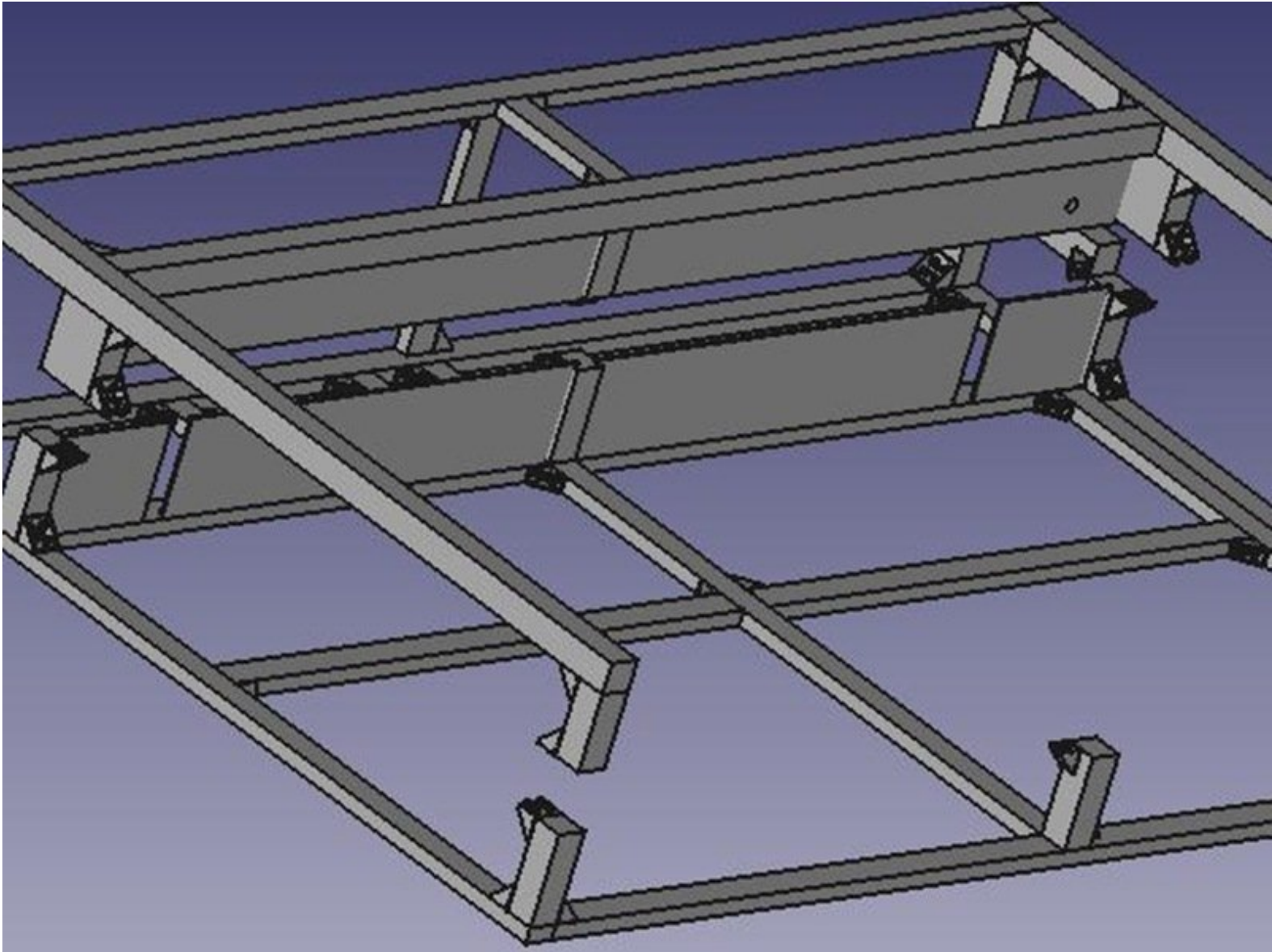


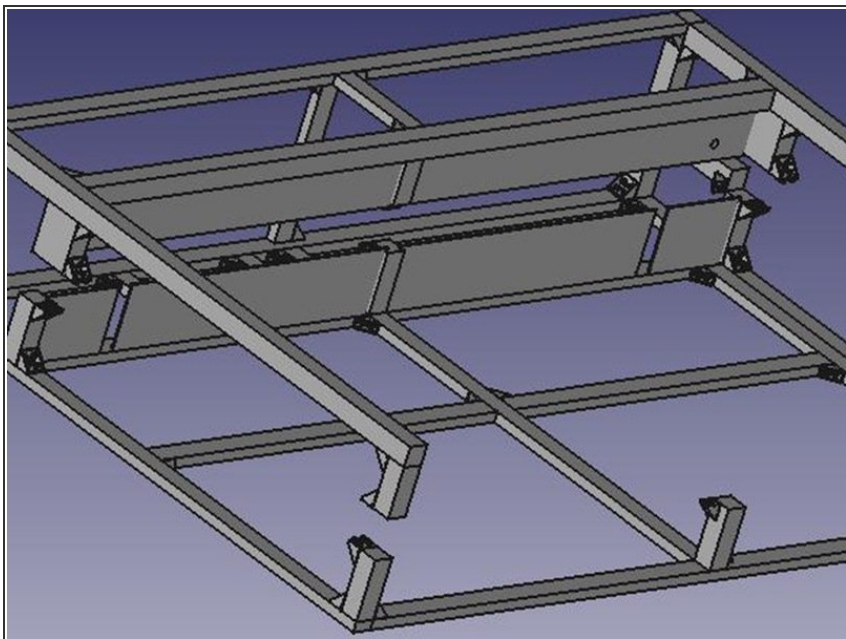


# How to build the OSE Lasersaur Outer Frame

Written By: Robert Kirk

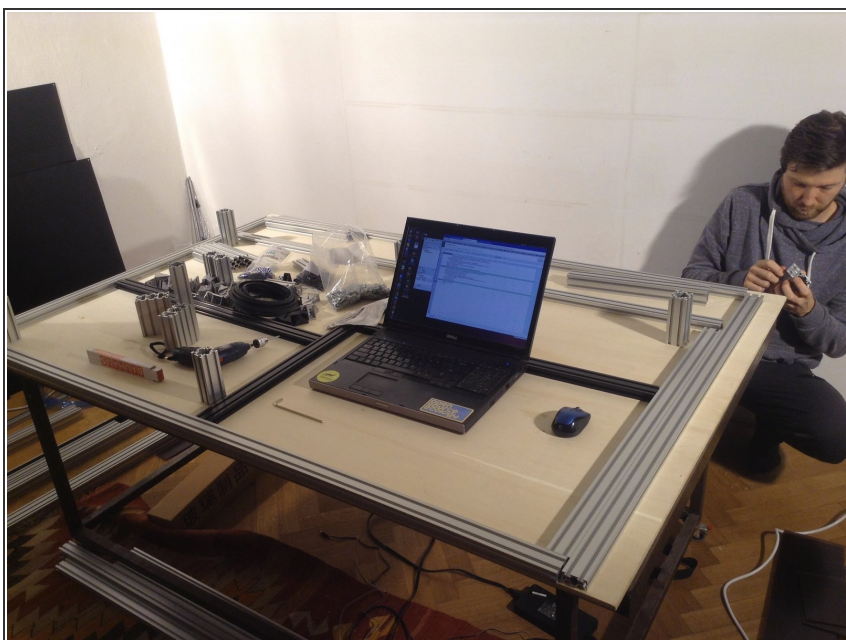


## Step 1 — How to build the OSE Lasersaur Outer Frame



- Review Free CAD image

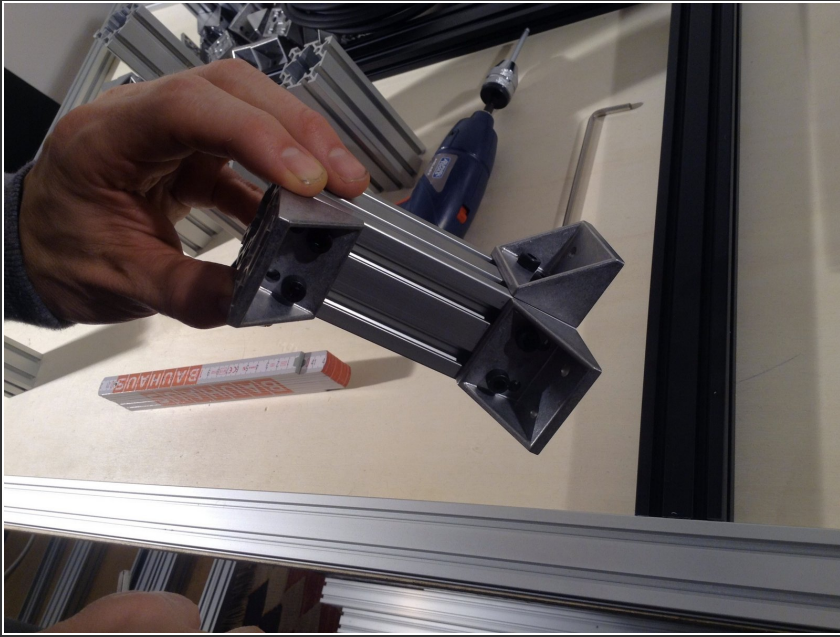
## Step 2



- Lay out materials for outer frame from <http://labs.nortd.com/lasersaur/bom-subs...>

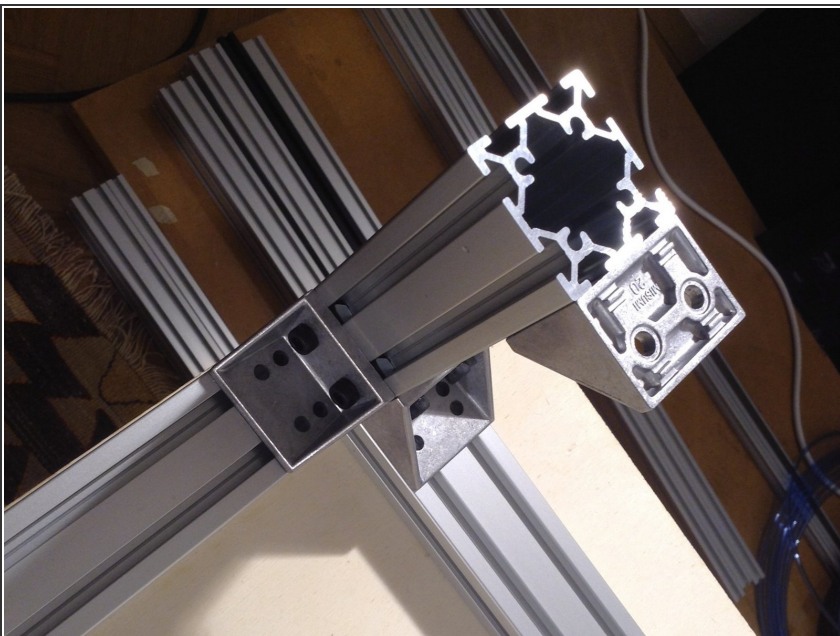


### Step 3



- Preassemble corner pieces, 2 mirror images Use 3 double brackets. Until the very end, leave all connections loose.

### Step 4



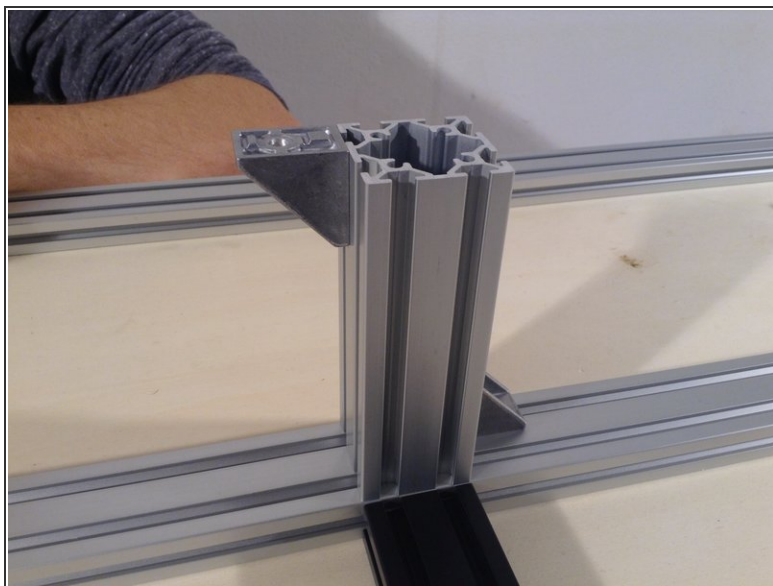
- Build second corner bracket for front of frame

## Step 5



- Build middle vertical column, front, use 2 brackets.

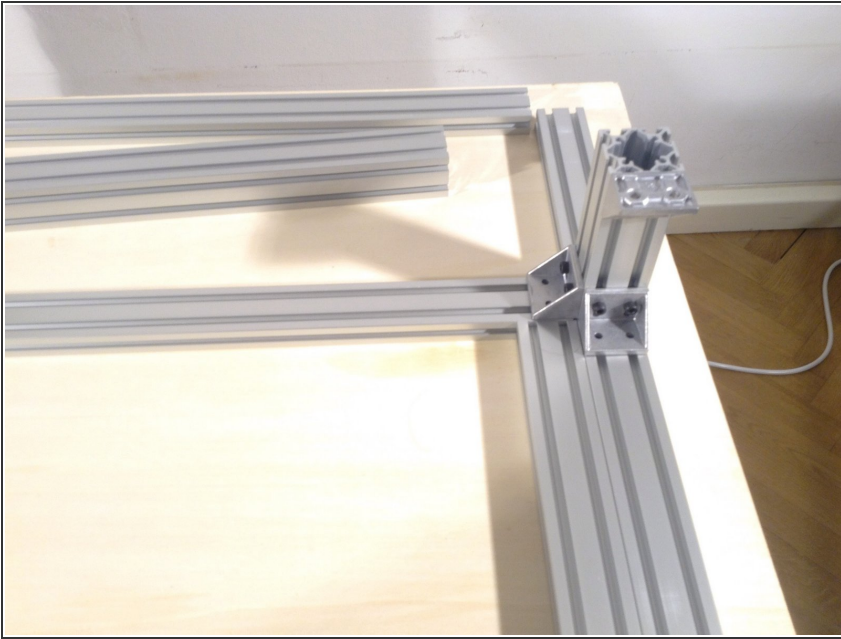
## Step 6



- Build middle rear vertical column.



## Step 7



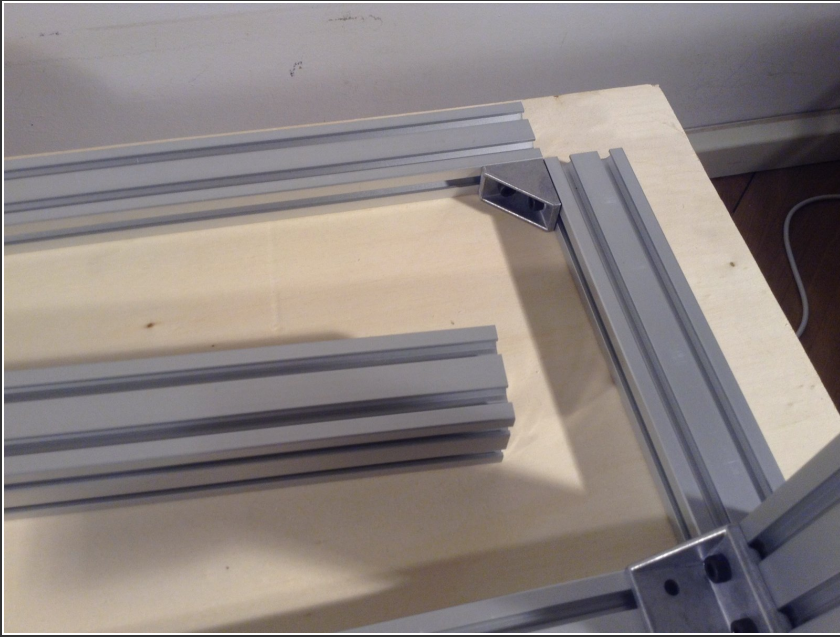
- Build rear 3rd corner vertical. Use 2 double and one single bracket. (note later time)

## Step 8



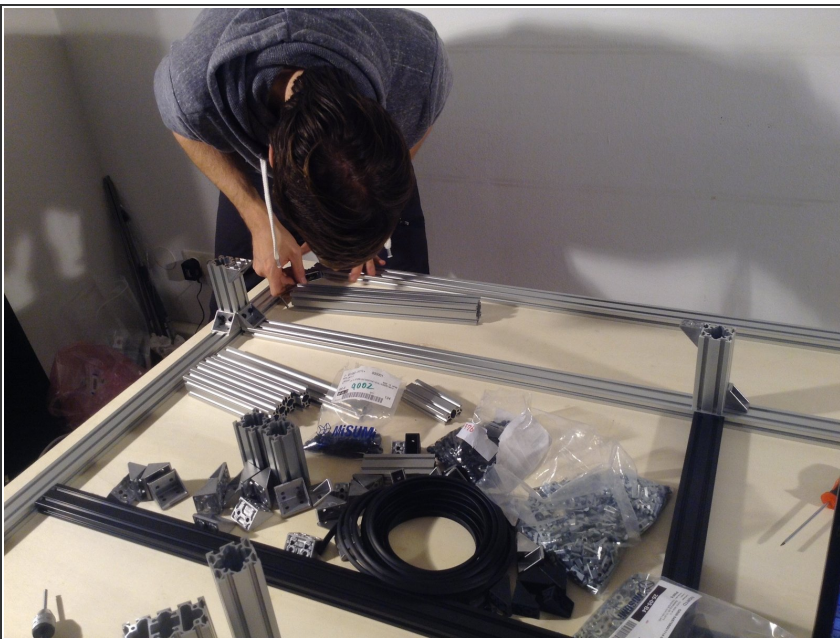
- Build 4th rear corner vertical. (second pix at same time as last)

## Step 9



- Build rear corner horizontal using a single bracket.

## Step 10



- Do the same on the rear left corner.

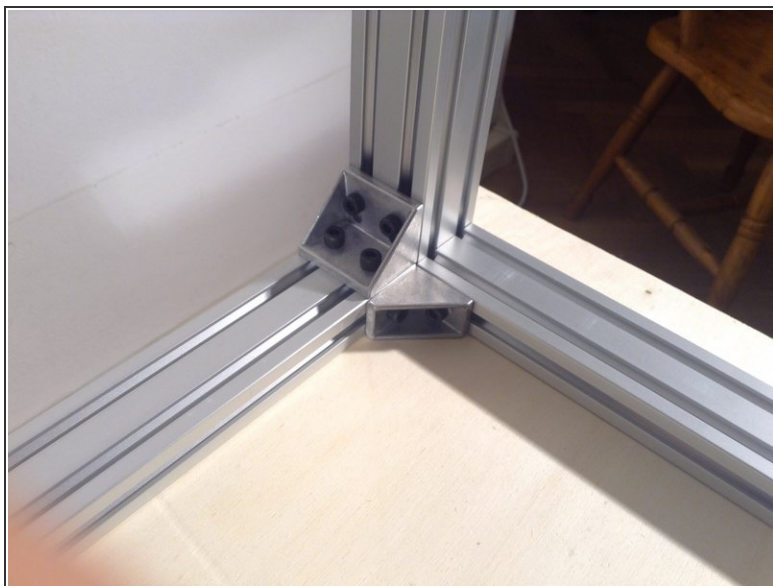


## Step 11



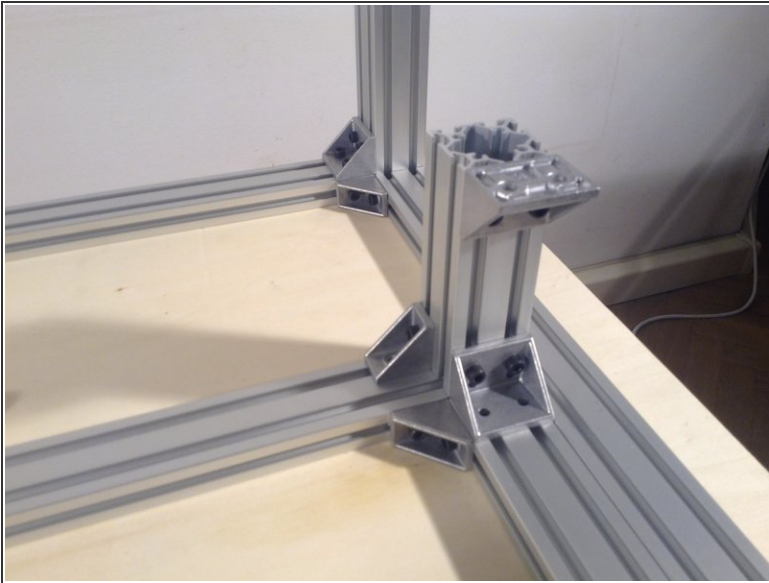
- Install rear vertical of overall frame

## Step 12



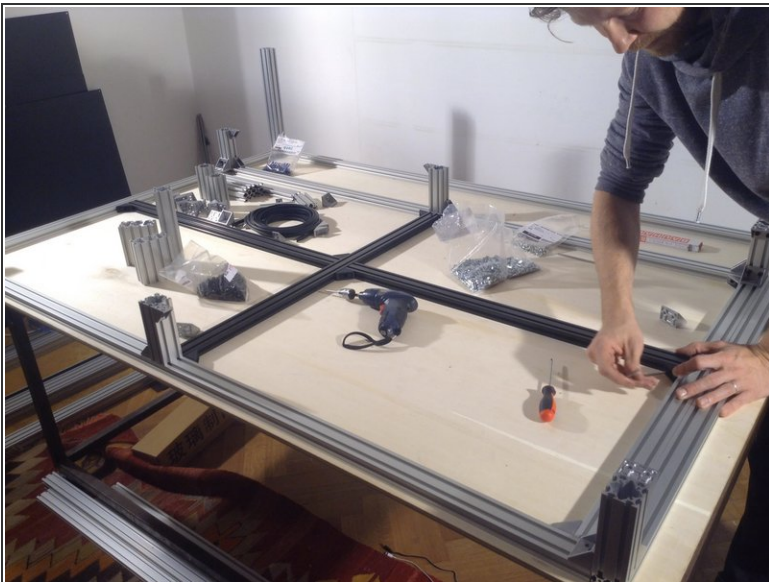
- Install single bracket for rear left vertical, and rear right vertical.

## Step 13



- Install single bracket on right front cutting chamber horizontals.

## Step 14



- Install middle black supports on the floor of the frame, using single black brackets, 1 per meeting point



## Step 15



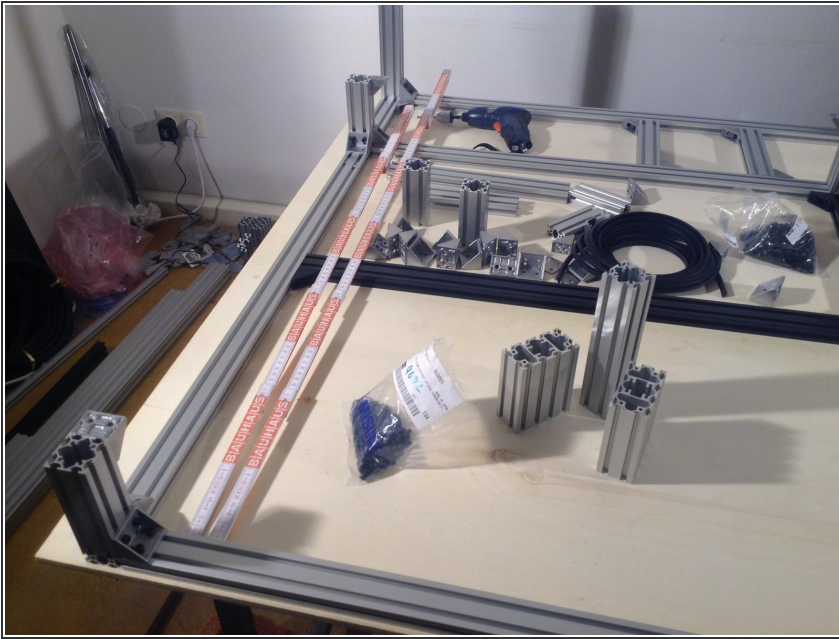
- Install 3 short 2040 extrusions on the rear base of the frame.

## Step 16



- Tighten down all joints. Insert spring nuts as needed.

## Step 17



- Inner distance between extrusions for the front compartment should be 86 cm.

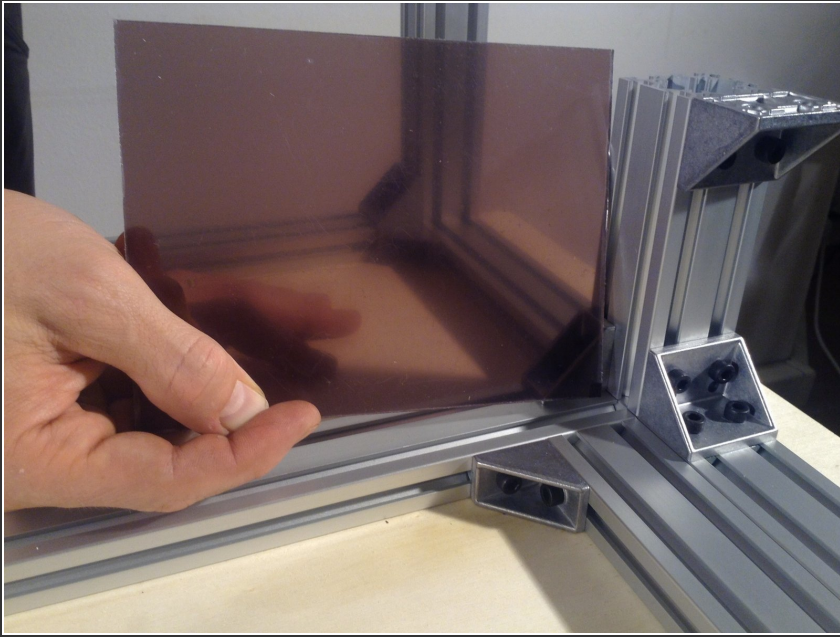
## Step 18



- Space between front horizontal and mid horizontal should be 41 cm on the inside.



## Step 19



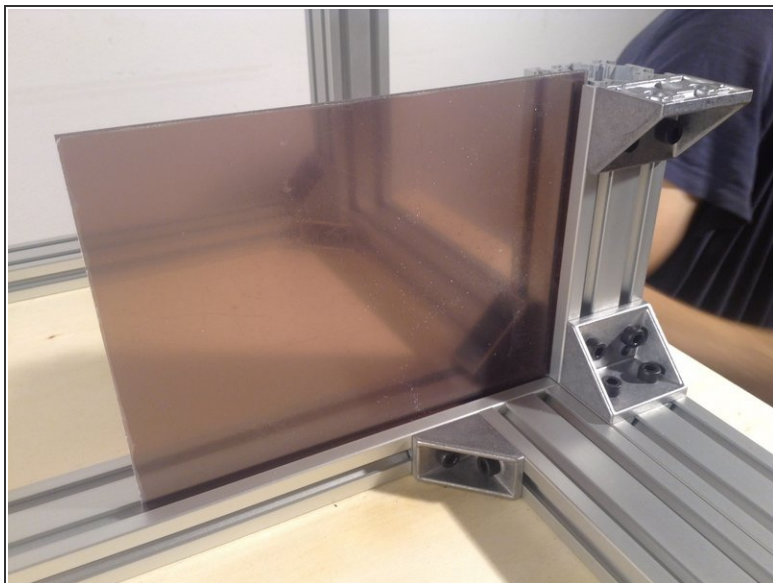
- Use the small polycarbonate separation panel - mark a .6x.6 cm corner cut out.

## Step 20



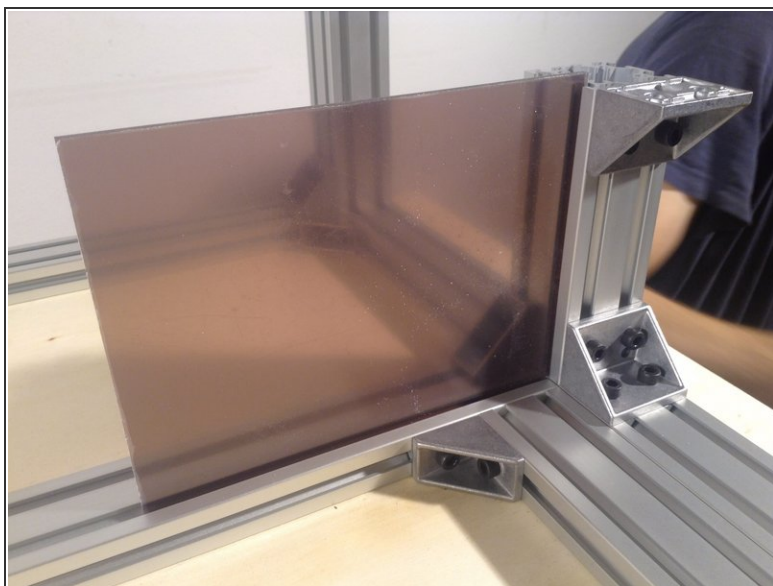
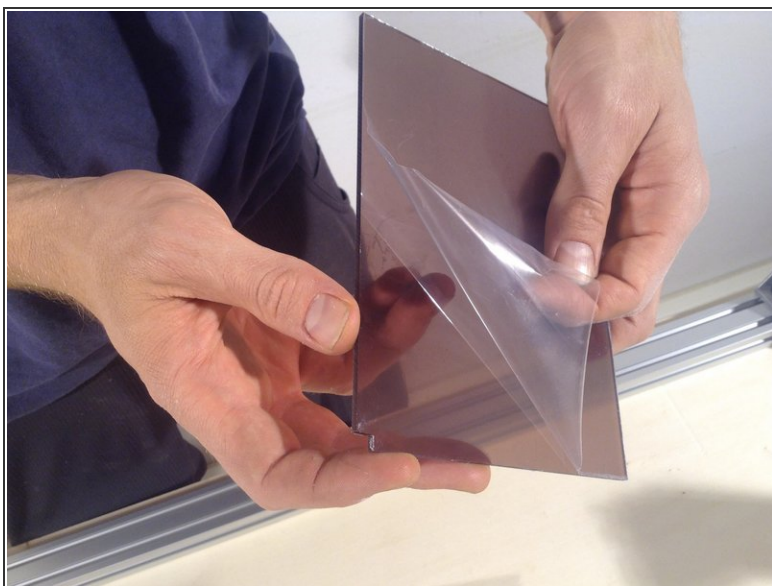
- Cut the corner out with a dremel tool. The corner cutout allows the panel to fit against the walls of the frame.

## Step 21



- Do the same for the second of the same panel.

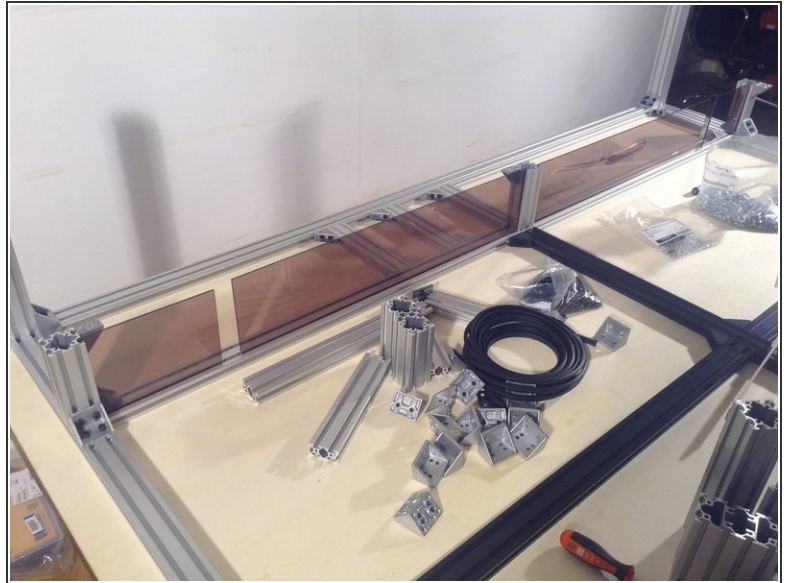
## Step 22



- Peel the protective covering from the small panel, and insert.



## Step 23



- Peel the protective covering from the long panel, and insert.

## Step 24



- Take out the panels, insert the table frame.

## Step 25



- Insert the small separation panels

## Step 26



- Insert the large separation panels



## Step 27



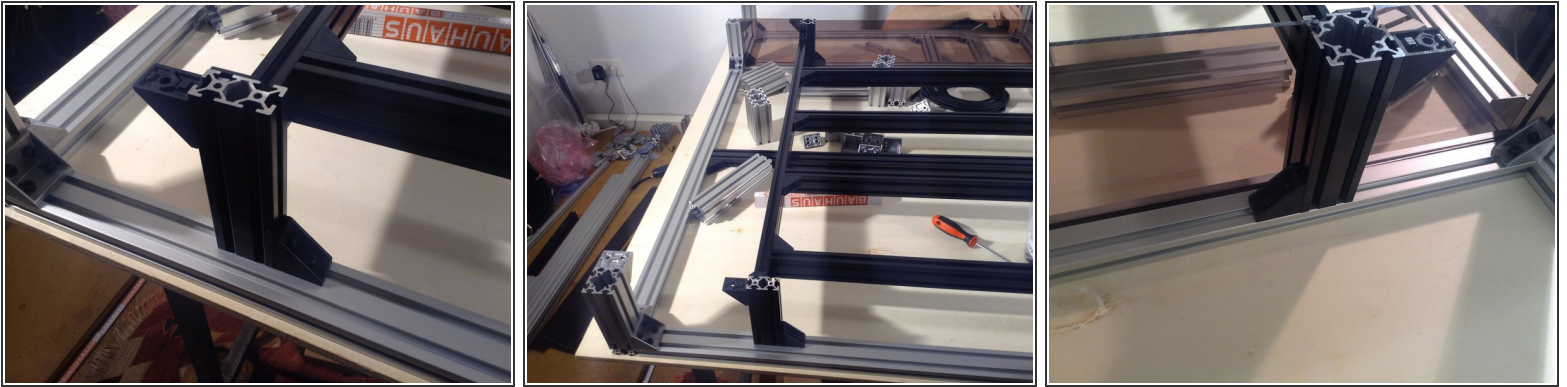
- Measure for parallel of the front and back. Also measure the diagonals to check that they are within 2 mm.

## Step 28



- Mount the base brackets of table to the outer frame - both for the front and back side of the table.

## Step 29



- CHECK Mount the middle rear vertical to the outer frame.

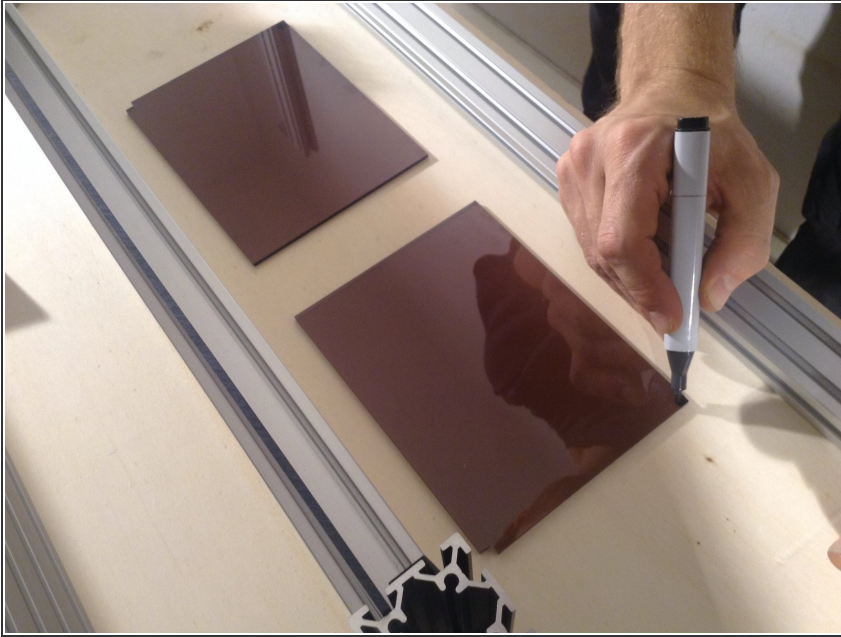
## Step 30



- Place the gantry frame on top of the table.

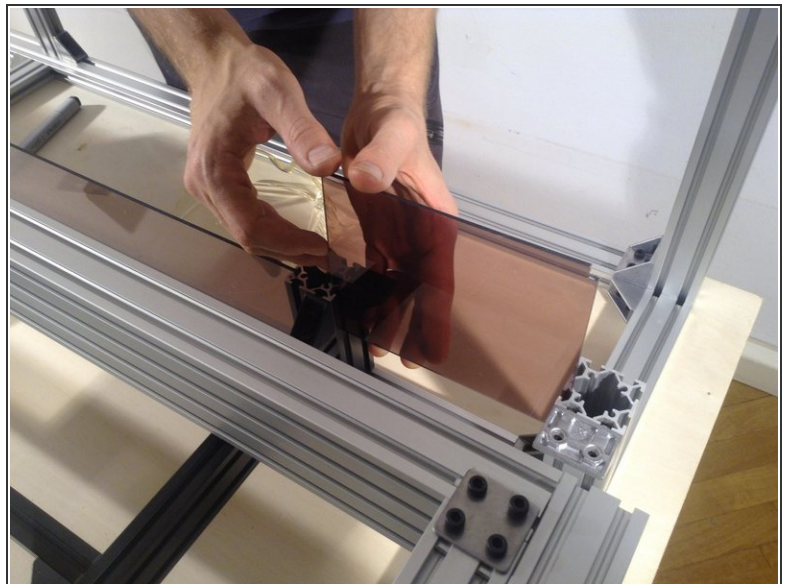
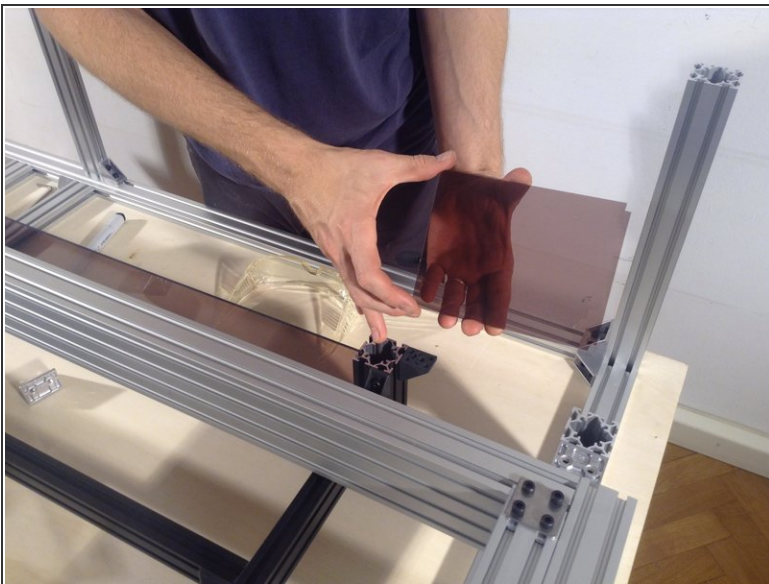


## Step 31



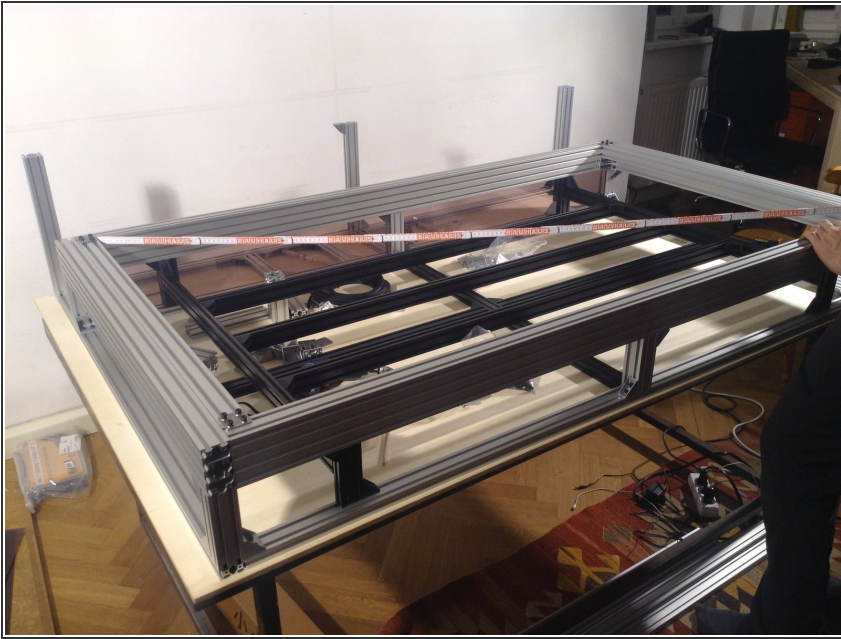
- Cut out the upper corner of the small separation panel, for both panels.

## Step 32



- Place the separation panels in the frame.

## Step 33



- Measure the diagonal of the gantry frame to see that it's square.

## Step 34



- xxxThen tighten down the 3 more single brackets in the front and in the rear.
- Tighten down the gantry frame to the bottom outer frame. Start with the 4 corners.



## Step 35



- Tighten down the gantry frame to the bottom outer frame. Start with the 4 corners.

## Step 36



- Cut rubber gasket to size for the long separator windows - 2 seams on top and bottom horizontals. See example of how the rubber gasket fits in the grooves of the aluminum extrusion.

## Step 37



- Insert rubber gasket in the bottom window edge. Poke in with the blunt end of a pen or some other object that helps the rubber to be pushed in the groove to create a tight seal.

## Step 38



- Insert rubber gasket in the top window edge.



## Step 39



- Insert small vertical support, a 4080 extrusion - rear post for the door.

## Step 40



- Start with the spring nuts

## Step 41



- Put in bracket and 2 screws.

## Step 42



- Put in 2 remaining screws. Repeat for the second vertical support.



## Step 43



- Continue to the 4040 extrusion for the front post of the door.

## Step 44



- (These steps should be done before corner post being put in)
- Take off protective foil from External Connection Panel.

## Step 45



- Take out corner post.

## Step 46



- Mount corner post, after putting in the panel.



## Step 47



- Mount the 2 front corner posts on top of the gantry frame.

## Step 48



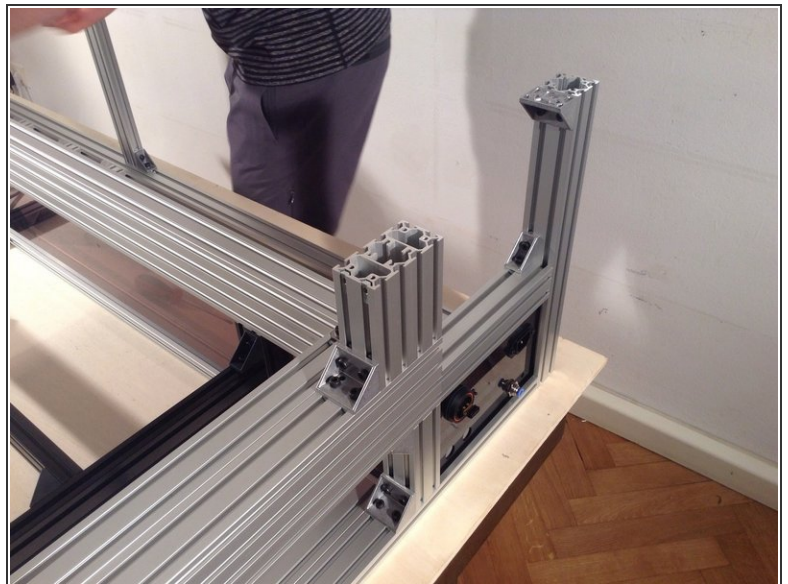
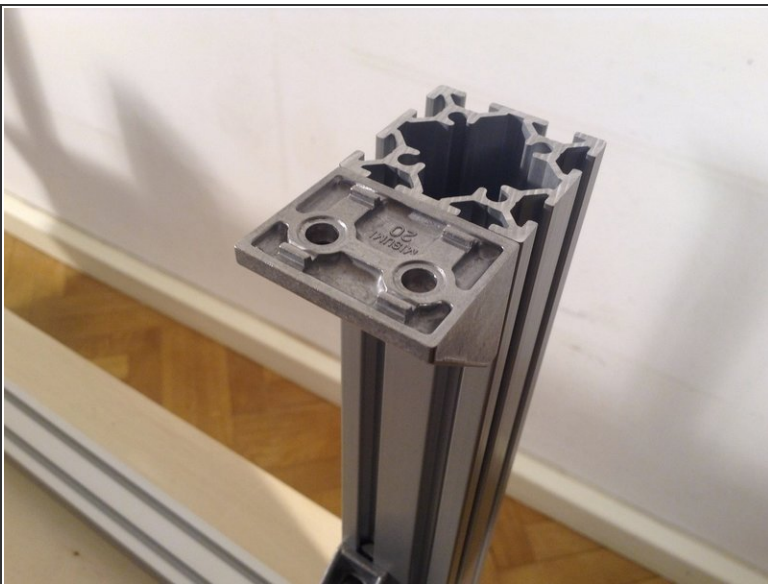
- Mount the middle rear support on top of the gantry frame, using a flat bracket (10:43)

## Step 49



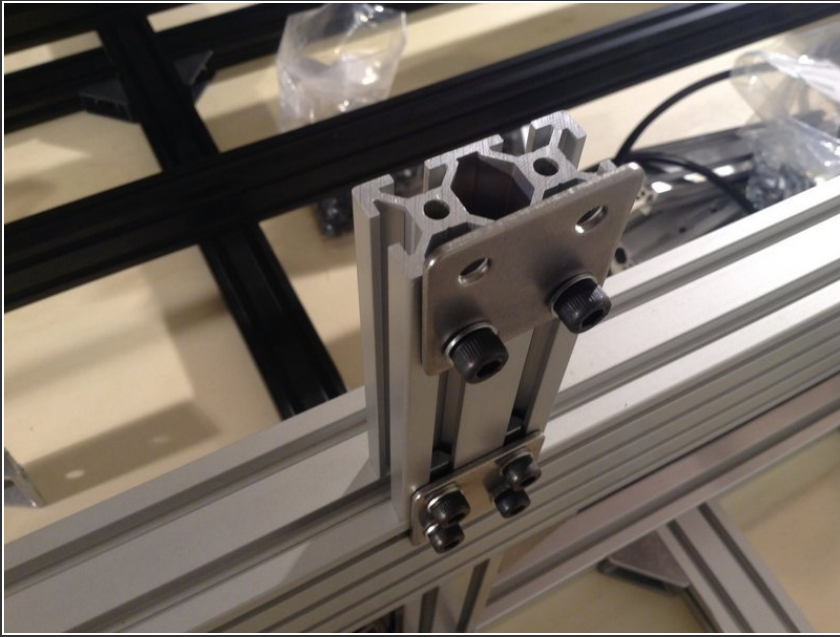
- Mount side extrusion above the External Connection Panel, using 2 single brackets.

## Step 50



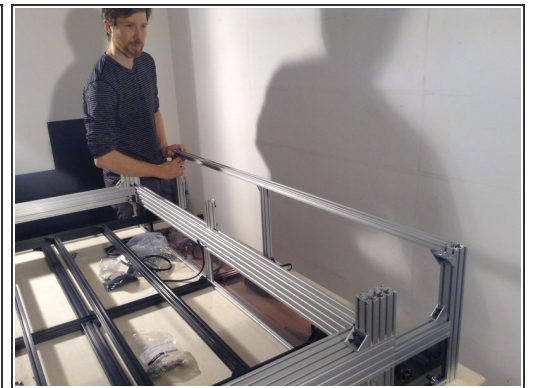
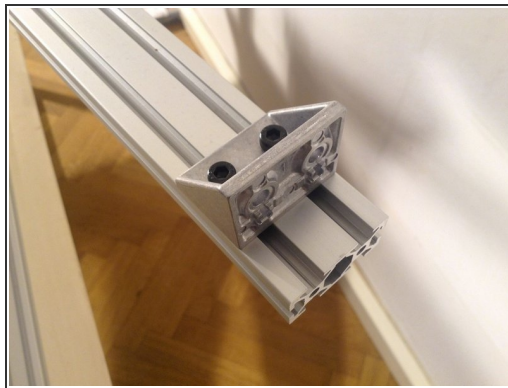
- Mount double bracket on top of 2 corner posts.

## Step 51



- Mount top flat bracket on top of middle rear support above the gantry frame.

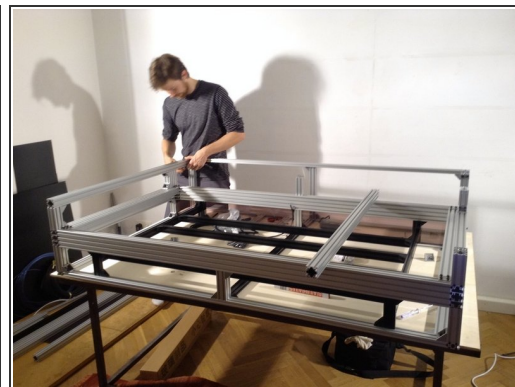
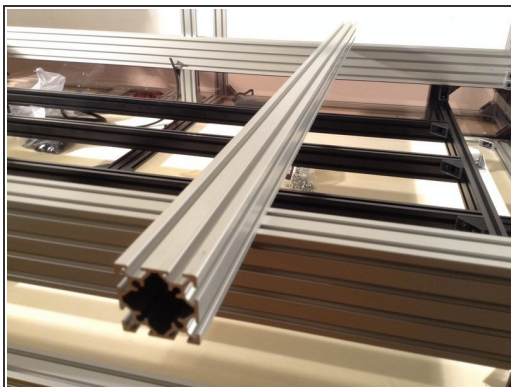
## Step 52



- Mount rear horizontal, 2040 extrusion with 2 double brackets, and then mount the midpoint with a single bracket.



## Step 53



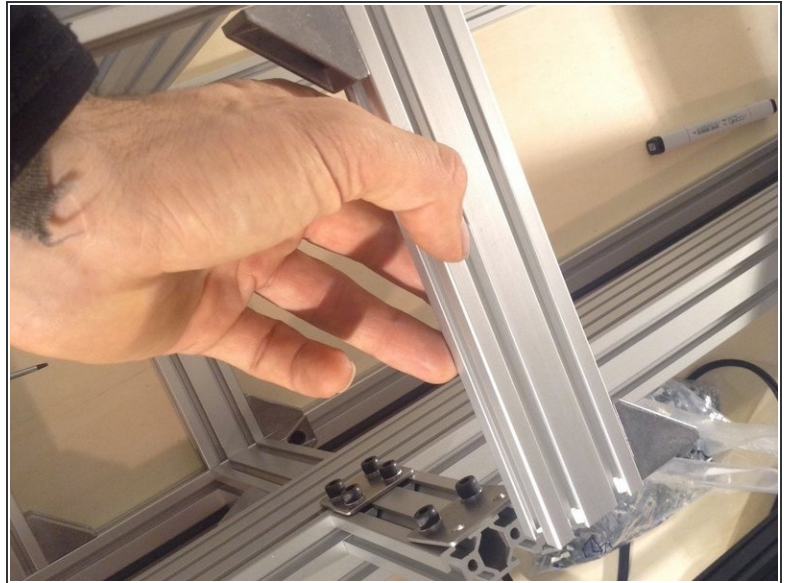
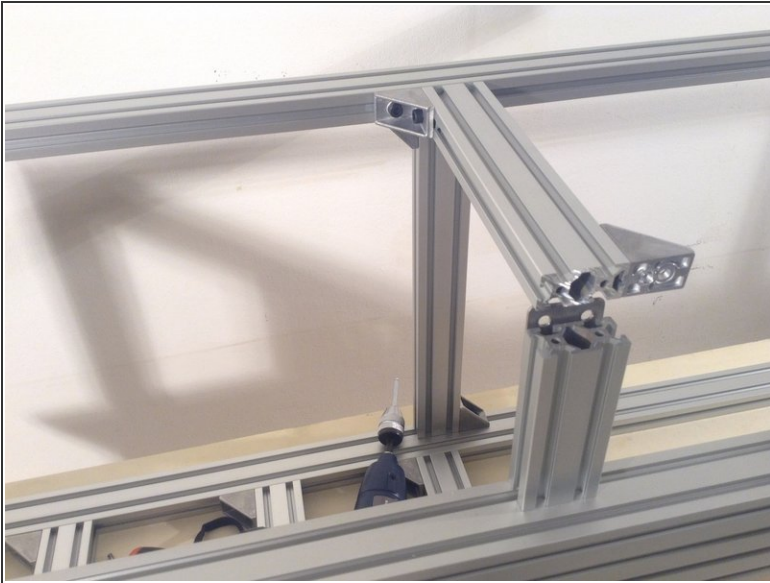
- Mount the side 4040 extrusions.

## Step 54



- Side 4040 extrusions done.

## Step 55



- Mount 2040 extrusion - the mid support at the rear of the frame.

## Step 56



- Mount 4040 extrusion for the rear of the cutting chamber - using 2 double brackets at the sides and a double planar bracket in the middle.



## Step 57



- Use small bolts (8 mm long) and a washer for the flat double bracket. Before fixing this rear post in place, we need to install the back separator window.

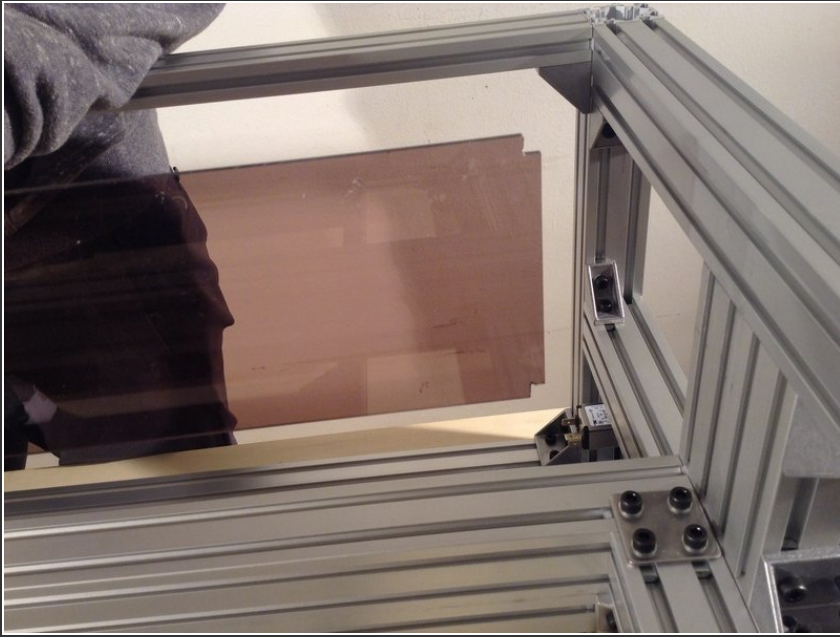
## Step 58



- Take the rear window and peel the protective cover.



## Step 59



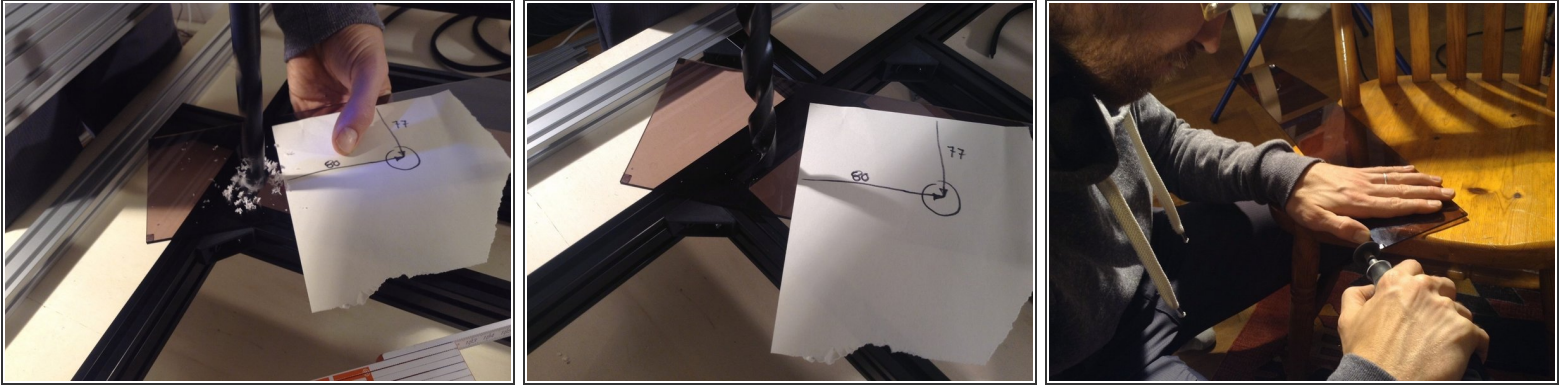
- Cut edges out with a dremel tool.

## Step 60



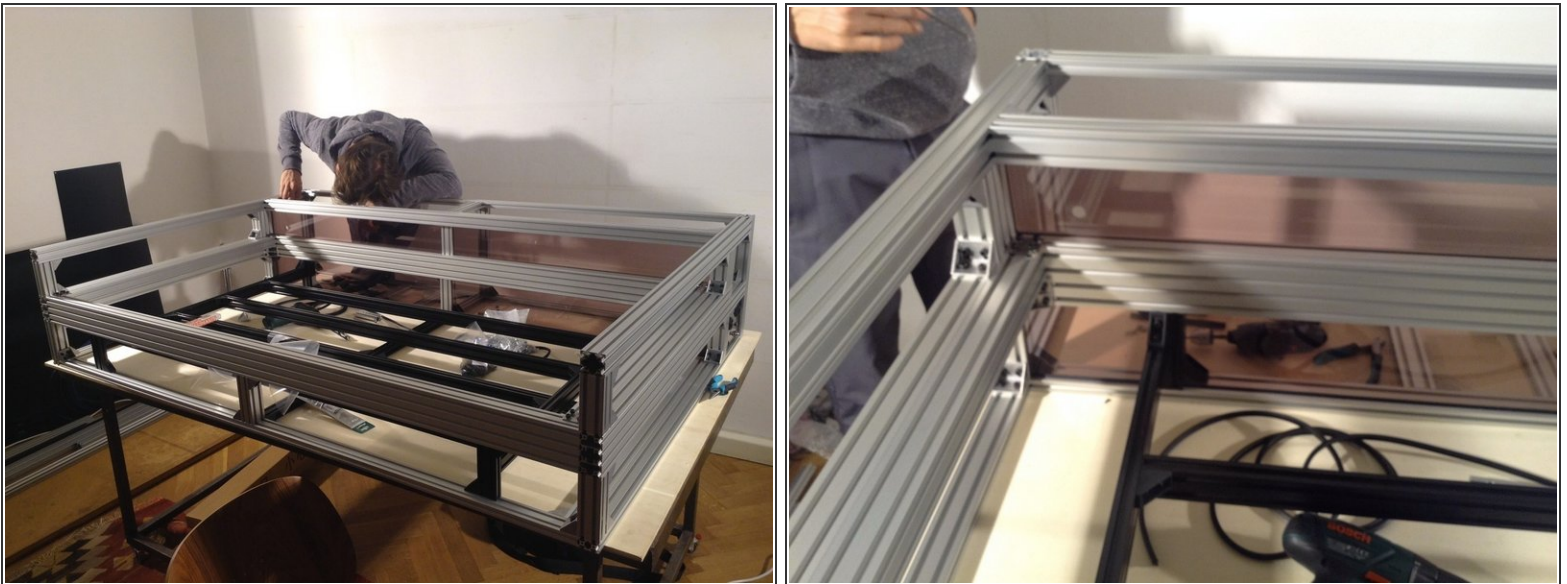
- Install on the right hand side.

## Step 61



- For the second panel, cut edges with dremel tool and then drill out a 16 mm hole, in location as shown.

## Step 62



- Put in upper rear windows and close off with 4040 extrusion on top.

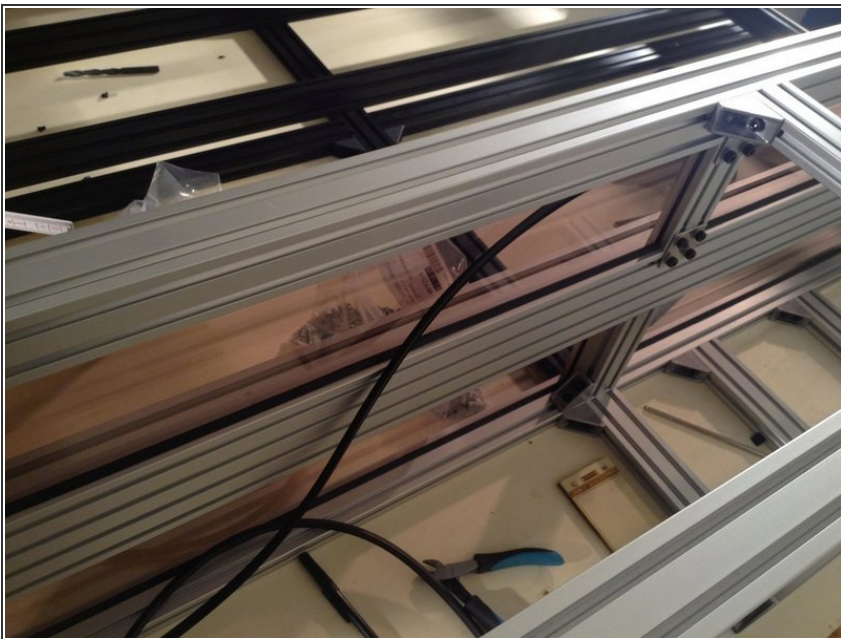


## Step 63



- Cut rubber gaskets and put them in the side external connection window.

## Step 64



- Finish putting in rubber gaskets - on the 2 horizontals in each window - for the 2 upper windows.