

REPAIR GUIDELINE

Blower_LB5800/LB6150



NOTICE: Although LB5800 & LB6150 are different in motor and PCBA part#, all of the repair documents, such as PCBA & Motor diagnosis, troubleshooting and repair guideline can share the same one.

Update Date: 2021/01/20

Table of Contents

NO.	Contents	Page
1	Troubleshooting	3
2	Tool list	4
3	How to Detect the PCBA and the Motor	5-15
4	How to Replace the Duct Set (Motor included)	16-24
5	How to Replace the PCBA	25-53

Troubleshooting

Problem	Possible Cause	Fault Position	Test & Solution
Won't turn on	PCBA issue	Handle housing	Test the motor as shown in the section " How to Detect the PCBA and the Motor ". If the motor is in good condition, it means the PCBA is broken, replace with a new PCBA; if the motor is diagnosed as defective or visually judged as burnt motor, replace with a new duct set.
	Motor issue	Duct set	
Speed-adjustment failure	PCBA issue	Handle housing	Replace the PCBA with a new one and verify whether the blower's speed can be adjusted correctly.
The air velocity and the volume are decreased compared with normal use.	The fan in the duct is over-worn.	Duct set	Open the handle housing, remove the fan baffle and visually check the fan inside the duct set. If the fan is over-worn, replace the whole duct set.

Tool List For Repair

NO.	Tool List	SPEC	Remark
1	Phillips screwdriver	PH2, PH0	
2	Torx screwdriver	T15	
3	Electric soldering iron		
4	Heat gun		
5	Heat-shrinkable sleeves		
6	Scissors		To remove the shrinkable sleeve
7	Multimeter		
8	Capacitor discharge fixture		Recommended for discharging the capacitor in the PCBA

Part 1: How to Detect the PCBA and the Motor

How to Detect the PCBA and the Motor

1. When having PCBA tested with a Multimeter, the capacitor should be discharged, otherwise the result will go wrong.

EGO special capacitor discharge fixture is recommended for discharging. **When the capacitor is fully discharged**, start testing the PCBA.

2. Insert the capacitor discharge fixture onto the blower for about 10 seconds to discharge the capacitor which is connected with the internal PCBA.



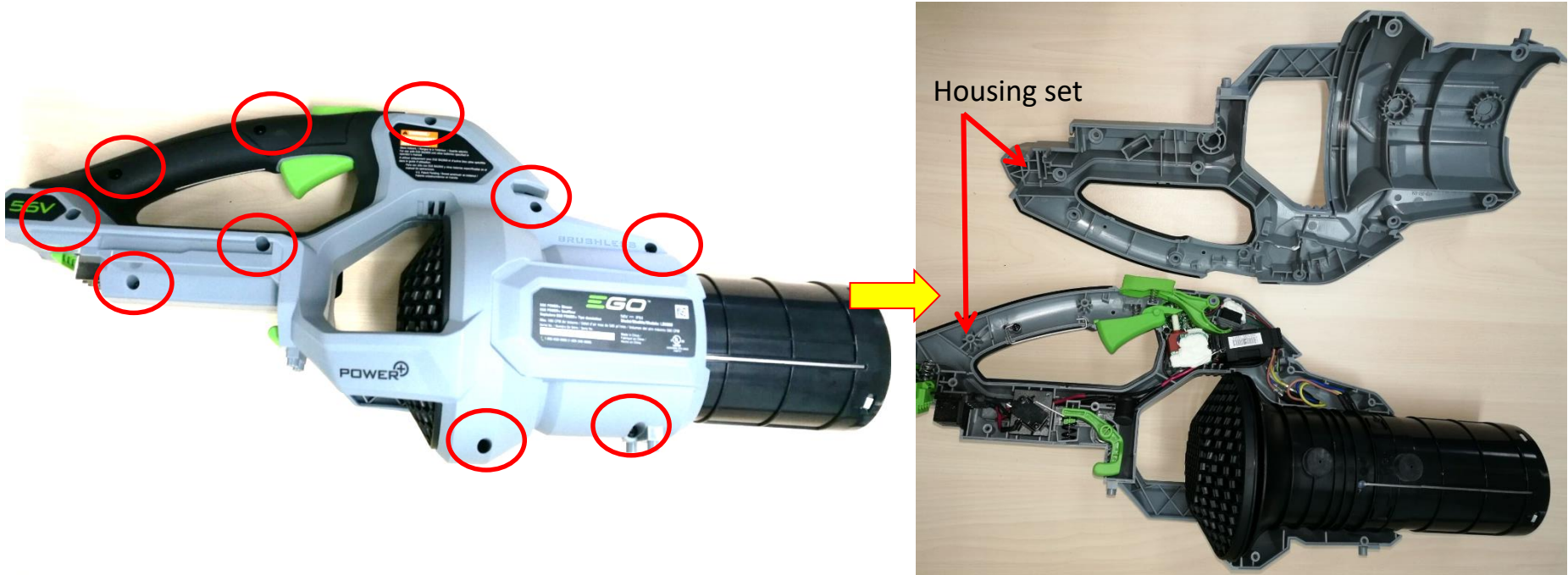
How to Detect the PCBA and the Motor

3. Remove the 4 screws on the blower bottom base to remove the bottom base.



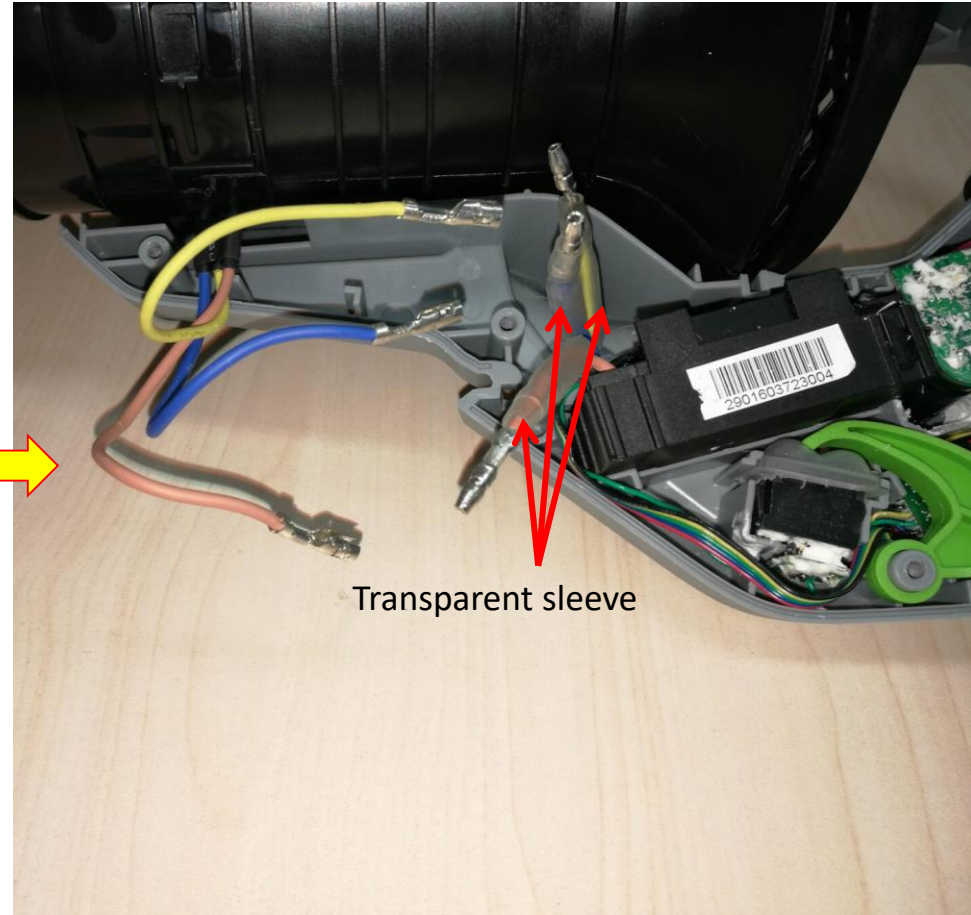
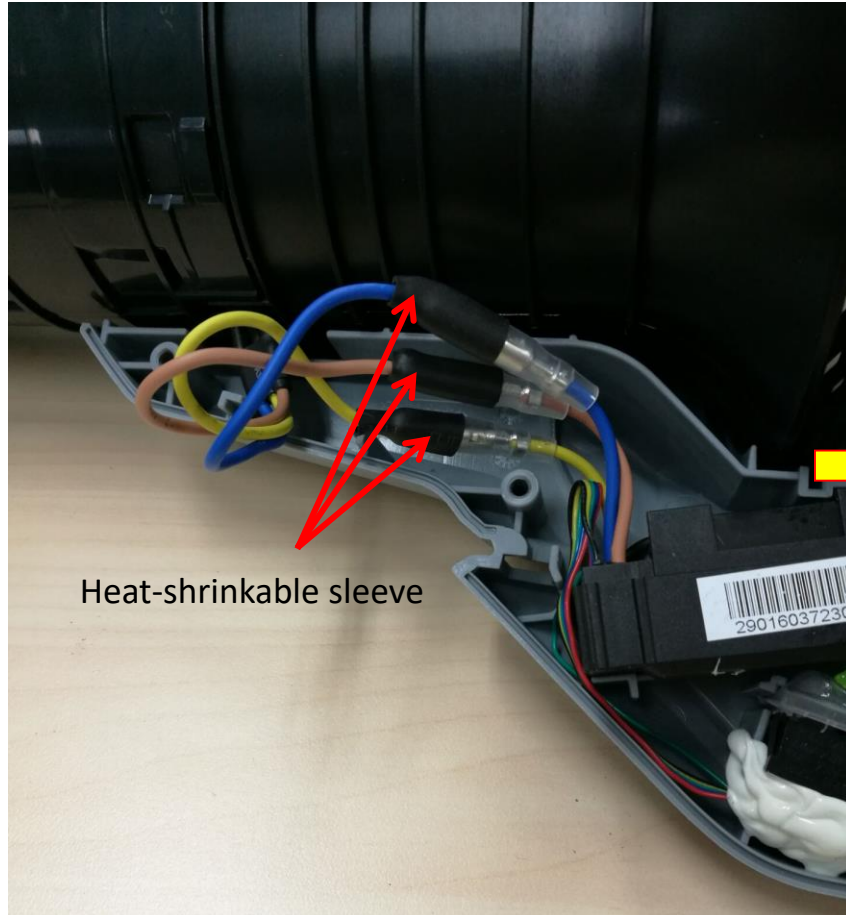
How to Detect the PCBA and the Motor

4. Remove the 10 screws to open the blower housings to expose the PCBA and duct set connectors.



How to Detect the PCBA and the Motor

5. Use scissors to cut off the heat-shrinkable sleeves and remove the transparent sleeves aside to separate the three connectors between the PCBA and the duct set (motor included).

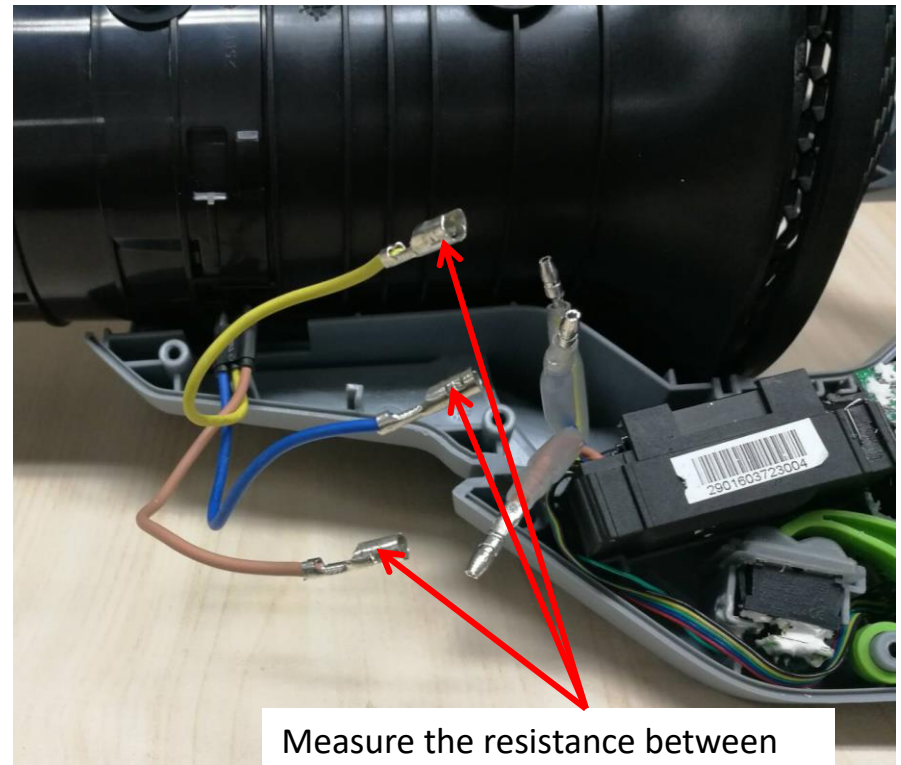


How to Detect the PCBA and the Motor

6. Test the duct set (motor included) to judge if the motor is open-circuit.

NOTICE: Judge if there is any burning smell of the motor before having diagnosis. If yes, the motor is burned. Replace it. Otherwise, go on below detection.

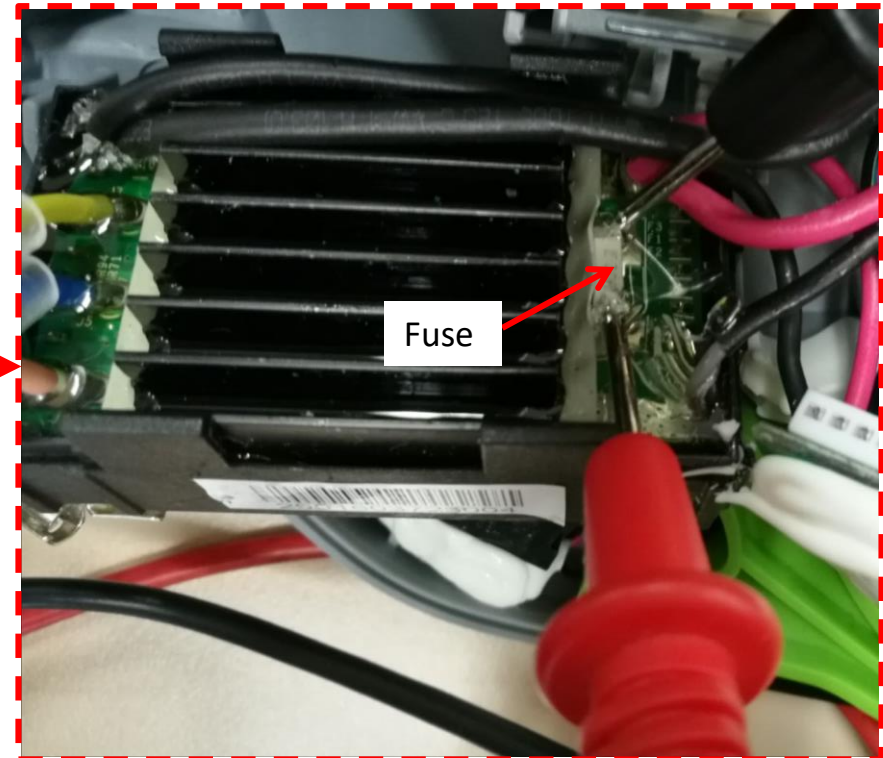
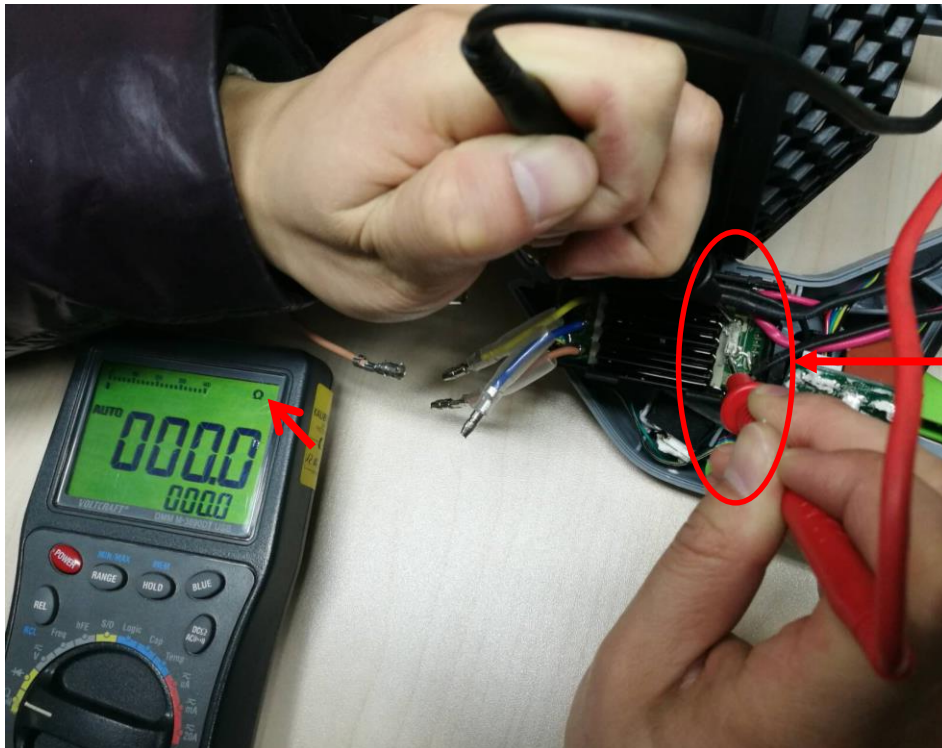
- a) Set the Multimeter function to “Resistance measuring” .
- b) Measure the resistance between any of the two connectors.
- c) If any of the measurements is infinite, means the circuit between the two connectors is open circuit, the motor is damaged. Replace with a new motor.
- d) **If the motor is shorted inside,** Multimeter is not applicable for detection. Directly test with a new motor after disconnecting the connectors.



Measure the resistance between any of the two connectors

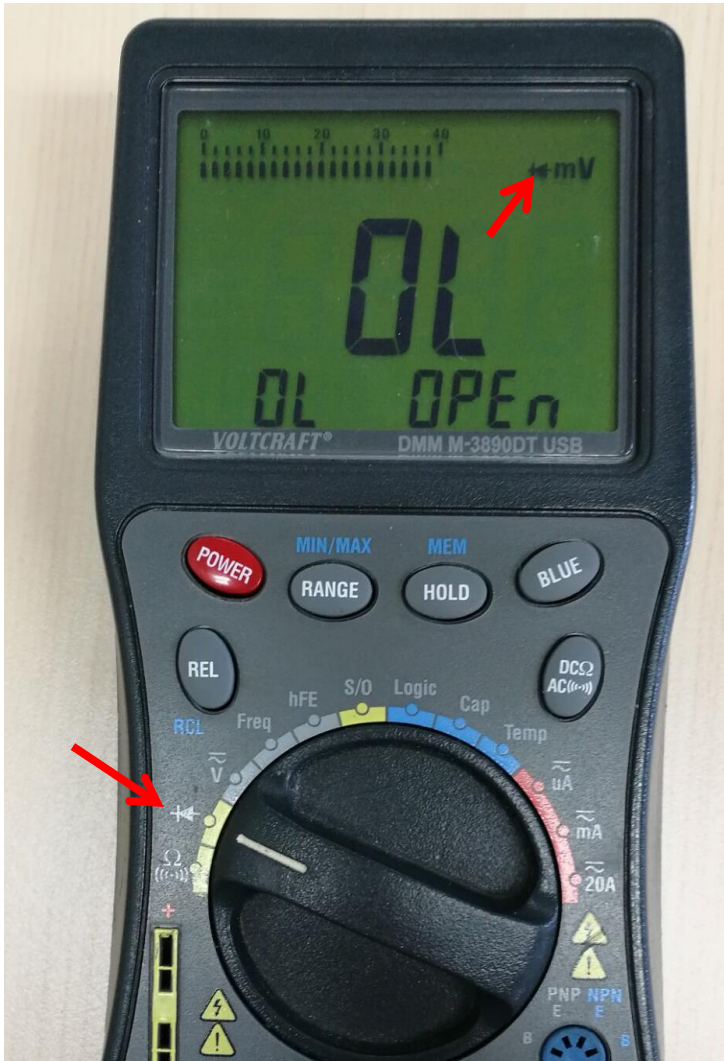
How to Detect the PCBA and the Motor

7. Measure the fuse in the PCBA.
 - a) With the Multimeter function set to " Ω ", pierce one pen pin of the Minto the sealing glue and force the pin contacting onto one end of the fuse, then pierce the other pen pin into the sealing glue and contacting onto the other end of the fuse.
 - b) If the value displayed is below 1Ω , the fuse is good. Go on next PCBA MOSFET testing, otherwise replace the whole PCBA directly. No separate fuse replacement is allowed.



How to Detect the PCBA and the Motor

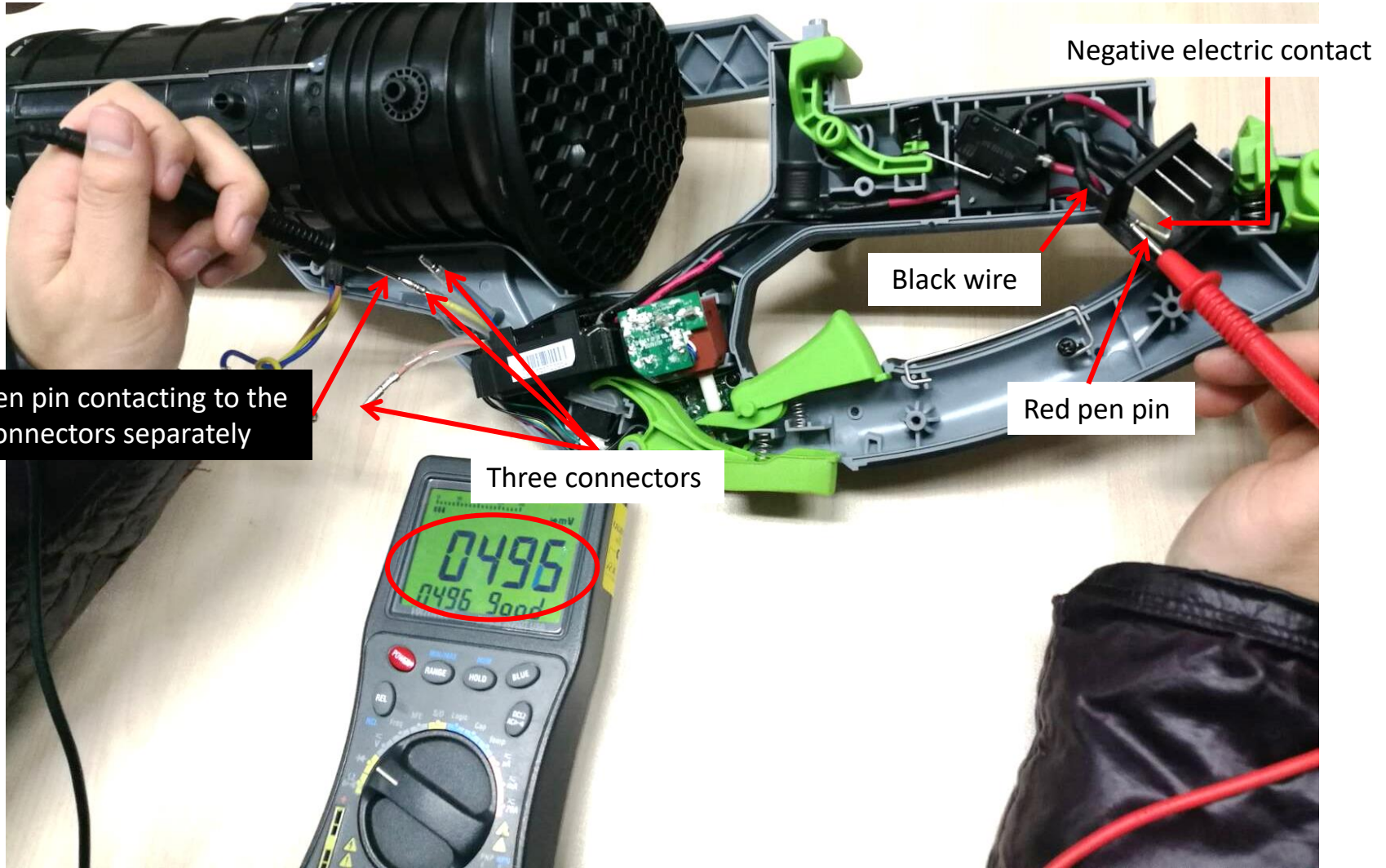
8. Measure the MOSFET in the PCBA (Step 1).



- Set the Multimeter function to “Diode measuring”.
- Contact the red pen pin to the negative electric contact (the battery electric contact that connects to black wire).
- Contact the black pen pin to the three connectors separately and measure each voltage (see next slide).
- If the LCD displays 0.45~0.55V for each measurement, go to the next testing step, otherwise means the PCBA is broken (When LCD displays both around 0.1V or OL., the MOSFET are broken).
- Follow the procedures in **“Replace the PCBA”** to replace a new PCBA.

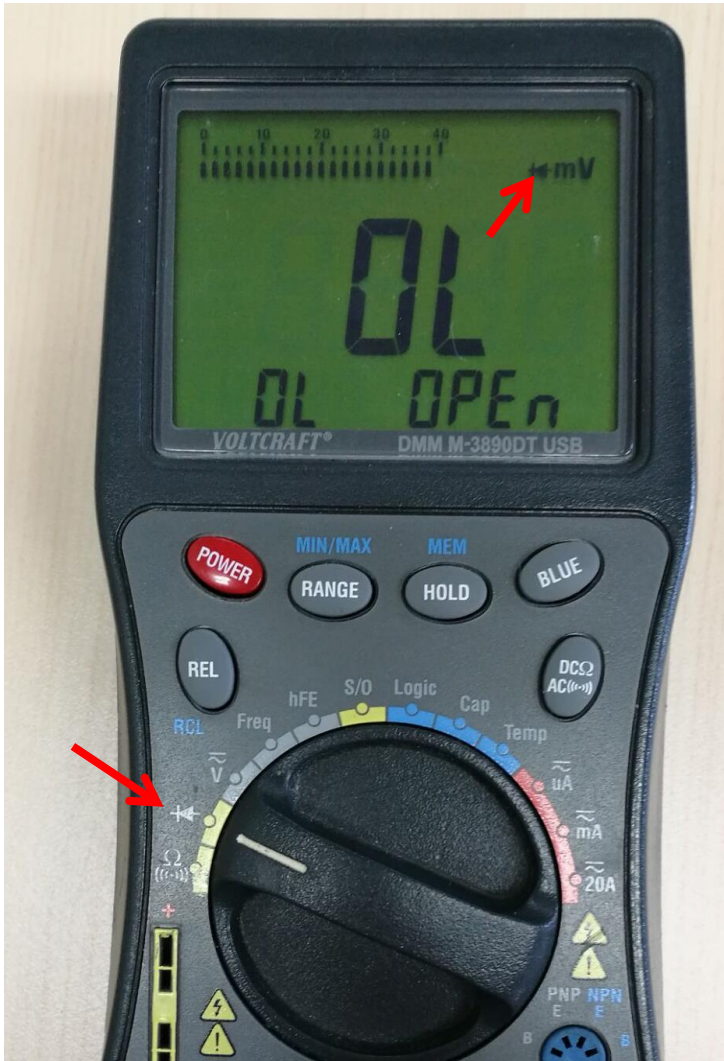
How to Detect the PCBA and the Motor

Figure showing how to measure the MOSFET in the PCBA (Step 1)



How to Detect the PCBA and the Motor

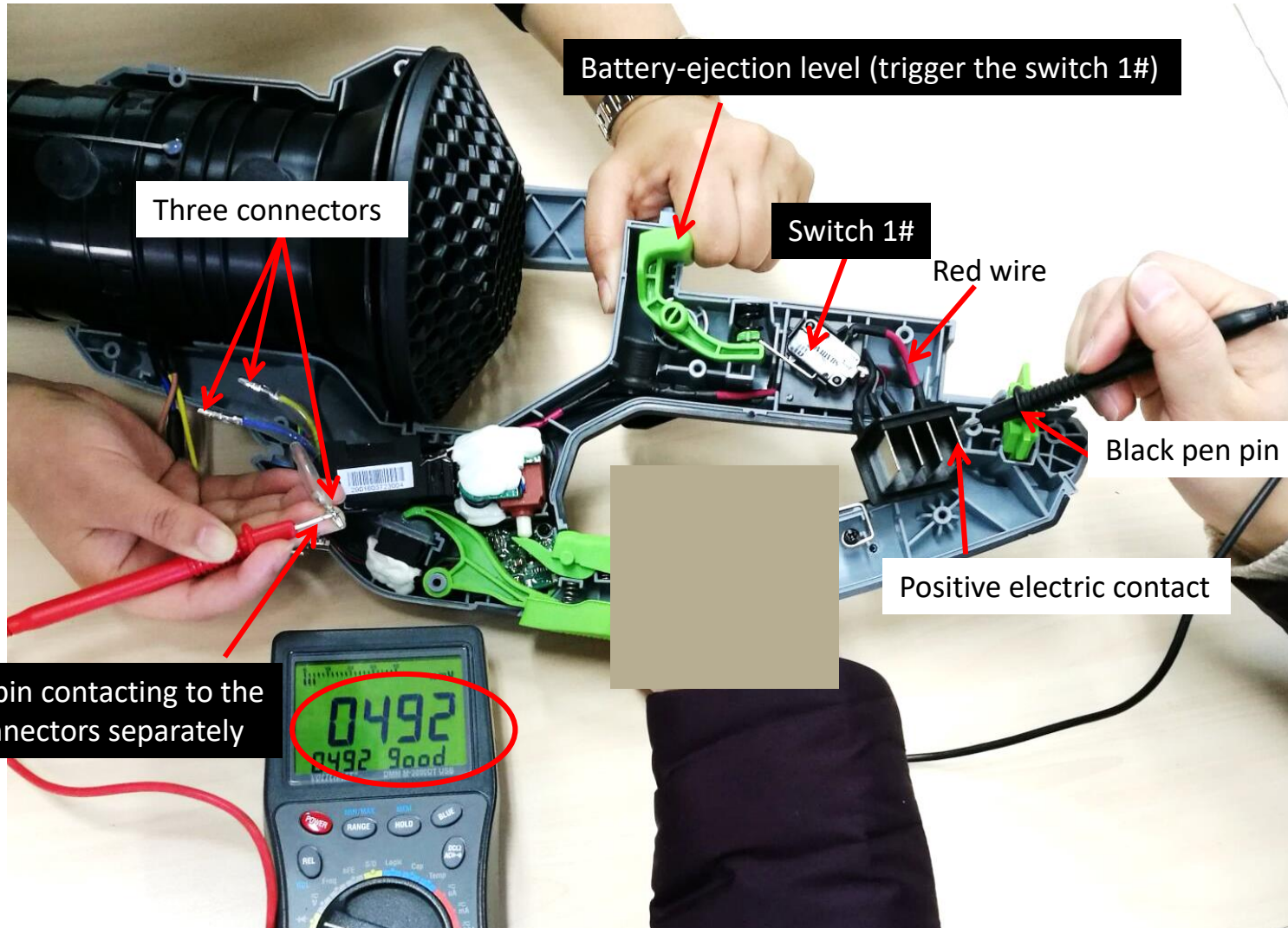
9. Measure the MOSFET in the PCBA (Step 2).



- Keep the Multimeter function setting at “Diode measuring”.
- Contact the black pen pin to the positive electric contact (the battery electric contact that connects to red wire).
- Contact the red pen pin to the three connectors separately and measure each voltage (see next slide).
- d) Press the battery ejection lever** to observe the value on the LCD screen. If the LCD displays 0.45~0.55V for each measurement, all the MOSFETs in the PCBA are good, namely the whole PCBA is good, otherwise means the PCBA is broken.
- Follow the procedures in “**Replace the PCBA**” to replace a new PCBA.

How to Detect the PCBA and the Motor

Figure showing how to measure the MOSFET in the PCBA (Step 2)



NOTICE: The switch 1# must be pressed when the positive electric contact is being detected.

Part 2: How to Replace the Duct Set (Motor included)

How to Replace the Duct Set (Motor included)

1. Open the housing set and separate the connectors between the PCBA and the duct set as Slide 7-9 shown in the section “**How to Detect the PCBA and the Motor**”.

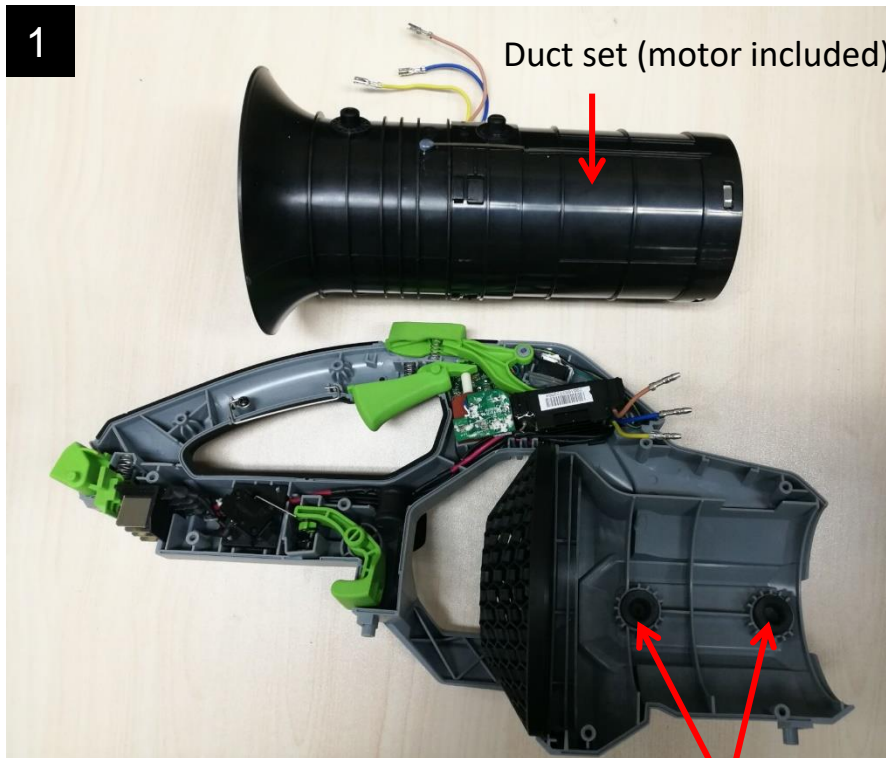


How to Replace the Duct Set (Motor included)

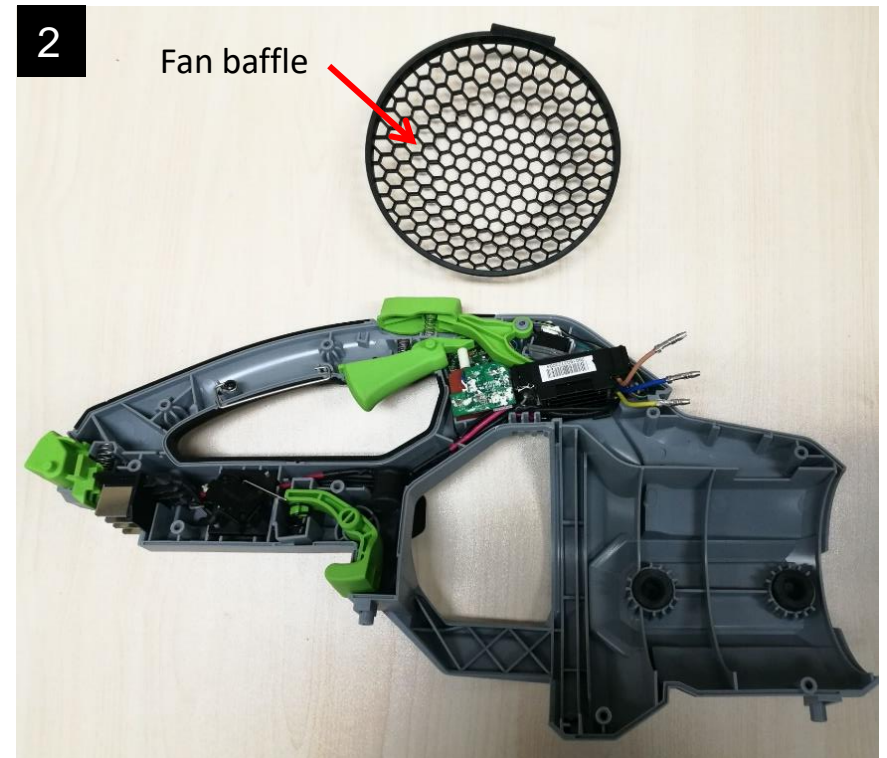
2. Remove the duct set from the housing and replace it with a new one.

NOTICE: Save the rubber gaskets on the housings, 2 on each housing. If any of them fell off the blower housing during disassembly, re-place them into their position before mounting the new duct set (Fig. 1).

3. Remove the fan baffle from the housing (Fig. 2). If the fan baffle is worn and needs replacement, replace it.

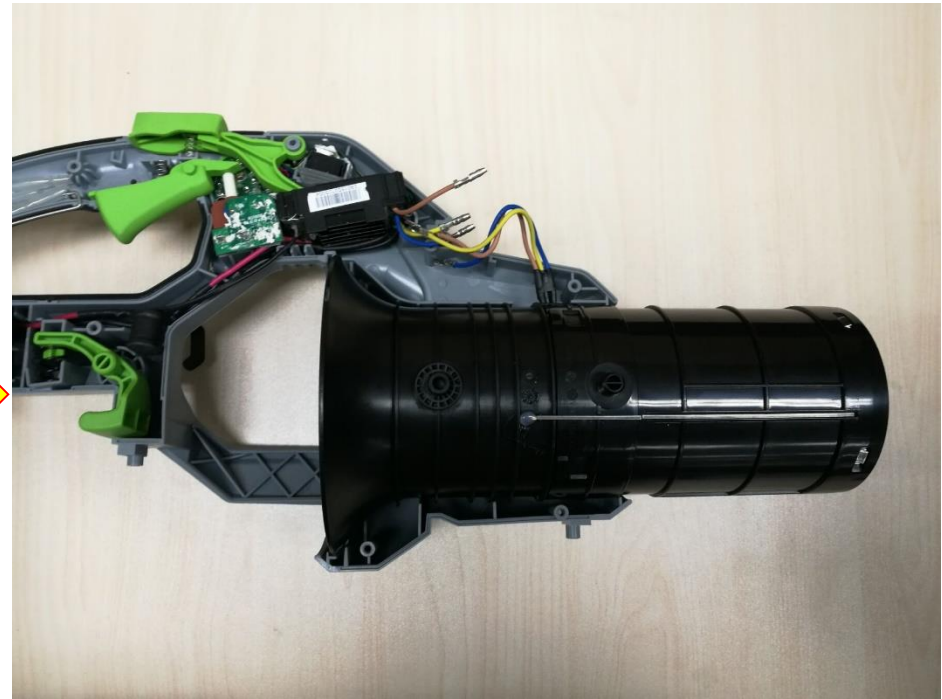
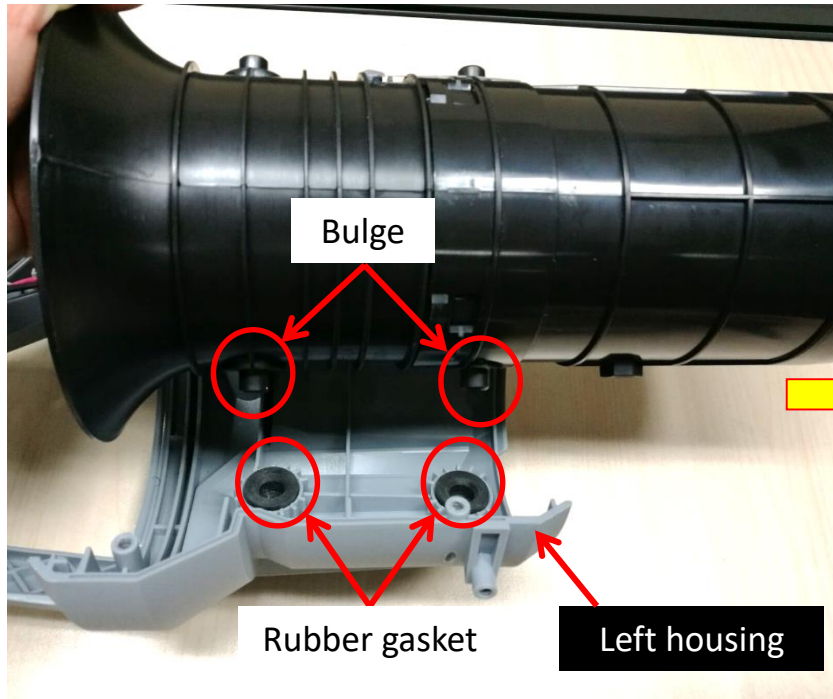


Rubber Gasket



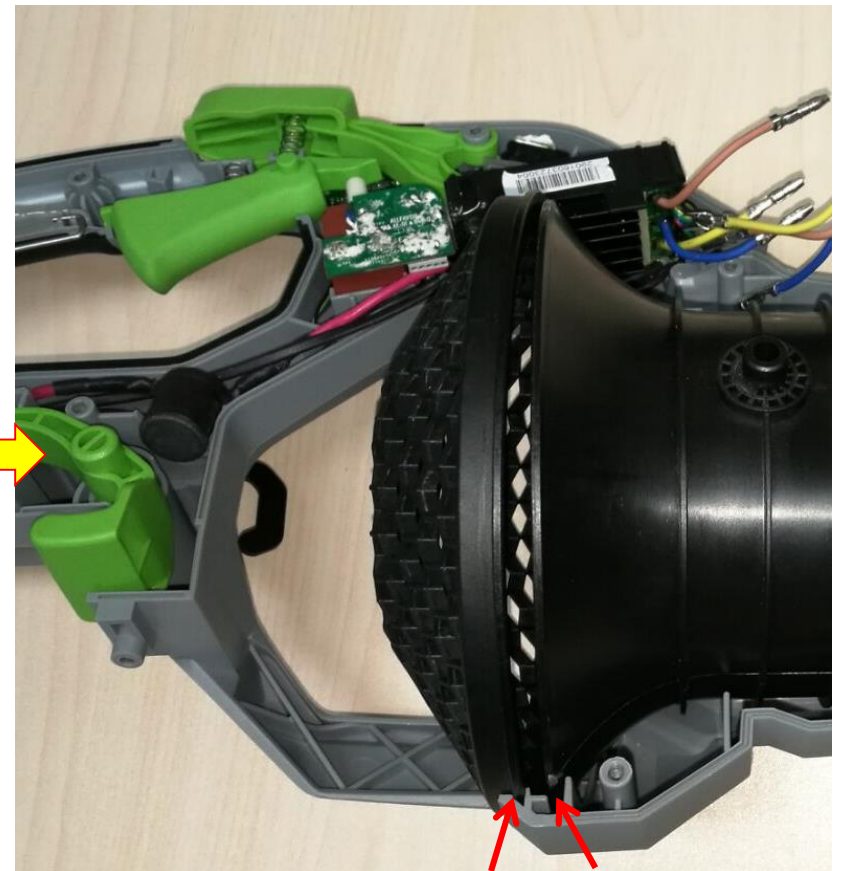
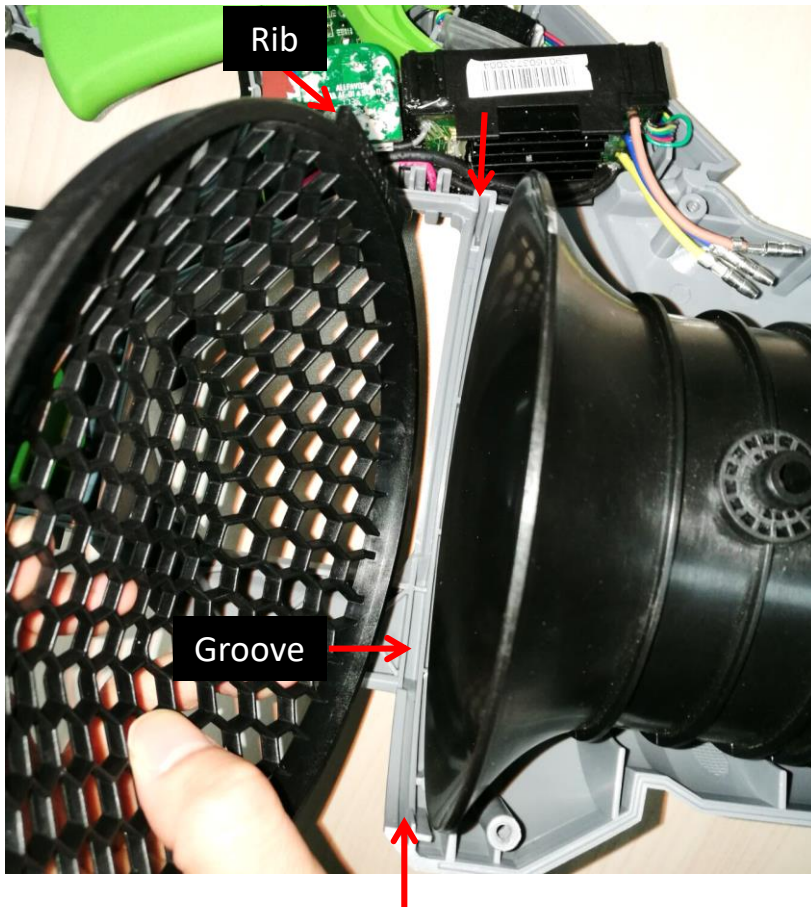
How to Replace the Duct Set (Motor included)

4. Align the bulges on the duct set with the rubber gaskets on the left housing to mount the new duct set into the left housing.



How to Replace the Duct Set (Motor included)

- Align the rib of the fan baffle with the groove in the left housing to correctly assemble the fan baffle into the left housing. **No misalignment of the groove.**

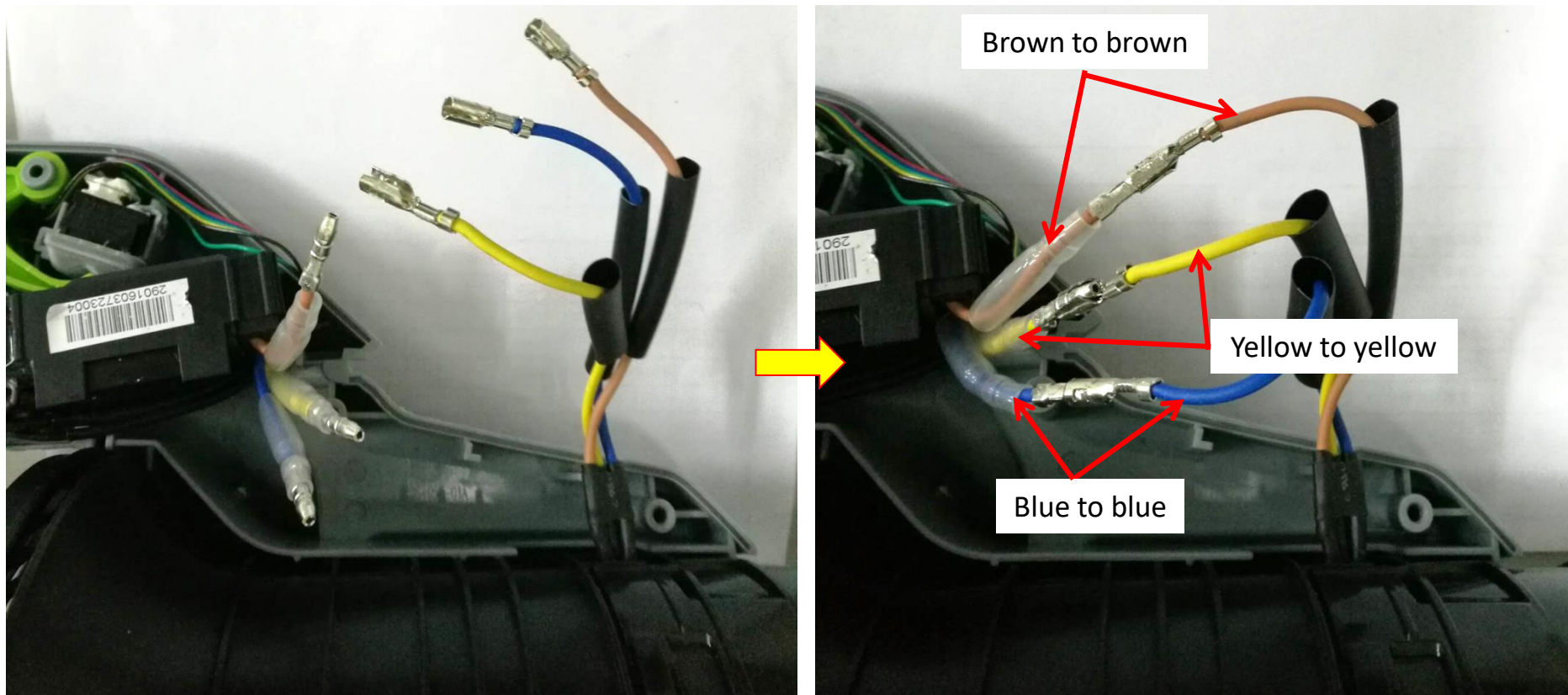


No misalignment of the groove.

How to Replace the Duct Set (Motor included)

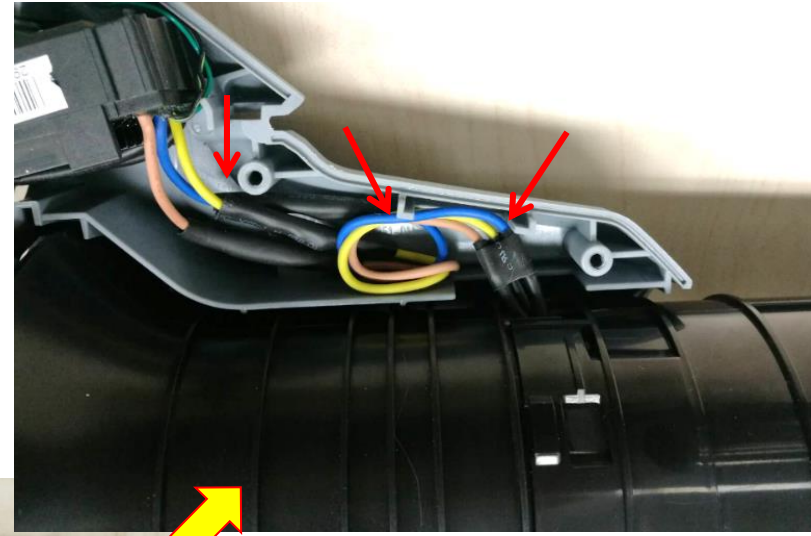
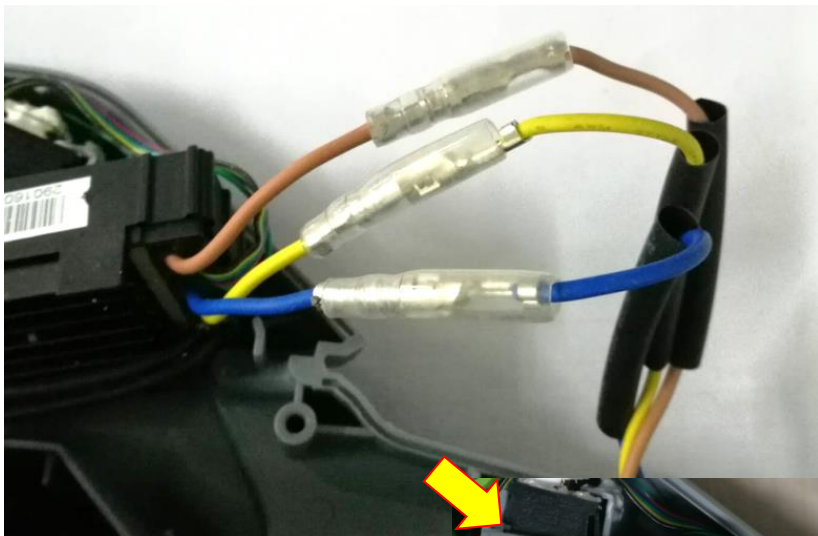
- Put on 3 new heat-shrinkable sleeves one by one onto each terminal, move the transparent sleeve aside before connecting the 3 connectors and then cover the connectors with the transparent sleeves.

NOTICE: Brown to brown, yellow to yellow, blue to blue.



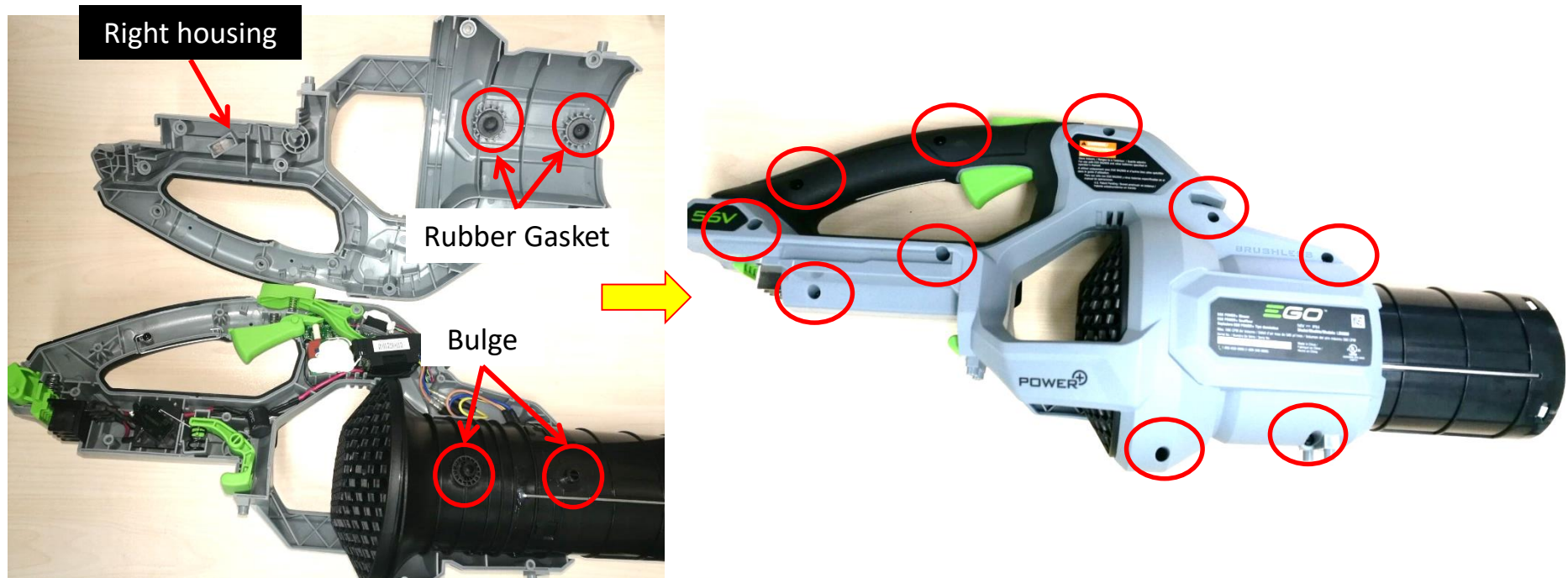
How to Replace the Duct Set (Motor included)

7. Cover the 3 connectors with the heat-shrinkable sleeves and use the heat gun to shrink them.
8. Align the connectors into the corresponding groove in the left housing.



How to Replace the Duct Set (Motor included)

9. Before closing the right housing, make sure that the other 2 rubber gaskets are correctly located in the right housing and then align the rubber gaskets with the bulges on the duct set to close the housings.
10. Avoid wire pinching.
11. Tighten the housings with the 10 screws.



How to Replace the Duct Set (Motor included)

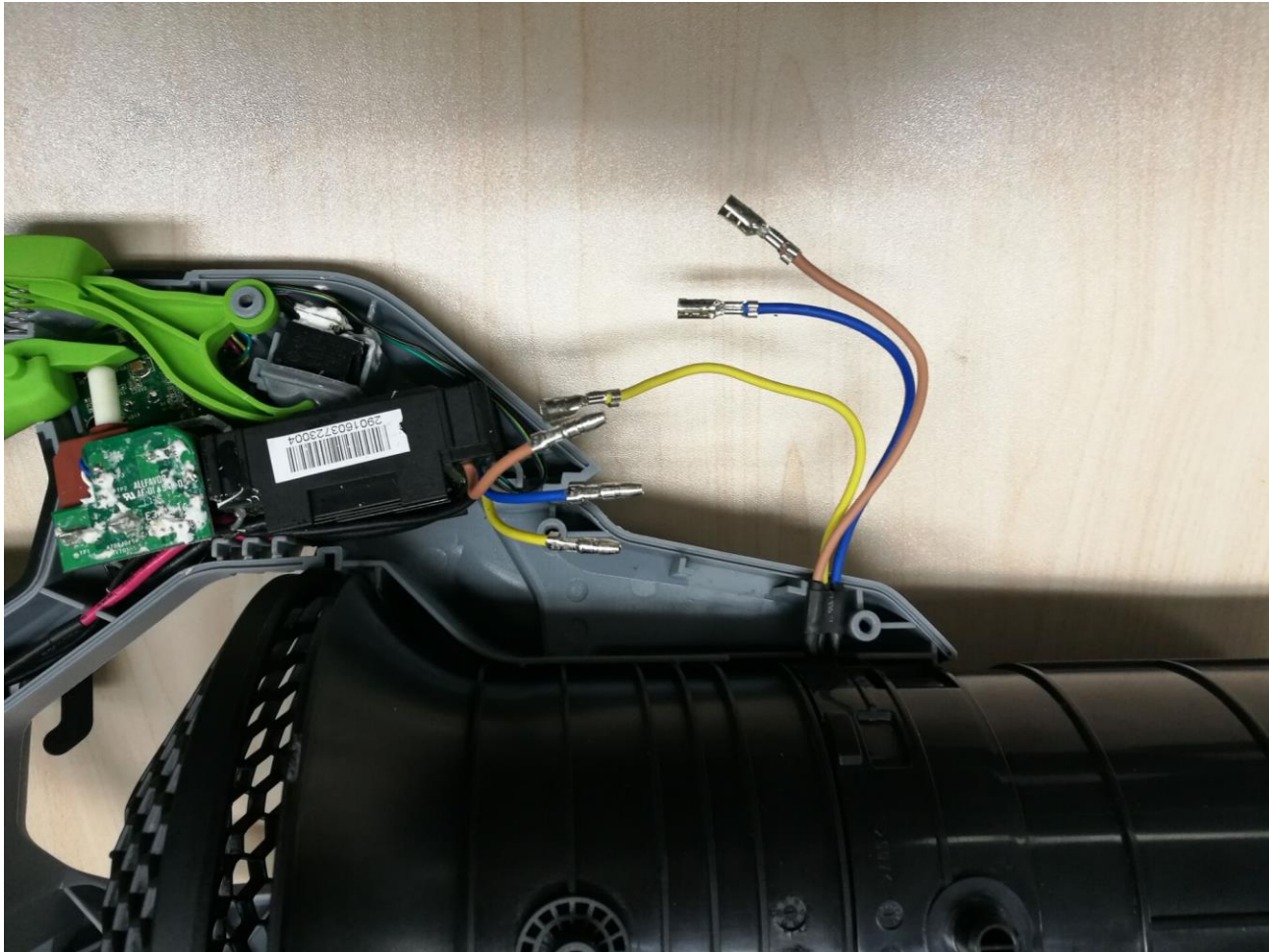
12. Mount the bottom base onto the housings and tighten it with the 4 screws.



Part 3: How to Replace the PCBA

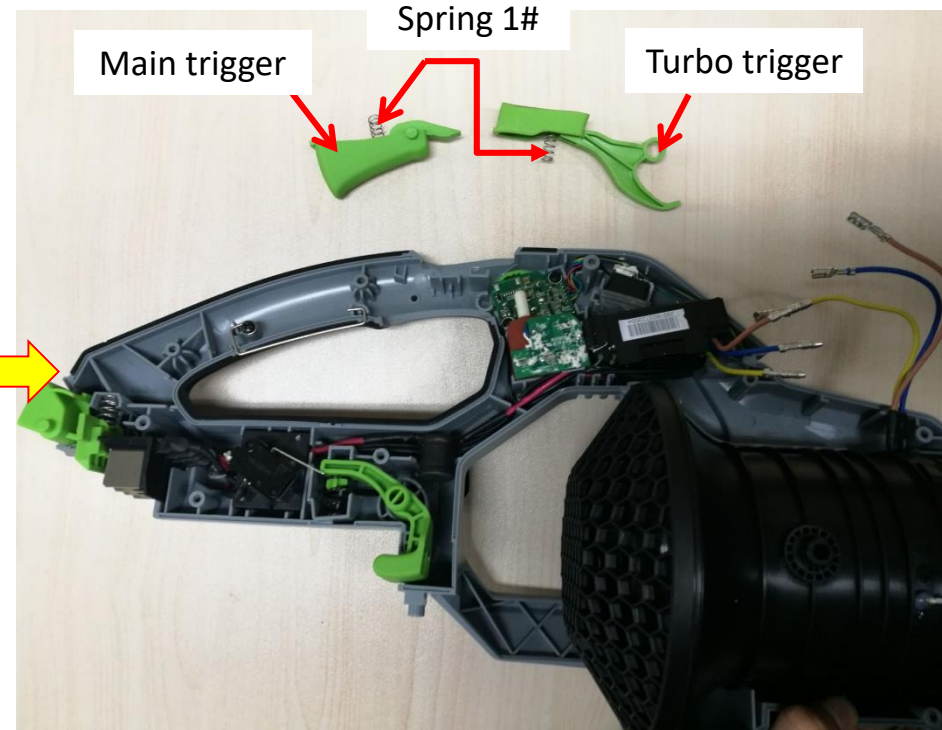
How to Replace the PCBA

1. Open the housing set and separate the connectors between the PCBA and the duct set as Slide 7-9 shown in the section “**How to Detect the PCBA and the Motor**”.



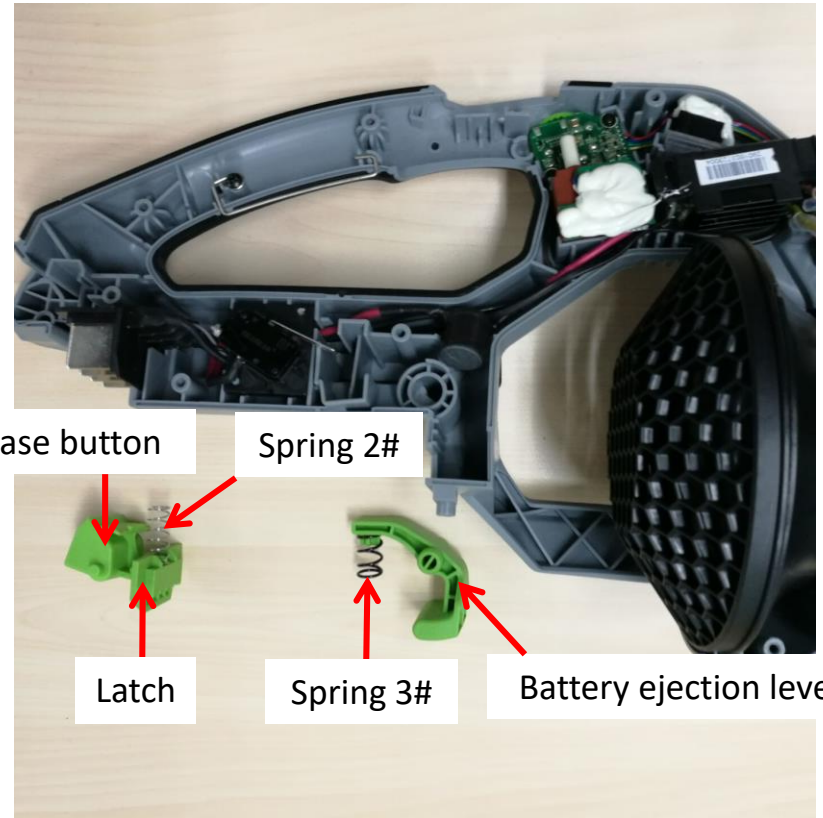
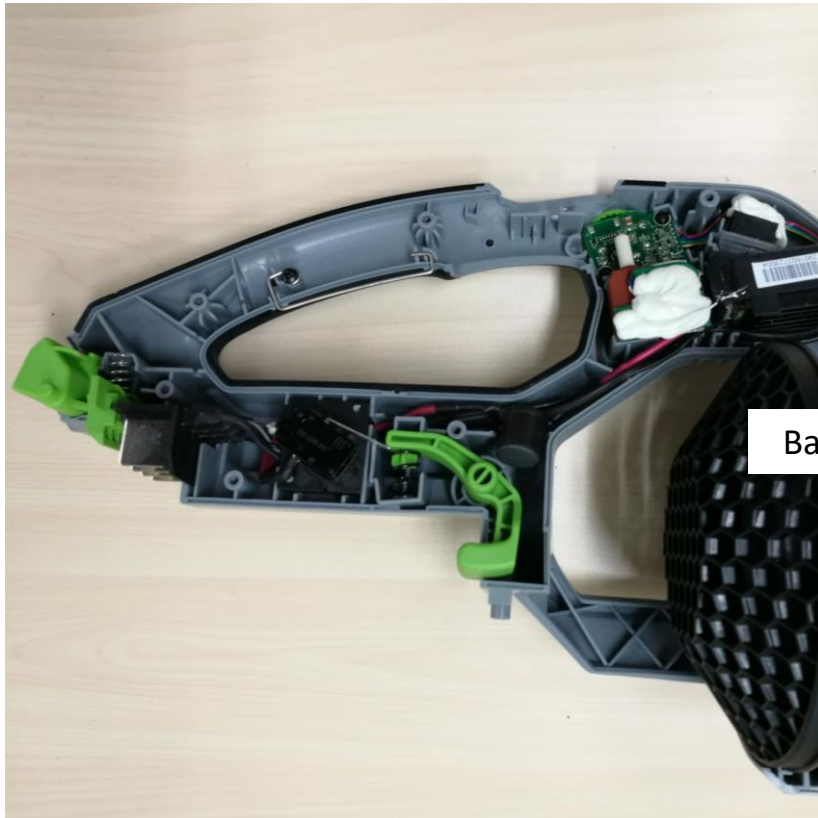
How to Replace the PCBA

2. Remove the main trigger and turbo trigger, as well as the 2 spring 1#. Save all of them for reassembly. If any of them needs replacement, replace it.



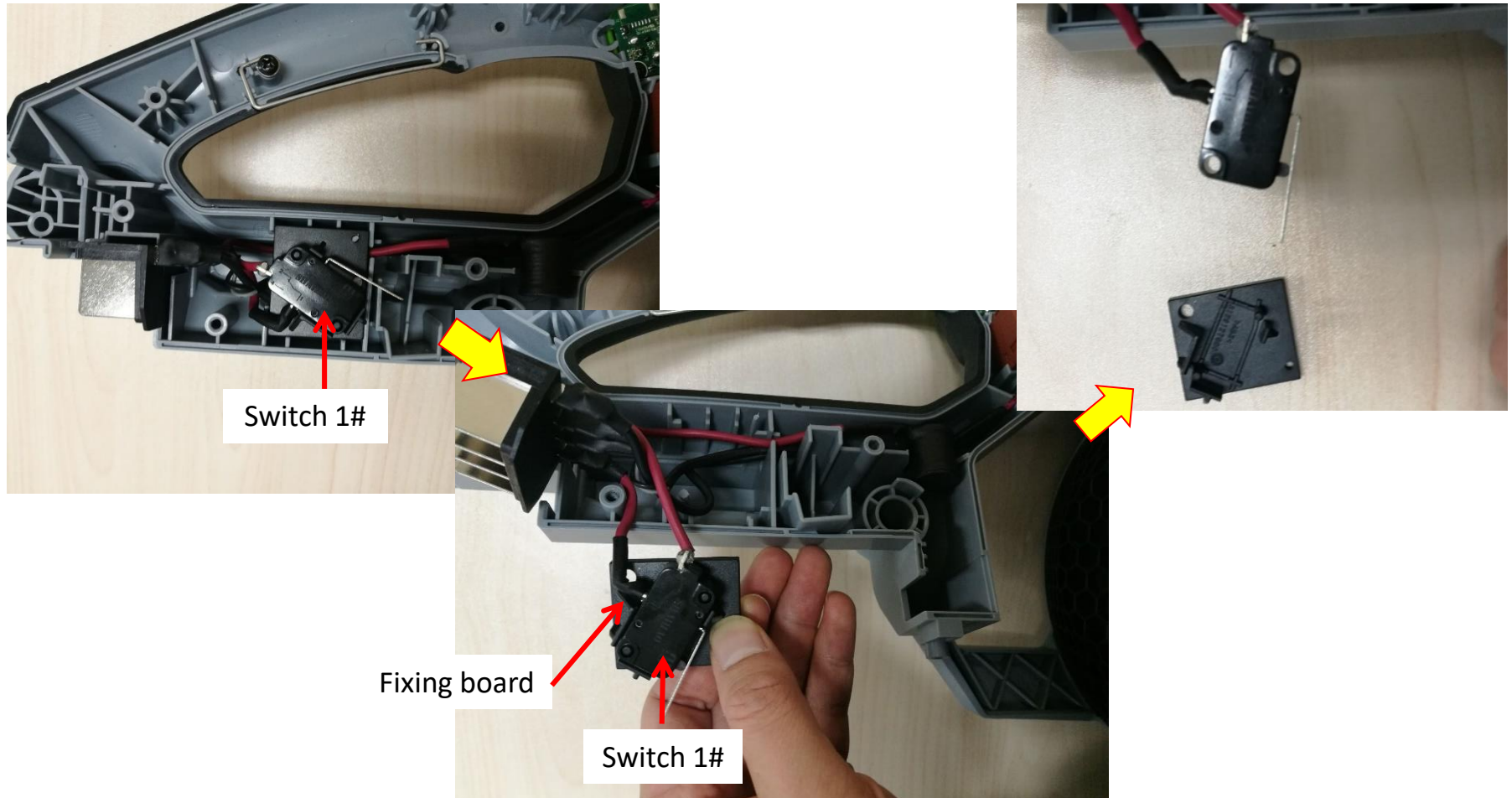
How to Replace the PCBA

3. Remove the battery-release button, latch, battery ejection lever and the 2 different springs. If any is worn or needs replacement, replace it.



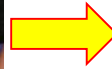
How to Replace the PCBA

4. Remove the switch 1#, together with its fixing board, from the left housing and separate the switch 1# from the fixing board.



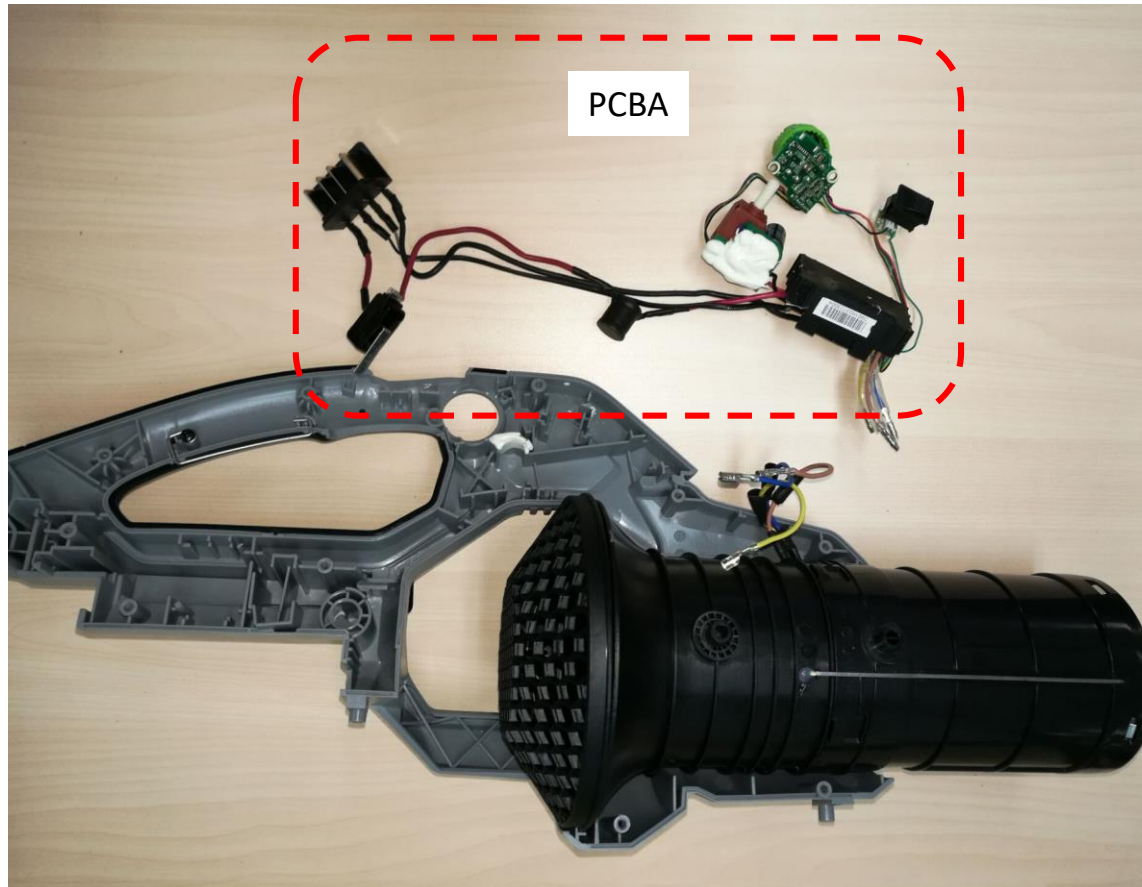
How to Replace the PCBA

5. Loosen and remove the 2 screws on the speed-adjustment PCBA to release the whole PCBA from the left housing.



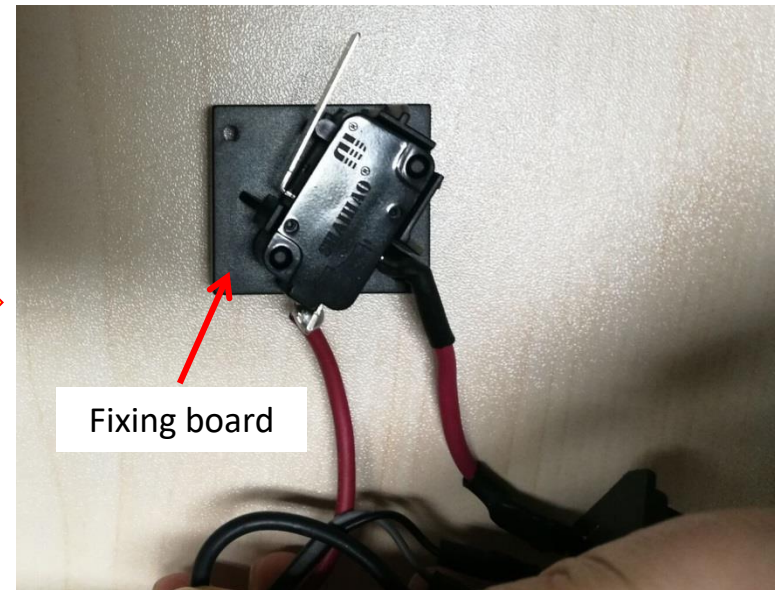
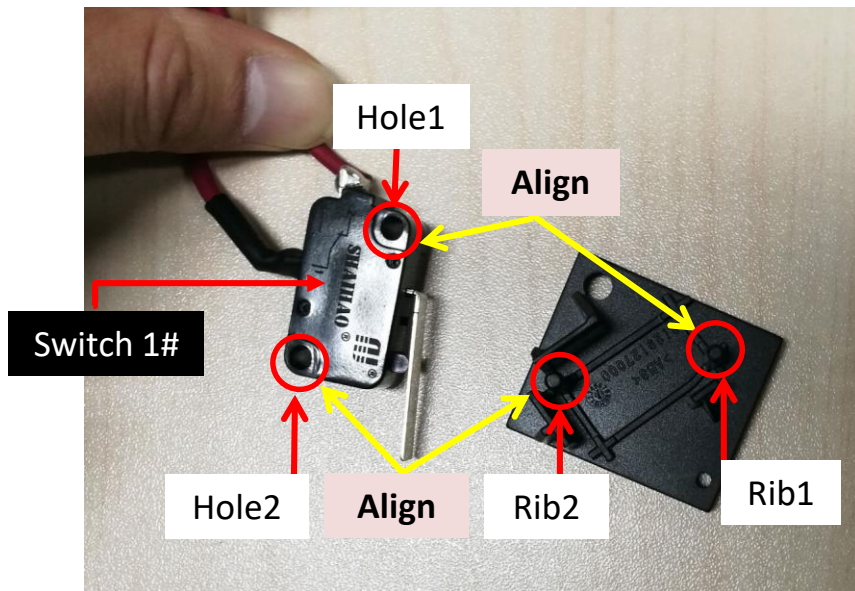
How to Replace the PCBA

6. Remove the PCBA from the left housing.
7. Replace it with a new PCBA.



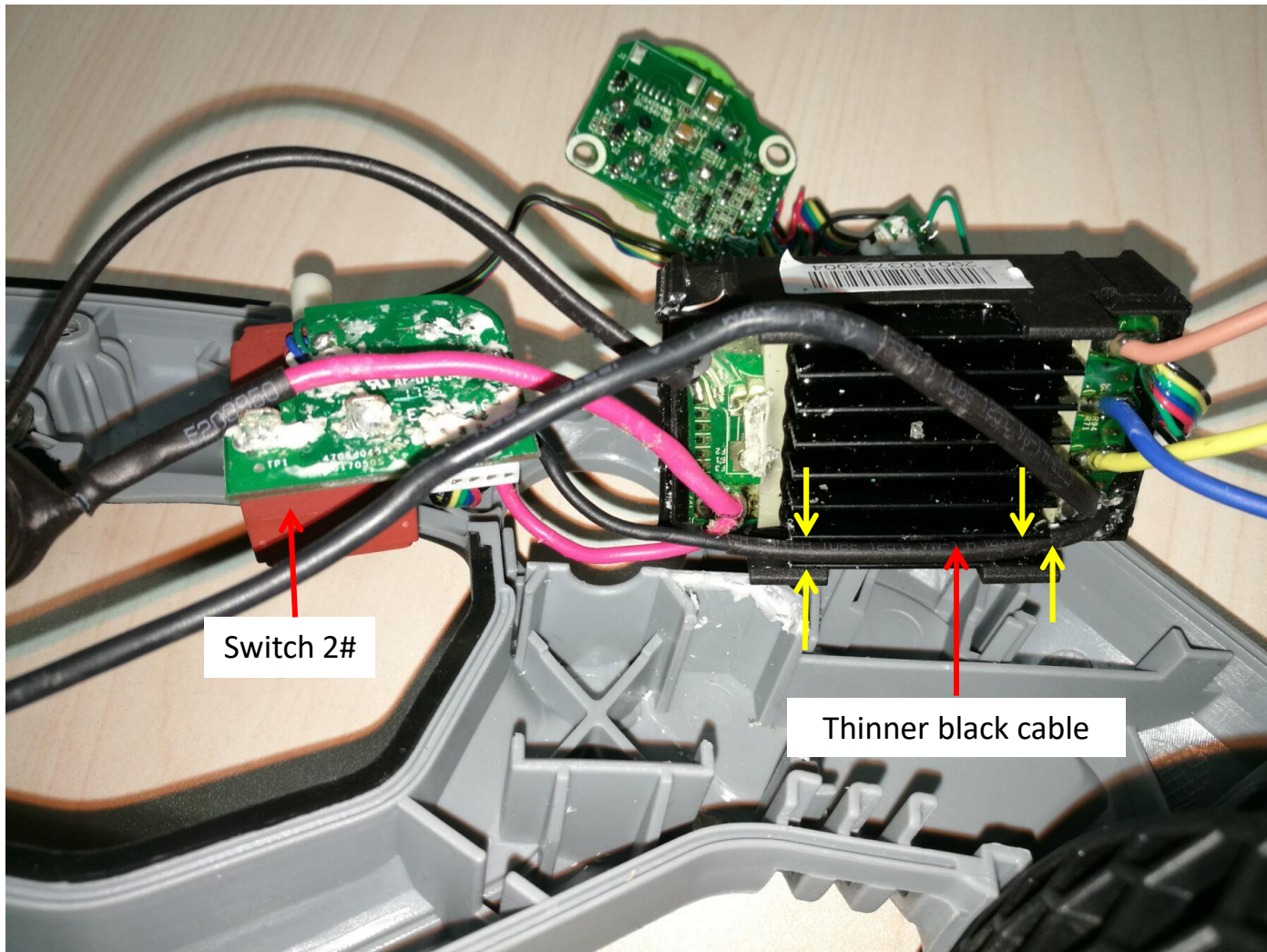
How to Replace the PCBA

- Align the holes in the switch 1# with the ribs on the fixing board to assemble the switch 1# onto the fixing board.



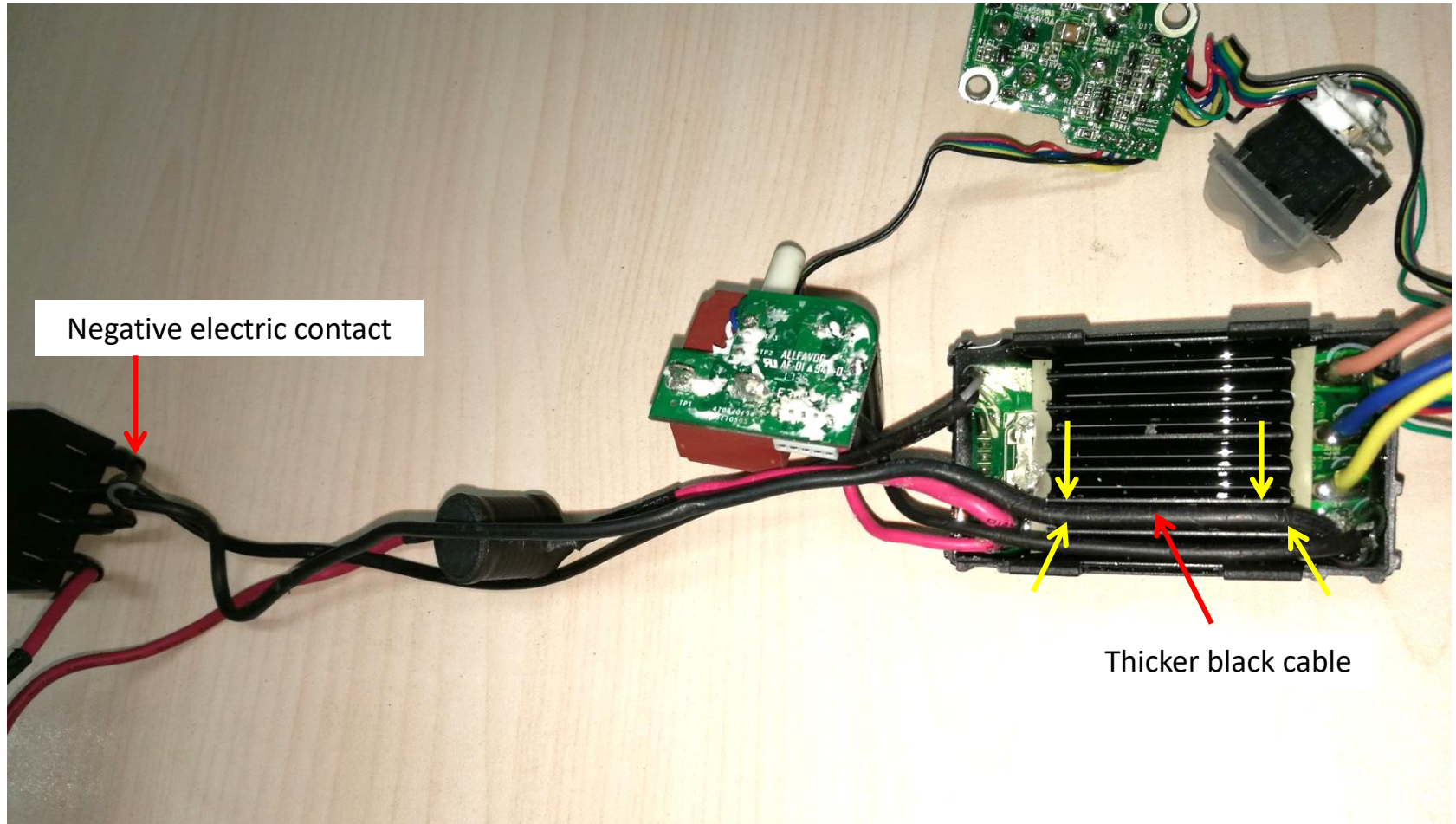
How to Replace the PCBA

9. Align the thinner black cable that is connected to the switch 2# into the groove at the edge of the PCBA.



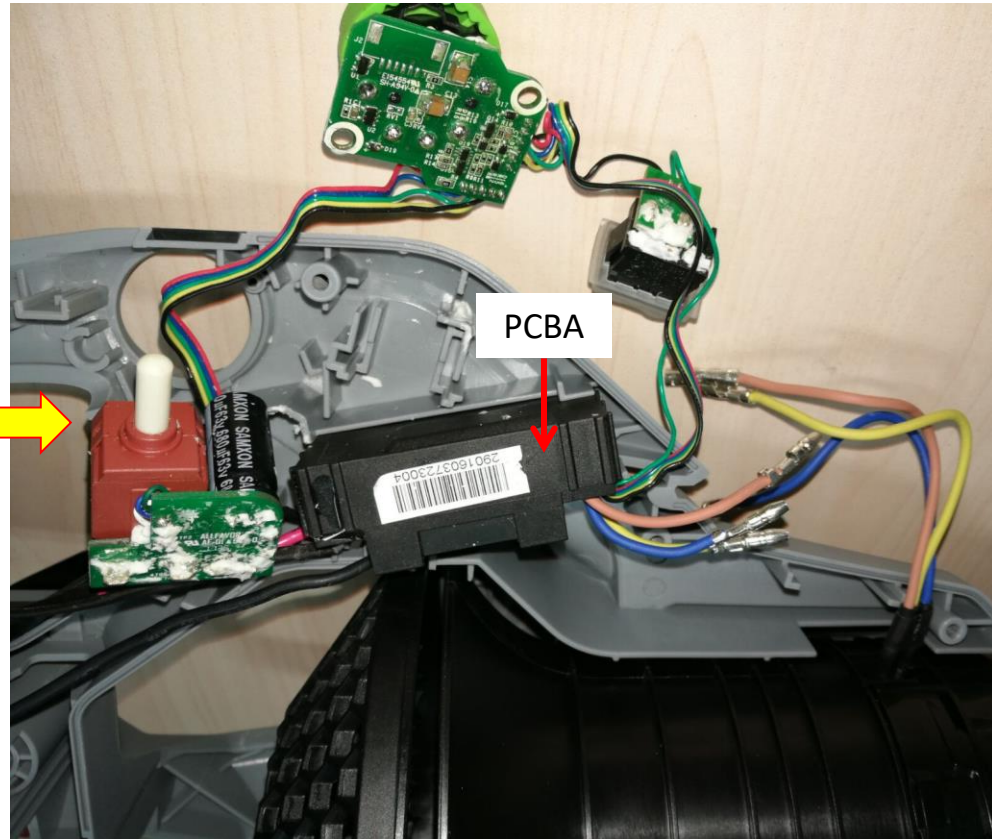
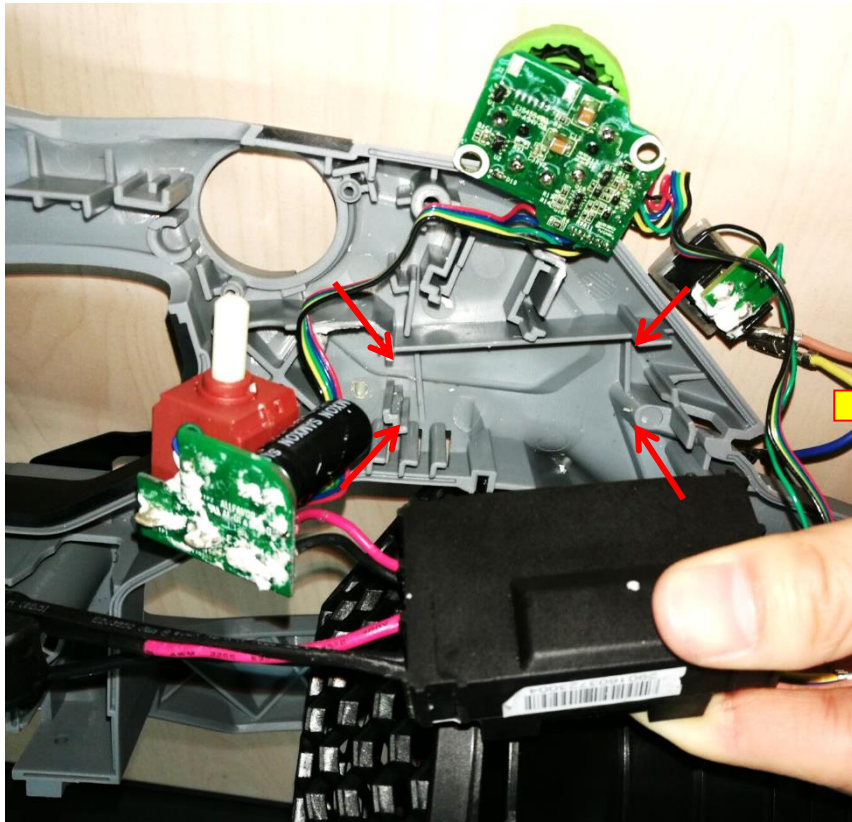
How to Replace the PCBA

10. Align the thicker black cable connected with negative electric contact into the groove at the second edge of the PCBA.



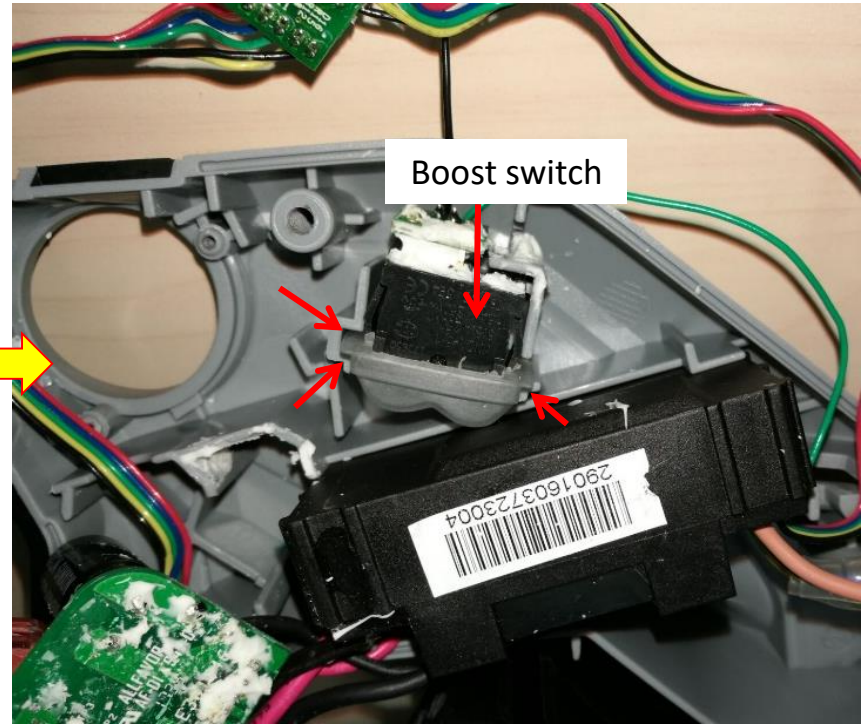
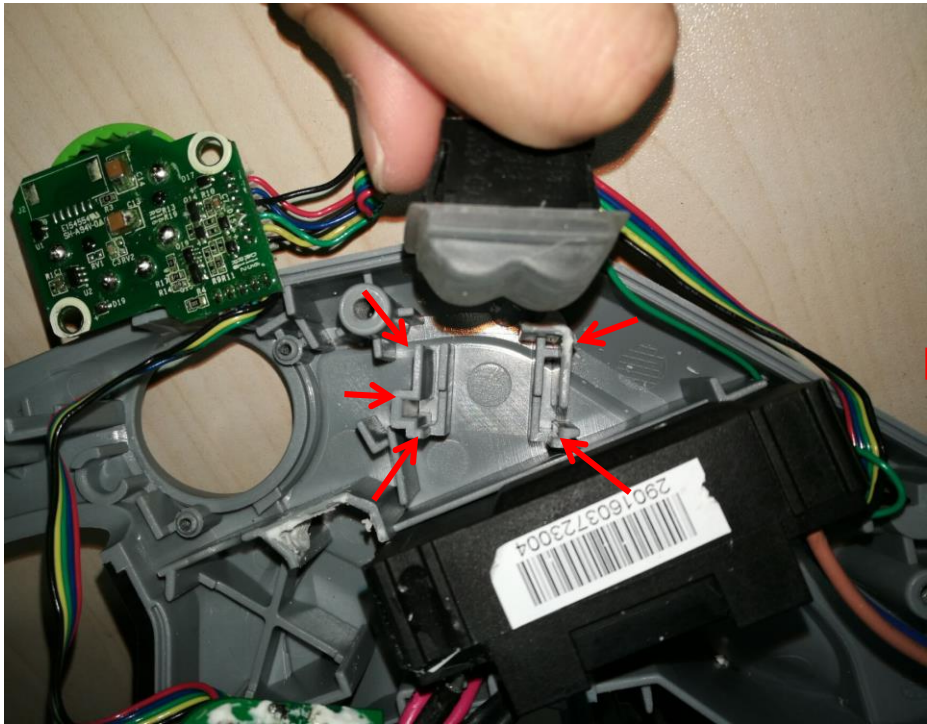
How to Replace the PCBA

11. Mount the PCBA with firmly holding the thinner and thicker wires in their place to put them into the groove in the left housing.



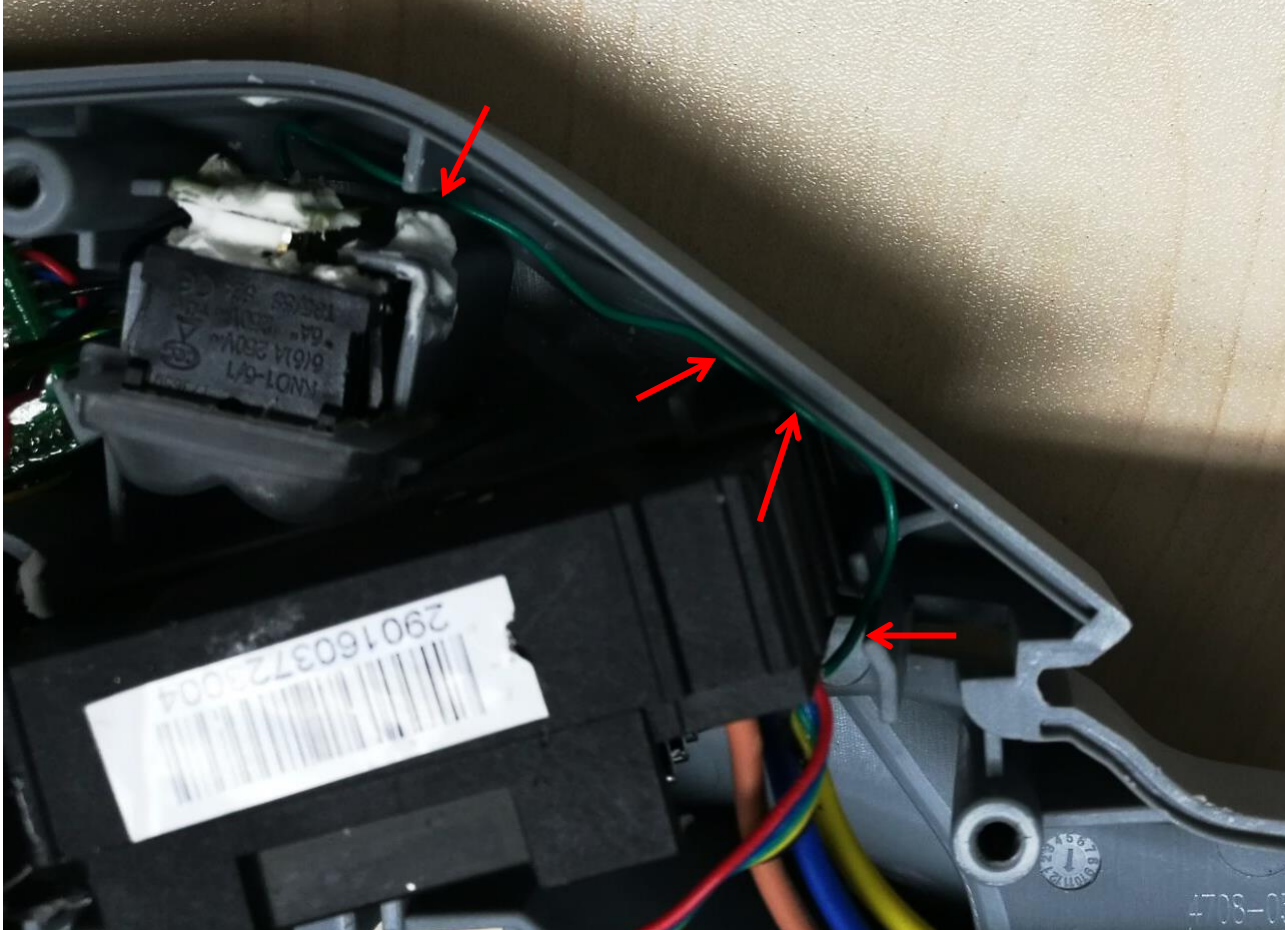
How to Replace the PCBA

12. Mount the boost switch into the groove.



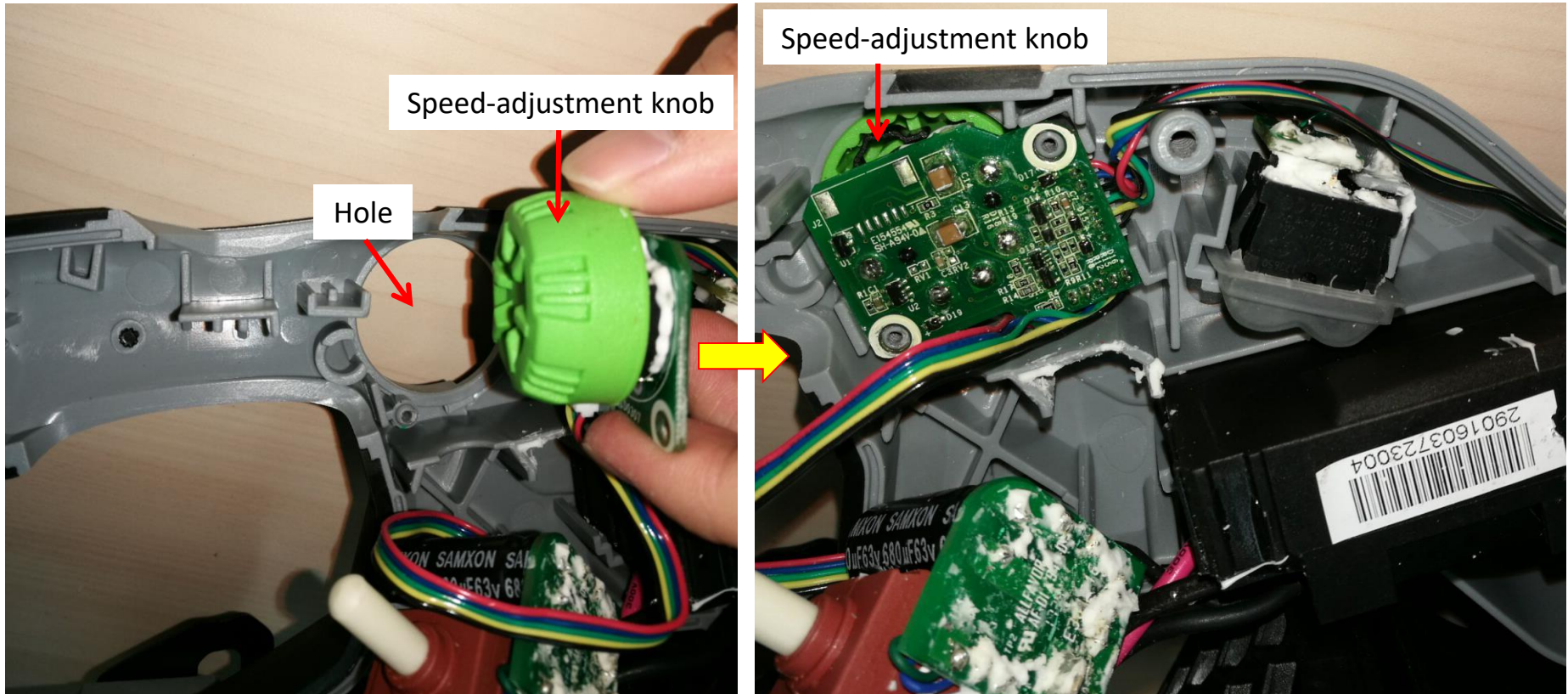
How to Replace the PCBA

13. Align the green thin cable from the boost switch into the groove.



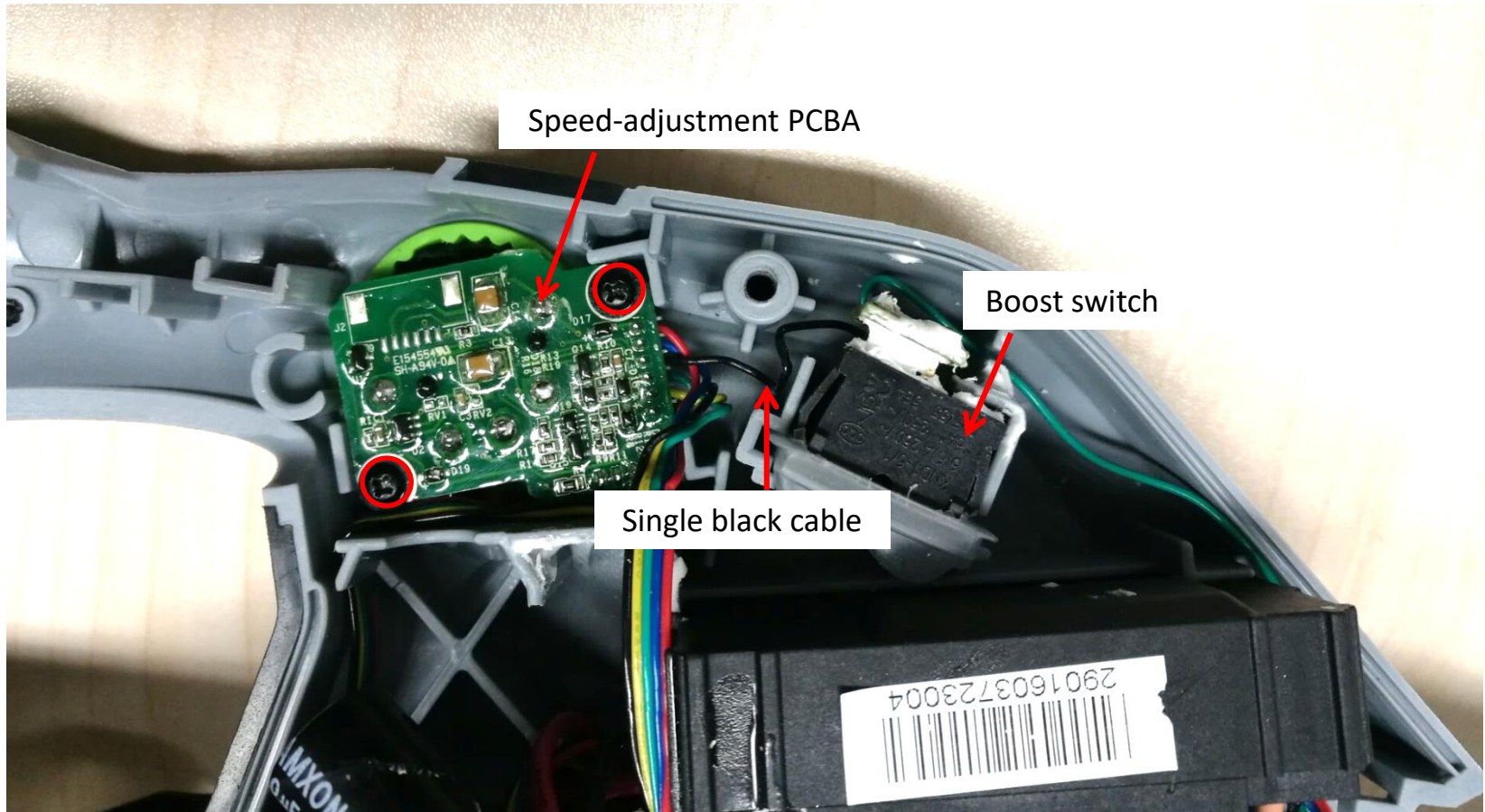
How to Replace the PCBA

14. Mount the speed-adjustment knob into its corresponding hole in the left housing.



How to Replace the PCBA

15. Tighten the speed-adjustment PCBA with the 2 screws.
16. Align the single black cable which connects the speed-adjustment PCBA to the boost switch into the vacant groove.



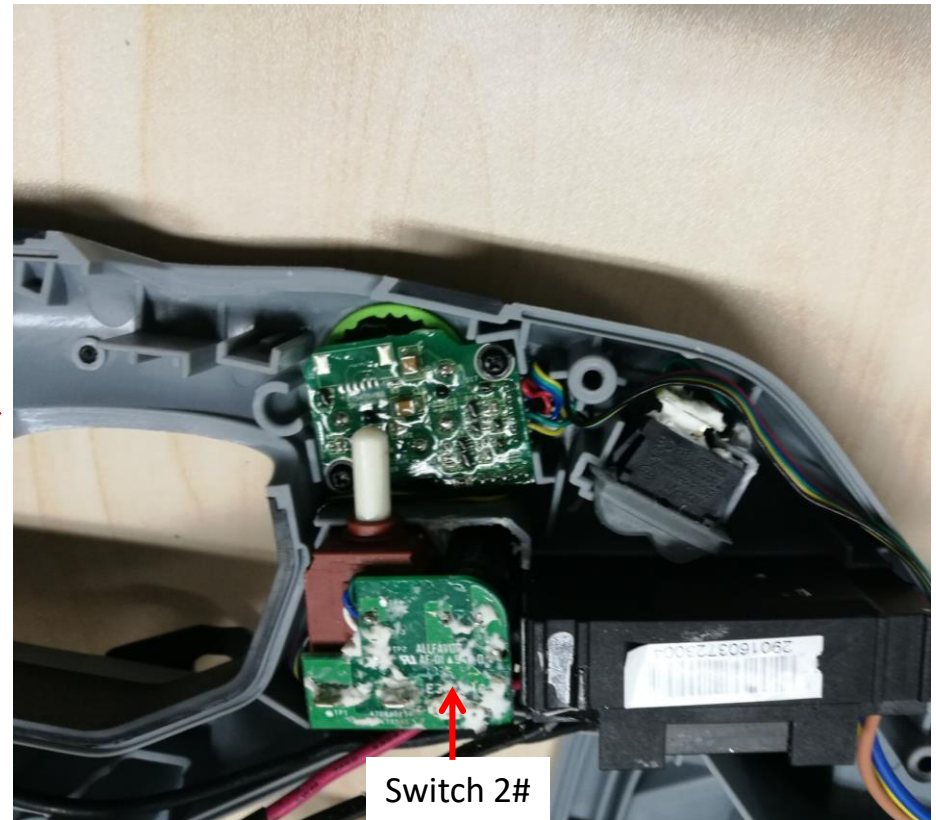
How to Replace the PCBA

17. Align the flat cables into the groove.



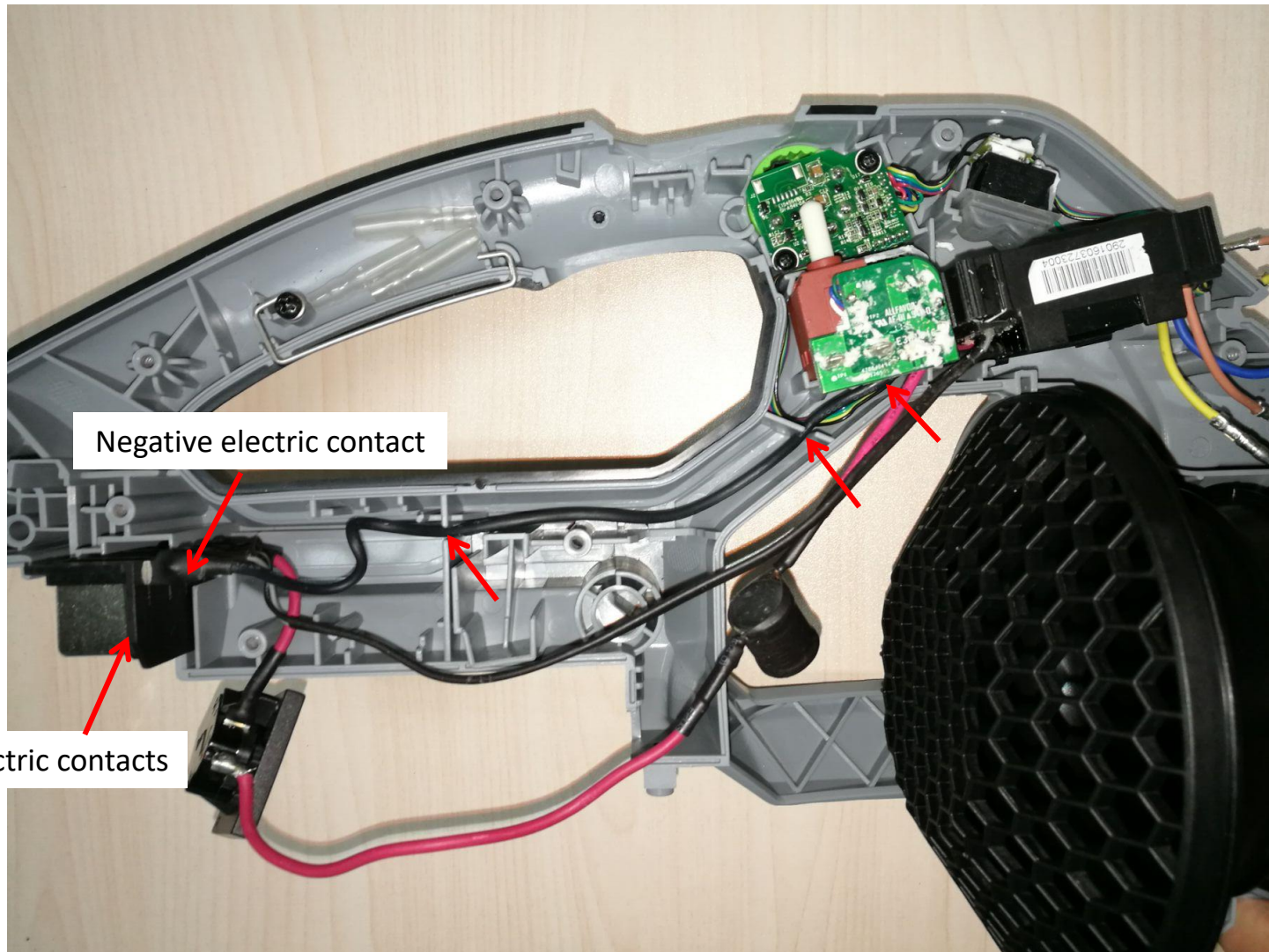
How to Replace the PCBA

- Align the other flat cables which link the switch 2# to the speed-adjustment PCBA into the groove first and then mount the switch 2# into the housing groove.



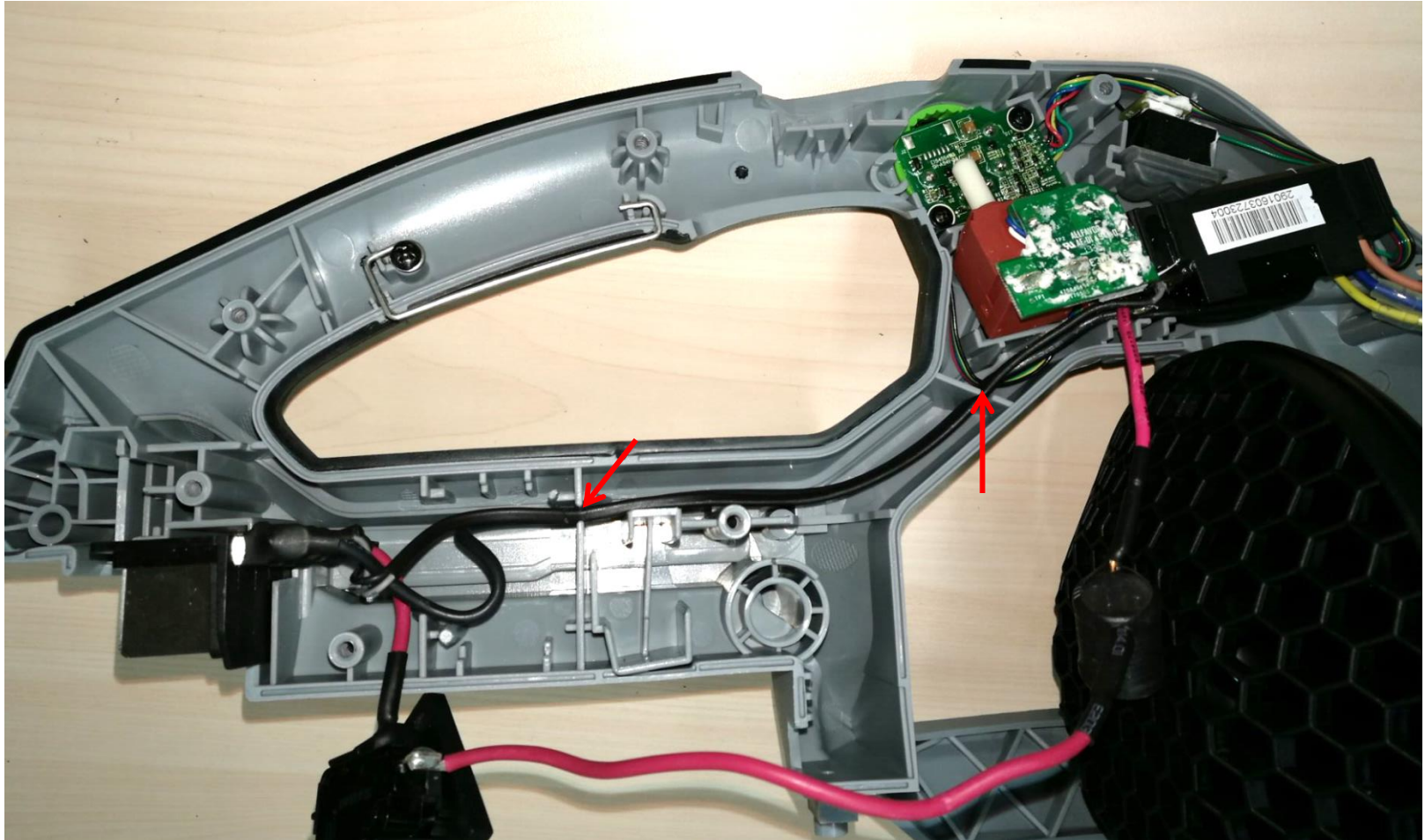
How to Replace the PCBA

19. Mount the battery electric contacts into the left housing and align the black cable which comes from the negative electric contact.



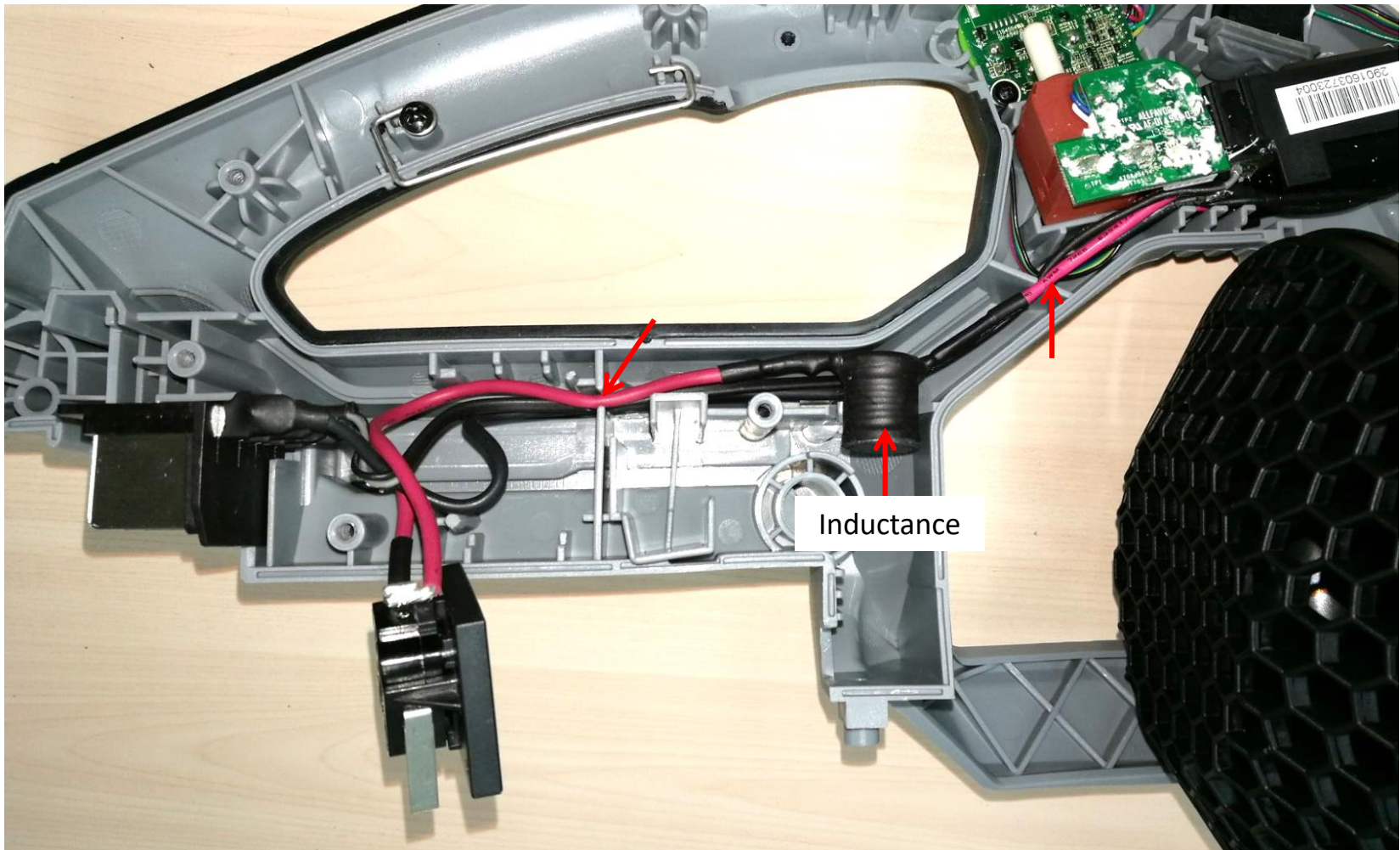
How to Replace the PCBA

20. Align the other black cable into the groove.



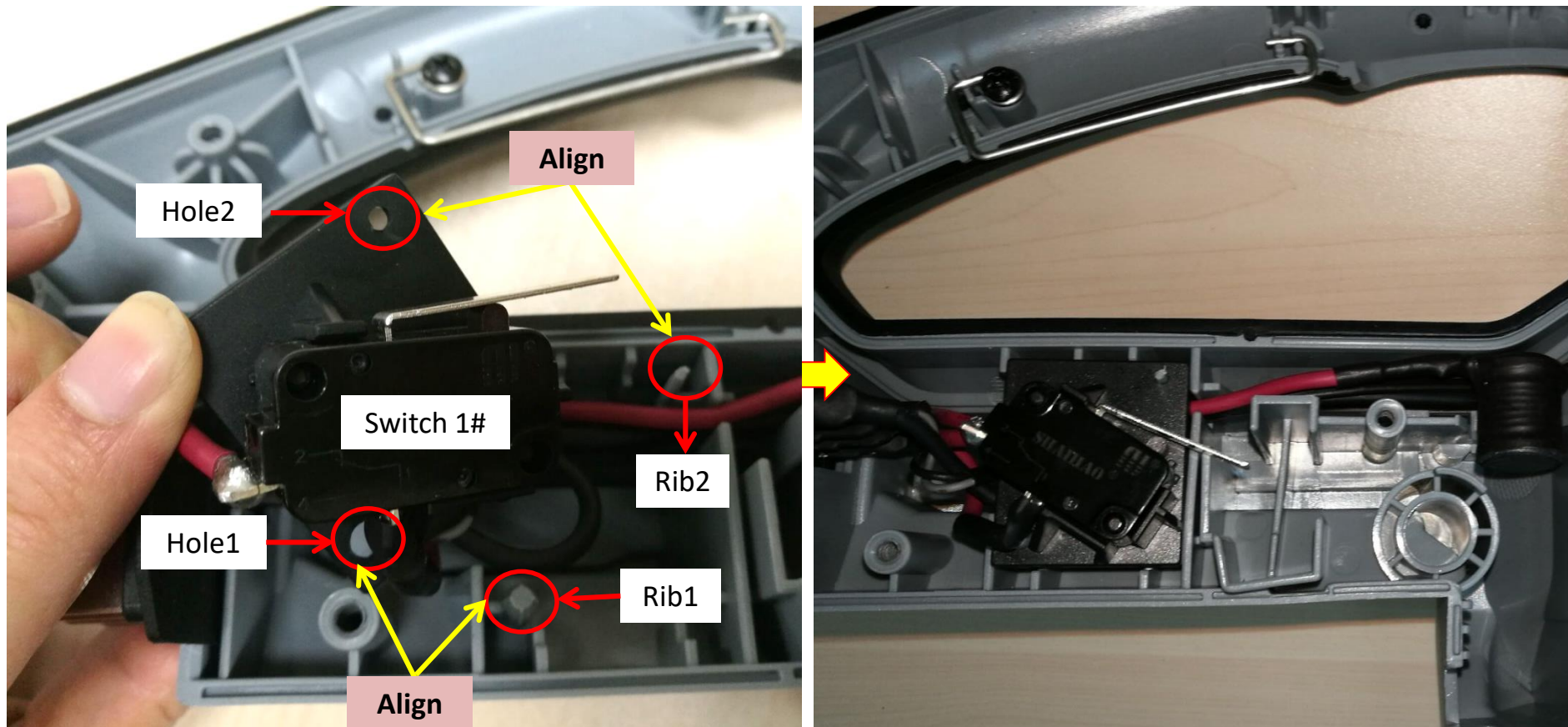
How to Replace the PCBA

21. Mount the inductance into the groove and align its linked red cable into the groove.



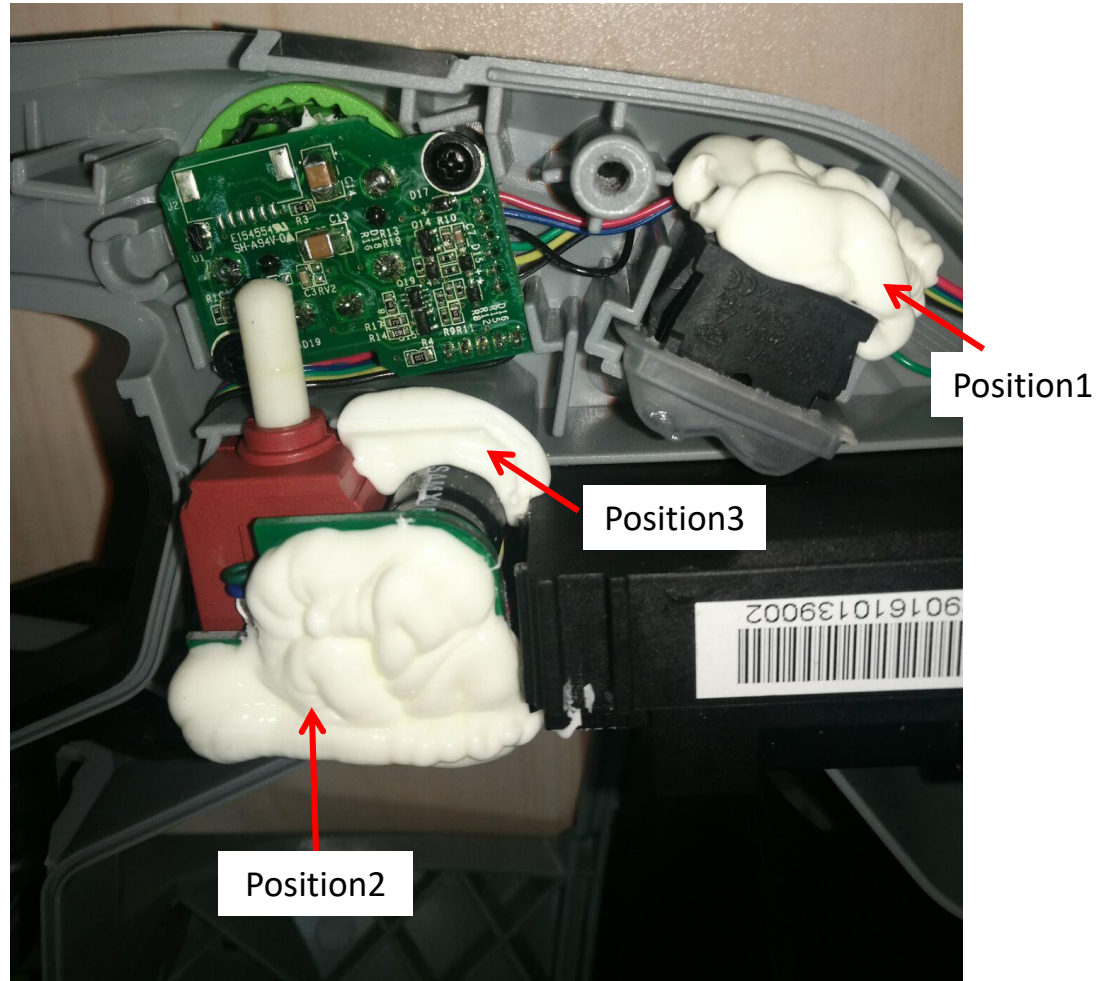
How to Replace the PCBA

22. Align the holes on the fixing board with the ribs on the left housing, and then mount the fixing board and the switch 1# assembly into the left housing.



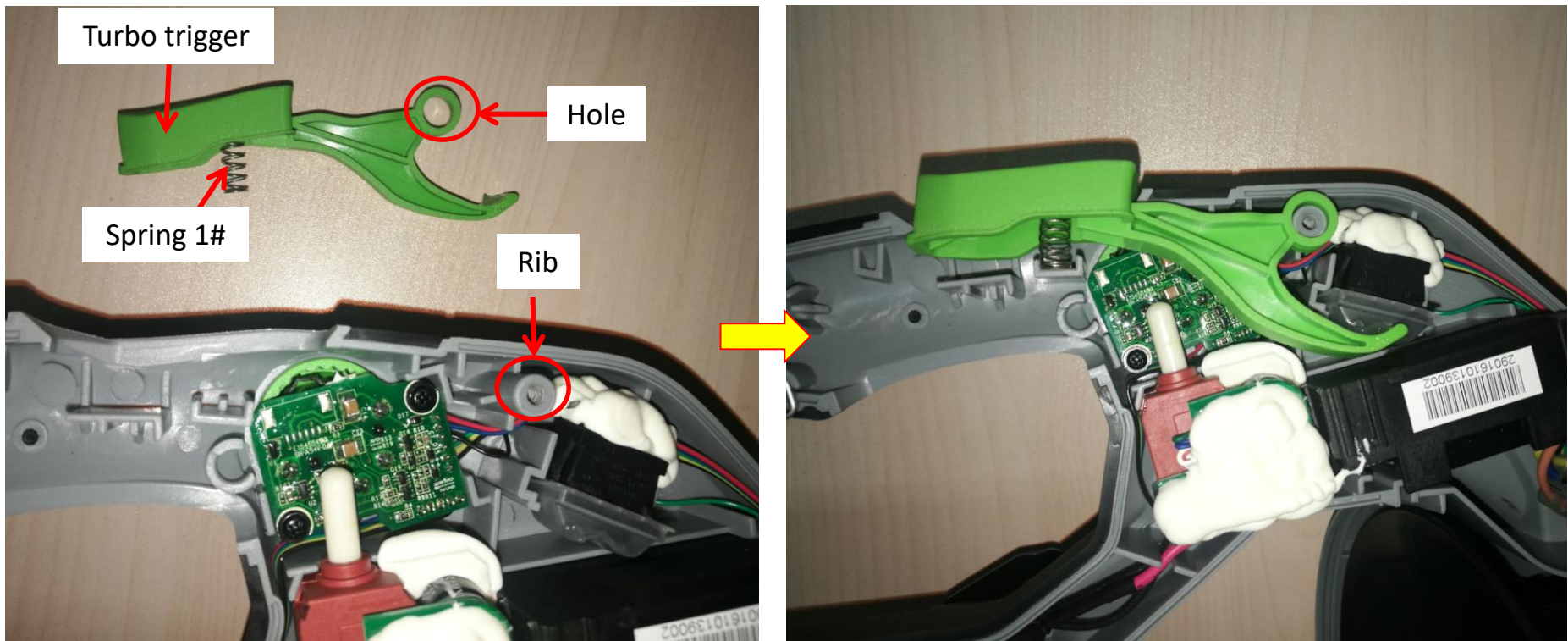
How to Replace the PCBA

23. Add some waterproof glue on position1 and position2 to protect the electric circuit board and position3 (capacitor fixing).



How to Replace the PCBA

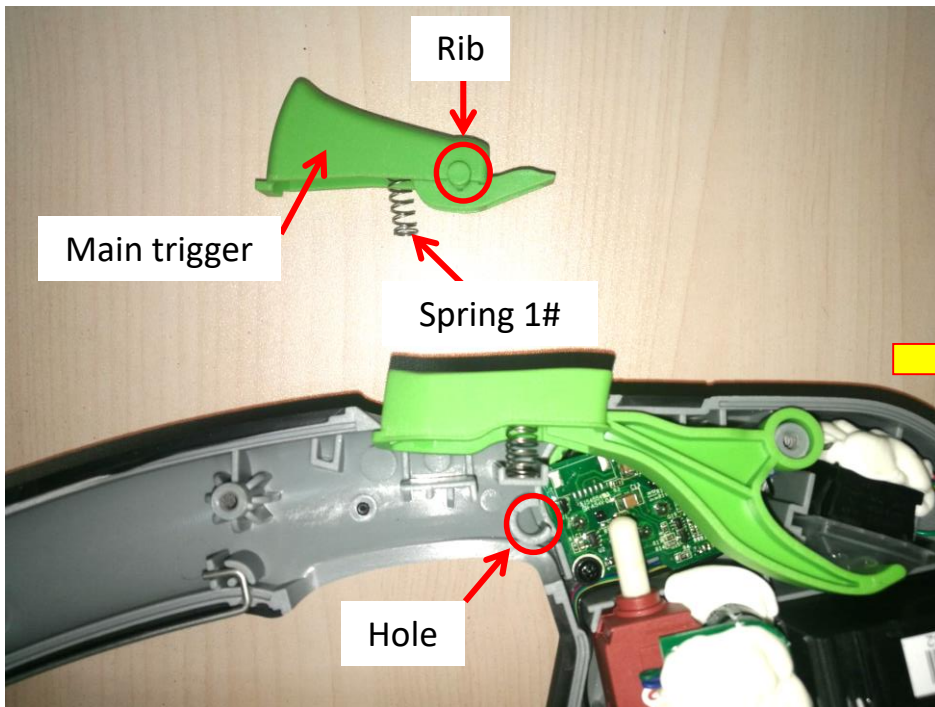
24. Place one spring 1# onto the turbo trigger first.
25. Align the hole on the turbo trigger with the rib on the left housing, then mount the trigger onto the rib.



How to Replace the PCBA

26. Assemble the other spring 1# onto the main trigger.

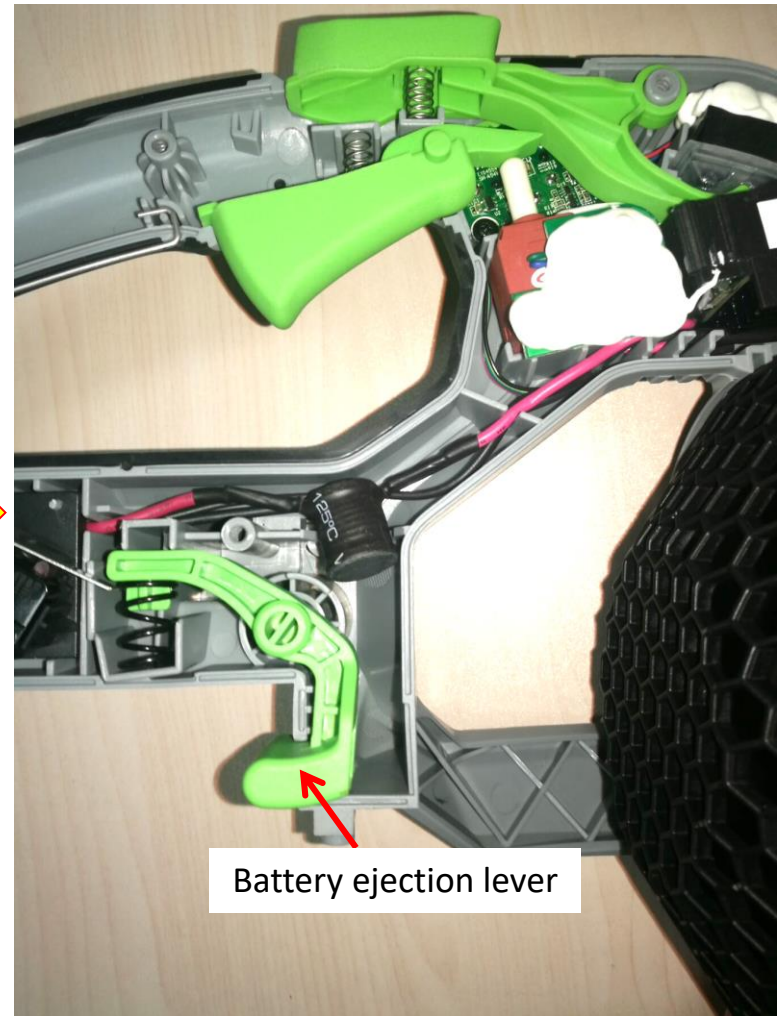
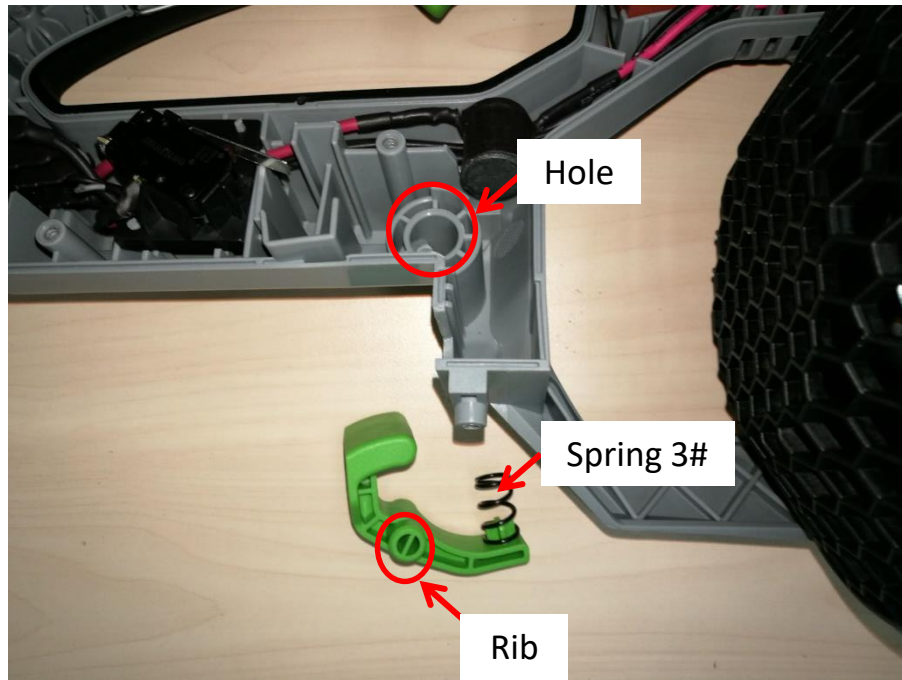
27. Align the rib on the main trigger with the hole on the left housing to mount the main trigger into its place.



How to Replace the PCBA

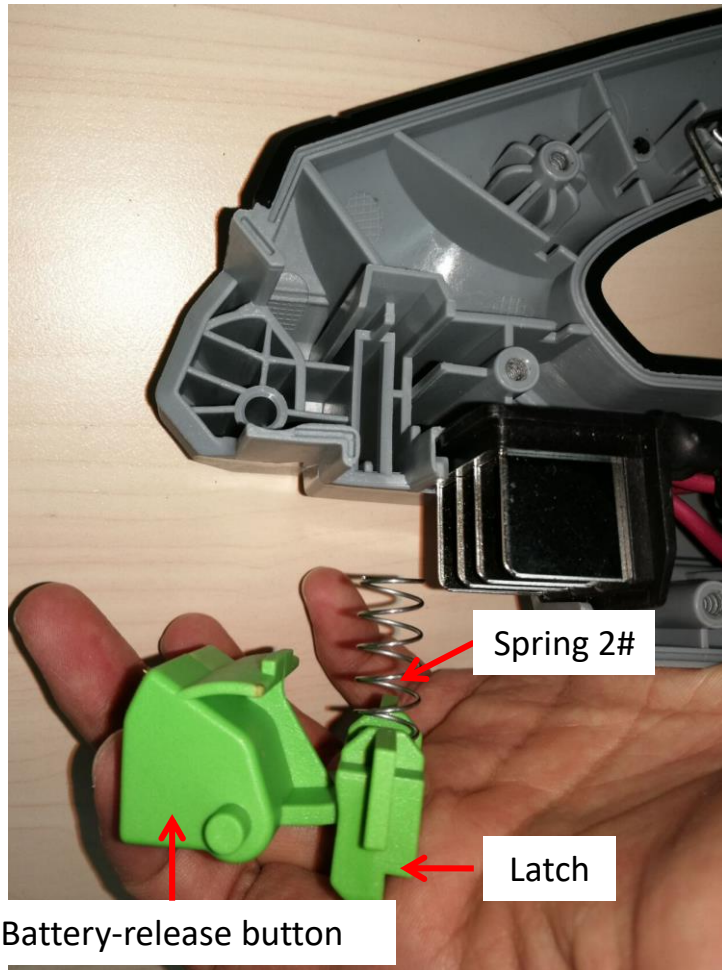
28. Assemble the spring 3# onto the lever.

29. Align the rib on the battery ejection lever with the hole on the left housing to mount the lever into its place.



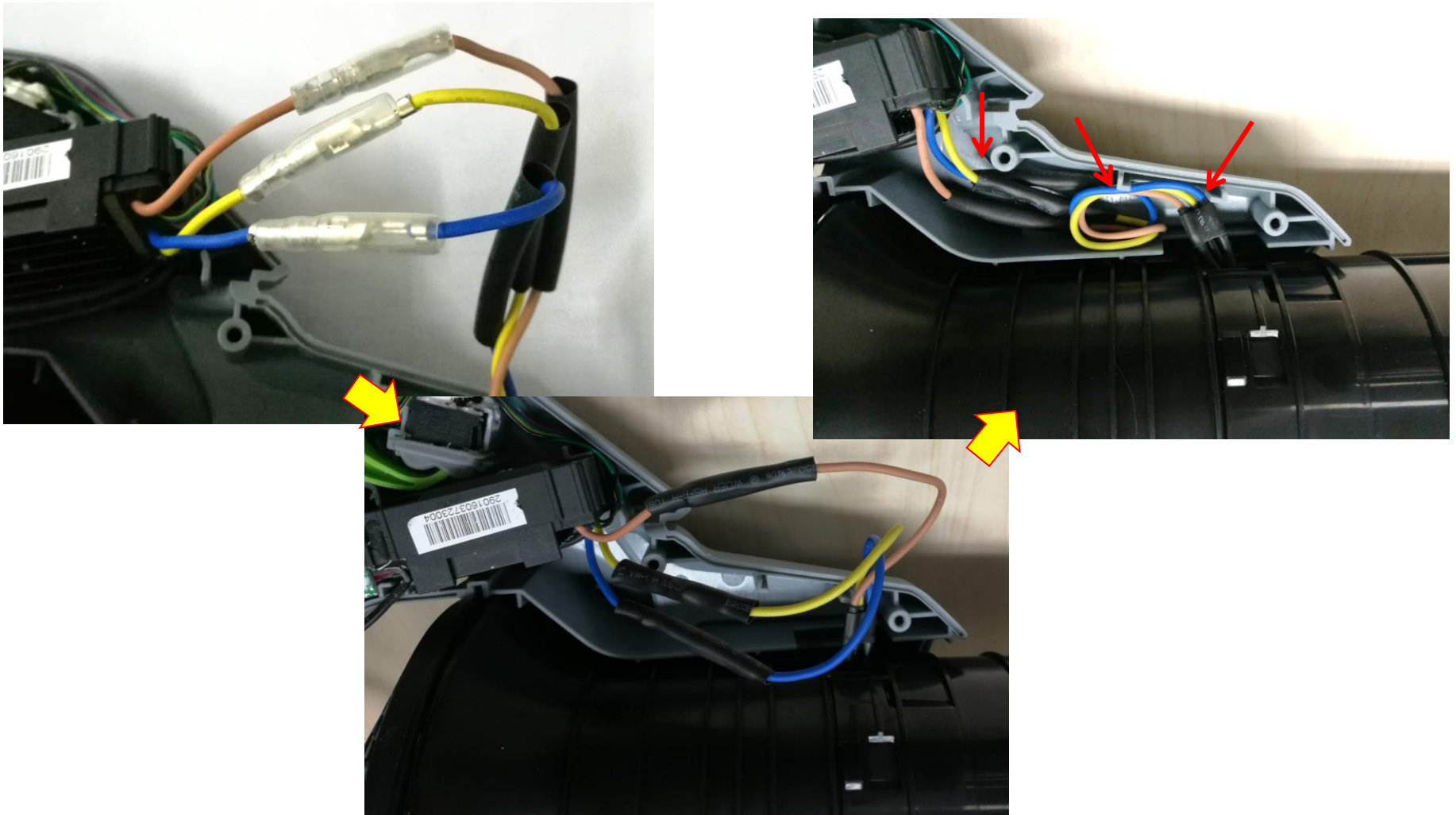
How to Replace the PCBA

30. Assemble the battery-release button, latch and spring 2# first, and then mount them into the groove of the left housing.



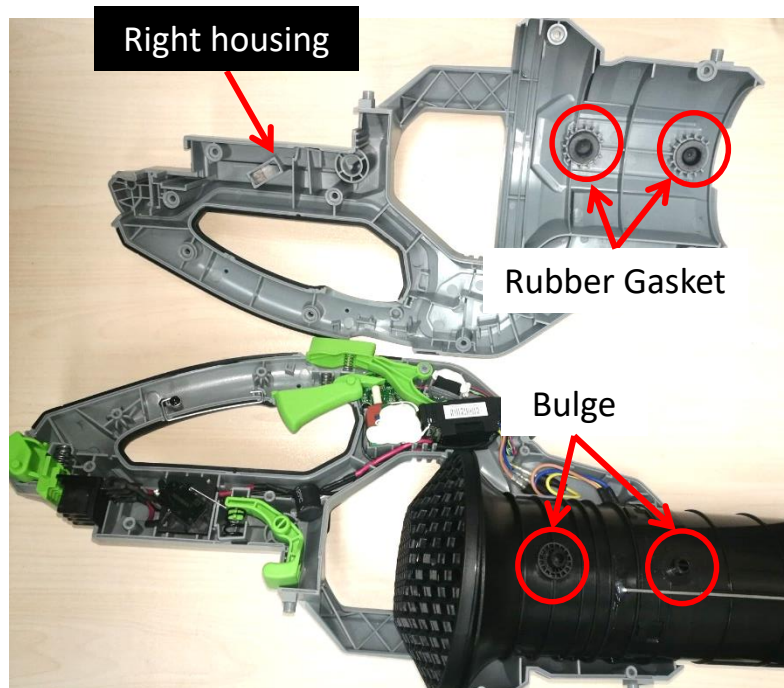
How to Replace the PCBA

31. Connect the connectors between the PCBA and the duct set as Slide 21-22 in section “**How to Replace the Duct Set (Motor included)**”.



How to Replace the PCBA

32. Before closing the right housing, make sure that the other 2 rubber gaskets are correctly located in the right housing and then align the rubber gaskets with the bulges on the duct set to close the housings.
33. Avoid wire pinching.
34. Tighten the housings with the 10 screws.



How to Replace the PCBA

35. Mount the bottom base onto the housings and tighten it with the 4 screws.



THE END