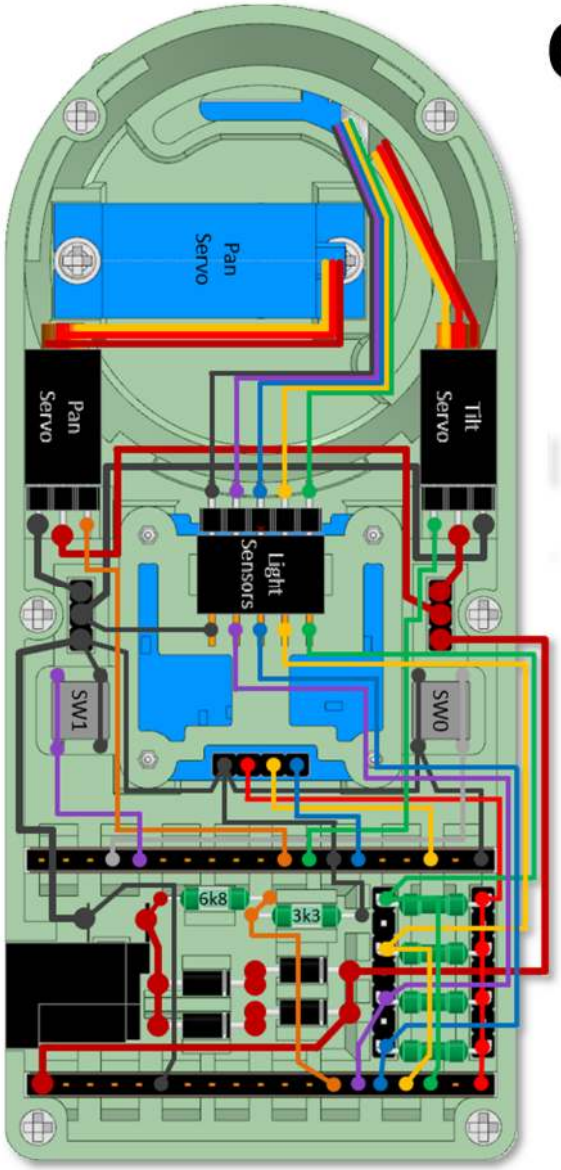
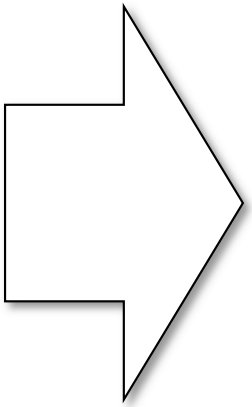
Project LightBot

Circuits & Wiring





Hand Tools:

Recommended:

- Fine Nosed Pliers
- Side Cutters
- 1.5 mm Drill
- 2.0 mm Drill
- 4.0 mm Drill
- Needle Files
- Screwdrivers
- Craft Knife

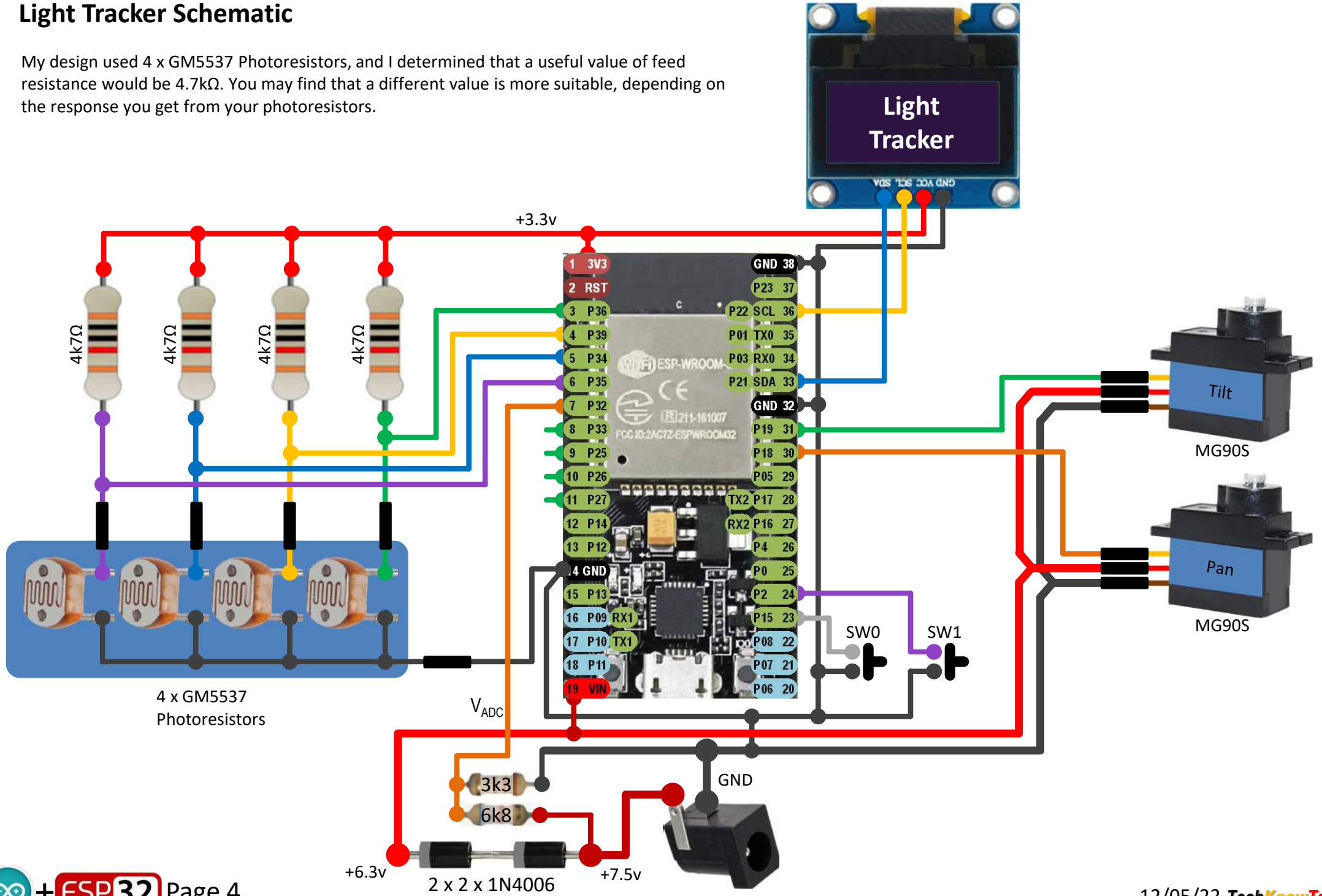
Note: Not all items needed are shown here.

Tools & Materials:

Temperature controlled iron
Solder flux
Resin cored solder
Hot melt glue gun
2-part epoxy resin glue
Screw drivers
Wire wrapping tool
Wire wrapping wire 30 AWG
24 AWG stranded wire (red & black)

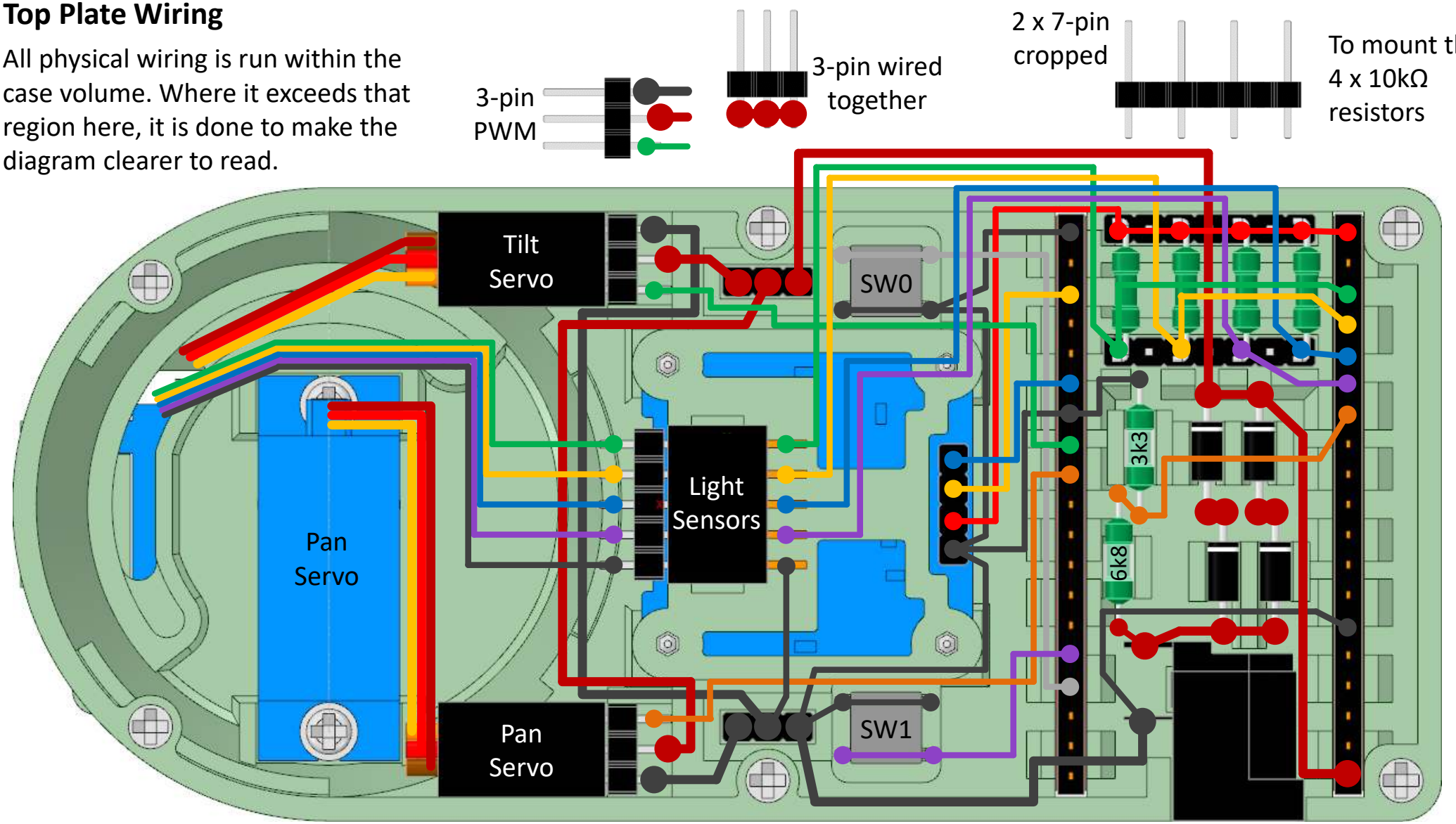
Light Tracker Schematic

My design used 4 x GM5537 Photoresistors, and I determined that a useful value of feed resistance would be 4.7kΩ. You may find that a different value is more suitable, depending on the response you get from your photoresistors.

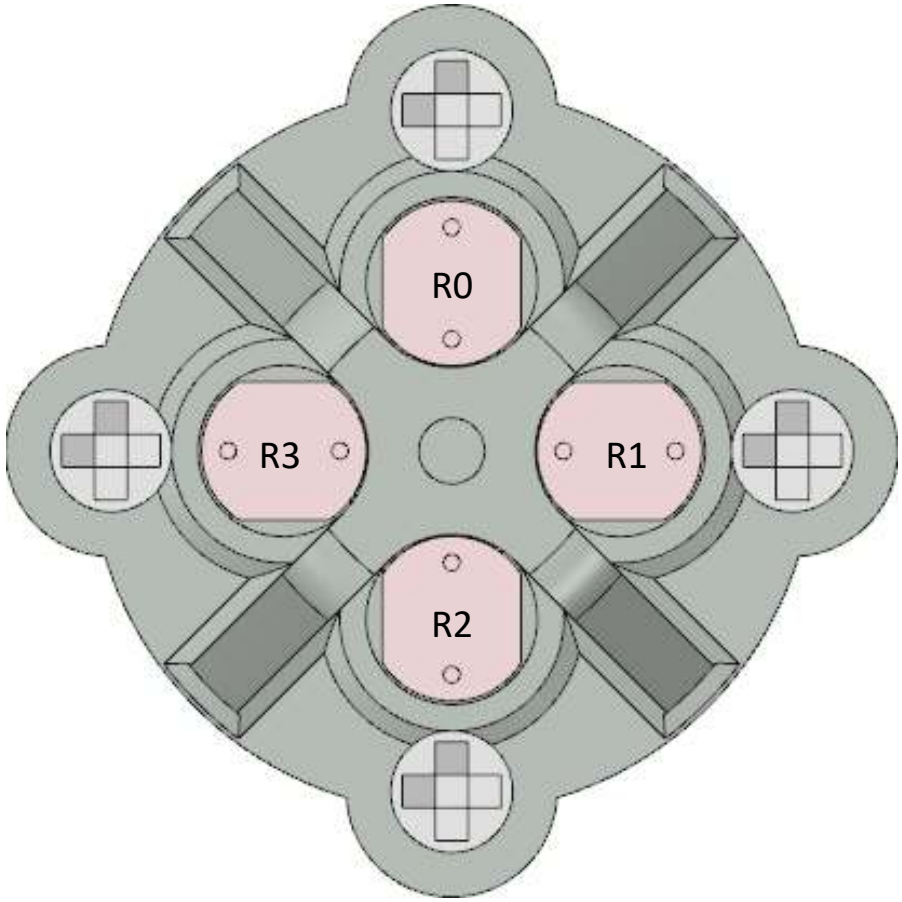


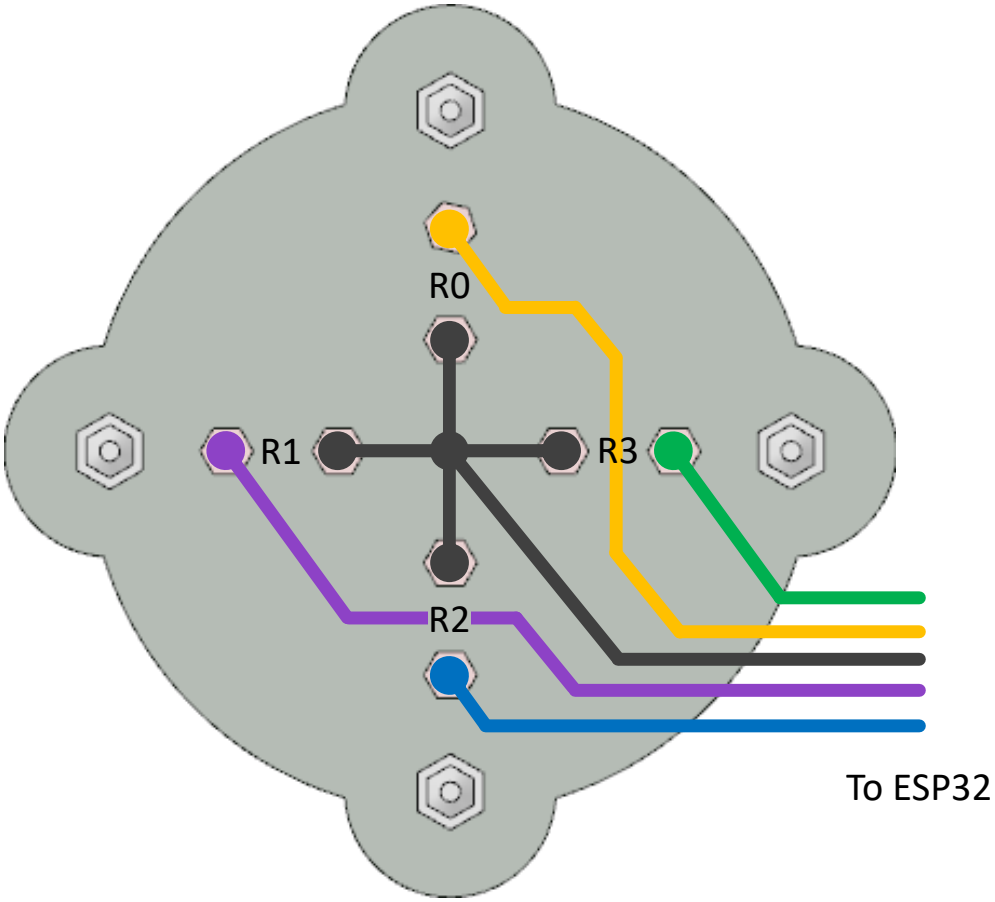
Top Plate Wiring

All physical wiring is run within the case volume. Where it exceeds that region here, it is done to make the diagram clearer to read.

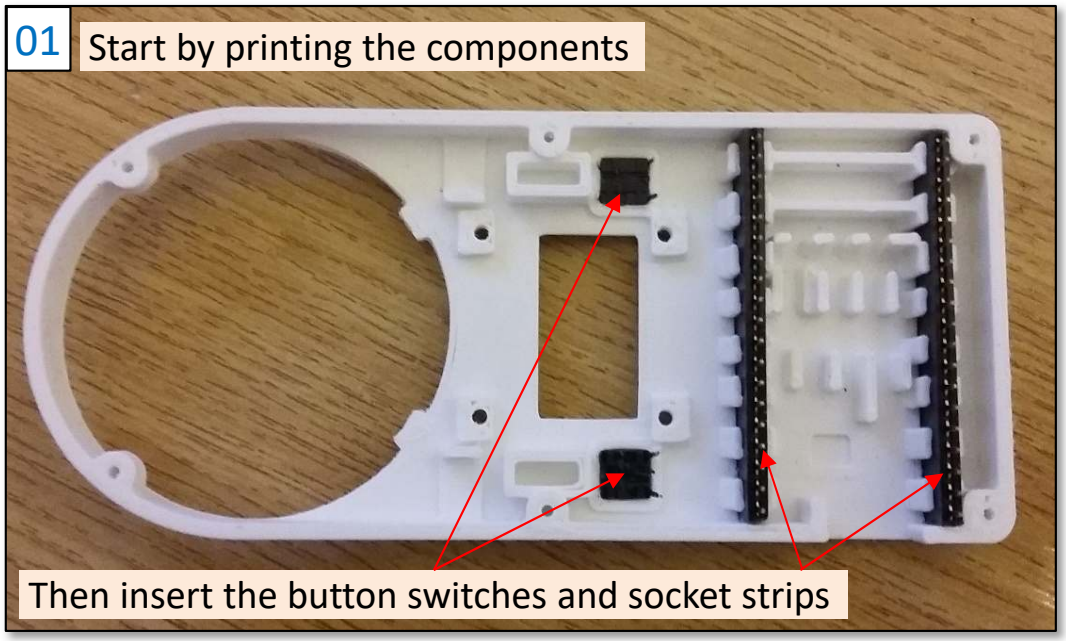


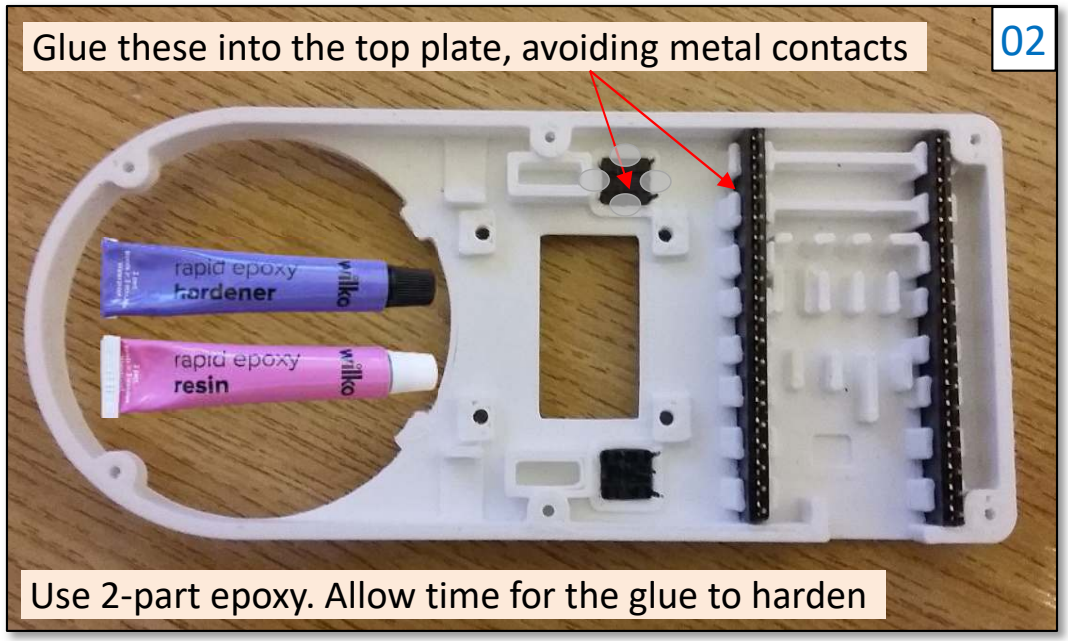
Sensor Wiring

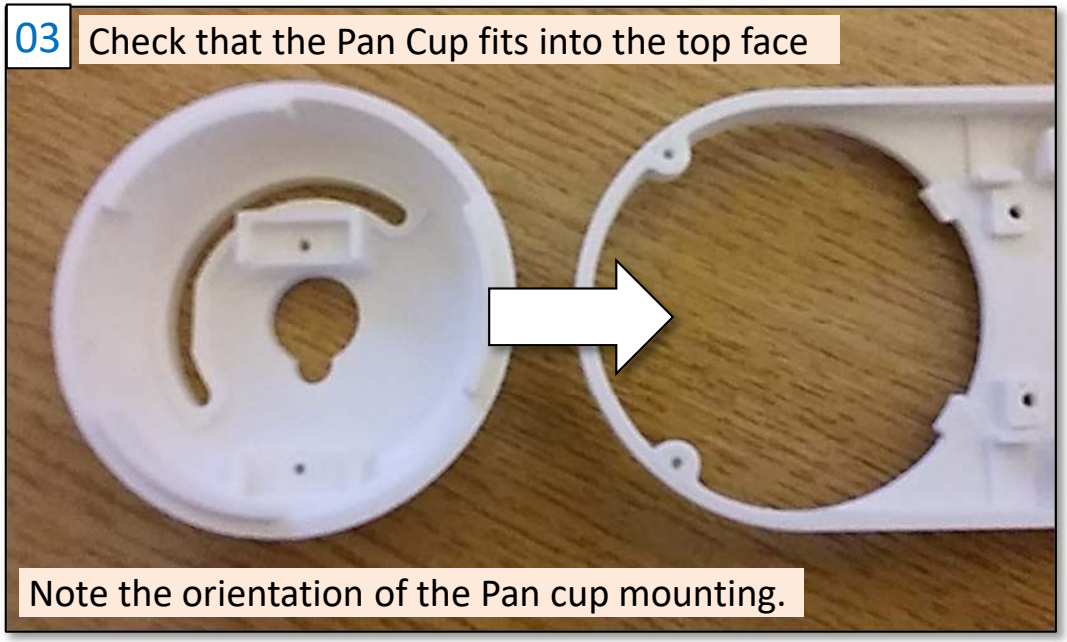


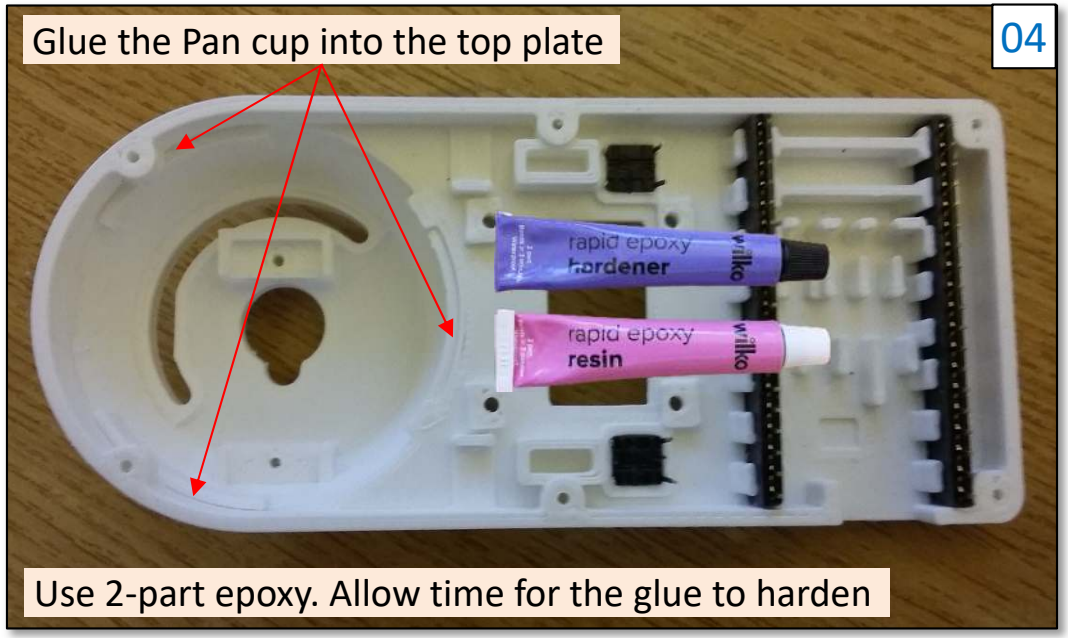


Build Sequence



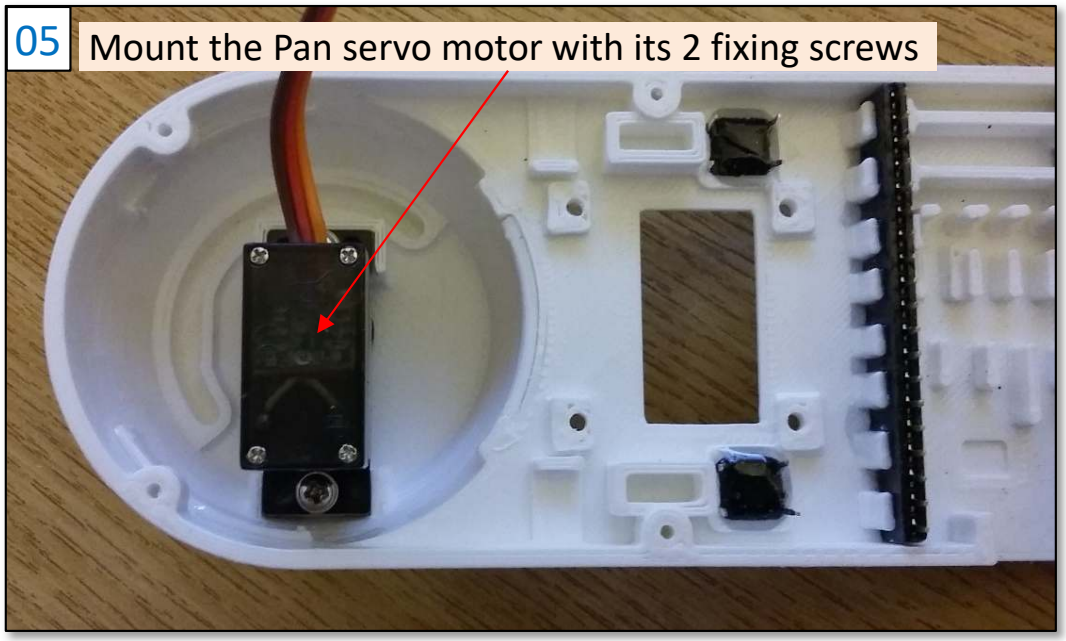




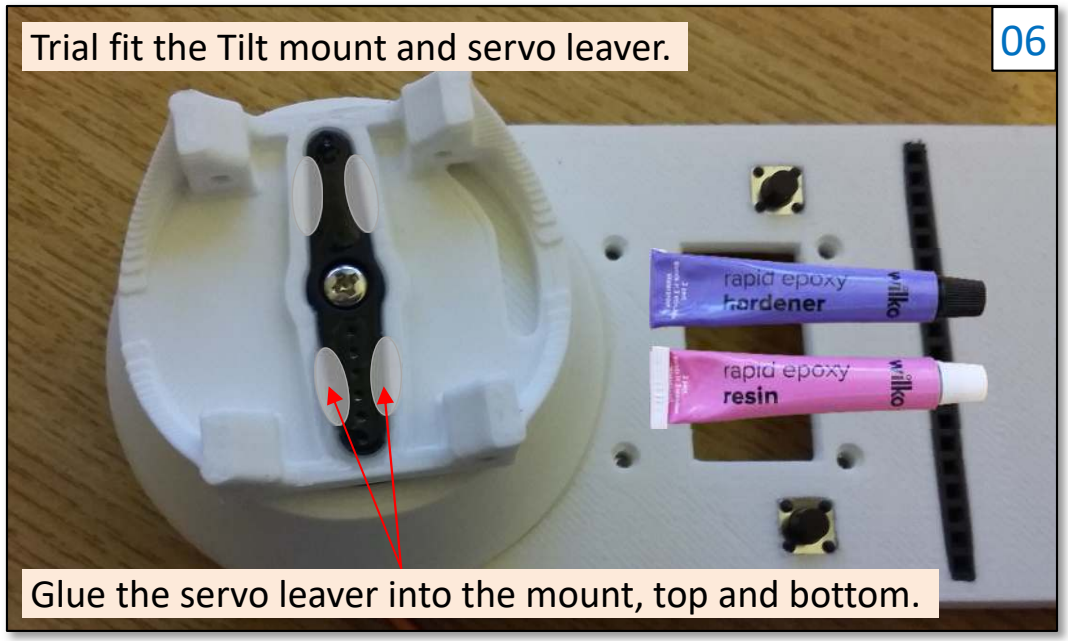


Wiring Sequence

05 Mount the Pan servo motor with its 2 fixing screws

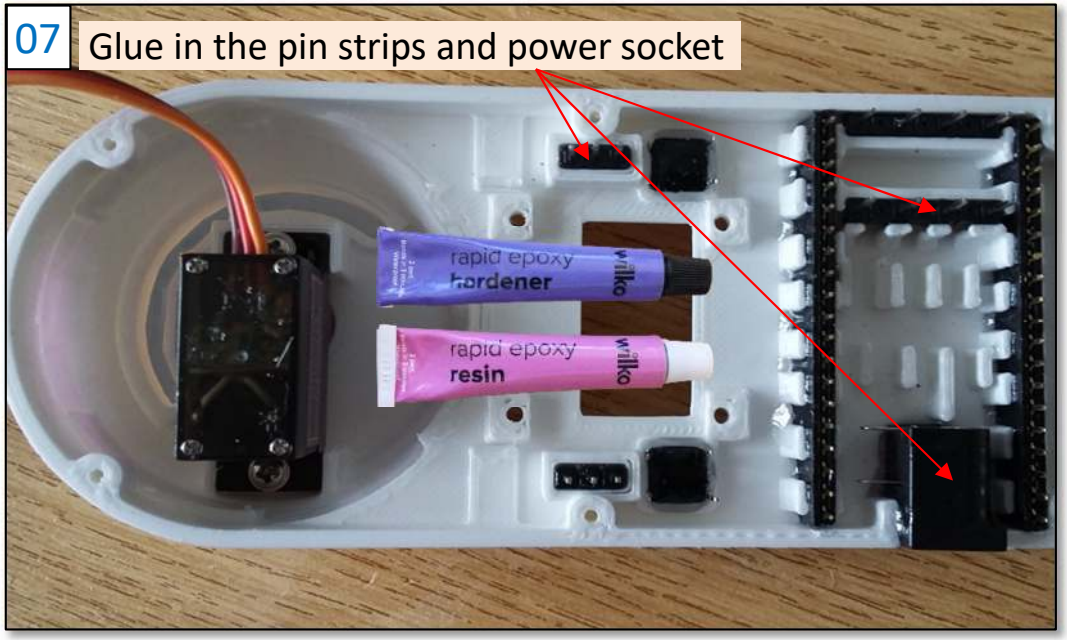


06 Trial fit the Tilt mount and servo leaver.

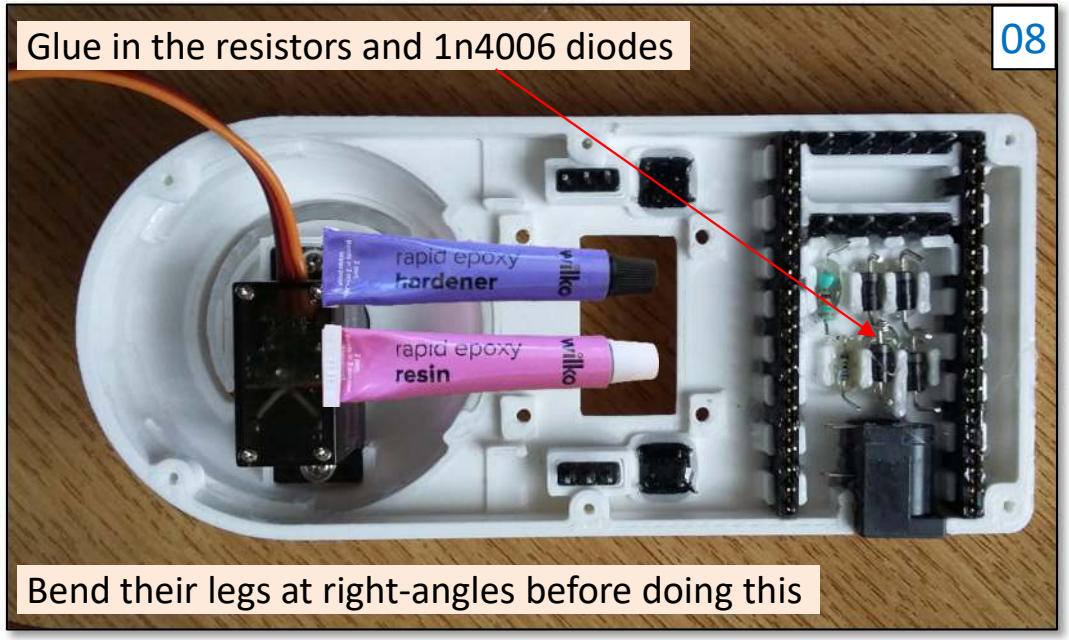


Glue the servo leaver into the mount, top and bottom.

07 Glue in the pin strips and power socket



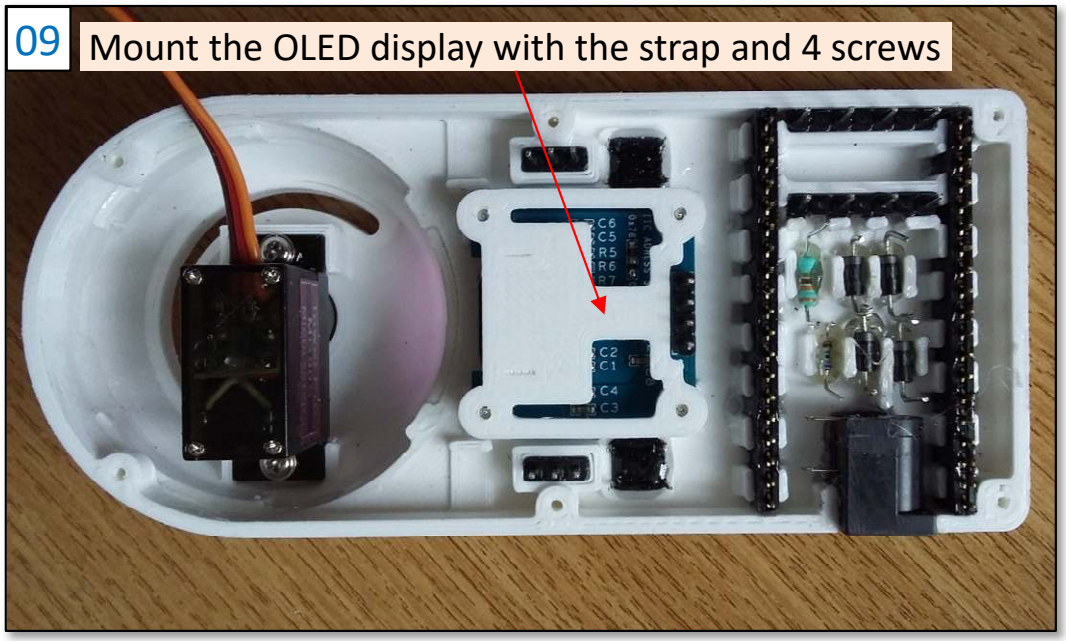
08 Glue in the resistors and 1n4006 diodes



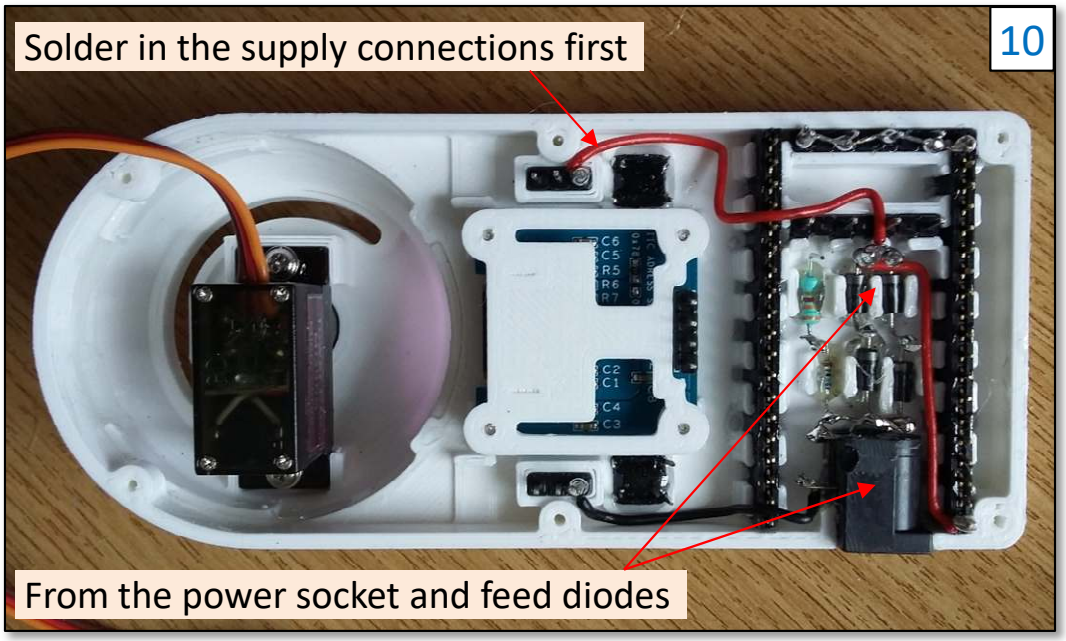
Bend their legs at right-angles before doing this

Wiring Sequence

09 Mount the OLED display with the strap and 4 screws

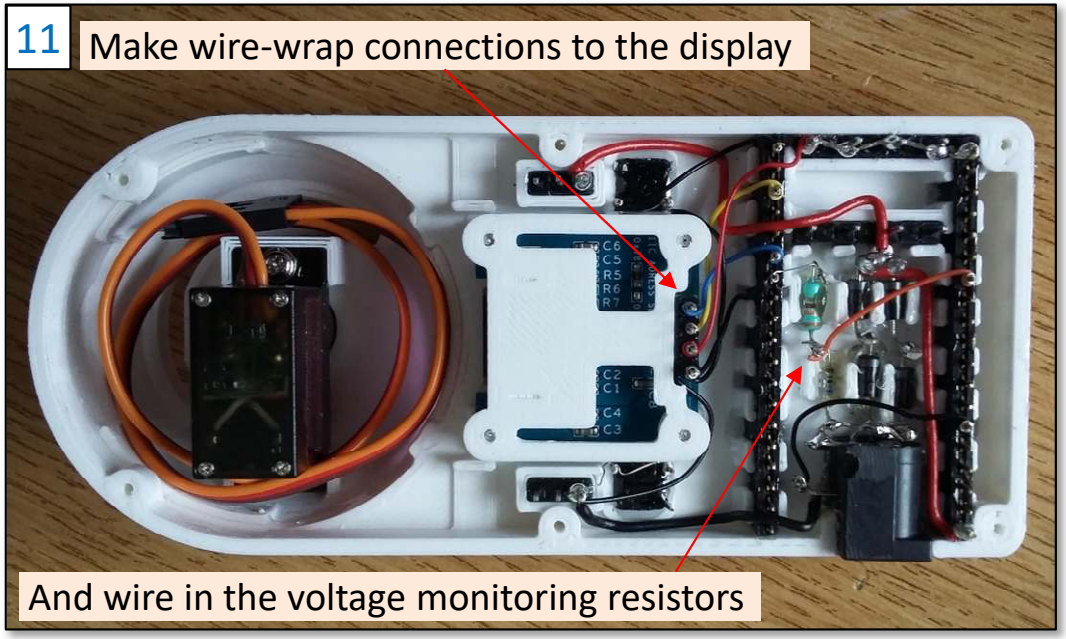


10 Solder in the supply connections first



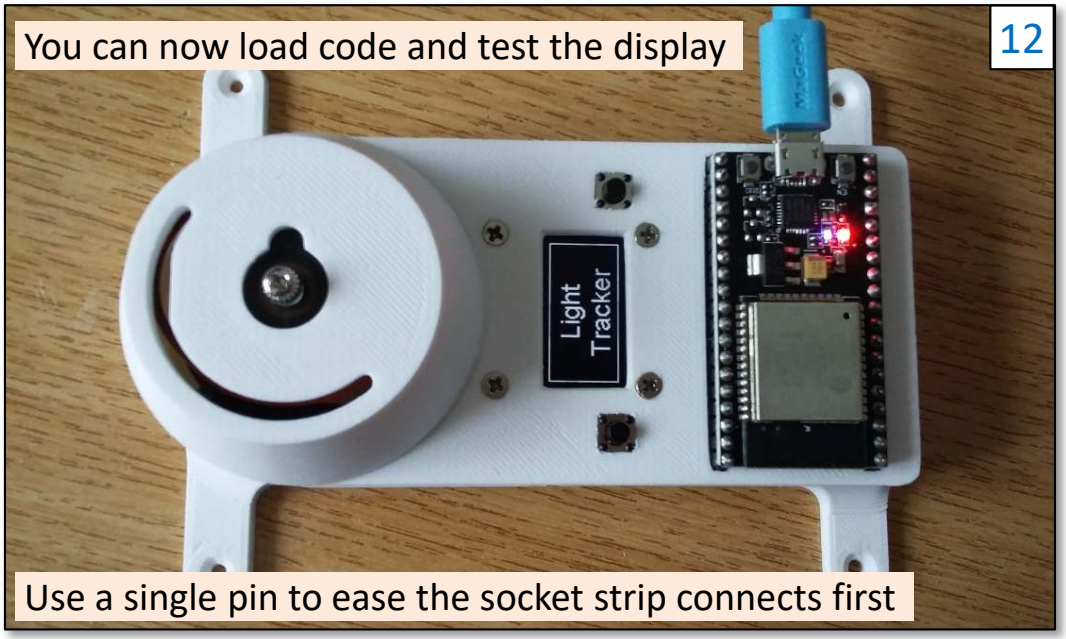
From the power socket and feed diodes

11 Make wire-wrap connections to the display



And wire in the voltage monitoring resistors

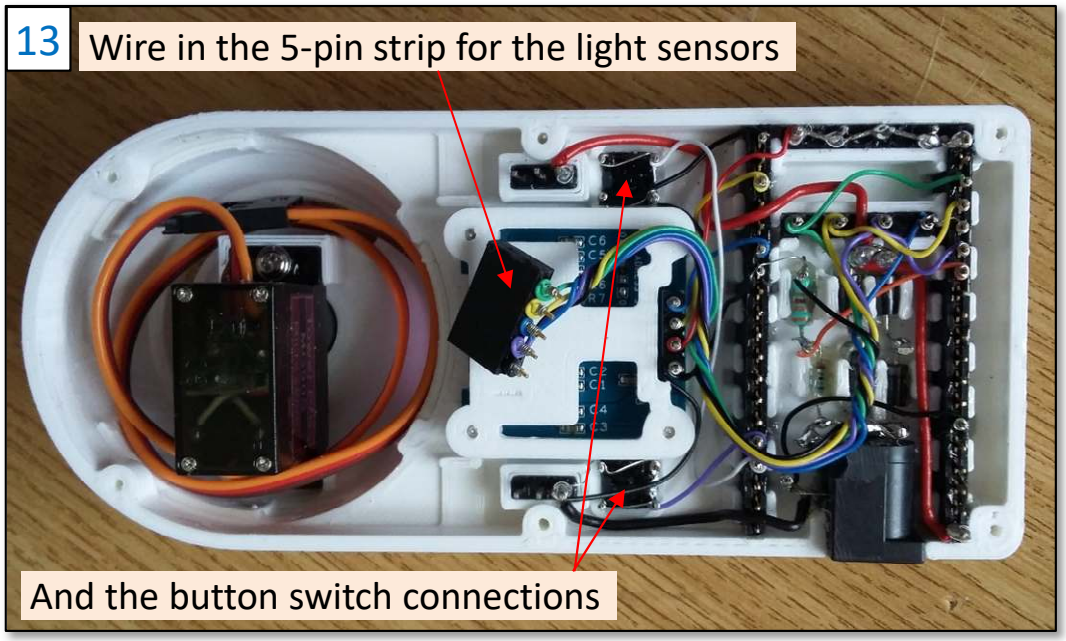
12 You can now load code and test the display



Use a single pin to ease the socket strip connects first

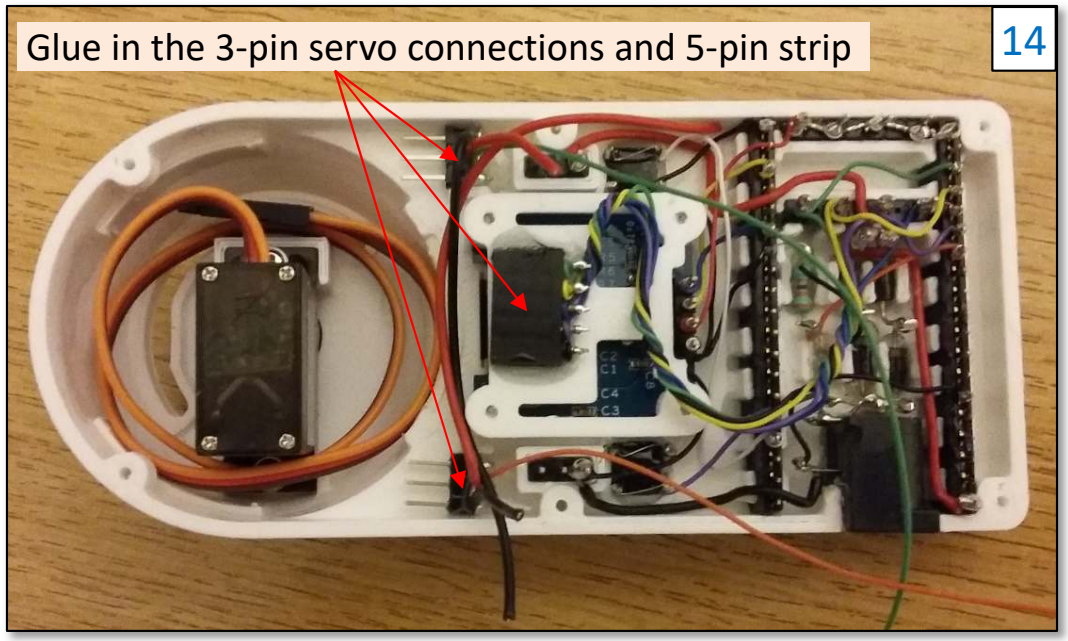
Wiring Sequence

13 Wire in the 5-pin strip for the light sensors

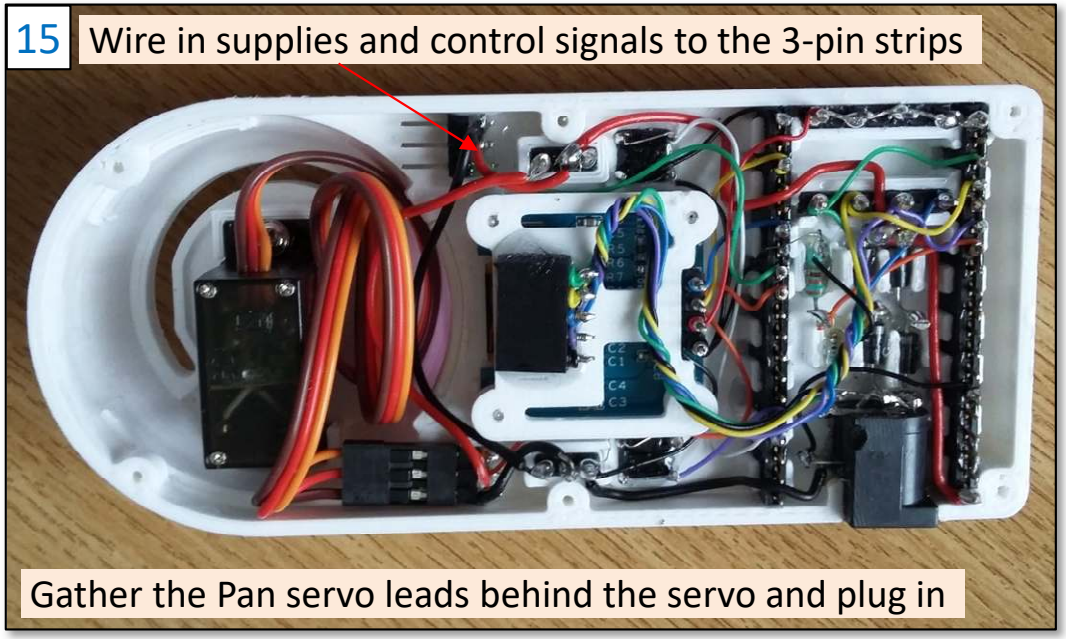


And the button switch connections

Glue in the 3-pin servo connections and 5-pin strip 14

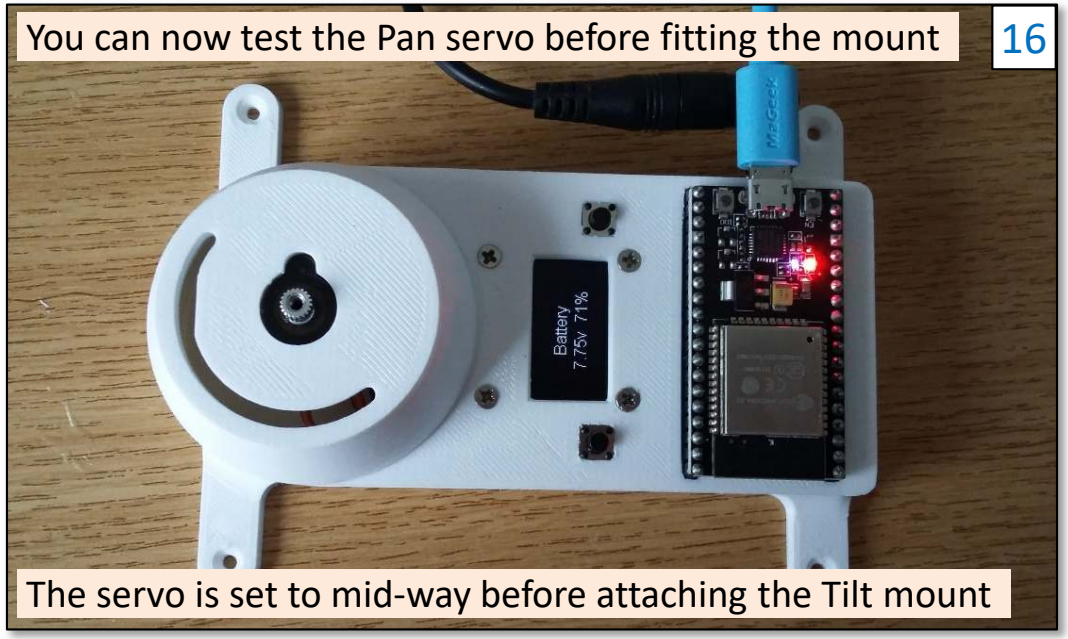


15 Wire in supplies and control signals to the 3-pin strips



Gather the Pan servo leads behind the servo and plug in

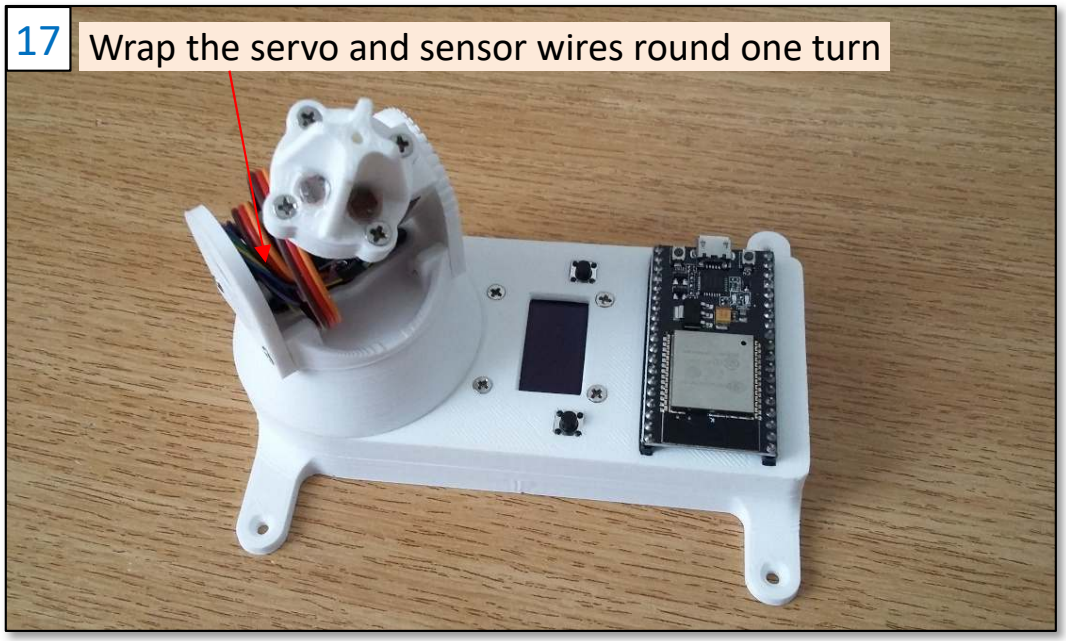
You can now test the Pan servo before fitting the mount 16



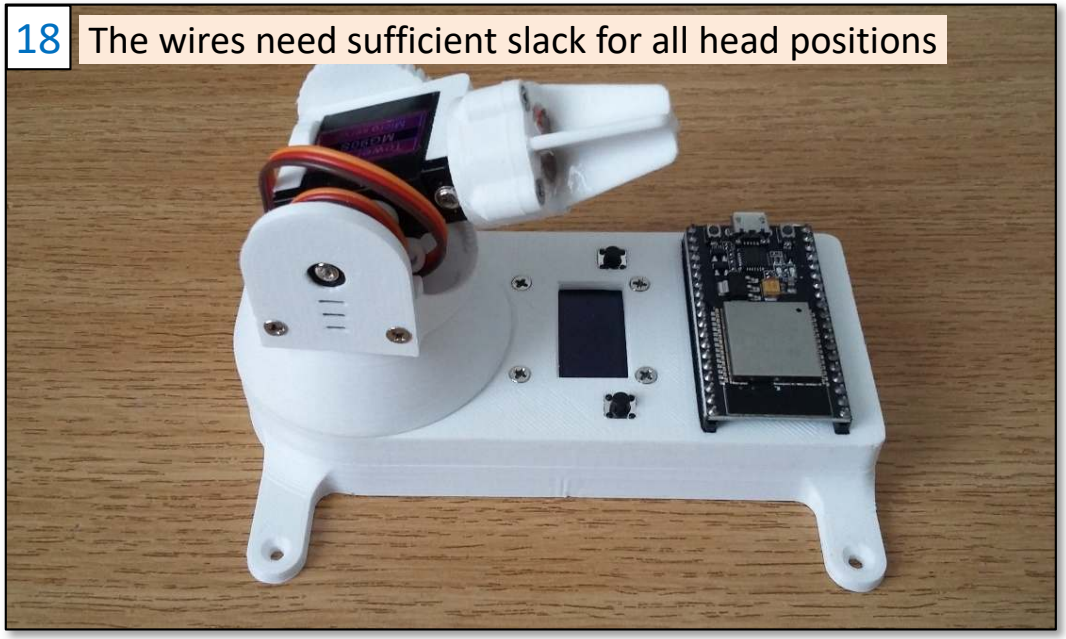
The servo is set to mid-way before attaching the Tilt mount

Wiring Sequence

17 Wrap the servo and sensor wires round one turn



18 The wires need sufficient slack for all head positions



19 The sensor wires are terminated on a 5-pin strip.