

Service Manual

Digital Camera/Body/Lens Kit

LUMIX



Model No. **DMC-GH3P**

DMC-GH3PC

DMC-GH3EB

DMC-GH3EC

DMC-GH3EE

DMC-GH3EF

DMC-GH3EG

DMC-GH3GC

DMC-GH3GD

DMC-GH3GH

DMC-GH3GK

DMC-GH3GN

DMC-GH3GT

DMC-GH3AEB

DMC-GH3AEF

DMC-GH3AEG

DMC-GH3AGC

DMC-GH3AGH

DMC-GH3AGK

DMC-GH3AGT

DMC-GH3HPU

DMC-GH3HEB

DMC-GH3HEC

Panasonic[®]

**DMC-GH3HEE
DMC-GH3HEF
DMC-GH3HEG
DMC-GH3HGC
DMC-GH3HGD**

**DMC-GH3HGH
DMC-GH3HGK
DMC-GH3HGN
DMC-GH3HGT**

Colour
(K).....Black Type

DMC-GH3A series: Interchangeable Lens (H-HS12035) is bundled.
DMC-GH3H series: Interchangeable Lens (H-VS014140) is bundled.

 **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.

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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 $1\text{ M}\Omega$ and $5.2\text{ M}\Omega$. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

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

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

Hot-Check Circuit

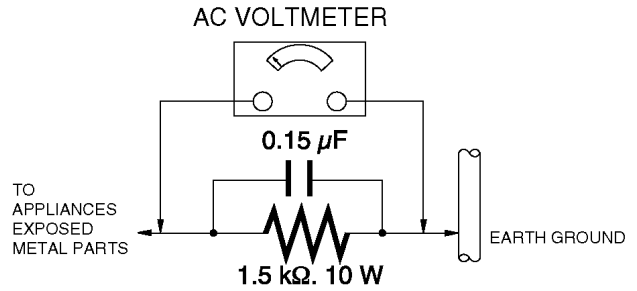


Figure. 1

1.4. How to Discharge the E. Capacitor on Capacitor P.C.B. Unit

CAUTION:

1. Be sure to discharge the E. Capacitor on Capacitor P.C.B. Unit.
2. Be careful of the high voltage circuit on Capacitor P.C.B. Unit when servicing.

[Discharging Procedure]

1. Peel the Battery Case Sheet.
2. Remove the Capacitor Cover.
3. Unscrew the 2 screws (O).
4. Remove the Capacitor P.C.B. Unit.
5. Put the insulation tube onto the lead part of Resistor (ERG5SJ102:1k Ω /5W).
(An equivalent type of resistor may be used.)
6. Put the resistor between both terminals of E. Capacitor on Capacitor P.C.B. Unit for approx. 5 seconds.
7. After discharging, confirm that the E. Capacitor voltage is lower than 10V by using a voltmeter.

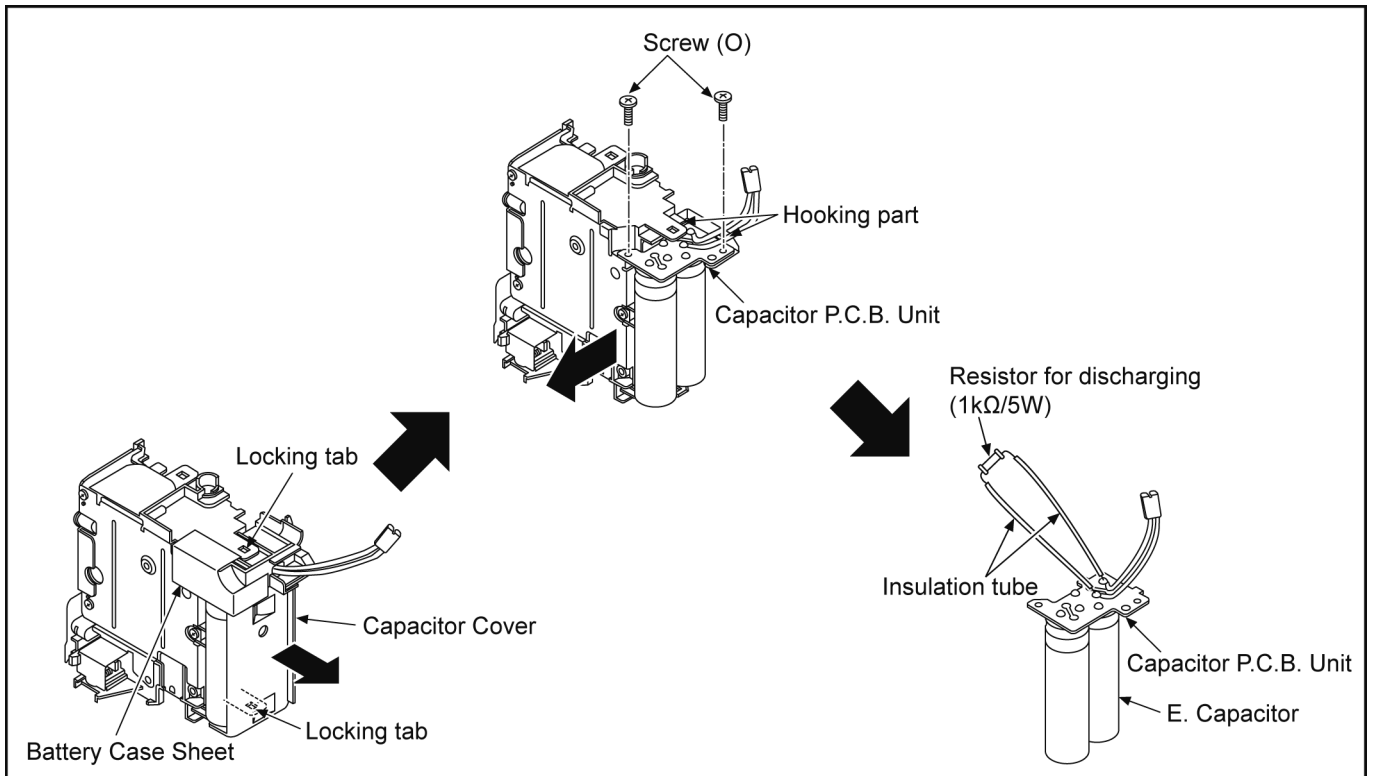


Fig. F1

2 Warning

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

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

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

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

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION :

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

2.2. How to Recycle the Lithium Ion Battery (U.S. Only)

ENGLISH



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

FRANÇAIS



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

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

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.



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 safely.

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:

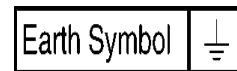
Blue	Neutral
Brown	Live

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.

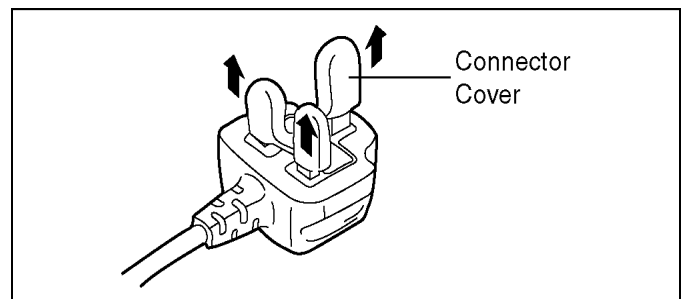
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

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.



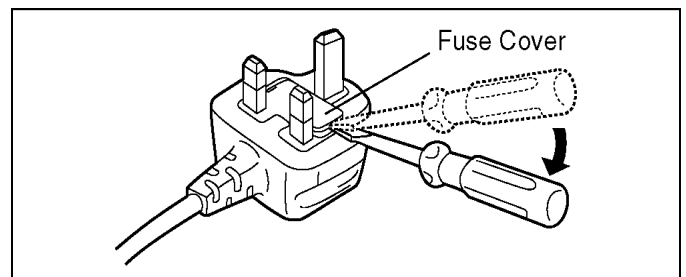
2.3.2.2. Before Use

Remove the Connector Cover as follows.

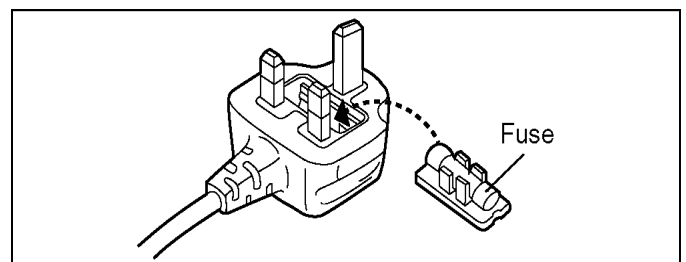


2.3.2.3. How to Replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.



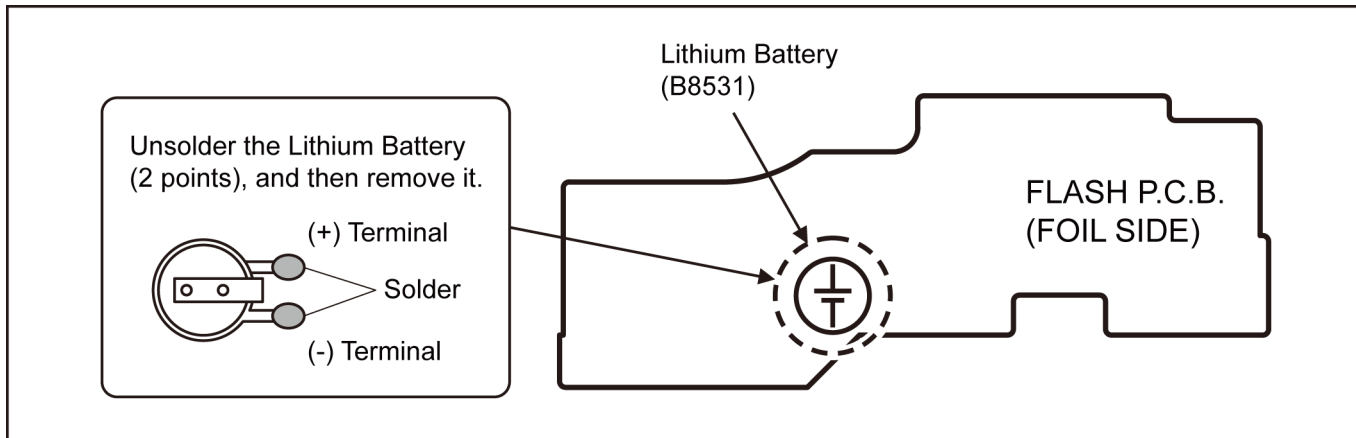
2.4. How to Replace the Lithium Battery

2.4.1. Replacement Procedure

1. Remove the FLASH P.C.B. (Refer to Disassembly Procedures.)
2. Unsolder the each soldering point of electric lead terminal for Lithium battery (Ref. No. "B8531" at foil side of FLASH P.C.B.) and remove the Lithium battery together with electric lead terminal. Then replace it into new one.

NOTE:

The Type No. ML421 includes electric lead terminals.



NOTE:

This Lithium battery is a critical component.

(Type No.: ML421 **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 fabricant.

NOTE:

Above caution is applicable for a battery pack which is for DMC-GH3/GH3A/GH3H series, as well.

3 Service Navigation

3.1. Introduction

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

3.2. Important Notice

*When servicing, it is recommended dealing with Clean box. (Refer to "8.2. Clean Box" section of this service manual for details.)

3.2.1. Camera Body Unit

3.2.1.1. About Mount Box Unit (Ref. 7)

1. This Service Manual does not contain the following repair service information for "MOUNT BOX UNIT"(Ref.7), because it requires special facilities and equipment.
 - a. Schematic diagram, Block diagram and P.C.B. layout.
 - b. Parts list for individual parts.
2. If the "MOUNT BOX UNIT" is confirmed as defective, exchange the "MOUNT BOX UNIT" as a unit (supplied as service parts size).
3. Before exchanging the "MOUNT BOX UNIT", the performances must be carefully checked, by following the "7.Troubleshooting Guide" section of this service manual.

Important:

1. After replacing the MOUNT BOX UNIT, the mount box data has to be stored to the unit. The mount box unit supplied as service parts has affix the label of own configure data. By inputting these data into the adjustment software and writing these data to FLASH-ROM (IC9999), the shutter adjustment becomes needless. In addition, the adjustment software can read data encoded to QR code by using WEB camera with a close-up function. Refer to the adjustment instruction in the adjustment software for details.

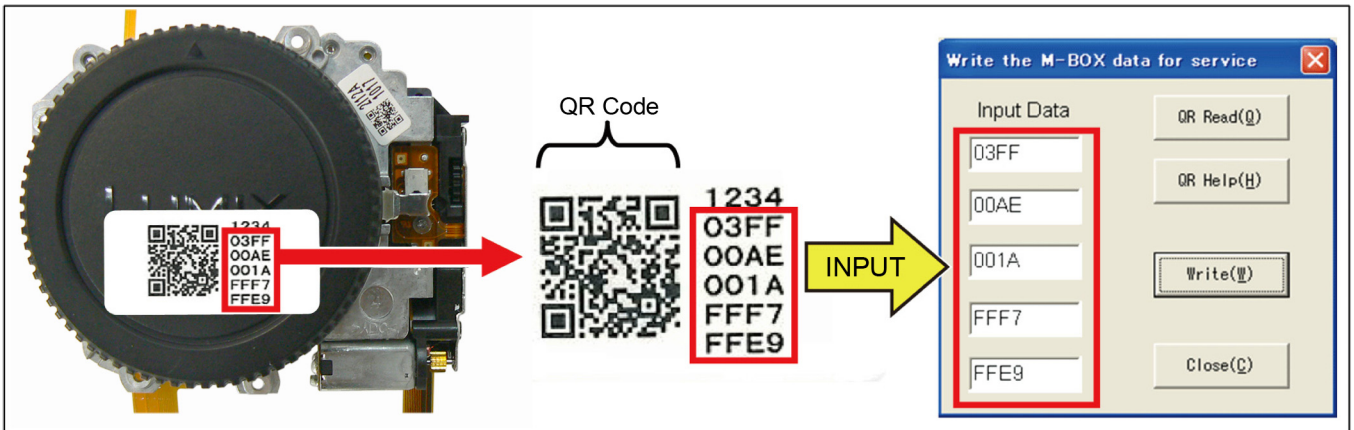


Fig. S1

2. The full adjustment must be performed after replacing the "MOUNT BOX UNIT", otherwise picture quality can not be meet with specification.

3.2.1.2. About Main P.C.B. (Ref. 1) & Flash-ROM (IC9999)

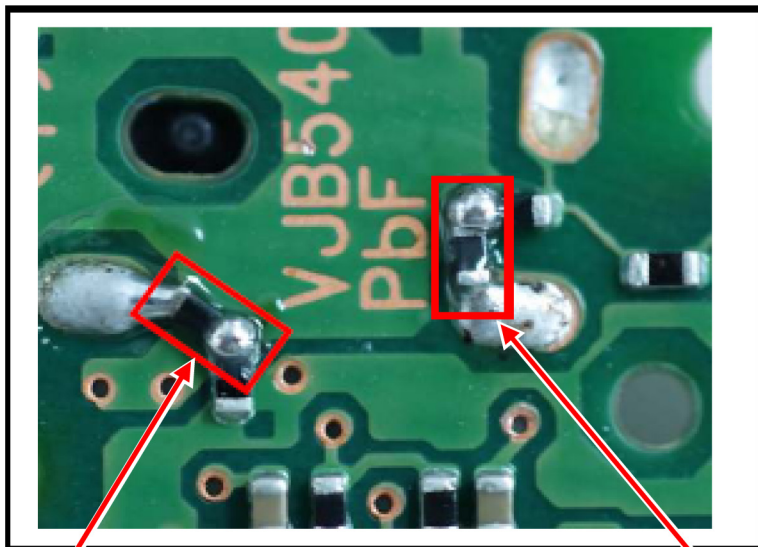
Important:

1. Before exchanging the "MAIN P.C.B.", the performances must be carefully checked, by following the "7.Troubleshooting Guide" section of this service manual.
2. Before replacing the "MAIN P.C.B. and/or Flash-ROM", proceed the EEPROM data backup from the unit.
After replacing the MAIN P.C.B. and/or Flash-ROM, overwrite the EEPROM data with backup data from the unit first, then proceed the adjustment /inspection.Refer to the adjustment instruction in the adjustment software for details.
3. The full adjustment must be performed after replacing the "MAIN P.C.B. and/or Flash-ROM", otherwise Picture quality can not be met with specification.

3.2.1.3. About EXT MIC P.C.B. (Ref. 58)

2 varistors:VA4403 & VA4404 are installed on the EXT MIC P.C.B. as follows.

Please note when they are exchanged.



VA4404 is soldered between
JK4401 4pin and R4420 GND.

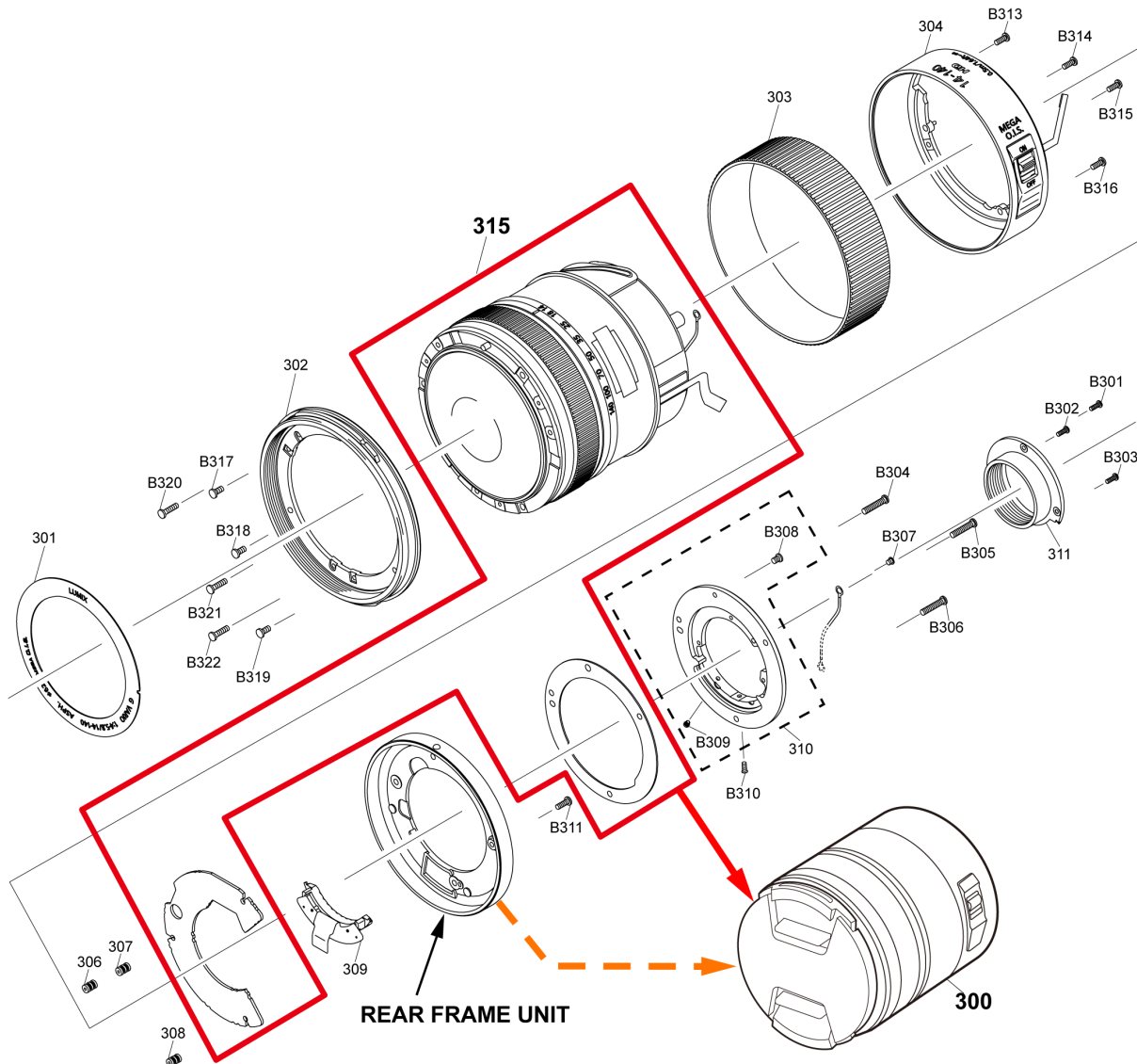
VA4403 is soldered between
JK4401 5pin and VA4402 GND.

3.2.3. Lens Unit (Interchangeable Lens: H-VS014140)

3.2.3.1. About Lens Main Block Unit (Ref. 315)

1. LENS MAIN BLOCK UNIT (Ref. 315) is not supplied due to difficulty of the transportation issue (Fragile, Dust-free packing), and requires critical lens adjustments.
Therefore, any needs of the "LENS MAIN BLOCK UNIT" (Ref. 315), carefully confirm its performance in advance.
2. Once "LENS MAIN BLOCK UNIT" (Ref. 315) is confirmed as defective, place order "LENS Unit" (Ref. 300) and replace REAR FRAME UNIT, to maintain Serial number of owner's original lens.

• When the "Ref.315" is necessary to be replaced, replace as a "Ref.300".



NOTE:

Keep covering the lens unit with Lens caps (front & rear), other than necessary cases.

Fig. S3



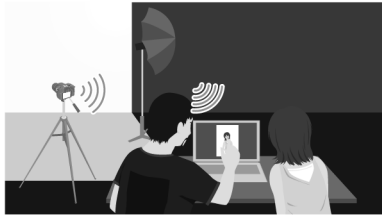

3.2.4. About Flexible Cable and Connector

Do not touch carelessly so that the foreign body should not adhere to the terminal part of flexible cable and connector.
Wipe off with a clean cloth and the cotton bud, etc. when the terminal part is dirty.

3.3. Service Notes

3.3.1. About Wi-Fi Function

Linking with the Wi-Fi compatible equipment allows you to remotely operate the camera, or share pictures with people in distant places even during recording or playing back.

[Remote Shooting] (P211)	[Playback on TV] (P220)
 <p>Linking with a smartphone/tablet enables the following:</p> <ul style="list-style-type: none"> • Remote recording (P213) • Playing back the pictures in the camera (P213) • Saving the pictures in the camera to the smartphone/tablet, or sending them to WEB services. (P213) • Sending the acquired location information to the camera. (P213) 	 <p>By linking with the DLNA compatible TV, you can display pictures on TV right after taking them or display them on TV later by playing them back on the camera.</p>
[Send Images While Recording] (P222)	[Send Images Stored in the Camera] (P231)
 <p>Every time you take a picture, the picture can be automatically sent to a specified location. You can play back the picture on the smartphone/tablet, or save and edit it on PC.</p> <p>• Send to:</p> <ul style="list-style-type: none"> – [Smartphone]/[PC]/[Cloud Sync. Service]/[Web service]/[AV device] 	 <p>You can select and send recorded images.</p> <p>• Send to:</p> <ul style="list-style-type: none"> – [Smartphone]/[PC]/[Cloud Sync. Service]/[Web service]/[AV device]/[Printer]

* The page number in the above table does not show the page number of this service manual.

3.3.2. Important Notice of Servicing

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

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

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

Printing Material [Leaflet for Customer]

[For The Customer]

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

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

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

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

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

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

3.4. General Description About Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30°C (86°F) more than that of the normal solder.

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

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

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

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

Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
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%

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








There are eight kinds of DMC-GH3 (Camera body unit), regardless of the colours.

- a) DMC-GH3 (Japan domestic model)
- b) DMC-GH3P/PC
- c) DMC-GH3EB/EC/EF/EG/GH/GN
- d) DMC-GH3EE
- e) DMC-GH3GK
- f) DMC-GH3GT
- g) DMC-GH3GD
- h) DMC-GH3PU/GC

What is the difference is that the "INITIAL SETTINGS" data which is stored in Flash-ROM mounted on MAIN P.C.B..

3.5.1. Defining methods:

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

<p>a) DMC-GH3 (Japan domestic model) The nameplate for this model shows the following Safety registration mark.</p> 
<p>b) DMC-GH3P/PC The nameplate for these models show the following Safety registration mark.</p> 
<p>c) DMC-GH3EB/EC/EF/EG/GH/GN The nameplate for these models show the following Safety registration mark.</p> 
<p>d) DMC-GH3EE The nameplate for this model shows the following Safety registration mark.</p> 
<p>e) DMC-GH3GK The nameplate for this model shows the following Safety registration mark.</p> 
<p>f) DMC-GH3GT The nameplate for this model shows the following Safety registration mark.</p> 
<p>g) DMC-GH3GD The nameplate for this model shows the following Safety registration mark.</p> 
<p>h) DMC-GH3PU/GC The nameplate for these models does not show any above Safety registration mark.</p>

NOTE:

After replacing the MAIN P.C.B., be sure to achieve adjustment.
Refer to the adjustment instruction in the adjustment software for details.

3.5.2. INITIAL SETTINGS:

After replacing the MAIN P.C.B., make sure to perform the initial settings after achieving the adjustment by ordering the following procedure in accordance with model suffix of the unit.

1. IMPORTANT NOTICE:

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

CAUTION:(INITIAL SETTINGS)

---AFTER REPLACING THE MAIN P.C.B. ---

[Except "EG, EF, EB and EC" models : (VEP56171A is used as a Main P.C.B.)]

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

(Effective model suffix : "P/PU/PC/GD/GC/GT/GK/EE/GN/GH and NONE(JAPAN)")

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

*. In the case of P model, select "PP".
In the case of PU model, select "PU".

[Only for "EG, EF, EB and EC" models : (VEP56171B is used as a Main P.C.B.)]

*. From the beginning, only "EG, EF, EB and EC" are displayed as model suffix lists, and these are displayed from the second times as well.

2. PROCEDURES:

• **Precautions:** Read the above "CAUTION" carefully.

• **Preparation:**

Attach the fully charged Battery, and insert the SD memory card.

• **Step 1. The temporary cancellation of "INITIAL SETTINGS":**

Set the [Drive mode dial] to "SINGLE".

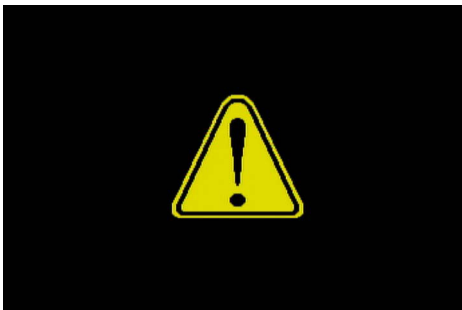
While keep pressing [DISP.] and [AF/AE LOCK] simultaneously, turn the Power on.

• **Step 2. The cancellation of "INITIAL SETTINGS":**

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

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

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



• **Step 3. Turn the Power on:**

Set the mode dial to [P] (Program AE Mode), then turn the Power on.

• **Step 4. Display the INITIAL SETTING:**

While keep pressing [MENU/SET] and “[RIGHT] of Cursor buttons” simultaneously, turn the Power off.

The “INITIAL SETTINGS” menu is displayed.

There are two kinds of “INITIAL SETTINGS” menu form as follows:

[CASE 1. After replacing MAIN P.C.B.]

[Except “EG, EB, EC and EF” models : (VEP56171A is used as a Main P.C.B.)]

When MAIN P.C.B. has just been replaced, all of the model suffix are displayed as follows. (three pages in total)

Model	Setting	Code
DMC-GH3 (Japan domestic model)	NONE(JAPAN)	00
DMC-GH3P	PP	01
DMC-GH3PC	PC	0C
DMC-GH3GD	GD	04
DMC-GH3GC	GC	05
DMC-GH3GT	GT	06
DMC-GH3GK	GK	07
DMC-GH3EE	EE	0A
DMC-GH3GN	GN	0B
DMC-GH3GH	GH	12
DMC-GH3PU	PU	03

[Only for “EG, EB, EC and EF” models : (VEP56171B is used as a Main P.C.B.)]

When MAIN P.C.B. has just been replaced, only 4 model suffix are displayed as follows.

Model	Setting	Code
DMC-GH3EG (No “E” model)	EG,E	02
DMC-GH3EF	EF	08
DMC-GH3EB	EB	09
DMC-GH3EC	EC	11

[CASE 2. Other than “After replacing MAIN P.C.B.”]

< Other than “EG/EB/EC/EF” models >

Setting	Code
GN	0B

< Only “EG/EB/EC/EF” models >

Setting	Code
EG,E	02
EF	08
EB	09
EC	11

• **Step 5. Choose the model suffix in “INITIAL SETTINGS”:** (Refer to “CAUTION”)

[Caution: After replacing MAIN P.C.B.]

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

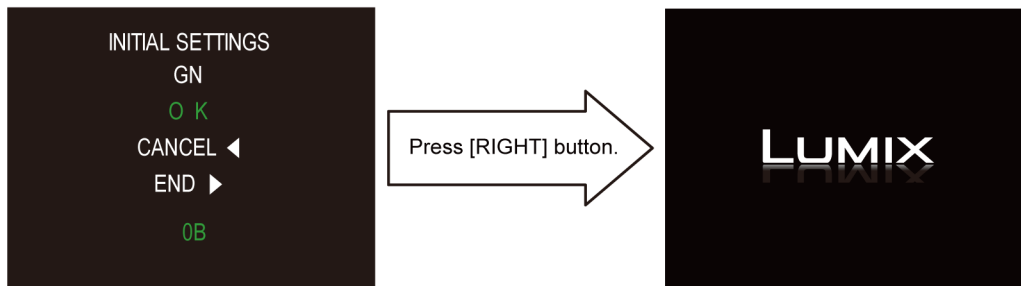
Once one of the model suffix have been chosen, the model suffix lists will not be displayed, thus, it can be changed.

Therefore, select the area carefully.

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

• **Step 6. Set the model suffix in “INITIAL SETTINGS”:**

- Press the “[RIGHT] of Cursor buttons”.
- The only set area is displayed, and then press the “[RIGHT] of Cursor buttons” after confirmation.
(The unit is powered off automatically.)



• **Step 7. CONFIRMATION:**

Confirm the display of “PLEASE SET THE CLOCK” in concerned language when the unit is turned on again.
When the unit is connected to PC with USB cable, it is detected as removable media.
(When the “GT” or “GK” model suffix is selected, the display shows “PLEASE SET THE CLOCK” in Chinese.)

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

• **Default setting (After “INITIAL SETTINGS”)**

	MODEL	VIDEO OUTPUT	LANGUAGE	DATE	REMARKS
a)	DMC-GH3 (Japan domestic model)	NTSC	Japanese	Year/Month/Date	
b)	DMC-GH3P	NTSC	English	Month/Date/Year	
c)	DMC-GH3PC	NTSC	English	Month/Date/Year	
d)	DMC-GH3PU	NTSC	Spanish	Month/Date/Year	
e)	DMC-GH3EB	PAL	English	Date/Month/Year	
f)	DMC-GH3EC	PAL	English	Date/Month/Year	
g)	DMC-GH3EE	PAL	Russian	Date/Month/Year	
h)	DMC-GH3EF	PAL	French	Date/Month/Year	
i)	DMC-GH3EG	PAL	English	Date/Month/Year	
j)	DMC-GH3GC	PAL	English	Date/Month/Year	
k)	DMC-GH3GD	NTSC	Korean	Year/Month/Date	
l)	DMC-GH3GH	PAL	English	Date/Month/Year	
m)	DMC-GH3GK	PAL	Chinese (simplified)	Year/Month/Date	
n)	DMC-GH3GN	PAL	English	Date/Month/Year	
o)	DMC-GH3GT	NTSC	Chinese (Traditional)	Year/Month/Date	

4 Specifications

The following specification is for DMC-GH3EB/GH3AEB/GH3HEB.

Some specifications may differ depending on model suffix.

Power Source:	DC 8.4 V
Power Consumption:	2.9 W (When recording with Monitor) [When the Interchangeable lens (H-HS12035) is used] 3.1 W (When recording with Monitor) [When the Interchangeable lens (H-VS014140) is used] 2.0 W (When playing back with Monitor) [When the Interchangeable lens (H-HS12035) is used] 2.3 W (When playing back with Monitor) [When the Interchangeable lens (H-VS014140) is used]
Camera effective pixels	16,050,000 pixels
Image sensor	4/3" Live MOS sensor, total pixel number 17,200,000 pixels, Primary colour filter
Digital Zoom	Max. 4×
Extra Tele Conversion	When taking still pictures: Max. 2× (When a picture size of [S] (4 M), aspect ratio of [4:3] is selected.) When recording motion pictures: 2.4×/3.6×/4.8×
Focus	Auto Focus/Manual Focus, Face Detection/AF Tracking/23-area-focusing/ 1-area-focusing/Pinpoint (Touch focus area selection possible)
Shutter system	Focal-plane shutter
Burst recording	
Burst speed	20 pictures/second (Super high speed), 6 pictures/second (High speed), 4 pictures/second (Middle speed), 2 pictures/second (Low speed)
Number of recordable pictures	Max. 18 pictures (when there are RAW files) Depends on the capacity of the card (when there are no RAW files)
ISO sensitivity (Standard Output Sensitivity)	AUTO/ $\frac{1}{125}$ / $\frac{1}{200}$ / $\frac{1}{400}$ / $\frac{1}{800}$ / $\frac{1}{1600}$ / $\frac{1}{3200}$ / $\frac{1}{6400}$ / $\frac{1}{12800}$ / $\frac{1}{25600}$ (1/3 EV step change possible) * Only available when [Extended ISO] is set.
Minimum Illumination	Approx. 6 lx (when i-Low light is used, the shutter speed is 1/25th of a second) [When the Interchangeable lens (H-HS12035) is used] Approx. 12 lx (when i-Low light is used, the shutter speed is 1/25th of a second) [When the Interchangeable lens (H-VS014140) is used]
Shutter speed	B (Bulb) (Max. approx. 60 minutes), 60 seconds to 1/4000th of a second Taking still pictures during motion picture recording Motion picture priorities: 1/25th of a second to 1/16000th of a second Still picture priorities: B (Bulb) (Max. approx. 60 minutes), 60 seconds to 1/4000th of a second
Metering range	EV 0 to EV 18
White Balance	Auto White Balance/Daylight/Cloudy/Shade/Incandescent lights/Flash/White set1/White set2/White set3/White set4/White Balance K set
Exposure (AE)	Programme AE (P)/Aperture-priority AE (A)/Shutter-priority AE (S)/Manual exposure (M)/AUTO Exposure Compensation (1/3 EV Step, -5 EV to +5 EV)
Metering Mode	Multiple/Centre weighted/Spot
Monitor	3.0" OLED Monitor (3:2) (Approx. 610,000 dots) (field of view ratio about 100%) Touch screen
Viewfinder	OLED Live Viewfinder (16:9) (Approx. 1,740,000 dots) (field of view ratio about 100%) (with diopter adjustment -4 to +4 diopter)
Flash	Built-in pop up flash GN 17.0 equivalent (ISO200·m) [GN 12.0 equivalent (ISO100·m)] Flash range: Approx. 30 cm (0.98 feet) to 17.1 m (56.0 feet) [When the Interchangeable lens (H-HS12035) is mounted, WIDE, [ISO AUTO] is set] Flash range: Approx. 50 cm (1.6 feet) to 12.0 m (39.0 feet) [When the Interchangeable lens (H-VS014140) is mounted, WIDE, [ISO AUTO] is set] AUTO, AUTO/Red-Eye Reduction, Forced ON, Forced ON/Red-Eye Reduction, Slow Sync., Slow Sync./Red-Eye Reduction, Forced OFF

Flash synchronisation speed	Equal to or smaller than 1/160th of a second	
Microphone	Stereo	
Speaker	Monaural	
Recording media	SD Memory Card/SDHC Memory Card [®] /SDXC Memory Card [®] (* UHS-I-compatible)	
Picture size		
Still picture	When the aspect ratio setting is [4:3] 4608×3456 pixels, 3264×2448 pixels, 2336×1752 pixels When the aspect ratio setting is [3:2] 4608×3072 pixels, 3264×2176 pixels, 2336×1560 pixels When the aspect ratio setting is [16:9] 4608×2592 pixels, 3264×1840 pixels, 1920×1080 pixels When the aspect ratio setting is [1:1] 3456×3456 pixels, 2448×2448 pixels, 1744×1744 pixels	
Recording quality		
Motion pictures	[AVCHD] 1920×1080/50p (28 Mbps)/1920×1080/50i (17 Mbps)/ 1920×1080/50i [*] (24 Mbps)/1920×1080/24p (24 Mbps) (*Sensor output is 25 frames/sec.) [MP4] 1920×1080/25p (20 Mbps)/1280×720/25p (10 Mbps)/ 640×480/25p (4 Mbps) [MOV] 1920×1080/50p [50 Mbps (IPB)]/ 1920×1080/25p [72 Mbps (ALL-Intra)]/ 1920×1080/25p [50 Mbps (IPB)]/ 1920×1080/24p [72 Mbps (ALL-Intra)]/ 1920×1080/24p [50 Mbps (IPB)]/ 1280×720/50p [72 Mbps (ALL-Intra)] When recording motion pictures in slow and fast motion: 1920×1080/24p [24 Mbps (IPB)]	
Quality	RAW/RAW+Fine/RAW+Standard/Fine/Standard/MPO+Fine/ MPO+Standard	
Recording file format		
Still Picture	RAW/JPEG (based on "Design rule for Camera File system", based on "Exif 2.3" standard, DPOF corresponding)/MPO	
Motion pictures	AVCHD Progressive/AVCHD/MP4/MOV	
Audio compression	AVCHD	Dolby [®] Digital (2 ch)
	MP4	AAC (2 ch)
	MOV	LPCM (non-compression)

Interface		
Digital	"USB 2.0" (High Speed) * Data from the PC can not be written to the camera using the USB connection cable.	
Analogue video/ audio	NTSC/PAL Composite (Switched by menu) Audio line output (monaural)	
Terminal		
[REMOTE]	φ 2.5 mm jack	
[AV OUT/DIGITAL]	Dedicated jack (8 pin)	
[HDMI]	MiniHDMI TypeC	
[MIC]	φ 3.5 mm jack	
Headphone	φ 3.5 mm jack	
Flash synchro	Available	
Dimensions	Approx. 132.9 mm (W)×93.4 mm (H)×82.0 mm (D) [5.23" (W)×3.68"(H)×3.23" (D)] (excluding the projecting parts)	
Mass	Approx. 550 g/1.21 lb [with the card and battery] Approx. 470 g/1.04 lb (camera body) Approx. 855 g/1.88 lb [with the Interchangeable lens (H-HS12035), card and battery] Approx. 1010 g/2.23 lb [with the Interchangeable lens (H-VS014140), card and battery]	
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)	
Operating humidity	10%RH to 80%RH	
Dust-proof and splash-proof	Yes	

Wireless transmitter

Compliance standard	IEEE 802.11b/g/n (standard wireless LAN protocol)
Frequency range used (central frequency)	2412 MHz to 2462 MHz (11ch)
Encryption method	Wi-Fi compliant WPA™/WPA2™
Access method	Infrastructure mode

Battery Charger (Panasonic DMW-BTC10E):

Information for your safety

Input:	AC~110 V to 240 V, 50/60 Hz, 0.2 A
Output:	DC==8.4 V, 0.65 A

Battery Pack (lithium-ion) (Panasonic DMW-BLF19E):

Information for your safety

Voltage/capacity:	7.2 V/1860 mAh
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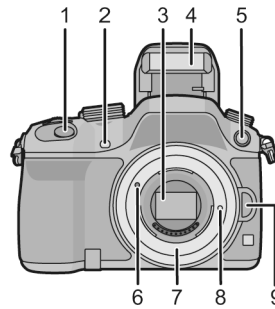
Interchangeable Lens	H-HS12035 “LUMIX G X VARIO 12–35 mm/F2.8 ASPH./ POWER O.I.S.”	H-VS014140 “LUMIX G VARIO HD 14–140 mm/F4.0–5.8 ASPH./MEGA O.I.S.”
Focal length	f=12 mm to 35 mm (35 mm film camera equivalent: 24 mm to 70 mm)	f=14 mm to 140 mm (35 mm film camera equivalent: 28 mm to 280 mm)
Aperture type	7 diaphragm blades/circular aperture diaphragm	7 diaphragm blades/circular aperture diaphragm
Aperture range	F2.8	F4.0 (Wide) to F5.8 (Tele)
Minimum aperture value	F22	F22
Lens construction	14 elements in 9 groups (4 aspherical lenses/1 UED Lens/1 UHR Lens)	17 elements in 13 groups (4 aspherical lenses/2 ED lenses)
Nano surface coating	Yes	None
In focus distance	0.25 m (0.82 feet) to ∞ (from the focus distance reference line)	0.5 m (1.6 feet) to ∞ (from the focus distance reference line)
Maximum image magnification	0.17× (35 mm film camera equivalent: 0.34×)	0.2× (35 mm film camera equivalent: 0.4×)
Optical Image Stabiliser	Available	Available
[O.I.S.] switch	Available (Switching ON/ OFF)	Available (Switching ON/ OFF)
Mount	“Micro Four Thirds Mount”	“Micro Four Thirds Mount”
Angle of view	84° (Wide) to 34° (Tele)	75° (Wide) to 8.8° (Tele)
Filter diameter	58 mm (2.3 inch)	62 mm (2.4 inch)
Max. diameter	Approx. 67.6 mm (2.7 inch)	Approx. 70 mm (2.8 inch)
Overall length	Approx. 73.8 mm (2.9 inch) (from the tip of the lens to the base side of the lens mount)	Approx. 84 mm (3.3 inch) (from the tip of the lens to the base side of the lens mount)
Mass	Approx. 305 g/0.67 lb	Approx. 460 g/1.01 lb
Dust-proof and splash-proof	Yes	None

5 Location of Controls and Components

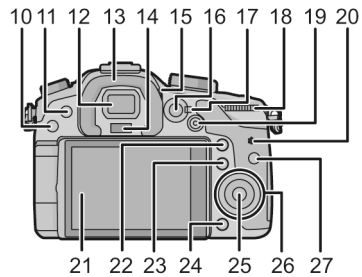
The following description is for DMC-GH3EB/GH3AEB/GH3HEB.
Some descriptions may differ depending on model suffix.






■ Camera body

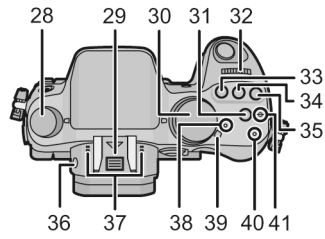
- 1 Shutter button (P26)
- 2 Self-timer indicator (P55)/
AF Assist Lamp
- 3 Sensor
- 4 Flash (P43)
- 5 Flash synchro socket*
- 6 Lens fitting mark
- 7 Mount
- 8 Lens lock pin
- 9 Lens release button (P18)



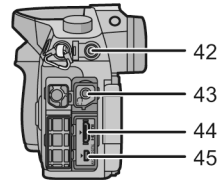
- 10 [▶] (Playback) button (P29)
- 11 [L/VF] button (P22)/[Fn5] button (P25)
- 12 Viewfinder (P22)
- 13 Eye Cup* (P92)
- 14 Eye sensor (P22)
- 15 Diopter adjustment dial (P22)
- 16 [AF/AE LOCK] button (P52)
- 17 Focus mode lever (P48)
- 18 Rear dial
- 19 Motion picture button (P27)
- 20 Speaker
 - Be careful not to cover the speaker with your finger. Doing so may make sound difficult to hear.
- 21 Touch screen/monitor (P17)
- 22 [Q.MENU] button (P24)/[Fn2] button (P25)
- 23 [⊞] (Auto Focus Mode) button (P48)/
[Fn3] button (P25)
- 24 [↵/⏎] (Delete/Cancel) button (P33)/
[Fn4] button (P25)
- 25 [MENU/SET] button (P17, 23)
- 26 Control dial (P17)/Cursor buttons (P17)
- 27 [DISP.] button (P28, 32)



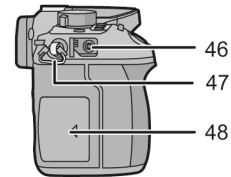
-
- 28 Drive mode dial
 - Single (P26): 
 - Burst (P53): 
 - Auto Bracket (P54): 
 - Self-timer (P55): 
 - 29 Hot shoe (Hot shoe cover)
 - Keep the Hot Shoe Cover out of reach of children to prevent swallowing.
 - 30 Mode dial (P34)
 - 31 [Wi-Fi] button (P60)/[Fn1] button (P25)
 - 32 Front dial
 - 33 [WB] (White Balance) button (P46)
 - 34 [ISO] (ISO sensitivity) button (P45)
 - 35 [] (Exposure Compensation) button (P44)
 - 36 Flash open button (P43)
 - 37 Stereo microphone
 - Be careful not to cover the microphone with your finger. Doing so may make sound difficult to record.
 - 38 Status indicator (P21)
 - 39 Camera ON/OFF switch (P21)
 - 40 Wi-Fi connection lamp
 - 41 Focus distance reference mark
-



-
- 42 [MIC] socket
 - 43 Headphone socket
 - 44 [HDMI] socket (P76)
 - 45 [AV OUT/DIGITAL] socket (P76, 79, 80)
-



-
- 46 [REMOTE] socket
 - 47 Shoulder strap eyelet (P18)
 - Be sure to attach the shoulder strap when using the camera to ensure that you will not drop it.
 - 48 Card door (P20)
-



- 49 Tripod mount
- A tripod with a screw length of 5.5 mm (0.22 inch) or more may damage this unit if attached.

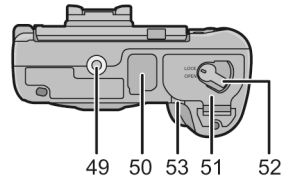
- 50 Terminal cover*
- Keep the terminal cover out of reach of children to prevent swallowing.

- 51 Battery door (P20)

- 52 Release lever (P20)

- 53 DC coupler cover

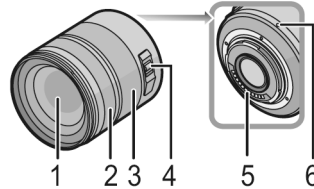
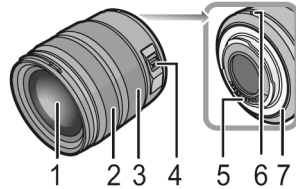
- When using an AC adaptor, ensure that the Panasonic DC coupler (DMW-DCC12: optional) and AC adaptor (DMW-AC8E: optional) are used.
- Always use a genuine Panasonic AC adaptor (DMW-AC8E: optional).
- When using an AC adaptor, use the AC mains lead supplied with the AC adaptor.
- It is recommended to use a fully charged battery or AC adaptor when recording motion pictures.
- If while recording motion pictures using the AC adaptor and the power supply is cut off due to a power outage or if the AC adaptor is disconnected etc., the motion picture will not be recorded.




■ Lens

H-HS12035
(LUMIX G X VARIO 12–35 mm/
F2.8 ASPH./POWER O.I.S.)

H-VS014140
(LUMIX G VARIO HD 14–140 mm/
F4.0–5.8 ASPH./MEGA O.I.S.)



- 1 Lens surface
- 2 Focus ring (P51)
- 3 Zoom ring (P43)
- 4 [O.I.S.] switch
 - The interchangeable lens (H-HS12035, H-VS014140) have O.I.S switch. Stabiliser function is activated when the O.I.S switch of the lens is set to [ON]. (()) is set at the time of purchase)
- 5 Contact point
- 6 Lens fitting mark
- 7 Lens mount rubber

6 Service Mode

6.1. Error Code Memory Function

1. General description

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

The error code is not memorized when the power supply is shut down forcibly.

(i.e., when the unit is powered on by the battery, the battery is pulled out)

The error code is memorized to Flash-ROM when the unit has just before powered off.

2. How to display

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

• Preparation

Attach the fully charged Battery, and insert the SD memory card.

• Step 1. The temporary cancellation of "INITIAL SETTINGS":

Set the [Drive mode dial] to "SINGLE".

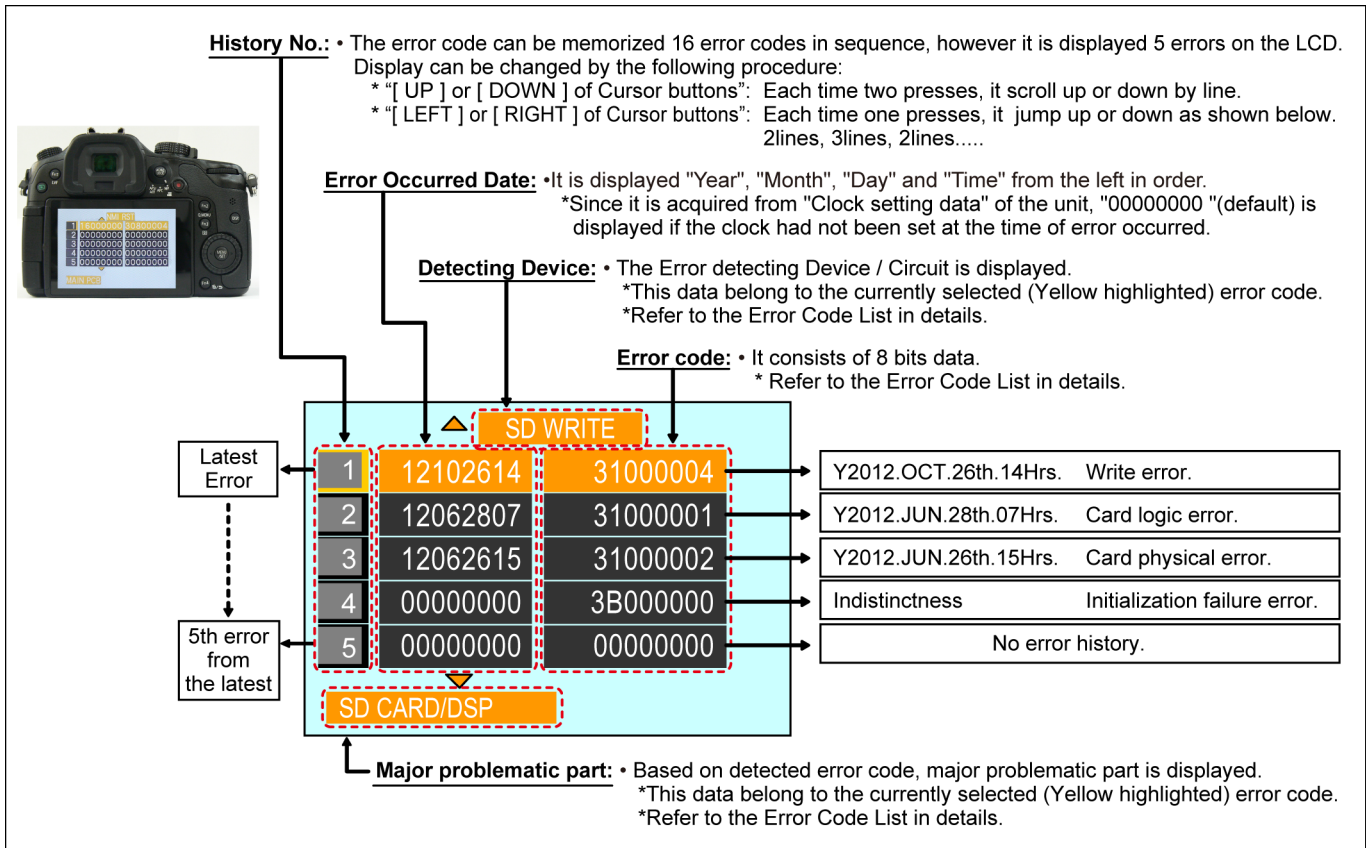
While keep pressing [DISP.] and [AF/AE LOCK] simultaneously, turn the Power on.

• Step 2. Execute the error code display mode:

Press [MENU/SET], "[LEFT] of Cursor buttons" and [AF/AE LOCK] simultaneously with the step 1 condition.

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

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



Example of Error Code Display

Error Code List:

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

Attribute	Main item	Sub item	Error code		Contents	Error Indication	
			High 4 bits	Low 4 bits		Detecting device	Problematic Part/Circuit
HARD	VENUS A/D	Flash	28*0	0000	Flash charging capacitor did not been fully charged within 20 seconds	STRB CHG	STRB PCB/FPC
	FLASH ROM	Data Area	2B*0	0001	Flash ROM data reading error is detected when the unit turns ON	FROM RE	FROM
				0002	Flash ROM data writing error is detected when the unit turns OFF	FROM WR	FROM
		Program Area		0005	Firmware update error	(No indication)	(No indication)
	SYSTEM IC	Initialization	2C*0	0001	Clock IC initialization failure error	SYS INIT	MAIN PCB
SOFT	CPU	Reset	30*0	0001 0007	System error(NMI reset)	NMI RST	MAIN PCB
	Recording Media	SD Memory Card	31*0	0001	SD memory card logic error SD memory card format error When it is detected, [MEMORY CARD ERROR FORMAT THIS CARD?] is displayed on the screen	SD CARD	SD CARD/DSP
				0002	SD memory card physical error During formatting the SD memory card, there is no response from the card If the mini-SD memory card is used, check the SD memory card adaptor		
				0004	SD memory card writing error Check the SD memory card. It might be damage one.	SD WRITE	
	Lens	Communication	3C11 3CF0	****	Lens communication error	ZOOM	ZOOMm/LENSu
	Camera	System	3B*0	0000	Initialization failure error	INIT	(No indication)
				0001	Exposure charging operation failure(Mount Box Unit)	(No indication)	(No indication)
0002				Failure of the returning operation to the home position(Mount Box Unit)			
		0003	Failure of the mecha shutter sensor(Mount Box Unit)				
Recording	Motion Image Recording	3F*0	0001	File time out error in recording motion image	(No indication)	(No indication)	
			0002	File data cue send error in recording motion image			
Wi-Fi			3211 3214	0001 FFFF	Wi-Fi related errors: *Generally, above are unable to specified the, which cannot be used for malfunction diagnosis.		

Important notice about “Error Code List”

About “*” indication:

The third digit from the left is different as follows.

In case of 0 (example: 2B001000)

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

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

In case of 8 (example: 2B801000)

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

It means that this error is occurred at service side.

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

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

NOTE:

The error code can not be initialized.

7 Troubleshooting Guide

7.1. Checking Method of Body and Interchangeable Lens

1. INITIAL (DEFAULT) STATUS OF THE LENS UNIT

The Lens unit which is supplied as a standard accessory for this camera unit (H-HS12035, H-VS014140) shows the following status when the Lens is detached from the Camera unit.

NOTE: Although the lens unit is attached it shows the same condition when the Camera turns off.

H-HS12035 (Included in DMC-GH3A):

- [1]. ZOOM RING When the Zoom ring is rotated, Zoom condition is changing accordingly.
(The 1st lens frame moves.)
[Focal length : 12mm to 35mm [35mm film camera equivalent: 24mm to 70mm]]
- [2]. FOCUS RING The Focus condition does not change although Focus ring is rotated. (Free rotation.)

H-VS014140 (Included in DMC-GH3H):

- [1]. ZOOM RING When the Zoom ring is rotated, Zoom condition is changing accordingly.
(The 1st lens frame moves.)
[Focal length : 14mm to 140mm [35mm film camera equivalent: 28mm to 280mm]]
- [2]. FOCUS RING The Focus condition does not change although Focus ring is rotated. (Free rotation.)

2. INITIAL INSPECTION TIPS (BEFORE DETERMINE THE UNIT BEING FAULTY/DEFECTIVE):

Since this unit is equipped with various functions/settings, some phenomenon/effect might be caused by miss usage of function and/or settings.

It might be made a miss-judgement caused by miss usage of function & settings although the unit is working properly without fault.

Therefore, check/confirm the followings before concluding/determine the unit being faulty/defective.


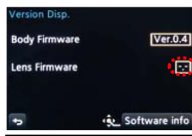
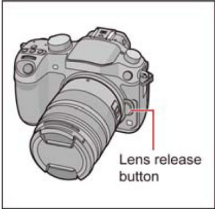

NOTE: Refer to the Operating Instructions carefully.

Also, useful hint/tips for this unit is available at following URL, and is updated frequently.

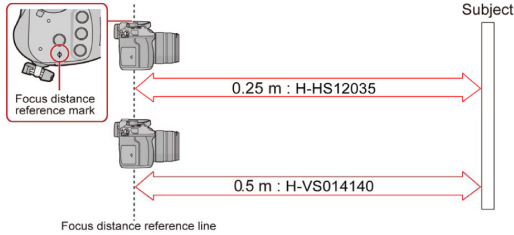
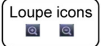

<http://panasonic.jp/support/global/cs/dsc/>

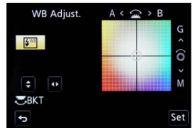


If it is hard to determine whether the resolution is out of specification or not, proceed the "RESOLUTION INSPECTION", before replacing the LENS MAIN BLOCK UNIT and/or MOUNT BOX UNIT. (The unit might be mishandling, dropping or others.)

[1]. [LENS RELATIVES]

TITLE	ITEMS	DESCRIPTION
LENS	Aperture size does not changed. (Although aperture value is changed, the physical size of aperture is never changed.)	*Although aperture value is changed, the physical size of aperture is never changed (It keeps the maximum aperture condition) until the shutter release button is fully released. (There is no "aperture stopping down" button. But instead, there are aperture effect preview function and shutter speed effect preview function.) ⇒ [Custom Menu] (1/8) ----- [Fn Button Set] (PREVIEW)
	The Aperture condition does not changed. (Aperture value shows "0.0")	*The Lens & Body are communicating (serial communication) through mount contacts (11 pins). *Confirm that lens & body mount contacts are not dirty. *While keep pressing the [Lens release] button, it makes same situation that Lens does not attached. *Although lens is attached to the body, the Aperture value shows "0.0" when the communication error is occurred. Also, when the firmware version confirmation mode is executed, the [- -] is displayed as Lens firmware version.  Aperture value is fixed at [0.0]  Firmware version shows  Lens release button
	Although the Focus ring is rotating, it does not change the Focus condition.	*The Focus condition is never changed although focus ring is rotated when the Focus mode is set to AFS/AFF or AFC. (When the [AF + MF] is set to [ON], it is able to fine adjust the focus manually by rotating the focus ring while AF lock.) ⇒ [Custom Menu] (5/8) ----- [AF + MF] (ON/OFF)
	No released without lens attachment.	*It is able to release the shutter button without attaching the lens unit. ⇒ [Custom Menu] (8/8) ----- [Shoot w/o Lens] (ON/OFF)
	The Dusty and/or dirty of the Lens	*Define the location of the dirt / dust of the lens first, whether it is outside surface of the lens or not. If it is outside surface of the lens, order the following procedure in steps. STEP-1. Blow off the dust certainly with Hand Blower. STEP-2. Clean and wipe up the Lens surface by using the Lens cleaning Kit (VFK1900BK). *Refer to the "11 Maintenance" of this manual.  [Wiping up the lens surface] Like drawing the circle, wipe up the lens surface centre towards to outside slowly.
It does not become the Shutter speed [B] (Bulb) mode.	*It is only able to select the shutter speed to [B](Bulb) when mode is set to [M] (Manual) and drive mode dial is set to [SINGLE]. ([B] mode: the shutter stays open while the shutter button is pressed fully (up to about 2 minutes). The shutter closes if you release the shutter button.)	

[2]. [BODY RELATIVES]

TITLE	ITEMS	DESCRIPTION
FOCUS	The picture is out of focus although the focus is adjusted in MF mode at once.	<p>*In the following conditions, the focus may be out of focus, no matter the kind of subject. Therefore, adjust the focus again by rotating the Focus ring.</p> <p>*After "in-focus" condition, Zoom condition has been changed.</p> <p>*Power switch is turned OFF and ON again.</p>
	Focus does not become in focus condition.	<p>*If the shooting distance is less than the Minimum requirement distance for focus, the focus may not be brought into focus, no matter the kind of subject.</p> 
	MF(Manual Focus)ASSIST does not work.	<p>*The MF assist function is that the certain area image is able to enlarge 4/5/10 times to make easier to focus. (It can be changed enlarged value by rotating the rear dial or clicking the loupe icons on display.)</p> <p>*It does not activated if the [Focus Mode] is set to other than [MF] mode.</p> <p>*It does not activated when using the Digital Zoom or recording motion pictures.</p> <p>*It does not activated if [MF Assist] is set to OFF.</p> <p>⇒ [Custom Menu] (5/8) ----- [MF Assist] (ON/OFF)</p> <p>(To display the MF assist, moving the focus lever or focus ring, and/or touching the [Auto Focus Mode].)</p> 
	Face detection does not work.	<p>*Select AF mode to face detection. (In [A]mode, it is automatically assigned according with scene.) (Press the [Auto Focus Mode] to display the AF mode menu.)</p> <p>*It does not activated when using the Digital Zoom or Miniature Effect of [Creative Control Mode].</p> <p>*It does not activated if the focus mode is set to MF.</p>
	The subject is not focused properly.	<p>*When get a fingerprint, dirt on the lens surface, resulting in the subject being out of focus.</p> <p>*The subject is beyond the focus range of the camera.</p> <p>*There is camera shake (jitter) or the subject is moving slightly.</p> <p>*The focus indication green mark is lights at the top right hand corner on the LCD when the subject is focused.</p> <p>*The shutter speed will become slower and the optical image stabilizer function may not work properly when taking pictures especially in dark places.</p>
	Focus does not change.	<p>*Focus & Exposure condition is locked when the [AF / AE LOCK] button is pressed under the condition of [AF/AE Lock Hold] is "On".</p> <p>⇒ [Custom Menu] (3/8) ----- [AF/AE Lock Hold] (ON/OFF)</p> <p>*It can be reset when [AF / AE LOCK] button is pressed again.</p>
	Although [AF/AE LOCK] button is pressed, it does not hold the Focus, only Exposure is locked.	<p>*Focus does not hold even if [AF/AE LOCK] button is pressed if the [AF/AE Lock] is selected [AE].</p> <p>⇒ [Custom Menu] (3/8) ----- [AF/AE Lock] (AE, AF, AF/AE)</p> <p>*In the Manual Focus condition, It is only worked as [AE lock] function.</p>
	It does not turn to the "AFC" mode. (Motion prediction does not work.)	<p>*Confirm the setting of the focus mode lever (AFS / AFF , AFC , MF).</p> <p>*Although AFC is effective with burst mode, the focus is fixed on the first picture when subject is dark.</p>
Flash	Some of the Flash setting(s) are not able to select.	*In accordance with the [REC] mode, selectable flash settings may be differ.
	[AUTO BRACKET] does not work.	*Only one picture can be taken when the Flash is fired.
	The subject is too bright / too dark with Flash.	<p>*Confirm that the picture is taken within Flash range or not.</p> <p>*Confirm that flash output settings.</p> <p>⇒ [Rec] (2/6) ----- Flash Set (1/3) ----- [Flash Adjust.] (1/3 EV Step, -3EV to +3EV)</p>
	The Flash adjustment does not effect.	*Confirm that the picture is taken within Flash range or not.
	White round spots appear on the recording picture	<p>*If you take a picture with flash in a dark place or indoors, white round spots may be appear on the picture caused by the flash reflecting of particles of dust in air. This is not a malfunction.</p> <p>*A characteristic of this is that the number of round spots and their position differ in every picture.</p> 

TITLE	ITEMS	DESCRIPTION
Flash	Colour is strange when the Flash is fired.	<p>*The colour of the subject which is other than Flash reachable distance is not coverage of white balance.</p> <p>*Confirm that [WB Adjustment] setting condition. (Press the [WB] button, and rotate the rear dial to select the White Balance. Then press the cursor [DOWN] button, in order to execute the [WB ADJUST.] screen.</p> <p>*It also effects to the Flash recording mode as well.</p> 
	The appearance of the light source is strange. (The light source appears ahead the subject.)	<p>*Normally, the light source appears ahead the subject. (This is the effect of the 1st curtain synchro.)</p> <p>*The Flash synchro mode can be selected. ⇒ [Rec] (2/6) ----- Flash Set (1/3) ----- [Flash Synchro] (1ST / 2ND)</p> 
EXPOSURE	The Exposure condition can not be changed	<p>*Focus & Exposure condition is locked when the [AF/AE LOCK] button is pressed under the condition of [AF/AE Lock Hold] is "On". ⇒ [Custom Menu] (3/8) ----- [AF/AE Lock Hold] (ON/OFF)</p> <p>*It can be reset when [AF/AE LOCK] button is pressed again.</p>
	Although [AF/AE LOCK] button is pressed, only focus is locked. (AE is not locked)	<p>*Focus does not hold even if [AF/AE LOCK] button is pressed if the [AF/AE Lock] is set to [AF]. ⇒ [Custom Menu] (3/8) ----- [AF/AE Lock] (AE, AF, AF/AE)</p> <p>*In the Manual Focus condition, It is only worked as [AE lock] function, regardless any settings.</p>
	The pictures recorded with [AUTO BRACKET] function are too dark/bright.	<p>*The [AUTO BRACKET] is selected after setting the [EXPOSURE COMPENSATION], the compensated value is effected for its reference value.</p>
	The Exposure condition is changed extremely.	<p>*Spot metering mode is measuring only the limited narrow area on the centre of the screen.</p> <p>*Confirm the setting condition of [EXPOSURE COMPENSATION] (1/3 EV Step, -5EV to +5EV)</p>
CAPTURING	Although shutter is released, no picture is captured.	<p>*Although the shutter button is fully pressed, it can not take a picture until the subject is not focused. (It is able to take a picture when the Focus Priority turns [OFF] although focus condition does not perfect.) OFF is gives priority to the best time to take a picture. ⇒ [Custom Menu] (4/8) ----- [Focus Priority] (ON/OFF)</p>
	[AUTO BRACKET] does not work.	<p>*Only single picture is able to captured when flash is fired.</p> <p>*Part of Creative Control Mode can not be used.</p> <p>*The exposure may not be compensated with auto bracket depending on the brightness of the subject.</p>
COLOUR REPRODUCTION	Colour is strange.	<p>*There is a possibility that [Finely adjusting the white balance] is selected/shifted.</p> <p>*Confirm that [WB Adjustment] setting condition. (Press the [WB] button, and rotate the rear dial to select the White Balance. Then after choosing the WB mode press the cursor [DOWN] button, in order to execute the [WB ADJUST.] screen.)</p> <p>*It is resumed/memorized although power turns off/on.</p> 
	Colour is strange. (With Flash)	<p>*The flash light does not reach enough to the subject due to the over than flash reachable distance. In this case, white balance may be other than its coverage.</p>
	The colour is strange (On PC monitor/ Printout image.)	<p>*There is a possibility that the picture is captured with [AdobeRGB] setting. ⇒ [Rec] (5/6) ----- [Color Space] (sRGB/AdobeRGB)</p> <p>*To proceed proper colour reproduction for AdobeRGB, the AdobeRGB capable PC and Printer are necessary.</p> <p>*In accordance with PC environment, it may not be displayed properly when the picture is re-sized with business software.</p>
POWER	The Power is turned off.	<p>*Confirm that the setting condition of [Sleep Mode]. (If the camera has not been used for the time selected on the setting, the power turns off automatically.) ⇒ [Setup] (2/6) ----- [Economy] [Sleep Mode] (10 MIN./5MIN./2 MIN./1 MIN./OFF)</p>
DISPLAY	Abnormal Picture Effect. Certain part of the picture is flashing in Black & White.	<p>*Confirm that the setting condition of [Highlight]. ⇒ [Custom Menu] (2/8) ----- [Highlight] (ON/OFF)</p> <p>The white saturated areas appear blinking in Black and White.</p>
	Firmware version	<p>*Confirm that the firmware versions of the body and lens to be checked. ⇒ [Setup] (4/6) ----- [Version Disp.]</p>

MENU LIST (Quick Reference)

The following menu items are displayed on the LCD monitor.

	 [REC]	 [MOTION PICTURE]	 [CUSTOM MENU]	 [SETUP]	 [PLAYBACK]
1st Page					
2nd Page					
3rd Page					
4th Page					/
5th Page					/
6th Page		/			/
7th Page	/	/		/	/
8th Page	/	/		/	/

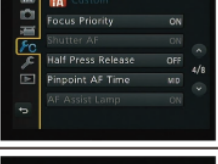
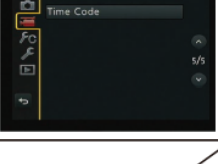
REMARKS:

Set the mode dial to [Intelligent Auto Mode]. [Intelligent Auto Mode] or [Intelligent Auto Plus Mode] can be selected.



[iA mode / iA+ mode]

* When the [Intelligent Auto Mode] and [Intelligent Auto Plus Mode], as for [REC] and [CUSTOM MENU], only the basic item is selected. (The menu item which can not be chosen is displayed in gray. When the menu page has no items can be chosen, the page is skipped display.)

	 [REC]	 [MOTION PICTURE]	 [CUSTOM MENU]	 [SETUP]	 [PLAYBACK]
1st Page					
2nd Page					
3rd Page					
4th Page					
5th Page					
6th Page					
7th Page					
8th Page					

Menu items of [SETUP] mode are same as Normal.

Menu items of [PLAYBACK] mode are same as Normal.

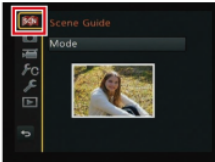
* When the mode dial is set to [Creative Motion Picture Mode], extra-menu group is displayed.



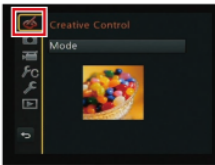
* When the mode dial is set to [C3 Custom Mode], extra-menu group is displayed.



* When the mode dial is set to [Scene Guide Mode (SCN)], extra-menu group is displayed.



* When the mode dial is set to [Creative Control Mode], extra-menu group is displayed.



NOTE:

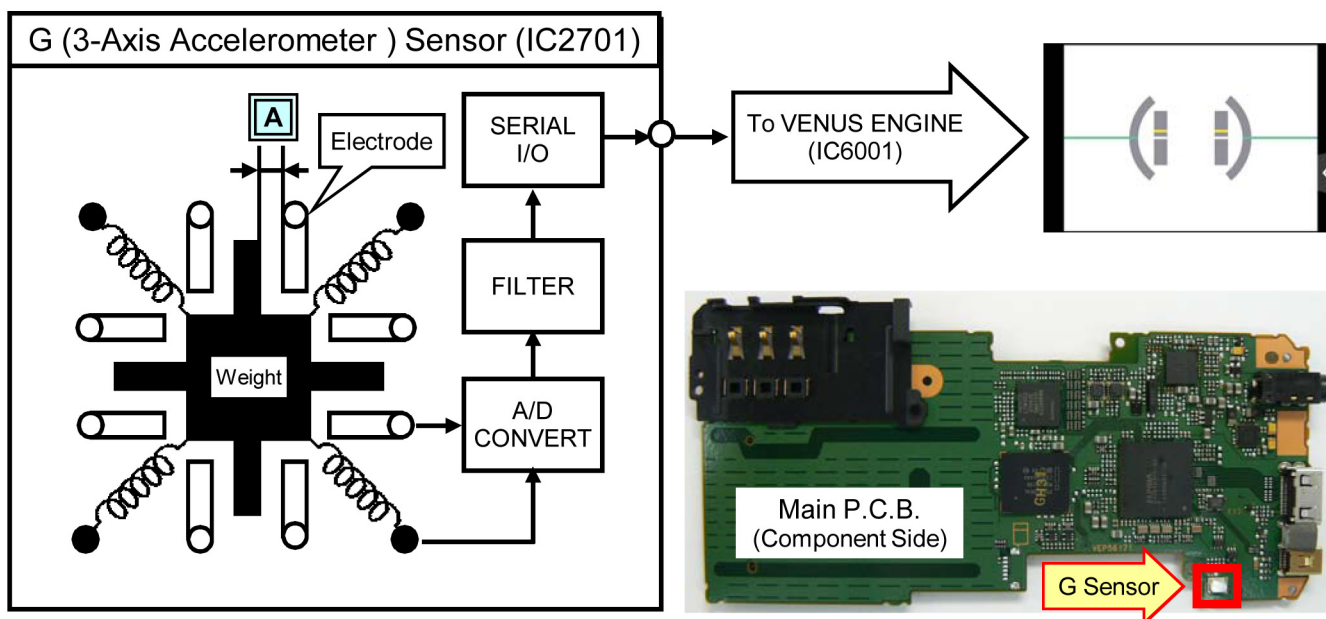
* When set [Menu Resume] in the [Setup] menu to [ON], the screen shows the last selected menu item when the camera is turned off.
⇒ [Setup] (4/6) ----- [Menu Resume] (ON/OFF)

7.2. About Electronic Level

The unit has the electronic level function using G (3-axis accelerometer) sensor inside the unit.

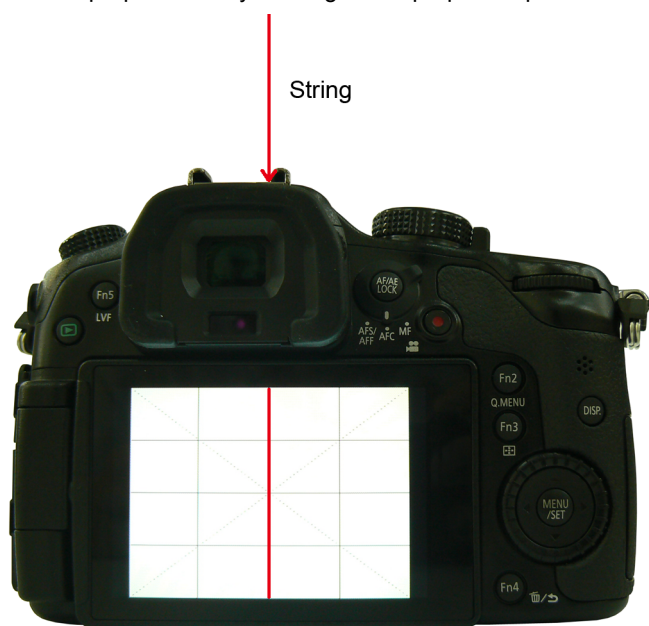
[Principle of Operation]

1. Movement of "Weight" is detected by capacitance. ----- [A]
2. Each acceleration of the X/Y/Z axis is converted into data and they are output.
3. The VENUS ENGINE converts the data into a horizontal angle and an angle of inclination, and displays them to screen.



[Purpose of the adjustment]

- Correct the camera as the horizontal angle and an angle of inclination become within ± 1 degree for a live-view picture.
 1. When the mount box unit or IC9999 (or Main P.C.B.) is replaced, readjustment is necessary.
 2. When the mount box unit, Main P.C.B. or the exterior of the camera is replaced, please confirm following;
 - a. Switch to display the Guidelines in LCD.
 - b. Confirm that the vertical lines in LCD are parallel with string hanging down perpendicularly. If they are significantly shifted, readjustment is necessary.
- Refer to the adjustment software for procedure of adjustment.
No special fixture is required. The adjustment can be performed with a table as possible horizontal, the string which hanging down perpendicularly and a general-purpose tripod.

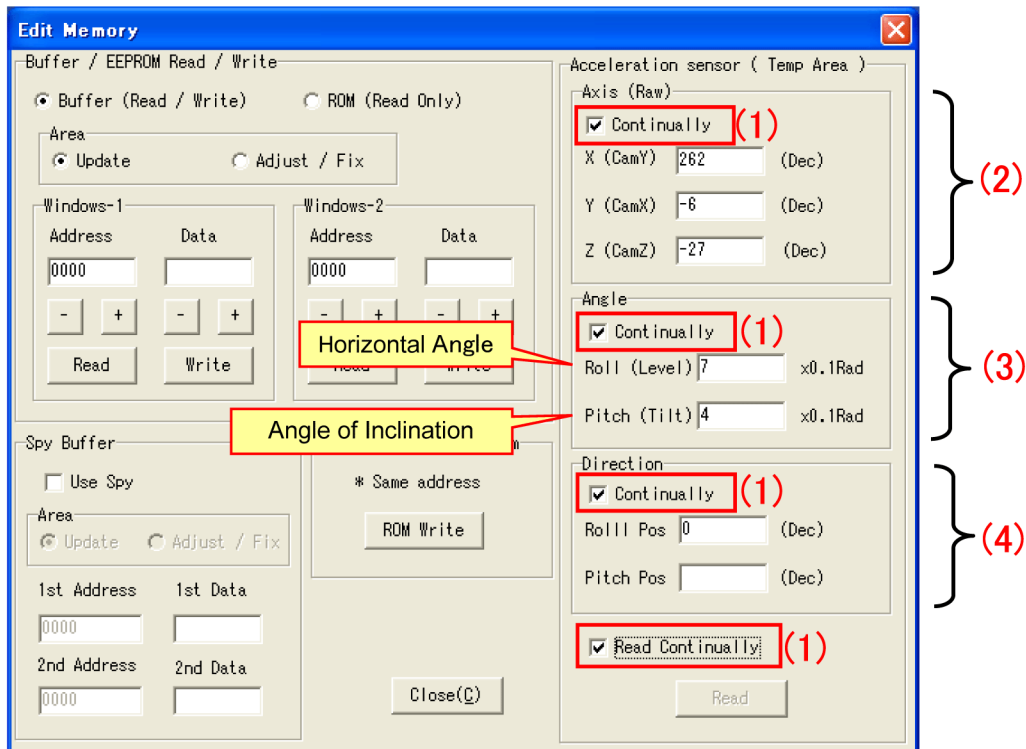


[Test of the G-Sensor working]

- G-Sensor working can be confirmed by G-Sensor data change on the “Edit Memory”.

[Operation]

- (1)----When you acquire the data of the G-sensor continually, put a checkmark here.
- (2)----Raw data of G- sensor is displayed.
- (3)----Roll angle (Horizontal Level) and Pitch angle (Tilt) are displayed.
- (4)----A posture state of the camera is displayed.



[Confirmation]

1. Put a checkmark in four portions of marked (1) each.
2. Move the camera and confirm the change of each data of (2) and (3).
Above value is one example. The value changes according to dispersion of each G-sensor.
3. When the value (3) is matched with the posture of the camera, G-sensor itself is normal.
If they are significantly different, G-sensor may be defective.

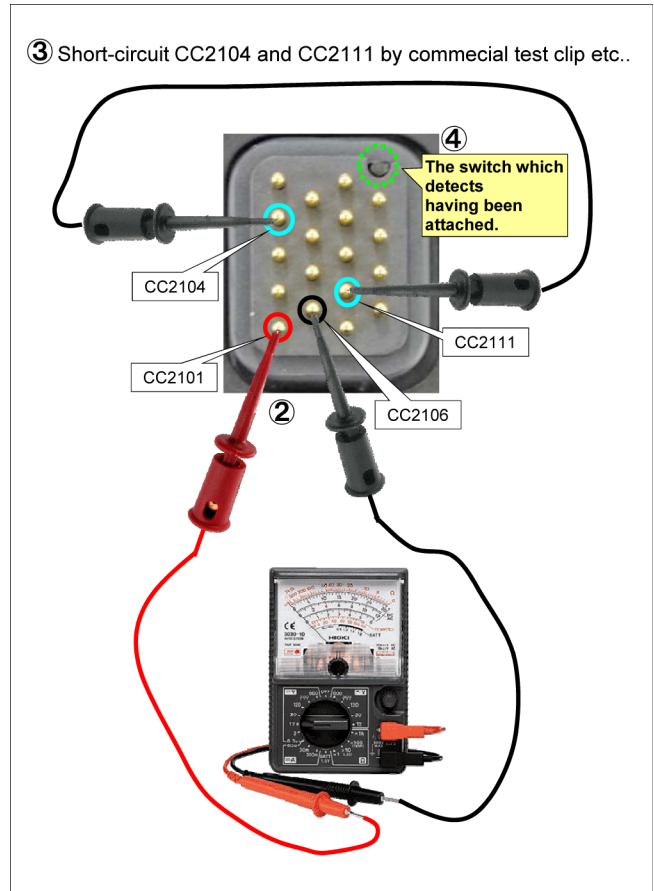
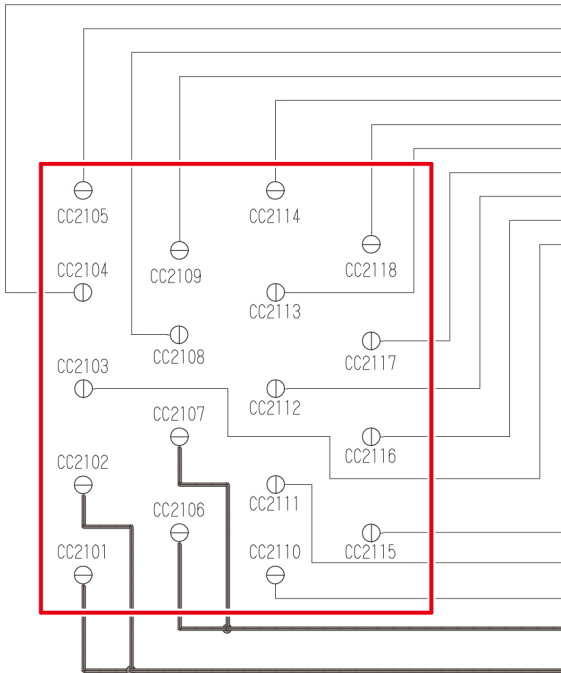
7.3. Checking Method of Battery Grip (DMW-BGGH3)

- It is a check method of optional battery grip (DMW-BGGH3).

■ Checking method of power circuit

1. Insert the Battery to the Battery Grip.
2. Connect a tester between CC2101 pin and CC2106 pin.
3. Short circuit CC2104 pin and CC2111 pin.
4. Push in the switch which detects having been attached.
5. It is normal if battery voltage is displayed on the tester.

<18 pin connector>



■ Checking Method of each Button switch and Dial.

- Turn on an operation ON/OFF switch after removing the battery.

【Checking Method of Button switch】

1. Connect the tester (range: × 100) between CC2106 (GND) and CC2116.
2. It is normal if resistance value has change when each [Fn] [Exposure compensation] [ISO] [WB] and [AE/AF LOCK] buttons is pushed.

【Checking Method of Shutter button switch】

- Pushed halfway
 1. Connect the tester (range: × 1) between CC2105 (-) and CC2113 (+).
 2. It is normal if a certain resistance value is displayed on the tester when pushed halfway.
- Pushed fully
 1. Connect the tester (range: × 1) between CC2105 (-) and CC2118 (+).
 2. It is normal if a certain resistance value is displayed on the tester when pushed fully.

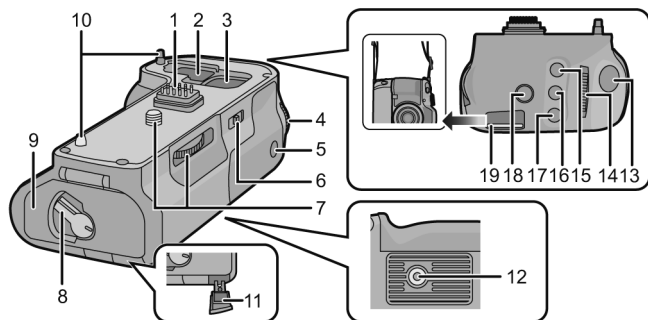
【Checking Method of Dial】


- Front dial
 1. Connect the tester (range: × 1) between CC2106 (GND) and CC2114.
 2. When you turn the dial slowly, check that resistance value changes.
 3. Connect the tester (range: × 1) between CC2106 (GND) and CC2108.
 4. When you turn the dial slowly, check that resistance value changes.
- Rear dial
 1. Connect the tester (range: × 1) between CC2106 (GND) and CC2112.
 2. When you turn a dial slowly, check that resistance value changes.
 3. Connect the tester (range: × 1) between CC2106 (GND) and CC2117.
 4. When you turn the dial slowly, check that resistance value changes.

【Operation ON/OFF switch】

1. Connect the tester (range: × 1) between CC2106 (GND) and CC2109.
2. When the operation ON/OFF switch is turned off, it is normal if it becomes open -circuit condition.

<Position of the Buttons and Dials>



- | | |
|---------------------------|---|
| 1 Electrical contacts | 12 Tripod mount |
| 2 Terminal cover storage | 13 Shutter button |
| 3 Terminal cap storage | 14 Front dial |
| 4 Rear dial | 15 [WB] (White Balance) button |
| 5 [AF/AE LOCK] button | 16 [ISO] (ISO sensitivity) button |
| 6 Operation ON/OFF switch | 17 [] (Exposure Compensation) button |
| 7 Attachment screw | 18 [Fn] button |
| 8 Release lever | 19 Strap attachment holder |
| 9 Battery door | |
| 10 Camera attachment pins | |
| 11 DC coupler cover | |

7.4. Wi-Fi P.C.B.

7.4.1. How to Remove Wi-Fi Password Protection

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

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

[Reset Procedure of Wi-Fi Settings]

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

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

7.4.2. Checking of trouble caused by Wi-Fi P.C.B. or not

The Wi-Fi P.C.B. works properly if the wireless access point (broadband router) name (SSID) in use is displayed on a screen of [Manual Connection].

(Primary Confirmation)

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

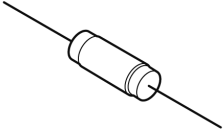
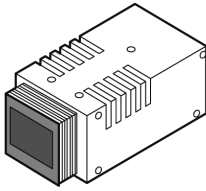

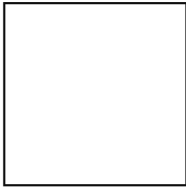
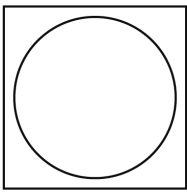
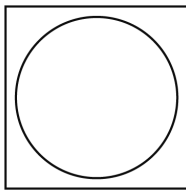
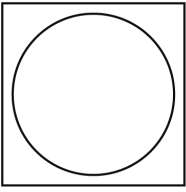
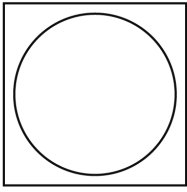
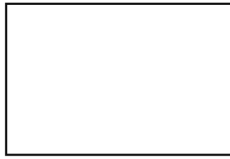
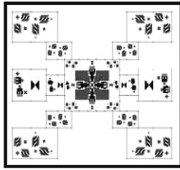


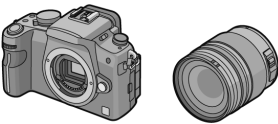


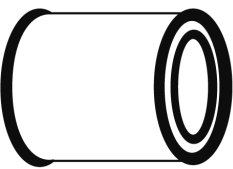

(Procedure)

- 1) Press [Wi-Fi] button.
- 2) Select [Connect newly] in [Wi-Fi] menu.
- 3) Select [Direct] in [Select connect method] menu.
- 4) Select [Manual Connection] in [Select connect method] menu.
- 5) The Wi-Fi P.C.B. works properly if the wireless access point (broadband router) name (SSID) in use is displayed.

8 Service Fixture & Tools

8.1. Service Fixture and Tools

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

<p>Resistor for Discharging (1kΩ/5W) ERG5SJ102</p>  <p>* An equivalent type of Resistor may be used.</p>	<p>LIGHT BOX (with DC Cable) RFKZ0523</p>  <p>* VFK1164TDVLB can be used.</p>	<p>ND FILTER 1 VFK1164ND09</p> 
<p>ND FILTER 2 RFKZ0513</p> 	<p>CC FILTER 1 RFKZ0511</p> 	<p>CC FILTER 2 RFKZ0512</p> 
<p>LB FILTER 1 RFKZ0520</p> 	<p>LB FILTER 2 RFKZ0521</p> 	<p>GRAY CARD RFKZ0506</p> 
<p>RESOLUTION CHART RFKZ0510</p>  <p>* Supplied as divided chart parts. (Assemble it before use.)</p>	<p>DRIVER VFK1390</p> 	<p>TORQUE DRIVER RFKZ0456</p>  <p>* Spec. : 2-30N·cm (Equiv.0.2-3kgf/cm)</p>
<p>DMC-G1K</p>  <p>Correspond by the marketed commodity. (It does not supply as service fixture and tools.)</p>	<p>Lens Cleaning Kit (BK) VFK1900BK</p>  <p>* Only supplied 10 set/box.</p>	<p>TOUCH PEN VGQ0C14</p>  <p>* VYQ4370 can be used.</p>
<p>NAME RING FIXTURE RFKZ0423</p> 	<p>SILICON CHIPS RFKZ0478</p>  <p>* For exchange the Packing.</p>	

About Name Ring Fixture : RFKZ0423 is used for H-VS014140.

8.2. Clean Box

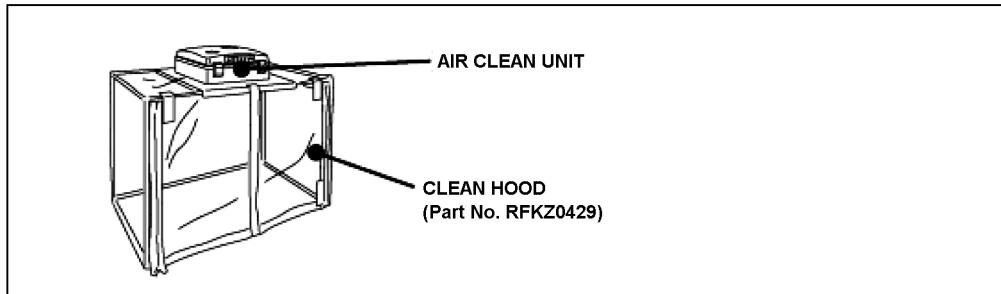
- The repair quality is considered, and it is recommended working in the environment of specified clean level less than class 10,000 (Federal Standard 209D).

(When remove the 1st lens frame, it is indispensable.)

[NOTE]

- Work in the environment of specified clean level less than class 10,000 (Federal Standard 209D) when remove the 1st lens frame for cleaning.

*Refer to “11.2. General description (Lens cleaning: Interchangeable Lens/H-HS12035)”, “11.3. General description (Lens cleaning: Interchangeable Lens/H-VS014140)” section of this service manual for details.

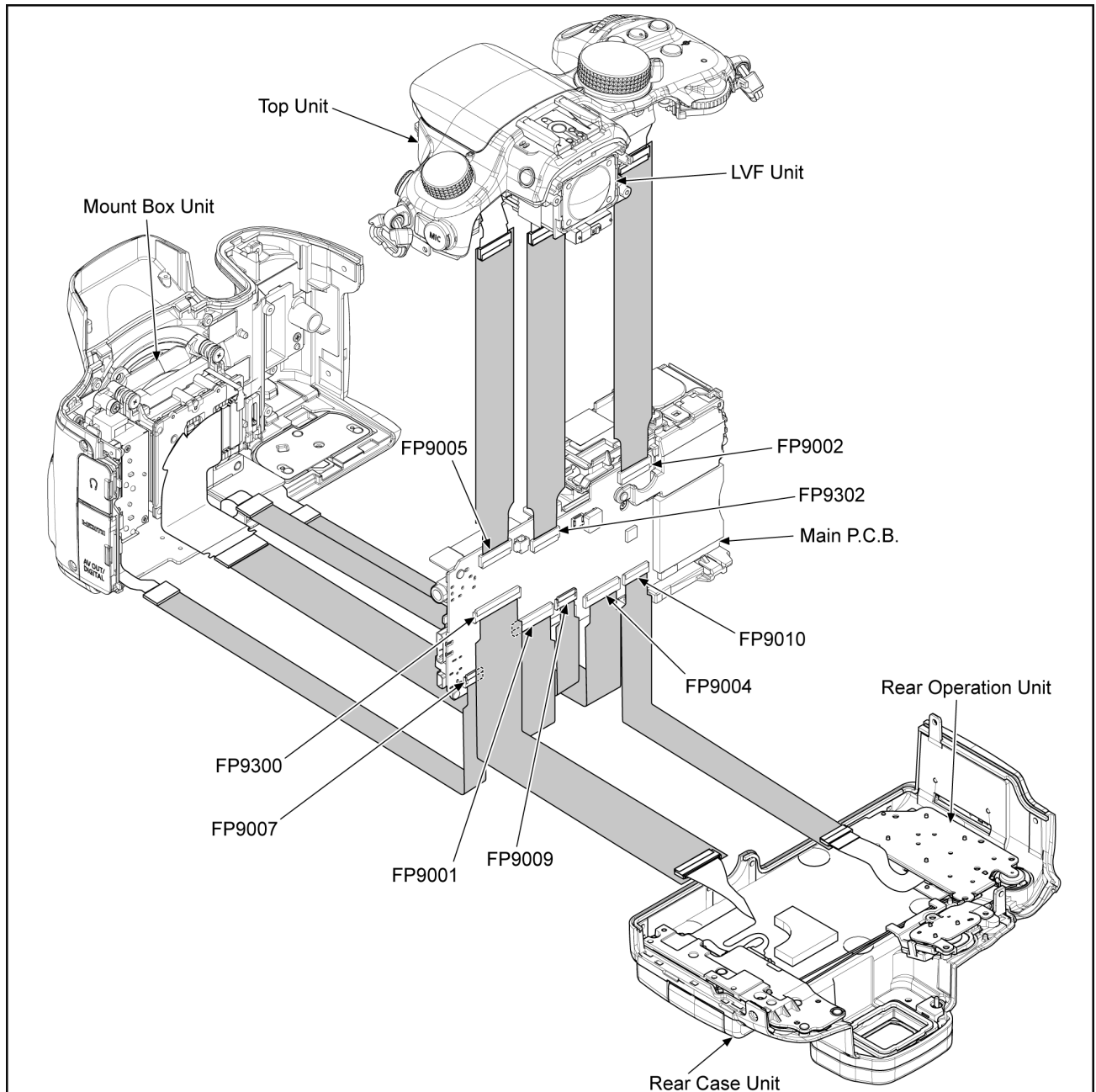


8.3. Service Position

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

Table S1 Extension Cable List

No.	Parts No.	Connection	Form
1	VFK1951	FP9002(MAIN) - MAIN - FLASH FPC - FLASH P.C.B.	39pin/0.3mm FFC
2	RFKZ0619	FP9300(MAIN) - HINGE FPC - LCD IF P.C.B. / MR1 SW FPC UNIT	61pin/0.3mm FFC
3	RFKZ0583	FP9007(MAIN) - MOUNT BOX UNIT	19pin/0.3mm FFC
4	RFKZ0564	FP9009(MAIN) - MOUNT BOX UNIT	23pin/0.3mm FFC
5	VFK1443	FP9010(MAIN) - REAR OPERATION UNIT	18pin/0.5mm FFC
6	VFK2024	FP9001(MAIN) - MOUNT BOX UNIT	51pin/0.3mm FFC
7	RFKZ0477	FP9004(MAIN) - Wi-Fi BG FPC - Wi-Fi P.C.B.	45pin/0.3mm FFC
8	VFK1951	FP9005(MAIN) - TOP UNIT	39pin/0.3mm FFC
9	VFK1950	FP9302(MAIN) - LVF EYE FPC UNIT	33pin/0.3mm FFC



CAUTION-1. (When servicing CAPACITOR P.C.B. UNIT)

1. Be sure to discharge the E.capacitor on CAPACITOR P.C.B. UNIT.
Refer to "HOW TO DISCHARGE THE E.CAPACITOR ON CAPACITOR P.C.B. UNIT".
The E.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 CAPACITOR P.C.B. UNIT.
3. DO NOT allow other parts to touch the high voltage circuit on CAPACITOR P.C.B. UNIT.

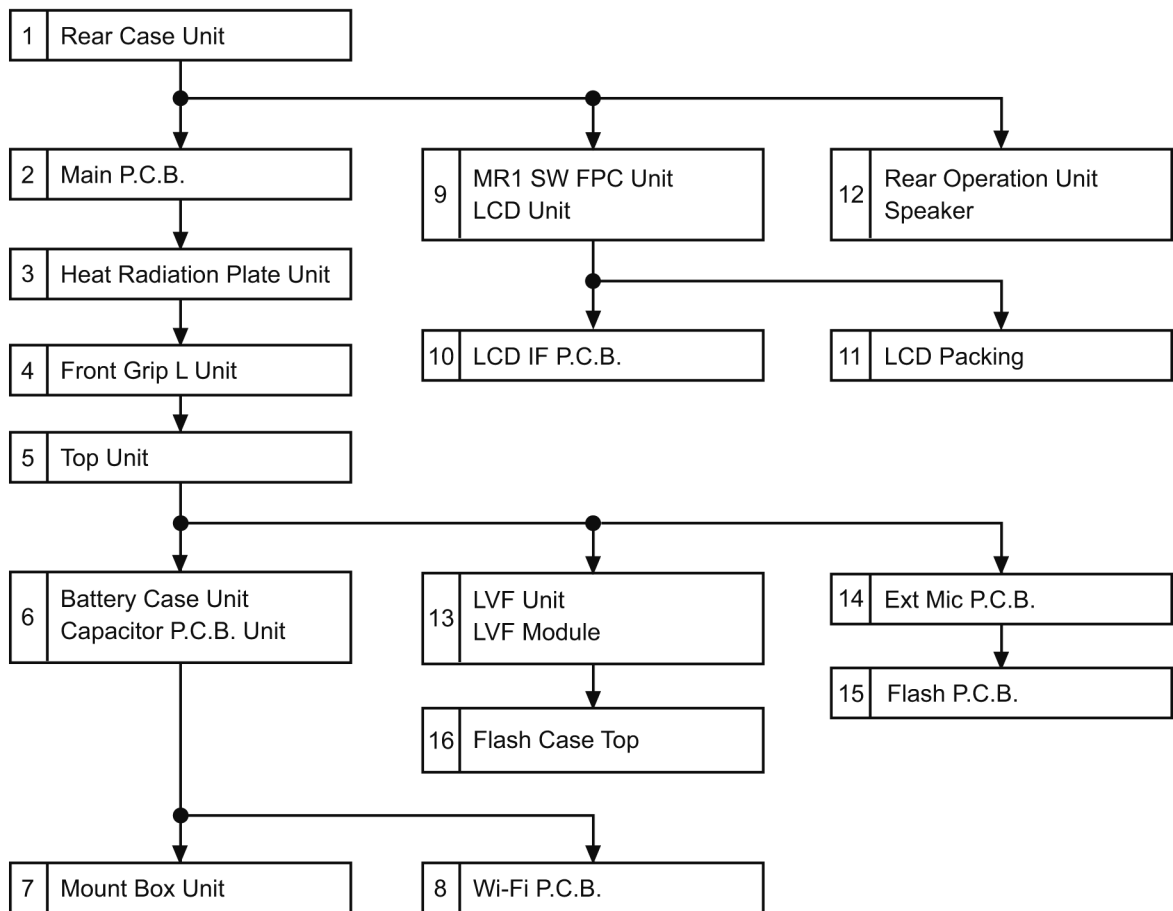
9 Disassembly and Assembly Instructions

9.1. Camera Body Part

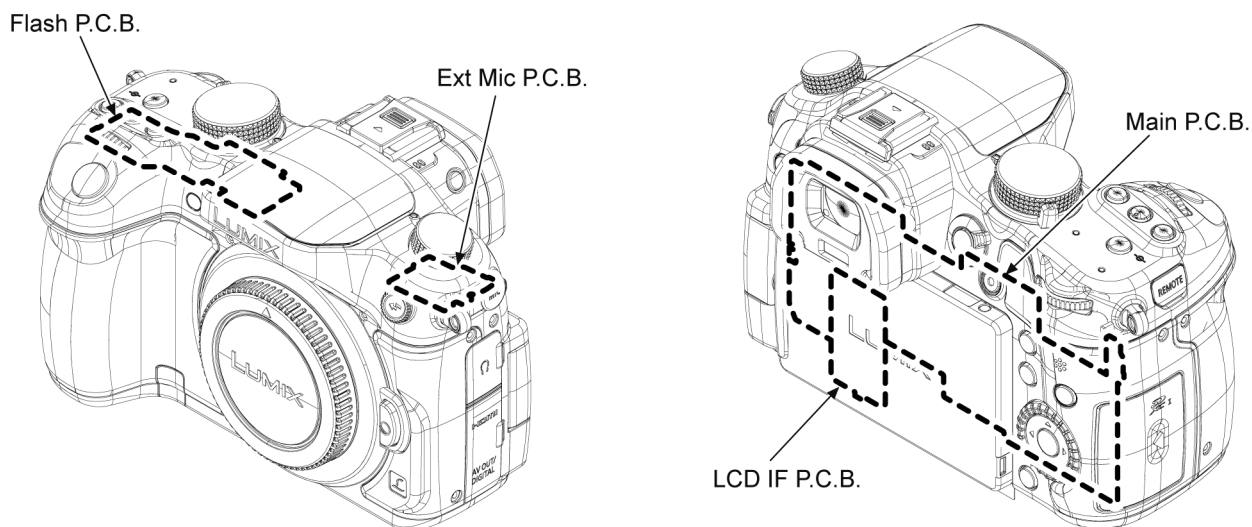
9.1.1. Disassembly Flow Chart

This is a disassembling chart.

When assembling, perform this chart conversely.



9.1.2. P.C.B. Location



9.1.3. Disassembly Procedure

No.	Item	Fig	Removal			
1	Rear Case Unit	(Fig. D1)	Card			
			Battery			
			2 Screws (A)			
			5 Screws (B)			
		(Fig. D2)	EYE CUP Unit			
			2 Screws (C)			
			2 Screws (D)			
			1 Screw (E)			
			LVF DPT Knob			
		(Fig. D3)	FP9010 (Flex)			
			FP9300 (Flex)			
			Rear Case Unit			
2	Main P.C.B.	(Fig. D4)	2 Screws (F)			
			Battery Contact Cover Unit			
			Water Label			
		(Fig. D5)	FP9001 (Flex)			
			FP9002 (Flex)			
			FP9003 (Flex)			
			FP9004 (Flex)			
			FP9005 (Flex)			
			FP9007 (Flex)			
			FP9009 (Flex)			
			FP9302 (Flex)			
			P9003 (Connector)			
			2 Screws (G)			
			1 Screw (H)			
			2 Locking tabs			
			Main P.C.B.			
			3	Heat Radiation Plate Unit	(Fig. D6)	1 Screw (I)
						2 Locking tabs
						1 Convex
						Heat Radiation Plate Unit
4	Front Grip L Unit	(Fig. D7)	1 Screw (J)			
			1 Screw (K)			
		(Fig. D8)	Grip L Tape			
			Tape			
			3 Hooking parts			
5	Top Unit	(Fig. D9)	5 Screws (L)			
			1 Screw (M)			
		(Fig. D10)	P8501 (Connector)			
			Top Unit			
6	Battery Case Unit, Capacitor P.C.B. Unit	(Fig. D11)	2 Screws (N)			
			Battery Case Unit			
		(Fig. D12)	Battery Case Sheet			
			2 Locking tabs			
			Capacitor Cover			
			2 Screws (O)			
			2 Hooking parts			
			Capacitor P.C.B. Unit			
7	Mount Box Unit	(Fig. D13)	Water Label			
			4 Screws (P)			
			Mount Box Unit			
8	Wi-Fi P.C.B.	(Fig. D14)	1 Screw (Q)			
			1 Locking tab			
			Connector (A)			
			1 Screw (R)			
			1 Locking tab			
			Wi-Fi P.C.B.			
			Wi-Fi Holder			

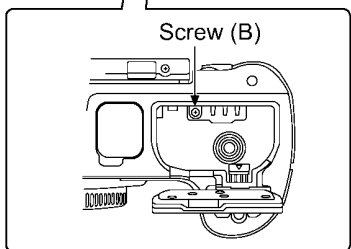
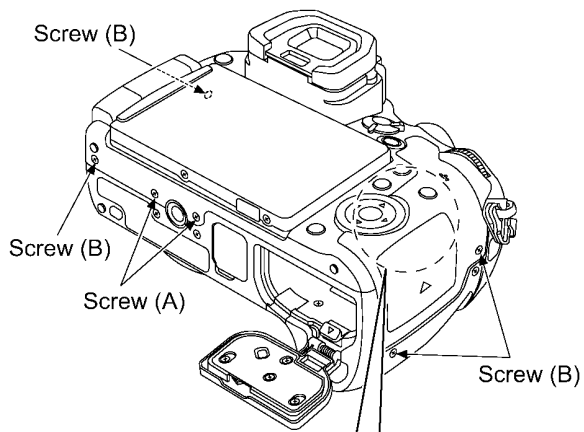
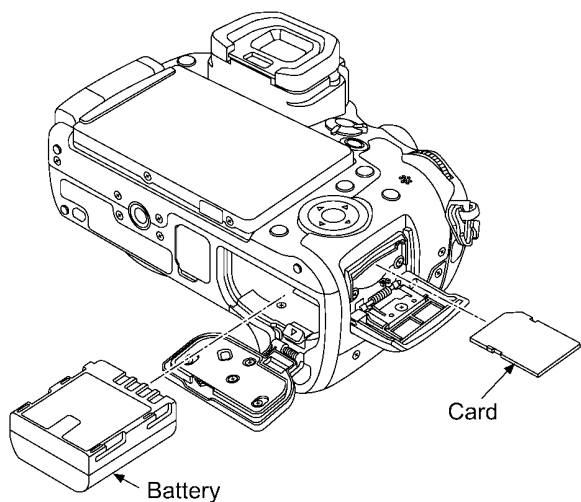
No.	Item	Fig	Removal
9	MR1 SW FPC Unit, LCD Unit	(Fig. D15)	2 Screws (S)
			Hinge Arm Cover Top
			Hinge Arm Cover Bottom
			4 Screws (T)
			Hinge Packing Cover Unit
		(Fig. D16)	6 Ribs
			Connector (B)
			2 Solders
			MR1 SW FPC Unit
			2 Ribs
			Hinge Cushion 4
			Hinge Fix Cover
			2 Screws (U)
LCD Unit			
10	LCD IF P.C.B.	(Fig. D17)	2 Screws (V)
			4 Screws (W)
			6 Locking tabs
			FP7204 (Flex)
			LCD Case Bottom
		(Fig. D18)	FP7201 (Flex)
			LCD Hinge Unit
			FP7202 (Flex)
			FP7203 (Flex)
			1 Rib
11	LCD Packing	(Fig. D19)	1 Hooking part
			LCD IF P.C.B.
12	Rear Operation Unit, Speaker	(Fig. D20)	LCD Packing
			8 Screws (X)
			1 Screw (Y)
			1 Screw (Z)
			Rear Operation Unit
13	LVF Unit, LVF Module	(Fig. D21)	Sheet A
			4 Hooking parts
			Speaker
13	LVF Unit, LVF Module	(Fig. D22)	When Installing
			1 Screw (a)
			1 Screw (b)
			LVF Unit
			3 Locking tabs
			LVF Module Holder
			LVF Module Cushion
			Connector (C)
			LVF Module
			14
1 Screw (d)			
FP4401 (Flex)			
2 Solders			
Ext Mic P.C.B.			
1 Convex			
15	Flash P.C.B.	(Fig. D24)	Mic Jack Holder
			Mic Jack Cover
			3 Screws (e)
			FP8502 (Flex)
16	Flash Case Top	(Fig. D25)	FP8503 (Flex)
			FP8504 (Flex)
			P8502 (Connector)
			2 Solders
			Flash P.C.B.
16	Flash Case Top	(Fig. D25)	2 Screws (f)
			2 Convexes
			Flash Case Top



9.1.3.1. Removal of the Rear Case Unit

NOTE:

- When servicing and reassembling, remove the card and battery from the unit.
- Install the body cap, except when it is necessary to prevent garbage and dust.

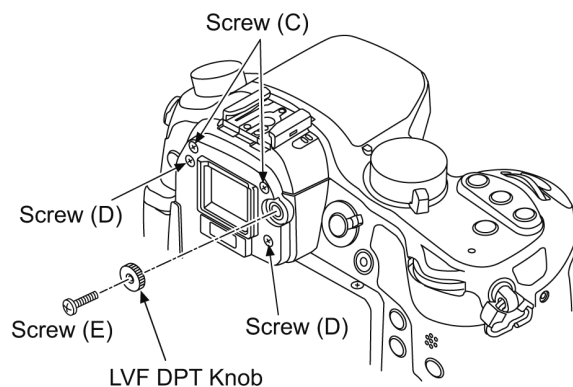
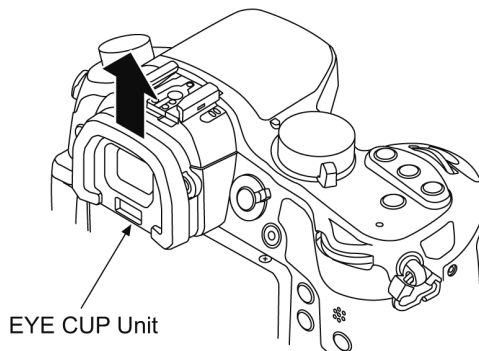
- Card
- Battery
- Screw (A) × 2
- Screw (B) × 5






Screw (A)	Screw (B)
 3mm BLACK	 5mm BLACK

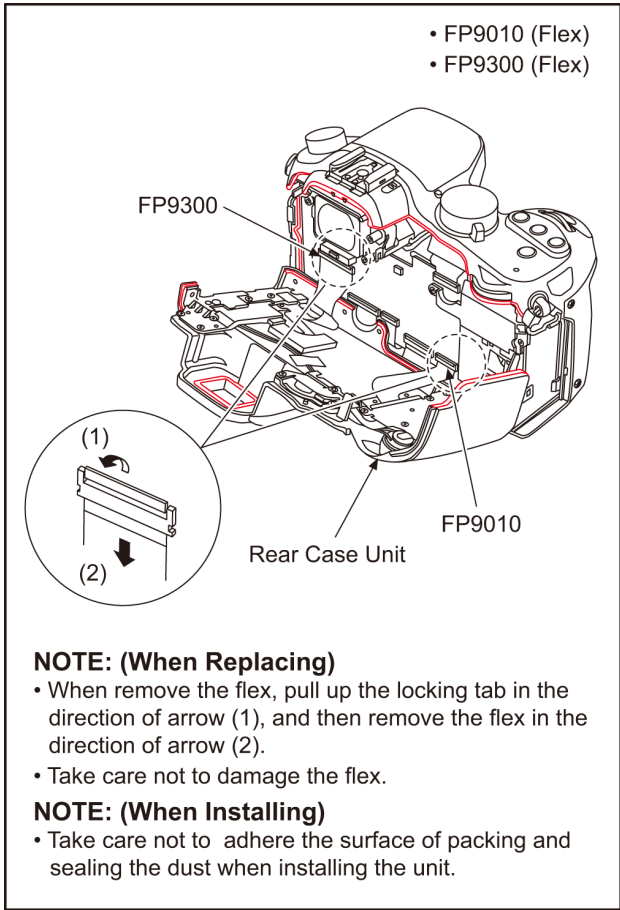
(Fig. D1)

- EYE CUP Unit
- Screw (C) × 2
- Screw (D) × 2
- Screw (E) × 1
- LVF DPT Knob



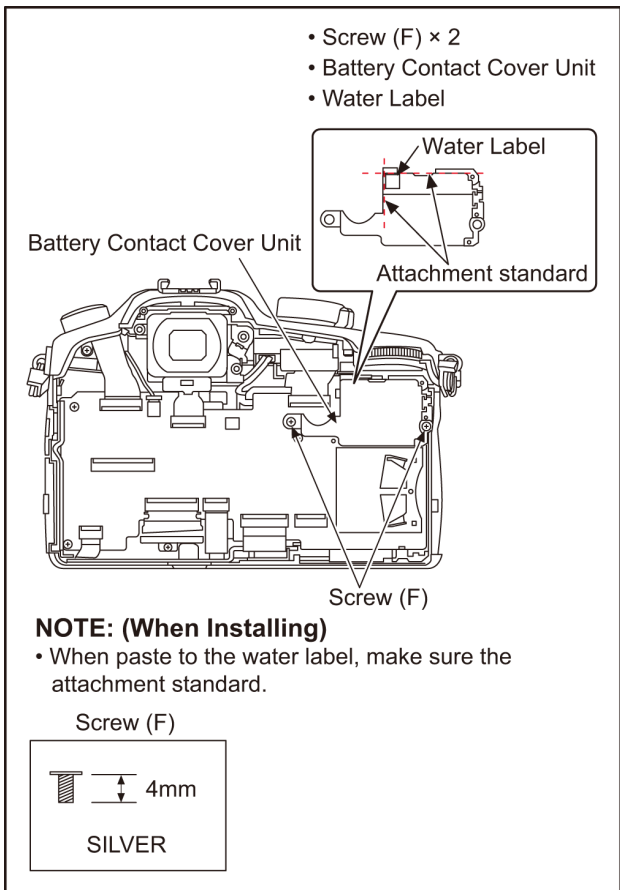
Screw (C)	Screw (D)	Screw (E)
 4mm BLACK	 3.5mm BLACK	 6mm BLACK

(Fig. D2)

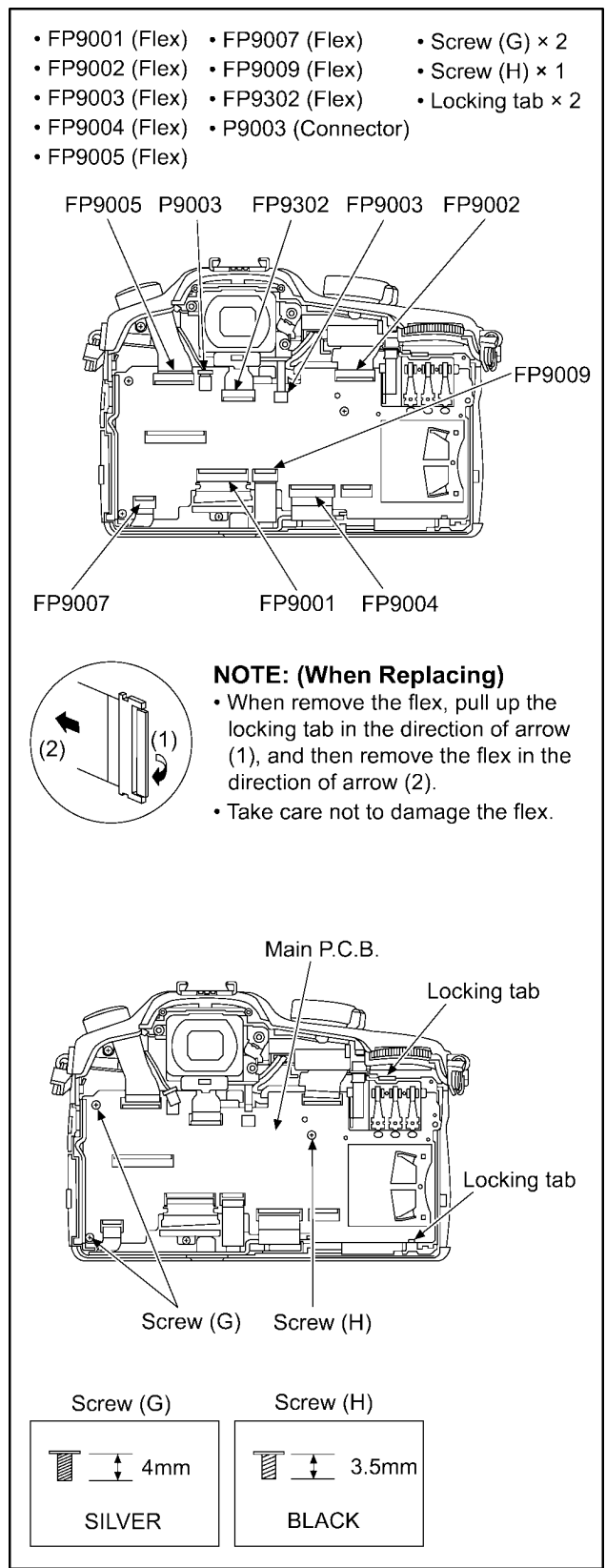


(Fig. D3)

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

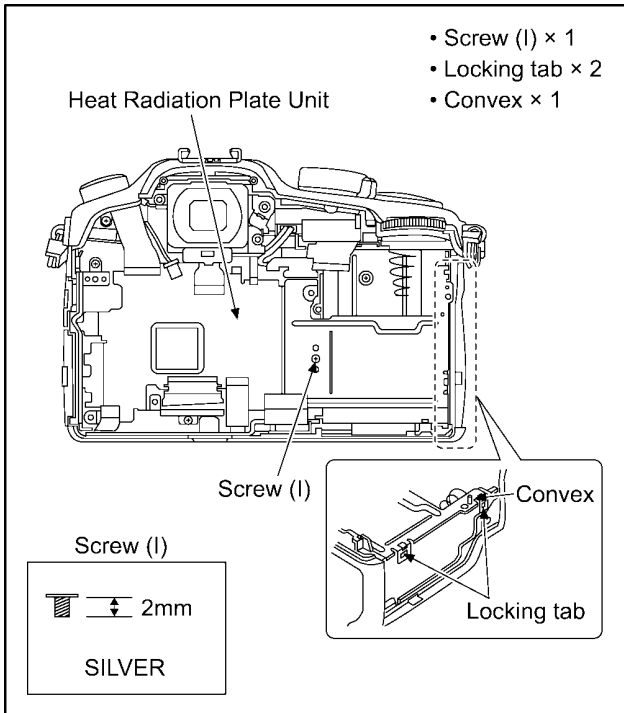


(Fig. D4)



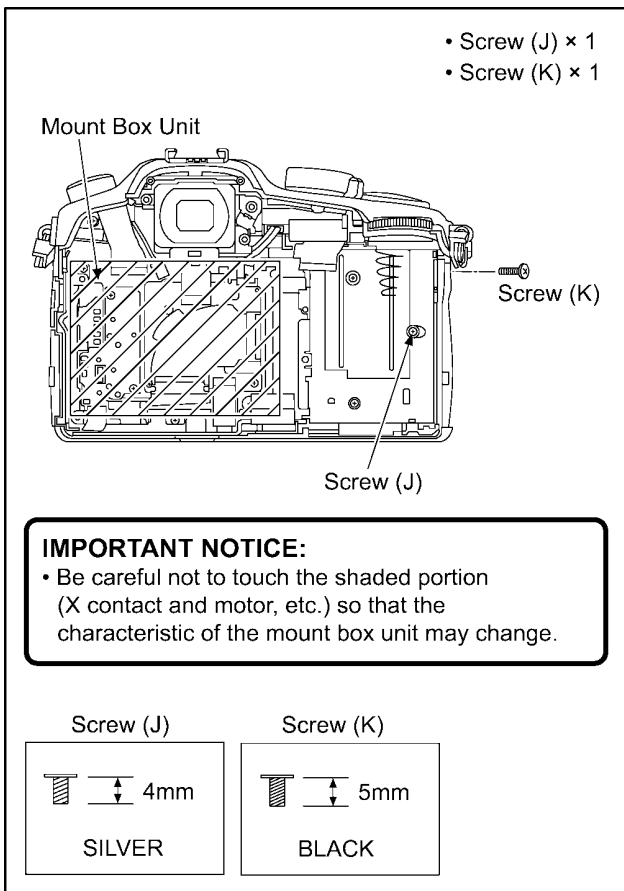
(Fig. D5)

9.1.3.3. Removal of the Heat Radiation Plate Unit

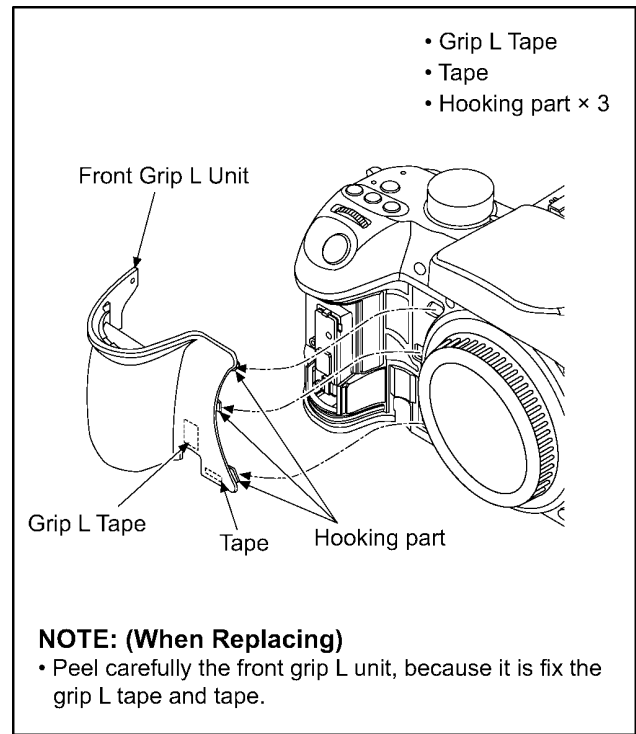


(Fig. D6)

9.1.3.4. Removal of the Front Grip L Unit

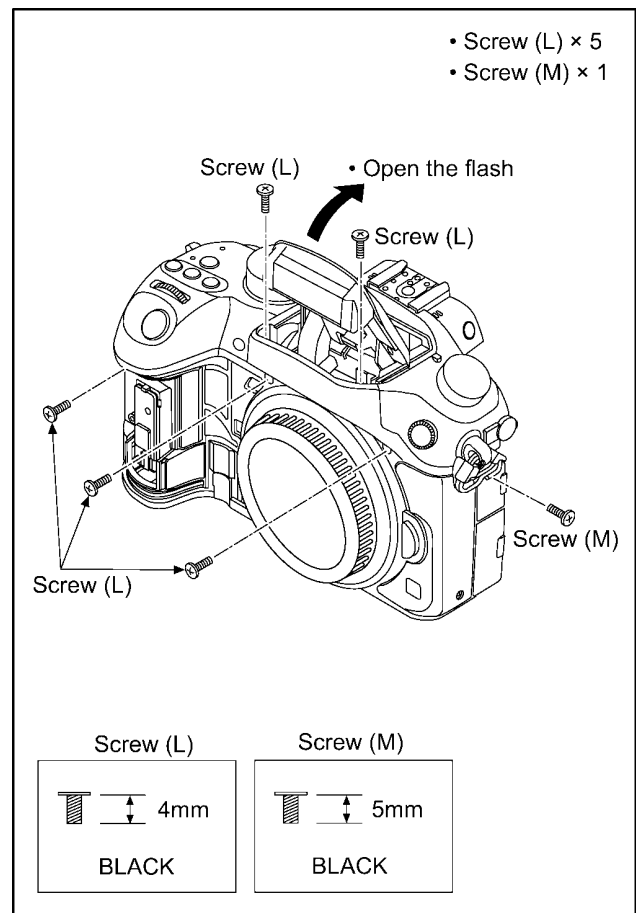


(Fig. D7)

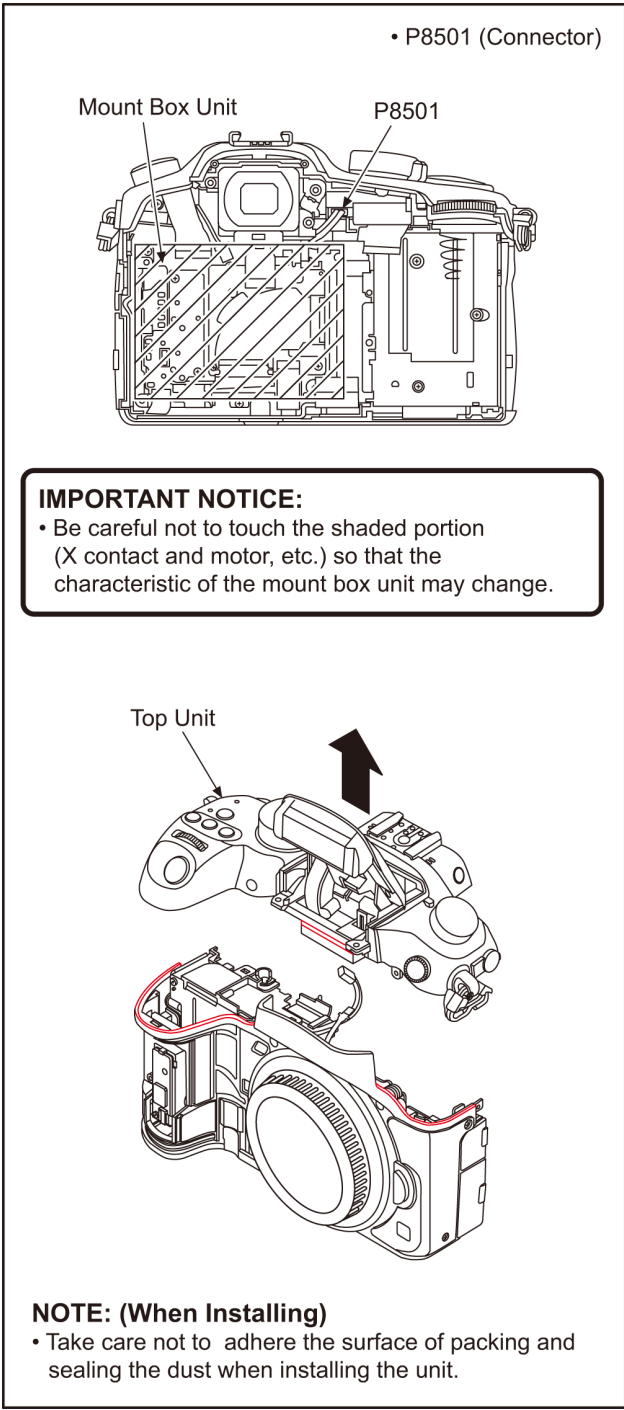


(Fig. D8)

9.1.3.5. Removal of the Top Unit

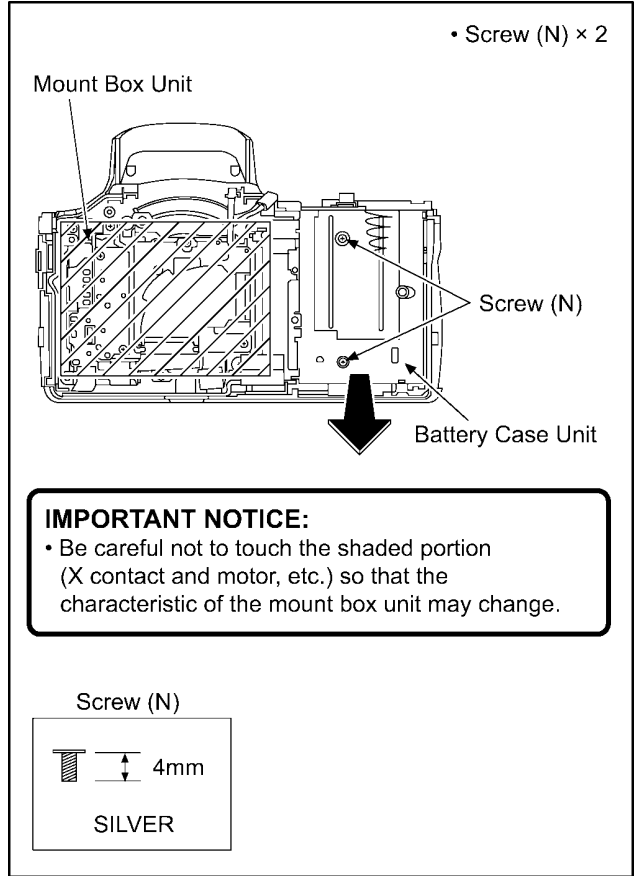


(Fig. D9)



(Fig. D10)

9.1.3.6. Removal of the Battery Case Unit and Capacitor P.C.B. Unit

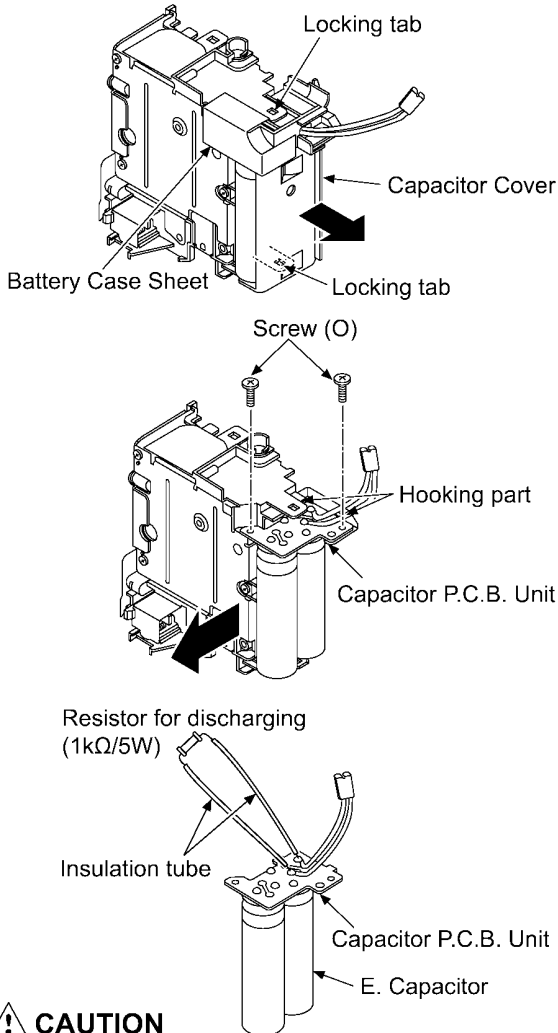


(Fig. D11)

- Battery Case Sheet
- Locking tab × 2
- Capacitor Cover
- Screw (O) × 2
- Hooking part × 2

IMPORTANT NOTICE:

• Take care not apply any bending load to the charging E.Capacitor.
It brings about the possibility of Flash P.C.B. and/or component damage on the Flash P.C.B..



CAUTION

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

1. Peel the Battery Case Sheet.
2. Remove the Capacitor Cover.
3. Unscrew the 2 screws (O).
4. Remove the Capacitor P.C.B. Unit.
5. Put the insulation tube on the lead part of resistor (ERG5SJ102: 1kΩ / 5W).
6. Put the resistor between both terminals of E.capacitor on Capacitor P.C.B. Unit for approx. 5 seconds.
7. After discharging, confirm that the E.Capacitor voltage is lower than 10V by using a voltmeter.

Screw (O)

3mm

SILVER

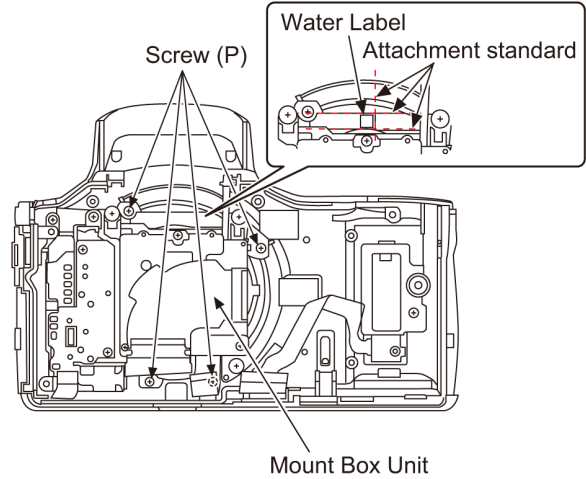
(Fig. D12)

9.1.3.7. Removal of the Mount Box Unit

NOTE:

• Install the body cap, except when it is necessary to prevent garbage and dust.

- Water Label
- Screw (P) × 4



NOTE: (When Installing)

• When paste to the water label, make sure the attachment standard.

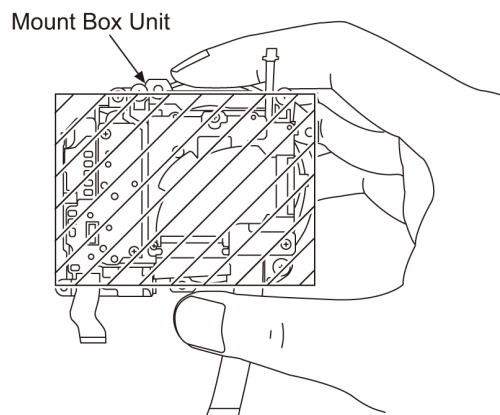
Screw (P)

3mm

RED

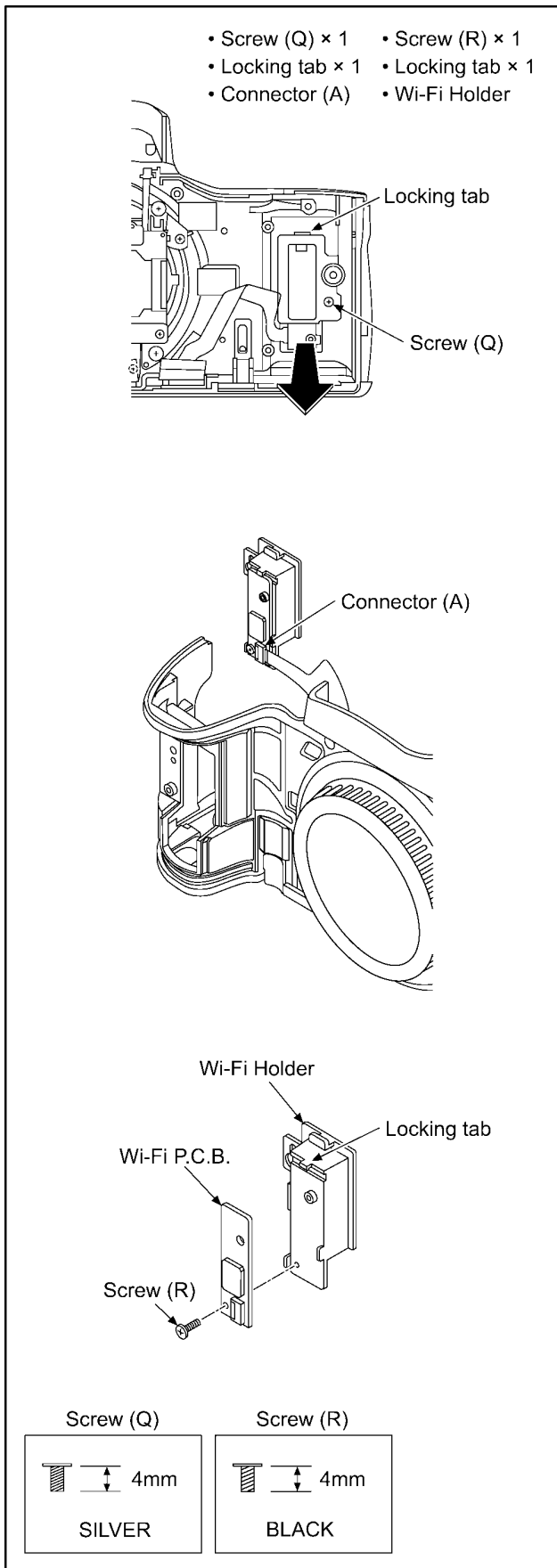
IMPORTANT NOTICE:

• Be careful not to touch the shaded portion (X contact and motor, etc.) so that the characteristic of the mount box unit may change. Handle it as shown in the figure below.



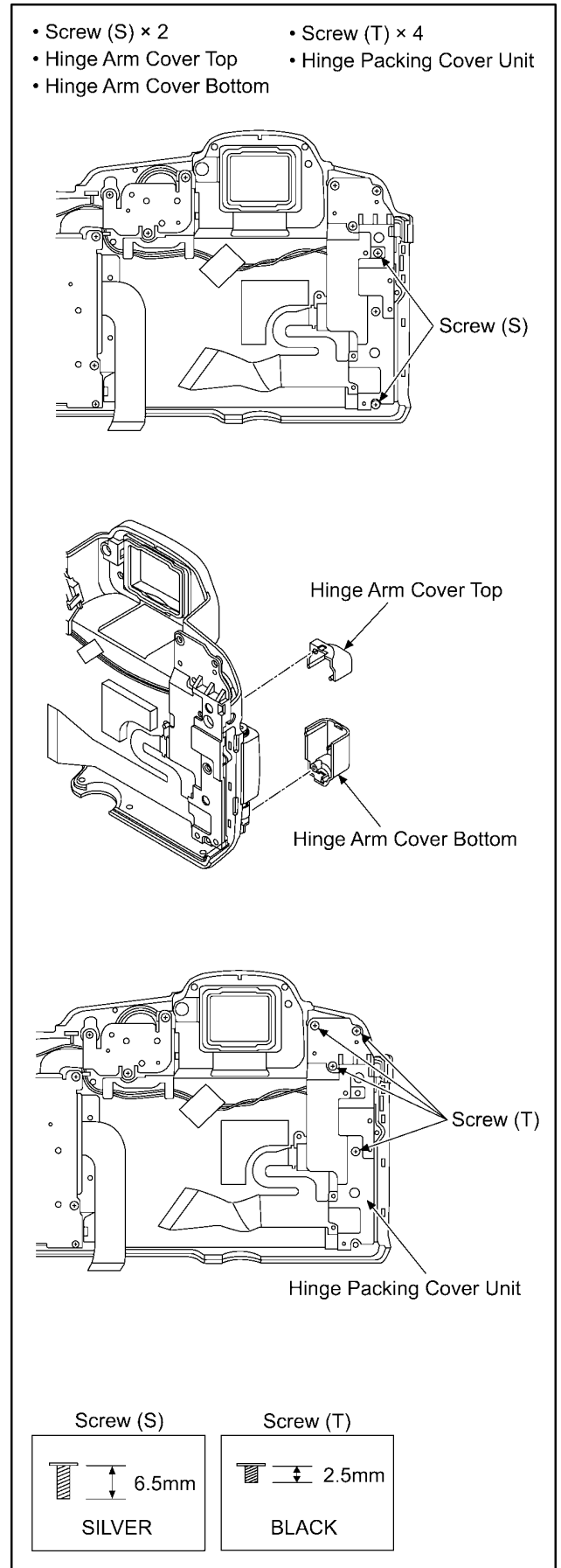
(Fig. D13)

9.1.3.8. Removal of the Wi-Fi P.C.B.



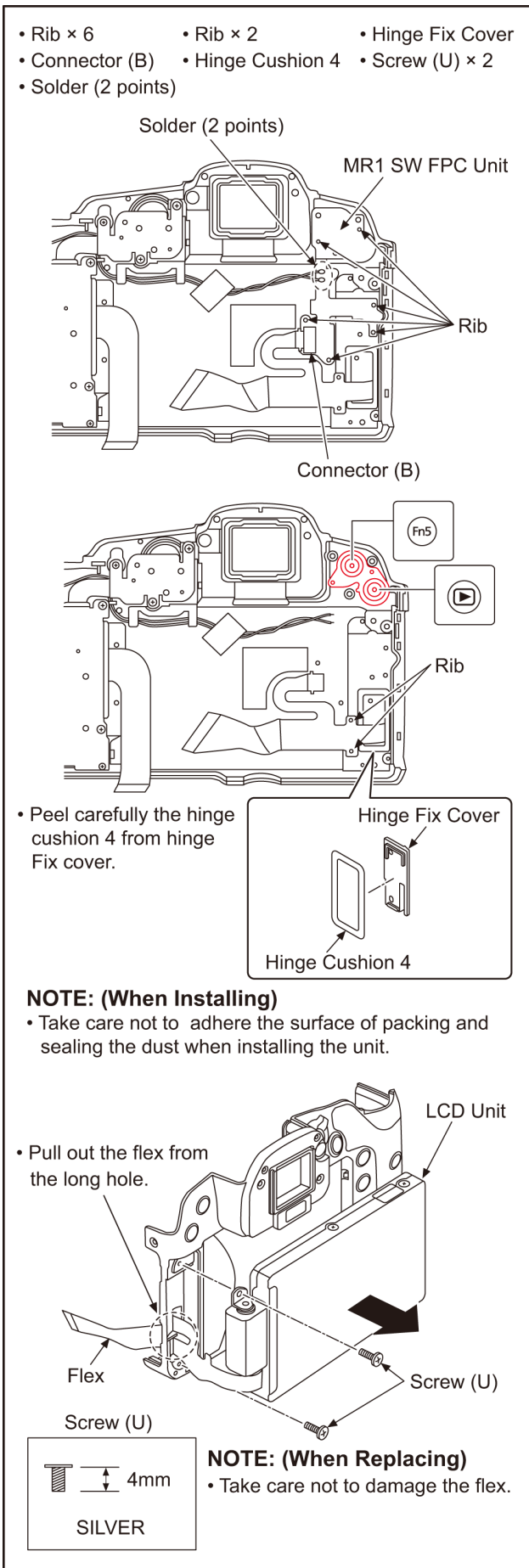
(Fig. D14)

9.1.3.9. Removal of the MR1 SW FPC Unit and LCD Unit

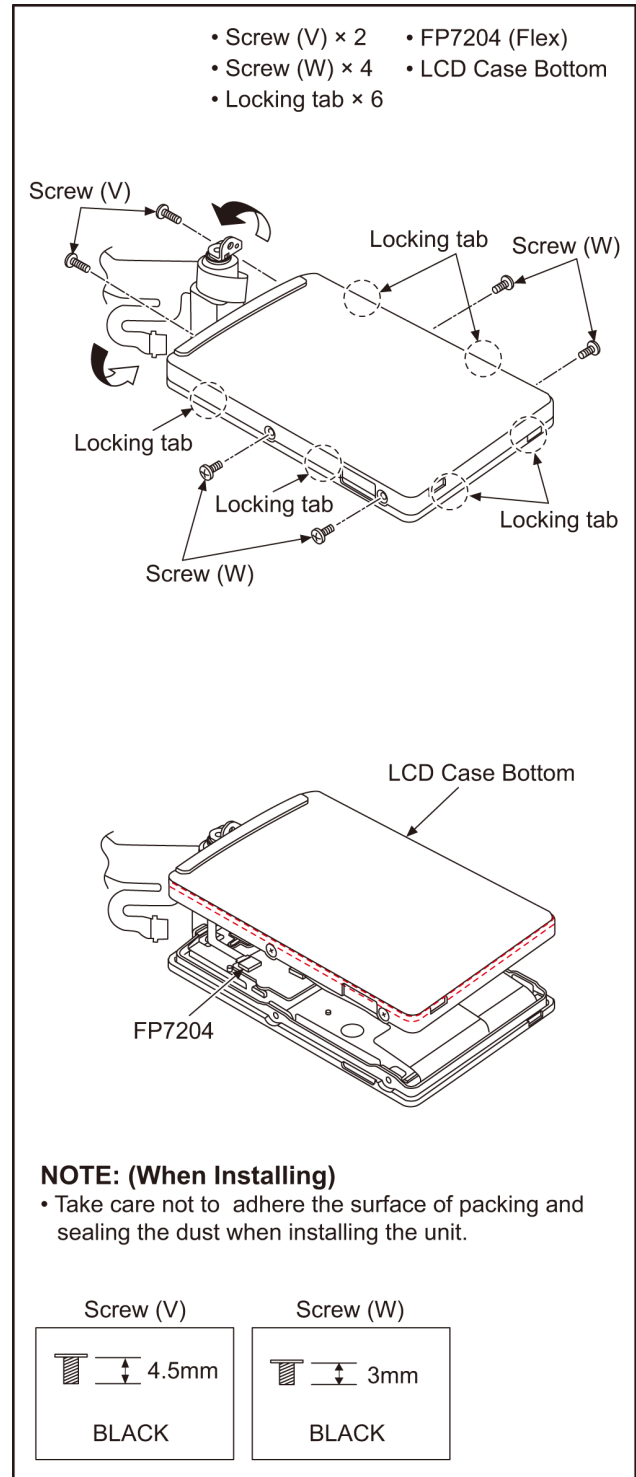


(Fig. D15)

9.1.3.10. Removal of the LCD IF P.C.B.

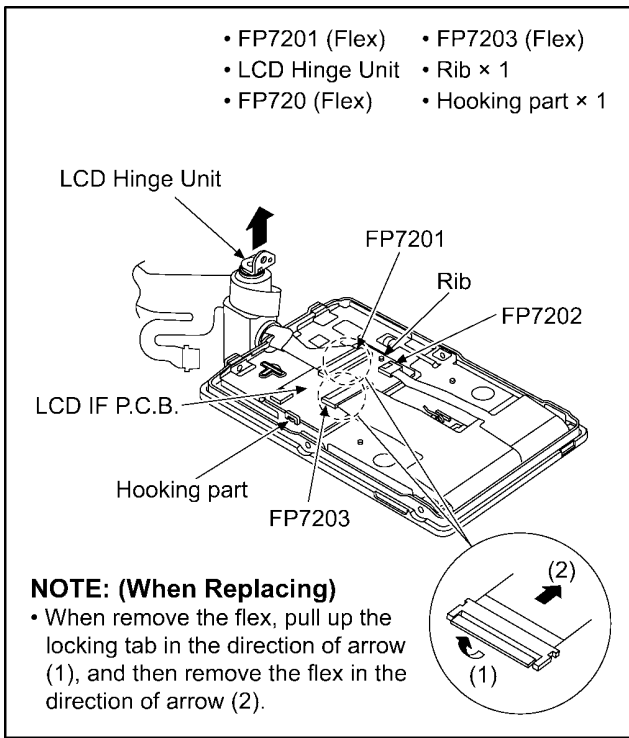


(Fig. D16)

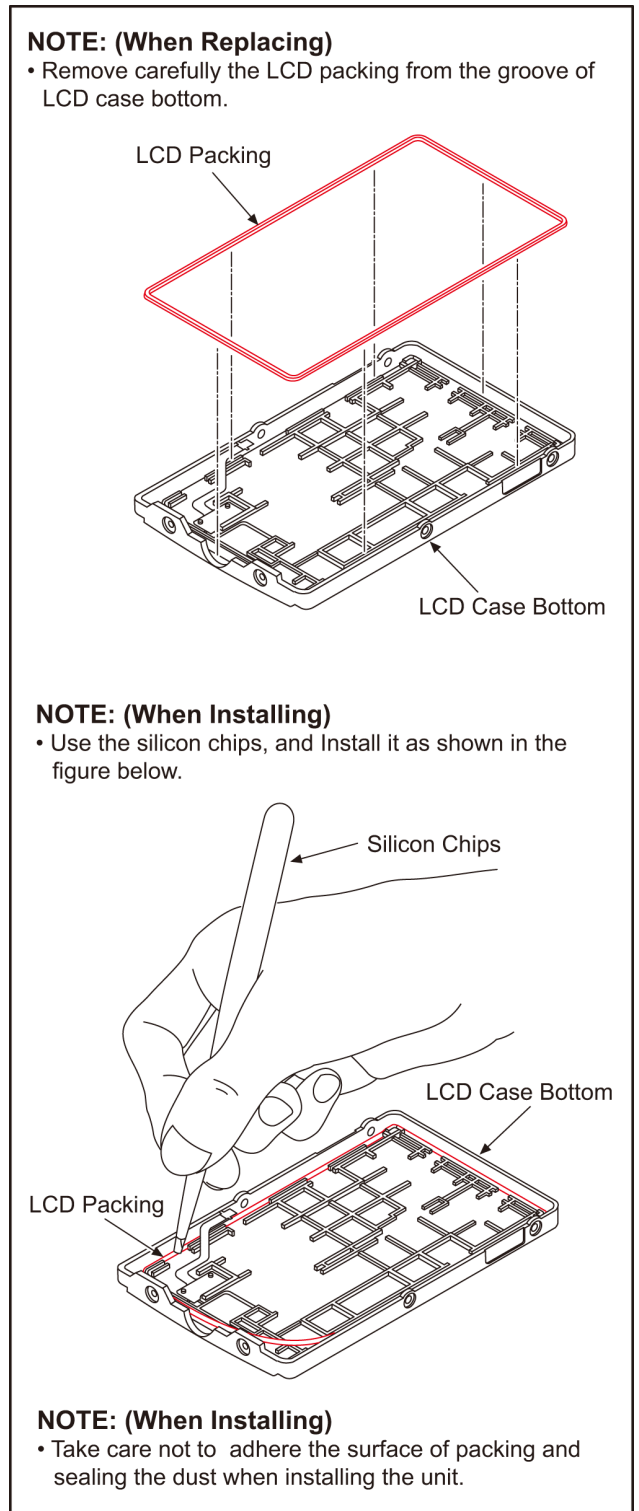


(Fig. D17)

9.1.3.11. Removal of the LCD Packing

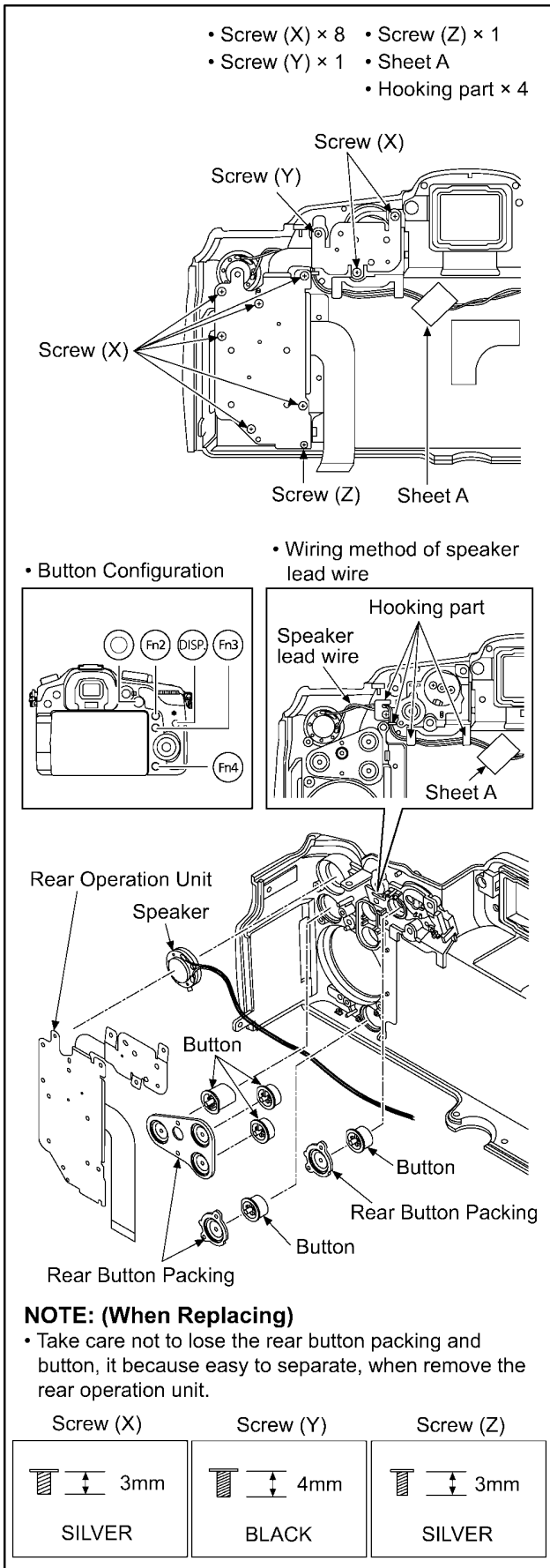


(Fig. D18)

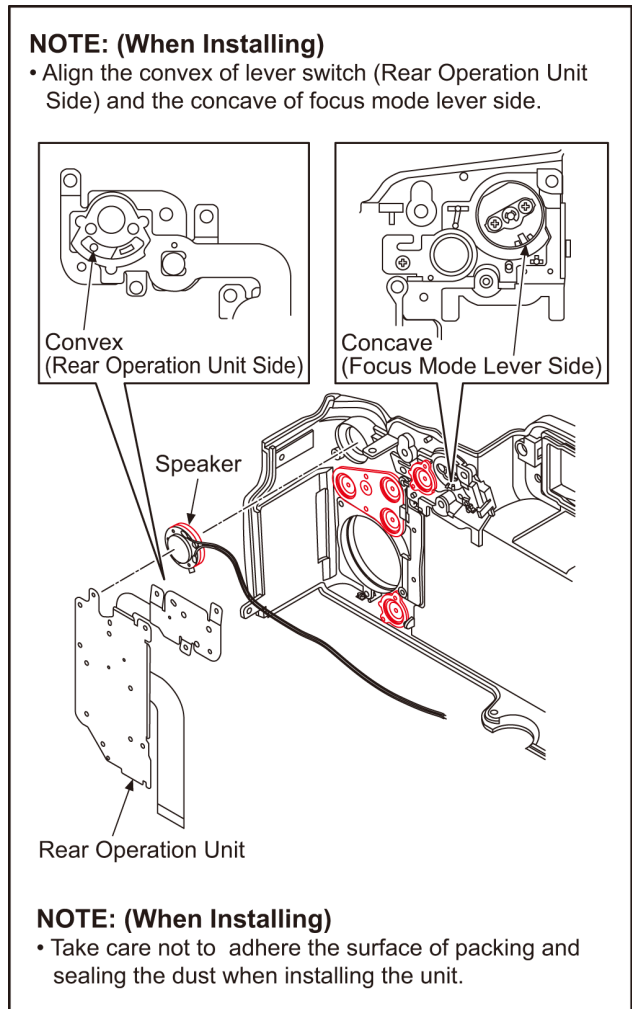


(Fig. D19)

9.1.3.12. Removal of the Rear Operation Unit and Speaker

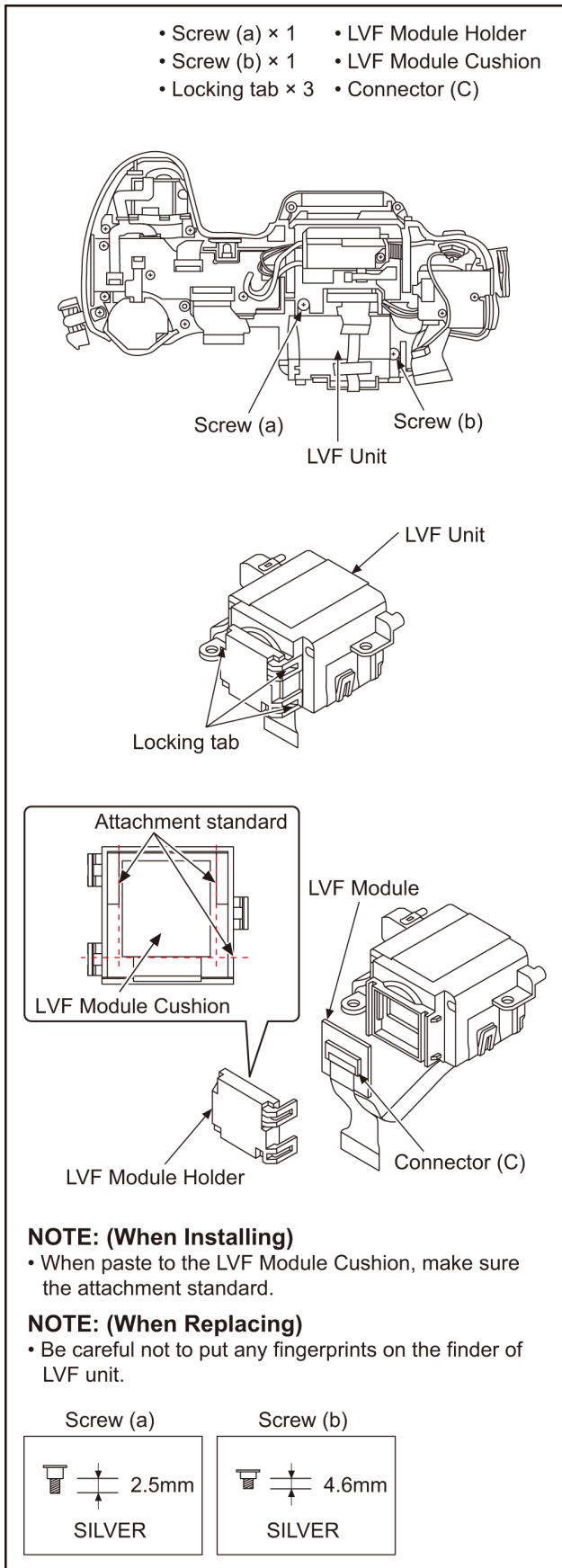


(Fig. D20)



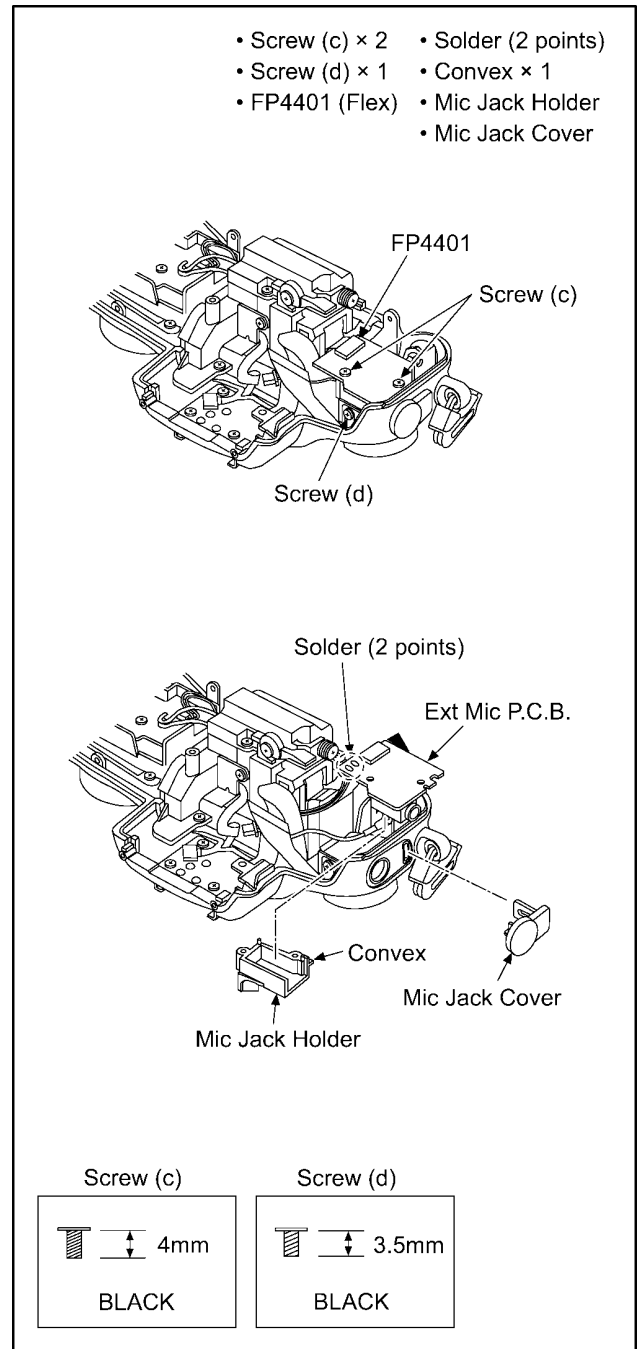
(Fig. D21)

9.1.3.13. Removal of the LVF Unit and LVF Module



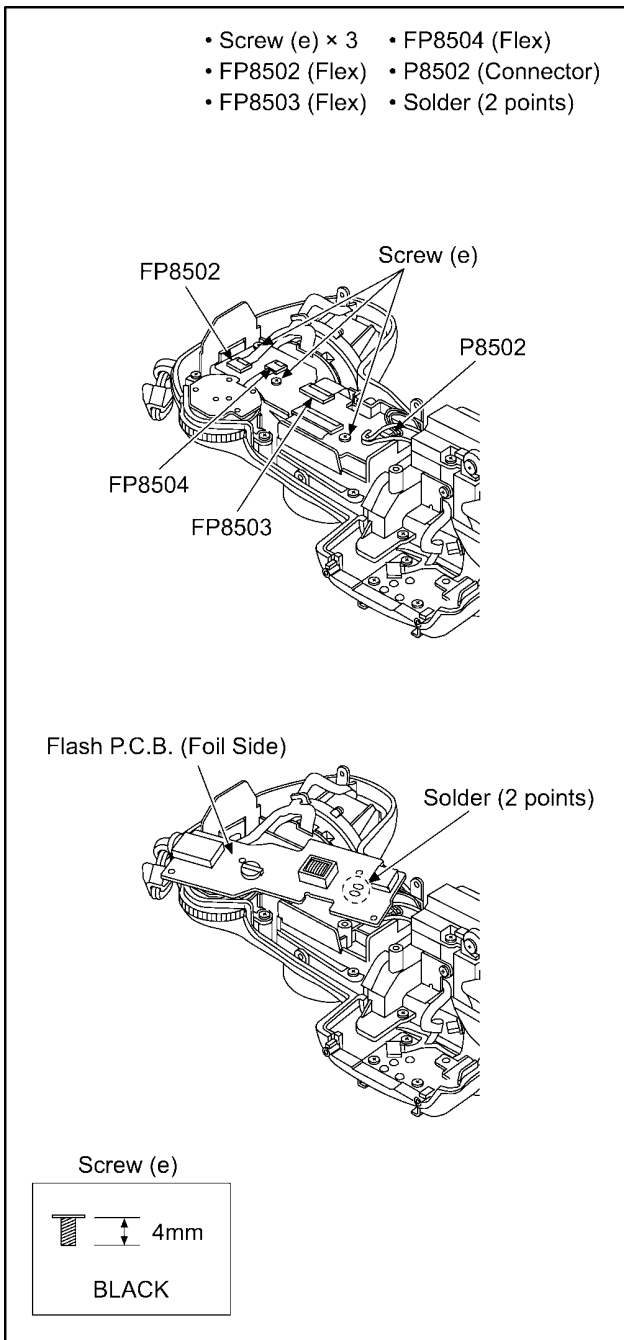
(Fig. D22)

9.1.3.14. Removal of the Ext Mic P.C.B.



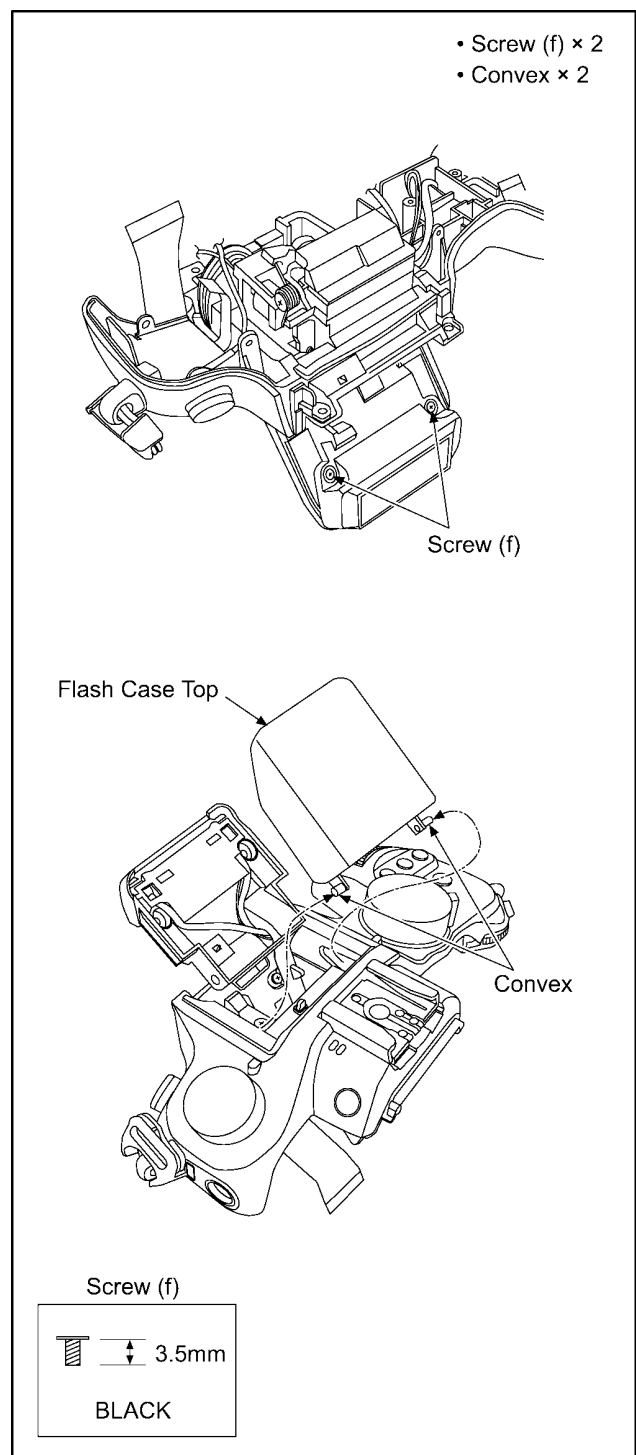
(Fig. D23)

9.1.3.15. Removal of the Flash P.C.B.



(Fig. D24)

9.1.3.16. Removal of the Flash Case Top



(Fig. D25)

NOTE: (When Installing)

Make sure to confirm the following points when installing:

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

9.2. Disassembly and Assembly Procedure for the Lens (H-HS12035)

It is recommended dealing with Clean box, to keep maintaining the dustproof environment.
(Refer to “8.2. Clean Box” section of this service manual for details.)

Important:

- When servicing the enclosure part (refer to Fig. X1), it must be performed inside of specified clean level.
(Specified clean level: Less than class 10,000 (Federal Standard 209D))
As for procedure, refer to the “11 Maintenance” for details.
- To minimize the possibilities/risk of getting the dust/dirt on the lens surface, keep covering the lens unit with lens caps (front & rear), other than necessary cases.
- Do not touch the surface of the lens glasses with your fingers.
- Blow off the dust on the surface of the lens with a blower brush.
- 5th lens has the “Nano Surface Coating”.
Avoid damage the coating, please DO NOT clean it with cloth.
Please keep cleaning 5th lens, blow off the dust with air brush.

Proceed disassemble and assemble, by referring the following table Fig. X1.

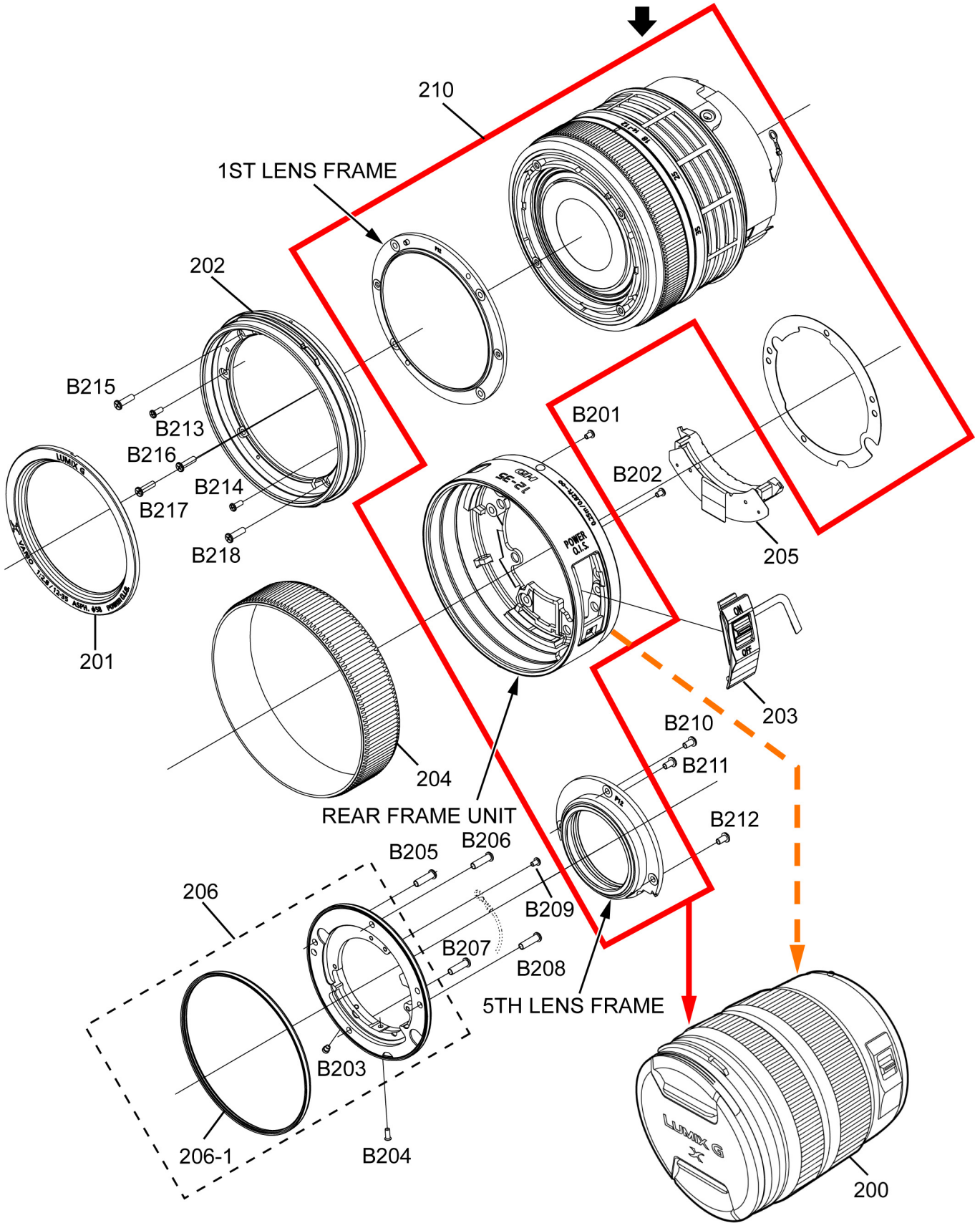
NOTE:

- When tightening screws, use a torque driver (RFKZ0456) with specified torque mentioned in each step.

Caution:
Keep covering the lens unit with Lens caps (front & rear), other than necessary cases.

Concerned Parts		Screws					Remarks
Part Name	Ref. No.	Ref. No.	Color	Length	Order	Torque value	
REAR FRAME UNIT		B201	Silver	5.0mm	–	19.6 ± 2.0 N·cm	
		B202	Silver	5.0mm	–	19.6 ± 2.0 N·cm	
MOUNT CONTACT UNIT	205	B204	Silver	3.5mm	–	9.8 ± 1.0 N·cm	
L MOUNT UNIT	206	B203	Silver	7.0mm	–	9.8 ± 1.0 N·cm	Stopper screw
		B205	Silver	7.0mm	*1	23.5 ± 2.4 N·cm	*1:Keep the stability of the L mount and install four screws bit by bit.
		B206	Silver	7.0mm		23.5 ± 2.4 N·cm	
		B207	Silver	7.0mm		23.5 ± 2.4 N·cm	
		B208	Silver	7.0mm	23.5 ± 2.4 N·cm		
B209	Silver	2.0mm	–	9.8 ± 1.0 N·cm	For GND cable connection		
5TH LENS FLAME		B210	Black	2.5mm	2	9.8 ± 1.0 N·cm	
		B211	Black	2.5mm	1	9.8 ± 1.0 N·cm	
		B212	Black	2.5mm	3	9.8 ± 1.0 N·cm	
1ST LENS FRAME		B213	Silver	3.5mm	–	6.9 ± 0.7 N·cm	
		B214	Silver	3.5mm	–	6.9 ± 0.7 N·cm	
HOOD ADAPTER	202	B215	Silver	6.0mm	–	11.8 ± 1.2 N·cm	
		B216	Silver	6.0mm	–	11.8 ± 1.2 N·cm	
		B217	Silver	6.0mm	–	11.8 ± 1.2 N·cm	
		B218	Silver	6.0mm	–	11.8 ± 1.2 N·cm	

* When servicing the surrounding part with thick line, refer to the "11.2. General description".
 * It must be performed inside of specified clean level.
 (Specified clean level: Less than class 10,000 Federal Standard 209D)



(Fig. X1)

9.3. Disassembly and Assembly Procedure for the Lens (H-VS014140)

It is recommended dealing with clean box, to keep maintaining the dustproof environment.
(Refer to “8.2. Clean Box” section of this service manual for details.)

Important:

1. When servicing the enclosure part (refer to Fig. K1), it must be performed inside of specified clean level.
(Specified clean level: Less than class 10,000 (Federal Standard 209D))
As for procedure, refer to the “11 Maintenance” for details.
2. To minimize the possibilities/risk of getting the dust/dirt on the lens surface, keep covering the lens unit with lens caps (front & rear), other than necessary cases.
3. Do not touch the surface of the lens glasses with your fingers.
4. Blow off the dust on the surface of the lens with a blower brush.
5. Use lens cleaning KIT (BK)(VFK1900BK).

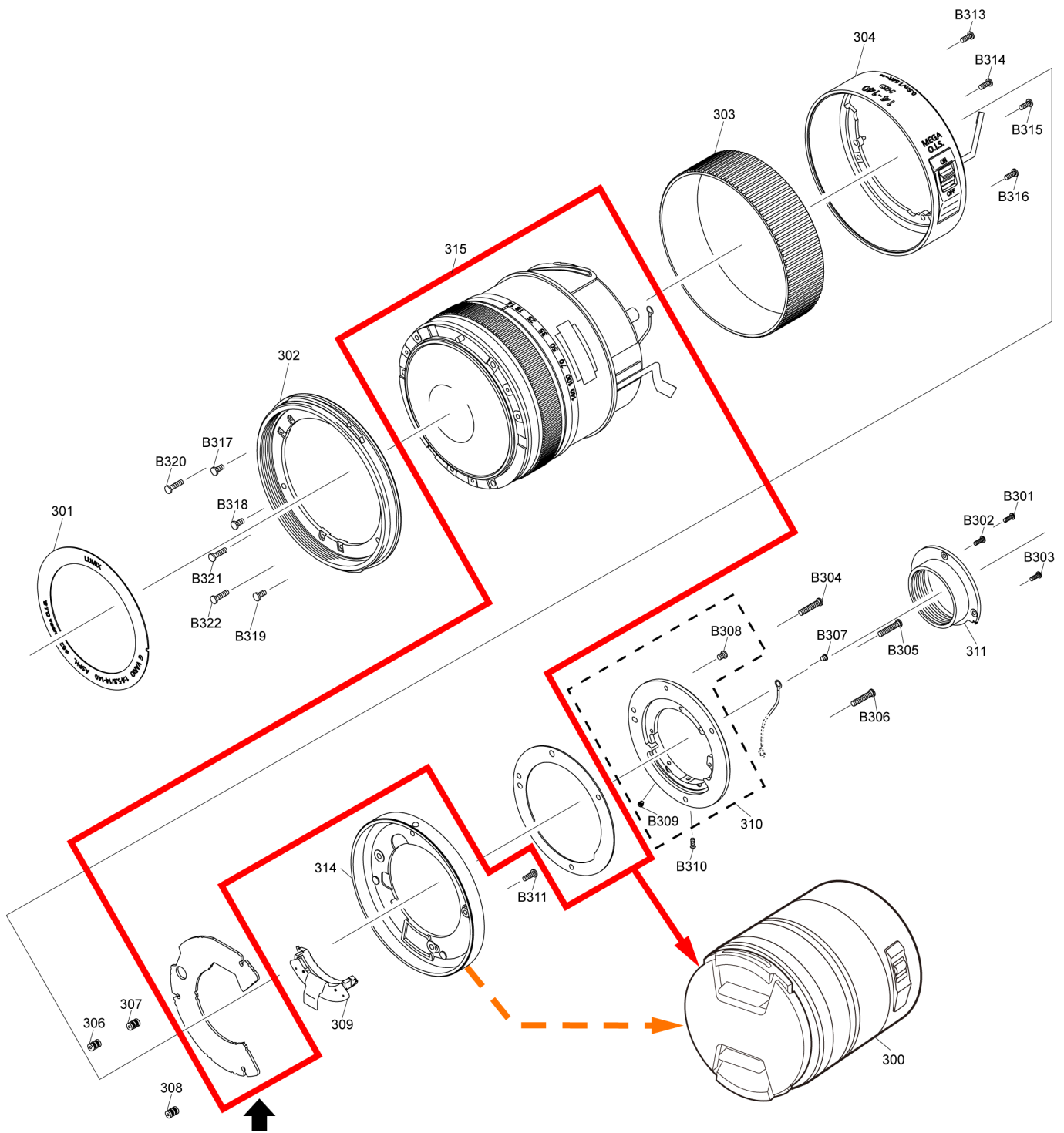
Proceed disassemble/assemble, by referring the following table and Fig. K1.

NOTE:

1. When installing the screws, be sure to use the torque driver (RFKZ0456) and tighten the screws with specified torque, mentioned on the above table.

Caution:
Keep covering the lens unit with Lens caps (front & rear), other than necessary cases.

Concerned Parts		Screws					Remarks
Part Name	Ref. No.	Ref. No.	Color	Length	Order	Torque value	
SHADING FRAME	311	B301	Black	2.5mm	–	9.8 ± 1.0 N·cm	
		B302	Black	2.5mm	–	9.8 ± 1.0 N·cm	
		B303	Black	2.5mm	–	9.8 ± 1.0 N·cm	
L MOUNT UNIT	310	B309	Silver	7.0mm	–	9.8 ± 1.0 N·cm	Stopper screw
		B304	Silver	10mm	–	27.4 ± 1.0 N·cm	
		B305	Silver	10mm	–	27.4 ± 1.0 N·cm	
		B306	Silver	10mm	–	27.4 ± 1.0 N·cm	
		B307	Silver	2.5mm	–	9.8 ± 1.0 N·cm	For GND cable connection
MOUNT CONTACT UNIT	309	B310	Silver	3.5mm	–	9.8 ± 1.0 N·cm	
COVER RING UNIT	304	B313	Silver	5.0mm	–	14.7 ± 1.0 N·cm	
		B314	Silver	5.0mm	–	14.7 ± 1.0 N·cm	
		B315	Silver	5.0mm	–	14.7 ± 1.0 N·cm	
		B316	Silver	5.0mm	–	14.7 ± 1.0 N·cm	



* When servicing the surrounding part with thick line, refer to the "11.3. General description".
 * It must be performed inside of specified clean level.
 (Specified clean level: Less than class 10,000 Federal Standard 209D)

(Fig. K1)

10 Measurements and Adjustments

10.1. Matrix Chart for Replaced Part and Necessary Adjustment

The relation between Replaced part and Necessary Adjustment is shown in the following table.

When concerned part is replaced, be sure to achieve the necessary adjustment(s).

As for Adjustment condition/procedure, consult the "Adjustment Manual" which is available in Adjustment software.

NOTE:

After adjustments have been terminated, make sure to achieve "INITIAL SETTINGS".

After updates it to the latest firmware, the adjustment is executed.

Adjustment Item		Mount Box Unit (*3)	Main P.C.B. (*2)	VENUS ENGINE (IC6001)	Flash-ROM (IC9999) (*2)	Eye sensor	G sensor (IC2701)	LCDu
S e c t i o n	C a m e r a	VENUS-ZOOM Inspection (PZM)	---	○	○	○	---	---
		ISO sensitivity adjustment (ISO)	○	○	---	○	---	---
		High brightness coloration inspection (SEN)	○	○	---	○	---	---
		Offset gain adjustment (SAT)	○	○	---	○	---	---
		AWB adjustment (WBL / WBM) (*5)	○	○	---	○	---	---
		IMAGE SENSOR white scratch compensation (WKI)	○	○	---	○	---	---
		IMAGE SENSOR black scratch compensation (BKI)	○	○	---	○	---	---
		Low illumination image quality correction (VSJ)	○	○	---	○	---	---
		Eye sensor sensitivity (EYE)	---	○	---	○	○	---
		G sensor (*6)	○	○	---	○	---	○
		Mount Box Adjustment data writing	○	---	---	---	---	---
		Mount box u readjustment	---	○	---	○	---	---
	AVCHD function inspection	---	○(*4)	○(*4)	○(*4)	---	---	
Display	Touch panel adjustment (TPC)	---	○	---	○	---	○	
Defect Part Division / Inspection	Resolution inspection (*1)	○	---	---	---	---	---	

- *1**
- Inspect it, not only corresponding part is replaced, but also camera body is shocked and/or dropped.
 - The Panasonic camera body in accordance with the Micro Four Thirds system (DMC-G1 unit, DMC-GH1 unit or DMC-GF1 unit etc. marketed commodity: operates normal) and a standard zoom lens H-FS014045 (marketed commodity: operates normal) is required as a reference machine.
 - Refer to the adjustment instruction in the adjustment software for details.

***2 NOTE: (When exchange the MAIN P.C.B.)**

IMPORTANT NOTICE (After replacing the MAIN P.C.B.)

After replacing the MAIN P.C.B., make sure to perform the "INITIAL SETTINGS" first, then release the "INITIAL SETTINGS" in order to proceed the electrical adjustment.

NOTE:

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

- Correspond by either the following when exchange the MAIN P.C.B. unavoidably by destruction and damage etc. of MAIN

P.C.B..

1. When it can turn on power, and the adjustment software can communicate with the camera body:

- Before replacing, proceed the Flash-ROM (IC9999) data backup from the unit. After replacing, overwrite the Flash-ROM (IC9999) data with backup data from the unit, before proceeding the main body adjustment.

2. When it cannot turn on power, or the adjustment software cannot communicate with the camera body:

- The readjustment of mount box unit etc. are necessary.
- Refer to the adjustment instruction in the adjustment software for details.

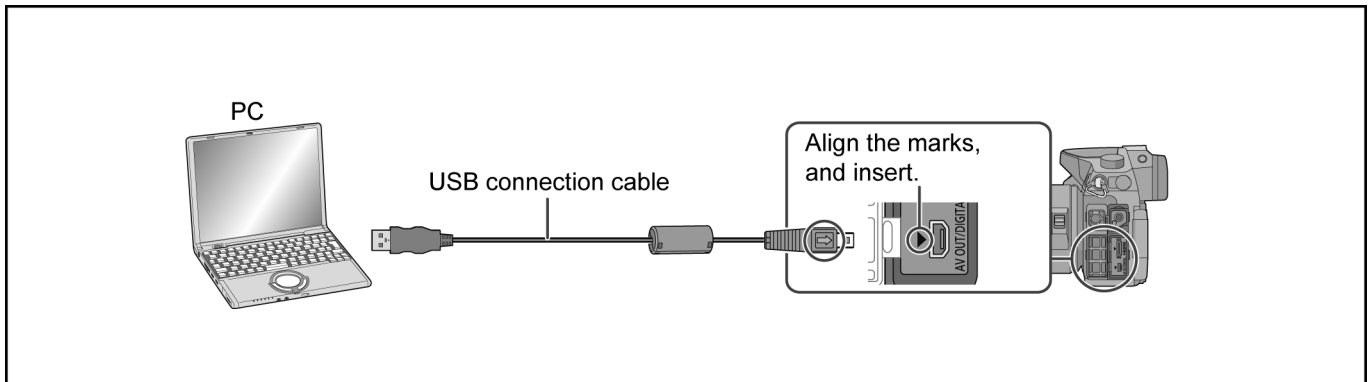
***3 NOTE: (After exchange the mount box unit)**

- Execute the resolution inspection by the comparison with the standard model (DMC-G1K etc.: operates normal).
- Refer to the adjustment instruction in the adjustment software for details.

***4**

- Confirm self recording/playback motion picture of AVCHD mode by the LCD.
- Confirm it on the TV with HDMI socket when repair HDMI relation.

* There are no LCD adjustment model.



***5 NOTE: (When AWB adjustment)**

- After change to WB adjustment mode for service with software, the adjustment is executed. After adjusting the AWB adjustment, to cancel the WB adjustment mode for service.
- Details, refer to the instructions in the adjustment software.

***6 About the G sensor adjustment**

- Offset adjustment for built in electronic level (tilt sensor). Refer to the adjustment instruction in the adjustment software for details.

About the 3D interchangeable lens (H-FT012) correspondence

This unit has no special structure (circuit or part) for the 3D interchangeable lens correspondence, only by software is processed the 3D interchangeable lens correspondence.

Therefore, if taken with other lenses as usual, the 3D interchangeable lens is no problem for operation.

11 Maintenance

11.1. Notice in external cleaning

11.1.1. ABOUT THE BODY

NOTE:

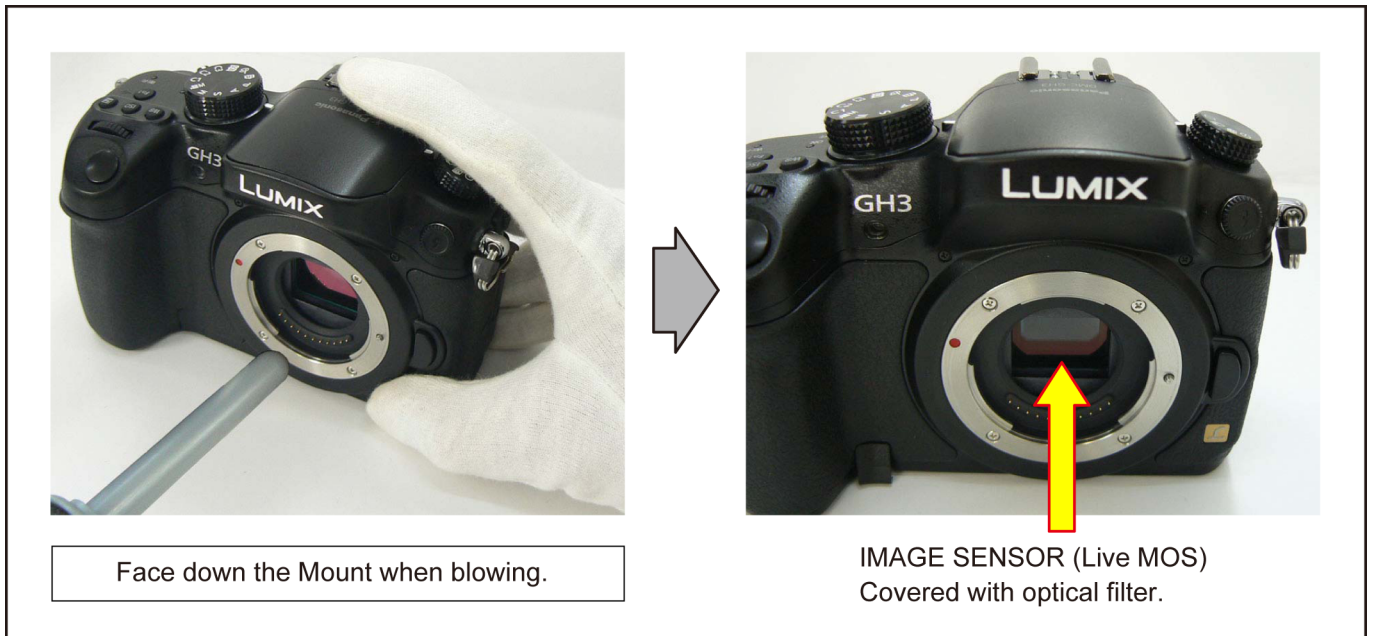
Before cleaning the camera, remove the battery and/or disconnect power plug from the outlet.
Also, remove the SD Memory card and lens unit.

11.1.1.1. DUST/DIRT ON THE OUTER CASING PART (S)

1. Blow off the dust first, then sweep out the dust from narrower spaces with soft cleaning brush.
2. Wipe up fingerprint and/or dirt on the Outer casing part with the dry fuzz-free cloth.

11.1.1.2. DUST/DIRT ON THE IMAGE SENSOR

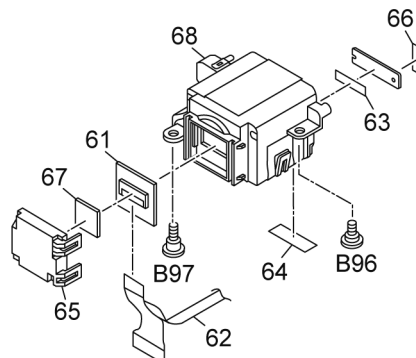
1. Blow off the dust on the surface of the Image sensor with the Blower. (Refer to the following Figure.)
 - Keep the Mount Facing down condition towards to floor when cleaning.
 - Do not put the Blower further inside than the lens mount.
 - Be careful not to blow too strongly.
2. Wipe off the dirt on the image sensor surface with Lens cleaning KIT(BK)(VFK1900BK).



11.1.1.3. ABOUT THE LVF UNIT

[PROCEDURES]

1. By referring the Disassembly & Assembly procedures and remove the LVF unit.
2. Disassemble the LVF unit as follows, then blow off the dust with blower.
3. Wipe off the dirt on the surface of glasses with Lens Cleaning KIT (VFK1900BK), if necessary.



11.1.2. ABOUT THE LENS

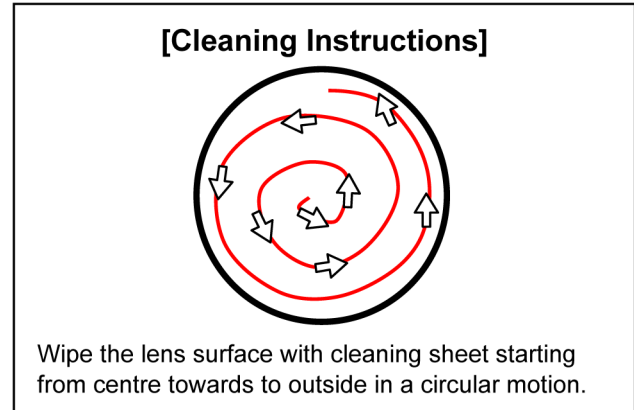
11.1.2.1. DUST/DIRT ON THE OUTER CASING PART(S)

1. Blow off the dust first, then sweep out the dust from narrower spaces with soft cleaning brush.
2. Wipe up the Outer casing part with the dry fuzz-free cloth.

11.1.2.2. DUST/DIRT ON THE LENS GLASSES

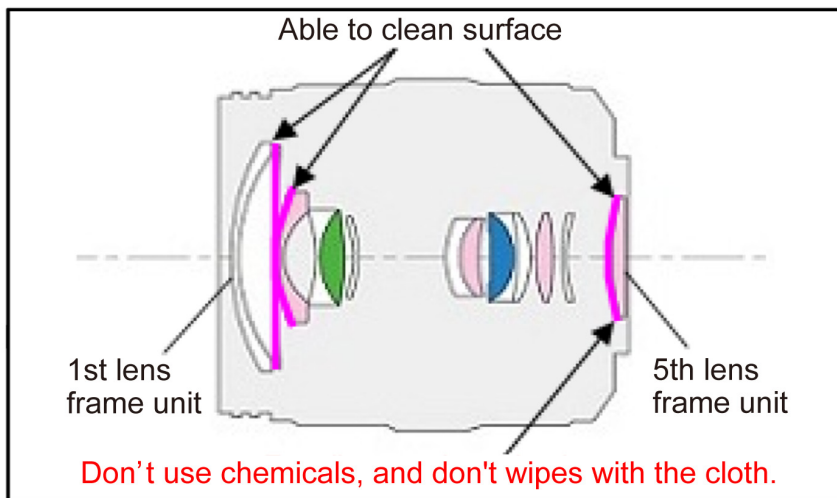
- Define the location of the dust/dirt first, whether it is outside lens surface or not.

1. When it is outside surface of the lens:
 - When the dust and/or dirt gets on the outer side surface of the Lens glasses, order the following procedures.
 - a. Blow off the dust on the Lens glass surface with the Blower, gently. (Do not Blow too strongly.)
 - b. Wipe out the dirt on the lens glass surface with Lens cleaning KIT(BK) (VFK1900BK) if necessary. (Consult the Instruction sheet which is included in the Lens cleaning KIT(BK) in details.)
2. When it is inside of the lens:
 - Refer to the “11.3. General description (Lens cleaning: Interchangeable Lens/H-VS014140)” section of this service manual.



11.2. General description (Lens cleaning: Interchangeable Lens/H-HS12035)

When there is a dust/dirt inside surface of the 1st / 5th lens frame unit, remove it by referring the following procedures.



CAUTION

*DO NOT REMOVE THE 1ST / 5TH LENS FRAME UNIT OTHER THAN INSIDE OF SPECIFIED CLEAN LEVEL.
(Specified clean level: Less than class10,000 (Federal Standard 209D))

Important:

1. When removing the 1st / 5th lens frame unit, it has to be proceed inside of specified clean level. (Less than class 10,000 (Federal Standard 209D))
As for clean box, refer to the “8.2. Clean Box”, in details.
2. When tighten the screws, use torque driver (RFKZ0456) with specified torque.
3. To keep the Lens performance, can only use the original 1st / 5th lens frame unit .
So the 1st / 5th lens frame unit is not supplied as spare parts.
Also do not exchange the 1st / 5th lens frame unit taking from others.
4. 5th lens has the “Nano Surface Coating”.
Avoid damage the coating, please DO NOT clean it with cloth.
Please keep cleaning 5th lens, blow off the dust with air brush.

11.2.1. Important notice of disassembly and assembly

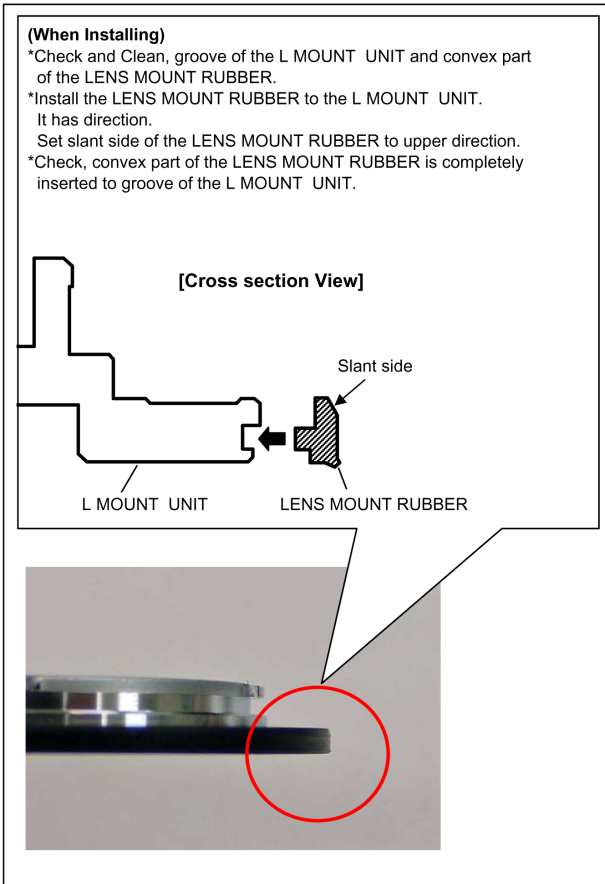
Important:

It must be performed inside of specified clean level.

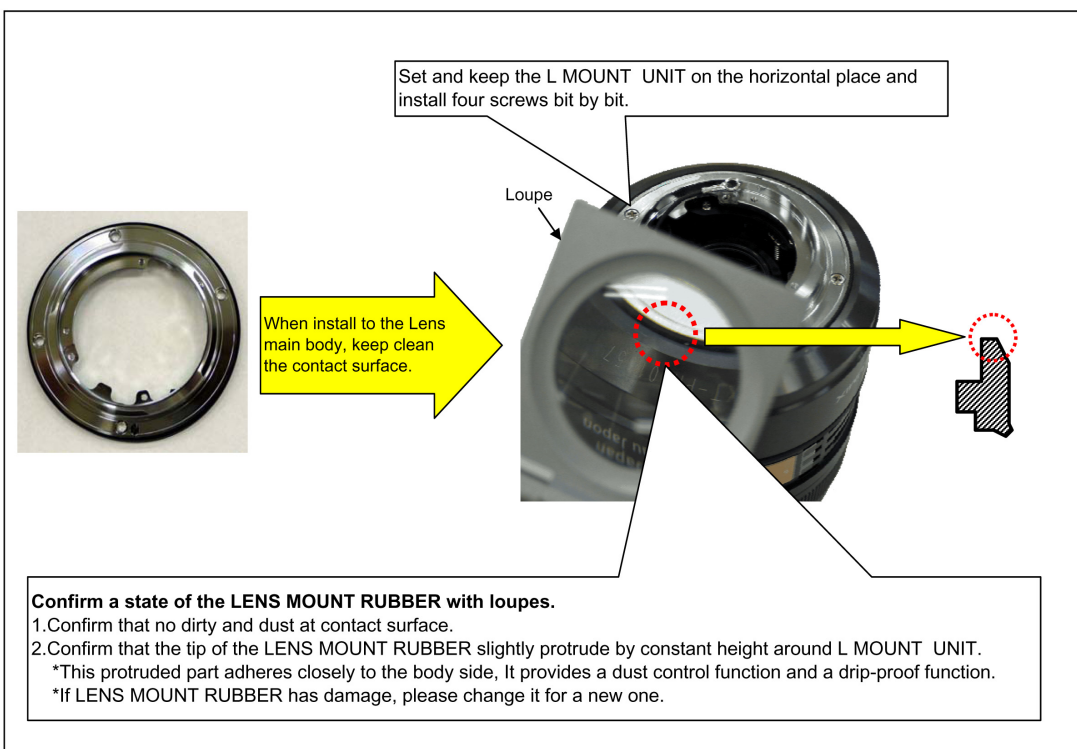
(Specified clean level: Less than class 10,000 (Federal Standard 209D))

11.2.1.1. About the LENS MOUNT RUBBER

1. Install the LENS MOUNT RUBBER



2. Install the L MOUNT UNIT



11.2.2. Disassembly procedure

11.2.2.1. Removal of the DECO.RING

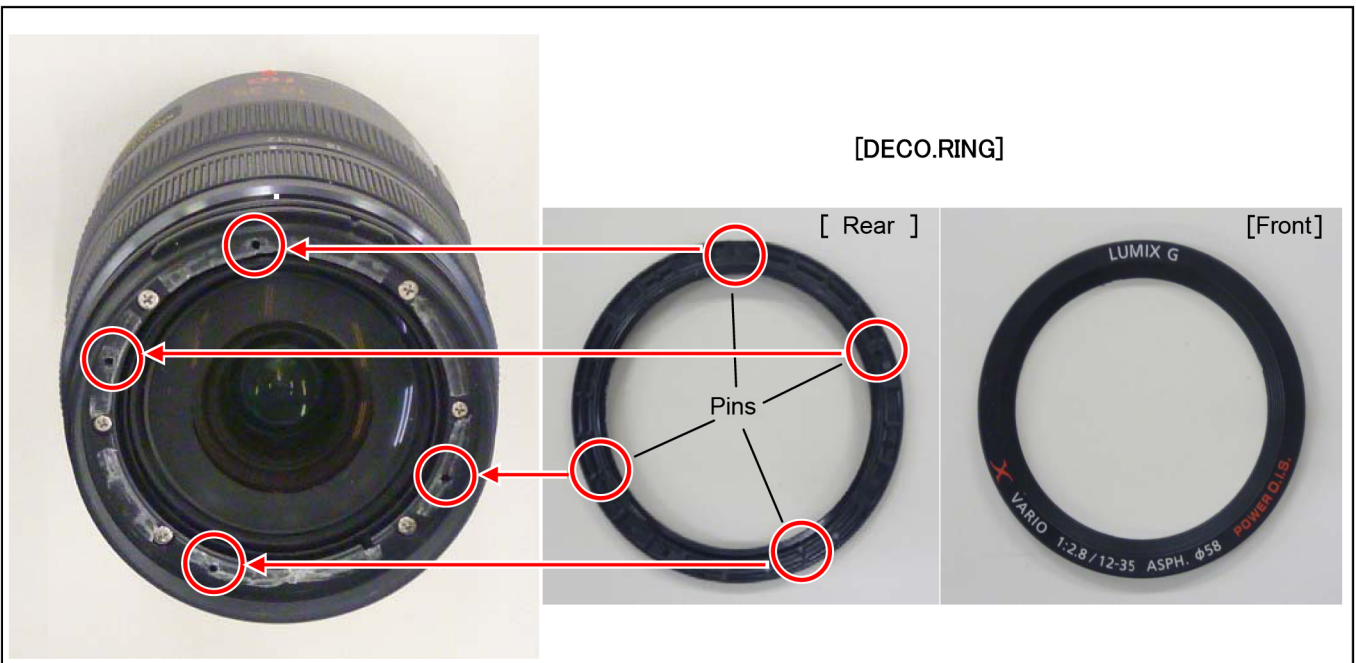
1. DECO.RING is stuck on the 1ST LENS FRAME UNIT.
2. It can be easy to remove the two-sided tape with sending hot air by hair dryer.
3. Put the sheet so that the lens glass is fully covered.
4. Insert the small flat blade screwdriver to Gap (between the decoration ring and lens glass), and peel off the DECO.RING gently.



11.2.3. Assembly procedure

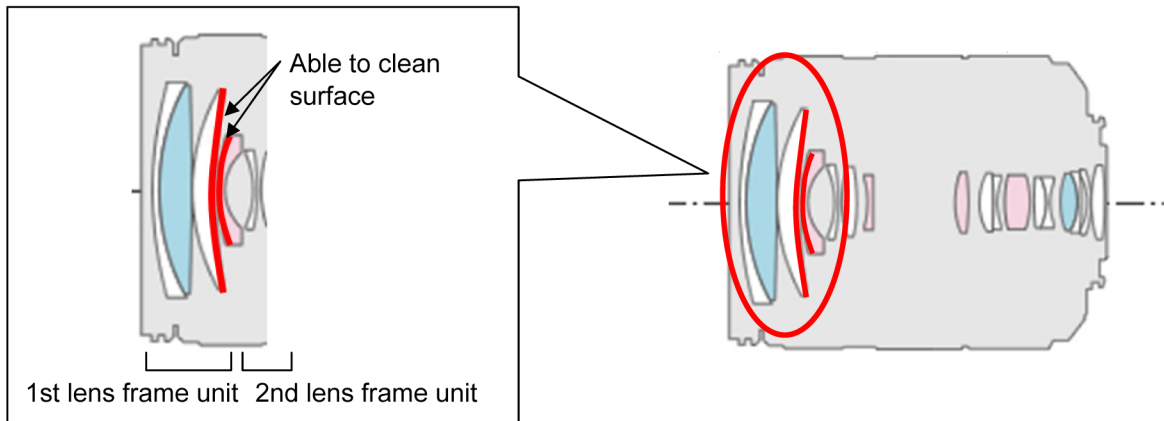
11.2.3.1. Installation of the DECO.RING

1. Please insert the pins (four places) of the DECO.RING to the hole of the hood adapter.
 - Use new one, do not use the one which is removed.
 - Double-stick tape sticks to the DECO.RING of the repair part. Please remove the old double-stick tape from HOOD ADAPTER.
2. After installing the DECO.RING, use a soft cloth to press it into place.



11.3. General description (Lens cleaning: Interchangeable Lens/H-VS014140)

When there is a dust/dirt inside surface of the 1st lens frame unit and/or subject side surface of the 2nd lens frame unit, remove it by referring the following procedures.



CAUTION

*DO NOT REMOVE 1st LENS FRAME UNIT OTHER THAN INSIDE OF SPECIFIED CLEAN LEVEL.
(Specified clean level: Less than class 10,000 (Federal Standard 209D))

Important:

1. When removing the 1st lens frame unit, it has to be proceed inside of specified clean level.
(Less than class 10,000 (Federal Standard 209D))
As for clean box, refer to the "8.2. Clean Box", in details.
2. When tighten the screws, use torque driver (RFKZ0456) with specified torque.
3. To keep the Lens performance, use only the 1st lens frame unit which was fitted as it was.
Therefore, the 1st lens frame unit is not supplied as spare parts.
Also do not exchange the 1st lens unit taking from others.

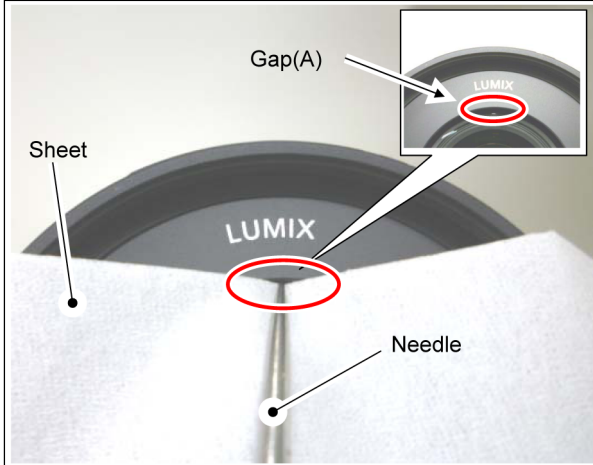
11.3.1. Disassembly procedure

Important:

It must be performed inside of specified clean level.
(Specified clean level: Less than class 10,000 (Federal Standard 209D))

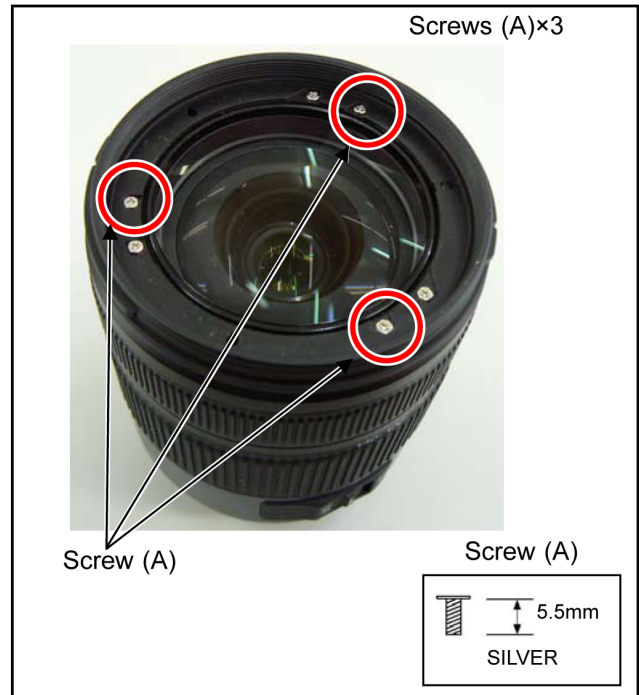
11.3.1.1. Removal of the Decoration Ring

1. Decoration ring is stuck on the 1st lens frame unit.
2. Put the sheet so that the lens glass is fully covered.
3. Insert the needle to Gap (A) (between the decoration ring and lens glass), and peel off the decoration ring gently.



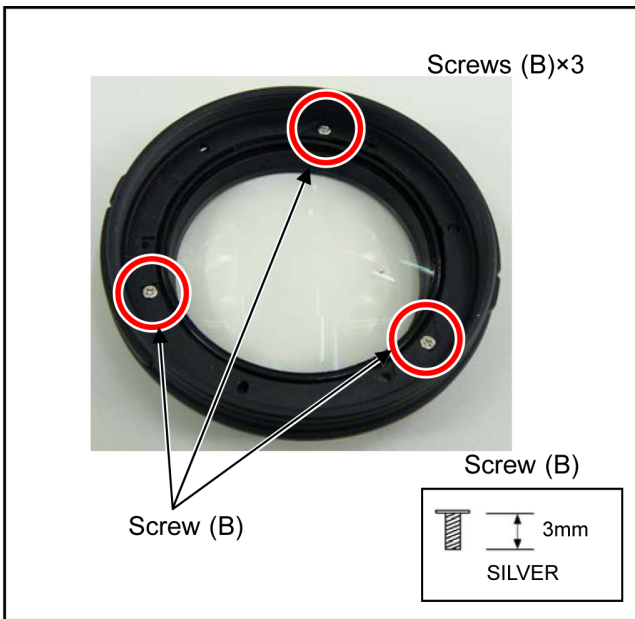
11.3.1.2. Removal of the 1st Lens Frame Unit

1. Remove the 3 screws (A) and then remove the 1st lens frame unit.



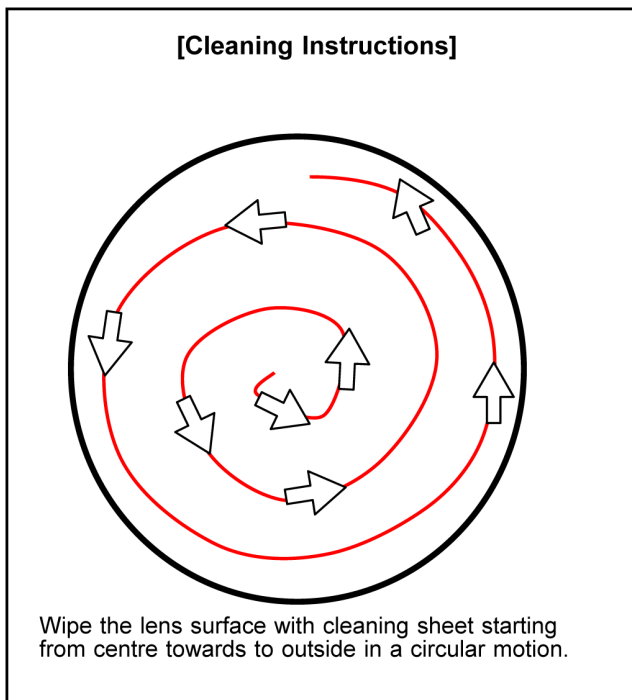
11.3.1.3. Removal of the hood adaptor

1. Remove the 3 screws (B) and then remove the hood adaptor.



11.3.1.4. Removal of a dust /dirt

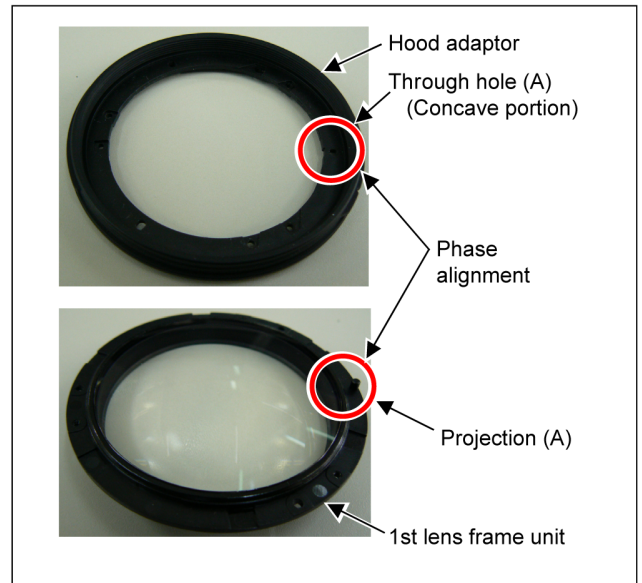
1. Blow off the dust on the Lens glass surface with the Blower, gently.
(Do not Blow too strongly.)
2. Although after blowing, the dust/dirt does not blow off, wipe out the dirt on the lens glass surface with Lens cleaning KIT (VFK1900BK)
(Consult the Instruction sheet which is included in the Lens cleaning KIT in details.)



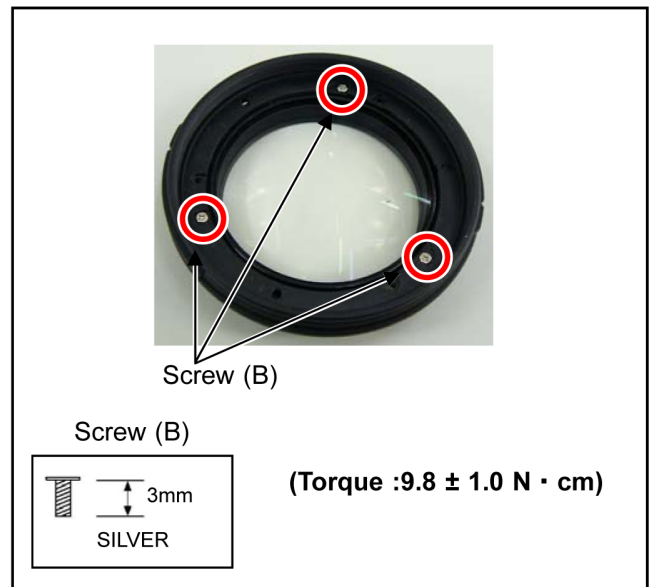
11.3.2. Assembly procedure

11.3.2.1. Installation of the hood adaptor

1. Install the hood adaptor to meet the through hole (A) with projection (A).



2. Tighten the 3 screws (B) by using torque driver with specified torque.
(Torque driver : RFKZ0456)
(Torque : 9.8 ± 1.0 N·cm)

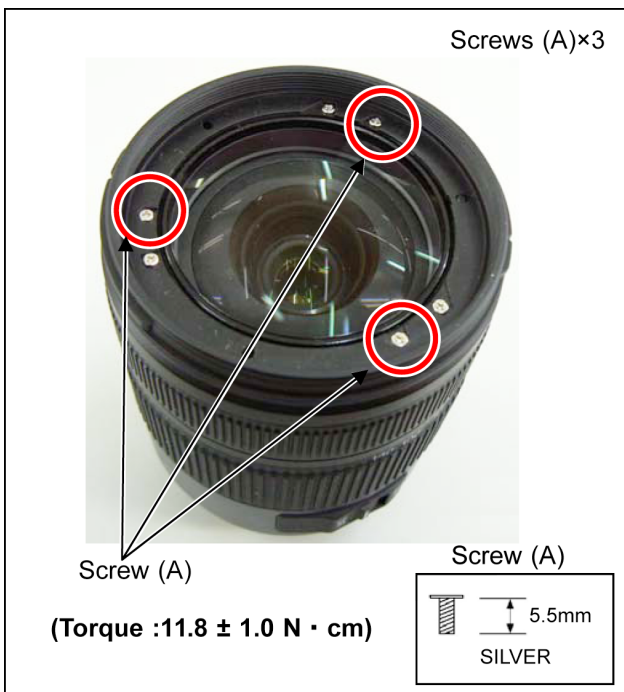


11.3.2.2. Installation of the 1st lens frame unit

1. Install the 1st lens frame unit onto the lens unit to meet the through hole (B) with projection (B).

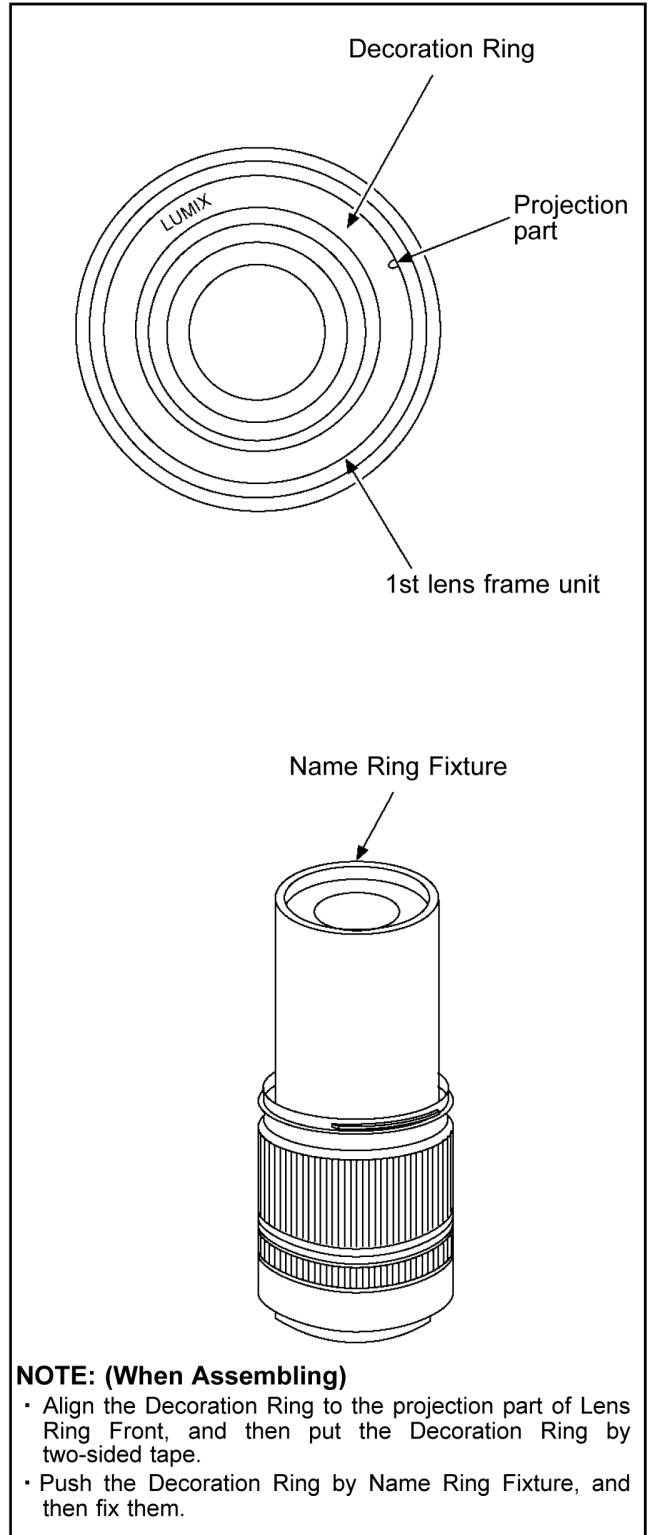


2. Tighten the 3 screws (A) by using torque driver with specified torque.
(Torque : 11.8 ± 1.0 N-cm)



11.3.2.3. Installation of the Decoration Ring

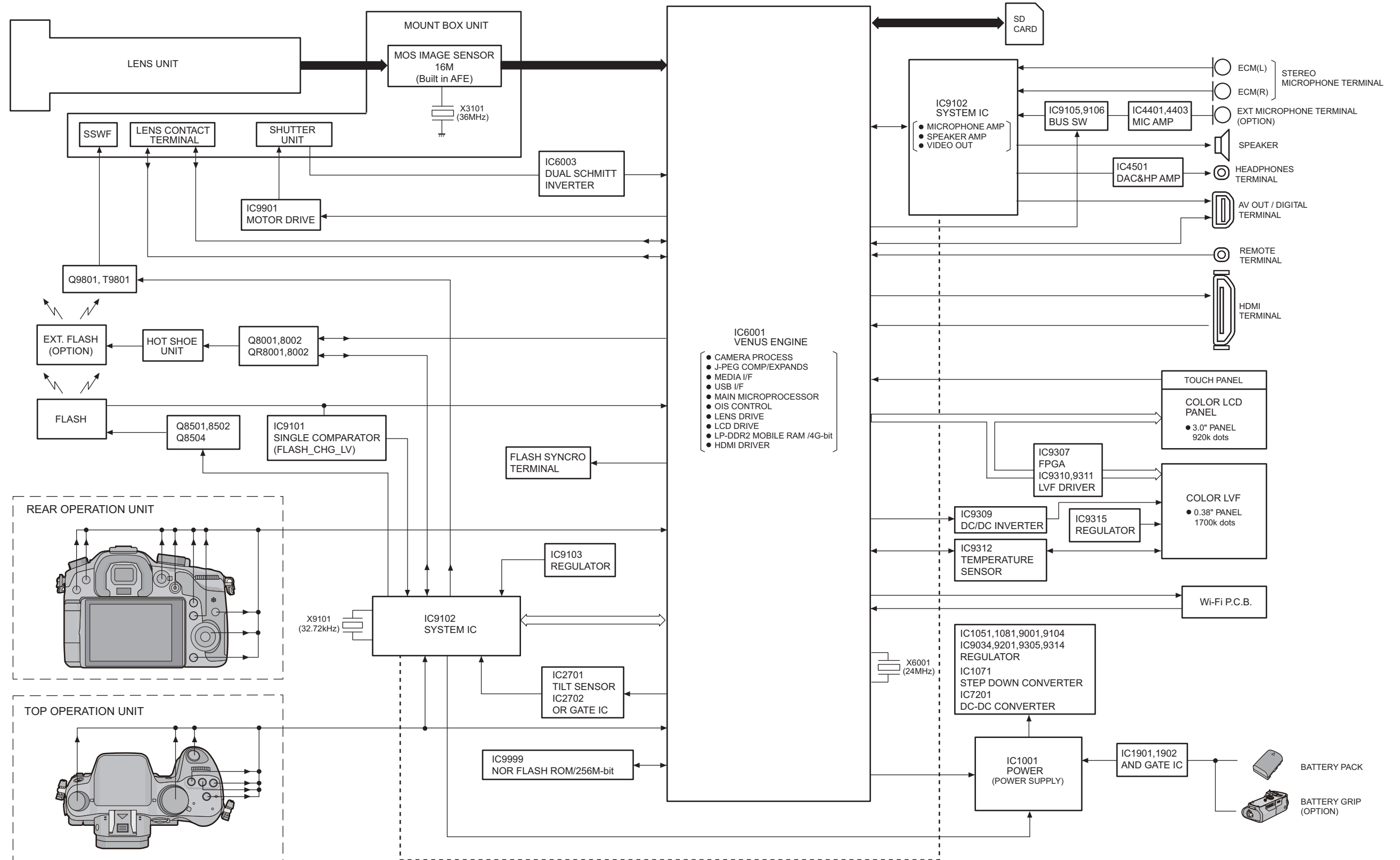
1. Use the Name Ring fixture (RFKZ0423)
2. Use new Decoration ring. (Do not use the one which is removed.)



12 Block Diagram

12.1. Overall Block Diagram

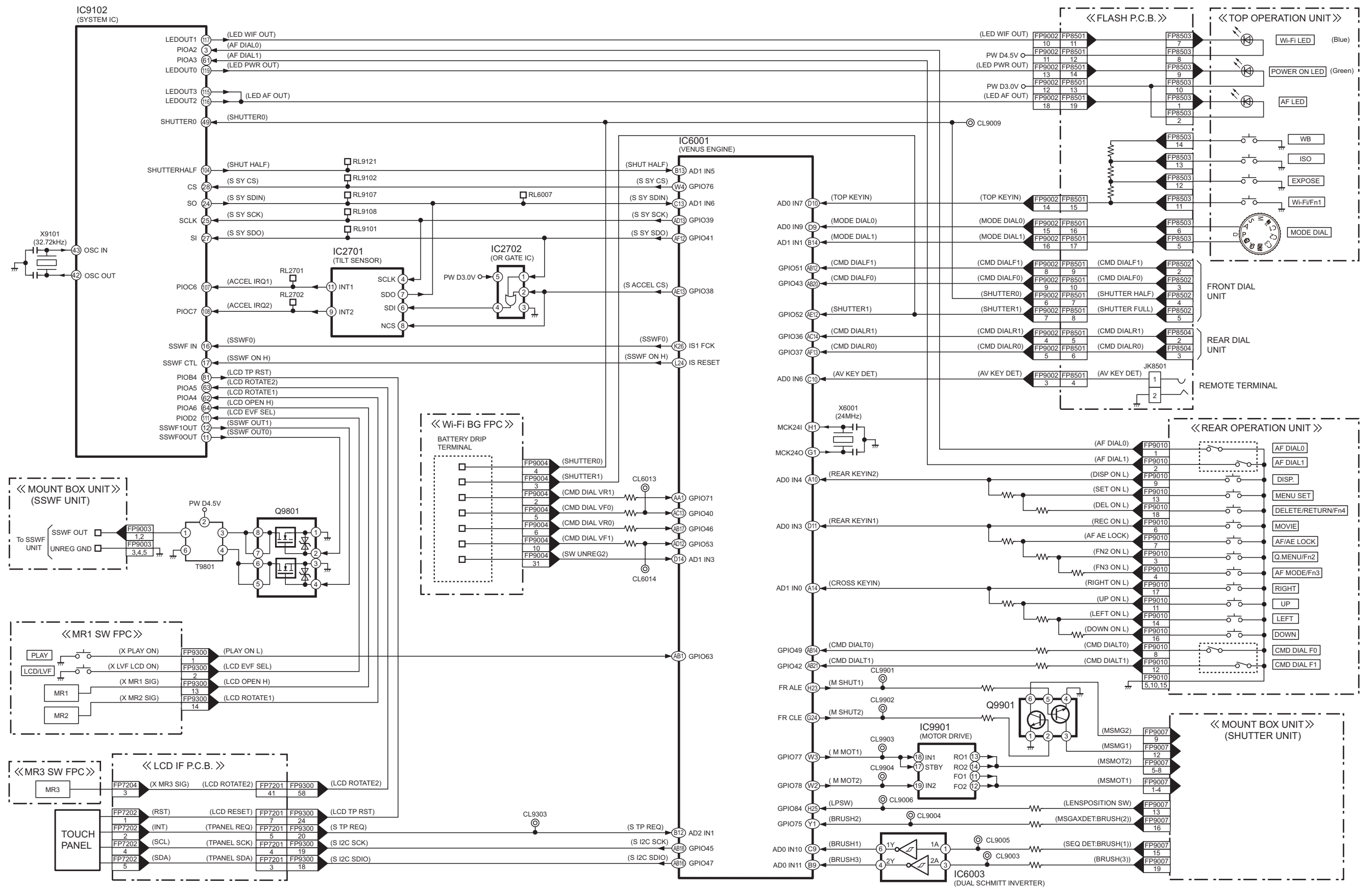
OVERALL BLOCK DIAGRAM



DMC-GH3 OVERALL BLOCK DIAGRAM

12.2. System Control Block Diagram

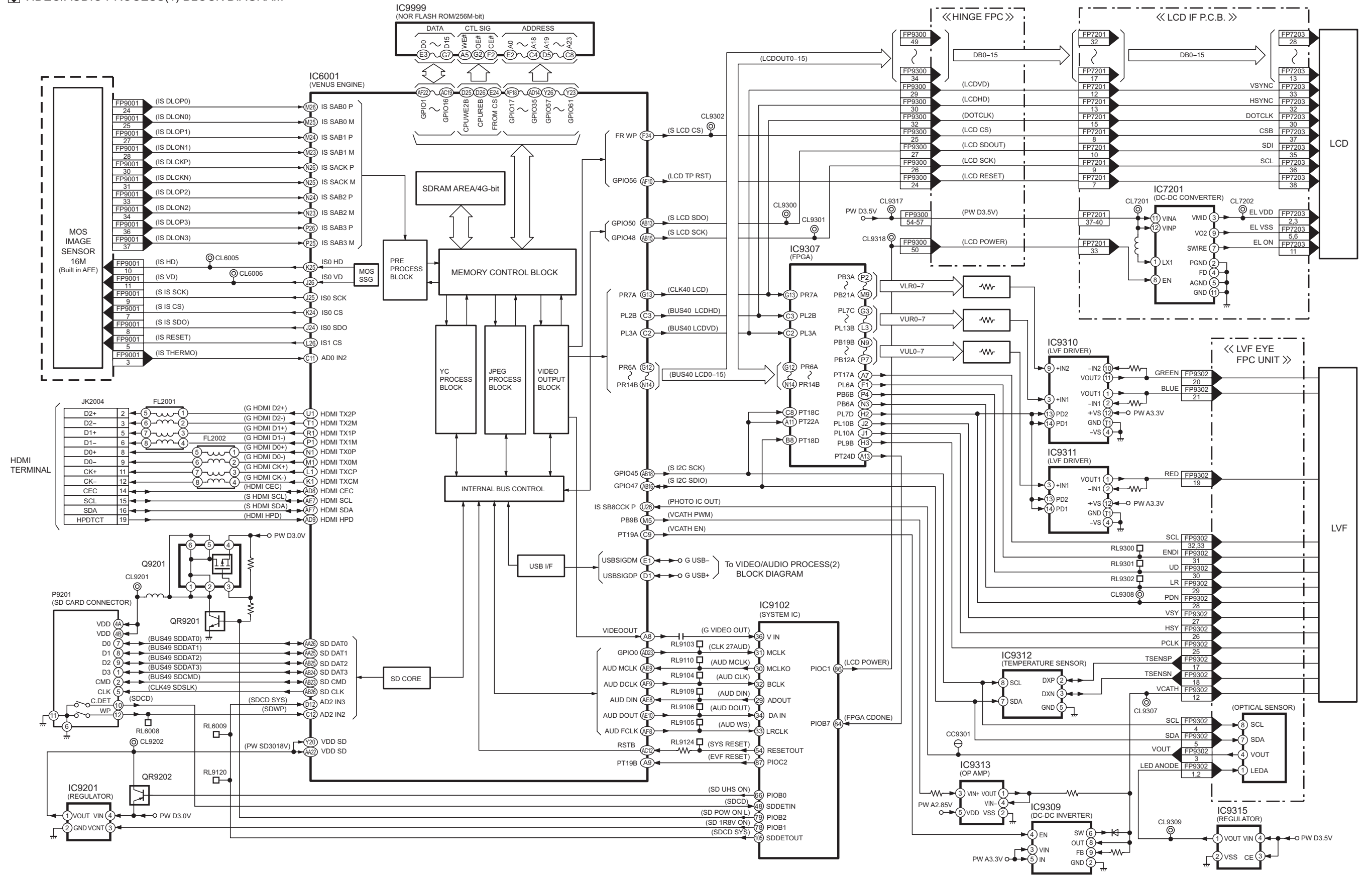
SYSTEM CONTROL BLOCK DIAGRAM



DMC-GH3 SYSTEM CONTROL BLOCK DIAGRAM

12.3. Video/Audio Process(1) Block Diagram

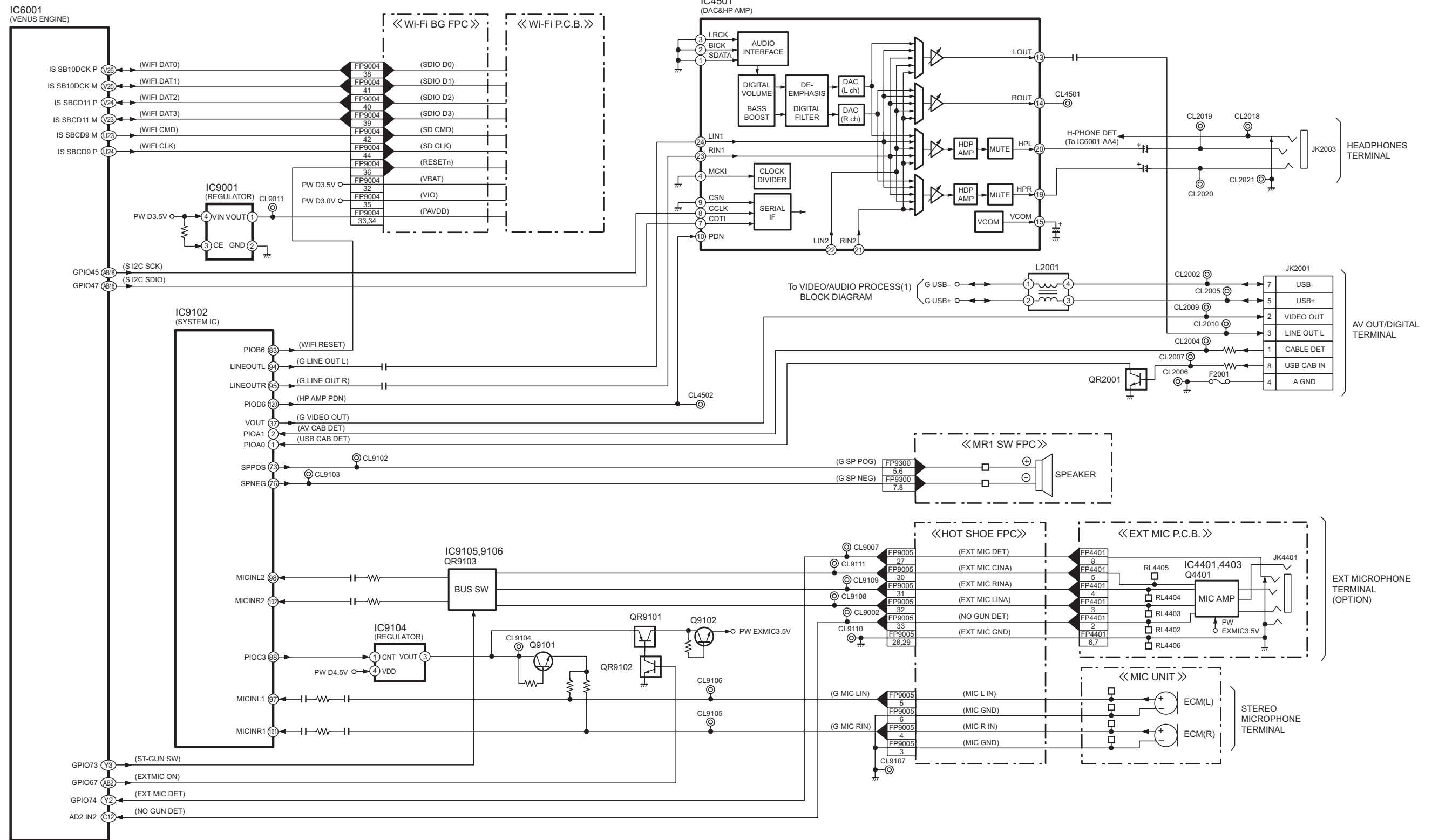
VIDEO/AUDIO PROCESS(1) BLOCK DIAGRAM



DMC-GH3 VIDEO/AUDIO PROCESS(1) BLOCK DIAGRAM

12.4. Video/Audio Process(2) Block Diagram

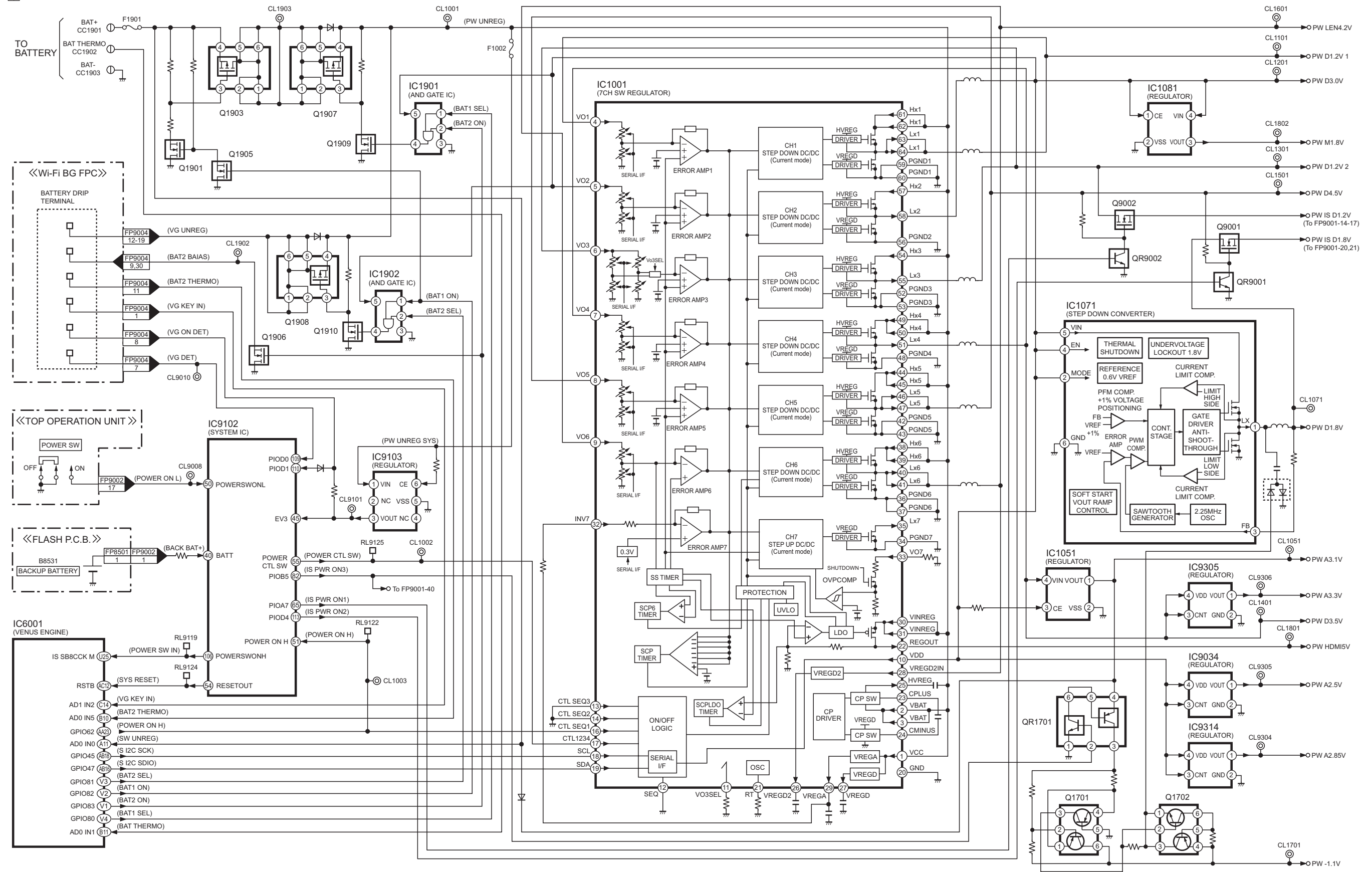
VIDEO/AUDIO PROCESS(2) BLOCK DIAGRAM



DMC-GH3 VIDEO/AUDIO PROCESS(2) BLOCK DIAGRAM

12.6. Power Block Diagram

POWER BLOCK DIAGRAM

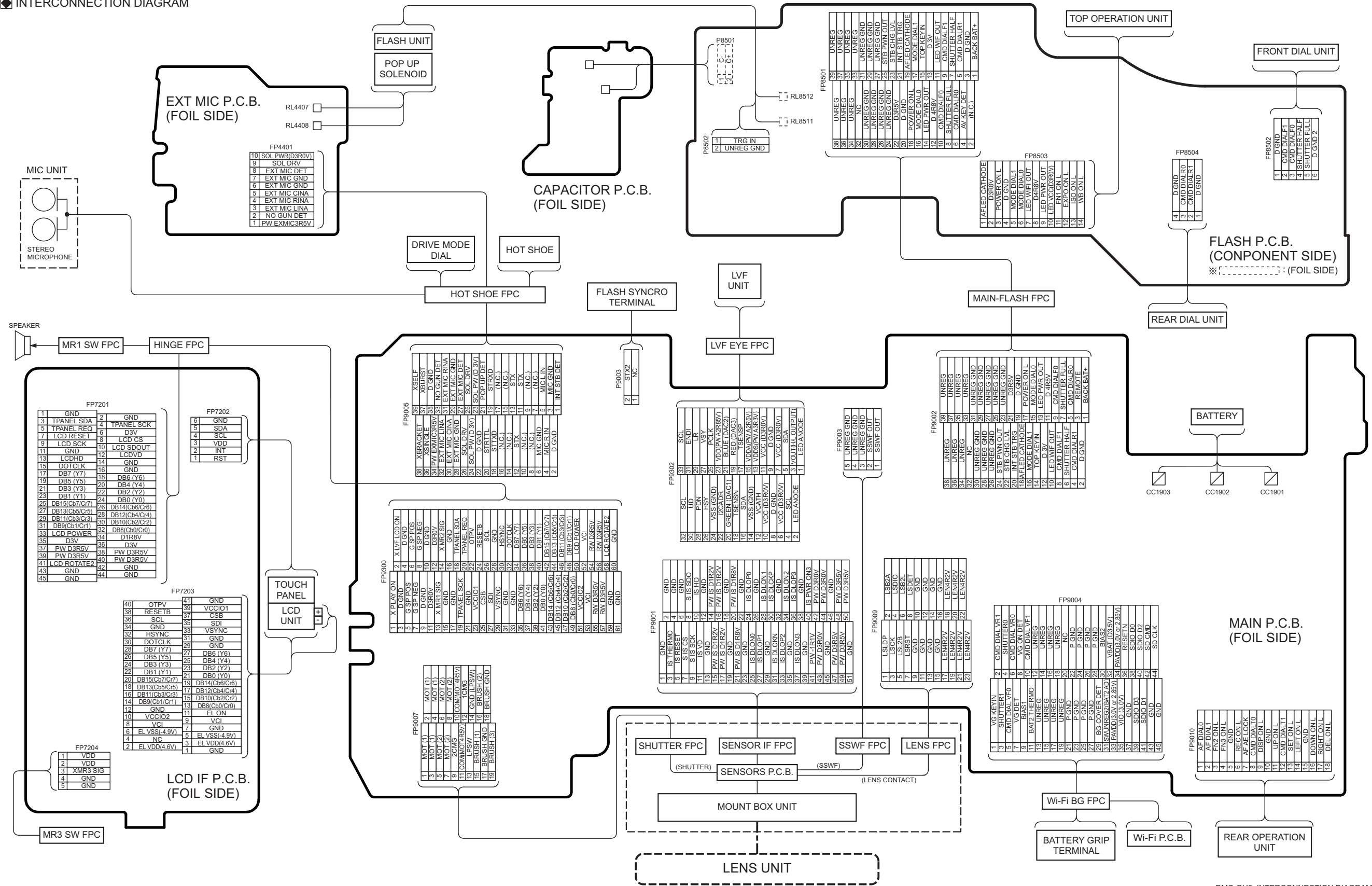


DMC-GH3 POWER BLOCK DIAGRAM

13 Wiring Connection Diagram

13.1. Interconnection Diagram

INTERCONNECTION DIAGRAM

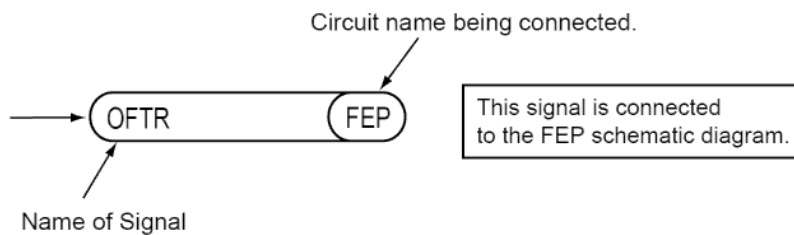


DMC-GH3 INTERCONNECTION DIAGRAM

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. Use the parts number indicated on the Replacement Parts List .
4. Indication on Schematic diagrams:



5. It might be taking time for display and/or access of the Schematic Diagrams & P. C. B having the heavy data volume.

Model No. : DMC-GH3/GH3A/GH3H Parts List Note

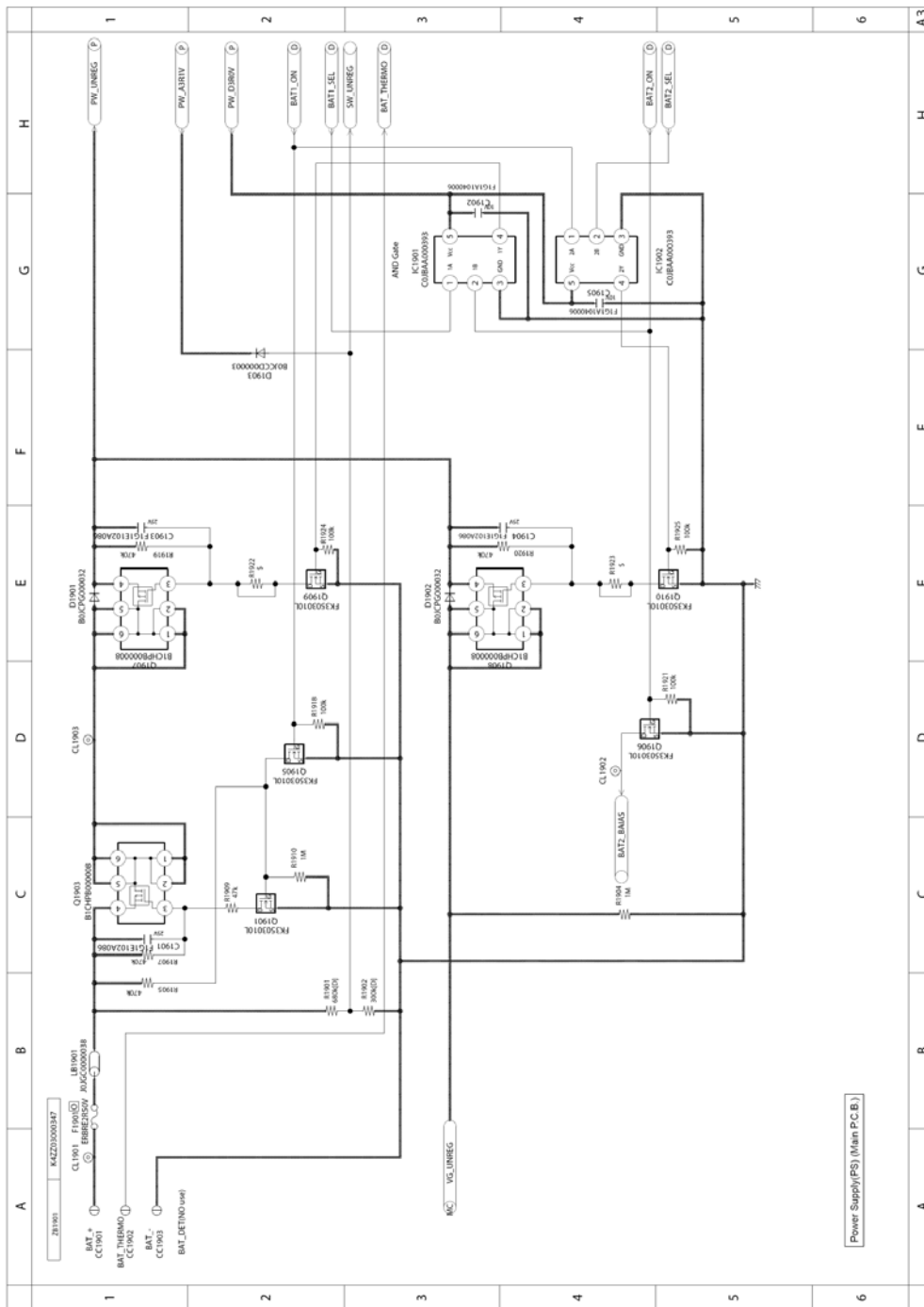
- Note:
1. * Be sure to make your orders of replacement parts according to this list.
 2. **IMPORTANT SAFETY NOTICE**
Components identified with the mark \triangle have the special characteristics for safety.
When replacing any of these components, use only the same type.
 3. Unless otherwise specified,
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.
 5. Supply of CD-ROM, in accordance with license protection, is allowable as replacement parts only for customers who accidentally damaged or lost their own.

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

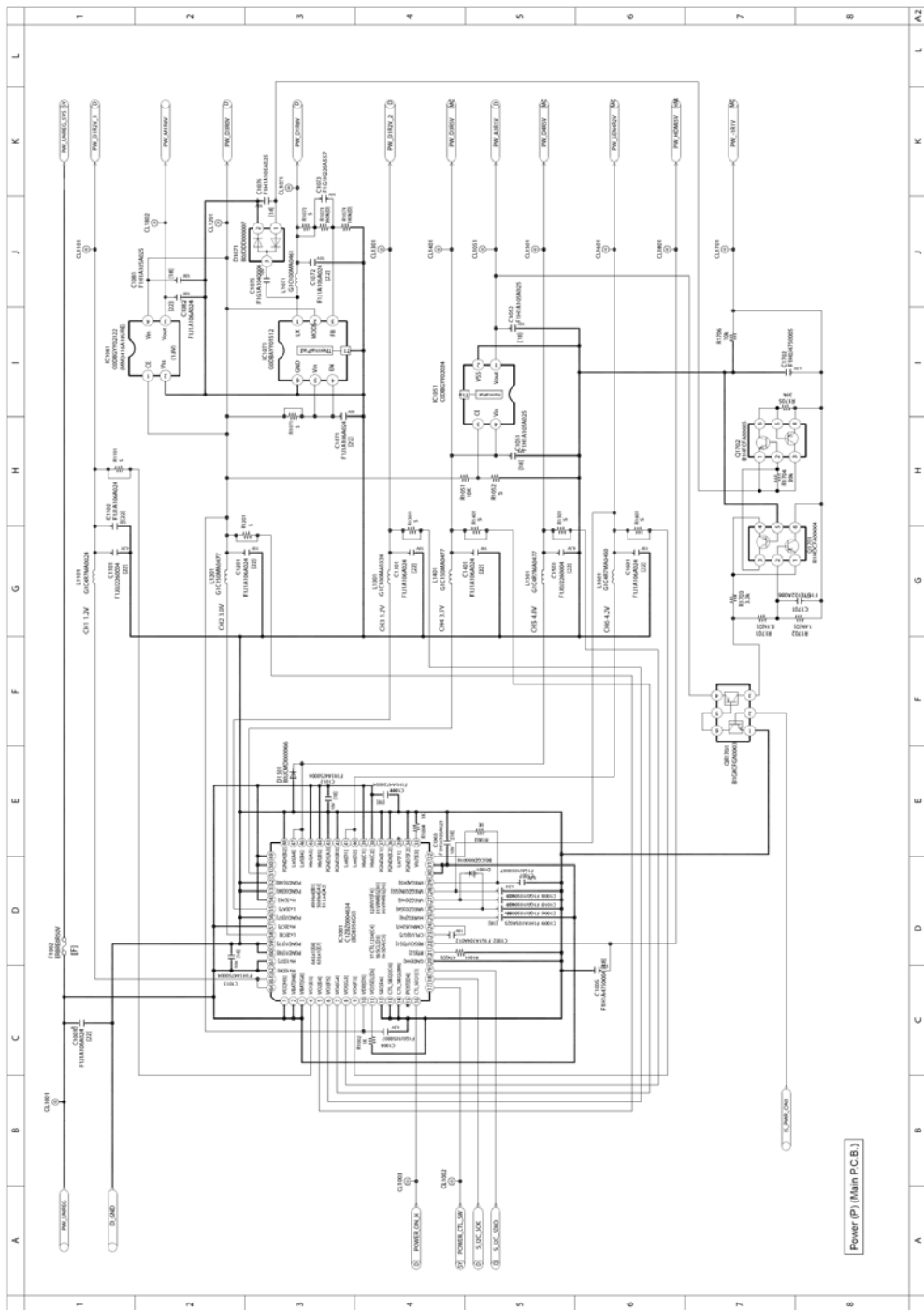
Definition of Parts supplier:

1. Parts marked with [ENERGY] in the remarks column are supplied from Panasonic Corporation Energy Company.
2. Parts marked with [SPC] in the remarks column are supplied from AVC-CSC-SPC. Others are supplied from PAVCX.

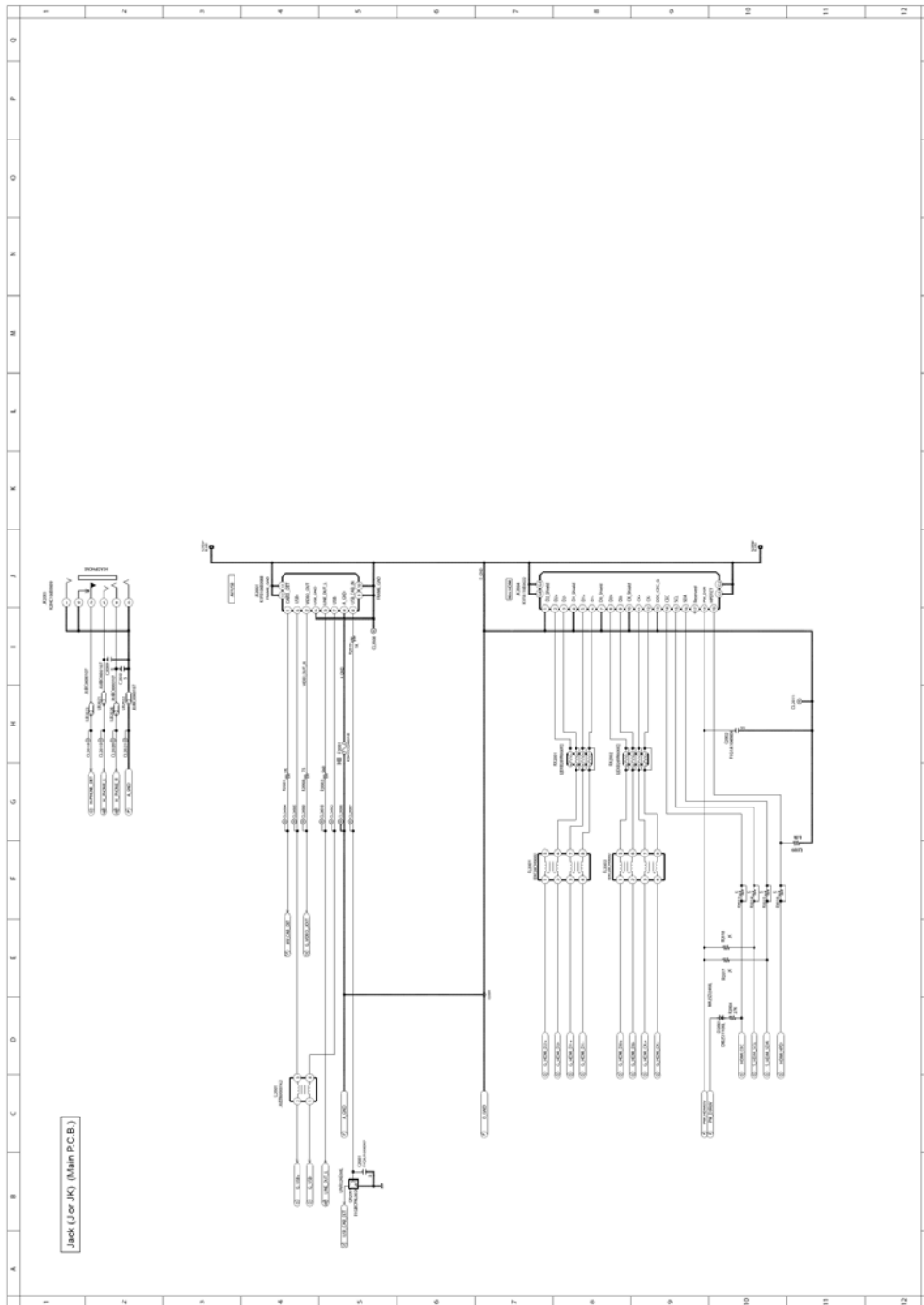
Model No. : DMC-GH3/GH3A/GH3H Power Supply(PS) (Main P.C.B.)



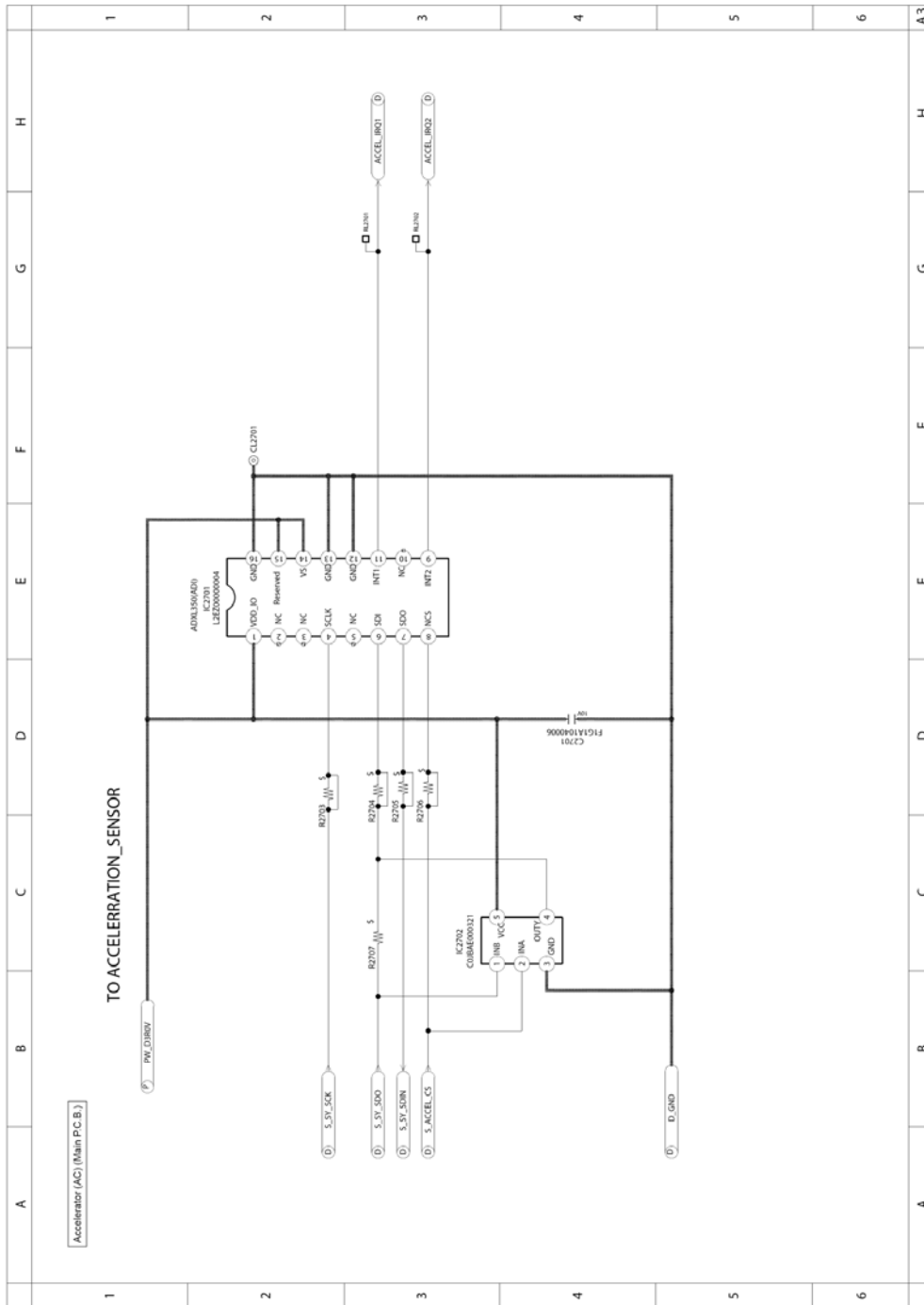
Model No. : DMC-GH3/GH3A/GH3H Power (P) (Main P.C.B.)



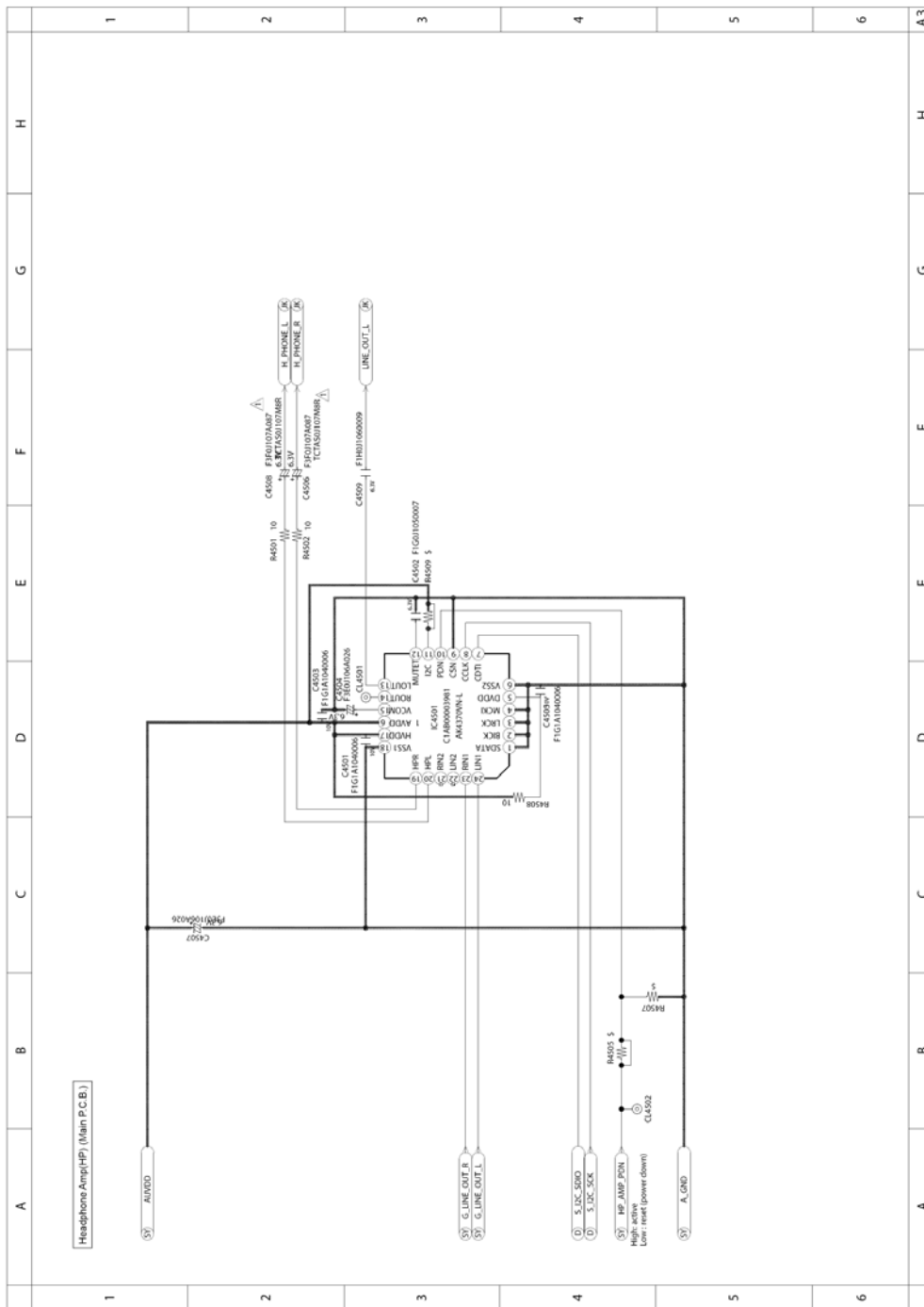
Model No. : DMC-GH3/GH3A/GH3H Jack (J or JK) (Main P.C.B.)



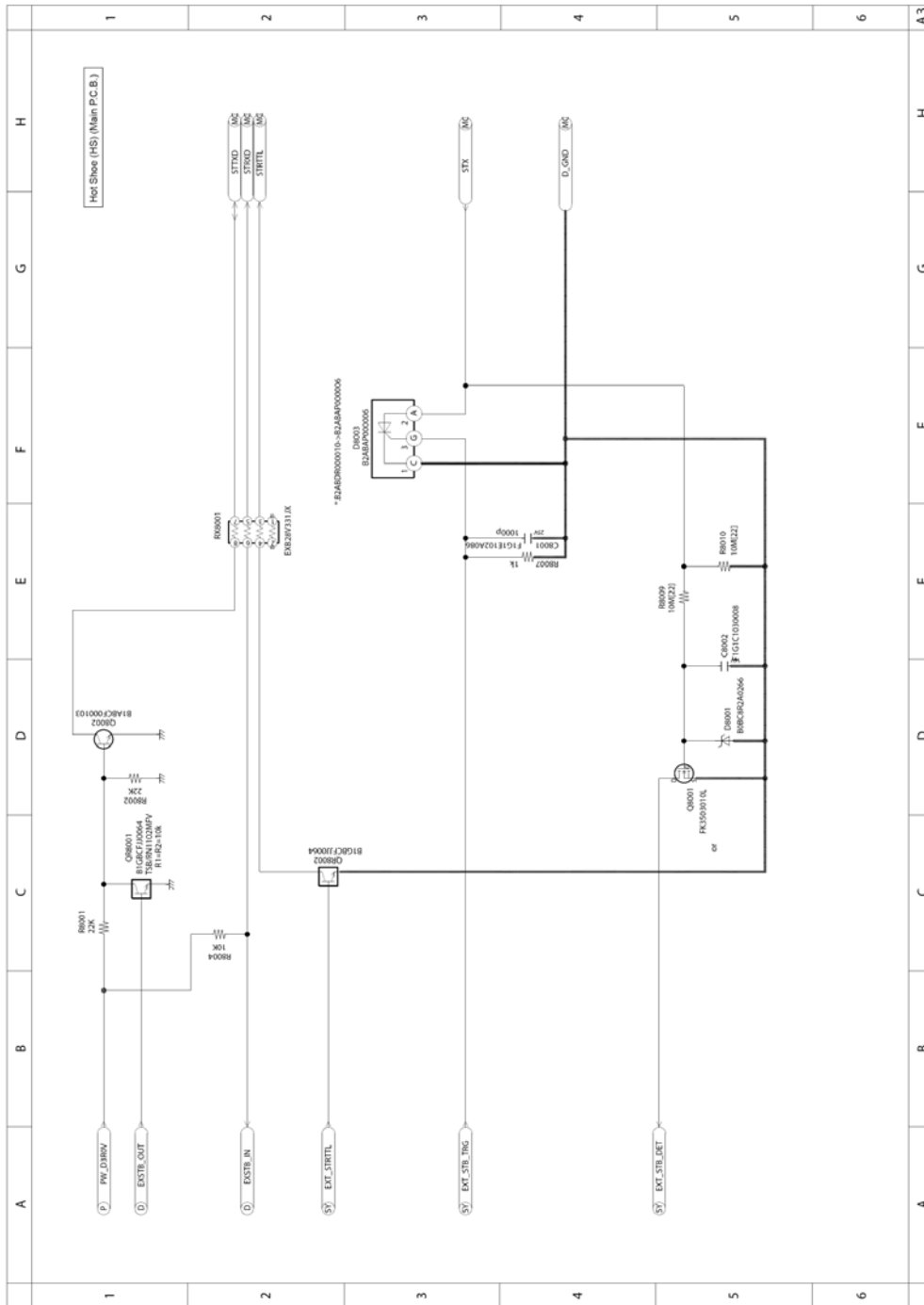
Model No. : DMC-GH3/GH3A/GH3H Accelerator (AC) (Main P.C.B.)



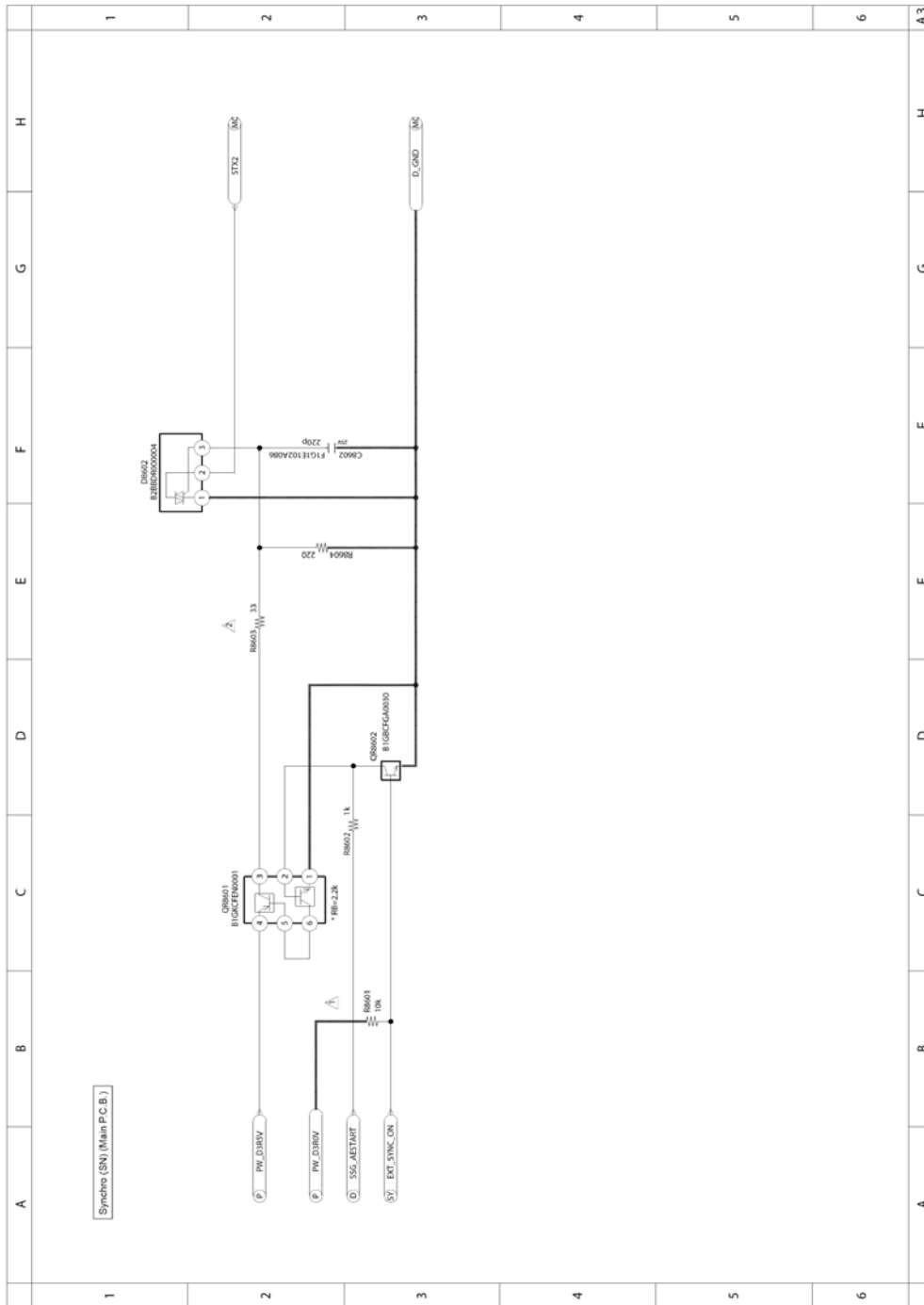
Model No. : DMC-GH3/GH3A/GH3H Headphone Amp(HP) (Main P.C.B.)



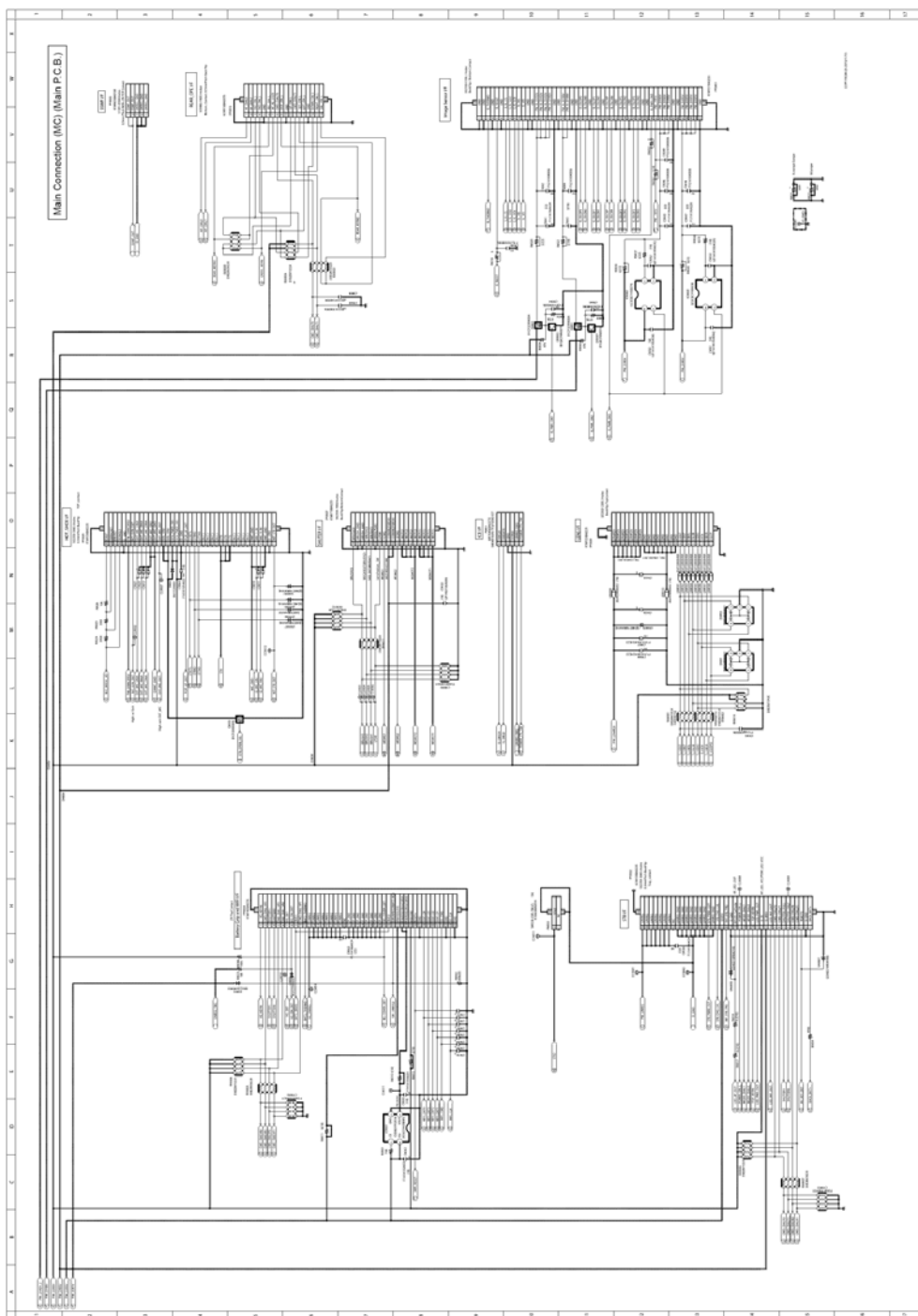
Model No. : DMC-GH3/GH3A/GH3H Hot Shoe (HS) (Main P.C.B.)



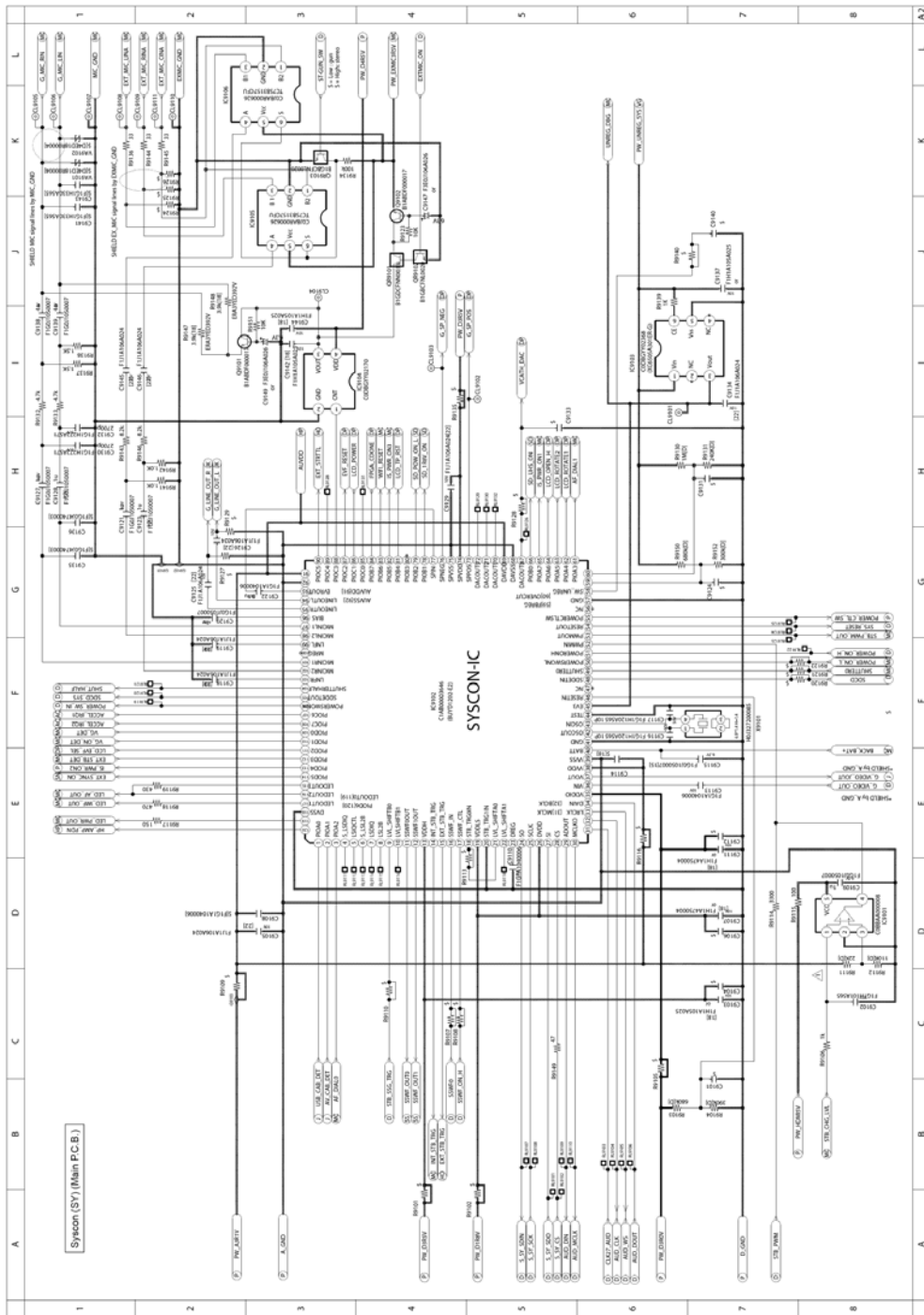
Model No. : DMC-GH3/GH3A/GH3H Synchro (SN) (Main P.C.B.)



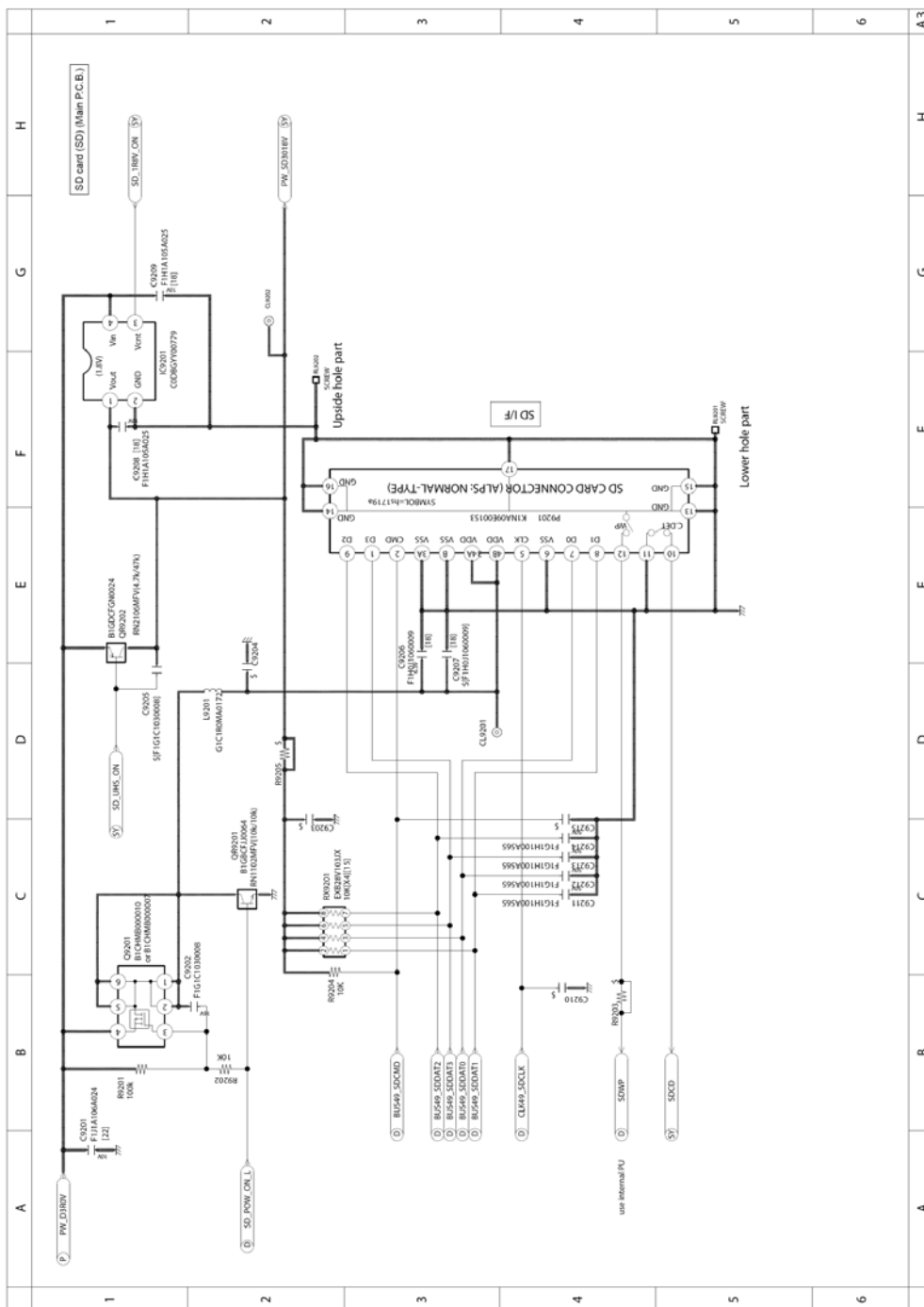
Model No. : DMC-GH3/GH3A/GH3H Main Connection (MC) (Main P.C.B.)



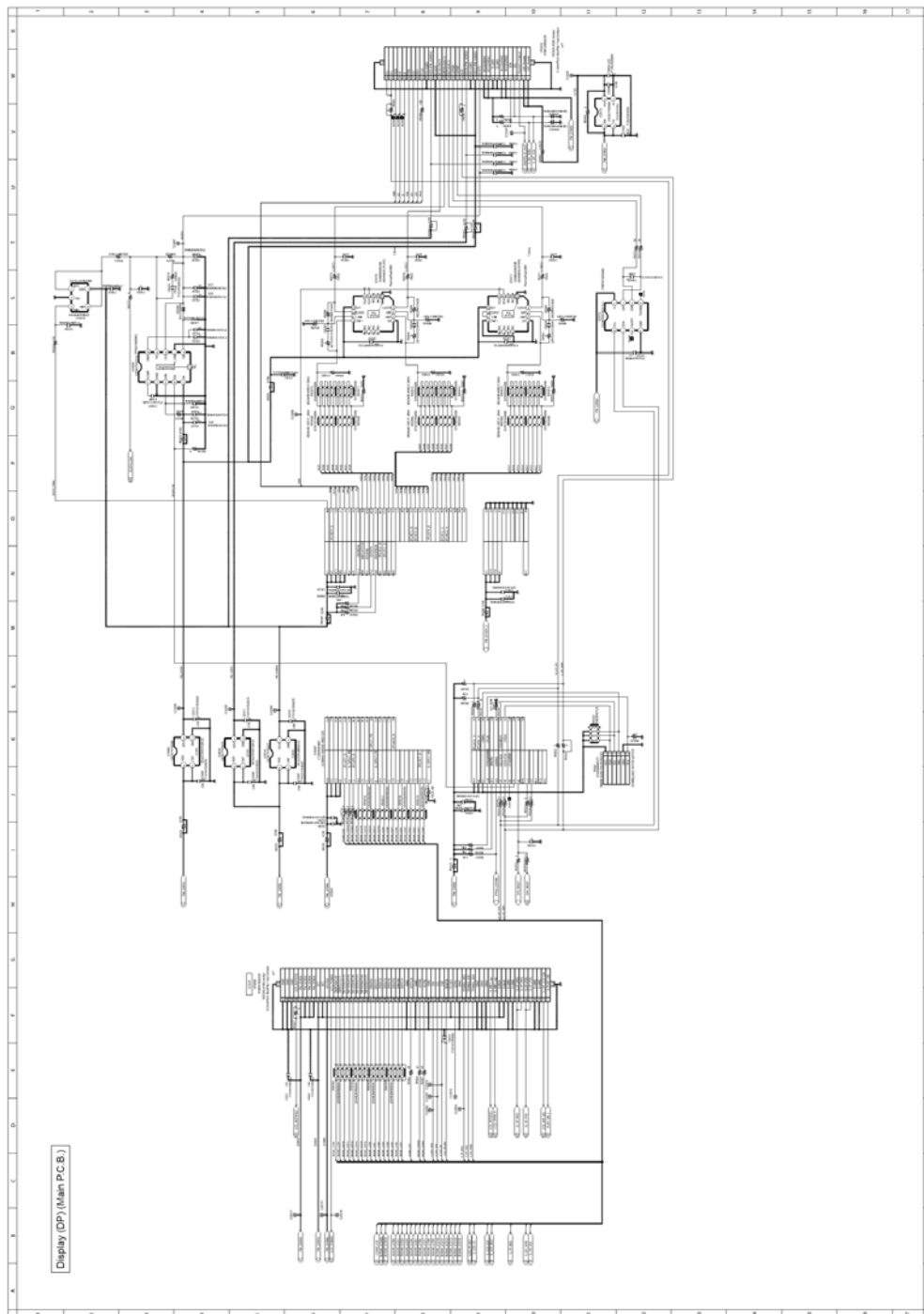
Model No. : DMC-GH3/GH3A/GH3H Syscon (SY) (Main P.C.B.)



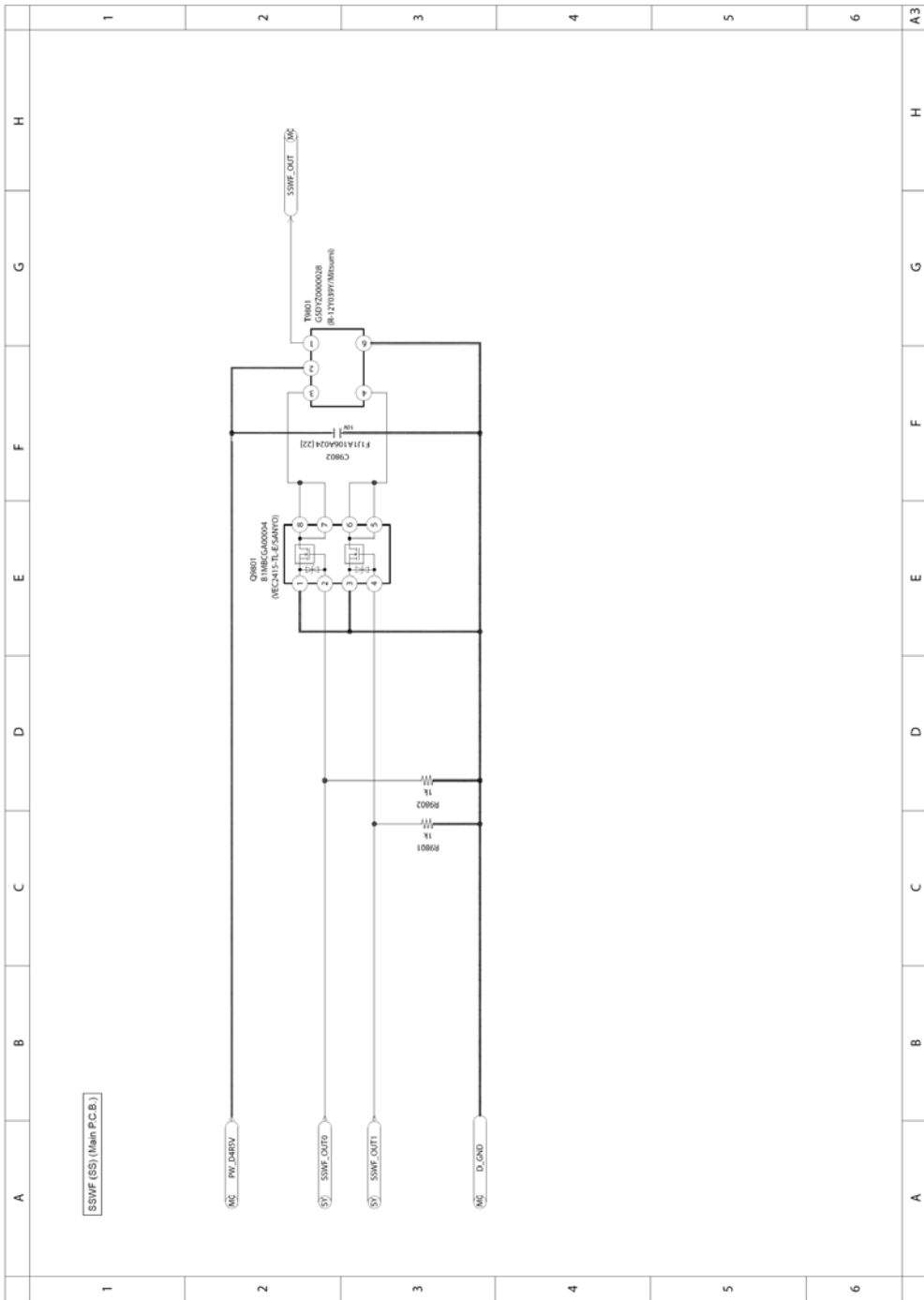
Model No. : DMC-GH3/GH3A/GH3H SD card (SD) (Main P.C.B.)



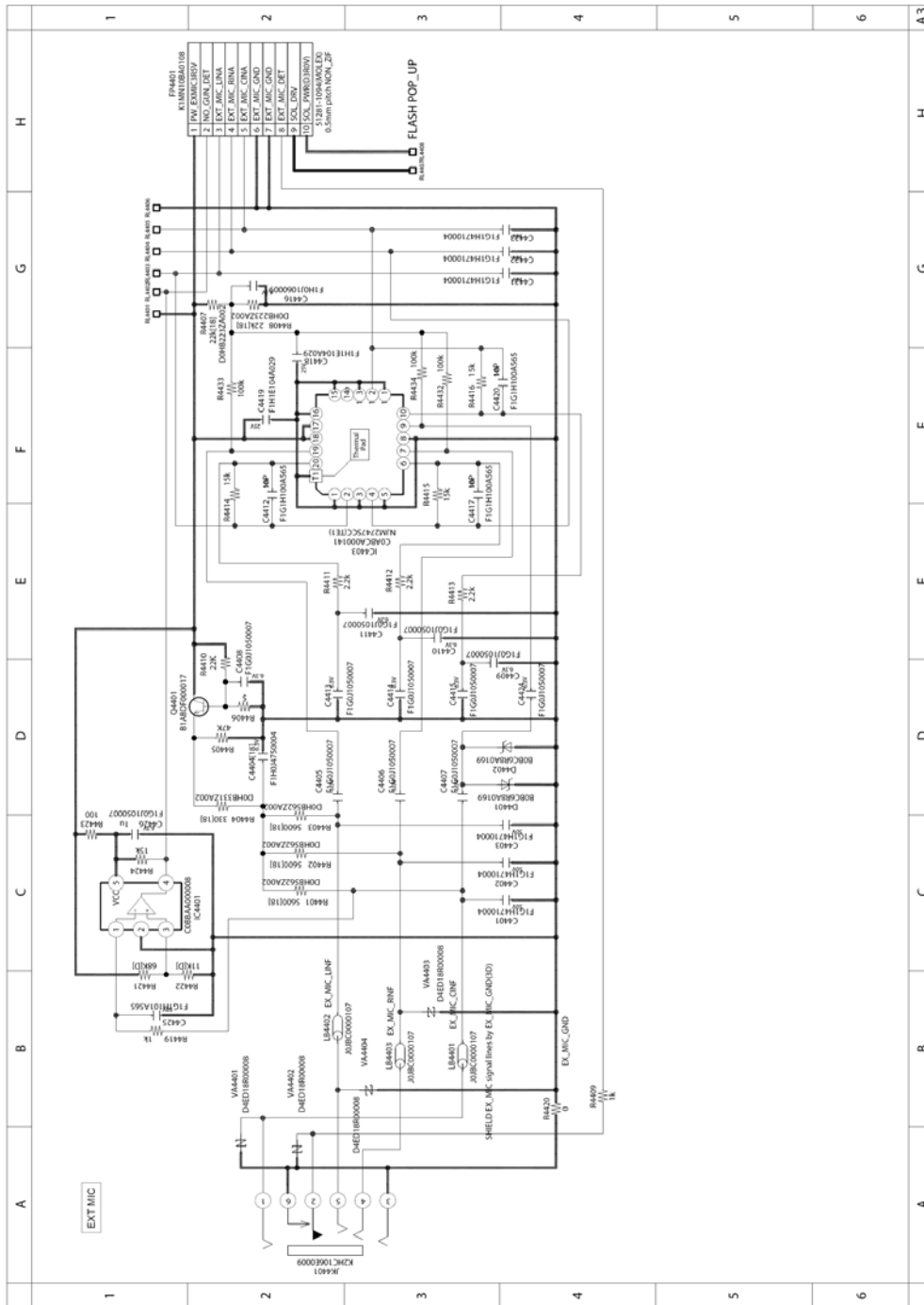
Model No. : DMC-GH3/GH3A/GH3H Display (DP) (Main P.C.B.)



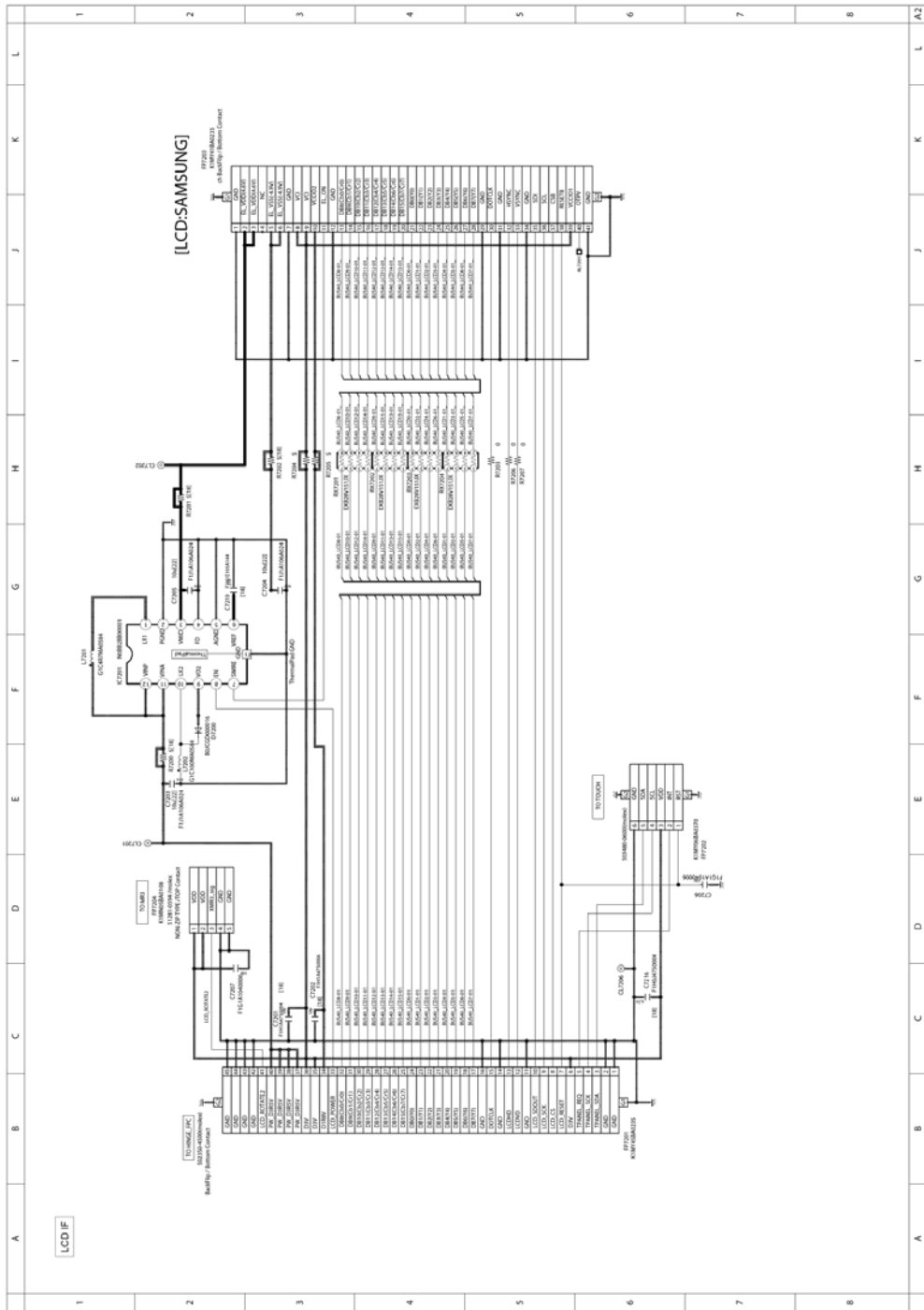
Model No. : DMC-GH3/GH3A/GH3H SSWF (SS) (Main P.C.B.)



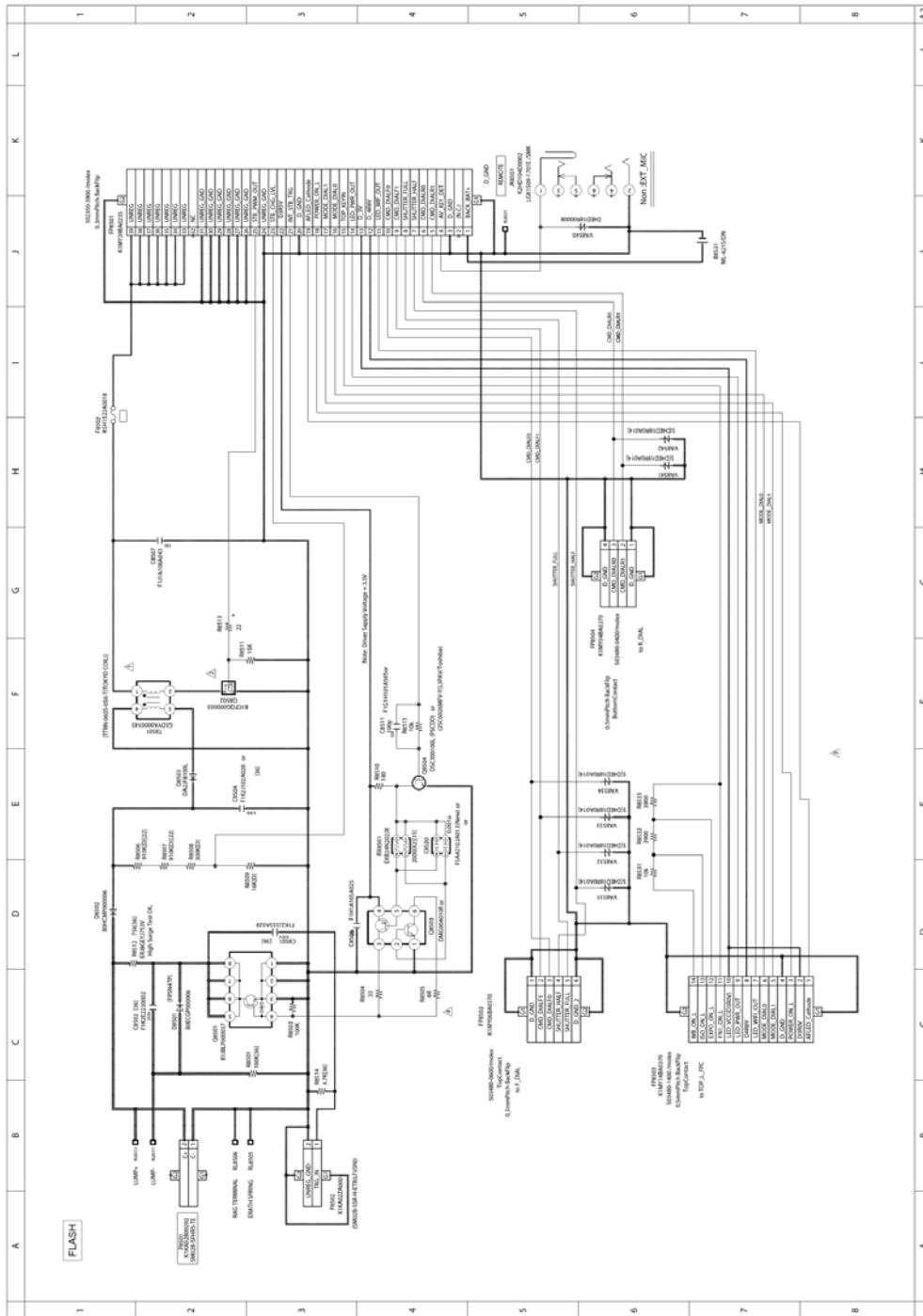
Model No. : DMC-GH3/GH3A/GH3H EXT MIC



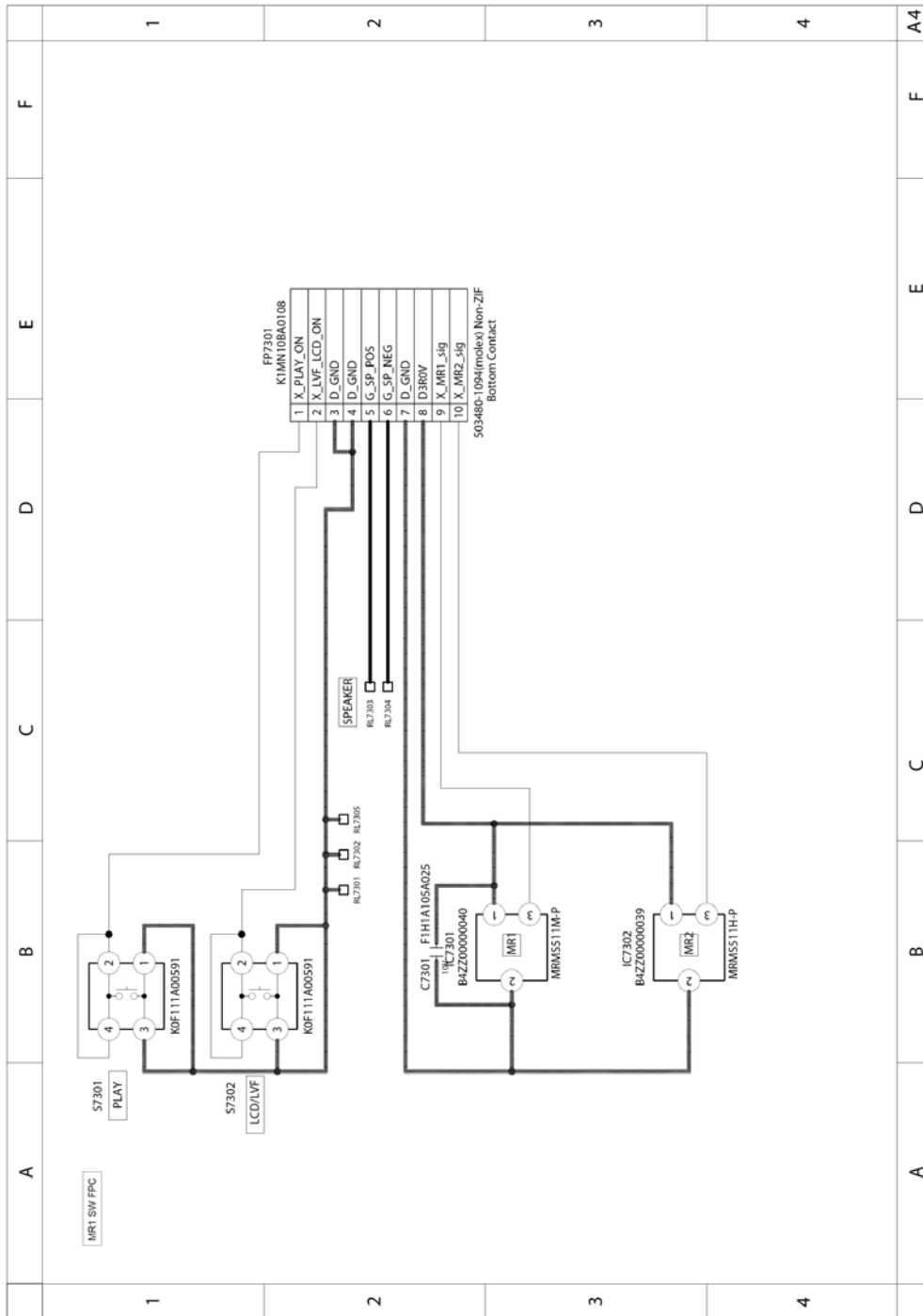
Model No. : DMC-GH3/GH3A/GH3H LCD IF



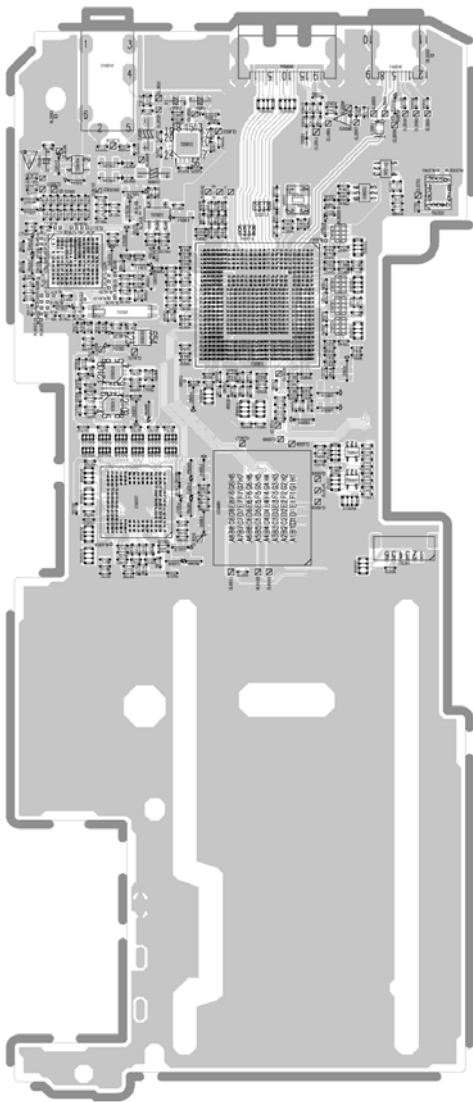
Model No. : DMC-GH3/GH3A/GH3H FLASH



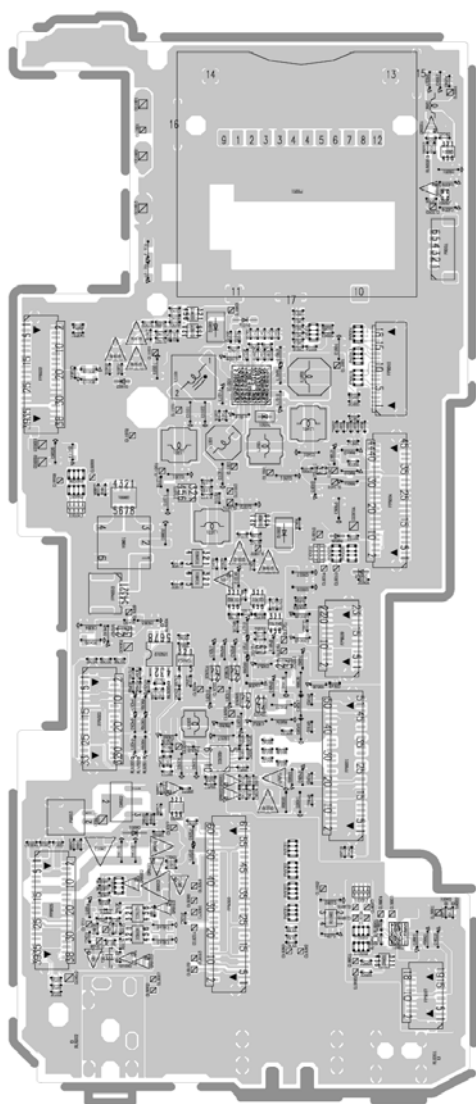
Model No. : DMC-GH3/GH3A/GH3H MR1 SW FPC



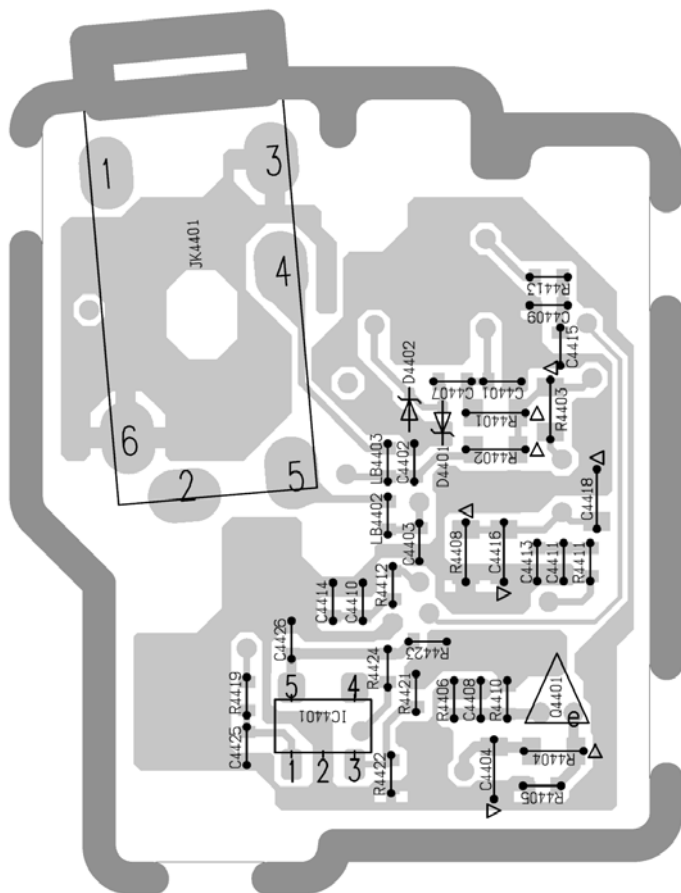
Model No. : DMC-GH3/GH3A/GH3H Main P.C.B. (Component Side)



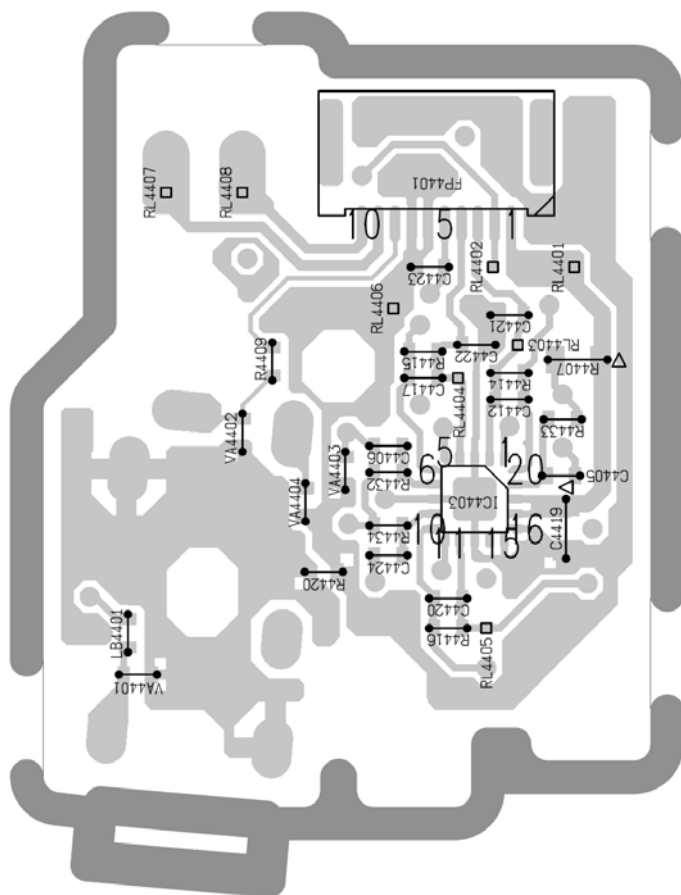
Model No. : DMC-GH3/GH3A/GH3H Main P.C.B. (Foil Side)



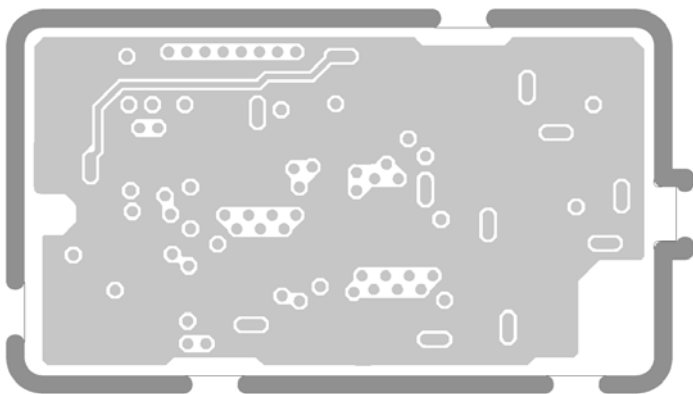
Model No. : DMC-GH3/GH3A/GH3H Ext mic P.C.B. (Component Side)



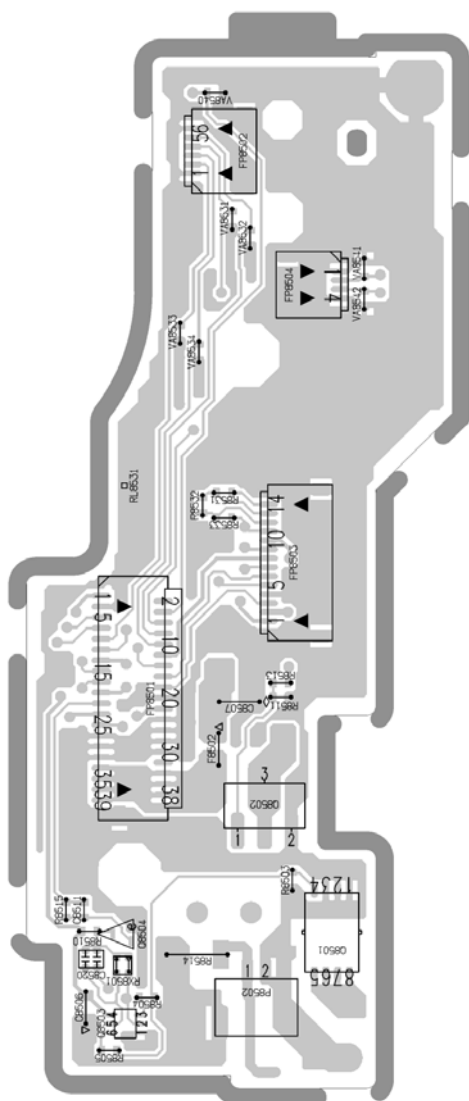
Model No. : DMC-GH3/GH3A/GH3H Ext mic P.C.B. (Foil Side)



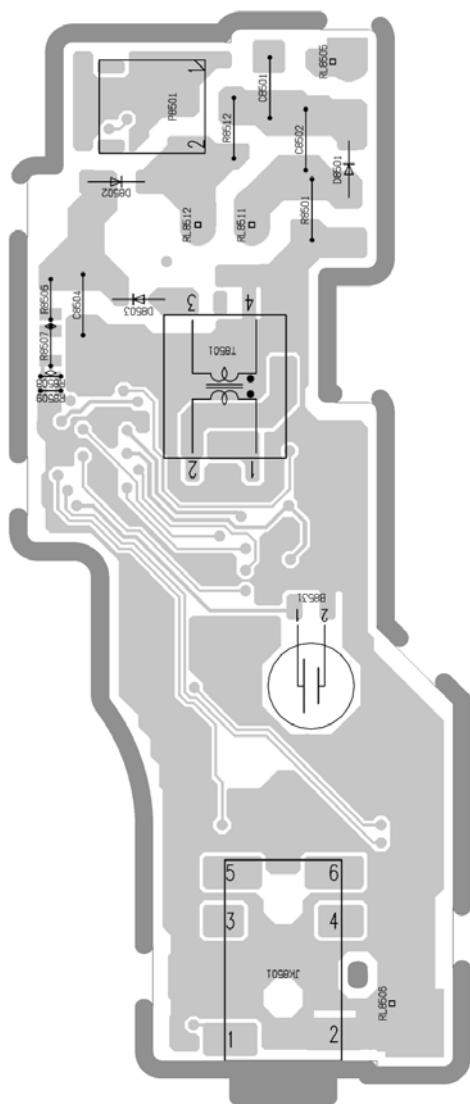
Model No. : DMC-GH3/GH3A/GH3H LCD IF P.C.B. (Component Side)



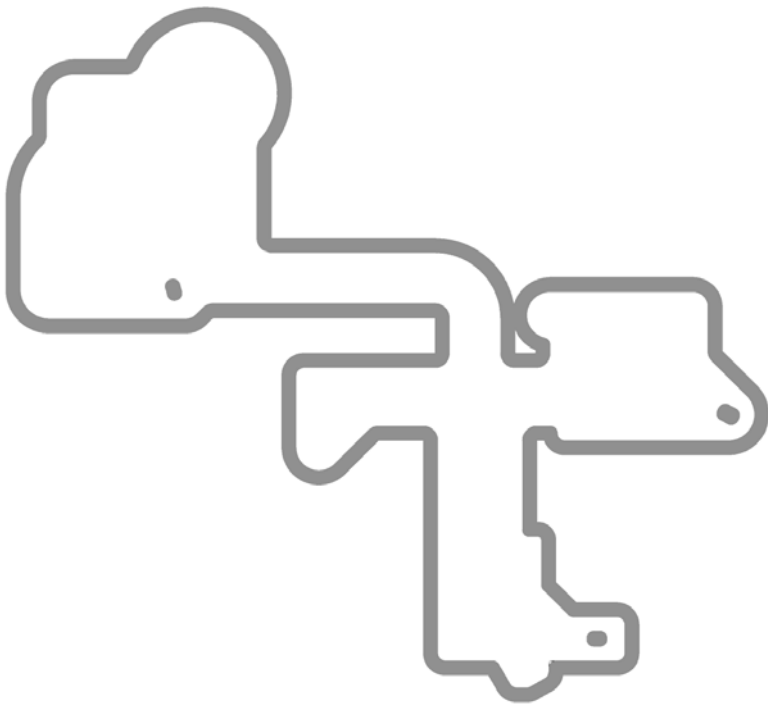
Model No. : DMC-GH3/GH3A/GH3H FLASH P.C.B. (Component Side)



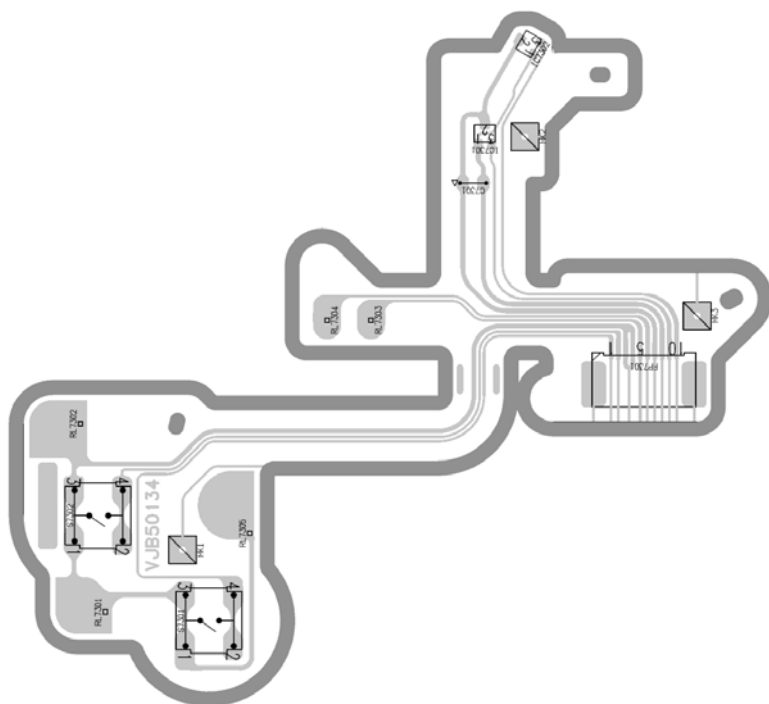
Model No. : DMC-GH3/GH3A/GH3H FLASH P.C.B. (Foil Side)



Model No. : DMC-GH3/GH3A/GH3H MR1 SW FPC P.C.B. (Component Side)



Model No. : DMC-GH3/GH3A/GH3H MR1 SW FPC P.C.B. (Foil Side)



Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C1001	FlJ1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1002	FlG1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C1003	FlH1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1004	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1005	FlH1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1006	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1007	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1008	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1009	FlH1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1010	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1011	FlH1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1012	FlH1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1013	FlH1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1051	FlH1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1052	FlH1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1071	FlJ1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1072	FlJ1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1073	FlG1H220A557	C.CAPACITOR CH 50V 22P	1	
		C1075	FlG1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C1076	FlH1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1081	FlH1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1082	FlJ1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1101	FlJ0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C1102	FlJ1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1201	FlJ1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1301	FlJ1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1401	FlJ1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1501	FlJ0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C1601	FlJ1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1701	FlG1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C1702	FlH0J4750005	C.CAPACITOR CH 6.3V 4.7U	1	
		C1901	FlG1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C1902	FlG1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C1903	FlG1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C1904	FlG1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C1905	FlG1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C2001	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C2002	FlG1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C2701	FlG1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C4401	FlG1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4402	FlG1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4403	FlG1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4404	FlH0J4750004	C.CAPACITOR CH 6.3V 4.7U	1	
		C4405	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4406	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4407	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4408	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4409	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4410	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4411	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4412	FlG1H100A565	C.CAPACITOR CH 50V 10P	1	
		C4413	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4414	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4415	FlG0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4416	FlH0J1060009	C.CAPACITOR CH 6.3V 10U	1	
		C4417	FlG1H100A565	C.CAPACITOR CH 50V 10P	1	
		C4418	FlH1E104A029	C.CAPACITOR CH 25V 0.1U	1	
		C4419	FlH1E104A029	C.CAPACITOR CH 25V 0.1U	1	
		C4420	FlG1H100A565	C.CAPACITOR CH 50V 10P	1	
		C4421	FlG1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4422	FlG1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4423	FlG1H4710004	C.CAPACITOR CH 50V 470P	1	

Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C4424	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4425	F1G1H101A565	C.CAPACITOR CH 50V 100P	1	
		C4426	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4501	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C4502	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4503	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C4504	F3E0J106A026	CAPACITOR	1	
		C4505	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C4506	F3F0J107A087	CAPACITOR	1	
		C4507	F3E0J106A026	CAPACITOR	1	
		C4508	F3F0J107A087	CAPACITOR	1	
		C4509	F1H0J1060009	C.CAPACITOR CH 6.3V 10U	1	
		C6001	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6002	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C6003	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6004	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C6005	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C6006	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C6007	F1G1H310003	C.CAPACITOR CH 50V 330P	1	
		C6009	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6010	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6011	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6012	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6013	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6014	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C6015	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6016	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6018	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6020	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6021	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6022	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6023	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6024	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6025	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6027	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6029	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6030	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6031	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C6032	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6033	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6034	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6035	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C6036	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6037	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6038	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6041	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6042	F1G1H100A565	C.CAPACITOR CH 50V 10P	1	
		C6043	F1G1H100A565	C.CAPACITOR CH 50V 10P	1	
		C6047	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6051	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6053	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C6054	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6055	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C6056	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6057	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C7201	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C7202	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C7203	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C7204	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C7205	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C7206	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C7207	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	

Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C7216	F1H0J4750004	C.CAPACITOR CH 6.3V 4.7U	1	
		C7219	F1H1E105A144	C.CAPACITOR CH 25V 1U	1	
		C8001	F1G1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C8002	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C8501	F1K2J333A029	C.CAPACITOR 630V 0.033U	1	
		C8502	F1K2E2230002	C.CAPACITOR 250V 0.022U	1	
		C8504	F1K2J102A028	C.CAPACITOR 630V 1000P	1	
		C8506	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C8507	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C8511	F1G1H101A565	C.CAPACITOR CH 50V 100P	1	
		C8520	F5A42102A013	CHIP CAPACITOR	1	
		C8602	F1G1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C9001	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9002	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9003	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9004	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9005	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9006	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9007	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9008	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9009	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9026	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9040	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9041	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9042	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9044	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9045	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9046	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9047	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9048	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9049	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9063	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9064	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9102	F1G1H101A565	C.CAPACITOR CH 50V 100P	1	
		C9103	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9105	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9107	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9109	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9110	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9111	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9113	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9115	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9116	F1G1H120A565	C.CAPACITOR CH 50V 12P	1	
		C9117	F1G1H120A565	C.CAPACITOR CH 50V 12P	1	
		C9118	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9119	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9120	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9121	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9122	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9123	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9125	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9126	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9127	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9128	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9129	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9130	F1G1H272A571	C.CAPACITOR CH 50V 2700P	1	
		C9132	F1G1H272A571	C.CAPACITOR CH 50V 2700P	1	
		C9134	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9137	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9138	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9139	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9142	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	

Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C9144	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9145	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9146	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9147	F3E0J106A026	CAPACITOR	1	
		C9149	F3E0J106A026	CAPACITOR	1	
		C9201	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9202	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C9206	F1H0J1060009	C.CAPACITOR CH 6.3V 10U	1	
		C9208	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9209	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9211	F1G1H100A565	C.CAPACITOR CH 50V 10P	1	
		C9212	F1G1H100A565	C.CAPACITOR CH 50V 10P	1	
		C9213	F1G1H100A565	C.CAPACITOR CH 50V 10P	1	
		C9214	F1G1H100A565	C.CAPACITOR CH 50V 10P	1	
		C9300	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9301	F1G1E472A086	C.CAPACITOR CH 25V 4700P	1	
		C9302	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9304	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9305	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9307	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9308	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9309	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9310	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9311	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9312	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9313	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9314	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9317	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9318	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C9319	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9320	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9321	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9322	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9323	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9324	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9325	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9327	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9330	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9331	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9332	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C9334	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9335	F1G1H100A565	C.CAPACITOR CH 50V 10P	1	
		C9337	F1G1H221A571	C.CAPACITOR CH 50V 220P	1	
		C9339	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C9340	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9342	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9344	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9346	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C9363	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C9364	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C9802	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9901	F1H0J4750005	C.CAPACITOR CH 6.3V 4.7U	1	
		C9902	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C9903	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		CX6001	F1L1E103A065	CAPACITOR NETWORKS	1	
		CX6002	F1L1E103A065	CAPACITOR NETWORKS	1	
		CX6003	F1L1E103A065	CAPACITOR NETWORKS	1	
		CX6004	F1L1E103A065	CAPACITOR NETWORKS	1	
		CX9001	F5A84104A021	CAPACITOR NETWORKS	1	
		CX9002	F5A84104A021	CAPACITOR NETWORKS	1	
		CX9003	F5A84104A021	CAPACITOR NETWORKS	1	
		D1001	B0JCGD000016	DIODE	1	E.S.D.

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		D1071	B0JDDD000007	DIODE	1	E.S.D.
		D1501	B0JCMD000066	DIODE	1	E.S.D.
		D1901	B0JCPG000032	DIODE	1	E.S.D.
		D1902	B0JCPG000032	DIODE	1	E.S.D.
		D1903	B0JCCD000003	DIODE	1	E.S.D.
		D2001	DB2S31100L	DIODE	1	E.S.D.
		D4401	B0BC6R8A0169	DIODE	1	E.S.D.
		D4402	B0BC6R8A0169	DIODE	1	E.S.D.
		D7200	B0JCGD000016	DIODE	1	E.S.D.
		D8001	B0BC8R2A0266	DIODE	1	E.S.D.
		D8003	B2ABAP000006	DIODE	1	E.S.D.
		D8501	B0ECGP000006	DIODE	1	E.S.D.
		D8502	B0HCMP000006	DIODE	1	E.S.D.
		D8503	DA2JF8100L	DIODE	1	E.S.D.
		D8602	B2BBDR000004	DIODE	1	E.S.D.
		D9001	B0BD6R800011	DIODE	1	E.S.D.
		D9002	B0JCCD000003	DIODE	1	E.S.D.
		D9003	B0BD6R800011	DIODE	1	E.S.D.
		D9004	B0JFCF000004	DIODE	1	E.S.D.
		D9005	B0JCCD000003	DIODE	1	E.S.D.
		D9300	B0JFCF000004	DIODE	1	E.S.D.
	⚠	F1002	ERBRE0R50V	FUSE 32V 0.5A	1	
	⚠	F1901	ERBRE2R50V	FUSE 32V 2.5A	1	
	⚠	F2001	K5H1522A0018	FUSE 32V 1.5A	1	
	⚠	F8502	K5H1522A0018	FUSE 32V 1.5A	1	
		FL2001	EXC28CH900U	FILTER	1	
		FL2002	EXC28CH900U	FILTER	1	
		FP4401	K1MN10BA0108	CONNECTOR 10P	1	
		FP7201	K1MY45BA0575	CONNECTOR 45P	1	
		FP7202	K1MY06BA0370	CONNECTOR 6P	1	
		FP7203	K1MY41BA0575	CONNECTOR 41P	1	
		FP7204	K1MN05BA0108	CONNECTOR 5P	1	
		FP8501	K1MY39BA0575	CONNECTOR 39P	1	
		FP8502	K1MY06BA0370	CONNECTOR 6P	1	
		FP8503	K1MY14BA0370	CONNECTOR 14P	1	
		FP8504	K1MY04BA0370	CONNECTOR 4P	1	
		FP9001	K1MY51BA0575	CONNECTOR 51P	1	
		FP9002	K1MY39BA0575	CONNECTOR 39P	1	
		FP9003	K1MN05BA0108	CONNECTOR 5P	1	
		FP9004	K1MY45BA0575	CONNECTOR 45P	1	
		FP9005	K1MY39BA0575	CONNECTOR 39P	1	
		FP9007	K1MY19BA0235	CONNECTOR 19P	1	
		FP9009	K1MY23BA0575	CONNECTOR 23P	1	
		FP9010	K1MY18BA0370	CONNECTOR 18P	1	
		FP9300	K1MY61BA0575	CONNECTOR 61P	1	
		FP9302	K1MY33BA0235	CONNECTOR 33P	1	
		IC1001	C1ZBZ0004634	IC	1	E.S.D.
		IC1051	C0DBGYY02024	IC	1	E.S.D.
		IC1071	C0DBAYY01512	IC	1	E.S.D.
		IC1081	C0DBGYY02122	IC	1	E.S.D.
		IC1901	C0JBAA000393	IC	1	E.S.D.
		IC1902	C0JBAA000393	IC	1	E.S.D.
		IC2701	L2EZ00000004	IC	1	E.S.D.
		IC2702	C0JBAA000321	IC	1	E.S.D.
		IC4401	C0BBAA000008	IC	1	E.S.D.
		IC4403	C0ABCA000141	IC	1	E.S.D.
		IC4501	C1AB00003981	IC	1	E.S.D.
		IC6001	VSG1015	IC	1	E.S.D. [SPC]
		IC6003	C0JBAB001059	IC	1	E.S.D.
		IC7201	N0BB2BB00001	IC	1	E.S.D.
		IC9001	C0DBGYY02518	IC	1	E.S.D.
		IC9034	C0CBCYY00070	IC	1	E.S.D.

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		IC9101	C0BBAA000008	IC	1	E.S.D.
		IC9102	C1AB00003646	IC	1	E.S.D.
		IC9103	C0DBGYY02368	IC	1	E.S.D.
		IC9104	C0DBGYY02170	IC	1	E.S.D.
		IC9105	C0JBAR000626	IC	1	E.S.D.
		IC9106	C0JBAR000626	IC	1	E.S.D.
		IC9201	C0DBGYY00779	IC	1	E.S.D.
		IC9305	C0CBCYY00086	IC	1	E.S.D.
		IC9307	C1ZBZ0004831	IC	1	E.S.D.
		IC9309	C0DBAYY01514	IC	1	E.S.D.
		IC9310	C0ABBA000298	IC	1	E.S.D.
		IC9311	C0ABBA000298	IC	1	E.S.D.
		IC9312	C0ZBZ0002037	IC	1	E.S.D.
		IC9313	C0ABGA000104	IC	1	E.S.D.
		IC9314	C0CBCYY00077	IC	1	E.S.D.
		IC9315	C0CBCYY00086	IC	1	E.S.D.
		IC9901	AN41400A-PB	IC	1	E.S.D.
		IC9999	RS10373	IC	1	E.S.D.
		JK2001	K1FB108E0008	JACK, AV OUT/DIGITAL	1	
		JK2003	K2HC106E0009	JACK, HEADPHONES	1	
		JK2004	K1FAL19E0022	JACK, HDMI	1	
		JK4401	K2HC106E0009	JACK, EXT MIC	1	
		JK8501	K2HD104D0002	JACK, REMOTE	1	
		L1071	G1C100MA0461	CHIP INDUCTOR 10UH	1	
		L1101	G1C4R7MA0024	CHIP INDUCTOR 4.7UH	1	
		L1201	G1C150MA0477	CHIP INDUCTOR 15UH	1	
		L1301	G1C100MA0328	CHIP INDUCTOR 10UH	1	
		L1401	G1C150MA0477	CHIP INDUCTOR 15UH	1	
		L1501	G1C4R7MA0477	CHIP INDUCTOR 4.7UH	1	
		L1601	G1C4R7MA0450	CHIP INDUCTOR 4.7UH	1	
		L2001	J0ZZB0000142	CHIP INDUCTOR	1	
		L7201	G1C4R7MA0584	CHIP INDUCTOR 4.7UH	1	
		L7202	G1C100MA0584	CHIP INDUCTOR 10UH	1	
		L9201	G1C1R0MA0172	CHIP INDUCTOR 1UH	1	
		L9300	G1C4R7MA0392	CHIP INDUCTOR 4.7UH	1	
		LB1901	J0JGC0000038	FILTER	1	
		LB2021	J0JBC0000107	FILTER	1	
		LB2022	J0JBC0000107	FILTER	1	
		LB2023	J0JBC0000107	FILTER	1	
		LB2024	J0JBC0000107	FILTER	1	
		LB4401	J0JBC0000107	FILTER	1	
		LB4402	J0JBC0000107	FILTER	1	
		LB4403	J0JBC0000107	FILTER	1	
		LB9001	J0JCC0000408	FILTER	1	
		LB9002	J0JCC0000408	FILTER	1	
		LB9003	J0JCC0000408	FILTER	1	
		LB9004	J0JCC0000408	FILTER	1	
		LB9005	J0JCC0000408	FILTER	1	
		LB9006	J0JCC0000408	FILTER	1	
		LB9007	J0JCC0000408	FILTER	1	
		LB9008	J0JCC0000408	FILTER	1	
		LB9009	J0JHC0000032	FILTER	1	
		LB9010	J0JHC0000032	FILTER	1	
		P8501	K1KA02B00292	CONNECTOR 2P	1	
		P8502	K1KA02ZA0001	CONNECTOR 2P	1	
		P9003	K1KA02BA0014	CONNECTOR 2P	1	
		P9201	K1NA09E00153	SD CARD CONNECTOR	1	
		Q1701	B1HDCFA00004	TRANSISTOR	1	E.S.D.
		Q1702	B1HFCFA00005	TRANSISTOR	1	E.S.D.
		Q1901	FK3503010L	TRANSISTOR	1	E.S.D.
		Q1903	B1CHPB000008	TRANSISTOR	1	E.S.D.
		Q1905	FK3503010L	TRANSISTOR	1	E.S.D.

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		Q1906	FK3503010L	TRANSISTOR	1	E.S.D.
		Q1907	B1CHPB000008	TRANSISTOR	1	E.S.D.
		Q1908	B1CHPB000008	TRANSISTOR	1	E.S.D.
		Q1909	FK3503010L	TRANSISTOR	1	E.S.D.
		Q1910	FK3503010L	TRANSISTOR	1	E.S.D.
		Q4401	B1ABDF000017	TRANSISTOR	1	E.S.D.
		Q8001	FK3503010L	TRANSISTOR	1	E.S.D.
		Q8002	B1ABCF000103	TRANSISTOR	1	E.S.D.
		Q8501	B1JBLP000037	TRANSISTOR	1	E.S.D.
		Q8502	B1CFQG000003	TRANSISTOR	1	E.S.D.
		Q8503	DMG904010R	TRANSISTOR	1	E.S.D.
		Q8504	DSC300100L	TRANSISTOR	1	E.S.D.
		Q9001	B1CFQC000004	TRANSISTOR	1	E.S.D.
		Q9002	B1CFQC000004	TRANSISTOR	1	E.S.D.
		Q9003	B1CFJD000006	TRANSISTOR	1	E.S.D.
		Q9101	B1ABDF000017	TRANSISTOR	1	E.S.D.
		Q9102	B1ABDF000017	TRANSISTOR	1	E.S.D.
		Q9201	B1CHMB000007	TRANSISTOR	1	E.S.D.
		Q9801	B1MBCGA00004	TRANSISTOR	1	E.S.D.
		Q9901	B1HBCFA00034	TRANSISTOR	1	E.S.D.
		QR1701	B1GKCFGN0003	TRANSISTOR-RESISTOR	1	E.S.D.
		QR2001	B1GBCFNL0020	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8001	B1GBCFJJ0064	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8002	B1GBCFJJ0064	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8601	B1GKCFEN0001	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8602	B1GBCFGA0030	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9001	B1GBCFNN0015	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9002	B1GBCFNN0015	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9101	B1GDCFNN0033	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9102	B1GBCFNL0020	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9103	B1GBCFNL0020	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9201	B1GBCFJJ0064	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9202	B1GDCFGN0024	TRANSISTOR-RESISTOR	1	E.S.D.
		R1001	ERJ2RHD473X	M.RESISTOR CH 1/16W 47K	1	
		R1002	D0GA102JA023	RESISTOR	1	
		R1003	D0GA102JA023	RESISTOR	1	
		R1004	D0GA102JA023	RESISTOR	1	
		R1051	D0GA103JA023	RESISTOR	1	
		R1073	ERJ2RKD364X	M.RESISTOR CH 1/16W 360K	1	
		R1074	ERJ2RKD184X	M.RESISTOR CH 1/16W 180K	1	
		R1701	ERJ2RHD512X	M.RESISTOR CH 1/16W 5.1K	1	
		R1702	ERJ2RKF1541X	M.RESISTOR CH 1/16W 1.54K	1	
		R1703	D0GA332JA023	RESISTOR	1	
		R1704	D0GA393JA023	RESISTOR	1	
		R1705	D0GA393JA023	RESISTOR	1	
		R1706	D0GA393JA023	RESISTOR	1	
		R1901	ERJ2RKD684X	M.RESISTOR CH 1/16W 680K	1	
		R1902	ERJ2RKD304X	M.RESISTOR CH 1/16W 300K	1	
		R1904	D0GA105JA023	RESISTOR	1	
		R1905	D0GA474JA023	RESISTOR	1	
		R1907	D0GA474JA023	RESISTOR	1	
		R1909	D0GA473JA023	RESISTOR	1	
		R1910	D0GA105JA023	RESISTOR	1	
		R1918	D0GA104JA023	RESISTOR	1	
		R1919	D0GA474JA023	RESISTOR	1	
		R1920	D0GA474JA023	RESISTOR	1	
		R1921	D0GA104JA023	RESISTOR	1	
		R1924	D0GA104JA023	RESISTOR	1	
		R1925	D0GA104JA023	RESISTOR	1	
		R2001	D0GA102JA023	RESISTOR	1	
		R2002	D0GA561JA023	RESISTOR	1	
		R2004	D0GA273JA023	RESISTOR	1	

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R2008	D0GA750JA023	RESISTOR	1	
		R2009	D0GA682JA023	RESISTOR	1	
		R2010	D0GA102JA023	RESISTOR	1	
		R2017	D0GA202JA023	RESISTOR	1	
		R2018	D0GA202JA023	RESISTOR	1	
		R4401	D0HB562ZA002	RESISTOR	1	
		R4402	D0HB562ZA002	RESISTOR	1	
		R4403	D0HB562ZA002	RESISTOR	1	
		R4404	D0HB331ZA002	RESISTOR	1	
		R4405	D0GA473JA023	RESISTOR	1	
		R4407	D0HB223ZA002	RESISTOR	1	
		R4408	D0HB223ZA002	RESISTOR	1	
		R4409	D0GA102JA023	RESISTOR	1	
		R4410	D0GA223JA023	RESISTOR	1	
		R4411	D0GA222JA023	RESISTOR	1	
		R4412	D0GA222JA023	RESISTOR	1	
		R4413	D0GA222JA023	RESISTOR	1	
		R4414	D0GA153JA023	RESISTOR	1	
		R4415	D0GA153JA023	RESISTOR	1	
		R4416	D0GA153JA023	RESISTOR	1	
		R4419	D0GA102JA023	RESISTOR	1	
		R4420	D0GAR00J0005	RESISTOR	1	
		R4421	ERJ2RHD683X	M.RESISTOR CH 1/16W 68K	1	
		R4422	ERJ2RHD113X	M.RESISTOR CH 1/16W 11K	1	
		R4423	D0GA101JA023	RESISTOR	1	
		R4424	D0GA153JA023	RESISTOR	1	
		R4432	D0GA104JA023	RESISTOR	1	
		R4433	D0GA104JA023	RESISTOR	1	
		R4434	D0GA104JA023	RESISTOR	1	
		R4501	D0GA100JA023	RESISTOR	1	
		R4502	D0GA100JA023	RESISTOR	1	
		R4508	D0GA100JA023	RESISTOR	1	
		R6001	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6002	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6003	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6004	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6005	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6006	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6007	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6008	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6009	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6010	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6011	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6012	ERJ2RHD561X	M.RESISTOR CH 1/16W 560	1	
		R6013	ERJ2RHD222X	M.RESISTOR CH 1/16W 2.2K	1	
		R6014	ERJ2RHD122X	M.RESISTOR CH 1/16W 1.2K	1	
		R6015	ERJ2RKF1183X	M.RESISTOR CH 1/16W 118K	1	
		R6016	ERJ2RKF2800X	M.RESISTOR CH 1/16W 28	1	
		R6017	ERJ2RHD241X	M.RESISTOR CH 1/16W 240	1	
		R6022	D0GA103JA023	RESISTOR	1	
		R6023	ERJ2RKF6201X	M.RESISTOR CH 1/16W 6.2K	1	
		R6025	D0GA681JA023	RESISTOR	1	
		R6027	D0GA105JA023	RESISTOR	1	
		R6029	D0GA473JA023	RESISTOR	1	
		R6030	D0GA470JA023	RESISTOR	1	
		R6031	D0GA473JA023	RESISTOR	1	
		R6032	ERJ2RHD103X	M.RESISTOR CH 1/16W 10K	1	
		R6034	D0GA101JA023	RESISTOR	1	
		R6035	D0GA102JA023	RESISTOR	1	EG, EC, EF, EB
		R6036	ERJ2RKF1000X	M.RESISTOR CH 1/16W 1K	1	
		R6037	ERJ2RKF1000X	M.RESISTOR CH 1/16W 1K	1	
		R6038	ERJ2RKF1000X	M.RESISTOR CH 1/16W 1K	1	

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R6039	ERJ2RKF1000X	M.RESISTOR CH 1/16W 1K	1	
		R6040	ERJ2RKF1000X	M.RESISTOR CH 1/16W 1K	1	
		R6041	D0GA181JA023	RESISTOR	1	
		R6043	D0GA150JA023	RESISTOR	1	
		R6063	D0GA150JA023	RESISTOR	1	
		R6072	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6073	ERJ2RHD511X	M.RESISTOR CH 1/16W 510	1	
		R6074	ERJ2RKF2800X	M.RESISTOR CH 1/16W 28	1	
		R6075	ERJ2RHD241X	M.RESISTOR CH 1/16W 240	1	
		R6078	D0GA222JA023	RESISTOR	1	
		R6079	D0GA222JA023	RESISTOR	1	
		R6080	D0GA103JA023	RESISTOR	1	
		R7203	D0GAR00J0005	RESISTOR	1	
		R7206	D0GAR00J0005	RESISTOR	1	
		R7207	D0GAR00J0005	RESISTOR	1	
		R8001	D0GA223JA023	RESISTOR	1	
		R8002	D0GA223JA023	RESISTOR	1	
		R8004	D0GA103JA023	RESISTOR	1	
		R8007	D0GA102JA023	RESISTOR	1	
		R8009	ERJ6GEYJ106V	M.RESISTOR CH 1/10W 10M	1	
		R8010	ERJ6GEYJ106V	M.RESISTOR CH 1/10W 10M	1	
		R8501	ERJ8GEYJ104V	M.RESISTOR CH 1/4W 100K	1	
		R8503	D0GA104JA023	RESISTOR	1	
		R8504	D0GA330JA023	RESISTOR	1	
		R8505	D0GA680JA023	RESISTOR	1	
		R8506	ERJ6RED914V	RESISTOR	1	
		R8507	ERJ6RED914V	RESISTOR	1	
		R8508	ERJ2RKD304X	M.RESISTOR CH 1/16W 300K	1	
		R8509	ERJ2RHD163X	M.RESISTOR CH 1/16W 16K	1	
		R8510	D0GA181JA023	RESISTOR	1	
		R8511	D0GA153JA023	RESISTOR	1	
		R8512	ERJ8GEYJ753V	M.RESISTOR CH 1/4W 75K	1	
		R8513	D0GA220JA023	RESISTOR	1	
		R8514	ERJ8GEYJ472V	M.RESISTOR CH 1/4W 4.7K	1	
		R8515	D0GA103JA023	RESISTOR	1	
		R8531	D0GA103JA023	RESISTOR	1	
		R8532	D0GA392JA023	RESISTOR	1	
		R8533	D0GA392JA023	RESISTOR	1	
		R8601	D0GA103JA023	RESISTOR	1	
		R8602	D0GA102JA023	RESISTOR	1	
		R8603	D0GA330JA023	RESISTOR	1	
		R8604	D0GA221JA023	RESISTOR	1	
		R9001	D0GA103JA023	RESISTOR	1	
		R9002	ERJ2RKD304X	M.RESISTOR CH 1/16W 300K	1	
		R9003	D0GA473JA023	RESISTOR	1	
		R9004	D0GA473JA023	RESISTOR	1	
		R9005	D0GA474JA023	RESISTOR	1	
		R9006	D0GA104JA023	RESISTOR	1	
		R9016	D0GA474JA023	RESISTOR	1	
		R9017	D0GB8R2JA065	RESISTOR	1	
		R9019	D0GB8R2JA065	RESISTOR	1	
		R9023	D0GA105JA023	RESISTOR	1	
		R9024	D0GA392JA023	RESISTOR	1	
		R9025	D0GA392JA023	RESISTOR	1	
		R9026	D0GA103JA023	RESISTOR	1	
		R9031	D0GAR00J0005	RESISTOR	1	PU, P, PC, EE, GC, GH, GT, GK, GN, GD
		R9032	D0GAR00J0005	RESISTOR	1	EG, EC, EF, EB
		R9054	D0GA472JA023	RESISTOR	1	
		R9103	ERJ2RKD684X	M.RESISTOR CH 1/16W 680K	1	
		R9104	ERJ2RKD394X	M.RESISTOR CH 1/16W 390K	1	
		R9106	D0GA102JA023	RESISTOR	1	
		R9111	ERJ2RHD223X	M.RESISTOR CH 1/16W 22K	1	

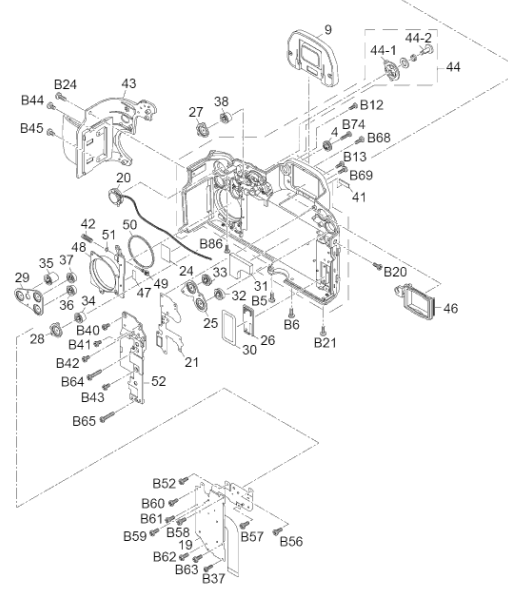
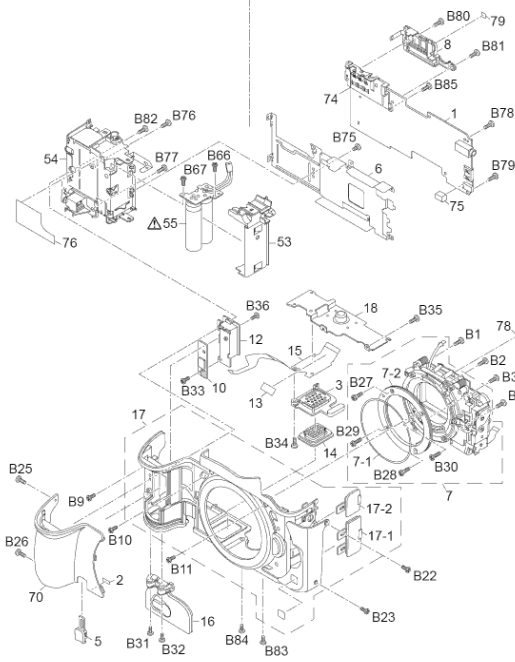
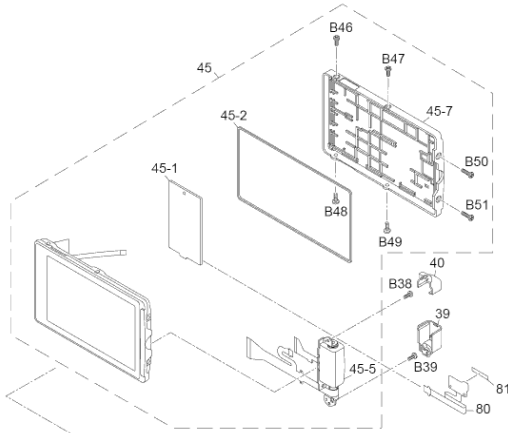
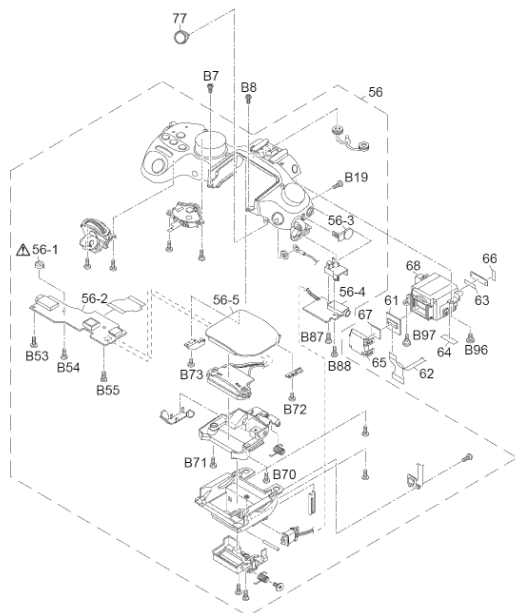
Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R9112	ERJ2RKD114X	M.RESISTOR CH 1/16W 110K	1	
		R9114	D0GA332JA023	RESISTOR	1	
		R9115	D0GA101JA023	RESISTOR	1	
		R9117	D0GA151JA023	RESISTOR	1	
		R9118	D0GA471JA023	RESISTOR	1	
		R9119	D0GA431JA023	RESISTOR	1	
		R9123	D0GA103JA023	RESISTOR	1	
		R9130	ERJ2RKD105X	M.RESISTOR CH 1/16W 1M	1	
		R9131	ERJ2RKD244X	M.RESISTOR CH 1/16W 240K	1	
		R9132	D0GA472JA023	RESISTOR	1	
		R9133	D0GA472JA023	RESISTOR	1	
		R9134	D0GA104JA023	RESISTOR	1	
		R9136	D0GA330JA023	RESISTOR	1	
		R9137	D0GA152JA023	RESISTOR	1	
		R9138	D0GA152JA023	RESISTOR	1	
		R9139	D0GA102JA023	RESISTOR	1	
		R9141	D0GA102JA023	RESISTOR	1	
		R9142	D0GA102JA023	RESISTOR	1	
		R9143	D0GA822JA023	RESISTOR	1	
		R9144	D0GA330JA023	RESISTOR	1	
		R9145	D0GA330JA023	RESISTOR	1	
		R9146	D0GA822JA023	RESISTOR	1	
		R9147	ERA3YED392V	M.RESISTOR 1/16W 3.9K	1	
		R9148	ERA3YED392V	M.RESISTOR 1/16W 3.9K	1	
		R9149	D0GA470JA023	RESISTOR	1	
		R9150	ERJ2RKD684X	M.RESISTOR CH 1/16W 680K	1	
		R9151	D0GA103JA023	RESISTOR	1	
		R9152	ERJ2RKD304X	M.RESISTOR CH 1/16W 300K	1	
		R9201	D0GA104JA023	RESISTOR	1	
		R9202	D0GA103JA023	RESISTOR	1	
		R9204	D0GA103JA023	RESISTOR	1	
		R9304	ERJ2RKF1780X	M.RESISTOR CH 1/16W 178	1	
		R9305	ERJ2RKF1780X	M.RESISTOR CH 1/16W 178	1	
		R9306	ERJ2RKF3160X	M.RESISTOR CH 1/16W 316	1	
		R9308	ERJ2RKF3160X	M.RESISTOR CH 1/16W 316	1	
		R9309	ERJ2RKF3160X	M.RESISTOR CH 1/16W 316	1	
		R9310	ERJ2RHD104X	M.RESISTOR CH 1/16W 100K	1	
		R9311	ERJ2RKD100X	M.RESISTOR CH 1/16W 10	1	
		R9312	ERJ2RKF7502X	M.RESISTOR CH 1/16W 75K	1	
		R9313	D0GA560JA023	RESISTOR	1	
		R9314	D0GA560JA023	RESISTOR	1	
		R9317	D0GA332JA023	RESISTOR	1	
		R9318	D0GA103JA023	RESISTOR	1	
		R9321	D0GA103JA023	RESISTOR	1	
		R9334	D0GA222JA023	RESISTOR	1	
		R9340	D0GA332JA023	RESISTOR	1	
		R9347	D0GA103JA023	RESISTOR	1	
		R9348	D0GA103JA023	RESISTOR	1	
		R9349	D0GA103JA023	RESISTOR	1	
		R9351	ERJ2RKD100X	M.RESISTOR CH 1/16W 10	1	
		R9353	ERJ2RHD102X	M.RESISTOR CH 1/16W 1K	1	
		R9354	ERJ2RHD102X	M.RESISTOR CH 1/16W 1K	1	
		R9355	ERJ2RHD102X	M.RESISTOR CH 1/16W 1K	1	
		R9359	ERJ2RHD271X	M.RESISTOR CH 1/16W 270	1	
		R9360	ERJ2RHD271X	M.RESISTOR CH 1/16W 270	1	
		R9361	ERJ2RHD271X	M.RESISTOR CH 1/16W 270	1	
		R9363	D0GA103JA023	RESISTOR	1	
		R9365	D0GA680JA023	RESISTOR	1	
		R9366	D0GA470JA023	RESISTOR	1	
		R9367	D0GA680JA023	RESISTOR	1	
		R9368	ERJ2RKF1780X	M.RESISTOR CH 1/16W 178	1	
		R9375	ERJ2RKD100X	M.RESISTOR CH 1/16W 10	1	

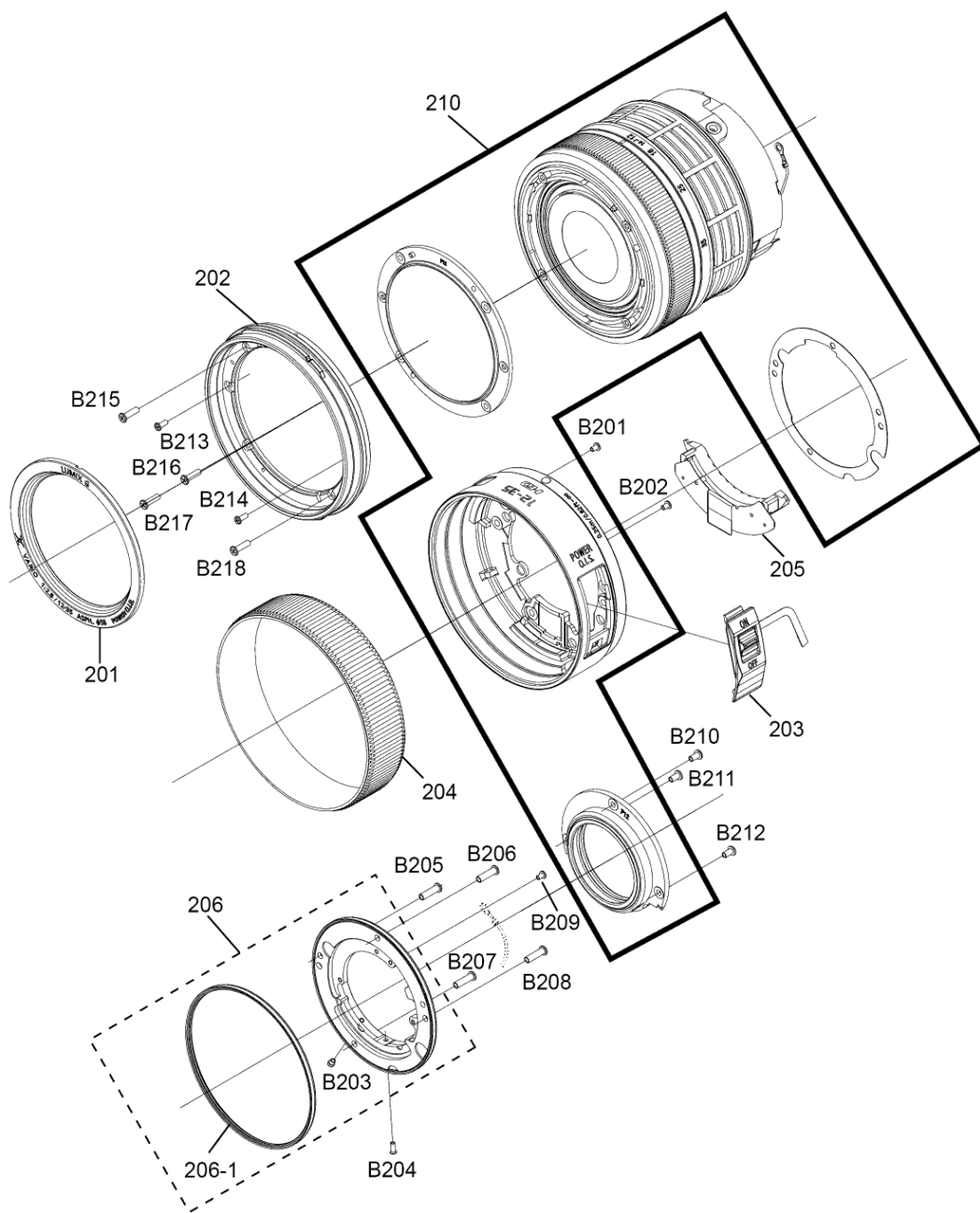
Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R9376	ERJ2RKD100X	M.RESISTOR CH 1/16W 10	1	
		R9379	ERJ2RHD104X	M.RESISTOR CH 1/16W 100K	1	
		R9388	D0GA101JA023	RESISTOR	1	
		R9495	ERJ6GEYJ6R8V	M.RESISTOR CH 1/10W 6.8	1	
		R9801	D0GA102JA023	RESISTOR	1	
		R9802	D0GA102JA023	RESISTOR	1	
		R9902	D0GA182JA023	RESISTOR	1	
		R9905	D0GA182JA023	RESISTOR	1	
		RX6001	D1H81034A042	RESISTOR NETWORKS	1	
		RX6002	D1H81034A042	RESISTOR NETWORKS	1	
		RX6003	D1H81034A042	RESISTOR NETWORKS	1	
		RX6004	D1H84734A042	RESISTOR NETWORKS	1	
		RX6005	D1H81504A042	RESISTOR NETWORKS	1	
		RX6006	EXB28V181JX	RESISTOR NETWORKS	1	
		RX7201	D1H81514A042	RESISTOR NETWORKS	1	
		RX7202	D1H81514A042	RESISTOR NETWORKS	1	
		RX7203	D1H81514A042	RESISTOR NETWORKS	1	
		RX7204	D1H81514A042	RESISTOR NETWORKS	1	
		RX8001	D1H83314A042	RESISTOR NETWORKS	1	
		RX8501	EXB24N202JX	RESISTOR NETWORKS	1	
		RX9001	D1H81014A042	RESISTOR NETWORKS	1	
		RX9002	D1H81014A042	RESISTOR NETWORKS	1	
		RX9003	EXB28V392JX	RESISTOR NETWORKS	1	
		RX9004	D1H81034A042	RESISTOR NETWORKS	1	
		RX9005	EXB28V392JX	RESISTOR NETWORKS	1	
		RX9006	D1H81034A042	RESISTOR NETWORKS	1	
		RX9007	EXB28V392JX	RESISTOR NETWORKS	1	
		RX9008	D1H81034A042	RESISTOR NETWORKS	1	
		RX9009	EXB28V392JX	RESISTOR NETWORKS	1	
		RX9010	D1H81044A042	RESISTOR NETWORKS	1	
		RX9011	D1H81024A042	RESISTOR NETWORKS	1	
		RX9012	D1H81034A042	RESISTOR NETWORKS	1	
		RX9201	D1H81034A042	RESISTOR NETWORKS	1	
		RX9300	D1K10014A006	RESISTOR NETWORKS	1	
		RX9305	D1K10014A006	RESISTOR NETWORKS	1	
		RX9306	D1K10014A006	RESISTOR NETWORKS	1	
		RX9307	D1K10014A006	RESISTOR NETWORKS	1	
		RX9308	D1K10014A006	RESISTOR NETWORKS	1	
		RX9309	D1K10014A006	RESISTOR NETWORKS	1	
		RX9310	D1K49904A006	RESISTOR NETWORKS	1	
		RX9311	D1K49904A006	RESISTOR NETWORKS	1	
		RX9312	D1K49904A006	RESISTOR NETWORKS	1	
		RX9313	D1K49904A006	RESISTOR NETWORKS	1	
		RX9314	D1K49904A006	RESISTOR NETWORKS	1	
		RX9315	D1K49904A006	RESISTOR NETWORKS	1	
		RX9321	EXB28V472JX	RESISTOR NETWORKS	1	
		T8501	G5DYA0000143	TRANSFORMER	1	
		T9801	G5DYZ0000028	TRANSFORMER	1	
		VA4401	D4ED18R00008	VARISTOR	1	
		VA4402	D4ED18R00008	VARISTOR	1	
		VA4403	D4ED1120A002	VARISTOR	1	
		VA4404	D4ED1120A002	VARISTOR	1	
		VA8540	D4ED18R00008	VARISTOR	1	
		VA9008	D4ED18R0A014	VARISTOR	1	
		X6001	H0J240500053	CRYSTAL OSCILLATOR	1	
		X9101	H0J327200085	CRYSTAL OSCILLATOR	1	

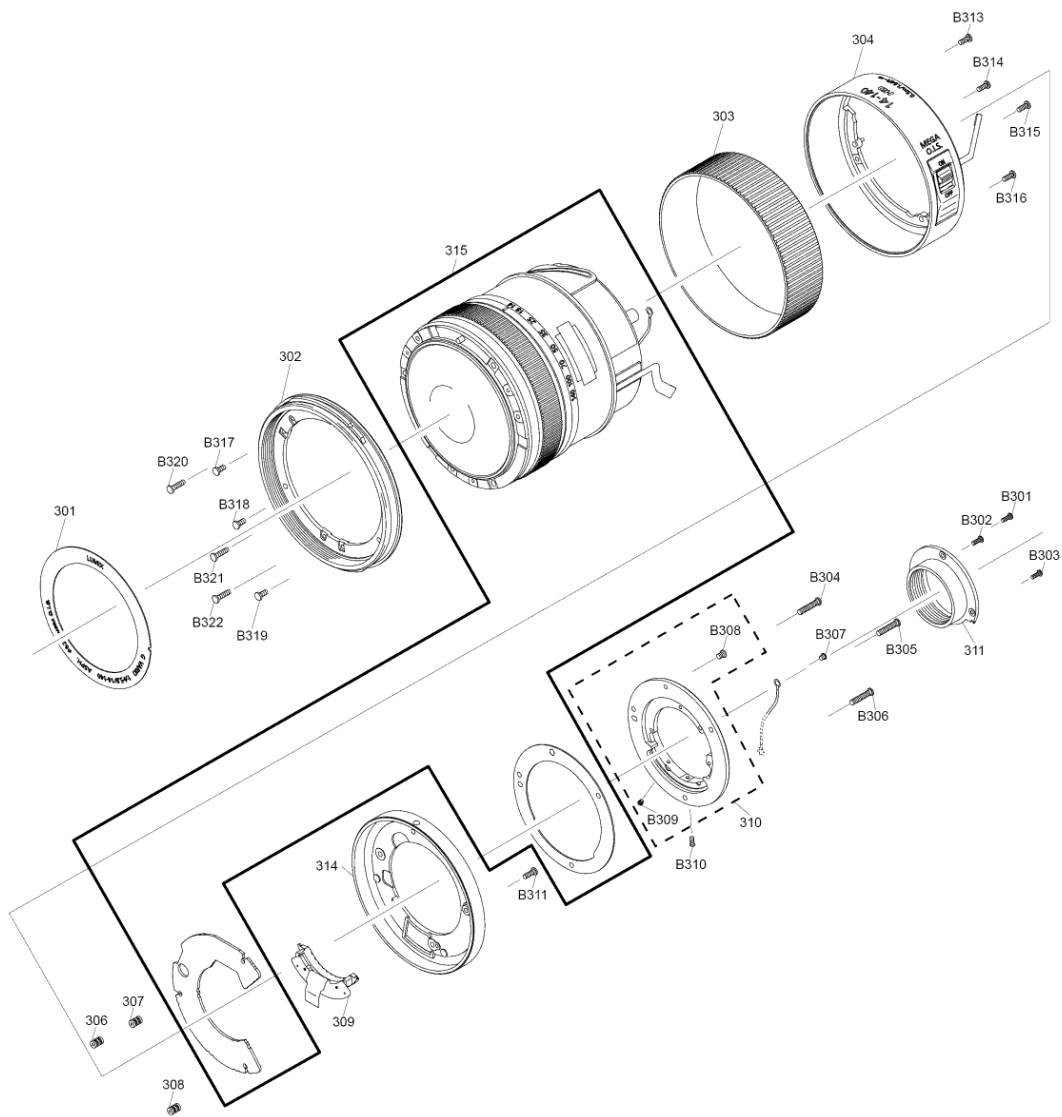
Model No. : DMC-GH3/GH3A/GH3H Frame and Casing Section



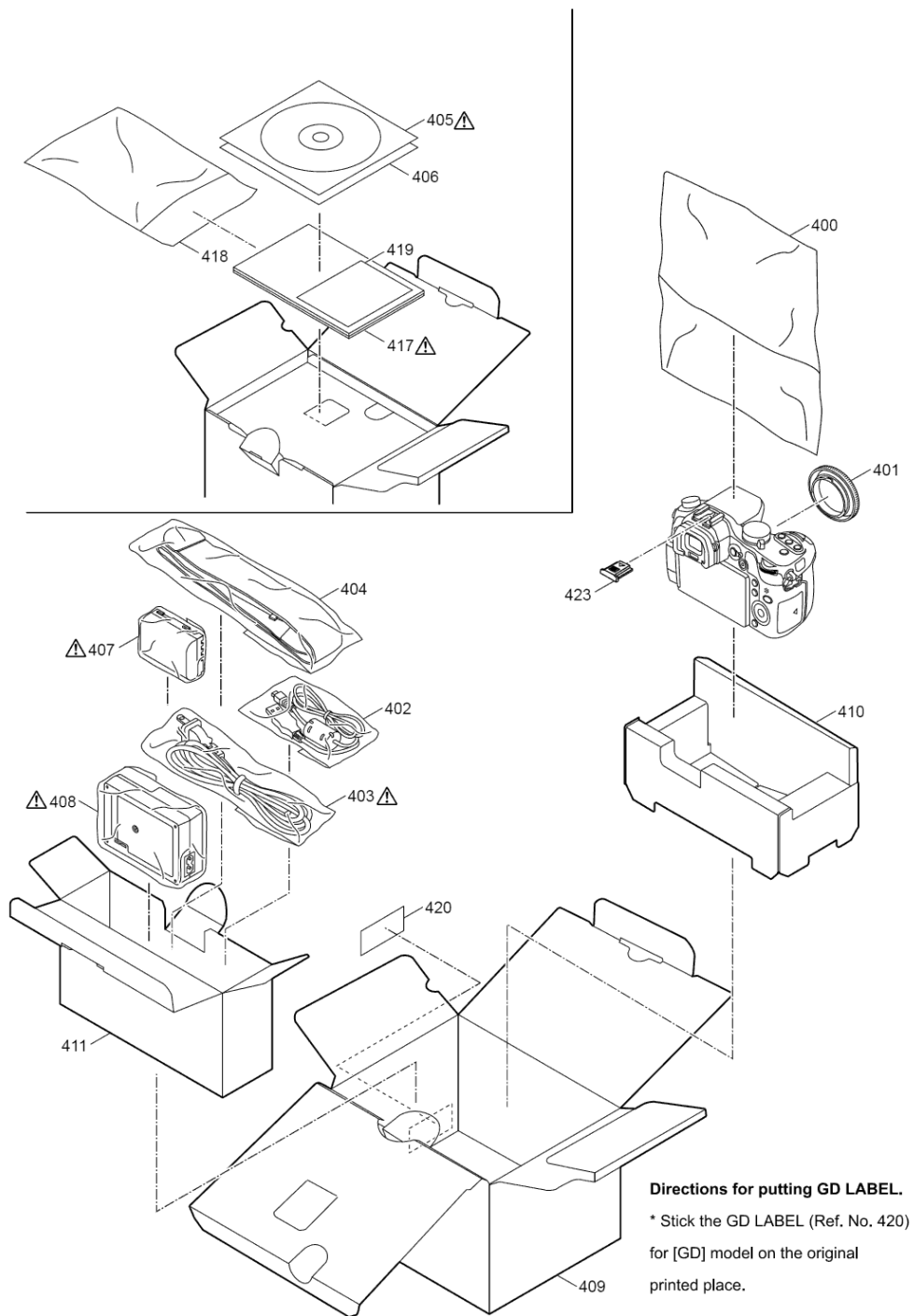
Model No. : DMC-GH3/GH3A/GH3H Camera Lens section (1)



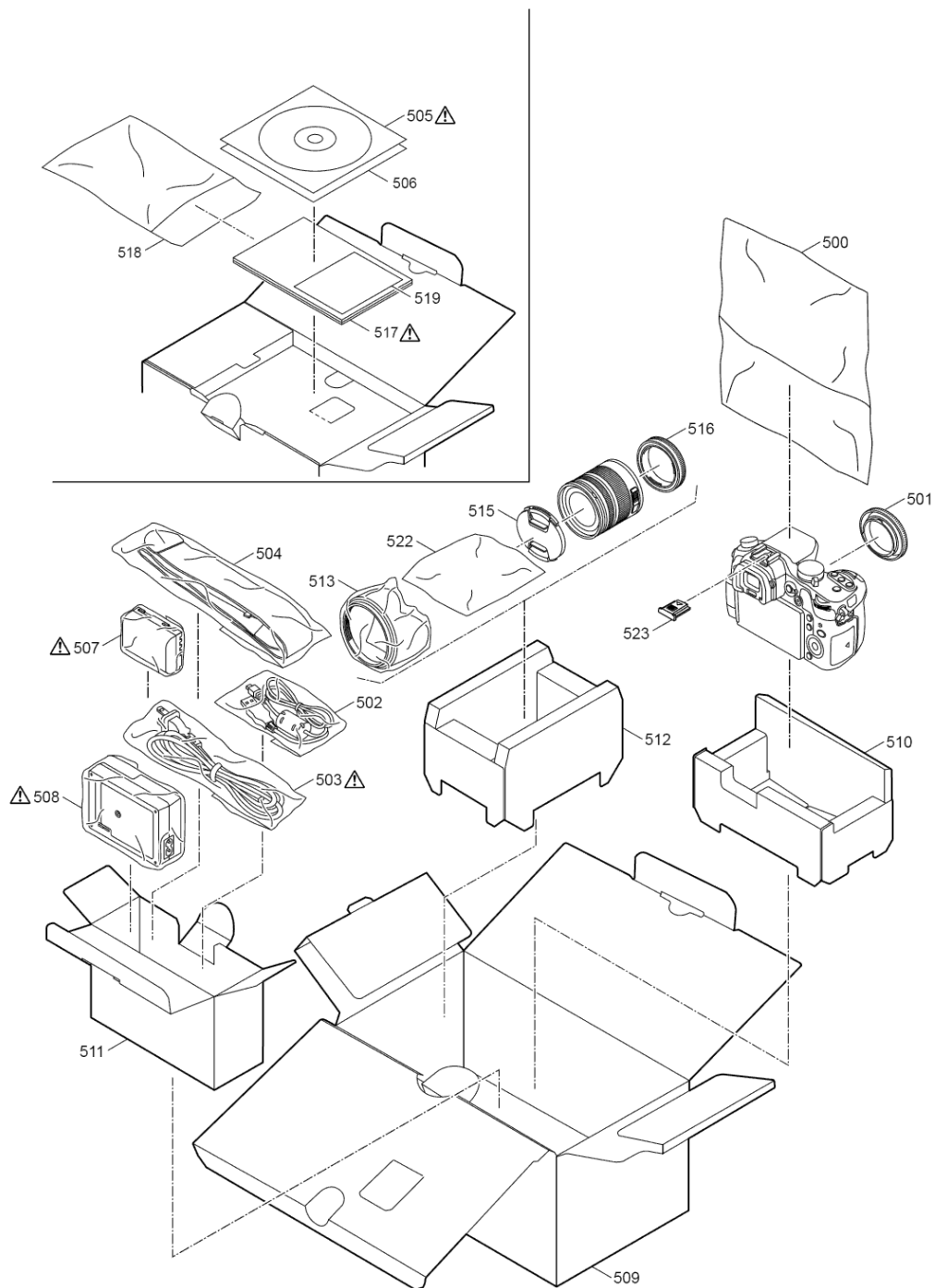
Model No. : DMC-GH3/GH3A/GH3H Camera Lens section (2)



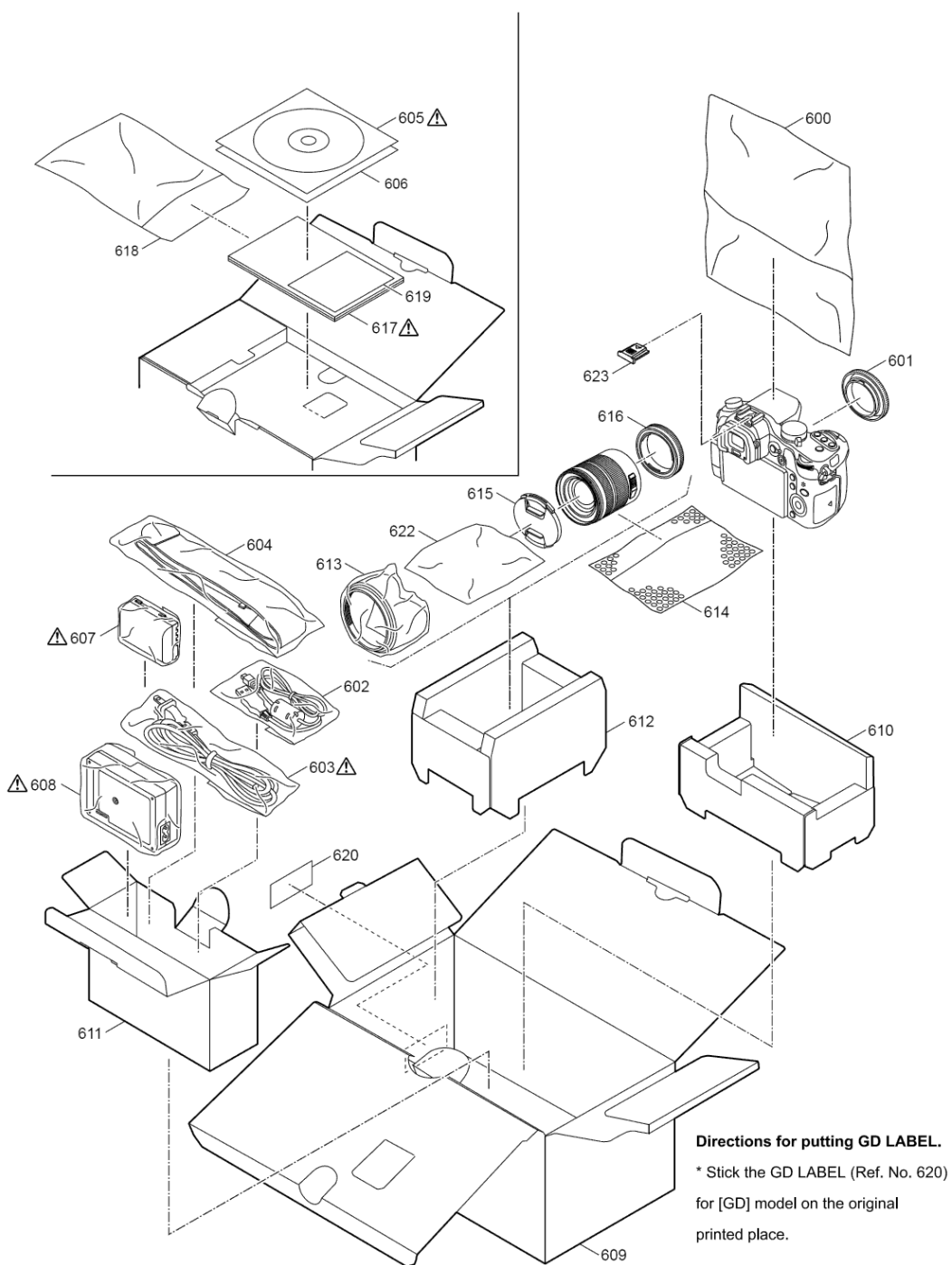
Model No. : DMC-GH3/GH3A/GH3H Packing Parts and Accessories Section (1)



Model No. : DMC-GH3/GH3A/GH3H Packing Parts and Accessories Section (2)



Model No. : DMC-GH3/GH3A/GH3H Packing Parts and Accessories Section (3)



Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		1	VEP56171B	MAIN P.C.B.	1	(RTL) E.S.D. EG,EC,EF,EB
		1	VEP56171A	MAIN P.C.B.	1	(RTL) E.S.D. PU,P,PC,EE,GC,GH,GT, GK,GN,GD
		2	VGQ0P93	TAPE	1	GH3EG,GH3P,GH3PC,GH3EC,GH3EF, GH3EB, GH3EE,GH3GC,GH3GH,GH3GT, GH3GK,GH3GN,GH3GD,GH3AEG,GH3AEF, GH3AEB,GH3AGC,GH3AGH,GH3AGT, GH3HPU,GH3HEG,GH3HEC,GH3HEF, GH3HEB,GH3HEE,GH3HGC,GH3HGH, GH3HGT,GH3HGN,GH3HGD
		3	VGQ1F66	BG CONTACT HOLDER	1	
		4	VGU0M80	LVF DPT KNOB	1	
		5	VKF5101	DC COVER	1	
		6	VYK6B41	HEAT RADIATION PLATE UNIT	1	
		7	VXQ2350	MOUNT BOX UNIT	1	
		7-1	VMD6702	B MOUNT	1	
		7-2	VMG2060	B MOUNT RING	1	
		8	VYK6B42	BATTERY CONTACT COVER UNIT	1	
		9	VYK6B43	EYE CUP UNIT	1	
		10	N5HBZ0000098	Wi-Fi P.C.B.	1	
		12	VGQ1F60	Wi-Fi HOLDER	1	
		13	VGQ1L06	SHEET	1	
		14	VKF5104	BG CONTACT COVER	1	
		15	VWJ2369	Wi-Fi BG FPC	1	
		16	VYF3508	BATTERY DOOR UNIT	1	
		17	VYK6J98	FRONT CASE UNIT	1	
		17-1	VKF5102	JACK COVER A	1	
		17-2	VKF5103	JACK COVER B	1	
		18	VYK6F54	TRIPOD	1	
		19	K0RB01500003	REAR OPERATION UNIT	1	
		20	L0AA01A00137	SPEAKER	1	
		21	VEP50134A	MR1 SW FPC UNIT	1	
		24	VGQ1F53	SHEET A	1	
		25	VGQ1F73	REAR BUTTON PACKING C	1	
		26	VGQ1F77	HINGE FIX COVER	1	
		27	VGQ1L75	REAR BUTTON PACKING D	1	
		28	VGQ1L75	REAR BUTTON PACKING D	1	
		29	VGQ1F84	REAR BUTTON PACKING B	1	
		30	VGQ1F95	HINGE CUSHION 4	1	
		31	VGQ1J67	REAR CUSHION G	1	
		32	VGU0M72	[PLAYBACK] BUTTON	1	
		33	VGU0M73	[LVF]/[Fn5] BUTTON	1	
		34	VGU0M74	[DELETE/CANCEL]/[Fn4] BUTTON	1	
		35	VGU0M75	[DISP.] BUTTON	1	
		36	VGU0M76	[AUTO FOCUE MODE]/[Fn3] BUTTON	1	
		37	VGU0M77	[Q. MENU]/[Fn2] BUTTON	1	
		38	VGU0N08	MOTION PICTURE BUTTON	1	
		39	VKM0C55	HINGE ARM COVER BOTTOM	1	
		40	VKM0C56	HINGE ARM COVER TOP	1	
		41	VKW3535	EYE SENSOR WINDOW	1	
		42	VMB4668	LCD LOCK SPRING	1	
		43	VYF3509	SD DOOR UNIT	1	
		44	VYK6J99	REAR CASE UNIT	1	
		44-1	VGU0M78	AF/AE LEVER	1	
		44-2	VGU0M79	[AF/AE LOCK] BUTTON	1	
		45	VYK6B48	LCD UNIT	1	
		45-1	VEP59122A	LCD IF P.C.B.	1	(RTL) E.S.D.
		45-2	VGQ1F96	LCD PACKING	1	
		45-5	VYK6B49	LCD HINGE UNIT	1	
		45-7	VKM0C58	LCD CASE BOTTOM	1	
		46	VYK6F57	LVF DPT BASE UNIT	1	
		47	VGQ1F76	FPC TAPE	1	
		48	VGQ1J68	LCD LOCK HOLDER	1	

Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		49	VGQ1J69	LCD LOCK KNOB	1	
		50	VGQ1K15	REAR CUSHION H	1	
		51	XUC12VW	E RING	1	
		52	VYK6F59	HINGE PACKING COVER UNIT	1	
		53	VGQ1F98	CAPACITOR COVER	1	
		54	VYK6B51	BATTERY CASE UNIT	1	
	⚠	55	VYQ8074	CAPACITOR P.C.B. UNIT	1	
		56	VYK6B52	TOP UNIT	1	
	⚠	56-1	ML-421S/DN	BUTTON BATTERY	1	[ENERGY] (B8531)
		56-2	VEP58185A	FLASH P.C.B.	1	(RTL) E.S.D.
		56-3	VKF5107	MIC JACK COVER	1	
		56-4	VEP54035A	EXT MIC P.C.B.	1	(RTL) E.S.D.
		56-5	VKM0C63	FLASH CASE TOP	1	
		61	L5ZZ00000173	LVF MODULE	1	
		62	VEP59123A	LVF EYE FPC UNIT	1	
		63	VGQ0J40	FPC TAPE	1	
		64	VGQ0Q18	CABLE SHEET	1	
		65	VGQ1H12	LVF MODULE HOLDER	1	
		66	VGQ1K74	EYE SENSOR TAPE	1	
		67	VGQ1L59	LVF MODULE CUSHION	1	
		68	VYQ8075	LVF UNIT	1	
		70	VYK6F63	FRONT GRIP L UNIT	1	
		74	K4ZZ03000347	BATTERY CONTACT UNIT	1	(ZB1901)
		75	VGQ1G90	GASKET	1	
		76	VGQ1M13	BATTERY CASE SHEET	1	
		77	VKF5108	CAP	1	
		78	VGQ9405	WATER LABEL	1	
		79	VGQ9405	WATER LABEL	1	
		80	VEP50135A	MR3 SW FPC UNIT	1	
		81	VGQ1F76	FPC TAPE	1	
		B1	VHD1919	SCREW	1	
		B2	VHD1919	SCREW	1	
		B3	VHD1919	SCREW	1	
		B4	VHD1919	SCREW	1	
		B5	VHD2149	SCREW	1	
		B6	VHD2149	SCREW	1	
		B7	VHD2166	SCREW	1	
		B8	VHD2166	SCREW	1	
		B9	VHD2166	SCREW	1	
		B10	VHD2166	SCREW	1	
		B11	VHD2166	SCREW	1	
		B12	VHD2166	SCREW	1	
		B13	VHD2166	SCREW	1	
		B19	VHD2342	SCREW	1	
		B20	VHD2438	SCREW	1	
		B21	VHD2438	SCREW	1	
		B22	VHD2438	SCREW	1	
		B23	VHD2438	SCREW	1	
		B24	VHD2438	SCREW	1	
		B25	VHD2438	SCREW	1	
		B26	VHD2438	SCREW	1	
		B27	VHD2124	SCREW	1	
		B28	VHD2124	SCREW	1	
		B29	VHD2190	SCREW	1	
		B30	VHD2190	SCREW	1	
		B31	VHD2179	SCREW	1	
		B32	VHD2179	SCREW	1	
		B33	XQN14+BJ4FJK	SCREW	1	
		B34	XQN16+B4FN	SCREW	1	
		B35	XQN16+B4FN	SCREW	1	
		B36	XQN16+B4FN	SCREW	1	
		B37	VHD1924	SCREW	1	

Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		B38	VHD2200-B	SCREW	1	
		B39	VHD2200-B	SCREW	1	
		B40	VHD2333	SCREW	1	
		B41	VHD2333	SCREW	1	
		B42	VHD2333	SCREW	1	
		B43	VHD2333	SCREW	1	
		B44	VHD2367	SCREW	1	
		B45	VHD2367	SCREW	1	
		B46	VHD2149	SCREW	1	
		B47	VHD2149	SCREW	1	
		B48	VHD2149	SCREW	1	
		B49	VHD2149	SCREW	1	
		B50	VHD2337	SCREW	1	
		B51	VHD2337	SCREW	1	
		B52	XQN14+BJ4FJK	SCREW	1	
		B53	XQN14+BJ4FJK	SCREW	1	
		B54	XQN14+BJ4FJK	SCREW	1	
		B55	XQN14+BJ4FJK	SCREW	1	
		B56	XQN16+B3FJ	SCREW	1	
		B57	XQN16+B3FJ	SCREW	1	
		B58	XQN16+B3FJ	SCREW	1	
		B59	XQN16+B3FJ	SCREW	1	
		B60	XQN16+B3FJ	SCREW	1	
		B61	XQN16+B3FJ	SCREW	1	
		B62	XQN16+B3FJ	SCREW	1	
		B63	XQN16+B3FJ	SCREW	1	
		B64	XQN16+BJ65FC	SCREW	1	
		B65	XQN16+BJ65FC	SCREW	1	
		B66	XQN16+B3FJ	SCREW	1	
		B67	XQN16+B3FJ	SCREW	1	
		B68	VHD2342	SCREW	1	
		B69	VHD2342	SCREW	1	
		B70	VHD2342	SCREW	1	
		B71	VHD2342	SCREW	1	
		B72	XQN16+BJ3FJK	SCREW	1	
		B73	XQN16+BJ3FJK	SCREW	1	
		B74	XQN14+BJ6FJK	SCREW	1	
		B75	XQN16+B2FJ	SCREW	1	
		B76	XQN16+B4FN	SCREW	1	
		B77	XQN16+B4FN	SCREW	1	
		B78	XQN16+B4FN	SCREW	1	
		B79	XQN16+B4FN	SCREW	1	
		B80	XQN16+B4FN	SCREW	1	
		B81	XQN16+B4FN	SCREW	1	
		B82	XQN16+BJ4FN	SCREW	1	
		B83	VHD2149	SCREW	1	
		B84	VHD2149	SCREW	1	
		B85	VHD2342	SCREW	1	
		B86	VHD2438	SCREW	1	
		B87	XQN14+BJ4FJK	SCREW	1	
		B88	XQN14+BJ4FJK	SCREW	1	
		B96	VHD2436	SCREW	1	
		B97	VHD2459	SCREW	1	
		200	VXW1447	LENS UNIT	1	(GH3A) [SPC]
		201	P127HJ0	DECO. RING	1	(GH3A) [SPC]
		202	P12F010	HOOD ADAPTER	1	(GH3A) [SPC]
		203	P12F350	OIS SW UNIT	1	(GH3A) [SPC]
		204	P12F320	ZOOM RUBBER	1	(GH3A) [SPC]
		205	P1279H0	MOUNT CONTACT UNIT	1	(GH3A) [SPC]
		206	P128H50	L MOUNT UNIT	1	(GH3A) [SPC]
		206-1	9630230	LENS MOUNT RUBBER	1	(GH3A) [SPC]
		210	----	LENS MAIN BLOCK UNIT	1	(GH3A) (NOT SUPPLIED) [SPC]

Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		B201	0242050	SCREW	1	(GH3A) [SPC]
		B202	0242050	SCREW	1	(GH3A) [SPC]
		B203	9580270	SCREW	1	(GH3A) [SPC]
		B204	0B44035	SCREW	1	(GH3A) [SPC]
		B205	0242070	SCREW	1	(GH3A) [SPC]
		B206	0242070	SCREW	1	(GH3A) [SPC]
		B207	0242070	SCREW	1	(GH3A) [SPC]
		B208	0242070	SCREW	1	(GH3A) [SPC]
		B209	0554020	SCREW	1	(GH3A) [SPC]
		B210	0HF4025	SCREW	1	(GH3A) [SPC]
		B211	0HF4025	SCREW	1	(GH3A) [SPC]
		B212	0HF4025	SCREW	1	(GH3A) [SPC]
		B213	0254035	SCREW	1	(GH3A) [SPC]
		B214	0254035	SCREW	1	(GH3A) [SPC]
		B215	0257060	SCREW	1	(GH3A) [SPC]
		B216	0257060	SCREW	1	(GH3A) [SPC]
		B217	0257060	SCREW	1	(GH3A) [SPC]
		B218	0257060	SCREW	1	(GH3A) [SPC]
		300	VXW1042	LENS UNIT	1	(GH3H) [SPC]
		301	P05F340	DECO. RING	1	(GH3H) [SPC]
		302	P05F020	HOOD ADAPTER	1	(GH3H) [SPC]
		303	P05C010	ZOOM RUBBER RING	1	(GH3H) [SPC]
		304	P057H00	COVER RING UNIT	1	(GH3H) [SPC]
		306	P04F370	FLOATING RUBBER	1	(GH3H) [SPC]
		307	P04F370	FLOATING RUBBER	1	(GH3H) [SPC]
		308	P04F370	FLOATING RUBBER	1	(GH3H) [SPC]
		309	P0579H0	MOUNT CONTACT UNIT	1	(GH3H) [SPC]
		310	P058H50	L MOUNT UNIT	1	(GH3H) [SPC]
		311	9630060	SHADING FRAME	1	(GH3H) [SPC]
		314	-----	REAR COVER	1	(GH3H) (NOT SUPPLIED) [SPC]
		315	-----	LENS MAIN BLOCK UNIT	1	(GH3H) (NOT SUPPLIED) [SPC]
		B301	0HF4025	SCREW	1	(GH3H) [SPC]
		B302	0HF4025	SCREW	1	(GH3H) [SPC]
		B303	0HF4025	SCREW	1	(GH3H) [SPC]
		B304	0242100	SCREW	1	(GH3H) [SPC]
		B305	0242100	SCREW	1	(GH3H) [SPC]
		B306	0242100	SCREW	1	(GH3H) [SPC]
		B307	0557025	SCREW	1	(GH3H) [SPC]
		B308	0557025	SCREW	1	(GH3H) [SPC]
		B309	9580270	SCREW	1	(GH3H) [SPC]
		B310	0B44035	SCREW	1	(GH3H) [SPC]
		B311	0257050	SCREW	1	(GH3H) [SPC]
		B313	0257050	SCREW	1	(GH3H) [SPC]
		B314	0257050	SCREW	1	(GH3H) [SPC]
		B315	0257050	SCREW	1	(GH3H) [SPC]
		B316	0257050	SCREW	1	(GH3H) [SPC]
		B317	0254030	SCREW	1	(GH3H) [SPC]
		B318	0254030	SCREW	1	(GH3H) [SPC]
		B319	0254030	SCREW	1	(GH3H) [SPC]
		B320	0554055	SCREW	1	(GH3H) [SPC]
		B321	0554055	SCREW	1	(GH3H) [SPC]
		B322	0554055	SCREW	1	(GH3H) [SPC]
		400	VPF1501	CAMERA BAG	1	(GH3)
		401	VKF4971	BODY CAP	1	(GH3)
		402	K1HY08YY0025	USB CABLE W/PLUG	1	(GH3)
	⚠	403	K2CQ2YY00082	AC CORD W/PLUG	1	GH3EG, GH3EC, GH3EF, GH3EE, GH3GC
	⚠	403	K2CA2CA00025	AC CORD W/PLUG	1	GH3P, GH3PC
	⚠	403	K2CT3YY00034	AC CORD W/PLUG	1	GH3EB, GH3GC, GH3GH
	⚠	403	K2CA2YY00129	AC CORD W/PLUG	1	GH3GT
	⚠	403	K2CA2YY00130	AC CORD W/PLUG	1	GH3GK
	⚠	403	K2CJ2YY00052	AC CORD W/PLUG	1	GH3GN
	⚠	403	K2CR2YY00026	AC CORD W/PLUG	1	GH3GD

Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		404	VFC4908	SHOULDER STRAP	1	(GH3)
	⚠	405	VFF1067	CD-ROM (INSTRUCTION BOOK)	1	GH3EG, GH3EC, GH3EF, GH3EB
	⚠	405	VFF1066	CD-ROM (INSTRUCTION BOOK)	1	GH3P, GH3PC
	⚠	405	VFF1068	CD-ROM (INSTRUCTION BOOK)	1	GH3EE, GH3GC, GH3GH, GH3GN
	⚠	405	VFF1069	CD-ROM (INSTRUCTION BOOK)	1	GH3GT, GH3GD
	⚠	405	VFF1070	CD-ROM (INSTRUCTION BOOK)	1	GH3GK
		406	VFF1074-C	CD-ROM (OVERSEA)	1	(EXCEPT GH3GK)
		406	VFF1075-C	CD-ROM (OVERSEA)	1	GH3GK
	⚠	407	----	BATTERY PACK	1	(GH3)
	⚠	408	VSK0794	BATTERY CHARGER	1	GH3EG, GH3EC, GH3EF, GH3EB, GH3EE
	⚠	408	VSK0793	BATTERY CHARGER	1	GH3P, GH3PC
	⚠	408	VSK0795	BATTERY CHARGER	1	GH3GC, GH3GH, GH3GK, GH3GN, GH3GD
	⚠	408	VSK0796	BATTERY CHARGER	1	GH3GT
		409	VPK5445	PACKING CASE	1	GH3EG, GH3EC, GH3EF, GH3EB, GH3EE, GH3GC, GH3GH, GH3GT, GH3GN, GH3GD
		409	VPK5444	PACKING CASE	1	GH3P, GH3PC
		409	VPK5446	PACKING CASE	1	GH3GK
		410	VPN7493	PAD A	1	(GH3)
		411	VPN7494	PAD B	1	(GH3)
	⚠	417	VQT4M50	BASIC O/I (FRENCH)	1	GH3EG, GH3EF
	⚠	417	VQT4S38	BASIC O/I (GERMAN)	1	GH3EG
	⚠	417	VQT4S39	BASIC O/I (ITALIAN)	1	GH3EG
	⚠	417	VQT4S40	BASIC O/I (DUTCH)	1	GH3EG
	⚠	417	VQT4S33	BASIC O/I (ENGLISH)	1	GH3P, GH3PC
	⚠	417	VQT4S34	BASIC O/I (SPANISH)	1	GH3P
	⚠	417	VQT4S35	BASIC O/I (CANADIAN FRENCH)	1	GH3PC
	⚠	417	VQT4M49	BASIC O/I (FINNISH)	1	GH3EC
	⚠	417	VQT4S41	BASIC O/I (SPANISH)	1	GH3EC
	⚠	417	VQT4S42	BASIC O/I (PORTUGUESE)	1	GH3EC
	⚠	417	VQT4S43	BASIC O/I (SWEDISH)	1	GH3EC
	⚠	417	VQT4S44	BASIC O/I (DANISH)	1	GH3EC
	⚠	417	VQT4M51	BASIC O/I (ENGLISH)	1	GH3EB
	⚠	417	VQT4S45	BASIC O/I (RUSSIAN)	1	GH3EE
	⚠	417	VQT4S46	BASIC O/I (UKRAINIAN)	1	GH3EE
	⚠	417	VQT4S47	BASIC O/I (ENGLISH)	1	GH3GC
	⚠	417	VQT4S48	BASIC O/I (CHINESE(TRADITIONAL))	1	GH3GC
	⚠	417	VQT4S49	BASIC O/I (ARABIC)	1	GH3GC
	⚠	417	VQT4S50	BASIC O/I (VIETNAMESE)	1	GH3GC
	⚠	417	VQT4M55	BASIC O/I (CHINESE(TRADITIONAL))	1	GH3GT
	⚠	417	VQT4M56	BASIC O/I (CHINESE(SIMPLIFIED))	1	GH3GK
	⚠	417	VQT4M57	BASIC O/I (ENGLISH)	1	GH3GN
	⚠	417	VQT4M58	BASIC O/I (KOREAN)	1	GH3GD
	⚠	417	VQT4U63	BASIC O/I (ENGLISH)	1	GH3GH
	⚠	417	VQT4U64	BASIC O/I (CHINESE(TRADITIONAL))	1	GH3GH
		418	VPF1100	BAG, POLYETHYLENE	1	(GH3)
		419	VQL2C67-2A	OPERATING LABEL	1	GH3PC
		419	VQL2C68-1A	OPERATING LABEL	1	GH3GT
		420	VQL2J61	GD LABEL	1	GH3GD
		423	VYF3522	HOT SHOE COVER	1	(GH3)
		500	VPF1501	CAMERA BAG	1	(GH3A)
		501	VKF4971	BODY CAP	1	(GH3A)
		502	K1HY08YY0025	USB CABLE W/PLUG	1	(GH3A)
	⚠	503	K2CQ2YY00082	AC CORD W/PLUG	1	GH3AEG, GH3AEF, GH3AGC
	⚠	503	K2CT3YY00034	AC CORD W/PLUG	1	GH3AEB, GH3AGC, GH3AGH
	⚠	503	K2CA2YY00129	AC CORD W/PLUG	1	GH3AGT
	⚠	503	K2CA2YY00130	AC CORD W/PLUG	1	GH3AGK
		504	VFC4908	SHOULDER STRAP	1	(GH3A)
	⚠	505	VFF1067	CD-ROM (INSTRUCTION BOOK)	1	GH3AEG, GH3AEF, GH3AEB
	⚠	505	VFF1068	CD-ROM (INSTRUCTION BOOK)	1	GH3AGC, GH3AGH
	⚠	505	VFF1069	CD-ROM (INSTRUCTION BOOK)	1	GH3AGT
	⚠	505	VFF1070	CD-ROM (INSTRUCTION BOOK)	1	GH3AGK
		506	VFF1074-C	CD-ROM (OVERSEA)	1	(EXCEPT GH3AGK)

Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		506	VFF1075-C	CD-ROM (OVERSEA)	1	GH3AGK
	⚠	507	-----	BATTERY PACK	1	(GH3A)
	⚠	508	VSK0794	BATTERY CHARGER	1	GH3AEG, GH3AEF, GH3AEB
	⚠	508	VSK0795	BATTERY CHARGER	1	GH3AGC, GH3AGH, GH3AGK
	⚠	508	VSK0796	BATTERY CHARGER	1	GH3AGT
		509	VPK5449	PACKING CASE	1	GH3AEG, GH3AEF, GH3AEB, GH3AGC, GH3AGH, GH3AGT
		509	VPK5450	PACKING CASE	1	GH3AGK
		510	VPN7496	PAD D	1	(GH3A)
		511	VPN7497	PAD E	1	(GH3A)
		512	VPN7499	PAD H	1	(GH3A)
		513	VYC1084	LENS HOOD UNIT	1	(GH3A) [SPC]
		515	VYF3480	LENS CAP	1	(GH3A) [SPC]
		516	VFC4605	LENS REAR CAP	1	(GH3A)
	⚠	517	VQT4M50	BASIC O/I (FRENCH)	1	GH3AEG, GH3AEF
	⚠	517	VQT4S38	BASIC O/I (GERMAN)	1	GH3AEG
	⚠	517	VQT4S39	BASIC O/I (ITALIAN)	1	GH3AEG
	⚠	517	VQT4S40	BASIC O/I (DUTCH)	1	GH3AEG
	⚠	517	VQT4M51	BASIC O/I (ENGLISH)	1	GH3AEB
	⚠	517	VQT4S47	BASIC O/I (ENGLISH)	1	GH3AGC
	⚠	517	VQT4S48	BASIC O/I (CHINESE (TRADITIONAL))	1	GH3AGC
	⚠	517	VQT4S49	BASIC O/I (ARABIC)	1	GH3AGC
	⚠	517	VQT4S50	BASIC O/I (VIETNAMESE)	1	GH3AGC
	⚠	517	VQT4M55	BASIC O/I (CHINESE (TRADITIONAL))	1	GH3AGT
	⚠	517	VQT4M56	BASIC O/I (CHINESE (SIMPLIFIED))	1	GH3AGK
	⚠	517	VQT4U63	BASIC O/I (ENGLISH)	1	GH3AGH
	⚠	517	VQT4U64	BASIC O/I (CHINESE (TRADITIONAL))	1	GH3AGH
		518	VPF1100	BAG, POLYETHYLENE	1	(GH3A)
		519	VQL2C68-1A	OPERATING LABEL	1	GH3AGT
		522	VPF1318	LENS BAG	1	(GH3A) [SPC]
		523	VYF3522	HOT SHOE COVER	1	(GH3A)
		600	VPF1501	CAMERA BAG	1	(GH3H)
		601	VKF4971	BODY CAP	1	(GH3H)
		602	K1HY08YY0025	USB CABLE W/PLUG	1	(GH3H)
	⚠	603	K2CQ2YY00082	AC CORD W/PLUG	1	GH3HEG, GH3HEC, GH3HEF, GH3HEE, GH3HGC
	⚠	603	K2CA2CA00025	AC CORD W/PLUG	1	GH3HPU
	⚠	603	K2CT3YY00034	AC CORD W/PLUG	1	GH3HEB, GH3HGC, GH3HGH
	⚠	603	K2CA2YY00129	AC CORD W/PLUG	1	GH3HGT
	⚠	603	K2CA2YY00130	AC CORD W/PLUG	1	GH3HGK
	⚠	603	K2CJ2YY00052	AC CORD W/PLUG	1	GH3HGN
	⚠	603	K2CR2YY00026	AC CORD W/PLUG	1	GH3HGD
		604	VFC4908	SHOULDER STRAP	1	(GH3H)
	⚠	605	VFF1067	CD-ROM (INSTRUCTION BOOK)	1	GH3HEG, GH3HEC, GH3HEF, GH3HEB
	⚠	605	VFF1066	CD-ROM (INSTRUCTION BOOK)	1	GH3HPU
	⚠	605	VFF1068	CD-ROM (INSTRUCTION BOOK)	1	GH3HEE, GH3HGC, GH3HGH, GH3HGN
	⚠	605	VFF1069	CD-ROM (INSTRUCTION BOOK)	1	GH3HGT, GH3HGD
	⚠	605	VFF1070	CD-ROM (INSTRUCTION BOOK)	1	GH3HGK
		606	VFF1074-C	CD-ROM (OVERSEA)	1	(EXCEPT GH3HGK)
		606	VFF1075-C	CD-ROM (OVERSEA)	1	GH3HGK
	⚠	607	-----	BATTERY PACK	1	(GH3H)
	⚠	608	VSK0794	BATTERY CHARGER	1	GH3HEG, GH3HEC, GH3HEF, GH3HEB, GH3HEE
	⚠	608	VSK0793	BATTERY CHARGER	1	GH3HPU
	⚠	608	VSK0795	BATTERY CHARGER	1	GH3HGC, GH3HGH, GH3HGK, GH3HGN, GH3HGD
	⚠	608	VSK0796	BATTERY CHARGER	1	GH3HGT
		609	VPK5453	PACKING CASE	1	GH3HPU, GH3HEG, GH3HEC, GH3HEF, GH3HEB, GH3HEE, GH3HGC, GH3HGH, GH3HGT, GH3HGN, GH3HGD
		609	VPK5454	PACKING CASE	1	GH3HGK
		610	VPN7496	PAD D	1	(GH3H)
		611	VPN7497	PAD E	1	(GH3H)
		612	VPN7500	PAD G	1	(GH3H)
		613	VYC0997	LENS HOOD UNIT	1	(GH3H) [SPC]

Model No. : DMC-GH3/GH3A/GH3H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		614	VPF1483	BAG	1	(GH3H)
		615	VYF3250	LENS CAP	1	(GH3H)[SPC]
		616	VFC4315	LENS REAR CAP	1	(GH3H)[SPC]
	⚠	617	VQT4S36	BASIC O/I (SPANISH)	1	GH3HPU
	⚠	617	VQT4S37	BASIC O/I (PORTUGUESE)	1	GH3HPU
	⚠	617	VQT4M50	BASIC O/I (FRENCH)	1	GH3HEG,GH3HEF
	⚠	617	VQT4S38	BASIC O/I (GERMAN)	1	GH3HEG
	⚠	617	VQT4S39	BASIC O/I (ITALIAN)	1	GH3HEG
	⚠	617	VQT4S40	BASIC O/I (DUTCH)	1	GH3HEG
	⚠	617	VQT4M49	BASIC O/I (FINNISH)	1	GH3HEC
	⚠	617	VQT4S41	BASIC O/I (SPANISH)	1	GH3HEC
	⚠	617	VQT4S42	BASIC O/I (PORTUGUESE)	1	GH3HEC
	⚠	617	VQT4S43	BASIC O/I (SWEDISH)	1	GH3HEC
	⚠	617	VQT4S44	BASIC O/I (DANISH)	1	GH3HEC
	⚠	617	VQT4M51	BASIC O/I (ENGLISH)	1	GH3HEB
	⚠	617	VQT4S45	BASIC O/I (RUSSIAN)	1	GH3HEE
	⚠	617	VQT4S46	BASIC O/I (UKRAINIAN)	1	GH3HEE
	⚠	617	VQT4S47	BASIC O/I (ENGLISH)	1	GH3HGC
	⚠	617	VQT4S48	BASIC O/I (CHINESE (TRADITIONAL))	1	GH3HGC
	⚠	617	VQT4S49	BASIC O/I (ARABIC)	1	GH3HGC
	⚠	617	VQT4S50	BASIC O/I (VIETNAMESE)	1	GH3HGC
	⚠	617	VQT4M55	BASIC O/I (CHINESE (TRADITIONAL))	1	GH3HGT
	⚠	617	VQT4M56	BASIC O/I (CHINESE (SIMPLIFIED))	1	GH3HGK
	⚠	617	VQT4M57	BASIC O/I (ENGLISH)	1	GH3HGN
	⚠	617	VQT4M58	BASIC O/I (KOREAN)	1	GH3HGD
	⚠	617	VQT4U63	BASIC O/I (ENGLISH)	1	GH3HGH
	⚠	617	VQT4U64	BASIC O/I (CHINESE (TRADITIONAL))	1	GH3HGH
		618	VPF1100	BAG, POLYETHYLENE	1	(GH3H)
		619	VQL2C68-1A	OPERATING LABEL	1	GH3HGT
		620	VQL2J61	GD LABEL	1	GH3HGD
		622	VPF1262	LENS BAG	1	(GH3H)[SPC]
		623	VYF3522	HOT SHOE COVER	1	(GH3H)