



蒙发利

EASEPAL

中国·厦门蒙发利科技有限公司

Xiamen Comfort Science & Technology Co.,Ltd

# Maintenance Service Manual

MODEL: PF53197

VOLTAGE SPESIFICATION: 220-240 V



By Customer Service Dept

# PF53197 Malfunction catalog

## —. Malfunction List

Common Trouble and processing Methods are listed as follow:

Error NO	Phenomenon	Description	Processing Methods
01	No Function When Starting.	The Controller`s LCD Nodisplay: ① Fuse melts (in the Power Source Box or on the main PCB). ② Power supply circuit poorly connected. ③ EMC Board fails. ④ Main PCB fails.	①Replace Fuse ②Replace Power Box. ③Replace EMC Board. ④Replace main PCB.
02	No Function When Starting.	The Controller`s LCD Display: ① Mechanical switch fails or it`s wire is opened. ② Up or Down Stroke Photo-electricity fails. ③ Main PCB fails. ④Kneading is on without pressing any key when starting and no response by pressing other keys.	①Replace mechanical switch or it's wire. ②Replace Stroke Photo-electricity. ③Replace the main PCB. ④Width Inspection Board of PCB fails, replace it.
03	No Width switchover.	① The terminals of Width Inspection on main PCB and wires are poorly connected. ②The terminals of Width Inspection on massage mechanical and wires are poorly connected. ③Width Inspection fails. ④Main PCB fails.	①&②Plug the terminal securely or replace the wires. ③Replace Width Inspection. ④Replace the main PCB.

04	No Partial Function.	<ul style="list-style-type: none"> <li>① Height Inspection Terminal or Wire Poorly Contacts.</li> <li>②Height Counting Subassembly fails.</li> <li>③Photo-electricity Subassembly fails.</li> </ul>	<ul style="list-style-type: none"> <li>① Plug the terminal securely or replace the wires.</li> <li>②Replace Height Counting Subassembly.</li> <li>③Replace Photo-electricity Subassembly.</li> </ul>
05	No Rolling.	<ul style="list-style-type: none"> <li>①Terminal or Wire Poorly Contacts.</li> <li>②Down-stroke Photo-electricity Subassembly Fails.</li> <li>③Up-stroke Photo-electricity Subassembly Fails.</li> <li>④Rolling Motor Fails.</li> <li>⑤Main PCB Fails.</li> </ul>	<ul style="list-style-type: none"> <li>① Plug the terminal securely or replace the wires.</li> <li>②Replace Down-Stroke Subassembly.</li> <li>③Replace Up-Stroke Subassembly.</li> <li>④Replace Rolling Motor.</li> <li>⑤Replace main PCB.</li> </ul>
06	No kneading	<ul style="list-style-type: none"> <li>①The terminals on main PCB and wires are poorly connected.</li> <li>②Kneading motor fails.</li> <li>③Main PCB fails.</li> </ul>	<ul style="list-style-type: none"> <li>①Plug the terminal securely or replace the wires.</li> <li>②Replace the kneading motor.</li> <li>③Replace main PCB.</li> </ul>
07	No tapping	<ul style="list-style-type: none"> <li>① The terminals on main PCB and wires are poorly connected.</li> <li>② Tapping motor fails.</li> <li>③ Main PCB fails.</li> </ul>	<ul style="list-style-type: none"> <li>①Plug the terminal securely or replace the wires.</li> <li>②Replace the kneading motor.</li> <li>③Replace the main PCB.</li> </ul>
08	No response when pressing the keys on the remote controller	<ul style="list-style-type: none"> <li>①The terminals and wires are poorly connected.</li> <li>②The PCB of remote controller fails.</li> </ul>	<ul style="list-style-type: none"> <li>①Plug the terminal securely or replace the wires.</li> <li>②replace the remote controller.</li> </ul>
09	The Backrest cannot recline or set up.	<ul style="list-style-type: none"> <li>①the terminal of reclining actuator and wires are poorly connected.</li> <li>②the reclining actuator fails.</li> <li>③main PCB fails.</li> </ul>	<ul style="list-style-type: none"> <li>①Plug the terminal securely.</li> <li>②replace the reclining actuator.</li> <li>③replace the main PCB.</li> </ul>

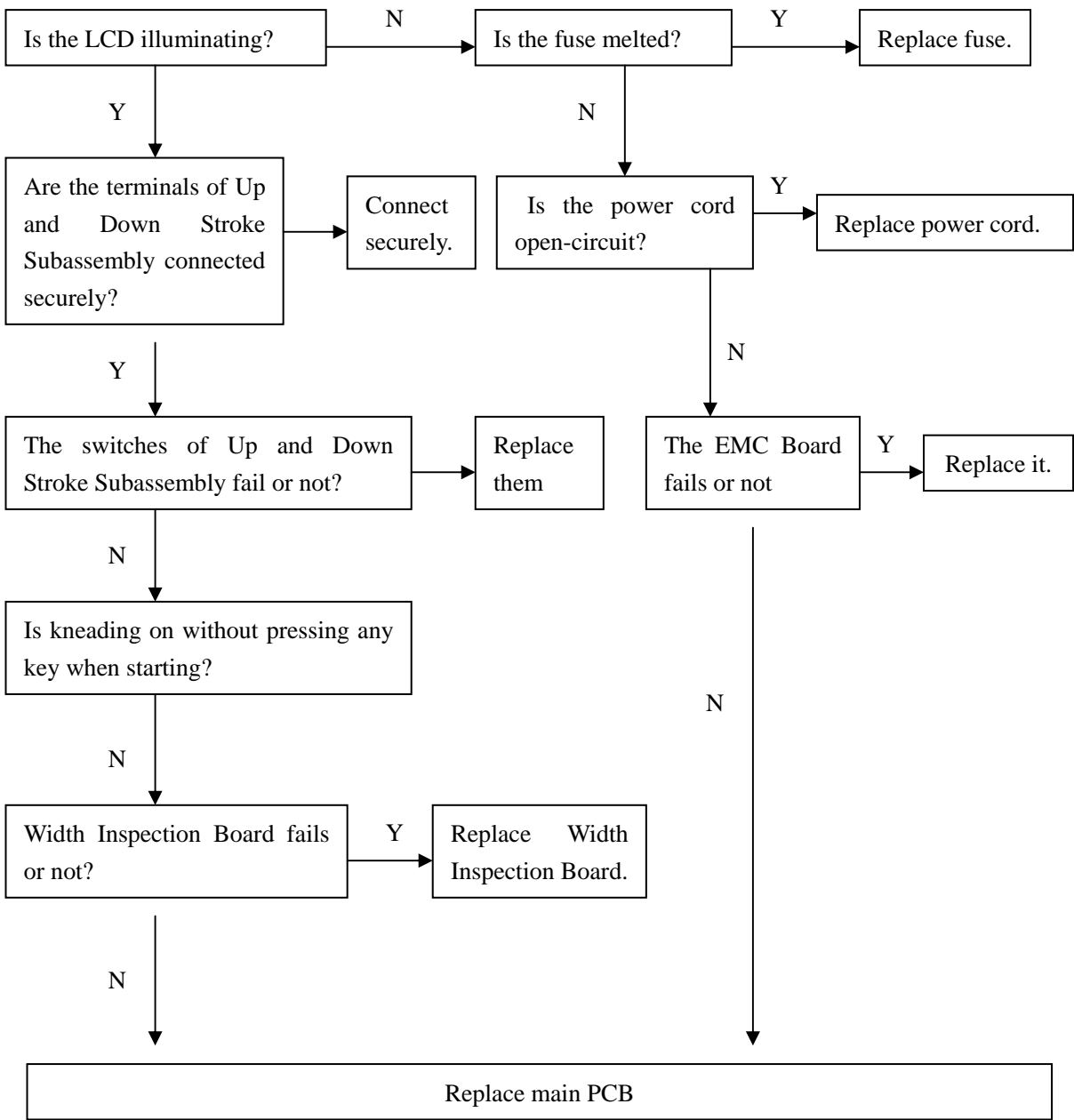
10	The Footrest cannot lift or recline.	①the terminal of foot rest actuator and wires are poorly connected.. ②the foot rest actuator fails. ③main PCB fails.	①Plug the terminal securely. ②replace the foot rest actuator. ③replace the main PCB.
11	No vibration by the motors in the seat pad.	①The vibrational motor fail ②The terminals and wires are poorly connected or the wires fail. ③Main PCB fails.	①Replace the vibrational motor. ②Plug the terminal securely or replace the wires. ③Replace the main PCB.
12	No kneading of the Footrest	①The terminals are not touch well with PCB or the wires are not connected. ②Main PCB fails。	①Plug the terminal securely or replace the wires. ②Replace the main PCB。
14	No gas charging in the seat-pad.	①The terminal of the snuffle valves and wires are poorly connected. ②The snuffle valves fail. ③The inflator pump fails. ④Main PCB fails.	①Plug the terminal securely. ②Replace the snuffle valves. ③Replace the inflator pump. ④Replace main PCB.
15	No gas charging in the Footrest	①The terminal of the snuffle valves and wires are poorly connected. ②The snuffle valves fail. ③The inflator pump fails. ④Main PCB fails.	①Plug the terminal securely. ②Replace the snuffle valves. ③Replace the inflator pump. ④Replace main PCB.

## 二. Troubleshooting Process

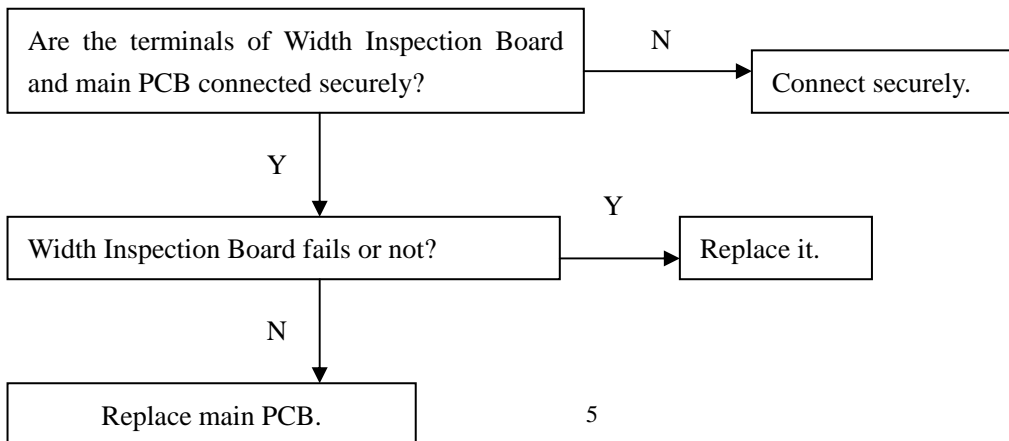
### Attention for repairing chair or replacing parts:

- ①Make sure the power is OFF before tearing down the wires, moving terminals or replacing parts.
- ②Semiconductors (such as IC and others) are very easy to be damaged by static, so when you touch the PCB, please make sure your body is grounding (by wearing a girding static ring), or your hands are touching with earthing grip (household electrical appliances putting to earth, such as fridges, washers and ...) to release all static of the body.

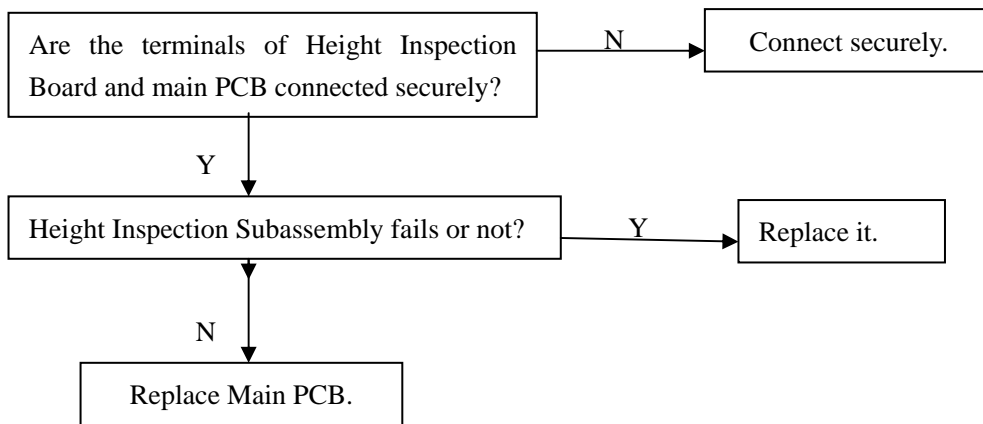
### 1. No function of starting.



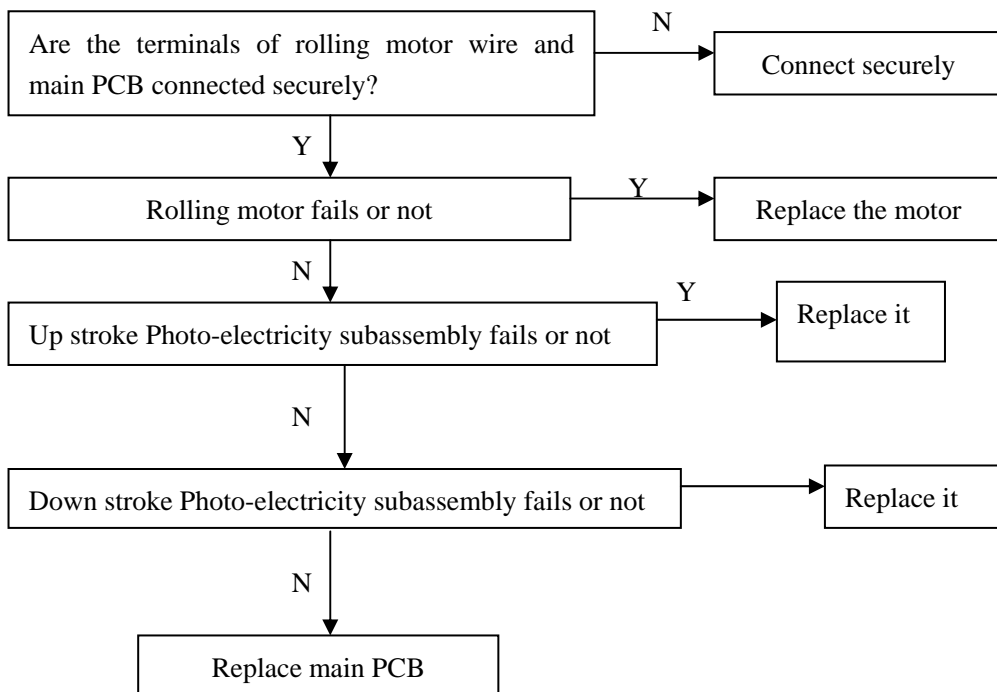
### 2. No width switchover



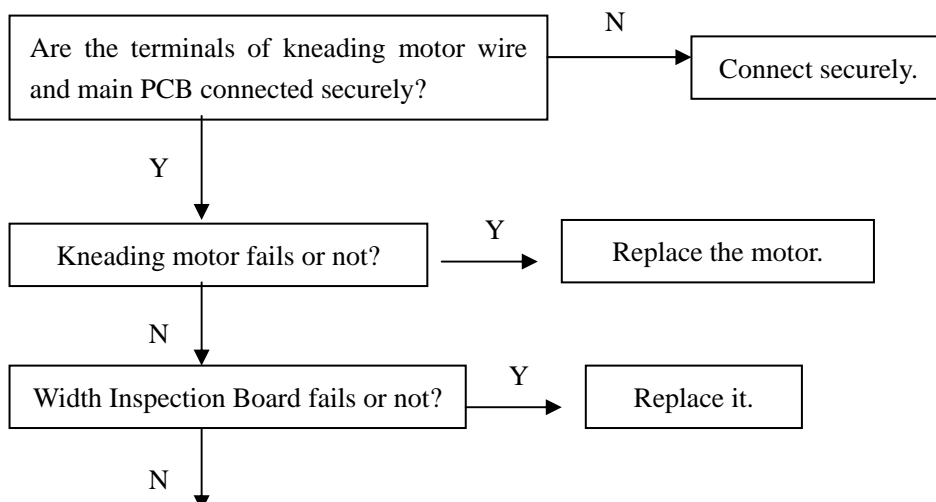
### 3. No function (fixed-spot or partial)



### 4. No rolling

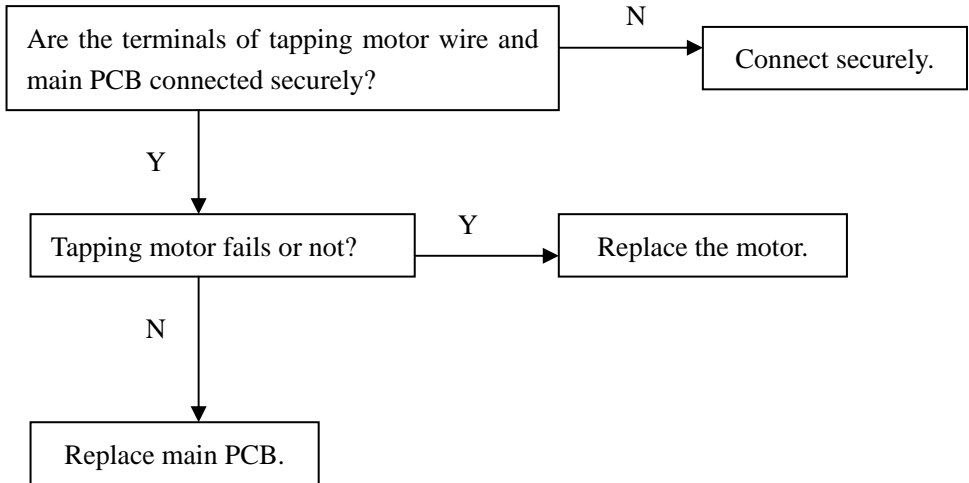


### 5. No kneading.

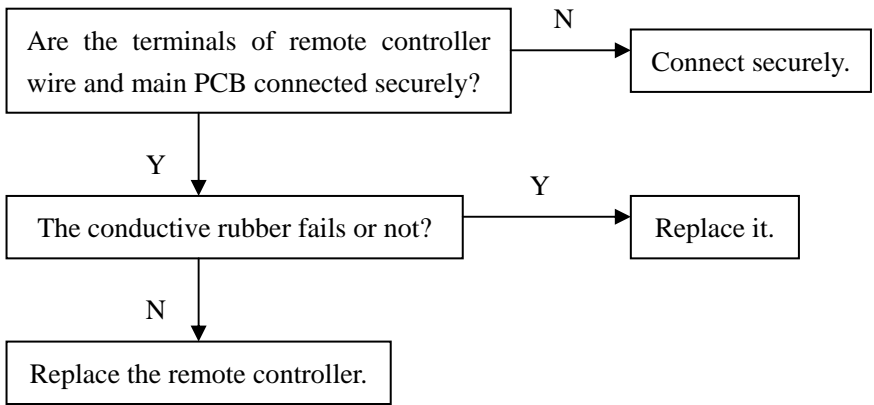


Replace main PCB.

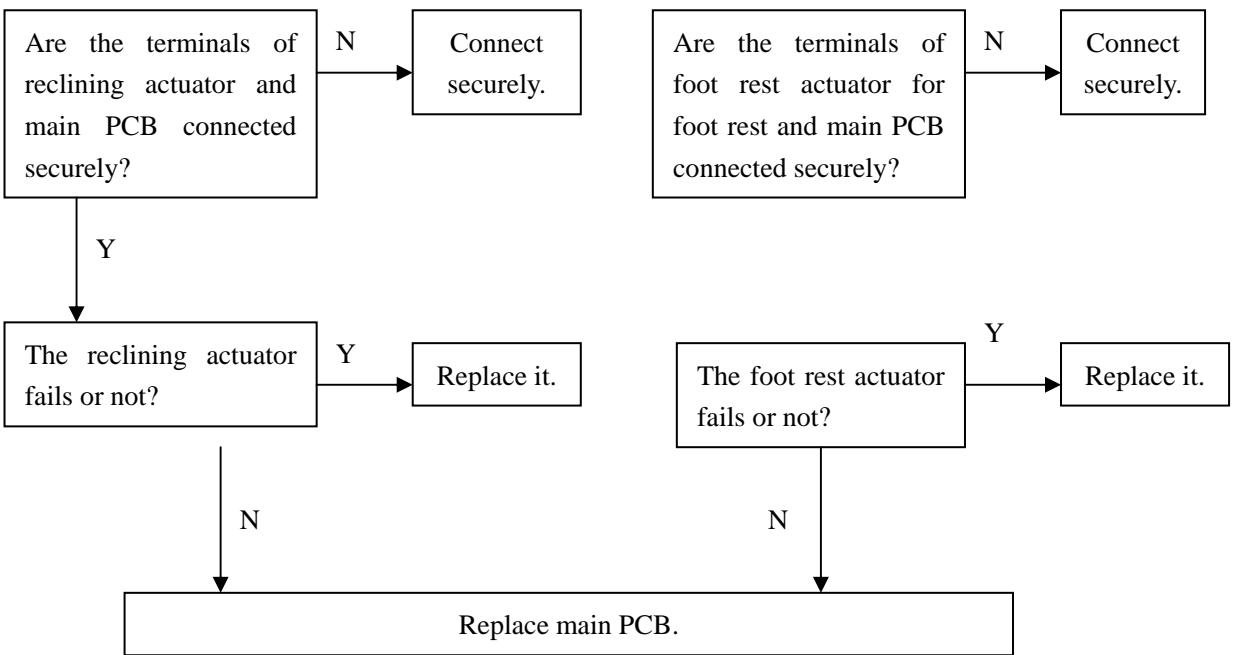
**6. No tapping.**



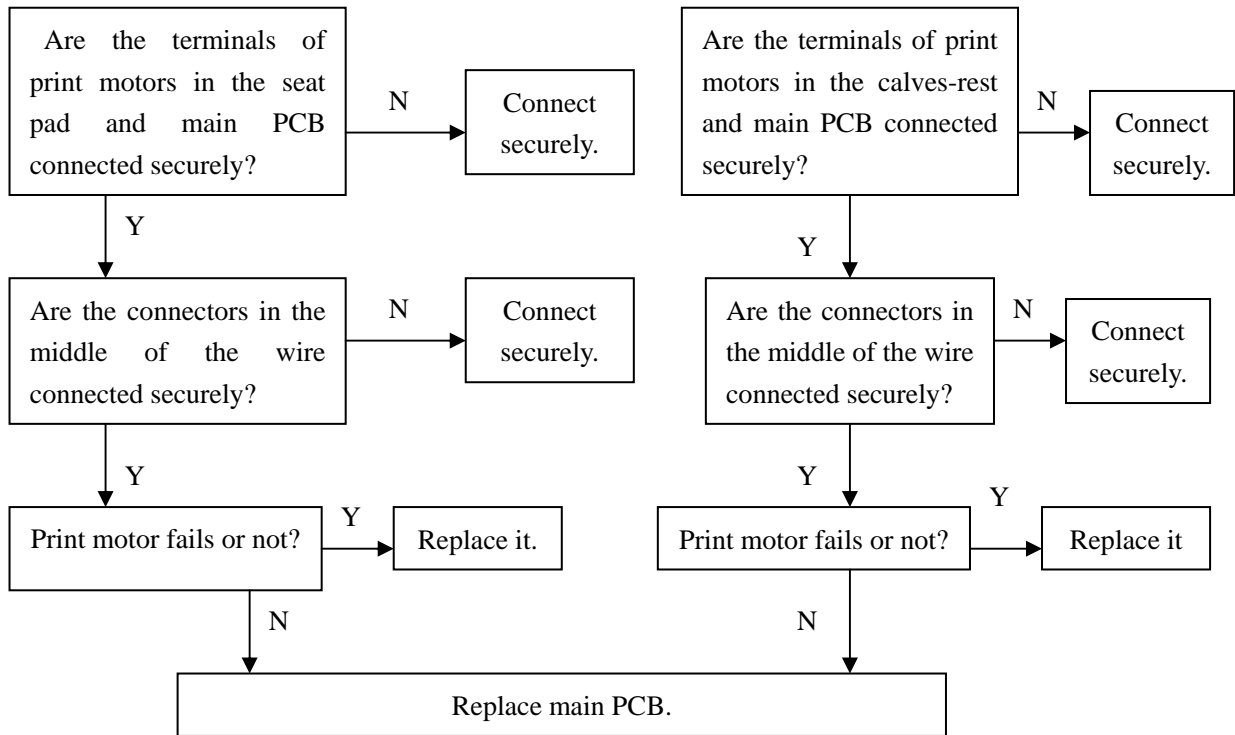
**7. The key of the remote controller was not function**



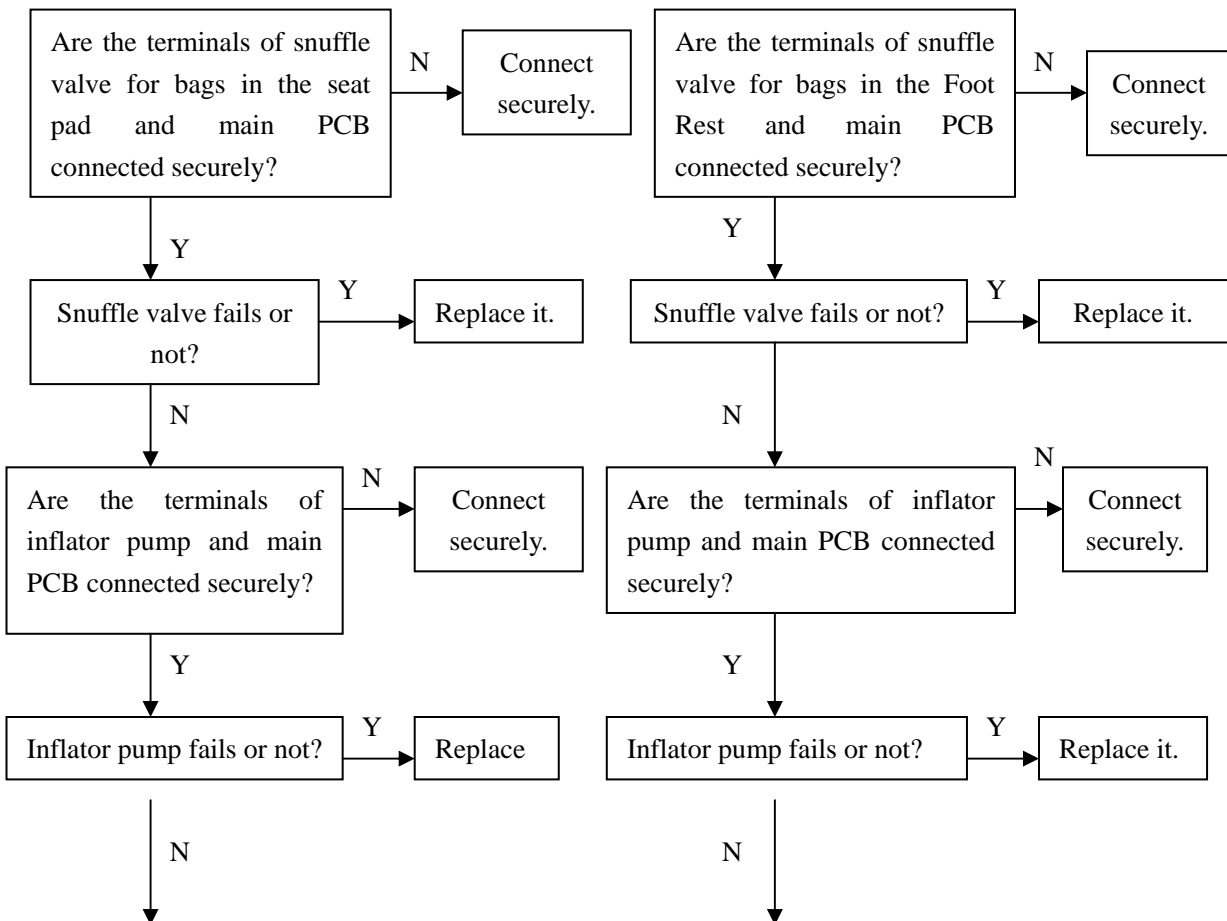
**8. Actuator doesn't work.**



## 9. NO vibration



## 10. No gas charging





Replace main PCB.

Common trouble about electric control and processing methods of this chair are mentioned above. It is for indication only.

### 三. PF53197 Disassembly process

Please make sure the massage chair is **POWER OFF** before maintenance and repair.

As the voltage specification is 220V AC, please make sure the plug is removed from outlet for safety before processing operations as follow

#### 1: Disassembly of the back pad

- ① You can find a zip on the top of the back rest.
- ② Unzip, then the back pad can be removed.
- ③ You should be replace if it was damaged



Unzip of the back pad

#### 2: Replace the Sponge pad

- A: You can see the Sponge pad after removed the back pad
- B: the zip is on the left of below
- C: Unzip of the sponge pad and replace it if you need



Unzip of the sponge pad

#### 3. Replacement the rear cover of backrest

If disfiguring damage or crack happened, you can proceed as follow:

- A: Find 4 pcs screws on the rear cover and 4 pcs screws on the power switch, then Slacken and remove them (8PCS) with a plus screwdriver.



Using the plus screwdriver screw off 8pcs screws

B: Please remove rear cover after removed power switch

C: You should be replaced if it was damaged

#### 4: Disassembly of the front cover of back rest

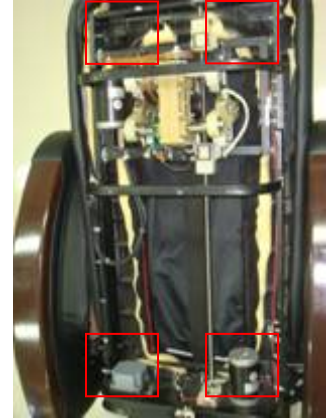
**If disfiguring damage or crack happened, or the inside cloth is damaged, you can proceed as follow:**

A: After removed the rear cover,

You can find 4pcs screws on the backrest with the front cover

B: Removed front cover after screw off the screws

C: You should be replace if it was damaged



Using plus screwdriver  
screw off 4pcs screws

#### 5: Disassembly of the motors :

**The voltage of this massage chair is high and the motors arerotating in high speed, so make sure the power is OFF before disassembly.**

**For safety, you should remove plug from outlet.**

**Attention:** Disassemble the rear cover of the back rest only, before disassembling the motors.

##### 5.1 Kneading motor:

A : Disassembled the rear cover of the Back rest,  
then take off the belt at the top massage mechanism

B : Find the wire of kneading motor,

Cut off the cable ties tightenin and contact nipple covering with wire,

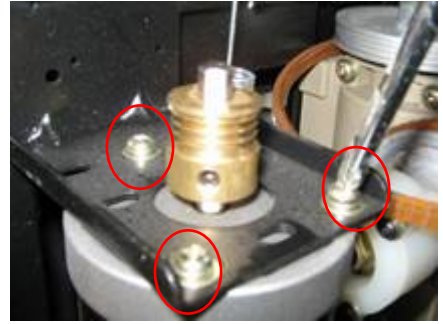
Then disconnect the two wires



Take off the belt

C : On the kneading motor have 3PCS fixing screws

Just screw them that take off the motor, and replace it if you need



Screw off the screws(3pcs)

## 5.2 Rolling motor:

A : Release the stopper at the bottom of back rest,

Recline the back rest forward for disassembling the motor easily.

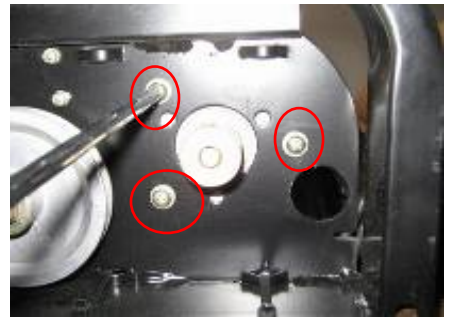
B: The rolling motor at the bottom of back rest.,

Take off the rolling belt at the bottom of motor

C: Disassemble ways as the same as the kneading motor



The rolling motor



Screw off the screws(3pcs)

## 5.3 Tapping motor:

The tapping motor at behind the massage mechanism

Disassemble methods as the same as the kneading motor or rolling motor,

But you feel is difficult screw off screws,

please disassemble the swimming arm(a side of screws motor )

(If you need ,see disassemble the swimming arm part 6.2)



Screw off the tapping motor's screws

## 6: Disassembly and replacement of massage mechanism

Disassemble the rear and front cover of the Back rest before disassembling the massage mechanism.

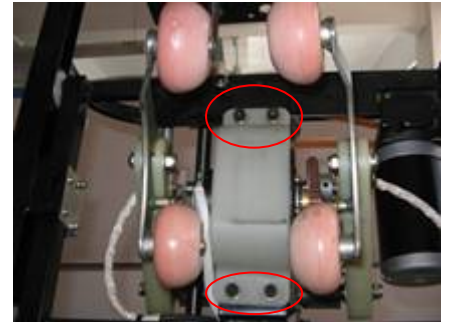
### 6.1 The below steps is the replace of massage mechanism

A. Remove the nipples tightening the wires of kneading and tapping motors, and disconnect the wires. Then cut off all the cable ties which this wires

B. Pull out the terminal of width inspection board.

C. Take off the belts of the kneading motor and tapping motor

Slacken and remove the 4 pieces of screws fixing the massage mechanism to the frame with inner hexagon spanner(5mm).



Screw off the inner hexagon(4pcs)

D. You maybe don't get it out because of the screw bolt.

So rotate the big belt wheel to adjust the width of swinging arms until you can get it out easily.

### 6.2 Disassemble the swinging arms and universal rods:

**NOTE:** You don't have to disassemble the massage mechanism

If you just disassembling the swinging arms.

A. Slacken and remove the hexagon check nut tightening the universal rod assembly to eccentric shaft with a hexagonal socket wrench(1/2).

B. Remove the hexagon check nut and washer, so you can separate the swinging arm and universal rod from the massage mechanism.

C. Remove the tension spring, and further disassembly can be done



Remove the hexagon check

**Attention:** When slackening the hexagon check nut tightening the universal rod assembly to eccentric shaft, you can't loosen it for the rotating shaft. So the eccentric shaft should be fixed. What you should do is inserting an iron rod into the hole of the shaft to stop its rotating.

### 6.3 Disassembly of the universal rod:

- A. Slacken and remove the screws tightening the plastic cover to the winging arm with a plus screwdriver if any parts need replacing.
- B: Remove the plastic cover, so you can separate the universal rod form the swimming arm.
- C: Slacken and remove the screw bolt tightening the flat end to the plastic bearing block with a shifting spanner and a plus screwdriver.



Take off the screws and universal rod



Slacken the screws and take out the ball top of rod

### 6.4 Replace the optocoupler of body type checkout

**Note:** You just disassemble the rear and front covers of the backrest before disassembling the optocoupler of body type checkout.

- A. Slacken and remove the screw tightening the optocoupler to the swimming arm with a plus screwdriver
- B: Disassemble the optocoupler on the other swinging arm in the same way; Now ,you can replace it.
- C: You can disassemble the optocouplers in the way mentioned above if the wires need replacing.



Slacken the screws

### 6.5 Replacement of the shock pad

- A: Find the screw tightening the shock pad to the swinging arm.
- B: Slacken and remove the screw with a plus screwdriver, so you can replace it.
- C: Proceed in the reverse order of disassembly when replacing a new one



Slacken the screws



## 6.6 Disassembly of the holder of knead balls

A: It is unnecessary to disassemble the massage mechanism to replace the holder of knead balls, just disassemble the rear cover of the Back rest.

B: Slacken and remove the screw bolt tightening the holder to the swinging arm with a hexagonal socket wrench (10 mm) and a minus screwdriver.

Pull the screw bolt out, and the holder can be removed.

C: Remove the tension spring and a new holder can be replaced if needed.

D: Proceed in the reverse order of disassembly when replacing a new one.



Disassemble the holder of knead balls

## 6.7 Disassembly of the knead balls

A: Slacken and remove the hexagon check nut tightening the knead balls to the holder with a hexagonal socket wrench(1/2).

B: Replace a new knead ball and tighten the hexagon check nut.



Take off the ball

**Attention:** There is a plastic washer between the wheel and the nut.

o

## 6.8 Disassembly of width inspection board

A: Pull out the terminal of width inspection board.

B: Disassemble the left swimming arm

C: Slacken and remove the screw bolt tightening the light barrier to the eccentric shaft with shifting spanner and inner hexagon spanner, then the eccentric shaft can be removed.

D: Slacken and remove the screws tightening the width inspection board to the reduction gear box:

E: Proceed in the reverse order of disassembly if the width inspection board



Drive the screw bolts and nuts



Tools and parts

or light barrier needs replaced.

**Attention:** In order to operate conveniently,  
you can disassemble the massage mechanism first,  
then disassemble the width inspection board.



Slacken the screws



width inspection board  
and tools

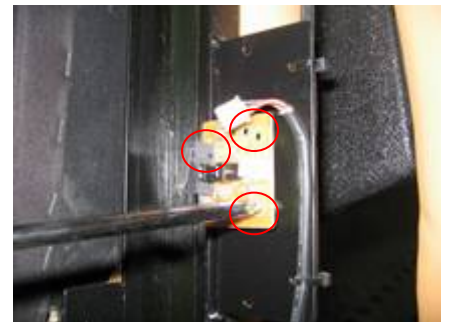
## 7. Disassembly of Photo-electricity Subassembly:

### 7.1. Disassembly of up /down stroke photo-electricity subassembly

A: Disassemble the Photo-electricity Subassembly is easier

Just slacken the screws(3pcs) and pull a terminal of the wire

B: There are on the backrest side



Terminal of the wire and 3pcs screws

**Attention:** Generally speaking, the Stroke Photo-electricity  
Subassembly is so stabile that it can't be damaged easily.

### 7.2. Disassembly of the counting Photo-electricity Subassembly

A: Disassemble methods as the same as 7.1

B: There is at the bottom of backrest



Terminal of the wire and 3pcs screws

## 8: Disassembly of bearings and bearing blocks

A: Disassemble the rear and front covers of the back rest.

B: Slacken and remove the screws tightening the sheet-metal to the frame with a plus screwdriver.



Slacken the screws (6pcs)

C: Remove the sheet-metal, so you can pull out the bearing block. Turn the block clockwise and counterclockwise alternately to pull it out easily.

## 9. Disassembly of the seat part

### 9.1 Replacement of the armrest

A: Slacken and remove the socket head screws tightening the armrest with a inner hexagon spanner.

B: Replace a new one, and tighten the screw bolts.



Slacken the screws(2pcs)

### 9.2 . Replacement of the decorative board

A: Find the screws at the side of decorative board  
There are 3pcs inner hexagon screws

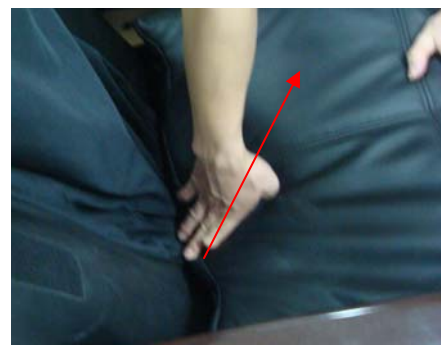
B: Slacken and remove inner hexagon screws  
Then you can take it down if need replace



Slacken the screws(3pcs)

### 9.3 Replacement of the seat pad

A: Raise seat pad begin behind of seat.



Raise seat pad



B: Pull out the Connector of air hose and vibrational motor wires then take off the fixing material



Connector of air hose and motor wires

D: Now, you can replace new one if it need



Take off the fixing material

#### 9.4 Replacement of the side boards

A: disassemble the armrest above the side board needing replacement

B: Find the inner hexagon screws (4pcs) ,then slacken them And take down

C: Now,you can replace a new one.



Inside board have 4pcs inner hexagon screws

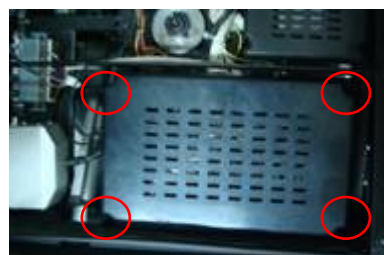
#### 9.5 Replacement of main PCB

A: Main PCB box Under the seat, just disassemble board and Raise it



Slacken the screws(9pcs)

B: Then,you can find 4pcs screws around box Slacken these screws and take the cap

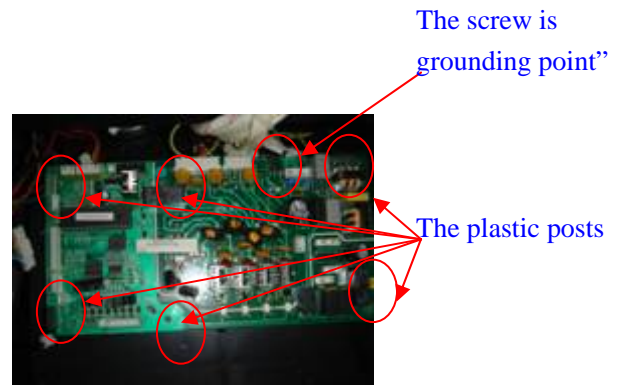


Slacken the screws(4pcs)



Take the box cap

C: Pull out all the terminal connecting to the main PCB, unlock the plastic posts for the PCB. and a grounding screw  
Then the PCB can be removed.



F: Proceed in the reverse order of disassembly when replacing a new PCB.

### 9.6 Replacement of the reclining actuator of the Back rest

A: Turn off the power and remove plug from outlet.

Lay the back rest forward on the Seat Pad.

Pull out the splint pin in the pin roll which connects the reclining actuator of the Back rest and the turnover mechanism with a nipper pliers.

Then draw the pin roll to free one end of the actuator.



taken down the Pin roll

B: Release the other end of the actuator in the same way as "A"



taken down the another Pin roll

C: Disassemble the upper cover of the box for the main PCB, then pull out the terminal of the actuator.



The terminal of reclining actuator

D: First, fix both end of the actuator in the reverse order of Part A&B. Don't forget to assemble the bush rings in the both end of actuator as you can see in disassembly.



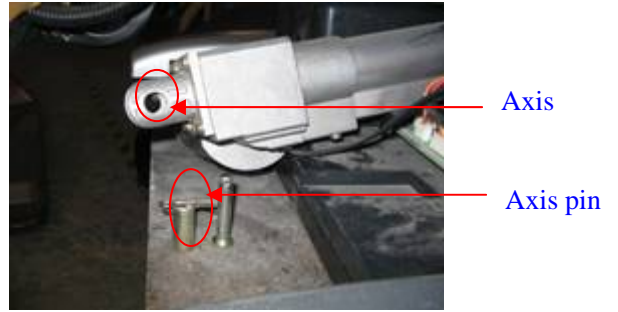
Reclining actuator and the accessory

E: Then connect the terminal of the actuator to the main PCB.

Turn the power on and check the connection is right or not by sitting up or reclining the Back rest.

If it's not, just exchange the two pin of the terminal.

F: At last, assemble the box of the main PCB, and tighten the wire of the actuator with cable ties.



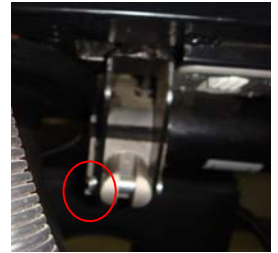
### 9.7 Replacement of the foot rest actuator

A: Turn off the power and remove plug from outlet. Lay the Back rest forward on the Seat Pad.

B: take off the splint pin in the pin roll which connects the legrest actuator with a nipper pliers ,then separate the actuator with legrest



Take off the splint pin  
Separate the actuator with legrest



Take off the another pin  
Separate the actuator with seatrest

**Attention: When drawing the pin roll, you should hold the LegRest with you leg or by another person. Because the LegRest maybe fall down on your foot**

C: Then, take off the splint pin of seat part, and separate the actuator with seatrest



The terminal of the actuator

D: Last, just you take off the terminal of actuator on main PCB  
Now, you can take out the actuator and replace it

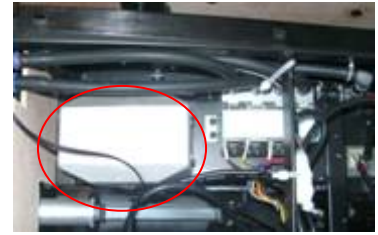


Take out the actuator of legrest

### 9.8 Replacement of the inflator pump and snuffle valves

A: Turn off the power, then removed the seat pad and disassemble seat board  
 Now ,you can look at the inflator pump

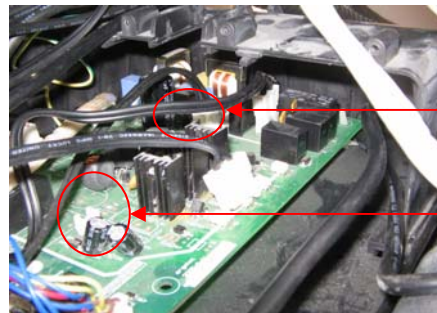
B: Pull out the rubber poles fixing the inflator pump,  
 Take out the erminal of the inflator pump and  
 the terminal of the snuffle valves



The inflator pump



the rubber poles



The terminal of  
 the inflator pump

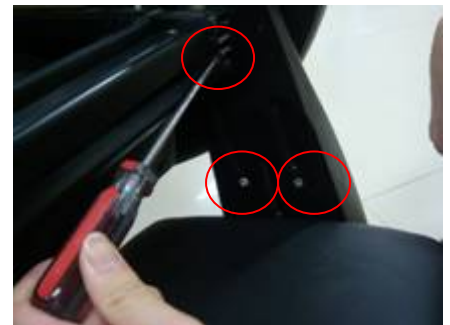
The terminal of  
 the snuffle valves

### 10. Replacement of the LegRest

Please follow the steps below to disassemble the LegRest:

A: Turn on the power, Raise the legrest to the extreme position  
 for the easier disassembly.

Turn legrest back up and take the screws.



B: take out the side cover of legrest, then take off the splint pin(2pcs)  
 And legrest on the actuator of legrest(1pcs)



Take out the cover



Take off the splint pin

(another side has one also)



C: Take out the terminal of legrest with power wires  
And take out the air hoses beside the inflator pump



Disassemble the terminal of power



Take off the air hoses

D: Now, you can take down the legrest and disassemble iron rest



Remove the screws(2pcs) of left side



Remove the screw(3pcs) of right side

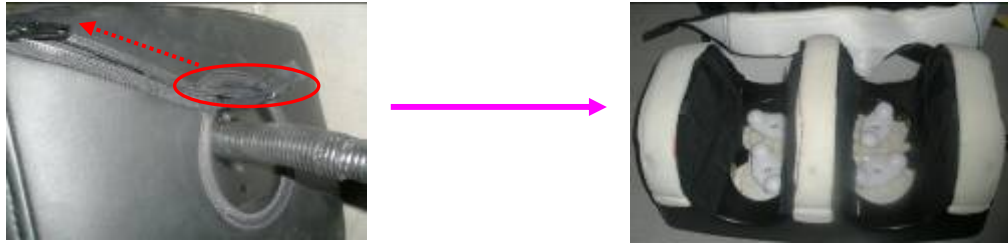


Take down the plastics(2pcs) on the rest



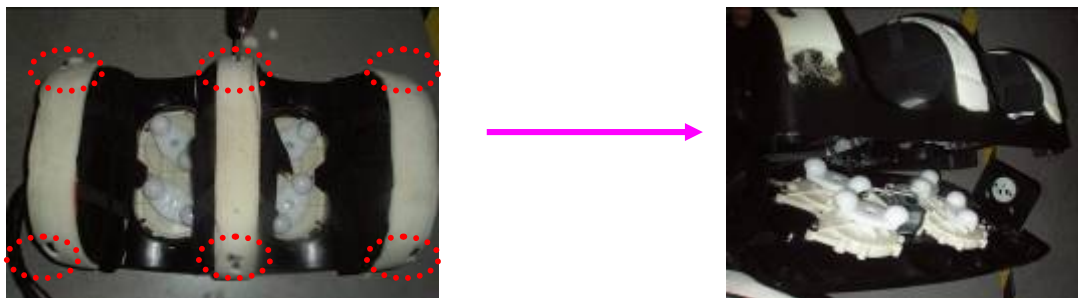
Remove the screws in the hole(4pcs)

E: After removed the iron rest,you can change the leg clother



F: Replacement the air bag、 massage roller and motor

①Disassemble the legrest

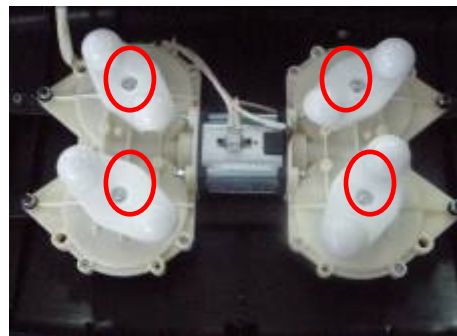


Slacken and remove the screws with cover (6pcs), see the picture

Disassemble the up or down cover

②Replacement the massage roller or motor

Remove either screw and change the roller  
Remove all the screws around of motor if you need change motor



③Replacement the air bag

Cut the fixing belt of bag before take the bag

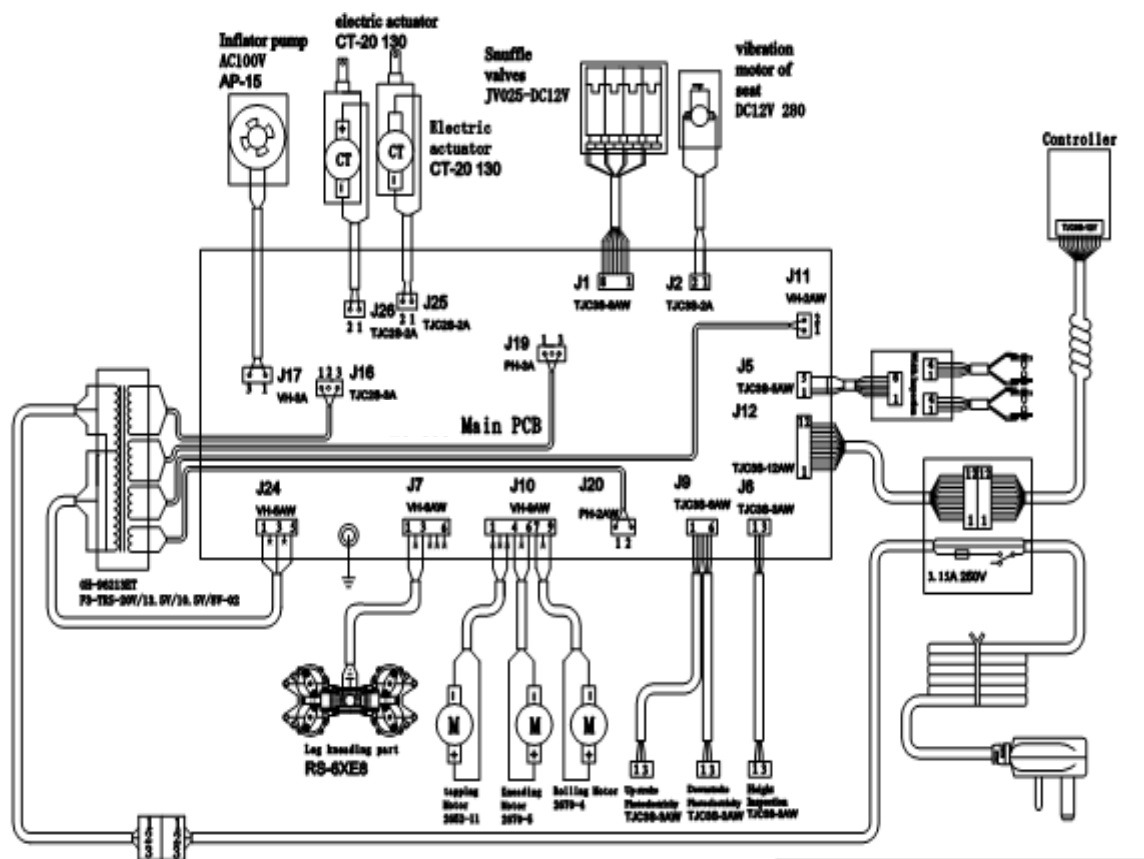


## Attention:

As the voltage specification is 220V AC, please make sure the plug is removed from outlet before processing operations above.

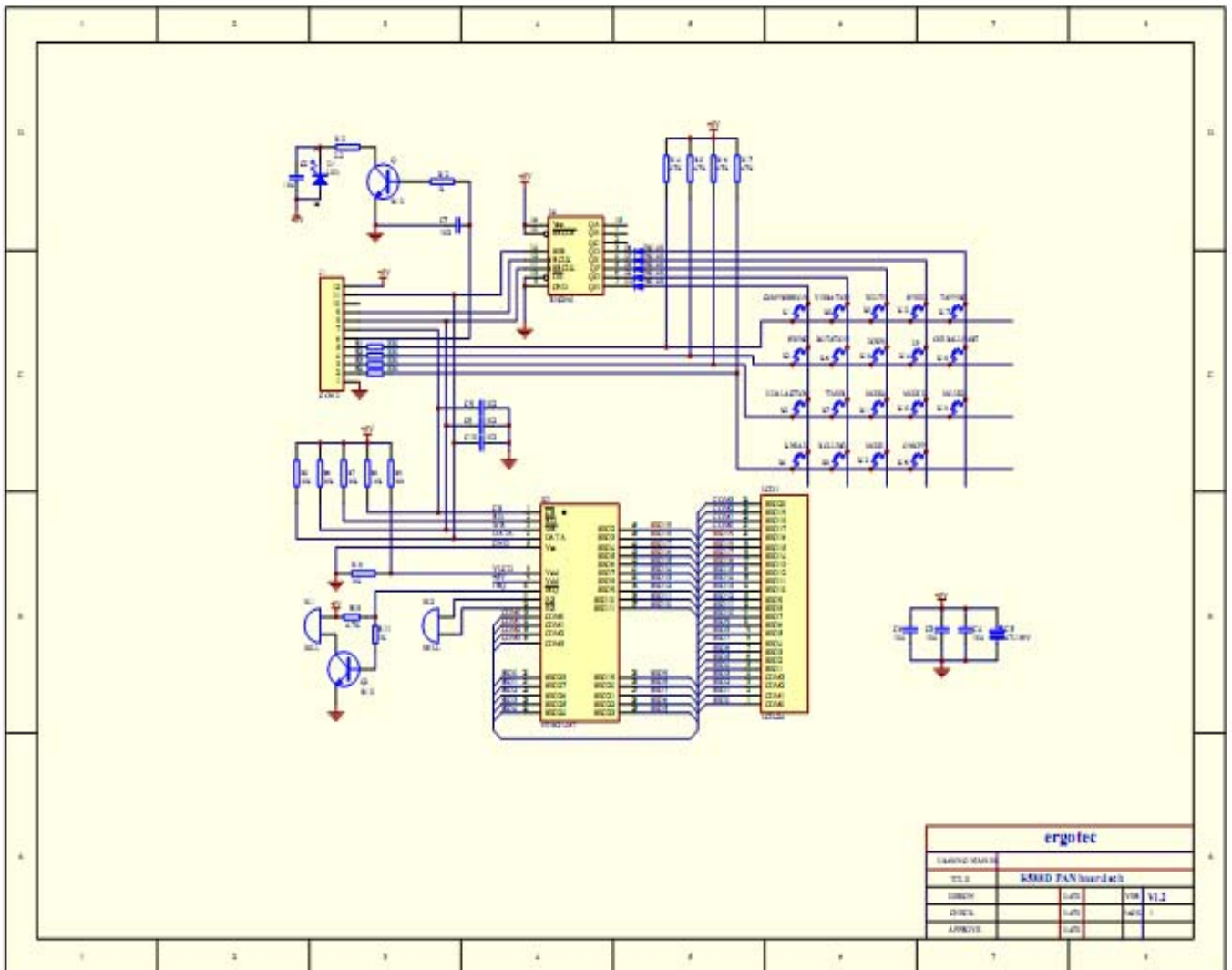
Because of the complex structure, only professional maintenance man can be approved to do the repair work to avoid damage to the product.

## Electrical wiring diagram



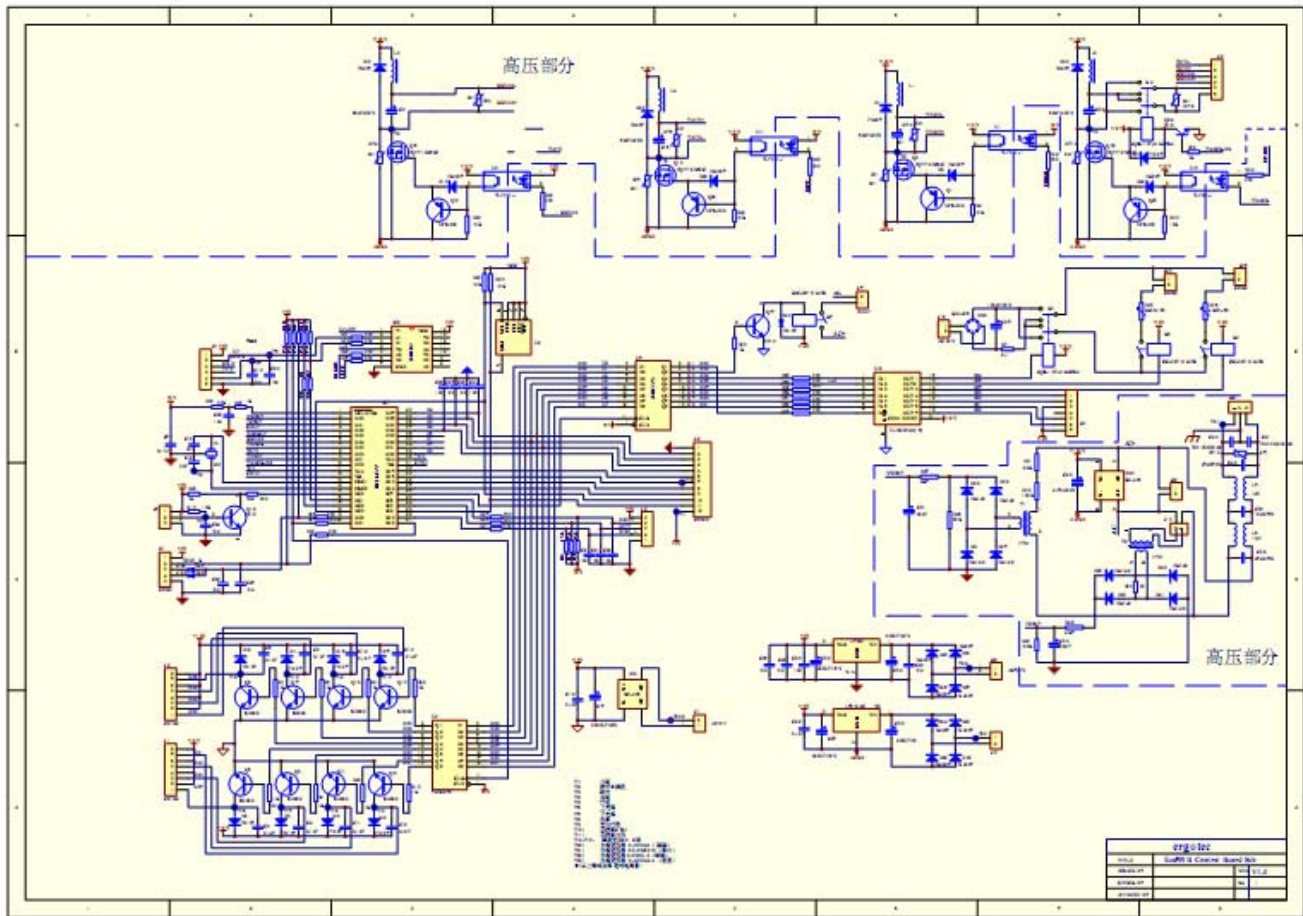
	第 1 套 共 1 套 版本 V0.3
	图名 电气接线图
	设计 图号
	日期 料号

# Schematic diagram of the controller





## Schematic diagram of the main PCB



## Contact us

Please contact us if you have any question about massage chair

**Xiamen Comfort Science & Technology Co.,Ltd, CSC**

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