

REPAIR GUIDELINE

Dedicated String Trimmer_ST1530



Version: 1

Issue Date: 03/20/2018

Table of Contents

NO.	Contents	Page
1	Troubleshooting	3
2	Tool list	4
3	Part 1: How to Detect the PCBA and Motor Assembly	5-15
4	Part 2: How to Replace the Motor Assembly	16-26
5	Part 3: How to Replace the PCBA	27-54
6	Part 4: How to Replace the Tube	55-67
7	Part 5: How to Replace the Trimmer Head and Gear Case Assembly	68-90

Troubleshooting

Problem	Possible Cause	Fault Position	Test & Solution
Won't turn on	PCBA issue	Rear housing	Test the motor's condition as is shown in the "How to Detect the PCBA and Motor Assembly" section, if the motor is in good condition, it means the PCBA is broken, replace it with a new one.
	Motor issue	Rear housing	Test the motor's condition as is shown in the "How to Detect the PCBA and Motor Assembly" section.

Tool List For Repair

NO.	Tool List	SPEC	Remark
1	Phillips	PH2, PH0	
2	Torx screwdriver	T-15	
3	Hex wrench	5mm	
4	Needle-nose pliers		
5	Multi-function wrench	14mm	

Part 1: How to Detect the PCBA and Motor Assembly

How to Detect the PCBA and Motor Assembly

1. Insert the capacitor discharge fixture onto the battery base.
2. Press the lock-off button and trigger simultaneously for about 10s to completely discharge the capacitor connected with the PCBA, then pull the capacitor discharging fixture out of the battery base.



How to Detect the PCBA and Motor Assembly

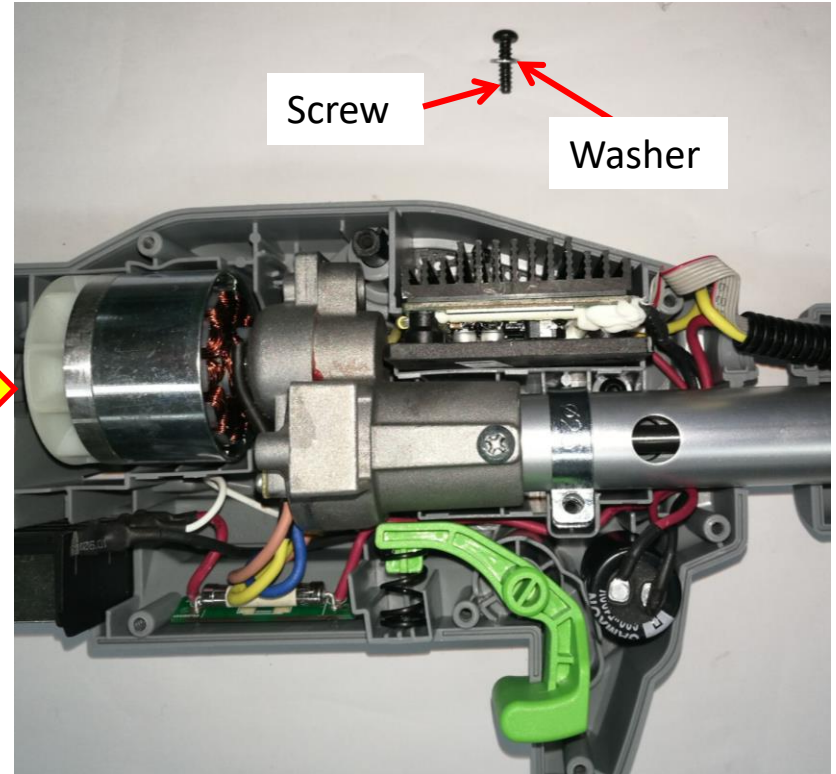
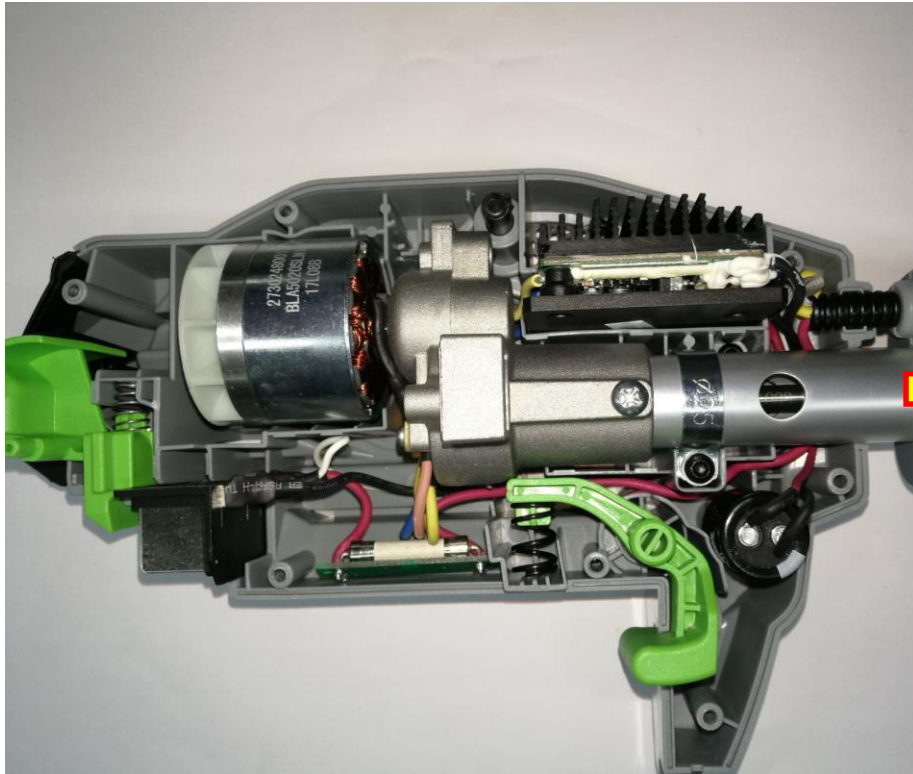
3. Loosen 8 screws to disassemble the housing assembly.



Description	Part Number	Qty.
Tapping screw	5620479001	8

How to Detect the PCBA and Motor Assembly

4. Loosen the screw to remove the fixed ring.

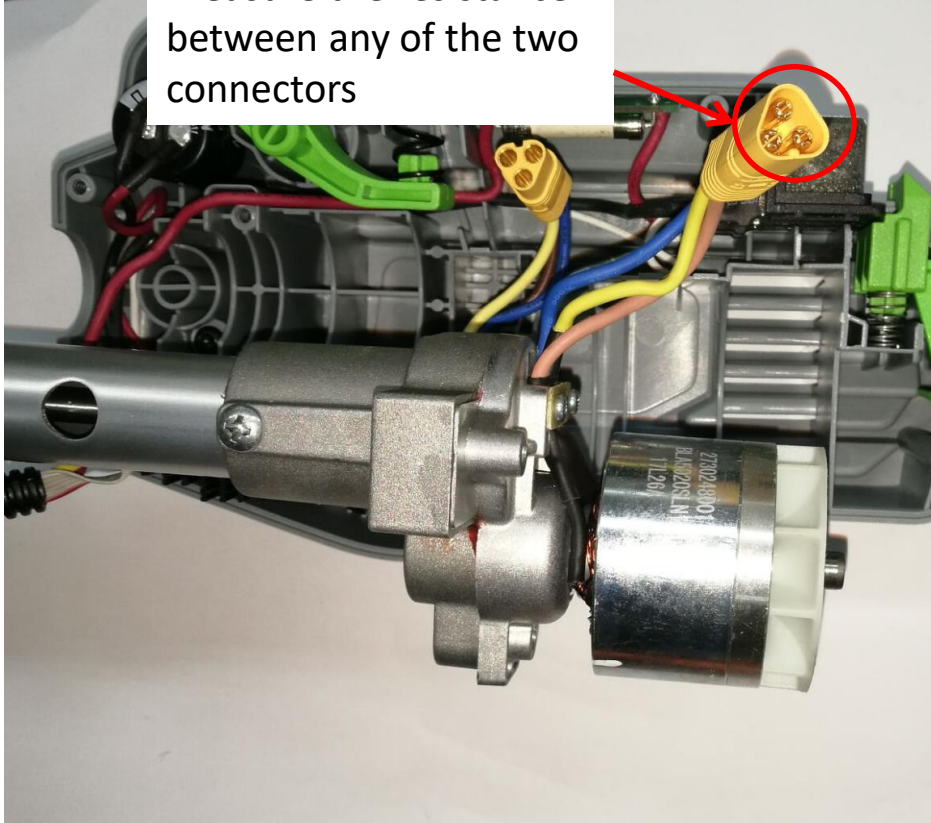


Description	Part Number	Qty.
Screw	5620479001	1
Washer	5650005001	1

How to Detect the PCBA and Motor Assembly

5. Remove the motor assembly from the groove to disconnect the yellow connector, then test the motor assembly to judge if it is open-circuit.

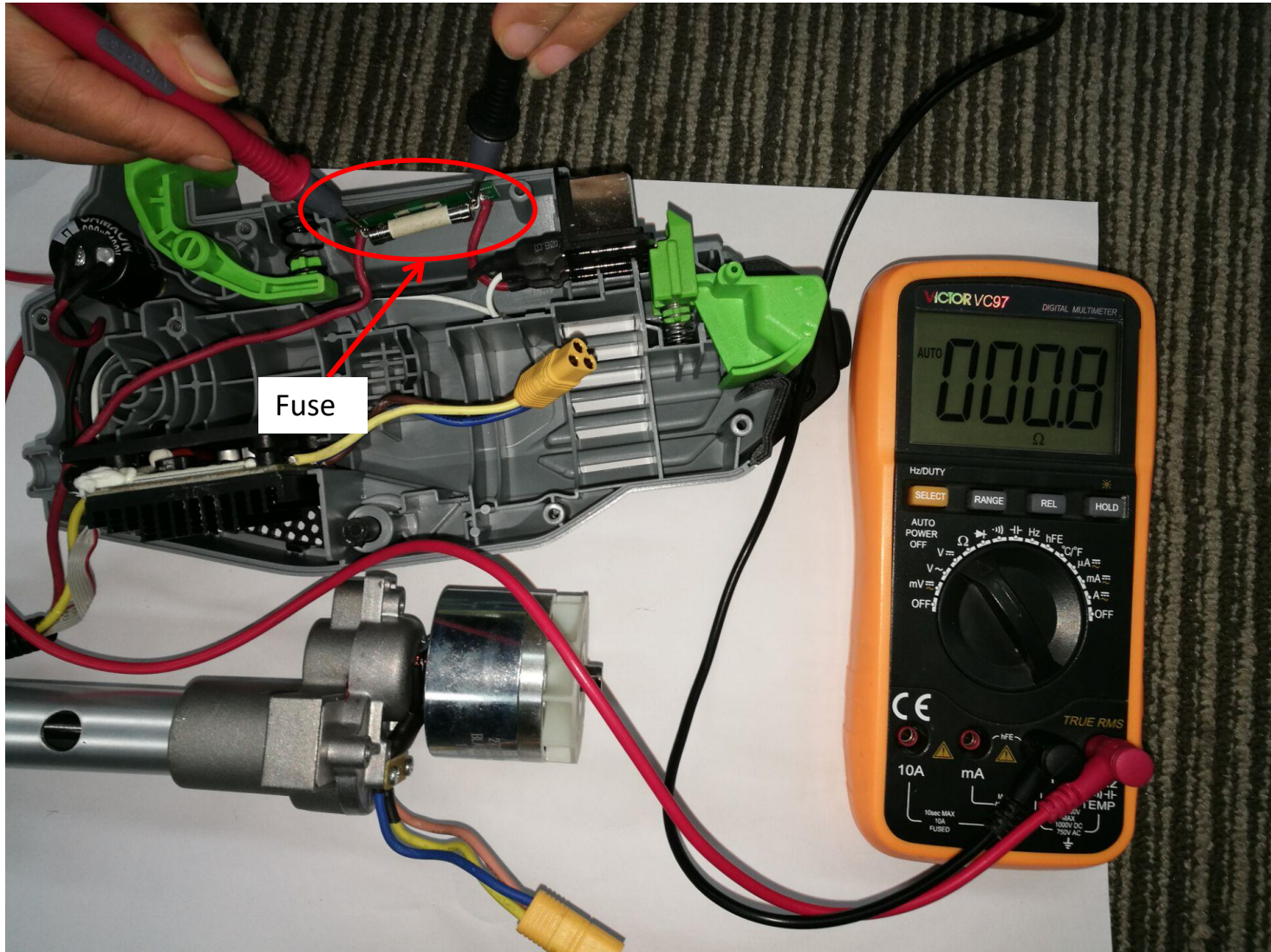
Measure the resistance between any of the two connectors



- 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 are open circuit, the motor is damaged. Follow the procedure “How To Replace the Motor Assembly” to replace a new one. Otherwise go to the next testing step

How to Detect the PCBA and Motor Assembly

6. Measure the fuse.

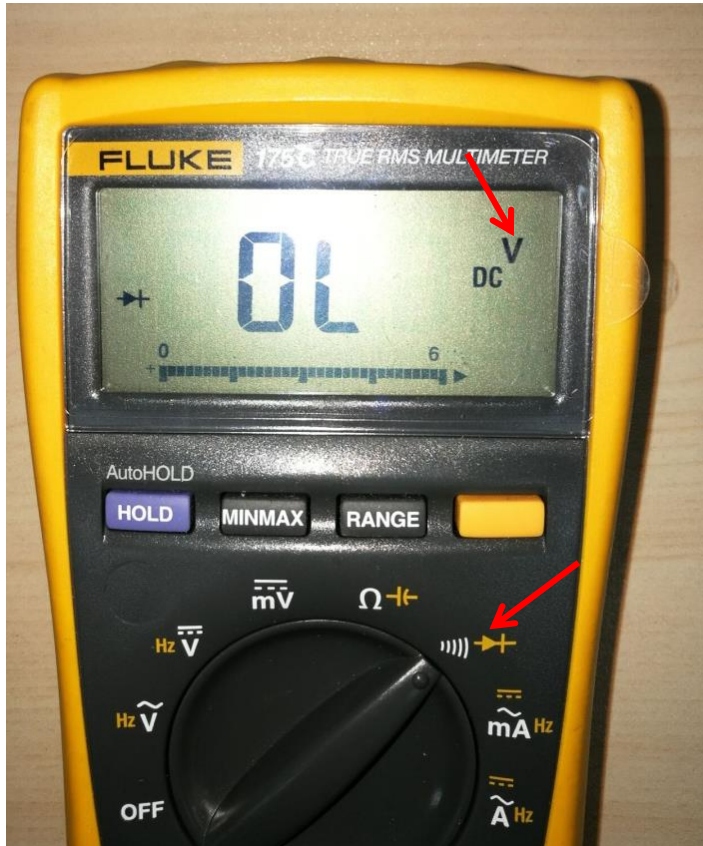


How to Detect the PCBA and Motor Assembly

- a) Set the multimeter function to “Resistance measuring” .
- b) Pierce one pen pin of the multimeter into the sealing glue and force the pin contacting onto one end of the fuse, then pierce another pen pin into the sealing glue and contacting onto the other end of the fuse.
- c) If the resistance is below 1Ω , means a good fuse, go to the next testing step; otherwise means a broken fuse.
- d) If the fuse is broken, follow the procedure “How To Replace the PCBA” to replace a new PCBA.

How to Detect the PCBA and Motor Assembly

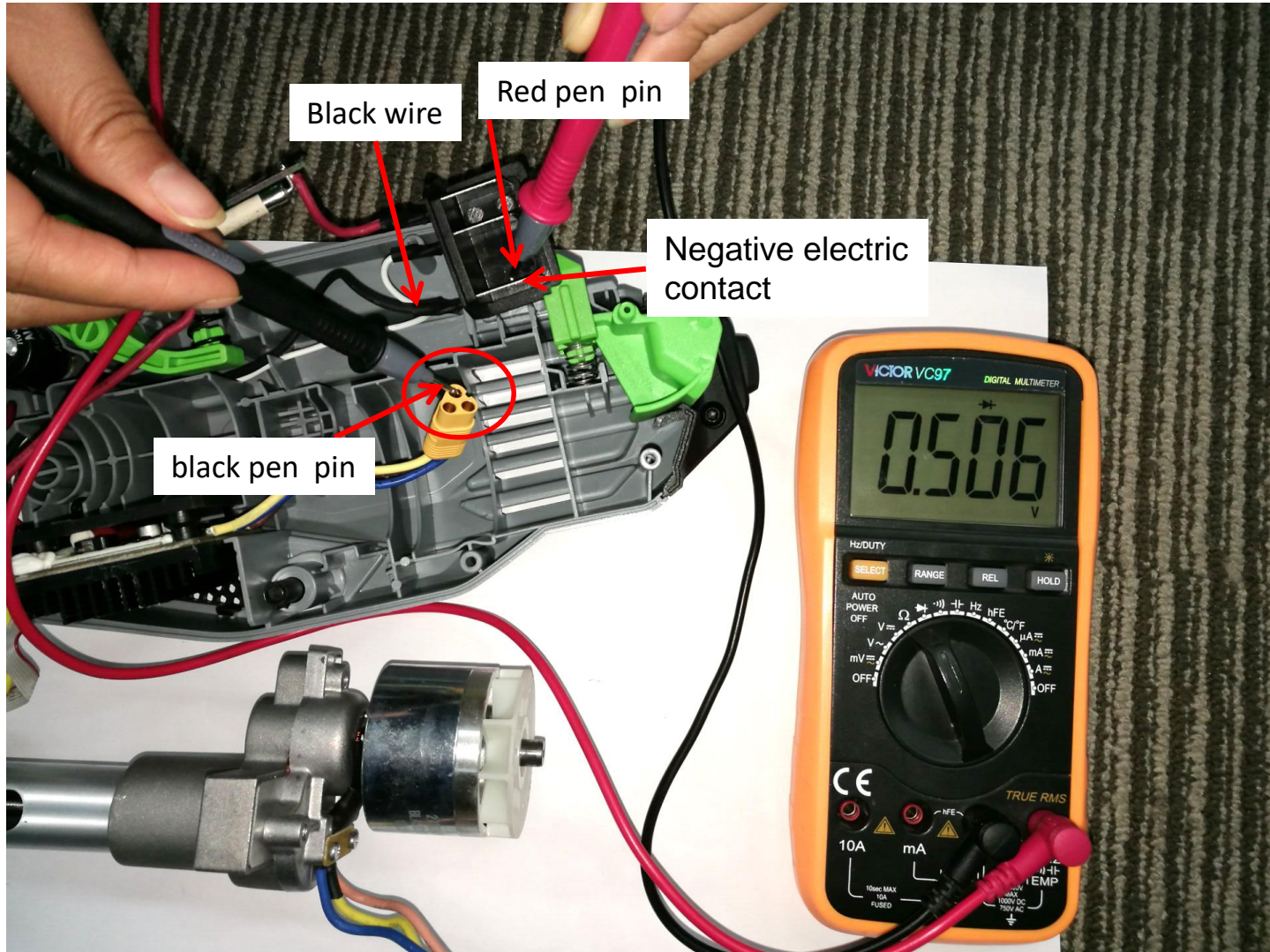
7. Measure the MOSFET in the PCBA. (Step 1)



- Set the multimeter function to “Diode measuring” .
- Contact the red pen pin to the negative electric contact (the metal plate that connects to black wire)
- Contact the black pen pin to the three connectors separately and measure the voltage.
- If the LCD displays 0.45~0.55V for each measurement, go to the next testing step, otherwise means the PCBA is broken. Follow the procedure “How To Replace the PCBA” to replace a new PCBA.

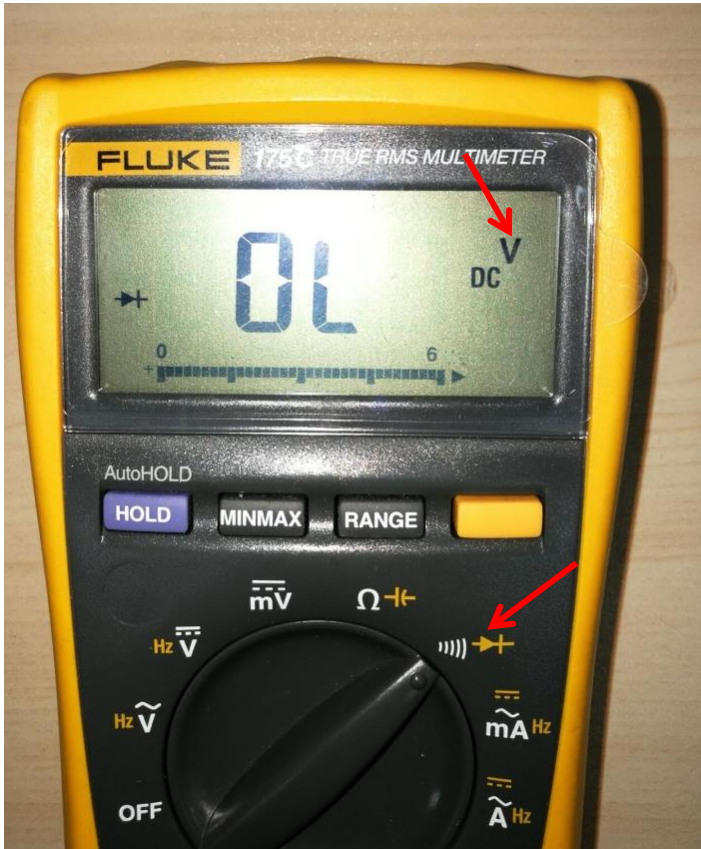
How to Detect the PCBA and Motor Assembly

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



How to Detect the PCBA and Motor Assembly

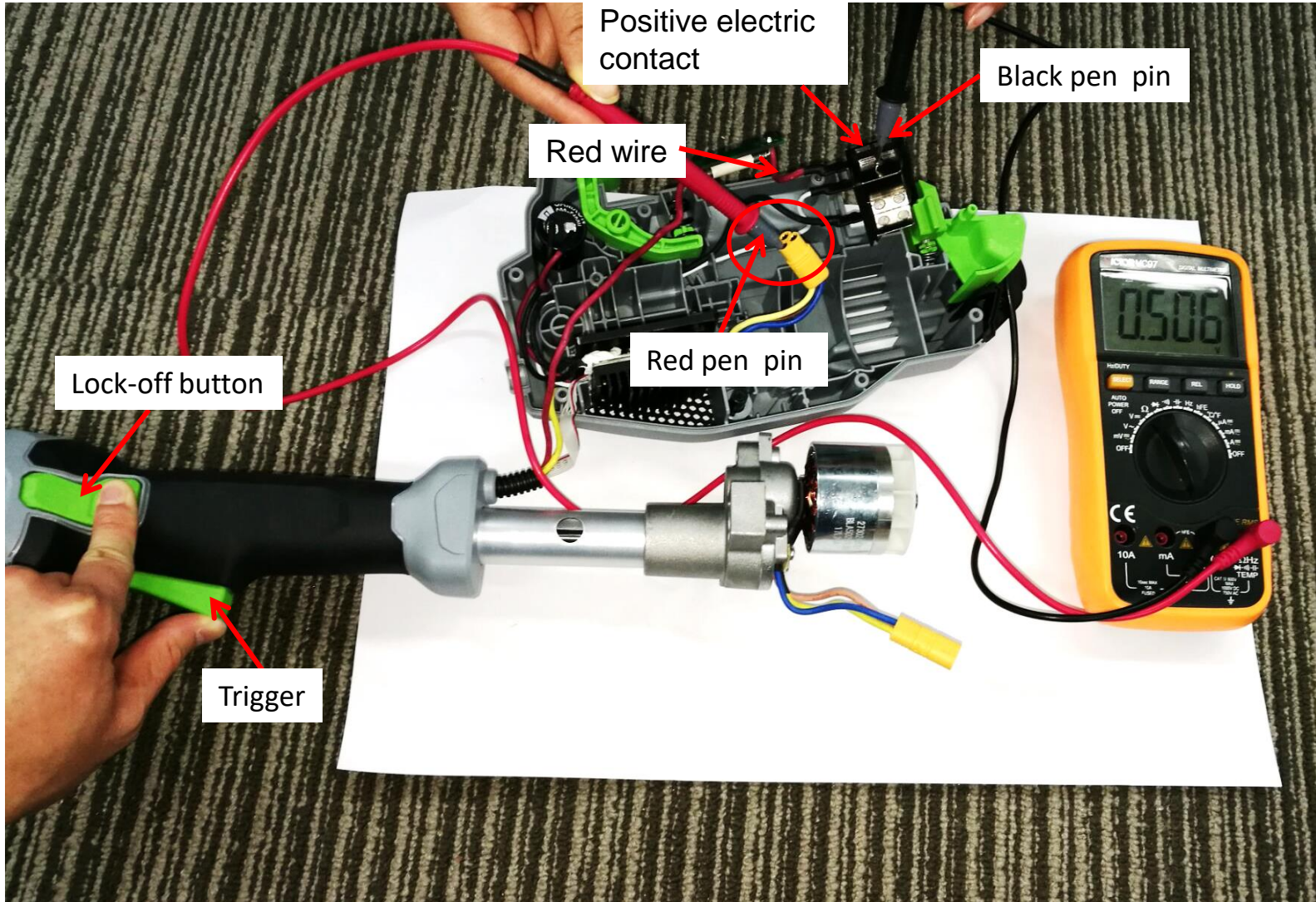
8. Measure the MOSFET in the PCBA. (Step 2)



- a) Keep the multimeter function setting at “Diode measuring”.
- b) Contact the black pen pin to the positive electric contact (the metal plate that connects to red wire)
- c) Contact the red pen pin to the three connectors separately and measure the voltage.
- d) Press the trigger and lock-off button simultaneously to observe the value on the LCD. If the LCD displays 0.45~0.55V for each measurement, go to the next testing step, otherwise means the PCBA is broken. Follow the procedure “How To Replace the PCBA” to replace a new PCBA.

How to Detect the PCBA and Motor Assembly

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



Part 2: How to Replace the Motor Assembly

How to Replace the Motor Assembly

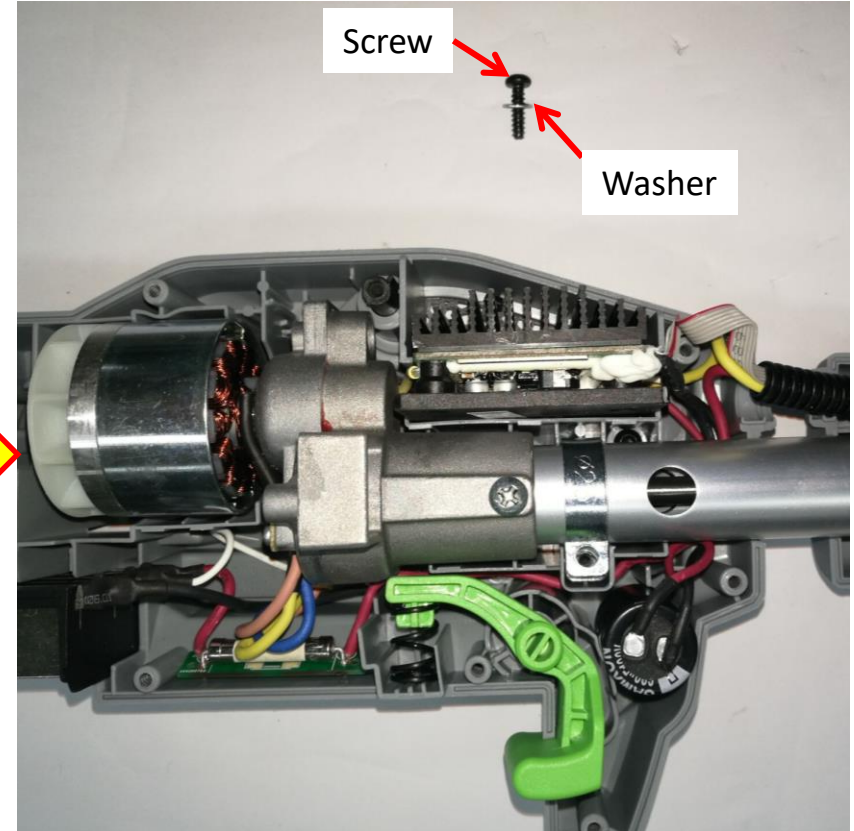
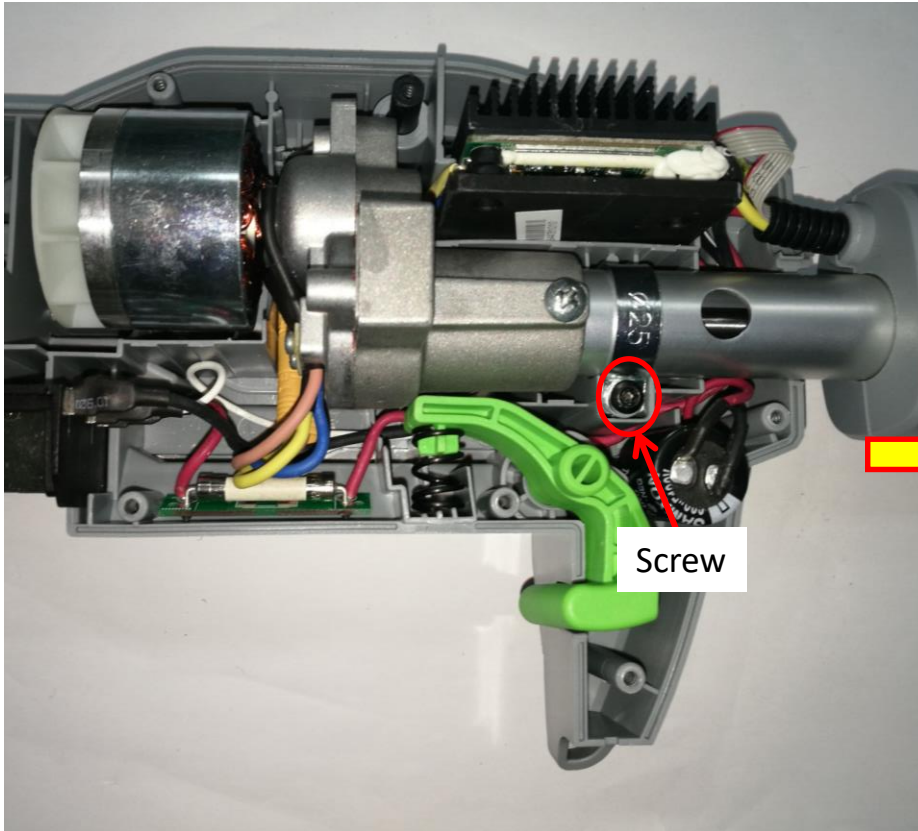
1. Open the housing set as is shown in the “How to Detect the PCBA and Motor assembly” section.



Description	Part Number	Qty.
Tapping screw	5620479001	8

How to Replace the Motor Assembly

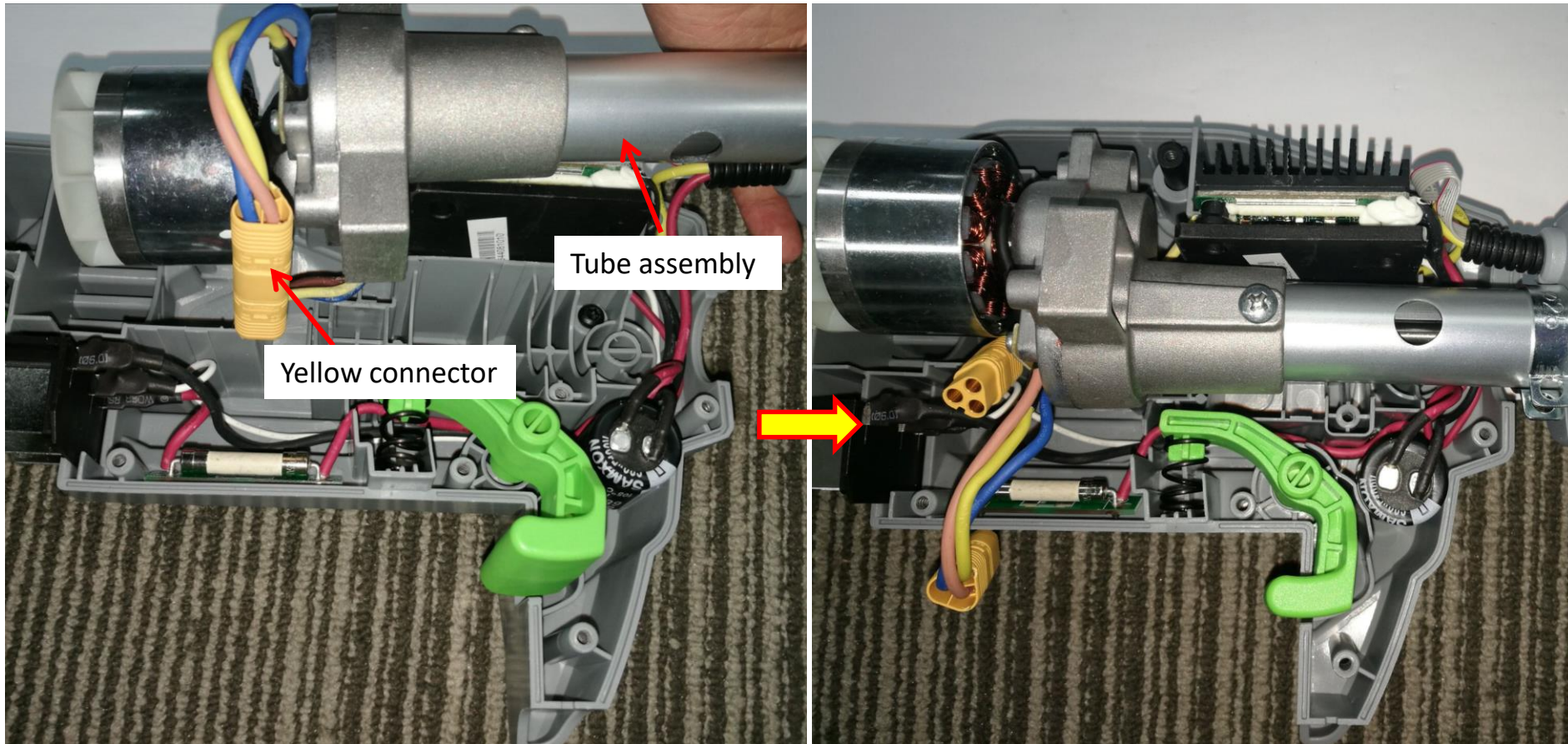
2. Loosen the screw which tightens the fixed ring.



Description	Part Number	Qty.
Screw	5620479001	1
Washer	5650005001	1

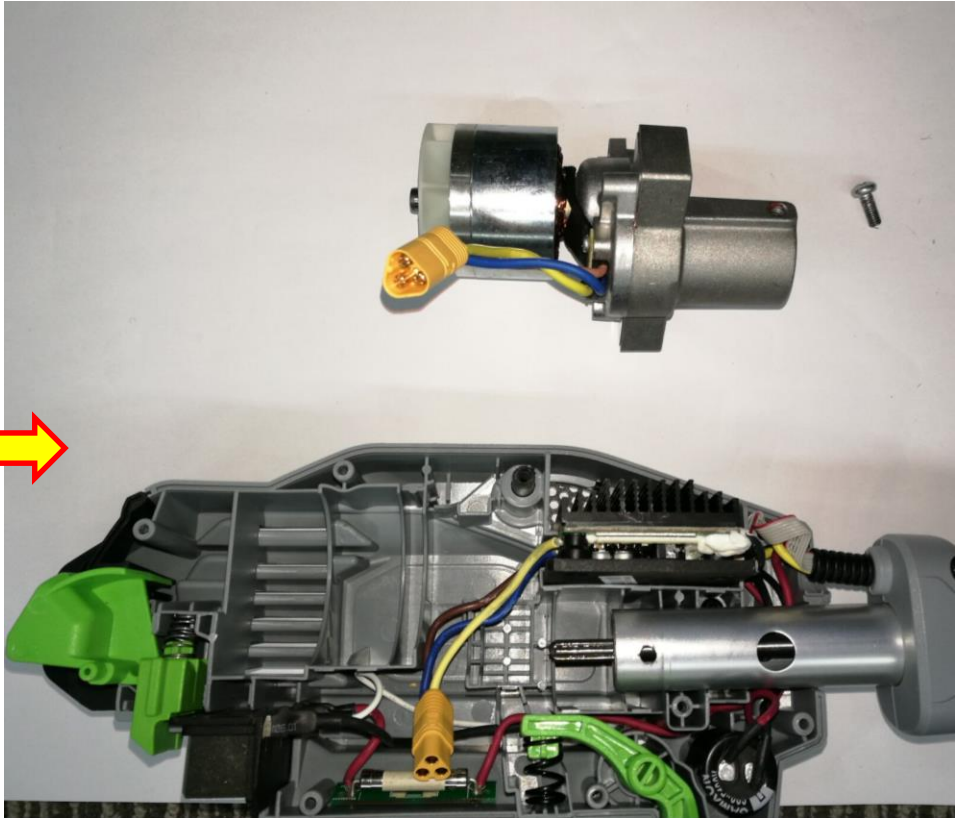
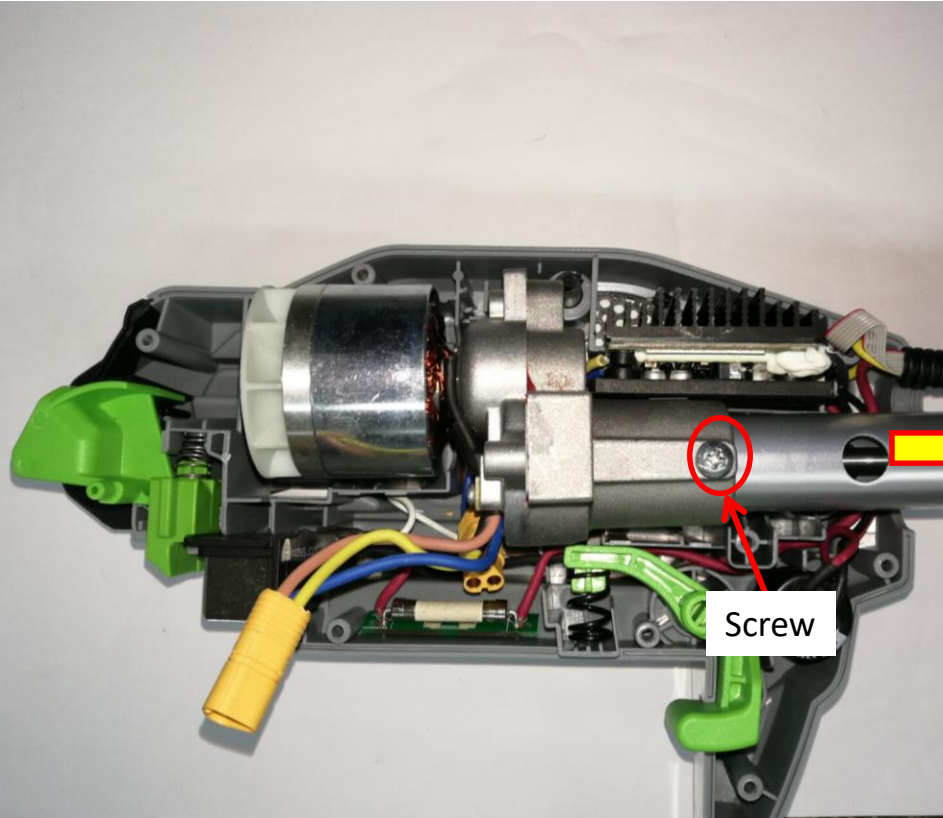
How to Replace the Motor Assembly

3. Remove the tube assembly to easily disconnect the yellow connector.



How to Replace the Motor Assembly

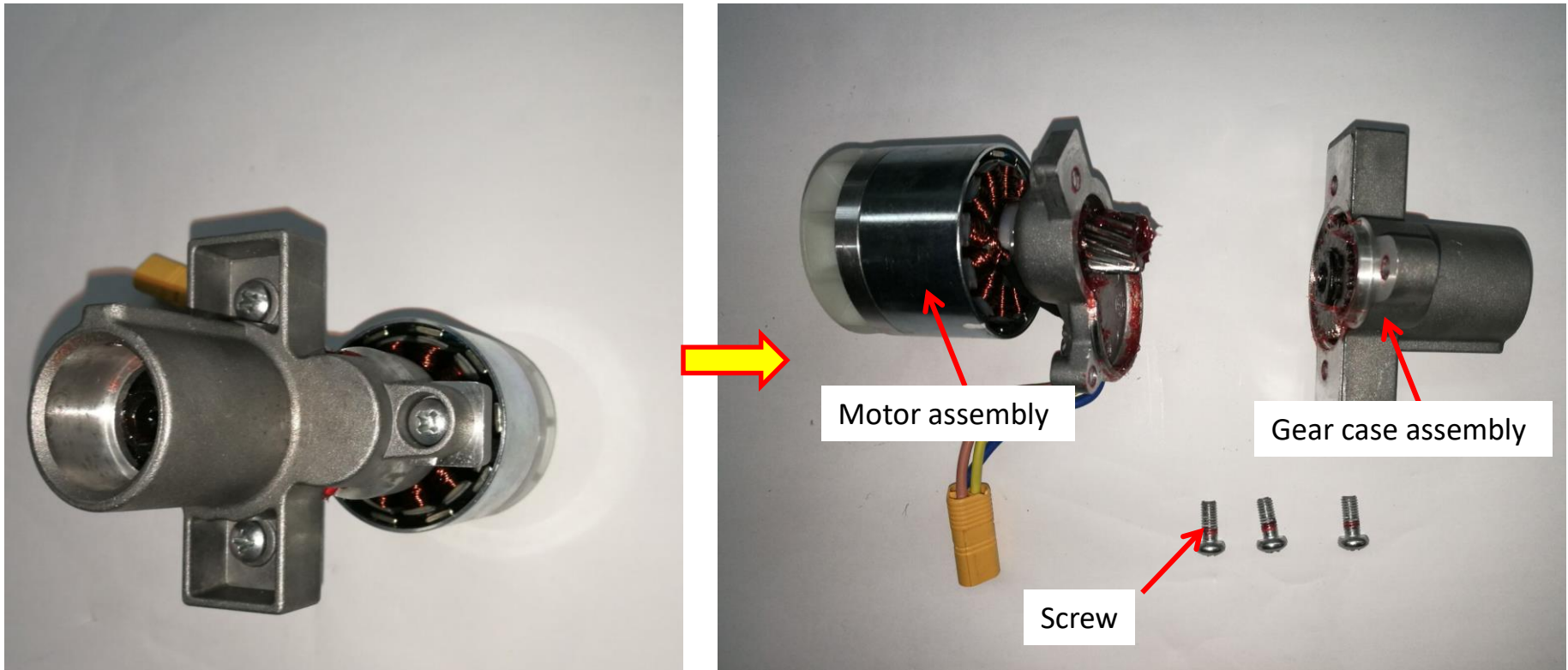
4. Loosen the screw to remove the motor and gear case assembly.



Description	Part Number	Qty.
Screw	5620050007	1

How to Replace the Motor Assembly

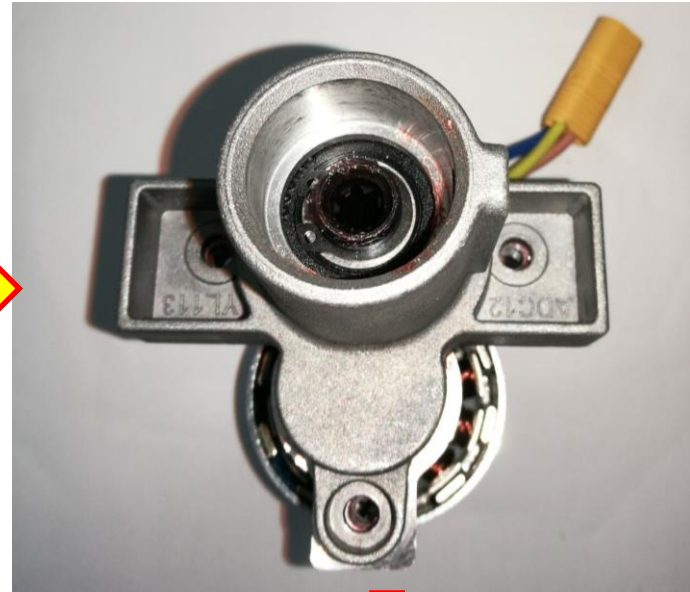
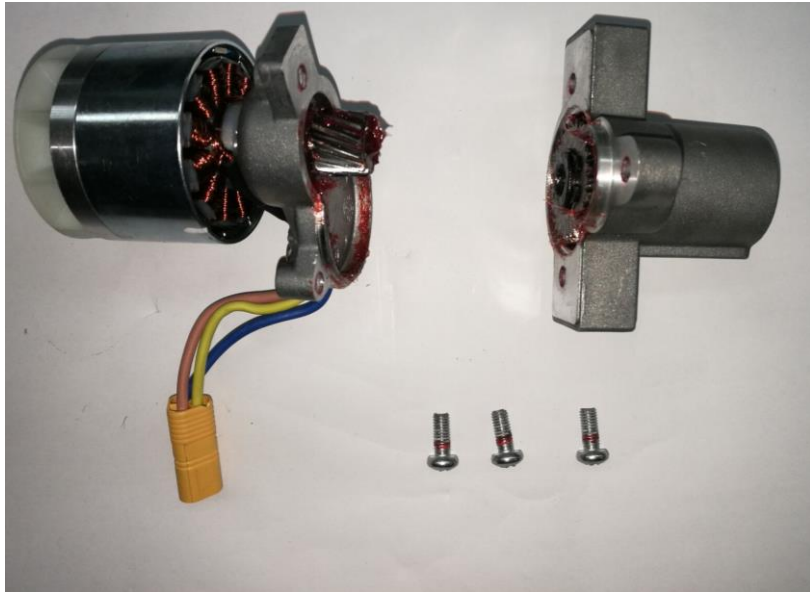
- Loosen 3 pcs screws to separate the gear case assembly from motor assembly. If any one is broken, replace it with a new one.



Description	Part Number	Qty.	Description	Part Number	Qty.
Motor assembly	2824757002	1	Screw	5620050007	3
Gear case assembly	2824761002	1			

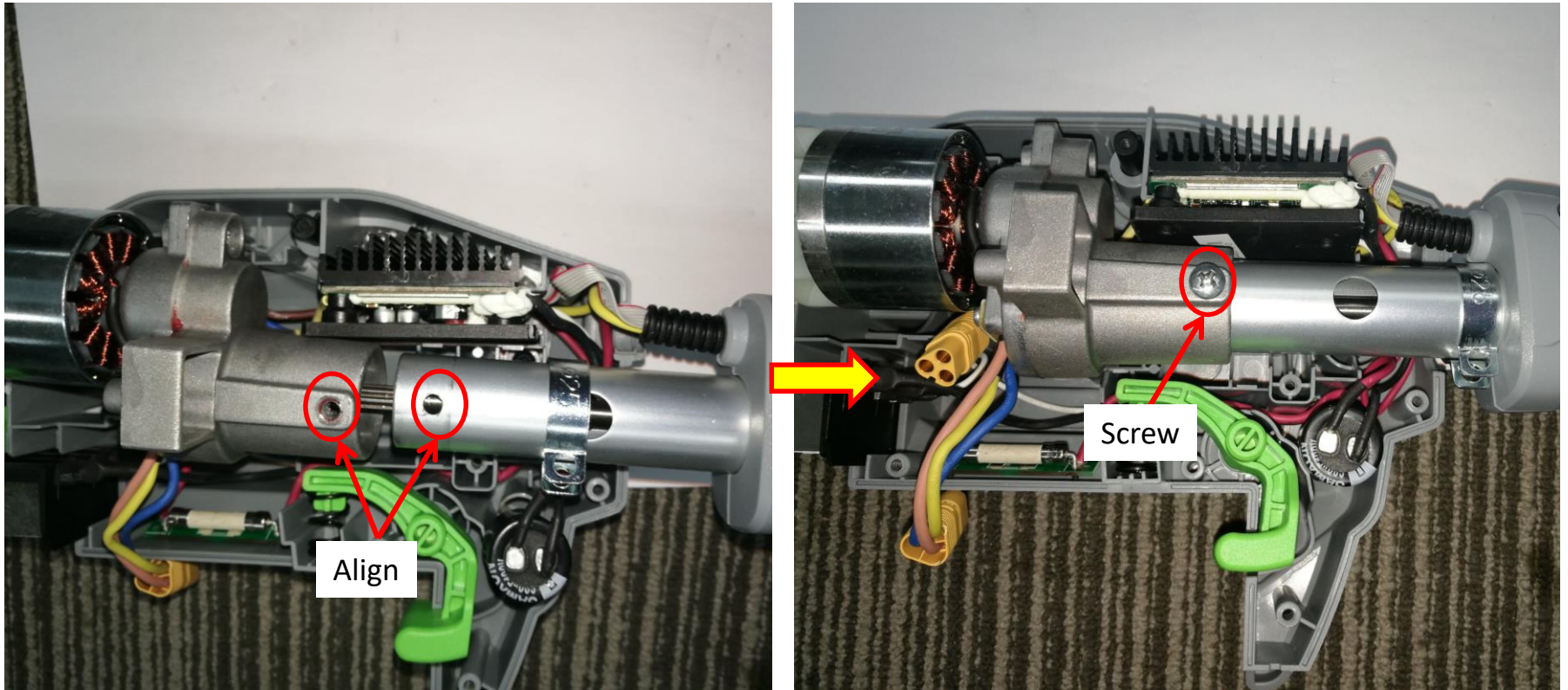
How to Replace the Motor Assembly

6. Assembly the motor assembly with the gear case assembly and fasten them with 3 pcs screws.



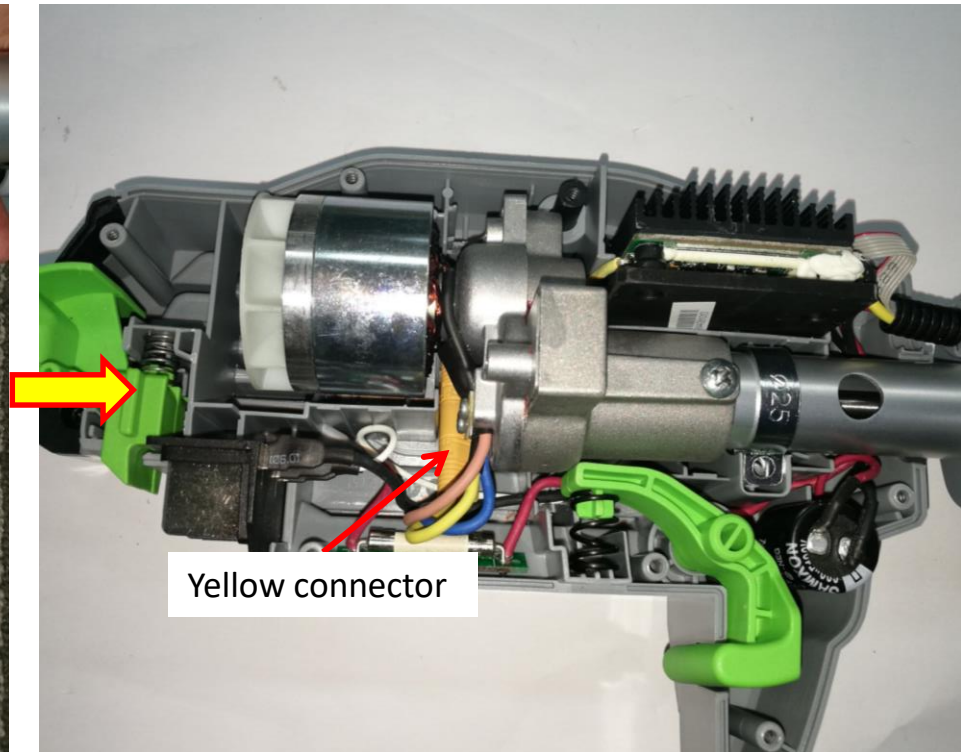
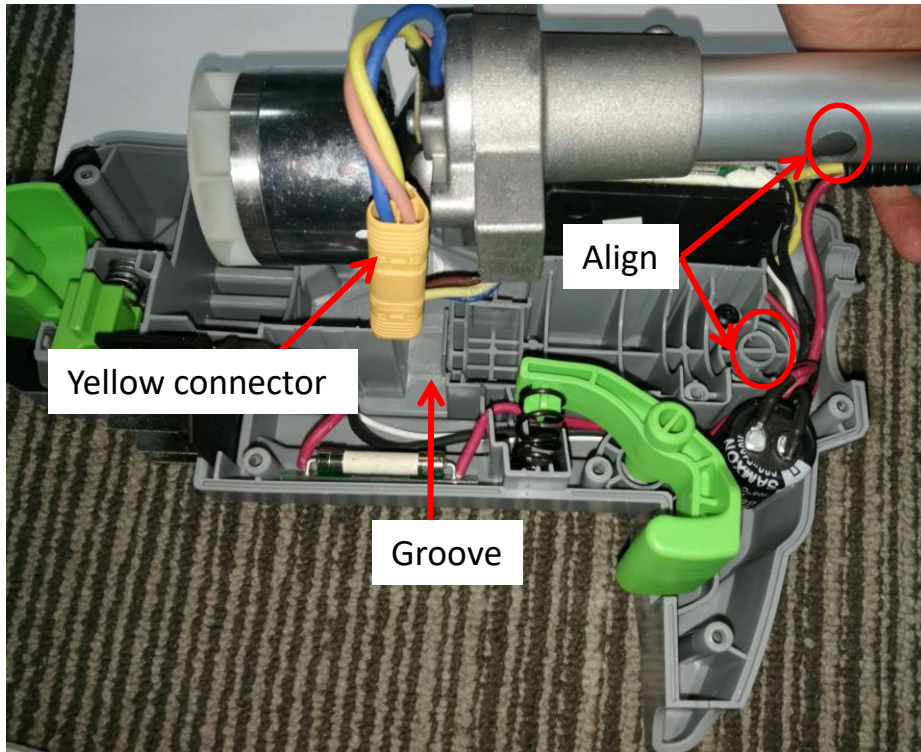
How to Replace the Motor Assembly

7. Align the hole on the tube with the hole on the gear case assembly, then insert the tube into the gear case assembly and fasten them with screw.



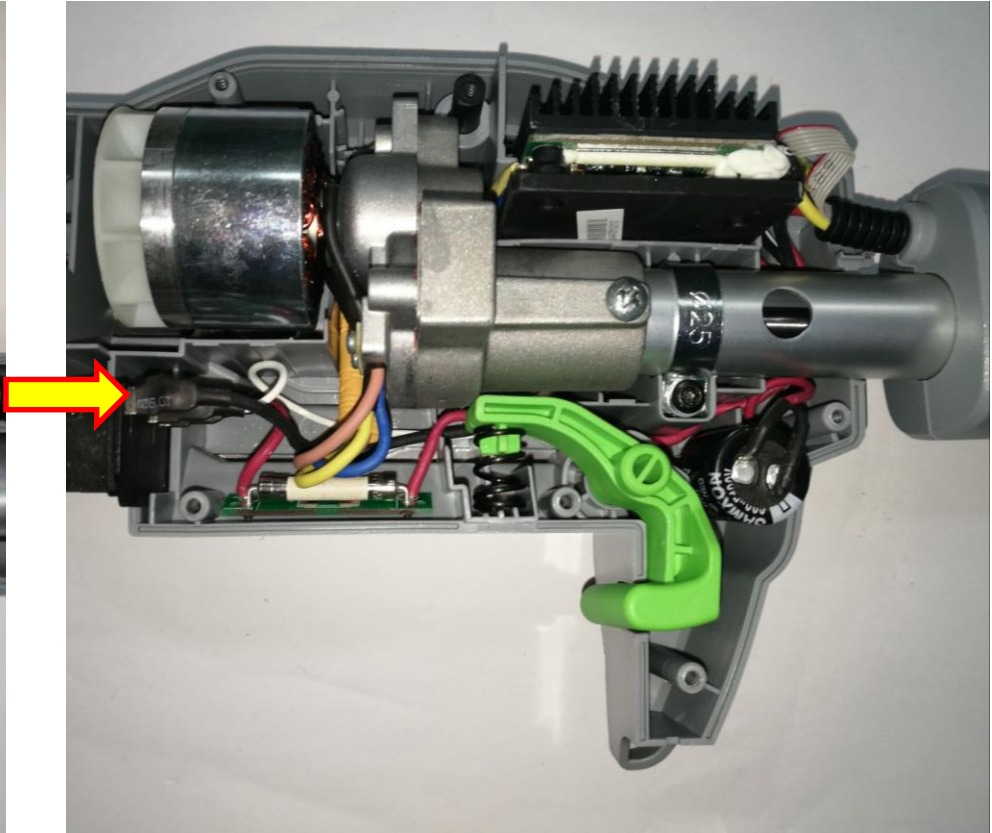
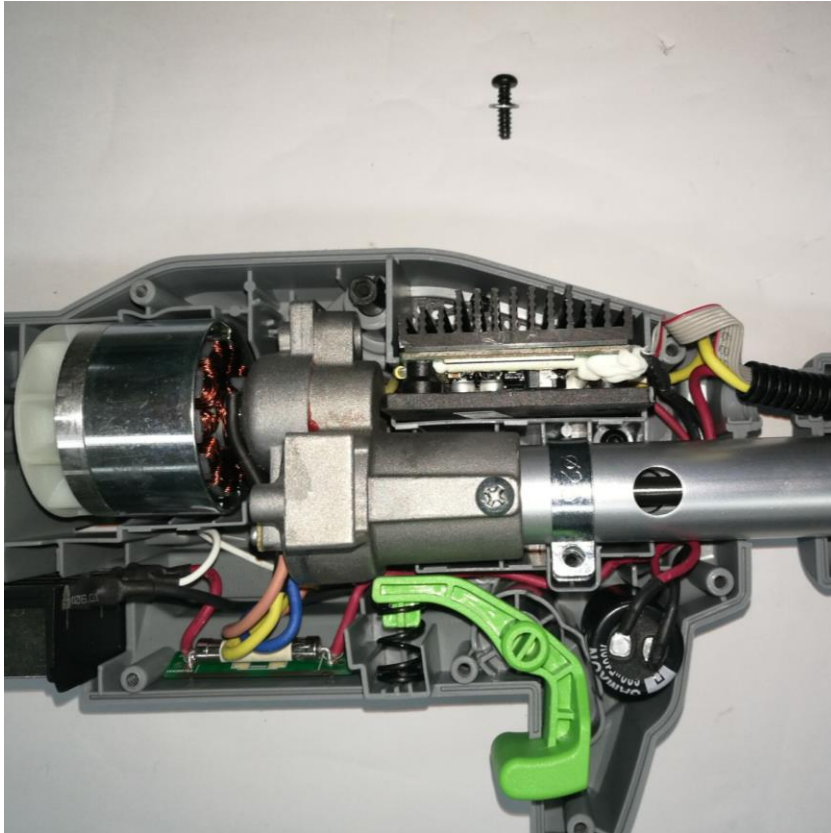
How to Replace the Motor Assembly

- Align the hole on the tube with the rib in the housing, meanwhile align the yellow connector with the groove in the housing, then mount the tube assembly into the housing.



How to Replace the Motor Assembly

9. Fasten the fixed ring with screw and washer.



How to Replace the Motor Assembly

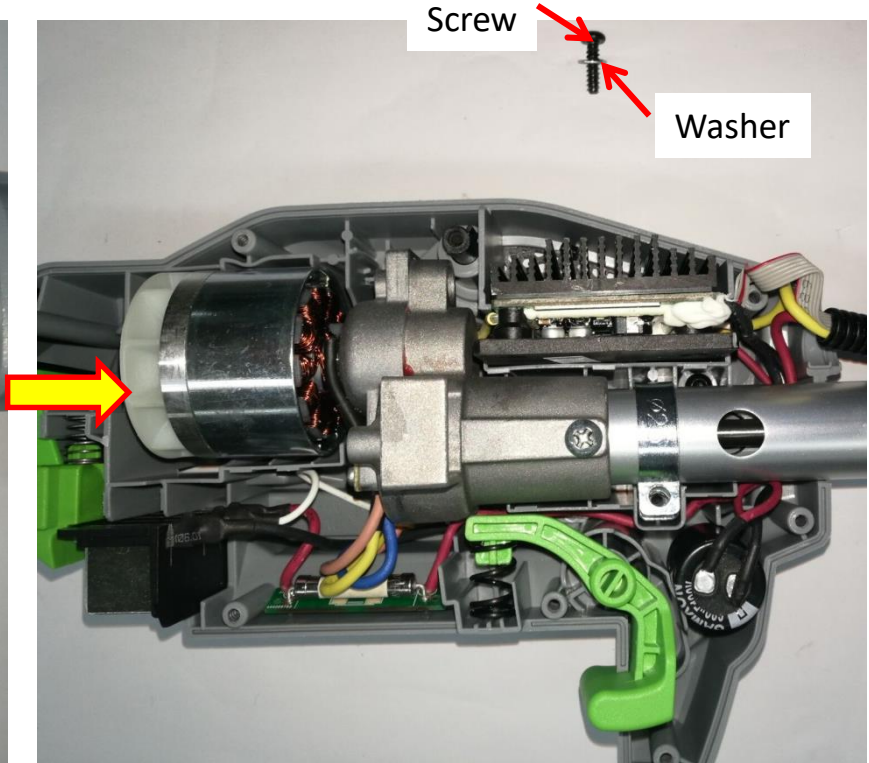
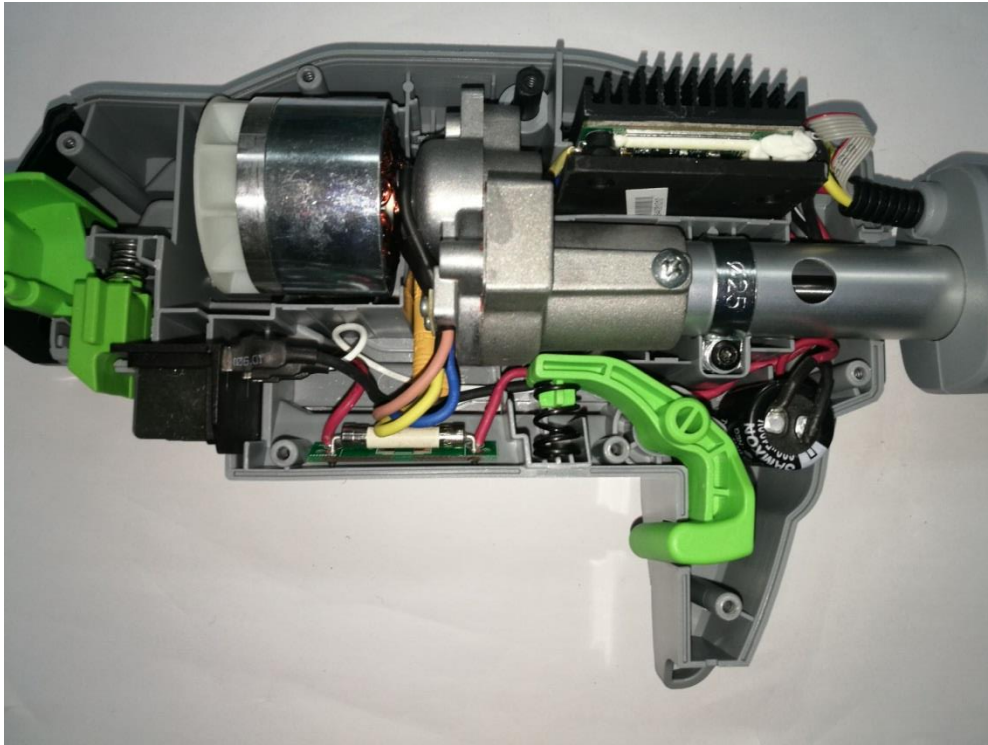
10. Assembly the housing assembly with 8 pcs screws.



Part 3: How to Replace the PCBA

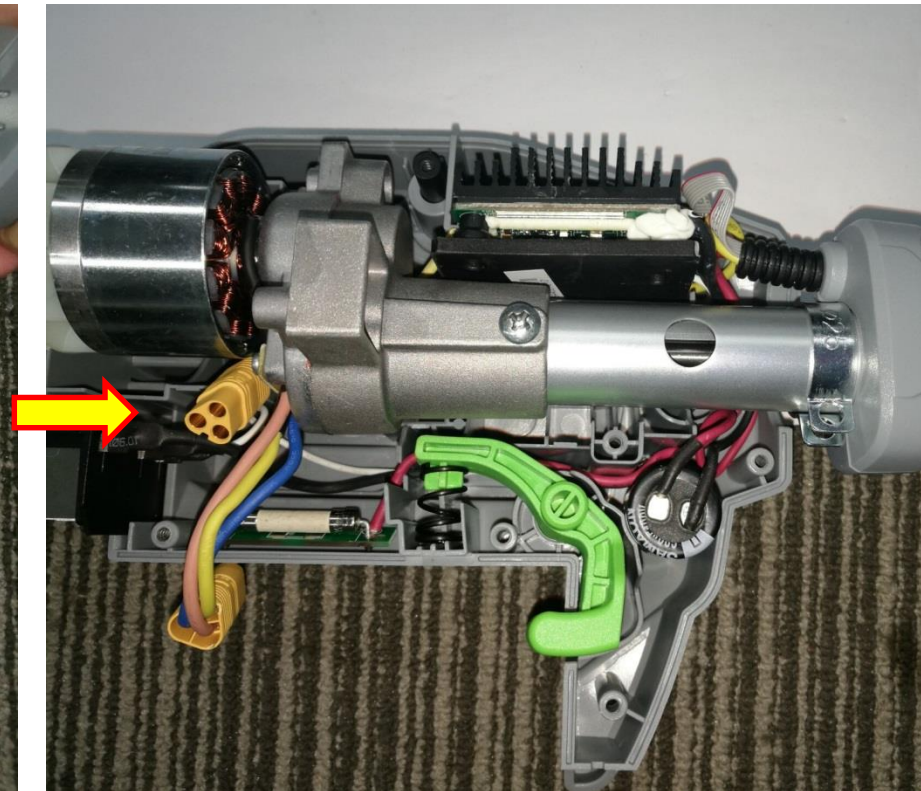
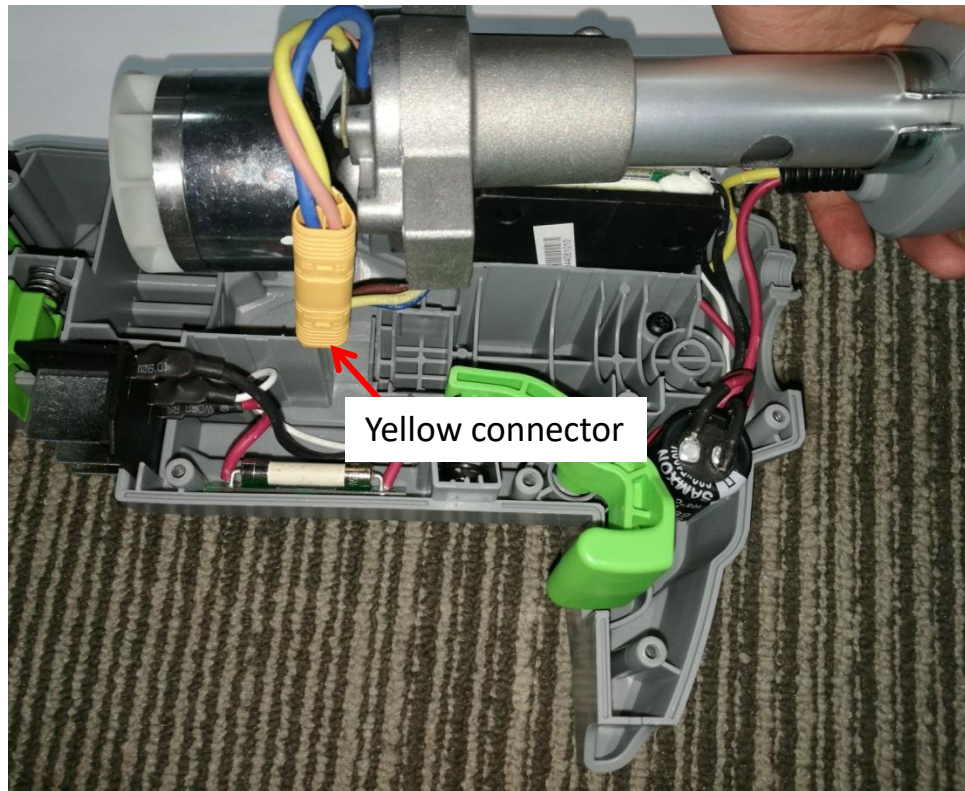
How to Replace the PCBA

1. Open the housing set as is shown in the “How to Detect the PCBA and Motor assembly” section.
2. Loosen the screw which tightens the fixed ring and remove the screw and the washer.



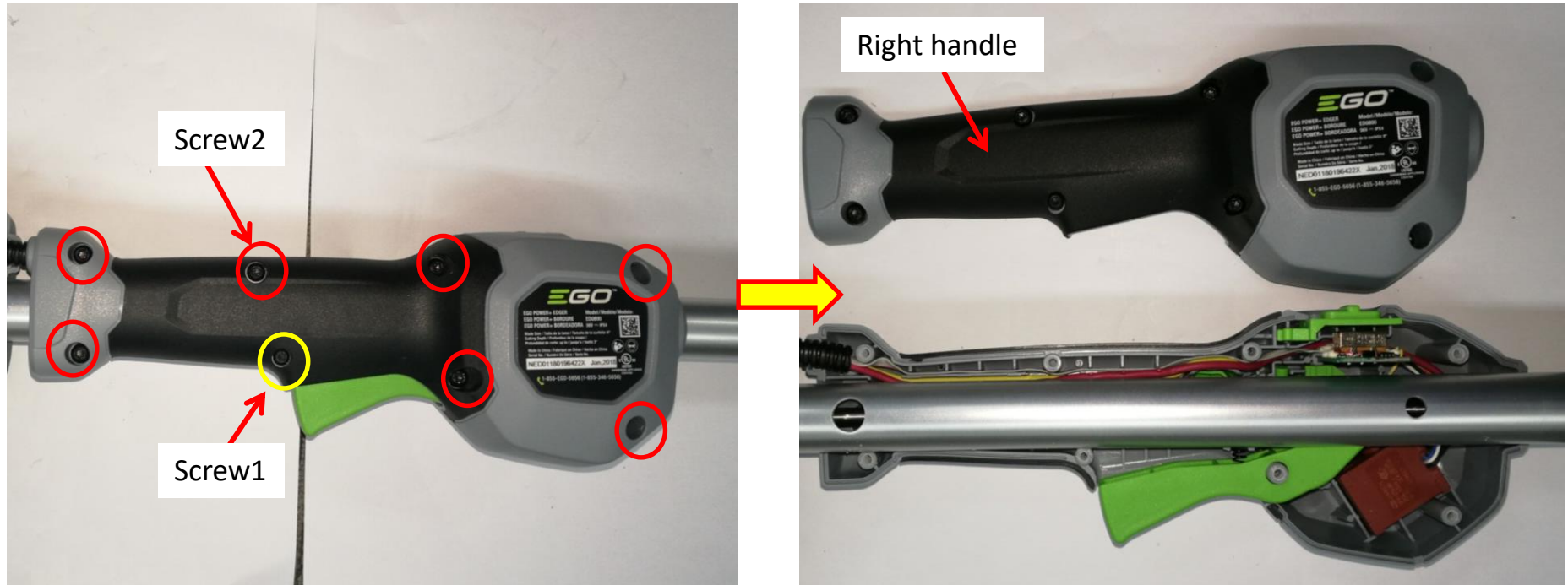
How to Replace the PCBA

3. Pull the tube assembly out of the housing to easily disconnect the yellow connector.



How to Replace the PCBA

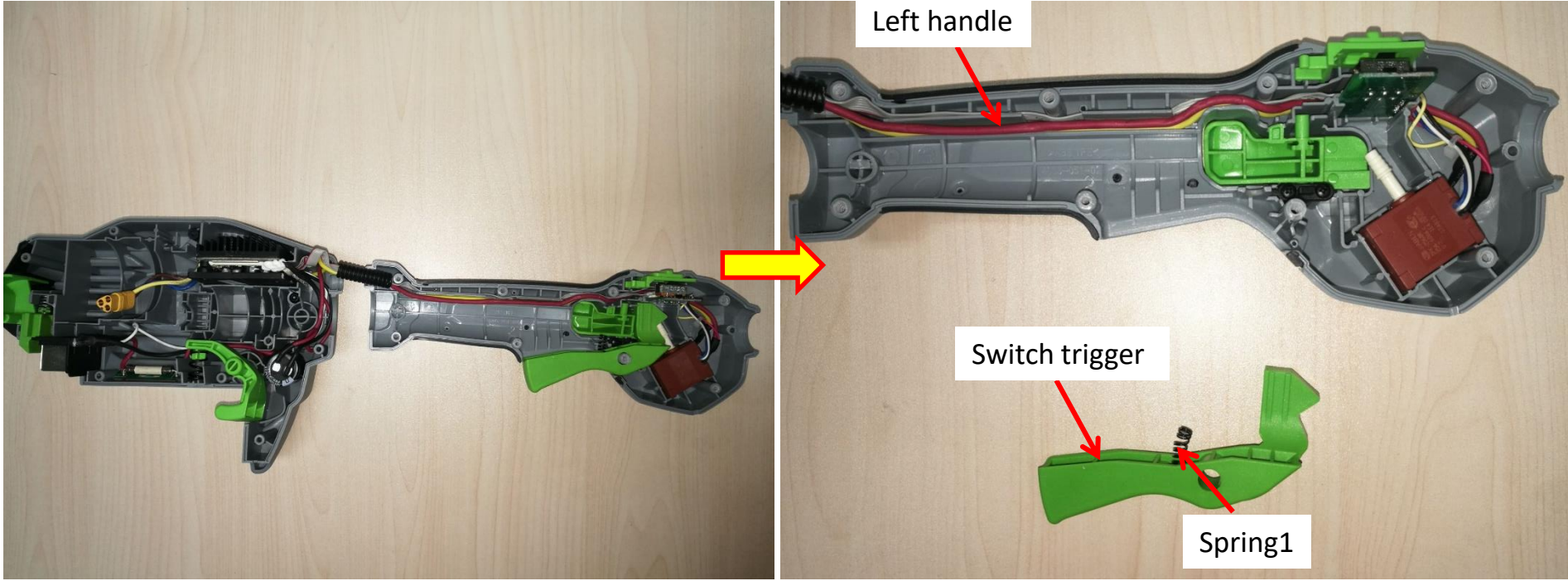
4. Loosen 1 screw1 and 7 pcs screw2 to remove the right handle.



Description	Part Number	Qty.
Screw1	5610305001	1
Screw2	5620479001	7

How to Replace the PCBA

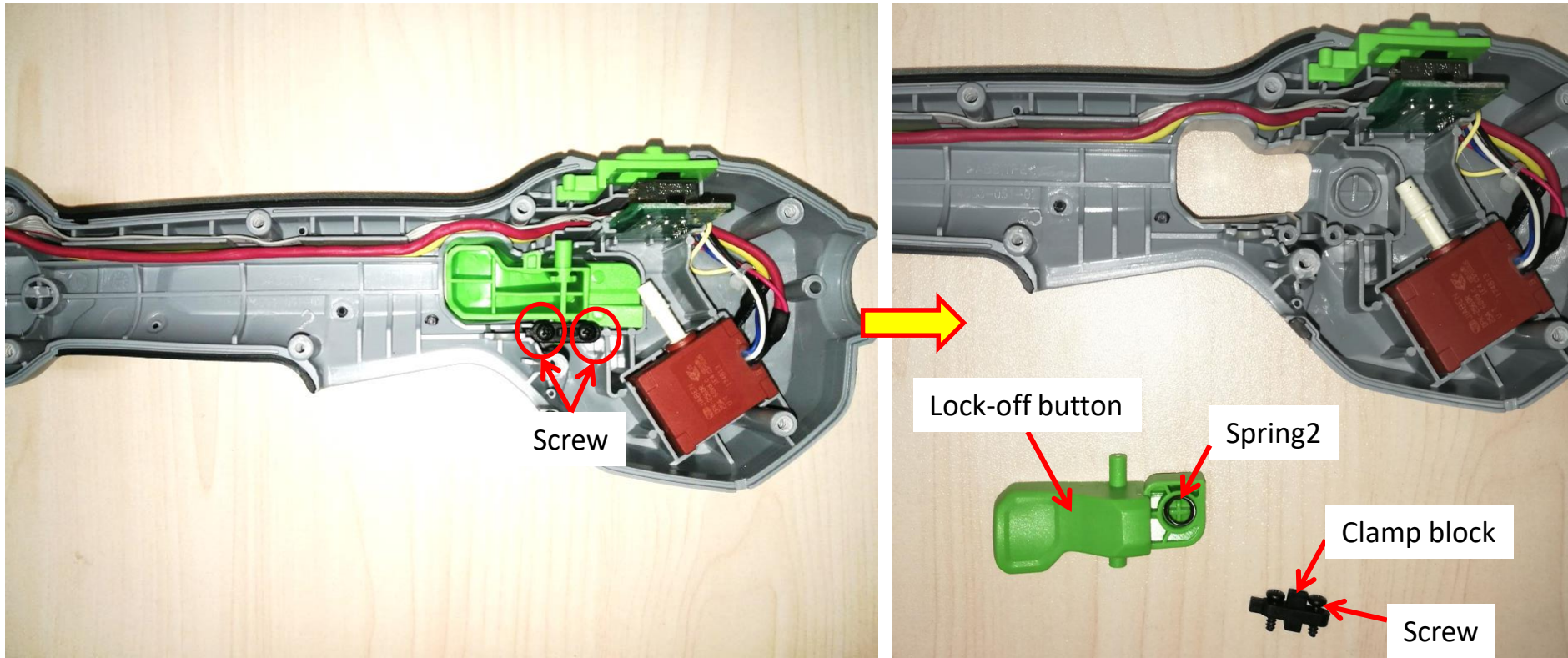
5. Remove the switch trigger and spring from the left handle.



Description	Part Number	Qty.
Screw trigger	3128578002	1
Spring1	3660075001	1

How to Replace the PCBA

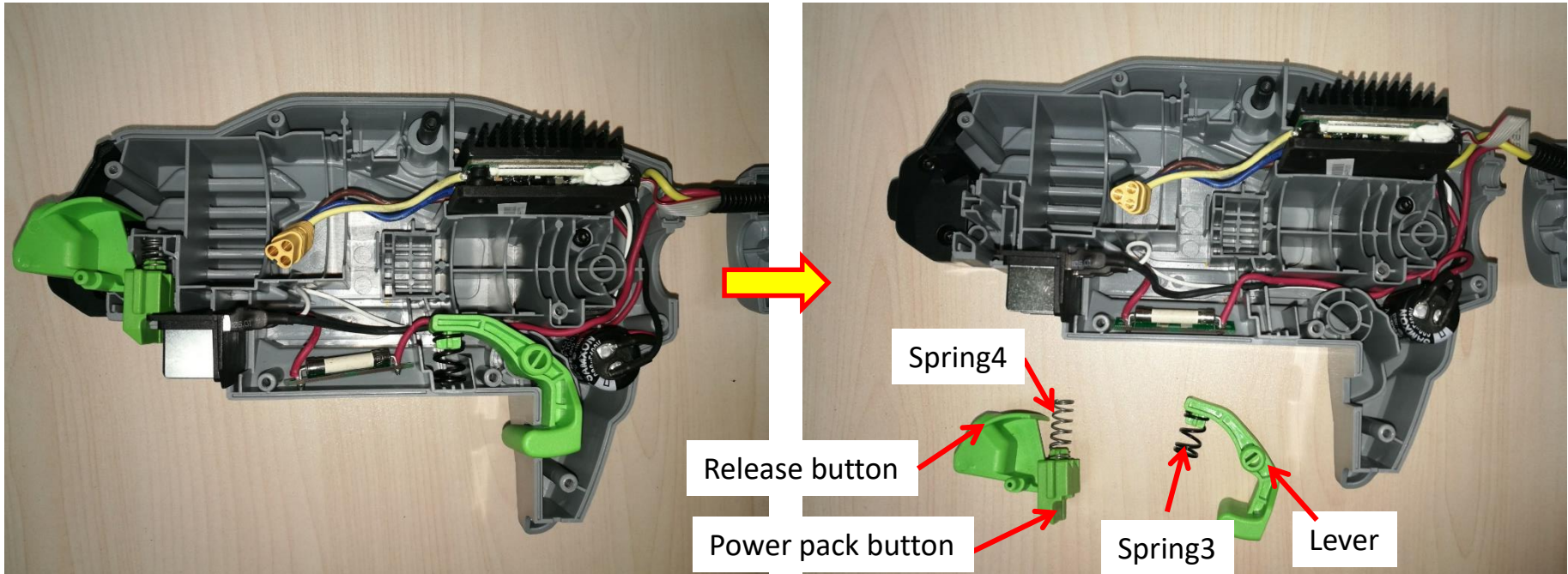
6. Loosen 2 pcs screws to remove the clamp block.
7. Remove the lock-off button from the left handle.



Description	Part Number	Qty.	Description	Part Number	Qty.
Lock-off button	3128577001	1	Screw	5610011006	2
Spring2	3660235001	1	Clamp block	3126865001	1

How to Replace the PCBA

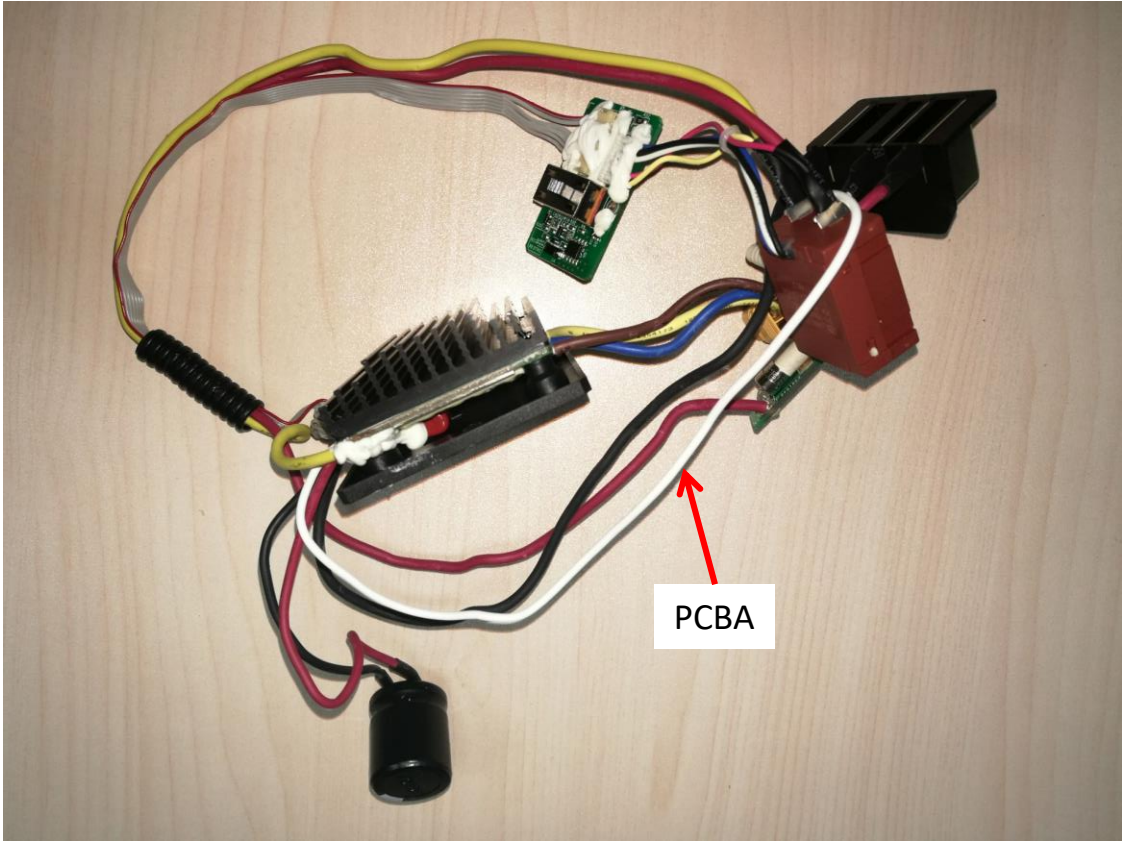
8. Remove the lever and spring1 from the housing set.
9. Remove the power pack button, release button and spring2.



Description	Part Number	Qty.	Description	Part Number	Qty.
Power pack button	3127202001	1	Spring3	3660614001	2
Release button	3127201001	1	Spring4	3660013003	1
Lever	3128266001	1			

How to Replace the PCBA

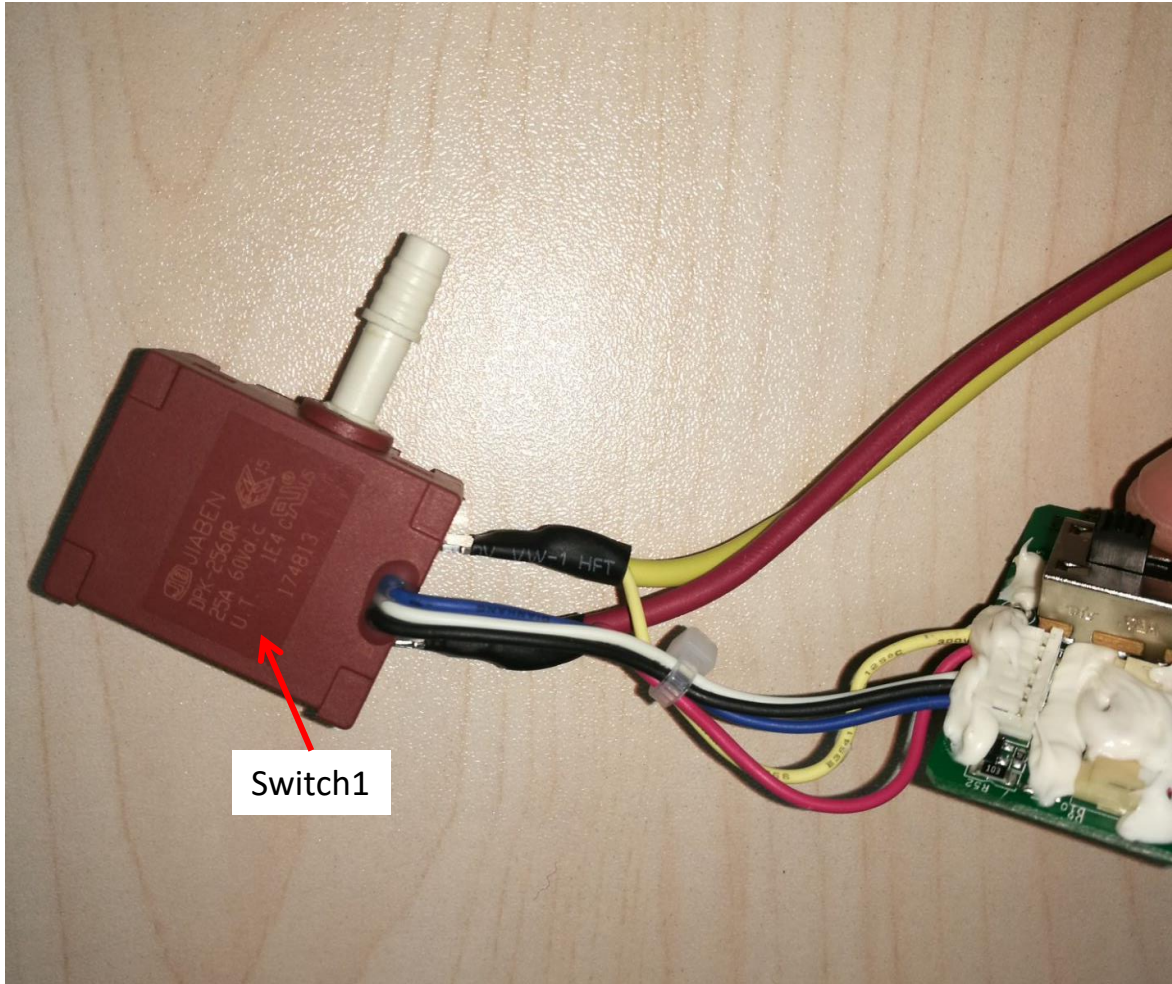
10. Remove the PCBA and replace it with a new one.



Description	Part Number	Qty.
PCBA	2830180001	1

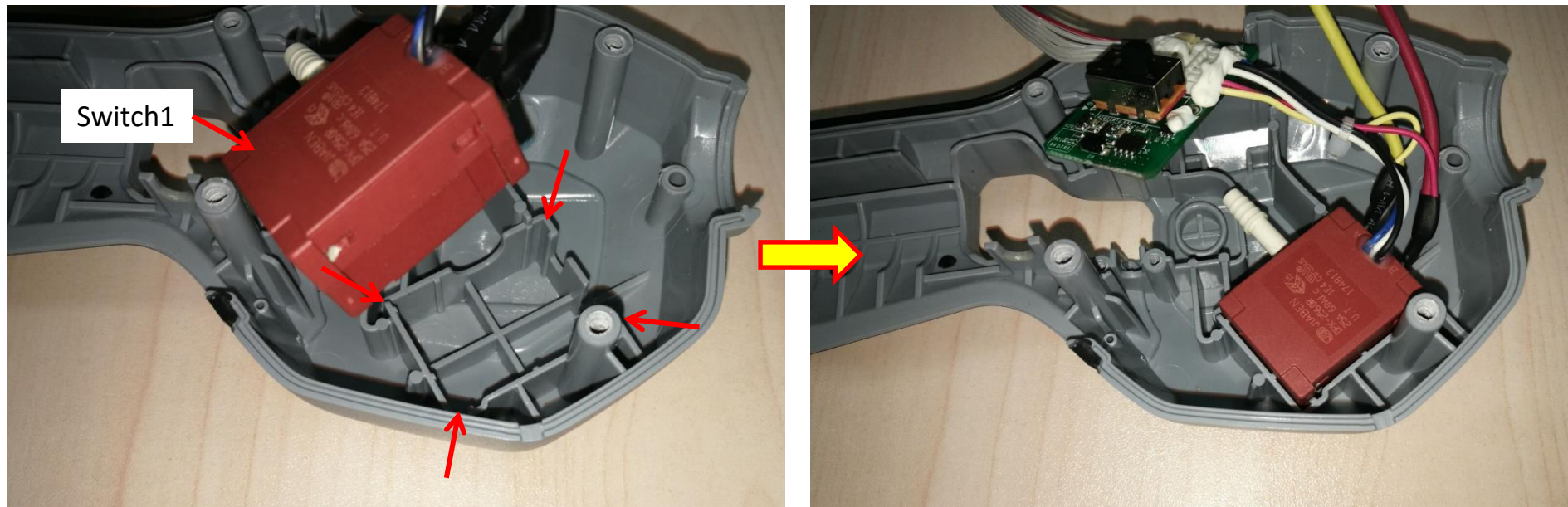
How to Replace the PCBA

11. Binding the thin cables connected with switch1 by ribbon.



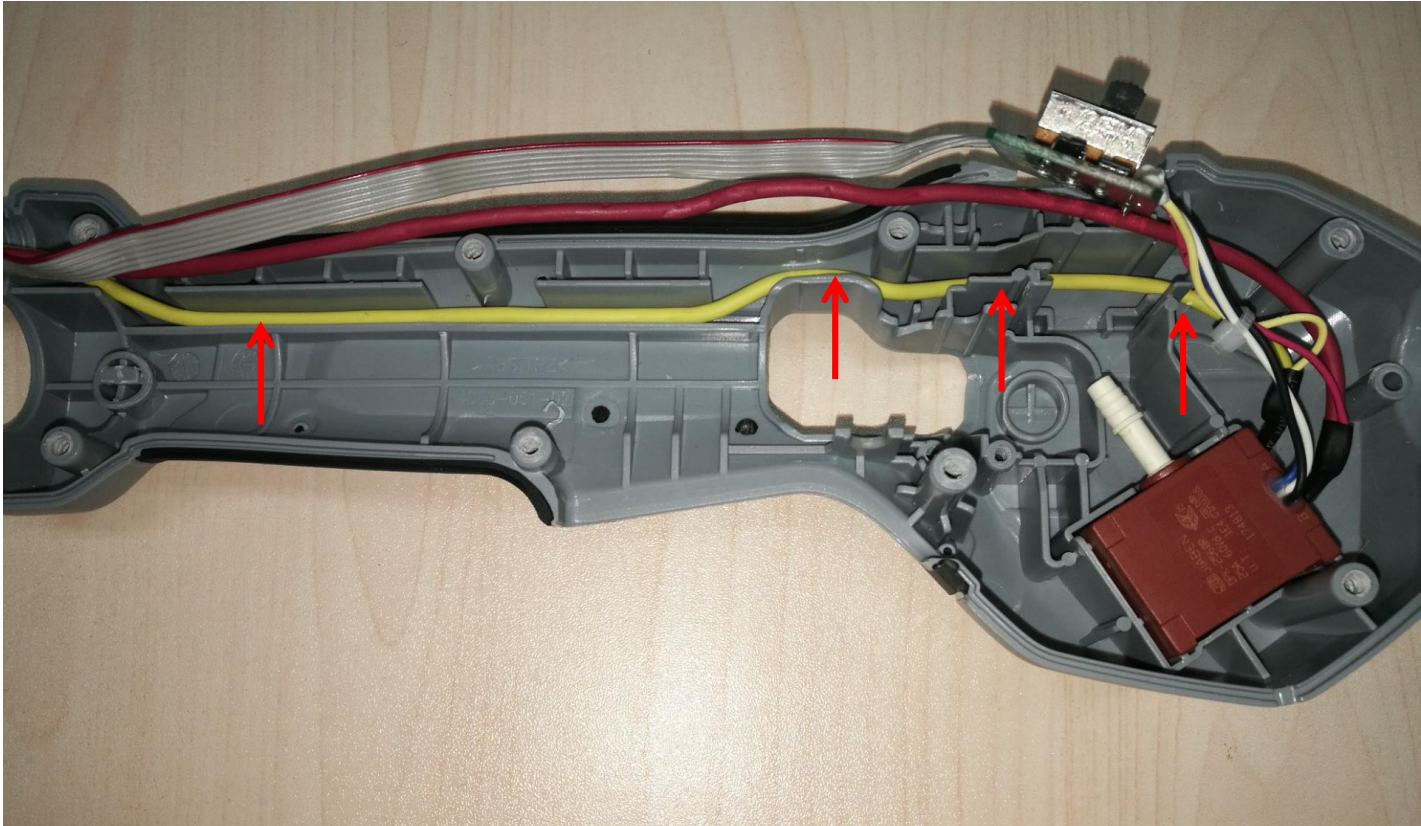
How to Replace the PCBA

12. Align the switch1 with the groove to mount it into the groove.



How to Replace the PCBA

13. Align the yellow cable into the groove.



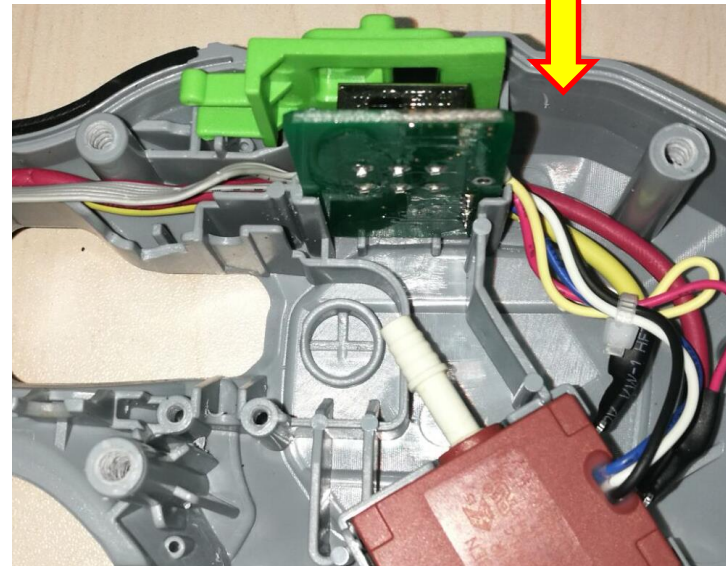
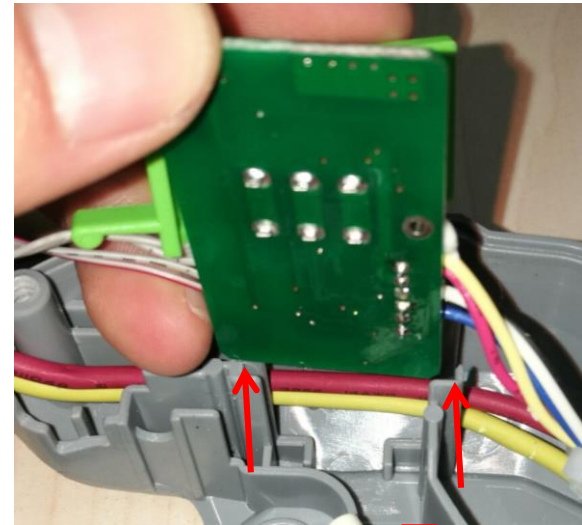
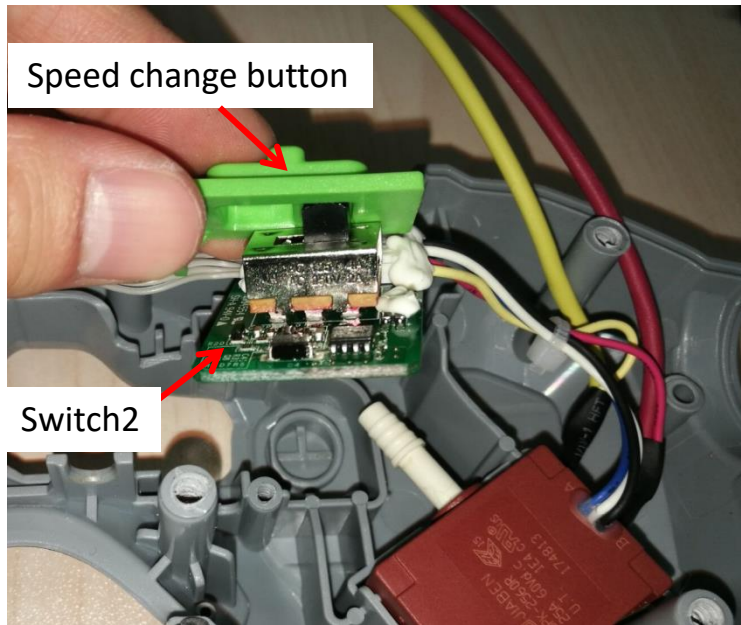
How to Replace the PCBA

14. Align the red cable into the groove.



How to Replace the PCBA

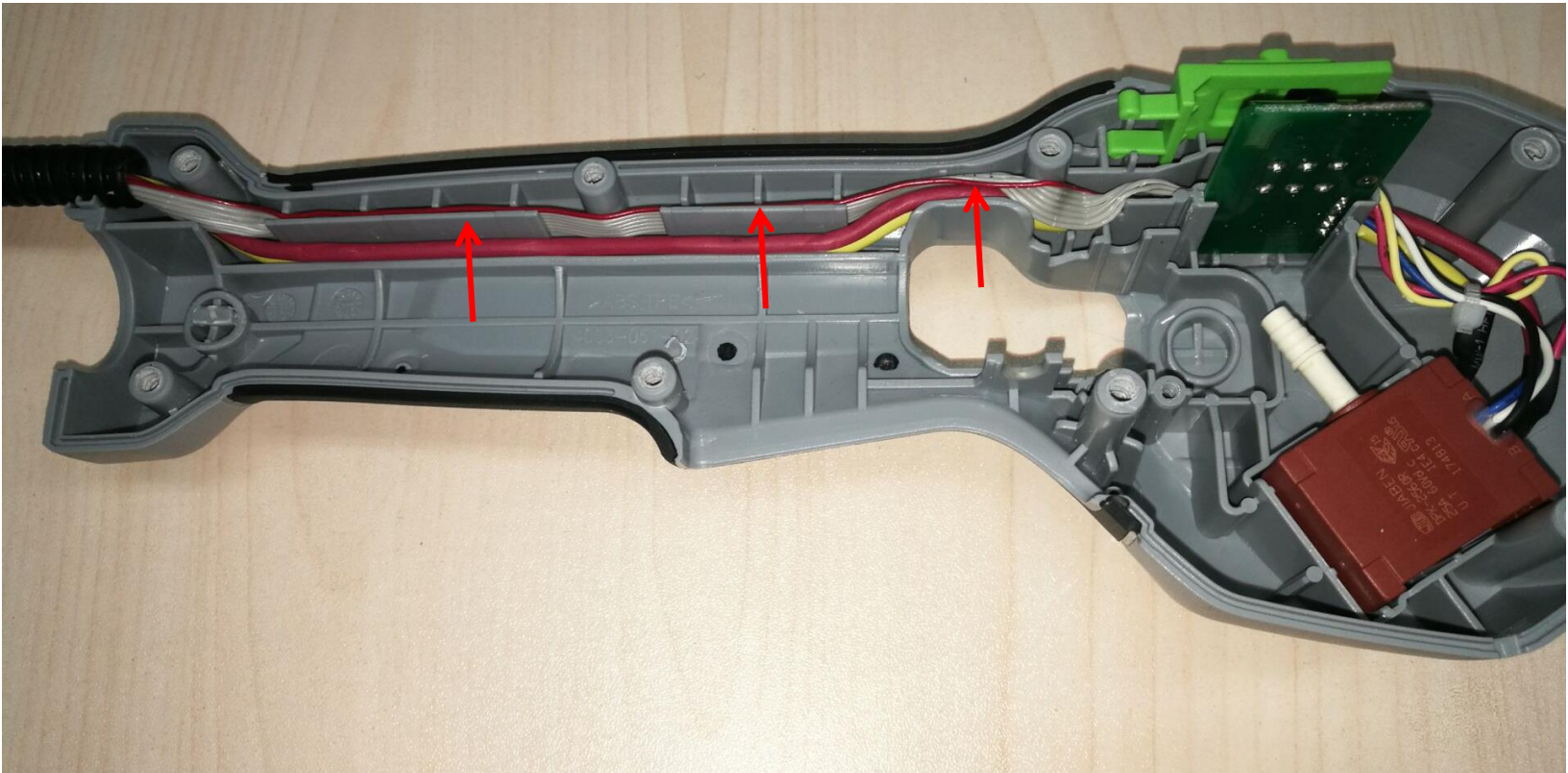
15. Assemble the speed change button with switch2, then insert the button assembly into the groove.



Description	Part Number	Qty.
Speed change button	3128276001	1

How to Replace the PCBA

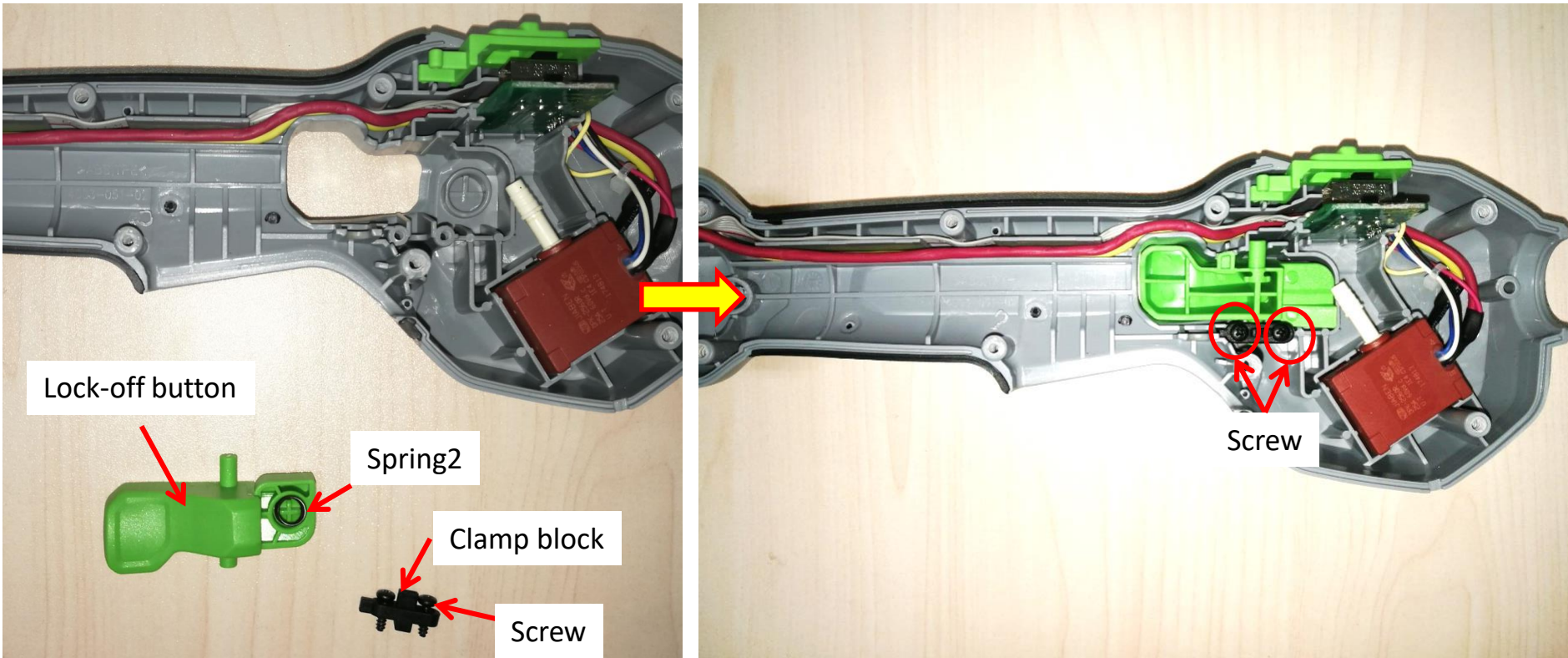
16. Align the flex cable into the groove.



How to Replace the PCBA

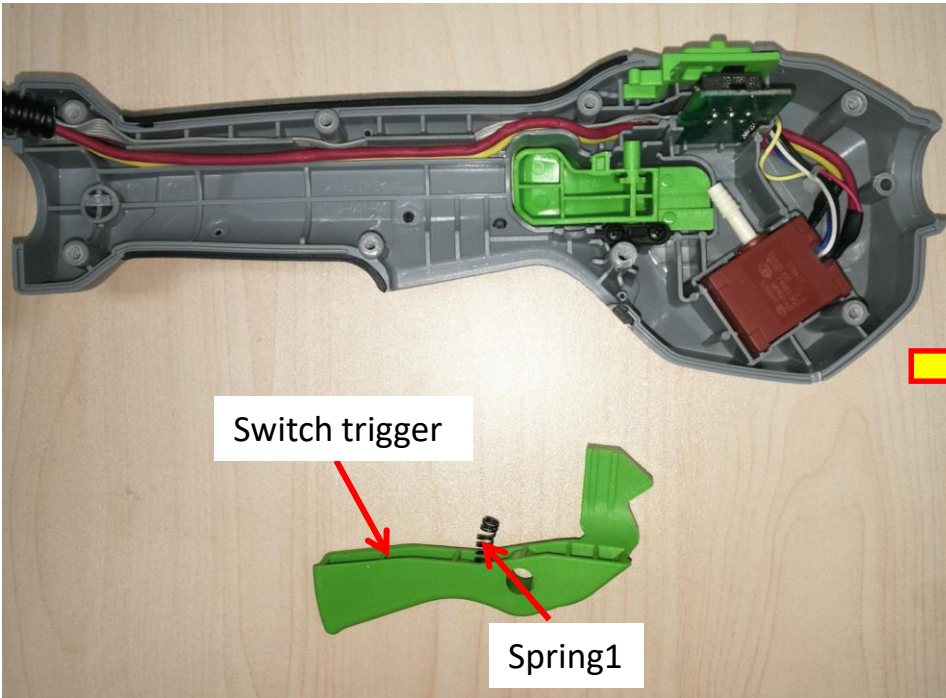
17. Assemble spring2 with lock-off button.

18. Position the lock-off button and fasten it with clamp block and screws.



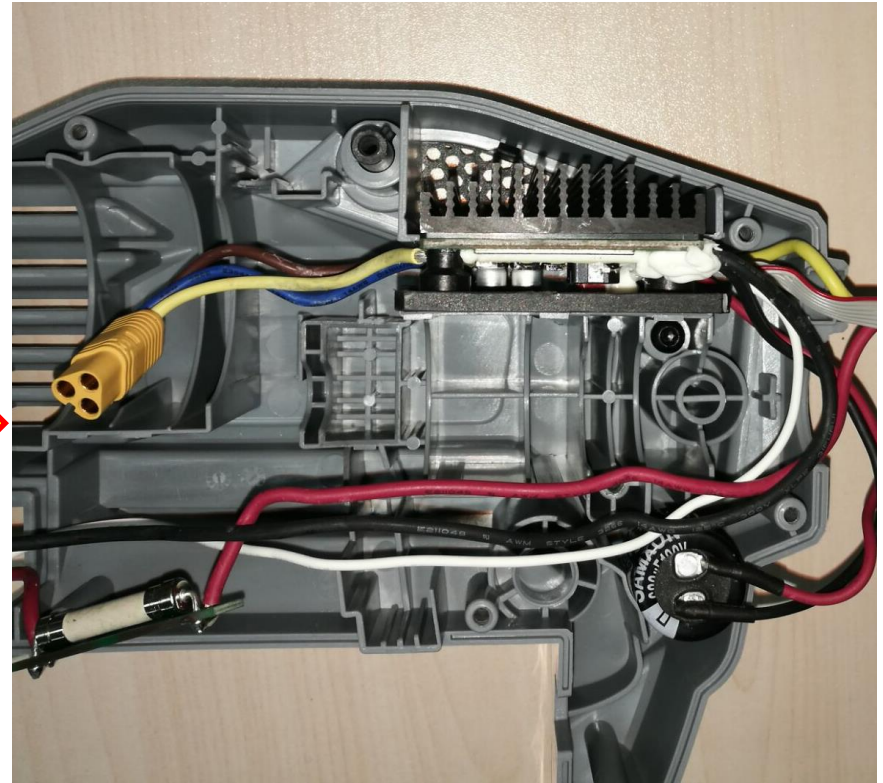
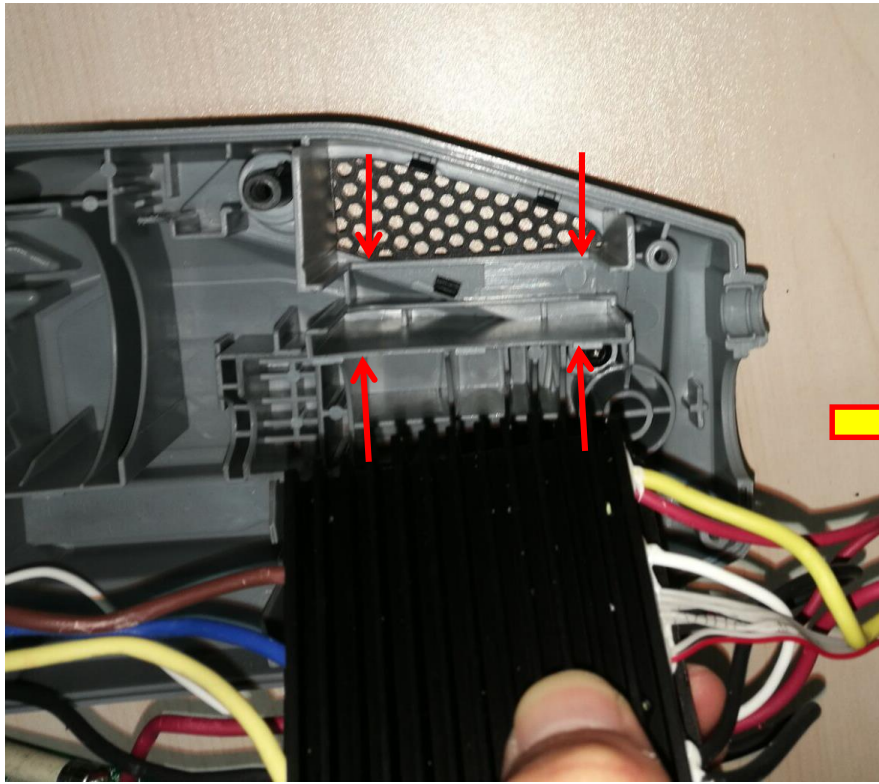
How to Replace the PCBA

- 19 . Assemble switch trigger with spring1.
20. Put the switch trigger into the position.



How to Replace the PCBA

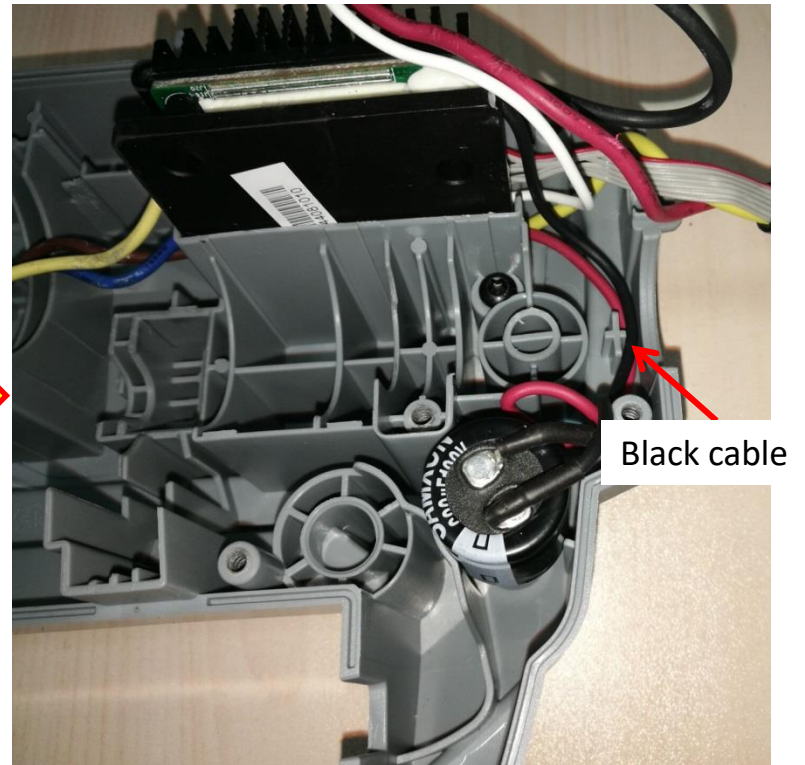
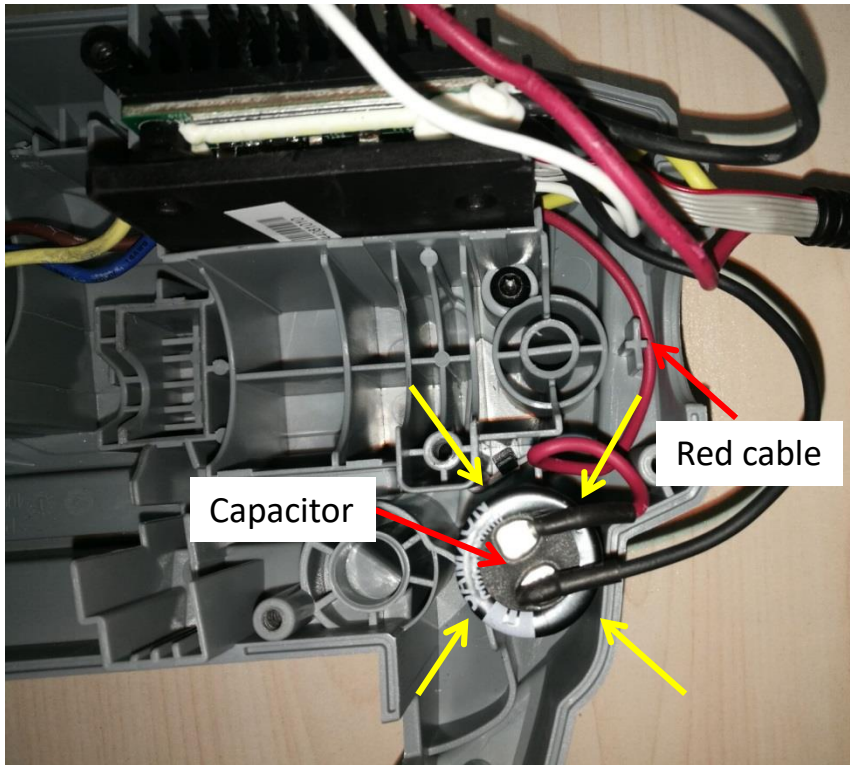
21. Mount the PCBA into the groove.



How to Replace the PCBA

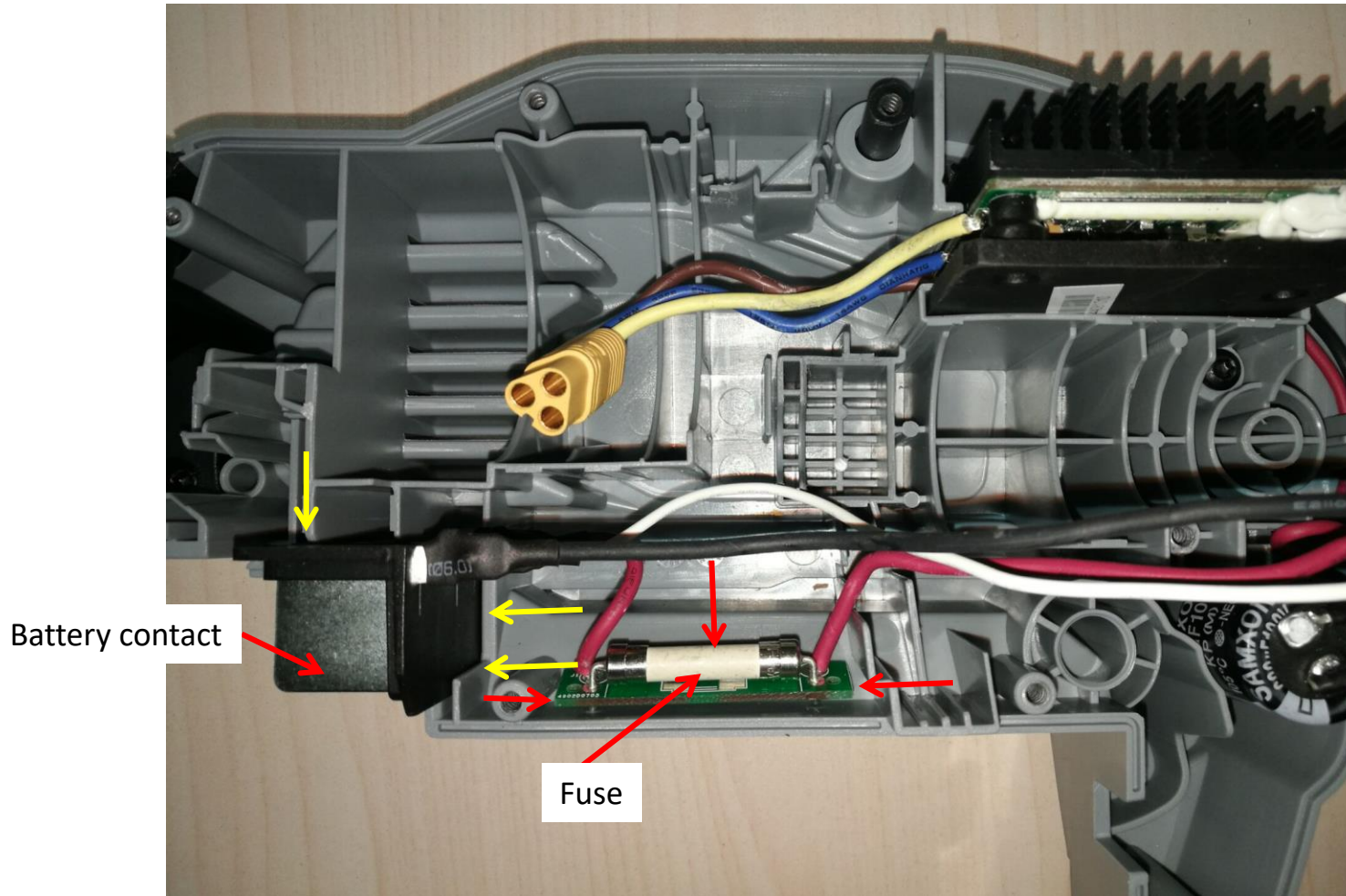
22. Mount the capacitor into the groove and align the red cable into the groove.

23. Mount the black cable into the groove.



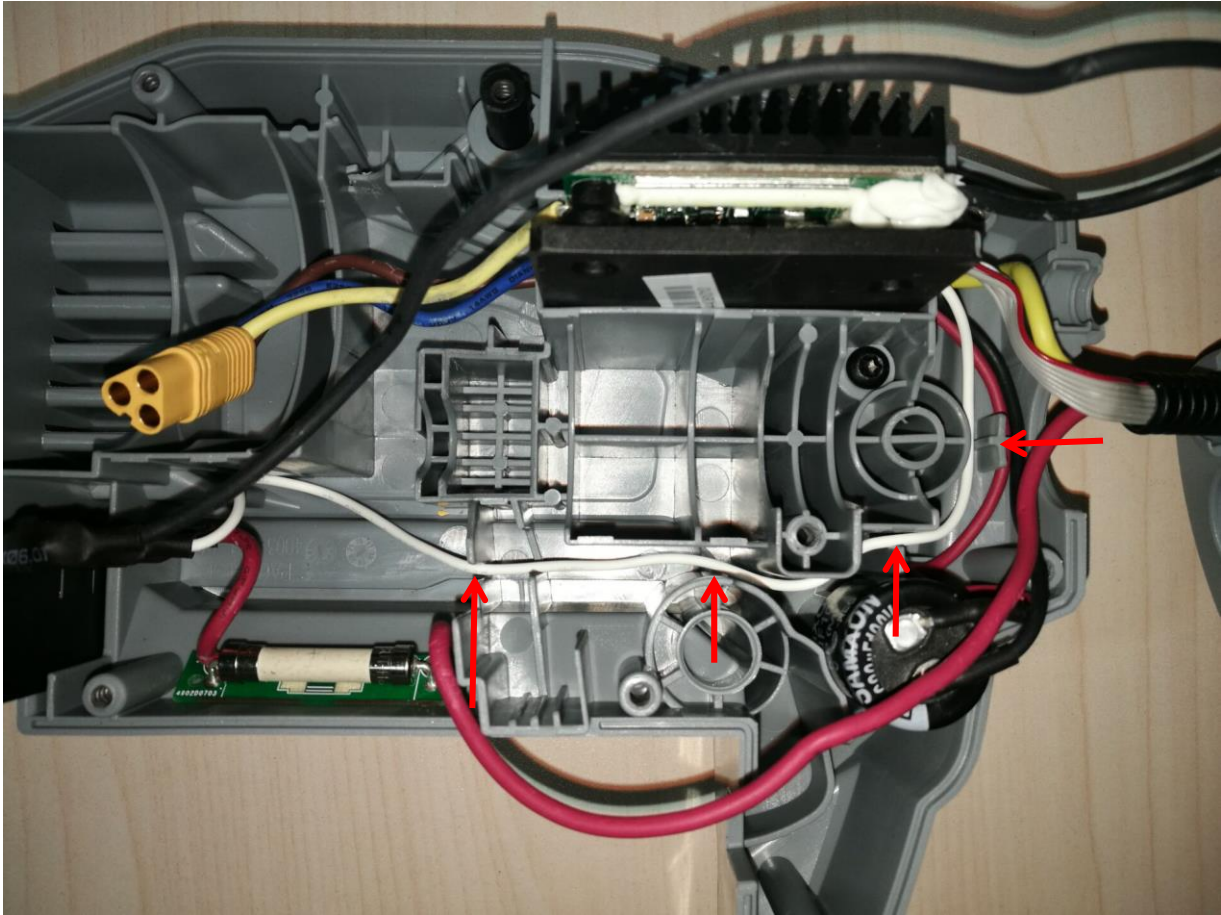
How to Replace the PCBA

24. Mount the battery contact into the groove.
25. Mount the fuse into the groove.



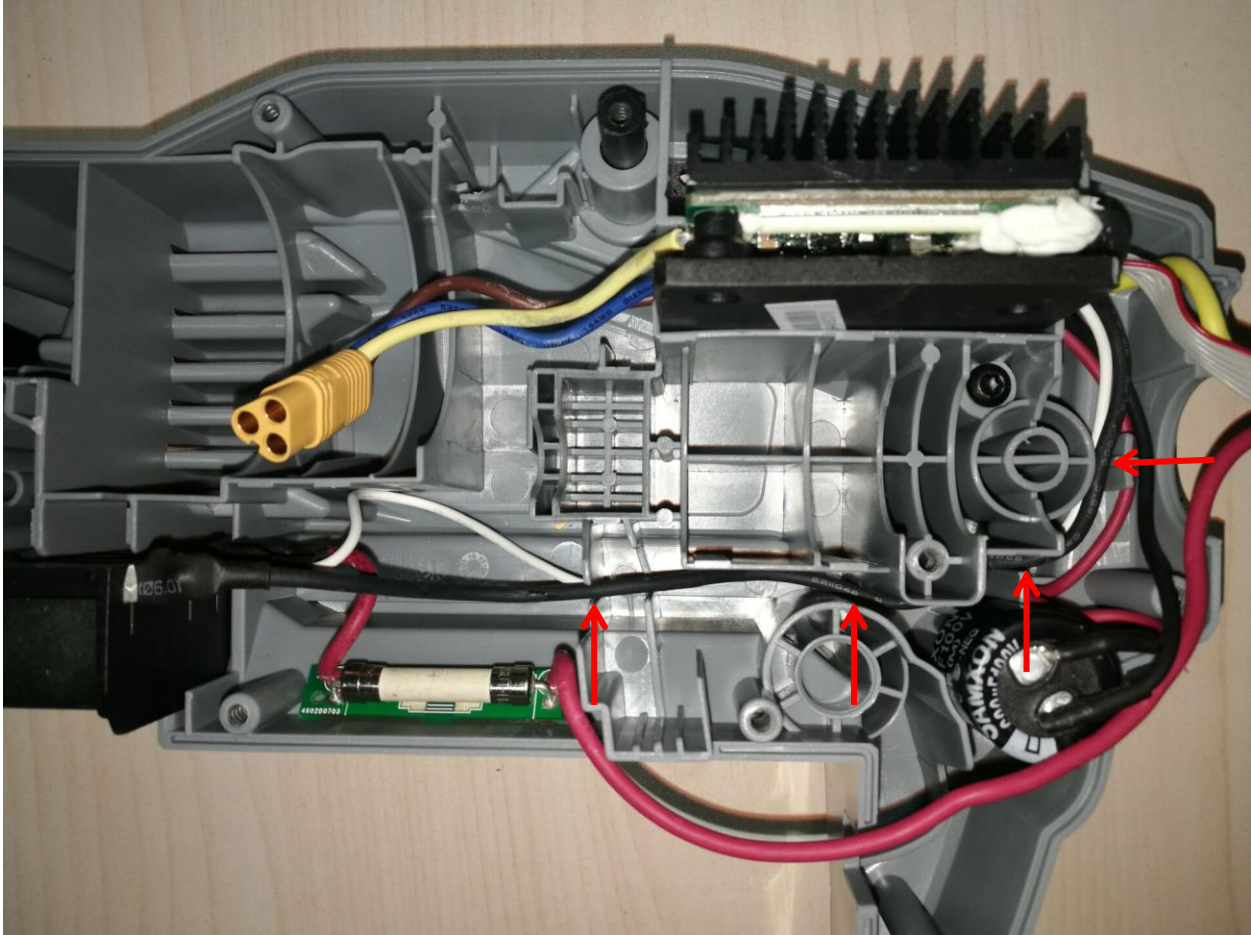
How to Replace the PCBA

26. Align the white cable into the groove.



How to Replace the PCBA

27. Align the black cable into the groove.



How to Replace the PCBA

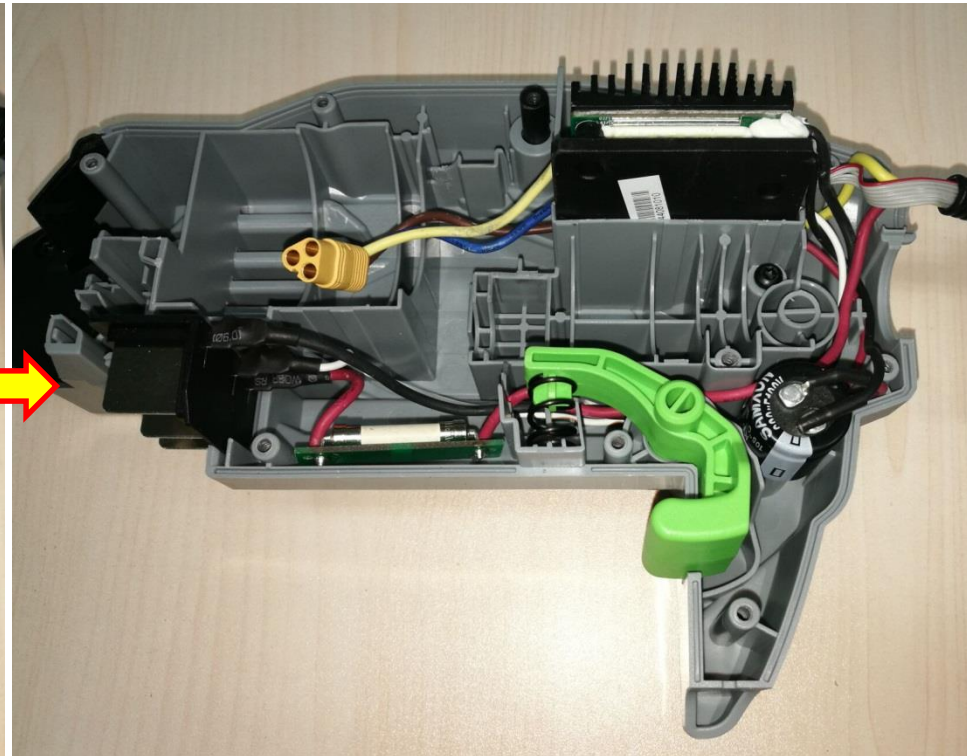
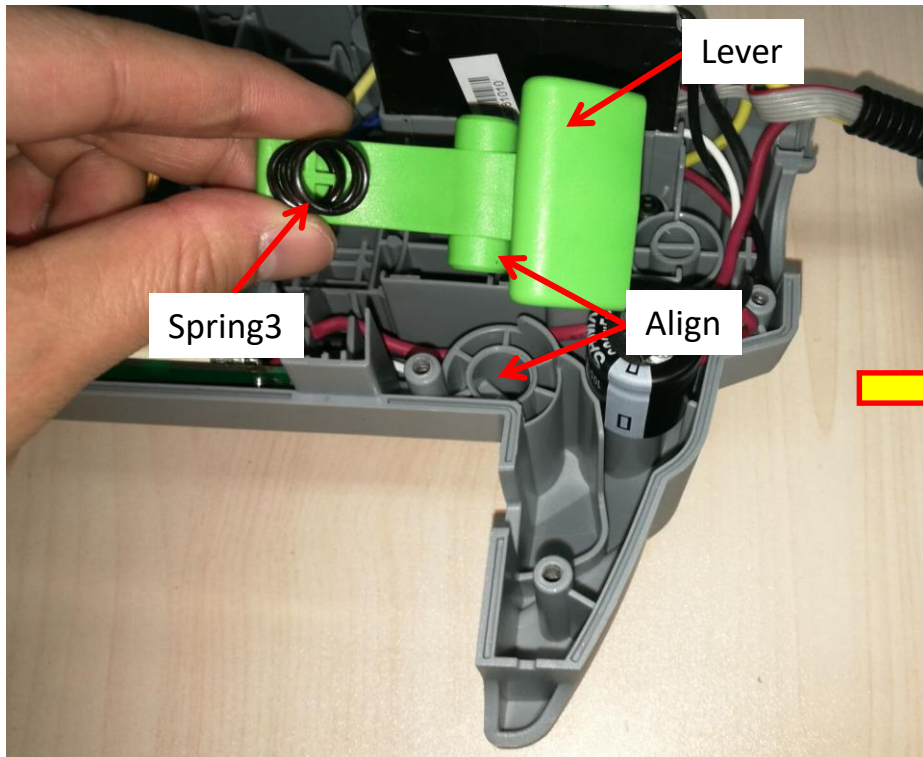
28. Align the red cable into the groove.



How to Replace the PCBA

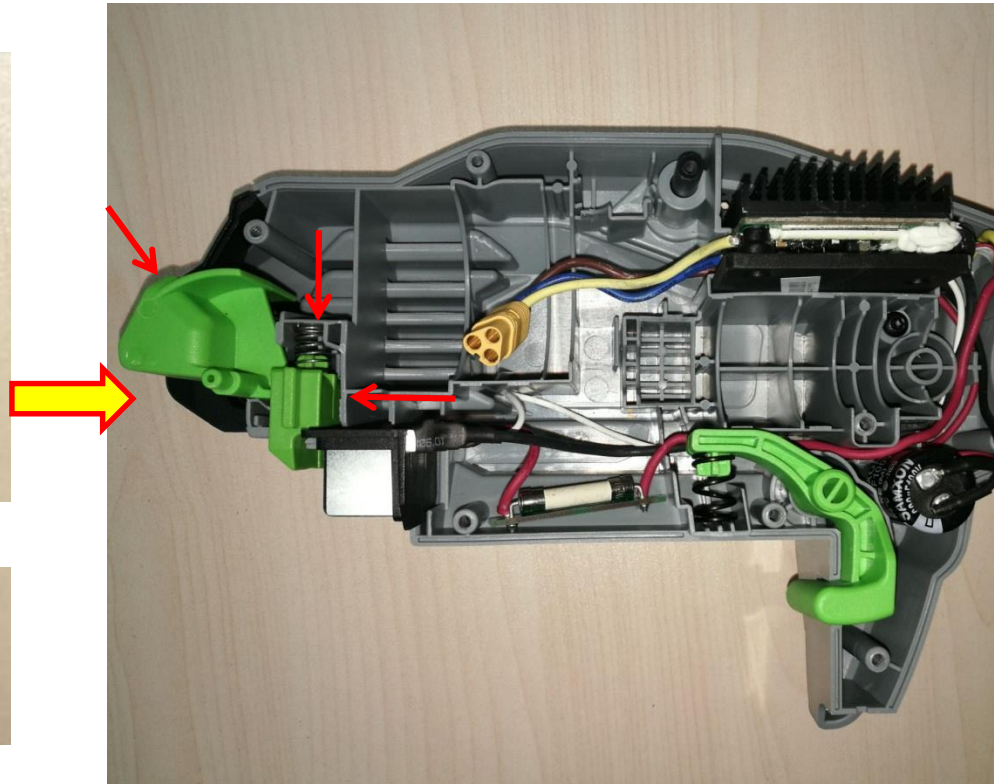
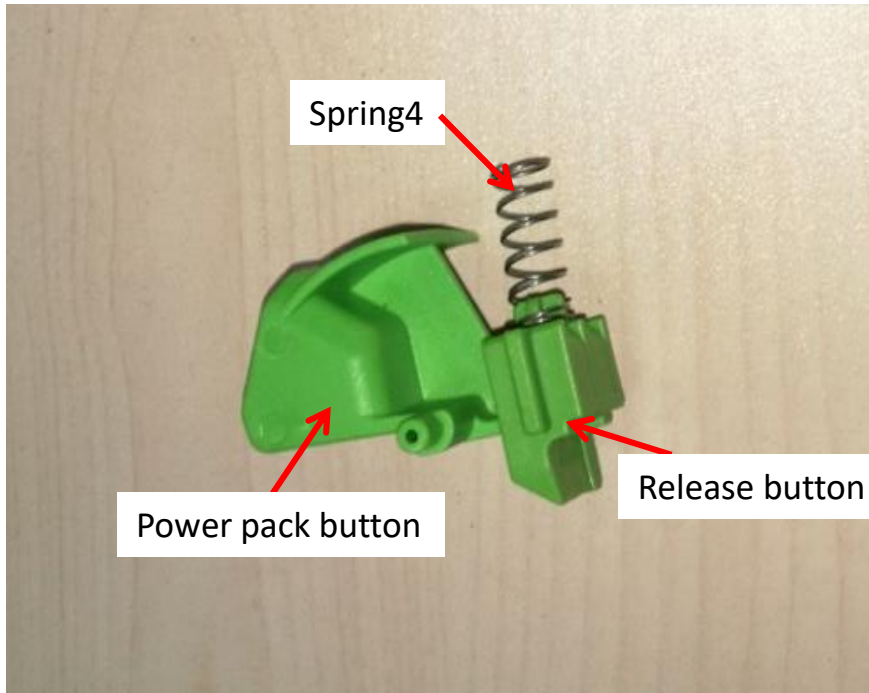
29. Assemble the spring3 with the lever.

30. Align the rib on the lever with the groove in the housing set.



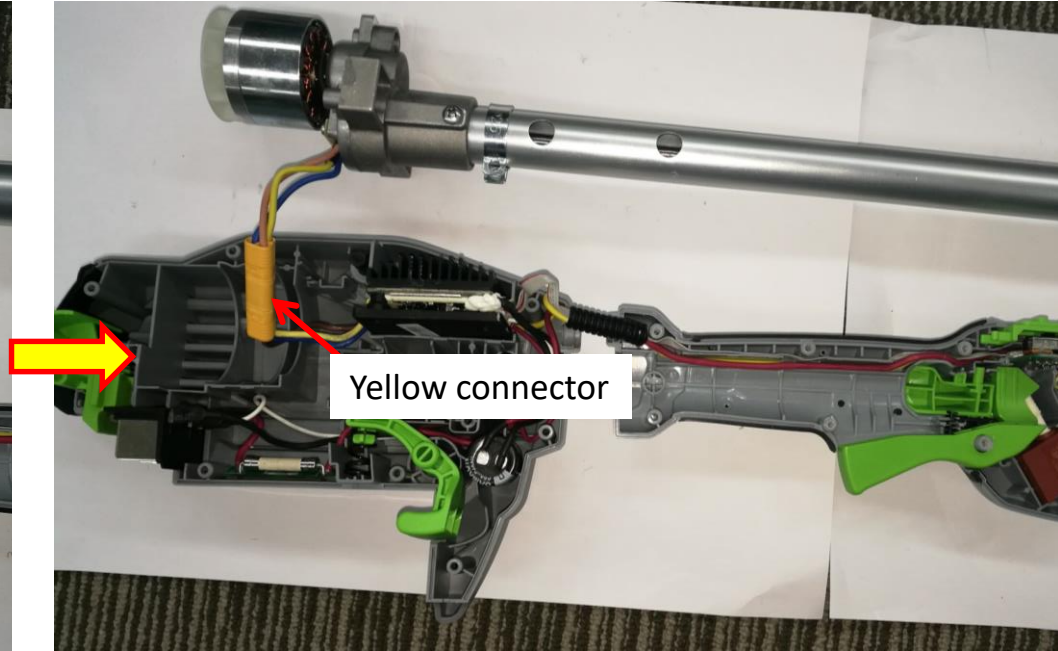
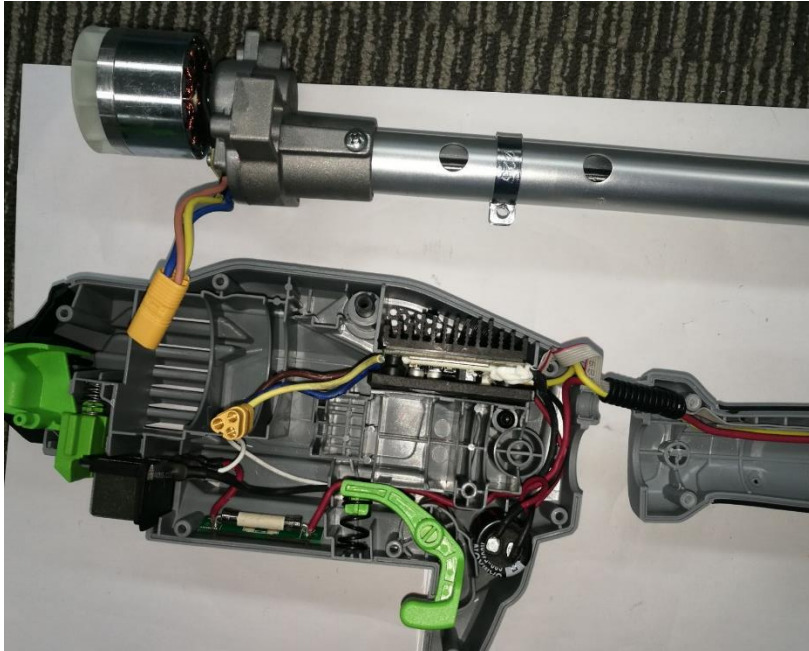
How to Replace the PCBA

31. Assemble the release button, power pack button and spring4 and mount them into the groove of the housing set.



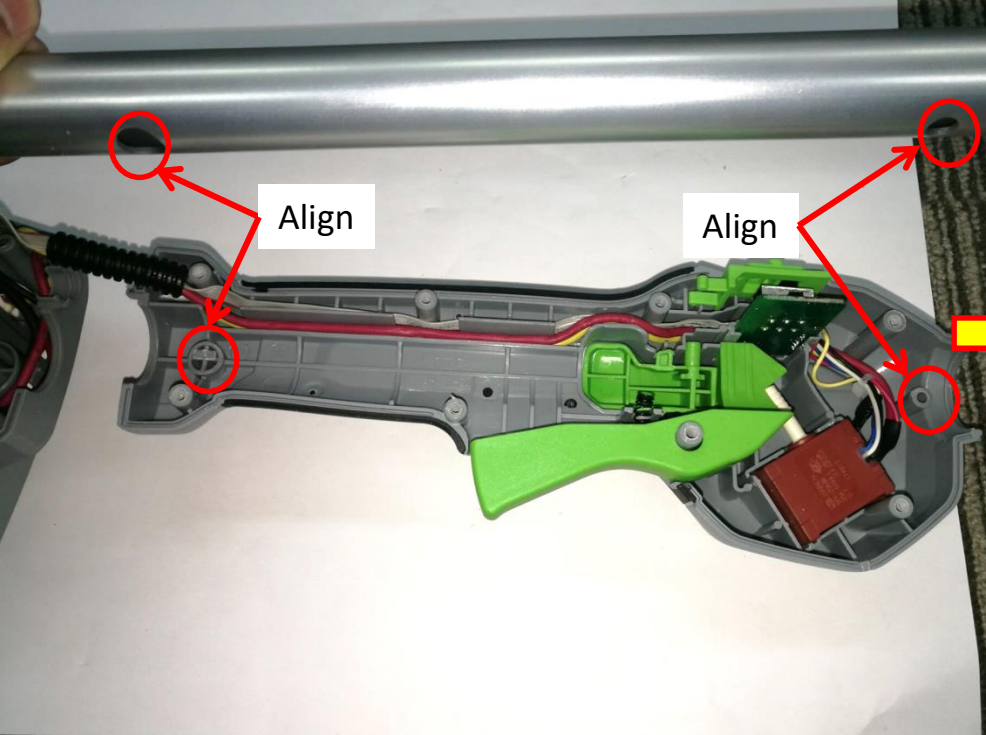
How to Replace the PCBA

32. Connect the yellow connector.



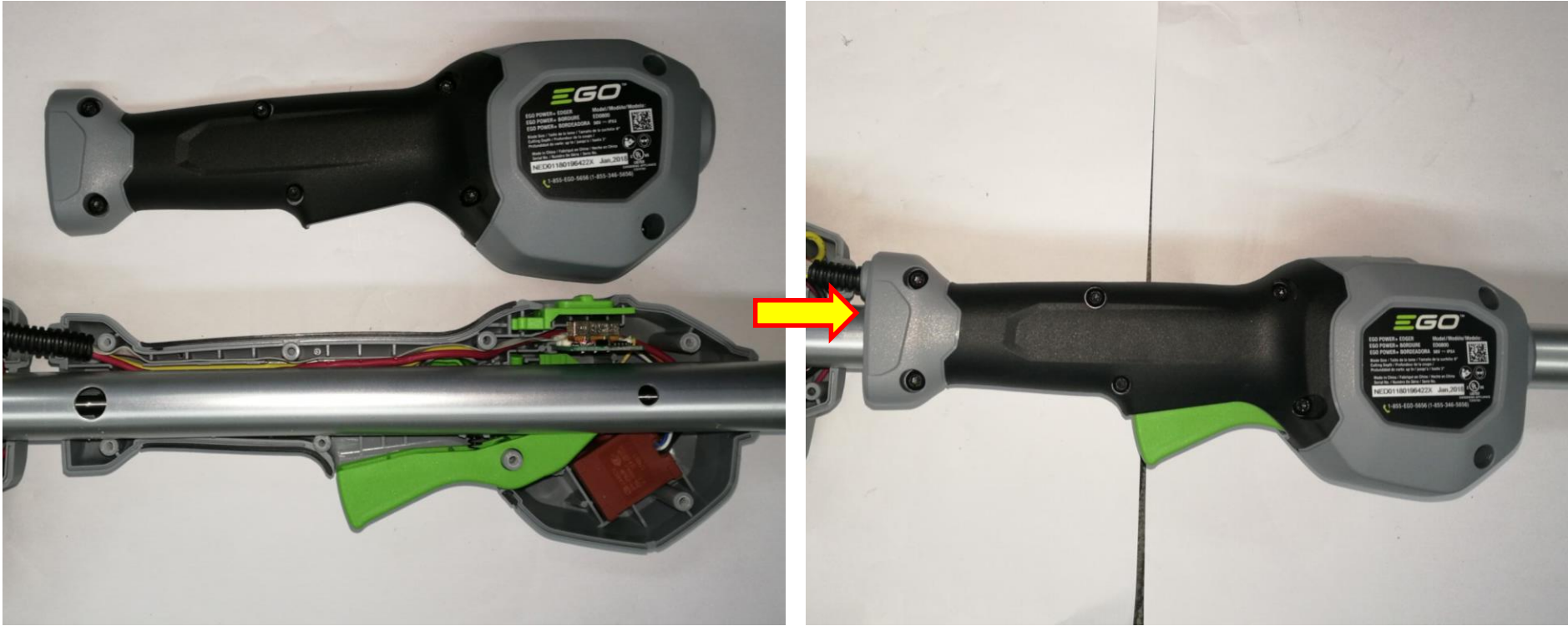
How to Replace the PCBA

33. Align the holes with the ribs, then mount the tube onto the handle set.



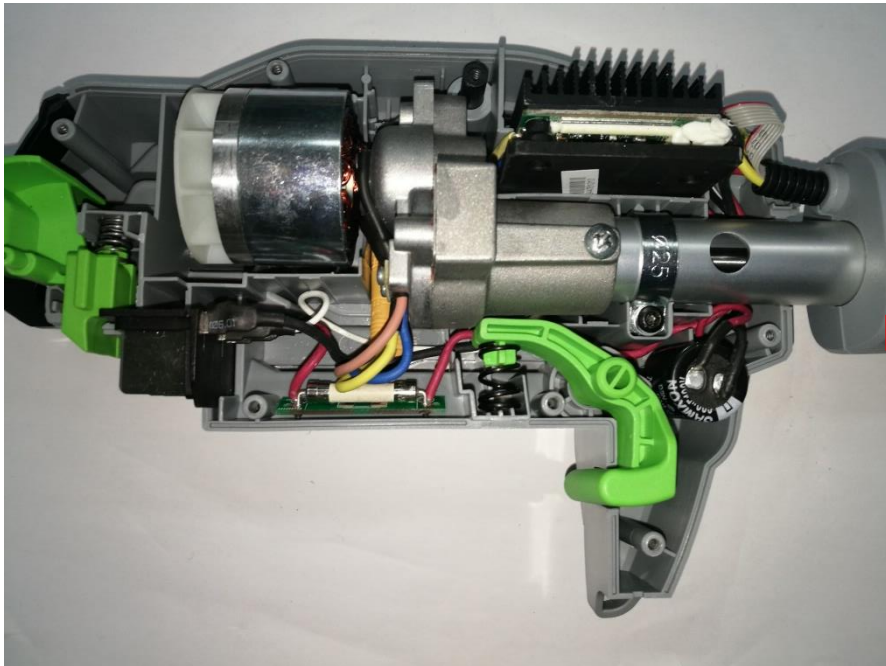
How to Replace the PCBA

34. Close the handle set with screws.



How to Replace the PCBA

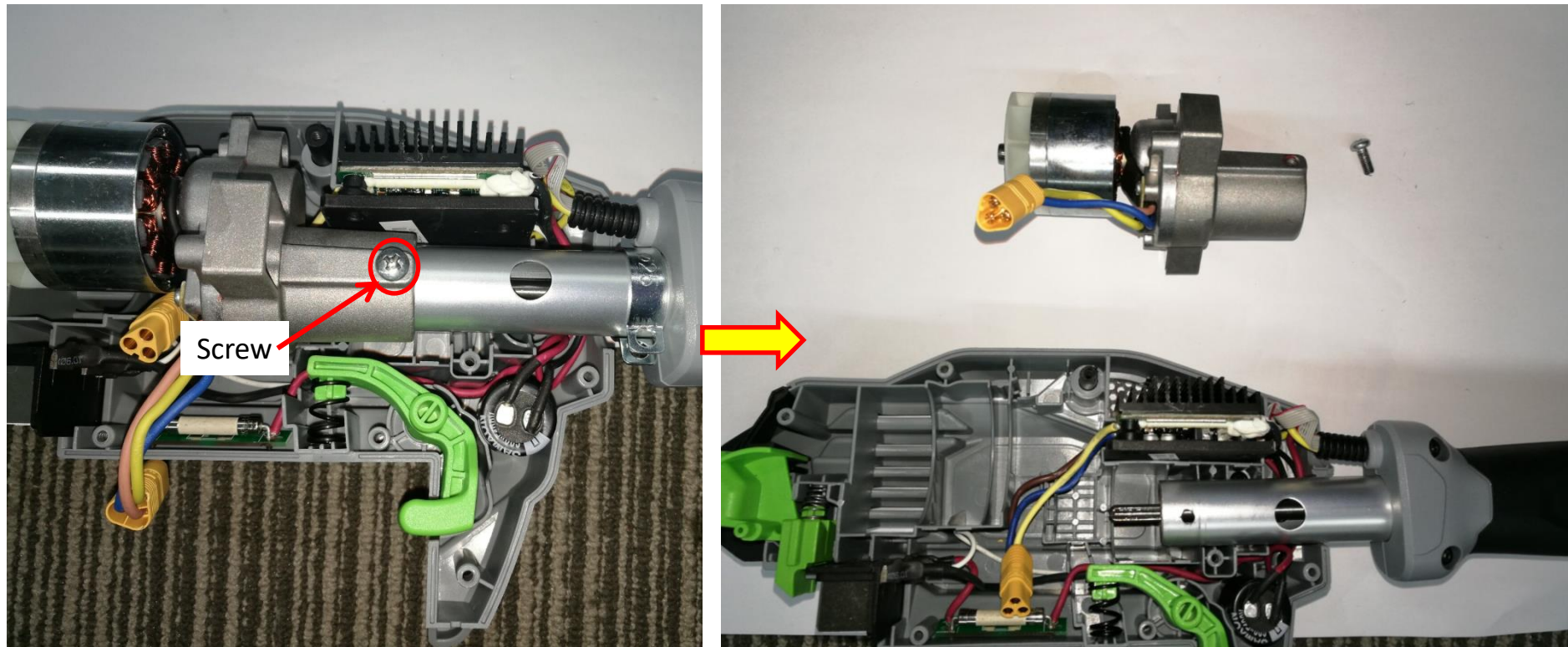
35. Align the tube assembly into the housing set and fix the fixed ring as are shown in the “How to Replace the Motor Assembly” section.
36. Close the housing set as is shown in the “How to Replace the Motor Assembly” section.



Part 4: How to Replace the Tube

How to Replace the Tube

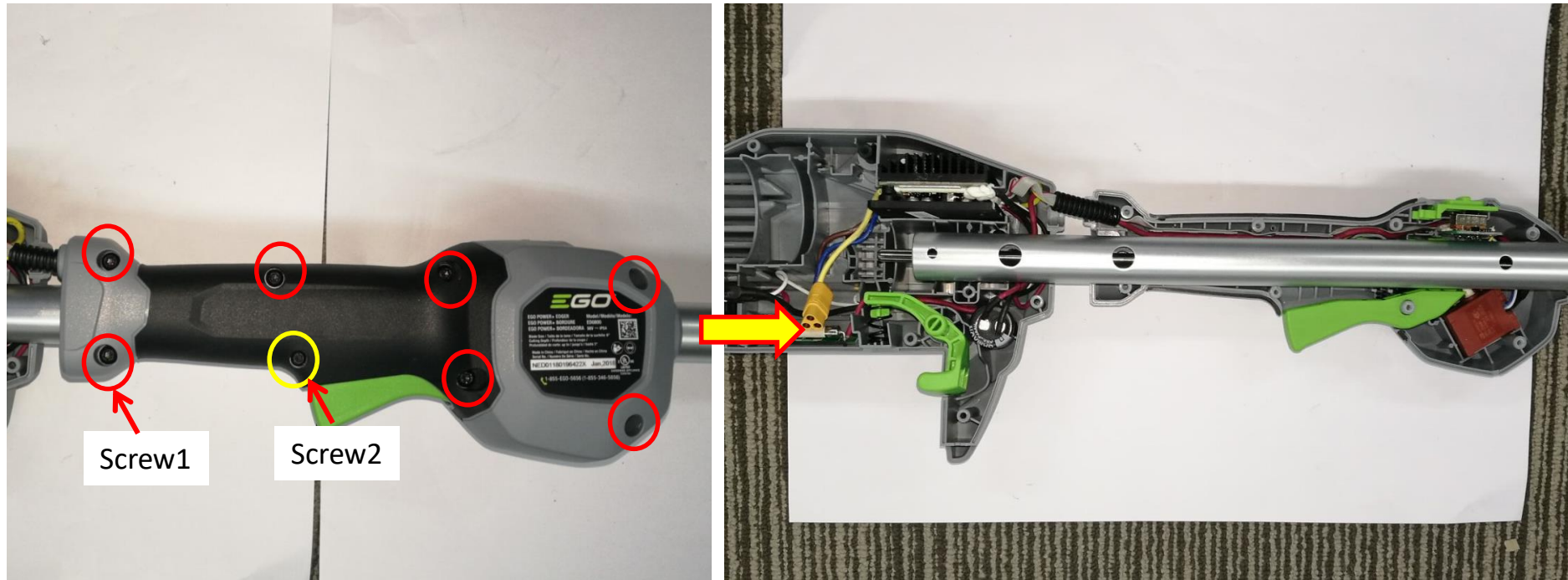
1. Open the housing set to disconnect the yellow connector and loosen the screw on the fixed ring as are shown in the “How to Detect the PCBA and Motor Assembly” section.
2. Loosen the screw to remove the motor and gear case assembly and the fixed ring.



Description	Part Number	Qty.
Screw	5620050007	1

How to Replace the Tube

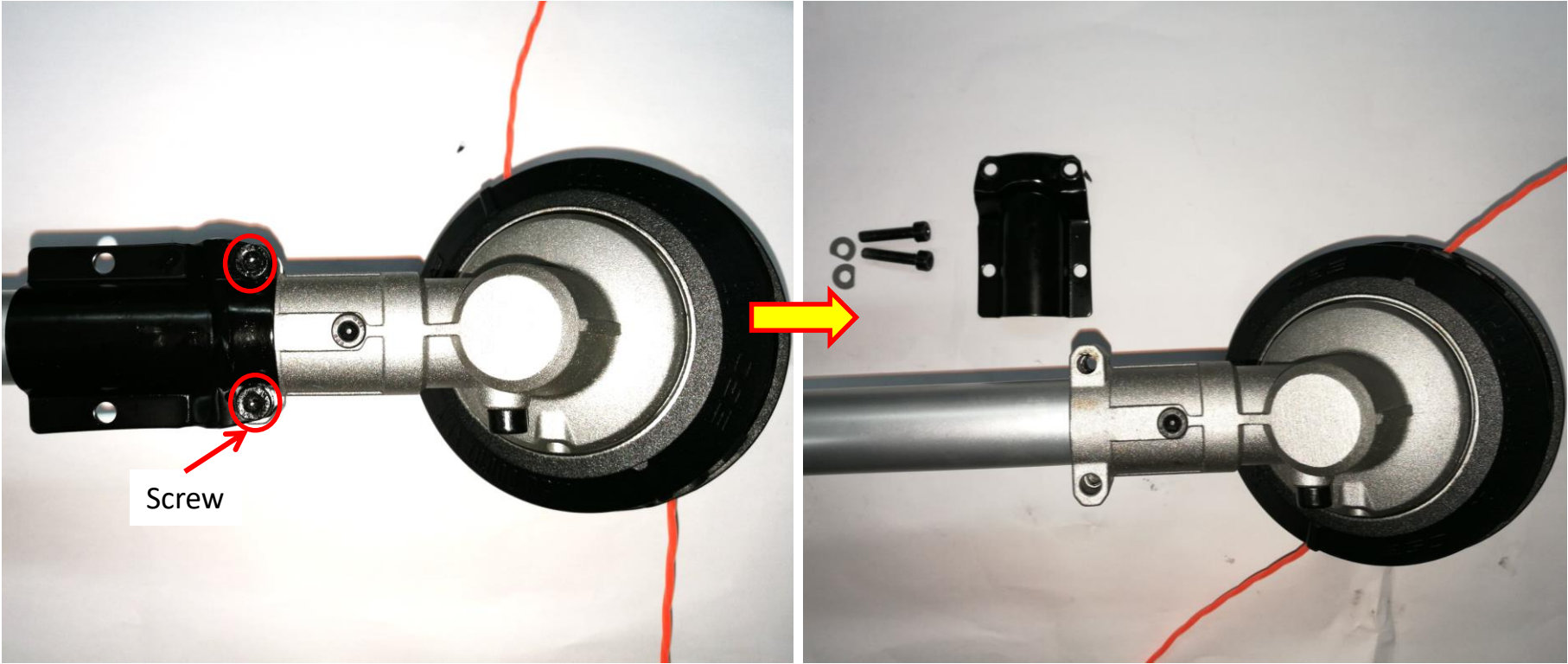
3. Loosen 7 pcs screw1 and 1 screw2 to remove the right handle set.



Description	Part Number	Qty.	Description	Part Number	Qty.
Screw1	5620479001	1	Screw2	5610305001	1

How to Replace the Tube

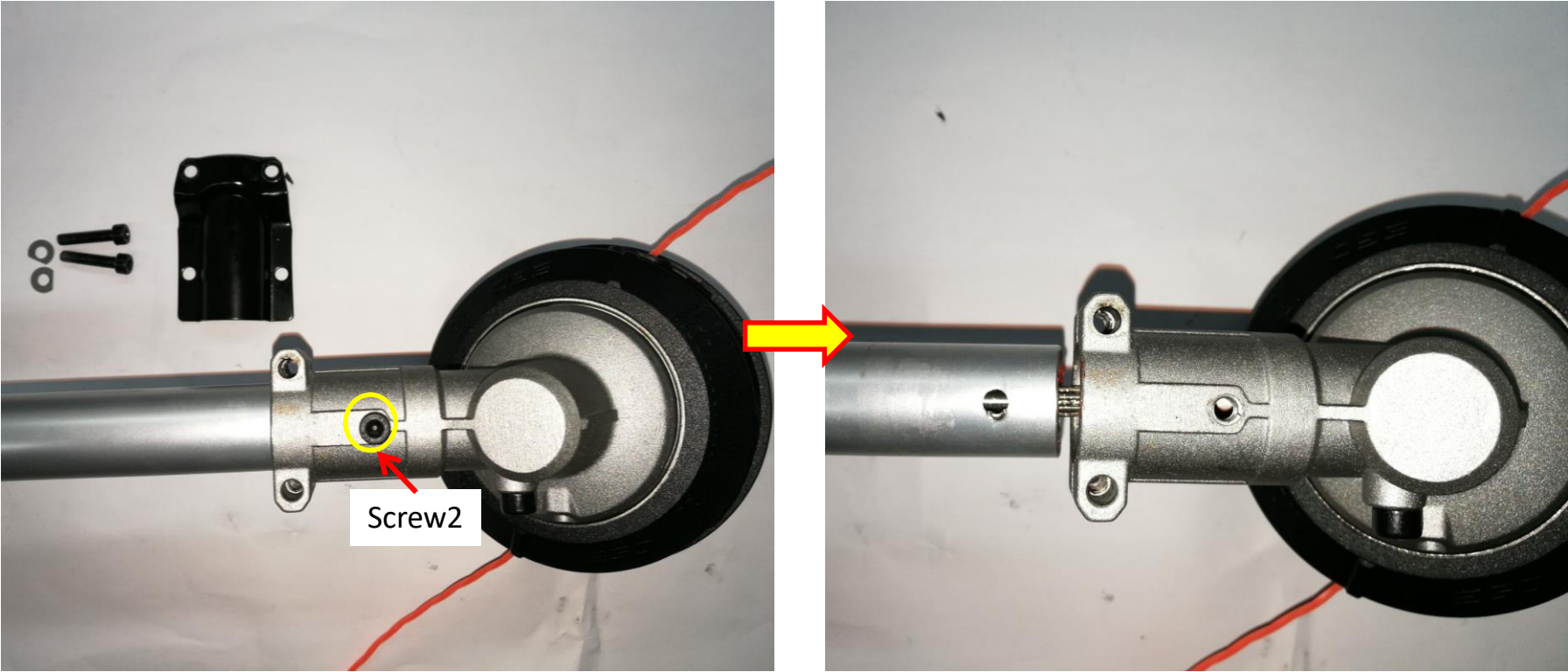
4. Loosen 2 pcs screws to remove the screws and washers.



Description	Part Number	Qty.	Description	Part Number	Qty.
screw	5620216003	2	Washer	5650598001	2

How to Replace the Tube

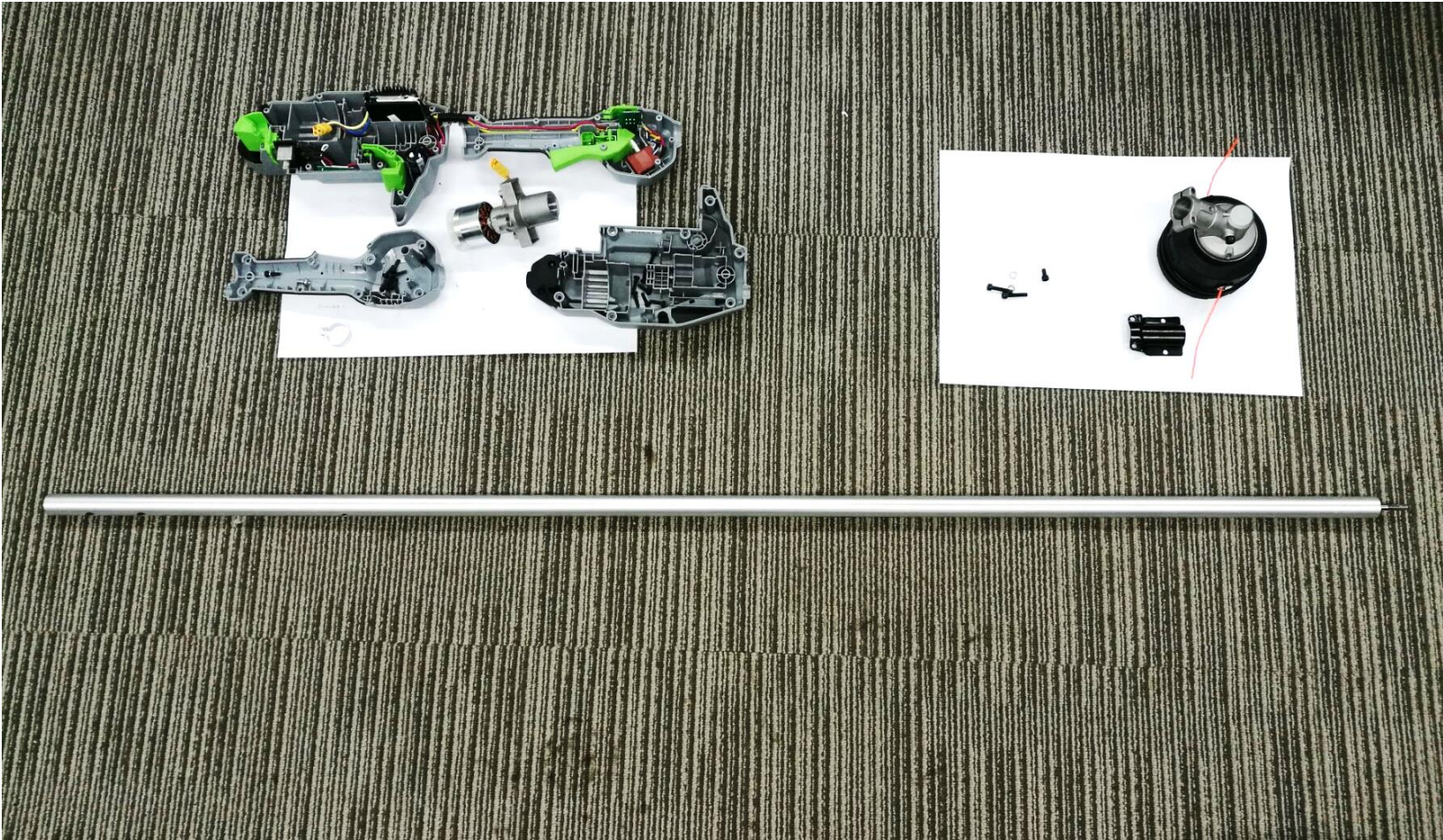
5. Loosen 1 screw to separate the tube assembly from the trimmer head.



Description	Part Number	Qty.
screw	5620213003	1

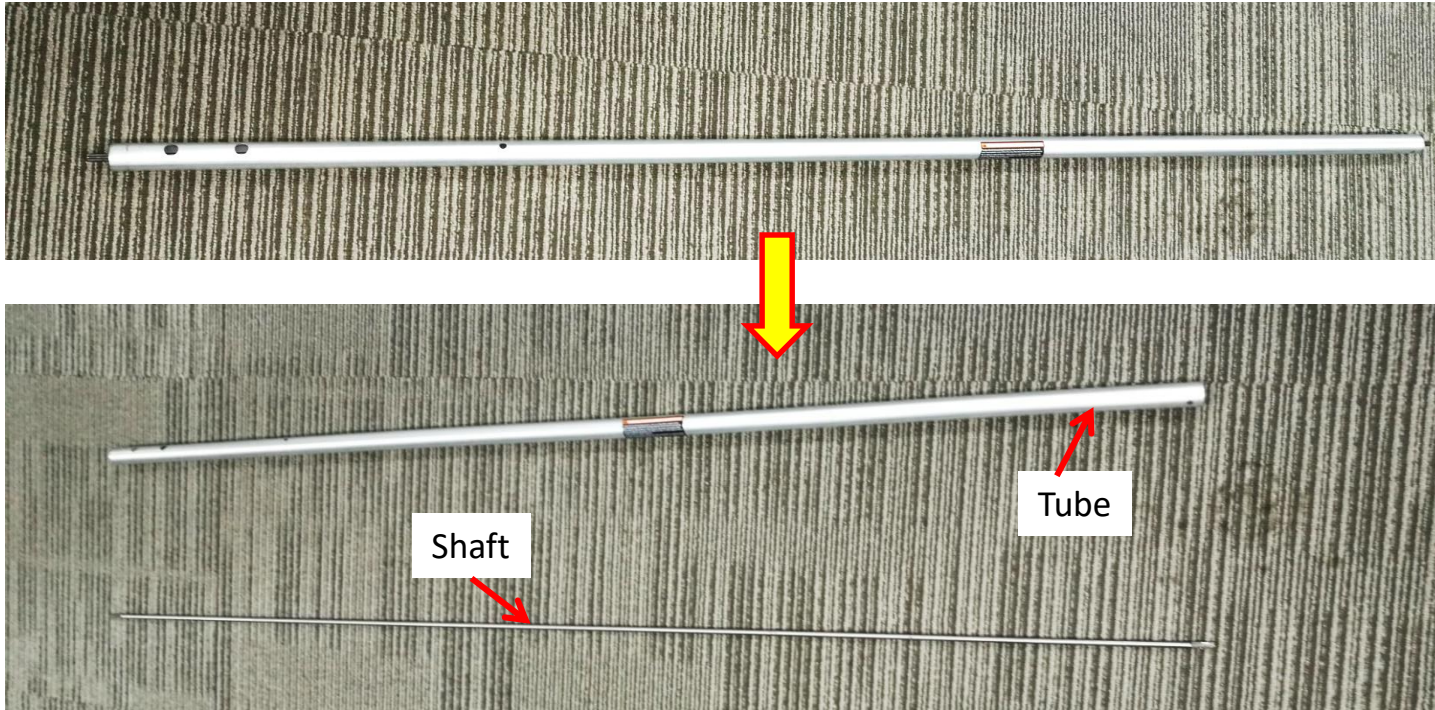
How to Replace the Tube

6. Remove the tube assembly.



How to Replace the Tube

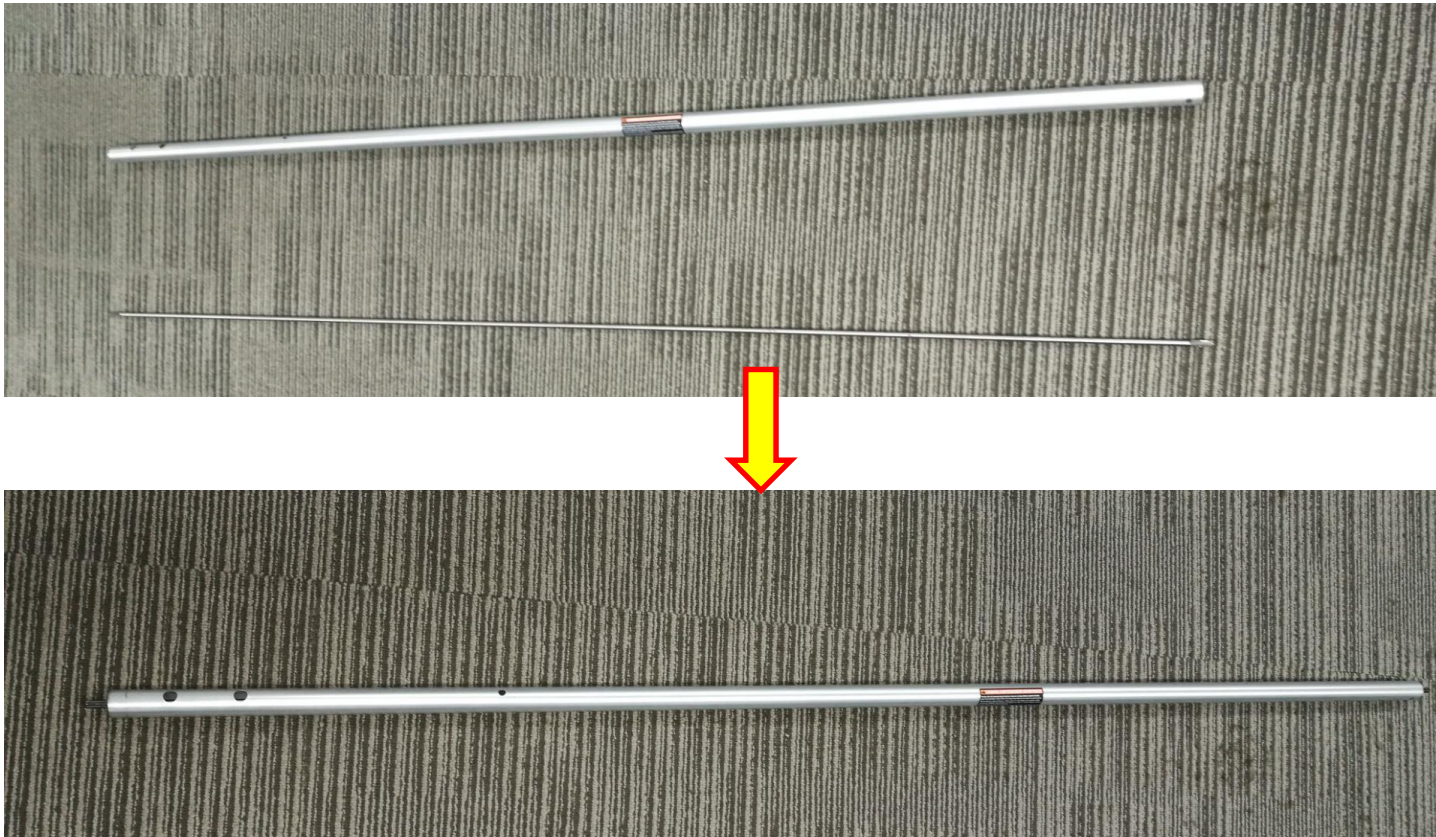
7. Take the shaft out of the tube. If any one is broken, replace it with a new one.



Description	Part Number	Qty.	Description	Part Number	Qty.
Shaft	3552666001	1	Tube	2825710002	1

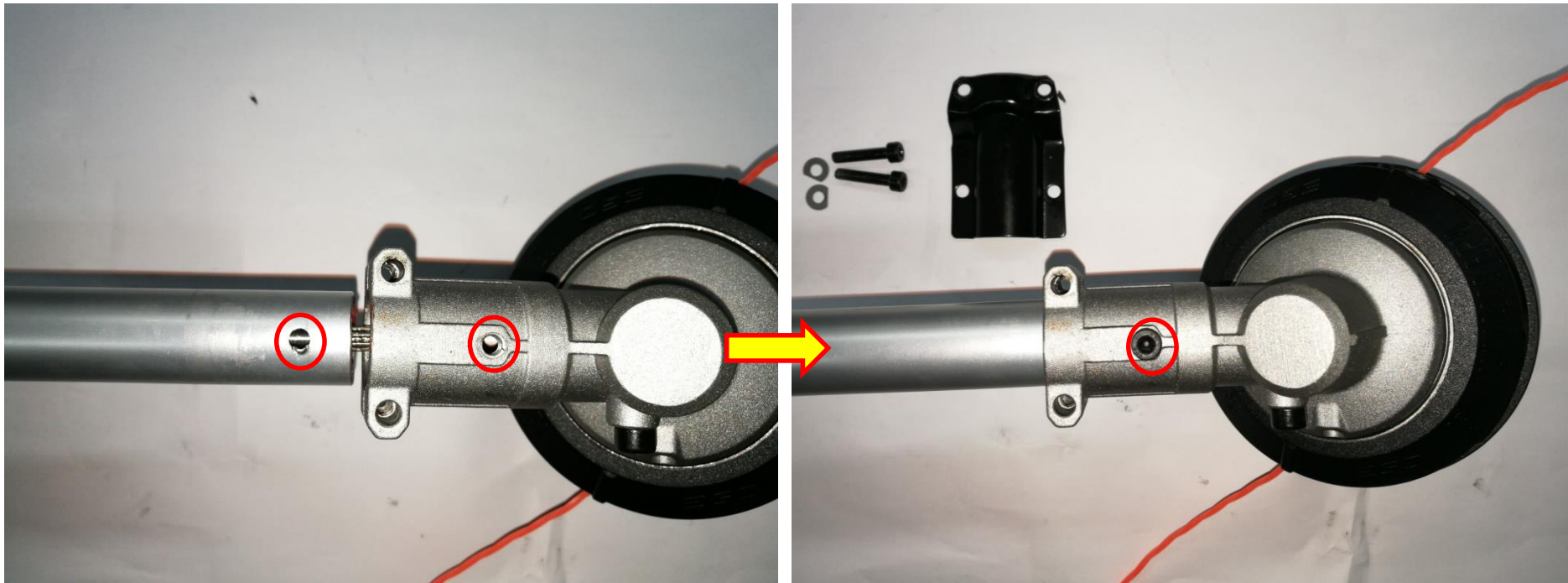
How to Replace the Tube

8. Insert the shaft into the tube.



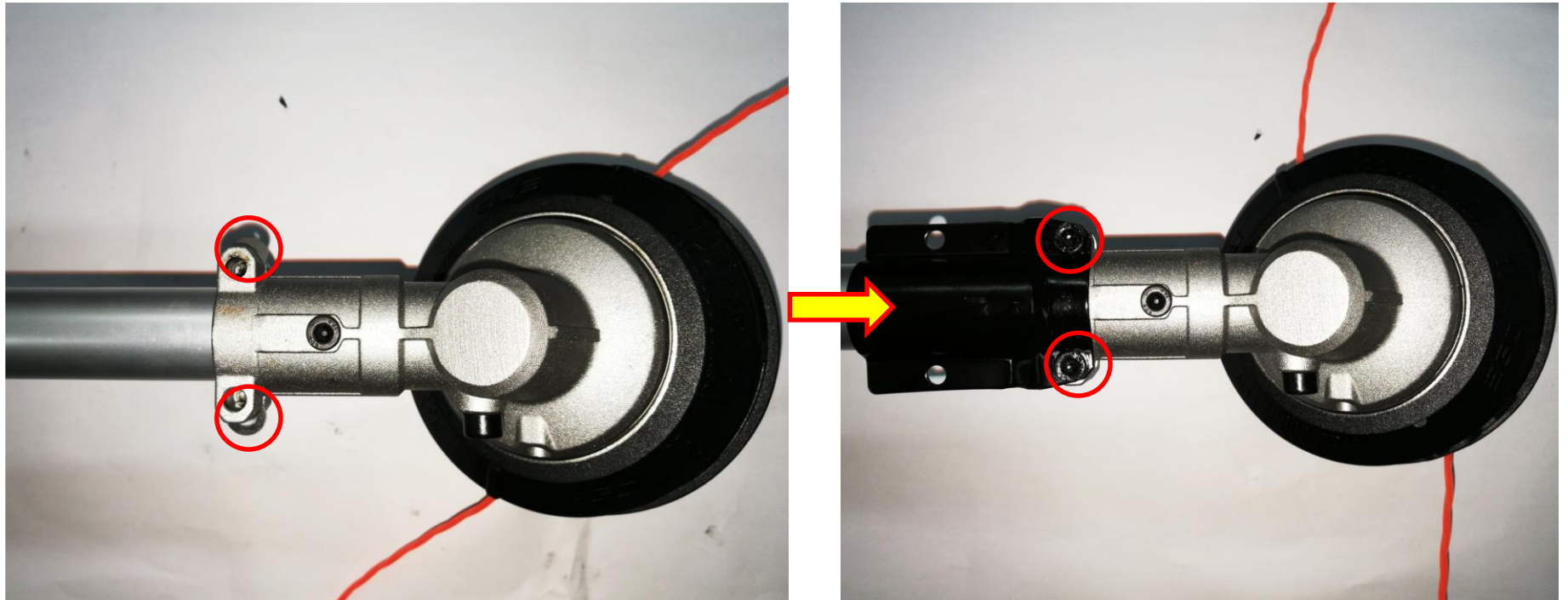
How to Replace the Tube

9. Align the hole on the tube with the hole on the gear case assembly, then insert the tube into the gear case assembly.
10. Fasten the tube with gear case assembly by screw.



How to Replace the Tube

11. Insert the washers into the gap of each side of the gear case assembly, then tighten the screws.



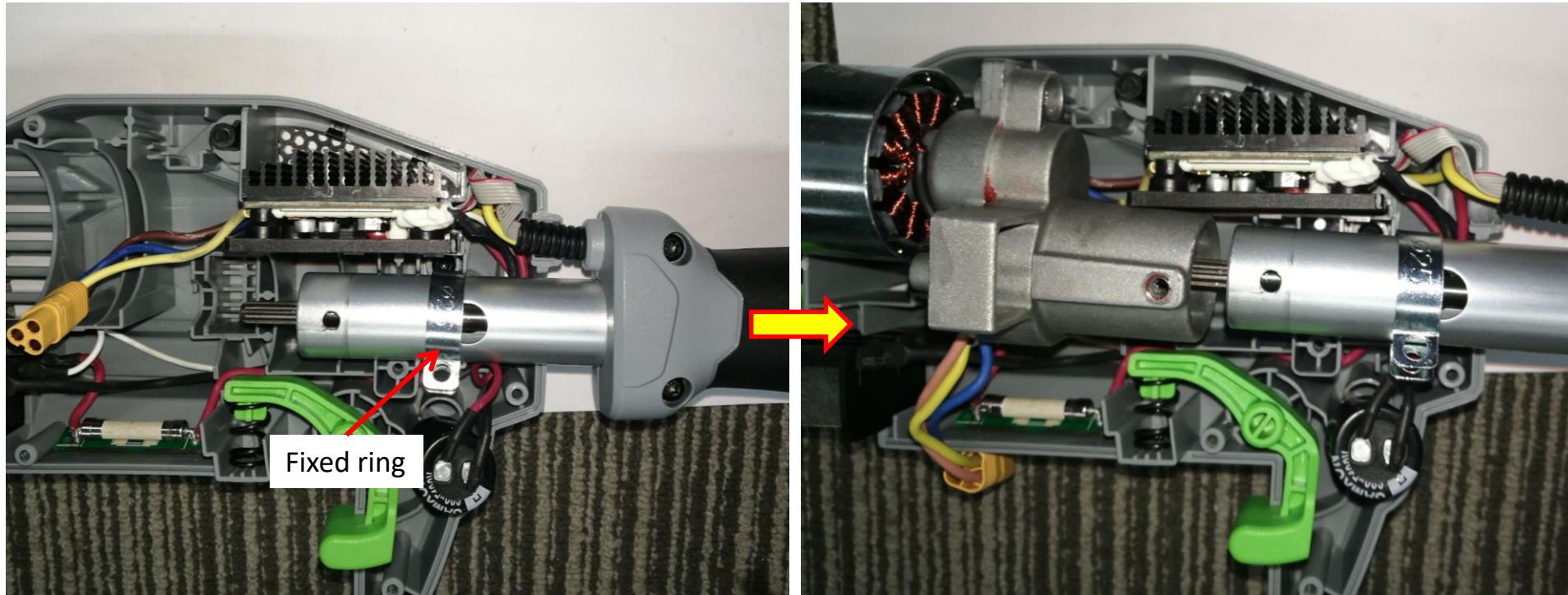
How to Replace the Tube

12. Assemble the handle set as is shown in the “How to Replace the PCAB” section.



How to Replace the Tube

13. Mount the fixed ring onto the tube.



How to Replace the Tube

14. Assemble the motor assembly with the tube and fix the fixed ring as are shown in the “How to Replace the Motor Assembly” section.
15. Close the housing set as are show in the “How to Replace the Motor Assembly” section.



Part 5: How to Replace the Trimmer Head and Gear Case Assembly

How to Replace the Trimmer head and Gear Case Assembly

1. Press the release tabs to remove the lower housing assembly.



Release tab



Lower housing assembly



Description	Part Number	Qty.
Lower housing assembly	2824946001	1

How to Replace the Trimmer head and Gear Case Assembly

2. Take the spring out of the upper housing assembly.



Description	Part Number	Qty.
Spring	3660654001	1

How to Replace the Trimmer head and Gear Case Assembly

3. Rotate the upper housing assembly to align the slot in the flange with the hole in the gear case.
4. Insert the hex wrench into the aligned holes to act as a stabilizer.



How to Replace the Trimmer head and Gear Case Assembly

5. Loosen the nut with multifunction wrench clockwise to remove it from the shaft.



Description	Part Number	Qty.
Nut	5630303001	1

How to Replace the Trimmer head and Gear Case Assembly

6. Take the plain washer out of the shaft.



Description	Part Number	Qty.
Washer	5650577001	1

How to Replace the Trimmer head and Gear Case Assembly

7. Take the upper housing assembly out of the shaft.



Description	Part Number	Qty.
Upper housing assembly	2824947001	1

How to Replace the Trimmer head and Gear Case Assembly

8. Take the flange cover out of the shaft.



Description	Part Number	Qty.
Flange cover	3706103001	1

How to Replace the Trimmer head and Gear Case Assembly

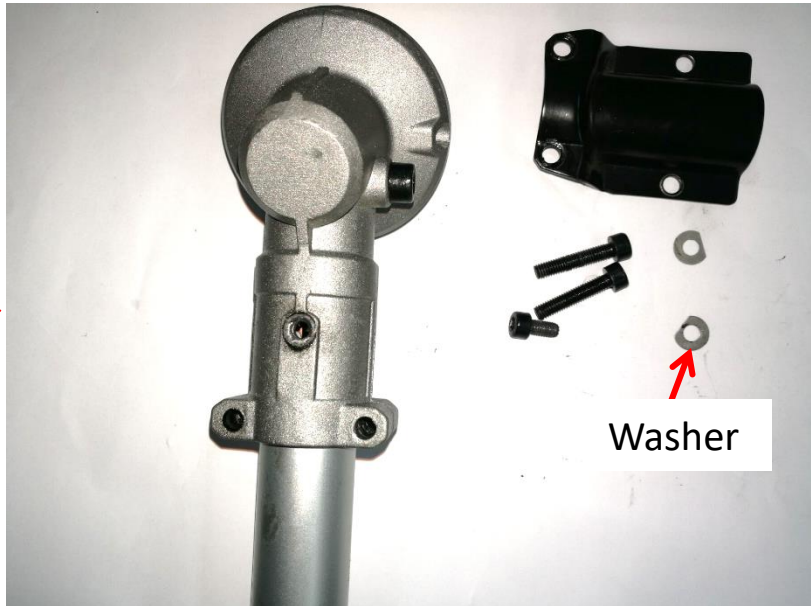
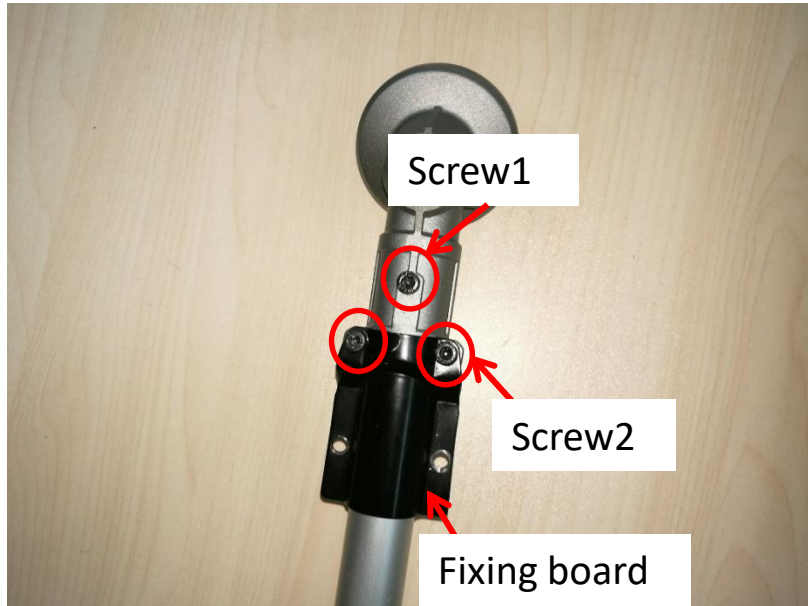
9. Take the flange out of the shaft.



Description	Part Number	Qty.
Inner flange	3552509001	1

How to Replace the Trimmer head and Gear Case Assembly

10. Loosen 1 screw1 and 2 pcs screw2 to remove 2 washers and the fixing board.



Description	Part Number	Qty.	Description	Part Number	Qty.
Screw1	5620213003	1	Washer	5650598001	2
Screw2	5620216003	2	Fixing board	3705417001	1

How to Replace the Trimmer head and Gear Case Assembly

11. Pull the connecting tube with one hand and pull the gear case with the other hand to separate them from each other. If the gear case assembly was broken or worn, replace it with a new one.



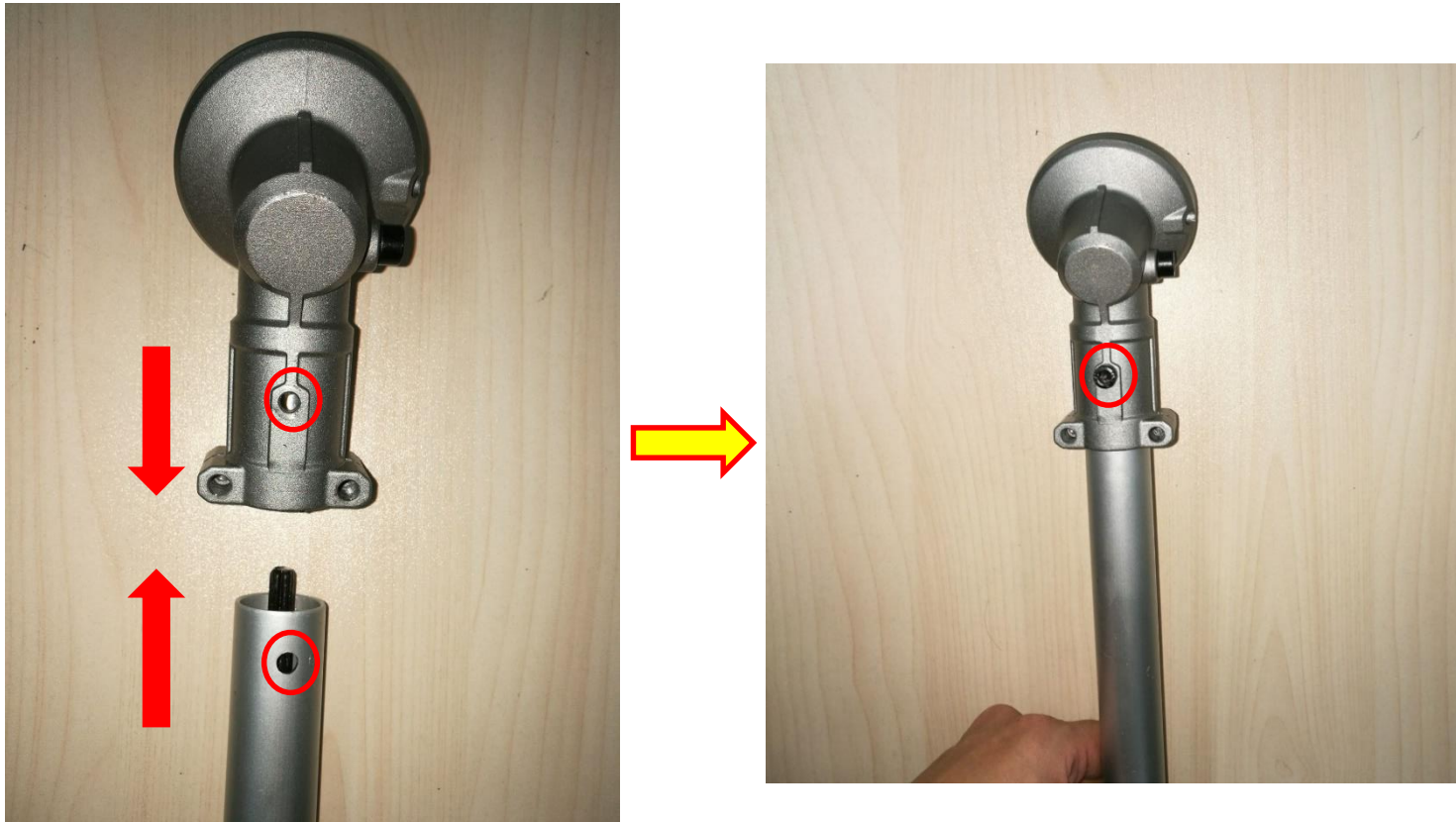
Description	Part Number	Qty.
Gear case assembly	2824954002	1

How to Replace the Trimmer head and Gear Case Assembly

12. Hold the connecting tube with one hand and hold the gear case with the other hand to assemble them together.

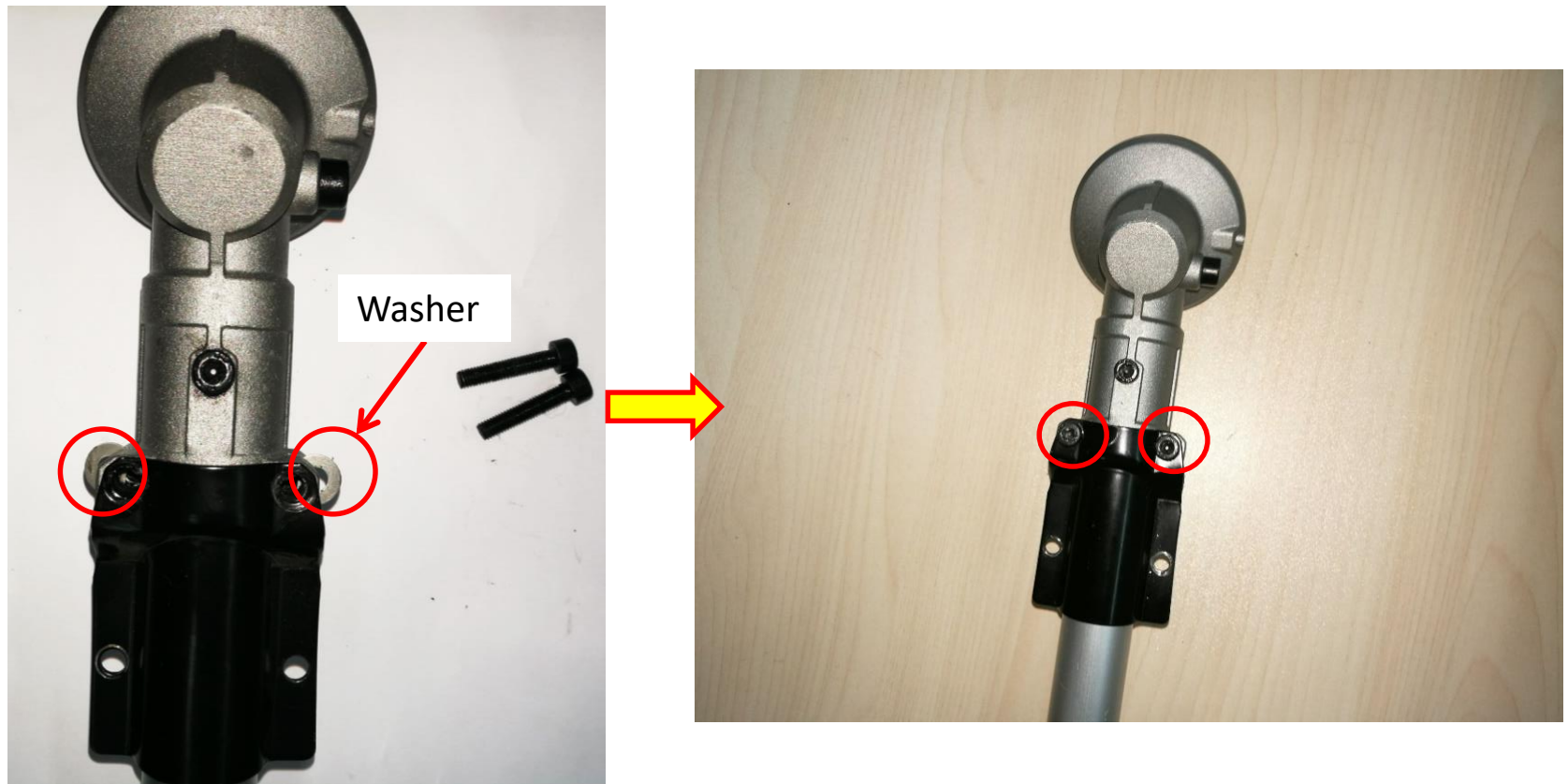
Notice: The hole on the gear case assembly should be in alignment with the hole on the tube.

13. Tighten the gear case with the connecting tube by screw.



How to Replace the Trimmer head and Gear Case Assembly

14. Mount the fixing board on the gear case assembly, then insert the washers into the gap of each side with round edges facing outside.
15. Tighten 2 pcs screws to assemble the fixing board with the gear case assembly.



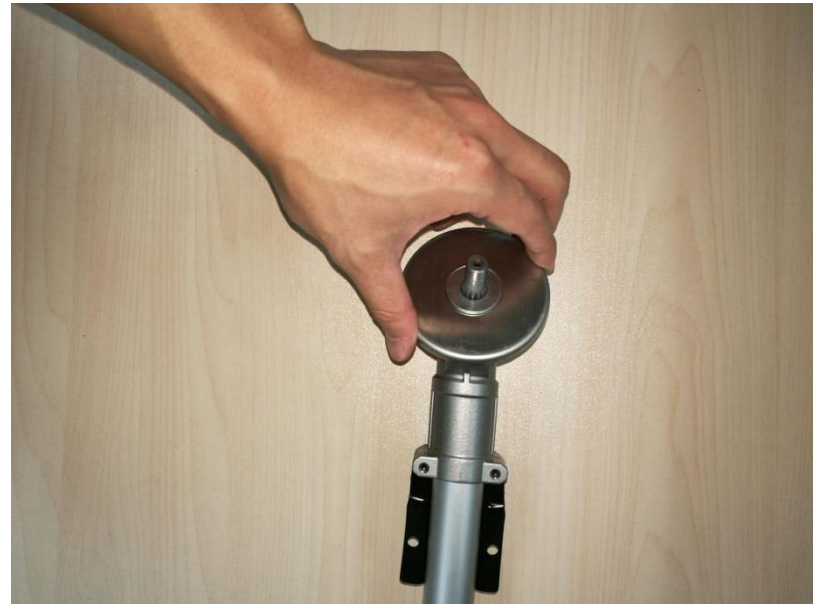
How to Replace the Trimmer head and Gear Case Assembly

16. Mount the flange onto the shaft.



How to Replace the Trimmer head and Gear Case Assembly

17. Mount the flange cover onto the shaft.



How to Replace the Trimmer head and Gear Case Assembly

18. Mount the upper housing assembly onto the shaft.



How to Replace the Trimmer head and Gear Case Assembly

19. Mount the plain washer onto the shaft.



How to Replace the Trimmer head and Gear Case Assembly

20. Rotate the upper housing assembly to align the slot in the flange with the hole in the gear case.
21. Insert the hex wrench into the aligned holes to act as a stabilizer.



How to Replace the Trimmer head and Gear Case Assembly

22. Mount the nut onto the shaft and tighten it with multifunction wrench anticlockwise.



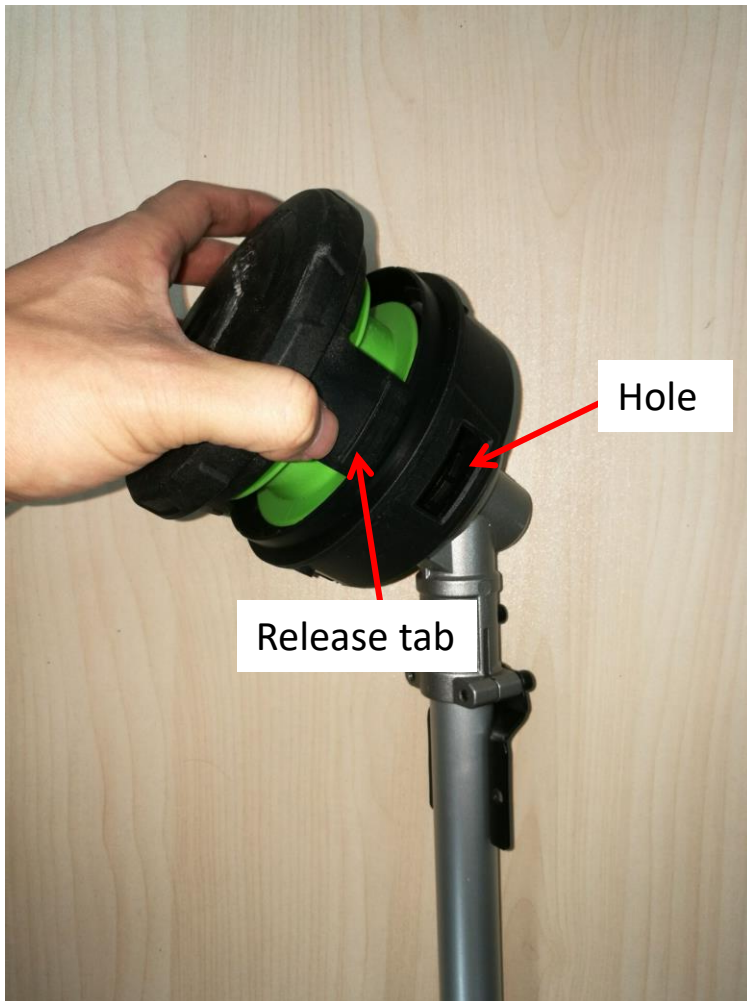
How to Replace the Trimmer head and Gear Case Assembly

23. Mount the spring onto the upper housing assembly.



How to Replace the Trimmer head and Gear Case Assembly

24. Align the release tabs on the lower housing assembly with the holes on the upper housing assembly to assemble them together.



How to Replace the Trimmer head and Gear Case Assembly

25. Rotate the lower housing assembly clockwise as necessary to align the mark “LOAD” on the lower housing assembly with the eyelets on the upper housing assembly.



How to Replace the Trimmer head and Gear Case Assembly

26. Cut one piece of trimmer line 16ft (5m) long. Insert the line into the eyelet on the upper housing assembly. Push until the end of the line comes out of the other side of the upper housing assembly. Pull the line from the other side until equal amounts of line appear on both sides of the spool.
27. Rotate the lower housing assembly clockwise to wind the line on the spool until approximately 5.5in. (14cm) of line is showing on each side.

