POTEC

Troubleshooting Guide

AUTO REF/KERATOMETER PRK-7000

PRK-7000 Case Decomposition.avi

PRK-7000 Case Assembly.avi

POTEC QUALITY CONTROL TEAM

Troubleshooting

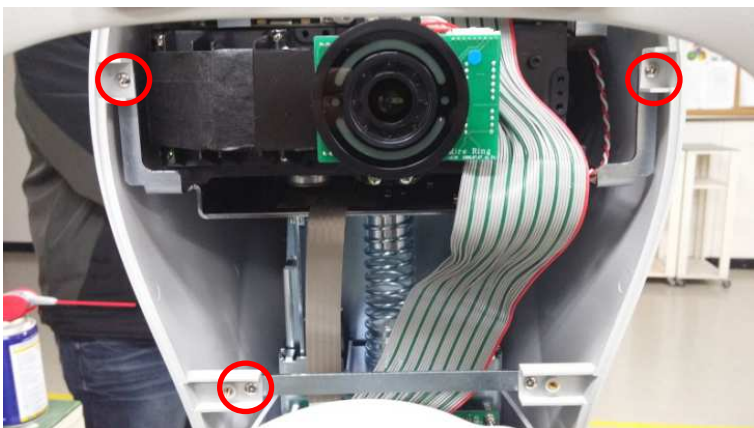# RK-TS7001_STAGE LOCK ASS'Y : Repairing process

Ref No.	Name of Part	Code of Part	Description	Q'ty
	STAGE LOCK ASS'Y	A-ASL0-C33		1

1. Separate the CAP from back head cover of PRK-7000 and open the screws. Detach cable and separate the back head cover. (Number of screw : 04)

Detach
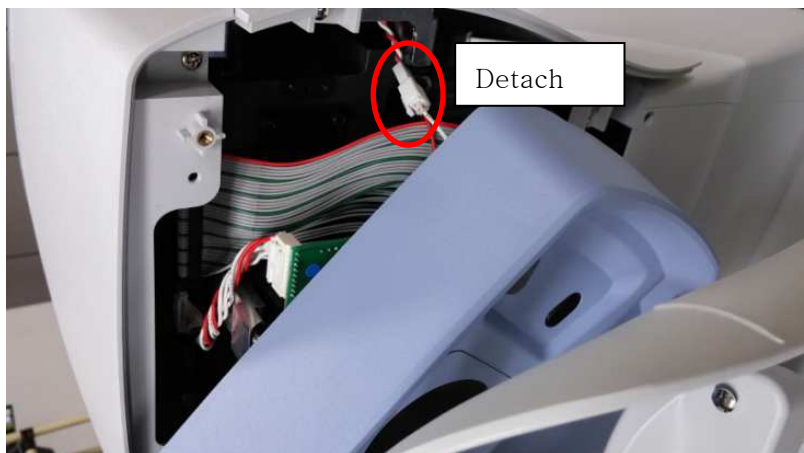
2. Open screws and separate the cover. (Number of screw:09)
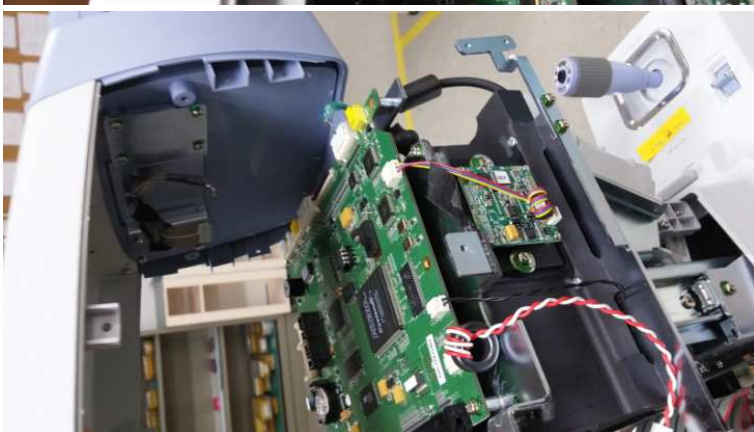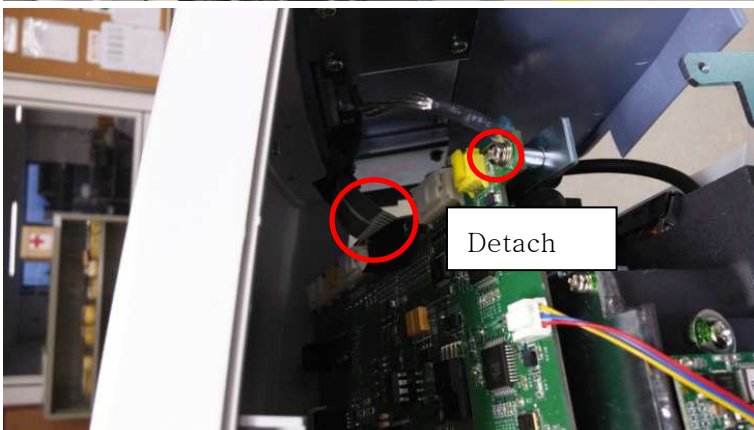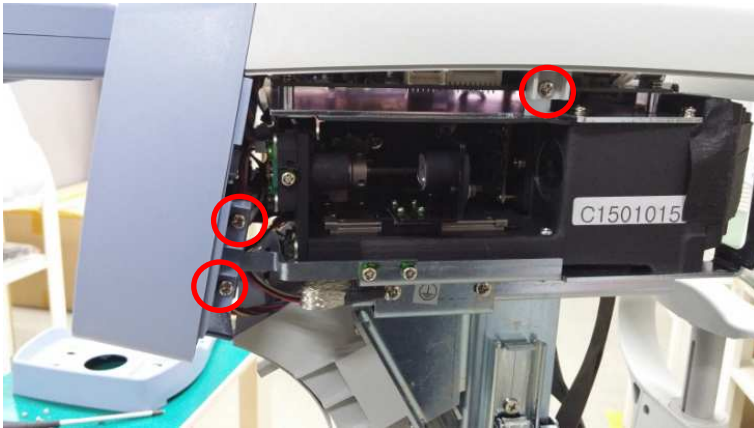
3. Open screws after lifting up LCD and open both side covers (left& right). (Number of screw:04)

4. Open all screws on the both sides as pictured below. After that, separate LCD ASS'Y. At the time of separating LCD ASS'Y detach ground cable of MAIN PCB and PRK3xa-LCD-DATA cable.

Detach

5. Instead of unscrewing all screws, partially loose the screws as shown below in the photos.

6. Open screws (shown in the photos below)
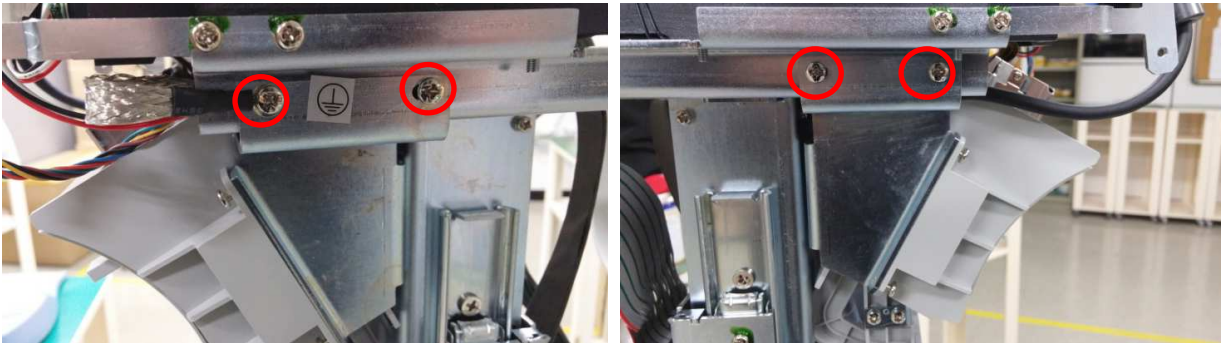
7. After that, detach cable and separate Printer ASS'Y.

detach

8. Open screws from Upper Base Cover.(Number of screws on bothside: 06)

9. After that, hold the Upper base cover and detach cable to separate the Upper base cover.
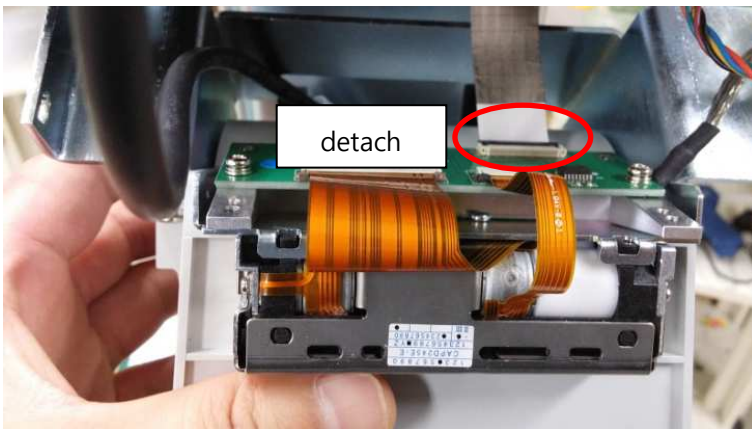

detach
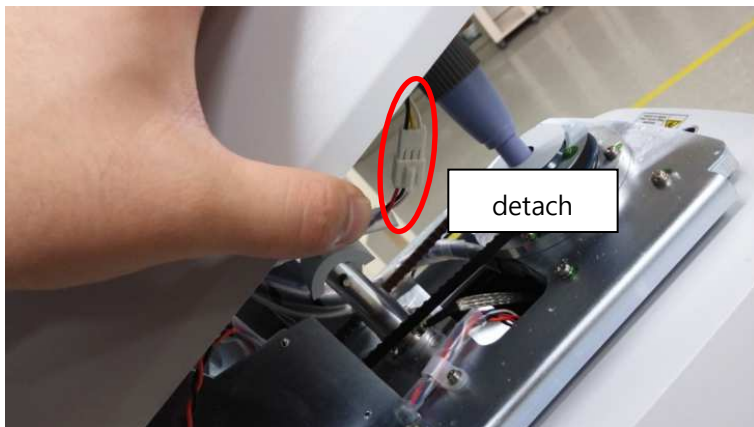
10. Open the screws below and separate Stage Lock ASS'Y. (Number of Screws:04)
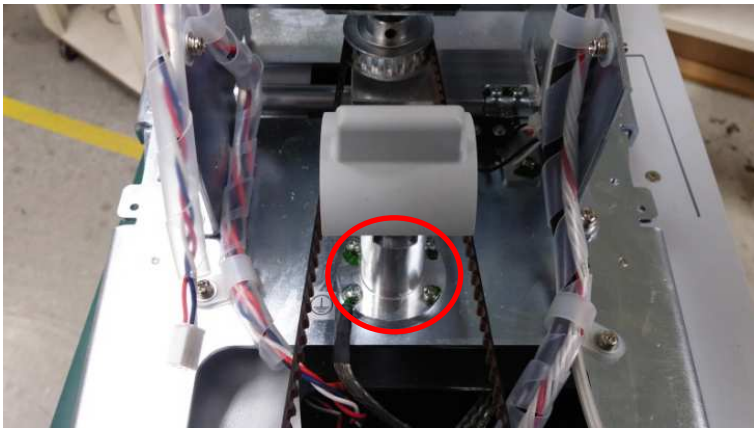
11. Attach separated Stage Lock ASS'Y and rubber with strong glue.

12. After that, assemble as instructed below. Assembly Caution

13. Assemble in inverse order of disassemble.
14. Lock the stage and don't move the joystick.

RK-TS7002_How to replace MAIN PCB ASS'Y

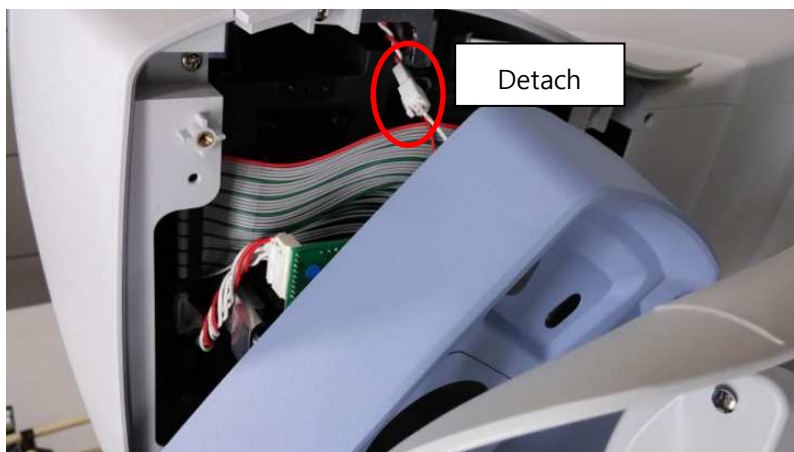| Ref No.	Name of Part	Code of Part	Description	Q'ty
	PRK3xa-Main PCB ASS'Y	A-EY00-C41		1

1. Separate the CAP of HEAD BACK COVER and remove the screws. Detach cable and disassemble HEAD BACK COVER. (4 screws)

Detach

2. Remove screws and separate the cover. (9 screws)

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3. Remove screws after lifting up LCD and open both side covers(L&R). (4 screws)

4. Remove all screws on the both sides as below picture. Then, separate LCD ASS'Y.
   At the time of separating LCD LCD ASS'Y detach ground cable of MAIN PCB and PRK3xa-LCD-DATA cabel.

Deach
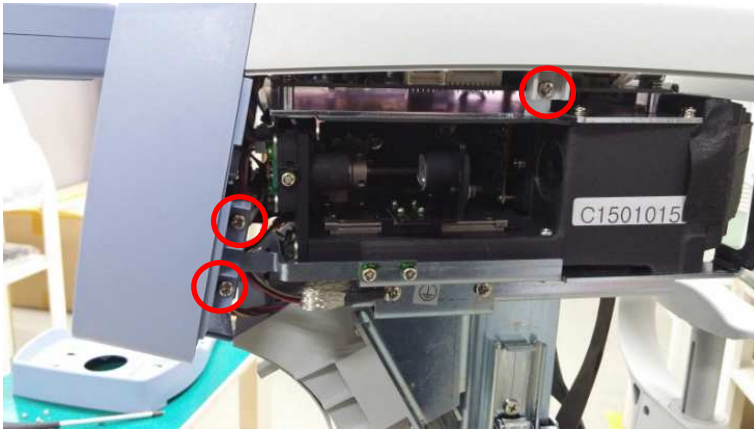
5. Remove 4 screws of MAIN PCB and replace with new one.
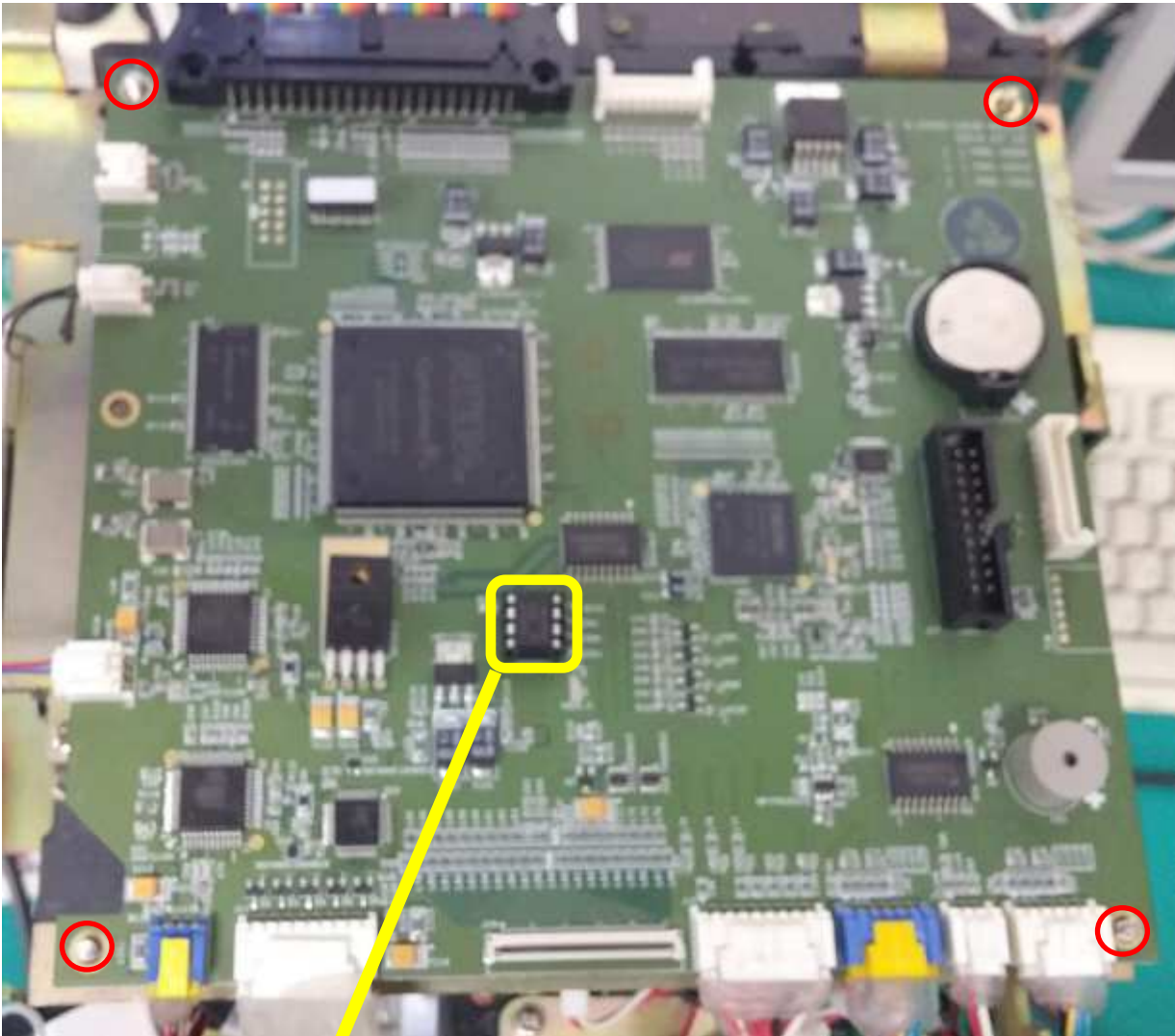
Data chip in the old   MAIN PCB should be attached to the new MAIN PCB.

[O]   [X]
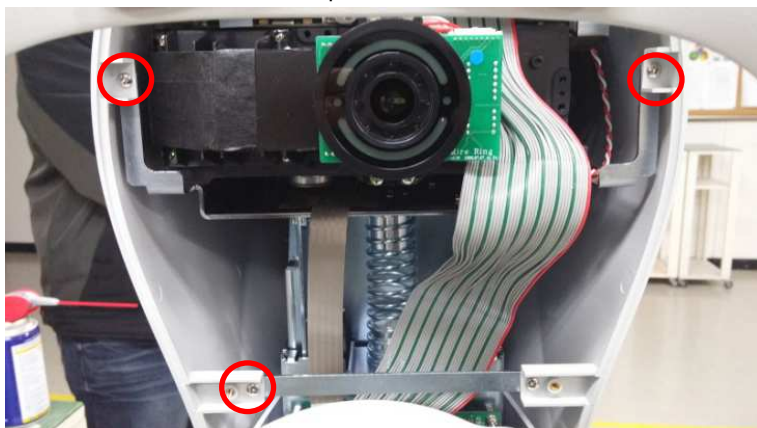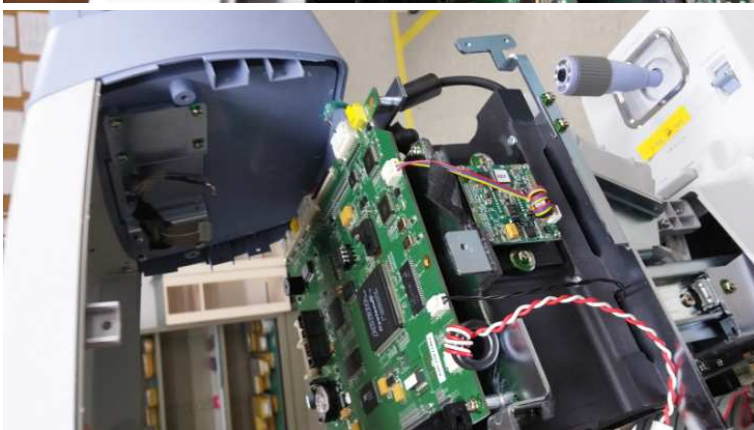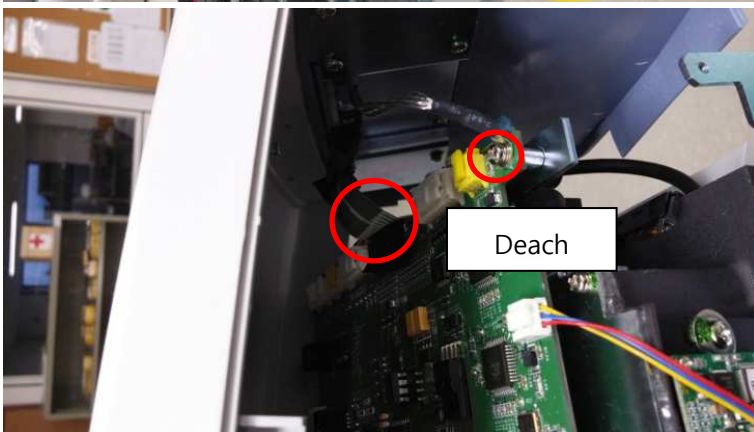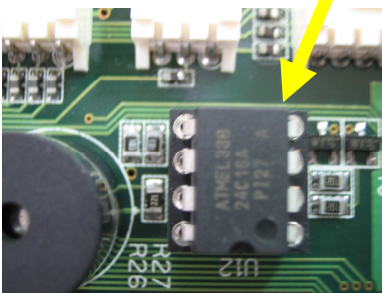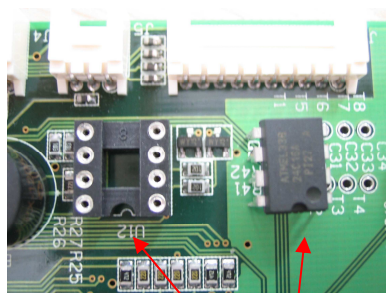
* Important
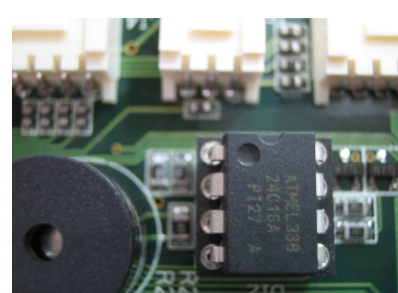
6. Assembly is the reverse of disassembly.

RK-TS7004_How to replace LCD Ass'y

Ref No.	Name of Part	Code of Part	Description	Q'ty
	PRK3xa-LCD ASS'Y	A-ASL0-C41A		1

1. Disassemble CAP of HEAD BACK COVER. Remove 4 bolts and cable to detach HEAD BACK COVER.

Division
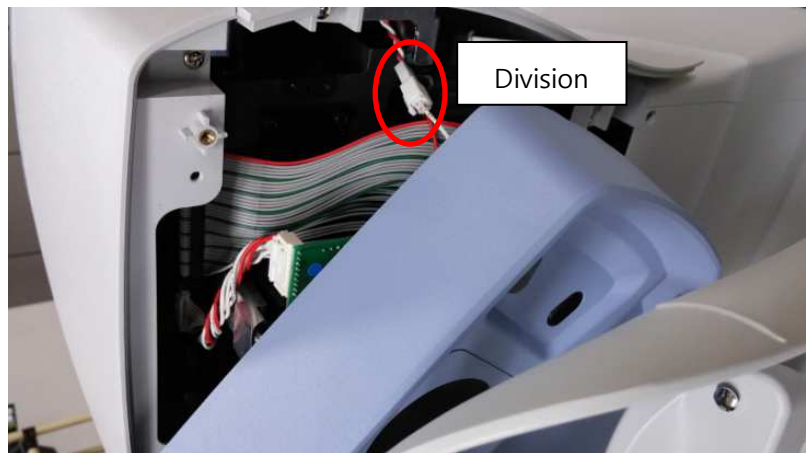
2. Remove bolts to disassemble the cover. (7 bolts)
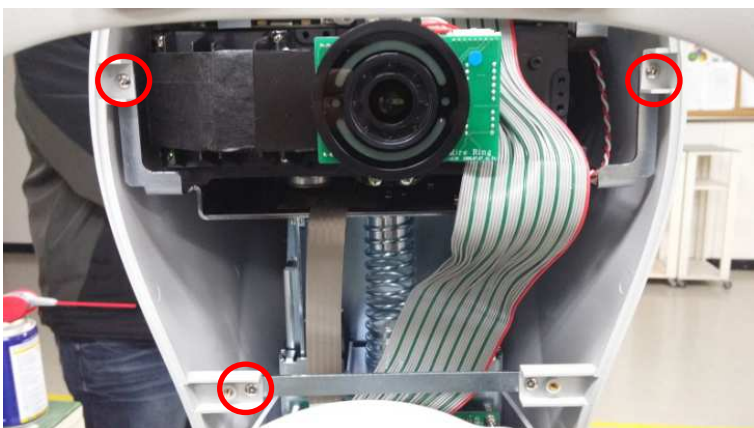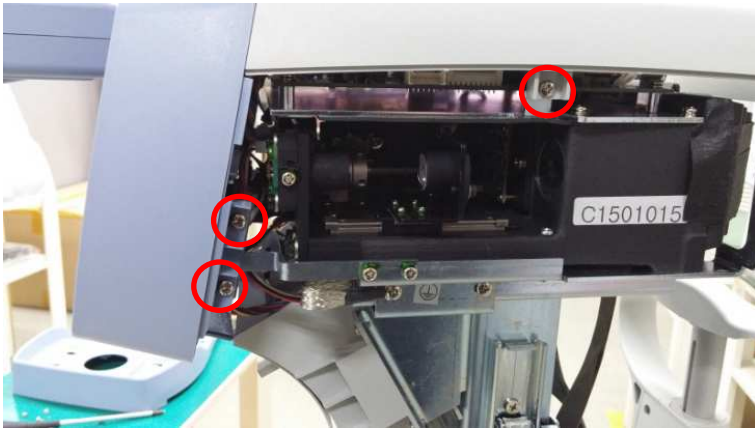
3. Raise above LCD and remove bolts. After that disassemble SIDE COVER_L/R. (4 bolts)

4. Remove all bolts of both sides as below images. Disassemble PRK3xa-LCD-DATA cable and grounding cable which is connected to MAIN PCB to disassemble LCD ASS'Y.

Division
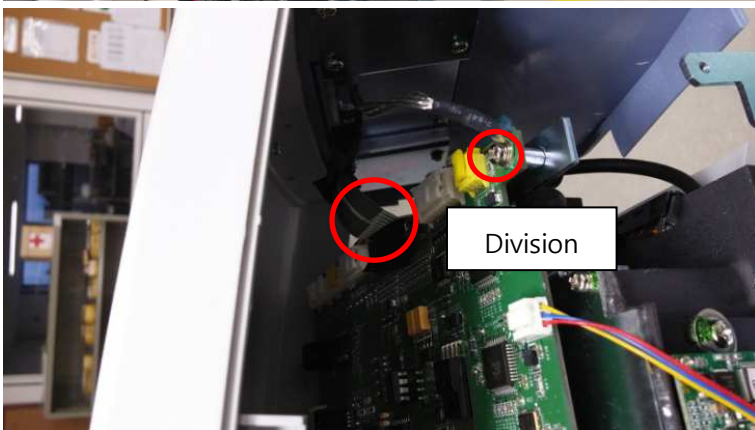
5. Turn over TOP FRONT ASS'Y and remove paper tape, detach CORE. After that pull out the cable to LCD side.
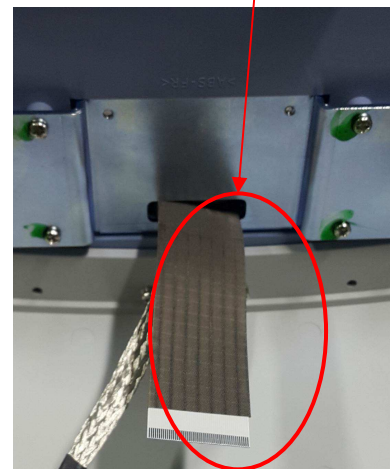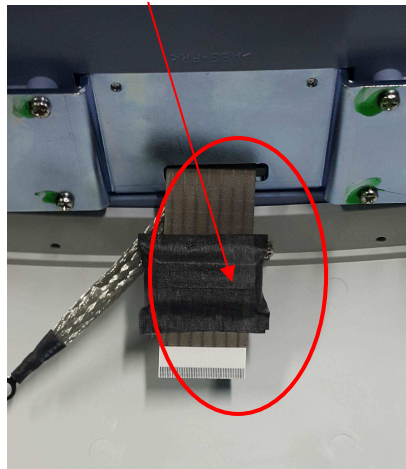
6. Remove 4 bolts of LCD ASS'Y, replace to a new LCLD ASS'Y.

- Caution: Put LCD ASS'Y between cables and fasten the bolts.

7. Assembly is reverse of disassembly.

RK-TS7005_how to check external image

1. Materials (monitor, PRK-7000, RGB cable)

2. Pull off RGB cable from monitor and connect to VIDEO OUT port of PRK-7000.

3. Turn on PRK-7000 and check whether PRK-7000's screen and external monitor's are same or not.

RK-TS7010_How to change SMPS

Ref No.	Name of Part	Code of Part	Description	Q'ty
	SMPS	A-EB00-005	Sun-1505P	1

1. Lay PRK-7000 and remove screws to disassemble 'Bottom Cover Plate'.

Bottom Cover Plate
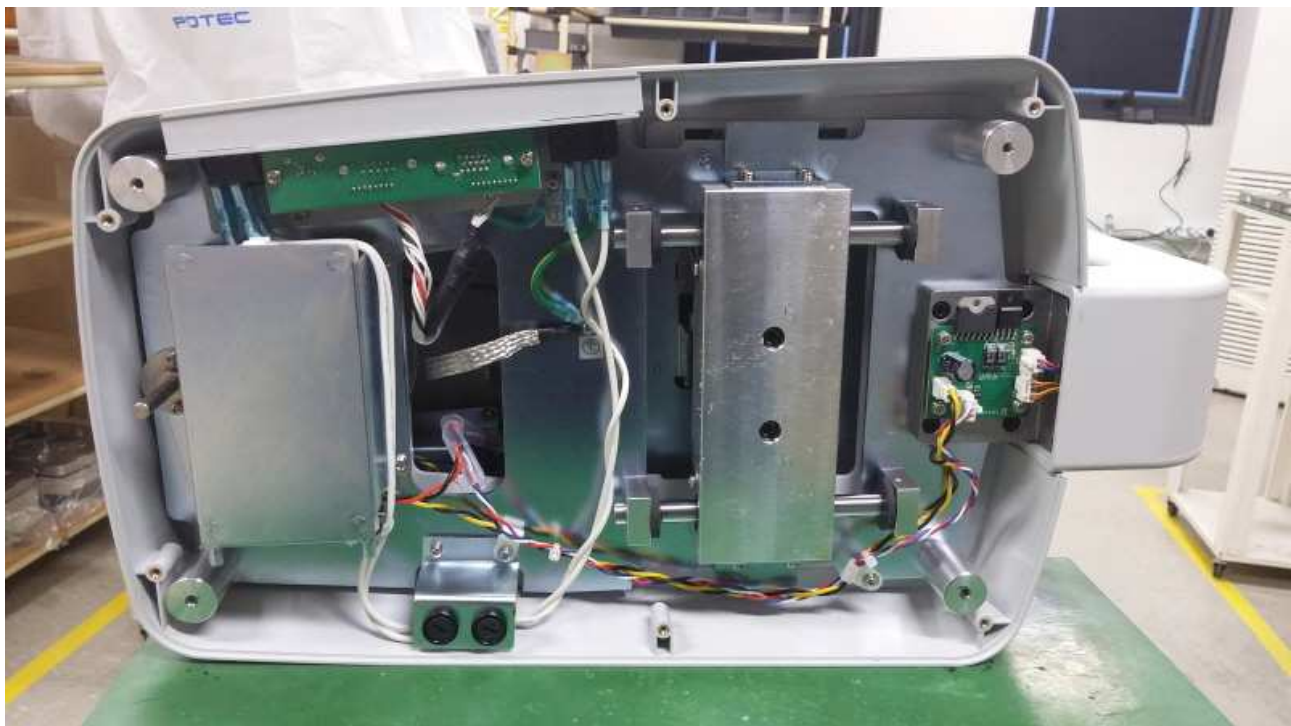
2. Remove screws of SMPS Housing and disassemble cable connecting SMPS.

15V DC

3. Mount a new SMPS. Assembly is reverse of disassembly.

RK-TS6011_Information on Headrest ASS'Y

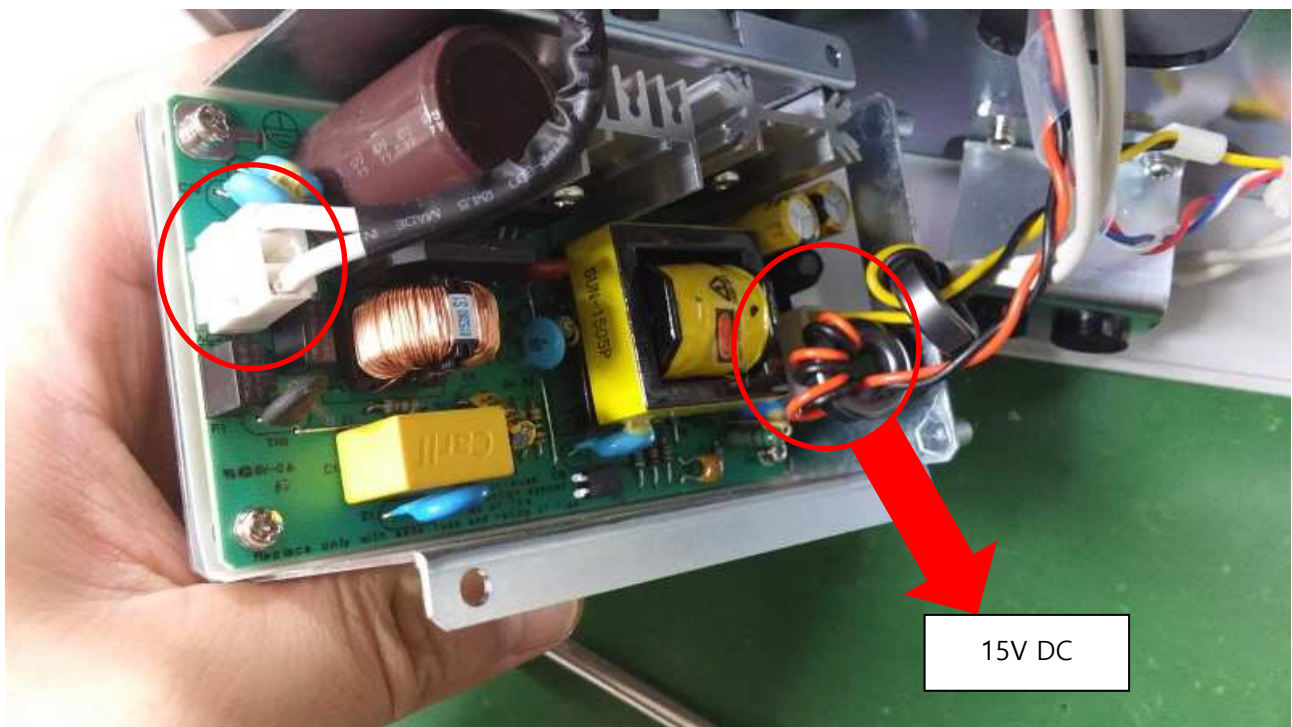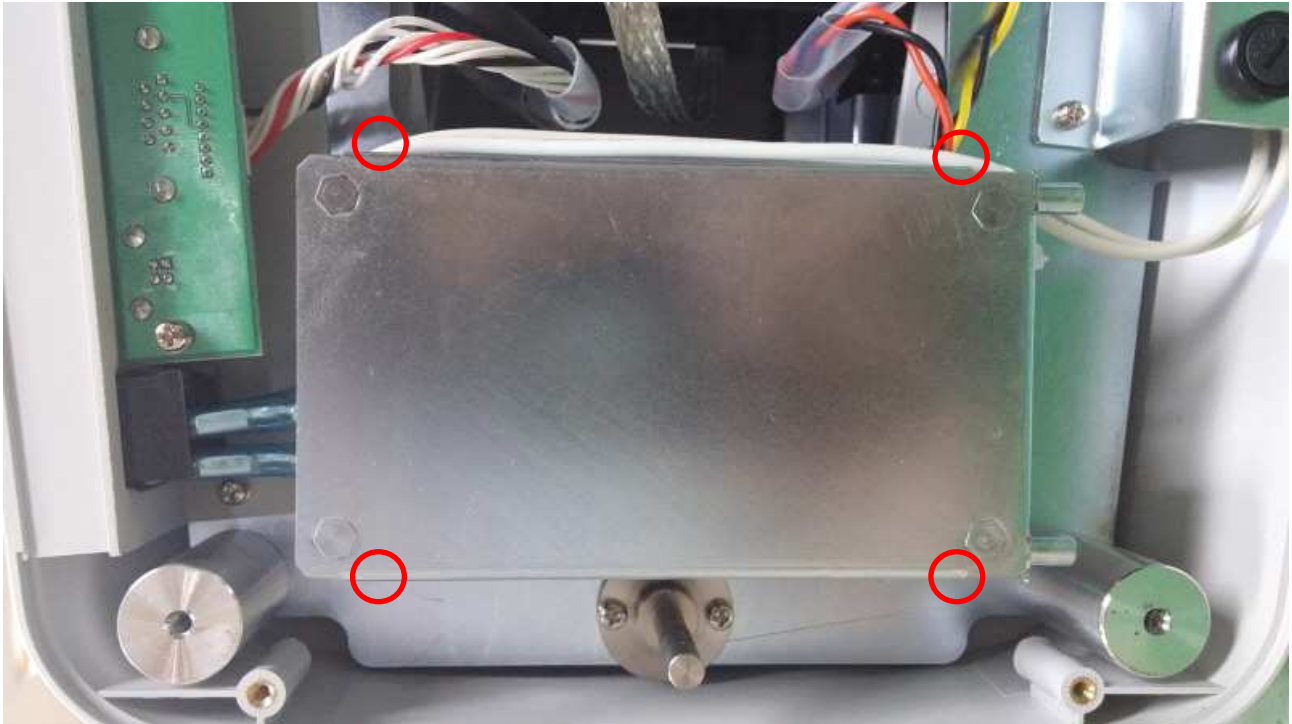| Ref No.	Name of Part	Code of Part	Description	Q'ty
	HEADREST ASS'Y	A-ASL0-C26		1
	HEADREST	A-MDA3-B01		1
	HEADREST BRACKET	A-MGA0-B31		1
	DC Geared Motor	A-EB00-B08	1G220231-20151	1
	PCB ASS'Y	A-EY00-B06	TA8428K PCB ASS'Y	1

1. Turn PRK-7000 on its side, remove screws and take 'Headrest Cover' off.
   If chinrest does not work up&down, even after switching on, 'TA8428K PCB ASS'Y' might be defective.

TA8428K PCB ASS'Y

2. Take cables off from 'TA8428K PCB ASS'Y' and remove screws to separate 'HEADREST ASS'Y'.

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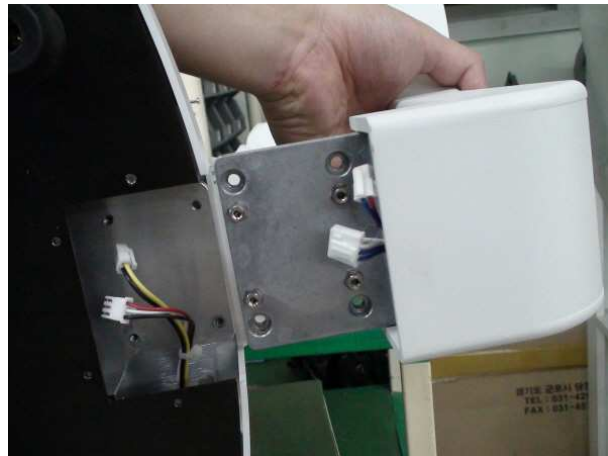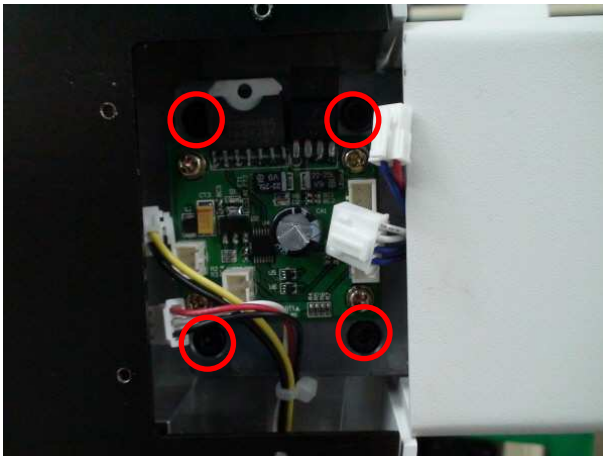
3. Replacement of 'HEADREST BRACKET' : Remove screws from the separated 'HEADREST BRACKET' and replace 'HEADREST BRACKET'
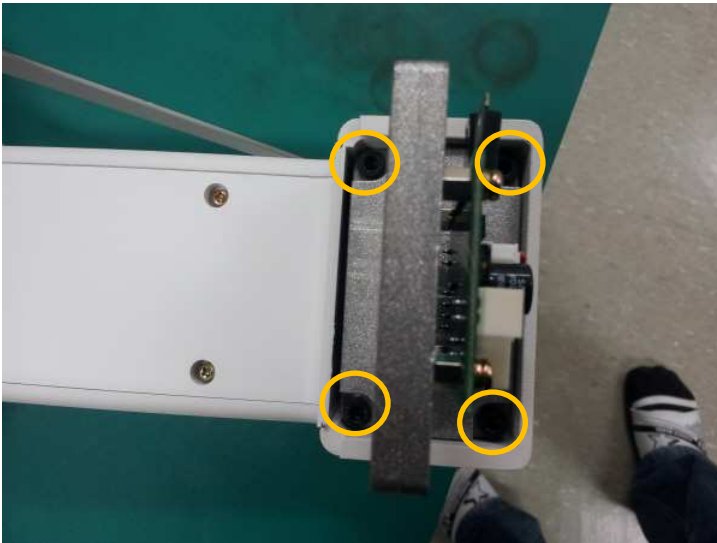
4. Replacement of 'DC Geared Motor' : Take 'HEADREST COVER' off and remove set screws and nuts(see red circle and box below).
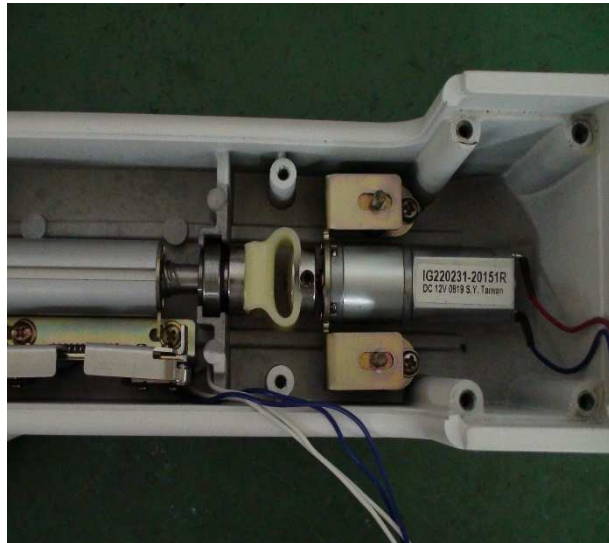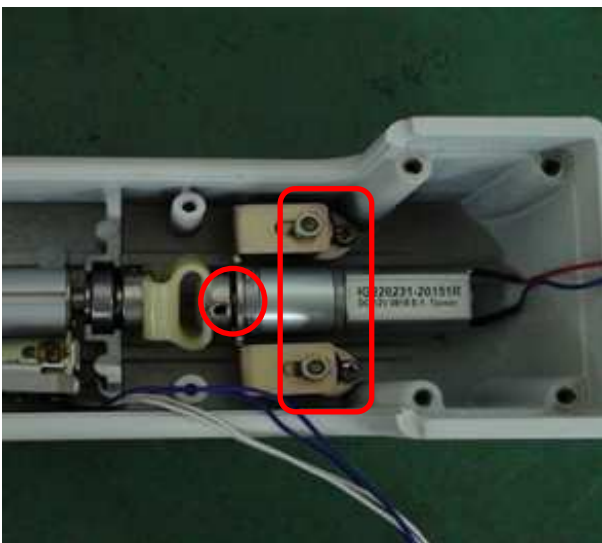
Disassemble the motor as the arrow and replace it to new one.
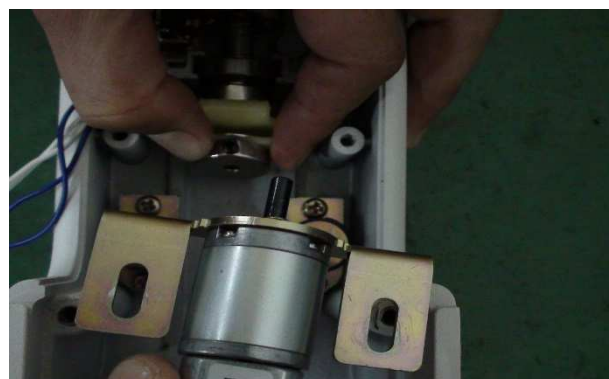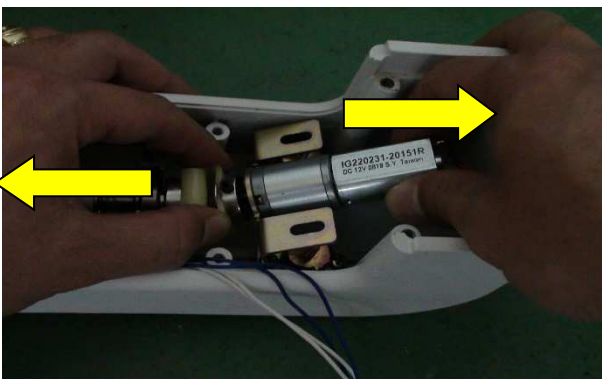
When assembling, move the new motor to the arrow direction and screw nuts tightly.

IG220231-20151R
DC 12V 081B S.Y. Taiwan
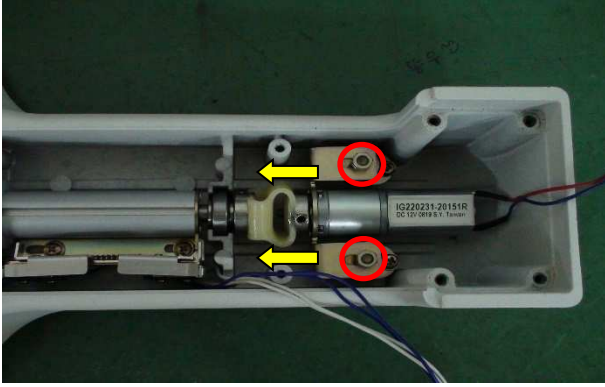
RK-TS7014_Checklist on an error of measurement

- 'ERR' is on the image, when PRK-7000 has the error of measurement. It might be from the defective 'REF-LED/REF CCD ASS'Y'.

- Checklist

1. Check on 'REF SETUP DATA'.

   1) Turn PRK-7000 on and enter 'DISP' menu by touching it.

   2) On 'DISPLAY MODE', press the measurement button as you keep touching the right and bottom part (red circled part in the picture below).

   3) Take the finger off the screen and press the measurement button again. Subsequently, touch 'REF DATA' on 'TOOL MODE'.
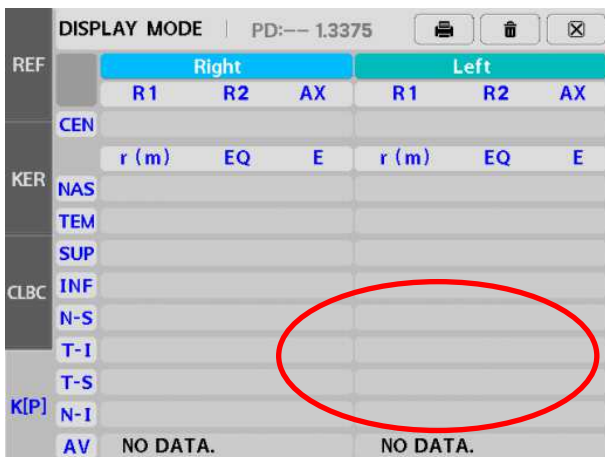
   4) It is normal when numbers of 'SETUP DATA'(yellow box) gets bigger from top to bottom. If there is the special character "###.##" in 'SETUP DATA', consider it as the problem and perform the data recovery. (Please refer to 'RK-TS7022_Data Recovery on PRK-7000'.)
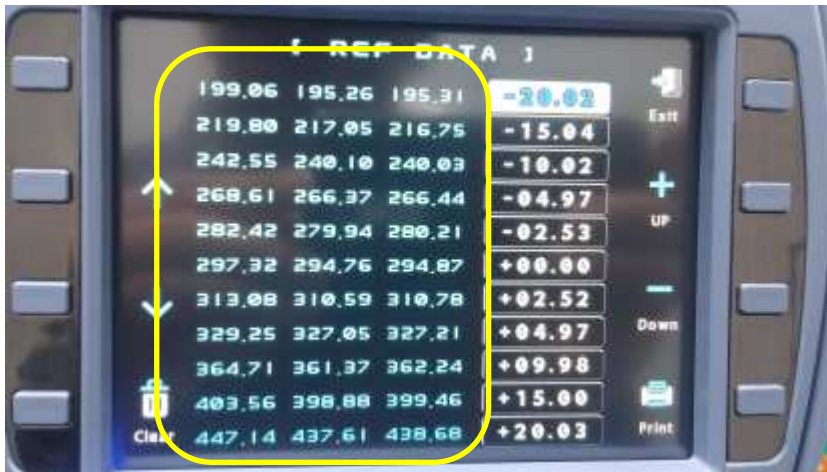
2. Check on REF optical light

   1) Take aim, focusing on lens of the test model eye. Touch 'REF TOOL' on 'TOOL MODE'.

   2) "MODE " touch x 2

   3) If optical light is not seen at six points, the following parts might be defective.

      - MAIN PCB ASS'Y

      - Replacement should be performed in the factory of Potec.

         (Alignment and set-up is needed to be performed by professional engineer in the factory)
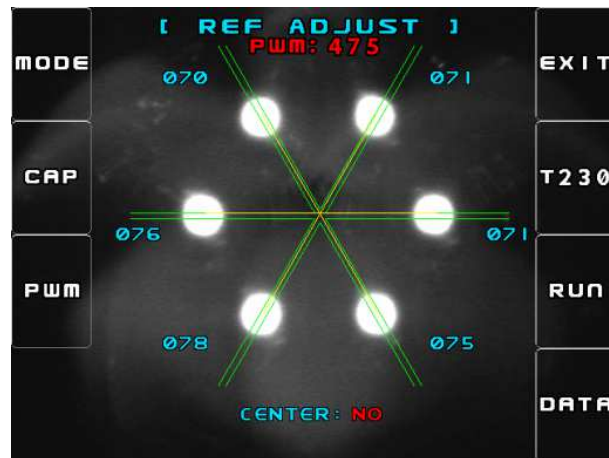
RK-TS7015_Measurement Error(discrepancy)

1. Light up and check the condition in the window shown in the below image in red, then clean up if necessary.
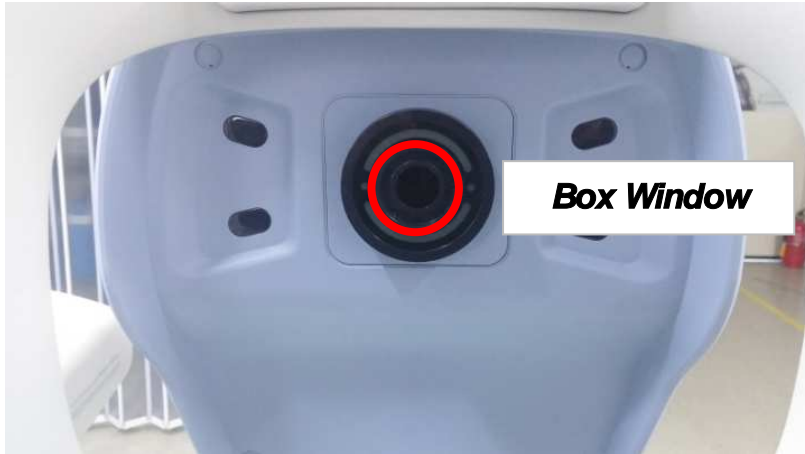
Box Window

2. Prepare a swab and a linen to moderately squeeze into the Box Window to remove any dust inside. Box Window can be broken when you rub hard.

3. Reset the values

   1) Move to page #9 in SETUP mode, then click on "LOAD DEFAULT SYSVAR".

   2) Place the provided model eye to check if the below values show

SPH	4.88 ~ 5.37
CYL	0.00
KER R1	7.95
KER R2	7.95

6. The measurement principle of PRK-7000 (SPH, CYL)

    To check the actual value shown from the second measurement, press the measurement button for the chart in the window to be vivid and vague in turn first.

7. Tolerance : 2Step is allowed.   1Step = ±0.25

8. For instance, it is assumed that the joystick was not under control properly if the values underlined below is show as a discrepancy.

 - Confidence of result

    : Confidence of result which is not A can not be confident.

9. Set up the values for users

 – It would be recommended to adjust the values in "D-SFT" if the outcome has regularly difference.

   1) Press "SETUP" button. Choose "D-SFT" in SETUP mode and adjust the value with DER/INC buttons.

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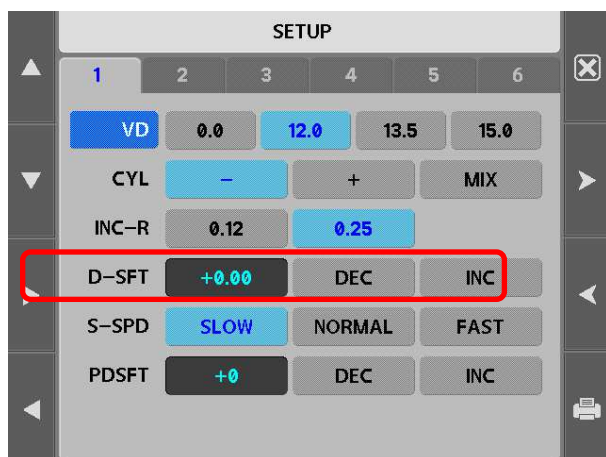
ex) For example,

Outcome: -5.00D, Real Value: -6.00D,   then adjust the value in -1.00.

10. Measure Speed Change – Choose 'SLOW' in S-SPD and measure again.
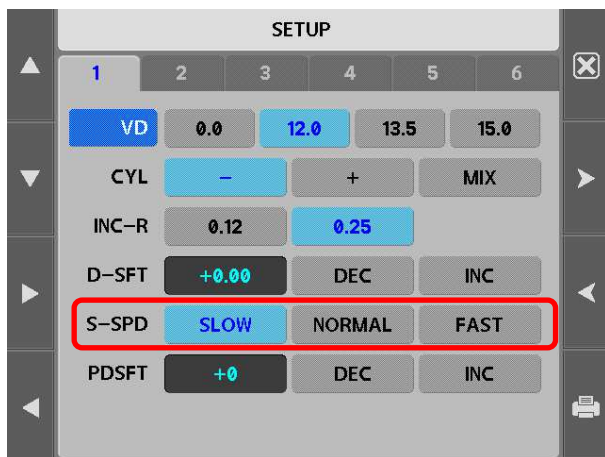
* For faster and correct service for customers, please provide us with the prescription of patients along with the printed values for our comparison.

RK-TS7016_Corrective action when chart is not clear

1. Turn on PRK-7000 by pressing the second button of left low and the first button of right row at the same time as below image.

2. After entering TOOL MODE, click "MOTOR TOOL".
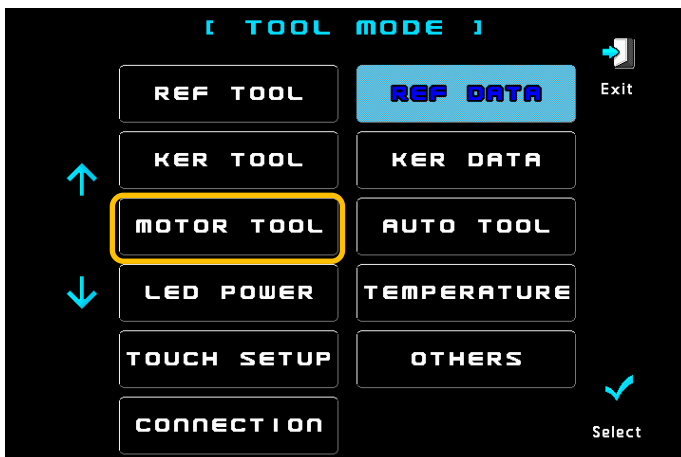
3. By pressing +5 / -5 icon to find clear area.
4. When you find clear area, click SM0D icon.
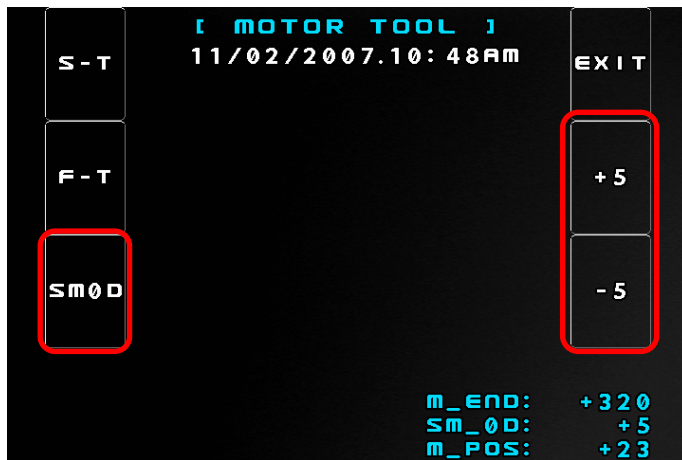
5. Press EXIT icon and Yes to save the data.
6. Turn on / off the power to check if the chart is clear.

RK-TS7017_In-Out focus trouble shooting guide

1. Please follow below instructions for shooting the focus problem.
2. Put the PRK-7000on the side as the below figure.
3. Unscrew Moving Lock Knob(Red) with wrench and unscrew 4 feet, screw bolts(Yellow) as well.
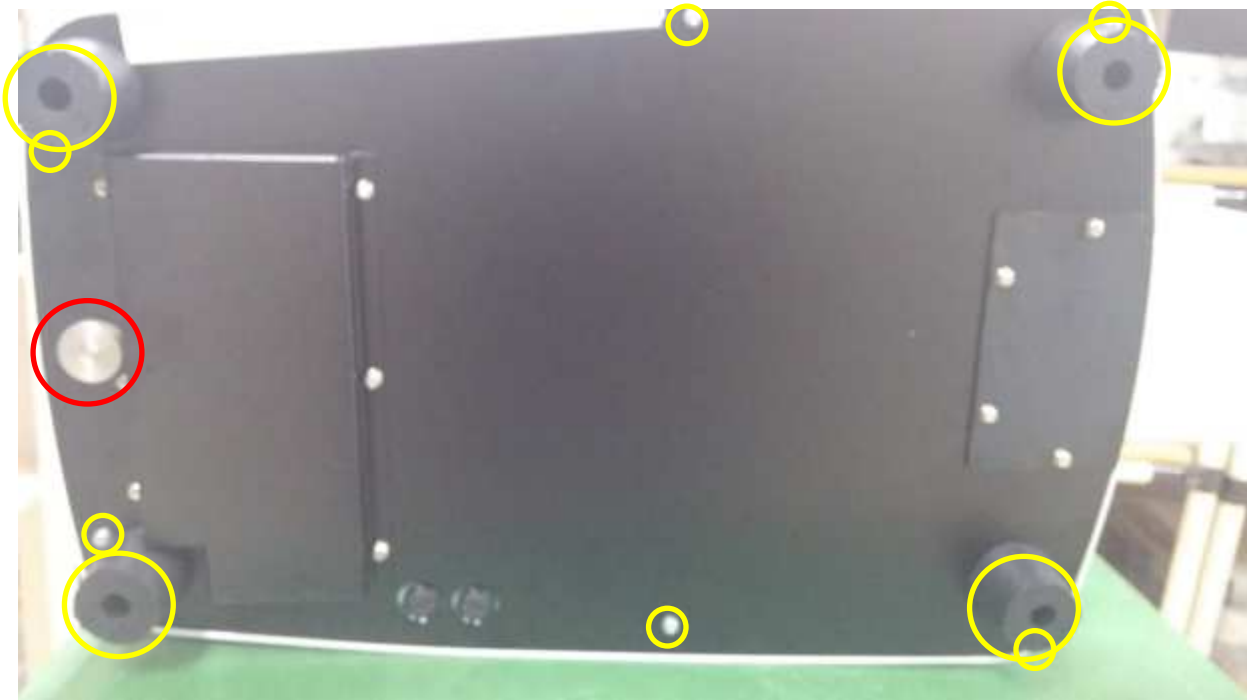
4. Take the Bottom Base Plate a part from the equipment.
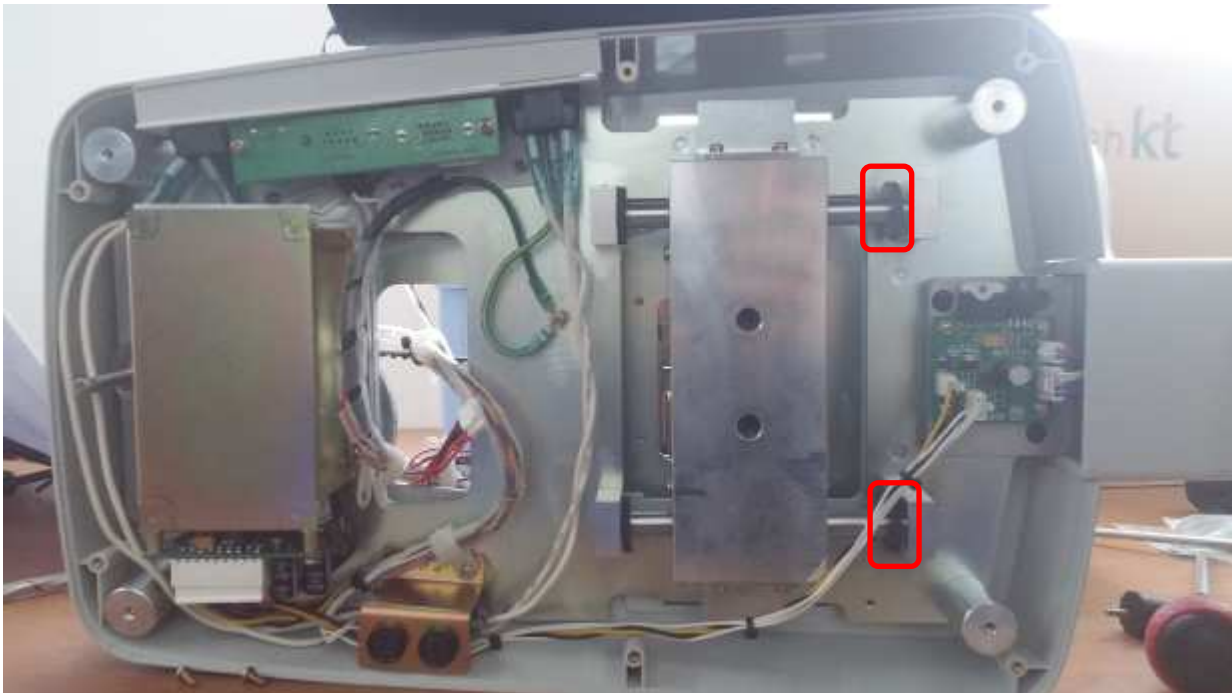
5. Remove the damper by using cutter.
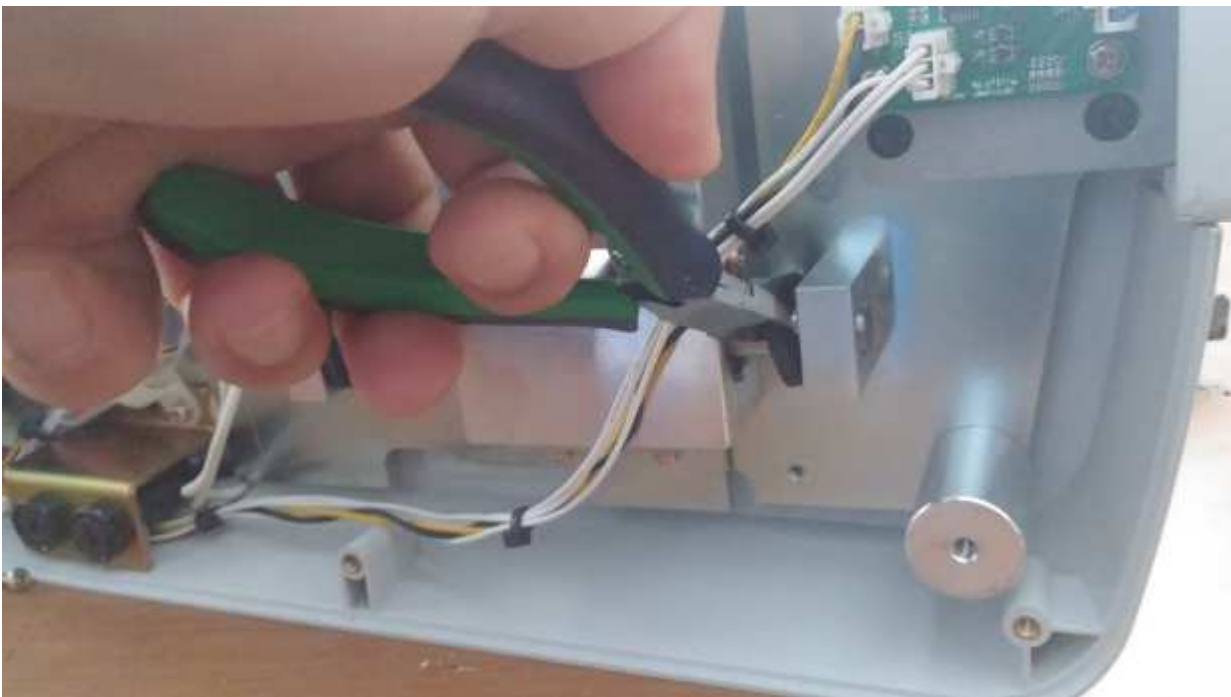
6. Put the Bottom Base Plate back on the equipment.

7. Then you can push further to place the optical head closer to patient eyes

RK-TS7018_How to replace PRINTER ASS'Y

Ref No.	Name of Part	Code of Part	Description	Q'ty
	PRINTER ASS'Y	A-ASL0-C40		1

1. Disassemble CAP of HEAD BACK COVER. Remove 4 bolts and cable to detach HEAD BACK COVER.

분리
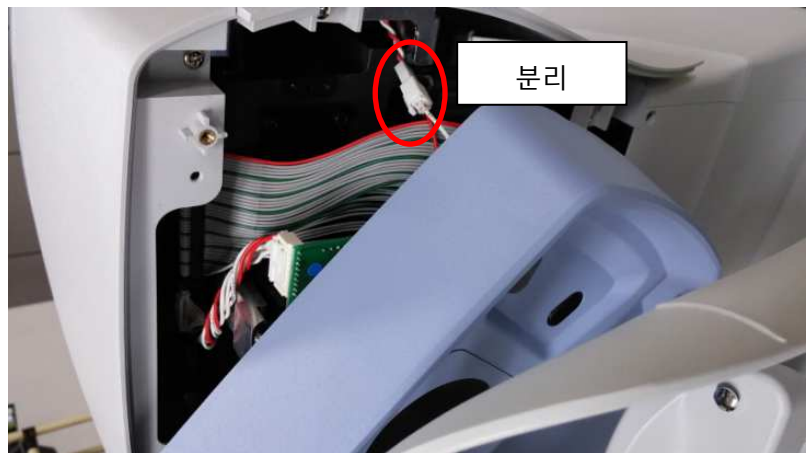
2. Remove bolts to disassemble the cover. (9 bolts)
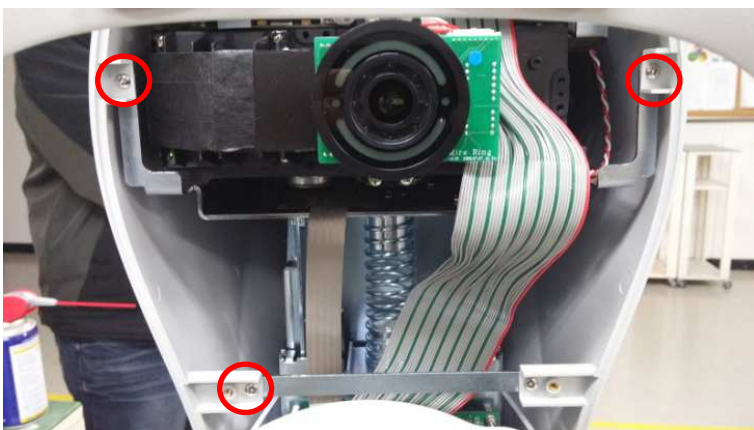
3. Raise above LCD and remove bolts. After that disassemble SIDE COVER_L/R. (4 bolts)

4. Remove all bolts of both sides as below images. Disassemble PRK3xa-LCD-DATA cable and grounding cable which is connected to MAIN PCB to disassemble LCD ASS'Y.

분리

5. Loosen the bolts in below image.

6. Remove bolts as below image.
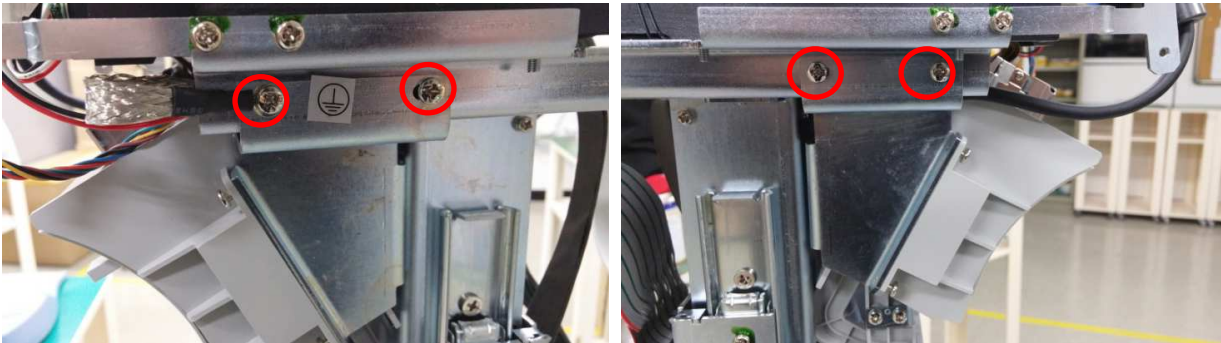
7. After that, detach a cable to disassemble Printer Ass'y from PRK-7000. Replace to a new one.

Division
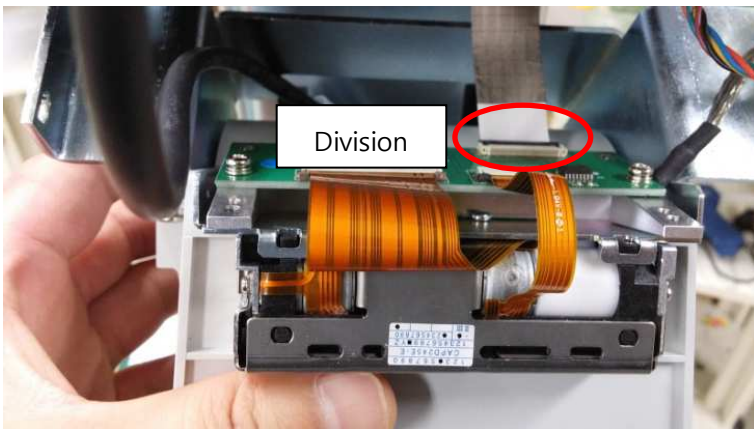
8. Assembly is reverse of disassembly.

RK-TS6019_When HEAD REST and HEAD BACK COVER reach each other

1) Lay down PRK-7000 as below picture. After that removing 'Moving Lock Knob' by using wrench and remove 8 bolts as below yellow circle.
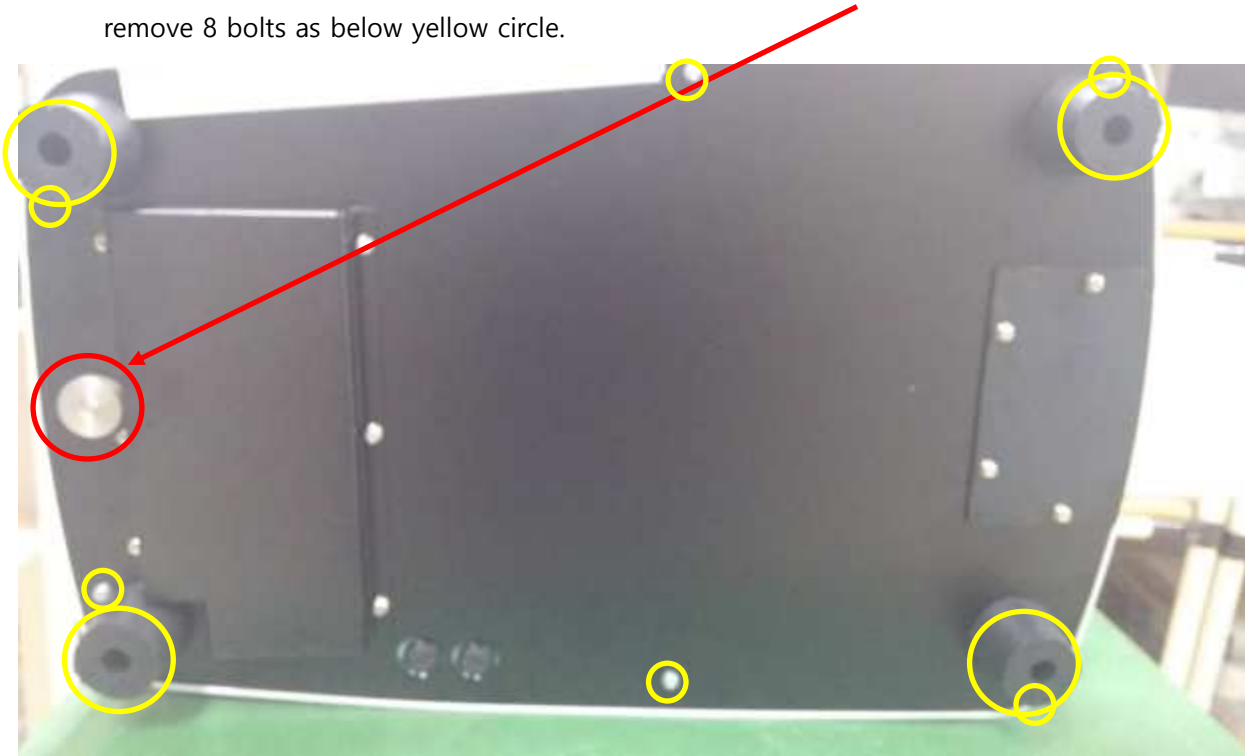
2) Disassemble Bottom Base Plate(black cover of above image).

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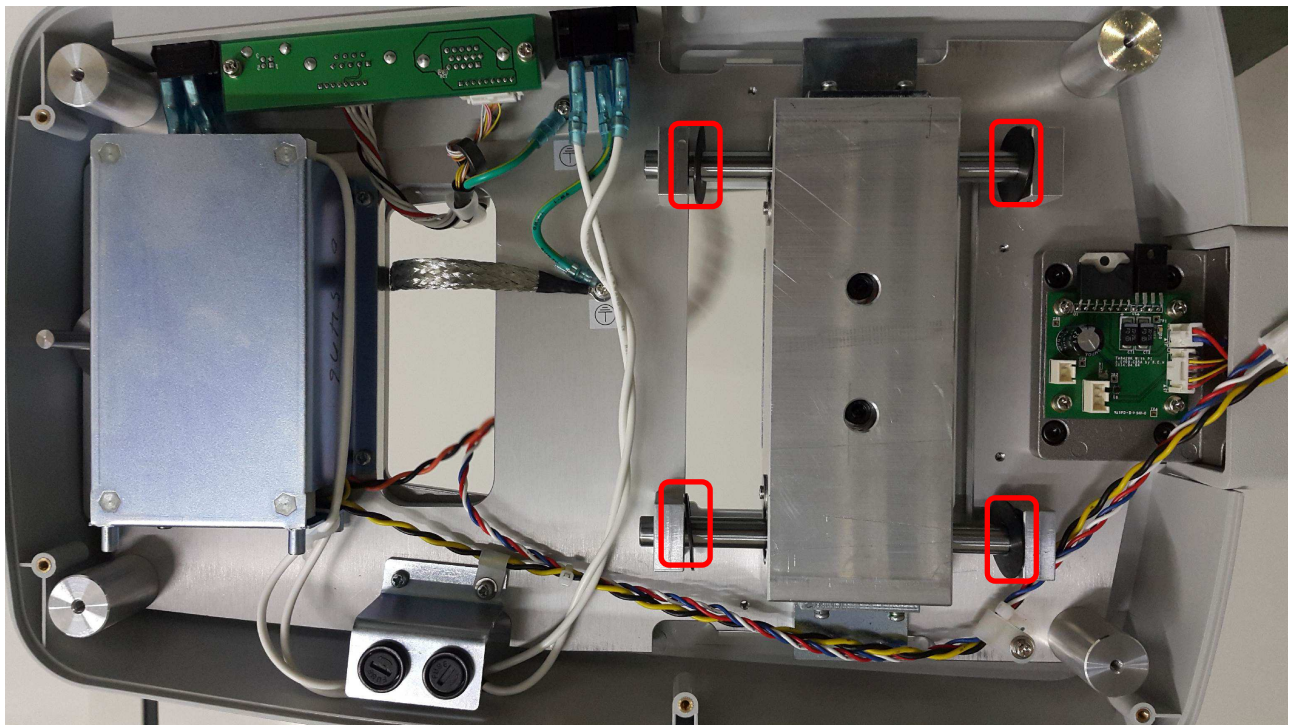
3) Cut the 4 of cushion rings by using nipper.
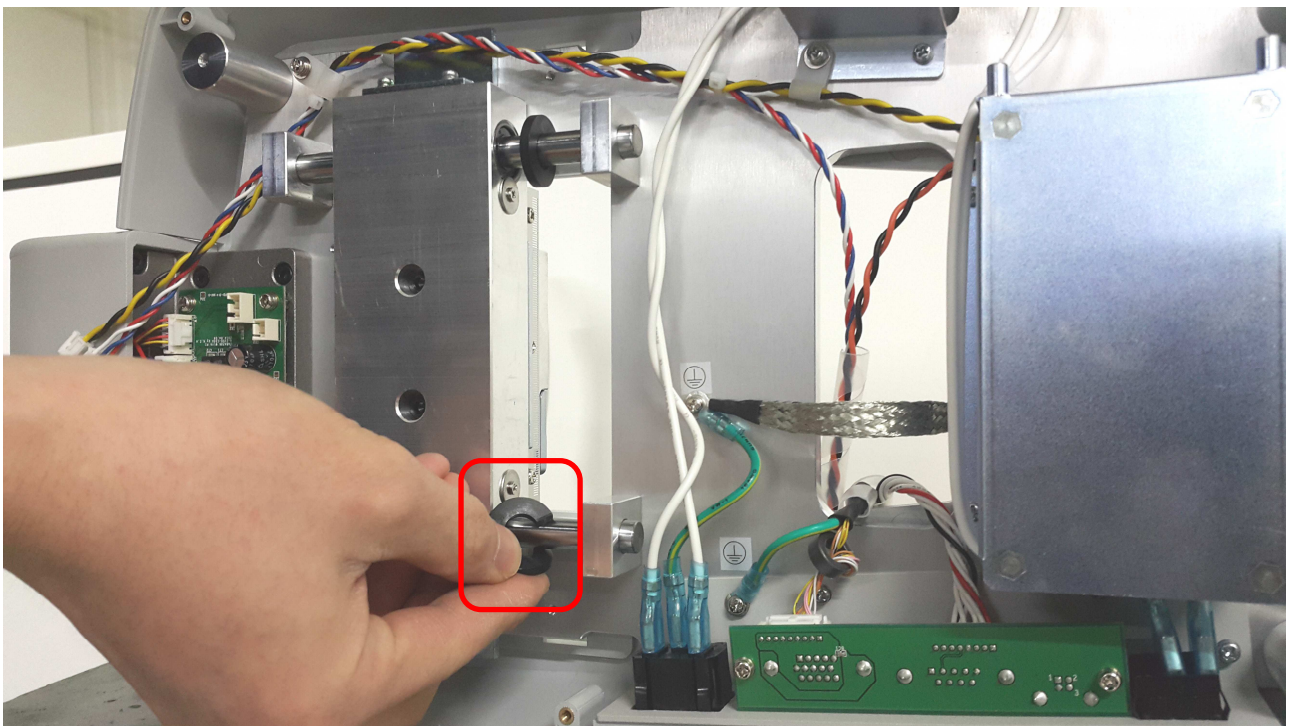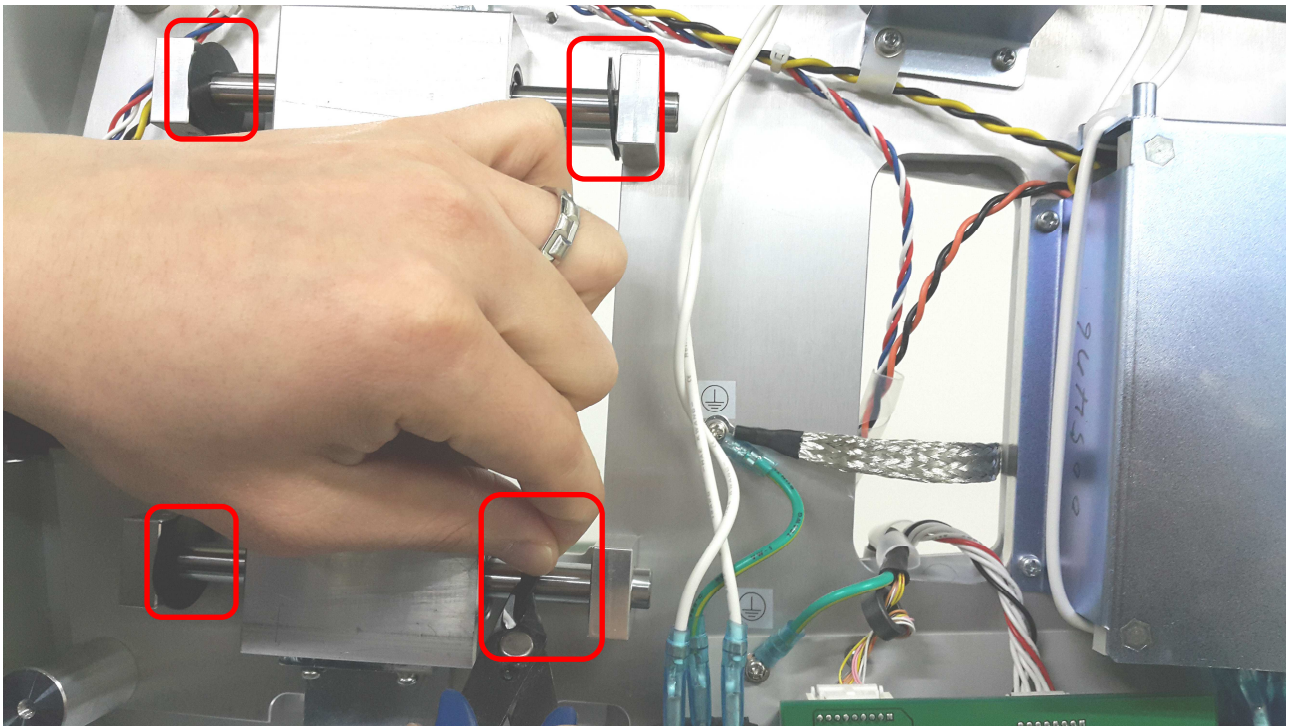
4) Attach 3.2T cushion ring x 4, assemble Bottom Base Plate again and check.

RK-TS7020_How to adjust brightness

1. Turn on PRK-7000 by pressing the second button of left low and the first button of right row at the same time as below image.

2. After entering TOOL MODE, click "LED POWER".

3. Change the value of TARGET LED (NOR) to 010.

4. Press EXIT icon and Yes to save the data.

1. USB driver installation

1) Connect PRK-7000 to PC by using usb cable, and then power on PC as you press the measurement button of PRK-7000. Subsequently, you can see the message indicating that new hardware is detected on your screen(Please refer to the picture below).
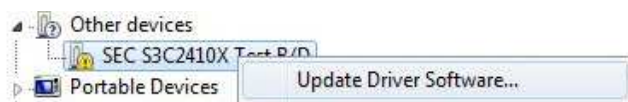
       [Windows XP]   [Windows 7]

2) Install the USB Driver provided from Potec(Open the folder named 'USB Driver').

        [Windows XP]   [Windows 7]

3) Select 'Install from a list or specific location(Advanced)' and 'Browse my computer for driver software' in turn. Designate the folder named 'USB Driver' provided from Potec to complete installation(Refer to the picture above).

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4) Once the installation is completed well, you can see the phrase [USB:OK] as in the picture below when you conduct 'PRK-Manager'.

2. Software Upgrade of PRK-7000

1) Connect PRK-7000 to PC with usb cable and conduct 'PRK-Manager' provided from Potec.

2) You can see the message as below on your screen, once you power on PC as you press the measurement button of PRK-7000

[Windows XP]   [Windows 7]

3) Click download button and then select the upgrade file.(Ex:CRKM1.0o.bin)

4) You can see the message below after the upgrade is completed.
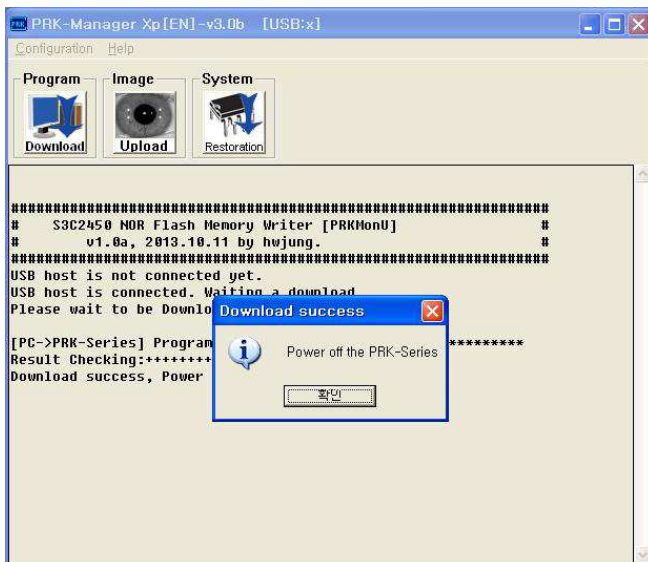
5) Power off and on PRK-7000 and check the software version.

　**Caution : Software upgrade does not work on the following circumstance of PC

- Driver could not be installed on Windows XP, 7, 8, 8.1 64bit. Install it on 32bit circumstance.

- Software upgrade could not be conducted on USB 1.1. Conduct it on, at least, USB 2.0.

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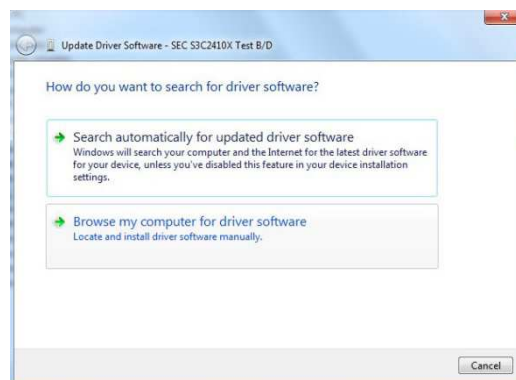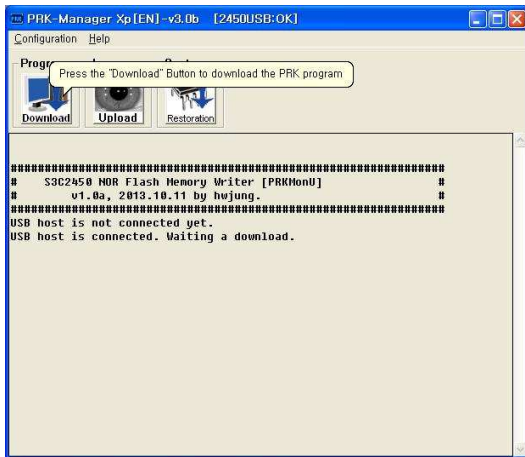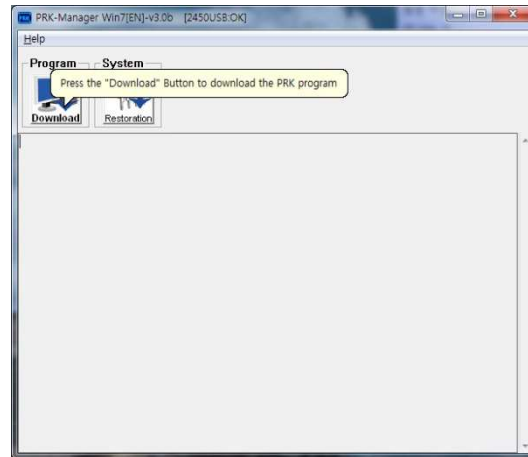2. USB Driver Installation

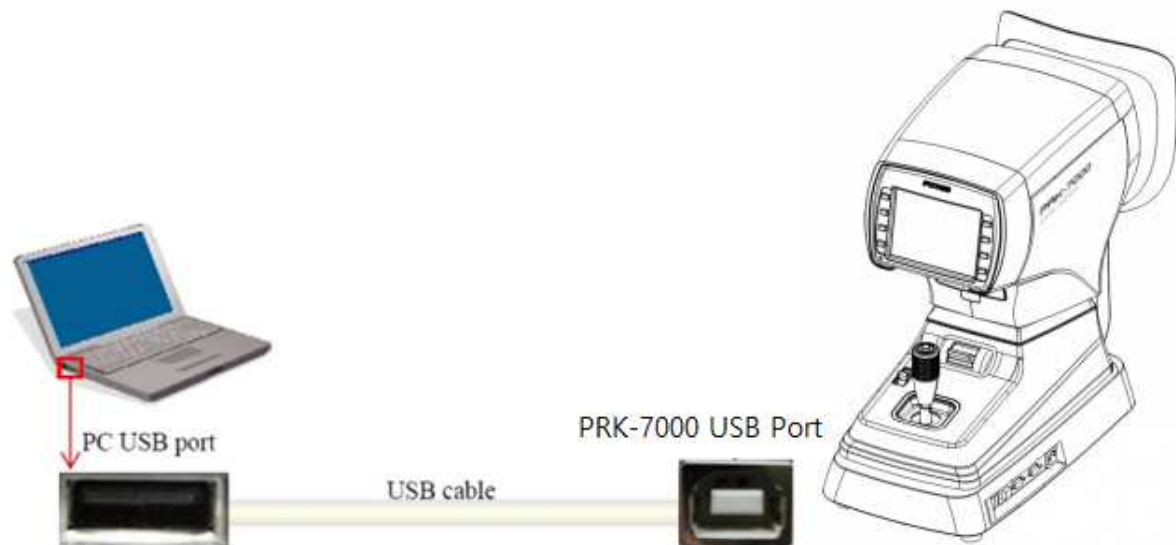5) Connect PRK-7000 to PC by using USB cable. Simultaneously press the measurement button and turn on the power. Then you can see the message indicating that new hardware is detected on your screen.

　　　　　[Windows XP]　　　　　　　　　　　　　[Windows 7]

6) Install the USB Driver provided from Potec.
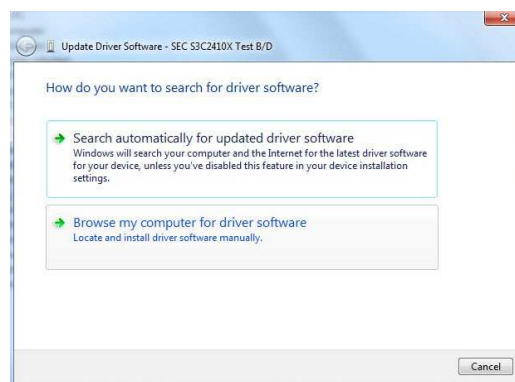
　　　　　　[Windows XP]　　　　　　　　　　　　[Windows 7]

7) Select 'Install from a list or specific location(Advanced)' and 'Browse my computer for driver software' in turn. Designate the folder named 'USB Driver' provided from Potec to complete installation (refer to the picture above).

8) You can see the phrase [USB:OK] as in the picture below when you conduct 'PRK-Manager'.

3. PRK-7000 Data Recovery

   1) Start 'PRK-Manager' while PC and PRK-7000 are connected by USB cable.

   2) Simultaneously touch LCD screen and turn on the power.

   3) Password : L-2 → L1 → R-1 → R2

   4) Move to 'SYSBAR MODE' by pressing measurement button 3times shortly when entering BOOT
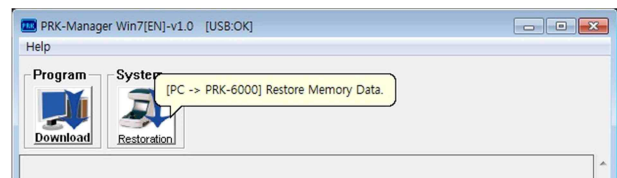
MODE. After that, Press measurement button for 10seconds

5) Start PRK-Manager on PC when you enter to 'SYSVAR RECOVERY' as below.

6) Select "System Restoration" in PRK-Manager and then select the back-up file provided by Potec. Ex.) K7FE06D.bin

[Windows XP]   [Windows 7]

7) After completing it, turn the device off and on..

● Caution : Data Recovery does not work on the following circumstance of PC

- Driver could not be installed on Windows XP, 7, 8, 8.1 64bit. Install it on 32bit.

- It could not be conducted on USB 1.1, Conduct in on at least USB 2.0

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