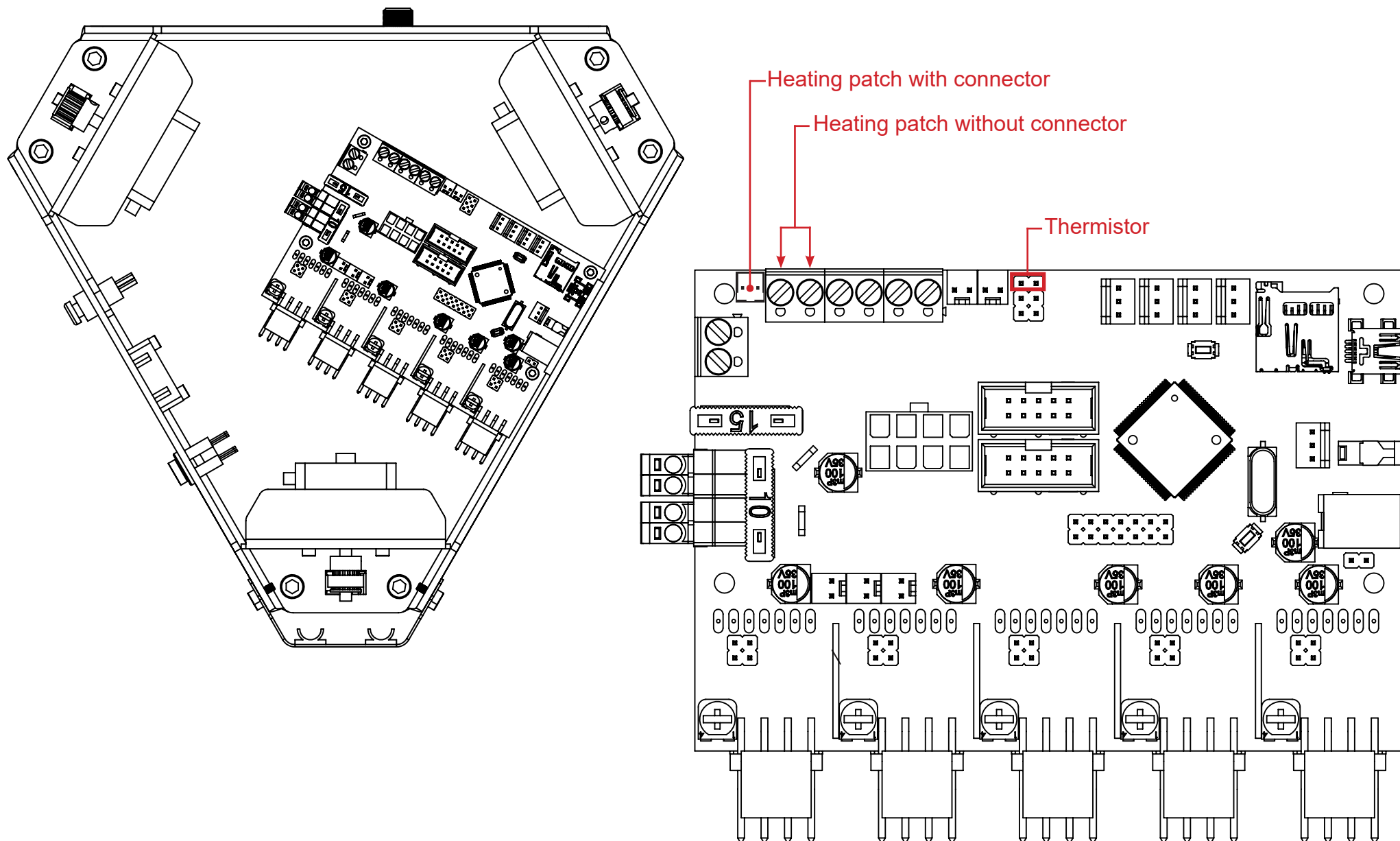
Modifying the configuration file:

1°) Go to the Support section of www.emotion-tech.com. In the «MicroDelta Rework / Software / Software / Configuration» tree you will find all the available versions of the configuration file.

Download the version that corresponds to your printer (depending on your options)

2°) Unzip the downloaded file and copy its content into the SD card of the eMotronic board. Replace existing files if necessary.

3°) Press the Reset button.

<div style="border: 2px solid red; color: red; text-align: center; font-weight: bold;">

Go now to the page 24 for the rest of the assembly !
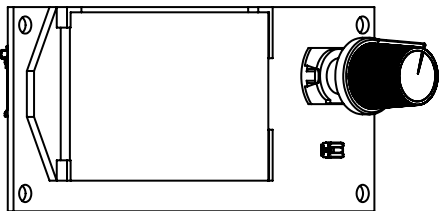
</div>

LCD SCREEN (plastic support)

Needed parts :

- 1 x Right side LCD cover
- 1 x Left side LCD cover
- 1 x Front plate LCD cover
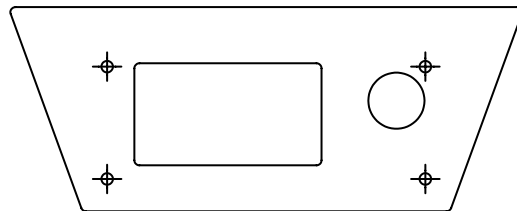- 1 x LCD screen
- 6 x M3 x 12 mm screw
- 2 x Ribbon cable

Target : mount the LCD screen on the 3D printer.
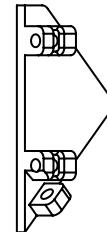
Pre-requisites:
The two screen covers (right and left) are to be printed by yourself. To download these two parts, go to the Support section of www.emotion-tech.com, then go to «MicroDelta Rework / Ressources_3D / Option LCD».
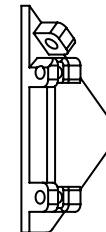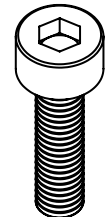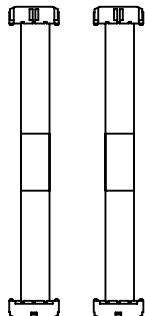
1 x LCD screen

1 x Front plate LCD cover

1 x Right side LCD cover
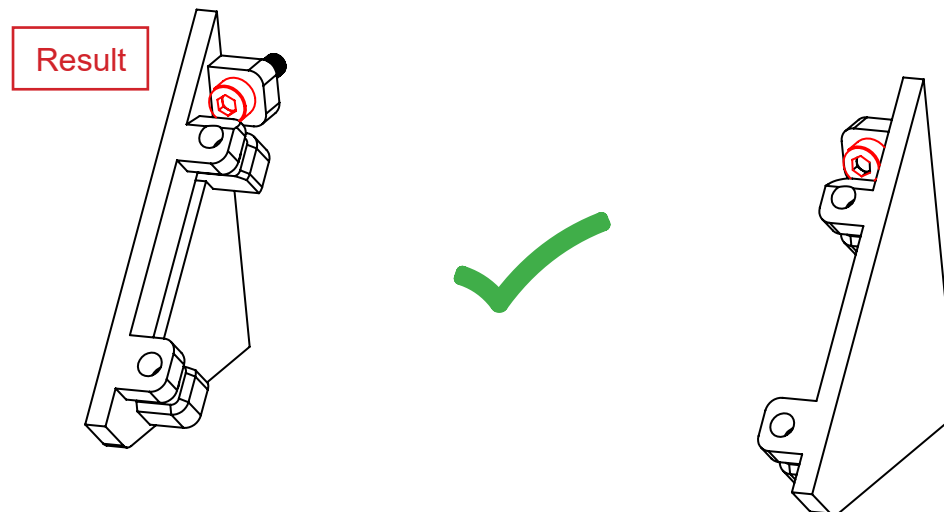
1 x Left side LCD cover
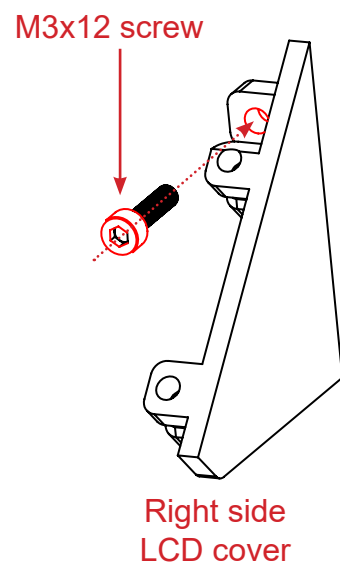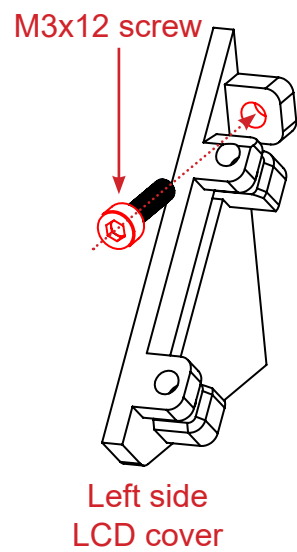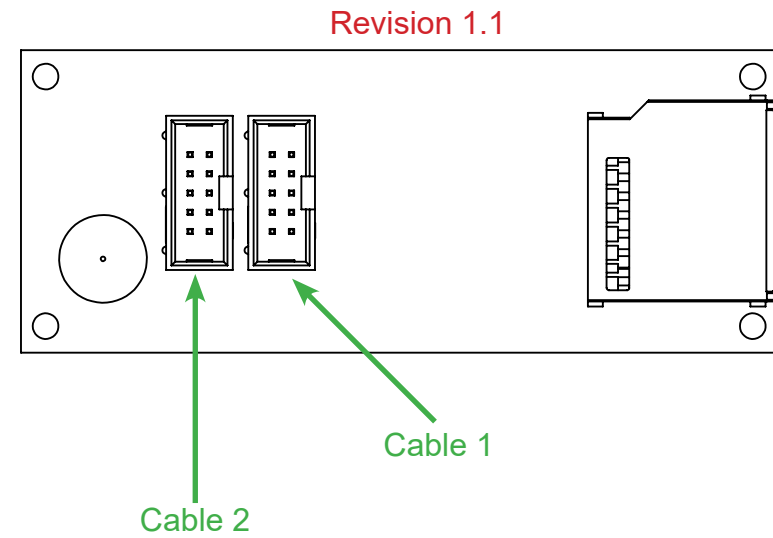
6 x M3 x 12 mm screw

2 x Ribbon cable

ANNEXE

Target : preposition the screws in the printed covers

Result

M3x12 screw

Left side
LCD cover

M3x12 screw

Right side
LCD cover

Target: Plug the Ribbon cables on the screen

Revision 1.0

Revision 1.1

Cable 1
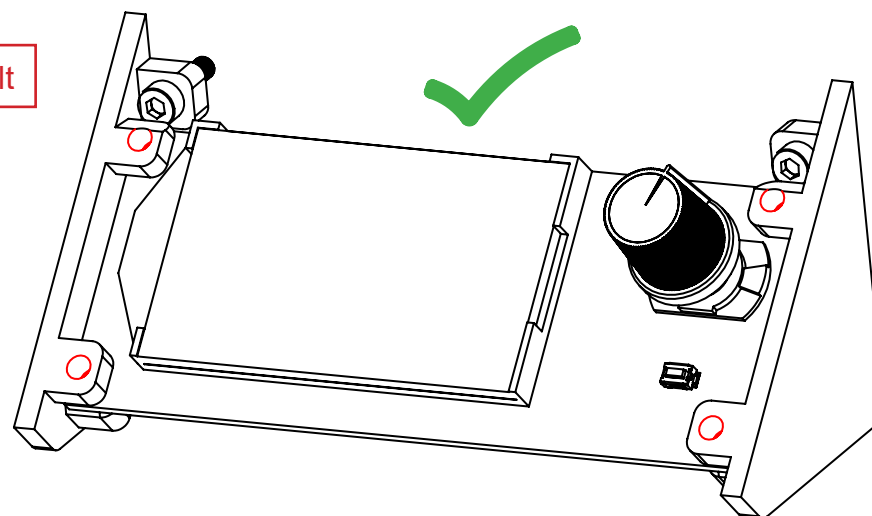
Cable 2

Cable 1   Cable 2

Note: The wiring on the eMotronic board side is shown on page 87.
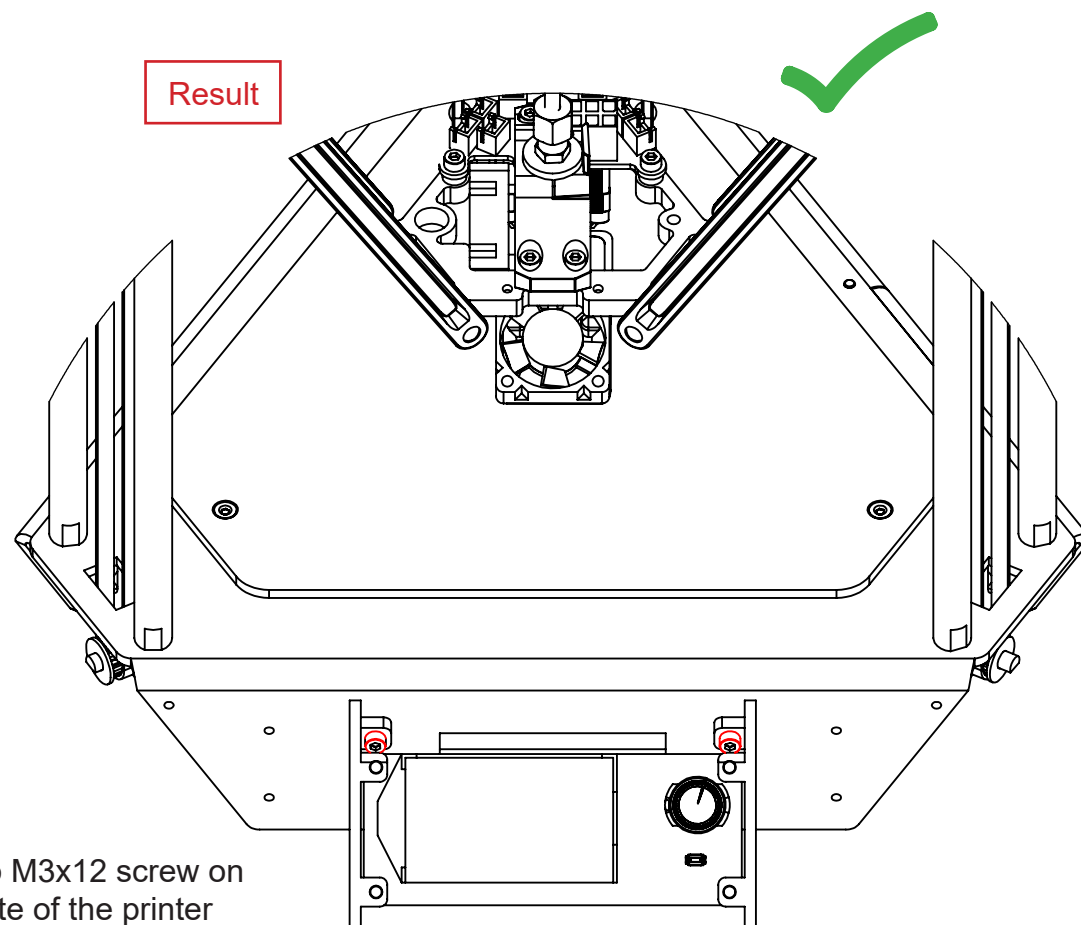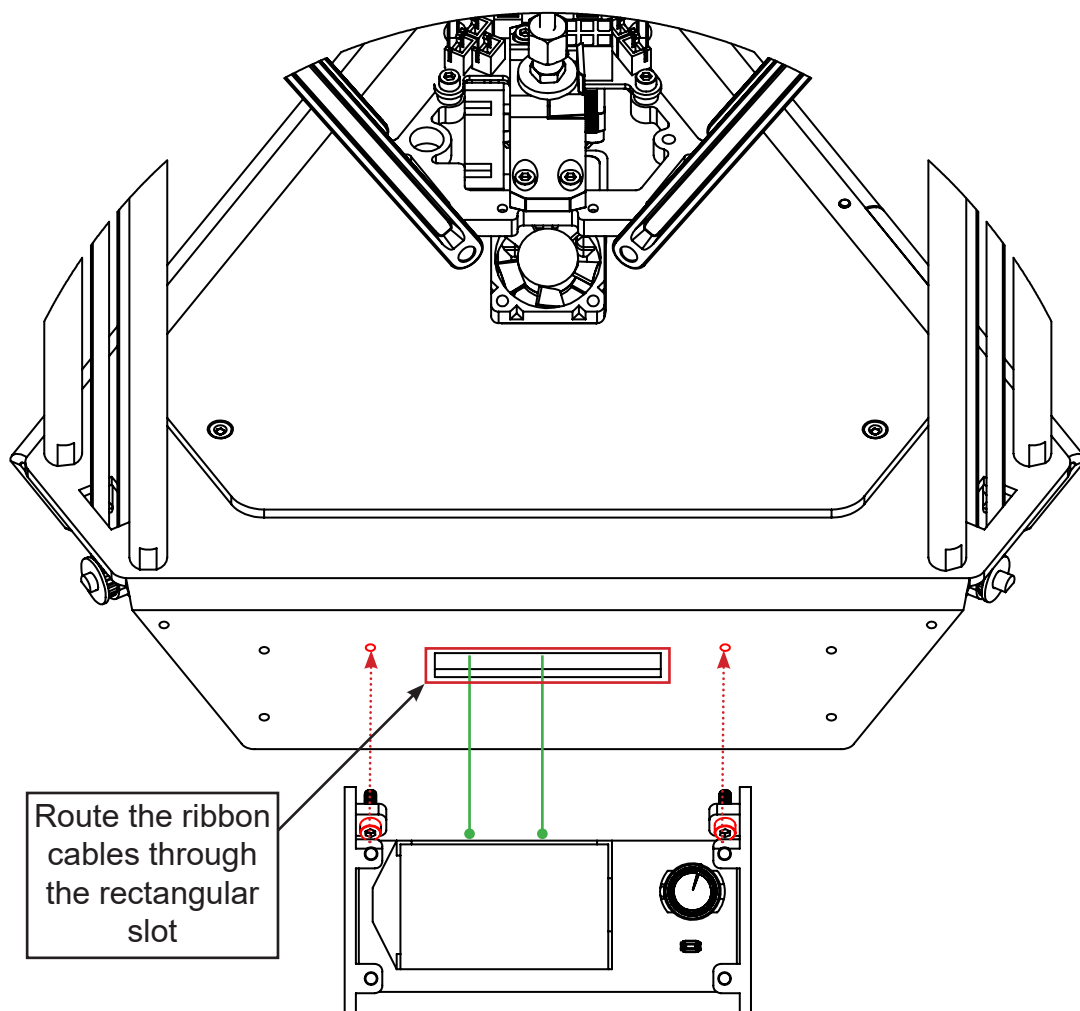
ANNEXE

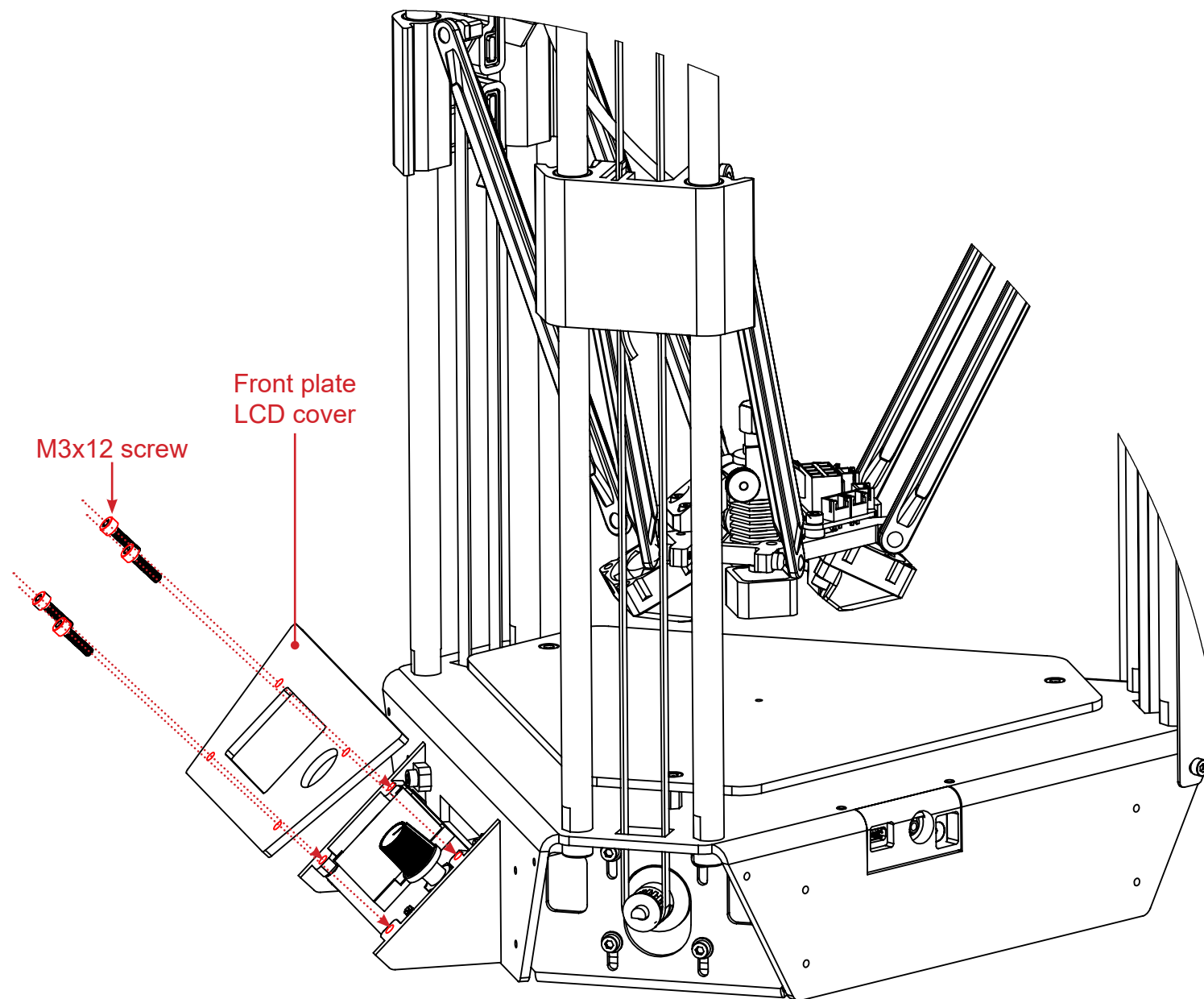**Target** : preposition the LCD screen between the two covers (right and left)

Result ✓

ANNEXE
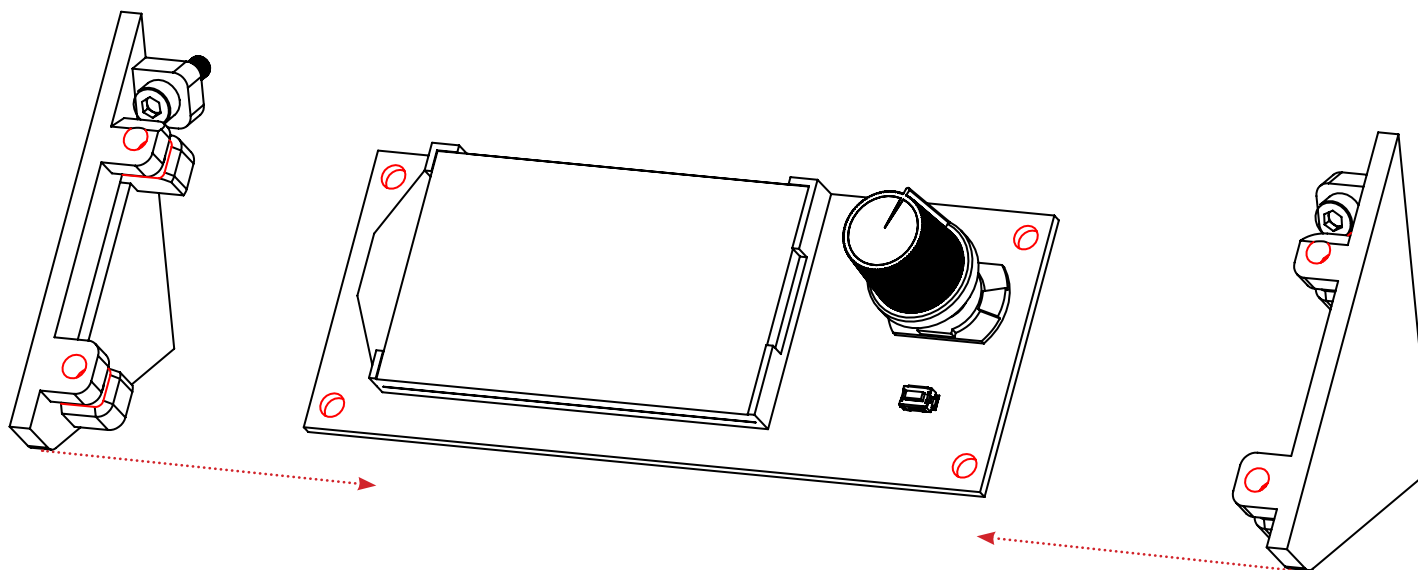
Target : mount the LCD on the printer

Route the ribbon cables through the rectangular slot

Result

Tighten the two M3x12 screw on the lower plate of the printer

ANNEXE

Target : mount the front plate LCD cover

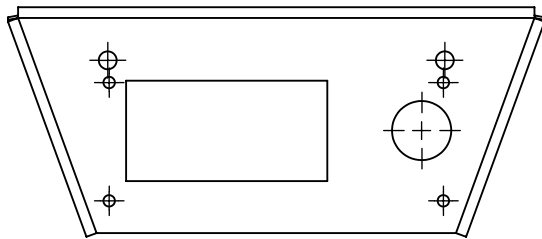M3x12 screw

Front plate
LCD cover
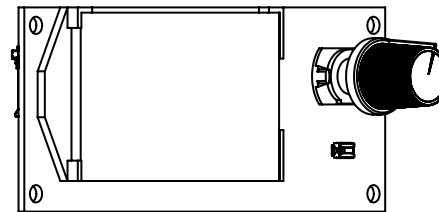
Result
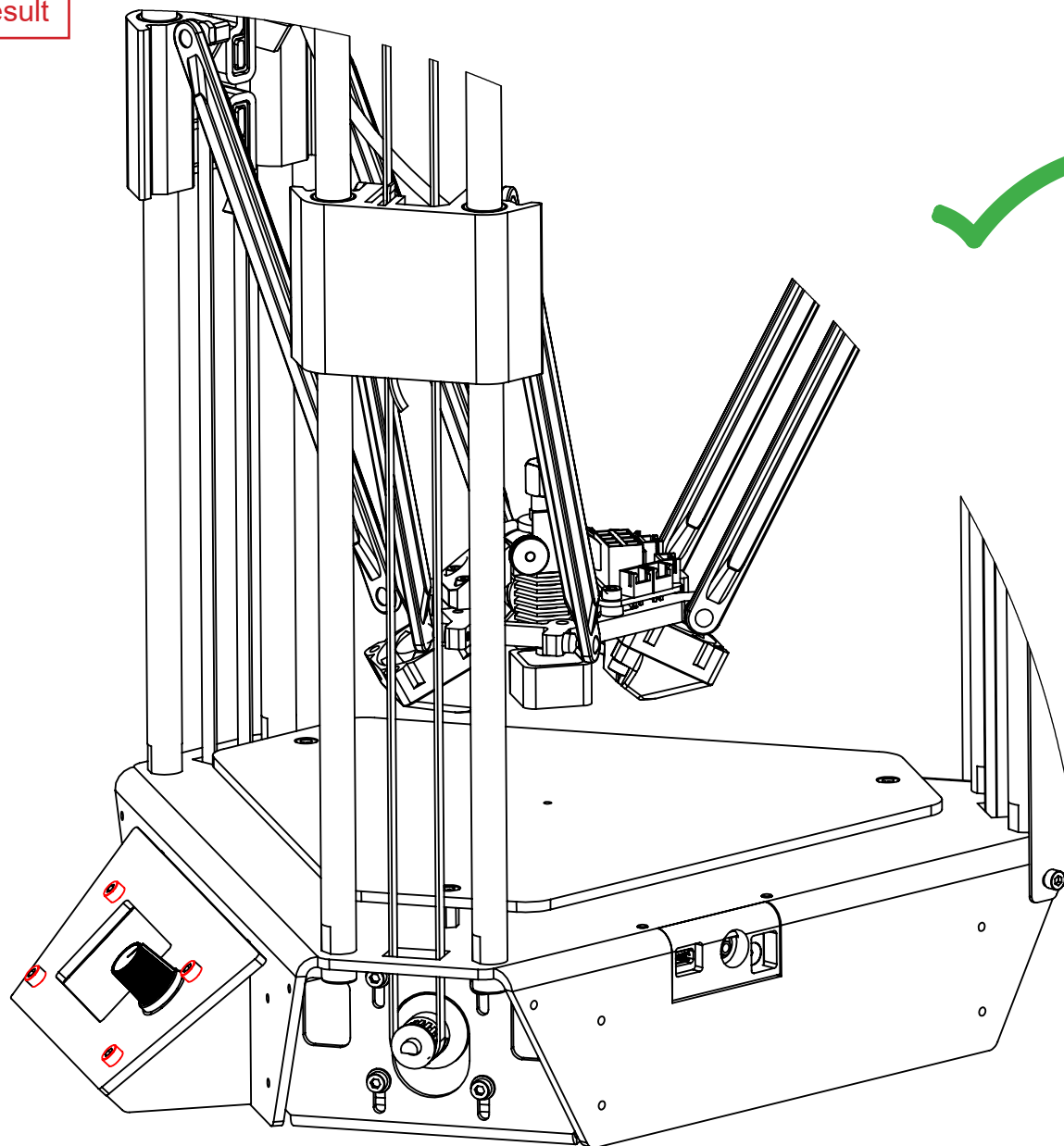
LCD SCREEN (metal support)

Needed parts :

- 1 x LCD cover
- 1 x LCD screen
- 2 x Ribbon cable
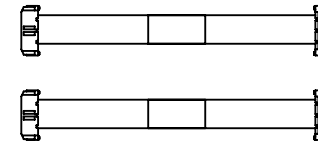- 6 x M3 x 12 mm screw
- 4 x 5 x 3 mm spacer
- 4 x M3 nut

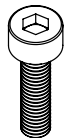**Target** : mount the LCD screen on the 3D printer.

1 x LCD cover

1 x LCD screen

2 x ribbon cable

6 x M3 x 12 mm screw

4 x 5 x 3 mm spacer

4 x M3 nut

Target : Fix the screen to the cover

M3 nut
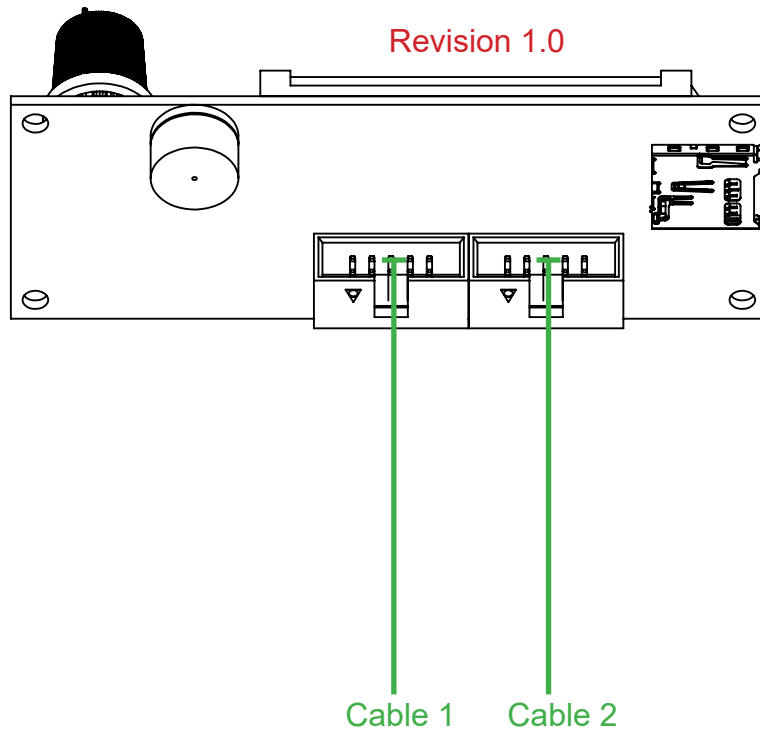
5 x 3 mm spacer

M3 x 12 mm screw

Tighten without force

ANNEXE
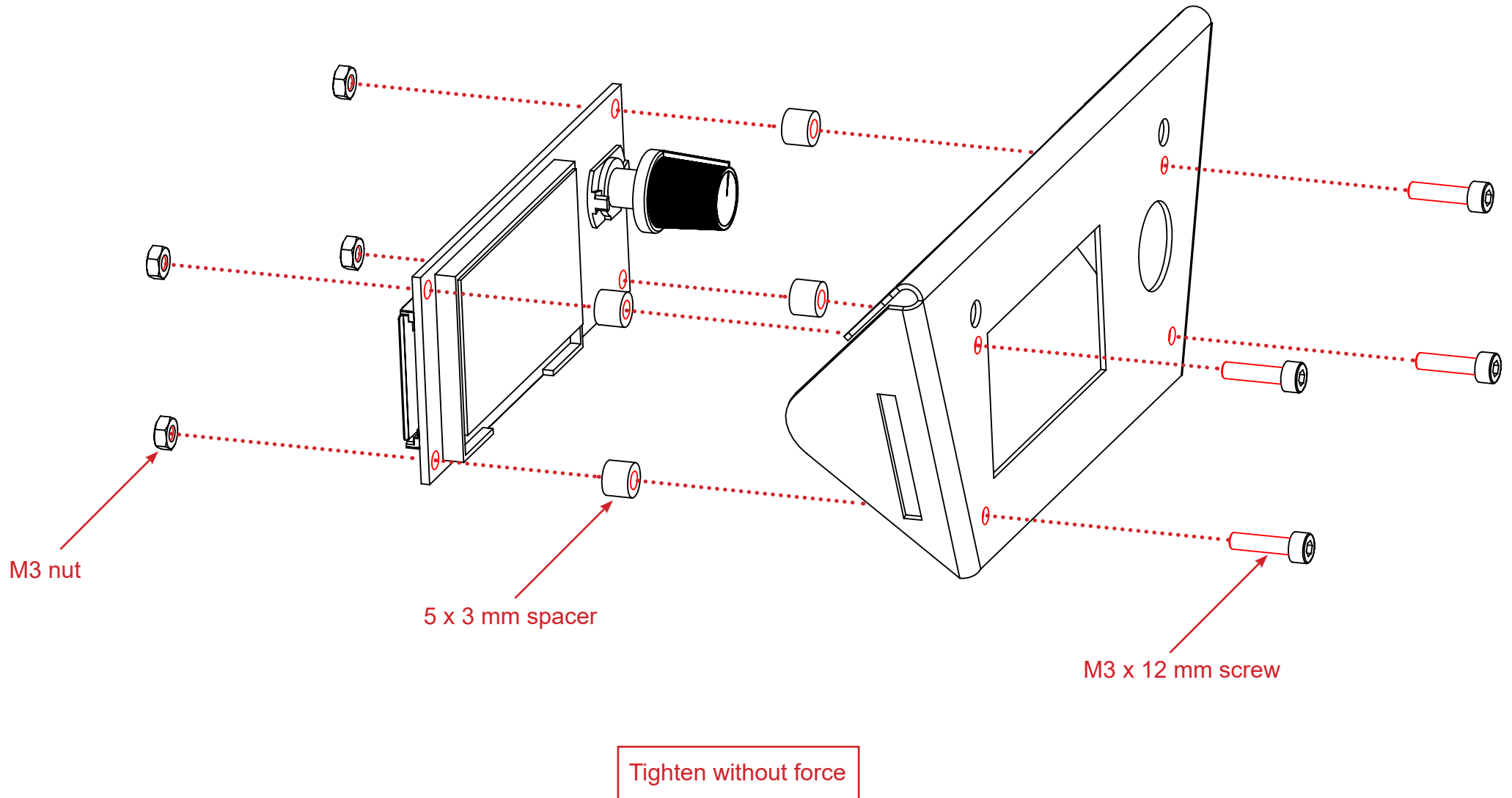
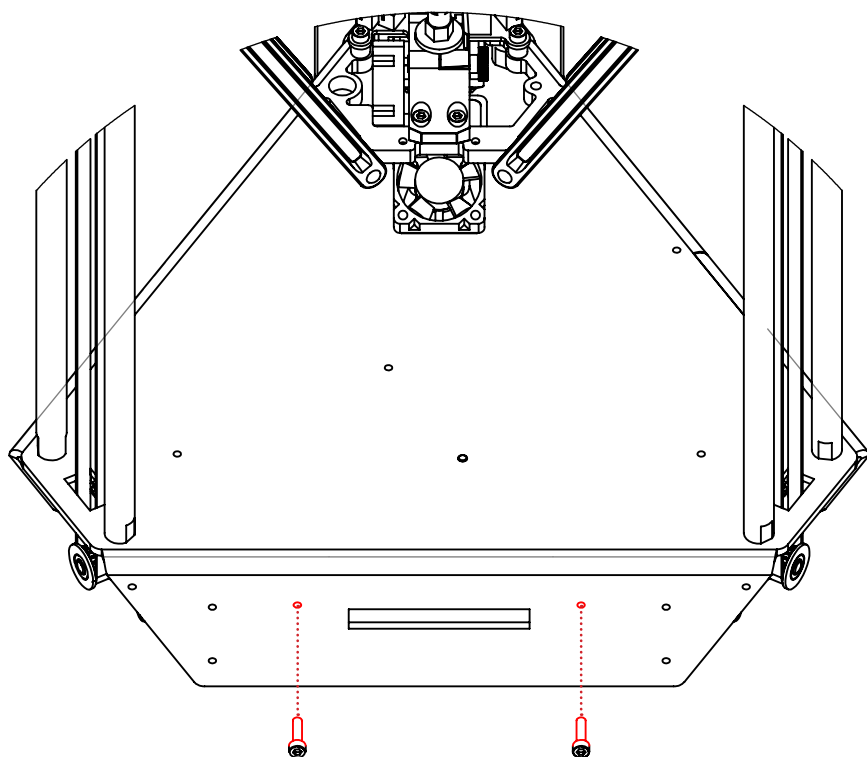**Target:** Plug ribbon cables on the screen

Revision 1.0

Revision 1.1

Cable 1

Cable 2

Cable 1

Cable 2
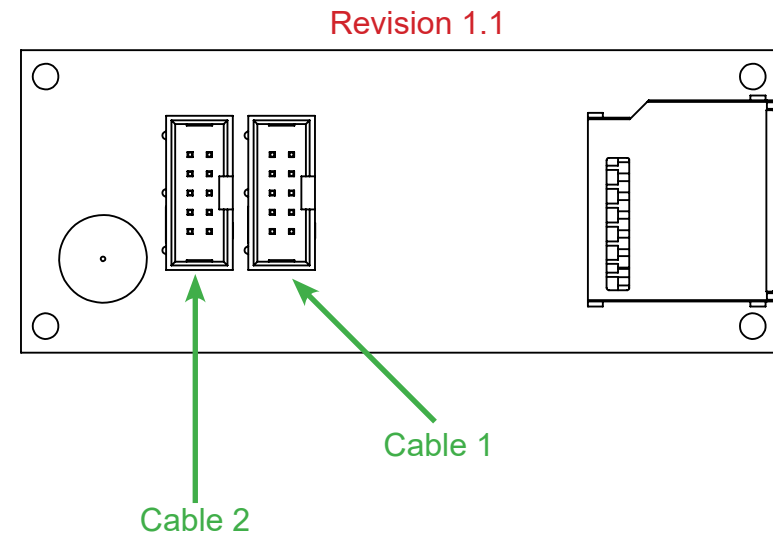
Note: The wiring on the eMotronic board side is shown on page 87.

Target : Fix the «cover + screen» assembly to the lower metal part
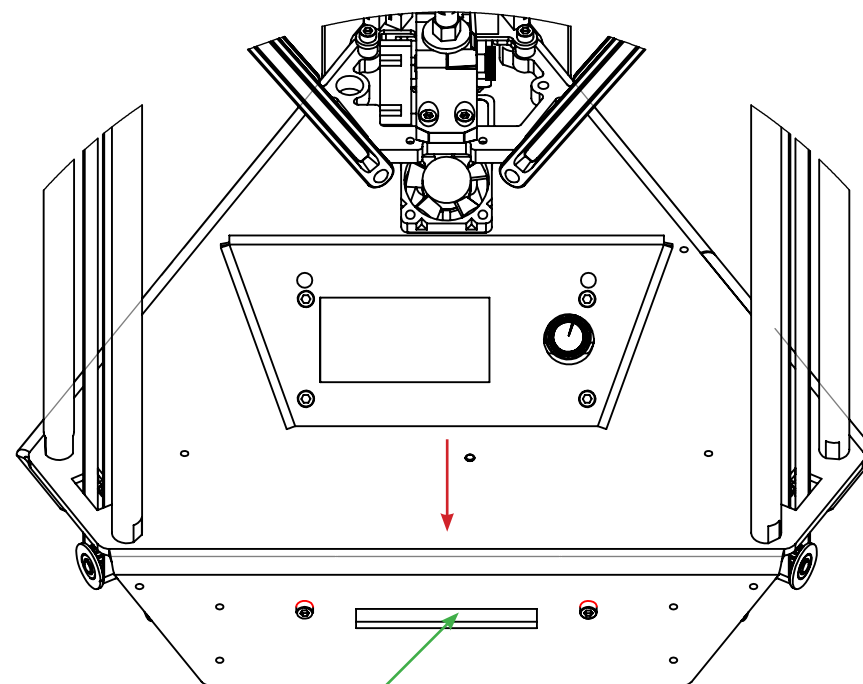
① Positioning the screws to support the screen cover
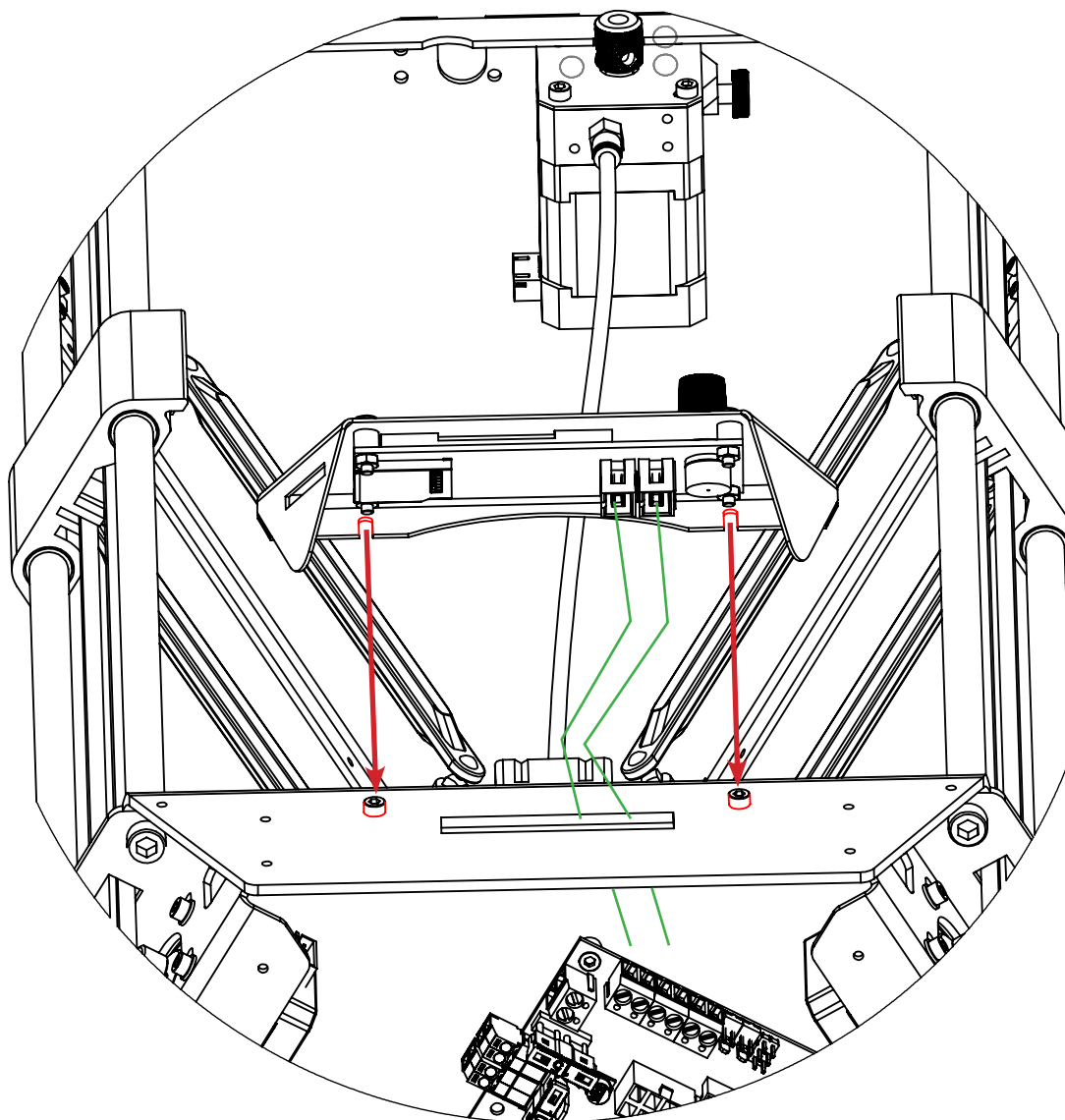
M3 x 12 mm screw

Do not screw into abutment
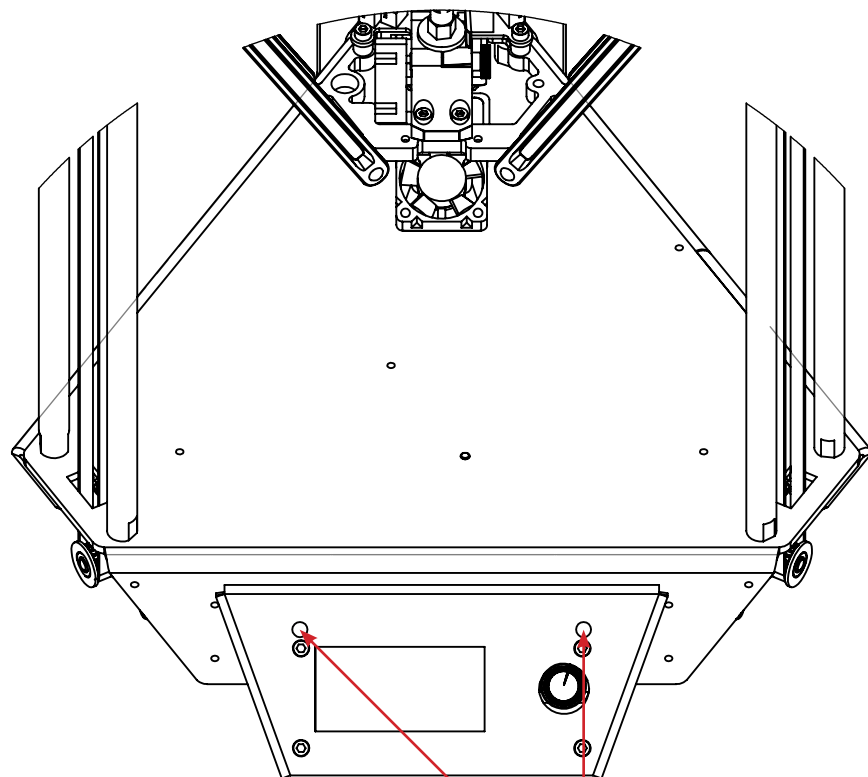
② Passage of the ribbon cables by the notch

Ribbon cables way

ANNEXE

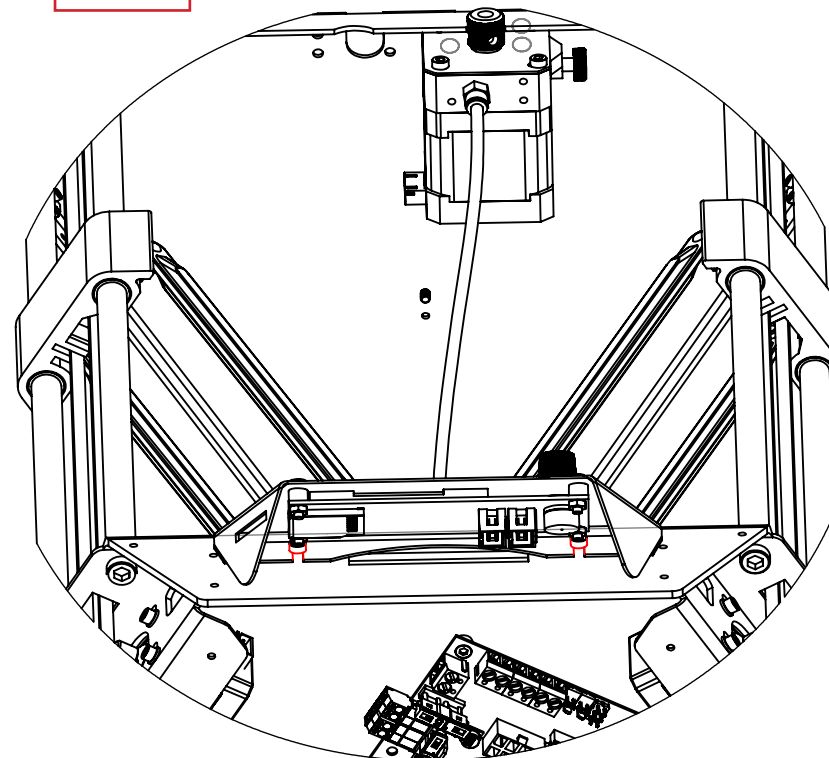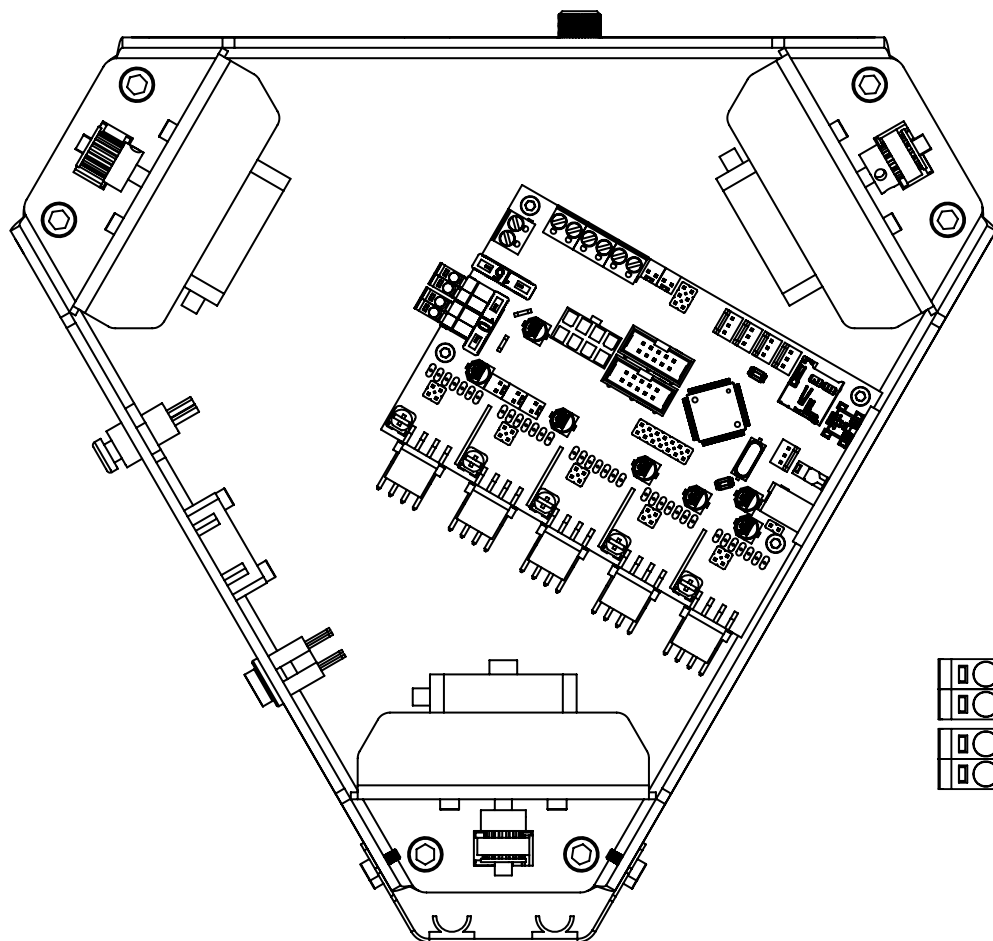③ Maintaining the screen cover with dedicated screws and notches

Result

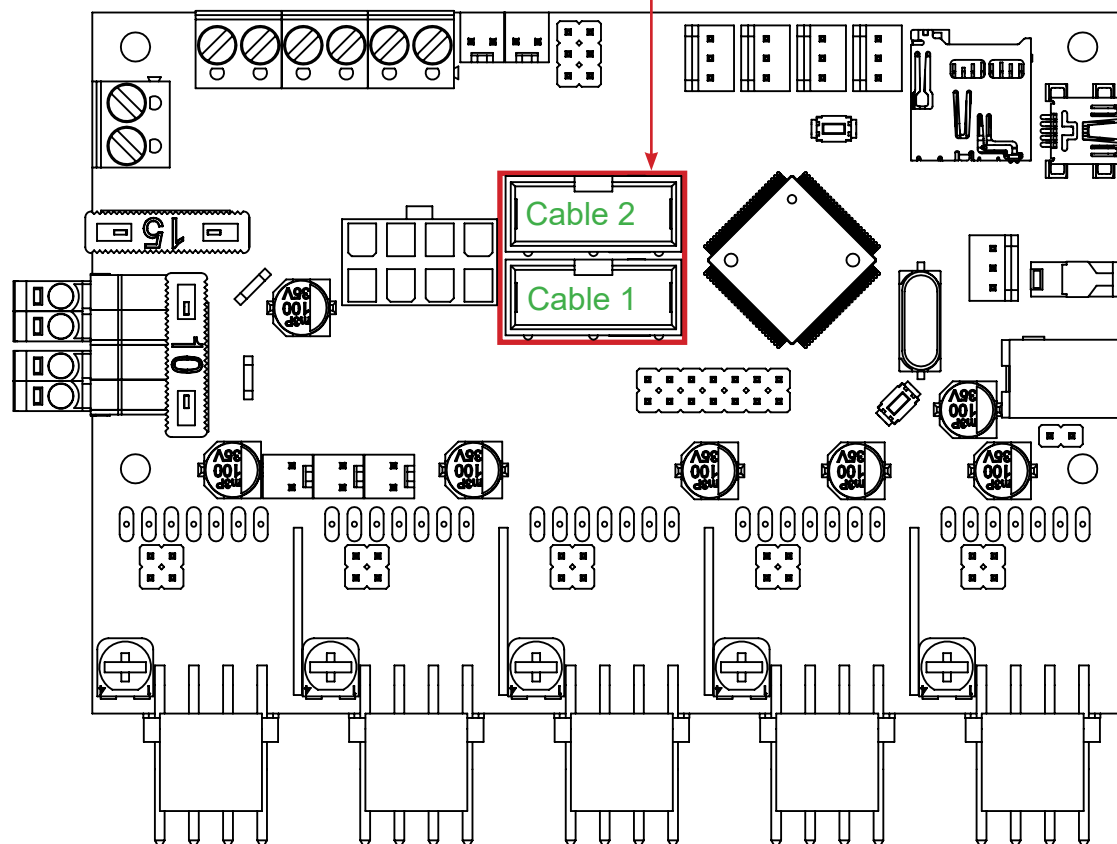Access screw
tightening screen
cover
(Allen wrench)

ANNEXE

Target : connect the LCD screen to the eMotronic board

Plug both ribbon cables on the emotronic board

Cable 2

Cable 1

Target : modifying the configuration file

Note: Without modification of the configuration files, your LCD screen will be preconfigured on a stable version (and therefore plug & play).
However, if you want to acquire the latest version of the firmware, you can follow the following tutorial.

1°) Go to the support section of www.emotion-tech.com. In the «MicroDelta Rework / Software / Software / Configuration» tree you will find all the available versions of the configuration file.

You will notice that two versions are available :
- Firmware EN HeatBed : for machines WITH heated option (with LCD screen or not)
- Firmware EN NoHeatBed : for machines WITHOUT heated option (with LCD screen or not)
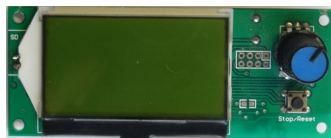
Download the version that corresponds to your printer (depending on your options)

2°) Unzip the downloaded file and copy its content into the TF card of the eMotronic board. Replace existing files if necessary.

3°) Press the Reset button.

Target : contrast adjustment

Only the revision 1.0 of the LCD screen requires a contrast adjustment.

To change the contrast :

rev 1.0

rev 1.1

1) from the Micro TF card, open the file «config.txt»
2) find the variable named «panel.contrast»
3) change its value from «38» to «19»
4) save the file
5) press the Reset button

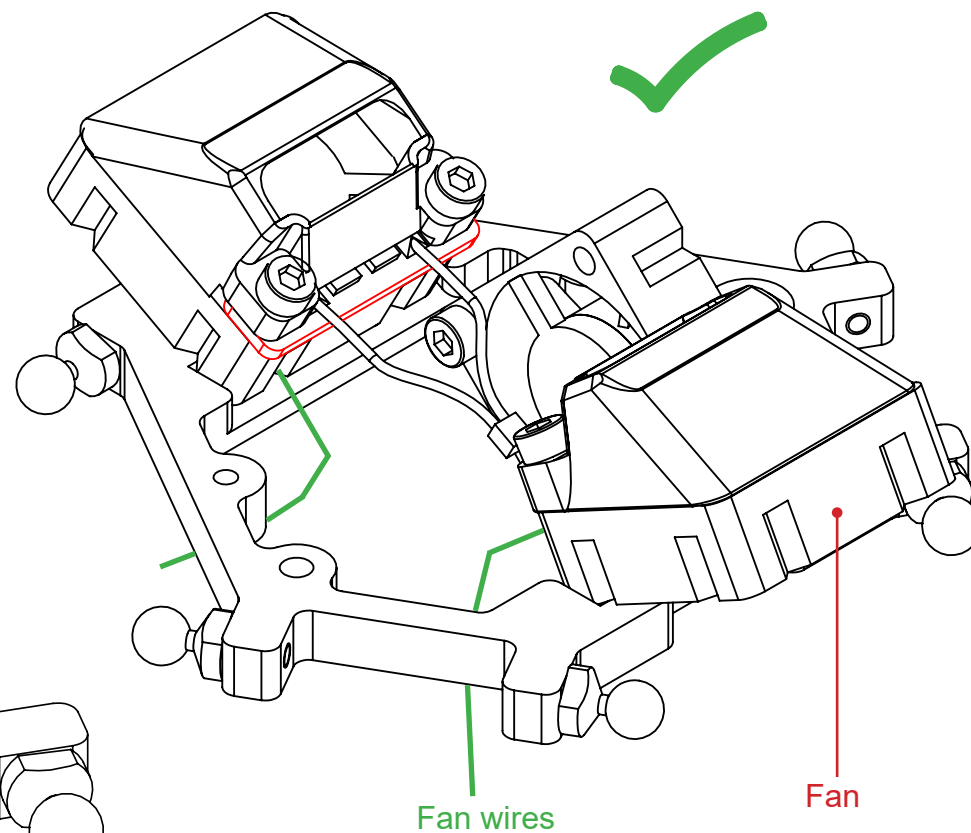**TF/SD card recommendations for the LCD :**

- avoid MLC & TLC type cards
- avoid Transcend & EssentialB Cards

- the cards of class 1 to 10 generally work very well
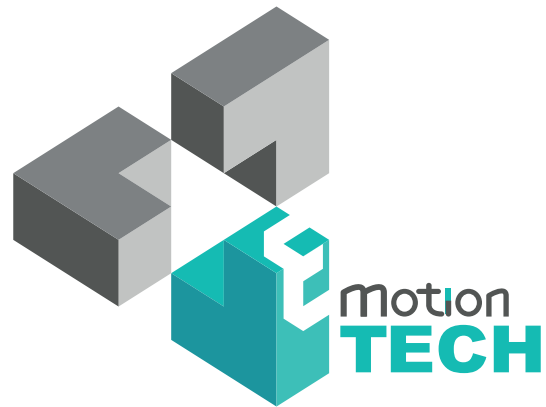- SDHC cards from 1 to 32 GB generally work very well

LED Lightning

Transluscent Fan Duct

M3 x 20 mm Screw

Fan

LED Board
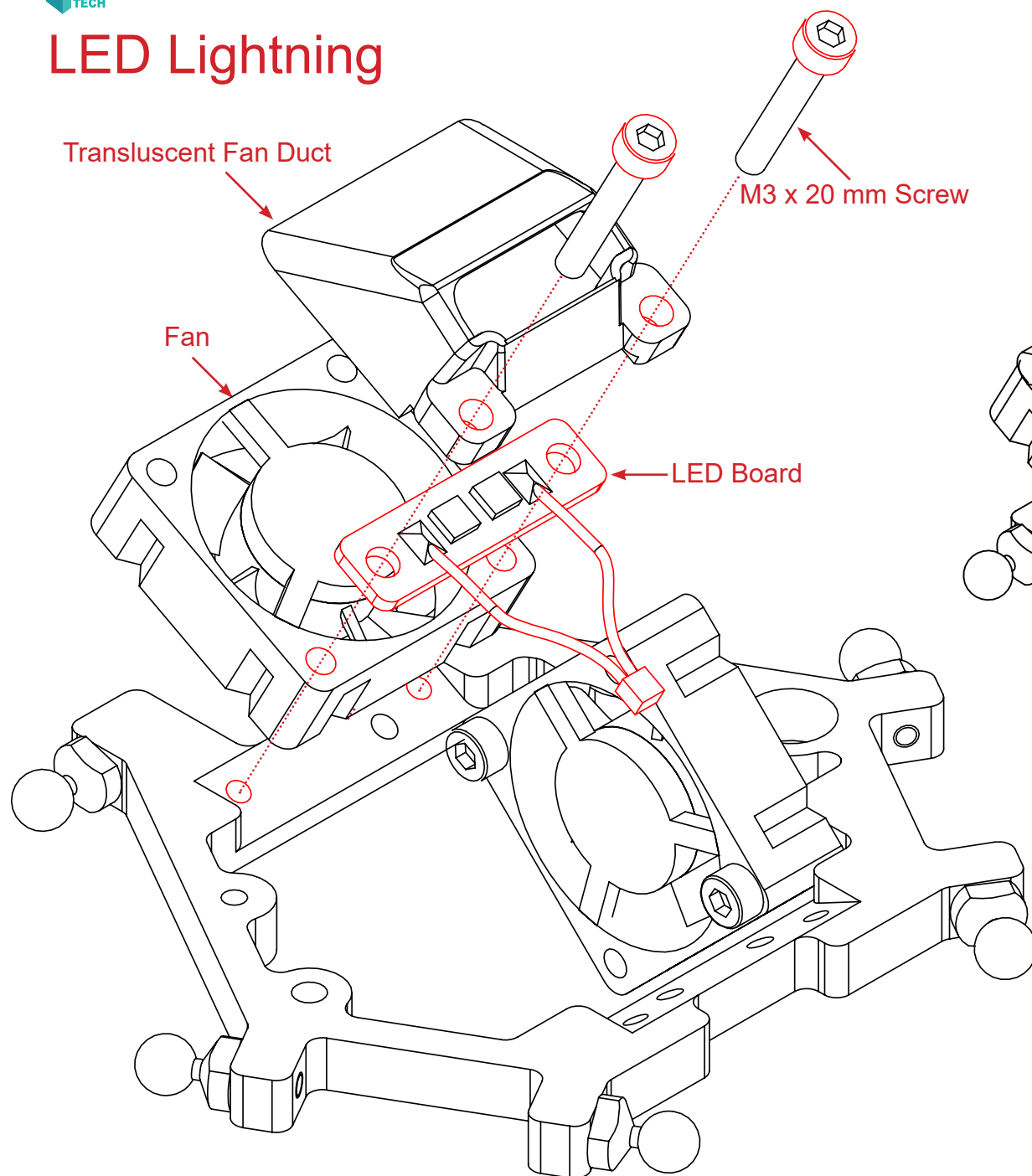
Be careful of the fan orientation !

Result

Fan

Fan wires

REMINDER: page 39 to continue assembly

Thank you for choosing MicroDelta Rework