Basic design notes

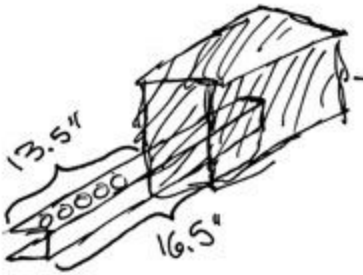
My first 3D design was very bad so I plan to make a better one. First I need to make the parts in 3D

I made the 16.5" but forgot to put holes in on the side

OK, I put the holes in. I have to use the difference transformation when I play w/ CAD but I haven't ever needed to use rotate untill this project! I used rotate to create the holes on the side.

I am using 16.5" Aluminium channels for the sides but I will use 13.5" channels for the front & back.

I made the 13.5" channels by copy & pasting the 16.5" channels code into a new doc & then used difference to cut it down.



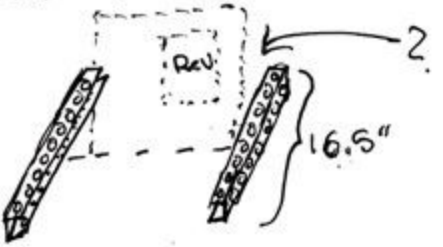
I have decided to make a sizing cube in OpenSCAD for reference. I made a giant cube that was 18,18,18. Then I used difference to make holes in it so I could see. The code is below.

```
difference(){
  difference(){
    difference(){
      cube(18);
      translate([-1,1,1])
        cube([20,16,16])
    }
    rotate([0,0,90])
      translate([-1,-17,1])
        cube([20,16,16])
  }
  rotate([0,0,90])
    translate([1,-17,-1])
      cube([16,16,20])
}
```

NB

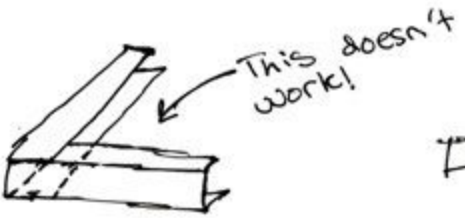
One thing I learned is that when you rotate, x & y switch places.

I have made the skeleton of the base but am trying to figure out how to make the verticle mount for the REV Hub.



I have figured out how to put the Hub

Ok so I just got a call from my team mate and he showed me how the channels do not connect how I want them to. Look below

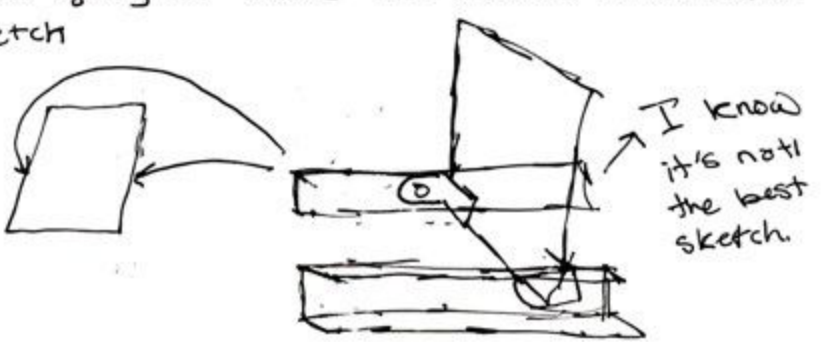


Also we realized that we want the convex side outward for ease of acces.

Now that the convex side is outside, we can easily mount the Verticle platform for the hub.

I just realized that the side channels cannot be higher than the front & back channels as it would cause the front & back to hit the floor.

So now that I have fixed all the coplications, I am going to make the mount. Here is the sketch



Before I put the Angle Brackets in, I had to make them. Now they are in and I have to add the plate that the REV PUB mount will go on. Before I put the plate in, I have to make it.

We may have a problem w/ mounting the plate as there are only 12" plates & the space between the sides are 12.5".

Ok so after looking at the problem, I realized that we have to use the 12" Aluminium Channels for the mount to work If you could hear me right now, you would hear a very loud sigh.

I don't think it will be too hard to do this. Here is a list of objectives.

1. Delete 13.5" Aluminium Channels. ✓
2. Make 12" Aluminium Channels. ✓
3. Translate everything so the distance between them is 12"
4. Paste 12" channels. ✓

(I want to cry)

$$\begin{array}{r} 13.5 \\ -\ 12.0 \\ \hline 1.5\text{in} \end{array}$$

Ok now I fixed the dilema. I'm going to make the plate now.

I don't want to put the holes into the plate but I know I have to so here we go.

So the plate is not completely accurate but it's close enough.

In case it is unclear, I made the 9" x 12" Aluminium pattern Plate.

Now I need to figure out what the motor mounts look like & make them in OpenSCAD.

I just realized that I completely forgot about the battery. I will probably need to make some space for it. All I have to do is translate the plate & angle brackets.

I think a 4.5x12 plate will work.

4.5"x 12" does not work.

I know that there is an official battery mount kit but I can't find an image.

I will now work on the motor mount.

Motor mount dimensions are 2.83465 x 0.5 in

I have decided not to add the mounts.