Build Criterias / Constraints/ Objectives: ~ 0.85 Meter x 0.85 Meter x 0.6 Meter Print Area.
Prints in a good quality both small parts as well as big parts.
Be very reliable.

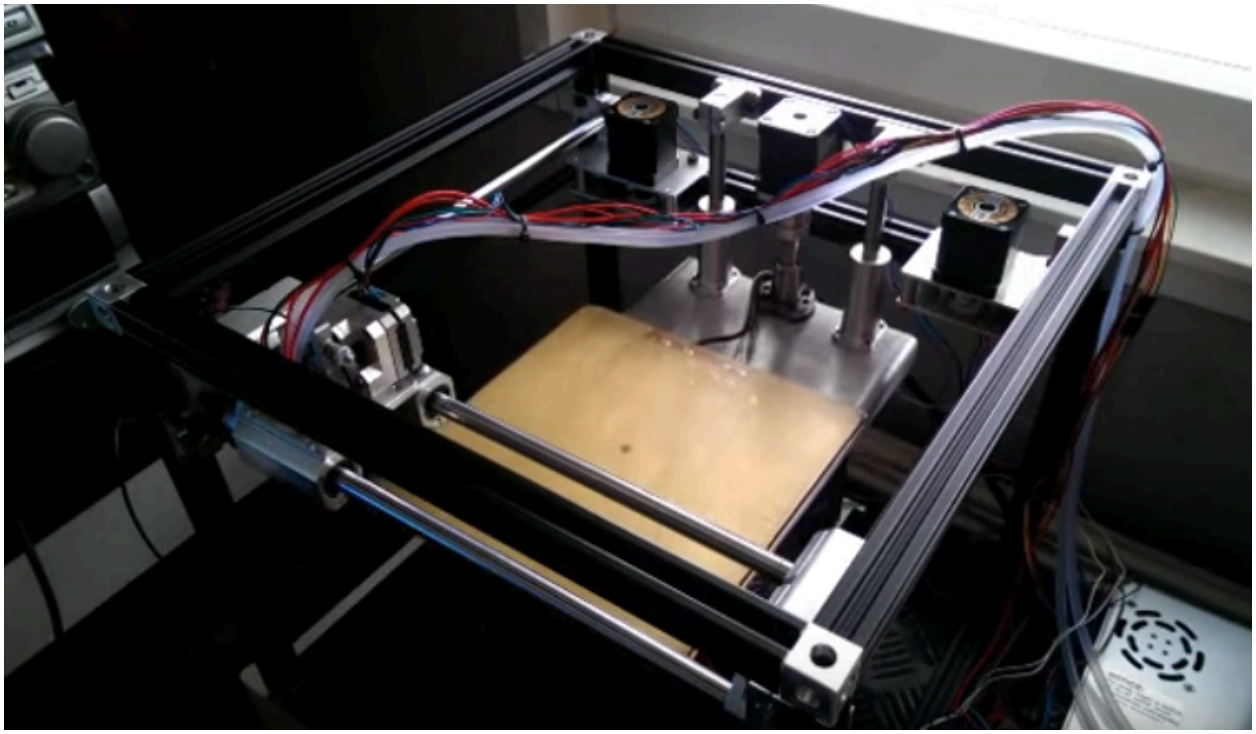
- Due to the above requirements, I understand it is not going to be a cheap build and I accept that.
I need it to work for building Robotics Prototypes and Concept models and I don't have time to calibrate and deal with errors every third time I will use it. It needs to be reliable and not time consuming to use later on.

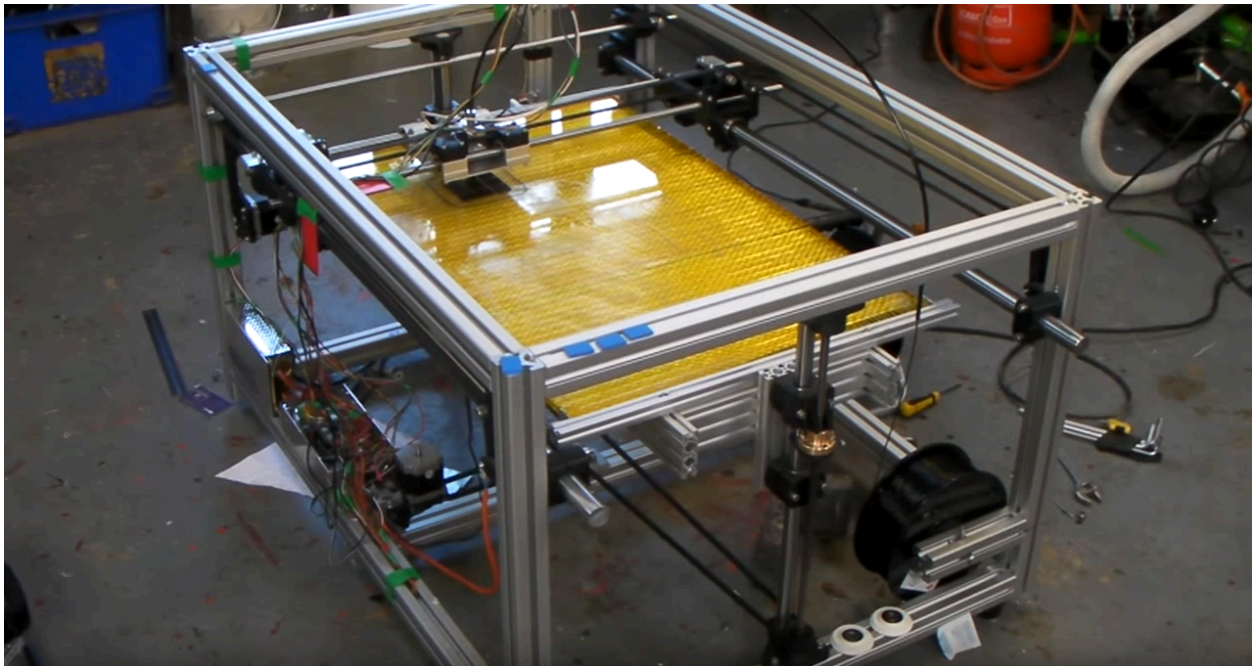
Once I've had the questions answers and cleared any doubt I'll start building the printer in CAD and order parts. But I don't want to pay for mistake that I can be saved for by listening to all the experience builders and engineers that have the knowledge or been through the same pain before. I hope some of you will be kind to help and give your experience/advices.
This Build thread also works for inspiration to others to begin with a larger 3D build.

What I need Advice with:
Motor system - Should I make it with Brushed/Brushless motors or should I buy and use Stepper motors? Pros and Cons?
Also if I choose to use 1, 2 or 4 motors for the z axis and moving the building bed up and down, it might not be aligned everytime I turn it on to use it, since the stepper-motors will jump to the closest step and turn the threaded-rods either way. A closed-loop control system might be more precise here? Or would a build with one motor, 4 timing pulleys mounted on 4 vertical threaded rods driven by a timing belt be the best choice?
Should I use 9mm GT2 belt or is 6mm going to be fine? - I already have quite a lot of pulleys and belts.
Power: 12V or 24V

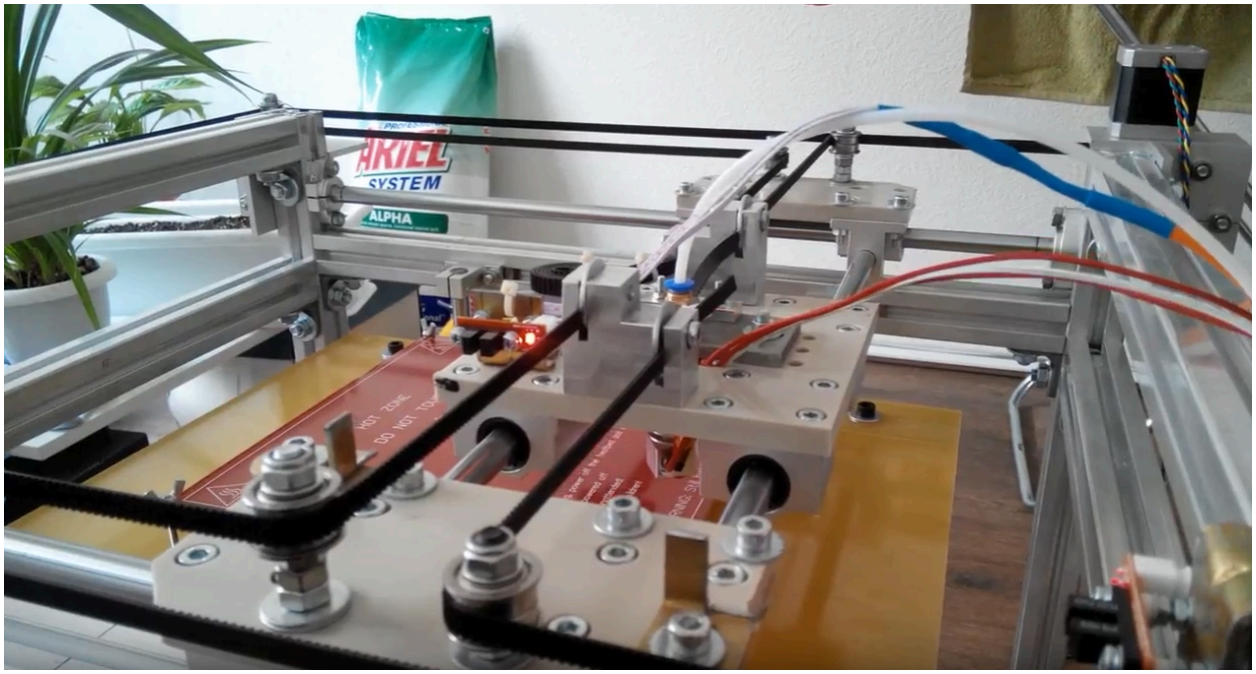
Inspirations for build:

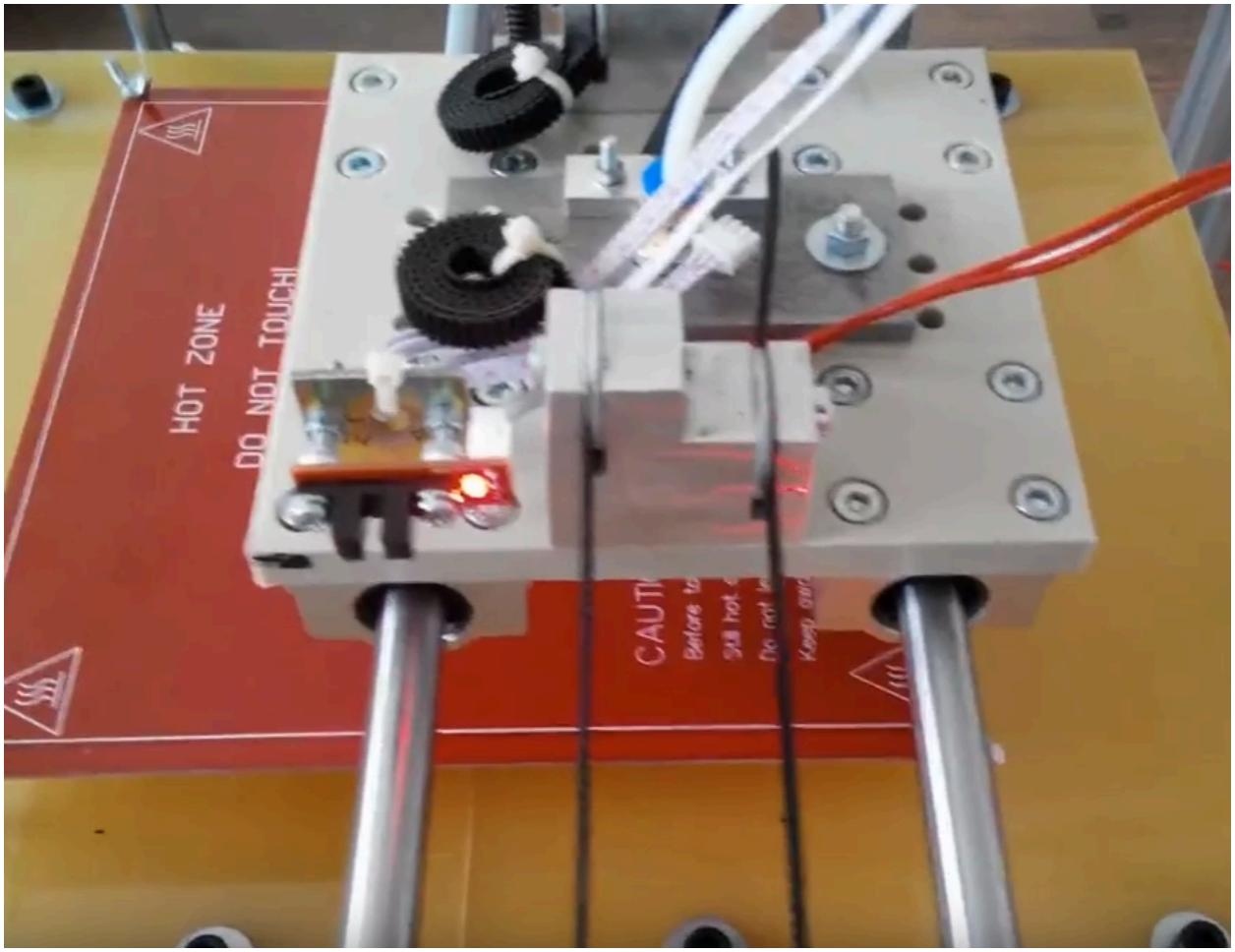
For The X,Y system:



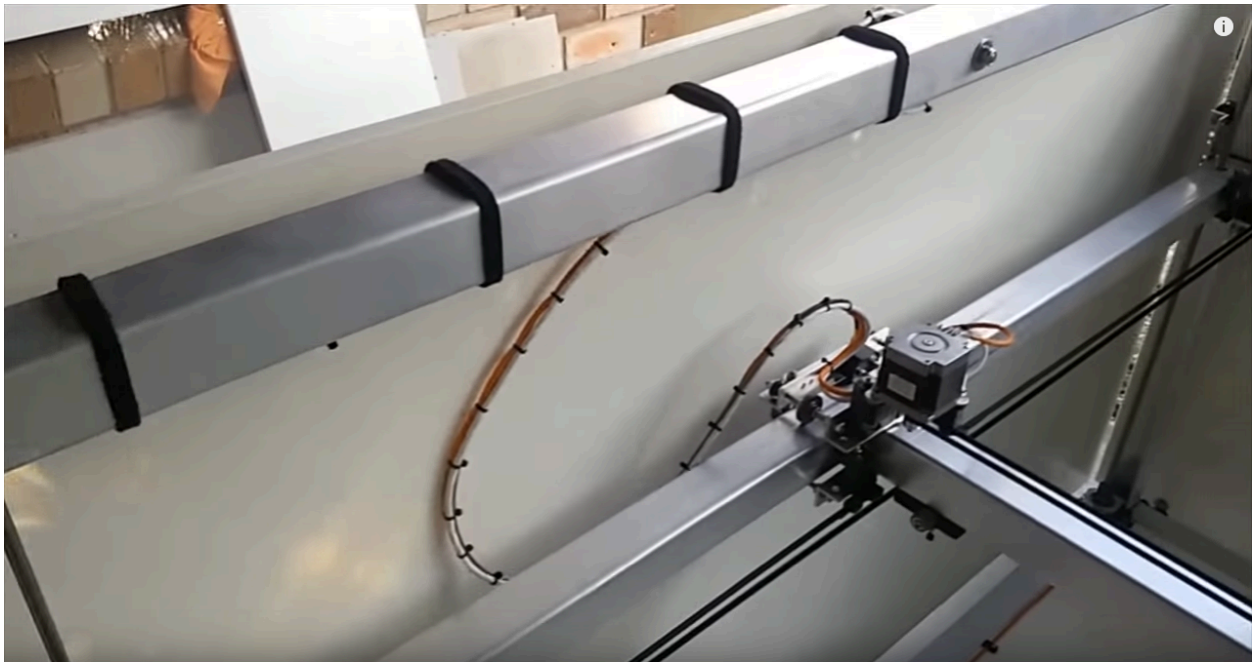


Use The Core XY Model:

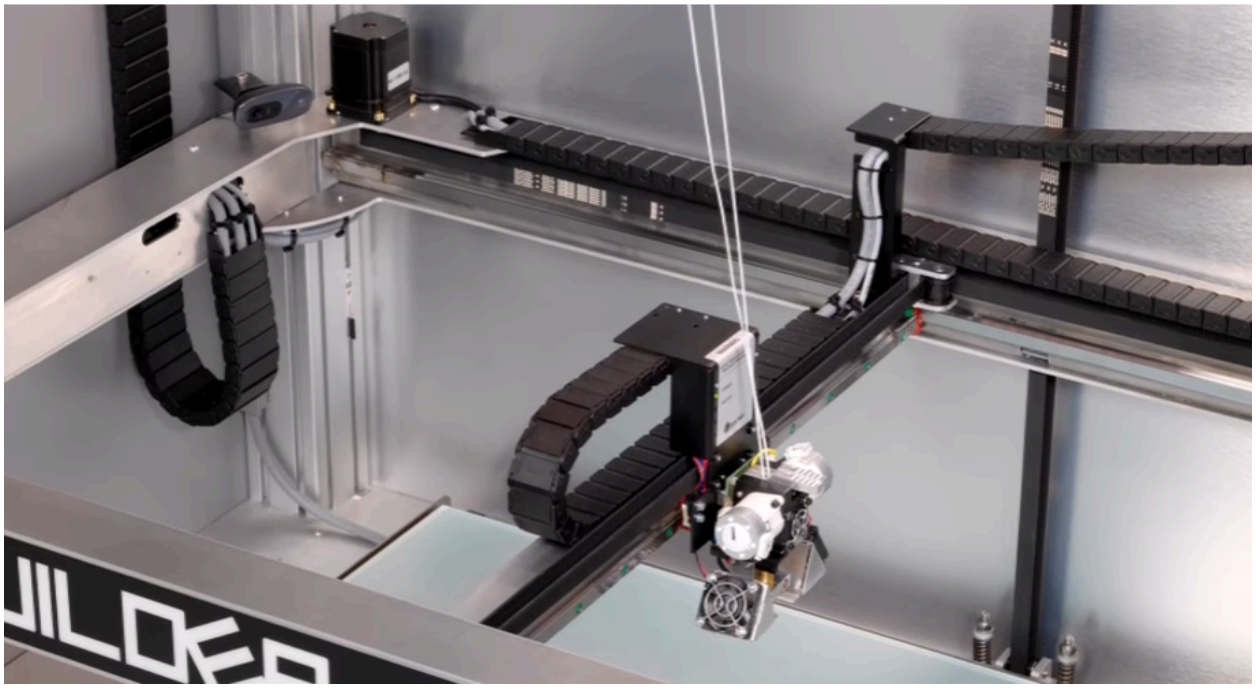

SYSTEM
ALPHA


HOT ZONE
DO NOT TOUCH!

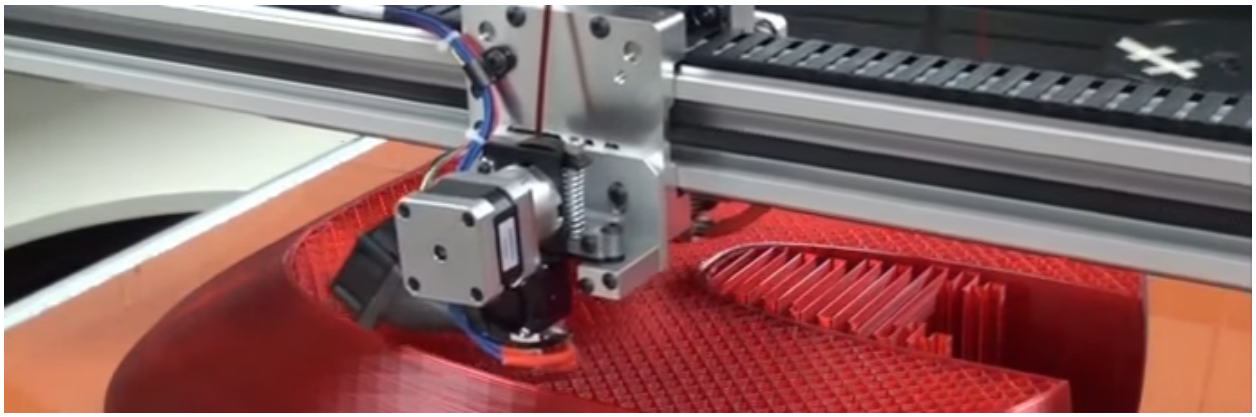
Make some homemade/Custom made Bearing guide rail on Square beams/Extruded Alu Beams?

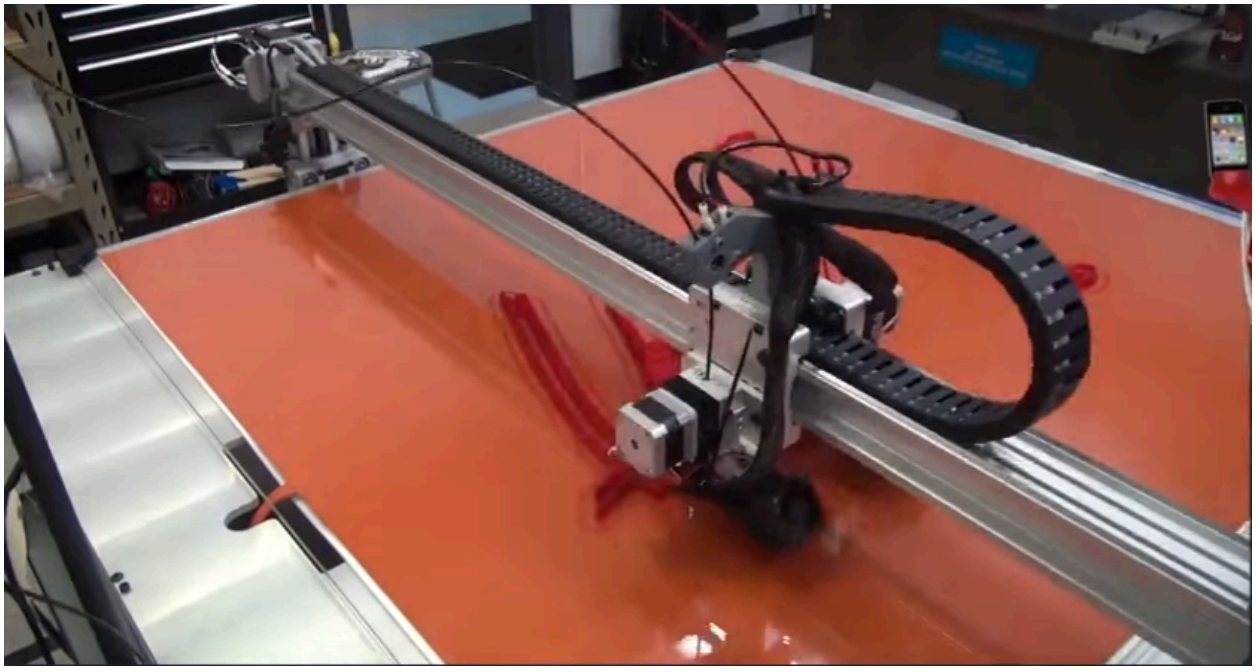


Use a thick belt and a linear guide rail:

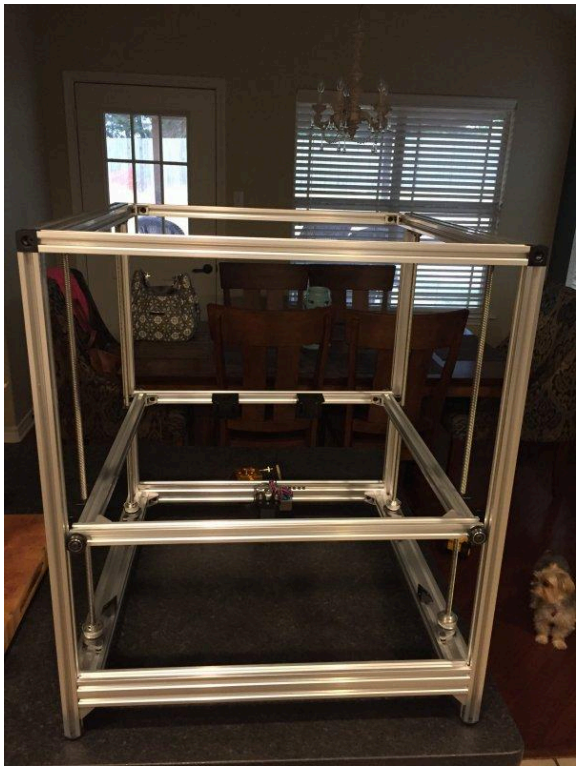


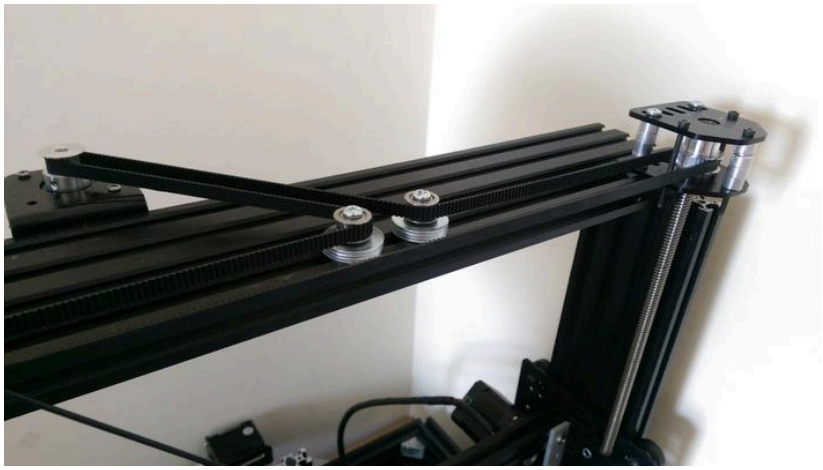
Using a GuideRail with a belt and maybe using two extruders or one extrude, one laser for lasercutting or adding an easy mount for a paste extrude or just use one extruder:

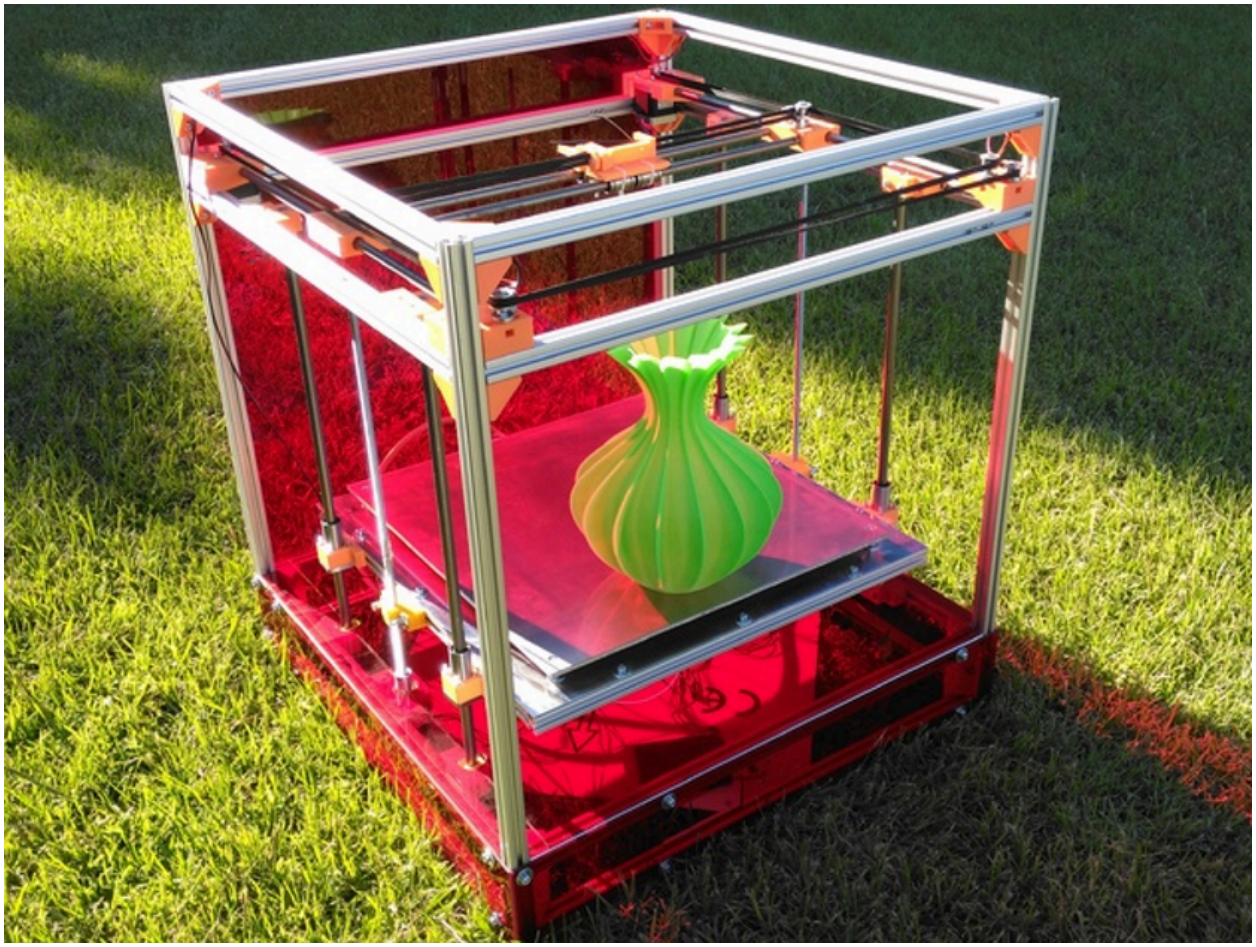




For the Z axis system:

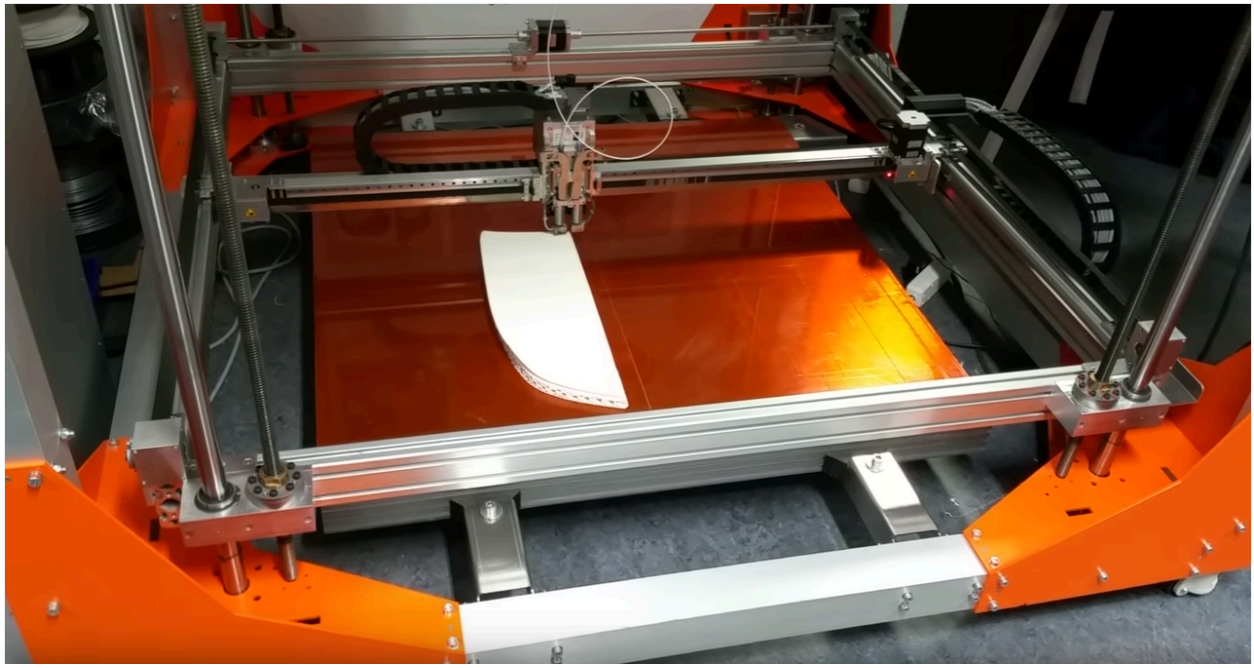


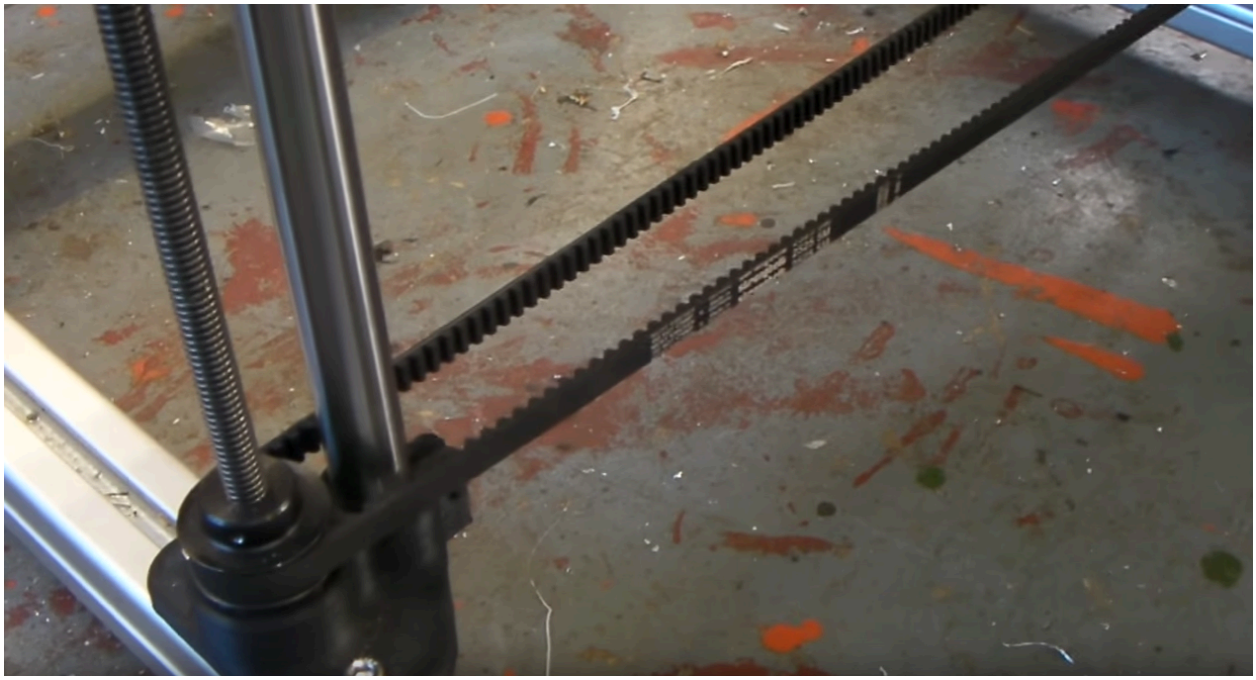




Use the Vulcanus concept of 2 threaded rods and 4 steel rods for the Z axis movement. Use One or Two motors to drive it to ensure precision and little time consumption for calibration?

Use Rods and Threaded rods.





- Picking the right parts:

Motor system:
I found this brushed/brushless motor closed-loop control code for receiving dir and step input

commands, made by Miguel Sánchez.
https://www.youmagine.com/designs/dc-motor-closed-loop-control-software

Otherwise the good old stepper motor build. And what stepper-motors are recommended to use for a large scale 3D printer up to a 1m X 1m X 1m?

GuideRails / Sliding System:

Should I invest in Hiweit sliding guide rails?

FrameBuilding Parts:
For a Build of ~ 1m X 1m X 1m is 2020 Extruded alu the perferred or should it be 2040 or 2525 or 3030? Or something else.

Mechanical Parts:

Screw Rods:
Use 10mm? 12mm?
Steel Rods:
Use 10mm? 12mm?
LinearBearings:
Use 10mm? 12mm?
Use GT2 Belts 6mm or 9mm? I've a lot of 6mm of width pulleys and belts laying around.

Electronics:
Board:
https://www.duet3d.com/DuetWifi

https://www.aliexpress.com/item/New-Version-AZSMZ-Mini-12864-LCD-4-x-DRV8825/32421952579.html?spm=2114.01010208.3.20.3rRJjS&ws_ab_test=searchweb0_0,searchweb201602_3_10065_10068_10000009_10084_10083_10080_10082_10081_10060_10061_10062_10056_10055_10037_10054_10033_10059_10032_10099_10078_10079_10077_427_426_10103_10073_10102_10096_10052_10107_10050_10106_10051,searchweb201603_2,afswitch_5&btsid=bcee37fc-94d2-4f37-b03c-5a8e6fe9208b

Powersupply:
I've a 12V 10A power supply from a Dell workstation. Is there something better I should invest in or what are you guys using?

LCD Display and SD card reader or (WIFI)

What are the best options? I'd liked not to program too much, I don't mind copy pasting code in Arduino or similar for it to work though.
https://www.duet3d.com/DuetWifiAddons

Extruder:
http://e3d-online.com/Titan-Extruder
Or what would be a good choice?
Endstops:
Using Optics or Mechanical? Personally I like the simplicity of mechanical.

Autoleveling Bed position:

Heat Bed:
Hacking a heat bed together:
Order silicone heating pads to custom size from a manufacture from Aliexpress/Alibaba?