

# 1. Introduction

Some tips for making the assembly easier.

Written By: Dozuki System



## Step 1 — All the required tools are included



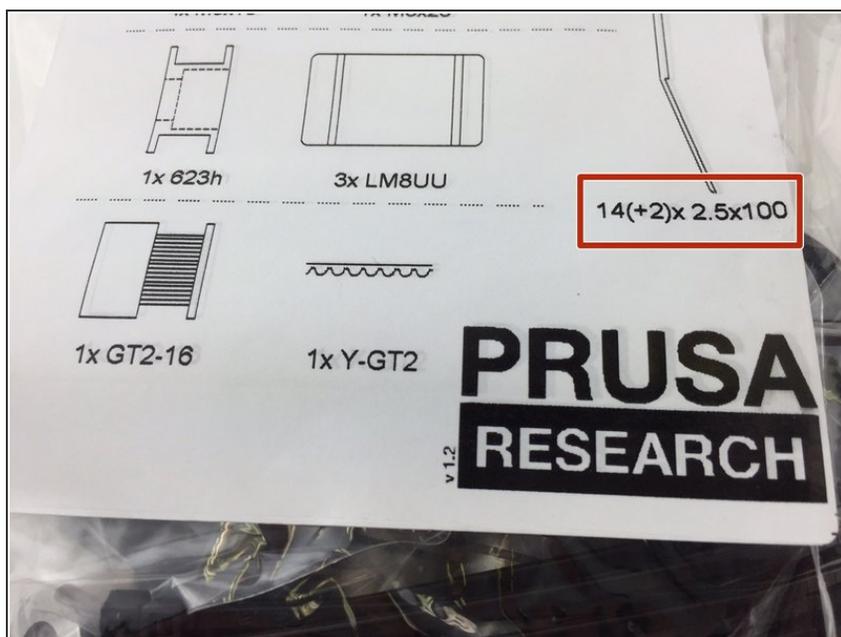
- ① No soldering is required.
- ① No wire crimping is required.

## Step 2 — Use labels for reference



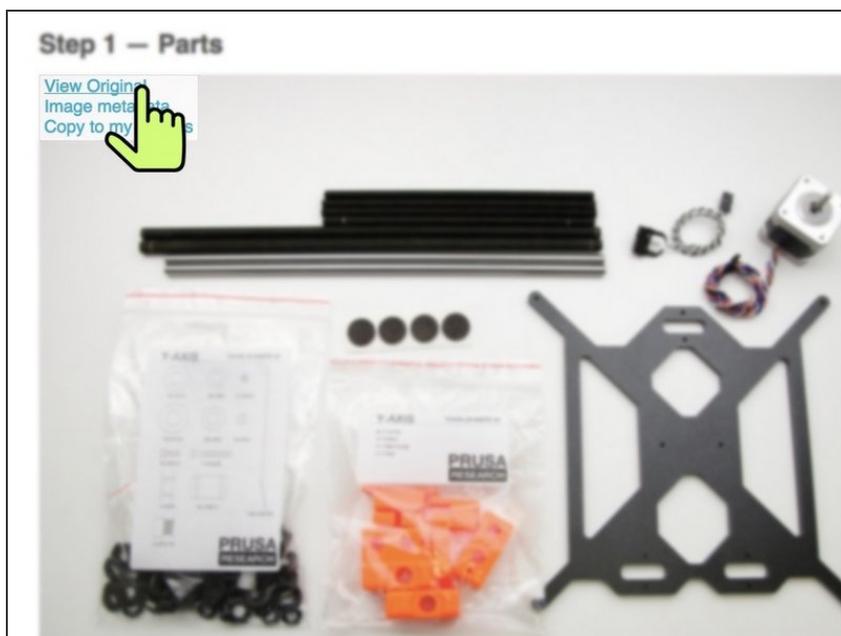
- ① Most of the labels are to scale 1:1 and can be used to identify the part :-)

### Step 3 — Critical parts are spare back-uped



- Critical parts, like zipties, have a spare for back-up.
- No need to worry if you mess up wiring or something

### Step 4 — View high resolution images

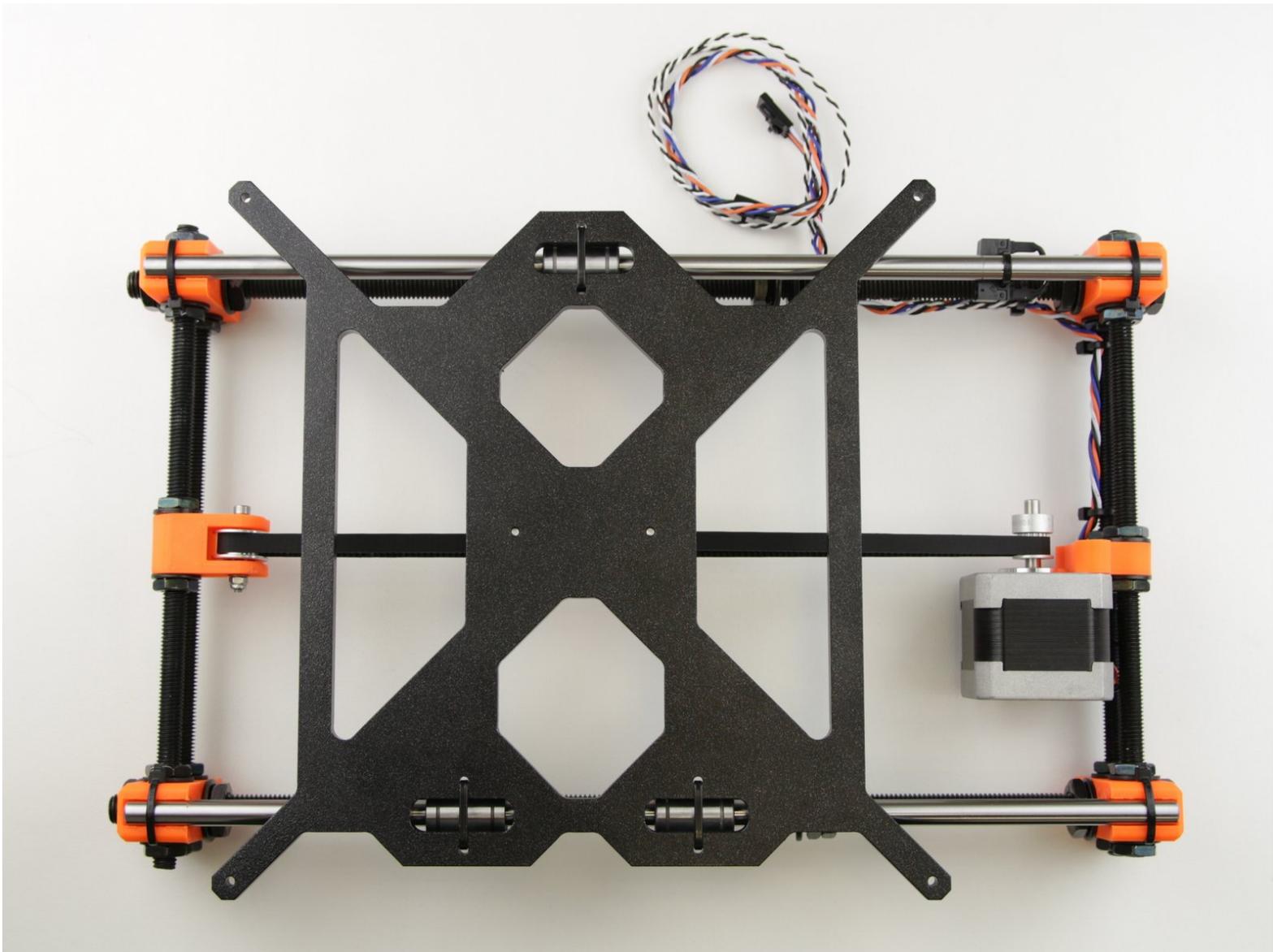


- ① When you browse the guide on <http://manual.prusa3d.com>, you can view the original images in high resolution for clarity.
- Just hover your cursor over the image and click the "View Original" button.
- You can start by assembling Y-axis in the next chapter - [2. Y axis](#)

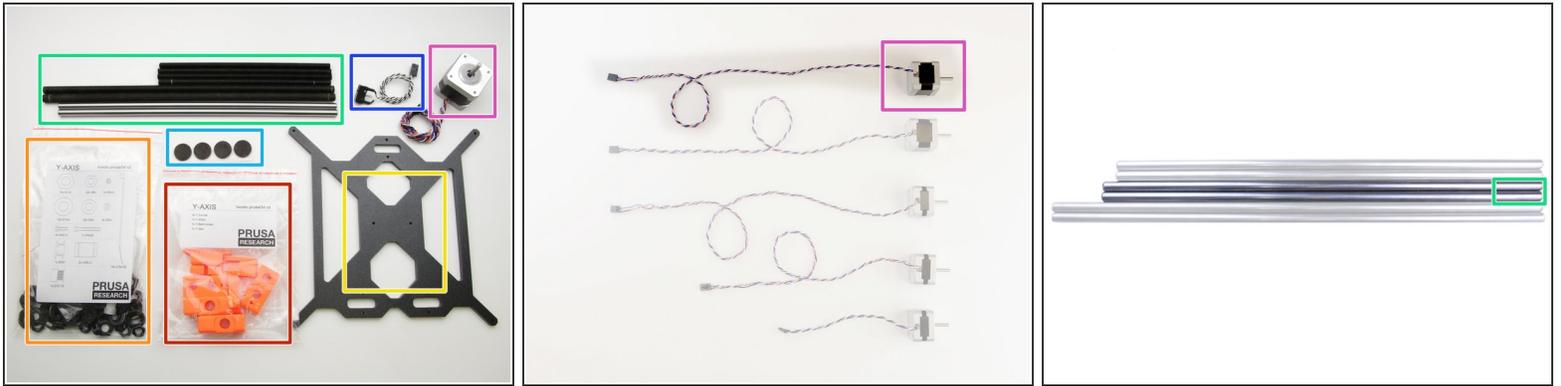
## 2. Y axis

Y-axis assembly

Written By: Dozuki System



## Step 1 — Get the necessary materials



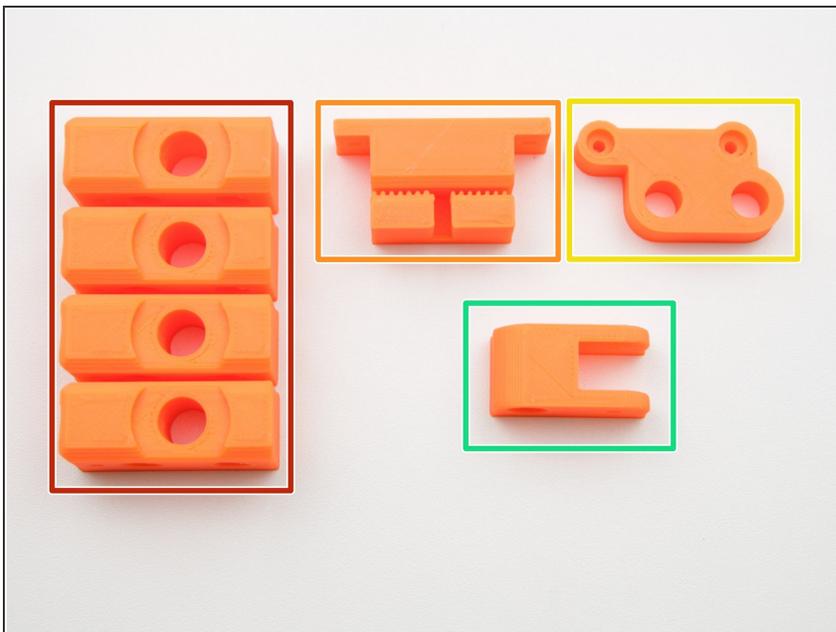
- 3D printed parts
- Necessary fasteners
- Milled aluminium Y-carriage
- Smooth and threaded rods (Smooth rods are the medium length ones from package [if you have only 2 lengths, use shorter ones])
- Felt spacers
- Y-axis endstop (use one of the endstops with longer cables).
- Y-axis motor (longer one)

## Step 2 — Get the necessary tools



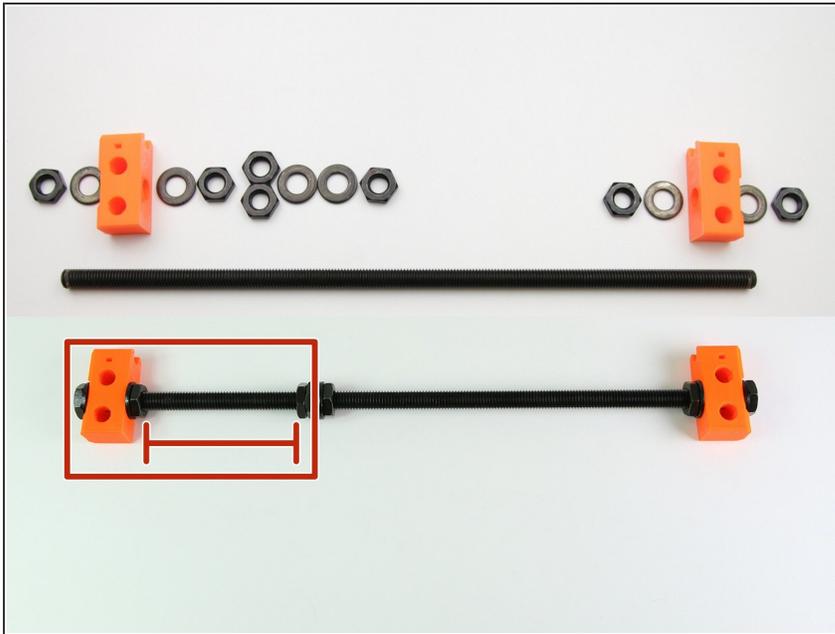
- 13/17mm spanners
- 3.6mm flathead screwdriver
- Needle-nose pliers
- 2.5 and 1.5mm hex spanner

## Step 3 — 3D printed parts



- Y-axis-corners
- Y-belt-holder
- Y-motor-holder
- Y-idler

## Step 4 — Assemble the Y-axis



- ★ Use M10n nuts, M10w washers and M10 threaded rods
- Screw the nuts and place washers and Y-corners on the threaded rod as shown in the picture
- Ensure a 80mm distance between nuts
- The 2 nuts after 80mm gap have to be tightened against each other (counter-nut)

## Step 5 — Assemble duplicate Y-axis rod



- Repeat Step 4 to get a second complete Y-axis rod.

## Step 6 — Assemble the Y-axis stage front



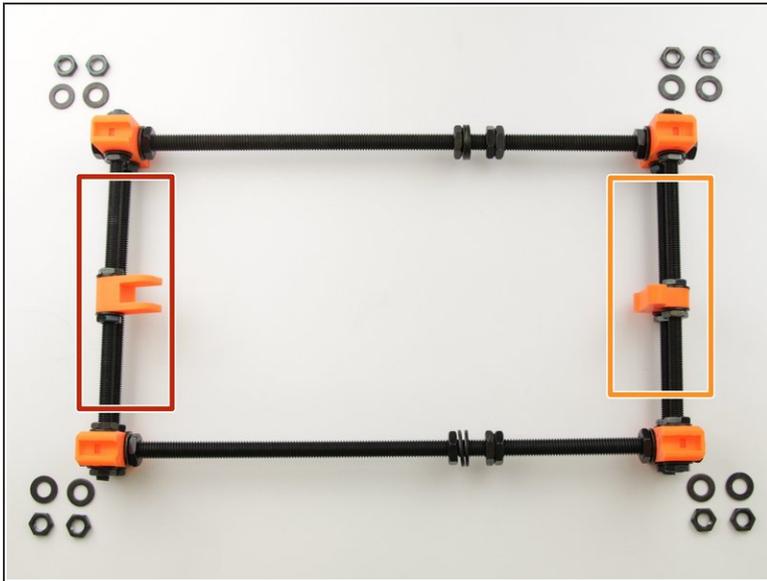
- ★ Use M8n nuts, M8w washers and M8 threaded rods
- Screw the nuts and place washers and Y-idler on threaded rod as shown in the picture
- ⓘ Y-idler should be somewhere in the middle of the threaded rod. The precise position doesn't matter at this time

## Step 7 — Assemble the Y-axis stage rear



- ✦ Use M8n nuts, M8w washers and M8 threaded rods
  - Screw the nuts and place washers and Y-motor-holder on threaded rod as shown in the picture
  - ⓘ Y-motor-mount should be somewhere in the middle of the threaded rod. The precise position doesn't matter at this time
  - ⚠ Ensure the correct orientation of Y-motor-holder

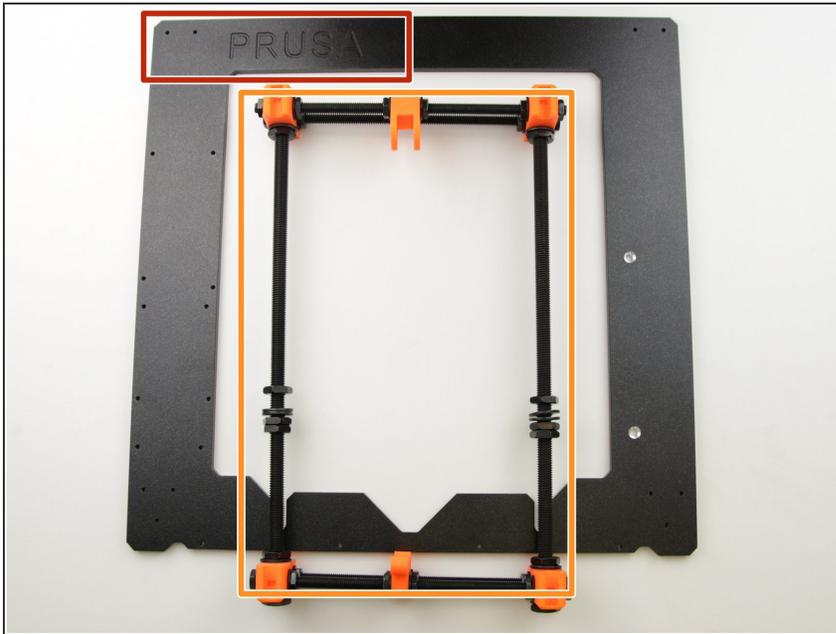
## Step 8 — Fully assemble the Y-axis stage



 Use M8n nuts and M8w washers

- Y-axis stage front
  - Insert Y-axis stage front and back in to Y-axis side elements and lock it with washers and nuts like in the picture
-  Ensure the correct placement. Y-axis rear stage has to be closer to double-nut!
-  It is incredibly important that the axis is perfectly rectangular at this stage of construction, all rods need to be perfectly straight and level. If not, you'll have trouble calibrating later on!

## Step 9 — Preparing for Y-axis stage



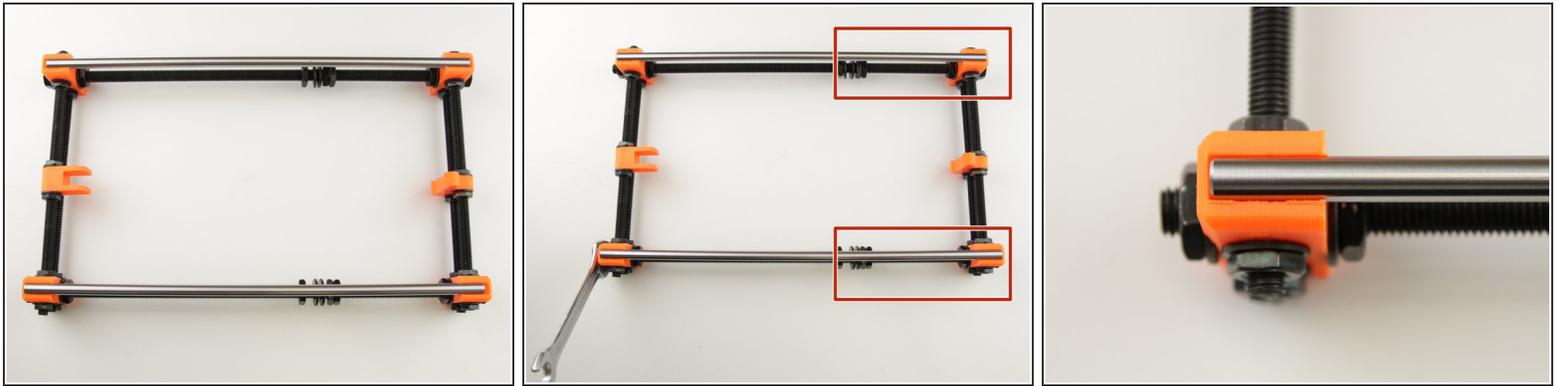
- Prusa i3 frame
- Y-axis stage

## Step 10 — Tighten the sides to the y-axis stage



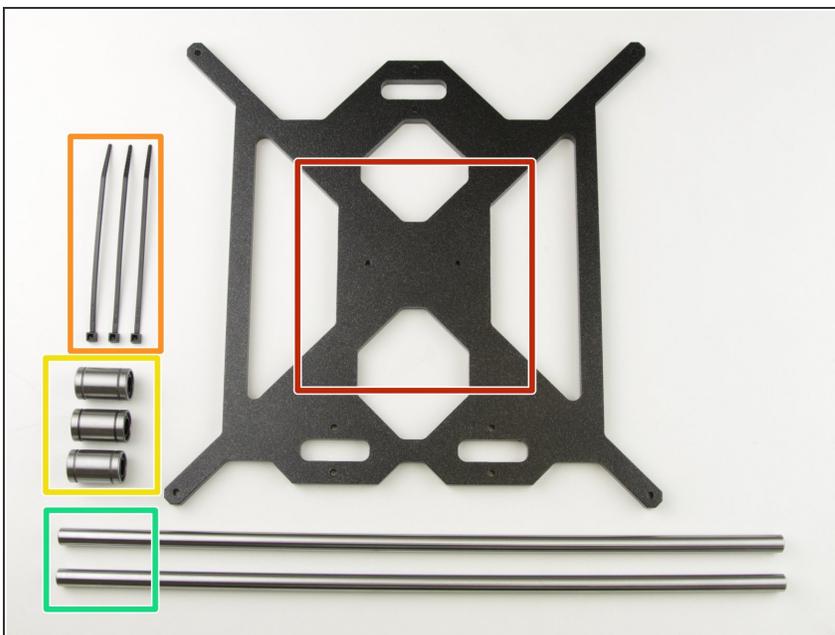
- Insert the Y-axis stage into the frame as close to Y-corners as possible
- Adjust and tighten the M8n nuts
- Rotate the Y-axis stage and repeat
- ⓘ After adjusting, the Y-axis stage should cause minimum movement while inserted into the frame
- ⚠ Tighten the M8n nuts gently or you'll risk damaging the 3D printed parts

## Step 11 — Adjust the length of the Y-axis stage



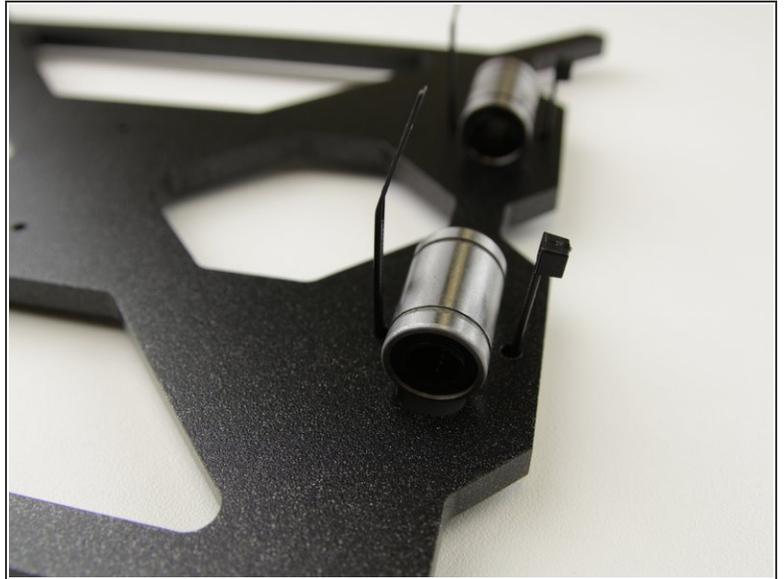
- Insert the 8mm smooth rod into the Y-axis stage.
- Adjust and tighten the M10n nuts
- ⓘ After tightening the nuts, there shouldn't be any gap between 8mm rods and Y-axis corners
- ⚠ Retain the 80mm gap between counter-nut and nut
- Remove the 8mm rods

## Step 12 — Prepare the Y-carriage



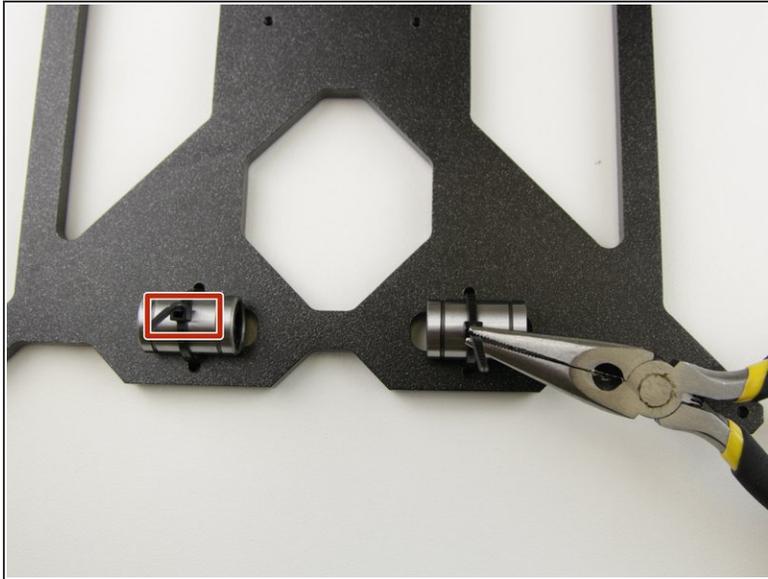
- Y-carriage
- 2.5x100mm ziptie
- LM8-UU linear bearing
- 8mm smooth rod

## Step 13 — Assemble the Y-carriage



- Insert zipties into the Y-carriage as shown on picture
- Place the linear bearings in cutouts

## Step 14 — Tighten Y-carriage zipties



- Use pliers to tighten the zipties

⚠ Ensure the correct position of ziptie connections as shown in the pictures, Otherwise your Y-axis will not move properly

## Step 15 — Cut the Y-carriage zipties



- Cut the excess ziptie with pliers

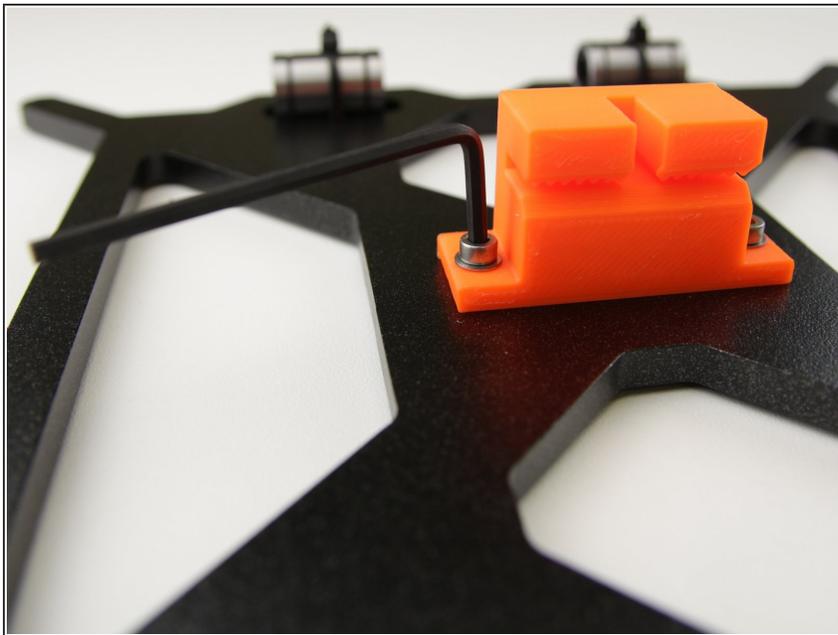
## Step 16 — Assemble the Y-belt holder



- Place Y-belt holder on the Y-carriage as shown on picture

 Be aware of the orientation of Y-belt holder (belt entry should face towards single bearing)

## Step 17 — Tighten the Y-belt holder



- Using M3x10 screws, M3w washers and 2.5mm hex spanner screw the Y-belt holder to Y-carriage

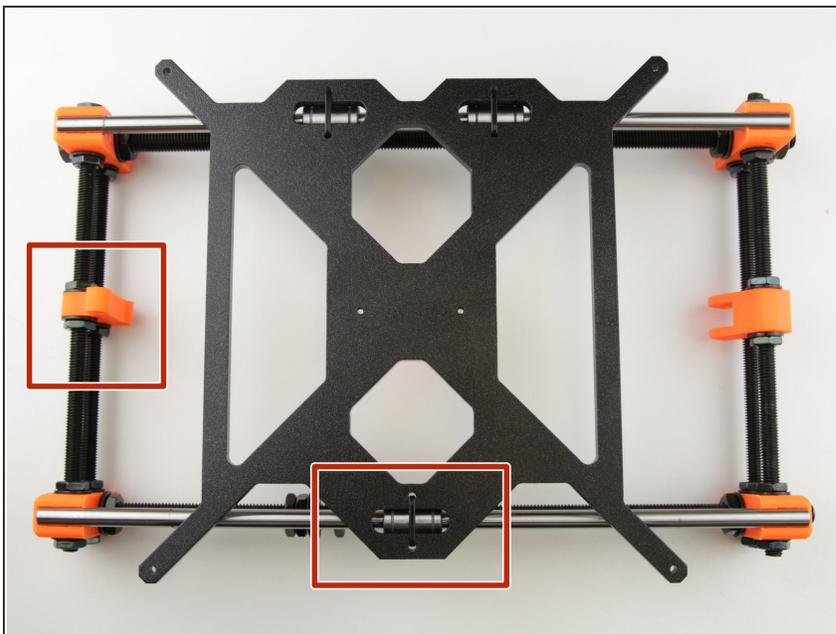
 Tighten the screws gently to prevent damage to the 3D printed part

## Step 18 — Assemble the Y-carriage rods



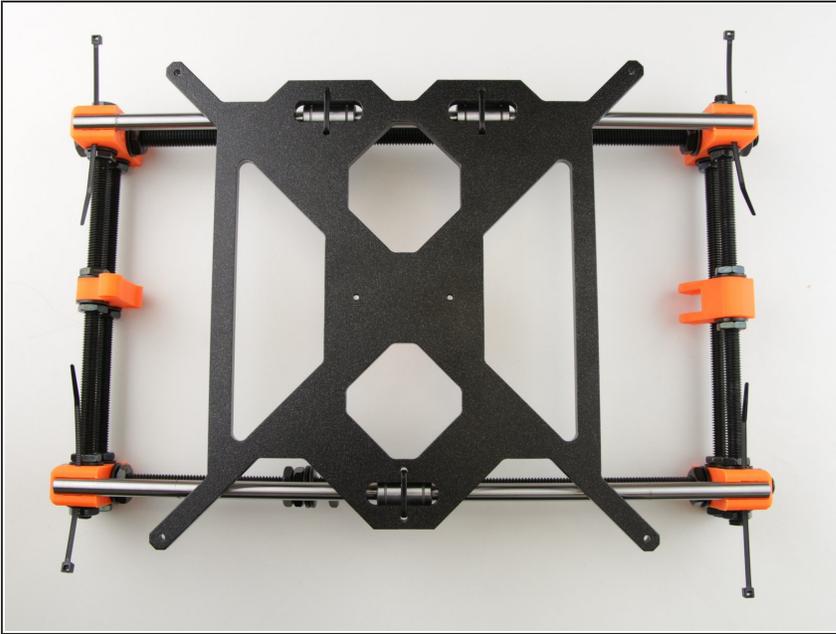
- Insert the 8mm smooth rods into the linear bearings on Y-carriage
- ⚠ Be very careful! Insert the rod straight into the bearings, do not apply too much force and do not tilt the rod!

## Step 19 — Assemble the Y-axis stage



- Insert the assembled Y-carriage into the Y-axis stage
- ⚠ Ensure the correct orientation of parts (Y-motor mount on the left and the single bearing on the bottom)

## Step 20 — Ziptieing the Y-axis stage



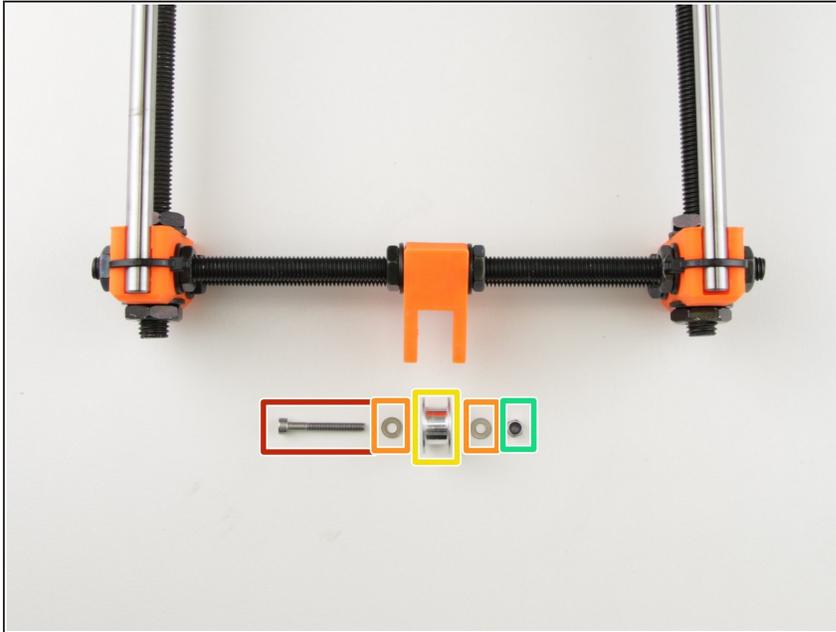
- Insert zipties into holes in Y-corners
- ⚠ Ensure the correct orientation of zipties (head of the ziptie should facing out from the Y-axis stage)

## Step 21 — Tighten the zipties on the Y-axis stage



- Using pliers, tighten the zipties as shown on picture
- ⚠ Ensure the correct orientation of zipties connection

## Step 22 — Assembly of the Y-idler



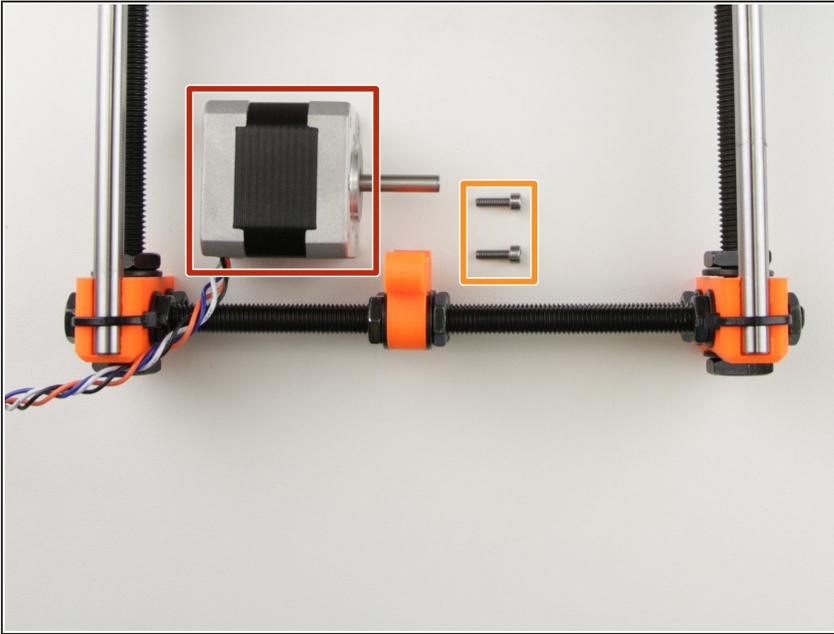
- M3x25 screw
- M3w washer
- 623h bearing housing
- M3nN nylock nut

## Step 23 — Tighten the Y-idler



- To tighten the Y-idler, use the pliers and 2.5mm hex spanner
- ⚠ Tighten the screw gently, just half turn max after the washers touch the 3D printed part.

## Step 24 — Place the motor into the Y-axis



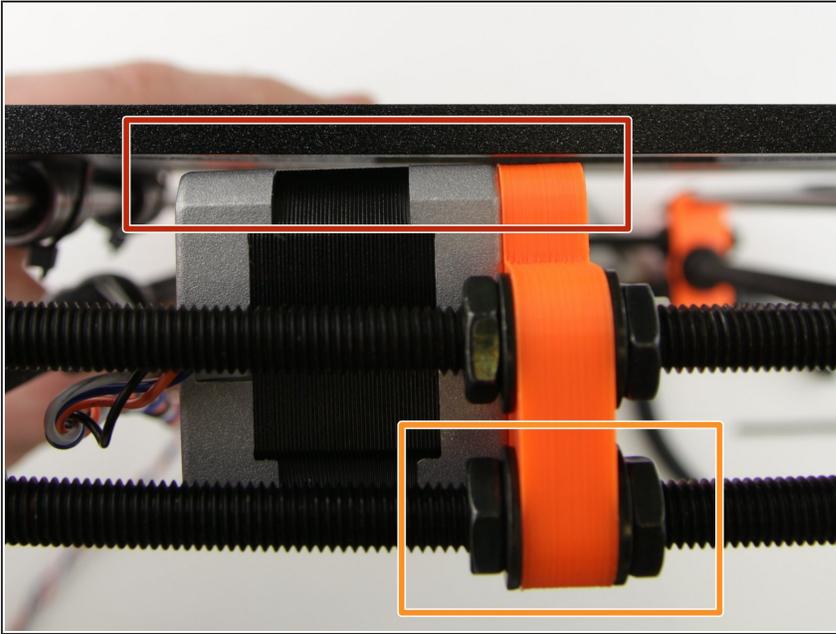
- Y-axis motor
- M3x10 screw
- ⚠ Ensure the correct orientation of motor (cables should face between M8 threaded rods)

## Step 25 — Secure the Y-axis motor



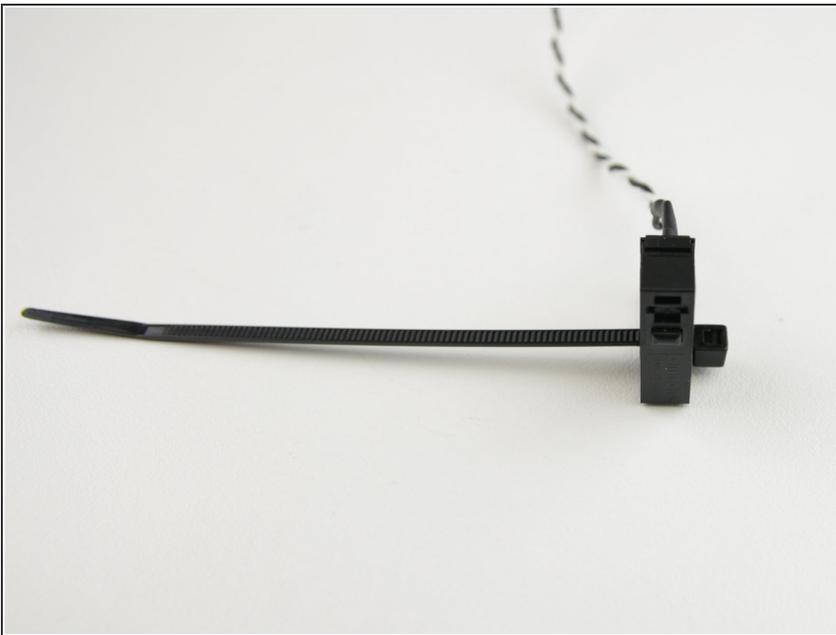
- Using the 2.5mm hex spanner, secure the motor to 3D printed part
- ⚠ Tighten the motor gently to avoid damage to 3D printed part

## Step 26 — Adjusting the motor



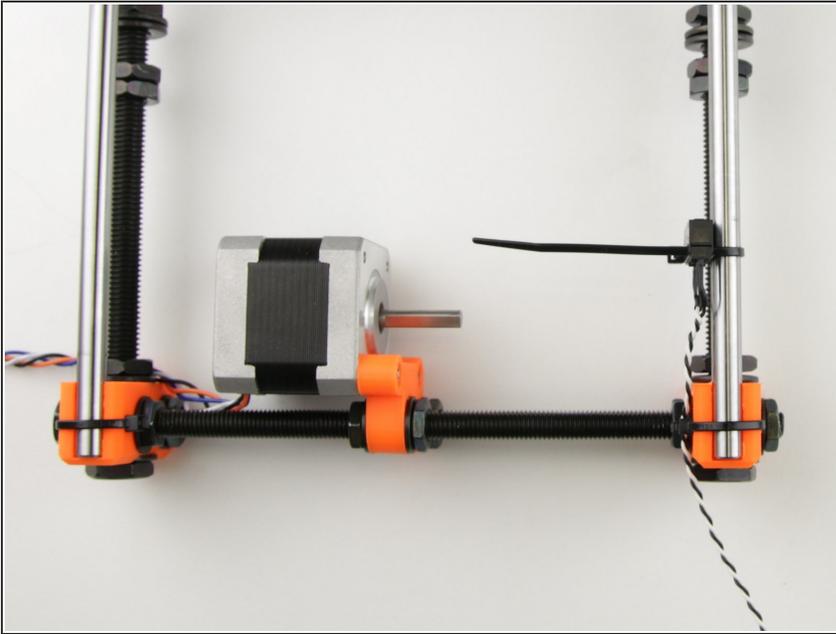
- Make sure that there is a small gap between motor and Y-carriage
- If the gap is not even, adjust the bottom nuts

## Step 27 — Prepare the Y-endstop



- Insert the ziptie in the Y-endstop as shown in picture
- Use one of the two endstops having the long cables

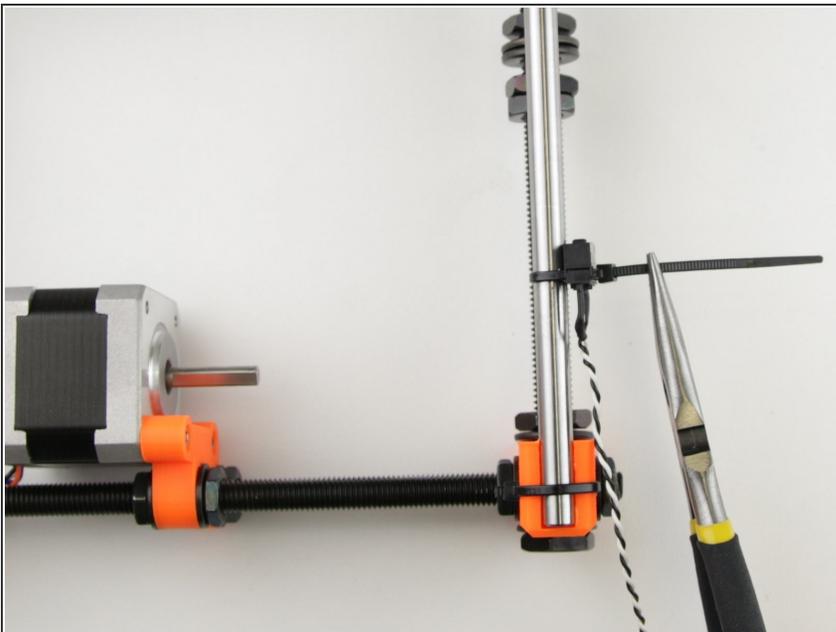
## Step 28 — Assembly of Y-endstop



- Place the Y-endstop on the Y-axis stage as shown on picture

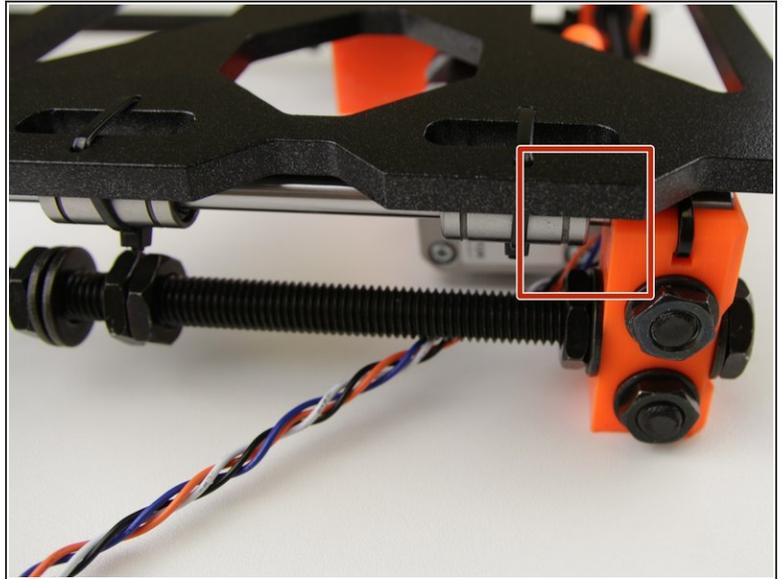
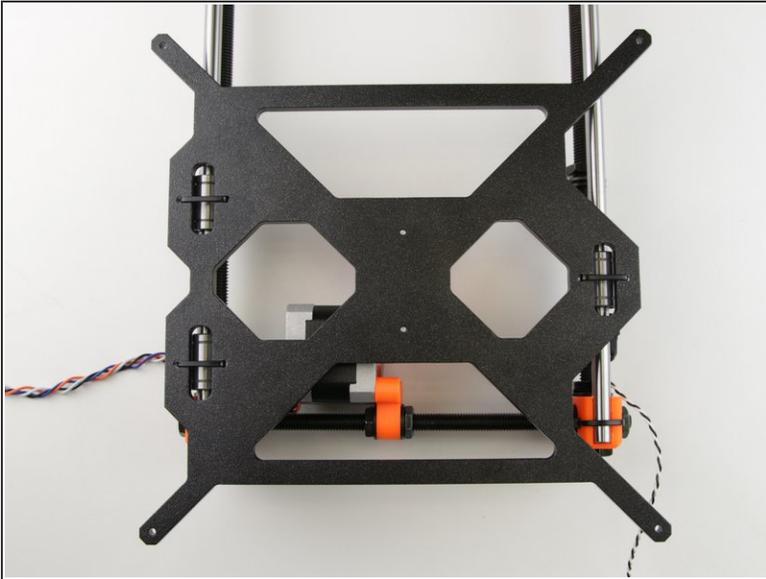
 Ensure the correct placement.  
(Shaft of Y-motor should face directly on the Y-endstop)

## Step 29 — Tighten the Y-endstop



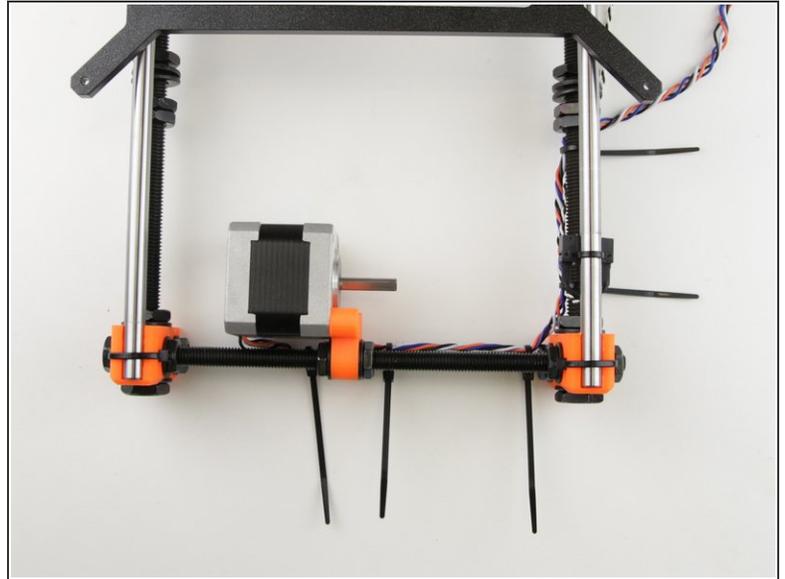
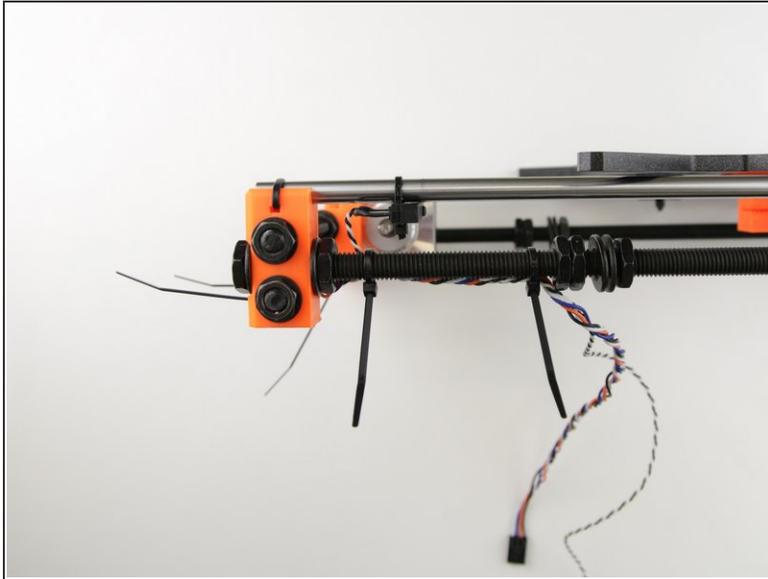
- Using pliers tighten the ziptie on the endstop as much as you can
- Cut off excess ziptie and discard

## Step 30 — Adjust the Y-endstop



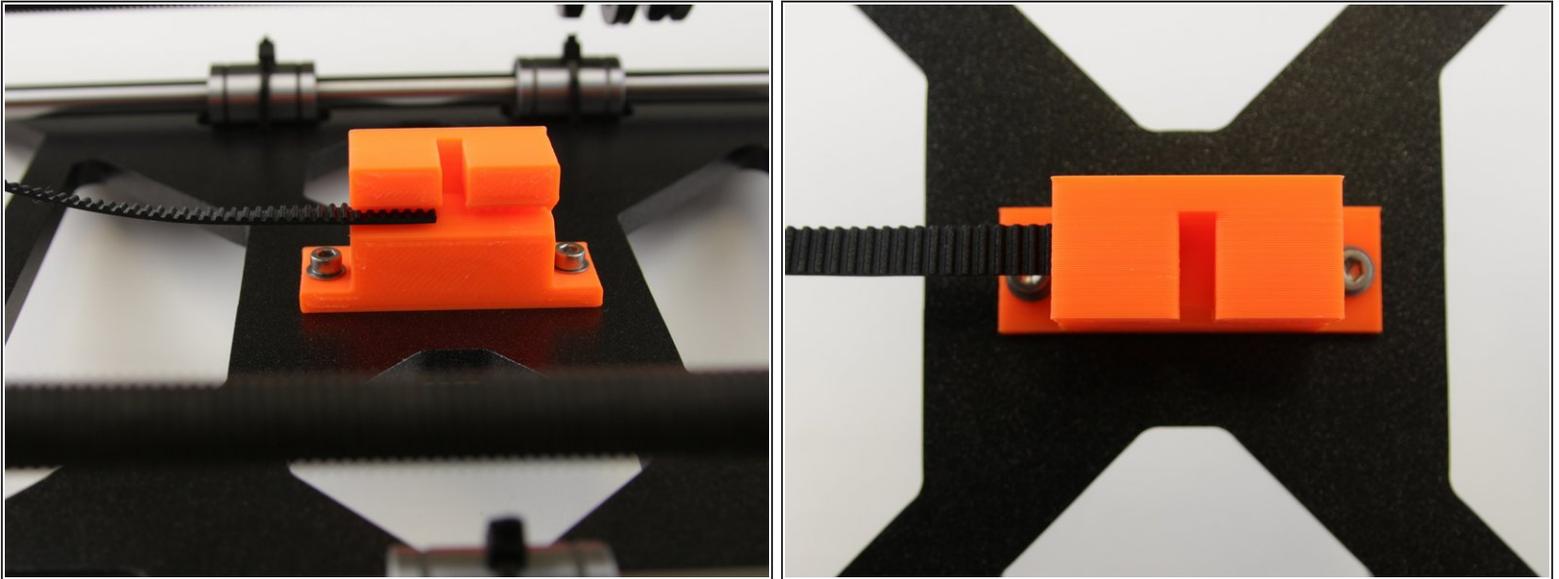
- Roll the Y-carriage until it hits the endstop
- Check the gap on the dual bearing side of Y-carriage between bearing and Y-corner (should be around 2-5mm)
- If the gap is too large or bearing is hitting the Y-corner, move the endstop to compensate

## Step 31 — Y-axis stage cable management



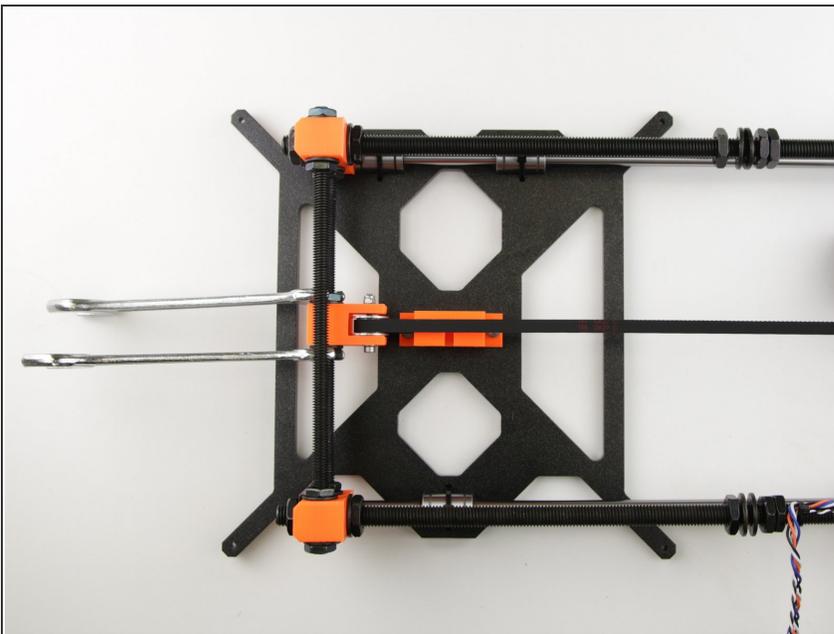
- Ziptie the cables to the threaded rods as shown in picture
  - Cut and discard excess ziptie
- ⚠ Tighten the zipties carefully to avoid damaging the wires
- ⚠ Be careful while cutting the zipties to avoid cutting the wires

## Step 32 — Assemble the belt on Y-axis



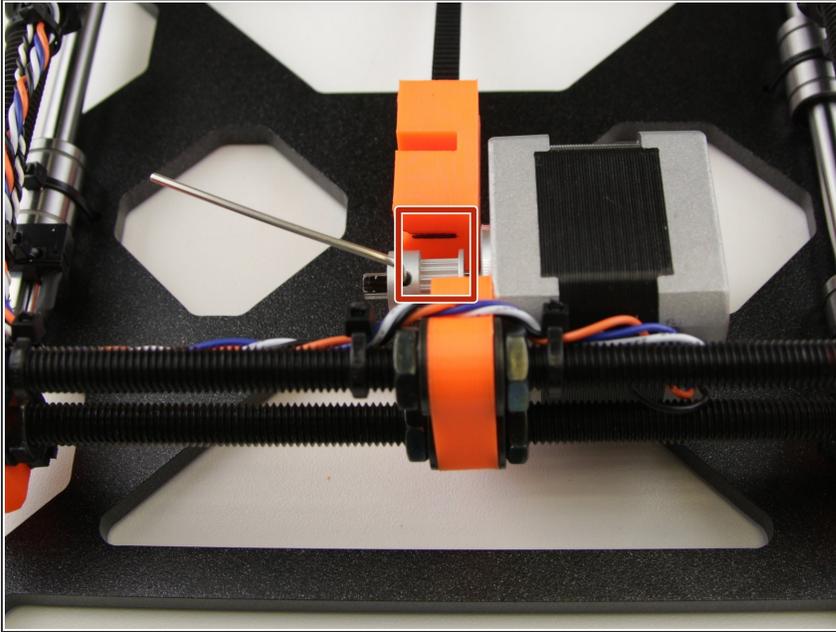
- Insert the Y-GT2 belt (shorter one) in the the Y-belt holder as shown in picture

## Step 33 — Adjust the Y-idler



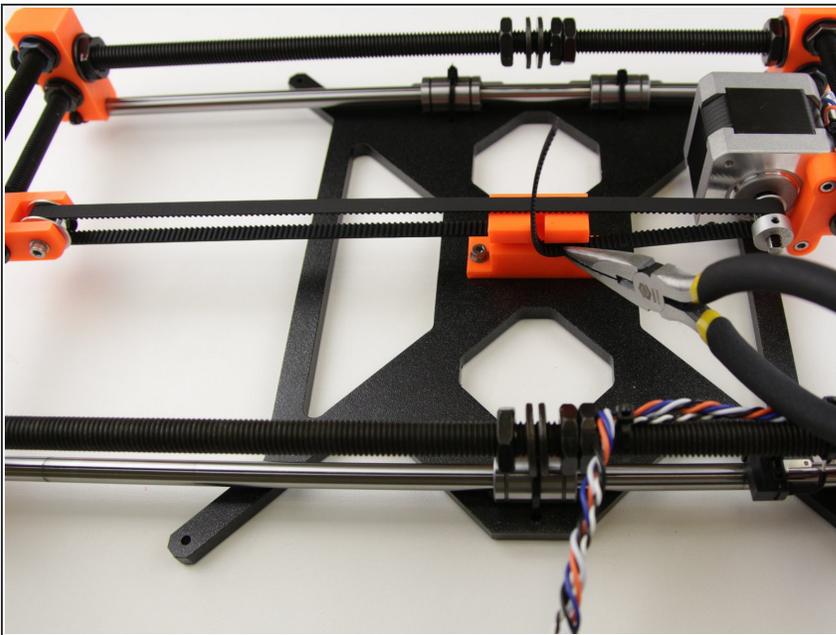
- Adjust the Y-idler as shown in picture (623h bearing housing should be in axis with the belt)
- ⚠ Tighten the M8n nuts gently to avoid damaging the 3D printed part

## Step 34 — Assemble the Y-motor pulley



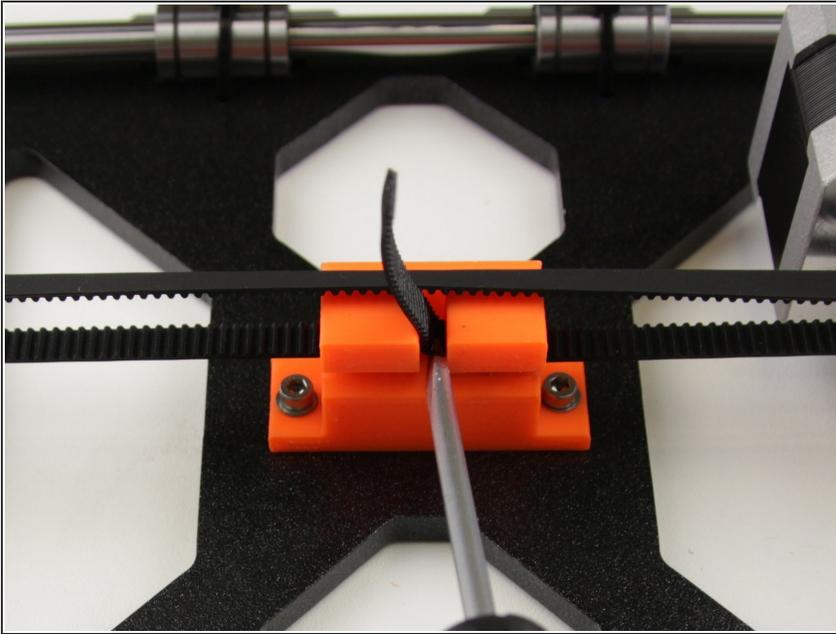
- Place a GT2-16 pulley on the Y-motor shaft as shown in picture
- ⚠ The belt part of the pulley has to be in axis with the belt itself
- Tighten the screws in the pulley
- ⚠ One of the screws has to be tightened directly against the pad on the shaft

## Step 35 — Tighten the Y-axis belt



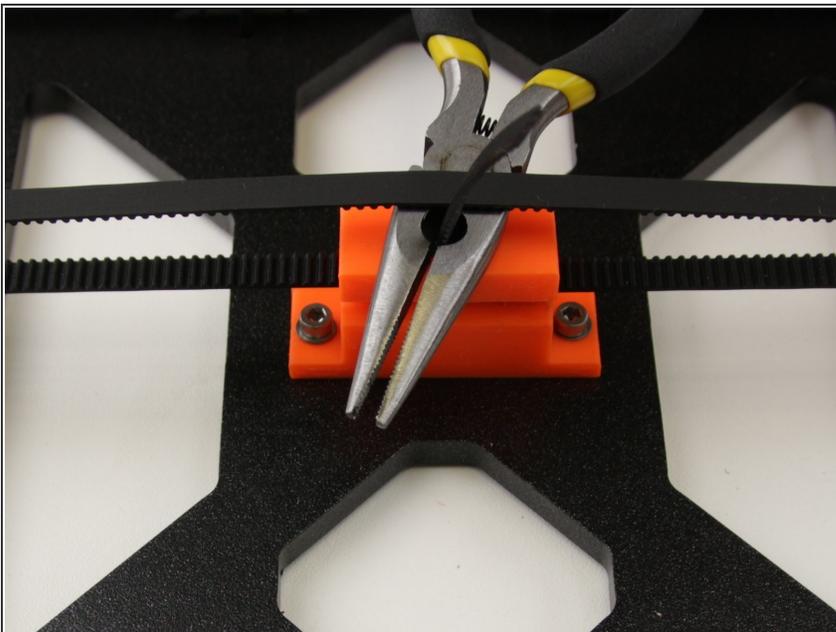
- Using the pliers, tighten the belt and insert it into the Y-belt holder
- ⓘ The belt should be quite tight, it should 'ping' like a music string

### Step 36 — Secure the Y-axis belt



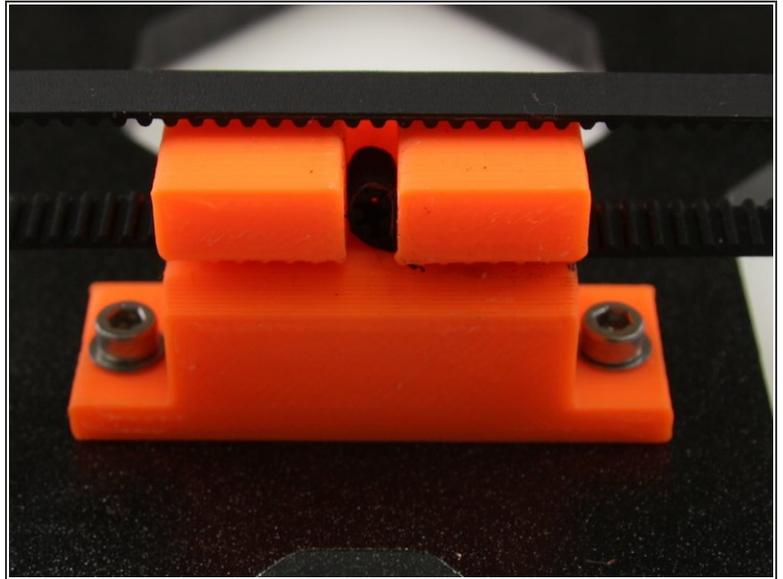
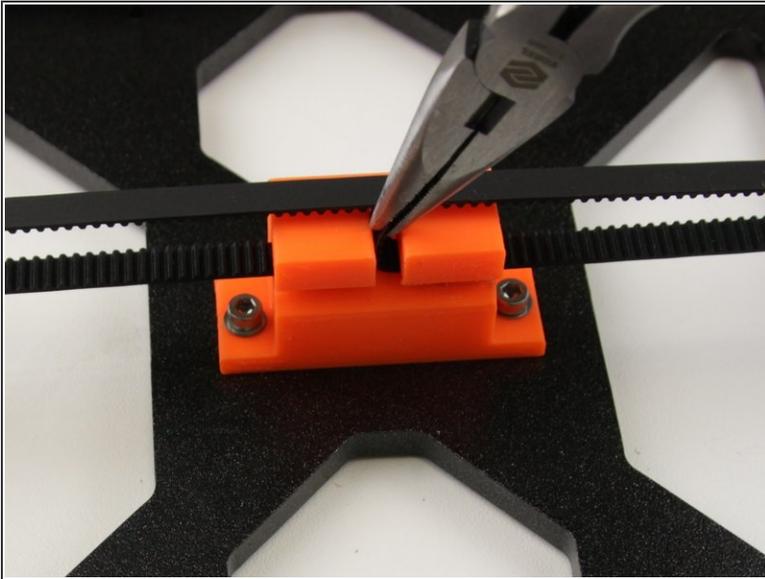
- Using a flathead screwdriver, move the belt to the end of the Y-belt holder cutout

### Step 37 — Cut the Y-axis belt



- ⚠ If remaining part of belt is longer than 10cm, you've got wrong belt, don't cut it and get the correct one!
- If necessary, use pliers to cut the remaining part of the belt

### Step 38 — Clean up the Y-axis belt



- If necessary, grab the end of the belt with pliers, twist it and insert it in the Y-belt holder cutout as shown in the picture

### Step 39 — Levelling the Y-axis



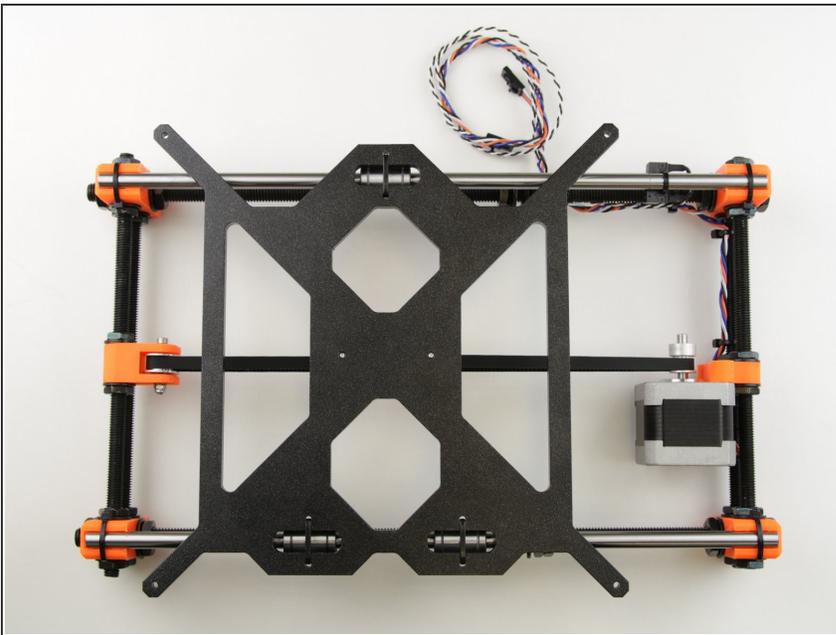
- Place assembled Y-axis on a flat surface
- Check if every corner is touching the ground
- If some corner is in the air, try twist the axis slightly
- ⓘ You can also check it by tapping each corner and listen if it's making any noise
- ⚠ This is your last chance to ensure the Y-Axis is perfectly angled and level. It'll save you a lot of hassle later!

## Step 40 — Secure the axis feet



- Stick the felt pad on each Y-corner

## Step 41 — All done!

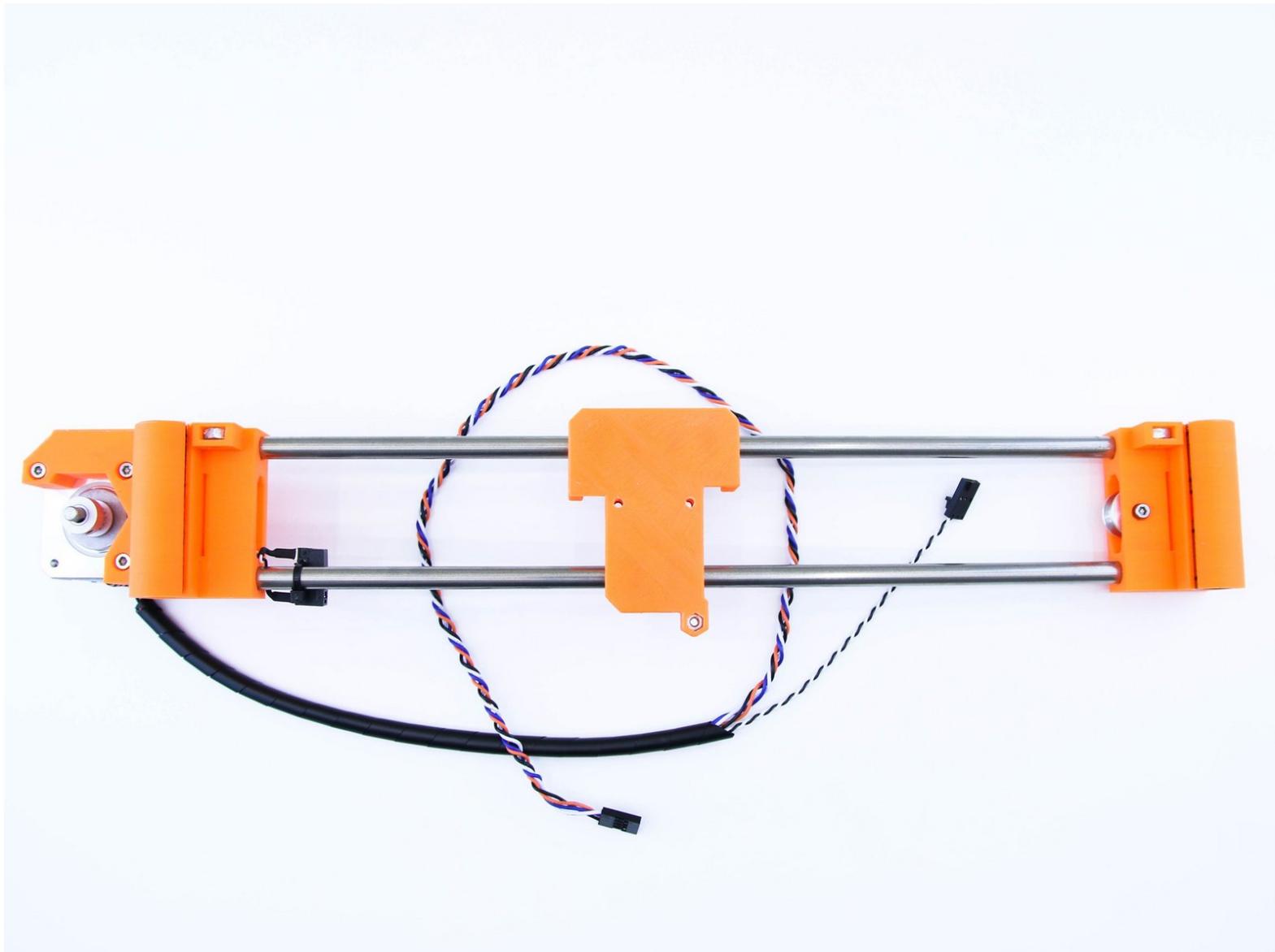


- Congratulations, you have assembled Y-axis !
- You can continue by assembling X-axis in the next chapter - [3. X axis](#)

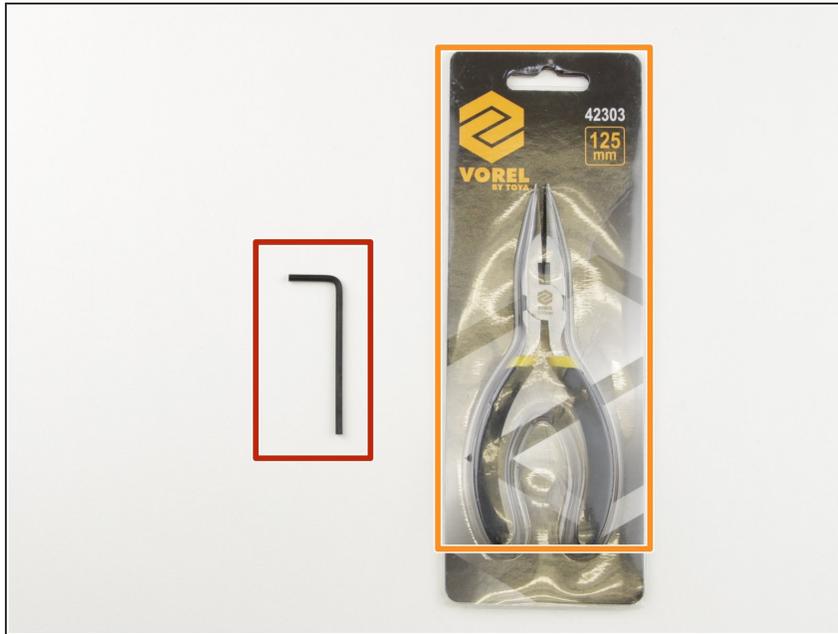
## 3. X axis

X axis guide

Written By: Dozuki System

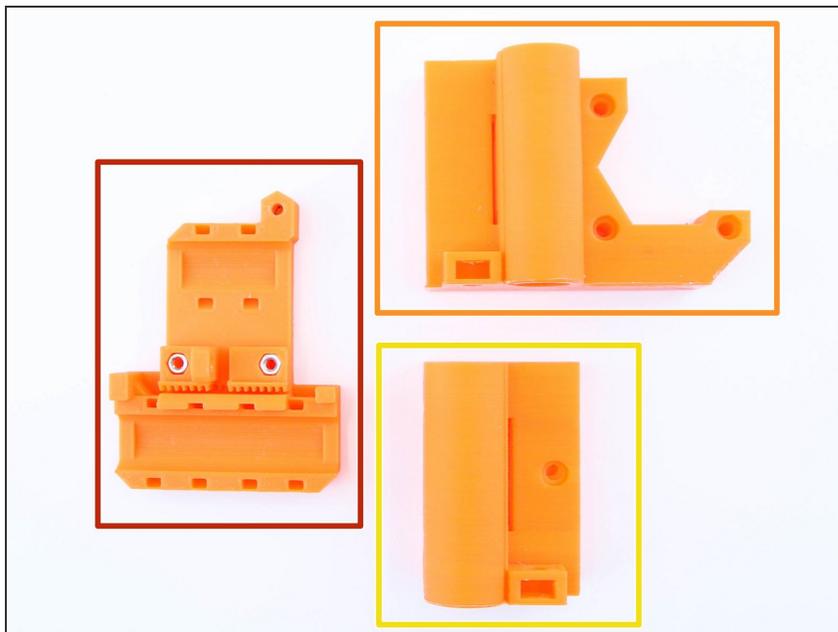


## Step 1 — Getting necessary tools



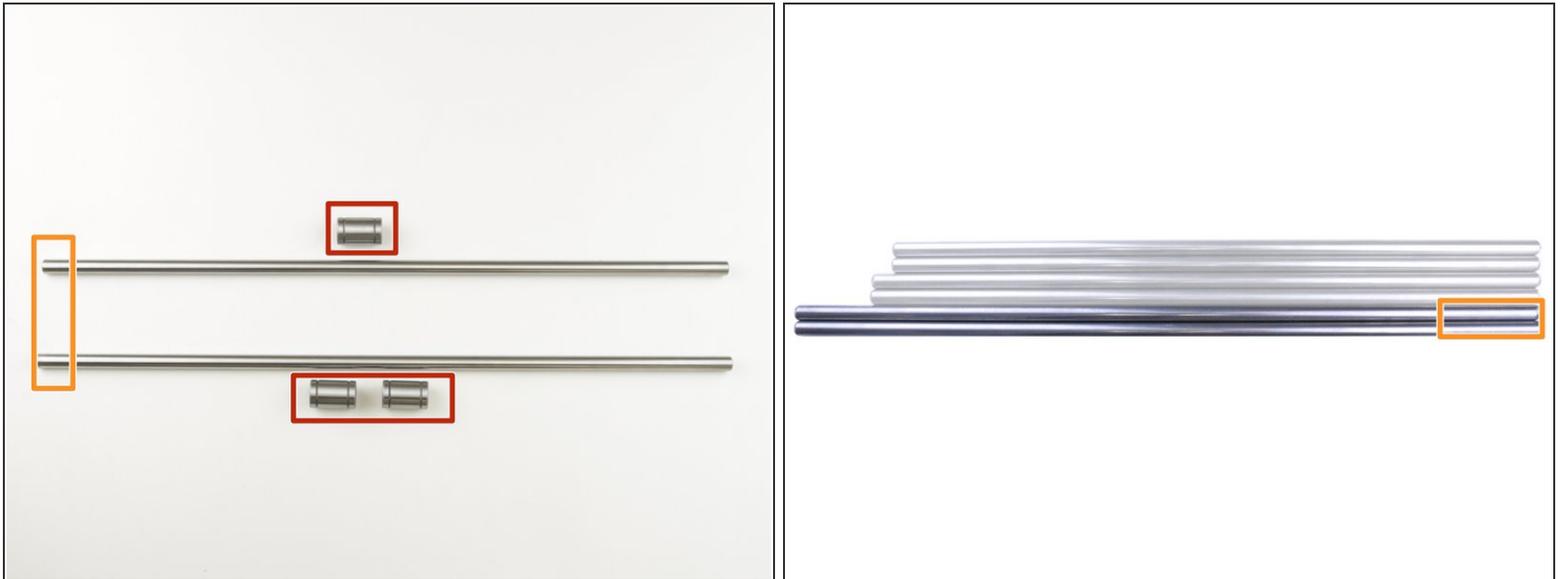
- 2.5mm hex spanner
- Needle-nose pliers

## Step 2 — 3D printed parts



- X-carriage
- X-end-motor
- X-end-idler

### Step 3 — Preparing the rods



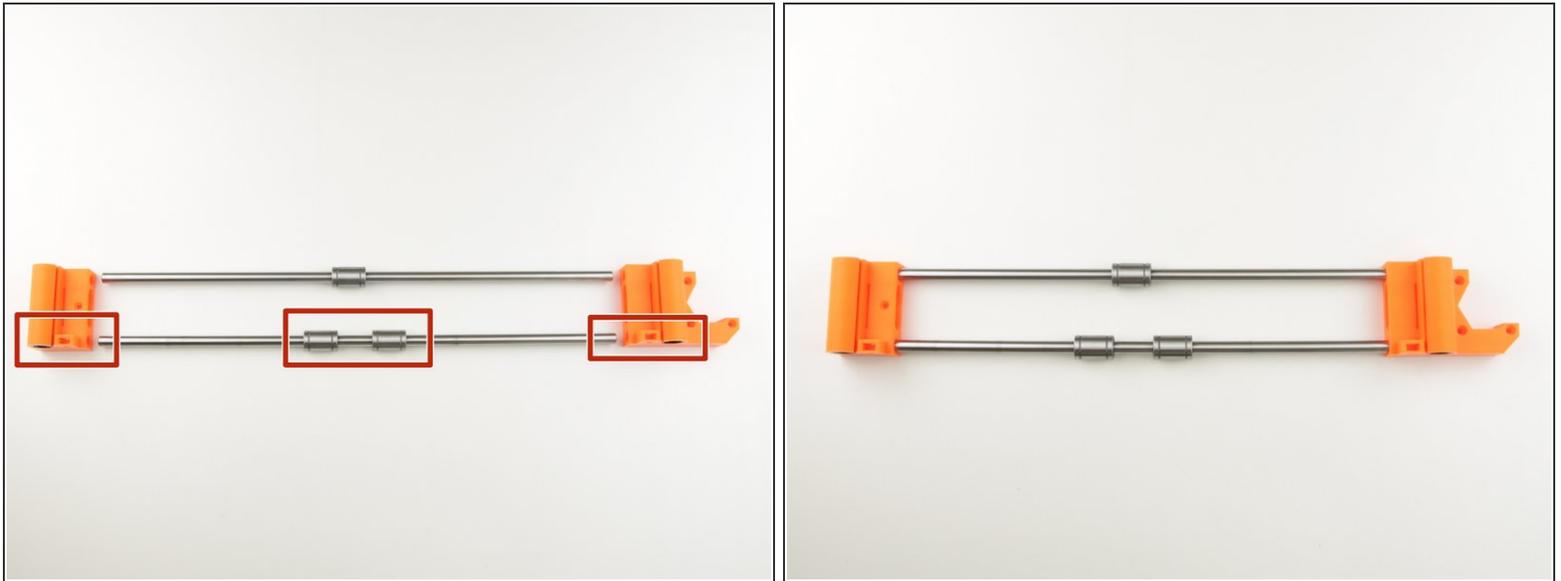
- LM8UU linear bearings
- 8mm smooth rods (longest ones)
- Carefully slide linear bearings on rods

### Step 4 — Preparing printed parts



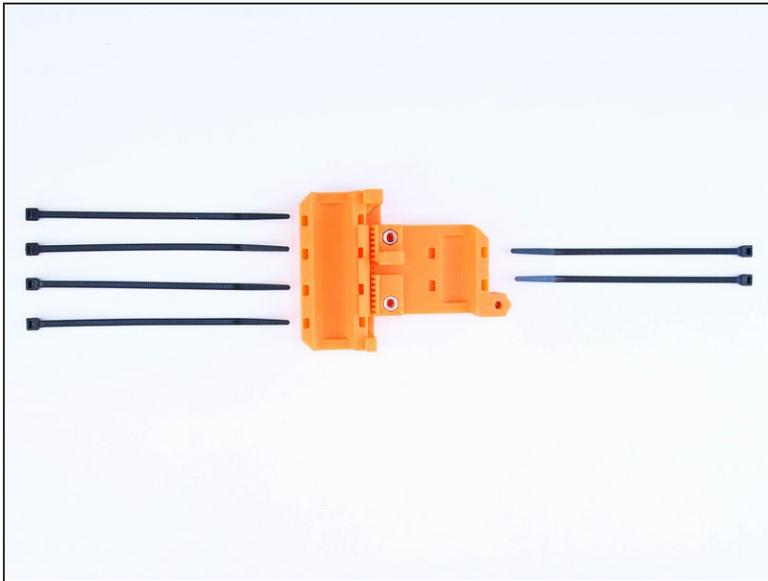
- Insert LM8UU linear bearing into the printed parts (X-end-motor and X-end-idler) as shown in pictures

## Step 5 — Assemble the X-axis base



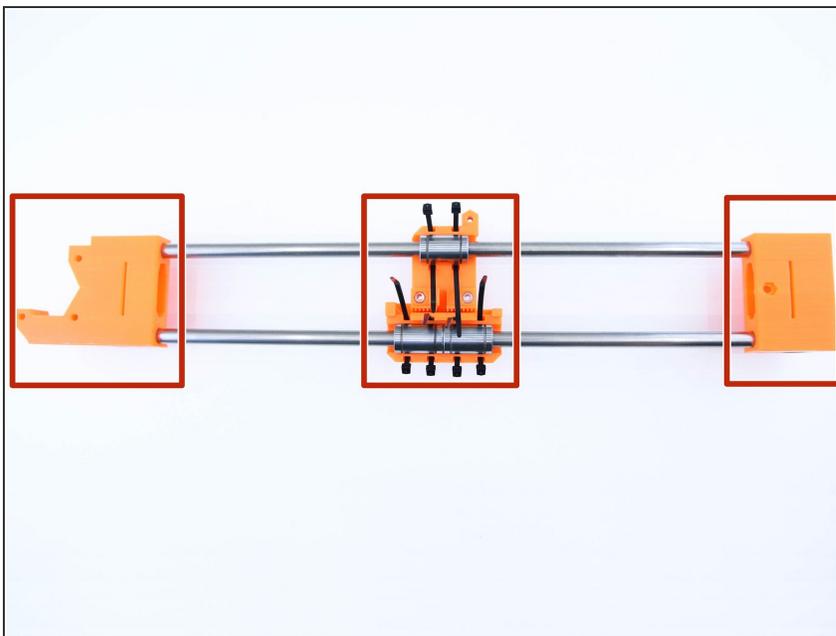
- Insert the rods with bearings into the printed parts
- ⓘ Distance between the printed parts should be around 303mm
- ⚠ Ensure the correct orientation of the parts and rods (rod with 2 bearings must be on the side with nut trap)
- ⚠ Insert the rods very carefully. Do not tilt the rods too much.

## Step 6 — Prepare the X-carriage



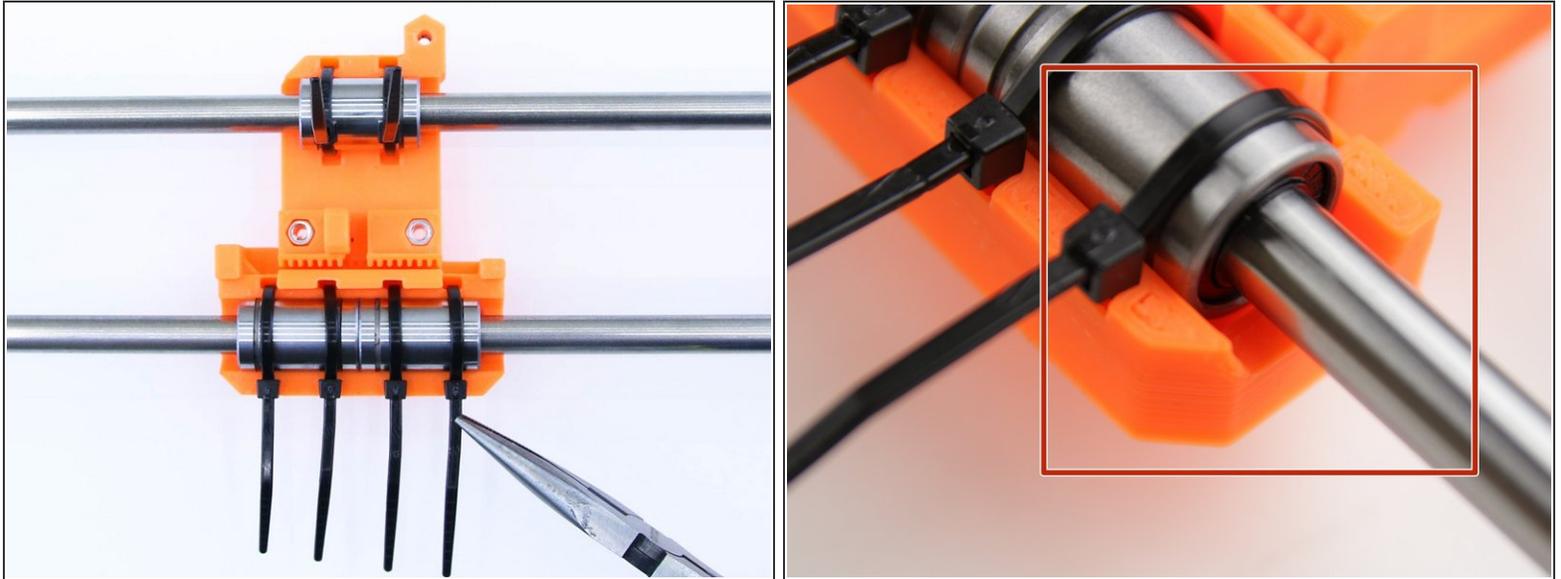
- Insert zip ties into the X-carriage as shown in the picture
- ☑ Ensure the correct orientation of zip ties (head of zip tie should face outside of the carriage)

## Step 7 — Placing the X-carriage



- Place X-carriage on the X-axis base as shown in the picture
- ⚠ Ensure the correct orientation of x-carriage

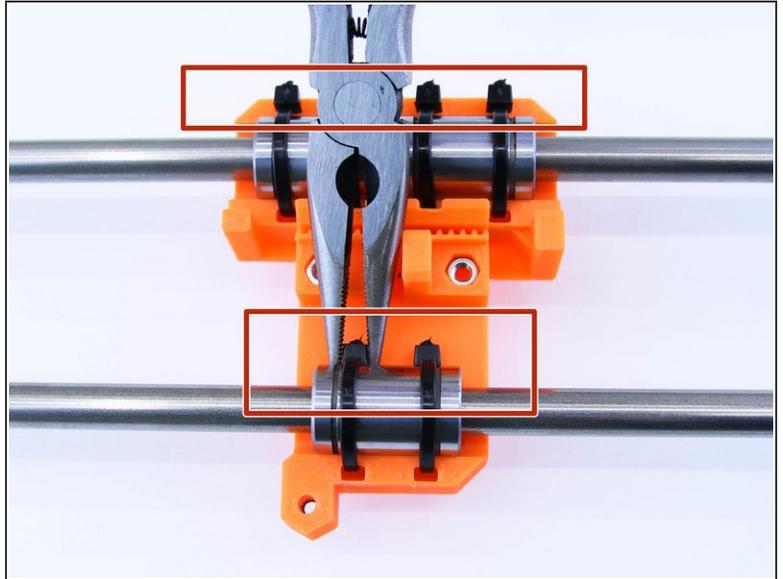
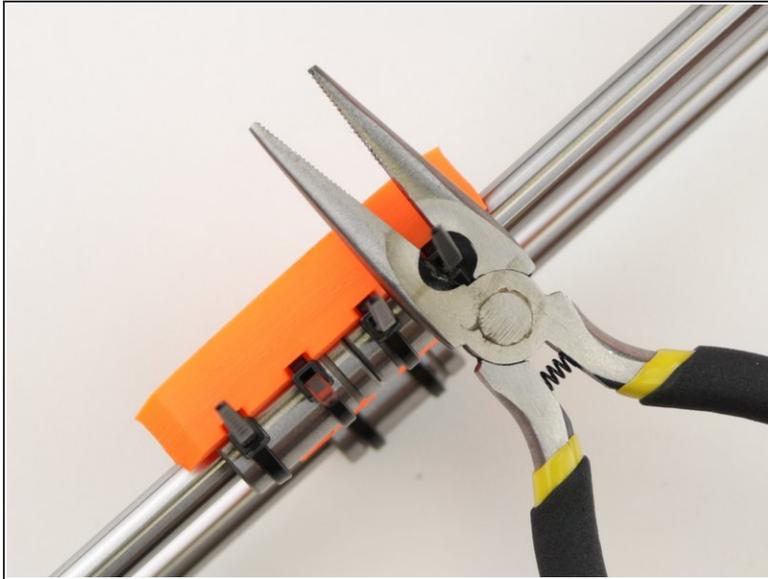
## Step 8 — Tighten the X-carriage



- Use pliers to tighten the zipties

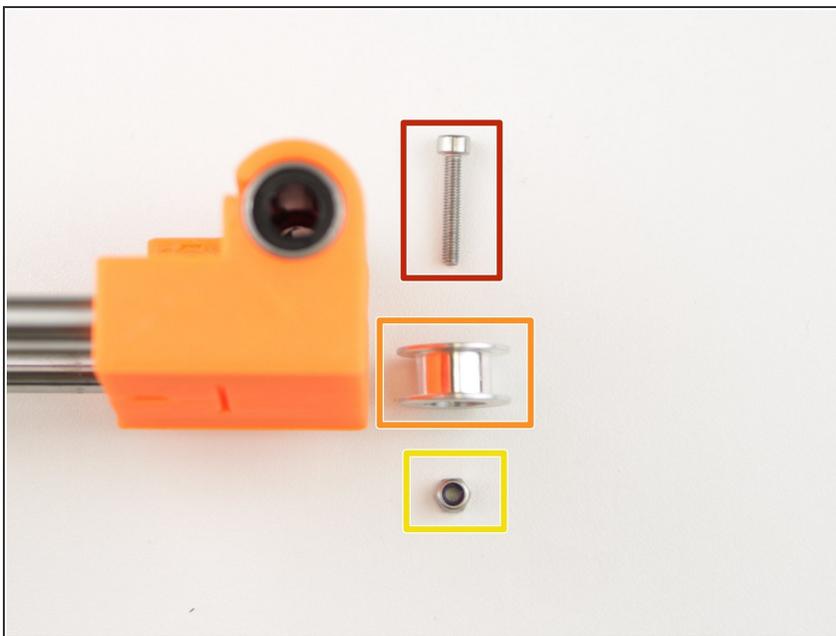
**⚠** Make sure that bearings are in the position as shown in the picture (bearing should be as deep in carriage as possible)

## Step 9 — Cleaning up



- Use pliers to cut off excess ziptie
- ⚠ Move the ziptie head to the position as shown in picture

## Step 10 — Preparing the X-end idler



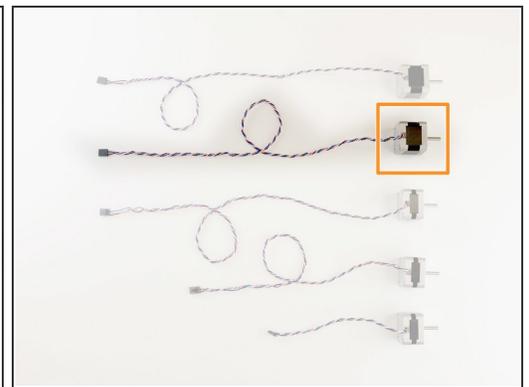
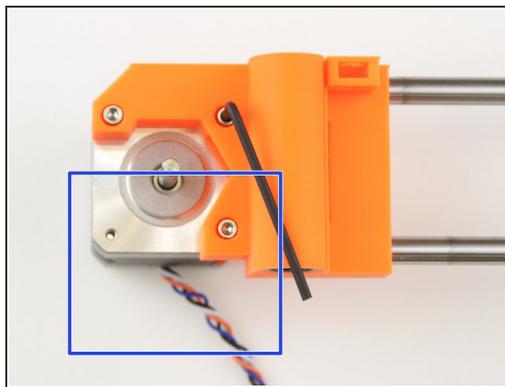
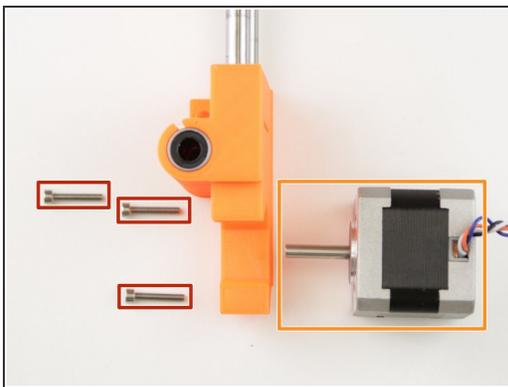
- M3x18 screw
- 623h bearing with housing
- M3nN nylock nut

## Step 11 — Assembling the X-end idler



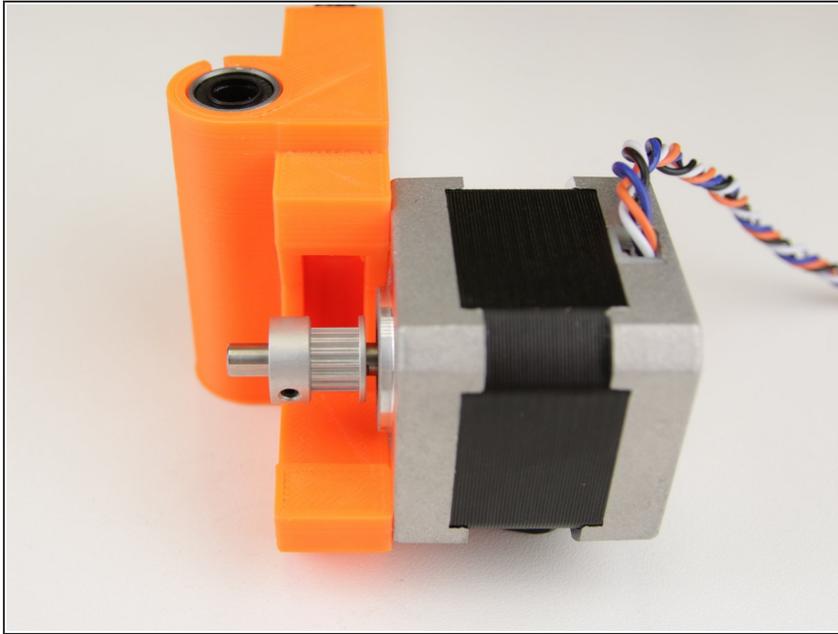
- Insert the 623h bearing into the X-end idler
- Secure it in position using M3x18 screw
- Tighten it with M3 nylock nut

## Step 12 — Assemble the X-motor



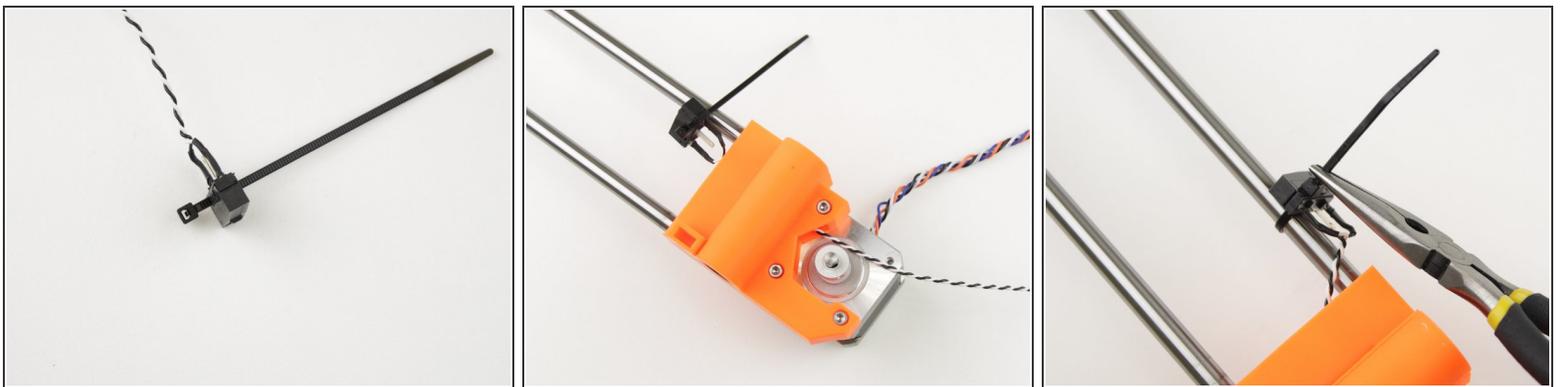
- M3x18 screw
- X motor (longest motor)
- Tighten the motor to the X-end-motor part
- ☑ Ensure the correct position of cables (Cables should face down)

### Step 13 — Assemble the X-motor pulley



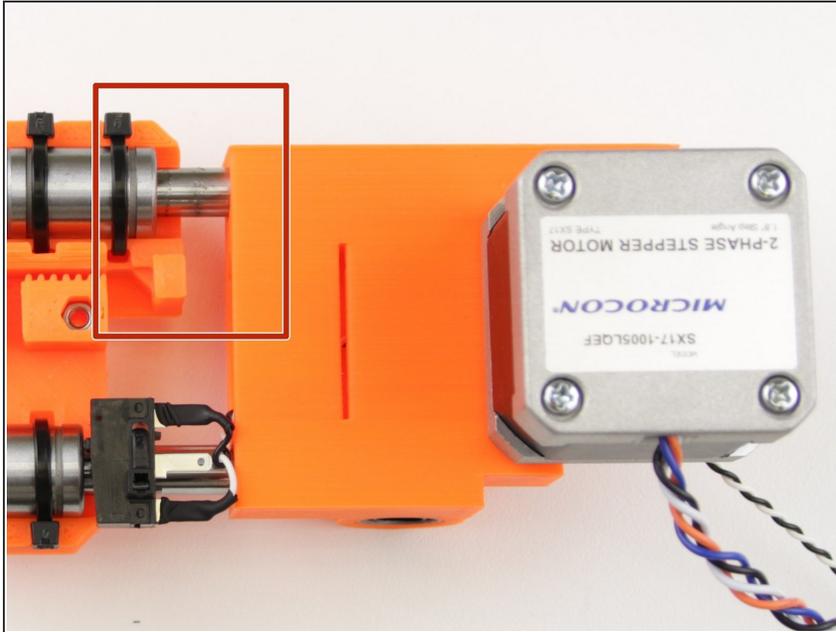
- Place GT2-16 pulley on X motor shaft
- Adjust the position as seen in picture (effective part of pulley should be in axis with X-end-motor cutout and one of the screws on pulley should face directly on pad on shaft)
- Tighten up the pulley using 1.5mm hex spanner

### Step 14 — Assembling the X-endstop



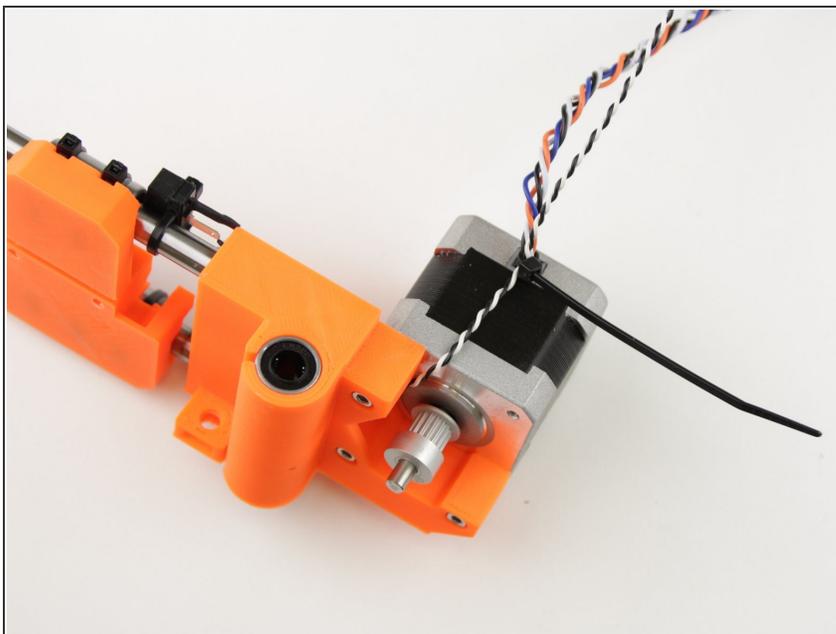
- Insert the ziptie in the X endstop (the one of two with the longest cables)
- Guide the cables through X-end-motor part
- Tighten the endstop to the bottom rod (the one with the single bearing)

## Step 15 — Adjusting the X-endstop



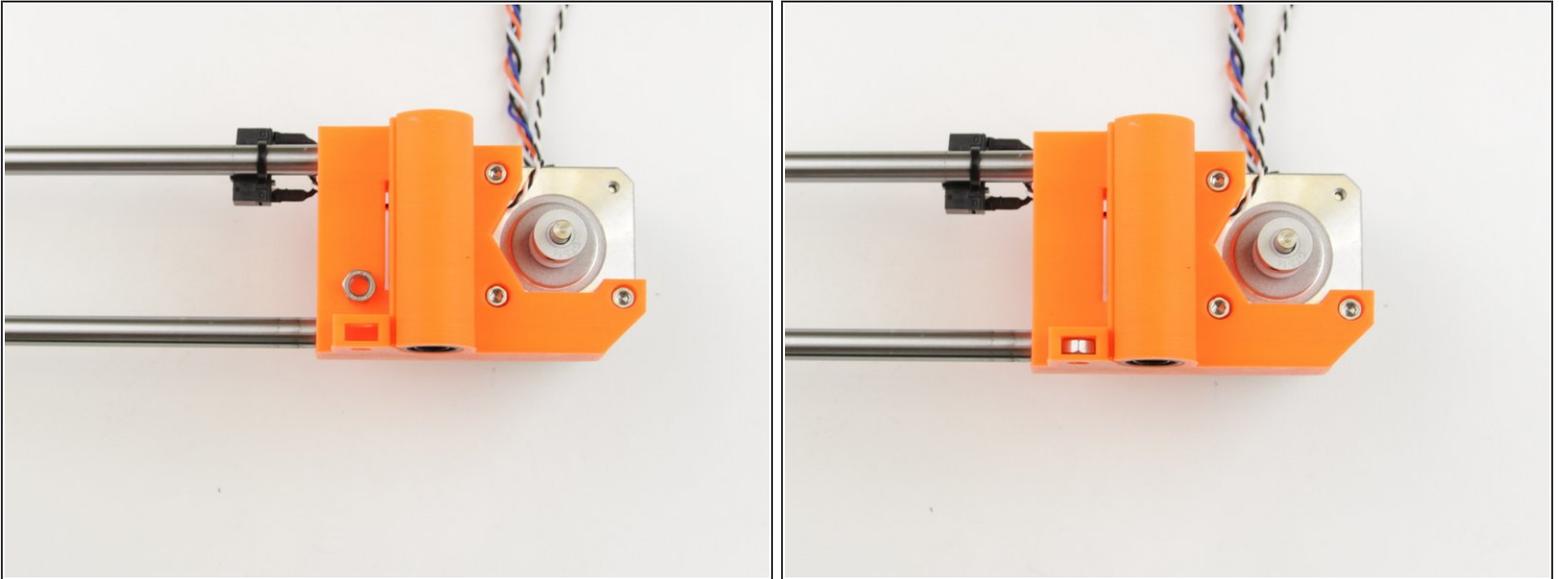
- Move the X-carriage on the end of the axis until it hits the endstop
- Move the endstop to achieve around 15mm gap between the top side of the carriage and X-end-motor
- Cut and discard excess ziptie

## Step 16 — Cable organisation



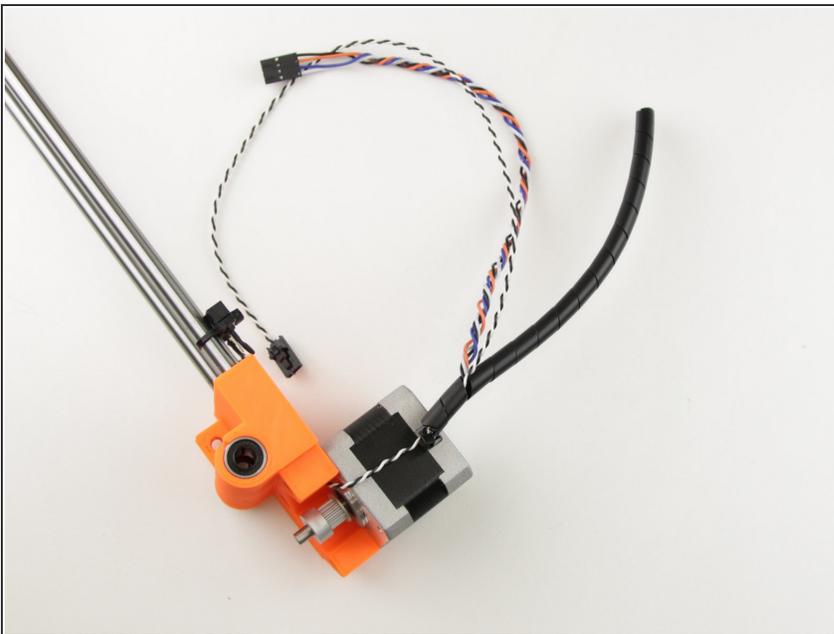
- Use ziptie to secure X-endstop cable to the X-motor cable as close to the motor as possible
- ⚠ Do not overtie the ziptie otherwise you can damage the cables

## Step 17 — Inserting the nuts



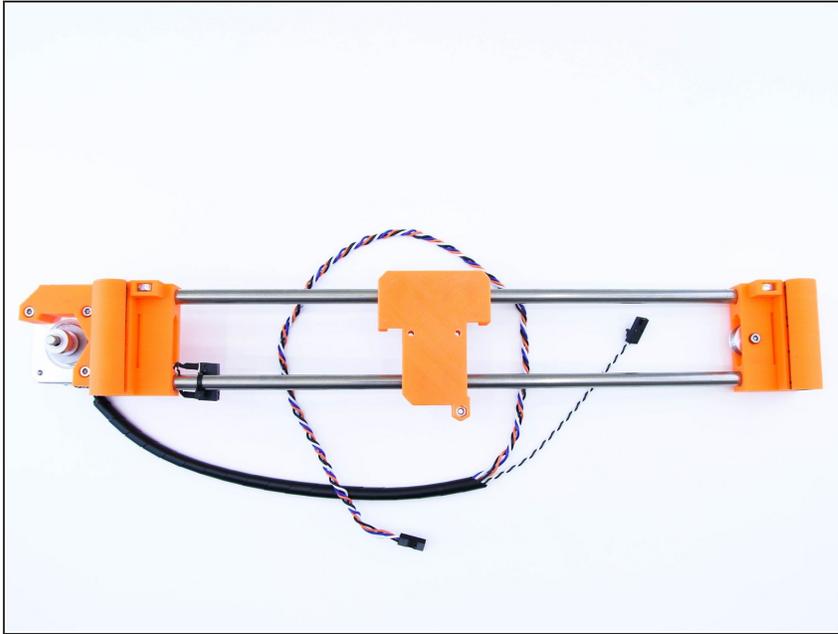
- Insert M5n nuts into the X-end-motor and X-end-idler
- ☞ Be careful when handling the X-axis after this step, the nuts can fall out

## Step 18 — Cable wrapping



- Use the smallest and shortest spiral wrap to wrap the cables

## Step 19 — All done!

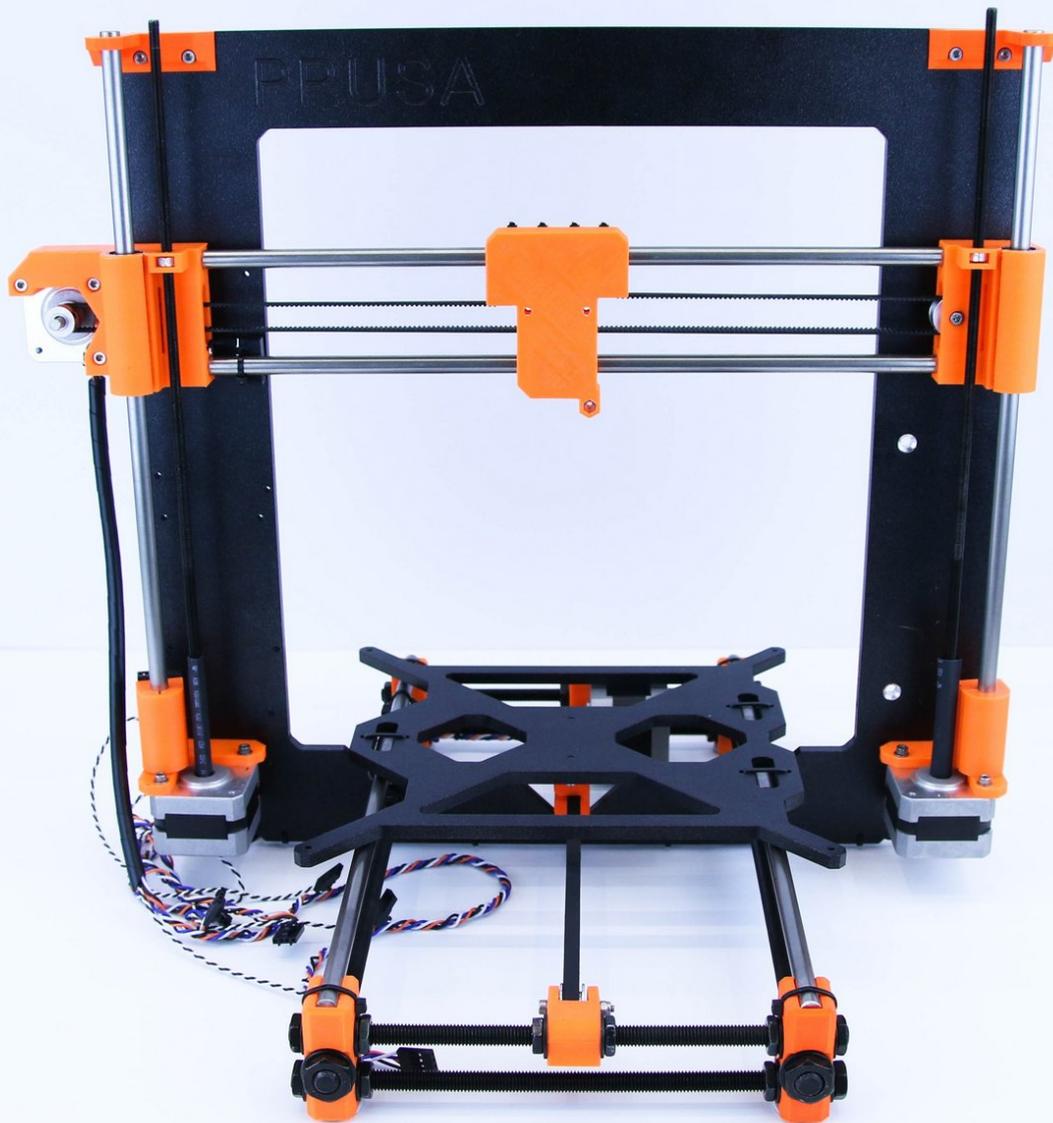


- Congratulations! You've just assembled X-axis
- ⓘ Don't be nervous that there isn't a belt, we'll get to that later
- You can continue by assembling Z-axis in the next chapter - [4. Z axis](#)

## 4. Z axis

Z axis guide

Written By: Dozuki System

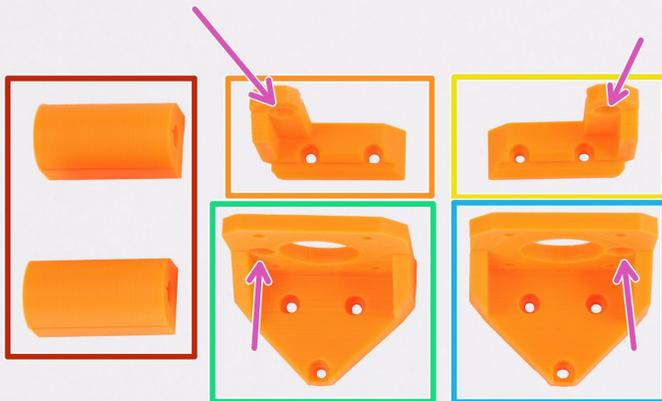


## Step 1 — Get the necessary tools



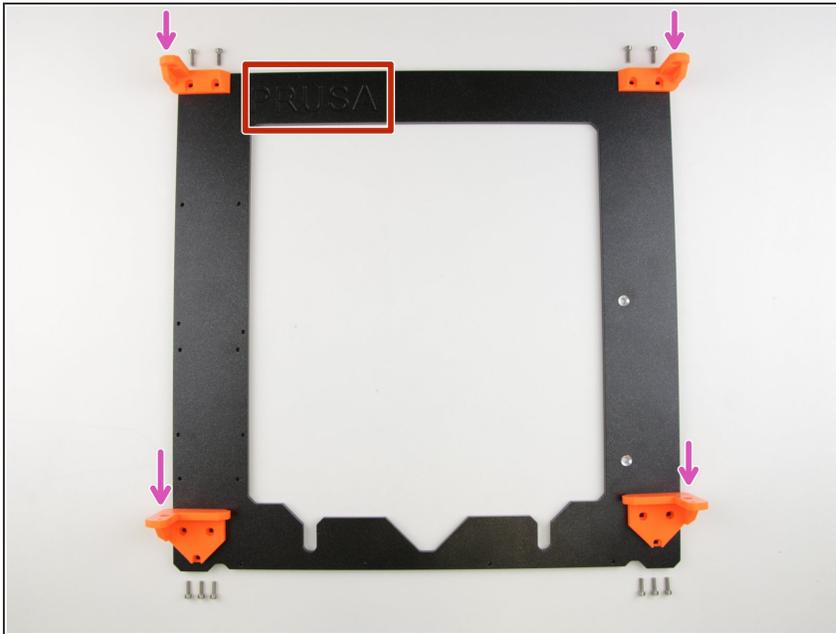
- 13/17mm spanners
- 3.6mm flathead screwdriver
- Needle-nose pliers
- 2.5 and 1.5mm hex spanner

## Step 2 — 3D printed parts



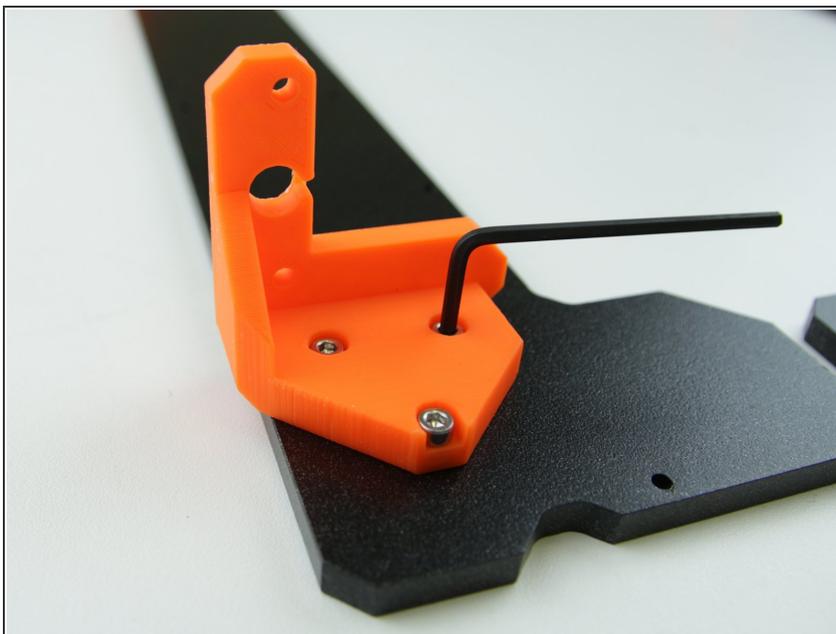
- Z-endstop-holder
- Z-axis-top-left
- Z-axis-top-right
- Z-axis-bottom-left
- Z-axis-bottom-right
- Use the hole for 8 mm smooth rod as orientation key in next steps

### Step 3 — Screw the parts to the frame



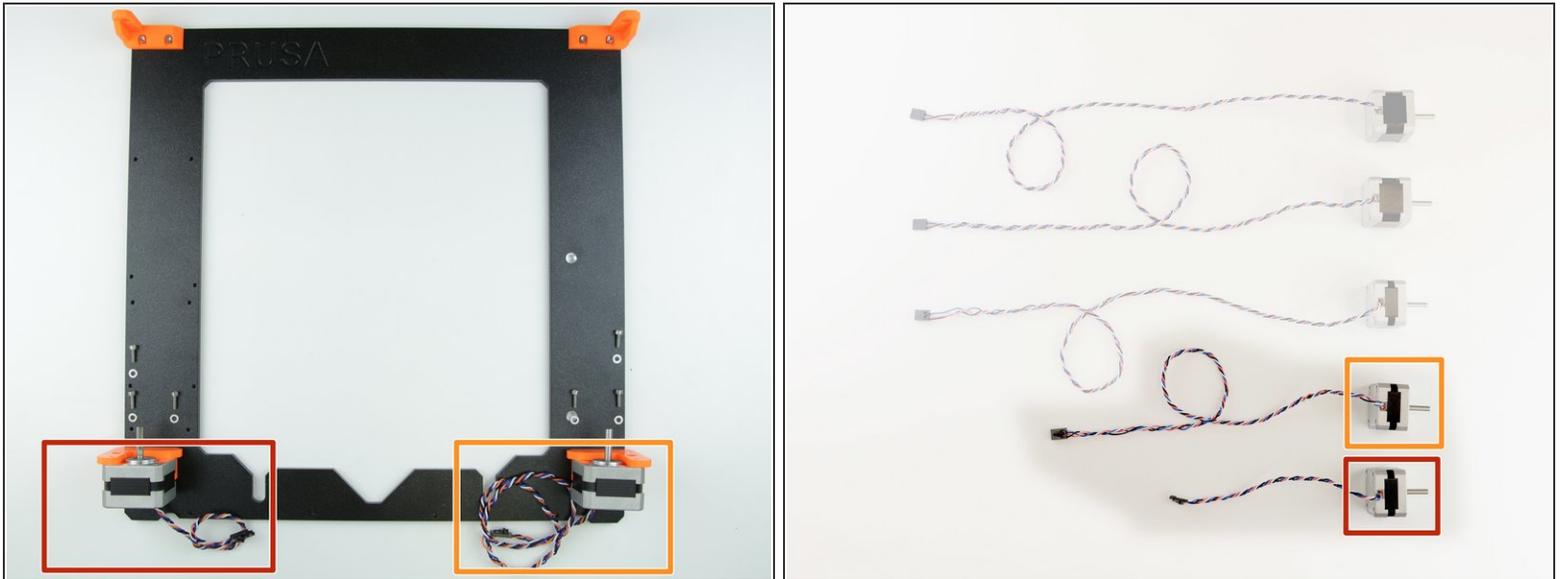
- Place parts on the frame as shown in the picture
- ⚠ Note the frame orientation (PRUSA logo has to be visible)
- ☑ All screws in this step are M3x10

### Step 4 — Tighten the parts on frame



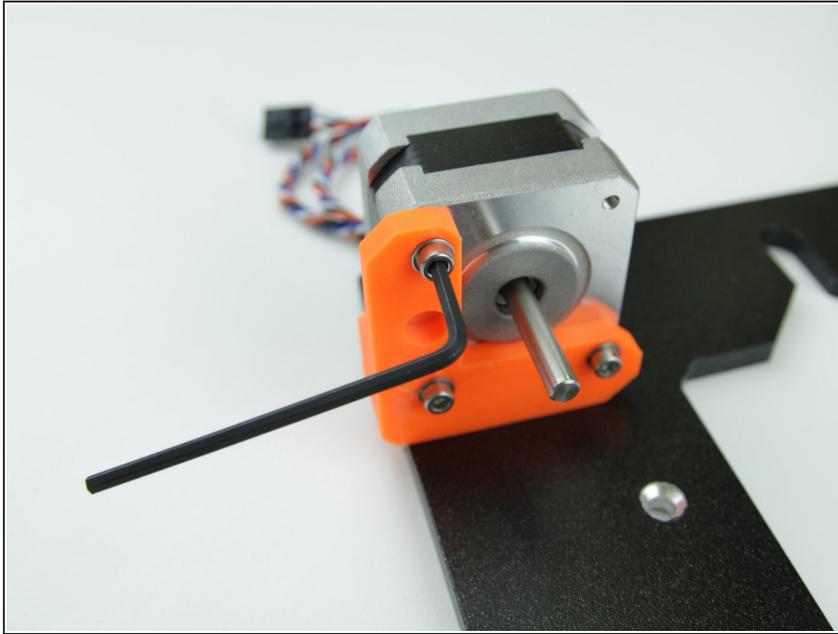
- Use 2.5mm hex spanner to tighten the parts to the frame
- ⚠ Tighten them gently, no superhuman force required

## Step 5 — Placing the Z-motors



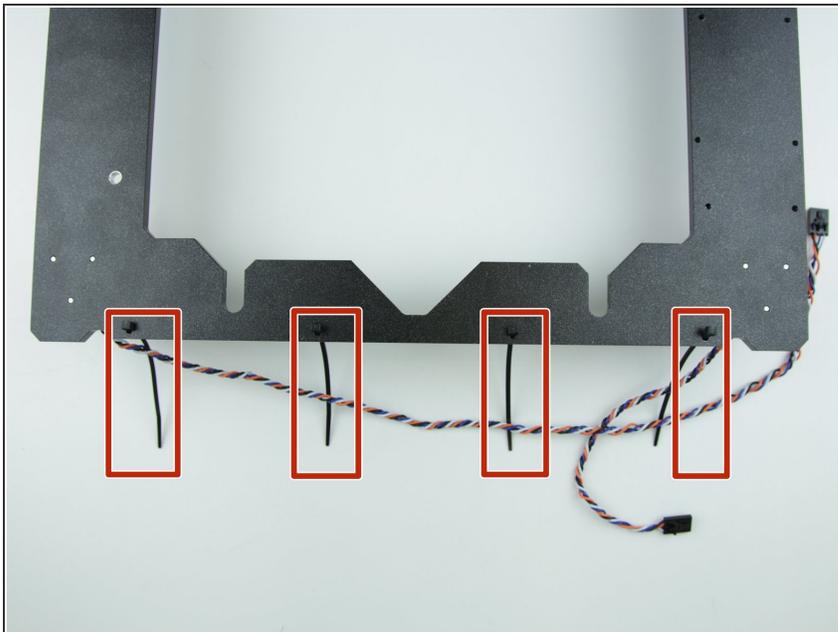
- Place the Z motors on the frame
  - Z-motor 1 (shortest motor with shortest cables)
  - Z-motor 2 (shortest motor with second shortest cables)
- ⚠️ Ensure the correct position of the motors (Z-motor 1 on the left)
- ℹ️ Use M3x10 screws and M3w washers

## Step 6 — Tighten the Z-motors



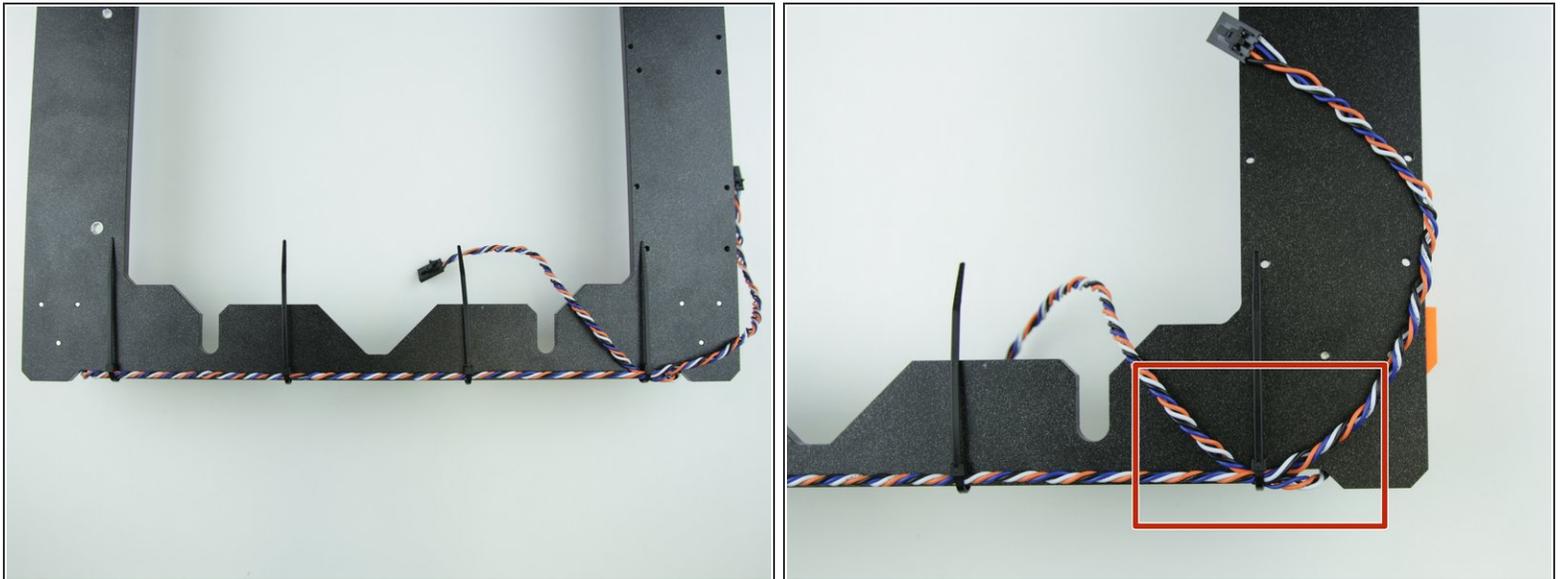
- Use 2.5mm hex spanner to tighten the motor to the printed part

## Step 7 — Cable management



- Insert the zipties in the holes at the bottom of the frame

## Step 8 — Cable management (2)



- Tie the cables to the frame as shown in the picture
- Note that the Z-motor 2 cables are tied with the last zip tie

## Step 9 — Cleaning up



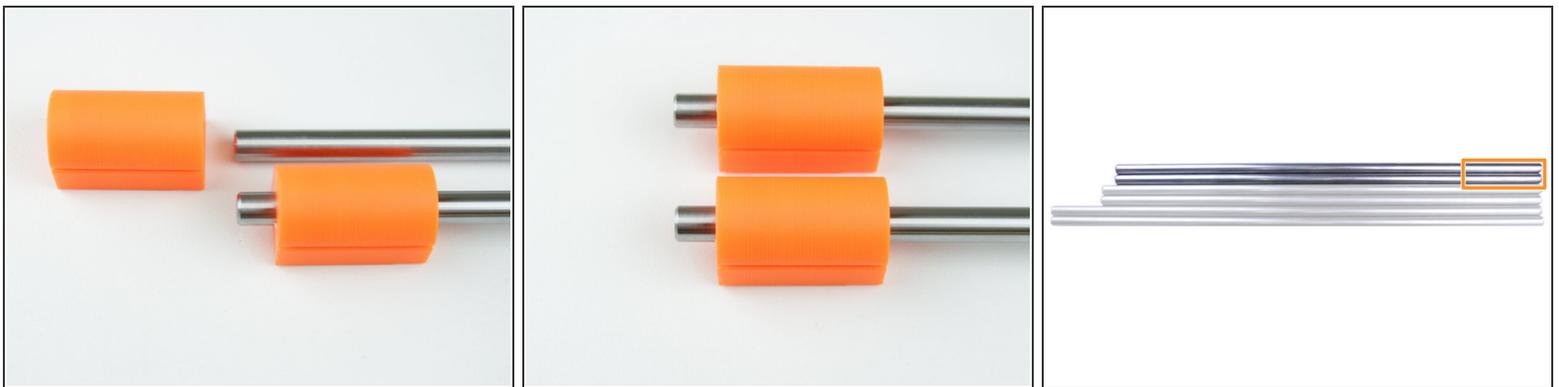
- Use pliers and cut the excess zip tie
- ⚠ Note the position of connecting zip tie

## Step 10 — Assembling the Y-axis



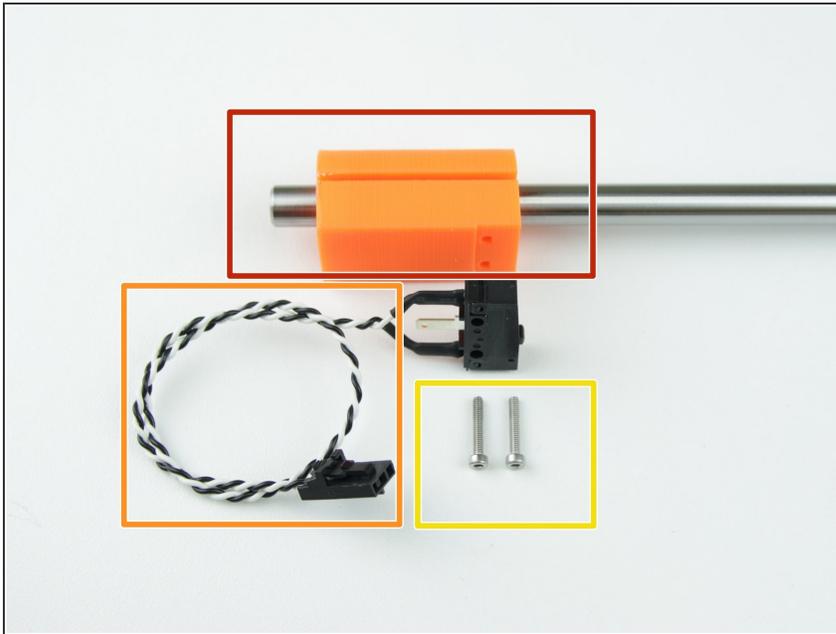
- Grab Y-axis assembly in your hand and slide it into the frame. You should be able to lift the constructed printer as a whole
- Tighten the M10 nuts to the frame
- ⚠ Ensure there is a washer between the nut and frame on both sides
- ⚠ Ensure the correct orientation of the Y-axis assembly and the frame (longer part should be on the side with motors)

## Step 11 — Preparing the Z-rods



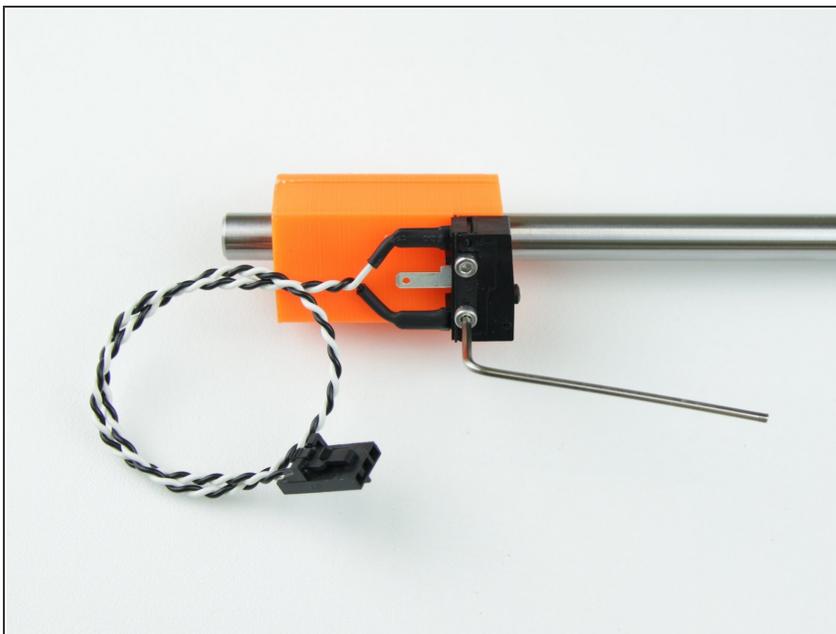
- Insert Z-rods (shortest ones) inside the Z-endstop holders
- Ensure the correct orientation of parts as shown in the picture

## Step 12 — Assembling the Z-endstop



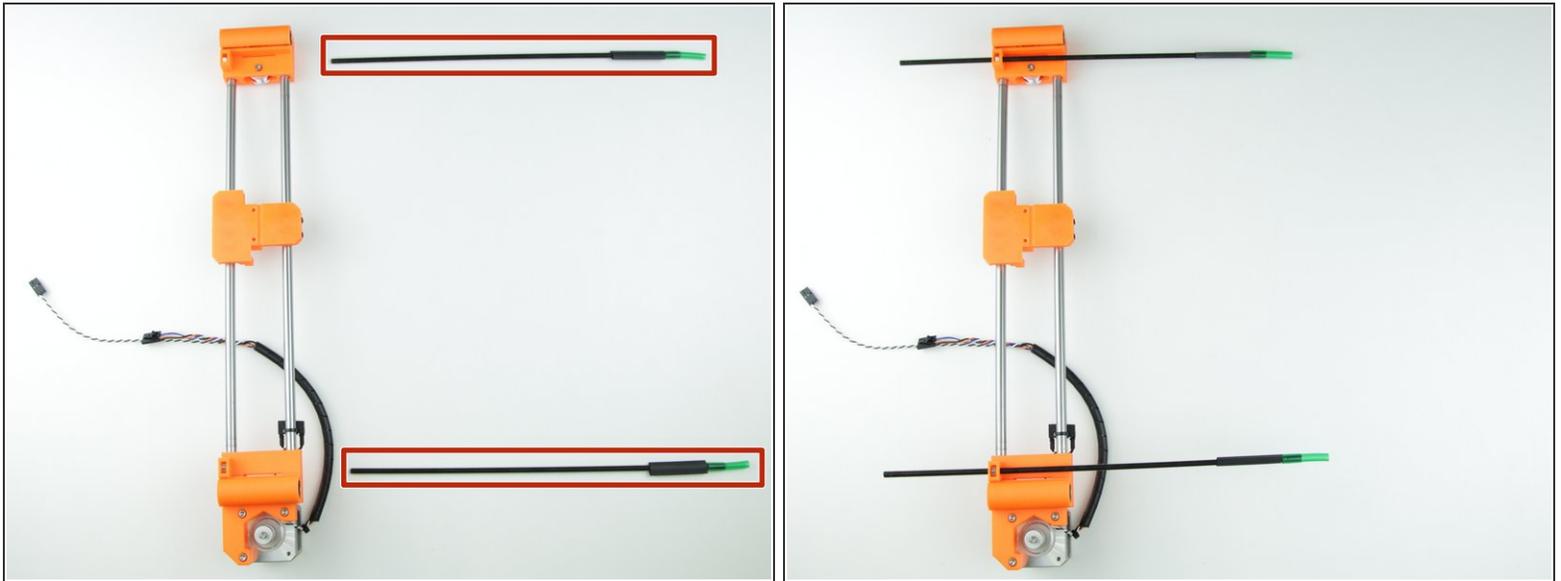
- Z rod with Z-endstop holder
- Z-endstop (the one with shortest cables)
- M2x12 screws

## Step 13 — Tighten the Z-endstop



- Using 1.5mm hex spanner tighten the endstop to the holder
- ⚠ Tighten it gently

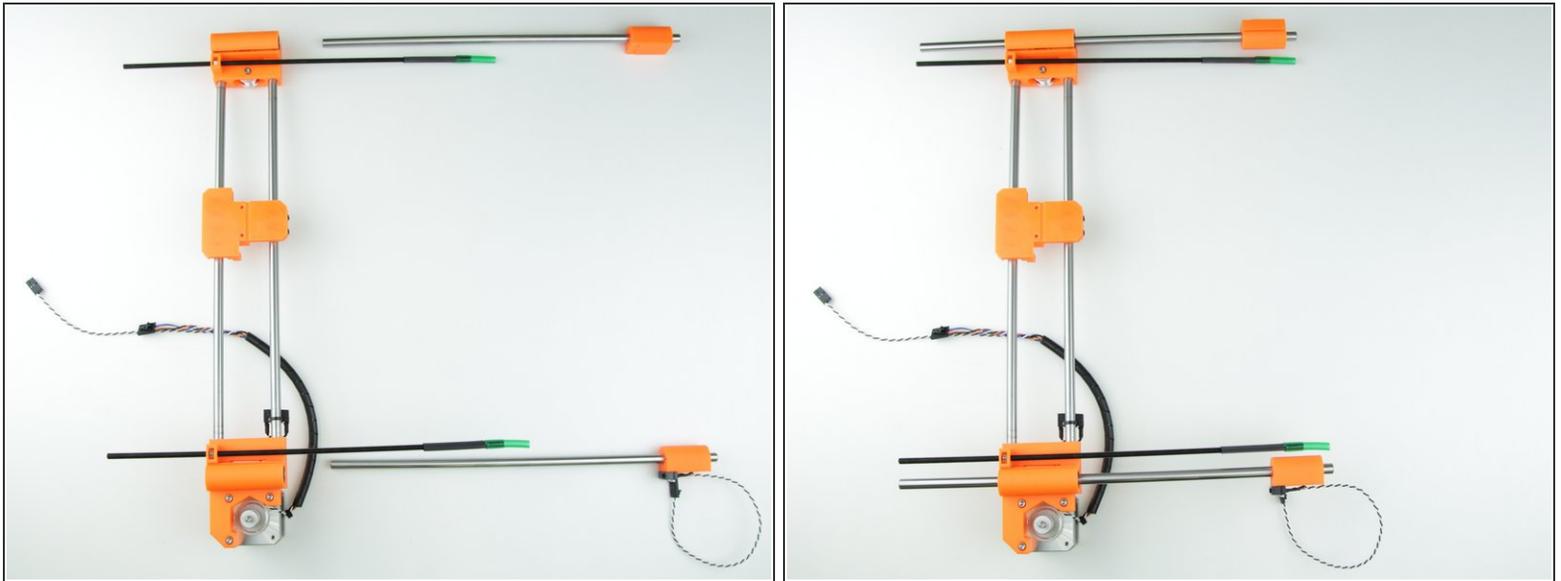
## Step 14 — Assembling the Z-threaded rods



- M5 threaded rods with preassembled hose coupling
- Screw the threaded rods inside the nuts in X-axis assembly

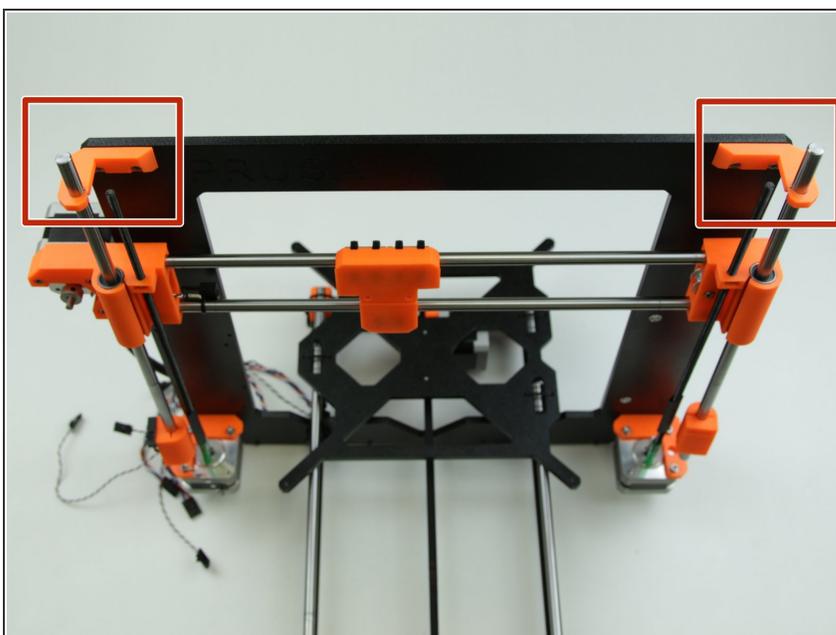
⚠ Screw until exactly 75mm deep

## Step 15 — Assemble smooth Z-rods



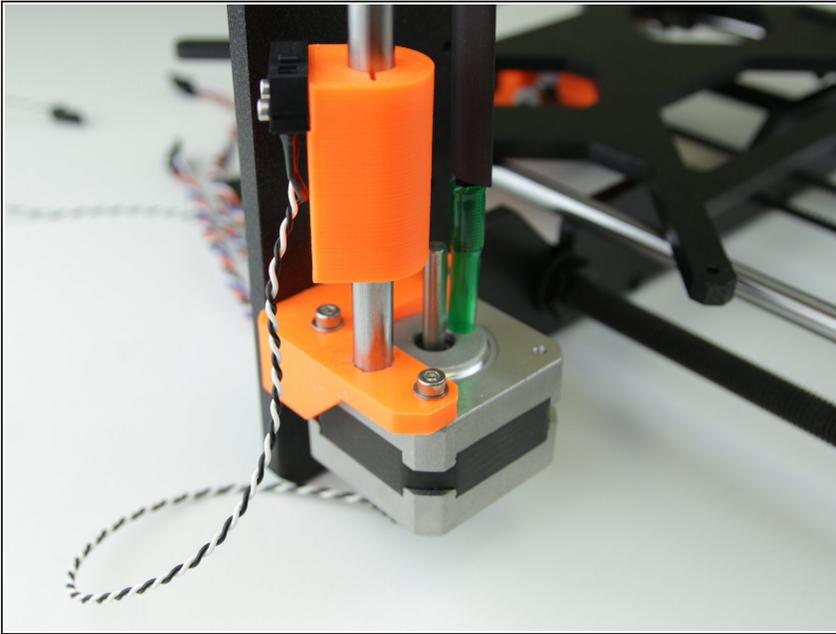
- Insert the smooth rods in the X-axis assembly
- ⚠ Insert them very carefully, perfectly in axis with the bearings and with minimal force
- ⚠ Rod with attached endstop has to be on the side with motor

## Step 16 — Z-axis assembly preparation



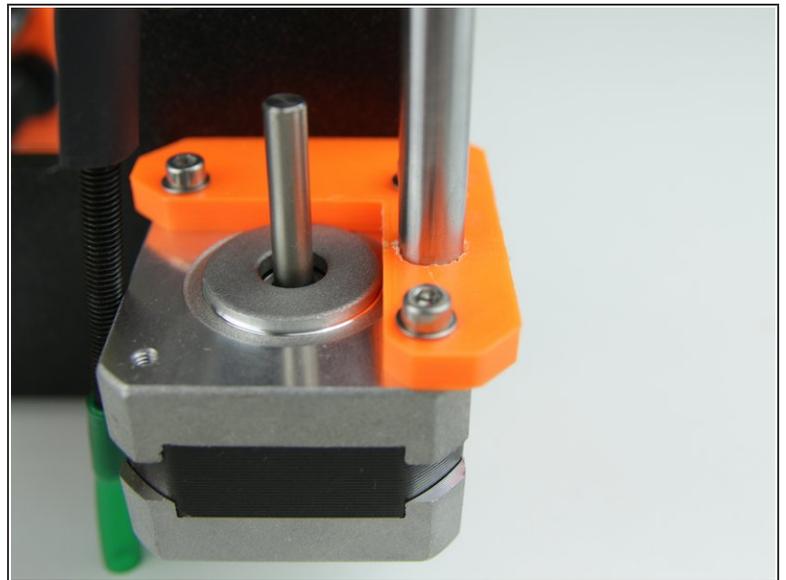
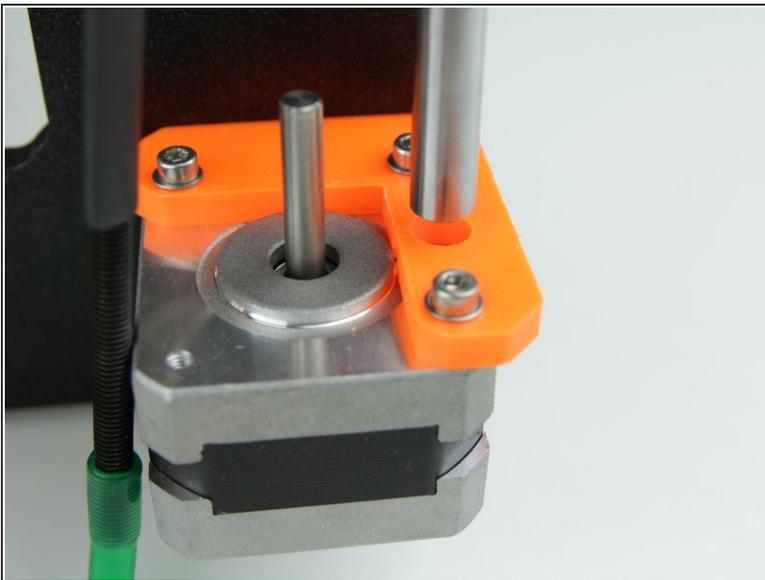
- Insert the Z-axis assembly into the top parts of the frame
- ⚠ Do not tilt the whole axis too hard. You risk damaging the top parts of the frame

## Step 17 — Assembling the left side



- Insert the rod with attached endstop to the bottom left printed part

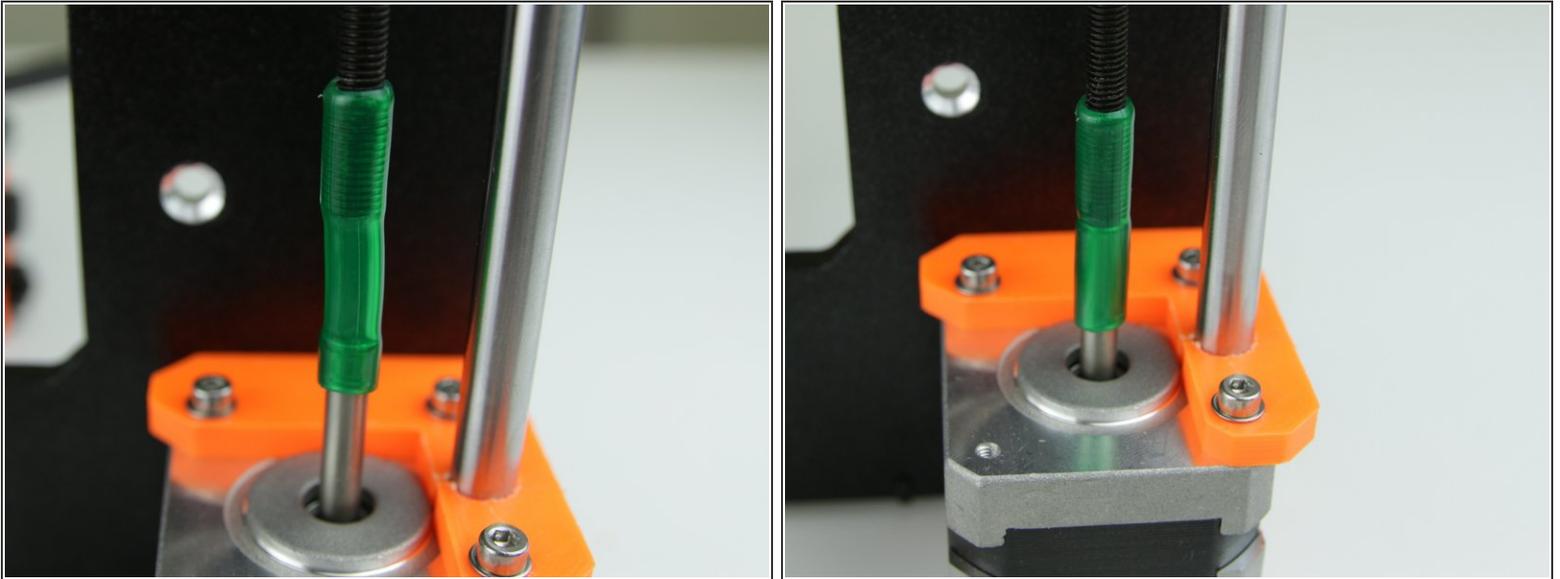
## Step 18 — Assembling the right side



- Slide the rod all the way down
- Make sure that the rod is facing directly to the hole in bottom right printed part (If not, apply some pressure to adjust the pitch between X-ends)
- Press the rod inside the part

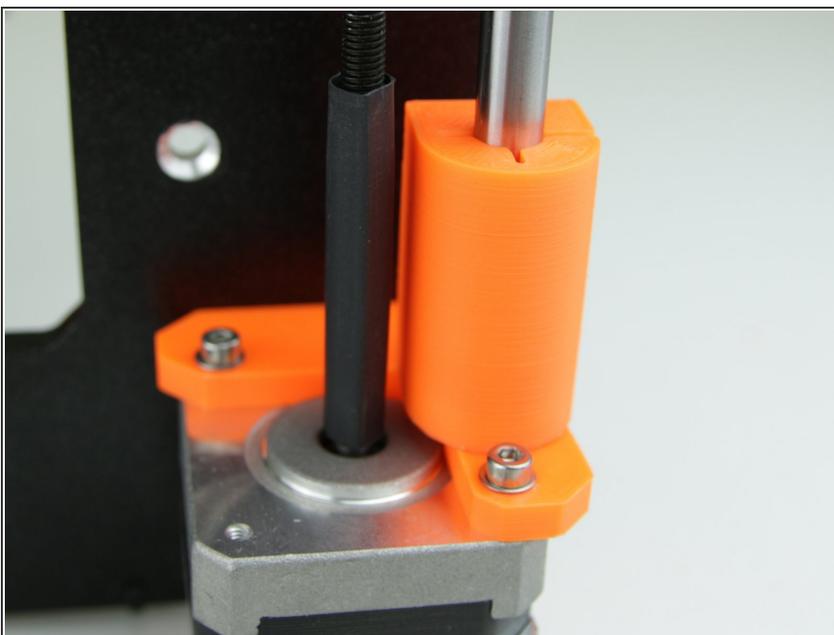
This document was generated on 2020-12-04 04:51:04 AM (MST).

## Step 19 — Assembling the hose coupling



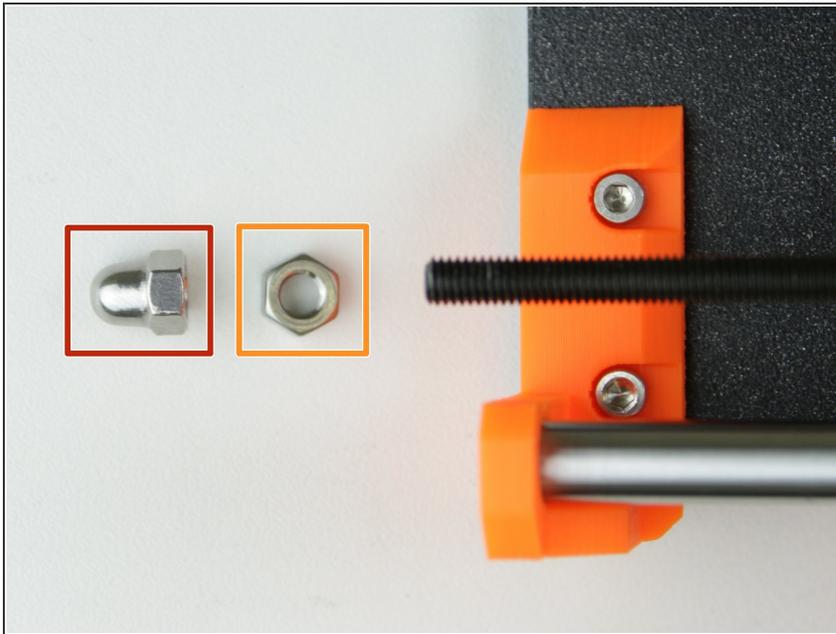
- Grab the end of the M5 threaded with hose coupling
  - Press the hose coupling all the way on the Z-motor shaft
- ⚠ Keep in mind that you have to do this on both sides simultaneously

## Step 20 — Final touches to the bottom side



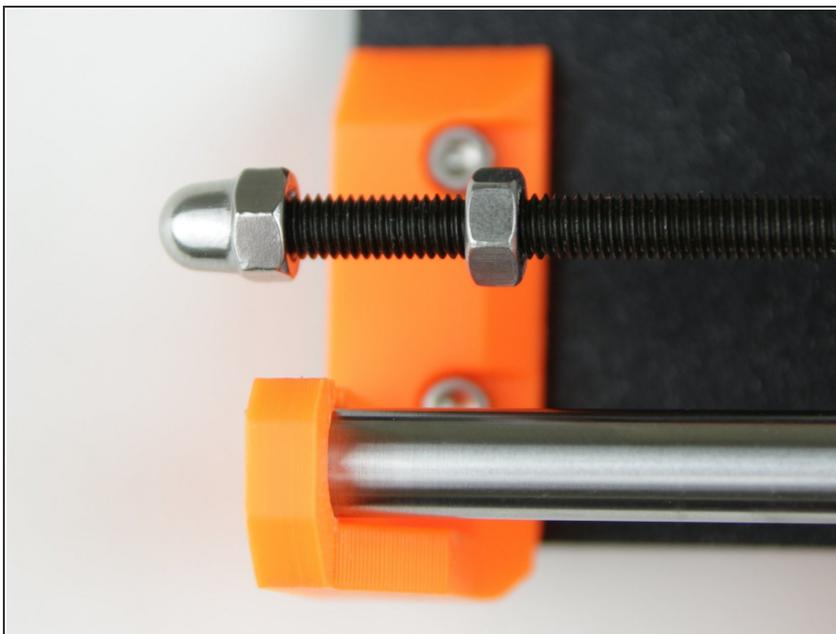
- Twist the Z-endstop-holder as shown in the picture
- Slide it all the way down
- Slide the heat shrink over the hose coupling
- Repeat the step on the other side

## Step 21 — Z-axis threaded rod end assembly



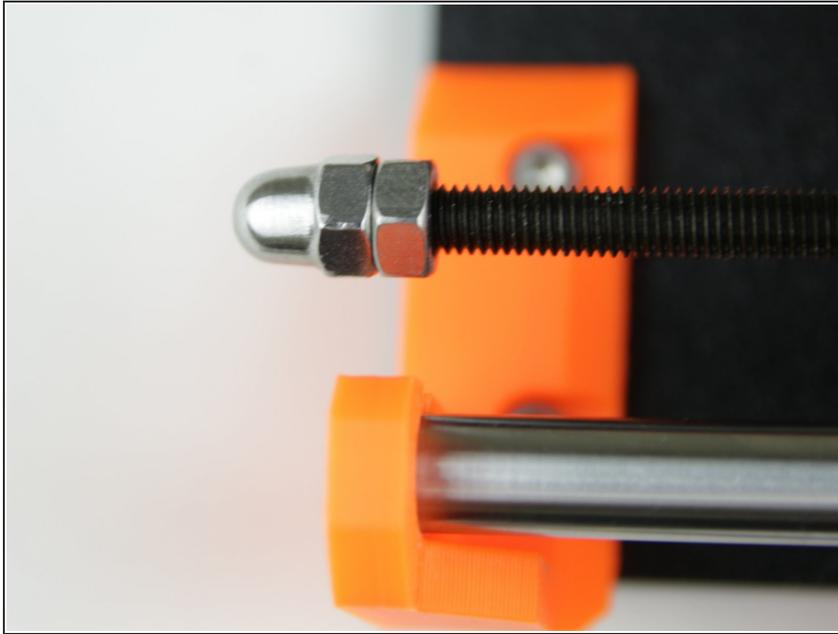
- M5nC Closed nut
- M5n nut

## Step 22 — Screwing the nuts



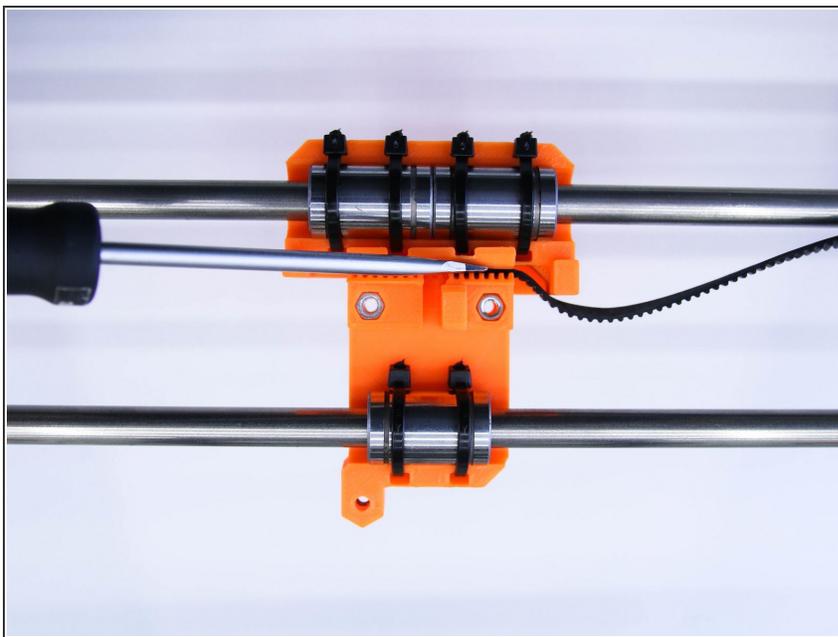
- Screw the M5n nut on the Z-axis threaded rods
- Screw the M5nc closed nuts on the Z-axis threaded rods as far as you can

## Step 23 — Tightening up the nuts



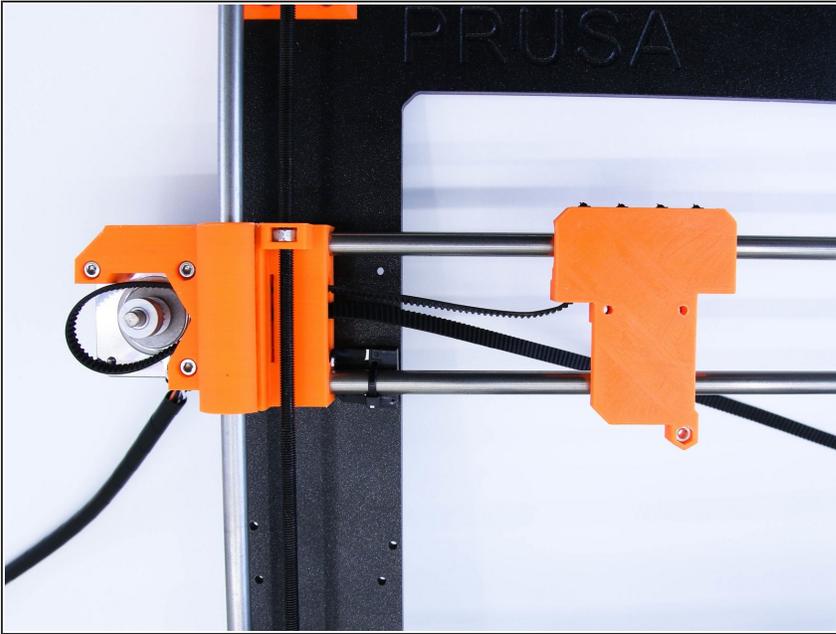
- Tie the nuts against each other

## Step 24 — Assembling the X-axis belt



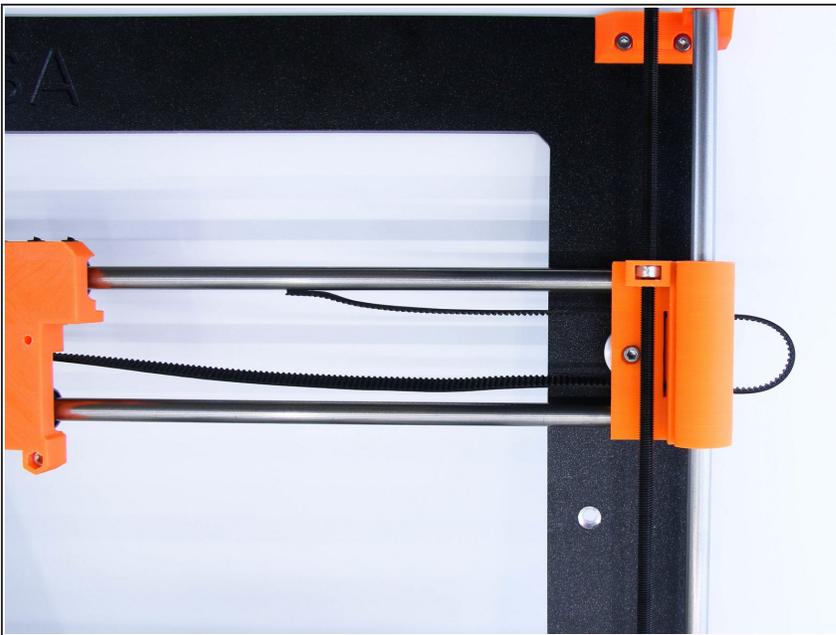
- Using flathead screwdriver, insert the X-GT2 belt (longer one) all the way down into the X-carriage

## Step 25 — X-axis belt motor guide



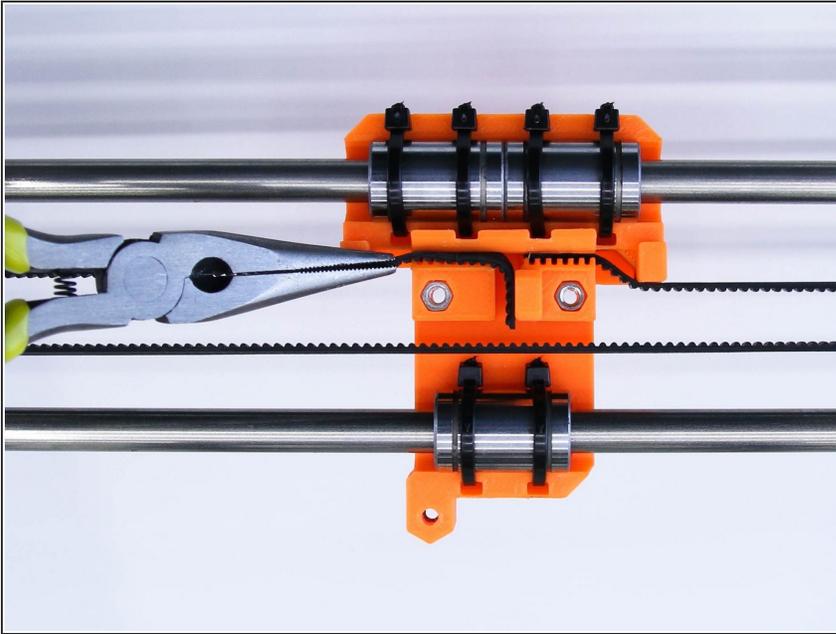
- Guide the X-axis belt through the X-end-motor, around GT2-16 pulley and back

## Step 26 — X-axis belt idler guide



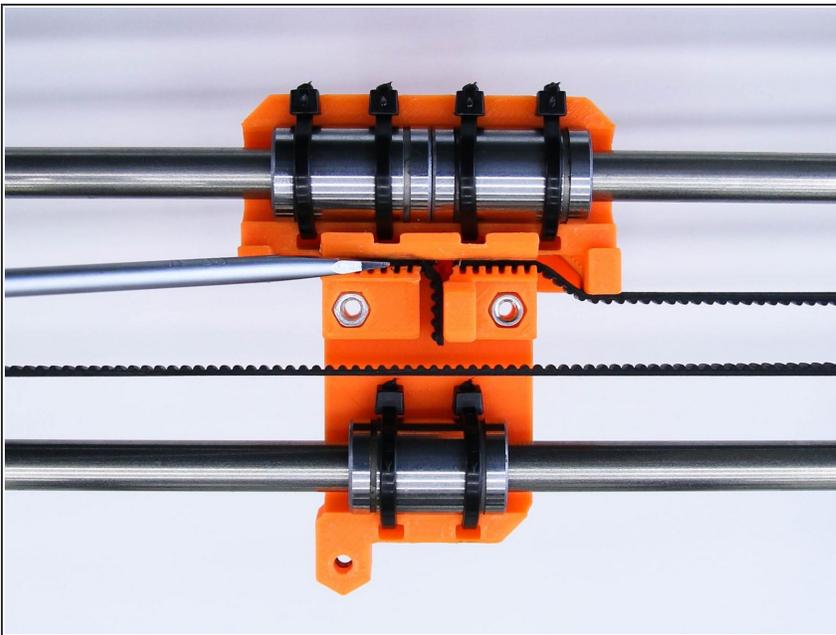
- Guide the x-axis belt through X-end-idler, around the 623h bearing with the housing and back

## Step 27 — Tightening the X-axis belt



- Use pliers to tighten up the X-axis belt
- ⓘ Just with the Y-belt, it should be tight enough to 'ping'

## Step 28 — X-axis belt finishing touches



- Use a screwdriver to push the belt all the way down to the X-carriage

## Step 29 — All done!



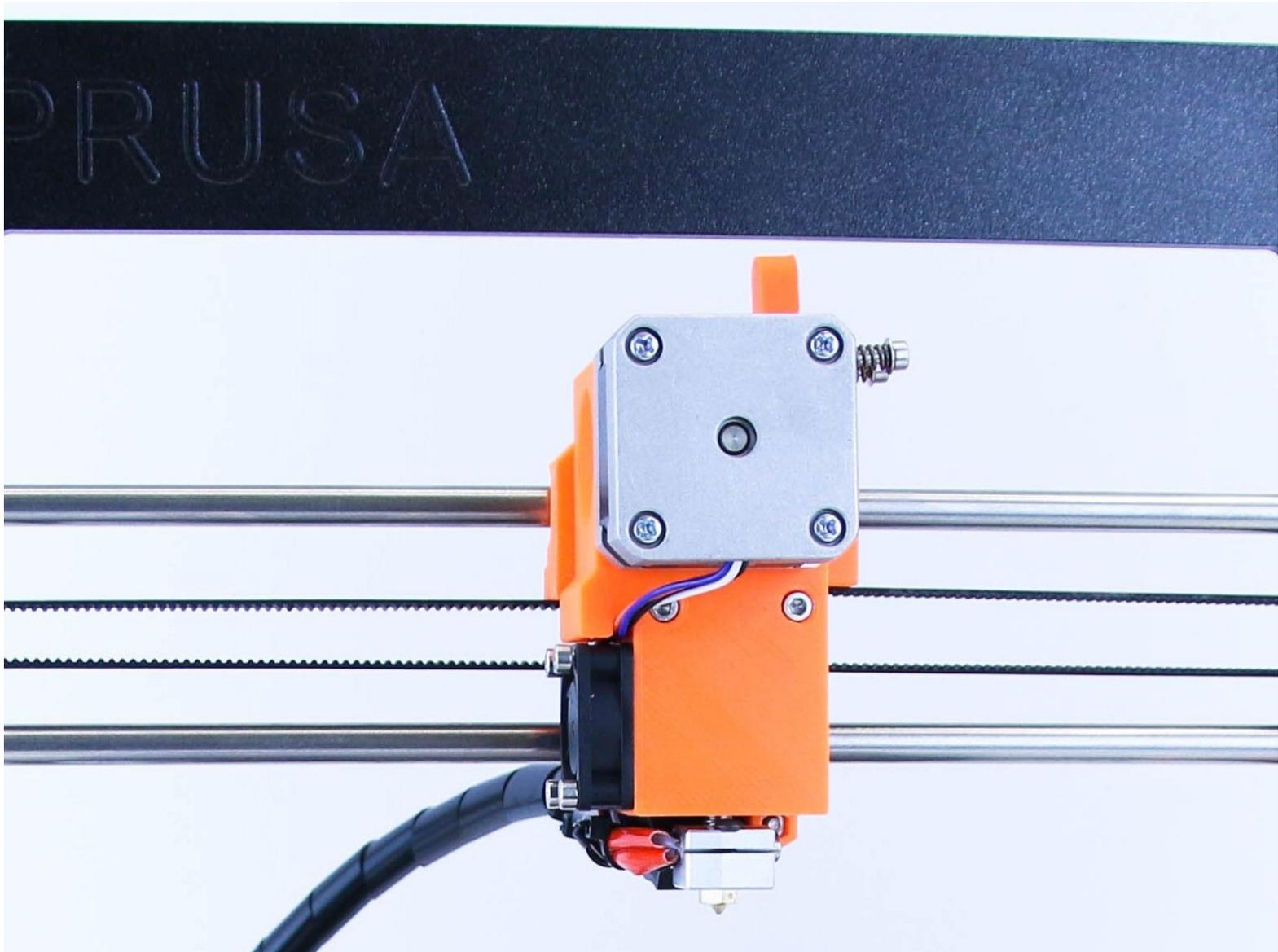
- Congratulations! You've just assembled Z-axis
- You can continue by assembling Extruder in the next chapter - [5. Extruder](#)



# 5. Extruder

Extruder guide

Written By: Dozuki System

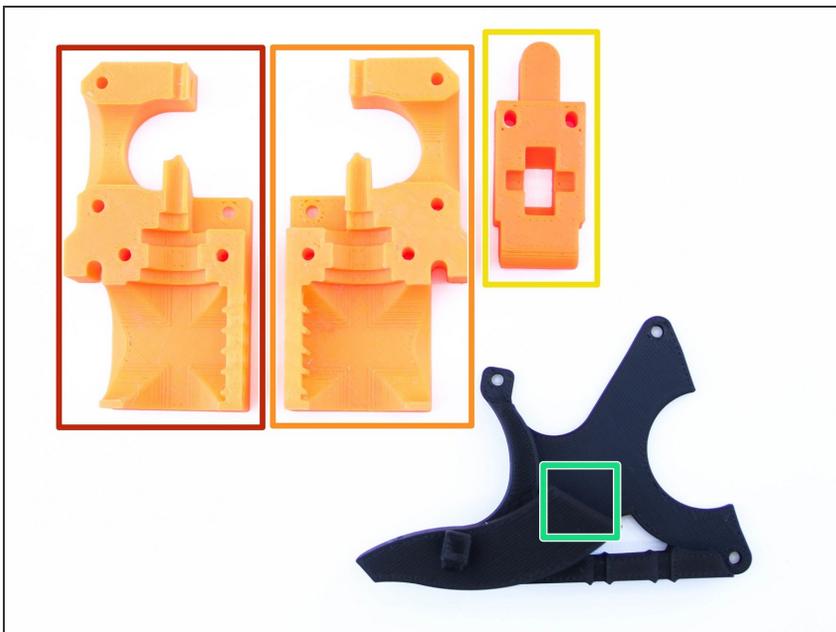


## Step 1 — Get the necessary tools



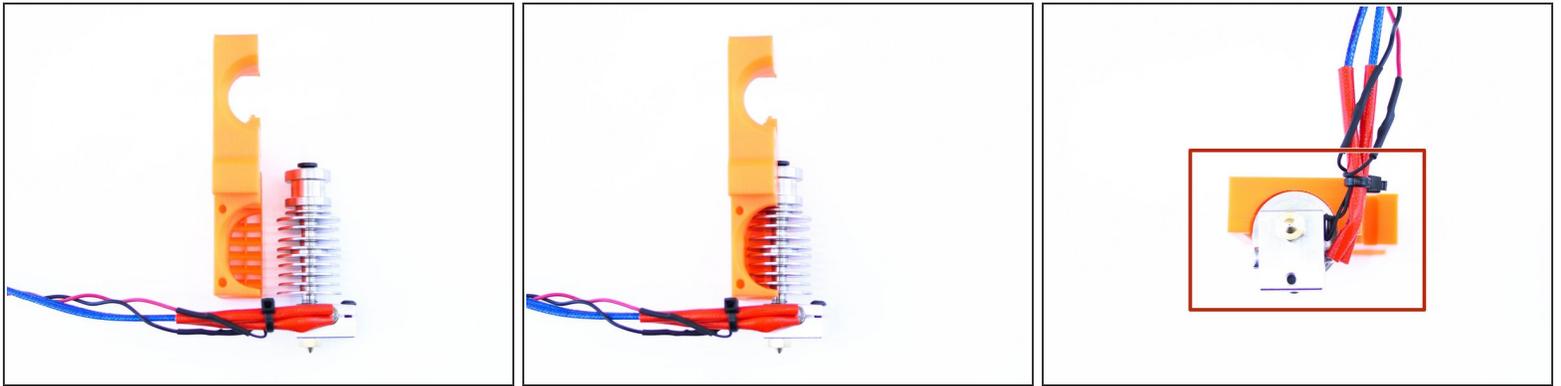
- 2.5, 2 and 1.5 mm hex spanner
- Needle-nose pliers

## Step 2 — 3D printed parts



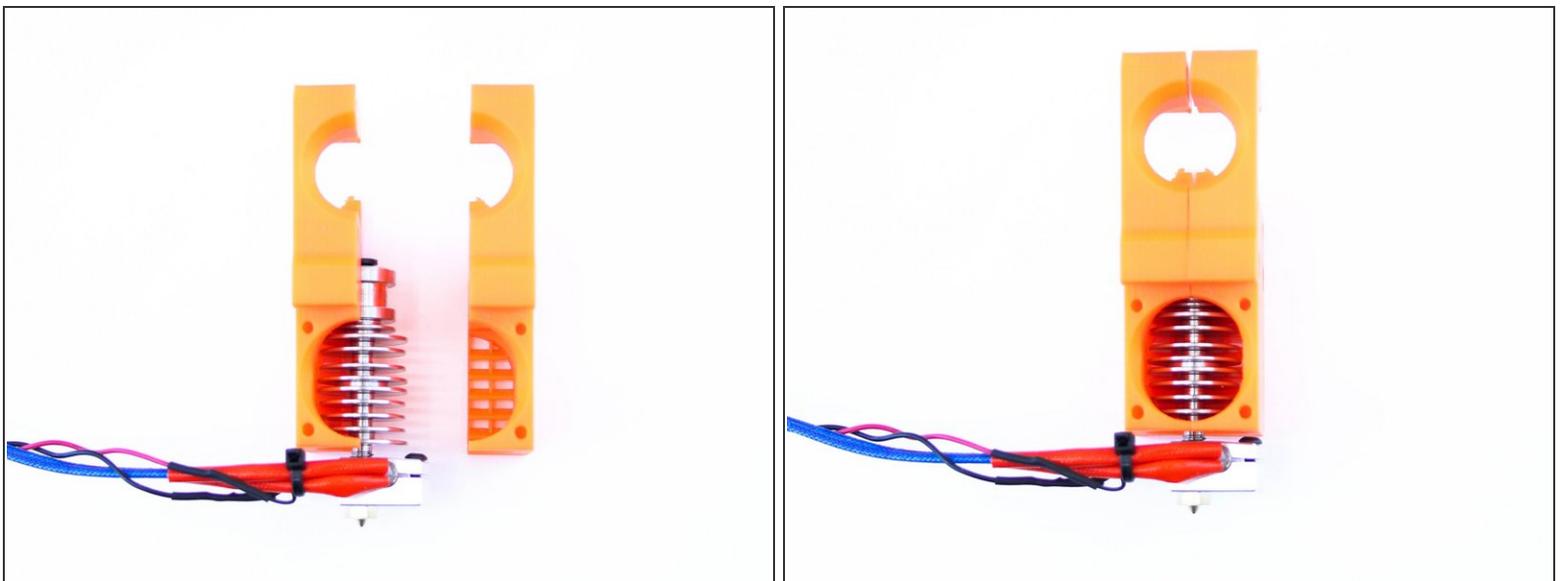
- Extruder body left
- Extruder body right
- Extruder idler
- Fan mount

### Step 3 — Preparing extruder left



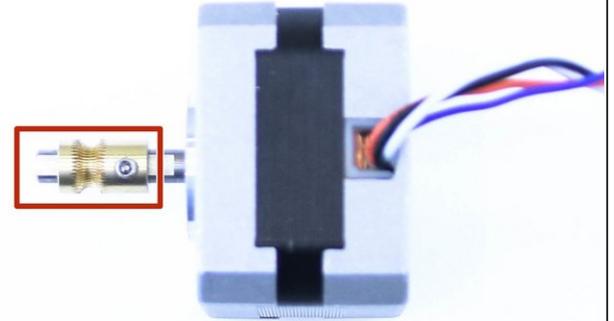
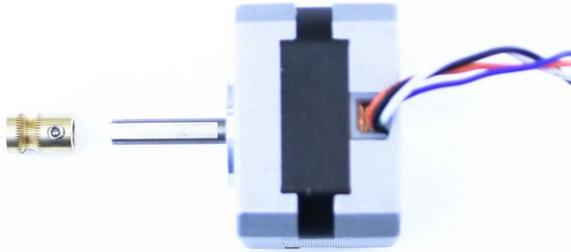
- Slide the nozzle into the extruder left printed part as shown in picture
- Push the nozzle all the way down and make sure that cables are on the side with big hole (as shown in picture)

### Step 4 — Preparing extruder body



- Slide the extruder body right on the nozzle as shown in picture

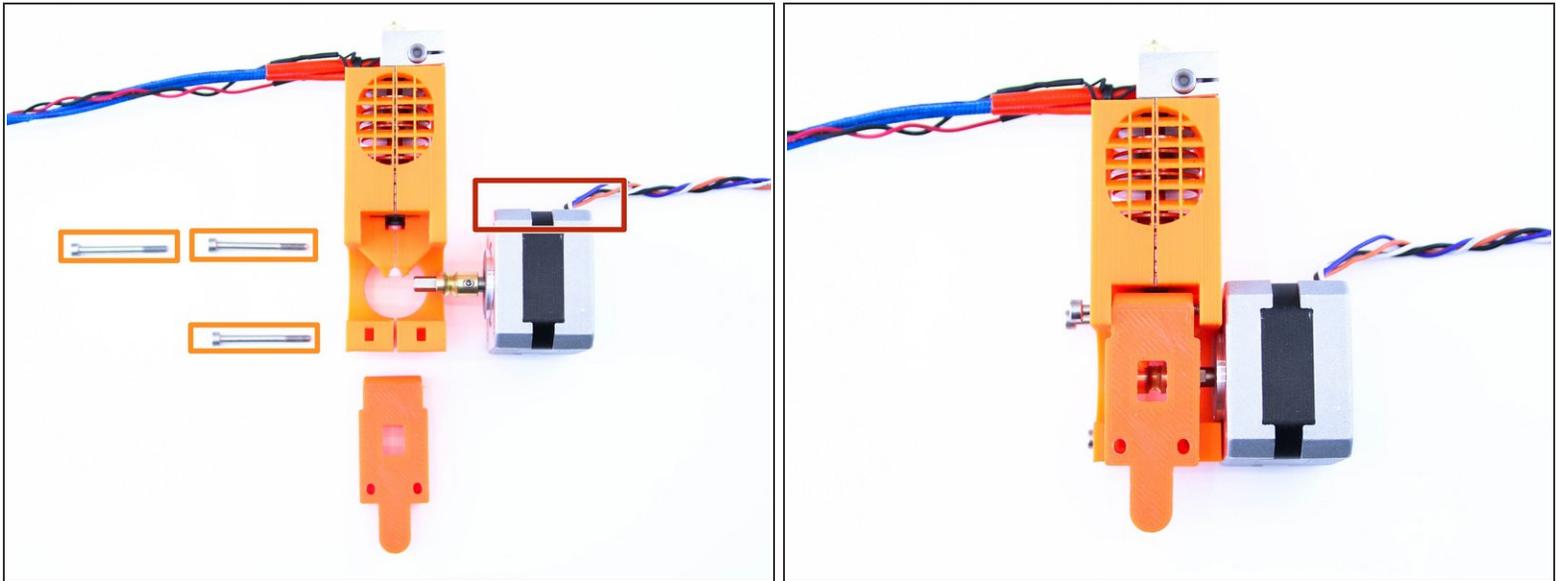
## Step 5 — Preparing the extruder motor



- Press the pulley on the motor
- Note the correct orientation (the screw has to be closer to the motor)

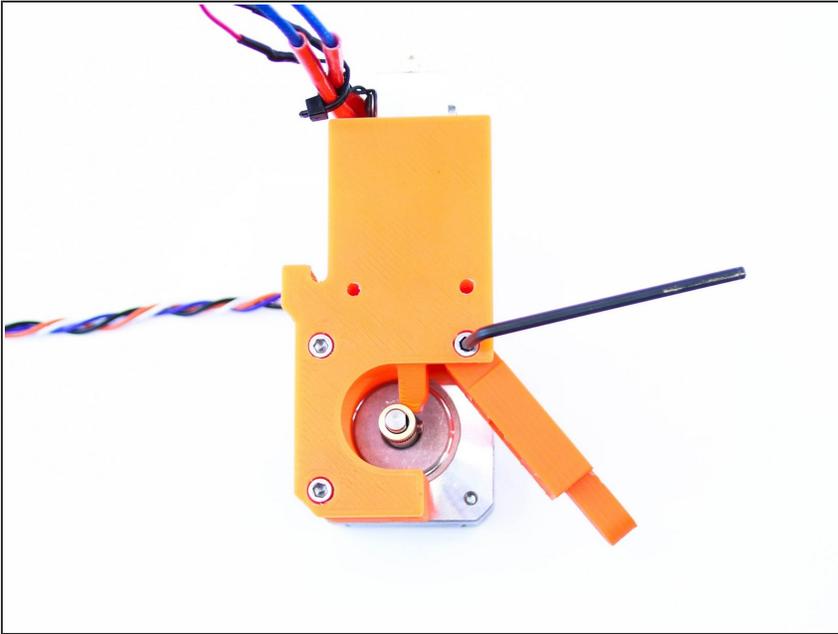
⚠ Don't tighten the pulley at the moment, we have still time for that

## Step 6 — Mounting the motor and idler



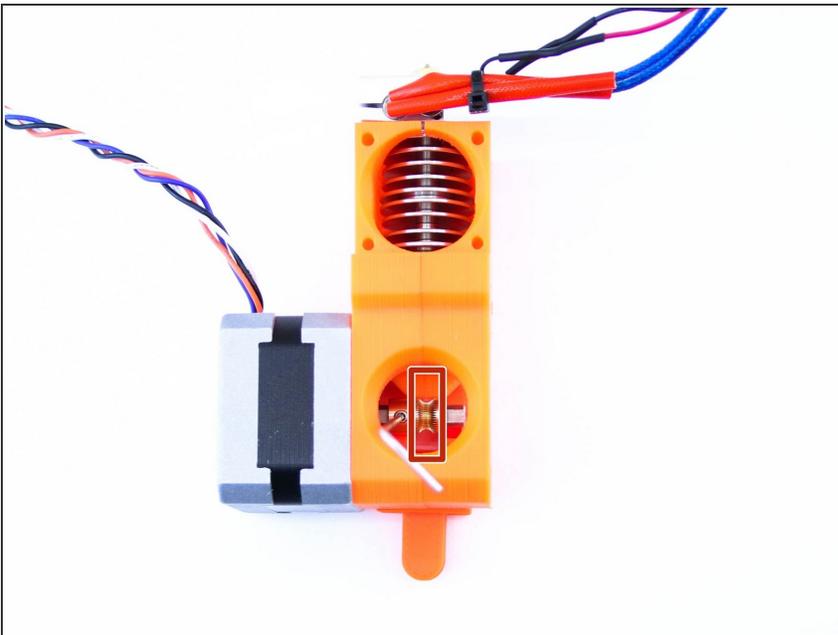
- M3x30 screws
  - Mount the motor on the extruder body as shown in picture
  - Note the correct orientation of motor cable
- ⚠ Don't forget to have idler in place (the screw has to go through it)

## Step 7 — Tightening the motor



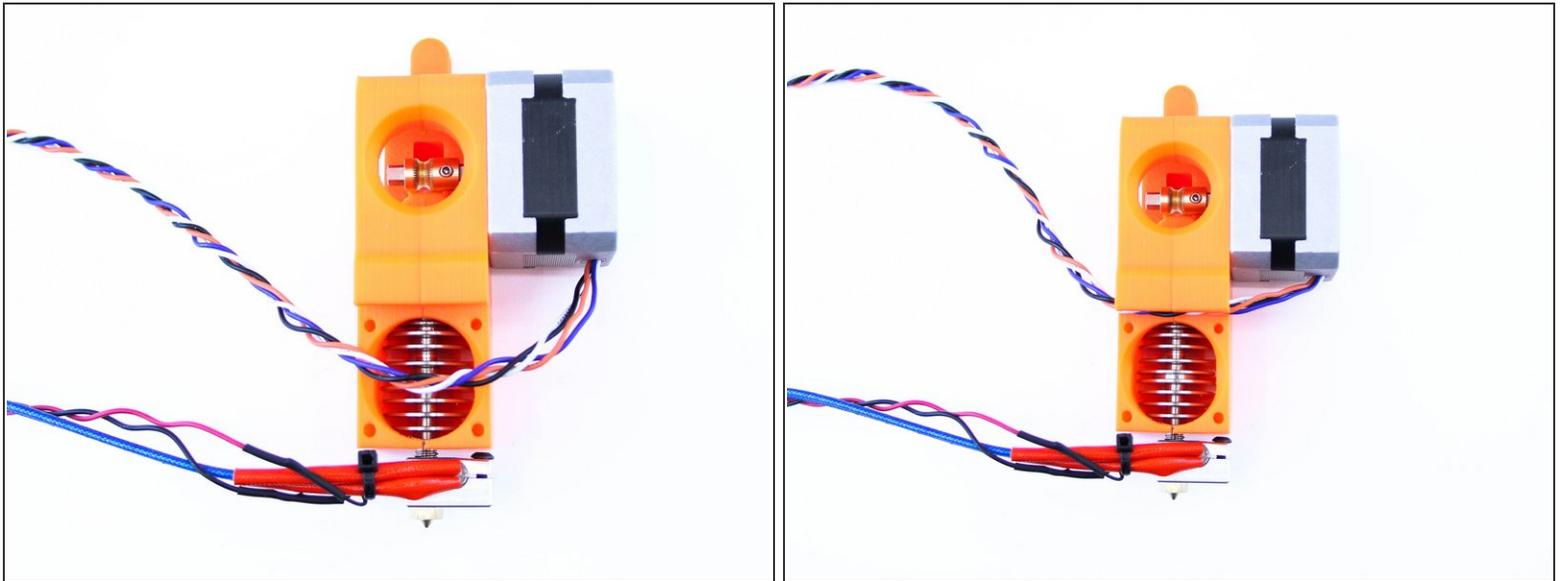
- Tighten the motor screws gently

## Step 8 — Tightening the pulley



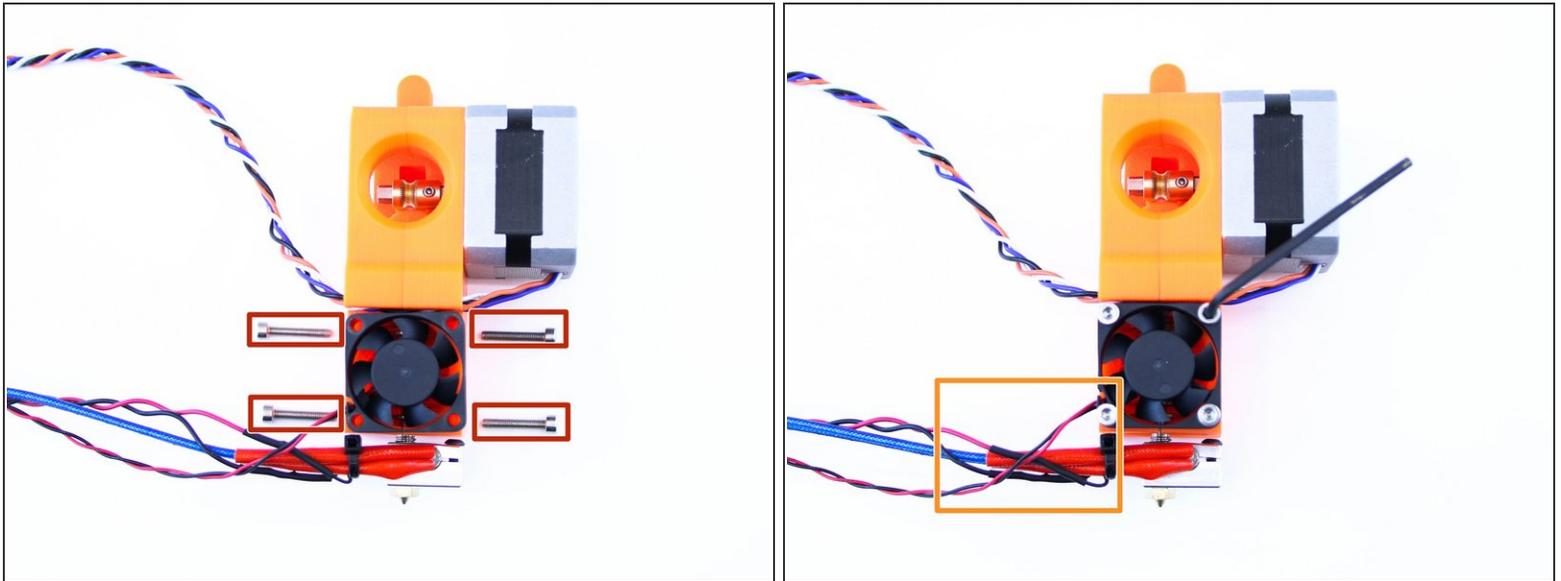
- Using the 1.5mm hex spanner tight the pulley
- Make sure that the part with smaller diameter is perfectly aligned with the nozzle entrance

## Step 9 — Hiding the cable



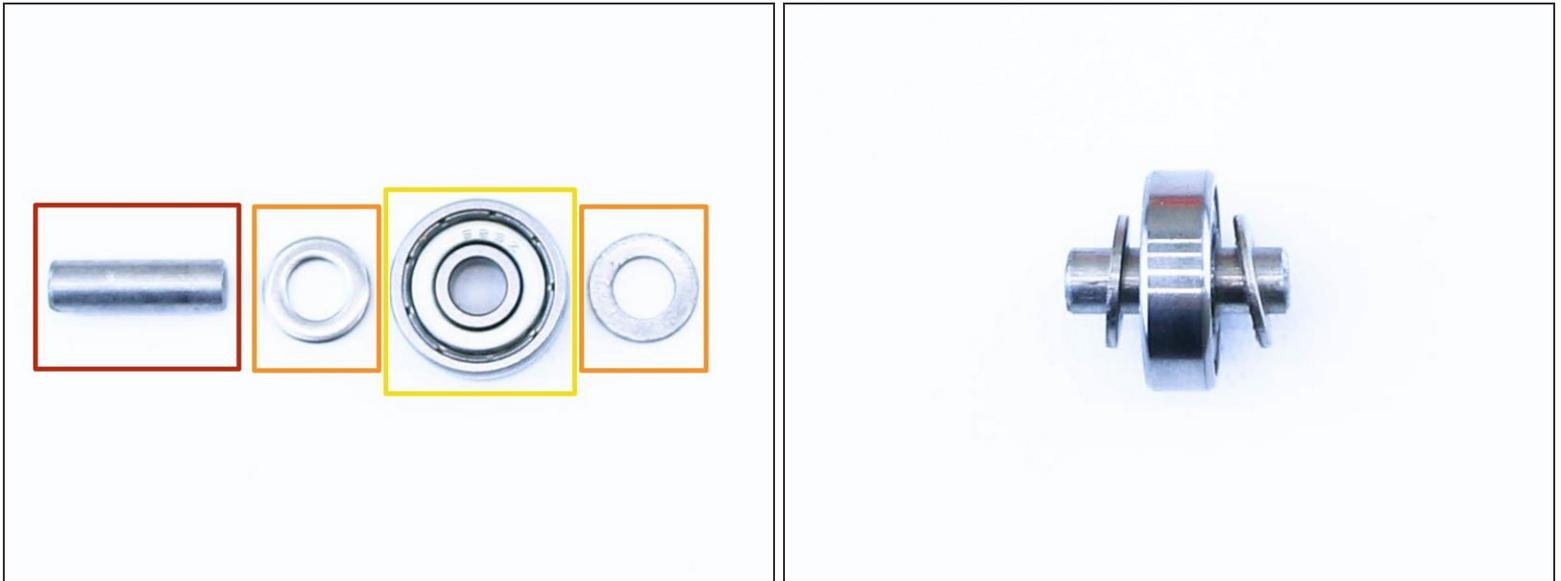
- Slide the extruder cable to the slot in the extruder body as shown in picture

## Step 10 — Mounting the fan



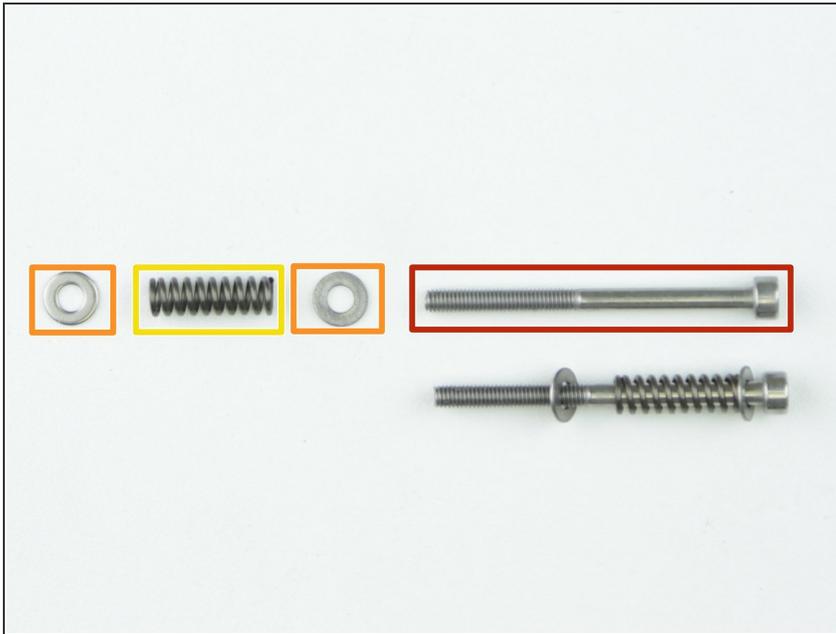
- M3x18 screws
- Using M3x18 screws mount the fan to the extruder body as shown in picture
- Note the correct orientation of the fan (the side with cable has to face the same direction as cables from nozzle)

## Step 11



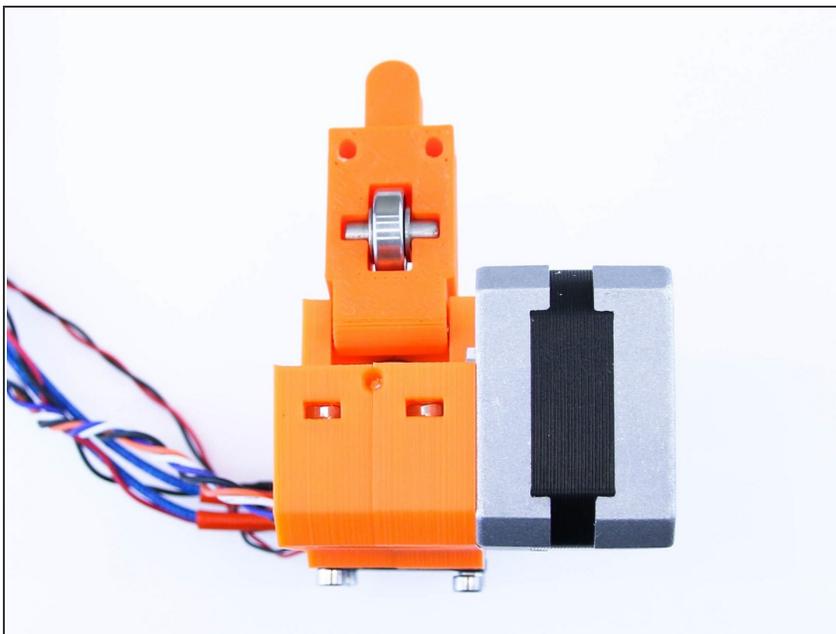
- 5x16sh shaft
- M5w washer
- 625 bearing
- Place the washers and bearing on the shaft as shown in picture

## Step 12 — Prepare the Extruder idler screws



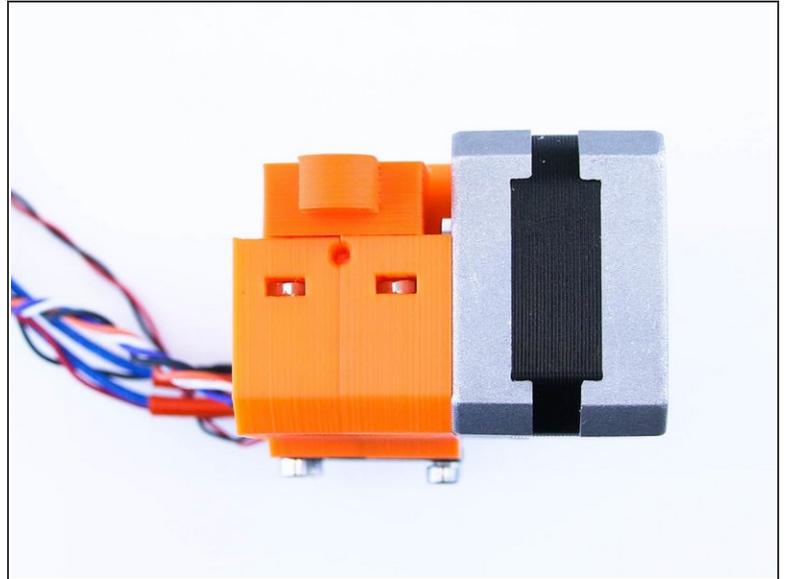
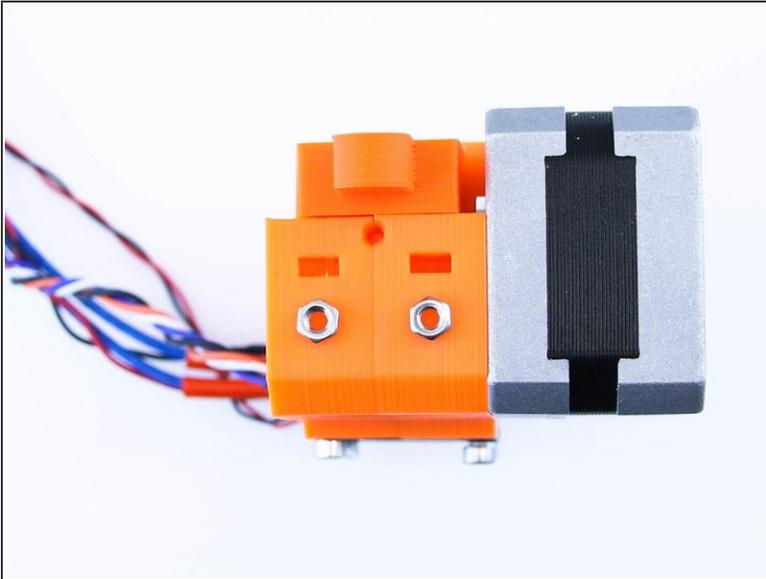
- M3x40 screw
- M3w washer
- Extruder spring
- Assemble the screws as shown in picture

## Step 13 — Assembling the idler



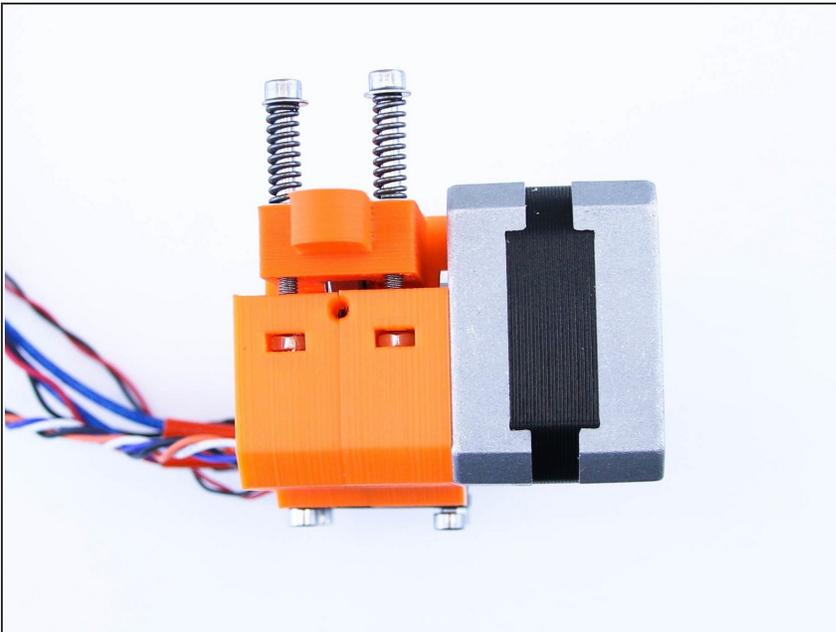
- Place the shaft with bearing into the idler

## Step 14 — Placing the nuts



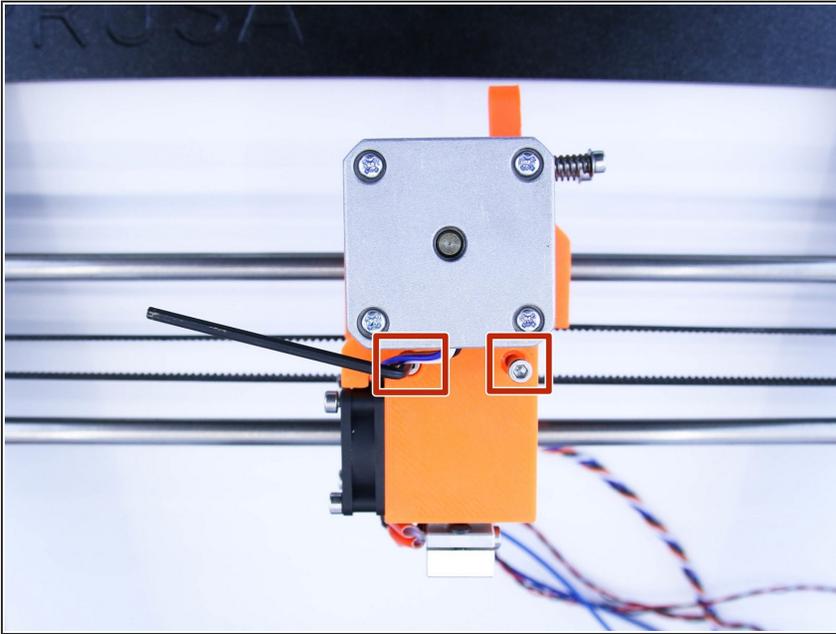
- Place the M3 nuts into the traps on the top of extruder body

## Step 15 — Placing the screws



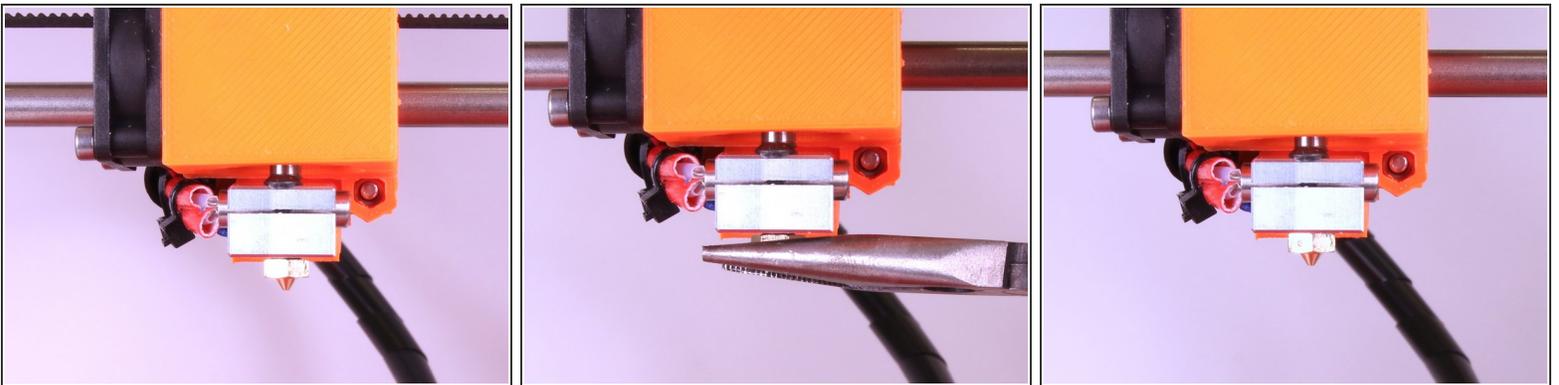
- Screw the extruder screws into the extruder body as shown in picture

## Step 16 — Placing the extruder



- Using M3x40 screw mount the extruder onto the x-carriage

## Step 17 — Nozzle tightening



**⚠** You have to tighten the nozzle tip after the nozzle is fully preheated. Tighten the nozzle before the first print!

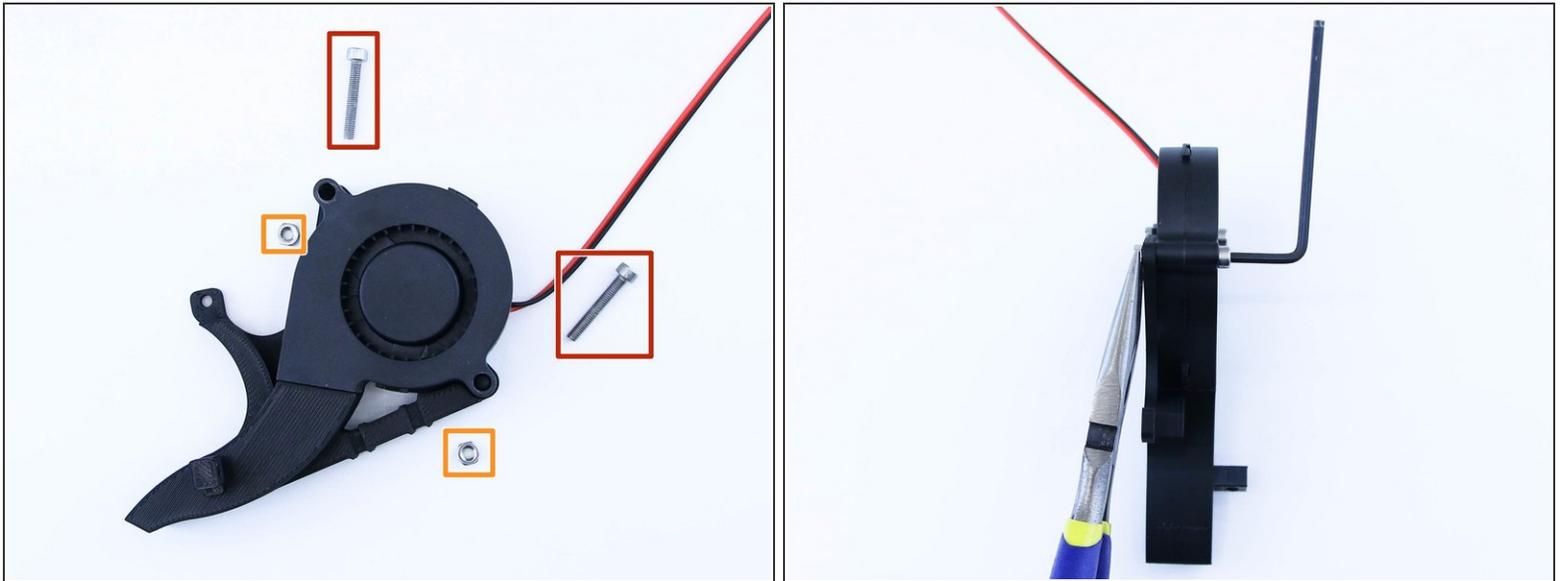
- Using needle nose pliers tighten the nozzle tip

## Step 18 — Preparing the print fan



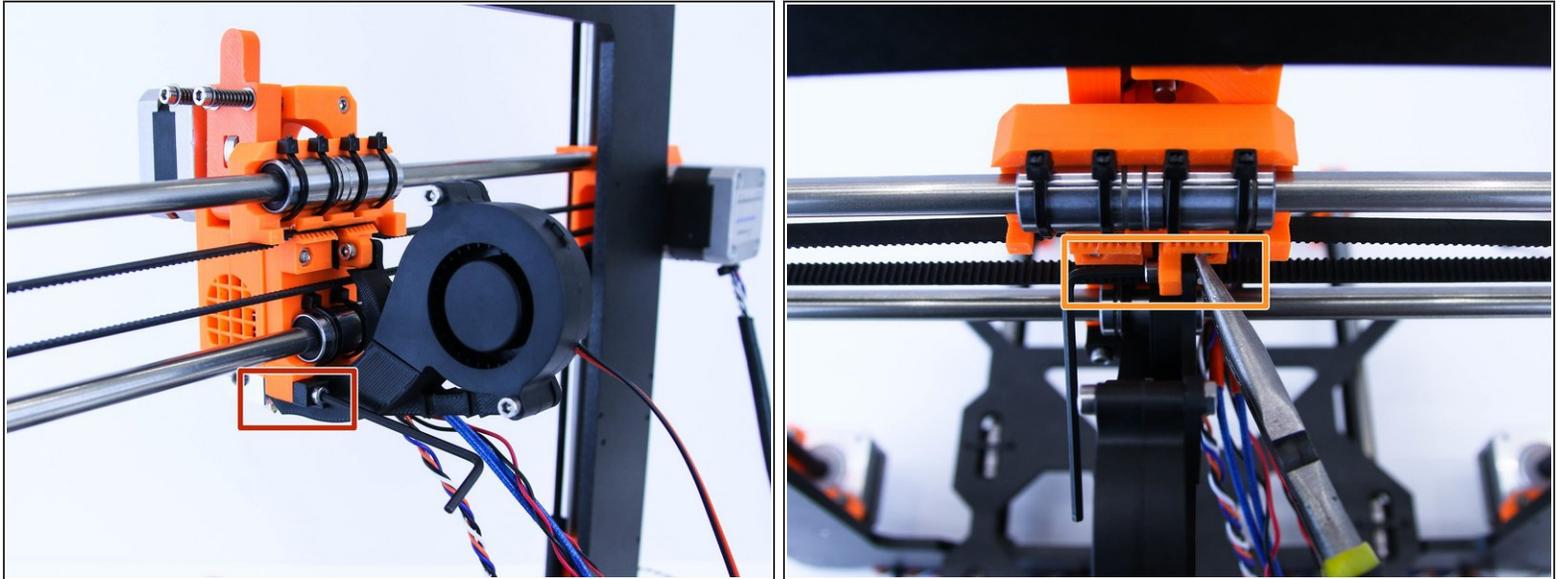
- 5015 print fan
- Place the print fan on the the fan mount

## Step 19 — Preparing the print fan (2)



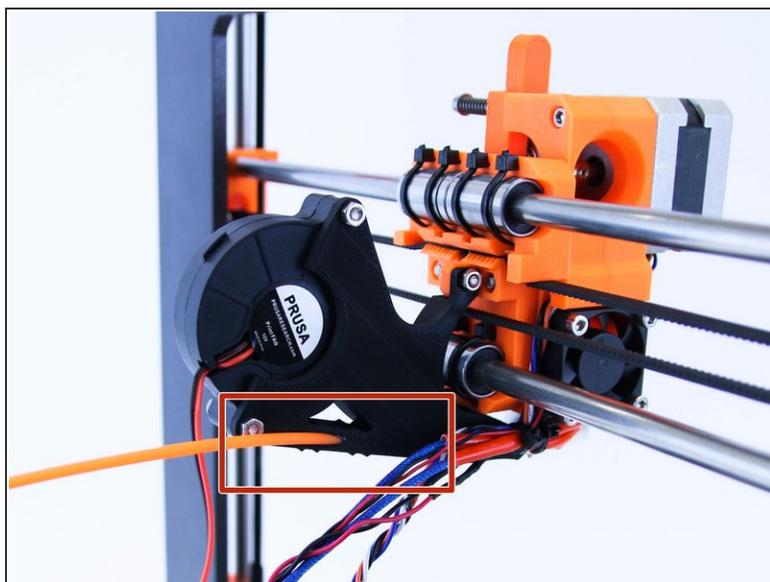
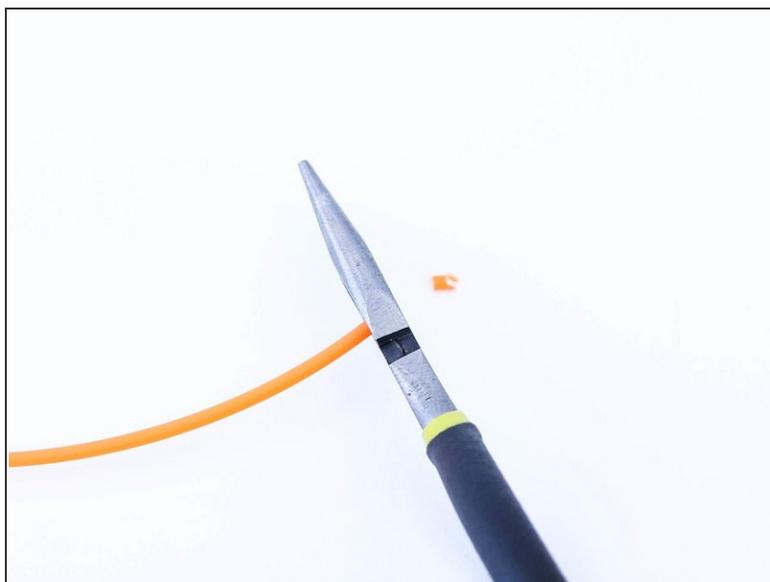
- M3x20 screws
- M3 nuts
- Screw the fan on to the fan mount as shown in picture

## Step 20 — Mounting the fan on the x-carriage



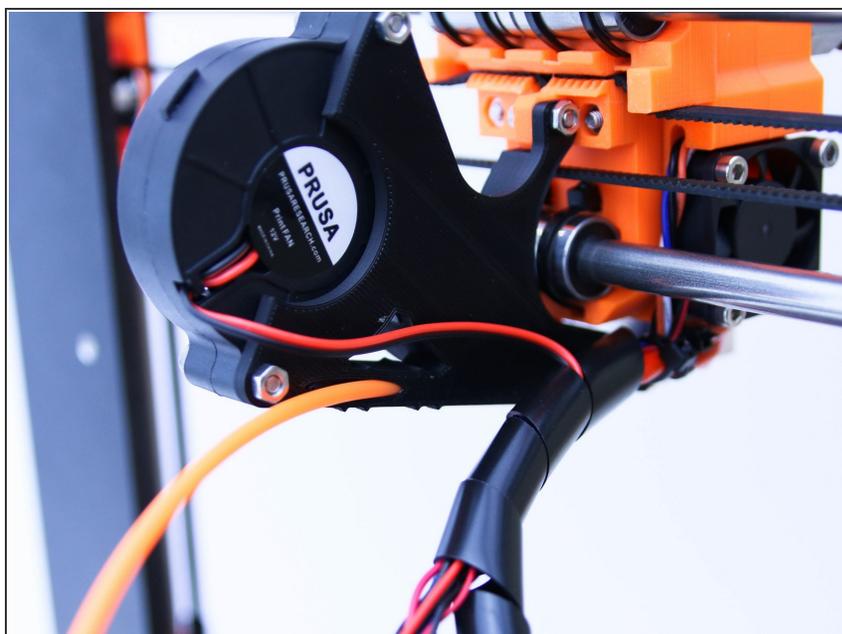
- Using M3x18 screw and M3 nut tight the bottom part of fan mount to the x-carriage
- Using M3x12 screw and M3 NYLOC nut tighten the top part of fan mount to the x-carriage

## Step 21 — Preparing the filament



- Take the piece of filament that came with the parts (PET Ø 3 mm, about 70 cm long).
- Push it all the way down the fan mount. If you experience difficulties when inserting the filament use pliers to make a sharp tip on the filament.

## Step 22 — Cable management part 1



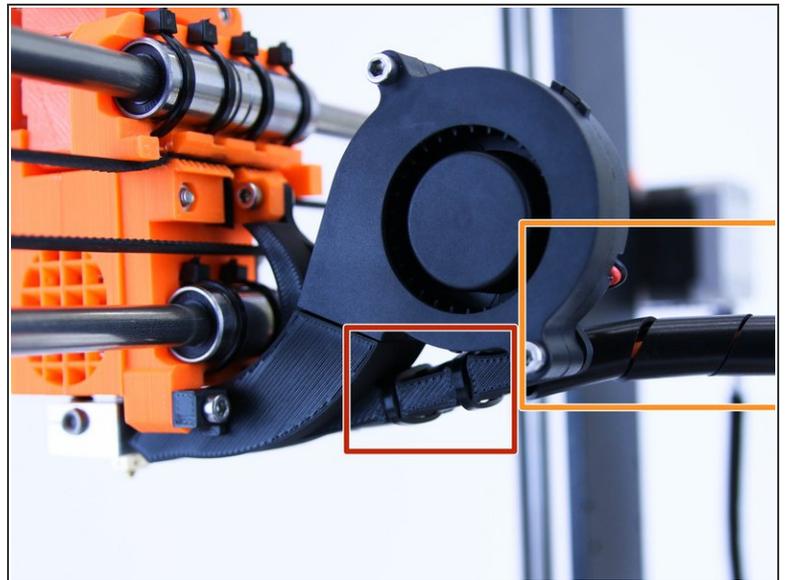
- Wrap the spiral wrap around the cables as shown in picture (only from ziptie to the filament entry) as shown in picture
- Use longest spiral wrap with largest diameter

## Step 23 — Cable management part 2



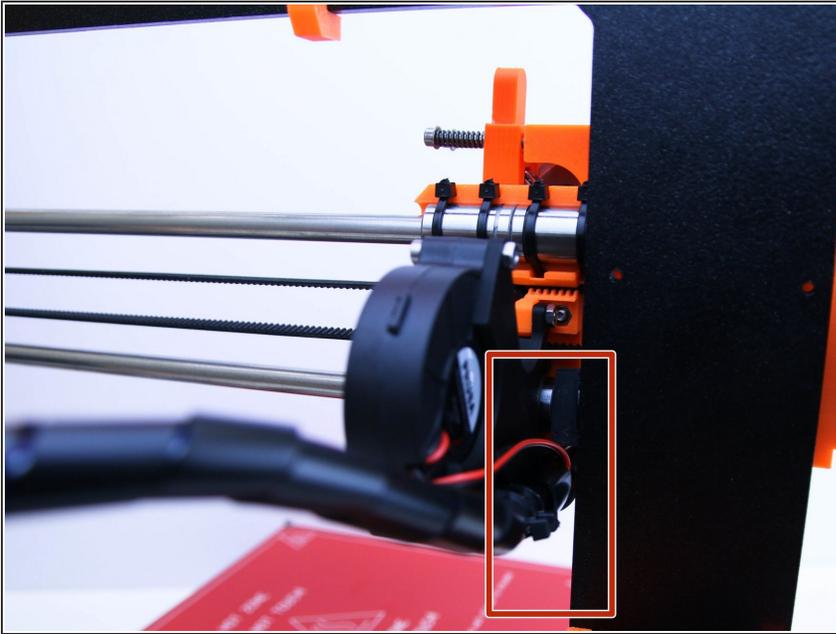
- Wrap the spiral wrap around cables and filament

## Step 24 — Cable management final part!



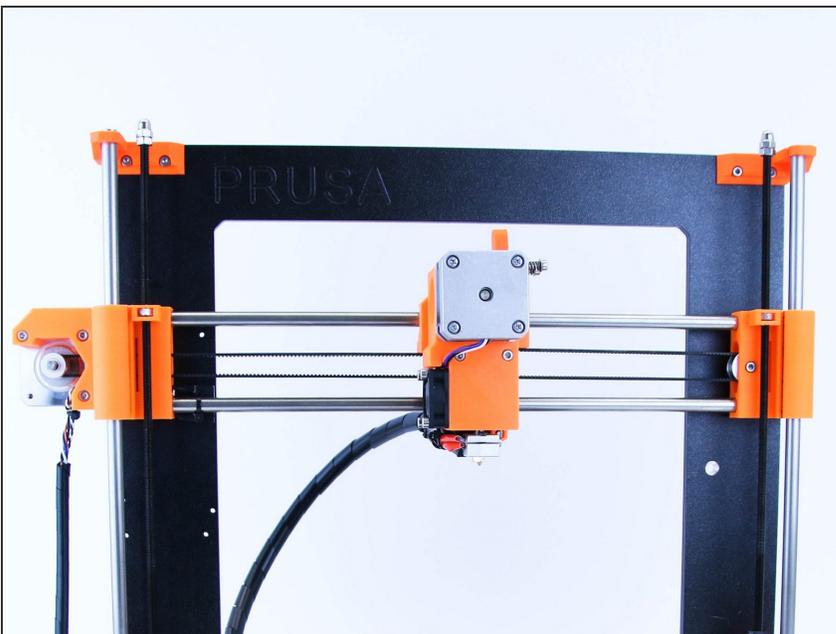
- Use two zipties and tight the wrapped cables to the fan mount
- ⚠ Make sure that the zipties are in cutouts
- ⓘ Make sure that the cables from extruder are facing up as shown in picture

## Step 25 — Adjusting the X endstop



- Adjust the X endstop as shown in picture (if bearing from X-carriage hits the endstop, there has to be a gap of about 4 mm between the cables and frame)

## Step 26 — All done!



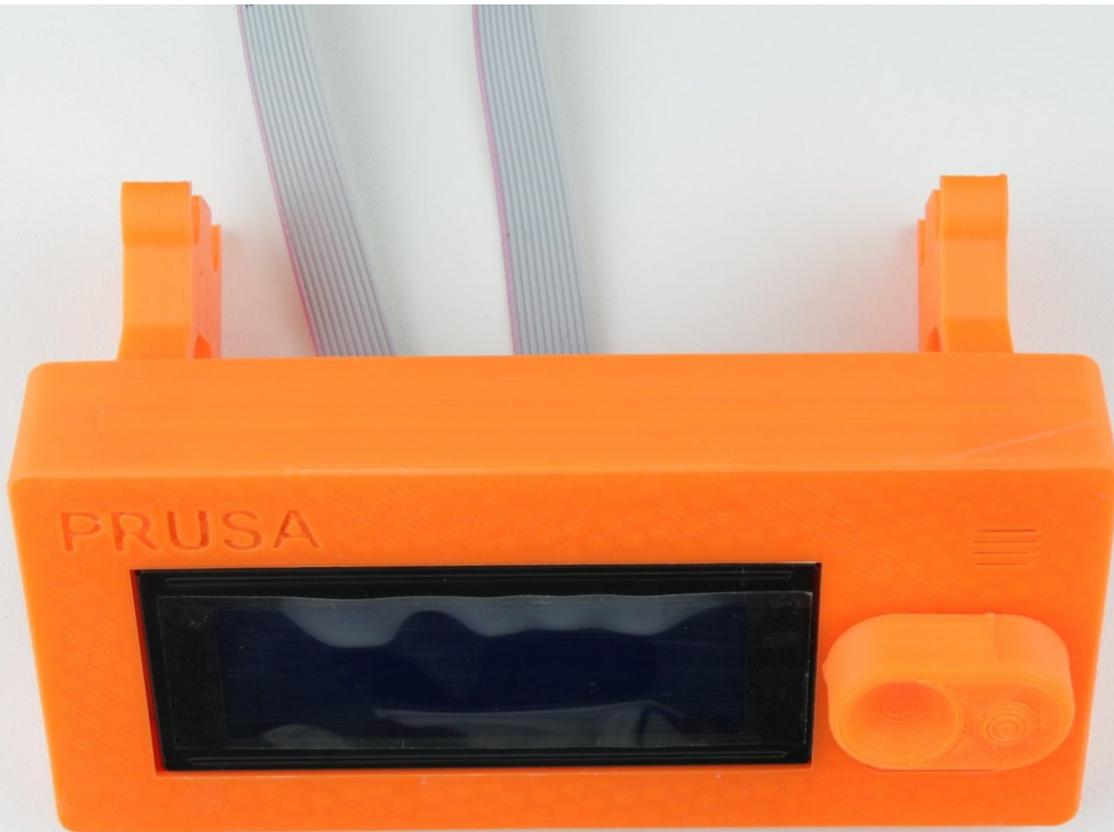
- Congratulations! You've just assembled extruder
- You can continue by assembling the LCD in the next chapter - [6. LCD](#)



## 6. LCD

LCD controller assembly

Written By: Dozuki System

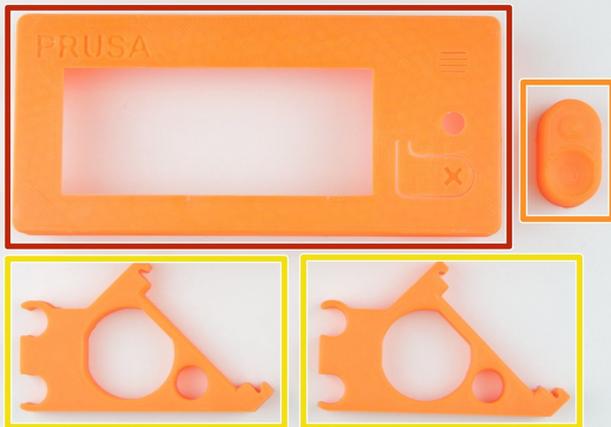


## Step 1 — Get the necessary tools



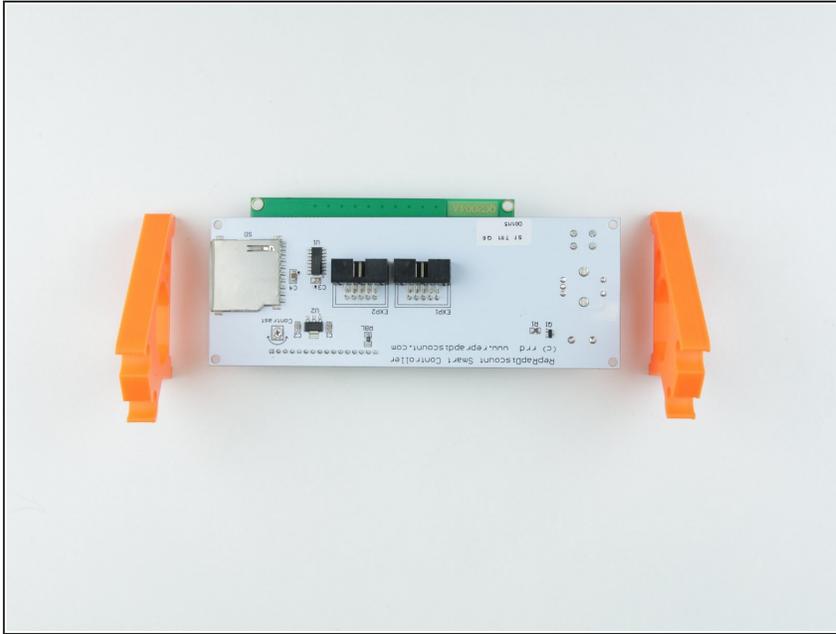
- Needle-nose pliers

## Step 2 — 3D printed parts



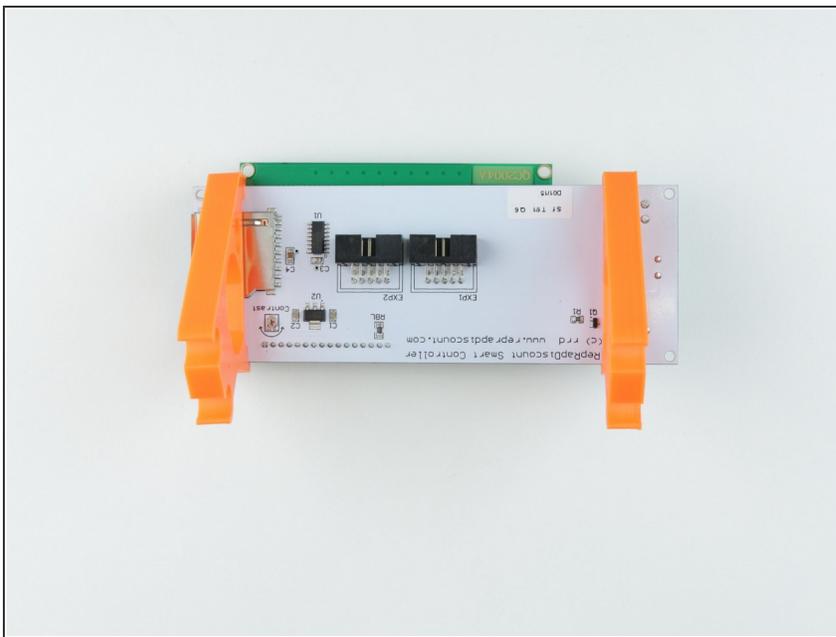
- LCD-cover
- LCD-knob
- LCD-support

### Step 3 — Preparing the LCD support for assembly



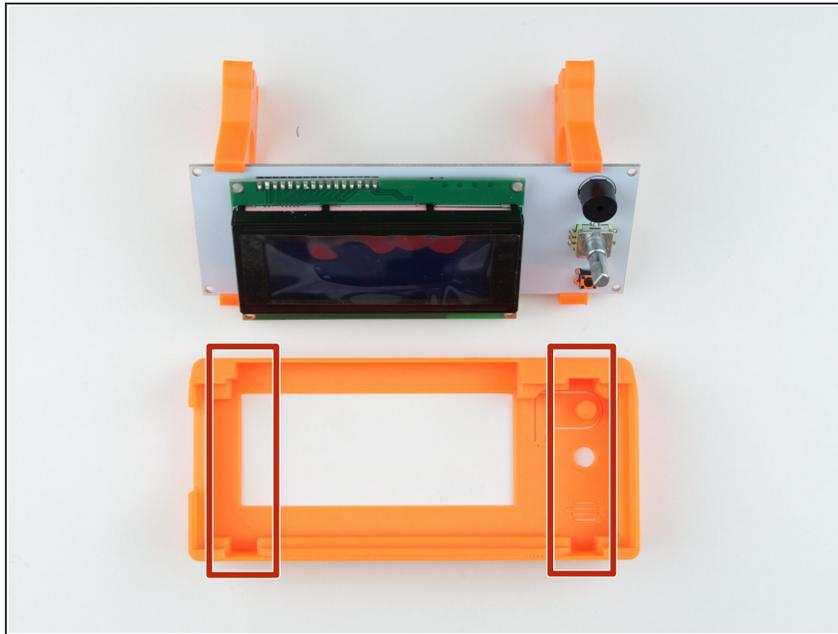
- Prepare the LCD controller and LCD-support printed parts as shown in the picture
- ⚠ Ensure the correct orientation of parts and LCD controller

### Step 4 — Assembling the LCD support



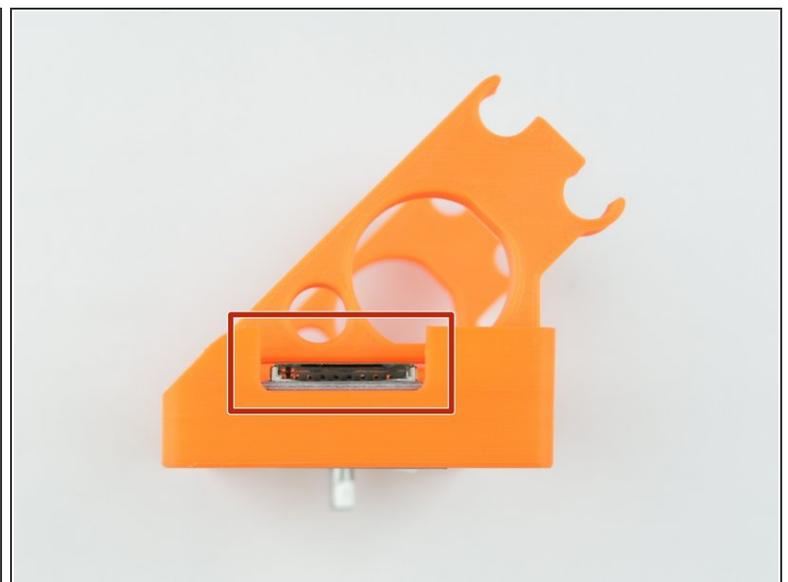
- Slide the LCD-support parts on the LCD-controller

## Step 5 — Adjusting the LCD-support



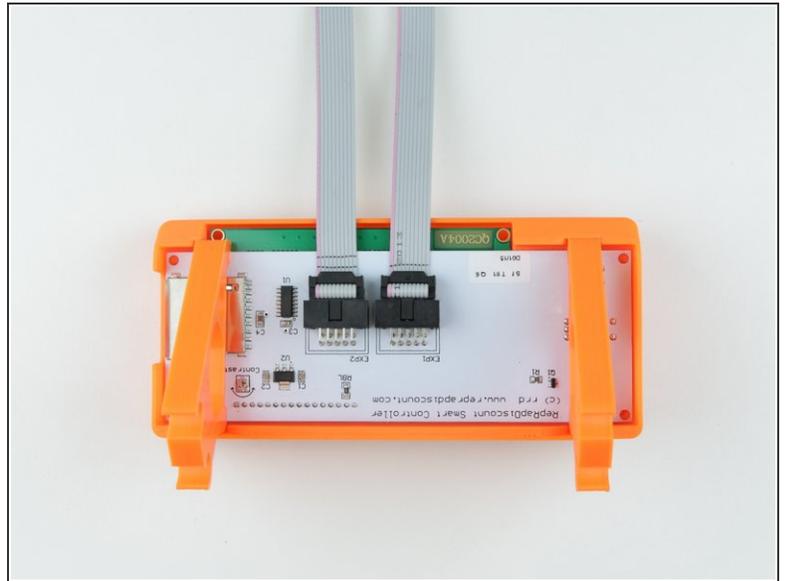
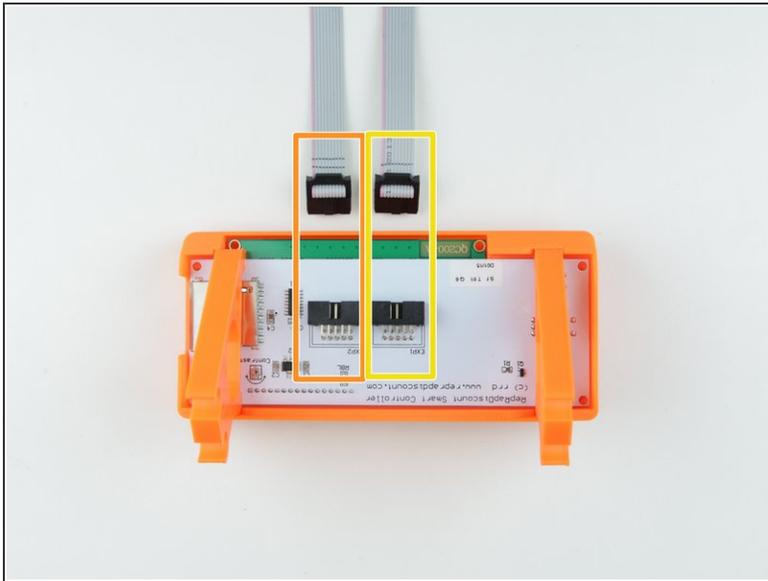
- Adjust the LCD-support parts as shown in picture
- LCD-support parts must face directly into the cutouts in LCD-cover

## Step 6 — Assembling the LCD-cover



- Press the LCD controller with LCD-support into the LCD-cover as shown in picture
- Press it as deep as possible (SD card slot has to be in same position as in picture)

## Step 7 — Plug in the cables



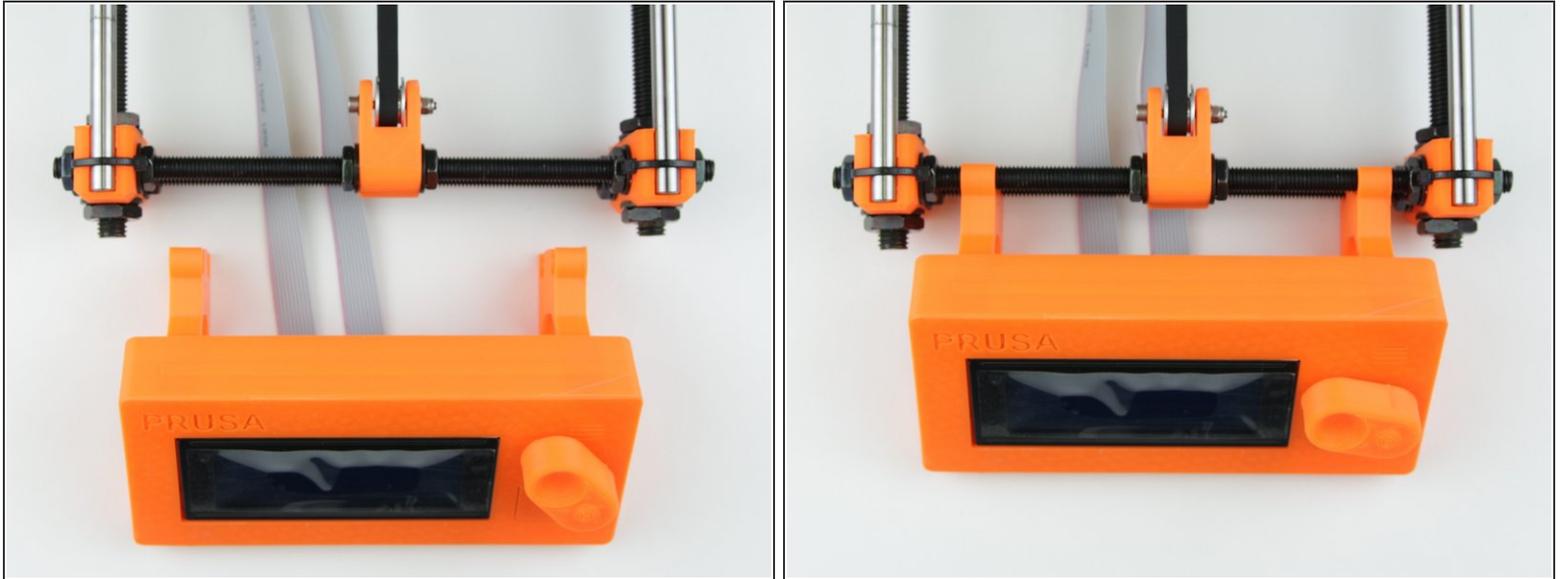
- Plug in the cables as shown in picture
- Cable with 2 stripes has to be plugged in connector labeled with EXT2
- Cable with 1 stripe has to be plugged in connector labeled with EXT1

## Step 8 — Assembling the LCD knob



- Assemble the LCD-knob part as shown in picture

## Step 9 — Secure the LCD display onto the printer



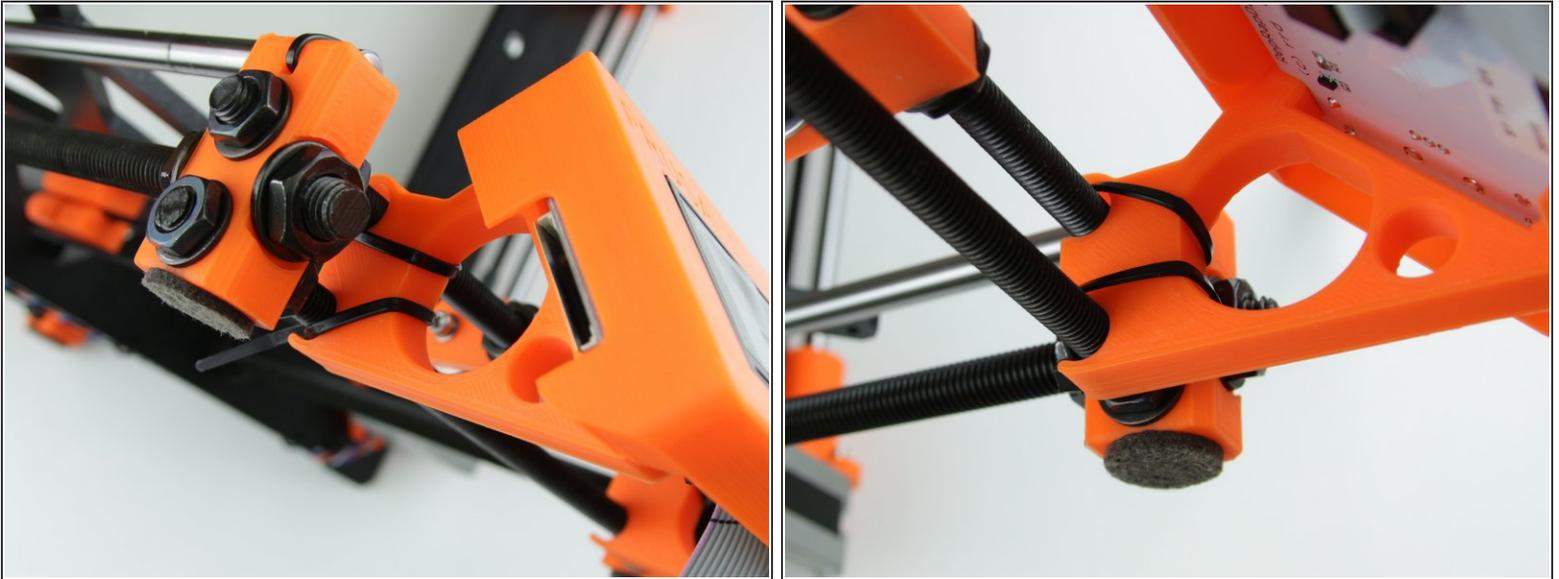
- Press the LCD assembly onto front side of Y-axis
- ⓘ Best way is press the LCD assembly on the top threaded rod first and then on the bottom

## Step 10 — Secure the LCD assembly



- Use a zip tie to anchor the LCD assembly to the top threaded rod

## Step 11 — Tighten the LCD assembly



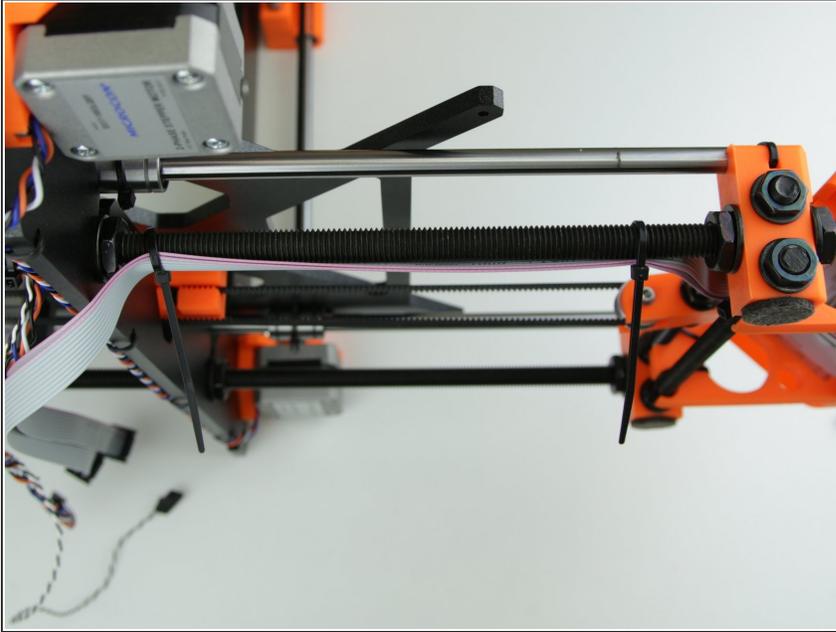
- Use a ziptie to secure the LCD assembly to the bottom threaded rod as shown in picture
- Repeat the steps for the other side as shown on second picture

## Step 12 — Guiding the LCD cables



- Guide the LCD cables between the threaded rods as seen in picture

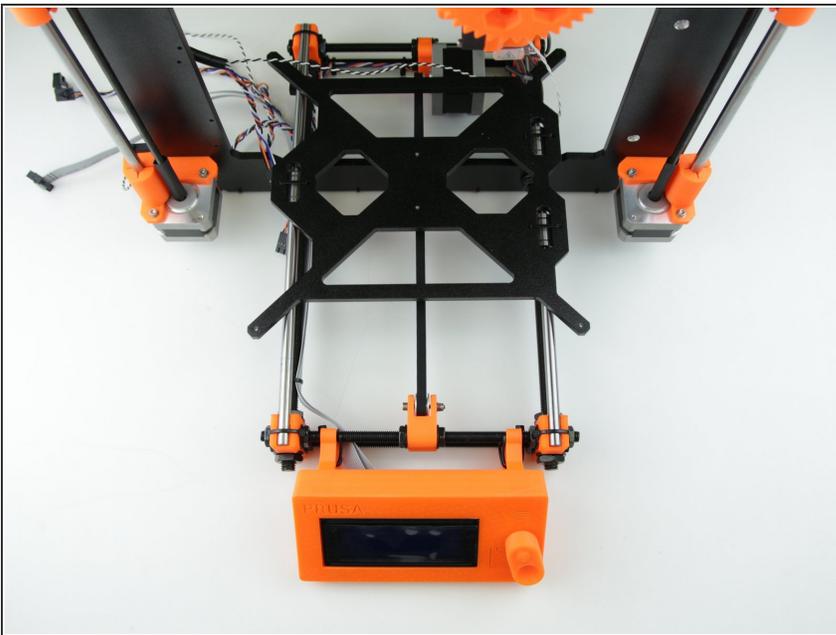
## Step 13 — Tighten the LCD cables



- Tie the LCD cables to the left M10 threaded rod as shown in picture

 Do not tie the cables too tight, otherwise you may damage them

## Step 14 — All done!



- Congratulations! You've attached LCD to the Prusa i3 3D printer!
- You can continue by assembling PSU and heatbed in the next chapter - [7. PSU and Heatbed](#)

# 7. PSU and Heatbed

PSU and Heatbed guide

Written By: Dozuki System



## Step 1 — Getting necessary tools



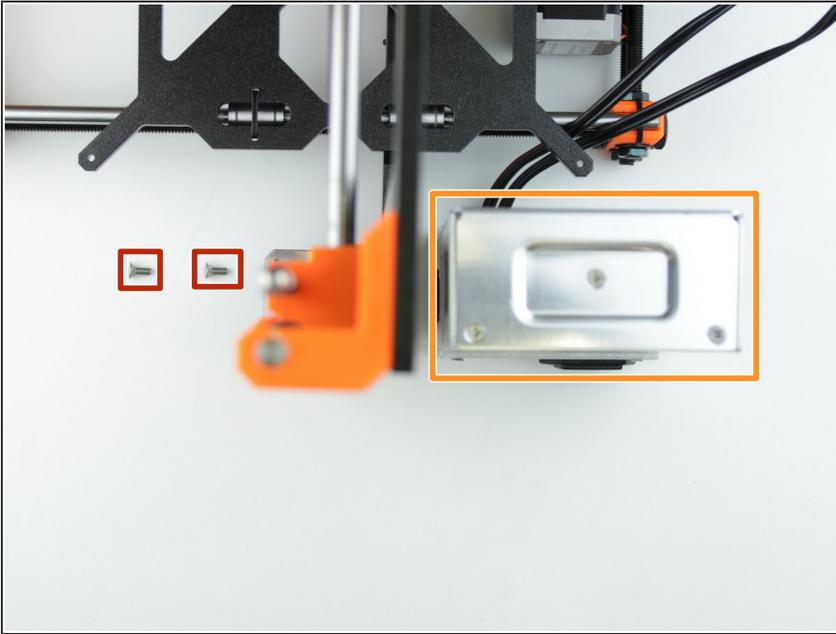
- 2.5mm hex spanner
- Needle-nose pliers

## Step 2 — 3D printed parts



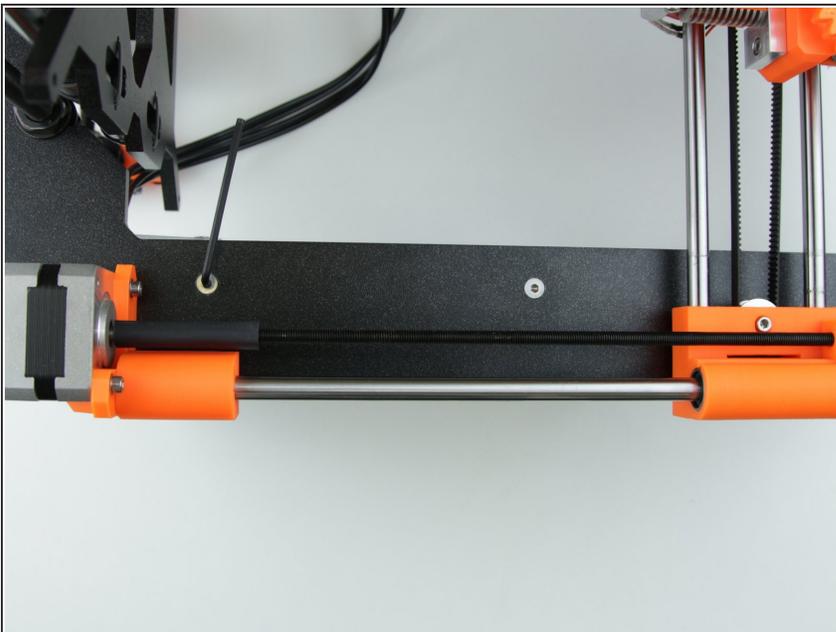
- Y-adjuster
- Spool-holder

### Step 3 — Assembling the PSU



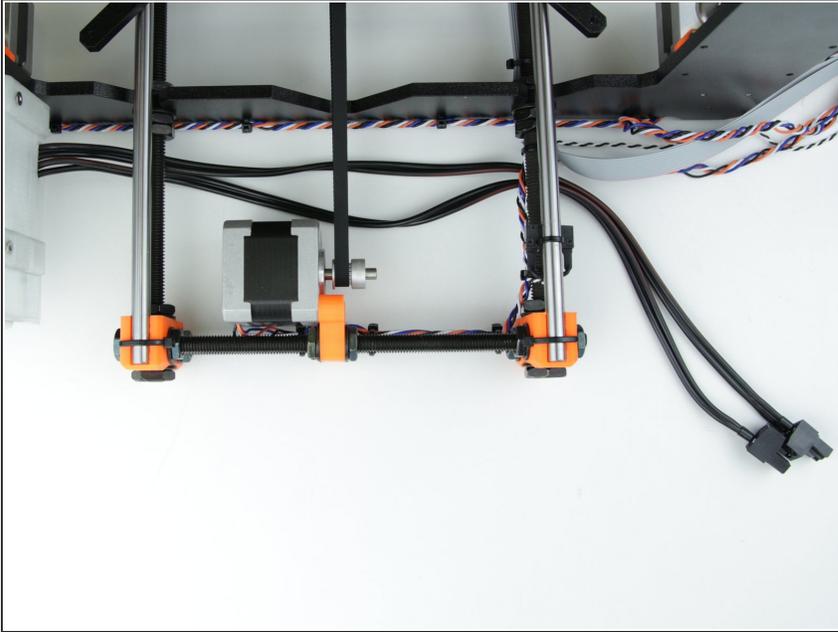
- M4x10 with semi-circular head
- 12V/240W Power supply with cover
- ⓘ Ensure the correct orientation of power supply (Mains power connector has to face out from printer)

### Step 4 — Securing the PSU



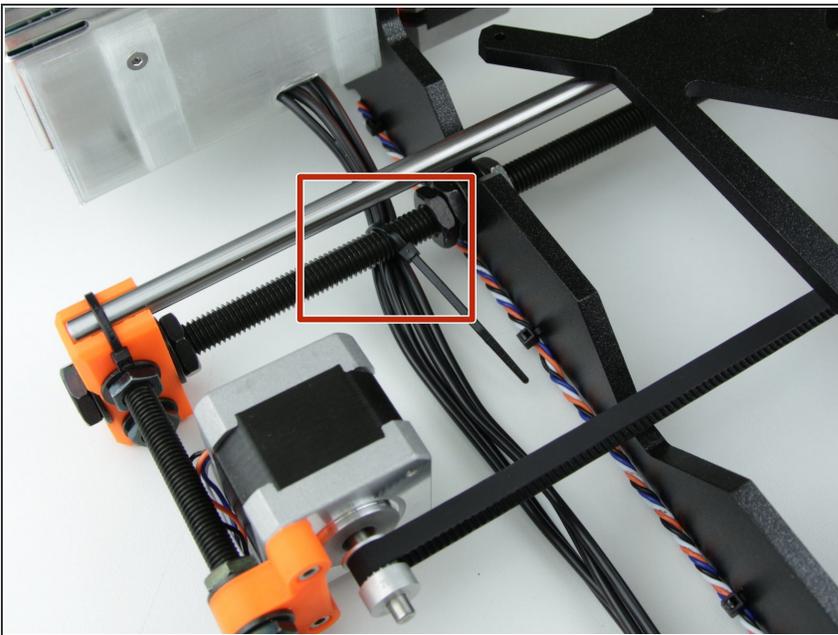
- Using 2.5mm hex spanner, tie the PSU to frame

## Step 5 — Main power cables guide



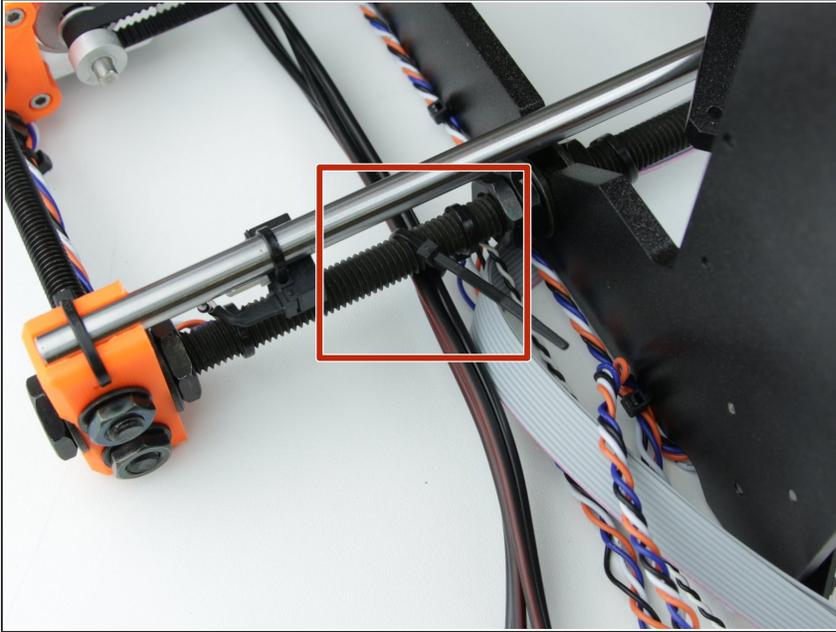
- Guide the low voltage cables from PSU under the threaded rods to the other side of frame as shown in picture

## Step 6 — Securing the power cables (Left side)



- Tie the low voltage power cables to the threaded rod
- ⚠ Do not tie them too much, otherwise you can damage cable insulation

## Step 7 — Securing the power cables (Right side)



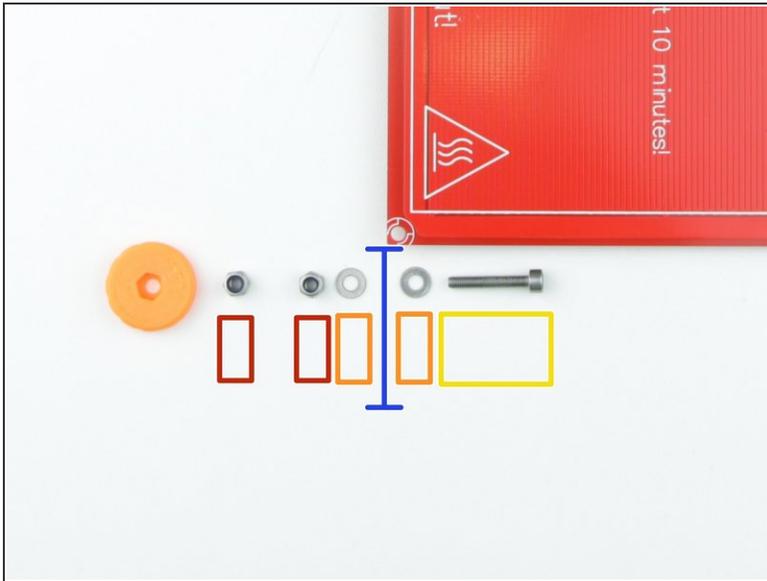
- Tie the low voltage power cables to the threaded rod
- ⚠ Do not tie them too much, otherwise you can damage cable insulation

## Step 8 — Configuring the PSU



- Check the switch position on the side of PSU if it's in correct position
- ⚠ Make sure that the power supply is not connected to mains!
- ⓘ Correct position means that the switch is on the side with your mains voltage. (If you have 110/120 V mains [mostly America] the switch has to be on the left, if you have 220/230 V [Europe and the rest of the world] the switch should be on the right )
- 🔧 You can change the switch position with flathead screwdriver
- ⚠ This is very important part, if the power supply is configured incorrectly it can be damaged!

## Step 9 — Assembling the heatbed



- M3nN Nylock nut

- M3w washer

⚠ Smooth part of the washer has to be in contact with heatbed, otherwise you can short the heatbed

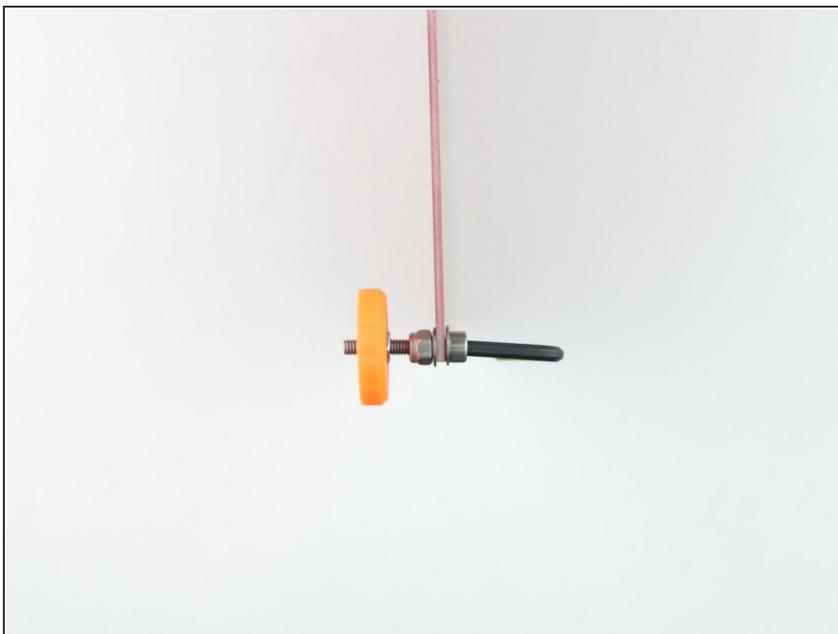
- M3x18 screw

## Step 10 — Heatbed screw - first nut



- As shown in picture, use pliers and a 2.5mm hex spanner and screw the first nut onto the screw
- ★ Remember the order of parts from previous step (Screw - washer - Heatbed- washer - nut)
- ⚠ The screw has to enter to the heatbed from the top side (side with visible traces)
- Do not tighten the nut yet, we'll get to it

## Step 11 — Heatbed screw - second nut



- Use pliers or Y-adjuster and the 2.5mm hex spanner to screw the second nut onto screw
- The distance between nuts should be around 3 mm, but it doesn't matter that much at this step

## Step 12 — Heatbed screw - finishing



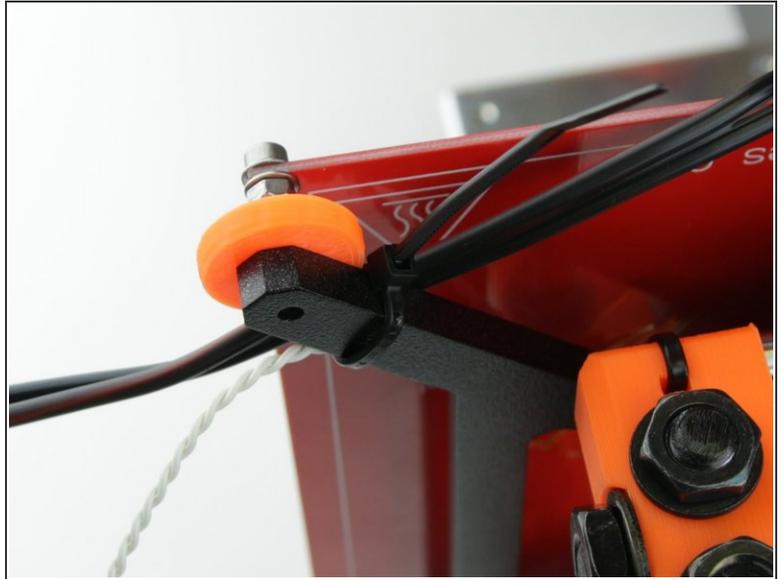
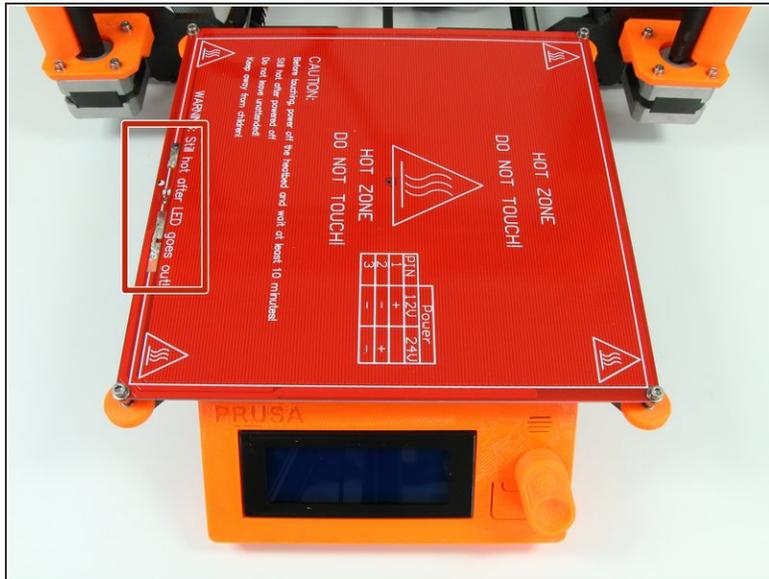
- Use pliers and the 2.5mm hex spanner and tighten the first nut

## Step 13 — Heatbed assembled



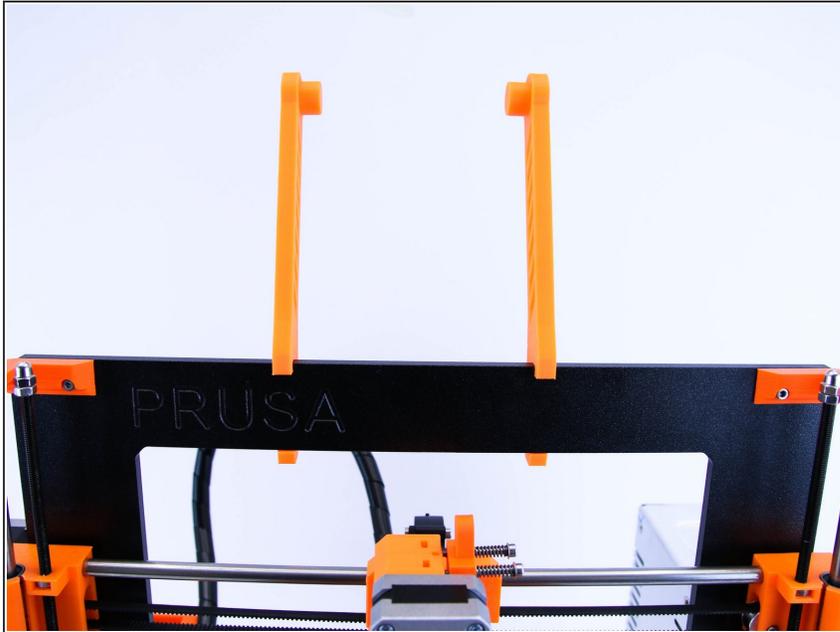
- Repeat previous 3 steps to have a screw in each corner of heatbed

## Step 14 — Place the heatbed on the printer



- Place the heatbed on Y-carriage as shown in picture
- ⚠ Ensure the correct orientation (cables on the left) and make sure that second nut in every corner is touching the Y-carriage
- ⓘ During this step you may notice that the corner screws either drop into the Y-Carriage, or require being screwed in. Either is acceptable. This is caused by the powder coating building up during the painting process, and will erode over time.

## Step 15 — Last finishing touch and done!

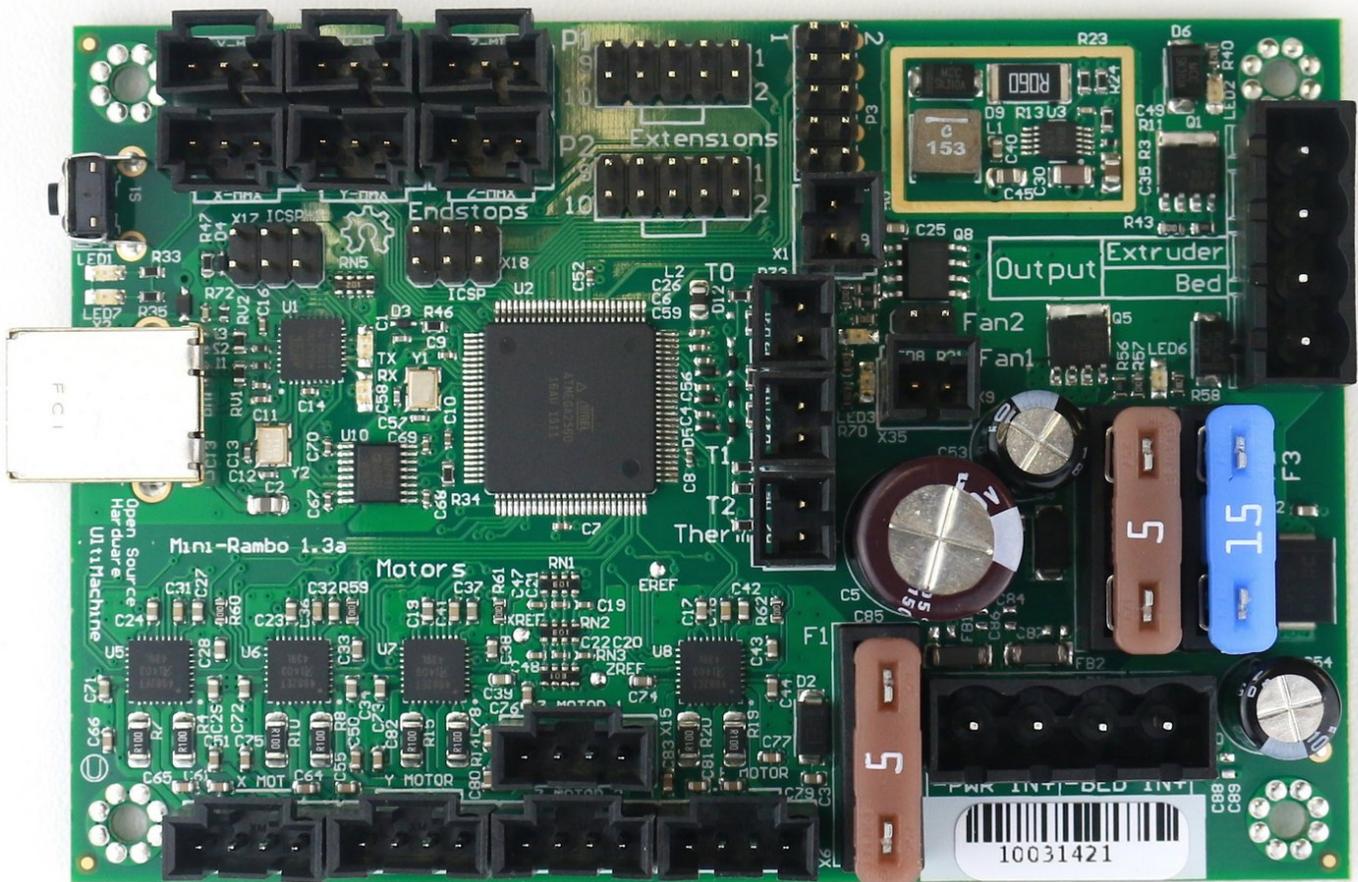


- Assemble the Spool-holders to the top of frame as shown in picture
- Almost there! you're one step before finish! Continue by connecting the electronics in the next chapter - [8. Electronics](#)

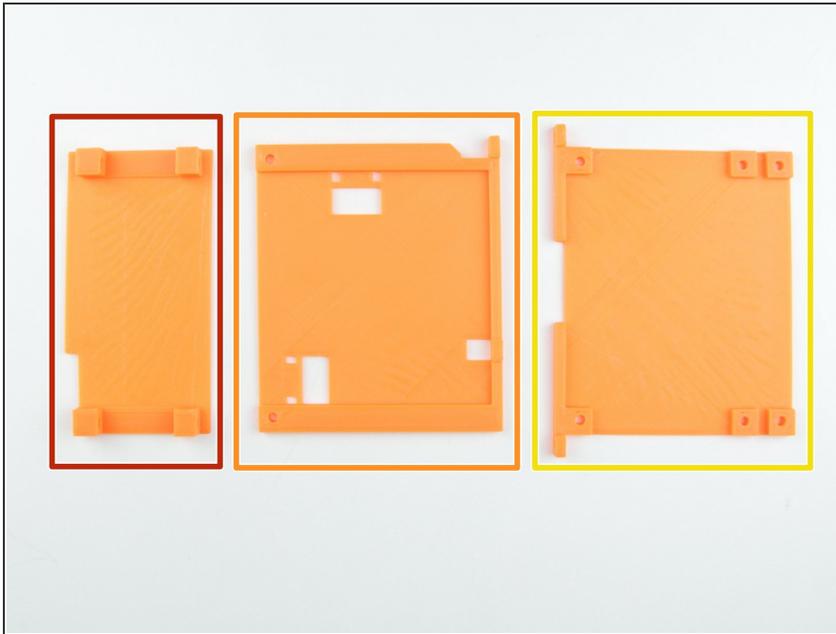
# 8. Electronics

Electronics guide

Written By: Dozuki System

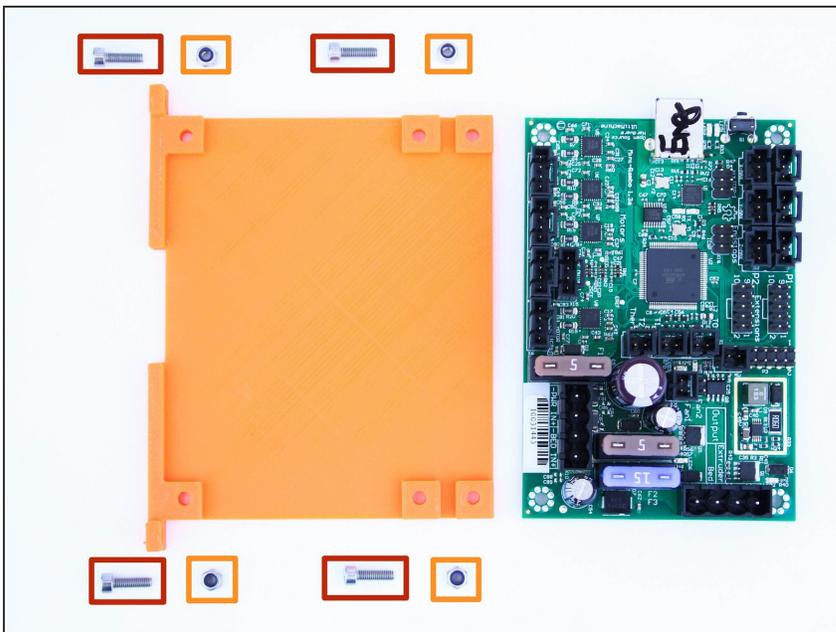


## Step 1 — 3D printed parts



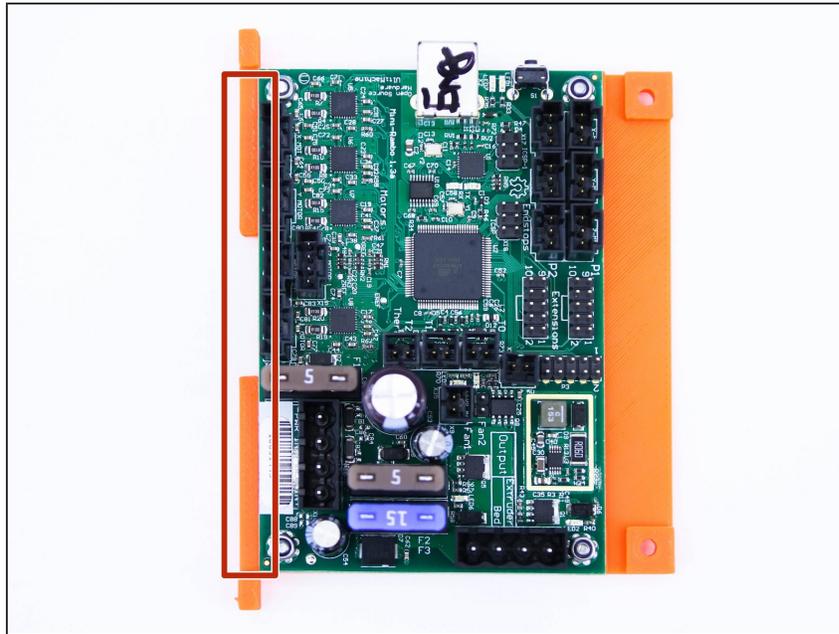
- Back Rambo-cover
- Right Rambo-cover
- Left Rambo-cover

## Step 2 — Assembling the Electronics



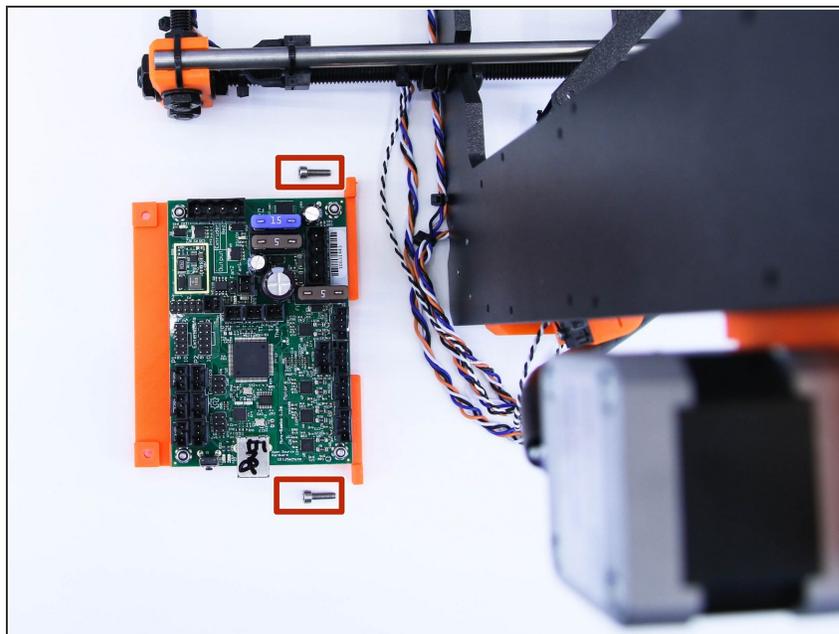
- M3x10 screws
- M3nN Nylock nuts
- ⓘ Electronics may look different

### Step 3 — Mounting the electronics cover



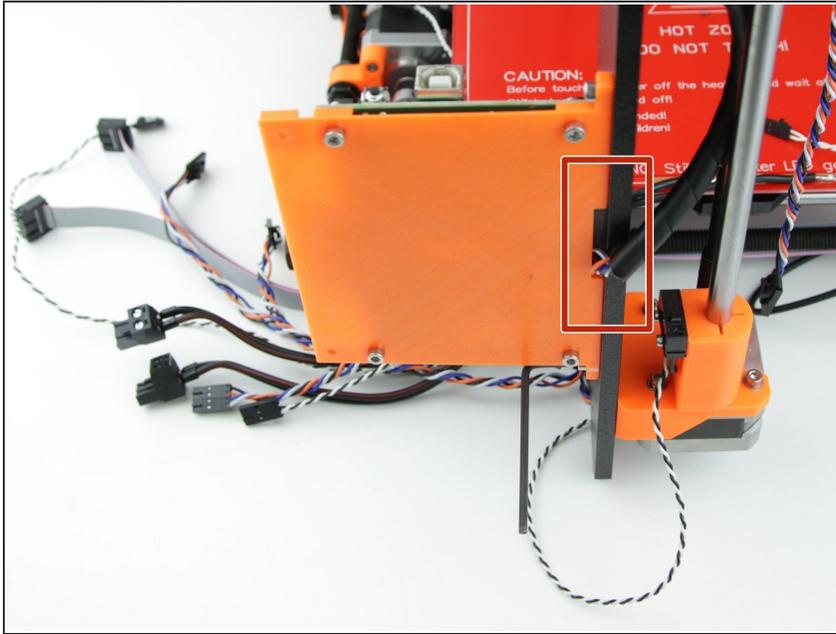
- Mount the Left Rambo-cover onto the back side of electronics as shown in picture
- ⚠ The screw has to come from the back (nut is on the side with electronics)
- ⚠ Note the correct orientation of electronics and cover (Motor connectors has to be on side with mounting holes)

### Step 4 — Assembling the electronics and the frame



- M3x10 screws

## Step 5 — Mounting electronics on frame



- Using a 2.5mm hex spanner, tie the electronics with cover to the frame
- ⚠ The bottom screw has to be screwed in bottom hole nearest to you as shown in picture
- ⚠ Do not tighten the screws too much, just half a turn after the screw touches the cover, otherwise you can damage the cover
- Note that the cables from X axis are going through the gap between cover and frame

## Step 6 — Tighten the heatbed cables



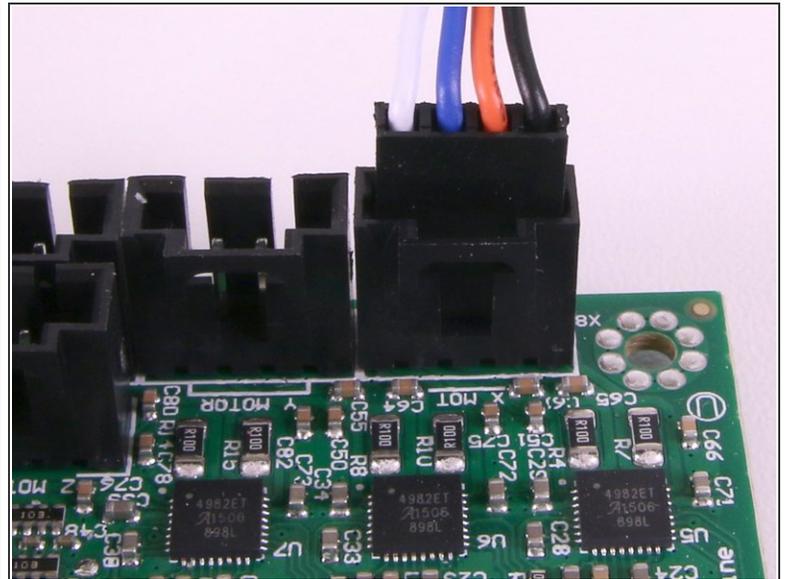
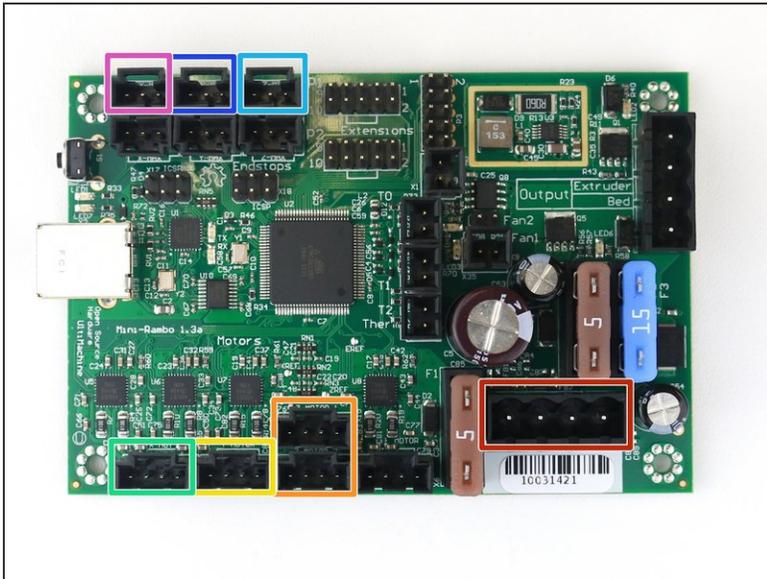
- Tie the cables on heatbed to the Y-carriage as shown in picture
- ⚠ Ensure the correct position of zipties connection, otherwise the connection can bump into frame and limit the movement of Y axis
- Cut and discard excess ziptie

## Step 7 — Wrapping the heatbed cables



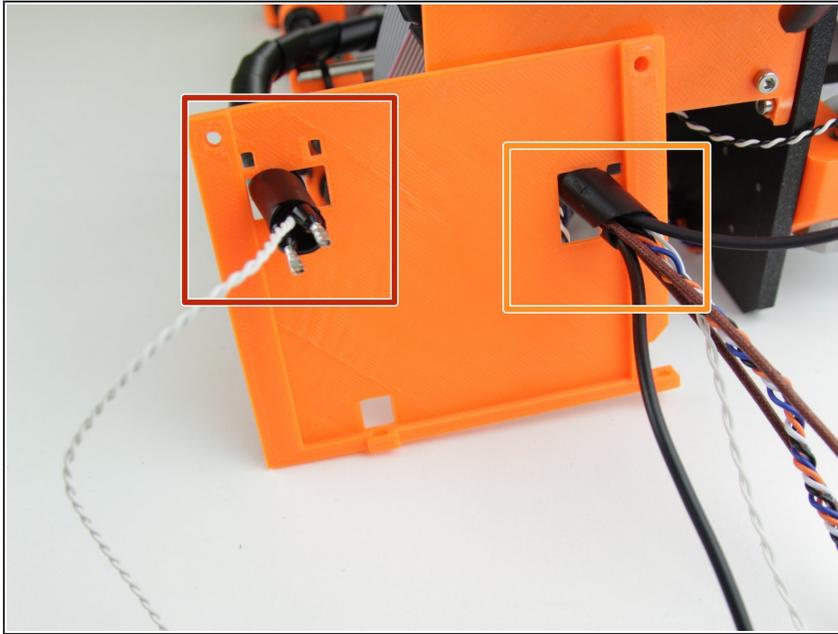
- Use spiral wrap and wrap the cables from heatbed

## Step 8 — Connecting electronics - part 1



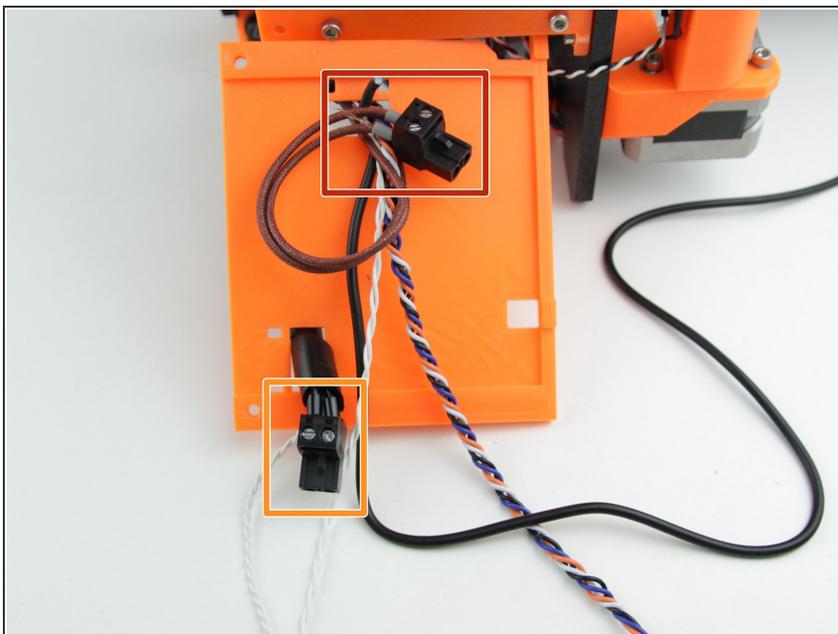
- X-axis endstop
  - Y-axis endstop
  - Z-axis endstop
  - X-axis motor
  - Y-axis motor
  - Z-axis motors (order of Z-motors doesn't matter)
  - Low voltage main cables (wires going out from PSU)
- ⓘ When connecting motors with connector without key, follow orientation shown in second picture

## Step 9 — Heatbed and extruder cables guide



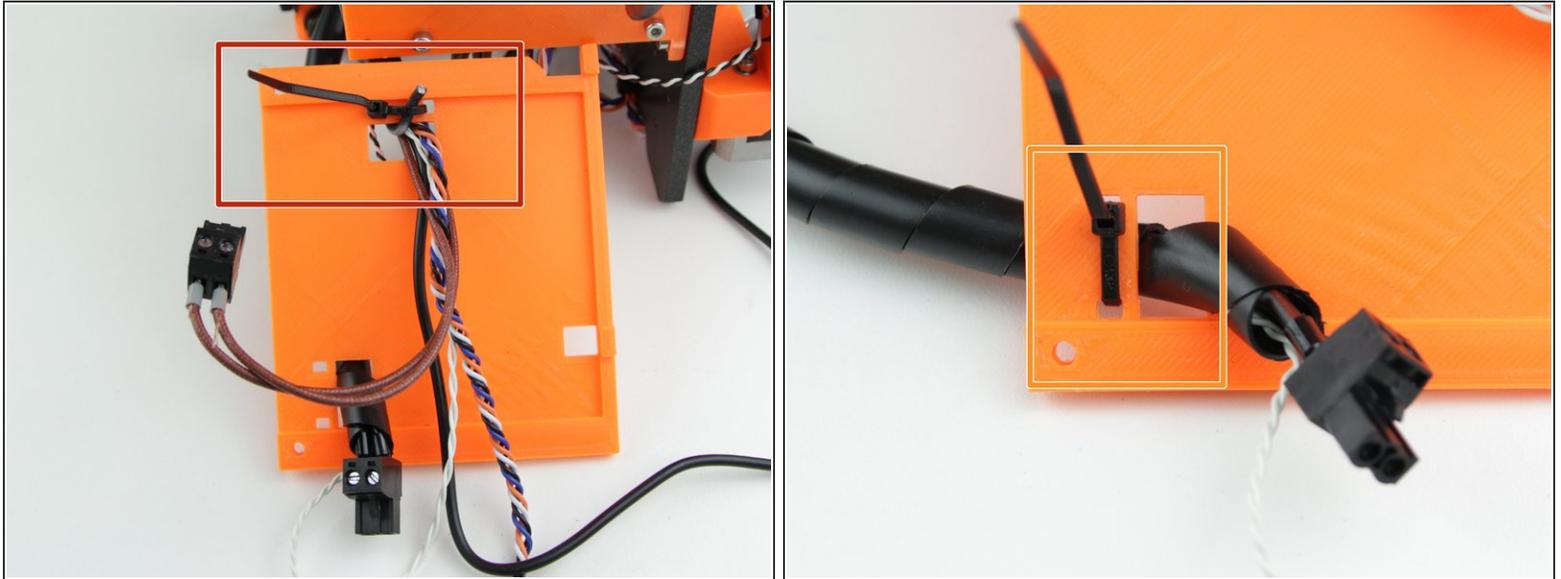
- Guide the cables from heatbed through hole on bottom of the right rambo-cover
- Guide the cables from extruder through hole on top of right rambo-cover

## Step 10 — Screw connectors onto the cables



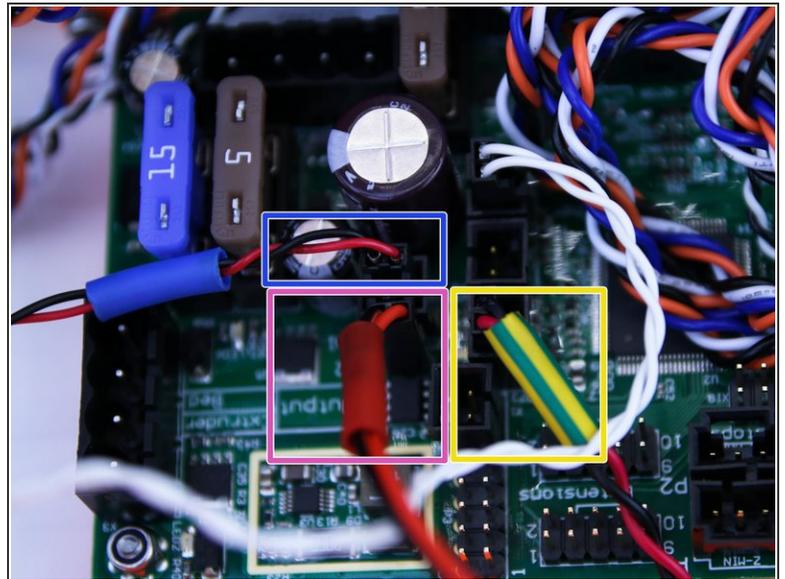
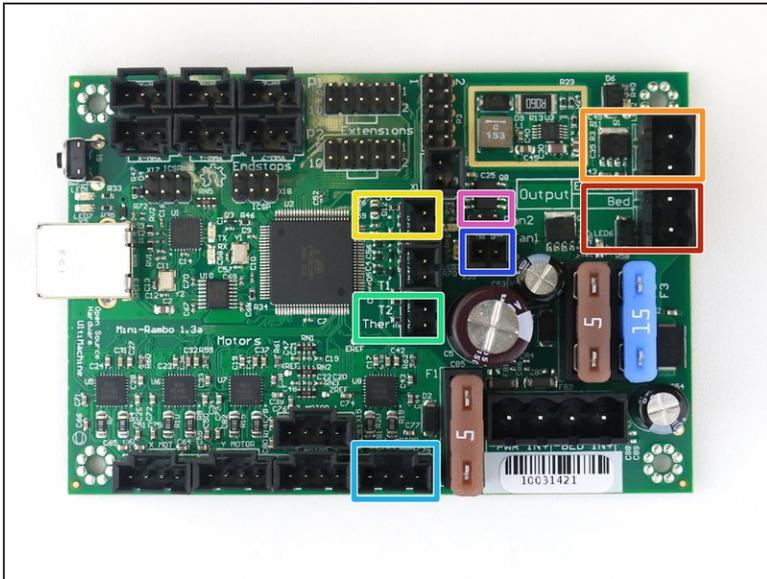
- Screw the MSPBE connector on extruder heater cables
  - Screw the MSPBE connector on Heatbed heater cables
- ⓘ It doesn't matter how you connect either connector (it's only the resistor heater, nothing special)
- ⚠ Tight the connectors very well, otherwise the connectors can overheat

## Step 11 — Securing the cables



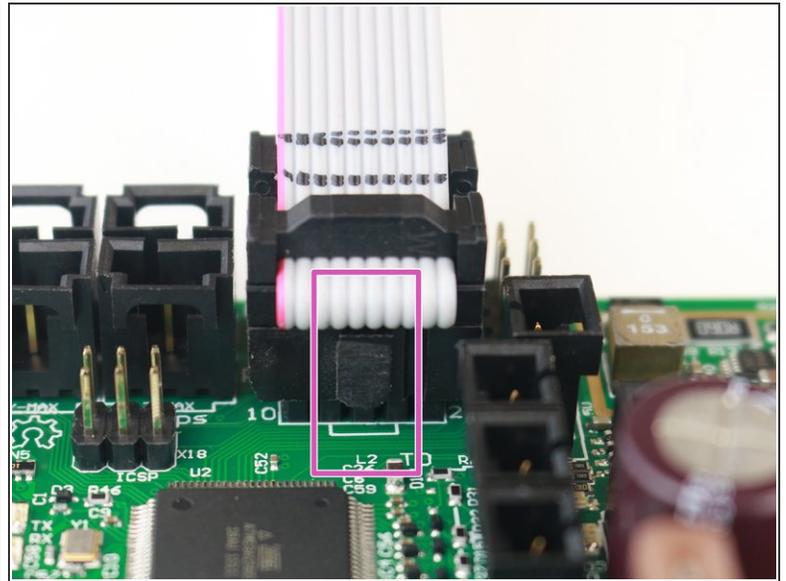
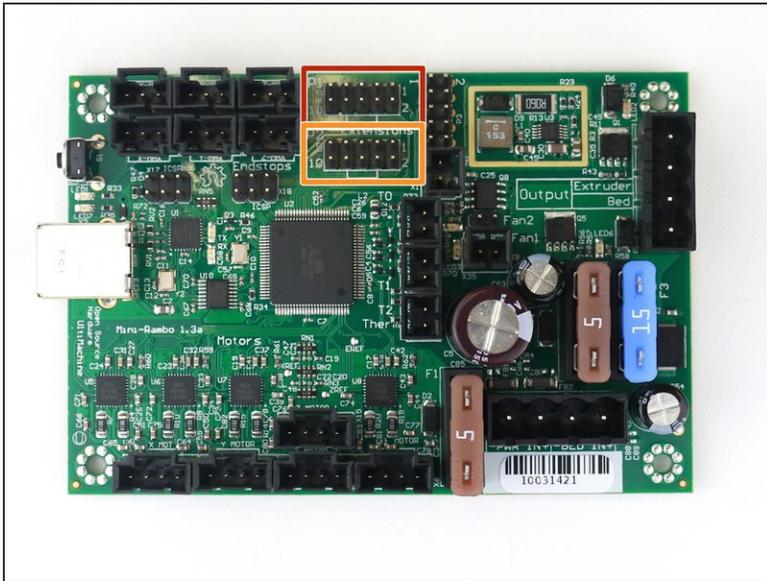
- Using a ziptie, tie the cables from extruder to the right rambo-cover at the end of spiral wrap
- ⓘ Don't forget to tie the filament as well
- Tie the cables from heatbed to the right rambo-cover with a ziptie (leave about 4cm for connection to electronics)
- ⚠ It's very important to anchor the heatbed cable to the RAMBo cover, otherwise the connector can overheat while printing

## Step 12 — Connecting electronics - part 2



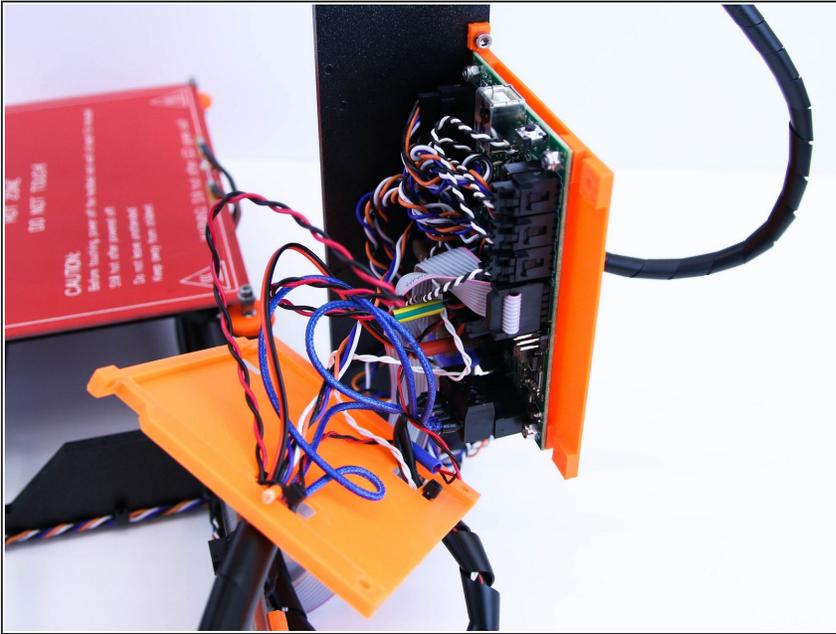
- Extruder heater
  - Heatbed heater
  - Extruder thermistor (cable going from extruder labeled with Yellow/Green heat shrink) [Orientation does not matter]
  - Heatbed thermistor (white cable going from heatbed)
  - Print fan (cable going from extruder labeled with Red heat shrink)[make sure that the red wire is closer to the thermistor]
  - Extruder fan (cable going from extruder labeled with Blue heat shrink)
  - Extruder motor
- ⚠ **DOUBLE CHECK** the connection! It is so important to ensure the correct connections.

## Step 13 — Connecting electronics - part 3



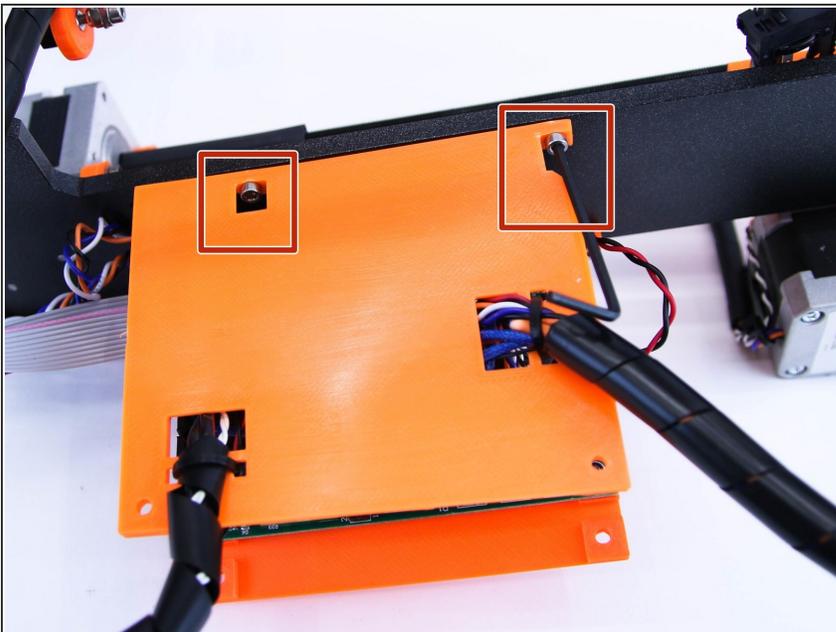
- LCD cable with ONE stripe (Connector P1)
  - LCD cable with TWO stripes (Connector P2)
- ⚠ Make sure that the key of connector is matching the key on the electronics
- ⓘ If your electronics looks different, skip this step

## Step 14 — All connected!



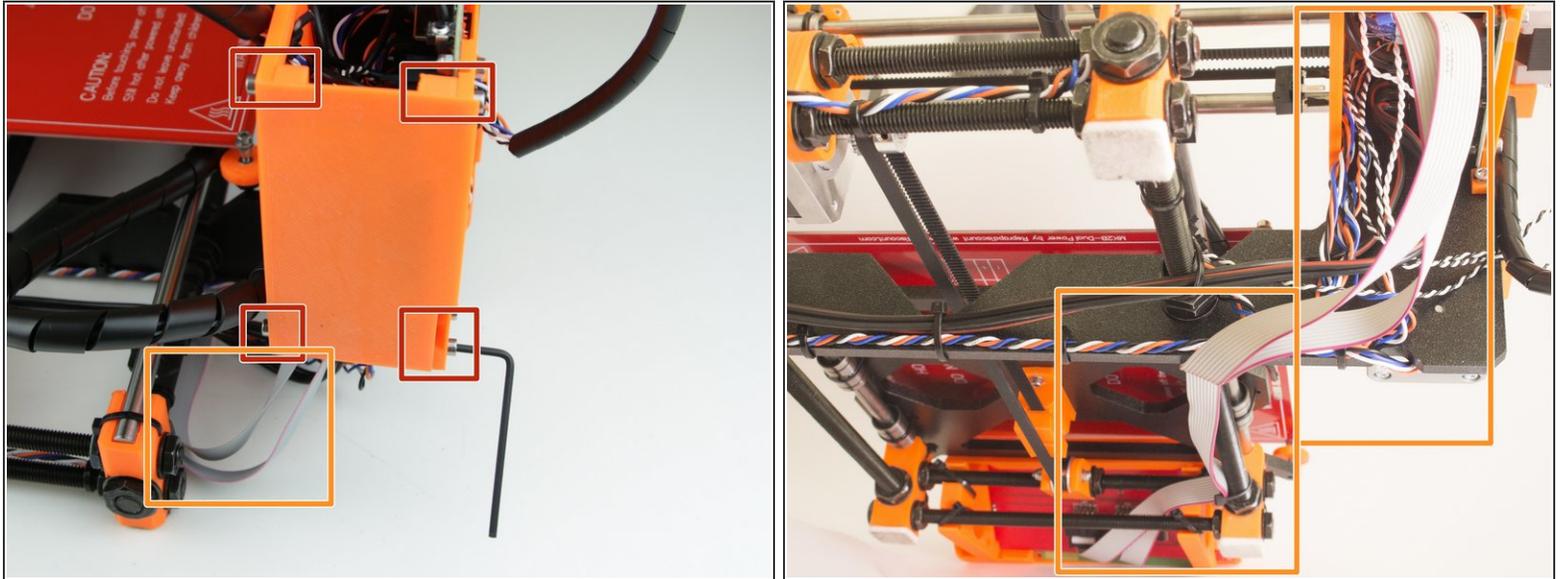
- If you've connected everything correctly, it should look like this

## Step 15 — Tighten the electronics right cover



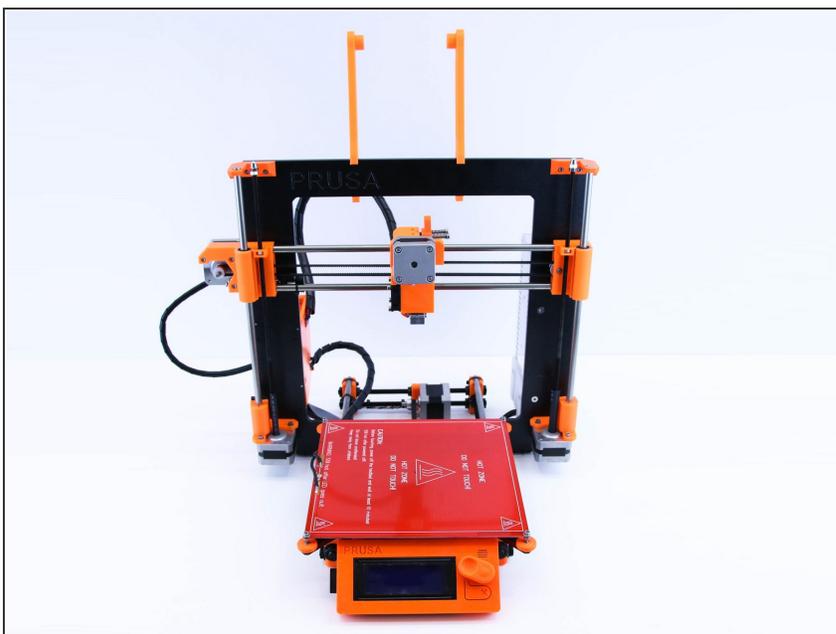
- Using M3x10 screws and the 2.5mm hex spanner, tie the right rambo-cover to the frame
- ⚠ Do not over-tighten the screws, just half a turn after the screw touches the cover, otherwise you can damage the cover
- ⚠ Covers has to be in line and parallel, as you can see in the picture

## Step 16 — Final touch



- Using M3x10 screws, screw the back rambo-cover between sides as shown in picture
- The LCD panel cable has to be kept separate from the power cables attached to the frame (12 V cable, Z1, Z2, Y motors and Y-endstop cables). The cables can overlap, but the LCD cables must not be attached to the power cables.

## Step 17 — Hooray!



- Congratulations, you've just assembled the whole Original Prusa i3 3D printer!
- You're almost there... Just finish the chapter [9. Antes de empezar](#)

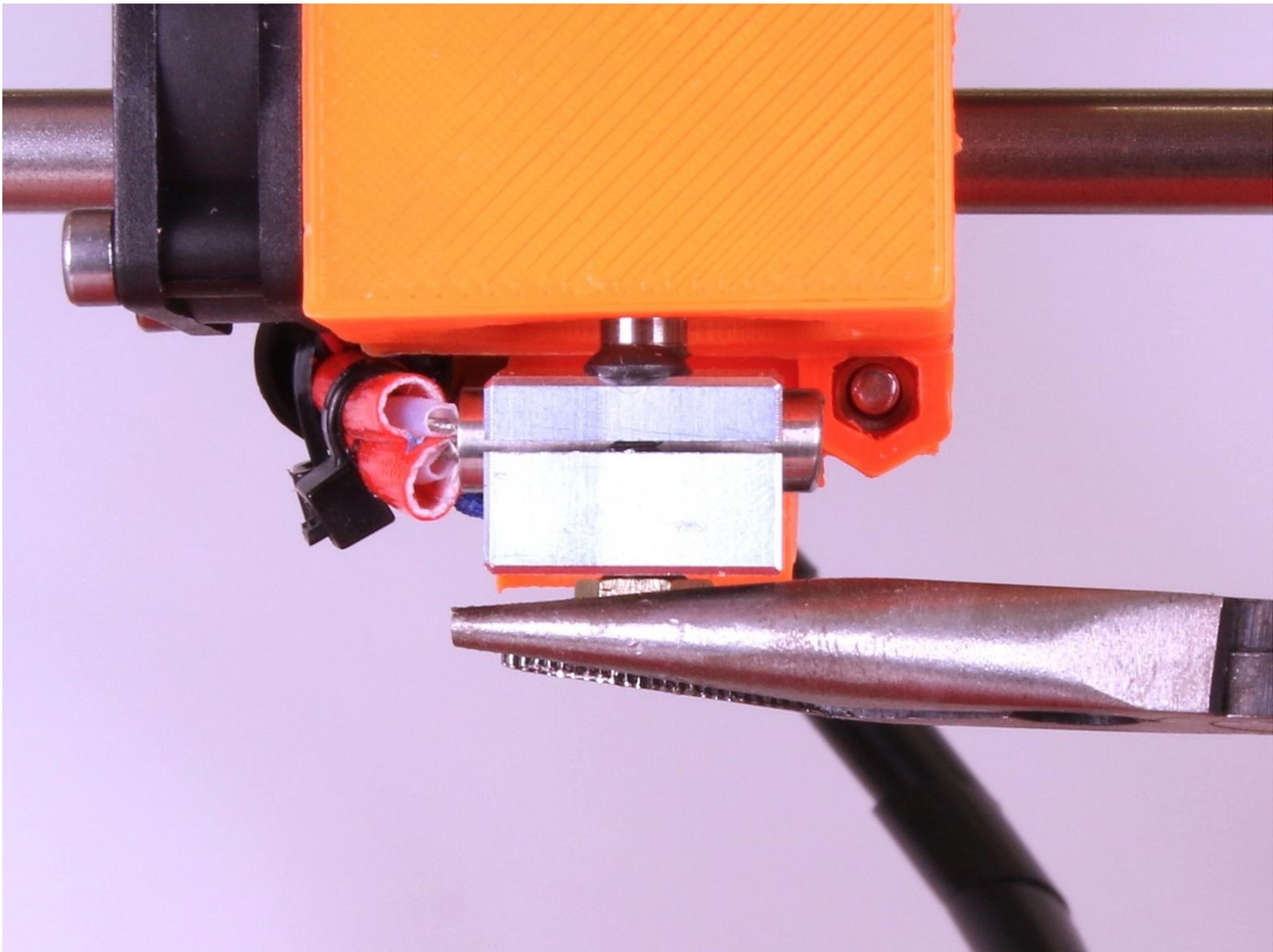




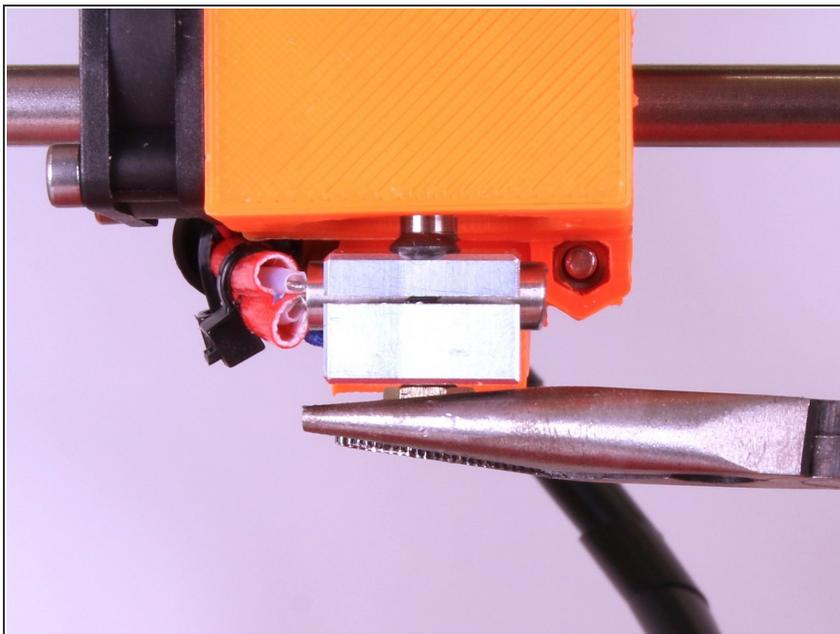
## 9. Preflight check

The last things you should check before the first print

Written By: Josef Prusa

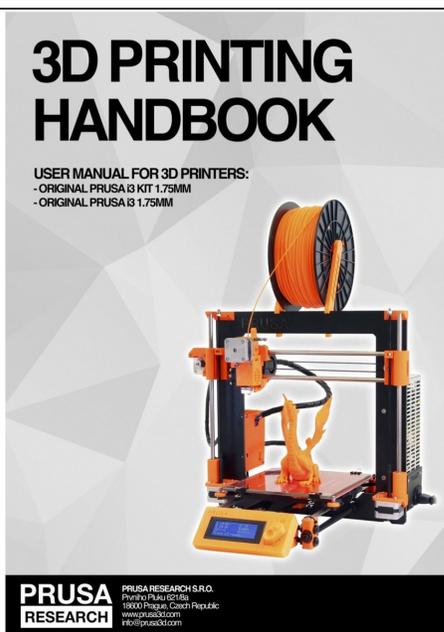


## Step 1 — Nozzle tightening



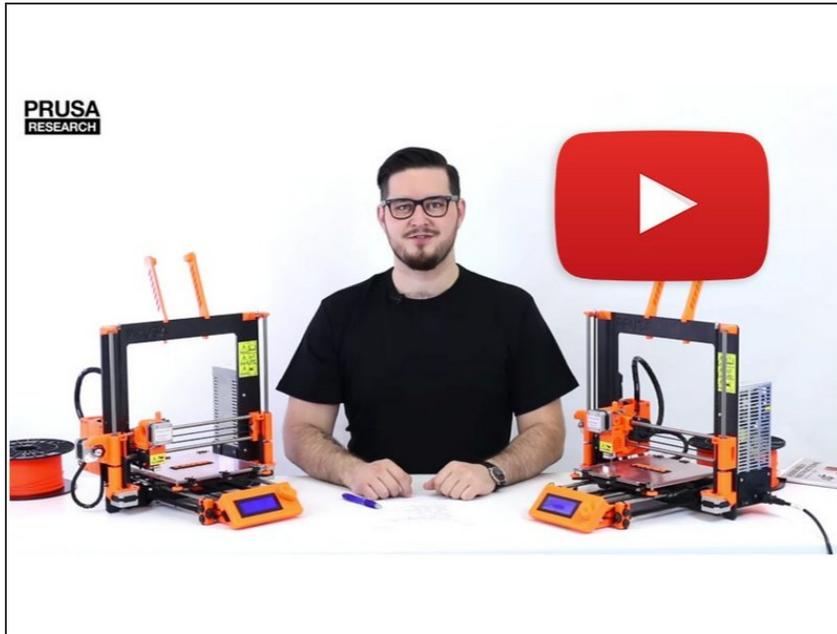
- You have to tighten the nozzle tip after the nozzle is fully preheated. Tighten the nozzle before the first print!
- Using needle nose pliers tighten the nozzle tip
- ⓘ All printers bought after January 7, 2016 have the nozzle pre-tightened by us ;-)

## Step 2 — Quick guide for your first prints



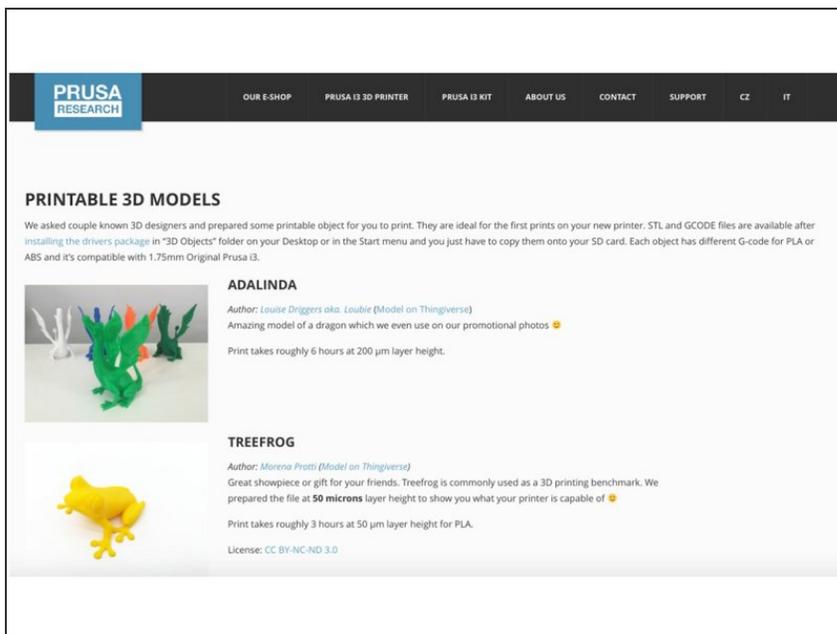
- ⓘ See our free **3D Printing Handbook** - <http://www.prusa3d.com/3dhandbook>
- Place the printer on a flat and stable surface (*page 10*)
- Read the safety instructions carefully (*page 5*)
- Download and install the drivers (*page 22*)
- Prepare the glass (*page 10*) and calibrate the printer (*page 12*)

## Step 3 — Check your Prusa i3 before printing



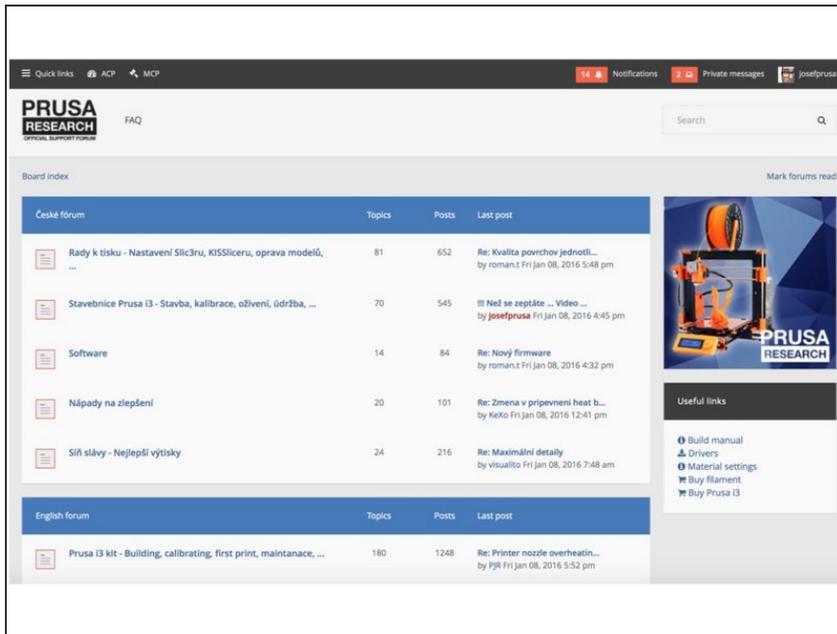
- Please watch our video with the most common build problems and their solutions before printing. It's on YouTube:  
<http://www.prusa3d.com/buildvideo>

## Step 4 — Printable 3D models



- **Congratulations! You should be ready to print by now ;-)**
- ⓘ Read the chapter on *page 16* in our Handbook
- You can start by printing some of our test objects bundled on the included SD card - you can check them out here  
[prusa3d.com/printable-3d-models](http://prusa3d.com/printable-3d-models)

## Step 5 — Prusa3D forum



The screenshot shows the Prusa3D forum interface. At the top, there are navigation links for 'Quick links', 'ACP', and 'MCP', along with notification and private message counts. The main header includes the 'PRUSA RESEARCH' logo, a search bar, and a 'Mark forums read' button. The forum is organized into sections: 'České fórum' (Czech forum) and 'English forum'. The 'České fórum' section contains a table with columns for 'Topics', 'Posts', and 'Last post'. Below the table, there are 'Useful links' such as 'Build manual', 'Drivers', 'Material settings', 'Buy filament', and 'Buy Prusa I3'.

České fórum	Topics	Posts	Last post
Rady k tisku - Nastavení Slic3ru, KISSliceru, oprava modelů, ...	81	652	Re: Kvalita povrchov jednotl... by roman.t Fri Jan 08, 2016 5:48 pm
Stavebnice Prusa I3 - Stavba, kalibrace, oživení, údržba, ...	70	545	!!! Než se zeptáte ... Video ... by josefprusa Fri Jan 08, 2016 4:45 pm
Software	14	84	Re: Nový firmware by roman.t Fri Jan 08, 2016 4:32 pm
Nápady na zlepšení	20	101	Re: Zmena v prípevnení heat b... by Kello Fri Jan 08, 2016 12:41 pm
Síň slávy - Nejlepší výstisky	24	216	Re: Maximální detaily by visualto Fri Jan 08, 2016 7:48 am

English forum	Topics	Posts	Last post
Prusa I3 kit - Building, calibrating, first print, maintanance, ...	180	1248	Re: Printer nozzle overheatin... by FJR Fri Jan 08, 2016 5:52 pm

- If you need help with the build, check out our forum with great community :-)
- Account is shared with <http://shop.prusa3d.com/>
- ★ Support forum is available at <http://forum.prusa3d.com>