MK2Clone

3. Z-axis assembly

Written By: q3ok

This document was generated on 2022-01-04 09:32:06 AM (MST).

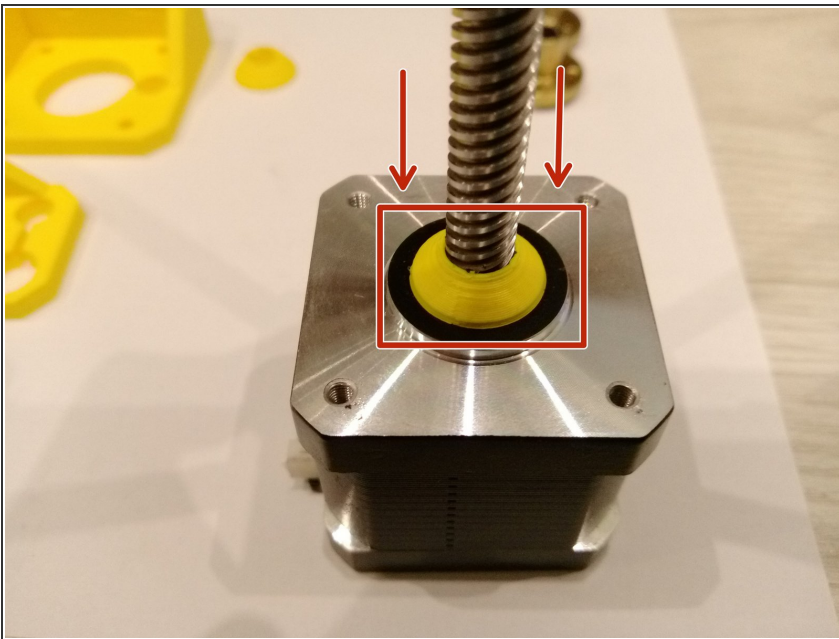© 2022   mk2clone.dozuki.com/   Page 1 of 11
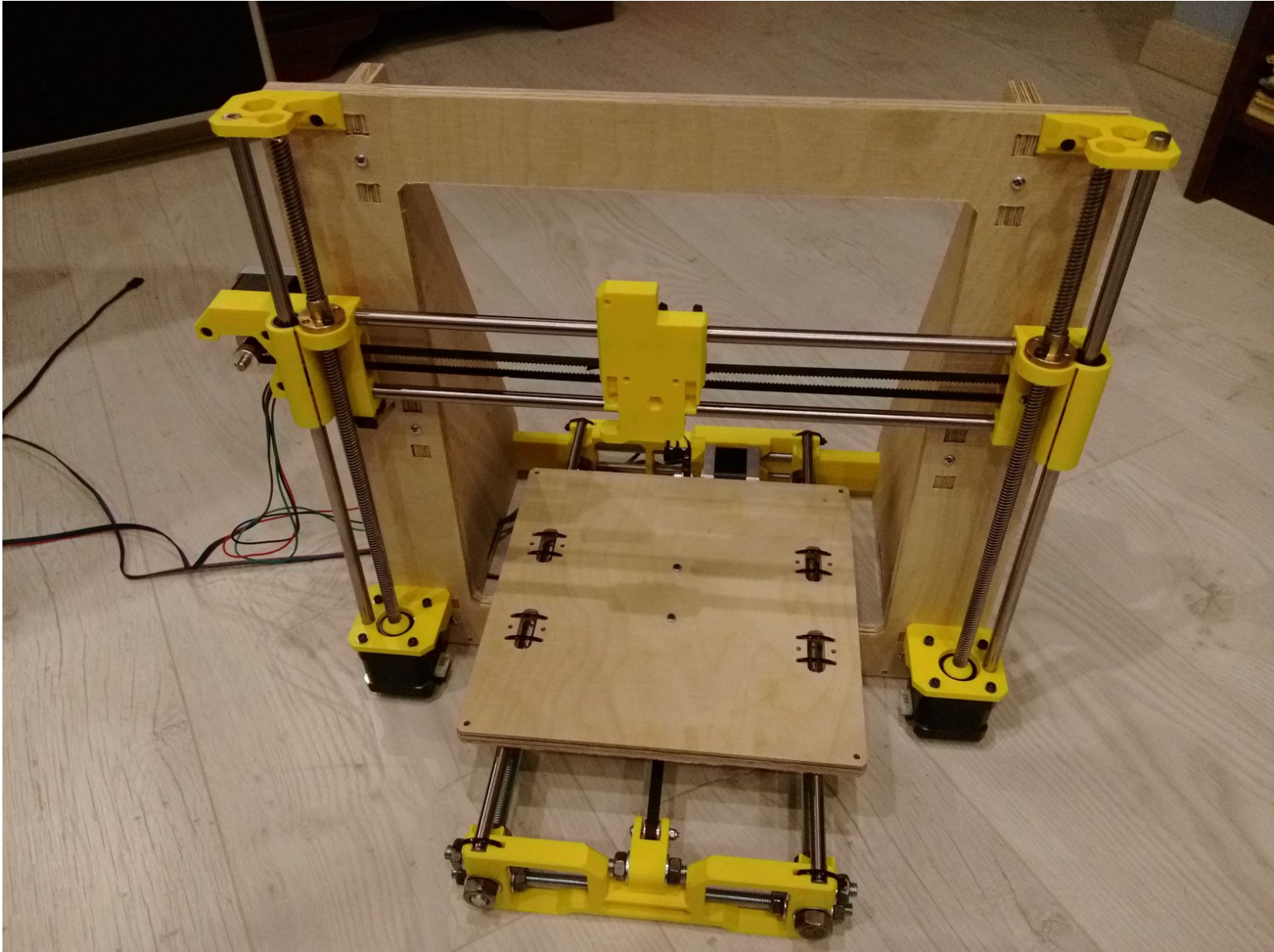
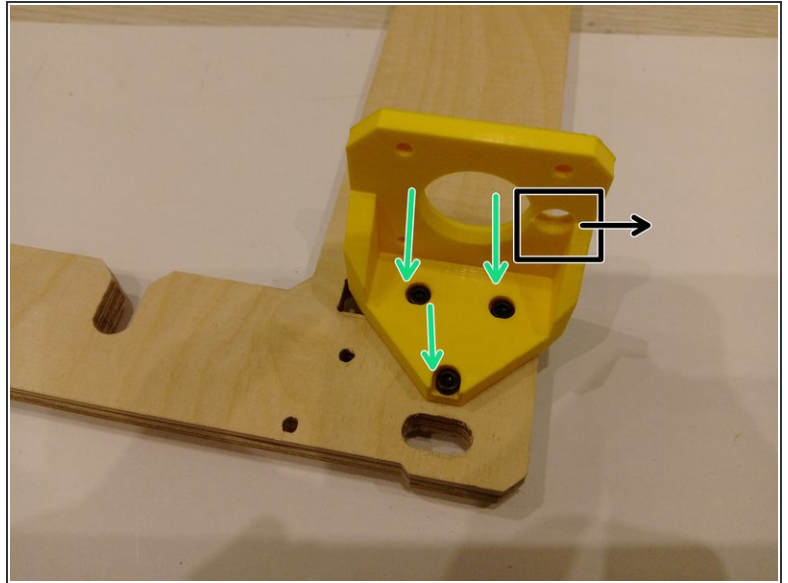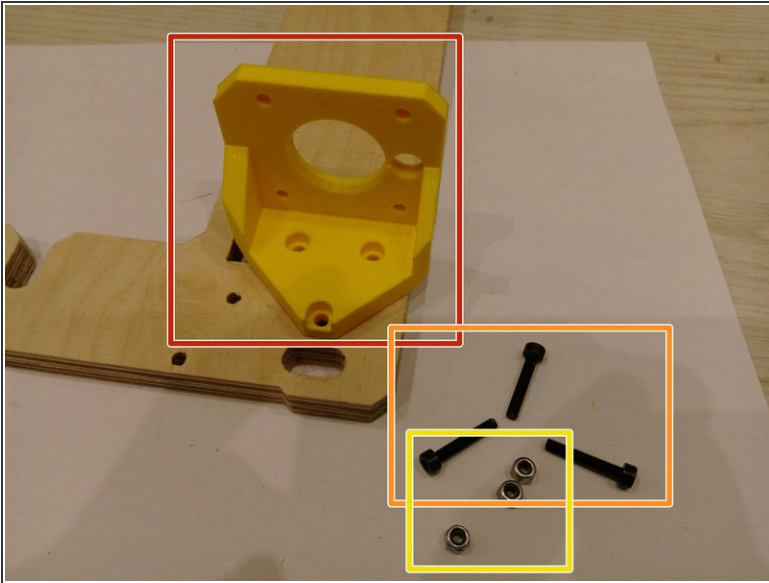## Step 1 — Printed parts needed
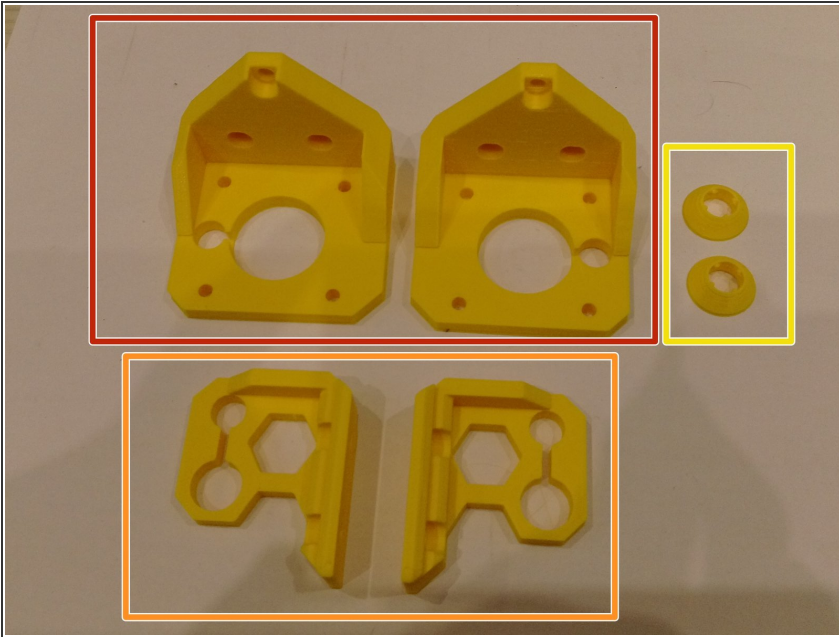
- ● Z-axis-bottom
- ● Z-axis-top
- ● 2x Z-screw-cover
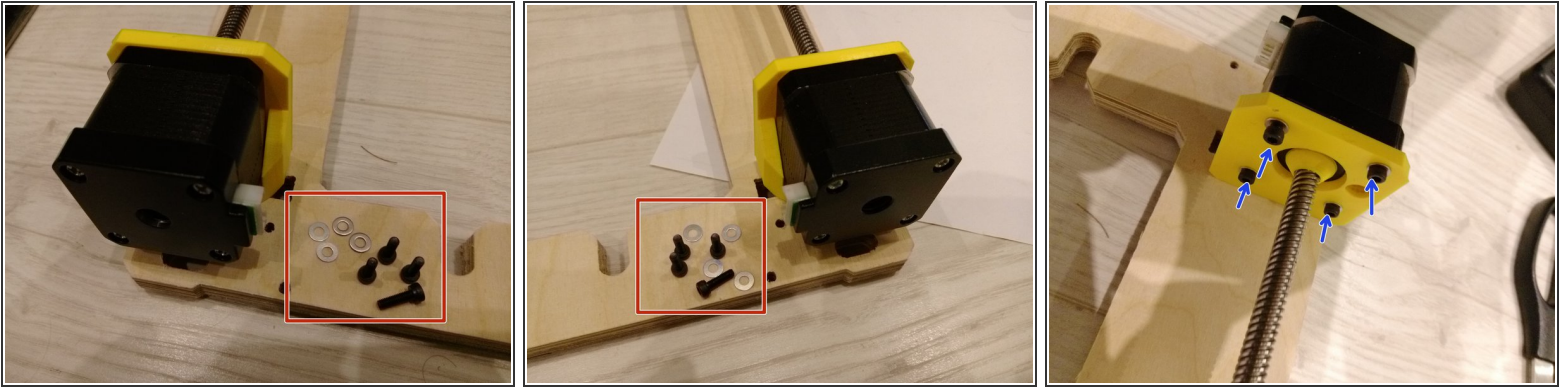
Step 2 — Prepare Z-axis motors

- ⓘ Take the two stepper motors with integrated screw (Tr8x8)
- ● Remove the brass nut from the screws manually
- ● Screw the Z-screw-cover on both motors
- ⚠ Do not tighten the screw-cover, leave at least 0.1mm space between motor and the plastic part

This document was generated on 2022-01-04 09:32:06 AM (MST).

© 2022

mk2clone.dozuki.com/

Page 2 of 11

Step 3 — Z-axis bottom assembly

- ● Z-axis bottom part

- ● 3x M3x18 screws

- ● 3x M3 self-locking nut

- ● Screw the plastic part to bottom of the frame as shown on picture, and lock using the nuts from the other side

- ⊡ Repeat the step for the opposite side

- ⚠ Make sure that you mount left part on left, and right on right, the 8mm hole must be facing outside on both parts

This document was generated on 2022-01-04 09:32:06 AM (MST).

© 2022   mk2clone.dozuki.com/   Page 3 of 11

Step 4 — Place the Z-motors

- For each motor take 4x M3x10 screw and 4x M3 washer

- Screw the motors to the Z-bottom plastic parts as shown on photo

- 📌 Make sure the correct orientation of motor connector

Step 5 — Place nuts on X-axis
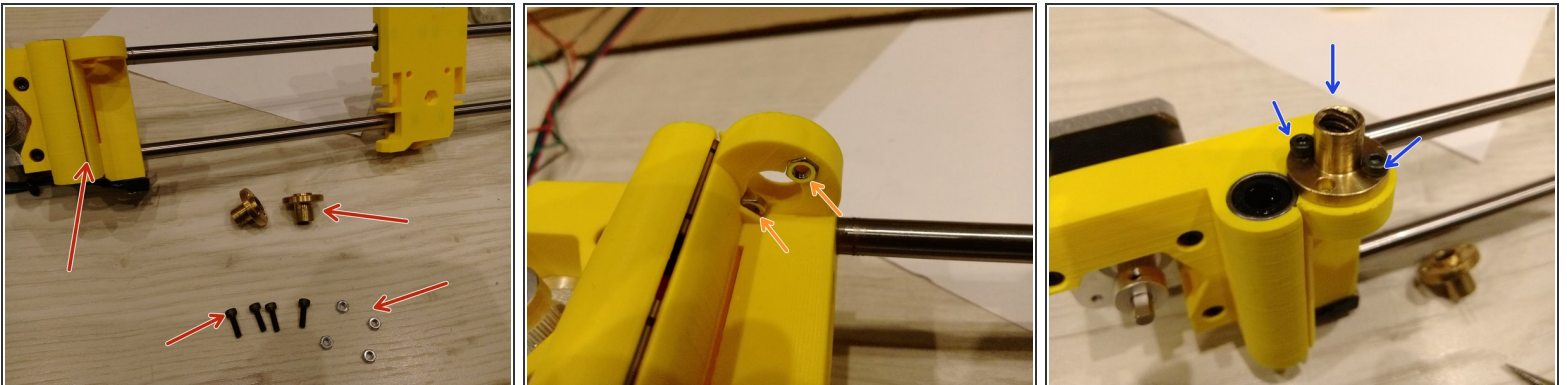
- Take the X-axis built before, trapezoidal nuts removed from motors screws, 4x M3x12 screws and 4x M3 nuts

- Insert the M3 nuts as shown on picture

- Put the trapezoidal screw on top and screw it using M3x12 screws

- ⓘ You have to put the trapezoidal nut as shown on image, as otherwise you will not be able to assemble it (unless you have a short nuts)

- 📌 Repeat the steps for the other side of X-axis

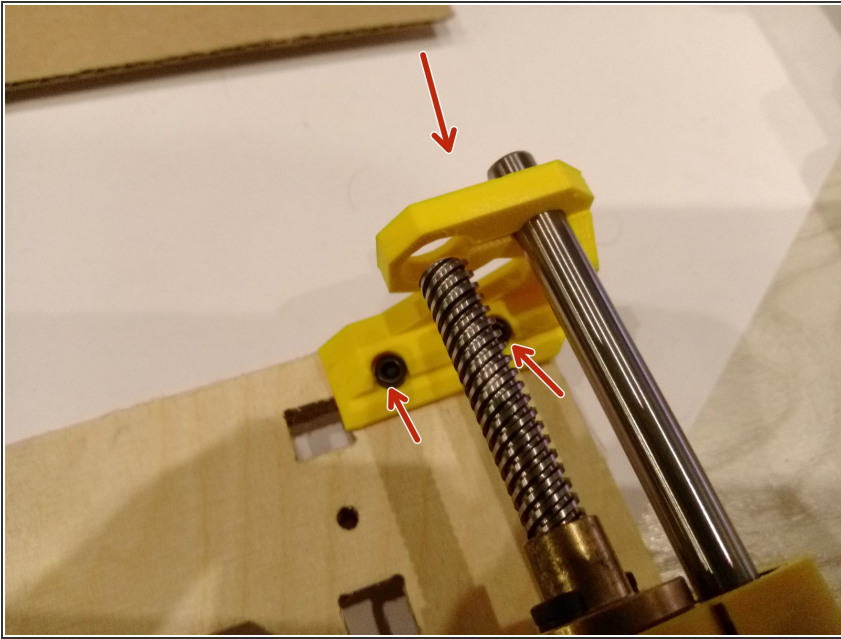This document was generated on 2022-01-04 09:32:06 AM (MST).

Step 6 — Put X-axis on Z-axis
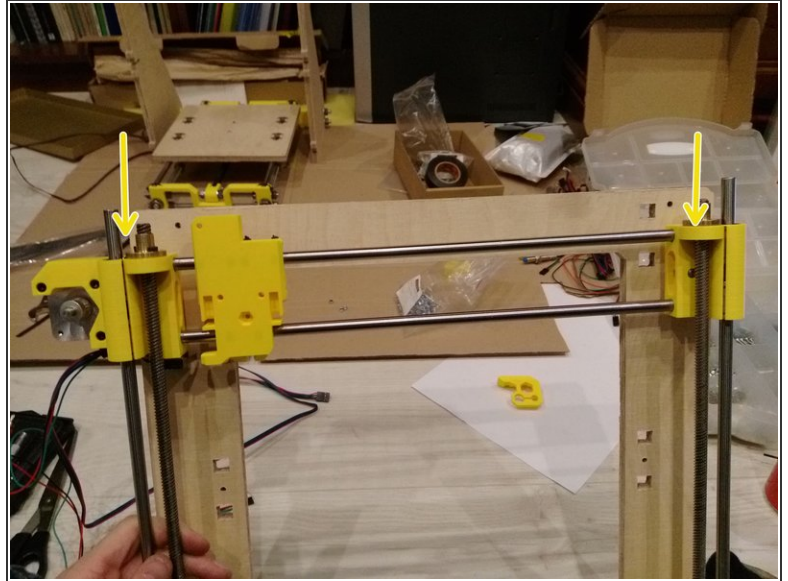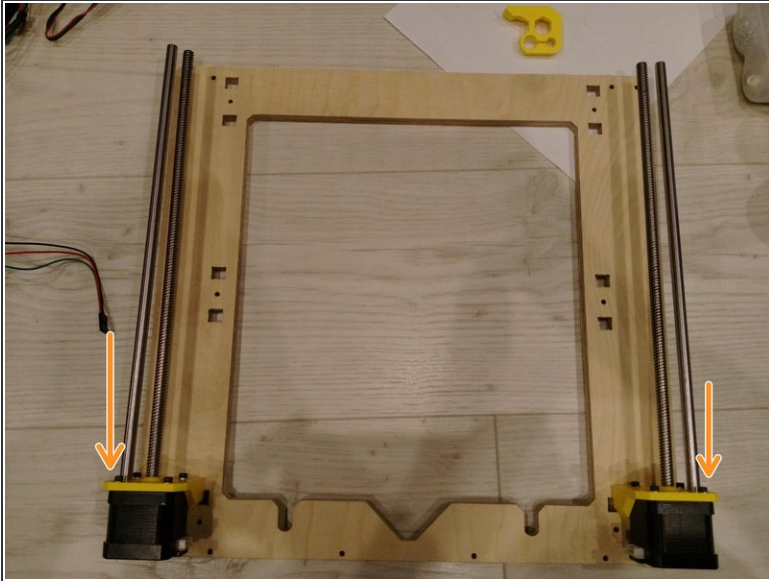
- Take the shortest smooth rods (the ones whose left ... 320mm length)

- Insert the rods into Z-bottom plastic parts as shown on image

- Take the X-axis and gently screw put it on top of Z-axis, moving motor screws to do it
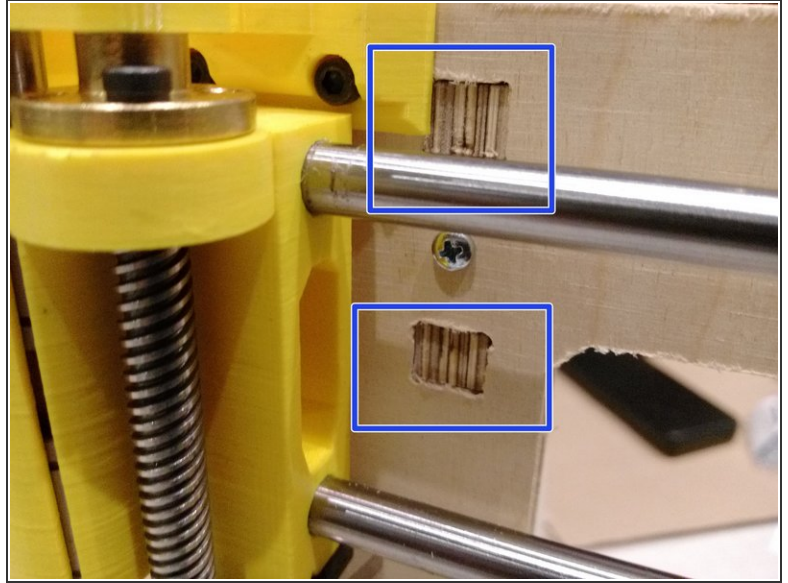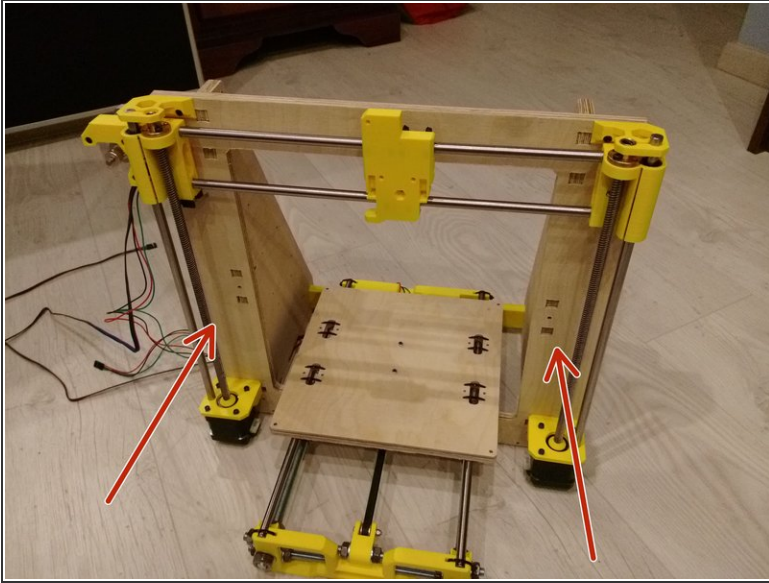
⚠ Do it gently!

This document was generated on 2022-01-04 09:32:06 AM (MST).

© 2022

mk2clone.dozuki.com/

Page 5 of 11
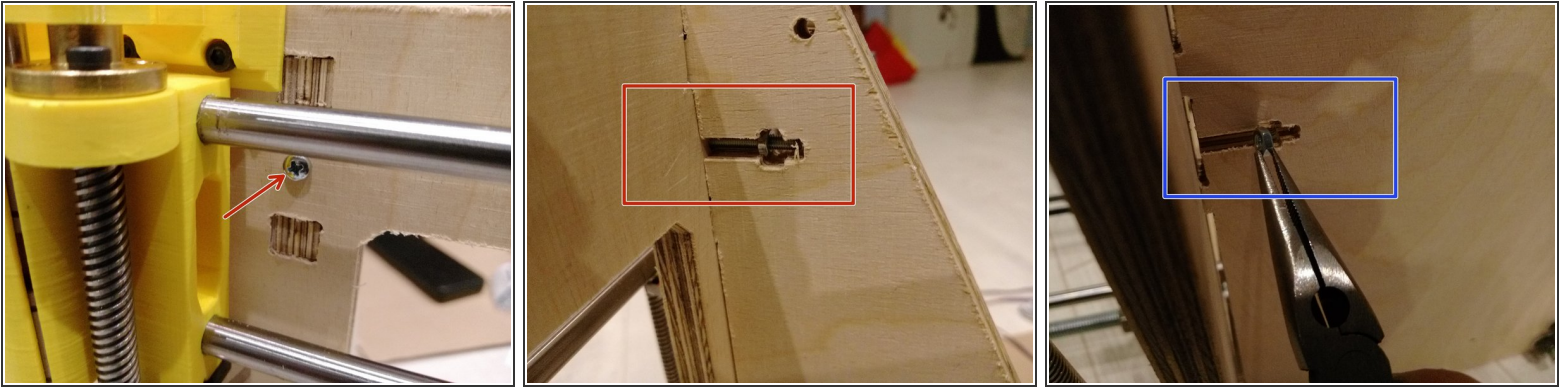
Step 7 — Place the z-tops

- Using 2x M3x18 screw and 2x M3 self locking nut assemble the Z-axis-tops to this contruction

- ⓘ Probably you will have to use a small amount of force to insert the part on smooth rod

- ⓘ Repeat this step for the other side

This document was generated on 2022-01-04 09:32:06 AM (MST).

© 2022

mk2clone.dozuki.com/

Page 6 of 11

## Step 8 — Connect all the parts together

- Put the Z-axis on Y-axis as shown on image

- Make sure the side support enters the main frame

- (i) Probably a small amount of force will be needed to achieve it

- (i) Tightening the plywood parts will be done in next step

This document was generated on 2022-01-04 09:32:06 AM (MST).

© 2022

mk2clone.dozuki.com/

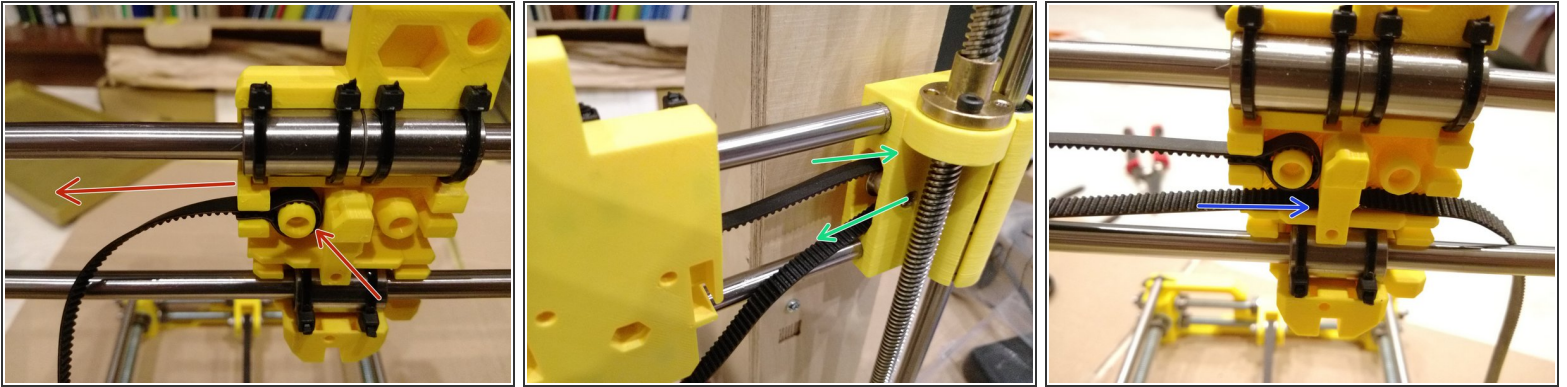Page 7 of 11

Step 9 — Tighten the plywood frame

- Using 6x M3x30 screws and M3 nuts tighten the front to the side supports

- Start from the top screws

- To hold nut while screwing use small pliers

- 📌 Make sure that you tighten it strongly, so there is no space between front and side supports

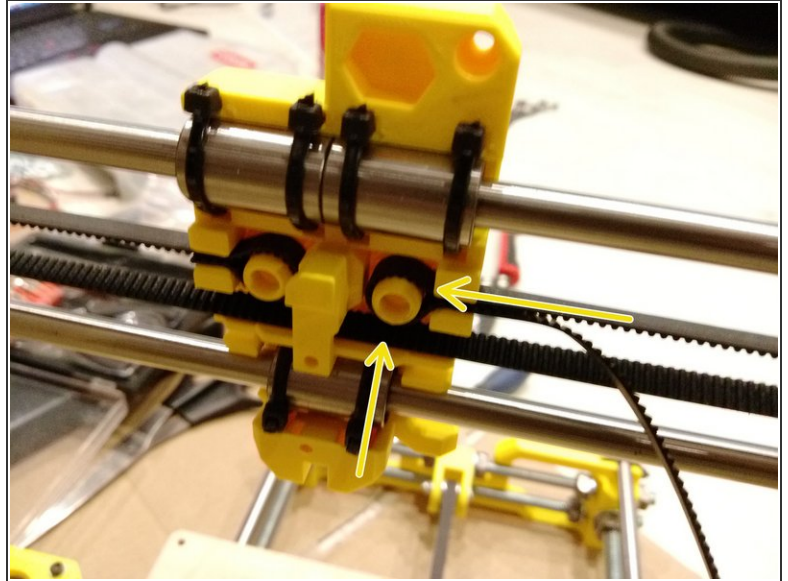## Step 10 — Tightening the Y-axis and frame
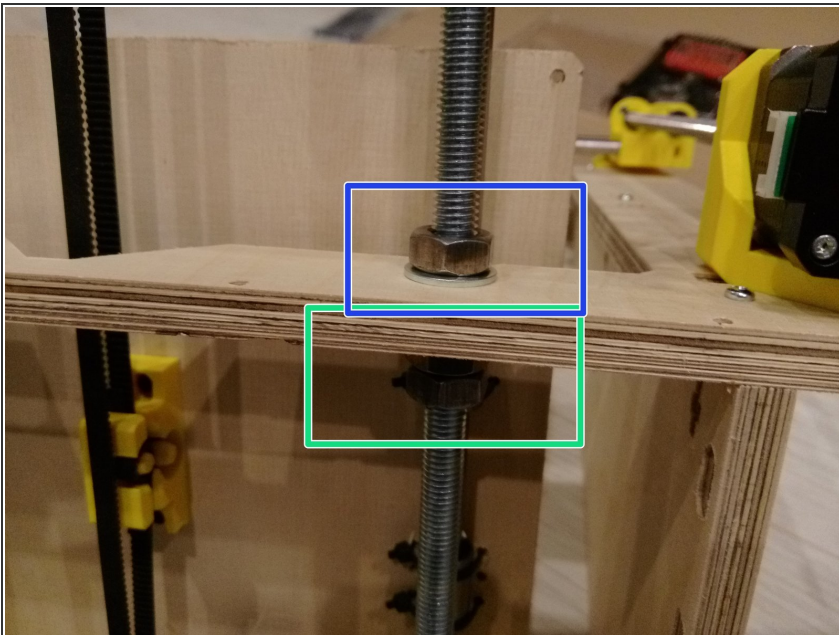
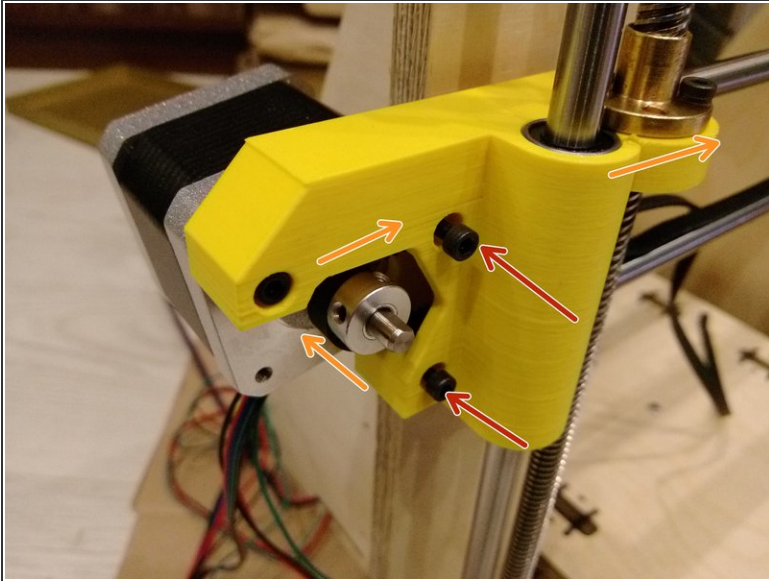- Tighten the M10 nuts on the bottom

- At first, gently screw the two M10 nuts to the frame

- Then screw and tighten the M10 nut from the other side

- ⚠️ Make sure that you put the M10 rod as low as possible (check if the contruction is stable on flat surface)

- 📌 Do this step for both M10 rods

This document was generated on 2022-01-04 09:32:06 AM (MST).

© 2022

mk2clone.dozuki.com/

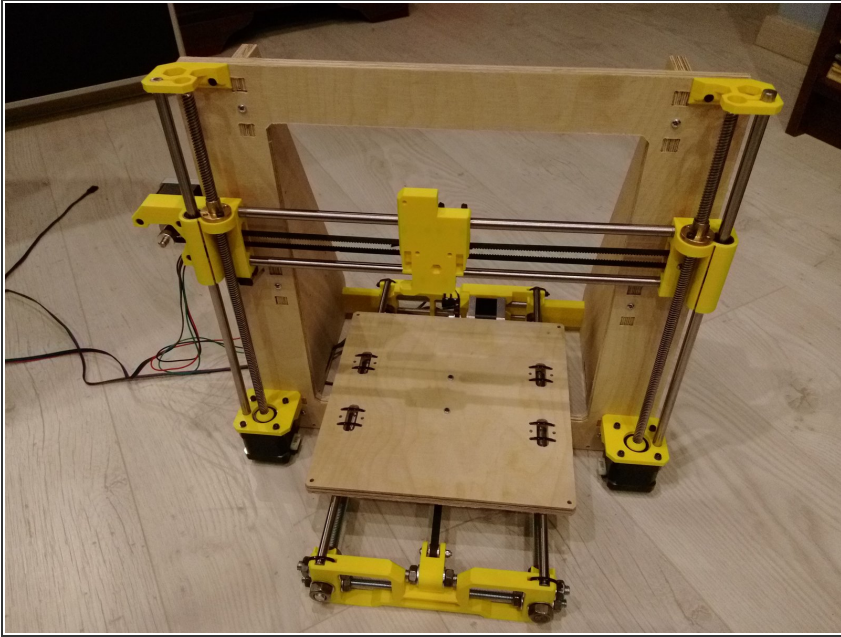Page 8 of 11

Step 11 — X-axis belt

- Start guiding the X-axis belt from the back to the side of x-end-idler

- Guide thru x-end-idler

- Guide back thru X-carriage, there is a special hole for that, to the X-end-motor

This document was generated on 2022-01-04 09:32:06 AM (MST).

© 2022   mk2clone.dozuki.com/   Page 9 of 11

Step 12 — X-axis belt #2

- Loosen the two screws on X-axis motor and turn a little the motor

- Guide the belt around GT2-16 pulley

- Take the belt back to X-carriage and secure there tightly

- Move the motor back to the position and screw the M3 screws again

⚠ Make sure that the belt is tightened enough (and NOT overtightened)

This document was generated on 2022-01-04 09:32:06 AM (MST).

© 2022   mk2clone.dozuki.com/   Page 10 of 11

Step 13 — Finito!

- The Z-axis has been fully assembled! Congratulations, that construction is looking like almost a printer!

- If you still have some time, go to [Extruder assembly](#)