Hey everyone, If you've been watching my videos or watched my stream, you've probably seen me gush over fighting games. For a long time, I've been playing on this. It's a custom made 3d printed hitbox controller. It's got kailh choc switches and a knockoff arduino micro. Now this is cool since it's low profile. But it's also loud as fuck. So mostly I've been playing on this instead. It's a chinese hitbox rip off. I've replaced the sanwa buttons with crown 202s. The directional buttons are kaihl speed browns and the other buttons are cherry clears. While I love this thing to death, I wanted to go in a completely opposite direction. Today we're going to be making a couple of hitbox style controllers. Ideally this will be cheaper than the 250 hitbox is asking but we'll see how it goes. The other thing is that all you'll need is a drill, a drill bit, your moms credit cart, and the three wacky numbers on the back. No soldering required.

Ok so let's do a quick breakdown of all the things you'll need to source. You will need, buttons, a plastic box, and the board. First, you'll need to decide what buttons you want to use. Since I want to have the loudest possible experience, I'm going to go with happ buttons which are SIGNIFICANTLY taller. However, I suspect most people watching this tutorial will want to go with sanwa style buttons. The buttons ARE the most expensive part of this build so choose something you like. If you're going on the cheap, maybe you can find a friend who has upgraded their buttons who are willing to give you their old ones. Keep in mind you'll need 14 total. 4 Direcitional (and one of these might be a 30mm), 8 standard hit buttons, one for start, and one for select. However, if the board you choose has extra features feel free to get more buttons. If you're super paranoid about messing up, get screw in buttons as they are a lot more tolerant to bigger holes. After the buttons the next thing you will need is a box. This was the hardest part for me to find but I ended up stumbling around the world of "document containers". I found this one for the happ style which was two for 30. So maybe find a friend to go halfsies. For a sanwa style, I found these that were four for 32. So maybe find three friends and go quarterlies? Next up is the board. If you want to super fancy you could always get a brook board, but we're going cheap. I found this zero input delay board for 13 dollars with wires included. One note on these types of boards is that if you are going with happ buttons, the blue/white wire is the one you want. For sanwas make sure you get the black and red. Finally make sure you have a drill bit that can drill in all the holes you need.

Onto extras, I wanted some rubber feet so I got these. Also I wanted to have a detachable cable so I bought a usb passthrough. USB passthrough WAS expensive though.Important, the usb passthrough is a bit too tall for the sanwa. Maybe try to find something smaller.

With that all out of the way, let's get started with assembly. First is to print out a template for the buttons. I'm gonna be using the standard hitbox layout. I'll link to the templates I used in the description. Important: make sure you turn off the margins otherwise the dimensions aren't right. Also for the happ box one, print it at 83% scale. I'm gonna tape this to the bottom of the top, then I'm going to mark the center of each button with a sharpie. This is where I'll drill. For happ buttons, we need 28 mm holes, so I'll go a head and do that. I also need to drill some holes for the start and select button. We also need to drill one hole for the usb pass through. Once it's done, the hard part is over. So a bit of advice. First: GO SLOW. Turn your drill speed down. Measure early and often.

Gonna take a little detour for my extras, I screwed in the rubber feet. I also don't like that the top is just plain. So let's get some weeb stickers and put it all over. I added a layer of clear coat to make sure none of them pop up. Nice.

Now all we to do is start installing the buttons. This isn't too hard. For the happ buttons we'll put the shaft in (OwO), then screw the nut so it's snug. Then we'll attach the microswitch. For the sanwas, we just snap them in. Next we'll wire it up. The color to each terminal doesn't really matter, just make sure you're connecting one pair to the buttons. The board I'm using has everything labeled, so it's easy as making sure each wire goes to the right place. Then we'll connect the USB to the pass through. Now I'll scrounge around for a usb to usb cable and we'll get to the fun part: testing.

Before I go into a game, I like to use this website for just making sure all the buttons actually work. I'll just go through and press each button and see if what I expect happens. If it doesn't, I'll make sure the wire for that button is going the right place. If not, I'll just unconnect it and move it to where it should go. Now that it's working good outside of a game let's load up something. I like using street fighter since it'll use all the buttons I have attached. Let's head into training mode. I'll press each button. Seems like it works. Wow this feels so weird and it's super funny.

And that's it. I hope this is helpful for anyone looking to make their own box. I don't think anything I went over was too crazy, you just need to know how to use a drill and legos. If you end up making one of these feel free to send it my way or annoy people on r/fightsticks.

Prices and links:

- feet $12
  https://www.amazon.com/dp/B08PBFL8GT?psc=1&ref=ppx_yo2ov_dt_b_product_details
- Happ boxx box $30 (for 2 $15)
  https://www.amazon.com/dp/B0B4BJDGRW?psc=1&ref=ppx_yo2ov_dt_b_product_details
- Happ Buttons $12 x 3 (36)
  https://www.amazon.com/dp/B07GBTLSQ5?psc=1&ref=ppx_yo2ov_dt_b_product_details
- Usb pass through $14
  https://www.amazon.com/dp/B08CXXS9M1?psc=1&ref=ppx_yo2ov_dt_b_product_details
- Drill bits 14
  https://www.amazon.com/dp/B07PR96VTK?psc=1&ref=ppx_yo2ov_dt_b_product_details

- Sanwa box $32 (for 4 $8) https://www.amazon.com/dp/B09PHB9JTV?psc=1&ref=ppx_yo2ov_dt_b_product_details
- Sanwa Cables $10 (for 20) https://www.amazon.com/dp/B07RRSG321?psc=1&ref=ppx_yo2ov_dt_b_product_details
- Zero Input delay Board $13 https://www.amazon.com/gp/product/B00UUROWWK/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&psc=1

Happ box total

- Feet 2.4
- Box 15
- Buttons 36
- Usb pass through 14
- Drill bits 14
- Board 13
- 94.4

Notes:

- DRILL FUCKING SLOW
- Turn drill speed down
- Take your time
- Measure a lot
- SCREW INS WILL SAVE YOU - can tolerate hole being a bit bigger.
- Don't forget start and select buttons.
- Also don't forget to drill in for your usb thing
- USB is too PHAT for sanwa box
- Clear coat didn't work out lol
- Use tape instead
- Make sure you tilt the stuff to not hit the start and select
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