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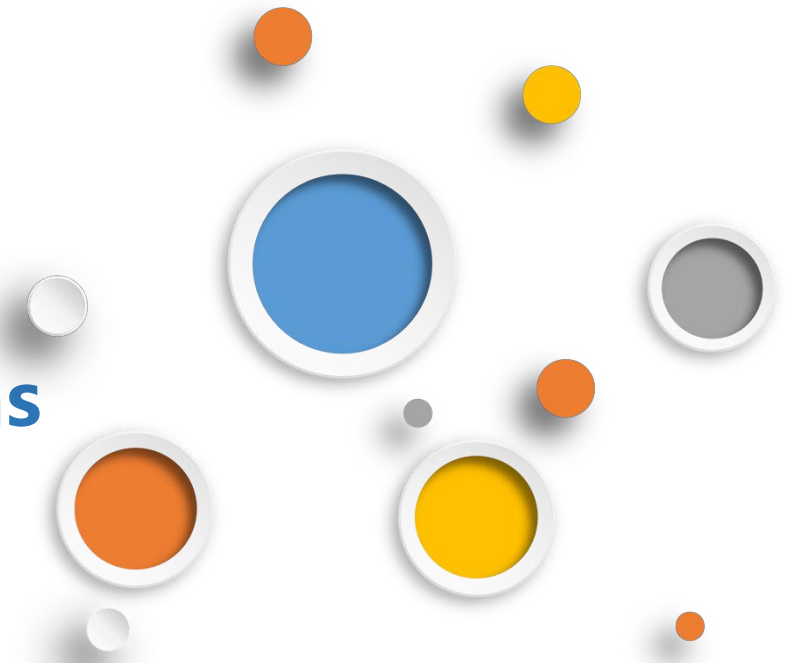
EC-8639 massage chair service





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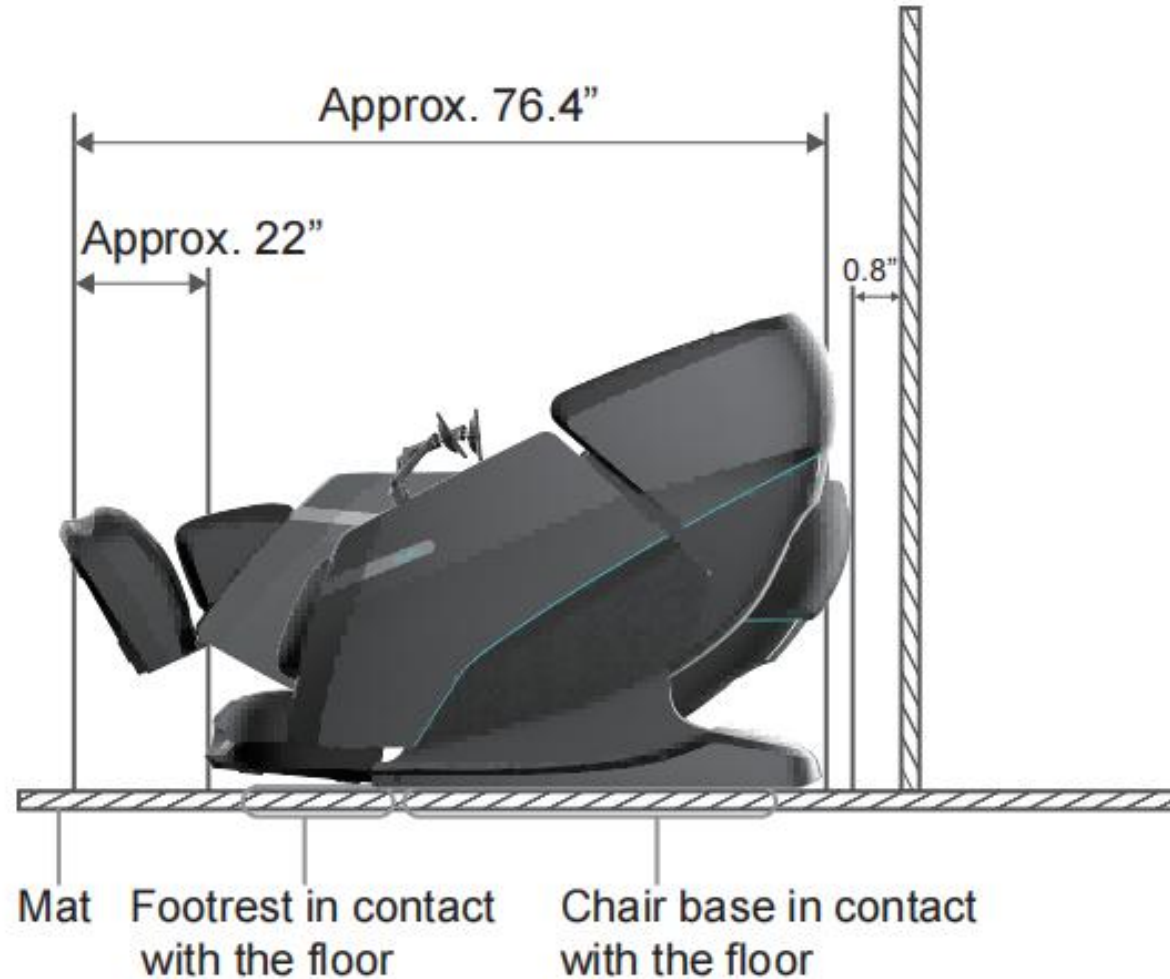
- 一、 Product introduction
- 二、 Massage chair tools and use
- 三、 Circuit working principle
- 四、 Massage chair removal instructions
- 五、 Massage chair fault judgment





一、Product introduction

1、Place Position:





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2、Product Specifications:

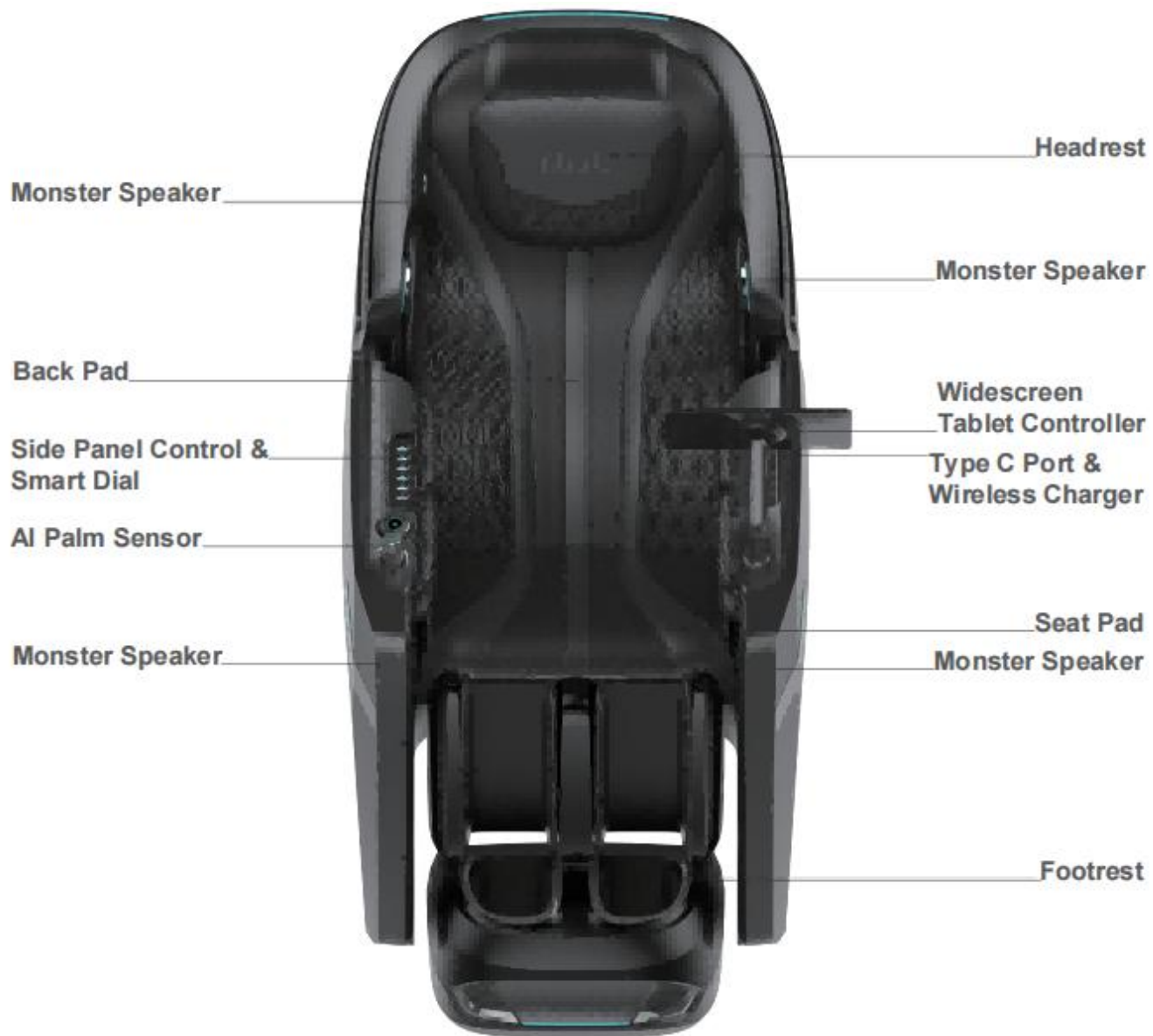
Product Name	4D-Escape Duo
Rated Input	110 - 120V~ 60Hz
Rated Current	2.55A
Working Time	Min. 3 minutes Max. 30 minutes
Extension of Footrest	Approx 7.1"
Dimension (L x W x H)	Upright: 63.8"x 31.4"x 48.7"
	Recline: 76.4"x 31.4"x 31.2"
Dimensions of Packing (L*W*H)	Box 1: 58.5"x 33.5"x 51.0"
	Box 2: 22.4"x 20.9"x 25"
N.W.	Main Unit: 251.3 lbs
	Footrest: 58 lbs
G.W.	Box 1: 302 lbs
	Box 2: 66.1 lbs
Weight of Chair	Approx 311 lbs
Usage Condition	Environment Temperature: 32°F - 104°F
	Contrasting Humidity: 20% - 80%RH
Storage Condition	Storage Temperature: 23°F - 95°F
	Storage Humidity: 20% - 80%RH
Maximum Weight of User	280 lbs
<p>This equipment contains a certified radio transmission module : FCC ID: YMX-ATS2853, 2A006-WLT8016 IC: 7284A-ATS2853, 26141-WLT8016</p>	



3、 External Side Structure:

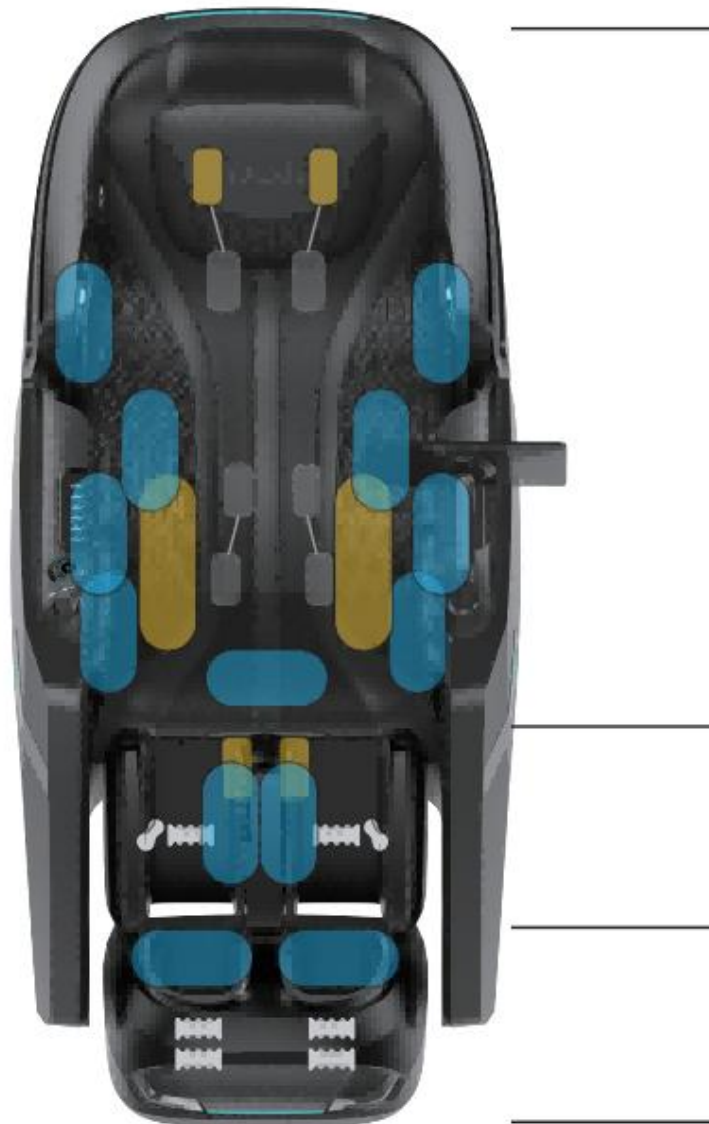








4、 Internal Structure:



33 Air Bags -
Shoulders 2
Arms 22
Lumbar 4
Seaside 4
Seat 1

Calves - 8 Air Bags

Feet - 16 Air Bags

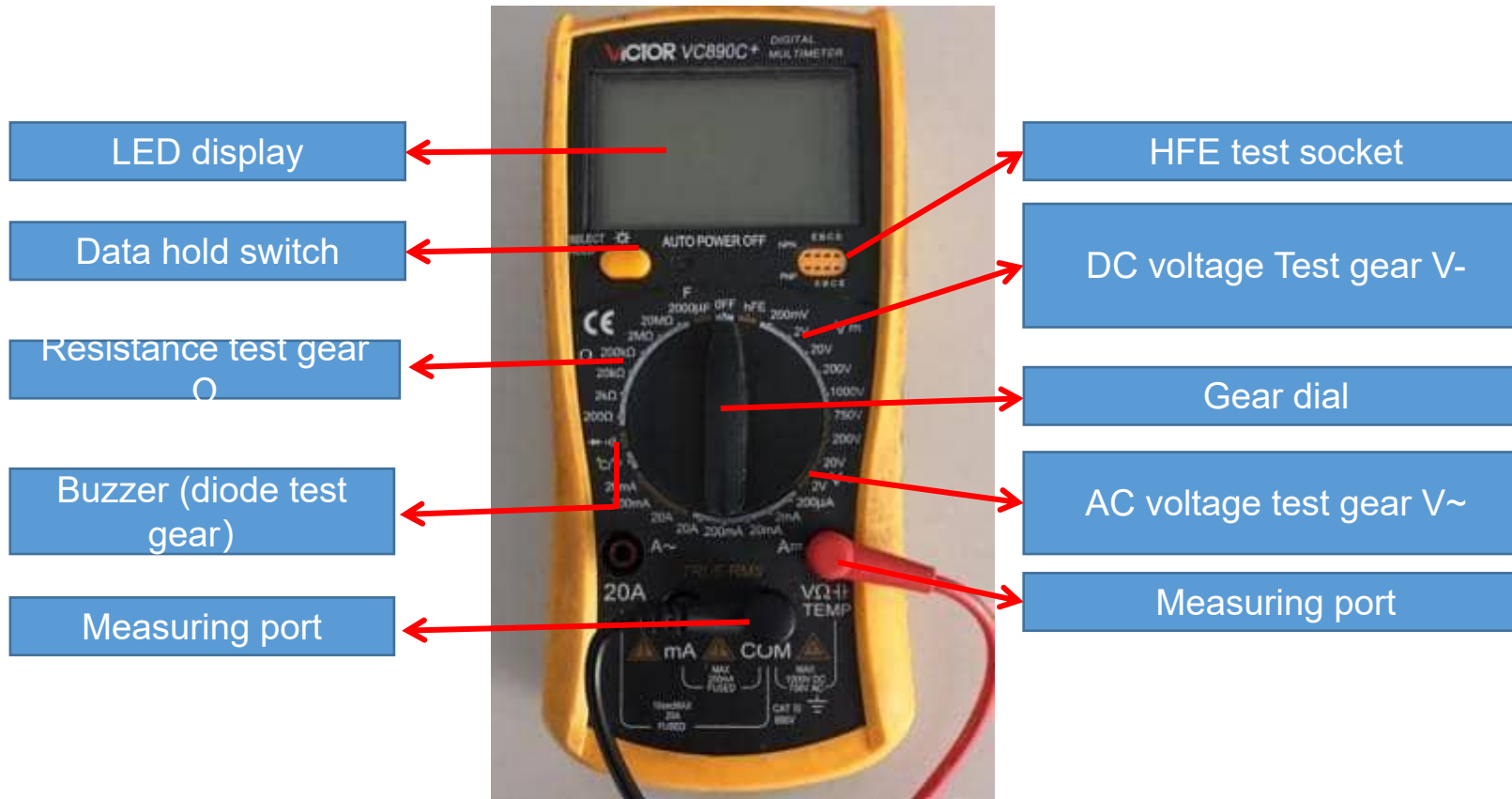
二、 Massage chair tools and use

1.tools

					
Screwdriver size 1,2,3	Diagonal cutter and long nose pliers	Soldering Kit	Spanner tools Kit	Test pen	Allen Key set
					
Ratchet Tools Set	24V/DC power	Electric Driver	electrical adhesive tape	Cable Ties	WIRE ONECTORS



2.Usage of multimeter





2.1、 Function of the test gears

Data hold switch: Memorize the measured data for comparison。

Buzzer (diode test gear) : Measure the quality of diode, the on-off and alarm function of circuit

Resistance gear test gear: Measure the quality and value of resistance

DC voltage Test gear V-: Measure DC voltage

AC voltage test gear V~: Measure AC voltage

VΩ / COM: VΩ Red pen port (+ pole) during test, black pen port (- pole) during com test

Note: when carrying out resistance or voltage test, it is necessary to select a suitable range. If the range is too small to be measured, and the range is too large, the test error range is large; if the voltage is not known, it is necessary to select a range measurement with a large windlass.



2.2、 On / off measurement of lines



open circuit



As shown in the left picture, first set the multimeter to the buzzer and power it
When the switch is on, the multimeter will display "0."; then contact the two probes with the ends of the red wire
At this time, the multimeter still shows "1." there is no change, which means there is an open circuit in the middle of the wire, that is, the line is open.



close circuit



As shown in the picture on the left, if the multimeter shows the number of ". 002" or ". 00n" and gives an alarm, it means that the wire is connected.

2.3、 Measurement of AC voltage



As shown in the picture above: measure the household plug-in board power supply (220V), select the range of 750, and the test result shows "224", indicating that the actual voltage of this group of sockets is 224v at the moment (the switch is pressed down, so there is power, and the light is

or

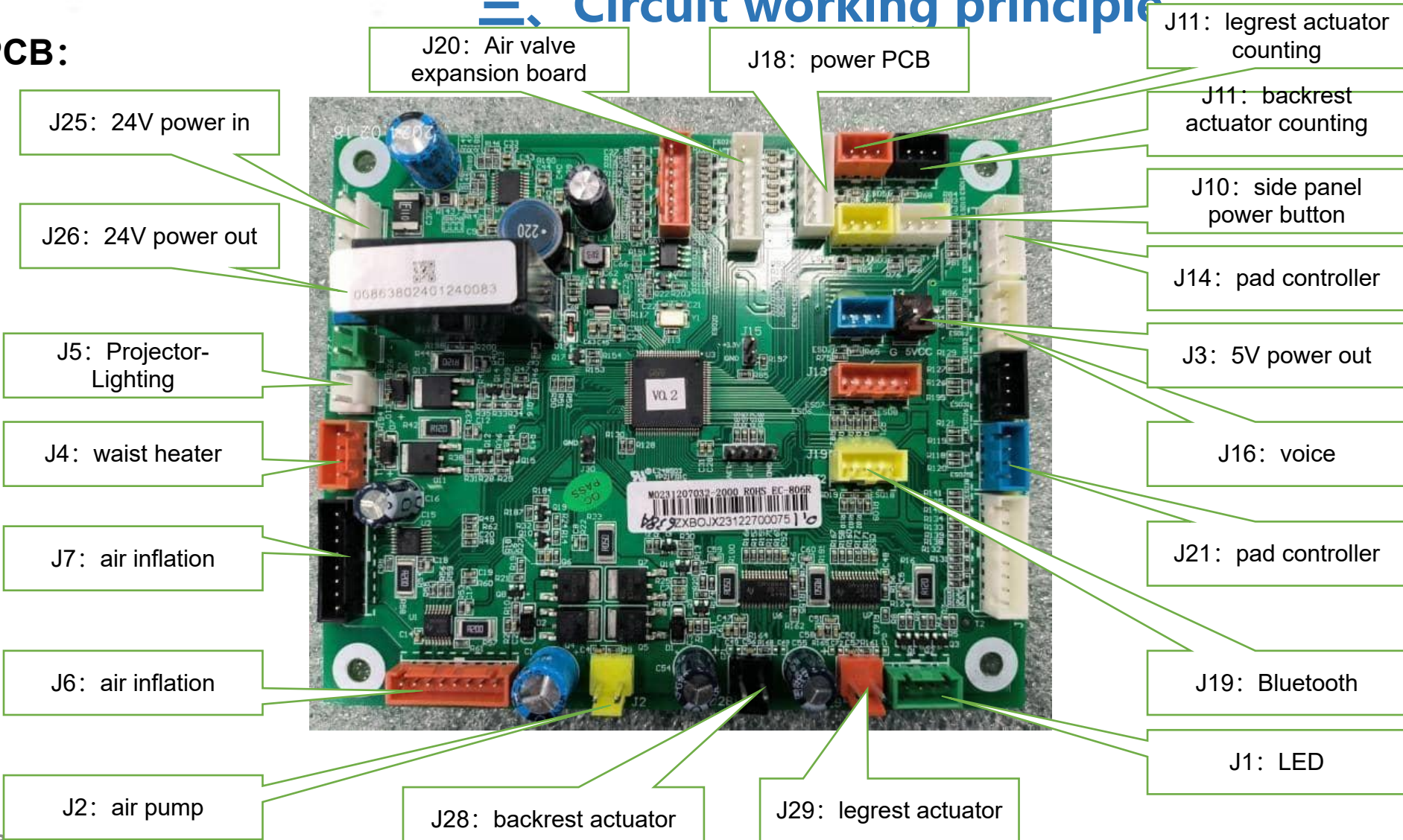


As shown in the above picture: measure the power supply (220V) of our household plug-in board, select the range of 750, and the test result is displayed as "001", indicating that the actual voltage of this group of sockets is 0V at the moment (the switch is not pressed down, so there is no power, and the light is not on).



三、Circuit working principle

1、main PCB:

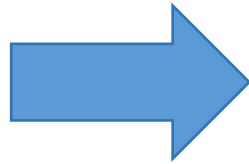




3.1、Disassembly of the pillow:



unzip the zipper



remove the pillow



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3.2、 Disassembly of the backrest pad :

1



unzip the zipper

2



unzip the zipper

3



unzip the zipper

4



unzip the zipper



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5



disconnect the terminals

6



disconnect the air hose

7



unzip the zipper

8



remove backrest pad



1



unzip the zipper

2



remove set air bag

3



unzip the zipper

4



remove the seat heater

5



unzip the zipper

6



remove the waist heater



3.3、 Disassembly of the hood:

1



remove the screws

2



remove the barrier

3



remove 4 screws

4



remove the rear cover

5



prised the hood cover

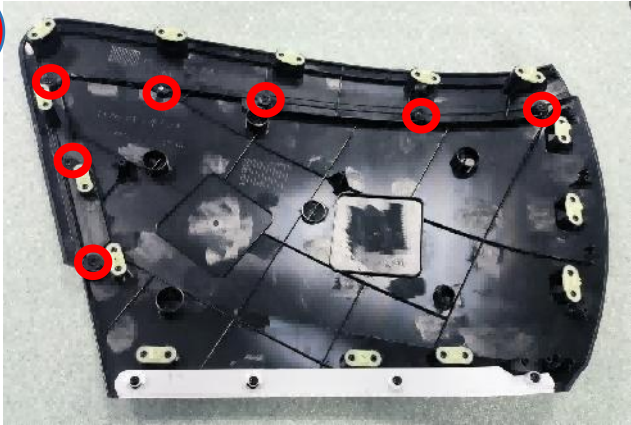
6



hood cover



7



remove the screws

8



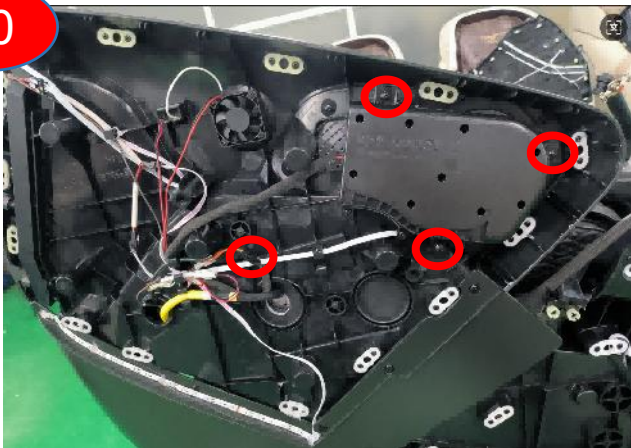
Separate decorative cover

9



Lower right outer hood

10



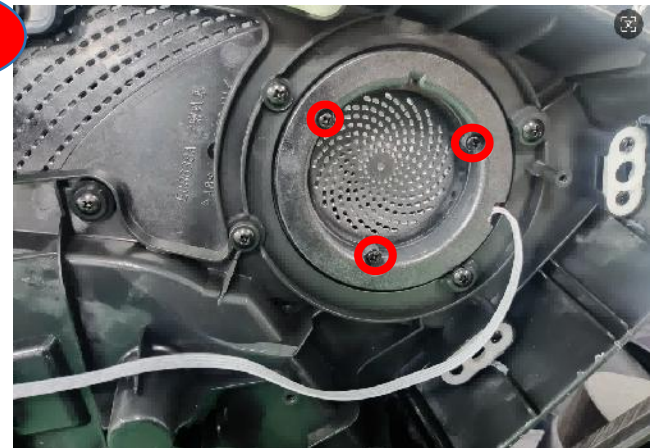
remove 3 screws,
discontent the terminal

11



remove the speaker

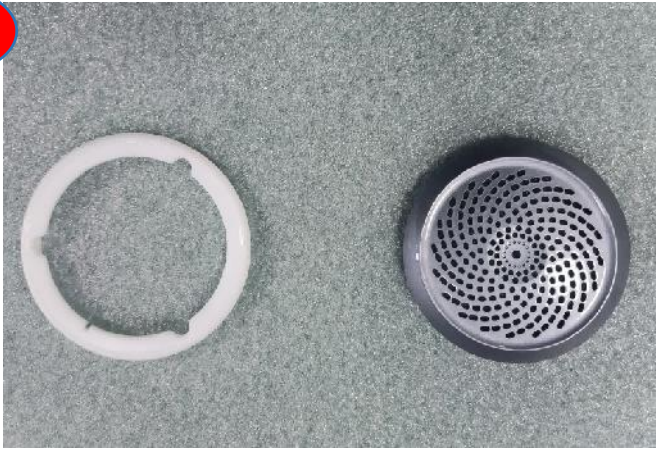
12



remove the screws

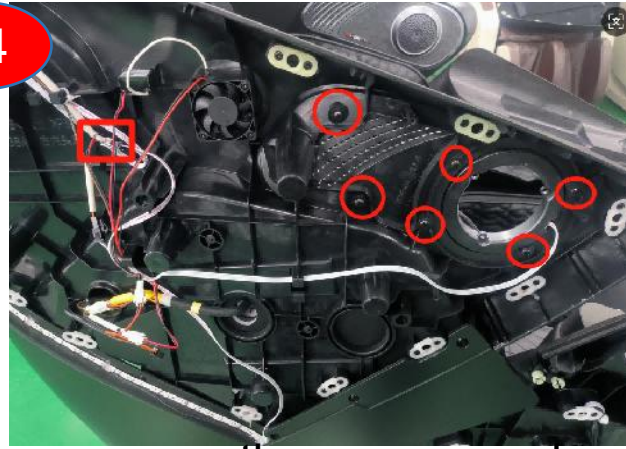


13



Remove the speaker cover

14



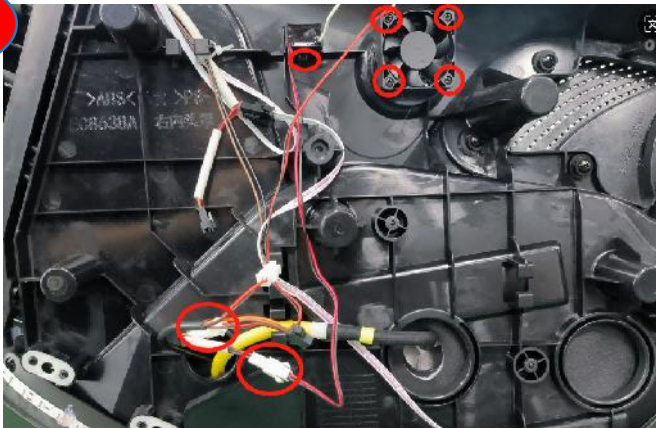
remove the screws and
discontent the terminal

15



remove the trim and LED

16



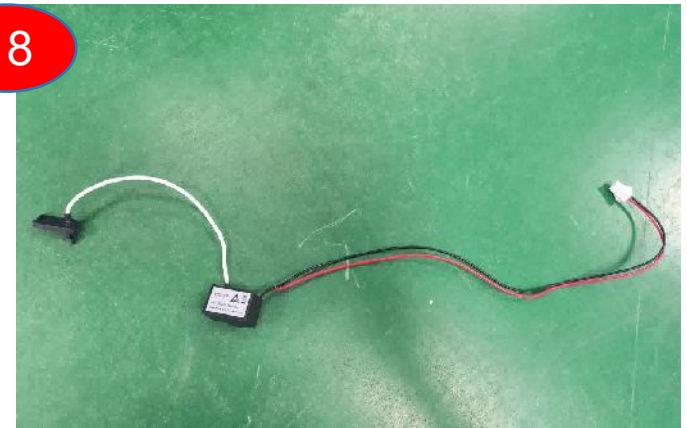
remove the screws and
discontent the terminal

17



remove the fan

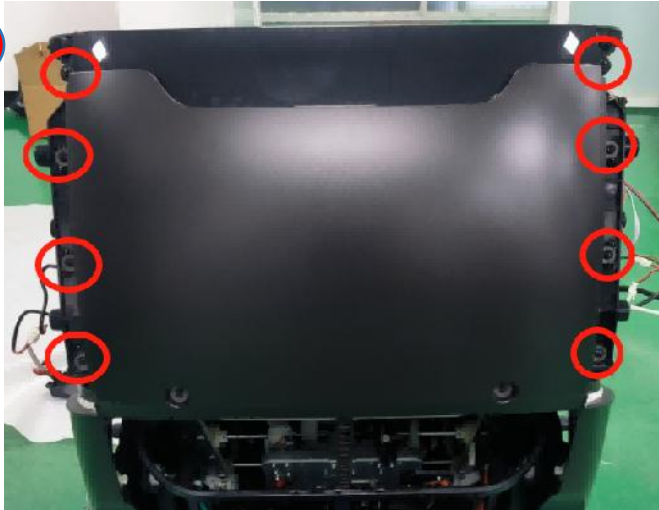
18



remove the negative ion
generator

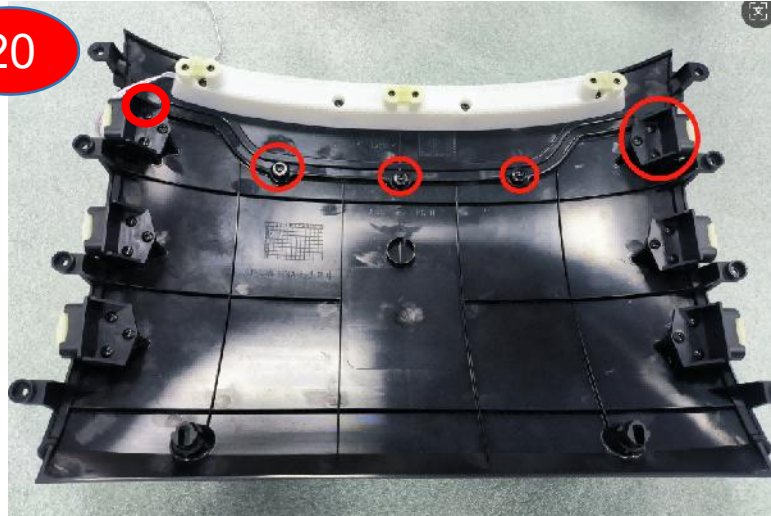


19



Remove the screws

20



Remove the screws

21



Separate the middle hood cover

22



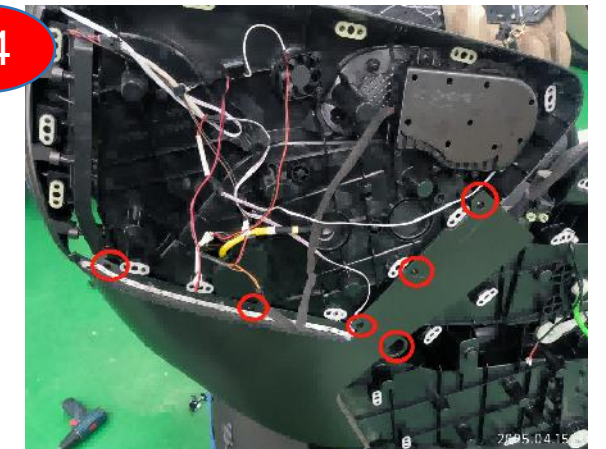
Remove the screws

23



Separate the LED

24



remove the screws

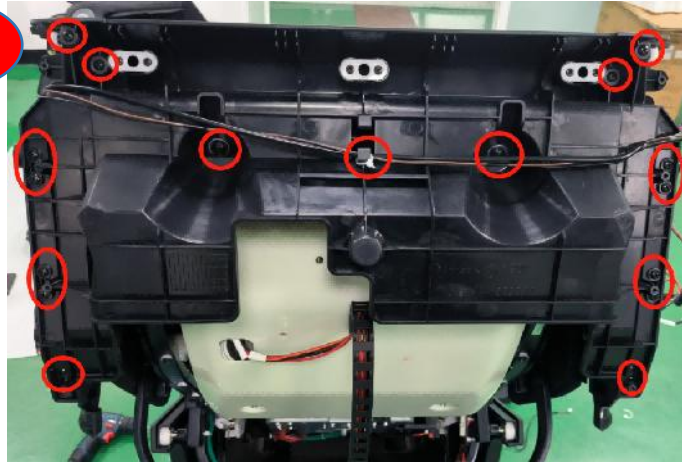


25



Remove the trim panel

26



Remove the screws

27



Remove the middle hood inner cover

28



unzip the zipper



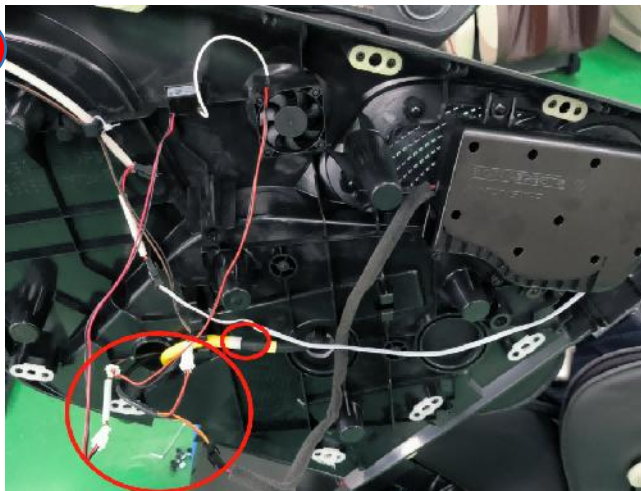
remove 2 screws



remove 2 screws

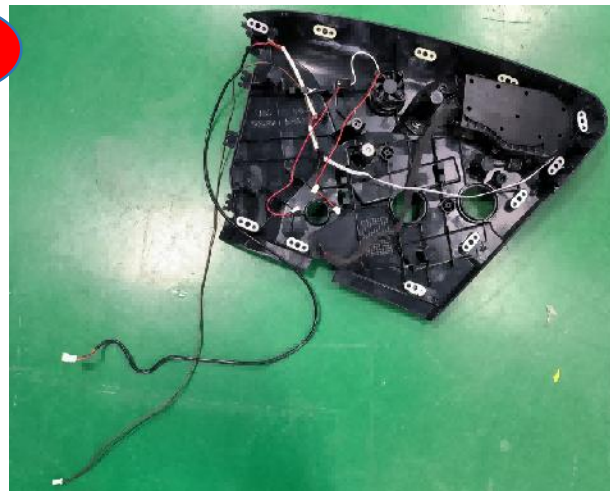


29



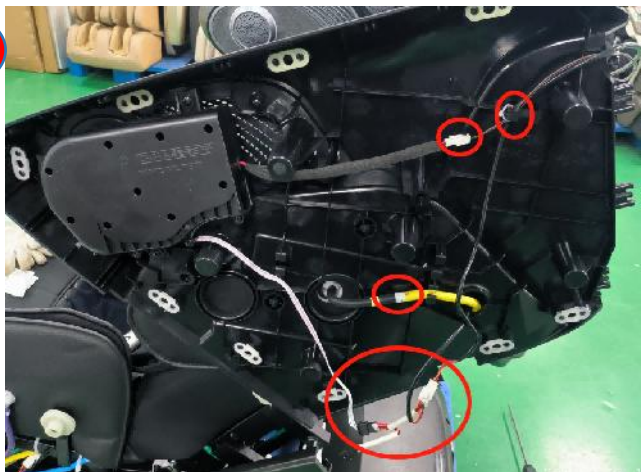
discontenent the terminals and air hose

30



remove the right inner hood cover

31



discontenent the terminals and air hose

32



remove the left inner hood cover



3.4、 Disassembly of the gear box:

1



remove the screws

2



remove the barrier

3



remove 4 screws

4



remove the rear cover

5



prised the hood cover

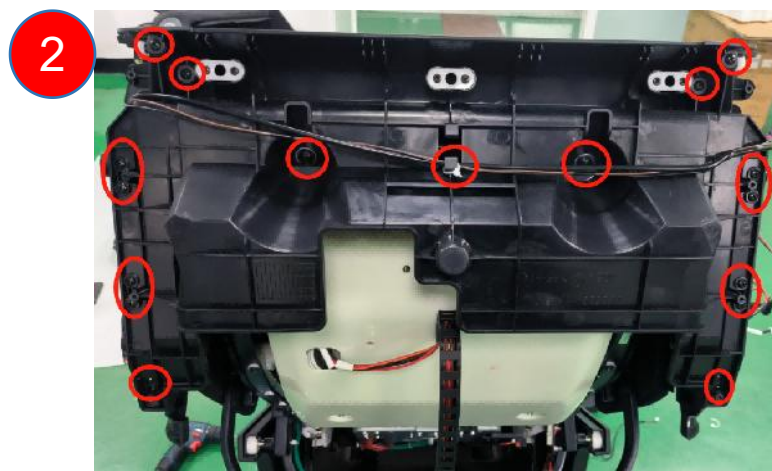
6



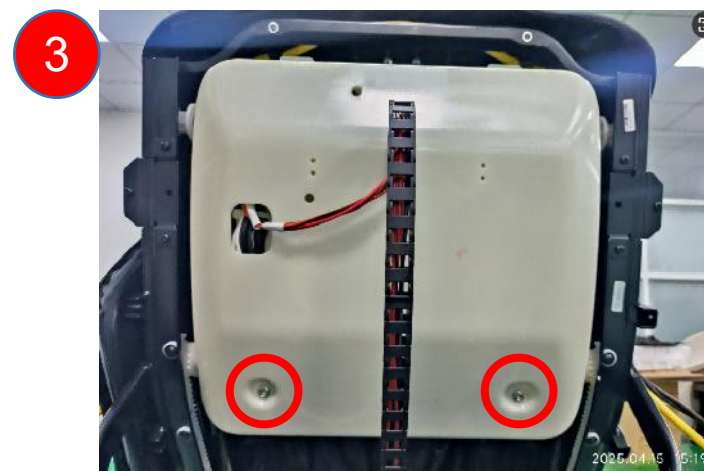
hood cover



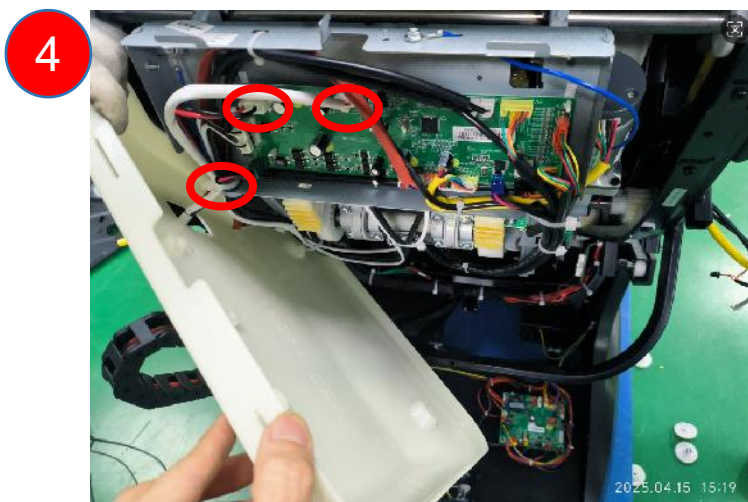
Remove the screws



Remove the screws



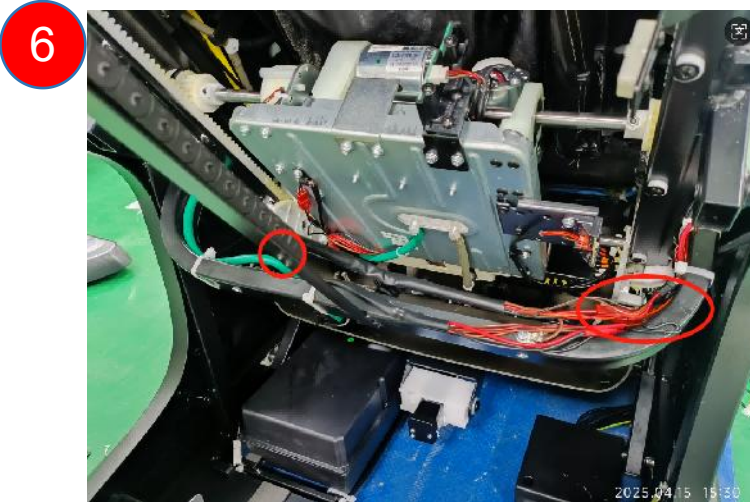
Remove the screws



discontent the terminals and cut the cable tie



Remove the screws



Remove the screws and remove the terminals



7



remove upper backrest cable

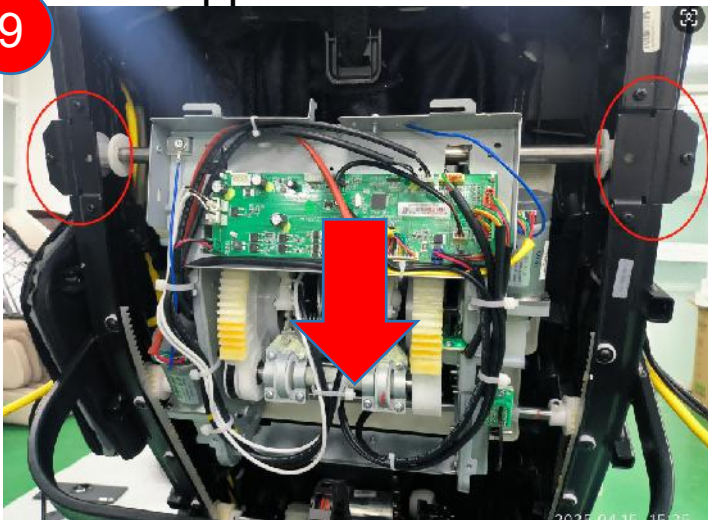
8



Rotate the rolling motor with a small Phillips screwdriver

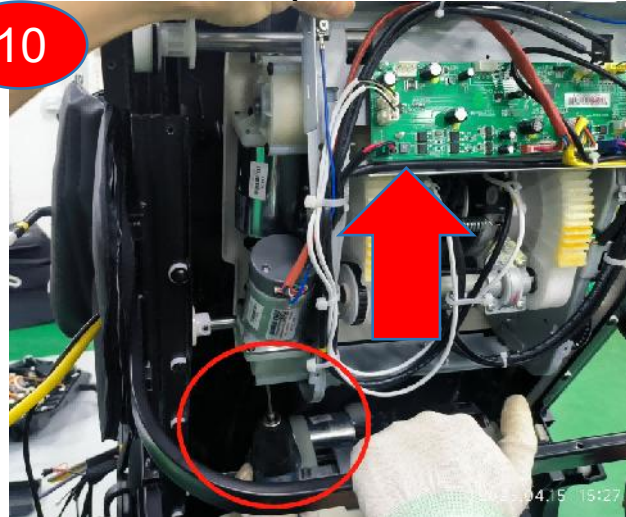


9



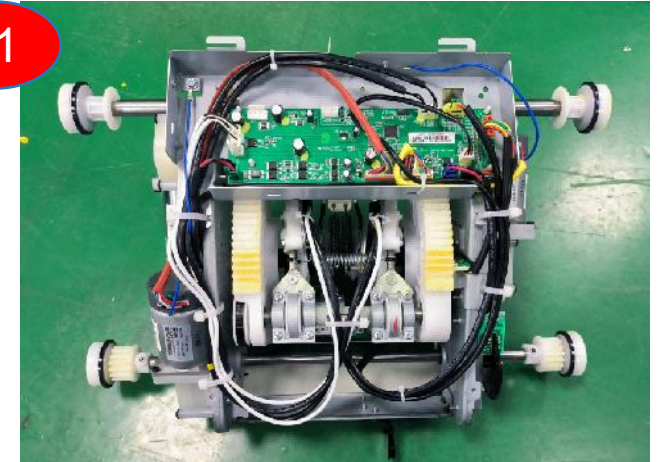
gear box go down and remove 2 baffles both side

10

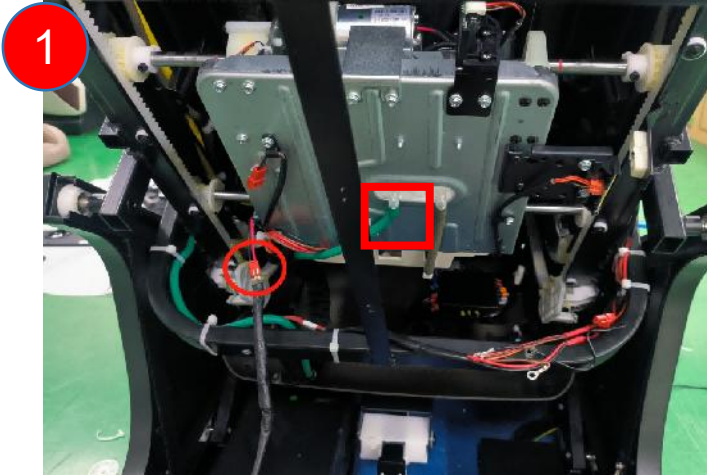


gear box go up

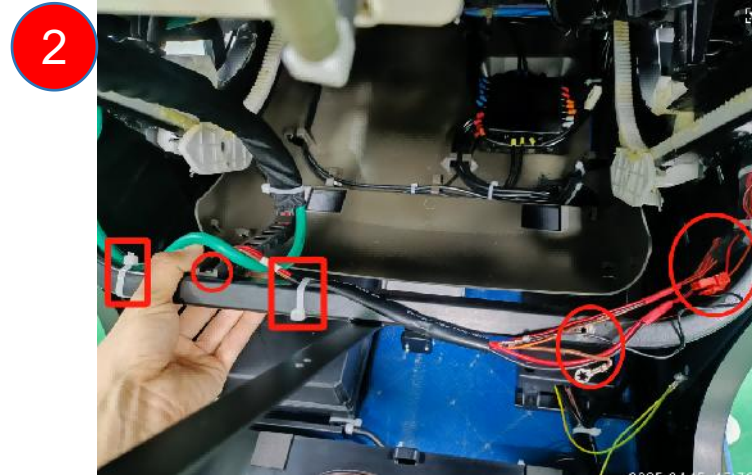
11



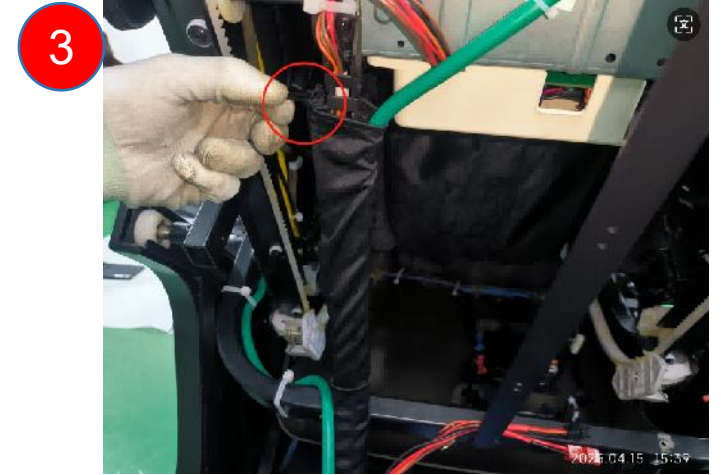
remove upper gear box



1
disconnect the air hose, Red terminal connected to 24VDC



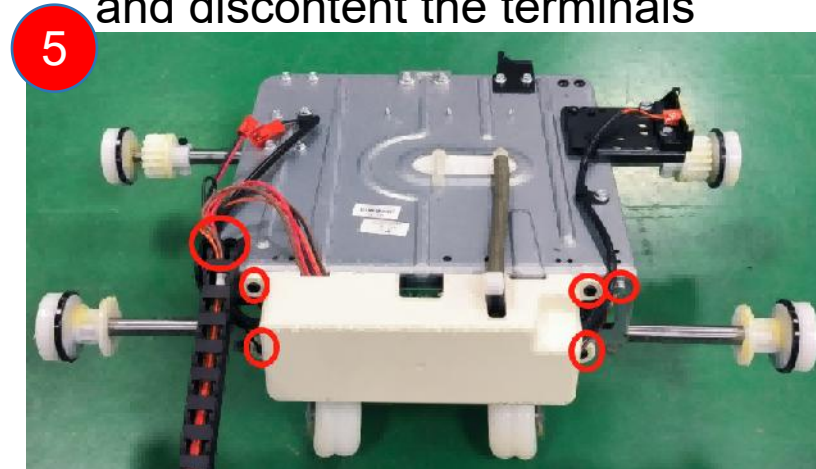
2
cut cable tie, remove the screws and disconnect the terminals



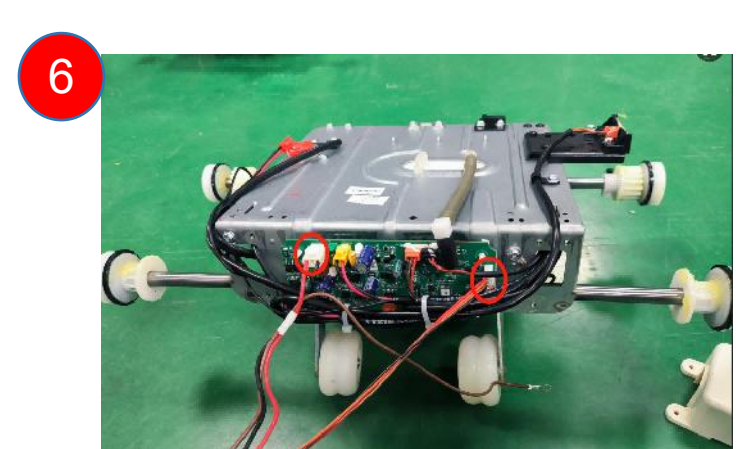
3
unzip the zipper



4
remove lower gear box



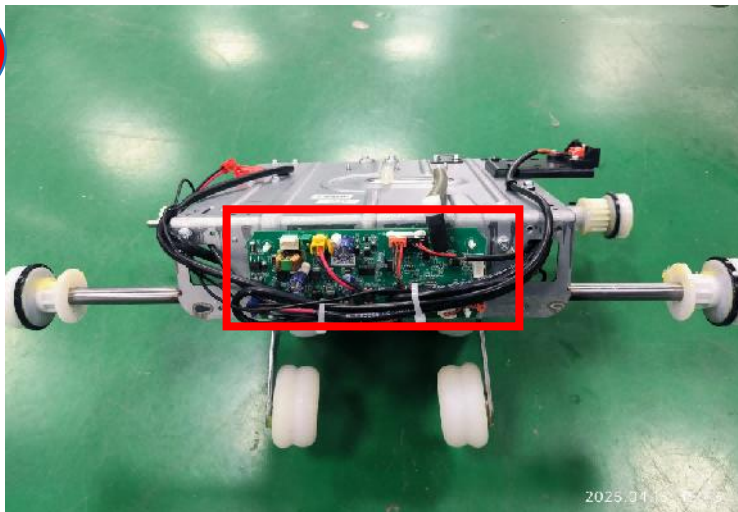
5
remove the screws



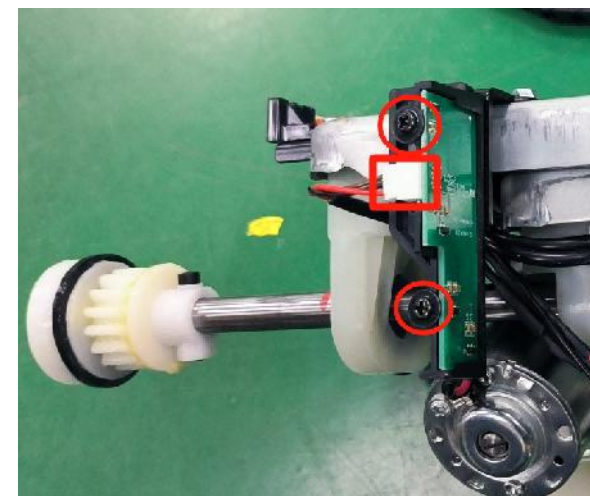
6
disconnect the terminal of the cable tie



remove lower backrest cable



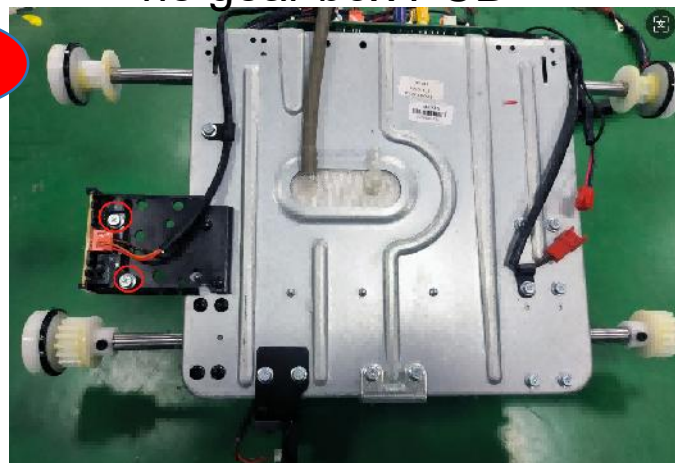
disconten the terminal, remove
he gear box PCB



remove the screws, disconten
the terminal



remove collision detection board



remove the screws, disconten
the terminal



remove up&down limitsesor



3.5、 Disassembly of the Transfer track:



1
clamp the spring open with apointed nose pliers



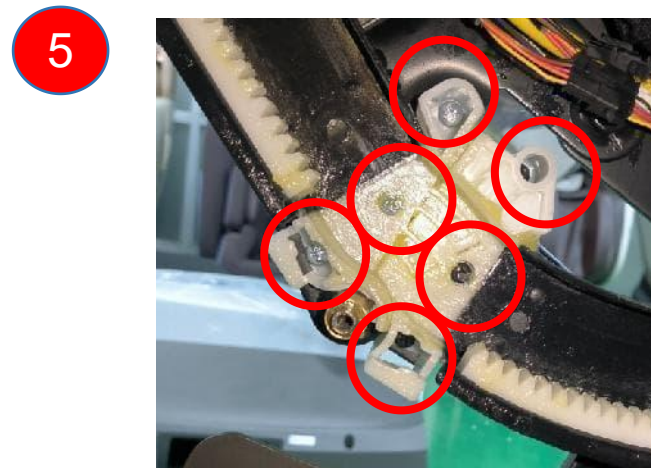
2
Spring released



3
remove the screws



4
remove the track



5
remove 6 screws



6
Remove the guide rail adapter plate



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3.6、 Disassembly of the side panel:

1



remove the screws

2



remove the barrier

3



remove 4 screws

4



remove the rear cover

5



prised the hood cover

6



hood cover

7



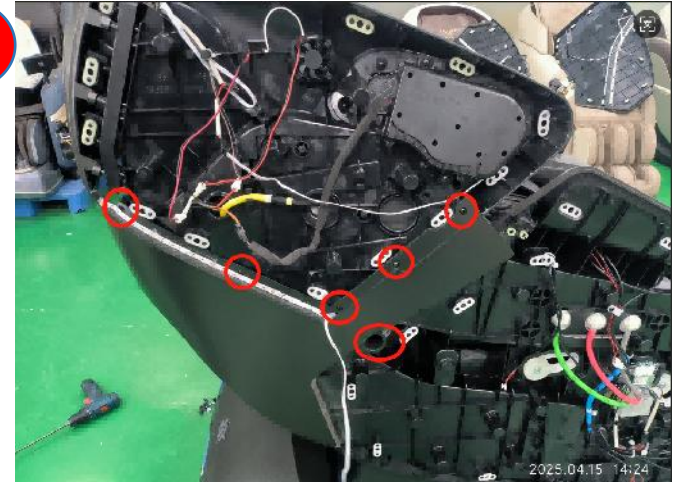
open the cover

8



discontent the terminals

9



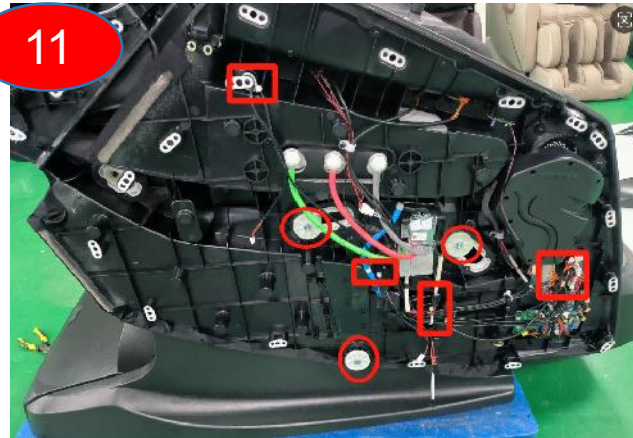
remove the screws

10



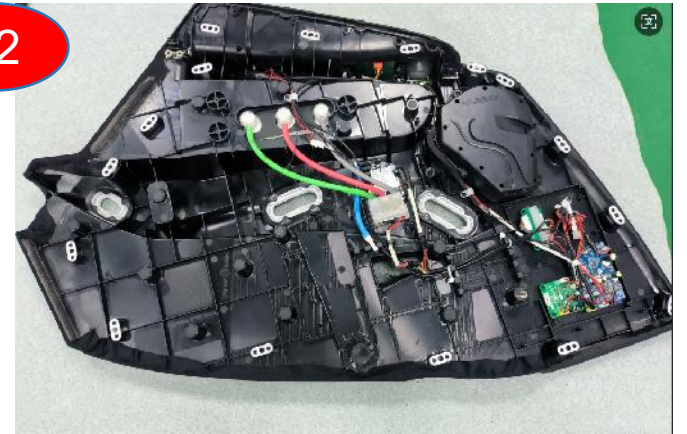
detach the decoration board

11

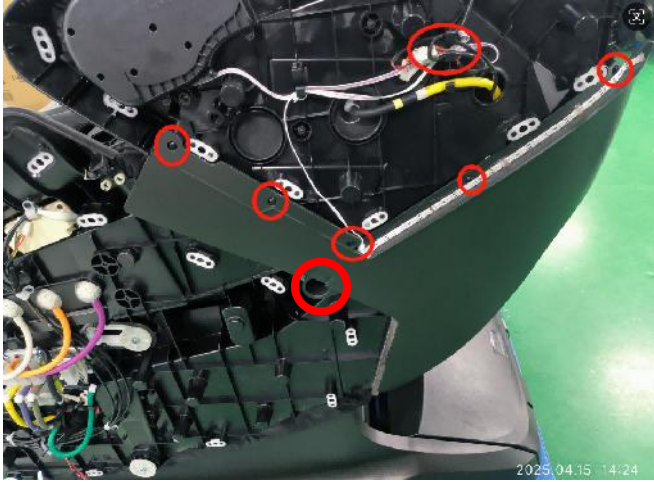


discontent the terminals and
air hose, cut cable tie

12



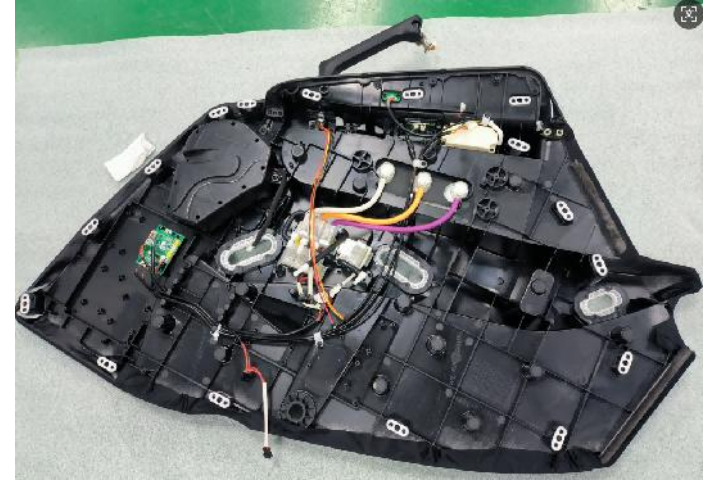
remove right side panel



remove the screws



discontent the terminals and air hose, remove the screws



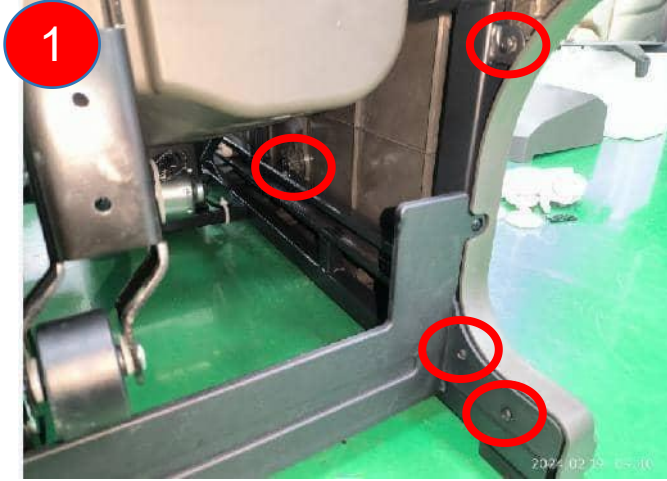
remove left side panel



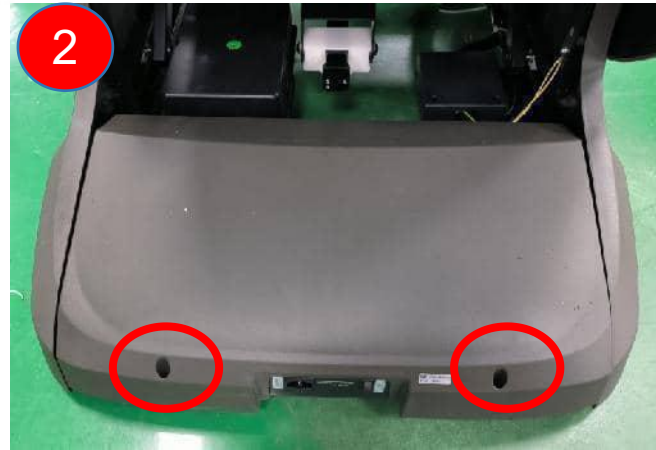
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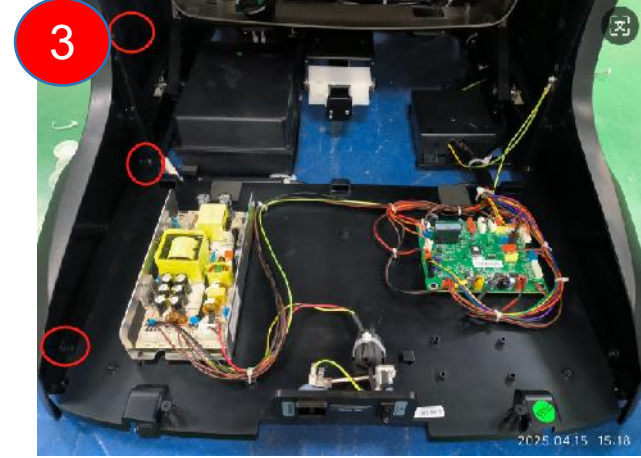
3.7、Disassembly of the lower side panel:



remove 4 screws



remove 2 screws



remove 3 screws



Slightly lift the massage chair to the side

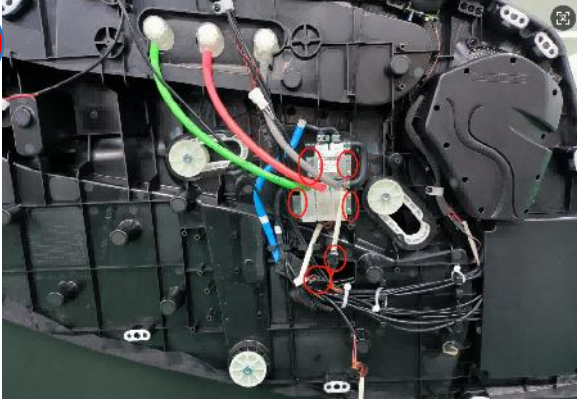


remove lower side panel



3.8、 Disassembly of the inner right side panel:

1



remove the screws,discontnet the terminal and air hose

2



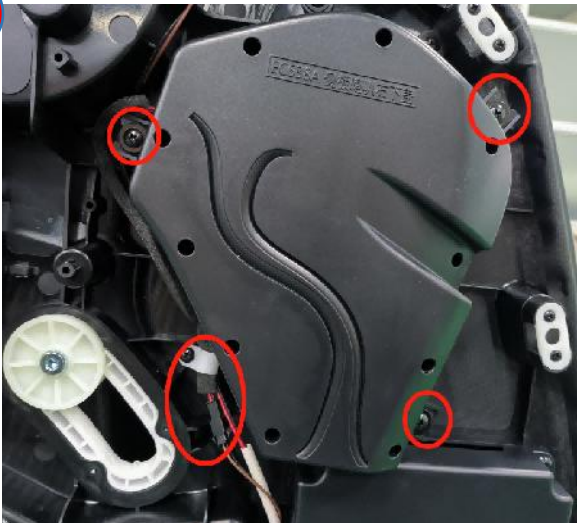
remove the 3-way air valves

3



remove the 2-way air valves

4



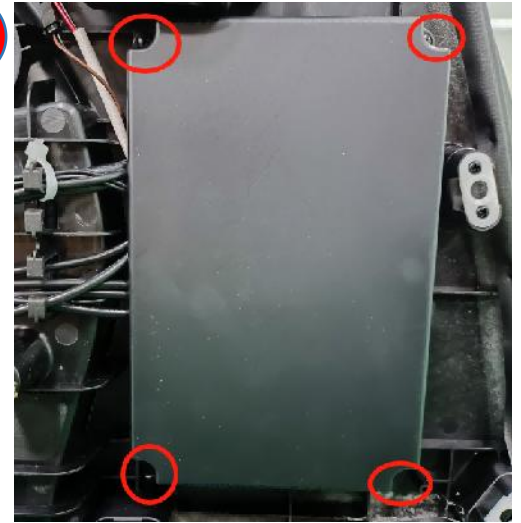
remove the screws, discontnet the terminal

5



remove the speaker

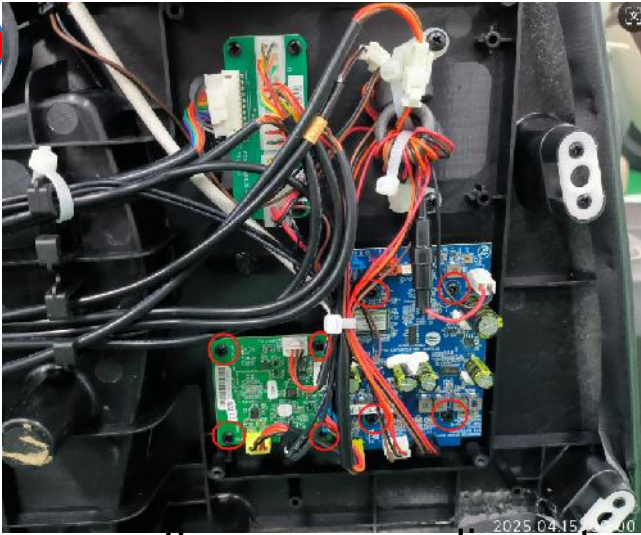
6



remove the screws and remove the cover



7



remove the screws, discontent the terminals

8



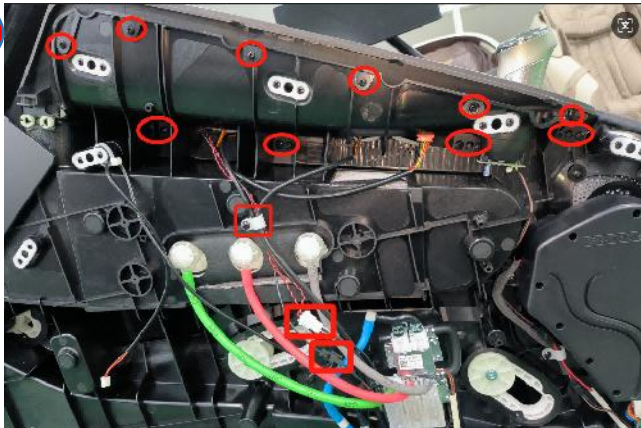
remove voice PCB

9



remove Bluetooth PCB

10



remove the screws, discontent the terminals

11



discontent the terminals

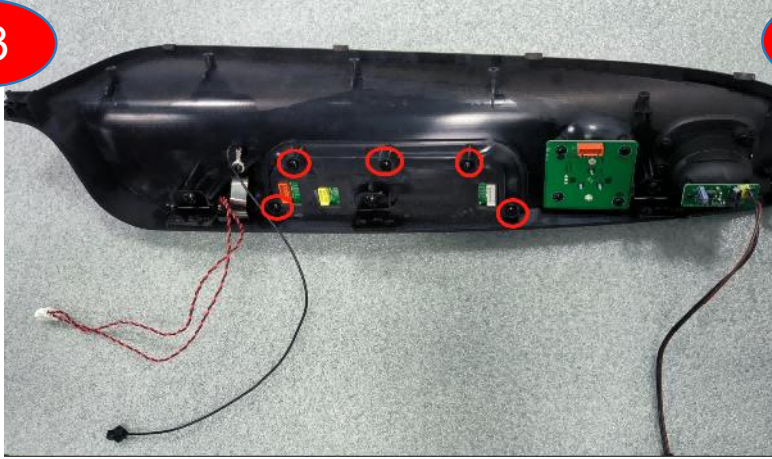
12



remove the arm cover unit



13



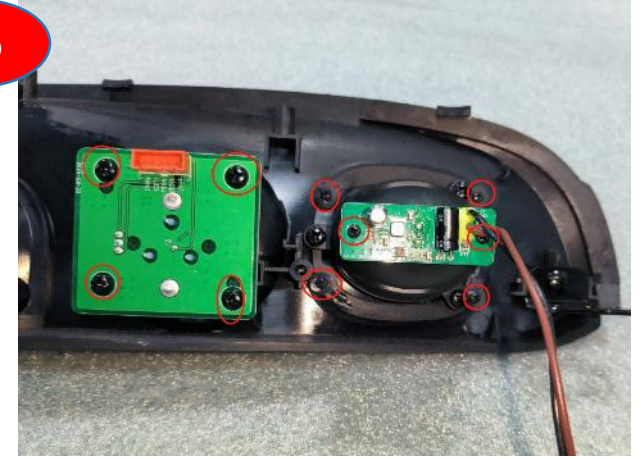
remove the screws

14



remove side panel button assembly

15



remove the screws

16



remove wireless charging unit

17



remove charging unit

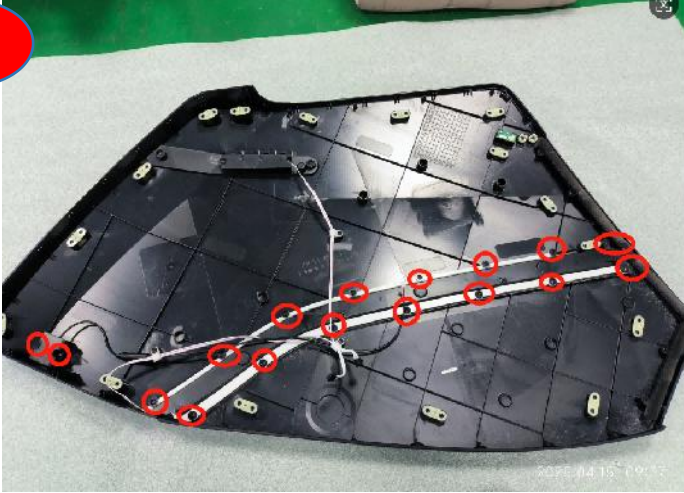
18



remove the Trim



19



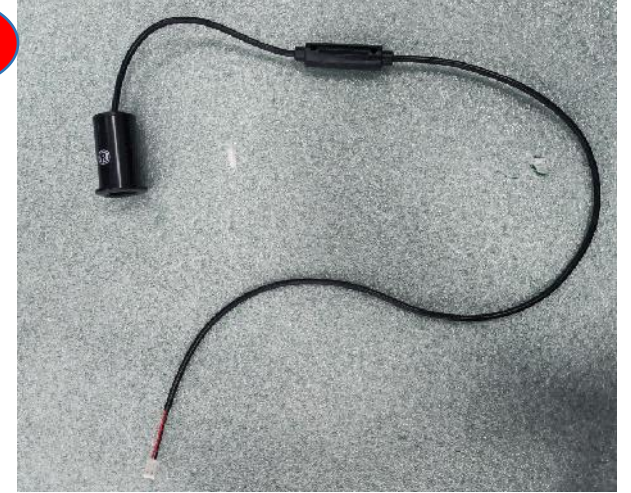
remove the screws

20



separate the cover

21



Spotlight



3.9、 Disassembly of the inner left side panel:

1



remove the screws

2



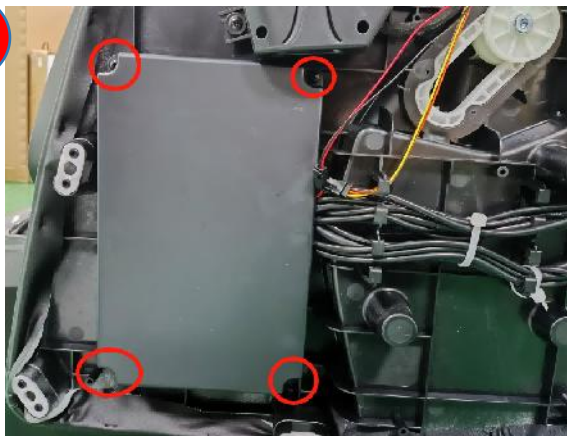
remove the USB charging PCB

3



remove the type-C charging PCB

4



remove the screws

5



remove the screws,
discontent the terminals

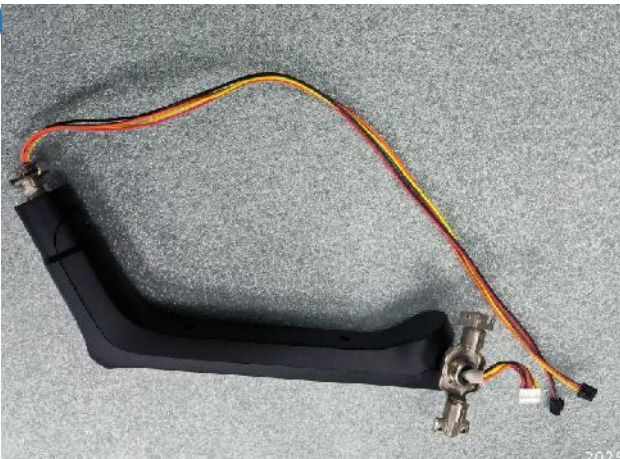
6



extend PCB



7



discontent the terminal,
remove the nut

8



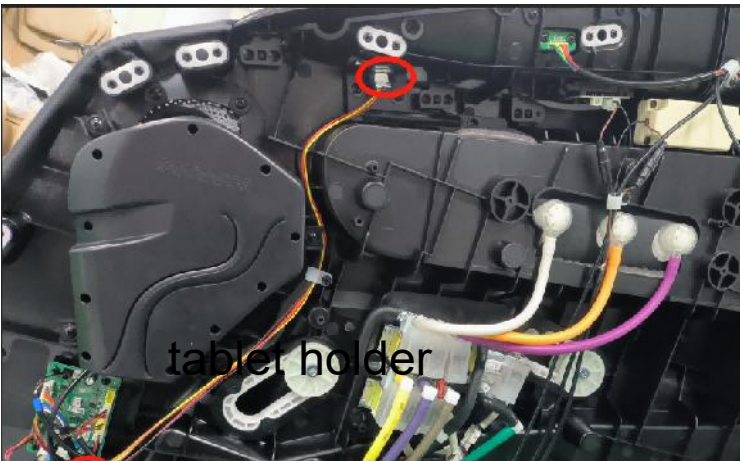
open the cover

9



remove the screws,
discontent the terminal

10



tablet holder

11

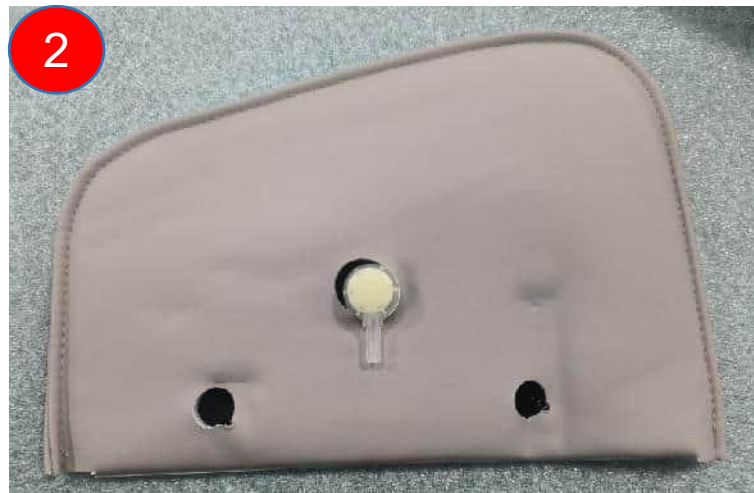
tablet



3.10、Disassembly of the side seat, shoulder:



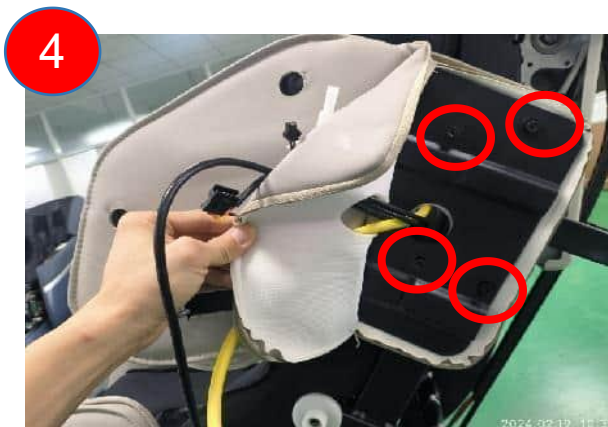
remove 2 screws



side seat



separate the side seat



remove 4 screws



shoulder



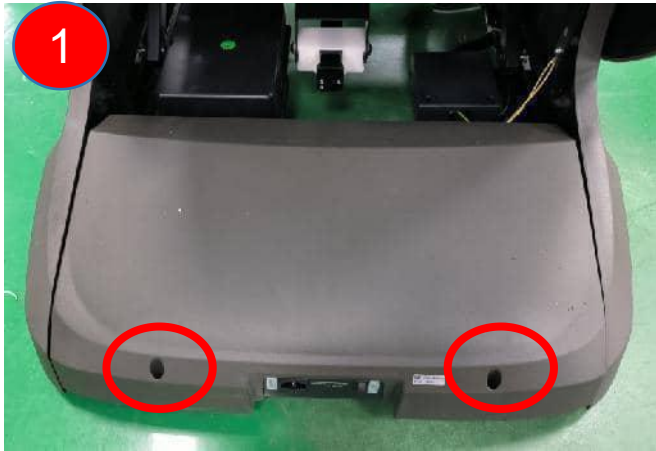
separate the shoulder



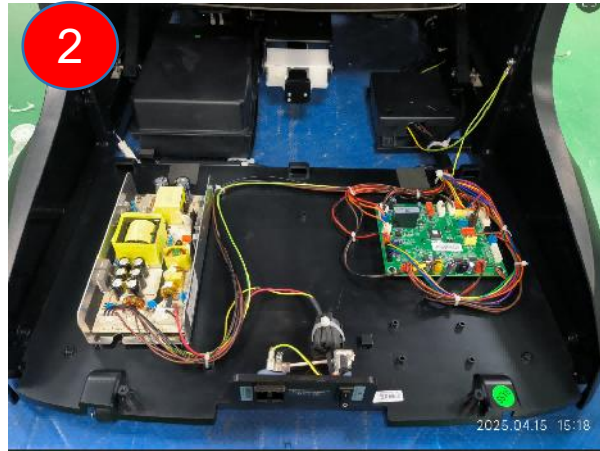
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3.11、Disassembly of the air pump:



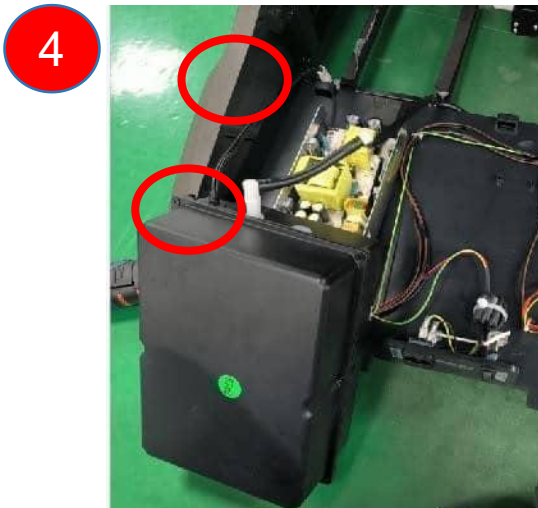
remove 2 screws



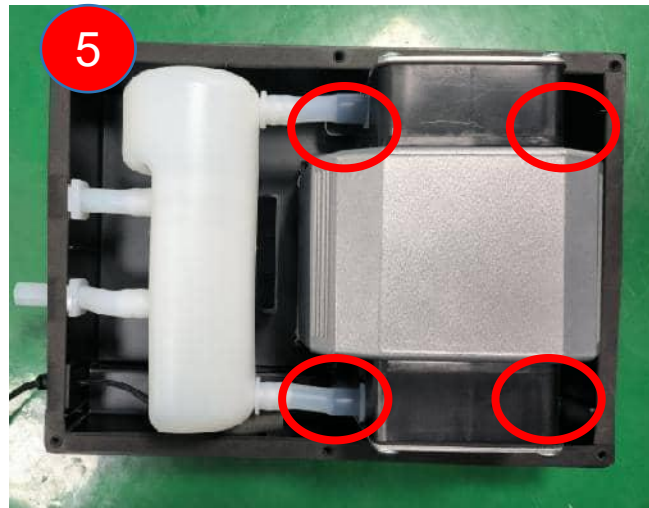
remove the cover



remove 2 screws



discontent the terminal and air hose



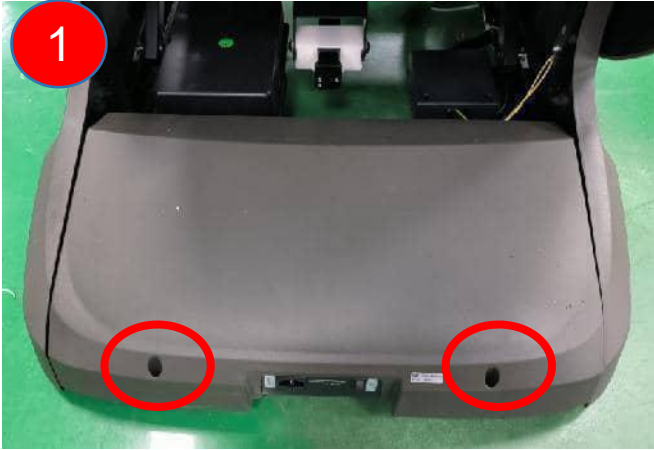
remove 4 screws



separate the air pump



3.12、Disassembly of the main PCB box:



remove 2 screws



remove the cover



power PCB



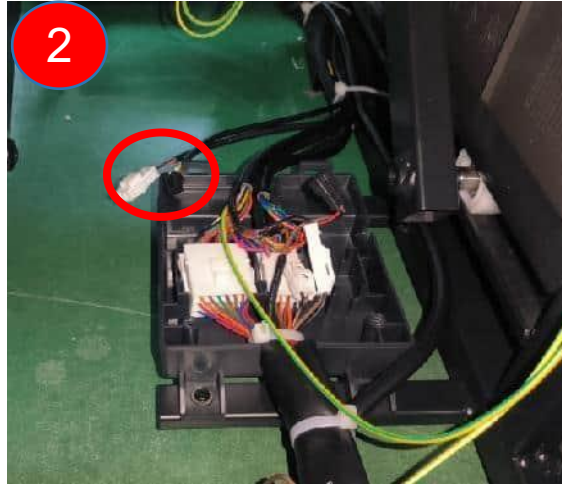
main PCB



3.13、 Disassembly of the backrest actuator



remove the cover



discontent the 2 terminals



cut the cable tie



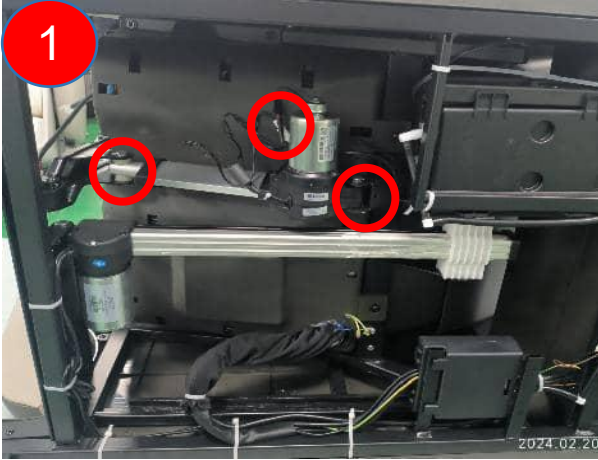
Remove the front pin and rear screw



remove backrest actuator



3.14、 Disassembly of the legrest actuator:



discontent the terminal,
remove the pin both side



remove legrest actuator



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3.15、Disassembly of the legrest:

1



remove the screws

2



discontentthe terminal and air hose, remove 2 catch pins

3



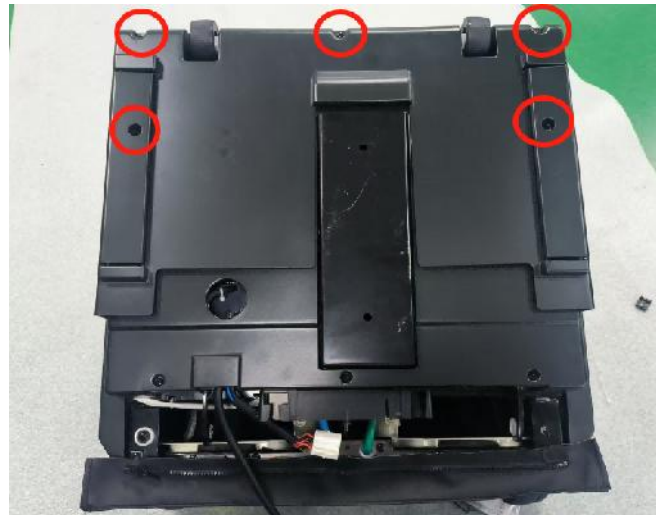
Move the legrest to the right

4



legrest

5



remove the screws

6



discontent the terminal



7



Anti pinch detection PCB

8



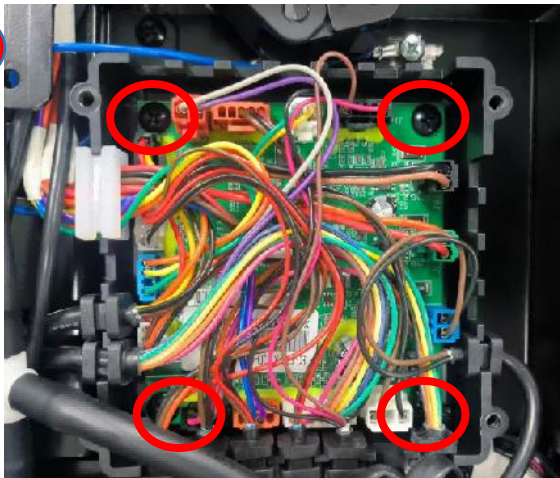
remove the screws

9



remove the screws

10



remove the screws,
discontent the terminals

11



remove legrest PCB



3.16、Disassembly of under seat PCB:

1



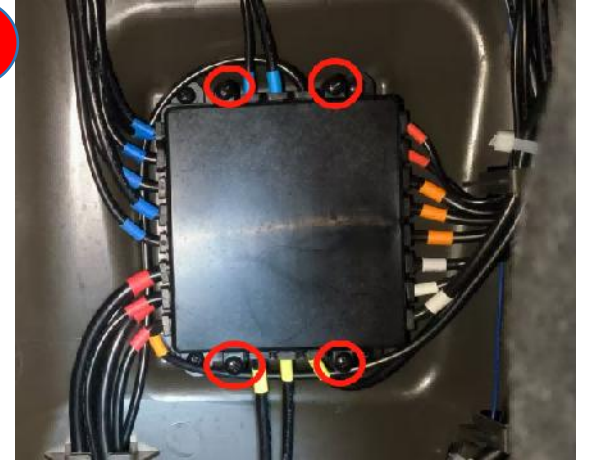
unzip the zipper

2



the position of under seat PCB

3



remove 4 screws

4



under seat PCB



五、Massage chair fault judgment

No.	phenomenon	problem description	steps of shooting the trouble	remark
1	Press and hold the POWER button on the side panel for more than 40 seconds	1. There is a button stuck	1. check the POWER button on the side panel	turn on the chair
02	remote control did not connected well	1. remote control wire is broken 2. remote control broken	1. replace remote control wire 2. replace remote control	turn on the chair
03	backrest signal is abnormity	1. The connector of the backrest wire is not well connected 2. Backrest wire Broken	1. check the connector of backrest wire 2. change the backrest wire 3. replace the mechanism	turn on the chair
04	rolling signal is abnormity	1. The connector of the backrest wire is not well connected 2. rolling sensor broken	1. check the connector of backrest wire 2. rolling sensor broken	turn on the chair
05	Pside panel buttons stuck	1. Button stuck	1. check the button of side panel	turn on the chair



06	The communication between main PCB and the legrest PCB has exceeded 4S and has not been successful	1.connector of leg rest wire not well 2.wire of leg rest broken	1.check the connector of leg rest wire 2.change the wire of leg rest 3.replace legrest PCB	turn on the chair
07	kneading signal is abnormality	1.kneading motor is abnormality 2.3D PCB is abnormality 3.counting sensor is abnormality of kneading motor	1.change kneading motor 2.change 3D PCB 3.change counting sensor of kneading motor	turn on the chair
08	tapping signal is abnormality	1.tapping motor is abnormality 2.3D PCB is abnormality 3.counting sensor of tapping motor is abnormality	1.change tapping motor 2.change 3D PCB 3.change counting sensor of tapping motor	turn on the chair
09	Telescopic signal is abnormality	1.3D Telescopic motor is abnormality 2.3D PCB is abnormality 3.counting sensor of 3D Telescopic motor is abnormality	1.change 3D Telescopic motor 2.change 3D PCB 3.change counting sensor of 3D Telescopic motor	turn on the chair
10	Abnormal heating sensor of upper mechanism	1. Abnormal heating drive circuit of the upper mechanism 2. Abnormal heating sensor of the upper mechanism 3. Heating sensor wire of the upper mechanism	1.replace upper mechanism PCB 2.replace the gearbox	turn on the chair



12	The foot roller has been turned on for 10 seconds and the initial position has not been detected	1. Abnormal foot roller motor 2. The sensor of the foot rolling motor is broken	1. Replace the motor 2. Check the foot roll sensor 3. Testing wires	turn on the chair
13	X-axis motor alarm	01: Overcurrent 04: Overvoltage 05: Undervoltage 06: Phase loss 07: Locked rotor 08: Over temperature 0B: Low pressure warning 0D: Hall stalling fault	1. Replace the motor 2. Testing wires	turn on the chair
14	Y-axis motor alarm	01: Overcurrent 04: Overvoltage 05: Undervoltage 06: Phase loss 07: Locked rotor 08: Over temperature 0B: Low pressure warning 0D: Hall stalling fault	1. Replace the motor 2. Testing wires	turn on the chair
17	lower leg rest Telescopic signal is abnormality	1. Telescopic motor of lower leg rest broken 2. the wire broken 3. counting sensor broken	1. change the motor 2. check the wire well or not 3. change the counting sensor of upper legrest motor	turn on the chair
18	upper leg rest Telescopic signal is abnormality	1. Telescopic motor of upper leg rest broken 2. the wire broken 3. counting sensor broken	1. change the motor 2. check the wire well or not 3. change the counting sensor of upper legrest motor	turn on the chair



19	when start the leg rest actuator, there is no counting signal for more than 2.5 seconds (or 40 seconds did not test the actuator Reset signal)	1. leg rest actuator broken 2. leg rest actuator wire broken	1. change leg rest actuator 2. check the wire of the leg rest actuator	turn on the chair
20	X-axis motor loses communication	1. Motor abnormality 2. Cable issues	1. Replace the motor 2. Testing wires	turn on the chair
21	Y-axis motor loses communication	1. Motor abnormality 2. Cable issues	1. Replace the motor 2. Testing wires	turn on the chair
22	Z-axis motor loses communication	1. Motor abnormality 2. Cable issues	1. Replace the motor 2. Testing wires	turn on the chair
24	The communication between the main PCB and the air valve control PCB has not been successful for more than 4 seconds	1. Poor contact of plug wires on the air valve control board 2. The plug line of the air valve control board is broken	1. Check if the signal plug of the air valve control board is properly plugged in 2. Replace the air valve control board and insert it线	turn on the chair



25	when start the zero-G actuator, there is no counting signal for more than 2.5 seconds (or 40 seconds did not test the actuator Reset signal)	1. zero-G actuator broken 2. zero-G actuator wire broken	1. change zero-G actuator 2. check the wire of the zero-G actuator	turn on the chair
26	The leg extension push rod detects the rear signal and detects the front signal again within 2.5 seconds (the rear sensor is broken)	1. The telescopic sensor is broken or has wiring problems 2. The telescopic motor is broken	1. Replace the sensor 2. Detecting sensor wires 3. Replace the telescopic motor	turn on the chair
27	Side panel controller and main PCB failed to communicate for more than 10 seconds	1. The wiring of the side panel controller is broken 2. The side panel controller is damaged	1. Check if the side panel controller is properly connected to the power cord 2. Replace the plug-in cable of the side panel controller 3. Replace the side panel controller	turn on the chair
28	If the front and rear sensors of the leg extension push rod are both at high level, it indicates that the sensor is abnormal or the terminal is disconnected	1. The telescopic sensor is broken or has wiring problems 2. The telescopic motor is broken	1. Replace the sensor 2. Detecting sensor wires 3. Replace the telescopic motor	turn on the chair
29	The leg extension push rod 20S did not detect the front sensor signal	1. The telescopic sensor is broken or has wiring problems 2. The telescopic motor is broken	1. Replace the sensor 2. Detecting sensor wires 3. Replace the telescopic motor	turn on the chair



30	The leg extension push rod detects the front signal and then detects the rear signal within 2.5 seconds (the rear sensor is broken)	<ol style="list-style-type: none">1. The telescopic sensor is broken or has wiring problems2. The telescopic motor is broken	<ol style="list-style-type: none">1. Replace the sensor2. Detecting sensor wires3. Replace the telescopic motor	turn on the chair
31	The leg extension push rod 20S did not detect the rear sensor signal	<ol style="list-style-type: none">1. The telescopic sensor is broken or has wiring problems2. The telescopic motor is broken	<ol style="list-style-type: none">1. Replace the sensor2. Detecting sensor wires3. Replace the telescopic motor	turn on the chair



Lower mechanism alarm number				
33	Abnormal collision signal (the collision signal on the PCB of the lower mechanism is triggered for more than 10 seconds when the upper mechanism is at the upper limit and the lower mechanism is at the lower limit)	<ol style="list-style-type: none"> 1. Abnormal sensor 2. Abnormal wiring 	<ol style="list-style-type: none"> 1. Replace the sensor 2. Replace the docking cable 	turn on the chair
34	The communication between the PCB of the lower mechanism and the main PCB has not been successful for more than 4 seconds	<ol style="list-style-type: none"> 1. Poor contact between the back frame and the plug-in line 2. The back frame is disconnected from the plug-in line 	<ol style="list-style-type: none"> 1. Check if the backrest cable is properly plugged in 2. Replace the backrest cable 	turn on the chair
35	The upper and lower limit sensors of the lower mechanism are simultaneously effective	<ol style="list-style-type: none"> 1. The upper and lower limit sensors of the lower mechanism are broken 2. lower backrest cable has come loose 	<ol style="list-style-type: none"> 1. Replace the upper and lower limit sensors of the lower mechanism 2. Check the connection of the backrest cable of the lower mechanism接 	turn on the chair
36	When the rolling function of the lower mechanism is activated, abnormal rolling counting is detected	<ol style="list-style-type: none"> 1. Poor contact of the backrest cable of the lower mechanism 2. The counting sensor of the lower mechanism is broken 	<ol style="list-style-type: none"> 1. check backrest cable of lower mechanism well or not 2. The counting sensor of the lower mechanism is broken 	turn on the chair



37	The 5S clock of the lower mechanism did not detect a wide position signal	1.kneading motor is abnormity 2.3D PCB is abnormity 3.counting senor is abnormity of kneading motor	1. change kneading motor 2. change 3D PCB 3. change counting sensor of kneading motor	turn on the chair
38	lower mechanism kneading signal is abnormity	1.kneading motor is abnormity 2.3D PCB is abnormity 3.counting senor is abnormity of kneading motor	1. change kneading motor 2. change 3D PCB 3. change counting sensor of kneading motor	turn on the chair
39	The 40S clock of the lower mechanism did not detect the upper limit sensor signal	1. The upper limit sensor is broken 2. The backrest cable connection falls off 3. The rolling motor is broken or disconnected	1. Replace the upper limit sensor board 2. Check the connection of the backrest cable 3. Replace the rolling motor or wiring	turn on the chair
40	When the rolling function of the lower mechanism is activated, abnormal rolling counting is detected	1. The backrest cable connection falls off 2. The travel counting sensor is broken	1. Check if the backrest cable is properly plugged in 2. The rolling counting sensor is broken	turn on the chair
41	After the upper limit sensor of the lower mechanism detects the signal, the lower limit sensor signal is detected again within 2 seconds	1.The lower (upper) limit sensor is broken	1. Replace the upper limit sensor board 2. Check the connection of the upper limit sensor wire	turn on the chair



42	The 40S clock of the lower mechanism did not detect the lower limit sensor signal	<ol style="list-style-type: none"> 1. The lower limit sensor is broken 2. The backrest cable connection falls off 3. The rolling motor is broken or disconnected 	<ol style="list-style-type: none"> 1. Replace the lower limit sensor board 2. Check the connection of the back wirebackrest cable 3. Replace the faulty or wired rolling motor 	turn on the chair
43	After the lower limit sensor of the lower mechanism detects the signal, the upper limit sensor signal is detected again within 2 seconds	<ol style="list-style-type: none"> 1. The lower (upper) limit sensor is broken 	<ol style="list-style-type: none"> 1. Replace the upper limit sensor board 2. Check the connection of the upper limit sensor wire 	turn on the chair
44	Inflate the mechanism for 15 seconds without detecting any change in air pressure The airbag cannot lift up	<ol style="list-style-type: none"> 1. The air valve is broken 2. The air pressure sensor is broken 3. Tracheal detachment 	<ol style="list-style-type: none"> 1. Pressure holding valve 2. Change the center board 3. Check the tracheal connection 	turn on the chair
45	Air leakage detected after holding for 15 seconds, unable to maintain pressure Air leakage detected for 15 seconds, unable to maintain pressure	<ol style="list-style-type: none"> 1. Reverse the connection between the inflation valve and the pressure maintaining valve 2. Abnormal connection 	<ol style="list-style-type: none"> 1. Check the tracheal connection 2. Check the wiring 	turn on the chair
46	If the front and rear sensors of the leg scraping push rod are both at high level, it indicates that the sensor is abnormal or the terminal is disconnected	<ol style="list-style-type: none"> 1. Scraping sensor broken or wiring problem 2. Scraping motor is broken 	<ol style="list-style-type: none"> 1. Replace the sensor 2. Detecting sensor wires 3. Replace the scraping motor 	turn on the chair



47	Abnormal counting signal of leg scraping	<ol style="list-style-type: none">1. The leg scraping motor is broken2. The counting line for leg scraping has fallen off3. Abnormal leg scraping counting sensor	<ol style="list-style-type: none">1. Replace the leg scraping motor2. Check the wiring of the leg scraping motor2. Replace the leg scraping sensor	turn on the chair
48	The leg scraping push rod did not detect the front sensor signal for 20 seconds	<ol style="list-style-type: none">1. Scraping sensor broken or wiring problem2. Scraping motor is broken	<ol style="list-style-type: none">1. Replace the sensor2. Detecting sensor wires3. Replace the scraping motor	turn on the chair
49	The leg scraping push rod did not detect the rear sensor signal for 20 seconds	<ol style="list-style-type: none">1. Scraping sensor broken or wiring problem2. Scraping motor is broken	<ol style="list-style-type: none">1. Replace the sensor2. Detecting sensor wires3. Replace the scraping motor	turn on the chair
50	Abnormal pressure detection of calf air valve detection board	<ol style="list-style-type: none">1. The pressure sensor is broken or there is a wiring issue2. The detection board is damaged	<ol style="list-style-type: none">1. Replace the sensor2. Detecting sensor wires3. Change the calf pressure detection board	turn on the chair