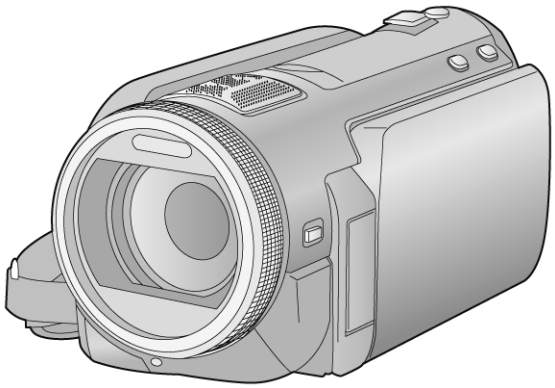
ORDER NO. VM1002001CE
B27

Service Manual

High Definition Video Camera

Model No. **HDC-HS700P**
HDC-HS700PC
HDC-HS700PU
HDC-HS700EB
HDC-HS700EC
HDC-HS700EE
HDC-HS700EF
HDC-HS700EG
HDC-HS700EP
HDC-HS700GC
HDC-HS700GN
HDC-HS700GT



Vol. 1
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®

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1 Safety Precautions

1.1. General Guidelines

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by

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

1.2. Leakage Current Cold Check

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

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

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

Hot-Check Circuit

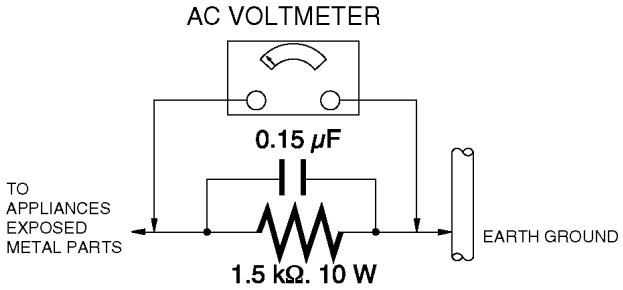


Figure. 1

1.4. How to Discharge the Capacitor on Flash P.C.B.

CAUTION:

1. **Be sure to discharge the capacitor on FLASH P.C.B..**
2. **Be careful of the high voltage circuit on FLASH P.C.B. when servicing.**

[Discharging Procedure]

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

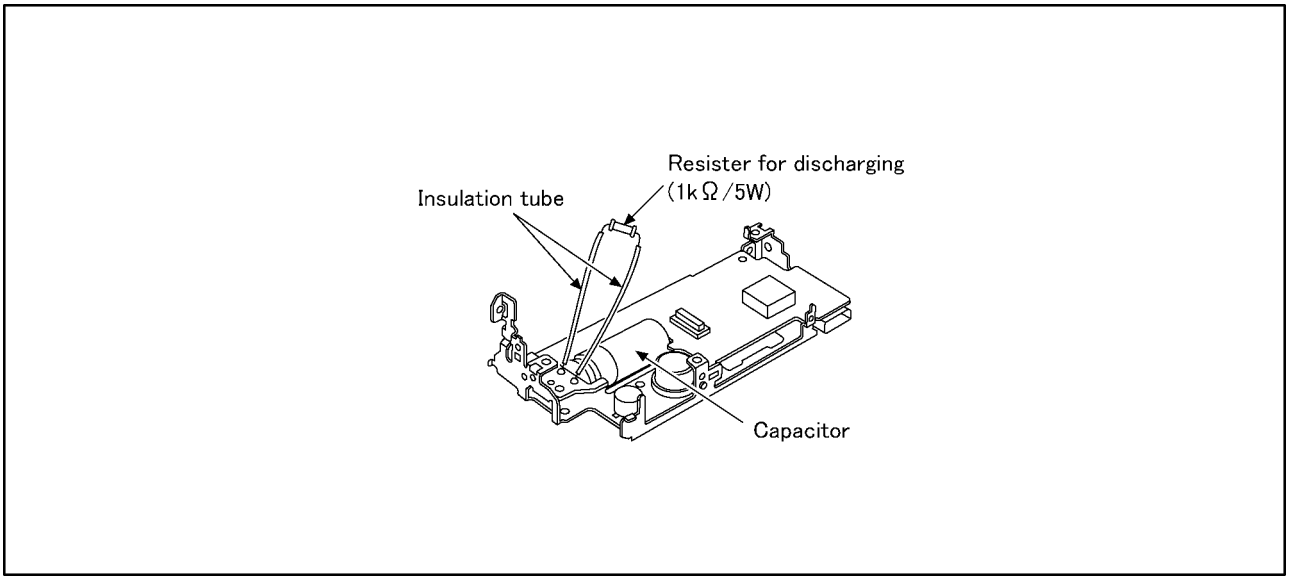


Fig. F1

2 Warning

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

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

ENGLISH

A lithium ion/polymer 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/lithium-polymère. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

2.3. Caution for AC Cord (For EB/GC)

2.3.1. Information for Your Safety

IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

CAUTION

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

FOR YOUR SAFETY

DO NOT REMOVE THE OUTER COVER

To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

2.3.2. Caution for AC Mains Lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362
Check for the ASTA mark or the BSI mark on the body of the fuse.

ASTA mark	BSI mark

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safety.
There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.

2.3.2.1. Important

The wires in this mains lead are coloured in accordance with the following code:

Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

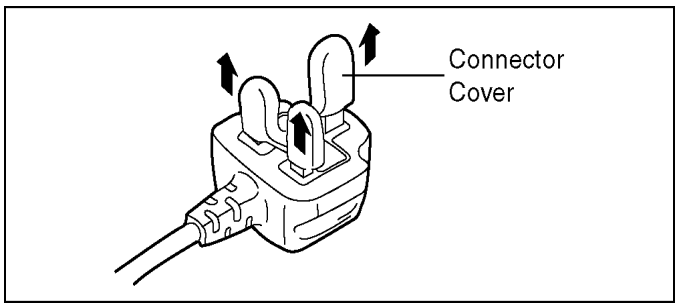
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol.

Earth Symbol	⏚

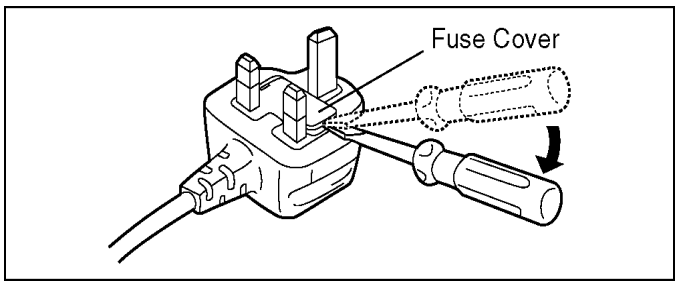
2.3.2.2. Before Use

Remove the Connector Cover as follows.

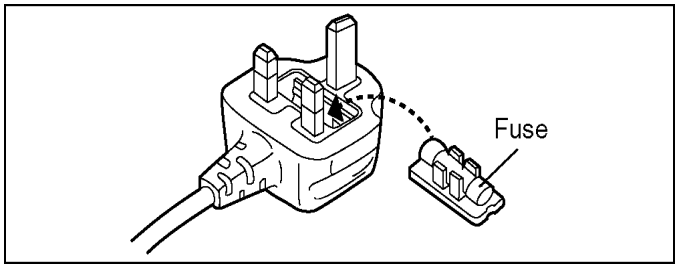


2.3.2.3. How to Replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



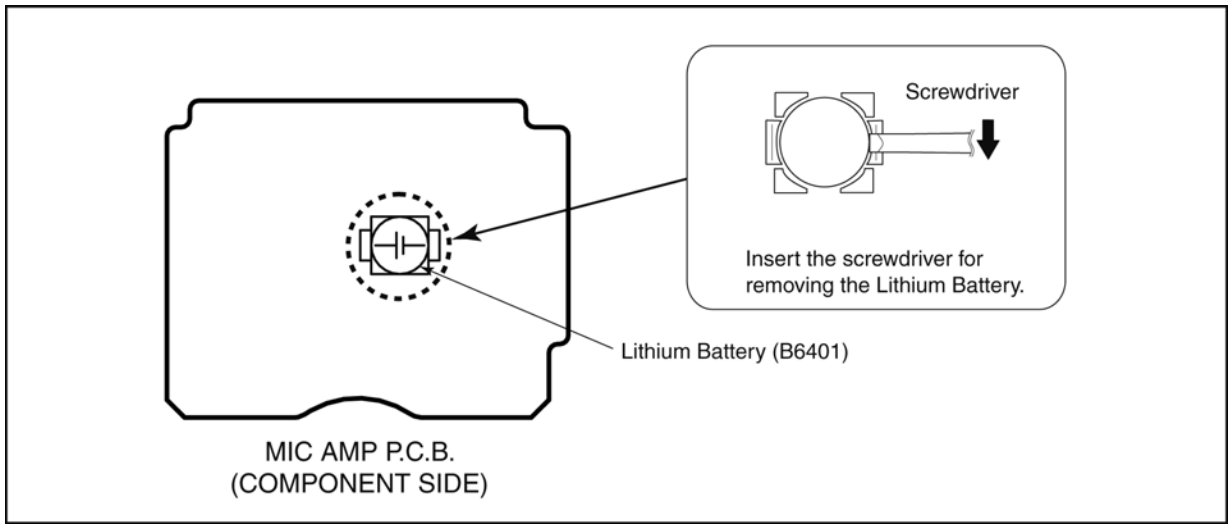
2. Replace the fuse and attach the Fuse cover.



2.4. How to Replace the Lithium Battery

2.4.1. Replacement Procedure

1. Remove the MIC AMP P.C.B.. (Refer to Disassembly Procedures.)
2. Remove the Lithium battery (Ref. No. “B6401” at component side of MIC AMP P.C.B.) and then replace it into new one.



NOTE:

This Lithium battery is a critical component.
(Type No.: ML-614S/ZTK **Manufactured by Energy Company, Panasonic Corporation**)
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 manufacturier.

NOTE:

Above caution is applicable for a battery pack which is for HDC-HS700 series, as well.

1. Battery Pack for this model.
2. Button-type battery for Remote controller (CR2025: Being supplied from Energy Company, Panasonic Corporation)

3 Service Navigation

3.1. Introduction

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

3.2. General Description About Lead Free Solder (PbF)

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

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

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

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

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

Recommended Lead Free Solder (Service Parts Route.)

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

Note

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

3.3. Important Notice 1:(Other than U.S.A. and Canadian Market)

1. The service manual does not contain the following information, because of the impossibility of servicing at component level without concerned equipment/facilities.
   a. Schematic diagram, Block Diagram and P.C.B. layout of MAIN P.C.B..
   b. Parts list for individual parts for MAIN P.C.B..
   When a part replacement is required for repairing MAIN P.C.B., replace as an assembled parts. (Main P.C.B.)
2. The following category is /are recycle module part. Please send it/them to Central Repair Center.
   - MAIN P.C.B. (VEP03H98AN: HDC-HS700P/PC/PU/GT)
   - MAIN P.C.B. (VEP03H98AP: HDC-HS700EB/EC/EF/EG/EP)
   - MAIN P.C.B. (VEP03H98AQ: HDC-HS700EE/GC/GN)

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

There are seven kinds of HDC-HS700.

- a) HDC-HS700P
- b) HDC-HS700PC
- c) HDC-HS700EB/EC/EF/EG/EP/GN
- d) HDC-HS700EE
- e) HDC-HS700GT
- f) HDC-HS700PU/GC

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

3.4.1. Defining methods:

To define the model suffix to be serviced, refer to the rating label which is putted on the Unit.

a) HDC-HS700P

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

b) HDC-HS700PC

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

c) HDC-HS700EB/EC/EF/EG/EP/GN

The nameplate for these models show the following Safety registration mark.

d) HDC-HS700EE

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

e) HDC-HS700GT

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

f) HDC-HS700PU/GC

The nameplate for these models do not show any above Safety registration mark.

NOTE:

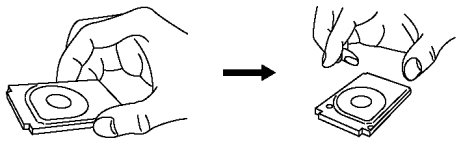
After replacing the MAIN P.C.B., be sure to achieve adjustment.

The adjustment instruction is available at “software download” on the “Support Information from NWBG/VDBG-AVC” web-site in “TSN system”, together with Maintenance software.

3.5. Precautions for Handling HDD

1. Handle HDD very carefully to prevent the static electricity and shock.
2. Set the HDD quickly after taking it out from the package. Make sure to put the HDD on buffer materials, etc.

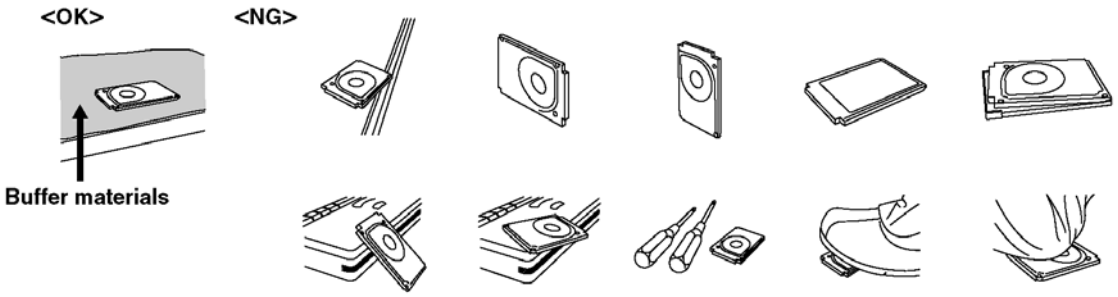
3.5.1. Precautions at incoming process and for opening packages

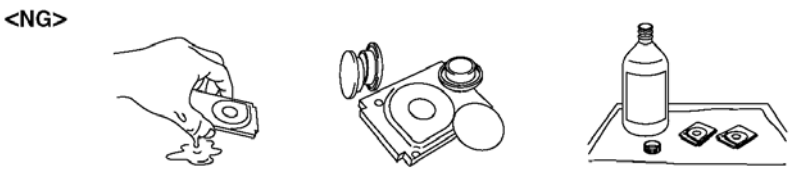
Preventing shock	▪ Do not throw down HDD from luggage carrier or avoid dropping accidentally when unloading. The HDD may not be reliable when impacts of dropping, throwing or rolling occur. ▪ Avoid HDD hitting other equipment or other HDD. Hold HDD firmly but do not apply excessive force when taking out from the package because it is particulars slippery. ▪ When taking out HDD from the package, make sure to put buffer materials such as conductive urethane materials on a work table. Also, a stable place is recommended to avoid impacts or vibration.
Preventing condensation	▪ To prevent dew condensation on HDD due to sharp temperature change, keep it indoors without unpacking, and adjust the package of HDD to room temperature completely before unpacking. ▪ Avoid entrance or window areas where temperature changes easily for storage.
Holding example	▪ Take out HDD holding both sides, not to press the top cover and the center of the device label. <OK>  Don't drop! <NG> 
Preventing static electricity	▪ After opening package, HDD must be handled only by a specified worker in E.S.D.* free environment on a conductive mat. It may cause damage on HDD components due to overvoltage such as electrostatic discharge, etc.

*E.S.D. = Electrostatically Sensitive Devices

3.5.2. Precautions for installing HDD

<table>
<tr><td>Preventing static electricity</td><td>
• HDD may be destroyed by static electricity charged to clothes or human body. Place a conductive mat with removed earthing and use the wrist strap to prevent static charge.

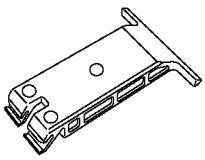

</td></tr>
<tr><td>Preventing shock</td><td>
• Place HDD with its face upward (the device label upward) on the flat and stable surface using buffer materials, etc.
• Do not stand HDD. If it falls down, the excessive impacts may damage HDD.
• Do not store or carry HDD close to other HDD or other components. The components may be distorted due to impacts or weight, which may result in the performance deterioration of the HDD.
• Do not put HDD in the working area. Do not put HDD close to industrial tools in particular or temporarily put it on the floor.
• Be extremely careful not to drop HDD when working on it because even dropping HDD down on the work table with a mat on it may cause damage to HDD.


</td></tr>
<tr><td>No water / solvent</td><td>
• Do not hold HDD with a wet hand or put magnets, solvent, tea, coffee, etc, close to HDD.
This affects internal components and outside of HDD


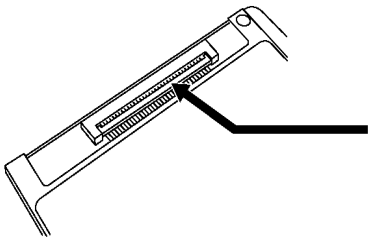
</td></tr>
<tr><td>Connector</td><td>
• The interface connector pin is easily damaged. Push it lightly and firmly to the end along the connector guide.
• For further details, refer to "Precautions for inserting and removing HDD FPC".
</td></tr>
</table>

3.5.3. Precautions for inserting and removing HDD FPC

Make sure to use the tool (LSVQ0112) when locking and unlocking the lock lever of HDD FPC connector.
Do not lock the lock lever without inserting HDD FPC. Otherwise, the connector may be damaged.



(LSVQ0112)

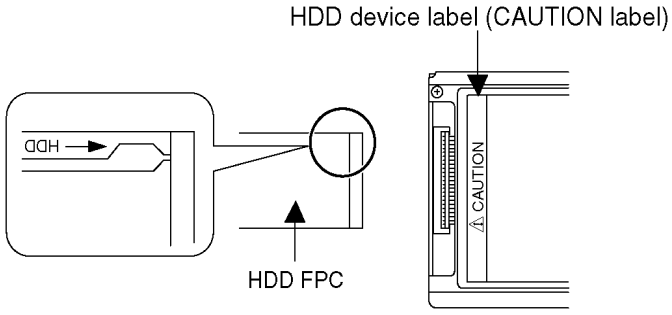


*The lock lever is open on initial condition.

Insert HDD FPC

① Place HDD so that HDD device label (CAUTION label) faces up.
Caution: Do not set the HDD cushion when installing HDD FPC.

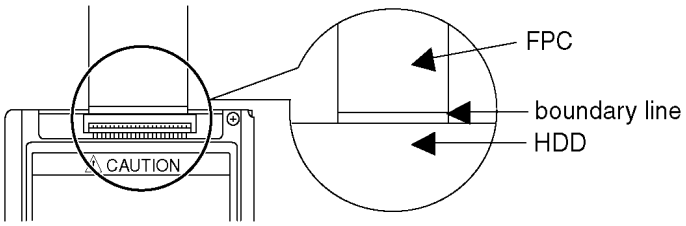
② Insert HDD FPC straight to the connector, and make sure if HDD FPC has been inserted to the end.
Caution: The connector surface of HDD FPC must face down and the letter "HDD" and the arrow must be seen as shown.



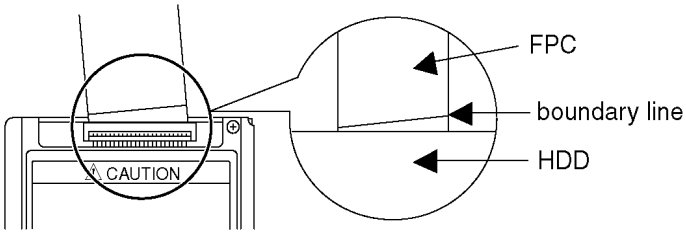
Check HDD FPC

Make sure if HDD FPC has been correctly inserted by confirming the FPC pattern boundary line.

<OK>

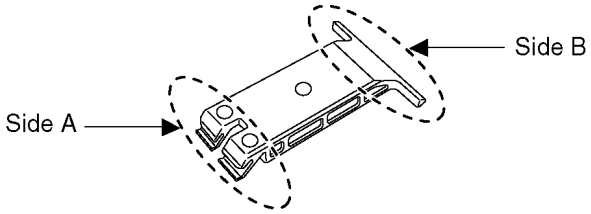


<NG>



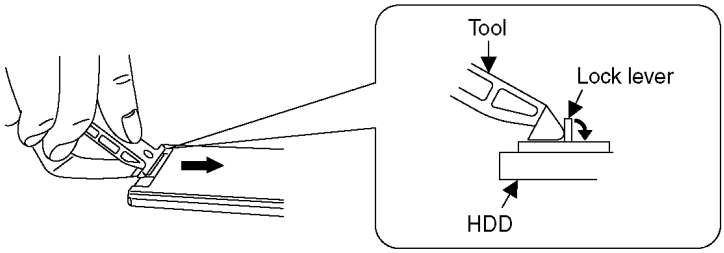
Tool operation

Lock using the tool after inserting HDD FPC.



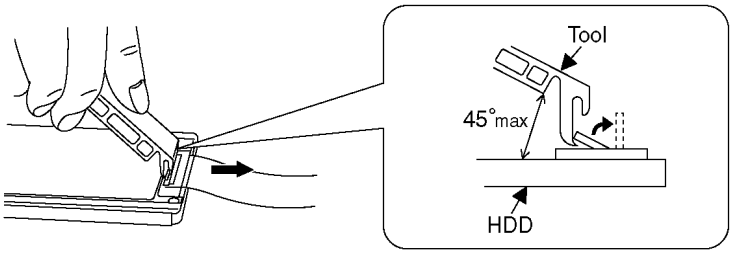
<How to lock>

After inserting HDD FPC, put the tool (Side B) on the connector and slide it slightly to the direction as shown to lock the lock lever.



<How to unlock>

Hook up the tip of the tool (Side A) and unlock the lock lever.
The angle of the tool must be less than 45 degree.



Make sure to use the tool (LSVQ0112) when opening and closing the lock lever.
When install the HDD to main unit, necessary install the HDD FPC and HDD cushion.

3.6. Formatting

[FORMAT MEDIA]

Please be aware that if a medium is formatted, then all the data recorded on the medium will be erased and cannot be restored. Back up important data on a PC, DVD disc etc.

1 Touch [FORMAT MEDIA].

2 Touch [SD CARD] or [HDD].

- When formatting is complete, touch [EXIT] to exit the message screen.
- Perform a physical formatting of the SD card when the SD card is to be disposed/ transferred.
- Perform a physical formatting of the built-in memory/HDD when this unit is to be disposed/ transferred.

- Do not turn this unit off or remove the SD card, while formatting. Do not expose the unit to vibrations or shock.

Use this unit to format media.
Formatting HDD is only available with this unit.
Do not format an SD card using any other equipment such as a PC. The card may not be used on this unit.

When disposing of or giving away this unit, note that:

- Formatting and deletion simply change the file management information and cannot be used to completely erase the data in built-in memory of this unit. The data can be recovered using commercially available software or the like.
- We recommend that you physically format the built-in memory before disposing of or giving away this unit.
- To physically format the HDD, connect the unit via the AC adaptor, select [FORMAT MEDIA] → [HDD] from the menu, and then press and hold the delete button on the screen below for about 3 seconds. When the HDD data deletion screen appears, select [YES], and then follow the on-screen instructions.

- Please look after the data in your built-in memory or HDD carefully. Panasonic will not be held responsible in the unlikely case that private data is divulged.

When disposing of or giving away the SD card, note that:

- Formatting and deletion of this unit or computer only changes the file management information and does not completely delete the data in the SD card.
- It is recommended that the SD card is physically destroyed or the SD card is physically formatted using this unit when disposing of or giving away the SD card.
- To physically format the SD card, connect the unit via the AC adaptor, select [FORMAT MEDIA] → [SD CARD] from the menu, and then press and hold the delete button on the screen below for about 3 seconds. When the SD card data deletion screen appears, select [YES], and then follow the on-screen instructions.

- The customer is responsible for the management of the data in the SD card.

4 Specifications

High Definition Video Camera
Information for your safety

Power source:	DC 9.3 V (When using AC adaptor) DC 7.2 V (When using battery)
Power consumption:	Recording: 6.3 W

Signal system	1080/60p, 1080/60i (NTSC areas) 1080/50p, 1080/50i (PAL areas)
Recording format	1080/60p: Original format (NTSC areas) 1080/50p: Original format (PAL areas) HA/HG/HX/HE: AVCHD format compliant
Image sensor	1/4.1″ 3MOS image sensor Total: 3050 K×3 Effective pixels: Motion picture: 2530 K×3 (16:9) Still picture: 2320 K×3 (4:3), 2630 K×3 (3:2), 2530 K×3 (16:9)
Lens	Auto Iris, F1.5 to F2.8 Focal length: 3.45 mm to 41.4 mm Macro (Full range AF) 35 mm equivalent: Motion picture: 35 mm to 420 mm (16:9) Still picture: 38.8 mm to 466 mm (4:3) 35.7 mm to 428 mm (3:2) 35 mm to 420 mm (16:9) Minimum focus distance: Normal: Approx. 4 cm (1.6″) (Wide)/Approx. 1.2 m (3.9 feet) (Tele) Tele macro: Approx. 70 cm (28″) (Tele) Intelligent auto Macro: Approx. 1 cm (0.4″) (Wide)/Approx. 70 cm (28″) (Tele)
Filter diameter	46 mm
Zoom	12× Optical Zoom, 18× i.Zoom, 30×/700× Digital Zoom

Monitor	3″ wide LCD monitor (Approx. 230 K dots)
Viewfinder	0.27″ wide EVF (Approx. 123 K dots)
Microphone	5.1 channel surround microphone (with a zoom microphone/ focus microphone function)
Speaker	1 round speaker, dynamic type
White balance adjustment	Auto tracking white balance system
Standard illumination	1,400 lx
Minimum required illumination	Approx. 1.6 lx (1/30 in Low light mode) (NTSC areas) Approx. 1 lx with the Color night rec function (NTSC areas) Approx. 1.6 lx (1/25 in Low light mode) (PAL areas) Approx. 1 lx with the colour night view function (PAL areas)
AV multi connector video output level	Component video out put level: Y: 1.0 Vp-p, 75 Ω Pb: 0.7 Vp-p, 75 Ω Pr: 0.7 Vp-p, 75 Ω AV video output level: 1.0 Vp-p, 75 Ω, NTSC system (NTSC areas) 1.0 Vp-p, 75 Ω, PAL system (PAL areas)
HDMI mini connector video output level	HDMI™ (x.v.Color™) 1080p/1080i/480p (NTSC areas) HDMI™ (V.1.3a with x.v.Colour™) 1080p/1080i/576p (PAL areas)
AV multi connector audio output level (Line)	316 mV, 600 Ω, 2 ch
Headphone output	77 mV, 32 Ω (Stereo mini jack)
HDMI mini connector audio output level	Dolby Digital/Linear PCM
MIC input	−70 dBV (Mic sensitivity −50 dB equivalent, 0 dB=1 V/Pa, 1 kHz) (Stereo mini jack)
USB / **SD card**	Read only (No copyright protection support) (EB/EC/EF/EG/EP areas) Read/Write (No copyright protection support) (Other areas)
HDD	Read only
	Hi-Speed USB (USB 2.0), USB terminal Type Mini AB USB host function (for DVD burner)
Flash	Available range: Approx. 1.0 m to 2.5 m (3.3 feet to 8.2 feet)

Dimensions	65 mm (W)×69 mm (H)×138 mm (D) [2.55 ″ (W)×2.71 ″ (H)×5.43 ″ (D)] (excluding projecting parts)
Mass (Weight)	Approx. 450 g (Approx. 0.99 lbs.) [without battery (supplied)]
Mass (Weight) in operation	Approx. 510 g (Approx. 1.12 lbs.) [with battery (supplied)]
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Operating humidity	10% to 80%
Battery operation time	Refer to “Charging and recording time”

Motion pictures

Recording media	**SD card**	SD Memory Card (FAT12 and FAT16 system compliant) SDHC Memory Card (FAT32 system compliant) SDXC Memory Card (exFAT system compliant) Refer to “Cards that you can use with this unit”
	HDD	240 GB
Compression		MPEG-4 AVC/H.264
Recording mode and transfer rate		1080/60p: Approx. 28 Mbps (VBR) (NTSC areas) 1080/50p: Approx. 28 Mbps (VBR) (PAL areas) HA: Approx. 17 Mbps (VBR) HG: Approx. 13 Mbps (VBR) HX: Approx. 9 Mbps (VBR) HE: Approx. 5 Mbps (VBR) Refer to “Recording modes/approximate recordable time”
Picture size		1080/60p: 1920×1080/60p (NTSC areas) HA/HG/HX/HE: 1920×1080/60i (NTSC areas) 1080/50p: 1920×1080/50p (PAL areas) HA/HG/HX/HE: 1920×1080/50i (PAL areas)
Audio compression		Dolby Digital/5.1 ch (built-in microphone), 2 ch (built-in microphone/external microphone)

Still pictures

Recording media	**SD card**	SD Memory Card (FAT12 and FAT16 system compliant) SDHC Memory Card (FAT32 system compliant) SDXC Memory Card (exFAT system compliant) Refer to “Cards that you can use with this unit”
	HDD	240 GB
Compression		JPEG (Design rule for Camera File system, based on Exif 2.2 standard), DPOF corresponding
Picture size		Picture aspect [4:3]: 4032×3024/3200×2400/2560×1920/640×480 Picture aspect [3:2]: 4608×3072/3600×2400/2880×1920 Picture aspect [16:9]: 4864×2736/3840×2160/3072×1728/1920×1080 Refer to “Number of recordable pictures”

AC adaptor
Information for your safety

Power source:	AC 110 V to 240 V, 50/60 Hz
Power consumption:	19 W
DC output:	DC 9.3 V, 1.2 A (Unit operation) DC 8.4 V, 0.65 A (Battery charging)

Dimensions	92 mm (W)×33 mm (H)×61 mm (D) [3.6 ″ (W)×1.3 ″ (H)×2.4 ″ (D)]
Mass (Weight)	Approx. 115 g (Approx. 0.25 lbs.)

Specifications may change without prior notice.

Charging and recording time

■ **Charging/Recording time**

● Temperature: 25 °C (77 °F)/humidity: 60%

NTSC areas					
Battery model number [Voltage/Capacity (minimum)]	Charging time	Recording destination	Recording mode	Maximum continuous recordable time	Actual recordable time
Supplied battery/ VW-VBG130 (optional) [7.2 V/1250 mAh]	2 h 35 min	HDD	1080/60p	1 h 25 min	55 min
			HA, HG, HX, HE	1 h 30 min	
		SD	1080/60p, HA, HG	1 h 30 min	55 min
			HX, HE	1 h 35 min	
VW-VBG260 (optional) [7.2 V/2500 mAh]	4 h 40 min	HDD	1080/60p	2 h 50 min	1 h 45 min
			HA, HG	2 h 55 min	
			HX, HE	2 h 55 min	1 h 50 min
		SD	1080/60p	2 h 50 min	1 h 45 min
			HA, HG, HX, HE	3 h	1 h 50 min
VW-VBG6 (optional)* [7.2 V/5400 mAh]	9 h 25 min	HDD	1080/60p	7 h	4 h 20 min
			HA, HG, HX	7 h 15 min	4 h 30 min
			HE	7 h 20 min	
		SD	1080/60p	7 h 10 min	4 h 25 min
			HA, HG	7 h 25 min	4 h 35 min
			HX	7 h 30 min	
			HE	7 h 30 min	4 h 40 min

PAL areas					
Battery model number [Voltage/ Capacity (minimum)]	Charging time	Recording destination	Recording mode	Maximum continuously recordable time	Actual recordable time
Supplied battery/ VW-VBG130 (optional) [7.2 V/1250 mAh]	2 h 35 min	HDD	1080/50p	1 h 30 min	55 min
			HA, HG, HX, HE	1 h 35 min	
		SD	1080/50p	1 h 30 min	55 min
			HA, HG, HX, HE	1 h 35 min	1 h
VW-VBG260 (optional) [7.2 V/2500 mAh]	4 h 40 min	HDD	1080/50p	2 h 55 min	1 h 45 min
			HA, HG, HX, HE	3 h	1 h 50 min
		SD	1080/50p	3 h	1 h 50 min
			HA, HG, HX, HE	3 h 5 min	1 h 55 min
VW-VBG6 (optional)* [7.2 V/5400 mAh]	9 h 25 min	HDD	1080/50p	7 h 15 min	4 h 30 min
			HA, HG, HX	7 h 30 min	4 h 40 min
			HE	7 h 35 min	
		SD	1080/50p	7 h 25 min	4 h 35 min
			HA	7 h 40 min	4 h 45 min
			HG, HX	7 h 45 min	
			HE		4 h 50 min

* The battery pack holder kit VW-VH04 (optional) is necessary.

● These times are approximations.

● **The indicated charging time is for when the battery has been discharged completely. Charging time and recordable time vary depending on the usage conditions such as high/low temperature.**

● The actual recordable time refers to the recordable time when repeatedly starting/stopping recording, turning the unit on/off, moving the zoom lever etc.

● The batteries heat up after use or charging. This is not a malfunction.

Cards that you can use with this unit

Use SD cards conforming to Class 4 or higher of the SD Speed Class Rating* for motion picture recording.

Card type	Capacity	Motion picture recording	Still picture recording
SD Memory Card	8 MB/16 MB	Cannot be used.	Can be used.
	32 MB/64 MB/ 128 MB/256 MB	Cannot be guaranteed in operation. The recording may suddenly stop during motion picture recording depending on the SD card you use.	
	512 MB/1 GB/ 2 GB	Can be used.	
SDHC Memory Card	4 GB/6 GB/8 GB/ 12 GB/16 GB/ 24 GB/32 GB		
SDXC Memory Card	48 GB/64 GB		

* The SD Speed Class Rating is the speed standard for successive writes.

Recording modes/approximate recordable time

● SD cards are only mentioned with their main memory size.

		Ⓐ				Ⓑ
Recording mode (NTSC areas)		1080/60p	HA	HG	HX	HE
(PAL areas)		1080/50p	HA	HG	HX	HE
Picture size		1920×1080	1920×1080	1920×1080	1920×1080	1920×1080
SD card	4 GB	19 min	30 min	40 min	1 h	1 h 30 min
	8 GB	40 min	1 h	1 h 20 min	2 h	3 h 20 min
	16 GB	1 h 20 min	2 h	2 h 40 min	4 h 10 min	6 h 40 min
	32 GB	2 h 40 min	4 h 10 min	5 h 30 min	8 h 20 min	13 h 40 min
	48 GB	4 h	6 h 20 min	8 h 10 min	12 h 30 min	20 h 20 min
	64 GB	5 h 20 min	8 h 30 min	11 h	16 h 50 min	27 h 30 min
HDD	240 GB	20 h	31 h 40 min	41 h	62 h 30 min	102 h

Ⓐ Favors image quality

Ⓑ Favors recording time

● The default setting is HG Mode.

● Maximum continuously recordable time for one scene: 12 hours

● The recording is paused once when the recording time for one scene exceeds 12 hours, and the recording will automatically resume after a few seconds.

● If a recording with a lot of action is recorded, the recording time is reduced.

● The recordable time may be reduced if recording of short scene is repeated.

● Use time in the row of 4 GB in above table as a guideline for the time that can be copied onto one DVD disc (4.7 GB).

Number of recordable pictures

● SD cards are only mentioned with their main memory size.

(In Still Picture Recording Mode)

Aspect ratio		4:3							
Picture size		12M 4032×3024		7.7M 3200×2400		4.9M 2560×1920		0.3M 640×480	
Picture quality									
SD card	512 MB	70	110	110	180	180	290	3600	6100
	1 GB	140	220	220	360	360	580	7400	12000
	2 GB	300	450	450	740	740	1200	15000	25000
	4 GB	610	940	940	1500	1500	2400	30000	50000
	8 GB	1200	1900	1900	3000	3000	4800	60500	102000
	16 GB	2500	3900	3900	6200	6200	9700	122000	205000
	24 GB	3600	5800	5800	9100	9100	14000	179000	301000
	32 GB	5000	7900	7900	12500	12500	19500	246000	414000
	48 GB	7200	11000	11000	18000	18000	28000	364000	613000
	64 GB	10000	15800	15800	25000	25000	39000	492000	829000
HDD	240 GB	37000	58000	58000	93000	93000	146000	899100	899100

Aspect ratio		16:9					
Picture size		13.3M 4864×2736		8.3M 3840×2160		5.9M 3072×1728	
Picture quality							
SD card	512 MB	65	100	100	160	160	270
	1 GB	130	200	200	320	320	540
	2 GB	270	400	400	700	700	1100
	4 GB	550	850	850	1420	1420	2200
	8 GB	1100	1700	1700	2800	2800	4500
	16 GB	2200	3400	3400	5600	5600	9000
	24 GB	3300	5100	5100	8400	8400	13000
	32 GB	4500	7000	7000	11500	11500	18200
	48 GB	6600	10000	10000	17000	17000	26000
	64 GB	9000	14000	14000	23000	23000	36400
HDD	240 GB	34000	54000	54000	86000	86000	136000

Aspect ratio		3:2					
Picture size		14.2M 4608×3072		8.6M 3600×2400		5.5M 2880×1920	
Picture quality							
SD card	512 MB	60	90	100	160	160	250
	1 GB	120	180	200	320	320	500
	2 GB	240	390	400	650	650	1000
	4 GB	500	800	850	1300	1300	2000
	8 GB	1000	1600	1700	2700	2700	4200
	16 GB	2100	3300	3400	5500	5500	8500
	24 GB	3100	4900	5100	8100	8100	12700
	32 GB	4200	6700	7000	11000	11000	17500
	48 GB	6200	9800	10000	16000	16000	25000
	64 GB	8400	13400	14000	22000	22000	35000
HDD	240 GB	32000	50000	50000	83000	83000	130000

(In Motion Picture Recording Mode)

Aspect ratio		16:9					
Picture size		13.3M 4864×2736		8.3M 3840×2160		2.1M 1920×1080	
Picture quality							
SD card	512 MB	65	100	100	160	440	690
	1 GB	130	200	200	320	900	1400
	2 GB	270	400	400	700	1800	2800
	4 GB	550	850	850	1420	3600	5600
	8 GB	1100	1700	1700	2800	7300	11000
	16 GB	2200	3400	3400	5600	14000	23000
	24 GB	3300	5100	5100	8400	21000	34000
	32 GB	4500	7000	7000	11500	29000	46000
	48 GB	6600	10000	10000	17000	44000	69000
	64 GB	9000	14000	14000	23000	59000	93000
HDD	240 GB	34000	54000	54000	86000	221000	348000

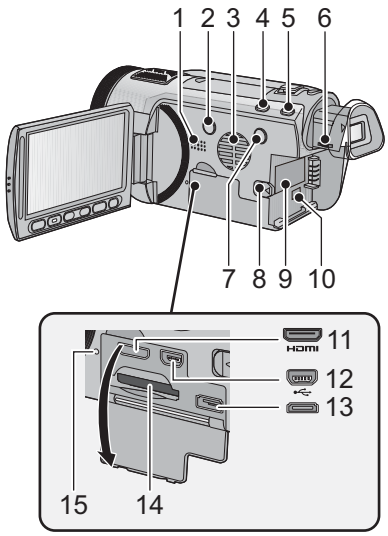
● The numbers shown in the table are approximations.

● **The number of recordable pictures depends on whether and are used together and on the subject being recorded.**

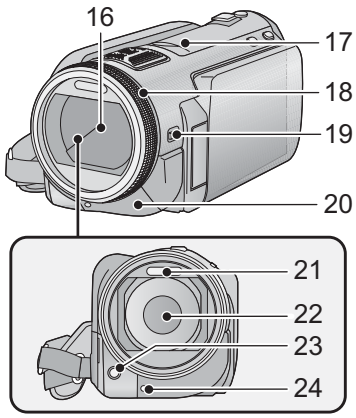
● Maximum number of recordable pictures that can be displayed is 99999.
If the number of recordable pictures exceeds 99999, the number will not change when the picture is taken until the number of recordable pictures gets less than 99999.

● The memory capacity indicated on the label of an SD card is the total of the capacity for copyright protection and management and the capacity which can be used on the unit, a PC etc.

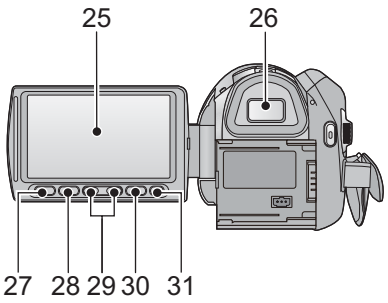
5 Location of Controls and Components



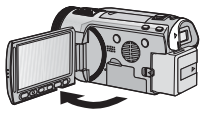
1 Speaker
2 Power button [⏻/I]
3 Inlet (cooling fan)
4 Intelligent auto/Manual button [iA/MANUAL]
5 Optical image stabilizer button [((✋))/O.I.S.]
6 Eyepiece corrector dial
7 1080/60p button [1080/60p] (NTSC areas)
1080/50p button [1080/50p] (PAL areas)
8 Battery release lever [BATT]
9 Battery holder
10 DC input terminal [DC IN]
● Always use the supplied AC adaptor or a genuine Panasonic AC adaptor.
11 HDMI mini connector [HDMI]
12 USB terminal [⇐]
13 AV multi connector
● Use the AV multi cable (only the supplied cable).
14 Card slot
15 Access lamp [ACCESS]



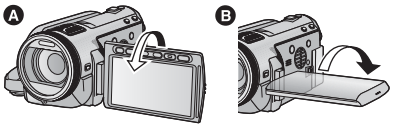
16 Lens cover
● The lens cover opens in Motion Picture Recording Mode or Still Picture Recording Mode.
17 Accessory shoe
18 Multi manual ring
19 Camera function button [CAMERA FUNCTION]
20 Remote control sensor
21 Built-in flash
22 Lens (LEICA DICOMAR)
23 AF assist lamp
24 Recording lamp



25 LCD monitor (Touch screen)



● It can open up to 90°.



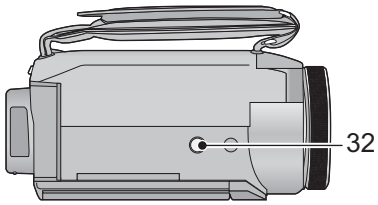
● It can rotate up to 180° Ⓐ towards the lens or 90° Ⓑ towards the viewfinder.

Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the LCD monitor screen. However, this is not a malfunction and does not affect the recorded picture.

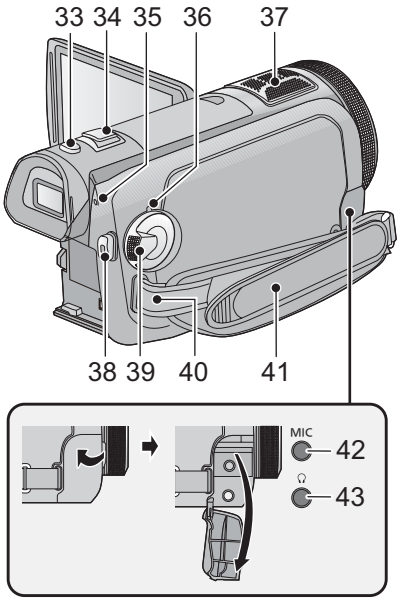
26 Viewfinder

Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the viewfinder screen. However, this is not a malfunction and does not affect the recorded picture.

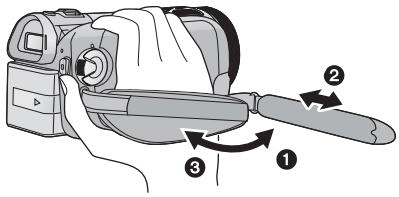
27 Quick menu button [Q.MENU]
28 Sub recording start/stop button
● This button functions in the same manner as the recording start/stop button.
29 Adjust zoom buttons
30 Menu button [MENU]
31 Delete button [🗑]



32 Tripod receptacle



33 Photoshot button [ ]
34 Zoom lever [W/T] (In Motion Picture Recording Mode or Still Picture Recording Mode)
Thumbnail display switch [/]/ Volume lever [−VOL+] (In Playback Mode)
35 HDD access lamp [ACCESS HDD]
36 Status indicator
37 Internal microphones
38 Recording start/stop button
39 Mode dial
40 Shoulder strap fixture
41 Grip belt
Adjust the length of the grip belt so that it fits your hand.



❶ Flip the belt.
❷ Adjust the length.
❸ Replace the belt.

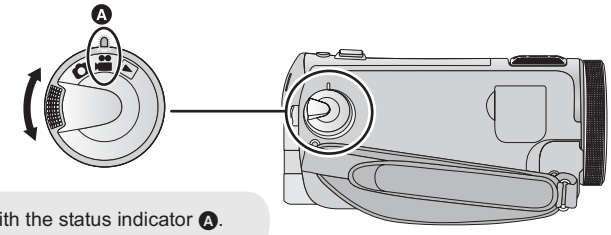
42 Microphone terminal [MIC]
- A compatible plug-in powered microphone can be used as an external microphone.
- Audio will be stereo (2 ch) with the external microphone input.
- When the unit is connected with the AC adaptor, sometimes noise may be heard depending on the microphone type. In this case, please switch to the battery for the power supply and the noise will stop.

43 Headphone terminal [ ]

Selecting a mode

Change the mode to recording or playback.

Operate the mode dial to change the mode to , or .



● Align with the status indicator A.

	Motion Picture Recording Mode
	Still Picture Recording Mode
	Playback Mode

How to use the touch screen

You can operate by directly touching the LCD monitor (touch screen) with your finger. It is easier to use the stylus pen (supplied) for detailed operation or if it is hard to operate with your fingers.

■ Touch

Touch and release the touch screen to select icon or picture.

- Touch the center of the icon.
- Touching the touch screen will not operate while you are touching another part of the touch screen.

■ About the operation icons

/ / / :

These icons are used to switch the menu and thumbnail display page, for item selection and setting etc.

:

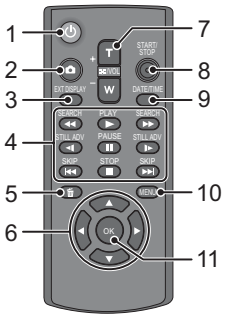
Touch to return to the previous screen such as when setting menus.

- Do not touch on the LCD monitor with hard pointed tips, such as ball point pens.
- Perform the touch screen calibration when the touch is not recognized or wrong location is recognized.

Using with the remote control

Select the menu.

(MENU) : [SETUP] → [REMOTE CONTROL] → [ON]



1 Power on/off button [ ]

Power can be turned on/off when the LCD monitor is opened or the viewfinder is extended.

- Power cannot be turned on by the power on/off button when 36 hours have passed after the power is turned off. Press the power button on the unit and turn the power back on.
- Power cannot be turned off when it is connected to the PC or the DVD burner.

2 Photoshot button [ ]*

3 On-screen display button [EXT DISPLAY]

4 Playback operation buttons

These buttons function in the same manner as the corresponding playback operation icon being displayed on screen.
[Excluding skip playback.]

5 Delete button [ ]*

6 Direction buttons [▲,▼,◄,►]

7 Zoom/volume/thumbnail display switch buttons [T, W, /VOL]*

8 Recording start/stop button [START/STOP]*

9 Date/time button [DATE/TIME]

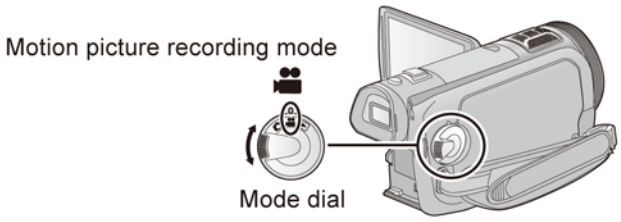
10 Menu button [MENU]*

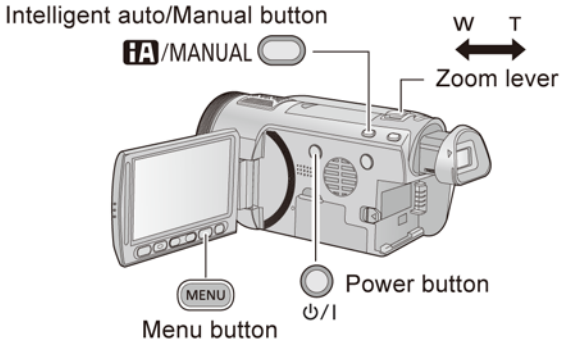
11 OK button [OK]

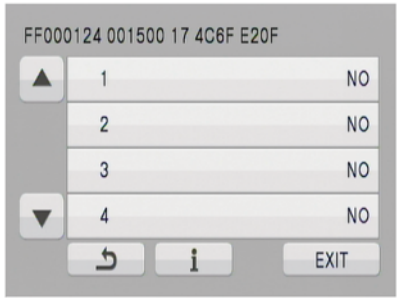
* means that these buttons function in the same manner as the corresponding buttons on the unit.

6 Service Mode

1. **Indication method of the service menu**
   Set the mode dial “Motion Picture Recording” mode.
2. Turn the power on, and then while keep pressing the "Zoom lever" to W side, "Intelligent auto/Manual" button and "Menu" button for more than 3 seconds until the top screen of the Service Mode Menu being displayed.







Top Screen of the service mode menu

Service mode menu

Screen display	Contents	Function
1	Factory settings	Function to throw a product up in a factory shipment state (When recorded data in HDD, “error display” is done)
2	Drive information display	Fall detection frequency of HDD, Frequency that exceeds highest/lowest operation guarantee temperature and serial number display
3	HDD self check execution	Function to check self as for the state of HDD
4	Lock search history indication	Display an error cord for three histories saved in EEPROM
5	Power ON self check result display	Power ON self check (function to diagnose correct function of the device and interface between devices) result display
6	HDD hardware test	Function to confirm state of HDD hardware

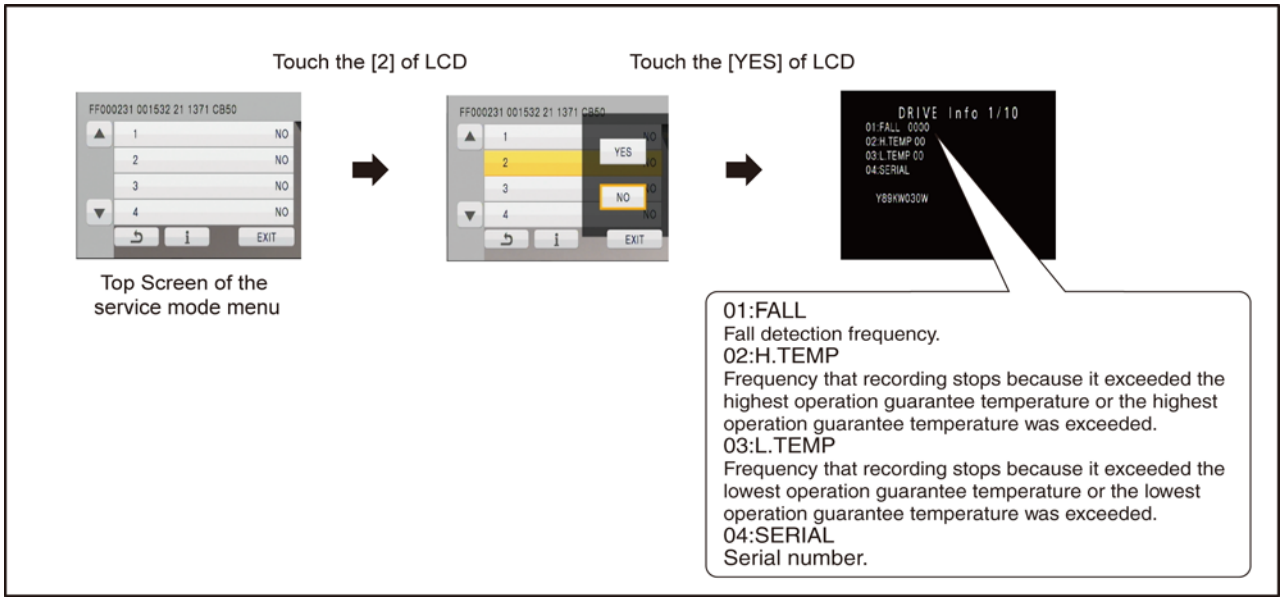
NOTE:
Do not using service mode except above table of Service Menu.

3. End method of the top screen of the service menu
   Push the menu button to end the service mode, and then POWER OFF.

6.1. Drive Information Display

Touch the [2] of LCD, select Drive Information display.

Operation specifications



Indication contents

- Drive Information display

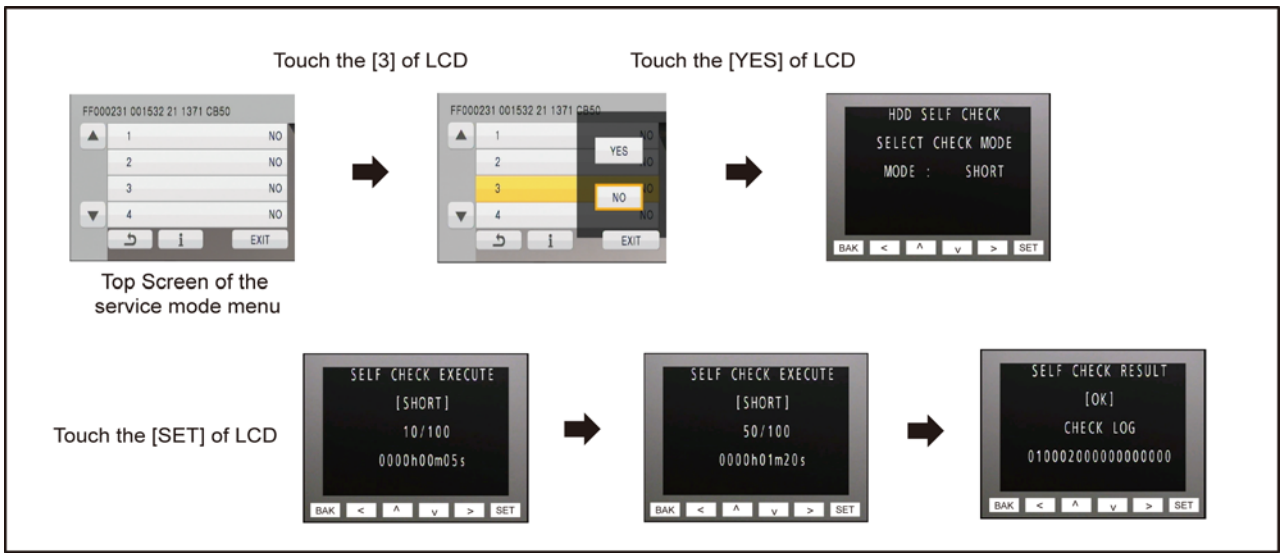
  Display the fall detection frequency of HDD, Frequency that exceeds highest/lowest operation guarantee temperature and serial number.

  Push the menu button to end the service mode, and then POWER OFF.

6.2. HDD Self Check Execution

Touch the [3] of LCD, select HDD self check execution.

Operation specifications



Indication contents

- HDD self check execution

  Display the HDD self check result information.

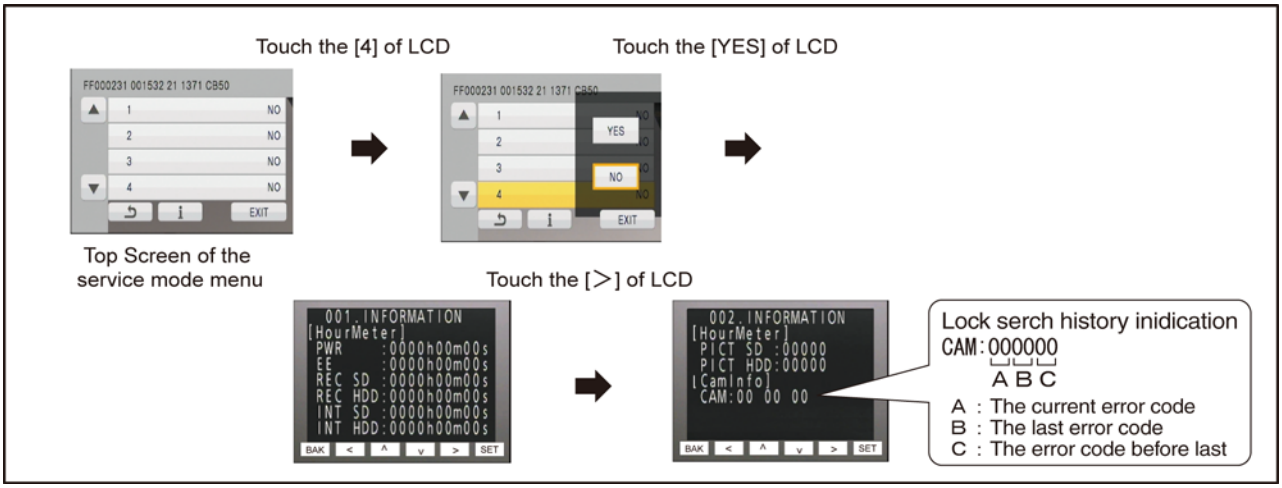
  Displays other than “OK” are abnormalities of HDD.

  Push the menu button to end the service mode, and then POWER OFF.

6.3. Lock Search History Indication

Touch the [4] of LCD, select Lock search history indication.

Operation specifications



Indication contents

- Lock search history indication
  Display the camera system error cord for three histories saved in EEPROM.
- The error cord contents which are displayed

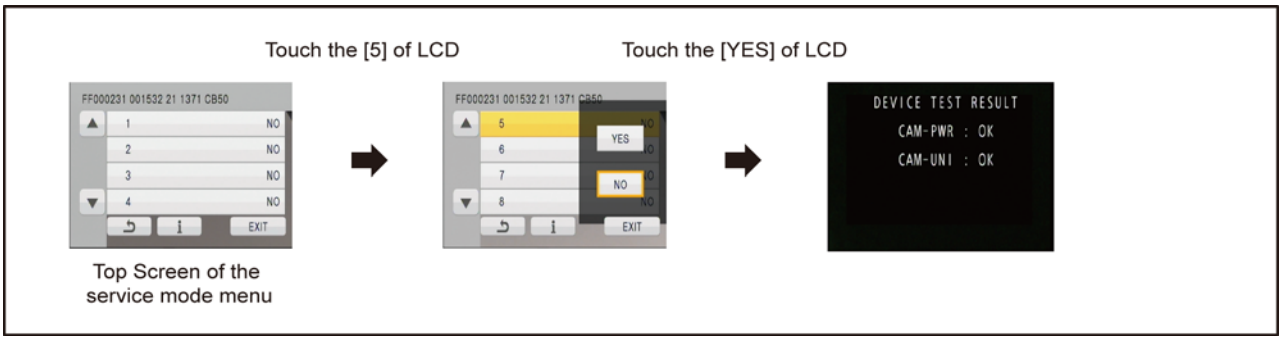
Error code	Function
51	Focus control is abnormal
52	Zoom control is abnormal
53	OIS lens control is abnormal
71	Lens cover open/close is abnormal
72	Cooling fan is abnormal
73	High temperature is abnormal
33	Communication between camera to ARM is abnormal

Lock search history indication is finished by POWER OFF.

6.4. Power ON Self Check Result Display

Touch the [5] of LCD, select Power ON self check result display.

Operation specifications



Indication contents

- Power ON self check result display
  Function to diagnose correct function of the device and interface between devices result display.

  Display the following commnucation test result.
  - CAM-PWR : Commnucation test between IC2006 to IC301
  - CAM-UNI : Commnucation test between IC3401 to IC301

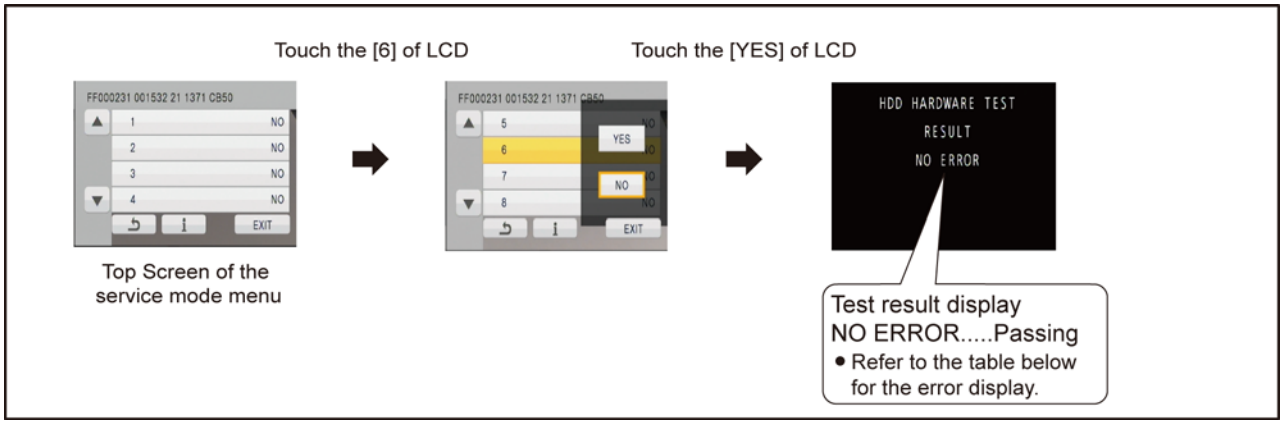
  Display other than “OK” are abnomalities of each lines.

Cutting of battery connection or AC power supply connection to end the service mode.

6.5. HDD Hardware Test

Touch the [6] of LCD, select HDD hardware test.

Operation specifications



Indication contents

- HDD hardware test
  Display the HDD hardware test result information.
- The error cord contents which are displayed

Error code	Function
NO ERROR	It is normal without the error
CTR ERROR	Controller Resistor Error
BUFF RAM ERROR	Buffer RAM Error
ECC DEV ERROR	ECC device Error
CPU ERROR	CPU RAM/ROM Error
COMMAND ERROR	Reserved

In the above table, displays other than “NO ERROR” are abnormalities of HDD.
Cutting of battery connection or AC power supply connection to end the service mode.

7 Service Fixture & Tools

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

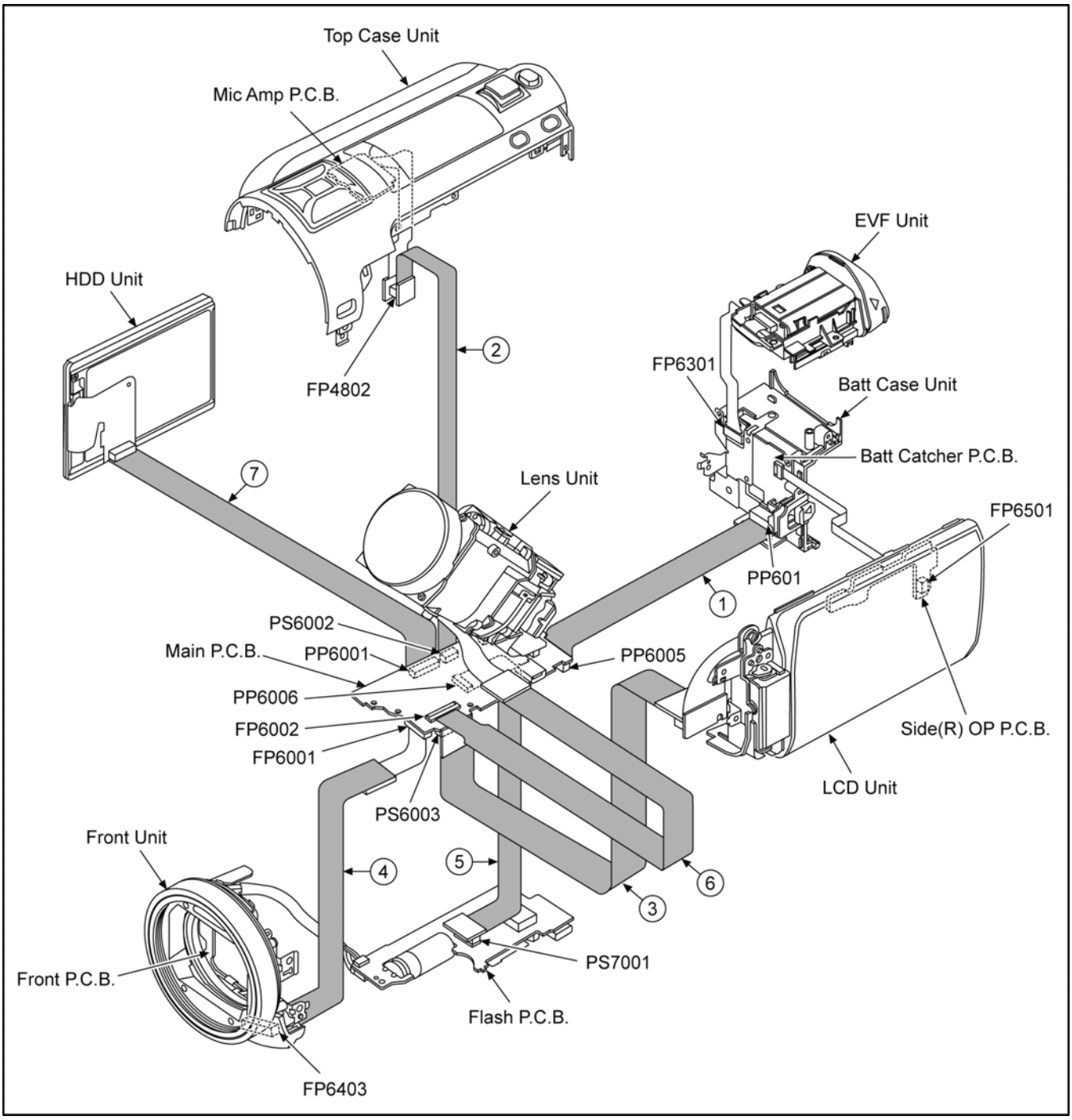
After replacing the MAIN P.C.B., be sure to achieve adjustment.
The adjustment instruction is available at “software download” on the “Support Information from NWBG/VDBG-AVC” web-site in “TSN system”, together with Maintenance software.

7.2. 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	RFKZ0444	PP6005(MAIN) - PP601(BATT CATCHER)	50PIN 0.5 B to B
2	RFKZ0342	PS6002(MAIN) - FP4802(MIC AMP)	20PIN 0.5 B to B
3	VFK1933	PS6003(MAIN) - MONITOR FPC	34PIN 0.5 B to B
4	VFK1950	FP6001(MAIN) - FP6403(FRONT)	33PIN 0.3 FFC
5	RFKZ0343	PP6006(MAIN) - PS7001(FLASH)	30PIN 0.5 B to B
6	RFKZ0416	FP6002(MAIN) - LENS UNIT	41PIN 0.3 FFC
7	RFKZ0379	PP6001(MAIN) - HDD UNIT	40PIN 0.5 B to B



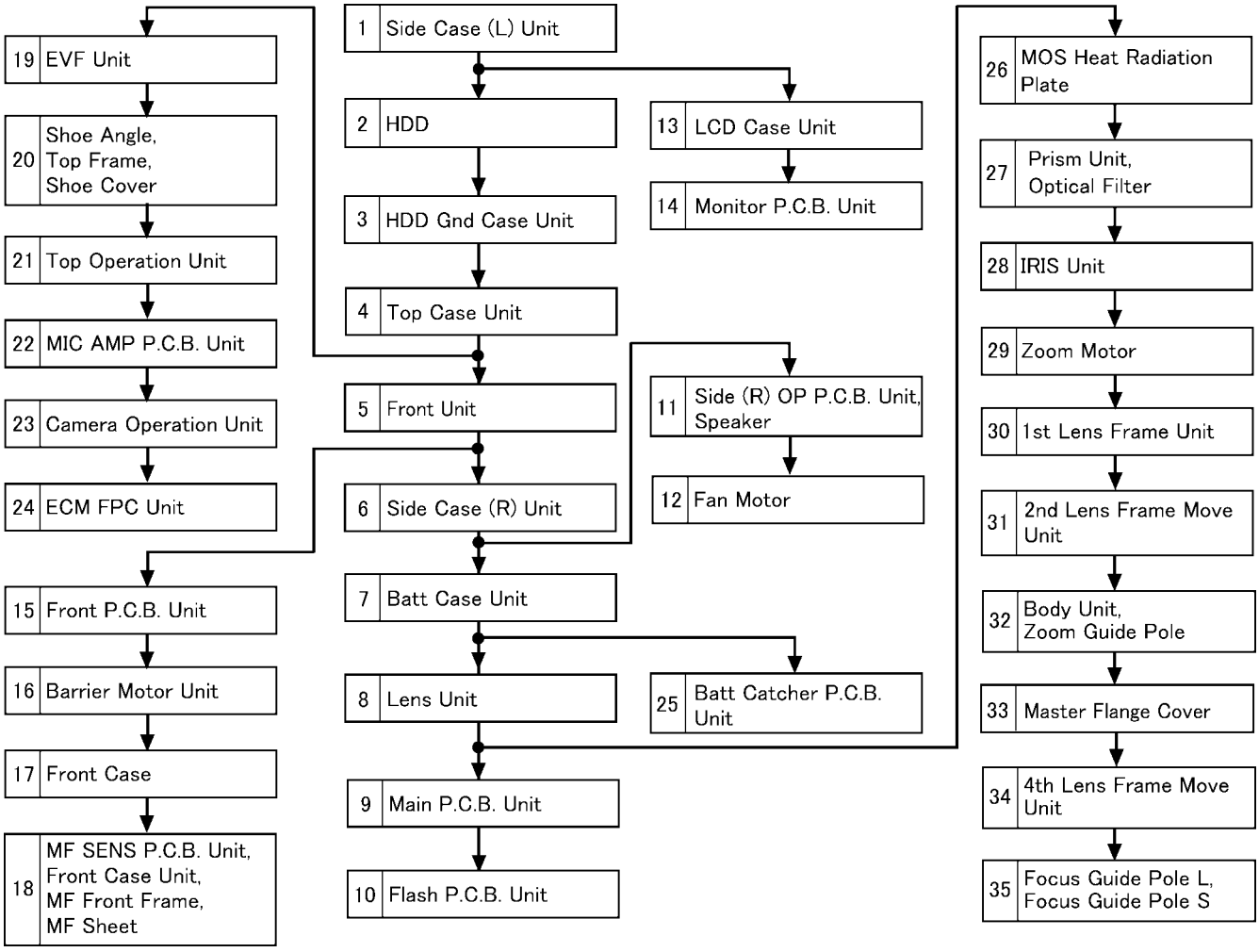
CAUTION-1. (When servicing FLASH P.C.B.)

1. Be sure to discharge the capacitor on FLASH P.C.B..
   Refer to “HOW TO DISCHARGE THE CAPACITOR ON FLASH P.C.B.”.
   The capacitor voltage is not lowered soon even if the AC Cord is unplugged or the battery is removed.
2. Be careful of the high voltage circuit on FLASH P.C.B..
3. DO NOT allow other parts to touch the high voltage circuit on FLASH P.C.B..

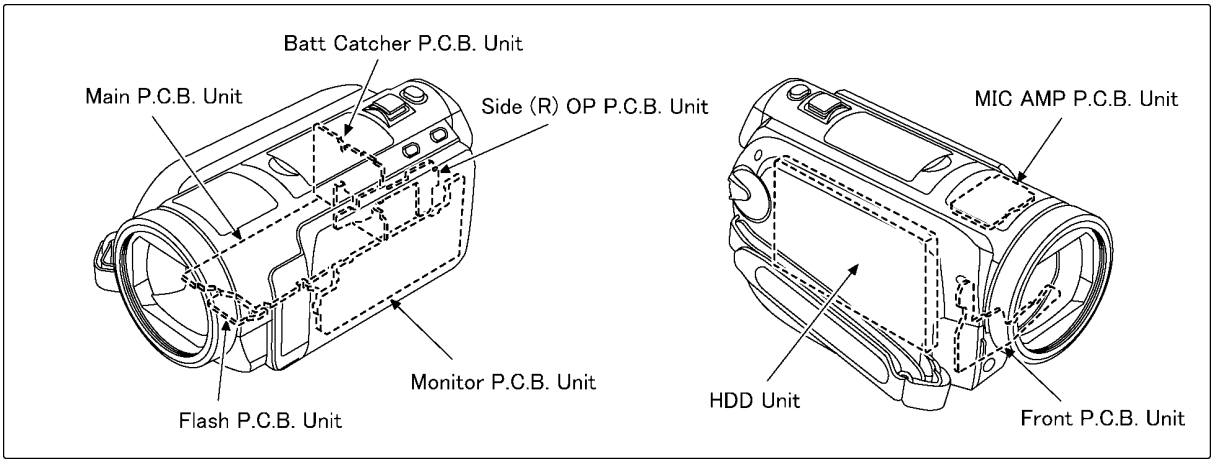
8 Disassembly and Assembly Instructions

8.1. Disassembly Flow Chart

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



8.2. PCB Location



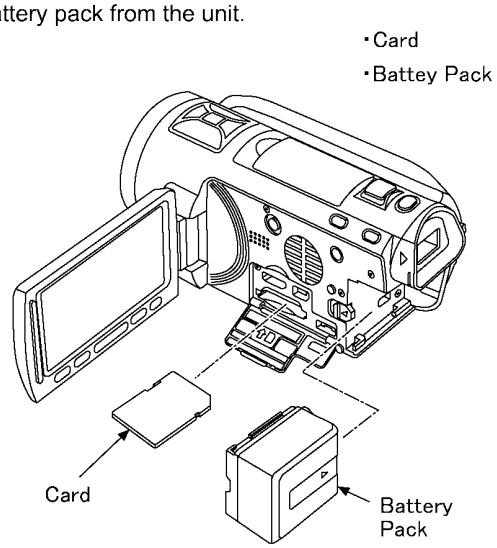
8.3. Disassembly Procedure

No.	Item	Fig	Removal
1	Side Case (L) Unit	Fig.D1	2 Screws (A)
			4 Screws (B)
			2 Locking tabs
			Sensor Cover Unit
		Fig.D2	3 Screws (C)
			4 Locking tabs
			Side Case (L) Unit
2	HDD	Fig.D3	PP6001 (Connector)
			2 HDD Cushions
			HDD
3	HDD Gnd Case Unit	Fig.D4	4 Screws (D)
			1 Screw (E)
			1 Rib
			HDD Gnd Case Unit
4	Top Case Unit	Fig.D5	1 Screw (F)
			1 Screw (G)
			1 Screw (H)
			1 Screw (I)
		Fig.D6	2 Locking tabs
			SR Cover
			1 Screw (J)
			PS6002 (Connector)
			2 Ribs
			1 Locking tab
			FP6301 (Flex)
			Top Case Unit
5	Front Unit	Fig.D7	P7001 (Connector)
			P7002 (Connector)
			1 Screw (K)
			1 Rib
			1 Locking tab
			FP6403 (Flex)
			Front Unit
6	Side Case (R) Unit	Fig.D8	4 Screws (L)
			1 Screw (M)
			PS6003 (Connector)
			FP6501 (Flex)
			Side Case (R) Unit
7	Batt Case Unit	Fig.D9	1 Screw (N)
			1 Screw (O)
			2 Ribs
			PP6005 (Connector)
			Batt Case Unit
8	Lens Unit	Fig.D10	2 Screws (P)
			1 Rib
			2 Projection parts
		Fig.D11	PP6004 (Connector)
			PP6007 (Connector)
			FP6002 (Flex)
			1 Screw (Q)
			Lens Frame Unit
			Lens Unit
9	Main P.C.B. Unit	Fig.D12	3 Screws (R)
			2 Ribs
			Main Heat Radiation Plate
		Fig.D13	PP6006 (Connector)
			1 Projection part
			Main P.C.B. Unit
10	Flash P.C.B. Unit	Fig.D14	2 Screws (S)
			1 Projection part
			Flash P.C.B. Unit

No.	Item	Fig	Removal
11	Side (R) OP P.C.B. Unit Speaker	Fig.D15	2 Screws (T)
			SP Angle
			PS6501 (Connector)
			P6501 (Connector)
			Speaker
			Side (R) OP P.C.B. Unit
		Fig.D16	NOTE: (When Installing)
12	Fan Motor	Fig.D17	3 Convexes
			Fan Damper
			Fan Motor
13	LCD Case Unit	Fig.D18	2 Screws (U)
			Holder
			Switch Unit
			3 Locking tabs
			Earth Plate
			Sheet
			Light Guide Plate
			3 Ribs
			LCD Case Unit
14	Monitor P.C.B. Unit	Fig.D19	FP904 (Flex)
			FP905 (Flex)
			2 Ribs
			2 Convexes
			LCD Frame
		Fig.D20	FP903 (Flex)
			4 Locking tabs
			Monitor P.C.B. Unit
		Fig.D21	1 Locking tab
			Reflection Sheet
			Light Guide Plate
			Diffusion Sheet
			Prism Sheet B
			Prism Sheet A
			Lighting Plate Holder
			Monitor P.C.B. Unit
15	Front P.C.B. Unit	Fig.D22	1 Screw (V)
			1 Screw (W)
			FP6400 (Flex)
			FP6402 (Flex)
			Front P.C.B. Unit
16	Barrier Motor Unit	Fig.D23	1 Screw (X)
			Barrier Motor Unit
		Fig.D24	NOTE: (When Installing)
17	Front Case	Fig.D25	Lens Ornament Sheet
		Fig.D26	4 Screws (Y)
			Front Case
18	MF SENS P.C.B. Unit Front Case Unit MF Front Frame MF Sheet	Fig.D27	1 Screw (Z)
			MF P.C.B. Holder
			MF SENS P.C.B. Unit
			Front Case Unit
			MF Front Frame
			MF Sheet
		Fig.D28	NOTE: (When Replacing)
19	EVF Unit	Fig.D29	2 Screws (a)
			1 Screw (b)
			EVF Unit
20	Shoe Angle Top Frame Shoe Cover	Fig.D30	3 Screws (c)
			Shoe Angle
		Fig.D31	4 Screws (d)
			1 Locking tab
			Top Frame
			Shoe Cover

No.	Item	Fig	Removal
21	Top Operation Unit	Fig.D32	4 Screws (f)
			FP4803 (Flex)
			2 Ribs
			Top Operation Unit
22	MIC AMP P.C.B. Unit	Fig.D33	FP4801 (Flex)
			FP4804 (Flex)
			2 Hooks
			MIC AMP P.C.B. Unit
23	Camera Operation Unit	Fig.D34	2 Locking tabs
			Camera Operation Unit
24	ECM FPC Unit	Fig.D35	4 Locking tabs
			MIC Sheet
			MIC Unit
		Fig.D36	MIC Cushion (A)
			MIC Cushion (B)
			MIC Cushion (C)
			MIC Case
			ECM FPC Unit
25	Batt Catcher P.C.B. Unit	Fig.D37	2 Screws (g)
			2 Locking tabs
			Rear Frame
			2 Locking tabs
			Batt Catcher P.C.B. Unit
26	MOS Heat Radiation Plate	Fig.D38	1 Screw (h)
			MOS Heat Radiation Plate
27	Prism Unit Optical Filter	Fig.D39	2 Screws (i)
			Prism Unit
			Optical Filter
28	IRIS Unit	Fig.D40	18 Solders
			3 Screws (j)
			3 Ribs
			IRIS Unit
29	Zoom Motor	Fig.D41	2 Screws (k)
			Zoom Motor
30	1st Lens Frame Unit	Fig.D42	3 Screws (l)
			1st Lens Frame Unit
31	2nd Lens Frame Move Unit	Fig.D43	2nd Lens Frame Move Unit Spring
			2nd Lens Frame Move Unit
32	Body Unit Zoom Guide Pole	Fig.D44	3 Screws (m)
			Body Unit
			2 Zoom Guide Poles
33	Master Flange Cover	Fig.D45	2 Screws (n)
			Master Flange Cover
34	4th Lens Frame Move Unit	Fig.D46	2 Side Yorks
		Fig.D47	3 Ribs
			4th Lens Frame Move Unit
35	Focus Guide Pole L Focus Guide Pole S	Fig.D48	Focus Guide Pole L
			Focus Guide Pole S

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



8.3.1. Removal of the Side Case (L) Unit

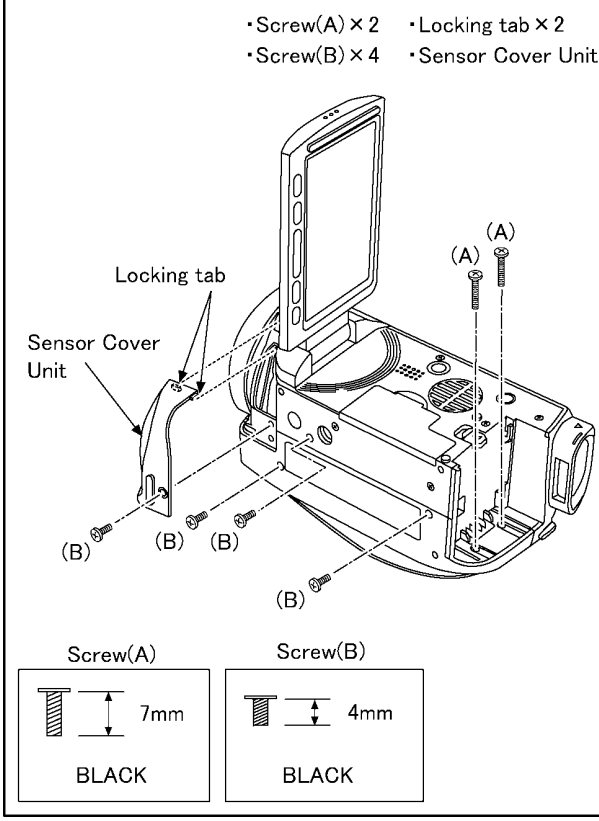


Fig.D1

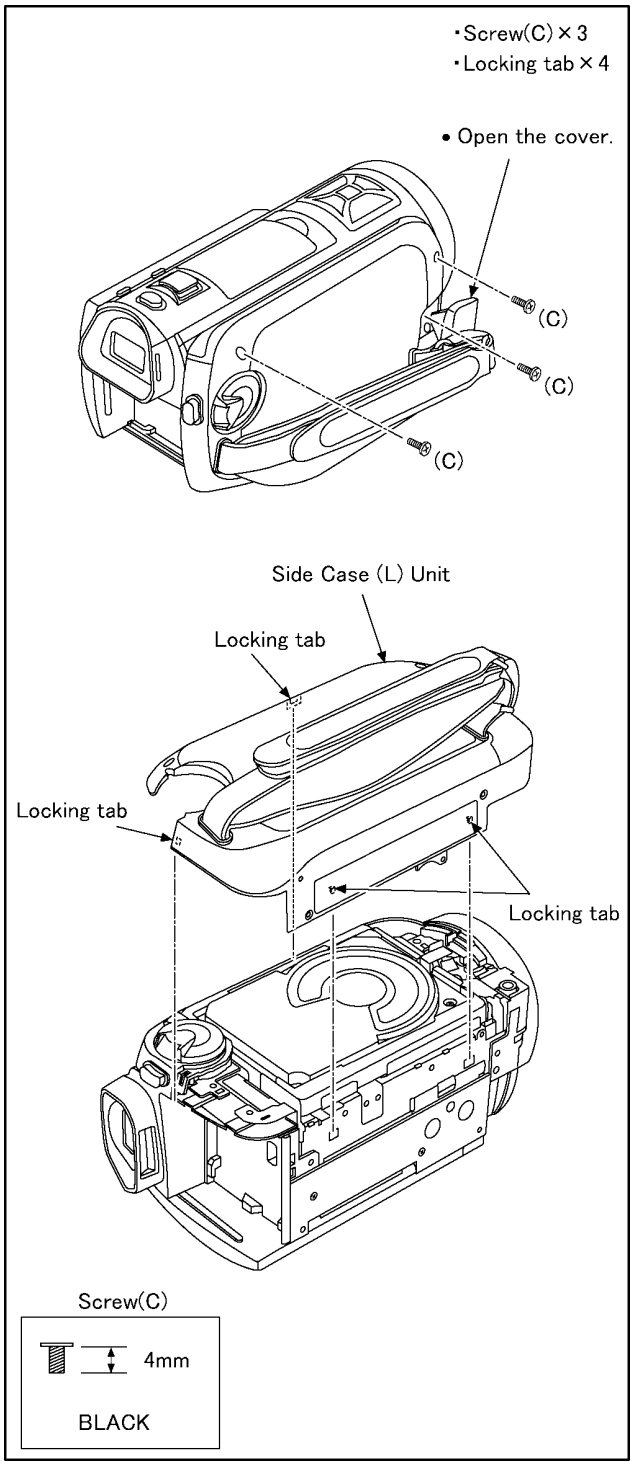


Fig.D2

8.3.2. Removal of the HDD

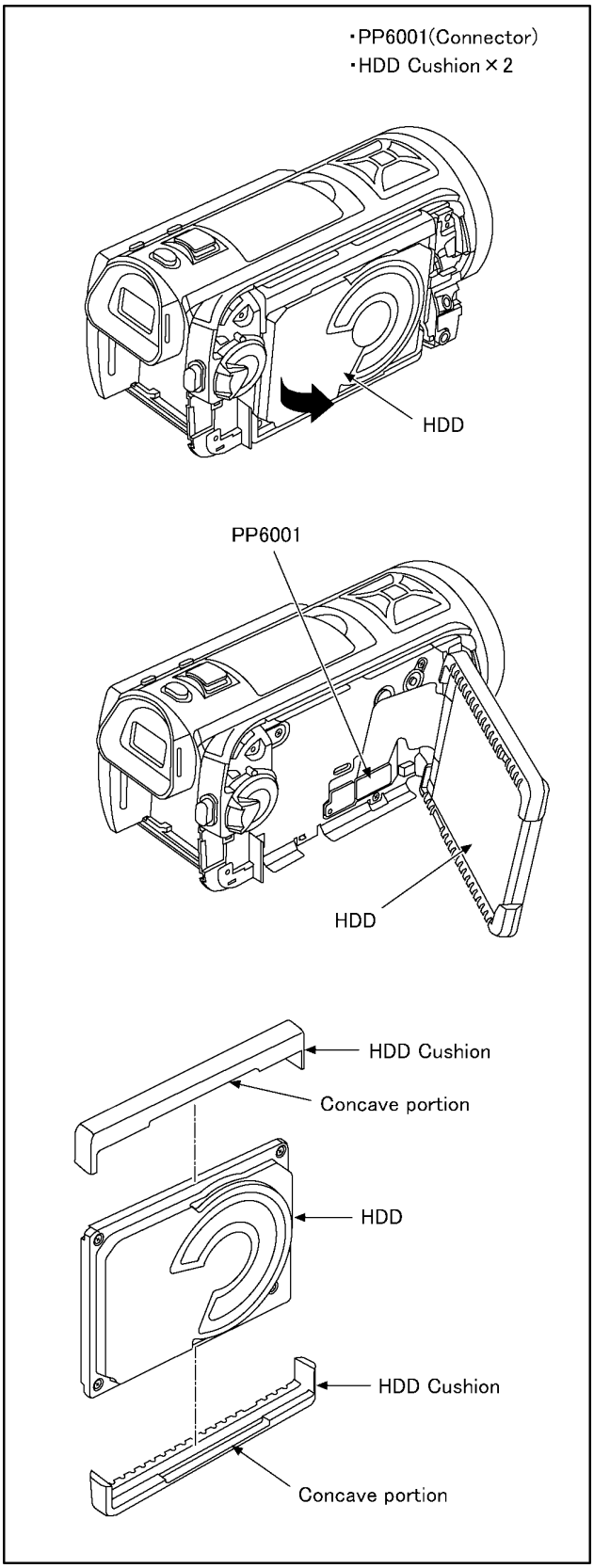


Fig.D3

8.3.3. Removal of the HDD Gnd Case Unit

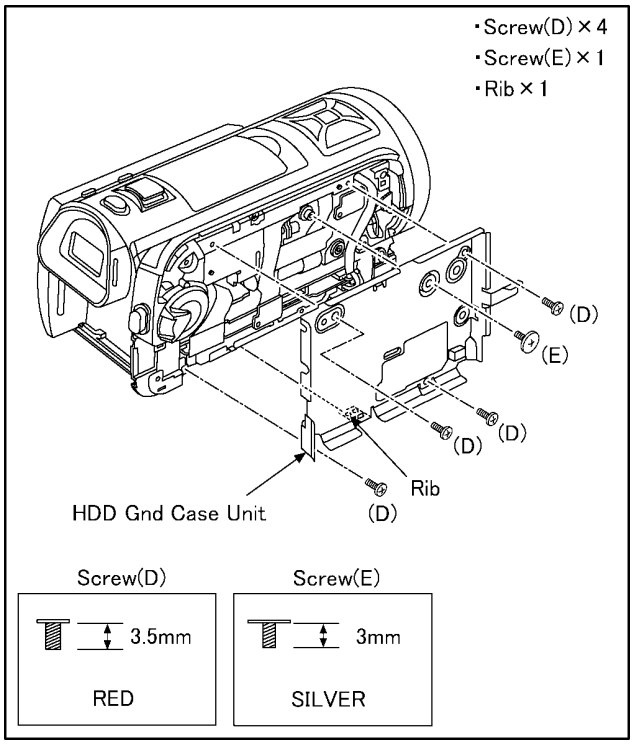


Fig.D4

8.3.4. Removal of the Top Case Unit

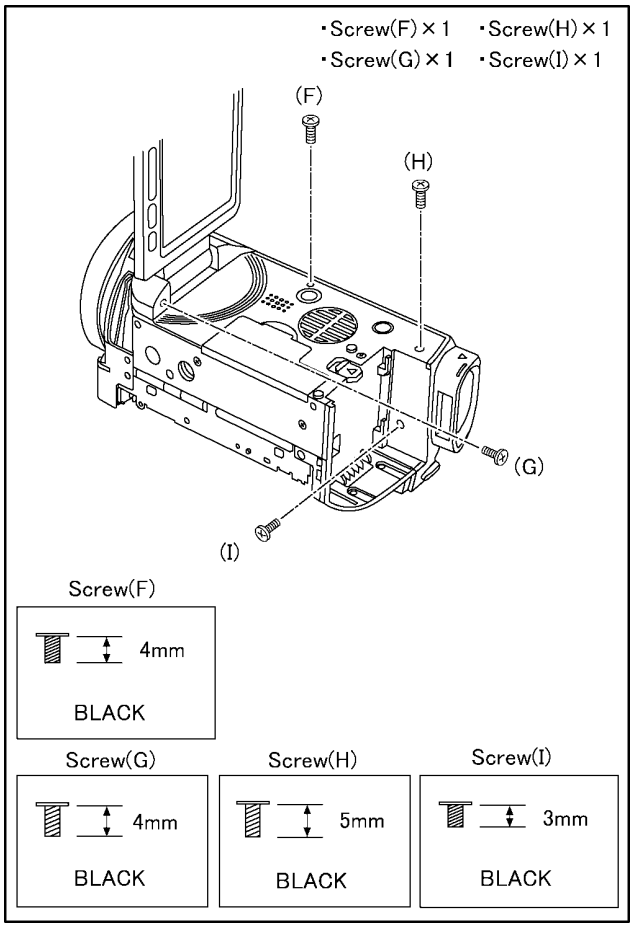


Fig.D5

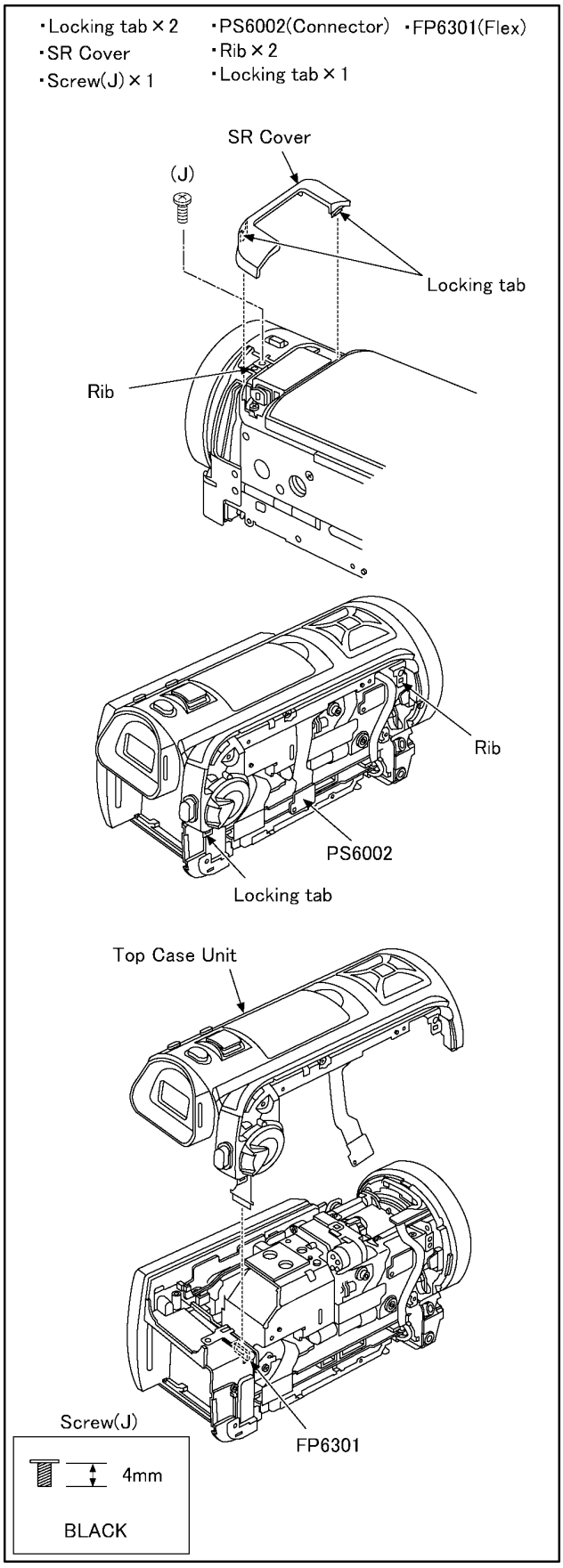


Fig.D6

8.3.5. Removal of the Front Unit

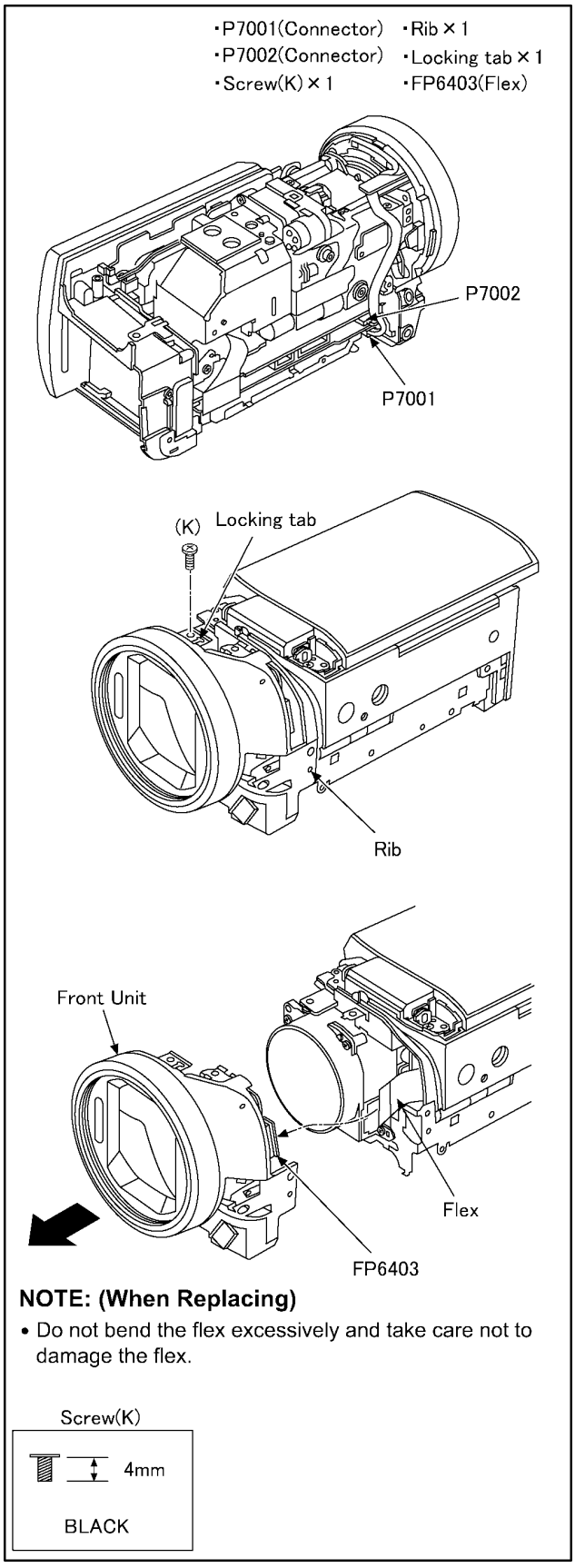


Fig.D7

8.3.6. Removal of the Side Case (R) Unit

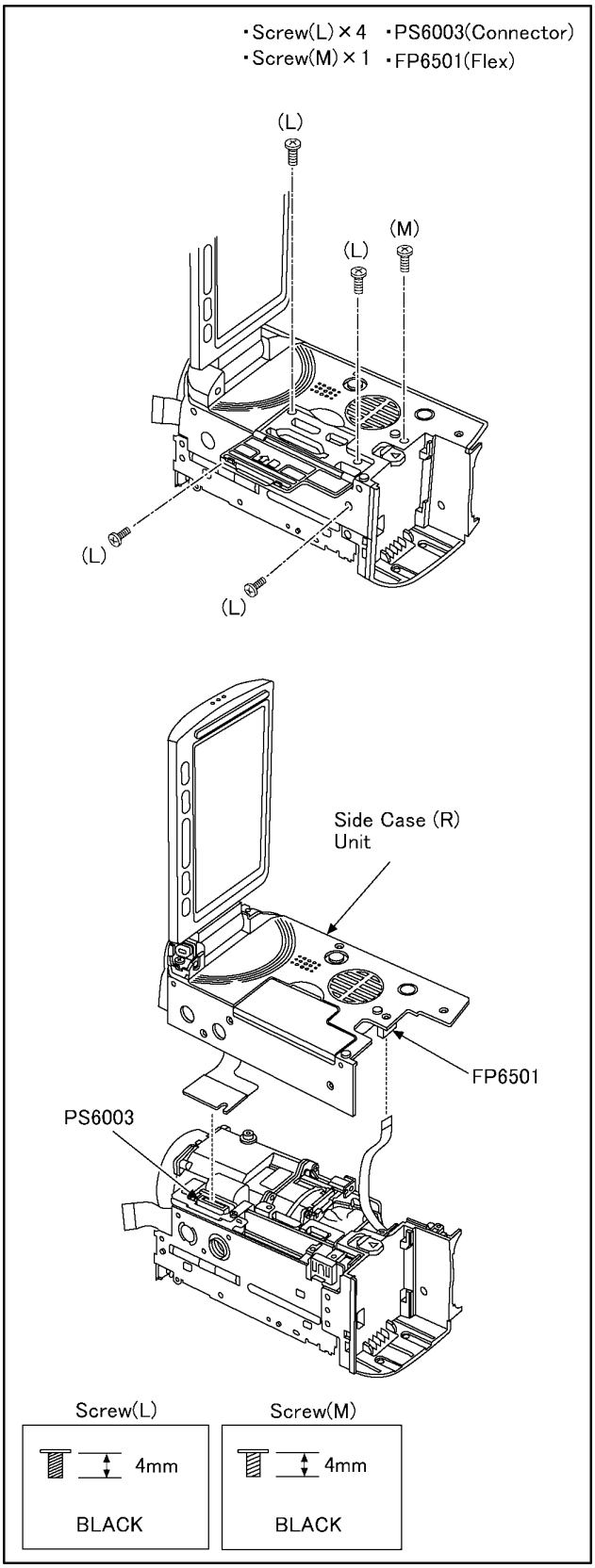


Fig.D8

8.3.7. Removal of the Batt Case Unit

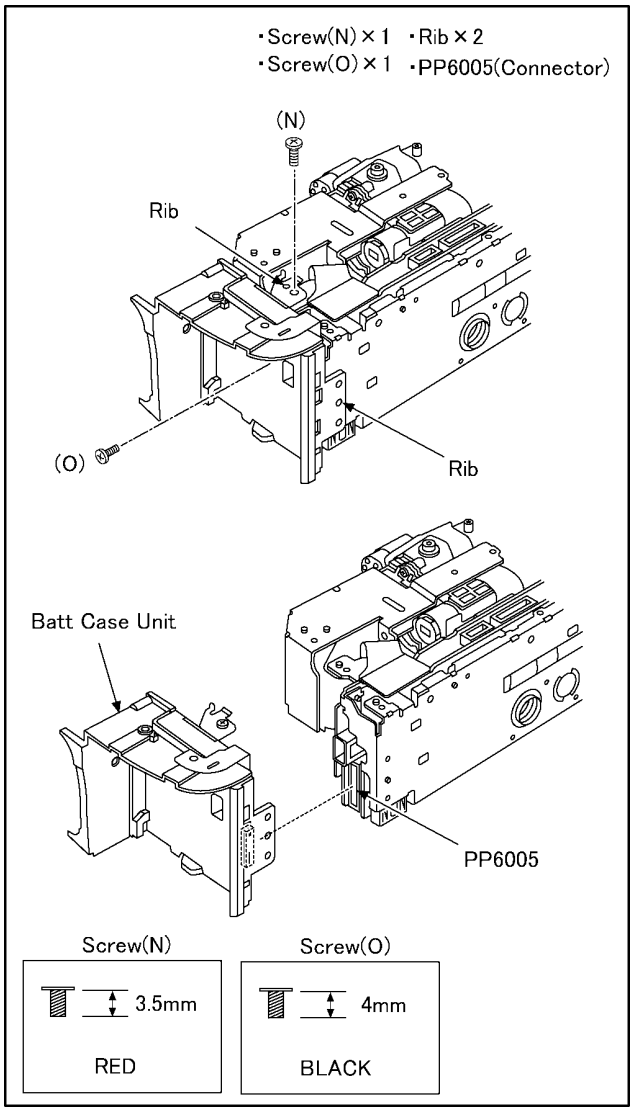


Fig.D9

8.3.8. Removal of the Lens Unit

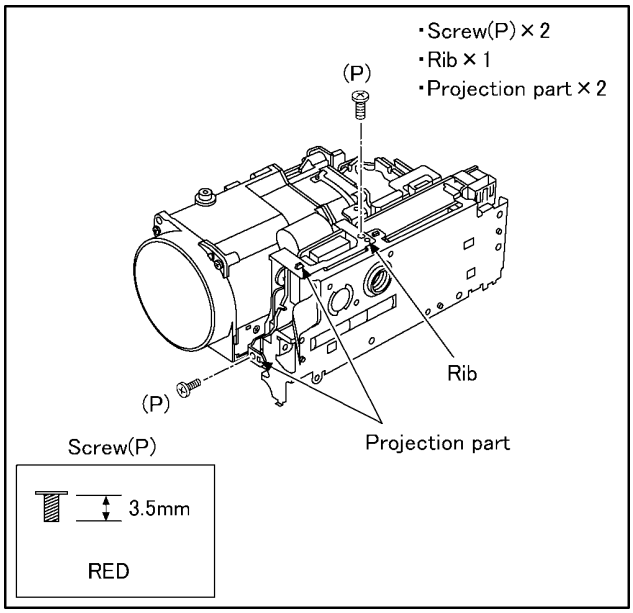


Fig.D10

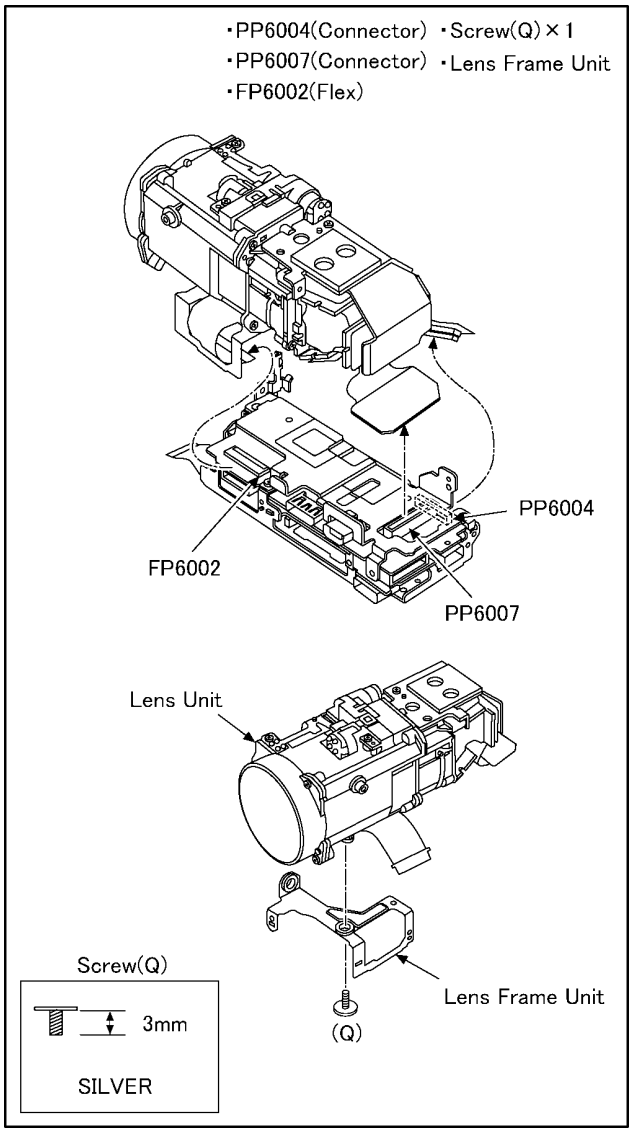


Fig.D11

8.3.9. Removal of the Main P.C.B. Unit

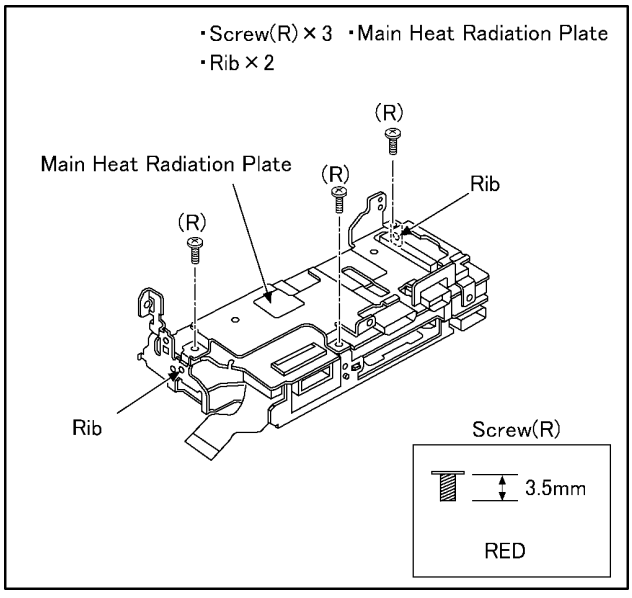


Fig.D12

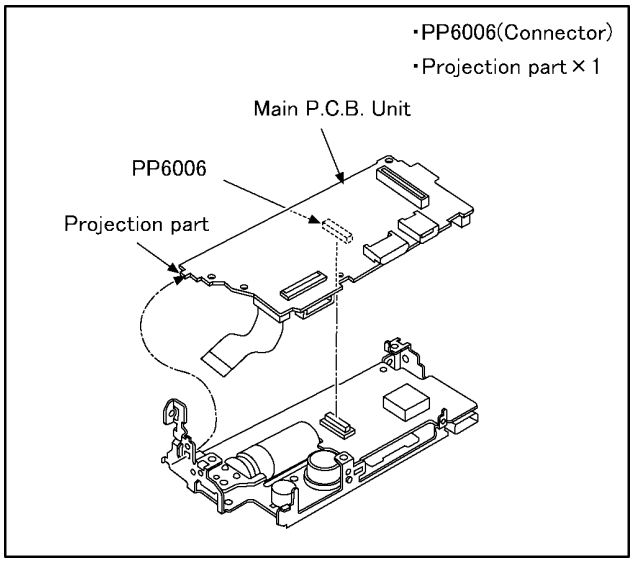
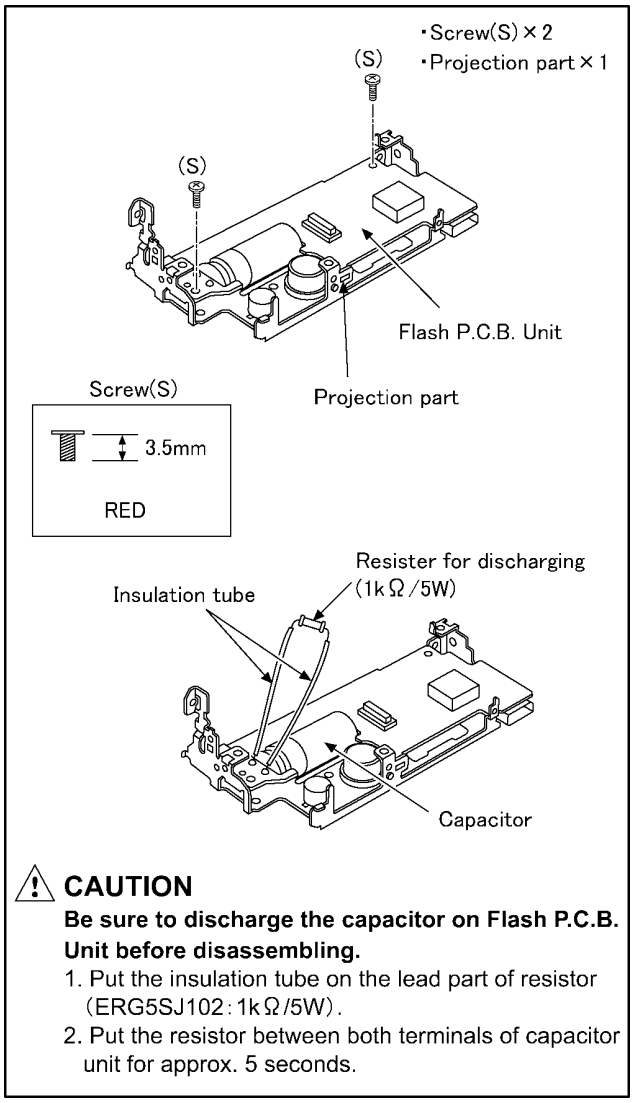


Fig.D13

8.3.10. Removal of the Flash P.C.B. Unit



⚠ CAUTION

Be sure to discharge the capacitor on Flash P.C.B. Unit before disassembling.

1. Put the insulation tube on the lead part of resistor (ERG5SJ102 : 1kΩ/5W).
2. Put the resistor between both terminals of capacitor unit for approx. 5 seconds.

Fig.D14

8.3.11. Removal of the Side (R) OP P.C.B. Unit and Speaker

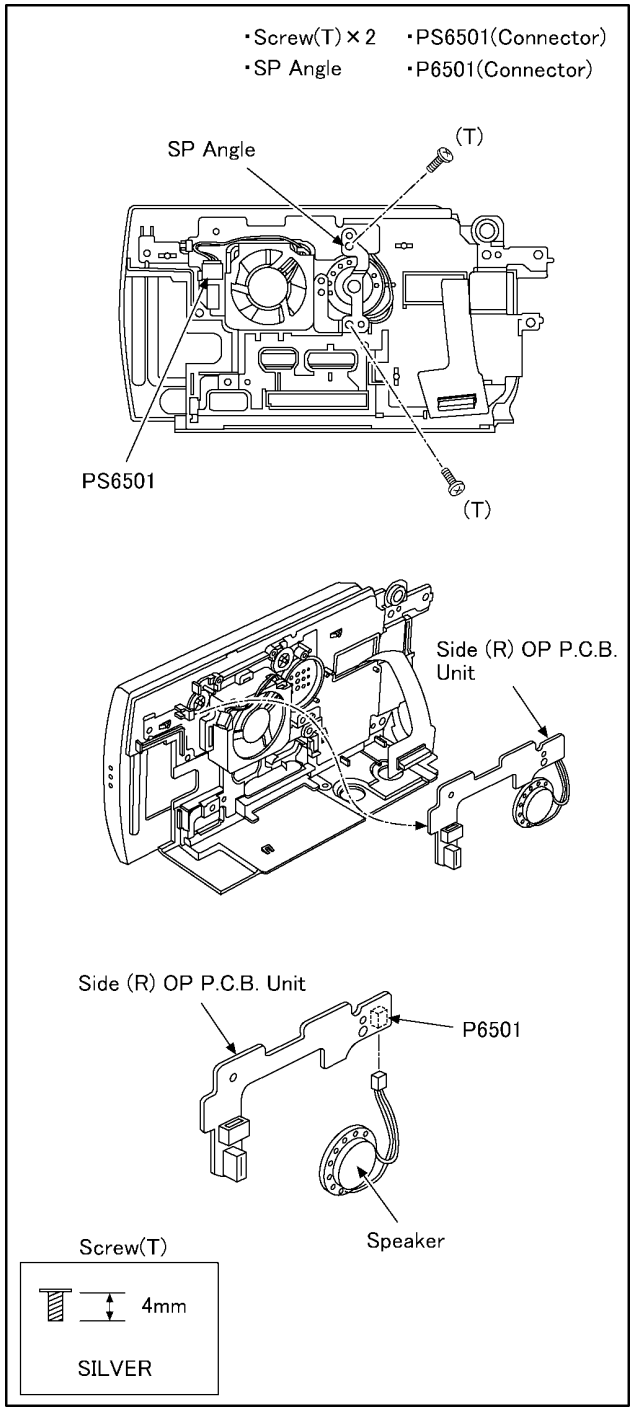


Fig.D15

NOTE: (When Installing)

1. Install the speaker lead wire to between convexes.
2. Be careful to that the solder part of speaker don't touch the SP Angle.

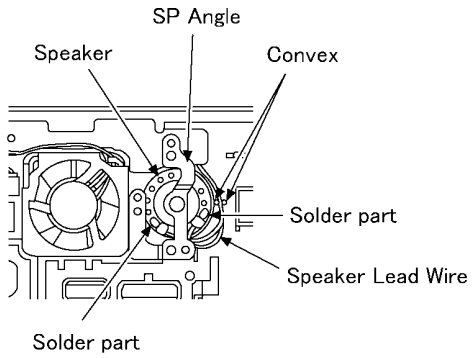


Fig.D16

8.3.12. Removal of the Fan Motor

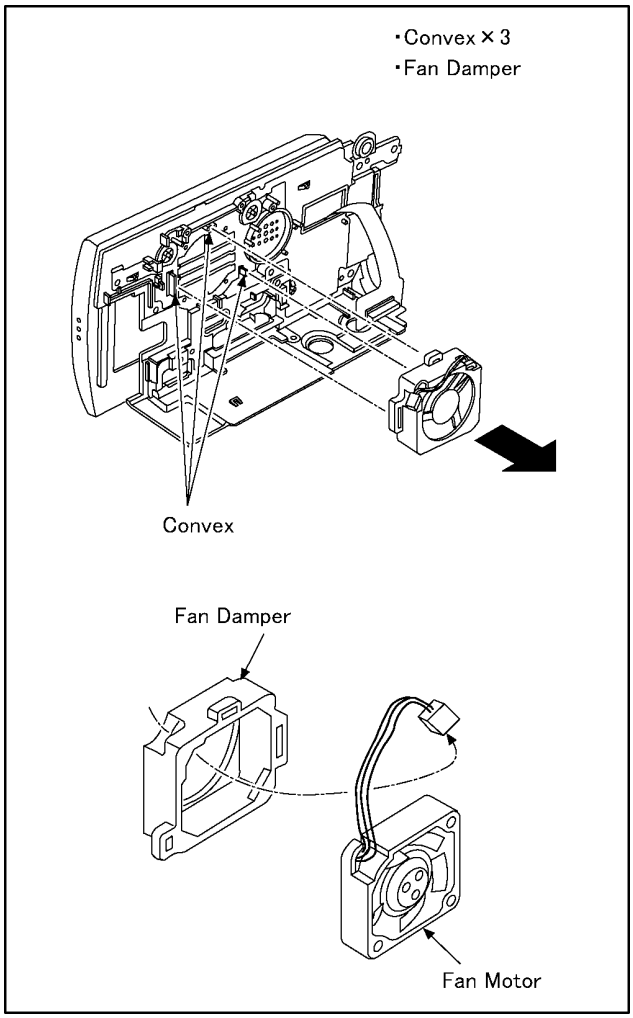
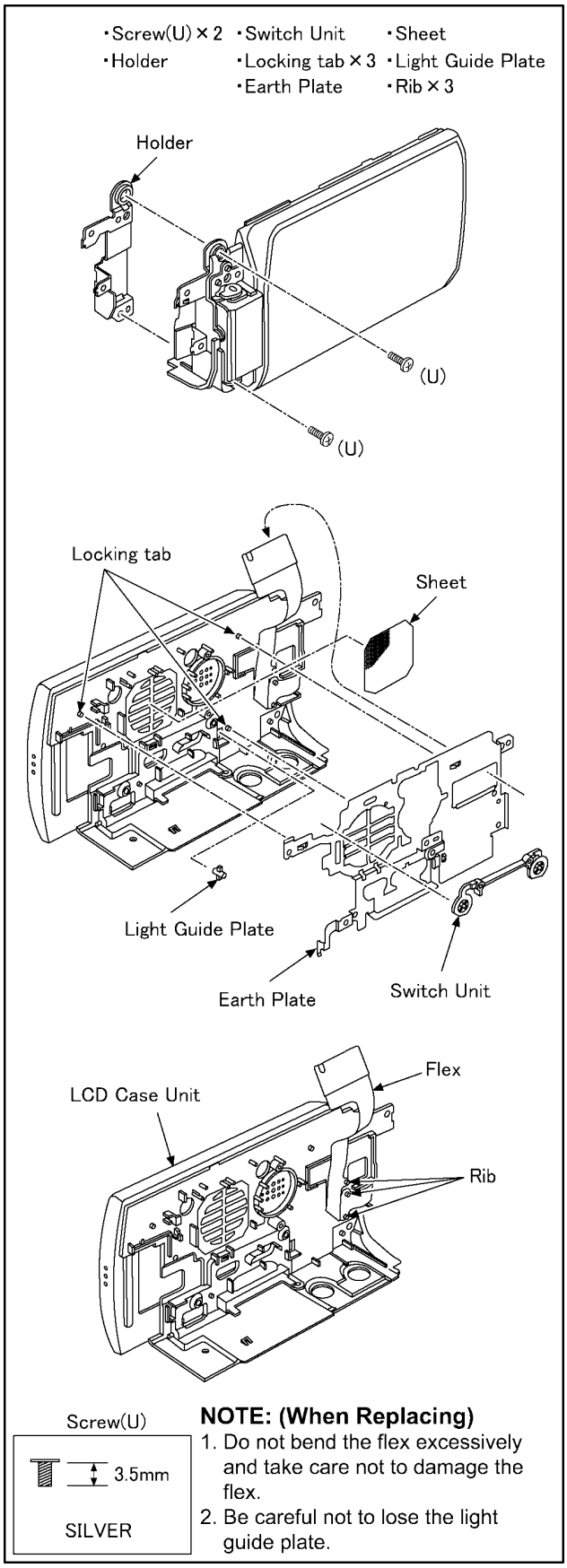


Fig.D17

8.3.13. Removal of the LCD Case Unit



NOTE: (When Replacing)

1. Do not bend the flex excessively and take care not to damage the flex.
2. Be careful not to lose the light guide plate.

Fig.D18

8.3.14. Removal of the Monitor P.C.B. Unit

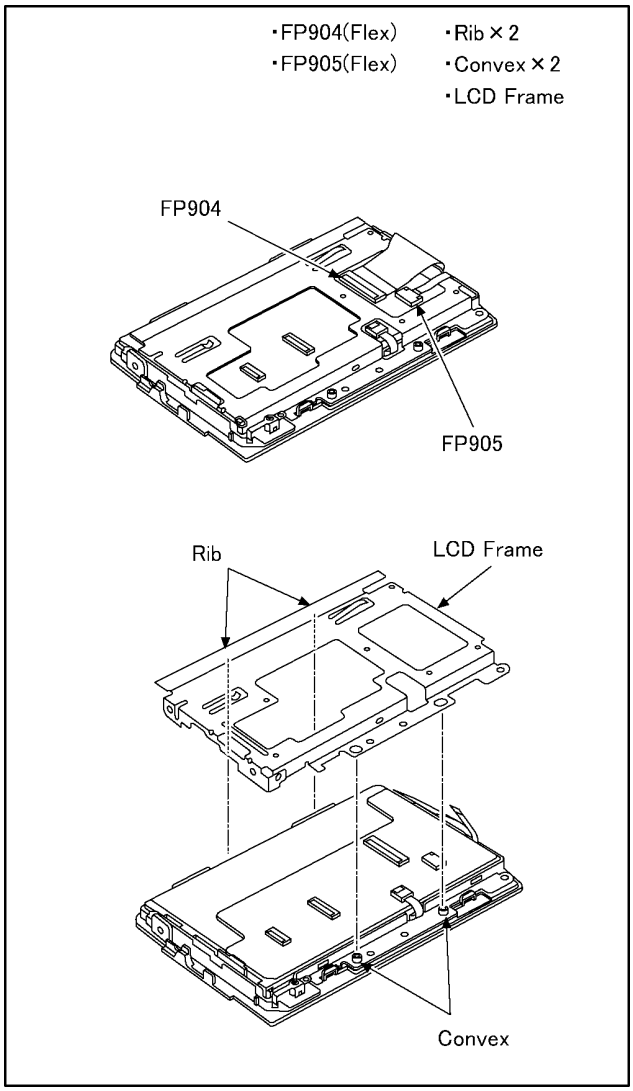


Fig.D19

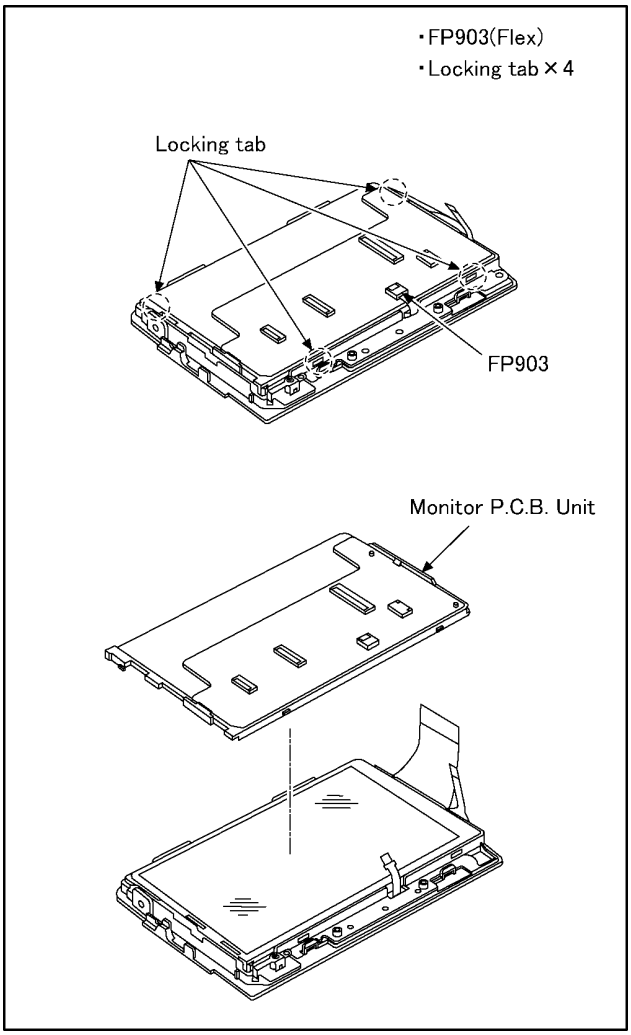


Fig.D20

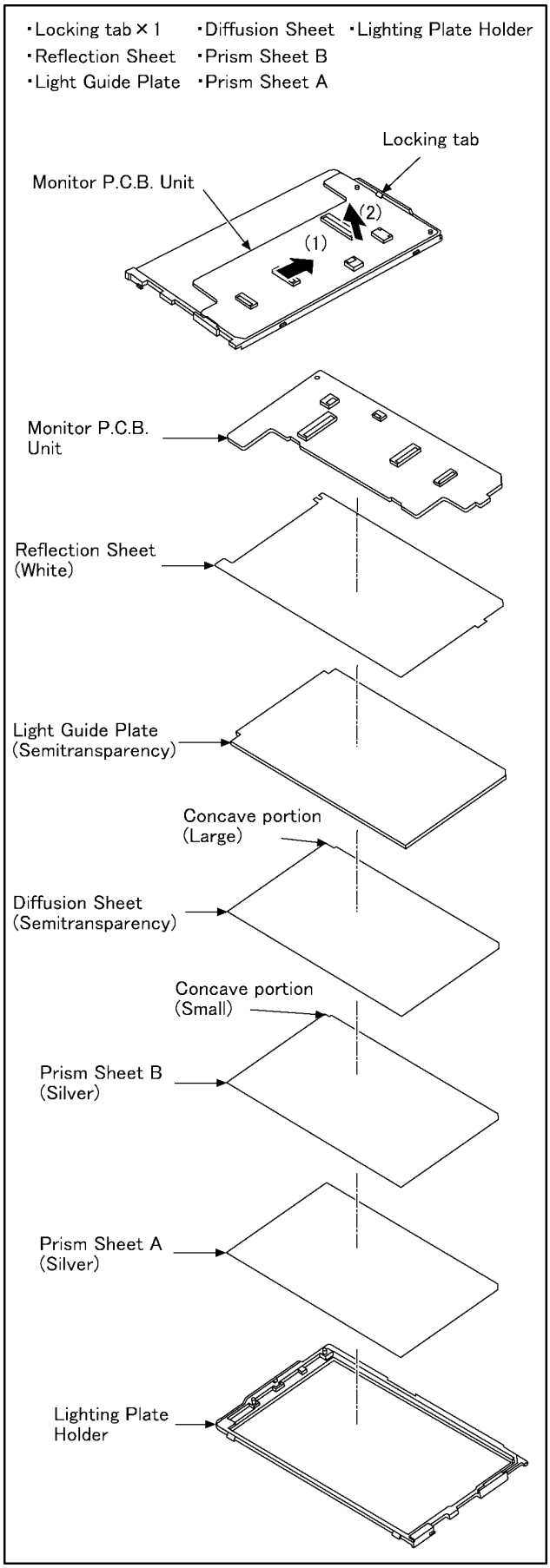


Fig.D21

8.3.15. Removal of the Front P.C.B. Unit

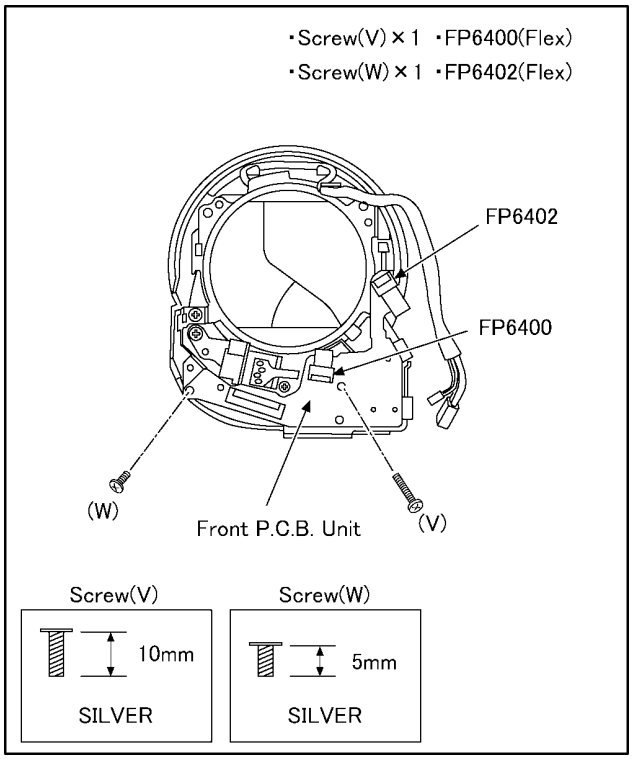


Fig.D22

8.3.16. Removal of the Barrier Motor Unit

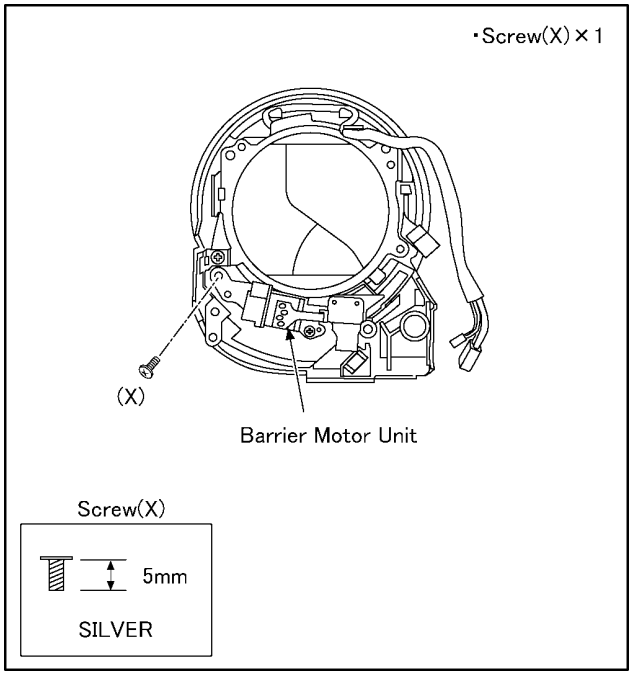


Fig.D23

NOTE: (When Installing)

- When install the barrier motor unit, align the projection part of the barrier motor unit between ribs of the barrier change lever.

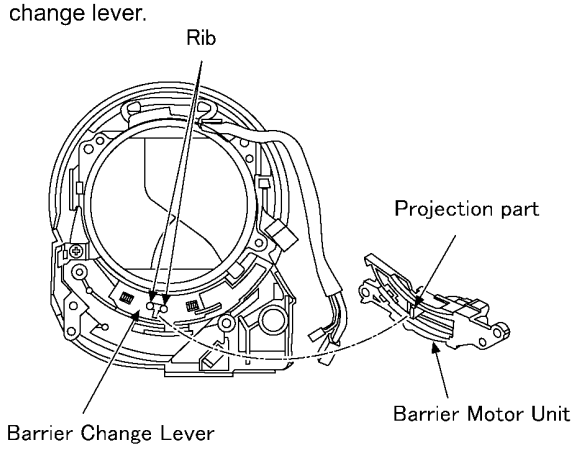
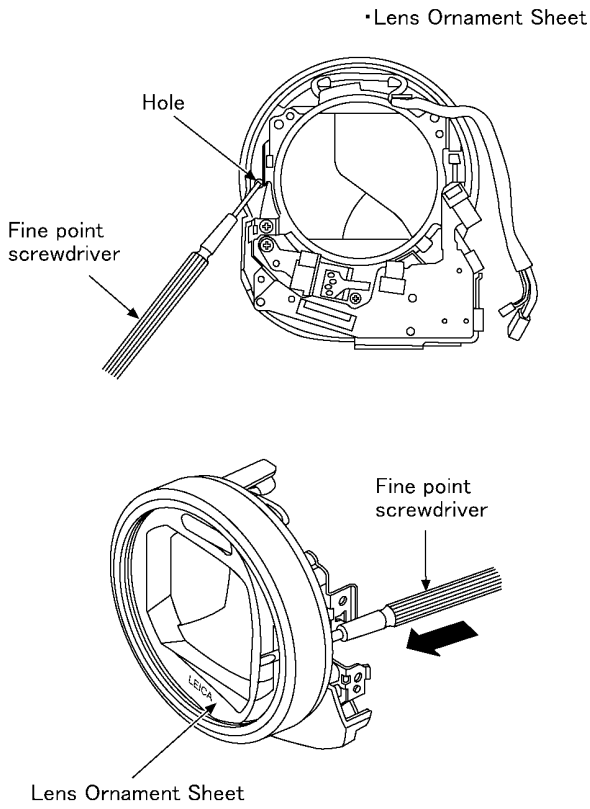


Fig.D24

8.3.17. Removal of the Front Case



NOTE: (When Replacing)

1. Put insert the fine point screwdriver into the hole on the backside of front case.
2. Push the fine point screwdriver to peel the lens ornament sheet.
3. Do not reuse the lens ornament sheet.
4. Remove the lens ornament sheet carefully not to remain the adhesive tape of lens ornament sheet.

Fig.D25

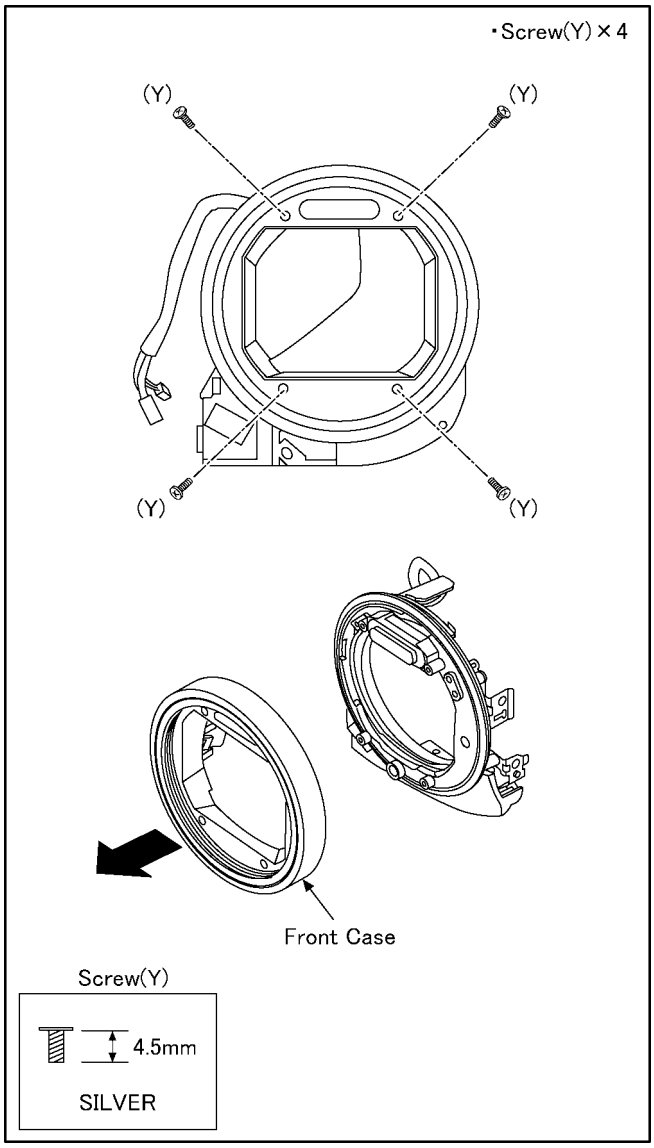
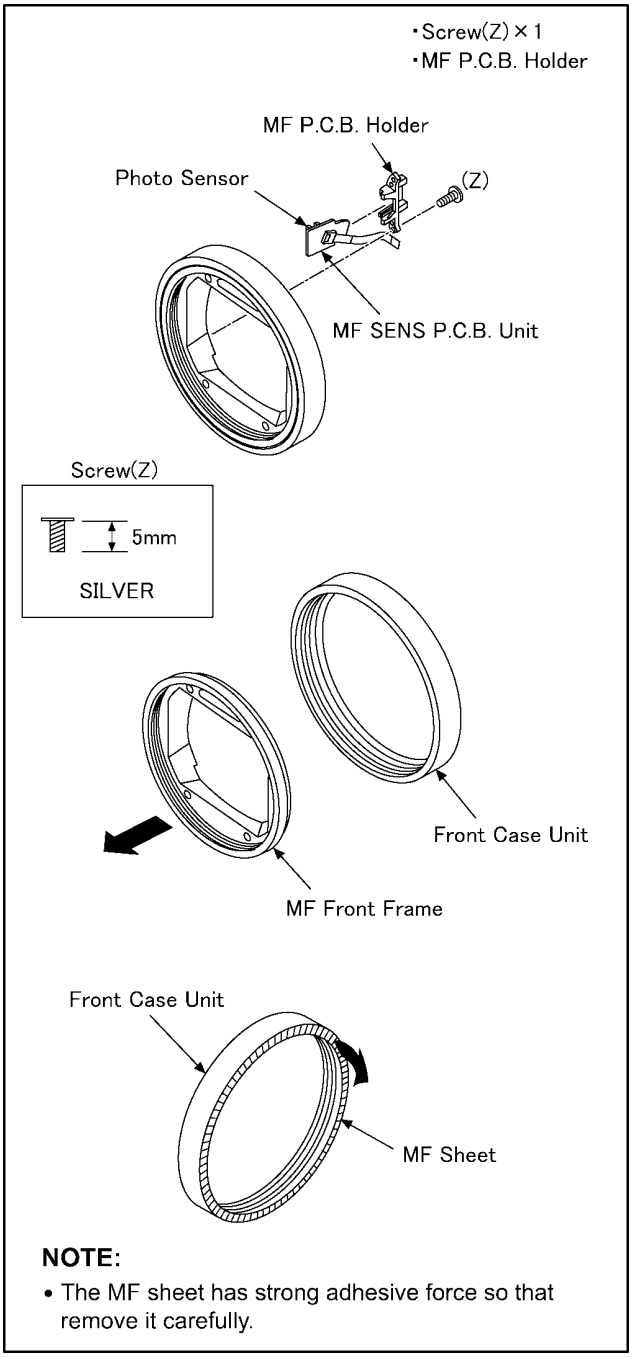


Fig.D26

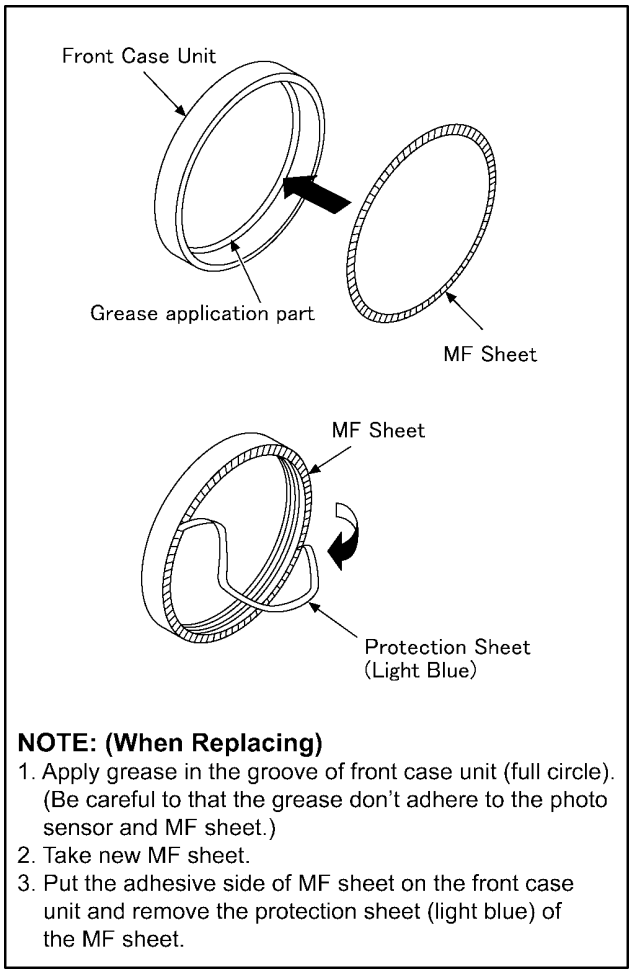
8.3.18. Removal of the MF SENS P.C.B. Unit, Front Case Unit, MF Front Frame and MF Sheet



NOTE:

- The MF sheet has strong adhesive force so that remove it carefully.

Fig.D27



NOTE: (When Replacing)

1. Apply grease in the groove of front case unit (full circle). (Be careful to that the grease don't adhere to the photo sensor and MF sheet.)
2. Take new MF sheet.
3. Put the adhesive side of MF sheet on the front case unit and remove the protection sheet (light blue) of the MF sheet.

Fig.D28

8.3.19. Removal of the EVF Unit

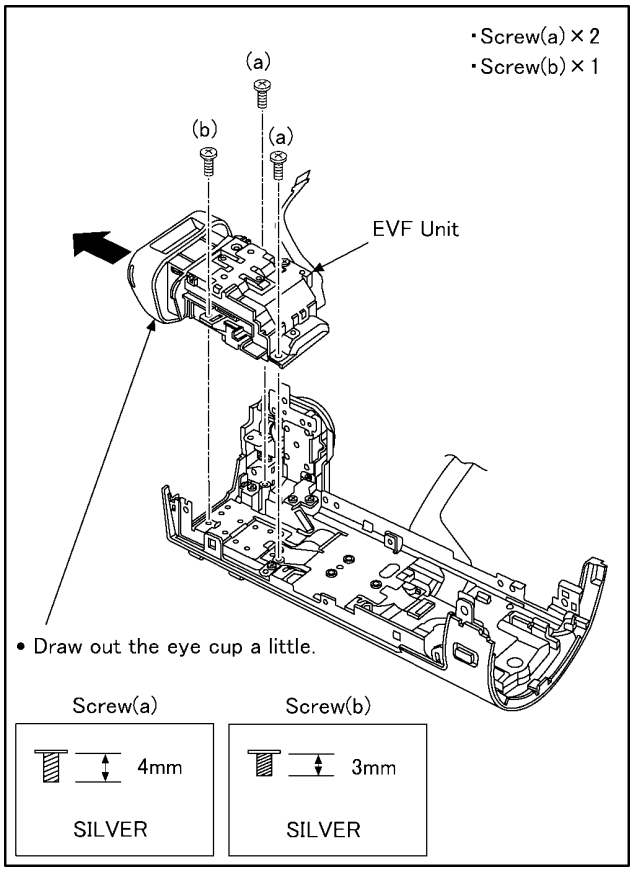


Fig.D29

8.3.20. Removal of the Shoe Angle, Top Frame and Shoe Cover

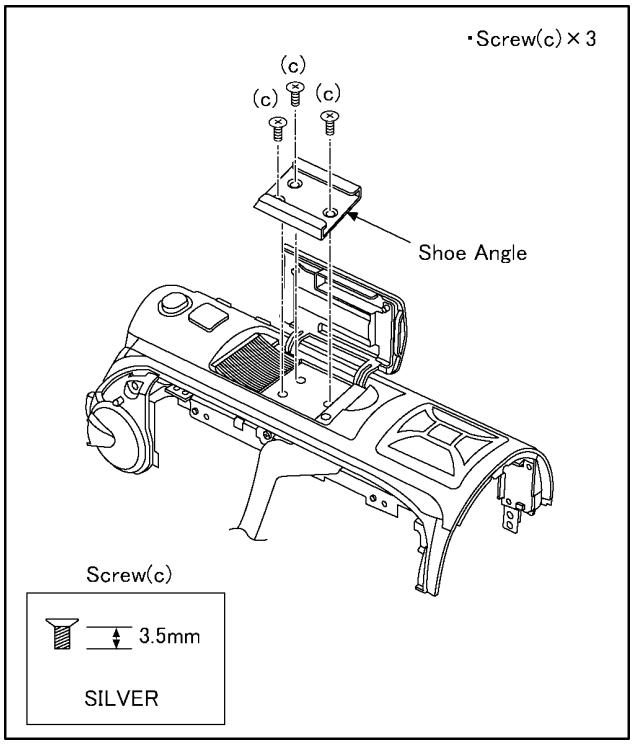


Fig.D30

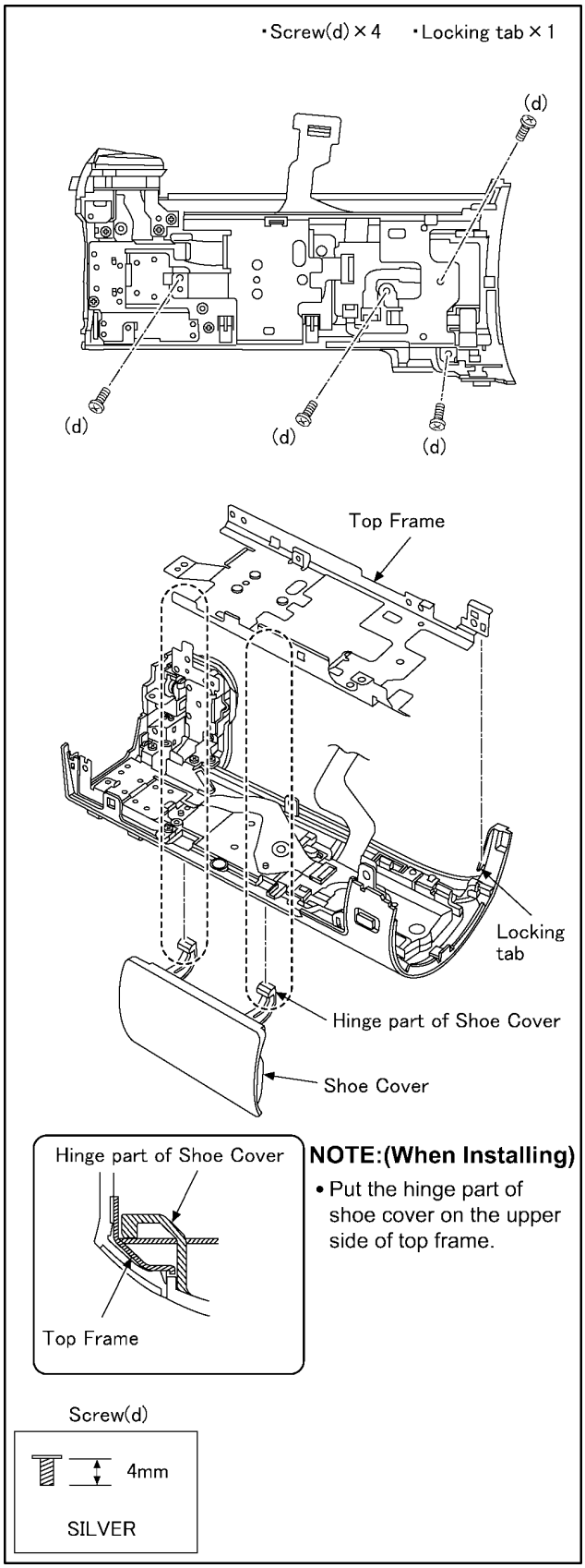


Fig.D31

8.3.21. Removal of the Top Operation Unit

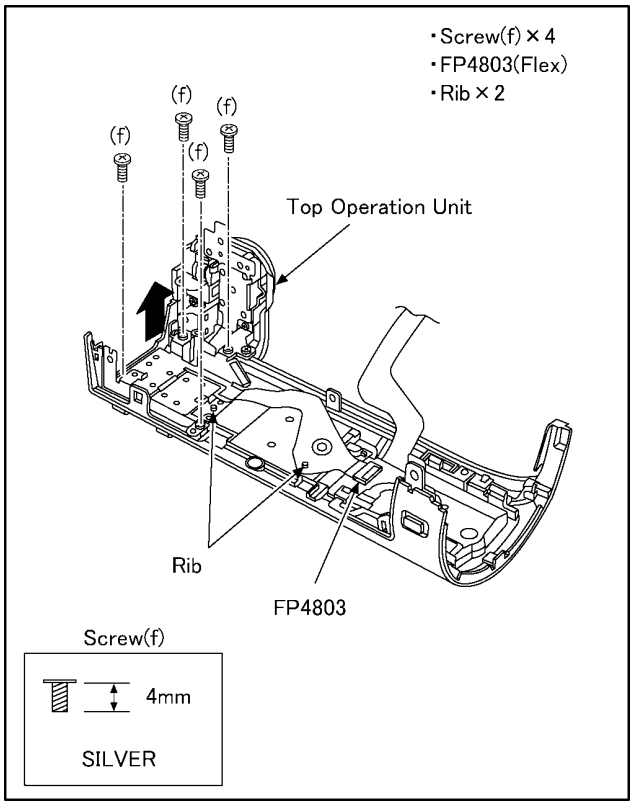


Fig.D32

8.3.22. Removal of the MIC AMP P.C.B. Unit

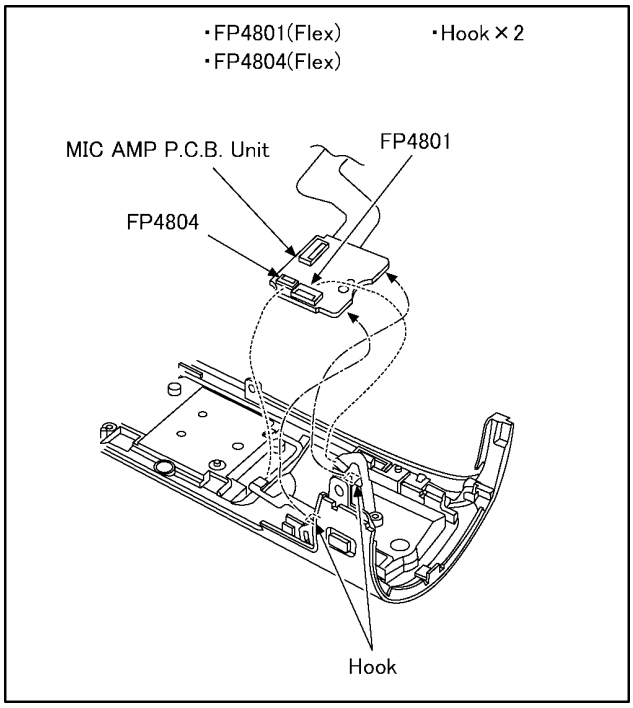


Fig.D33

8.3.23. Removal of the Camera Operation Unit

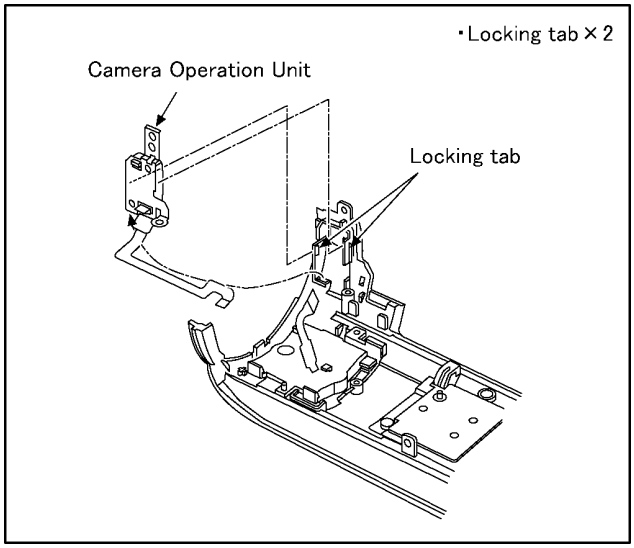


Fig.D34

8.3.24. Removal of the ECM FPC Unit

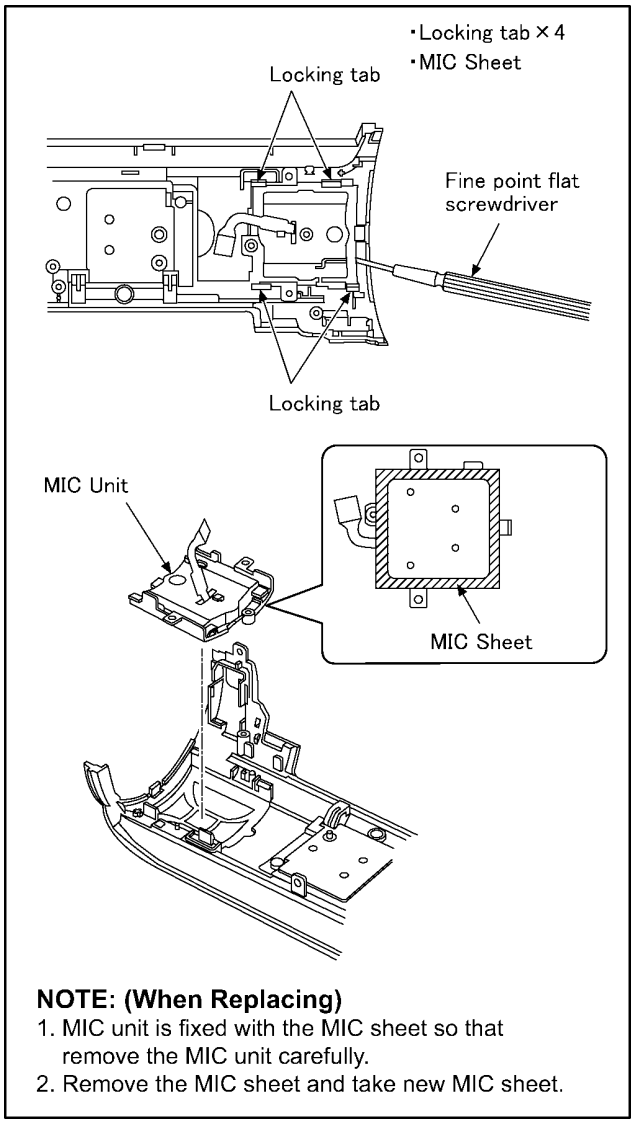


Fig.D35

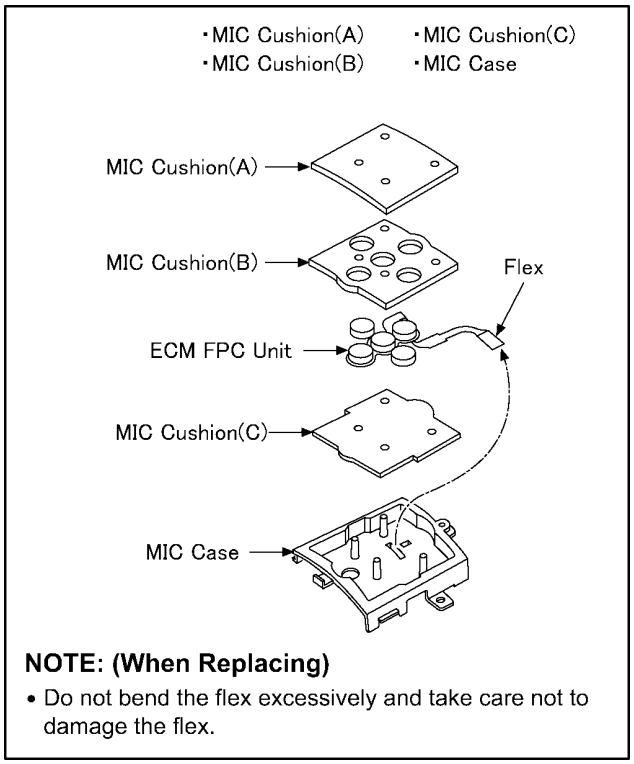


Fig.D36

8.3.25. Removal of the Batt Catcher P.C.B. Unit

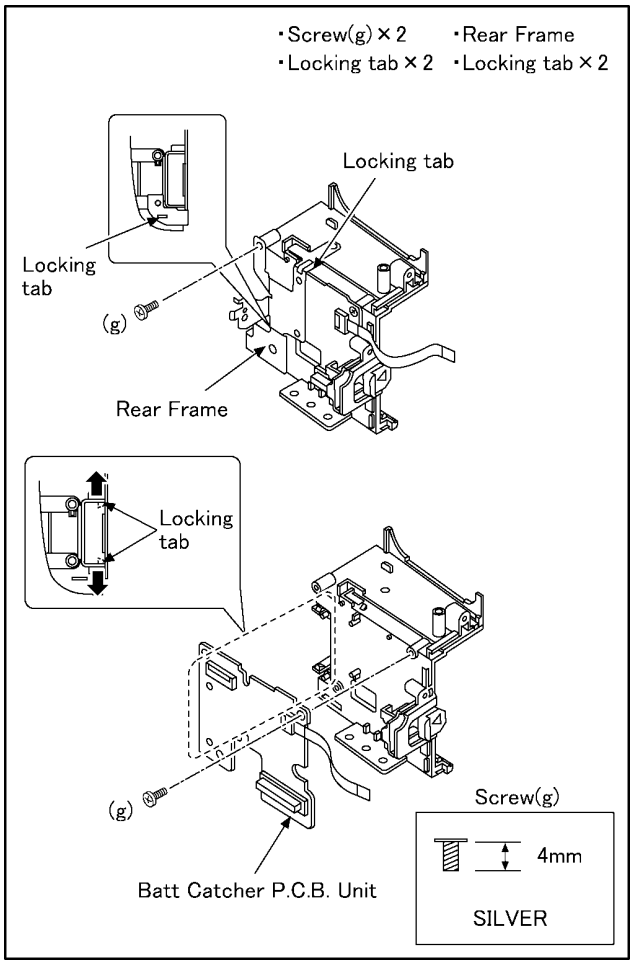


Fig.D37

8.3.26. Removal of the MOS Heat Radiation Plate

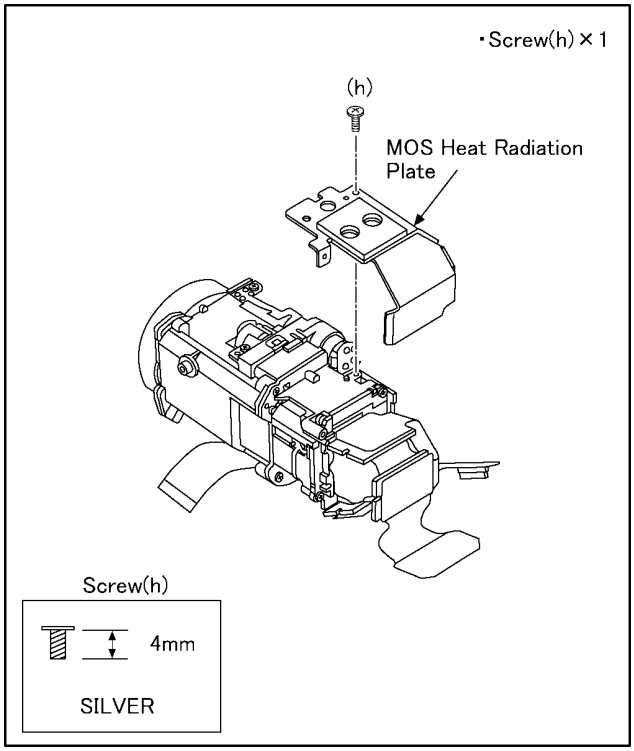


Fig.D38

8.3.27. Removal of the Prism Unit and Optical Filter

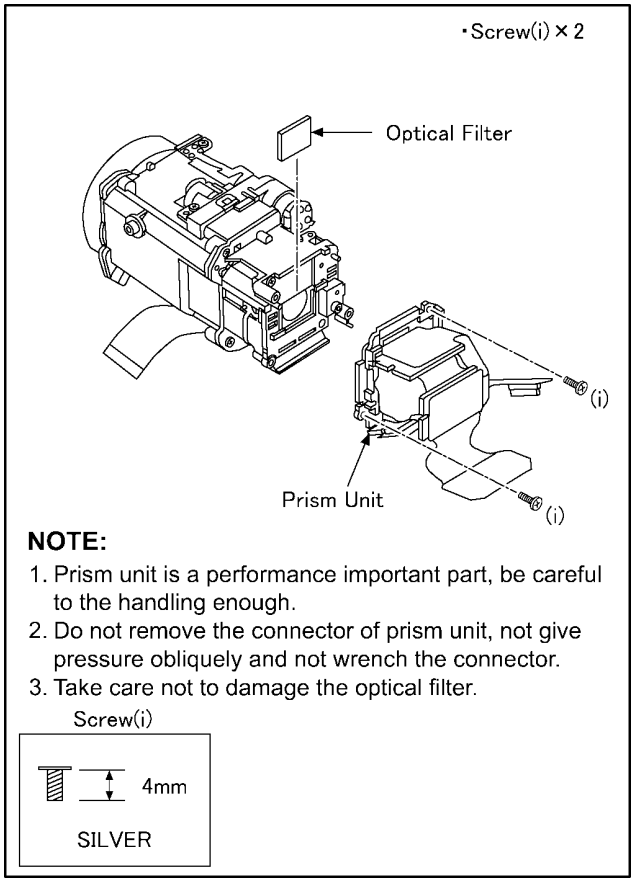


Fig.D39

8.3.28. Removal of the IRIS Unit

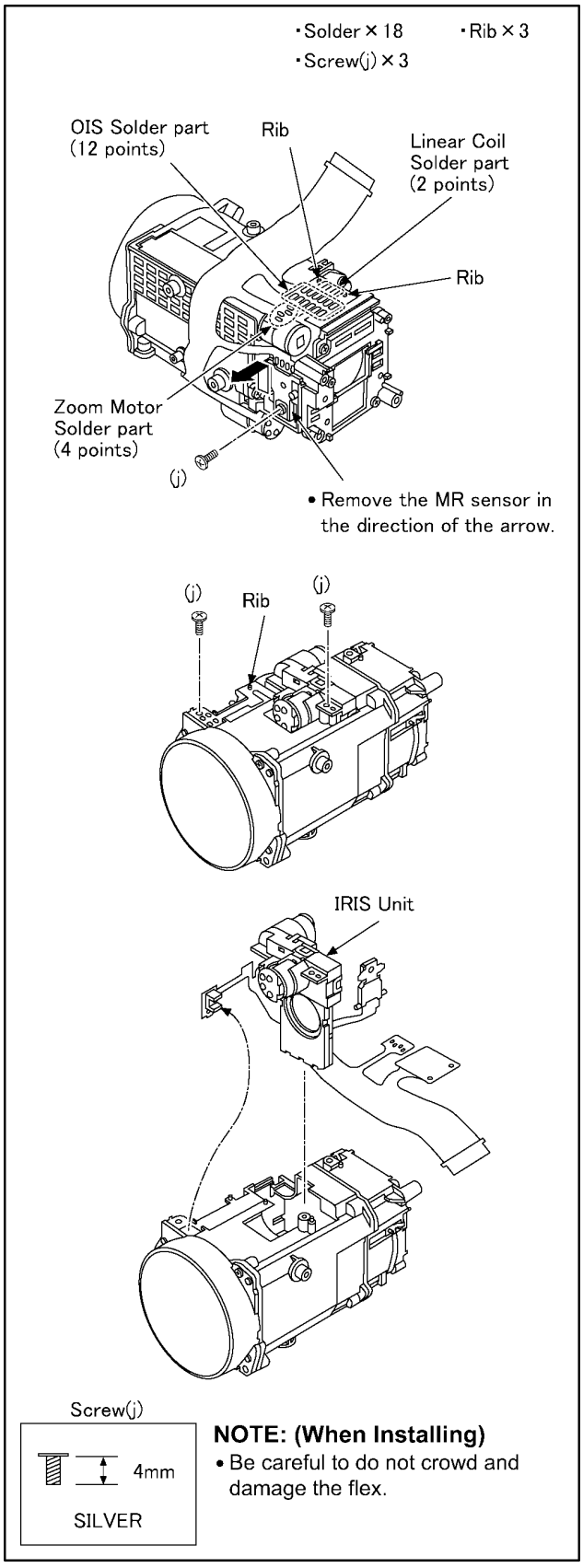


Fig.D40

8.3.29. Removal of the Zoom Motor

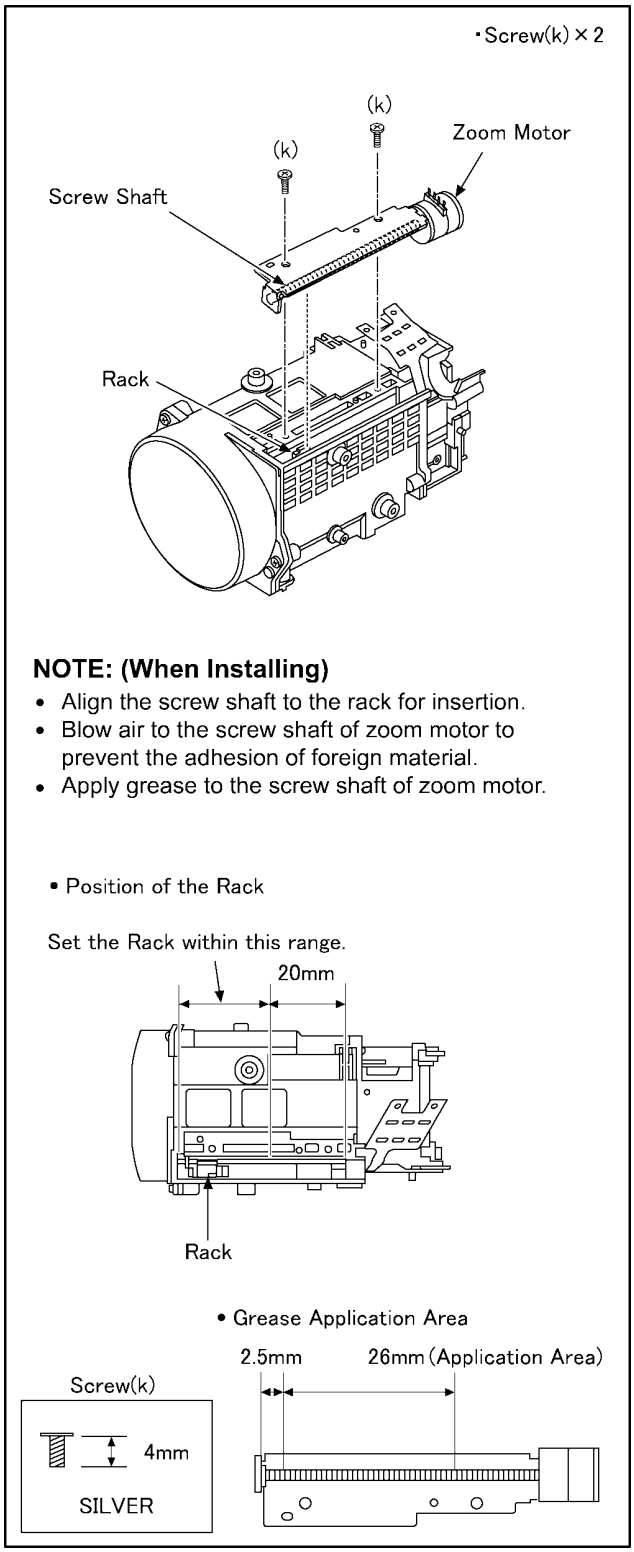


Fig.D41

8.3.30. Removal of the 1st Lens Frame Unit

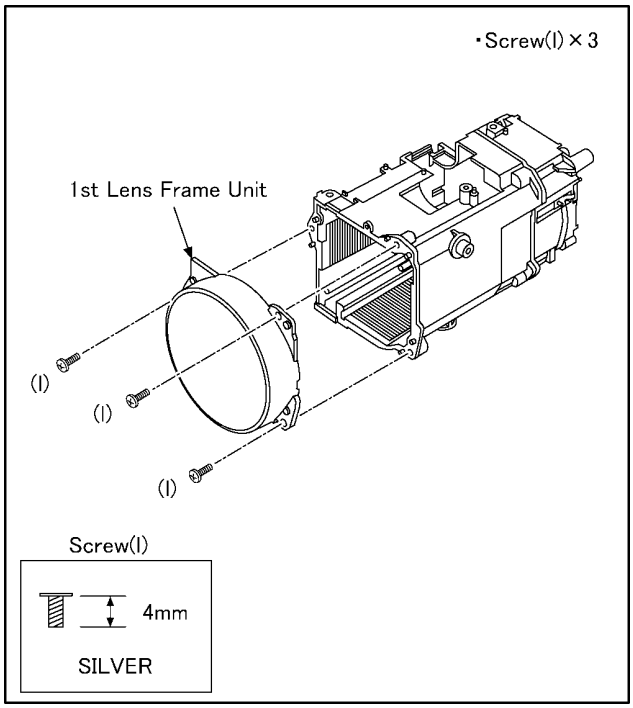


Fig.D42

8.3.31. Removal of the 2nd Lens Frame Move Unit

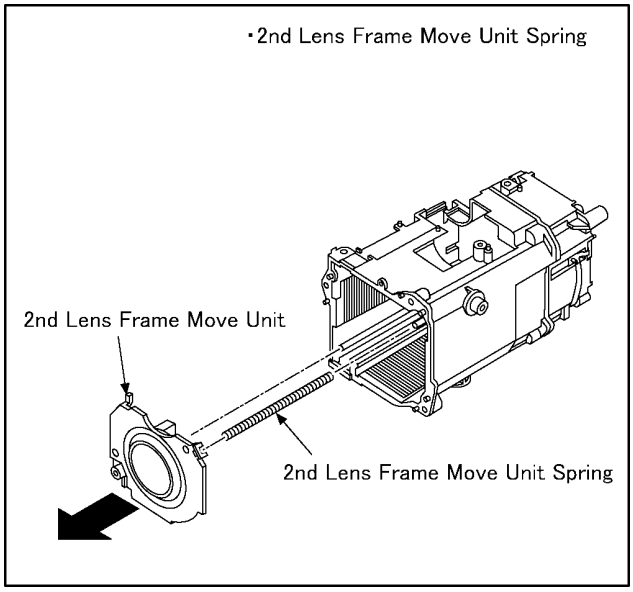


Fig.D43

8.3.32. Removal of the Body Unit and the Zoom Guide Pole

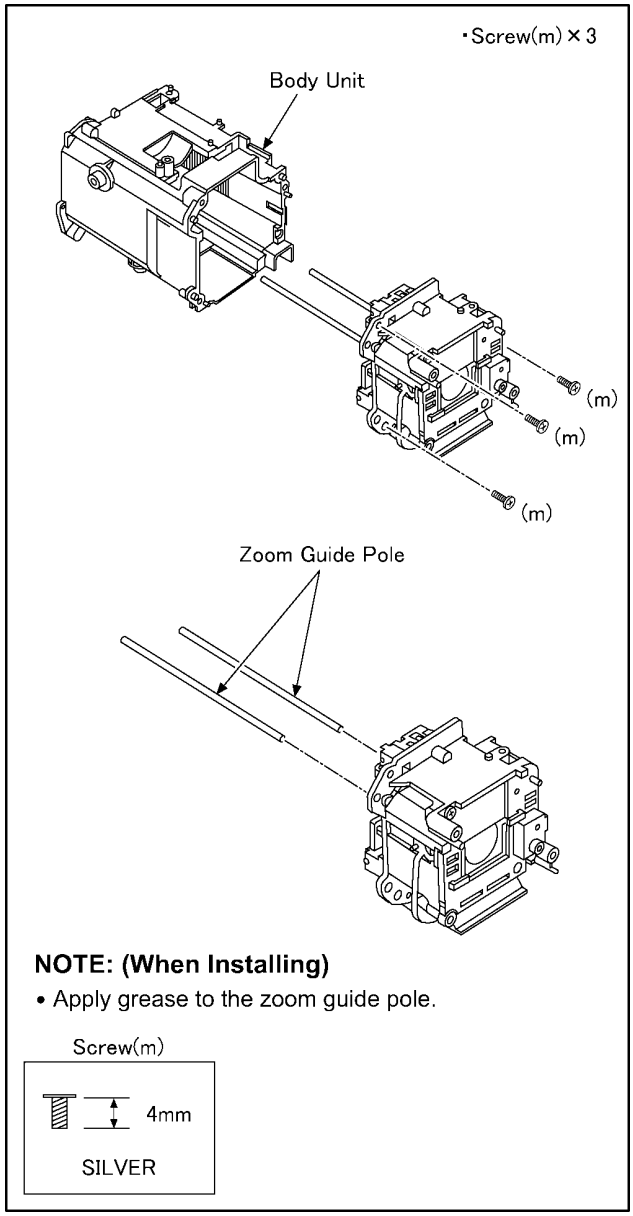


Fig.D44

8.3.33. Removal of the Master Flange Cover

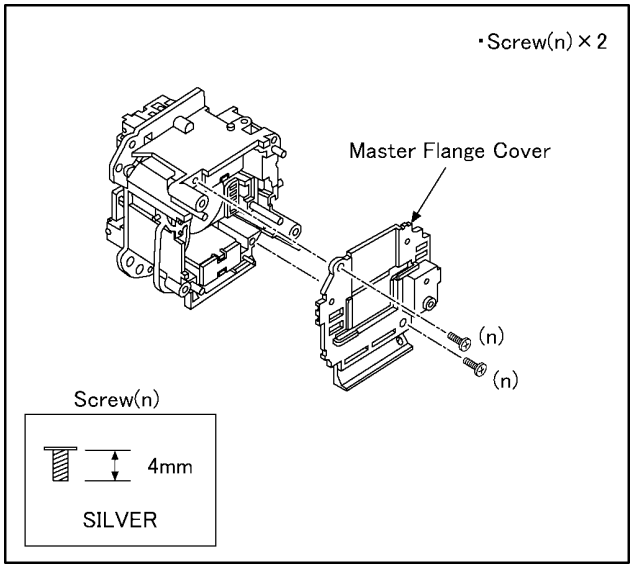


Fig.D45

8.3.34. Removal of the 4th Lens Frame Move Unit

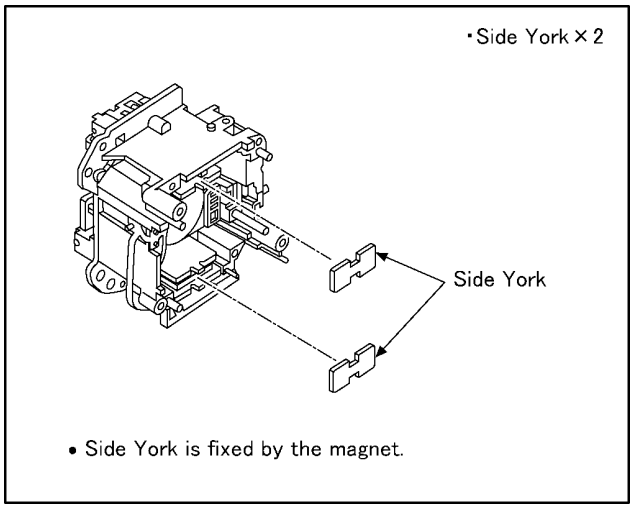
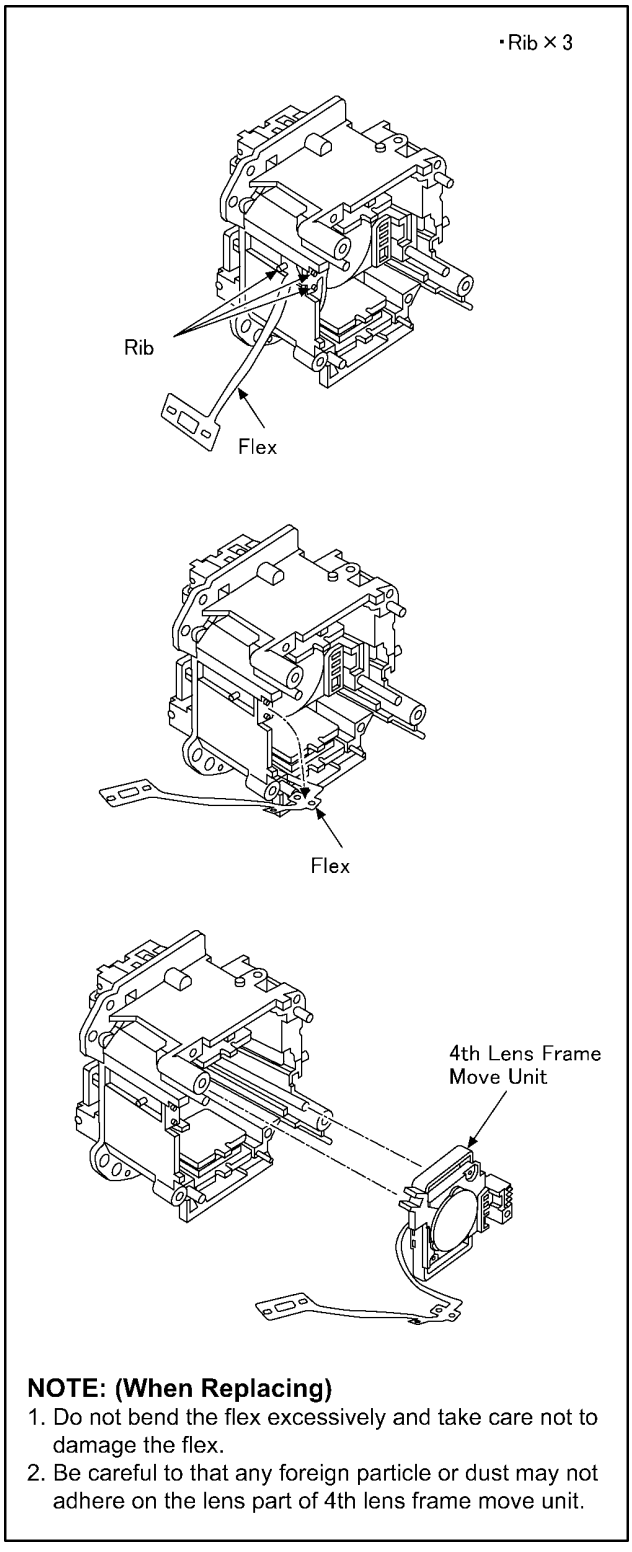


Fig.D46

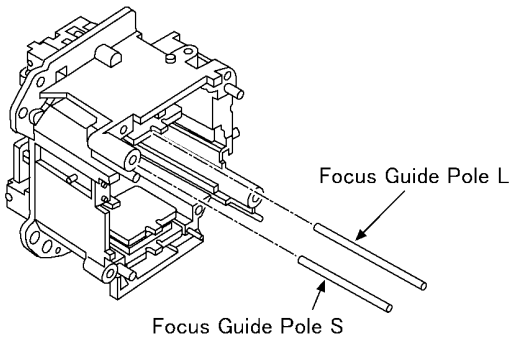


NOTE: (When Replacing)

1. Do not bend the flex excessively and take care not to damage the flex.
2. Be careful to that any foreign particle or dust may not adhere on the lens part of 4th lens frame move unit.

Fig.D47

8.3.35. Removal of the Focus Guide Pole L and Focus Guide Pole S



NOTE: (When Installing)

- Apply grease to the focus guide pole L and focus guide pole S.

Fig.D48

9 Measurements and Adjustments

9.1. Electric Adjustment

- Adjustment method is different from a conventional High definition video camera.
- An exclusive jig and PC (including software for adjustment “Tatsujin”) are necessary for electric adjustment.
- A USB driver for service is necessary to communication with PC.
- Connection method of the main unit and an exclusive adjustment jig as follows

9.1.1. Adjustment Procedure

- Connect the main unit to PC with USB.
  The adjustment instruction is available at "Software download" on the "Support Information from NWBG/VDBG-AVC" web-site in "TSN System".

Figure of connection

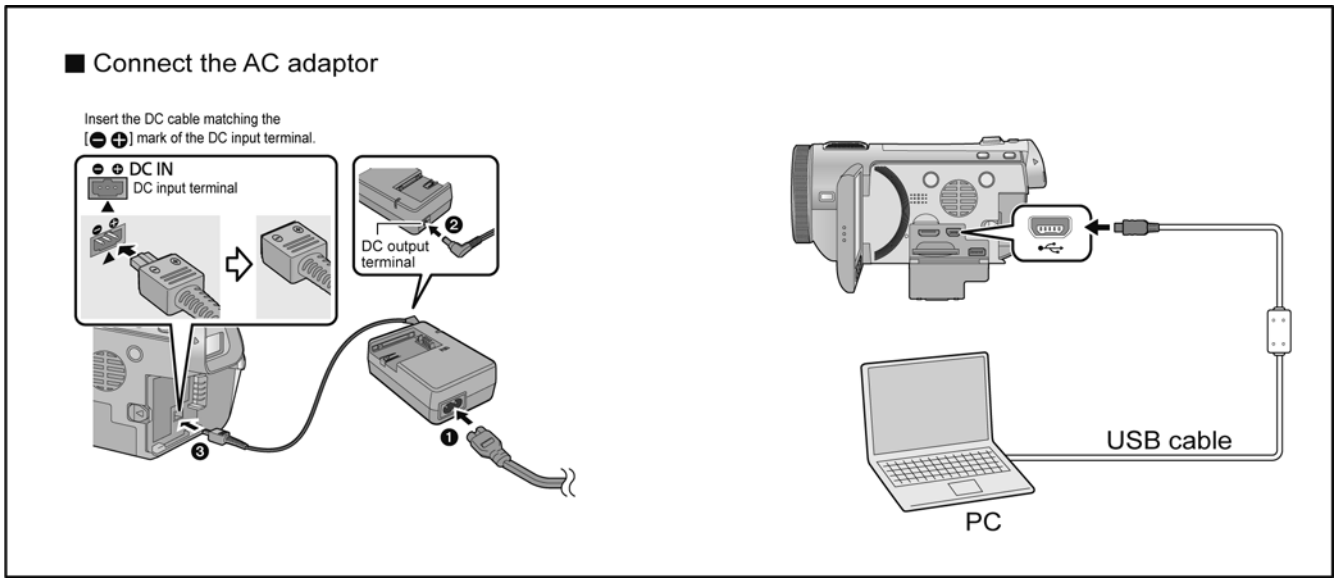
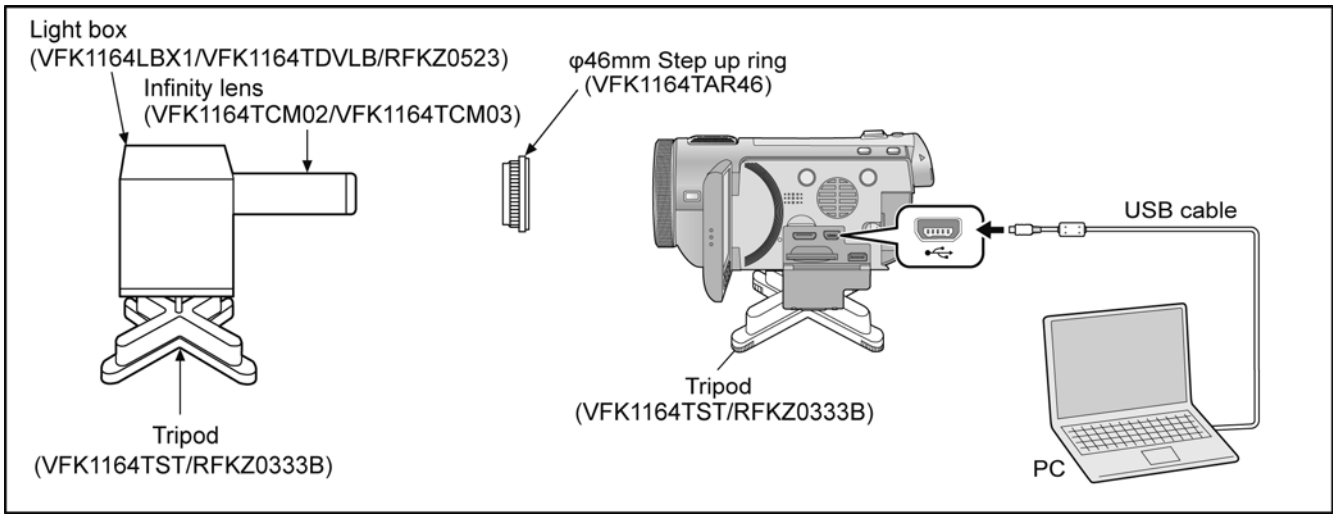


Figure of image when adjustment



Part Number of jig

- Only a necessary jig mentions it in setup of electric adjustment.

No.	Part Name	Part Number	Remarks
1	PC	------	
2	AC Adaptor	------	
3	USB Cable	------	
4	46mm Step Up Ring	VFK1164TAR46	
5	Adjustment Software (Tatsujin)	------	

Adjustment Items

- Adjustment item as follows.

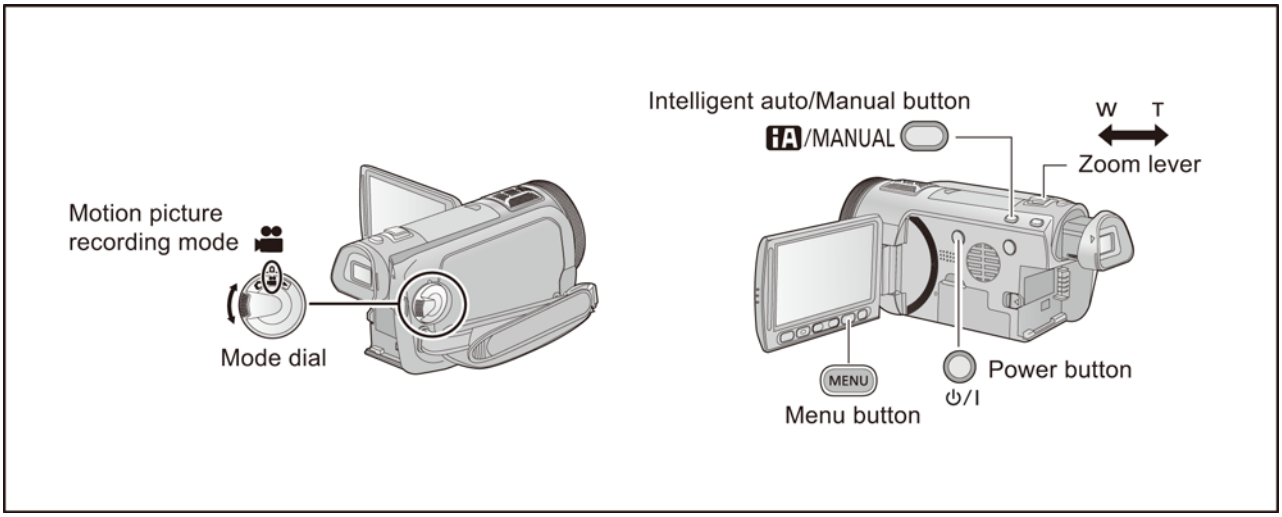
  The adjustment instruction is available at "Software download" on the "Support Information from NWBG/VDBG-AVC" web-site in "TSN System".

	Adjustment item \ Replacement part	Main P.C.B.	IC2002(EEPROM)	Lens Unit	Prism Unit	IC3701	IC3401, IC3402	IC701	OIS sensor	HDD G sensor
Camera Part	● Hall amplifire/PWM bias/ OIS Hall amplifire adjustment (automatic)	○	○	○	○			○	○	
	● OIS Sensor Offset adjustment (automatic)	○	○						○	
	● Zoom tracking adjustment (automatic)	○	○	○	○			○		
	● Address wound revision (automatic)	○	○		○					
	● White balance adjustment (automatic)	○	○		○					
	● Gain adjustment between channels (automatic)	○	○		○					
Video Part	● Brightness level adjustment (automatic)	○	○			○				
	● UniPhier DDR revision (automatic)	○	○				○			
	● HDD G sensor adjustment (automatic)	○	○							○

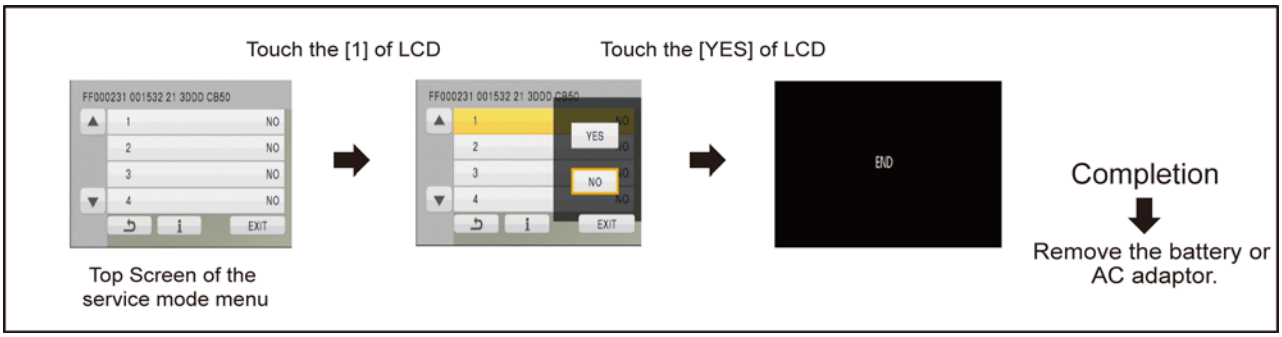
10 Factory Setting

10.1. How To Turn On The Factory Settings?

1. Set the mode switch “Motion Picture Recording” mode.
2. Turn the power on, and then while keep pressing the “Zoom lever” to W side, “Intelligent auto/Manual” button and “Menu” button for more than 3 seconds until the top screen of the Service Mode Menu being displayed.



3. Touch the [1] of LCD.
4. Touch the [YES] of LCD.
5. After few seconds “END” is displayed on LCD monitor. Cutting of battery connection or AC power supply connection as a completion of the “FACTORY SETTINGS”.



10.2. What Is The Factory Settings?

The factory settings clean up and/or refresh the following settings.

1. MENU, MODE, ADJUSTMENT VALUE.
2. SD card format.
3. Reset the folder number and file number of still pictures.
   (Setting the folder number is 100, and file number is 0.)
4. Clear the mechanism lock information.
5. Clear the service mode information contents.
6. Close the lens cover
7. Initialize the VIERA Link Physical Address.
8. Confirm the data area of HDD is cleared.
   (When recorded data in HDD, "error display" is done)
   If "error display" is done, execute physical format according to the following procedure.

- To physically format the HDD, connect the unit via the AC adaptor, select [FORMAT MEDIA] → [HDD] from the menu, and then press and hold the delete button on the screen below for about 3 seconds. When the HDD data deletion screen appears, select [YES], and then follow the on-screen instructions.

The setting position of factory settings:

Name	Setting position
Mode dial	Motion picture recording mode

VM1002001CE

Service Manual

Diagrams and Replacement Parts List

High Definition Video Camera

Model No.

HDC-HS700P	HDC-HS700EF
HDC-HS700PC	HDC-HS700EG
HDC-HS700PU	HDC-HS700EP
HDC-HS700EB	HDC-HS700GC
HDC-HS700EC	HDC-HS700GN
HDC-HS700EE	HDC-HS700GT

Vol. 1
Colour
(K).....Black Type

S1. About Indication of The Schematic Diagram

S1.1. Important Safety Notice

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

1.Although reference number of the parts is indicated on the P.C.B. drawing and/or schematic diagrams, it is NOT mounted on the P.C.B. when it is displayed with "$" mark.

2.It is only the "Test Round" and no terminal (Pin) is available on the P.C.B. when the TP (Test Point) indicated as "●" mark.

3.The voltage being indicated on the schematic diagram is measured in "Standard-Playback" mode when there is no specify mode is mentioned.

4.Although the voltage and waveform available on here is measured with standard frame, it may be differ from actual measurement due to modification of circuit and so on.

5.The voltage being indicated here may be include observational-error (deviation) due to internal-resistance and/or reactance of equipment. Therefore, handle the value indicated on here as reference.

6.Use the parts number indicated on the Replacement Parts List .

7.Indication on Schematic diagrams:

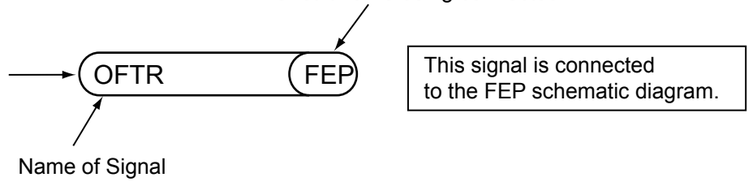


Table of contents

S2. Voltage Chart

Note) Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.
Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

S2.1. Strobe P.C.B.

REF No.	PIN No.	POWER ON
IC7001	1	0
IC7001	2	0
IC7001	3	0
IC7001	4	0
IC7001	5	3.3
IC7001	6	0
IC7001	7	0
IC7001	8	0
IC7001	9	2.9
IC7001	10	8.3
Q3901	E	3.3
Q3901	C	3.3
Q3901	B	3.3

S2.2. Front P.C.B.

REF No.	PIN No.	POWER ON
Q4901	E	0.5
Q4901	C	3.9
Q4901	B	1
Q4902	E	4.5
Q4902	C	2.9
Q4902	B	3.9
Q4903	E	0.5
Q4903	C	3.9
Q4903	B	1
Q4904	E	4.5
Q4904	C	2.9
Q4904	B	3.9
Q4907	E	4.5
Q4907	C	5.1
Q4907	B	5.1
Q4908	E	2.8
Q4908	C	4.5
Q4908	B	3.4
Q6401	E	5.1
Q6401	C	-0.4
Q6401	B	5.1
QR6401	E	0
QR6401	C	4.8
QR6401	B	0

S2.3. MIC AMP P.C.B.

REF No.	PIN No.	POWER ON
IC4801	1	2.5
IC4801	2	2.5
IC4801	3	2.5
IC4801	4	0
IC4801	5	2.5
IC4801	6	2.5
IC4801	7	2.5
IC4801	8	4.8
IC4802	1	2.5
IC4802	2	2.5
IC4802	3	2.5
IC4802	4	0
IC4802	5	2.5
IC4802	6	2.5
IC4802	7	2.5
IC4802	8	4.8
IC4803	1	2.5
IC4803	2	2.5
IC4803	3	2.5
IC4803	4	0
IC4803	5	2.5
IC4803	6	2.5
IC4803	7	2.5
IC4803	8	4.8
Q4801	E	4.1
Q4801	C	4.8
Q4801	B	4.8

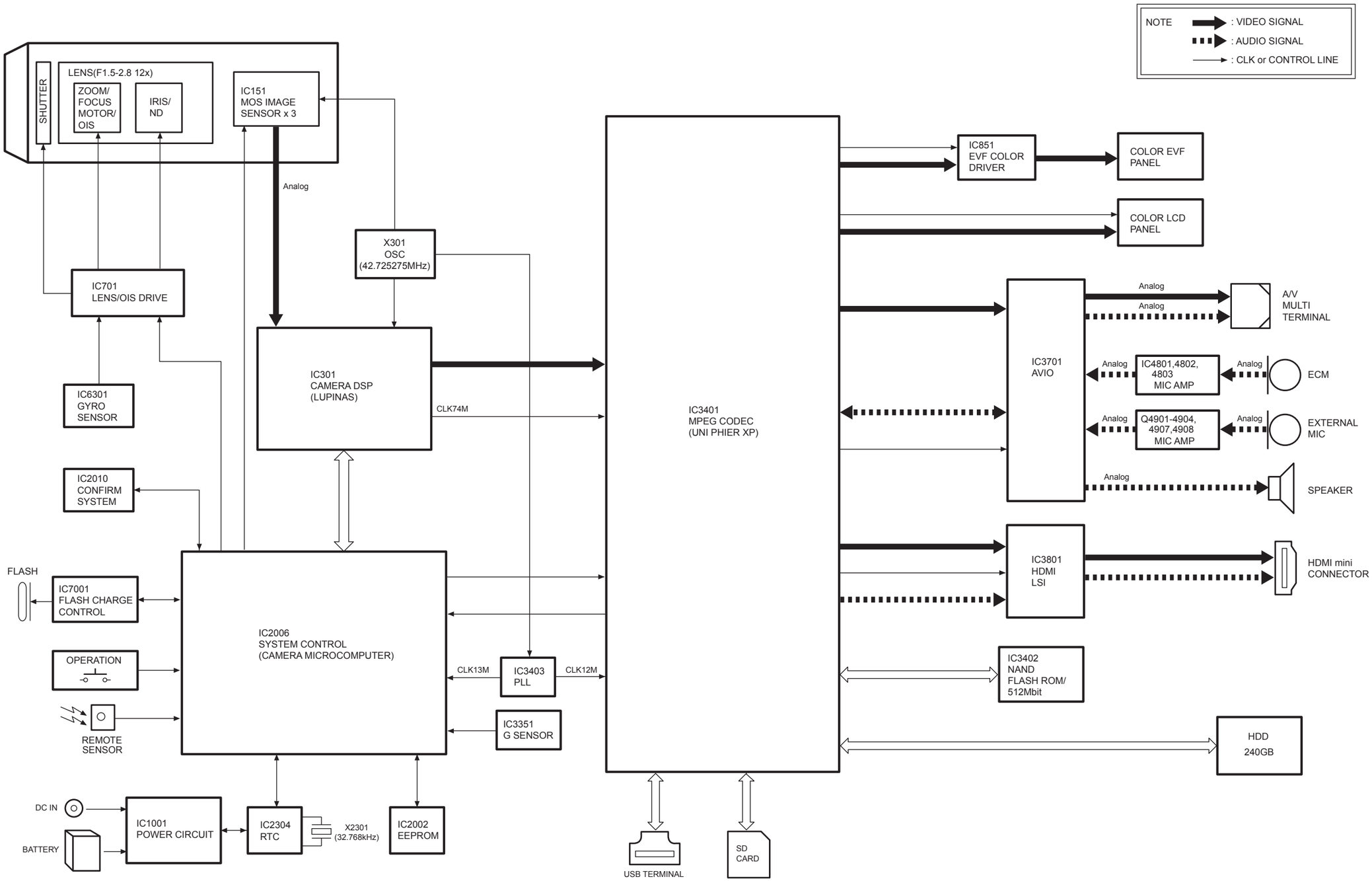
S2.4. BATT_Catcher P.C.B.

REF No.	PIN No.	POWER ON
IC6302	1	3.2
IC6302	2	0
IC6302	3	0
IC6302	4	2.9
IC6302	5	3.2
IC851	1	0
IC851	2	0
IC851	3	0
IC851	4	0
IC851	5	0
IC851	6	0
IC851	7	0
IC851	8	0
IC851	9	0
IC851	10	0
IC851	11	0
IC851	12	0.7
IC851	13	0.7
IC851	14	0
IC851	15	0
IC851	16	0
IC851	17	0
IC851	18	0
IC851	19	0
IC851	20	0
IC851	21	0
IC851	22	0
IC851	23	0
IC851	24	0.2
IC851	25	0
IC851	26	0
IC851	27	0
IC851	28	0
IC851	29	0
IC851	30	0
IC851	31	0
IC851	32	0
IC851	33	0.1
IC851	34	0
IC851	35	0
IC851	36	0
IC851	37	0
IC851	38	0
IC851	39	0
IC851	40	0
IC851	41	0
IC851	42	0
IC851	43	0
IC851	44	0
IC851	45	0
IC851	46	0
IC851	47	0
IC851	48	0
IC851	49	0
IC851	50	0
IC851	51	0
IC851	52	0
IC851	53	0
IC851	54	0
IC851	55	0
IC851	56	0
IC851	57	0
IC851	58	0
IC851	59	0
IC851	60	0
IC851	61	0

REF No.	PIN No.	POWER ON
IC851	62	0
IC851	63	0
IC851	64	0

S3. Block Diagram

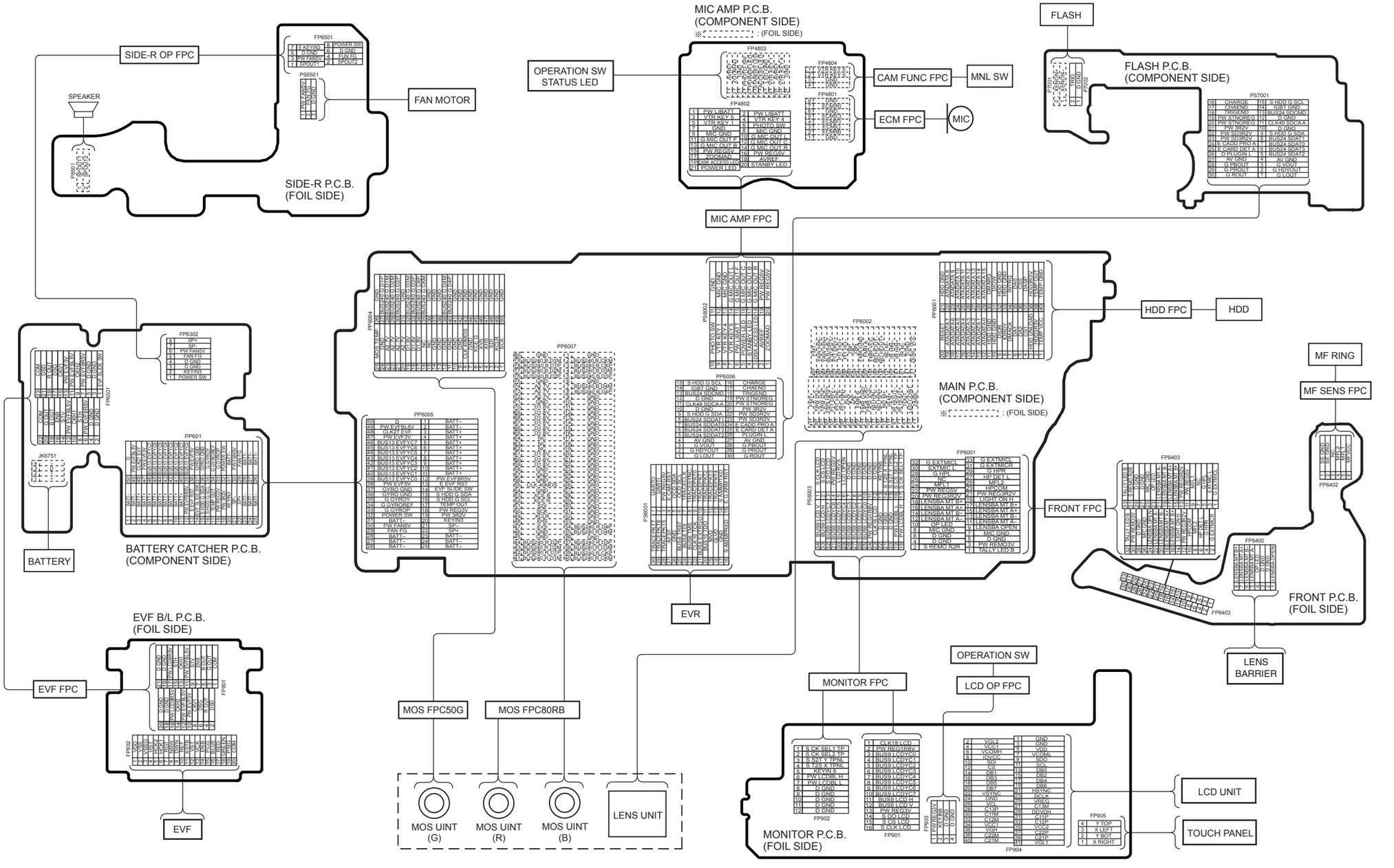
S3.1. Overall Block Diagram



HDC-HS700 OVERALL BLOCK DIAGRAM

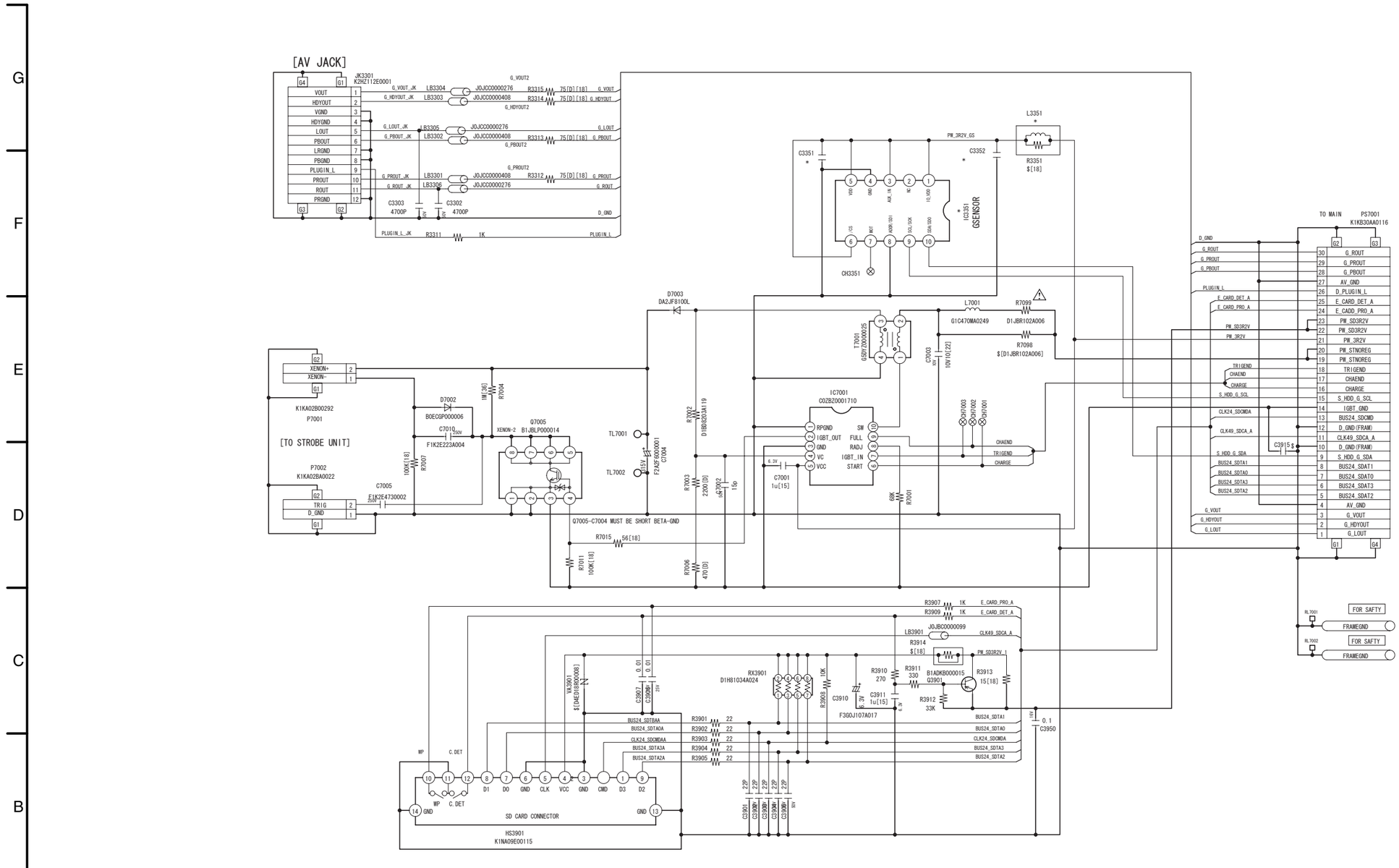
S4. Schematic Diagram

S4.1. Interconnection Diagram



HDC-HS700 INTERCONNECTION DIAGRAM

S4.2. Strobe Schematic Diagram



Modify Category

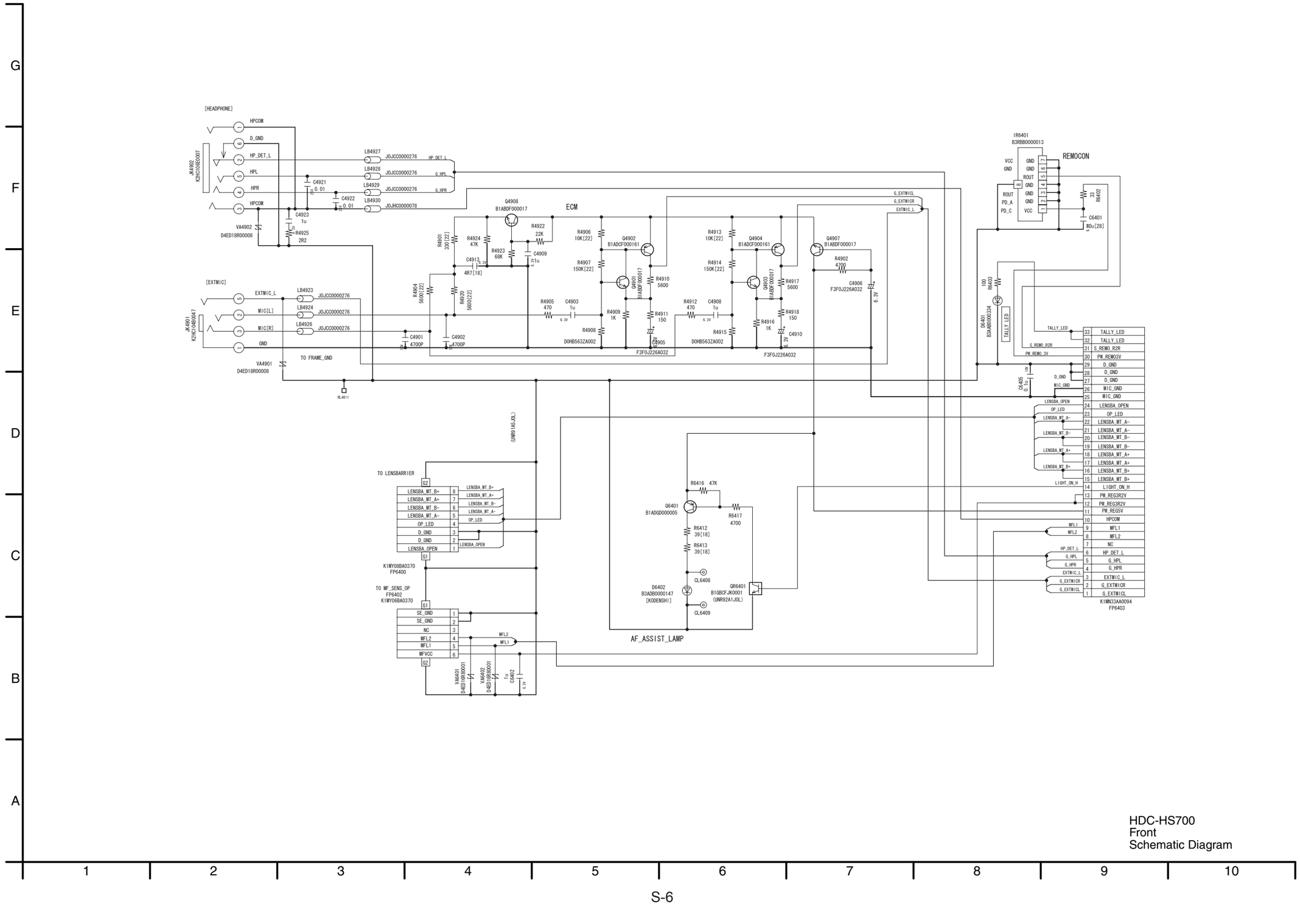
	Variation	Type	CIRCUIT BOARD NO.	UNIT NO.
1	HS700	A	VJB03H87	A
2	S$700,S$707,TM700	B		B
3	R2250,R225F	C	VJB03H91	A

VariationCategory

	A	B/C
C3351	16V0.1	$
C3352	F1J0J1060009	$[F1J0J1060009]
IC3351	L2EE00000014	$[L2EE00000014]
L3351	G1C100MA0408	$[G1C100MA0408]

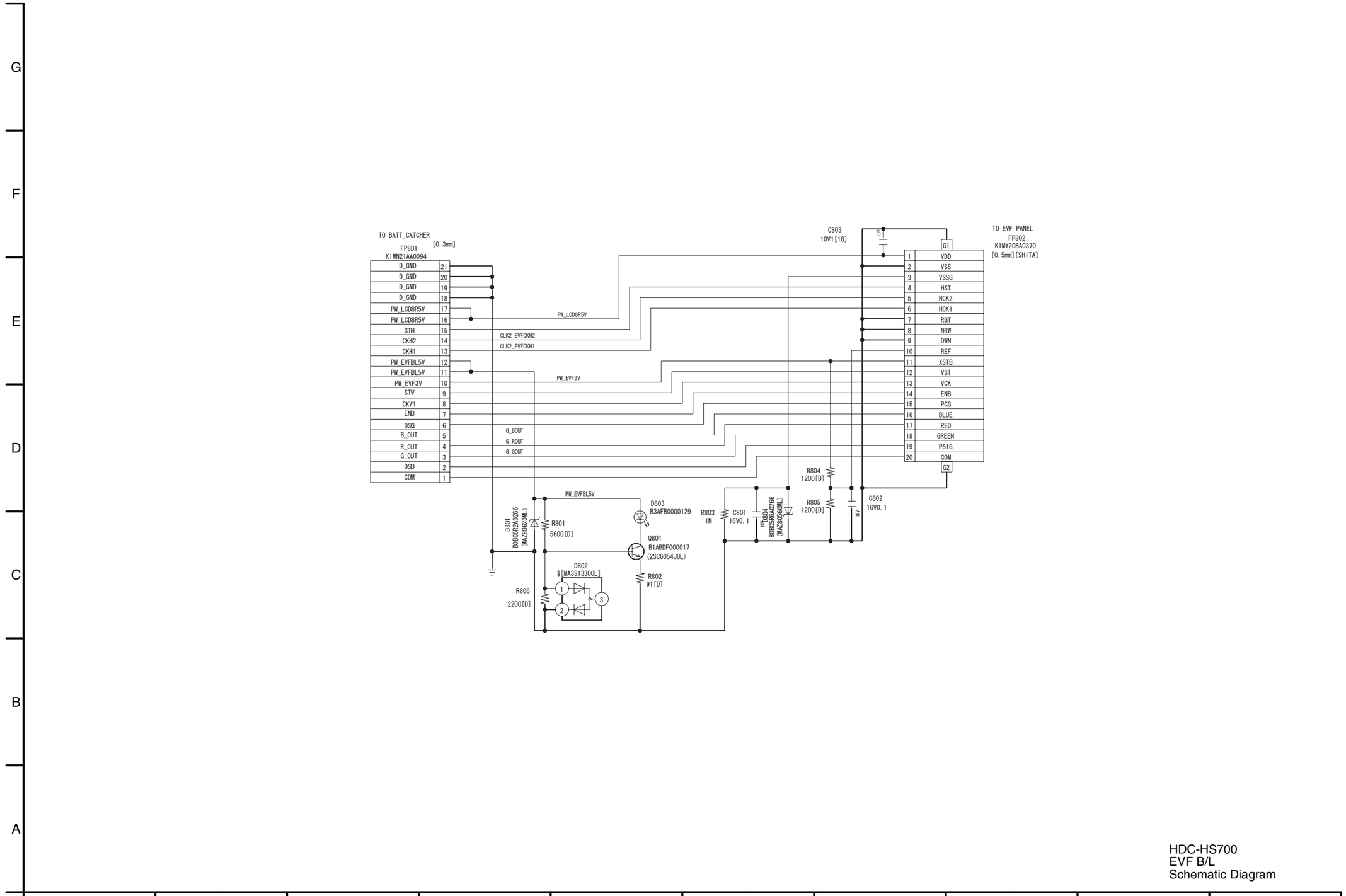
HDC-HS700
Strobe
Schematic Diagram

S4.3. Front Schematic Diagram



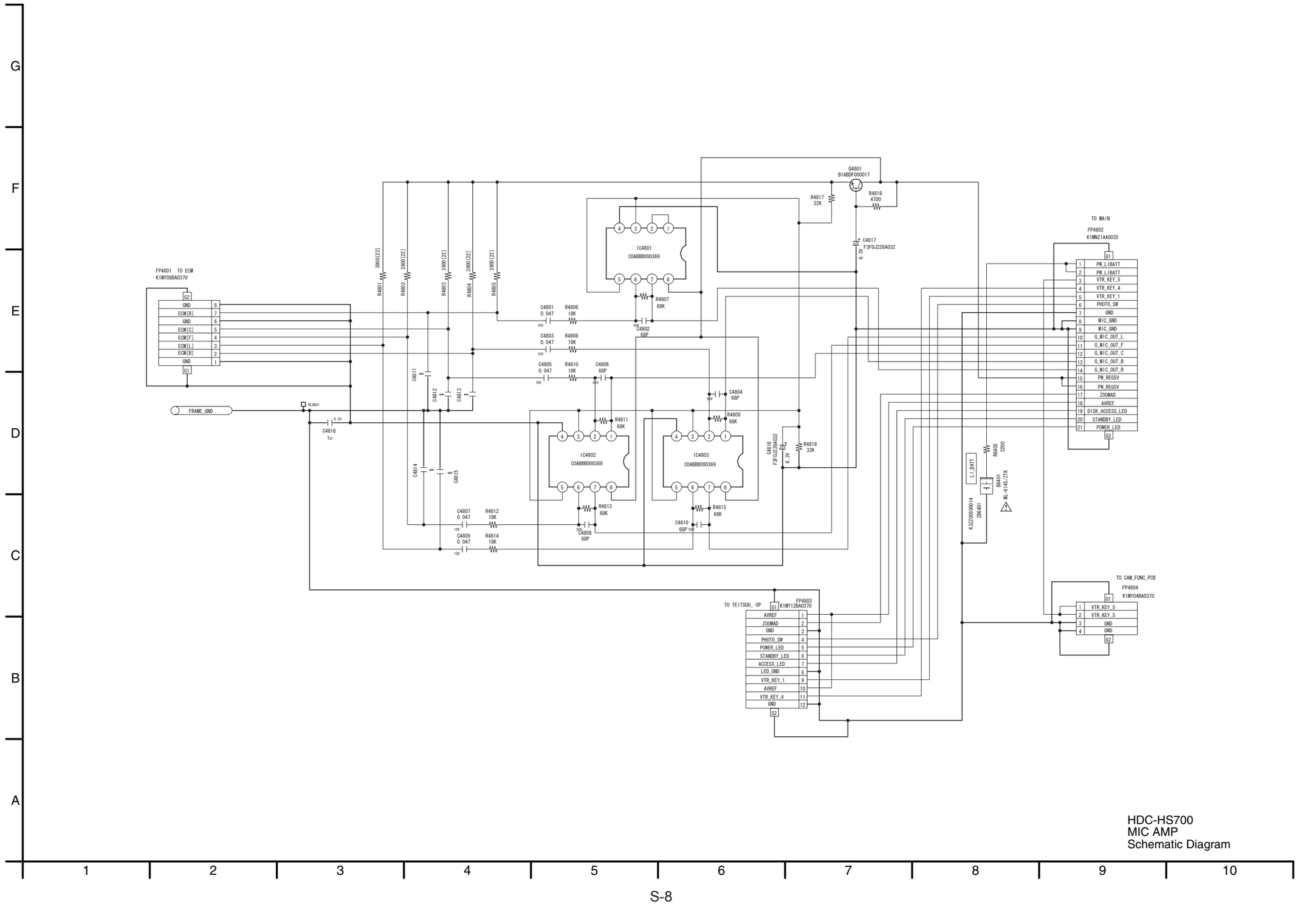
HDC-HS700
Front
Schematic Diagram

S4.4. EVF B/L Schematic Diagram



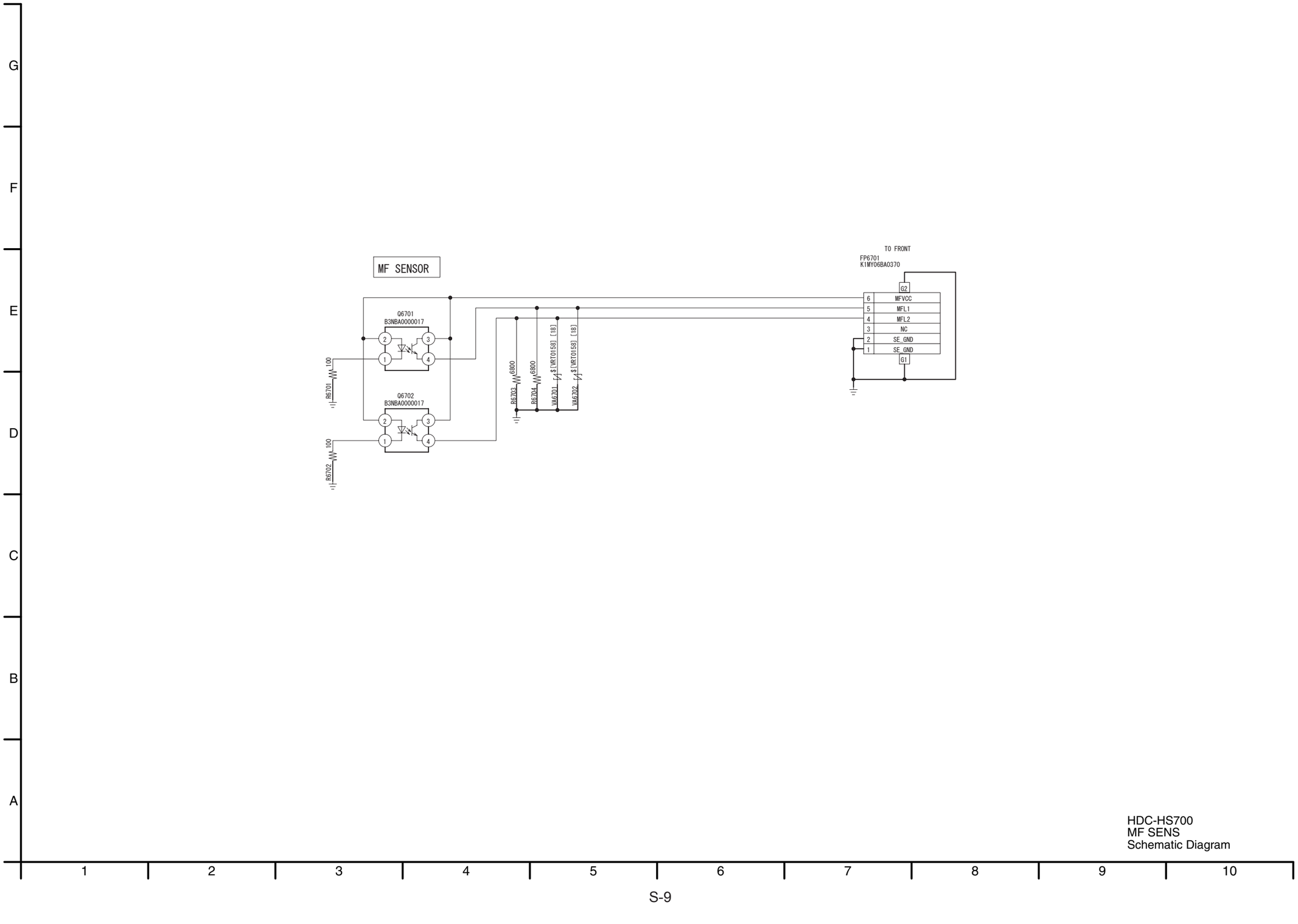
HDC-HS700
EVF B/L
Schematic Diagram

S4.5. MIC AMP Schematic Diagram

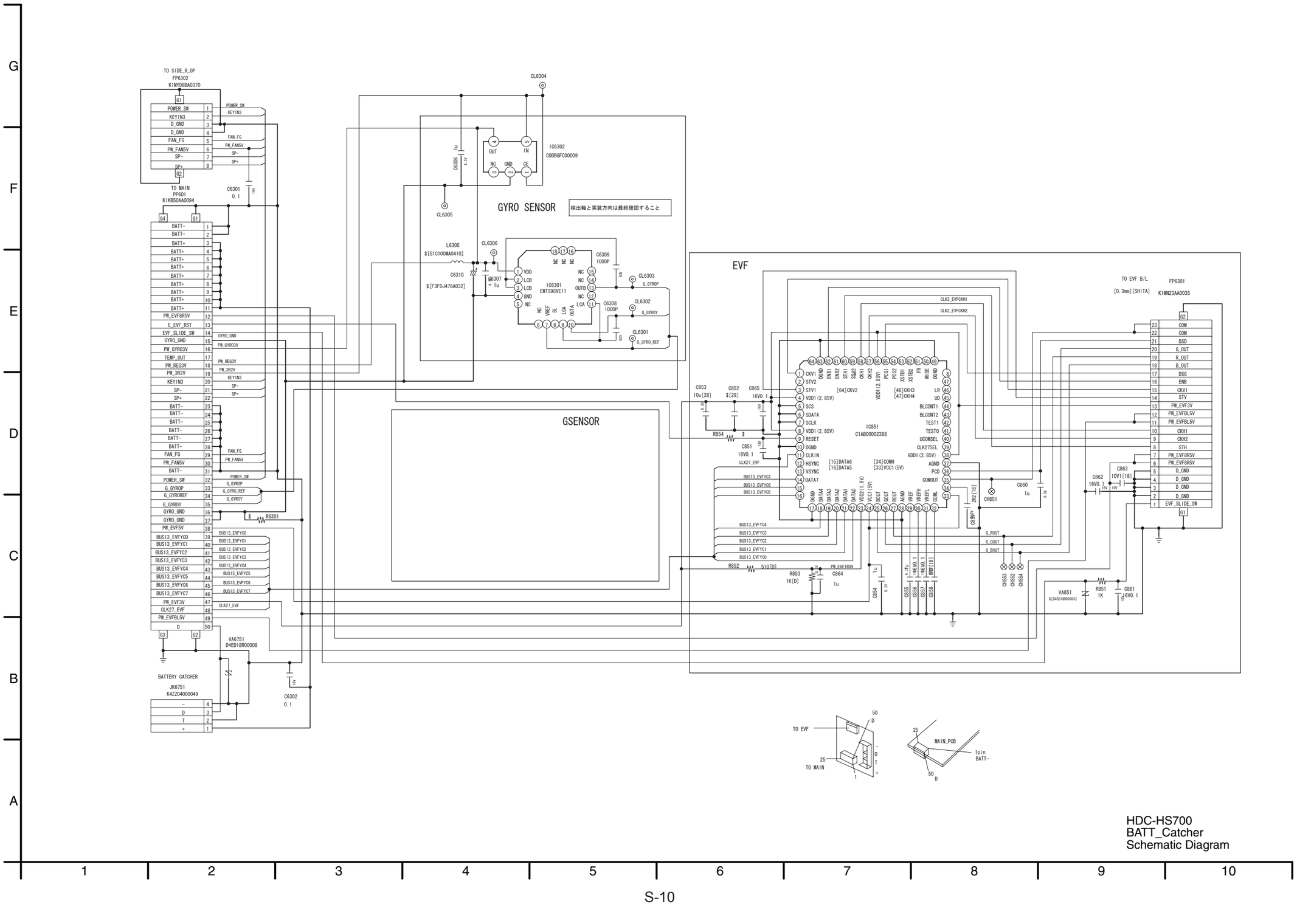


HDC-HS700
MIC AMP
Schematic Diagram

S4.6. MF SENS Schematic Diagram

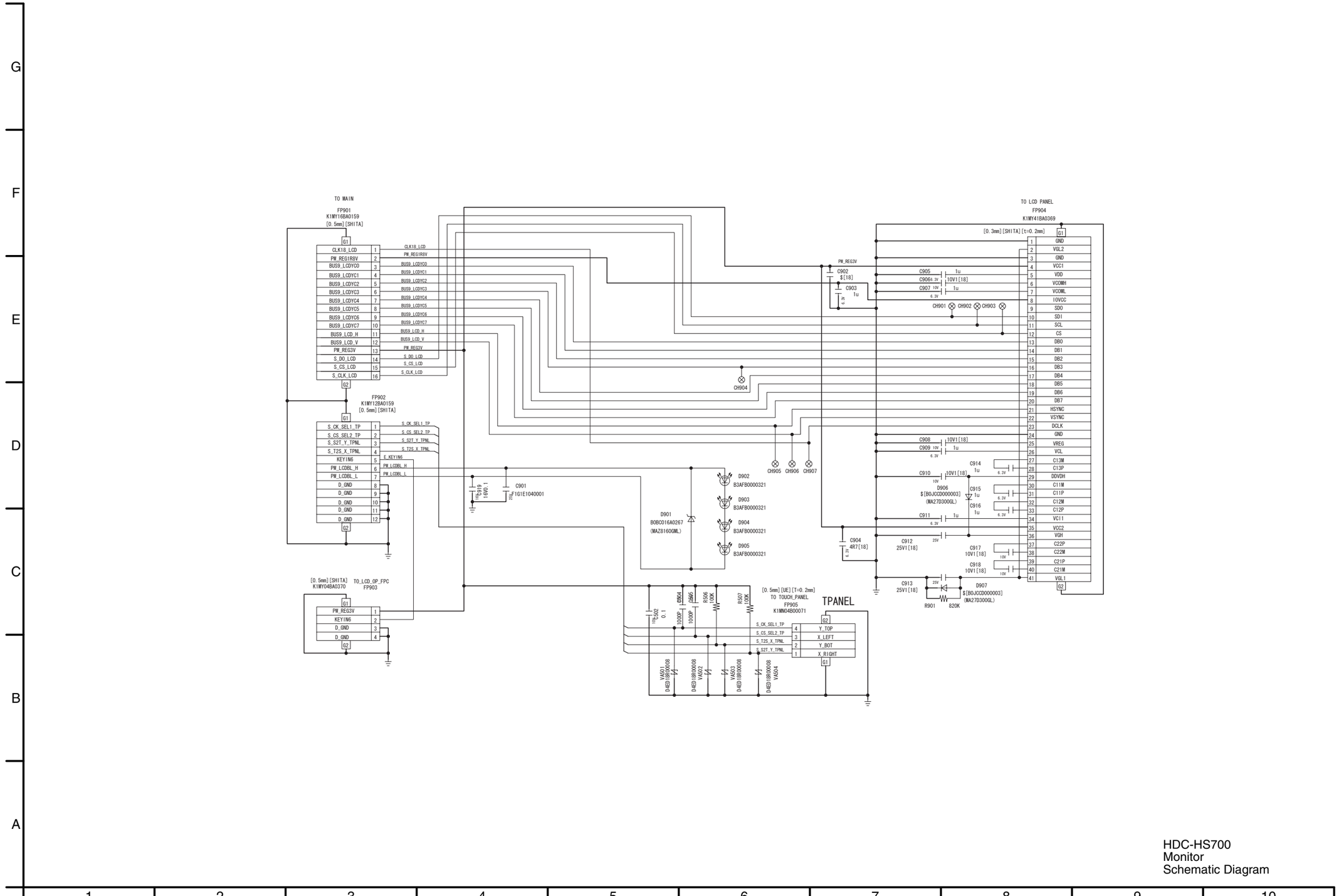


S4.7. BATT_Catcher Schematic Diagram



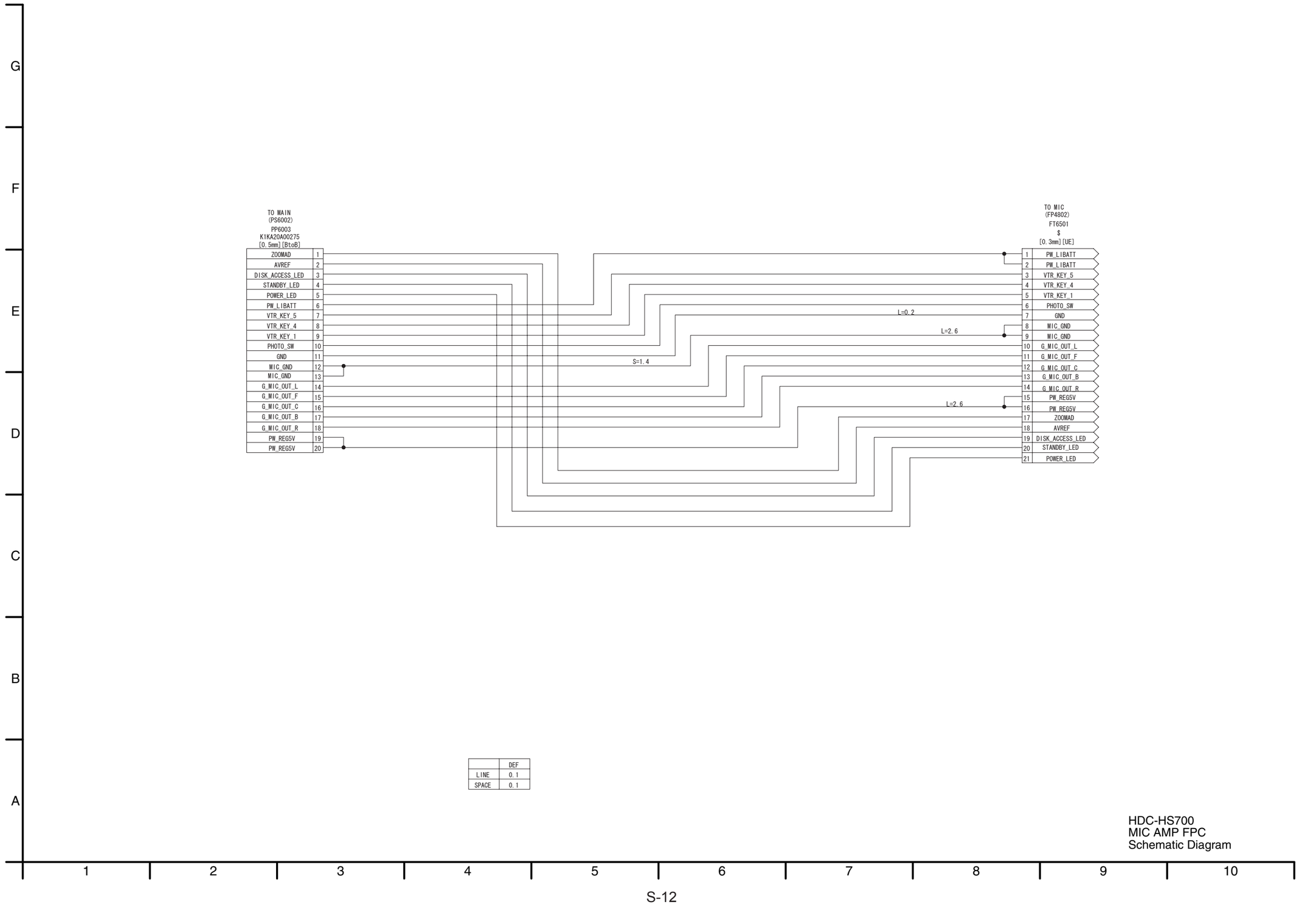
HDC-HS700
BATT_Catcher
Schematic Diagram

S4.8. Monitor Schematic Diagram

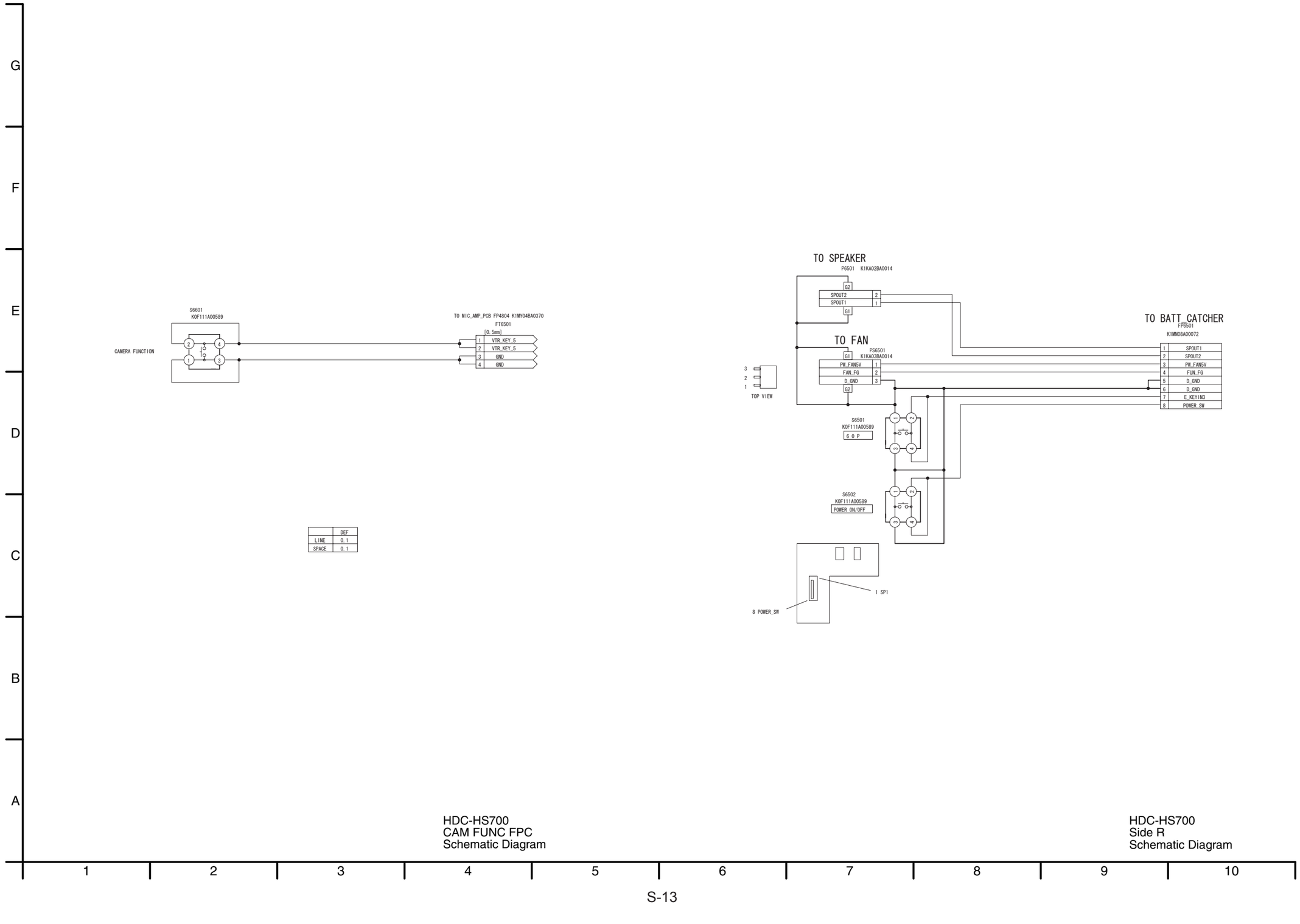


HDC-HS700
Monitor
Schematic Diagram

S4.9. MIC AMP FPC Schematic Diagram



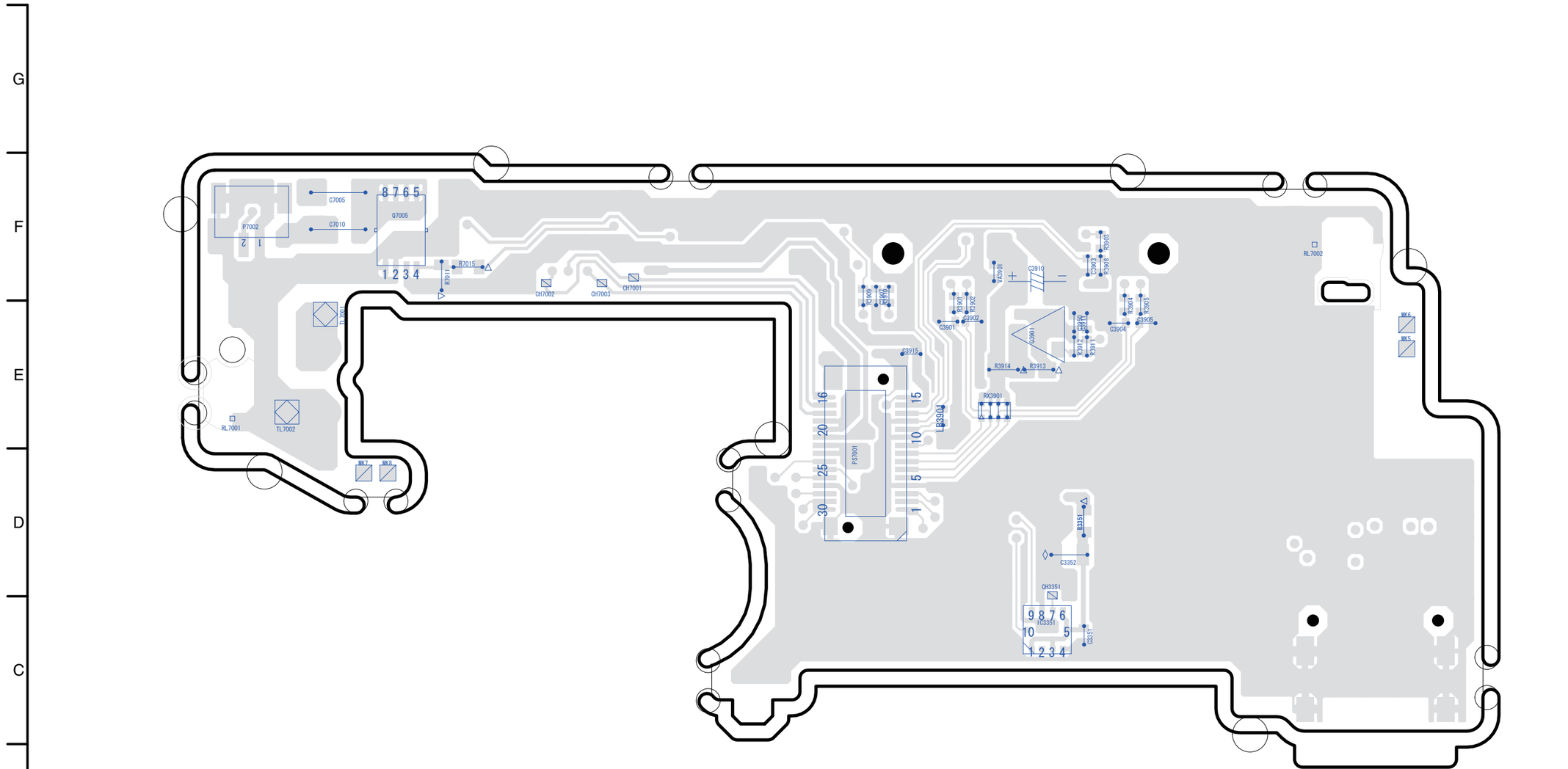
S4.10. CAM FUNC FPC Schematic Diagram / S4.11. Side R Schematic Diagram



S5. Print Circuit Board

S5.1. Strobe P.C.B.

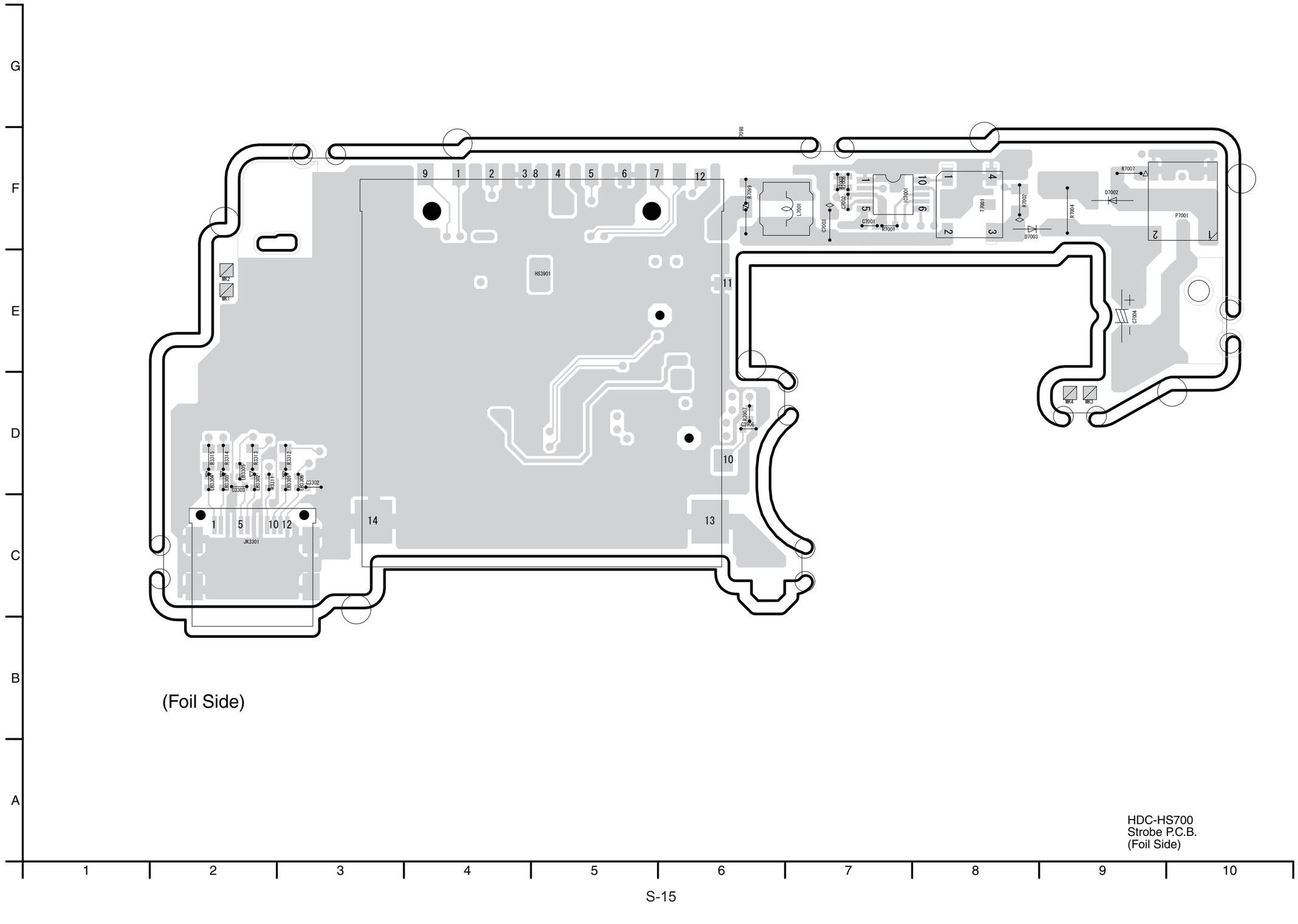
S5.1.1. Strobe P.C.B. (Component Side)



(Component Side)

HDC-HS700
Strobe P.C.B.
(Component Side)

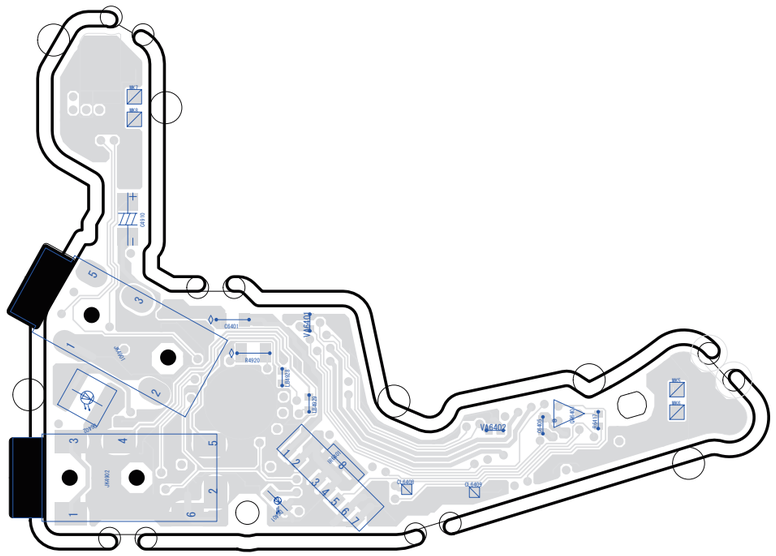
S5.1.2. Strobe P.C.B. (Foil Side)



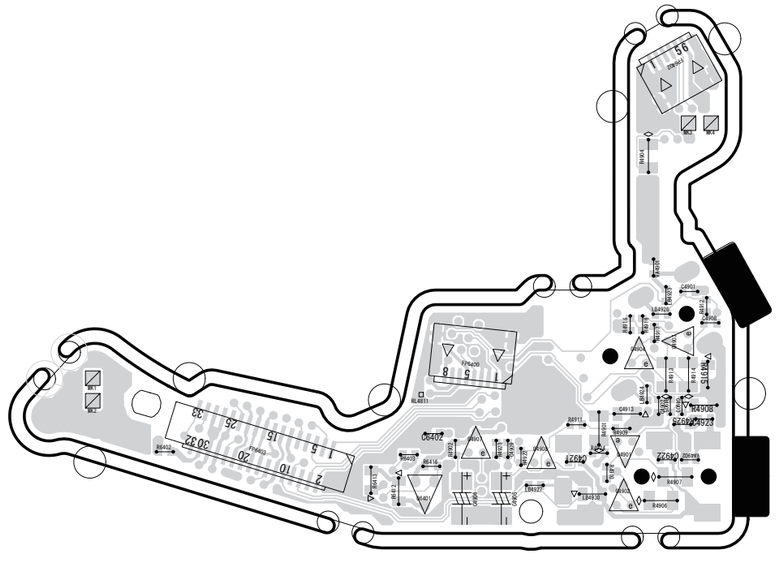
(Foil Side)

HDC-HS700
Strobe P.C.B.
(Foil Side)

S5.2. Front P.C.B.



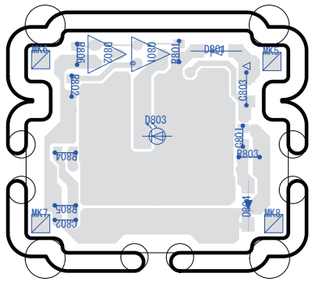
(Component Side)



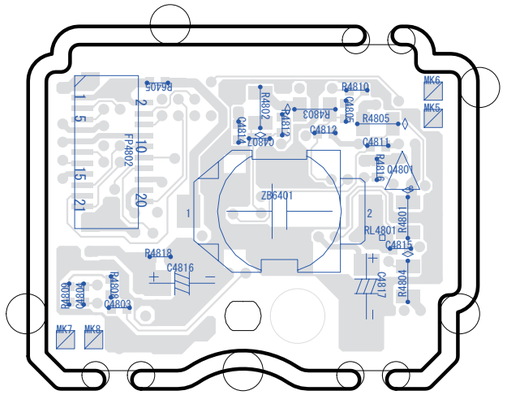
(Foil Side)

HDC-HS700
Front P.C.B.

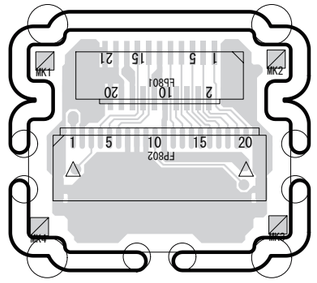
S5.3. EVF B/L P.C.B. / S5.4. MIC AMP P.C.B.



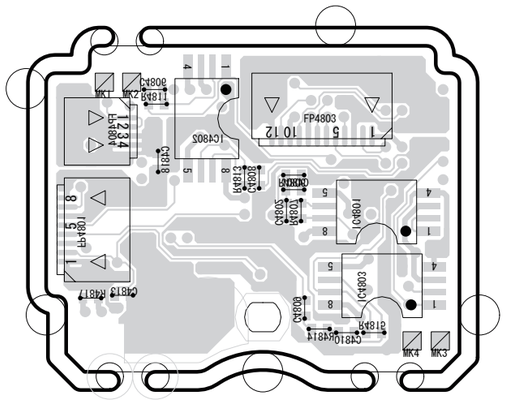
(Component Side)



(Component Side)



(Foil Side)

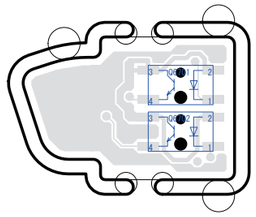


(Foil Side)

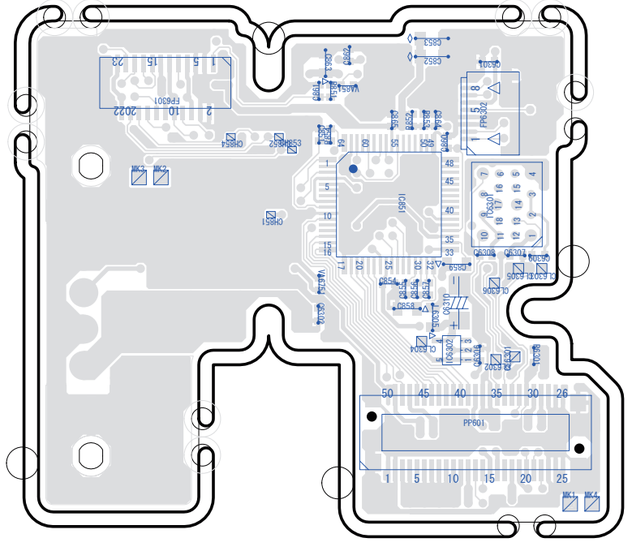
HDC-HS700
EVF B/L P.C.B.

HDC-HS700
MIC AMP P.C.B.

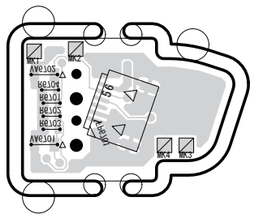
S5.5. MF SENS P.C.B. / S5.6. BATT_Catcher P.C.B.



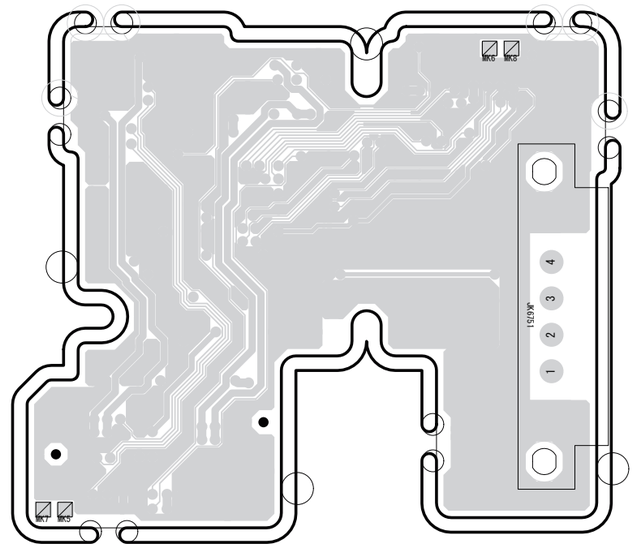
(Component Side)



(Component Side)



(Foil Side)



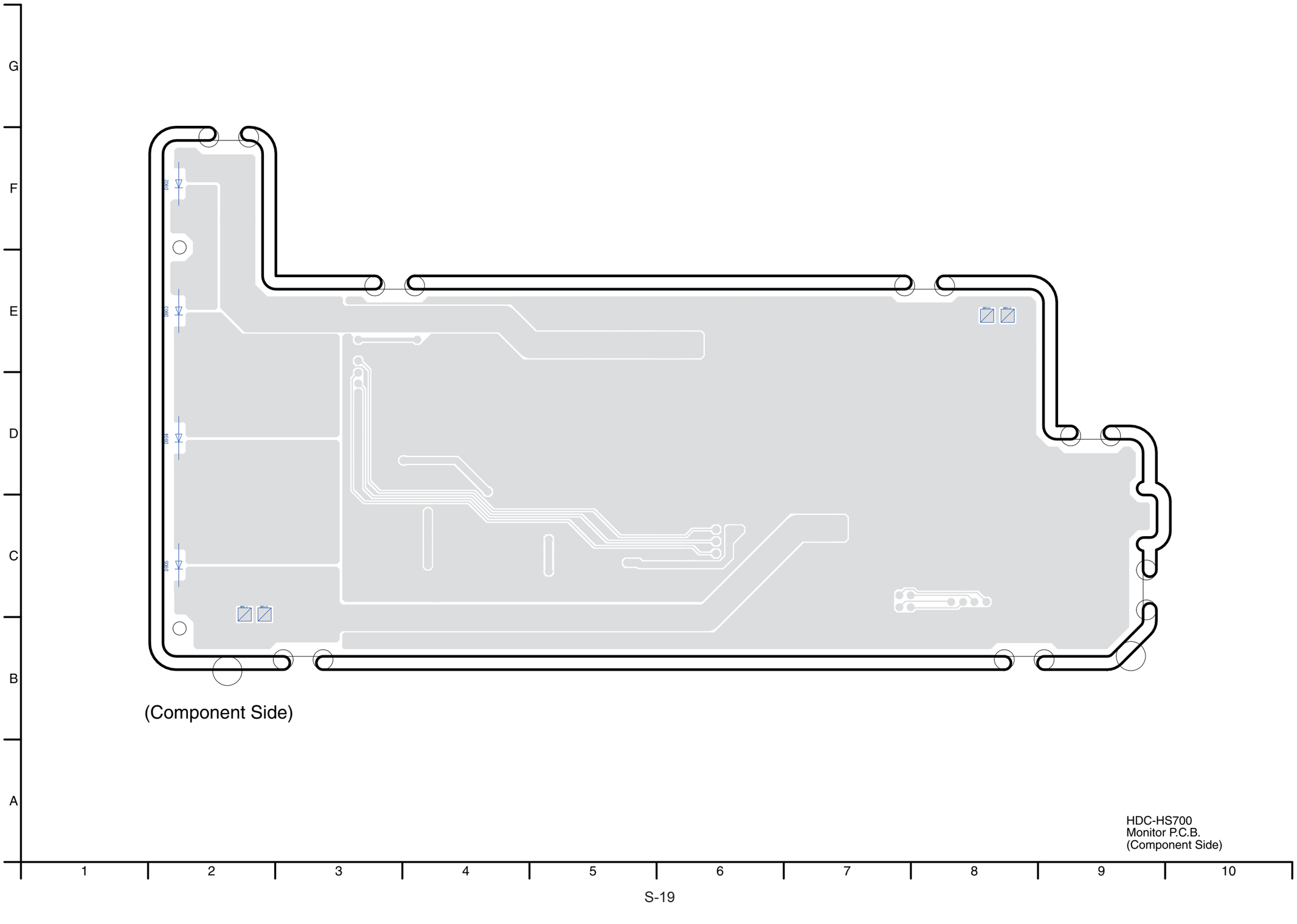
(Foil Side)

HDC-HS700
MF SENS P.C.B.

HDC-HS700
BATT_Catcher P.C.B.

S5.7. Monitor P.C.B.

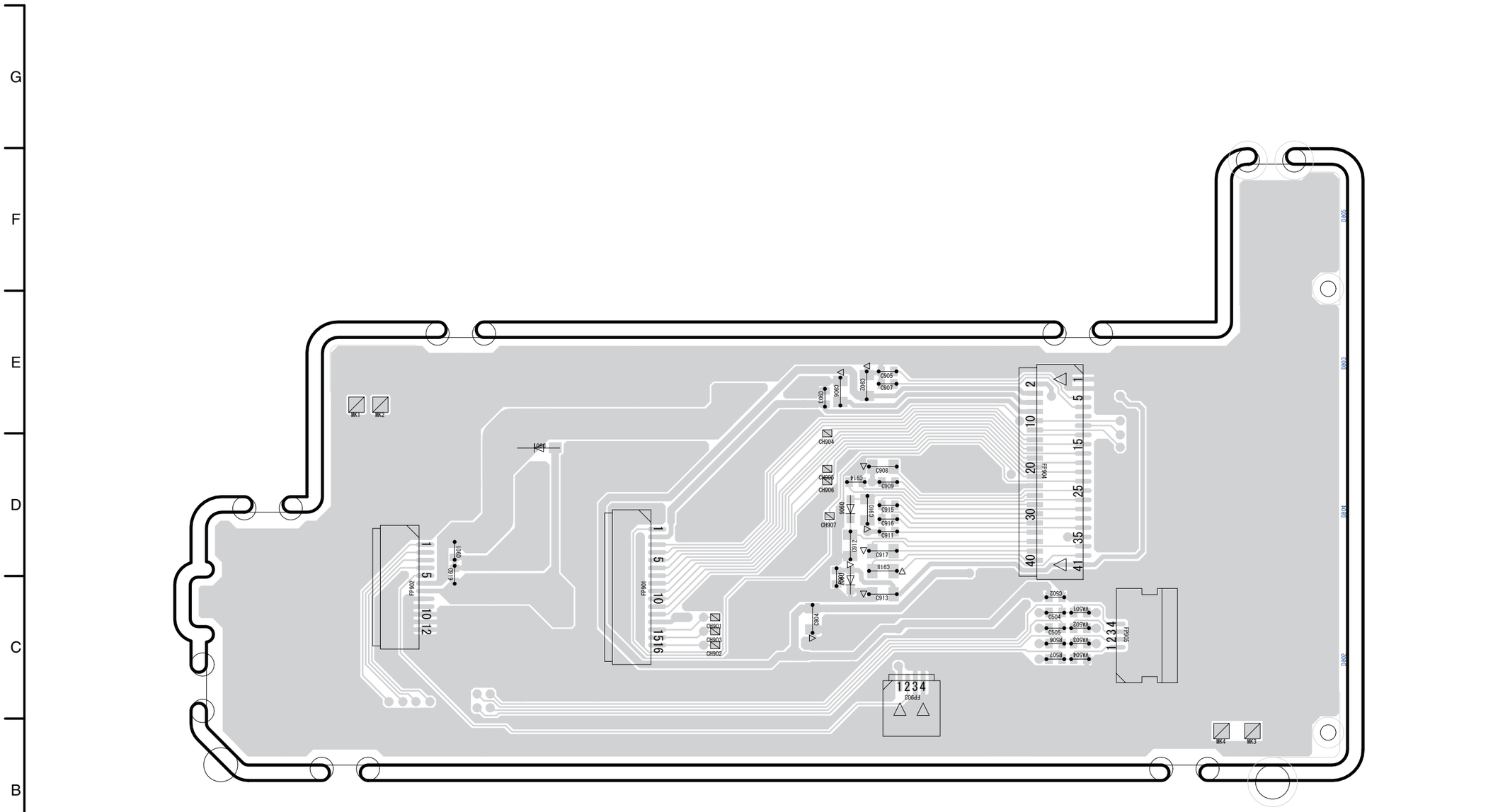
S5.7.1. Monitor P.C.B. (Component Side)



(Component Side)

HDC-HS700
Monitor P.C.B.
(Component Side)

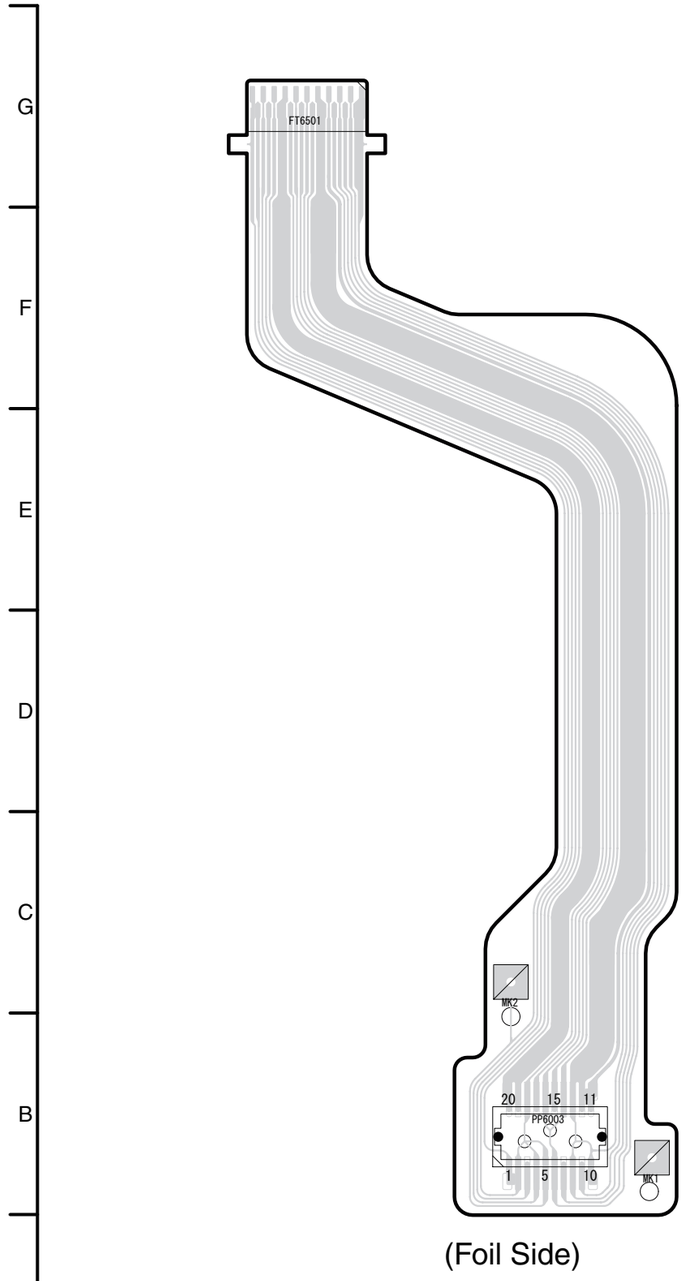
S5.7.2. Monitor P.C.B. (Foil Side)



(Foil Side)

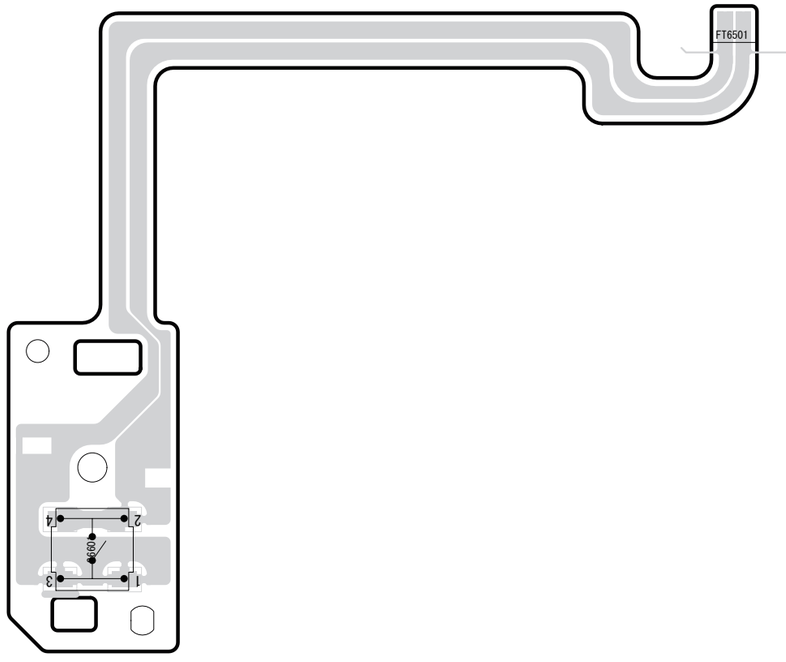
HDC-HS700
Monitor P.C.B.
(Foil Side)

S5.8. MIC AMP FPC P.C.B. / S5.9. CAM FUNC FPC P.C.B.



(Foil Side)

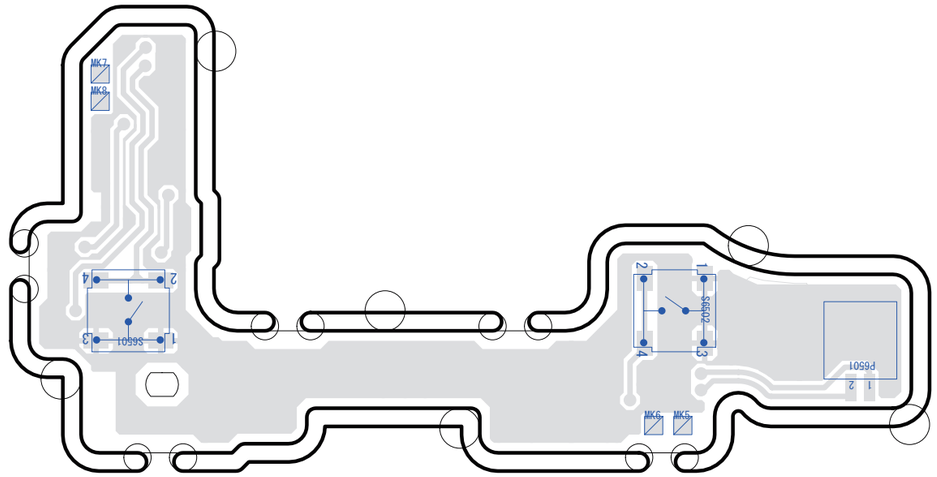
HDC-HS700
MIC AMP FPC P.C.B.



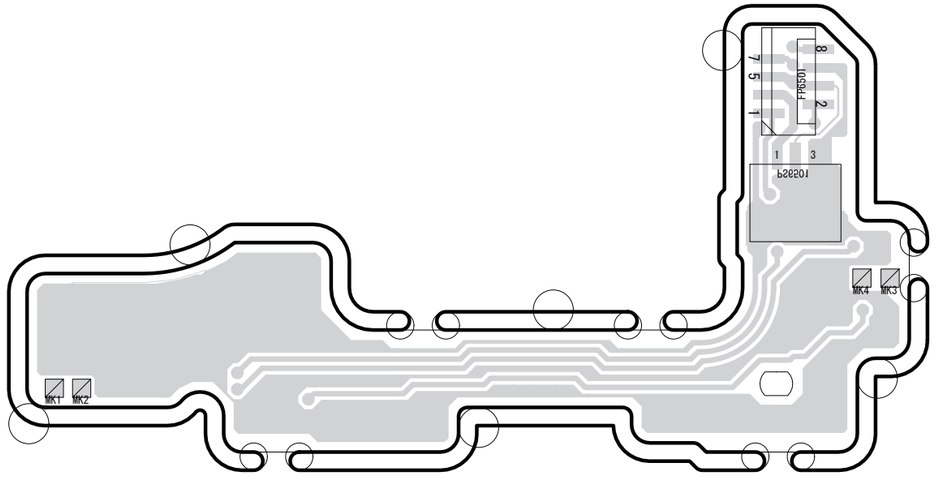
(Foil Side)

HDC-HS700
CAM FUNC FPC P.C.B.

S5.10. Side R P.C.B.



(Component Side)



(Foil Side)

HDC-HS700
Side R P.C.B.

S6. Replacement Parts List

Note: 1.* Be sure to make your orders of replacement parts according to this list.

2. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for safety.
   When replacing any of these components, use only the same type.

3. Unless otherwise specified,
   All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.

4. The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

E.S.D. standards for Electrostatically Sensitive Devices, refer to "PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP03H98AN	MAIN PCB UNIT	1	P,PC,PU,GT (RTL) E.S.D.
■	VEP03H98AQ	MAIN PCB UNIT	1	EE,GC,GN (RTL) E.S.D.
■	VEP03H98AP	MAIN PCB UNIT	1	EG,EP,EF,EB,EC (RTL) E.S.D.
■	VEP03H87A	FLASH PCB UNIT	1	(RTL) E.S.D.
■	VEP20C84A	FRONT PCB UNIT	1	(RTL) E.S.D.
■	VEP29224A	EVF BL PCB UNIT	1	(RTL) E.S.D.
■	VEP04956A	MIC AMP PCB UNIT	1	(RTL) E.S.D.
■	VEP27225A	MF SENS PCB UNIT	1	(RTL) E.S.D.
■	VEP01A32A	BATT CATCHER PCB UNIT	1	(RTL) E.S.D.
■	VEP26330A	MONITOR PCB UNIT	1	(RTL) E.S.D.
■	VEP04957A	MIC AMP FPC UNIT	1	(RTL) E.S.D.
■	VEP20C85A	CAM FUNC PCB UNIT	1	(RTL)
■	VEP06G50A	SIDE R OP PCB UNIT	1	(RTL) E.S.D.
■	VEP03H87A	FLASH PCB UNIT		(RTL) E.S.D.
C3302	ECJ0EB1E472K	C.CAPACITOR CH 25V 4700P	1	
C3303	ECJ0EB1E472K	C.CAPACITOR CH 25V 4700P	1	
C3351	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C3901	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3902	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3903	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3904	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3905	ECJ0EC1H220J	C.CAPACITOR CH 50V 22P	1	
C3906	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C3907	ECJ0EB1C103K	C.CAPACITOR CH 16V 0.01U	1	
C3910	F3G0J107A017	C.CAPACITOR CH 6.3V 100U	1	
C3911	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C3950	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C7001	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C7002	ECJ0EC1H150J	C.CAPACITOR CH 50V 15P	1	
C7003	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
C7005	F1K2E4730005	C.CAPACITOR 250V 0.047U	1	
C7010	F1K2E223A004	C.CAPACITOR 250V 0.022U	1	
D7002	B0ECGP000006	DIODE	1	E.S.D.
D7003	DA2JF8100L	DIODE	1	E.S.D.
HS3901	K1NA09E00115	SD CARD SLOT	1	
IC3351	L2EE00000011	IC	1	E.S.D.
IC7001	C0ZBZ0001710	IC	1	E.S.D.
JK3301	K2HZ112E0001	D-TERMINAL	1	
L7001	G1C470MA0249	CHIP INDUCTOR 47UH	1	
LB3301	J0JCC0000408	FILTER	1	
LB3302	J0JCC0000408	FILTER	1	
LB3303	J0JCC0000408	FILTER	1	
LB3304	J0JCC0000276	FILTER	1	
LB3305	J0JCC0000276	FILTER	1	
LB3306	J0JCC0000276	FILTER	1	
P7001	K1KA02B00292	CONNECTOR 2P	1	
P7002	K1KA02BA0022	CONNECTOR 2P	1	
PS7001	K1KB30AA0116	CONNECTOR 30P	1	
Q3901	B1ADKB000015	TRANSISTOR	1	E.S.D.
Q7005	B1JBLP000014	TRANSISTOR	1	E.S.D.
R3311	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R3312	ERJ3RED750V	SURFACE MOUNTING FI & DO	1	
R3313	ERJ3RED750V	SURFACE MOUNTING FI & DO	1	
R3314	ERJ3RED750V	SURFACE MOUNTING FI & DO	1	
R3315	ERJ3RED750V	SURFACE MOUNTING FI & DO	1	
R3901	ERJ2GEJ220	M.RESISTOR CH 1/16W 22	1	
R3902	ERJ2GEJ220	M.RESISTOR CH 1/16W 22	1	
R3903	ERJ2GEJ220	M.RESISTOR CH 1/16W 22	1	
R3904	ERJ2GEJ220	M.RESISTOR CH 1/16W 22	1	
R3905	ERJ2GEJ220	M.RESISTOR CH 1/16W 22	1	
R3906	D0YAR0000007	M.RESISTOR CH 1/10W 0	1	
R3907	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R3908	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
R3909	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R3910	ERJ2GEJ271	M.RESISTOR CH 1/10W 270	1	
R3911	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R3912	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	1	
R3913	D0GB150JA057	M.RESISTOR CH 1/10W 15	1	
R3914	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	1	
R7001	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	
R7002	D1BD8203A119	SURFACE MOUNTING PRECISIO	1	
R7003	ERJ2RHD222	M.RESISTOR CH 1/16W 2.2K	1	
R7004	ERJ8GEYJ105V	M.RESISTOR CH 1/4W 1M	1	
R7006	ERJ2RHD471X	M.RESISTOR CH 1/16W 470	1	
R7007	ERJ3GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R7011	ERJ3GEYJ104	M.RESISTOR CH 1/10W 100K	1	
R7015	ERJ3GEYJ560	M.RESISTOR CH 1/10W 56	1	
⚠ R7099	D1JBR102A006	M.RESISTOR CH 1/16W 1K	1	
RX3901	EXB28V103JX	RESISTOR NETWORKS	1	
T7001	G5DYZ0000025	TRANSFOMER	1	
■	VEP20C84A	FRONT PCB UNIT		(RTL) E.S.D.
C4901	ECJ0EB1E472K	C.CAPACITOR CH 25V 4700P	1	
C4902	ECJ0EB1E472K	C.CAPACITOR CH 25V 4700P	1	
C4903	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4905	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C4906	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C4908	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4909	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C4910	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C4913	F1H0J475A010	C.CAPACITOR CH 6.3V 4.7U	1	
C4923	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6401	F1J0J106A049	C.CAPACITOR CH 6.3V 10U	1	
C6405	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
D6401	B3AAB0000334	LED	1	E.S.D.
D6402	B3ADB0000147	DIODE	1	E.S.D.
FP6400	K1MY08BA0370	CONNECTOR 8P	1	
FP6402	K1MY06BA0370	CONNECTOR 6P	1	
FP6403	K1MN33AA0094	CONNECTOR 33P	1	
IR6401	B3RBB0000013	REMOTE SENSOR	1	
JK4901	K2HC104B0047	JK, EXT MIC	1	
JK4902	K2HC106E0007	JACK, AV	1	
LB4923	J0JCC0000276	FILTER	1	
LB4924	J0JCC0000276	FILTER	1	
LB4926	J0JCC0000276	FILTER	1	
LB4927	J0JCC0000276	FILTER	1	
LB4928	J0JCC0000276	FILTER	1	
LB4929	J0JCC0000276	FILTER	1	
LB4930	J0JHC0000078	FILTER	1	
Q4901	B1ABDF000017	TRANSISTOR	1	E.S.D.
Q4902	B1ADCF000161	TRANSISTOR	1	E.S.D.
Q4903	B1ABDF000017	TRANSISTOR	1	E.S.D.
Q4904	B1ADCF000161	TRANSISTOR	1	E.S.D.
Q4907	B1ABDF000017	TRANSISTOR	1	E.S.D.
Q4908	B1ABDF000017	TRANSISTOR	1	E.S.D.
Q6401	B1ADGD000005	TRANSISTOR	1	E.S.D.
QR6401	B1GBCFJK0001	TRANSISTOR	1	E.S.D.
QR6403	B1GDCFYY0010	TRANSISTOR	1	E.S.D.
R4901	ERJ6GEYJ331V	M.RESISTOR CH 1/8W 330	1	
R4902	ERJ2GEJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4904	ERJ6GEYJ562V	M.RESISTOR CH 1/8W 5.6K	1	
R4905	ERJ2GEJ471	M.RESISTOR CH 1/10W 470	1	
R4906	ERJ6GEYJ103V	M.RESISTOR CH 1/8W 10K	1	
R4907	ERJ6GEYJ154V	M.RESISTOR CH 1/8W 150K	1	
R4908	D0HB563ZA002	RESISTOR	1	
R4909	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4910	ERJ2GEJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4911	ERJ2GEJ151	M.RESISTOR CH 1/10W 150	1	
R4912	ERJ2GEJ471	M.RESISTOR CH 1/10W 470	1	
R4913	ERJ6GEYJ103V	M.RESISTOR CH 1/8W 10K	1	
R4914	ERJ6GEYJ154V	M.RESISTOR CH 1/8W 150K	1	
R4915	D0HB563ZA002	RESISTOR	1	
R4916	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R4917	ERJ2GEJ562	M.RESISTOR CH 1/10W 5.6K	1	
R4918	ERJ2GEJ151	M.RESISTOR CH 1/10W 150	1	
R4920	ERJ6GEYJ562V	M.RESISTOR CH 1/8W 5.6K	1	
R4922	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R4923	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	
R4924	ERJ2GEJ473Y	M.RESISTOR CH 1/10W 47K	1	
R4925	ERJ2GEJ2R2X	M.RESISTOR CH 1/16W 2.2	1	
R6402	ERJ2RKD330	M.RESISTOR CH 1/16W 33	1	
R6403	ERJ2GEJ101	M.RESISTOR CH 1/10W 100	1	
R6412	ERJ3GEYJ390	M.RESISTOR CH 1/10W 39	1	
R6413	ERJ3GEYJ390	M.RESISTOR CH 1/10W 39	1	
R6416	ERJ2GEJ473Y	M.RESISTOR CH 1/10W 47K	1	
R6417	ERJ2GEJ472	M.RESISTOR CH 1/10W 4.7K	1	
VA4901	D4ED18R00008	VARISTOR	1	
VA4902	D4ED18R00008	VARISTOR	1	
■	VEP29224A	EVF BL PCB UNIT		(RTL) E.S.D.
C801	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C802	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C803	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
D801	B0BC6R2A0266	DIODE	1	E.S.D.
D803	B3AFB0000129	DIODE	1	E.S.D.
D804	B0BC5R6A0266	DIODE	1	E.S.D.
FP801	K1MN21AA0094	CONNECTOR 21P	1	
FP802	K1MY20BA0370	CONNECTOR 20P	1	
Q801	B1ABDF000017	TRANSISTOR	1	E.S.D.
R801	ERJ2RHD562	M.RESISTOR CH 1/16W 5.6K	1	
R802	ERJ2RKD910	M.RESISTOR CH 1/16W 91	1	
R803	ERJ2GEJ105	M.RESISTOR CH 1/10W 1M	1	
R804	ERJ2RHD122	M.RESISTOR CH 1/16W 1.2K	1	
R805	ERJ2RHD122	M.RESISTOR CH 1/16W 1.2K	1	
R806	ERJ2RHD222	M.RESISTOR CH 1/16W 2.2K	1	
■	VEP04956A	MIC AMP PCB UNIT		(RTL) E.S.D.
⚠ B6401	ML-614S/ZTK	BATTERY	1	[ENERGY]
C4801	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C4802	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1	
C4803	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C4804	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1	
C4805	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C4806	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1	
C4807	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C4808	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1	
C4809	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
C4810	ECJ0EC1H680J	C.CAPACITOR CH 50V 68P	1	
C4811	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
C4812	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
C4813	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
C4814	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
C4815	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
C4816	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C4817	F3F0J226A032	T.CAPACITOR CH 6.3V 22U	1	
C4818	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
FP4801	K1MY08BA0370	CONNECTOR 8P	1	
FP4802	K1MN21AA0035	CONNECTOR 21P	1	
FP4803	K1MY12BA0370	CONNECTOR 12P	1	
FP4804	K1MY04BA0370	CONNECTOR 4P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
IC4801	C0ABBB000369	IC	1	E.S.D.
IC4802	C0ABBB000369	IC	1	E.S.D.
IC4803	C0ABBB000369	IC	1	E.S.D.
Q4801	B1ABDF000017	TRANSISTOR	1	E.S.D.
R4801	ERJ6GEYG392	M.RESISTOR CH 1/10W 3.9K	1	
R4802	ERJ6GEYG392	M.RESISTOR CH 1/10W 3.9K	1	
R4803	ERJ6GEYG392	M.RESISTOR CH 1/10W 3.9K	1	
R4804	ERJ6GEYG392	M.RESISTOR CH 1/10W 3.9K	1	
R4805	ERJ6GEYG392	M.RESISTOR CH 1/10W 3.9K	1	
R4806	ERJ2GEJ183	M.RESISTOR CH 1/10W 18K	1	
R4807	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	
R4808	ERJ2GEJ183	M.RESISTOR CH 1/10W 18K	1	
R4809	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	
R4810	ERJ2GEJ183	M.RESISTOR CH 1/10W 18K	1	
R4811	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	
R4812	ERJ2GEJ183	M.RESISTOR CH 1/10W 18K	1	
R4813	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	
R4814	ERJ2GEJ183	M.RESISTOR CH 1/10W 18K	1	
R4815	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	
R4816	ERJ2GEJ472	M.RESISTOR CH 1/10W 4.7K	1	
R4817	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R4818	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	1	
R6405	ERJ2GEJ222	M.RESISTOR CH 1/10W 2.2K	1	
ZB6401	K3ZZ00500014	BATTERY HOLDER	1	
■	VEP27225A	MF SENS PCB UNIT		(RTL) E.S.D.
FP6701	K1MY06BA0370	CONNECTOR 6P	1	
Q6701	B3NBA0000017	TRANSISTOR	1	E.S.D.
Q6702	B3NBA0000017	TRANSISTOR	1	E.S.D.
R6701	ERJ2GEJ101	M.RESISTOR CH 1/10W 100	1	
R6702	ERJ2GEJ101	M.RESISTOR CH 1/10W 100	1	
R6703	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
R6704	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
■	VEP01A32A	BATT CATCHER PCB UNIT		(RTL) E.S.D.
C851	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C852	F1J0J106A049	C.CAPACITOR CH 6.3V 10U	1	
C853	F1J0J106A049	C.CAPACITOR CH 6.3V 10U	1	
C854	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C855	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C856	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C857	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C858	F1H0J225A002	C.CAPACITOR CH 6.3V 2.2U	1	
C859	F1H0J225A002	C.CAPACITOR CH 6.3V 2.2U	1	
C860	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C861	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C862	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C863	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
C864	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C865	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
C6301	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C6302	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C6306	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6307	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C6308	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
C6309	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
C6310	F3F0J476A032	C.CAPACITOR CH 25V 0.01U	1	
FP6301	K1MN23AA0035	CONNECTOR 23P	1	
FP6302	K1MY08BA0370	CONNECTOR 8P	1	
IC851	C1AB00002388	IC	1	E.S.D.
IC6301	EWTS9CVE11	IC	1	E.S.D.
IC6302	C0DBGFC00009	IC	1	E.S.D.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
JK6751	K4ZZ04000049	JACK, BATTERY CATCH	1	
PP601	K1KB50AA0094	CONNECTOR 50P	1	
R851	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	
R852	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
R853	ERJ2RHD102X	M.RESISTOR CH 1/16W 1K	1	
VA6751	D4ED18R00008	VARISTOR	1	
■	VEP26330A	MONITOR PCB UNIT		(RTL) E.S.D.
C502	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
C504	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
C505	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
C506	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
C507	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
C901	F1G1E1040001	C.CAPACITOR CH 25V 0.1U	1	
C902	F1H0J475A010	C.CAPACITOR CH 6.3V 4.7U	1	
C903	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C905	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C906	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
C907	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C908	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
C909	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C910	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
C911	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C912	F1H1E105A116	C.CAPACITOR CH 25V 1U	1	
C913	F1H1E105A116	C.CAPACITOR CH 25V 1U	1	
C914	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C915	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C916	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
C917	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
C918	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
C919	F1G1C104A080	C.CAPACITOR CH 16V 0.1U	1	
D901	B0BC016A0267	DIODE	1	E.S.D.
D902	B3AFB0000321	DIODE	1	E.S.D.
D903	B3AFB0000321	DIODE	1	E.S.D.
D904	B3AFB0000321	DIODE	1	E.S.D.
D905	B3AFB0000321	DIODE	1	E.S.D.
D906	B0JCCD000003	DIODE	1	E.S.D.
D907	B0JCCD000003	DIODE	1	E.S.D.
FP901	K1MY16BA0159	CONNECTOR 16P	1	
FP902	K1MY12BA0159	CONNECTOR 12P	1	
FP903	K1MY04BA0370	CONNECTOR 4P	1	
FP904	K1MY41BA0369	CONNECTOR 41P	1	
FP905	K1MN04B00071	CONNECTOR 4P	1	
R506	ERJ2GEJ104	M.RESISTOR CH 1/10W 100K	1	
R507	ERJ2GEJ104	M.RESISTOR CH 1/10W 100K	1	
R901	ERJ2GEJ824	M.RESISTOR CH 1/16W 820K	1	
R902	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	1	
R903	ERJ3GEY0R00	M.RESISTOR CH 1/10W 0	1	
■	VEP04957A	MIC AMP FPC UNIT		(RTL) E.S.D.
PP6003	K1KA20A00275	CONNECTOR 20P	1	
■	VEP20C85A	CAM FUNC PCB UNIT		(RTL)
S6601	K0F111A00589	SWITCH	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP06G50A	SIDE R OP PCB UNIT		(RTL) E.S.D.
FP6501	K1MN08A00072	CONNECTOR 8P	1	
P6501	K1KA02BA0014	CONNECTOR 2P	1	
PS6201	K1KB40A00128	CONNECTOR 40P	1	
PS6501	K1KA03BA0014	CONNECTOR 3P	1	
S6501	K0F111A00589	SWITCH	1	
S6502	K0F111A00589	SWITCH	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
8	VEP79258A	HDD FPC UNIT	1	(RTL) E.S.D.
33	VGK3616	MF RING	1	
34	VYK3Q71	BARIA CASE UNIT	1	
35	VGL1326	TARY PANEL LIGHT	1	
36	VGL1309	AF PANEL LIGHT	1	
37	N9ZZ00000415	BARRIER MOTOR UNIT	1	
38	EFN-MVBH7ZC	FLASH	1	
39	VGQ0K50	LENS ORNAMENT SHEET	1	
40	VGQ0K49	MF FRONT FRAME	1	
41	VGQ0K51	MF SHEET	1	
42	VGQ0K53	MF PCB HOLDER	1	
43	VEP27225A	MF SENS PCB UNIT	1	(RTL) E.S.D.
44	VWJ2134	MF SENS FPC	1	
45	KORE00900047	OPERATION BUTTON UNIT	1	
46	VYK3Q41	TOP CASE UNIT	1	
47	VMP9581	TOP FRAME	1	
48	VEP20C85A	CAM FUNC PCB UNIT	1	(RTL)
49	VGU0F89	CAMERA OP BUTTON	1	
50	VGQ0K85	CAMERA OP CASE	1	
51	VMP9616	CAMERA OP ANGLE	1	
52	VGQ0K35	MIC CASE	1	
53	VGQ0C85	MIC CUSHION (A)	1	
54	VGQ0C86	MIC CUSHION (B)	1	
55	VGQ0C87	MIC CUSHION (C)	1	
56	VGQ0L66	MIC SHEET	1	
57	VEP24186B	ECM FPC UNIT	1	
78	VEP04956A	MIC AMP PCB UNIT	1	(RTL) E.S.D.
79	VEP04957A	MIC AMP FPC UNIT	1	(RTL) E.S.D.
81	VYK3Q52	SIDE CASE (L) UNIT	1	
82	VYK3Q31	SENSOR COVER UNIT	1	
85	VEP20C84A	FRONT PCB UNIT	1	(RTL) E.S.D.
91	VMP8492	SHOE ANGLE	1	
92	VYK3Q72	HDD GND CASE UNIT	1	
93	VGQ9672	GASKET	1	
95	VMG1922	HDD CUSHION	1	
96	VMG1922	HDD CUSHION	1	
98	RFKV0224HDKT	HDD	1	
99	VGQ0M74	CUSHION	1	
100	VGQ0M76	SHEET	1	
B14	VHD1814	SCREW	1	
B15	VHD1814	SCREW	1	
B16	VHD1814	SCREW	1	
B17	VHD1814	SCREW	1	
B18	XQN16+BJ5FN	SCREW	1	
B19	XQN16+BJ5FN	SCREW	1	
B20	XQN16+BJ10FN	SCREW	1	
B21	XQN14+BJ5FN	SCREW	1	
B26	XQN16+B3FN	SCREW	1	
B27	XQN16+B3FN	SCREW	1	
B28	XQN16+BJ4FN	SCREW	1	
B29	XQN16+BJ4FN	SCREW	1	
B30	XQN16+BJ4FN	SCREW	1	
B31	XQN16+BJ4FN	SCREW	1	
B32	XQN16+BJ4FN	SCREW	1	
B33	XQN16+BJ4FN	SCREW	1	
B34	XQN16+BJ4FN	SCREW	1	
B35	XQN16+BJ4FN	SCREW	1	
B36	XQN16+BJ4FN	SCREW	1	
B37	XQN16+BJ4FN	SCREW	1	
B47	VHD1907	SCREW	1	
B48	VHD1907	SCREW	1	
B57	VHD2189	SCREW	1	
B59	VHD2233	SCREW	1	
B66	XQN16+B4FJK	SCREW	1	
B67	XQN16+B4FJK	SCREW	1	
B68	XQN16+B4FJK	SCREW	1	
B69	XQN16+B4FJK	SCREW	1	
B70	XQN16+B4FJK	SCREW	1	
B71	XQN16+B4FJK	SCREW	1	
B75	XQN16+B4FJK	SCREW	1	
B91	VHD1907	SCREW	1	
B92	VHD1907	SCREW	1	
B93	XQN16+BJ7FJK	SCREW	1	
B94	XQS2+A35FN	SCREW	1	
B95	XQS2+A35FN	SCREW	1	
B96	XQS2+A35FN	SCREW	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	VEP03H98AN	MAIN PCB UNIT	1	P,PC,PU,GT (RTL) E.S.D.
1	VEP03H98AQ	MAIN PCB UNIT	1	EE,GC,GN (RTL) E.S.D.
1	VEP03H98AP	MAIN PCB UNIT	1	EG,EP,EF,EB,EC (RTL) E.S.D.
2	VWJ2133	FRONT FPC	1	
3	VWJ2132	SIDE R OP FPC	1	
4	VEP03H87A	FLASH PCB UNIT	1	(RTL) E.S.D.
5	VMB4353	CAPACITOR GND SPRING	1	
9	VYK3Q34	BOTTOM FRAME UNIT	1	
10	VYK3Q35	MAIN HEAT RADIATION PLATE	1	
11	VYK3R04	MOS HEAT RADIATION PLATE	1	
12	VYK3Q33	LENS FRAME UNIT	1	
13	VYK3Q37	BATT CASE UNIT	1	
14	VEP01A32A	BATT CATCHER PCB UNIT	1	(RTL) E.S.D.
15	VMP9580	REAR FRAME	1	
16	VYK3X05	SIDE CASE (R) UNIT	1	EG,EP,EF,EB,EC,EE,GC,GN
16	VYK3X24	SIDE CASE (R) UNIT	1	P,PC,PU,GT
17	LOAA01A00050	SPEAKER	1	
18	VMP9589	SP ANGLE	1	
19	L6FAG99D0020	FAN MOTOR	1	
20	VMG1928	FAN DAMPER	1	
21	VEP06G50A	SIDE R OP PCB UNIT	1	(RTL) E.S.D.
22	KORE00600006	SWITCH UNIT	1	
83	VKM8271	SR COVER	1	
97	VGQ0L69	POWER IC HEAT RADIATION S	1	
B1	XQN16+BJ4FN	SCREW	1	
B2	XQN16+BJ4FN	SCREW	1	
B9	XQN16+BJ4FN	SCREW	1	
B10	XQN16+BJ4FN	SCREW	1	
B49	VHD1907	SCREW	1	
B50	VHD1907	SCREW	1	
B51	VHD1907	SCREW	1	
B52	VHD1907	SCREW	1	
B53	VHD1907	SCREW	1	
B54	VHD1907	SCREW	1	
B55	VHD1907	SCREW	1	
B56	VHD1907	SCREW	1	
B58	VHD2189	SCREW	1	
B60	XQN16+BJ4FN	SCREW	1	
B61	XQN16+BJ4FJK	SCREW	1	
B62	XQN16+BJ4FJK	SCREW	1	
B63	XQN16+B4FJK	SCREW	1	
B64	XQN16+B4FJK	SCREW	1	
B65	XQN16+B4FJK	SCREW	1	
B72	XQN16+B4FJK	SCREW	1	
B73	XQN16+B4FJK	SCREW	1	
B74	XQN16+B4FJK	SCREW	1	
B79	XQN16+BJ5FJK	SCREW	1	
B80	XQN16+BJ7FJK	SCREW	1	
B81	XQN16+BJ7FJK	SCREW	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
58	VGQ0K38	EYE CUP	1	
59	VGQ0D06	EVF LENS CASE	1	
60	VDL2175	EVF LENS (A)	1	
61	VGQ0C99	LENS HOLDER (A)	1	
62	VDL2176	EVF LENS (B)	1	
63	VGQ0D00	LENS HOLDER (B)	1	
64	VGQ0K39	EVF CASE	1	
65	VGU0E13	EVF ANGLE KNOB	1	
66	VGQ0D02	PRISM REINFORCEMENT PIECE	1	
67	VGL1340	POLARIZE LENS PLATE	1	
68	VGQ0D01	LCD HOLD PIECE	1	
69	L5BDDXH00033	LCD	1	
70	VGQ0D03	LCD REINFORCEMENT PIECE	1	
71	VGL1341	EVF B/L POLARIZE LENS PLATE	1	
72	VGL1304	EVF DIFFUSION SHEET	1	
73	VGQ0D04	B/L PIECE	1	
74	VEP29224A	EVF BL PCB UNIT	1	(RTL) E.S.D.
75	VGQ0K40	EVF SLIDE CASE	1	
76	VMP9583	EVF SLIDE FRAME	1	
77	VEP29225A	EVF FPC UNIT	1	(RTL) E.S.D.
B22	XQN16+BJ4FJK	SCREW	1	
B23	XQN16+BJ4FJK	SCREW	1	
B24	XQN16+BJ4FJK	SCREW	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
32	VEP26330A	MONITOR PCB UNIT	1	(RTL) E.S.D.
23	VYK3Q66	LCD CASE (T) UNIT	1	
24	VYK3U03	PANEL UNIT	1	
25	VGQ0K48	LIGHTING PLATE HOLDER	1	
26	VGL1322	PRISM SHEET A	1	
27	VGL1323	PRISM SHEET B	1	
28	VGL1324	DIFFUSION SHEET	1	
29	VKW3442	LIGHT GUIDE PLATE	1	
30	VGL1325	REFLECTION SHEET	1	
31	VMP9590	LCD FRAME	1	
B7	VHD1688	SCREW	1	
B8	VHD1688	SCREW	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

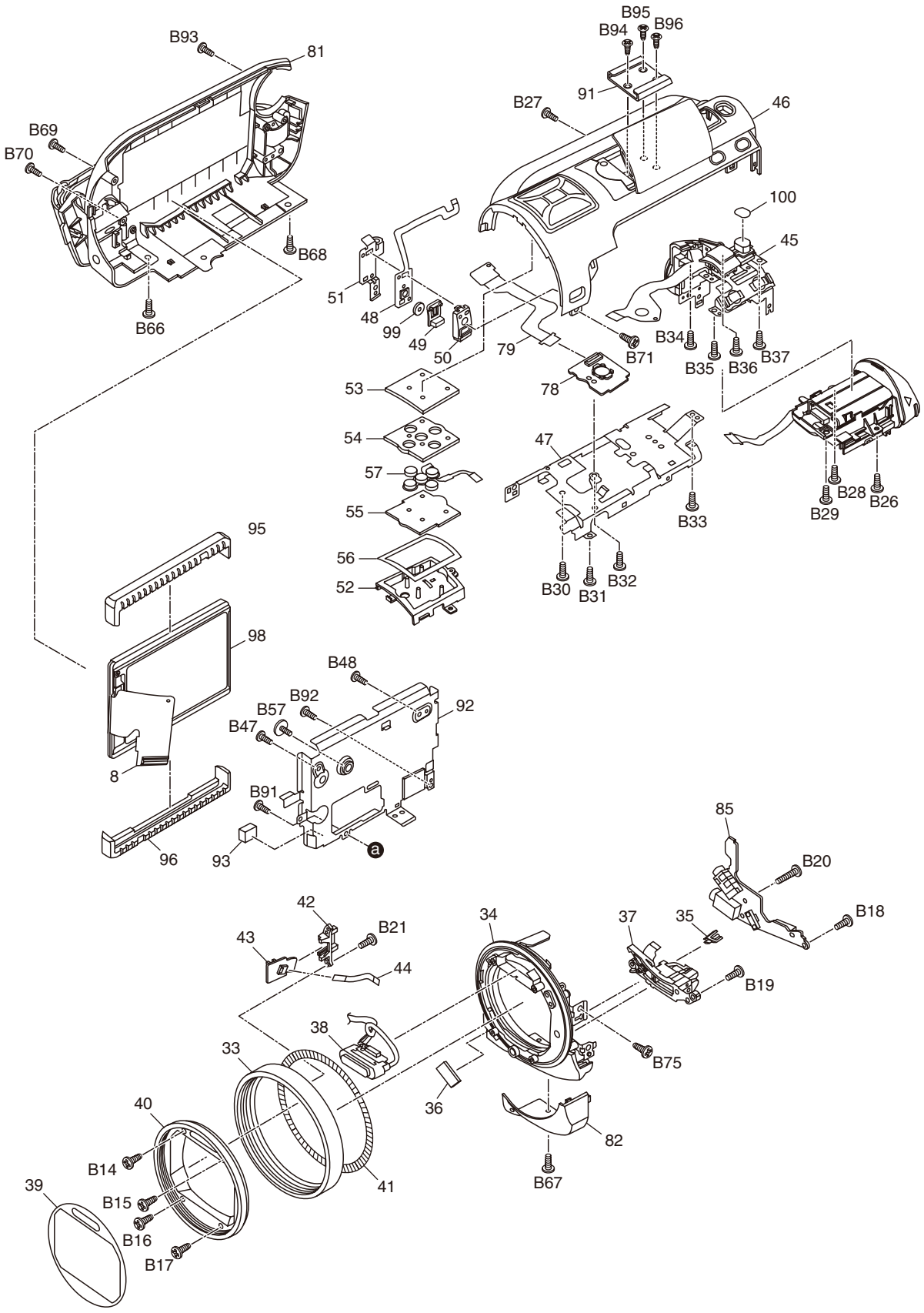
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
201	VXQ1862	PRISM UNIT	1	
203	VXW1115	LENS UNIT	1	
204	L6HA88NC0006	STEPPING MOTORS	1	
205	VXP3372	IRIS UNIT	1	
206	VMA0X14	SIDE YORK	1	
207	VMA0X14	SIDE YORK	1	
208	VMS8060	ZOOM GUIDE POLE	1	
209	VMS8060	ZOOM GUIDE POLE	1	
210	VMS8061	FOCUS GUIDE POLE L	1	
211	VMS8062	FOCUS GUIDE POLE S	1	
212	VDW1995	MASTER FLANGE COVER	1	
213	VDL1900	OPTICAL FILTER	1	
214	VXP3391	2ND LENS FRAME MOVE UNIT	1	
215	VMB4358	2ND LENS FRAME MOVE UNIT SP	1	
216	VDW1989	BODY UNIT	1	
217	VXQ1856	OIS UNIT	1	
218	VXP3394	4TH LENS FRAME MOVE UNIT	1	
219	VXQ1855	1ST LENS FRAME UNIT	1	
B201	VHD2072	SCREW	1	
B202	VHD2072	SCREW	1	
B203	VHD2072	SCREW	1	
B204	VHD2072	SCREW	1	
B205	VHD2072	SCREW	1	
B206	VHD2072	SCREW	1	
B207	VHD2072	SCREW	1	
B208	VHD2072	SCREW	1	
B209	VHD2072	SCREW	1	
B210	VHD2072	SCREW	1	
B211	VHD2072	SCREW	1	
B212	VHD2072	SCREW	1	
B213	VHD2072	SCREW	1	
B214	VHD2072	SCREW	1	
B215	VHD2072	SCREW	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

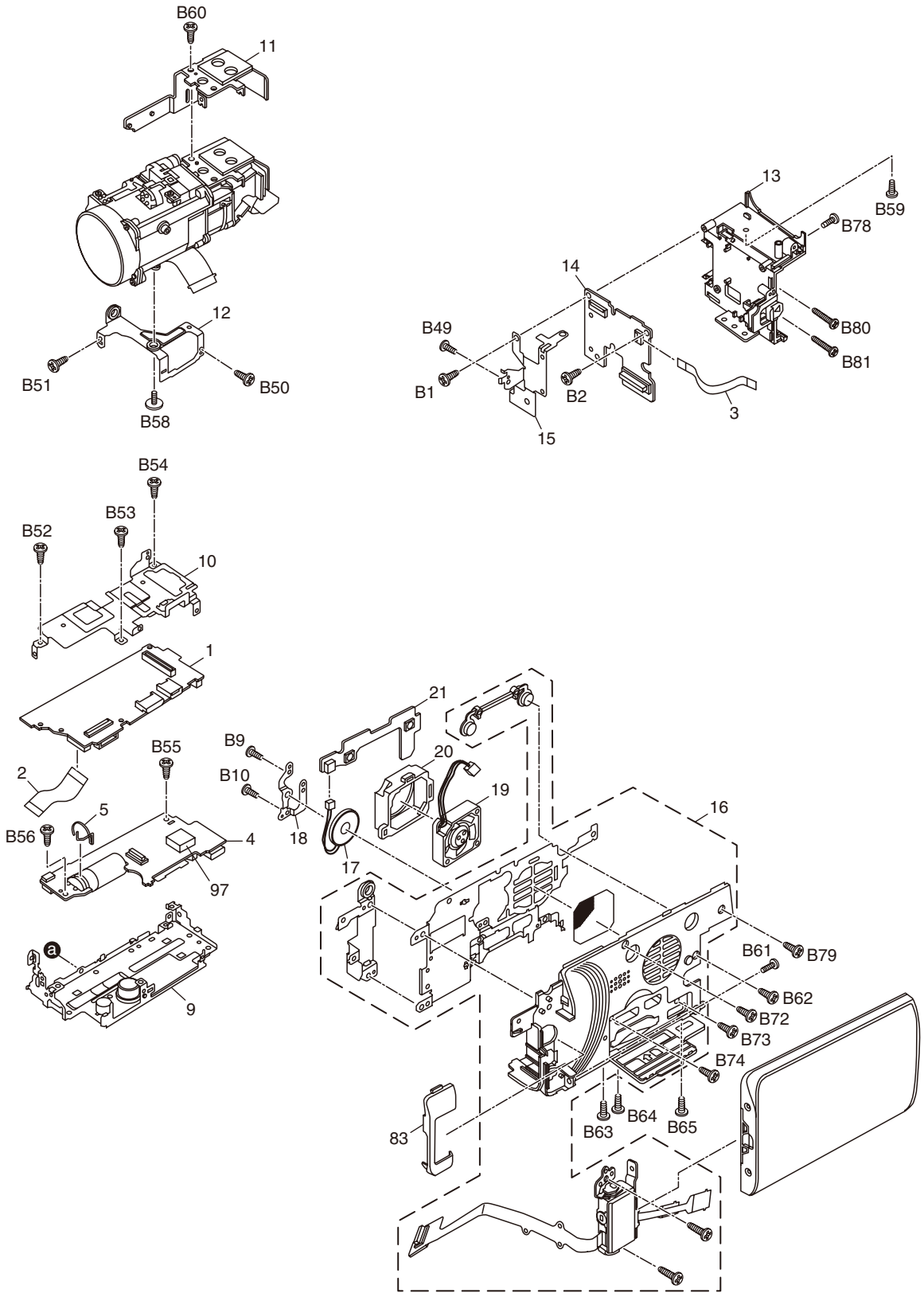
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
301	K2GJYDC00004	DC CABLE	1	
302	K1HY12YY0004	MULTI D/RCA CABLE	1	
303	K1HY04YY0032	USB CABLE	1	
305	N2QAEC000024	REMOTE CONTROL UNIT	1	
⚠ 306	DE-A51CB	AC ADAPTOR	1	EG,EP,EF,EB,EC,EE,PU,GC,
				GT,GN
⚠ 306	DE-A51BB	AC ADAPTOR	1	P,PC
307	VGQ0C14	TOUCH PEN	1	
308	VPF1294	BAG, POLYETHYLENE	1	
309		CD-ROM	1	EG,EP,EF,EB,EC,EE,P,PC,
				PU,GC,GT,GN
⚠ 310	VQT2M81	OPERATING INSTRUCTIONS	1	EG
⚠ 310	VQT2M82	OPERATING INSTRUCTIONS	1	EG
⚠ 310	VQT2M83	OPERATING INSTRUCTIONS	1	EG
⚠ 310	VQT2M88	OPERATING INSTRUCTIONS	1	EP
⚠ 310	VQT2M89	OPERATING INSTRUCTIONS	1	EP
⚠ 310	VQT2M84	OPERATING INSTRUCTIONS	1	EF
		(FRENCH)		
⚠ 310	VQT2M90	OPERATING INSTRUCTIONS	1	EB
		(ENGLISH)		
⚠ 310	VQT2M85	OPERATING INSTRUCTIONS	1	EC
⚠ 310	VQT2M86	OPERATING INSTRUCTIONS	1	EC
⚠ 310	VQT2M87	OPERATING INSTRUCTIONS	1	EC
⚠ 310	VQT2M94	OPERATING INSTRUCTIONS	1	EE
		(RUSSIAN)		
⚠ 310	VQT2M95	OPERATING INSTRUCTIONS	1	EE
		(UKRAINIAN)		
⚠ 310	VQT2M75	OPERATING INSTRUCTIONS	1	P,PC
		(ENGLISH)		
⚠ 310	VQT2M76	OPERATING INSTRUCTIONS	1	PC
		(CANADIAN FRENCH)		
⚠ 310	VQT2M77	OPERATING INSTRUCTIONS	1	PU
		(ENGLISH)		
⚠ 310	VQT2M78	OPERATING INSTRUCTIONS	1	PU
⚠ 310	VQT2M91	OPERATING INSTRUCTIONS	1	GC
⚠ 310	VQT2M92	OPERATING INSTRUCTIONS	1	GC
⚠ 310	VQT2M93	OPERATING INSTRUCTIONS	1	GC
⚠ 310	VQT2M79	OPERATING INSTRUCTIONS	1	GT
		(CHINESE(SIMPLFIED))		
⚠ 310	VQT2M96	OPERATING INSTRUCTIONS	1	GN
		(ENGLISH)		
311	VPG2D76	PACKING CASE	1	EG,EP,EF,EB,EC,EE,PU,GC,
				GT,GN
311	VPG2D75	PACKING CASE	1	P,PC
312	VPN6971	PAD	1	
313	VPF1377	PROTECT BAG	1	
⚠ 314	K2CQ29A00002	AC CABLE	1	EG,EP,EF,EC,EE,GC
⚠ 315	K2CT39A00002	AC CABLE	1	EB,GC
⚠ 316	K2CA2CA00025	AC CABLE	1	P,PC,PU
⚠ 316	K2CA29A00021	AC CABLE	1	GT
⚠ 318	K2CJ29A00002	AC CABLE	1	GN
321	---	BATTERY	1	
323	VFF0612	CD-ROM (O/I)	1	EG,EP,EC
323	VFF0613	CD-ROM (O/I)	1	GC

S7. Exploded View

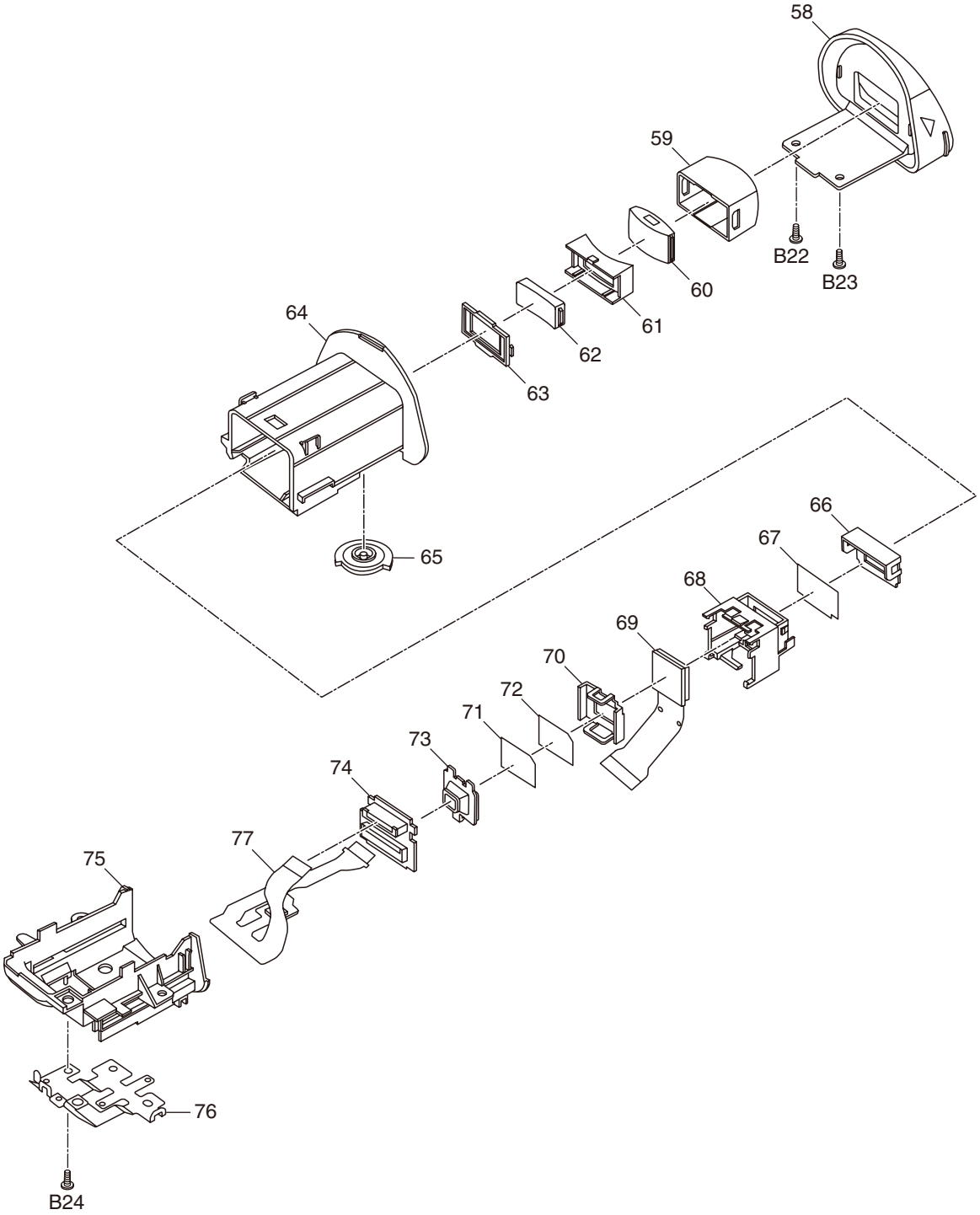
S7.1. Frame and Casing Section (1)



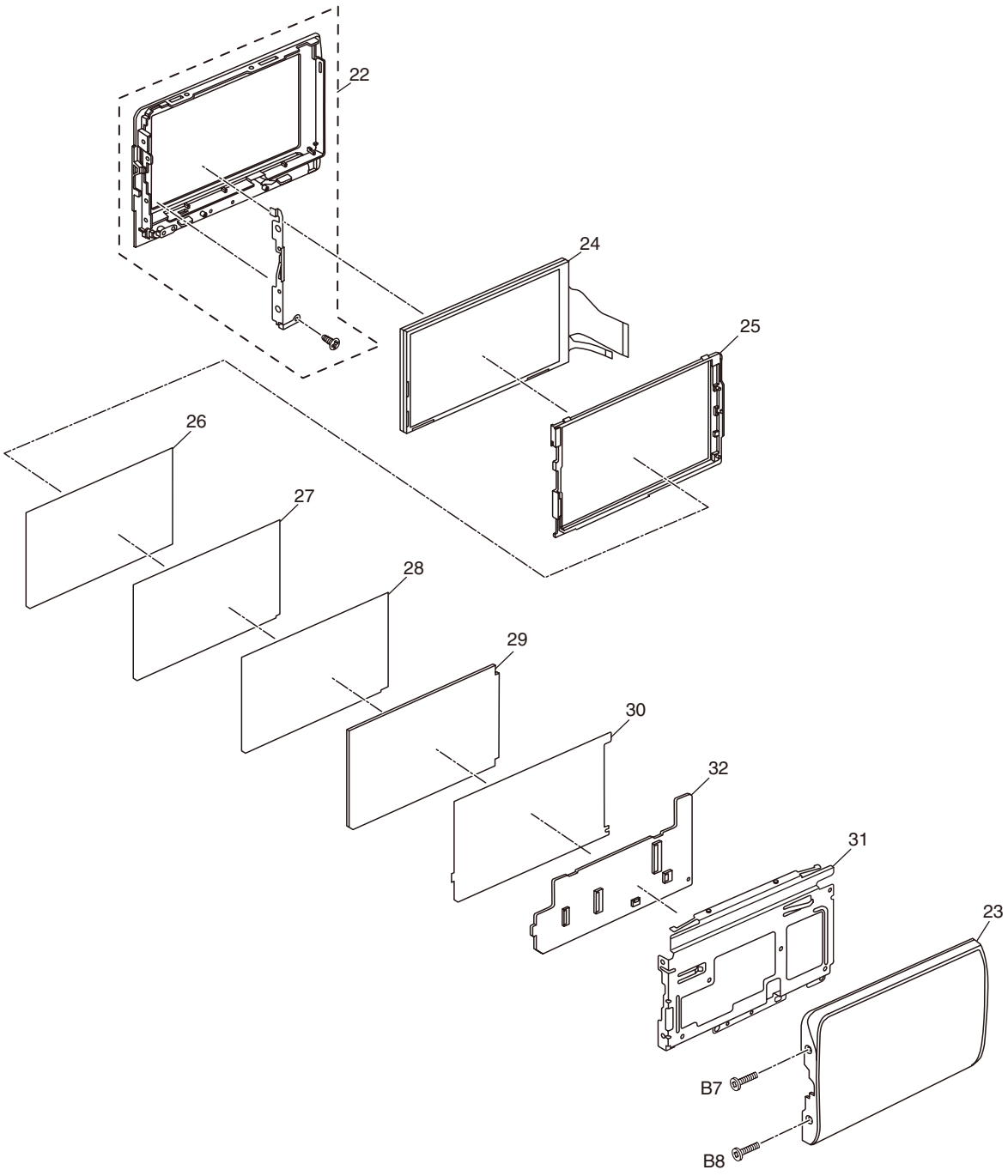
S7.2. Frame and Casing Section (2)



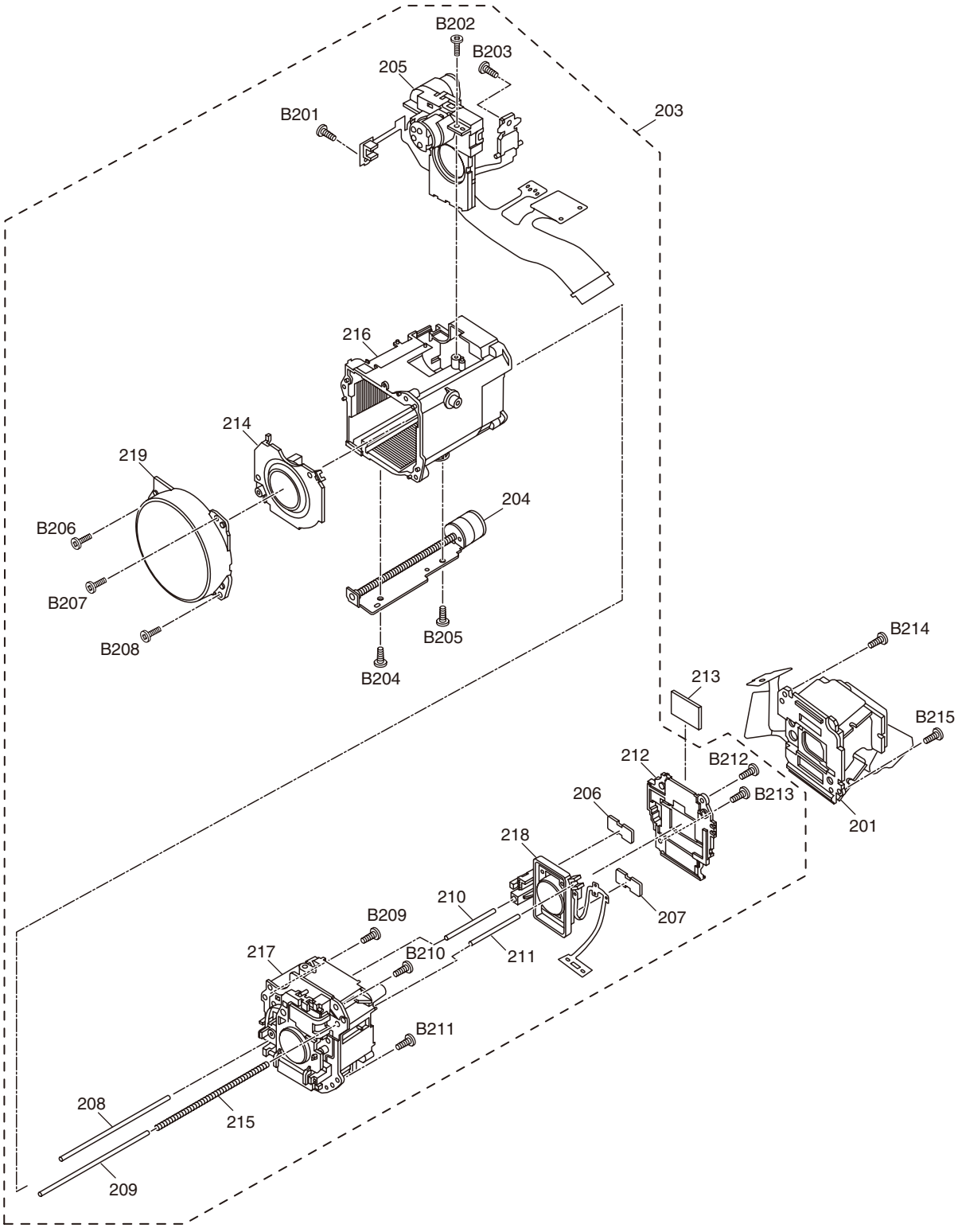
S7.3. EVF Section



S7.4. LCD Section



S7.5. Camera Lens Section



S7.6. Packing Parts and Accessories Section