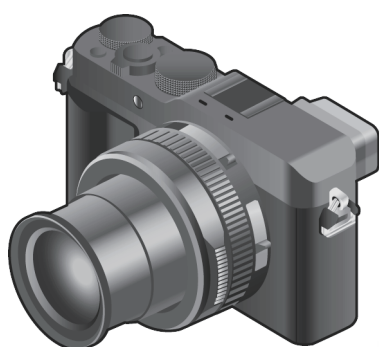


Service Manual

Digital Camera

LUMIX



Model No. **DC-LX100M2P**
DC-LX100M2PP
DC-LX100M2EB
DC-LX100M2EE
DC-LX100M2EF
DC-LX100M2EG
DC-LX100M2EP
DC-LX100M2GA
DC-LX100M2GC
DC-LX100M2GD
DC-LX100M2GH
DC-LX100M2GK
DC-LX100M2GN
DC-LX100M2GT

Colour
(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[®]

© Panasonic Corporation 2018 Unauthorized copying and distribution is a violation of law.

TABLE OF CONTENTS

	PAGE
1 Safety Precautions	3
1.1. General Guidelines	3
1.2. Leakage Current Cold Check	3
1.3. Leakage Current Hot Check (See Figure. 1)	3
2 Warning	4
2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Devices	4
2.2. How to Recycle the Lithium Ion Battery (U.S.A. and Canada Only)	4
2.3. How to Replace the Lithium Battery	5
3 Service Navigation	6
3.1. Introduction	6
3.2. Important Notice	6
3.3. Service Notes	7
3.4. General Description About Lead Free Solder (PbF)	8
3.5. How to Define the Model Suffix (NTSC or PAL model)	9
4 Specifications	14
5 Location of Controls and Components	16
6 Service Mode	18
6.1. Error Code Memory Function	18
7 Troubleshooting Guide	22
7.1. Wi-Fi Circuit (WIFI/BT P.C.B.)	22
8 Service Fixture & Tools	23
8.1. Service Fixture and Tools	23
8.2. When Replacing the Main P.C.B.	24
8.3. Service Position	24
9 Disassembly and Assembly Instructions	25
9.1. Disassembly Flow Chart	25
9.2. P.C.B. Location	26
9.3. Disassembly Procedure	27
9.4. Lens Disassembly Procedure	40
9.5. Assembly Procedure for the Lens (Phase Alignment)	45
9.6. The Application of Grease Method	51
9.7. Removal of the MOS Unit	52
10 Measurements and Adjustments	53
10.1. Introduction	53
10.2. Before Disassembling the unit	53
10.3. Details of Electrical Adjustment	56
10.4. After Adjustment	63
11 Maintenance	64
11.1. Cleaning Lens, Viewfinder and LCD Panel	64
12 Block Diagram	65
12.1. Overall Block Diagram	65
13 Wiring Connection Diagram	66
13.1. Interconnection Diagram	66
14 Schematic Diagram	67
15 Printed Circuit Board	67
16 Exploded View and Replacement Parts List	67

PAGE

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 $1\text{ M}\Omega$ and $5.2\text{ M}\Omega$. 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 $1.5\text{ k}\Omega$, 10 W resistor, in parallel with a $0.15\text{ }\mu\text{F}$ 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 $1\text{ k}\Omega/\text{V}$ 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 $1/2\text{ mA}$. 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

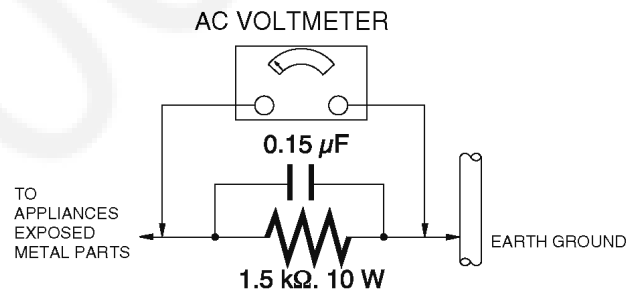


Figure. 1

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 MOS image sensor, 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. How to Recycle the Lithium Ion Battery (U.S.A. and Canada Only)

ENGLISH



A lithium ion battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

FRANÇAIS



L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion recyclable. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

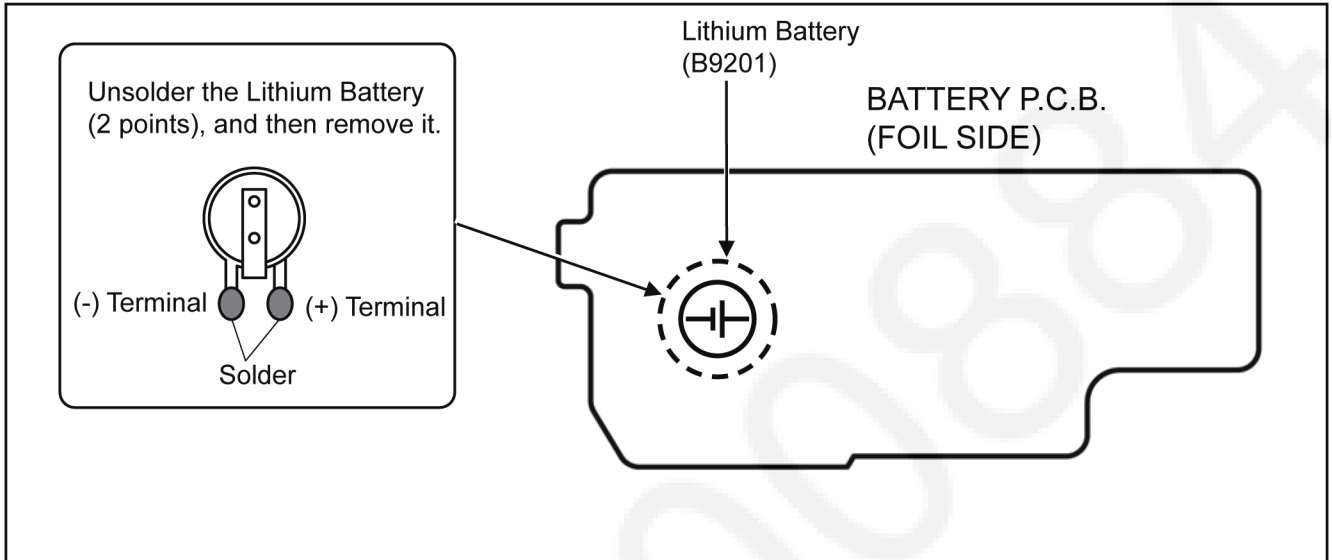
2.3. How to Replace the Lithium Battery

2.3.1. Replacement Procedure

1. Remove the Battery P.C.B.. (Refer to Disassembly Procedures.)
2. Unsolder the each soldering point of electric lead terminal for Lithium battery (Ref. No. "B9201" at Foil side of Battery P.C.B.) and remove the Lithium battery together with electric lead terminal. Then replace it into new one.

NOTE:

The Lithium battery includes electric lead terminals.



NOTE:

This Lithium battery is a critical component.

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in requirement designed specifically for its use.

Replacement batteries must be of same type and manufacture.

They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.

Do not attempt to re-charge the old battery or re-use it for any other purpose.

It should be disposed of in waste products destined for burial rather than incineration.

(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 fabricant.

NOTE:

Above caution is applicable for a battery pack which is for DC-LX100M2 series, as well.

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.

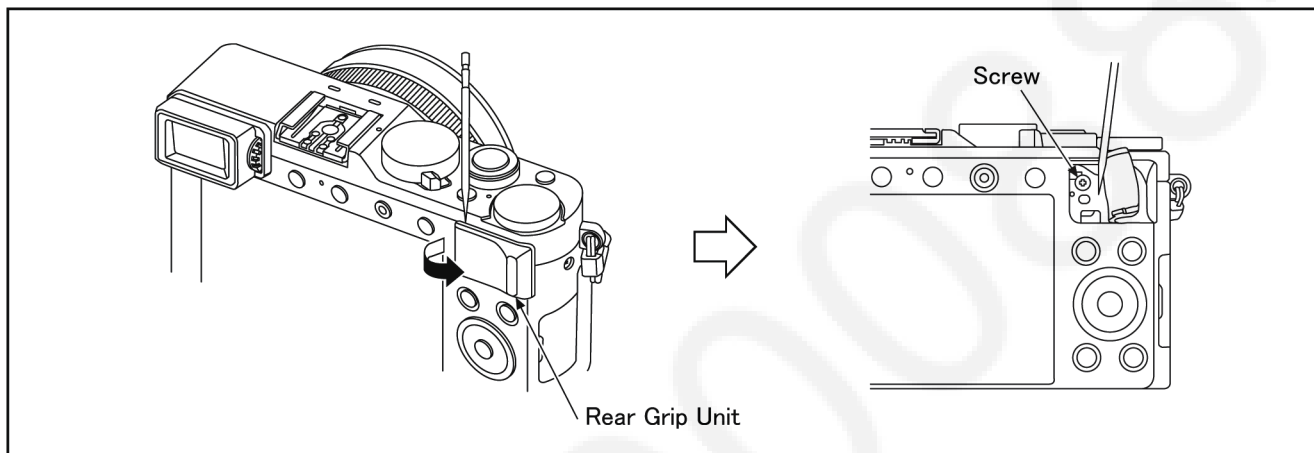
3.2. Important Notice

3.2.1. Attention for disassembling

This unit has a structure that one screw is hidden under the Rear Grip Unit.

When disassembling, there is a need to remove this screw without fail.

Refer to "9 Disassembly and Assembly Instructions" for details.



3.2.2. About Lens Block

The image sensor (MOS) Unit which are connected to the lens unit with 2 of 3 screws, after performing the Optical tilt adjustment.

During servicing, if one of MOS Unit fixing screws are loosened, the Optical tilt adjustment must be performed.

(About the Optical tilt adjustment, refer to the "10.3.2. Adjustment Specifications" for details.)

3.2.3. About Venus Engine (IS6001) [Located on the Main P.C.B.]:

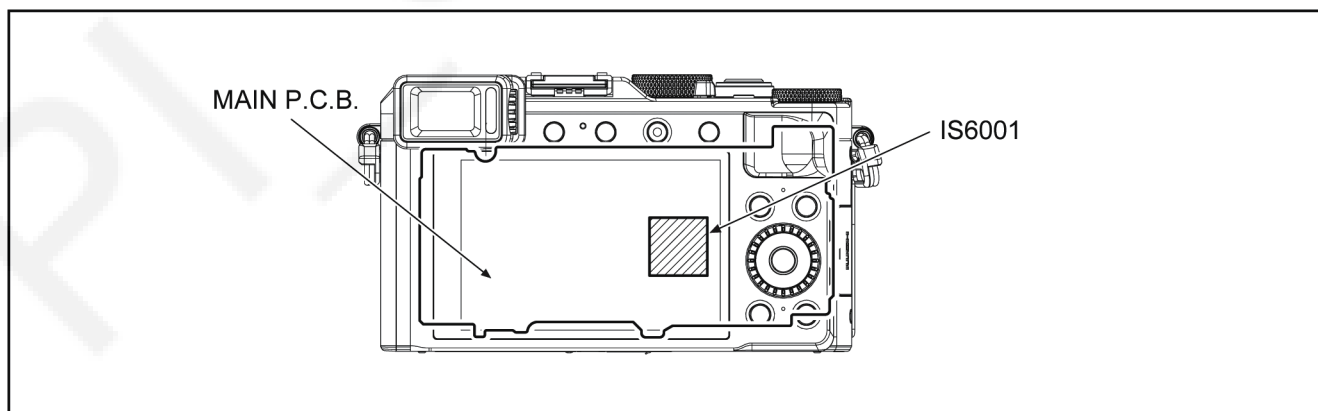
The Venus Engine (IS6001) consists of two IC chips (DRAM and Venus) , which are fixed together with solder.

(It's called, "Package On Package" type IC.)

When replacing, always replace in pairs. (Units of service parts: integrated (one pair) state.)

NOTE:

- During servicing, do not press down hard on the surface of IS6001.
- The pad pasted on surface of IS6001, paste on surface of the IS6001 without fail after the replacement.



3.2.4. About Flexible Cable and Connector

Do not touch carelessly so that the foreign body should not adhere to the terminal part of flexible cable and connector.

Wipe off with a clean cloth and the cotton bud, etc. when the terminal part is dirty.

3.3. Service Notes

3.3.1. About Wi-Fi / Bluetooth Function

The page number in this chapter does not show the page number of this service manual.

What you can do with the Wi-Fi®/ Bluetooth® function

Controlling with a Smartphone (P60)

- Recording with a smartphone (P61)
- Playing back or saving images stored on the camera, or uploading them on social media sites (P63)

Explore more enjoyment possibilities with Bluetooth®

You can connect to a smartphone that supports Bluetooth low energy any time. Connect to a smartphone to use a full range of features.

- Pairing (Connection setup) (P56)
- Turning on/off the camera with a smartphone (P60)
- [B] (Bulb) recording (P62)
- Sending recorded images to a smartphone automatically
- Recording location information of a smartphone on recorded images
- Synchronising the camera's clock with a smartphone

These operating instructions refer to both smartphones and tablets as smartphones from this point on unless noted otherwise.

- For details, refer to the "Operating Instructions for advanced features (PDF format)".

3.3.2. Important Notice of Servicing

This camera unit has the personal information of wireless LAN connection the customer has registered.

For the protection of private information, please erase the personal information after the completion of repair by "Initial Settings".

In addition, please print out the following documents, and pass to the customer with the camera unit.

Printing Material [Leaflet for Customer]

[For The Customer]

Before using your camera please check the Wi-Fi settings.

Depending on what was serviced, the settings may have been reset to the factory defaults.

1. If the settings were reset you will need to reenter your Lumix Club login ID and password.

If you have forgotten the login ID and/or Password, please connect to the Lumix Club web site and create a new ones.

2. You may also have to reenter the settings for your local Wi-Fi network settings.

We recommend consulting the operating manual if you have any questions.

3.4. 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.
SVKZ000001----- (0.3mm 100g Reel)
SVKZ000002----- (0.6mm 100g Reel)
SVKZ000003----- (1.0mm 100g Reel)

Note

- * Ingredient: Tin (Sn) 96.5%, Silver (Ag) 3.0%, Copper (Cu) 0.5%. (Flux cored)

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









There are several types of DC-LX100M2 regardless of the colours.

- a) DC-LX100M2 (Japan domestic model)
- b) DC-LX100M2P/PP
- c) DC-LX100M2EB/EF/EG/EP
- d) DC-LX100M2EE
- e) DC-LX100M2GN
- f) DC-LX100M2GD
- g) DC-LX100M2GT
- h) DC-LX100M2GK
- i) DC-LX100M2GA/GC/GH

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

3.5.1. 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) DC-LX100M2 (Japan domestic model) The nameplate for this model shows the following Safety registration mark.	
b) DC-LX100M2P/PP The nameplate for these models show the following Safety registration mark.	
c) DC-LX100M2EB/EF/EG/EP The nameplate for these models show the following Safety registration mark.	
d) DC-LX100M2EE The nameplate for this model shows the following Safety registration mark.	
e) DC-LX100M2GN The nameplate for this model shows the following Safety registration mark.	
f) DC-LX100M2GD The nameplate for this model shows the following Safety registration mark.	
g) DC-LX100M2GT The nameplate for this model shows the following Safety registration mark.	
h) DC-LX100M2GK The nameplate for this model shows the following Safety registration mark.	
i) DC-LX100M2GA/GC/GH The nameplate for these models do not show any above Safety registration mark.	

NOTE:

After replacing the Main P.C.B., be sure to achieve adjustment.

3.5.2. Initial Settings:

After replacing the Main P.C.B. and/or Flash-ROM, make sure to perform the initial settings after achieving the adjustment by ordering the following procedure in accordance with model suffix of the unit.

1. Important Notice:

Before proceeding Initial settings, make sure to read the following CAUTION.

CAUTION:(Initial Settings)

---After Replacing the Main P.C.B. and/or Flash-ROM ---

[Except "EB/EF/EG and EP" models]

*. The model suffix can be chosen **JUST ONE TIME.**

(Effective model suffix : "P/PP/EE/GA/GC/GD/GH/GK/GN/GT and JAPAN domestic model")

*. Once one of the model suffix has been chosen, the model suffix lists will not be displayed, thus, it can not be changed.

2. Procedures:

- Precautions: Read the above "CAUTION" carefully.

- Preparation:

Attach the fully charged Battery, and insert the memory card (32MB or more).

Remove the lens cap.

- **Step 1. The Temporary Cancellation of "Initial Settings":**

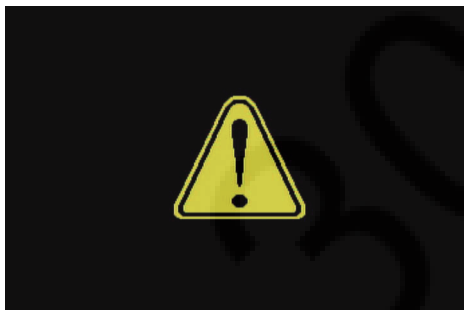
While pressing "[RIGHT] of Cursor button", [AF/AE LOCK] button and [DISP.] button simultaneously, turn the power on.

- **Step 2. The Cancellation of "Initial Settings":**

Press the [Playback] button in order to enter the [Playback] mode.

Press [AF/AE LOCK] button and "[UP] of Cursor buttons" simultaneously, then turn the power off.

The LCD displays the " ! " mark before the unit powers down.



- **Step 3. Turn the Power on:**

Turn the power on.

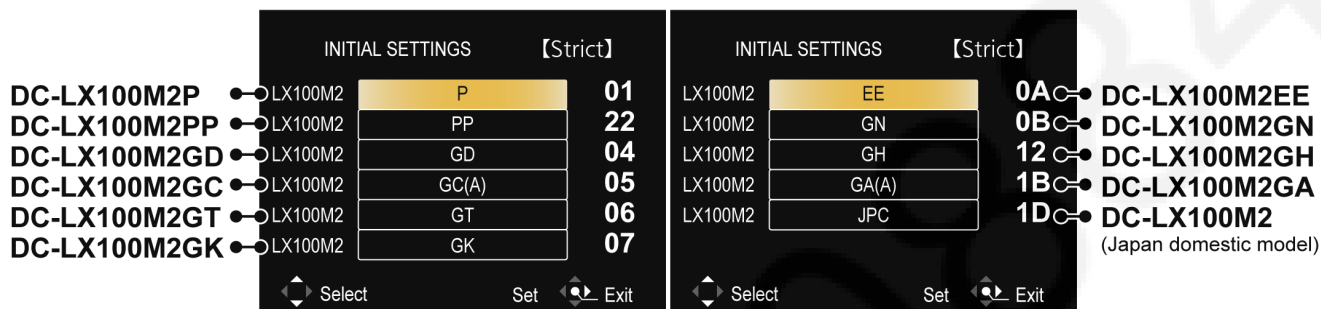
• **Step 4. Display the Initial Settings:**

1. Set [Shutter speed dial] to "[A](Auto Mode)".
2. Set [Aperture ring] to "[A](Auto Mode)".
3. While pressing [MENU/SET] button and "[RIGHT] of Cursor buttons" simultaneously, turn the power off.
The "Initial Settings" menu is displayed.
There are two kinds of "Initial Settings" menu form as follows:

[CASE 1. After replacing Main P.C.B. and/or Flash-ROM]

[Except "EB/EF/EG/EP" models: (1PB1DVLB1282Z is used as a Main P.C.B.)]

When Main P.C.B. has just been replaced, 11 model suffixes are displayed as follows. (two pages in total)



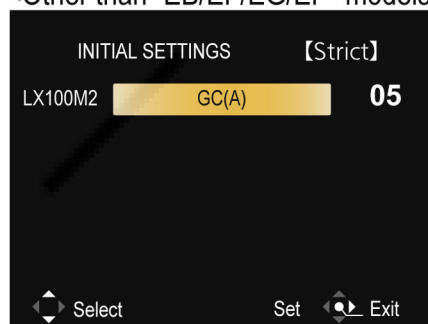
[Only "EB/EF/EG/EP" models: 1PB1DVLB1282Y is used as a Main P.C.B.]

When Main P.C.B. has just been replaced, only 4 model suffixes are displayed as follows. (one pages in total)

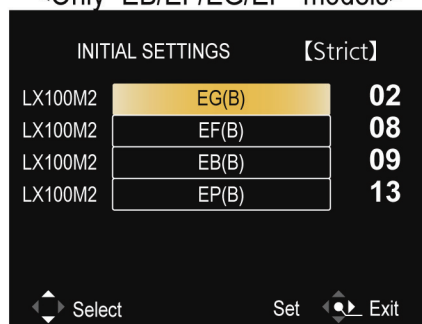


[CASE 2. Other than "After replacing Main P.C.B. and/or Flash-ROM"]

<Other than "EB/EF/EG/EP" models>

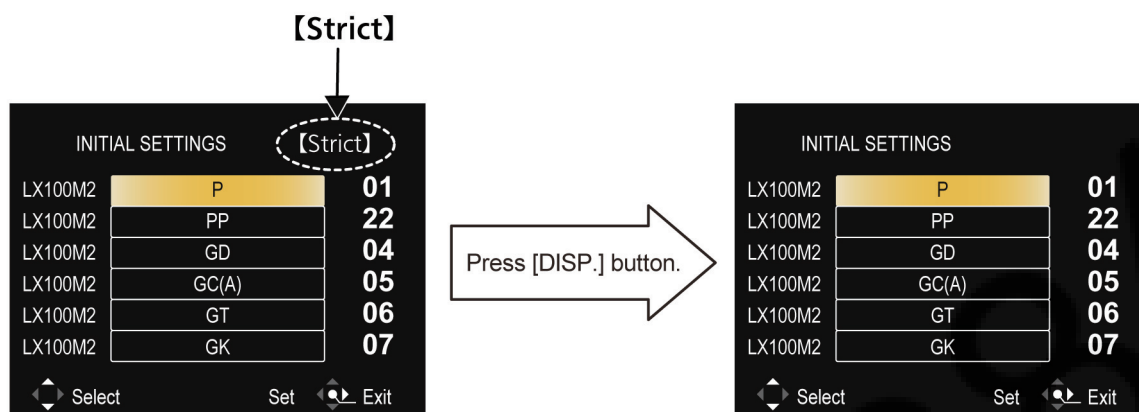


<Only "EB/EF/EG/EP" models>



• **Step 5. Cancel “Strict” mode:**

Press the [DISP.] button to cancel “Strict” mode. (Confirm the “Strict” is disappeared.)



• **Step 6. Choose the Model Suffix in “Initial Settings”: (Refer to “CAUTION”)**

[Caution: After replacing the Main P.C.B. and/or Flash-ROM]

The model suffix can be chosen, **JUST ONE TIME**.

Once one of the model suffix have been chosen, the model suffix lists will not be displayed, thus, it can not be changed.

Therefore, select the area carefully.

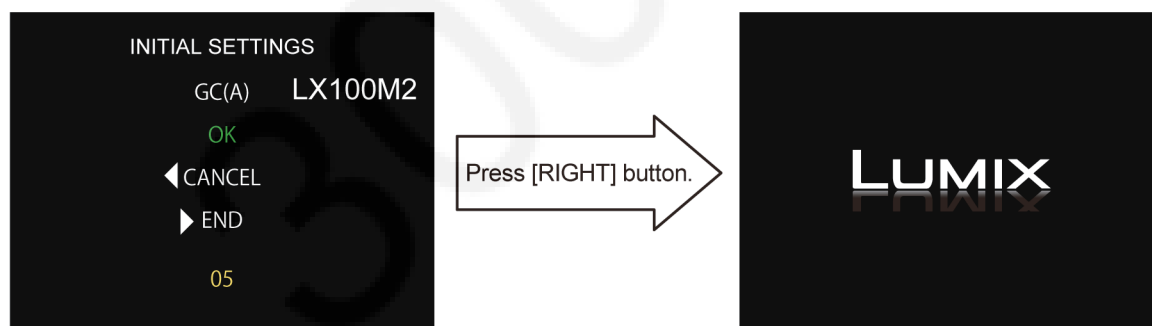
Select the area with pressing “[UP] / [DOWN] of Cursor buttons”.

• **Step 7. Set the Model Suffix in “Initial Settings”:**

Press the “[RIGHT] of Cursor buttons”.

The only set area is displayed, and then press the “[RIGHT] of Cursor buttons” after confirmation.

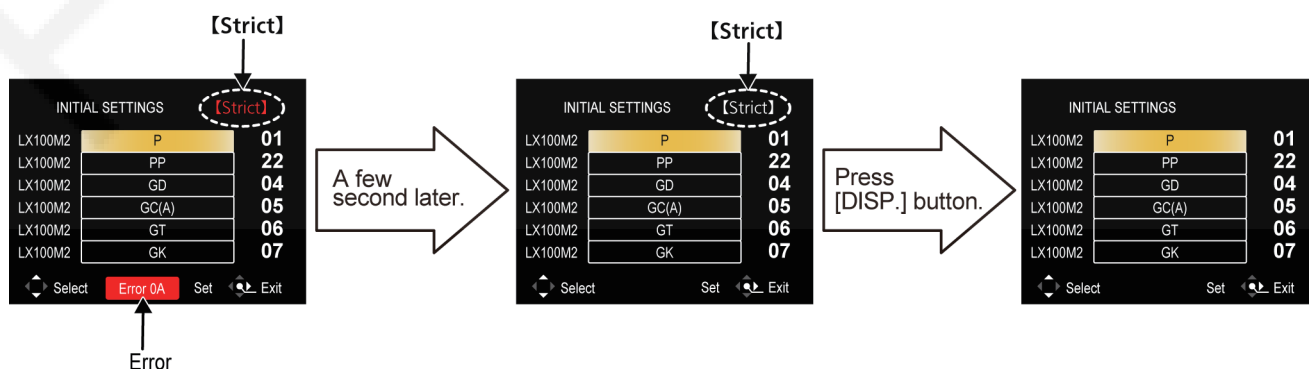
(The unit is powered off automatically.)



NOTE:

When the error message such as the following is displayed, cancel “Strict” mode.

Press [DISP.] button to clear the “Strict” display at the upper right corner of screen.



• **Step 8. Confirmation:**

Confirm the display of “Please set the clock” in concerned language when the unit is turned on again.

When the unit is connected to PC with USB cable, it is detected as removable media.

(When the “GK” or “GT” model suffix is selected, the display shows “Please set the clock” in Chinese.)

As for your reference, major default setting condition is as shown in the following table.

• **Default setting (After “Initial Settings”)**

	MODEL	VIDEO OUTPUT	LANGUAGE	DATE	REMARKS
a)	DC-LX100M2P	NTSC	English	Month/Date/Year	
b)	DC-LX100M2PP	NTSC	English	Month/Date/Year	
c)	DC-LX100M2EB	PAL	English	Date/Month/Year	
d)	DC-LX100M2EE	PAL	Russian	Date/Month/Year	
e)	DC-LX100M2EF	PAL	English	Date/Month/Year	
f)	DC-LX100M2EG	PAL	English	Date/Month/Year	
g)	DC-LX100M2EP	PAL	English	Date/Month/Year	
h)	DC-LX100M2GA	PAL	English	Date/Month/Year	
i)	DC-LX100M2GC	PAL	English	Date/Month/Year	
j)	DC-LX100M2GD	NTSC	Korean	Year/Month/Date	
k)	DC-LX100M2GH	PAL	English	Date/Month/Year	
l)	DC-LX100M2GK	PAL	Chinese (simplified)	Year/Month/Date	
m)	DC-LX100M2GN	PAL	English	Date/Month/Year	
n)	DC-LX100M2GT	NTSC	Chinese (traditional)	Year/Month/Date	
o)	DC-LX100M2 (Japan domestic model)	NTSC	Japanese	Year/Month/Date	

4 Specifications

The following specification is for DC-LX100M2EB.

Some specifications may differ depending on model suffix.

The page number in this chapter does not show the page number of this service manual.

Specifications are subject to change without notice.

Digital Camera:

Information for your safety

Power Source:	8.4 V===	
Power Consumption:	2.1 W (When recording with Monitor) 2.8 W (When recording with Viewfinder) 1.7 W (When playing back with Monitor) 1.9 W (When playing back with Viewfinder)	
Camera effective pixels	17,000,000 pixels	
Image sensor	4/3" MOS sensor, total pixel number 21,770,000 pixels, Primary colour filter	
Lens	Optical 3.1× zoom, f = 10.9 mm to 34 mm (35 mm film camera equivalent: 24 mm to 75 mm) Wide: F1.7 to F16 Tele: F2.8 to F16 Filter diameter ∅ 43 mm	
Image stabiliser	Optical method	
Focus range	AF	50 cm (1.6 feet) to ∞
	AF Macro / MF / Intelligent auto / Motion Picture	3 cm (0.098 feet) (Wide) / 30 cm (0.98 feet) (Tele) to ∞
Shutter system	Electronic shutter+Mechanical shutter	
Minimum Illumination	Approx. 5 lx (when i-Low light is used, the shutter speed is 1/25th of a second)	
Shutter speed	Still picture: T (Time) (Max. approx. 30 minutes)*, 60 seconds to 1/4000th of a second (Mechanical shutter) 1 second to 1/16000th of a second (Electronic shutter) * B (Bulb) recording is available when using Shutter Remote Control (via Bluetooth connection). Motion picture: 1/2nd of a second to 1/16000th of a second (When Manual Exposure Mode is set and [MF] is selected), 1/25th of a second to 1/16000th of a second (Other than the above)	

Exposure (AE)	Programme AE (P) / Aperture-priority AE (A) / Shutter-priority AE (S) / Manual exposure (M) Exposure Compensation (1/3 EV Step, -5 EV to +5 EV, -3 EV to +3 EV dial setting range)	
Light metering system	Multiple / Centre weighted / Spot	
Monitor	3.0" TFT LCD (3:2) (Approx. 1,240,000 dots) (field of view ratio about 100%) Touch screen	
Viewfinder	0.38" Colour LCD Live Viewfinder (16:9) (Approx. 2,760,000 dots equivalent) (field of view ratio about 100%) (Magnification approx. 0.7× (35 mm film camera equivalent)), with 50 mm lens at infinity; -1 m ⁻¹ (with dioptre adjustment -4 to +3 dioptre)	
Flash mode	AUTO, AUTO/Red-Eye Reduction, Forced ON, Forced ON/Red-Eye Reduction, Slow Sync., Slow Sync./Red-Eye Reduction, Forced OFF	
Microphone	Stereo	
Speaker	Monaural	
Recording media	SD Memory Card / SDHC Memory Card* / SDXC Memory Card* (* UHS-I UHS Speed Class 3)	
Recording file format		
Still picture	RAW/JPEG (based on "Design rule for Camera File system", based on "Exif 2.31" standard)	
4K photo	MP4 (H.264/MPEG-4 AVC, AAC (2 ch))	
Motion pictures	AVCHD Progressive / AVCHD / MP4	
Audio compression	AVCHD	Dolby Audio™ (2 ch)
	MP4	AAC (2 ch)
Interface		
[HDMI]	micro HDMI Type D	
[USB/CHARGE]	USB 2.0 (High Speed) / USB 2.0 Micro-B * Data from the PC can not be written to the camera using the USB connection cable.	
Dimensions	Approx. 115.0 mm (W)×66.2 mm (H)×64.2 mm (D) (4.53" (W)×2.61" (H)×2.53" (D)) (excluding the projecting parts)	
Mass	Approx. 392 g / 0.86 lb (with card and the battery) Approx. 350 g / 0.77 lb (excluding card and battery)	

Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating humidity	10%RH to 80%RH

Wireless transmitter

Wireless LAN	
Compliance standard	IEEE 802.11b/g/n (standard wireless LAN protocol)
Frequency range used (central frequency)	2412 MHz to 2462 MHz (1 to 11 ch)
Encryption method	Wi-Fi compliant WPA™/WPA2™
Access method	Infrastructure mode
Bluetooth function	
Compliance standard	Bluetooth v4.2 (Bluetooth low energy (BLE))
Frequency range used (central frequency)	2402 MHz to 2480 MHz

AC adaptor (Panasonic SAE0012F):

Information for your safety

Input:	110 V-240 V~ 50/60 Hz 0.2 A
Output:	5 V=== 1.0 A

Battery Pack (lithium-ion) (Panasonic DMW-BLG10E):

Information for your safety

Voltage/capacity:	7.2 V / 1025 mAh
--------------------------	------------------

Flash (supplied)

Guide number	10 equivalent (ISO 200• m), 7 equivalent (ISO 100• m)
Lighting angle	24 mm (35 mm film camera equivalent)

The symbols on this product (including the accessories) represent the following:

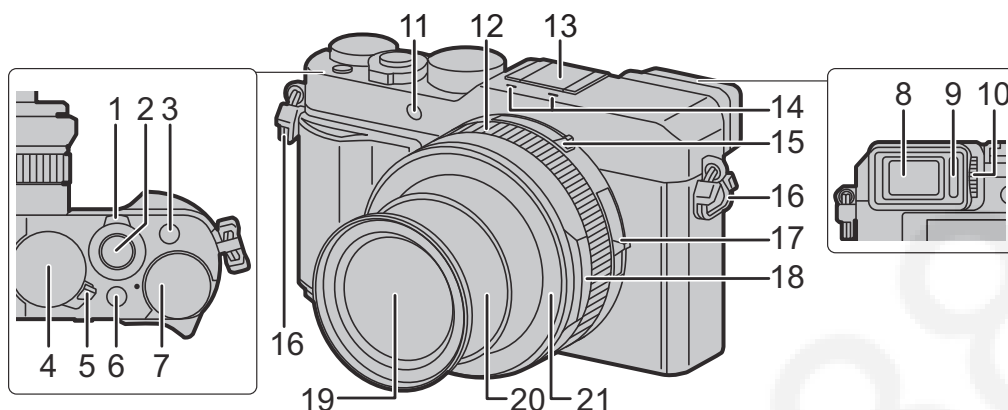
~	AC
===	DC
	Class II equipment (The construction of the product is double-insulated.)



5 Location of Controls and Components

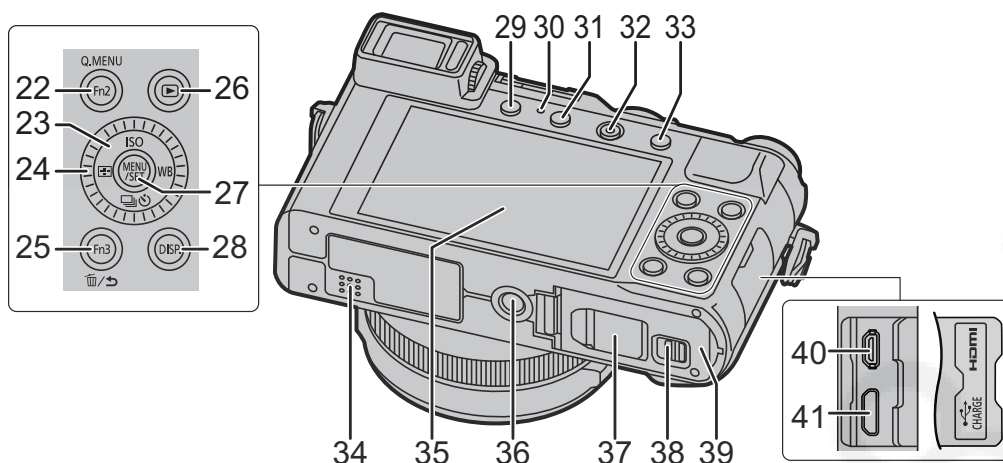
The following description is for DC-LX100M2EB.






Some descriptions may differ depending on model suffix.

The page number in this chapter does not show the page number of this service manual.



1	Zoom lever (P22) • The operation of the zoom lever is indicated as shown below in these operating instructions. Rotate the zoom lever: 	15	Aspect ratio selector switch • You can easily switch the aspect ratio of still pictures using the aspect ratio selector switch. [4:3]/[1:1]/[16:9]/[3:2]
2	Shutter button (P21)	16	Shoulder strap eyelet (P13)
3	[Fn1] button (P27)	17	Focus selector switch – [AF]: Auto Focus operates when the shutter button is pressed halfway. – [AF ]: You can take pictures of a subject as close as 3 cm (0.098 feet) from the lens by rotating the zoom lever upmost to Wide. – [MF]: Use this function when you want to fix the focus or when the distance between the lens and the subject is determined and you do not want to activate Auto Focus.
4	Shutter speed dial (P19, 31)		
5	Camera ON/OFF switch (P17)		
6	[iA] button (P19)		
7	Exposure compensation dial	18	Aperture ring (P19, 31)
8	Viewfinder (P18)	19	Lens (Filter diameter \varnothing 43 mm)
9	Eye sensor (P18)	20	Lens barrel
10	Dioptr adjustment dial (P18)	21	Lens front ring • To attach the auto lens cap (optional), remove the lens front ring.
11	Self-timer indicator/ AF Assist Lamp (P20)		
12	Control ring (P28)		
13	Hot shoe (Hot shoe cover) (P43)		
14	Stereo microphone (P20) • Be careful not to cover the microphone with your finger. Doing so may make sound difficult to record.		



22	[Q.MENU] button/[Fn2] button (P27)	34	Speaker (P20)
23	Cursor button (P23)	35	Touch screen (P25)/monitor (P65)
24	Control dial <ul style="list-style-type: none"> • Selection of items or setting of values etc., is performed. • The operation of rotating the control dial is illustrated as below in these operating instructions. When rotating the control dial to the left or right: 	36	Tripod mount <ul style="list-style-type: none"> • It may not be possible to attach and securely fasten a tripod with a screw length of 5.5 mm (0.22 inch) or more to the camera. Doing so may also damage the camera.
25	[Fn3] button (P27, 33)/ [] (Delete) button (P47)/ [] (Cancel) button (P26)	37	DC coupler cover <ul style="list-style-type: none"> • Always use a genuine Panasonic AC adaptor (DMW-AC10E: optional). • When using an AC adaptor, ensure that the Panasonic DC coupler (DMW-DCC11: optional) and AC adaptor (DMW-AC10E: optional) are used. • When using an AC adaptor (optional), use the AC mains lead supplied with the AC adaptor (optional).
26	[] (Playback) button (P47)	38	Release lever (P14)
27	[MENU/SET] button (P25) <ul style="list-style-type: none"> • Confirmation of setting contents, etc., is performed. 	39	Card/Battery door (P14)
28	[DISP.] button <ul style="list-style-type: none"> • This switches the screen display. 	40	[HDMI] socket <ul style="list-style-type: none"> • You can view pictures on a TV screen by connecting your camera to your TV with the HDMI micro cable.
29	[LVF] button (P18)/[Fn5] button (P27)	41	[USB/CHARGE] socket (P15)
30	Charging lamp (P15)/ WIRELESS connection lamp (P53)	• Function buttons ([Fn6] to [Fn10]) are touch icons. Touch the  tab on the recording screen to display them.	
31	[Fn4] button (P27)		
32	Motion picture button (P45)		
33	[AF/AE LOCK] button		

6 Service Mode

6.1. Error Code Memory Function

1. General description

This unit is equipped with history of error code memory function, and can be memorized 16 error codes in sequence from the latest. When the error is occurred more than 16, the oldest error is overwritten in sequence.

The error code is not memorized when the power supply is shut down forcibly (i.e., when the unit is powered on by the battery, the battery is pulled out) The error code is memorized to Flash-ROM when the unit has just before powered off.

2. How to display

The error code can be displayed by ordering the following procedure:

• Preparation

Attach the fully charged Battery, and insert the memory card (32MB or more).

Remove the lens cap.

• Step 1. The Temporary Cancellation of “Initial Settings”:

While pressing “[RIGHT] of Cursor button”, [AF/AE LOCK] button and [DISP.] button simultaneously, turn the power on.

• Step 2. Execute the Error Code Display Mode:

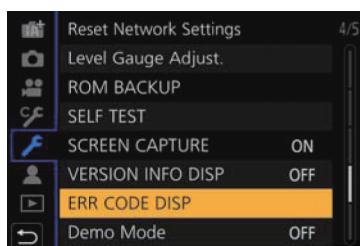
While pressing [MENU/SET] button, “[LEFT] of Cursor button” and [AF/AE LOCK] button simultaneously.

*The display is changed as shown below when the above buttons are pressed simultaneously.

Normal display → Error code display → Camera information display → Normal display →

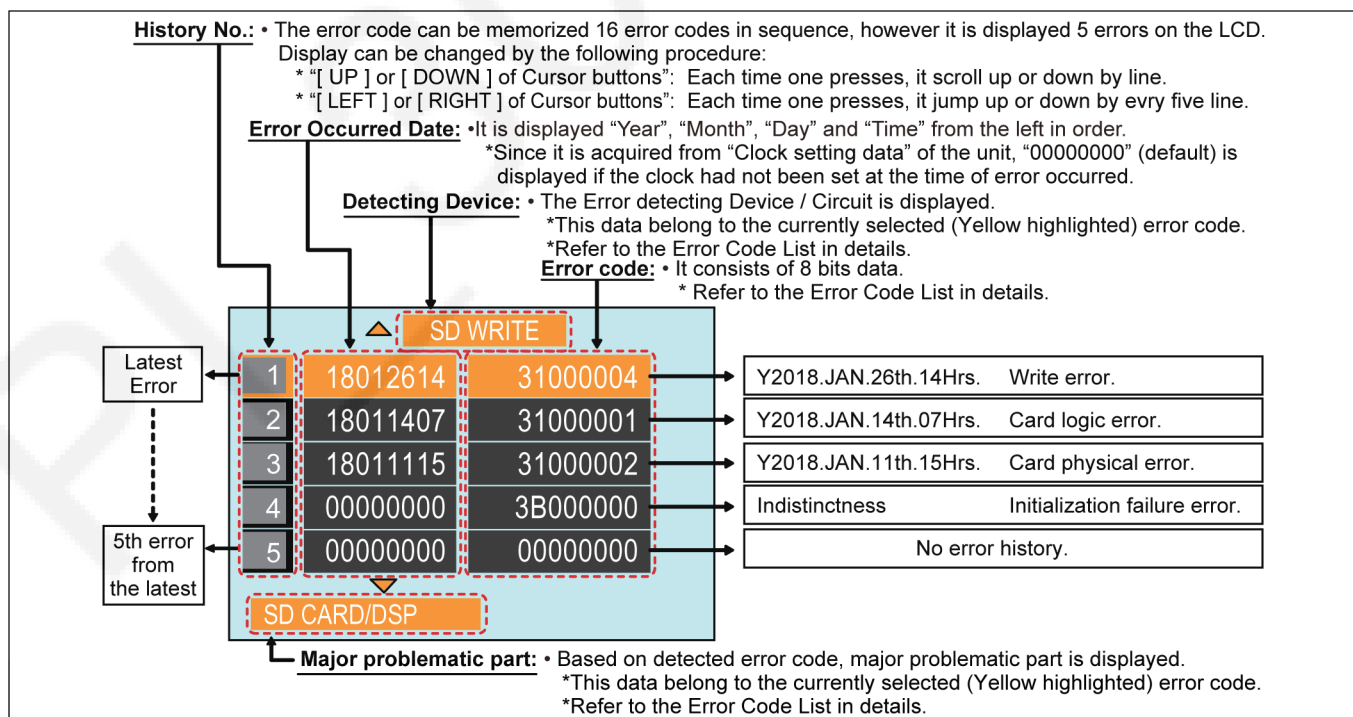
[Display method from the menu display]

Select [ERR CODE DISP] from the setup menu and then press [MENU/SET] button with the step 1 condition.



*The display is changed as shown below when [MENU/SET] button is pressed.

Menu display → Error code display → Camera information display → Menu display →



Example of Error Code Display

Error Code List

The error code consists of 8 bits data and it shows the following information.

Attribute	Main item	Sub item	Error code		Contents (Upper)	Error Indication			
			High 4 bits	Low 4 bits	Check point (Lower)	Detecting device	Part/Circuit		
LENS	Lens drive	Focus	1C*0	0?01	HP Low detect error (Focus encoder always detects High, and not becomes Low)	FOCUS L	LENS FPC/ DSP		
					Mechanical lock, FP9007-(13) signal line or IS6001 (VENUS ENGINE)				
				0?02	HP High detect error (Focus encoder always detects Low, and not becomes High)	FOCUS H			
					Mechanical lock, FP9007-(13) signal line or IS6001 (VENUS ENGINE)				
				Zoom	0?10	Collapsible barrel Low detect error (Collapsible barrel encoder always detects High.)		ZOOM L	ZOOMm/ LENSu
						Mechanical lock, FP9007-(11) signal line or IS6001 (VENUS ENGINE)			
		0?20	Collapsible barrel High detect error (Collapsible barrel encoder always detects Low.)		ZOOM H				
			Mechanical lock, FP9007-(11) signal line or IS6001 (VENUS ENGINE)						
		0?30	Zoom motor sensor error. (Initialized or Terminated)		ZOOM ENC				
			Mechanical lock, FP9007-(1, 3) signal line or IS6001 (VENUS ENGINE)						
			0?40	Zoom motor sensor error. (During monitor mode.)					
				Mechanical lock, FP9007-(1, 3) signal line or IS6001 (VENUS ENGINE)					
		0?50	Zoom motor sensor error. (During monitor mode with slow speed.)						
			Mechanical lock, FP9007-(1, 3) signal line or IS6001 (VENUS ENGINE)						
			0?60	Detection of zoom misregistration by impact such as fails.	(No indication)	(No indication)			
				Lens Unit					
		OIS	1000	PSD (X) error. Hall element (X axis) position detect error in OIS unit.	OIS X	LENSu NG			
				OIS Unit					
			2000	PSD (Y) error. Hall element (Y axis) position detect error in OIS unit.	OIS Y				
				OIS Unit					
			3000	GYRO (X) error. Gyro (IC7101 : X axis) detect error on Main P.C.B.	GYRO X	GYRO NG			
				IC7101 (Gyro element) or IS6001 (VENUS ENGINE)					
			4000	GYRO (Y) error. Gyro (IC7101 : Y axis) detect error on Main P.C.B.	GYRO Y				
				IC7101 (Gyro element) or IS6001 (VENUS ENGINE)					
			5000	GYRO (R) error. Gyro (IC7101 : R axis) detect error on Main P.C.B.	GYRO R				
				IC7101 (Gyro element) or IS6001 (VENUS ENGINE)					
			6000	Drive voltage (X) error.	OISX REF	LENSu/LENS FPC			
				LENS Unit, LENS flex breaks, IS6001(VENUS ENGINE) AD value error, etc.					
			7000	Drive voltage (Y) error.	OISY REF				
				LENS Unit, LENS flex breaks, IS6001(VENUS ENGINE) AD value error, etc.					
		8000	OIS GYRO - Digital communication error.	(No indication)	(No indication)				
			IC7101 (Gyro element) or IS6001 (VENUS ENGINE)						
Lens	18*1	0000	Power ON time out error.	LENS DRV	LENSu				
			Lens drive system						
	18*2	0000	Power OFF time out error.						
			Lens drive system						

Attribute	Main item	Sub item	Error code		Contents (Upper)	Error Indication	
			High 4 bits	Low 4 bits	Check point (Lower)	Detecting device	Part/Circuit
HARD	Adj.History	OIS	1D*0	2000	OIS adj. Yaw direction amplitude error (small)	OIS ADJ	OIS ADJ
				3000	OIS adj. Pitch direction amplitude error (small)		
				4000	OIS adj. Yaw direction amplitude error (large)		
				5000	OIS adj. Pitch direction amplitude error (large)		
				8000	OIS adj. Yaw direction off set error		
				9000	OIS adj. Pitch direction off set error		
				A000	OIS adj. Yaw direction gain error		
				B000	OIS adj. Pitch direction gain error		
				C000	OIS adj. Yaw direction position sensor error		
				D000	OIS adj. Pitch direction position sensor error		
				E000	OIS adj. other error		
	FLASH	Flash	28*0	0000	Flash charge timeout error (system error indicated)	STRB CHG	TOP P.C.B./ FPC
				0001	EEPROM of External Flash is damaged	EST EEP	E STRB
				0002	ZOOM function of External Flash is damaged	EST	
				0003	Other function of External Flash is damaged	EST	
		Data Area	2B*0	0001	IP2951 (Flash-ROM) data reading error is detected when the unit turns ON	FROM RE	FROM
				0002	IP2951 (Flash-ROM) data writing error is detected when the unit turns OFF	FROM WR	FROM
		Program Area		0005	Firmware update error	FIRMUP FAIL	FROM
				0006	Firmware update error (USB Micon)	USBFWUP FAIL	USB
				000C	Firmware update error of LENS-FPGA	FIRMUP FAIL	FPGA
				000D	Firmware update error of IMAGE-FPGA	FIRMUP FAIL	FPGA
				000E	Firmware update error of TC-FPGA	FIRMUP FAIL	FPGA
SOFT	CPU	Reset	30*0	0001 0007	System error (NMI reset)	NMI RST	MAIN P.C.B.
	Recording Media	Memory card	31*0	0002	Memory card physical error During formatting the memory card, there is no response from the memory card If the mini-SD memory card is used, check the SD memory card adaptor	SD CARD	SD CARD/ DSP
				0004	Memory card writing error Check the memory card. It might be damage one.	SD WRITE	
	Lens	Communi-cation	3C11 3CF0	****	Lens communication error	LENS COMM	SOFT
	Camera	System	37*0	0001	Activation: Electronic signature hash value mismatch	VLOG	VLOG
				0002	Activation: Serial number mismatch		
				0003	Activation: Model name mismatch		
				0004	Activation: Origin country mismatch		
				0005	Activation: Firmware version down		
				0006	Activation: Activation code mismatch		
				0007	Activation: Old firmware		
			3B*0	0000	EEPROM writing during camera initialization	FROM	SOFT
			3D*0	0000	Assert occurrence	ASSERT	SOFT
			3E*0	0001	Exposure charging operation failure	MSHUT	MSHUT
				0002	Failure of the returning operation to the home position		
				0003	Failure of the mecha shutter sensor		
				0004	Failure of the mecha shutter sensor		
				0005	Failure of the mecha shutter sensor		
				0006	Exposure charging recovery operation failure		
				0011	Failure of the mecha shutter sensor		
				0012	Failure of the mecha shutter sensor		
				0013	Failure of the mecha shutter sensor		
				0014	Abnormal current of shutter drive motor		
				0101	Failure of the electromagnetic front curtain open		
				0102	Failure of the electromagnetic front curtain open		
				0111	Failure of the electromagnetic front curtain open		
				0112	Failure of the electromagnetic front curtain open		
	Recording	Motion Image Recording	3F*0	0001	File time out error in recording motion image	(No indication)	(No indication)
				0002	File data cue send error in recording motion image		

Attribute	Main item	Sub item	Error code		Contents (Upper)	Error Indication	
			High 4 bits	Low 4 bits	Check point (Lower)	Detecting device	Part/Circuit
Wi-Fi			321*	****	Wi-Fi/Bluetooth error	WiFi	WiFi
			3A11	0000	(Initial Setting error of Wi-Fi.Bluetooth)		

Important notice about “Error Code List”

1) About “*” indication:

The third digit from the left is different as follows.

- In case of 0 (example: 2B01000)

When the third digit from the left shows “0”, this error occurred under the condition of Initial Settings has been completed.

It means that this error is occurred basically at user side.

- In case of 8 (example: 2B81000)

When the third digit from the left shows “8”, this error occurred under the condition of Initial Settings has been released. (Example; Factory assembling-line before unit shipment, Service mode etc.)

It means that this error is occurred at service side.

2) About “?” indication: (“2B*0 0?01” to “2B*0 0?60”):

The third digit from the right shows one of the hexadecimal (“0” to “F”) character.

• Step 3. How to exit from Error Code display mode:

Simply, turn the power off. (Since Error code display mode is executed under the condition of temporary cancellation of “Initial Settings”, it wake up with normal condition when turn off the power.)

NOTE:

The error code can not be initialized.

7 Troubleshooting Guide

7.1. Wi-Fi Circuit (WIFI/BT P.C.B.)

7.1.1. How to Remove Wi-Fi Password Protection

To prevent incorrect operation or use of the Wi-Fi function by a third party and to protect saved personal information, this unit protects the Wi-Fi function with a password.

It is unable to service with password locked condition. When accepting for repair, the unit has been set the Wi-Fi password by customer, run the [Reset Network Settings] for removing Wi-Fi password, then check the operation.

[Reset Procedure of Network Settings]

- 1) Press the [MENU/SET] button, and select the [SETUP] mode by Cursor buttons, then press the [MENU/SET] button.
- 2) Select [Reset Network Settings] by Cursor buttons, then press the [MENU/SET] button.
- 3) Select [YES] and press the [MENU/SET] button.

(The [Reset Network Settings] performs not only resetting Wi-Fi Password but also resetting other all Wi-Fi Settings.)

7.1.2. Checking of Trouble Caused by Wi-Fi Circuit or Not

The Wi-Fi circuit works properly if the wireless access point (broadband router) name (SSID) in use is displayed on a screen of "From List" in connection method.

(Primary Confirmation)

Confirm that the wireless access point (broadband router) works properly.

(Procedure)

- 1) Select [Wi-Fi] in [Setup] menu.
- 2) Select [Wi-Fi Function] in [Wi-Fi] menu.
- 3) Select [New Connection] in [Wi-Fi] menu.
- 4) Select optional function in [Select a function] menu, then select [Via Network] in [Select connection method] menu.
- 5) Select [From List] in [Select connection method] menu.
- 6) The Wi-Fi Circuit works properly if the wireless access point (broadband router) name (SSID) in use is displayed.

*Change the WIFI/BT P.C.B., when the above checking detected the abnormal of Wi-Fi Circuit.

8 Service Fixture & Tools

8.1. Service Fixture and Tools

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

Collimator (built-in Focus Chart) RFKZ0422	Light Box (with DC Cable) RFKZ0523	Gray Card RFKZ0506
ND Filter (ND0.3) RFKZ0513	ND Filter (ND0.6) VFK1164ND06	ND Filter (ND 0.9) VFK1164ND09
CC Filter (CC-C7.5) RFKZ0511	CC Filter (CC-Y10) RFKZ0512	LB Filter (LBB2) RFKZ0520
LB Filter (LBB8) RFKZ0521	Torque Driver RFKZ0542	Diffuser RFKZ0591
Lens Cleaning Kit (BK) VFK1900BK	Driver (for optical tilt adjustment) RFKZ0609	Optical tilt adjustment chart RFKZ0570
 * Only supplied 10 set/box.	 * T3 Torx type	
Camera stand RFKZ0333J	Grease (for Lens) RFKZ0472	

8.2. When Replacing the Main P.C.B.

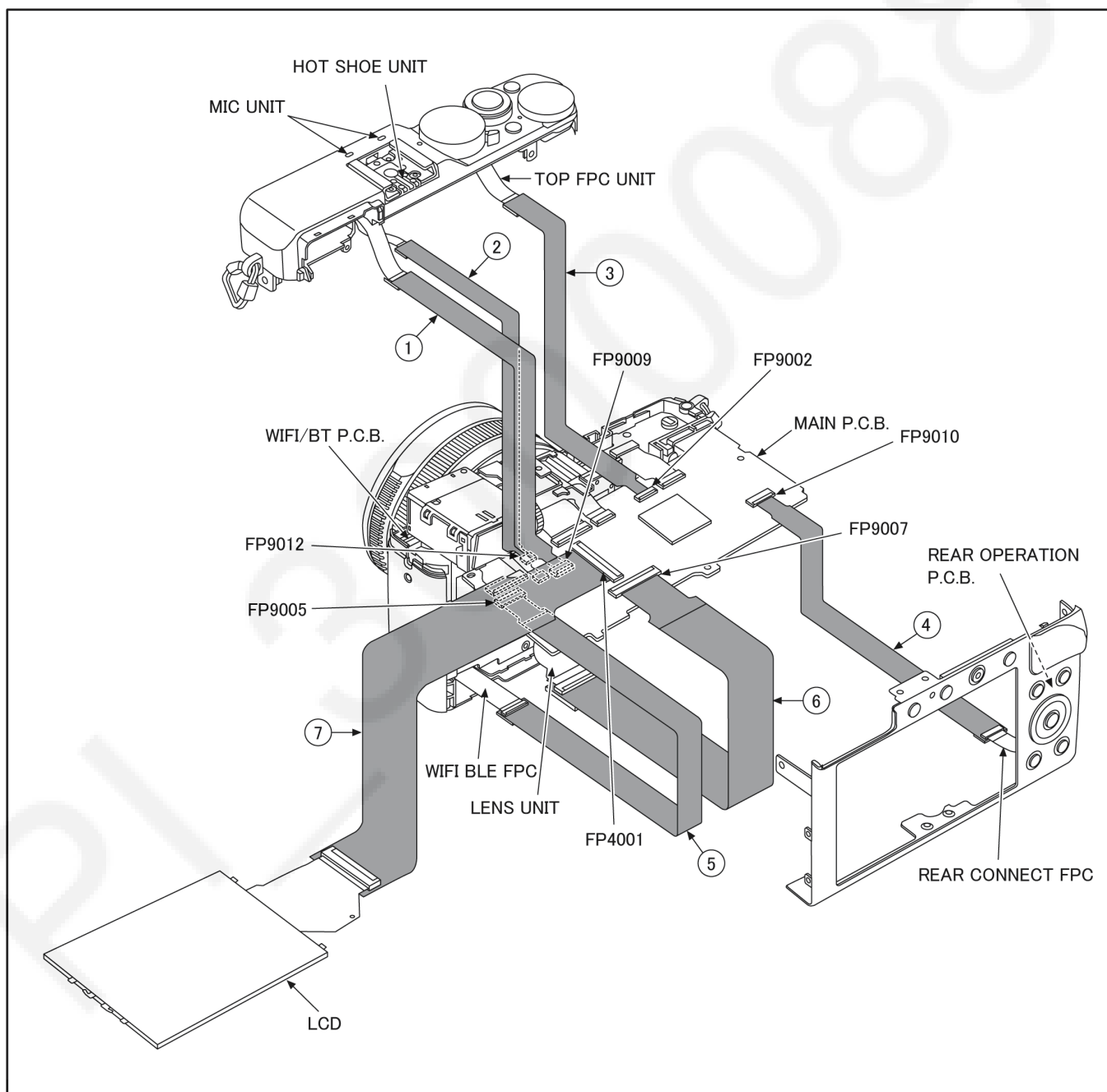
After replacing the Main P.C.B., be sure to achieve adjustment.

8.3. Service Position

This Service Position is used for checking and replacing parts. Use the following Extension cables for servicing.

Table S1 Extension Cable List

No.	Parts No.	Connection	Form
1	VFK1582A1025	FP9009(MAIN P.C.B.)↔HOT SHOE UNIT	10pin / 0.5 FFC
2	VFK1974	FP9012(MAIN P.C.B.)↔MIC UNIT	4pin / 0.5 FFC
3	RFKZ0583	FP9002(MAIN P.C.B.)↔TOP FPC UNIT	19pin / 0.3 FFC
4	RFKZ0564	FP9010(MAIN P.C.B.)↔REAR CONNECT FPC↔FP9512(REAR OPERATION P.C.B.)	23pin / 0.3 FFC
5	RFKZ0564	FP9005(MAIN P.C.B.)↔WIFI BLE FPC↔WIFI/BT P.C.B.	23pin / 0.3 FFC
6	VFK2024	FP9007(MAIN P.C.B.)↔LENS UNIT	51pin / 0.3 FFC
7	RFKZ0619	FP4001(MAIN P.C.B.)↔LCD	61pin / 0.3 FFC

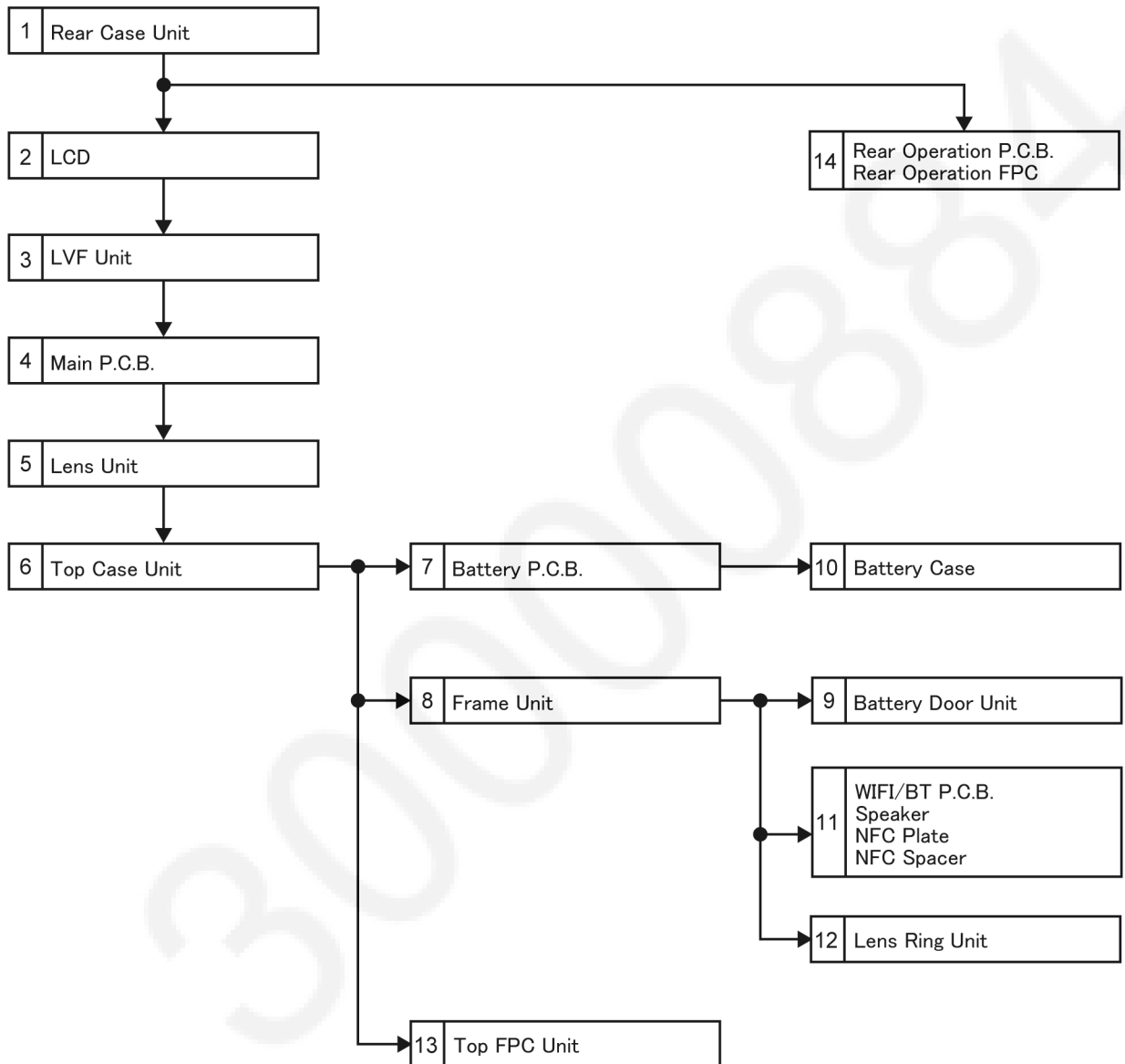


9 Disassembly and Assembly Instructions

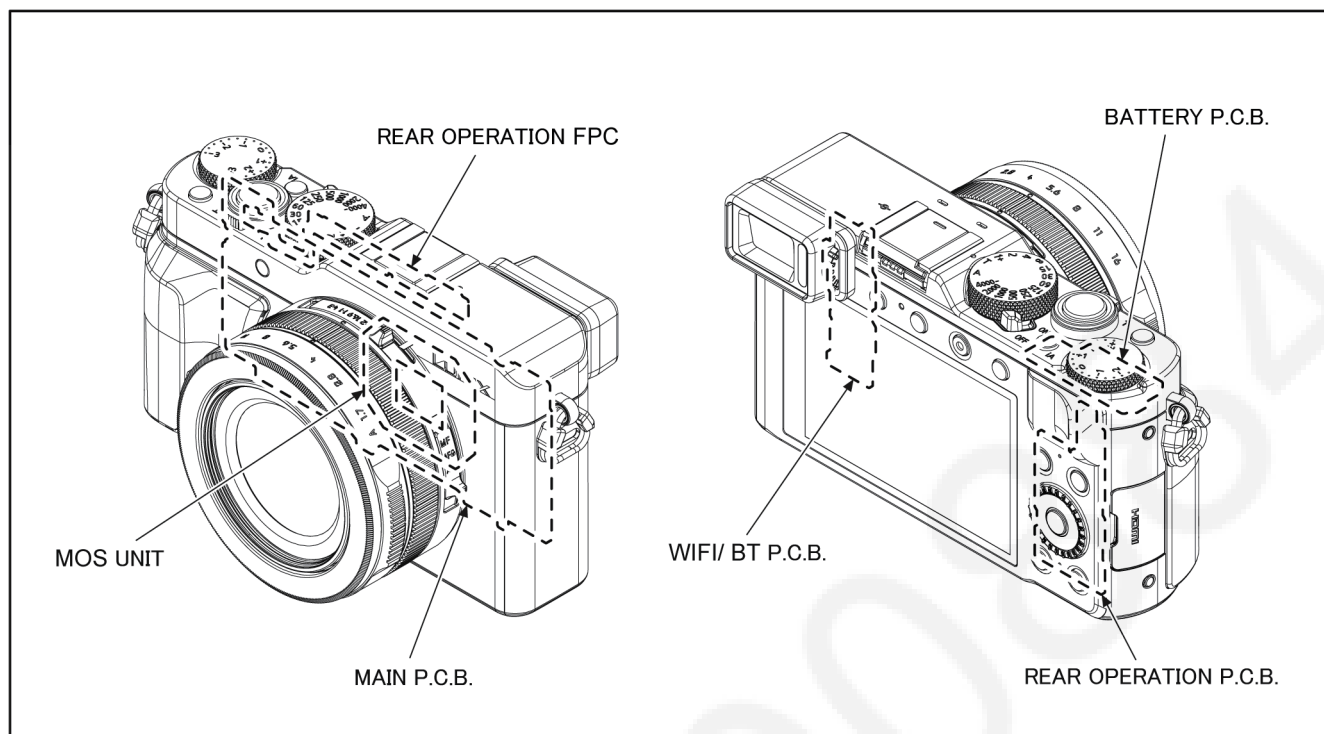
9.1. Disassembly Flow Chart

This is a disassembling chart.

When assembling, perform this chart conversely.



9.2. P.C.B. Location



9.3. Disassembly Procedure

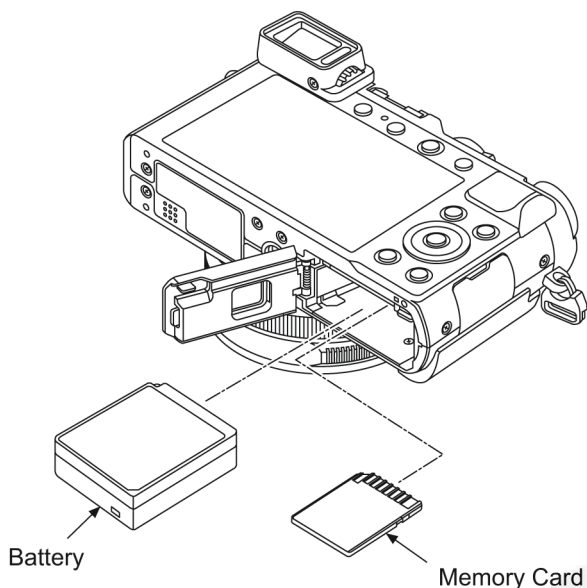
No.	Item	Fig.	Removal
1	Rear Case Unit	(Fig. D2)	Locking tab x 1 Screw (A) x 1
		(Fig. D3)	Screw (B) x 1 Screw (C) x 5 Screw (D) x 1 Locking tab x 2 Eye Cup Unit
		(Fig. D4)	Shoe Spring Screw (E) x 2 Locking tab x 5 FP9010 (Flex) Rear Case Unit
2	LCD	(Fig. D5)	Screw (F) x 1 Hooking part x 2
		(Fig. D6)	Locking tab x 1 Frame Plate Unit FP4001 (Flex) LCD
3	LVF Unit	(Fig. D7)	FP4002 (Flex) Screw (G) x 1 FP9011 (Flex) LVF Unit
4	Main P.C.B.	(Fig. D8)	FP9001 (Flex) FP9002 (Flex) FP9003 (Flex) FP9004 (Flex) FP9005 (Flex) FP9007 (Flex) FP9009 (Flex) FP9012 (Flex) FP9013 (Flex) Jack Door Unit Screw (H) x 1 Screw (T) x 1 Hooking part x 1 Main P.C.B.
		(Fig. D9)	When Installing
5	Lens Unit	(Fig. D10)	Graphite Sheet Z Graphite Sheet I Screw (I) x 3 Locking tab x 2
		(Fig. D11)	Hooking part x 1 Convex x 2 Lens Fix Plate Unit
		(Fig. D12)	Lens Cap Lens Unit
6	Top Case Unit	(Fig. D13)	Screw (J) x 1 Screw (K) x 1
		(Fig. D14)	Screw (L) x 2 Projecting part x 1 Top Case Unit
7	Battery P.C.B.	(Fig. D15)	Screw (M) x 1 Locking tab x 1 Convex x 2 Battery P.C.B.
8	Frame Unit	(Fig. D16)	Screw (N) x 1 Screw (O) x 1 Screw (P) x 1 Strap Holder (L) Locking tab x 2
		(Fig. D17)	Frame Unit
9	Battery Door Unit	(Fig. D18)	Battery Door Shaft Battery Door Spring Battery Door Unit

No.	Item	Fig.	Removal
10	Battery Case	(Fig. D19)	Graphite Sheet Z Locking tab x 4
		(Fig. D20)	Battery Out Spring Battery Lock Knob Battery Lock Spring Battery Case
11	WIFI/BT P.C.B., Speaker, NFC Plate, NFC Spacer	(Fig. D21)	When Replacing
		(Fig. D22)	Locking tab x 2 AF AE Lock Tape Locking tab x 3
		(Fig. D23)	Solder (2 points) Locking tab x 2 WIFI/BT P.C.B. Speaker NFC Plate NFC Spacer
12	Lens Ring Unit	(Fig. D24)	Screw (Q) x 3 Hooking part x 1 Convex x 2 Lens Ring Unit
13	Top FPC Unit	(Fig. D25)	Locking tab x 1 LED FPC Screw (R) x 5 Convex x 4
		(Fig. D26)	Top FPC Unit Lever Rotor
14	Rear Operation P.C.B., Rear Operation FPC	(Fig. D27)	Screw (S) x 1 FP9511 (Flex) Locking tab x 3 Convex x 1 Locking tab x 3 Rear Operation P.C.B. Rear Operation FPC

NOTE:

- When servicing and reassembling, remove the memory card and battery from the unit.
- Install the lens cap to prevent garbage and dust except when it is necessary.
- Do not reuse the screws tightened to metal materials. Use new screws.

- Memory Card
- Battery



(Fig. D1)

9.3.1. Removal of the Rear Case Unit

- Locking tab × 1
- Screw (A) × 1

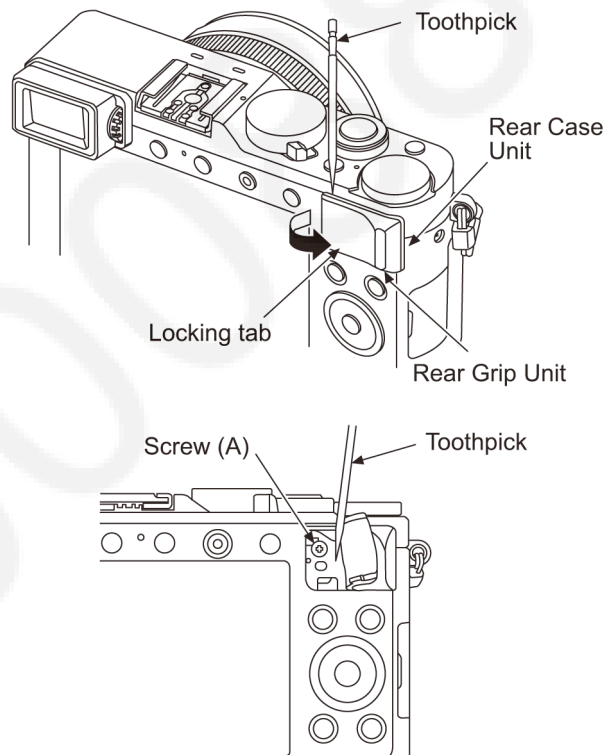
NOTE: (When Replacing)

* Take care because that screw (A) is hidden under the Rear Grip Unit.

1. The Rear Grip Unit is attached to the Rear Case Unit by double-sided adhesive tape.

Peel the adhesive portion of the Rear Grip Unit using a toothpick, etc., and unlock the locking tab, then roll up in the direction of arrow (1) till the screw (A) appear. (Rear Grip Unit is fixed with screw from the inside of the Rear Case Unit, so can not to remove.)

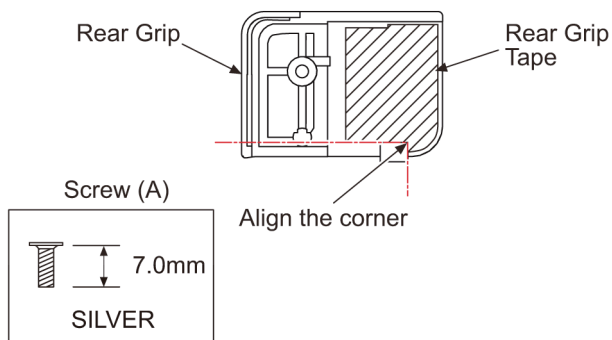
2. Remove the screw (A).

**NOTE: (When Installing)**

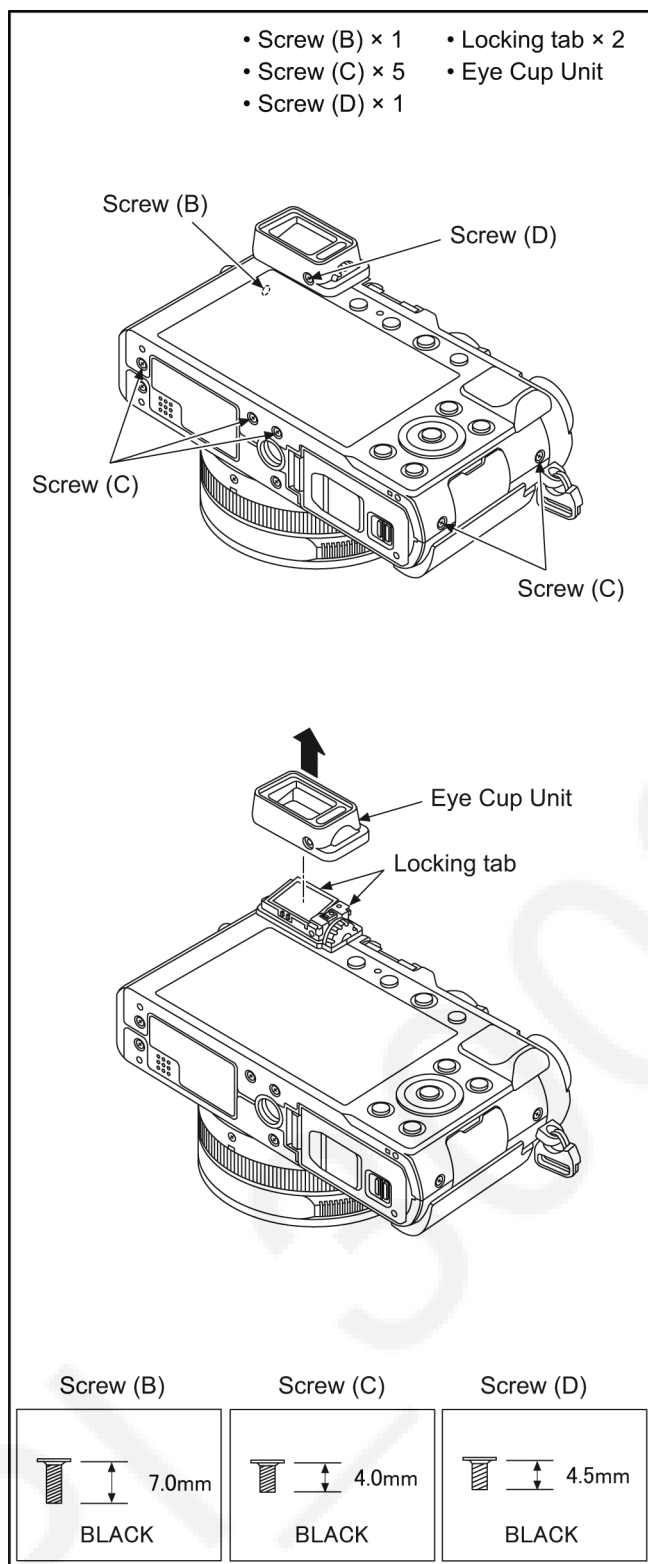
- Beware that the adhesive force of the Rear Grip tape is reduced on touching with its adhesive surface.
- Replace a new Rear Grip Tape when adhesive force is reduced.

[Pasting position standard]

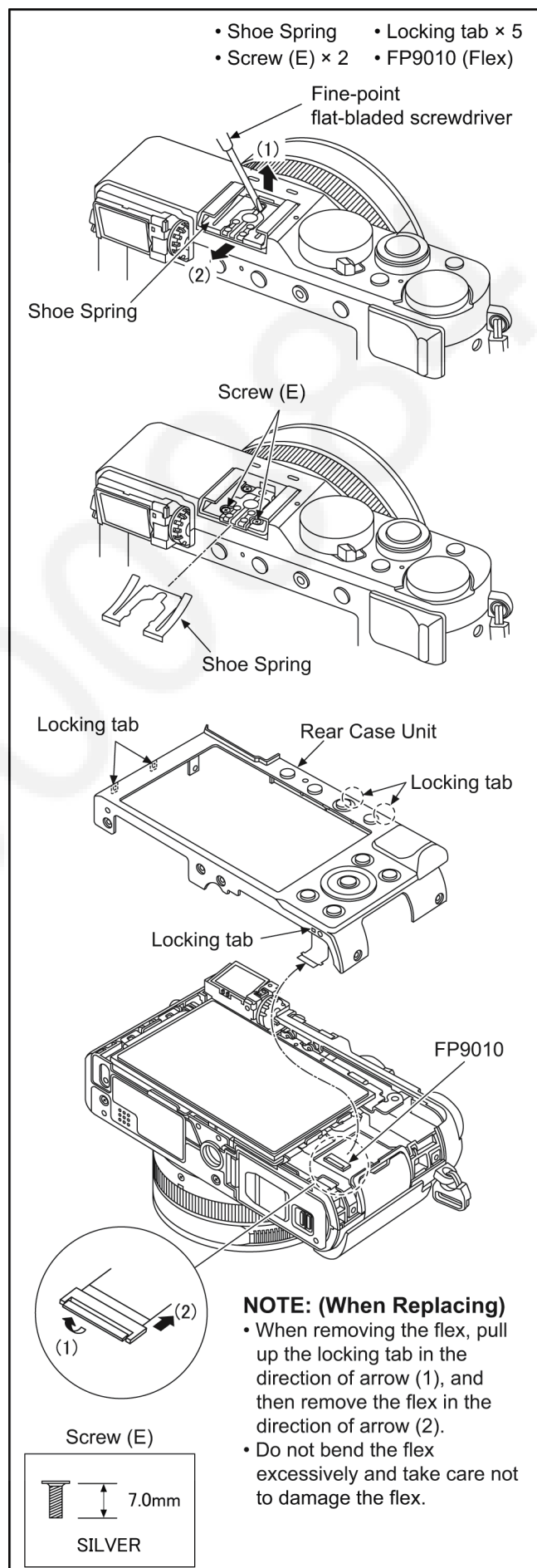
- When pasting the Rear Grip Tape on the Rear Grip, make sure to adhere in accordance with pasting position standard.



(Fig. D2)

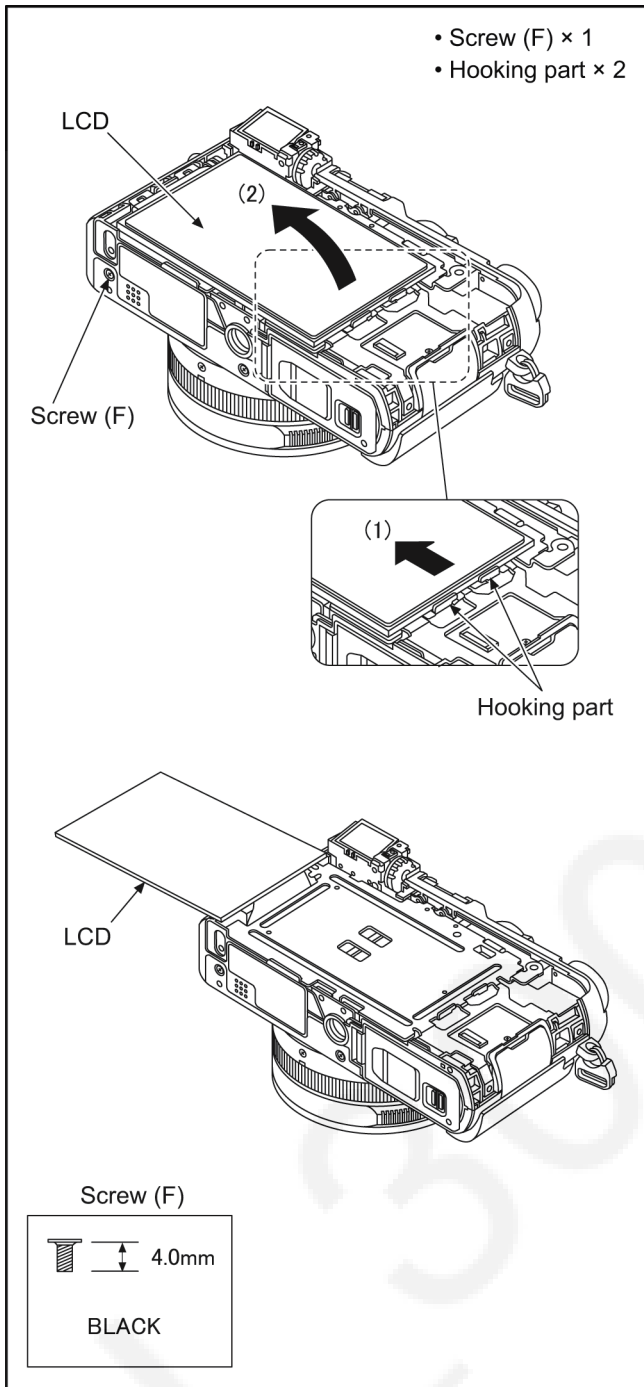


(Fig. D3)

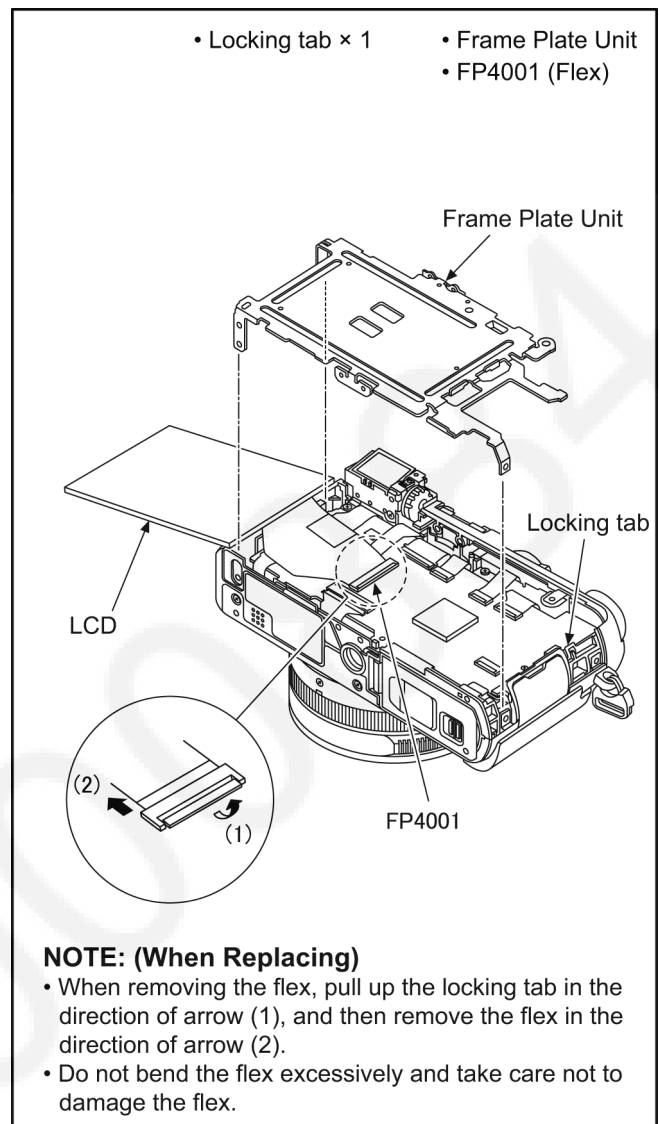


(Fig. D4)

9.3.2. Removal of the LCD

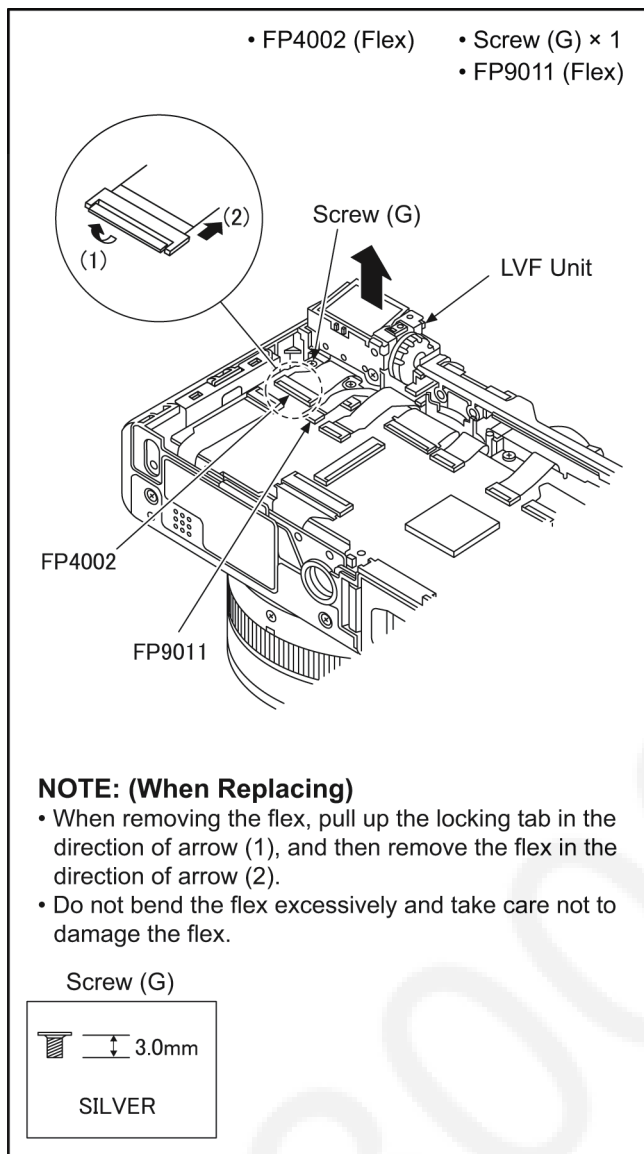


(Fig. D5)



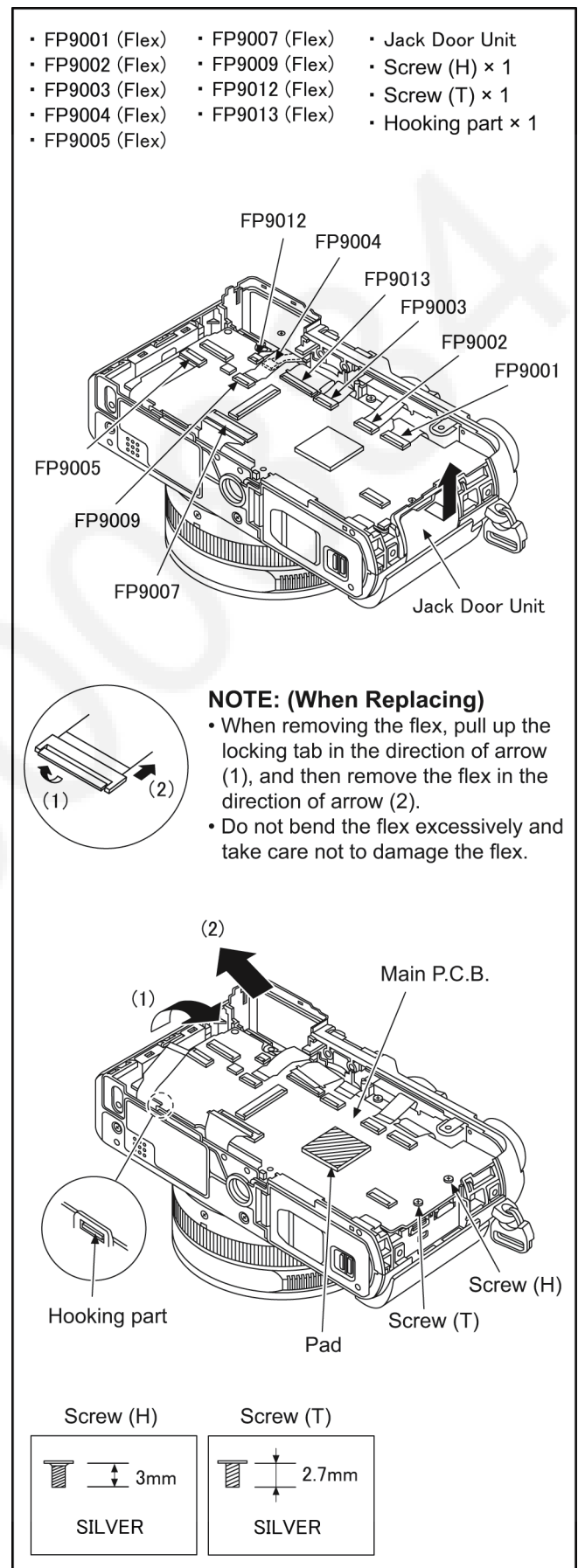
(Fig. D6)

9.3.3. Removal of the LVF Unit



(Fig. D7)

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



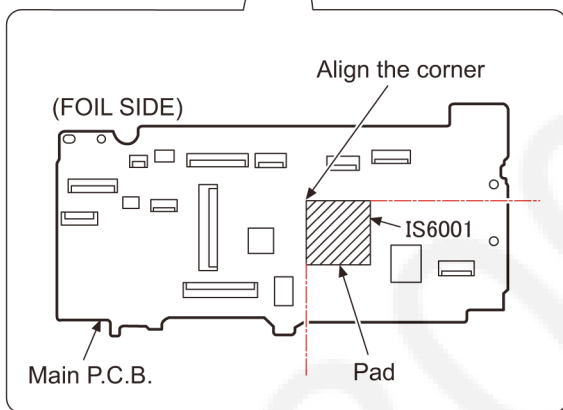
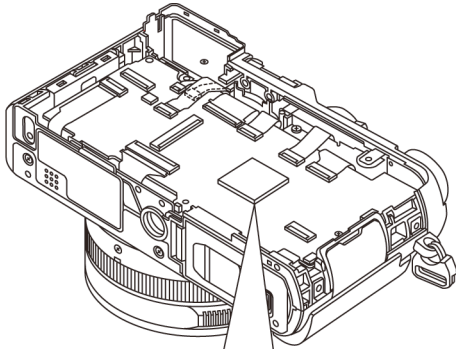
(Fig. D8)

NOTE: (When Installing)

- The Main P.C.B. for repairing is not pasted the pad for heat radiation. Paste either new pad and the pad which has been pasted on the old Main P.C.B..

[Pasting Position Standard for Pad]

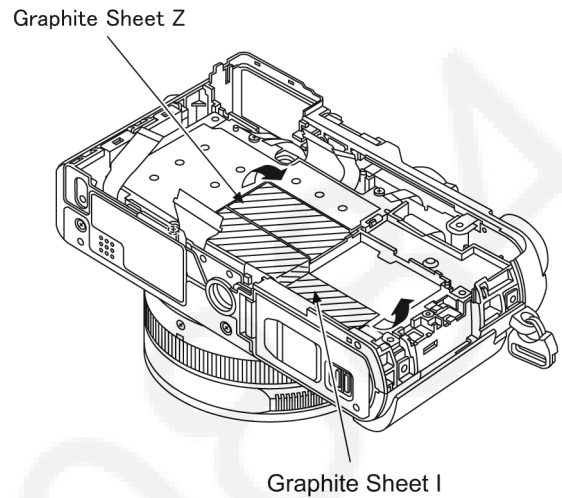
- When pasting the Pad, be careful not press strongly. (will be cause for pad destruction)



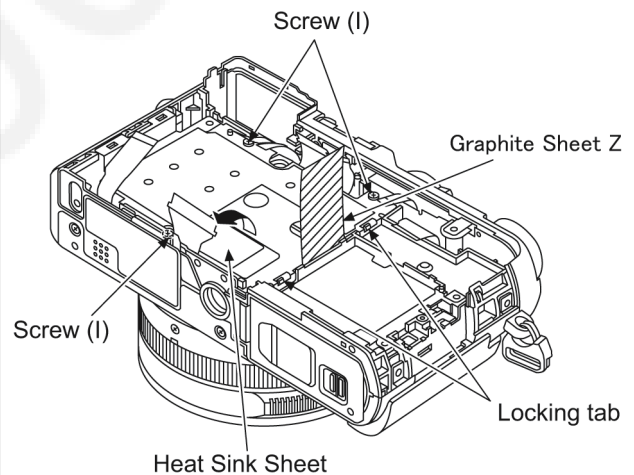
(Fig. D9)

9.3.5. Removal of the Lens Unit

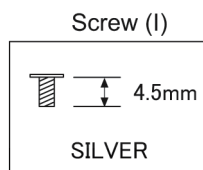
- Graphite Sheet Z
- Graphite Sheet I
- Screw (I) × 3
- Locking tab × 2

**NOTE: (When Replacing)**

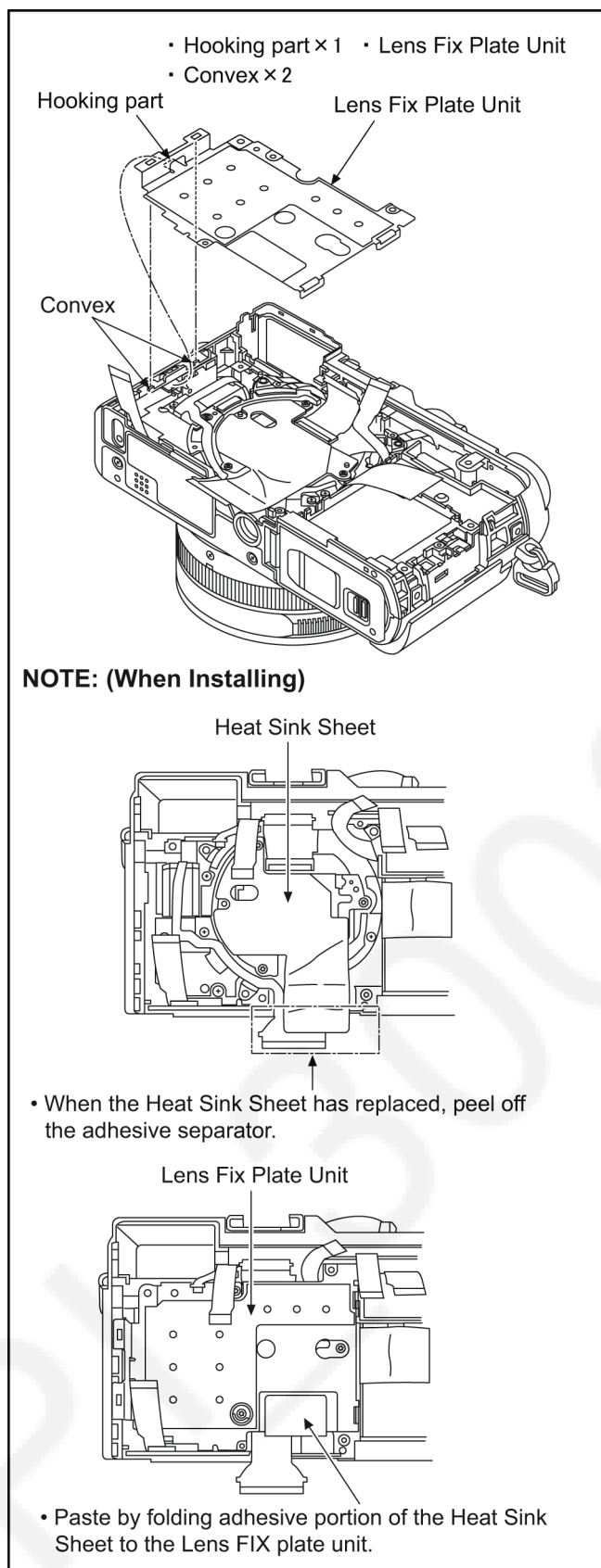
- Peel the Graphite Sheet Z and Graphite Sheet I slowly and carefully. (Only the Graphite Sheet I is peeled off.)

**NOTE: (When Replacing)**

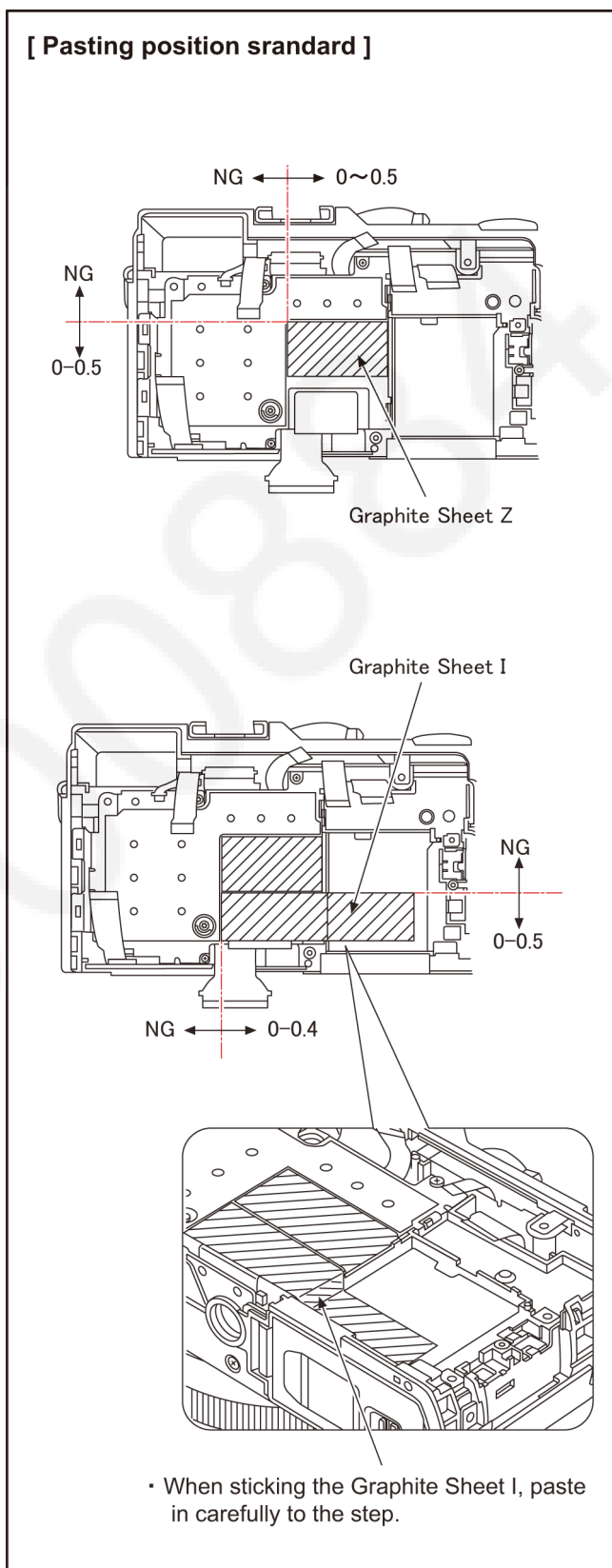
- Peel the Heat Sink Sheet off slowly and carefully in the direction of the arrow.



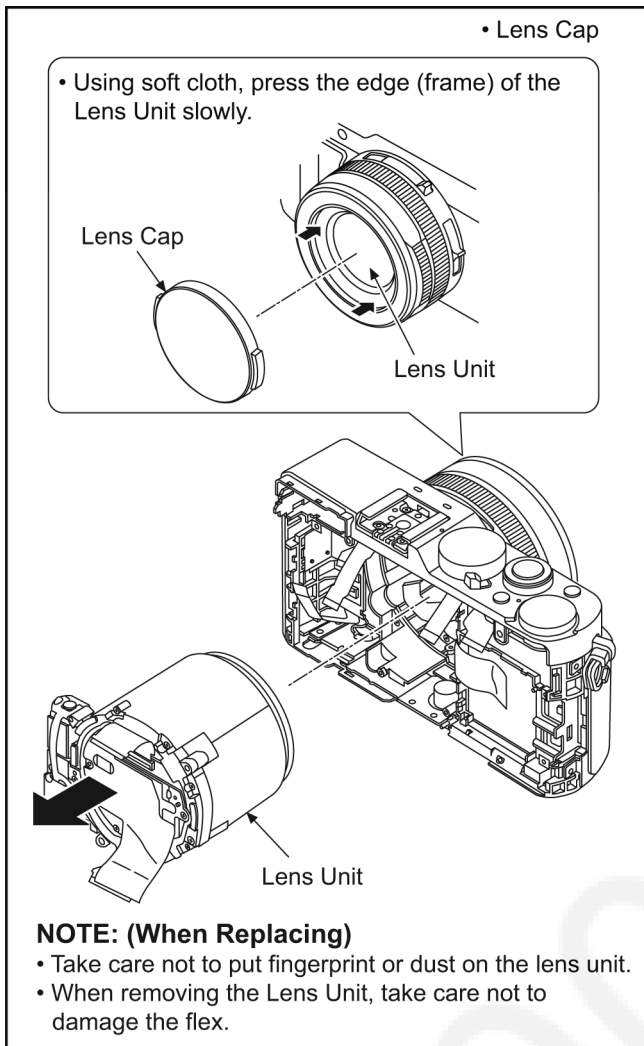
(Fig. D10)



(Fig. D11)

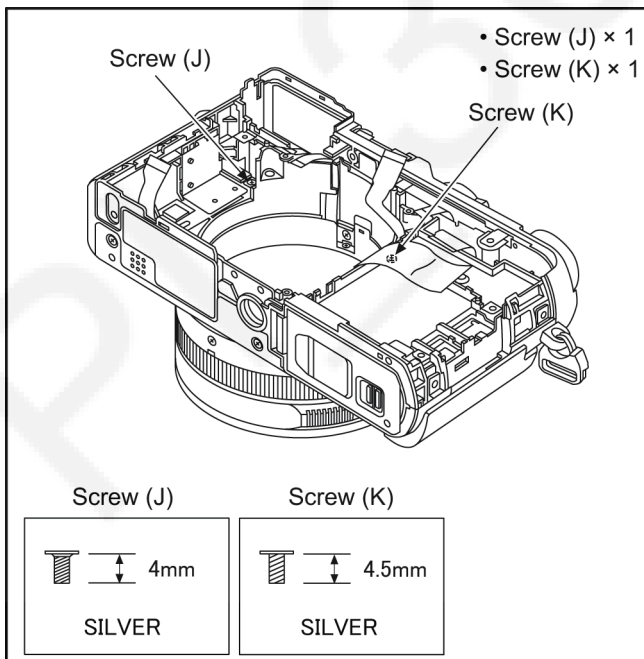


(Fig. D11-1)

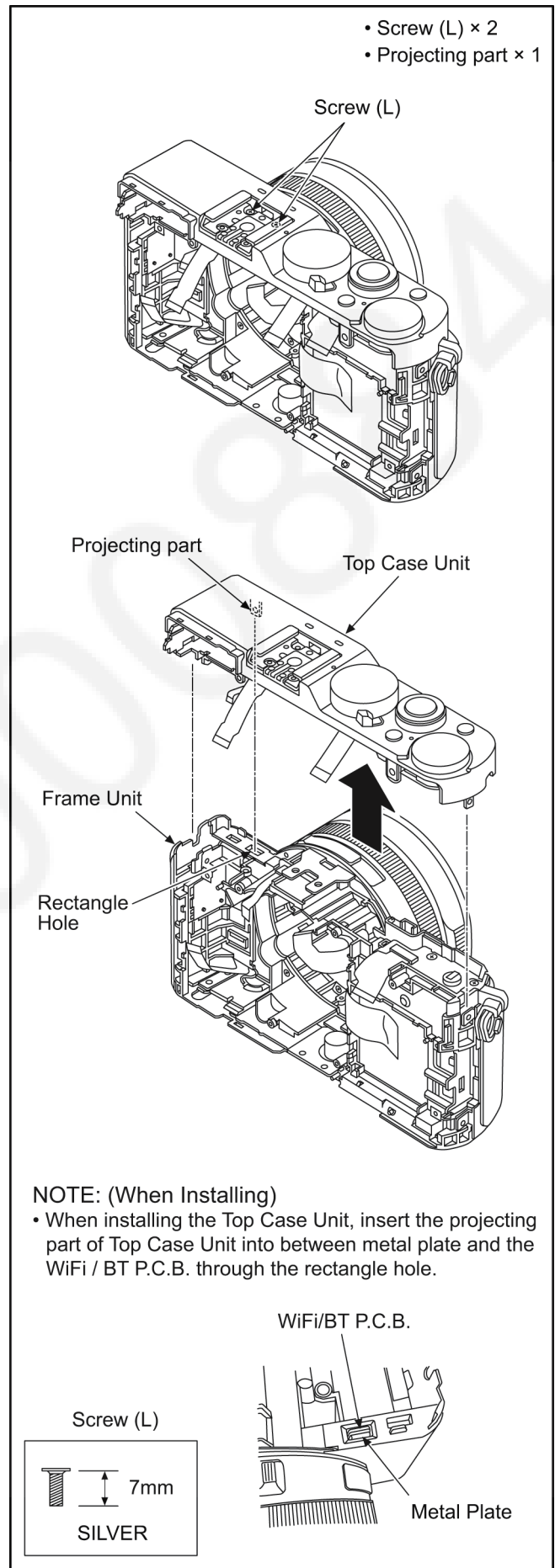


(Fig. D12)

9.3.6. Removal of the Top Case Unit

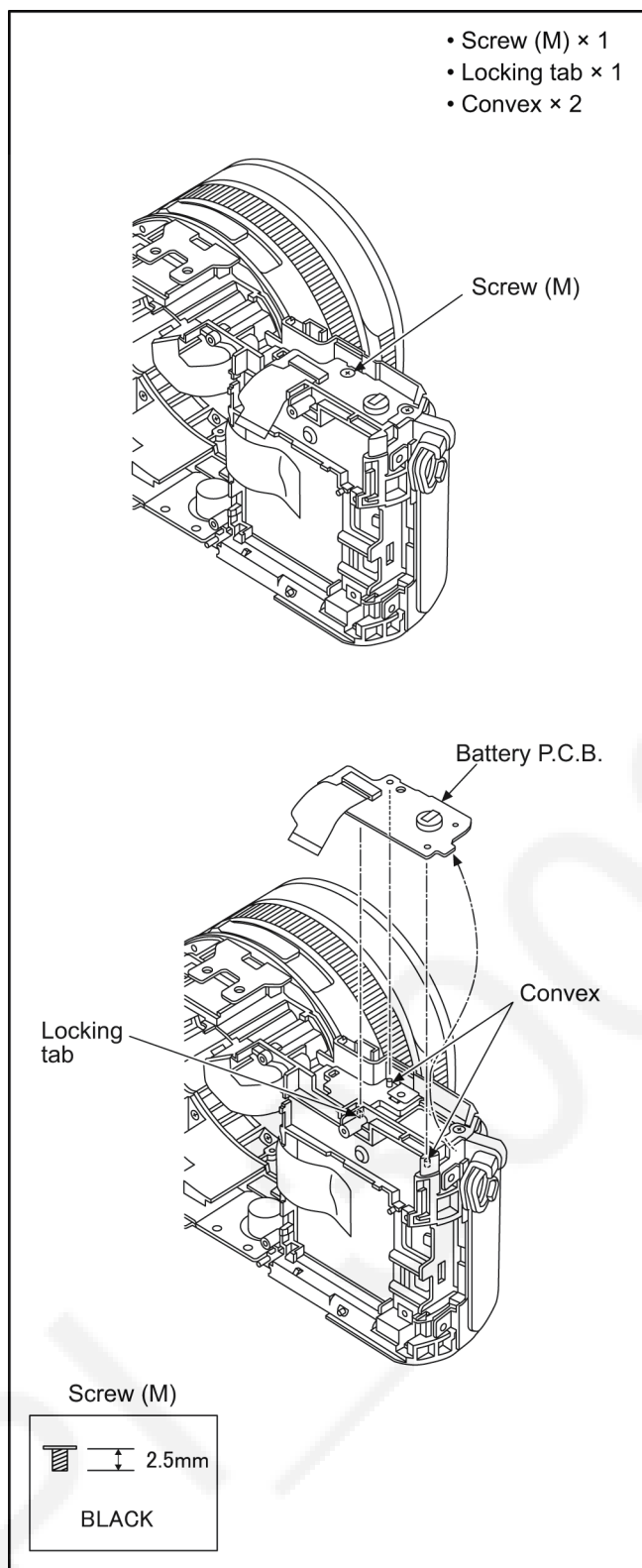


(Fig. D13)



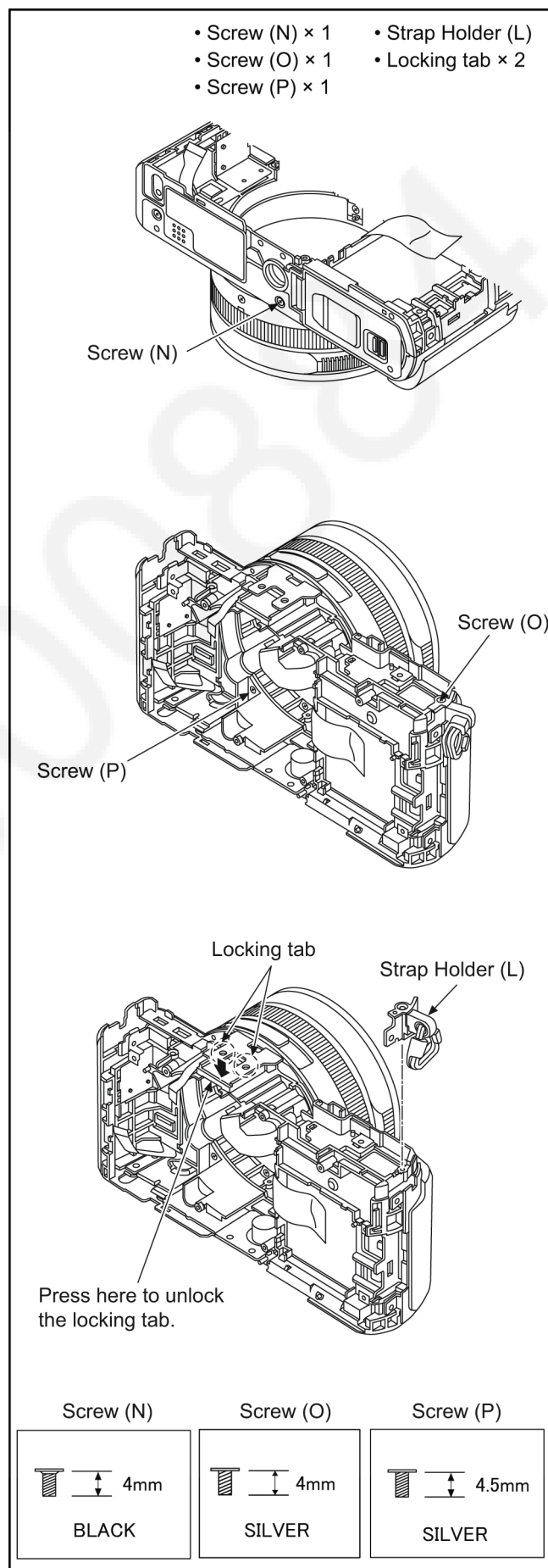
(Fig. D14)

9.3.7. Removal of the Battery P.C.B.

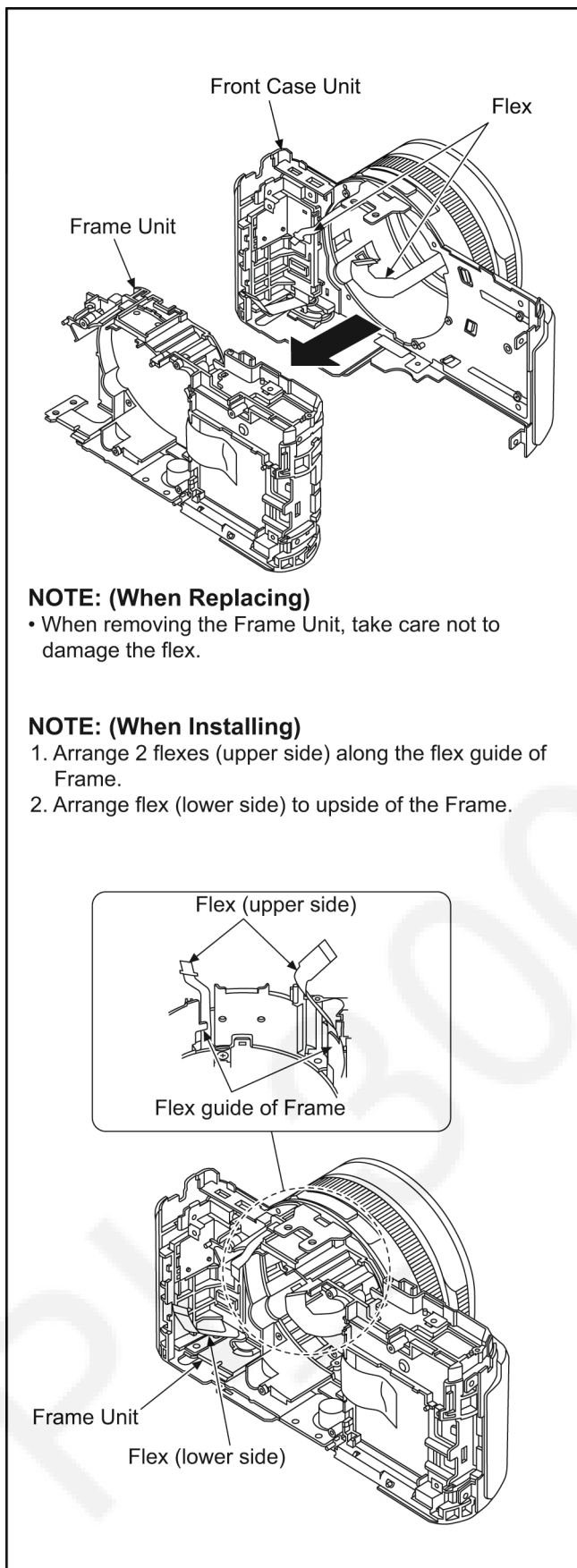


(Fig. D15)

9.3.8. Removal of the Frame Unit

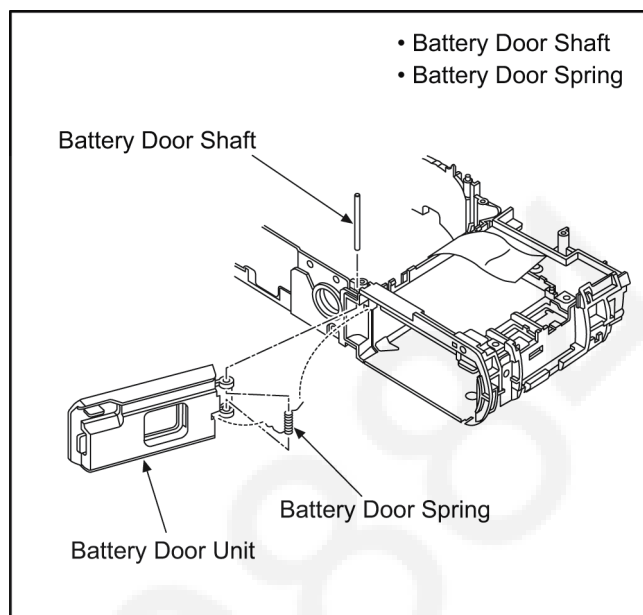


(Fig. D16)



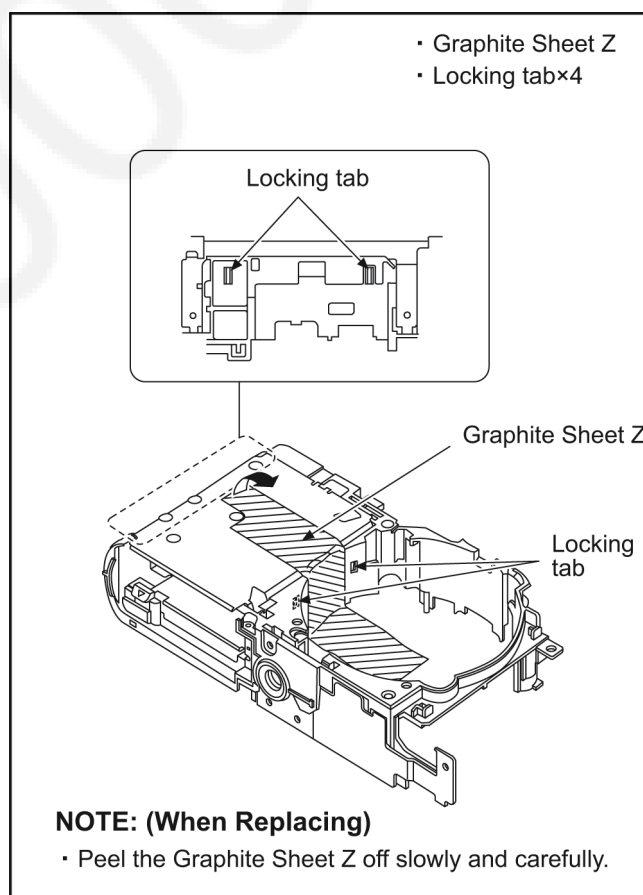
(Fig. D17)

9.3.9. Removal of the Battery Door Unit

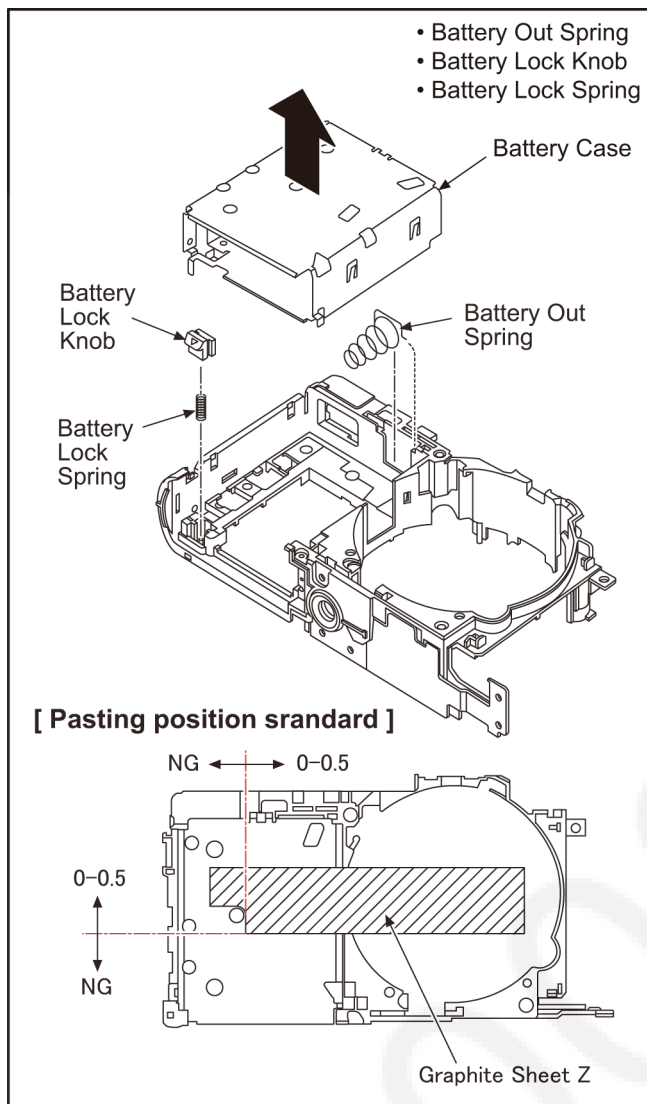


(Fig. D18)

9.3.10. Removal of the Battery Case

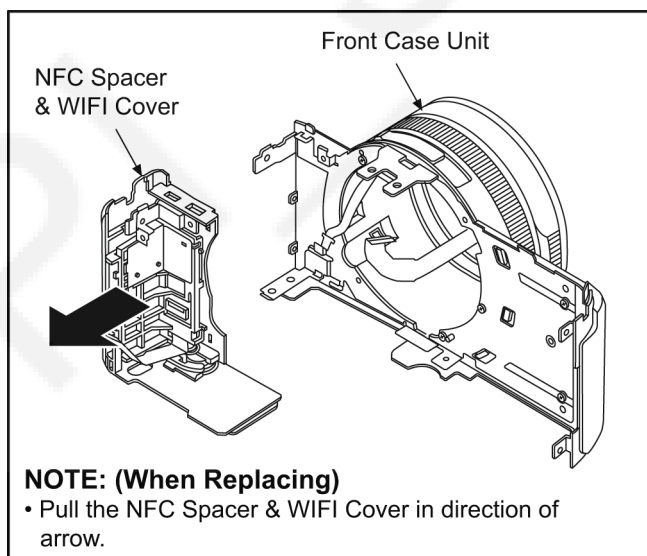


(Fig. D19)

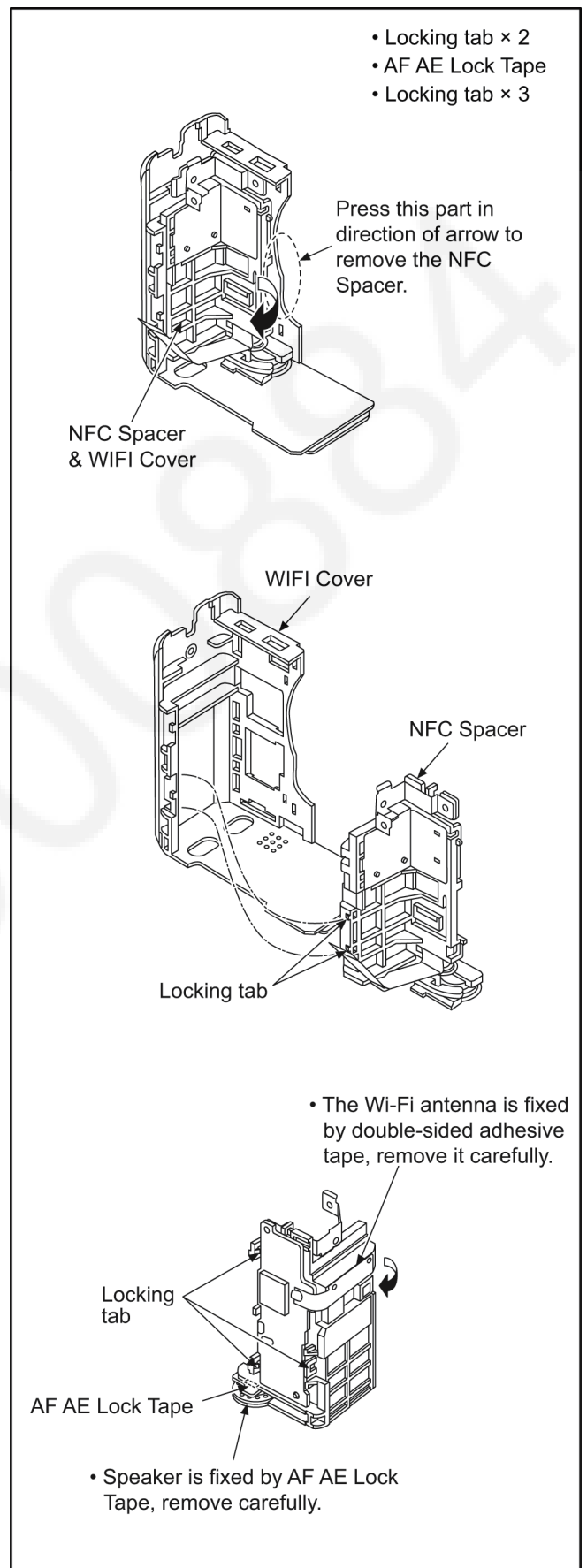


(Fig. D20)

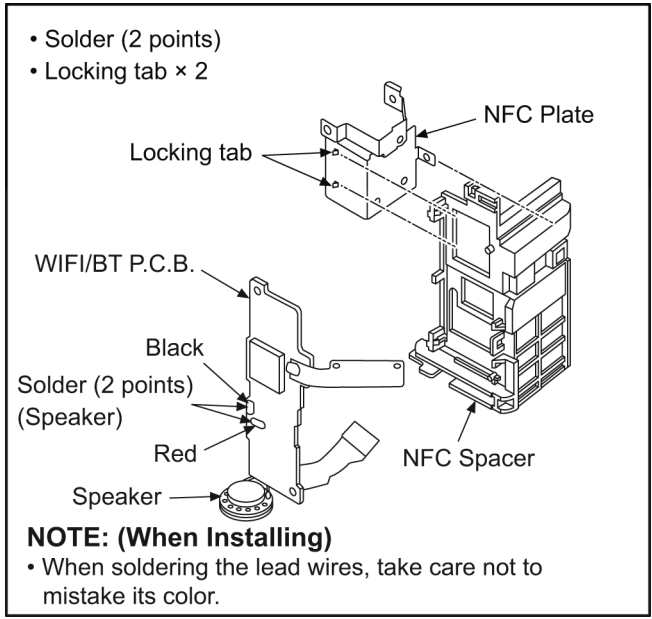
9.3.11. Removal of the WIFI/BT P.C.B., Speaker, NFC Plate, and NFC Spacer



(Fig. D21)

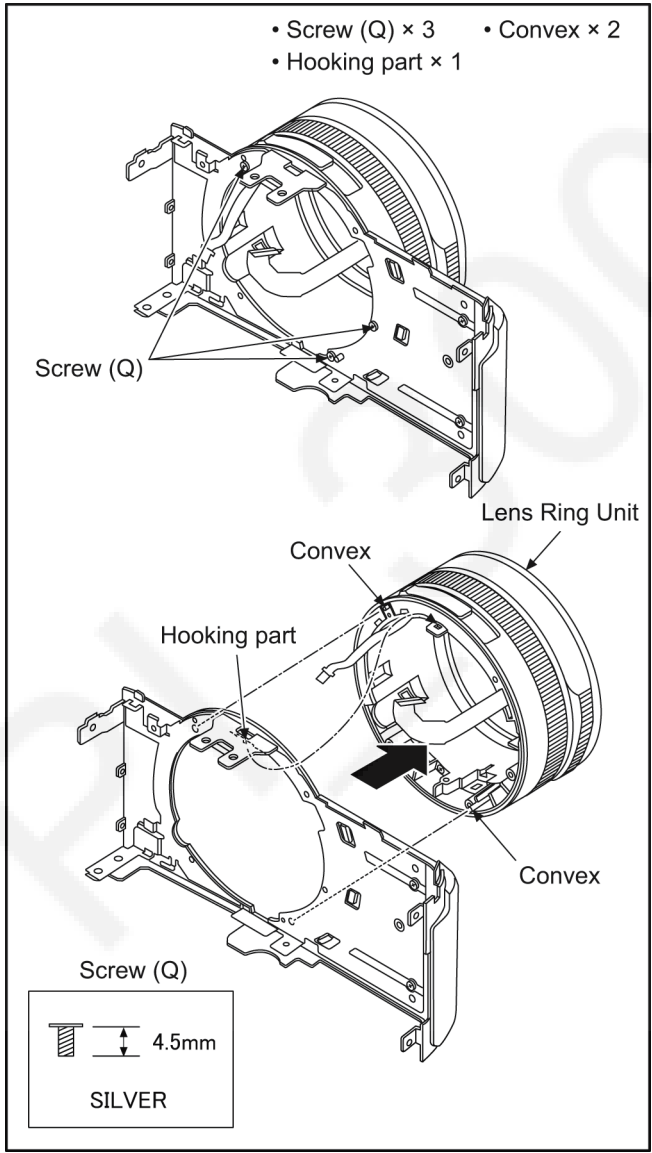


(Fig. D22)



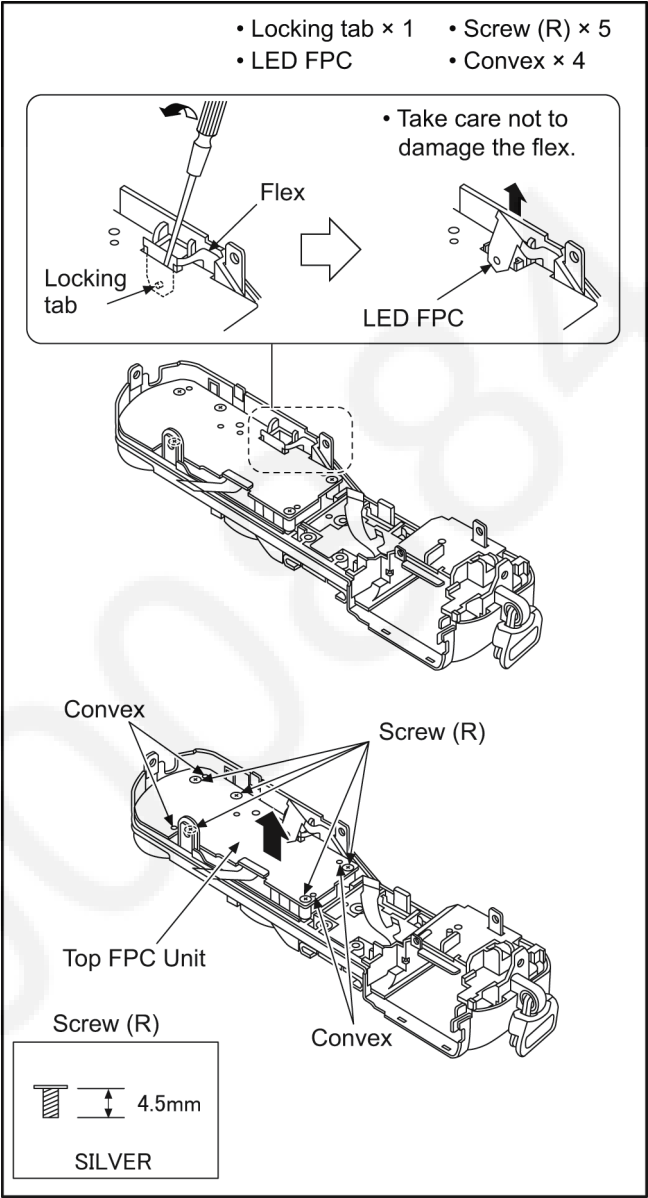
(Fig. D23)

9.3.12. Removal of the Lens Ring Unit



(Fig. D24)

9.3.13. Removal of the Top FPC Unit

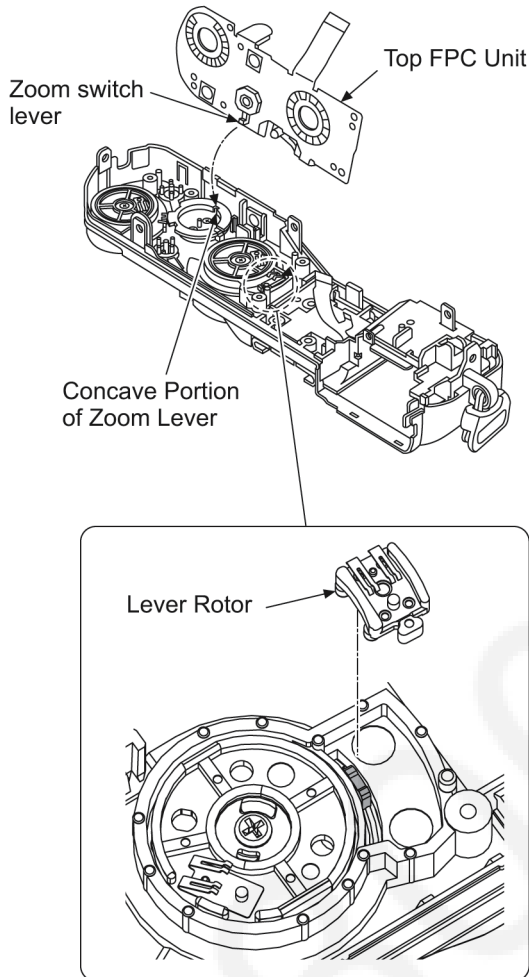


(Fig. D25)

• Lever Rotor

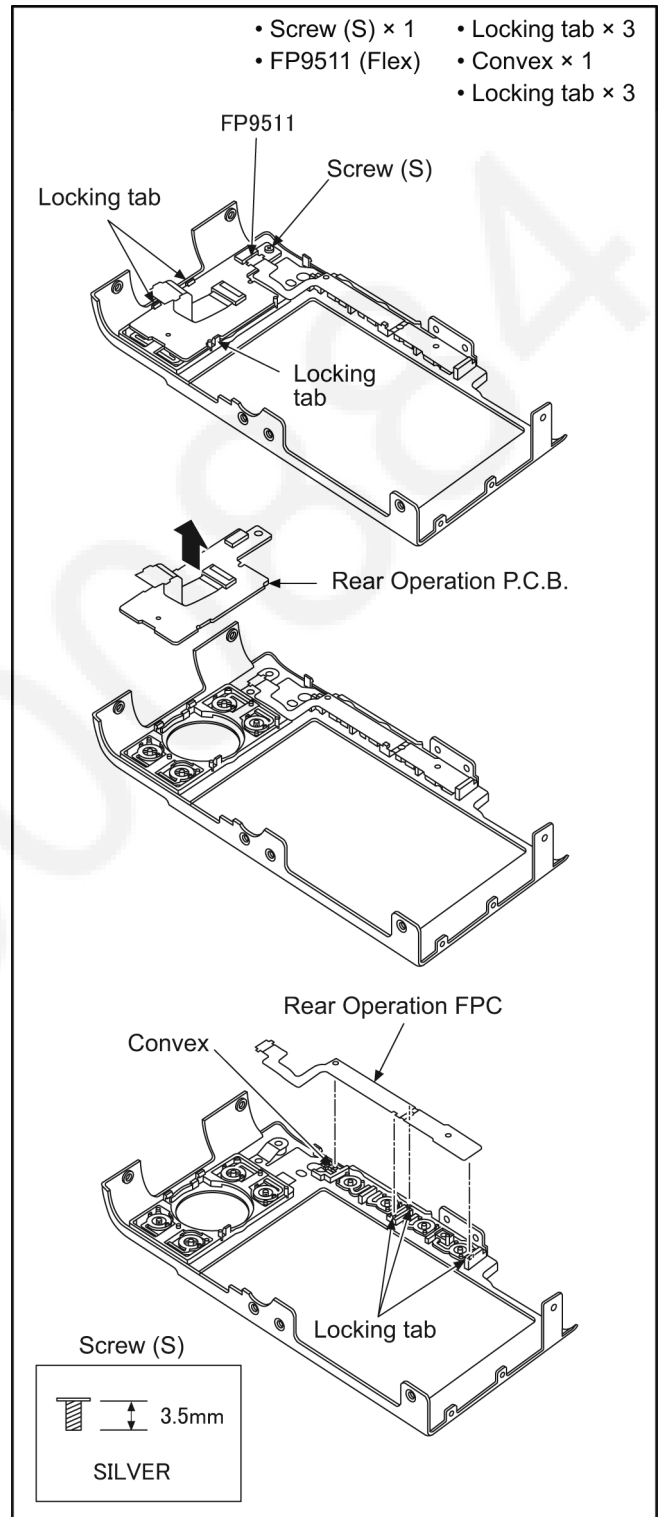
NOTE: (When Replacing)

1. Align the concave portion of Zoom Lever and Lever of Zoom Switch.
2. Take care not to lose the Lever Rotor, because it is easy to separate.



(Fig. D26)

9.3.14. Removal of the Rear Operation P.C.B., and Rear Operation FPC



(Fig. D27)

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/or dirt on it, and no gradient images.)

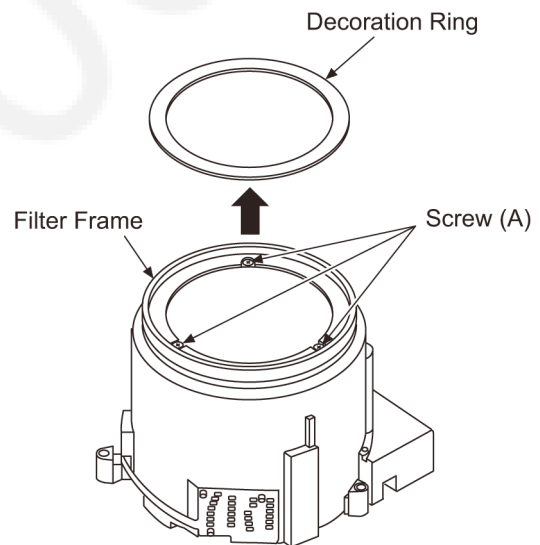
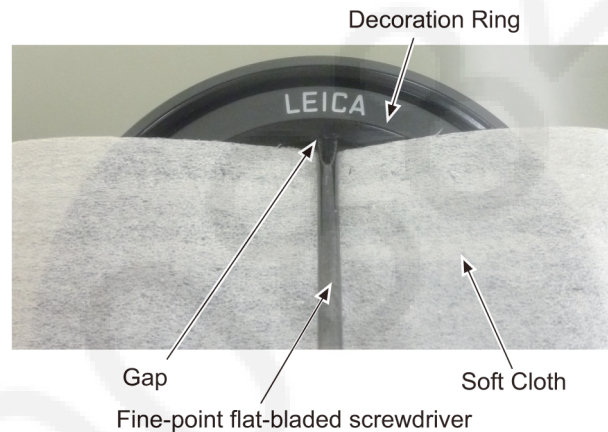
9.4. Lens Disassembly Procedure

Precaution:

1. Do not remove the MOS Unit when disassembling or reassembling the lens in order to maintain it clean.
When remove it, refer to item "9.7".
2. Keep dust or dirt away from the lens.
To remove dirt or dust from the lens, blow with dry air.
3. Do not touch the lens surface.
4. Use Lens Cleaning Kit (VFK1900BK).
5. Apply grease to surely the specified position as shown in the figure on item "9.6".
6. The Shutter Unit is composed the 3rd Lens Frame Unit, 4th Lens Frame Unit and Both Side Cam Frame Unit.
When replacing, exchange the Shutter Unit always.

9.4.1. Removal of the Decoration Ring and Filter Frame

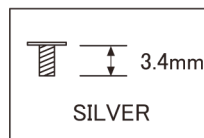
1. The Decoration ring is stuck with double-sided tape to the Filter Frame.
2. Put the soft cloth so that the lens glass is fully covered.
3. Insert the fine-point flat-bladed screwdriver to Gap (between the Decoration Ring and lens glass), and peel off the Decoration Ring carefully.
4. Unscrew the 3 screws (A).
5. Remove the Filter Frame.



NOTE: (When Replacing)

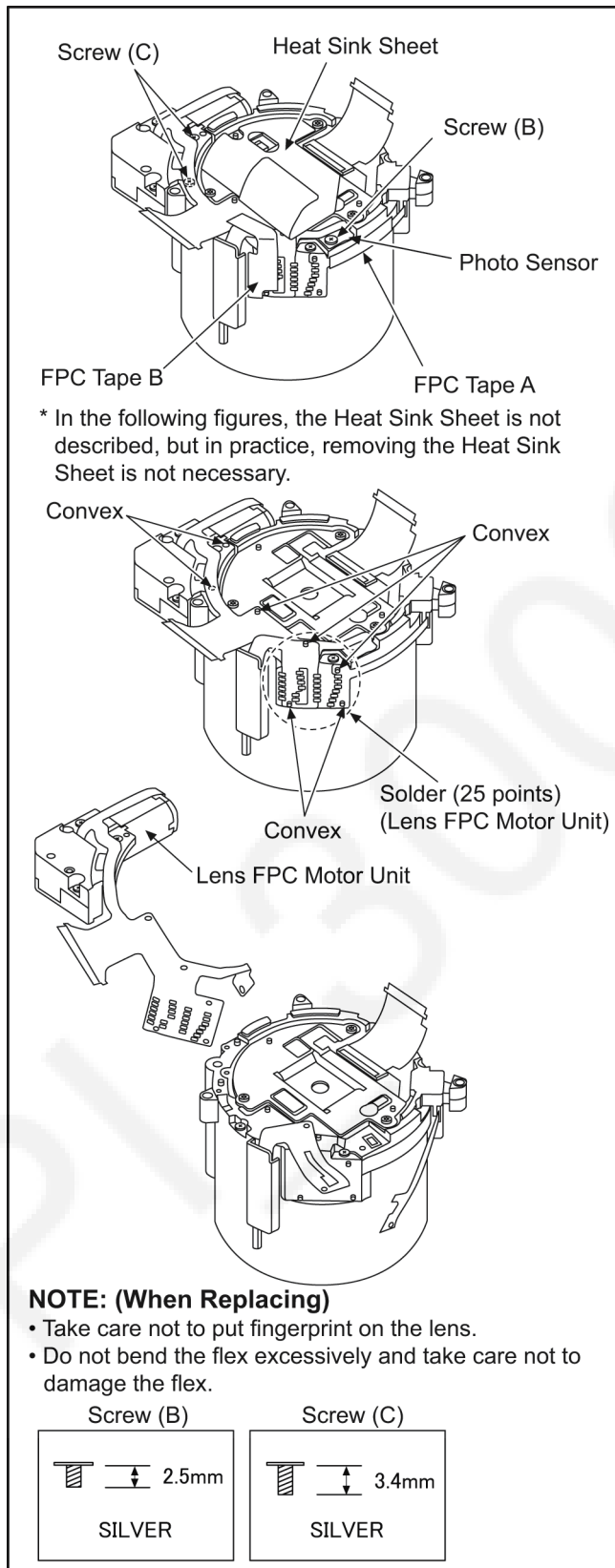
- Take care not to put fingerprint on the lens.

Screw (A)



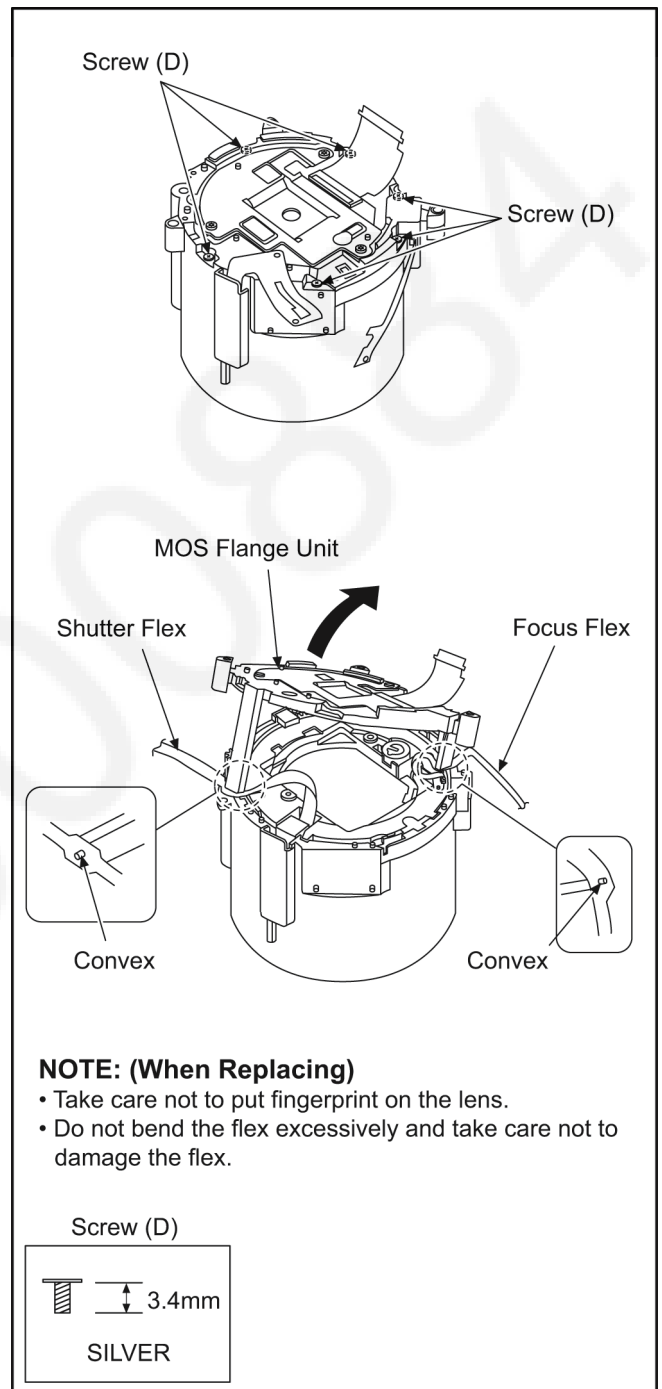
9.4.2. Removal of the Lens FPC motor Unit

1. Peel the FPC Tape A and FPC Tape B.
2. Unscrew the screw (B) and remove the Photo Sensor.
3. Unscrew the 2 screws (C).
4. Unsolder the 25 soldering points.
5. Remove the 7 convexas.
6. Remove the Lens FPC Motor Unit.



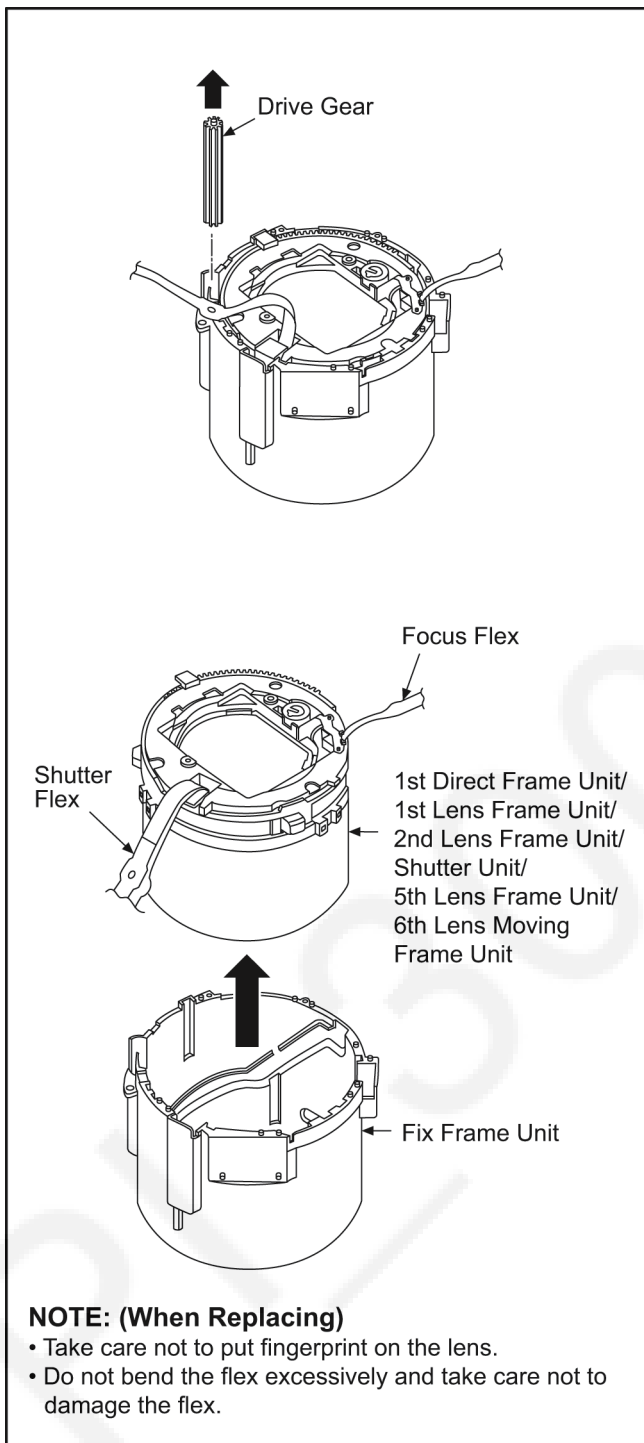
9.4.3. Removal of the MOS Flange Unit

1. Unscrew the 6 screws (D).
2. Remove the 2 convexas.
3. Remove the MOS Flange unit.



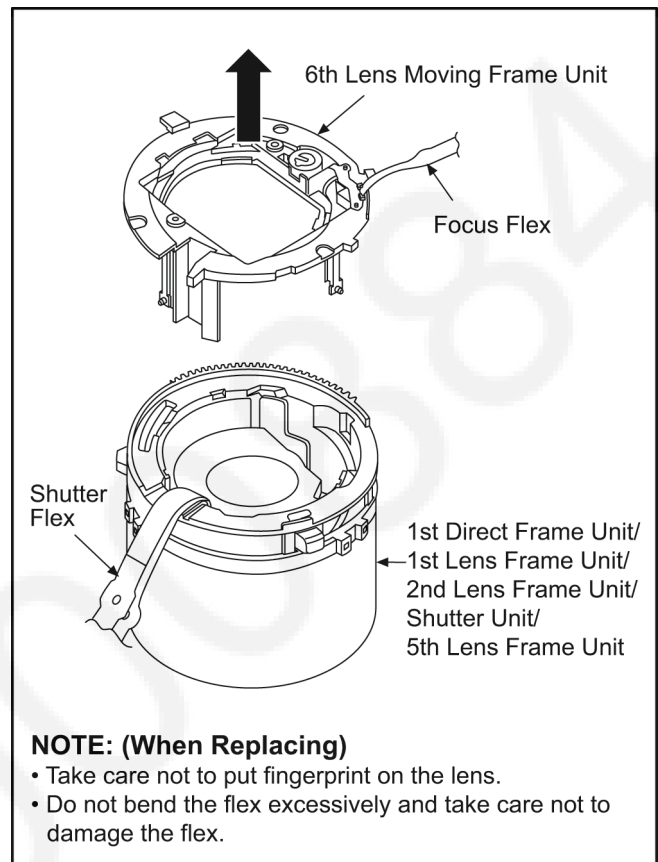
9.4.4. Removal of the Fix Frame Unit

1. Remove the Drive Gear.
2. Push the 1st Lens Frame Unit from the lens front side in direction of arrow, and then remove the 1st Direct Frame Unit/ 1st Lens Frame Unit/ 2nd Lens Frame Unit/ Shutter Unit/ 5th Lens Frame Unit/ 6th Lens Moving Frame Unit from the Fix Frame Unit.



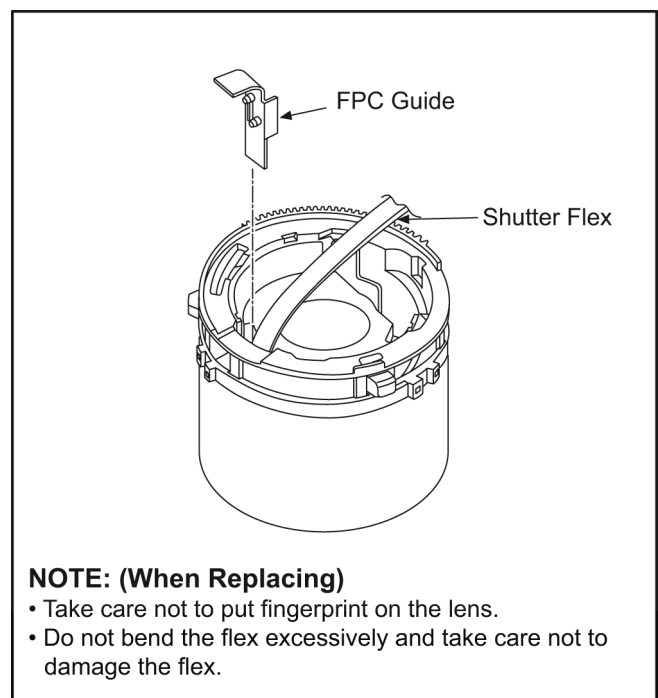
9.4.5. Removal of the 6th Lens Moving Frame Unit

1. Remove the 6th Lens Moving Frame Unit from the unit of 1st Direct Frame Unit/ 1st Lens Frame Unit/ 2nd Lens Frame Unit/ Shutter Unit/ 5th Lens Frame Unit.

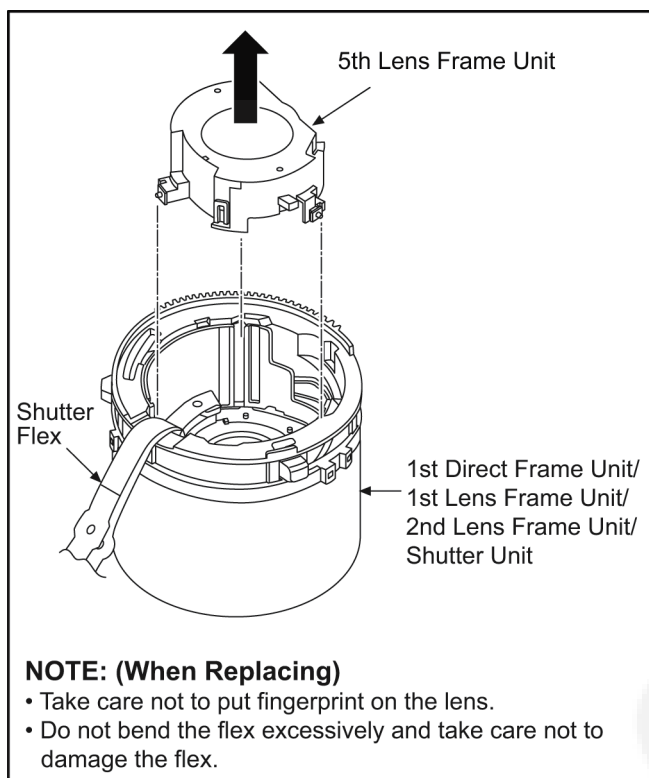


9.4.6. Removal of the 5th Lens Frame Unit

1. Remove the FPC Guide.

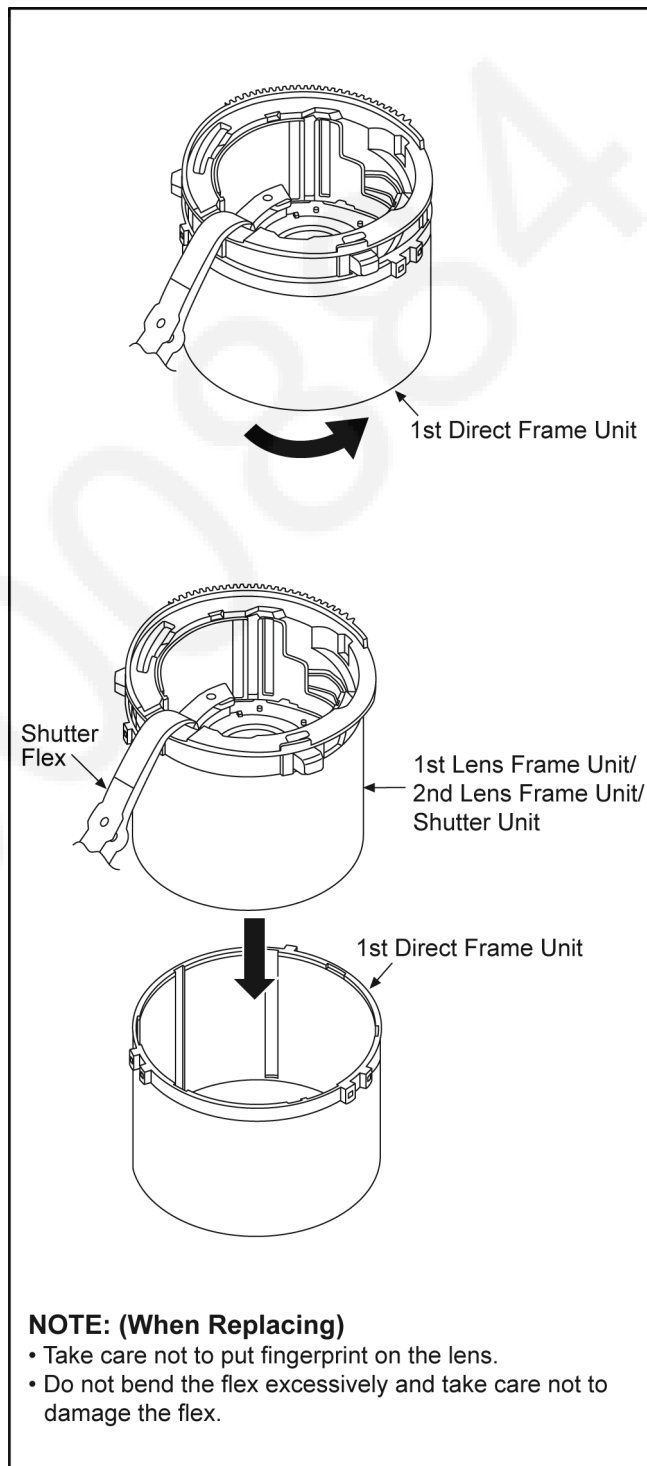


2. Remove the 5th Lens Frame Unit from the unit of 1st Direct Frame Unit/ 1st Lens Frame Unit/ 2nd Lens Frame Unit/ Shutter Unit.



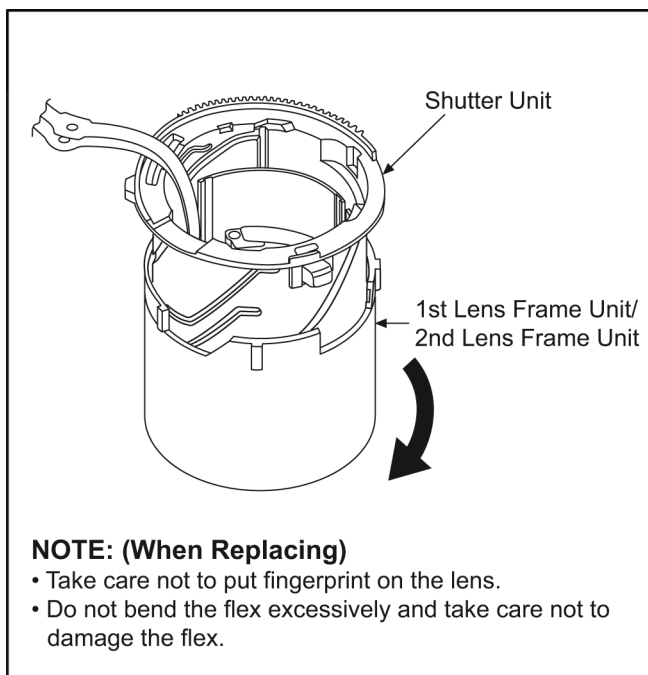
9.4.7. Removal of the 1st Direct Frame Unit

1. Turn the 1st Direct Frame Unit in direction of arrow fully.
2. Remove the 1st Direct Frame Unit from the unit of 1st Lens Frame Unit/ 2nd Lens Frame Unit/ Shutter Unit.



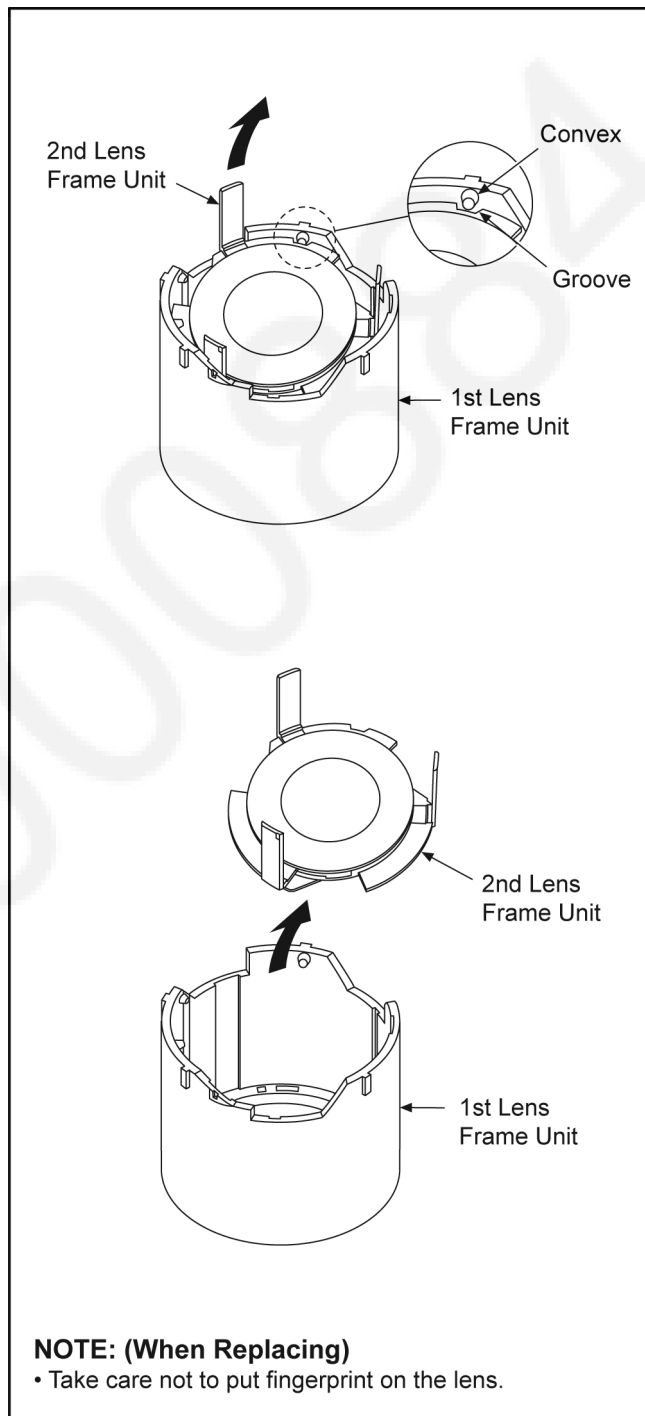
9.4.8. Removal of the Shutter Unit

1. Rotate the 1st Lens Frame Unit/ 2nd Lens Frame Unit in direction of arrow to remove the Shutter Unit.



9.4.9. Removal of the 2nd Lens Frame Unit

1. Remove the groove of the 2nd Lens Frame Unit from the convex of the 1st Lens Frame Unit, remove the the 2nd Lens Frame Unit while inclining it in the direction of arrow.



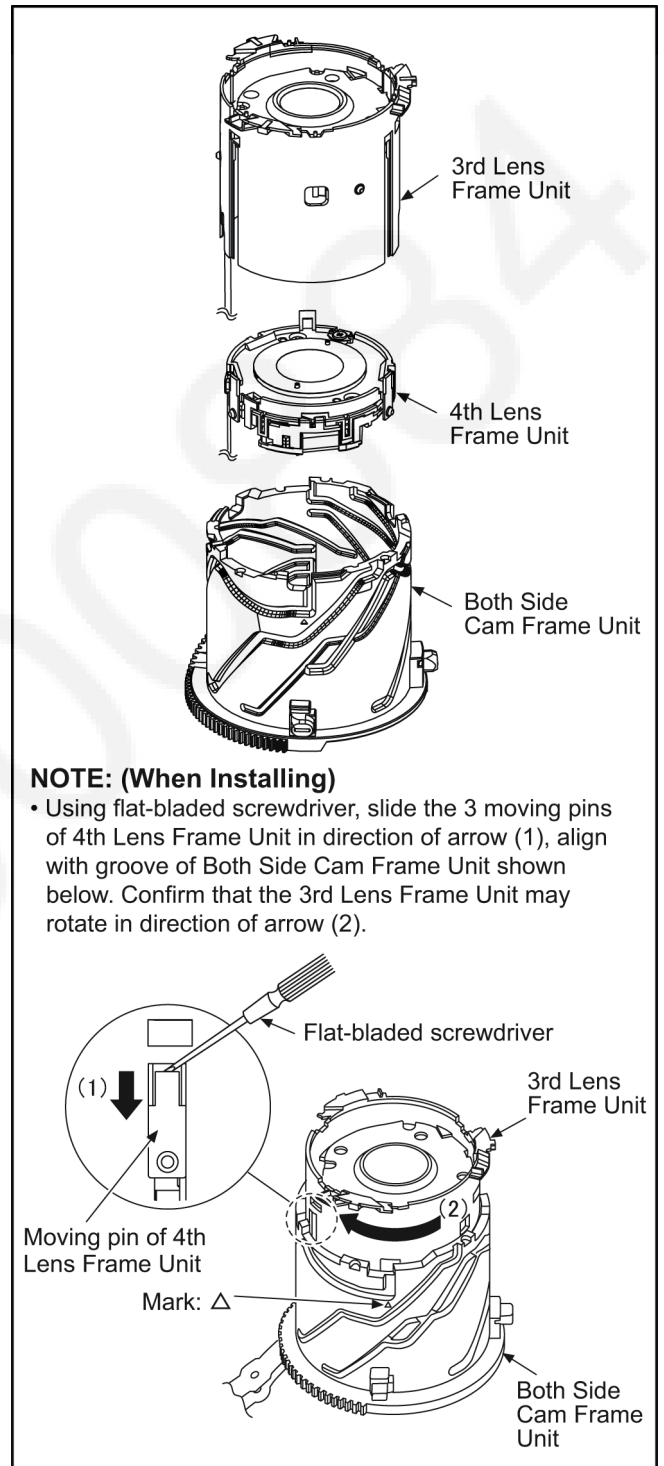
9.5. Assembly Procedure for the Lens (Phase Alignment)

Precaution:

1. Do not remove the MOS Unit when disassembling or reassembling the lens in order to maintain it clean.
When remove it, refer to item "9.7."
2. Keep dust or dirt away from the lens.
To remove dirt or dust from the lens, blow with dry air.
3. Do not touch the lens surface.
4. Use Lens Cleaning Kit (VFK1900BK).
5. Apply grease to surely the specified position as shown in the figure on item "9.6."
6. The Shutter Unit is composed the 3rd Lens Frame Unit, 4th Lens Frame Unit and Both Side Cam Frame Unit.
When replacing, exchange the Shutter Unit always.

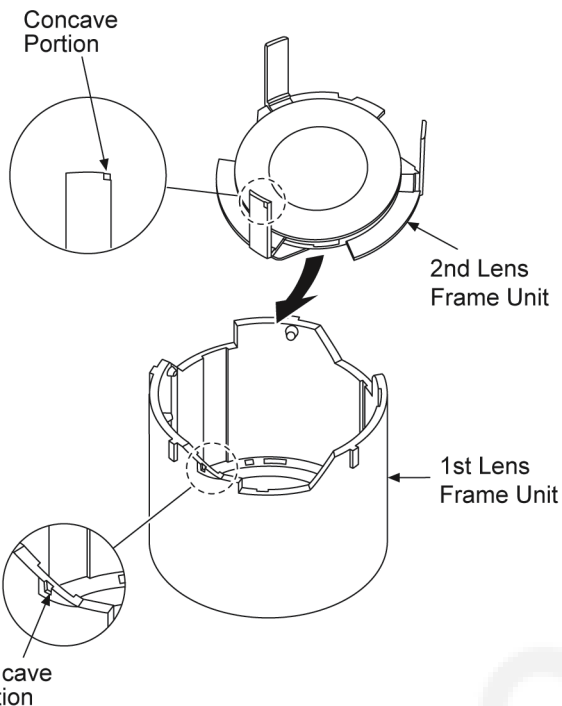
9.5.1. Assembly of the Shutter Unit

The Shutter Unit is composed the 3rd Lens Frame Unit, 4th Lens Frame Unit and Both Side Cam Frame Unit.
When replacing, exchange the Shutter Unit always.

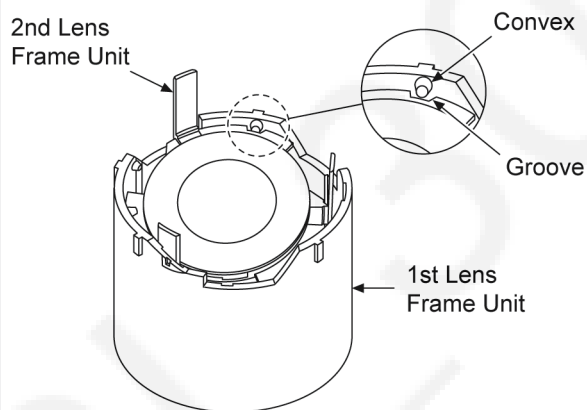


9.5.2. Assembly of the 1st Lens Frame Unit and 2nd Lens Frame Unit

1. Align the concave portion of 2nd Lens Frame Unit and the concave portion of 1st Lens Frame Unit.
2. Insert the 2nd Lens Frame Unit in 1st Lens Frame Unit while tilting 2nd Lens Frame Unit.



3. Align the groove of 2nd Lens Frame Unit and convex of 1st Lens Frame Unit, then insert it.

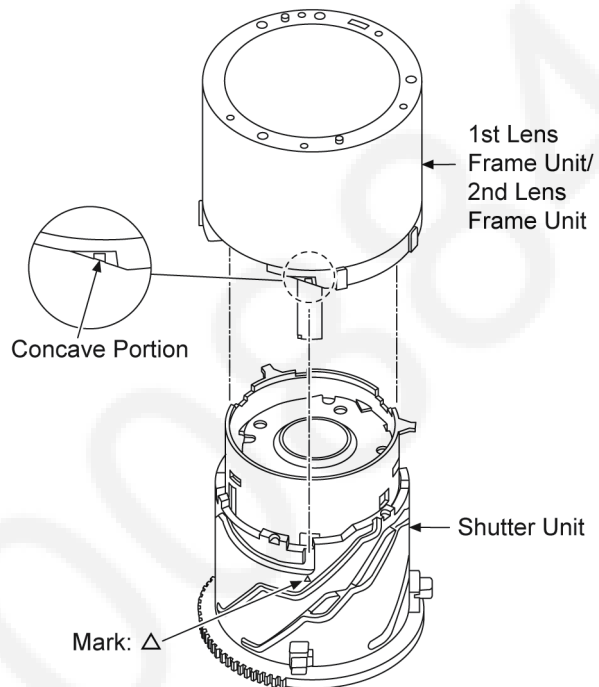


NOTE: (When Installing)

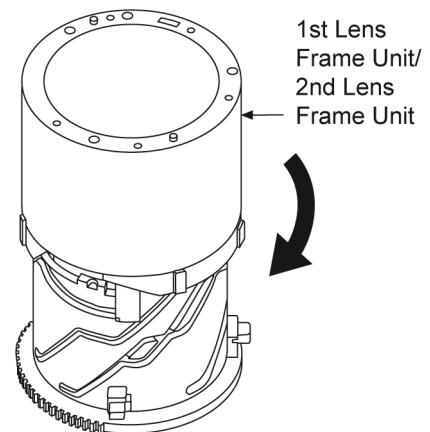
- Take care not to put fingerprint on the lens.

9.5.3. Assembly of the 2nd Lens Frame Unit/ Shutter Unit and 1st Lens Frame Unit

1. Align the concave portion of 1st Lens Frame Unit and mark "Δ" of Shutter Unit, and then insert.



2. Insert the 1st Lens Frame Unit and 2nd Lens Frame Unit while rotating them.

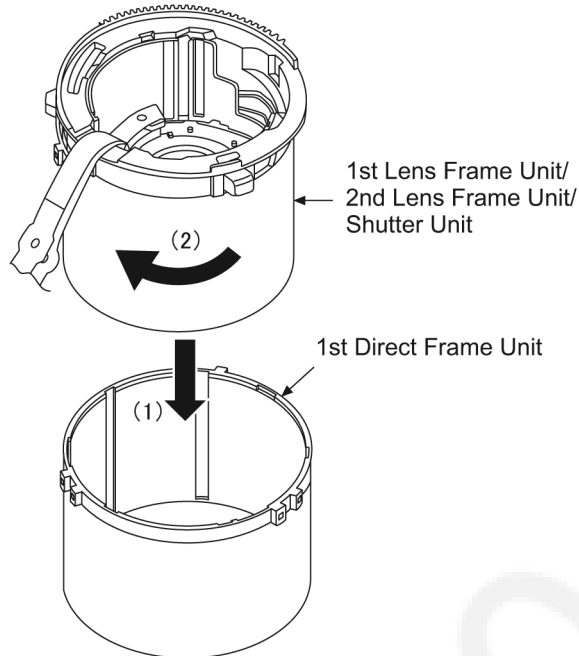


NOTE: (When Installing)

- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.

9.5.4. Assembly of the 1st Lens Frame Unit, 2nd Lens Frame Unit, Shutter Unit, 1st Direct Frame Unit

1. Insert the 1st Lens Frame Unit/ 2nd Lens Frame Unit/ Shutter Unit to 1st Direct Frame Unit in direction of arrow (1), and then rotate them in direction of arrow (2) to match the Shutter Unit.

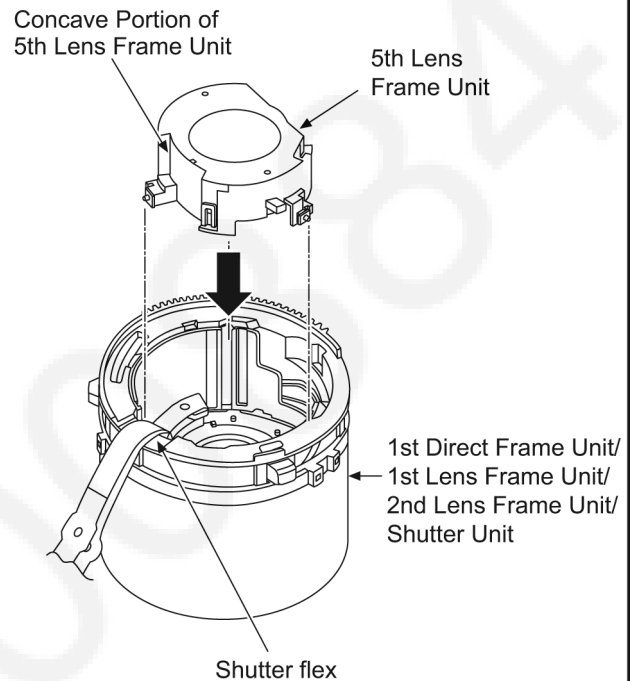


NOTE: (When Installing)

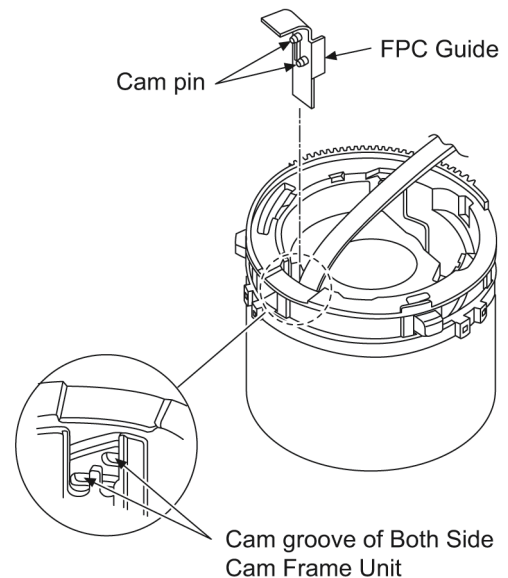
- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.

9.5.5. Assembly of the 1st Direct Frame Unit, 1st Lens Frame Unit, 2nd Lens Frame Unit, Shutter Unit, and 5th Lens Frame Unit

1. Align the concave portion of 5th Lens Frame Unit and Shutter flex, and then insert.



2. Insert the FPC Guide, and align the cam pins of FPC Guide and Cam groove of Both Side Cam Frame Unit.

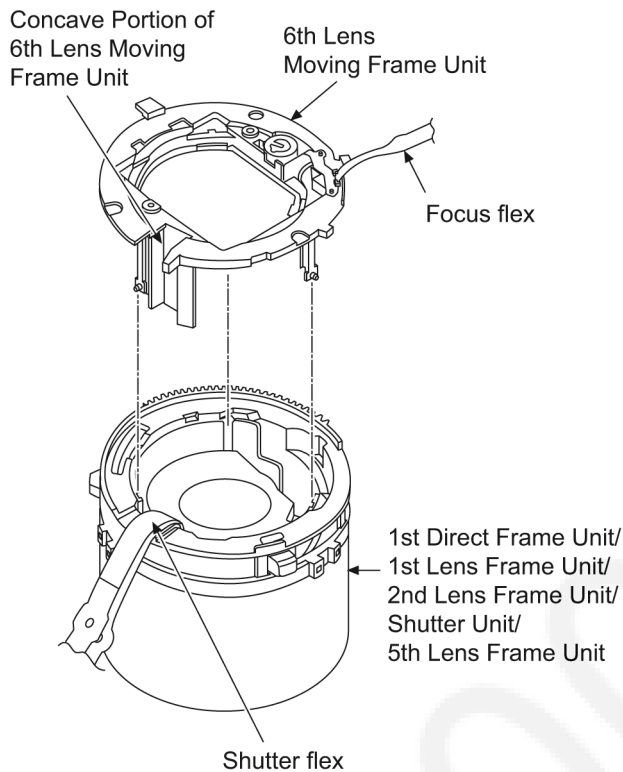


NOTE: (When Installing)

- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.

9.5.6. Assembly of the 1st Direct Frame Unit, 1st Lens Frame Unit, 2nd Lens Frame Unit, Shutter Unit, 5th Lens Frame Unit and 6th Lens Moving Frame Unit

1. Align the concave portion of 6th Lens Moving Frame Unit and Shutter flex, and then insert.

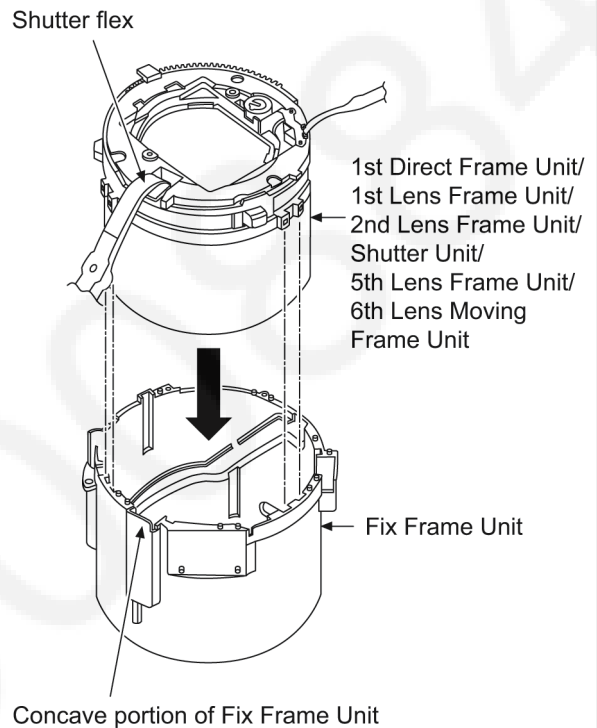


NOTE: (When Installing)

- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.

9.5.7. Assembly of the 1st Direct Frame Unit, 1st Lens Frame Unit, 2nd Lens Frame Unit, Shutter Unit, 5th Lens Frame Unit, 6th Lens Moving Frame Unit and Fix Frame Unit

1. Align the concave portion of Fix Frame Unit and Shutter flex, and then insert.

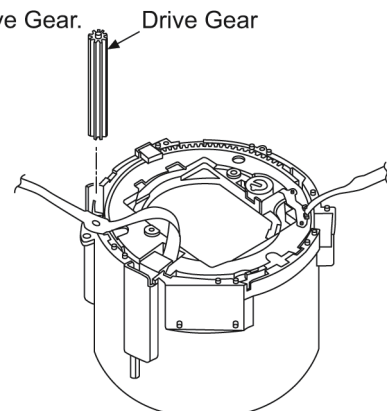


NOTE: (When Installing)

- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.

9.5.8. Assembly of the Mos Flange Unit

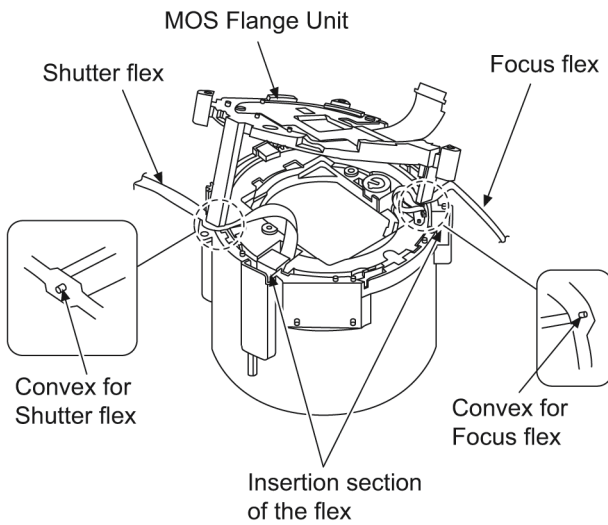
1. Insert the Drive Gear.



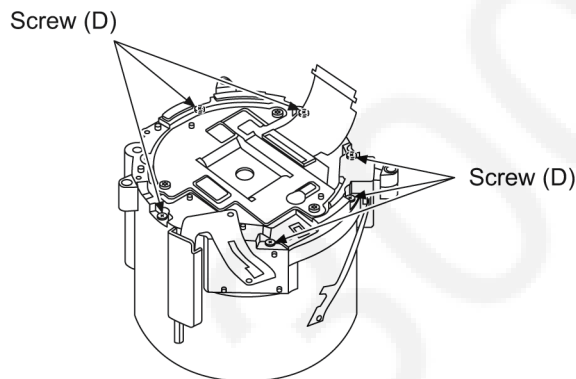
NOTE: (When Installing)

- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.

2. Insert the convex (for Focus flex) of MOS Flange Unit into the hole of Focus Flex, then insert into the flex insertion section of the Fix Frame Unit.
3. Insert the convex (for Shutter flex) of MOS Flange Unit into the hole of Shutter Flex, then insert into the flex insertion section of the Fix Frame Unit.



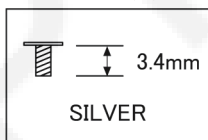
4. Tighten the 6 screws (D) and fasten.



NOTE: (When Installing)

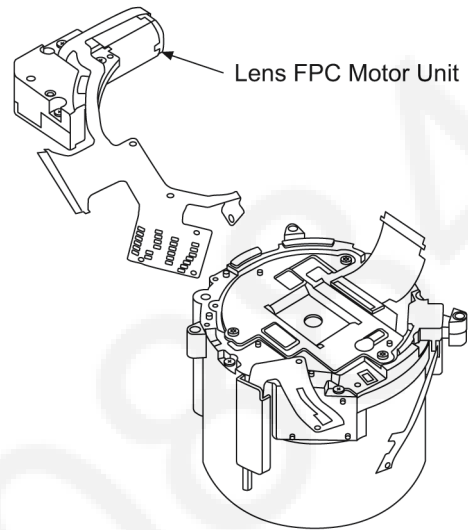
- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.

Screw (D)

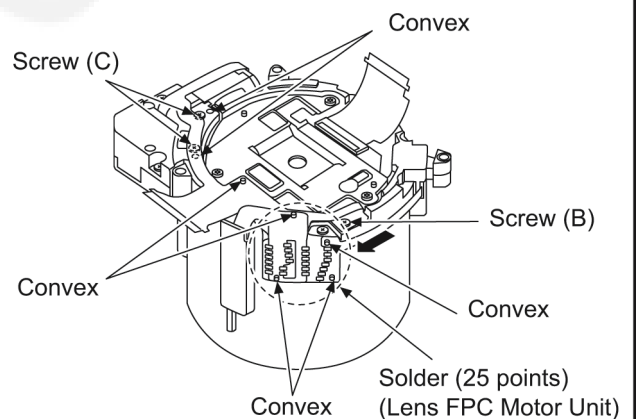


9.5.9. Assembly of the Lens FPC Motor Unit

1. Attach the Lens FPC Motor Unit.



2. Fix the Lens FPC Motor Unit with 7 convexas, then tighten 2 screws (C) and 1 screw (B).
3. Solder 25 soldering points.



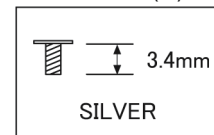
NOTE: (When Installing)

- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.
- Before tightening the screw (B), Shift the flex in direction of arrow, then tighten the screw.

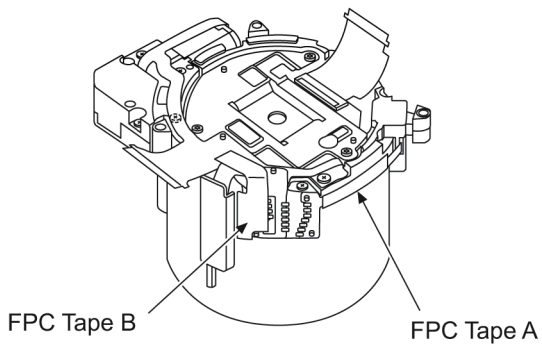
Screw (B)



Screw (C)



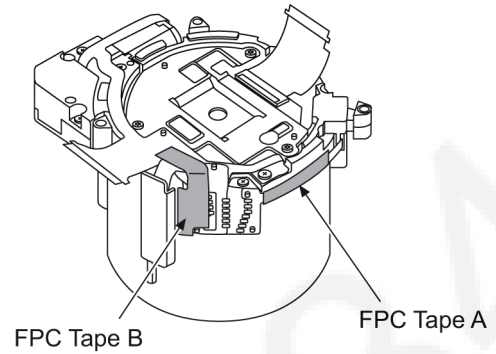
4. Paste the FPC Tape A and FPC Tape B to fasten.



NOTE: (When Installing)

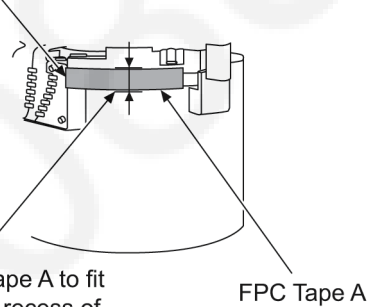
- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.

[Pasting Position Standard for FPC Tape A, FPC Tape B]

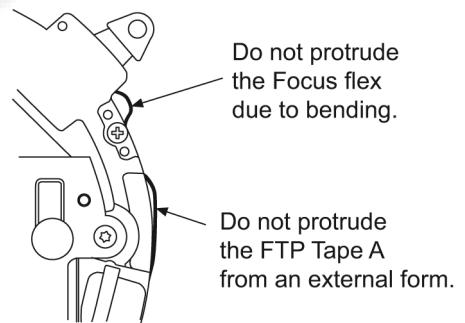


■ FPC Tape A

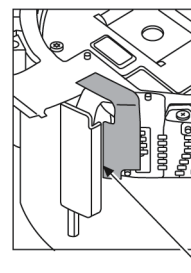
When pasting the FPC Tape A, confirm the ends of Lens flex as pasting standard.



Paste the FPC tape A to fit into the range of recess of the Fix Frame Unit.



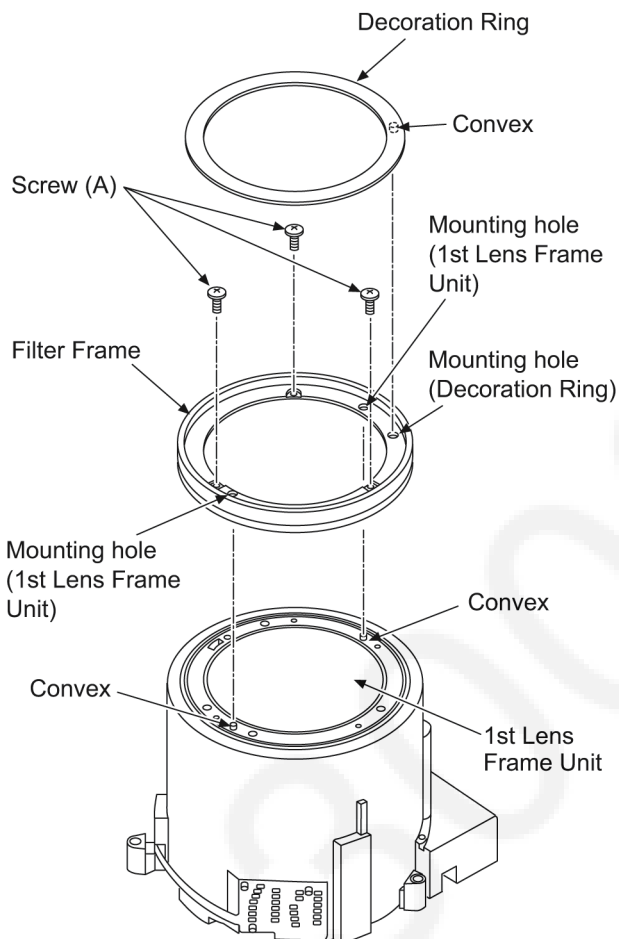
■ FPC Tape B



Use convex portion end face of Fix Frame Unit as pasting standard.

9.5.10. Assembly of the Filter Frame and Decoration Ring

1. Align the convex of 1st Lens Frame Unit and the mounting holes for 1st Lens Frame Unit on the Filter Frame, then install the Filter Frame.
2. Tighten the 3 screws (A).
3. Align the convex of Decoration Ring and mounting hole for Decoration Ring on the Filter Frame, then install the Decoration Ring.
4. After installing the Decoration Ring, use a soft cloth to press it into place.



NOTE: (When Installing)

- Take care not to put fingerprint on the lens.
- Use new one, do not use the one which is removed.
- Double-stick tape sticks to the Decoration Ring of the repair part. Please remove the old double-stick tape from HOOD ADAPTER.

Screw (A)

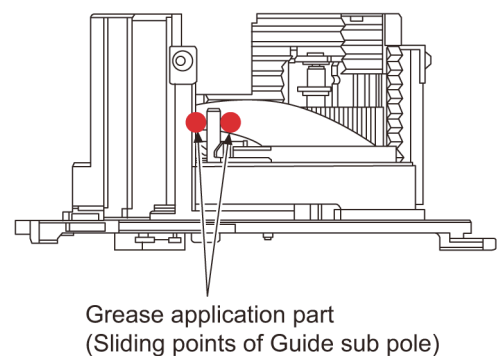
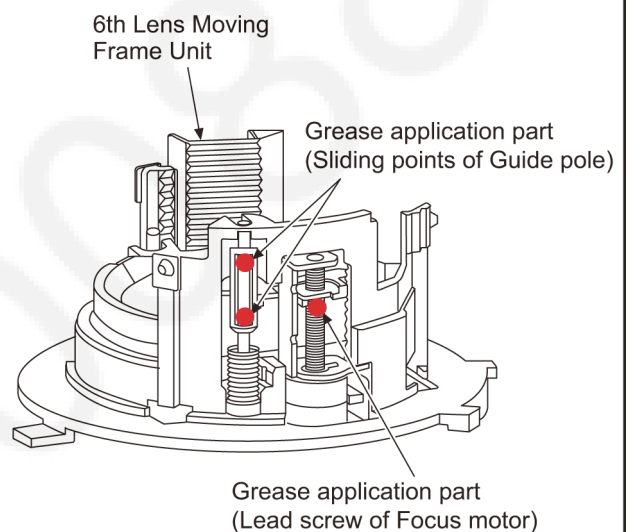


SILVER

9.6. The Application of Grease Method

The grease application parts of lens unit are as follows.
Apply grease additionally in the specified position if necessary.
When the grease is applied, use a toothpick and apply thinly.

- Lead screw part of Focus motor
 - Grease: RFKZ0472
 - Amount of application: 1.0 ± 0.1 mg (1 point)
- Sliding points of Guide pole
 - Grease: RFKZ0472
 - Amount of application: 0.8 ± 1 mg (2 points)
- Sliding points of Guide sub pole
 - Grease: RFKZ0472
 - Amount of application: 0.8 ± 1 mg (2 points)



9.7. Removal of the MOS Unit

When remove the MOS Unit once (the screw (E) is loosened even a little), the optical tilt adjustment is required.

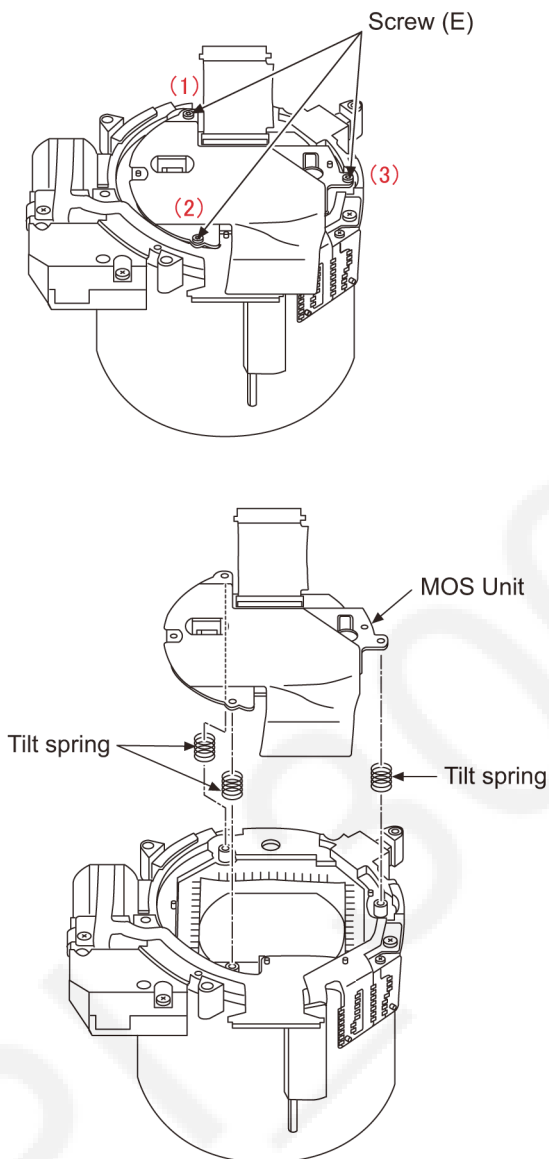
When loosen the screw (E), necessary the optical tilt adjustment at the end of assembling. (Refer to item "10.3.2.")

To prevent the MOS Unit from catching the dust and dirt, do not remove the MOS Unit except for replacing.

1. Unscrew the 3 screws (E).
2. Remove the MOS Unit.
3. Remove the 3 Tilt Springs.

NOTE: (When Installing)

- Take new screw.
(Don't reuse the screws)
- Tighten the 3 special screws according to the following.
 - * Set the bit of optical tilt adjustment driver (RFKZ0609) to the torque driver (RFKZ0542).
 - [Screw order]: (1)→(2)→(3).
 - [Screw torque]: $5 \pm 1 \text{ N}\cdot\text{cm}$.
- Be sure to execute the optical tilt adjustment with the screw (1), (2) and (3).
- After the adjustment is finished, the screw locking glue is unnecessary.



NOTE: (When Installing)

- Take care not to put fingerprint on the lens.
- Do not bend the flex excessively and take care not to damage the flex.

Screw (E)



3.0mm

SILVER

Special Screw
(T3 Torx type)

10 Measurements and Adjustments

10.1. Introduction

When servicing this unit, make sure to perform the adjustments necessary based on the part(s) replaced.
Before disassembling the unit, it is recommended to back up the camera data stored in Flash-ROM as a data file.

NOTE: (When replacing the Lens unit and MOS unit)

- When the MOS unit is unavoidably removed for Lens unit and MOS unit replaced, an optical tilt adjustment is necessary after parts are exchanged.
- The adjustment software (DSC_Tilt) is necessary to execute an optical tilt adjustment.
- The adjustment software "DSC_Tilt" is available at "TSN Website".

NOTE: (When replacing the Main P.C.B.)

- Number of necessary adjustment items decreases by copying the backup data to new Main P.C.B. when adjustment data in old Main P.C.B. can be read by ROM_BACKUP "DSC→SD" in "10.2.2. Flash-ROM Data Backup".
For more details, please refer an item "Main P.C.B. (to which the backup data was copied)" in the table of "10.3.2. Adjustment Specifications".

10.2. Before Disassembling the unit

10.2.1. Initial Setting Release

The cameras specification are initially set in accordance with model suffix (such as EB/EG/GK and so on.).
Unless the initial setting is not released, an automatic alignment software in the camera is not able to be executed when the alignment is carried out.

Note:

The initial setting should be again done after completing the alignment. Otherwise, the camera may not work properly.
Therefore as a warning, the camera display a warning symbol "!" on the LCD monitor every time the camera is turned off.
Refer to the procedure described in "3.5.2. Initial Settings" for details.

[How to Release the camera initial setting]

Preparation:

- Attach the fully charged Battery, and insert the memory card (32MB or more).
Remove the lens cap.

Step 1. The temporary cancellation of "Initial Settings":

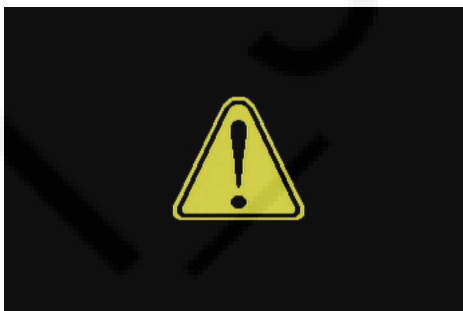
While pressing "[RIGHT] of Cursor button", [AF/AE LOCK] button and [DISP.] button simultaneously, turn the power on.

Step 2. Cancellation of "Initial Settings":

Press the [Playback] button in order to enter the [Playback] mode.

Press the [AF/AE LOCK] button and "[UP] or Cursor buttons" simultaneously, then turn the power off.

The LCD displays the "!" mark before the unit powers down.



10.2.2. Flash-ROM Data Backup

Number of necessary adjustment items decreases by copying the backup data to new Main P.C.B. when adjustment data in old Main P.C.B. is usually read by ROM_BACKUP "DSC→SD".

It is recommended to backup the Flash-ROM data as the way of return when trouble occurs before disassembling the unit depending on each case.

[ROM_BACKUP (Method of Non-PC backup)]

1. Insert the memory card into the unit.
2. Set the camera to "Temporary cancellation of the initial settings".
3. Select the "SETUP" menu.

From the "SETUP" menu, select "ROM_BACKUP".

NOTE:

This item is not listed on the customer's "SETUP" menu.

4. When this "ROM_BACKUP" item is selected, the following submenus are displayed.

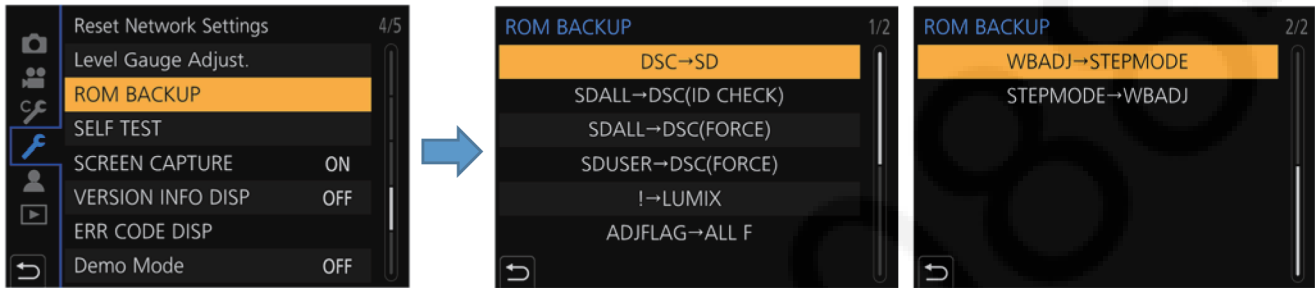


Fig.2-1

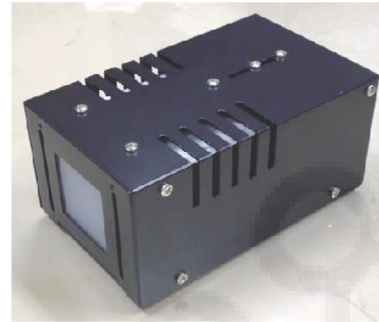
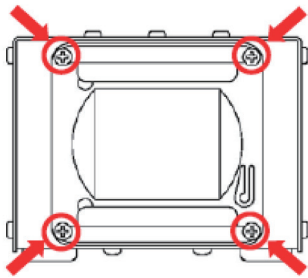
Item	Function	Details
DSC → SD	Save all the DSC's Flash-ROM data to Memory Card	<ul style="list-style-type: none"> DSC's Flash-ROM data is saved to the Memory Card as a data file. (DATA BACKUP) - File location: ROOT DIRECTORY in Memory Card. - File Name: <ol style="list-style-type: none"> 1) User Setup Information data:<Model No.>U.TXT [Depending on the model, more than one file may be generated (e.g. <Model No.>U.TXT and <Model No.>U3.TXT).] 2) Electrical Adjustment data:<Model No.>F.TXT [Depending on the model, more than one file may be generated (e.g. <Model No.>F.TXT and <Model No.>F3.TXT).] - If the concerned file already exists, "OVERWRITE?" message is displayed.
SDALL → DSC (ID CHECK)	Write the all data to DSC's Flash-ROM from Memory Card	<ul style="list-style-type: none"> The backup data stored in the Memory Card is transferred to DSC unit. - ID CHECK: When the model ID is different, data is not transferred.
SDALL → DSC (FORCE)	Write the all data to DSC's Flash-ROM from Memory Card	<ul style="list-style-type: none"> - FORCE: Even if the model ID is different, data is transferred. * If the Main P.C.B. is replaced, select "SDALL→DSC (FORCE)".
SDUSER → DSC (FORCE)	Only "User setup information" is written from the saved file in the Memory Card to DSC's Flash-ROM	<ul style="list-style-type: none"> Only the user's "setup" setting condition is transferred to DSC unit. - FORCE: Even if the model ID is different, the data is transferred.
! → LUMIX	Shipping set without initializing "User setup information"	<ul style="list-style-type: none"> Initial setting is executed without initializing the user's set up setting condition. * The initial setting must be performed while the Self-timer LED is blinking. * The picture data stored in the built-in memory of the DSC is not erased, with this operation.
ADJFLAG → ALL F	Set all adjustment flags completion	<ul style="list-style-type: none"> Status of the all adjustment flags are changed to "F" (completion).
WBADJ → STEPMODE	ISO: Adjustment WBL, WBM: Setting	<ul style="list-style-type: none"> ISO: Sensitivity adjustment. WBL: Setting up the white in low color temperature. WBM: Setting up the white in high color temperature.
STEPMODE → WBADJ	Cancel "STEPMODE"	<ul style="list-style-type: none"> Cancel the "STEPMODE" mode.

10.2.3. About Light Box

How to remove the Front Hood

In order to utilize maximum of the diffusing surface of light box, some adjustment items need the distance between diffusing surface of light box and camera body becomes several cent-meters.

Before the adjustments, remove the front hood of light box following steps below.



Unscrew the 4 screws, then remove the front hood.

10.3. Details of Electrical Adjustment

10.3.1. How to execute the Electrical Adjustment

It is not necessary to connect the camera to a PC to perform adjustments.

“Flag reset operation” and “Initial setting operation” are required when carrying out the alignment, follow the procedure below.

10.3.1.1. Startup Electrical Adjustment mode

1. Release the initial settings.
2. Insert a recordable memory card (32MB or more).
(Without a memory card, the automatic adjustment can not executed.)
3. Procedure to set the camera into adjustment mode:
While pressing “[LEFT] of Cursor button”, [Playback] button and [AF/AE LOCK] button simultaneously, turn the power on.
LCD monitor displays “SERVICE MODE”. (Refer to Fig. 3-1)

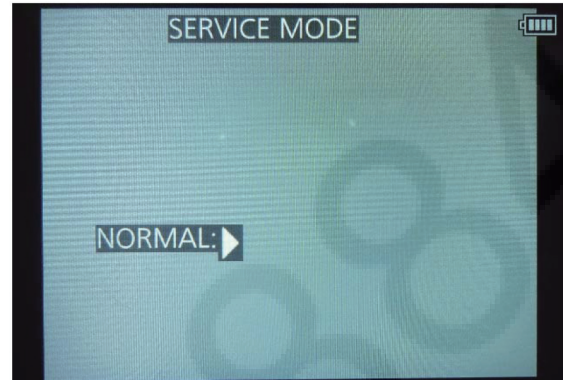


Fig.3-1

10.3.1.2. Status Adjustment Flag Setting

Reset (Not yet adjusted) the status flag condition.

1. Press the [DISP.] button, the LCD monitor displays the Flag status screen. (Refer to Fig.3-2)
2. Select item by pressing the Cursor buttons. (Gray cursor is moved accordingly.)
3. Press the [Fn3] button.

NOTE:

The selected item's flag has been changed from
“F (green)” to “0 (yellow)”.

*Flag conditions:

F (green)

means that the alignment has been completed and the status flag condition is set. In this case, the flag condition should be reset, if you try to carry out the automatic alignment.

0 (yellow)

means that the alignment has been not “completed” and the status flag condition is “reset”. In this case, automatic alignment is available.

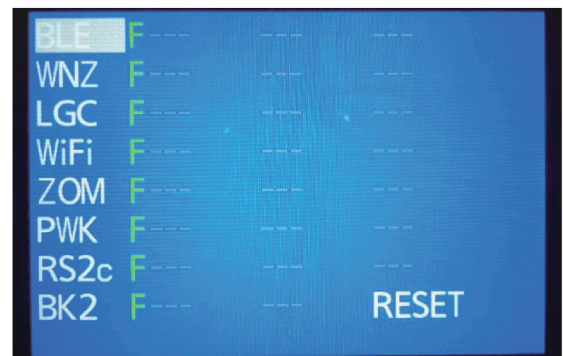
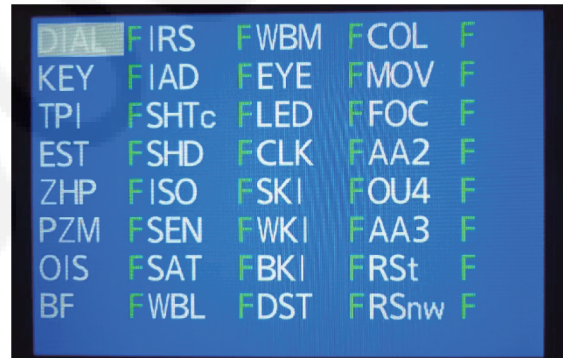


Fig.3-2

- In case of setting the status flag into set condition again without completion of the alignment, the status flag should be UNDO by using ROM BACKUP function.

10.3.1.3. Execute Adjustment (In case of “OIS Adjustment”)

1. Perform step “10.3.1.1.” to “10.3.1.2.”, to reset the OIS flag status “F” (Set) to “0” (Reset)
2. Press “[DISP.] button” after Flag reset.
OIS Adjustment screen is displayed on the LCD panel.
(Refer to Fig.3-3)
3. Press the [Shutter] button.
The adjustment will start automatically.

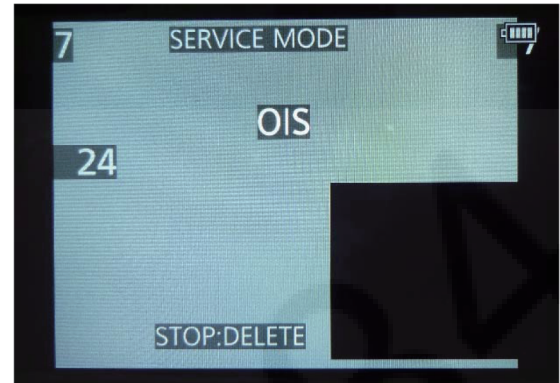


Fig.3-3

4. When the adjustment is completed successfully, adjustment report menu appears with Green OK on the LCD monitor. (Refer to Fig.3-4)

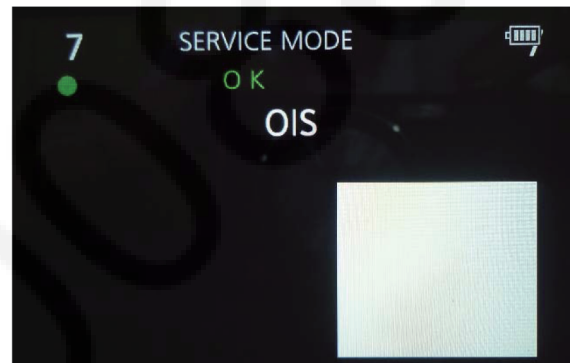


Fig.3-4

10.3.1.4. Attention point during Adjustment

1. Step “10.3.1.3.” procedure shows OIS adjustment as an example. To perform the adjustment, refer to the “10.3.2. Adjustment Specifications” table which shows key point for each adjustment.
2. Do not move the light box, the camera or the chart while adjusting. If one of these is moved accidentally, start the adjustment again.
3. Do not press any buttons/keys until the default menu (Refer to Fig.3-5) is displayed on the LCD monitor. Otherwise, adjustment data may not be stored properly.
4. If the adjustment is interrupted accidentally, the alignment data may not be properly saved in the Flash-ROM.

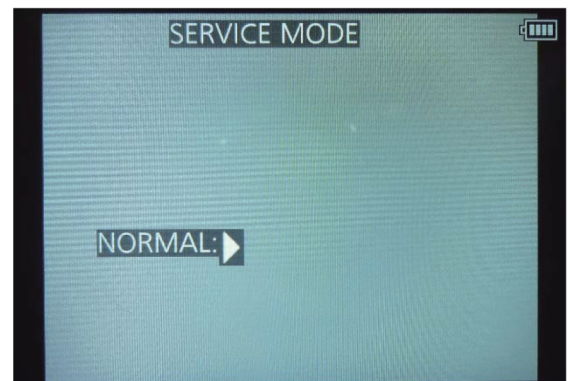


Fig.3-5

10.3.1.5. Finalizing the Adjustment

1. Several adjustment flags can be reset (“F” into “0”) at the same time. In this case, when the adjustment has been completed, the screen will change showing the adjustment for the next item until all reset items are completed.
Also, when the [Shutter] button is pressed, the screen jump to the next adjustment item.
2. To cancel the adjustment mode while in the process of performing the adjustment, follow this procedures.
3. Operate the following, when escaping the Electrical Adjustment mode on the way.
 - (1) Press “[Fn3] button”.
 - (2) Press “[RIGHT] of Cursor buttons”.

NOTE:

- If adjustment is cancelled with above procedure, adjustment is not completed. Make sure to adjust it later.

10.3.2. Adjustment Specifications

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.

The table below shows all the information necessary to perform each adjustment.

Adjustment order	Adjustment Item	FLAG	Purpose	Replacing Parts									JIG/TOOLS	SETUP	How to Operate
				MAIN P.C.B./Flash-ROM/VENUS ENGINE	MAIN P.C.B. (When written the Backup data)	Flash-ROM (IP2951)	Charging Control Microcomputer (IC1502)	Lens part (Excluding Image Sensor)	Image Sensor	Microphone	Electronic Level (IC6201)	LVF Unit/EYE Sensor FPC			
1	Synchronization of Flash-ROM with the charge control micro computer	-	Executing synchronization (optimization) of Flash-ROM with the charge control micro computer (Upgrading the software version)	-	-	○	○	-	-	-	-	-			<ul style="list-style-type: none">Do adjust the firmware of the Charging Control Microcomputer to the firmware of the one of the Flash-ROM by the following procedure.<ul style="list-style-type: none">1) Release the camera initial setting.2) Insert a memory card (32MB or more).3) Turn the power off.The camera check the firmware of both the Flash-ROM and the Charging Control Microcomputer. If they are not match, the firmware of the Charging Control Microcomputer is updated and the camera is turned the power off automatically. *While doing adjustment, don't turn the power off forcibly. It takes about 10 seconds to update the firmware of the Charging Control Microcomputer. While updating, the camera is displaying a warning symbol "!" on the LCD and lighting the AF Assist Lamp. (If the firmware of the camera (Flash-ROM) is old, the AF Assist Lamp does not light.)
2	Optical Tilt	-	Adjustment of MOS Unit installation angle to the Lens	-	-	-	-	○	○	-	-	-			<p>NOTE: It is necessary to use the "DSC_Tilt" software to allow the "Optical tilt adjustment". The Adjustment software "DSC_Tilt" is available at "TSN Website".</p> <ul style="list-style-type: none">Optical Tilt Adjustment Driver RFKZ0609 : T3Optical Tilt Adjustment Chart RFKZ0570Camera Stand RFKZ0333JTorque Driver RFKZ0542 <p>* The screw locking glue is unnecessary, after adjustment.</p> <p>* Torx : 5 ± 1 N•cm</p>
3	Zoom Home Position	ZHP	Zoom Home Position inspection	-	-	○	-	○	○	-	-	-	NONE	NONE	<ul style="list-style-type: none">1) Change the flag into the "0", and then proceed to the adjustment mode.2) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
4	Venus Zoom *4	PZM	Venus Zoom Inspection	○	○	○	-	-	-	-	-	-	NONE	NONE	<ul style="list-style-type: none">1) Change the flag into the "0", and then proceed to the adjustment mode.2) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
5	OIS sensor	OIS	OIS sensor output level adjustment	○	-	○	-	○	○	-	-	-	NONE	NONE	<ul style="list-style-type: none">1) Change the flag into the "0", and then proceed to the adjustment mode.2) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
6	Backfocus / GYRO *4	BF	To have the focus tracking curve be appropriate shape and GYRO sensor adjustment	○	○	○	-	○	○ *1	-	○	-	<ul style="list-style-type: none">Collimator RFKZ0422	<ul style="list-style-type: none">1) Set the camera in front of collimator so that the distance between collimator and camera body becomes 5.5 cm as shown in Fig.A. (It is not distance between lens barrel top and collimator.) * Set the camera on a tripod to prevent it from falling down.	<ul style="list-style-type: none">1) Change the flag into the "0", and then proceed to the adjustment mode.2) Set the camera angle so that the star chart is displayed to the center, and press the shutter button fully. (Green ● mark is displayed on LCD.)3) Press the shutter button fully, again. (When a result is OK, it is the completion of an inspection.)
7	Iris	IRS	Iris adjustment	○	-	○	-	○	○	-	-	-	<ul style="list-style-type: none">Light Box RFKZ0523	<ul style="list-style-type: none">1) Set the camera in front of light box so that the distance between diffusing surface of light box and camera body becomes 5.5 cm as shown in Fig.B. (It is not distance between lens barrel top and diffusing surface of light box.)	<ul style="list-style-type: none">1) Change the flag into the "0", and then proceed to the adjustment mode.2) Set the camera angle so that the diffusing surface of light box is displayed on the full of LCD monitor, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)

Adjustment order	Adjustment Item	FLAG	Purpose	Replacing Parts									JIG/TOOLS	SETUP	How to Operate
				MAIN P.C.B./Flash-ROM/VENUS ENGINE	MAIN P.C.B. (When written the Backup data)	Flash-ROM (IP2951)	Charging Control Microcomputer (IC1502)	Lens part (Excluding Image Sensor)	Image Sensor	Microphone	Electronic Level (IC6201)	LVF Unit/EYE Sensor FPC			
8	Shutter	SHTc	Shutter speed adjustment	○	—	○	—	○	○	—	—	—	• Light Box RFKZ0523	1) Set the camera in front of light box so that the distance between diffusing surface of light box and camera body becomes 5.5 cm as shown in Fig.B. (It is not distance between lens barrel top and diffusing surface of light box.)	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Set the camera angle so that the diffusing surface of light box is displayed on the center of LCD monitor, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
		SHD	Do not use "SHD" adjustment flag for this unit. Use "BK2" adjustment flag, instead.												
9	Incident angle dependent WB adjustment	IAD	Incident angle dependent WB adjustment	○	—	○	—	○	○	—	—	—	• Light Box RFKZ0523 • ND0.3 Filter RFKZ0513	1) Set the camera in front of light box so that the distance between diffusing surface of light box and camera body becomes 4.0 cm as shown in Fig.B. (It is not distance between lens barrel top and diffusing surface of light box. When the adjustment starts, the lens automatically moves out.)	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Set the camera angle so that the diffusing surface of light box is displayed on the center of LCD monitor, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
<div>•Set "STEPMODE" to adjust 10: ISO, 11: SEN, 12: WBL, 13: WBM. < How to switch to "STEPMODE" > 1. Perform "10.2.2. Flash-ROM Data Backup" and select "WBADJ→STEPMODE" for ROM_BACKUP. 2. Press [MENU/SET] button, and move to the flag setting screen at "STEPMODE". ⇒ The screen appears on the LCD. (See Fig. on the right.)</div> <div><div>Normal flag setting screen</div><div><div>KEY</div><div>FIRS</div><div>FWM</div><div>COL</div><div>F</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div><div>—</div></div></div>															

Adjustment order	Adjustment Item	FLAG	Purpose	Replacing Parts									JIG/TOOLS	SETUP	How to Operate
				MAIN P.C.B./Flash-ROM/VENUS ENGINE	MAIN P.C.B. (When written the Backup data)	Flash-ROM (IP2951)	Charging Control Microcomputer (IC1502)	Lens part (Excluding Image Sensor)	Image Sensor	Microphone	Electronic Level (IC6201)	LVF Unit/EYE Sensor FPC			
13	White balance (High color temp.)	WBM	Setting up the white in high color temperature	○	-	○	-	○	○	-	-	-	• Light Box RFKZ0523 • ND0.9 Filter VFK1164ND09 • ND0.3 Filter RFKZ0513 • CC-C7.5 Filter RFKZ0511 • CC-Y10 Filter RFKZ0512 • LBB2 Filter RFKZ0520 • LBB8 Filter RFKZ0521	1) Set the camera in front of light box so that the distance between diffusing surface of light box and camera body becomes 5.5 cm as shown in Fig.B/D. (It is not distance between lens barrel top and diffusing surface of light box. When the adjustment starts, the lens automatically moves out.)	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Set the camera angle so that the diffusing surface of light box is displayed on the center of LCD monitor, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
●After adjusting 10: ISO, 11: SEN, 12: WBL and 13: WBM, perform Initial Settings once. Then, cancel "STEPMODE" <How to release of "STEPMODE"> 1. Perform "10.2.2. Flash-ROM Data Backup" and select "STEPMODE → WBADJ" for ROM_BACKUP. Press [MENU/SET] button. Then again, cancel the Initial Settings. Move to the servicing mode, and continue the subsequent adjustment.															
14	Offset gain	SAT	Setting up the offset gain.	○	-	○	-	○	○	-	-	-	• Light Box RFKZ0523 • ND0.6 Filter VFK1164ND06	1) Set the chart to the diffusion surface of the light box. 2) Set the camera in front of light box so that the distance between diffusing surface of light box and camera body becomes 4.0 cm as shown in Fig.B/D. (It is not distance between lens barrel top and diffusing surface of light box. When the adjustment starts, the lens automatically moves out.)	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Fine adjust the position so that the entire screen is white, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
15	Eye sensor	EYE	Inspecting sensitivity of eye sensor	○	-	○	-	-	-	-	-	○	• Gray Card RFKZ0506	1) Set the camera in front of gray card so that the distance between gray card and eye sensor of camera body becomes 4.5 cm as shown in Fig.C.	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Set the camera so that the attachment side of eye sensor and center of the gray card is perpendicular, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
16	MOS sensor Temp. white missing pixels *2	SKI	Registration of the Temp. white missing pixels	○	-	○	-	○	○	-	-	-	NONE	NONE	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
17	MOS sensor FD white missing pixels *2	WKI	Registration of the FD (floating diffusion) white missing pixels	○	-	○	-	○	○	*1	-	-	NONE	NONE	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
18	Color reproduction inspection and Microphone check	COL	Color reproduction inspection and Microphone check	○	-	○	-	○	○	○	-	-	NONE	NONE	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Press the shutter button fully. 3) Utter the voice for about 5 seconds into the microphone, just before pushing a shutter release. * Utter the voice at the above the Hot Shoe. * Comparatively high voice is Ideal. (Standard: about 1KHz) (When a result is OK, it is the completion of an inspection.)
		BKI	Do not use "BKI" adjustment flag for this unit. Use "BK2" adjustment flag, instead. (In case of most DSC models, the adjustment flag for MOS SENSOR Missing Pixels is "BKI". But, in this model, "BK2" the adjustment flag for MOS SENSOR Missing Pixels.)												

Adjustment order	Adjustment Item	FLAG	Purpose	Replacing Parts								JIG/TOOLS	SETUP	How to Operate
				MAIN P.C.B./Flash-ROM/VENUS ENGINE	MAIN P.C.B. (When written the Backup data)	Flash-ROM (IP2951)	Charging Control Microcomputer (IC1502)	Lens part (Excluding Image Sensor)	Image Sensor	Microphone	Electronic Level (IC6201)	LVF Unit/EYE Sensor FPC		
19	Electronic Level	AA2 + AA3	Electronic Level adjustment	○	○	○	-	-	-	-	○	-	<p>• ACC Adjustment Chart</p> <p>1) Download the "ACC Adjustment chart.pdf" and print it to A3 size (or equivalent size) paper. ("ACC Adjustment chart.pdf" is available at "TSN Website". To download, click on "Support Information for AV Products".)</p> <p>2) Hang in the string with weight, then put the printed ACC adjustment chart on the wall or panel horizontally. (Fig. A)</p> <p>3) After putting the adjustment chart horizontally, remove the string with weight.</p> <p>4) Attach the camera to tripod.</p> <p><Setup procedures></p> <p>3-1) Adjust the height of tripod to match the lens of camera and center of the adjustment chart.</p> <p>3-2) Apply the triangle (or equivalent) in center of the chart, then adjust center of the lens of camera on the vertical extension.</p> <p>3-3) Confirm that the chart is displayed on the LCD monitor fully.</p> <p>3-4) Fine adjust the camera angle so that the horizontal bar of chart is displayed horizontally on the LCD monitor and matches the cross guide line of the LCD monitor. (Fig.B)</p>	<p>1) Change the flag "AA2" and "AA3" into the "0", and then press DISPLAY button and proceed to the adjustment mode.</p> <p><Offset adjustment></p> <p>2) Set the camera to the horizontal position. Then set the distance between adjustment chart and camera body becomes 33 cm. And optical axis of the lens and center of the chart crosses right-angled.(Fig. C)</p> <p>3) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)</p> <p><Tilt adjustment></p> <p>4) Rotate the camera to the 90 degrees, so that the grip side down, and press the shutter button.(Fig. D)</p> <p>5) Set the camera to the horizontal position, and press the shutter button.(Fig. E)</p> <p>6) Rotate the camera to the 90 degrees, so that the grip side up, and press the shutter button.(Fig. F)</p> <p>(When a result is OK, it is the completion of an inspection.)</p>
<div> <div> <p>Fig.A: Setting of the adjustment chart horizontally</p> <p>Fix by pins (or equivalent)</p> <p>Install the adjustment chart so that the both marking top and bottom of chart overlaps with the string.</p> <p>Hung string with weight.</p> </div> <div> <p>Fig.B: Setting of the camera to the front of adjustment chart</p> <p>[Top View]</p> <p>Triangle</p> <p>Adjustment chart</p> <p>CAMERA</p> </div> <div> <p>Fig.C</p> <p>Fig.D</p> <p>Fig.E</p> <p>Fig.F</p> </div> </div>														
	WiFi	Do not use "WiFi" adjustment flag for servicing. This adjustment is for factory procedure. (For confirmation of Wi-Fi function, use the reception level of Wi-Fi access point as usual.)												

Adjustment order	Adjustment Item	FLAG	Purpose	Replacing Parts								JIG/TOOLS	SETUP	How to Operate
				MAIN P.C.B./Flash-ROM/VEHUS ENGINE	MAIN P.C.B. (When written the Backup data)	Flash-ROM (IP2951)	Charging Control Microcomputer (IC1502)	Lens part (Excluding Image Sensor)	Image Sensor	Microphone	Electronic Level (IC6201)	LVF Unit/EYE Sensor FPC		
20	Shading Compensation and MOS SENSOR Missing Pixels (Black) *3	BK2	Compensation of Shading and Compensation of MOS SENSOR Missing Pixels (Black)	○	-	○	-	○	○ *1	-	-	-	1) Set the Diffuser in front of the diffusing surface of light box.(Fig.D) (It is not distance between lens barrel top and diffusing surface of diffuser.)	1) Change the flag into the "0", and then proceed to the adjustment mode. (BK2 flag is 2nd pages.) 2) Press the shutter button fully. → Green ● mark is displayed on LCD. 3) Attach the Camera Lens on the Diffuser. And set the camera angle so that the diffusing surface of light box is displayed on the full of LCD monitor, and press the shutter button fully. → The 1st adjustment is executed, and then green ● mark is displayed on LCD. 4) Move away camera body from the light box, and press the shutter button fully. → The lens starts zooming and stops automatically, then green ● mark is displayed on LCD. 5) Attach the Camera Lens on the Diffuser. And set the camera angle so that the diffusing surface of light box is displayed on the full of LCD monitor, and press the shutter button fully. → The 2nd adjustment is executed, and then green ● mark is displayed on LCD. 6) Move away camera body from the light box, and press the shutter button fully. → The lens starts zooming and stops automatically, then green ● mark is displayed on LCD. 7) Attach the Camera Lens on the Diffuser. And set the camera angle so that the diffusing surface of light box is displayed on the full of LCD monitor, and press the shutter button fully. → The 3rd adjustment is executed, then green ● mark is displayed on LCD. 8) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)

Fig.A Distance between Collimator and Camera

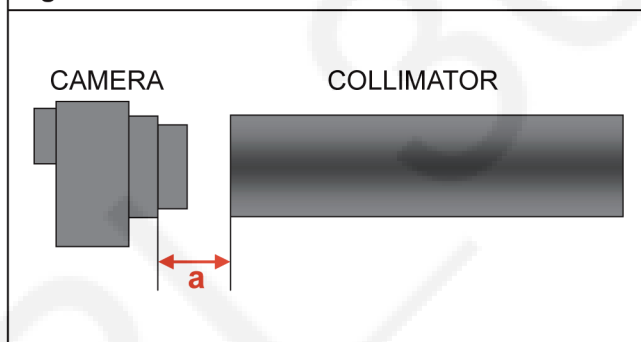


Fig.B Distance between Light Box and Camera

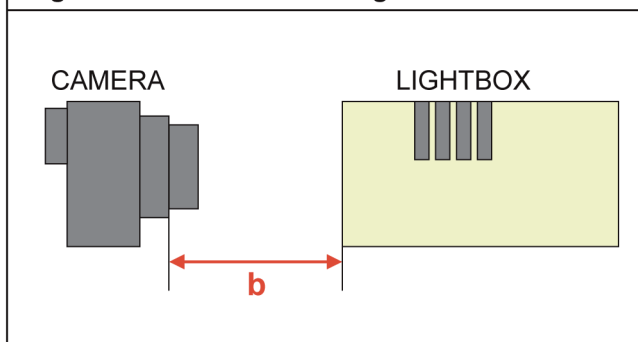


Fig.C Distance between Gray Card and Camera

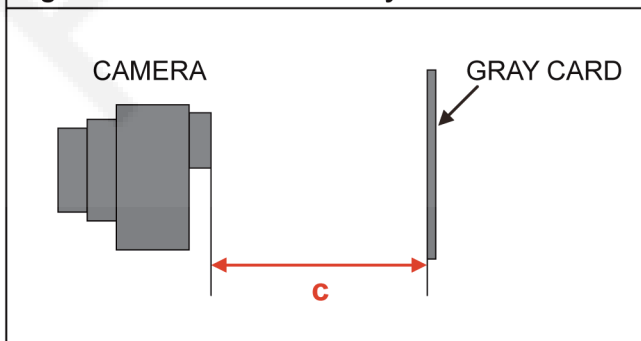
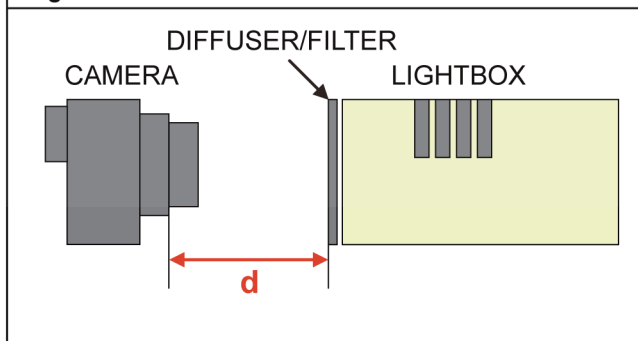


Fig.D Distance between Diffuser/Filter and Camera



- * 1: This adjustment must be performed not only replacing the MOS Unit, but also simply removing the MOS Unit.
- * 2: The pixel that always lights while shaded is called a white wound.
- * 3: The pixel that does not light while complete exposed is called a black wound.
- * 4: If the adjusted data is backed up from the main board before replacement or repair, write the data to the new main board. If parts other than the main board are not replaced, adjustment is not necessary for items other than "Venus Zoom(PZM)/Backfocus/GYRO(BF)".

IMPORTANT NOTICE: (After replacing the Main P.C.B. (Venus Engine is included) or Venus Engine)

After replacing the Main P.C.B. (Venus Engine is included) or Venus Engine, make sure to perform the "Initial Settings" first, then release the "Initial Settings" in order to proceed the electrical adjustment.

NOTE:

- 1) If electrical adjustment or data re-writing is executed before "Initial Settings", suffix code list is never displayed, and it cannot be chosen suitable suffix code.
- 2) Never remove the battery during initial setting in process.

10.4. After Adjustment

10.4.1. Initial Setting

Since the initial setting has been released to execute the built-in adjustment software, it should be set up again before shipping the camera to the customer.

Refer to the procedure described in "3.5.2. Initial Settings" for details.

[IMPORTANT]

1. The initial setting should be done again after completing the alignment. Otherwise, the camera will not work properly.
Therefore as a warning, the camera display a warning symbol " !" on the LCD monitor every time the camera is turned off.
2. Confirm that status of all adjustment flag show "F". Even if one of the adjustment flag shows "0", initial setting programmed is never executed.

11 Maintenance

11.1. Cleaning Lens, Viewfinder and LCD Panel

Do not touch the surface of lens, Viewfinder and LCD Panel with your hand.

When cleaning the lens, use air-blower to blow off the dust.

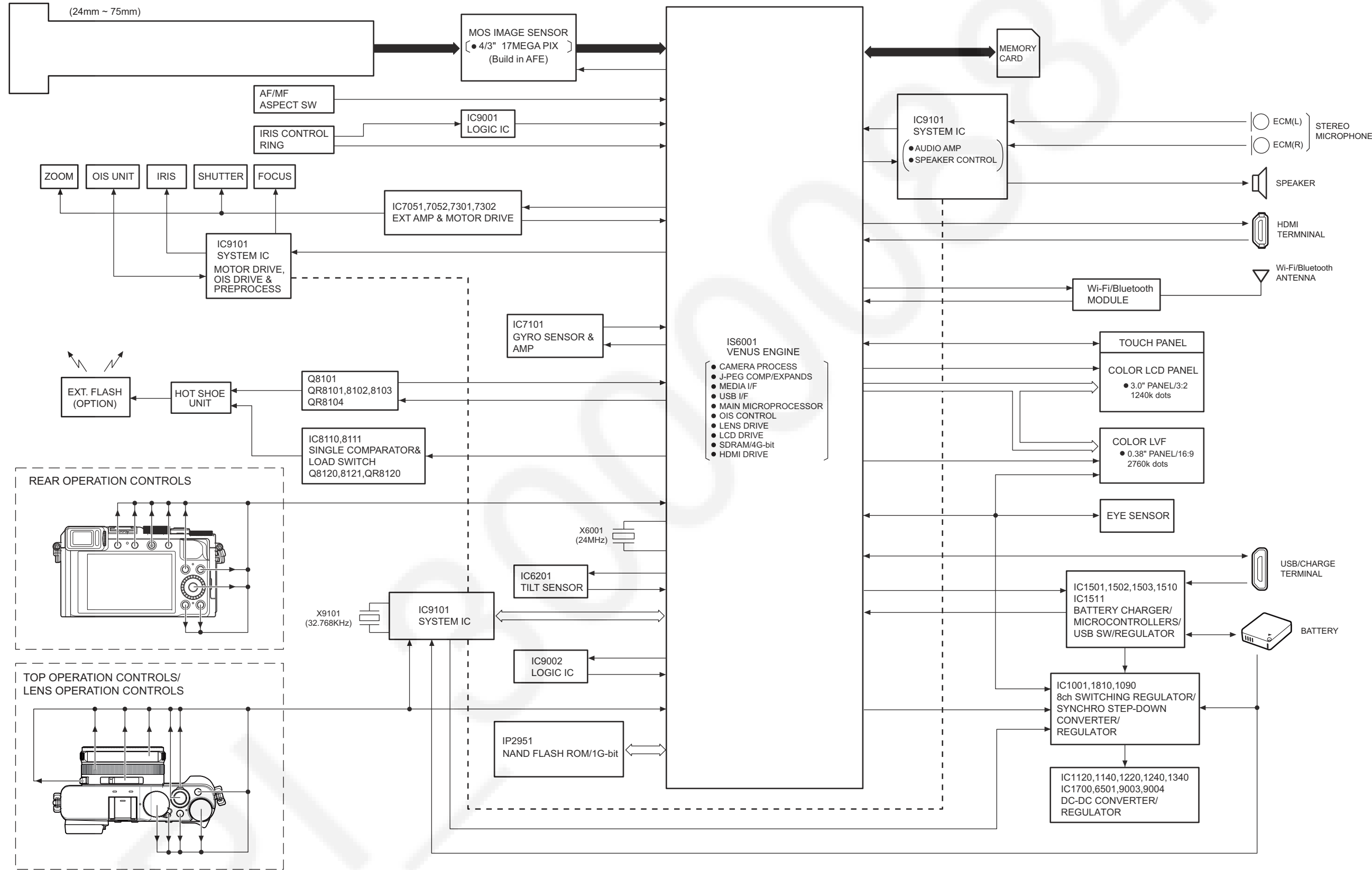
When cleaning the LCD Panel, dampen the lens cleaning paper with lens cleaner, and the gently wipe the its surface.

Note:

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

12 Block Diagram

12.1. Overall Block Diagram



DC-LX100M2 OVERALL BLOCK DIAGRAM

13.1. Interconnection Diagram



14 Schematic Diagram

Please click the radio button for “Diagrams II / Parts List” on the menu bar in XML Service Manual.
If you want to print, please click the icon button for “Print” on the icon bar and select the item.

15 Printed Circuit Board

Please click the radio button for “Diagrams II / Parts List” on the menu bar in XML Service Manual.
If you want to print, please click the icon button for “Print” on the icon bar and select the item.

16 Exploded View and Replacement Parts List

Please click the radio button for “Diagrams II / Parts List” on the menu bar in XML Service Manual.
If you want to print, please click the icon button for “Print” on the icon bar and select the item.