REPAIR INSTRUCTION

CONTENTS

1. Before Starting the Repair Work

Be sure to read the following precaution before starting the repair work.

1.1 Precaution on Flash High Voltage Circuit

- After the FLASH UNIT is removed, be sure to discharge the main capacitor.
  (Discharging resistor : 1 kΩ, approx. 5 W.)
- First contact the GND ⊖ terminal of the main capacitor with the discharging resistor.
  Then contact the positive ⊕ terminal of the main capacitor.

CAUTION:
Be careful of electric shock because the circuit is the high voltage circuit.

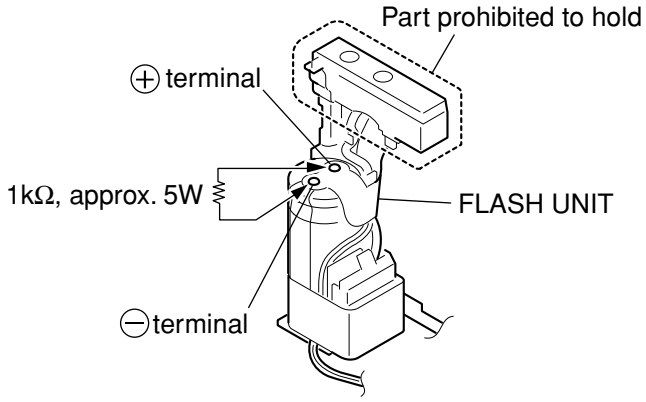


Fig. 1 Precaution on the flash high voltage circuit

1.2 Precaution on Handling Flash

Do not give excessive stress to the light emission part of the FLASH UNIT during repair work.
Doing so could damage the xenon tube, and it causes the malfunction of flashing.

CAUTION:
Do not hold the part indicated in the figure during disassembling and assembling.

1.3 List of Tools

The following tools are used for the re-assembling during service.

List of tools

New	Name of tools	Part No.	Remarks
	Screwdriver (Local Purchase)		
	Tweezers (Local Purchase)		

1.4 List of Supplies

The following supplies are used for the re-assembling during service.

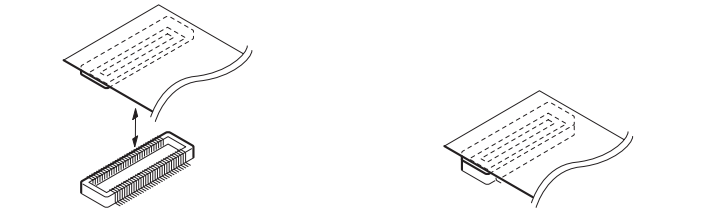
List of supplies

New	Name of supplies	Part No.	Remarks
	ADHESIVE TAPE SONY T4000	CY4-6012-000	Double-sided tape
	ADHESIVE TAPE 3M No.56	CY4-6018-000	Electric insulation Tape
	DIA BOND No. 1663G	CY9-8129-000	

1.5 Connectors for FPC Board

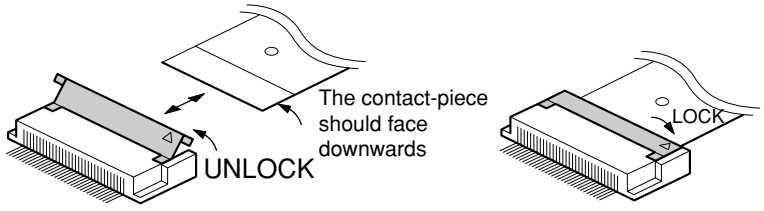
This product is used the three types of the connectors for FPC board.

① Type A



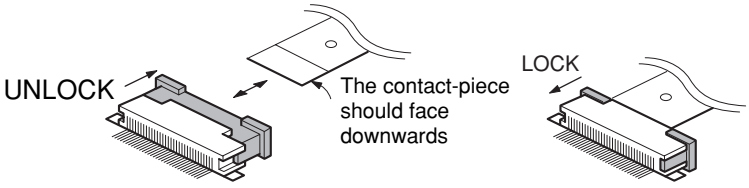
Unconnected state　　Connected state

② Type B



Unlocked state　　Locked state

③ Type C



Unlocked state　　Locked state

Fig. 2 Connectors for FPC board

CAUTIONS:

1. For the connectors of Type B and Type C, make sure to set them to the unlocked state before removing and inserting FPC board. After FPC board is inserted, set them to the locked state.
2. The FPC board is equipped with the holes as shown. Use them for removal and insertion by inserting the tweezers into them as required.

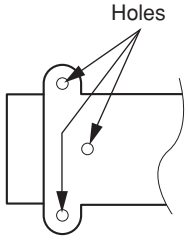
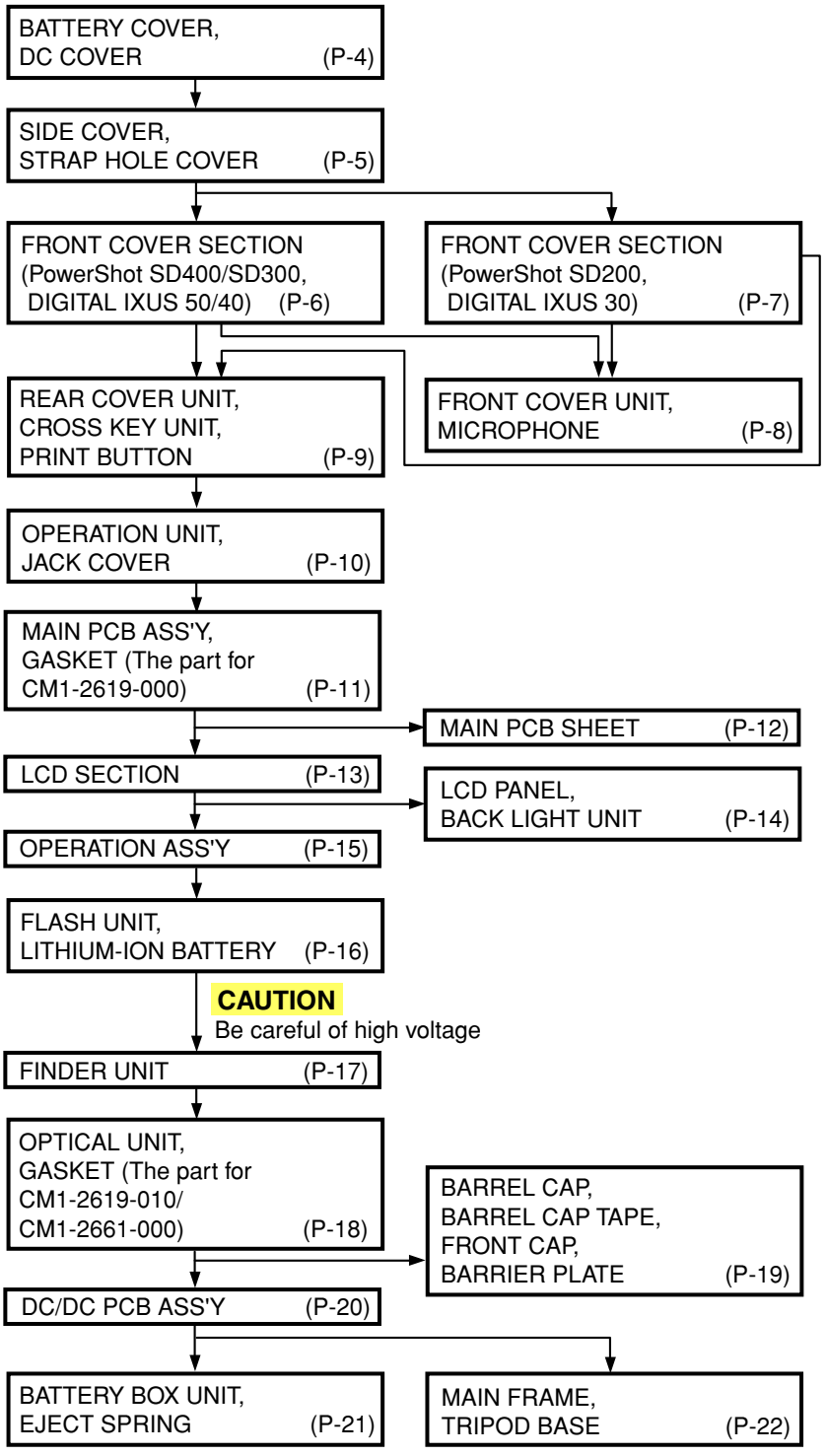


Fig. 3 Holes for removal

2. Disassembly/Assembly

2.1 Procedure

Disassembling procedure of PowerShot SD400/SD300/SD200 and DIGITAL IXUS 50/40/30 is shown by the following flowchart.
Reverse the disassembling procedure to reassemble them. ∗ The pages to refer are shown in parenthesis ( ).



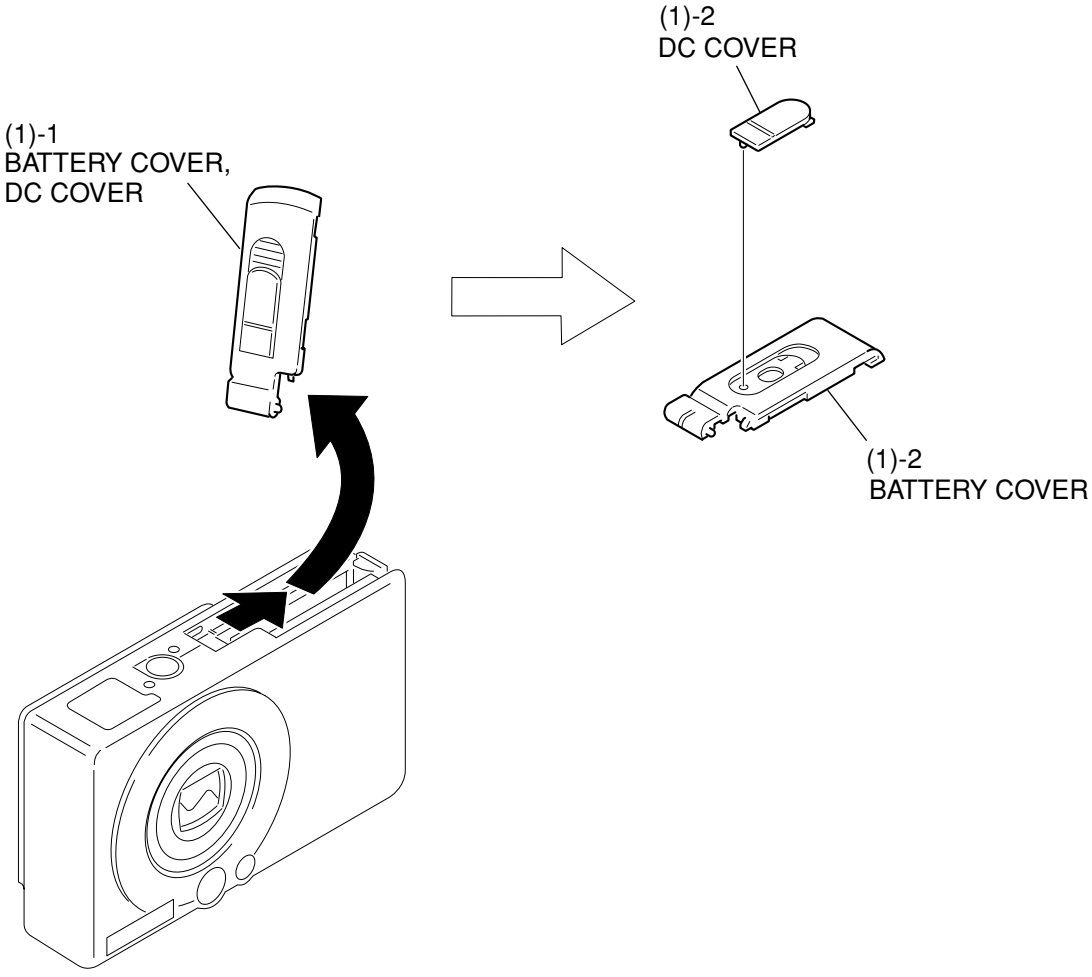


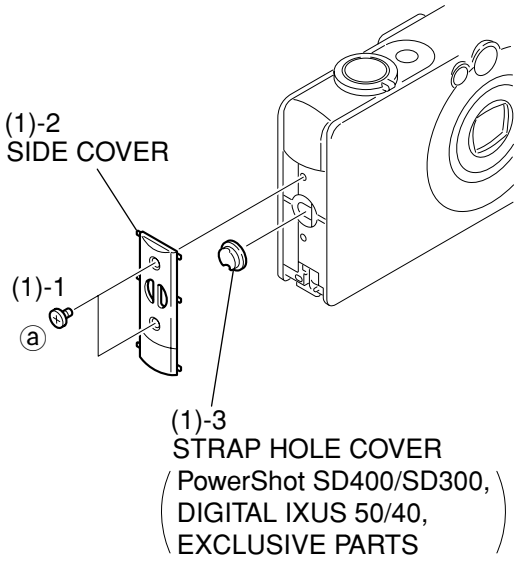
Fig. 4 BATTERY COVER, DC COVER

2.2 BATTERY COVER, DC COVER

(1) BATTERY COVER, DC COVER

1. Slide and twist the BATTERY COVER and DC COVER in the direction of the arrow, then remove them together as an assembled unit from the main unit.
2. Separate the BATTERY COVER and the DC COVER.

(PowerShot SD400/SD300, DIGITAL IXUS 50/40)



(PowerShot SD200, DIGITAL IXUS 30)

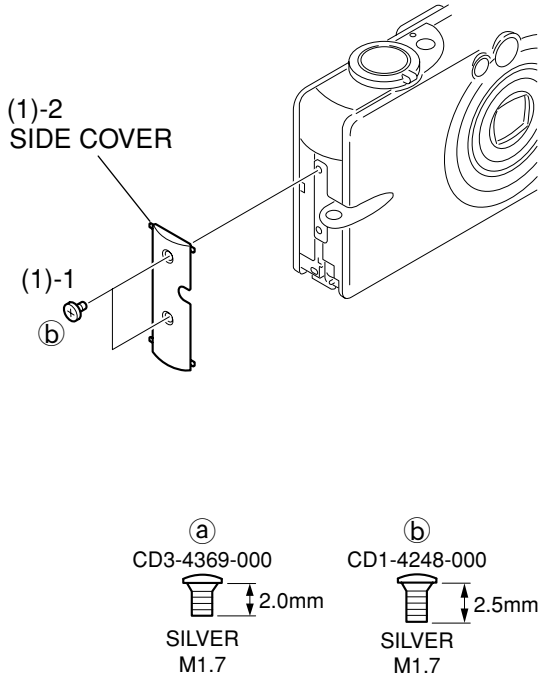


Fig. 5 SIDE COVER, STRAP HOLE COVER

2.3 SIDE COVER, STRAP HOLE COVER

(1) SIDE COVER, STRAP HOLE COVER

(PowerShot SD400/SD300, DIGITAL IXUS 50/40)

1. Remove the screws ⓐ × 2.
2. Remove the SIDE COVER.
3. Remove the STRAP HOLE COVER. (PowerShot SD400/SD300, DIGITAL IXUS 50/40 EXCLUSIVE PARTS)

(PowerShot SD200, DIGITAL IXUS 30)

1. Remove the screws ⓑ × 2.
2. Remove the SIDE COVER.

(PowerShot SD400/SD300, DIGITAL IXUS 50/40)

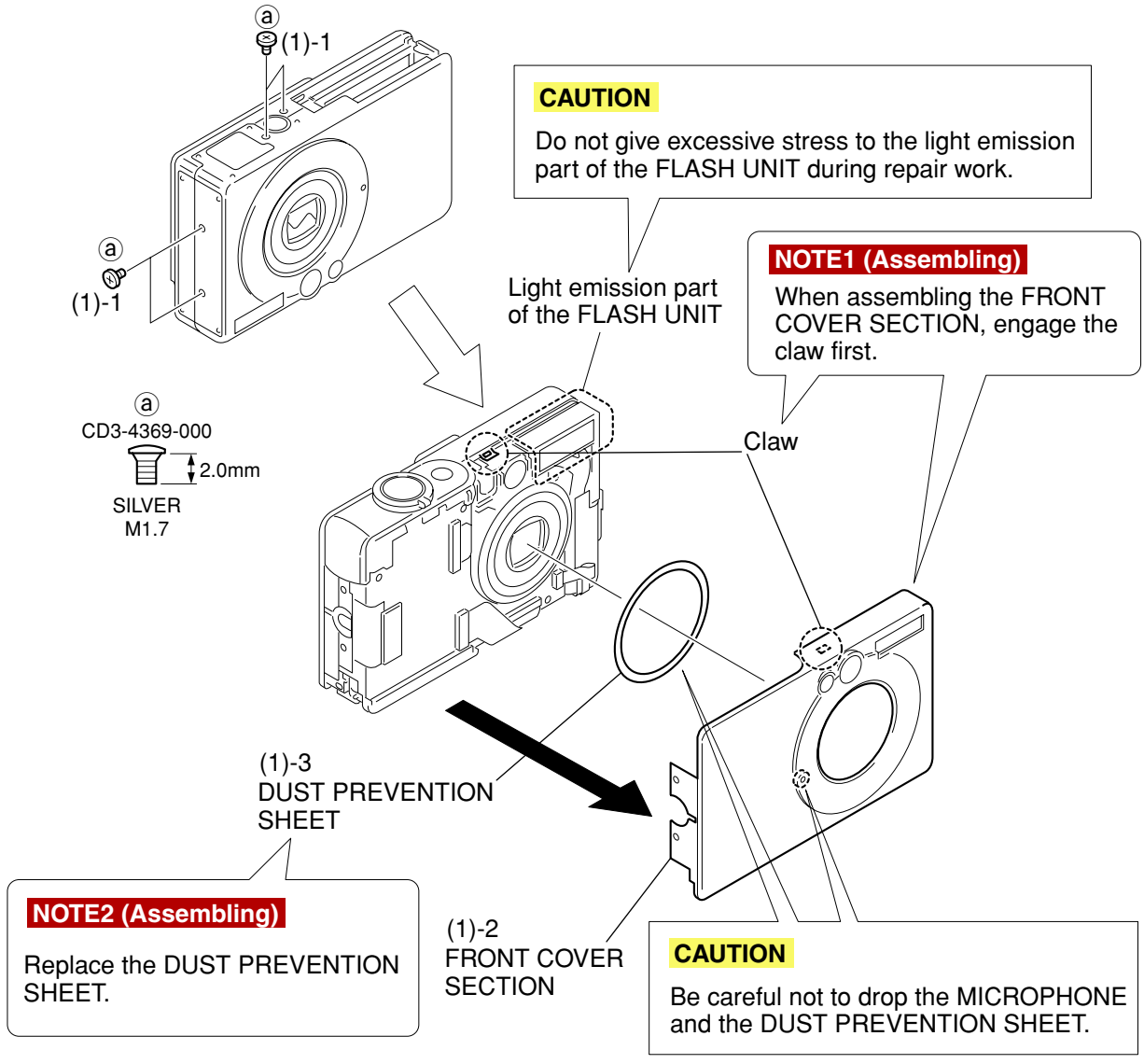


Fig. 6 FRONT COVER SECTION (PowerShot SD400/SD300, DIGITAL IXUS 50/40)

2.4 FRONT COVER SECTION (PowerShot SD400/SD300, DIGITAL IXUS 50/40)

CAUTION

Do not give excessive stress to the light emission part of the FLASH UNIT during repair work.

(1) FRONT COVER SECTION (PowerShot SD400/SD300, DIGITAL IXUS 50/40)

1. Remove the screws ⓐ × 4.
2. Disengage the claw to remove the FRONT COVER SECTION.

CAUTION

Be careful not to drop the MICROPHONE and the DUST PREVENTION SHEET.

NOTE1 (Assembling)

When assembling the FRONT COVER SECTION, engage the claw first.

3. Remove the DUST PREVENTION SHEET.

NOTE2 (Assembling)

Replace the DUST PREVENTION SHEET.

(PowerShot SD200/DIGITAL IXUS 30)

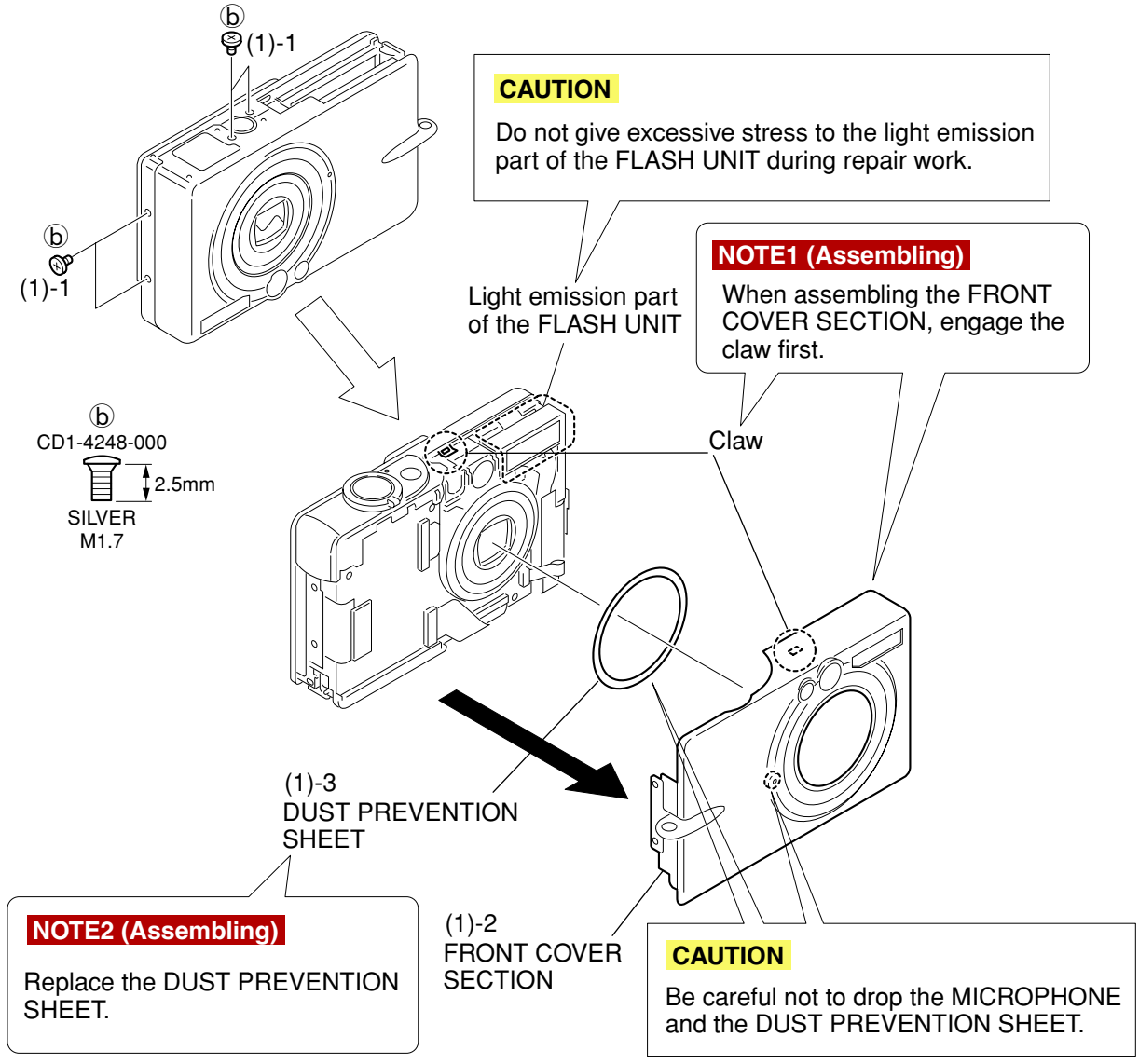


Fig. 7 FRONT COVER SECTION (PowerShot SD200/DIGITAL IXUS 30)

2.5 FRONT COVER SECTION (PowerShot SD200/DIGITAL IXUS 30)

CAUTION

Do not give excessive stress to the light emission part of the FLASH UNIT during repair work.

(1) FRONT COVER SECTION (PowerShot SD200/DIGITAL IXUS 30)

1. Remove the screws ⓑ × 4.
2. Disengage the claw to remove the FRONT COVER SECTION.

CAUTION

Be careful not to drop the MICROPHONE and the DUST PREVENTION SHEET.

NOTE1 (Assembling)

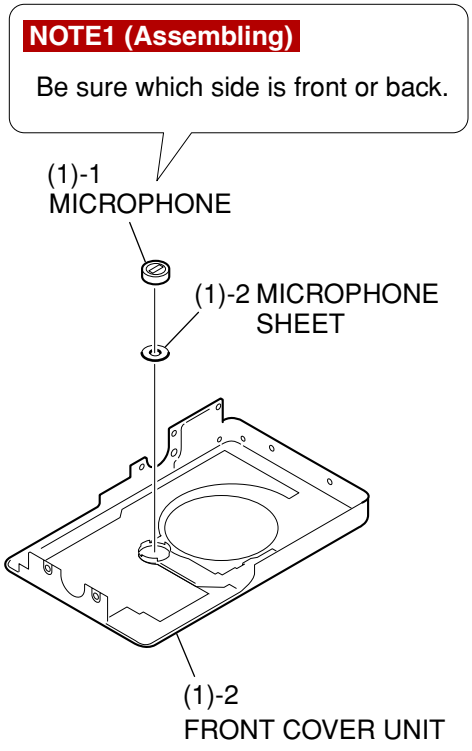
When assembling the FRONT COVER SECTION, engage the claw first.

3. Remove the DUST PREVENTION SHEET.

NOTE2 (Assembling)

Replace the DUST PREVENTION SHEET.

(PowerShot SD400/SD300, DIGITAL IXUS 50/40)



(PowerShot SD200, DIGITAL IXUS 30)

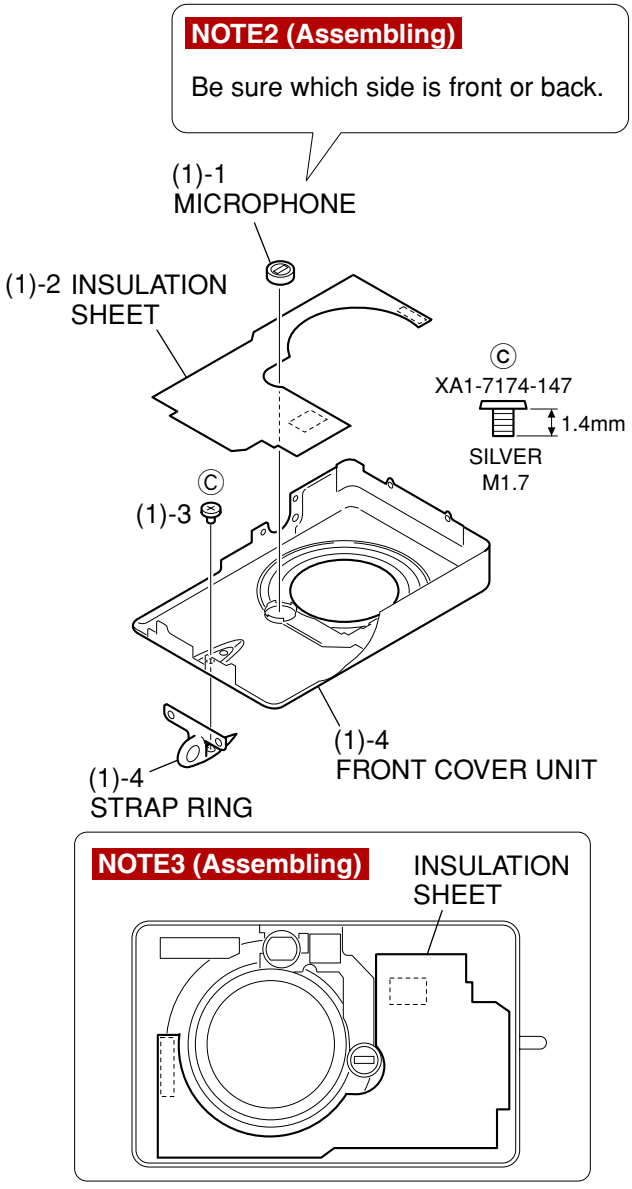


Fig. 8 FRONT COVER UNIT, MICROPHONE

2.6 FRONT COVER UNIT, MICROPHONE

(1) FRONT COVER UNIT, MICROPHONE

(PowerShot SD400/SD300, DIGITAL IXUS 50/40)

1. Remove the MICROPHONE.
2. Separate the MICORPHONE SHEET from the FRONT COVER UNIT.

NOTE1 (Assembling)

Be sure which side is front or back.

(PowerShot SD200, DIGITAL IXUS 30)

1. Remove the MICROPHONE.

NOTE2 (Assembling)

Be sure which side is front or back.

2. Peel off the INSULATION SHEET.

NOTE3 (Assembling)

Attach the INSULATION SHEET at the position as shown in the figure.

3. Remove the screw Ⓒ × 1.
4. Separate the STRAP RING from the FRONT COVER UNIT.

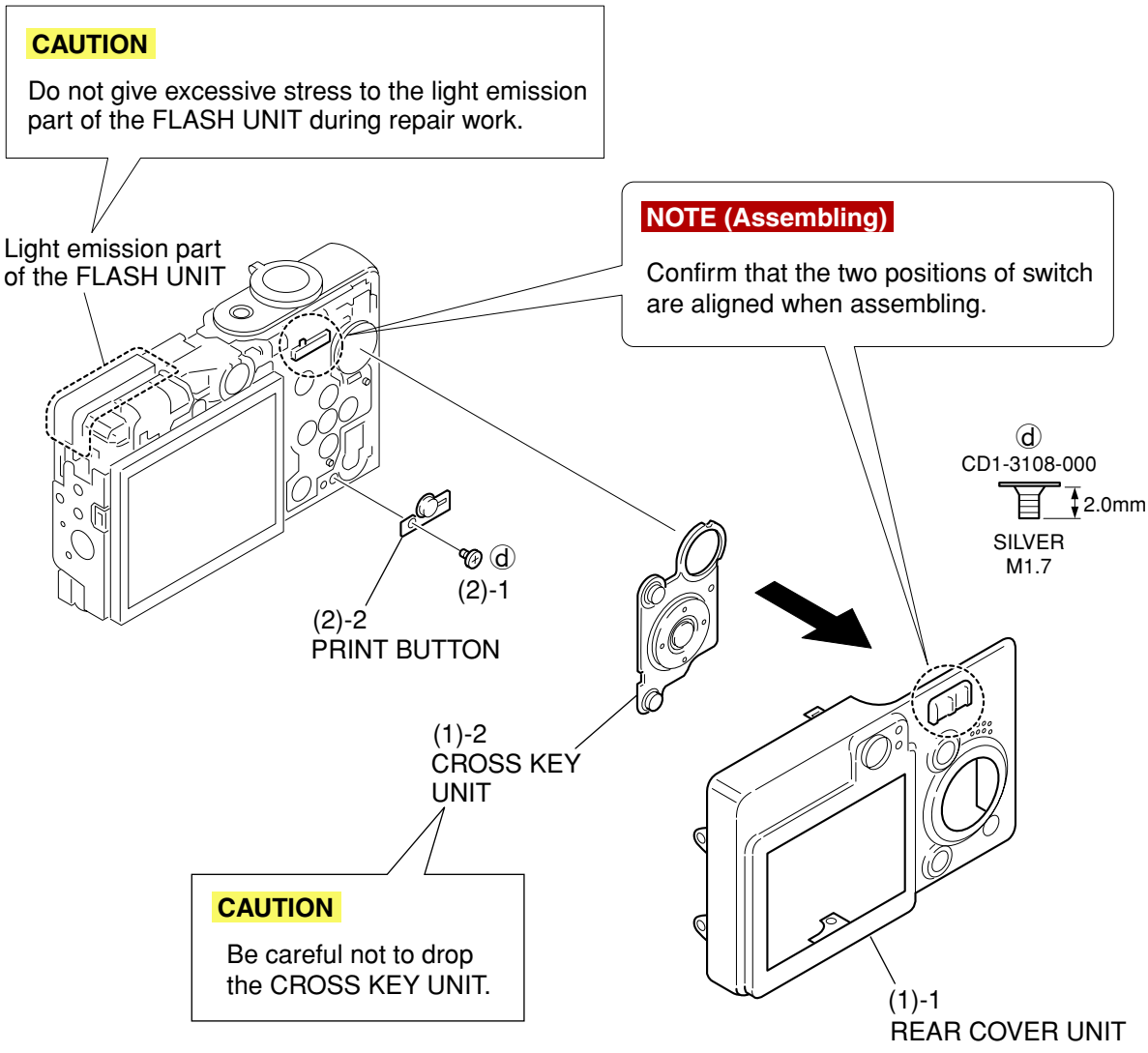


Fig. 9 REAR COVER UNIT, CROSS KEY UNIT, PRINT BUTTON

2.7 REAR COVER UNIT, CROSS KEY UNIT, PRINT BUTTON

CAUTION

Do not give excessive stress to the light emission part of the FLASH UNIT during repair work.

(1) REAR COVER UNIT, CROSS KEY UNIT

1. Remove the REAR COVER UNIT.

CAUTION

Be careful not to drop the CROSS KEY UNIT.

NOTE (Assembling)

Confirm that the two positions of switch are aligned when assembling.

2. Remove the CROSS KEY UNIT.

(2) PRINT BUTTON

1. Remove the screw ⓓ × 1.
2. Remove the PRINT BUTTON.

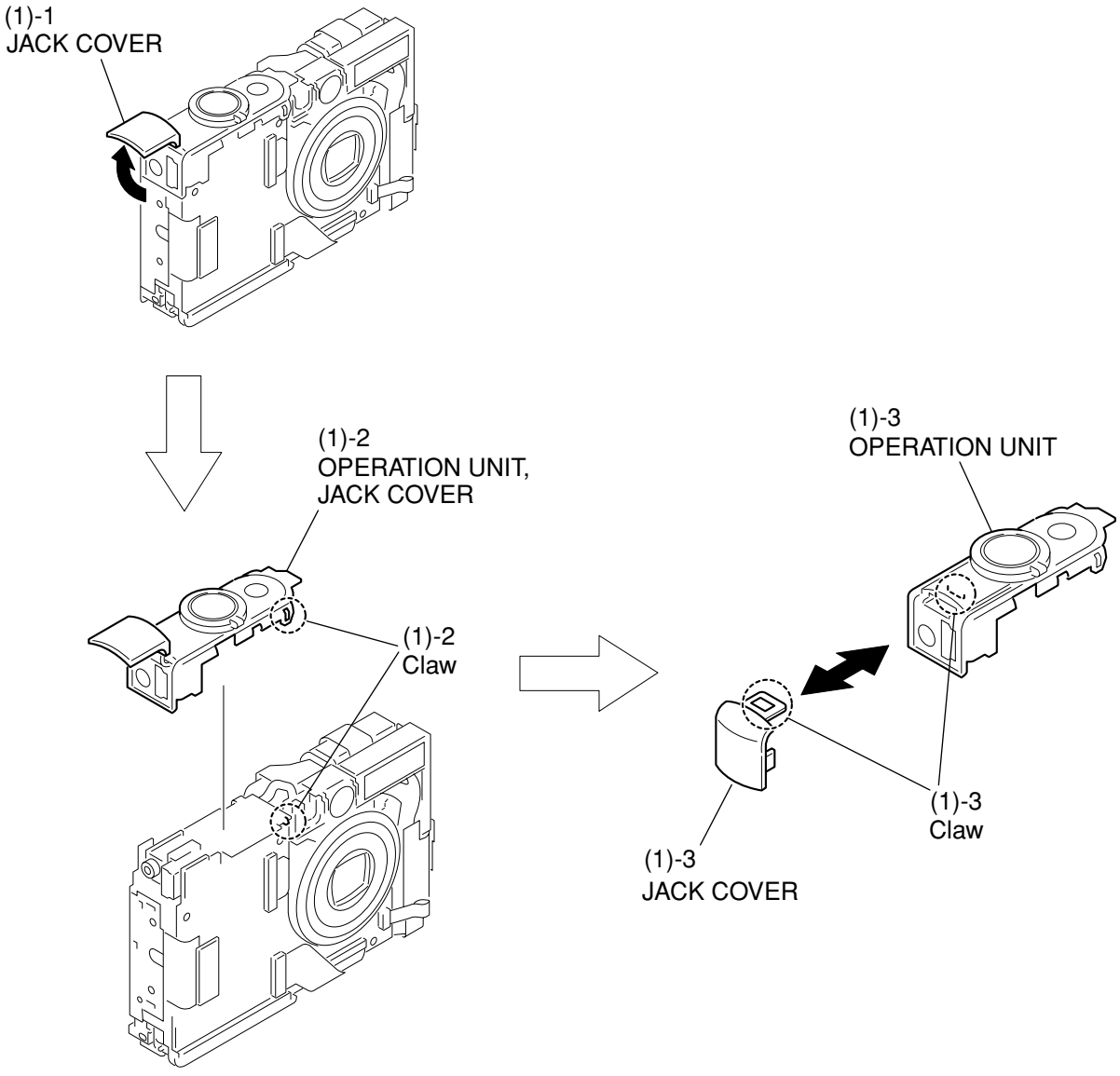


Fig. 10 OPERATION UNIT, JACK COVER

2.8 OPERATION UNIT, JACK COVER

(1) OPERATION UNIT, JACK COVER

1. Open the JACK COVER.
2. Disengage the claw, and remove the OPERATION UNIT and the JACK COVER together as an assembled unit.
3. Disengage the claw, and separate the JACK COVER from the OPERATION UNIT.

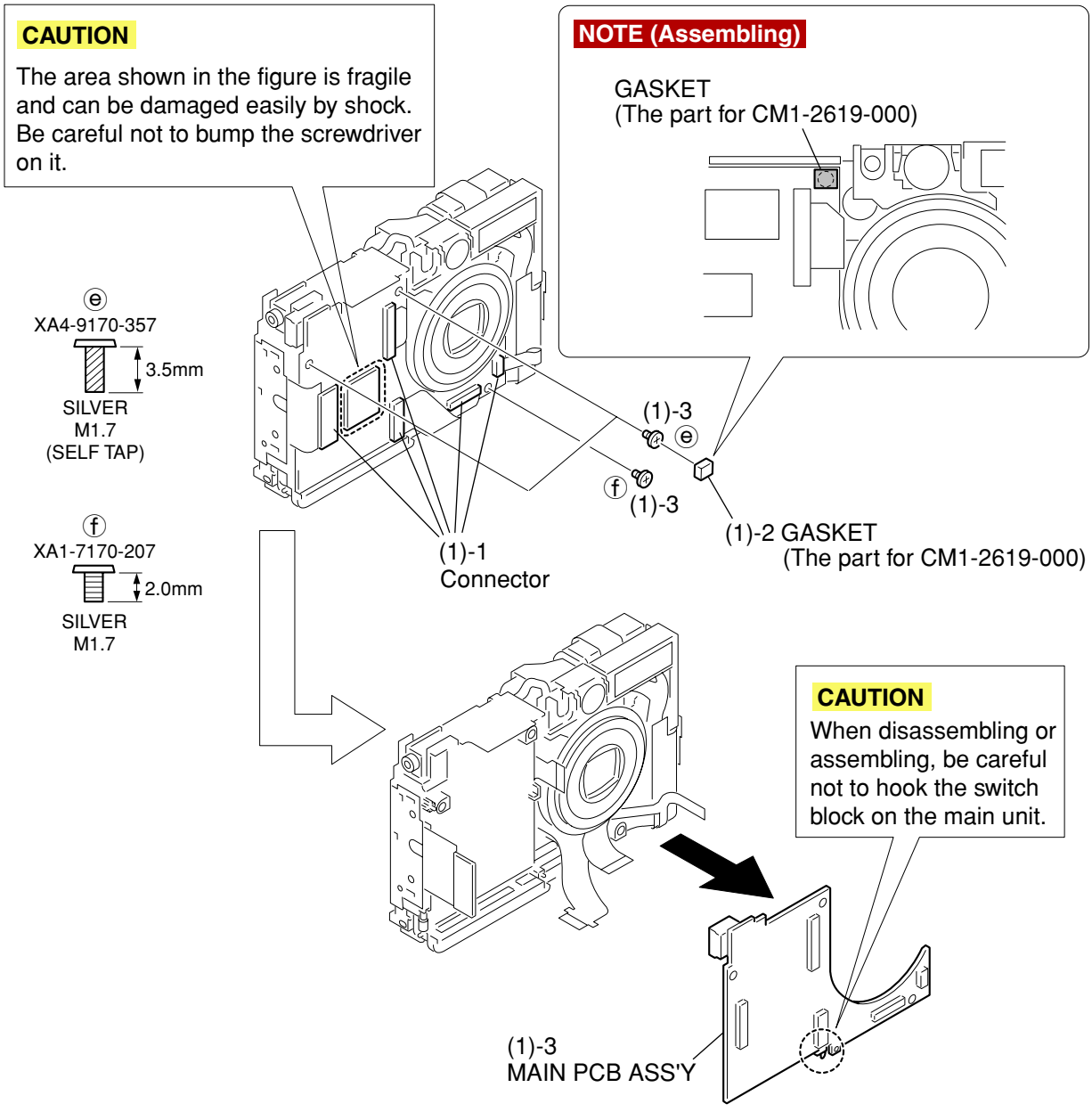


Fig. 11 MAIN PCB ASS'Y, GASKET (The part for CM1-2619-000)

2.9 MAIN PCB ASS'Y, GASKET (The part for CM1-2619-000)

(1) MAIN PCB ASS'Y, GASKET (The part for CM1-2619-000)

CAUTION

The area shown in the figure is fragile and can be damaged easily by shock. Be careful not to bump the screwdriver on it.

1. Disconnect the five connectors.
2. Peel off the GASKET (The part for CM1-2619-000).

NOTE (Assembling)

When the OPTICAL UNIT whose part number is CM1-2619-000 is used, attach the GASKET at the position as shown in the figure.

This GASKET is different from what is attached to the OPTICAL UNIT.

3. Remove the screws ⓔ × 2 and ⓕ × 1.
4. Remove the MAIN PCB ASS'Y.

CAUTION

When disassembling or assembling, be careful not to hook the switch block on the main unit.

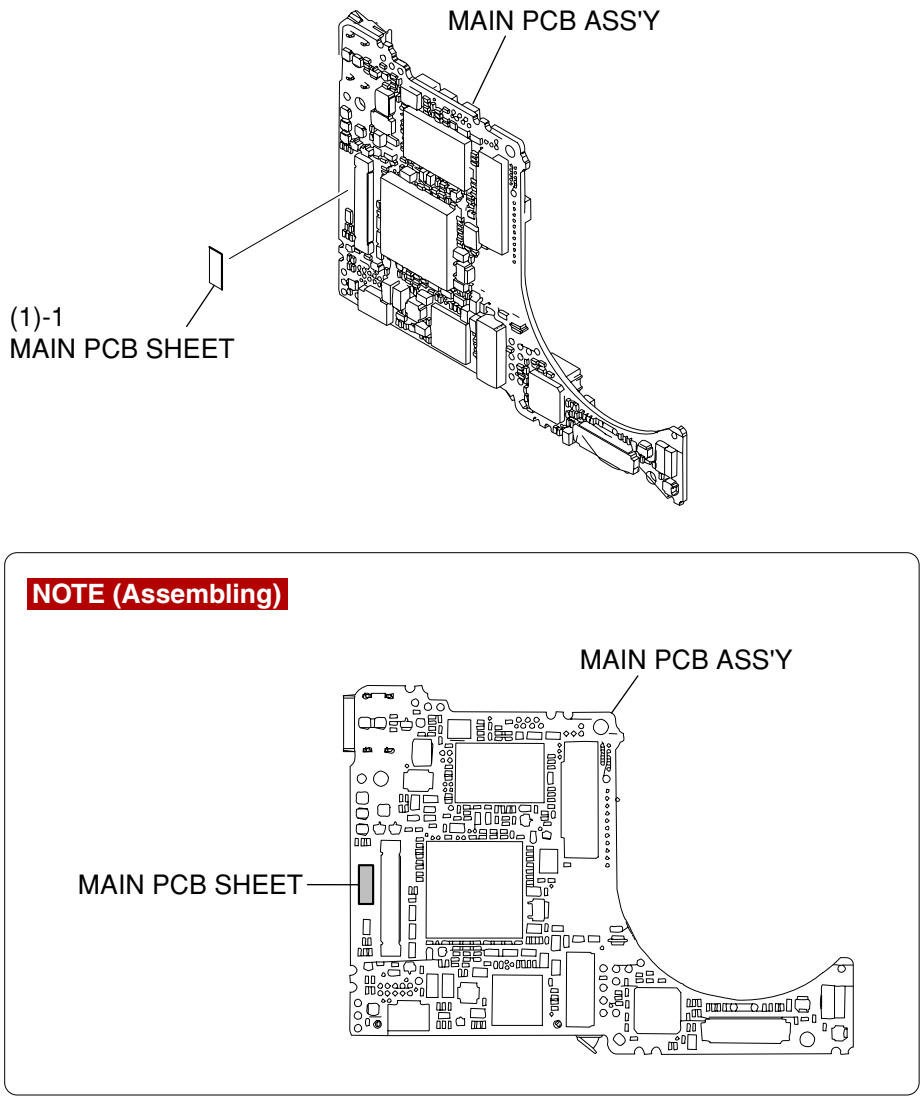


Fig. 12 MAIN PCB SHEET

2.10 MAIN PCB SHEET

(1) MAIN PCB SHEET

1. Peel off the MAIN PCB SHEET.

NOTE (Assembling)

Attach the MAIN PCB SHEET in the position shown in the figure.

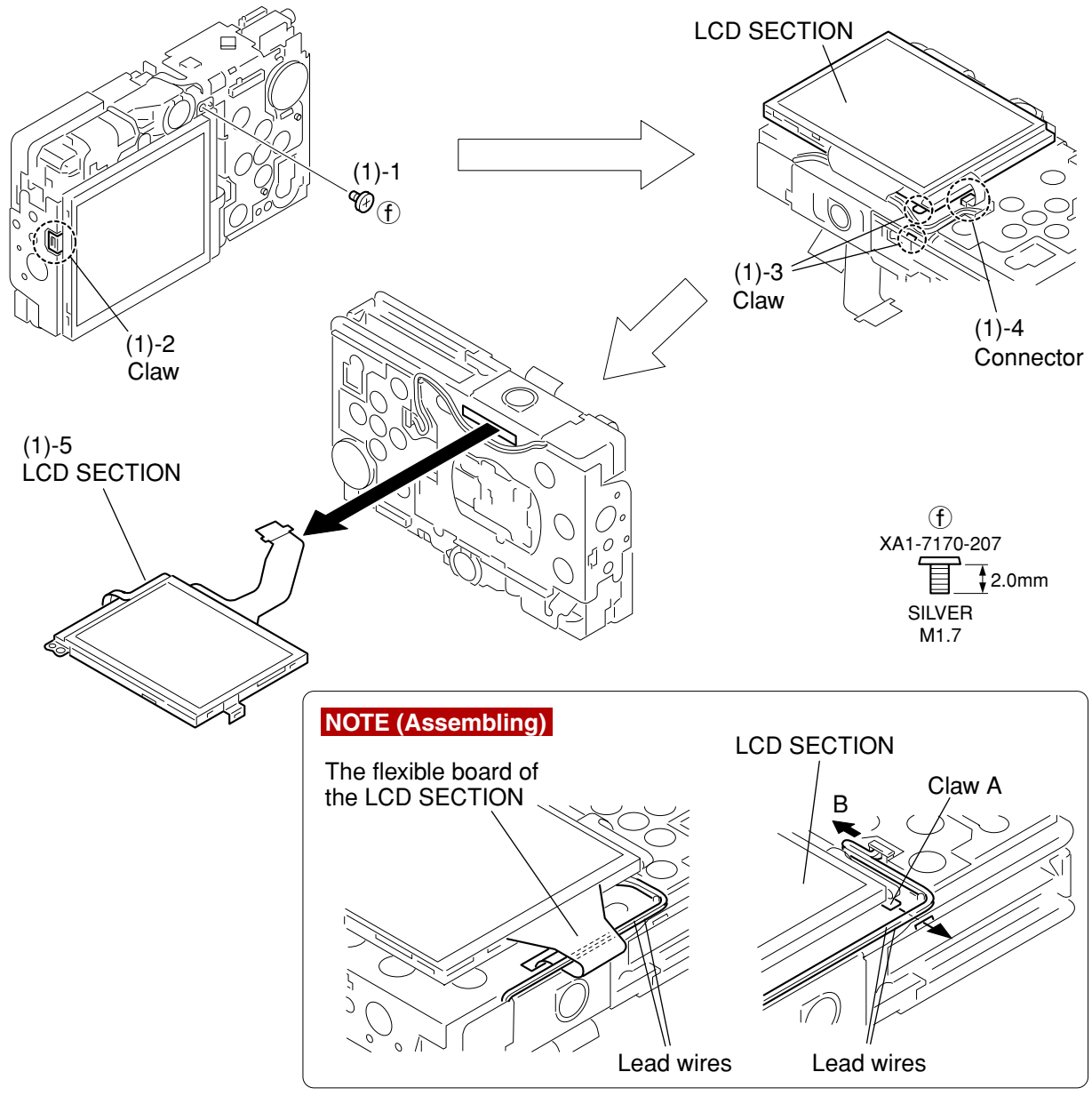


Fig. 13 LCD SECTION

2.11 LCD SECTION

(1) LCD SECTION

1. Remove the screw ⓕ×1.
2. Disengage the claw.
3. Disengage the claw.
4. Disconnect the connecter while lifting the LCD SECTION.
5. Remove the LCD SECTION.

NOTE (Assembling)

Route the flexible board of the LCD SECTION as shown in the figure. Install the LCD SECTION in the main unit in order that the claw A goes under the lead wires. In doing so, pull the lead wires in the direction of the arrow B to remove slack.

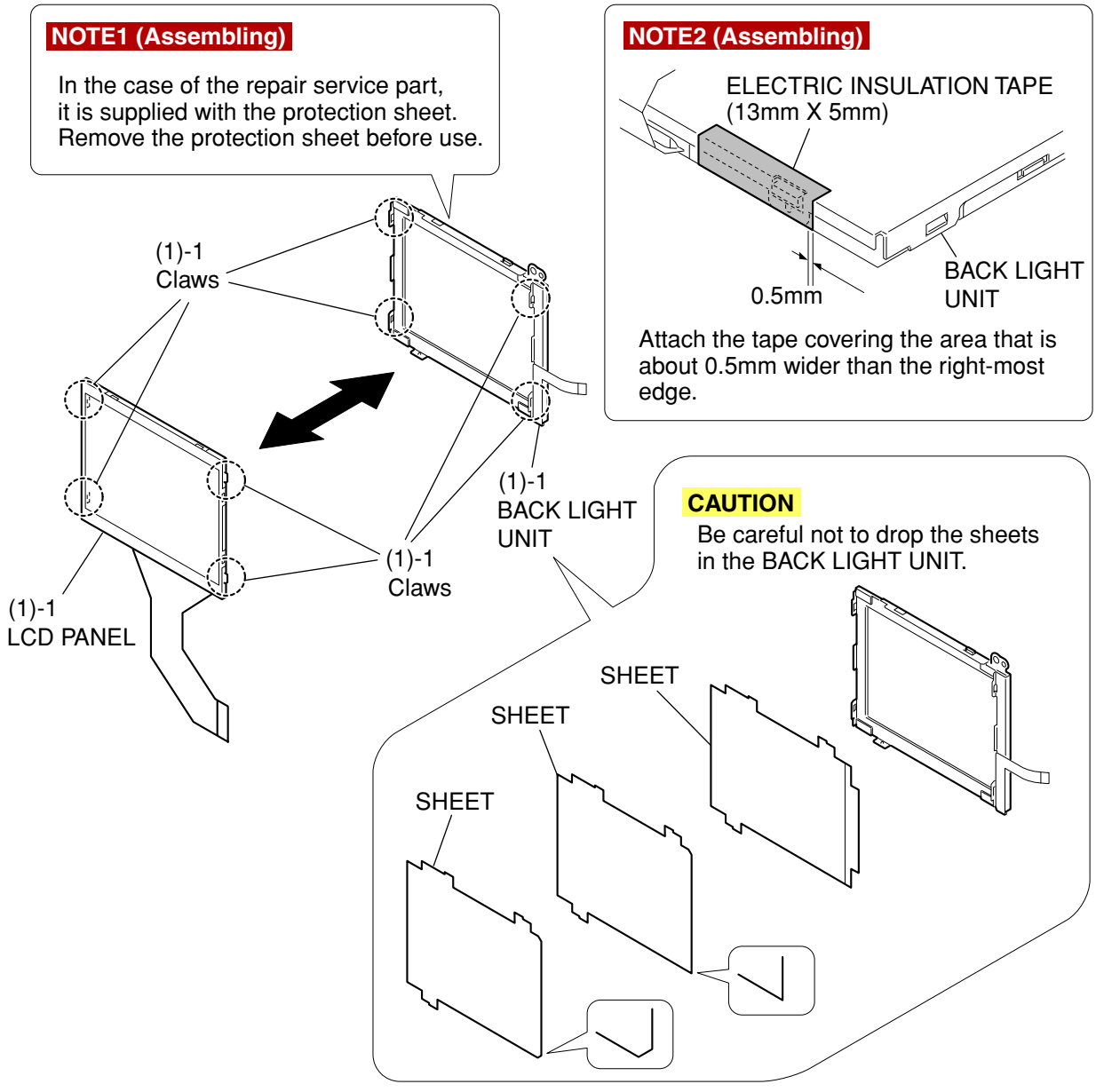


Fig. 14 LCD PANEL, BACK LIGHT UNIT

2.12 LCD PANEL, BACK LIGHT UNIT

(1) LCD PANEL, BACK LIGHT UNIT

1. Disengage the four claws, and separate the LCD PANEL and the BACK LIGHT UNIT.

CAUTION

Be careful not to drop the sheets in the BACK LIGHT UNIT.

NOTE1 (Assembling)

In the case of the repair service part, it is supplied with the protection sheet.
Remove the protection sheet before use.

NOTE2 (Assembling)

Attach the ELECTRIC INSULATION TAPE (13mm × 5mm) at the position as shown in the figure.

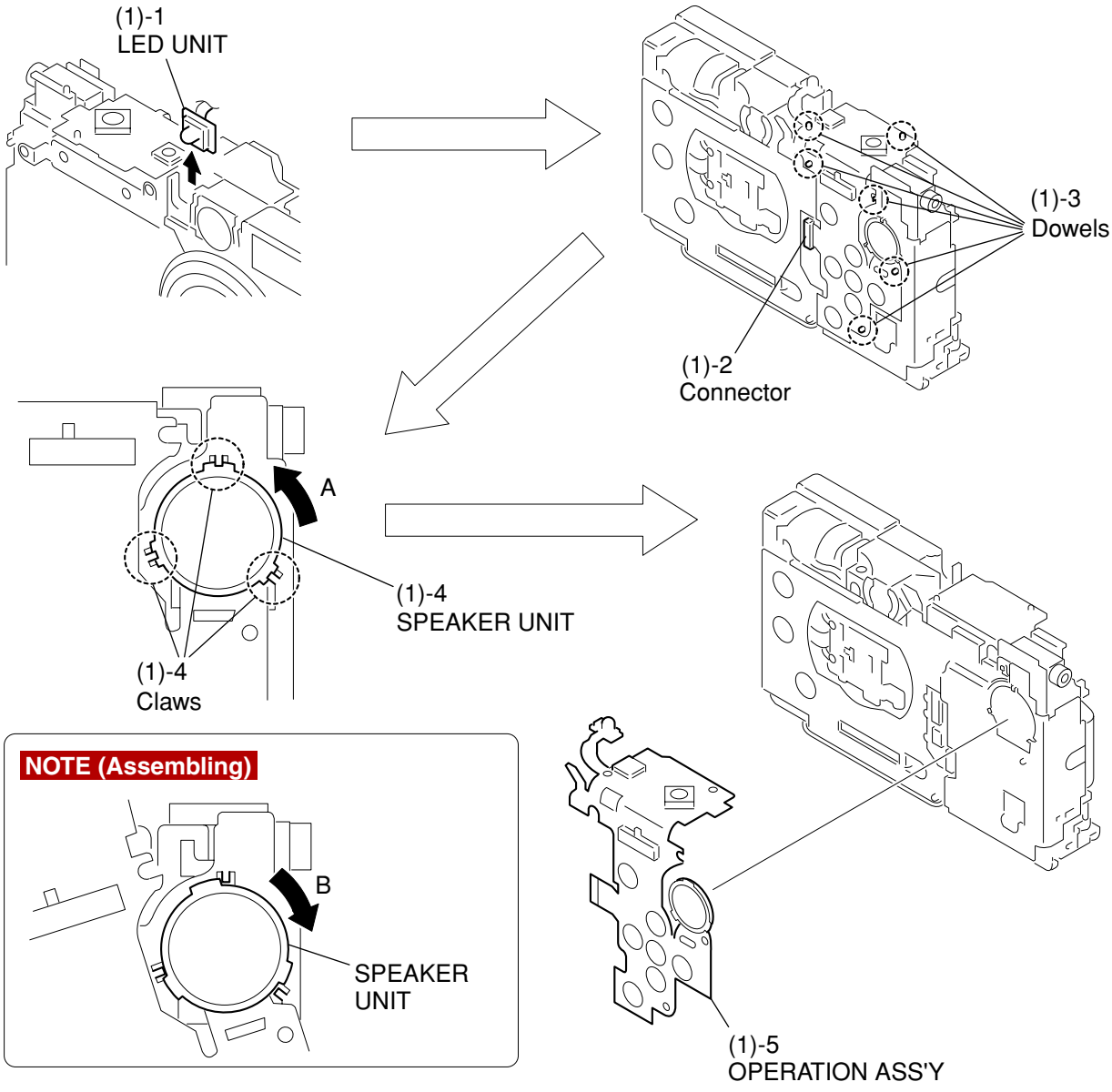


Fig. 15 OPERATION ASS'Y

2.13 OPERATION ASS'Y

(1) OPERATION ASS'Y

1. Remove the LED UNIT.
2. Disconnect the connector.
3. Disengage the six dowels.
4. Rotate the SPEAKER UNIT in the direction of the arrow A to disengage the three claws.

NOTE (Assembling)

When assembling, rotate the SPEAKER UNIT in the direction of the arrow B to engage it to the three claws.

5. Remove the OPERATION ASS'Y.

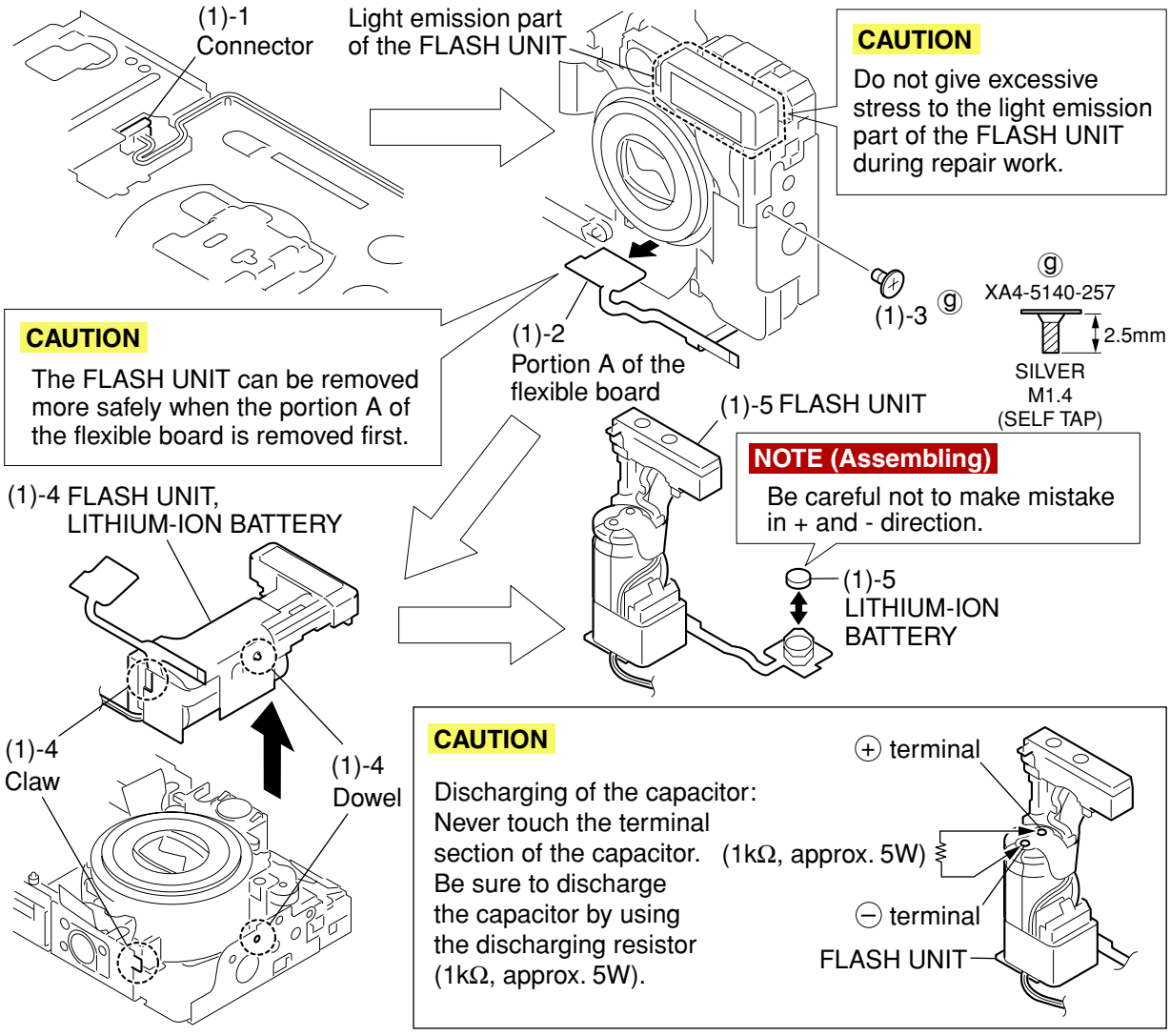


Fig. 16 FLASH UNIT, LITHIUM-ION BATTERY

2.14 FLASH UNIT, LITHIUM-ION BATTERY

CAUTION

Do not give excessive stress to the light emission part of the FLASH UNIT during repair work.

(1) FLASH UNIT, LITHIUM-ION BATTERY

1. Disconnect the connector.
2. Pull out the portion A of the flexible board.

CAUTION

The FLASH UNIT can be removed more safely when the portion A of the flexible board is removed first.

3. Remove the screw ⓖ × 1.
4. Disengage the dowel and the claw to remove the FLASH UNIT and the LITHIUM-ION BATTERY together as an assembled unit.

CAUTION

Never touch the terminal section of the capacitor. Be sure to discharge the capacitor by using the discharging resistor (1kΩ, approx. 5W).

5. Separate the FLASH UNIT and the LITHIUM-ION BATTERY.

NOTE (Assembling)

Be careful not to make mistake in + and - direction.

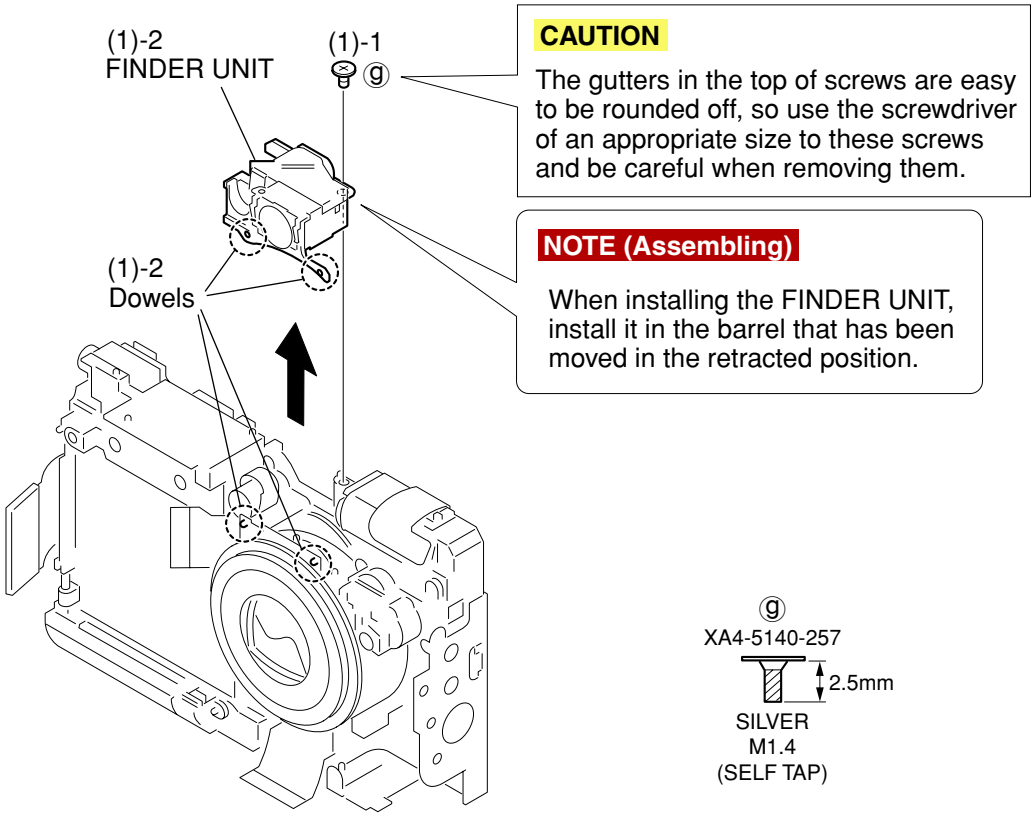


Fig. 17 FINDER UNIT

2.15 FINDER UNIT

(1) FINDER UNIT

1. Remove the screw ⓖ × 1.

CAUTION

The gutters in the top of screws are easy to be rounded off, so use the screwdriver of an appropriate size to these screws and be careful when removing them.

2. Disengage the two dowels to remove the FINDER UNIT.

NOTE (Assembling)

When installing the FINDER UNIT, install it in the barrel that has been moved in the retracted position.

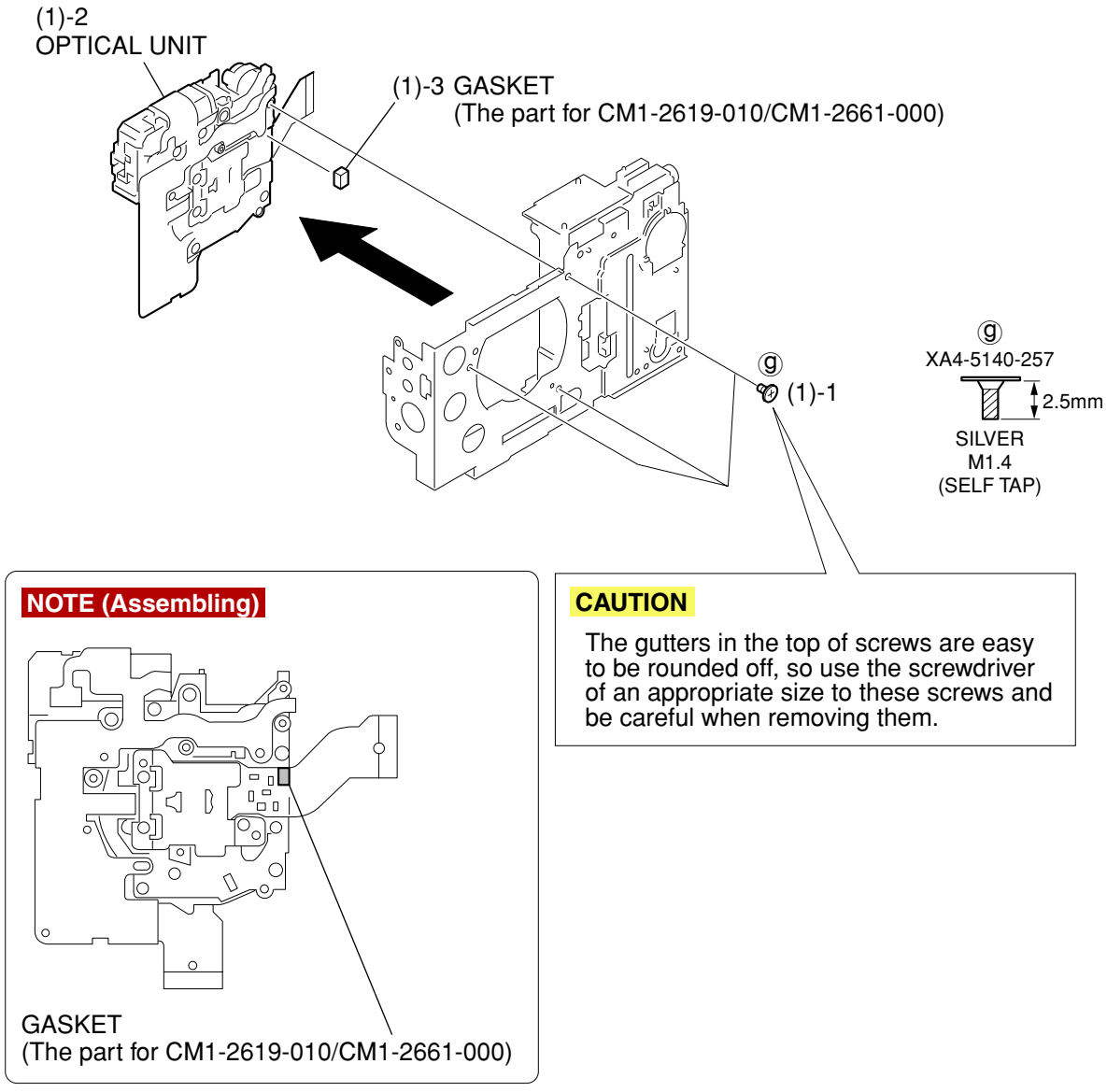


Fig.18 OPTICAL UNIT, GASKET (The part for CM1-2619-010/CM1-2661-000)

2.16 OPTICAL UNIT, GASKET (The part for CM1-2619-010/CM1-2661-000)

(1) OPTICAL UNIT, GASKET (The part for CM1-2619-010/CM1-2661-000)

1. Remove the screws ⓖ × 3.
2. Remove the OPTICAL UNIT.

CAUTION

The gutters in the top of screws are easy to be rounded off, so use the screwdriver of an appropriate size to these screws and be careful when removing them.

3. Peel off the GASKET.

NOTE (Assembling)

When the OPTICAL UNIT whose part number is CM1-2619-010 or CM1-2661-000 is used, attach the GASKET in the position shown in the figure. The GASKET shown in this figure is different from what is attached to the head of the screw fixing the MAIN PCB ASS'Y.

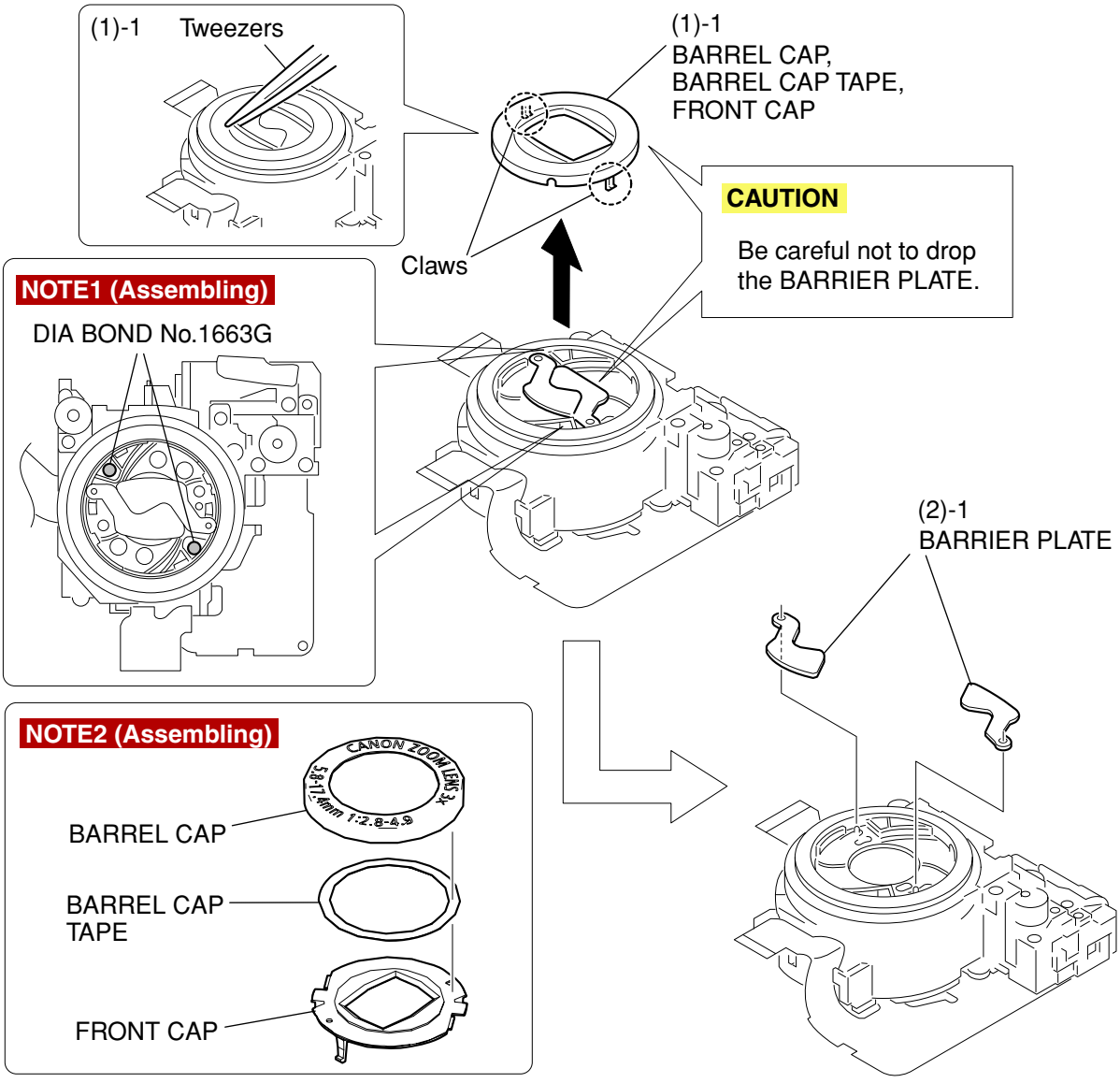


Fig. 19 BARREL CAP, BARREL CAP TAPE, FRONT CAP, BARRIER PLATE

2.17 BARREL CAP, BARREL CAP TAPE, FRONT CAP, BARRIER PLATE

(1) BARREL CAP, BARREL CAP TAPE, FRONT CAP

1. Insert the tweezers inside of the FRONT CAP as shown in the figure. Disengage the two claws with the tweezers from the positions attached with DIA BOND and remove the BARREL CAP, BARREL CAP TAPE and FRONT CAP together as an assembled unit.

CAUTION

Be careful not to drop the BARRIER PLATE.

NOTE1 (Assembling)

Apply the DIA BOND No.1663G to the position as shown in the figure.

NOTE2 (Assembling)

Assemble the BARREL CAP, BARREL CAP TAPE and FRONT CAP as shown in the figure.

(2) BARRIER PLATE

1. Remove the two pieces of BARRIER PLATES.

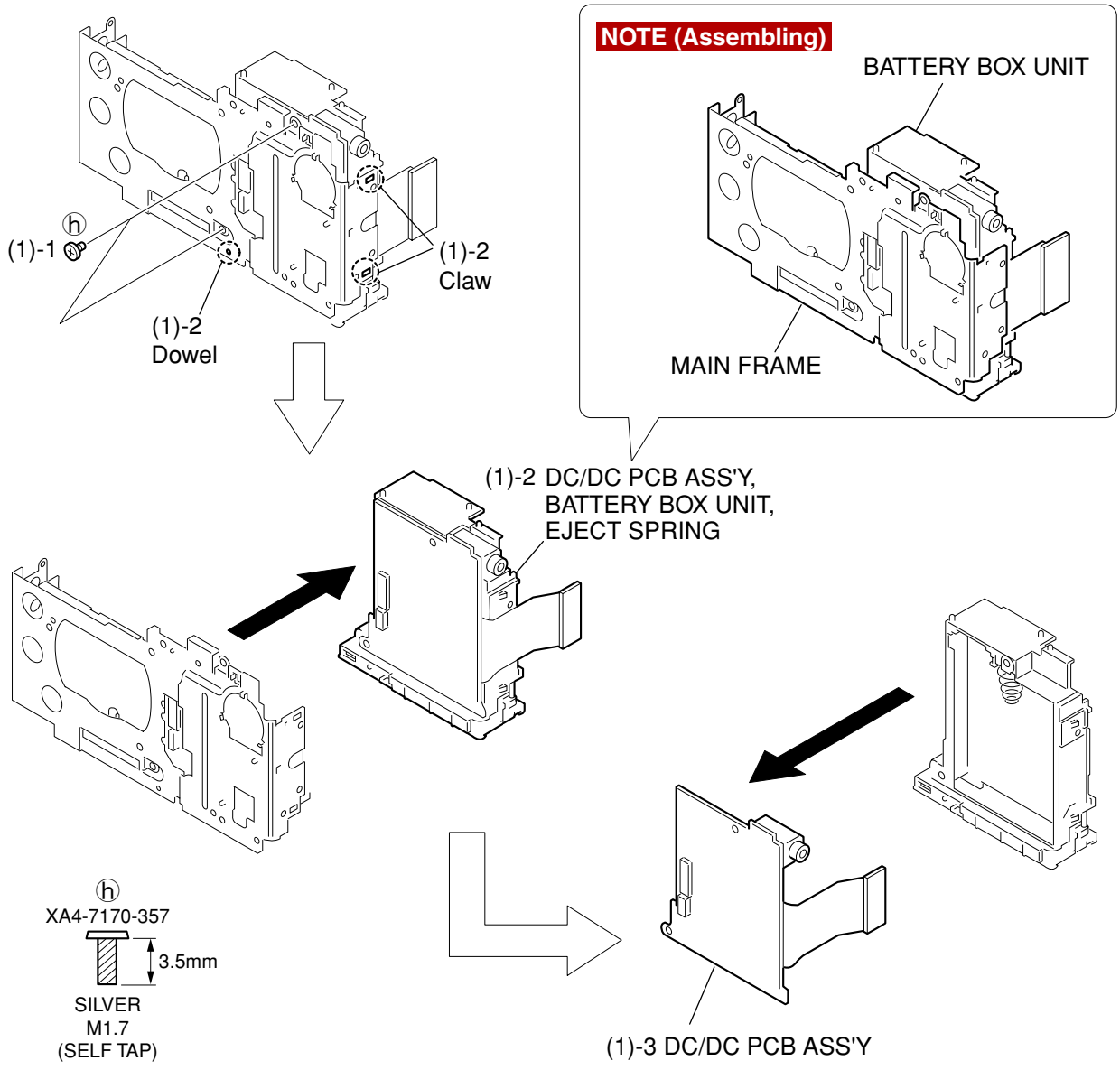


Fig. 20 DC/DC PCB ASS'Y

2.18 DC/DC PCB ASS'Y

(1) DC/DC PCB ASS'Y

1. Remove the screws ⓗ × 2.
2. Disengage the dowel and two claws to remove the DC/DC PCB ASS'Y, the BATTERY BOX UNIT and the EJECT SPRING together as an assembled unit.

NOTE (Assembling)

Install the BATTERY BOX UNIT tightly and securely to the MAIN FRAME.

3. Remove the DC/DC PCB ASS'Y.

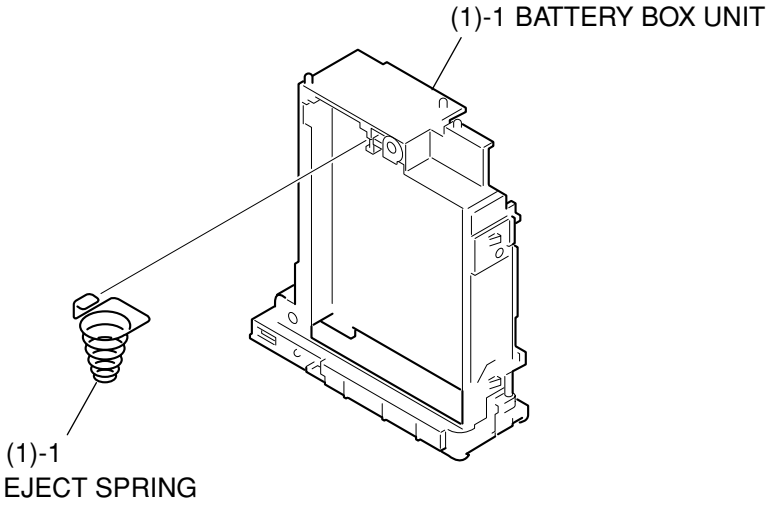


Fig. 21 BATTERY BOX UNIT, EJECT SPRING

2.19 BATTERY BOX UNIT, EJECT SPRING

(1) BATTERY BOX UNIT, EJECT SPRING

1. Separate the EJECT SPRING from the BATTERY BOX UNIT.

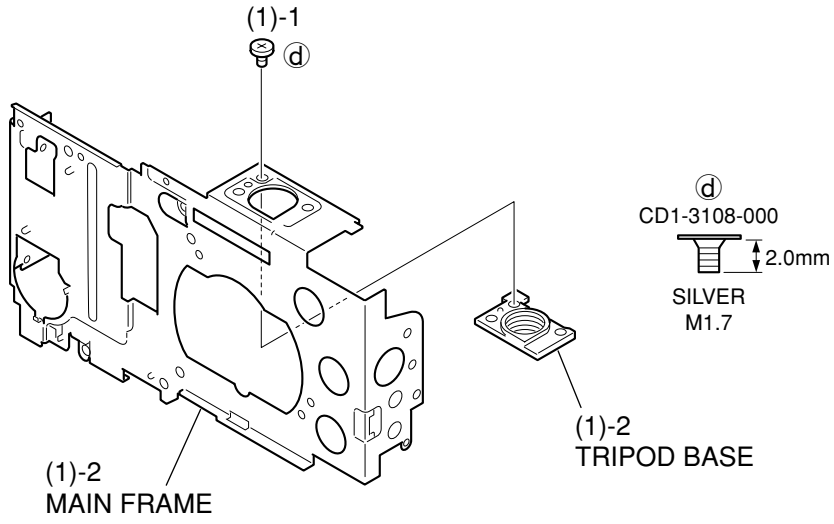


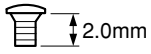
Fig. 22 MAIN FRAME, TRIPOD BASE

2.20 MAIN FRAME, TRIPOD BASE

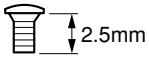
(1) MAIN FRAME, TRIPOD BASE

1. Remove the screw ⓓ × 1.
2. Separate the MAIN FRAME and the TRIPOD BASE.

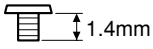
2.21 Screw List

ⓐ
CD3-4369-000


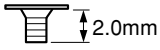
SILVER
M1.7

ⓑ
CD1-4248-000


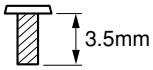
SILVER
M1.7

ⓒ
XA1-7174-147


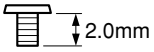
SILVER
M1.7

ⓓ
CD1-3108-000


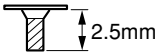
SILVER
M1.7

ⓔ
XA4-9170-357


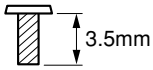
SILVER
M1.7
(SELF TAP)

ⓕ
XA1-7170-207


SILVER
M1.7

ⓖ
XA4-5140-257


SILVER
M1.4
(SELF TAP)

ⓗ
XA4-7170-357


SILVER
M1.7
(SELF TAP)

3. Adjustments

3.1 Replacement Parts and Adjustment Items

PowerShot SD400 and DIGITAL IXUS 50 requires electrical adjustments when certain parts are replaced.
The table below indicates the adjustments required for the respective part replacements.
For all other parts not listed below, no electrical adjustments are necessary after replacement.

Adjustment Items / Replacement Part	Optical Unit Adjustment	CCD Adjustment	Shading Adjustment	Imaging Process Adjustment	Color Adjustment	Pixel Dot Adjustment	LCD Adjustment	Flash Adjustment
DC/DC PCB ASS'Y								
OPTICAL UNIT	● #1	● #2	● #3	● #4	● #5	● #6		● #7
FLASH UNIT								●
MAIN PCB ASS'Y	○	○	○	○	○	○	○	○
LCD PANEL							○	
BACK LIGHT UNIT							○	

● : Adjustment is necessary after replacement.
○ : Adjustment is necessary after replacement.
(Adjustment is not necessary, only if the adjustment data has been saved and then transferred after the part is replaced.)
Blank : Adjustment is unnecessary.

* When OPTICAL UNIT is replaced, adjust certainly at the procedure as below.

#1. Optical Unit Adjustment

#2. CCD Adjustment

#3. Shading Adjustment

#4. Imaging Process Adjustment

#5. Color Adjustment

#6. Pixel Dot Adjustment

#7. Flash Adjustment

3.2 Adjustment Tools

The following tools are required for electrical adjustment.

DESCRIPTION	PARTS NO.	REMARKS
PC/AT-Compatible Machine (Windows 2000 pre-installed Model, USB port)	—	Local purchase
SERVICE MANUAL (CD-ROM)	CY8-4402-031	
ADJUSTMENT SOFTWARE	—	Download
Compact Power Adapter CA-DC10	—	Enclosed in “AC Adapter Kit ACK-DC10”
AC Cable	—	Enclosed in “AC Adapter Kit ACK-DC10”
DC Coupler DR-10	—	Enclosed in “AC Adapter Kit ACK-DC10”
INTERFACE CABLE IFC-400PCU	—	Enclosed in Merchandise
Brightness Box	CY9-1566-100/200*2	
Color Viewer (5500° K)	CY9-1562-100/200*2	
Color Bar Chart	DY9-2002-000	
18% Gray Chart	CY9-1563-000	
AF Chart (1)	CY9-1583-000	*3
Infinity Collimator	CY9-1569-100/200*2	
W-10 Filter *1	CY9-1556-000	
C-12 Filter	CY9-1555-000	
FL-W Filter	CY9-1557-000	
ND-4 Filter	CY9-1553-000	
Light-Shielding Cloth (500 × 500 mm or larger)	—	Local purchase
Tripod	—	Local purchase
Reference Camera	—	Merchandise
DIGITAL CAMERA SolutionDisk	—	Enclosed in Merchandise

*1 2pcs. required.
*2 -100 : 100~120V, -200 : 200~240V
*3 The file containing “How to print out” and Chart for print-out is in the Service Manual APPENDIX.

3.3 Before Starting Electrical Adjustments

3.3.1 TWAIN Driver Installation

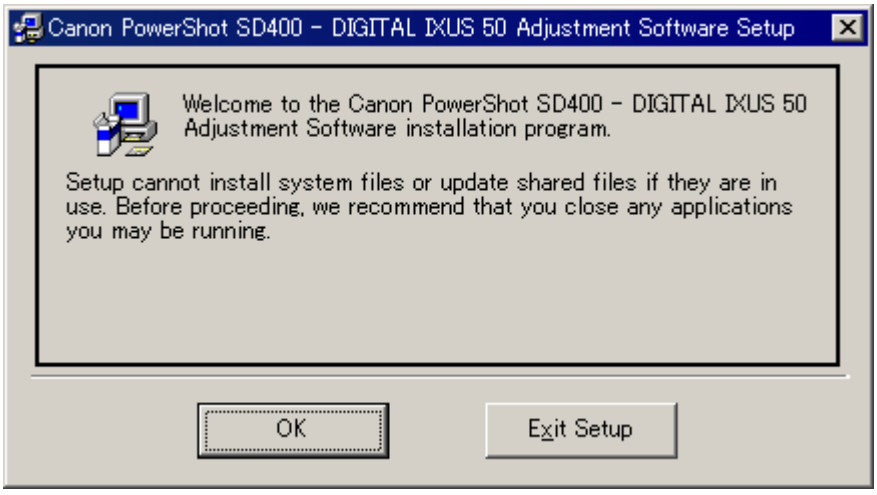
Install the USB Driver for Adjustment in the CD-ROM to PC.
("This Adjustment Software" is impossible when the RS-232C TWAIN driver is used.)

3.3.2 Canon DCP Connect Installation

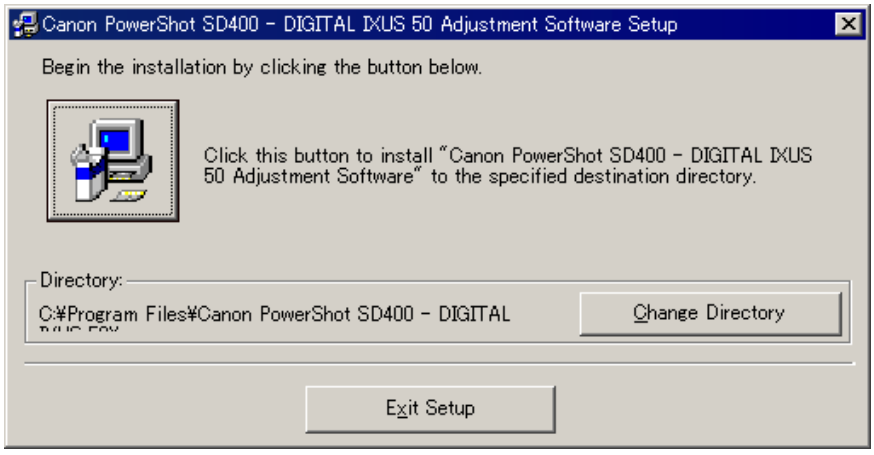
After downloading and extracting Adjustment Software, double-click Setup.exe (\Canon DCP Connect\Setup.exe) to install it.

3.3.3 Adjustment Software Installation

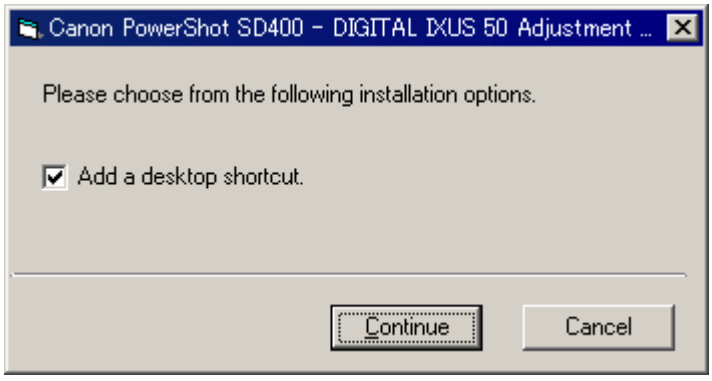
1. After downloading and extracting Adjustment Software, double-click Setup.exe to install it.
   (Adjustment Softwares are different according to the model of camera that you are going to adjust.)
2. When the dialog box below appears, click the "OK" button.



3. When the dialog box below appears, click the  button. (Software installation will then begin.)



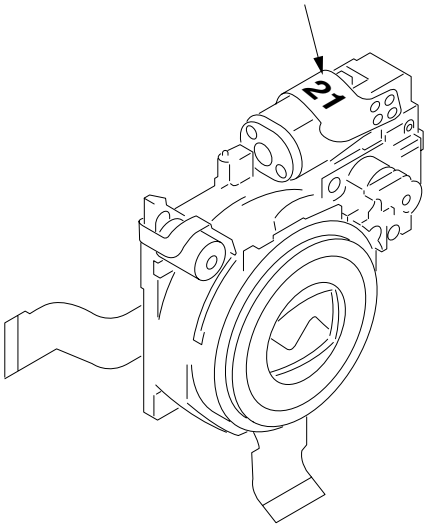
4. When the dialog box below appears, click the "Continue" button.
(In the case that you do not add a shortcut on desktop, remove clicking from the check box.)



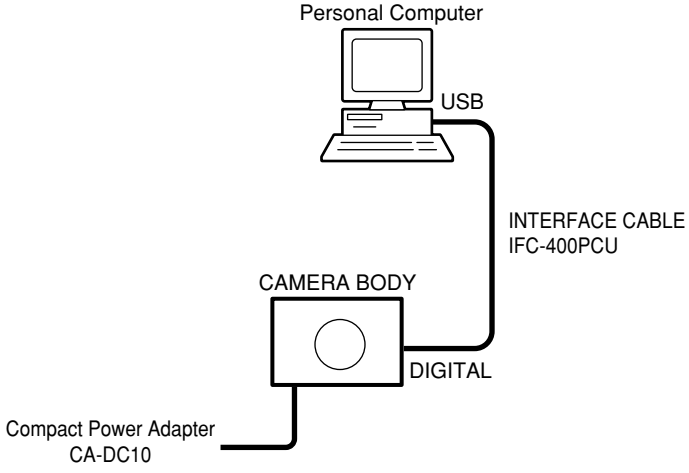
3.3.4 Preparation

Before starting up the Adjustment Software, follow the preparatory steps below:

1. Obtain all the tools necessary for the adjustment.
2. For the Optical Unit Adjustment jot down the data written on the optical Unit.
   You will need it later.



3 Connect the Camera to the Power Source with the AC Adapter Kit ACK-DC10 (CA-DC10, AC Cable & DR-10).
4. Set the Replay Mode on the camera.
5. Connect the Camera's Digital terminal to the PC's USB Port with INTERFACE CABLE IFC-400 PCU.



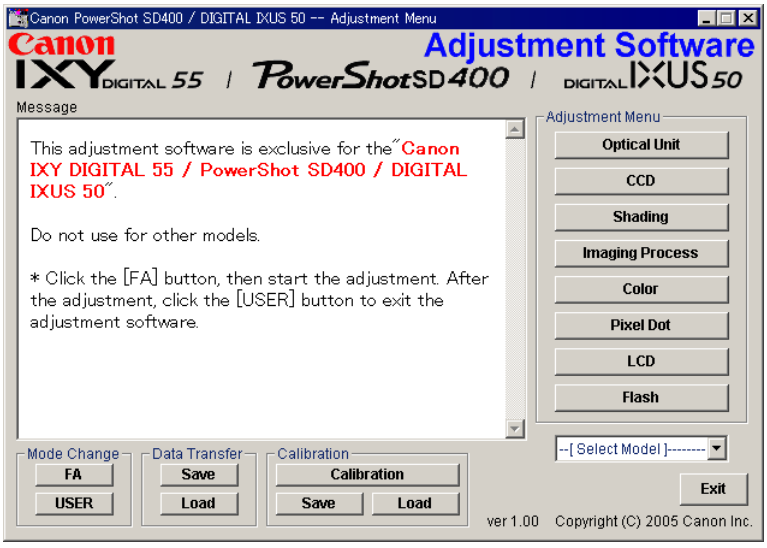
6. Turn on the camera.
   Note: Perform the preparation in the following order otherwise the camera won't work properly.

3.3.5 Starting up the Adjustment Software

After completing the preparatory steps, click Start and move the cursor to Program; then select Canon Digital Camera and click PowerShot SD400 and DIGITAL IXUS 50 Adjustment.

3.3.6 Menu Window

When the Adjustment Software starts up, the Menu Window below will appear.



3.3.7 How to Use the Adjustment Software

■ Start-up of Camera Watch

This camera requires Camera Watch for the communication with PC. Start up Camera Watch by selecting Start > Program > Canon Utilities > Camera DCP connect > Camera Watch.

■ Mode change

This camera uses normally PTP for communication with PC. Because calibration and adjustment become impossible depending on the condition of PTP, select the TWAIN mode of the PTP before starting calibration and adjustment.

- "FA Mode" button: This button is used to change the mode from the USER mode to the FA mode. (PTP to TWAIN)

* Before starting calibration and adjustment, be sure to set the FA mode.

- "USER Mode" button: This button is used to change the mode from the FA mode to the USER mode. (TWAIN to PTP)

* When calibration and adjustment are completed, be sure to change the mode to the USER mode before quitting the software.

■ Adjustment Menu/Calibration

For starting, click the button related with calibration/adjustment.

* Whenever you use your light source for the adjustment for the first time, be sure to click the "Calibration" Button.

■ Quitting the Adjustment Software

Click the "Exit" button.

■ Camera Data Saving and Loading <Data Transfer>

- "Save" button : This button saves all adjustment data stored on the camera in text format.
- "Load" button : This button loads all adjustment data saved in text format to the camera.

■ Calibration Data Saving and Loading <Calibration>

- "Save" button : This button saves the calibration data.
- "Load" button : This button loads the saved calibration data to the adjustment software and reflects it.

■ Notes

- If the adjustment fails, a message indicating the failure will appear on each product. If this happens, do the adjustment again.
- The Adjustment Software is dedicated only to Canon Digital Camera PowerShot SD400 and DIGITAL IXUS 50.
  Never use it for any other camera.
- The Windows2000 must be pre-installed on the computer that is equipped with the USB terminal.

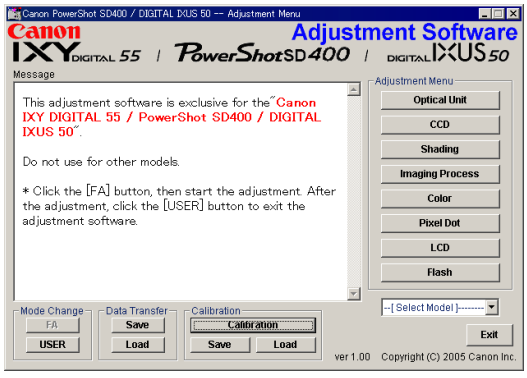
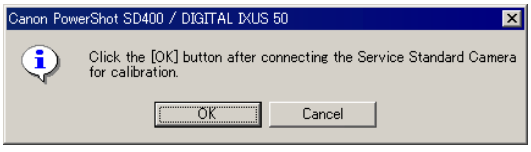
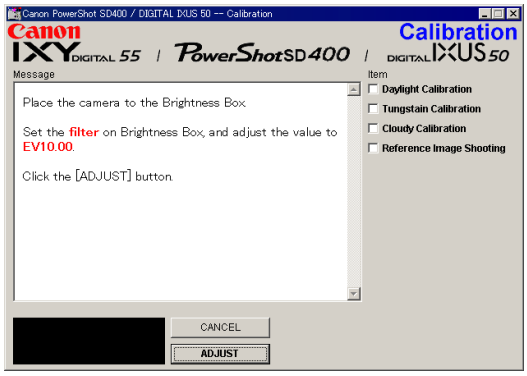
* Operations on the other Operating Systems such as Windows95, 98, Windows XP and others are not guaranteed.

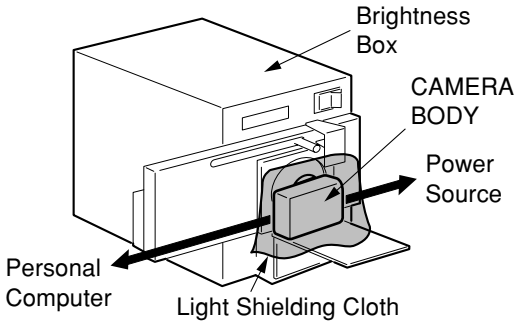
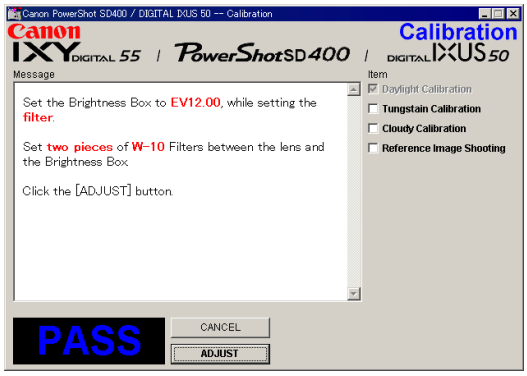
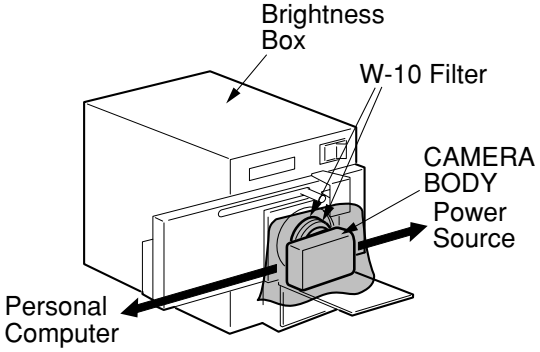
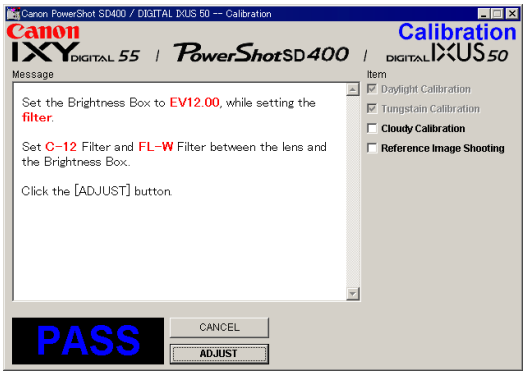
3.4 Calibration

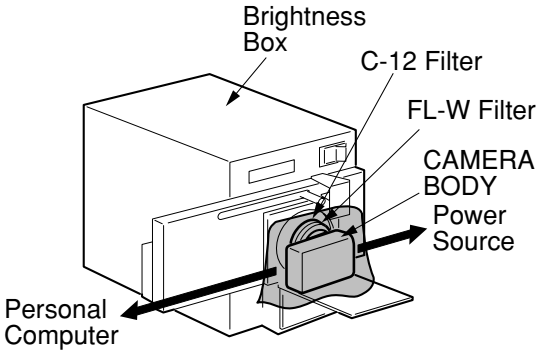
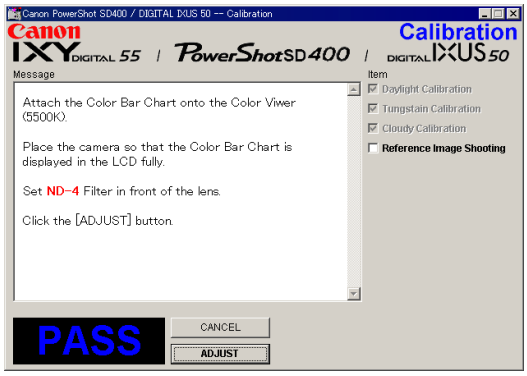
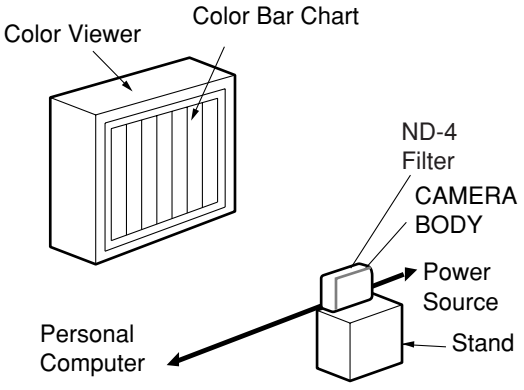
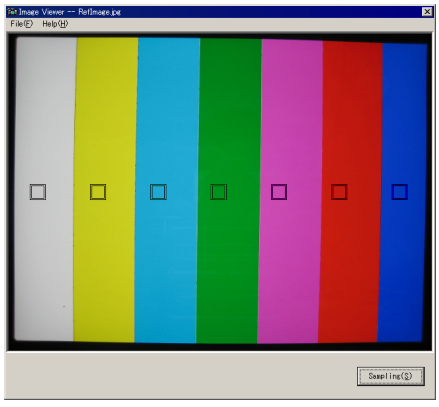
3.4.1 Calibration

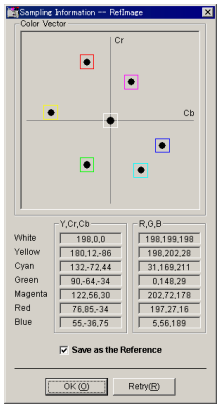
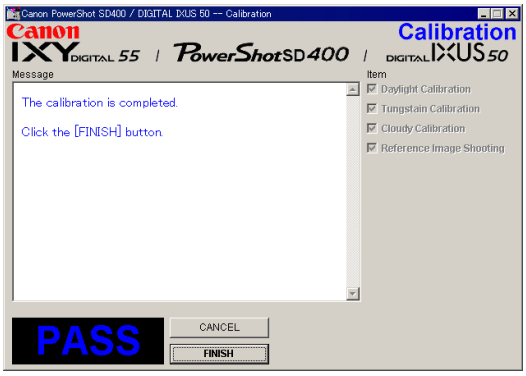
■ Tools Used

- Personal Computer
- SERVICE MANUAL (CD-ROM)
- ADJUSTMENT SOFTWARE
- Compact Power Adapter CA-DC10
- AC Cable
- DC Coupler DR-10
- INTERFACE CABLE IFC-400PCU
- Brightness Box
- Color Viewer (5500° K)
- Color Bar Chart
- W-10 Filter (2pcs.)
- C-12 Filter
- FL-W Filter
- ND-4 Filter
- Light-Shielding Cloth
- Reference Camera
- DIGITAL CAMERA Solution Disk

1	Click the “Calibration” button.	
2	1. When the message on the right appears, check that the reference camera (Merchandise) is connected to the computer. 2. Click the “OK” button.	
3	When the message on the right appears, go to 4.	

4	1. Set the filter of the Brightness Box and place the camera so that lens is set against the light source surface of the Brightness Box. 2. Put the light-Shielding Cloth so that light except the Brightness Box does not come in. 3. Set the Brightness Box to the value displayed on the message. 4. Click the “ADJUST” button.	
5	When the message on the right appears, go to 6.	
6	1. Place the camera so that lens is set against the light source surface of the Brightness Box via the two W-10 Filters. 2. Put the light-Shielding Cloth so that light except the Brightness Box does not come in. 3. Set the Brightness Box to the value displayed on the message. 4. Click the “ADJUST” button.	
7	When the message on the right appears, go to 8.	

8	1. Remove the two W-10 Filters. 2. Place the camera so that lens is set against the light source surface of the Brightness Box via the C-12 and FL-W Filter. 3. Put the light-Shielding Cloth so that light except the Brightness Box does not come in. 4. Set the Brightness Box to the value displayed on the message. 5. Click the “ADJUST” button.	
9	When the message on the right appears, go to 10.	
10	1. Attach the Color Bar Chart to the Color Viewer. 2. Place the camera so that the Viewing image of the color bar chart is the full of LCD with the ND-4 Filter attached. 3. Click the “ADJUST” button.	
11	1. Shift a frame on the displayed screen with a mouse to choose a color of color bar. 2. Click the “Sampling” button.	

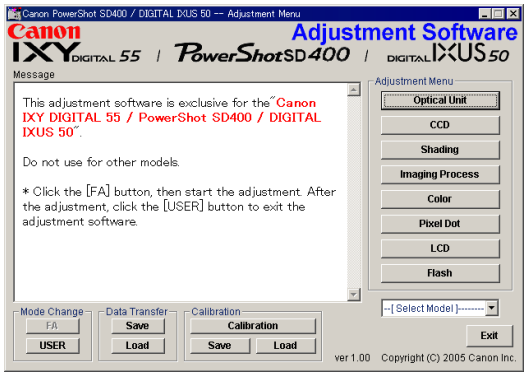
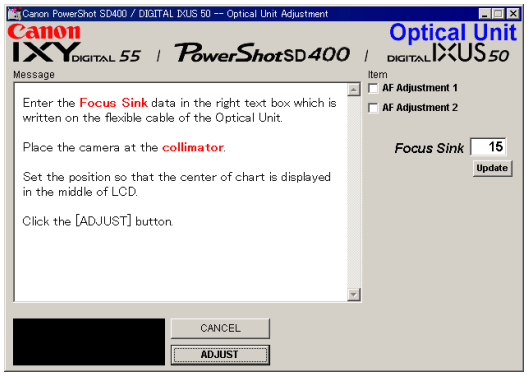
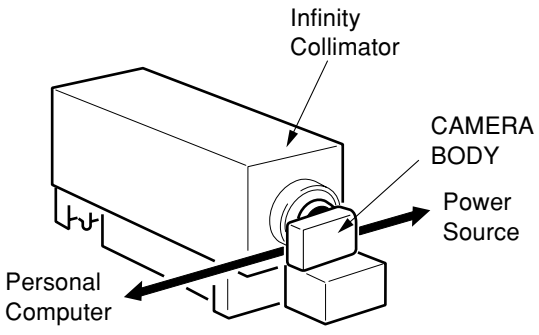
12	Check “Save as the Reference”, and click the “OK” button to store the data.	
13	When the message on the right appears, click the “FINISH” button. (This ends the “Calibration” Adjustment.)	

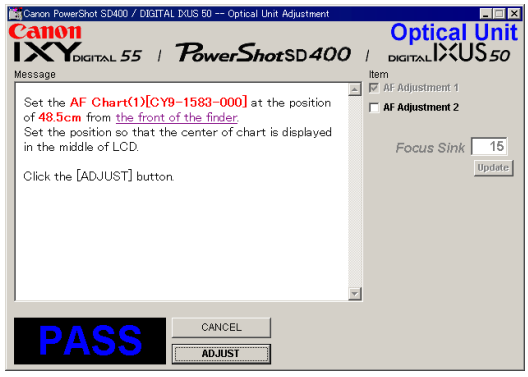
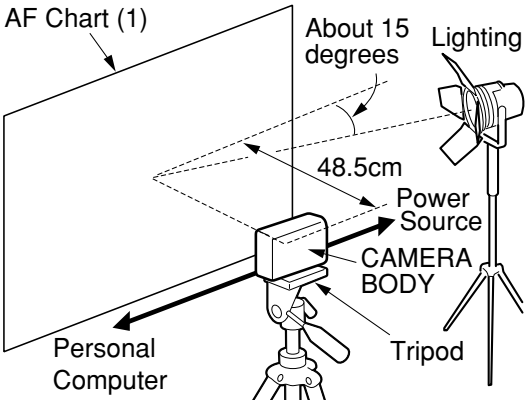
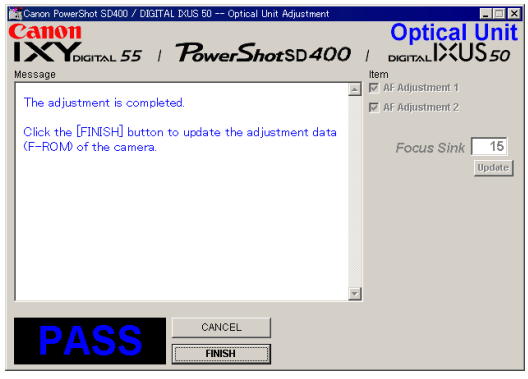
3.5 Adjustment Procedure

3.5.1 Optical Unit Adjustment

■ Tools Used

- Personal Computer
- SERVICE MANUAL (CD-ROM)
- ADJUSTMENT SOFTWARE
- Compact Power Adapter CA-DC10
- AC Cable
- DC Coupler DR-10
- INTERFACE CABLE IFC-400PCU
- AF Chart (1)
- Infinity Collimator
- Tripod
- DIGITAL CAMERA Solution Disk

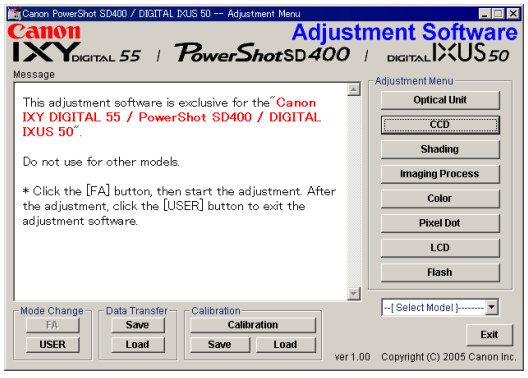
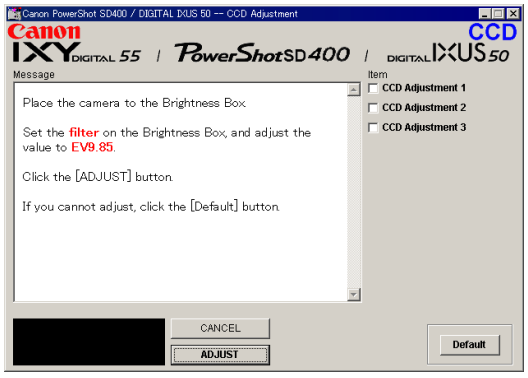
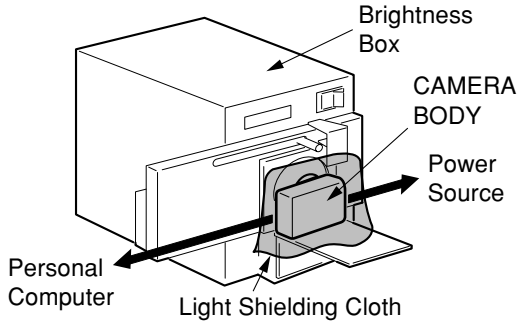
1	Click the “Optical Unit” button.	
2	When the message on the right appears, enter the value whitch is written on the flat cable of the Optical Unit in the Focus Sink text box, go to 3.	
3	1. Place the camera at the infinity collimator. 2. Adjust the position of the camera finely so that the center of the Auto Focus Chart is aligned with the center of the LCD. 3. Click the “ADJUST” button.	

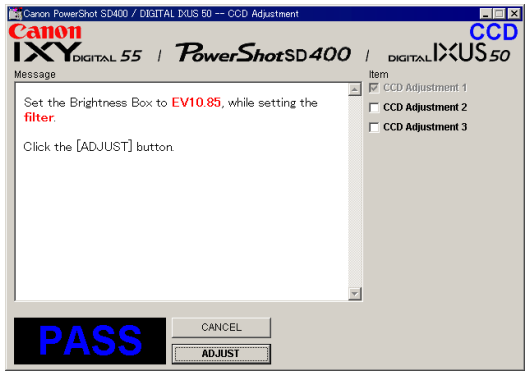
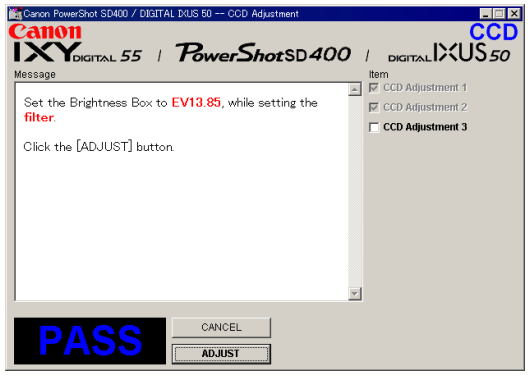
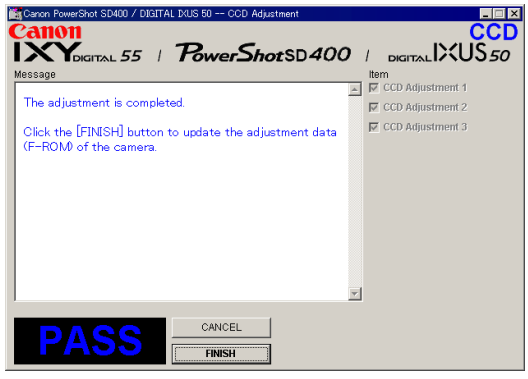
4	When the message on the right appears, go to 5.	
5	1. Set the AF Chart (1) (CY9-1583-000) at 48.5cm away from the front of the finder. * Set the AF Chart (1) (CY9-1583-000) on a plain color wall or equivalent. * Adjust the light so that the brightness of the chart will be about EV9.0. The ray of the light should come in at a nar row angle as seen from the chart. 2. Adjust the position of the camera finely so that the center of the AF Chart (1) (CY9-1583-000) is aligned with the center of the LCD. 3. Click the “ADJUST” button.	
6	When the message on the right appears, click the “FINISH” button. (This ends the “Optical Unit” Adjustment.)	

3.5.2 CCD Adjustment

■ Tools Used

- Personal Computer
- SERVICE MANUAL (CD-ROM)
- ADJUSTMENT SOFTWARE
- Compact Power Adapter CA-DC10
- AC Cable
- DC Coupler DR-10
- INTERFACE CABLE IFC-400PCU
- Brightness Box
- Light-Shielding Cloth
- DIGITAL CAMERA Solution Disk

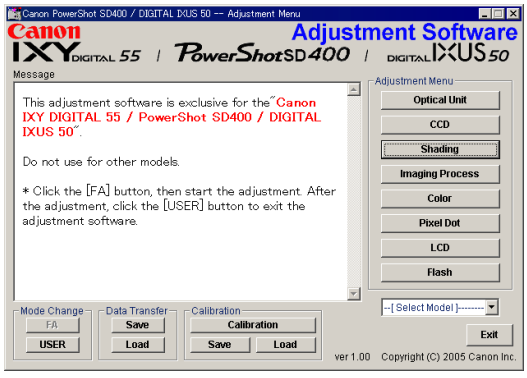
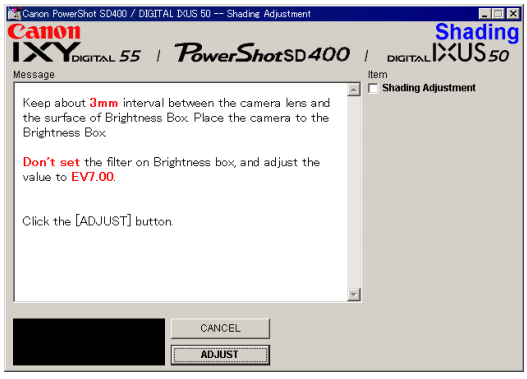
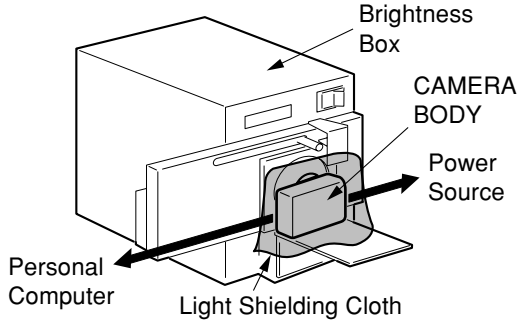
1	Click the “CCD” button.	
2	When the message on the right appears, go to 3.	
3	1. Set the filter of the Brightness Box and place the camera so that lens is set against the light source surface of the Brightness Box. 2. Put the light-Shielding Cloth so that light except the Brightness Box does not come in. 3. Set the Brightness Box to the value displayed on the message. 4. Click the “ADJUST” button. * When the adjustment does not work, click the “Default” button.	

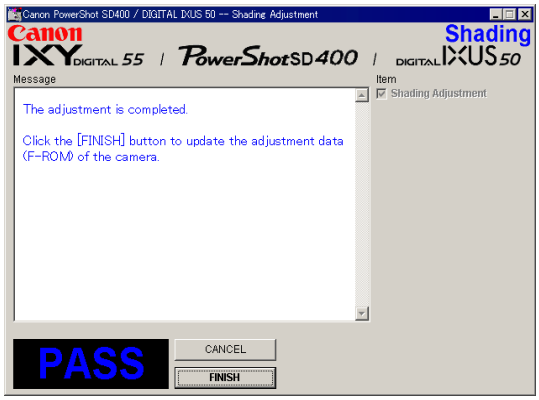
4	1. When the message on the right appears, set to the displayed value. 2. Click the “Adjust” button.	
5	1. When the message on the right appears, set to the displayed value. 2. Click the “Adjust” button.	
6	When the message on the right appears, click the “FINISH” button. (This ends the “CCD” Adjustment.)	

3.5.3 Shading Adjustment

■ Tools Used

- Personal Computer
- SERVICE MANUAL (CD-ROM)
- ADJUSTMENT SOFTWARE
- Compact Power Adapter CA-DC10
- AC Cable
- DC Coupler DR-10
- INTERFACE CABLE IFC-400PCU
- Brightness Box
- Light-Shielding Cloth
- DIGITAL CAMERA Solution Disk

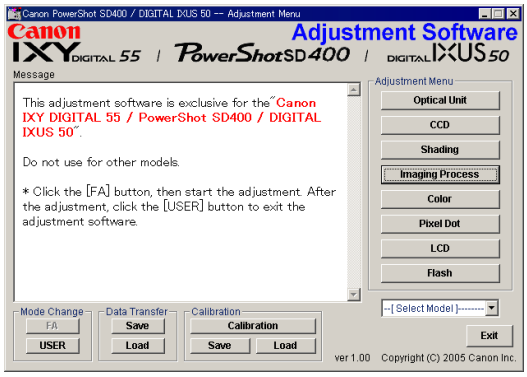
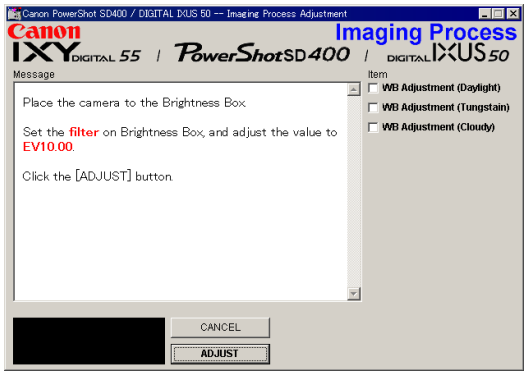
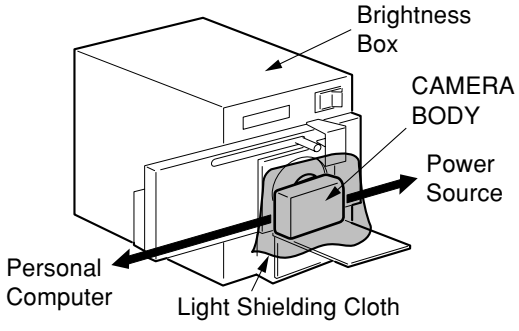
1	Click the “Shading” button.	
2	When the message on the right appears, go to 3.	
3	1. Do not set the filter of the Brightness Box and place the camera so that lens is set about 3mm interval from the light source surface of the Brightness Box. 2. Put the light-Shielding Cloth so that light except the Brightness Box does not come in. 3. Set the Brightness Box to the value displayed on the message. 4. Click the “ADJUST” button.	

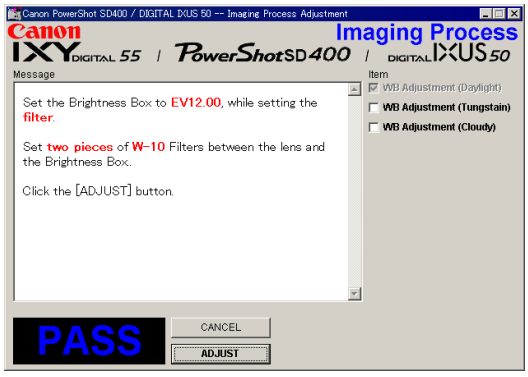
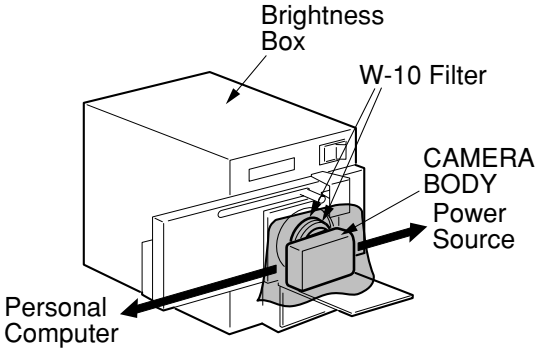
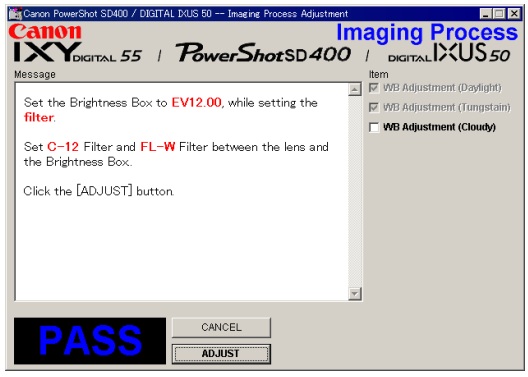
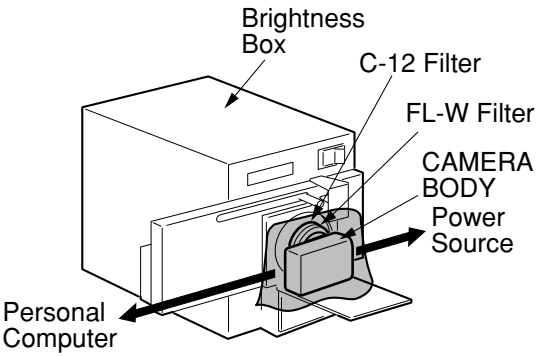
4	When the message on the right appears, click the “FINISH” button. (This ends the “Shading” Adjustment.)	

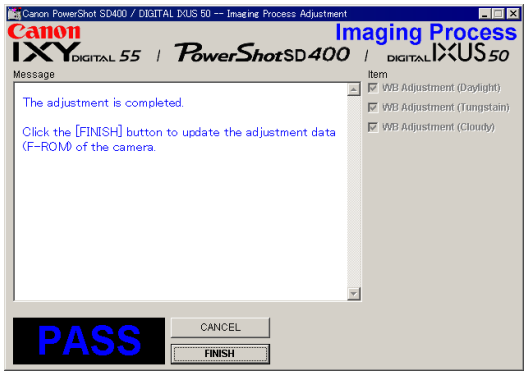
3.5.4 Imaging Process Adjustment

■ Tools Used

- Personal Computer
- SERVICE MANUAL (CD-ROM)
- ADJUSTMENT SOFTWARE
- Compact Power Adapter CA-DC10
- AC Cable
- DC Coupler DR-10
- INTERFACE CABLE IFC-400PCU
- Brightness Box
- W-10 Filter (2pcs.)
- C-12 Filter
- FL-W Filter
- Light-Shielding Cloth
- DIGITAL CAMERA Solution Disk

1	Click the “Imaging Process” button.	
2	When the message on the right appears, go to 3.	
3	1. Set the filter of the Brightness Box and place the camera so that lens is set against the light source surface of the Brightness Box. 2. Put the light-Shielding Cloth so that light except the Brightness Box does not come in. 3. Set the Brightness Box to the value displayed on the message. 4. Click the “ADJUST” button.	

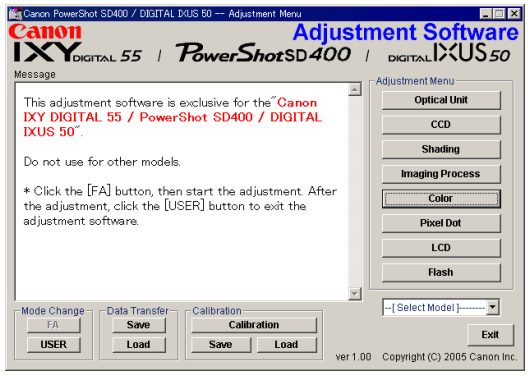
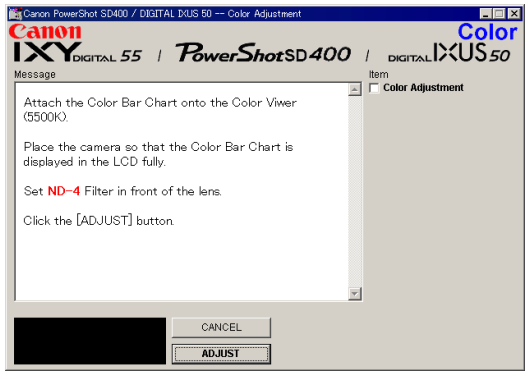
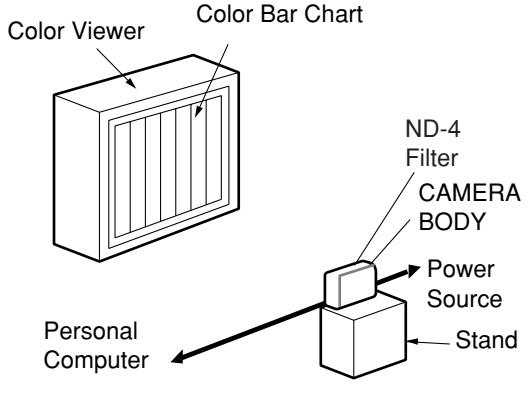
4	When the message on the right appears, go to 5.	
5	1. Place the camera so that lens is set against the light source surface of the Brightness Box via the two W-10 Filters. 2. Put the light-Shielding Cloth so that light except the Brightness Box does not come in. 3. Set the Brightness Box to the value displayed on the message. 4. Click the “ADJUST” button.	
6	When the message on the right appears, go to 7.	
7	1. Remove the two W-10 Filters. 2. Place the camera so that lens is set against the light source surface of the Brightness Box via the C-12 and FL-W Filter. 3. Put the light-Shielding Cloth so that light except the Brightness Box does not come in. 4. Set the Brightness Box to the value displayed on the message. 5. Click the “ADJUST” button.	

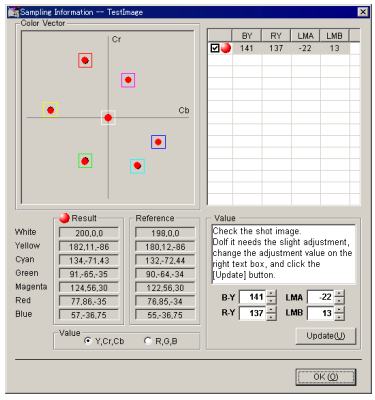
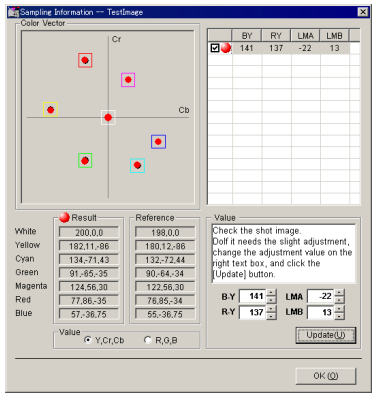
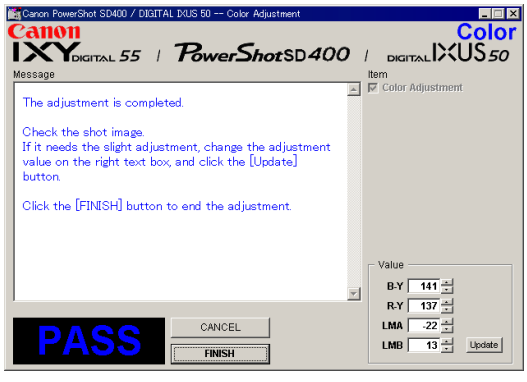
8	When the message on the right appears, click the “FINISH” button. (This ends the “Imaging Process” Adjustment.)	

3.5.5 Color Adjustment

■ Tools Used

- Personal Computer
- SERVICE MANUAL (CD-ROM)
- ADJUSTMENT SOFTWARE
- Compact Power Adapter CA-DC10
- AC Cable
- DC Coupler DR-10
- INTERFACE CABLE IFC-400PCU
- Color Viewer (5500° K)
- Color Bar Chart
- ND-4 Filter
- DIGITAL CAMERA Solution Disk

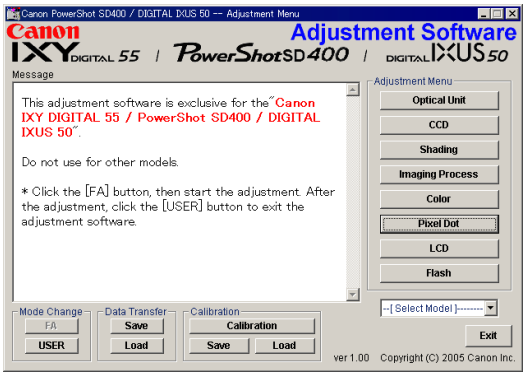
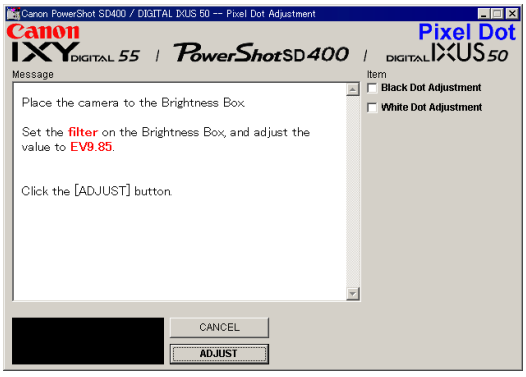
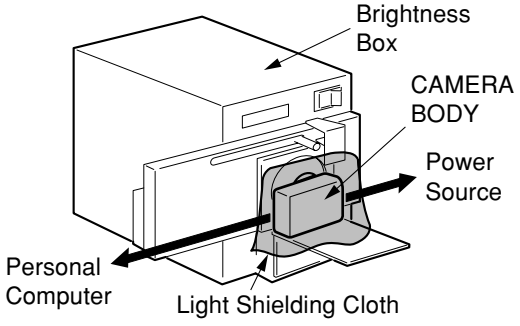
1	Click the “Color” button.	
2	When the message on the right appears, go to 3.	
3	1. Attach the Color Bar Chart to the Color Viewer. 2. Place the camera so that the Viewing image of the color bar chart is the full of LCD with the ND-4 Filter attached. 3. Click the “ADJUST” button.	

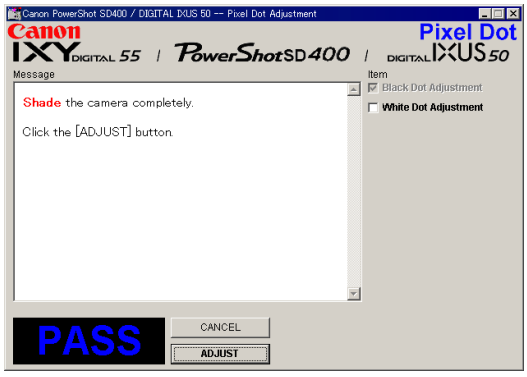
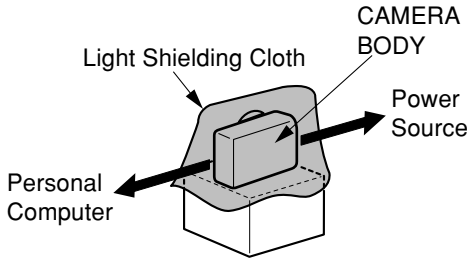
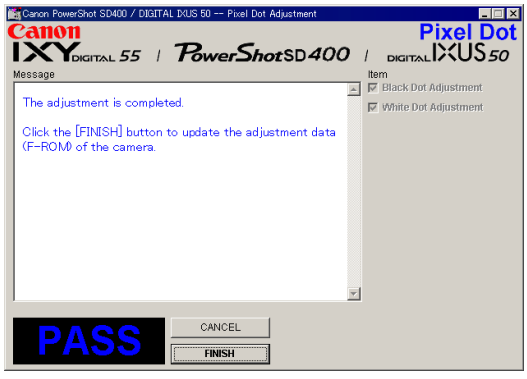
4	1. Shift a frame on the displayed screen with a mouse to choose a color of color bar. 2. Click the “Sampling” button.	
5	Check “Yellow and Red”, and click the “OK” button. If these data are within specifications, go to 6. * Specification Ave_Cr = Reference Camera ± 10 Ave_Cb = Reference Camera ± 10	
6	1. Confirm to see that the image on the PC monitor satisfies the specifications. 2. If the image on the PC monitor does not satisfy the specifications, change the data using UP, DOWN button or change the data directly by typing the data in the text box. Then click the “UPDATE” button.	
7	When the message on the right appears, click the “FINISH” button. (This ends the “Color” Adjustment.)	

3.5.6 Pixel Dot Adjustment

■ Tools Used

- Personal Computer
- SERVICE MANUAL (CD-ROM)
- ADJUSTMENT SOFTWARE
- Compact Power Adapter CA-DC10
- AC Cable
- DC Coupler DR-10
- INTERFACE CABLE IFC-400PCU
- Brightness Box
- Light-Shielding Cloth
- DIGITAL CAMERA Solution Disk

1	Click the “Pixel Dot” button.	
2	When the message on the right appears, go to 3.	
3	1. Set the filter of the Brightness Box and place the camera so that lens is set against the light source surface of the Brightness Box. 2. Put the light-Shielding Cloth so that light except the Brightness Box does not come in. 3. Set the Brightness Box to the value displayed on the message. 4. Click the “ADJUST” button.	

4	When the message on the right appears, go to 5.	
5	1. Cover the camera with the Light-Shielding Cloth so that the no light reasons the CCD. 2. Click the “ADJUST” button.	
6	When the message on the right appears, click the “FINISH” button. (This ends the “Pixel Dot” Adjustment.)	

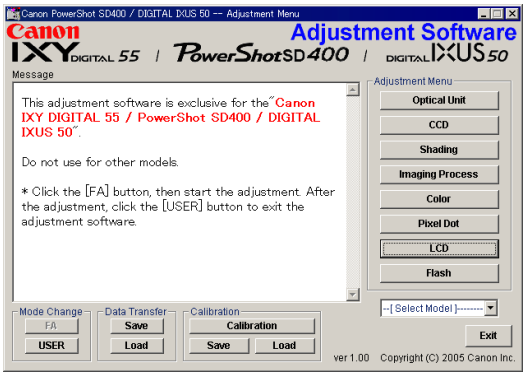
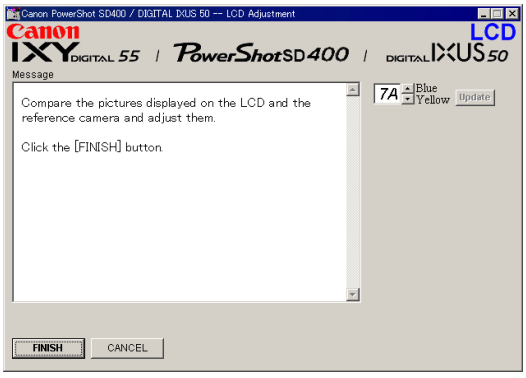
3.5.7 LCD Adjustment

■ Tools Used

- Personal Computer
- SERVICE MANUAL (CD-ROM)
- ADJUSTMENT SOFTWARE
- Compact Power Adapter CA-DC10
- AC Cable
- DC Coupler DR-10
- INTERFACE CABLE IFC-400PCU
- Reference Camera
- DIGITAL CAMERA SolutionDisk

■ Preparation

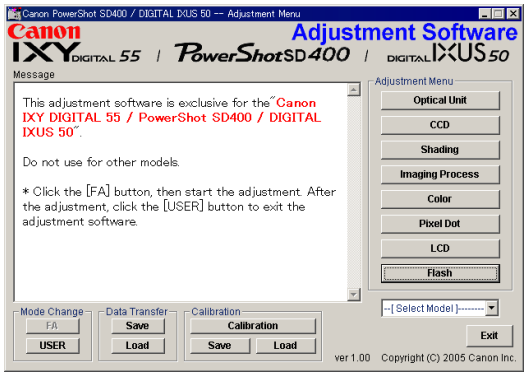
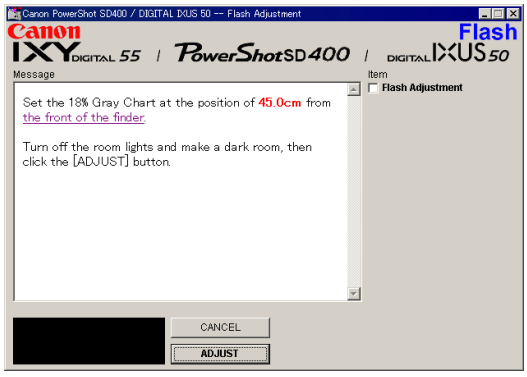
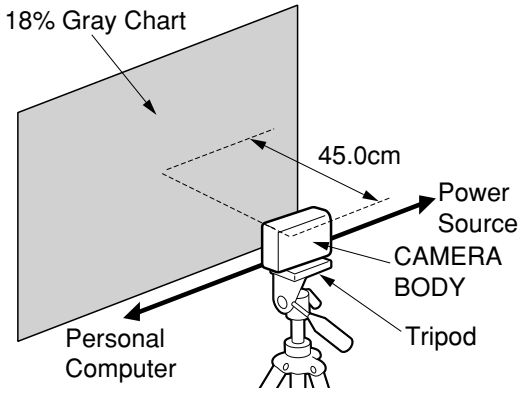
1. Insert the blank CF Card into the reference camera.
2. Connect the reference camera with the PC.
3. Add the “Gray.jpeg” image to the CF card of the refernce camera using Zoom Browser EX. (Gray.jpg is in the folder of Adjustment Software downloaded.)
4. Finish the ZoomBrowser EX.
5. Disconnect the reference camera from the PC, and display the “Gray.jpg” image in PLAY mode.

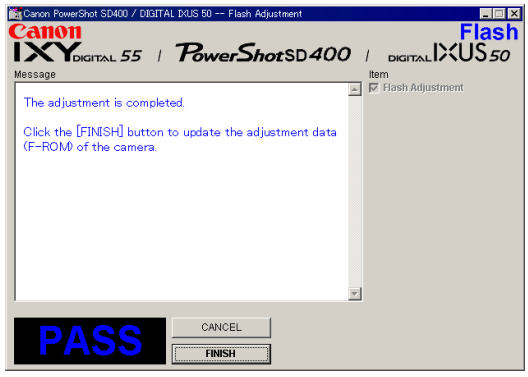
1	Click the “LCD” button.	
2	1. Compare the image with that of the reference camera. If it has a different color tint, adjust it by repeating clicking the Yellow/Blue button and the “Update” button alternately. 2. Click the “FINISH” button. (This ends the “LCD” Adjustment.)	

3.5.8 Flash Adjustment

■ Tools Used

- Personal Computer
- SERVICE MANUAL (CD-ROM)
- ADJUSTMENT SOFTWARE
- Compact Power Adapter CA-DC10
- AC Cable
- DC Coupler DR-10
- INTERFACE CABLE IFC-400PCU
- 18% Gray Chart
- Tripod
- DIGITAL CAMERA Solution Disk

1	Click the “Flash” button.	
2	When the message on the right appears, go to 3.	
3	1. Set the 18% Gray Chart at 45.0cm away from the front of the camera finder. 2. Make the room as dark as a darkroom. 3. Click the “ADJUST” button.	

4	When the message on the right appears, click the “FINISH” button. (This ends the “Flash” Adjustment.)	

3.5.9 Checking of sound recording/output

It is not required to adjust the recording/output (volume, etc.) of sound.
Check the camera if the sound is recorded/play-backed properly.