



# 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

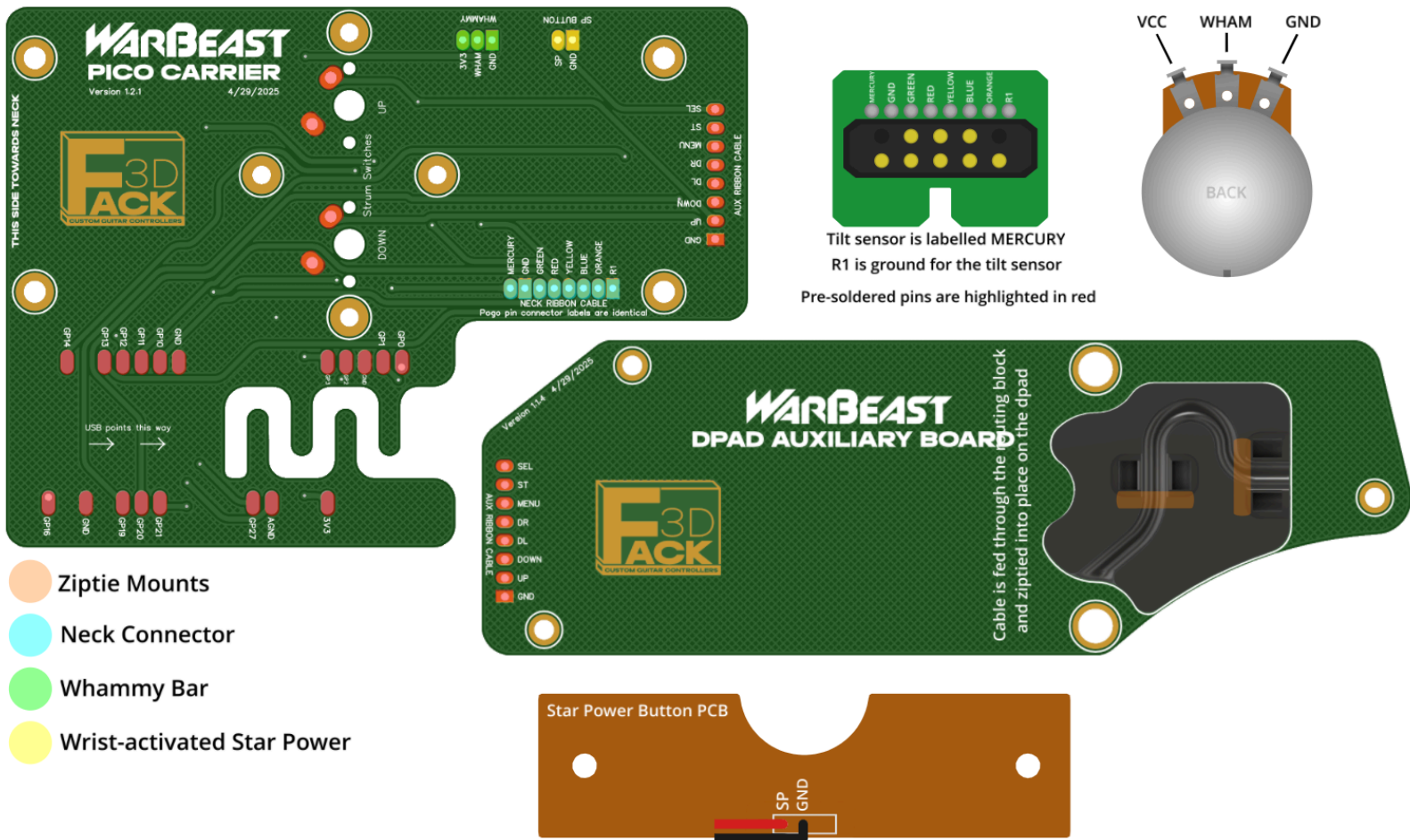
- **Mainboard assembly** with pre-installed pico and strum switches
- **D-pad start/select board assembly**
- **20cm 8-pin JST cable** (Connects the mainboard & d-pad together)
- **3D printed replacement strumbar**
- **10ft braided micro USB cable**
- **Two-piece 3D printed cable grommet** (Replaces sync button housing)
- **Cable ties** for routing the USB cable/tidying excess wires
- **MININEKK Guitar Hero-style neck** (NOT YET RELEASED)

## 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.

# Part 1: 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 them together.

## Part 2: Installing the Strumbar

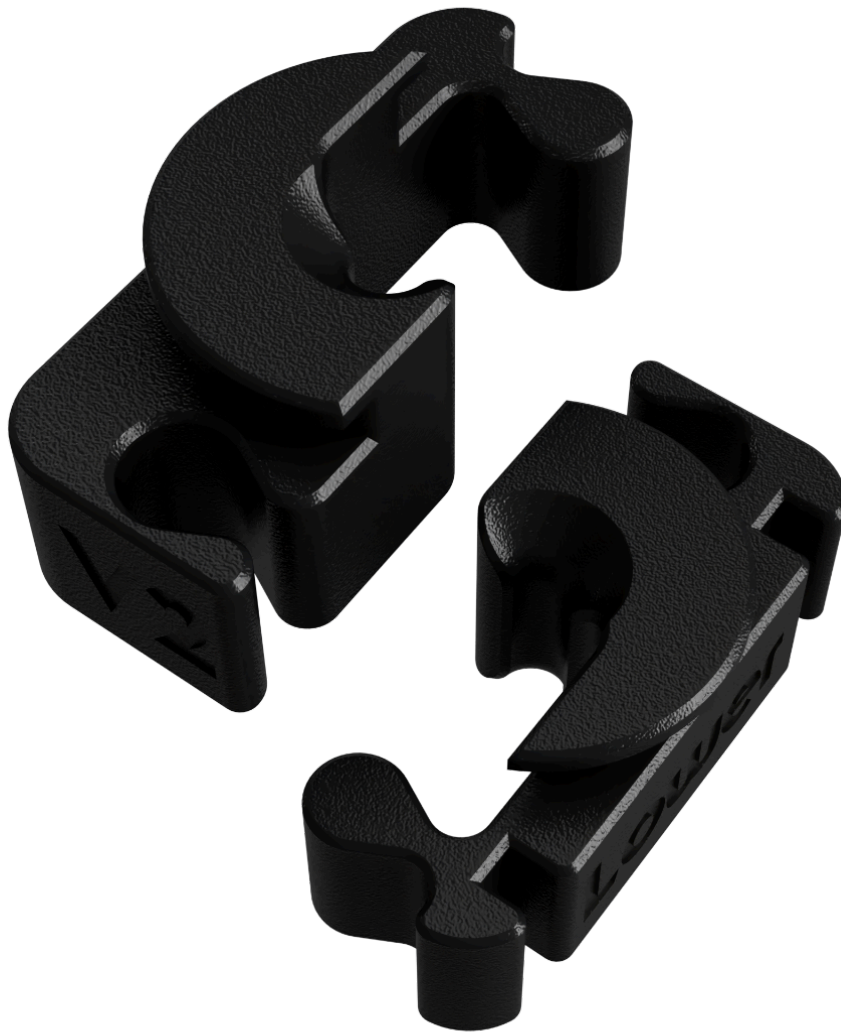
If you are using the replacement strumbar included in your kit, be it your strumboard has microswitches or you just don't like the stock one, installation will be a breeze.

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 final fitting of 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.



## Part 3: USB Cable Grommet

The two odd shaped pieces in your kit are a grommet for the USB cable to exit the body through. The two pieces, labeled **“Upper”** and **“Lower”** fit together like a puzzle with the cable in the center hole. First, take the sync button and its housing out of the guitar. Lay the cable inside of the center hole on the lower piece, and slide the upper piece into place from either the back or front. Make sure the circular side is facing away from the micro USB end of the cable. Lastly, fit the interlocked pieces lower-side down into the front shell of the body. The lower side has two notches, so it can only fit one way.



## Part 4: 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 lower extension. Remove the three screws from the headstock, and screw it on top of the mid-section. To route the neck wires through the lower extension, slide the rear outer cover upward to reveal the screws holding the channel cover on. Remove those screws, and pull the cover off. Without pinching any wires, route them through the extension, and screw the cover back on. Once that's done, slightly loosen the bottom-most screw on the mid-section. You can now remove the screws on the bottom sides of the mid-section, slide the lower extension in, and tighten them back into place. Lastly, tighten back the bottom-most screw on the mid-section, and slide the outer cover back on. You are now able to attach the neck.

**G:** Green wire

**R:** Red wire

**Y:** Yellow wire

**B:** Blue wire

**O:** White wire

**GND:** Black wire

Please note that you will no longer have tilt function with this neck installed, since the original neck has the sensor.





# Part 5: Programming Your Guitar

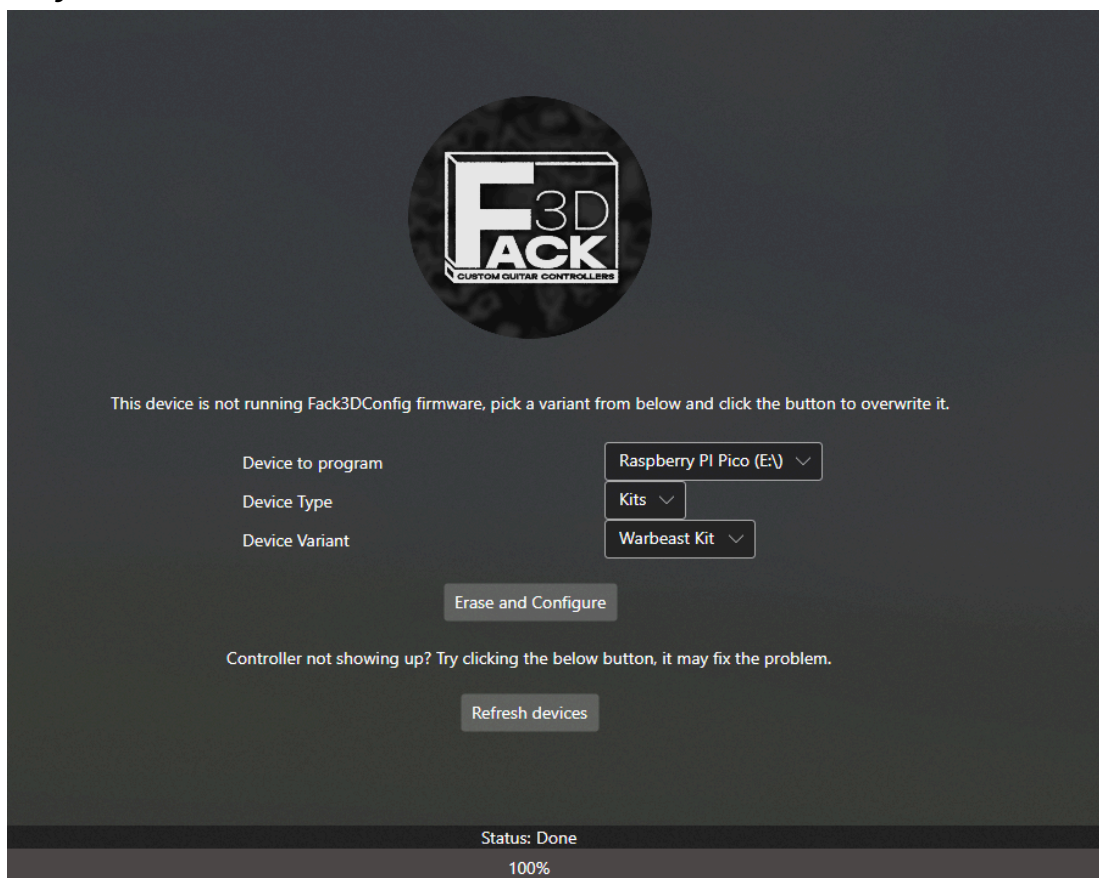
Once everything is installed properly, it's time to install Santroller onto your guitar.

Download and run my own seller tool, Fack3DConfig, linked below.

[Newest Version of Fack3DConfig - Win/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 device variant is set to **“Warbeast Kit”**. If anything else is selected, the guitar will not work or you may even damage something. 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.

## Part 6: 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!