！　"　＃　＄　％　　配布許可印

ニコン
映像カンパニー
CS推進部
GM

サービス
計画課
M

Nikon

COOLPIX 2000

VAA12001(J)

VAA12002(U)

VAA12003(EP)

VAA12004(EN)

REPAIR MANUAL

Nikon | NIKON CORPORATION

Tokyo, Japan

Recycled paper

！　"　＃　＄　％＆ '　( )　＊　＋

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CONTENTS

Specifications

Exposure	
Metering	Segment matrix metering, center-emphasized metering and spot metering
Exposure control	Programmed auto exposure with exposure compensation (-2.0-+2.0EV in steps of f1/3 EV)
Range (ISO 100 equivalent)	W: 1.9-15.9 EV
	T: 3.5-17.6 EV

Shutter	
Speed	Mechanical and charge-coupled electronic shutter
	$2 - ^1/_{1000}$ S

Aperture	
Range	Electronically-controlled preset aperture
	Two steps

Sensitivity	
	Auto

Self-timer	
	Ten-second duration

Built-in speedlight	
Range	
	0.4 - 2.7m (1'4" - 8'10") (W)
Flash control	0.4 - 1.3m (1'4" - 4'3") (W)
	Sensor flash system

Interface	
	USB

Power sources	
	• New AA alkaline dry batteries (4 pcs.), AA Ni-cd dry batteries (4 pcs.) or AA Nickel hydrogen batteries (4 pcs.) should be used.
	• AC adapter EH-53 (Optional)

Battery life (EN-EL2)	
	Approx. 60 minutes (when four AA dry batteries are used)
	*The measurement conditions are Our Company's conditions. (Zooming must be done each time a picture is taken. 30% of pictures must be taken with flash. NORMAL mode must be used.)

Dimensions (W x H x D)	
	108x 69 x 38 mm (4.3" x 2.8" x 1.5")

Weight	
	Approximately 190 g (5.9 oz) without battery or memory card

Operating Environment	
Temperature	
Humidity	0 - 40°C (32 - 104°C)
	Less than 80% (no condensation)

Explanation of circuit

1. Outline

The system configuration is as follows.

(IC and main functions)

1) IC3101 CCD (Charge Coupled Device)

- This is a solid image element and its main function is Photo-Electric Conversion.
- The primary color filters (containing RGB) are used.

  (In general, the primary color filters are excellent in color repeatability compared with the complementary color filters.)
- To enhance the condensing ratio, a lens called "On Chip Lens" is built in CCD.
- Drive pulse is supplied by IC3001 (V-Driver) and IC3003 (TG).

2) IC3001 V-Driver

- This is IC for V-CCD drive.

  (The H-CCD drive pulse is made by IC3003 (TG).)

3) IC3003 TG (Timing Pulse Generator)

- This is IC for generating the timing pulse. The original signals are supplied from the inside of IC6003 (ASIC) and SSG (Sync Signal Generator).
- This IC sends the control signal to IC3006 (CDS/AGC/ADC).
- By the serial control from IC6003 (ASIC), this IC also sends the flash control signal (controlled by pulse width) for the CCD drive timing.

4) IC3006 (CDS/AGC/ADC)

- This is IC for preprocessing the CCD output signal.
- This IC removes the CCD drive noise with CDS (Co-related Double Sampling) and extracts only the image signal from the CCD output.
- This IC corrects the ISO sensitivity with AGC (Auto Gain Control).
- This IC converts the analogue image signal to the digital one of 10 bits with ADC (Analogue to Digital Conversion).
- The output signal is outputted to IC6003 (ASIC).

5) IC6003 (ASIC)

- This is IC for processing image. It generates the analogue RGB output signal (image + display) for LCD output, TV monitor output signal (analogue composite output) and signal for writing in the CF card (JPEG).
- By processing these signals in parallel, this IC shortens the image processing time.
- When processing image, IC6002 (64 Mbits SDRAM) is used as an external memory.

6) IC6002 (SDRAM)

• This is an external memory to store the Y/C data, JPEG data, display data, etc. temporarily.

7) IC6008 (RISC)

• This is a main microcomputer for controlling the system.

• This unit also detects the keys on the top/rear operation panel, controls the motors around the lenses and controls the LCD driver.

8) IC6004 (Flash ROM)

• This is a Flash ROM of 8 bits.

• This unit stores the adjustment values, the set destination, the set values for delivery, etc.

2. Image signal processing

There are two methods to read electric charge from CCD. One is interlace method (to read the ODD and EVEN fields separately) and the other progressive method (to read all electric charge at a time). This machine uses the interlace method. The merit of the interlace method is as follows: when the electric charge converted photoelectrically by the photodiode is sent to VCCD, the electric charge may not overflow or the overflow amount may be small compared with the progressive method. So, the dynamic range is large.

There are two modes for reading the pixels from CCD. One is "capture (stationary image recording) mode" to read all the pixels in each of ODD and EVEN fields and the other "selection mode" to read the pixels at regular intervals.

1) Monitor mode

The CCD reading operation of this mode is called "selection mode". All the CCD pixels are not outputted and only one every set lines is read.
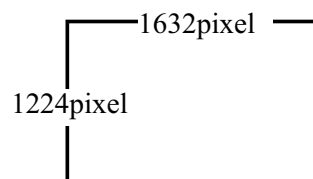
In this machine, "1/4 selection" to read one every four lines is adopted.

This mode is used for through mode (monitor mode) and for recording animation.
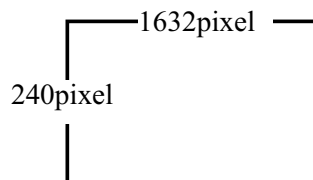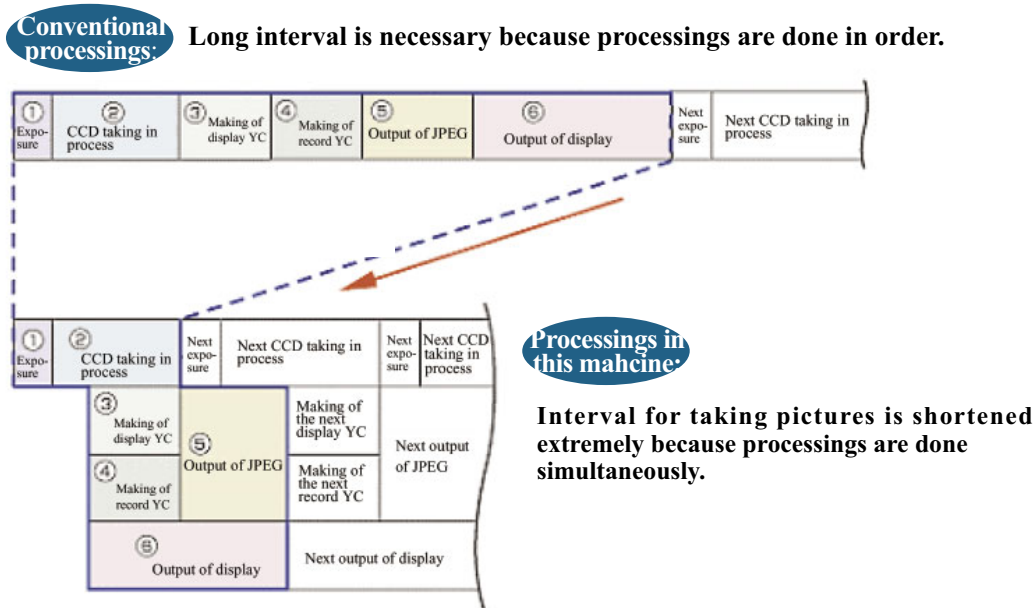

2) Capture mode

When reading CCD in this mode, all the pixels are read in each of ODD and EVEN fields. This mode is used for recording stationary images including continuous ones.
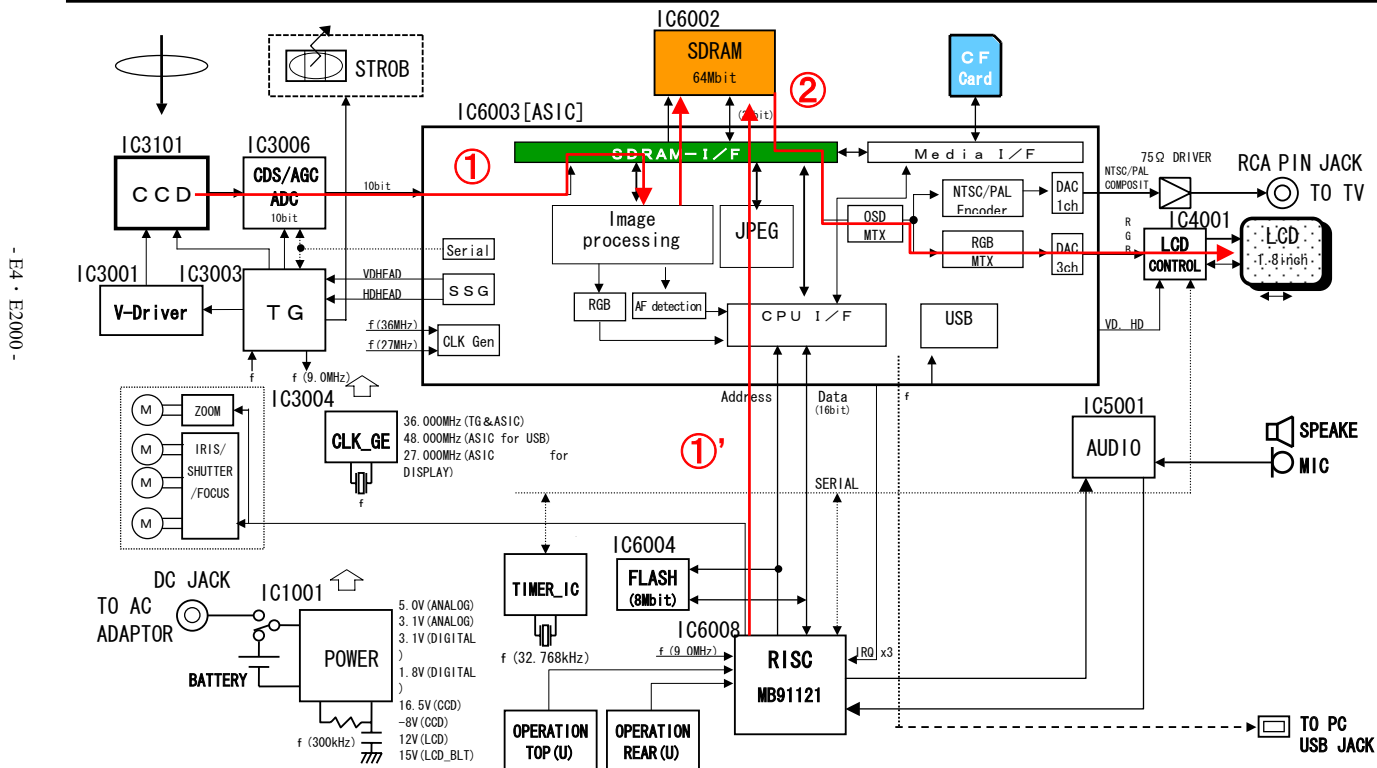
3. ASIC/SDRAM

In this machine, the following necessary ① ~ ⑥ processings are executed simultaneously to shorten extremely the interval for taking pictures.

Conventional processings: **Long interval is necessary because processings are done in order.**

① Expo-sure	② CCD taking in process	③ Making of display YC	④ Making of record YC	⑤ Output of JPEG	⑥ Output of display	Next expo-sure	Next CCD taking in process

① Expo-sure	② CCD taking in process	Next expo-sure	Next CCD taking in process	Next expo-sure	Next CCD taking in process

Processings in this mahcine:

Interval for taking pictures is shortened extremely because processings are done simultaneously.

③ Making of display YC
④ Making of record YC
⑤ Output of JPEG
⑥ Output of display

Making of the next display YC
Making of the next record YC
Next output of JPEG
Next output of display

4. Operation modes

The flow charts will show the operation of the monitor mode, capture mode and reproduction mode.
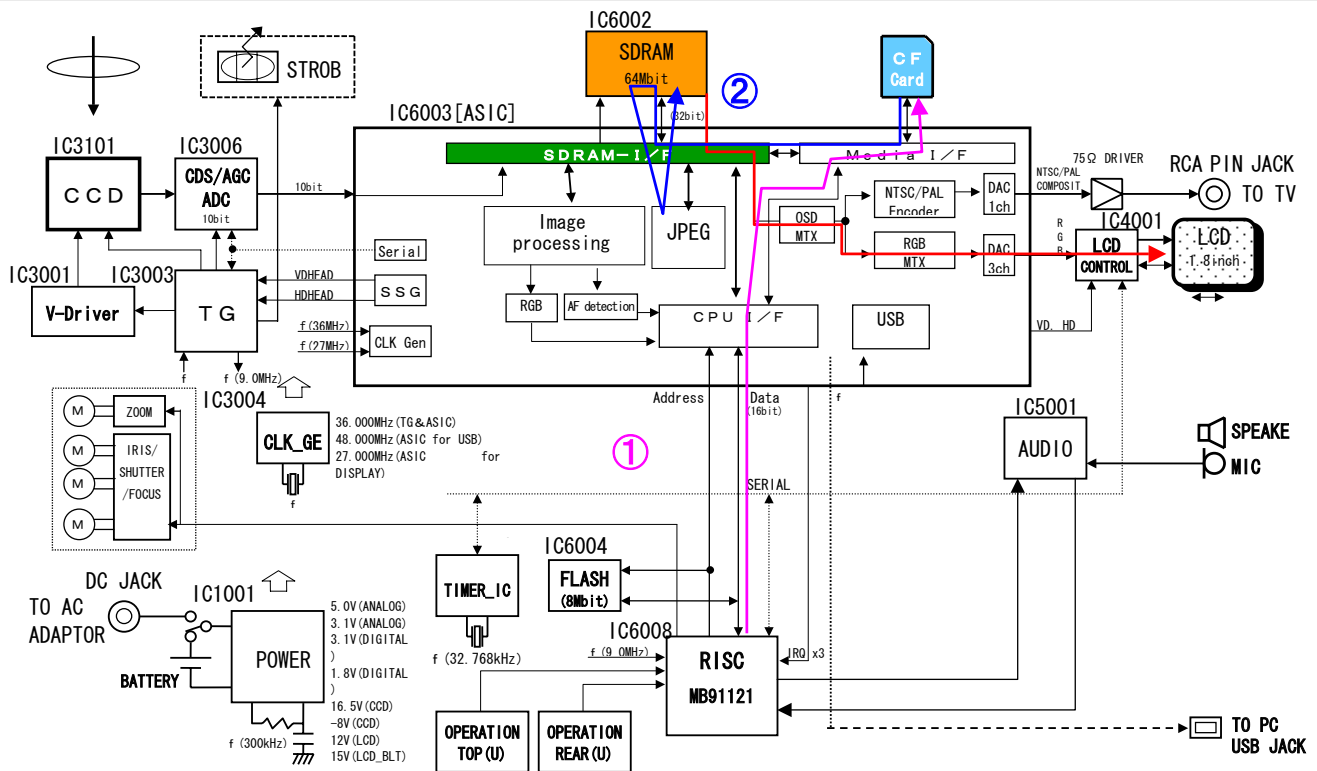
Monitor mode

VAA12001-R.3580.A

Capture mode

① The image data of ODD Field are temporarily written in the image area of SD-RAM.
② The image data of EVEN Field are sent to YC processing. ② ' The image data of ODD Field are read from SD-RAM and are sent to YC processing. (YC processing is done in ② and ② '.)
③ After YC processing is done with the image data of ② and ② ', the YC data are stored in SD-RAM.
④ When ③ is done, the OSD image data are stored in SD-RAM at the same time.
⑤ The OSD (image data) and display data are read and OSD_MIX are performed. Then, the data are outputted to LCD. (*If the record size is small, the data are read again. After passing through YCP and V/HZOOM, they are resized.)
⑥ The YC data are read and are encoded to JPEG. Then, they are written in the JPEG area of SD-RAM.
⑦ The data of [6] are read and then are written in CF-CARD. (*RGB conversion is done for TIFF and then TIFF is written in CF-CARD.)

- E5 · E2000 -

VAA12001-R.3580.A

C o n f i d e n t i a l
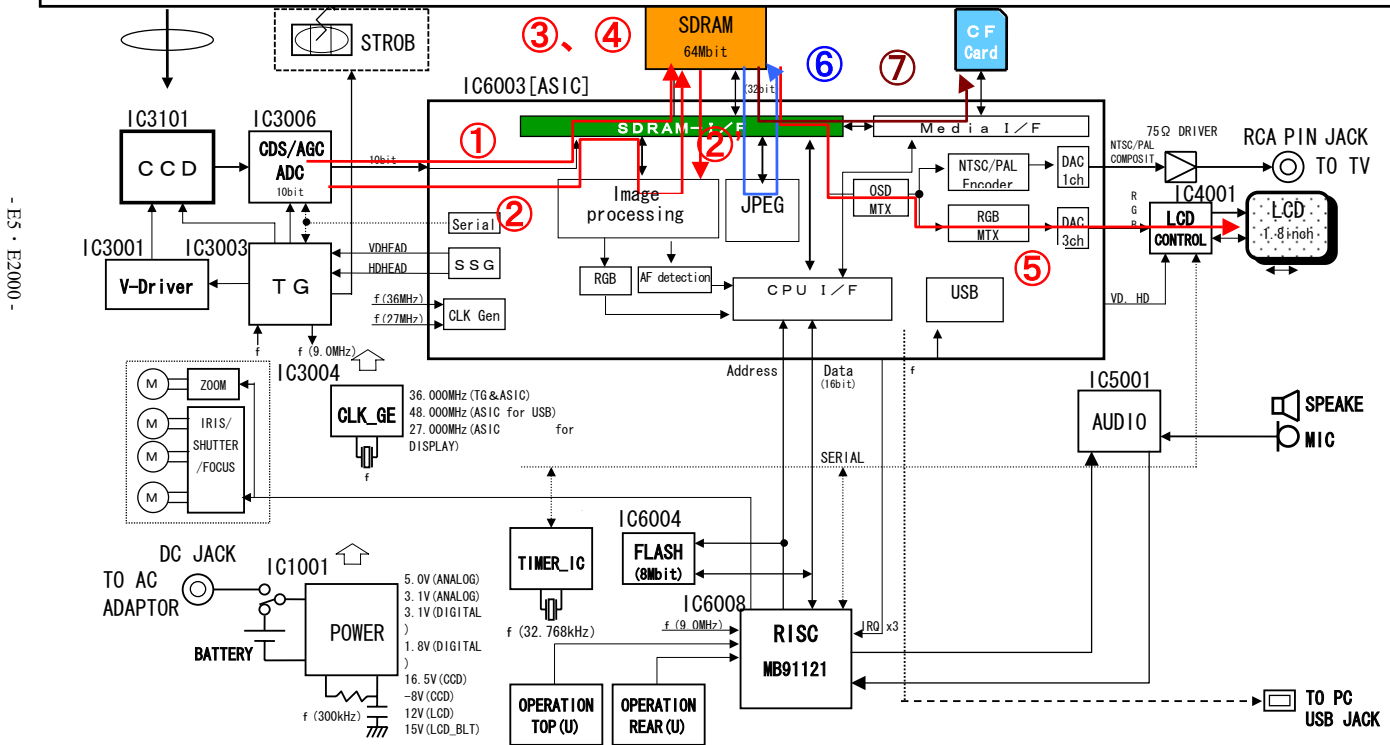
① The CD-CARD data are found and detected from U-Con and are stored in SD-RAM.

② After JPEG is extended by header analysis of the JPEG data, the data are decoded and are stored in the Y/C area.

③ OSD and display data are read, are mixed with OSDMIX and then are displayed.

STROB

IC6002
SDRAM
64Mbit

CF
Card

②

IC6003[ASIC]

IC3101
CCD

IC3006
CDS/AGC
ADC
10bit

10bit

SDRAM-I/F

(32bit)

Media I/F

75Ω DRIVER

RCA PIN JACK
TO TV

NTSC/PAL
COMPOSIT

NTSC/PAL
Encoder

DAC
1ch

IC4001
LCD
CONTROL

LCD
1.8inch

R
G
B

RGB
MTX

DAC
3ch

OSD
MTX

Image
processing

JPEG

IC3001
V-Driver

IC3003
TG

VDHEAD
HDHEAD

Serial

SSG

f(36MHz)
f(27MHz)

CLK Gen

RGB

AF detection

CPU I/F

USB

VD. HD

f(9.0MHz)

IC3004

Address

Data
(16bit)

f

IC5001
AUDIO

SPEAKE
MIC

M ZOOM

M IRIS/
SHUTTER
/FOCUS

M

M

CLK_GE

f

36.000MHz(TG&ASIC)
48.000MHz(ASIC for USB)
27.000MHz(ASIC   for
DISPLAY)

①

SERIAL

IC6004
FLASH
(8Mbit)

TIMER_IC

f(32.768kHz)

DC JACK

TO AC
ADAPTOR

IC1001

5.0V(ANALOG)
3.1V(ANALOG)
3.1V(DIGITAL
)
1.8V(DIGITAL
)
16.5V(CCD)
-8V(CCD)
12V(LCD)
15V(LCD_BLT)

POWER

BATTERY

f(300kHz)

IC6008
RISC
MB91121

f(9.0MHz)

IRQ x3

OPERATION
TOP(U)

OPERATION
REAR(U)

TO PC
USB JACK

- E6・E2000 -

VAA12001-R.3580.A

DISASSEMBLING

⚠ WARNING

	● There are high voltege parts inside. Be careful of this electric shock, when you remove the cover. ● You must discharge the main condenser according to the instruction of this repair manual before you remove the cover.

Notes: ! Remove the battery and the CF card prior to dissassmbly.

" At disassembling, be sure to memorize how the lead wires were arranged, how the screws were fixed and the type of the used screws.

\# Electrical parts must be grounded since they are easily damaged by static.

1. Rear case

!
XQN16+BJ4FN   %

"
XQN16+BJ4FN   %

• Remove the V-OUT and USB jack covers.

• Remove the two screws " (XQN16 + B25FN) and two screws \# (XQN16 + BJ4FN).

#
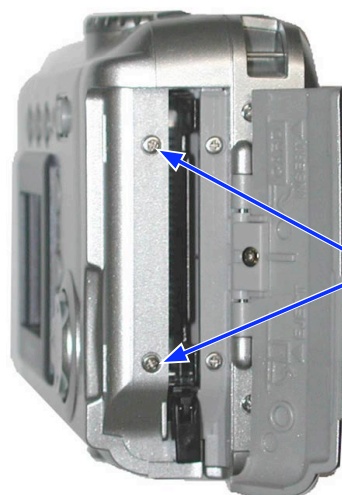
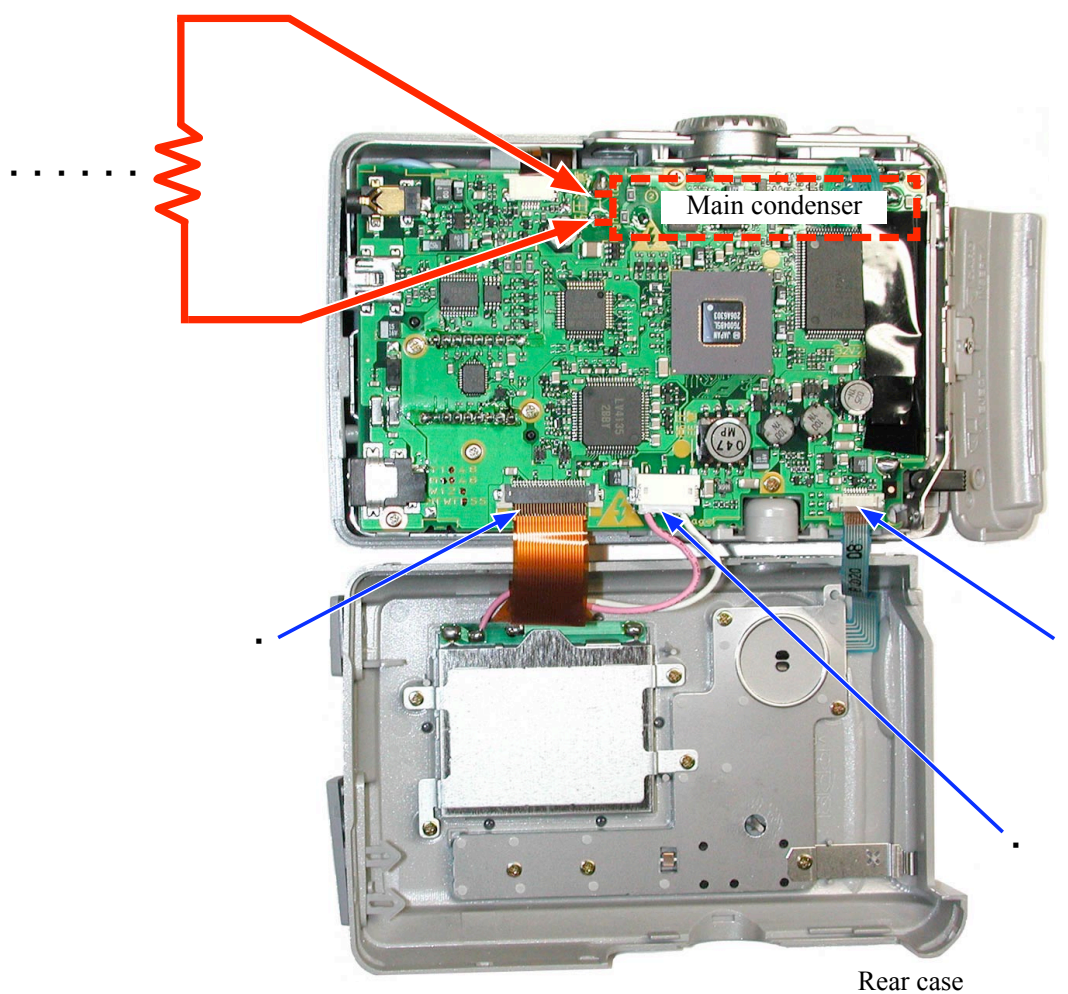XQN16+B25FN   %

Push.
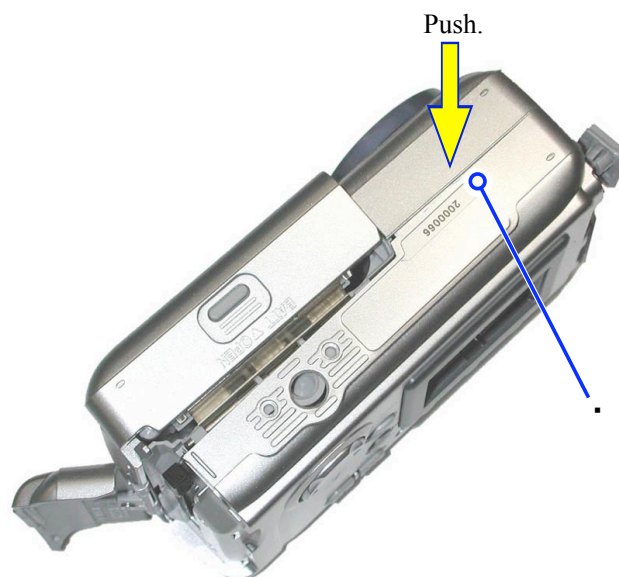
Push.

&

- Remove the two screws $ (XQN16 + B25FN).
- Release the latch % on the top and latch & on the bottom and then remove the rear case.

2. Discharge of main condenser

| ⚠ WARNING |
|---|
| ● There are high voltege parts inside. Be careful of this electric shock, when you remove the cover.

● You must discharge the main condenser according to the instruction of this repair manual before you remove the cover. |

%( ) * + ,

Main condenser

!

#

"

Rear case

- Open the rear case and discharge the main condenser.
- Remove the FPC " and cable # of LCD and the FPC $ of the rear OP. Then, disassemble the rear case.

3. Front case

!
XQN16+BJ4FN

"
XQN16+B25FN   %
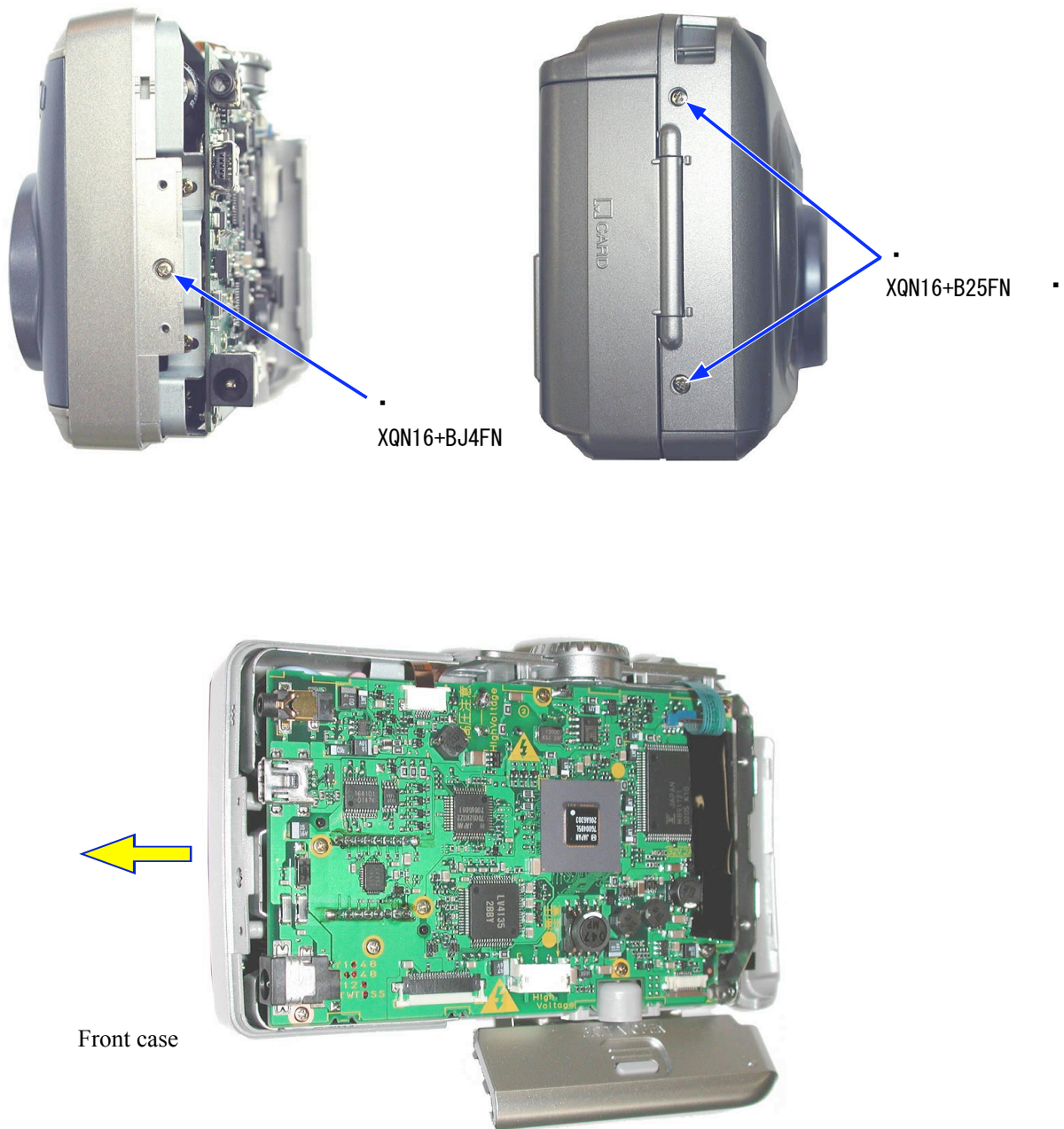
Front case

- Remove the one screw "   (XQN16 + BJ4FN) and two screws (XQN16 + B25FN).
- Open the battery cover and remove the front case forward.

'

&

Front case

#

XQN16+BJ4FN   -

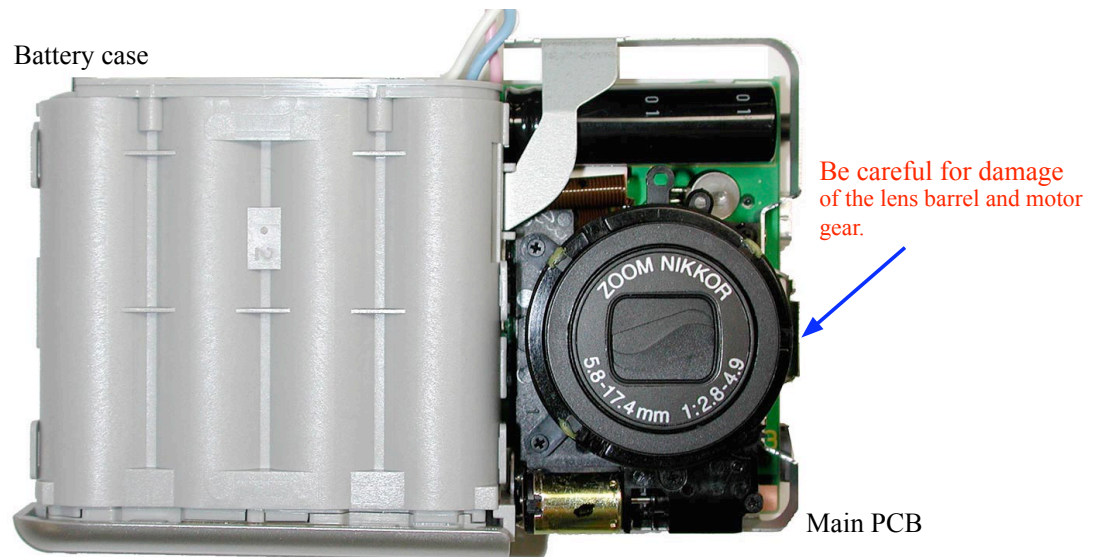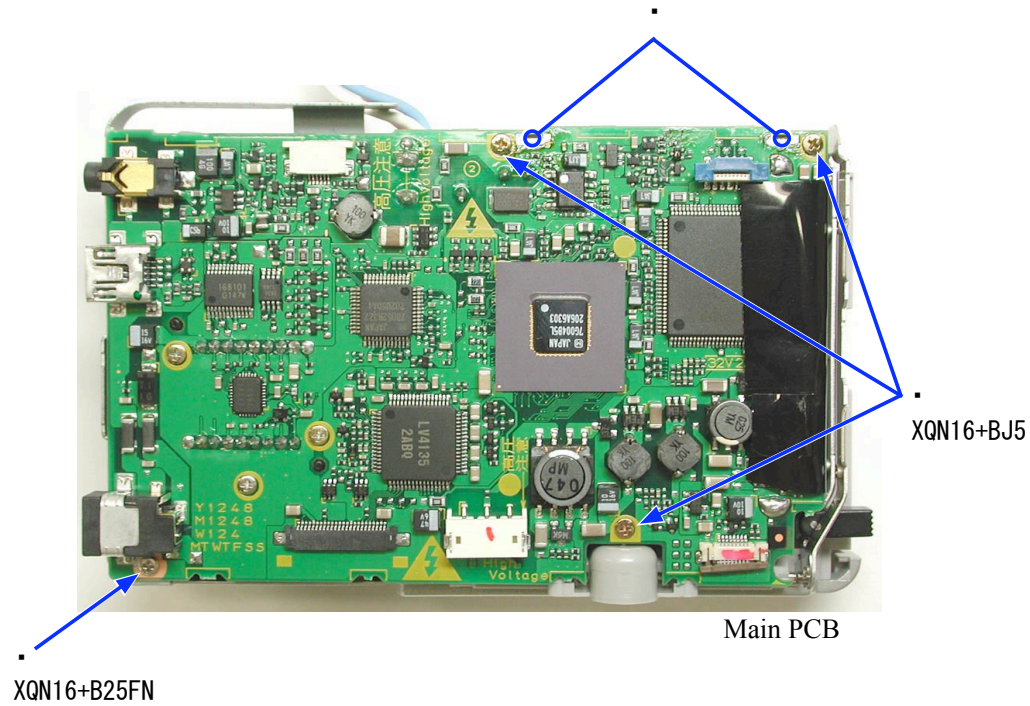/   .
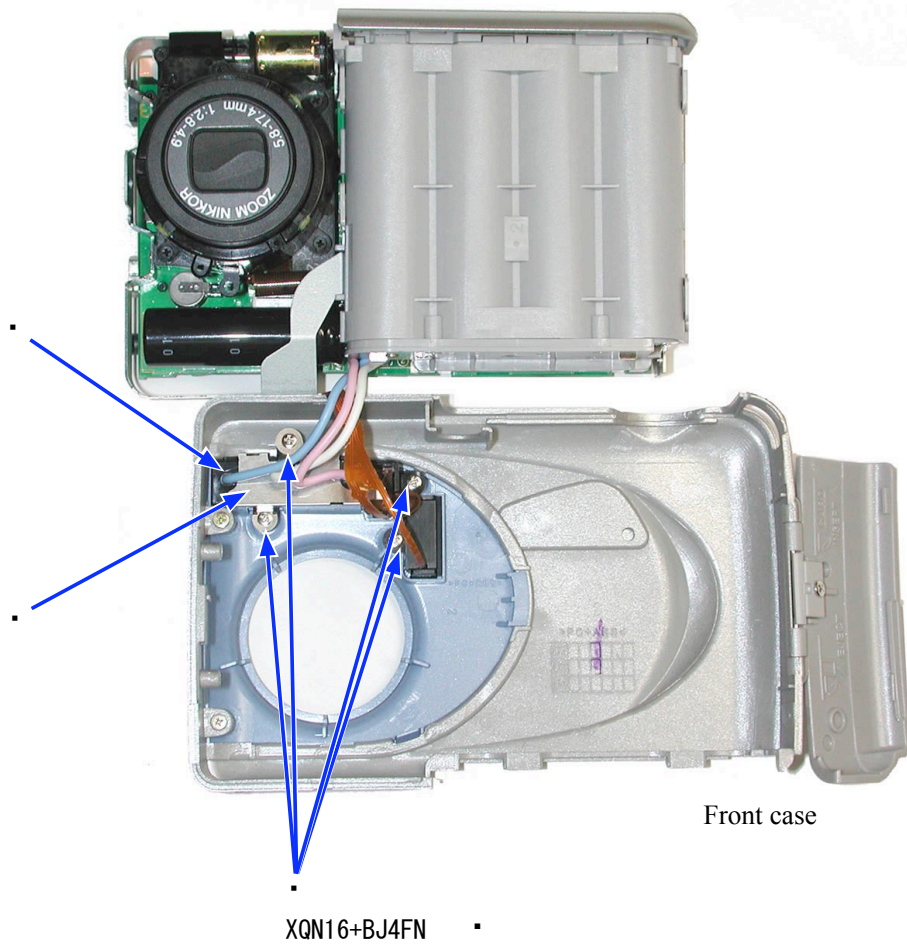
Front case

- Remove the four screws $ (XQN16 + BJ4FN) and then remove the speed light unit % and speed light earth
  plate & .
- The self LED window ' and optical adjusting sensor window (can be removed from the front case.

4. Main PCB

! XQN16+B25FN

XQN16+BJ5 %
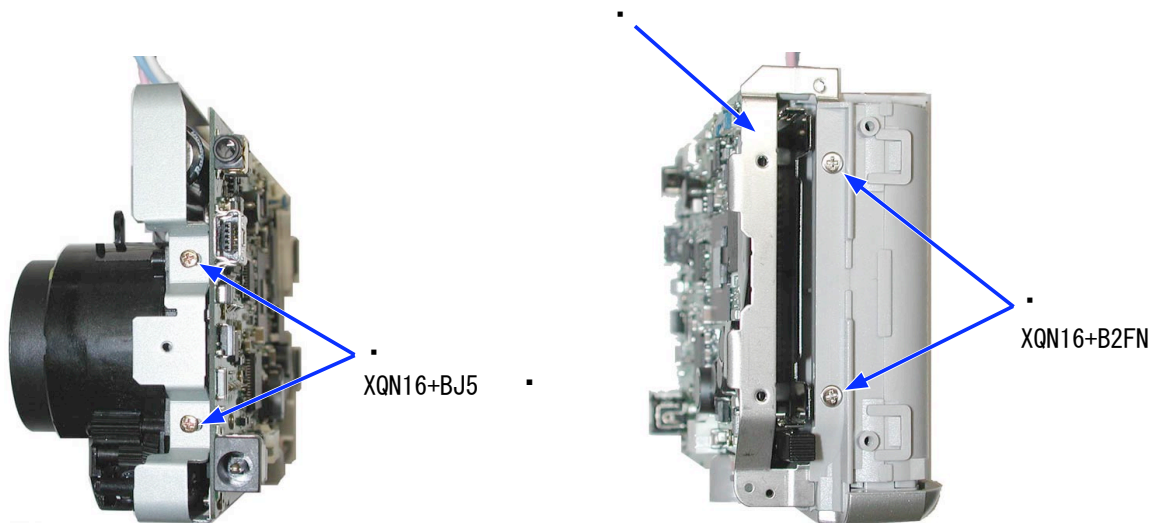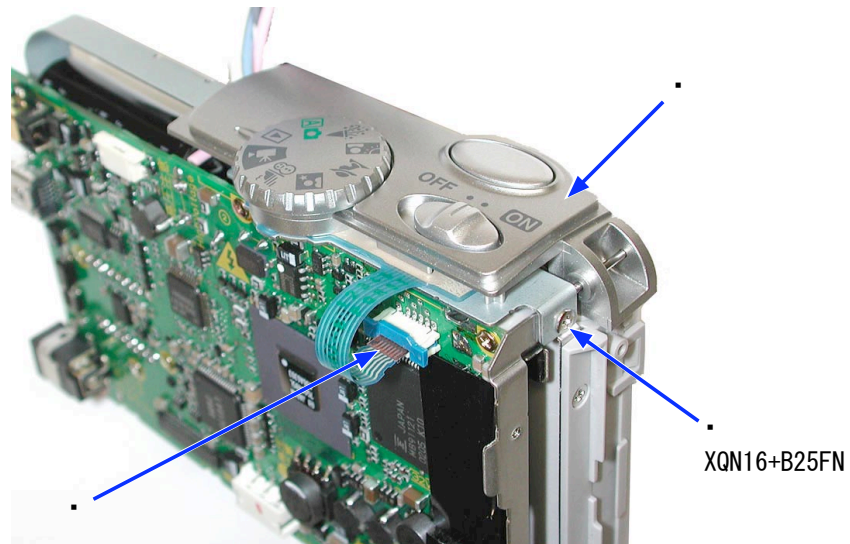
& XQN16+B2FN %

- Remove the one screw " (XQN16 + B25FN) and FPC # and then remove the top OP $.
- Remove the two screws % (XQN16 + BJ5).
- Remove the two screws & (XQN16 + B2FN) and then remove the CF earth plate ' .

1

XQN16+BJ5 O

Main PCB

2
XQN16+B25FN

Battery case

Be careful for damage
of the lens barrel and motor
gear.

Main PCB

- Remove the solder of the battery terminal (.
- Remove the three screws)   (XQN16 + BJ5) and one screw *   (XQN16 + B25FN).
- Disassemble the battery case unit and main PCB.

5. Lens unit

Speed light unit

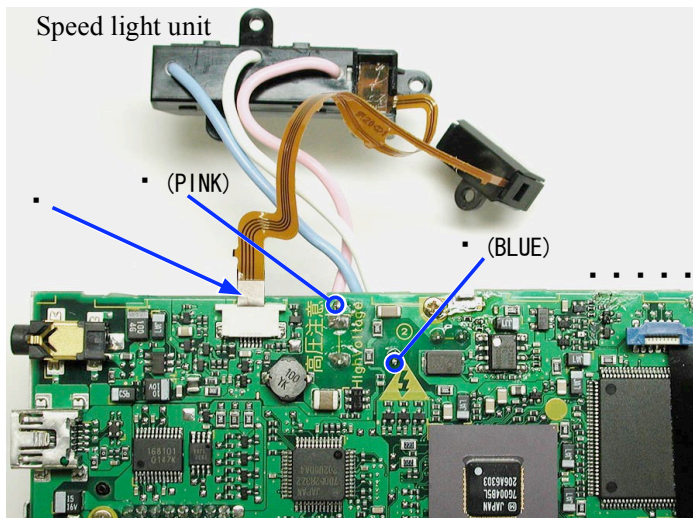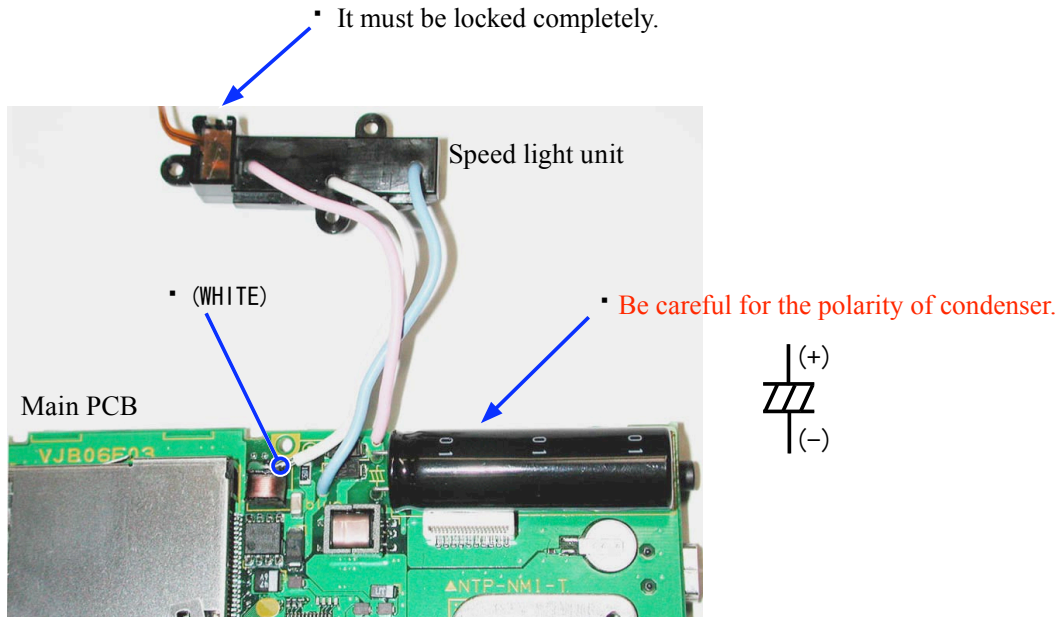Main PCB

!
XQN16+BJ5x2 (10)

"

&

'

#
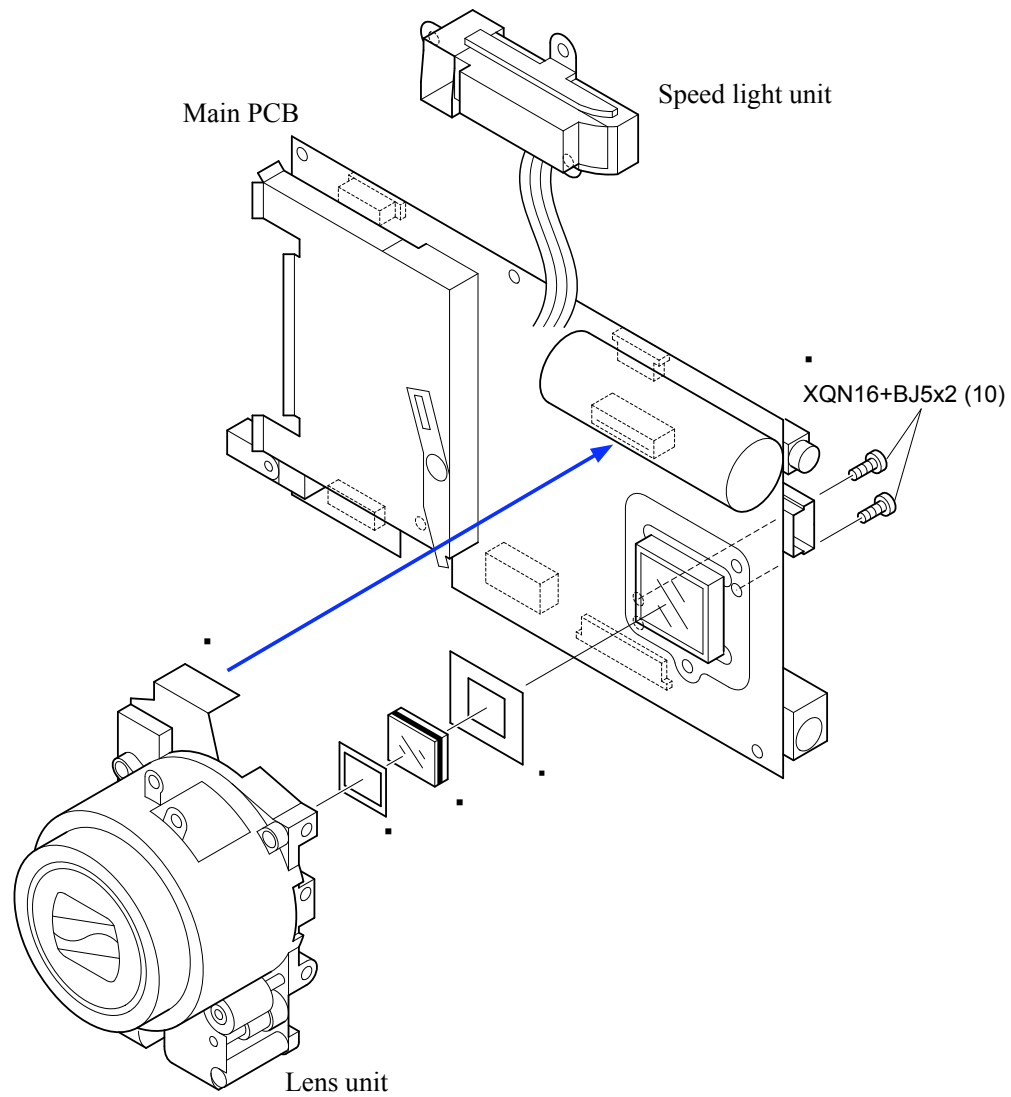
Lens unit

- Remove the two screws " (XQN16 + BJ5) and FPC # . Then, remove the lens unit.
- The aperture frame $, optical filter % and sponge & can be removed at the same time.

Assembly

1. **Speed light unit**

" It must be locked completely.

Speed light unit

\# (WHITE)

! Be careful for the polarity of condenser.

(+)

(−)

Main PCB

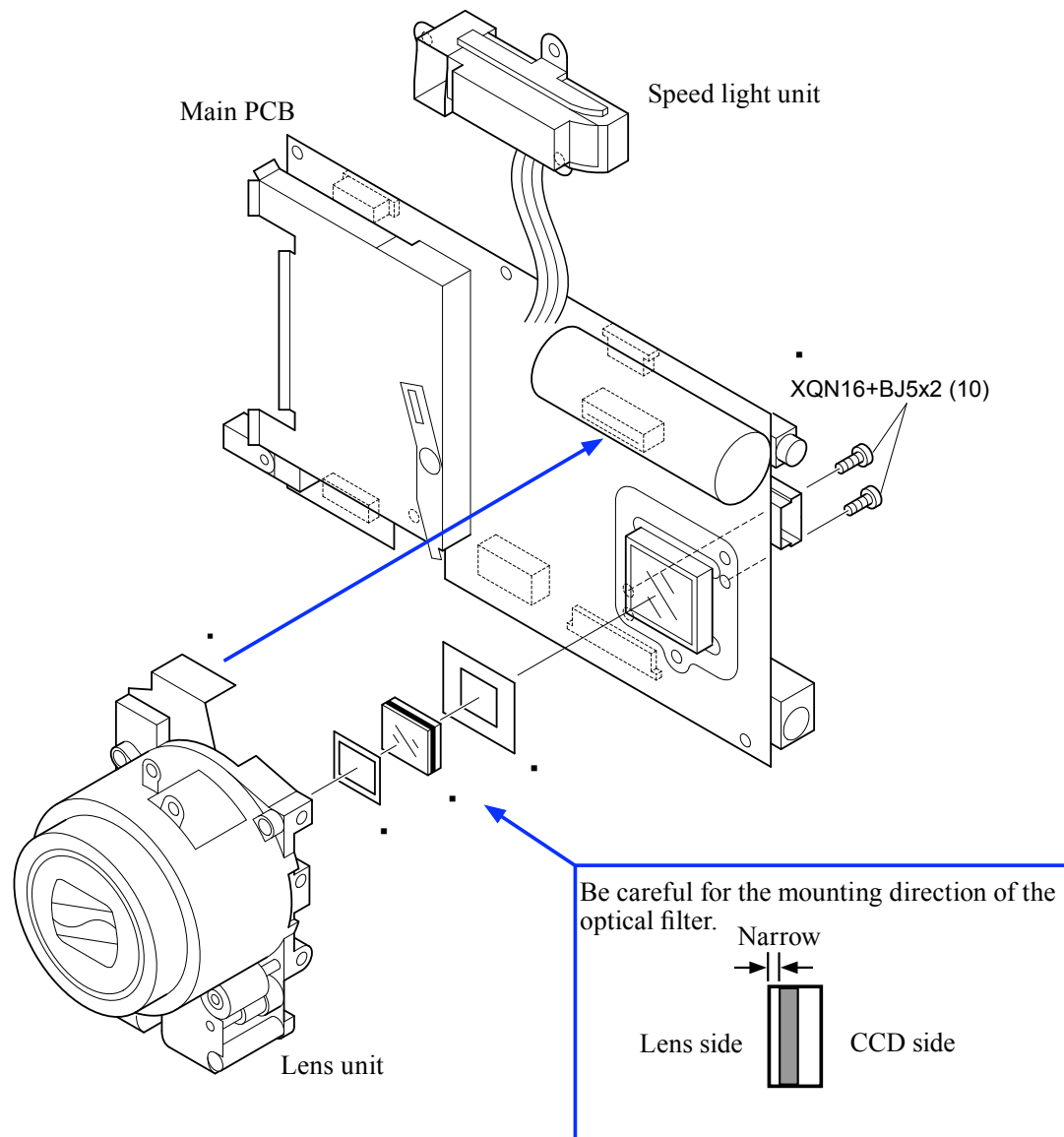VJB06F03

▲NTP-NM1-T.

Speed light unit

"

\# (PINK)
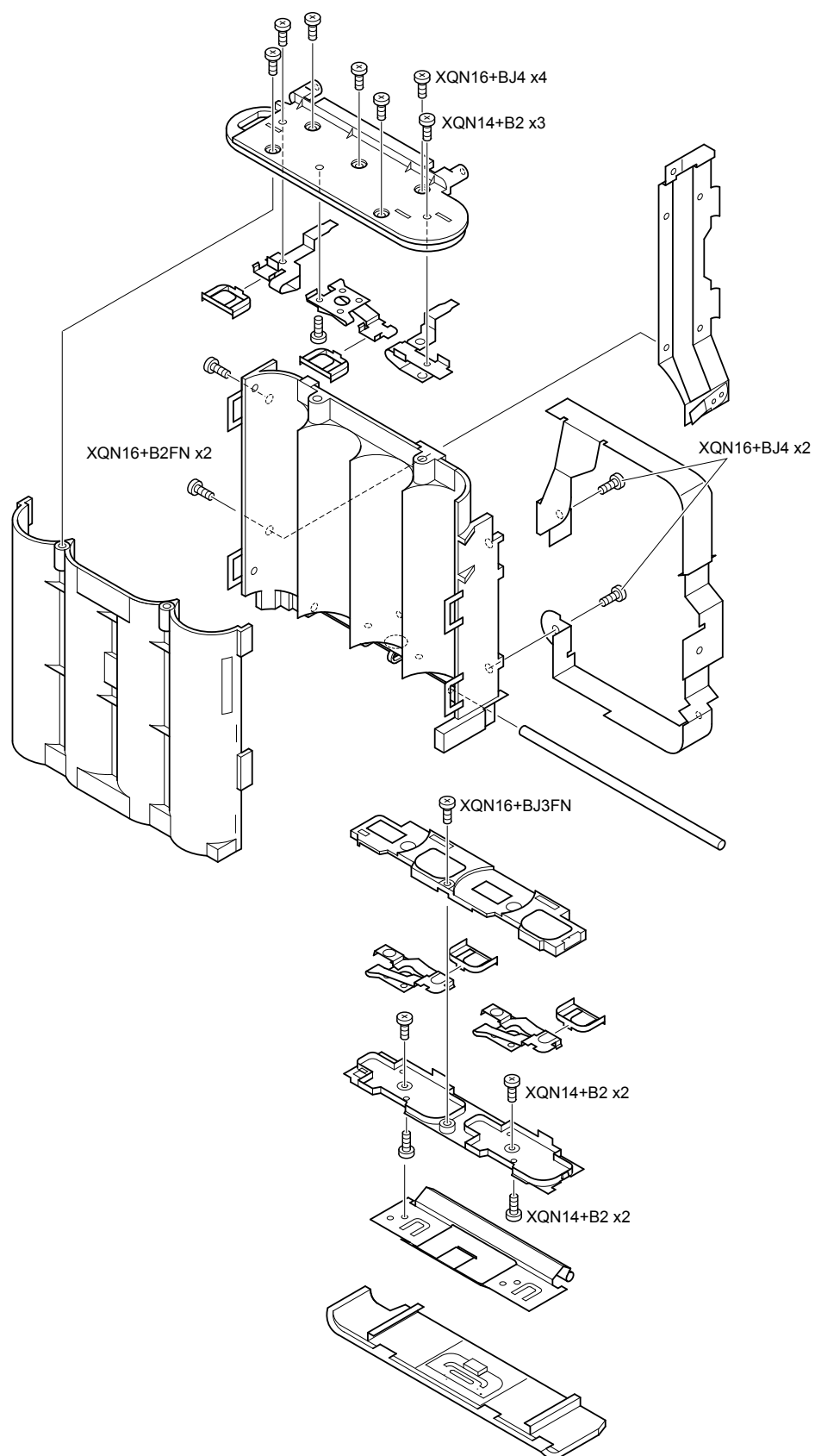
\# (BLUE)

$ % & ' (

high voltage

- Solder the main condenser " on the main PCB.
- Solder the lead wire (white) of the speed light unit \# .
- Solder the lead wires (blue) and (pink) of the speed light unit \# .
- Set the optical adjusting sensor (front FPC) $ into the speed light unit and connect it to the connector of main
  PCB.

2. Lens unit

Speed light unit

Main PCB

*
XQN16+BJ5x2 (10)

)

!

"

#

Lens unit

Be careful for the mounting direction of the optical filter.
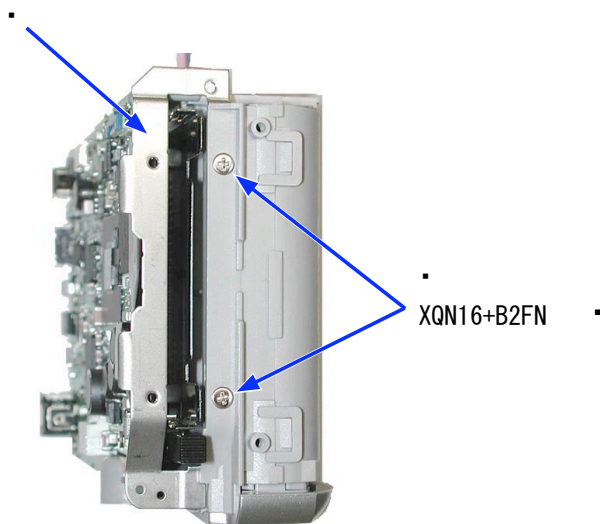
Narrow

Lens side   CCD side

- Set the aperture frame " , optical filter # and sponge $ into the lens unit.

- Install the main PCB to the lens unit and tighten it with the two screws % (XQN16 + BJ5).

- Connect FPC & .

3. Battery case assembly

XQN16+BJ4 x4

XQN14+B2 x3

XQN16+B2FN x2

XQN16+BJ4 x2

XQN16+BJ3FN

XQN14+B2 x2

XQN14+B2 x2

4. Main PCB

Battery case

Be careful for damage
of the lens barrel and
motor gear.

ZOOM NIKKOR

5.8-17.4mm 1:2.8-4.9

Main PCB

!

#
XQN16+B2FN   ,
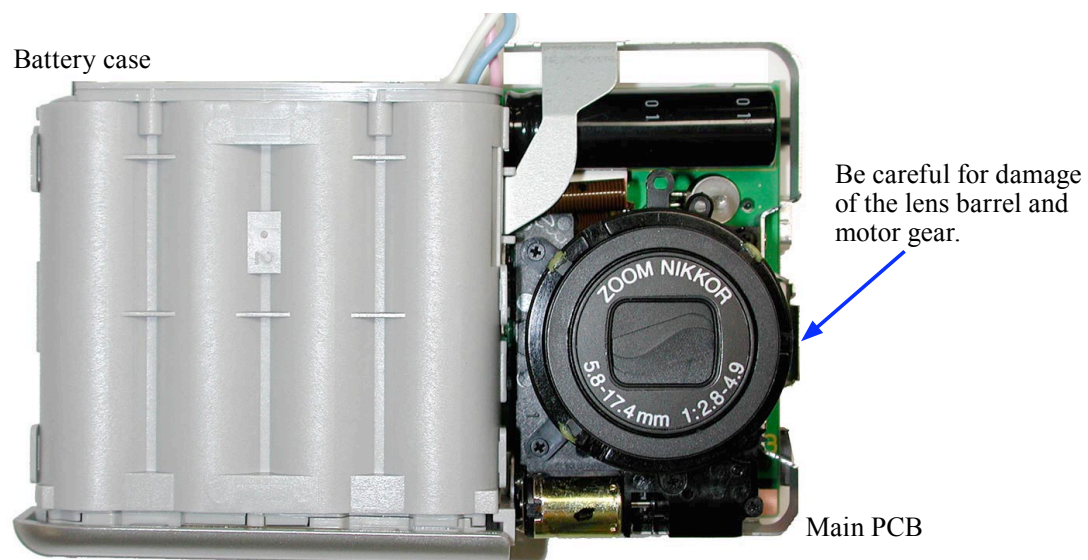
• Assemble the battery case unit and main PCB.
• Set the CF earth plate "   and tighten the two screws (XQN16 + B2FN).

XQN16+BJ5 -

Main PCB

*
XQN16+B25FN

)
XQN16+BJ5 ,

0

/
XQN16+B25FN

1
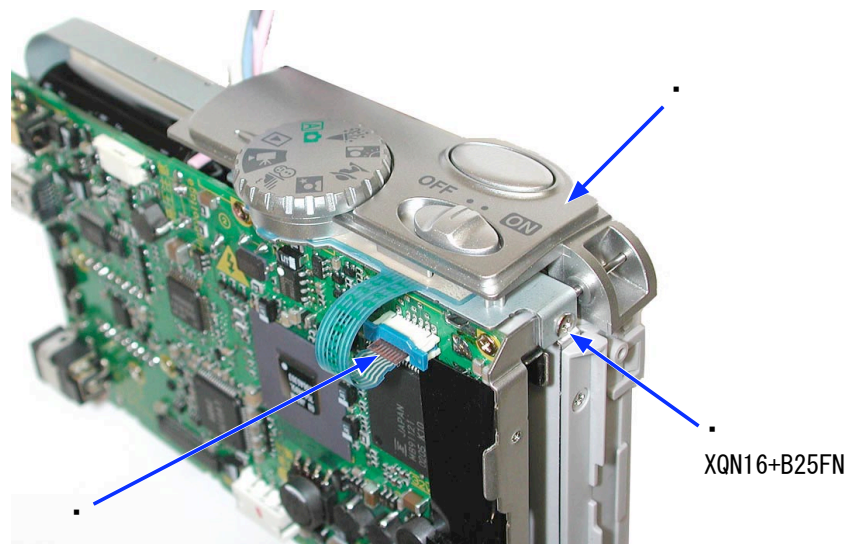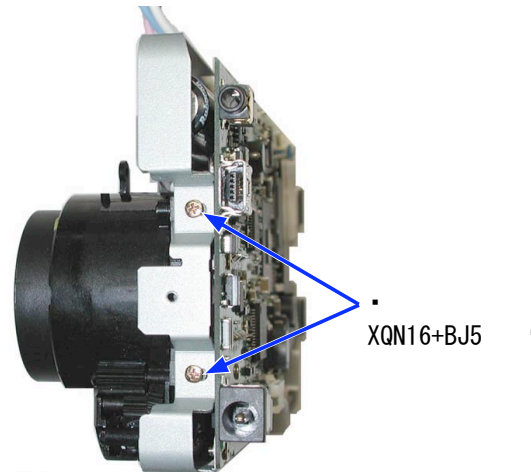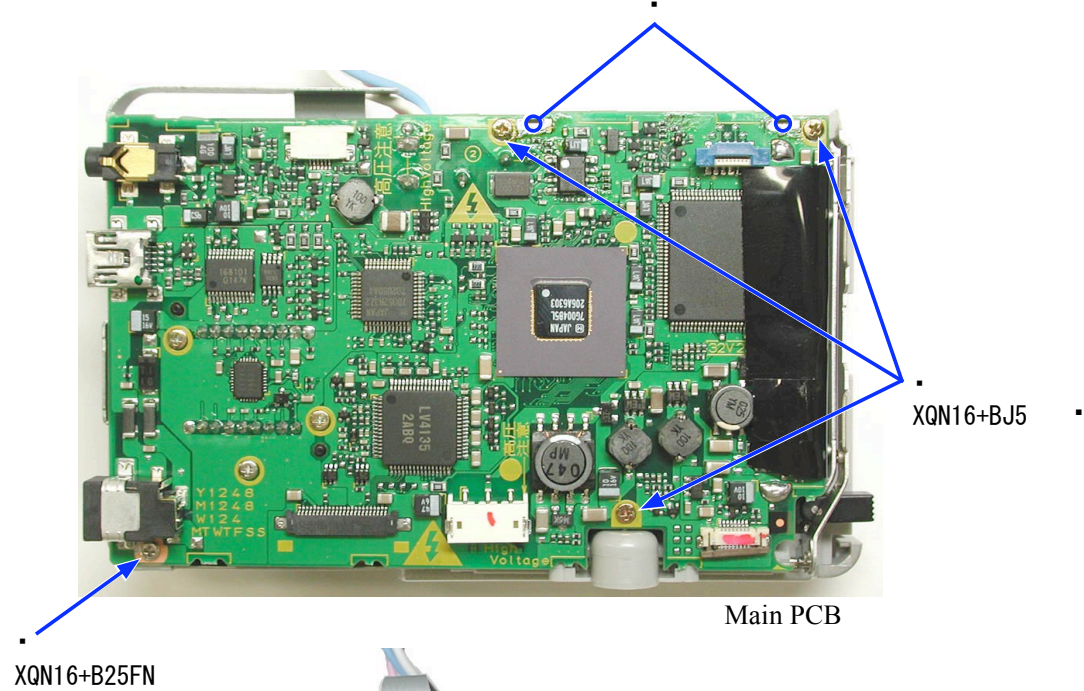
- Tighten the three screws $ (XQN16 + BJ5), one screw % (XQN16 + B25FN) and two screws & (XQN16 + BJ5).
- Solder the battery terminal ' .
- Set the top OP (, tighten the one screw) (XQN16 + B25FN) and connect FPC * .

5. Front case

Front case

)
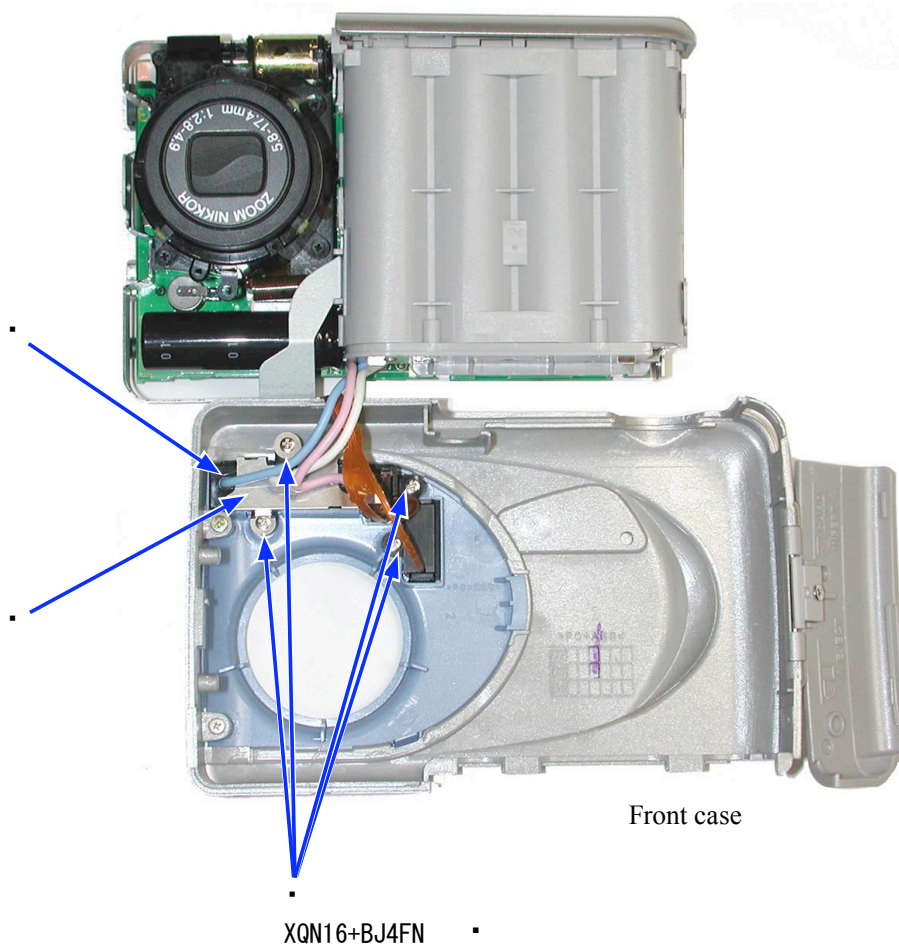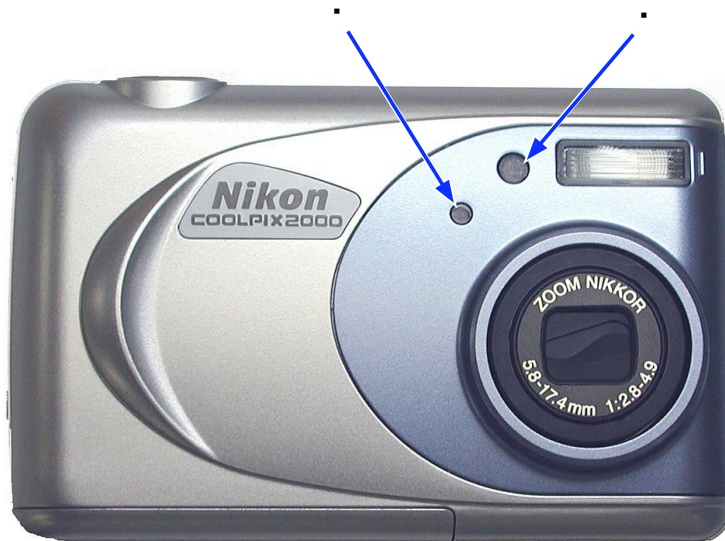
XQN16+BJ4FN   2

- Set the self LED window " and optical adjusting sensor window # .
- Set the speed light unit $ and speed light earth plate % onto the front case and tighten the four screws &

  (XQN16 + BJ4FN).

Main PCB

Front case

)
XQN16+BJ4FN

.
XQN16+B25FN   ,
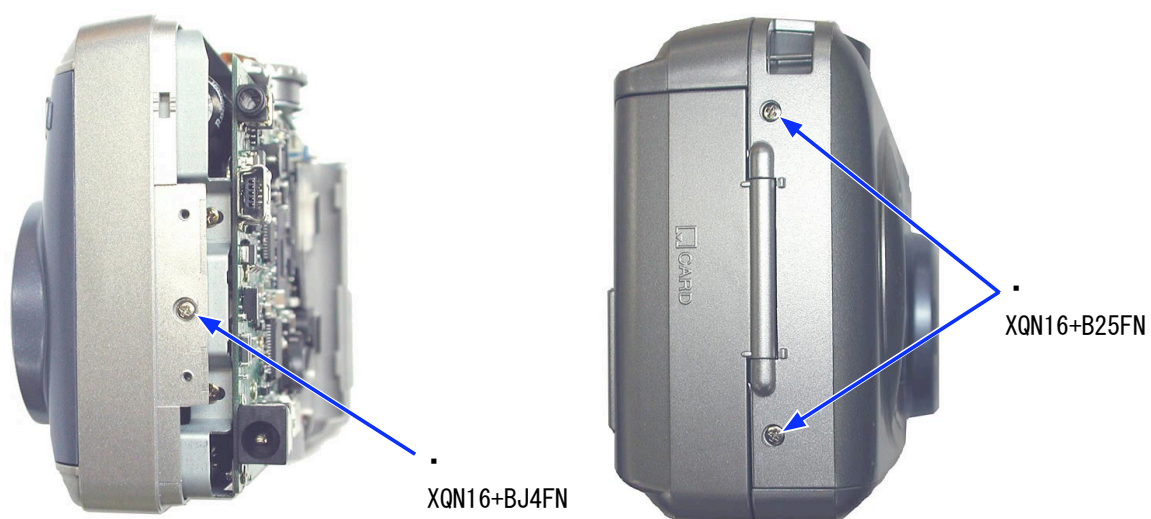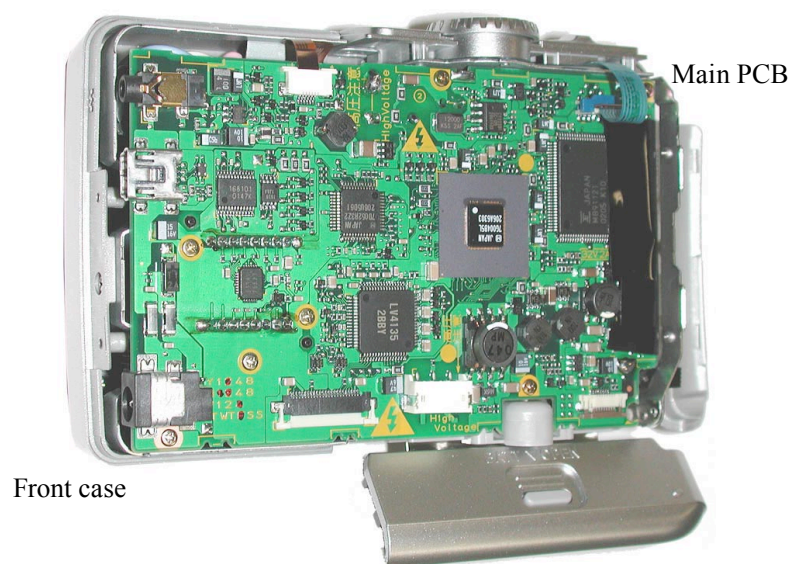
• Assemble the front case and main PCB.

• Tighten the one screw &   (XQN16 + BJ4FN) and the two screws '   (XQN16 + B25FN).

6. Rear case assembly

XQN16+BJ35

XQN16+BJ35 x4

XQN16+BJ35 x4

7. Rear case

Front case

!

*

#

"

Rear case

)
XQN16+B25FN   ,
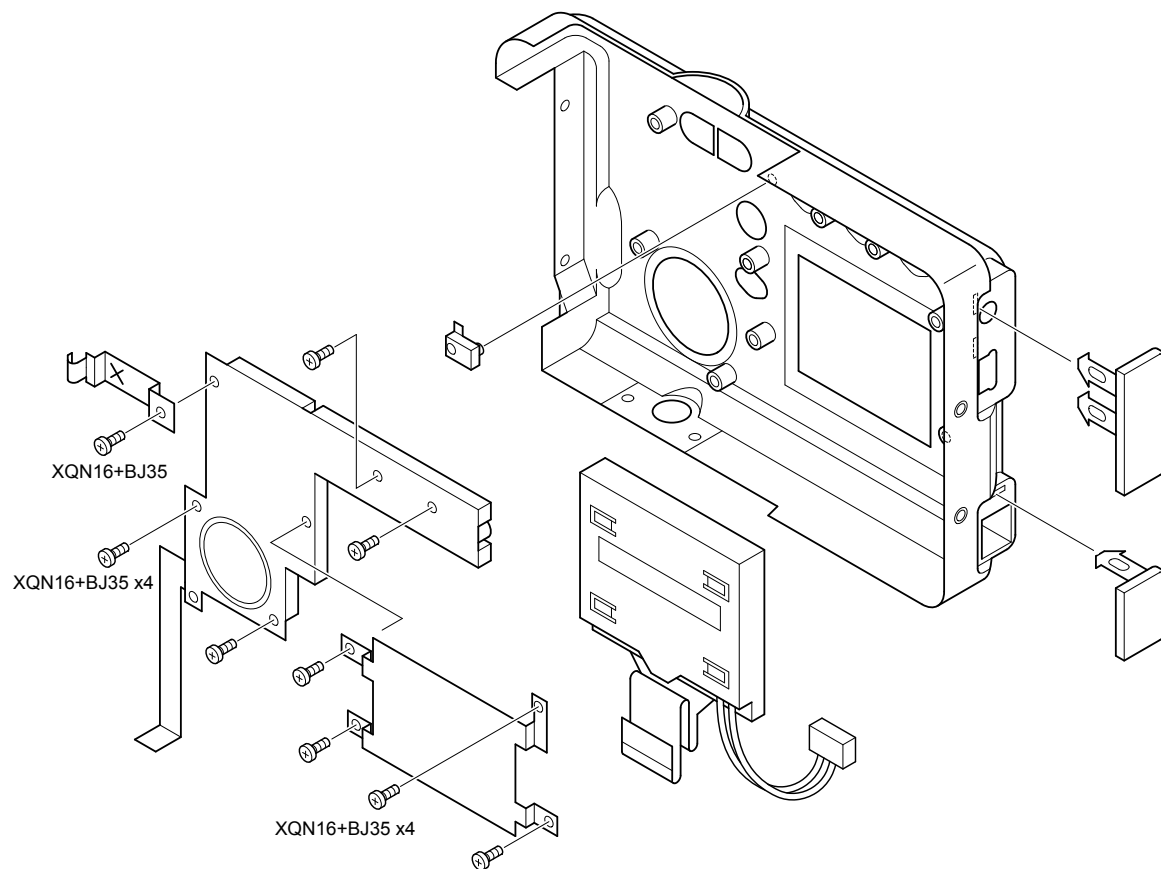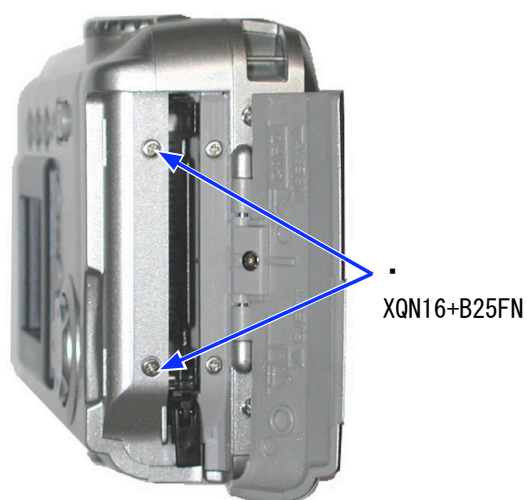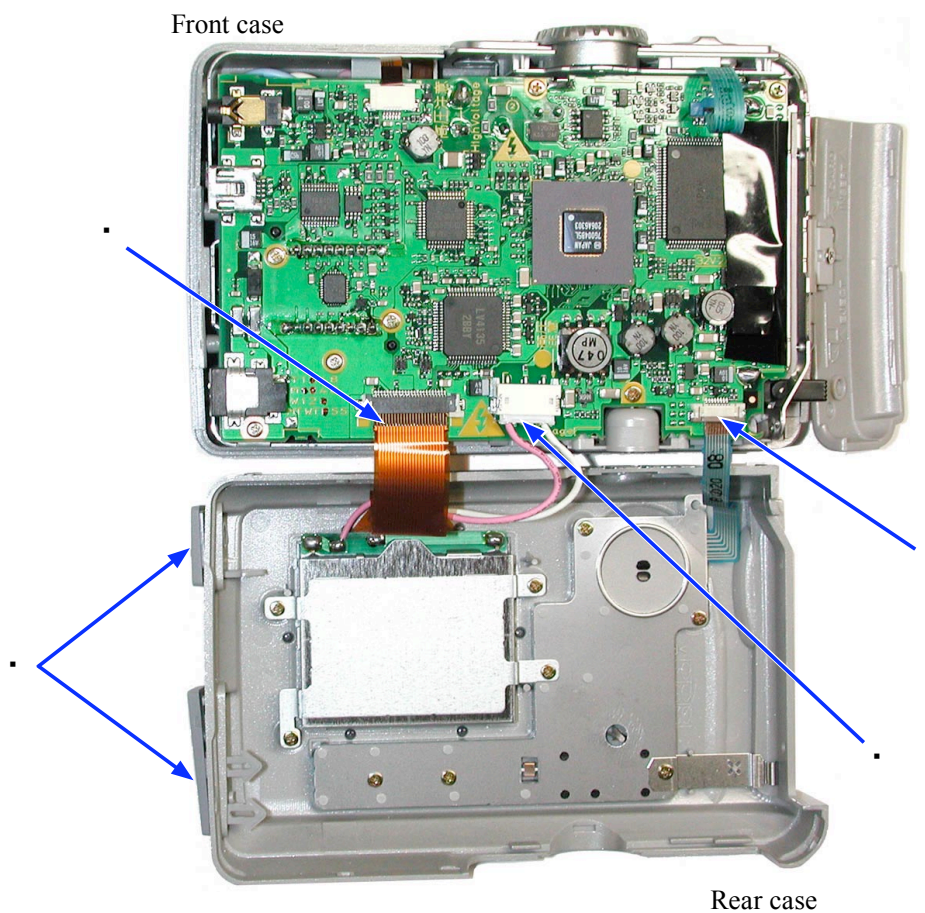
- Connect the FPC "   and cable #   of LCD and the FPC $ of rear OP to the rear case.
- Remove the V-OUT and USB jack covers %   temporarily.
- Assemble the rear and front cases.
- Tighten the two screws &   (XQN16 + B25FN).

XQN16+BJ4FN   ,

O
XQN16+BJ4FN   ,
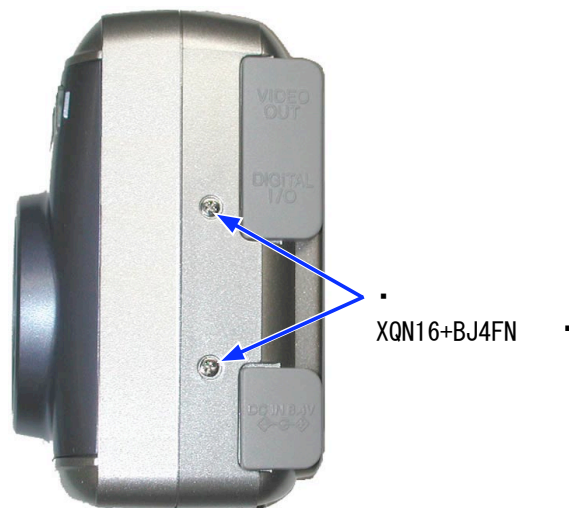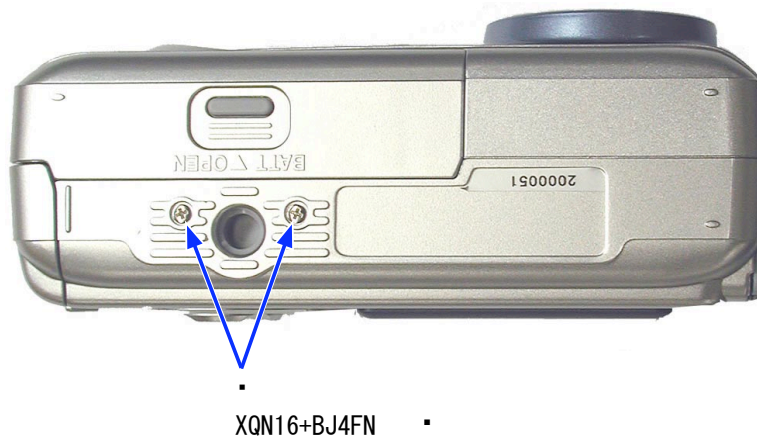
The V-OUT/USB covers and DC jack cover must not be caught.

- Tighten the two screws '   (XQN16 + BJ4FN) and two screws ((XQN16 + BJ4FN).
- Set the V-OUT and USB jack covers.

Adjustment

1. **Machines to be used**

   Personal computer, AC adapter EH-53 or EH-21 and USB cable (UC-E5)

   CF card (which does not record any data).

2. **Service tools**

   Color viewer 5100K, seimens star chart, calibration software and color adjustment chart, ND filter 1.2 and standard reflection sheet

3. **Adjustment items and order**

   1. Adjustment of lens back focus
   2. Adjustment of shutter
   3. Adjustment of ISO sensitivity
   4. Adjustment of AWB
   5. Adjustment of color gain and phase
   6. Adjustment of Photocell sensitivity

   Note: When a lens, CCD or main PCB is replaced, it is necessary to perform 1~5 again. Carry out adjustments of 2~5 in order.

   *After each adjustment is done, perform setting for delivery.

4. **Adjustment when parts are replaced**

   ! : Adjustment is necessary.

   : Adjustment is not necessary.

	Lens back focus	Shutter ISO sensitivity AWB presetting Color gain/phase	Optical adjusting sensor	Setting for delivery
Lens unit	!	!		
Optical filter	!	!		
Main PCB	!	!		!
Speed light unit			!	
Front FPC			!	

   * After each adjustment is done, perform setting for delivery.

5. **Color viewer**

   Before using the color viewer, turn on the switch and carry out aging for about 30 minutes.

6. Setup

1) Necessary conditions of system
   - Windows® 98SE or Me, 2000, XP
   - PC/AT compatible machine equipped with a processor of Pentium or higher
   - CD-ROM drive
   - Floppy disk drive for a 3.5-inch 2HD
   - USB port
   - Empty memory of 40MB or more
   - Hard disk drive with empty capacity of 15MB or more
   - VGA or SVGA to display 256 colors or more

2) Installation of maintenance software
   - Insert the FD of maintenance software into the floppy disk drive.
   - Copy the maintenance software into an optional folder of HD.

3) Installation of the maintenance USB driver
   - Insert the FD of maintenance software into the floppy disk drive.
   - Copy the maintenance USB driver into an optional folder of HD.
   - Set the mode dial of camera to "A". As pressing the speed light button and multi selector ＃ , turn on the power.
   - Connect the camera to PC with the USB cable.
   - When the hardwarewizard is displayed on PC, select the maintenance USB driver "NkUsbMt1. Inf" and let PC recognize the camera.
   - Open the USB controller through "control panel", "system" and "device manager" and make sure that "Nikon Uploader Driver" is displayed.

4) How to access the maintenance mode
   - Insert a CF card (which does not record any data).
   - Set the mode dial of camera to "A". As pressing the speed light button and multi selector ＃ , turn on the power.
   - Connect the camera to PC with the USB cable.

5) How to exit from the maintenance mode
   - Remove the cord of the AC adapter. (If the power switch is turned off, the adjustment data are not valid.)
   - Remove the USB cable.

A

7. Maintenance software

- Start the maintenance software E2kMnt.exe, and the following window is displayed on the monitor.
- Check "Use USB" and click the "Connect" button.
- If connection is successful, the model name and version number are displayed in "Camera Information".

8. Adjustment of lens back focus

1) Preparation for adjustment

- Insert a CF card (which does not record any data).
- Set the mode dial of camera to "A". As pressing the speed light button and multi selector ＃ , turn on the power.
- Take a picture of the siemens chart. Make sure with LCD that the chart center is in the center of screen.

2) Conditions of adjustment

- Use the A3 siemens chart (enlarge the A4 size attached to the instruction manual to the A3 size and then use it).
- Set the illuminance of chart surface to 70~1000 lux.
- The distance between the chart and camera (front surface of lens) must be 150cm ± 3cm.

Camera

150cm±3cm

Siemens star chart
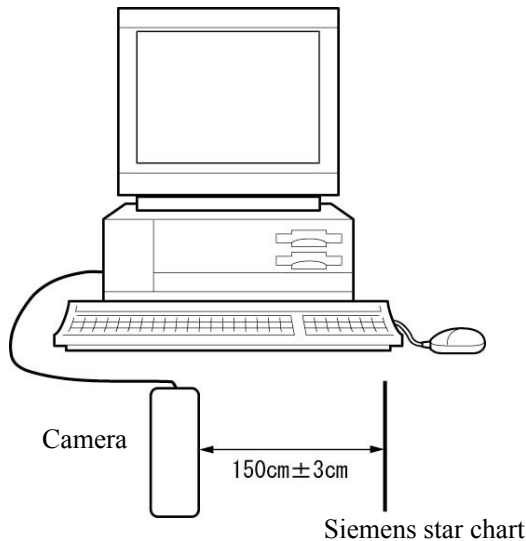
3) How to adjust

- Set "Test3" of "Test Mode" with the "Each Mode" tab of the maintenance software, and the software makes adjustment automatically.

- Select "Buffer Read/Write" of "EEPROM Read/Write" with the "EEPROM Read/Write" tab.

- After inputting the address "(00c7)" to Window1 or 2, click "Read" to make sure that data is "0001 (hex)" and adjustment is ended.

- Check the value of the adjustment RAM "(0308)" ~"(030b)".
    Range of adjustment value: ffd8~0028 (-40~+40)
    Note: "0000~7fff" means (0~32768) and "ffff~8000", (-1~-32768).

- Return the address "(00c7)" to "Set data to 0000(hex)" with [+/-] in Window1 or 2. Then, click "Write" to write the data in RAM.

- Click "Write" of "ROM Write" to write the data in EEPROM.

- Set "Normal" of "Test Mode" with the "Each Mode" tab to end the adjustment.

9. Adjustment of shutter
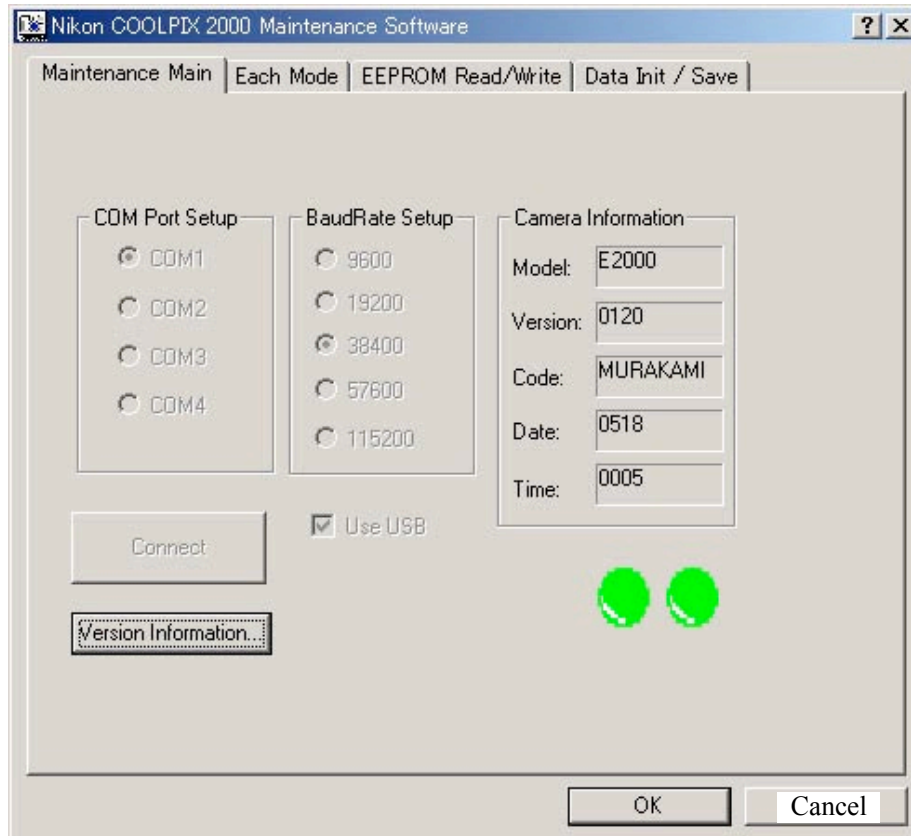
1) Preparation for adjustment

  • Insert a CF card (which does not record any data).

  • Set the mode dial of camera to "A". As pressing the speed light button and multi selector #, turn on the power.

  • Take a picture of the luminance surface of the color viewer.

2) Conditions of adjustment

  • Set the color viewer without chart.

  • Set the illuminance of the color viewer to 2400 lux.

  • Set the camera contact tightly with the luminance surface of the color viewer.

Camera   0 cm   Color viewer
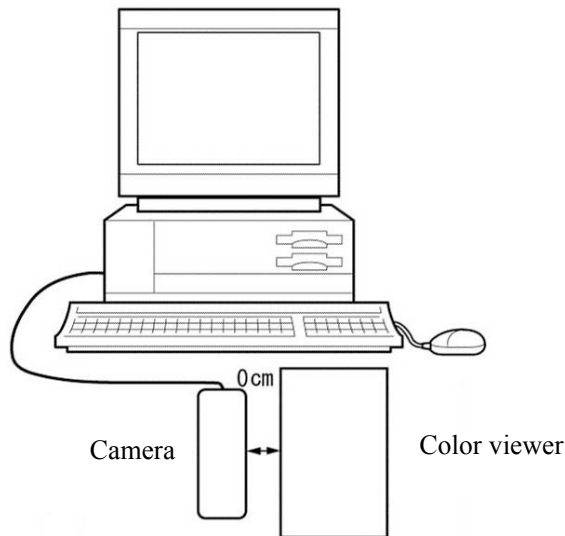
3) How to adjust

  • Set "Test4" of "Test Mode" with the "Each Mode" tab of the maintenance software, and the software makes adjustment automatically.

  • Select "Buffer Read/Write" of "EEPROM Read/Write" with the "EEPROM Read/Write" tab of the maintenance software.

  • After inputting the address "(00c7)" to Window1 or 2, click "Read" to make sure that the data is "0001 (hex)" and the adjustment is ended.

    If the data of "(00c7)" is others except "0001 (hex)", check the following items and make adjustment again.
       "0000": Adjusting
       "0002": Adjustment value is under the standard. (Check if the mechanical shutter is faulty.)
       "0003": Adjustment value is over the standard. (Check if the mechanical shutter is faulty.)
       "0004": Illuminance is too low. (Check if the illuminance of the color viewer is set incorrectly.)
       "0005": Illuminance is too high. (Check if the illuminance of the color viewer is set incorrectly.)
       "0006": Time is over.

  • Return the address "(00c7)" to "Set data to 0000(hex)" with [+/-] in Window1 or 2. Then, click "Write" to write the data in RAM.

  • Click "Write" of "ROM Write" to write the data in EEPROM.

  • Set "Normal" of "Test Mode" with the "Each Mode" tab to end the adjustment.

10. Adjustment of ISO sensitivity

1) Preparation for adjustment
   - Insert a CF card (which does not record any data).
   - Set the mode dial of camera to "A". As pressing the speed light button and multi selector # , turn on the power.
   - Lower the illuminance for the luminance surface of the color viewer with the ND filters 1.2 and then take a picture of the surface.

2) Conditions of adjustment
   - Set the color viewer without chart.
   - Set the illuminance of the color viewer to 2400 lux.
   - Adhere the ND filters 1.2 to the luminance surface of the color viewer and then set the camera contact tightly with the surface.

Camera   0 cm   Color viewer

ND filter
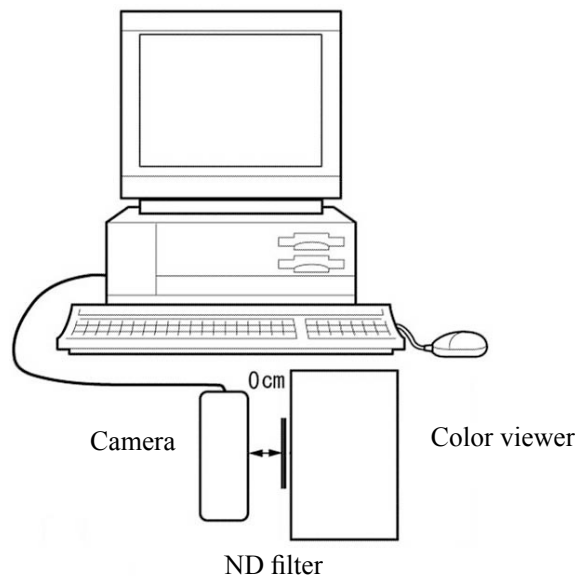
3) How to adjust
   - Set "Test5" of "Test Mode" with the "Each Mode" tab of the maintenance software, and the software makes adjustment automatically.

   - Select "Buffer Read/Write" of "EEPROM Read/Write" with the "EEPROM Read/Write" tab of the maintenance software.

   - After inputting the address "(00c7)" to Window1 or 2, click "Read" to make sure that the data is "0001 (hex)" and the adjustment is ended.

     If the data of "(00c7)" is others except "0001 (hex)", check the following items and make adjustment again.
       "0000": Adjusting
       "0002": Adjustment is in time-out.
       "0003": Adjustment value is under the standard.
       "0004": Adjustment value is over the standard.

   - Return the address "(00c7)" to "Set data to 0000(hex)" with [+/-] in Window1 or 2. Then, click "Write" to write the data in RAM.

   - Click "Write" of "ROM Write" to write the data in EEPROM.

   - Set "Normal" of "Test Mode" with the "Each Mode" tab to end the adjustment.

11. Adjustment of AWB presetting

1) Preparation for adjustment

- Insert a CF card (which does not record any data).

- Set the mode dial of camera to "A". As pressing the speed light button and multi selector #, turn on the power.

- Take a picture of the luminance surface of the color viewer.

2) Conditions of adjustment

- Set the color viewer without chart.
- Set the illuminance of the color viewer to minimum.
- Set the camera contact tightly with the luminance surface of the color viewer.

0 cm

Camera   Color viewer
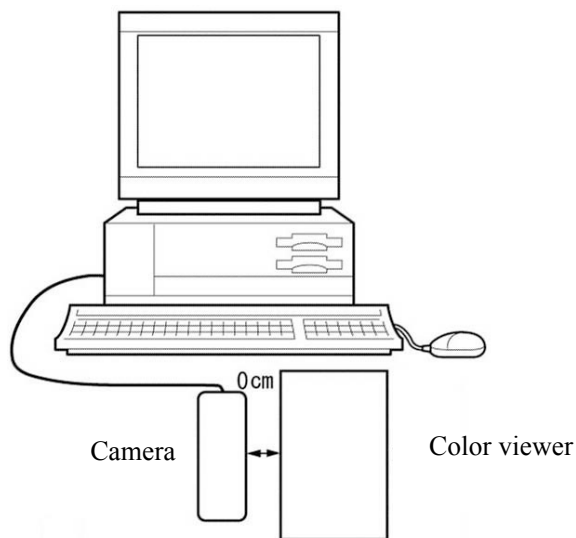
3) How to adjust

- Set "Preset1" of "White Balance Mode" with the "Each Mode" tab of the maintenance software.

- Select "Buffer Read/Write" of "EEPROM Read/Write" with the "EEPROM Read/Write" tab.

- Input the address "(017d)" to Window1 or 2 and click "Read".

- Input "03 (hex)" to the upper two digits in the Data column and click "Write".

- Click "Read" to make sure that "ff (hex)" is outputted in the upper two digits in the Data column.

- Set "Preset2" of "White Balance Mode" with the "Each Mode" tab.

- Input the address "(017d)" to Window1 or 2 and click "Read".

- Input "03 (hex)" to the upper two digits in the Data column and click "Write".

- Click "Read" to make sure that "ff (hex)" is outputted in the upper two digits in the Data column.

- Click "Write" of "ROM Write" to write the data in EEPROM.

- Set "Normal" of "White Balance Mode" with the "Each Mode" tab to end the adjustment.

12. Adjustment of color gain and phase

1) Preparation for adjustment
   - Insert a CF card (which does not record any data).
   - Set the mode dial of camera to "A". As pressing the speed light button and multi selector ＃ , turn on the power.
   - Take a picture of the color chart and, as checking with LCD, adjust the angle of view.

2) Conditions of adjustment
   - Set the illuminance of the color viewer to minimum.
   - Set the color chart to the color viewer. Refer to the following figure for its setting direction and angle of view.

No clearance   No clearance

YELLOW   RED   ← LCD screen frame

Display the RED and YELLOW parts in the whole LCD screen frame.

3) How to adjust
   - Select "Buffer Read/Write" of "EEPROM Read/Write" with the "EEPROM Read/Write" tab of the maintenance software.

   - Input the address "(017d)" to Window1 or 2 and click "Read".

   - Input "01 (hex)" to the lower two digits in the Data column and click "Write".

   - Set "Preset1" of "White Balance Mode" with the "Each Mode" tab.

   - Select "Buffer Read/Write" of "EEPROM Read/Write" with the "EEPROM Read/Write" tab.

   - Input the address "(017d)" to Window1 or 2 and click "Read".

   - Input "13 (hex)" to the upper two digits in the Data column and click "Write".

   - Click "Read" to make sure that "ff (hex)" is outputted in the upper two digits in the Data column.

   - Click "Write" of "ROM Write" to write the data in EEPROM.

   - Set "Preset2" of "White Balance Mode" with the "Each Mode" tab.

   - Input the address "(017d)" to Window1 or 2 and click "Read".

   - Input "13 (hex)" to the upper two digits in the Data column and click "Write".

   - Click "Read" to make sure that "ff (hex)" is outputted in the upper two digits in the Data column.

   - Click "Write" of "ROM Write" to write the data in EEPROM.

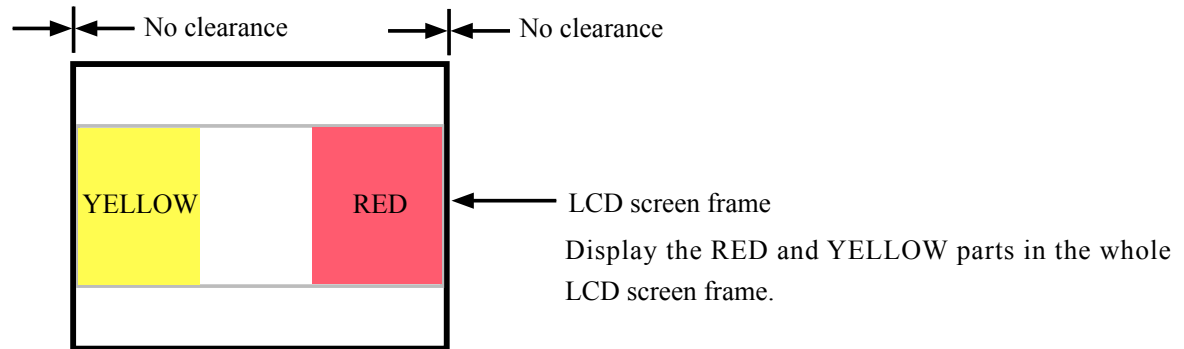   - Set "Normal" of "Test Mode" with the "Each Mode" tab to end the adjustment.

13. Adjustment of Photocell sensitivity

1) Preparation for adjustment
 • Insert a CF card (which does not record any data).

 • Set the mode dial of camera to "A". As pressing the speed light button and multi selector # , turn on the power.

 • Take a picture of the standard reflection sheet.

2) Conditions of adjustment
 • Make adjustment in the dark room.
 • Set the illuminance to 100 lux or less.
 • The distance between the standard reflection sheet and camera (front surface of lens) must be 140cm ± 3cm.

Camera
140cm±3cm

Standard reflection sheet
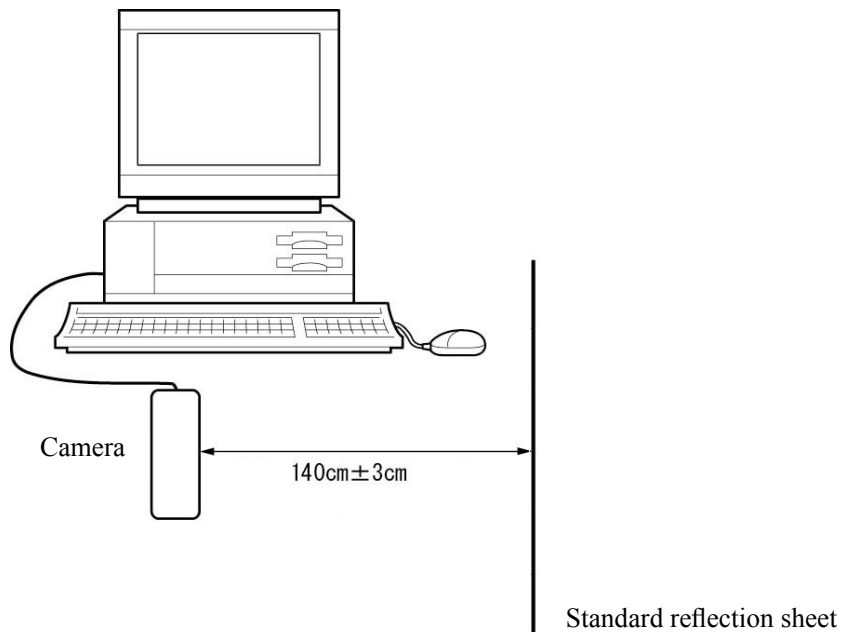
3) How to adjust
 • Set "Test2" of "Test Mode" with the "Each Mode" tab of the maintenance software, and the software makes adjustment automatically.

 • Select "Buffer Read/Write" of "EEPROM Read/Write" with the "EEPROM Read/Write" tab of the mainte- nance software.

 • After inputting the address "(00c7)" to Window1 or 2, click "Read" to make sure that the data is "0001 (hex)" and the adjustment is ended.

 If "(00c7)" is others except "0001 (hex)", check the following items and make adjustment again.
  "0002": Optical adjustment level is too low.
  "0003": Optical adjustment level is too high.

 • Return the address "(00c7)" to "0000 (hex)" with [+/-] in Window 1 or 2. Then, click "Write" to write the data in RAM.

 • Click "Write" of "ROM Write " to write the data in EEPROM.

 • Set "Normal" of "Test Mode" with the "Each Mode" tab.

14. Setting for delivery

For the repair parts of the main PCB, the default for setting destination is "Japanese specification" (Japanese/NTSC).

When this PCB is replaced, complete the assembly and then carry out setting for delivery according to each destination by pressing [MENU] and cursor button at the same time.

[How to set]

- Insert a CF card (which does not record any data).
- Set the mode dial of camera to "A" and turn on the power.
- For each destination, as pressing the following switches, turn off the power.

    E2000J: [MENU] + [→]: Japanese/NTSC

    E2000E: [MENU] + [↑]: English/NTSC

    E2000EP: [MENU] + [↓]: English/PAL

    E2000EN: [MENU] + [↑]: English/NTSC

- Turn on the power again.
- Make sure that the remaining quantity is displayed at the lower right on LCD.
- Make sure that "Card is not inserted" is displayed by removing the medium.
- Turn off the power.

The contents of inspection standards and tools for E2000

[1]! Inspection standards

Item	Criteria	Applied tool(s)
External view Gap/ Difference in height	• When closing the battery cover a gap between the cover and the body shall be less than 0.1 mm. • Difference in height between the body and the cover shall be less than 0.3mm. Check the condition by loading a battery and closing the cover	Vernier caliper
External view	• Any conspicuous scratches or dirt shall not be required. Check it by naked eyes under fluorescent lamp or natural sunshine.	Visual observation
Operation-ability/ Operation mode	• While operating, any irregularities or irregular noise shall not be required. Check it by shaking the camera while operating, or by intentionally lightly hitting the camera on to the linoleum-laid desk while operating.	Special battery
Operate-on ability Button(s)	• While operating, any irregularities / Malfunctions shall not be required. No cave-ins of the buttons shall be required.	
On the lever, Knob, command dial	• When clicking, normal touch shall be required. Any outstanding 'caught-in-mechanism' touch or 'rubbed-in-mechanism' touch shall not be required. Check and observe the condition through normal operation.	
Operation touch Each cover	• While operating, any irregular conditions shall not be required. • Opening / closing each cover shall be smoothly made.	
Monitor Shooting image	• Inclined degree of image shall be less than 0.5 degree.	Photoshop Printer
Lens capacity Focal distance	• Wide-end position (Compelling ″) 5.8 mm +5% -1% • Tele-end position (Compelling ″) 16.878 mm +1% -5%	Dedicated tool(s)
Open aperture F No.	• Wide-end position (Compelling ″) F2.8 +6.2% -0.5% • Tele-end position (Compelling ″) F5.22 +9.9% -3.1%	
AF Shortest photography distance 　　　Normal 　　　Macro	The focus of AF must be fit at the following distance. • 30cm at each zoom position • 4cm at macro zoom position	Visual observation
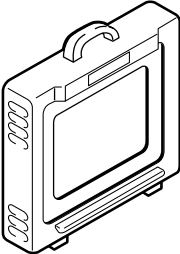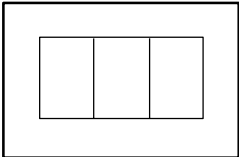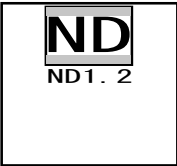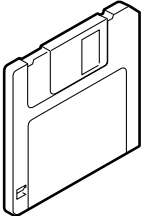
Item	Criteria	Applied tool(s)

AE control
  AE accuracy
  Difference of Tele-Wide
	±0.5EV or less (Check at each luminance level for the viewer of 5100K.)
	±0.3EV or less
		Viewer

Shooting with a speed light
  Guide No.# (ISO100$ m)
 	
Red eye pre-firing
 	
Recycle time
The shutter unable to release
 	
Flash
	• FULL 6.8 ±0.4EV
	  (Charge for 10 seconds with the full-charged battery and perform measurement within 1 second.)
	• Pre-firing must be done at red eye mode.
	  (While changing the mode, check that the lamp does not work.)
	• The recycle time shall be within 8 sec.
	• While lightly pressing the shutter release button, the red LED shall blink.
	  Then, the shutter shall not be released.
	  Unless it is in flashing mode, or the charged condition is not enough, LED blinking mode and shutter release lock can not work.
	• In response to any button operations for some functions, light impact from outside, or shutter release, unexpected flashing shall not be required.
		Flash meter,
		Special battery,
		Visual Observation
		
		EIAJ chart

Quality of image
  Resolution
	The solution shall be in compliance with the following values.
	• Horizontal center : 750lines
	  Vertical center : 750lines
	  Horizontal line(s) at each corner : 500ines
	  Vertical line(s) at each corner : 500lines
	Set the conditions of 'Fine as the quality of image', 'AWB', and A mode, 0.3 m of a distance from the chart' and equipping the 5100K viewer,
	a subject shall be taken in the full range of angle of view.
	Then, its recorded image data file shall be opened by the dedicated software Photoshop, and its solution level shall be Judged by observing.
	
	<table><tr><td></td><td>R</td><td>G</td><td>B</td></tr><tr><td>W</td><td>166-278</td><td>161-271</td><td>158-272</td></tr><tr><td>Ye</td><td>185-227</td><td>138-170</td><td>8-50</td></tr><tr><td>R</td><td>144-206</td><td>4-36</td><td>20-50</td></tr></table>
	• Set the conditions of 'Fine as the quality of image', 'AWB', 'Center-weighted', and Auto mode.
	• Equip the chart with the 5100K viewer and take a subject in the full range of angle of view.
	  Then, open the recorded image data file through the dedicated software Photoshop.
	  Using the Marquee tool (M), pick up the image's central area 64 x 64 picture element, and read the histogram's RGB.
		5100K viewer
		Photoshop
		
		Color bar chart
		5100K viewer
		Photoshop
		Visual observation

Item	Criteria	Applied tool(s)

LCD and others
  Monitor LCD
	External view
	• No vignetting or shading on the LCD shall be required.
	• Inclination between the monitor and the monitor frame shall not be so outstanding.
	Field of view
	• Through-the-monitor image :96 to 100 %
	• Play-back image : 98 to 100 %
	Bright pixels or dim pixels on LCD
	  Bright pixels: 3 pieces or less
	  Dim pixels: 9 pieces or less
	  Bright pixels: Visible normally
	    throught 5% ND filter
	  Dim pixels: Visible normally
		Visual
		observation

Self-timer	• 10 ± 3 sec. • Blinks 9 times and lights for 1 second.	Visual Observation Stop watch

Electrical Characterstics
  For consumption
  current
	Stand-by
	• Less than 0.2 mA while turning off the main powerswitch. Measure the consumption current value with a dummy battery pack.Start-up
	• Select 'AUTO' from the select dial and check that any image appears on the LCD.
	  Then, leave it for 15 sec. or a bit longer and then measure the consumption current value.
	  The value shall be less than 1A.
		Standard
		power supply
		Ammeter
		Dummy battery
		pack

For battery-check
  voltage
	Level 1(Half battery mark)
	• 4.6 ± 0.2 V
	  Voltage when the power supply voltage is lowered and the half battery mark is lit on LCD
	Level 2 (The battery mark blinks)
	• 4.0 ± 0.2 V
	  Voltage when the power supply voltage is lowered and the consumed battery warning is lit on LCD	

！ " ＃ ＄ %＆ ' （ ） ） Tool List

" ＃ ＄ %＆ '
" ＃ New tool

＆ ' （ ） Tool No.	* ＋ ＋ ， Name	F ＋ G Remarks
J63070 (100-240Volts)	- ． ／ 0 1 ／ 2 ／ ＋ 5100K Colour Viwer 5100K	H I Common
J63056	3 4 5 6 7 8 ／ 9 Chart for Colour Adjustment	H I Common
J63077 "	ND： ； ＜ ＝ ／ 1. 2 ND filter 1.2	E2000
J65044 "	＞ 8 ？ ＠A ／ B C D E： 9 Calibration Software	E2000

" # $ %& '
" # New tool

& ' ( ) Tool No.	* + + , Name	F + G Remarks
J18069	P Q R S T Standard Reflector	1.8M×2.5M H I Common
J / 0 K L M 1 2 < N O Attached in Service Manual	U / V D K 7 8 / 9 Siemens chart	H I Common

作成承認印 配布許可印

ニコン
映像カンパニー
CS推進部
GM

サービス
計画課
M
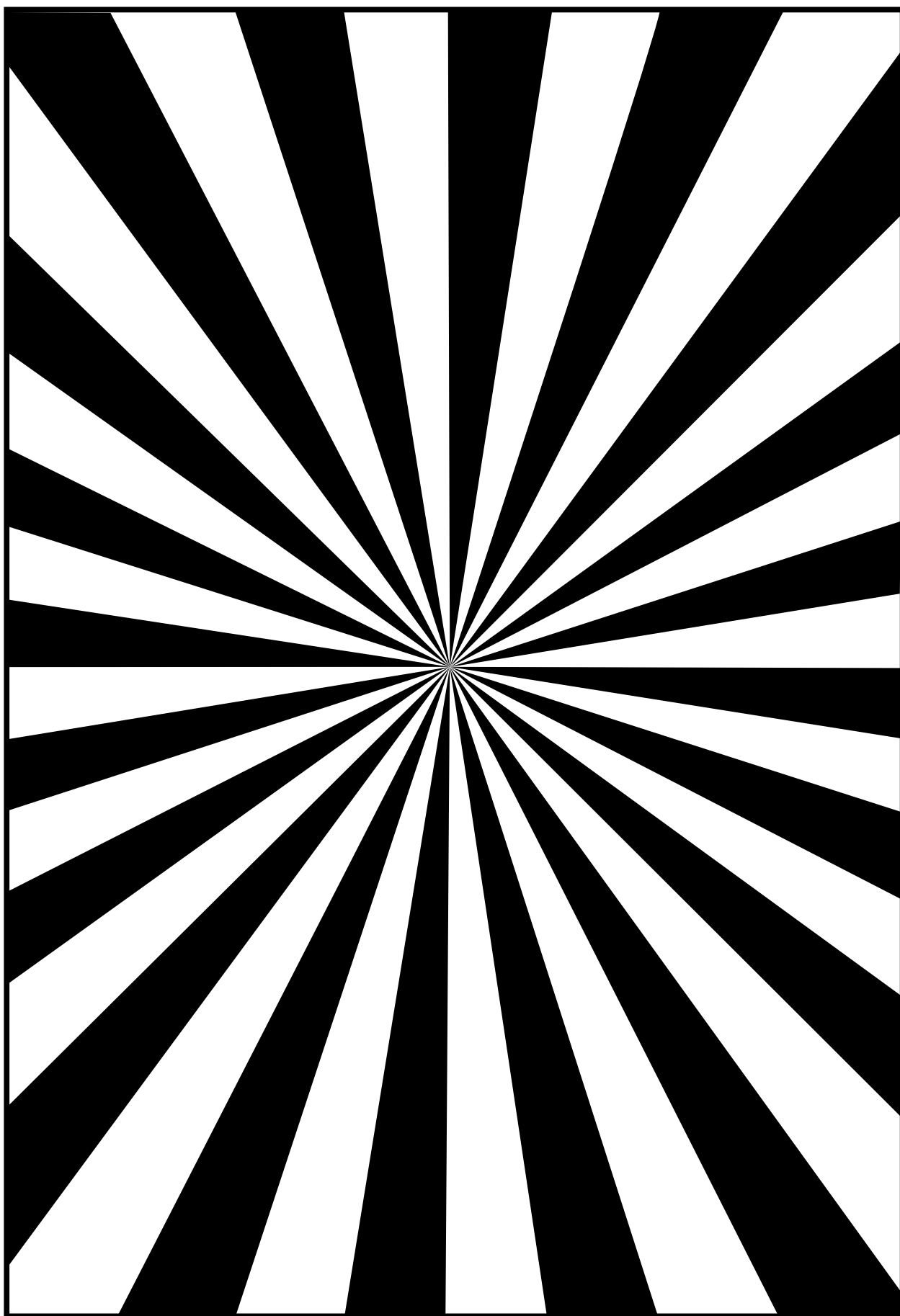
Nikon

COOLPIX 2000

VAA12001(J)

VAA12002(U)

VAA12003(EP)

VAA12004(EN)

PARTS LIST
修 理 部 品 表

Nikon | **NIKON CORPORATION**
Tokyo, Japan

XQN16+BJ4FN (10)

XQN16+BJ4FNx2 (10)

VMC1799 (5)

VGQ6708 (5)

XQN16+BJ4FN (10)

EFN-KTQ42 (5)

VGQ6707 (5)

XQN16+BJ35x3 (10)

VKW3046 (5)

VEP33112A (5)

F2A2F1100001 (5)

XQN16+BJ5x2 (10)

VEP06F03A (1)

6B100-200 (1)

6K600-401 (5)

XQN16+B25FNx2 (10)

6B100-200B (5)

VFK3568 (5)

A4-38423(10)

VMS7126x2 (5)

VMD4625 (5)

6B100-200C (5)

XQN16+BJ4FNx2 (10)

VGB0579 (5)

XQN16+B25FN (10)

VKM5913 (1)

VKW3045 (5)

Nikon
COOLPIX2000

XQN16+BJ4x2 (10)

XQN16+B25FN (10)

VGP5743 (5)

Fig. 1

XQN16+BJ4x4 (10)

XQN14+B2x3 (10)

VMD4612 (5)

VMC1792 (5)

VMC1791 (5)

VXK1745 (5)

LSMD0263x2 (5)

VMC1793 (5)

XQN16+B2FNx2
(10)

XQN16+BJ4x2 (10)

VXK1746 (5)

VGQ6710 (5)

VMS7127 (5)

VGQ6709 (5)

XQN16+BJ3FN (10)

VMD4623 (5)

LSMD0263x2 (5)

VMC179x2 (5)

XQN14+B2x2 (10)

VYF2846 (5)

VMD4613 (5)

XQN14+B2x2 (10)

VMAON40 (5)

Fig. 2

XQN16+B25FN (10)

K0RC00300002 (5)

XQN16+B25FNx2 (10)

VMS7210 (5)

VYK0H33 (1)

VKW3047 (5)

VKF3570 (5)

XQN16+BJ4FNx2 (10)

XQN16+BJ4FNx2 (10)

VYQ2561(5)

VKF3569 (5)

VMC1800 (5)

K0RB01100001 (5)

XQN16+BJ35 (10)

XQN16+BJ35x4 (10)

VEK9783 (1)

VMA0N38 (5)

XQN16+BJ35x4 (10)

Fig. 3

Parts List

Part Number	Part Code	名　　称	Part Name	Pcs, /Unit	fig No.	Main Assembly	Term of Deliver	Q'ty/ Order	Remarks
EFN−KTQ42	(EFN−KTQ42)	ストロボユニット	STROBE UNIT	1	1	VEP06F03A	○△	5	
F2A2F1100001	(F2A2F1100001)	コンデンサー	CAPACITOR	1	1	VEP06F03A	○△	5	
K0RB01100001	(K0RB01100001)	背面　操作部ユニット	REAR OPERATION UNIT	1	3		○	5	
K0RC00300002	(K0RC00300002)	上部　操作部ユニット	TOP OPERATION UNIT	1	3		○	5	
LSMD0263	(LSMD0263)	プロテクター	PROTECTOR	4	2		○	5	
SS060−21	(SS060−21)	ＳＢ　プロテクター	SB PROTECTOR	1	1	EFN−KTQ42	○△	5	
VDL1326	(VDL1326)	オプティカルフィルター	OPTICAL FILTER	1	1		○	5	
VEK9783	(VEK9783)	ＬＣＤ部組	LCD UNIT	1	3		○	1	
VEP06F03A	(VEP06F03A)	メインＣ．Ｂ．Ａ	MAIN C.B.A.	1	1		○	1	
VEP33112A	(VEP33112A)	フロントＦＰＣユニット	FRONT FPC UNIT	1	1		○	5	
VGB0579	(VGB0579)	銘板	NIKON BADGE	1	1		○	5	
VGP5743	(VGP5743)	パネル	DECORATION PANEL	1	1		○	5	
VGQ6707	(VGQ6707)	センサーカバー	PHOTO SENSOR COVER	1	1		○	5	
VGQ6708	(VGQ6708)	センサーホルダー	PHOTO SENSOR HOLDER	1	1		○	5	
VGQ6709	(VGQ6709)	バッテリーケース前	BATTERY CASE FRONT	1	2		○	5	
VGQ6710	(VGQ6710)	バッテリーケース後	BATTERY CASE REAR	1	2		○	5	
VKF3568	(VKF3568)	ＣＦカバー	CF COVER	1	1		○	5	

Parts List

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Part Number	Part Code	名　　称	Part Name	Pcs, /Unit	fig No.	Main Assembly	Term of Deliver	Q'ty/ Order	Remarks
VKF3569	(VKF3569)	ＤＣジャックカバー	DC JACK COVER	1	3		○	5	
VKF3570	(VKF3570)	Ｖ／ＵＳＢジャックホルダー	V OUT/USB JACK COVER	1	3		○	5	
VKM5913	(VKM5913)	前カバー	FRONT CASE	1	1		○	1	
VKW3045	(VKW3045)	センサーパネル	PHOTO SENSOR PANEL	1	1		○	5	
VKW3046	(VKW3046)	セルフタイマーＬＥＤパネル	SELF-TIMER LED PANEL	1	1		○	5	
VKW3047	(VKW3047)	チャージＬＥＤパネル	CHARGE LED PANEL	1	3		○	5	
VMA0N38	(VMA0N38)	ＬＣＤホルダー	LCD HOLDER	1	3		○	5	
VMA0N39	(VMA0N39)	レンズフレーム	LENS FRAME UNIT	1	2		○	5	
VMA0N40	(VMA0N40)	バッテリーカバーヒンジ	BATTERY COVER HINGE	1	2		○	5	
VMC1791	(VMC1791)	バッテリーターミナル	BATTERY TERMINAL COMMON	3	2		○	5	
VMC1792	(VMC1792)	バッテリーターミナル＋	BATTERY TERMINAL +	1	2		○	5	
VMC1793	(VMC1793)	バッテリーターミナルー	BATTERY TERMINAL -	1	2		○	5	
VMC1799	(VMC1799)	アースバネ	STROBE EARTH SPRING	1	1		○	5	
VMC1800	(VMC1800)	アースバネ	REAR EARTH SPRING	1	3		○	5	
VMD4612	(VMD4612)	トップコンタクトベース	TOP CONTACT BASE	1	2		○	5	
VMD4613	(VMD4613)	底コンタクトベース	BOTTOM CONTACT BASE	1	2		○	5	
VMD4623	(VMD4623)	ターミナルカバー	TERMINAL COVER	1	2		○	5	

Parts List

Part Number	Part Code	名　　称	Part Name	Pcs, /Unit	fig No.	Main Assembly	Term of Deliver	Q'ty/ Order	Remarks
VMD4625	(VMD4625)	ホルダー軸	SHAFT HOLDER	1	3		○	5	
VMS7126	(VMS7126)	ＣＦカバー軸	CF COVER SHAFT	2	3		○	5	
VMS7127	(VMS7127)	バッテリーカバー軸	BATTERY COVER SHAFT	1	2		○	5	
VMS7210	(VMS7210)	ストラップ軸	STRAP SHAFT	1	3		○	5	
VMX3221	(VMX3221)	ＣＣＤゴム	CCD RUBBER	1	1		○	5	
VXK1745	(VXK1745)	アース接片	CF EARTH PLATE UNIT	1	2		○	5	
VYF2846	(VYF2846)	バッテリーカバー	BATTERY COVER UNIT	1	2		○	5	
VYK0H33	(VYK0H33)	背面ケース部組	REAR CASE UNIT	1	3		○	1	
VYQ2561	(VYQ2561)	定格銘板　製品番号シール	RATING PLATE & SERIAL NO. SEAL	1	3		○	5	
XQN14+B2	(XQN14+B2)	ＳＣＲＥＷ	SCREW	7	2		○	10	
XQN16+B25FN	(XQN16+B25FN)	ＳＣＲＥＷ	SCREW	6	1, 3		○	10	
XQN16+B2FN	(XQN16+B2FN)	ＳＣＲＥＷ	SCREW	2	2		○	10	
XQN16+BJ25FN	(XQN16+BJ25FN)	ＳＣＲＥＷ	SCREW	1	3		○	10	
XQN16+BJ35	(XQN16+BJ35)	ＳＣＲＥＷ	SCREW	14	1, 3		○	10	
XQN16+BJ3FN	(XQN16+BJ3FN)	ＳＣＲＥＷ	SCREW	1	2		○	10	
XQN16+BJ4	(XQN16+BJ4)	ＳＣＲＥＷ	SCREW	7	1, 2		○	10	
XQN16+BJ4FN	(XQN16+BJ4FN)	ＳＣＲＥＷ	SCREW	8	1, 3		○	10	

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Part Number	Part Code	名　称	Part Name	Pcs, /Unit	fig No.	Main Assembly	Term of Deliver	Q'ty/ Order	Remarks
XQN16+BJ5	（XQN16+BJ5）	ＳＣＲＥＷ	SCREW	2	1		○	10	
6B100-200	（6B100-200）	鏡筒ユニット	LENS UNIT	1	1		○	1	
6B100-200B	（6B100-200B）	バリア	BARRIER	1	1		○	5	
6B100-200C	（6B100-200C）	銘板	MANE PLATE	1	1		○	5	
＊6K600-401	（6K600-401）	LP前絞り	LPF SPACER	1	1		○	5	
A4-38423	（A4-38423）	ＳＣＲＥＷ	SCREW	1	1		○	10	