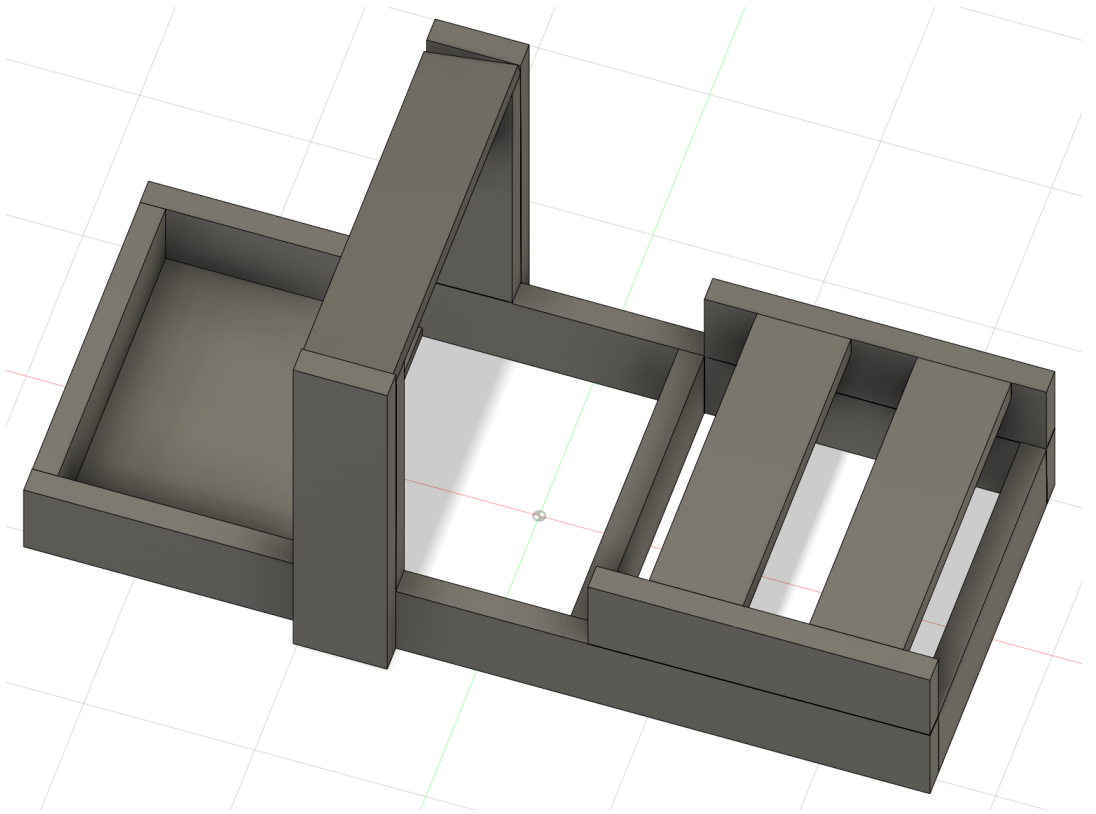
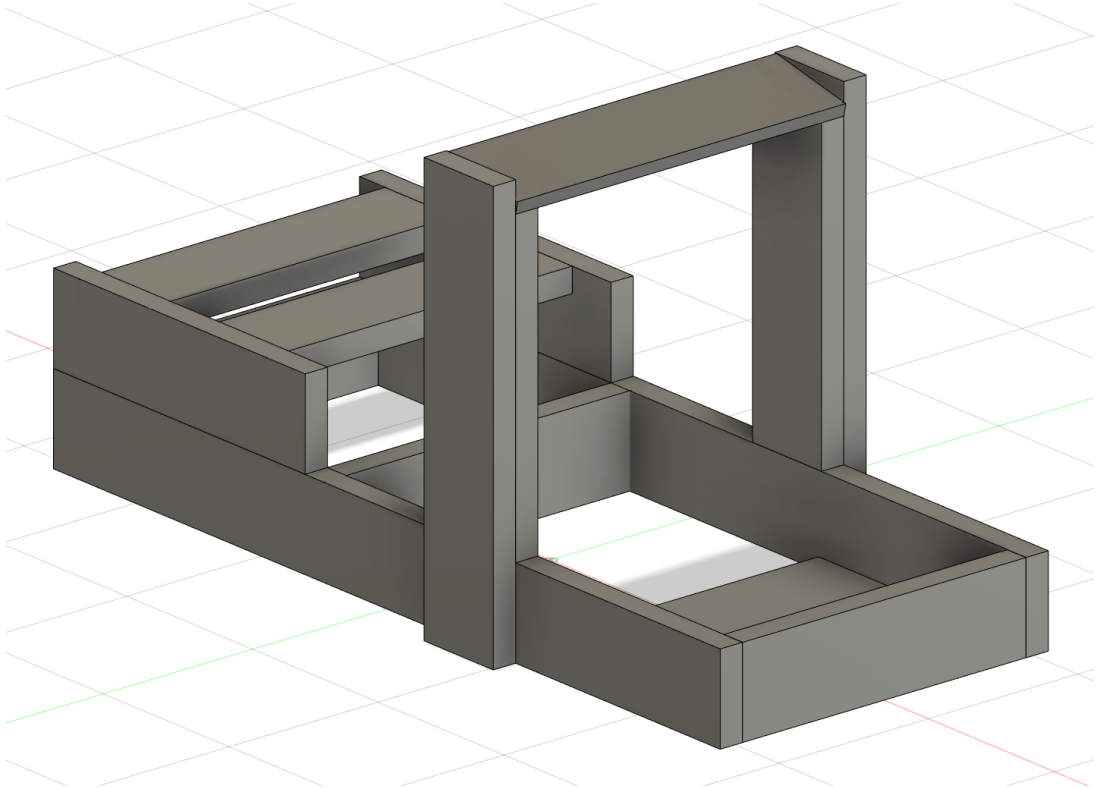


# Wooden Rig Build Guide



## What You Need:

### Wood: ~\$50-\$70

(3x) 10ft 2x6 (Straight, untreated) (~\$30)

(1x) 2'x4' 3/4in Plywood (Nicest you can afford, robust for pedals) (~\$40)

- Worth mentioning you can buy a 2'x2' piece if you are willing to lose an inch off of your pedal base board. This is the route I would go to be as financially efficient as possible, but it is nice to have extra wood. (~\$20)

### Hardware: ~\$74.50

(40x) 3 Inch Lag Screws (Probably buy a container of these to be cheaper) (~\$25)



(10x) 3+ Inch Normal Screws (~\$6)



(2x) 1 1/2 Inch Screws (~\$.50)

(2x) 2x6 Joist Bracket (~\$20)



(4x) Mending Plates (~\$10)



(1x) 50 pack of 1 Inch Wood Screws (You'll have extra, but way cheaper) (~\$8)

(1x) Wood Glue (Not necessary, but it certainly won't negatively affect the rig) (~\$5)

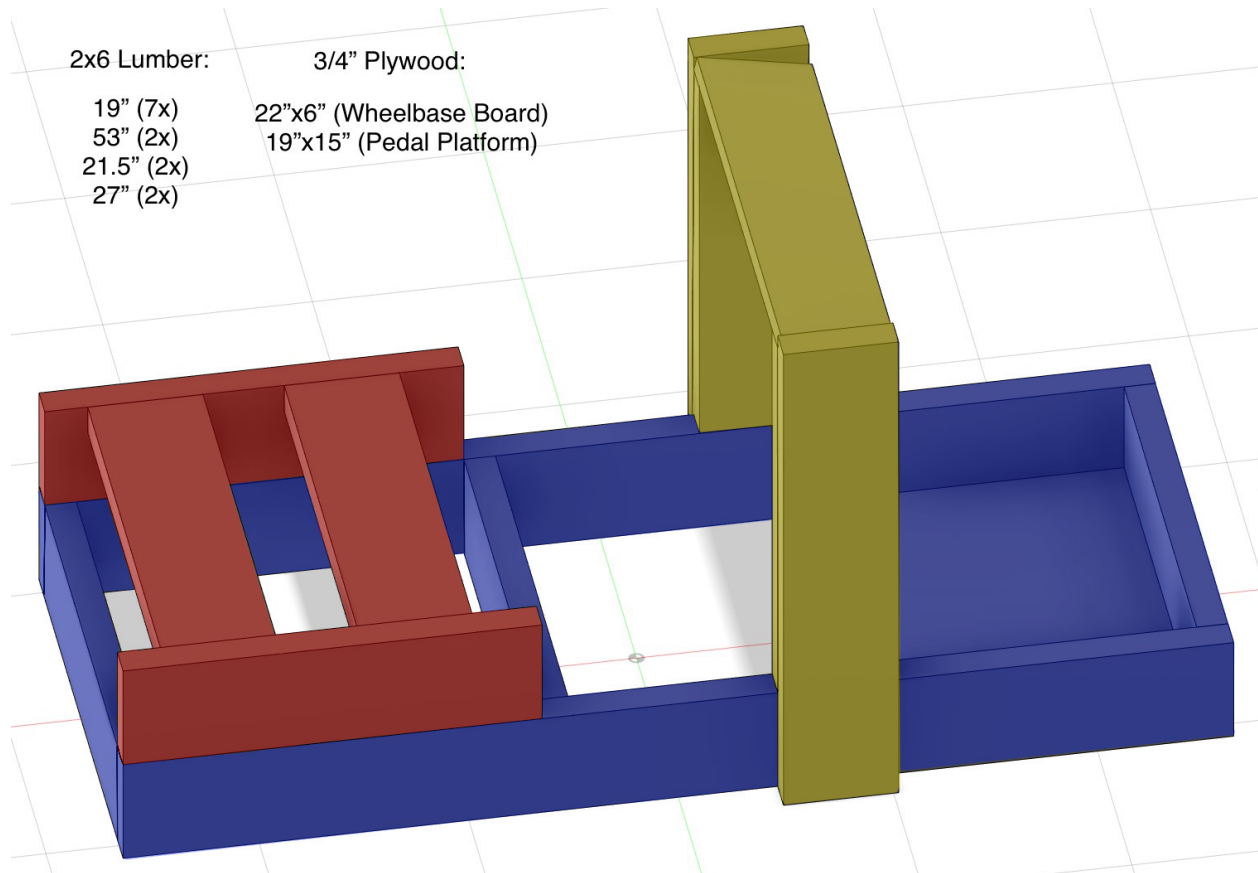
## Tools:

- Something to cut in straight lines
  - Miter Saw
  - Circular Saw
  - Handheld Jigsaw
  - Handsaw (This will be a very time consuming experience)
  
- Straight Edge
- Tape Measure
- Pencil
- Drill
- Impact Driver (Not sure if it is required, those thicker bolts may be challenging without)
- Correct screwdriver bits for the screws you purchased (Philips, Star, etc)
- Drill bits for pilot holes (For the big screws, but good for all)

## Planning:

Build the rig in 3 different sections so you can adjust seating position, steering wheel angle, distance to pedals, distance to wheel, etc.

We will refer to these sections as **Seat Mount (Red)**, **Rig Base (Blue)**, and **Wheel Mount (Yellow)**



## Cutting the Wood:

Below is a picture showing how to cut your 3 2x6 boards to get all of the pieces you are going to need.

Required stocks		Summary	
Stock length	Quantity	Total parts	
120"	3	Total parts length	336"
<b>Total</b>	<b>3</b>	Used stocks total length	360"
		Total yield	93.333 %

### Layout patterns

Labels settings T1

Layout details					
Repetition	Stock length	Part length / Label		Qty	Waste
1x	120"	19"		4	Material remnant 1"
		21 1/2"		2	

Layout details					
Repetition	Stock length	Part length / Label		Qty	Waste
1x	120"	19"		2	Material remnant 2"
		53"		1	
		27"		1	

Layout details					
Repetition	Stock length	Part length / Label		Qty	Waste
1x	120"	19"		1	Material remnant 21"
		53"		1	
		27"		1	

Your 3/4in plywood just needs to be cut to the dimensions provided. You can modify the length of both pieces, but NOT the width (19 Inches).

## Assembly:

ALWAYS DRILL A PILOT HOLE FOR ALL (G) SCREWS!!! This is to avoid splitting.

Key:

<b>A</b> - 53" Board	<b>B</b> - 19" Board	<b>C</b> - 21.5" Board	<b>D</b> - 27" Board	<b>E</b> - Wheel Mount Board	<b>F</b> - Pedal Base Board
<b>G</b> - Thick Lag Screws	<b>H</b> - Long Wood Screws	<b>I</b> - 1.5" Screws	<b>J</b> - Joist Bracket	<b>K</b> - Mending Plates	<b>L</b> - 1" Wood Screws

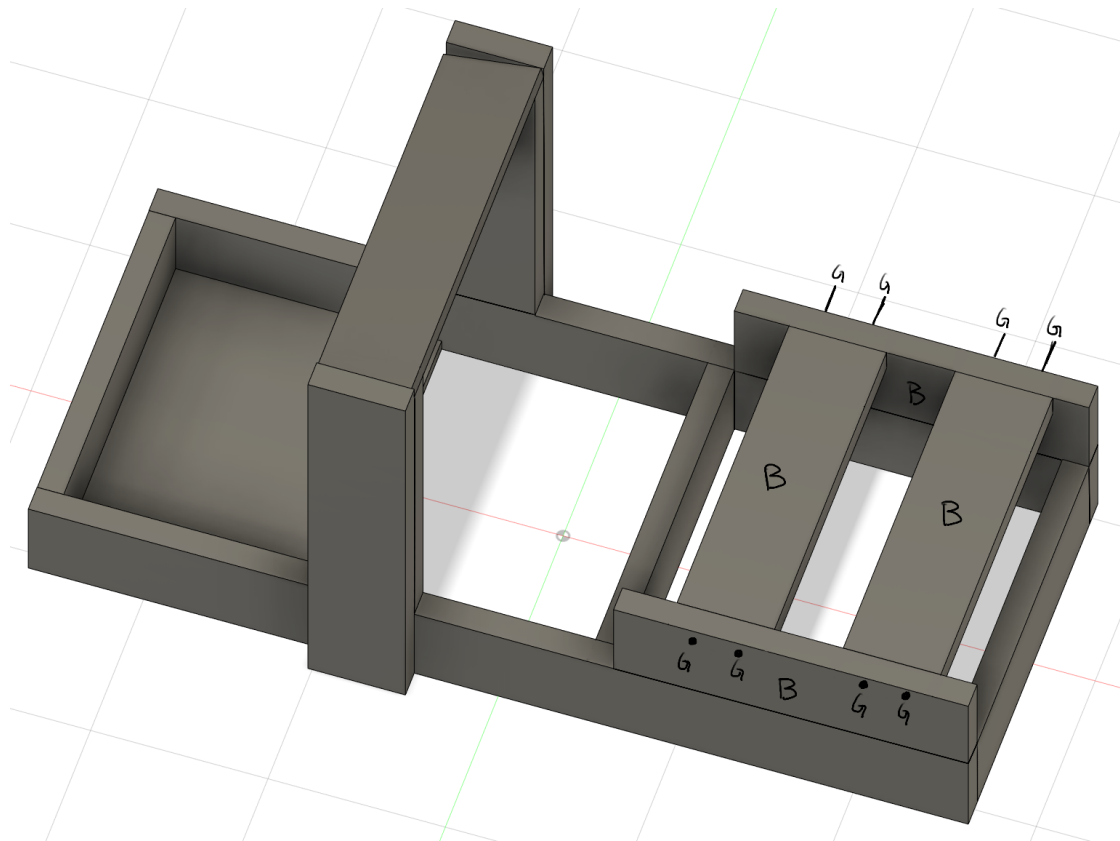
### Seat Mount:

(4x) B

(8x) G

Drive 2 (G) into each inside (B). Drill pilot holes for these.

Space the inside (B) out so you can mount your seat on them. Also great for bass shakers!



## Rig Base:

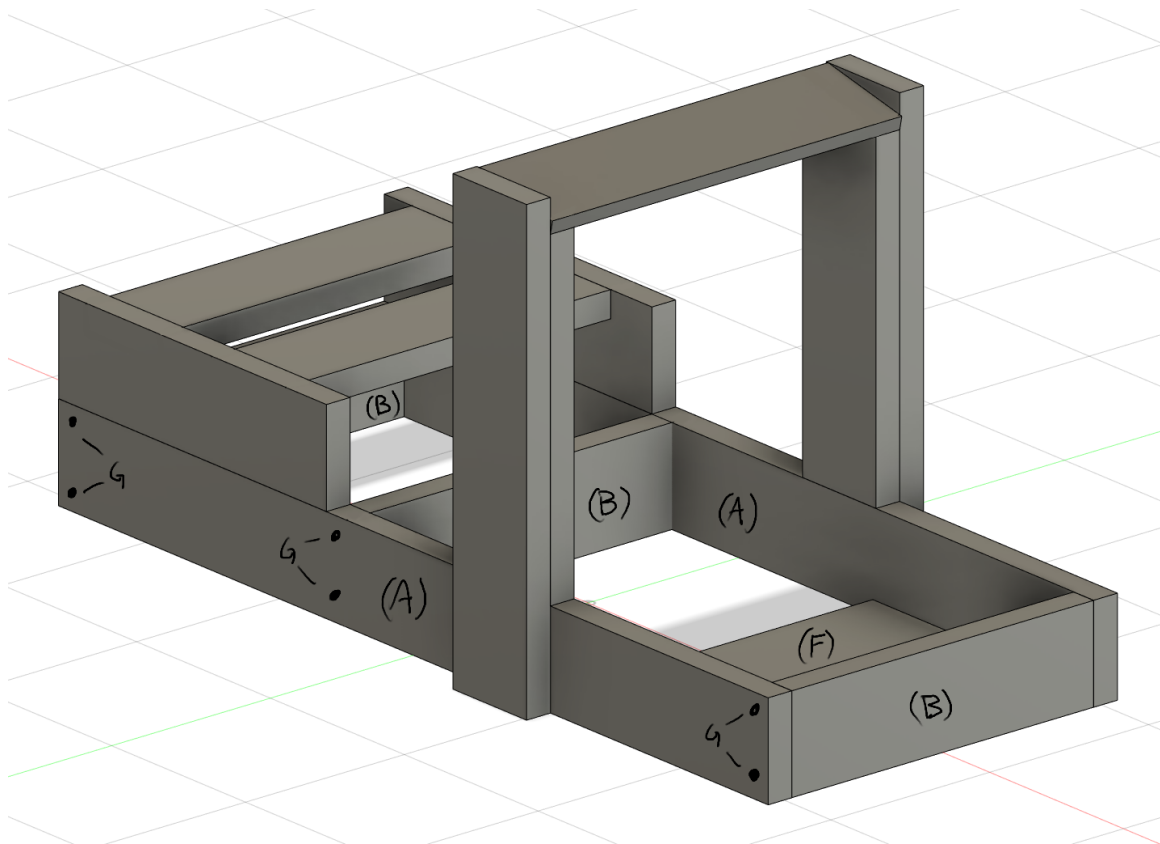
(2x) A  
(3x) B  
(1x) F  
(12x) G  
(6x) H

Drive 2 (G) through (A) and into each (B). Drill pilot holes for these.

Drive 3 (H) through (A) and into (F). Drill pilot holes for these. Do this for each side.

\*\*\*If you have carpet, you can keep (F) flush with the ground because the bolts you will use to mount your pedals, will just sink into carpet. **If you have a hard surface like vinyl, concrete, or hardwood, you should elevate this board to give enough clearance for the bolt heads.**\*\*\*

\*Note\* The middle (B) should be as close to the middle as you can, without it interfering with your feet while getting in and out of the rig. This is necessary to take a lot of flex out of the rig. (Initially, I didn't have this because I wanted to use the underside as a storage area. There was too much flex.) The render is where mine is on my rig.

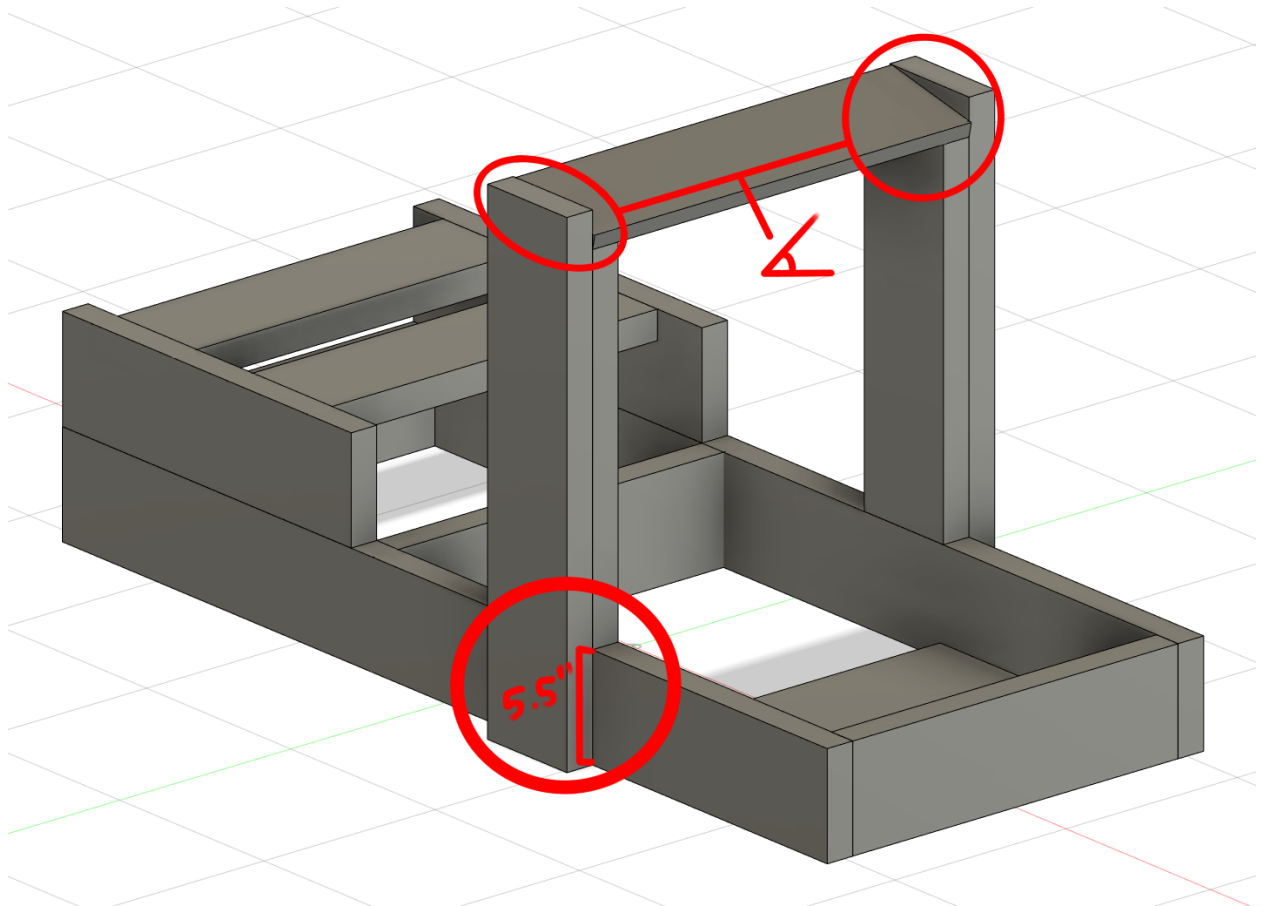


## Wheel Mount:

- (2x) C
- (2x) D
- (2x) J
- (1x) E
- (14x) G
- (2x) I
- (4x) H
- (~8-10x) L (Depending how many screws go into your (J))

This is where customization begins to come into play. The **Wheel Mount** design was to help align how far away it could be from my body, so assemble it all but dont screw into the **Rig Base** yet so you can freely slide it forward and backward, to see what feels right.

The bottom of (C) has to always be 5.5" higher than the bottom of (D). The boards should be staggered.



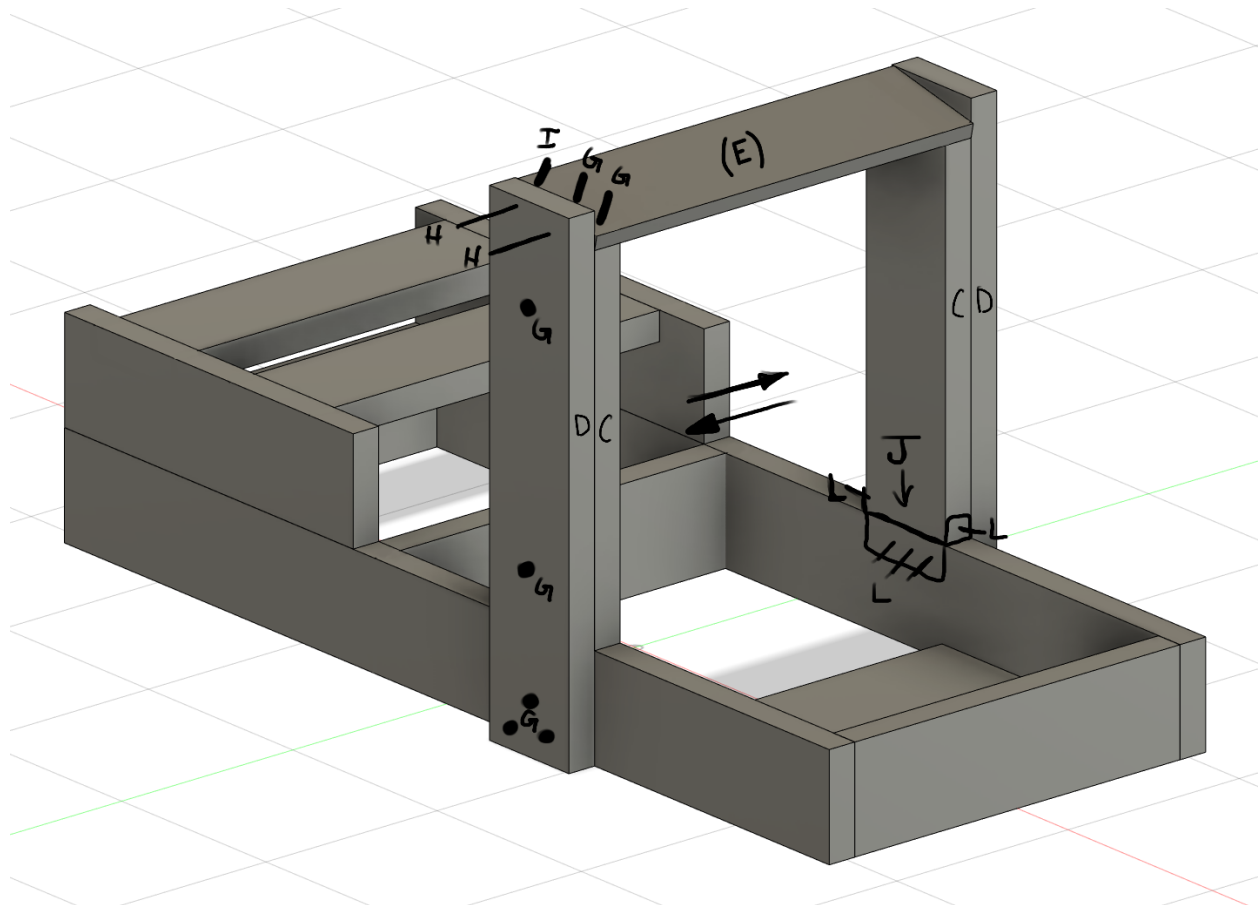


You will also need to figure out your wheel angle. At stock measurements, I have my wheel angle set to 13 degrees. It is nice to have another person holding your wheel mounted to (E) in front of you while you work this out.

If you have a direct drive wheel, this angle will be necessary. If you have a wheelbase that already has an angle in it, like the Logitech G29, then you can disregard the angle for the most part.

Once you have figured out wheel angle and height of (E), if necessary, you can screw most of it together! It is the same screw pattern on both sides, so just replicate what you did on the one side to the other.

Wait to screw the bottom 3 (G) on each (D) so you can adjust the rig before attaching it all together.



## Bringing It All Together:

You should now have 3 separate ready-to-go pieces of the rig waiting to attach to each other!

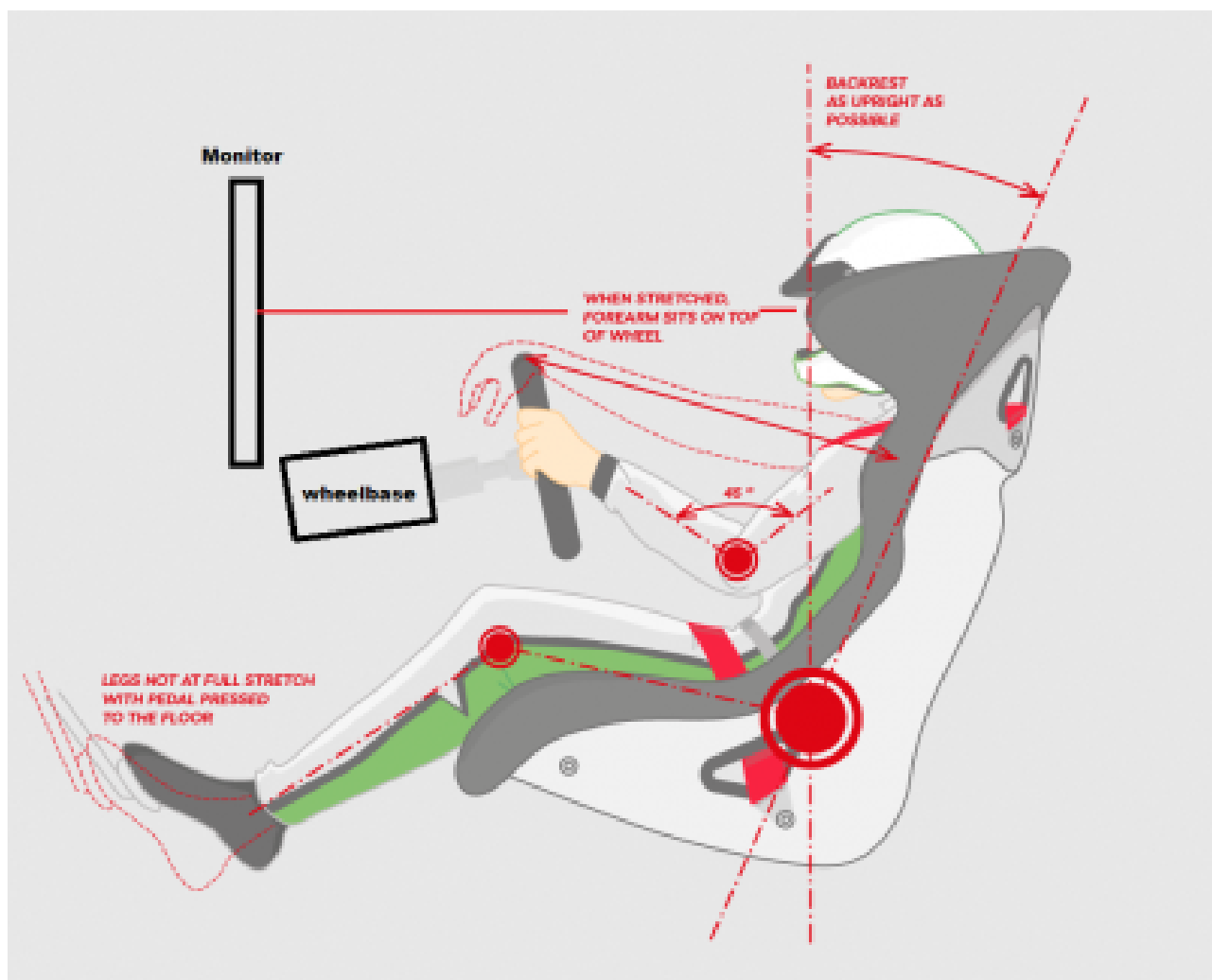
Attach your seat.

Seats are all different, but the **Seat Mount** should accommodate really anything with just minor adjustments. I was able to put my dxracer chair on there by drilling 4 holes and mounting it that way.

Stack the **Seat Mount** carefully onto the **Rig Base** near the back. Loosely put your pedals in place. Have your wheel attached to the **Wheel Mount**. Place the **Wheel Mount** on the **Rig Base**.

Carefully sit on your seat and move everything around accordingly. Get it all to feel right.

This was the reference photo I used to get a general idea of position:



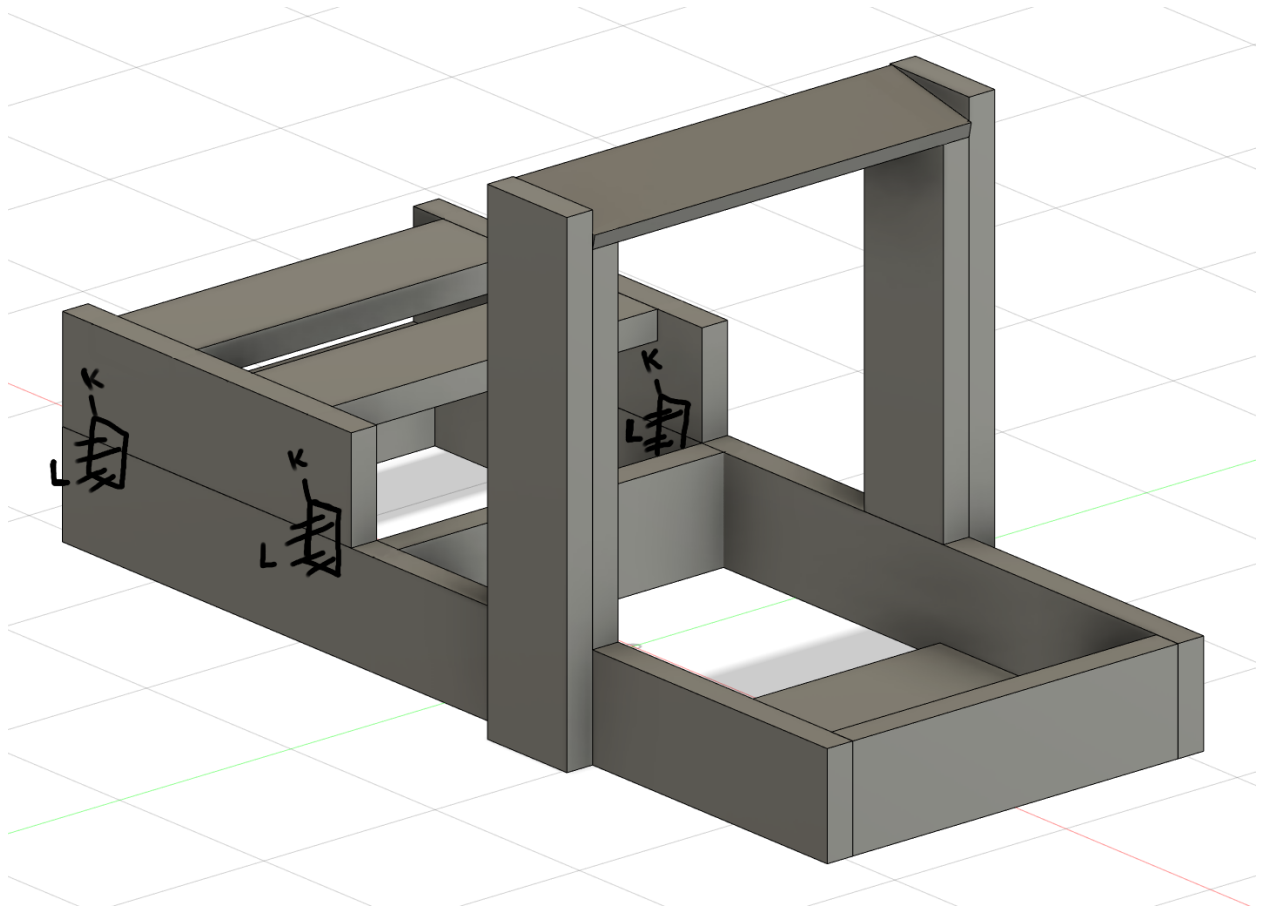
Once you find everything is in a comfortable position, screw it down!

The bottom 3 (G) can be driven through the bottom of (D) through (A) on each side.

Drill as many (L) through (J) into (A) as you can.

This will finish your **Wheel Mount**.

This is where those Mending Plates (K) come in. I used four. One for each corner on the inside walls under my seat. You can screw these on internally, or externally. I found it was kind of hard to screw them into the inside wall because the position made it awkward with the drill. But I don't see them.



**Your rig is complete!**

## Final Thoughts:

There are ways to beef up certain areas. Use more screws (within reason) and wood glue. Some brackets may be redundant and another board instead, may be more stable. You can play around with the design. That is the beauty of wood. You can be very creative!

I think the hardest part about getting started is figuring out the dimensions, how much wood to buy, how to design around your body, and finding the motivation to do it. It is a daunting task if you don't have a lot of experience working with wood and power tools.

I am 6' 1" and 160lbs. I am a lanky guy with long arms and long legs. I tried to design this rig with on-the-fly adjustments, while building, in mind. I hope this translates to others if they decide to build this.

Hope this gives others the push they need to build something they can be proud of AND be very happy with!

