

# Service Manual



Model: Ronin / 8500 Max

Customer Service  
Department

*Ningbo Zhouqi Health and Technology Company*

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&  
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# 1、Product Parameters and Functions

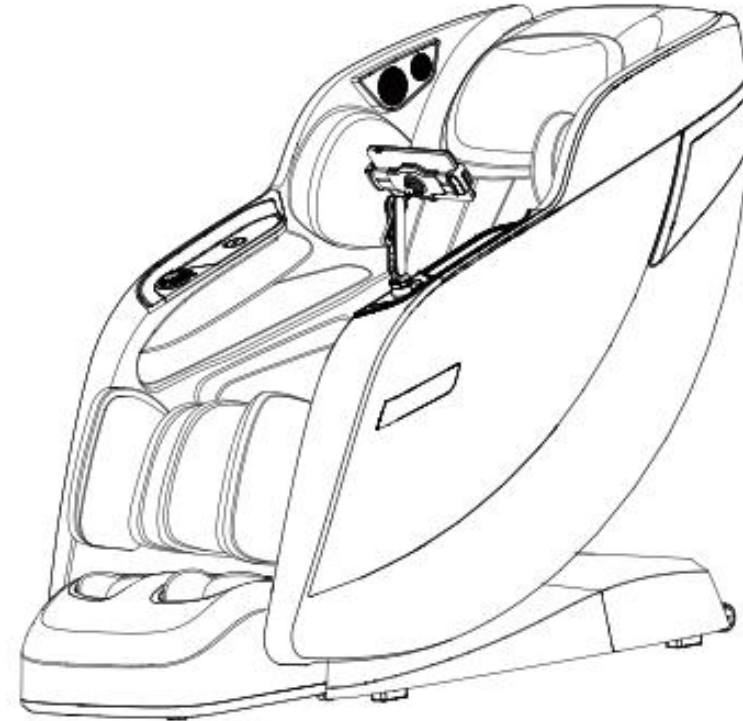
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1、Product Parameters

2、Fuctions

3、Remote Instruction

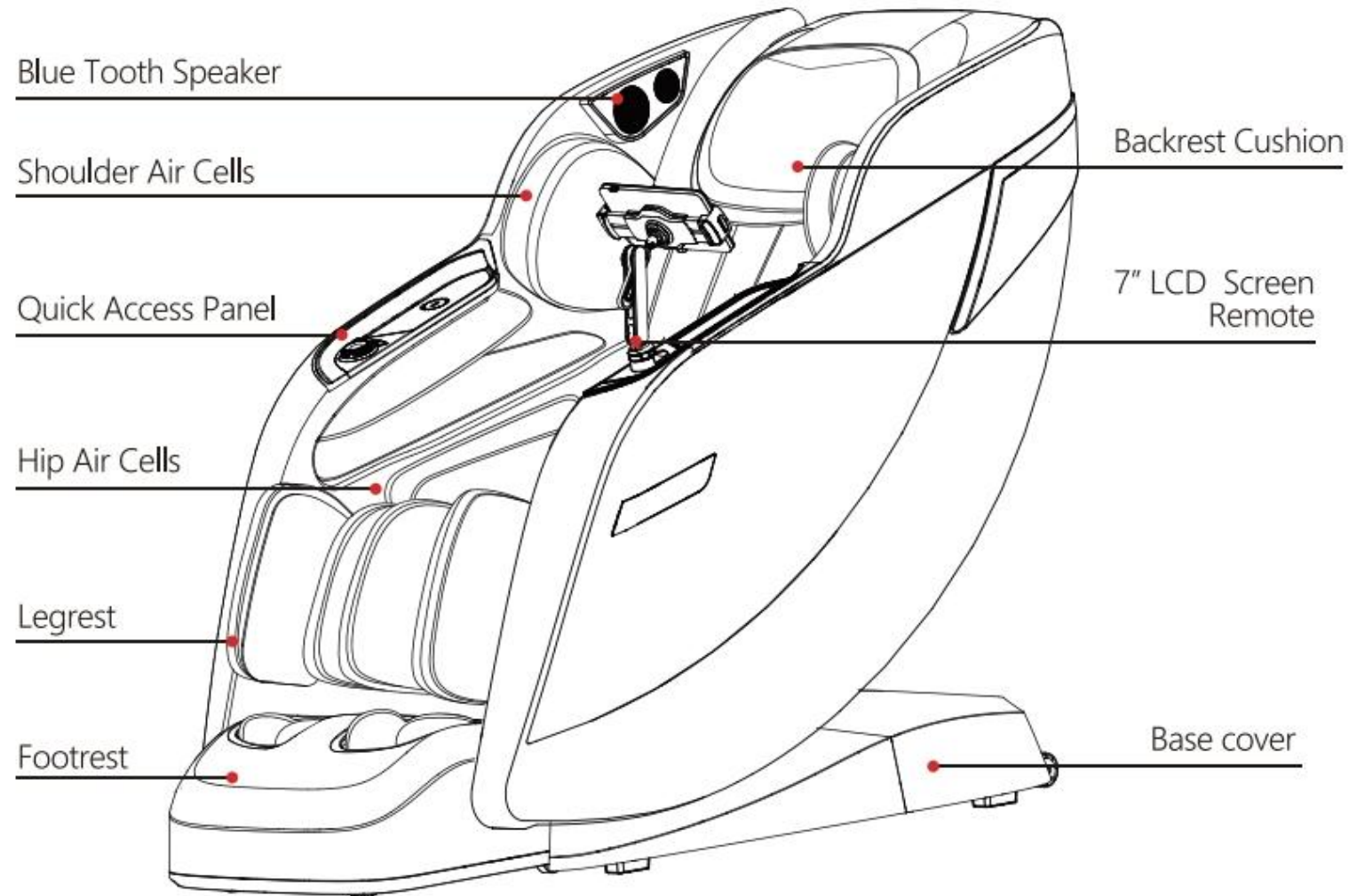
4、Product Size



# 1.1.1·Product Parameters

<i>Name</i>	<i>Specification</i>
Product name	Massage Chair
Model No	TP-4D 8500 MAX / TP-Ronin 4D / Sonoma 4D
Rated frequency	60HZ
Rated voltage	110V
Rated power	180W
Safety design	Class 1
Net weight	216.1lbs
Gross weight	260.1lbs
Product size	62.5" *29.7" *43.7

## 1.2.1 · Function Introduction



## 1.3.1·Remote Control



1.Turn on LCD SCREEN to start massaging.



2.There are six option on the home page:CLASSICAL,CUSTOMIZED,POSITION MANUAL,SETTING,FAVORITES.



3.After choose the CLASSIC mode,there are 8 programs  
RENEW MODE,STRETCH  
MODE,FATIGUE&RELIEF,HAWAIIAN  
MODE,MORNING GLOW,NIGHT  
MODE,POWER TOUCH,NAP MODE.

## 1.3.1·Remote Control



4.After choose the SPECIALTY mode,there are 8 programs :  
ACUPOINT,RELAX,GENTLE,SHIATSU,DEEP TISSUE,ATHLETIC,CIRCULATION,RECHARGE.



5.After choose the ELITE TARGET mode,there are 8 programs :  
REST,FENG CHI,BACK FOCUS,LUMBAR FOCUS,WAIST & HIP FOCUS,LEG & FEET FOCUS,UPPER BODY,LOWER BODY.



6.After selecting the automatic massage program, the chair will start to body test.For enjoying the most comfortable massage,please put your head on the head rest and try to sit in the deepest of the chair.

## 1.3.1·Remote Control



7.After the body test, the shoulder position test will be started, the massage hand will move from top to the shoulder position and start kneading to lock your shoulder position.



8.After choose the CUSTOM mode, it will enter the CUSTOM mode page: In this page, you can select the body parts of the air cells massage,such as the FOLL BODY,SHOULDER,HAND,WAIST-HIP,LEG-FOOT massage, or you can select the massage action: like KNEADING,PERCUSSION ,ACUPRESSURE,FLAP,SLAP, MIXTURE.



9.In MANUAL mode massage position page,you can control the massage hand position through FIXED POINT, FULL BODY, AREA,UP and DOWN.

In "full body" mode, "up" and "down" are invalid.

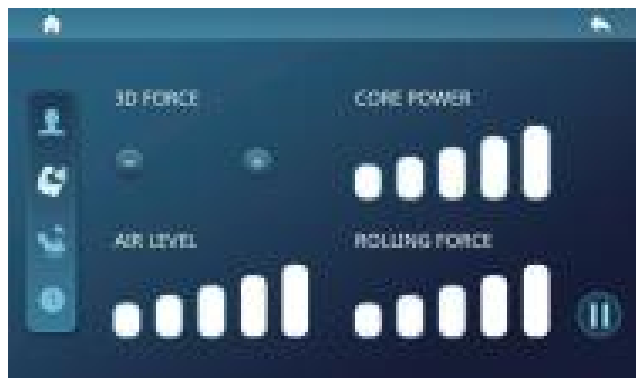
## 1.3.1·Remote Control



10.In MANUAL mode OPTIONS page, you can choose the other functions you may need, such as:HEATING,LEG KNEADING,FOOT ROLLING,RANGE,WIDE ,MIDDLE and NARROW.



11.There are 4 function:HEATING,ROLLING, AIR MASSAGE and ADD TO FAVORITES. You can add your favorite massage program into ADD TO FAVORITES.

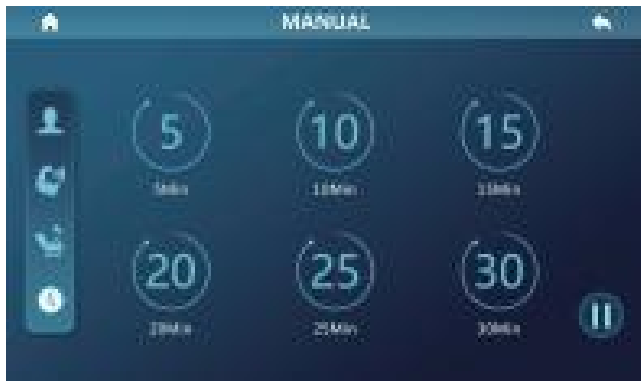


12.This button to help to control:4D FORCE,CORE POWER,AIR LEVEL and ROLLING FORCE  
Note:some actions are controlled by automatic program, and manual adjustment is invalid at this time.

## 1.3.1·Remote Control



13.This button to help to control: calf rise,calf down, zero gravity, backrest rise,legrest extend, legrest retract, backrest down.



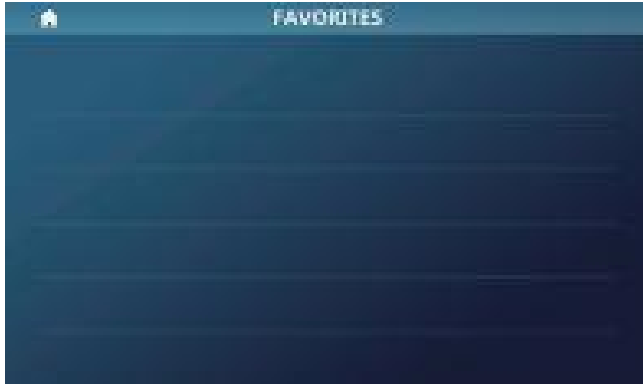
14.This button to change massage time:5Min,10Min,15Min,20Min,25Min,30Min.



15.Home page SETTING you can control The BLUETOOTH,LANGUAGE,VOICE,KEY TONE DORMANCY,BACKLIGHT.

## 1.3.1·Remote Control

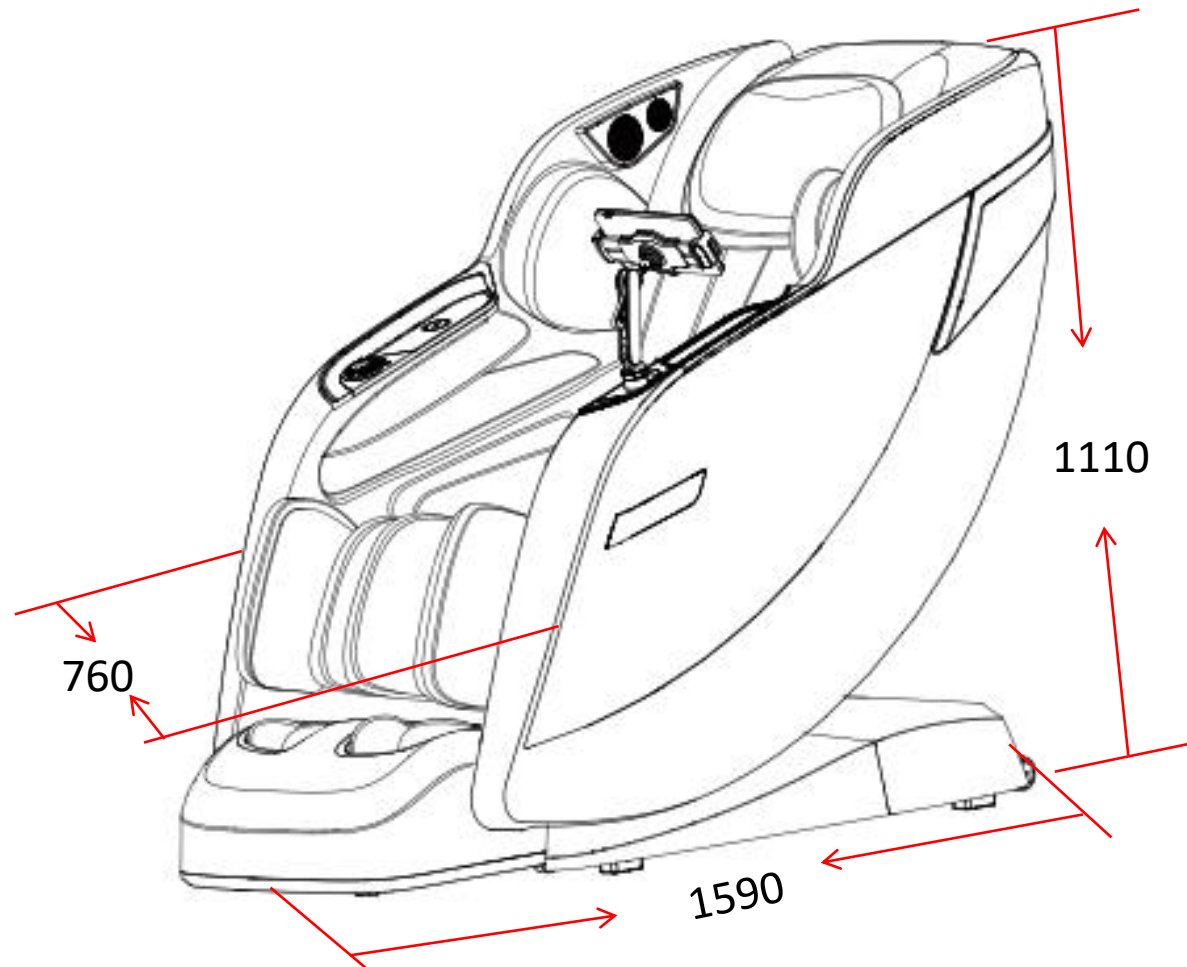
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16.FAVORITES:You can add the programs you like into it and when you feel uncomfortable you can delete it.

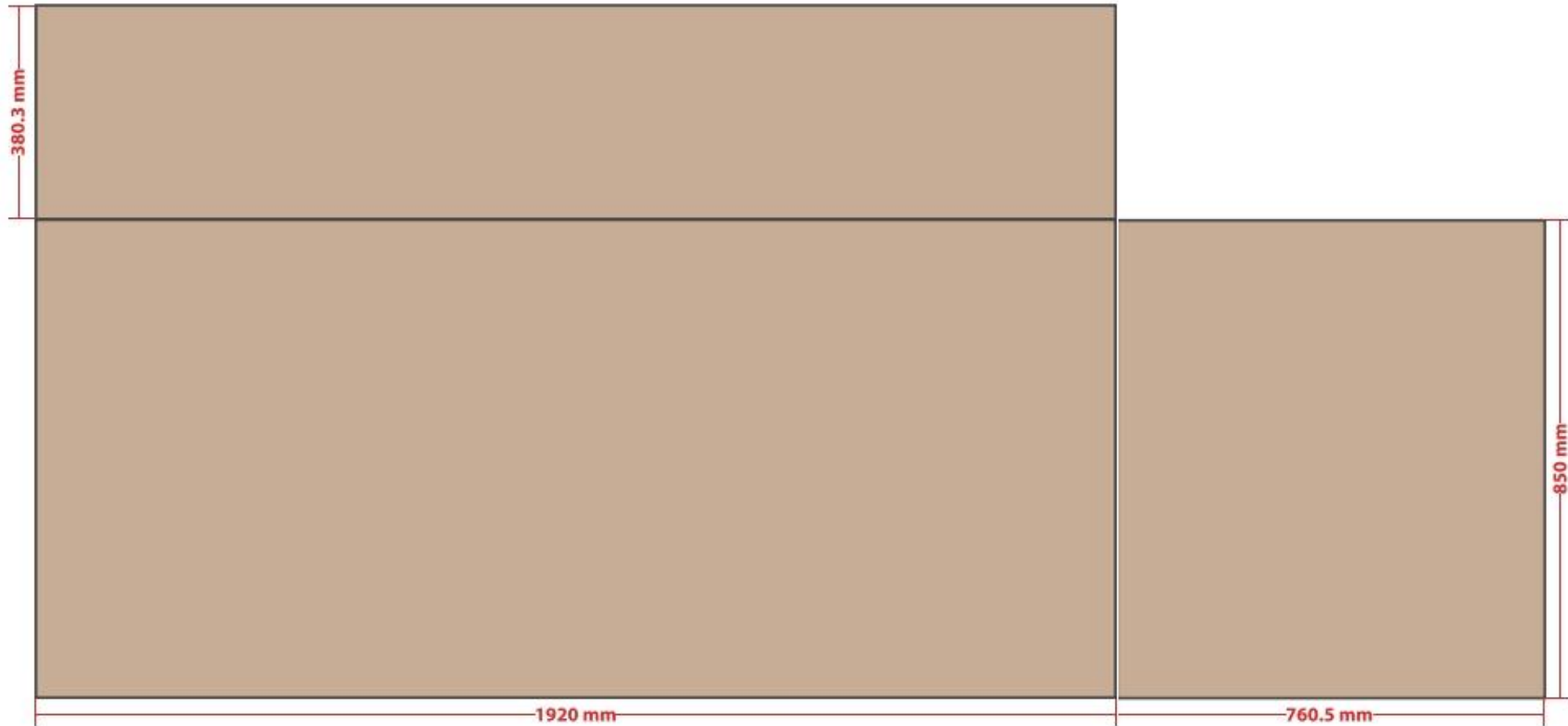
## 1.4.1·Product Size

### Chair Size



## 1.4.2·Product Size

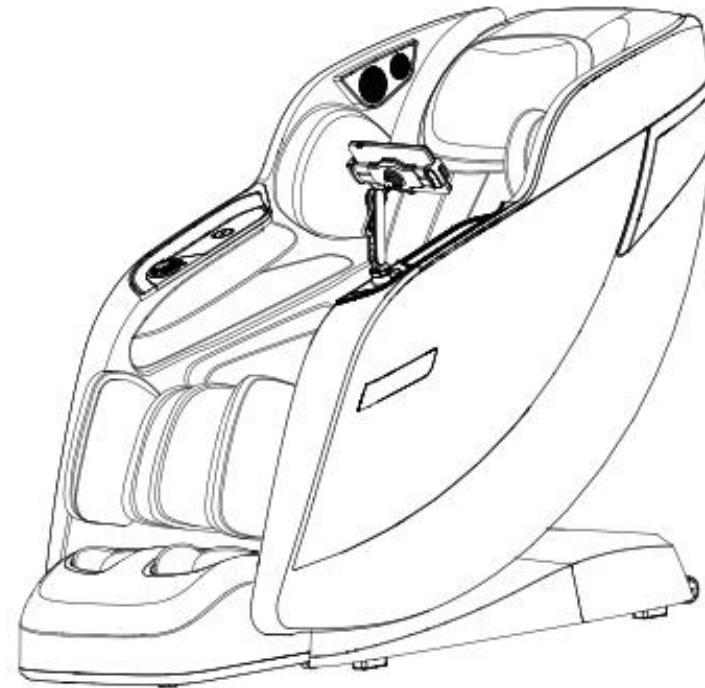
### Package Size



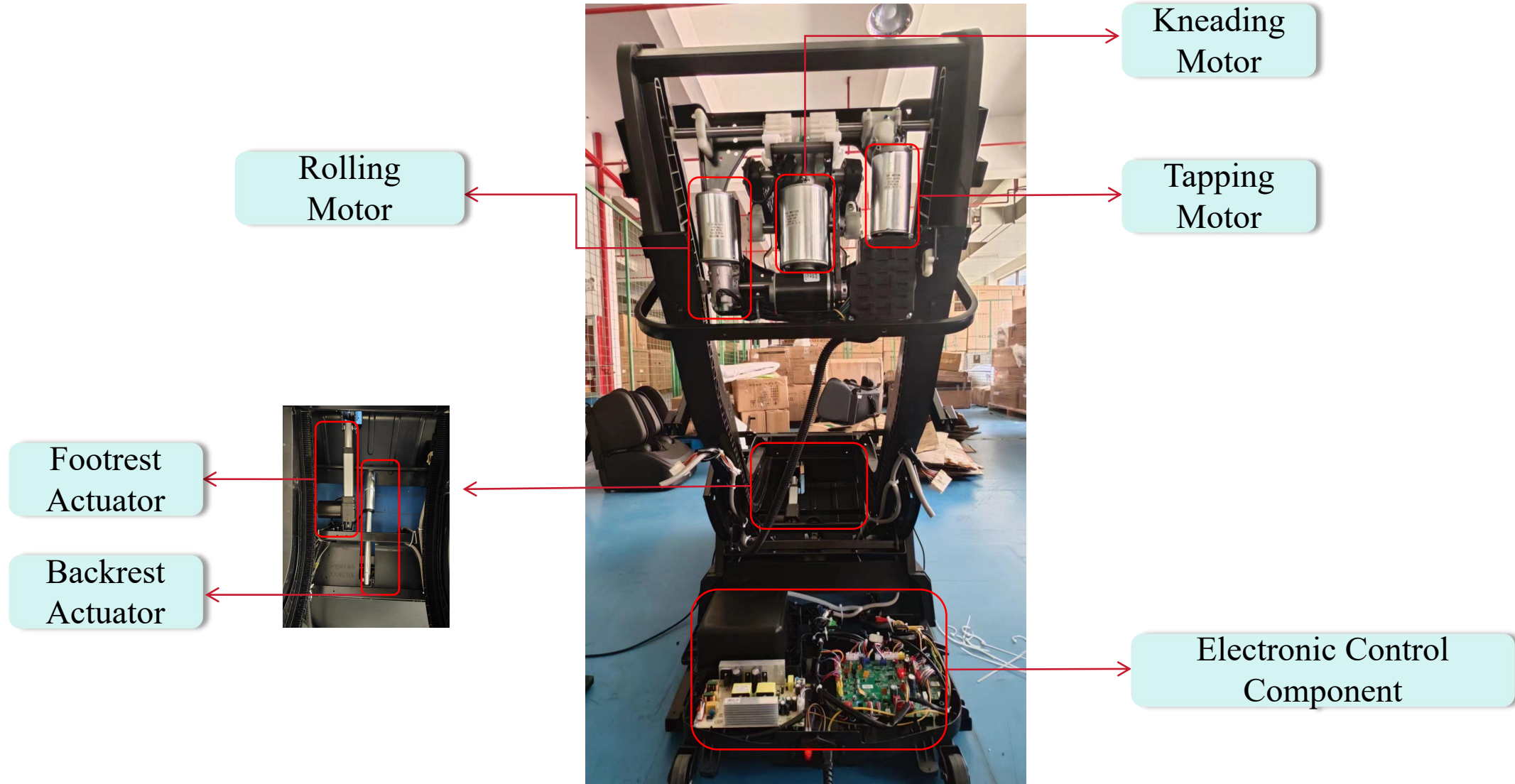
## II、Chair Structure

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- 1、Name of Parts
- 2、Internal parts diagram
- 3、Internal wiring of Electrical Control  
Box

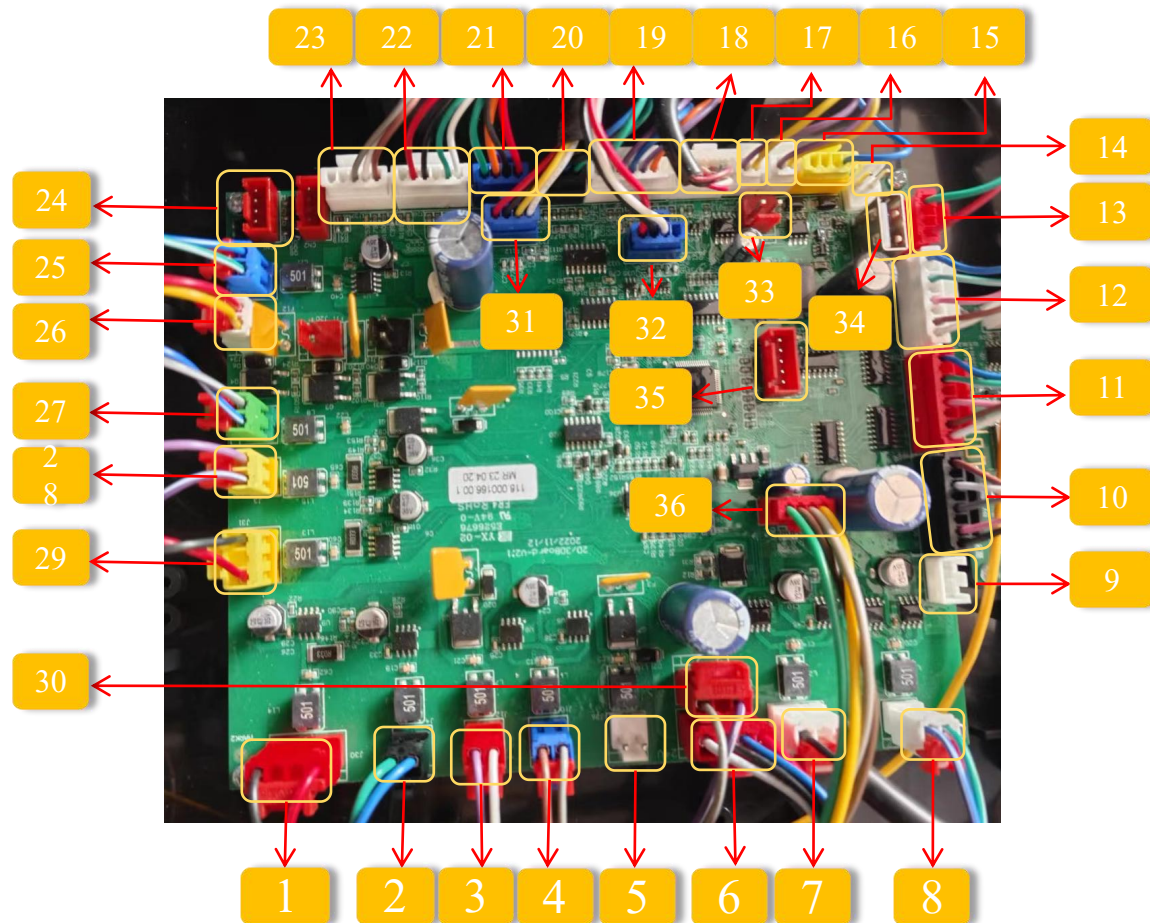


## 2.1.1、 Name of Parts



## 2.2.1、Internal Parts Diagram

PCB



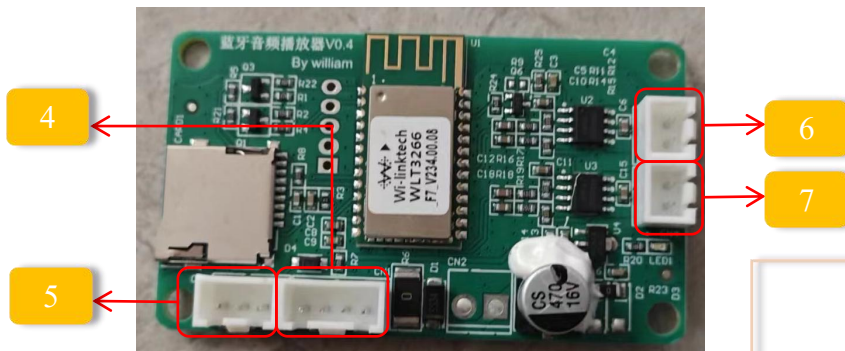
Code	Function	Code	Function	Code	Function
1	Footrest Actuator	13	Charging	25	Foot up/down motor
2	Rolling Motor	14	12V Backup	26	Foot Roller Motor
3	Tapping Motor	15	Negative Ion	27	Calf roller Motor
4	Kneading Motor	16	12V LED Light	28	Foot up/down motor
5	Foot Tapping Motor	17	12V LED Light	29	Backrest Actuator
6	24V Input	18	Remote Controller	30	Wirelss Charging
7	24V Air Pump	19	Signal of mechanism width, count of tapping, kneading and rolling	31	Quick button
8	3D Motor	20	Up and Down limit	32	Bluetooth
9	220V Air Pump Control	21	Health Detection	33	12V output
10	Footrest Air Valve	22	Signal of footrest and Anti-pinch	34	USB Power Supply
11	Left Arm Air Valve	23	Signal of 3D mechanism	35	Program download port
12	Right Arm Air Valve	24	RGB Light Control	36	5V Input

## 2.2.2、 Internal Parts Diagram

**Power Board**

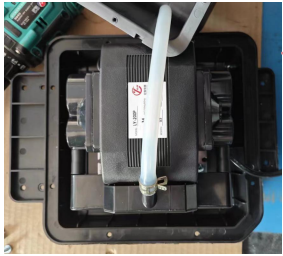


Number	Function
1	AC220V input
2	DC5V output
3	DC24 output
4	Bluetooth Board Control Cable Connector
5	Inserted Music connector
6	Left audio signal output
7	Right audio signal output

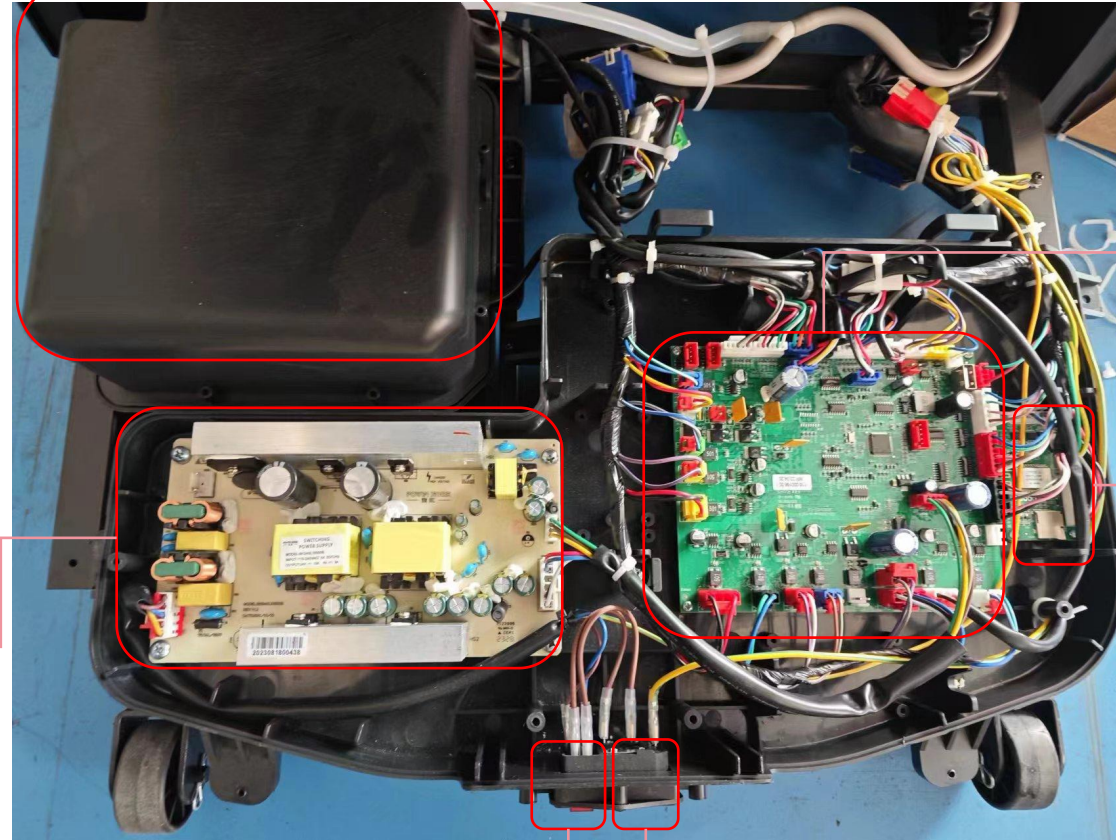


**Bluetooth Board**

## 2.3.1、 Internal wiring of Electrical Control Box



Air Pump



PCB

Bluetooth  
Board

Power Board

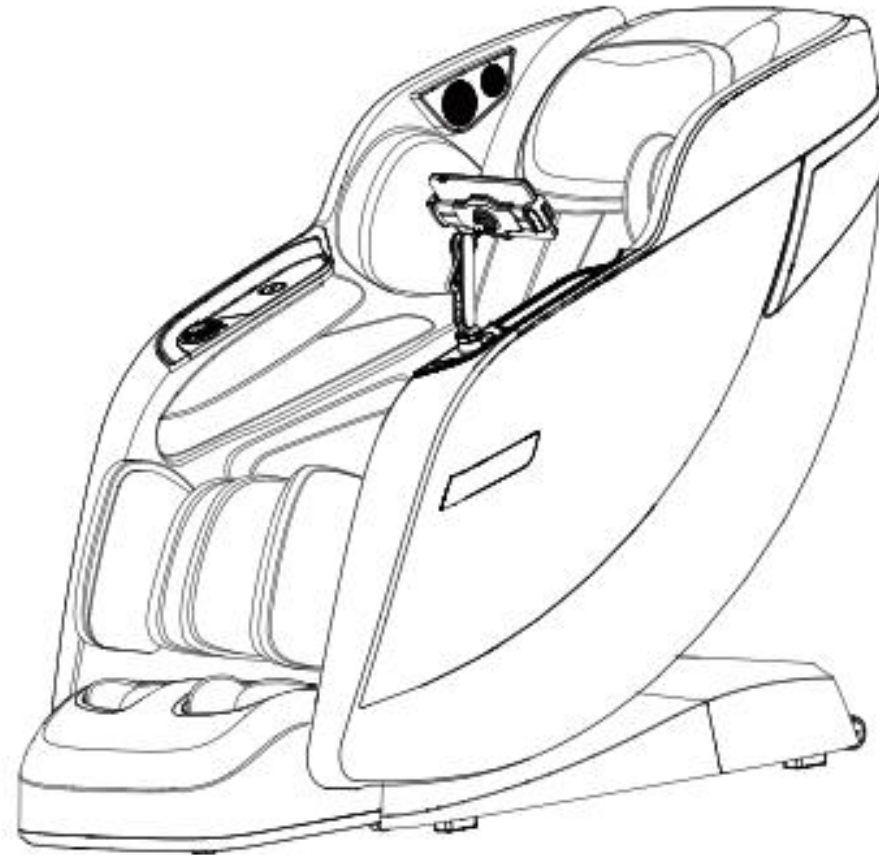
Switch

Power  
Socket

### III、 Decomposition Diagram

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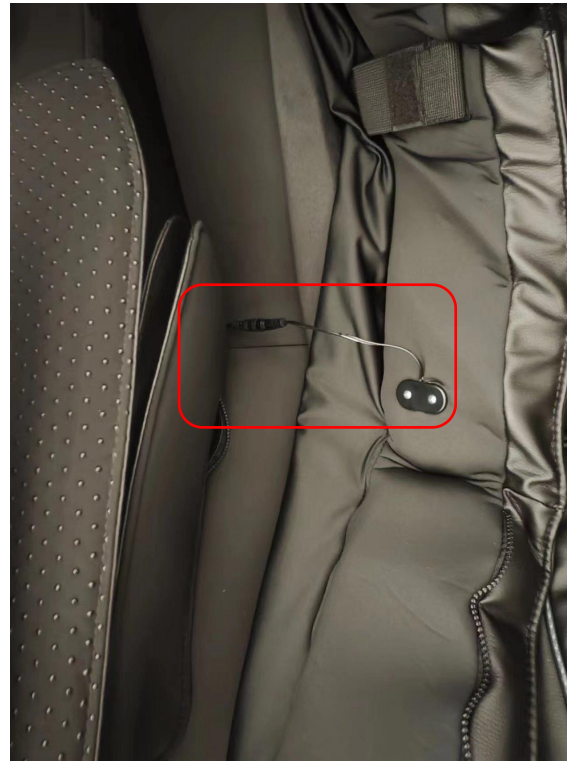
- 1、 Removal of the backrest cover
- 2、 Removal of the footrest
- 3、 Removal of back cover
- 4、 Removal of the armrest
- 5、 Removal of back assy
- 6、 Removal of massage mechanism
- 7、 Removal of electric control box
- 8、 Removal of lower side panel
- 9、 Removal of actuators



### 3.1.1·Removal of the backrest cover



① Unzip zipper as arrow shows in picture and remove the buckle

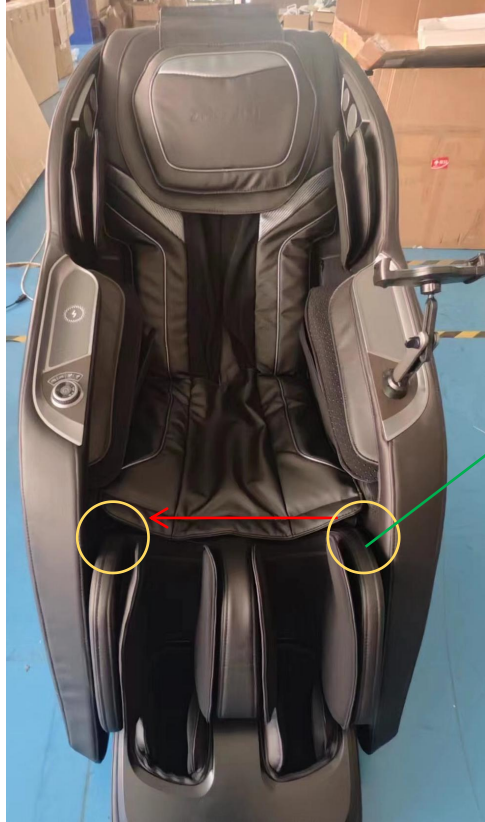


② Unscrew the connection terminals shown in the picture



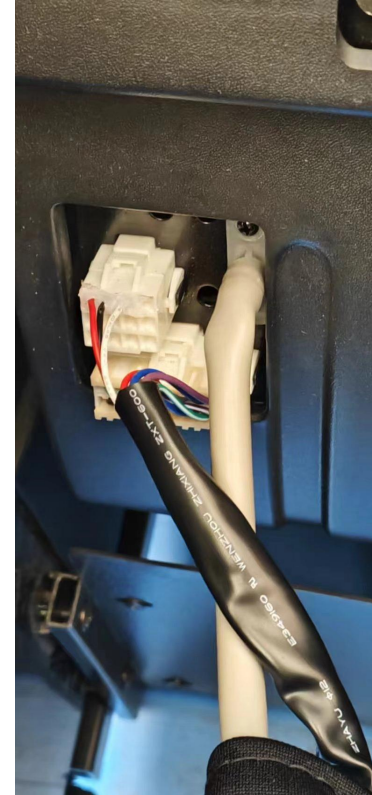
③ Backrest cover

## 3.2.1 · Removal of footrest



Buckle  
style

① Unzip the zipper (red arrow); remove the buckle (yellow circle) and pull and push it outward a little to remove it



② Remove terminals and unplug air tubes



③ Footrest part

## 3.2.2·Removal of footrest

### Decomposition



Remove the seven screws shown above and take off Picture(1)



Screws

(1)



② Remove the eight screws in the picture and take off the picture (2)

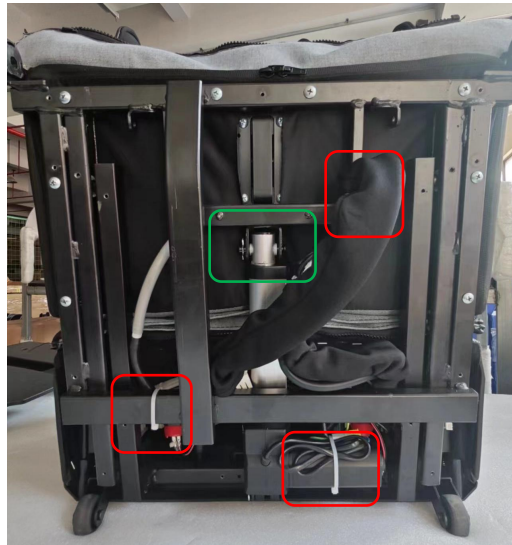
(2)



screws



## 3.2.2·Removal of footrest



① Cut ties and remove actuator pins

Pin



② Unplug the two air hose connectors and actuator connection terminals shown in the picture.



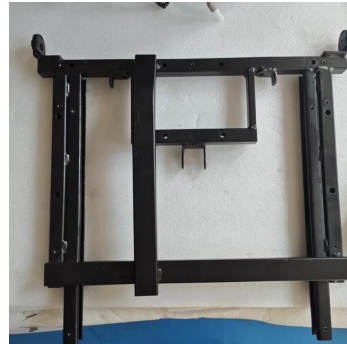
③ Pull up with both hands and unzip the zipper between the upper leg and the foot.

## 3.2.2·Removal of footrest



④ the calf part  
Remove the 10 screws  
from the iron frame show  
in picture

screws

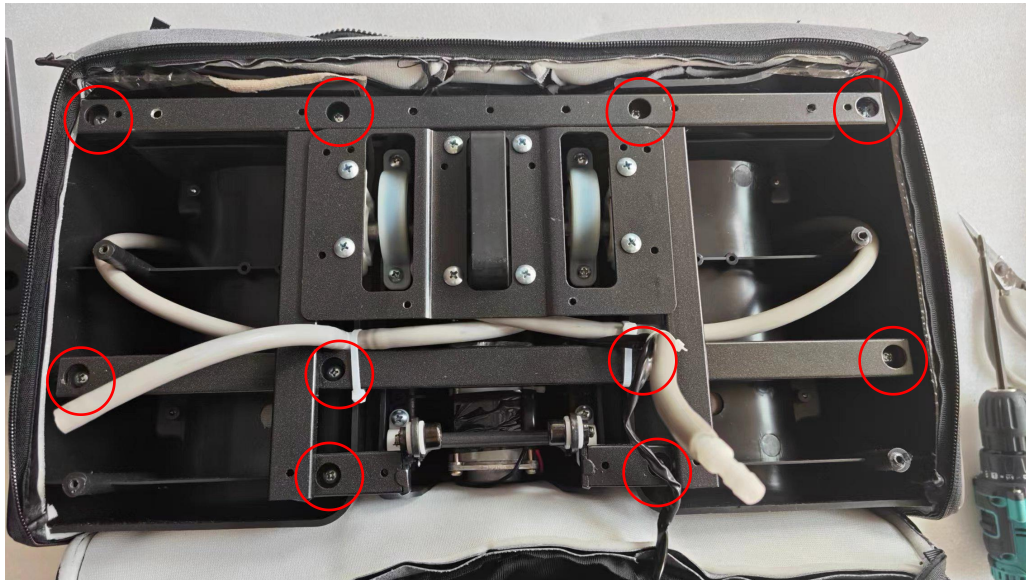


⑤ iron stand



⑥ Unzip the zipper as the  
direction of the arrow show in  
the picture.

## 3.2.2·Removal of footrest



⑦ The internal motor can be removed by removing the screws shown in the picture.



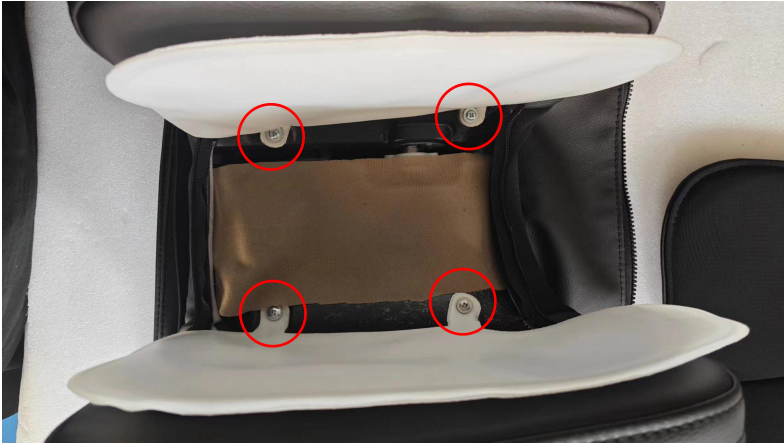
Calf leather



① Unzip the zipper and remove the calf leather

## 3.2.2·Removal of footrest

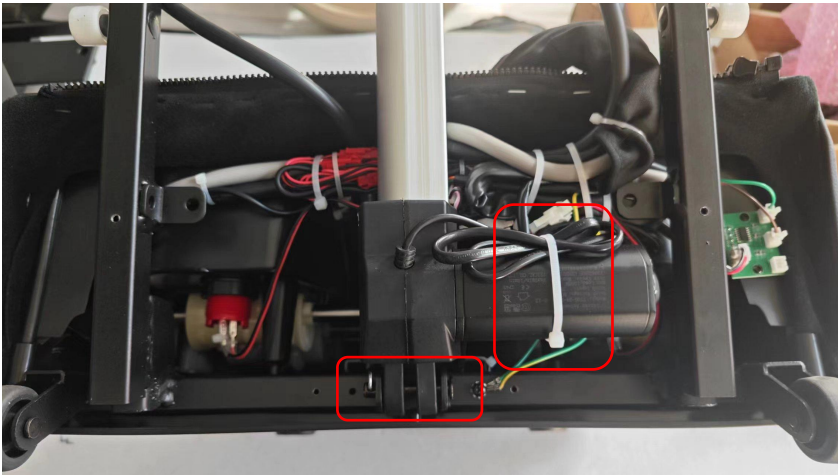
### Decomposition



① Remove the screws in the picture to remove the calf airbags

## 3.2.2·Removal of footrest

### Decomposition



① Cut the cable ties in the picture and remove the latch



② Unplug the terminals and remove the actuator



Screw

③ Remove the screws under the foot leather, one on each side.



## 3.2.2·Removal of the footrest

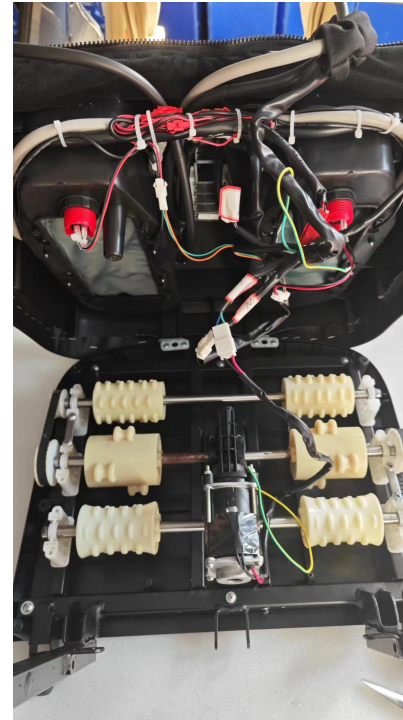
### Decomposition



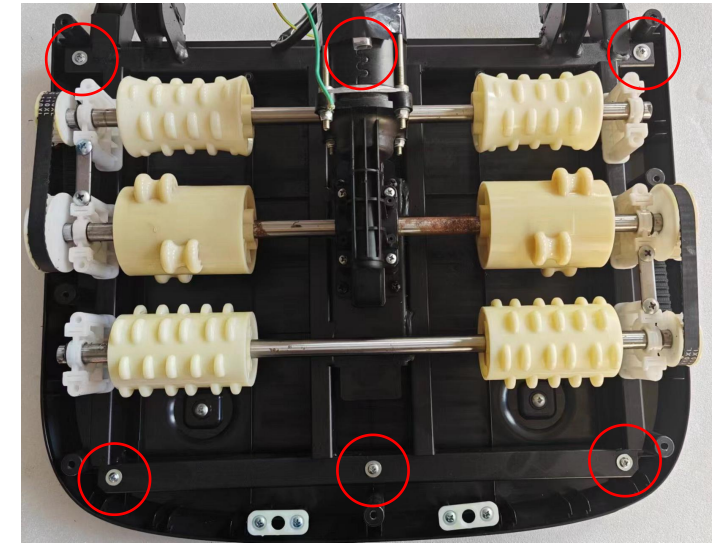
Screw



④ Cut the cable ties in the picture and remove the pins



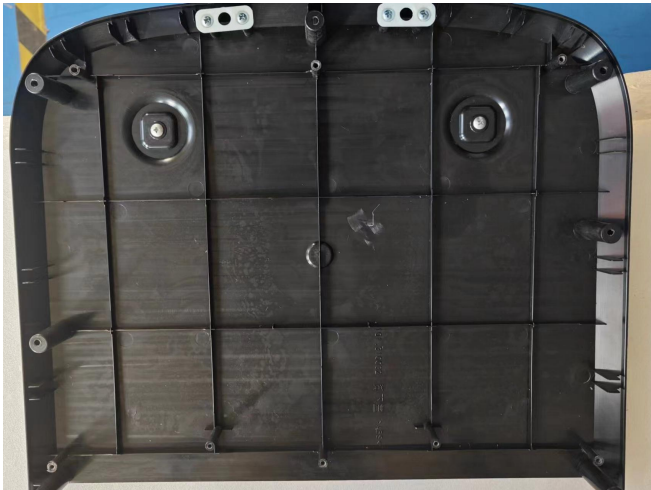
⑤ Separate the bottom of the foot from the cap and unplug the corresponding terminals.



⑥ Remove the six screws (red circles) and separate the bottom cover.

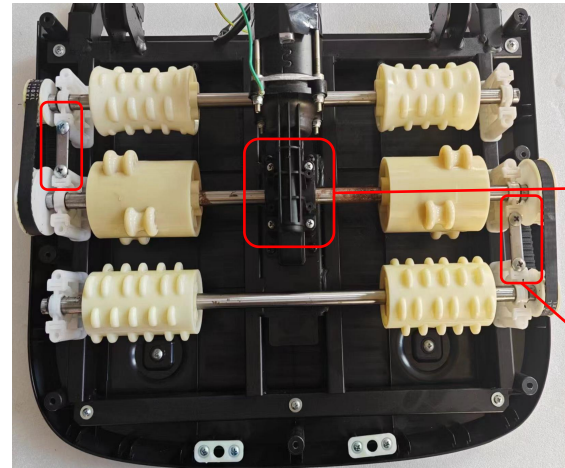
## 3.2.2·Removal of footrest

### Decomposition



screws

⑦ Bottom cover and screw pattern

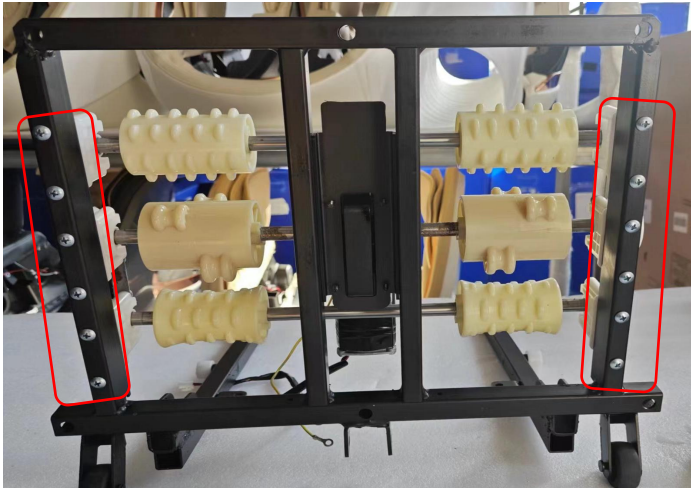


⑧ Remove the screws in the picture, remove the motor and the patch.



## 3.2.2·Removal of footrest

### Decomposition



⑨ Bottom cover and screw pattern

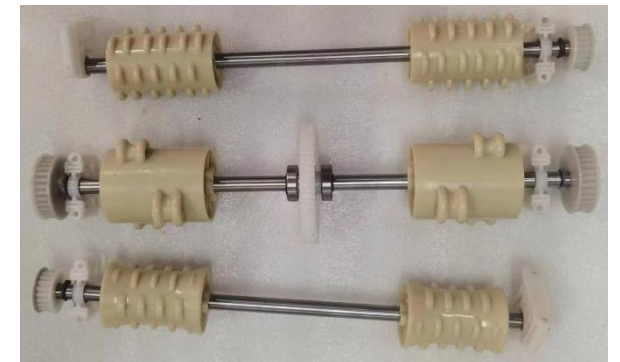
screw



belt

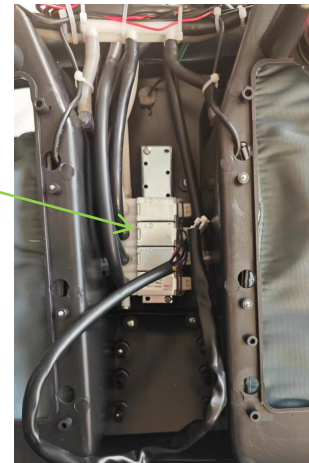
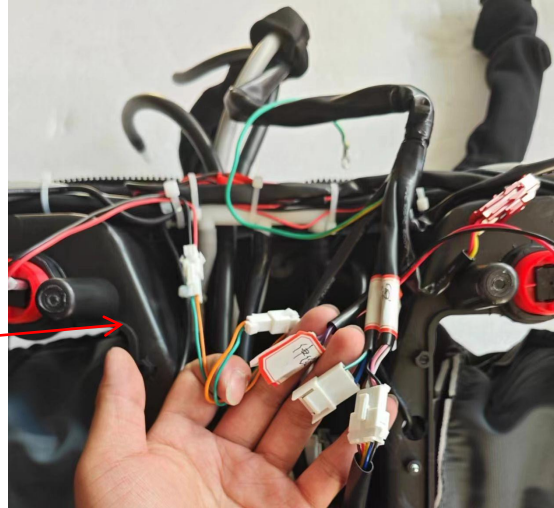
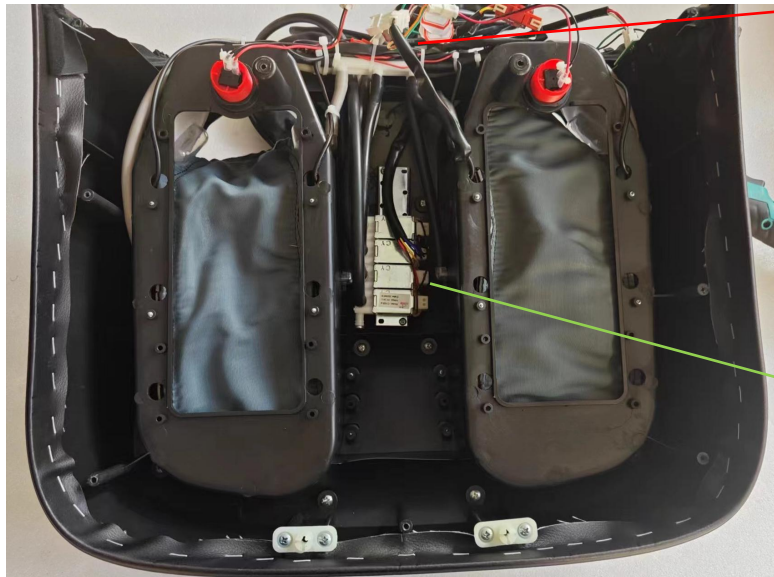


foot roller



## 3.2.2·Removal of footrest

### Decomposition



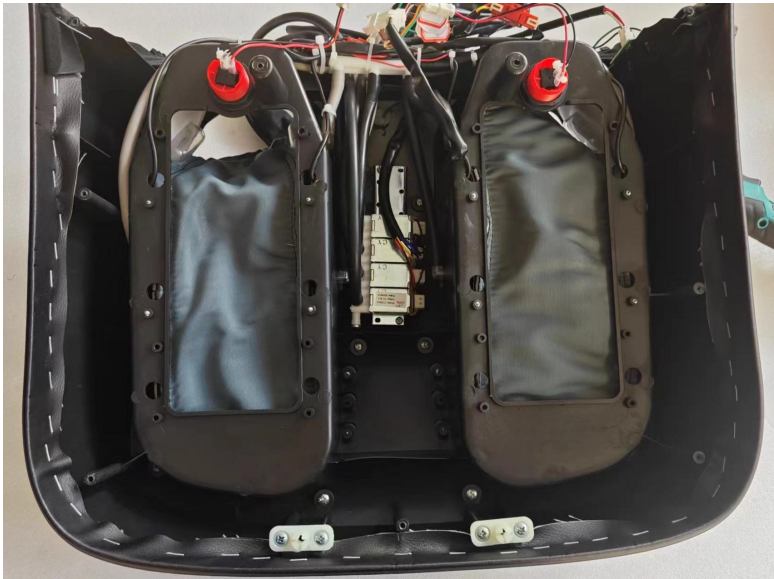
- ① Remove the air valve and heating pad by unplugging the corresponding terminals.

heating pad



## 3.2.2·Removal of footrest

### Decomposition



① Remove the foot cover by removing the screws in the picture

Upper Foot Cover



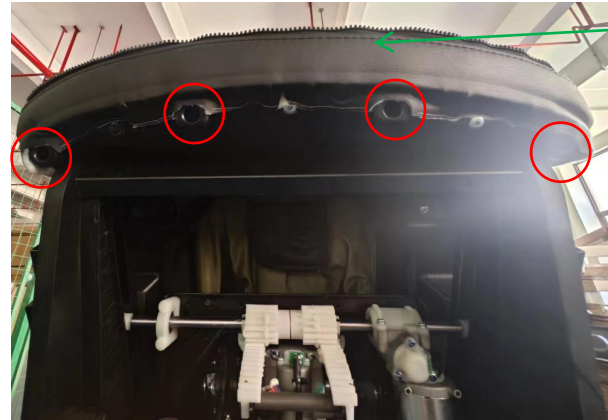
screws



### 3.3.1 · Removal of back cover



① Remove the two screws show in the picture



screws



② Remove the screws show in picture, then pull outward to remove the back cover



③ back cover

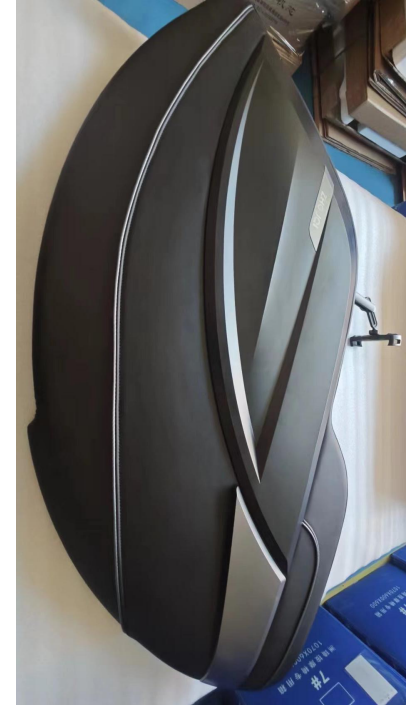
### 3.4.1 · Removal of the Armrest



① Remove the screws in the picture with an hex wrench



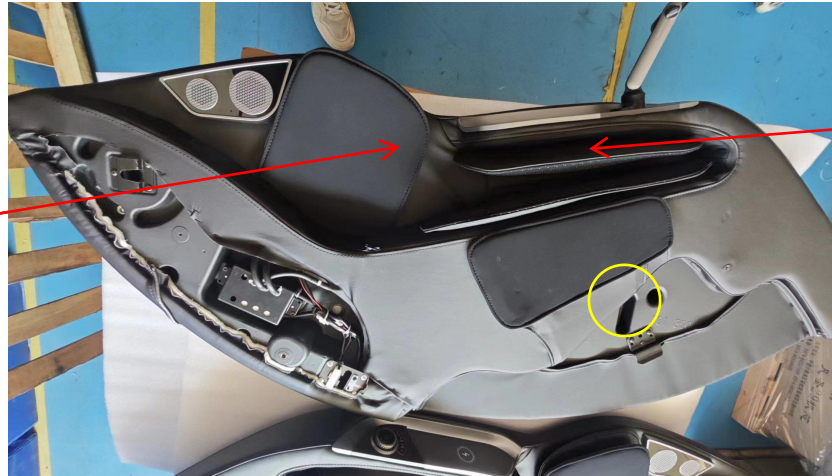
screws



② Left armrest

## 3.4.2·Removal of the Armrest

### Decomposition of armrest decorations



large trim piece



① Remove the four screws shown (circled in yellow) and remove the large trim piece

Note: After removing the screws, you need to pull them outward to remove the decorative parts.

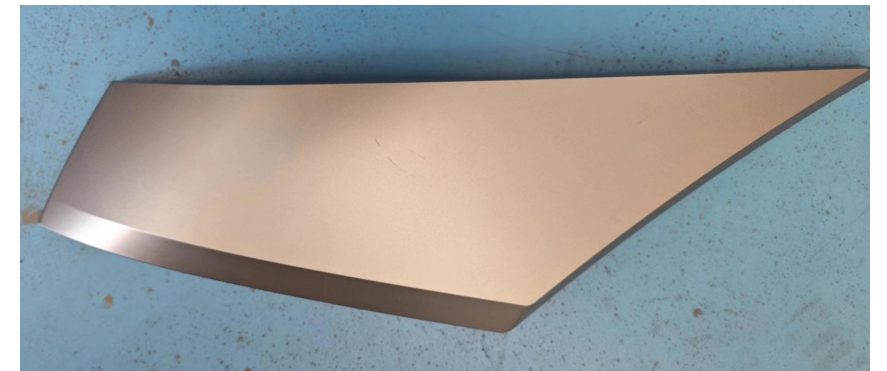
### 3.4.3·Removal of the Armrest

#### Decomposition of armrest decorations



① Remove the two screws shown (circled in red) and remove the small decorative piece

Small decorative piece



Note: After removing the screws, you need to pull them outward to remove the decorations.

### 3.4.4·Removal of the Armrest

#### Air valve disassembly



① Air valve Integration Box  
(as shown in red circle)

①



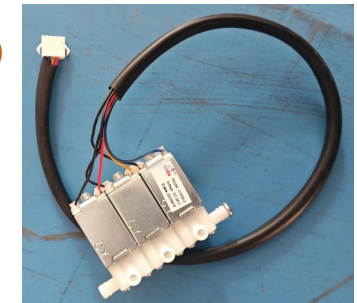
②



③



④



solenoid  
valve

Note: Remove the air valve by following the steps above

### 3.4.5·Removal of the Armrest

#### speaker removal



① Removal of the black cover plate



② Removal of the black cover plate



③ Speaker assy

## 3.4.6·Removal of the Armrest

### Decomposition of armrest panels



① Peel off the screw cover



② Peel off the screws



③ Remove the quick access panel

Note: Left panel

## 3.4.6·Removal of the Armrest

### Decomposition of armrest panels



① Peel off the screw  
cover



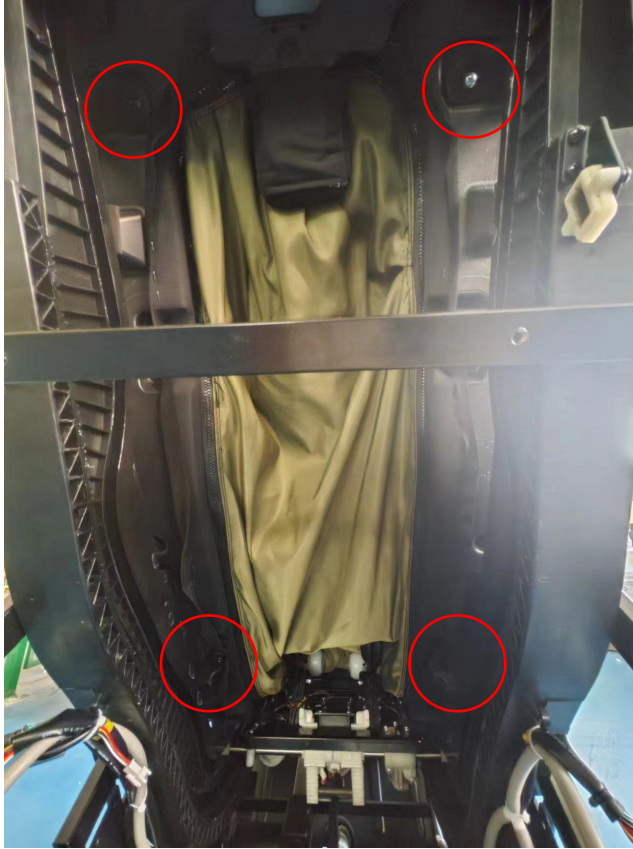
② Peel off the screws



③ Remove the  
shortcut key panel

Note: Right panel

### 3.5.1 · Removal of the back assy



① Remove the four screws show in picture

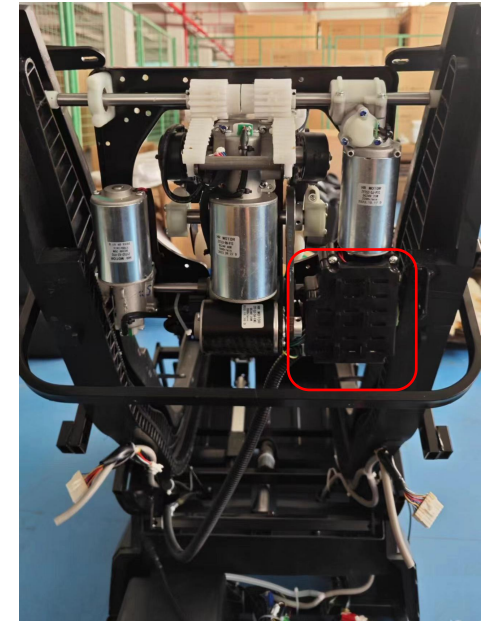
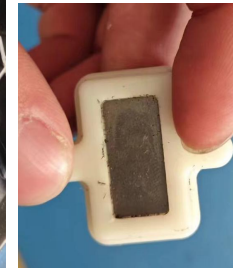
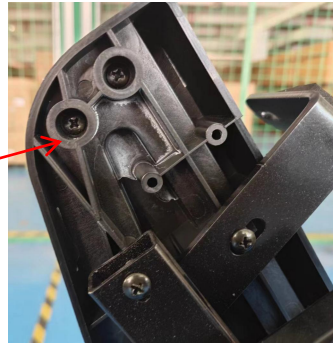
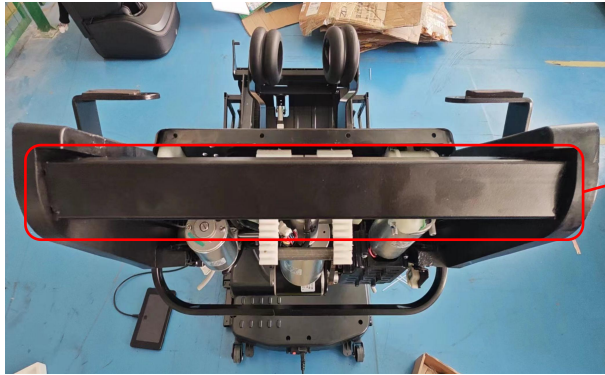


② Remove the screws in the picture



③ back assy

## 3.6.1 · Removal of the massage mechanism



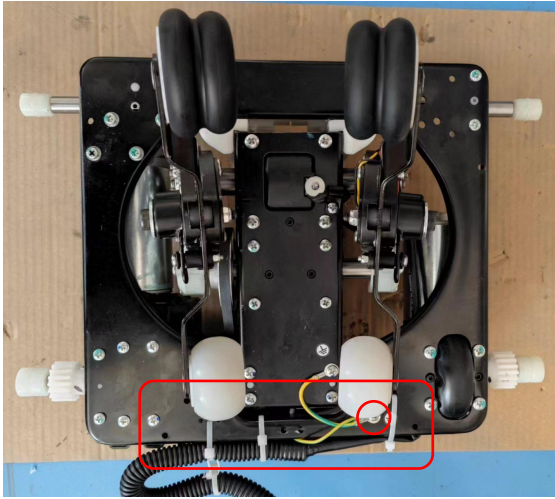
① Remove beam  
as show in picture

② Remove screws  
shown (two left and  
two right)

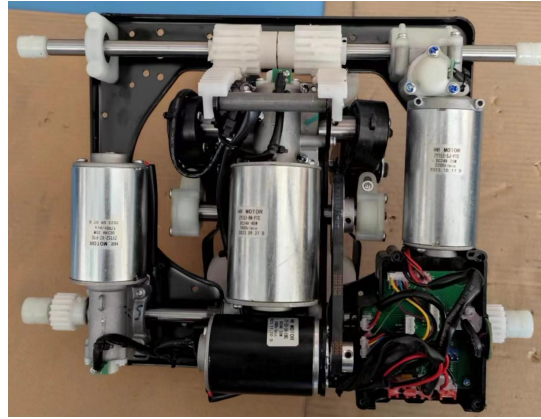
③ Remove the upper  
induction magnet

④ Remove the  
mechanism connection  
harness

### 3.6.2·Removal of the massage mechanism



⑤ Cut the retaining tie and remove the ground wire

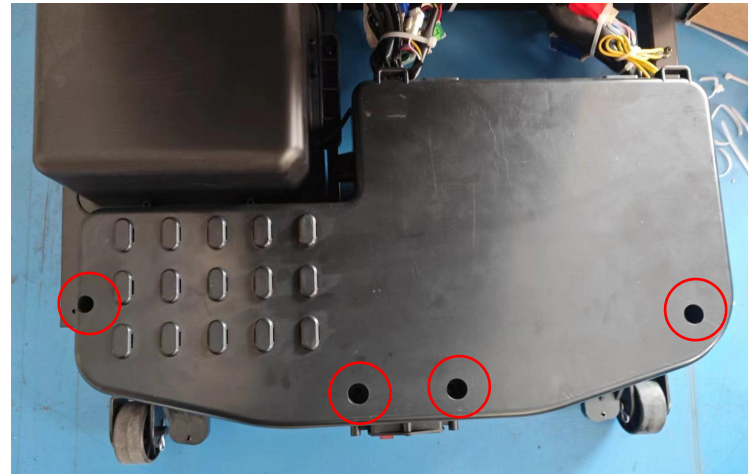


⑥ Take out the mechanism

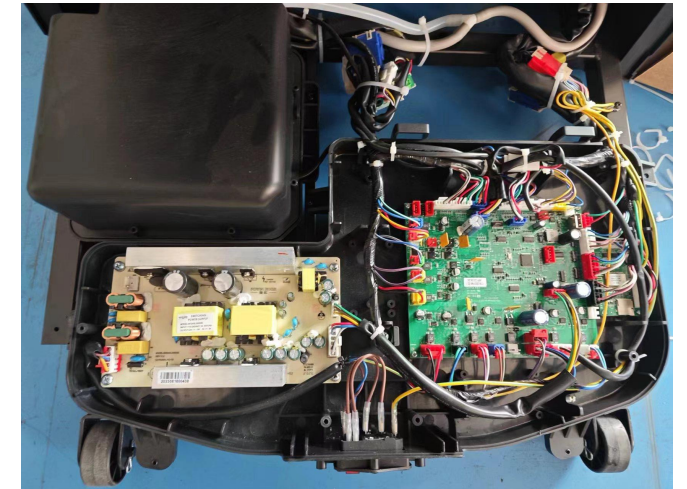
### 3.7.1·Removal of electric control box



① Remove the four screws shown

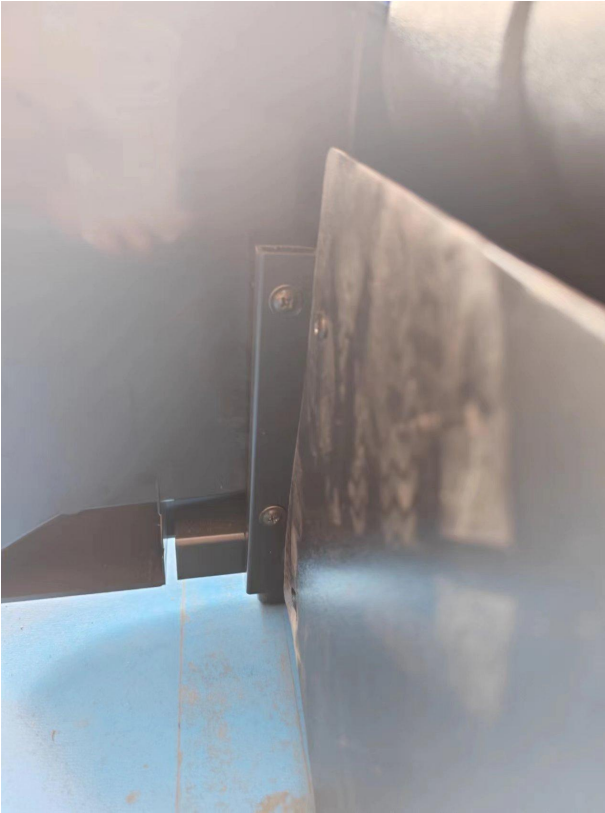


② Remove the four screws shown



③ Electrical Control Box

### 3.8.1 · Removal of lower side panel



① Remove front screw (near calf)



② Remove the middle screw



③ Remove rear screws (near the electric control box)

**Note:** To remove the side panels, use the remote controller to make backrest down until the screws can be removed

## 3.8.2·Removal of side panel

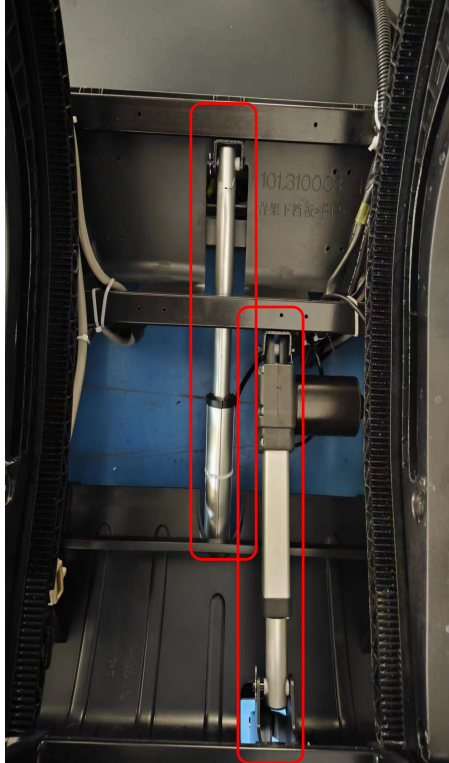


① Right lower side panel

screws



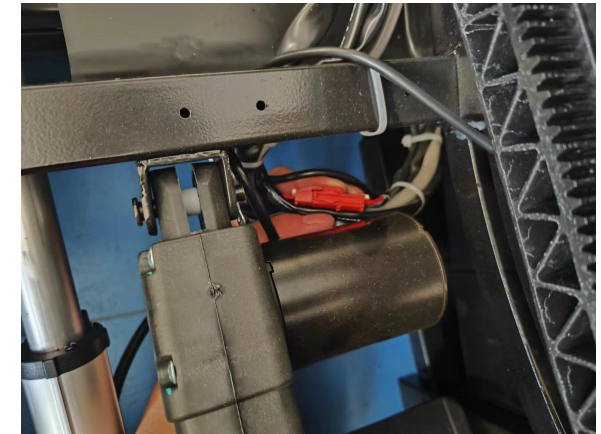
## 3.9.1 · Removal of actuators



① Remove the backrest actuator and footrest actuator (as shown)

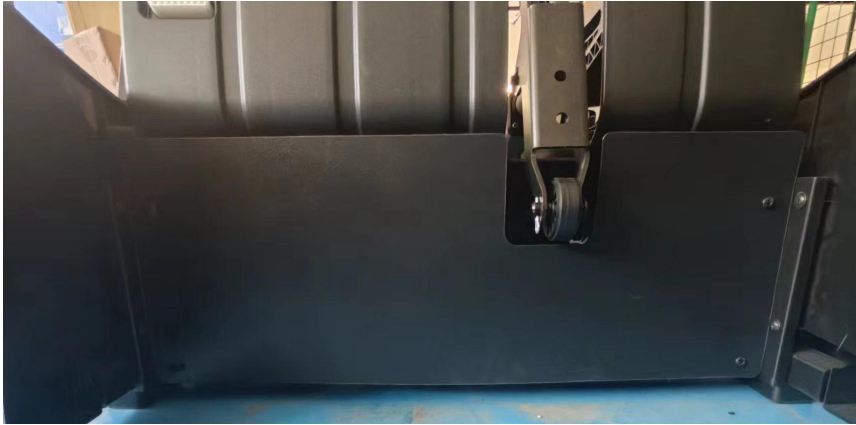


② Remove backrest actuator terminals



③ Remove footrest actuator terminals

## 3.9.2·Removal of actuators



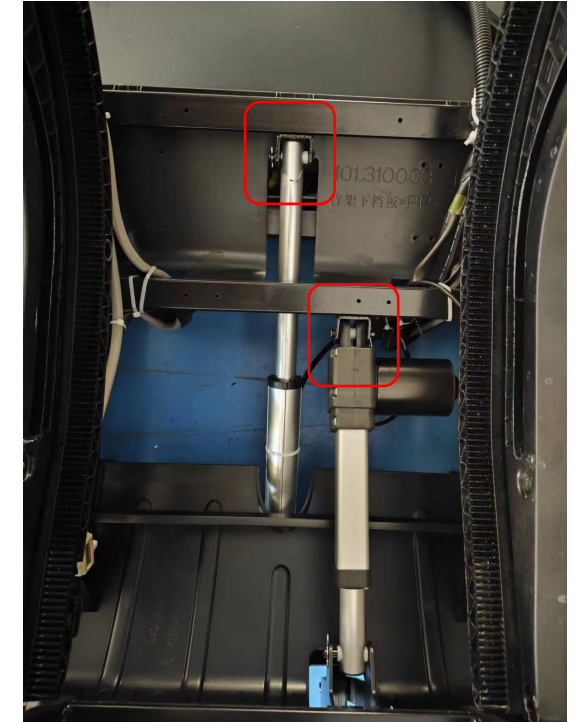
④ Remove the front bezel panel



bolt



⑤ Remove the bolt shown to remove the actuator



### 3.9.3·Removal of actuators

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⑥ Footrest  
actuator

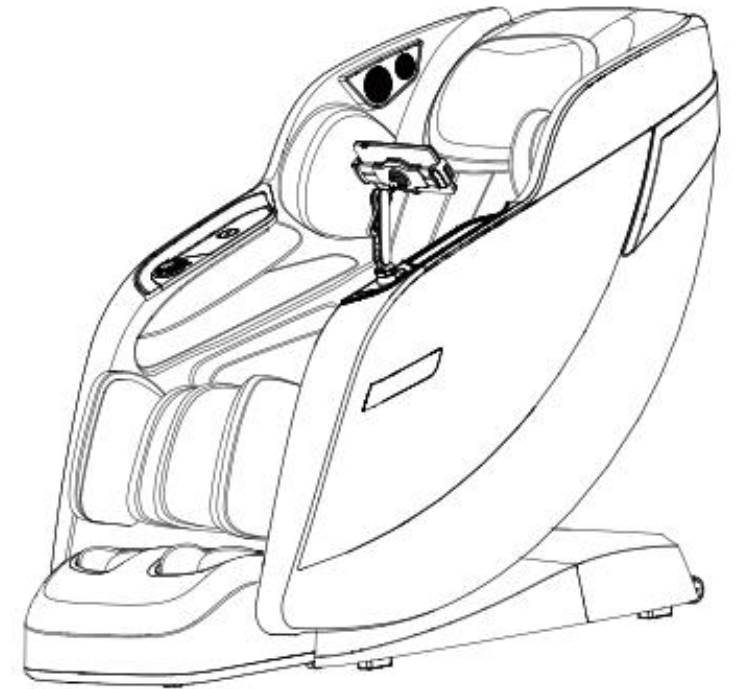


⑦ Backrest  
actuator

## IV、 Problem analysis and maintenance

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- |   |   |
|---|---|
| 1. Remote Controller Error Code                   | 6. Foot roller does not work              |
| 2. Machine does not work                          | 7. Backrest or foot heating does not work |
| 3. Kneading and tapping does not work             | 8. No music function                      |
| 4. Mechanism can not move up and down             | 9. A group of air pressure does not work  |
| 5. Backrest or footrest actuator can't up or down |   |



## 4.1.1·Problem analysis and maintenance

### Remote controller error code

Error			
Code	description	possible causes	Checking
1	Button Stuck on the remote controller 01	Button Stuck	check the keys
2	Timeout between the connect of PCB and remote controller Main--Ctrl Link	Bad connection or broken wiring	check the wiring

## 4.2.1 · Problem analysis and maintenance

The whole machine does not work

Analysis

1. The main switch is not on (I on and O off)、 make sure the power cord is plugged in.
2. The remote controller itself is damaged, resulting in failure to start, replace the remote controller
3. If the fuse is blown, it is usually caused by the short-circuit of the driver due to the load; replace the load、 replace PCB、 Replace the fuse.
4. The connecting wire behind the switch assy is loose or broken.
5. Check whether or not the power board has DC 24V power output. If yes, replace the PCB, and if no power output, replace the power board.

## 4.3.1 · Problem analysis and maintenance

### Kneading and tapping doesn't work

#### Analysis

1. Use a multimeter to measure the plug-in on the mainboard and check whether there is voltage DC24V output, if no, replace the PCB. If there is voltage, check whether the wire harness plug-in has poor connect and whether the motor has any resistance.

2. If main board has voltage, harness well connect and doesn't broken, but kneading or tapping motor still does not work, replace the motor.

3. In case multimeter unavailable, you can use the substitution method to confirm that the motor is good or not (kneading and tapping plug-in interchangeable).

## 4.4.1 · Problem analysis and maintenance

The mechanism can't move up and down

Analysis

1. First of all, check if wiring harness well connected
2. Measure the plug-in on main board with a multimeter to check whether there is DC 24V voltage output. If no, replace the PCB.
3. In there is voltage output, use the multimeter to measure whether the motor has resistance value, if no resistance value, replace the rolling motor.
4. In case multimeter unavailable, use the substitution method to confirm that the motor is good or not (Rolling, kneading and tapping exchange).
5. If wiring harness, power supply and motor all are good, but the mechanism still does not walk, replace the internal circle count board of the mechanism, or change the upper and lower limit detection board or whole massage mechanism to check

## 4.5.1 · Problem analysis and maintenance

### The backrest or footrest actuator can't up or down

#### Analysis

1. First check whether wire harness of the actuator has been well connected

2. Press button of backrest up/down, and use the multimeter to measure the power supply plug-in on the mainboard. If there is DC24 output, replace the actuator. If there is no voltage output, replace the mainboard.

3. In case multimeter unavailable, use the substitution method to confirm that actuator is good or not

4. If the backrest and legrest actuators do not work at the same time, first check whether the anti-pinch induction switch on the back cover of the electric control box is controlled, and then check whether the plug-in wire harness of the anti-pinch induction detection board is in bad contact or falls off. If all are ok, replace the anti-pinch induction detection board and the main board.

## 4.6.1 · Problem analysis and maintenance

The foot roller is not working

Analysis

1. First check whether the wiring harness has been well connected

2. Turn on remote controller, use the multimeter to measure the plug-in on the mainboard, if no DC 24V output, then change the PCB

3. In case multimeter unavailable, use the substitution method to check that the foot roller motor is good or not (foot roller motor and kneading, tapping plug-in exchange).

4. If there is voltage on the main board, use the multimeter to measure whether the motor has resistance value, if no, replace the motor.

## 4.7.1·Problem analysis and maintenance

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Back and foot heating does not work

1.First check whether the wiring harness has well connected or not

Analysis

2. Find the mainboard heating plug-in and turn on remote controller, use the multimeter to check whether there is voltage output. If there is no voltage output, replace the motherboard. If with voltage output, replace the heating pad.

## 4. 8. 1 • Problem analysis and maintenance

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No music

1. First check whether the wiring harness has been well connected or not

Analysis

2. Check whether the mobile phone Bluetooth is connected to the massage chair

3. If wire harness well connected, but Bluetooth cannot be searched, replace the Bluetooth board

## 4. 9. 1 • Problem analysis and maintenance

### Airbag doesn't work

#### Analysis









1.First check whether the air bag is damaged or leaking, whether the air pipe is bent or broken, and whether the air is leaking.

2.Check whether the wiring harness well connected or broken

3.Use the multimeter to confirm whether the air pump has DC24V voltage, if no, replacement of the PCB; If yes, replace air pump.

4. Use the multimeter to confirm whether the group of air valve is normally supplied with DC 24V. If there is no voltage, replace the PCB; If there is voltage, replace the air valve.

## V、Tool List

							
Multimeter	Electroprobe	Hex wrench	Nose pliers	PVC tape	Cable tie	Vise	Electric hand drill

The background features large, expressive Japanese calligraphy in a brownish-gold ink. A faint, light blue line drawing of a car is visible in the center. The text "Thank you" is written in a large, elegant serif font, and "Customer Service" is in a smaller, sans-serif font inside a dark brown rectangular box.

# Thank you

Customer Service

