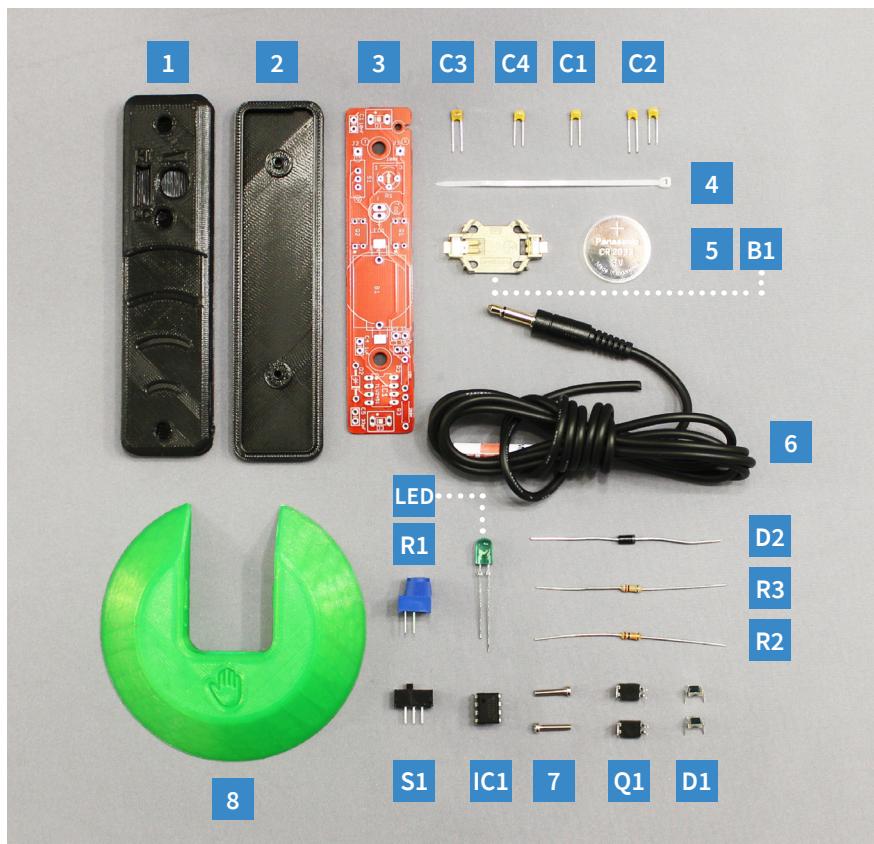


Proximity Switch

ASSEMBLY MANUAL



BILL OF MATERIALS

1	Case Top	D1	Diode
2	Case Bottom	R3	200k Ohm Resistor <small>RED BLACK YELLOW GOLD</small>
3	PCB	R2	10k Ohm Resistor <small>BROWN BLACK ORANGE GOLD</small>
C3	10pF Capacitor (label: BC10J)	D1	Photosensor Diode (2)
C4	1uF Capacitor (label: 105)	Q1	MOSFET (2)
C1	10nF Capacitor (label: 103)	7	Screws (2)
C2	33uF Capacitor (2) (label: 330)	IC1	OP Amp
LED	LED	S1	Slide Switch
R1		R1	Potentiometer
R2		Q1	MOSFET (2)
R3		D1	Diode
4	Zip Tie	6	3.5mm mono cable (half length)
5	Battery	7	Screws (2)
B1	Battery Holder	IC1	OP Amp
6		S1	Slide Switch
8	Switch Base	R1	Potentiometer

HOLE W9 = Hole to put part through

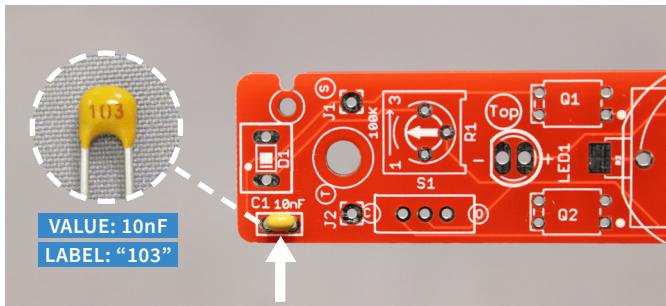
 = Solder the area in the white square

BEFORE STARTING:

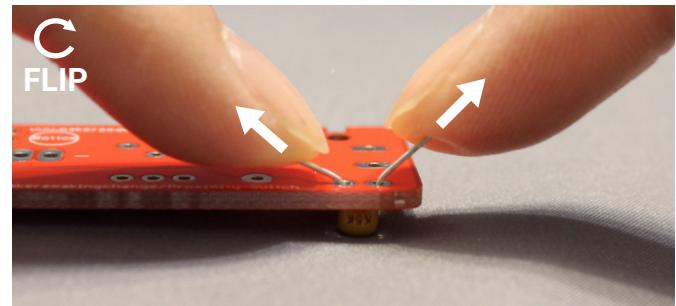
- Insert the components in the correct orientation.
- Insert components flush to the PCB except Q1.
- Components are inserted from the PCB side marked as "TOP" and soldered on the side marked as "BOTTOM".

TOOLS

- Soldering iron
- Solder
- Flush cutters
- Wire stripper
- Needle nose pliers
- Phillips screwdriver
- Electrical tape
- Clamp
- Magnifier
- Desoldering pump
- Plate



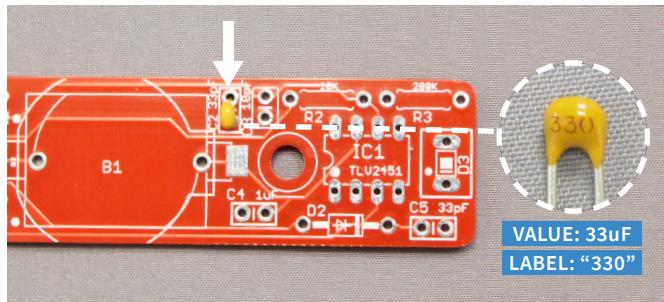
01.



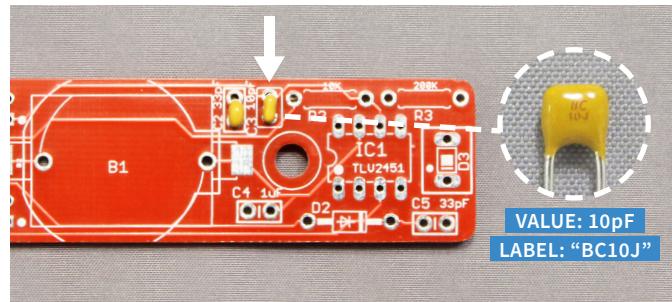
02.

Proximity Switch

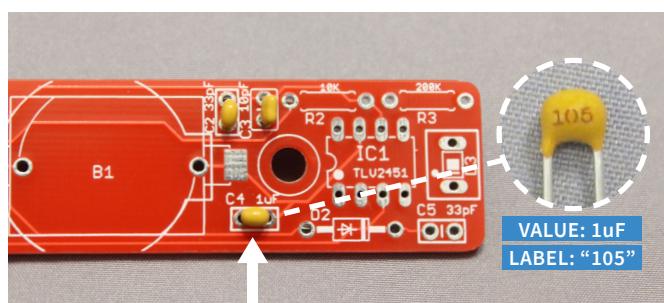
ASSEMBLY MANUAL



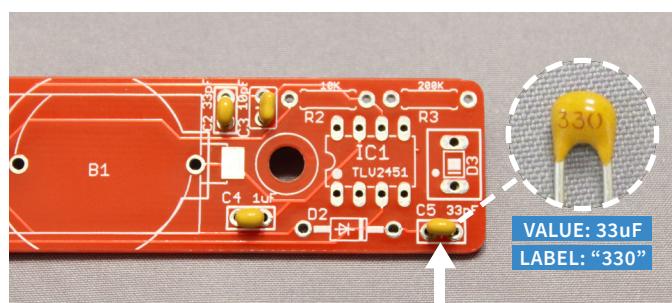
03. Insert and bend the leads 45° outwards like in step 2. **C2** **HOLE C2**



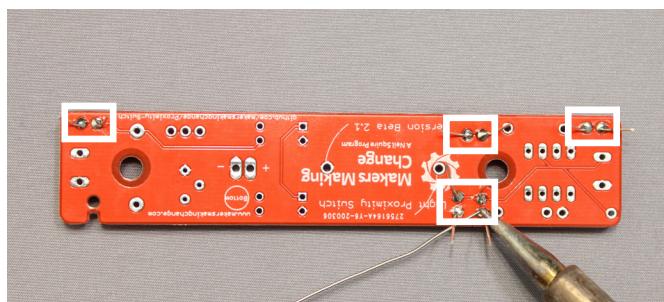
04. Insert and bend the leads 45° outwards like in step 2. **C3** **HOLE C3**



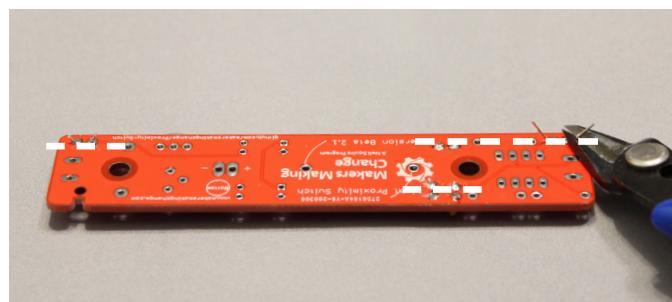
05. Insert and bend the leads 45° outwards like in step 2. **C4** **HOLE C4**



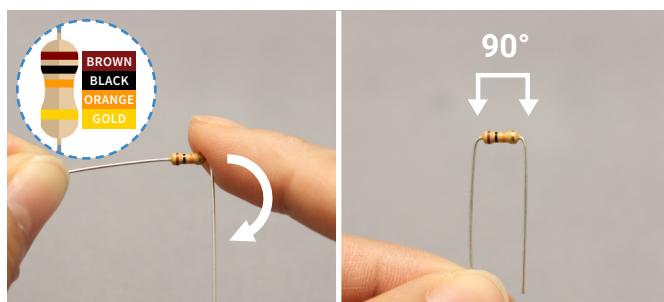
06. Insert and bend the leads 45° outwards like in step 2. **C2** **HOLE C5**



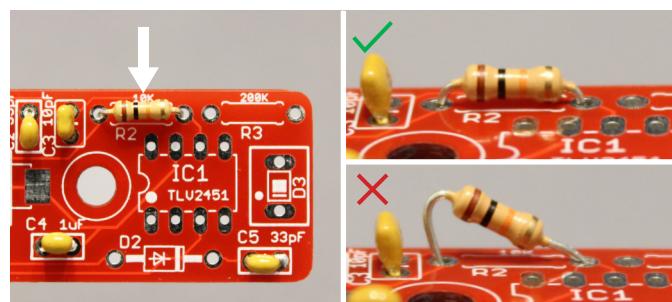
07. 



08. Snip off all excess leads.



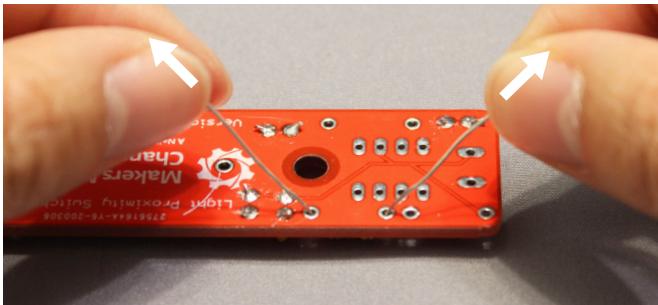
09. Press down with a finger to form 90° corners. **R2**



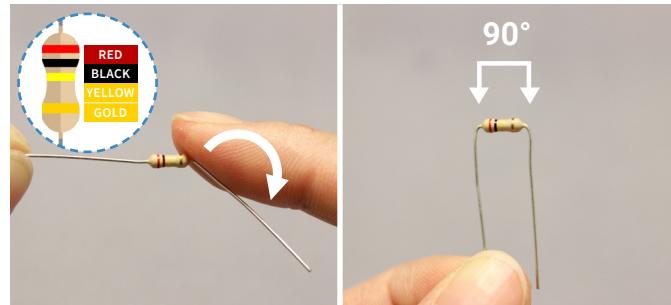
10. Ensure resistor is flush to board. **HOLE R2**

Proximity Switch

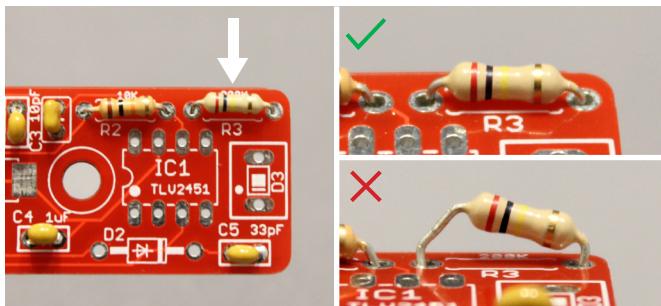
ASSEMBLY MANUAL



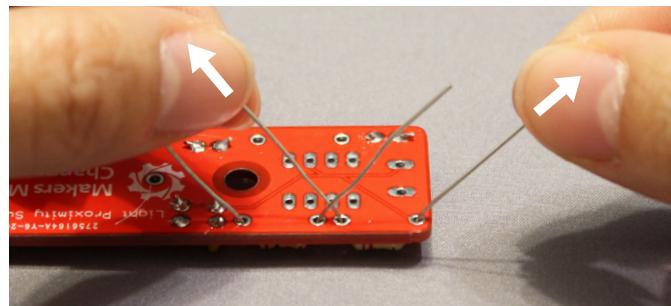
11.



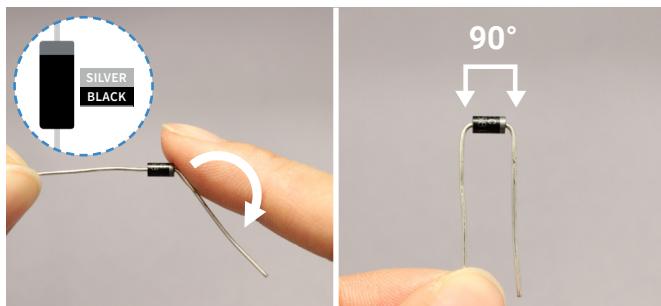
12. Press down with a finger to form 90° corners. R3



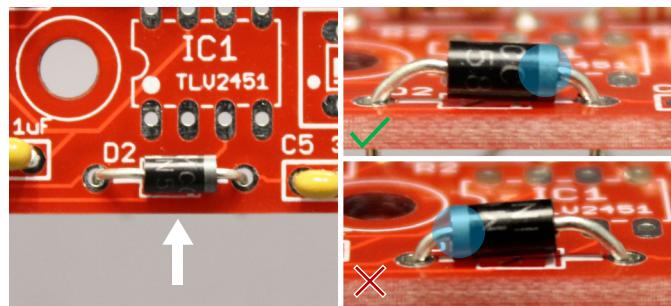
13. Ensure resistor is flush to board. HOLE R3



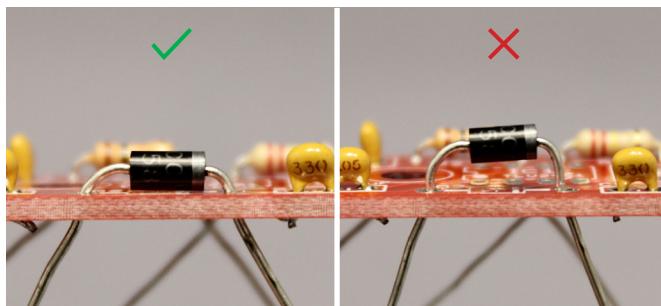
14.



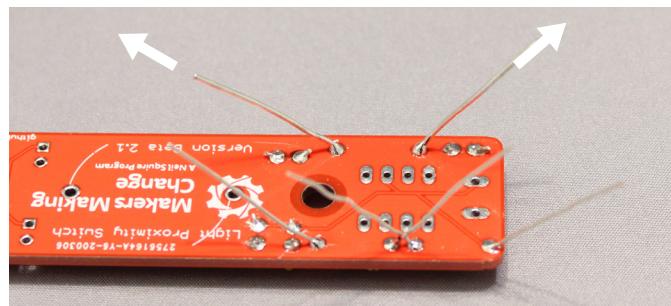
15. Press down with a finger to form 90° corners. D2



16. **IMPORTANT:** Orient the diode with the silver band towards the "C5" marking. HOLE D2



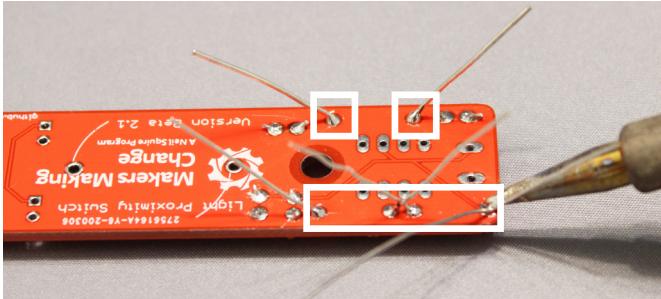
17. Ensure diode is flush to board.



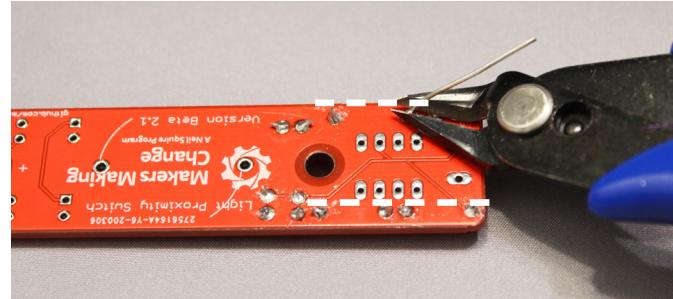
18.

Proximity Switch

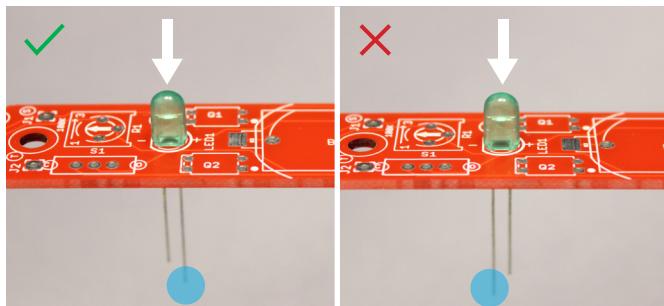
ASSEMBLY MANUAL



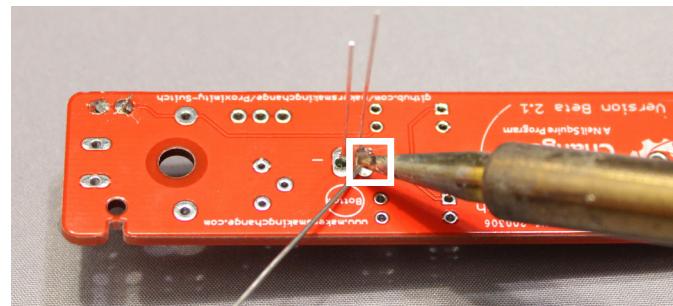
19. x 2



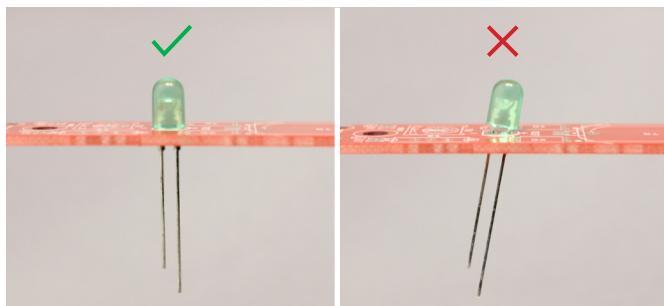
20.



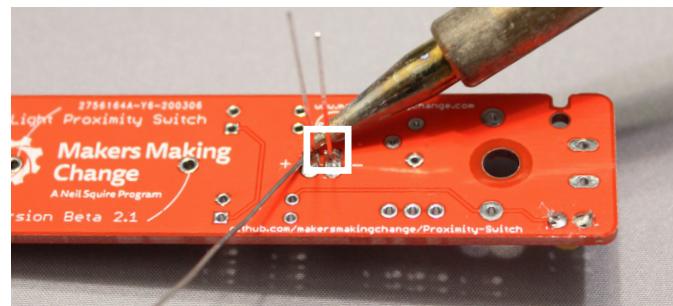
21. **IMPORTANT:** Insert the LED with the longer **LED** **HOLE** towards the centre of the PCB.



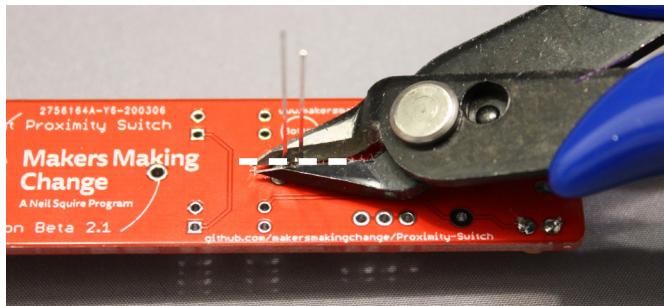
22. **IMPORTANT:** Solder **one** lead quickly to avoid damage.



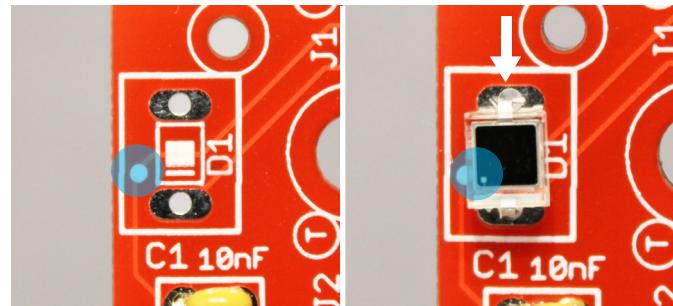
23. Ensure the LED is flushed to the board and aligned with the white outline.



24. **IMPORTANT:** Solder quickly to avoid damage.



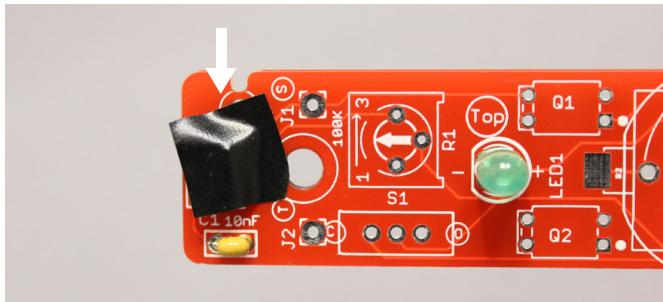
25. **IMPORTANT:** Solder quickly to avoid damage. x 2



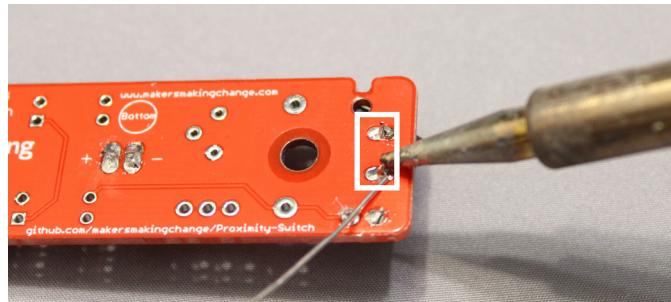
26. **IMPORTANT:** Insert and orient the sensor with white dot towards the PCB white dot. **D1** **HOLE** **D1**

Proximity Switch

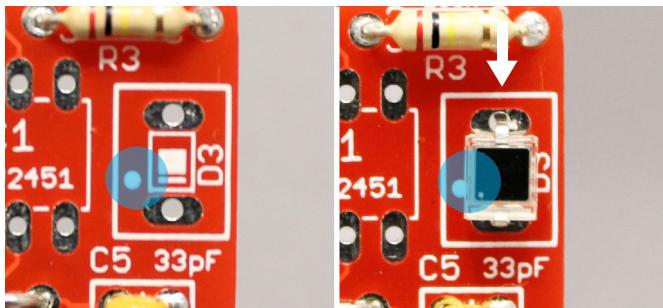
ASSEMBLY MANUAL



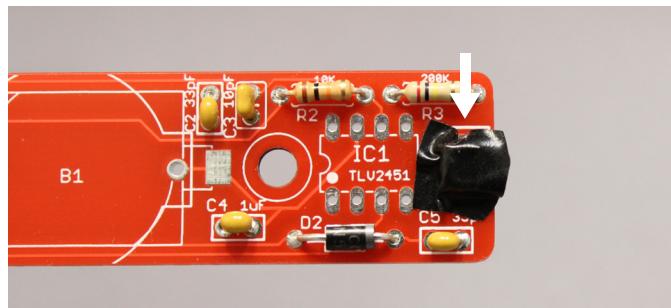
27. Use a piece of tape to hold down the sensor.  x 2



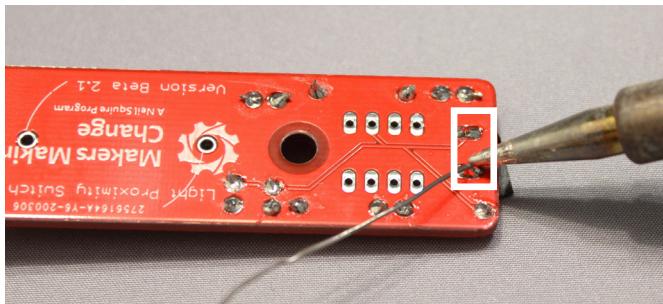
28. **IMPORTANT:** Solder quickly to avoid damage.  x 2



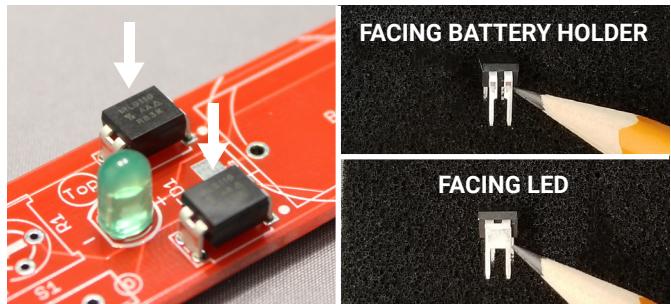
29. **IMPORTANT:** Insert and orient the part with white dot towards the PCB white dot. 



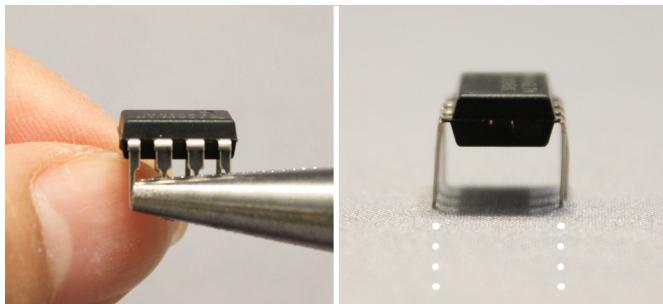
30. Use tape to hold down the sensor.  x 2



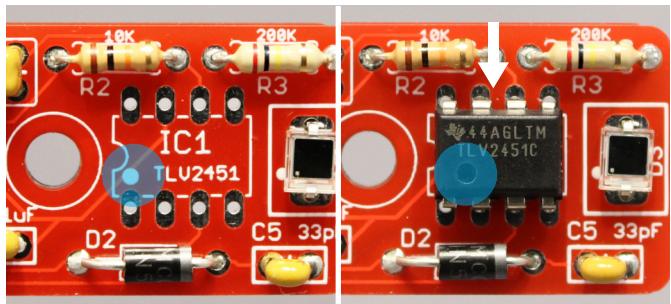
31. **IMPORTANT:** Solder quickly to avoid damage.  x 2



32. MOSFETs will sit higher than the PCB. 



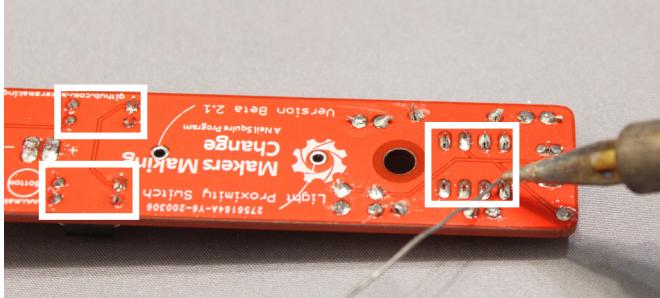
33. Gently bend the leads so they're straight and parallel. 



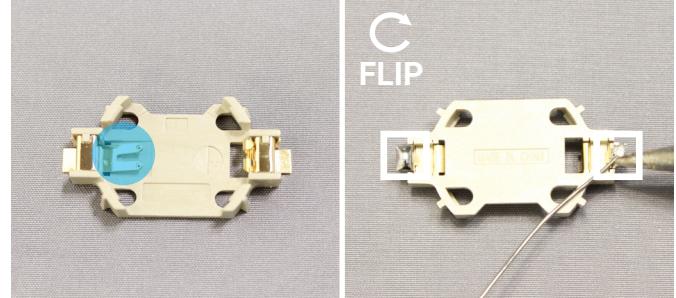
34. **IMPORTANT:** Orient the dot towards the PCB white dot. 

Proximity Switch

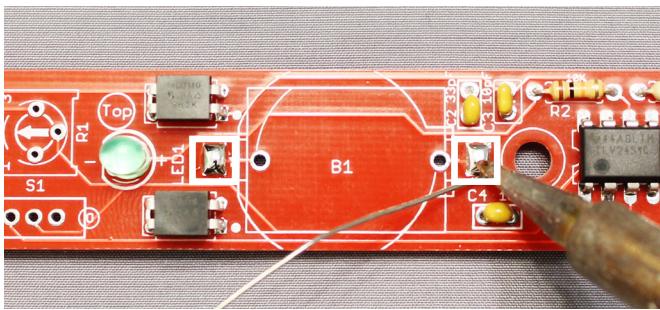
ASSEMBLY MANUAL



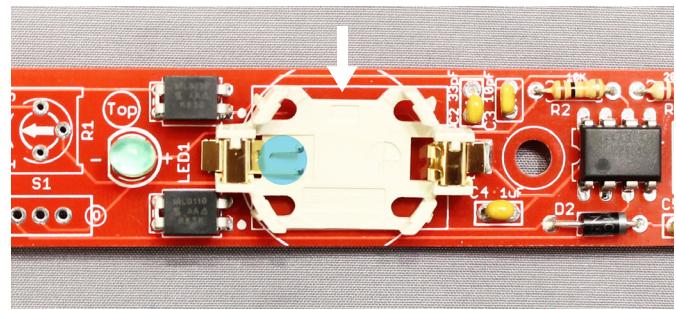
35.  x 16



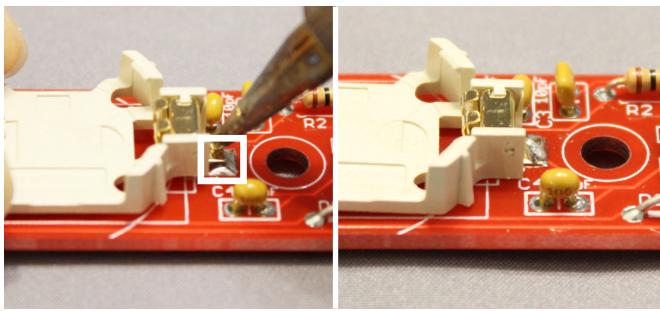
36. With the metal prongs on the left, flip the part over and tin the metal pads with solder.  x 2



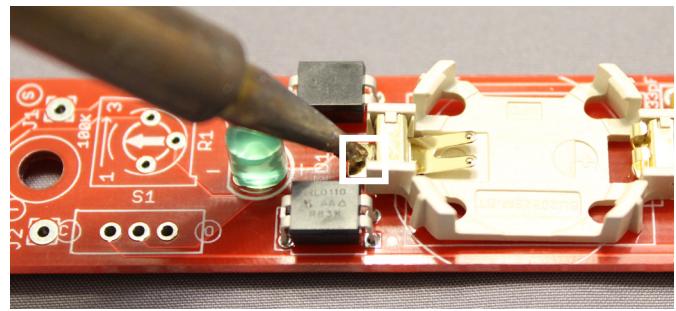
37. Tin the rectangular metal pads highlighted in the white squares with solder.  x 2



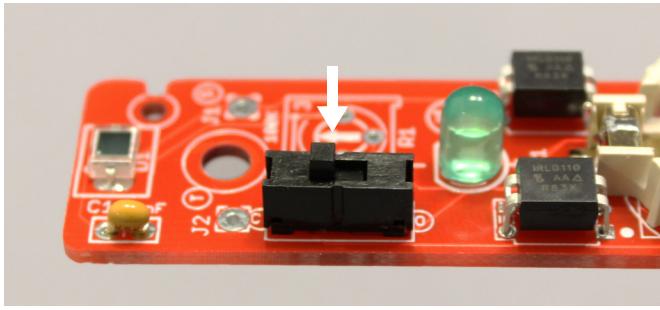
38. Align the battery holder on the PCB with the metal prongs on the left.  HOLE B1



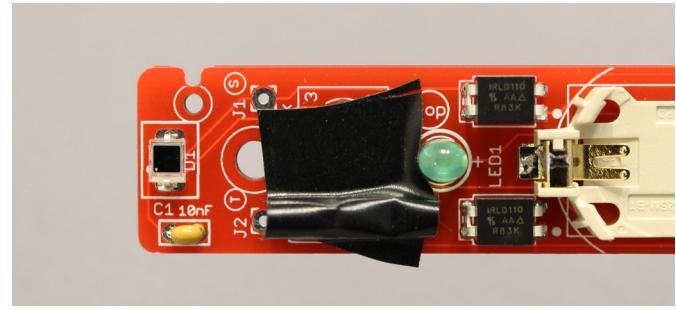
39. Place the soldering iron on the metal pad to melt the solder. The holder should "drop" down. 



40. 



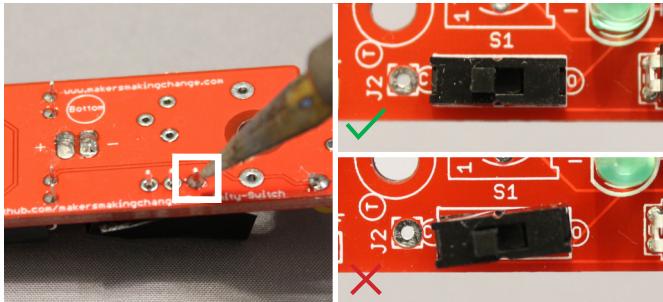
41.  S1  HOLE S1



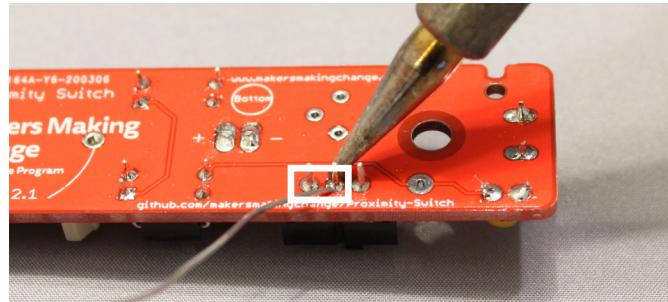
42. Use tape to hold down the slide switch.

Proximity Switch

ASSEMBLY MANUAL



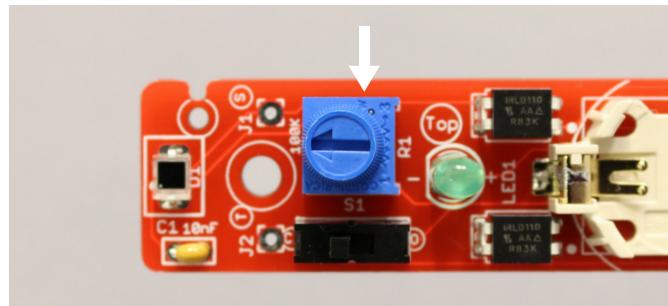
43. Solder **one** pin. Check switch is aligned to the silkscreen outline and flush to the board.



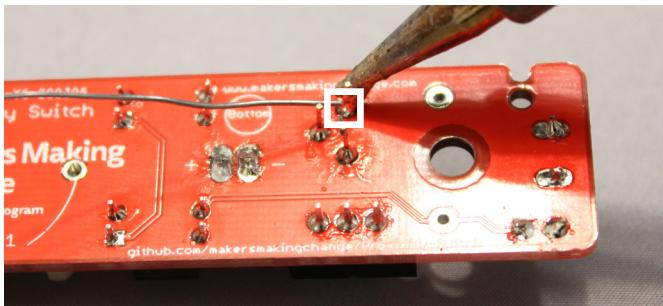
44. x 2



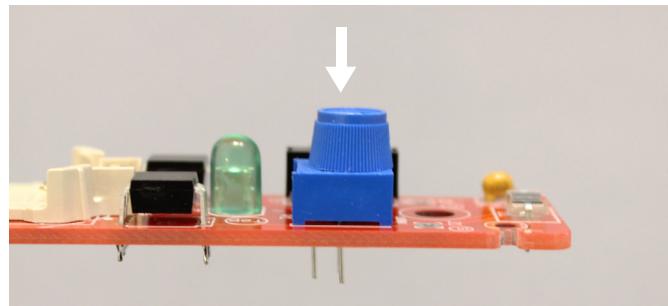
45.



46. Use tape to hold down the potentiometer. R1 HOLE R1



47. Solder **one** pin only.



48. Ensure that the potentiometer is flush to the board and aligned to the white PCB silkscreen.



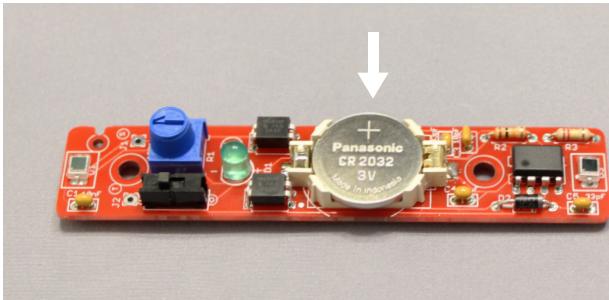
49. x 2



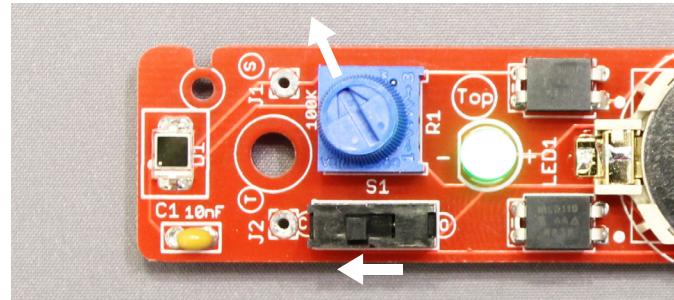
50.

Proximity Switch

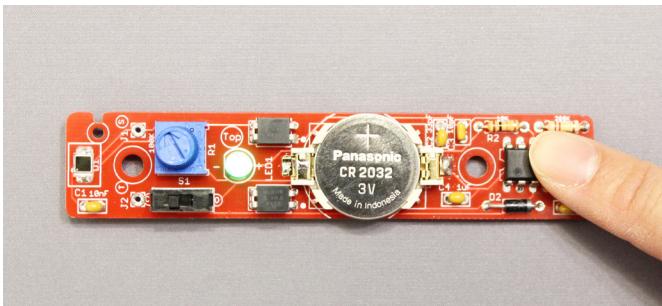
ASSEMBLY MANUAL



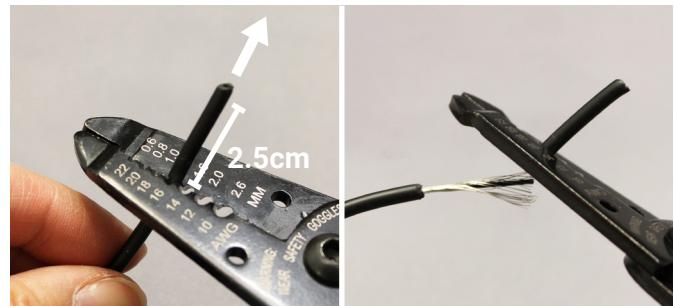
51. BAT



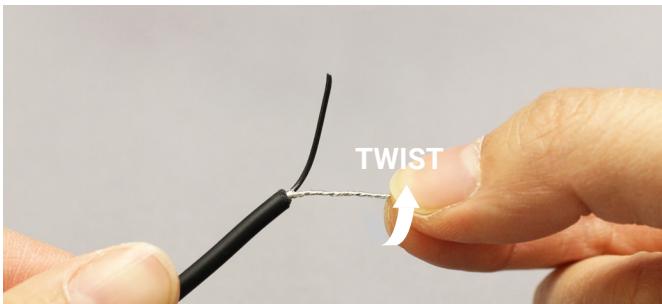
52. Adjust the sensors as shown.



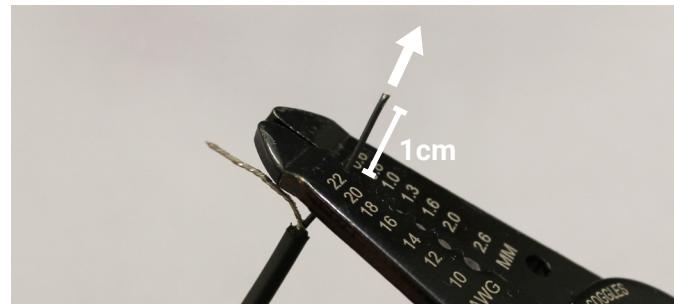
53. Cover the right photosensor with your finger. The LED should light up.



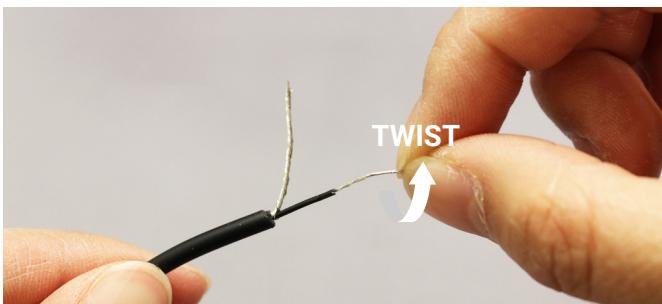
54. Use the wire stripper. 6



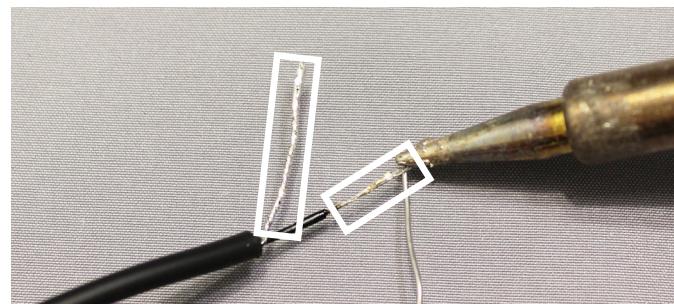
55.



56.



57.



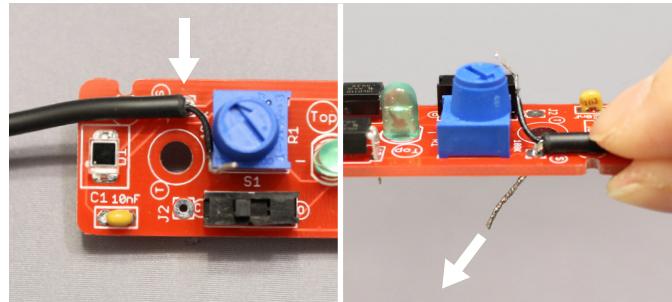
58. Lightly tin the ends of the two exposed cables with solder. Avoid heavy soaking or blobbing. 

Proximity Switch

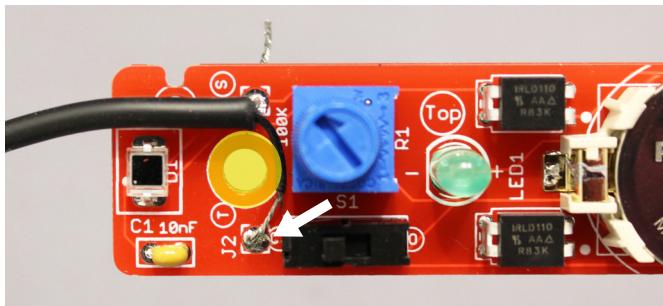
ASSEMBLY MANUAL



59. Trim wires at an angle for easier insertion.



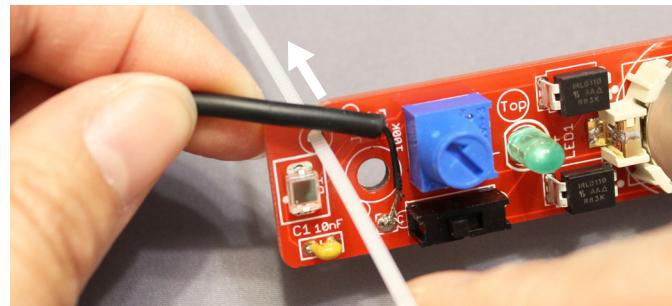
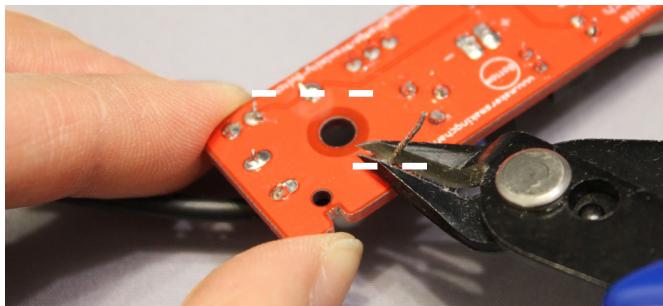
60. Insert the exposed cable (not the insulated cable) as far as possible.



61. **IMPORTANT:** Insert the exposed wires of the insulated cable. Ensure wire loops around the hole (highlighted in yellow) and not over it.



62.

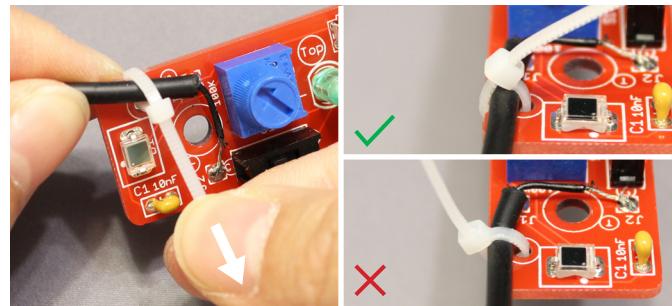


63.

64.



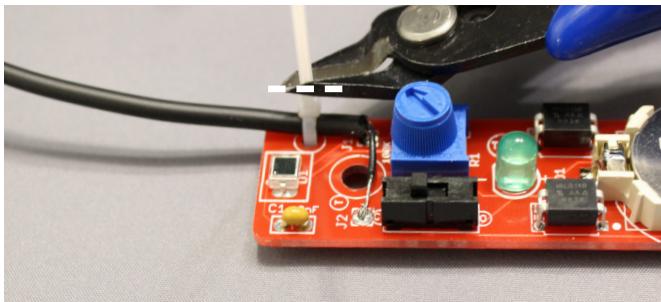
65. **IMPORTANT:** Ensure 3mm of black cord remains to the right of the zip tie.



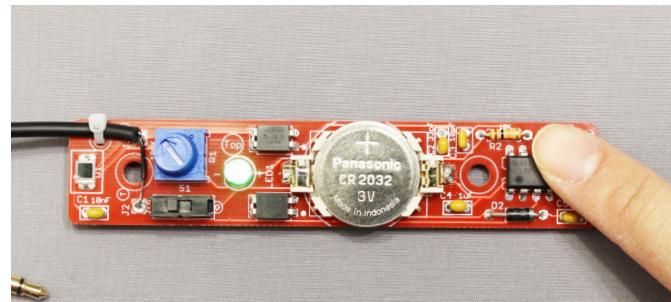
66. **IMPORTANT:** Make sure the zip tie knot is oriented as depicted or it will interfere with the enclosure.

Proximity Switch

ASSEMBLY MANUAL



67.



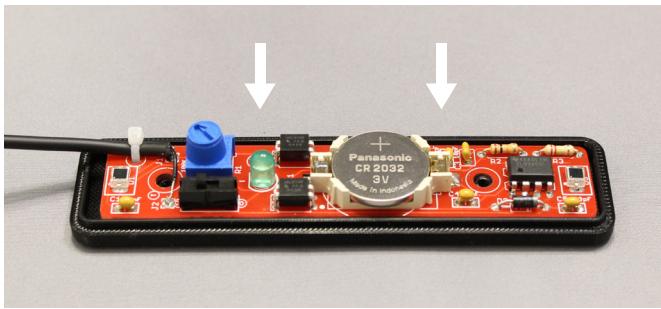
68. Cover the right photosensor with your finger. The LED should light up.



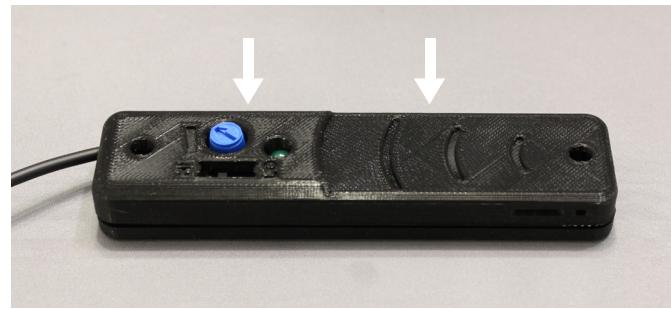
69. Trim any long leads on the underside of the PCB.



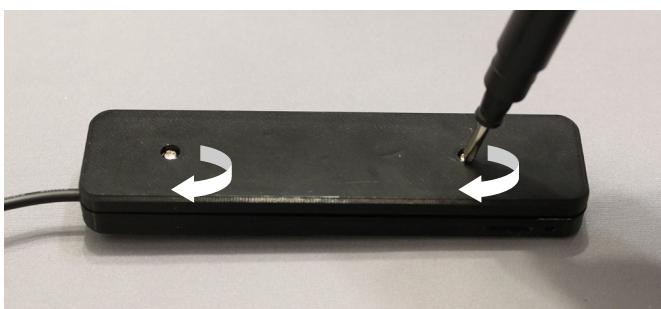
70. Remove all support material and make sure the holes are free of any plastic. 1



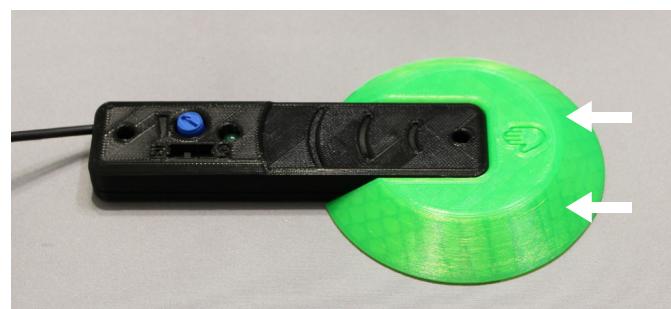
71. Insert the PCB into the enclosure base, aligning the holes in the PCB with the cylindrical posts on the bottom case. 2



72.



73. Gently tighten the 2 screws. Do not overtighten. 7



74.