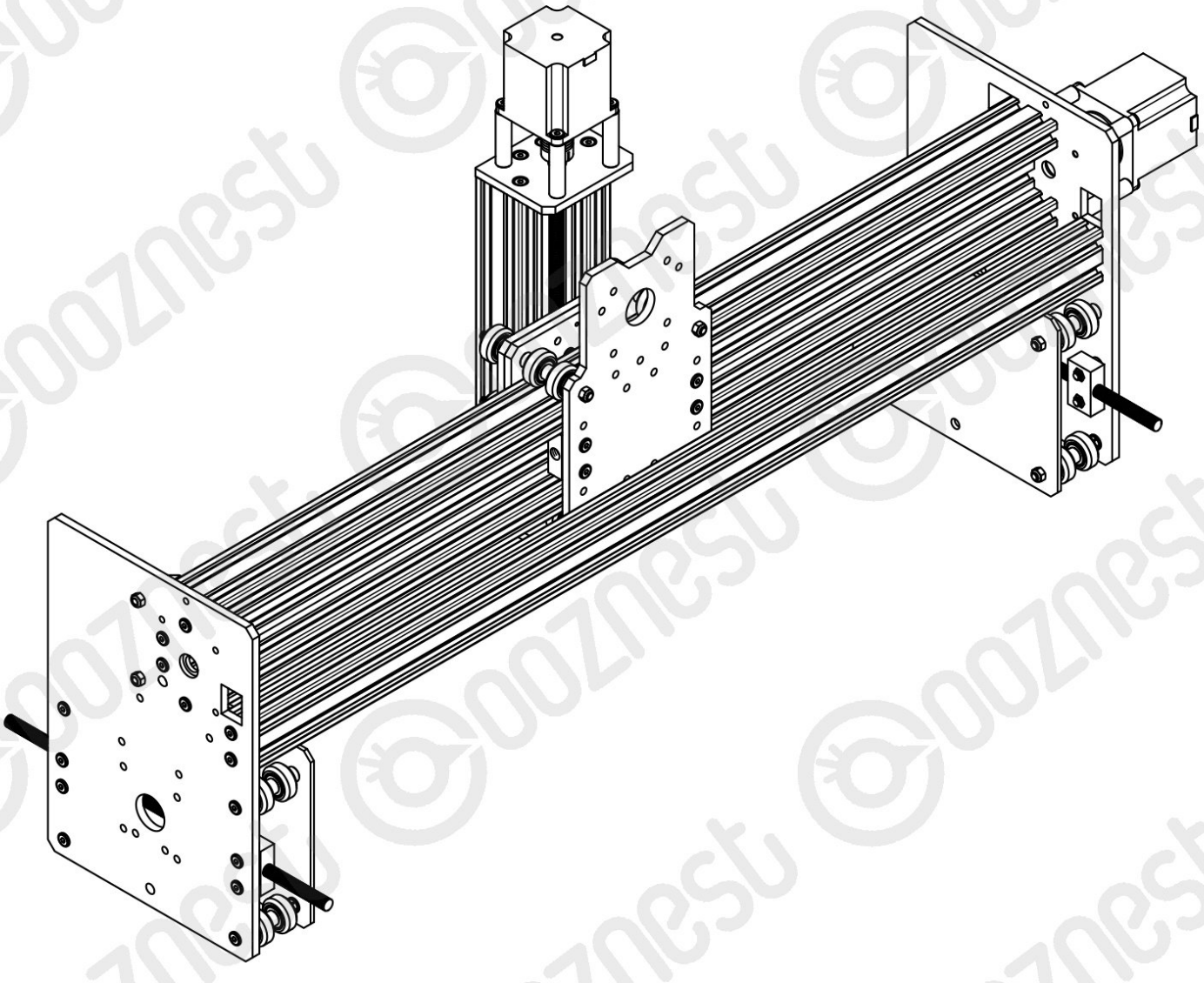
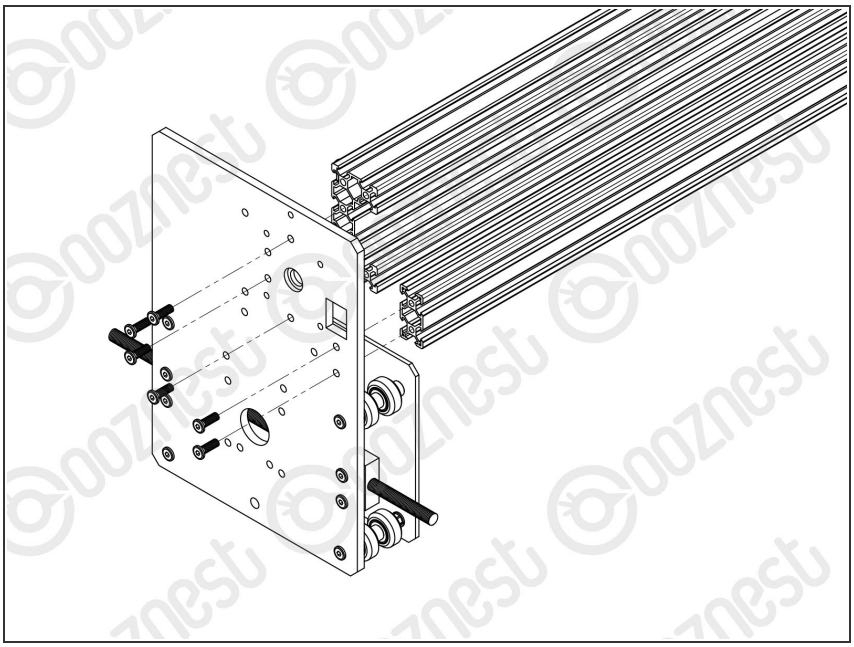
4. X-Gantry Assembly

Written By: Robert



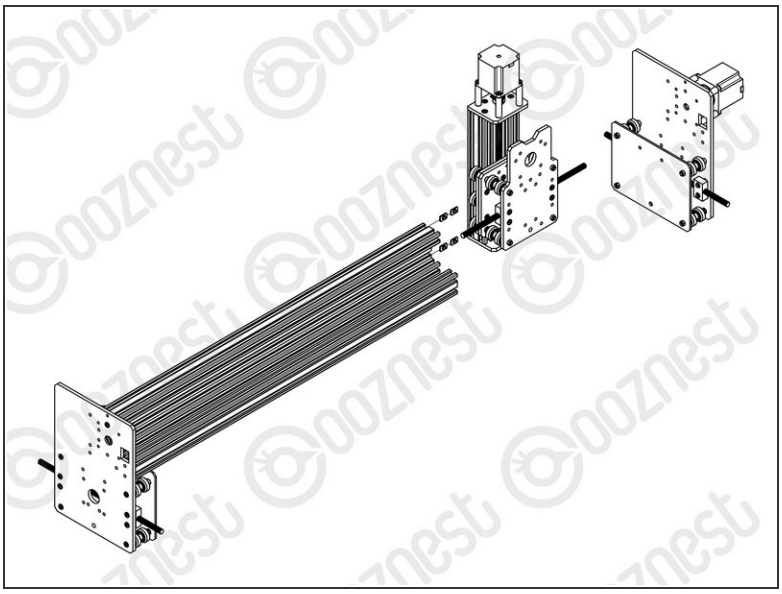
Step 1 — Extrusions

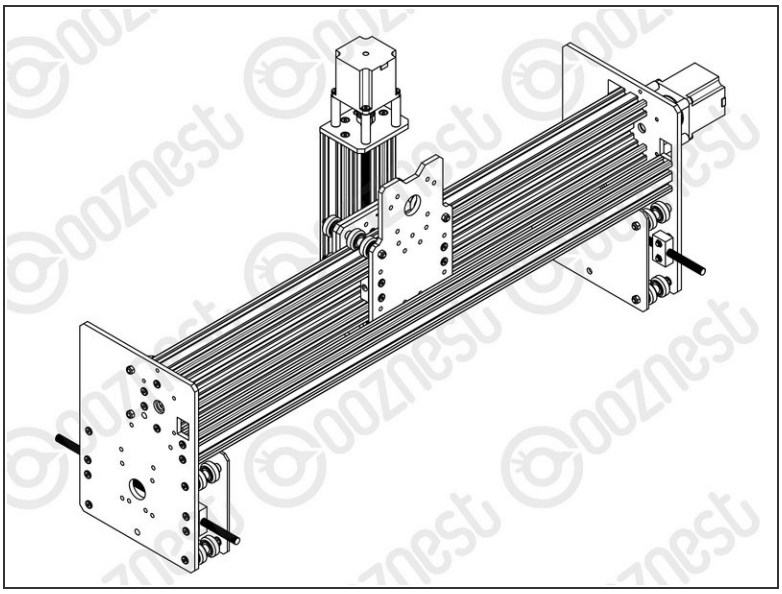


ⓘ Build the machine on a flat surface to ensure the frame is square.

- Attach the V-Slot-2040-750mm to the back two holes on the Y-Plate-Right-Assembly using 2 x M5-Low-Profile-15mm bolts.
- Attach the C-Beam-750mm to the four non-threaded holes on the Y-Plate-Right Assembly shown above using 4 x M5-Low-Profile-15mm bolts.

Step 2 — X-Carriage & Y-Plate-Left Assembly





- Before the Y-Plate-Left-Assembly can be attached, Tee-Nuts need to be inserted.

  ⚠ The Tee-Nuts should be inserted so that the flat face is facing outwards.

  - Insert 2 x Tee-Nuts in to the front facing top slot, 2 x Tee-Nuts in to the front facing bottom slot.
- Slide the X-Carriage-Assembly onto the C-Beam-750mm in the orientation seen above.
- Repeat Step 1 for the Y-Plate-Left-Assembly.
- Recheck the bottom Eccentric-Spacer-6mms on the X-Carriage-Assembly to make sure they are touching the rail, there is no wobble, and that the X-Carriage-Assembly runs smoothly along the whole length of the C-Beam-750mm.
- Place the X-Gantry Assembly onto a flat table. Check both Y-Plates are sitting flush with the table. Loosen the extrusions and adjust if needed.

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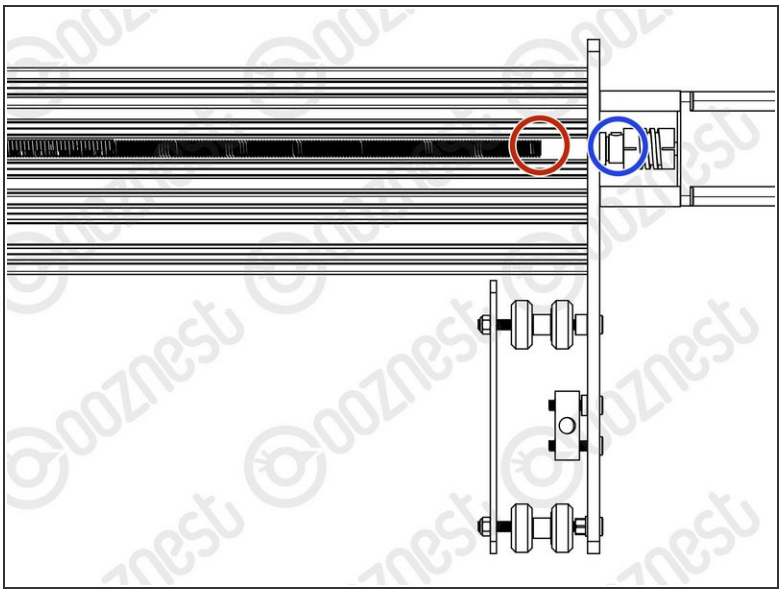
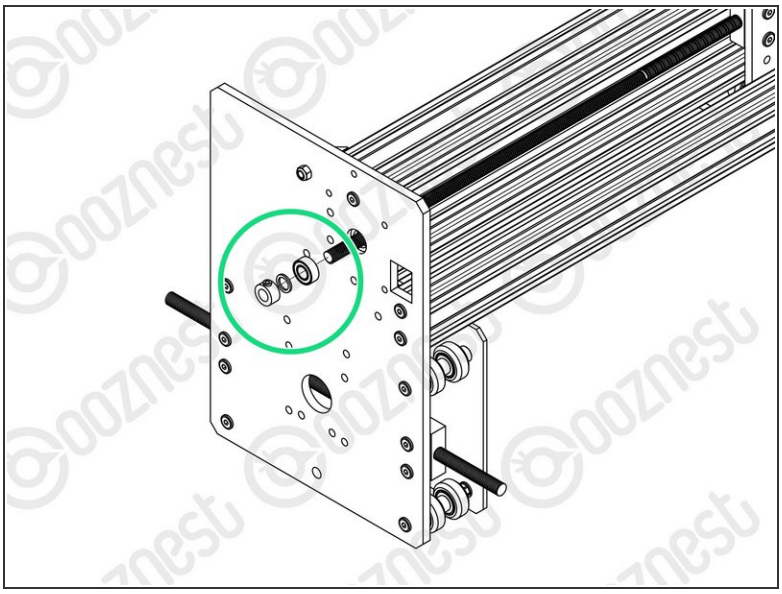
Step 3 — X-ACME Screw

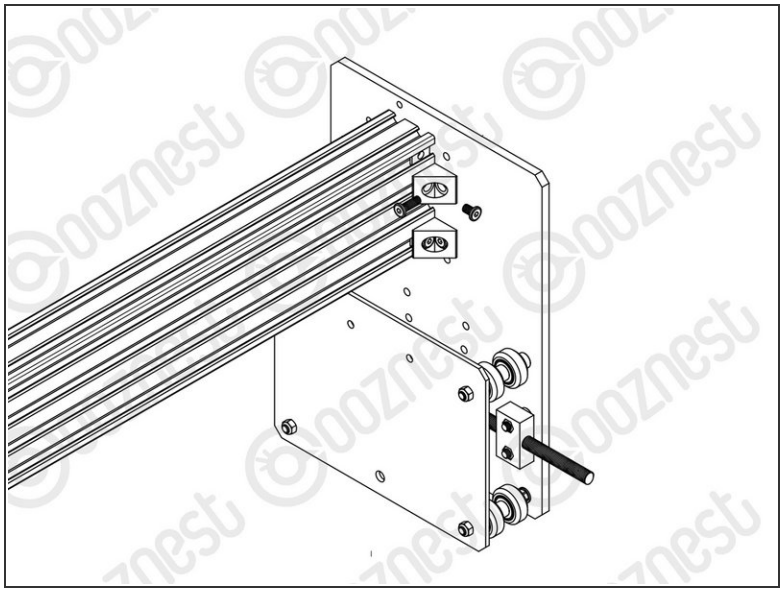


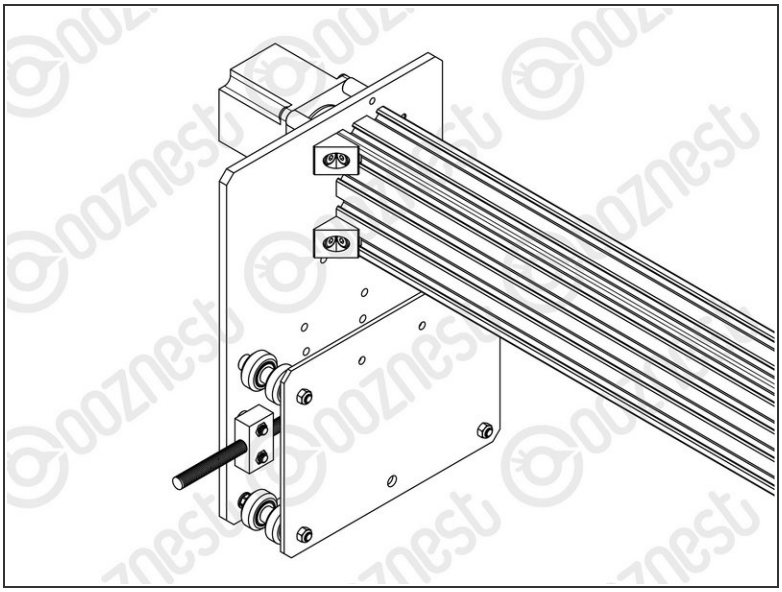


- Looking at the Y-Plate-Left, adjust the X-ACME-Screw so the end is on the extrusion side of the Y-Plate-Left.
  - In the gap between the Y-Plate-Left and Flexible-Coupler, insert a F688zz-Bearing, 8mm-Shim, and 8mm-Clamping-Collar. With the F688zz-Bearing closest to the Y-Plate-Left, seated inside the hole.
  - Adjust the X-ACME-Screw back through the F688zz-Bearing, 8mm-Shim, and 8mm-Clamping-Collar, until there is gap of ~1.0mm (The thickness of a Precision-Shim) between it and the shaft of the NEMA23-Stepper-Motor shaft.
  - While pushing the 8mm-Clamping-Collar against the 8mm-Shim and F688zz-Bearing into the recess on the Y-Plate-Left, tighten the clamping bolt on the 8mm-Clamping-Collar.
  - Push the Flexible-Coupler up against the 8mm-Clamping-Collar. Tighten the clamping bolt first around the X-ACME-Screw, then the grub screw onto the X-ACME-Screw.
  - Rotate the Flexible-Coupler a couple of times to insure it is in a un-stressed state. Then rotate it so the grub screw on the stepper motor side is aligned with the flat portion of the motor shaft. Tighten the clamping bolt first around the motor shaft, then the grub screw onto the flat portion of the motor shaft.
- On the outside of the Y-Plate-Right slide on a F688zz-Bearing, 8mm-Shim, and 8mm-Clamping-Collar. Inset the F688zz-Bearing into the hole.

- While pushing the 8mm-Clamping-Collar against the 8mm-Shim and F688zz-Bearing into the recess on the Y-Plate-Right, tighten the clamping bolt on the 8mm-Clamping-Collar.

Step 4 — Angle Corners





- Attach an Angle-Corner to the Y-Plate-Right-Assembly & the front facing top slot of the C-Beam-750mm. A M5-Low-Profile-8mm screws into the Tee-Nut previously inserted, and a M5-Low-Profile-15mm goes though the Angle-Corner and attaches to a M5-Nyloc-Nut on the outside of the Y-Plate-Right-Assembly.
  - Repeat this for the other 3 Angle-Corners in the positions shown above.

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