

REPAIR GUIDELINE

Blower_LB6000E



*Version: 1
Issue Date: 2016/12/02*

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Troubleshooting

Problem	Possible Cause	Fault Position	Test & Solution
Won't turn on	PCBA is damaged	PCBA in the housing	Test the PCBA according to the procedure in the diagnosing section, if it is broken, replace the PCBA.
	Bearings on the motor shaft are worn and seized.	Motor in Ducted Assembly	Use a stick to turn the fan from the air inlet, if the fan is not able to move, it means the bearings are stuck. Replace the duct assembly.
	Motor is broken	Motor in Ducted Assembly	Measure the resistance between any two of the three cables of the motor by using a multimeter. If the resistance is infinite, replace the motor and ducted assembly.
The switch is always in the on position. The blower cannot be shut off.	The switch contacts are stuck.	Switch in the handle housing	Insert a good battery, if the blower will run regardless of the switch is on or off , replace the switch assembly in the handle housing.

Troubleshooting

Problem	Possible Cause	Fault Position	Test & Solution
Press the boost button/ depth adjusting knob when the blower runs, the air velocity and the volume doesn't change.	PCBA or switch assembly is broken	PCBA in the duct housing or switch in the handle housing	Following the procedure in the diagnosing section to test the PCBA, If it is broken, replace PCBA. If PCBA works fine, test the switch and replace the switch assembly if it is not working.
The air velocity and the volume are decreased compared with normal use.	The fan in the duct is worn.	Fan in Ducted assembly	Open the housing set, take off the fan baffle and check the fan. If the fan is worn, replace the motor and ducted assembly.

Tool List For Repair

NO.	Tool List	SPEC	Remark
1	Torx screwdriver	T15	
2	Philips	PH2	
3	Socket wrench	10mm	
4	Multimeter		
5	Capacitor discharging fixture		

How to disassemble the blower

1. Stop the motor and remove the battery pack from the blower.
2. Loosen and remove the 7 screws to remove the right housing.



Description	Part Number	Quantity
Tapping screw	5610294001	7

How to disassemble the blower

3. Remove the left housing and cut the zip-tie. If the housing set was broken, replace it with a new one.



Description	Part Number	Quantity
L R Housing Set	2824817001	1

How to disassemble the blower

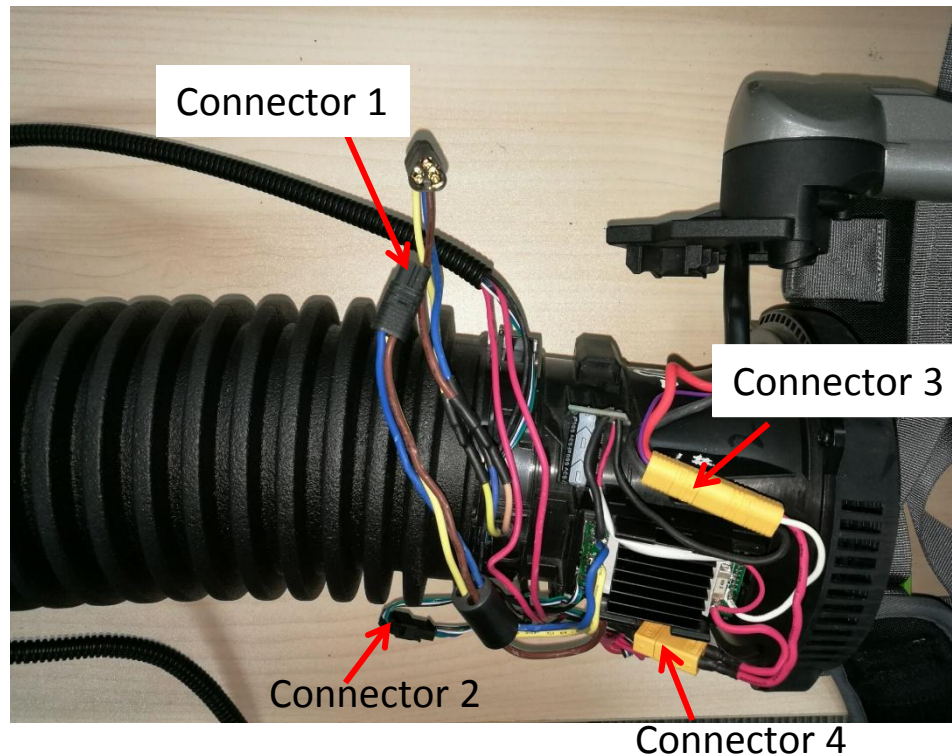
4. Disconnect connector 1.

Connector 1: PCBA with motor

Connector 2: PCBA with speed adjustment switch

Connector 3: PCBA with battery electric assembly

Connector 4: PCBA with main switch



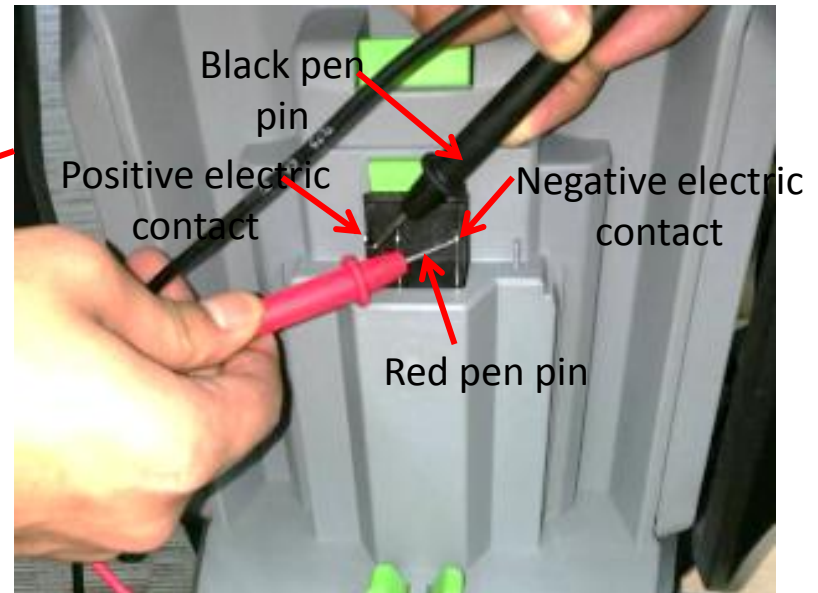
How to disassemble the blower

5. Test the PCBA to judge if it is broken.
 - 1) Discharge the capacitor that is connected in the PCBA
 - a) Set the multimeter function to “Diode measuring” .



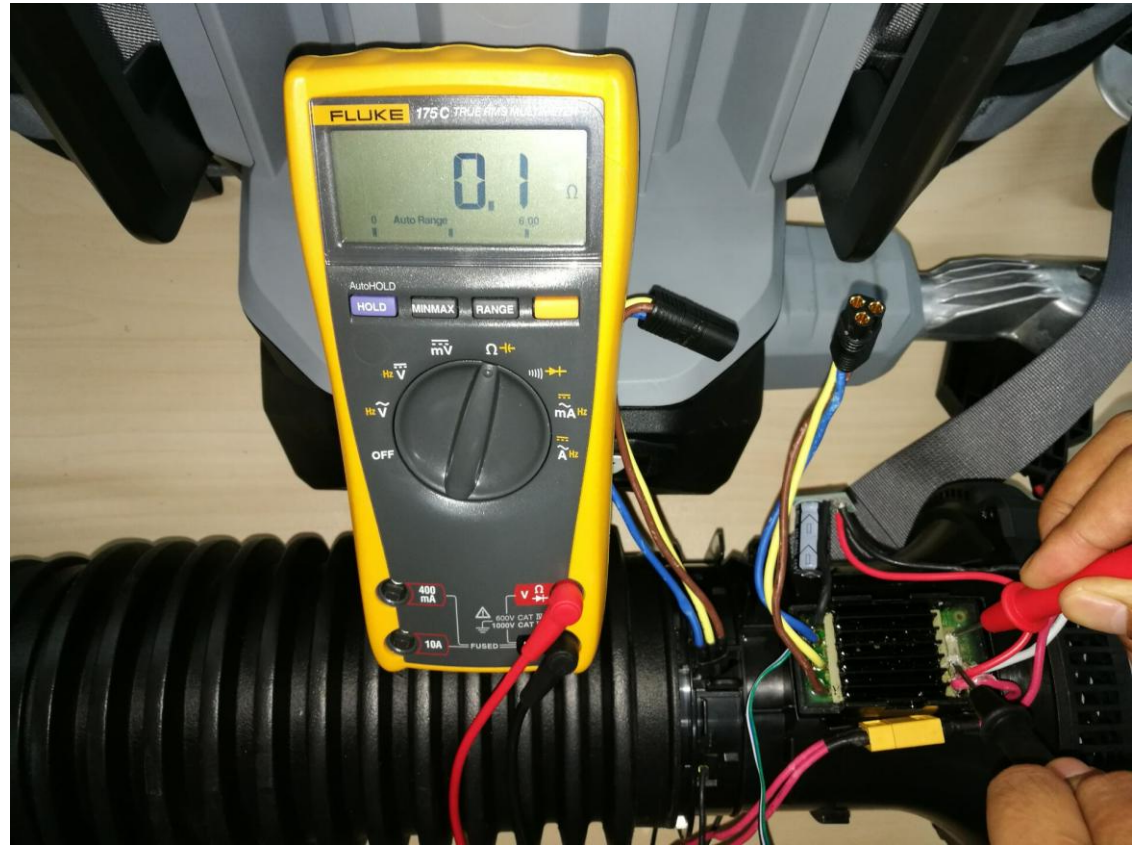
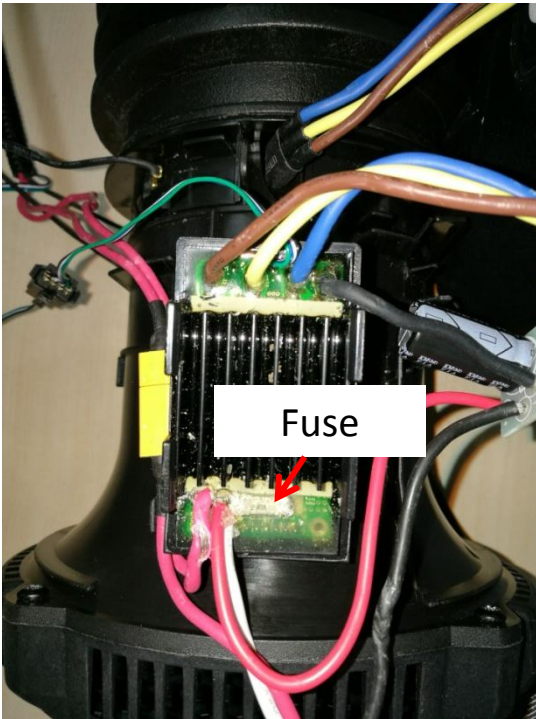
How to disassemble the blower

- b) Push the red pen pin to the negative electric contact and push the black pen pin to the positive electric contact.
 - c) Press the switch trigger and hold for about 10s to discharge the capacitor
- NOTICE: If electric exists, the multimeter will beep until the discharging process ends, otherwise there will be no sound.



How to disassemble the blower

2) Measure the fuse in the PCBA

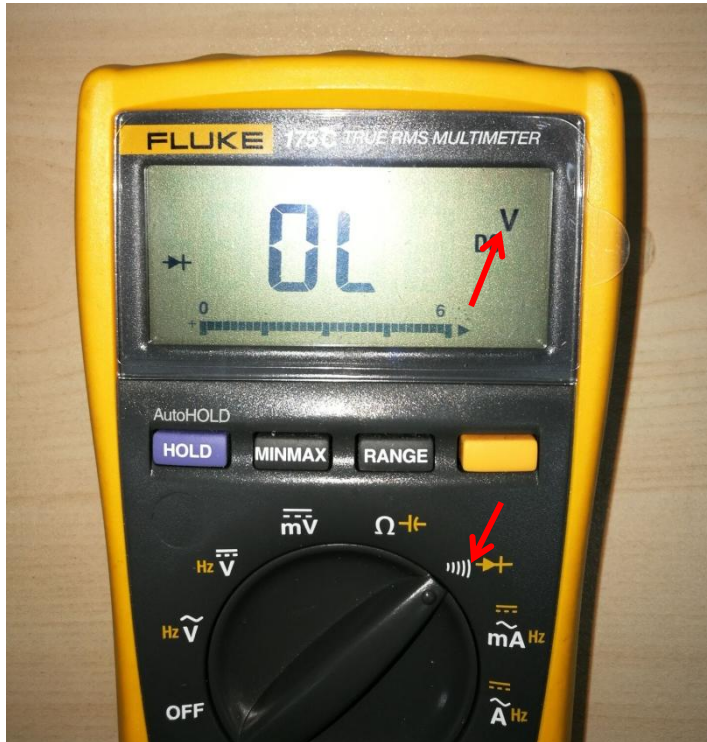


How to disassemble the blower

- 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 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 fit a new PCBA.

How to disassemble the blower

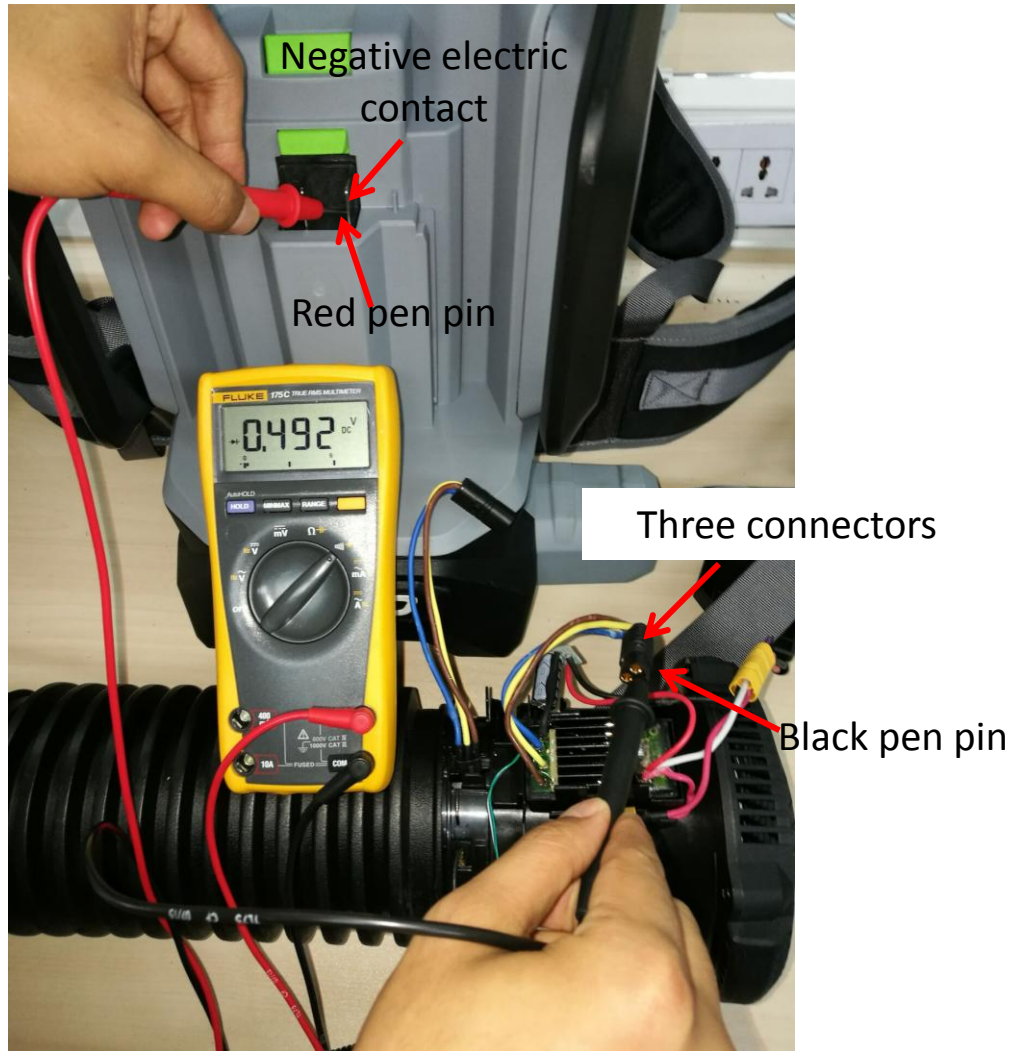
3) Measure the MOSFET in the PCBA (Step 1)



- Set the multimeter function to “Diode measuring” .
- Push the red pen pin to the negative electric contact.
- 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 fit 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

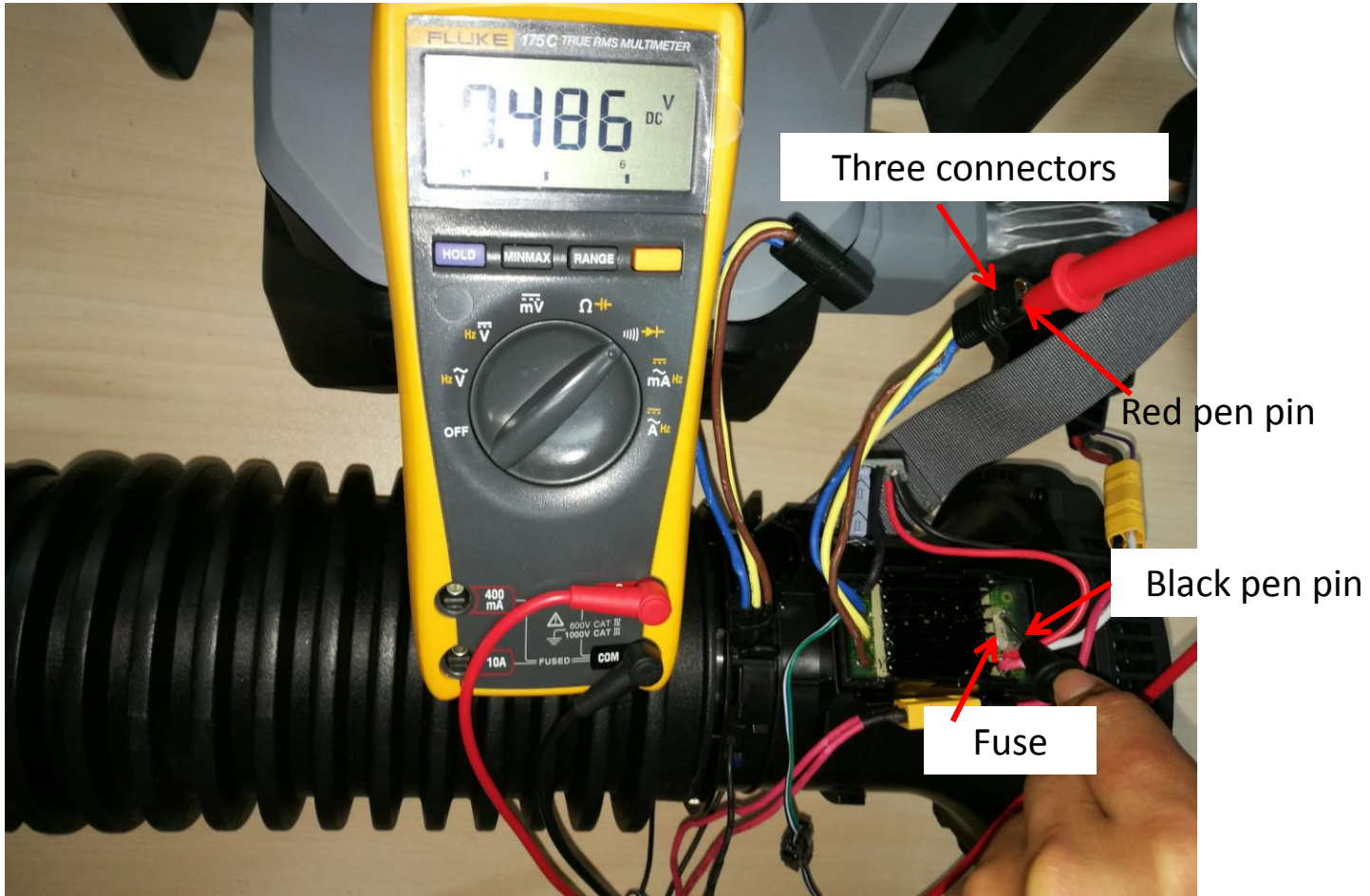
4) Measure the MOSFET in the PCBA (Step 2)



- Keep the multimeter function setting at “Diode measuring”.
- Pierce black pen pin of the multimeter into the sealing glue and force the pin contacting one side of the fuse.
- Press the red 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 it means the PCBA is broken. Follow the procedure “How to replace the PCBA” to fit a new PCBA.

How to disassemble the blower

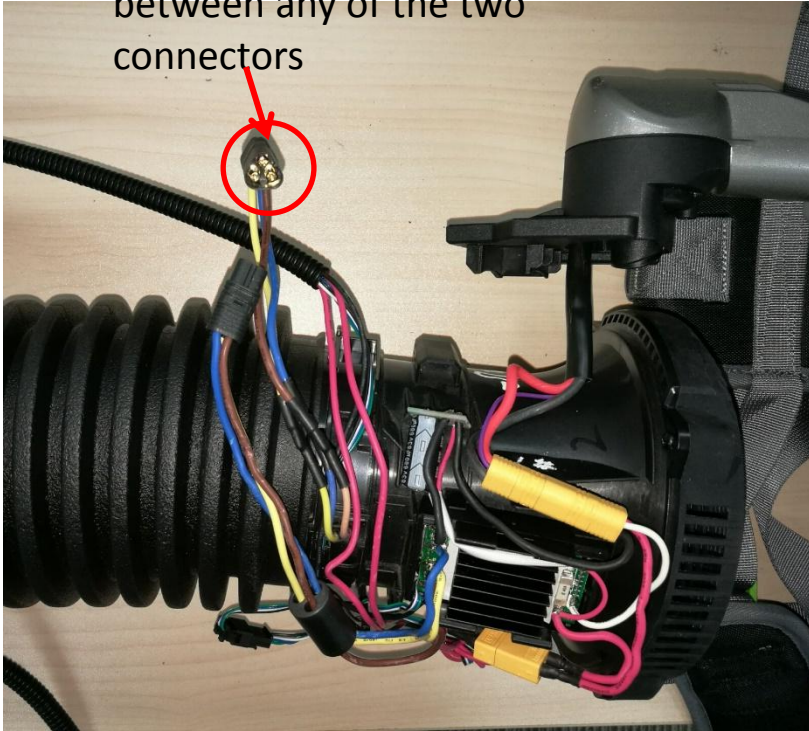
Figure showing how to measure the MOSFET in the PCBA (Step 2)



How to disassemble the blower

6. Test the motor assembly to judge if it is an open-circuit.

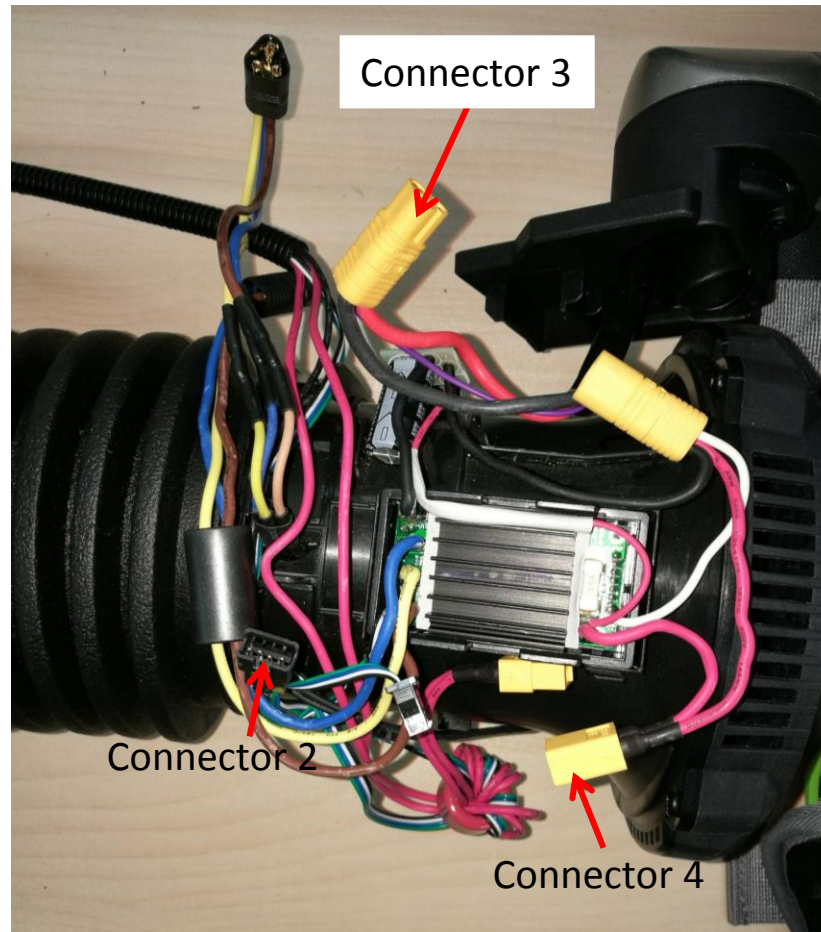
Measure the resistance between any of the two connectors



- a) Set the multimeter function to “Resistance measuring” .
- b) Measure the resistance between any of the two connectors.
- c) If any of the measurement are infinite, it means the circuit between the two connectors is an open circuit, the motor is damaged. Follow the procedure “How To replace the motor and dusted assembly” to fit a new one. Otherwise go to the next testing step.

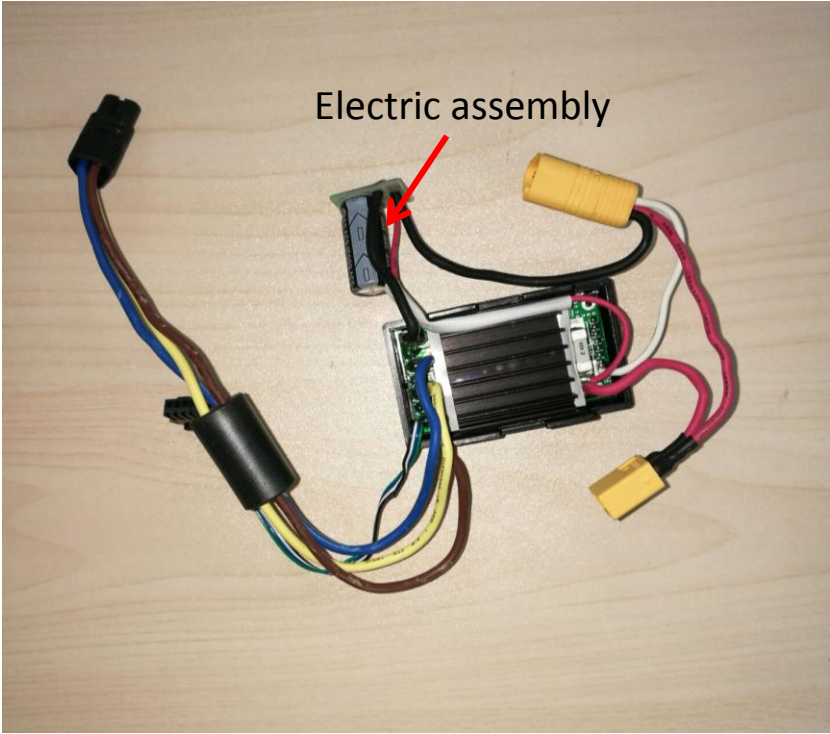
How to replace the PCBA

1. Disconnect connector 2, connector 3 and connector 4.



How to replace the PCBA

2. Remove the PCBA.



Description	Part Number	Quantity
Electric assembly	2830165001	1

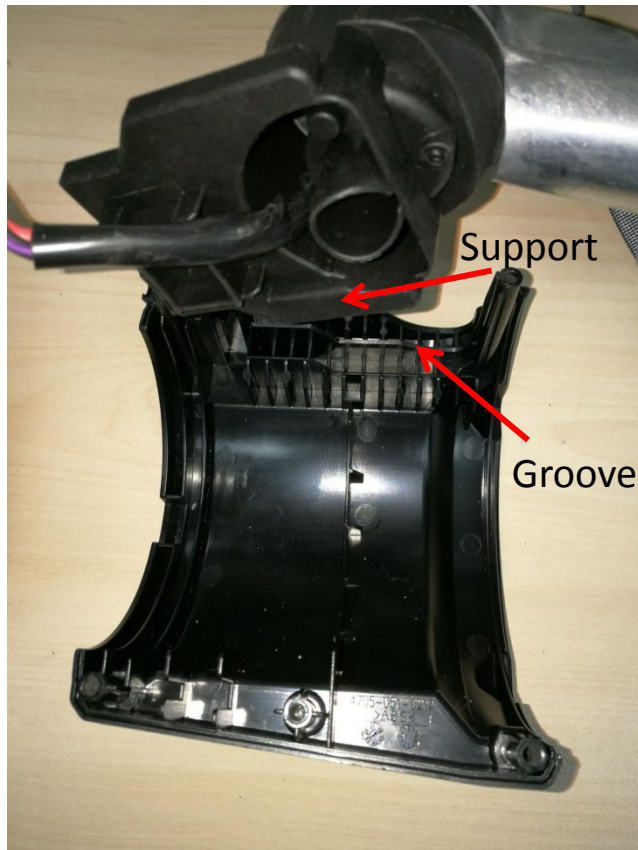
How to replace the PCBA

3. Replace the PCBA with a new one and then connect the four connectors.



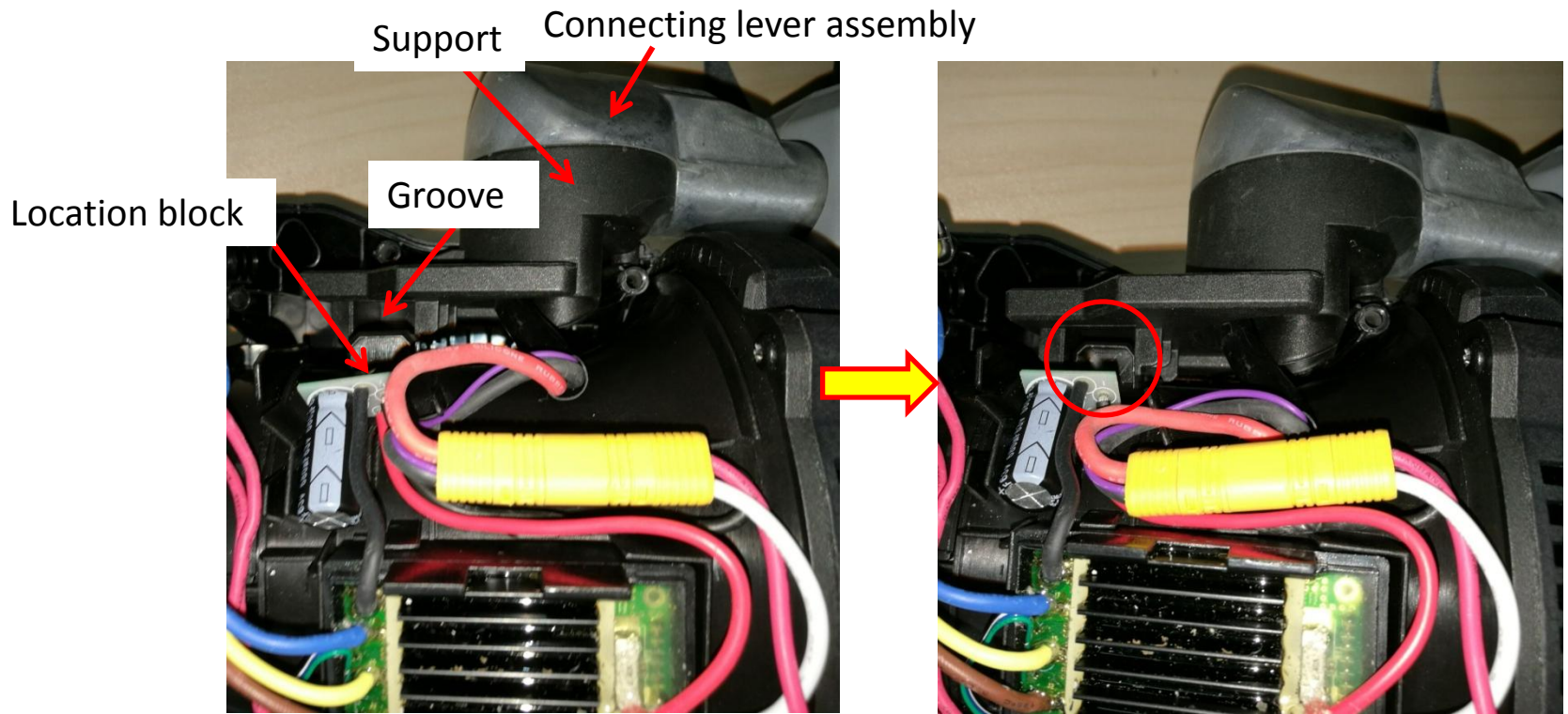
How to replace the PCBA

4. Put the support into the groove of the left housing to assemble them together.



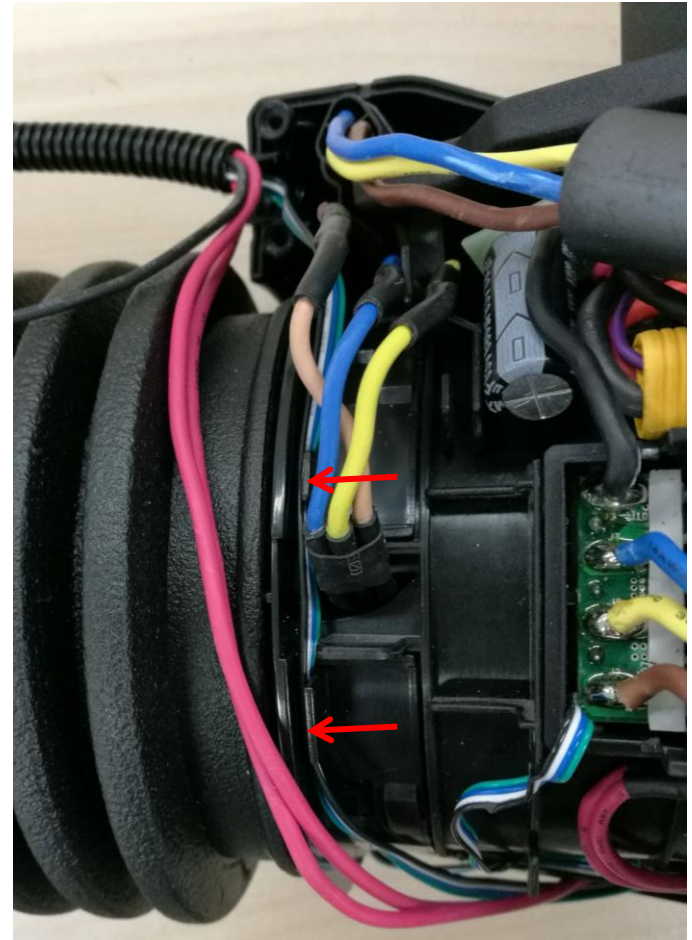
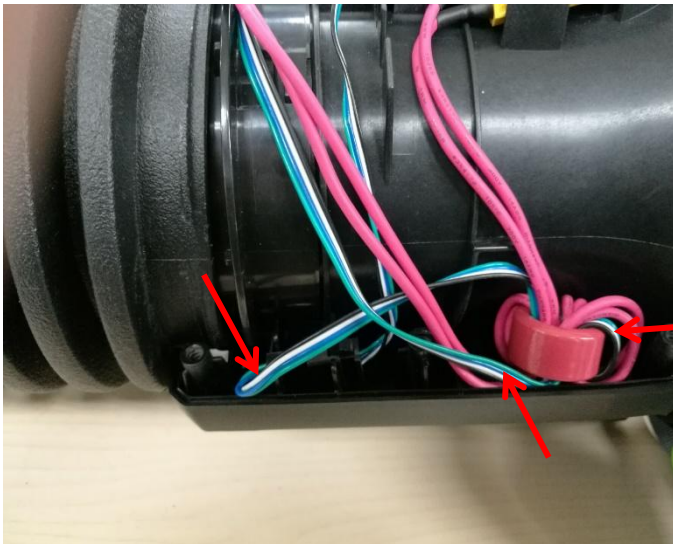
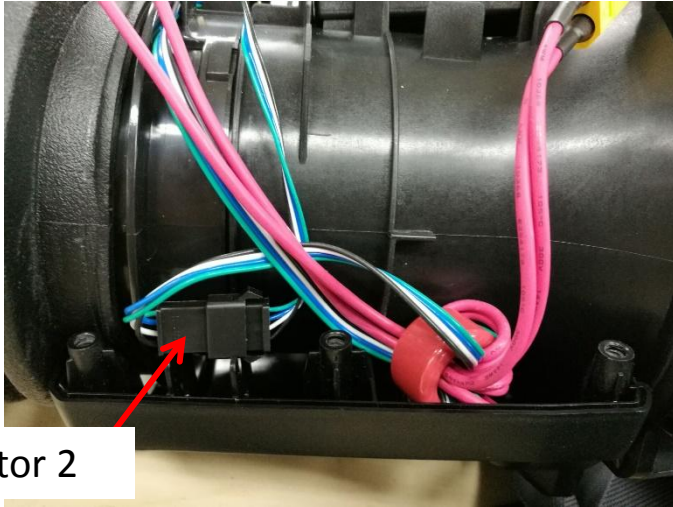
How to replace the PCBA

5. Align the location block on the ducted assembly with the groove on the support to position the ducted assembly.



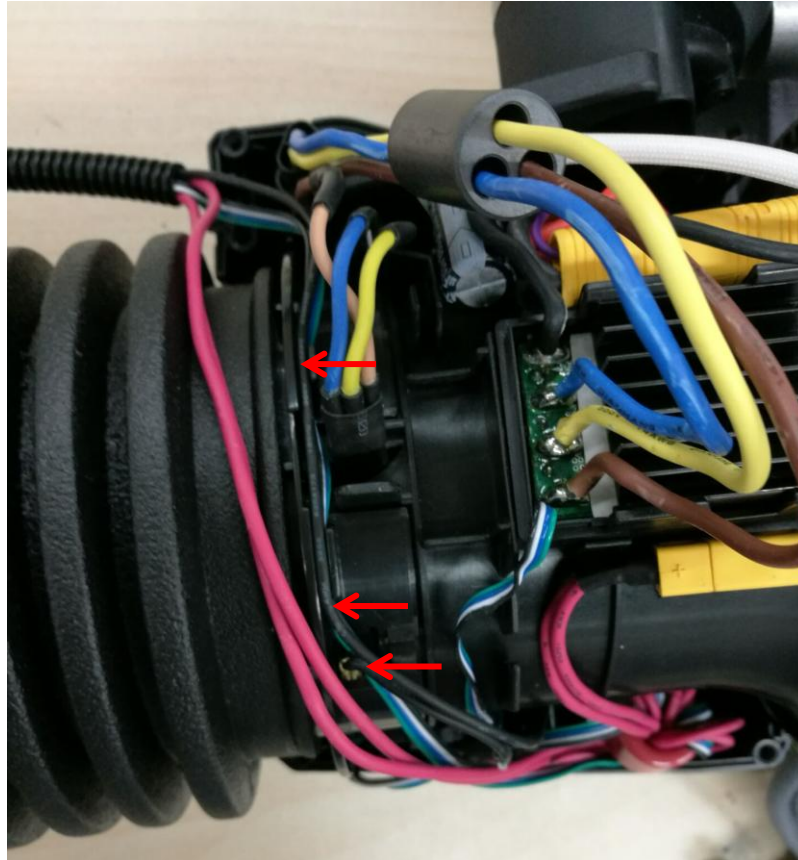
How to replace the PCBA

6. Put connector 2 into the slot and align the thin flat cables into its groove.



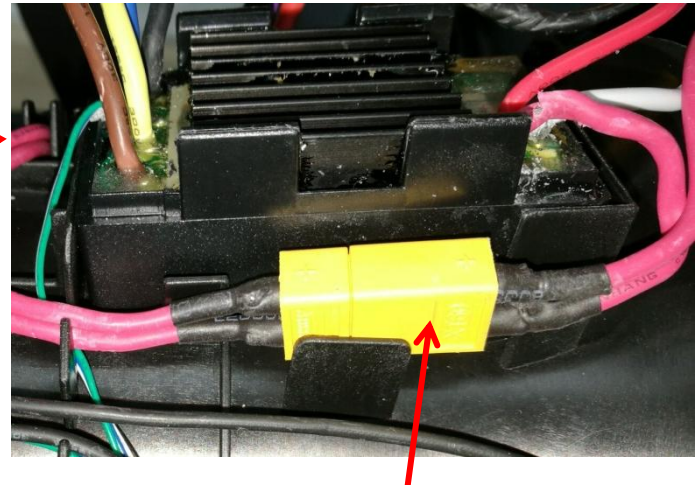
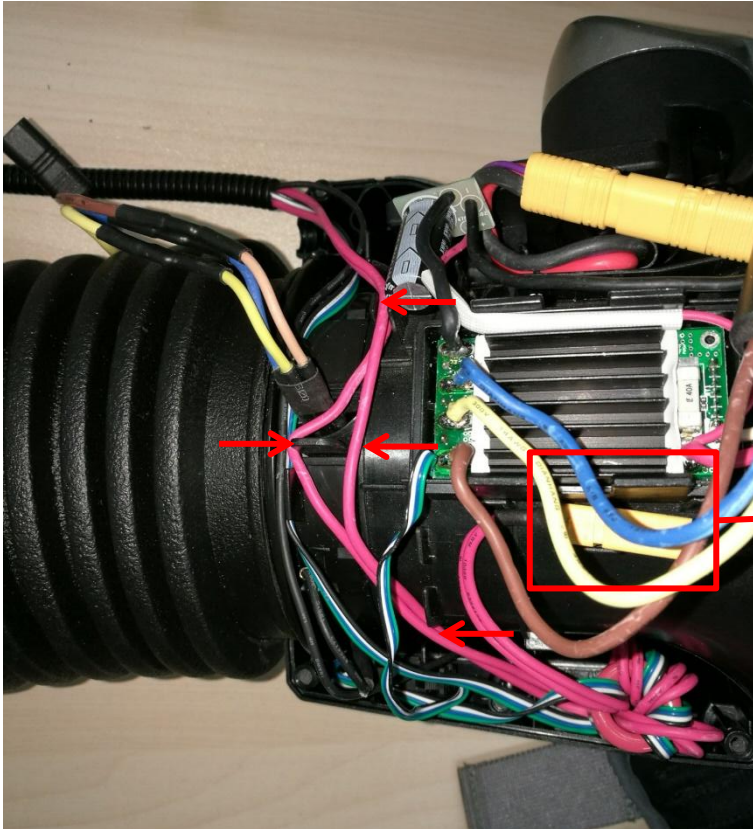
How to replace the PCBA

7. Align the black cable into the groove.



How to replace the PCBA

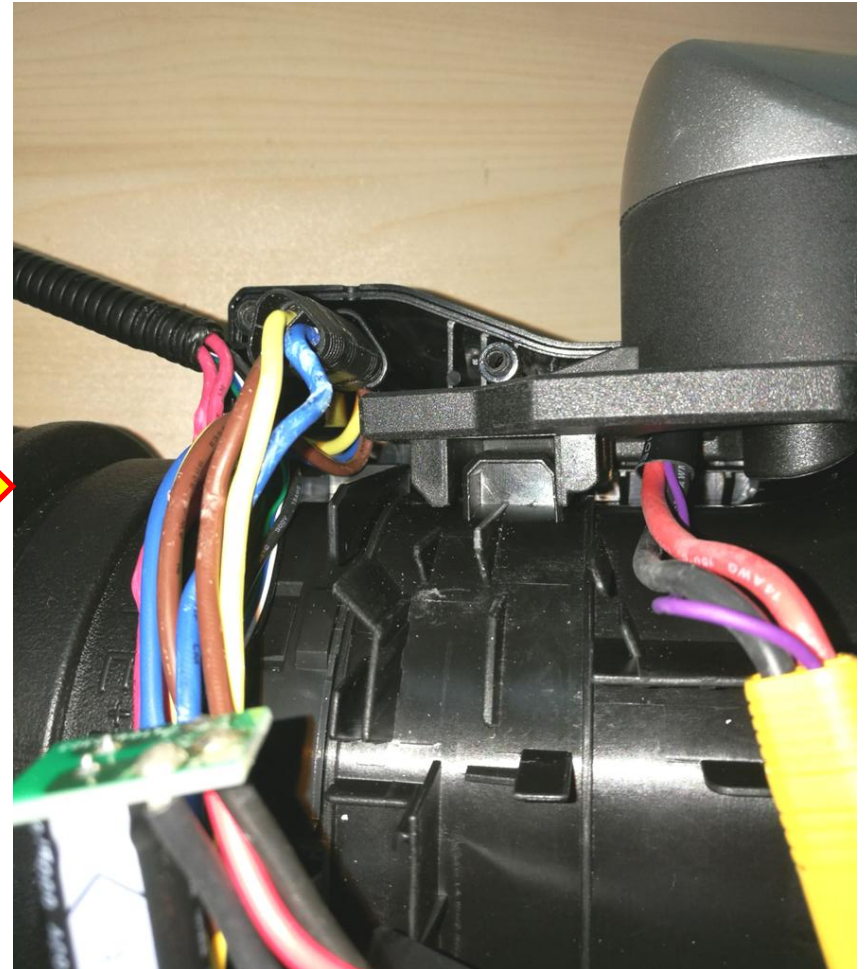
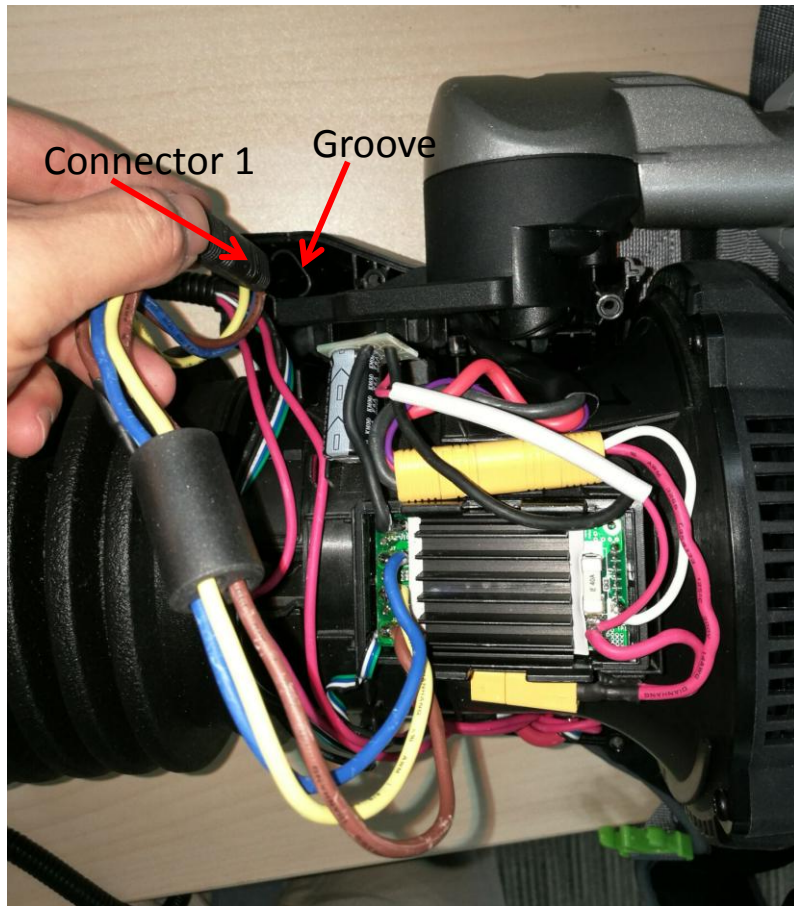
8. Align the red cables into the groove and put connector 4 into the right position.



Connector 4

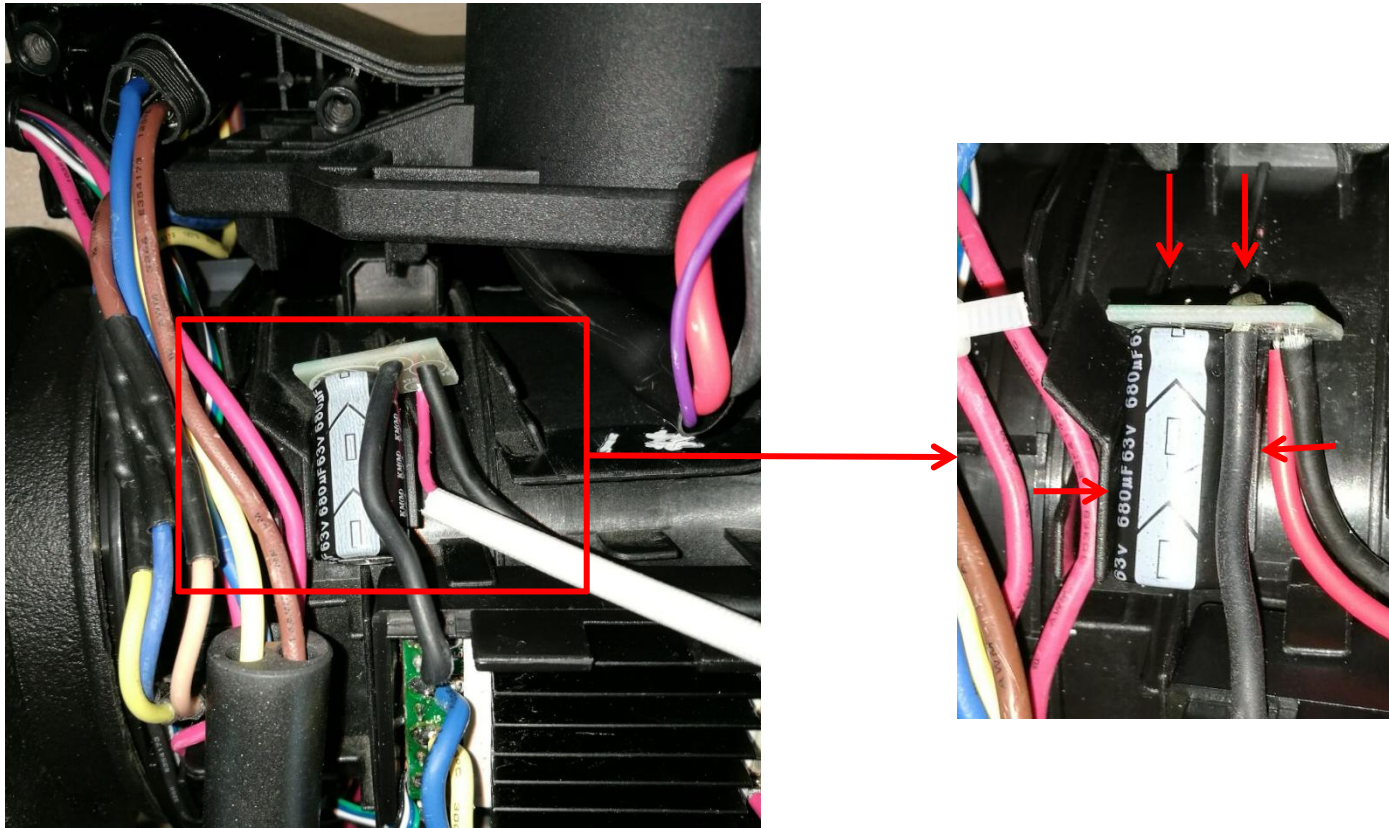
How to replace the PCBA

9. Insert connector 1 into the groove in the left housing.



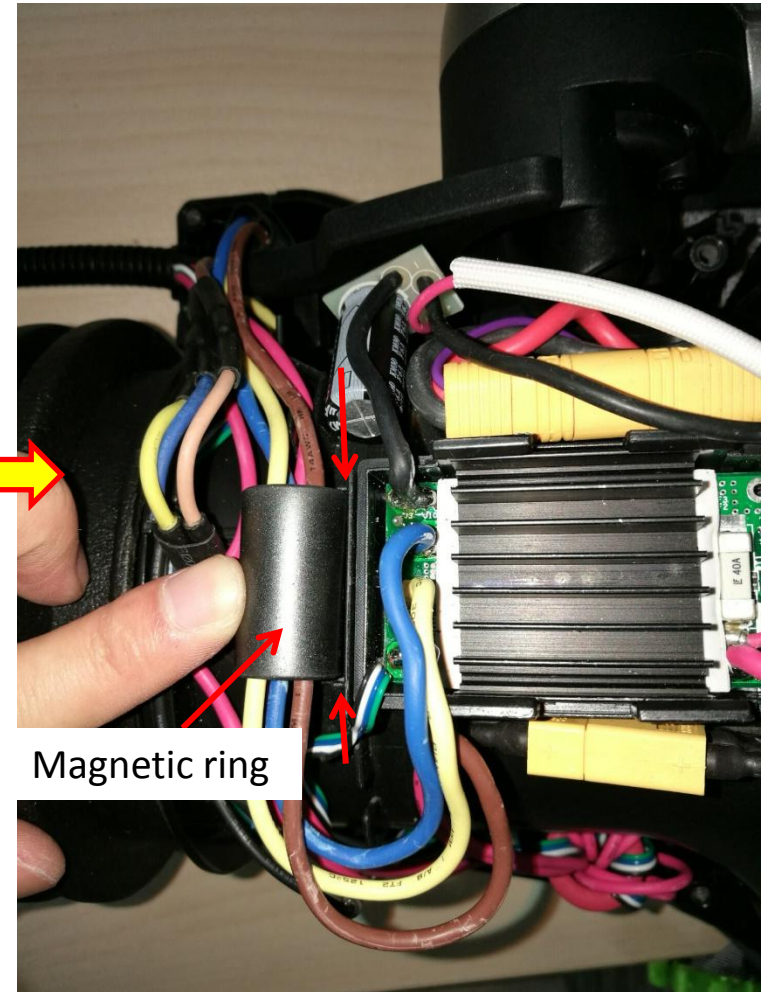
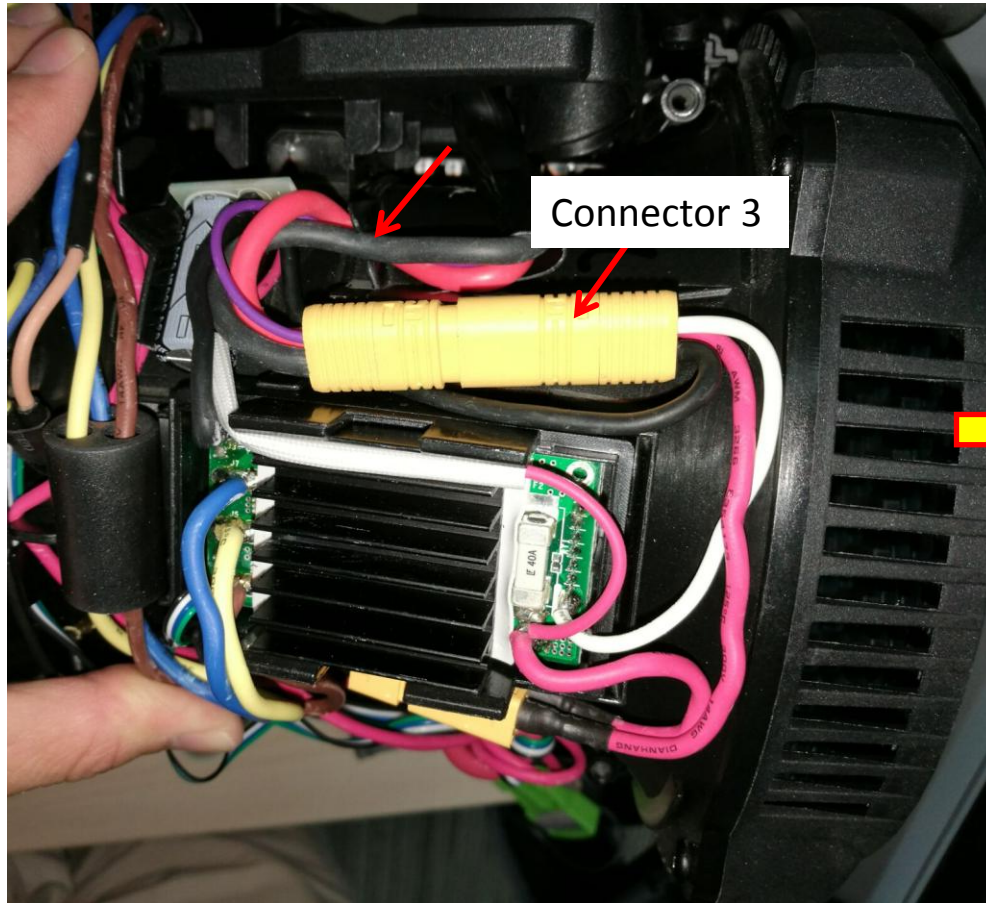
How to replace the PCBA

10. Align the black and red cables connected with the capacitor into the groove and put the capacitor into its right position.



How to replace the PCBA

11. Put the connector 3 into the right position and put the cables connected with the support into the groove then mount the magnetic ring into its position.



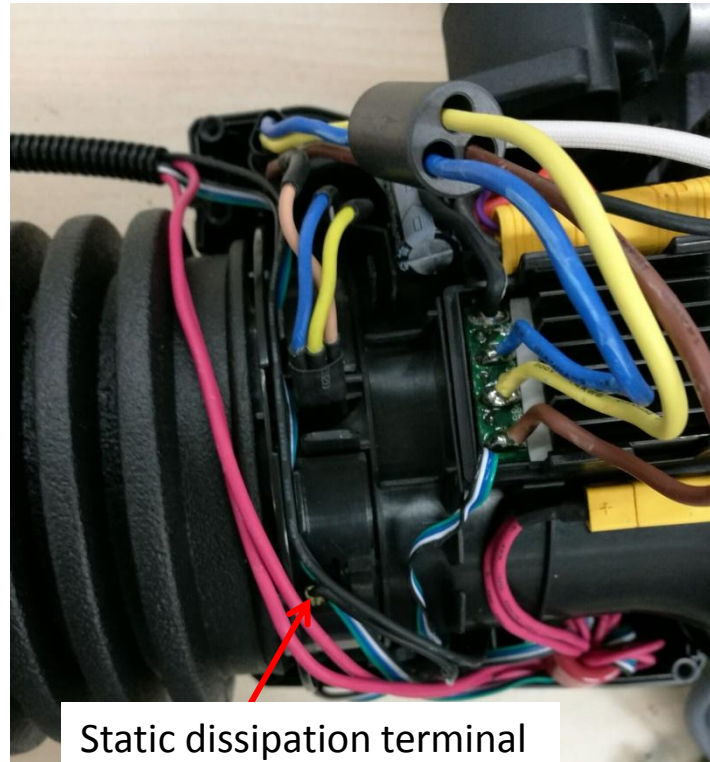
How to replace the PCBA

12. Mount the right housing onto the left housing and tighten the screws to assemble the housing.



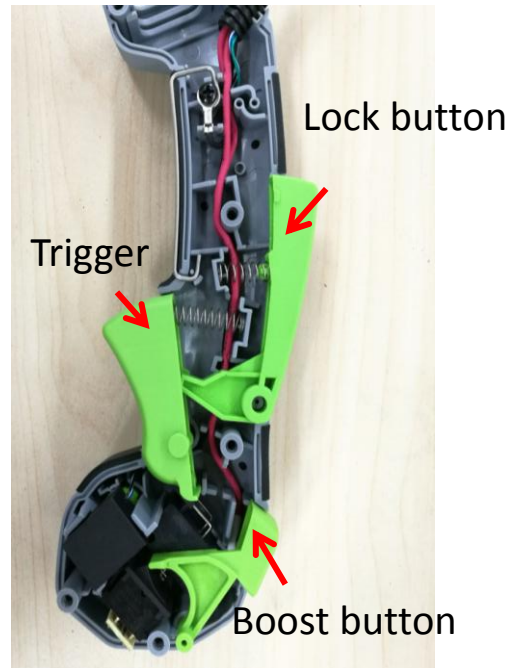
How to replace the switch assembly

1. Disassemble the housing as shown in the “How to disassemble the blower” and disconnect connector 2 and connector 4.
2. Pull the static dissipation terminal out of the hole on the ducted assembly to separate the handle assembly from the ducted assembly.



How to replace the switch assembly

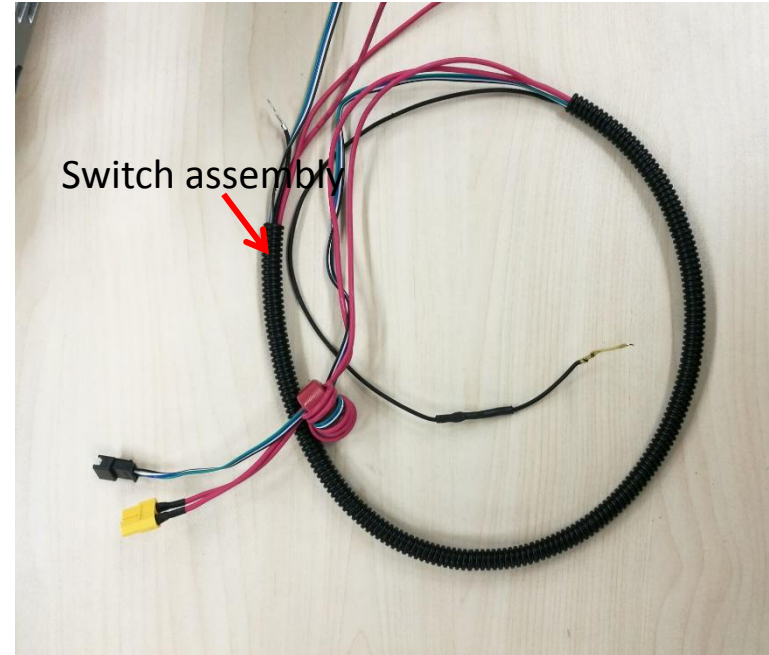
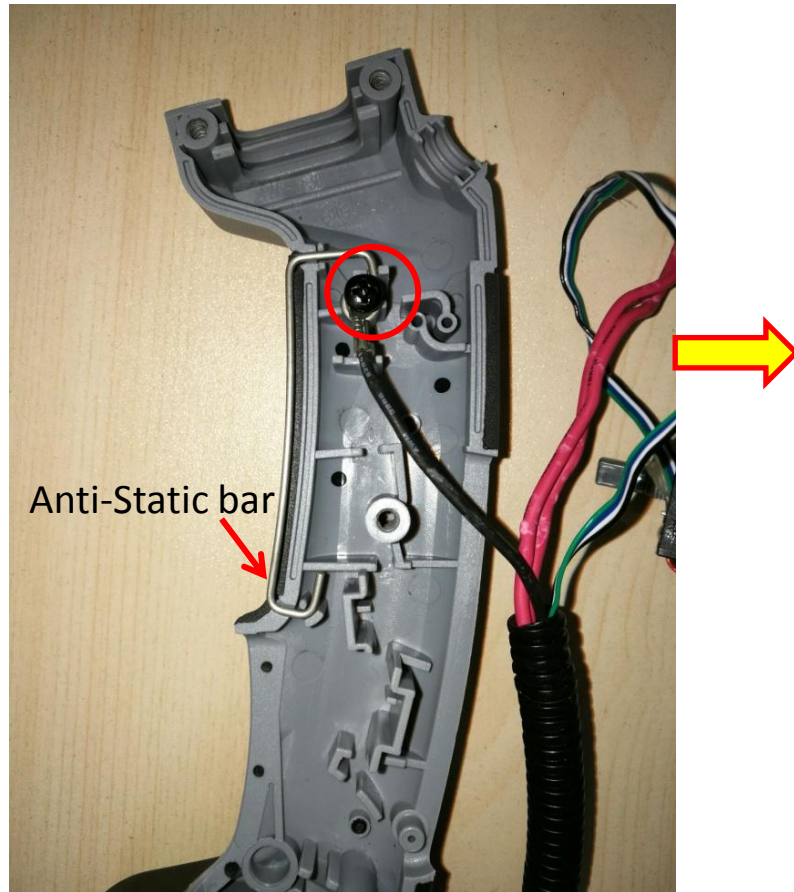
3. Remove the 6 screws and open the handle housing. If the trigger, button or depth adjusting knob was broken, replace it with a new one.



Description	Part Number	Quantity	Description	Part Number	Quantity
Handle housing set	2824819001	1	Trigger	3128387001	1
Lock button	3127212001	1	Boost button	3128385001	1
Depth Adjusting Knob	3128386001	1			

How to replace the switch assembly

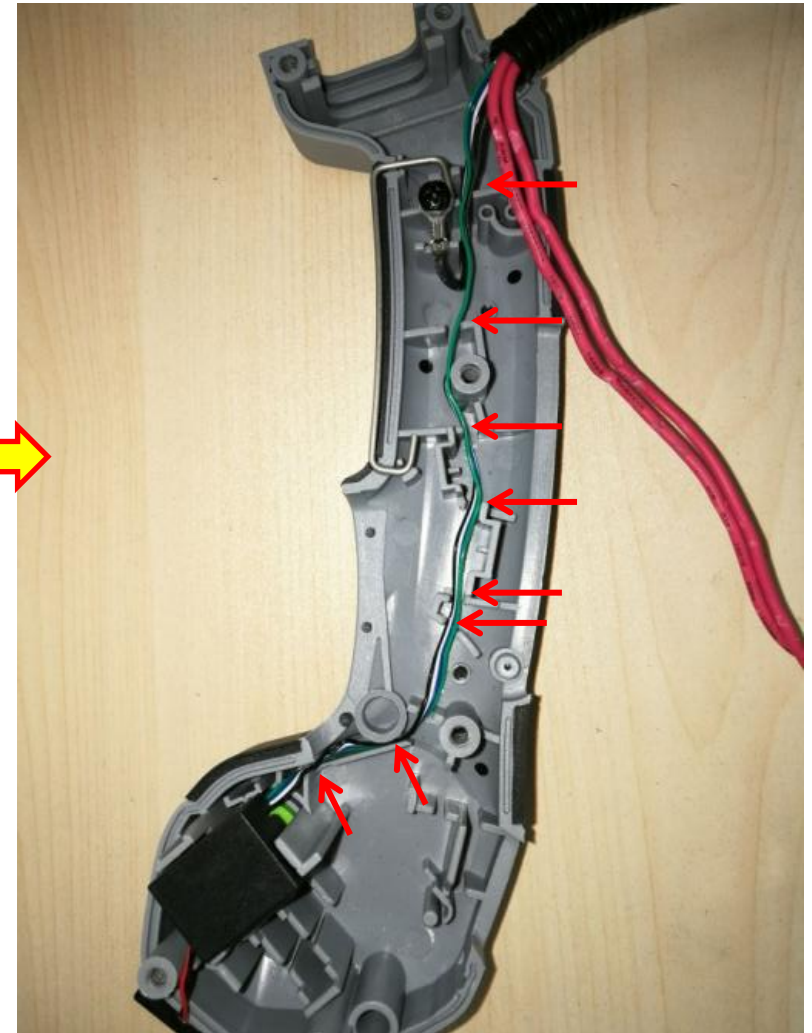
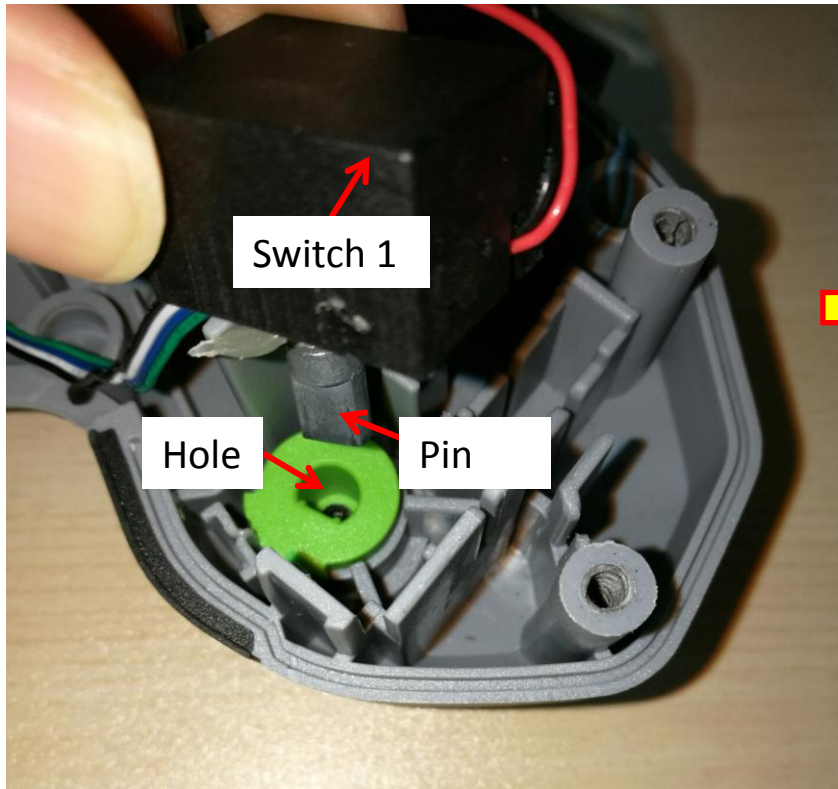
- Loosen the screw to have the switch assembly replaced. If the Anti-Static bar is damaged or bent, replace it with a new one.



Description	Part Number	Quantity
Switch assembly	2824718002	1
Anti-Static bar	3650142001	1

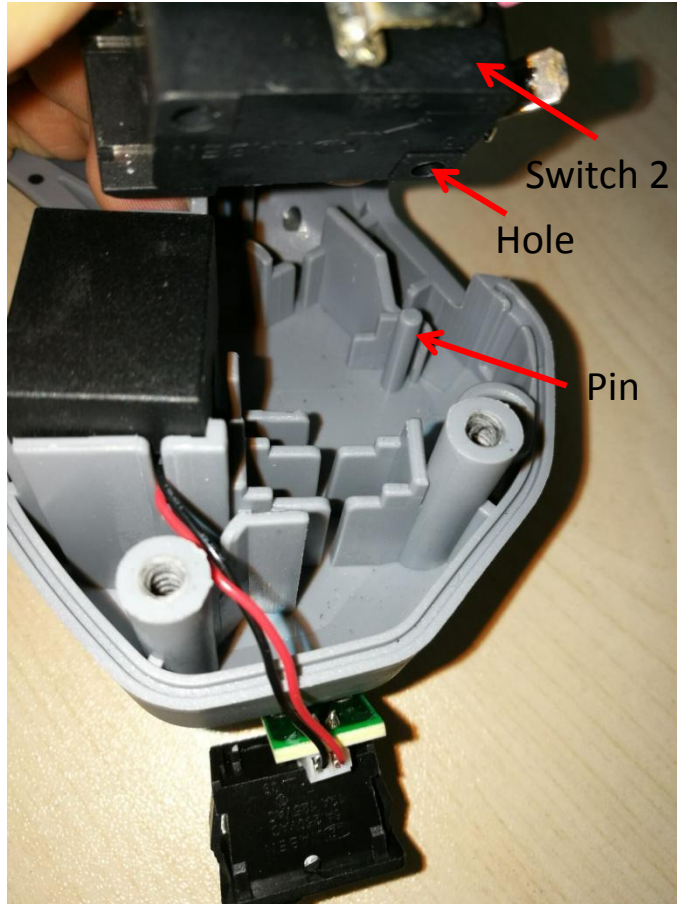
How to replace the switch assembly

5. Align the pin on switch 1 with the hole in the depth adjusting knob to position switch 1.
6. Align the thin cables into the groove.



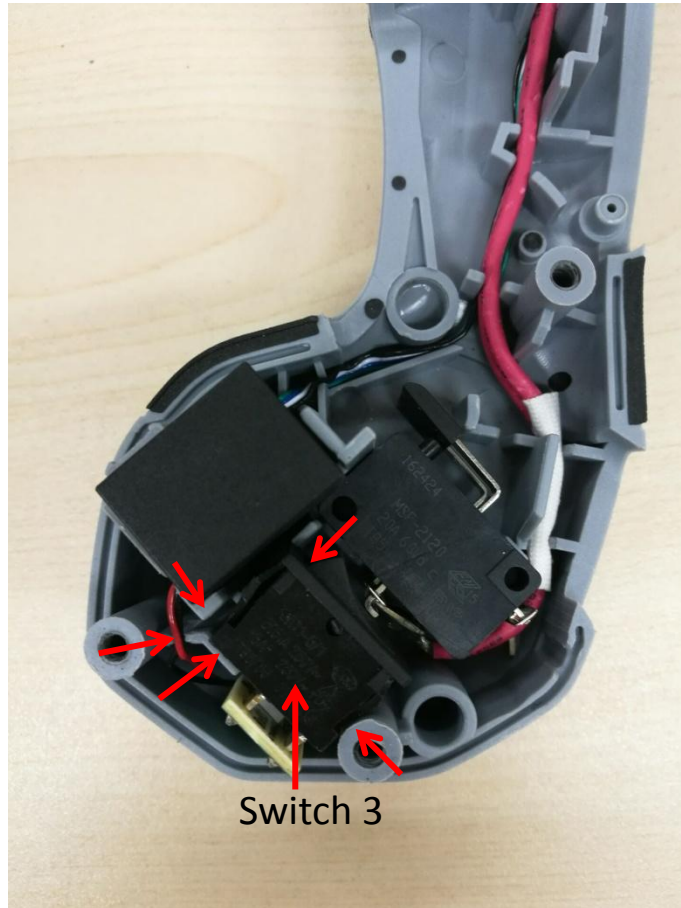
How to replace the switch assembly

- Align the pin on the handle housing with the hole on switch 2 to position switch 2 and then align the two red cables into the groove.



How to replace the switch assembly

8. Put switch 3 into the right position and align the cables then mount trigger and buttons.



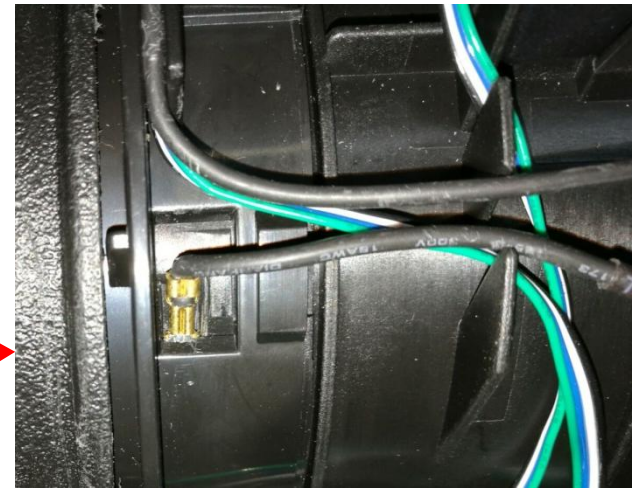
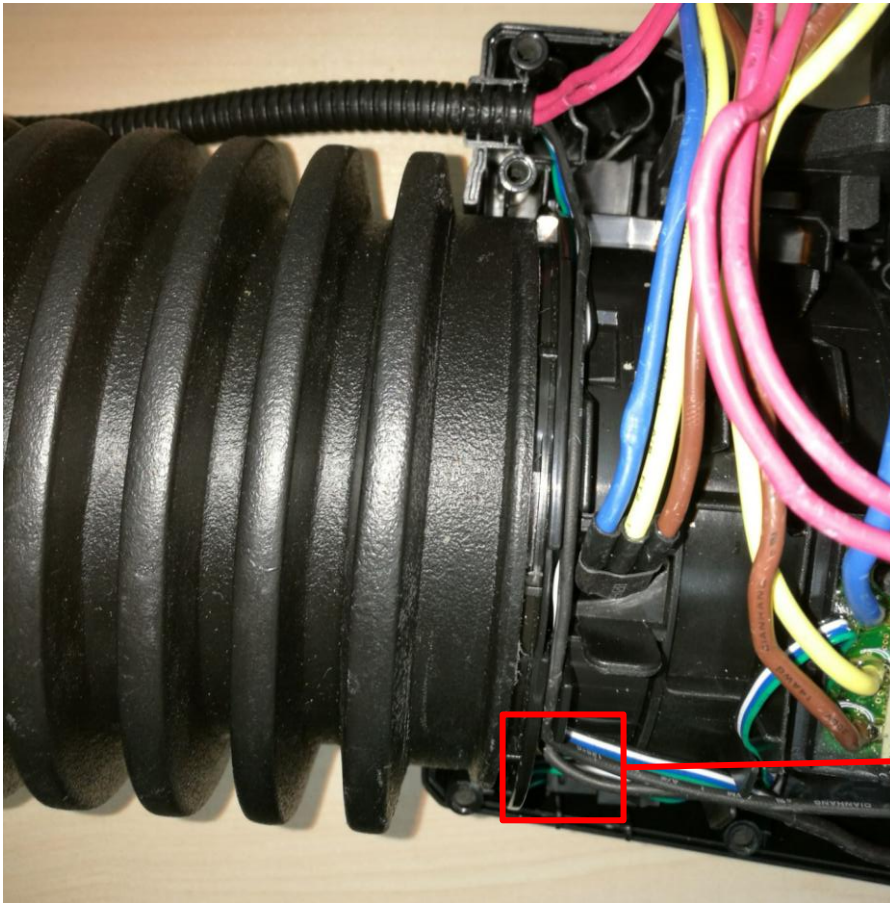
How to replace the switch assembly

9. Assemble the left handle onto the handle support and align the right handle housing with left handle housing and close them, lock them with 6 screws.



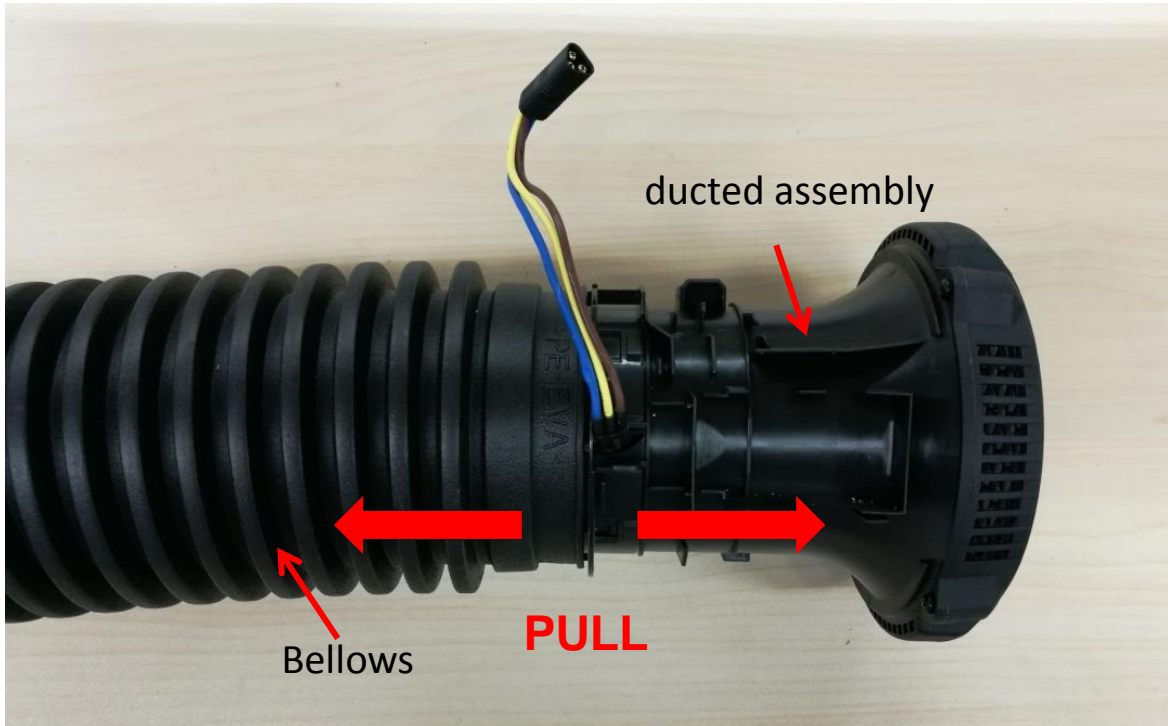
How to replace the switch assembly

10. Insert the static dissipation terminal into the hole in the ducted assembly.
11. Align the cables and assemble the housing as shown in the “How to replace the PCBA” section.



How to replace the motor and ducted assembly

1. Disassemble the housing set and remove the PCBA as shown in the “How to disassemble the blower” and “how to replace the PCBA” section.
2. Pull the ducted assembly and the bellows to separate them from each other.



How to replace the motor and ducted assembly

3. Remove the 4 screws to disassemble the fan baffle from the ducted assembly.
4. Replace the ducted assembly with a new one, if the fan baffle was broken replace it with a new one then assemble the ducted assembly with fan baffle with the 4 screws.



Description	Part Number	Quantity
ducted assembly	2824495001	1
Fan baffle	3128343001	1

How to replace the motor and ducted assembly

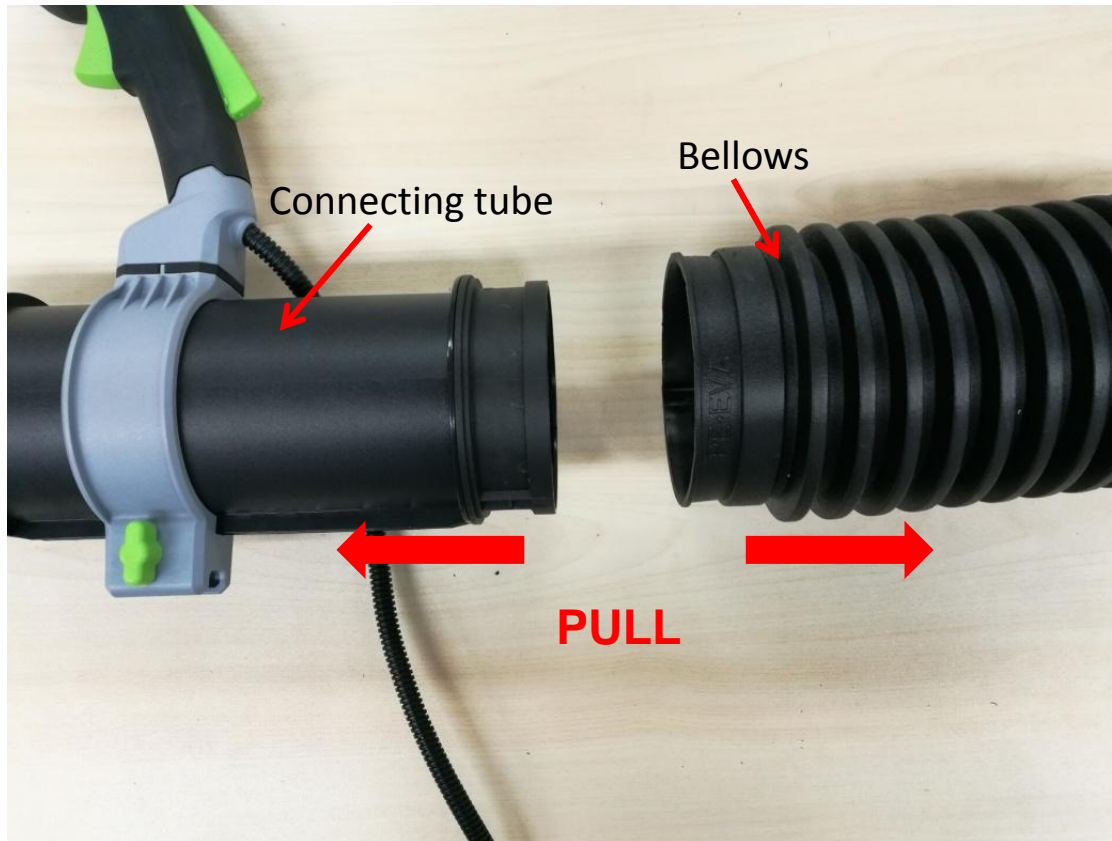
5. If the bellows are broken, loosen the screw on the lock ring and remove them. If the lock ring was broken, replace it with a new one.



Description	Part Number	Quantity
Lock ring	3128545001	1
Screw	5610224002	1

How to replace the motor and ducted assembly

6. Separate the connecting tube and bellows, then replace the bellows with a new one.



Description	Part Number	Quantity
Bellows	3128519001	1

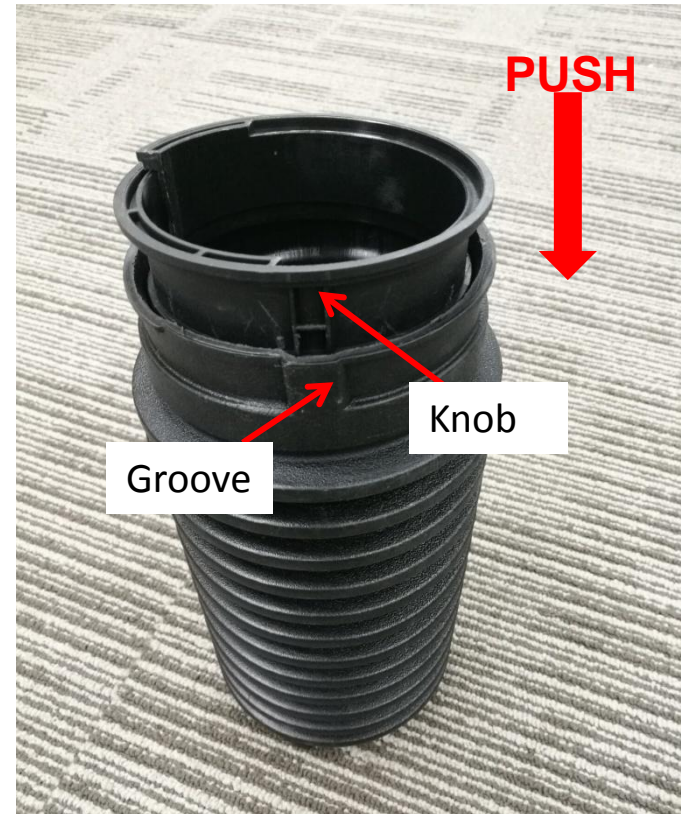
How to replace the motor and ducted assembly

7. Remove the holding ring from the connecting tube.



How to replace the motor and ducted assembly

8. Squeeze one side of the holding ring to make part of the two sides overlap each other meanwhile align the knob on the holding ring with the groove on the bellows, then push the holding ring to place it into position.



How to replace the motor and ducted assembly

9. Push the connecting tube into the bellows.



How to replace the motor and ducted assembly

10. Tighten the lock ring with the screw.



How to replace the motor and ducted assembly

11. Align the knob on the ducted assembly with the groove on the bellow and then push the ducted assembly into the bellows.



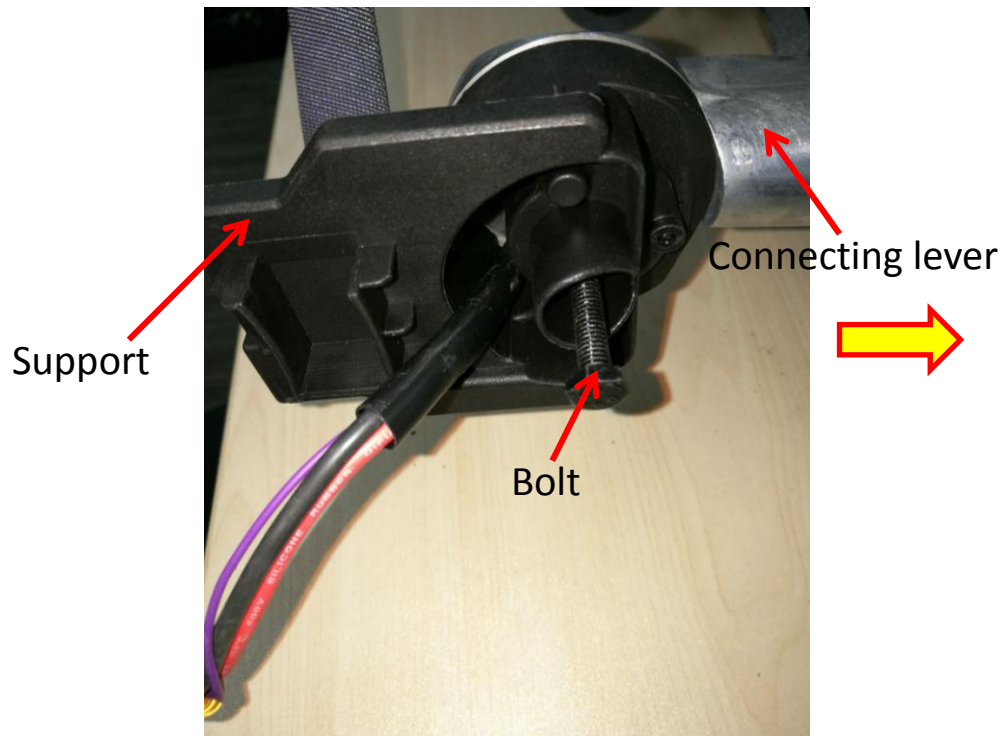
How to replace the motor and ducted assembly

12. Assemble the PCBA and the housing as shown in the “How to replace the PCBA” section.



How to replace the connecting lever

1. Open the housing set and disconnect connector 3 as shown in the “How to disassemble the blower” and “how to replace the PCBA” section.
2. Loosen the bolt to separate the support from the connecting lever.



Description	Part Number	Quantity
Bolt	5640243001	1

How to replace the connecting lever

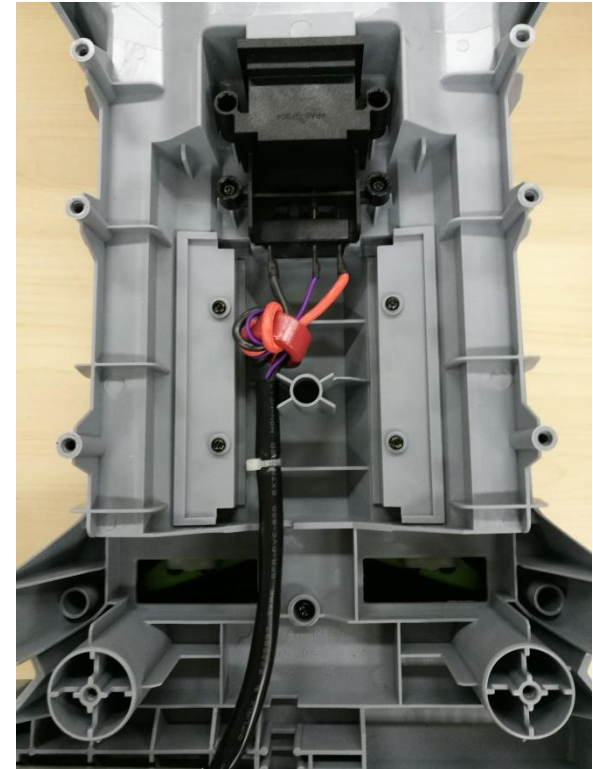
3. Loosen the 8 screws to disassemble the harness from the rear housing.



Description	Part Number	Quantity
Tapping screw	5610298001	8

How to replace the connecting lever

4. Loosen the 18 screws to separate the rear housing from the front housing and take the frame away.



Description	Part Number	Quantity
Hexagon Socket Screw	5620157006	18

How to replace the connecting lever

5. Loosen the screw on the fixed ring.



Description	Part Number	Quantity
screw	5620157006	1

How to replace the connecting lever

6. Loosen the screw on the hoop.



Description	Part Number	Quantity
screw	5610097002	1

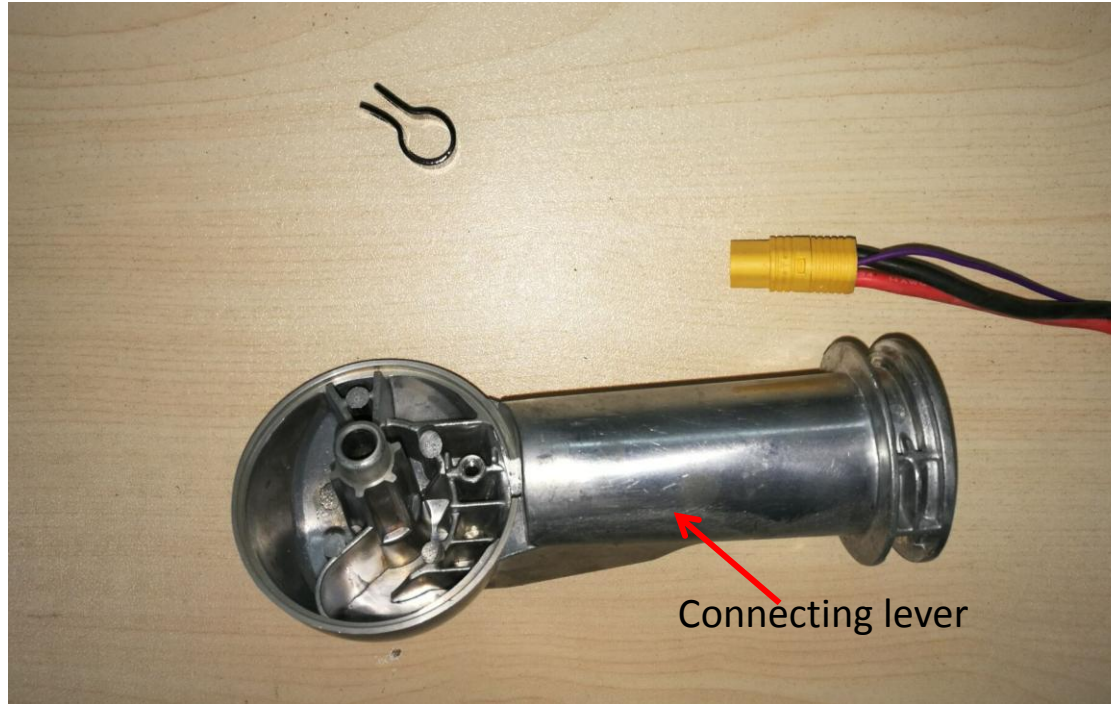
How to replace the connecting lever

7. Open the mouth of the hoop a little bit and take the hoop out of the cables.



How to replace the connecting lever

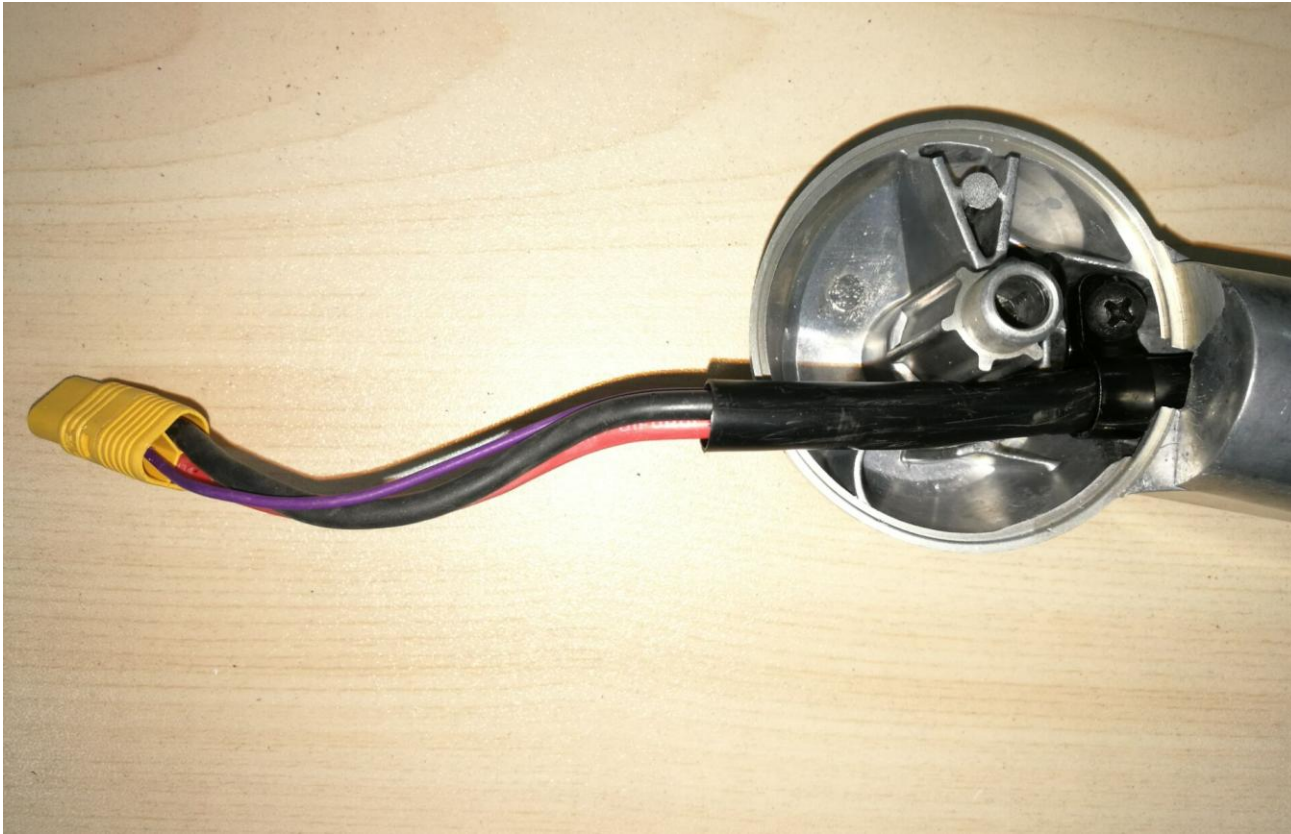
8. Pull the cables out of the connecting lever and replace the connecting lever with a new one.



Description	Part Number	Quantity
Connecting lever	3421815001	1

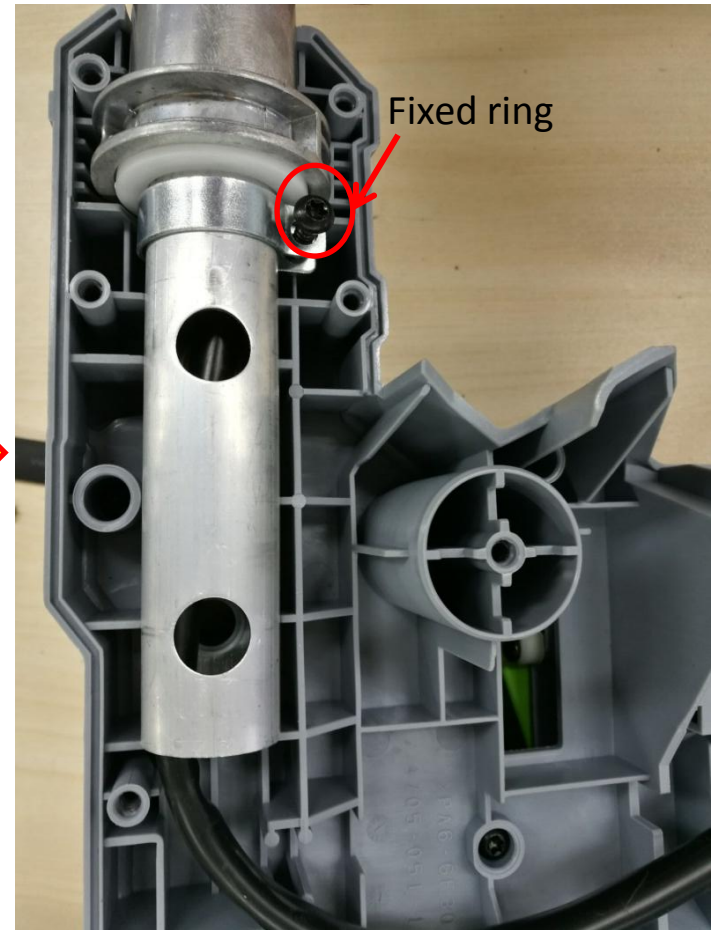
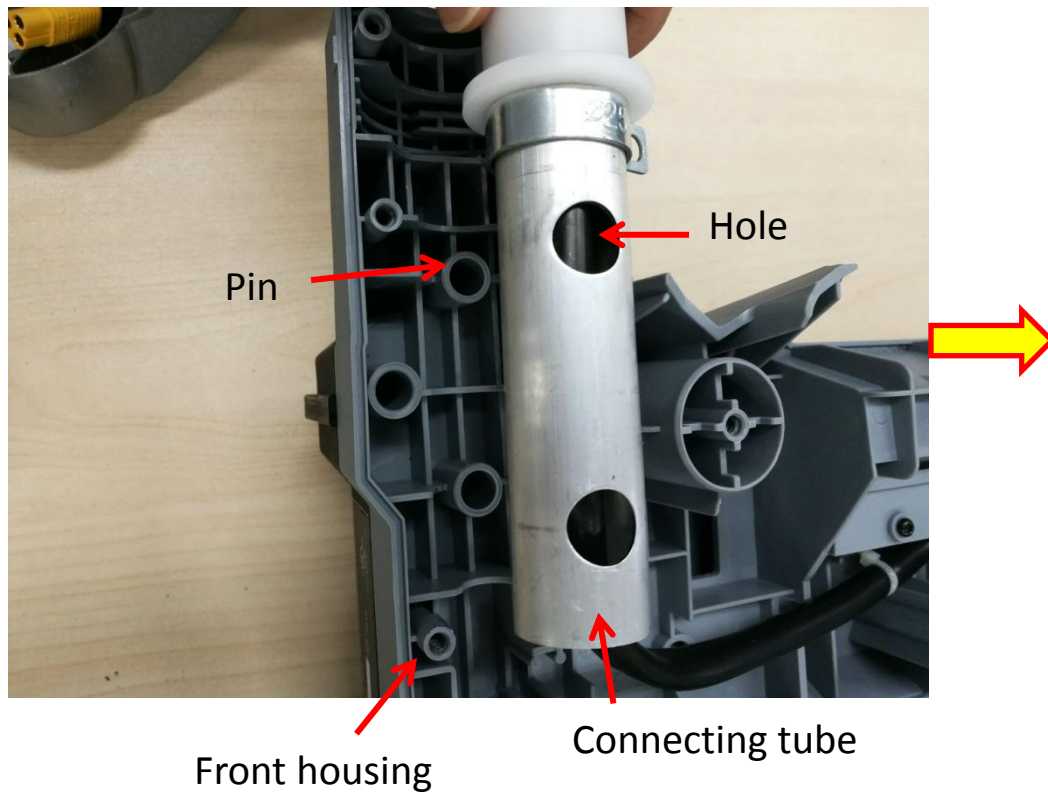
How to replace the connecting lever

9. Insert the cables into the connecting lever then put the hoop onto the cables and tighten the hoop with the screw.



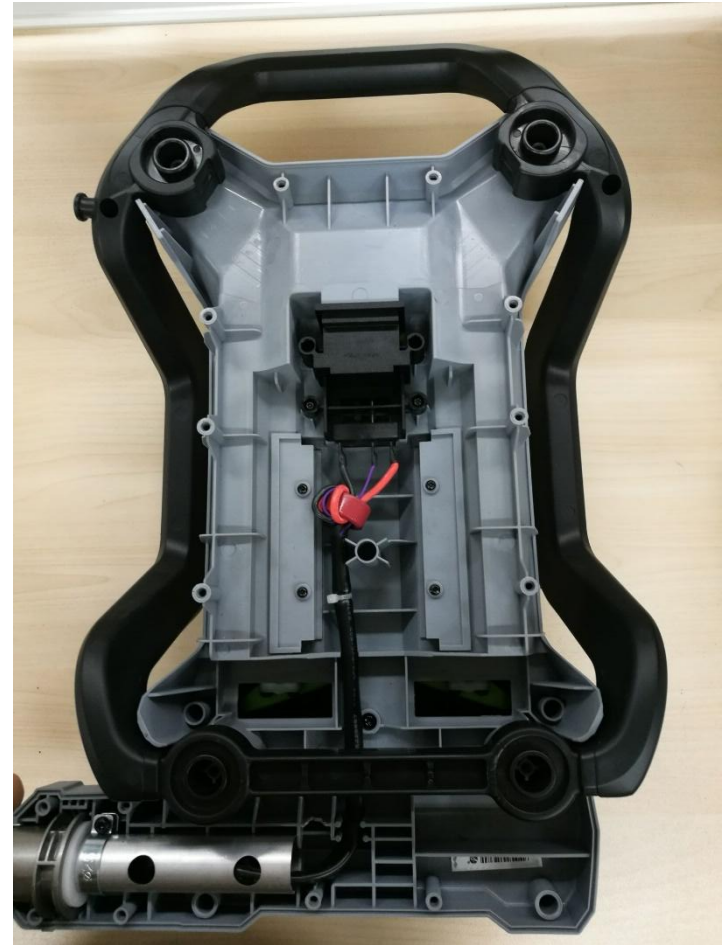
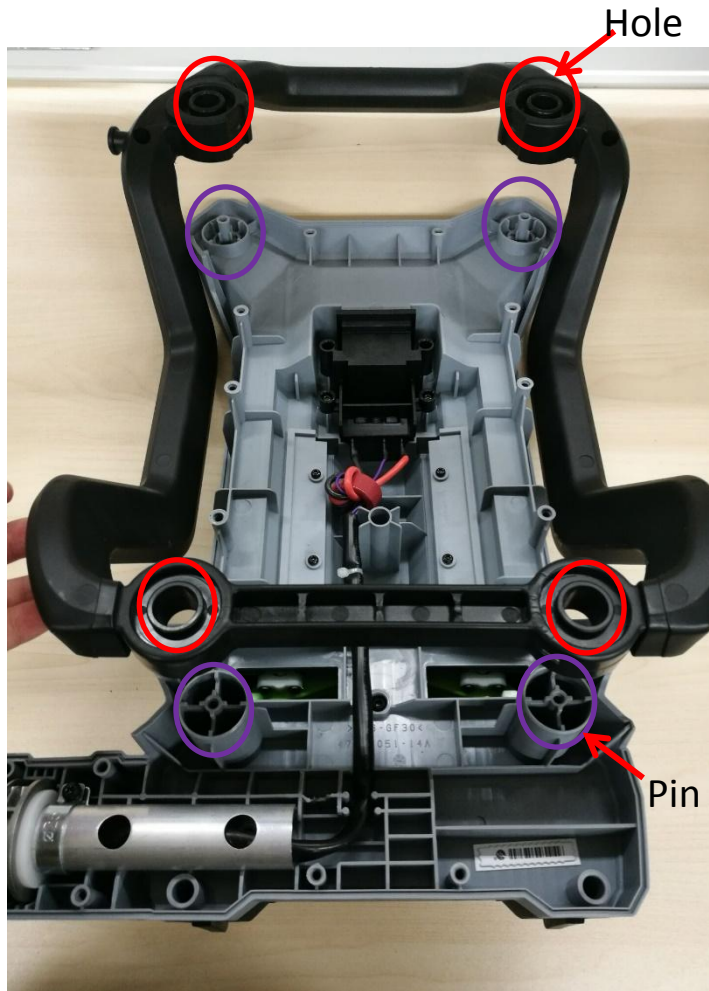
How to replace the connecting lever

10. Align the hole on the connecting tube with the pin on the front housing to put the connecting tube into its position.
11. Tighten the fixed ring with screw.



How to replace the connecting lever

12. Align the holes on the frame with the pins on the front housing and then push the frame onto the front housing to assemble them.



How to replace the connecting lever

13. Assemble the rear housing with the front housing with screws.



How to replace the connecting lever

14. Mount the harness on the rear housing with the 8 screws.



How to replace the connecting lever

15. Mount the support onto the connecting lever and tighten it with the bolt.



How to replace the connecting lever

16. Connect connector 3 and assemble the housing assembly as shown in the “How to replace the PCBA” section.



THE END