

Introducing the Juno Finger Blaster

Welcome! This is the assembly guide for the “Finger Blaster,” a mod for the [Out of Darts Juno](#) that allows you to wrist mount the blaster or connect it as a masterkey to another blaster. How it works is you have a trigger button connected by wire to the Juno which you keep attached to the back of one of your fingers. You activate the button by pressing it with your thumb. The neat thing about it is that the trigger I’ve designed mimics the functionality of the standard two-stage trigger. You can do a half push of the button to rev the motors, then a full push to fire.

Disclaimer

I’m relatively new to Nerf modding and electronics, so I make no claim to have made the perfect design here. There are several areas that could be greatly improved before this project could be considered “done.” This is a prototype. I made the files in TinkerCAD and this is only a hobby to me. I make no promises to make further refinements or follow up on anyone’s requests. However, it does work and I’m really happy with the results.

Required Parts

STL’s

JFB Button Box (Version A or B)
JFB Housing (Version A or B)
JFB Button
JFB Button Peg
2 x Picatinny 90 Degree Coupler (For optional masterkey setup)

Hardware

2 x [21A Microswitch Tezuo, Button](#)
[18 AWG Wire](#)
[Tubing Wire Conduit](#), [Cable Sleeve](#), or equivalent
2 x [XT60 Male/Female Pair](#)
1 x [M3 Socket Head Screw with Nut 25mm](#)
4 x [M3 Socket Head Screw with Nut 25mm](#) (For optional picatinny connectors)
1 x [Velcro Cable Tie](#)
Glue ([E6000](#) is great, but any kind is fine. Not structurally necessary)
Sandpaper (If the rail coupler is too tight)
Soldering kit
Heat shrink and/or electrical tape

Explanations

Thankfully, you can get most of the hardware relatively cheaply. Order enough wire to extend from the blaster to your hand 4 times with slack. Having more than necessary is always good to have as backup.

Notice that I didn't list anything I used for my wrist mount above. How I created mine was by cutting holes through an [archery guard](#) and applying lots of [JB Weld](#) to bind the blaster to a metal plate on the opposite side of the guard. I'm not going to review that process because I'm sure you nifty DIY'ers can come up with something a little more sophisticated. You can even use the Fidlock holdster magnets if you want ([male](#), [female](#), [plate](#)). Do keep in mind that you really need to ensure that it won't accidentally fall off while you're running around. The Juno is heavy and it will tear apart your delicate soldering welds if it falls off your arm. I added a [detachable clip](#) as a contingency.

I think this build is more successful as a masterkey since aiming with a wrist mounted blaster is problematic. I have provided a picatinny coupler for this purpose that works well for a top mounted rail. It gives me enough clearance on my Rival Saturn (which I've already installed a rival rail to picatinny adapter) where I can still pump the blaster. Your needs will vary based on your blaster and preferences.

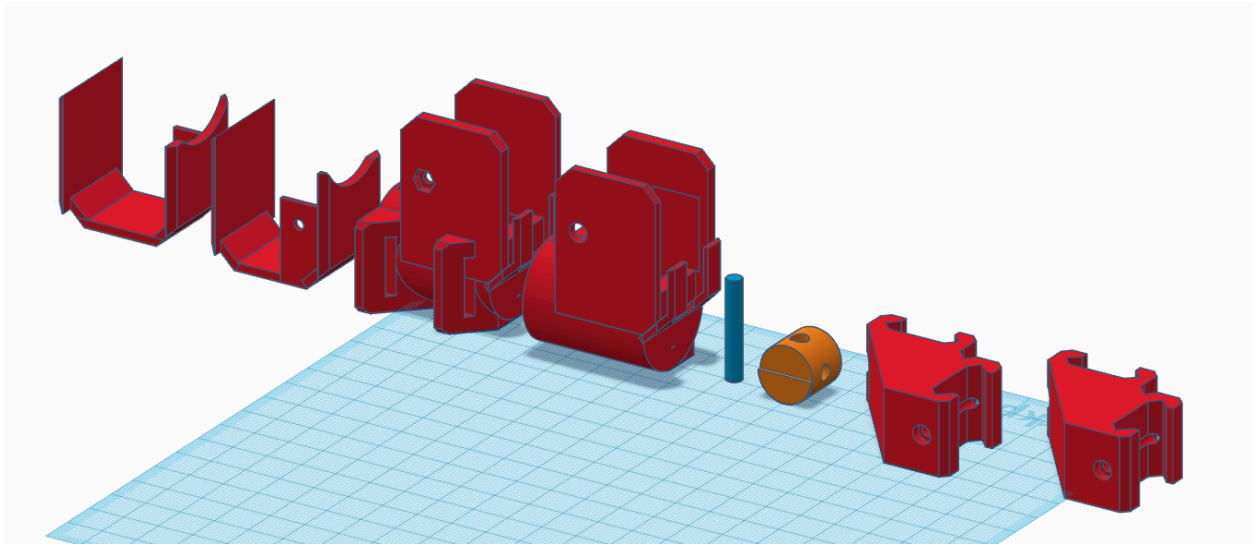
There are two versions of the box and housing: A and B. I would refrain from calling them right/left handed models, because it depends on how you are using the blaster. I have made a chart to simplify what version to select:

Use	Handedness	Print Files
Masterkey	Right	Box and Housing B
Wristmounted	Right	Box and Housing A
Masterkey	Left	Box and Housing A
Wristmounted	Left	Box and Housing B

This all has to do with the position of the button in relation to your thumb. When using a Masterkey, it's assumed that you will have the main blaster in your hand. The button would be harder to reach if you used version A in this case.

3D Printing

The STL's were designed to be printed without supports. Please print in the default orientation of the files as seen below:



Infill: 15%

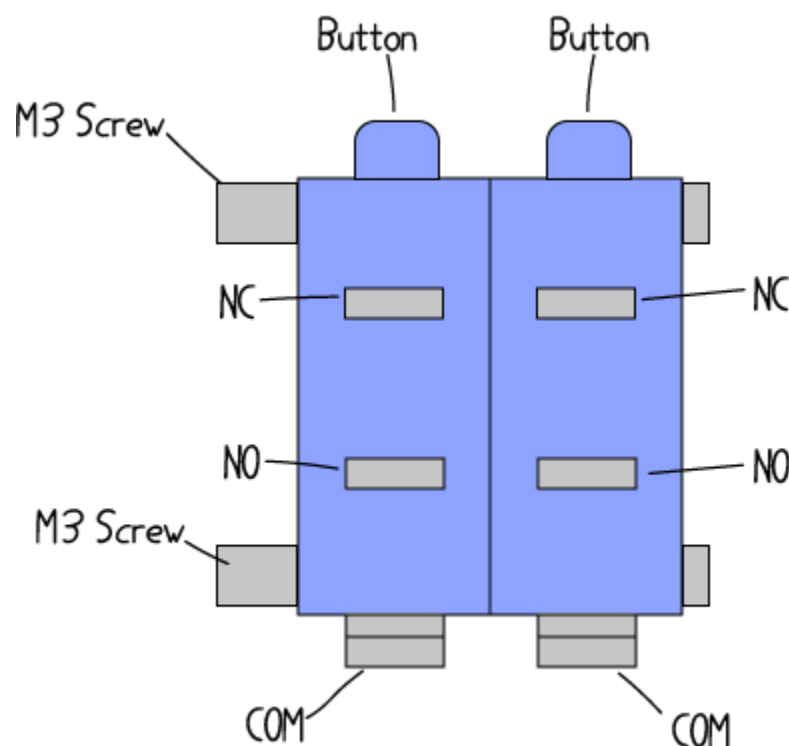
Layer Height: .2mm

I designed the picatinny coupler to be tight fit because I really hated the idea of the blaster wobbling around when I use it. Since 3D printers have different tolerances, the design may be too tight for your rail. Please use sandpaper as needed.

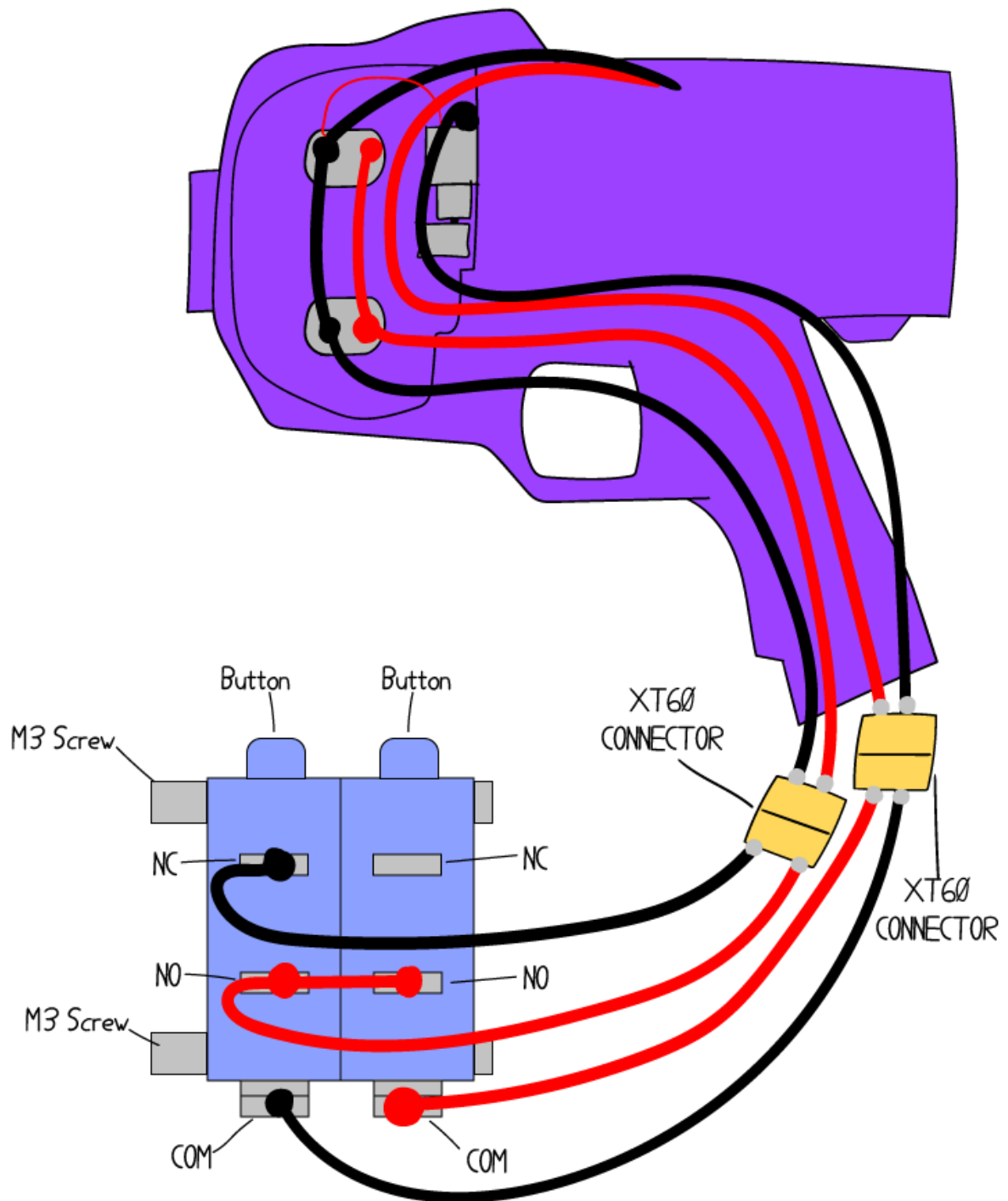
Wiring

I usually start this project by first working on the wiring, then assembling the housing later. The wiring mimics the internal wiring of the standard Juno, but with the wires extended outside of the blaster. There is one key difference, however. The ingenious design of the Juno uses a spring to keep one of the switches depressed at all times until the user pulls the trigger. This is the opposite of my trigger. That means we will connect to the NO (normally open) contact instead of the NC (normally closed) contact of that switch.

I find it easier to begin by screwing the two buttons together with a couple M3 screw/nut pairs. so that the contacts are all pointing out and facing the same direction. As seen from behind:



This is the wiring guide (not to scale):



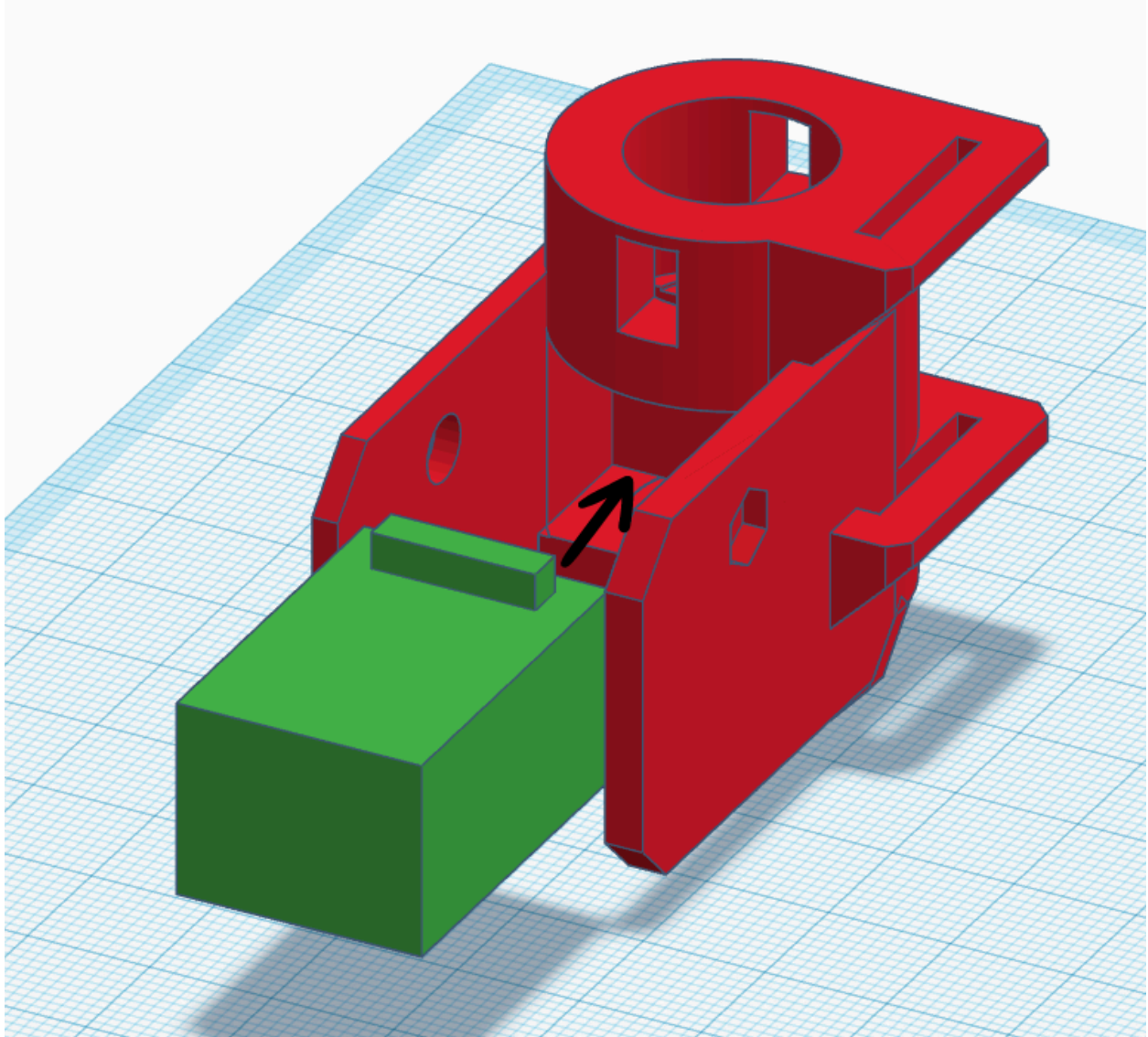
When soldering, make sure to keep the sides of the switches clear. These will be flush against the walls of the button box. Unlike what the graphic looks like, you really should aim your wires downward so that they'll fit through the provided channel in the assembly step.

If you're converting a full assembled Juno, keep in mind that I haven't found a way to wire it to keep the functionality of both the standard trigger and the Finger Blaster button at the same time without frying the pusher switch. You have to choose one over the other. In fact, you can do away with the entire handleInner, handleOuter, and trigger of the Juno if you're all-in with the Finger Blaster build.

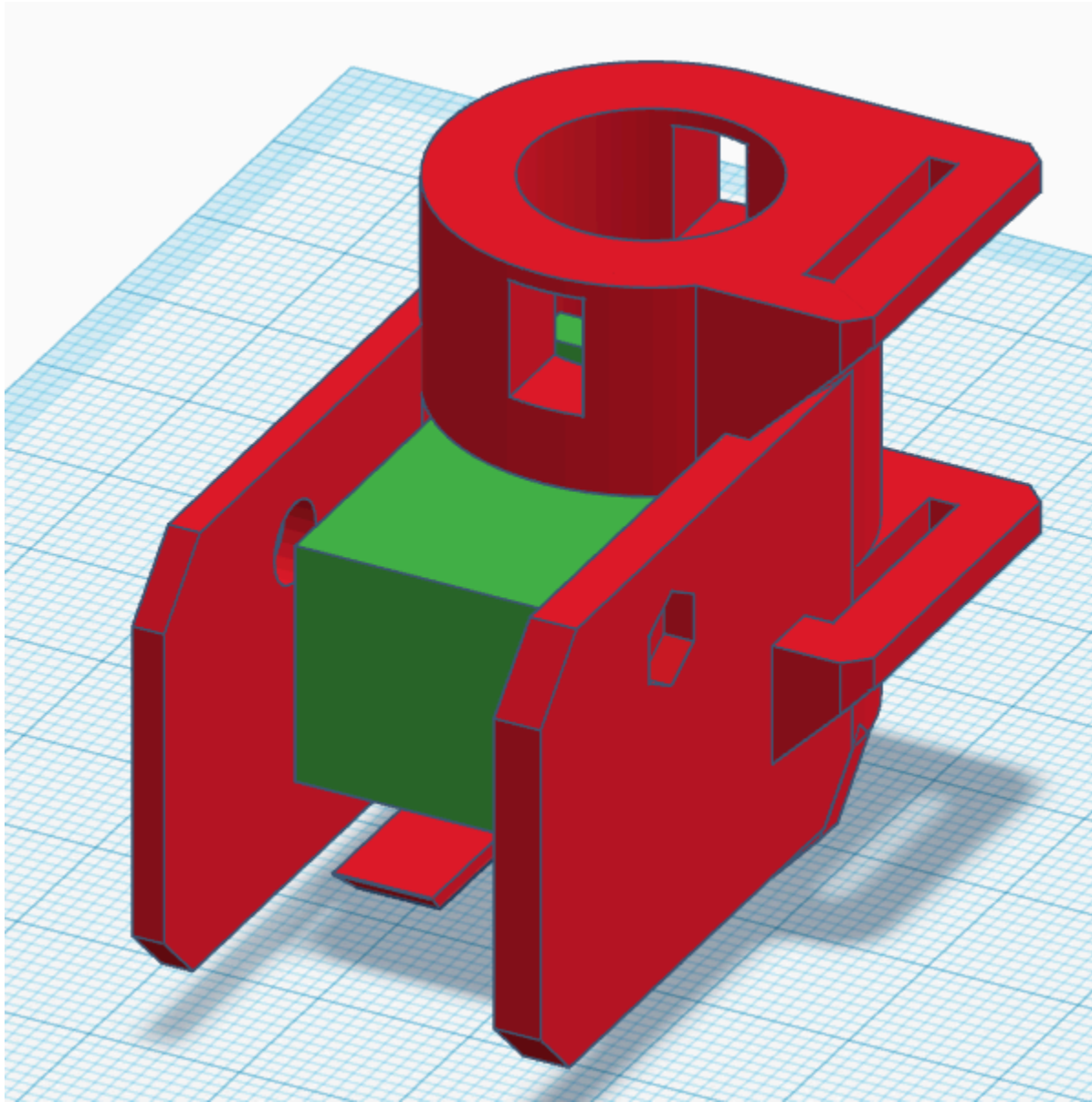
Make sure to stagger the placement of the XT60 connectors if you do decide to keep the handle as depicted in the graphic. This makes it easier to push them through the slim hole at the bottom of the handle. I like reversing the connectors so that you can't accidentally plug them in the wrong way (a male and female pair soldered to the junos, for example). Add heat shrink and/or electrical tape to the contacts so that you don't accidentally shock yourself while using it.

Assembly

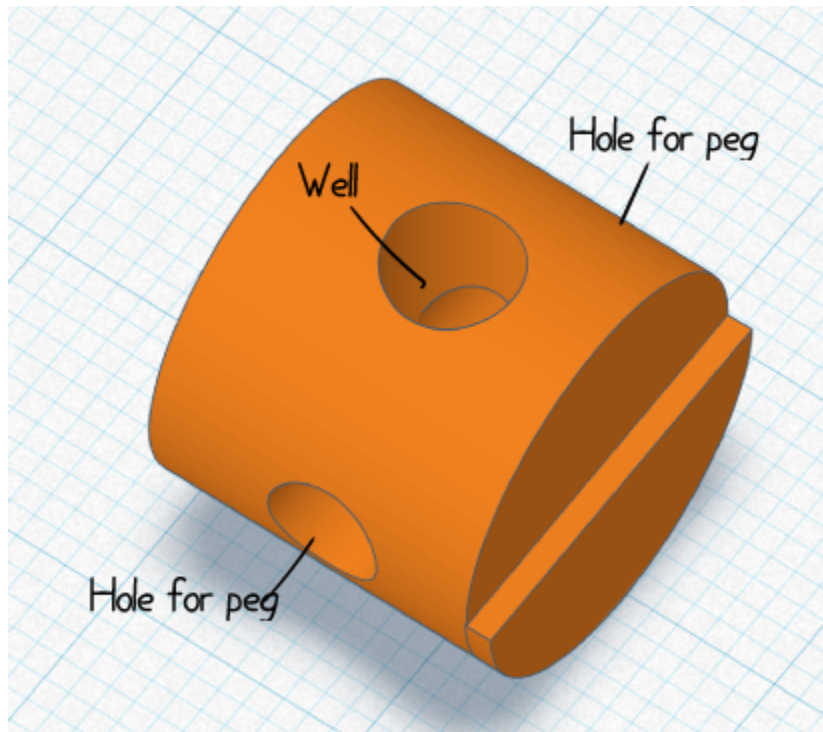
Remove the M3 screws used to hold the switches together. Slide the switches into the button box. You'll have to depress the buttons so that it could fit into the cavity:



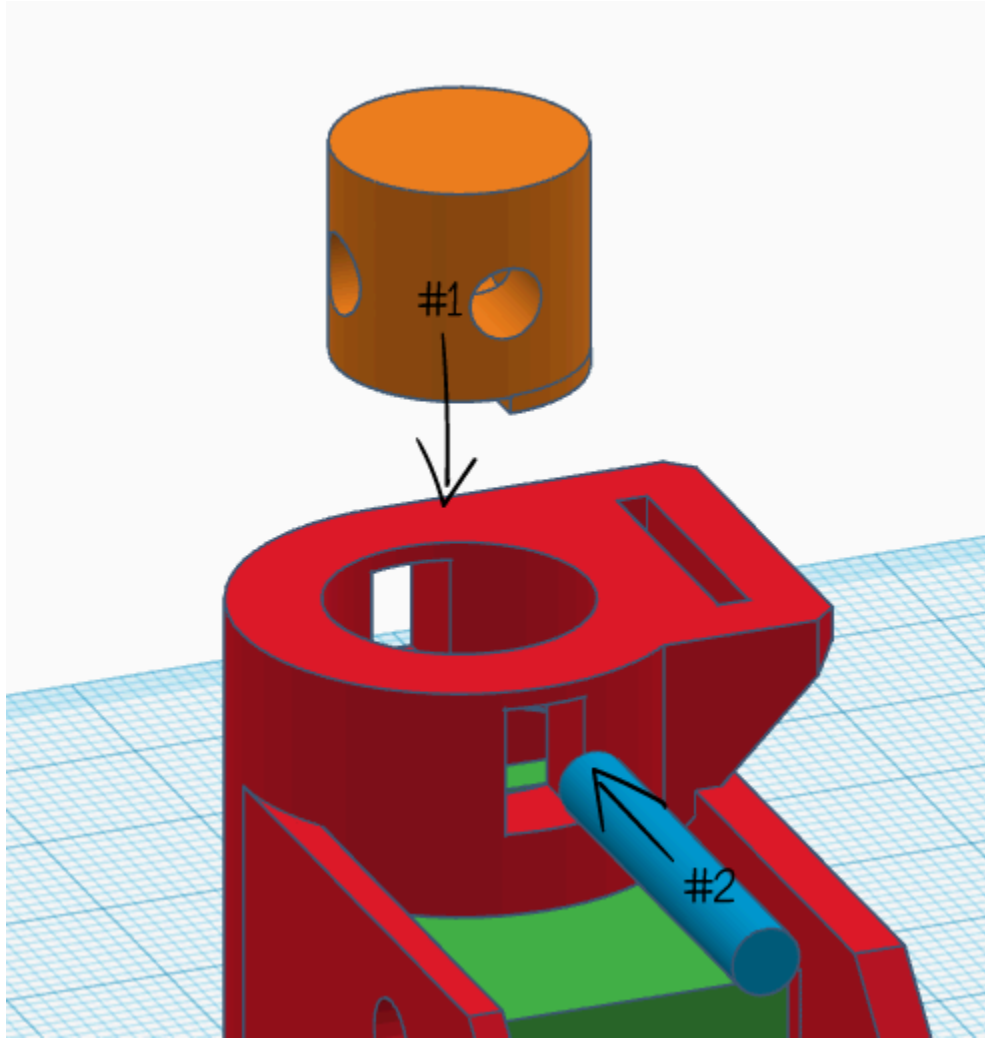
It should snap right into place:



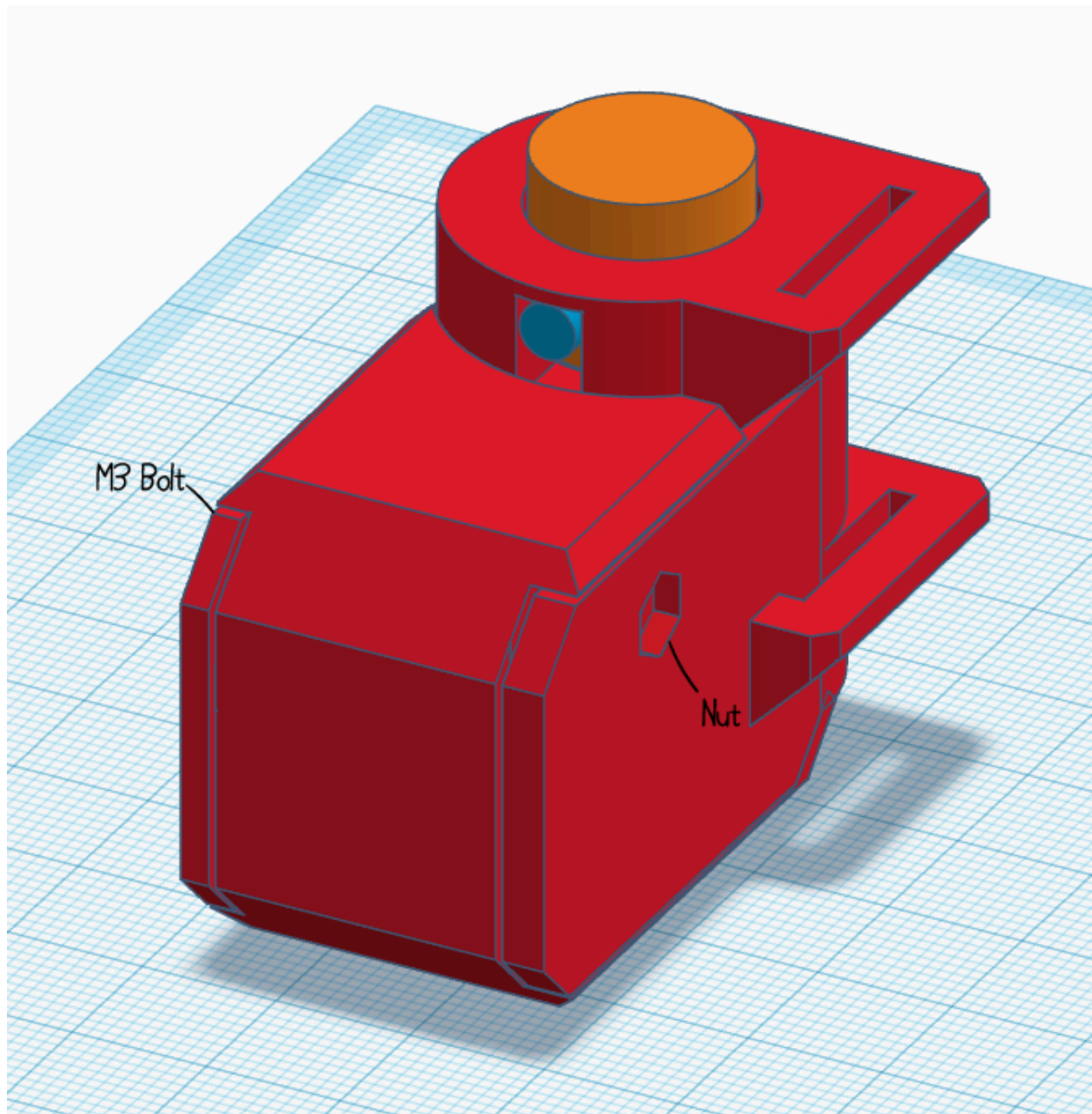
Put a little glue in the well of the button. Just enough to hold the peg in place in the next step.



Insert the button into the button hole. Make sure the extended part of the button is facing downwards and is on the right side, lining up the peg holes correctly. This is important to make sure that the motors are rev'd first before the pusher is activated. Push the peg into the hole, ensuring that no end is sticking out. Allow time for it to cure.



Slide the housing over everything, making sure to guide the wires through the channel underneath and out the front. Use the M3 screw to keep everything together. You might have to wiggle the parts around to get the alignment right. The screw should be going through the box, housing, and the switches:



Insert the velcro cable tie through the rectangular holes on the side. Wrap the tie around your finger and secure it together. Cut off the excess. Add the cable sleeve to the wires. Success! You should have a fully functional JFB.









Thanks for trying this out!
This project was designed by Raeleus