



WarBeast RPi Complete Upgrade Kit

This guide will add a little more detail in terms of wiring and some other tips for installing your new kit, or if you are building from scratch with the gerber files and 3D models provided on my github. [\(release date TBD\)](#)

KIT INCLUDES

- **Mainboard with pre-installed pico and strum switches**
- **D-pad start/select board**
- **20cm 8-pin JST cable** (Connects the mainboard & d-pad together)
- **3D printed strumbar** (Optional, stock ALPS strumbar will fit)
- **10ft braided micro USB cable**
- **Two-piece 3D printed cable grommet** (Replaces sync button housing)
- **Cable ties** for routing the USB cable/tidying excess wires
- **MININEKK Guitar Hero-style neck** (if selected as an addon)

REQUIRED TOOLS

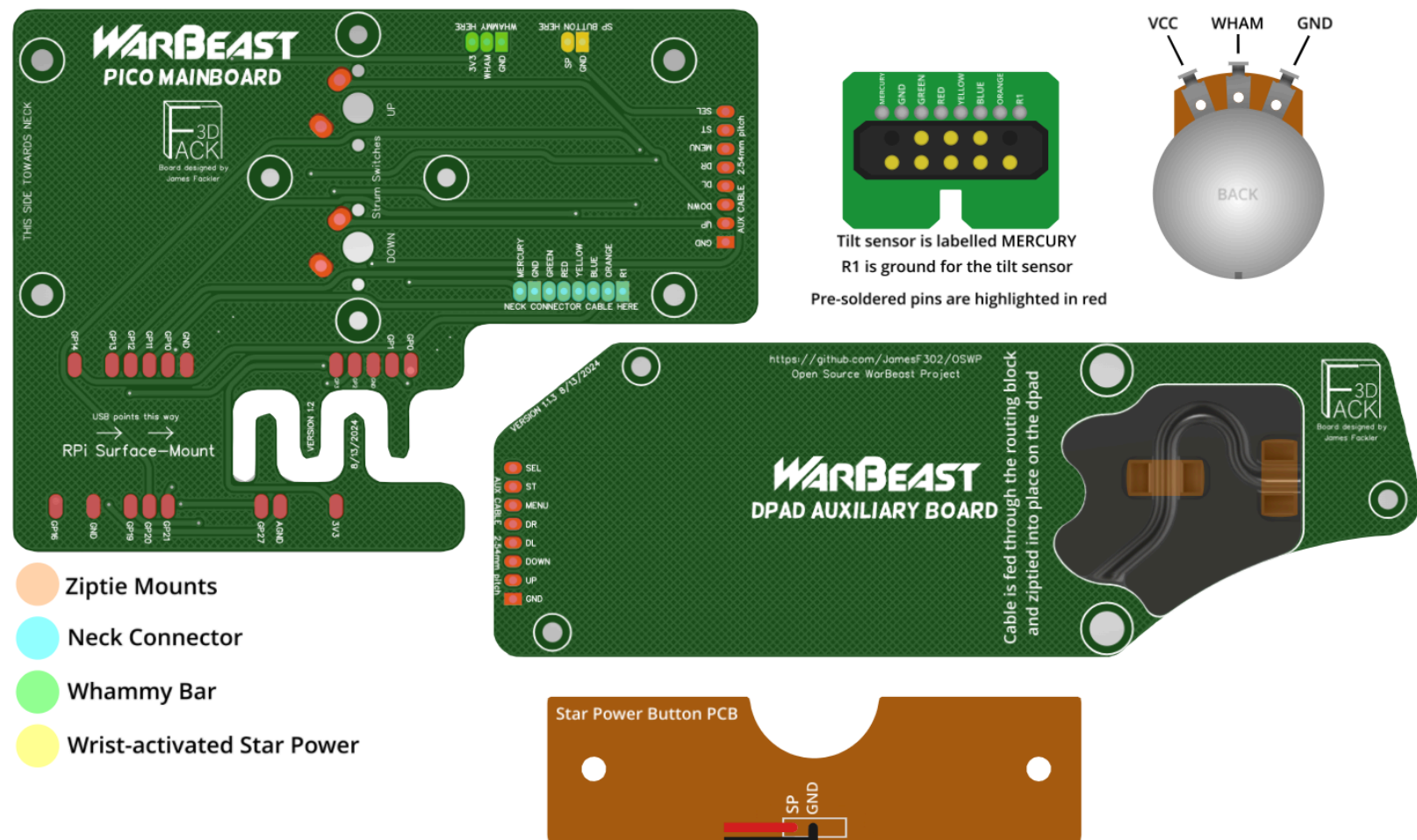
- **Basic soldering skills**
- **Soldering iron**
- **Wire strippers**
- **T-10 Torx** for body screws and **PH1 Phillips** for internal screws (MININEKK also uses T-10 Torx)

There are two different revisions of this controller. The first revision has ALPS strum switches with a pogo pin style neck connector. Revision 2 has micro-switches for strum, and a cartridge neck connector. If you are planning on reusing your original strumbar,

Revision 2 will not fit due to the difference in height needed for the micro-switches.

Revision 2 also contains a spring to keep the strumbar centered, which can be discarded as it's no longer needed for the new switches.

PT1: WIRING DIAGRAM & DOCUMENTATION



The whammy potentiometer only uses two wires originally, so you will need to find a third one to correctly wire the potentiometer. You can either use leftover wire from the battery compartment, or your own wire for this. If you have revision 2, the neck connector will look much different, however the pinout is identical. You can read the pinout by looking where the neck wires meet the mainboard. Be aware that you may need to peel away any glue covering that area in order to find them. I would also suggest marking one side of the ribbon cable with a sharpie at the end, to prevent accidentally soldering the ribbon cable backwards.

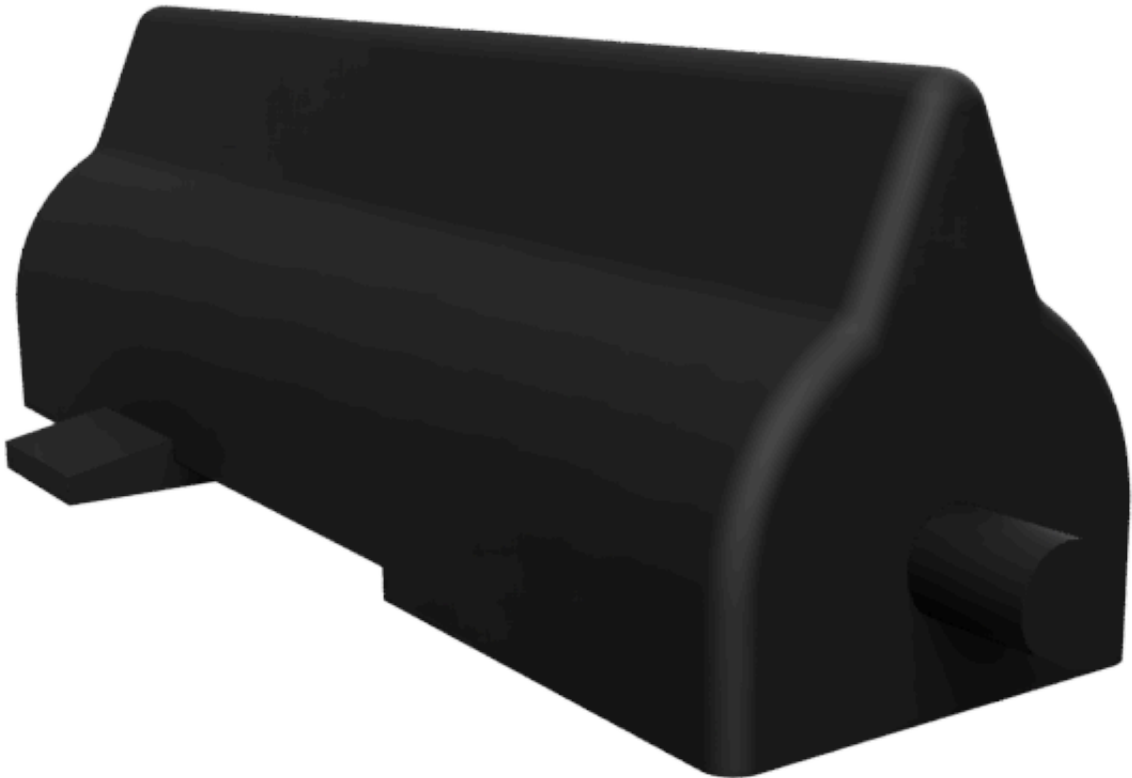
IMPORTANT:

If you are hardwiring the original neck, you may need to reverse the connection at your splices. I would suggest probing the connections with a multimeter before soldering.

PT2: INSTALLING THE STRUMBAR

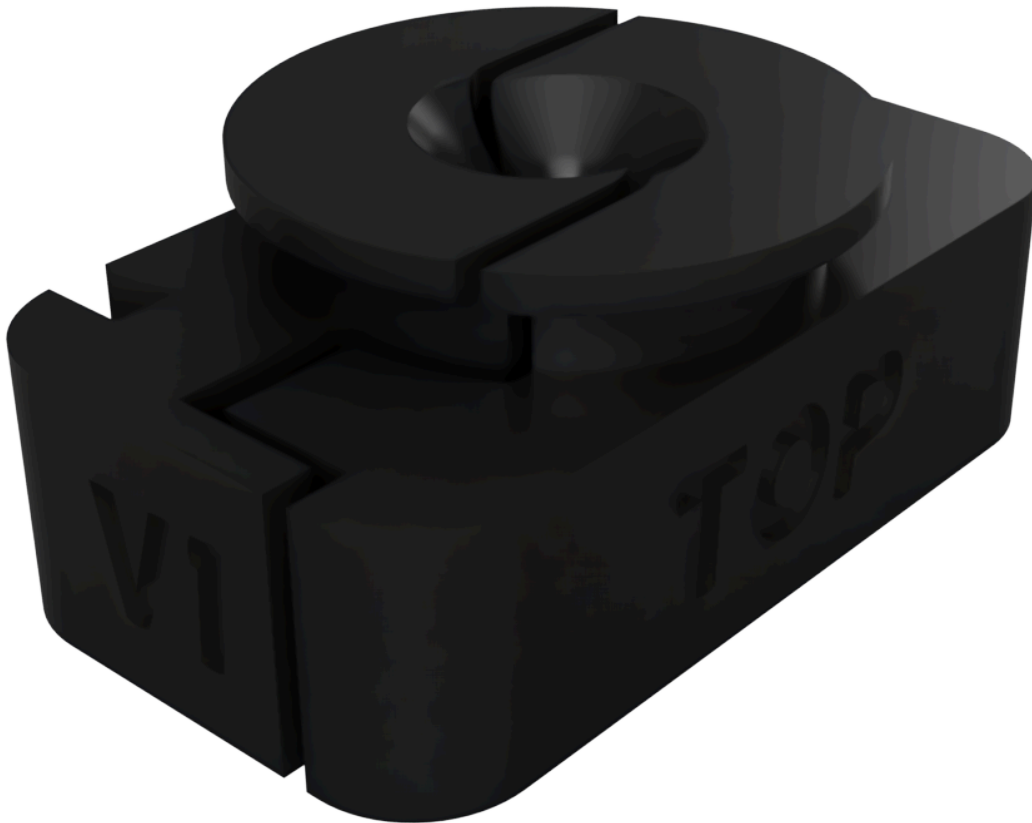
If you are using the replacement strumbar included in your kit, be it your strumboard has microswitches or you just don't like the stock one, installation will be a breeze.

Simply remove your old strumbar and the bushings, fit the bushings on your new strumbar, and insert your new strumbar into place. (Please lube or grease the pins before fitting the bushings!) If the bushings don't rotate smoothly, you may have to sand or file a bit off of the underside of the pins. The new strumbar is designed to fit perfectly without extra modification, but this may not always be the case. **If the strumbar does not fully reach the switches**, file off a small amount on the top surface of the side brackets in between the strumbar and the mainboard until the switches contact. This will move the mainboard closer to the strumbar, and close the gap.



PT3: USB CABLE GROMMET

The two extra pieces in your kit is a grommet for the USB cable to exit the body through. The two pieces, labeled “TOP” and “BOTTOM” lock together and form a single piece once you insert the cable through. First, take the sync button and its housing out of the guitar. The bottom piece (with the two notches) slides into the front half of the shell in place of the original sync button location. The cable is now fed through the center hole in the bottom part, and the other half is snapped into place on top of the first half with the cable inside. This piece is merely for aesthetics, so you don't have a gaping hole in the bottom of your guitar. Please note that if you use a different USB cable than the one supplied it may not fit correctly, so please measure beforehand. (Roughly 3.2mm in diameter)



PT4: MININEKK GH-STYLE NECK

If you bought the add-on Guitar Hero-style neck attachment, installation is just as simple as the stock neck, if not easier. The neck will come in three pieces. Headstock, mid-section, and bottom section. Remove the three screws from the headstock, and screw it on top of the mid-section. To route the neck wires through the bottom section, slide the back cover off to reveal the screws for the back panel, unscrew & remove. Without pinching any wires, route them through the bottom section, and screw the back panel on. Once that's done, slightly unscrew the bottom-most screw on the mid-section. You can now remove the screws on the bottom sides of the mid-section, slide the bottom-section in, and screw them back into place. Lastly, tighten back the bottom-most screw on the mid-section. You are now able to slide the neck into position.

Neck wire diagram is as follows:

- G: Green wire
- R: Red wire
- Y: Yellow wire
- B: Blue wire
- O: White wire
- GND: Black wire



PT5: PROGRAMMING YOUR GUITAR

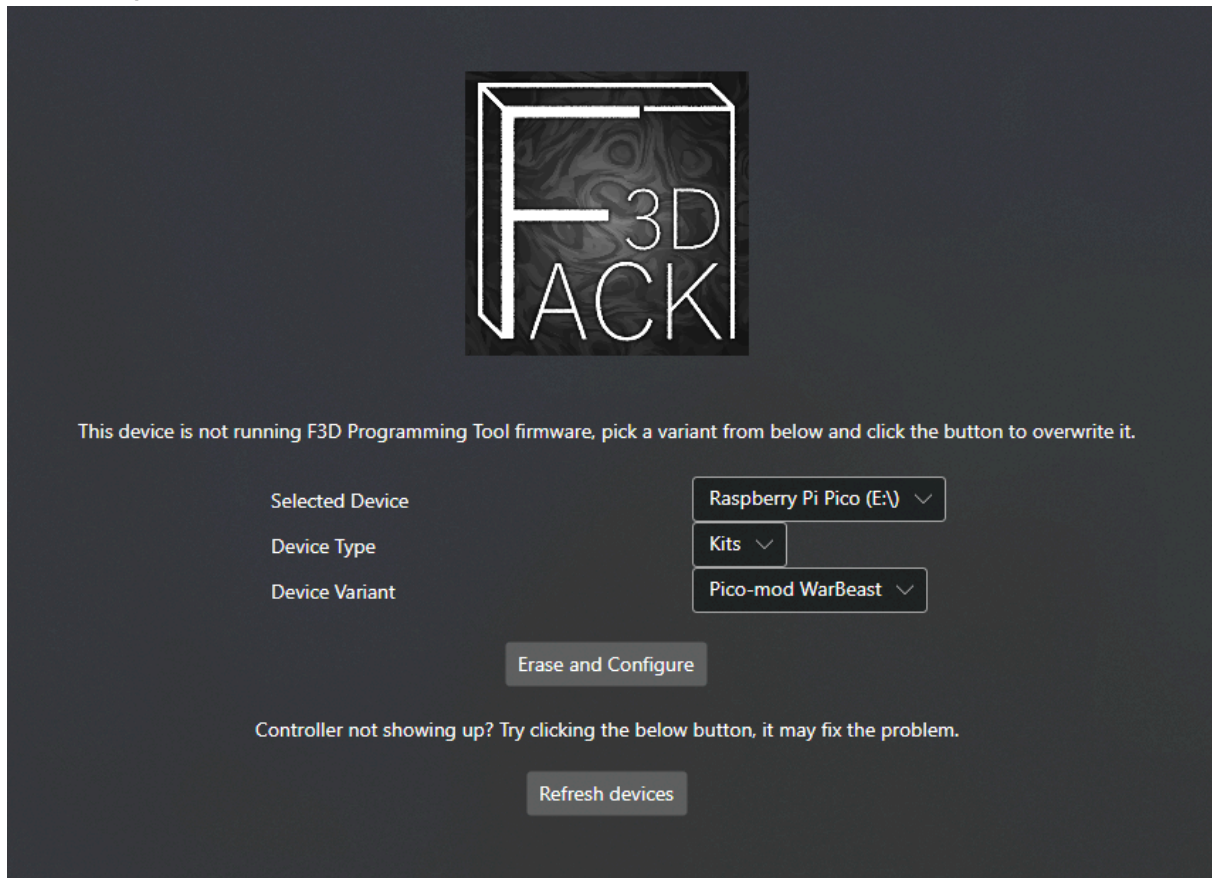
Once everything is installed properly, it's time to install Santroller onto your guitar.

Download and run the Fack3D Guitar Programming Tool linked below.

[Fack3D Guitar Programming Tool for Windows, Mac, & Linux](#)

(PDF must be downloaded in order to click hyperlinks)

Once you've opened the configurator and plugged your guitar in, you will be met with a window that looks like this.



Make sure the selected device is “Raspberry Pi Pico”.

You may see more than one device type or variant. Please be sure that your device type is set to “**Kits**” and your variant is set to “**Warbeast**”. If anything else is selected, the guitar will not work. Once everything looks like the picture above, hit “Erase and Configure”. When it's finished writing, click “Configure”, open the whammy drop-down menu, and click calibrate. The tool will walk you through calibration.

PT6: TESTING YOUR GUITAR

After everything has been correctly set up and calibrated, click “Save Settings” and let it write your new calibration. After that, you are now able to test the guitar in your five-fret game of choice. If everything works as it’s supposed to, congratulations, you’re all done!

If you are using the original neck and are experiencing fret dropping/flicker, I would suggest folding up a small piece of paper and wedging it into the neck slot as you’re inserting the neck. I’ve found that since the neck is so long it tends to wiggle a bit, so this may fix that issue if it’s happening to you. You can also hardwire the neck if you don’t care about keeping it detachable. This is most likely to happen with revision 1, which has the pogo pin neck connector.

Please contact me if you have any problems with your kit. Thank you, and enjoy your new and improved WarBeast!