



蒙发利

EASEPAL

中国·厦门蒙发利科技有限公司

Xiamen Comfort Science & Technology Co.,Ltd

产品维修手册

Maintenance Service Manual

产品型号/MODEL: EC-381E

适用电压规格/ voltage specification: 110VAC

蒙发利集团·客服

By the Easepal's Customer Service Dept.

一、产品故障列表 Trouble List

如下为EC-381E常见的故障现象及维修方法。

Common Troubles and Maintenance Methods are listed as below:

故障序号NO	现象 phenomenon	描述 Description	维修方法 maintenance method
01	开机无功能 No function	A. 手控器无显示: LCD NO DISPLAY ①、保险丝烧掉Fuse melts (电源盒处和中心板上(in the Power Source Box and main PCB) ②、电源电路接触不良。Power supply	①、更换保险丝 Replace Fuse ②、更换电源盒 Replace Power Box ③、更换电源滤波器 Replace EMC Board ④、更换中心板 Replace main PCB

		<p>circuit Poorly connected</p> <p>③、电源滤波器坏 EMC Board Failed</p> <p>④、中心板坏 Main PCB failed</p>	
		<p>B. 手控器有显示: LCD HAS DISPLAY</p> <p>①、机械开关坏掉 或是机械开关的线材断开。 Mechanical switch fails or it' s wire is broken</p> <p>②、上下行程光电坏。 Up or Down Stroke Photoelectricity was failed</p> <p>③、中心板坏掉 Main PCB failed</p> <p>④、开机直揉捏其他按键无效 kneading all the time from powerand no response with other button</p>	<p>①、更换机械开关或是线材 replace mechanical switch or wire</p> <p>②、更换行程光电 Replace stroke photoelecruicity</p> <p>③、更换中心板 Replace main PCB</p> <p>④、宽度检测板坏， 更换宽度检测板 Replace Width Inspection Board</p>
02	<p>宽中窄不能切换 the Width switchover isn` t change</p>	<p>①、中心板宽度检测端子线材接触不良。The terminals of Width Inspection on main PCB with wires were poorly connected</p> <p>②、机芯宽度检测板端子线材接触不良。The terminals of Width Inspection on mechanical with wires were poorly connected</p> <p>③、宽度检测板坏。 Width Inspection failed</p> <p>④、中心板坏Main PCB failed</p>	<p>①、②点将端子接插到位或是更换线 材Plug the terminals well or replace the wires</p> <p>③、更换宽度检测板 Replace Width Inspection</p> <p>④、更换中心板 Replace the main PCB</p>

03	不行走 NO Rolling	1、 端子或是线材接触不良 Terminals or Wire Poorly Contact ②、 上、下行程光电组件坏。 UP/ Down-stroke Photoelectricity Subassembly Failed ③、 行走电机坏 Rolling Motor Failed ④、 中心板坏 Main PCB failed	①、 将端子接插到位或是更换线材。 Plug the terminal well or replace the wires 2、 更换上、下行程组件 ReplaceUP/Down-StrokeSubassembly ③、 更换机芯。 Replace gear box ④、 更换中心板 Replace main PCB
04	不揉捏 No kneading	①、 中心板端子没插到位或是线材接触不良。The terminals on main PCB and wires are poorly connected 2 、揉捏电机坏 Kneading motor failed ③、 中心板坏Main PCB failed	①、 将端子接插到位或是更换线材。 Plug the terminal well or replace the wires ②、 更换机芯 Replace gear box ③、 更换中心板。 Replace main PCB
05	不敲击 No tapping	①、 中心板端子没插到位 The terminals on main PCB and wires are poorly connected ②、 敲击电机坏 Tapping motor faild ③、 中心板坏掉Main PCB failed	①、 将端子接插到位 Plug the terminal well ②、 更换机芯 Replace gear box ③、 更换中心板R Replace main PCB
06	手控器上按键无反映 The all buttons of controller aren`t response	①、 端子接触不良或线材接触不良 The terminals and wires are poorly connected ②、 手控器PCB板坏 The PCB in the controller failed	①、 将端子接插到位或是更换线材。 Plug the terminal well or replace the wires ②、 更换手控器 Replace the controller
07	不升倒背 backrest can`t recline or lift	①、 电动推杆连接线未接插到位 The terminal of electrically operated pusher and wires are	①、 将连接线接插到位 Plug the terminal well ②、 更换电动推杆

		<p>poorly connected</p> <p>②、电动推杆坏</p> <p>The electrically operated pusher failed</p> <p>③、中心板坏</p> <p>Main PCB failed</p>	<p>Replace the electrically operated pusher</p> <p>③、更换中心板</p> <p>Replace main PCB</p>
08	<p>小腿不能升降</p> <p>calves-rest can't lift or recline</p>	<p>①、电动推杆连接线未接插到位</p> <p>The terminal of electrically operated pusher and wires are poorly connected</p> <p>②、电动推杆坏</p> <p>The electrically operated pusher failed</p> <p>③、中心板坏Main PCB failed</p>	<p>①、将连接线接插到位</p> <p>Plug the terminal well</p> <p>②、更换电动推杆</p> <p>Replace the electrically operated pushe</p> <p>③、更换中心板</p> <p>Replace main PCB</p>
9	<p>座部电机不振动</p> <p>no vibration by the motor in the seat-pad</p>	<p>1、 振动电机坏</p> <p>Print motors failed</p> <p>2、 端子接触不良或是线材坏掉。</p> <p>The terminals and wires are poorly connected or the wires fail</p> <p>3、 中心板坏。Main PCB failed</p>	<p>1、 更换振动电机</p> <p>Replace the print motor</p> <p>2、 将端子接插到位或者更换线材。</p> <p>Plug the terminal well or replace the wires</p> <p>3、 更换中心板</p> <p>Replace main PCB</p>
10	<p>小腿电机不振动</p> <p>no vibration by the motor in the calves-rest</p>	<p>①、振动电机坏。</p> <p>Print motors failed</p> <p>②、端子接触不好或是线材坏掉。</p> <p>The terminals and wires are poorly connected or the wires failed</p> <p>③、中心板坏。Main PCB failed</p>	<p>①、 更换振动电机</p> <p>Replace the print motor</p> <p>②、 将端子接插到位或者更换线材。</p> <p>Plug the terminal well or replace the wires</p> <p>③、更换中心板</p> <p>Replace main PCB</p>
11	<p>座部不充气</p> <p>no gas charging in the seat-pad</p>	<p>①、气泵泄气阀端子接触不良</p> <p>The terminal of the snuffle valves and wires are poorly connected</p>	<p>①、将端子接好</p> <p>Plug the terminal well</p> <p>②、更换泄气阀。</p> <p>Replace the snuffle valves</p>

12	小腿不充气 no gas charging in the calves-rest	②、泄气阀坏 The snuffle valves fail ③、气泵坏The inflator pump failed	③、更换气泵。 Replace the inflator pump ④、更换中心板 Replace main PCB
13	靠背腰部或肩部不充气 no gas charging in the backrest	④、中心板坏Main PCB fails	

二. 故障检修流程图 Troubleshooting Process

在修理或者替换零配件过程中注意下面几点:

- A. 在拆卸连线, 移动连接器, 或者替换部件前一定要断开电源线插头。
- B. 因为半导体 (像集成电路, 或者其它的) 很容易被静电损坏, 所以当要触摸PCB前, 请确保你的身体和大地有连线 (佩带静电手环), 或可以将手放在地端, 以释放身体上所带的静电。

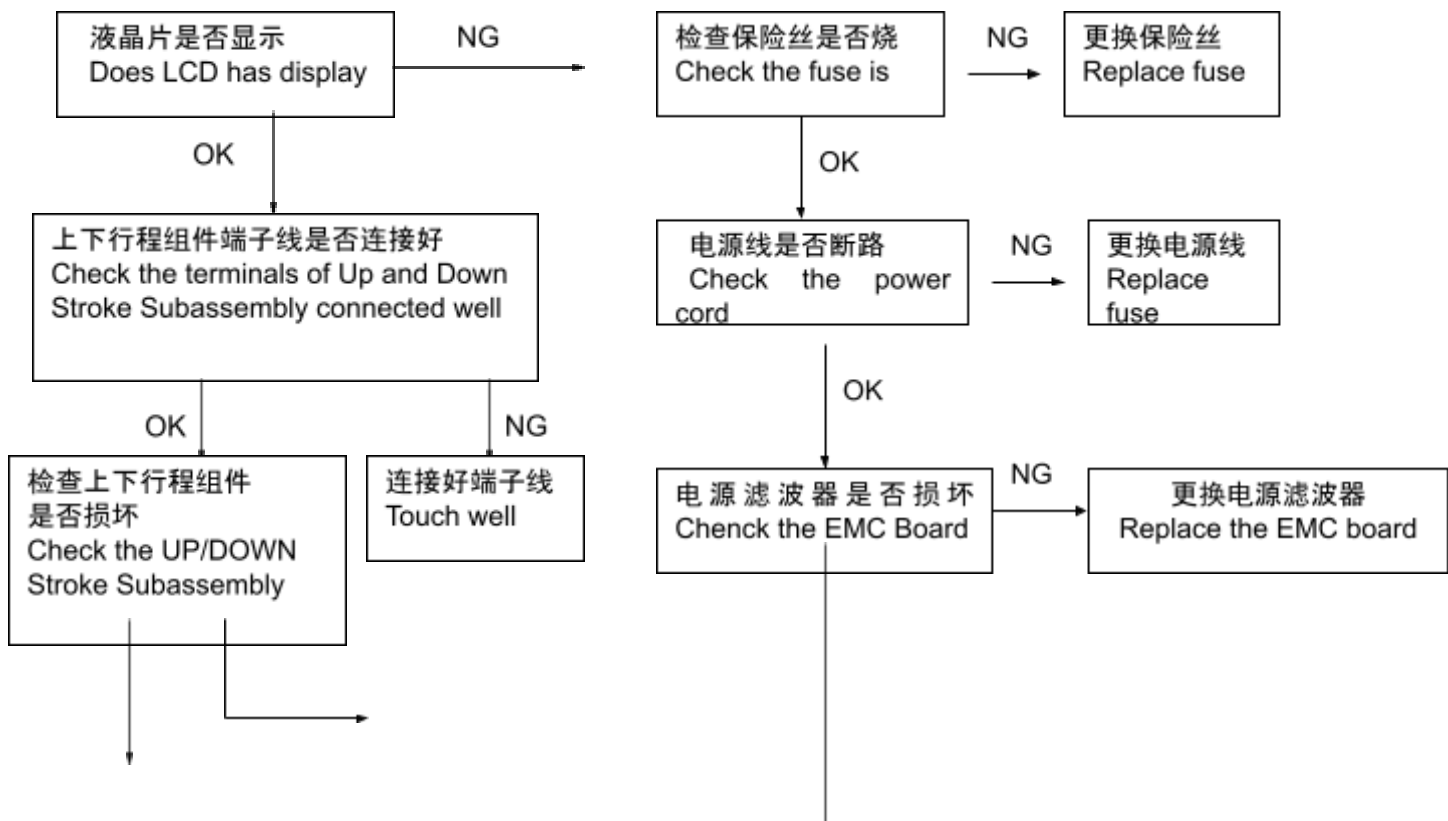
Notes for repairing chair or replacing parts

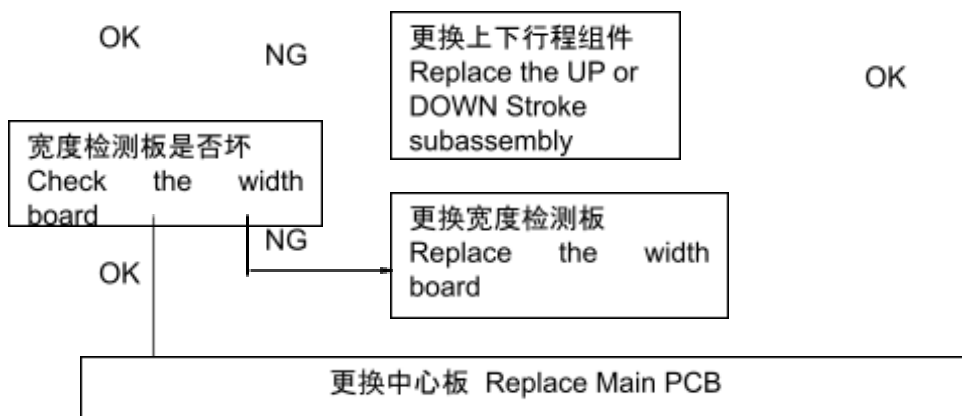
A. Make sure the power is off when you tear down the wires, move terminals or replacing parts.

B. The semiconductors (like IC or something else) will easily be damaged by static.

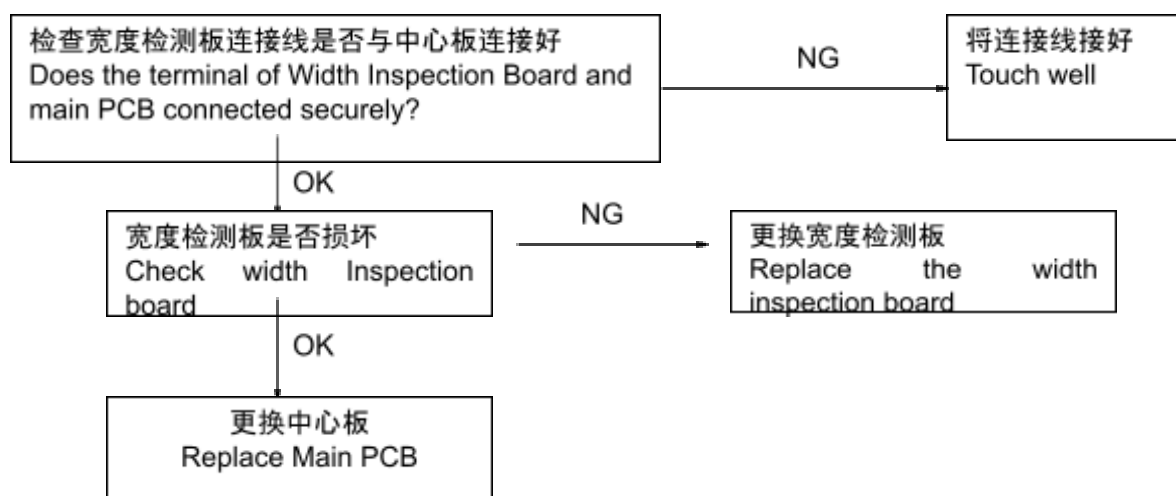
So you touch the PCB before, please make sure your body is connected with the ground.

1、开机无功能/ No function

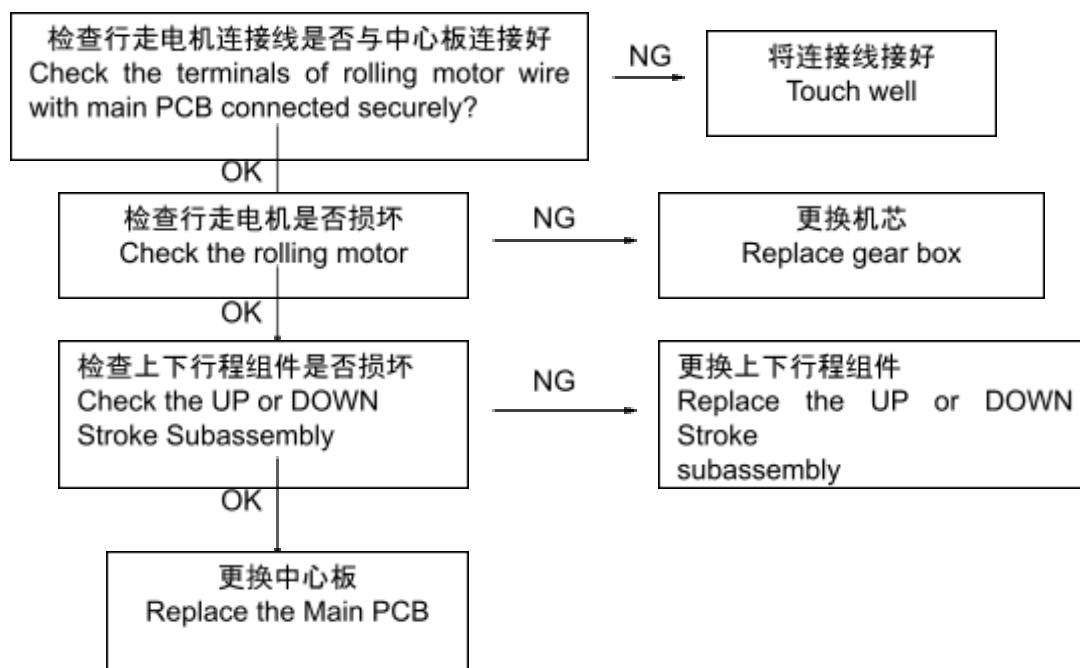




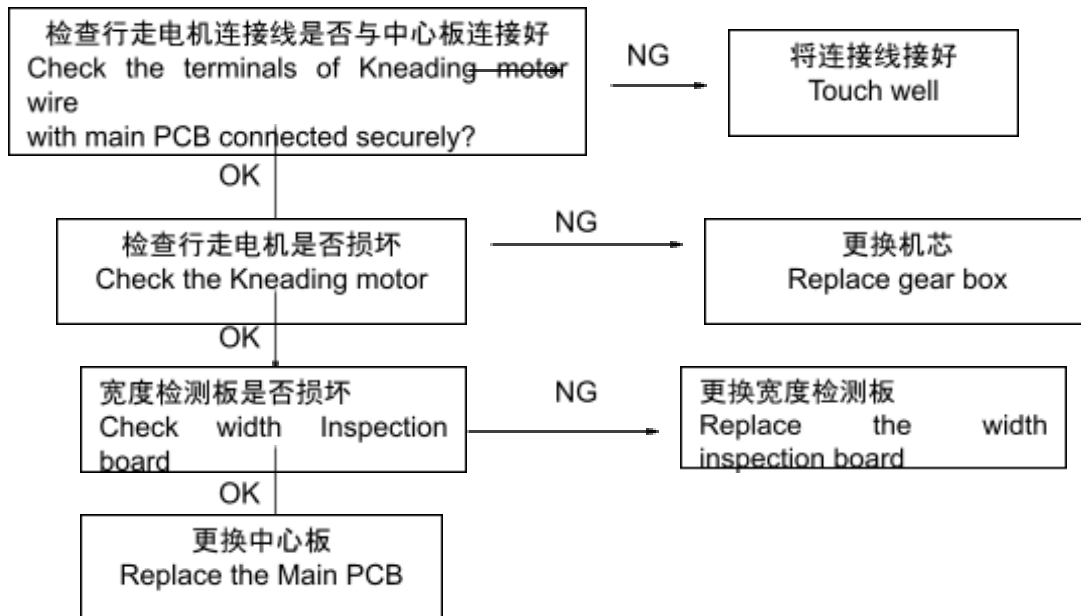
2、机芯宽中窄不能切换 No width switchover



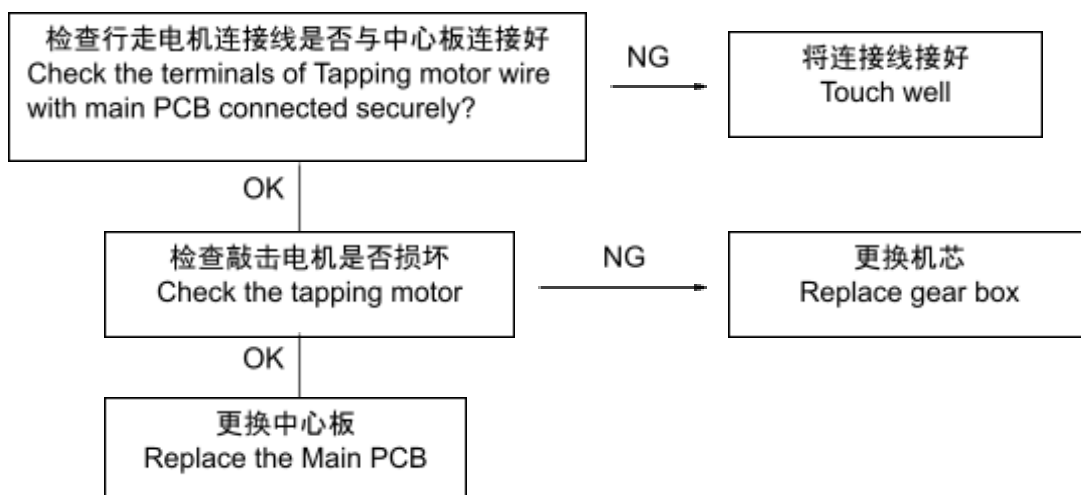
3、不行走/ NO ROLLING



4、不揉捏/ NO KNEADING

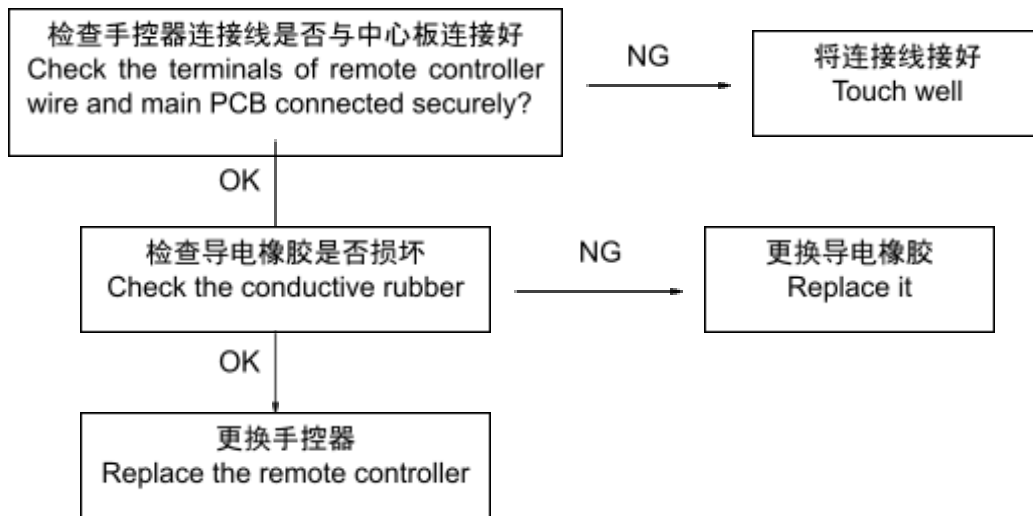


5、不敲击/ NO TAPPING



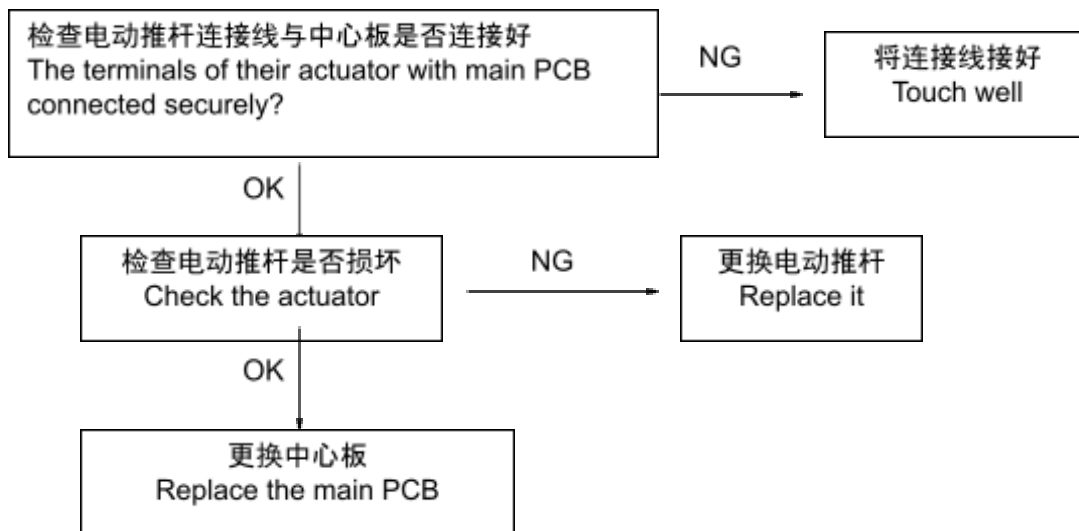
6、手控器上按键无反应

The all buttons of controller aren't response



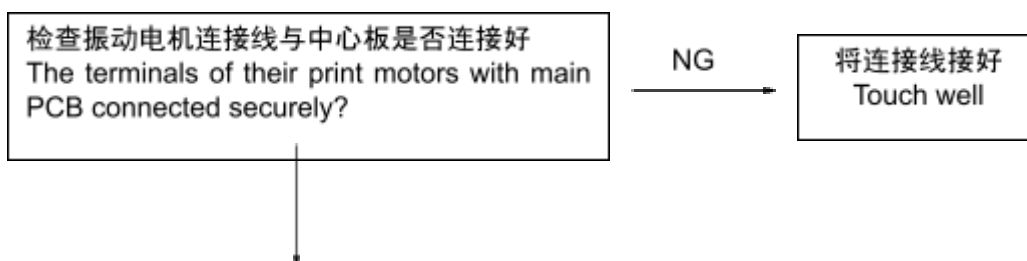
7、电动推杆(靠背/小腿/零重力)不工作

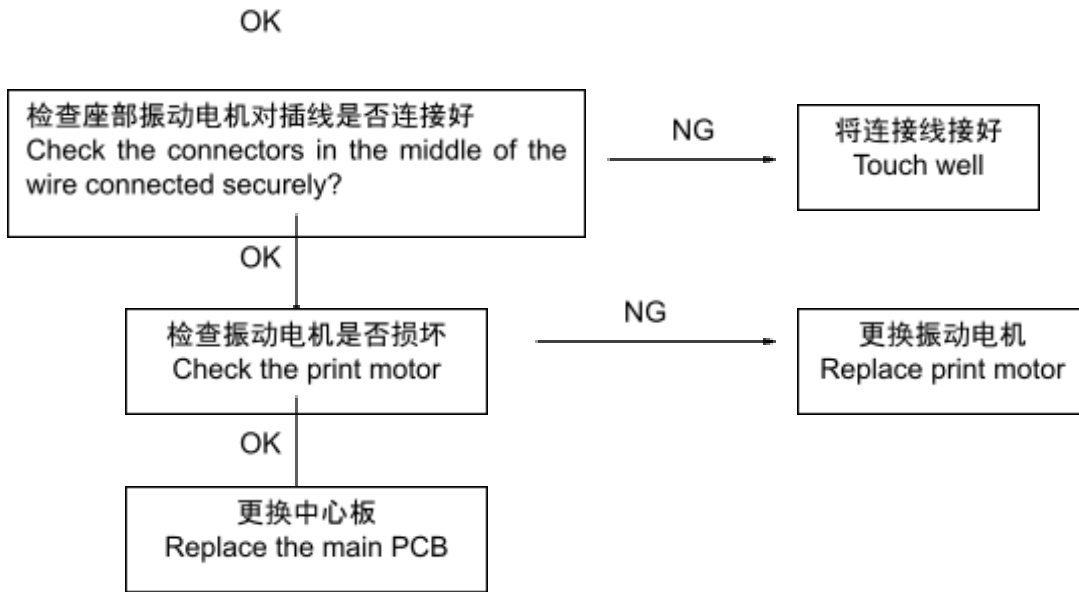
Actuator doesn't work.(Backrest and legrest)



8、振动电机不工作

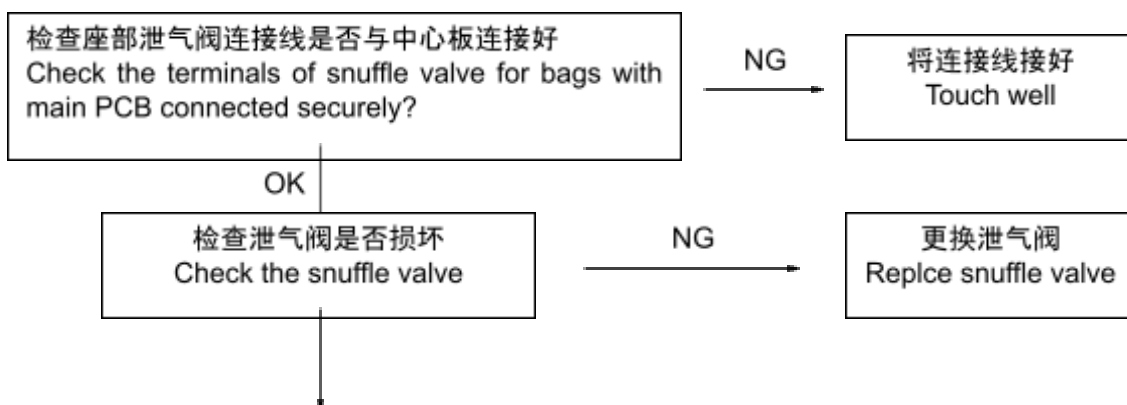
No vibration

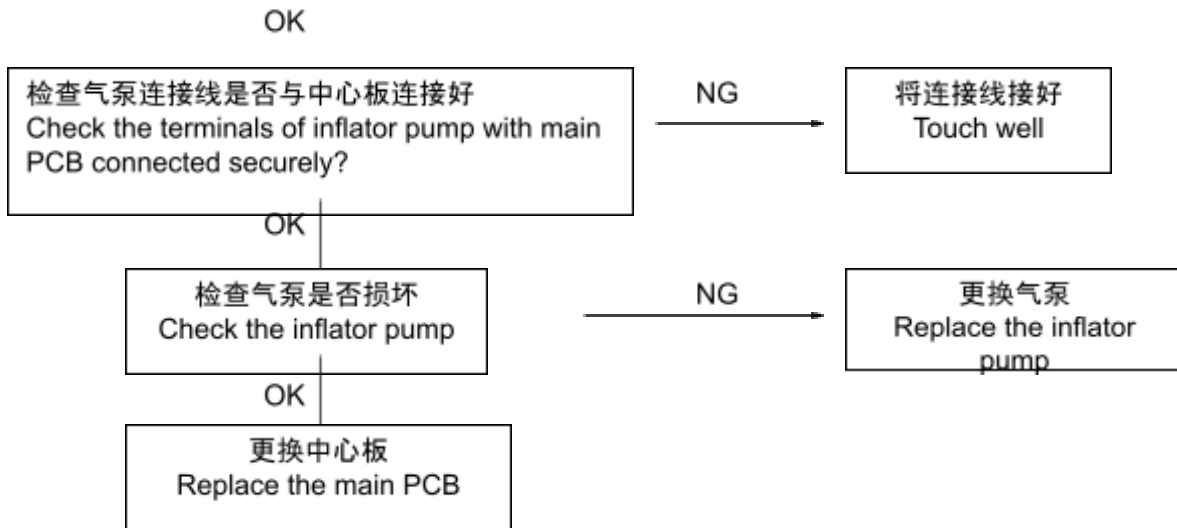




9、座部/腿部/靠背腰部或肩部不充气

No gas charging (Seat pad / Calves-rest/Backrest part)





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1. 靠背枕头的拆解 Disassembly of the pillow

A. 拉开小枕头的拉链, 即可取下枕头

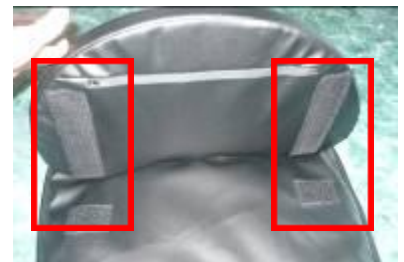
Unzip the zipper of the pillow, then take down the pillow



枕头与披风的拉链
zipper fixing backrest pad



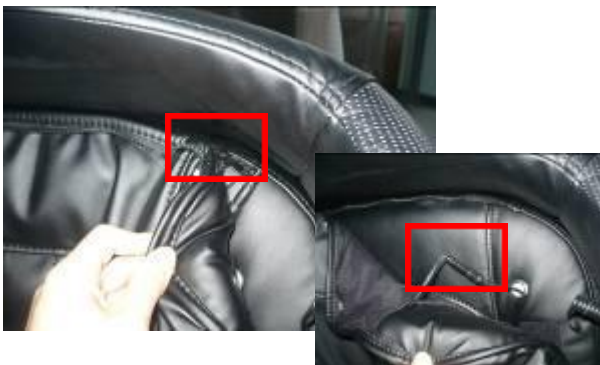
枕头有大小之分, 小枕头与大枕头之间用粘扣结合, 用手打撕开即可分离
The Pillow has the cent of size(bia & small)



2. 披风的拆卸 Disassembly of the backrest pad

A. 拉开披风与靠背的拉链和披风与座部的拉链, 以及拆开端子即可取下披风

Unzip zippers of the pad, then take down the backrest pad



披风与靠背的拉链 及连接端子
the zipper fixing the pad and the backrest
then notice the terminal



披风与座部的拉链及端子
The zipper fixing the pad and termianl

3.靠背的拆卸 Disassembly of the backrest

A. 拉开披风与靠背的拉链 (见2), 与座部联接部可不用拆下, 可将披风放在座位上。

Unzip the zipper fixing backrest pad and backrest, put the backrest pad on the seat part

B. 首先要拔除数据线 & 靠背连接气管及端子

Disconnect the wire plug & 4 air hoses and wire terminal



靠背的4根气管及一条连接端子
the 4 air hoses of backrest and terminal

B. 然后向上扳动卡钩 (靠背底部) 并拆除连接轴

数据线插座
the electrical outlet

Then take up switch at the bottom of backrest and take down pin for actuator



向上拉起卡位销
set up the switch



拆卸与连杆连接的销轴
the pin fixing backrest and the actuator

C. 现在可以把靠背竖起与座部的卡槽口并行, 这样就容易把靠背从座部提起分离
Last, set up the backrest with seat to 90°, then take it up very easy

Note: How to disconnect as how to set it well

4.拉绒布的拆卸 Disassembly of the cloth of the front cover

A. 取下披风后, 可以看到靠背上的拉绒布 (见2)



Take down back pad, you can see sponge pad

B. 在靠背左下部可以找到拉链; 将拉链拉开, 使其与靠背分离.

Find zipper at lower of left, then unzip sponge pad and disconnect with backrest

C. 如果要更换拉绒布, 只要将新拉绒布上的拉链与靠背右下部的拉链头配合后重新拉上拉链就可以了

If the sponge pad is broken and need to be replace ,please get a new one



向上拉开拉链就可以更换拉绒布了
Zip the 2 zipper and replace a new cloth

5. 面罩的拆卸 Disassembly

A. 这款椅子比较特殊, 拆面罩要先拆靠背后盖, 因为面罩的连接线在内部, 然后再拉开拉练并拆下4个固定螺丝, 并分离氧气头才能拆下



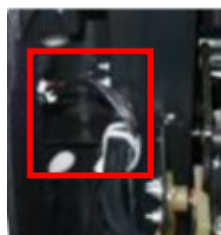
拉开靠背底部的两个拉练
The zipper at bottom of backrest



拆除4个固定螺丝
Remot the 4 screws

C. 拆开后盖后, 分离这些相关端子

Then disconnect these terminals for head cover



- D. 然后拆下固定头罩螺丝, 即可以拿下这个部件了
Slack and remove the 4 screws of fixing cover

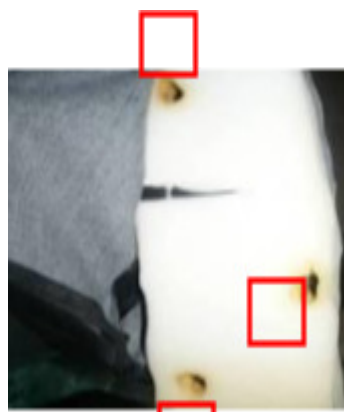


6. 左右肩部按摩器的更换 **replace the shoulder massage**

- A. 拉开左右肩部的拉链, 取下固定肩部按摩器的3枚螺丝, 拔开气管, 可以更换肩部按摩器
Unzip the zipper fixing shoulder massage, slack and remove the 3 screws, disconnect the air hose;
Then replace a new one



拉练位置
The Zipper of shoulder



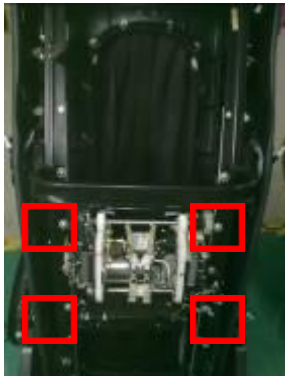
肩部按摩器的3枚螺丝
the screws fixing shoulder massage



气管位置
The hose of shoulder

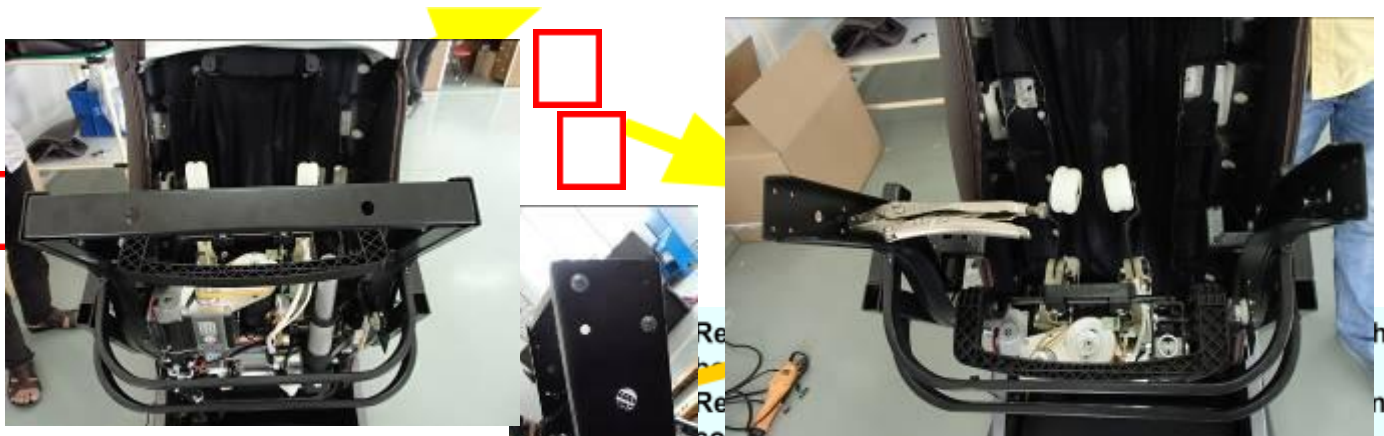
- C. 取下前背盖上的6螺丝, 拿下前背盖

Take down the screws of the front cover, take down the cover.



固定前靠背的6枚螺丝
The 4 screws fixing front backrest cover

7.机芯的更换 **replace the gear box**

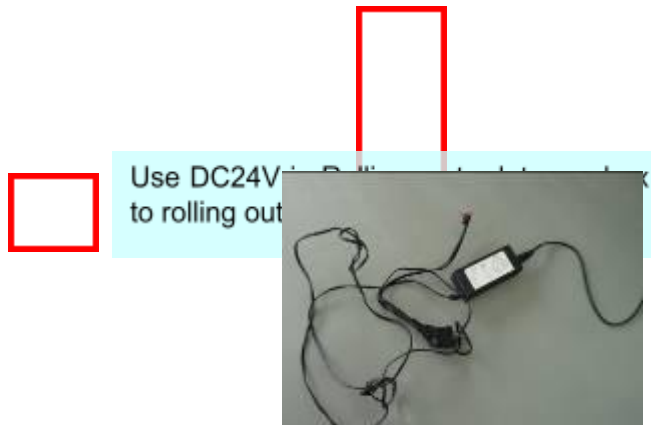


D. 移除机芯上的连接线材 Disconnect the all wire of gear box



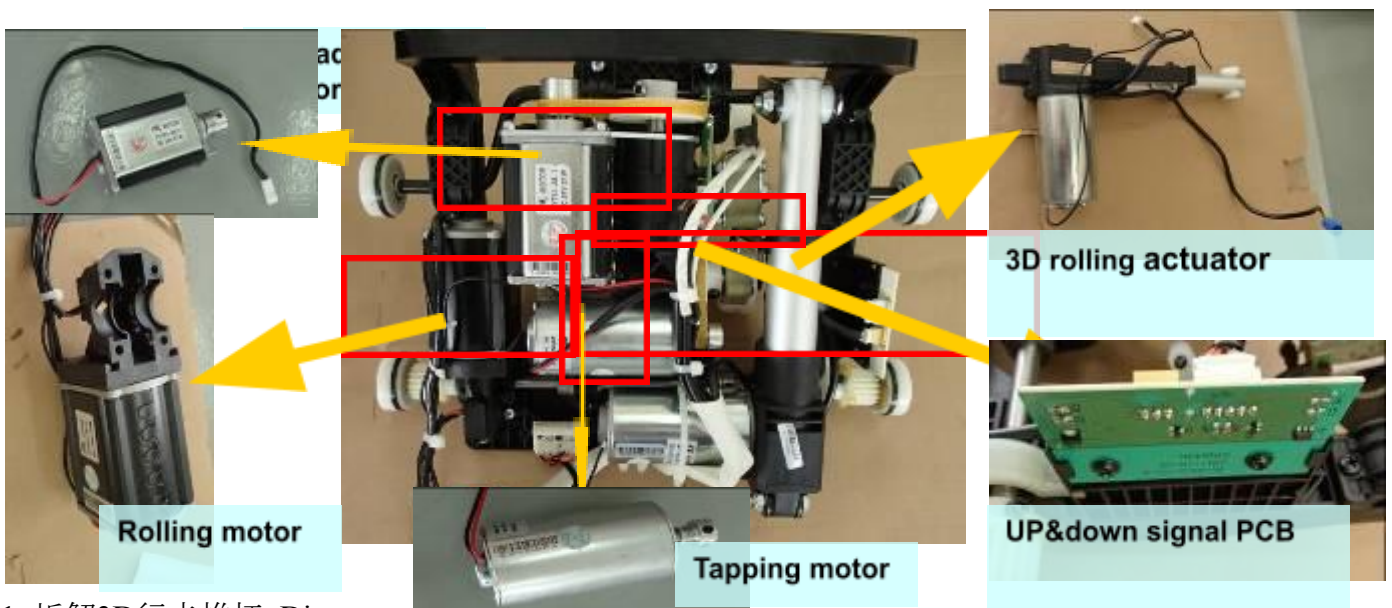
机芯上的电机电源及信号线,请拆除它们
Disconnect moto wire and gear boxsignal , then remove the inner signal later



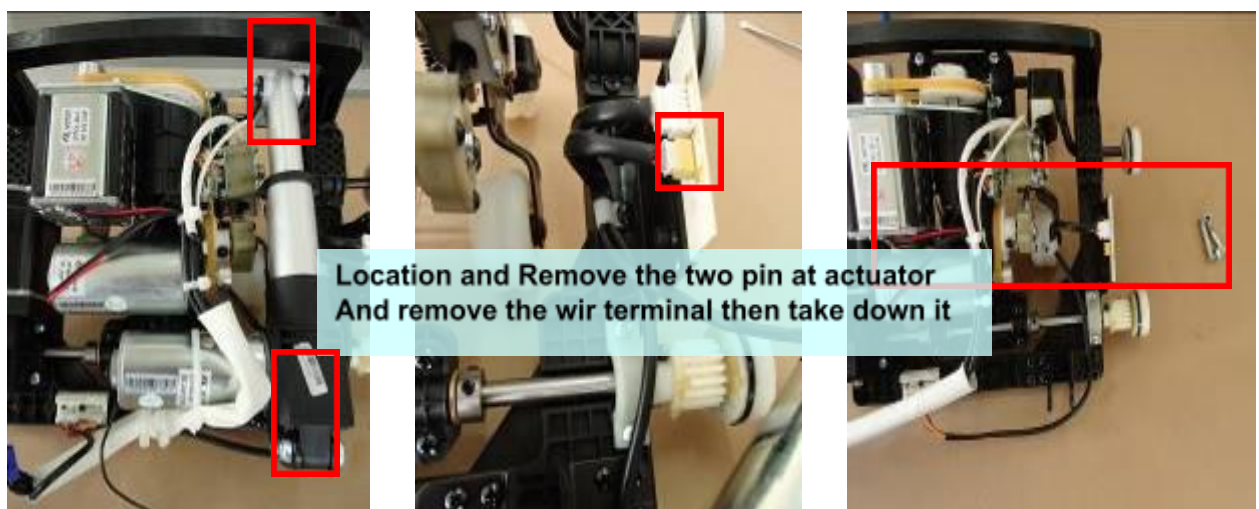


Take out the gear box from the backrest

E,机芯分解,Disassemble gear box



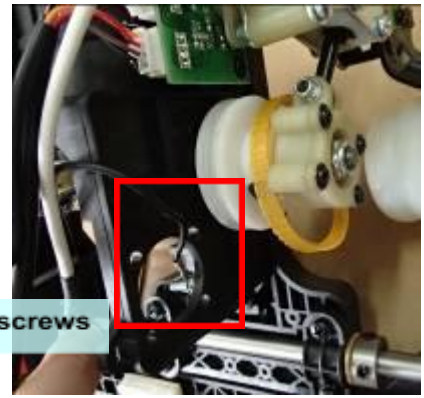
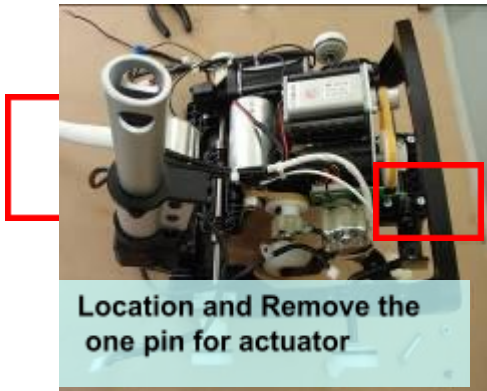
E1. 拆解3D行走推杆 Disconnect the 3D rolling actuator



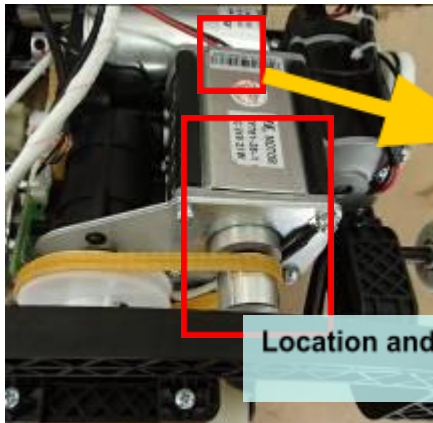
E2. 拆解捶打电机,Disconnect the tapping motor

要拆解拖捶打电机需要拆解3D推杆一边的插销来提供空间

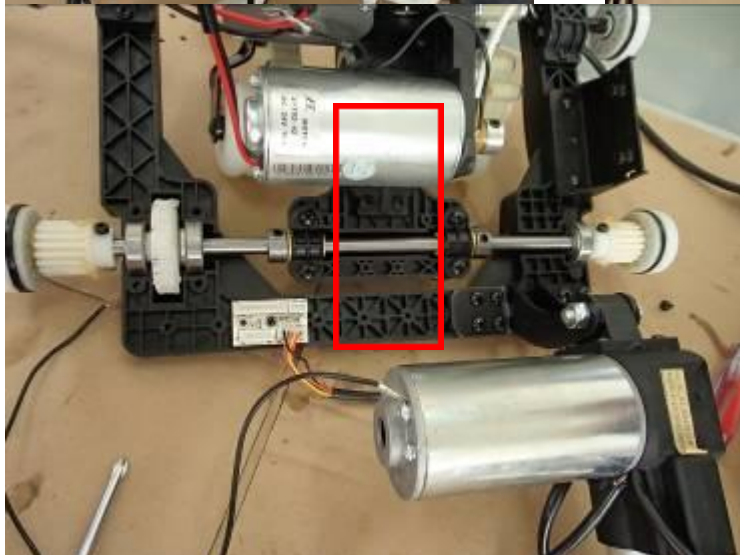
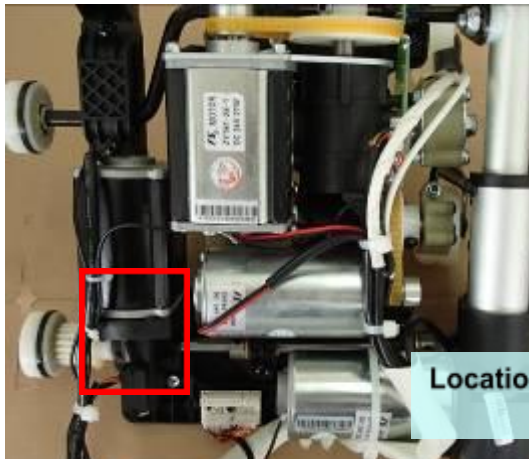
First disconnect the 3D rolling actuator one pin for disconnect the tapping motor



E3. 拆解揉捏电机, Disconnect the kneading motor



E4. 拆解行走电机 Disconnect the rolling motor



IF you need replace the rolling bearing , please disconnect one pin for 3D actuator first, Then Location and remove the four screws

8. 坐垫的拆卸 **Disassembly of the seat pad**

A. 拉开坐垫与小腿连接的拉链和坐垫与披风连接的拉链

Unzip the zipper fixing seat pad and leg rest, unzip the zipper fixing seat pad and backrest pad.



坐垫与披风连接的拉链

the zipper fixing seat pad and



坐垫与小腿连接的拉链

the zipper fixing seat pad and leg rest

B. 断开 backrest pad 管

Disconnect the air hose of the seat pad



座部气囊的气管

hose of the seat



the air

C. 剪掉座部震动电机接线头处的扎扣，拔开接线头。

Cut the cable tie on the terminal of the vibrating motor, disconnect it



座部震动电机接线头

the terminal of the vibrating motor

D. 取下坐垫，剪开拉链处的扎扣，拉开拉链更换皮套

Take down the seat, cut the cable tie, then unzip the zipper, take down the cover



座垫外套拉链

the zipper fixing the seat cover

9. 座

A. 取

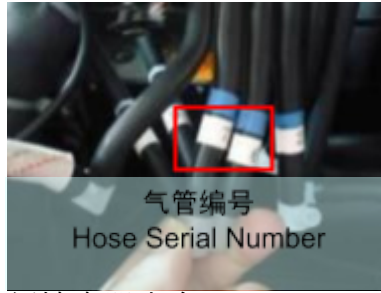
(refer to disassembly of the side board)

B. 取下座侧按摩器的2枚螺丝，断开气管，取下座侧按摩器

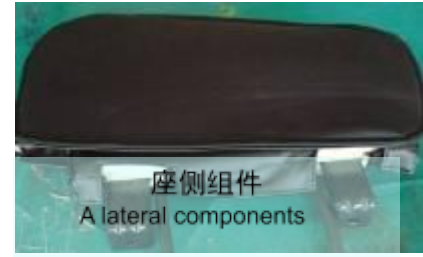
Slack and remove the 2 screws on the seat lateral components
disconnect the air hose, take the seat lateral components



固定座侧按摩器的2枚螺丝
The 2 screws fixing the lateral components



气管编号
Hose Serial Number



座侧组件
A lateral components

C. 取下座侧按摩器以后, 可以直接更换座侧按摩器皮套
If necessary, you can replace the cover of side massage for seat rest

10. 更换前挡板 **Replace Front board**

A: 抬起小腿后, 你能看到所有的固定螺丝, 取下它们, 更换前挡板

Raised the legrest then you slacken and remove the fixing all the screws on front board, replace new one



上前挡板的螺丝
The screws of up front board



下前挡板的4枚螺丝
The screws of down front board

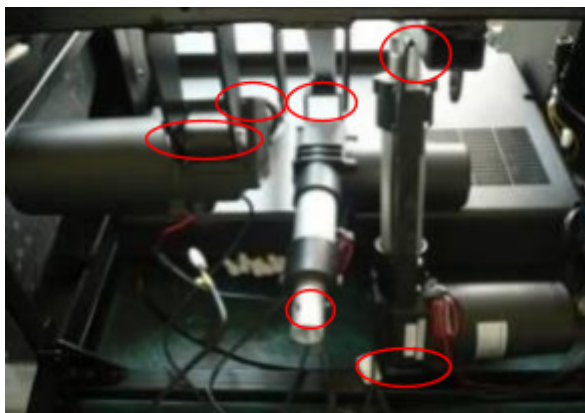
11. 更换靠背&座部&小腿电动推杆 **Replace the backrest, seat-rest and legrest actuator**

A: 取下前挡板后, 可以清楚的看到三个电动推杆分布位置

After take the front board, you can see the different actuatores distribution

B: 取下电动推杆的波浪形卡口销及销轴, 分离电动推杆端子.

Take away the two pins and disconnect wire terminal of a actuator(if you need)



靠背电动推杆
Backrest's actuator

小腿电动推杆
Legrest's actuator

零重力推杆
Zero-G (seat rest) actuator

12. 更换中心盒上的部件 **Replace The Main PCB BOX Spare Part**

A. 取下靠背(参考靠背的解), 并开起零重力

Take down the backrest, then open the zere-G

B:用十字螺丝刀取下固定中心盒上前盖的3个十字盘头螺钉,就可以取下上前盖
Slacken and remove fixing the 3 screws in the PCB box.
Then you can remove the front cover away



中心盒上盖的螺丝 the screws fixing front upper cover of main PCB box

C. 拆开中心盒上盖后
After take the main pcb box cover



在这个平台上,你可以根据需要进行更换部件或维护,
具体的部件可以在上图找到,只需分离固定件等即可拆离。
You can replace the which part that the part was broken on the board;
Please refer the picture above, then remove the fixing thing just

13. 小腿的拆卸及内部结构

1. 小腿下行程开关的更换

Replacement of down limit sensor of leg rest

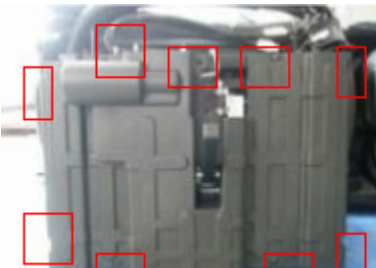
A. 开启零重力, 将小腿升至最高

Open zero-G, rose leg rest to the highest



B. 取下小腿保护盖上的螺丝。

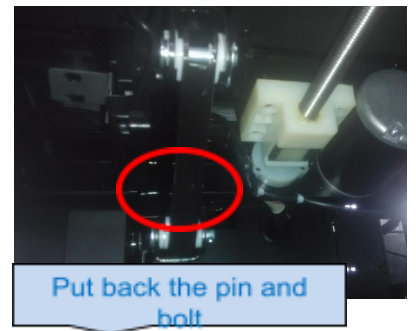
Slack and remove the screws fixing leg rest cover



固定小腿下挡板的十字盘头螺钉(9pcs)
The screws position

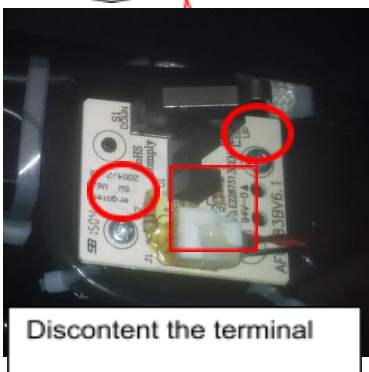
C. 取下插销和螺栓, 移出小腿保护盖, 装回插销

Move out the pin and bolt, remove the leg rest cover, put back the bolt



D. 2 screws fixing the sensor, 拔下端子, 更换下行程开关。

As fixing the sensor, disconten the terminal, then replace a new sensor



2.小腿上行程开关的更换

Replacement of up limit sensor of leg rest

- A. 取下小腿保护盖(参考下行程开关的更换)
Take down the leg rest cover(refer to replacement of replacement of down limite sensor)
- B. 取下固定遮光铁片的两枚螺丝, 取下遮光铁片
Slack and remove 2 screws fixing the iron, take the iron



C. 剪掉扎扣
Cut the cable tie

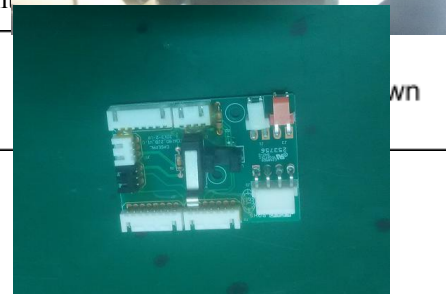
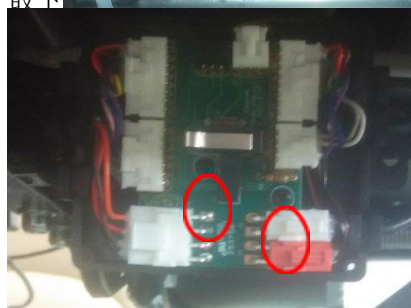


剪掉扎扣
cut the cable tie

D. 取下固定上行程开关的2枚螺丝, 取下上行程开关
Slack and remove the screws fixing the cover



E. 取下固定上行程开关的2枚螺丝, 取下上行程开关
Slack and remove the screws fixing the sensor, disconnect the sensor

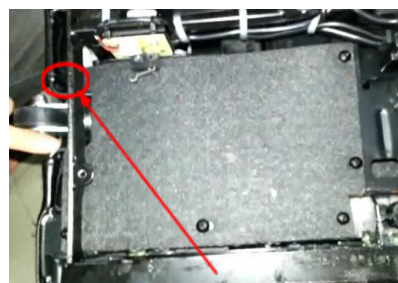


固定上行程开关的2枚螺丝
2 screws fixing up limit sensor

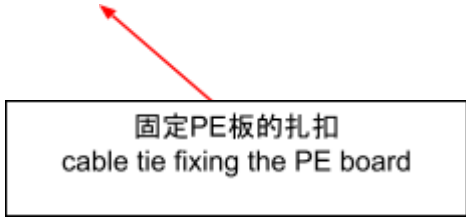
上行程开关被取下
the sensor had been taken down

3.

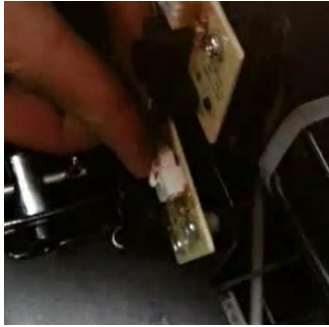
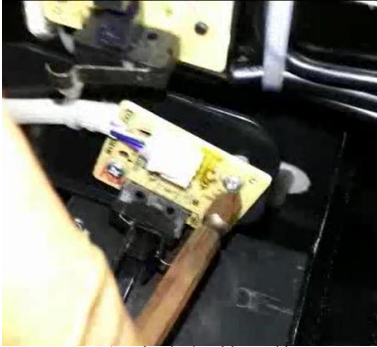
- A. 取下小腿保护盖(参考下行程开关的更换)
Take down the leg rest cover(refer to replacement of down limit sensor)
- B. 取下遮住触地开关的PE板
Take down the PE board with Keep out the touch down sensor



固定PE板的5枚螺丝

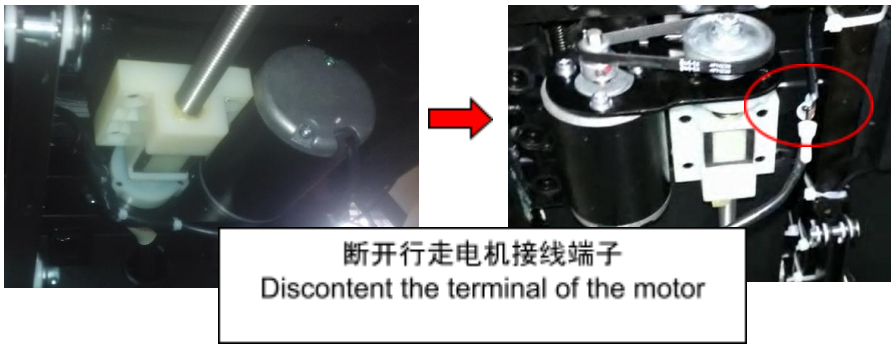


C. 取下固定触地开关的螺丝
Slack and remove the screws fixing touch down sensor



**4.小腿行走电机的更换
Replacement of motor**

- A. 取下小腿保护盖(参考下行程开关的更换)
Take down the leg rest cover (refer to replacement of replacement of down limite sensor)
- B. 断开行走电机接线端子。
Discontent the terminal of the motor

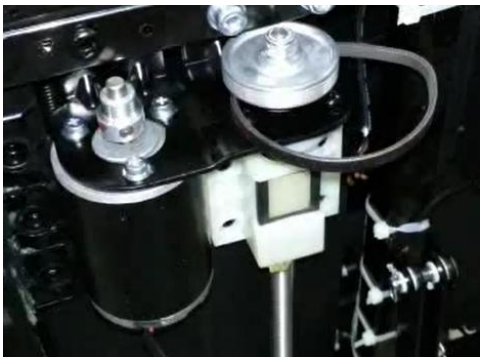


断开行走电机接线端子
Discontent the terminal of the motor

- D. 取下电机皮带, 取下固定电机的四枚螺丝, 可以更换电机
Take down the belt, slack and remove 4 screws fixing the motor, than we can replace the motor



取下皮带
take down the belt



取下螺丝
take down the screws

14.中心板实物接线图Physical wiring diagram

