REPAIR GUIDELINE

Blower_LB5300E

Version: 1
Issue Date: 2016/02/25

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Troubleshooting

Problem	Possible Cause	Fault Position	Test & Solution
Fail to start	PCBA is damaged.	PCBA in Handle	Replace PCBA in the handle.
	Motor is damaged.	Motor in Ducted Assembly	Measure the resistance between any two of the three cables in the motor and ducted assembly by using a multimeter. If the resistance is infinite, replace the motor and duct assembly.
Press the boost button/air velocity adjusting knob when the blower runs, the air velocity and the volume doesn't change.	PCBA is broken	PCBA in Handle	Replace PCBA in the handle.
The air velocity and the volume are decreased compared with normal use.	The fan in the duct is over-worn	Fan in Ducted assembly	Open the handle housing , take off the fan baffle and check the fan. If the fan is over-worn, replace the motor and duct assembly.

Tool List For Repair

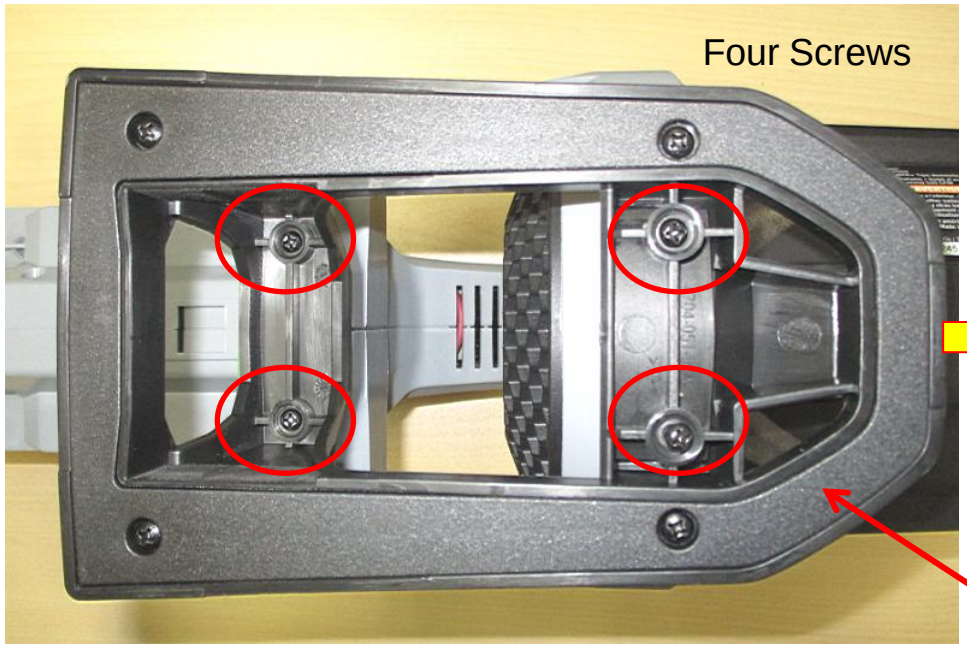
NO.	Tool List	SPEC	Remark
1	Magnetic bits		
2	Utility knife		To remove the label
3	Heat gun		
4	Heat -shrinkable sleeves	Φ7 mm	
5	Scissors		To remove the shrinkable sleeve
6	Multimeter		
7	Capacitor discharging fixture		

How to disassemble the blower

1. Remove the air velocity indication label.

How to disassemble the blower

2. Remove the 4 screws to disassemble the base assembly.



Base Assembly

Description	Part Number
Tapping Screw	5610032004
Base Assembly	2824381001

How to disassemble the blower

3. Remove the 8 screws and open the handle housings.

How to disassemble the blower

4. Remove the Fan Baffle.
5. Loosen the 2 screws in the right housing and remove the right housing.

Fan Baffle

Right Housing

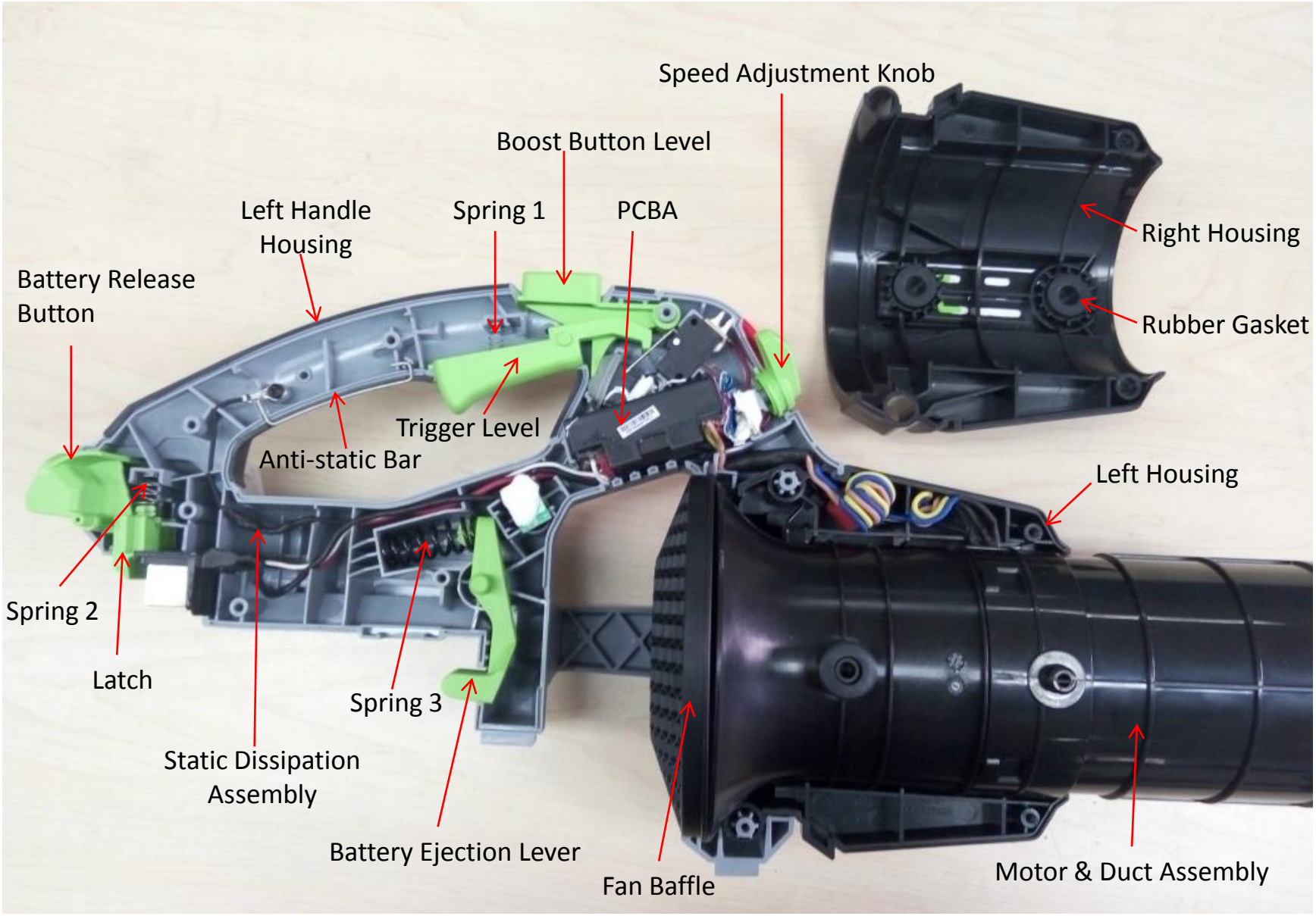
Motor & Duct Assembly

How to disassemble the blower

- ✓ The following parts can be replaced after opening the housings.

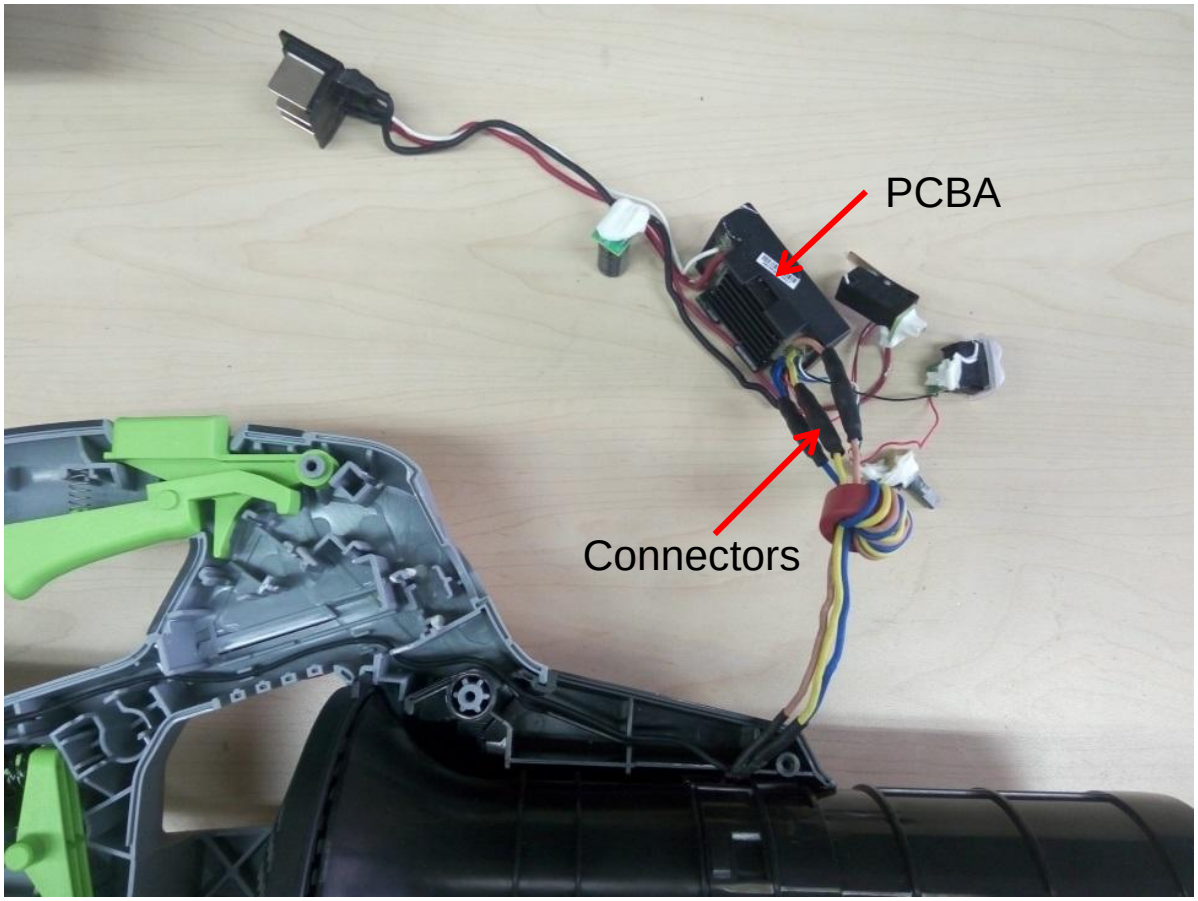
Description	Part Number	Description	Part Number
Battery Release Button	3127201001	Static Dissipation Assembly	2824406001
Latch	3127202001	Anti-static Bar	3650142001
Battery Ejection Lever	3127206001	Left Handle Housing	3321366001
Speed Adjusting Knob	3127215001	Right Handle Housing	3321365001
Boost Button Level	3128066001	Handle Housing Set	2824414001
Trigger Level	3128069001	Left Housing	3321362001
PCBA	2830105001	Right Housing	3321361001
Spring 1	3660088003	Housing Set	2824413001
Spring 2	3660013003	Motor & Duct Assembly	2824335002
Spring 3	3660129002	Fan Baffle	3128068001
		Rubber Gasket	5650519001

How to disassemble the blower



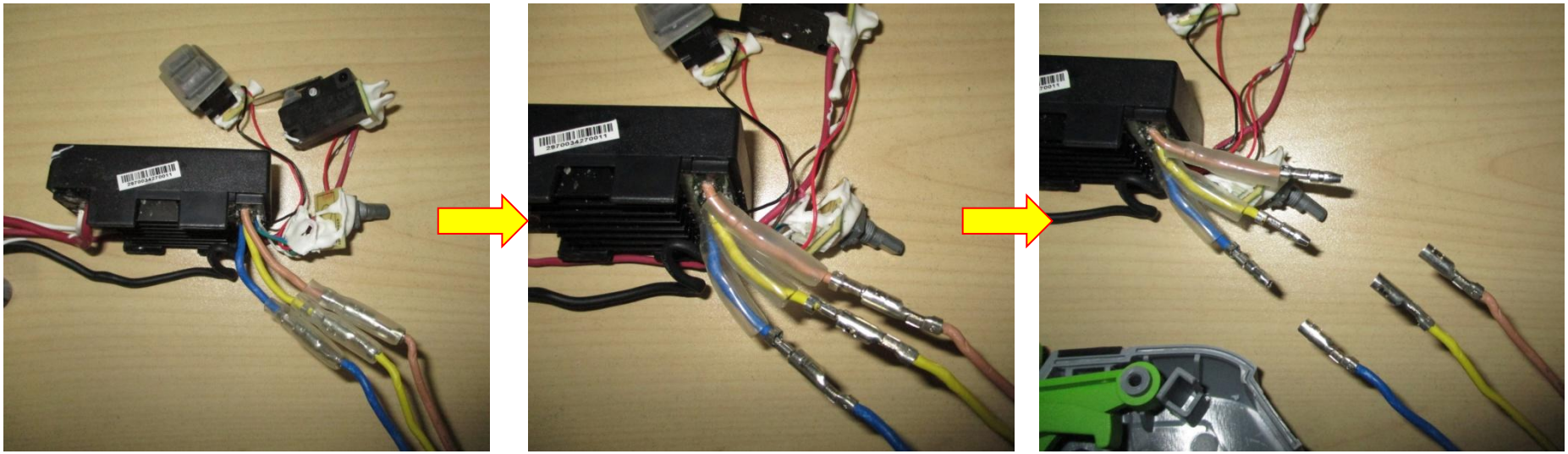
How to disassemble the blower

6. Take out the PCBA from the left handle housing.



How to disassemble the blower

7. Remove the heat-shrinkable sleeves, move the transparent sleeve aside and separate the three connectors.



How to disassemble the blower

8. 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 are infinite, means the circuit between the two connectors are open circuit, the motor is damaged. Follow the procedure “How To Replace the motor and dust assembly” to replace a new one. Otherwise go to the next testing step.

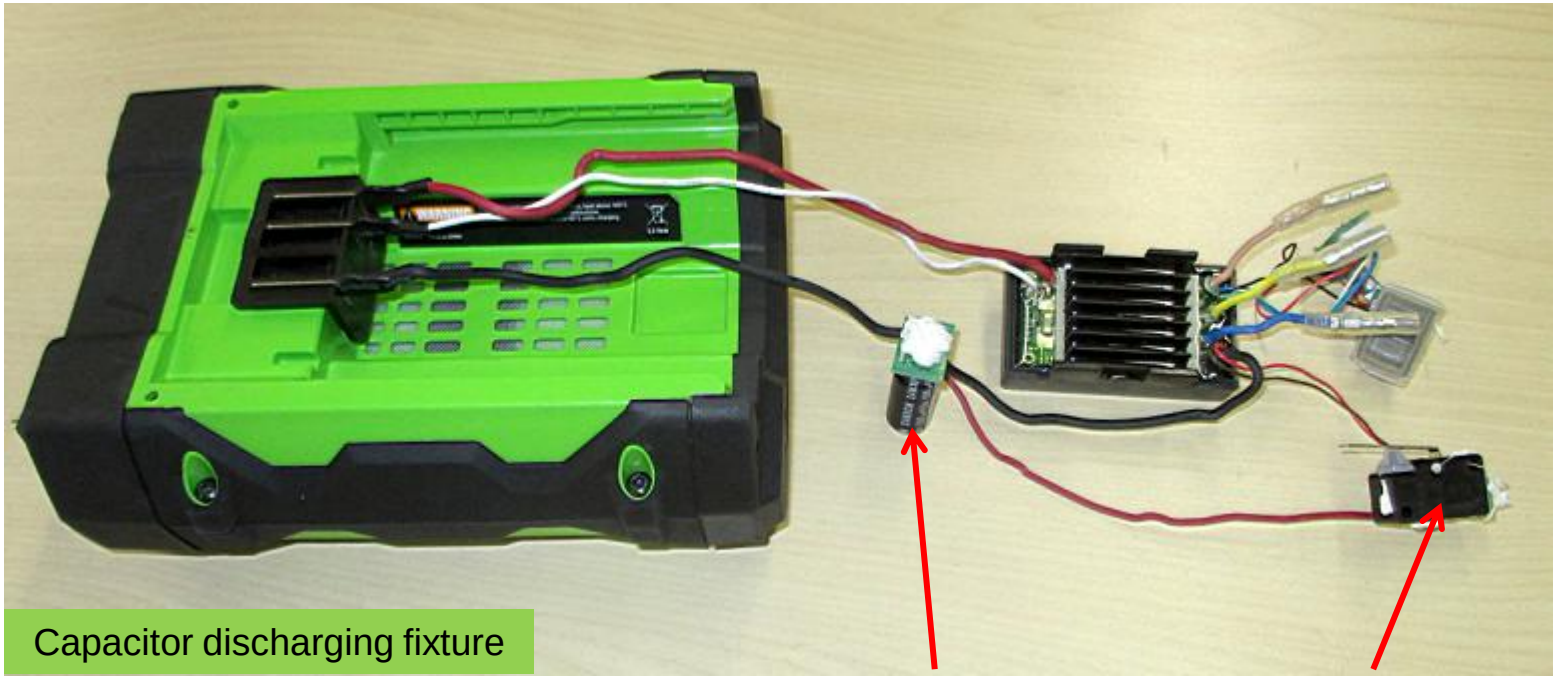
How to disassemble the blower

9. Test the PCBA to judge if it is broken.

   1) Discharge the capacitor which is connected in the PCBA assembly.

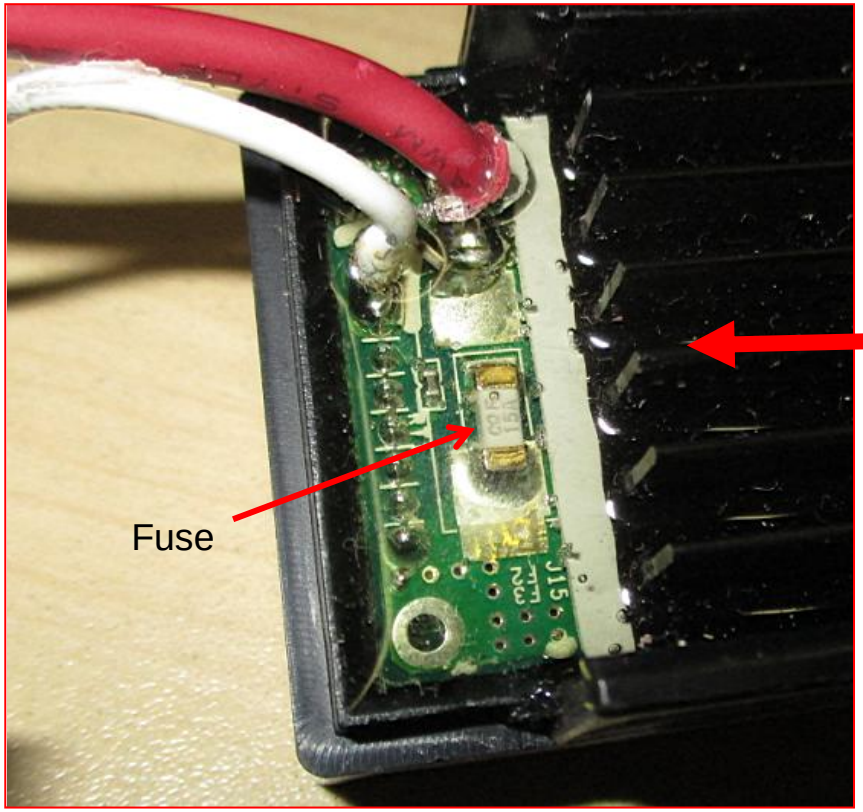
      a) Connect the electrical contacts into the discharging fixture.

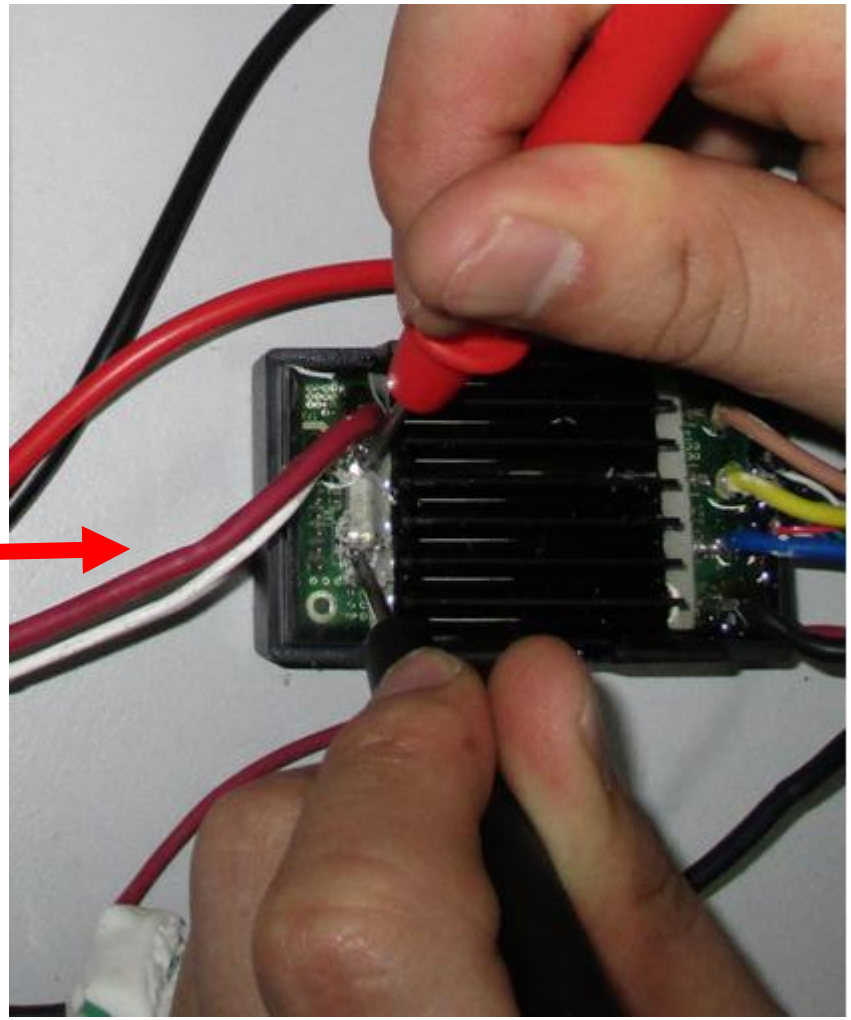
      b) Press the main switch trigger and hold for about 10s to discharge the capacitor.



How to disassemble the blower

2) Measure the Fuse in the PCBA.





How to disassemble the blower

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 0, 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 disassemble the blower

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

a) Set the multimeter function to “Diode measuring” .

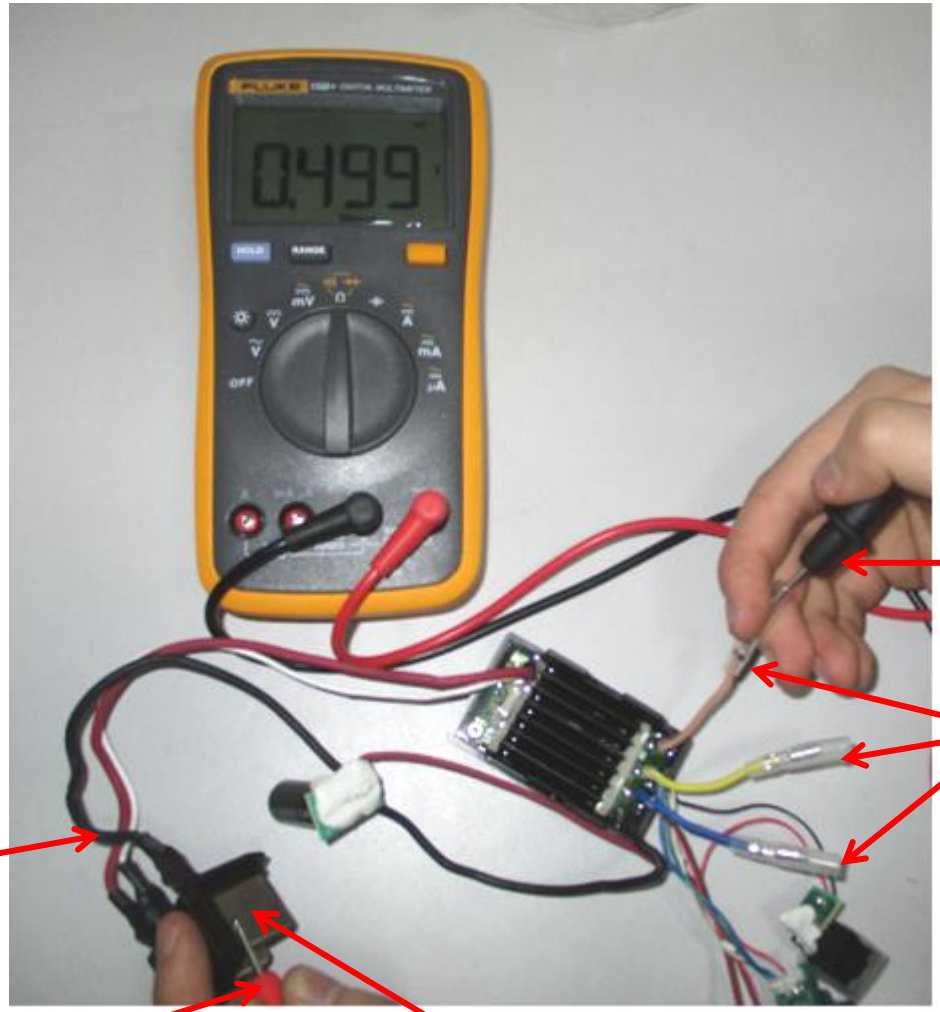
b) Contact the red pen pin to the negative electric contact (the metal plate that connects to black wire).

c) Contact the black pen pin to the three connectors separately and measure the voltage.

d) 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 disassemble the blower

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



How to disassemble the blower

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

a) Keep the multimeter function setting at “Diode measuring”.

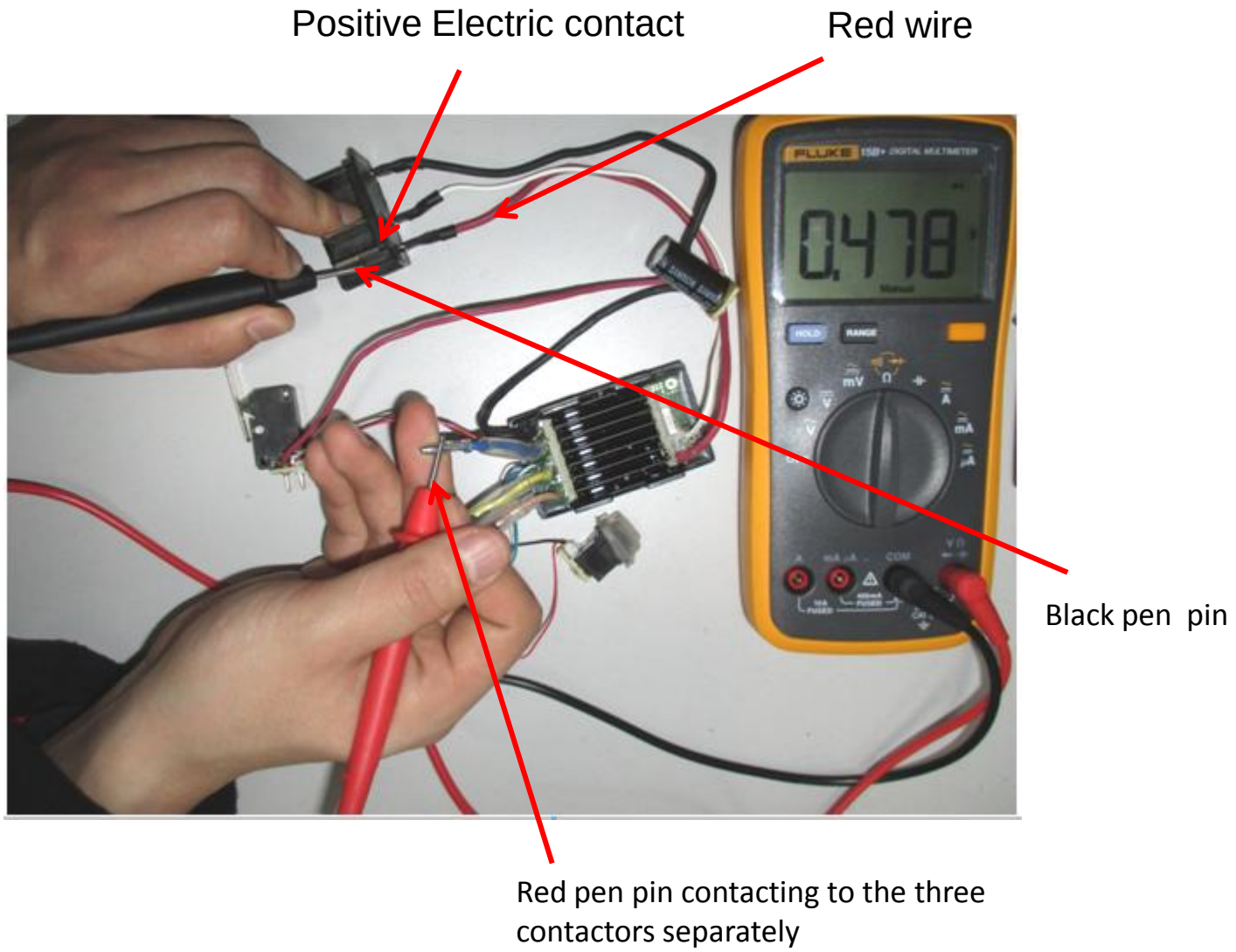
b) Contact the black pen pin to the positive electric contact (the metal plate that connects to red wire).

c) Contact the red pen pin to the three connectors separately and measure the voltage.

d) If the LCD displays 0.45~0.55V for each measurement, the PCBA is OK, otherwise means the PCBA is broken. Follow the procedure “How To Replace the PCBA” to replace a new PCBA.

How to disassemble the blower

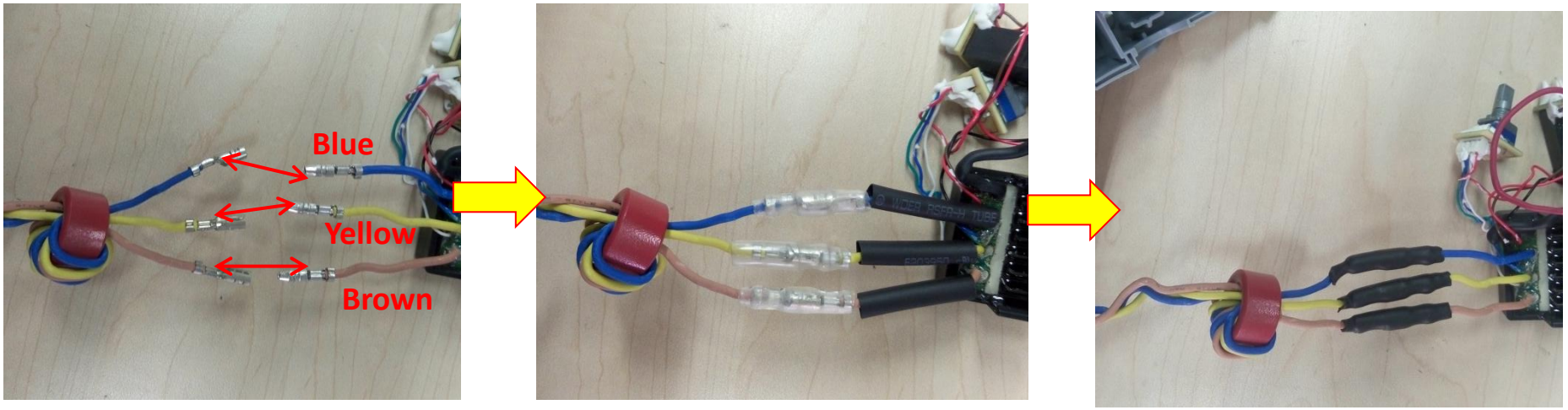
Figure showing how to measure the MOSFET in the PCBA (Step 2)



How to Replace the PCBA

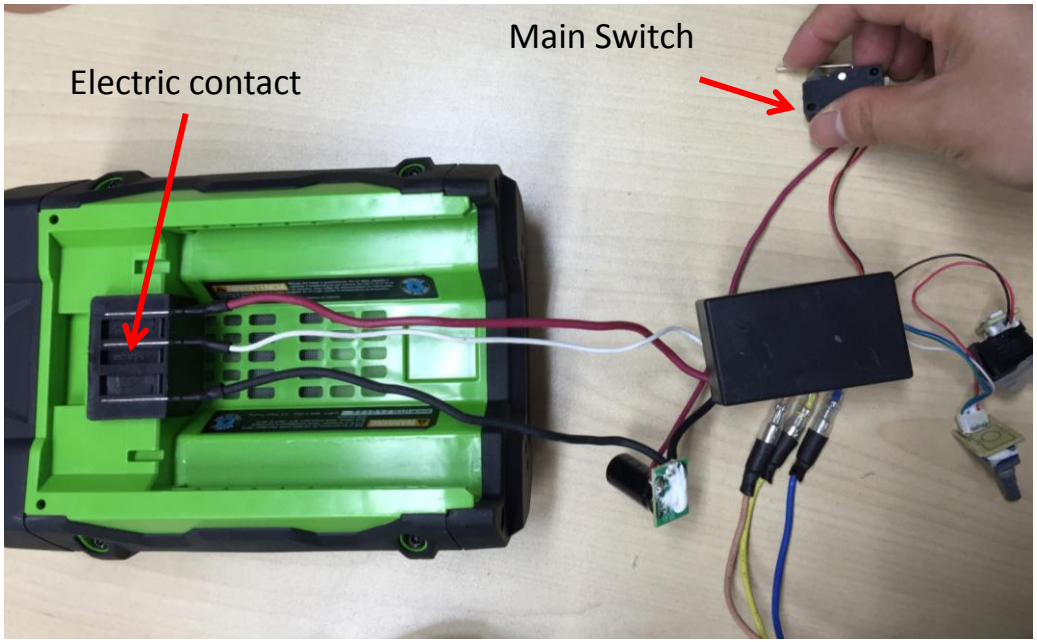
1. Following the instructions in "How to disassemble the blower" to remove the right handle housing cover and right housing, take out the defective PCBA.
2. Clean the glues in the housing.
3. Replace with a new PCBA.
4. Reconnect the three connectors with the new PCBA.

Correct Connection: Brown to brown, yellow to yellow, blue to blue



How to Replace the PCBA

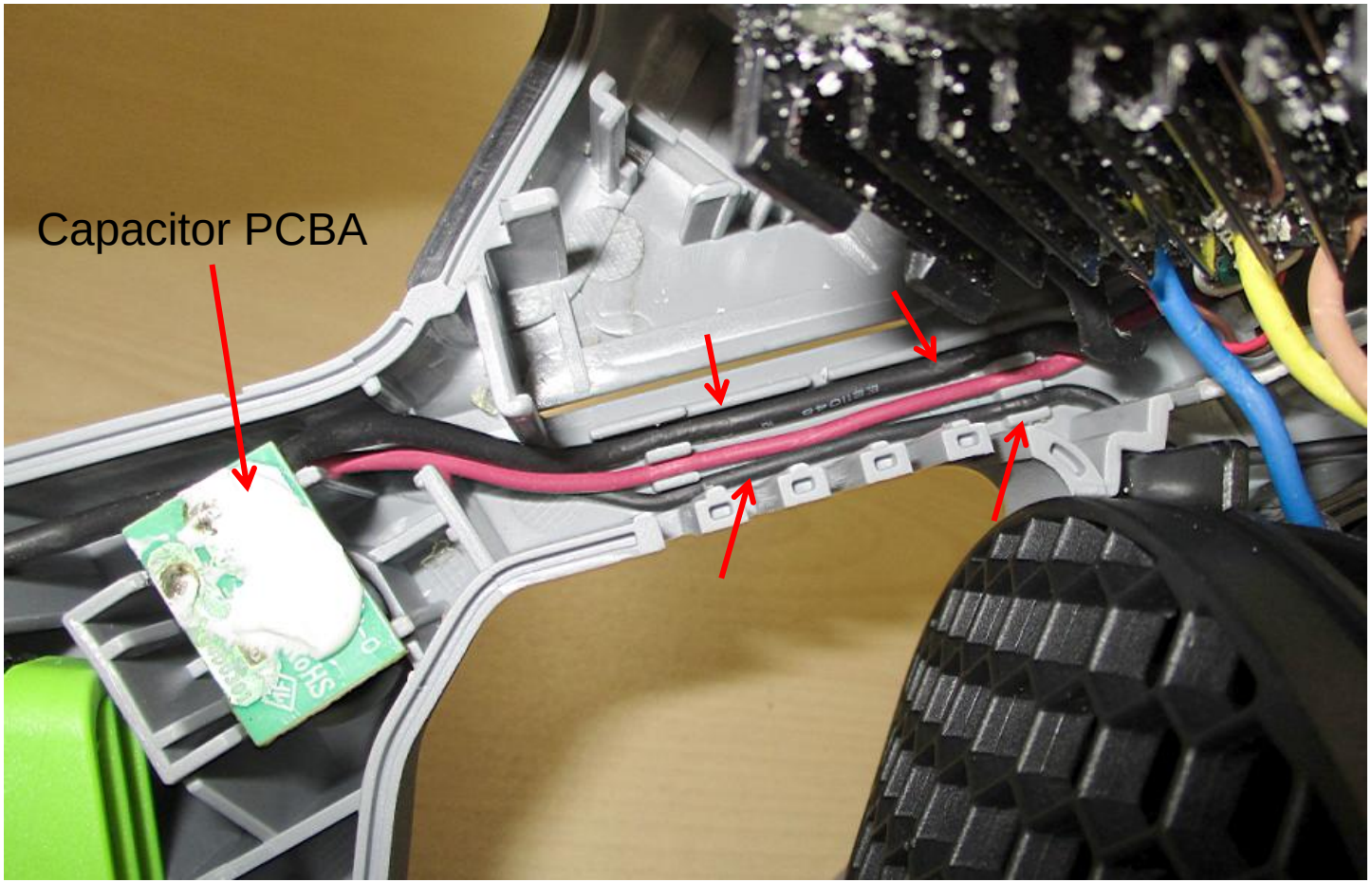
5. Test the blower.
   a) Connect the electric contact to a full charged battery.
   b) Press the main switch briefly and release it.
   c) Check the motor working status through the fan baffle . If the blower fan rotates counterclockwise, means the replacement solution is correct. Otherwise recheck the connection or replace a motor and test again.



Look through the fan baffle and check the fan rotation direction

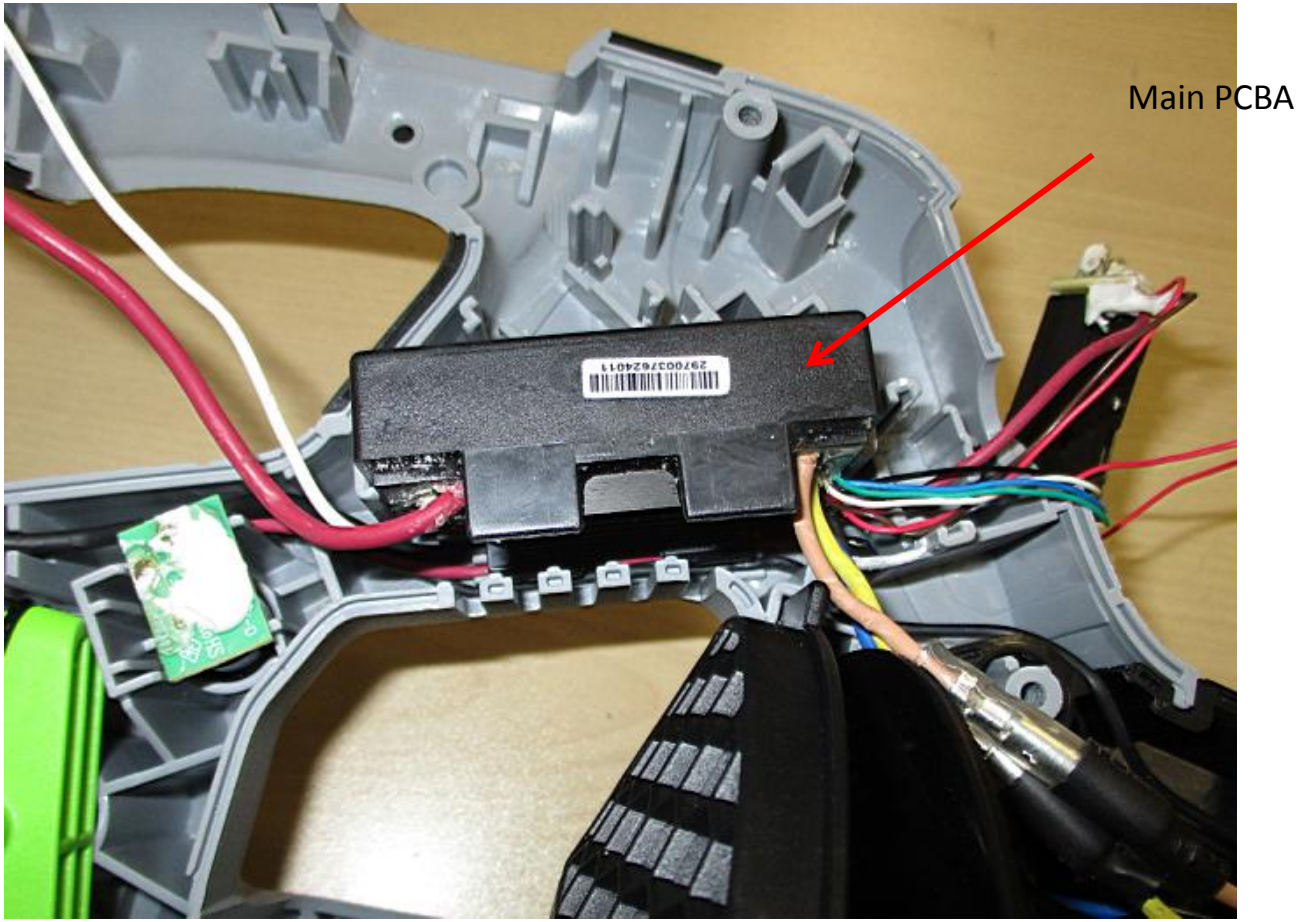
How to Replace the PCBA

6. Insert the capacitor PCBA into the housing and align the capacitor wires into the grooves. **Note: The wires should be well aligned, otherwise the housing is not able to be closed properly.**



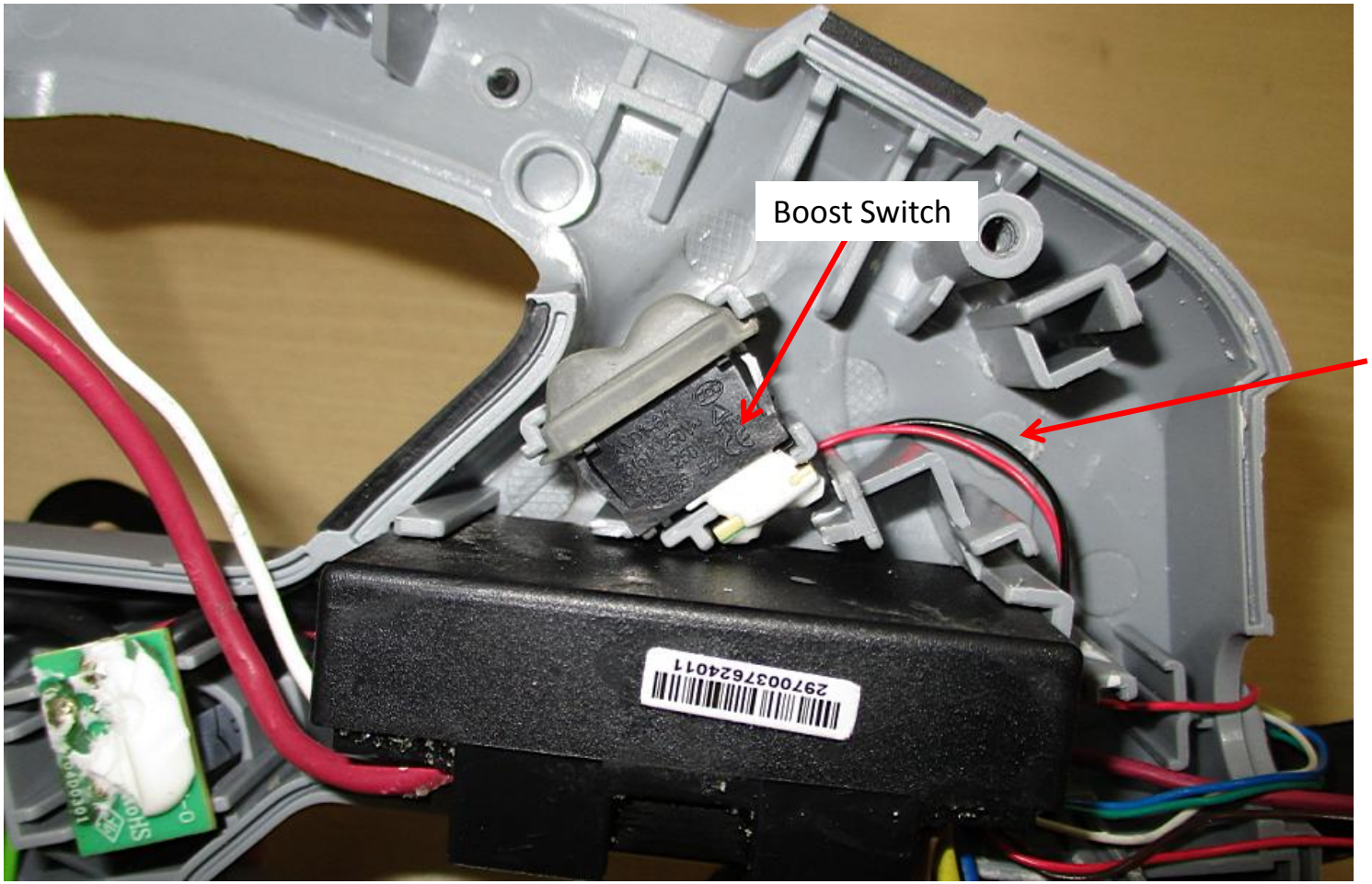
How to Replace the PCBA

7. Mount the Main PCBA into the left handle housing.



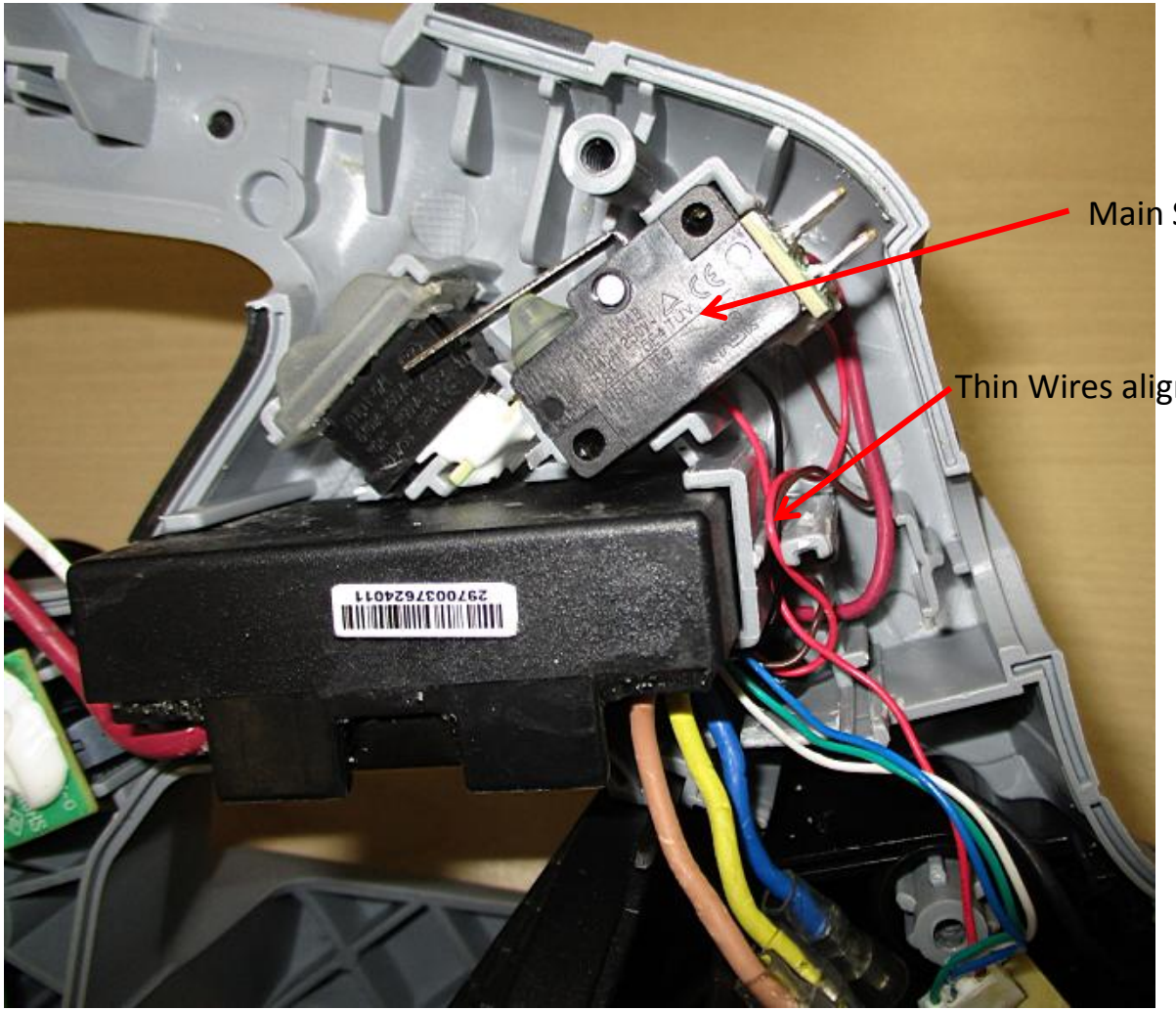
How to Replace the PCBA

8. Mount the boost switch into the left handle housing.



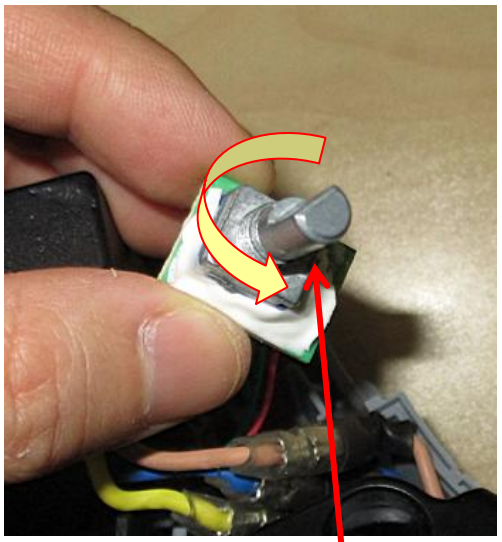
How to Replace the PCBA

9. Mount the main switch into the left handle housing.

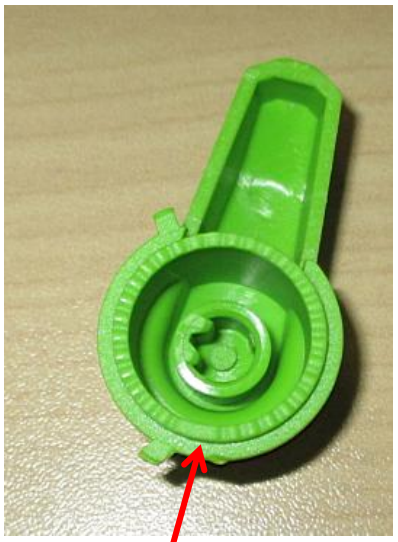


How to Replace the PCBA

10. Turn the adjustable resistance pole counterclockwise as far as possible to the stop position, then mount the plastic knob onto the pole.
11. Fix the adjustable resistance PCBA assembly into the left handle housing.

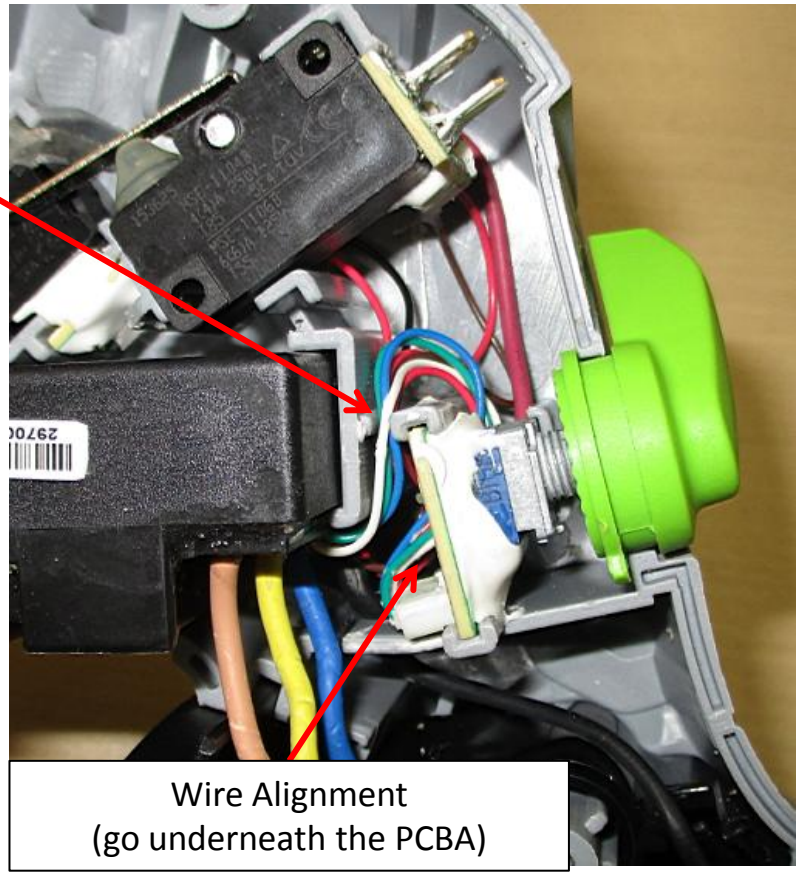


Adjustable Resistance Pole



Knob

Align the thin wires into the groove

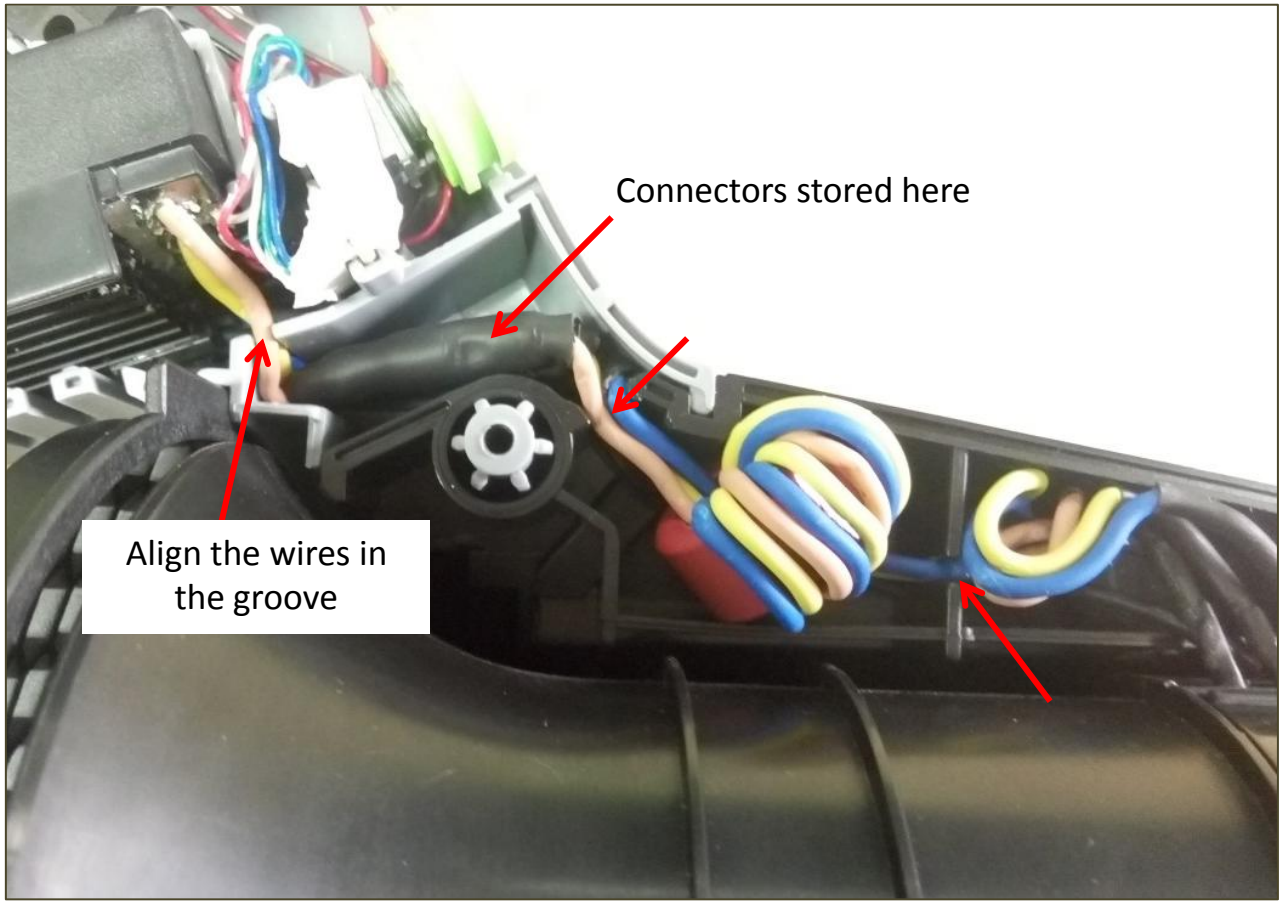


Wire Alignment
(go underneath the PCBA)

How to Replace the PCBA

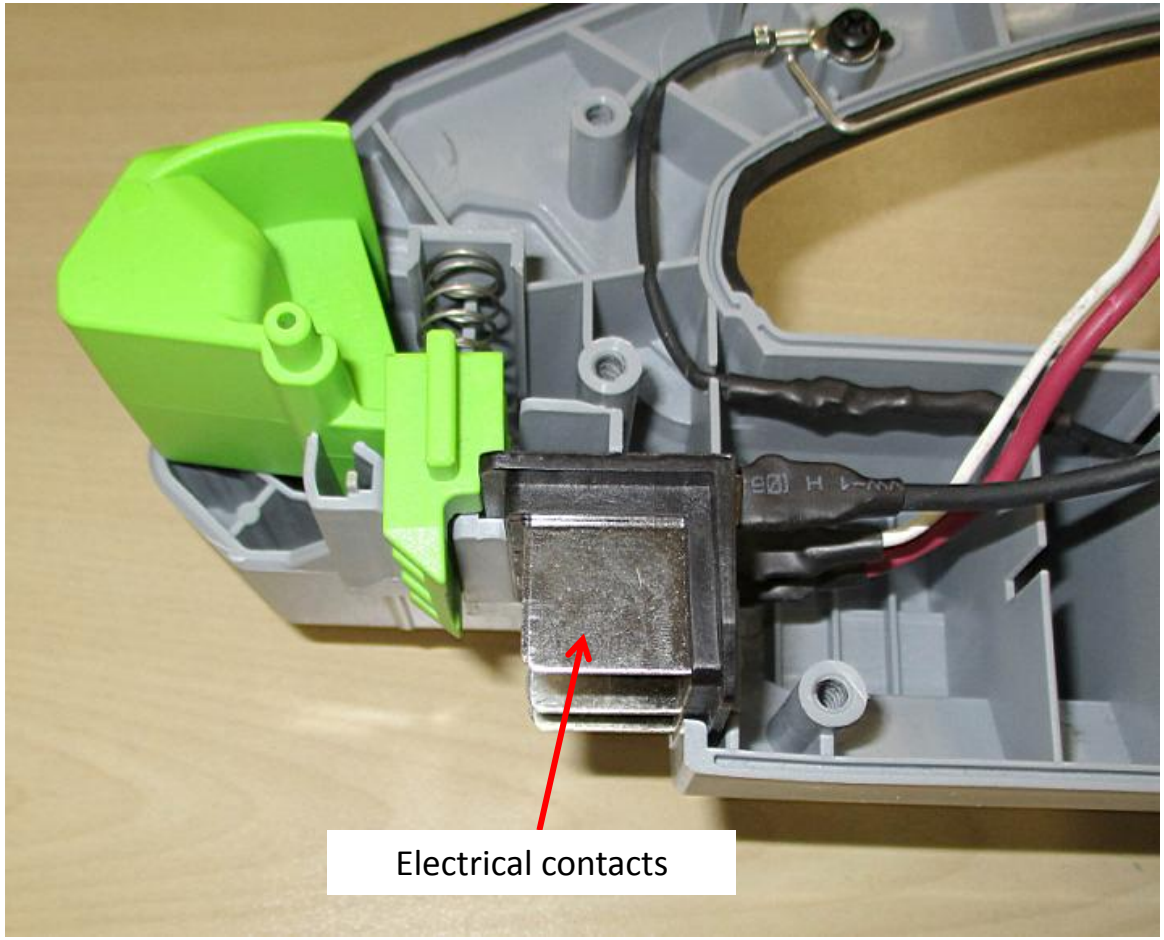
12. Align the three motor wires into the groove.

    Note: if the wires are not properly aligned, the housings are not able to be closed.



How to Replace the PCBA

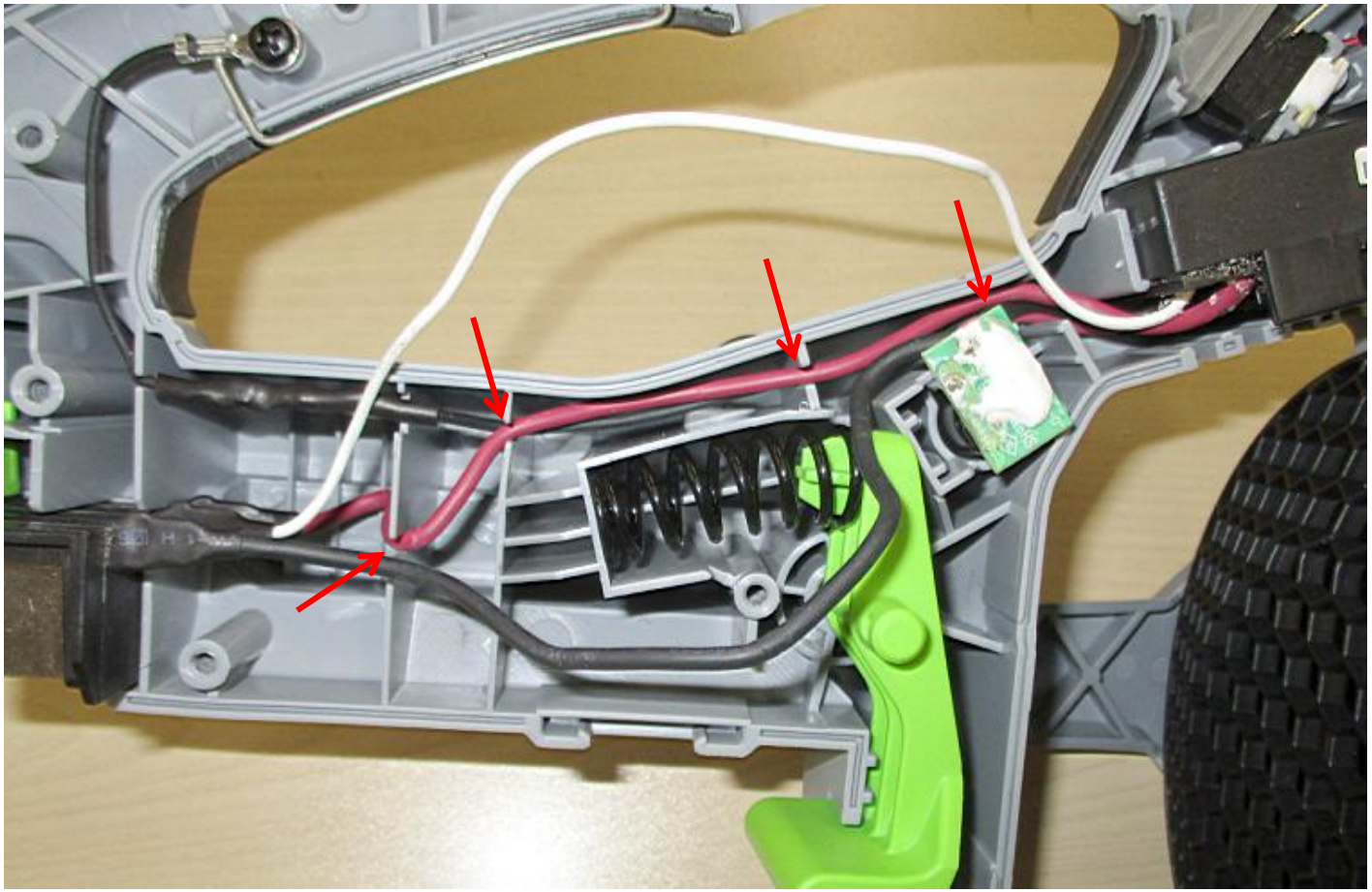
13. Fix the electrical contacts into the housing.



How to Replace the PCBA

14. Align the wires into the grooves.

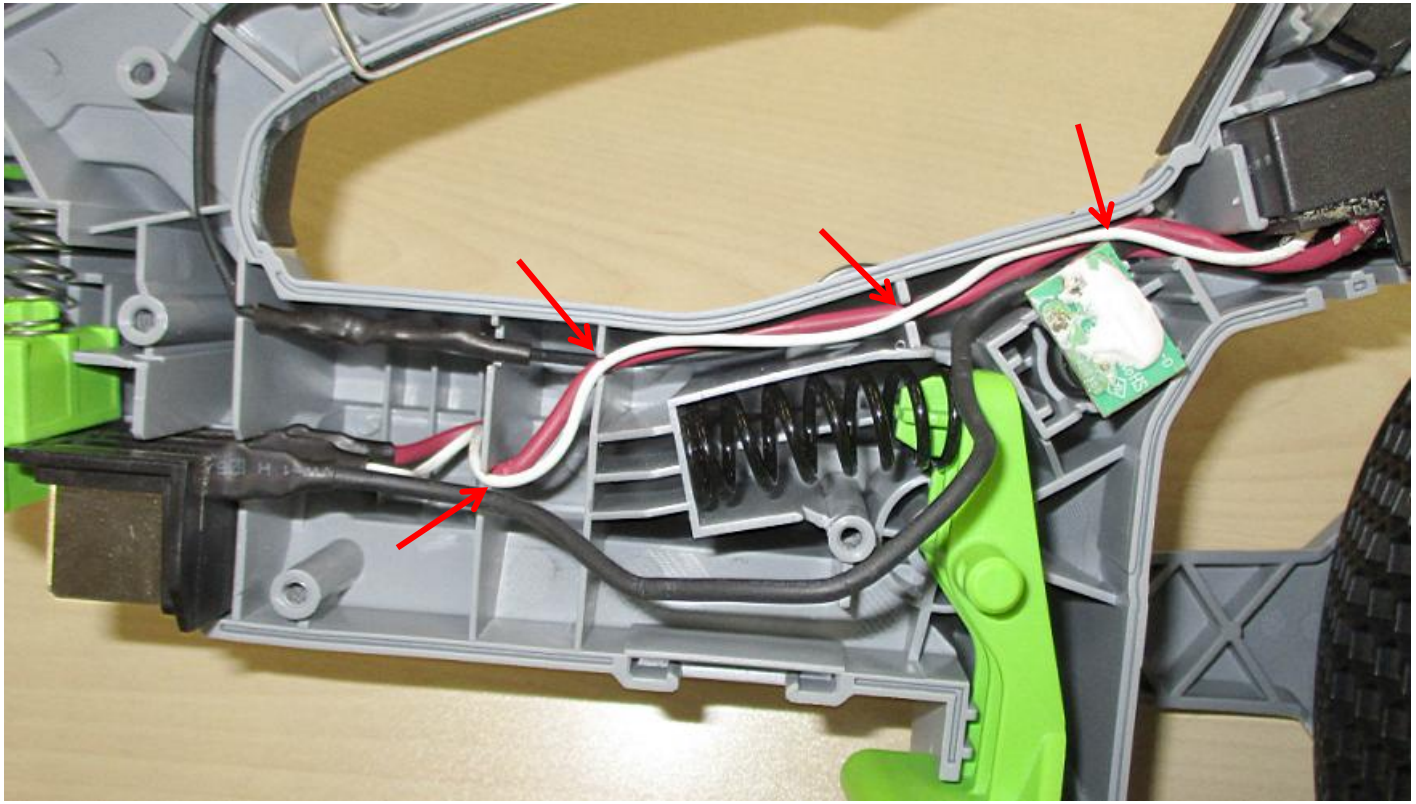
    a) Align the red wire first.



How to Replace the PCBA

14. Align the wires into the grooves.

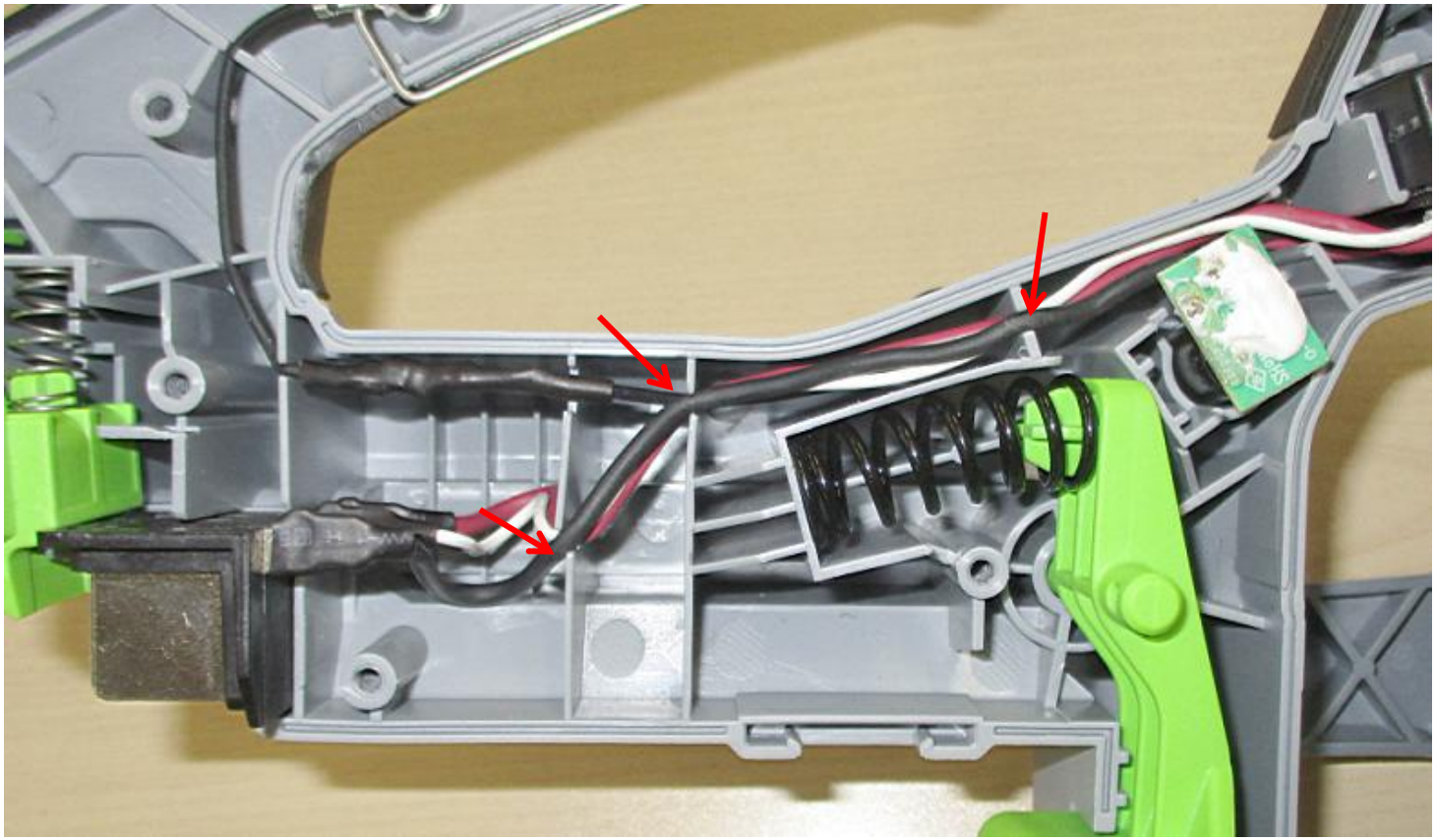
    b) Align the white wire.



How to Replace the PCBA

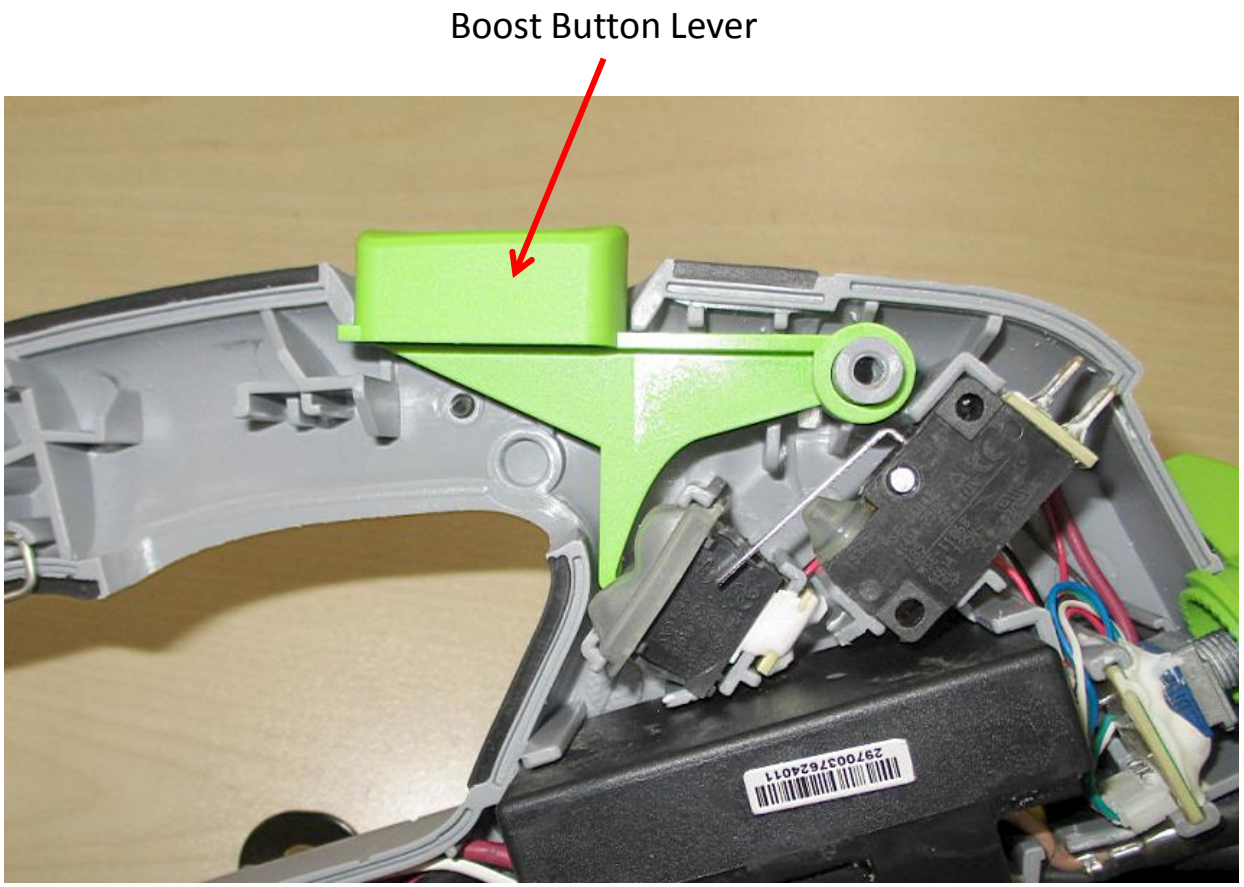
14. Align the wires into the grooves

    c) Finally align the black wire.



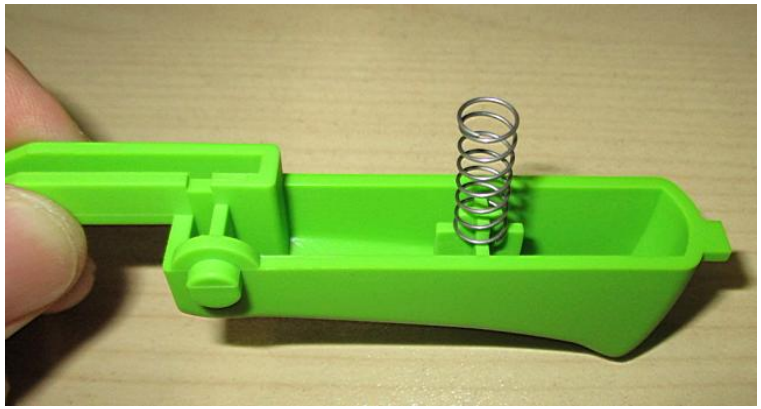
How to Replace the PCBA

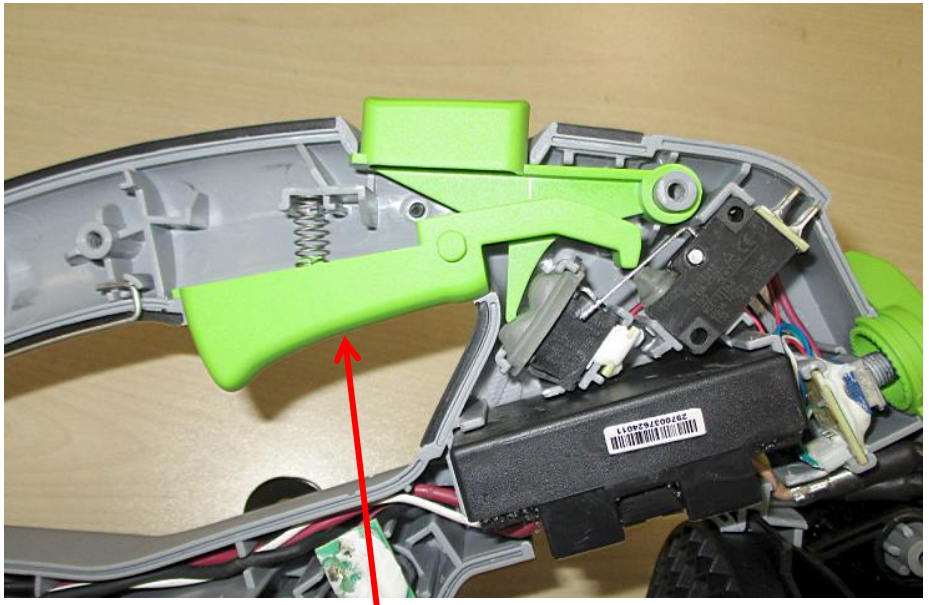
15. Fix the boost button lever into the left handle housing.



How to Replace the PCBA

16. Fix the spring onto the trigger rib and mount the trigger lever into the left handle housing.



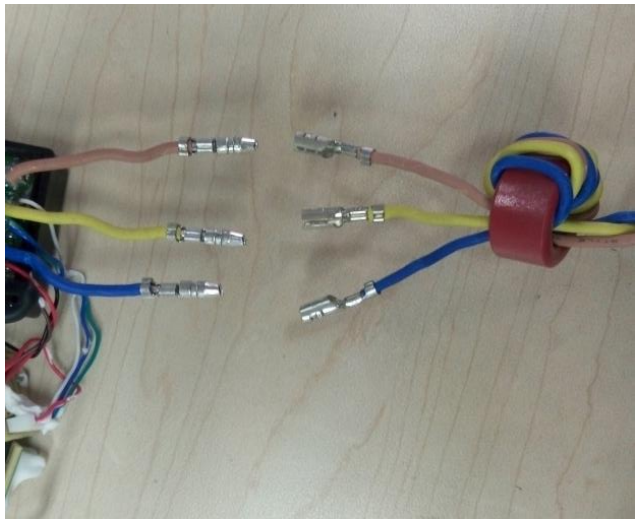


How to Replace the Motor & Duct Assembly

1. Following the instructions in “How to disassemble the blower” to remove the right handle housing cover and right housing, take out the Motor and duct assembly.

How to Replace the Motor & Duct Assembly

2. Disconnect the three motor wire connectors.
3. Pull out the static dissipation terminal from the duct assembly.
4. Replace with a new motor & duct assembly.



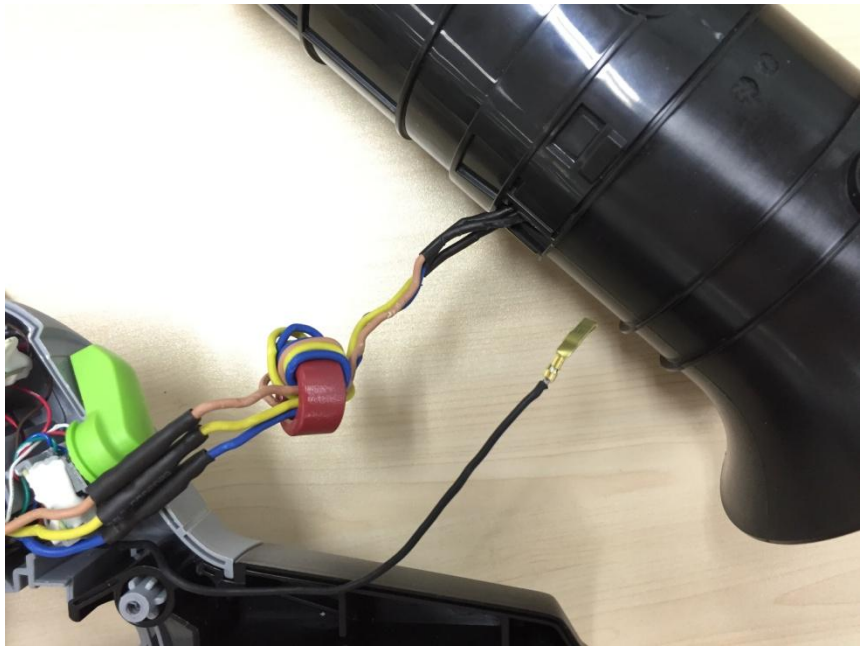
Static Dissipation Terminal

Motor & Duct Assembly

How to Replace the Motor & Duct Assembly

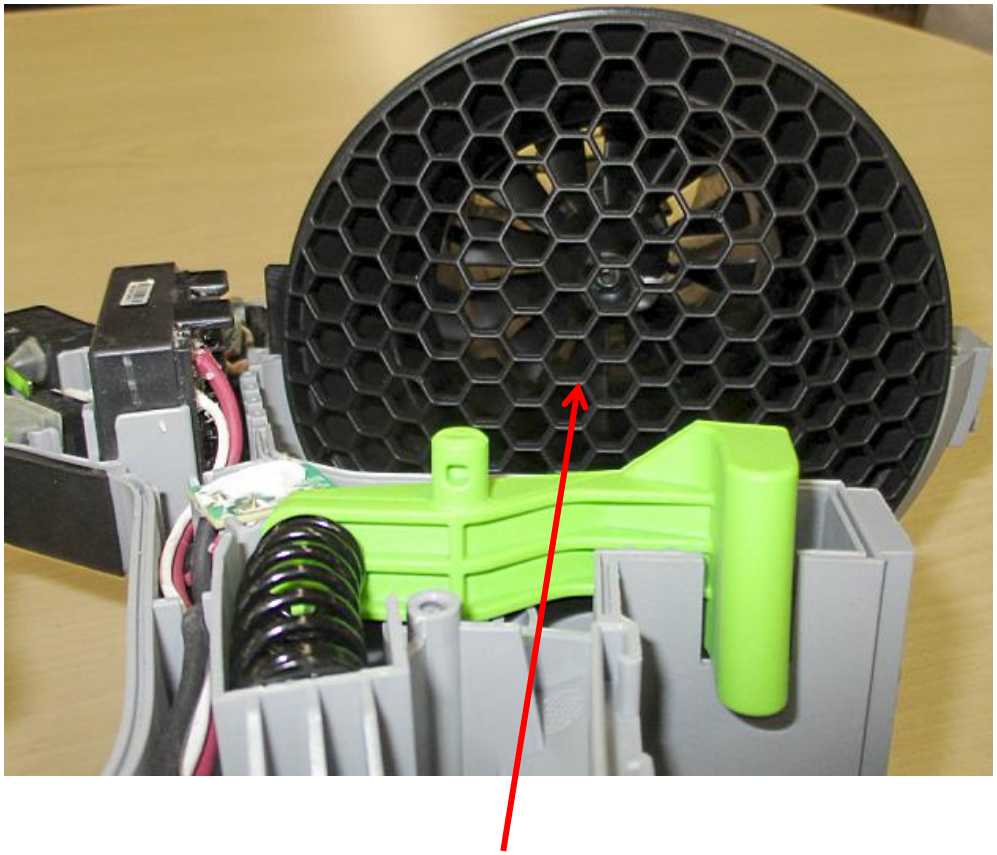
5. Reconnect the three motor connectors to the new motor and duct assembly.
6. Inert the static dissipation terminal into the connection hole of the new motor and dust assembly.

<u>Correct Connection</u>: Brown to brown, yellow to yellow, blue to blue



How to Replace the Motor & Duct Assembly

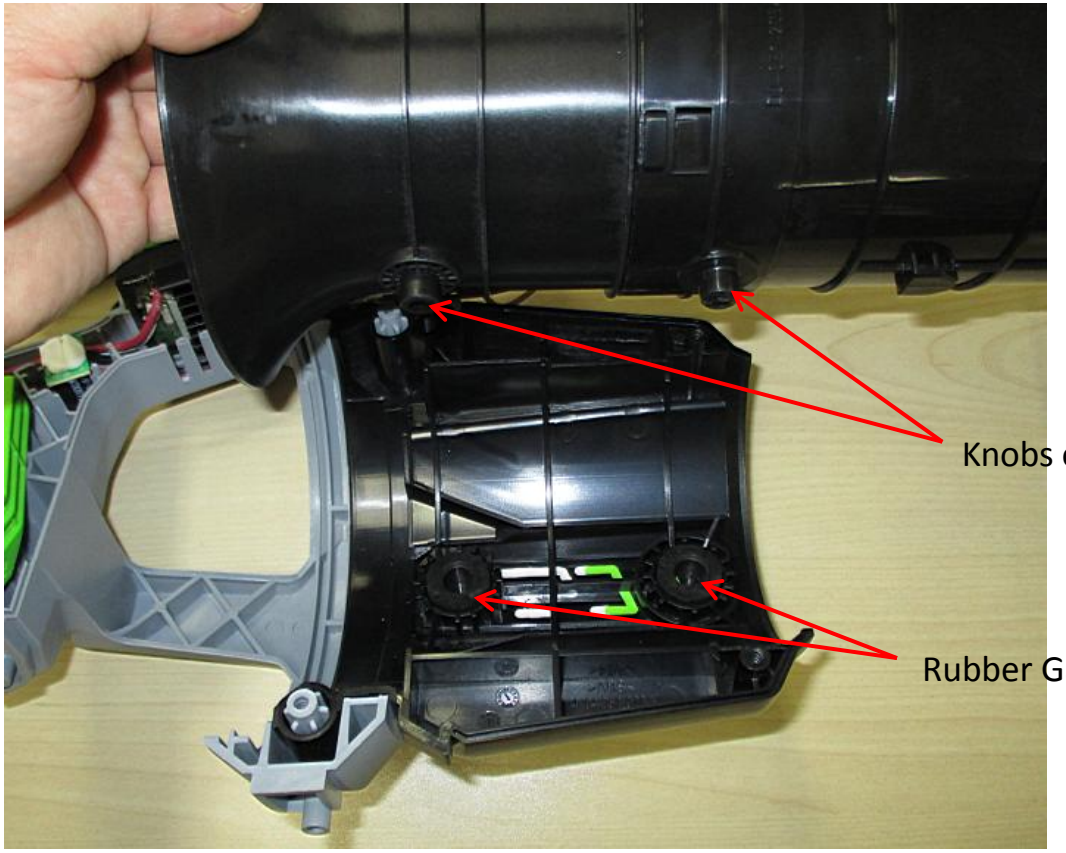
7. Test the blower.
   a) Connect the electric contact to a battery
   b) Press the main switch briefly and release it.
   c) Check the motor working status through the fan baffle . If the blower fan rotates counterclockwise, means the replacement solution is correct. Otherwise recheck the connection or replace a PCBA and test again.



Look through the fan baffle and check the fan rotation direction

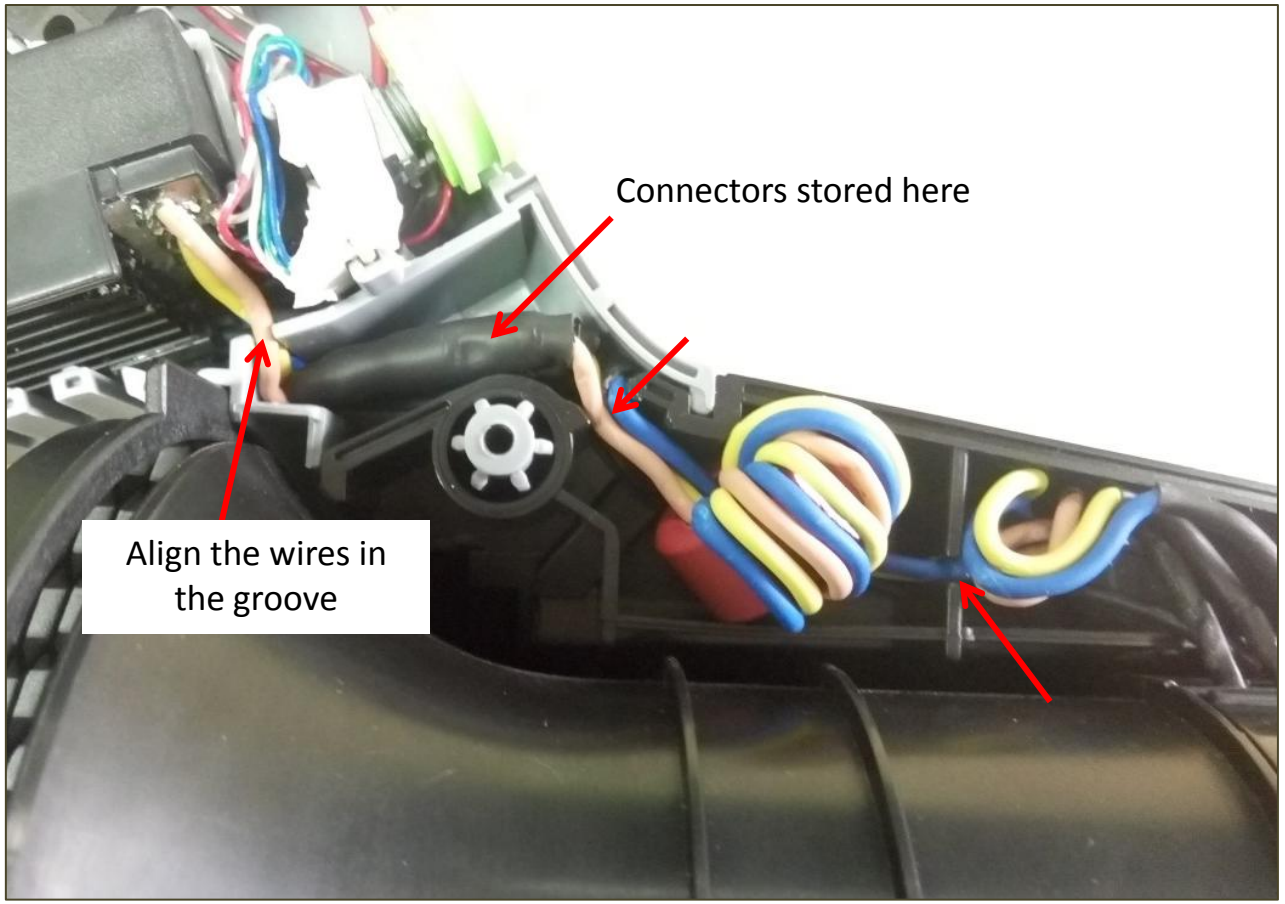
How to Replace the Motor & Duct Assembly

8. Check to make sure the two rubber gaskets are located into the left housing. If they fell out, refix them in place.
9. Align the knobs on the duct assembly with the rubber gasket holes in the left housing and mount the motor and duct assembly in the housing.



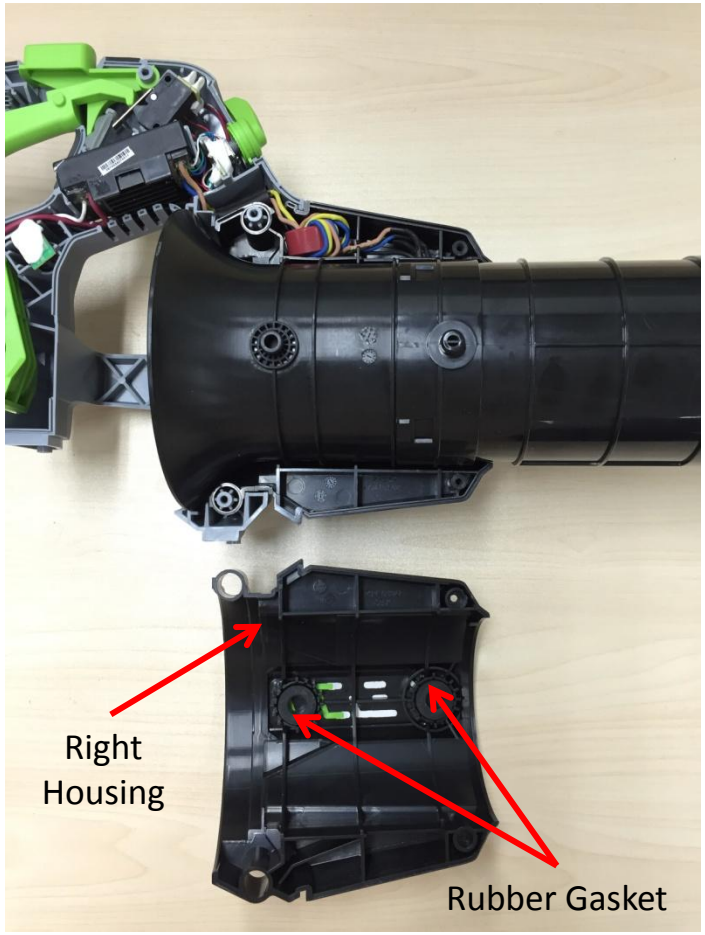
How to Replace the Motor & Duct Assembly

10. Align the wires into the grooves.



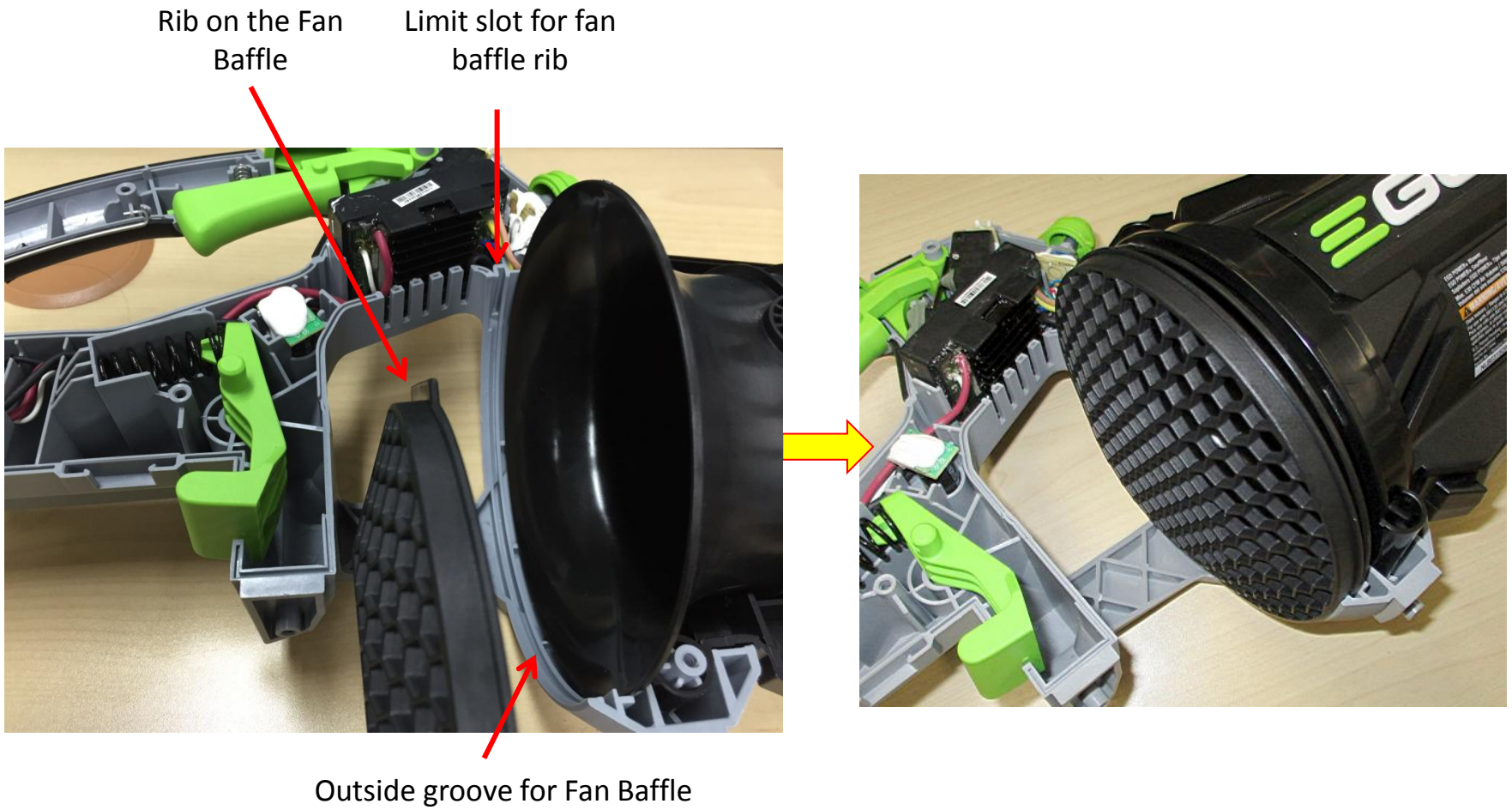
How to Assemble the Blower

1. Check to make sure the two rubber gaskets are located into the right housing, if they fell out, refix them in place.
2. Align the right housing with left housing and close them, lock them with 2 screws.



How to Assemble the Blower

3. Align the rib on the fan baffle with the limit slot in left housing, mount the fan baffle into the outside groove in the left housing.



How to Assemble the Blower

4. Check to make sure all the components are fixed in position, and wires are well aligned, close the right handle housing and lock the housing with 8 screws.
5. Install a battery to the blower and test the blower.