

Trolley Ultrasound System 9901 Service Manual

Catalogue

2 INSIDE VIEW.....1

3 PARTS VIEW..... 4

4 FAULT PHENOMENA AND SOLUTIONS.....5

 SHOW BLACK LINE IN PRINTING.....5

 CAN’ T PRINT.....5

 NO VIDEO SINGNAL AFTER CONNECTING CENTRAL SYSTEM..... 5

 IMAGE OVERLAPPING.....6

 BLURRED SCREEN.....6

 NO IMAGE..... 6

 IMAGE NOT CLEAR.....6

 UNABLE TO BOOT..... 6

 BLOWING UP FUSE AFTER POWER ON.....7

 UNABLE TO BOOT..... 7

 NO IMAGE..... 7

 SHOW BLACK LINE IN PRINTING.....8

 UNABLE TO PRINT.....8

 IMAGE OVERLAPPING.....8

SPARK PHENOMENON.....8

PROBE GETS HOT.....9

ECHO AREA ISN’ T A FAN WHEN USE INTRAVAGINAL PROBE.....9

CONVEX PROBE IDENTIFIED AS TRANSVAGINAL PROBE.....9

CAN’ T MOVE OR NOT SENSITIVE.....9

LOUD NOISE.....9

KEYBOARD NOT WORK.....9

UNABLE TO START.....10

A BRIGHT LINE ON SCREEN.....10

SCREEN FLICKERS.....10

IMAGE NOT CLEAR.....10

UNABLE TO START.....11

SERIOUS DISTURBANCE.....11

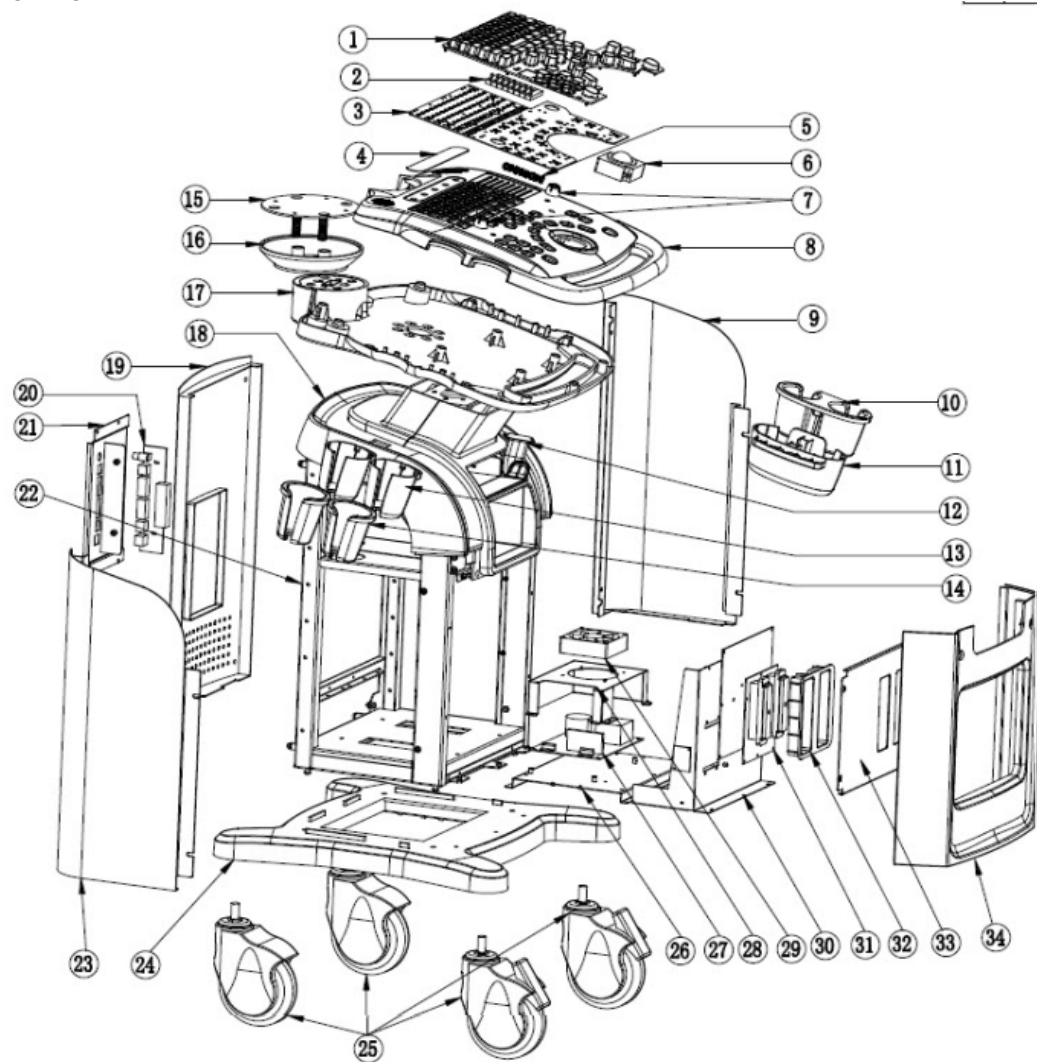
SYSTEM CRASH FREQUENTLY DURING LITHOTRIPSY.....11

Product Appearance



- ① Keyboard
- ② Trackball
- ③ 8 Segments TGC
- ④ CRT Display
- ⑤ Convex Probe

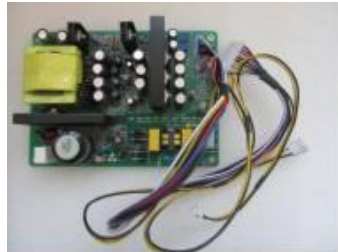
2 Inside View



Sequence	1	2	3	4	5
Name	Probe cable hook	Nut of Handle	Handle	Upper cover of main body	Intravaginal probe hook
Sequence	6	7	8	9	10
Name	Metal part of hook	Abdominal probe hook	Shield cover of probe board	Metal frame side cover	Probe socket board
Sequence	11	12	13	14	15
Name	CRT hook	CRT front frame	Keyboard upper cover	Trackball	Gaining
Sequence	16	17	18	19	20
Name	Silicone keypad	Keyboard PCB board	Keyboard bottom cover	TGC cap	Keyboard screw cap
Sequence	21	22	23	24	25
Name	Screen adjusting	Filter holder	CRT Display	CRT fix metal parts	Front screen fix

					part
Sequence	26	27	28	29	30
Name	Bottom cover	CRT display board	Metal Frame L board	Bottom shim	Power supply board
Sequence	31	32	33	34	35
Name	Power shield board	Power cooling fan	Back output	Handle connecting board	Back metal frame
Sequence	36	37	38		
Name	Main body cooling fan	Brand LOGO	Filter		

3 Parts View



Power Supply
Board



Probe Board



Keyboard Board



Digital Signal
Board



Output Board



Power Cable



Abdominal Probe



Transvaginal
Probe



Cooling Fan



CRT Display



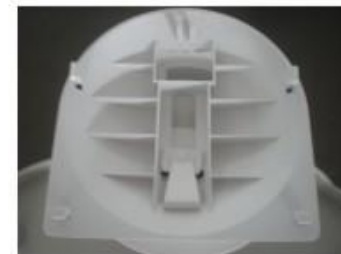
Silica gel keyboard



Flat Cable



Track Ball




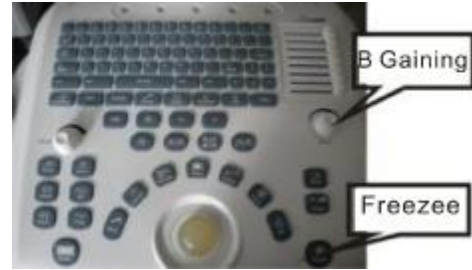
Display base




Fuse

4 Fault phenomena and solutions

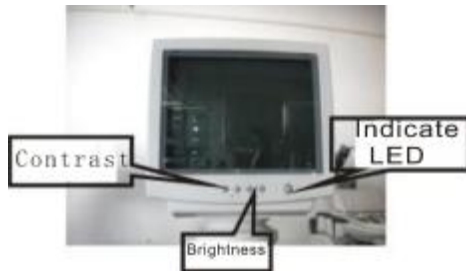
Part	Sequence No.	Fault Phenomenon	Cause Analysis	Solution	Figure Illustration
4.1 Digital Singnal Board (DSP)	4.1.1	Show Black line in printing	Mal function of DSP	<p>If black line still exists by using transvaginal probe, then press , and exchange two probes' position (remove probe counterclockwise). Check whether there's black line, please use Abdominal probe if problem still exists. Or try to shake the probe socket to test whether it's well connected</p> <p>② Replace probe</p> <p>③ If you have tried all above and can't solve it, please replace the DSP.</p>	Refer to figure 1/2
	4.1.2	Can't print	Mal function of DSP	<p>① Replace probe</p> <p>② If you have tried all above and can't solve it, please replace the DSP.</p>	
	4.1.3	No video singnal after connecting Central System	Mal function of DSP	<p>① Check the Video Output setting of Central System. If other Ultra-sound machine is normal, there must be problem in Mother board of computer</p> <p>② Replace probe</p>	

	4.1.4	Image overlapping	Mal function of DSP	① It occurs in inspection of Gyn and Uro, which is caused by too many focus point. Press [Focus], then adjust [Value] and change 4 focus point to 2 (4 Δ to 1) ③ Replace probe ③ If you have tried all above and can't solve it, please replace the DSP.	
	4.1.5	blurred screen	Mal function of DSP	replace the DSP	
Part	Sequence No.	Fault Phenomenon	Cause Analysis	Solution	Figure Illustration
4.1 Digital Singnal Board (DSP)	4.1.6	No image	Mal function of DSP	① State of mode, [Freeze] or not ② Check the sign of probe at the right corner, if there's no probe, then you should restart machine and replace one and screw up ③ If [B Gaining] is at its highest but no image on screen, the probe may not work ④ If you have tried all above and can't solve it, please replace the DSP.	
	4.1.7	Image not clear	Mal function of DSP	No Speckle noise in far-field, then check whether B Gaining is at lowest value in 8 TGC segment, if it's at its highest, indicating bad DSP	
	4.1.8	Unable to boot	Mal function of DSP	① Check the insertion on thread plate, then check fuse, if fuse is good but no response after pressing [Start], please replace the [Start Key]. If fuse doesn't work, replace a fuse or power supply cable.	

				② Display may not work ③ If you have tried all above and can't solve it, please replace the PB	
4.2 Power Board (PB)	4.2.1	Blowing up fuse after power on	Mal function of PB	Replace PB	Refer to figure 1/3
Part	Sequence No.	Fault Phenomenon	Cause Analysis	Solution	Figure Illustration
4.2 Power Board (PB)	4.2.2	4.2.2	Unable to boot	Malfunction of PB	Refer to figure 1/3
4.3 Probe	4.3.1	No image	Mal function of Probe	① State of mode, [Freeze] or not ② Check the sign of probe at the right corner , if there's no probe, then you should restart machine and replace one and screw up ③ If [B Gaining] is at its highest but no image on screen, the probe may not work ④ If you have tried all above and can't solve it, please replace the DSP.	

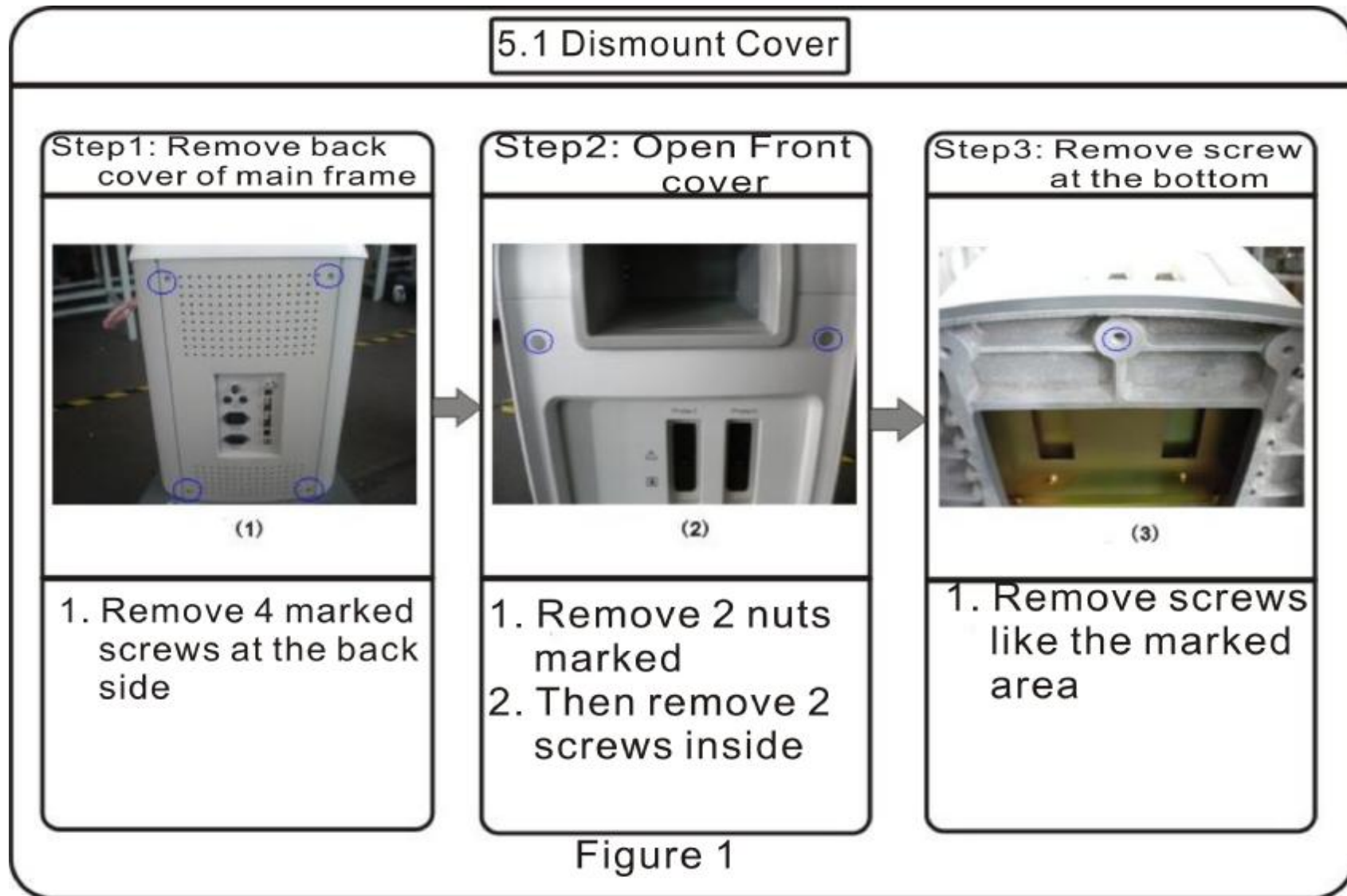
	4.3.2	Show Black line in printing	Mal function of Probe	<p>① If black line still exists by using transvaginal probe, then press , and exchange two probes' position (remove probe counterclockwise). Check whether there's black line, please use Abdominal probe if problem still exists. Or try to shake the probe socket to test whether it's well connected</p> <p>② Replace DSP</p> <p>③ If you have tried all above and can't solve it, please send probe back and repair</p>	
Part	Sequence No.	Fault Phenomenon	Cause Analysis	Solution	Figure Illustration
4.3 探头	4.3.3	Unable to print	Mal function of Probe	<p>① Replace DSP</p> <p>② If you have tried all above and can't solve it, please send probe back and repair</p>	
	4.3.4	Image overlapping	Mal function of Probe	<p>① It occurs in inspection of Gyn and Uro, which is caused by too many focus point. Press [Focus], then adjust [Value] and change 4 focus point to 2 (4 Δ to 1)</p> <p>② Replace probe</p> <p>③ If you have tried all above and can't solve it, please replace the DSP.</p>	
	4.3.5	spark phenomenon	Mal function of Probe	Replace probe	

	4.3.6	Probe gets hot	operation	It's normal when Tep is under 40℃. Probe will get hotter after working a period of time. Please press [Freeze] when don't use it	
	4.3.7	Echo area isn't a fan when use intravaginal probe	operation	Probe connection problem leads to unable to be identified, please reinstall the probe	
	4.3.8	Convex probe identified as Transvaginal probe	operation	Power off and remove the probe (can be easily removed by turning the switch 90° counterclockwise), then boot with LOGO and press [Freezee]. If it still show C-R13, please press [reset], normally screen will show C-R60, then install the probe and defreeze	
4.4 trackball	4.4.1	Can't move or not sensitive	Operation/ Mal function of Trackball	① Slide 8 TGC bar several times. The reason is that System check TGC first and then Trackball. System can't check trackball if the TGC is not working ② you have tried all above and can't solve it, please replace the Trackball	Refer to figure 6
Part	Sequence No.	Fault Phenomenon	Cause Analysis	Solution	Figure Illustration
4.5 Cooling fan	4.5.1	Lound noise	Mal function of fan	Generally led by aging of fan, please replace it	Refer to figure 1/3
4.6 Keyboard or connection	4.6.1	Keyboard not work	Mal function of Keyboard or	Check Keyboard and connection cable whether they disconnect . Or replace Keyboard or connection cable	Refer to figure 6

cable			connection cable		
4.7 Display	4.7.1	Unable to start	Mal function of Display	<p>① Check the insertion on thread plate, then check fuse, if fuse is good but no response after pressing [Start], please replace the [Start Key]. If fuse doesn't work, replace a fuse or power supply cable.</p> <p>② Display may not work</p> <p>③ If you have tried all above and can't solve it, please replace the PB or send back to repair</p>	
	4.7.2	A bright line on screen	Mal function of Display	Incontrollable of H-hold and V-hold signal, please send back to repair	
	4.7.3	Screen flickers	Mal function of screen brightness potentiometer •	send back to repair	
	4.7.4	Image not clear	Operation	<p>① Echo signal particles are too bold, please adjust frame</p> <p>② If image is dark, you need to adjust contrast and brightness. Firstly turn both to its lowest, turning brightness to its highest and then adjusting contrast to the best state.</p>	

Part	Sequence No.	Fault Phenomenon	Cause Analysis	Solution	Figure Illustration
4.8 Fuse and power supply cable	4.8.1	Unable to start	Mal function of Fuse /power supply cable	<p>① Check the insertion on thread plate, then check fuse, if fuse is good but no response after pressing [Start], please replace the [Start Key]. If fuse doesn't work, replace a fuse or power supply cable.</p> <p>② Display may not work</p> <p>If you have tried all above and can't solve it, please replace the PB or send back to repair</p>	
4.9 Mother board of display	4.9.1	serious disturbance	Operation	<p>① If you have equipped Central Computer Workstation, please disconnect them (pull out computer power and video cable) Then check, if no disturbance any more, please relace a better power</p> <p>② If there's disturbance without a workstation, please ensure there're no high power electric instrument or transformer signal towers and keep away from such devices</p> <p>③ If no situation above, please equipa Filter regulators to avoid grid noise jamming.</p>	
	4.9.2	System crash frequently during lithotripsy	Operation	Add a filter on the input side	

5. Illustration of Units Dismounting



5.1 Dismount Cover

Step4: Open Side Board



(4)

1. Remove the screws marked

Step5: Open Side Board



(5)

1. Remove the screws marked

Step6: Whole inside Structure



(6)

1. Whole inside structure occur after side board taken off

Figure 2

5.2 Dismount Digital Signal Board

Step1: Dismount Probe Shield



(1)

1. Remove the screws marked and take off the cover

Step2: Take the central part from main frame



(2)

1. Remove screws marked above and take the central part from the metal frame

Step3: Take Digital Board



(3)

1. Remove all screws marked above and get the DSP

Figure 3

5.3 Dismount Power Supply Board

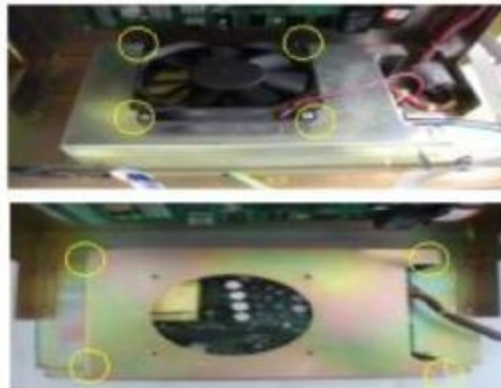
Step1: Pull out all connection cable



(1)

1. Pull out all connection line marked above

Step2: Take off fan and shield



(2)

1. Remove all screws marked above
2. Take the cooling fan and shield cover

Step3: Take off power supply PCB



(3)

1. Remove all screws marked above then you can get the power supply PCB

Figure 4

5.4 Dismount Display

Step1: Pull out all cable



(1)

1. Pull out the cable at back

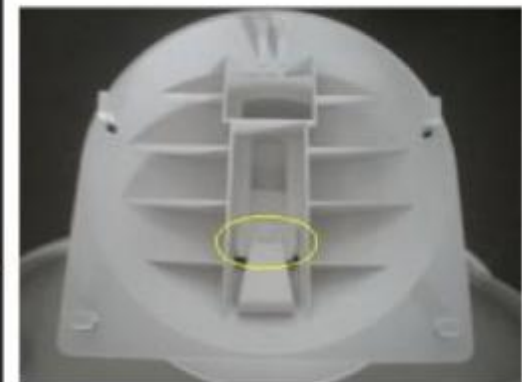
Step2: Take off bottom cover



(2)

1. Knock the hook marked to be flat
2. Push the display a little forward and take it off

Step3: Get the whole Display



(3)

1. Tilt the hook marked up
2. Pull the bottom cover backward with strength
3. Put what you dismount away

Figure 5

5.5 Remove Fuse



(1)

1. Use a wrench to turn the fuse counterclockwise and it will be popped out
2. Replace it with a new 3.5A/250V one and fix it

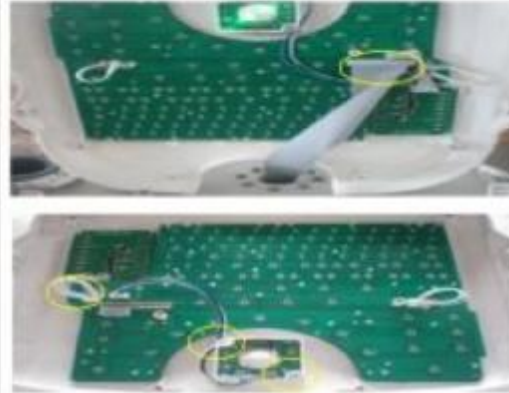
Figure 6

5.6 Dismount keyboard Trackball



(1)

1. Remove screws
at the bottom



(2)

1. Pull out all lines
and screws, then
take off the
trackball



(3)

1. Remove 12 screws
marked above and
then take off the key
PCB