

i-mop xxi – Service Manual



Warning: read the instructions before using the machine

SUMMARY

CHAPTER 1 – GENERAL INFORMATION	4
1.1 CONVENTIONS	4
1.2 WORKING ON THE MACHINE.....	4
1.3 TRANSPORTING THE MACHINE	4
1.4 OTHER REFERENCE MANUALS	4
CHAPTER 2 – SAFETY.....	5
2.1 SYMBOLS USED	5
2.2 GENERAL INSTRUCTIONS	5
CHAPTER 3 – MACHINE DESCRIPTION	7
3.1 TECHNICAL CHARACTERISTICS.....	7
3.2 DESCRIPTION	8
CHAPTER 4 – SCHEDULED MAINTENANCE	12
4.1 SCHEDULED MAINTENANCE PLAN	12
CHAPTER 5 – I-MOP BRUSHMOTOR REPLACEMENT INSTRUCTIONS.....	13
CHAPTER 6 – I-MOP MAGNETIC VALVE REPLACEMENT INSTRUCTIONS.....	19
CHAPTER 7 – I-MOP MAINBOARD ASSEMBLY INSTRUCTIONS.....	22
CHAPTER 8 – I-MOP MAIN LEVER REPLACEMENT	29
CHAPTER 9 – I-MOP DASHBOARD ASSEMBLY INSTRUCTIONS.....	34
CHAPTER 10 – I-MOP TUBES REPLACEMENT INSTRUCTIONS.....	38
1. Brush tube replacement – WATER CHANNEL Ø4 MM	38
2. Main tube replacement – TRANSPARENT WATER CHANNEL Ø6 MM	41
3. Internal tube replacement – WATER CHANNEL Ø6 MM	45
CHAPTER 11 – I-MOP VACUUM MOTOR REPLACEMENT.....	47
CHAPTER 12 – I-MOP WHEEL AND WHEEL SUPPORT REPLACEMENT	50
1. Wheel replacement.....	50
2. Wheel support replacement.....	50
CHAPTER 13 – I-MOP FILTER AND DEFLECTOR REPLACEMENT INSTRUCTIONS.....	54
CHAPTER 14 – SQUEEGEE WHEELS CLEANING.....	55

CHAPTER 15 – WATER SAFE INTERVAL ADJUSTMENT	56
CHAPTER 16 – ELECTRICAL SCHEME	57
CHAPTER 17 – BATTERIES	58
DATASHEET	58
ASSEMBLY INSTRUCTIONS	59
CHAPTER 18 – CHARGER	62
DATASHEET	62
REFERENCE STANDARDS	62
CHAPTER 19 – REPAIR FLOW CHART	63

CHAPTER 1 – GENERAL INFORMATION

1.1 CONVENTIONS

All references to forward, backward, front, rear, right, left indicated in this manual shall be considered as referred to the operator in the working position with the hands on the handle and the sticker facing the direction of travel.

1.2 WORKING ON THE MACHINE



WARNING!

Do not work close to the machine, without adequate fixed safety supports.

1.3 TRANSPORTING THE MACHINE



WARNING!

Before transporting the machine with a conveyance, make sure that:

- All the tanks are empty and removed from the machine
- The batteries are extracted from the machine
- The machine is securely fastened in accordance with the means of transportation (air, sea, road etc.)

1.4 OTHER REFERENCE MANUALS

The following manuals are available from the manufacturer:

- User and Maintenance Manual



CHAPTER 2 – SAFETY

The following symbols are used to indicate potential hazardous conditions. Always read this information with attention and take any precautions necessary to protect the people and things.

2.1 SYMBOLS USED

DANGER!

Indicates a danger with risk, possibly even deadly for the user.

WARNING!

Indicates a potential risk of injury to persons or damage to devices.

CAUTION!

Indicates a caution or a note on key functions or on useful features. Pay careful attention to text blocks indicated by this symbol.

NOTICE

Indicates a note on key functions or on useful features.

CONSULTATION

Indicates the need to consult the User Manual before carrying out any operation.

2.2 GENERAL INSTRUCTIONS

Specific cautions and warnings are described below to highlight the potential dangers of damage to the machine and/or people.

DANGER!

- Before carrying out any maintenance/repair, remove the batteries as described in user manual.
- This machine should only be used by properly trained and authorized personnel.
- Do not operate this machine in environments where there are harmful, hazardous, flammable, and/or explosive powders, liquids or vapors.
- Keep sparks, flames and incandescent material, away from the batteries.
- When charging the batteries, perform the operation only in well ventilated areas and away from naked flames.
- Remove all jewelry when working with electrical components.





WARNING!

- Before performing any maintenance/repair, carefully read all the instructions relevant to the maintenance/repair.
- Do not use the machine for purposes other than those listed in the user manual. Only use accessories recommended by the manufacturer.
- Always protect the machine from sun, rain, and other weather conditions, both when on and off, this is to avoid the risk of electrical shock. Store the machine indoors
- Do not use the machine as a means of transport.
- Do not leave the machine unattended without making sure that the machine itself cannot move independently.
- Do not use the machine in particularly dusty environments.
- Do not use the machine on ramps or inclinations greater than 6%.
- Do not knock shelves or scaffolding, especially if there is a danger of falling objects.
- Do not let any object penetrate the openings of the machine. Do not use the machine if the openings are blocked; keep the openings of the machine free of dust, lint, hair and any other foreign body that can reduce air flow.
- Do not remove or alter the plates affixed to the machine by the manufacturer.
- The usage temperature of the machine must be between 0°C and +40 °C.
- The storage temperature of the machine must be between 0°C and +40 °C.
- The humidity must be between 30% and 95%.
- Do not tamper with the protections in place for the machine, for any reason.
- Do not wash the machine with direct jets of water or pressure or with corrosive substances.
- Before working on the electrical components wear ESD gloves to avoid the electrostatic discharge (ESD), which may result in damage to components on the PCB.
- Before using the external battery charger appliance, make sure that the frequency and voltage as indicated on the machine's registration plate match the mains voltage.
- Do not charge the batteries if the power cord or plug are damaged.
- Do not smoke when charging the batteries.
- To reduce the risk of fire, electric shock, or injury, do not leave the machine connected to the mains when unattended. Disconnect the machine from the socket when not being used and before maintenance.
- Keep the power cord away from hot surfaces.
- Take the necessary measures to ensure that hair, jewelry and/or other loose parts cannot be caught by any moving parts of the machine.
- If replacing parts, ask a Dealer or Authorized Retailer for Original Spare Parts (OSP).
- When the machine is used correctly in accordance with the terms of use, the vibrations of the machine will not cause any dangerous situations. The level of the vibrations are well within the legal limits.
- When transferring the machine with temperatures below freezing point, be careful because the water in the tanks or hoses may freeze and seriously damage the machine.
- Only use the brushes supplied with the machine and those specified in User Manual. The use of other brushes can compromise your safety, and might damage the machine.
- When it is necessary to tilt the machine for maintenance, remove the batteries first.
- When the machine reaches the end of the lifecycle, please take care of proper removal and disposal, due to the possible presence inside of toxic and poisonous materials (e.g. Batteries, PCB etc.) These materials are subject to regulations which provide for the disposal at designated appropriate centers in the area.

CHAPTER 3 – MACHINE DESCRIPTION

3.1 TECHNICAL CHARACTERISTICS

DESCRIPTION	VALUES
Voltage	24 V
Washed track	64 cm
Vacuum	5.8 kPa
Solution tank capacity	5L
Recovery tank capacity	5L
Disc brush speed	350 rpm
Number of disc brushes	2
Disc brush pressure	24.6 kg
Maximum floor slope for using the machine	6%
No. of batteries	2
Built-in battery charger	No
Theoretical hourly yield	2300 m ²
Estimated hourly yield	1700 m ²
Autonomy	70 min
Width of machine passage	64 cm
Machine body dimensions, with squeegee and brush (length x height x width)	43x124x69 cm
Machine weight empty (without batteries, with empty tanks)	21 kg
Machine weight heavy (with batteries, with a full tank)	35.3 kg
Disc brush motor	170 W (x2)
Vacuum motor	180 W
Construction standards	CE
Protection class	IP2X
Sound pressure level A in the operating position	76 dB(A)
Sound power level A	74 dB(A)

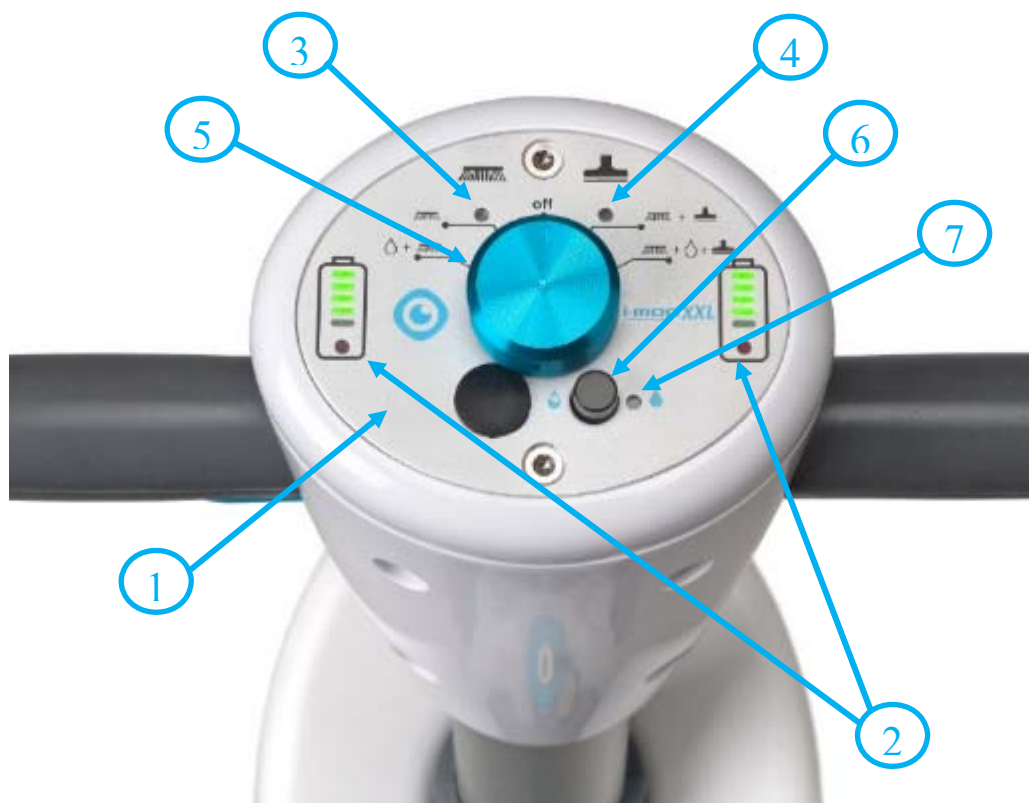


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3.2 DESCRIPTION

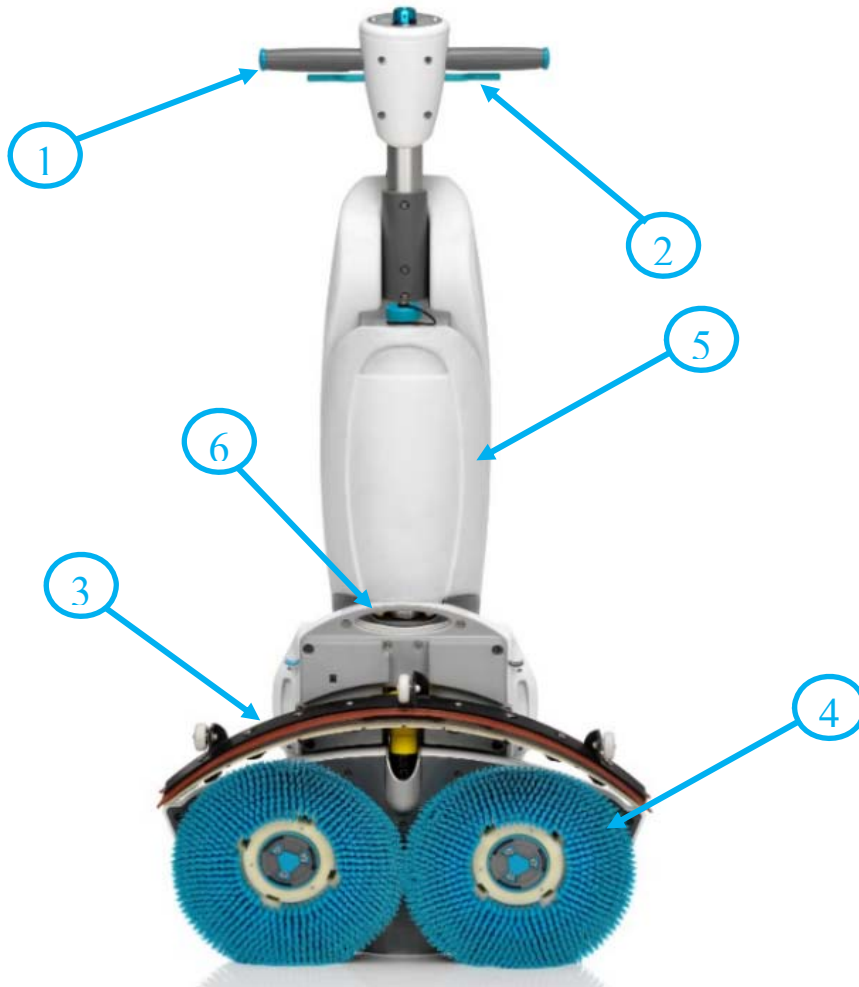
Control panel and controls

1. Aluminum Dashboard
2. Battery charger status in graphic scale
3. Light indication of the brush working
4. Light indication of the vacuum working
5. Select switch
6. Water safe button
7. Light indication of the interval flow rate working



External view

1. Handle
2. Lever
3. Squeegee
4. Brushes
5. Solution tank
6. Transport handle

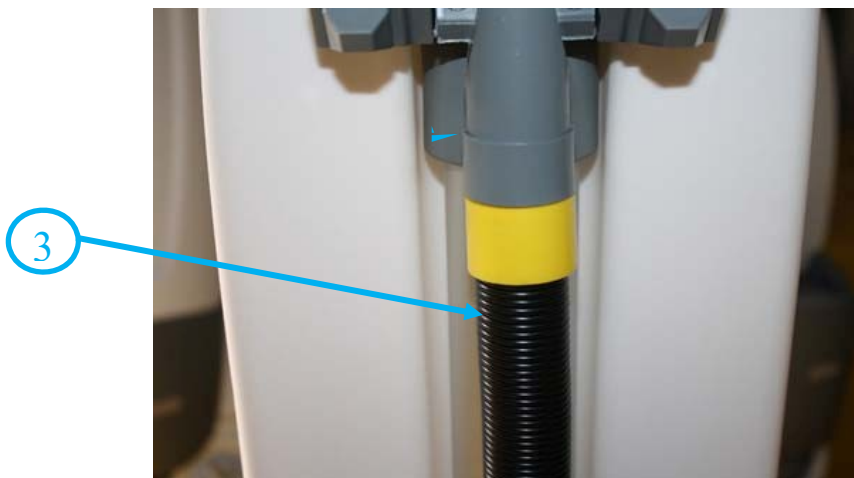


- 7. Recovery tank
- 8. Left battery
- 9. Right battery
- 10. Transport wheels
- 11. Brush motors



Internal view

1. Vacuum motor filter
2. Transparent plastic deflector
3. Vacuum hose



CHAPTER 4 – SCHEDULED MAINTENANCE

The service life of the machine and its maximum safety of operation are guaranteed by careful and regular maintenance.



WARNING!

See the chapter GENERAL INFORMATION AND SAFETY.

The Scheduled Maintenance Plan is detailed as below. The frequency specified may be subject to change depending on particular work conditions, to be defined by the maintenance manager.

The maintenance instructions, listed in the following Scheduled Maintenance Plan, are described in following chapters describing maintenance/replacement procedures.

4.1 SCHEDULED MAINTENANCE PLAN

OPERATION	DAILY OPERATION OR AFTER USING THE MACHINE	MONTHLY OR EVERY 100 HOURS	EVERY SIX MONTHS OR EVERY 400 HOURS
Squeegee cleaning	✓		
Clean disc brush	✓		
Charge batteries	✓		
Check vacuum filter	✓		
Clean transparent plastic deflector	✓		
Clean squeegee wheels		✓	
Check/replace squeegee blades		✓	
Clean filter for the detergent solution (or washing water)		✓	
Clean nozzles		✓	
Check tightening of screws and nuts			✓ (1)(2)

(1): and after the first 8 hours of operation

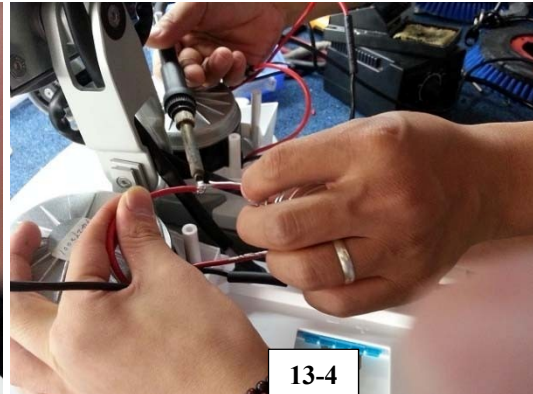
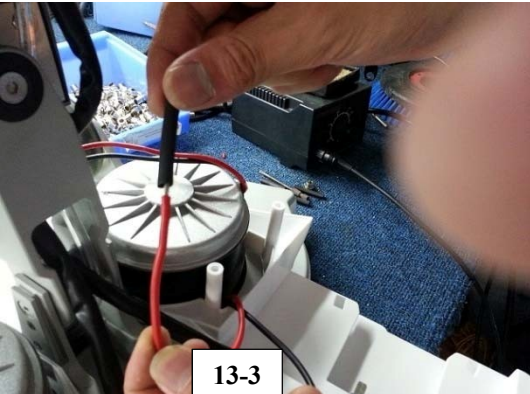
(2): maintenance to be carried out by an US Group Authorized Service Centre

CHAPTER 5 – I-MOP BRUSHMOTOR REPLACEMENT INSTRUCTIONS

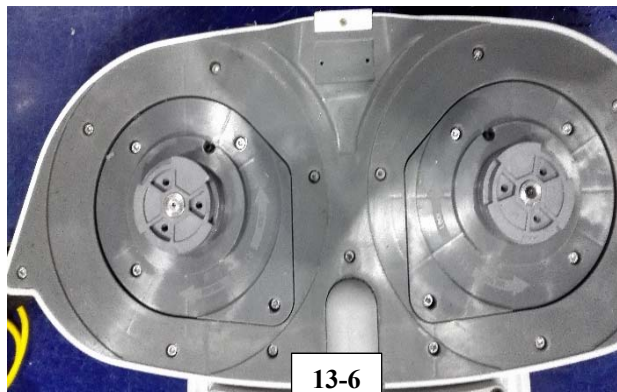
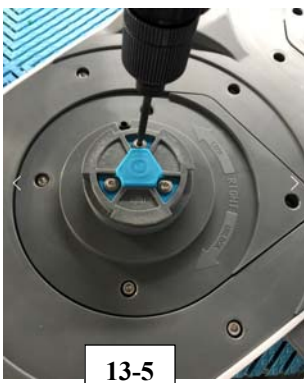
1. Disassemble the two BRUSH MOTOR COOLING COVERS by removing the 4 SCREWS EJOT DELTA PT 50X14, then remove the two BRUSH MOTOR COOLING COVERS



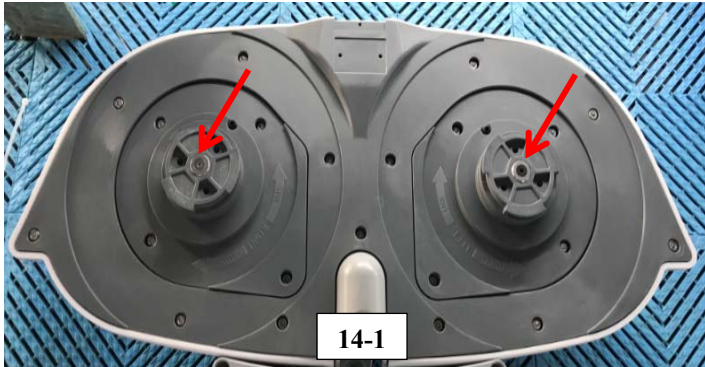
2. Disconnect the cables that are protected with the HEAT SHRINKBALE TUBE and unsolder the cables or cut them



3. Remove the 6pcs SCREW WN 5451 50X14 EJOT DELTA
4. Remove the 2pcs COVER BRUSH MOTOR SCREW



5. Remove 2pcs COUNTER SUNK BOLT M5X18.5 at the center of the motor shaft
6. Remove the 2pcs DRIVING WHEEL BOTTOM



7. Remove the BRUSH UNIT BOTTOM PART by unscrewing 13pc SCREWS SOCKET HEAD CAP M5X10 with attention to the LOCTITE 222
8. Remove the BRUSH UNIT BOTTOM PART



9. Remove the BRUSH MOTOR HELICAL GEARS

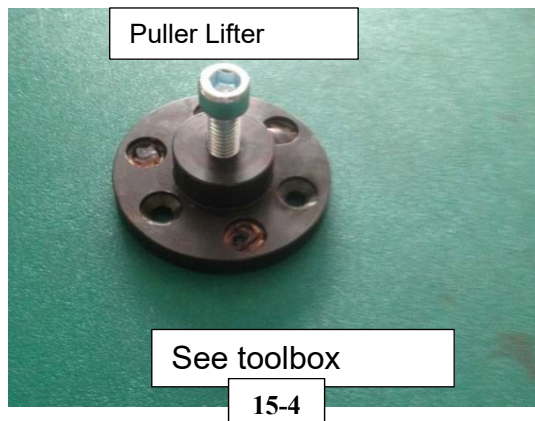


10. Remove the BRUSH MOTOR FIXATION RUBBER and the BRUSH MOTOR SUPPORT RUBBER



11. Remove the DRIVING WHEEL TOP from the shaft of the BRUSH MOTOR HELICAL GEARS if needed with an extractor / pulley lifter

12. Remove the SUPPORT DISC GEARBOX SIDE



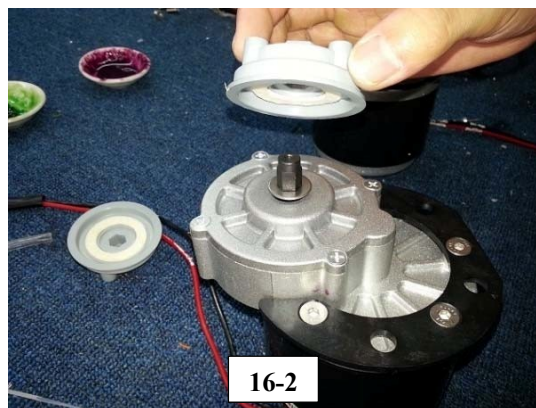
13. Remove the BRUSH MOTOR CONSTRUCTION RING by loosening the 4 SCREWS COUNTER SUNK M6X16



14. Put the BRUSH MOTOR CONSTRUCTION RING on the BRUSH MOTOR HELICAL GEARS and block it with 4 SCREWS COUNTER SUNK M6X16 dipped in LOCTITE 222



15. Put the DRIVING WHEEL TOP on the shaft of the BRUSH MOTOR HELICAL GEARS



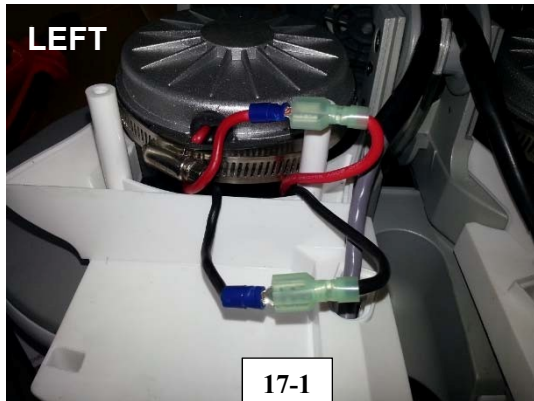
16. Put the BRUSH MOTOR SUPPORT RUBBER in the upper side of the BRUSH MOTOR HELICAL GEARS by pushing it close to the flange

17. Put the BRUSH MOTOR FIXATION RUBBER in the lower side of the BRUSH MOTOR HELICAL GEARS and block it together with the BRUSH MOTOR SUPPORT RUBBER matching the pins and the holes of the two gaskets

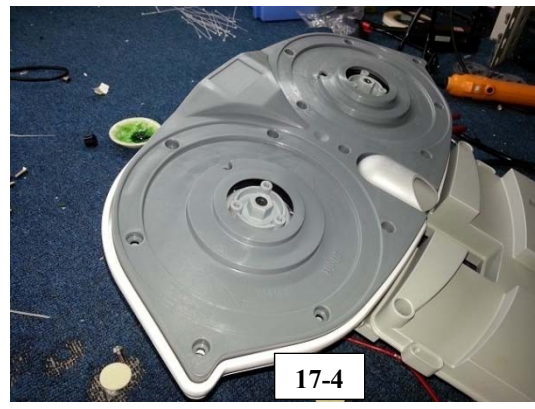


18. Put the 2 BRUSH MOTORS HELICAL GEARS on the BRUSH MOTOR CONSTRUCTION COVER

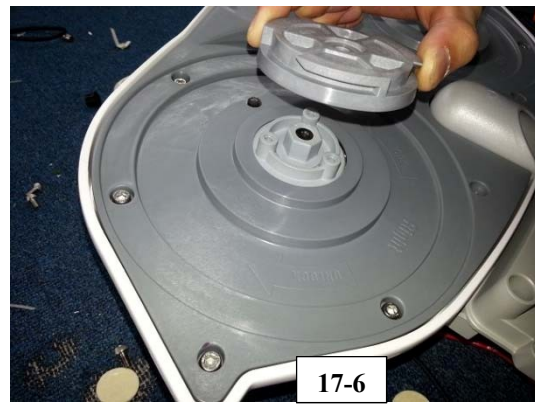
19. The proper connections are as follows: red wire - red wire for the left brush motor and red wire - **black** wire for the right brush motor.



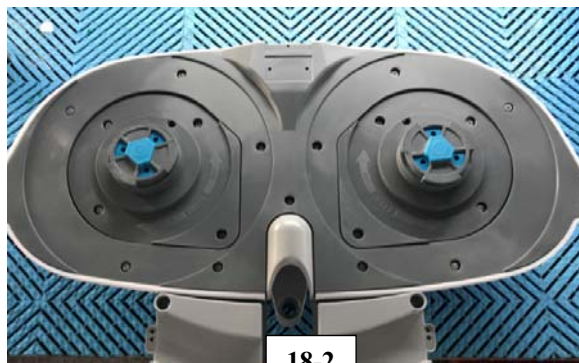
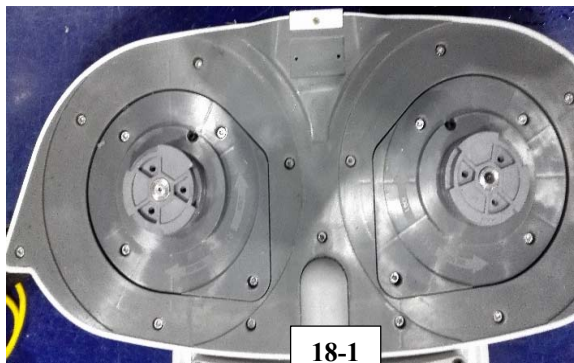
20. Put the BRUSH UNIT PROTECTOR on the BRUSH MOTOR CONSTRUCTION COVER and close everything with the BRUSH UNIT BOTTOM PART



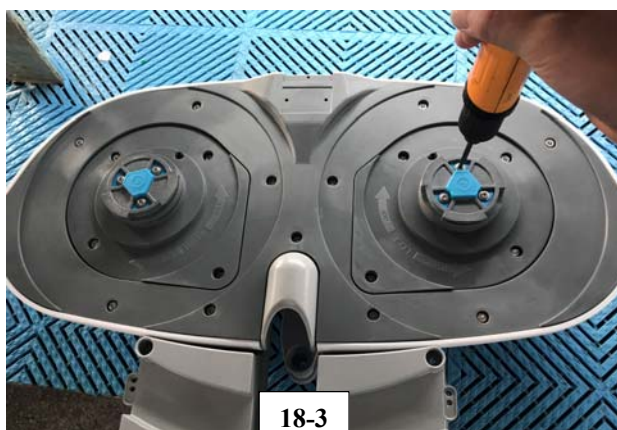
21. Block the BRUSH UNIT BOTTOM PART with the SCREWS SOCKET HEAD CAP M5X10 dipped in the LOCTITE 222
22. Put the DRIVING WHEEL BOTTOM, with attention to the side of mounting, on the DRIVING WHEEL TOP



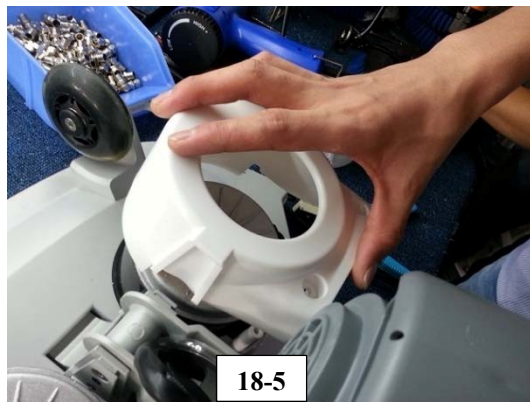
23. Fasten 2pcs COUNTER SUNK BOLT M5X18.5 at the center of the motor shaft
24. Put the two COVER BRUSH MOTOR SCREW




25. Fasten 3pcs EJOT SCREW 50X14 each side to fix the COVER BRUSH MOTOR SCREW

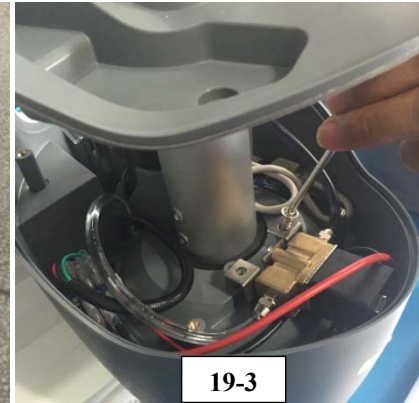
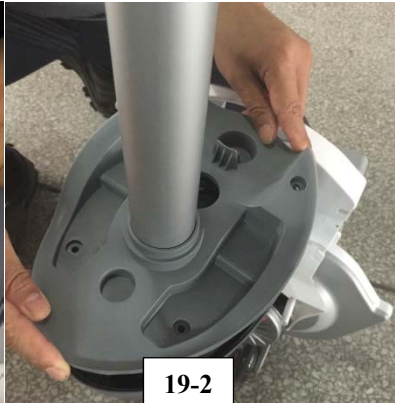
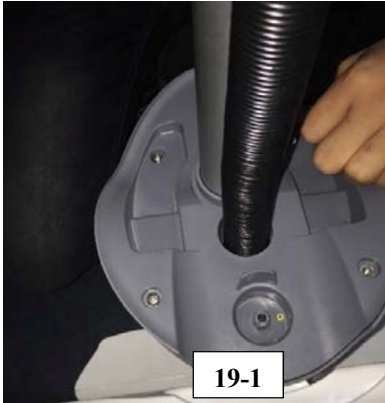


26. Adjust the cables in the correct position and re-assemble the BRUSH MOTOR CONSTRUCTION COVER by fastening 2 SCREWS EJOT on each side

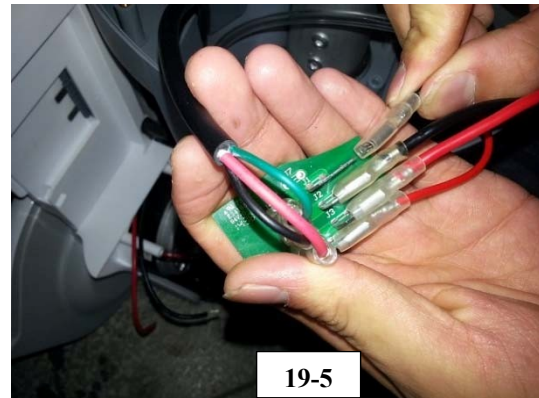
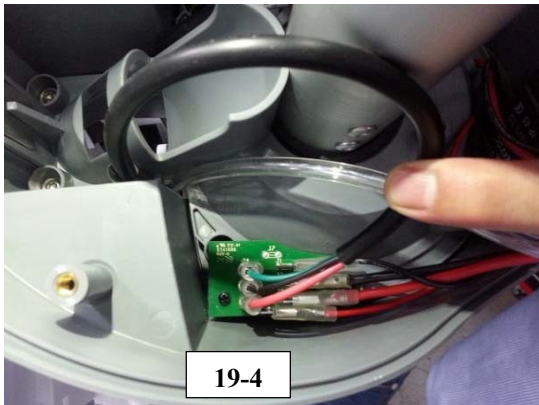


CHAPTER 6 – I-MOP MAGNETIC VALVE REPLACEMENT INSTRUCTIONS

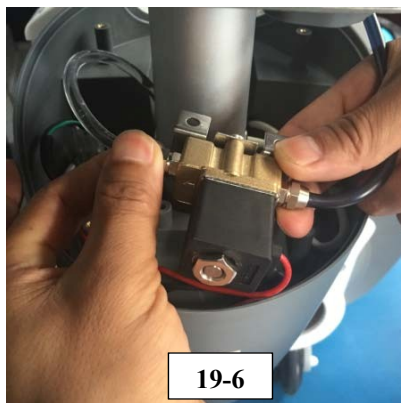
1.  **WARNING!** Wear gloves when you touch electrical components to avoid ESD.
2. Remove the 4 SCREWS M4X12 CROSS HEAD and open the MOTOR UNIT TOP
3. Remove the 2 SCREWS EJOT DELTA PT 50X14 and extract the ASSY MAGNETIC VALVE



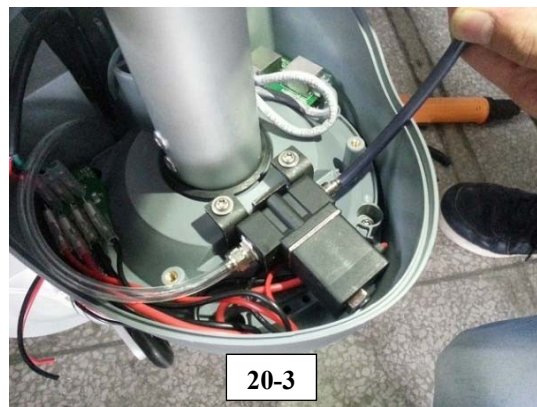
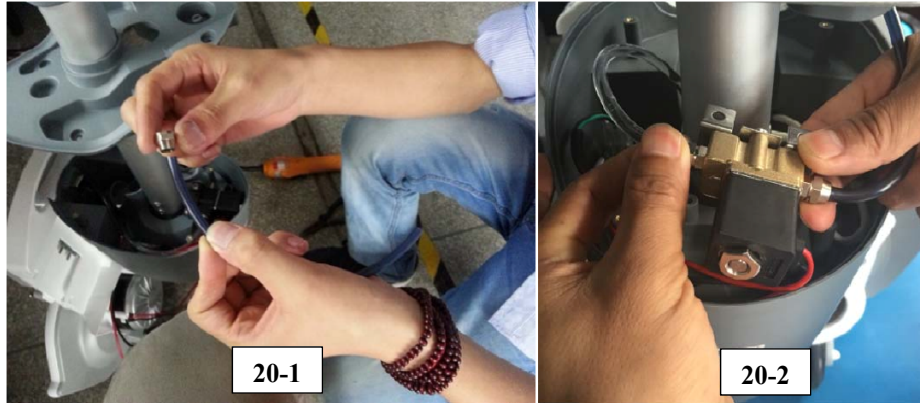
4. Unplug the PCB MAGNETIC VALVE & VAC MOTOR CONNECTION, the cables of the ASSY MAGNETIC VALVE are the external ones. If needed remove the SCREW PARKER 2.9X16



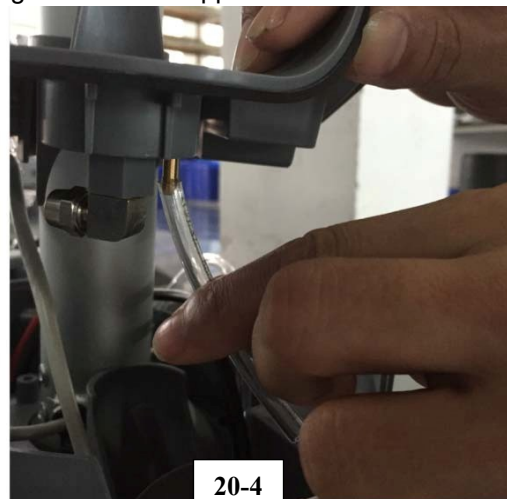
5. Remove the VALVE COUPLINGS and the CHANNELS Ø6 MM from the ASSY MAGNETIC VALVE
6. Replace the ASSY MAGNETIC VALVE



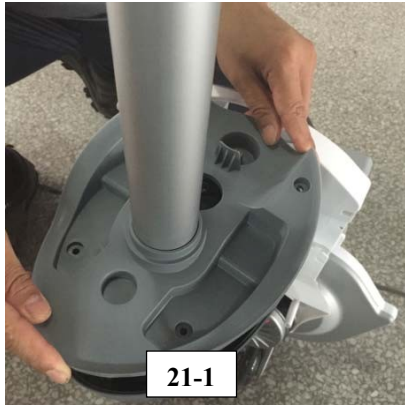
- Put the MAGNETIC VALVE COUPLING on the WATER CHANNEL Ø6 MM, then connect it to the ASSY MAGNETIC VALVE, Block the TRANSPARENT WATER CHANNEL Ø6 MM on the ASSY MAGNETIC VALVE with the MAGNETIC VALVE COUPLING




- Insert the transparent exhausting hose to the copper tube head.



9. Close the MOTOR UNIT COVER with attention to not press the cables or the hoses
10. Screw the MOTOR UNIT TOP on the MOTOR UNIT COVER with 4 SCREWS CROSS HEAD M4X12

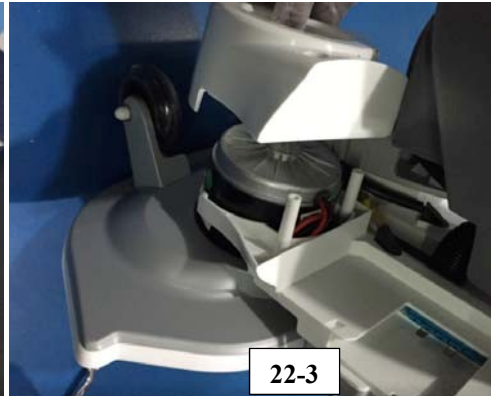
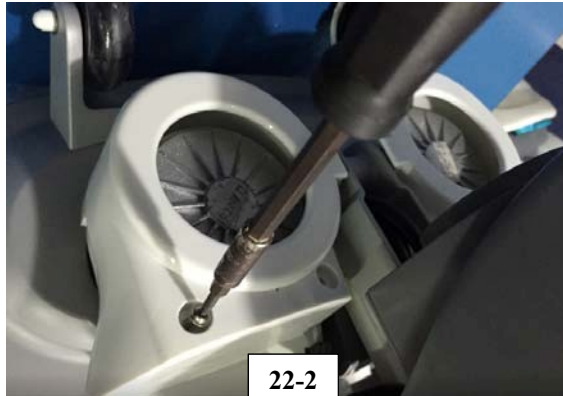


CHAPTER 7 – I-MOP MAINBOARD ASSEMBLY INSTRUCTIONS

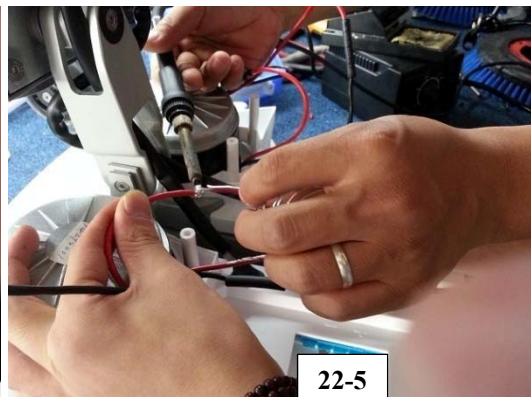
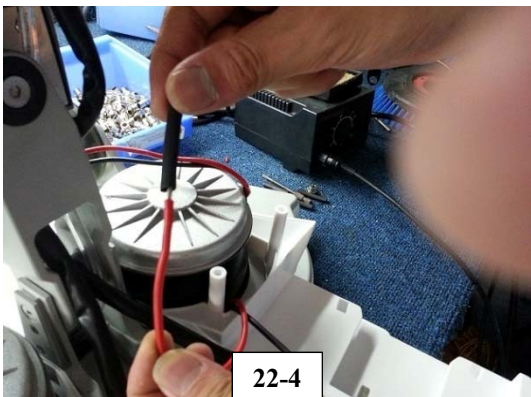
1.  **WARNING!** Wear gloves when you touch electrical components to avoid ESD damage.



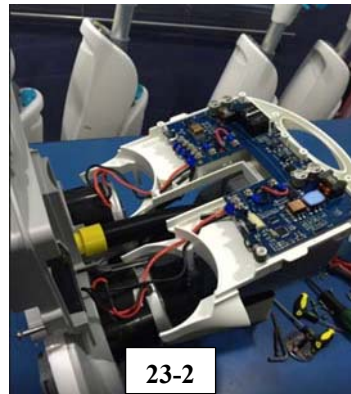
2. Disassemble the two BRUSH MOTOR COOLING COVERS by removing the 4 SCREWS EJOT DELTA PT 50X14, then remove the two BRUSH MOTOR COOLING COVERS



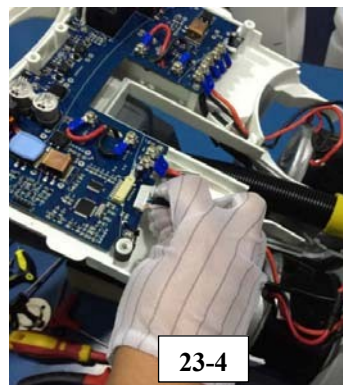
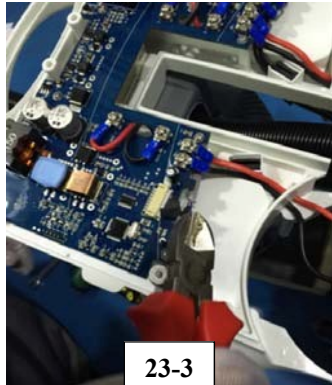
3. Disconnect the cables that are protected with the HEAT SHRINK TUBING and unsolder the cables or cut them



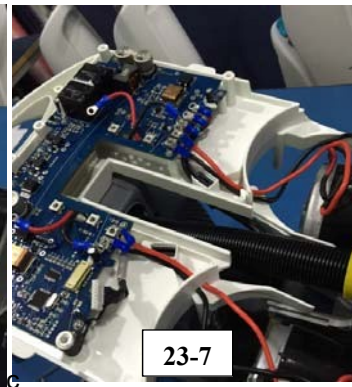
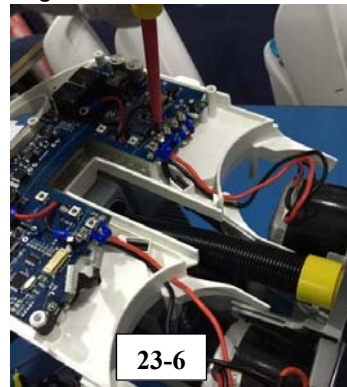
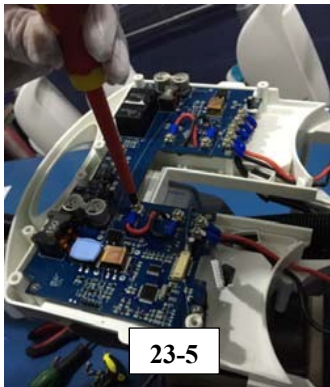
4. Disconnect MAIN LEVER COVER and MAIN LEVER HOUSING by removing 8 screw EJOT DELTA PT 50X14



5. Cut the cable tie fixed to the 8-pin connector of UTP cable and HOT SHRINK TUBING fixed to the grounding wire, then pull out the 8-pin connector from MAIN PCB.



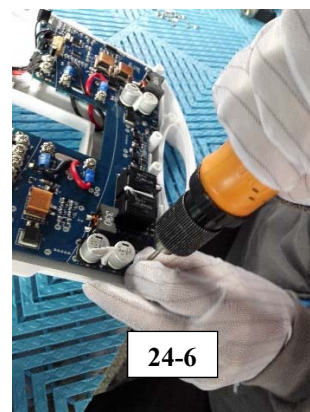
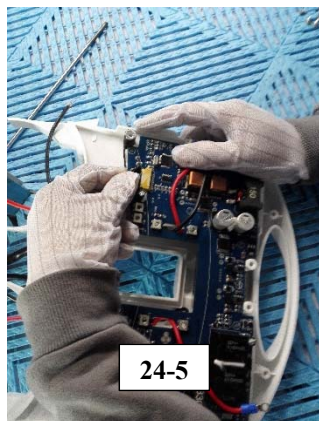
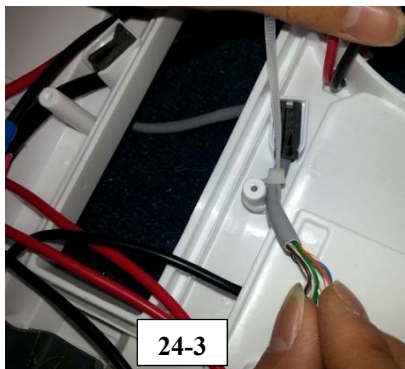
6. Remove the 11 screws of the MAIN PCB which fix the terminal of the wires for the battery, brush motor and main wires to vacuum motor housing.



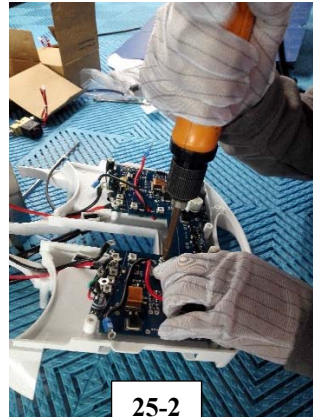
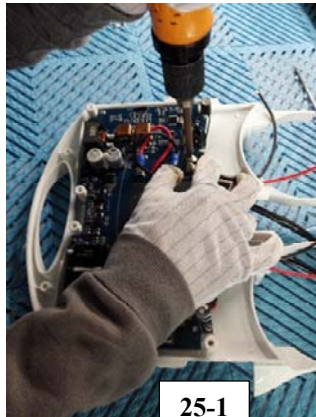
7. Take the MACHINE BATTERY CONTROL PCB ASSY out of the MAIN LEVER COVER by removing 10 SCREWS EJOT DELTA PT 25X10



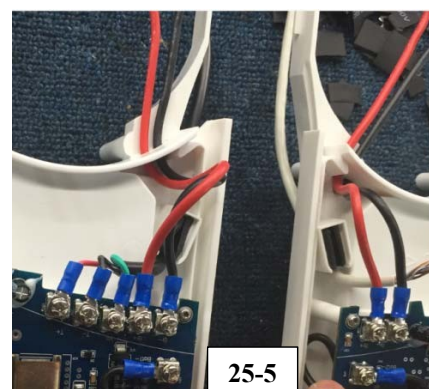
8. Block the POWER CABLE 3 WIRES with a CABLE TIE 3X15 to the MAIN LEVER COVE
9. Put the cables through the MACHINE BATTERY CONTROL PCB ASSY following the scheme of the pictures below
10. Block the MACHINE BATTERY CONTROL PCB ASSY to the MAIN LEVER COVER with 10 SCREWS EJOT DELTA PT 25X10



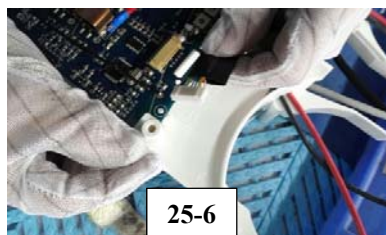
11. Fix the four input cables to the MACHINE BATTERY CONTROL PCB ASSY following the scheme of the pictures below



12. Fix the seven output cables to the MACHINE BATTERY CONTROL PCB ASSY following the scheme of the pictures below

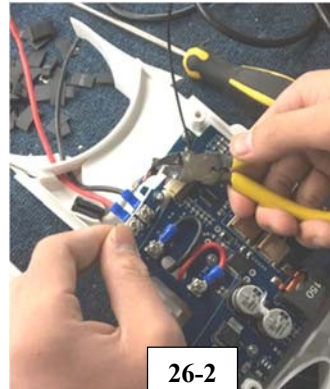


13. Put a small piece of HEAT SHRINK TUBING through the UTP CABLE, then joint the connector to the MACHINE BATTERY CONTROL PCB ASSY, block the UTP CABLE with a CABLE TIE 3X15, remove the residue of tie via diagonal cutting pliers



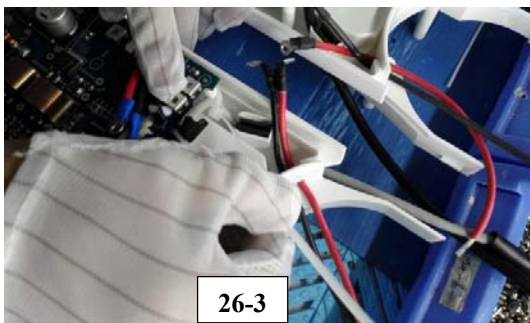


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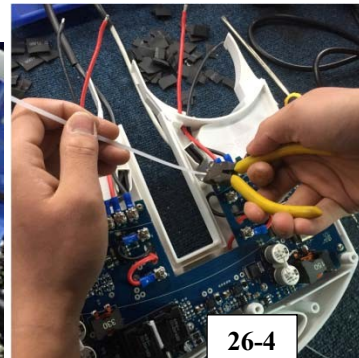


26-2

14. Block the UTP CABLE with a CABLE TIE 3.5X30, , remove the residue of the cable tie with a diagonal cutting pliers.

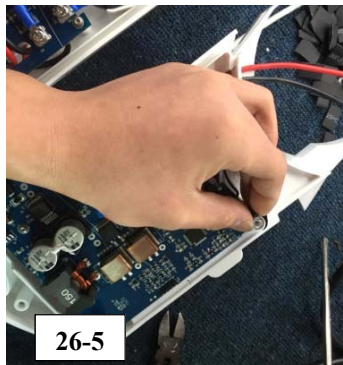


26-3



26-4

15. Put a small piece of HEAT SHRINK TUBING around the ESD CABLE and bend it with an angle of 90°,



26-5



26-6

16. Shrink the HEAT SHRINK TUBING with a hair-dryer/hot air gun
 17. Block the HEAT SHRINK TUBING with a drop of LOCTITE 502

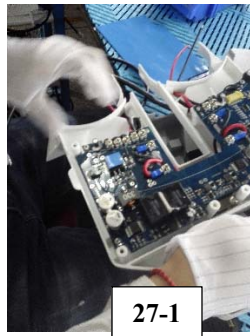


26-7

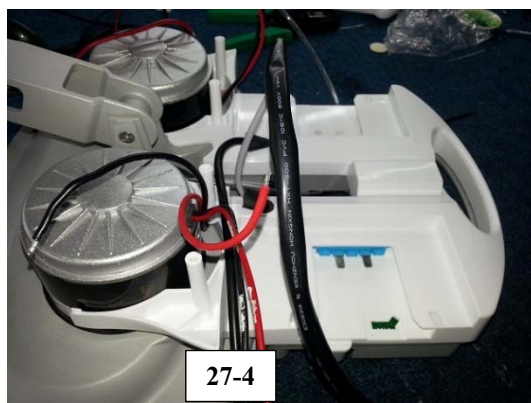
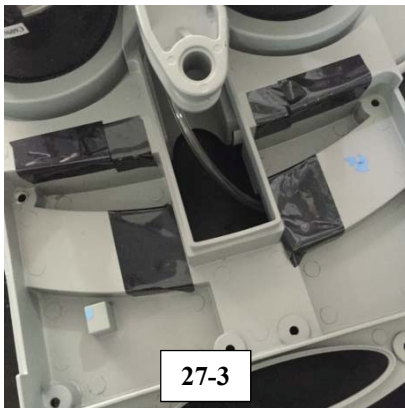


26-8

18. Add the 3pcs Thermal Conductive Pad 14X17X2 MM onto the HEAT SINKS



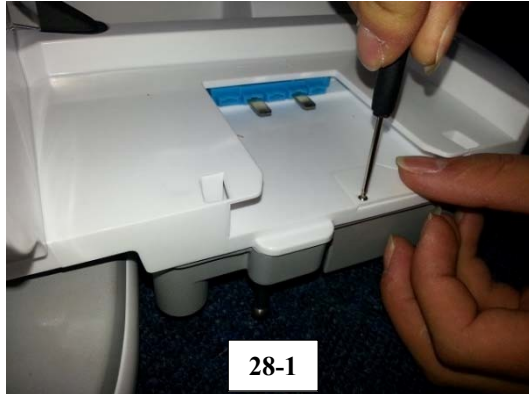
19. Add 4 pieces of insulating tape onto the MAIN LEVER HOUSING
20. Add the whole preassembly on the MAIN LEVER HOUSING centering the BRISH MOTORS HELICAL GEARS on their own seats



21. Turn the MAIN LEVER HOUSING and close the MAIN LEVER UNIT ASSY with the MAIN LEVER COVER, paying attention not to damage the mini USB on the main board while screwing it with 8 screw EJOT DELTA PT 50X14



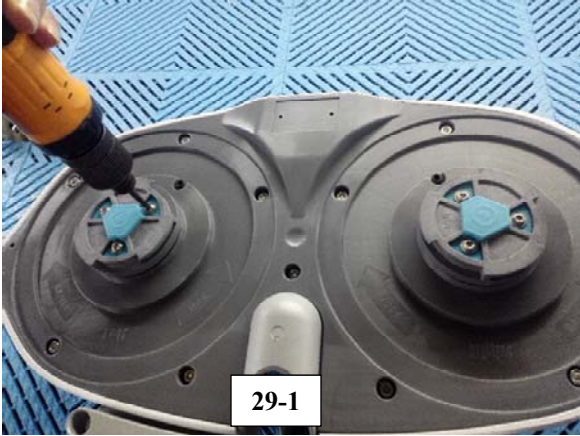
22. Close the opening on the MAIN LEVER COVER with the USB UPDATE SLOT COVER and 1 SCREW COUNTER SUNK M1.7X6



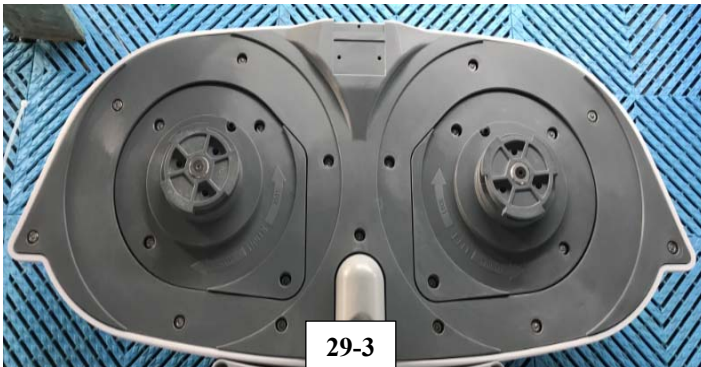
Special screw
driver in Toolbox

CHAPTER 8 – I-MOP MAIN LEVER REPLACEMENT

1. Remove the 6 pcs EJOT SCREW 50X14 which fixed the two COVER BRUSH MOTOR SCREW, then remove the 2pcs COVER BRUSH MOTOR SCREW
2. Remove the 2pcs COUNTER SUNK BOLT M5X18.5 at the center of brush motor shaft



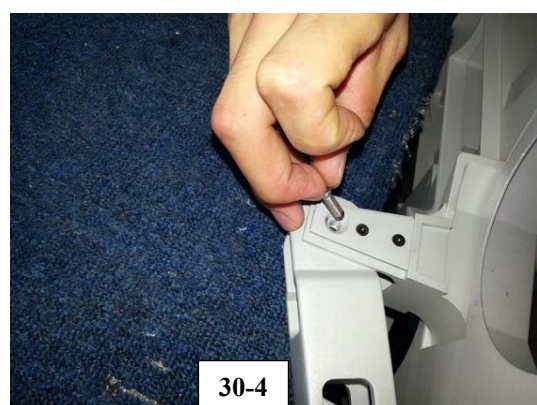
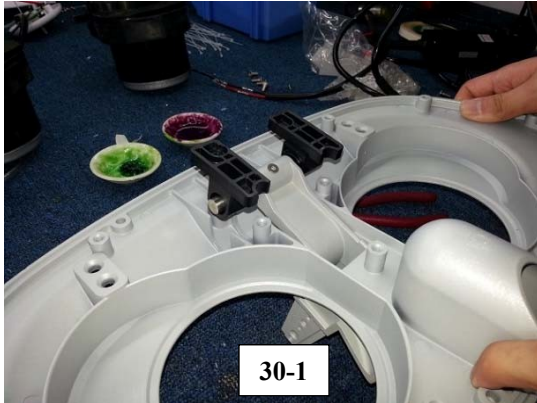
3. Remove the DRIVING WHEEL BOTTOM



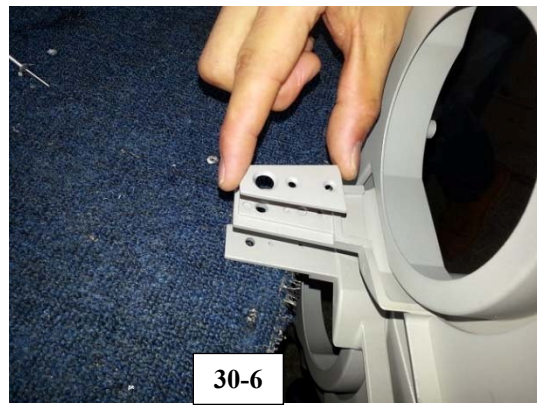
4. Remove the BRUSH UNIT BOTTOM PART by unscrewing the SCREWS SOCKET HEAD CAP M5X10 while paying attention to the LOCTITE 222 that was used.
5. Remove the BRUSH UNIT BOTTOM PART



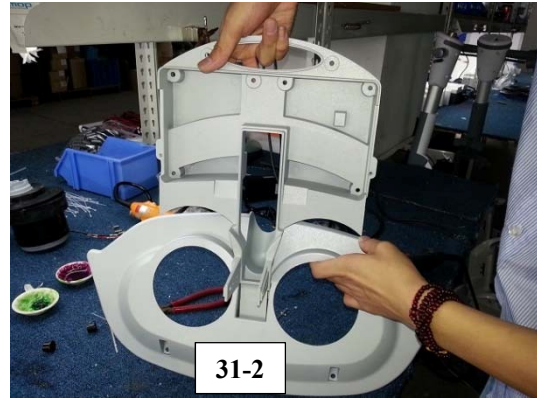
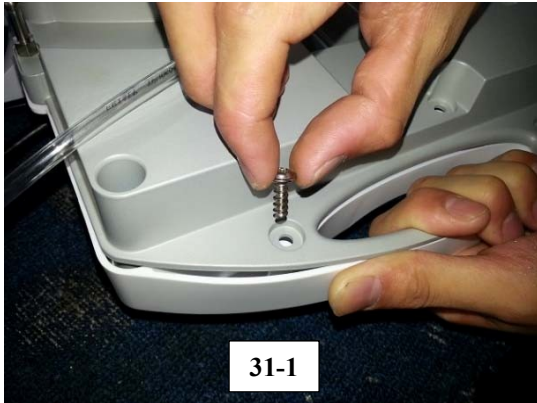
6. Remove the 2 BRUSH UNIT HINGE SUPPORTS from the CHASSIS HINGE
7. Remove the CHASSIS HINGE from the centering hole of the MAIN LEVER HOUSING while unscrewing the SCREW COUNTER SUNK M4X12 previously dipped in the LOCTITE 222
8. Remove from both sides the SCREW COUNTER SUNK M4X12 previously dipped in the LOCTITE 222



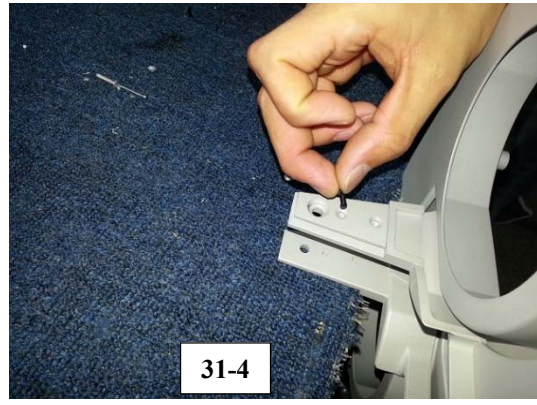
9. Remove the 2 MAIN LEVER SUPPORT PLATES on the side of the MAIN LEVER HOUSING by unscrewing the 2 SCREWS COUNTER SUNK M3X8 previously dipped in the LOCTITE 222.



10. Turn the MAIN LEVER HOUSING and open the MAIN LEVER UNIT ASSY removing the MAIN LEVER COVER unscrewing the 8 SCREWS EJOT DELTA PT 50X14
11. Replace the MAIN LEVER HOUSING



12. Recompose everything putting the 2 MAIN LEVER SUPPORT PLATES on the side of the MAIN LEVER HOUSING and block it with 2 SCREWS COUNTER SUNK M3X8 dipped in the LOCTITE 222



13. Put the CHASSIS HINGE in the centering hole of the MAIN LEVER HOUSING
14. Block the CHASSIS HINGE with 1 SCREW COUNTER SUNK M4X12 dipped in the LOCTITE 222



15. Put the 2 BRUSH UNIT HINGE SUPPORTS from the 2 sides of the MAIN LEVER HOUSING



16. Put the BRUSH UNIT PROTECTOR on the BRUSH MOTOR CONSTRUCTION COVER and close everything with the BRUSH UNIT BOTTOM PART

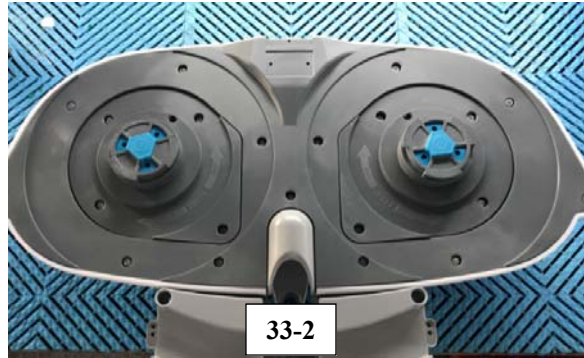


17. Block the BRUSH UNIT BOTTOM PART with the SCREWS SOCKET HEAD CAP M5X10 dipped in the LOCTITE 222

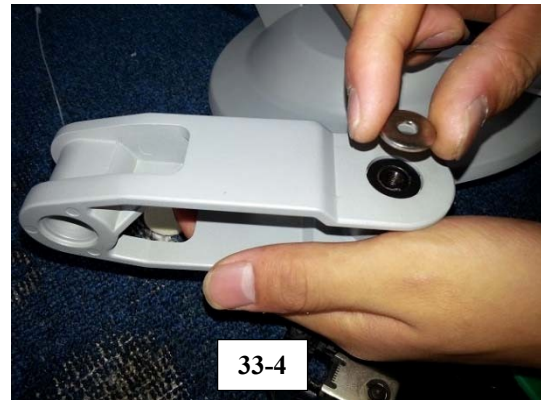
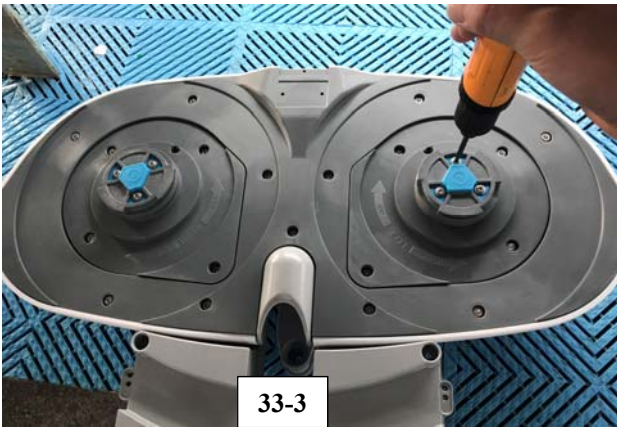
18. Put the DRIVING WHEEL BOTTOM, with attention to the side of mounting, on the DRIVING WHEEL TOP



19. Fasten the 2pcs COUNT SUNK SCREW M5X18.5 to fix the two DRIVING WHEEL TOP
20. Put on 2pcs COVER BRUSH MOTOR SCREW




21. Fasten 3pcs EJOT SCREW 50x14 to fix COVER BRUSH MOTOR SCREW each side
22. Add the WASHER AXIS MAIN LEVER that will be the spacer between the HINGE CARDAN TOP UNIT and the MAIN LEVER HOUSING



23. Put the ASSY HING CARDAN on the MAIN LEVER HOUSING and block it with 2 SCREWS COUNTER SUNK M4X12 dipped in the LOCTITE 222

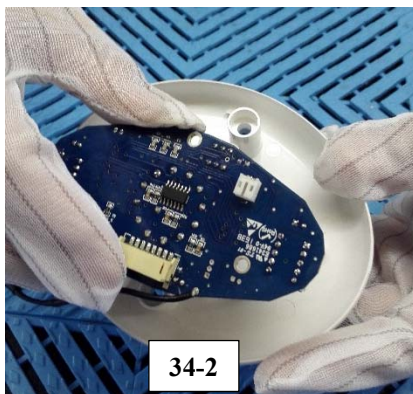


CHAPTER 9 – I-MOP DASHBOARD ASSEMBLY INSTRUCTIONS

17.  **WARNING!** Wear gloves when you touch electrical components in order to avoid ESD damage.



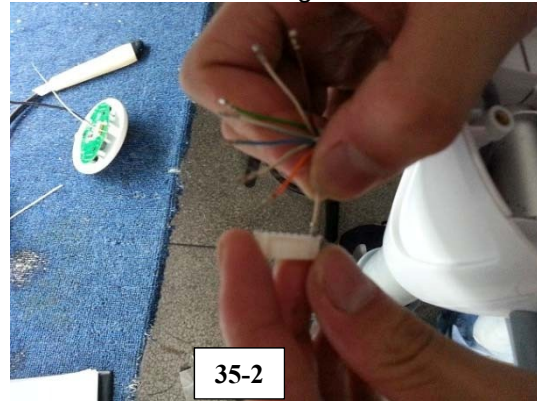
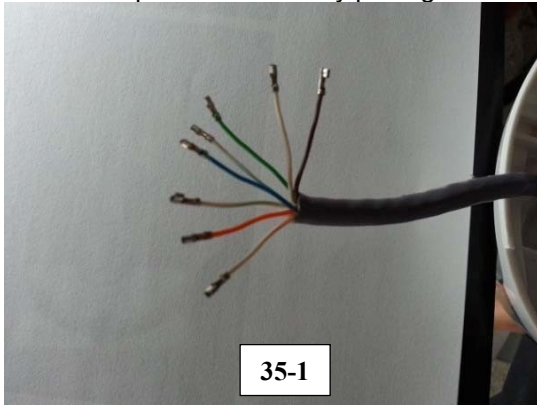
18. Put the PCB CONTROL UNIT on the TOP HOUSING CONTROL UNIT
19. Fix the TOP HOUSING CONTROL UNIT with 1 SCREW PARKER 2.9X16



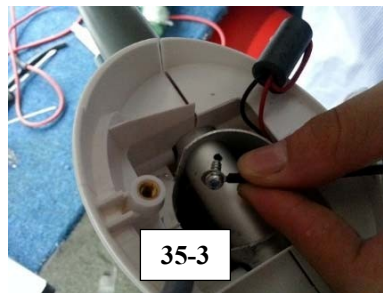
20. Have LOCTITE 401 to fix the rubber to the micro switch, then fix it to the REAR HOUSING CONTROL UNIT



21. Assemble the quick connector by putting the cables in the connector following the scheme below



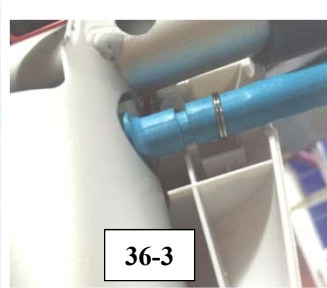
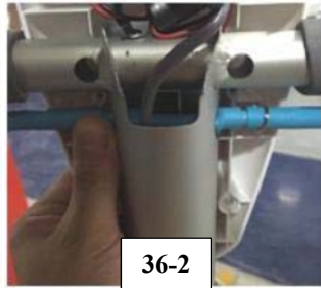
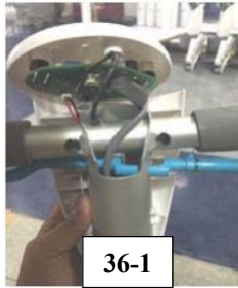
22. Fix the esd wire of top board onto the hole of the INLET TUBE with a SCREW CROSS HEAD M4X12



23. Assemble the spring onto the new POWER SWITCH CONTROL UNIT (in blue)



24. Put the REAR HOUSING CONTROL UNIT onto the tube while inserting the POWER SWITCH CONTROL UNIT (blue) together with the spring in its seat by moving the HANDLE CONTROL UNIT until you find the correct positioning on the POWER SWITCH CONTROL UNIT itself.

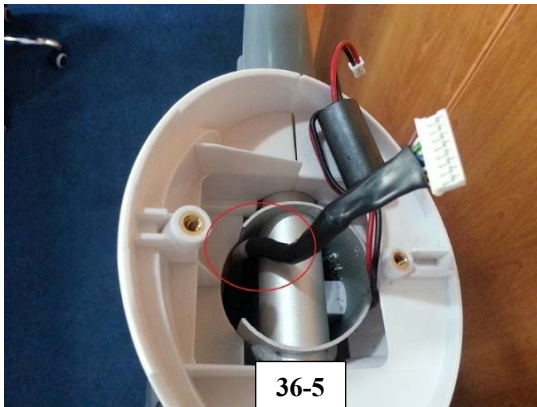


9. Close the INLET TUBE ASSY with the FRONT HOUSING CONTROL UNIT

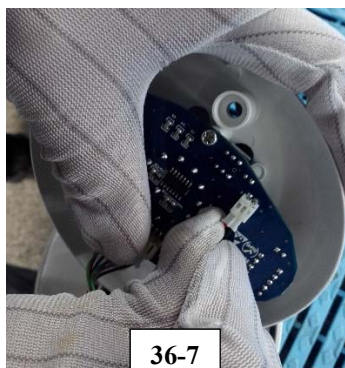


25. Cover the cable with a piece of heat shrink tubing $\text{Ø}8 - \text{Ø}4$ long enough to wrap a portion of the grey sheath that covers the cable.

26. Connect the PCB CONTROL UNIT with the connector that was created.



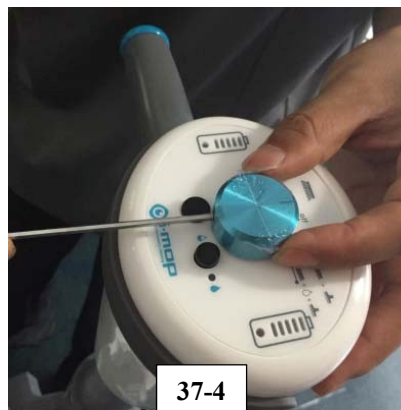
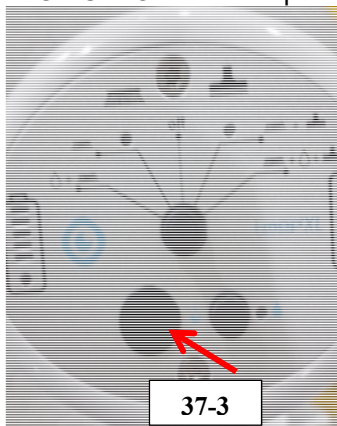
27. Complete the other connections of the PCB CONTROL UNIT



30. Close the HOUSING CONTROL UNIT with the TOP HOUSING CONTROL UNIT and put two sleeves to the two holes
31. Fix the top aluminum dashboard via two screws

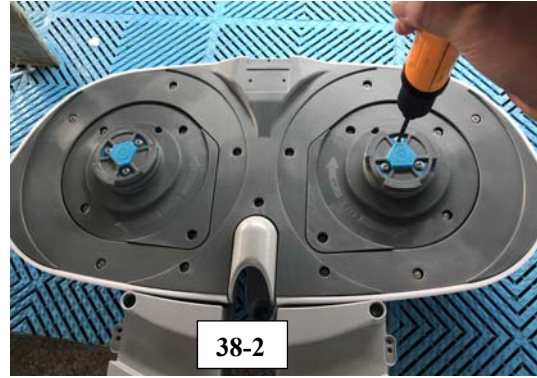
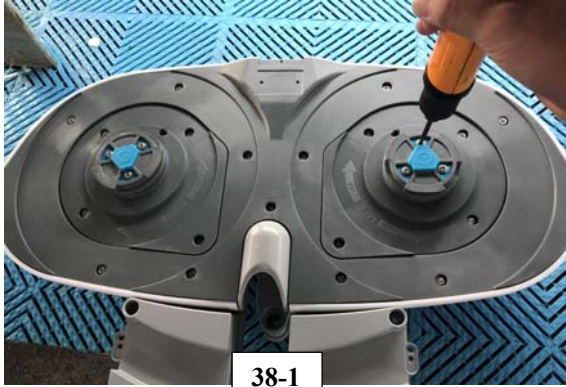


32. Add the Rubber Block for water flow adjustment to the board
33. Put the TURNING BUTTON onto the pin and lock it with 1 SCREW SOCKET HEAD M3X8

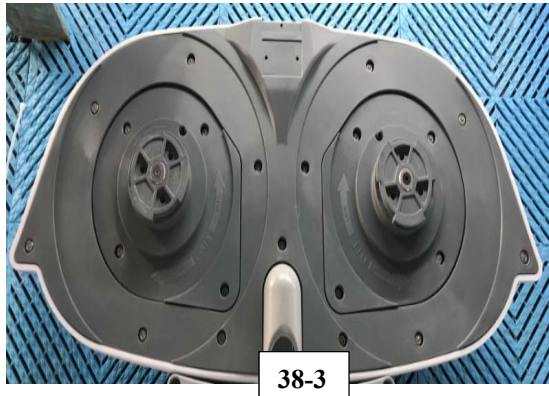


CHAPTER 10 – I-MOP TUBES REPLACEMENT INSTRUCTIONS

1. Brush tube replacement – WATER CHANNEL Ø4 MM
 - 1.1. Remove the 6pcs EJOT SCREW 50 X14
 - 1.2. Remove the 2pcs COVER BRUSH MOTOR SCREW



- 1.3. Remove the COUNTER SUNK BOLT M5X18.5
 - 1.4. Remove the DRIVING WHEEL BOTTOM



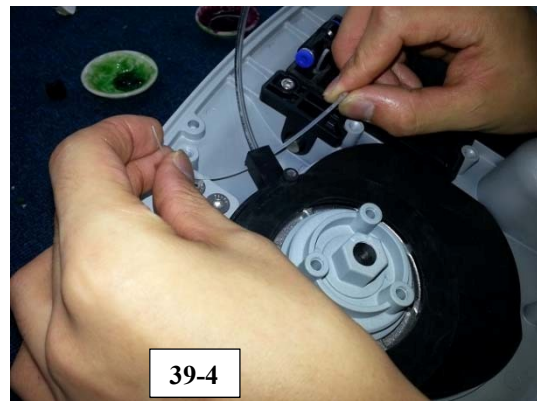
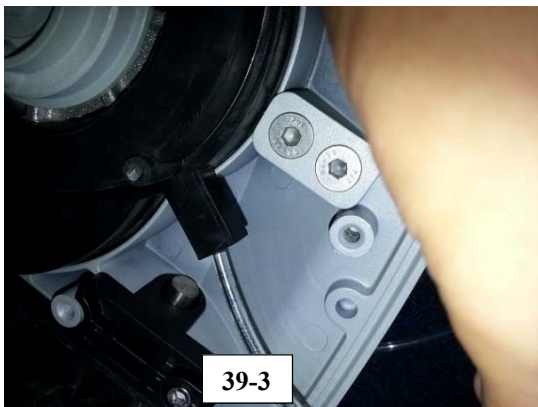
- 1.5. Remove the BRUSH UNIT BOTTOM PART by unscrewing the SCREWS SOCKET HEAD CAP M5X10 doing attention to the LOCTITE 222
 - 1.6. Remove the BRUSH UNIT BOTTOM PART



- 1.7. Remove the WATER CHANNEL Ø4 MM from the WATER COUPLING BRUSH MOTOR and from the BRUSH MOTOR SUPPORT RUBBER after having cut the CABLE TIE 3.X15
- 1.8. Replace the WATER CHANNEL Ø4 MM



- 1.9. Re-assemble the group putting the WATER CHANNEL Ø 4 MM in the BRUSH MOTOR SUPPORT RUBBER and block it with a CABLE TIE 3X15
- 1.10. Put the WATER CHANNEL Ø 4 MM in the WATER COUPLING BRUSH MOTOR



1.11. Put the BRUSH UNIT PROTECTOR onto the BRUSH MOTOR CONSTRUCTION COVER and close everything with the BRUSH UNIT BOTTOM PART



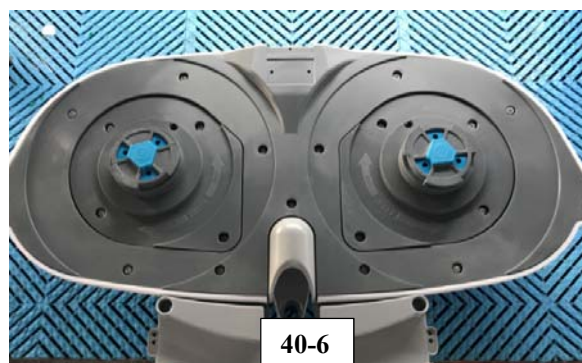
1.12. Block the BRUSH UNIT BOTTOM PART with the SCREWS SOCKET HEAD CAP M5X10 dipped in the LOCTITE 222

1.13. Put the DRIVING WHEEL BOTTOM, with attention to the side of mounting, on the DRIVING WHEEL TOP

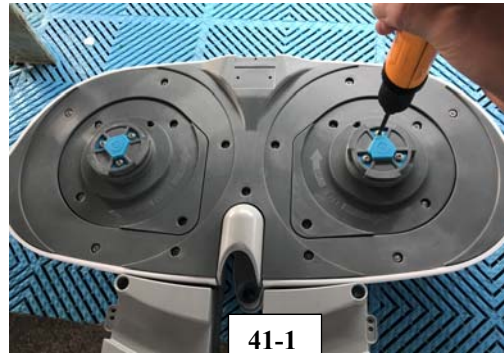


1.14. Fasten 2pcs COUNTER SUNK M5X18.5 to fix 2pcs DRIVING WHEEL BOTTOM

1.15. Add 2pcs COVER BRUSH MOTOR SCREW



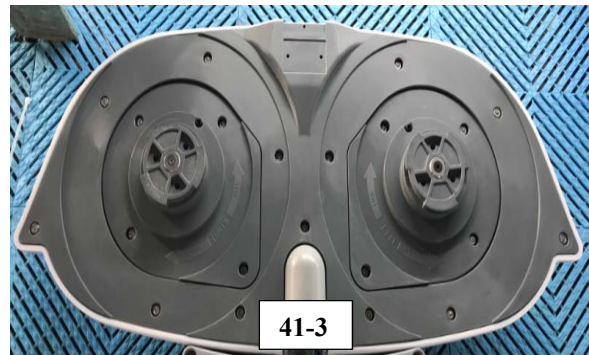
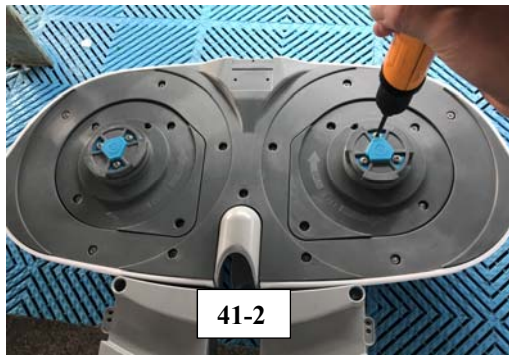
1.16. Fasten 3pcs EJOT SCREW 50X14 each side to fix 2pcs COVER BRUSH MOTOR



2. Main tube replacement – TRANSPARENT WATER CHANNEL Ø6 MM

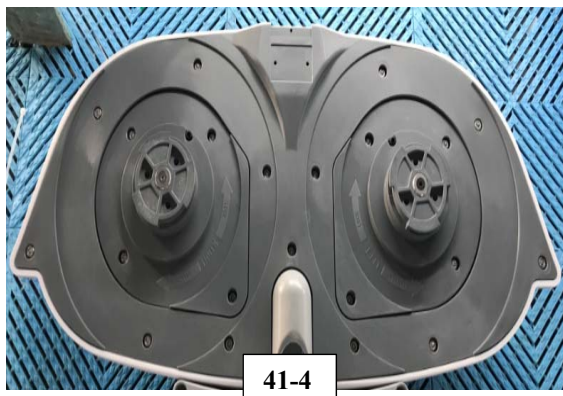
2.1. Remove the 6pcs EJOT SCREW 50 X14

2.2. Remove the 2pcs COVER BRUSH MOTOR SCREW



2.3. Remove the COUNTER SUNK BOLT M5X18.5

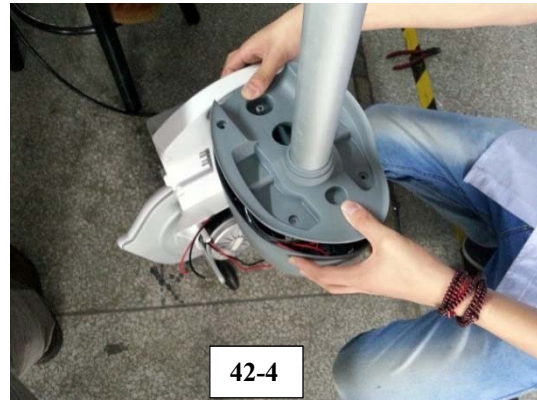
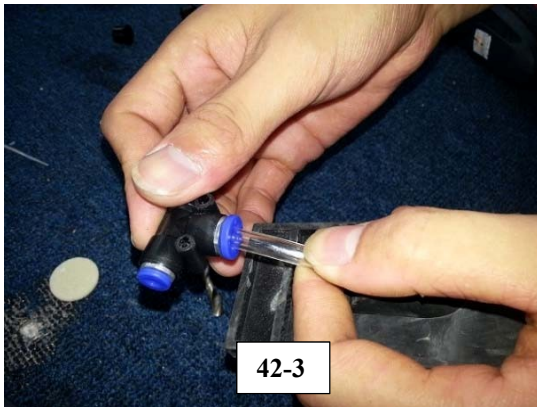
2.4. Remove the DRIVING WHEEL BOTTOM



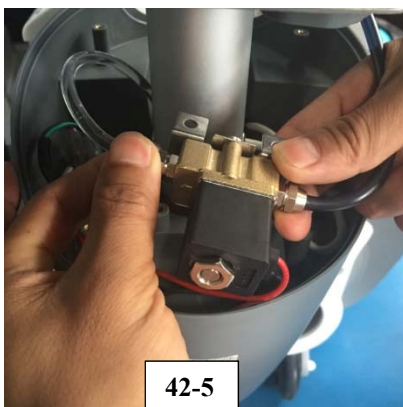
- 2.5. Remove the BRUSH UNIT BOTTOM PART by unscrewing the SCREWS SOCKET HEAD CAP M5X10 doing attention to the LOCTITE 222
- 2.6. Remove the BRUSH UNIT BOTTOM PART



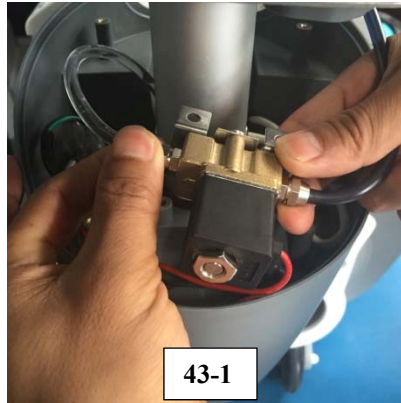
- 2.7. Remove the WATER CHANNEL Ø6 MM from the WATER COUPLING BRUSH MOTOR
- 2.8. Remove the 4 SCREWS COUNTER SUNK M6X12 and open the MOTOR UNIT TOP



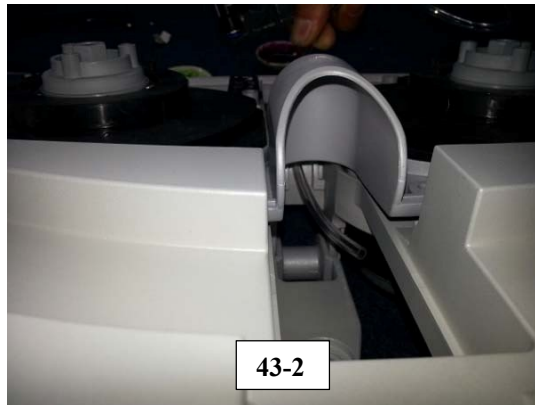
- 2.9. Remove the MAGNETIC VALVE COUPLINGS from the ASSY MAGNETIC VALVE and remove the WATER CHANNELS Ø6 MM from the ASSY MAGNETIC VALVE
- 2.10. Pull the WATER CHANNEL Ø6 MM and extract it completely
- 2.11. Replace the WATER CHANNEL Ø6 MM



- 2.12. Put the TRANSPARENT WATER CHANNEL Ø6 MM on the ASSY MAGNETIC VALVE
- 2.13. Lock the TRANSPARENT WATER CHANNEL Ø6 MM on the ASSY MAGNETIC VALVE with the MAGNETIC VALVE COUPLING



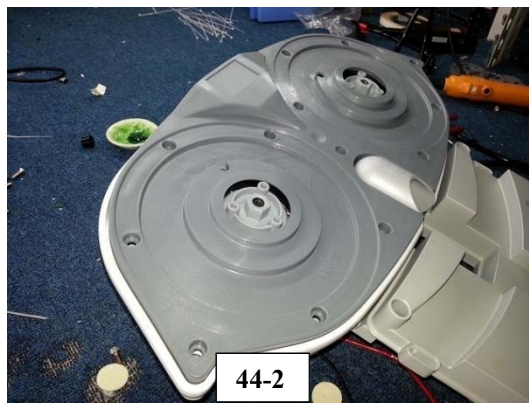
- 2.14. Put the WATER CHANNEL Ø6 MM through the MOTOR UNIT TOP until it comes out on the other side



- 2.15. Put the WATER CHANNEL Ø6 MM in the CONSTRUCTION COVER SEAL
- 2.16. Put the WATER CHANNEL Ø6 MM in the WATER COUPLING BRUSH MOTOR



2.17. Close everything with the BRUSH UNIT BOTTOM PART



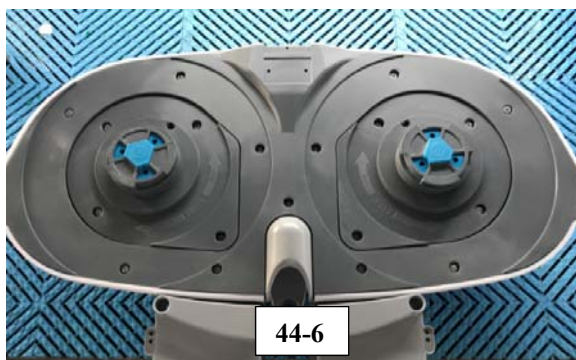
2.18. Lock the BRUSH UNIT BOTTOM PART with the SCREWS SOCKET HEAD CAP M5X10 dipped in the LOCTITE 222

2.19. Put the DRIVING WHEEL BOTTOM, with attention to the side of mounting, on the DRIVING WHEEL TOP

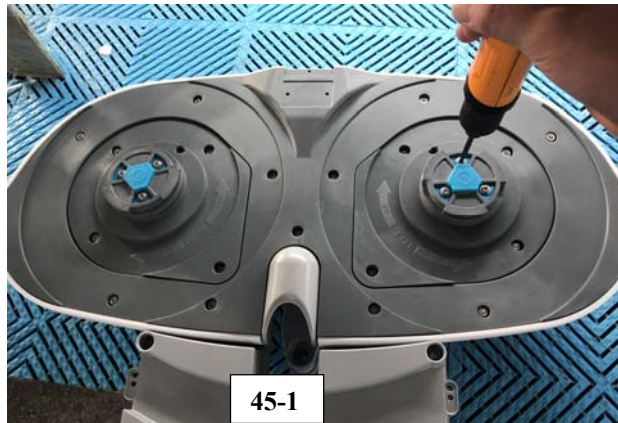


2.20. Fasten 2pcs COUNTER SUNK M5X18.5 to fix 2pcs DRIVING WHEEL BOTTOM

2.21. Add 2pcs COVER BRUSH MOTOR SCREW



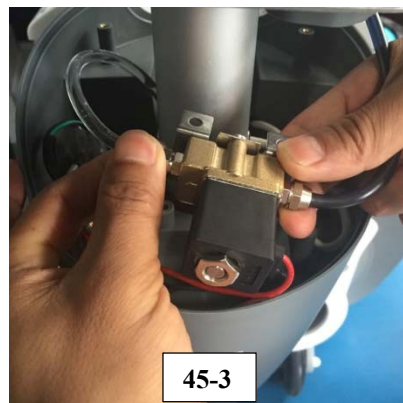
2.22. . Fasten 3pcs EJOT SCREW 50X14 each side to fix 2pcs COVER BRUSH MOTOR



3. Internal tube replacement – WATER CHANNEL Ø6 MM

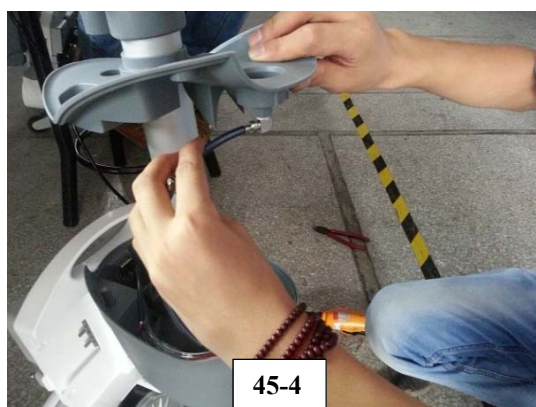
3.1. Remove the 4 SCREWS COUNTER SUNK M6X12 and open the MOTOR UNIT TOP

3.2. Remove the MAGNETIC VALVE COUPLING from the MAGNETIC VALVE ASSY and remove the WATER CHANNELS Ø6 MM from the MAGNETIC VALVE ASSY

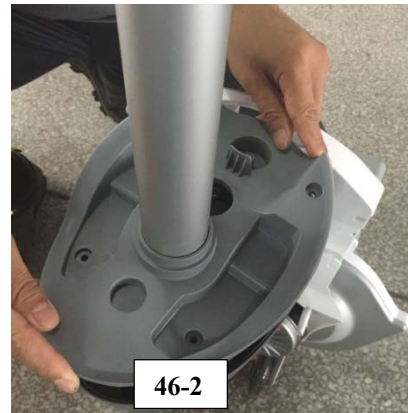
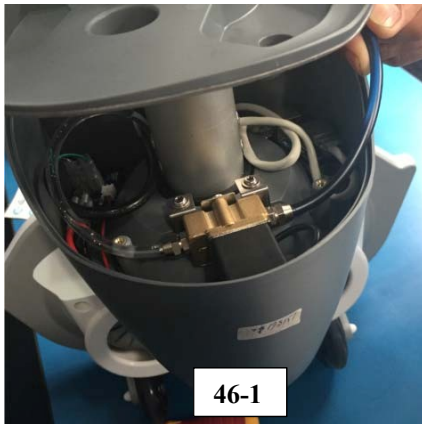


3.3. Remove the MAGNETIC VALVE COUPLING from the ANGLE METAL CONNECTOR and remove the WATER CHANNEL Ø6 MM from the ANGLE METAL CONNECTOR

3.4. Replace the WATER CHANNEL Ø6 MM




- 3.5. Put the WATER CHANNEL Ø6 MM on the ASSY MAGNETIC VALVE and on the ANGLE METAL CONNECTOR and block it with the MAGNETIC VALVE COUPLINGS
- 3.6. Close the MOTOR UNIT COVER with attention not pressing the cables or the hoses in between.

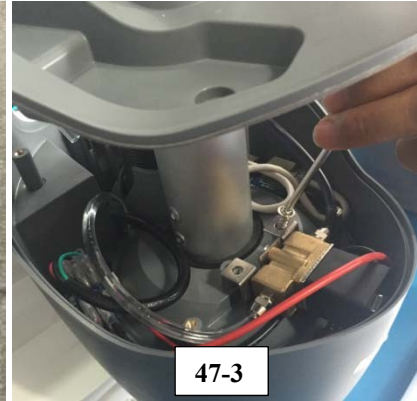
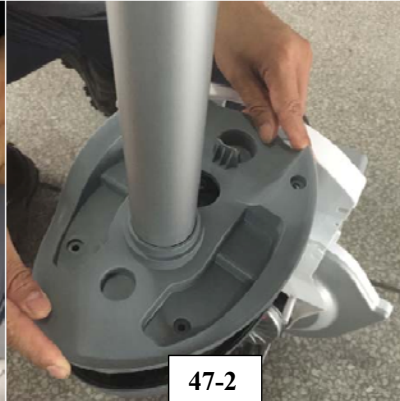
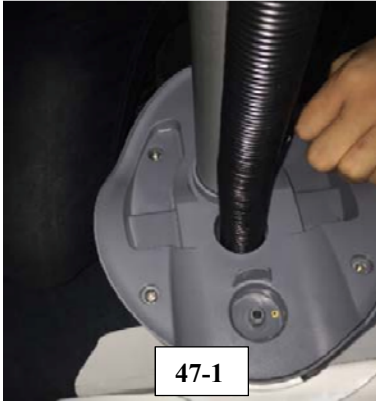


- 3.7. Screw the MOTOR UNIT TOP on the MOTOR UNIT COVER with 4 SCREWS CROSS HEAD M4X12

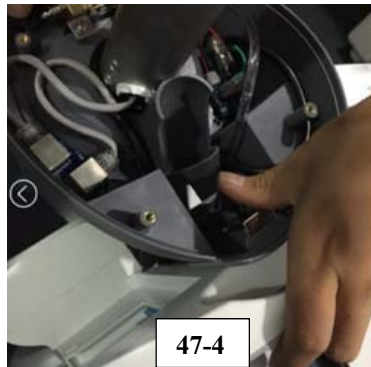


CHAPTER 11 – I-MOP VACUUM MOTOR REPLACEMENT

1.  **WARNING!** Wear gloves when you touch electrical components to avoid ESD damage.
2. Remove the 4 SCREWS M4X12 CROSS HEAD and open the MOTOR UNIT TOP
3. Remove the 2 SCREWS EJOT DELTA PT 50X14 and extract the ASSY MAGNETIC VALVE



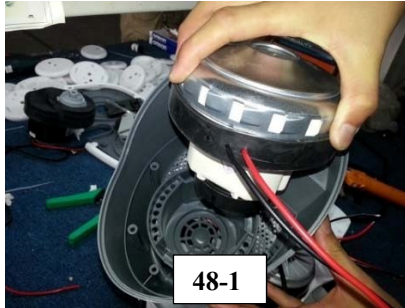
4. Remove the MAGNET TOP UNIT 40X20X10MM, the put a steel tool such as wrench there to hold the vacuum unit to the brush unit



5. Unscrew the 8 SCREWS EJOT DELTA PT 50X14
6. Open the MOTOR UNIT COVER extracting the POWER CABLES 2 WIRES



7. Extract the VACUUM MOTOR GROUP
8. Unplug the DOMEL VACUUM CLEANER MOTOR of the POWER CABLES 3 WIRES with attention to not extract the POWER CABLES 2 WIRES from the VACUUM MOTOR SEALING SUPPORT
9. Replace the DOMEL VACUUM CLEANER MOTOR



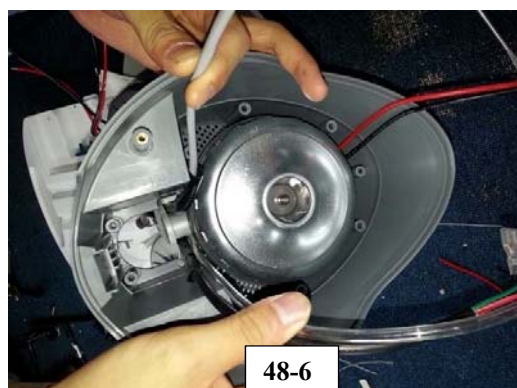
10. Put the other side of the cables through the VACUUM MOTOR SEALING SUPPORT



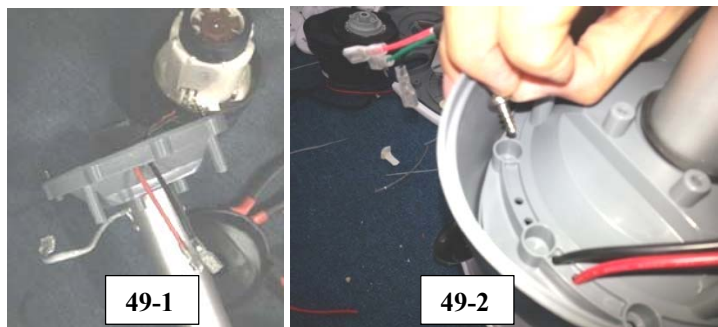
11. Put the VACUUM MOTOR SEALING SUPPORT on the DOMEL VACUUM CLEANER MOTOR
12. Fit the whole VACUUM MOTOR GROUP in the MOTOR UNIT COVER



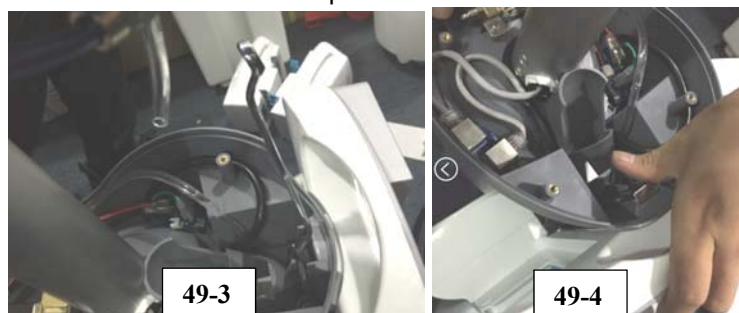
13. Fit the VACUUM MOTOR GROUP in the MOTOR COVER UNIT with attention to have the UTP CABLE in the correct position together with the WATER CHANNEL Ø6 MM and the POWER CABLE 2 WIRES



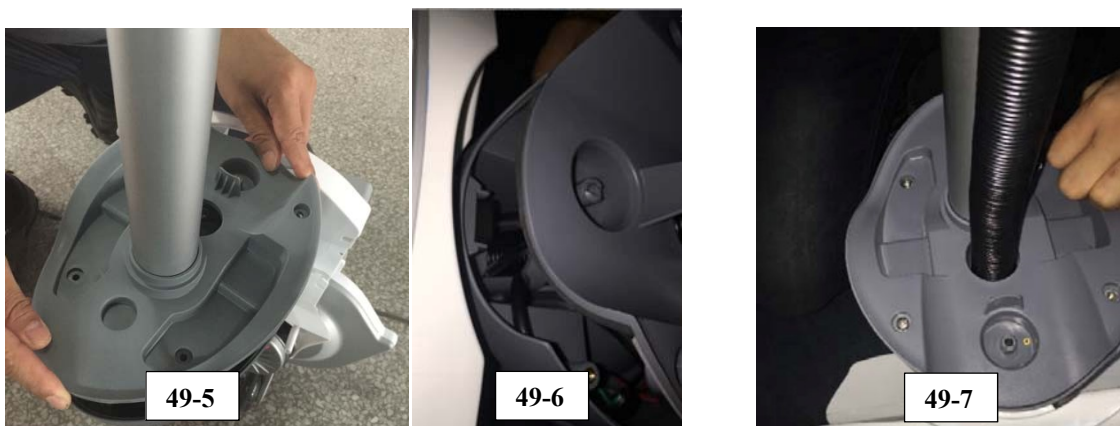
14. Put the POWER CABLES 2 WIRES in the MOTOR UNIT COVER
15. Close the group with 8 SCREWS EJOT DELTA PT 50X14



16. Take away the steel tool such as a wrench then put the MAGNET TOP UNIT 40X20X10MM there



17. Close the MOTOR UNIT COVER with attention not to press the cables or the hoses in between
18. Screw the MOTOR UNIT TOP on the MOTOR UNIT COVER with 4 SCREWS CROSS HEAD M4X12



CHAPTER 12 – I-MOP WHEEL AND WHEEL SUPPORT REPLACEMENT

1. Wheel replacement

- 1.1. Put the SHAFT TRANSPORT CASTOR (72.0027.1) on the work table , then put the TRANSPORT CASTOR (72.0029.2/797)



50-1

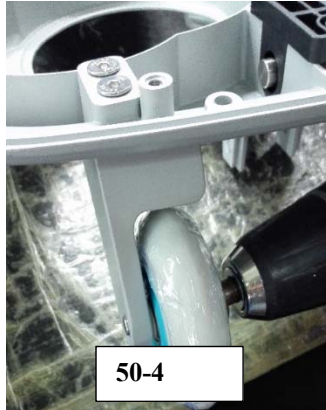


50-2

- 1.2. then locate the TRANSPORT WHEEL PILLA (left or right), . Add NUT M5 NYLON/M5 (04.0048.0) on it, then use wrench to fix them together tightly



50-3



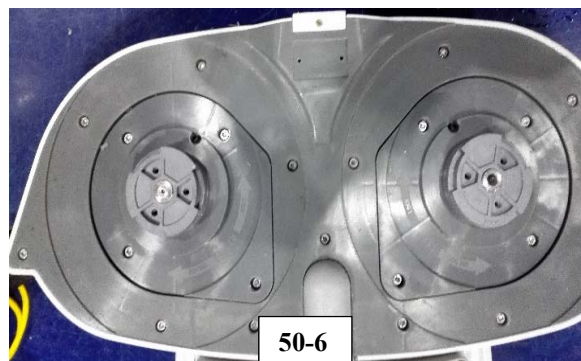
50-4

2. Wheel support replacement

- 2.1. Remove the 6pcs EJOT SCREW 50X14
2.2. Remove the 2pcs COVER BRUSH MOTOR SCREW



50-5



50-6

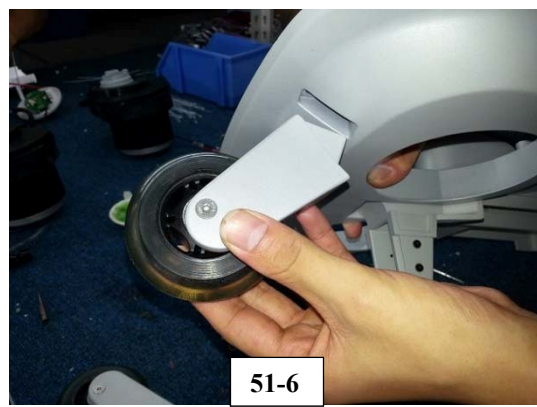
- 2.3. Remove 2pcs COUNT SUNK SCREW M5X18.5 at the center of brush motors
- 2.4. Remove the DRIVING WHEEL BOTTOM



- 2.5. Remove the BRUSH UNIT BOTTOM PART by unscrewing the SCREWS SOCKET HEAD CAP M5X10 with attention to the LOCTITE 222
- 2.6. Remove the BRUSH UNIT BOTTOM PART



- 2.7. Remove the TRANSPORT WHEEL PILLAR from his own seat on the BRUSH MOTOR CONSTRUCTION COVER by unscrewing the 2 SCREWS COUNTER SUNK M6X16 with attention that they have been dipped in the LOCTITE 222
- 2.8. Replace the TRANSPORT WHEEL PILLAR and put the 2 SCREWS COUNTER SUNK M6X16 after having them dipped in the LOCTITE 222



2.9. Put the BRUSH UNIT PROTECTOR on the BRUSH MOTOR CONSTRUCTION COVER and close everything with the BRUSH UNIT BOTTOM PART



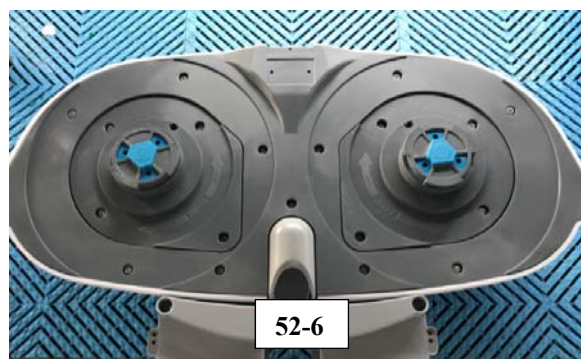
2.10. Lock the BRUSH UNIT BOTTOM PART with the SCREWS SOCKET HEAD CAP M5X10 dipped in the LOCTITE 222

2.11. Put the DRIVING WHEEL BOTTOM, with attention to the side of mounting, on the DRIVING WHEEL TOP

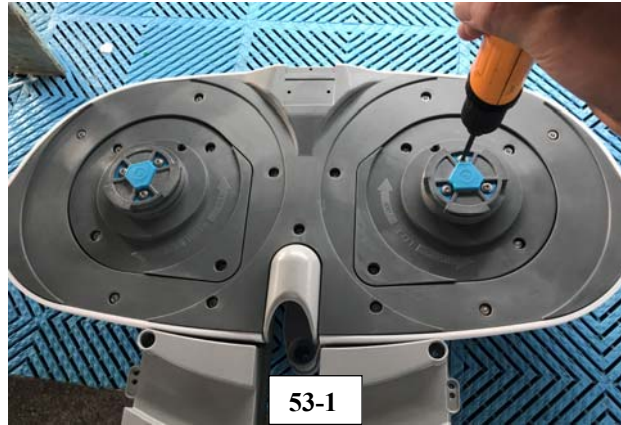


2.12. Fast the 2pcs COUNT SUNK SCREW M5X18.5 to fix the 2pcs DRIVING WHEEL TOP

2.13. Put on the 2pcs COVER BRUSH MOTOR SCREW

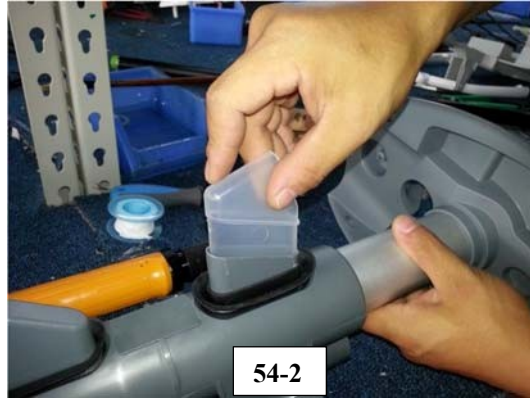


2.14. Fasten 3pcs EJOT SCREW 50X14 to fix the COVER BRUSH MOTOR SCREW each side



CHAPTER 13 – I-MOP FILTER AND DEFLECTOR REPLACEMENT INSTRUCTIONS

1. replace the filter cassette inside dirty tank
2. Put the TRANSPARENT PLASTIC DEFLECTOR DIRTY TANK on his seat on the TANK HOLDER REAR, recognizable from the O-RING around the lips of the DIRT COMPARTMENT SEAL



CHAPTER 14 – SQUEEGEE WHEELS CLEANING

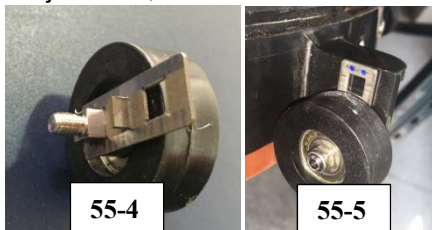
Part List :

- 72.0137.2 ,shaft squeegee castor dia.8mm,3pcs
- 72.0235.0 M5 washer stainless steel 5X15X1MM,6pcs
- 04.0048.0, NUT M5 NYLON, 6pcs
- 72.0138.1, height adjust plate ver.1, 3pcs
- 72.0238.32,SQUEEGEE CASTOR GREY DIA.8MM,3pcs

1. Use wrench to assemble SHAFT SQUEEGEE CASTOR (72.0137.2) SQUEEGEE CASTOR GREY (72.0238.32) , M5 WASHER STAINLESS STEEL 5X15X1MM (72.0235.0) and NUT M5 NYLON (04.0048.0) together.



2. Insert the HEIGHT ADJUSTMENT PLATE (72.0138.1) to the subassembly of step 1, then attach them to the square hole of the squeegee, pay attention that the two blue dots need be upside. When doing the height adjustment, the white dot need to be upside.

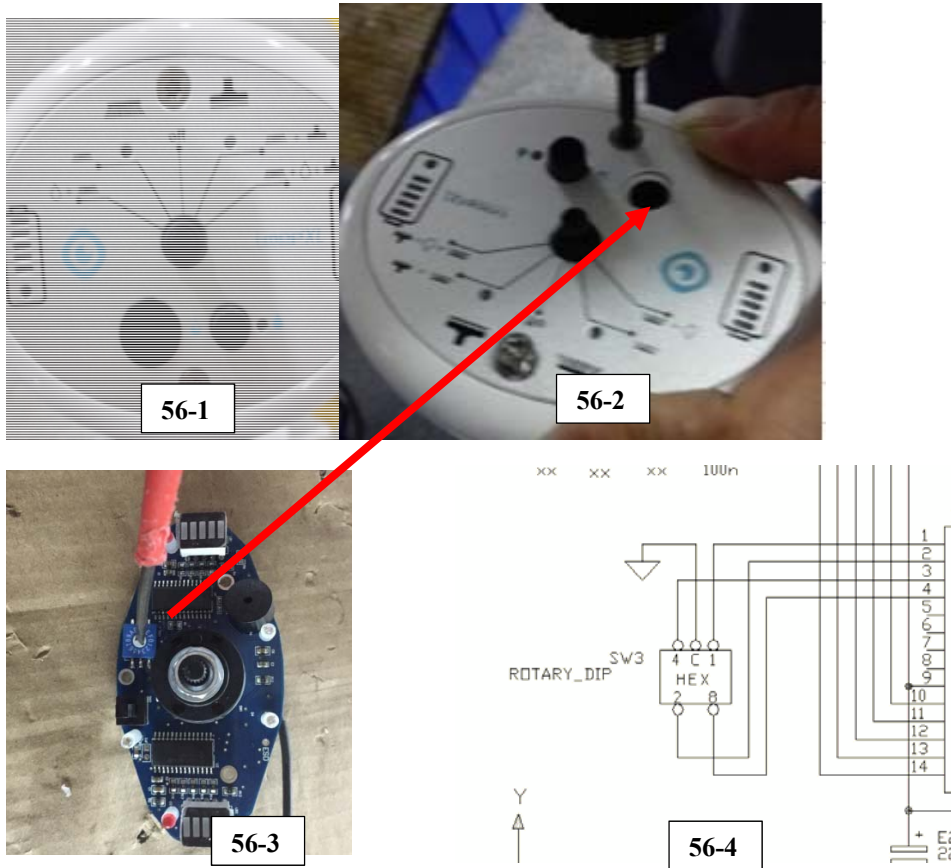


3. Fix the subassembly step 2 to squeegee by one M5 WASHER STAINLESS STEEL 5X15X1MM (72.0235.0)and one NUT M5 NYLON (04.0048.0) via wrench.



CHAPTER 15 – WATER SAFE INTERVAL ADJUSTMENT

1. Remove the rubber block of water save internal setting
2. Adjust the position of the interval functioning moving the selector with a screw driver to the desired position following the scheme

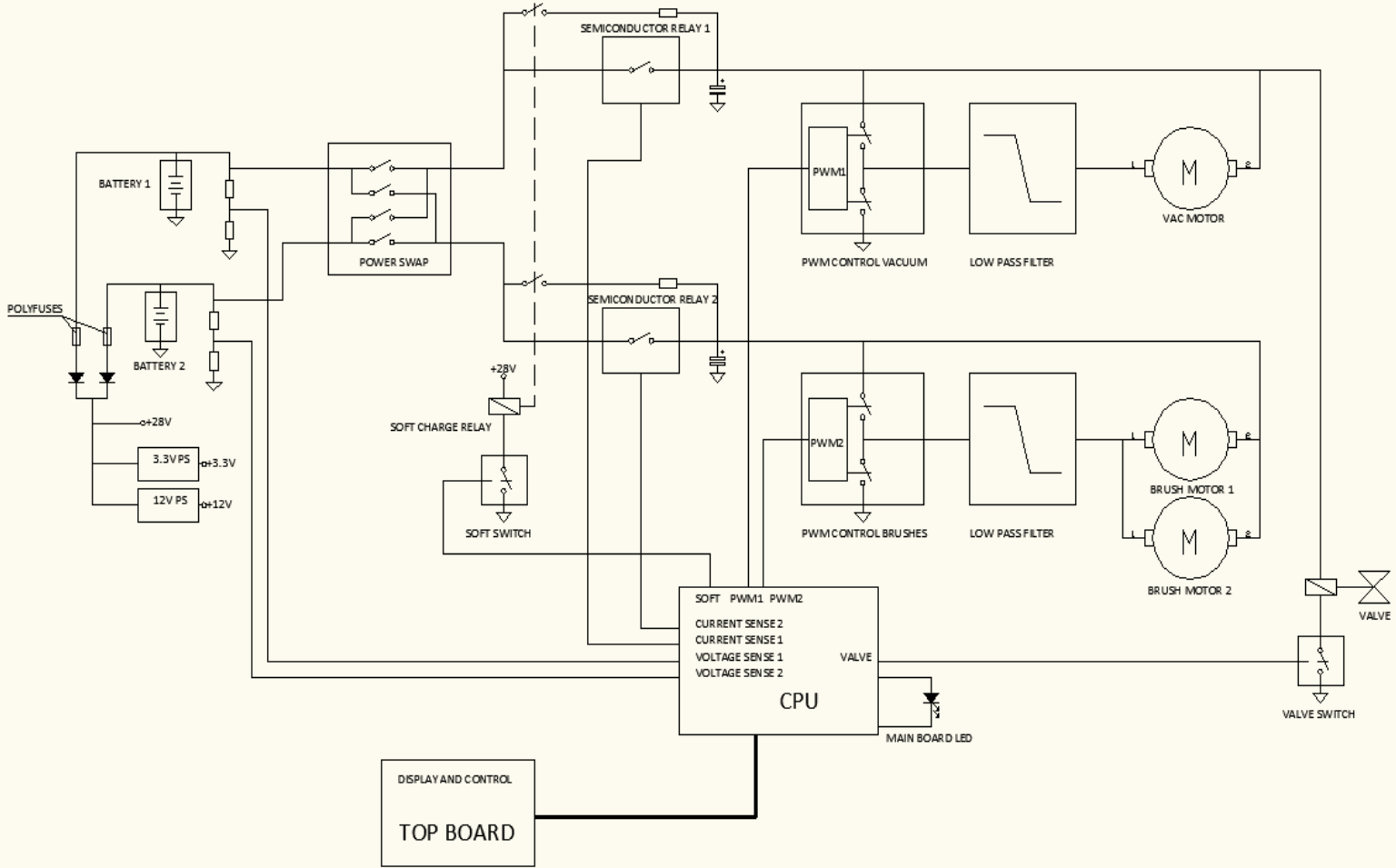


3. In the table the values (in seconds) of the different positions:

POSITION	WATER (S)	STOP (S)
0	0.6	9.4
1	1.2	8.8
2	1.8	8.2
3	2.4	7.6
4	3	7
5	3.5	6.5
6	4.1	5.9
7	4.7	5.3
8	5.3	4.7
9	5.9	4.1
A	6.5	3.5
B	7	3
C	7.6	2.4
D	8.2	1.8
E	8.8	1.2
F	9.4	0.6

56-4

CHAPTER 16 – ELECTRICAL SCHEME



BLOCK DIAGRAM IMOP 57-1

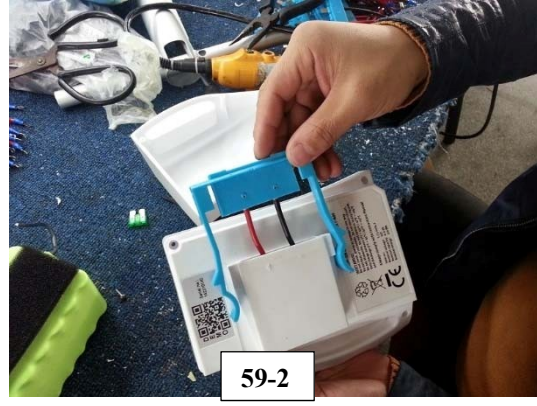
CHAPTER 17 – BATTERIES

DATASHEET

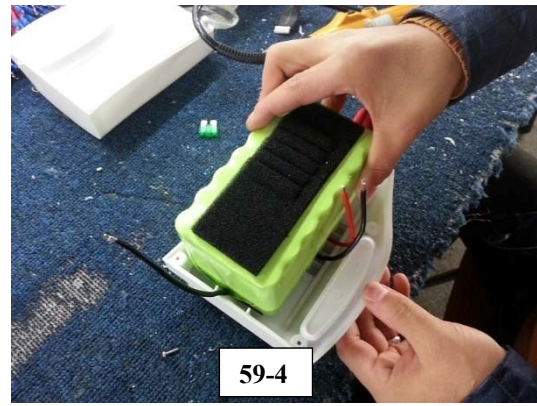
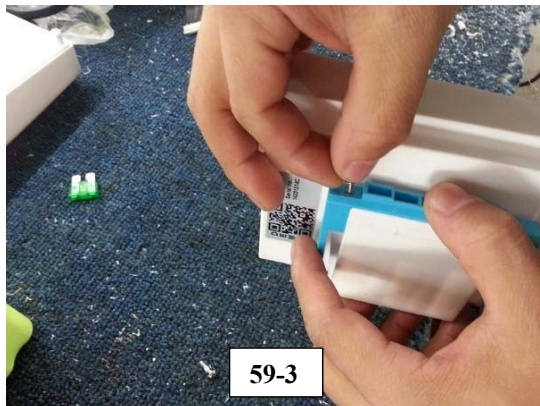
Model	Samsung ICR18650-GA
<i>Voltage and capacity</i>	
Nominal voltage	4.2 V
Nominal capacity @ 25 °C *	100% - 220 mAh
Nominal capacity @ 0°C *	80% - 1760 mAh
Nominal capacity @ -20 °C *	60% - 1320 mAh
Nominal energy @ 25 °C *	8.14 Wh
* Discharge current $\leq 1C$	
<i>Cycles</i>	
80% intensity of discharge	800 cycles
70% intensity of discharge	800 cycles
50% intensity of discharge	800 cycles
<i>Discharge</i>	
Continuous maximum discharge current	10 A
Continuous recommended discharge current	6.45 A
Impulsive 10 s maximum current	20 A
End of discharge voltage	2.75 V
<i>Working conditions</i>	
Working temperature	-40 °C – 55 °C (do not charge when temperature is < -20 °C)
Storage temperature	-40 °C – 85 °C
Humidity (without condensation)	Max 95%
Index of protection	IP54
<i>Charge</i>	
Charge voltage	4.2 V
Holding voltage	3.62 V
Maximum charge current	2.15 A
Recommended charge current	$\leq 1.075 A$
<i>Cells</i>	
Weight of Lithium (per cell)	1.25 g
Weight of Lithium compound (per cell)	18.67 g
Number of cells (per battery)	28
<i>Other</i>	
Maximum storage time @ 25 °C	12 months
Maximum storage time @ 60 °C	3 months
Dimensions	157 x 133 x 94 mm
Weight	1.665 kg
PCB on board	YES

ASSEMBLY INSTRUCTIONS

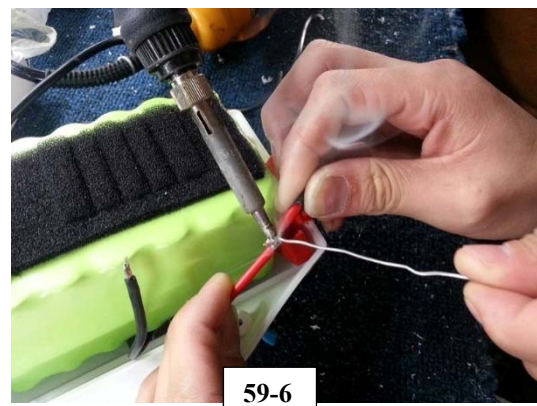
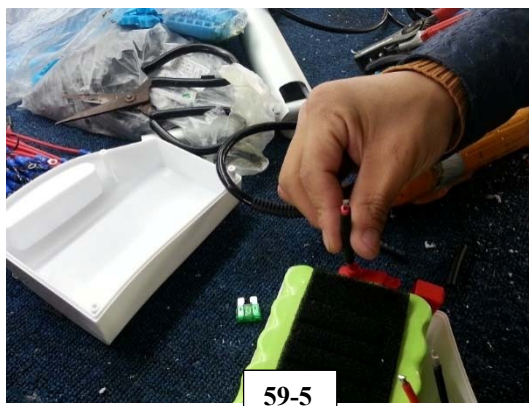
1. Paste the SIDE FOAM MOTOR VACUUM to the BATTERY PACK CELLS.
2. Put the BATTERY CONNECTOR FEMALE into the BATTERY PACK HOUSING BOTTOM. The BLUE in the LEFT battery and the GREY in the RIGHT battery.



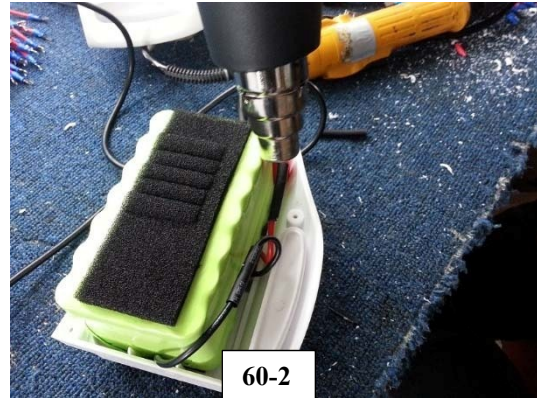
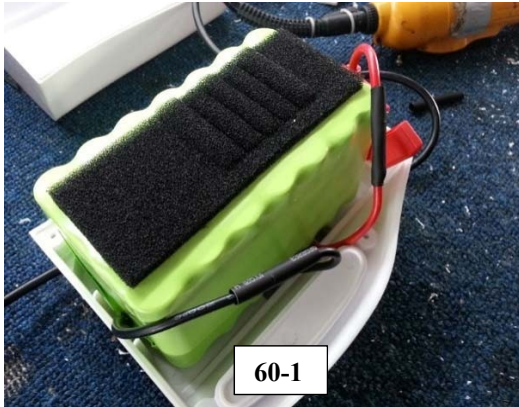
3. Screw the BATTERY CONNECTOR FEMALE to the BATTERY PACK HOUSING BOTTOM with 2 SCREW WN 5451 25X10 EJOT DELTA PT.
4. Put the BATTERY PACK CELLS into the BATTERY PACK HOUSING BOTTOM.



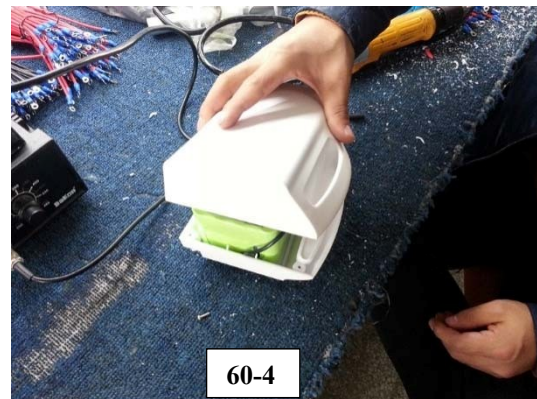
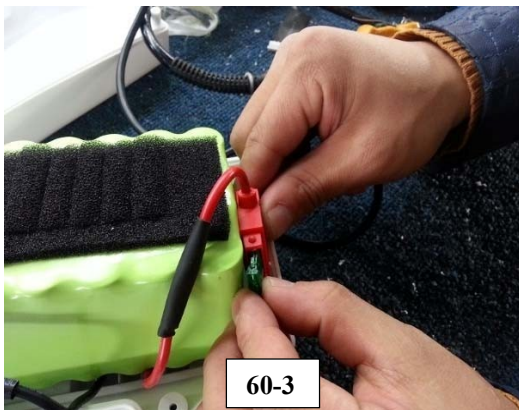
5. Put a piece of heat shrinkable tubing on the cables and solder the ones coming from the BATTERY PACK CELLS to the ones coming from the BATTERY CONNECTOR FEMALE (RED with RED and BLACK with BLACK).



6. Cover the soldering with the heat shrinkable tubing and heaten it to shrink it.



7. Put the fuse into its seat in the BATTERY PACK CELLS.
8. Close the ASSY BATTERY PACK with the BATTERY PACK HOUSING TOP.



9. Screw the two BATTERY PACK HOUSINGS with 4 SCREW WN 5451 25X10 EJOT DELTA PT

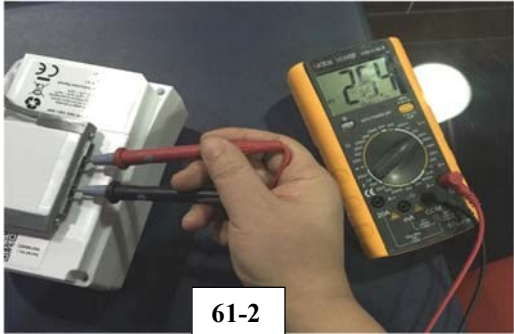
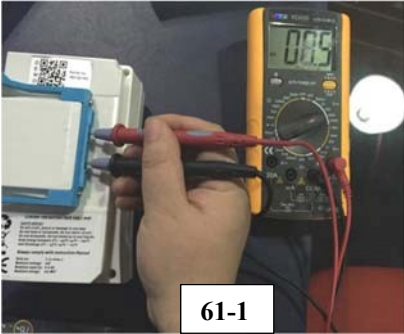


10. Testing procedure of Battery

Measure the Voltage of Battery via Voltage meter or Multiple meter by insert the red wire to the hole with "+" mark and black wire to the "-" mark

- A. If the reading of Voltage is with minus, this is the plus and minus was installed incorrectly and will damage the main PCB if insert this kind of battery to machine
- B. If the reading is Zero, the insert fuse is broken and need be replaced
- C. If the reading is about 10V, the batter is possibly damaged via over-discharge.

D, if the reading is above 16V, the battery is OK.



CHAPTER 18 – CHARGER

DATASHEET

Model	
Input voltage	AC 100-240 V
Frequency	50-60 Hz
Output current	9A
Charging voltage	29.4 V
“Float” voltage	27.4 V
Charge current	9 A
Charge features	3 phases with max time of 20 hours per absorption
Minimum capacity of the batteries	10 Ah
Thresholdcharge interrupt	0.3 Ah
Available as power pack	NO
Protection	Reverse polarity of the battery (fuse in the positive lead)
	Output short circuit
	Overheating
Working temperature	-20 +55 °C
Humidity	Up to 100 °C
Weight	1.125 kg
Dimensions	62-1 266 x 215 x105 mm

REFERENCE STANDARDS

Safety

EN55022:2006 + A1:2007

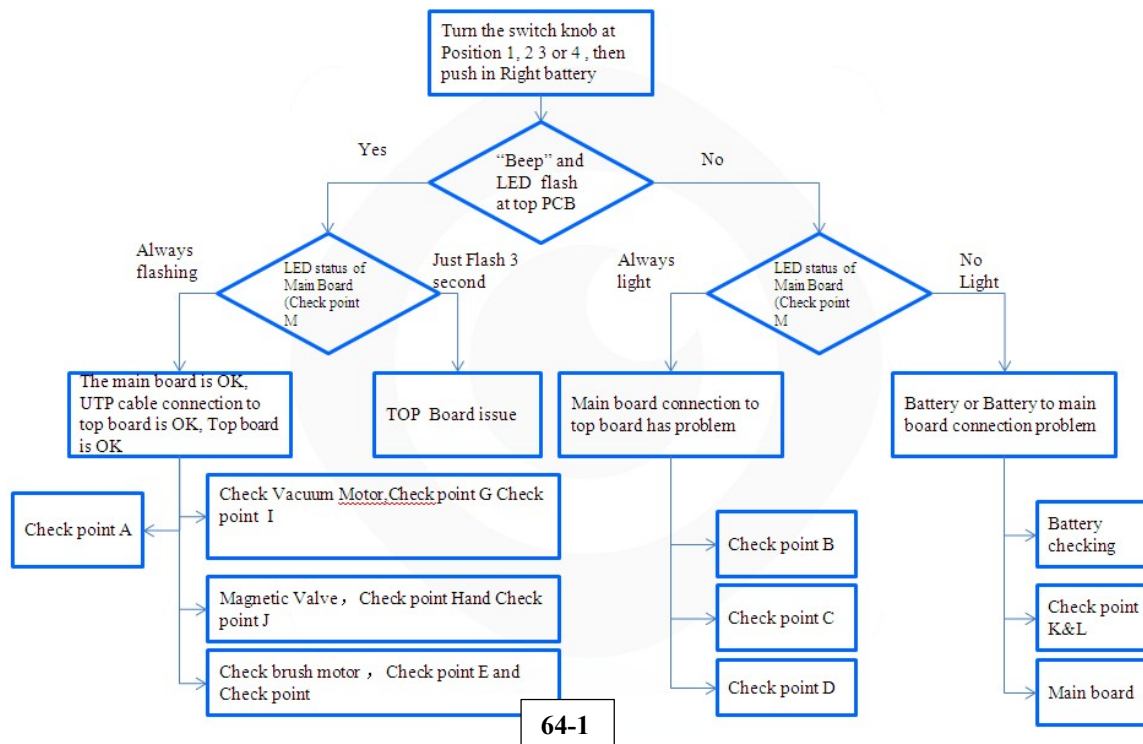
Emissions

EN61000-3-2:2006 + A1:2009 + A2:2009; EN61000-3-3:2008

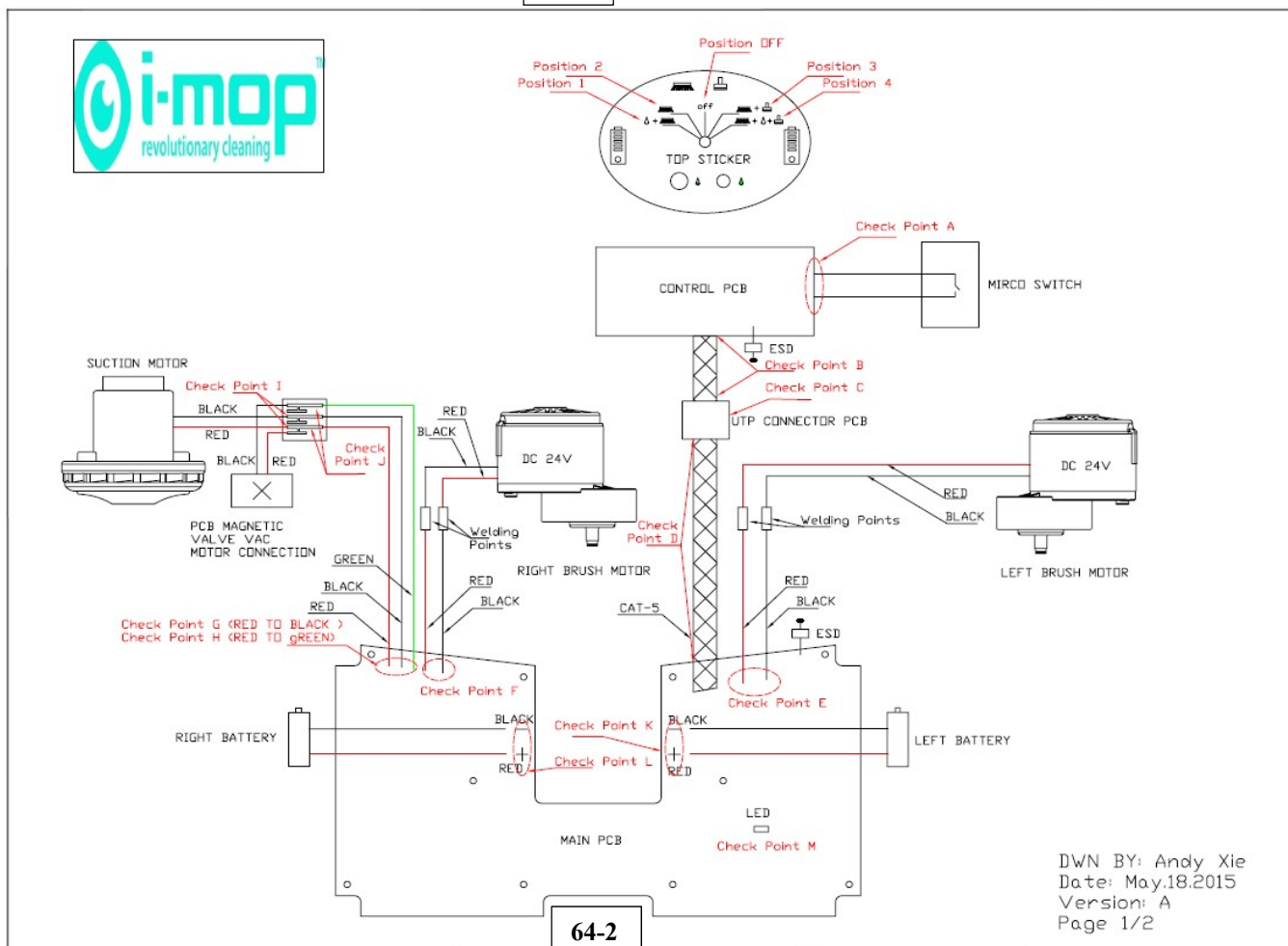
Immunity

EN55024:201

CHAPTER 19 – REPAIR FLOW CHART



64-1



64-2

DWN BY: Andy Xie
Date: May.18.2015
Version: A
Page 1/2



TROUBE SHOOTING TIPS,

- Step 1, To check Main PCB if works
Turn the switch knob at Position 1, 2 3 or 4 and then just push in Right battery
A. If LED (Check point M) is flashing , it means the main pcb and CAT5 connection is OK
B, if LED is always light and no flashing, the top PCB or Check Point B or Check point C have problem
C, if no LED light, it means The wire joint battery and main board has problem or main PCB damaged
- Step 2. Turn Knob at Position 1, 2 3 or 4, and two batteries LED on the top sticker are green, but brush motor don't run when switch on, need to inspect Check point A if short when switch on because of damage micro switch or trigger bar issue
- Step 3, When just pushing the two batteries in , the battery voltage should be measurable at Check Point K and L
- Step 4, Voltage Status at Position 1 with trigger bar switch on
Battery Voltage points: Check point E,F,H and J
Zero Voltage points: Check Point G and I
- Step 5, Voltage Status at Position 2 with trigger bar switch on
Battery Voltage points: Check point E and F
Zero Voltage points: Check Point G,H,I and J
- Step 6, Voltage Status at Position 3 with trigger bar switch on
Battery Voltage points: Check point E,F,G and I
Zero Voltage points: Check Point H and J
- Step 7, Voltage Status at Position 4 with trigger bar switch on
Battery Voltage points: Check point E,F,G,H,I and J

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Date: May.18.2015
Version: A
Page 2/2

65-1



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