railcore

N) Aligning your RailCore

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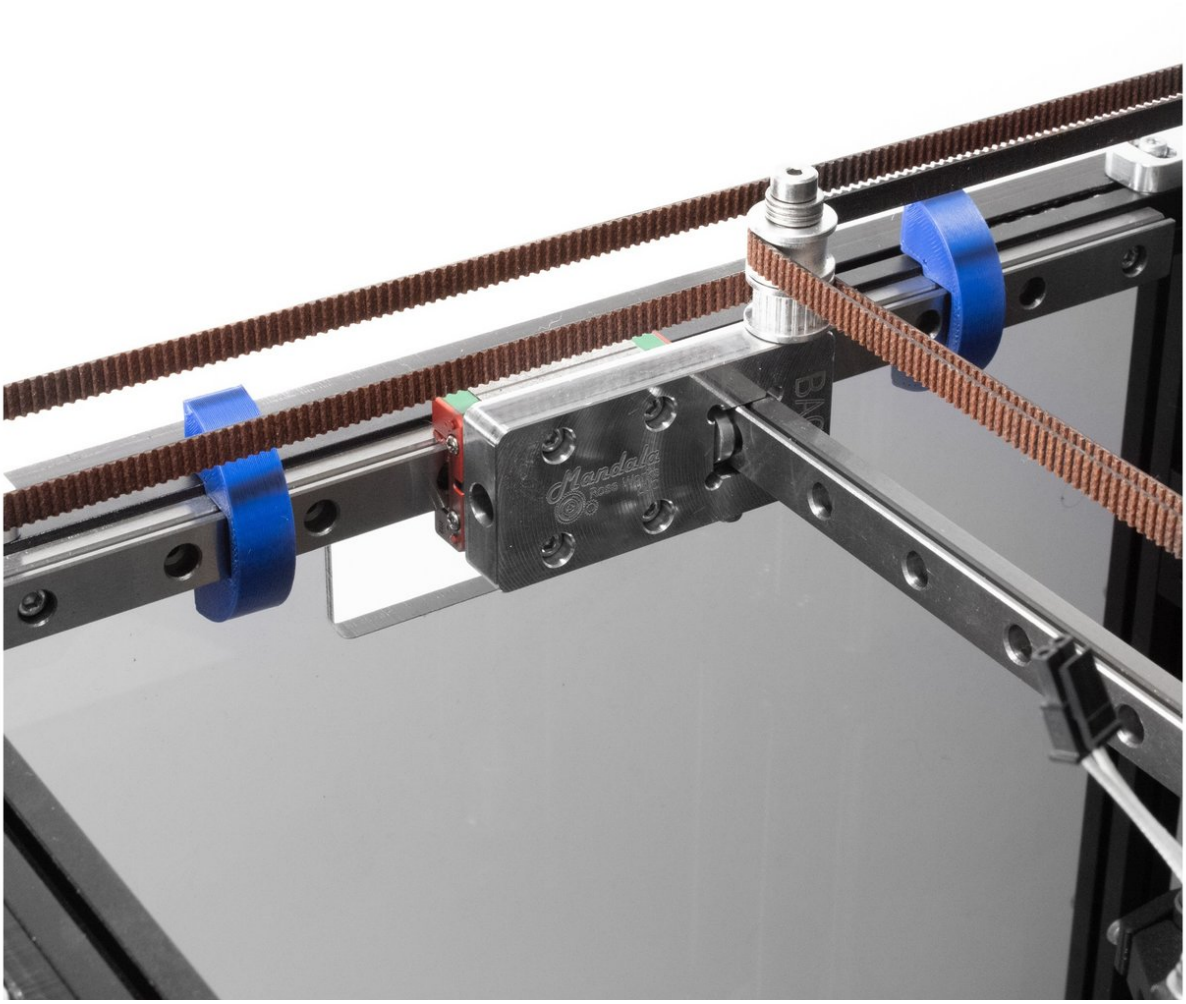

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TOOLS:

- Allen Key (1)

PARTS:

- Printed Rail Alignment Tool (1)

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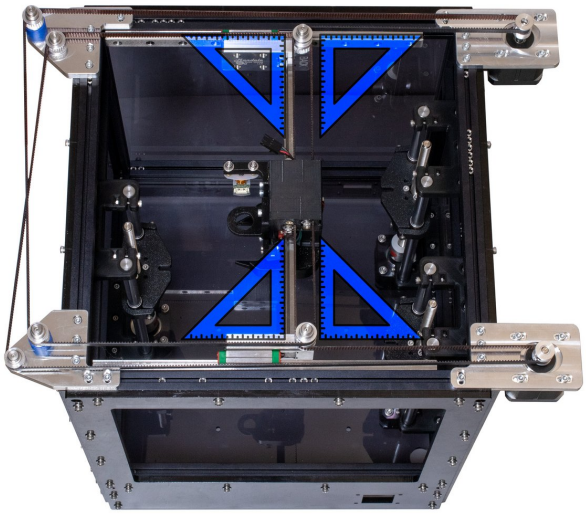
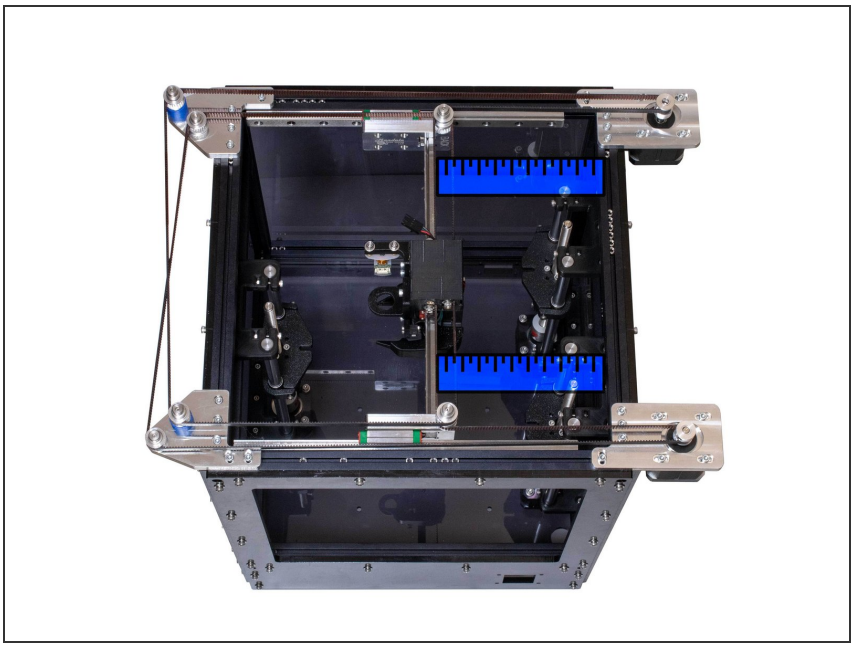
Step 1 — Align the Belts



- The first step is to align your belts. Adjust the steppers so there's some tension, it doesn't take much, just enough that the belts are straight.
- Loosen the bolts holding each stepper and idler mount, and move them on the frame until the belts form 90 degree angles to each other.

Step 2 — Tension the Belts



- Earlier in the process you should have made sure your belts are equal lengths, if you did, that will make getting proper tension easier.

⚠ Each X Carriage has two bolts retaining the Y rail in place. Loosen those bolts in both carriages just a little before proceeding. (They should still keep the rail in position, but should not be tight)

- Pull on the Front stepper in the mounts to lightly tension the front belt. You don't need too much tension.
- Pull the rear stepper back in the mount until the measurements marked in red on the image are equal. (Measure from the right side of the Y rail marked in red, to the left side of the top right extrusion where marked in red).

⚠ 1-2-3 blocks can be used in place of measuring.

- Once the Y rail is squared you should re-tighten the bolts in the X carriages to retain the Y rail.

ⓘ Ideal belt tension is between 40 - 50hz as measured on the short spans on the left of the printer between the idler mounts.

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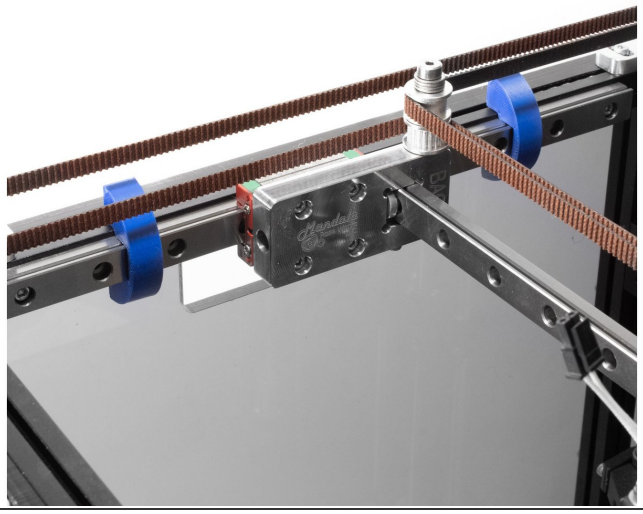
Step 3 — Centering the Linear Rails



- Center your X rails by loosening the retaining bolts and installing the alignment jigs on opposite sides of the rail.
- Tighten the rail back to the extrusion and repeat for the next X rail.

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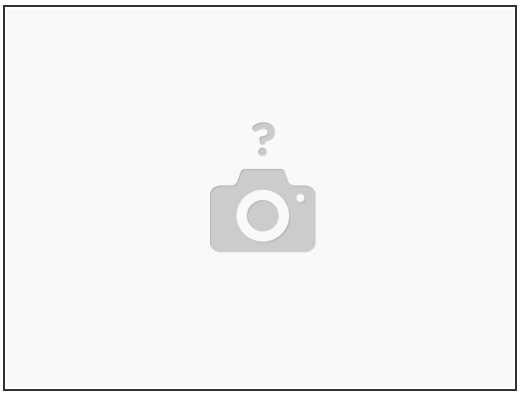
Step 4 — Aligning the Z Towers



- Loosen the bolts in the Z brackets for one tower, so it can move freely.
- Lower the Z yoke by spinning the lead screw, until the yoke is just above the leadscrew coupler.
- Tighten down the lower Z bracket, be sure the Z extrusion is pushed flush against the side extrusions as you tighten the brackets.
- Move the yoke into the center of the Z tower.
- Use a calipers or a ruler to measure from your front panel to the Z extrusion at the bottom.
- Repeat the same measurement near the top of the Z tower, and adjust until it's equal.
- Tighten the top of the Z tower. Repeat for all 3 towers.

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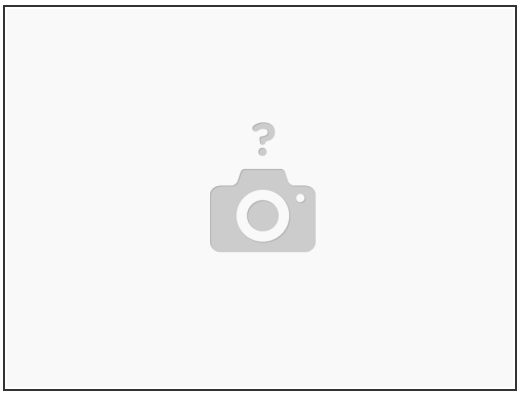
Step 5 — Adjust X Endstop



- Loosen your X endstop mount. Move it to back side of the right extrusion.
- Move the X endstop to be against the rear X carriage, be sure the switch triggers.
- Tighten down the X endstop.

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