ORDER NO. DSC1303009CE
B26

Service Manual

Digital Camera

LUMIX

Model No. DMC-LZ30P
DMC-LZ30PC
DMC-LZ30PU
DMC-LZ30E
DMC-LZ30EE
DMC-LZ30GC
DMC-LZ30GF
DMC-LZ30GW
DMC-LZ30GK
DMC-LZ30GN

Colour
(R).....Red Type (only DMC-LZ30E)
(K).....Black Type

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

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1 Safety Precautions

1.1. General Guidelines

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.
2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 MΩ and 5.2 MΩ. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

1.3. Leakage Current Hot Check (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5 kΩ, 10 W resistor, in parallel with a 0.15 μF capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.
3. Use an AC voltmeter, with 1 kΩ/V or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Hot-Check Circuit

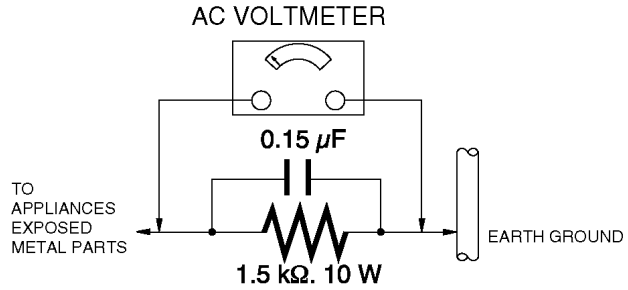


Figure. 1

1.4. How to Discharge the E.Capacitor on the Frame Unit

CAUTION:

1. **Make sure to discharge the E.capacitor on the Frame Unit.**
2. **Be careful of the high voltage circuit on the Frame Unit when servicing.**

[Discharging Procedure]

1. Refer to the disassemble procedure and remove the necessary parts/unit.
2. Install the insulation tube onto the lead part of resistor (ERG5SJ102:1kΩ /5W).
   (an equivalent type of resistor may be used.)
3. Place a resistor between both terminals of E.capacitor on the Frame Unit for approx. 5 seconds.
4. After discharging, confirm that the E.capacitor voltage is lower than 10V using a voltmeter.

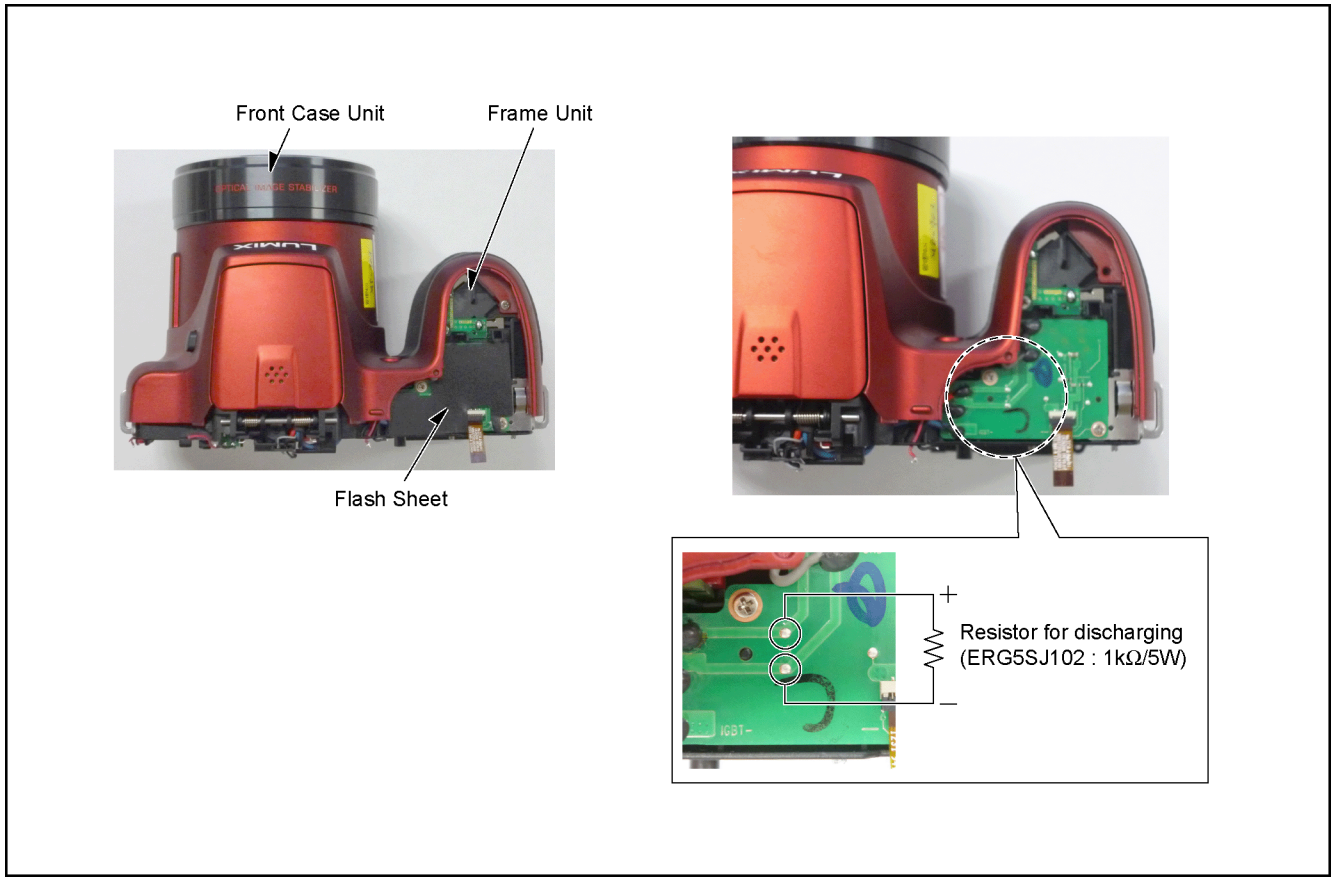


Fig. F1

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices.

> Examples of typical ES devices are IC (integrated circuits) and some field-effect transistors and semiconductor “chip” components.

The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION :
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

2.2. About the batteries

(For English)

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer’s instructions.

(For German)

ACHTUNG

Explosionsgefahr bei falschem Anbringen der Batterie. Ersetzen Sie nur mit einem äquivalentem vom Hersteller empfohlenem Typ.
Behandeln Sie gebrauchte Batterien nach den Anweisungen des Herstellers.

(For French)

MISE EN GARDE

Une batterie de remplacement inappropriée peut exploser. Ne remplacez qu’avec une batterie identique ou d’un type recommandé par le fabricant. L’élimination des batteries usées doit être faite conformément aux instructions du manufacturier.

3 Service Navigation

3.1. Introduction

This service manual contains technical information, which allow service personnel's to understand and service this model.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, the information will be followed by service manual to be controlled with original service manual.

3.2. General Description About Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.
The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30°C (86°F) more than that of the normal solder.

Distinction of P.C.B. Lead Free Solder being used

The letter of "PbF" is printed either foil side or components side on the P.C.B. using the lead free solder.(See right figure)	PbF

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used. (Definition: The letter of "PbF" is printed on the P.C.B. using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the P.C.B. cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30°C (662±86°F).

Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
  RFKZ03D01KS----------(0.3mm 100g Reel)
  RFKZ06D01KS----------(0.6mm 100g Reel)
  RFKZ10D01KS----------(1.0mm 100g Reel)

Note

* Ingredient: tin (Sn) 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

3.3. Important Notice

After replacing the MAIN P.C.B. and / or the Lens Unit, be sure to achieve adjustment.
Refer to the procedure described in "8. Measurements and Adjustments".

3.4. How to Define the Model Suffix (NTSC or PAL model)

There are six kinds of DMC-LZ30, regardless of the colours.

- a) DMC-LZ30P/PC
- b) DMC-LZ30E
- c) DMC-LZ30EE
- d) DMC-LZ30GN
- e) DMC-LZ30GK
- f) DMC-LZ30PU/GC/GF/GW

What is the difference is that the “Initial Setting” data which is stored in Flash-ROM mounted on MAIN P.C.B..

3.4.1. Defining methods:

To define the model suffix to be serviced, refer to the nameplate which is putted on the bottom side of the Unit.

a) DMC-LZ30P/PC

The nameplate for this model shows the following Safety registration mark.

b) DMC-LZ30E

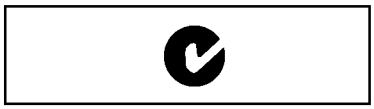
The nameplate for this model shows the following Safety registration mark.

c) DMC-LZ30EE

The nameplate for this model shows the following Safety registration mark.

d) DMC-LZ30GN

The nameplate for this model shows the following Safety registration mark.



e) DMC-LZ30GK

The nameplate for this model shows the following Safety registration mark.

f) DMC-LZ30PU/GC/GF/GW

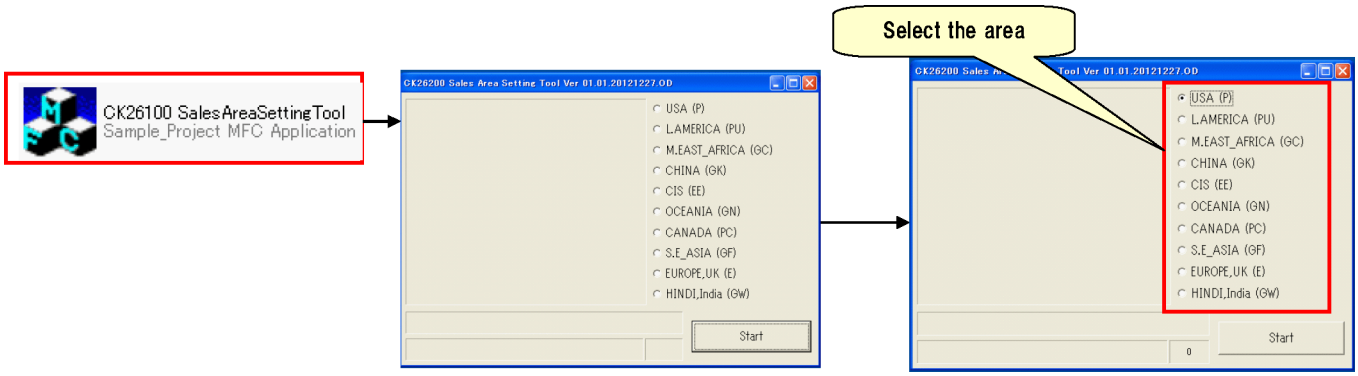
The nameplate for these models do not show any above Safety registration mark.
DMC-LZ30PU/GC: The nameplate shows the country of origin.
DMC-LZ30GF/GW: The nameplate does not show the country of origin.

NOTE:

After replacing the MAIN P.C.B., make sure to perform the “Initial Setting” and “adjustment”.
The adjustment software is available at "TSN Website".

3.4.2. Initial Setting

1. Execute the Sales Area Setting Tool



2. Connect the DSC to PC by USB cable

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Connect the DSC to PC by USB cable.

3. Sales Area Setting

4 Specifications

NOTE:

The following specification is for DMC-LZ30. Some specifications may differ depending on model suffix.

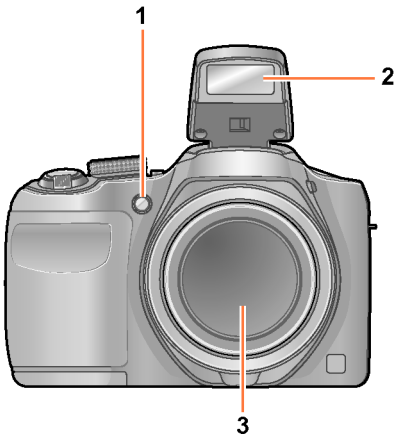
Specifications are subject to change without notice.

Power Source	DC 6 V LR6/AA Alkaline batteries (4) DC 4.8 V HR6/AA Rechargeable Ni-MH (nickel metal hydride) batteries (4)
Power Consumption	When recording: 1.5 W When playing back: 1.0 W
Camera effective pixels	16,100,000 pixels
Image sensor	1/2.3” CCD, total pixel number 16,400,000 pixels Primary color filter
Lens	Optical 35× zoom f=4.5 mm to 157.5 mm (35 mm film camera equivalent: 25 mm to 875 mm)/ F3.0 (Max. Wide) to F5.9 (Max. Tele)
Image Stabilizer	Optical method (Digital method is used when recording motion pictures.)
Focus range	**P / M:** 30 cm (0.98 feet) (Max. Wide) / 2 m (6.6 feet) (Max. Tele) to ∞ **Macro / Intelligent Auto / Motion picture:** 1 cm (0.033 feet) (Max. Wide) / 1.5 m (4.9 feet) (Max. Tele) to ∞
Shutter system	Electronic shutter + Mechanical shutter
Shutter speed	15 seconds to 1/2000th of a second
Exposure (AE)	Program AE (P) / Manual exposure (M) Exposure Compensation (1/3 EV Step, -3 EV to +3 EV)
Metering Mode	[Multi Metering] / [Center Weighted] / [Spot]
LCD monitor	3.0” TFT LCD (4:3) (Approx. 460,800 dots) (field of view ratio about 100%)
Flash	Flash range: (ISO AUTO) Approx. 0.6 m (2.0 feet) to 10 m (33 feet) (Max. Wide)
Microphone/ Speaker	Monaural
Recording media	Built-in Memory (Approx. 100 MB) / SD Memory Card / SDHC Memory Card / SDXC Memory Card
Recording file format	JPEG (based on Design rule for Camera File system, based on Exif 2.3 standard) (still picture) QuickTime Motion JPEG (motion pictures with audio)
Interface	
Digital	USB 2.0 (High Speed)
Analog video	NTSC Composite
Audio	Audio line output (Monaural)
Terminal	AV OUT/DIGITAL: Dedicated jack (8 pin)
Dimensions	Approx. 123.8 mm (W) × 83.7 mm (H) × 91.4 mm (D) [4.87” (W) × 3.30” (H) × 3.60” (D)] (excluding the projection part)
Mass (Weight)	With card and batteries: Approx. 558 g (1.23 lb) Excluding card and batteries: Approx. 465 g (1.03 lb)
Operating temperature	0 °C to 40 °C (32 °F to 104 °F) (Operating humidity: 10%RH to 80%RH)

5 Location of Controls and Components

NOTE:

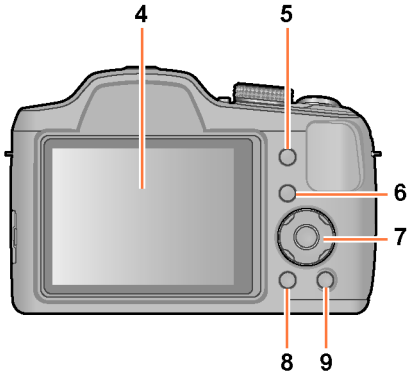
The following description is for DMC-LZ30. Some descriptions may differ depending on model suffix.



1 Self-timer indicator / AF Assist Lamp

2 Flash

3 Lens



4 LCD monitor

5 [EXPOSURE] button
Operate this when setting the shutter speed or aperture value (only in the M mode).

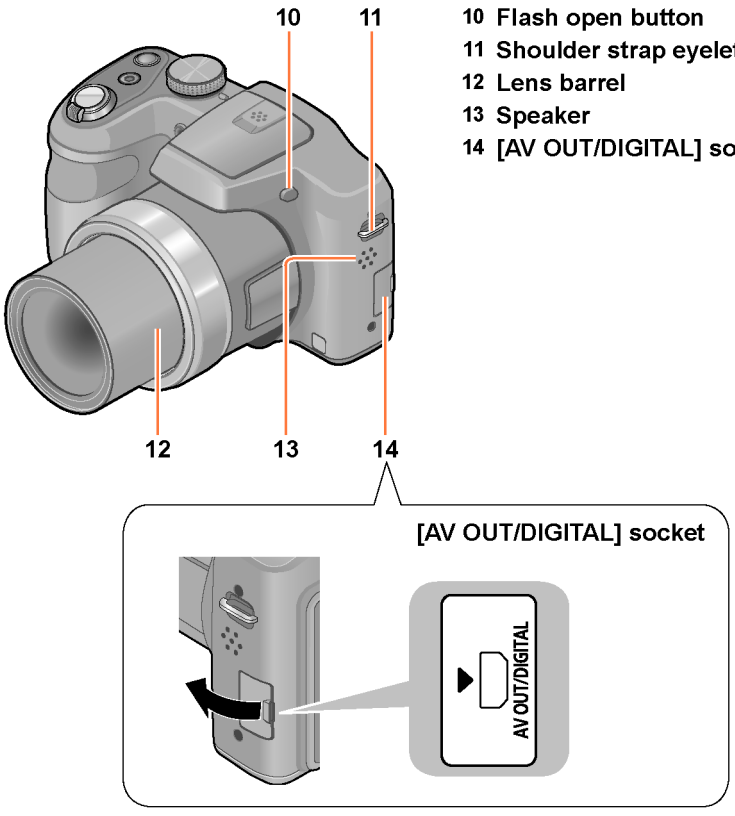
6 Playback button
Use this to switch to playback mode.

7 Cursor button

8 [DISP.] button
Use this to change display.

9 [Q.MENU] / [🗑] / [⮌] button
In the recording mode:
Quick menu is displayed.
In the playback mode:
Pictures are deleted.
During menu operations:
Previous screen is restored.

● The illustrations and screens in this manual may differ from the actual product.



10 Flash open button

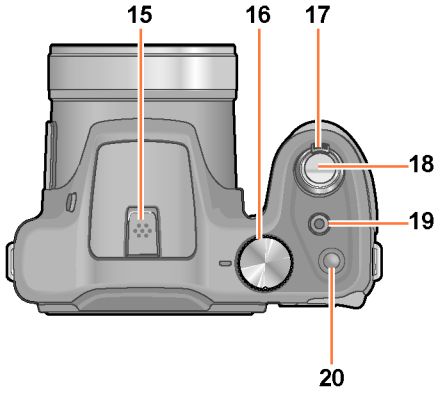
11 Shoulder strap eyelet

12 Lens barrel

13 Speaker

14 [AV OUT/DIGITAL] socket

● Some methods of holding the camera may block the speaker, making it difficult to hear the beep, etc.



15 **Microphone**

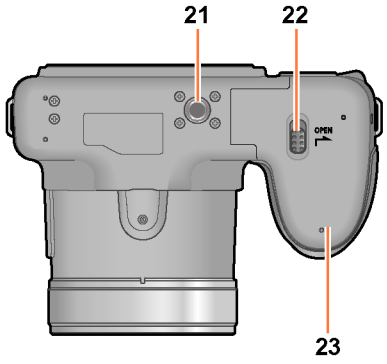
16 **Mode dial**
Use this to select the recording mode.

17 **Zoom lever**
Operate this when zooming in on a distant subject to record it larger.

18 **Shutter button**
Use this to focus and record still pictures.

19 **Motion picture button**
Record motion pictures.

20 **Camera [ON/OFF] button**
Use this to turn the camera on and off.

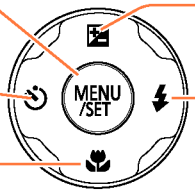


21 **Tripod Mount**
Do not attach to a tripod with a 5.5 mm (0.22 inch) or longer screw. Doing so may damage this unit.

22 **Release lever**

23 **Card/Battery door**

Cursor button



[MENU/SET]
Use this to display the menus, enter the settings, etc.

Up cursor button (▲)
• Exposure Compensation, Auto Bracket etc.

Left cursor button (◀)
• Self-timer

Right cursor button (▶)
• Flash

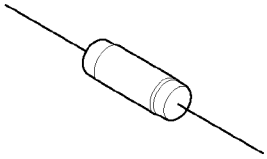
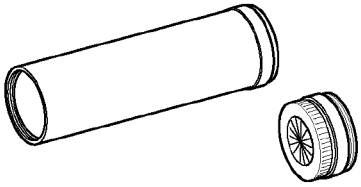
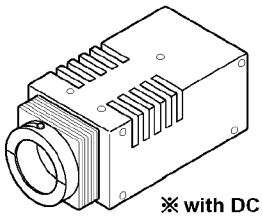
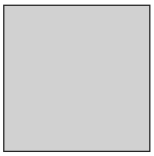
Down cursor button (▼)
• Macro Mode etc.

●In this manual, the button that is used is indicated by ▲▼◀▶.

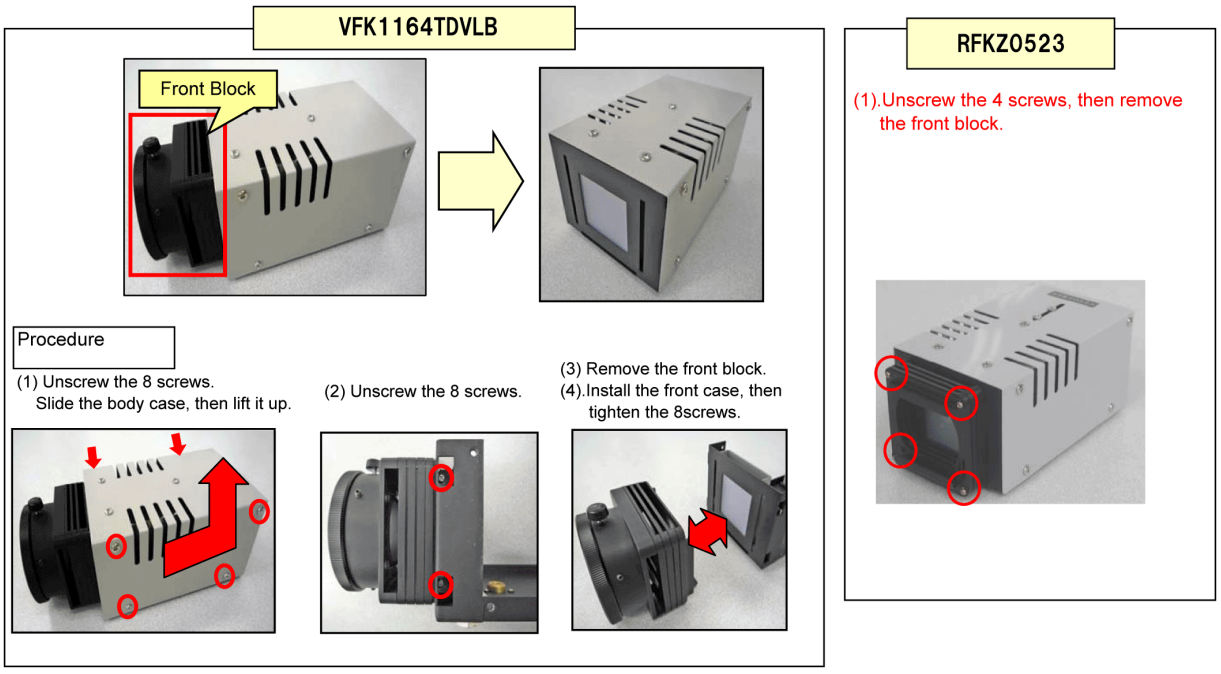
6 Service Fixture & Tools

6.1. Service Fixture and Tools

The following Service Fixture and tools are used for checking and servicing this unit.

Resistor for Discharging ERG5SJ102	Infinity Lens (with Focus Chart) VFK1164TCM02	LIGHT BOX VFK1164TDVLB
 An equivalent type of Resistor may be used.	 * VFK1164TCM03 can be used.	 ※ with DC Cable * RFKZ0523 can be used.
Lens Cleaning Kit (BK) VFK1900BK	Gray chart RFKZ0612	
 * Only supplied as 10 set/box.		

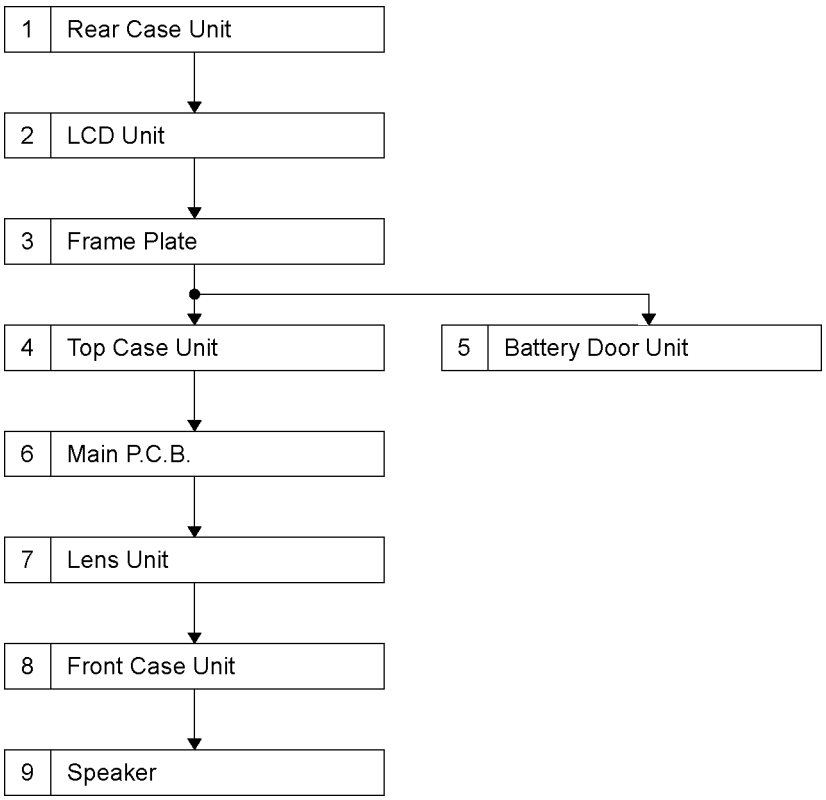
REMARKS
1. ABOUT "LIGHT BOX":



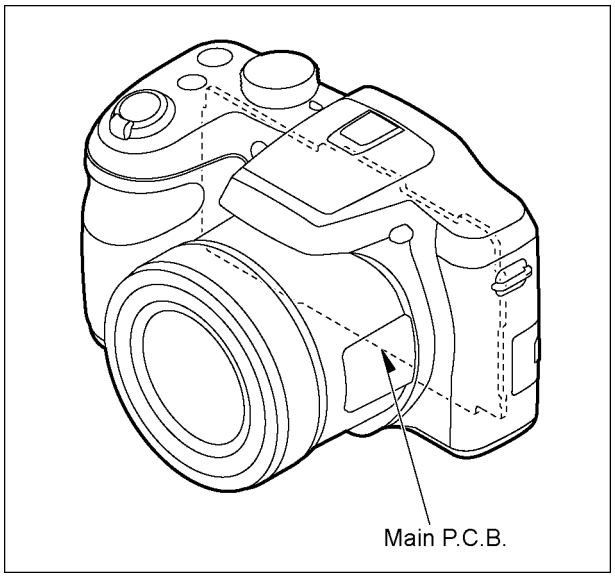
7 Disassembly and Assembly Instructions

7.1. Disassembly Flow Chart

This is a disassembling chart.
When installing, perform this chart conversely.



7.2. PCB Location



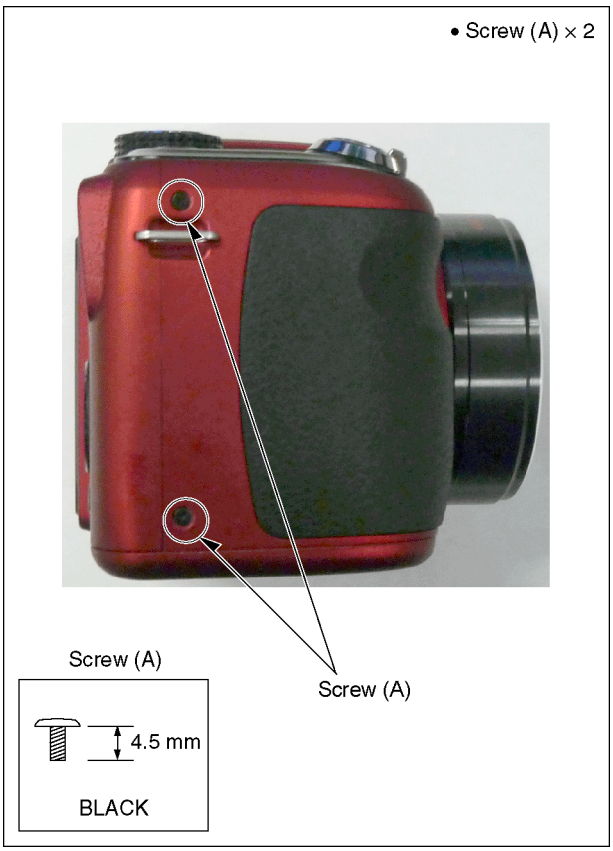
7.3. Disassembly Procedure

No.	Item	Fig	Removal
1	Rear Case Unit	(Fig. D1)	Card
			Battery
		(Fig. D2)	2 Screws (A)
		(Fig. D3)	2 Screws (B)
		(Fig. D4)	4 Screws (C)
			2 Screws (D)
		(Fig. D5)	1 Screw (E)
		(Fig. D6)	2 Screws (F)
		(Fig. D7)	Rear Case Unit
2	LCD Unit	(Fig. D8)	Connector (A)
			LCD Unit
3	Frame Plate	(Fig. D9)	6 Screws (G)
			Frame Plate
			Tripod
4	Top Case Unit	(Fig. D10)	Connector (B)
			Top Case Unit
5	Battery Door Unit	(Fig. D11)	Battery Door Shaft
			Battery Door Unit
6	Main P.C.B.	(Fig. D12)	3 Screws (H)
			FPC Sheet
		(Fig. D13)	Connector (C)
			Connector (D)
			Connector (E)
			Connector (F)
			11 Solders
			Main P.C.B.
7	Lens Unit	(Fig. D14)	3 Screws (I)
			Lens Unit
8	Front Case Unit	(Fig. D15)	Flash Sheet
			(Caution for Discharging)
		(Fig. D16)	5 Screws (J)
			1 Screw (K)
			Flash Open Button
			USB Cover
			Front Case Unit
9	Speaker	(Fig. D17)	1 Screw (L)
			Strap R
			Strap R Plate
			2 Locking tabs
			Speaker

7.3.1. Removal of the Rear Case Unit

NOTE:
When servicing and reassembling,
remove the card and battery from the unit.

(Fig. D1)



(Fig. D2)

• Screw (B) × 2

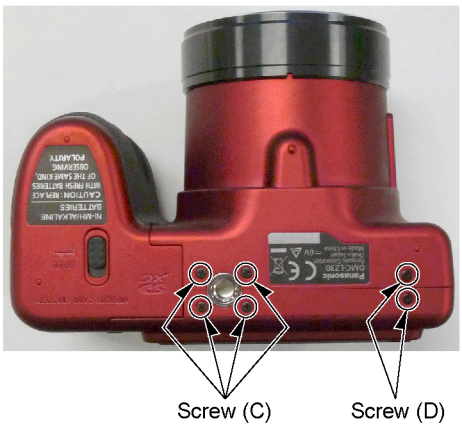
Screw (B)

4.5 mm

BLACK

(Fig. D3)

• Screw (C) × 4
• Screw (D) × 2



Screw (C)

3mm

BLACK

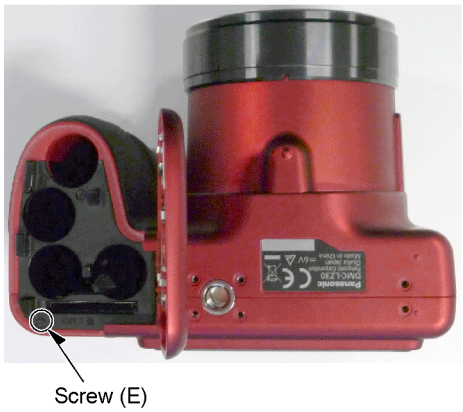
Screw (D)

4.5 mm

BLACK

(Fig. D4)

• Screw (E) × 1



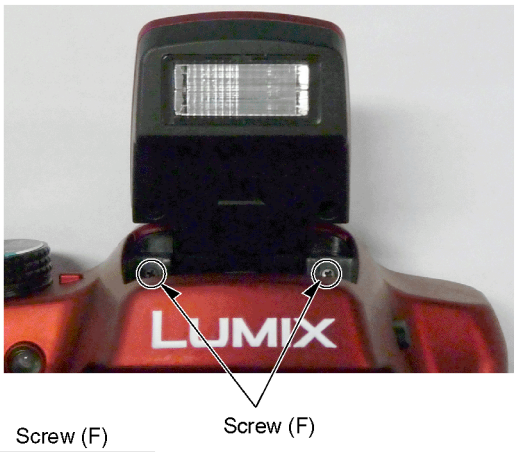
Screw (E)

4 mm

BLACK

(Fig. D5)

• Screw (F) × 2



Screw (F)

4mm

BLACK

(Fig. D6)

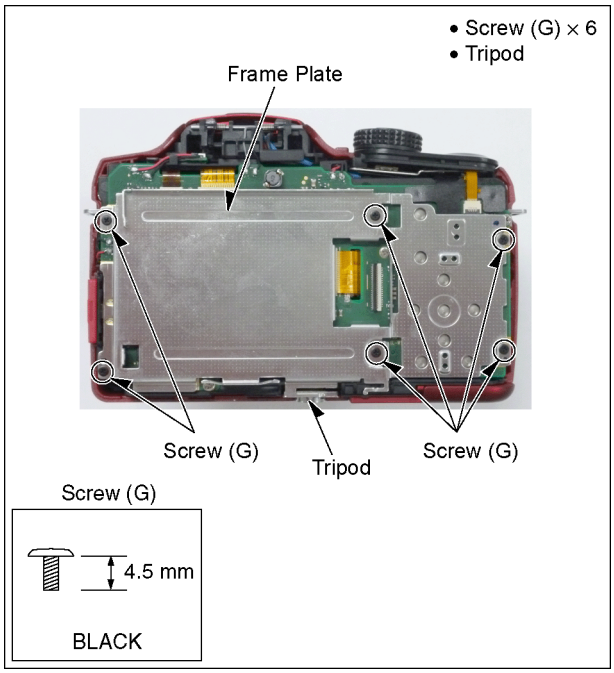
(Fig. D7)

7.3.2. Removal of the LCD Unit

NOTE: (When Replacing)
- Take care not to damage the flex.

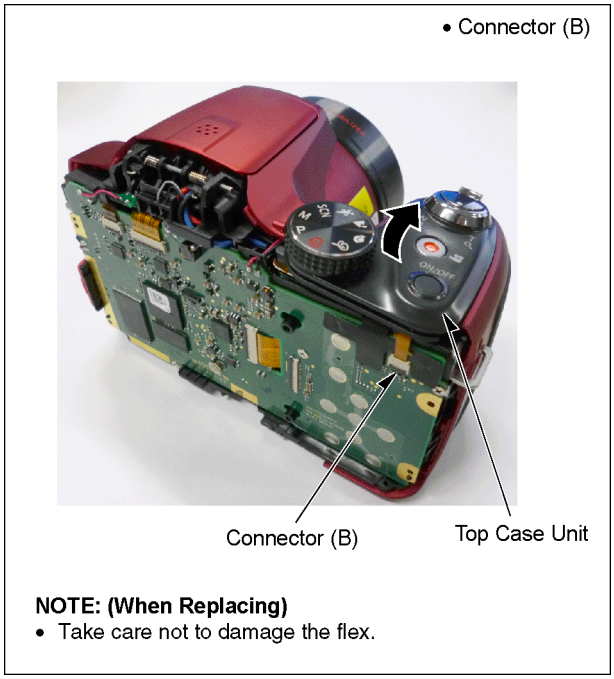
(Fig. D8)

7.3.3. Removal of the Frame Plate



(Fig. D9)

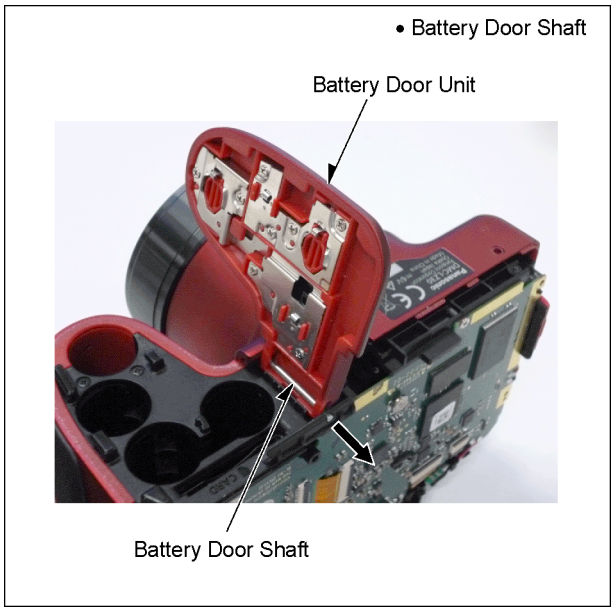
7.3.4. Removal of the Top Case Unit



NOTE: (When Replacing)
- Take care not to damage the flex.

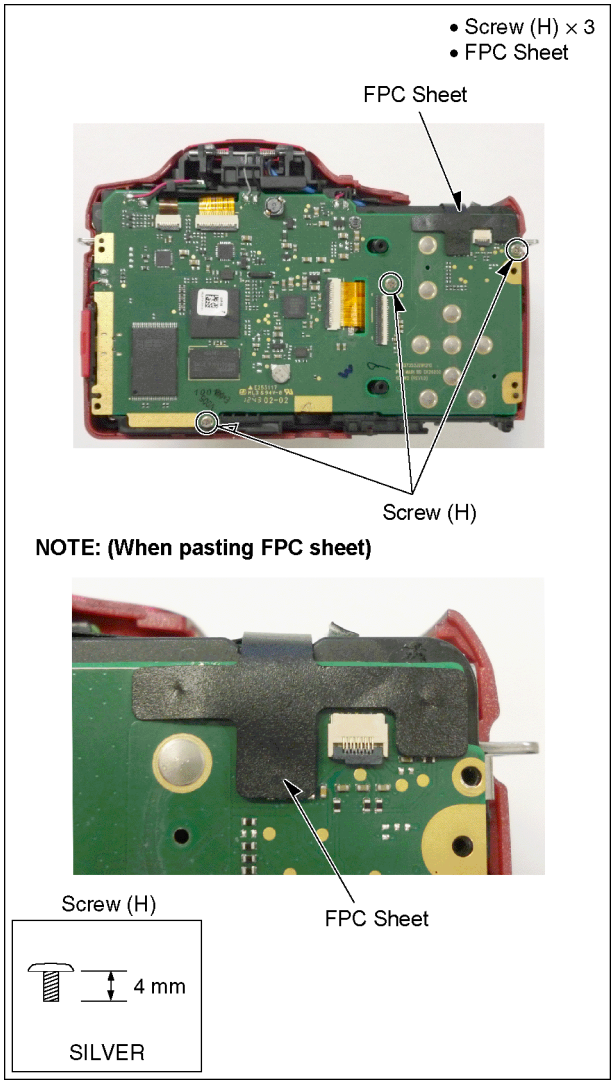
(Fig. D10)

7.3.5. Battery Door Unit



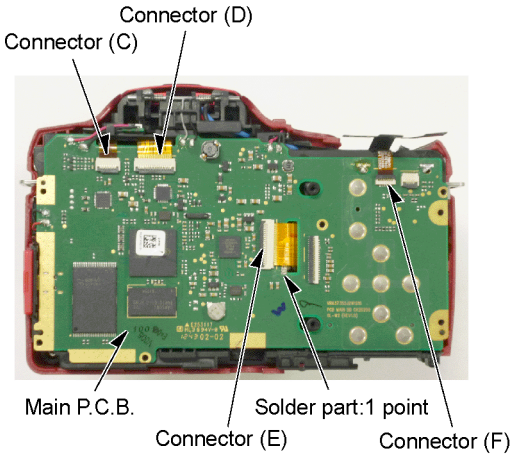
(Fig. D11)

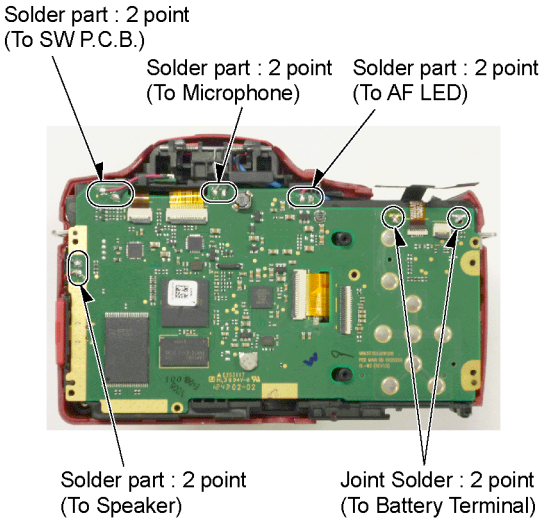
7.3.6. Removal of the Main P.C.B.



(Fig. D12)

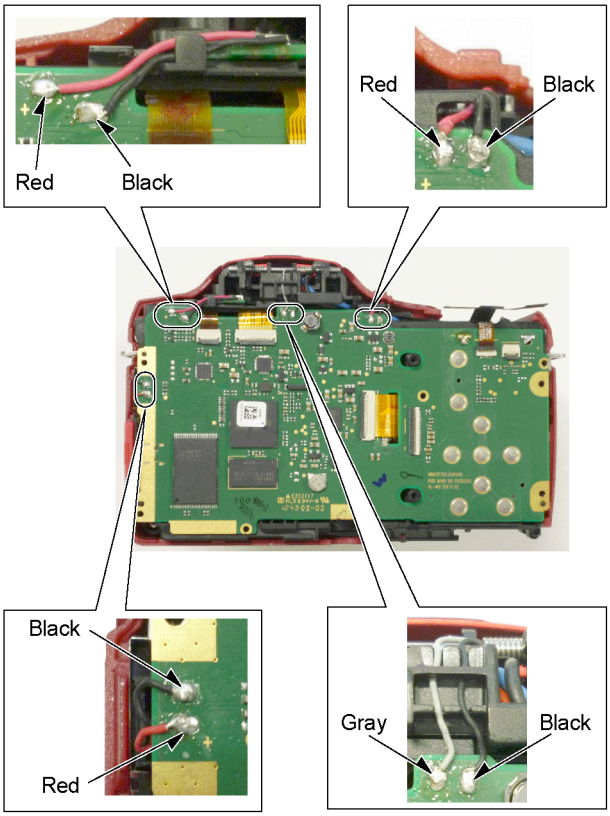
- Connector (C)
- Connector (D)
- Connector (E)
- Connector (F)
- 11 Solders





NOTE: (When Installing)
CAUTION:
Please fix Main P.C.B. with screws before soldering.
- Otherwise, soldered terminal part may be damaged after installing.

NOTE: (When Installing)
- Arrangement of Lead Wire.



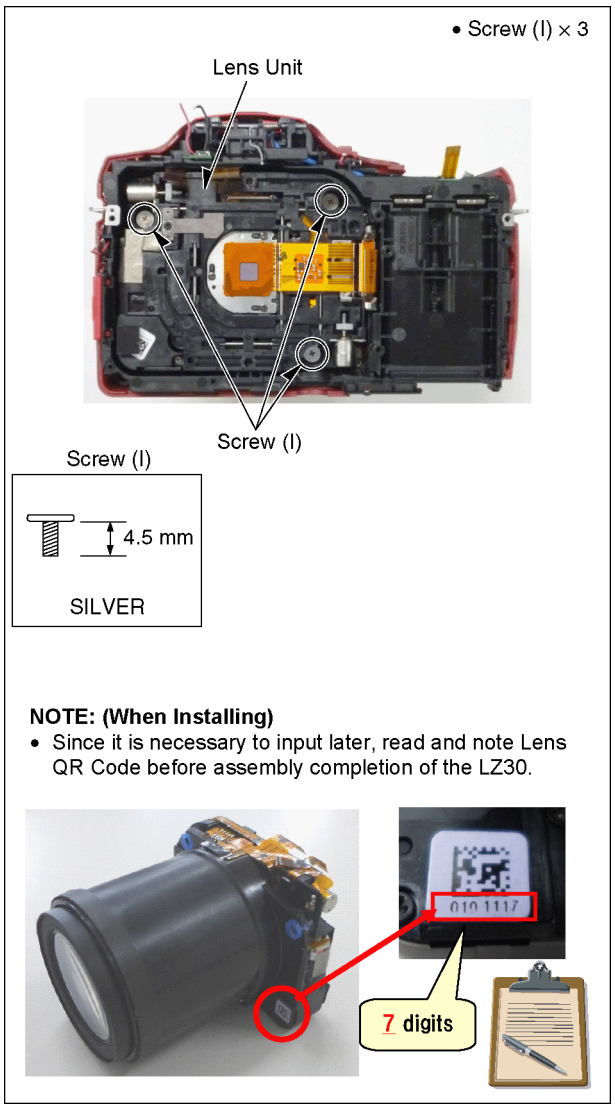
(Fig. D13)

7.3.7. Removal of the Lens Unit

NOTE:

When Disassembling and Installing for the Lens Unit

1. Take care that the dust and dirt are not entered into the lens. In case of the dust is putted on the lens, blow off them by airbrush.
2. Do not touch the surface of lens.
3. Use lens cleaning KIT(BK) (VFK1900BK).



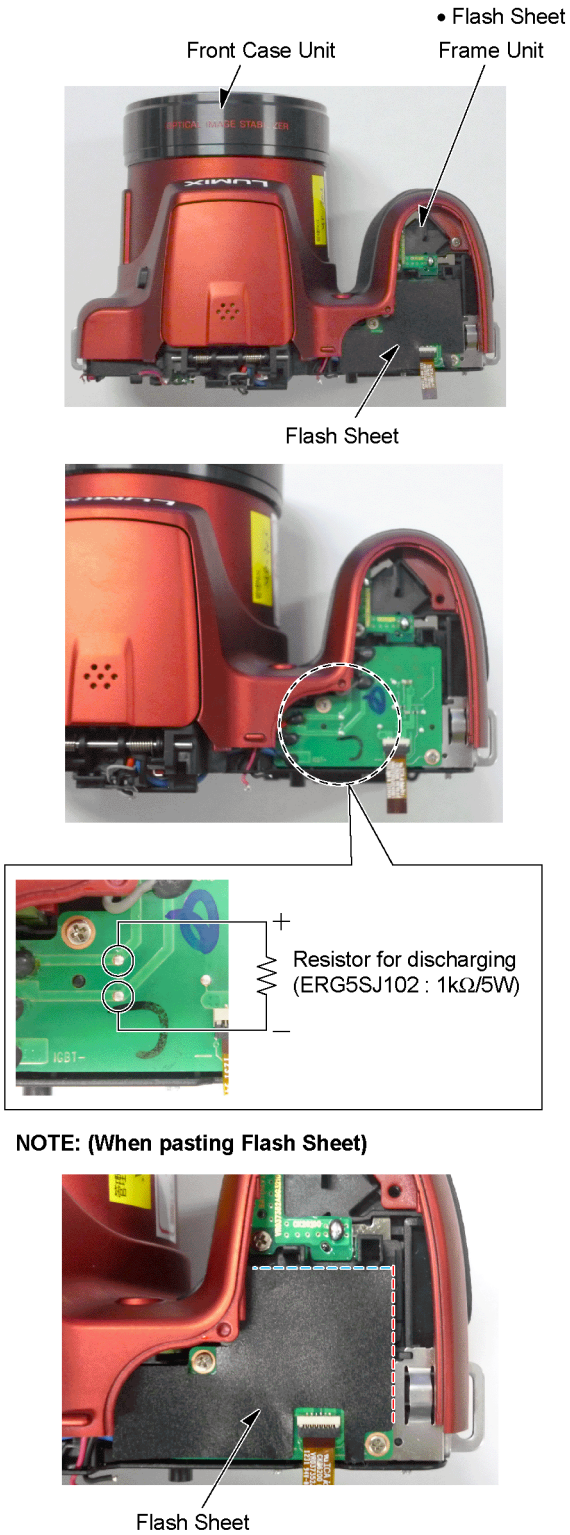
(Fig. D14)

7.3.8. Removal of the Front Case Unit

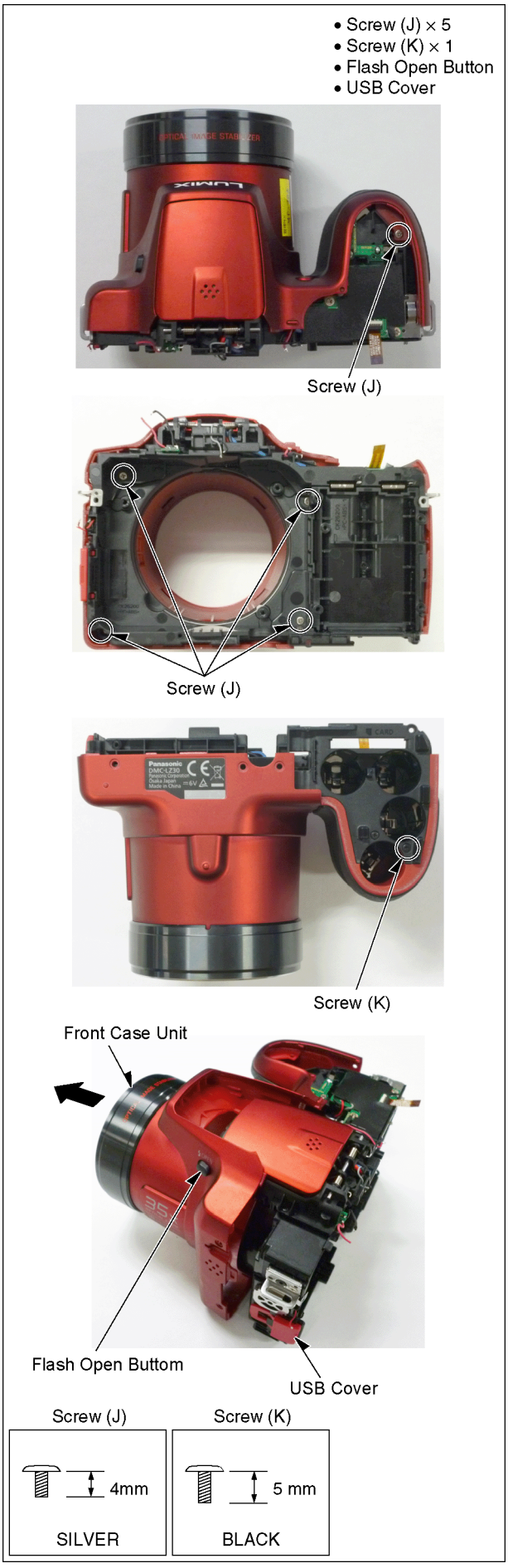
⚠ CAUTION

Be sure discharge the E.Capacitor on the Frame Unit before disassembling.

1. Peel off the Flash Sheet.
2. Put the insulation tube on the lead part of resistor (ERG5SJ102: 1kΩ/5W).
3. Put the resistor between both terminal of E.Capacitor unit for approx. 5 seconds.

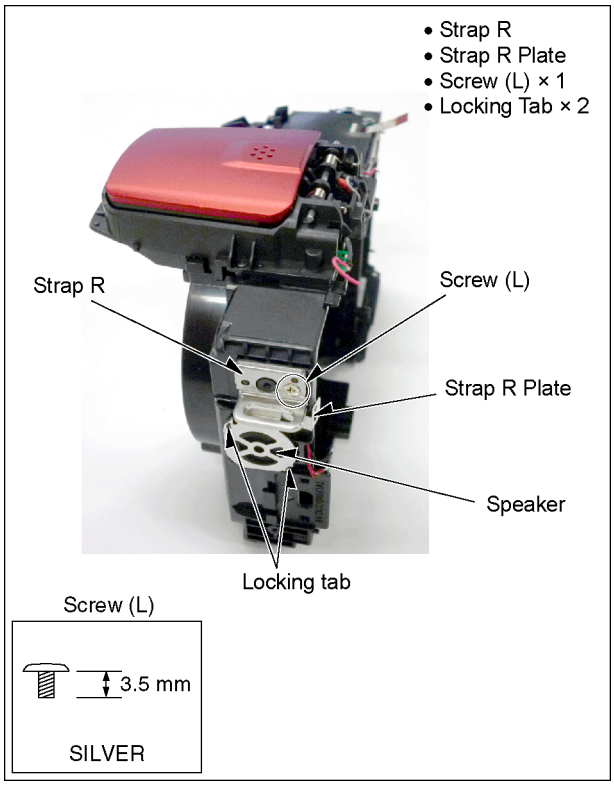


(Fig. D15)



(Fig. D16)

7.3.9. Removal of the Speaker



(Fig. D17)

NOTE: (When Installing)

Make sure to confirm the following points when installing:

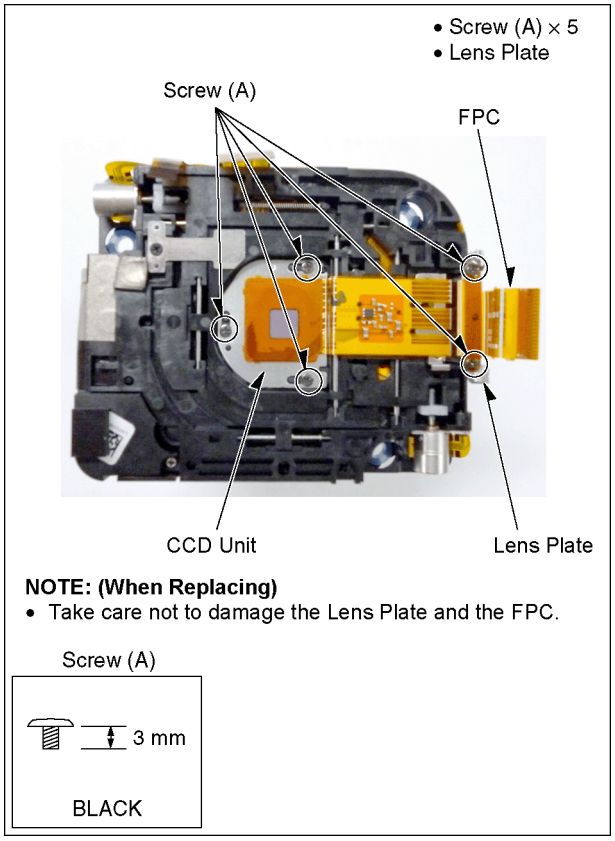
- The Screw is tightened enough.
- Installing conditions are fine. (No distortion, no abnormal-space.)
- No dust and/or dirt on Lens surfaces.
- LCD image is fine. (No dust and dirt on it, and no gradient images.)

7.4. Lens Disassembly Procedure

Precaution:

1. Do not remove the CCD Unit when disassembling or reassembling the lens in order to maintain it clean.
2. Keep dust or dirt away from the Lens.
3. To remove dirt or dust from the Lens, blow with dry air.
4. Do not touch the Lens surface.
5. Use Lens cleaning KIT (BK)(VFK1900BK).

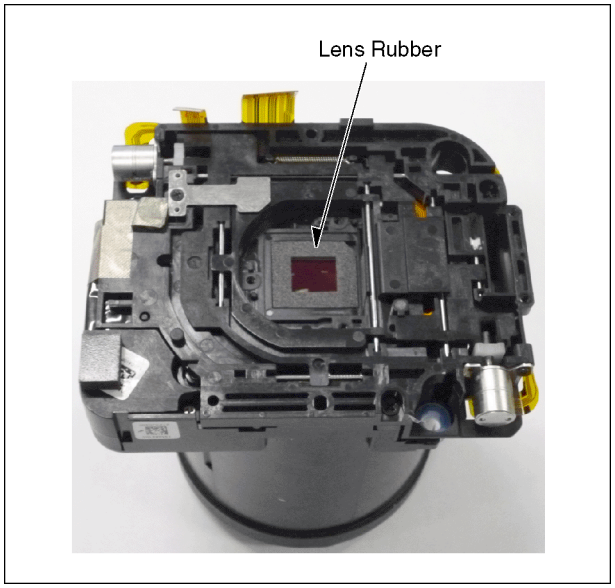
7.4.1. Removal of the CCD Unit



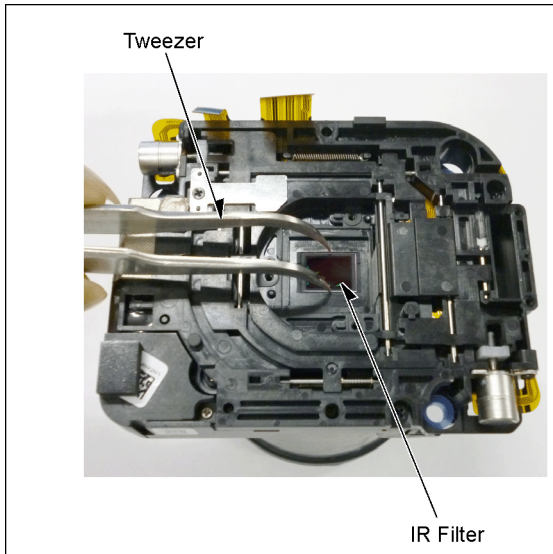
NOTE: (When Replacing)

- Take care not to damage the Lens Plate and the FPC.

7.4.2. Removal of the Lens Rubber



7.4.3. Removal of the IR Filter

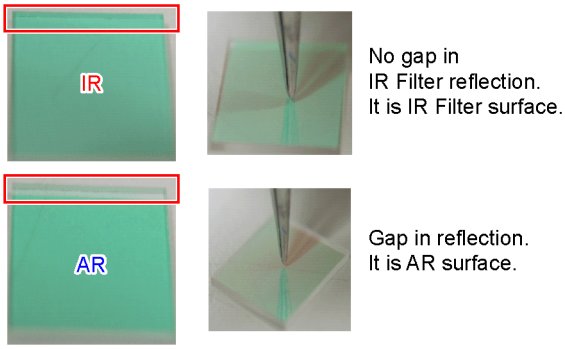


NOTE: (When Replacing)

- When remove the IR Filter, use tweezer.

NOTE: (When Installing)

- When install the IR Filter, use tweezer.
- Place the IR Filter onto the Lens (IR surface facing the Lens).



8 Measurements and Adjustments

8.1. Introduction

When servicing this unit, make sure to perform the adjustments necessary based on the part(s) replaced.
To perform the adjustment, it is necessary to use the “SPCA5330_v1020.exe” and “CK26200WriteQRCodeTool.exe” software.
The Adjustment software “SPCA5330_v1020.exe” and “CK26200WriteQRCodeTool.exe” are available at “TSN Website”.

8.2. Matrix chart (Replaced part and Adjustment item)

The following matrix table shows the relation between the replaced part and the necessary adjustment.
When a part is replaced, make sure to perform the necessary adjustment(s) in the order indicated.

DMC-LZ30 Adjustment Procedure

	JIG/TOOL	Repairing Service Parts (Unit)				
		MAIN PCB	LCD	LENS u Without CCD	CCD	FRAME u (with TOP PCB)
1. Read and note Lens QR Code	※Before assembly completion of the LZ30	●	—	●	—	—
2. USB driver installation	•USB driver <SPCA5330_v1020> ※Once you have installed, it is unnecessary to execute again.	●	—	●	—	—
3. MB/LCD Function Check	•SD Card	●	●	●	●	●
4. Focus Calibration	•Light Box :RFKZ0523 or VFK1164TDVLB •Collimator : VFK1164TCM02 or VFK1164TCM03 or RFKZ0422	●	—	●	●	—
5. OB Calibration		●	—	—	—	—
6. WB/AGC Calibration	•Light Box :RFKZ0523 or VFK1164TDVLB	●	—	●	●	—
7. MeShut Calibration	•Light Box :RFKZ0523 or VFK1164TDVLB	●	—	●	●	—
8. Dark DP Calibration	•Light Box :RFKZ0523 or VFK1164TDVLB	●	—	●	●	—
9. Light / S.S / Preview DP Calibration		●	—	—	—	—
10. Flash WB Calibration	•Gray Chart : RFKZ0612	●	—	—	—	●
11. Write Lens QR Code	•Lens QR code write tool	●	—	●	—	—

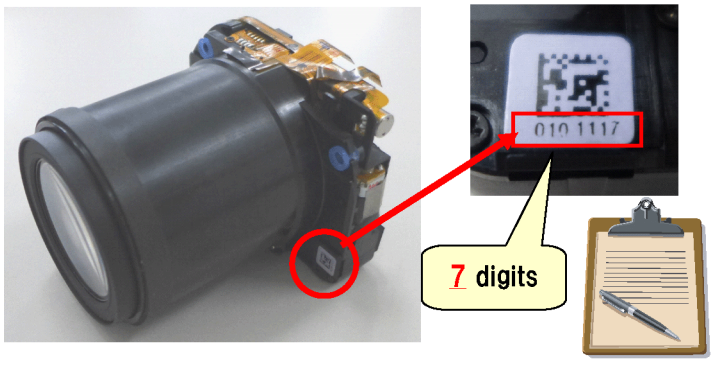
NOTE

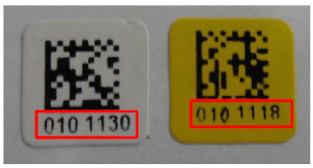
1. Don't replace the sequence of the Adjustment because the previous calibration matters with the next adjustment.

8.3. Adjustment procedure

8.3.1. Read Lens QR Code

Since it is necessary to input later, read and record Lens QR Code stuck on the lens before assembly completion of the LZ30.

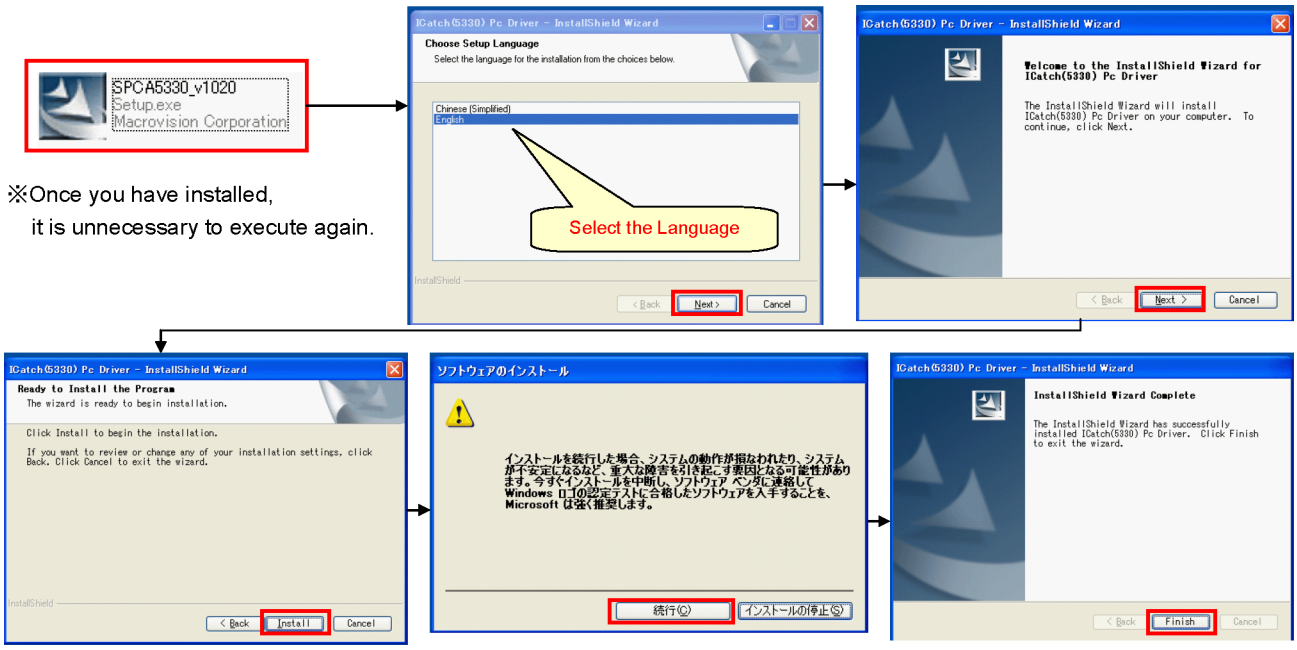




There are some kinds of the colors of the QR Code label of LZ30.
Every kind is compatible for the same specification.

8.3.2. USB driver installation

1. Execute the Setup Launcher



2. Connect the DSC to PC by USB cable

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Connect the DSC to PC by USB cable.

3. Install the Hardware to PC

8.3.3. MB/LCD Function Check

1. Setting the DSC

1. Set the battery to the camera.
2. Insert the SD card.
3. Turn off the power.
4. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
5. Press "Playback" key to enter selection menu.
6. Turn the DSC to the usual distance and brightness in photography.

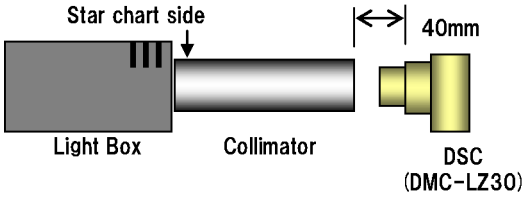
2. Execute MB/LCD Function Check

1. Press "Right Key" or "Left Key" or "Up Key" or "Down Key" to change selected item.
2. Choose "**MB/LCD**", and press "Display Key".
3. Change the flag status of "Disable" from 00001 to 00000 by operating "Right Key" or "Left Key", and then press "Menu/Set Key".
4. Press "Menu/Set Key" again, and select "OK", and press "Menu/Set Key" to start checking.
5. Checking Items are executing in turn automatically as follows.
   a. RTC → Check the Crystal RTC.
   b. Iris → Check the Iris operation.
   c. MSHUT → Check the Mechanical Shutter operation.
   d. ZOOM → Check the Detection of Lens Zoom Position (Wide/Tele) .
   e. STROB → Check Strobe board flush function.
      *To open the Strobe beforehand is recommended.
   f. CARD → Check SD card socket can be read/write.
   g. AUDIO → Check MIC and Speaker by REC/PLAY audio file.
      Input voice when ADUIO REC is displayed.
   h. Memory → Check Internal memory size.
6. When Mark overlap Between RED and Green, the screen will show the result "OK" or "NG".
7. Press "PLAYBACK Key" to return to calibration.

8.3.4. Focus Calibration

1. Setting the DSC

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Press "Playback" key to enter selection menu.
5. Set the Collimator's Star-chart side to the front of Light Box.
6. Move the DSC to the center of the collimator on the opposite side of the Light Box.



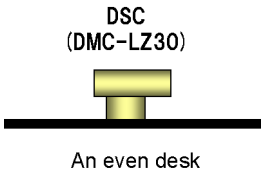
2. Execute Calibration

1. Press "Right Key" or "Left Key" or "Up Key" or "Down Key" to change selected item.
2. Choose "**FOCUS(Infinity)**", and press "Display Key".
3. Change the flag status of "Disable" from 00001 to 00000 by operating "Right Key" or "Left Key", and then press "Menu/Set Key".
4. Press "Menu/Set Key" again, and select "OK", and press "Menu/Set Key" to start checking.
5. When calibration finishes, the screen will show the result "OK" or "NG".
6. Press "PLAYBACK Key" to return to calibration menu.

8.3.5. OB Calibration

1. Setting the DSC

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Press "Playback" key to enter selection menu.
5. Put the DSC on a desk where the lens side is turned downward in order to make "all black" environment.



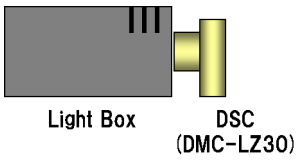
2. Execute Calibration

1. Press "Right Key" or "Left Key" or "Up Key" or "Down Key" to change selected item.
2. Choose "**OB CLB(BLACK)**", and press "Display Key".
3. Change the flag status of "Disable" from 00001 to 00000 by operating "Right Key" or "Left Key", and then press "Menu/Set Key".
4. Press "Menu/Set Key" again, and select "OK", and press "Menu/Set Key" to start checking.
5. When calibration finishes, the screen will show the result "OK" or "NG".
6. Press "PLAYBACK Key" to return to calibration menu.

8.3.6. WB/AGC Calibration

1. Setting the DSC

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Press "Playback" key to enter selection menu.
5. To Select the Light box mode, carry out the following operations.
   a. Press "Right Key" or "Left Key" to change selected item to "**WB/AG(LV10)**", and press "PLAYBACK Key".
   b. Press "UP Key" or "Down Key" to change selected item to "Light Src", and press "Right Key" or "Left Key" to set the value as "00002", and press "MENU/SET Key".
6. Set the DSC to the front of light box closely.



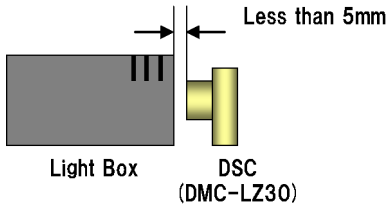
2. Execute Calibration

1. Press "Right Key" or "Left Key" or "Up Key" or "Down Key" to change selected item.
2. Choose "**WB/AG(LV10)**" again, and press "Display Key".
3. Change the flag status of "Disable" from 00001 to 00000 by operating "Right Key" or "Left Key", and then press "Menu/Set Key".
4. Press "Menu/Set Key" again, and select "OK", and press "Menu/Set Key" to start checking.
5. When calibration finishes, the screen will show the result "OK" or "NG".
6. Press "PLAYBACK Key" to return to calibration menu.

8.3.7. MeShut(LV13/LV14) Calibration

1. Setting the DSC

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Press "Playback" key to enter selection menu.
5. To Select the Light box mode, carry out the following operations.
   a. Press "Right Key" or "Left Key" to change selected item to "**WB/AGC(LV10)**", and press "PLAYBACK Key".
   b. Press "UP Key" or "Down Key" to change selected item to "Light Src", and press "Right Key" or "Left Key" to set the value as "00002", and press "MENU/SET Key".
6. Set the DSC to the front of light box closely less than 5mm.



2. Execute Calibration

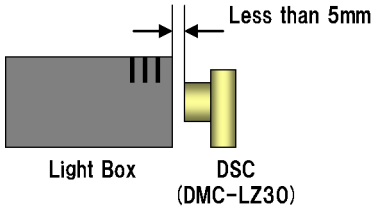
1. Press "Right Key" or "Left Key" or "Up Key" or "Down Key" to change selected item.
2. Choose "**MeShut26(LV13)**", and press "Display Key".
3. Change the flag status of "Disable" from 00001 to 00000 by operating "Right Key" or "Left Key", and then press "Menu/Set Key".
4. Press "Menu/Set Key" again, and select "OK", and press "Menu/Set Key" to start checking.
5. When calibration finishes, the screen will show the result "OK" or "NG".
6. Choose "**MeShut80(LV14)**", and operate and execute calibration same as "MeShut26".
7. Press "PLAYBACK Key" to return to calibration menu.

8.3.8. Dark DP Calibration

1. Setting the DSC

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Press "Playback" key to enter selection menu.
5. Set the DSC to the front of Light Box closely less than 5mm.

* The "Light box mode" is not depend on the calibration result.



2. Execute Calibration

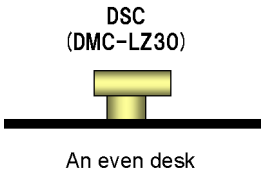
1. Press "Right Key" or "Left Key" or "Up Key" or "Down Key" to change selected item.
2. Choose "**Dark DPC**", and press "Display Key".
3. Change the flag status of "Disable" from 00001 to 00000 by operating "Right Key" or "Left Key", and then press "Menu/Set Key".
4. Press "Menu/Set Key" again, and select "OK", and press "Menu/Set Key" to start checking.
5. When calibration finishes, the screen will show the result "OK" or "NG".
6. Press "PLAYBACK Key" to return to calibration menu.

* It takes several minutes.

8.3.9. Light / S.S / Preview Calibration

1. Setting the DSC

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Press "Playback" key to enter selection menu.
5. Put the DSC on a desk Where a lens side is turned downward in order to make "all black" environment.



2. Execute Calibration

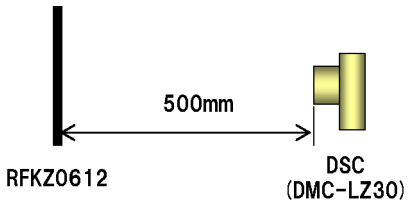
1. Press "Right Key" or "Left Key" or "Up Key" or "Down Key" to change selected item.
2. Choose "**Light/S.S(BLACK)**", and press "Display Key".
3. Change the flag status of "Disable" from 00001 to 00000 by operating "Right Key" or "Left Key", and then press "Menu/Set Key".
4. Press "Menu/Set Key" again, and select "OK", and press "Menu/Set Key" to start checking.
5. When calibration finishes, the screen will show the result "OK" or "NG".
6. Press "PLAYBACK Key" to return to calibration menu.

* Carrying out this adjustment after 25 minutes after power ON is recommended.
* It takes several minutes.

8.3.10. FLASHWB Calibration

1. Setting the DSC

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Press "Playback" key to enter selection menu.
5. In dark environment not Light is reflected
6. Set gray chart (RFKZ0612) from DSC at 500 mm.

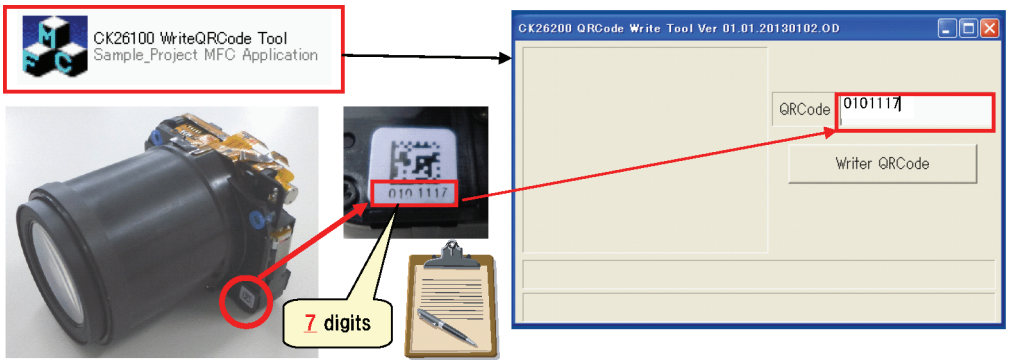


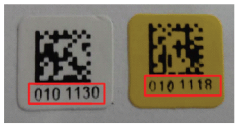
2.Execute Calibration

1. Press "Right Key" or "Left Key" or "Up Key" or "Down Key" to change selected item.
2. Choose "**FLASH WB**", and press "Display Key".
3. Change the flag status of "Disable" from 00001 to 00000 by operating "Right Key" or "Left Key", and then press "Menu/Set Key".
4. Press "Menu/Set Key" again, and select "OK", and press "Menu/Set Key" to start checking.
5. When calibration finishes, the screen will show the result "OK" or "NG".
6. Press "PLAYBACK Key" to return to calibration menu.

8.3.11. Write Lens QR Code

1. Execute the Write QRCode Tool





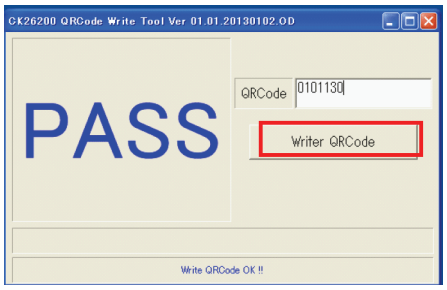
There are some kinds of the colors of the QR Code label of LZ30.
Every kind is compatible for the same specification.

2. Connect the DSC to PC by USB cable

1. Set the battery to the camera.
2. Turn off the power.
3. Press "Tele" + "Menu/Set" + "Playback" key at the same time. It starts in the state of "Engineer Mode" automatically.
4. Connect the DSC to PC by USB cable.

3. Write Lens QR Code

1. Click "Write QRCode" after connect the USB cable.



9 Maintenance

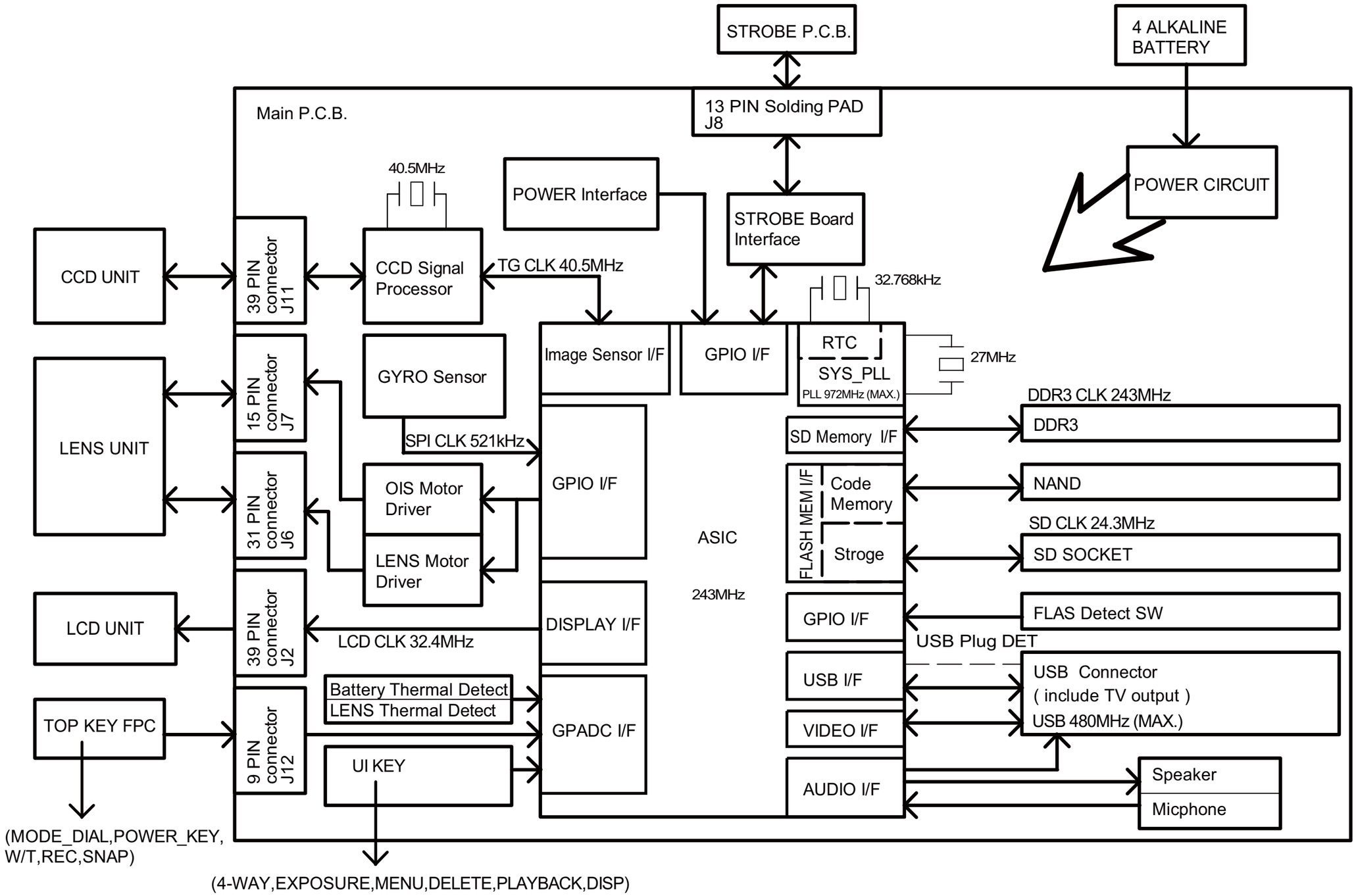
9.1. Cleaning Lens and LCD Panel

Do not touch the surface of lens and LCD Panel with your hand.
When cleaning the lens, use air-Blower to blow off the dust.
When cleaning the LCD Panel, dampen the lens cleaning paper with lens cleaner, and the gently wipe the its surface.
Note:

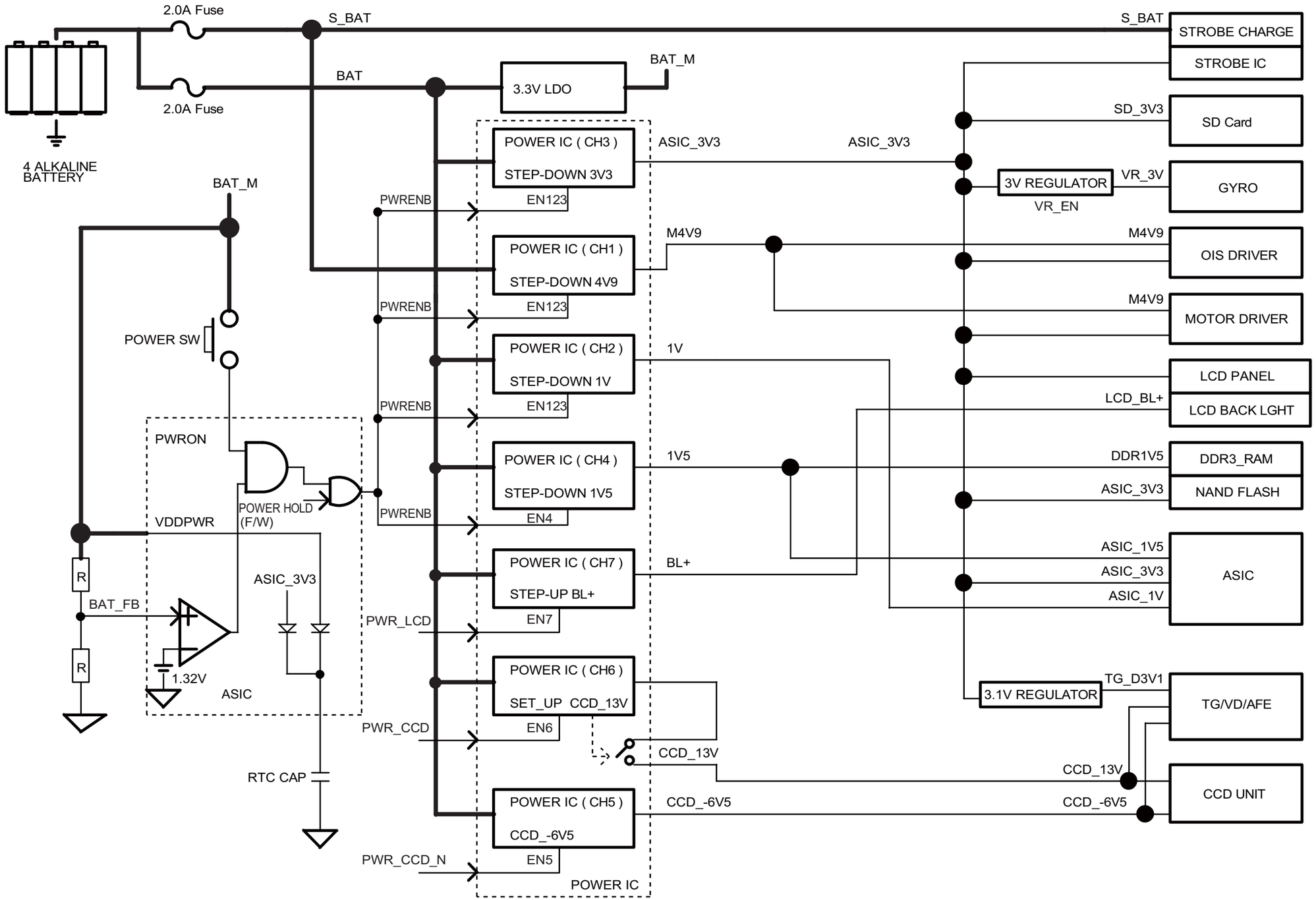
The Lens Cleaning KIT ; VFK1900BK (Only supplied as 10 set/Box) is available as Service Aid.

10 Block Diagram

10.1. Overall Block Diagram



10.2. Power Block Diagram



11 Wiring Connection Diagram

11.1. Interconnection Schematic Diagram