



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-624H

适用电压规格/ voltage specification:

蒙发利集团·客服

By the Easepal's Customer Service Dept.

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1、产品预防措施进行检查和维修 Precautions for inspection and repair

检查: Inspection

- 确认机器的电源线是连接好的
Verify that the power cord is tightly connected on the machine.
- 小心避免电击
Be careful to avoid electric shock.

维修: Repair

- 维修前需先关闭电源供电
Power off the supply before repair work begins.
- 维修过程中保持整洁
Keep things tidy and in order during repair work.
- 当更换多个部件时，确定损坏的部件和重新使用的部件
When changing more than one part, identify the parts that are damaged and reuse the serviceable parts.
- 在拆除装配过程中，不损坏其他部件和PCB
During the dismantling or assembling process, do not damage other parts and PCB.
- 小心提防松动或断开连接的连接器再进行修理
Be on the alert for loose or disconnected connectors during repair.
- 装配完成后不要留下螺丝或其他部件
Do not leave any screws or other foreign objects in the unit after it is assembled.
- 维修完成后，确认产品是否恢复正常工作
Carry out test operation of the machine after the repair work is done.
- 维修工作最好在地毯上进行，防止产品划伤或弄脏
It is preferable to perform the repair work on a carpet to prevent scratching or dirtying the unit.
- 维修完成后清理工作现场
Clean the workplace after repair work is completed.

2、产品故障列表 Trouble List

如下为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 circuit Poorly connected ③、电源滤波器坏 EMC Board Failed ④、中心板坏 Main PCB failed	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
		B. 手控器有显示: LCD HAS DISPLAY 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 ②、上下行程光电坏。 Up or Down Stroke Photoelectricity was failed ③、中心板坏掉 Main PCB failed ④、开机直揉捏其他按键无效 kneading all the time from power and no response with other button	①、更换机械开关或是线材 replace mechanical switch or wire ②、更换行程光电 Replace stroke photoelectricity ③、更换中心板 Replace main PCB ④、宽度检测板坏, 更换宽度检测板 Replace Width Inspection Board
02	宽中窄不能切换 the Width switchover isn't change	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 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 ③、宽度检测板坏。 Width Inspection failed ④、中心板坏 Main PCB failed	①、②点将端子接插到位或是更换线材 Plug the terminals well or replace the wires ③、更换宽度检测板 Replace Width Inspection ④、更换中心板 Replace the main PCB

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 failed 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 poorly connected ②、电动推杆坏 The electrically operated pusher failed ③、中心板坏 Main PCB failed	①、将连接线接插到位 Plug the terminal well ②、更换电动推杆 Replace the electrically operated pusher ③、更换中心板 Replace main PCB

08	小腿不能升降 calves-rest can't lift or recline	①、电动推杆连接线未接插到位 The terminal of electrically operated pusher and wires are poorly connected ②、电动推杆坏 The electrically operated pusher failed ③、中心板坏 Main PCB failed	①、将连接线接插到位 Plug the terminal well ②、更换电动推杆 Replace the electrically operated pusher ③、更换中心板 Replace main PCB
9	座部电机不振动 no vibration by the motor in the seat-pad	①、振动电机坏 Print motors failed ②、端子接触不良或是线材坏掉。 The terminals and wires are poorly connected or the wires fail ③、中心板坏。Main PCB failed	①、更换振动电机 Replace the print motor ②、将端子接插到位或者更换线材。 Plug the terminal well or replace the wires ③、更换中心板 Replace main PCB
10	小腿电机不振动 no vibration by the motor in the calves-rest	①、振动电机坏。 Print motors failed ②、端子接触不好或是线材坏掉。 The terminals and wires are poorly connected or the wires failed ③、中心板坏。Main PCB failed	①、更换振动电机 Replace the print motor ②、将端子接插到位或者更换线材。 Plug the terminal well or replace the wires ③、更换中心板 Replace main PCB
11	座部不充气 no gas charging in the seat-pad	①、气泵泄气阀端子接触不良 The terminal of the snuffle valves and wires are poorly connected	①、将端子接好 Plug the terminal well
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	②、更换泄气阀。 Replace the snuffle valves ③、更换气泵。 Replace the inflator pump
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	④、更换中心板 Replace main PCB

3、工具清单 Tools List Tools required

			
<p>螺丝刀 Screwdriver size 1, 2, 3</p>	<p>尖嘴钳和斜口钳 Diagonal cutter and long nose pliers</p>	<p>电烙铁 Soldering Kit</p>	<p>扳手 Spanner tools Kit</p>
			
<p>电笔 Test pen</p>	<p>内六角扳手 Allen Key set</p>	<p>内六角套筒扳手 Ratchet Tools Set</p>	<p>热风枪 Blower</p>
			
<p>电动螺丝刀 Electric Driver</p>	<p>电工胶带 electrical adhesive tape</p>	<p>扎扣 Cable Ties</p>	<p>压线帽 WIRE CONECTORS</p>

4-1. 靠背枕头的拆解 Disassembly of the pillow

The chair have two pillows

A. 拉开拉链，然后取下小枕头

Unzip zippers then remove the pillow



小枕头
Small pillow

4-2. 披风的拆卸 Disassembly of the backrest pad

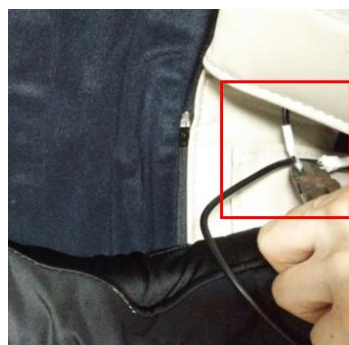
A. 拉开披风与靠背的拉链

Unzip zippers of the pad,



B. 剪断坐垫与座架连接端子

Cutting cushion and mount connection terminals



C. 拉开座部与腿部之间的拉练,之后再拉开内部缓冲垫的连接,即可以取下披风了
OPEN zipper on the seat and between of leg, then open zipper with the backrest pad



拉开连接拉练
Open zipper of inside



拉起披风
Pull up the backrest pad

NEXT:



披风组件
Backrest pad

4-3. 靠背头罩的拆卸 Disassembly of the backrest hood

A. 拉开拉链,然后用十字螺丝刀卸下头罩螺丝

Unzip zippers then use phillips screwdriver remove hood screws



拆除 2 个固定螺丝
Loose and screw 2 screws

B. 拉开肩部皮套拉链，然后卸下肩部螺母

Pull open the shoulder holster zipper, then remove the shoulder nut



拆除 2 个固定螺母
Loose and screw 2 nut

C. 取下头罩组件过程中断开 2 处连接端子，然后即可取下头罩

Remove hood components process interrupt the two terminals, and then under the hood



4-4. 靠背后盖的拆卸 Disassembly of the backrest cover

A. 找个靠背后盖的 4 枚螺丝位置,然后拆下它们即可以取下后盖了

Slack and remove the 4 screws of the rear cover, then you can take down it



靠背后盖
Backrest

4-5. 机芯组件的更换 Replace the subassembly of gear box

A. 参考步骤 3 拆开后盖

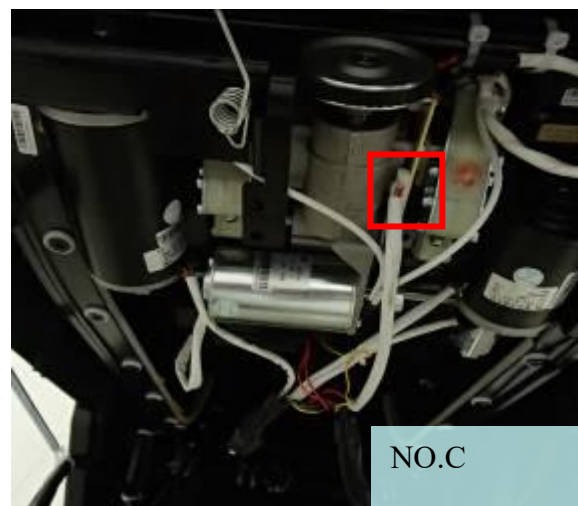
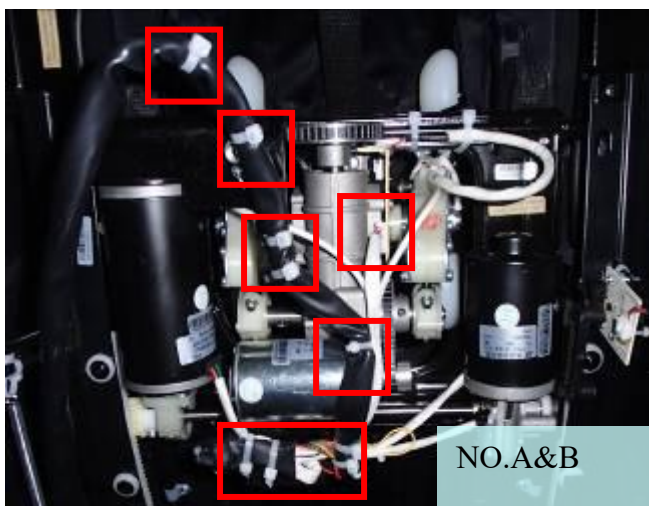
Refer NO.3 disassembly of the backrest cover

B. 开机后让机芯停在顶部

Power on ,let the gear box stop at the top of backrest

C. 然后拆除机芯上的引线

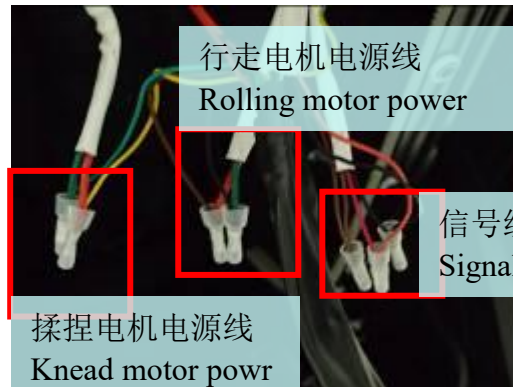
Then Disconnect the wire at the gear box.



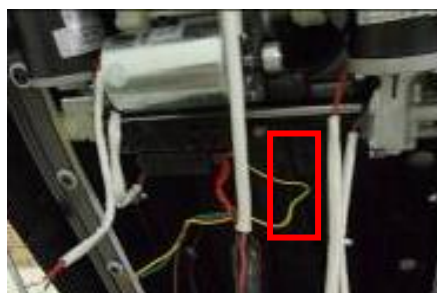
NEXT:



机芯上的电机电源及信号线
Disconnect moto wire and gear



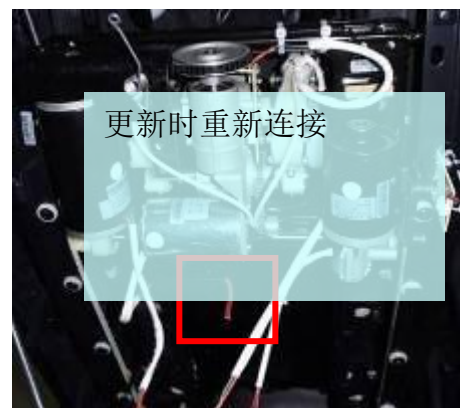
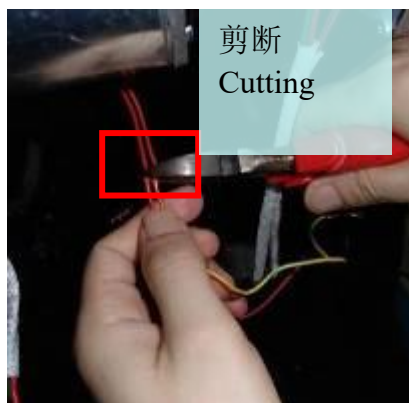
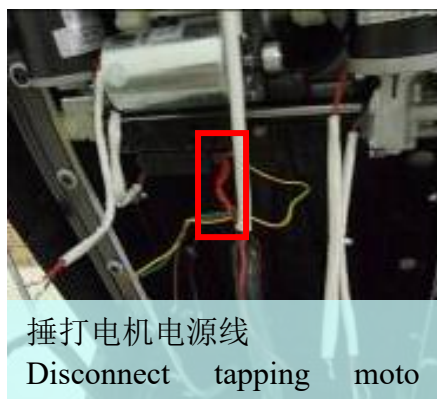
NEXT:



接地线
Disconnect ground lead

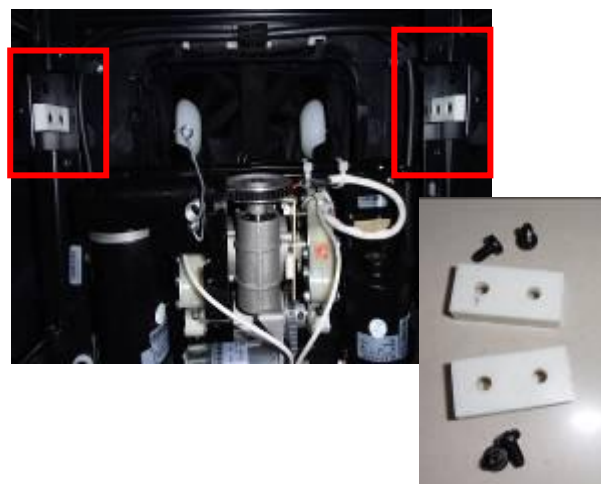
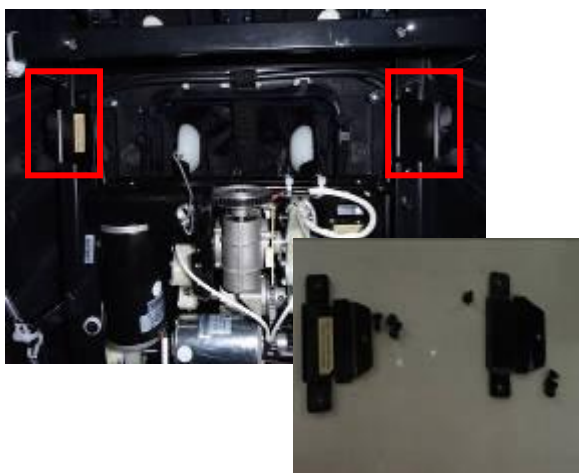


NEXT:



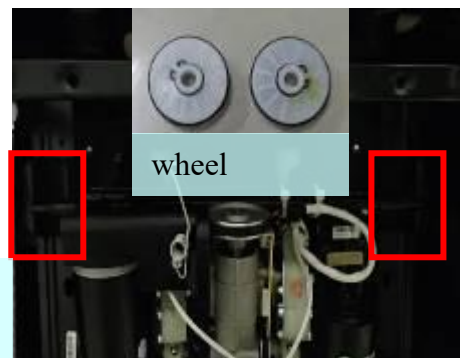
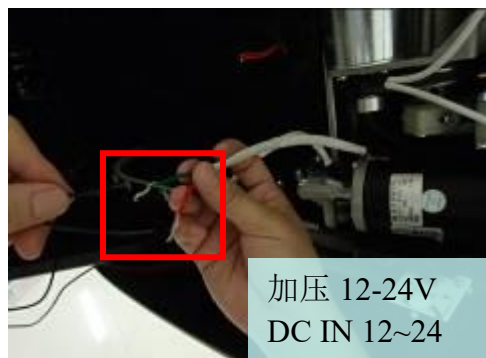
C. 打开机芯出行缺口,然后取下机芯防撞块

Open the gear box way out at backrest top, then take down the Movement collision block

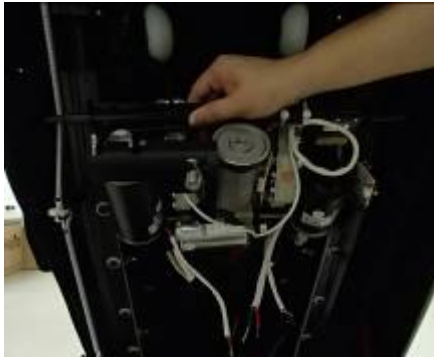


D. 给行走电机加入直流 12~24V 电源,让机芯向上推动并取出它

DC12~24V IN to the rolling motor , then move out the gear box

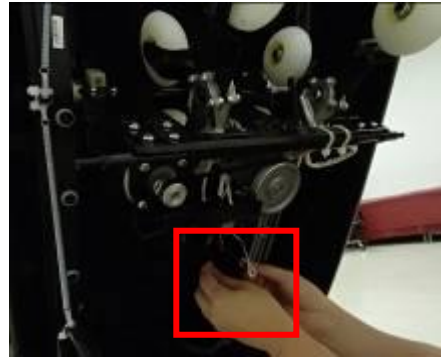


NEXT:

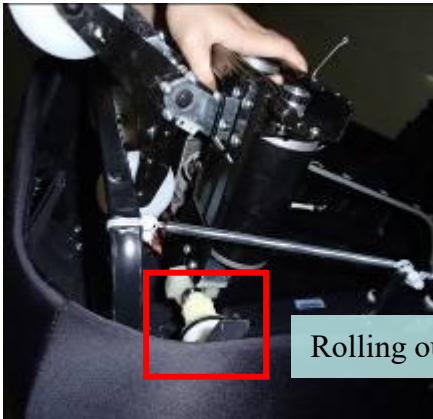


如图所示,压下机芯,放平,之后再加电源向上行走即可

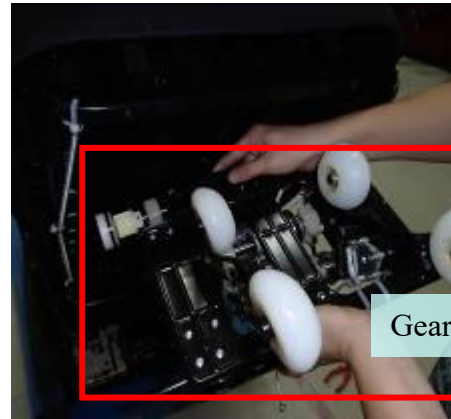
As picture shown,screw down gear box,then DC in 12~24 to rolling moto and take out it



NEXT:

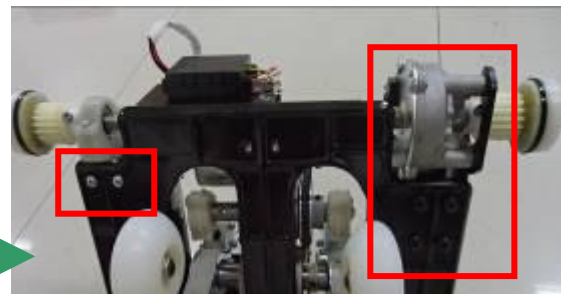
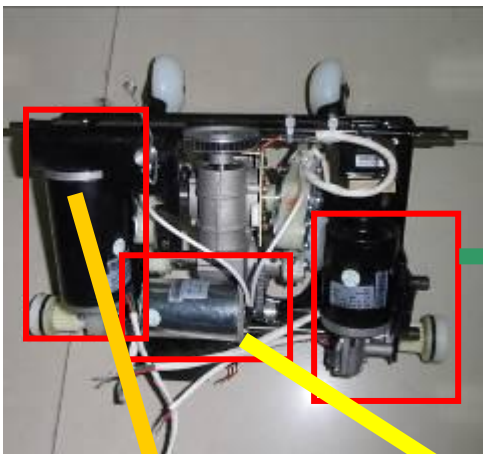


Rolling out



Gear box

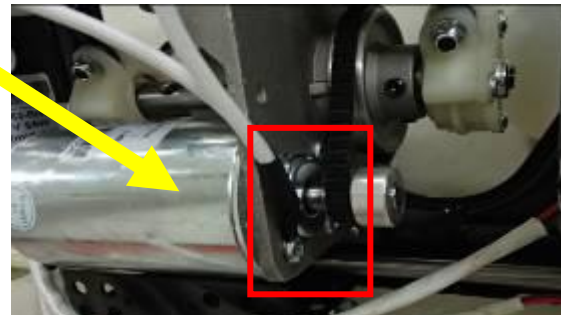
E. 机芯图解
Gear box



行走电机组件
Rolling
Assembly moto



揉捏电机
Kneading motor

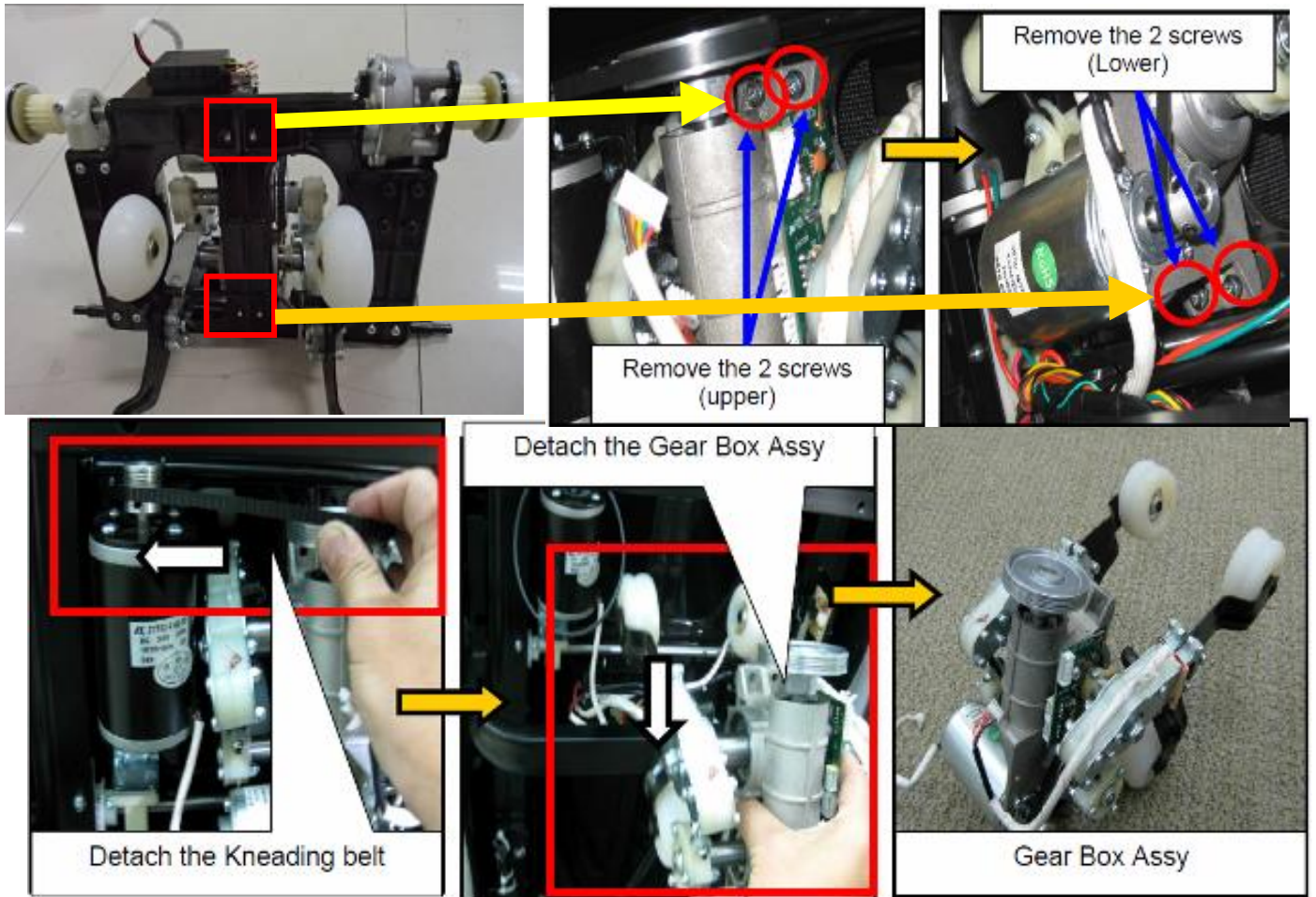


揉捏电机
Tapping motor



F. 机

Gear box assy



4-6. 机芯上下行程光电的拆解 Replacing up & down limit sensor.

打开背架后盖后,我们可以看到上下行程光电

we can find up & down limit sensor

A.打开后盖参考步骤 3, Ref no.3: Disassembly of the backrest cover

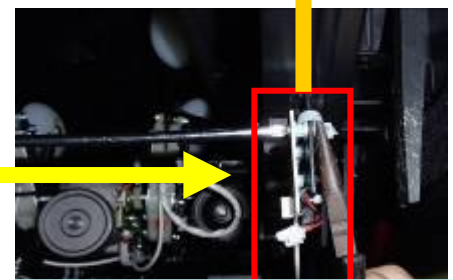


B.上行程光电的拆解比较简单,如图所示

Disassembly the up limit sensor is very easy(As shown picture)



首先让机芯向下移动,给拆解上行程光电让出空间
First. Moving gear box down get space to limit sensor



断开端子,拆卸3枚螺丝即可
Take down terminal and 3 screws

C.下行程的拆解方法比较困难,如下图示

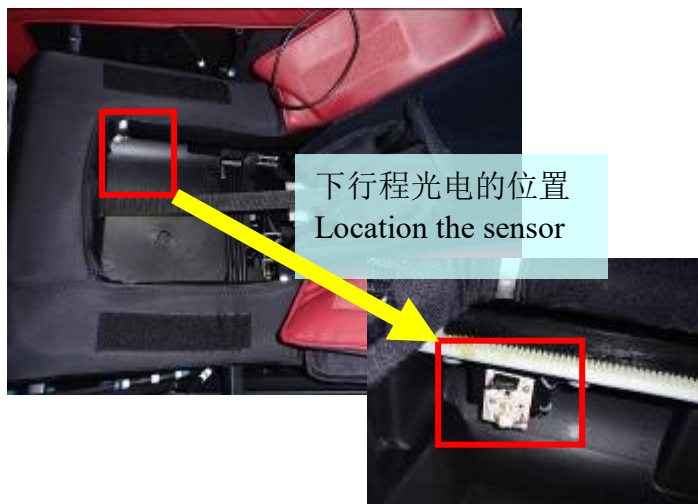
Disassembly the down limit sensor is difficulty(As shown picture)



为了更方便的拆解下行程光电,我们把拉绒布拉开
After open lint to disassembly down sensor better easy

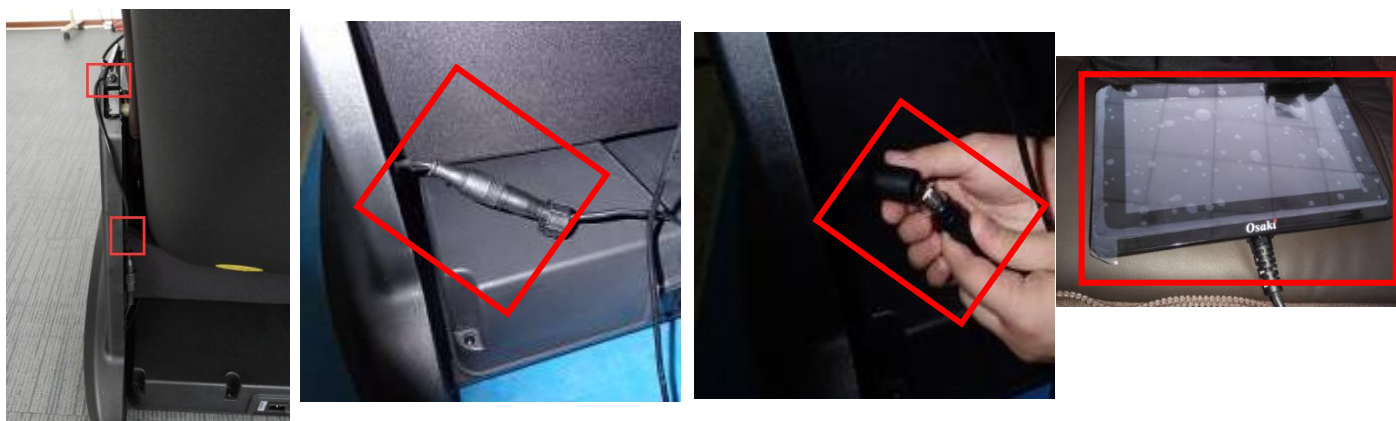


NEXT.



4-7. 手控器的更换 Change the remote controller

(以左侧为例, 右侧同理) (As an example, on the left side of the right side in the same way)



4-8. 肩部的拆卸 Disassembly of the shoulder

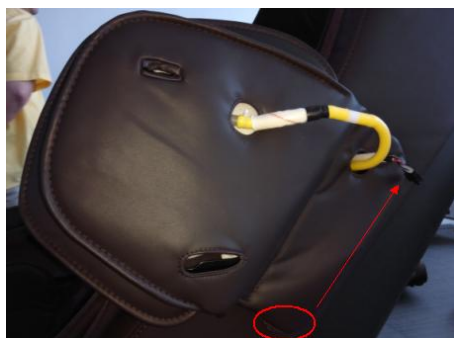
(以左侧为例, 右侧同理) (As an example, on the left side of the right side in the same way)

A: 分离靠背头罩。(参考 4-3: 靠背头罩的拆卸)

Detach the backrest hood. (Refer to 4-3: Disassembly of the backrest hood)

B. 肩部组件的拆卸

Disassembly of the shoulder components



拉开连接拉练
Open zipper of inside



拆除 3 颗螺钉和断开
气管 Demolition of 3
screws and Disconnect
air hose terminal

拉开拉链后将皮套掀起
可以 3 颗螺钉 Open
zipper of inside After
Open zipper can see 3
screws



4-9. 侧板的拆卸 Disassembly of the side board

(以左侧为例, 右侧同理) (As an example, on the left side of the right side in the same way)

A. 拆卸侧板

Demolition of the side board



拉开连接拉练
Open zipper of inside



拆除 2 颗螺钉
Demolition of two screws



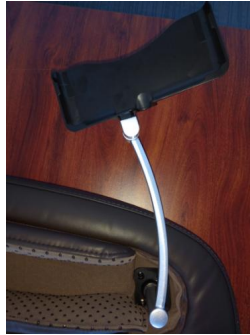
将侧板向前推动至销轴移出
卡槽 Remove the side panel
push forward to pin card
slots



断开气管和端子
Disconnect air hose and terminal



B.拆手控器支架 Disassembly the manual device bracket



拆除 4 个固定螺丝
Loose and screw 4screws

4-10. 座侧充气组件的拆卸 Disassembly of the lateral pneumatic components

(以左侧为例，右侧同理) (As an example, on the left side of the right side in the same way)

A: 分离侧板。(参考 4 - 9:侧板的拆卸)

Detach the side board. (Refer to 4-9: Disassembly of the side board)

B: 拆除座侧充气组件

Demolition of the lateral pneumatic components



拆除 2 颗螺钉
Demolition of two screws



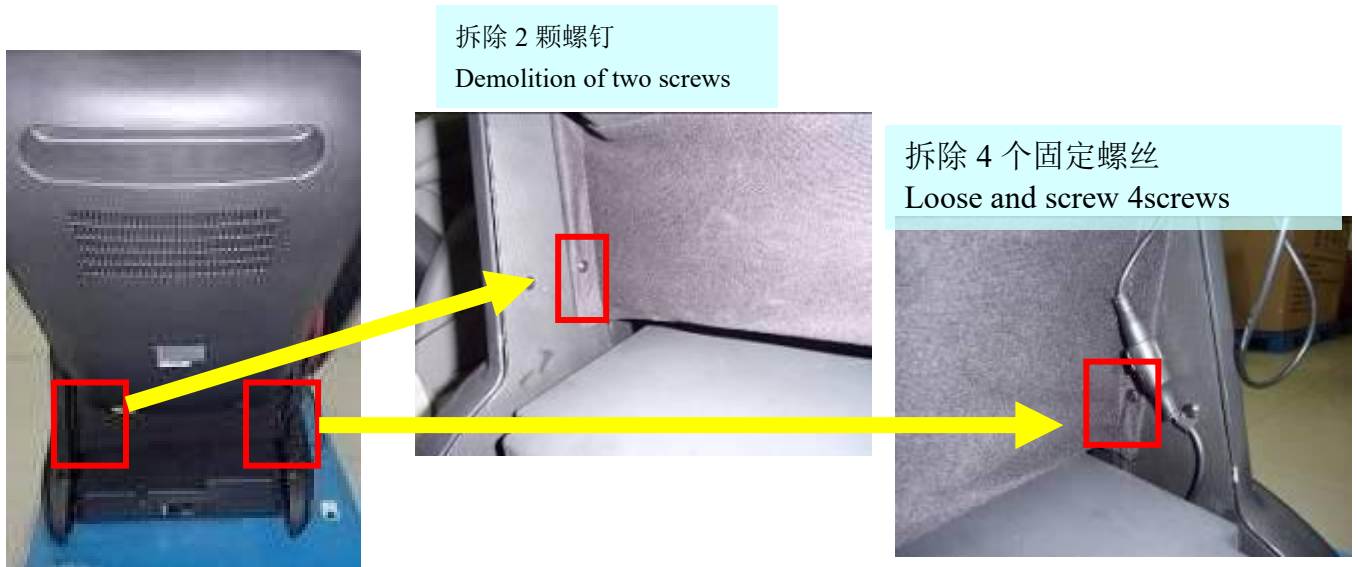
断开气管
Disconnect terminal



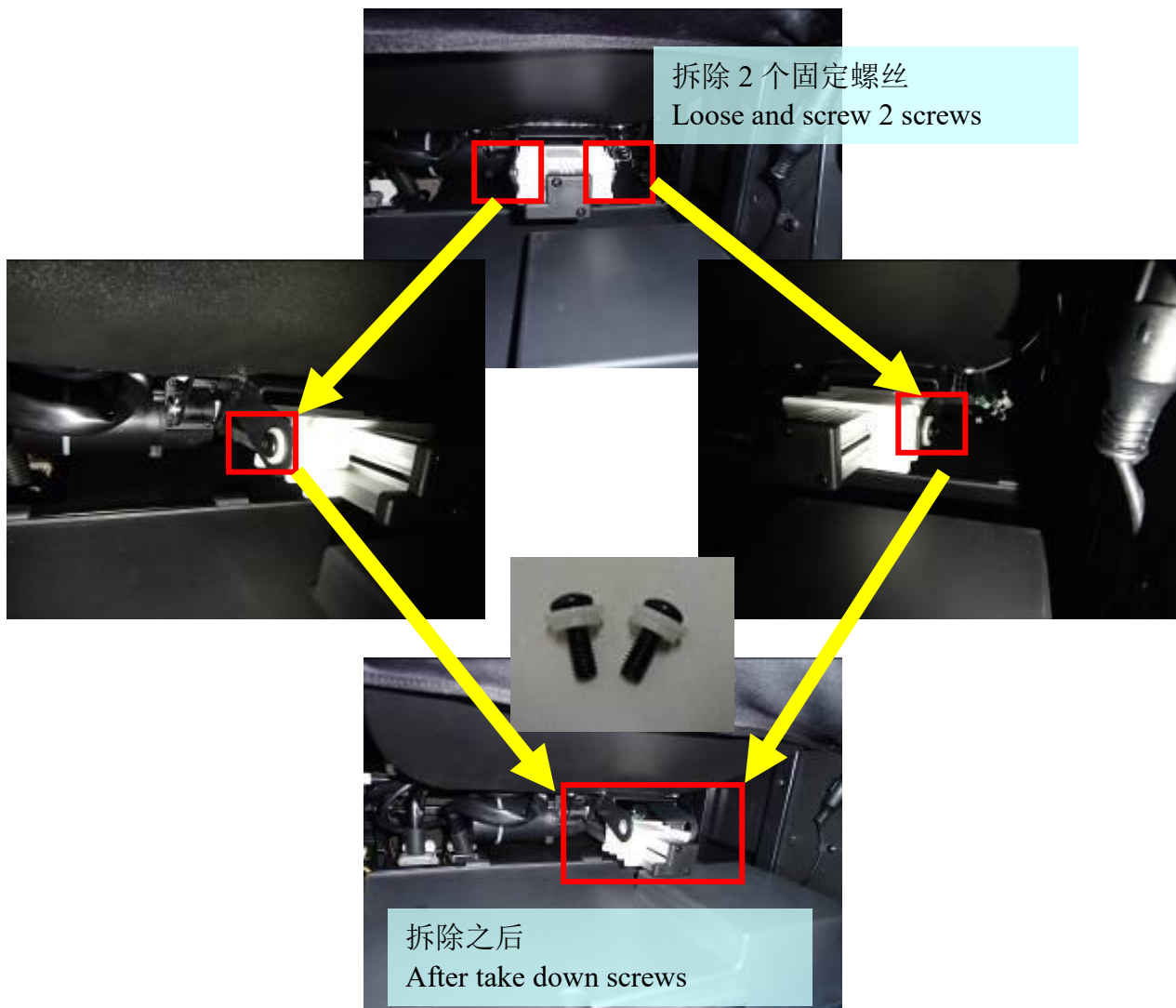
4-11. 更换靠背&小腿电动推杆 Replace the backrest 、 seat-rest actuator

A: 取下后档布,可以看到靠背电动推杆后方固定位置

After take the rear bumper cloth, you can see the backrest actuator



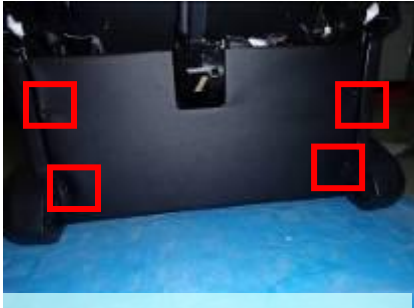
NEXT:



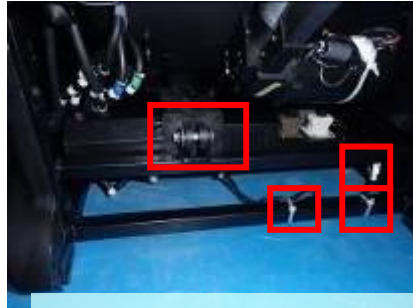
B:抬起小腿可以看到下前挡板，拆除它

After pull up the legrest , you can see the front board and take it
取下电动推杆的波浪形卡口销及销轴，分离电动推杆端子。

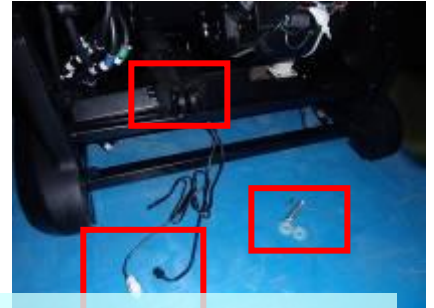
Take away the pin and disconnect wire terminal of a actuator



拆下下前挡板
Moving the plate washer



可以看到推杆的固定销轴及线材固定点及接头
Take down the pin of actuator and open the wire terminal



NEXT:

After moving out the backrest actuator it



Backrest actuator

C. 小腿电动推杆的更换



抬起小腿拆下前挡板,之后定位图中三个位置,除下它们即可(建议先拆上方销轴以方便拆底部销轴)
Pull-up the legrest and disassembly the plate washer then location map of three position, (moving the top of pin first)

NEXT

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



4-12. 更换中心板 Replace The Main PCB

A. 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



中心盒上前盖上的 3 枚螺丝
the 3 screws fixing front upper cover for PCB box



NEXT



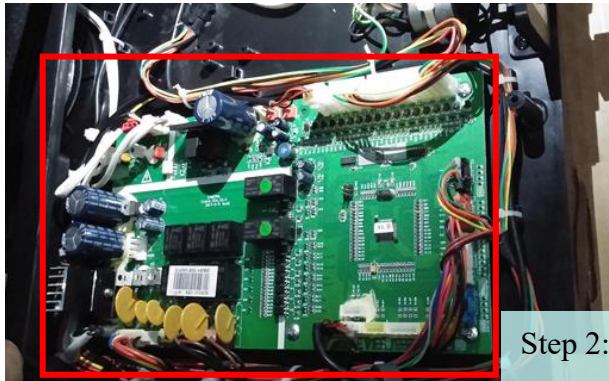
定位图中三个位置,除下它们即可
disassembly the plate washer then location map of position

B: 拔掉连接端子后。将中心盒拉出下，方便拆取中心盒上的任一部件。

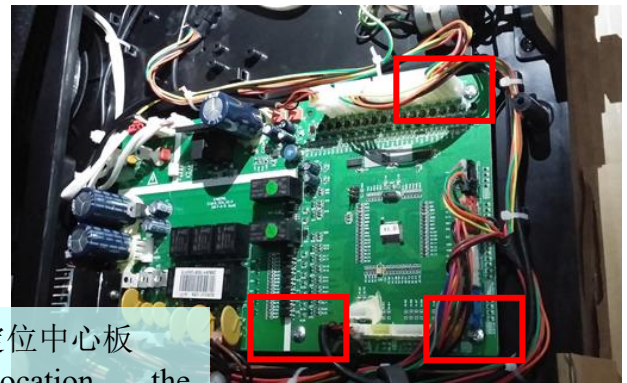
Disconnect all wire terminal then take way out the PCB BOX



Step 1: 拉出中心盒
Take out PCB



Step 2: 定位中心板
Location the



Step 3: 取下中心板
Take out the

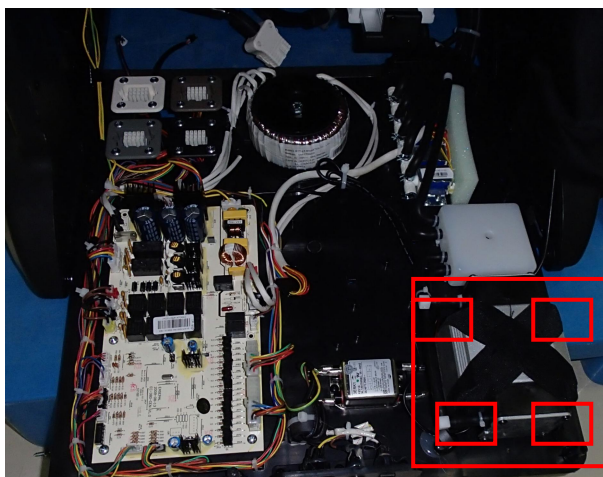
4-13. 更换充气泵 replace inflant pump

参考 NO.9 拆开中心盒，然后定位充气泵

Refer NO.9 replace pcb to open the pcb box and location at inflant pump

A. 取下中心盒上前盖。

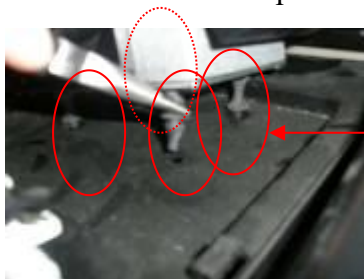
Take down the front cover of main PCB box



取下固定充气泵的四枚螺丝
Slack and remove the 4 screws

B. 用工具拔出充气泵底部的橡皮堵头

Pull out the rubber poles fixing the inflator pump on the base plate with nipper pliers.



拔出塑胶堵头
Pull out the rubber poles

C. 断开充气泵的接线端子

Disconnect the terminal of the inflator pump, then cut the cable ties fixing the wires.

D. 拔开充气泵的气管接头

Pull out the gas hose connecting the inflator and snuffle valves. Then the whole pump can be removed.

E. 逆序换上新的充气泵

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

注意 Attention: 装回充气泵时，要将橡胶堵头放到中心盒底盘的孔内，并用尖嘴钳从下面拉出，确保充气泵已经固定住 When fixing the pump, you should insert the rubber poles into the hole of the base plate, then pull them though with nipper pliers, then the rubber poles are locked in the hole.

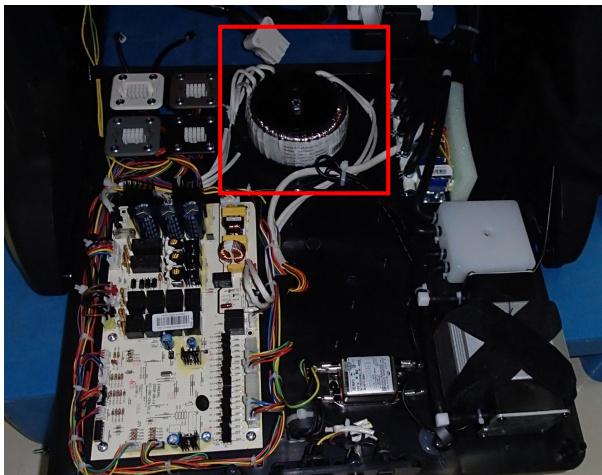
4-14. 变压器的更换 replace the transformer

参考 NO.9 拆开中心盒，然后定位变压器

Refer NO.9 replace pcb to open the pcb box and location at transformer

A. 取下中心盒上前盖。

Take down the front cover of main PCB box



变压器的螺丝
the screw fixing the transformer

B. 取下变压器的螺丝，断开所有变压器的接线端子，更换变压器

Slack the screw fixing the transformer, then disconnect all the terminal of transformer, replace a new one

4-15. 泄气阀的更换 replace the air valve

参考 NO.9 拆开中心盒，然后定位泄气阀

Refer NO.9 replace pcb to open the pcb box and location at air valve

A. 取下中心盒上后盖

Take down the inner cover of main PCB box



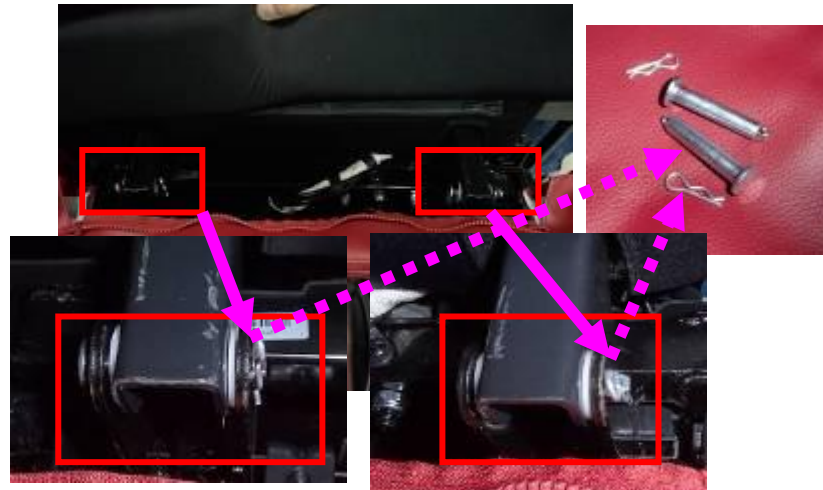
取下固定气阀的四枚螺丝，拔掉接线端子，可以更换气阀
Slack and remove the 4 screws, disconnect the terminal of the air valve



4-16. 小腿的拆卸及内部结构 Disassembly the leg rest and internal structure

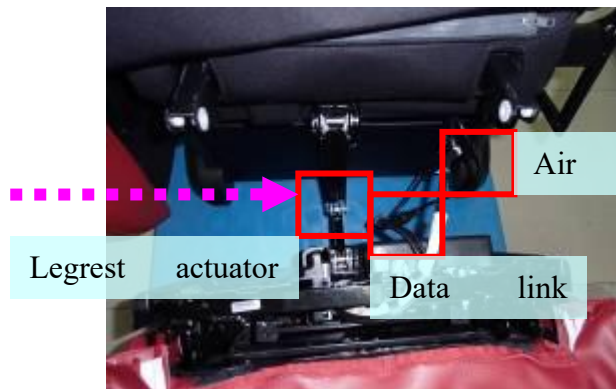
A. 拉开座部与腿部之间的拉练, 拆下固定小腿与座部之间的连接销轴

OPEN zipper on the seat and between of legrest, then find the two pin fix on the seat and legrest

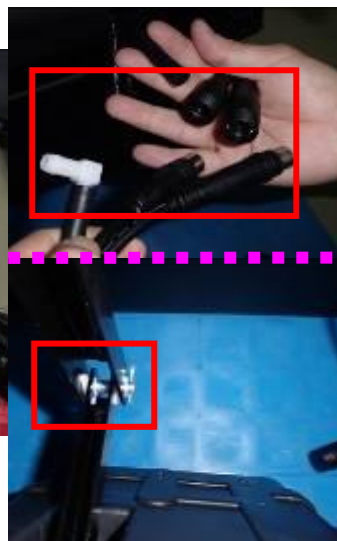


B. 完成 A 步骤之后, 断开小腿的数据线及气管及小腿推杆的连接销轴即可以分离小腿组件

After step A, disconnect the data link wire and air hose, the take down the pin at the legrest actuator



NEXT:



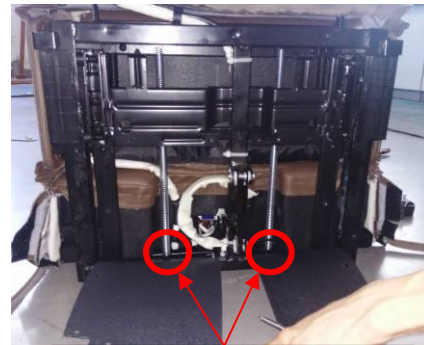
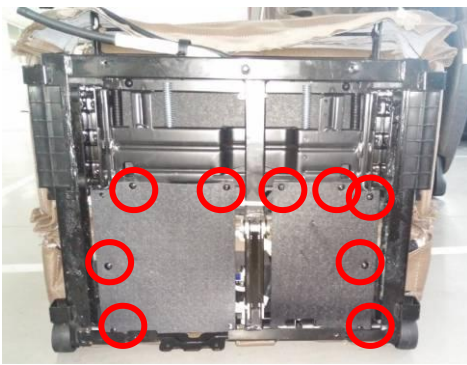
分离后的小腿组件
Legrest

C . 分解内部 internal structure

1. 如要拆后盖，请拆除面上的数颗螺丝
Remove the screws at cover if you need

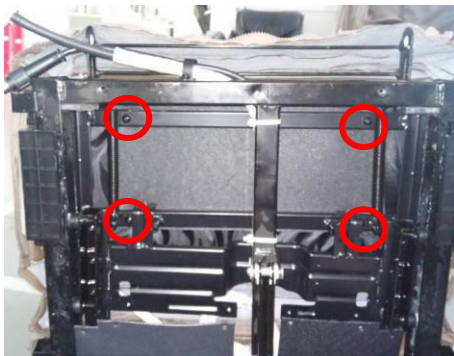


2. 取下固定 PE 板的螺丝，移开 PE 板。然后取下拉簧。
Remove the PE board, take down the spring.



取下拉簧
take down the spring

3. 现在可以伸缩小腿，并找到固定上小腿底部的四枚长螺丝。取下四枚长螺丝。
Now expand the leg rest, we can find 4 screws fix upper leg rest. Slack and removed them.



固定上小腿底部 4 枚螺丝的位置
the position of 4 screws

4. 拉开上小腿两侧的拉链，取下侧边固定上小腿的 2 枚螺丝（左右各 2 枚）

Unzip the zipper on both side of upper leg rest, slack and removed 2 screws (2 screws on both side)

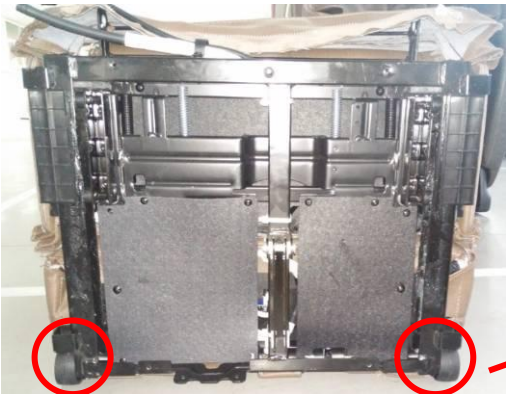


5. 现在我们可以更换外套上小腿或上小腿气袋。

Now we can replace the upper leg rest leather or air bag

6. 取下小腿滚轮。

Take down the wheel of leg rest

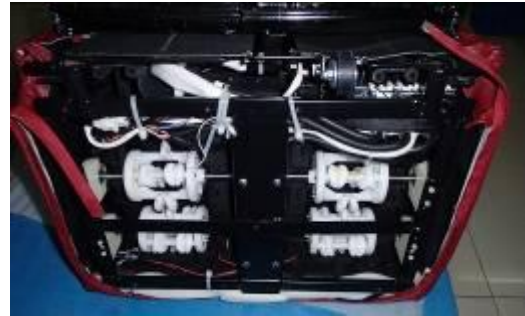
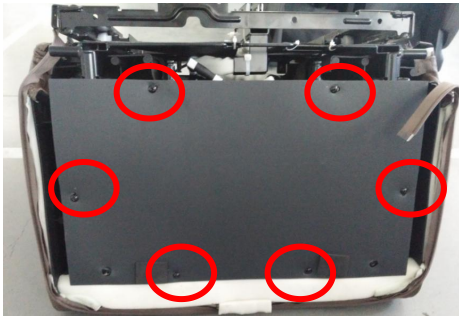


7. 取下小腿脚垫并取下底部皮套

Take down the mats and removed the bottom leather



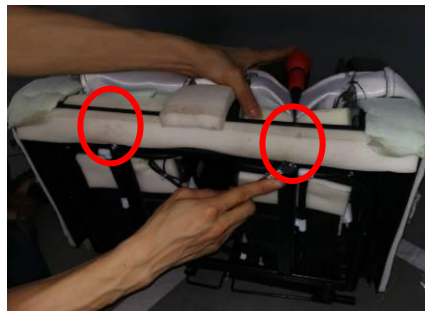
8.取下 PE 板
Take down the PE board



9.取下固定上小腿的螺丝。
Slack and removed the screws fix lower leg rest



底部 2 枚螺丝



顶部 2 枚螺丝



左右边各 1 枚螺丝

10.移出下小腿，现在可以更换外套下小腿或下小腿气袋或小腿气阀
Remove lower leg rest, now we can replace lower leg rest leather or air bag or air valve

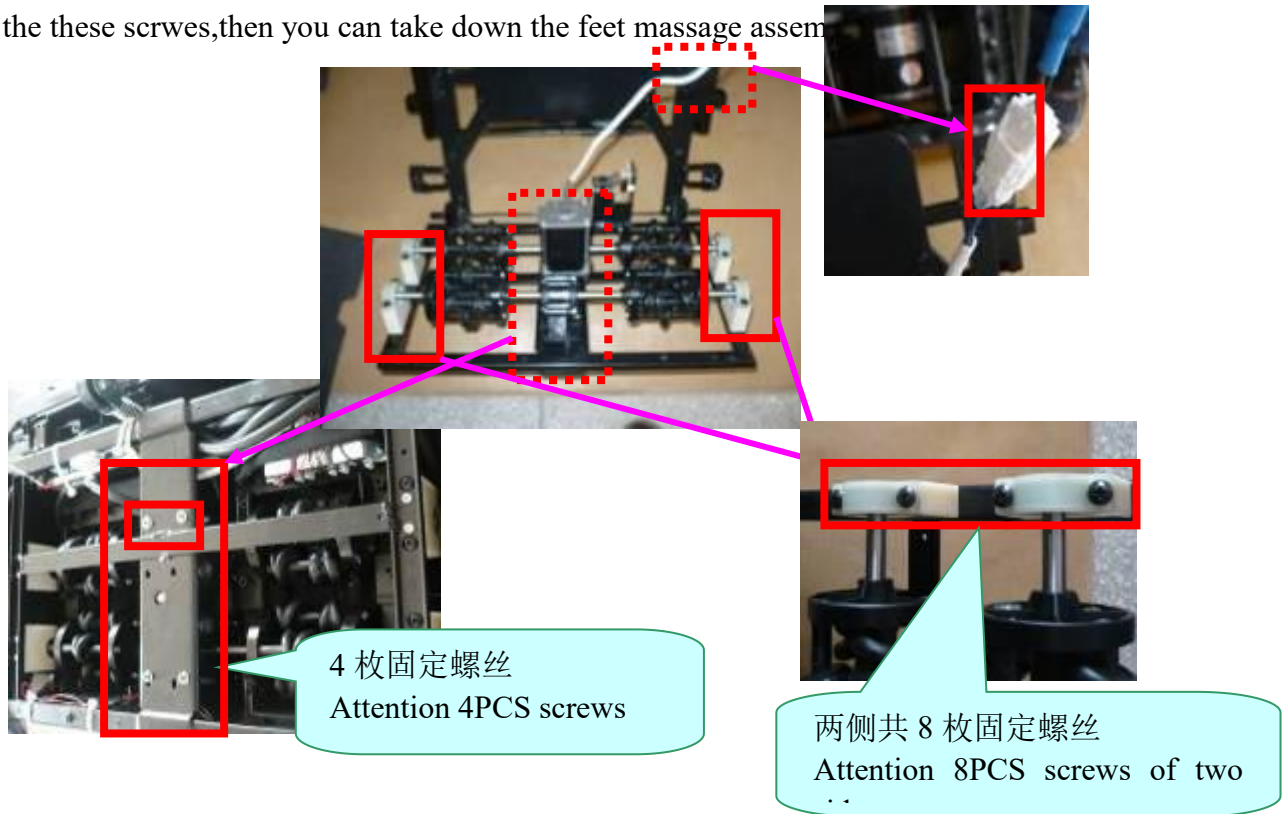


D . 分离上下小腿皮套后，可以清晰的看到脚底滚轮组件

After remove the legrest(UP/DOWN PART),then you can see picture of below:

移除这些螺丝后，你就可以拿下脚轮组件了

Remove the these scrwes,then you can take down the feet massage assem



附：实物接线图 The physical wiring diagram

