



# Adafruit Pi Box Plus

Created by Phillip Burgess



<https://learn.adafruit.com/adafruit-pi-box-plus>

Last updated on 2023-08-29 02:35:29 PM EDT

# Table of Contents

## Assembly Instructions

---

3

- Preparation
- Parts List
- Assembly
- Opening the Lid...
- If Using a GPIO Ribbon Cable...

---

# Assembly Instructions



Keep your Raspberry Pi® Model B+ computer safe and sound in this lovely clear acrylic enclosure. We designed this case to be beautiful, easy to assemble and perfect for any use (but especially for those who want to tinker!) This enclosure is not compatible with the original “classic” Raspberry Pi Model A or B — [we have a different case for those](#) (). Nor will it fit the Pi 4 — but there are many good [Pi 4 case options](#) () now.

This case is for the Raspberry Pi Model B+, 2 or 3 only.

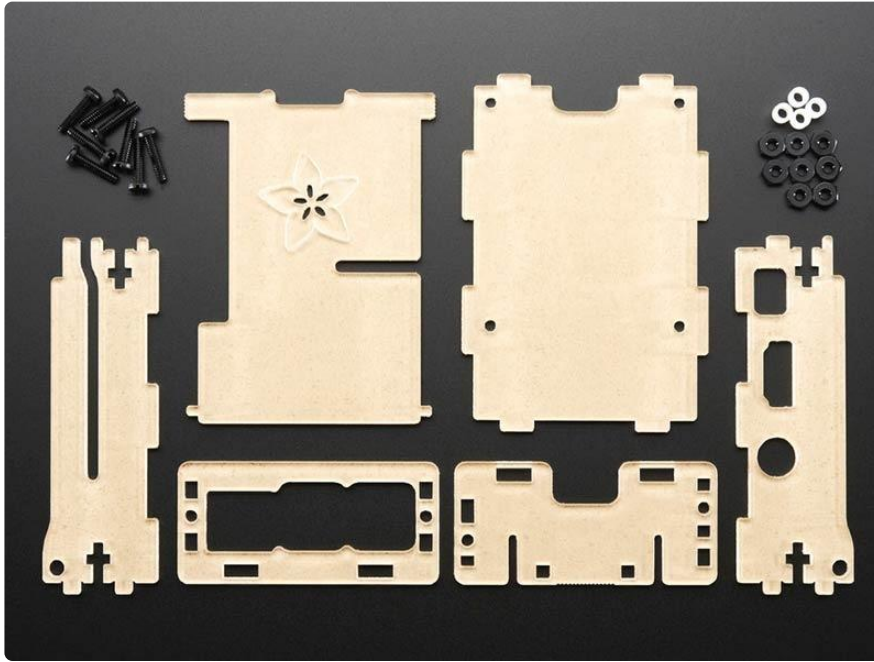
Made of crystal-clear acrylic, this case keeps the Pi secure, has a hinged top for connector access, and even has little feet cut into the sides so that it stands up above your desk. You can use all of the connectors on the edges of the Pi: HDMI, Audio/Video, microSD slot, micro USB power, Ethernet and the 4 USB ports. There's also a cut out to allow a 40-pin IDC cable to the GPIO breakout pins on the Pi and pass it through the case. For more advanced hacking, the enclosure is designed so that you can lift or remove the top piece and plug any sort of cables you wish into the breakouts in the middle. The case is airy enough that no additional vents or cooling is required.

## Preparation

## Parts List

The kit includes the following items:

- Six (6) laser-cut acrylic pieces.
- Eight (8) 1/2" #4-40 nylon machine screws.
- Eight (8) 4-40 nylon nuts.
- Four (4) 1/8" nylon spacers.

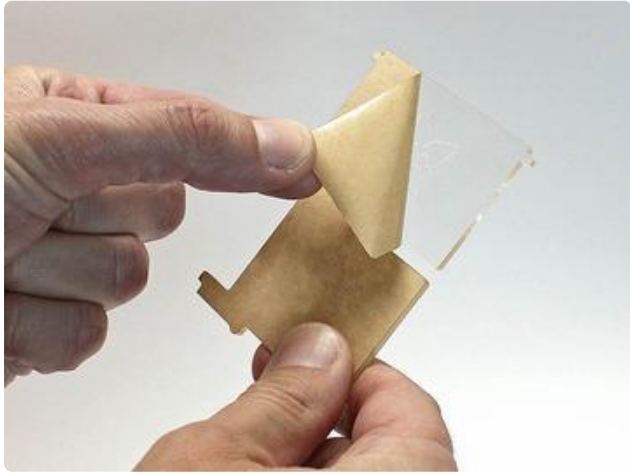


Not included with the kit, you will also need:

Raspberry Pi Model B+ computer.

Small screwdriver.

Optional: tape.



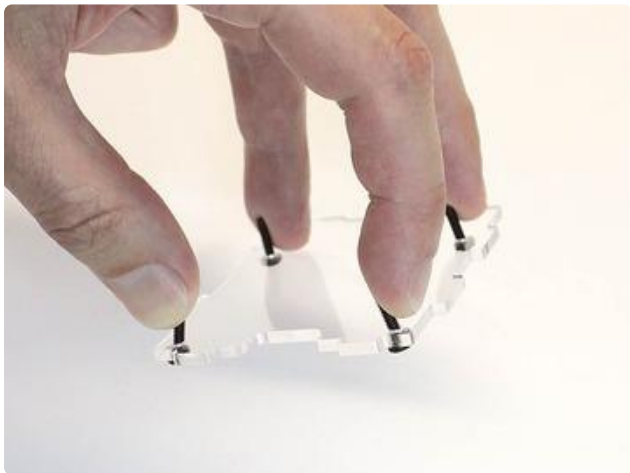
Begin by peeling the backing paper off all the laser-cut parts. It's easiest to start at a corner, catching the edge of the paper with a fingernail

The laser-cutting process sometimes leaves a little paper soot at the edges. If you like, you can wash the parts with soap and water, just be absolutely certain that all the parts are completely dry before proceeding!

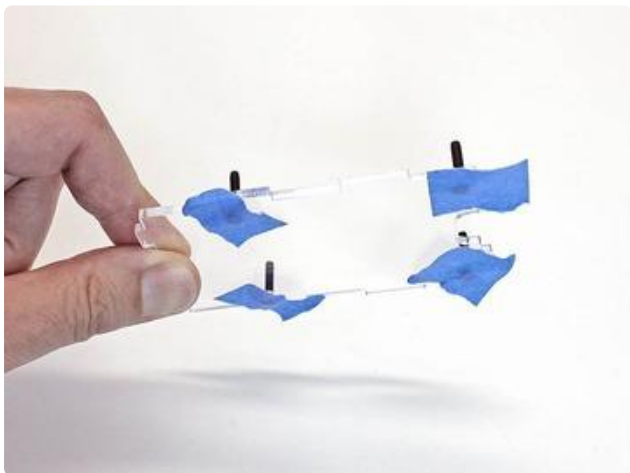
## Assembly

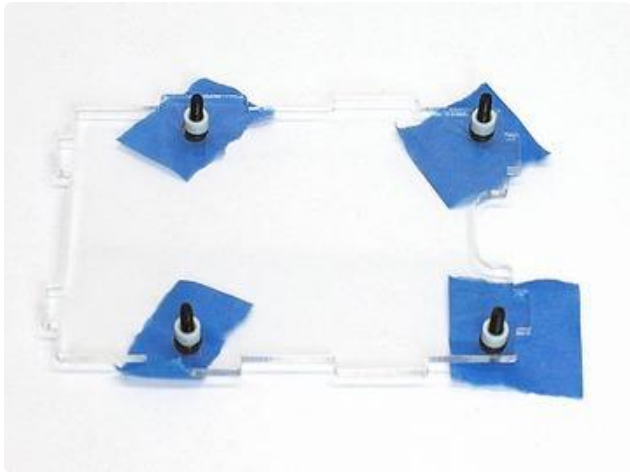
Start with the bottom. It's the largest piece, with four screw holes. There's no front or back face; it's symmetrical and can be flipped either way.

Insert a nylon screw into each of the four holes.



The base needs to be flipped over and set on the work surface with the screws pointing up. This can be done by holding all four screws while turning it over...or, if that's a dexterity challenge, just use a little tape on the head of each screw; we'll peel it off later.





Place a nylon spacer over each of the four screws.



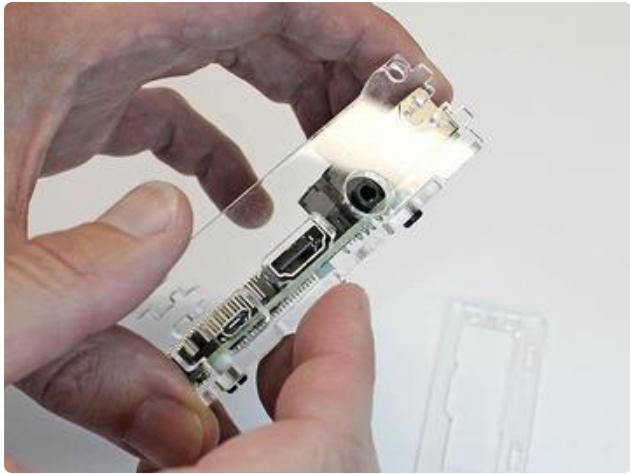
Line up the Raspberry Pi board over the four screws and lower it into place.

Add a nylon nut to each screw and give it a few turns with your finger, just enough to keep it in place. It's okay if they won't twist all the way down — this is normal, other parts on the board interfere with the fit.



Pick up the board (the screws should now be loosely held with nuts) and peel away the tape if you used it.

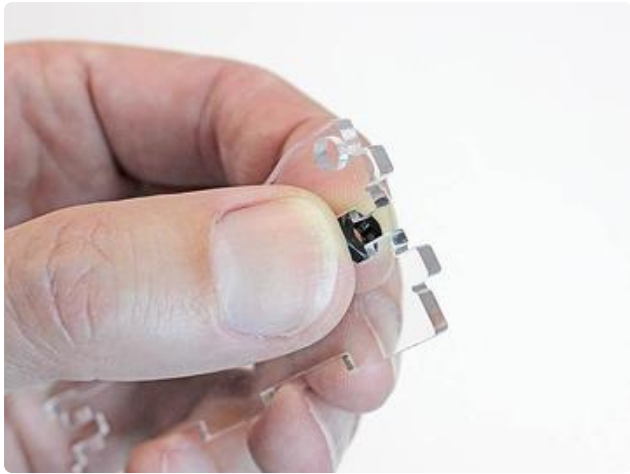
Now you can press each nut down against the board (making the screw heads protrude from below). You'll find each nut has a certain position where it can fit flush against the board without interference from nearby parts. As you find this placement for each nut, gently tighten the corresponding screw with a small screwdriver.



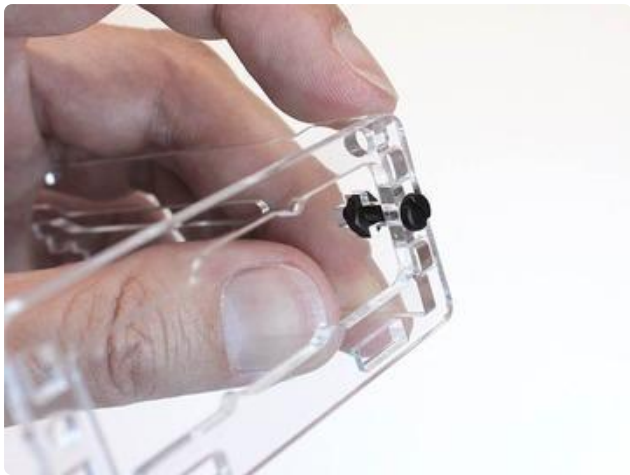
Examine the four side pieces. Unlike the base, these are not symmetrical and each one has a specific location and inside/ outside faces. Some have cutouts to fit around the ports, or lock against other pieces a specific way.



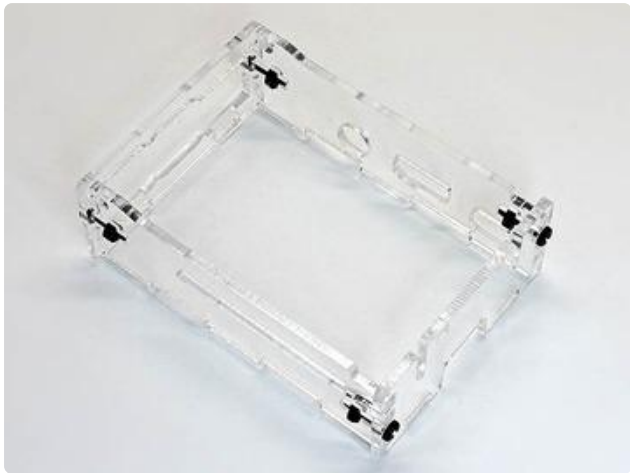
As you sort out this little jigsaw puzzle, arrange the pieces on the table so you can keep track of the positions where each fits.



Pick up one of the two longer side pieces. These have a t-shaped slot at each end. Insert a nut into the cross part of the T. You can either pinch it in place as shown here, or hold from the side with a bit of tape.

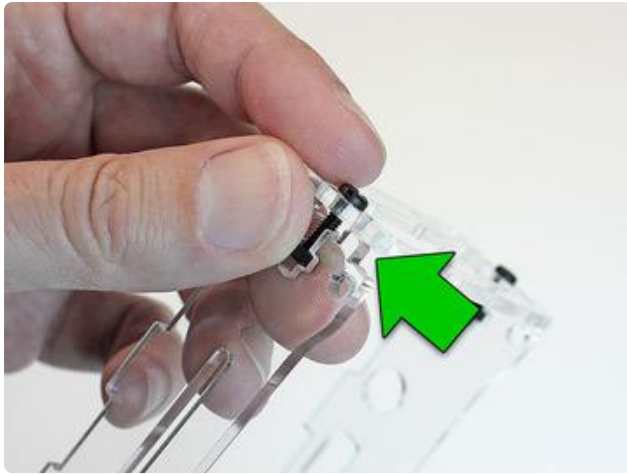


Mate this side with the corresponding end piece (tabs and slots should fit together) and feed in a screw to join up with the nut.



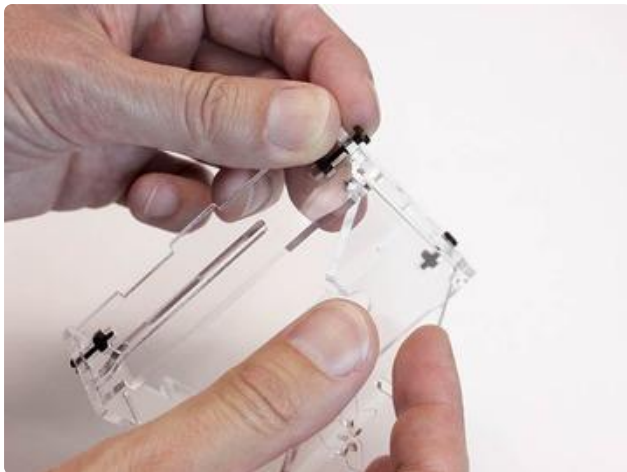
Repeat with all four screws and sides.





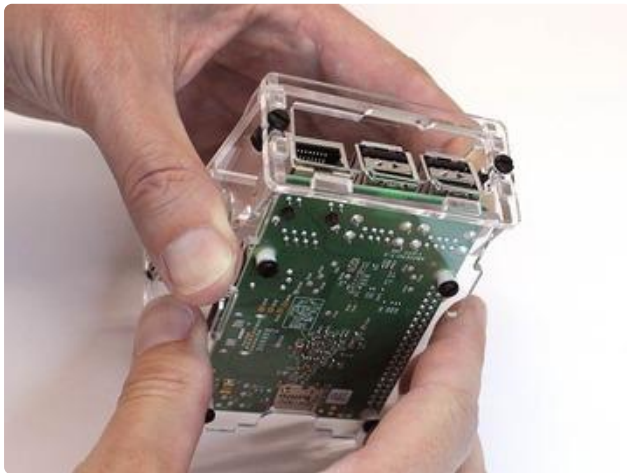
The last piece remaining is the lid. This has small bumps at one end that act as pivot points...these meet up with holes in the sides of the case.

To make this fit, you need to loosen one of the screws at the pivot end of the case. Turn the screw just enough that the tabs come free of the slots and you can turn this piece outward slightly, then the “lid bumps” can pop into place.



Make sure to line up the camera and GPIO cutouts on the lid with the locations on the Pi board; you may need to flip it over.

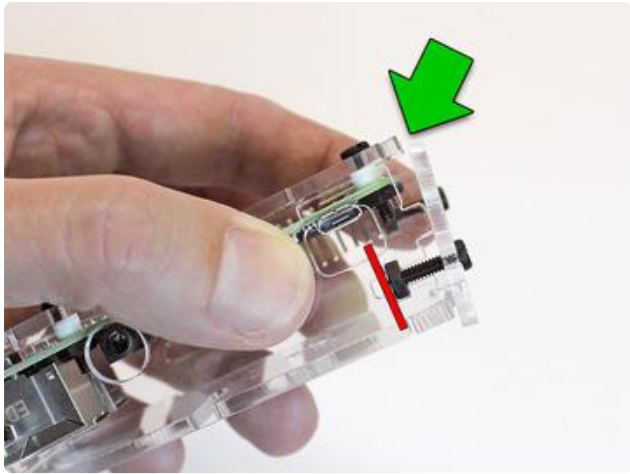
If you need frequent access to the board, you can also leave the lid piece off altogether.



Now slide the bottom (with Pi attached) up into the case, aligning the USB and Ethernet ports. Rock it a little bit to get the HDMI and A/V ports into their cutouts.

The base will pivot mostly, but not entirely, into place.

(If the USB & Ethernet ports don't fit in the end cutouts, you'll need to remove those two screws and flip the end piece over.)



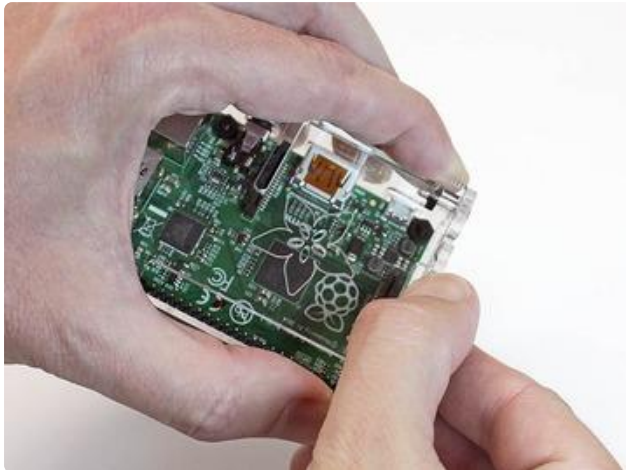
At the opposite end of the board (with the SD card slot), loosen both screws slightly, so the nut is flush with the tip of the screw.

You can then tip the end piece out slightly, drop the bottom into place, and re-tighten the end screws.



Taa-daah! Raspberry Pi, encased.

## Opening the Lid...

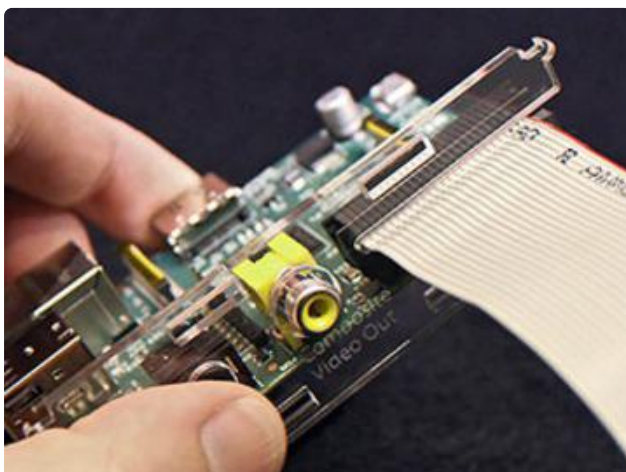


The large cutout on top lets you access the GPIO pins with jumper wires. If you need more access to the board (such as when adding a camera), the lid can be flipped back.



This relies on the slight flexibility of the plastic parts. There's a "grippy edge" above the SD card slot. Gently push this outward with your thumb while lifting the lid with your other hand, and it should pivot open. Push this piece also when closing the lid.

## If Using a GPIO Ribbon Cable...



If you're using a ribbon cable or Pi Cobbler, you need to connect that to the board first and then assemble the sides around it (rather than assembling the sides and popping in the board from below). It's a little more challenging but the T-slot-and-screw principle is the same.

(This photo shows the original Pi and case. Cable for the B+ hasn't arrived yet, but the idea is the same.)