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5110C-Service Menu

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1. Parameters

Product Specifications

Product Name	Massage Chair
Model Number	Ti-Reflex
Power Input	100-240V~ 50/60Hz
Power Consumption	200W
Auto Timer	15 mins
Maximum Load	Approx. 100kg
Carton size	Approx. 58 (L) x 32.2(W) x 33(H) inches
Calf outer box size	Approx. 21.85x (L) x 19.5(W) x 23.4(H) inches
Net / Gross Weight	Footrest Carton: Approx.G.W.: 46.3lbs / N.W.: 50.7lbs Main Body Carton: Approx.G.W.: 160.94lbs / N.W.: 209.44lbs
Maximum Body Weight of User	352lbs

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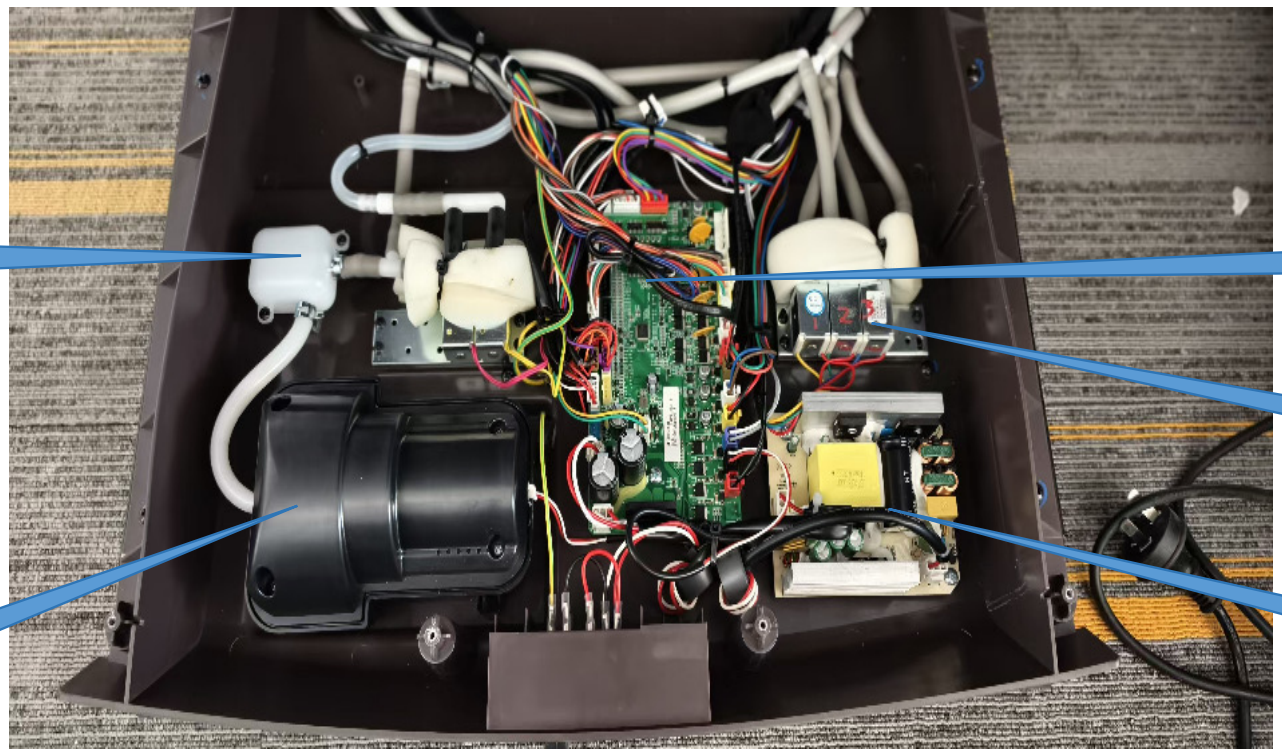
2. Electrical Item

1、Electricical Box



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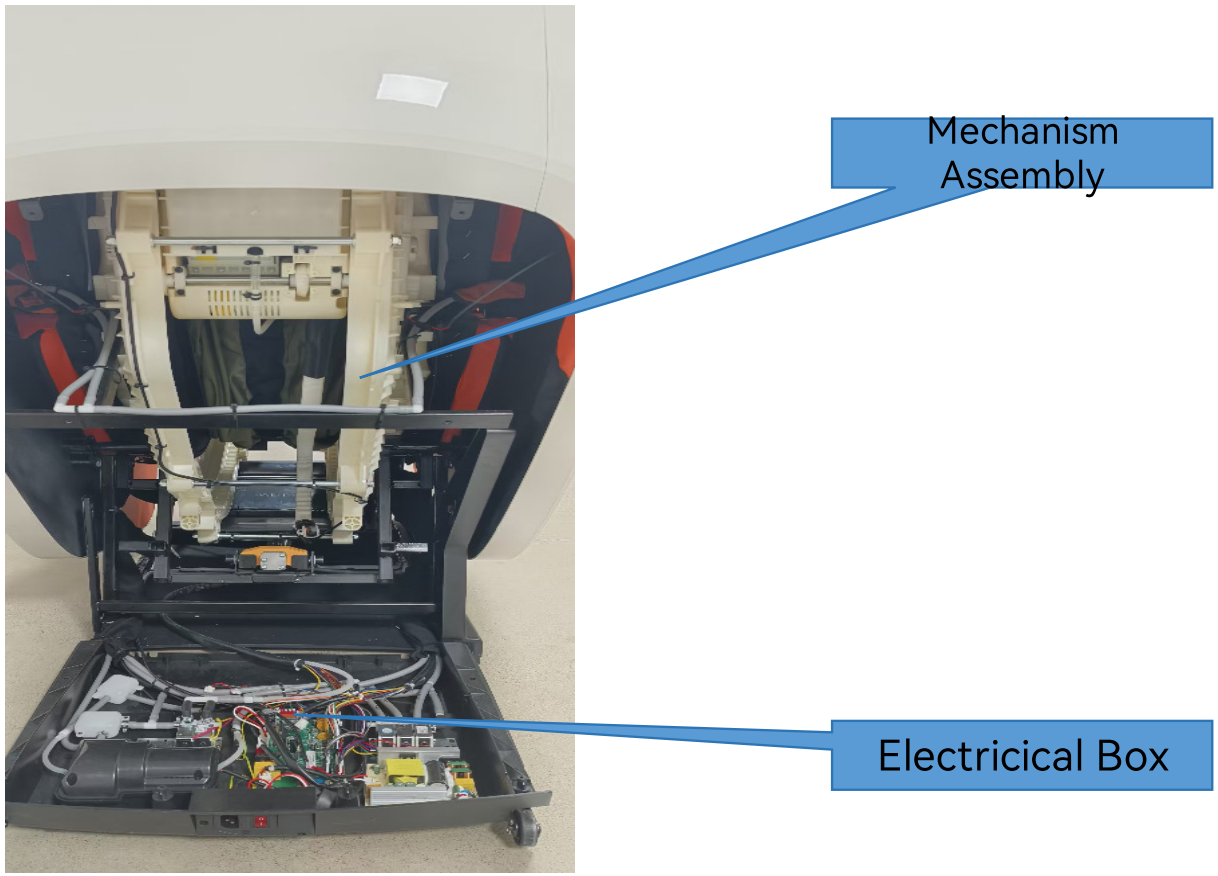
2. Electrical Item

Internal Frame



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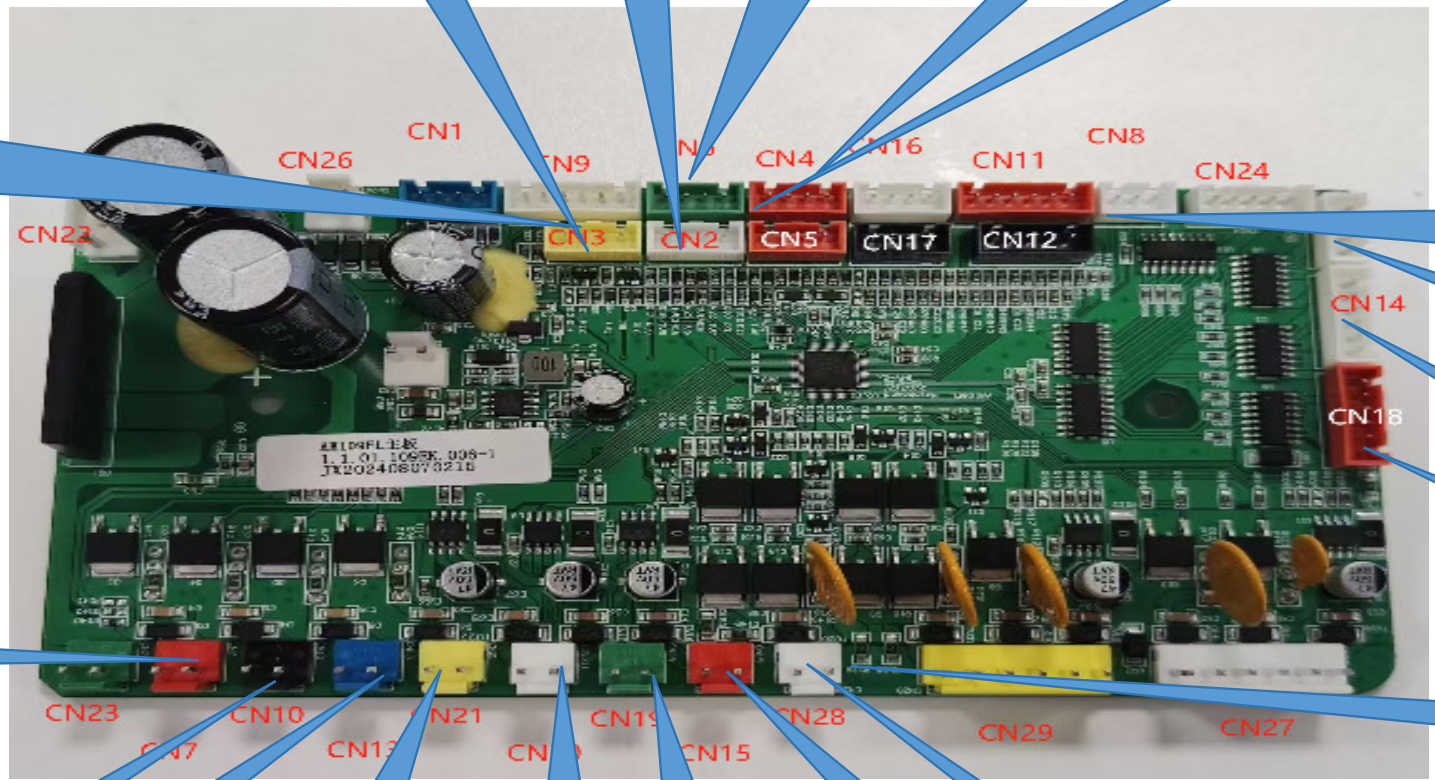
3、中心主板定义图



Debug Serial Port

Voice Control Port

2.Backrest Anti-Pinch
3-Foot Roller Home Position

Controller

2-Upper Limit
3-Lower Limit

2-Legrest Extention Anti Pinch
3-Legrest Rise and Down Anti Pinch
4- electric shock
5- Grounded

2-Shoulder Inflation
3-Left Hand
4-Right Hand
5-Foot Side

1/2-3D Inflation
3/4-3D Deflation

1/2Upper Leg Inflation
3/4Lower Leg Inflation
5/6Lower Leg Compression

1/2- Foot StretchL
3/4- Foot StretchR

1/2Upward Walk
2/3Upward Tapping
4/5Upward Kneading

Heating

DC Air Pump

Foot Roller

Foot Roller

Calf Telescoping

Suction Pump

Calf Push Rod

Backrest Push Rod

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III. Safety Operation Specifications for Massage Chair Repair

1.1 Safety Operation Specifications

1.Before carrying out any repair, anti-static precautions must be taken first, such as wearing anti-static work clothes and shoes, and an anti-static wrist strap. Do not operate with wet hands to avoid electric shock or short circuits that may damage components.

2.Any electrical equipment or wiring shall be considered live unless verified otherwise by the person performing the work. Do not touch it. When contact is required for operation, cut off the power supply, then after verifying de-energization and discharging (for capacitive equipment), use a voltage detector to check whether it is still live. Only after confirming it is de-energized may inspection and repair be carried out. For voltage detection, use a dedicated voltage detector with the voltage range adjusted to the appropriate setting. Before use, test the detector on a known live circuit to ensure it is working properly. When performing high-voltage detection, wear insulating gloves; do not use your hands to test for live conditions.

3.When it is necessary to come into contact with high voltage, personal safety must be the top priority, and appropriate electric shock prevention measures shall be taken.

4.Do not disassemble or repair the product while it is operating. The product must be stopped and the main power supply disconnected before disassembly and repair are carried out in accordance with safe operating procedures.

5.Any temporarily removed wires or power supply terminals of electrical equipment must be wrapped with insulating tape so that no bare parts are exposed. Power supply lines that are no longer in use should be removed.

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III. Safety Operation Specifications for Massage Chair Repair

1.1 Safety Operation Specifications

6.All electrical wiring connections must ensure proper conduction. Terminals must not be loose, wire ends must not protrude, and insulation wrapping must meet requirements while being neat and presentable.

7.Without the permission and approval of the head of electrical engineering at headquarters, inspection and testing personnel are not allowed to arbitrarily change the original structure or wiring method of the product.

8.After each repair or inspection, check whether any wiring has been connected incorrectly, and whether any materials, spare parts, tools, or other items have been left on the electrical wiring or inside the electrical equipment, so as to prevent loss or remaining items inside the equipment that could cause an accident. Only after confirming that everything is correct may the power be switched on.

9.After power-on, continuously observe for any abnormal sounds, odors, or irregular movements. If any abnormality is found, immediately turn off the power and stop product operation to prevent a more serious accident.

10.In the event of a fire in electrical equipment, immediately cut off the power supply and use a carbon dioxide dry chemical fire extinguisher or carbon tetrachloride dry chemical fire extinguisher. Do not use water to extinguish the fire

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III. Safety Operation Specifications for Massage Chair Repair

1.2 Preparing Tools

					
十字螺丝刀	老虎钳 尖嘴钳	电烙铁	扳手	电动螺丝刀	电工胶带

					
电笔	六角扳手	万用表	24V/DC电源	轧带	压线帽

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III. Safety Operation Specifications for Massage Chair Repair

1.3 Instructions for Using the Multimeter

1. Voltage Measurement

(1) DC Voltage Measurement (e.g., power supply)

First, insert the black test lead into the “COM” jack and the red test lead into the “VΩ” jack. Turn the rotary switch to a range higher than the estimated value. (Note: The values on the dial are the maximum ranges. “V–” indicates DC voltage range, “V~” indicates AC voltage range, and “A” indicates current range.) Then connect the test leads to the two ends of the power supply or battery, ensuring stable contact. The value can be read directly from the display. If the display shows “1.”, the range is too small; increase the range before measuring again.

(2) AC Voltage Measurement

The test lead connections are the same as for DC voltage measurement. However, turn the rotary switch to the required range under the AC voltage “V~” position. AC voltage has no positive/negative polarity. The measurement method is the same as described above. When measuring either AC or DC voltage, pay attention to personal safety. Do not touch the metal parts of the test leads with your hands.

III. Safety Operation Specifications for Massage Chair Repair

2. Using the Continuity Buzzer

The continuity buzzer function of a multimeter is mainly used to check whether a circuit is open or closed. When checking a circuit, use the continuity buzzer function. If the digital multimeter emits a beep, the circuit is closed (conductive). If there is no beep, the circuit is open. Note that the buzzer will sound below a certain resistance value, typically several tens of ohms. Therefore, when measuring a very small resistor, do not assume the resistor is faulty; instead, use the resistance range to check it.

Precautions when using the continuity buzzer function:

Before measurement, ensure the multimeter reading is at zero voltage or zero current. While using the multimeter, do not touch the metal parts of the test leads with your hands. This ensures measurement accuracy and personal safety. The multimeter must be placed horizontally during use to avoid errors.

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III. Safety Operation Specifications for Massage Chair Repair

3. Resistance Measurement

Insert the test leads into the “COM” and “VΩ” jacks. Turn the rotary switch to the required range under “Ω”. Connect the test leads to the metal parts at both ends of the resistor. During measurement, you may touch the resistor with your hands, but do not touch both ends of the resistor simultaneously, as this will affect measurement accuracy (the human body has a large but finite resistance). When reading the value, maintain good contact between the test leads and the resistor. Pay attention to the units: at the “200” range, the unit is “Ω”; at “2K” to “200K” ranges, the unit is “KΩ”; above “2M”, the unit is “MΩ”.

4. Diode Measurement

A digital multimeter can measure light-emitting diodes (LEDs), rectifier diodes, etc. The test lead positions are the same as for voltage measurement. Turn the rotary switch to the “diode” symbol. Connect the red test lead to the anode of the diode and the black test lead to the cathode. The display will show the forward voltage drop of the diode. Typical values: Schottky diode approx. 0.2 V; ordinary silicon rectifier diodes (1N4000, 1N5400 series, etc.) approx. 0.7 V; LEDs approx. 1.8–2.3 V. Swap the test leads; if the display shows “1.”, the diode is normal (reverse resistance is very high). Otherwise, the diode may be broken down.

III. Safety Operation Specifications for Massage Chair Repair

5. Transistor Measurement

The test lead positions are the same as above. The principle is similar to diode measurement.
First, assume pin A is the base. Connect the black test lead to this pin, and use the red test lead to touch the other two pins respectively. If both readings are approx. 0.7 V, then connect the red test lead to pin A and the black test lead to the other two pins. If both readings show “1.”, then pin A is the base, and the transistor is PNP type. Otherwise, re-measure.

How to determine the collector and emitter? A digital multimeter cannot use pointer deflection like an analog meter. Instead, use the “hFE” function. Turn the rotary switch to the “hFE” position. Next to the switch, there are small jacks for measuring PNP and NPN transistors. Based on the previously determined type, insert the base into the corresponding “b” jack, and insert the other two pins into the “c” and “e” jacks. The display will show the β (hFE) value. Then, keeping the base fixed, swap the other two pins. Compare the two readings. The pin arrangement that gives a higher reading corresponds to the “c” and “e” markings on the socket.

Tip: The above method is suitable for directly measuring small transistors (e.g., 9000 series). For larger transistors, use extension wires: connect small wires to the three pins and then measure. This greatly facilitates the process.

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IV. Disassembly Instructions and Operation Diagrams for Massage Chair

1. Disassembly of Headrest and Back Cushion

a. Unzip the headrest zipper, the zippers on both sides of the back cushion, and the connecting zipper of the foot mechanism. The headrest and back cushion can then be removed.

b. When removing the back cushion, disconnect the heating power cord located behind the back cushion

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IV. Disassembly Instructions and Operation Diagrams for Massage Chair

2. Disassembly of Calf Assembly

Remove the four screws on the left and right sides of the calf assembly, then disconnect the pivot pin, R-pin, air tubes, and wiring harness connectors. The calf assembly can then be removed.

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IV. Disassembly Instructions and Operation Diagrams for Massage Chair

3. Disassembly of Rear Cover

Use an electric screwdriver to remove the six screws on the rear cover, then lift off the rear cover. (See figure)

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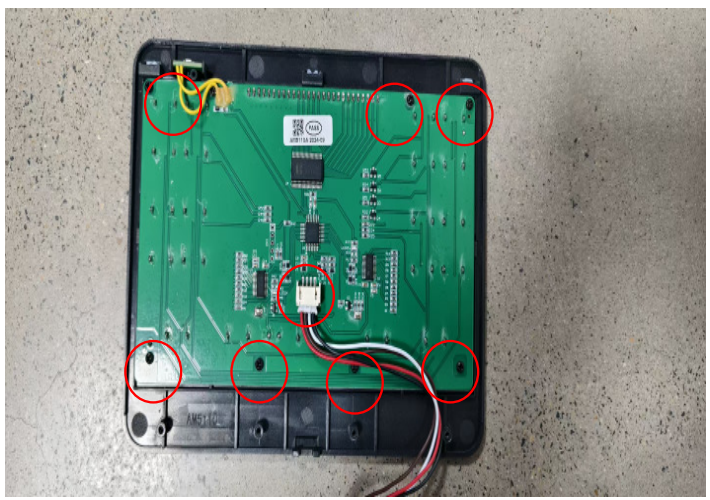
IV. Disassembly Instructions and Operation Diagrams for Massage Chair

4. Disassembly of Hand Control Panel Assembly



a. Turn the hand controller over to the back side and remove the four fixing screws.
b. Disconnect the wiring harness of the hand control panel assembly, remove the screws, and take out the hand control panel assembly.

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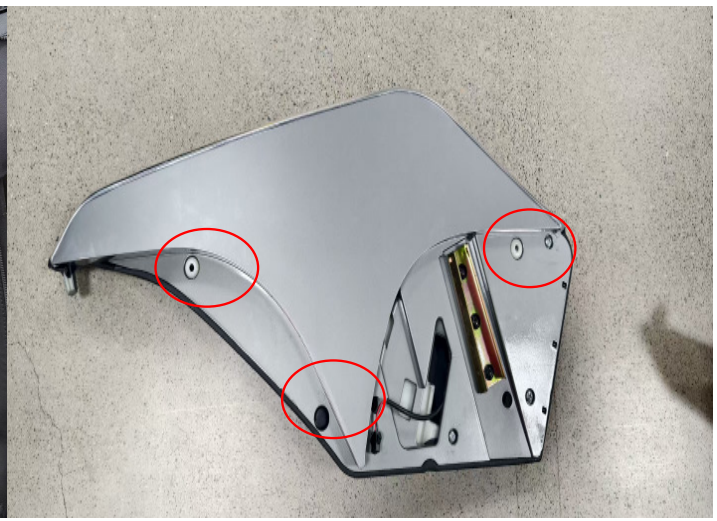
IV. Disassembly Instructions and Operation Diagrams for Massage Chair

5. Disassembly of Shoulder Clamp Assembly






First remove the speaker cover, then remove three screws. Lift the entire shoulder clamp upward to detach it, then disconnect the speaker wire connector.

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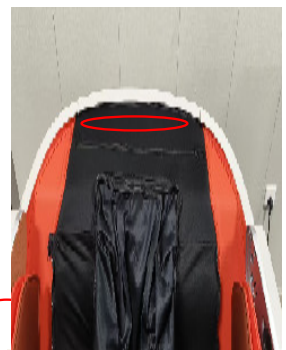
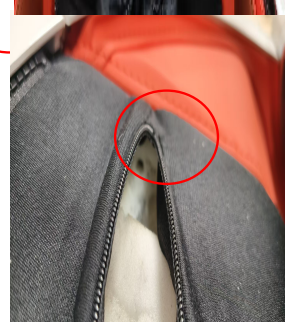
IV. Disassembly Instructions and Operation Diagrams for Massage Chair

6. Disassembly of Side Cover Assembly

1





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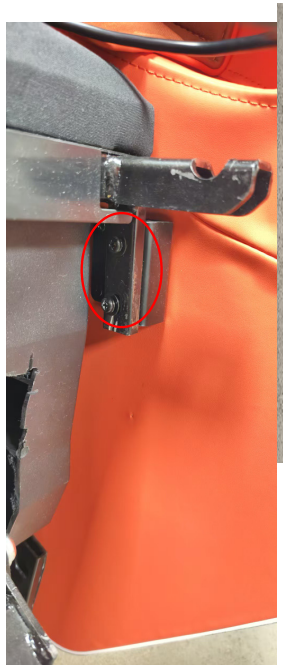

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4

5

a. Remove the screws on the side after taking off the rear cover (Fig. 1).
b. Pull open the front cover, unzip the backrest frame zipper, and remove the screws (Fig. 2).
c. After removing the calf section from the front, take out two screws from each side, then lift the side cover upward to separate it, and finally disconnect the air tube (Fig. 4-5).

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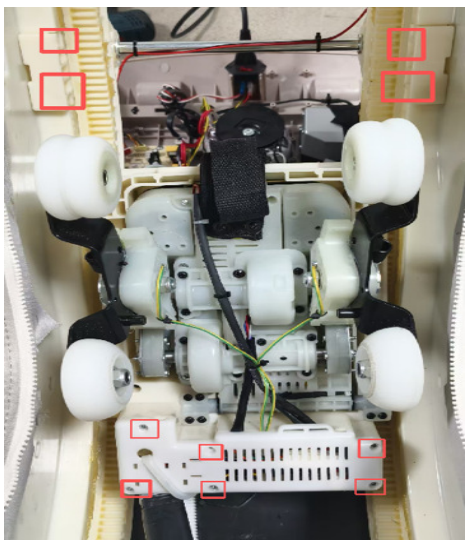
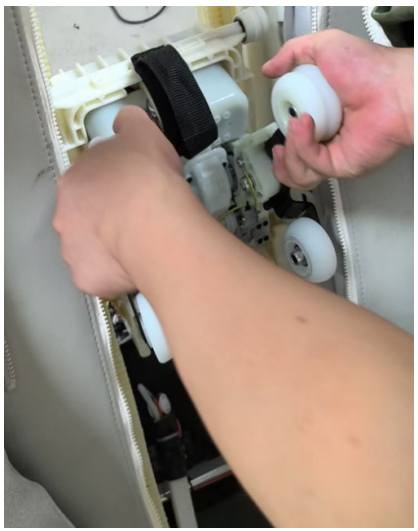
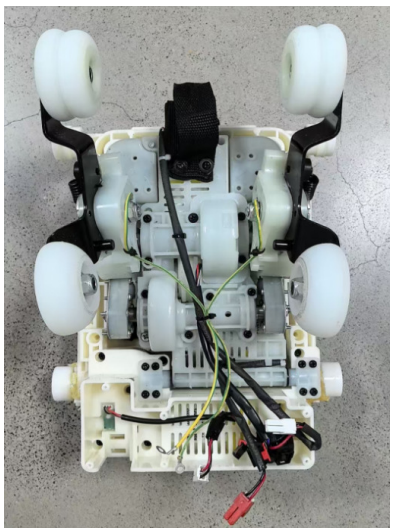
IV. Disassembly Instructions and Operation Diagrams for Massage Chair

7. Disassembly of Massage Mechanism Assembly

a. Unzip the wear-resistant fabric zipper, turn on the chair, move the mechanism to the waist position, then cut off power.

b. Remove the six screws on the top cover of the mechanism and the four screws on the limit blocks on both sides of the guide rail.

c. Apply DC 12V power to the travel motor. The mechanism will reset and move to the limit block. Lift it upward to remove the mechanism.

d. Disconnect the wiring harness and take out the mechanism.

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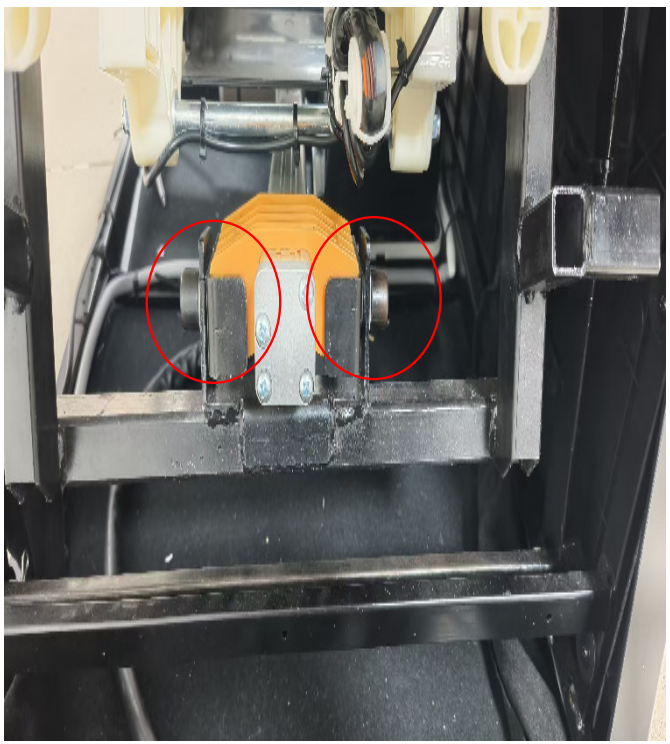
IV. Disassembly Instructions and Operation Diagrams for Massage Chair

8. Disassembly of Push Rod (Reclining Backrest Push Rod)



1

2

a. Remove the rear cover of the massage chair, then use a hex key to remove two screws (Fig. 1).
b. After removing the calf section, locate the push rod. Remove the cotter pins from the pivot pins at both ends of the push rod, pull out the pivot pins, and disconnect the push rod terminal on the main board. The push rod can then be removed (Fig. 2).

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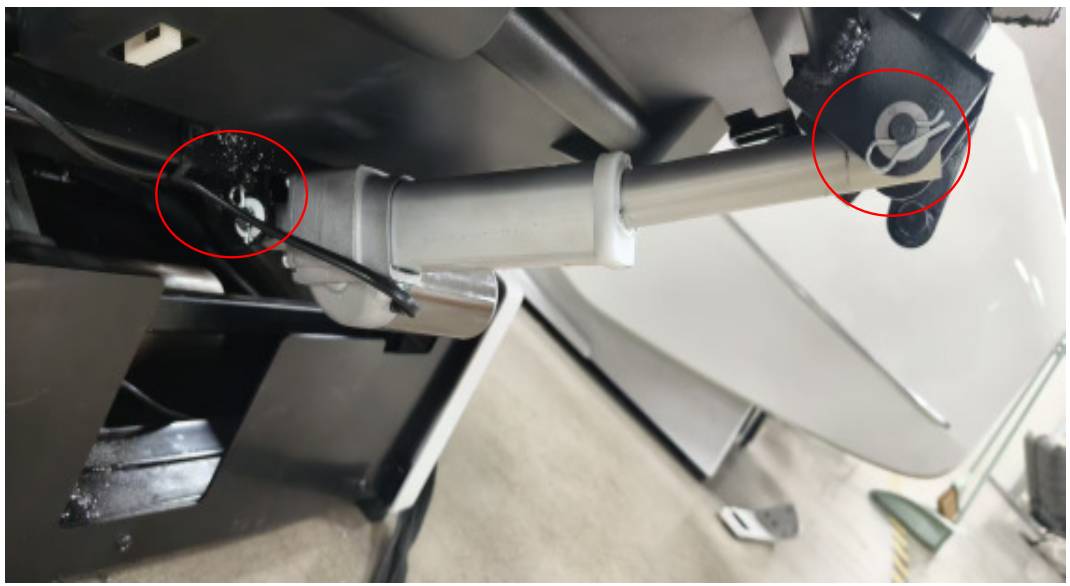
IV. Disassembly Instructions and Operation Diagrams for Massage Chair

9. Disassembly of Push Rod (Leg Push Rod)



a. Remove the calf section of the massage chair to access the push rod.

b. Remove the cotter pins from the pivot pins at both ends of the push rod, pull out the pivot pins, and disconnect the push rod terminal on the main board. The push rod can then be removed.

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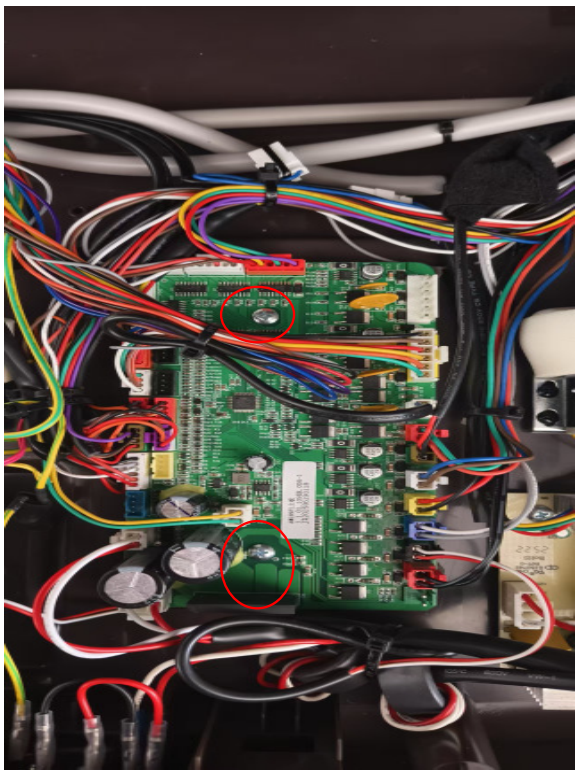
IV. Disassembly Instructions and Operation Diagrams for Massage Chair

10. Disassembly of Central Main Board



a. Remove the screws on the top cover of the central box.
b. Disconnect all terminals, remove the fixing screws, and the central main board can be replaced.

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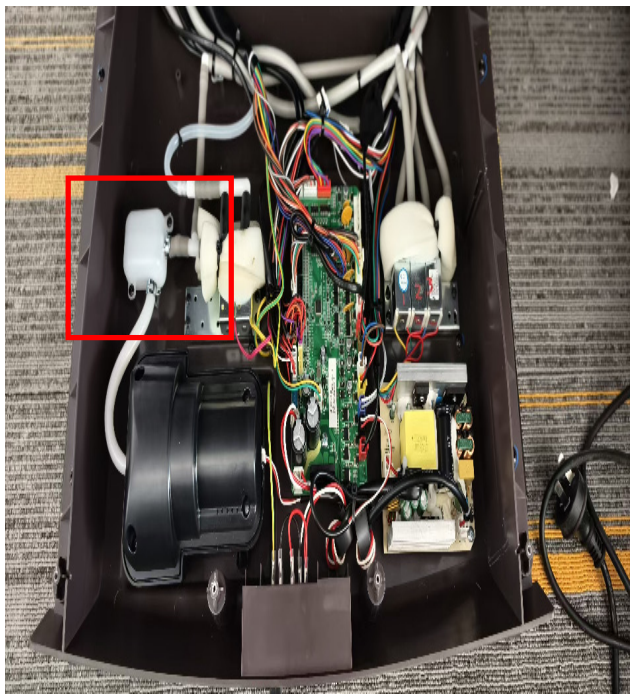
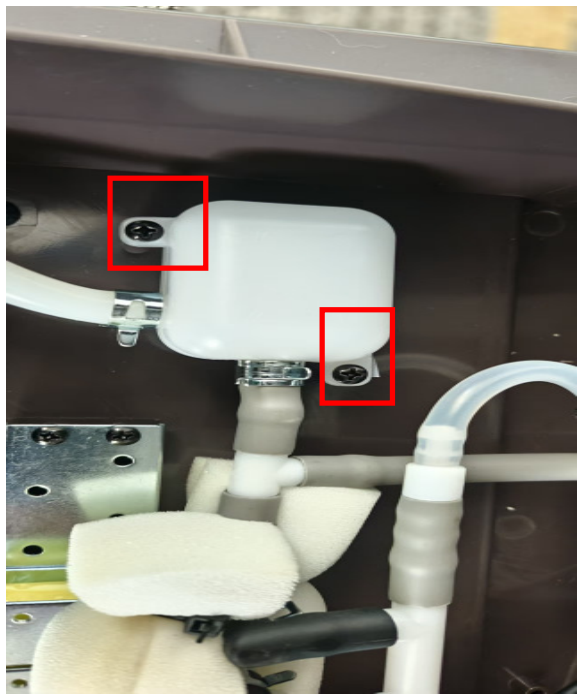
IV. Disassembly Instructions and Operation Diagrams for Massage Chair

11. Disassembly of Air Reservoir Tank





a. Remove the screws on the top cover of the central box.
b. Remove the fixing screws and air tube clamps, then the air reservoir tank can be replaced.

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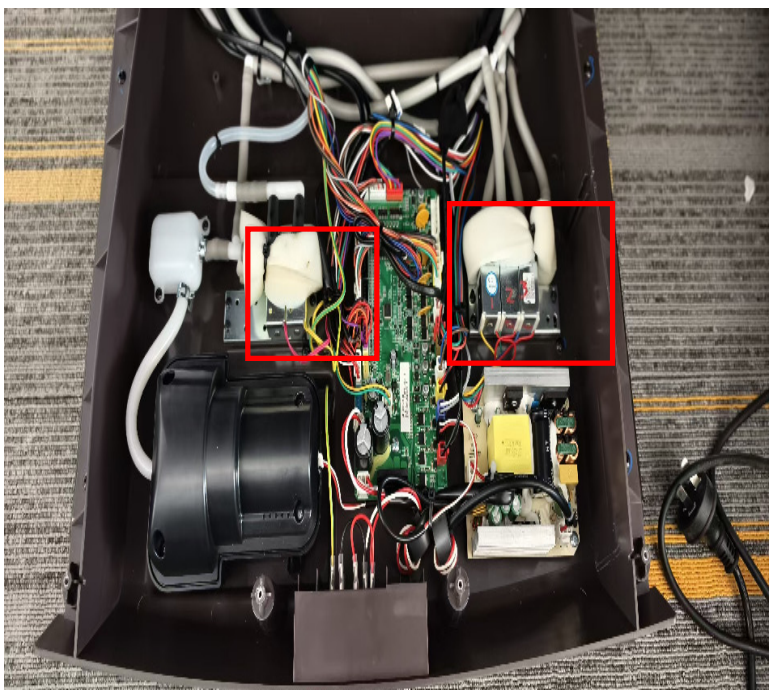
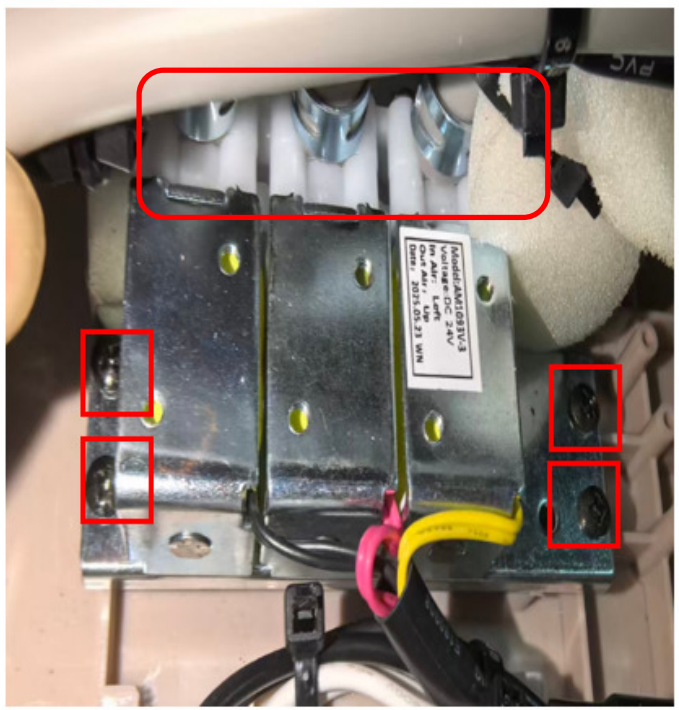
IV. Disassembly Instructions and Operation Diagrams for Massage Chair

12. Disassembly of Solenoid Valve





a. Remove the screws on the top cover of the central box.
b. Remove the four fixing screws, disconnect the air tubes, cut the cable ties securing the wires, and disconnect the solenoid valve terminal on the main board. The solenoid valve can then be removed.

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V. Common Fault Troubleshooting and Analysis

Fault Code	Fault Description	Possible Cause	Troubleshooting Method	Remarks
1	Hand controller and central board have no communication for more than 4 seconds	1. Poor contact or break in the interconnection cable	1. Check or replace the interconnection cable	(1) Real-time detection (2) Automatic shutdown upon fault; operation not allowed
2	Massage mechanism rolling motor position sensor fault (count reaches limit but no limit signal detected)	1. Upper/lower limit sensor defective 2. Mechanism magnet installed backwards	1. Check magnet polarity 2. Replace the sensor	(1) Detection when function is enabled (2) Automatic shutdown upon fault; operation not allowed
3	Massage mechanism rolling motor position encoding fault (upper and lower limit active simultaneously)	1. Upper/lower limit signal wire not connected on main board 2. Control board damaged 3. Upper/lower limit sensor defective	1. Check connections for upper/lower limit sensors 2. Replace control board 3. Replace the sensor	(1) Real-time detection (2) Automatic shutdown upon fault; operation not allowed
4	Massage mechanism rolling motor counting sensor fault (no count change detected for >6 seconds)	1. Travel counting sensor defective or not connected 2. Motor terminal not connected or wire broken 3. Upper/lower limit magnet installed backwards or missing 4. Drive circuit component damaged 5. Motor defective or stalled	1. Check connections 2. Verify magnet presence and polarity 3. Check or replace motor 4. Replace mechanism control board	(1) Detection when function is enabled (2) Automatic shutdown upon fault; operation not allowed

V. Common Fault Troubleshooting and Analysis

5	Massage mechanism kneading motor position sensor fault (no position encoder change detected for >8 seconds)	1. Home position sensor defective or wire not connected	1. Replace the sensor 2. Check or replace motor 3. Replace mechanism control board	(1) Detection when function is enabled (2) Automatic shutdown upon fault; operation not allowed
6	Massage mechanism kneading motor position encoding fault (at least two of wide/medium/narrow signals active simultaneously)	1. Circuit board abnormal 2. Home position sensor defective	1. Replace the sensor 2. Replace mechanism control board	(1) Real-time detection (2) Automatic shutdown upon fault; operation not allowed

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END

到处完结