

Makertech

Stage 02: Platform (and Flexplate Upgrade)

Print platform assembly.

Written By: Makertech

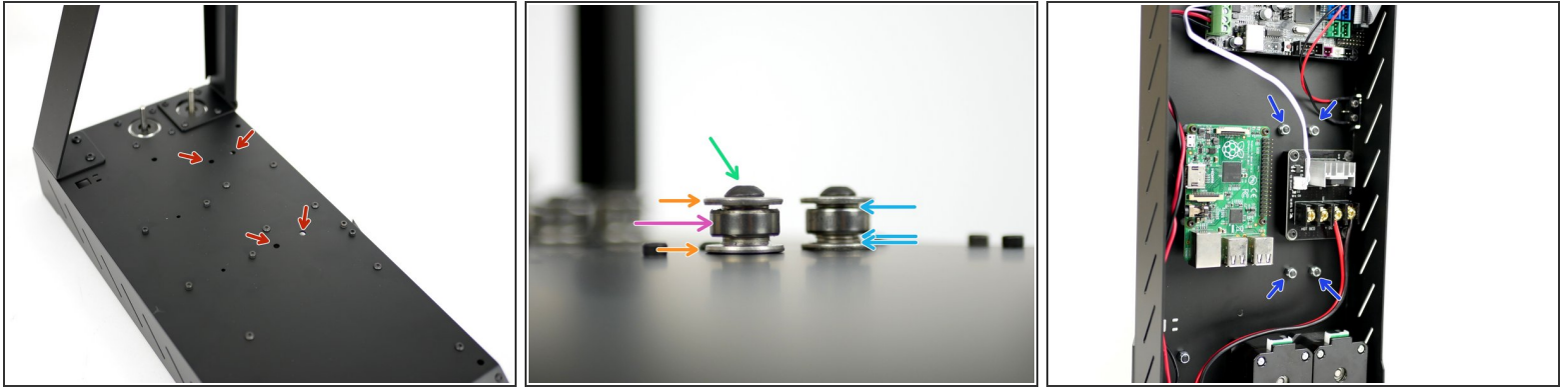




TOOLS:

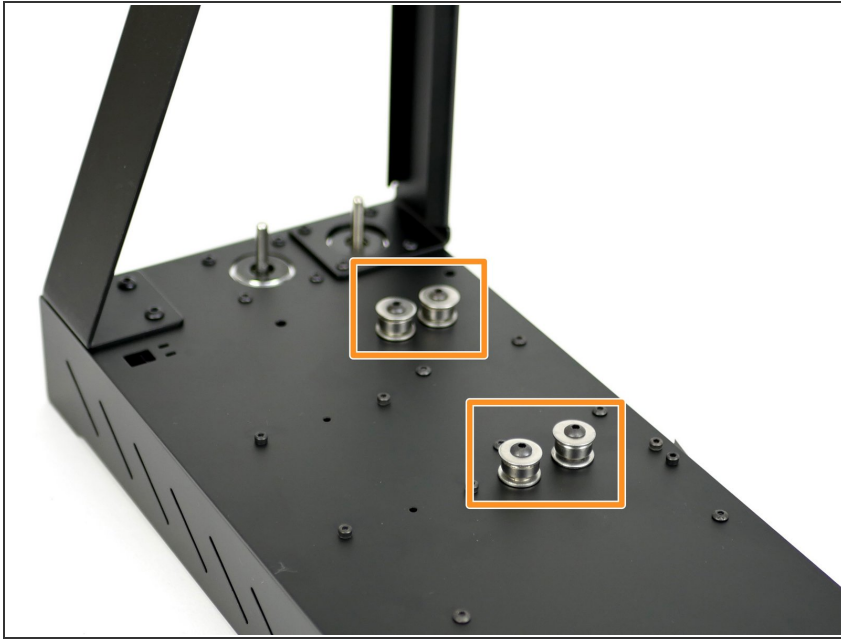
- [Allen Keys \(Included\)](#) (1)
- [Pliers](#) (1)
- [Scissors or sidecutters](#) (1)
- [Bulldog clip \(optional\)](#) (1)
- [Clear Tape](#) (1)

Step 1 — X-Bearing Idlers



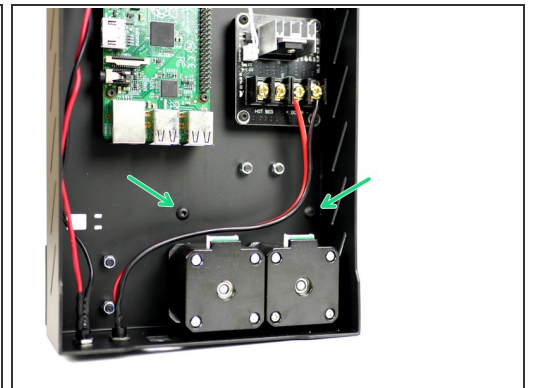
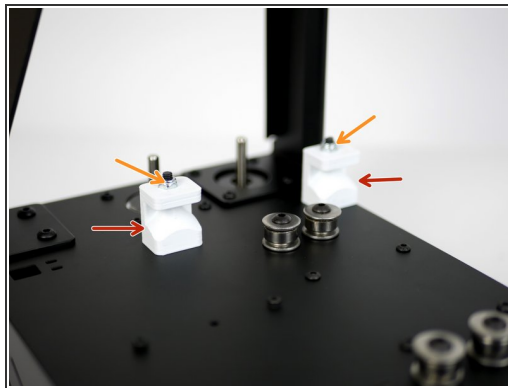
- X-Bearing assemblies need to be installed here.
- M4 x 18mm bolt
- M4 penny washer
- M4 washer (x3)
- ☞ Note, there are two M4 washers under the bearing.
- 624zz bearing
- M4 nyloc

Step 2 — X-Bearing Idlers



- i** Install like so in these four locations, make sure they are tight and that the bearings can also still spin.

Step 3 — Platform Guides - Fixed



- Install two of the fixed guides here.

- M4 x 30mm bolt

- M4 Nyloc

- i** Secure these tightly making sure that the back of them are parallel with the back of the base.

- ★** Note, the final versions of the guides are black.

Step 4 — Platform Guides - Eccentric



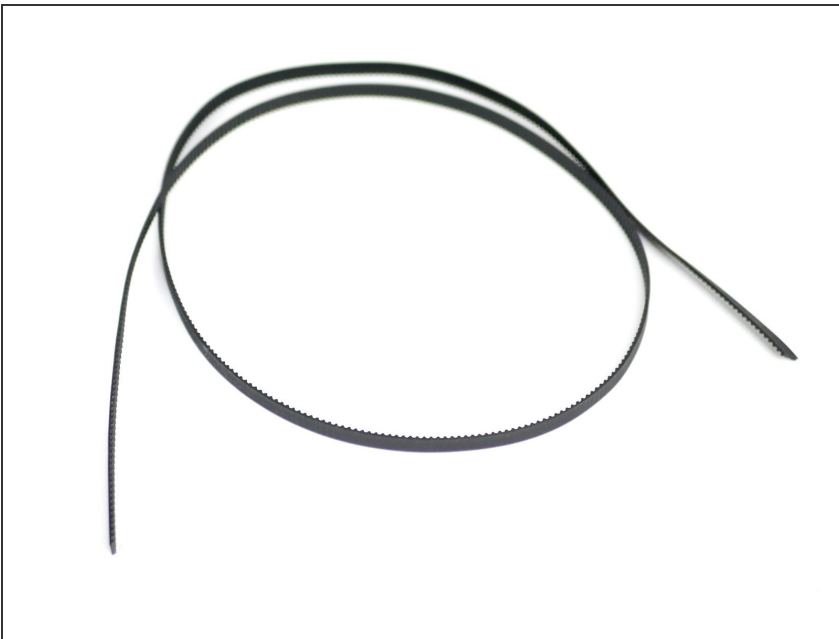
● Install two eccentric guides here.

● M4 x 30mm bolt

● M4 nyloc

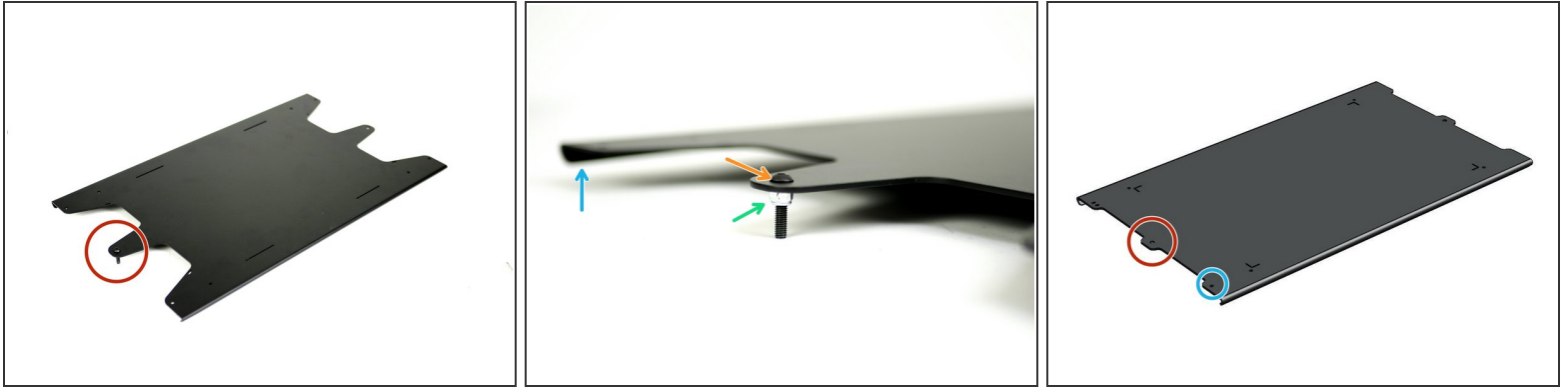
ⓘ Secure these firmly but do not tighten, you should still be able to rotate them by hand.

Step 5 — GT2 Belt



ⓘ Cut 1m of GT2 belt.

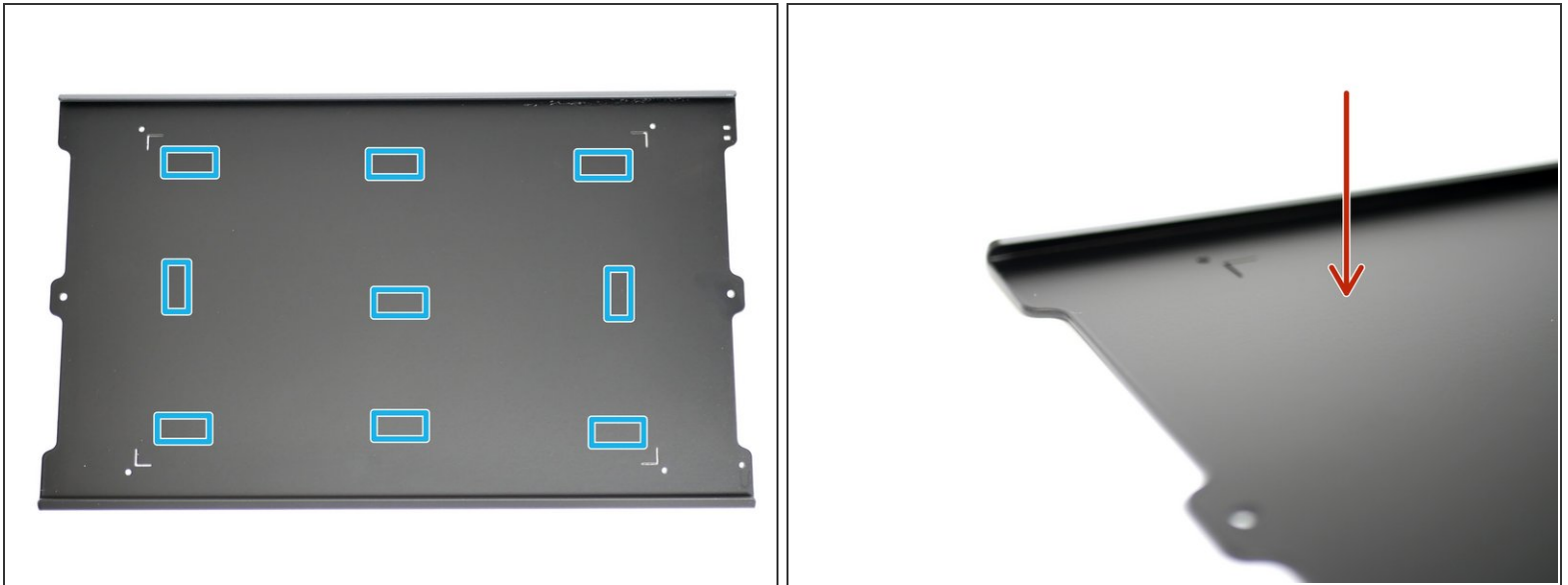
Step 6 — Platform Prep.



⚠ Double check that the platform is flat, you may need to bend it against a table edge slightly to get it flat, it doesn't need to be perfect as auto-levelling will compensate in software.

- Fix to the **left side** of the platform an M4 x 18mm bolt.
 - M4 x 18mm bolt
 - M4 nyloc
- Note, the final version of the platform is slightly different to what's photographed. This is where the M4 bolt should be fastened.
- Note also the orientation of the platform, the flanged edges should be facing down and the Pi cam mounting hole should be on the bottom left.

Step 7 — Flexplate Magnets (Upgrade)



i Only complete this step if you do **not** have the heated bed upgrade.

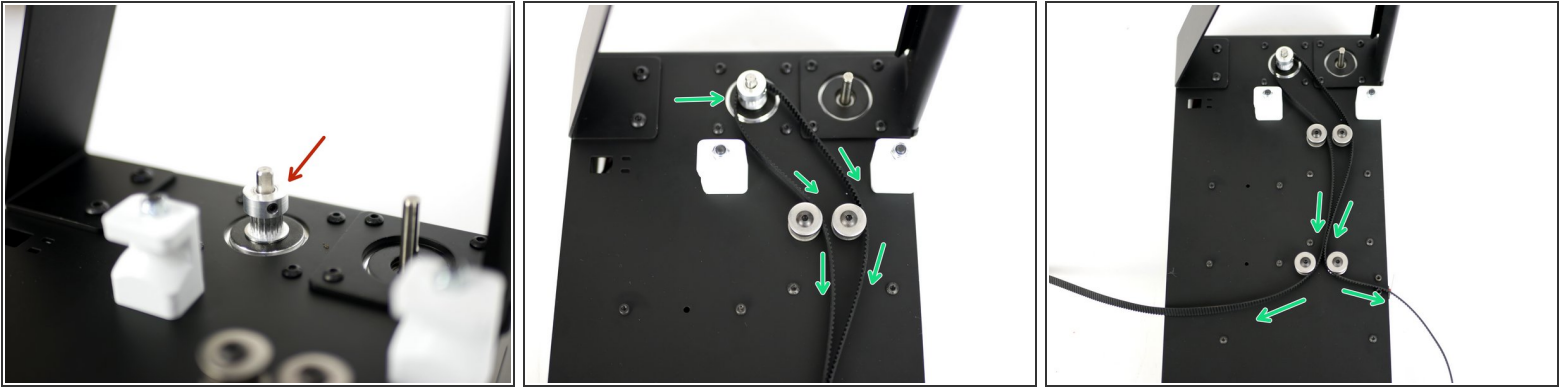
! The included magnets are very strong and should be handled with care. Magnets are also brittle and should never be slammed together. Keep clear of metal objects. Always slide a magnet to separate it from a surface.

i Carefully slide a magnet off the stack. The easiest way to remove a magnet from the stack is to first twist it and then slide and pull it off.

- Arrange the magnets like shown and use either double sided or regular clear tape to secure it to the underside of the platform.
- Underside of platform.

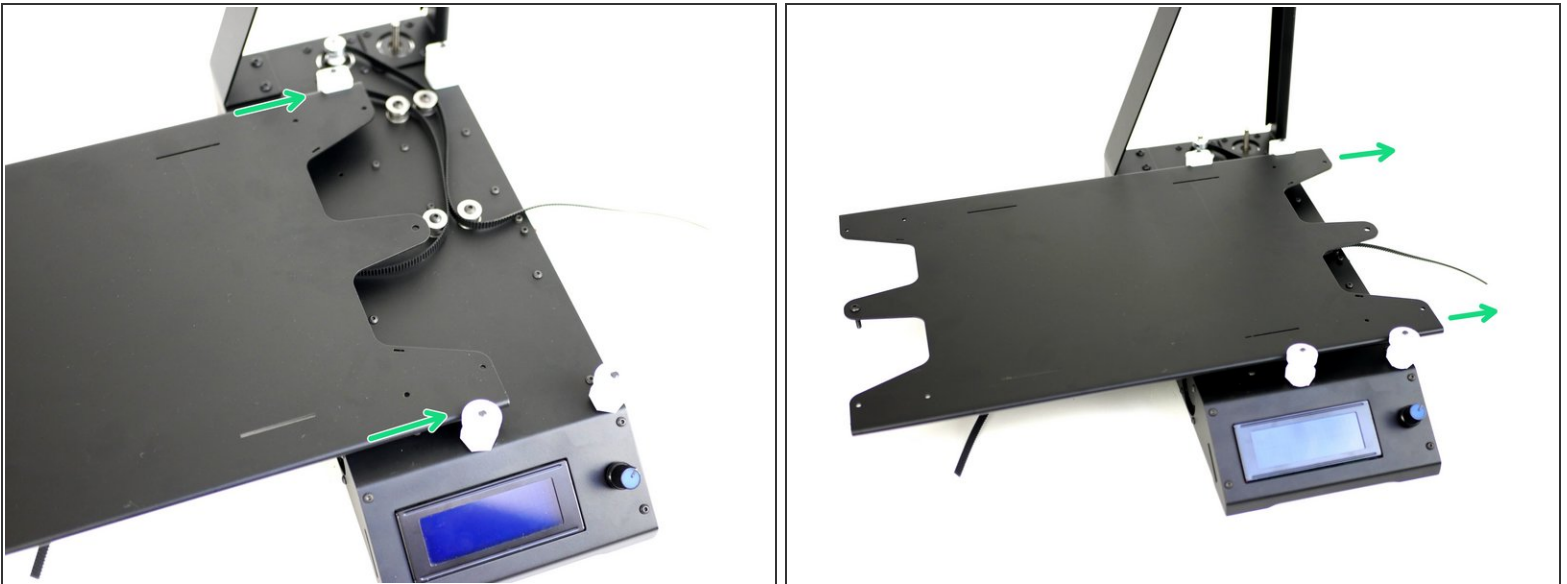
i Apply the tape to the same side/pole of each magnet. This is easy to do by making sure that each magnet is taken from the same side of the stack and is fixed down on the same side.

Step 8 — X-Belt Path



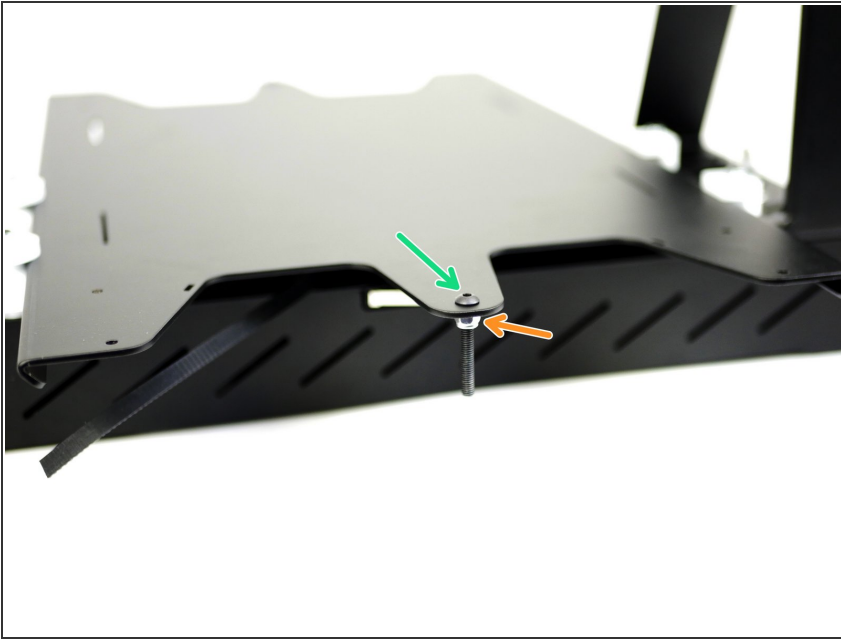
- Drop a belt pulley onto the X-motor with the grub screw side facing upwards.
- Thread the belt around the pulley and between the bearing like shown.
- ☑ Make sure that the teeth side of the belt are facing inwards.

Step 9 — Installing the Platform



- Slide the platform onto the guides from the left side, like shown.

Step 10 — Endstop Trigger

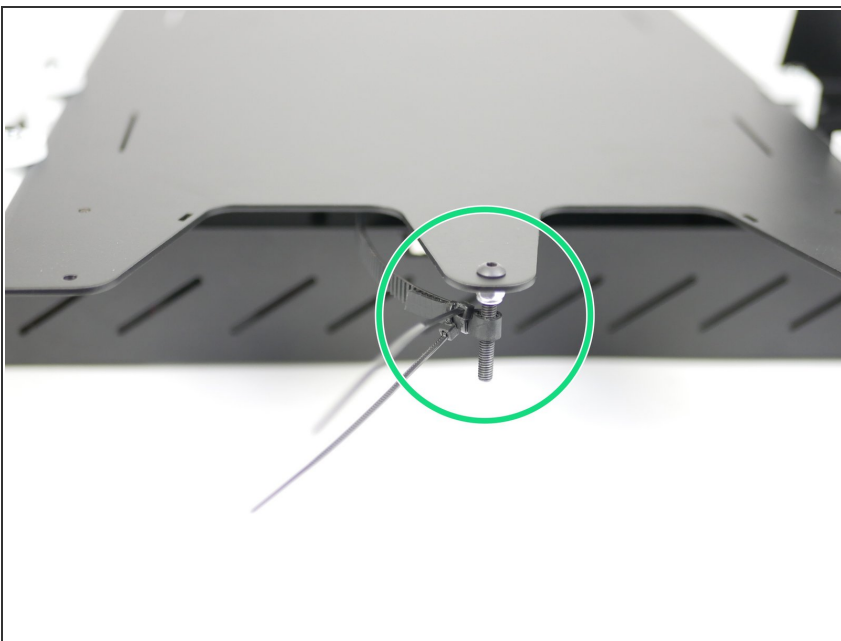


① On the right side of the platform fasten on a M4 x 30mm bolt

● M4 x 30mm bolt

● M4 Nyloc

Step 11 — Tying the GT2 Belt



● Tie the right side of the GT2 belt onto the M4x30mm bolt that you secured in the previous step.

① Use two cable ties.

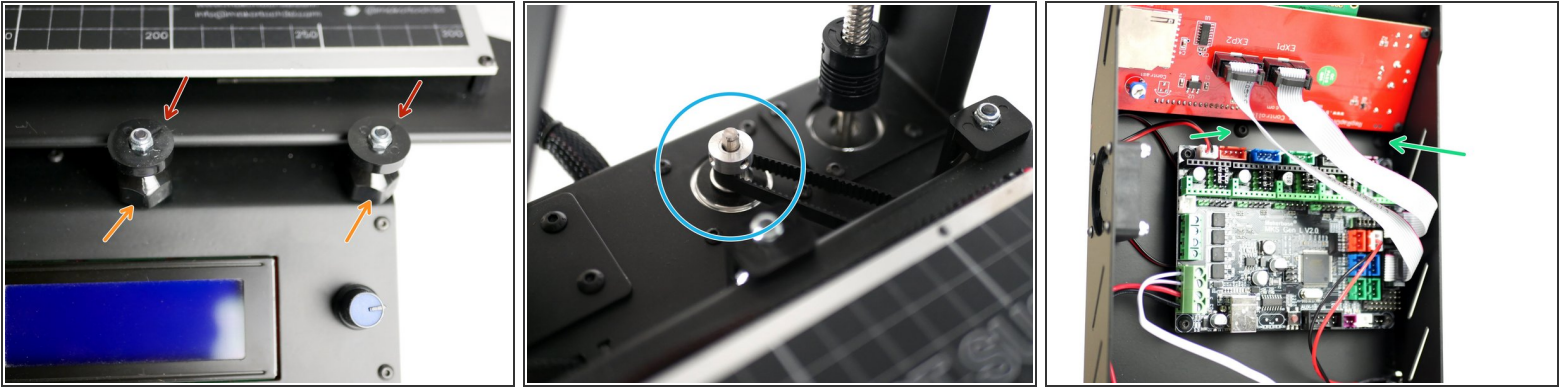
① Make sure that the teeth are facing inwards and that the belt is still following the same path through the bearing idlers.

Step 12 — Tying the GT2 Belt with Tension



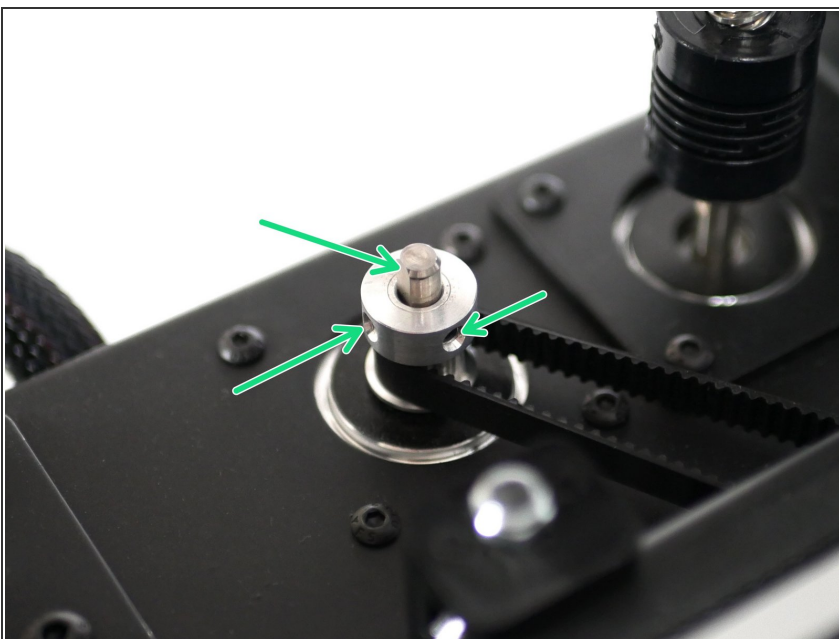
- ⓘ Put the Axis onto its back for easier access to the other side of the belt.
- Pull the belt around the bolt, do so tightly and use a bulldog clip to hold in place temporarily. Or ask some one to hold the belt together with a pair of pliers.
- ☑ Make sure that the belt is still correctly weaved through the bearing idlers.
- Whilst under tension, use cable ties to firmly secure the belt in place.
- Cut off any excess, leaving about an inch.
- ☑ We recommend that the belt be "guitar string tight". Too tight or too loose and print quality will be affected. If in doubt, tighter is usually better, but if you start warping the metal then you've gone too far.

Step 13 — Checking Platform Motion



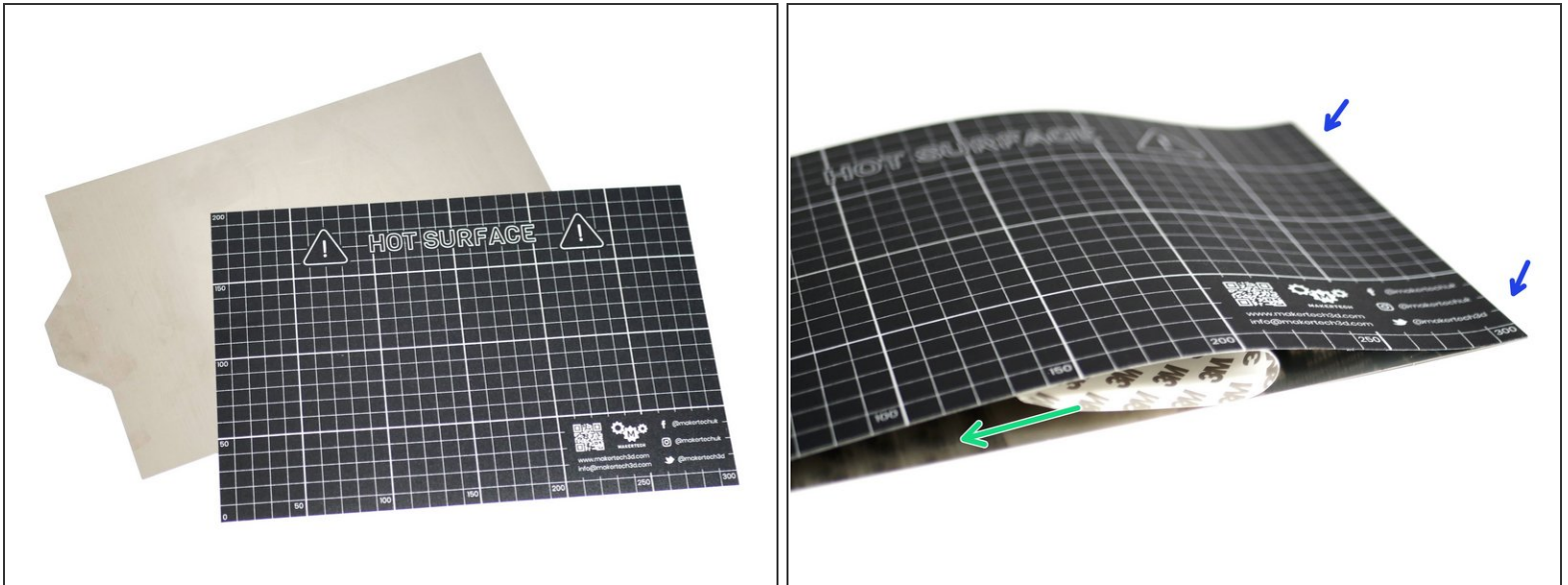
- Adjust the eccentric guides at the front of the base to get a good hold onto the platforms edge.
- The Idlers have a marking on them. Start by pointing this marking inwards. Turning the guide clockwise will tighten it against the platform and vice versa.
- Rotate the x-axis pulley to check the platforms motion.
- ⓘ The platforms movement should be straight and with out any wobble.
- Once happy with the platforms motion, tighten the bolts holding the eccentric guides to fix them in place and prevent any further rotation.

Step 14 — Securing the Pulley



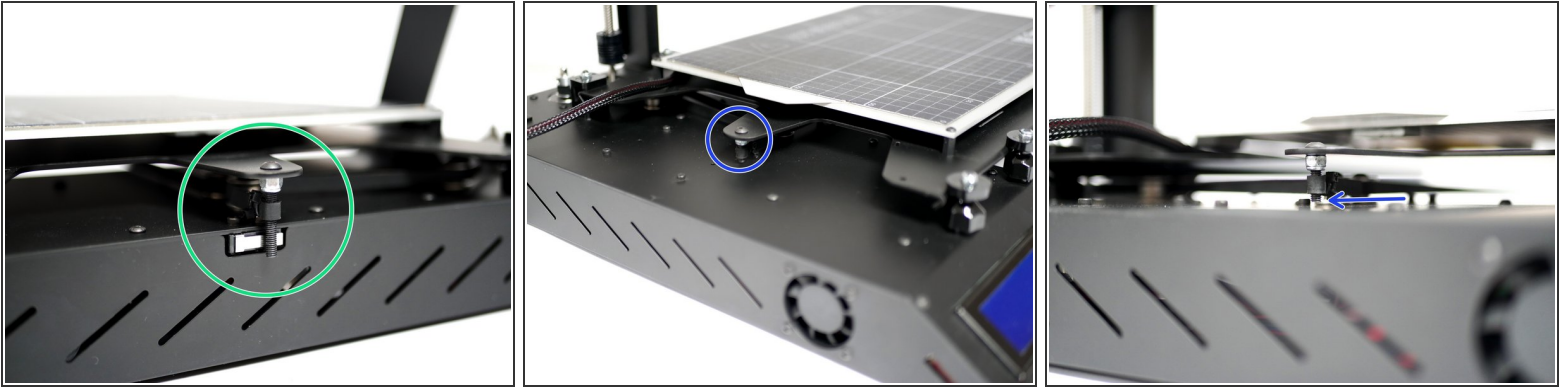
- Secure the pulley onto the flat side of the motors shaft.

Step 15 — Flexplate (Upgrade)



- i Before starting make sure the flexplate surface is **clean**.
- Peel away the backing from the right side of the surface sticker.
- Fix the sticker onto the edge of the flexplate making sure to carefully align it with the top and bottom edges.
- Pull away the backing paper and press down the sticker.
- i Check that the flexplate attaches well to the platform.

Step 16 — Platform Motion Continued



- When pushed all the way to the left the platform should bump the X-Endstop.
- The platform should also be able to be pushed all the way to the right, like shown with the bottom of the bolt clearing the top of the base. Don't push any further as it will cause it to fall off the guides.