

KM4CFT KX Iambic Paddle Kit

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Thank you for your purchase of the KM4CFT KX Iambic Paddle kit! This kit is a morse code paddle that is intended to pair with the Elecraft KX2 or KX3 Portable Transceiver. It takes the popular KM4CFT KH1 paddle design and alters it to fit with the KX line instead. It fully takes advantage of 3D printing techniques by having magnets embedded into the print leaving it completely hidden!

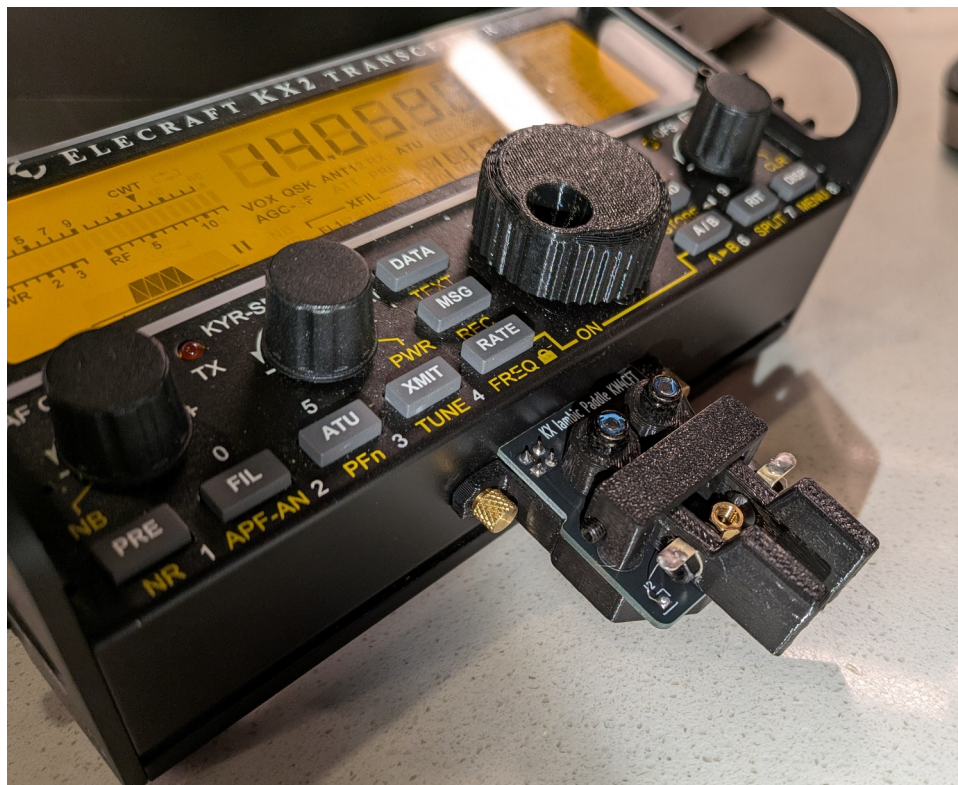
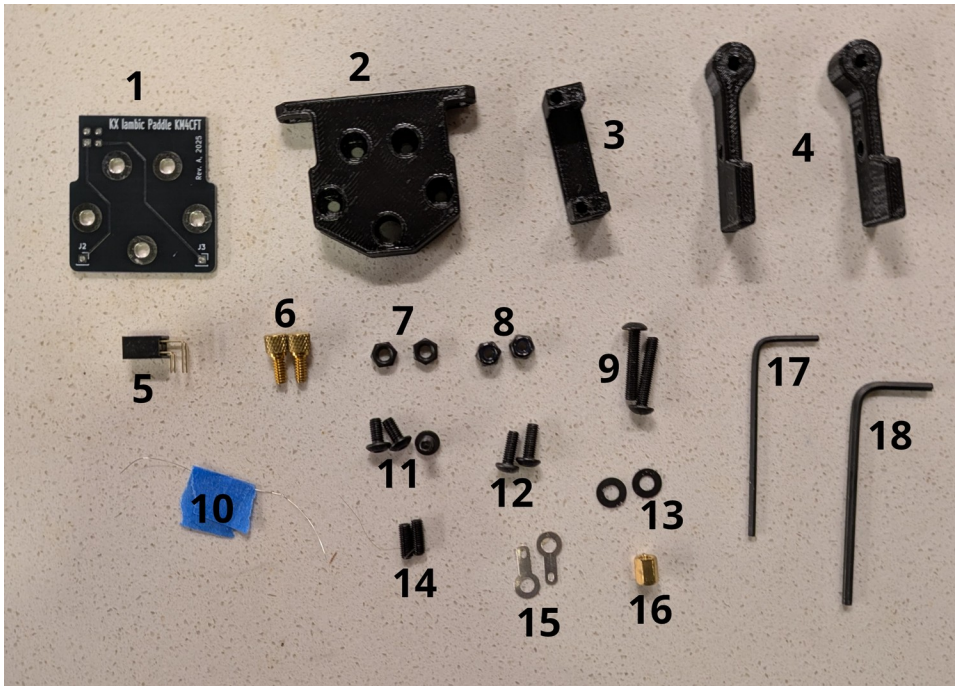


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Parts List:

	Item	Qty/ Length		Item	Qty/ Length
1	Printed Circuit Board	1x	10	36 AWG Nichrome Wire (Painter's Tape for Visibility)	2-3"
2	(3D Printed) Baseplate	1x	11	M3 x 6mm Screw	3x
3	(3D Printed) Travel Adjustment Arch	1x	12	M3 x 8mm Screw	2x
4	(3D Printed) Paddle Arms w/ Magnets	1 pair	13	M3 Washer	2x
5	2x2 Right Angle Pinsocket	1x	14	M3 x 8mm Grubscrew	2x
6	4-40 x 1/4" Thumbscrew	2x	15	M3 Solder Tabs	2x
7	M3 Nut	2x	16	M3 x 6mm Standoff	1x
8	M3 Nylock Nut	2x	17	1.5mm Hex Wrench	1x
9	M3 x 16mm Screw	2x	18	2mm Hex Wrench	1x

Counterfeit Warning

Beware of Chinese Counterfeit Paddles! If you did not purchase your paddle from RadioDan-W7RF or HamGadgets then it is a counterfeit! All KM4CFT products are sold in the USA only! There are elements of the paddles that the Chinese sellers did not incorporate into the design so if you build one of theirs then it WILL NOT WORK!

Should you buy one from a Chinese seller, I recommend giving them a 1 star review, reporting them and requesting you get your money back!

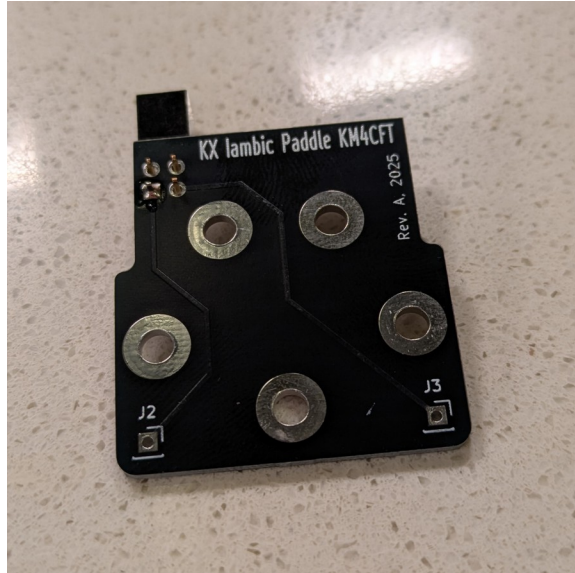
KX Paddle Assembly Instructions

Before we begin assembly you will need the following tools:

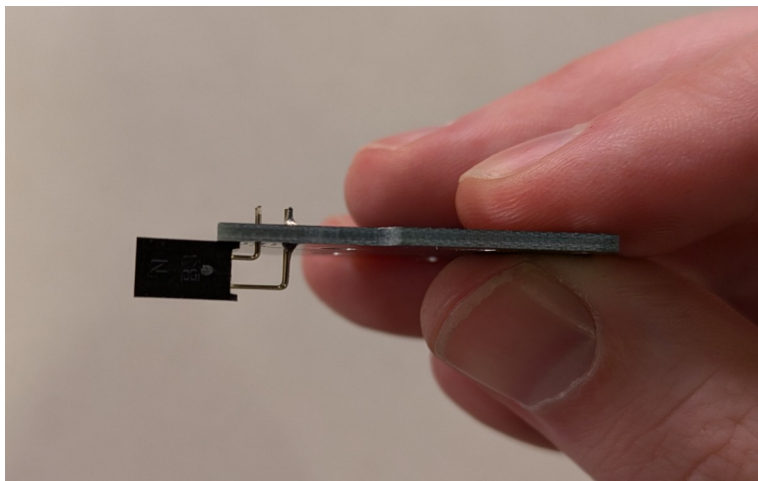
- Soldering Iron
- Solder
- (optional) Helping Hands
- Flush cutters
- One of the following:
 - Pliers
 - 5.5mm wrench
 - 5.5mm Socket with driver (best option)

Step 1: Solder the 2x2 Right Angle Pinsocket

First, take a look at the supplied PCB. The top side is the one with the “KX Iambic Paddle KM4CFT” written on it. The right angle pinsocket will be attached on the *bottom* side and soldered on the top. Put the pinsocket in place and solder only a **single** terminal as shown in the picture:



We are soldering a single terminal so that we can ensure the connector is perfectly aligned! Using your fingers and squeezing the plastic portion of the connector (touching the metal part might result in a burn) use the soldering iron to adjust the connector such that it is properly aligned:



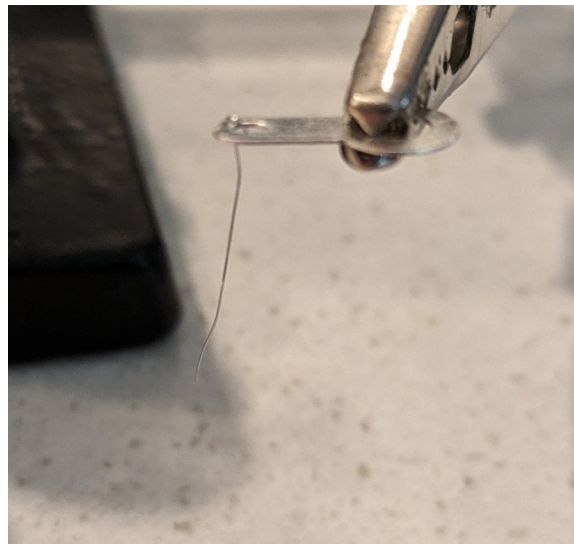
Once the connector is aligned, solder the remaining 3 pins.

Step 2: Soldering the Nichrome Wire to the Solder Lugs

First, find the small piece of nichrome wire. It is super thin so make sure to keep a close eye on it! (There should be a piece of painter's tape attached to help you find it) Next, cut it in half, so that you have one piece for each contact.



Next, wrap the wire around the small hole as shown in the photo below. You will want it to come out at a 90 degree angle. Secure the wire in place with some solder.



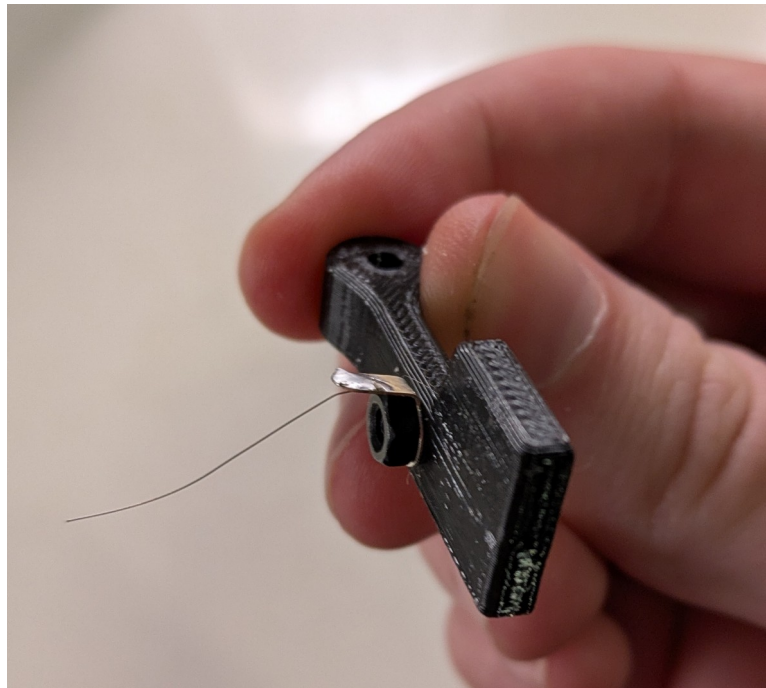
Step 3: Install Lever Contacts

For this step you will need an M3x6 screw, an M3 nut, your 3D printed paddle arms and the solder lugs with wire you prepared in the previous step. Looking at the paddle arm there is one side that has an “L” or “R” embossed into it. This is the side that the screw head will sit. Push the screw through the hole on the arm. On the opposite side, insert the solder lug such that the perpendicularly soldered wire points *away* from the screw head. Secure the solder lug in place with your M3 nut.

Repeat for the other arm.



Next, bend the soldered tabs 90 degrees so that the Nichrome wire is pointing down.



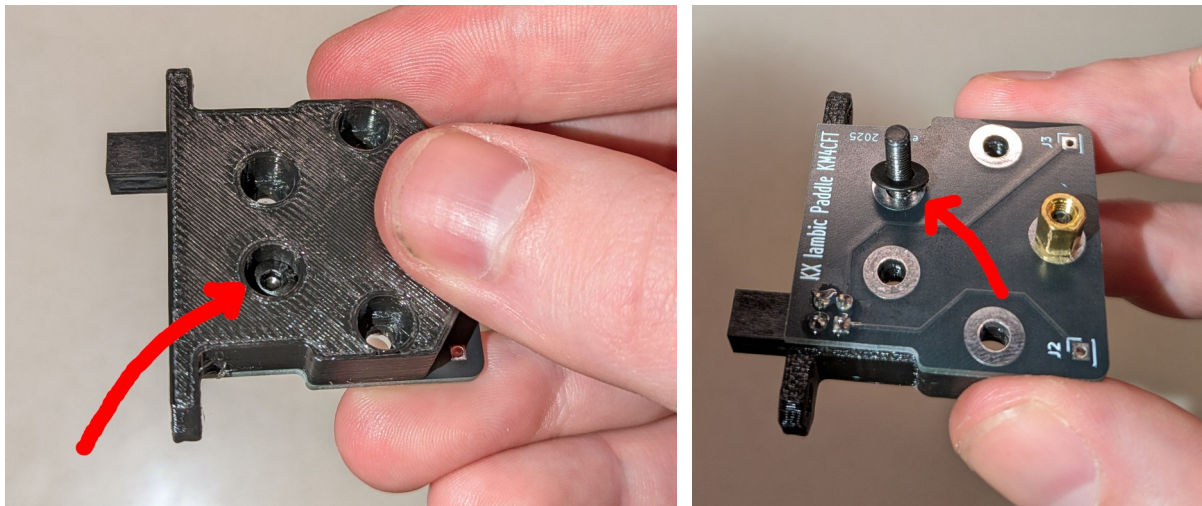
Step 4: Install the Center Standoff

For this step you will need your M3 Hex Standoff and an M3x6 screw. Insert the screw from the bottom side and secure the standoff on the top side. You will likely need to fiddle around some to get the sides aligned. You want it so that a flat face is parallel to the left and right sides of the PCB as shown in the photo.

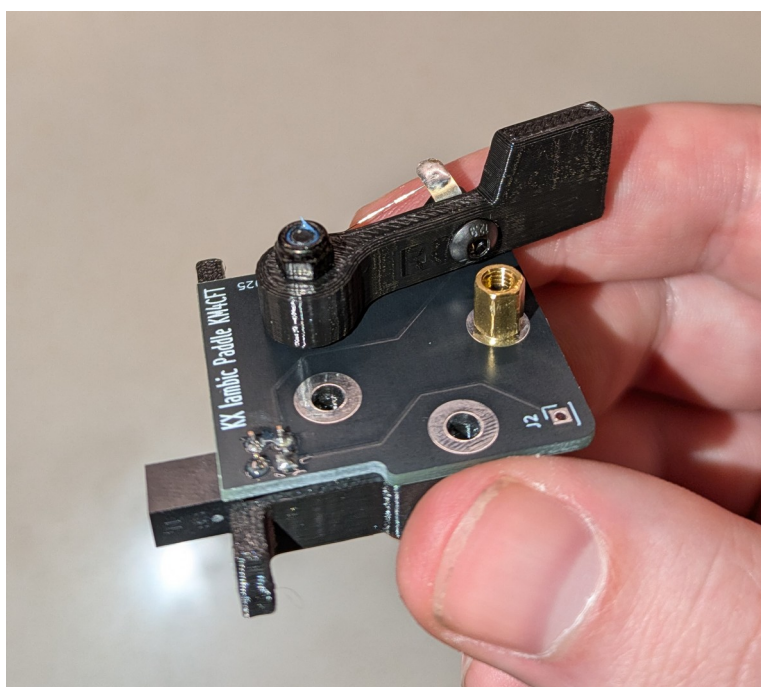


Step 5: Attach the Lever Arms

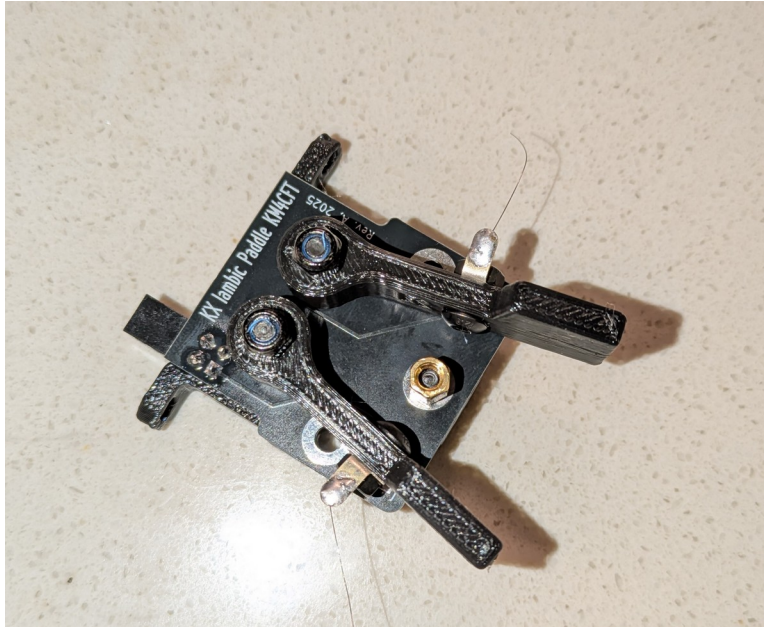
For this step you will need an M3x16 screw, an M3 washer, your paddle arm, the Baseplate, and an M3 nylock nut. Insert the M3x16 screw through the Baseplate (into the counter-bored hole) and up from the bottom of the board. Next, drop in a washer from the top like in the picture:



Next, drop in the paddle arm. Be sure to choose the arm that has the screw head pointing towards the center like in the photo! Next, secure the arm in place using the nylock nut. This will require some adjustment, but you want to adjust the screw such that the paddle arm can easily rotate but not so loose that it wobbles around. I prefer to fully tighten the screw and then slowly loosen it until this is achieved.



Now repeat for the other arm:

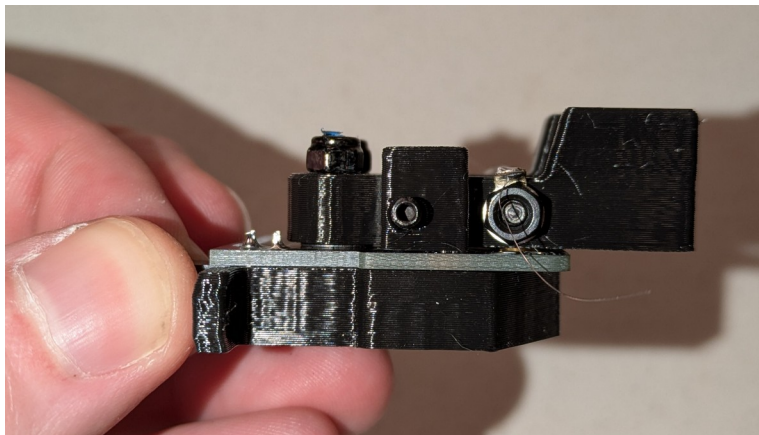


Step 6: Install the Travel Adjuster Arch

For this step you will need the travel adjuster 3D print (the print that looks like an arch), two of the grub screws and two M3x8 screws. Take the grub screws and screw them into the travel adjuster from the outside as shown in the following photo. Don't screw them in all the way just yet; we want it to be flush with the inside face for now!

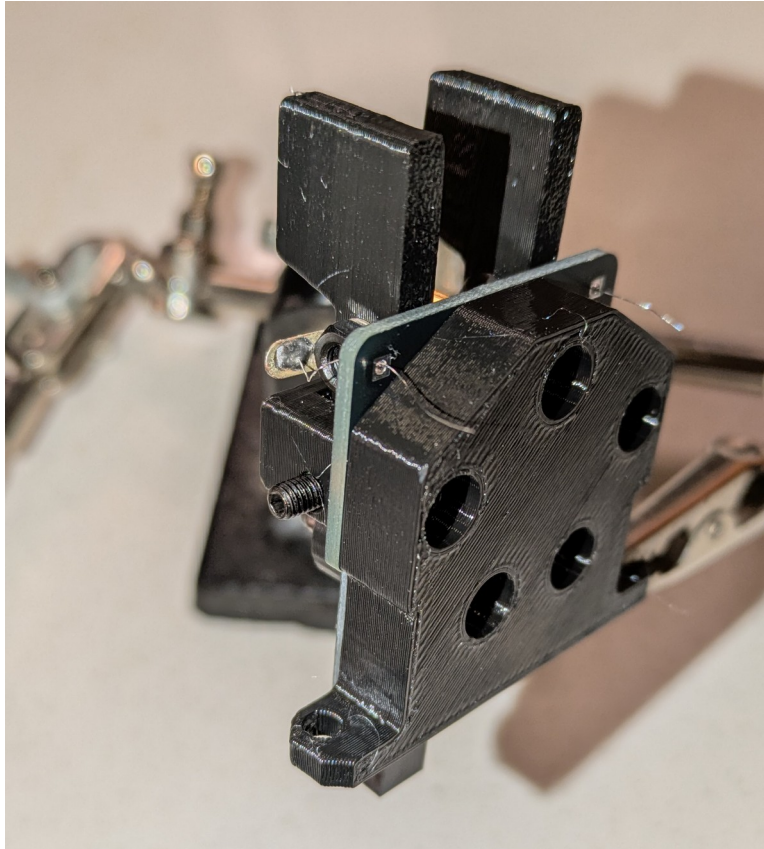


Next, we want to attach the travel adjuster to the PCB. Place the travel adjuster so that it arches over the paddle arms and so that the grub screws are closer to the hinges. Secure the arch in place with the two M3x8 screws, going through the baseplate from the bottom. Be careful not to over tighten the screws as the screw can easily strip out the threads inside the print. (the screw is tapping the threads into the print!)

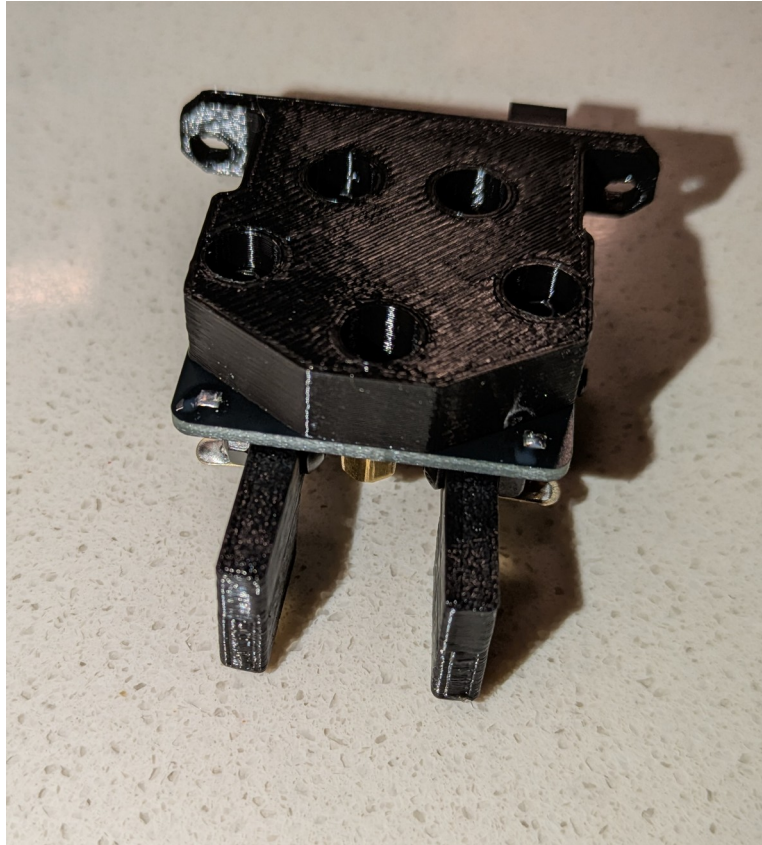


Step 7: Solder the Nichrome Wires to the PCB

First, feed the nichrome wires through the small holes on the corners of the board. Be sure to leave a small amount of slack by making the wire form a curve to the hole. We need that slack so that the lever can rotate freely without pulling on the wire.



Finally, solder the wire in place and trim off the extra wire.



With that, your paddle has been assembled! Use the 1.5mm Allen wrench to adjust the contact distance and test out the paddle on your KX2 or KX3. Use the two supplied thumbscrews to secure the paddle. Congrats!