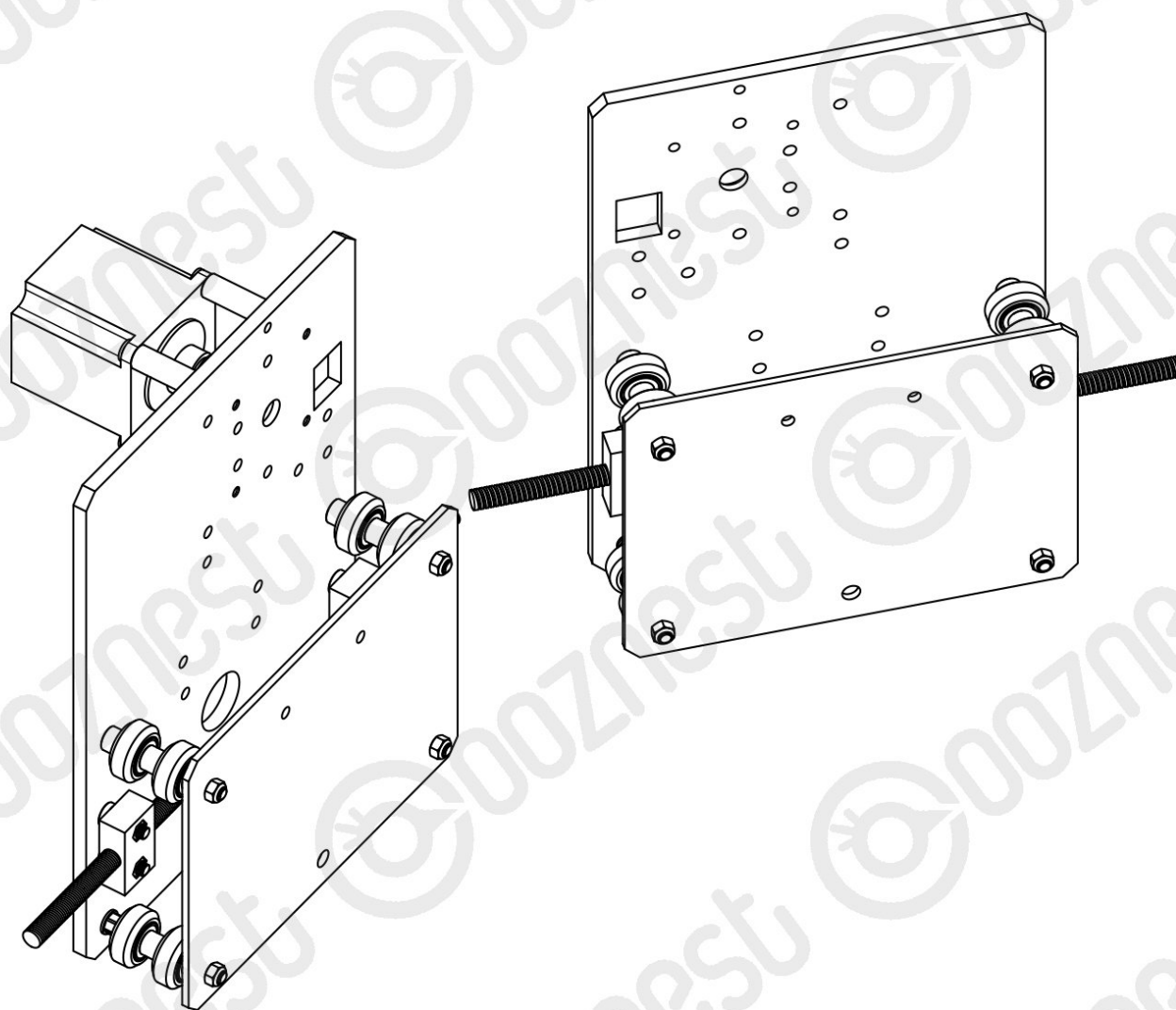


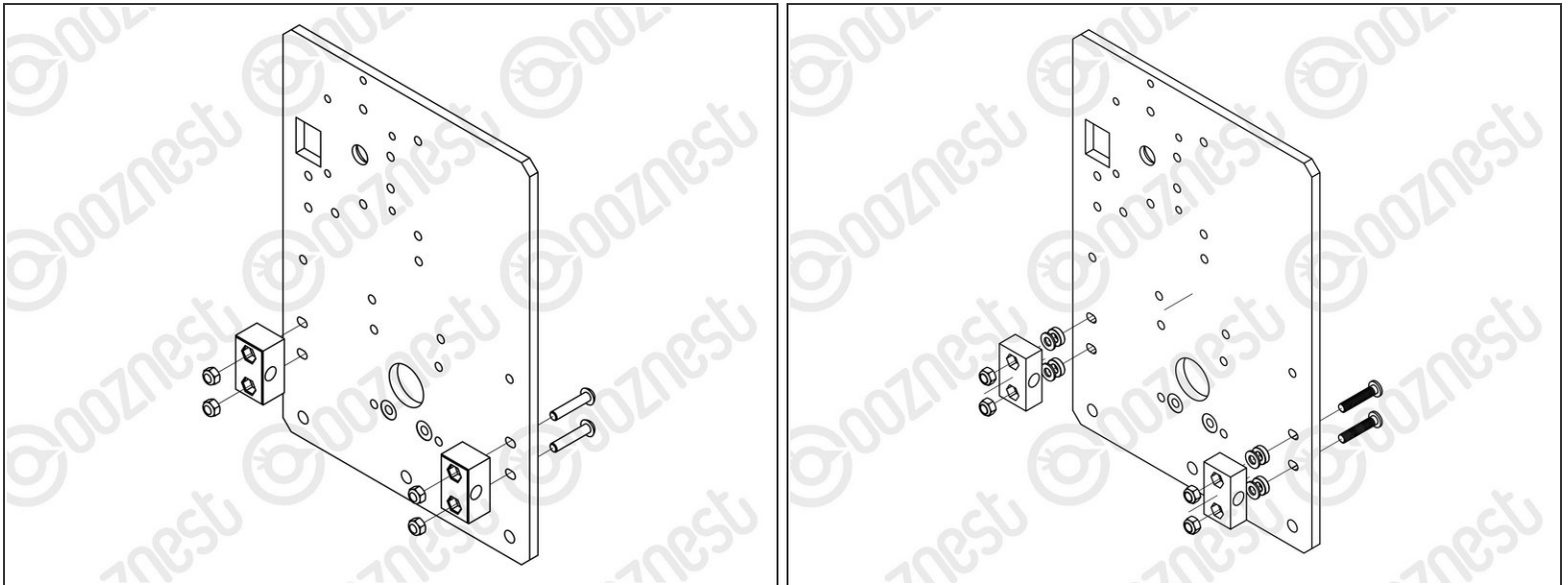


2. Y-Plate Assembly

Written By: Ryan Christy



Step 1 — ACME Nut Blocks



i If you have a [WorkBee 2.2.1](#) please follow the **Purple Points** and look at **Image 1**. If you have a [WorkBee 2.2](#) please follow the **Green Points** and look at **Image 2**.

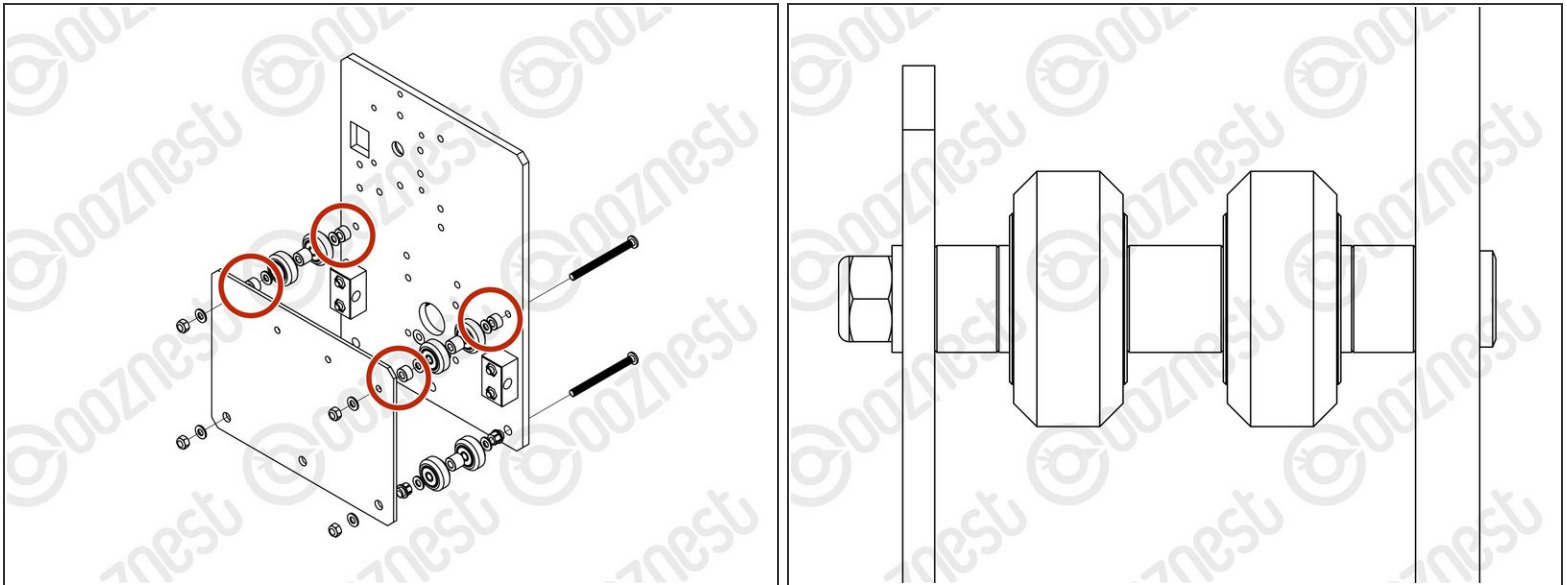
- Attach 2 x ACME-Nut-Blocks to one of the Y-Plates using 4 x M5-Low-Profile-25mm bolts & 4 x M5-Nyloc-Nuts. Only loosely tighten these bolts so the ACME-Nut-Blocks can still move side to side.
- Thread a Y-ACME-Lead-Screw through both ACME-Nut-Blocks. Tighten the bolts holding one of the ACME-Nut-Blocks, making sure it is square to the Y-Plate.
- To remove any backlash, pinch the loose ACME-Nut-Block towards the previous one, and tighten the bolts holding it. Leave the Y-ACME-Lead-Screw threaded through the ACME-Nut-Blocks.

i --- WorkBee 2.2 ---

- Attach 2 x ACME-Nut-Blocks to one of the Y-Plates using 4 x M5-Low-Profile-25mm bolts & 4 x M5-Nyloc-Nuts. On each bolt, in-between the ACME-Nut-Block and Y-Plate, there should be an Aluminium-Spacer-3mm and a Precision-Shim. Only loosely tighten these bolts so the ACME-Nut-Blocks can still move side to side.
- Thread a Y-ACME-Lead-Screw through both ACME-Nut-Blocks. Tighten the bolts holding one of the ACME-Nut-Blocks, making sure it is square to the Y-Plate.

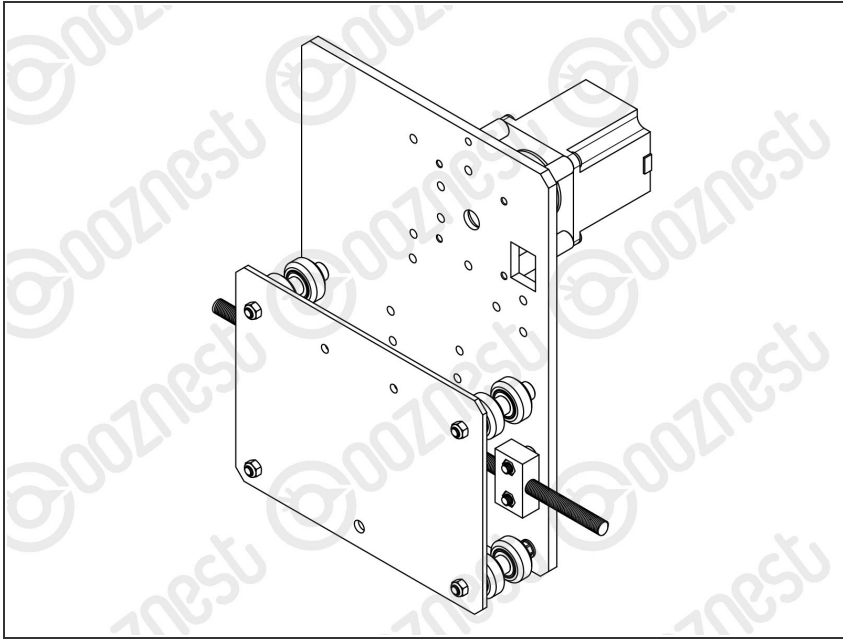
- To remove any backlash, pinch the loose ACME-Nut-Block towards the previous one, and tighten the bolts holding it. Leave the Y-ACME-Lead-Screw threaded through the ACME-Nut-Blocks.

Step 2 — Y Wheels & Y-Plate-Inner



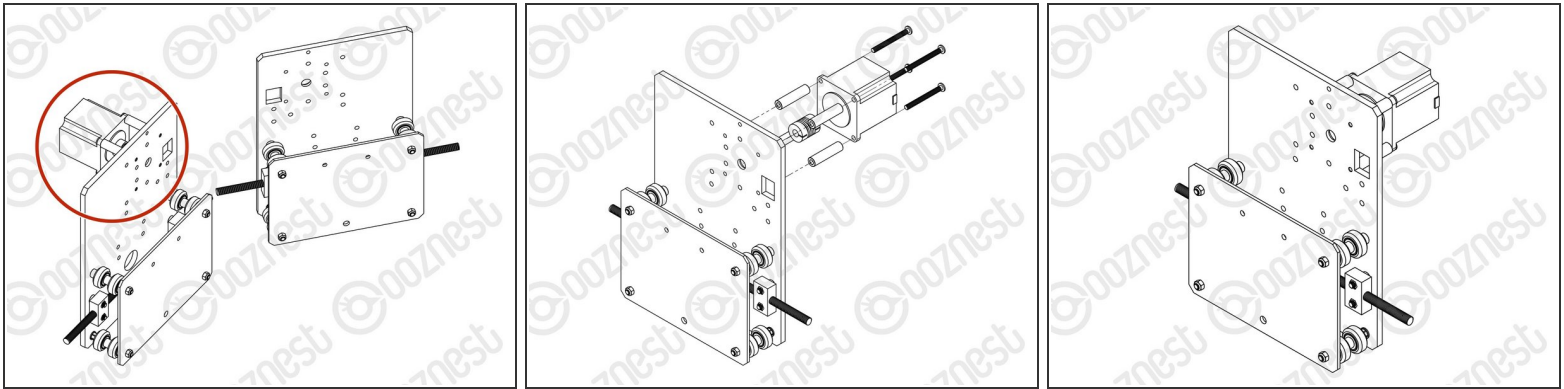
- First attach the bottom right wheel set; insert a M5-Low-Profile-60mm bolt through the Y-Plate-Assembly from the back. On to this bolt, add an Eccentric-Spacer-6mm, Precision-Shim, Solid-V-Wheel-Xtreme-Assembly, Aluminium Spacer-9mm, Solid-V-Wheel-Xtreme-Assembly, Precision Shim, and a Eccentric-Spacer-6mm in this order.
- Next, add a Y-Plate-Inner onto the top of this assemblage, add a Precision-Shim and then slightly thread on a M5-Nyloc-Nut. The rounded portion of the Eccentric-Spacer-6mm should be inserted into the hole on either the Y-Plate-Assembly or Y-Plate-Inner (depending on which side it is on).
- Repeat for the other wheel set on the bottom row corner.
- Repeat for the 2 wheel sets on the top row, however for these sets use Aluminium-Spacer-6mms instead of Eccentric-Spacer-6mms.
- Once all of the wheels are attached the M5-Nyloc-Nuts can be tightened down. Ensure that the Solid-V-Xtreme-Wheels can still rotate freely. On the hexagonal portion of the Eccentric-Spacer-6mm, there will be one face that is marked with '6mm'.
- Using a spanner, adjust each Eccentric-Spacer-6mm so that this face is facing downwards. Doing this maximizes the gap between the top and bottom row of wheels.
- ❗ Try to get all the wheels touching the aluminium extrusion as best as possible. It is not a problem, if there is one wheel which is slightly looser than the others. After the machine has been operational for a little while, they will bed in.

Step 3 — Adjusting Y Wheels



- Run any piece of C-Beam extrusion in-between the two rows of wheels. Initially, there may be a small amount of play between the C-Beam and wheels. Turn the assembly upside down so the C-Beam is sitting on the row of wheels with the Aluminium-Spacer-6mms.
- Starting with one pair of wheels, adjust both Eccentric-Spacer-6mms down onto the C-Beam Extrusion until there is a small amount of friction between both wheels and the C-Beam Extrusion.
- When adjusting the pair of Eccentric-Spacer-6mms ideally they should be adjusted identically. However, sometimes one will need to be adjusted slightly more than the other to get both wheels engaged with the C-Beam extrusion.
- Repeat for the other pair of wheels with eccentric spacers.
- Slide the C-Beam extrusion back and forth through the wheels. This should require a small amount of force, and all wheels should spin as it rolls. Also check there is no wobbling of the extrusion. Once happy, double check the tightness of the M5-Nyloc Nuts.

Step 4 — Repeat



- Repeat the this section for other Y-Plate. As seen it should be a mirror image of the previous assembly.
- A NEMA23-Stepper-Motor needs to be attached to the second Y-Plate Assembly. See pictures 2 & 3.
 - Slide the 1/4" side (the side with the smallest hole) of the Flexible-Coupler onto the shaft of the NEMA23-Stepper-Motor. Don't tighten it down at this point.
 - Attach the NEMA23-Stepper-Motor to the threaded holes on the Y-Plate using 4 x M5-Low-Profile-50mm bolts and 4 x Aluminium-Spacer-40mm's.
- ⓘ Orient the NEMA23-Stepper-Motor so that the wire is towards the back of the Y-Plate (the side closet to the small rectangle opening).
- ⓘ The Y-Plate Assembly with the NEMA23-Stepper-Motor will be known going forward as the Y-Plate-Left Assembly.
- ⓘ The other Y-Plate Assembly (Without the NEMA23-Stepper-Motor) will be known going forward as the Y-Plate-Right Assembly.

Thanks for following the guide. Any issues, please contact us!