

# railcore

## C) Top Extrusions Assembly

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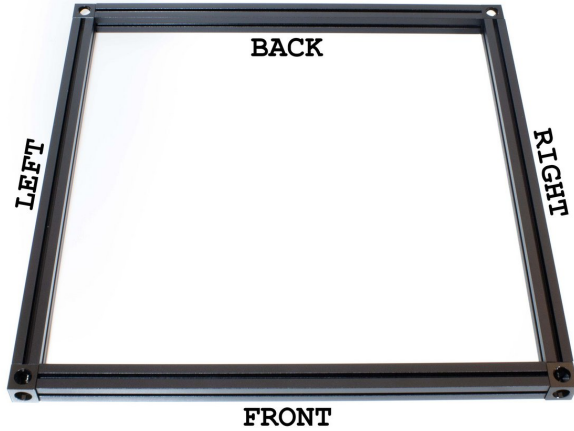
**TOOLS:**

- [Allen Key](#) (1)
- [Masking Tape](#) (1)

**PARTS:**

- [270mm 1515 Extrusion](#) (4)
- [Corner Cube](#) (4)
- [M3 Nut](#) (88)
- [M3 x 8 Socket Head Screw](#) (16)
- [M3 lock washer](#) (8)
- *For Misumi Rails Only*
- [245mm Linear Rail](#) (2)
- [5mm Acrylic Extrusion Spacer](#) (8)
- [81mm Acrylic Extrusion Spacer](#) (12)

## Step 1 — Lay Out Top Extrusions



- Lay out top extrusions as pictured.
- It can be helpful to use masking tape to add a label to the top of each extrusion indicating which it is (Top Back, Top Left, etc).
- Be sure the Corner cubes have a larger hole facing up, smaller hole facing down.

## Step 2 — Bolt Corner Cube to Top Left Extrusion



- Bolt corner cube to top left 270mm extrusion using (1) M3 x 8mm socket head screw.

**i** Note on the corner cube, the small hole is pointing to the right in this image.

### Step 3 — Add Hardware to Top Left Extrusion



- Hold the extrusion as it will be oriented on the printer (make sure the big hole on the corner cube faces up).
  - In the layout shown in the image, insert the acrylic spacer inserts and M3 nuts in the outer channel. There should be (2) 5mm spacers, (3) 81mm spacers, and 4 M3 nuts.
  - Slide (7) M3 nuts into the top channel.
  - Slide (4) M3 nuts into the top channel.
- i** Note on the corner cube, the small hole is pointing to the right in this image.

## Step 4 — Attach Second Corner Cube to Top Left Extrusion



- Attach the second corner cube to the top left extrusion using (1) M3 x 8mm socket cap screw. Be sure the large hole is up, small hole is down.
- ⓘ Note on both corner cubes, the small hole is pointing to the right in this image

## Step 5 — Attach Top Front and Top Back Extrusions



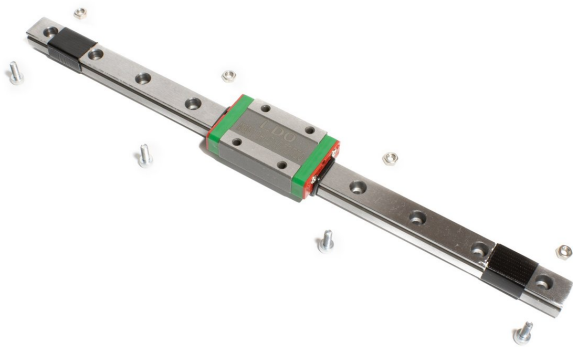
- Attach the (2) 245mm top front and top back extrusions using (1) M3 x 8mm socket head screw for each.

## Step 6 — Add Hardware to Top Front and Top Back Extrusions



- (8) M3 nuts go in the top channel of the back extrusion.
- (8) M3 nuts go in the front channel of the front extrusion.
- Insert the acrylic spacer inserts and M3 nuts in the top outer channel. There should be (2) 5mm spacers, (3) 81mm spacers, and 4 M3 nuts (See second image for reference).
- Insert the acrylic spacer inserts and M3 nuts in the front outer channel. There should be (2) 5mm spacers, (3) 81mm spacers, and 4 M3 nuts (See second image for reference).

## Step 7 — (2x) Install M3 Hardware into Linear Rail



- Select 4 evenly spaced holes in your linear rail. (2 empty holes between each bolt)
  - Place a M3 x 8mm socket cap head screw into one of the holes selected. Loosely thread on (1) M3 nut to the bolt. **DO NOT TIGHTEN THEM FULLY.** The M3 nut only needs to be threaded onto the tip of the bolt, you want a gap between the nut and the back of the rail. Repeat for the other three (3) holes.
  - Repeat the above steps for the other 245mm rail.
- i** If you are using Misumi rails, use a M3 lock washer between the M3 x 8mm and the rail.

**⚠** It is highly recommended to use a bit of masking tape to keep the carriage from sliding off of the linear rail.

## Step 8 — Attach Linear rail to Top Front and Top Back Extrusions



- Attach each linear rail to top front and top back extrusions by sliding the M3 nuts into the inside channel on the extrusion.
- Roughly center the extrusion, and then snug up the bolts.

**⚠ Do not overtighten the bolts, you just need them snug for now. They'll be tightened later.**

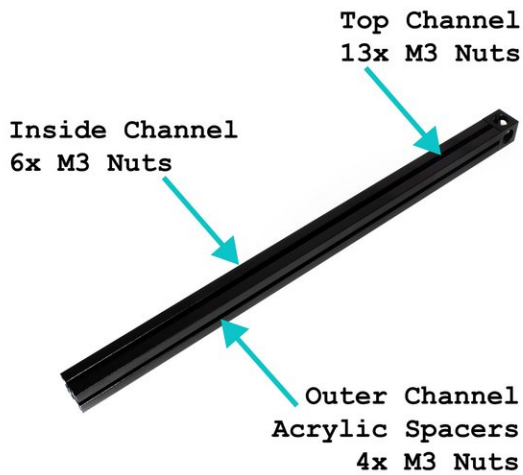
## Step 9 — Attach Corner Cube to Top Right Extrusion



- Set aside the rest of your top extrusion assembly for now, so we can work on the top right extrusion.
- Attach a corner cube to the right 270mm extrusion using (1) M3 x 8mm socket head screw.



## Step 10 — Add Hardware to Top Right Extrusion



- Slide (13) M3 nuts into the top channel.
- Slide (6) M3 nuts into the inside channel.
- Insert the acrylic spacer inserts and M3 nuts in the outer channel. There should be (2) 5mm spacers, (3) 81mm spacers, and (4) M3 nuts (See second image for reference).

**⚠ Be sure the orientation of the corner cube is correct. A large hole should face up, a small hole should be facing down, and a small hole should be facing towards the inside channel.**

## Step 11 — Attach Second Corner Cube to Top Right Extrusion



- Attach second corner cube to top right extrusion using (1) M3 x 8mm socket head screw.

## Step 12 — Attach Top Right Extrusion to the Rest of the Top Extrusion Assembly



- Attach Top Right Extrusion to the rest of the Top Extrusion Assembly using (2) M3 x 8mm socket head screws.