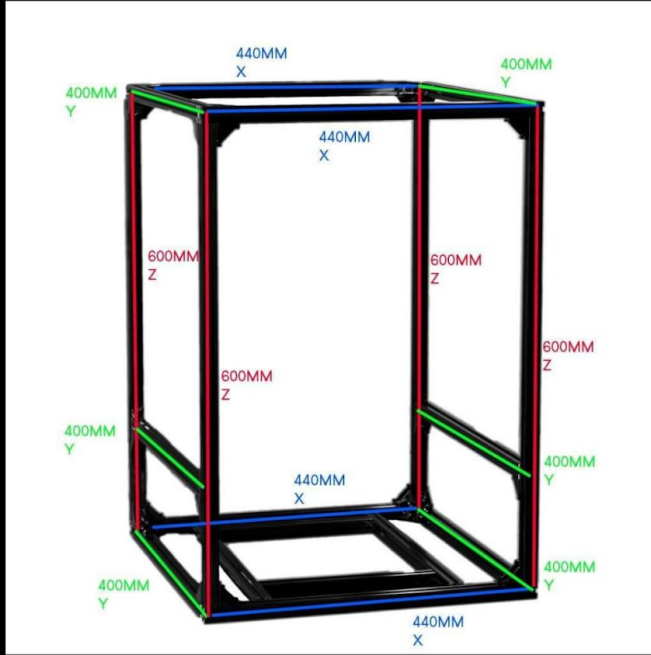


Hypercube Remix Build Instructions v1.0:



Information:

This document in its current state is a first rough draft of the Hypercube Remix Build Guide.

CAD Build Guide revision 1.0 is coming shortly.

Build Guide 1.1 will be released in tandem with the CAD Build Guide. To be used with the CAD Build guide for a complete visual reference!

Version: Revision 1.0

Date: 1/2/19

Instructions:

Building the Frame:

- + use the document image for dimensions, except for:
- + But place the left and right bottoms 60mm up
- + So when the Z motors attach, they won't be on the ground. the z axis will then reach the Core XY and hotend
- + Set your middle left and right beams 200mm from top instead of bottom
- + The bed itself is the two 410 and two 235(I think) and the bar that the z backlash nuts attach to is exactly centered
- + You will be left over with 2 pieces left that are longer, that were for the original bed.
- + As well as one piece for a spool mount. Should you choose to use it for that, 100mm
- + You can, also if you want to, raise the middle beams so they seat directly under the XY motors.
- + I like them further down at the 200mm mark. I use it on my build to seat the ramps/arduino, the mosfet, and the psu.
- + Power switch to sit under the PSU.

+ Look at the public album on my profile. Its more updated and has 300+ photos of the whole build.

+ If you raise the beams you would just need to seat the electronics on a different position, or just hanging from the beam instead.

+ The benefit to the position of the electronics.

As they seat on my build, the only wire extensions that you will need to make:

++ x endstop

++ hotend thermistor

++ bed thermistor

++ hotend heatsink fan

++ hotend blower fan for part cooling

+ Anywhere else requires making motor extensions for at least 2 of them if you place electronics elsewhere.

+ Just a heads up!

+ Many like to make a trunk space underneath. I believe using that position is also ok for little need of jumpers

+ Don't use Adrian's small Alignment tool. Does not work with the zyltech kit. You can use his bed alignment tool, the L version only. It positions the rear section perfectly of the bed.

When you get to attach your bed to frame:

+ Build full bed frame, without the heat bed on. For easy access to build.

+ Build printer frame completely first.

+ Place your 4 z rod mounts to the frame first. Equal distance from direct center. All of them.

+ Then feed the rods on the bed, then feed the rods onto the frame, with the bed on them.

+ Place the rods in top first, raise the bed up.

- + Then pull the rods up in the top mounts about 30-40mm
- + You then have perfect clearance to now slide them back down direct into the lower mounts
- + Secure to bed to frame tightening the z rod mounts. completely tight.
- + Then assemble your z motor mounts, with leadscrew , motor, backlash nut, coupling, and mount all together on the leadscrews
- + Mount the motor mounts directly centered in the lower 400mm space first. Tighten.
- + Then bottom out the bed.
- + And bottom out the backlash nuts on the leadscrews.
- + then Mount the backlash nuts to the bed cross beam.
- + This forces the leadscrews & backlash nuts to be square and centered. While also mounted correctly for the z motors Alignment & mounted correctly for the backlash nuts alignment too.
- + Tighten it all.
- + Then,
- + Manually raise and lower the bed, by evenly turning the leadscrews from the couplings.
- + Do this 3-4 times going up and down.
- + The backlash nuts will squeek. Maybe. Due to binding. If so. Loosen the backlash nut mount so it's only finger tight, able to move.them with force.
- + now Just keep moving the bed up and down and making slight adjustments to the backlash nut mount until you hear nothing.
- + Then tighten them completley.

All set.

If the z axis is binding / squeaking:

-
- + They should, by dropping the bed and mounting them that way, assemble perfectly
 - When you move to up the first time and they don't squeak/bind, then your all set!
 - + Just so you know what to do if it does make noise

Additional helpful tips for assembling the printer frame:

-
- + I built the frame in these steps.
 - + The two front and back full panels first.
 - + Then attached the 6 side beams. 3 on each side.
 - + Makes it very easy and makes it so you have a square front panel, a square back panel.
 - + And then just make each side , mounting front and rear to one at a time. Don't tighten. The side ones completely tight yet.
 - + Mount the other side the same way. Then rest the printer frame on one side.
 - + While you tighten the other facing you. So that it is forced to seat square for the entire Extrusion frame.
 - + When you build the print bed, assemble it on a level flat surface.

Check out below for good visual aids/build video:

- + Tech2c on YouTube
- + He has assembly videos. the full printer . It's not exactly the same, so:

+ Substitute the above for the frame.

+ But you can follow along his assembly, to the T, for quite literally everything else.

+ Here is a HEVO full cad. So you can compare. it is also Built exactly the same. Aside for the frame. So you can compare and use it as a visual reference at least

<https://myhub.autodesk360.com/ue2a468fb/g/shares/SHabee1QT1a327cf2b7a18c8b63e5d4f3ef9?viewState=NoIgbgDAdAjCA0IDeAdEAXAngBwKZoC40ARXAZwEsBzAOzXjQEMydz1C0BW TgNgE4AJgA4eAZgC0jPnwjiALBD4BjcQCNVAM1mb%2BM0ZwDsAJIEa0AXxABdIA>

+ Specifically the belt paths. Exactly the same

+ And the XY carriages / joiners positions as well.

+ The toothed pulleys and smooth pulls of them are in specific position and you can assemble them wrong.

+ Unfortunately, It does not all fit together one way, so it can be easy to make a mistake.

For the Ramp / Arduino / Stepper Drivers:

+ Zyltech has videos for assembling the ramps board and doing the drivers. You will see a sticker on the back of it.

+ It's a special link for the information in a video guide on assembly of the board with stepper driver info and correctly assembling them & tuning currents.

My settings for the stepper drivers are the following, and I recommend as they work perfectly with the build:

X axis = 0.75

Y axis = 0.75

Z axis (dual z on one driver) = 1.1

E0 = 0.75
