

Panasonic[®]

ORDER NO. DSC1404007CE

B26

Service Manual

Digital Camera/Body/Lens Kit

Model No. **DMC-GH4P**

DMC-GH4PC

DMC-GH4EB

DMC-GH4EC

DMC-GH4EE

DMC-GH4EF

DMC-GH4EG

DMC-GH4GC

DMC-GH4GD

DMC-GH4GH

DMC-GH4GK

DMC-GH4GN

DMC-GH4GT

DMC-GH4AEG

DMC-GH4AGC

DMC-GH4AGH

DMC-GH4AGN

DMC-GH4HPU

DMC-GH4HEB

DMC-GH4HEC

DMC-GH4HEE

DMC-GH4HEF

DMC-GH4HEG

Colour

(K).....Black Type

DMC-GH4A series: Interchangeable Lens (H-HS12035) is bundled.

DMC-GH4H series: Interchangeable Lens (H-FS14140) 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 M Ω and 5.2 M Ω . 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 k Ω , 10 W resistor, in parallel with a 0.15 μ 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 k Ω /V or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

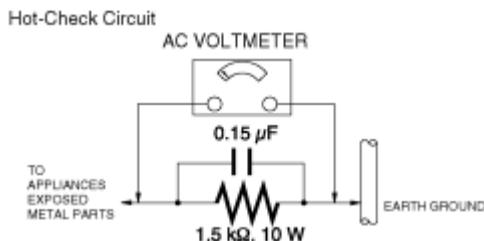


Figure. 1

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

- This unit equipped with two pieces of capacitors as E.Capacitor.
“Either one of the E.Capacitors discharging operation” makes discharging for others as well.

CAUTION:

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

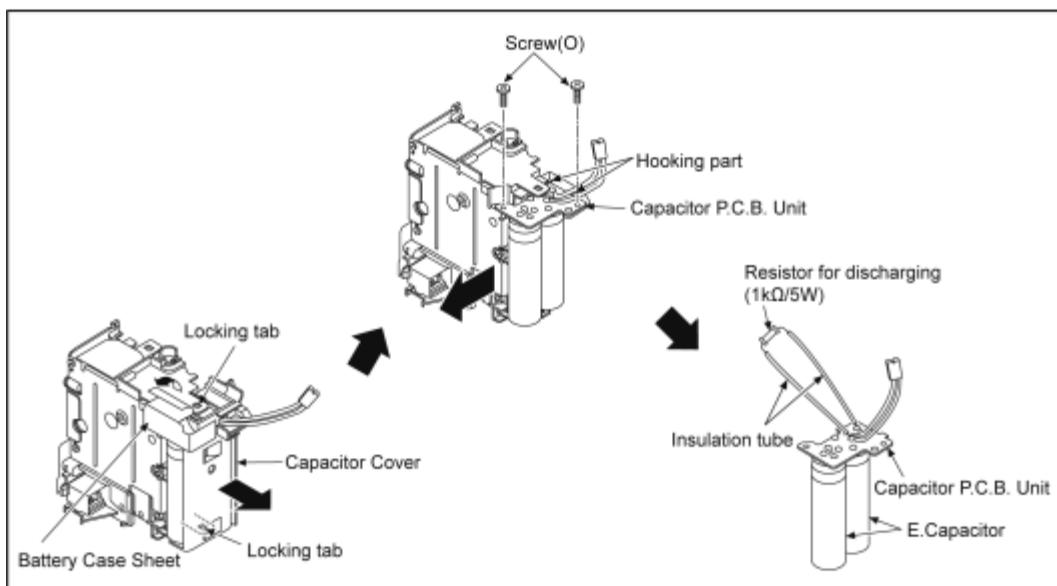


Fig. F1

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		<p>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.</p>
FRANÇAIS		<p>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.</p>

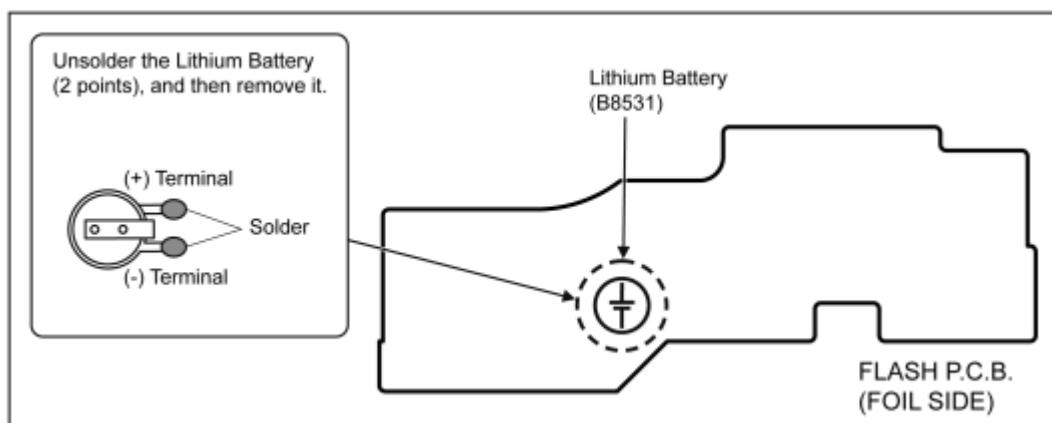
2.3 How to Replace the Lithium Battery

2.3.1 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 Lithium battery includes electric lead terminals.



NOTE:

This Lithium battery is a critical component.

It must never be subjected to excessive heat or discharge.

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

Replacement batteries must be of same type and manufacture.

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

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

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

(For English)

CAUTION

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

(For German)

ACHTUNG

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

(For French)

MISE EN GARDE

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

NOTE:

Above caution is applicable for a battery pack which is for DMC-GH4/GH4A/GH4H series, as well.

2.4 Caution for AC Cord (For EB/GC/GH)

2.4.1 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.

2.4.2 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.

2.4.2.1 Important

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

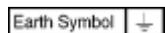
Blue	Neutral
Brown	Live

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.

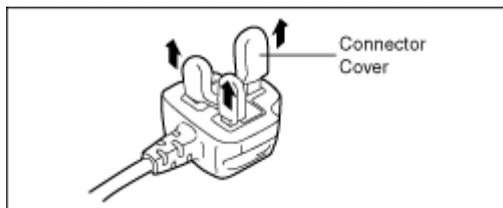
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

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.



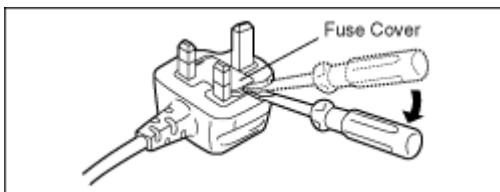
2.4.2.2 Before Use

Remove the Connector Cover as follows.

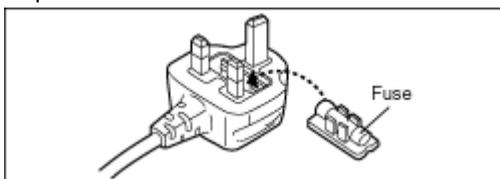


2.4.2.3 How to Replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.



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 About Service of Bundled Lenses

Please refer to the following service manuals about Disassembly and Assembly or Maintenance of bundled lenses.

- H-HS12035PP/E/GK: Order No [DSC1206029CE](#)
- H-FS14140PP/E/GK: Order No [DSC1305023CE](#)

3.3 Important Notice

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

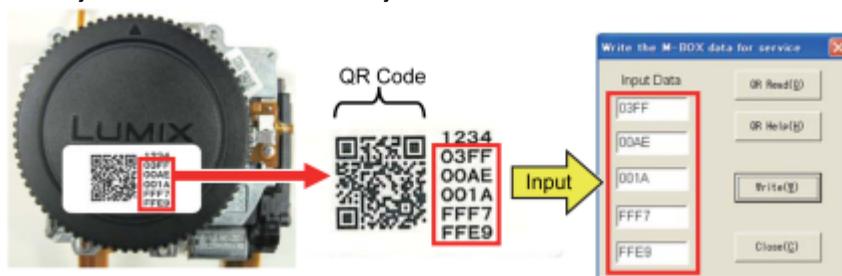
3.3.1 Camera Body Unit

3.3.1.1 About Mount Box Unit (Ref. 12)

1. This Service Manual does not contain the following repair service information for “Mount Box Unit”(Ref.12), 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 (IC6003), 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.



- The full adjustment must be performed after replacing the “Mount Box Unit”, otherwise picture quality can not be meet with specification.

3.3.1.2 About Main P.C.B. (Ref. 1) & Flash-ROM(IC6003)

Important:

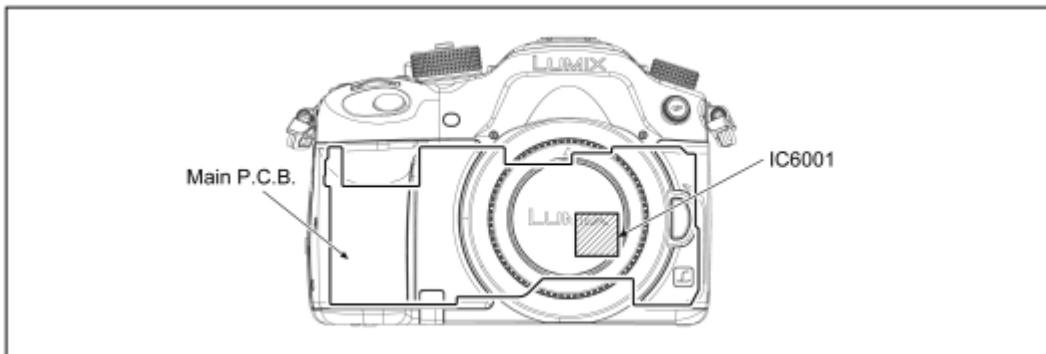
- Before exchanging the “Main P.C.B.”, the performances must be carefully checked, by following the “7.Troubleshooting Guide” section of this service manual.
- Before replacing the “Main P.C.B. and/or Flash-ROM”, proceed the EEPROM data backup from the unit. After replacing the Main P.C.B. and/or Flash-ROM, 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.
- 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.

3.3.1.3 About Venus Engine (IC6001) [Located on the Main P.C.B.]:

- The Venus Engine (IC6001) consists of two IC chips, which are fixed together with solder. (The so called, “Package On Package” type IC.)

NOTE:

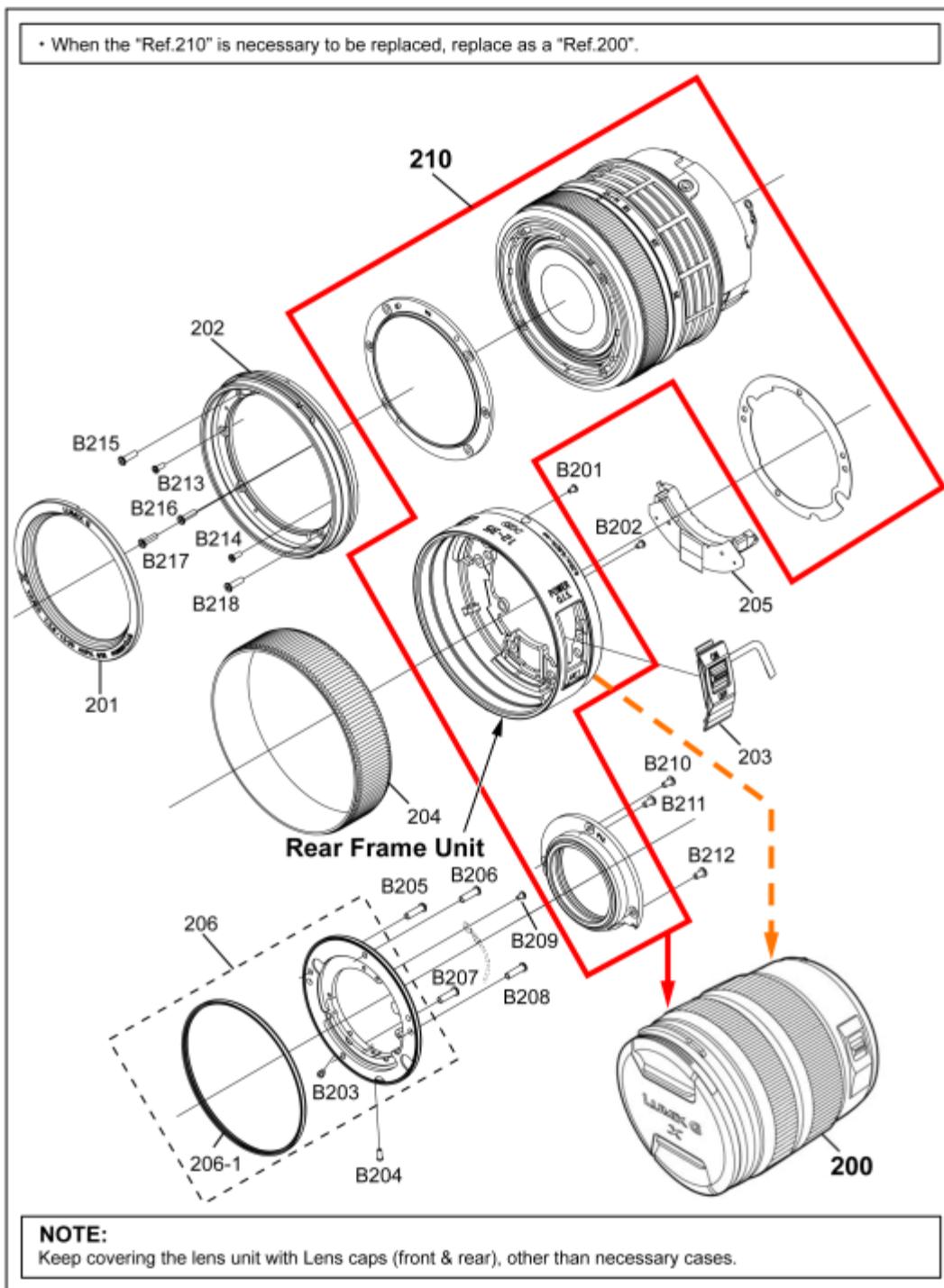
- During servicing, do not press down hard on the surface of IC6001.



3.3.2 Lens Unit (Interchangeable Lens: H-HS12035)

3.3.2.1 About Lens Main Block Unit (Ref. 210)

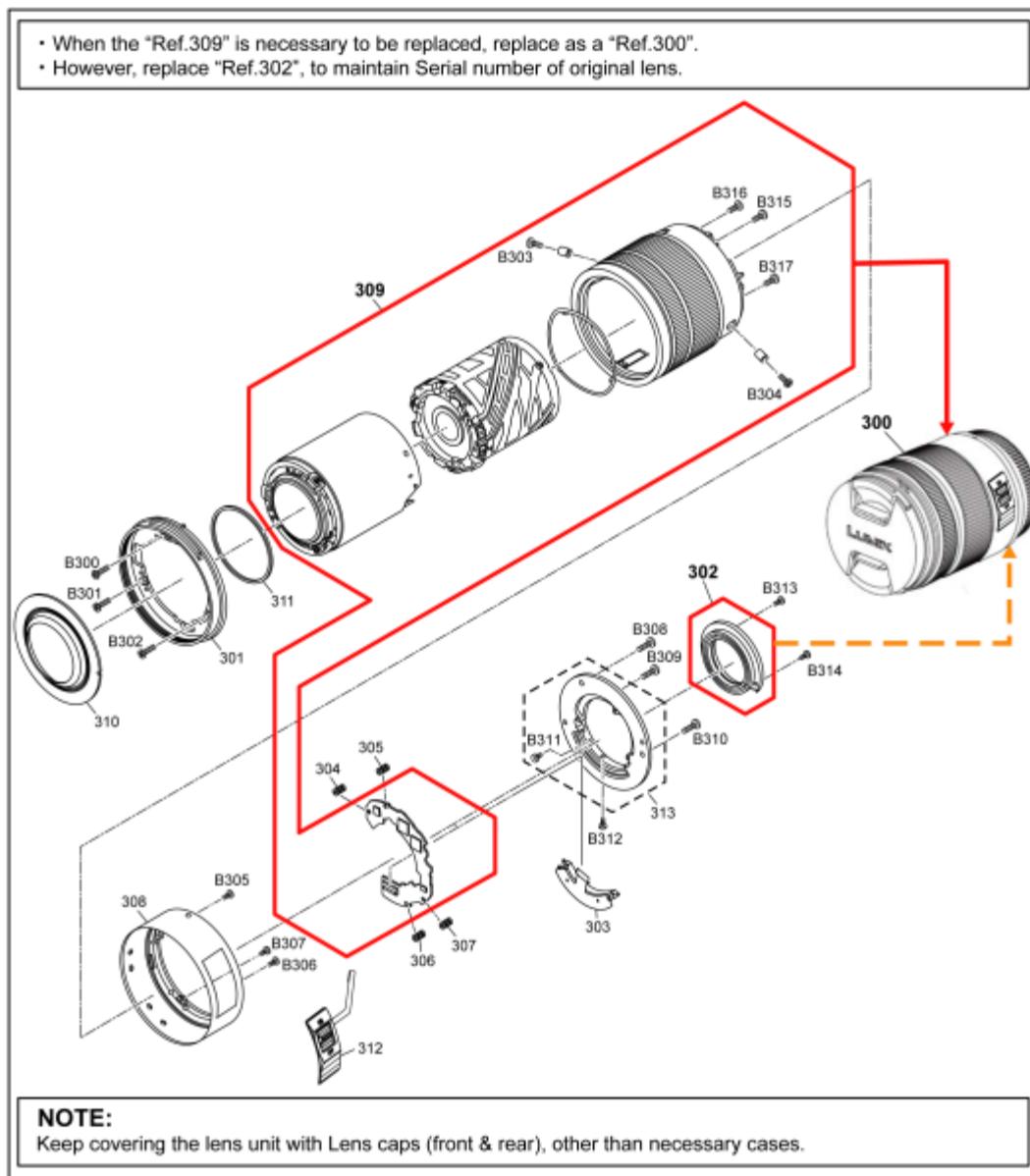
- Lens Main Block Unit (Ref. 210) is not supplied due to difficulty of the transportation issue (Fragile, Dust-free packing), and requires critical lens adjustments. Therefore, any needs of the “Lens Main Block Unit” (Ref. 210), carefully confirm its performance in advance.
- Once “Lens Main Block Unit” (Ref. 210) is confirmed as defective, place order “Lens Unit” (Ref. 200) and replace Rear Frame Unit, to maintain Serial number of owner’s original lens.



3.3.3 Lens Unit (Interchangeable Lens: H-FS14140)

3.3.3.1 About Lens Main Block Unit (Ref. 309)

1. Lens Main Block Unit (Ref. 309) 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. 309), carefully confirm its performance in advance.
2. Once "Lens Main Block Unit" (Ref. 309) is confirmed as defective, place order "Lens Unit" (Ref. 300) and replace Shading Frame (Ref. 302), to maintain Serial number of owner's original lens.



3.3.4 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.

3.4 Service Notes

3.4.1 About Wi-Fi Function

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

What you can do with the Wi-Fi function

Controlling with a Smartphone/Tablet (P258)

Recording with a smartphone (P264)

Playing back pictures in the camera (P265)

Saving images stored in the camera (P265)

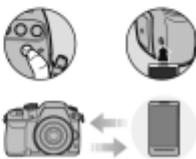
Sending images to an SNS (P267)

Writing location information on images stored in the camera (P267)



Easy connection, easy transfer

You can use easily by pressing and holding [Wi-Fi] or by using the NFC function.



Displaying pictures on a TV (P272)



Printing Wirelessly (P273)



When sending images to AV device (P274)

You can send pictures and motion pictures to AV devices in your house (home AV devices). You can also send them to the devices (external AV devices) of your family or friends living away from you via "LUMIX CLUB".



When sending images to PC (P276)



Using Web services (P280)

You can send pictures and motion pictures to an SNS, etc. via "LUMIX CLUB".

By using [Cloud Sync. Service], you can receive pictures and motion pictures on a PC or smartphone.

3.4.2 Important Notice of Servicing

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

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

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

Printing Material [Leaflet for Customer]



3.5 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 $350\pm 30^{\circ}\text{C}$ ($662\pm 86^{\circ}\text{F}$).

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%

3.6 How to Define the Model Suffix (NTSC or PAL Model)

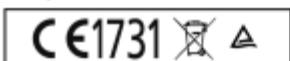
There are nine kinds of DMC-GH4 (Camera body unit), regardless of the colours.

- a) DMC-GH4 (Japan domestic model)
- b) DMC-GH4P/PC
- c) DMC-GH4EB/EC/EF/EG
- d) DMC-GH4EE
- e) DMC-GH4GN
- f) DMC-GH4GD
- g) DMC-GH4GT
- h) DMC-GH4GK
- i) DMC-GH4PU/GC/GH

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

3.6.1 Defining Methods:

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

a) DMC-GH4 (Japan domestic model) The nameplate for this model shows the following Safety registration mark.	
b) DMC-GH4P/PC The nameplate for these models show the following Safety registration mark.	
c) DMC-GH4EB/EC/EF/EG The nameplate for these models show the following Safety registration mark.	
d) DMC-GH4EE The nameplate for this model shows the following Safety registration mark.	
e) DMC-GH4GN The nameplate for this model shows the following Safety registration mark.	
f) DMC-GH4GD The nameplate for this model shows the following Safety registration mark.	
g) DMC-GH4GT The nameplate for this model shows the following Safety registration mark.	
h) DMC-GH4GK The nameplate for this model shows the following Safety registration mark.	
i) DMC-GH4PU/GC/GH The nameplate for these models do not show any above Safety registration mark.	

NOTE:

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

3.6.2 Initial Settings:

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

1. Important Notice:

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

CAUTION:(Initial Settings)

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

[Except "EB/EC/EF and EG" models:(VEP56199A is used as a Main P.C.B.)]

- *. The model suffix can be chosen **JUST ONE TIME.**
(Effective model suffix : "P/PC/PU/EE/GC/GD/GH/GK/GN/GT 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.

[Only for "EB/EC/EF and EG" models:(VEP56199B is used as a Main P.C.B.)]

- *. From the beginning, only "EB/EC/EF and EG" 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 memory card.

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

Set the [Drive mode dial] to “Single”.

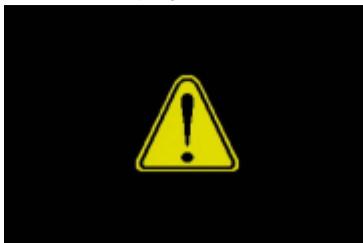
While keep pressing [DISP.] button and [AF/AE LOCK] button simultaneously, turn the power on.

- **Step 2. The Cancellation of “Initial Settings”:**

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

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

The LCD displays the “ ! ” mark before the unit powers down.



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

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

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

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

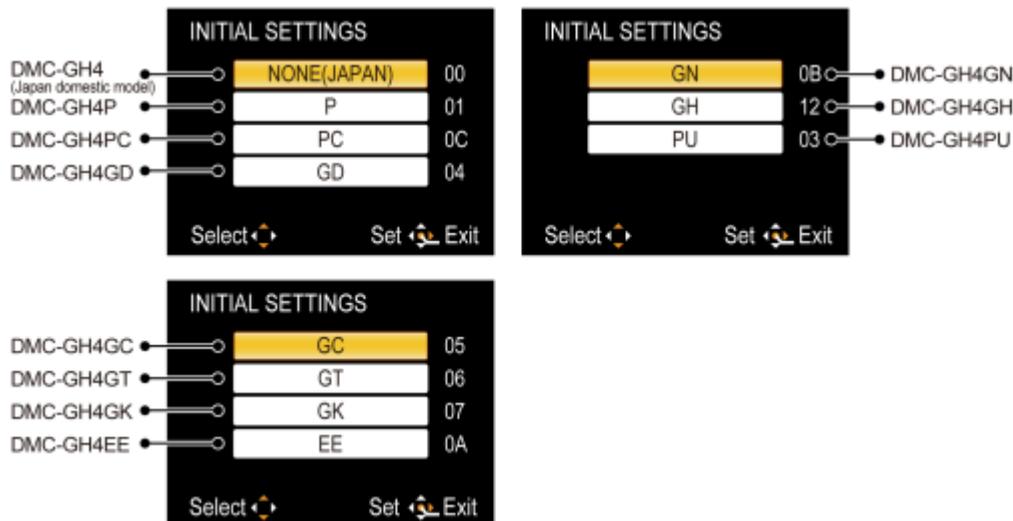
The “Initial Settings” menu is displayed.

There are two kinds of “Initial Settings” menu form as follows:

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

[Except “EB/EC/EF and EG” models : VEP56199A is used as a Main P.C.B.]

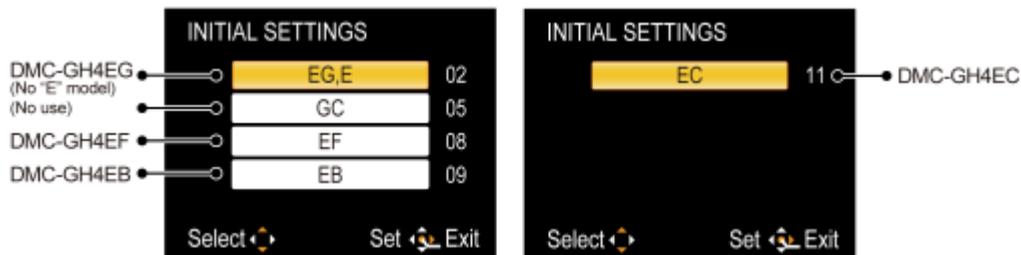
When Main P.C.B. has just been replaced, 11 model suffixes are displayed as follows. (three pages in total)



[Only “EB/EC/EF and EG” models : (VEP56199B is used as a Main P.C.B.)]

When Main P.C.B. has just been replaced, only 5 model suffixes are displayed as follows. (two pages in total)

(Do not select GC.)



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



- **Step 5. Choose the Model Suffix in “Initial Settings”:** (Refer to “CAUTION”)

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

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

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

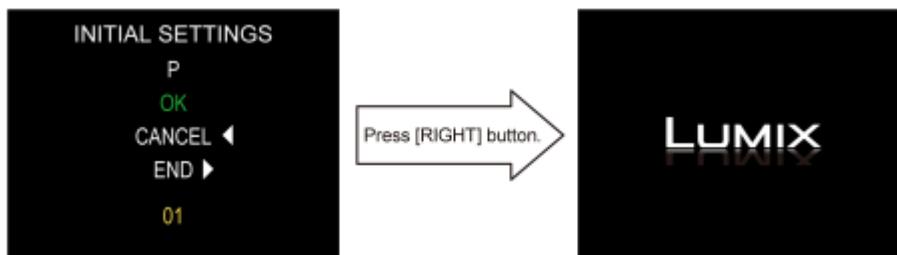
Therefore, select the area carefully.

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

- **Step 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 “GK” or “GT” model suffix is selected, the display shows “PLEASE SET THE CLOCK” in Chinese.)

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

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

	MODEL	VIDEO OUTPUT	LANGUAGE	DATE	REMARKS
a)	DMC-GH4 (Japan domestic model)	NTSC	Japanese	Year/Month/Date	
b)	DMC-GH4P	NTSC	English	Month/Date/Year	
c)	DMC-GH4PC	NTSC	English	Month/Date/Year	
d)	DMC-GH4PU	NTSC	Spanish	Month/Date/Year	
e)	DMC-GH4EB	PAL	English	Date/Month/Year	
f)	DMC-GH4EC	PAL	English	Date/Month/Year	

g)	DMC-GH4EE	PAL	Russian	Date/Month/Year
h)	DMC-GH4EF	PAL	French	Date/Month/Year
i)	DMC-GH4EG	PAL	English	Date/Month/Year
j)	DMC-GH4GC	PAL	English	Date/Month/Year
k)	DMC-GH4GD	NTSC	Korean	Year/Month/Date
l)	DMC-GH4GH	PAL	English	Date/Month/Year
m)	DMC-GH4GK	PAL	Chinese (simplified)	Year/Month/Date
n)	DMC-GH4GN	PAL	English	Date/Month/Year
o)	DMC-GH4GT	NTSC	Chinese (Traditional)	Year/Month/Date

4 Specifications

4.1 Camera Body

The following specification is based on DMC-GH4EB/GH4AEB/GH4HEB.
Some specifications may differ depending on model suffix.

Digital Camera Body (DMC-GH4): Information for your safety

Power Source:	DC 8.4 V
Power Consumption:	2.7 W (When recording with Monitor) [When the Interchangeable lens (H-HS12035) is used] 2.7 W (When recording with Monitor) [When the Interchangeable lens (H-FS14140) is used] 1.6 W (When playing back with Monitor) [When the Interchangeable lens (H-HS12035) is used] 1.6 W (When playing back with Monitor) [When the Interchangeable lens (H-FS14140) 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/Eye Detection/Tracking/49-area-focusing/Custom Multi/ 1-area-focusing/Pinpoint (Touch focus area selection possible)
Shutter system	Focal-plane shutter
Burst recording	
Burst speed	40 pictures/second (Super high speed), 12 pictures/second (High speed, AFS), 7 pictures/second (High speed, AFC), 7 pictures/second (Middle speed), 2 pictures/second (Low speed)
Number of recordable pictures	When there are RAW files: 40 pictures When there are no RAW files: 100 or higher pictures * Recording conditions are based on CIPA standards and an SDHC card manufactured by Panasonic is used.

ISO sensitivity (Standard Output Sensitivity)	AUTO/[iso]/100*/200/400/800/1600/3200/6400/12800/25600 (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 1/30th of a second (When [System Frequency] is set to [59.94 Hz (NTSC)]) or 1/25th (When [System Frequency] is set to [50.00 Hz (PAL)])] [When the Interchangeable lens (H-HS12035) is used] Approx. 9 lx [when i-Low light is used, the shutter speed is 1/30th of a second (When [System Frequency] is set to [59.94 Hz (NTSC)]) or 1/25th (When [System Frequency] is set to [50.00 Hz (PAL)])] [When the Interchangeable lens (H-FS14140) is used]
Shutter speed	Still picture: B (Bulb) (Max. approx. 60 minutes), 60 seconds to 1/8000th of a second Motion picture: 1/30th of a second to 1/16000th of a second (When [System Frequency] is set to [59.94 Hz (NTSC)])/ 1/25th of a second to 1/16000th of a second (When [System Frequency] is set to [50.00 Hz (PAL)])/ 1/24th of a second to 1/16000th of a second (When [System Frequency] is set to [24.00 Hz (CINEMA)])
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)
Light metering system, Light metering mode	1728-zone multi-pattern sensing system, Multiple/Centre weighted/Spot
Monitor	3.0" OLED Monitor (3.2) (Approx. 1,040,000 dots) (field of view ratio about 100%) Touch screen
Viewfinder	OLED Live Viewfinder (4.3) (Approx. 2,360,000 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 feet) [When the Interchangeable lens (H-HS12035) is mounted, WIDE, ([ISO AUTO] is set) Approx. 50 cm (1.6 feet) to 13.7 m (45 feet) [When the Interchangeable lens (H-FS14140) 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 1/250th of a second
Microphone	Stereo
Speaker	Monaural
Recording media	SD Memory Card/SDHC Memory Card*/SDXC Memory Card* (* UHS-I UHS Speed Class 3)
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, 3840×2160 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	<p>[AVCHD] When [System Frequency] is set to [59.94 Hz (NTSC)] 1920×1080/59.94p (28 Mbps), 1920×1080/59.94i (17 Mbps), 1920×1080/59.94i* (24 Mbps), 1920×1080/23.98p (24 Mbps) (* Sensor output is 29.97 frames/sec.) When [System Frequency] is set to [50.00 Hz (PAL)] 1920×1080/50.00p (28 Mbps), 1920×1080/50.00i (17 Mbps), 1920×1080/50.00i* (24 Mbps) (* Sensor output is 25.00 frames/sec.) [MP4] When [System Frequency] is set to [59.94 Hz (NTSC)] 3840×2160/29.97p (100 Mbps), 1920×1080/59.94p (28 Mbps), 1920×1080/29.97p (20 Mbps), 1280×720/29.97p (10 Mbps), 640×480/29.97p (4 Mbps) When [System Frequency] is set to [50.00 Hz (PAL)] 3840×2160/25.00p (100 Mbps), 1920×1080/50.00p (28 Mbps), 1920×1080/25.00p (20 Mbps), 1280×720/25.00p (10 Mbps), 640×480/25.00p (4 Mbps) [MP4] (LPCM), [MOV] When [System Frequency] is set to [59.94 Hz (NTSC)] 3840×2160/29.97p [100 Mbps (IPB)], 3840×2160/23.98p [100 Mbps (IPB)], 1920×1080/59.94p [200 Mbps (ALL-Intra)], 1920×1080/59.94p [100 Mbps (IPB)], 1920×1080/59.94p [50 Mbps (IPB)], 1920×1080/29.97p [200 Mbps (ALL-Intra)], 1920×1080/29.97p [100 Mbps (IPB)], 1920×1080/29.97p [50 Mbps (IPB)], 1920×1080/23.98p [200 Mbps (ALL-Intra)], 1920×1080/23.98p [100 Mbps (IPB)], 1920×1080/23.98p [50 Mbps (IPB)] When [System Frequency] is set to [50.00 Hz (PAL)] 3840×2160/25.00p [100 Mbps (IPB)], 1920×1080/50.00p [200 Mbps (ALL-Intra)], 1920×1080/50.00p [100 Mbps (IPB)], 1920×1080/50.00p [50 Mbps (IPB)], 1920×1080/25.00p [200 Mbps (ALL-Intra)], 1920×1080/25.00p [100 Mbps (IPB)], 1920×1080/25.00p [50 Mbps (IPB)] When [System Frequency] is set to [24.00 Hz (CINEMA)] 4096×2160/24.00p [100 Mbps (IPB)], 3840×2160/24.00p [100 Mbps (IPB)], 1920×1080/24.00p [200 Mbps (ALL-Intra)], 1920×1080/24.00p [100 Mbps (IPB)], 1920×1080/24.00p [50 Mbps (IPB)]</p>						
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	<table border="1"> <tr> <td>AVCHD</td> <td>Dolby® Digital (2 ch)</td> </tr> <tr> <td>MP4</td> <td>AAC (2 ch)</td> </tr> <tr> <td>MP4 (LPCM), MOV</td> <td>LPCM (2 ch)</td> </tr> </table>	AVCHD	Dolby® Digital (2 ch)	MP4	AAC (2 ch)	MP4 (LPCM), MOV	LPCM (2 ch)
AVCHD	Dolby® Digital (2 ch)						
MP4	AAC (2 ch)						
MP4 (LPCM), MOV	LPCM (2 ch)						
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 [System Frequency]) Audio line output (monaural)						
Terminal							
[REMOTE]	φ 2.5 mm jack						
[AV OUT/DIGITAL]	Dedicated jack (8 pin)						
[HDMI]	MicroHDMI Type D						
[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)×83.9 mm (D) (5.23" (W)×3.68"(H)×3.30" (D)) (excluding the projecting parts)
Mass	Approx. 560 g/1.23 lb [with the card and battery] Approx. 460 g/1.06 lb (camera body) Approx. 865 g/1.91 lb [with the Interchangeable lens (H-HS12035), card and battery] Approx. 825 g/1.82 lb [with the Interchangeable lens (H-FS14140), 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 (1 to 11ch)
Encryption method	Wi-Fi compliant WPA™/WPA2™
Access method	Infrastructure mode

NFC

Compliance standard	ISO/IEC 18092 NFC-F (Passive Mode)
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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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4.2 Lens

Interchangeable Lens	H-HS12035 "LUMIX G X VARIO 12–35 mm/F2.8 ASPH./ POWER O.I.S."	H-FS14140 "LUMIX G VARIO 14–140 mm/F3.5–5.6 ASPH./POWER 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	F3.5 (Wide) to F5.6 (Tele)
Minimum aperture value	F22	F22
Lens construction	14 elements in 9 groups (4 aspherical lenses, 1 UED Lens, 1 UHR Lens)	14 elements in 12 groups (3 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)	0.3 m (0.98 feet) to ∞ (from the focus distance reference line) (focal length 14 mm to 21 mm), 0.5 m (1.6 feet) to ∞ (from the focus distance reference line) (focal length 22 mm to 140 mm)
Maximum image magnification	0.17× (35 mm film camera equivalent: 0.34×)	0.25× (35 mm film camera equivalent: 0.5×)
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	58 mm
Max. diameter	Approx. 67.6 mm (2.7 inch)	Approx. 67 mm (2.6 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. 75 mm (3.0 inch) (from the tip of the lens to the base side of the lens mount)
Mass	Approx. 305 g/0.67 lb	Approx. 265 g/0.58 lb
Dust-proof and splash-proof	Yes	None

5 Location of Controls and Components

The following description is for DMC-GH4EB/GH4AEB/GH4HEB.

Some descriptions may differ depending on model suffix.

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

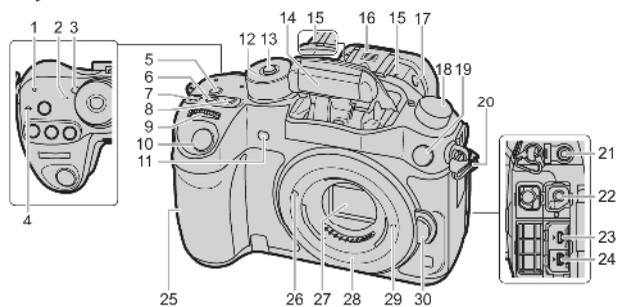
5.1 Camera Body



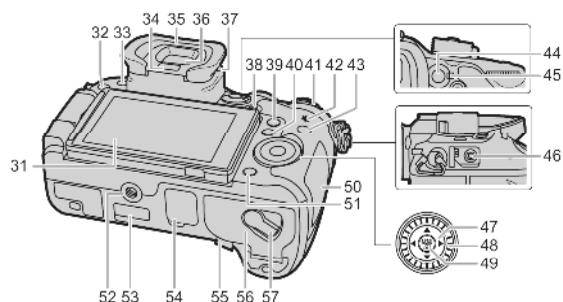
5.2 Lens



■ Camera body



1	Wi-Fi® connection lamp (P255)	17	Flash open button (P180) • The flash opens, and recording with the flash becomes possible.
2	Status indicator (P36)	Drive mode dial	
3	Camera ON/OFF switch (P36)	Single (P112): 	
4	Focus distance reference mark (P110)	Burst (P113): 	
5	[Wi-Fi] button (P255)/[Fn1] button (P317)	Auto Bracket (P116): 	
6	[ISO](ISO sensitivity) button (P132)	Self-timer (P118): 	
7	[](Exposure Compensation) button (P157)	Time Lapse/Animation (P120, 124): 	
8	[WB](White Balance) button (P135)	19	Flash synchro socket (Flash synchro socket cap) (P348)
9	Front dial (P42)	20	Shoulder strap eyelet (P26)
10	Shutter button (P39)	21	[MIC] socket (P350)
11	Self-timer indicator (P118)/AF Assist Lamp (P307)	22	Headphone socket (P62, 208)
12	Mode dial (P41)	23	[AV OUT/DIGITAL] socket (P326, 332, 335, 337)
13	Mode dial lock button (P41)	24	[HDMI] socket (P325)
14	Flash (P180)	25	NFC antenna [] (P263)
15	Stereo microphone (P207) • Be careful not to cover the microphone with your finger. Doing so may make sound difficult to record.	26	Lens fitting mark (P23)
16	Hot shoe (Hot shoe cover) (P347) • Keep the Hot Shoe Cover out of reach of children to prevent swallowing.	27	Sensor
		28	Mount
		29	Lens lock pin
		30	Lens release button (P24)



31 Touch screen/monitor (P49)	47 Cursor buttons (P43)
32 [▶] (Playback) button (P221)	48 Control dial (P42)
33 [LVF] button (P48)/[Fn5] button (P317)	49 [MENU/SET] button (P43, 54)
34 Eye sensor (P48)	50 Card door (P33)
35 Eye Cup (P412)	51 [⏏/↵] (Delete/Cancel) button (P227)/ [Fn4] button (P317)
36 Viewfinder (P48)	52 Tripod mount (P418) • A tripod with a screw length of 5.5 mm (0.22 inch) or more may damage this unit if attached.
37 Diopter adjustment dial (P38)	53 Cover for the interface unit connector • Keep the cover for the interface unit connector out of reach of children to prevent swallowing.
38 Motion picture button (P191)	54 Cover for the battery grip connector (P352) • Keep the cover for the battery grip connector out of reach of children to prevent swallowing.
39 [Q.MENU] button (P53)/[Fn2] button (P317)	55 DC coupler cover (P353) • When using an AC adaptor, ensure that the Panasonic DC coupler (optional) and AC adaptor (optional) are used.
40 [⏏] (Auto Focus Mode) button (P91)/ [Fn3] button (P317)	56 Battery door (P32)
41 Rear dial (P42)	57 Release lever (P32)
42 Speaker (P62) • Be careful not to cover the speaker with your finger. Doing so may make sound difficult to hear.	
43 [DISP.] button (P44) • Each time this is pressed, the display on the monitor is switched.	
44 [AF/AE LOCK] button (P159)	
45 Focus mode lever (P91, 107)	
46 [REMOTE] socket (P353)	

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:

o Preparation

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

o Step 1. The Temporary Cancellation of "Initial Settings":

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

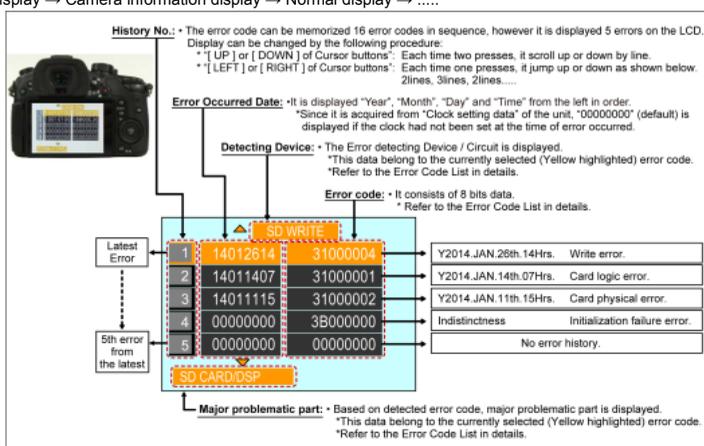
While keep pressing [DISP.] button and [AF/AE LOCK] button simultaneously, turn the power on.

o Step 2. Execute the Error Code Display Mode:

Press [MENU/SET] button, "[LEFT] of Cursor buttons" and [AF/AE LOCK] button 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

o 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	BIS	In Body Image Stabilization	20*0	0010	HP High detect error (BIS X axis HP encoder always detects High, and not becomes Low) (Mount Box Unit, Motor Drive IC)	(No indication)	(No indication)	
				0020	HP Low detect error (BIS X axis HP encoder always detects Low, and not becomes High) (Mount Box Unit, Motor Drive IC)			
				0030	HP High detect error (BIS Y axis HP encoder always detects High, and not becomes Low) (Mount Box Unit, Motor Drive IC)			
				0040	HP Low detect error (BIS Y axis HP encoder always detects Low, and not becomes High) (Mount Box Unit, Motor Drive IC)			
				0050	BIS GYRO (X) error (Mount Box Unit, GYRO IC on Front Case Unit)			
				0060	BIS GYRO (Y) error (Mount Box Unit, GYRO IC on Front Case Unit)			
				0070	BIS GYRO communication error (Mount Box Unit, GYRO IC on Front Case Unit)			
	FLASH	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)	
SOFT	CPU	Reset	30*0	0001 0007	System error (NMI reset)	NMI RST	MAIN PCB	
	Recording Media	Memory card	31*0	0001	Memory card logic error 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	Memory card physical error During formatting the memory card, there is no response from the memory card If the mini-SD memory card is used, check the SD memory card adaptor			
				0004	Memory card writing error Check the memory card. It might be damage one.			
		Lens	Communication	3C11 3CF0	****	Lens communication error	ZOOM	ZOOMm/ LENSu
		Camera	System	3B*0 3E*0	0000	Initialization failure error	INIT	(No indication)
	0001				Exposure charging operation failure (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit)	(No indication)	(No indication)	
	0002				Failure of the returning operation to the home position (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit)			
	0003				Failure of the mecha shutter sensor (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit, MS Drive IC)			
	0004				Failure of the mecha shutter sensor (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit, MS Drive IC)			
	0005				Failure of the mecha shutter sensor (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit, MS Drive IC)			
	0006				Exposure charging recovery operation failure (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit, MS Drive IC)			
	0011				Failure of the mecha shutter sensor (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit, MS Drive IC)			
	0012				Failure of the mecha shutter sensor (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit, MS Drive IC)			
	0013				Failure of the mecha shutter sensor (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit, MS Drive IC)			
0014	Abnormal current of shutter drive motor (FP9007(Main)-->Flex contact check of Mount Box Unit, Mount Box Unit, MS Drive IC)							
	Recording	Motion Image Recording	3F*0	0001	File time out error in recording motion image			
				0002	File data cue send error in recording motion image			
Wi-Fi			3211	**02 **0C	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: 2B 001000)

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: 2B 801000)

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.

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-FS14140) 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-GH4A):

- [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 changed although Focus ring is rotated. (Free rotation.)

H-FS14140 (Included in DMC-GH4H):

- [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 changed 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.

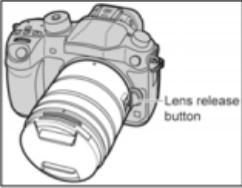
NOTE: Refer to the Operating Instructions carefully.

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

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

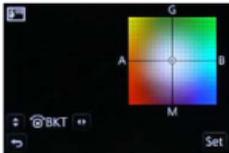
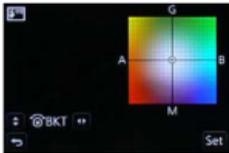
If it is hard to determine whether the resolution is out of specification or not, proceed the "RESOLUTION INSPECTION", before replacing the LENS MAIN BLOCK UNIT and/or MOUNT BOX UNIT. (The unit might be mishandling, dropping or others.)

[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] (7/9) ----- [Fn Button Set] [Setting in REC mode](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 
	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] (3/9) ----- [AF + MF] (ON/OFF)
	No released without lens attachment.	*It is able to release the shutter button without attaching the lens unit. ⇒ [Custom Menu] (9/9) ----- [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 60 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. *After "in-focus" condition, Zoom condition has been changed. *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> <p> (A) Focus distance reference mark (B) Focus distance reference line (C) 0.25 m (0.82 feet) [When the interchangeable lens (H-HS12035) is used] (D) 0.3 m (0.98 feet) (Wide to focal length 21 mm) [When the interchangeable lens (H-FS14140) is used] (E) 0.5 m (1.6 feet) (focal length 22 mm to Tele) [When the interchangeable lens (H-FS14140) is used] </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.) *It does not activated if the [Focus Mode] is set to other than [MF] mode. *It does not activated when using the Digital Zoom or recording motion pictures. *It does not activated if [MF Assist] is set to OFF. ⇒ [Custom Menu] (3/9) ----- [MF Assist] (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 [iA] mode, it is automatically assigned according with scene.) (Press the [Auto Focus Mode] to display the AF mode menu.) *It does not activated when using the Digital Zoom or Miniature Effect of [Creative Control Mode]. *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. *The subject is beyond the focus range of the camera. *There is camera shake (jitter) or the subject is moving slightly. *The focus indication green mark is lights at the top right hand corner on the LCD when the subject is focused. *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". ⇒ [Custom Menu] (1/9) ----- [AF/AE Lock] (ON/OFF) *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]. ⇒ [Custom Menu] (1/9) ----- [AF/AE Lock] (AE LOCK, AF LOCK, AF/AE LOCK, AF-ON) *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). *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. *Confirm that flash output settings. ⇒ [Rec Menu] (4/7) ----- Flash (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. *A characteristic of this is that the number of round spots and their position differ in every picture.</p>

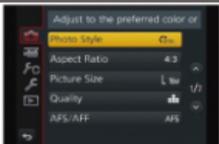
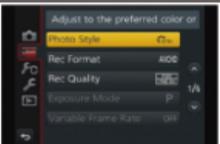
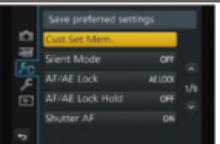
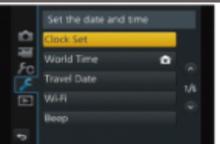
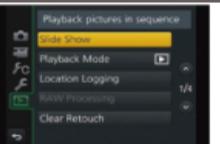
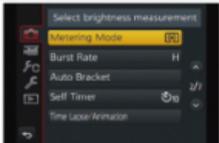
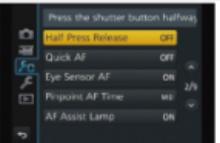
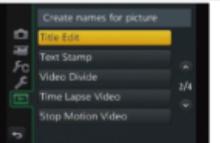
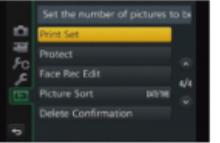
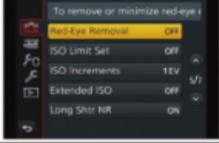
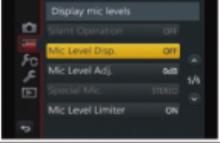
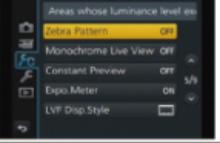
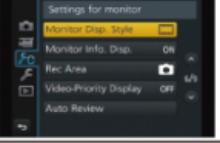
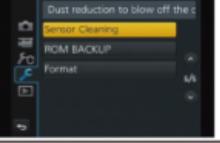
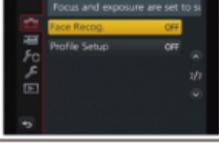
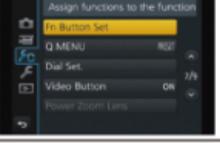
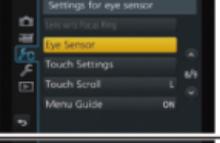
TITLE	ITEMS	DESCRIPTION
Flash	Colour is strange when the Flash is fired.	<p>*The colour of the subject which is other than Flash reachable distance is not coverage of white balance.</p> <p>*Confirm that [WB Adjustment] setting condition. (Press the [WB] button, and rotate the rear dial to select the 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 Menu] (4/7) ----- Flash (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] (1/9) ----- [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] (1/9) ----- [AF/AE Lock] (AE LOCK, AF LOCK, AF/AE LOCK, AF-ON)</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] (3/9) ----- [Focus Release Priority] (FOCUS/RELEASE)</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 Menu] (6/7) ----- [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 Menu] (3/6) ----- [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] (4/9) ----- [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 Menu] (4/6) ----- [Version Disp.]</p>

MENU LIST (Quick Reference)

[Mode Dial] * As for the red character portion of a mode dial, the following basic menu is displayed.

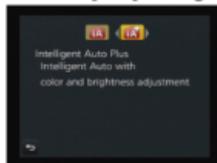
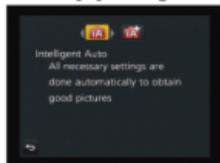
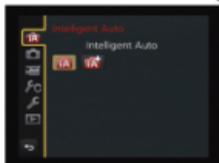
IA	Intelligent Auto Mode	M	Creative Video Mode
IA⁺	Intelligent Auto Plus Mode	C1	Custom Mode
P	Program AE Mode	C2	Custom Mode
A	Aperture-Priority AE Mode	C3	Custom Mode
S	Shutter-Priority AE Mode		Creative Control Mode
M	Manual Exposure Mode		

The following menu items are displayed on the LCD monitor.
 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]	 [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 Intelligent Auto Mode]

When a mode dial is Intelligent Auto Mode position and set the [Intelligent Auto Mode], as for [REC], [MOTION PICTURE] and [CUSTOM] only the basic item is displayed.

([SETUP] and [PLAYBACK] are the same as above-mentioned MENU LIST (Quick Reference).)

[REC]	[MOTION PICTURE]	[CUSTOM]	[SETUP]	[PLAYBACK]
			Same as [MENU LIST (Quick Reference)].	

[Creative Video Mode]

When a mode dial is Creative Video Mode position, [REC] is not displayed.

([MOTION PICTURE], [CUSTOM], [SETUP] and [PLAYBACK] are the same as above-mentioned MENU LIST (Quick Reference).)

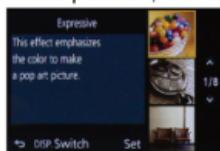
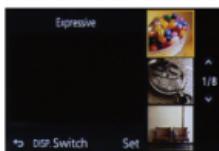
[C3 Custom Mode]

Set the mode dial to [C3 Custom Mode]. Custom Set [3-1], [3-2] or [3-3] can be selected.



[Creative Control Mode]

When a mode dial is Creative Control Mode position, it is displayed **except the above-mentioned MENU LIST (Quick Reference).**



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 MENU] (3/6) ----- [Menu Resume] (ON/OFF)

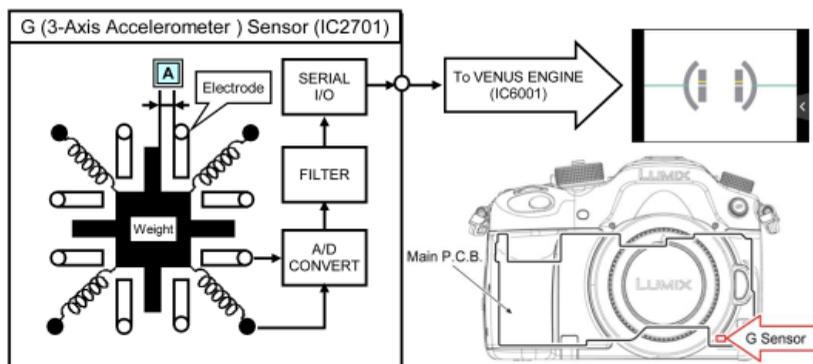
7.2 About Tilt Sensor Display

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

[Principal of Operation]

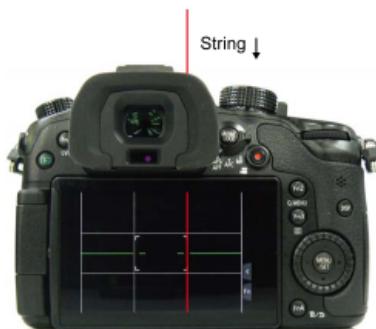
1. Movement of "Weight" is detected by capacitance. ----- [A]
2. Each acceleration of the X/Y/Z axis is converted into data and they are output.

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 IC6003 (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:
 1. Switch to display the Guidelines in LCD.
 2. 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.

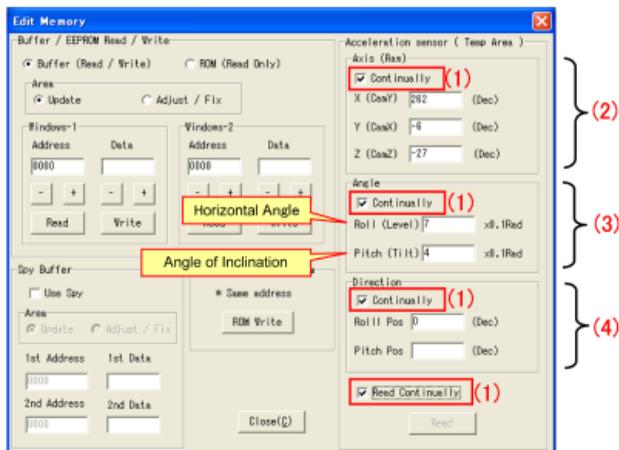


[Test of the G-Sensor Working]

- 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]

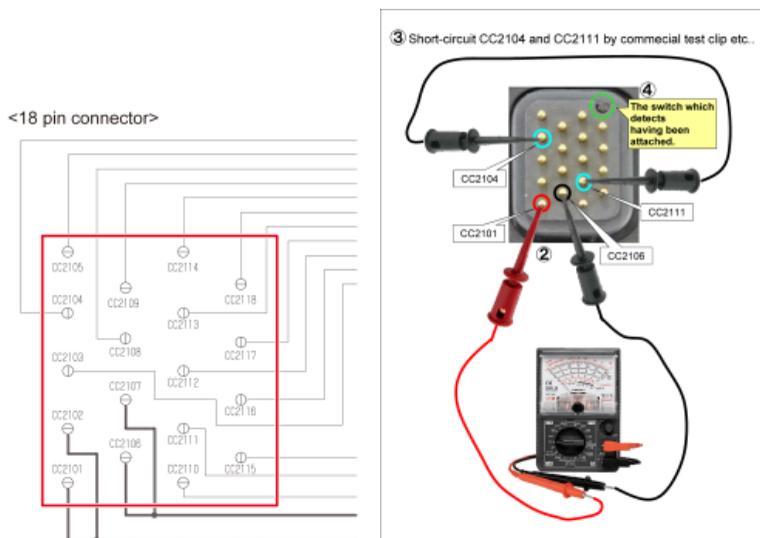
1. Put a checkmark in four portions of marked (1) each.
2. Move the camera and confirm the change of each data of (2) and (3). Above value is one example. The value changes according to dispersion of each G-sensor.
3. When the value (3) is matched with the posture of the camera, G-sensor itself is normal.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



■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.

- o 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.

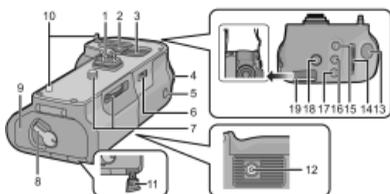
[Checking Method of Dial]

- o 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.
- o 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]

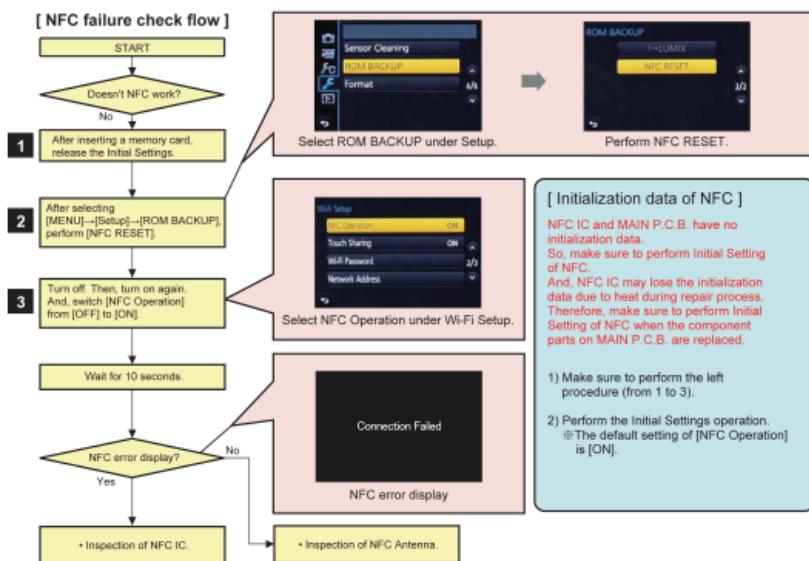
1. Connect the tester (range:×1) between CC2106 (GND) and CC2109.
2. When the operation ON/OFF switch is turned off, it is normal if it becomes open -circuit condition.

<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 Failure Diagnosis of NFC



7.5 Wi-Fi NFC P.C.B.

7.5.1 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.

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

7.5.2 Checking of Trouble Caused by Wi-Fi NFC P.C.B. or Not

The Wi-Fi NFC 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.

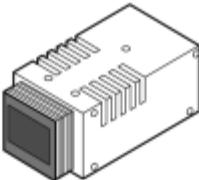
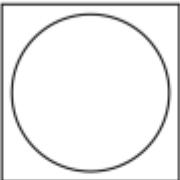
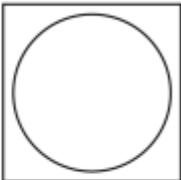
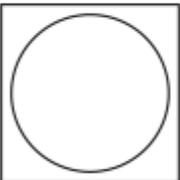
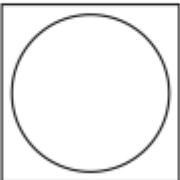
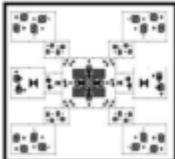
(Procedure)

- 1) Press [Wi-Fi] button.
- 2) Select [Connect newly] in [Wi-Fi] menu.
- 3) Select optional function in [select a function] menu, then select [Direct] in [Select connect method] menu.
- 4) Select [Manual Connection] in [Select connect method] menu.
- 5) The Wi-Fi NFC 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.

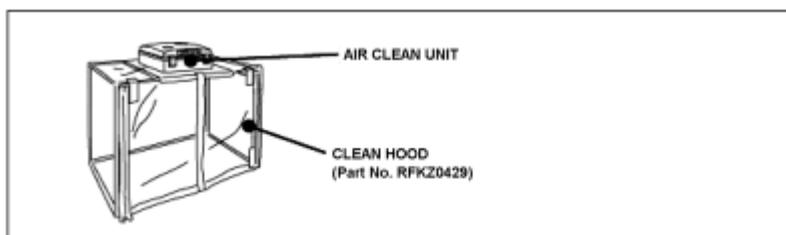
Resistor for Discharging (1k Ω /5W) ERG5SJ102	Light Box (with DC Cable) RFKZ0523	ND Filter 1 (ND 0.9) VFK1164ND09
 <p>* An equivalent type of resistor may be used.</p>	 <p>* VFK1164TDVLB can be used.</p>	
ND Filter 2 (ND 0.3) RFKZ0513	CC Filter 1 (CC-C7.5) RFKZ0511	CC Filter 2 (CC-Y10) RFKZ0512
		
LB Filter 1 (LBB2) RFKZ0520	LB Filter 2 (LBB8) RFKZ0521	Gray Card RFKZ0506
		
Resolution Chart RFKZ0510	Driver VFK1390	Torque Driver RFKZ0456
 <p>* Supplied as divided chart parts. (assemble it before use.)</p>		 <p>* Spec. : 2-30N·cm (equiv.0.2-3kgf/cm)</p>
DMC-G1K	Lens Cleaning Kit (BK) VFK1900BK	Silicon Chips RFKZ0478
 <p>* Correspond by the marketed commodity. (It does not supply as service fixture and tools.)</p>	 <p>* Only supplied 10 set/box.</p>	 <p>* For exchange the packing.</p>

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).

[NOTE]

- Work in the environment of specified clean level less than class 10,000 (Federal Standard 209D) when inside cleaning of a lens.
Please refer to the following service manuals.
- H-HS12035PP/E/GK: Order No [DSC1206029CE](#)
- H-FS14140PP/E/GK: Order No [DSC1305023CE](#)



8.3 When Replacing the Main P.C.B.

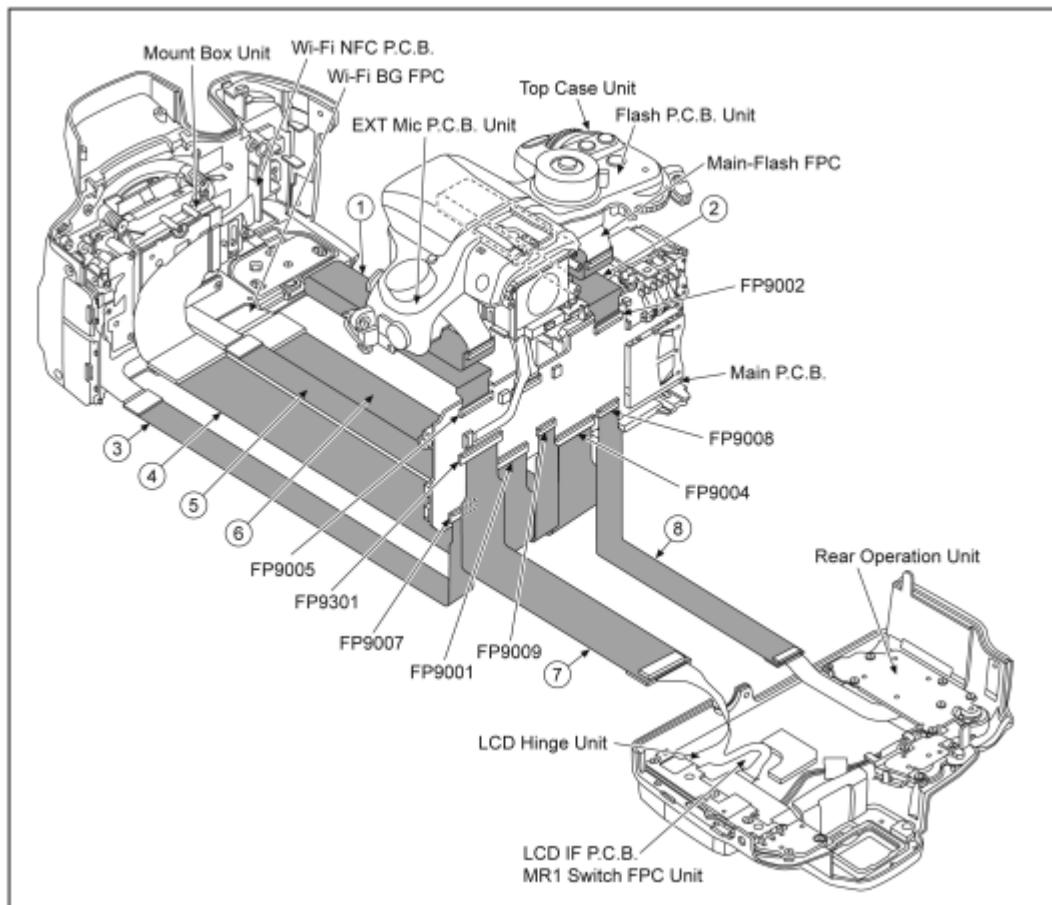
After replacing the Main P.C.B., be sure to achieve adjustment.
Refer to the adjustment instruction in the adjustment software for details.

8.4 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	From
1	RFKZ0477	FP9005 (MAIN) ↔ EXT MIC P.C.B. UNIT / TOP CASE UNIT	45pin / 0.3 FFC
2	RFKZ0416	FP9002 (MAIN) ↔ MAIN-FLASH FPC - FLASH P.C.B. UNIT	41pin / 0.3 FFC
3	VFK1950	FP9007 (MAIN) ↔ MOUNT BOX UNIT	33pin / 0.3 FFC
4	RFKZ0619	FP9001 (MAIN) ↔ MOUNT BOX UNIT	61pin / 0.3 FFC
5	RFKZ0564	FP9009 (MAIN) ↔ MOUNT BOX UNIT	23pin / 0.3 FFC
6	RFKZ0619	FP9004 (MAIN) ↔ WI-FI BG FPC- WI-FI NFC P.C.B.	61pin / 0.3 FFC
7	RFKZ0619	FP9301 (MAIN) ↔ LCD HINGE UNIT - LCD IF P.C.B. / MR1 SWITCH FPC UNIT	61pin / 0.3 FFC
8	VFK1443	FP9008 (MAIN) ↔ REAR OPERATION UNIT	18pin / 0.5 FFC



CAUTION (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.

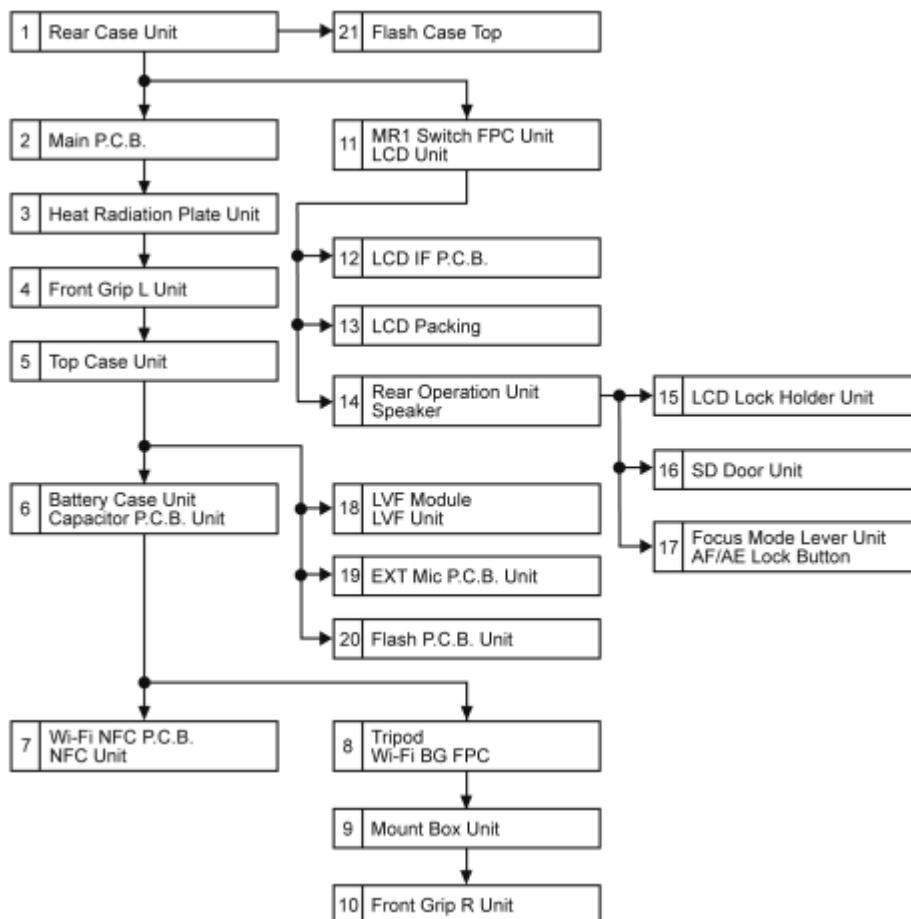
9 Disassembly and Assembly Instructions

9.1 Camera Body Part

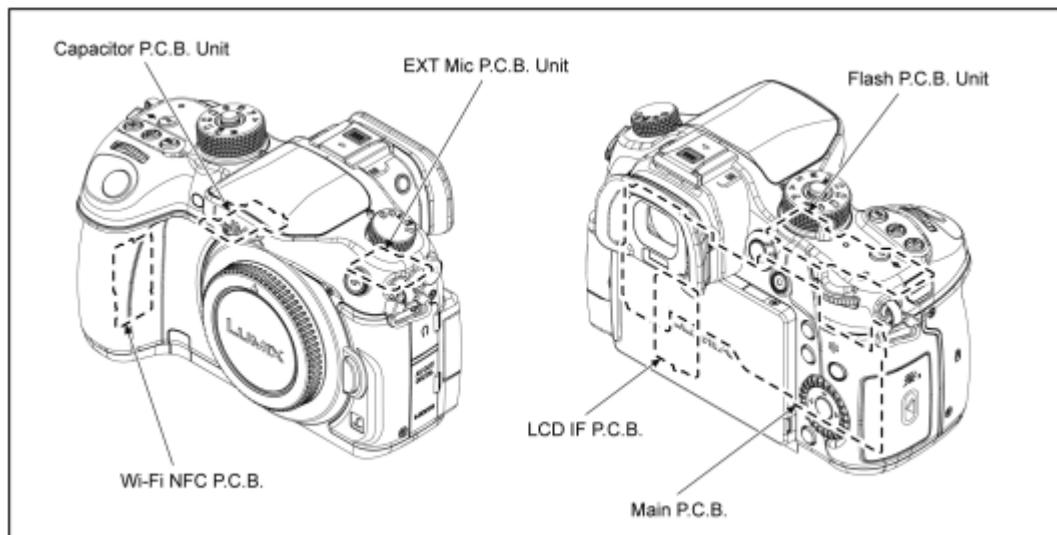
9.1.1 Disassembly Flow Chart

This is a disassembling chart.

When assembling, perform this chart conversely.



9.1.2 P.C.B. Location



9.1.3 Disassembly Procedure

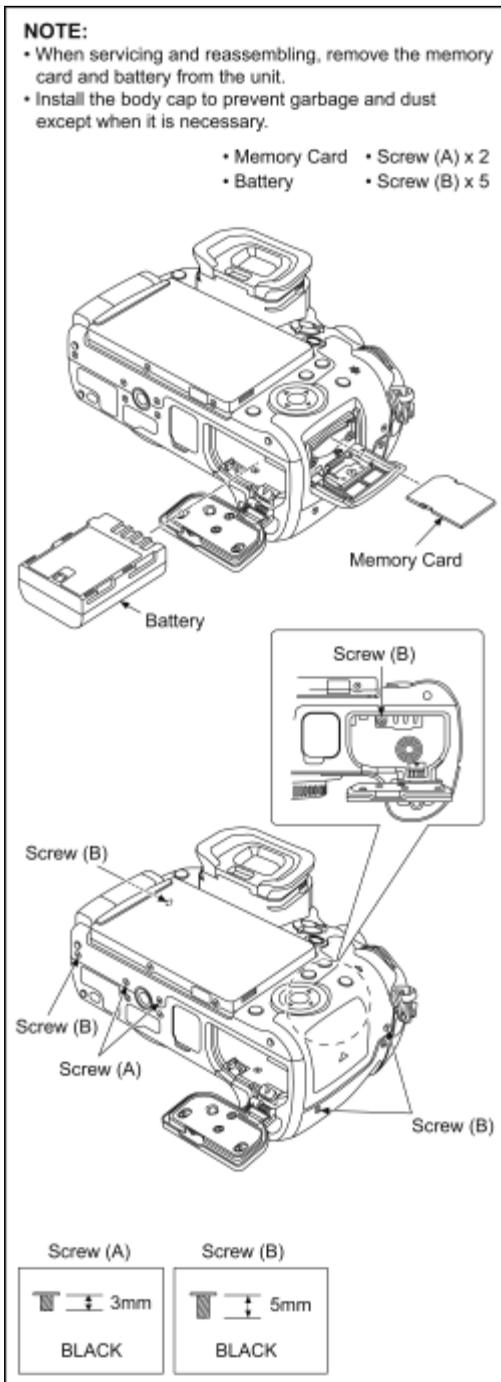
No.	Item	Fig.	Removal
1	Rear Case Unit	(Fig. D1)	Memory Card
			Battery
			Screw (A) x 2
		(Fig. D2)	Screw (B) x 5
			Eye Cup Unit
			Screw (C) x 2
			Screw (D) x 2
		(Fig. D3)	Screw (E) x 1
			LVF DPT Knob
			FP9008 (Flex)
2	Main P.C.B.	(Fig. D4)	FP9301 (Flex)
			Rear Case Unit
		(Fig. D5)	Screw (F) x 2
			Battery Contact Cover Unit
			FP9001 (Flex)
			FP9002 (Flex)
			FP9003 (Flex)
			FP9004 (Flex)
			FP9005 (Flex)
			FP9007 (Flex)
			FP9009 (Flex)
			FP9302 (Flex)
			FP9303 (Flex)
			P9003 (Connector)
			Screw (G) x 2
			Screw (H) x 1
Locking tab x 2			
Main P.C.B.			
3	Heat Radiation Plate Unit	(Fig. D6)	Screw (I) x 1
			Locking tab x 2
			Convex x 1
			Heat Radiation Plate Unit
4	Front Grip L Unit	(Fig. D7)	Screw (J) x 1
			Screw (K) x 1
		(Fig. D8)	Hooking part x 6

			Front Grip L Unit
5	Top Case Unit	(Fig. D9)	Screw (L) x 5
			Screw (M) x 1
		(Fig. D10)	P8501 (Connector)
			Top Case Unit
6	Battery Case Unit, Capacitor P.C.B. Unit	(Fig. D11)	Screw (N) x 2
			Battery Case Unit
		(Fig. D12)	Battery Case Sheet
			Locking tab x 2
			Capacitor Cover
			Screw (O) x 2
			Hooking part x 2
			Capacitor P.C.B. Unit
7	Wi-Fi NFC P.C.B., NFC Unit	(Fig. D13)	Connector (A)
			Screw (P) x 1
			Hooking part x 1
			Connector (B)
		(Fig. D14)	Screw (Q) x 1
			Locking tab x 1
			Wi-Fi Holder
			Wi-Fi NFC P.C.B.
			Screw (R) x 1
			Locking tab x 1
			NFC Unit
8	Tripod, Wi-Fi BG FPC	(Fig. D15)	BG Contact Cover
			IF Contact Cover
			Screw (S) x 2
		(Fig. D16)	Screw (T) x 2
			Screw (U) x 1
			Tripod
			Convex x 2
			BG Contact Holder
			Wi-Fi BG FPC
9	Mount Box Unit	(Fig. D17)	Screw (V) x 4
			Mount Box Unit
		(Fig. D18)	Body Cap
			Screw (W) x 2
			Screw (X) x 2
			B Mount
			B Mount Ring
			Mount Spring
			Lens Lock Pin Unit
			Lens Lock Pin Spring
10	Front Grip R Unit	(Fig. D19)	Screw (Y) x 1
			Screw (Z) x 2
			Hooking part x 3
			Jack Cover C
			Jack Cover B
			Front Grip R Unit
11	MR1 Switch FPC Unit, LCD Unit	(Fig. D20)	Screw (a) x 2
			Hinge Arm Cover Top
			Hinge Arm Cover Bottom
			Screw (b) x 4
		(Fig. D21)	Hinge Packing Cover Unit
			Connector (C)

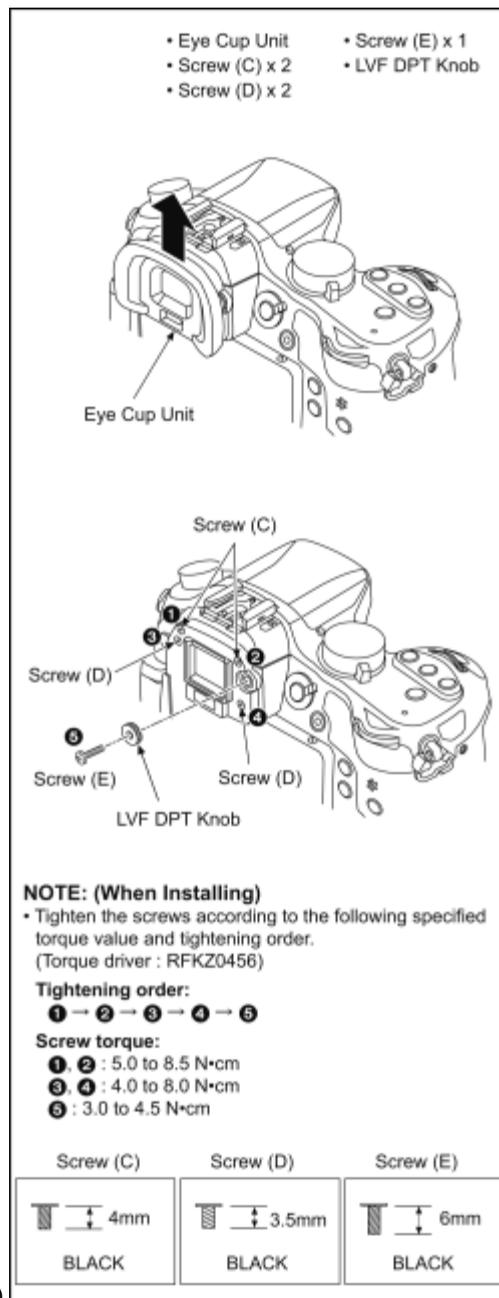
			Solder (2 points)
			Convex x 7
			MR1 Switch FPC Unit
			Convex x 2
			Hinge Cushion 4
			Hinge Fix Cover
		(Fig. D22)	Screw (c) x 2
			Spacer x 2
			LCD Unit
12	LCD IF P.C.B.	(Fig. D23)	Screw (d) x 2
			Screw (e) x 4
			Locking tab x 6
			FP7200 (Flex)
			LCD Case Bottom Unit
		(Fig. D24)	FP7202 (Flex)
			LCD Hinge Unit
			FP7201 (Flex)
			Convex x 1
			Hooking part x 1
			LCD IF P.C.B.
13	LCD Packing	(Fig. D25)	LCD Packing
14	Rear Operation Unit, Speaker	(Fig. D26)	Screw (f) x 8
			Screw (g) x 1
			Screw (h) x 1
			Sheet
		(Fig. D27)	Hooking part x 4
			Rear Operation Unit
			Speaker
			Q.MENU Button
			DISP. Button
			FN3 Button
			Rear Button Packing B
			Rear Button Packing D x 2
			Motion Picture Button
			FN4 Button
		(Fig. D28)	When Installing
15	LCD Lock Holder Unit	(Fig. D29)	LCD Lock Holder Unit
			LCD Lock Spring
16	SD Door Unit	(Fig. D30)	Screw (i) x 2
			Screw (j) x 3
			SD Door Unit
17	Focus Mode Lever Unit, AF/AE Lock Button	(Fig. D31)	Screw (k) x 2
			Rear Button Cover
			Click Ball
			Mode Dial Spring
			E Ring
			AF/AE Rotor
			Focus Mode Lever Unit
			AF/AE Lock Button
18	LVF Module, LVF Unit	(Fig. D32)	Screw (m) x 1
			Screw (n) x 1
			Screw (o) x 2
			Convex x 1
			Locking tab x 2
			LVF Holder Tape

			LVF Holder
			Locking tab x 4
		(Fig. D33)	Heat Radiation Pad (A)
			LVF Module Plate
			Heat Radiation Pad (B)
			LVF Module
			LVF Unit
19	Ext Mic P.C.B. Unit	(Fig. D34)	Screw (p) x 1
			FP4401 (Flex)
			Solder (2 points)
			Mic Jack Cover
			Ext Mic P.C.B. Unit
20	Flash P.C.B. Unit	(Fig. D35)	Screw (q) x 3
			FP8502 (Flex)
			FP8503 (Flex)
			FP8504 (Flex)
			P8502 (Connector)
			Solder (2 points)
			Flash P.C.B. Unit
		(Fig. D36)	When Replacing
21	Flash Case Top	(Fig. D37)	Screw (r) x 2
			Projection part x 2
			Flash Case Top

9.1.3.1 Removal of the Rear Case Unit

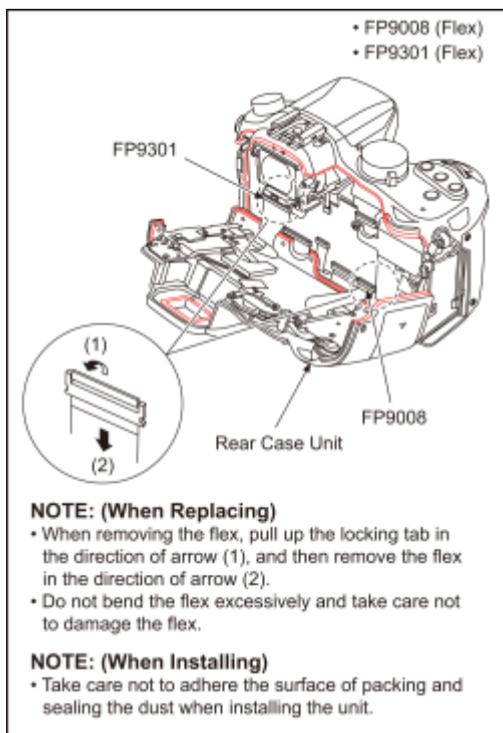


(Fig. D1)

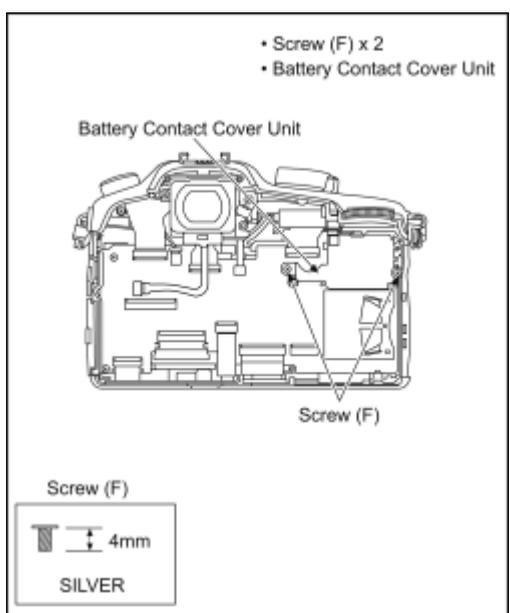
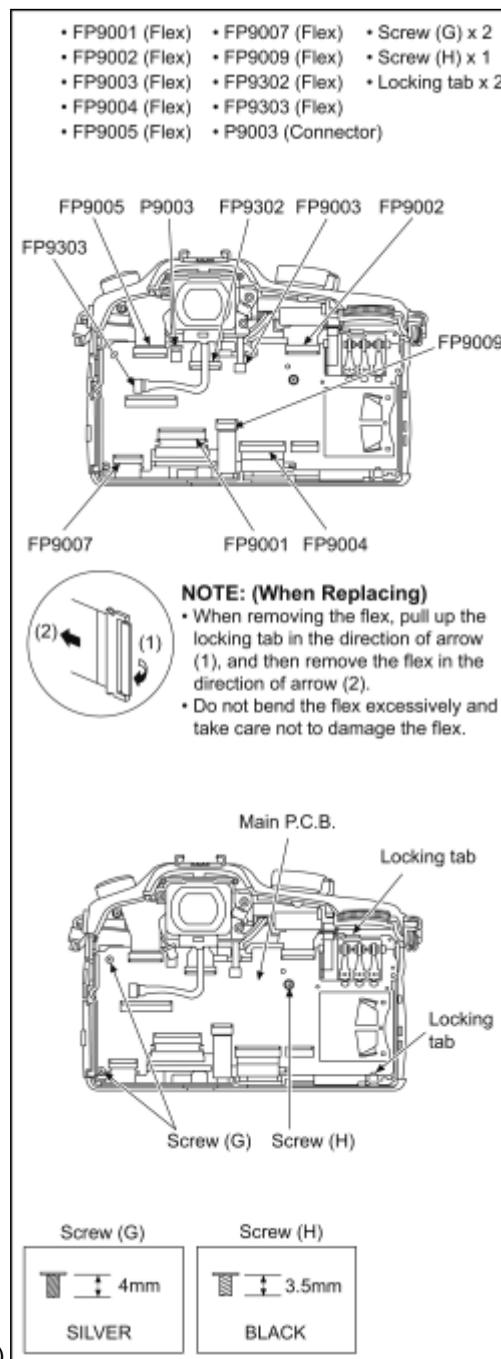


(Fig. D2)

(Fig. D3)



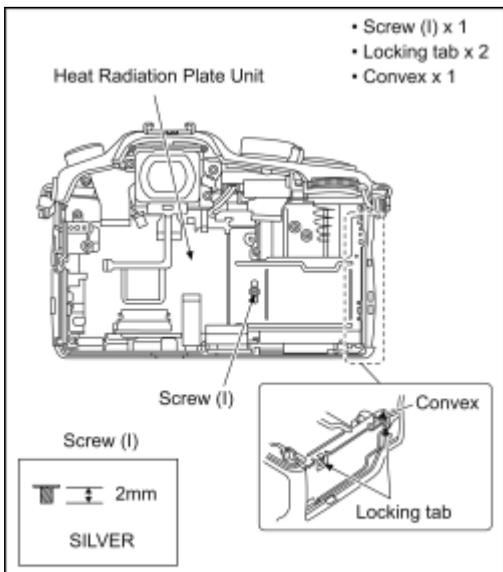
9.1.3.2 Removal of the Main P.C.B.



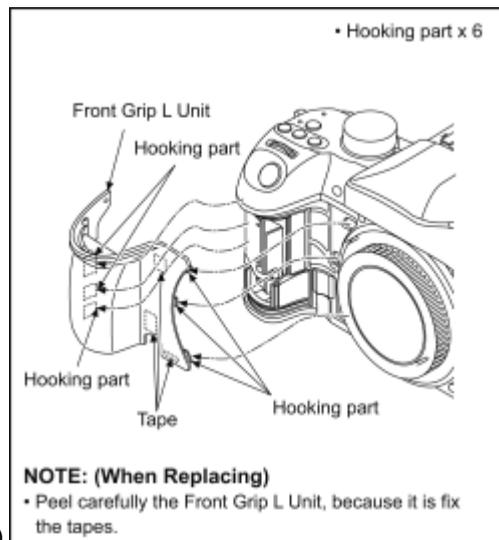
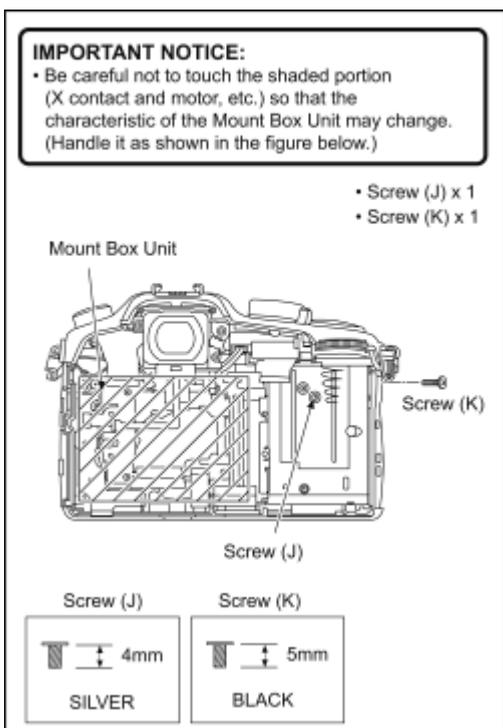
(Fig. D4)

(Fig. D5)

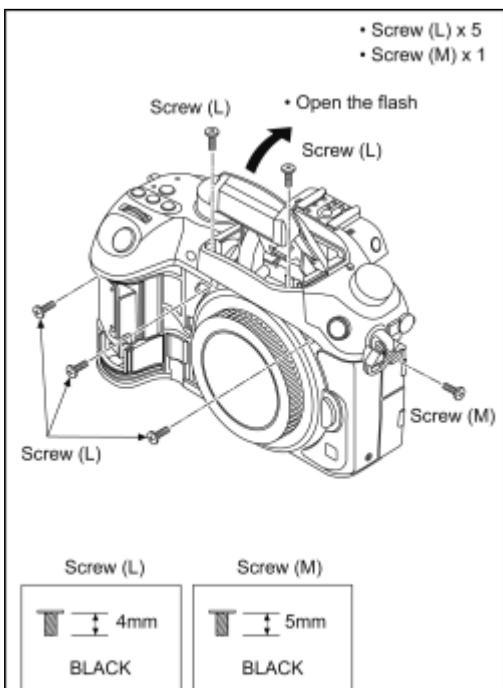
9.1.3.3 Removal of the Heat Radiation Plate Unit



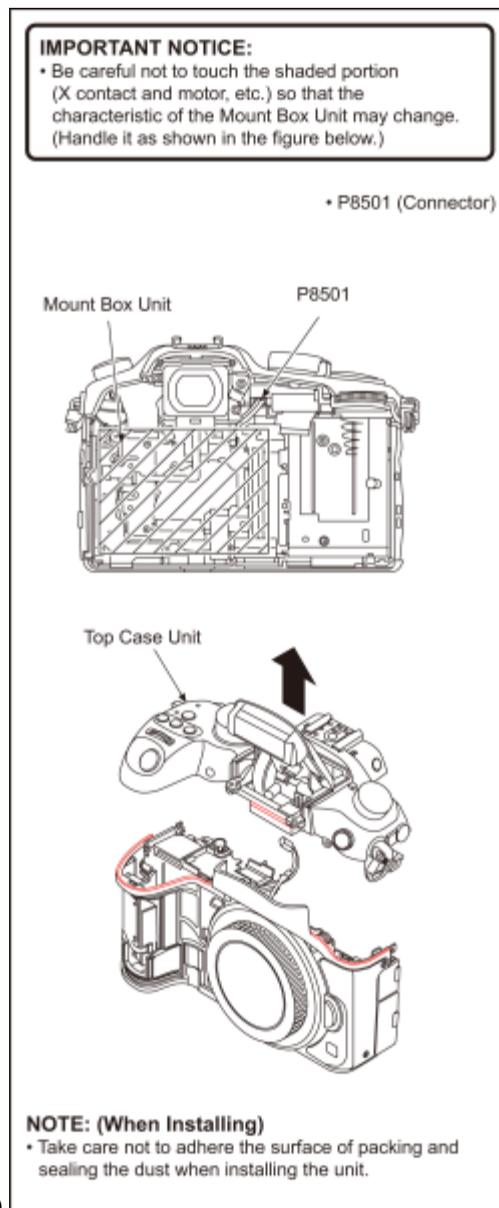
9.1.3.4 Removal of the Front Grip L Unit



9.1.3.5 Removal of the Top Case Unit

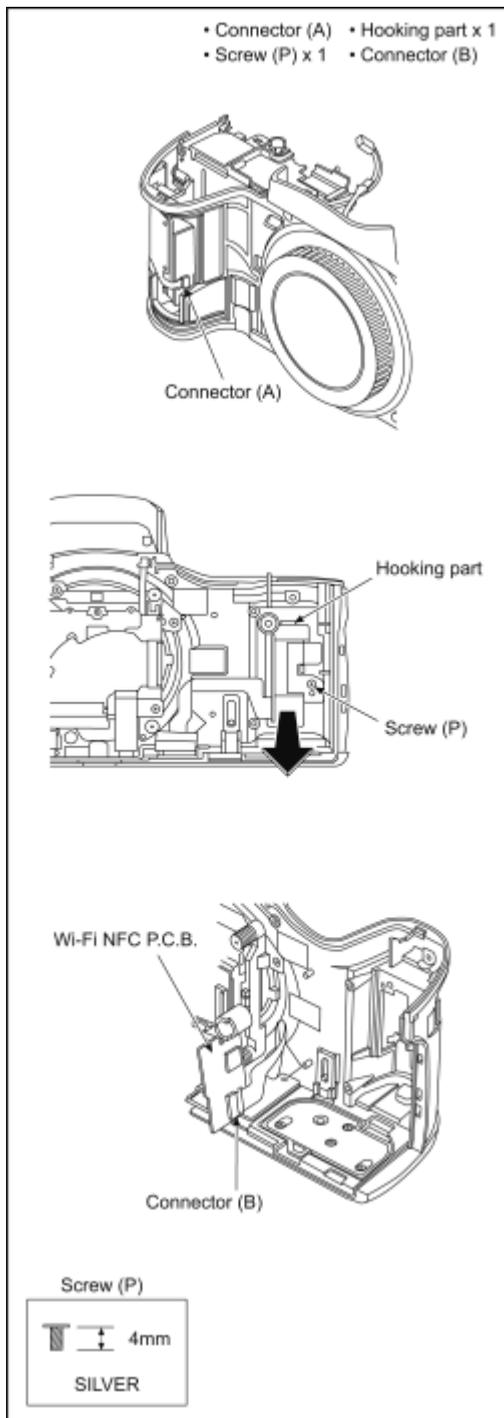


(Fig. D9)

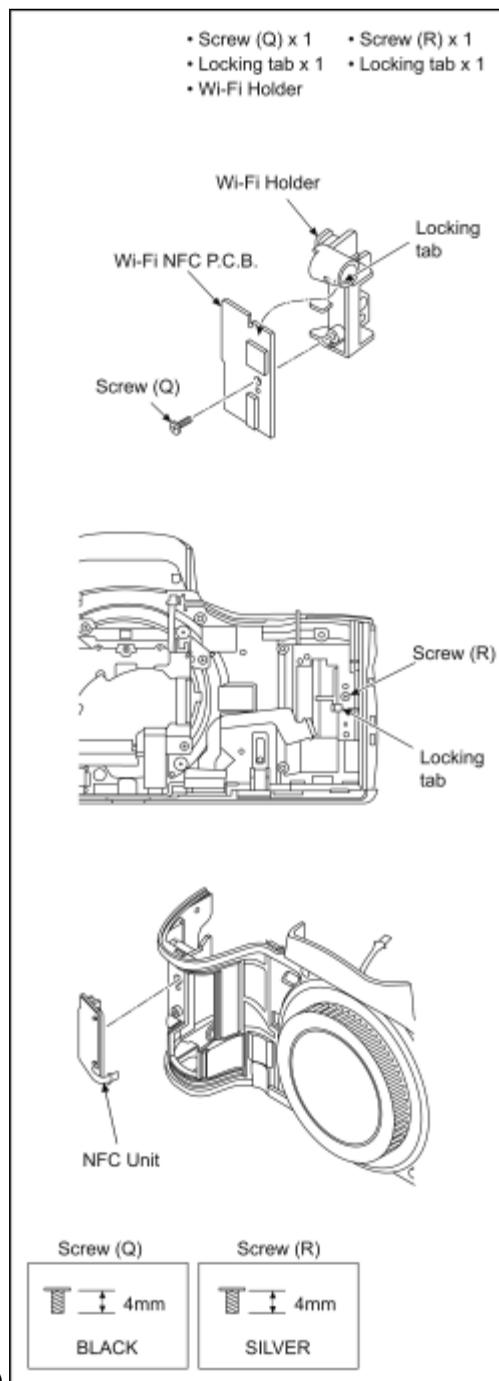


(Fig. D10)

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

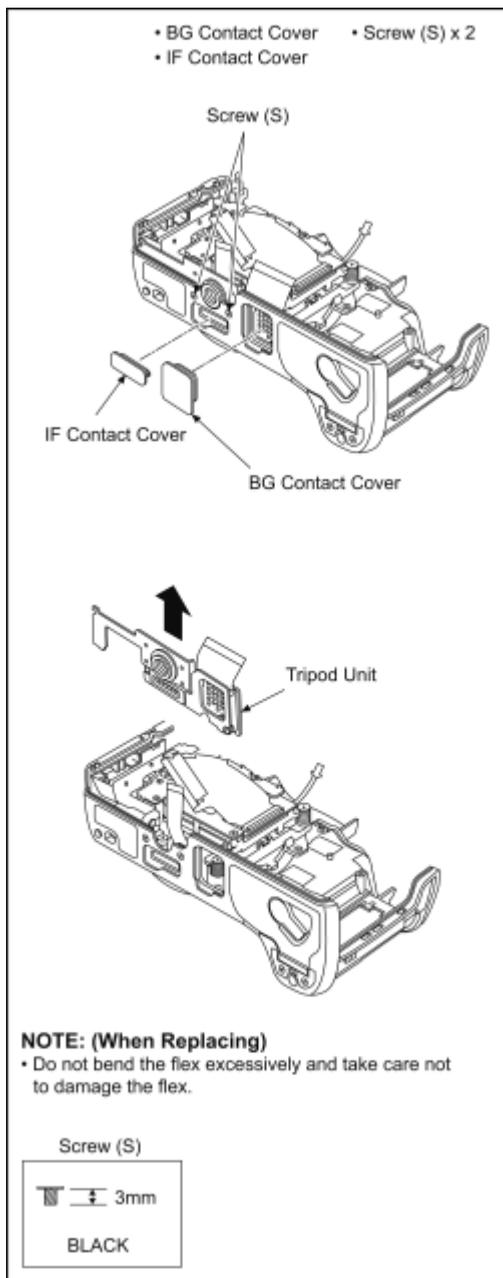


(Fig. D13)

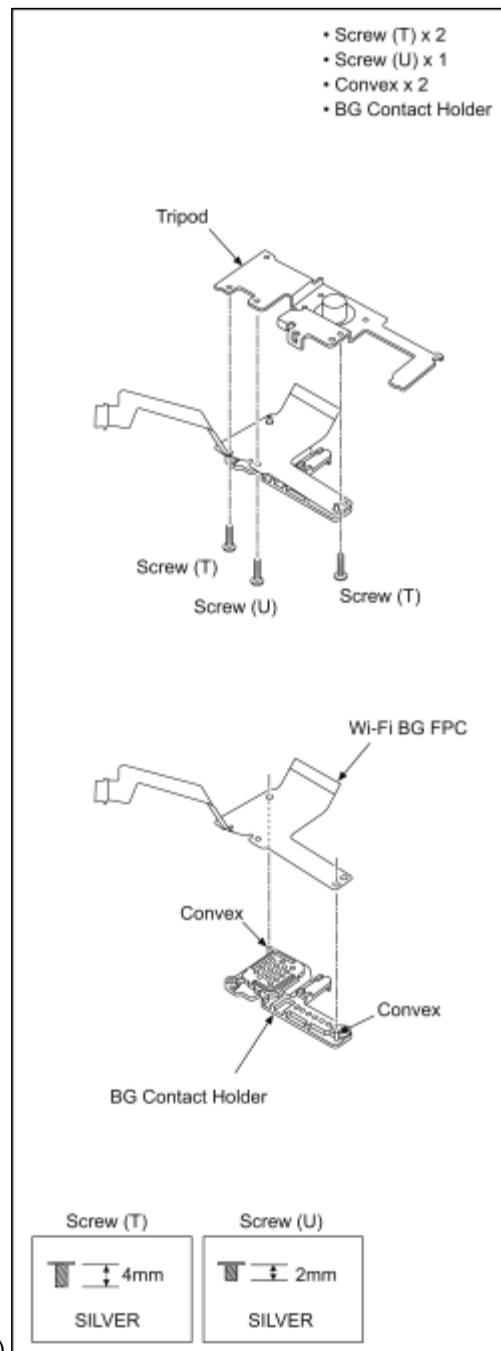


(Fig. D14)

9.1.3.8 Removal of the Tripod and Wi-Fi BG FPC

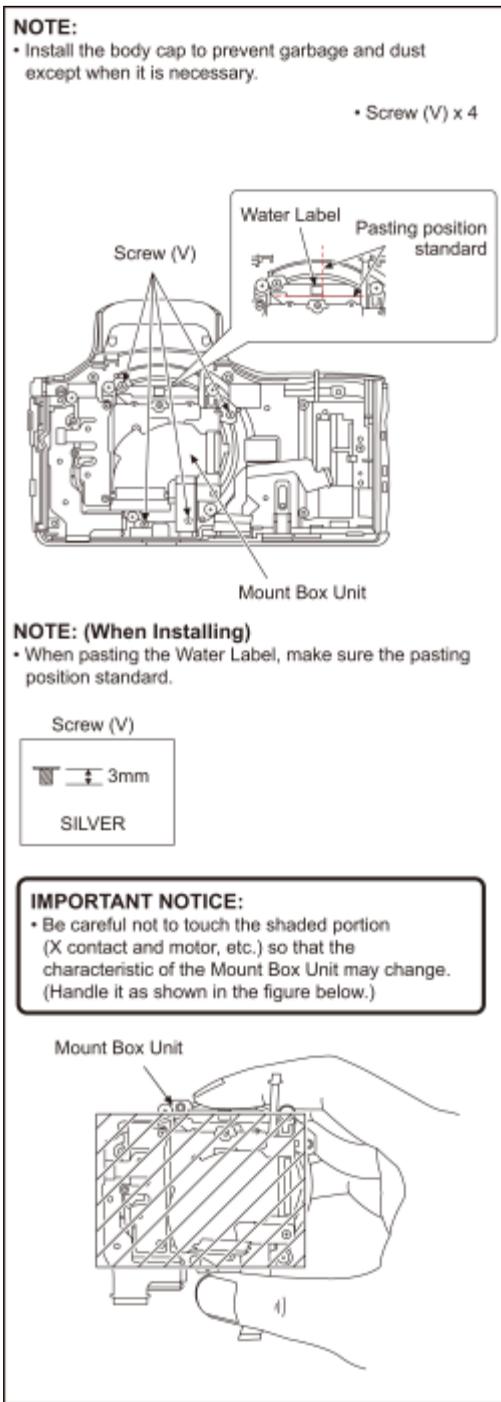


(Fig. D15)

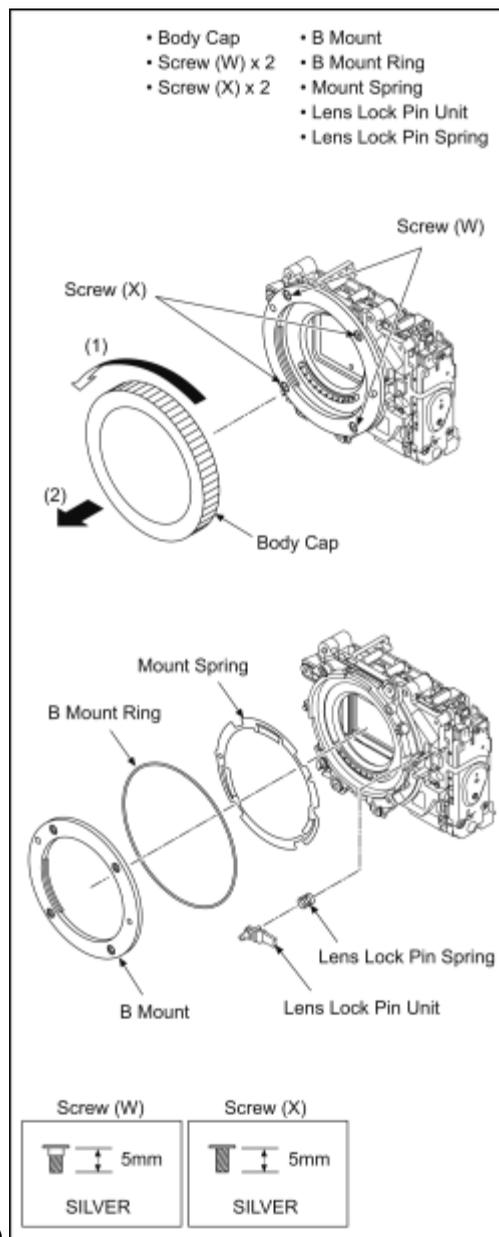


(Fig. D16)

9.1.3.9 Removal of the Mount Box Unit

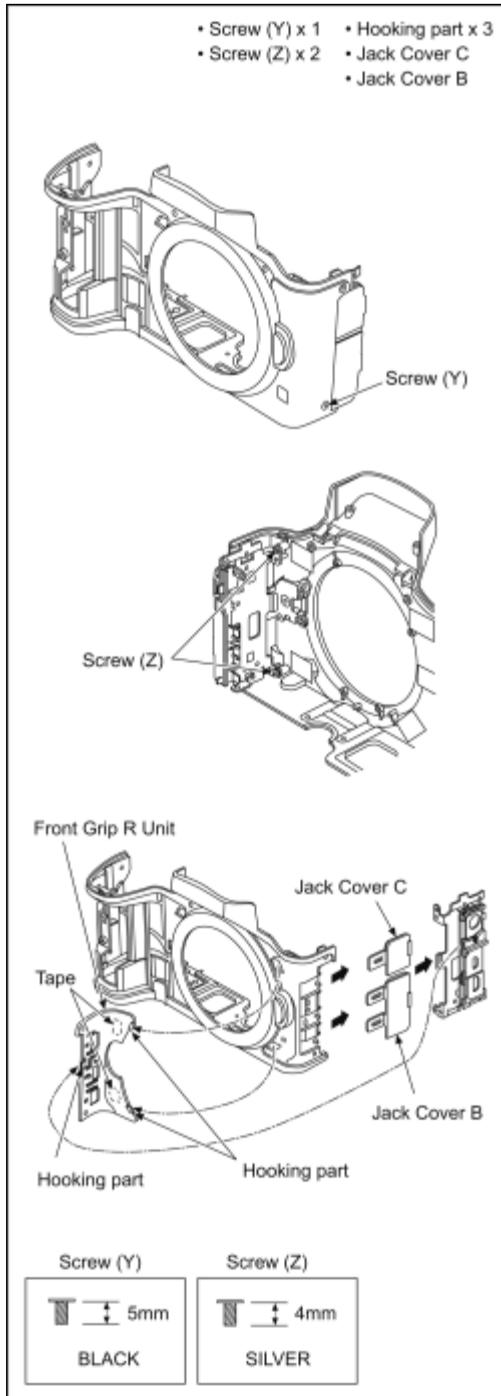


(Fig. D17)



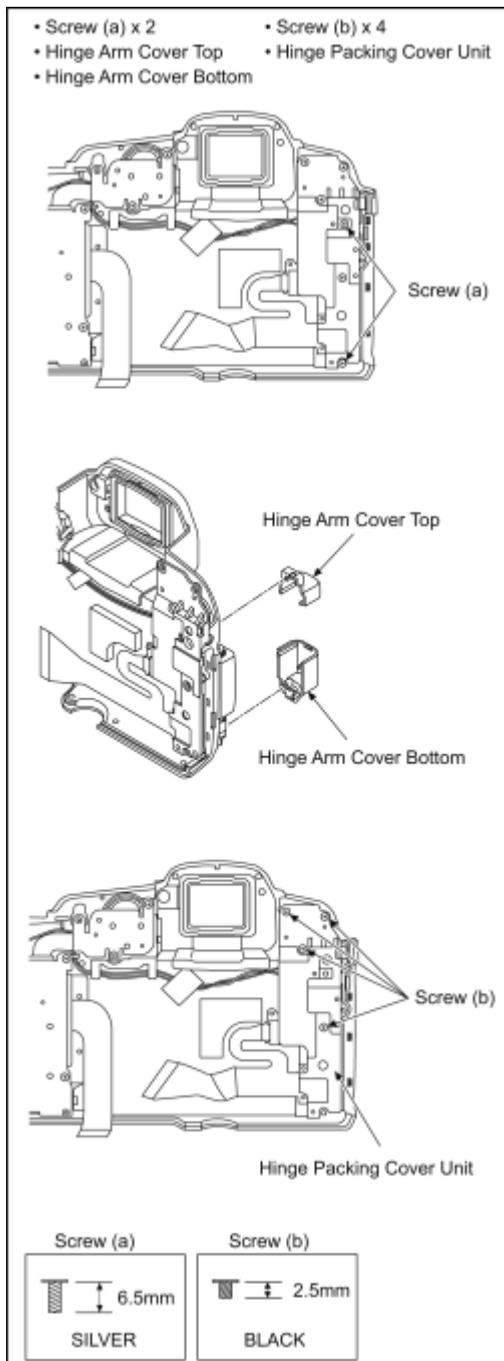
(Fig. D18)

9.1.3.10 Removal of the Front Grip R Unit

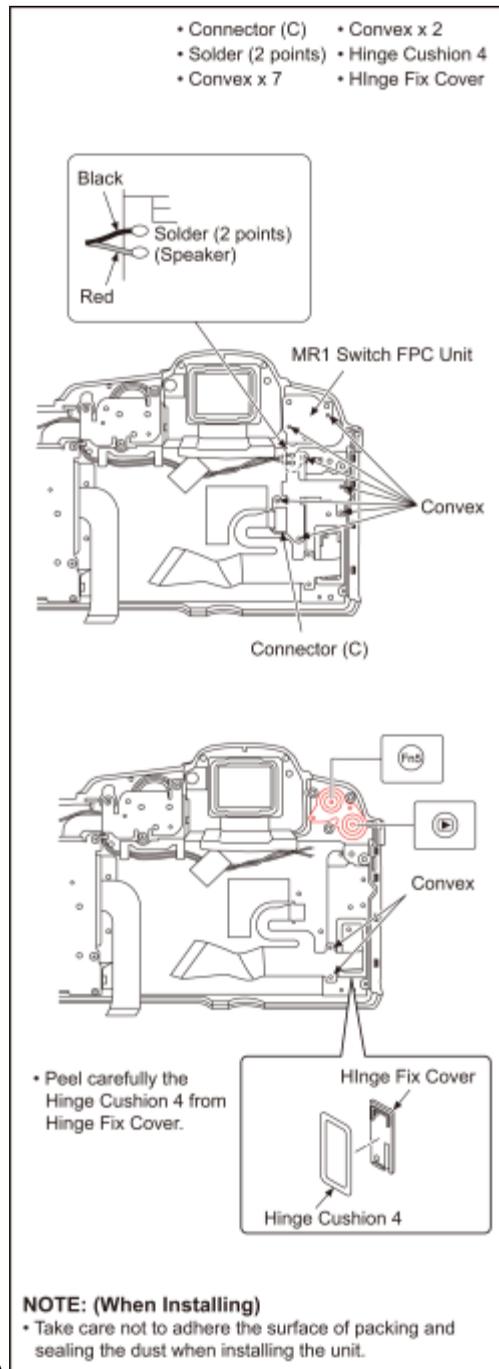


(Fig. D19)

9.1.3.11 Removal of the MR1 Switch FPC Unit and LCD Unit

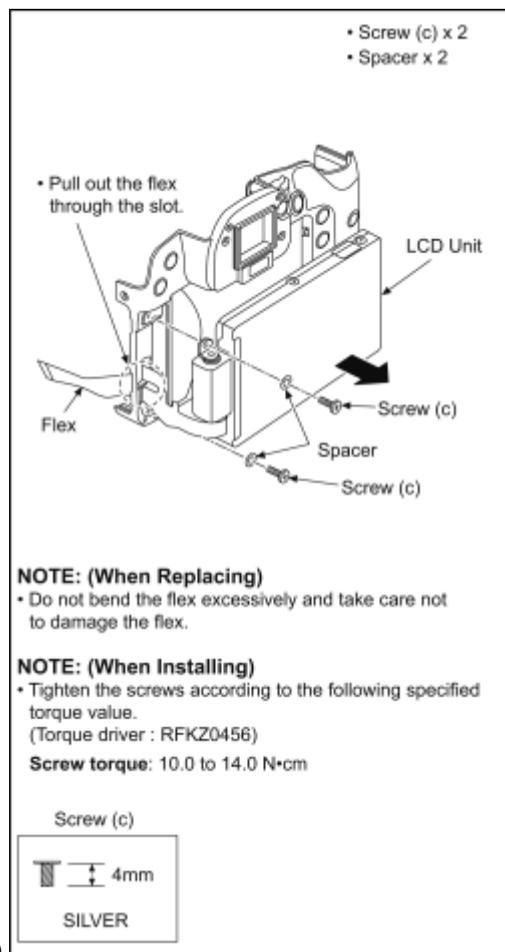


(Fig. D20)



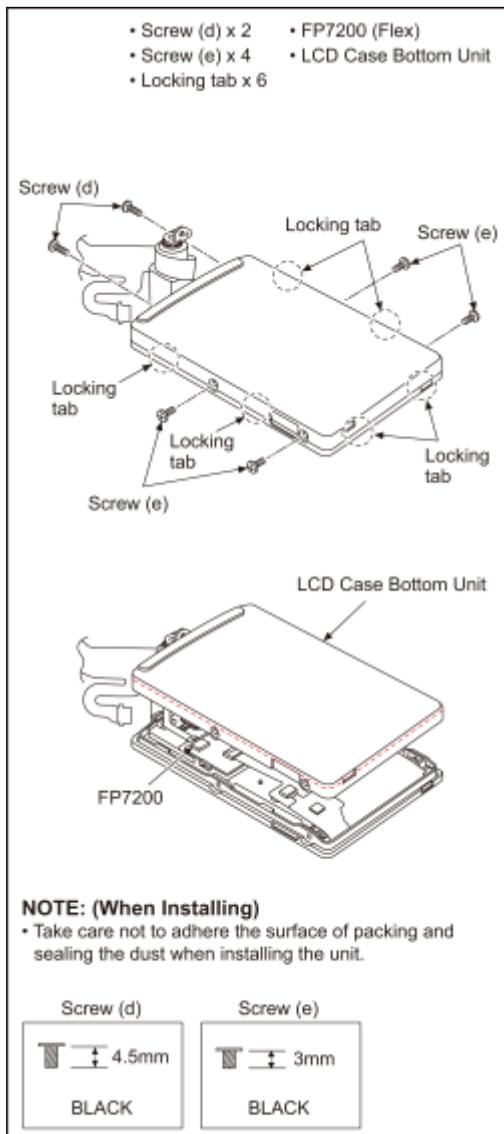
(Fig. D21)

(Fig.

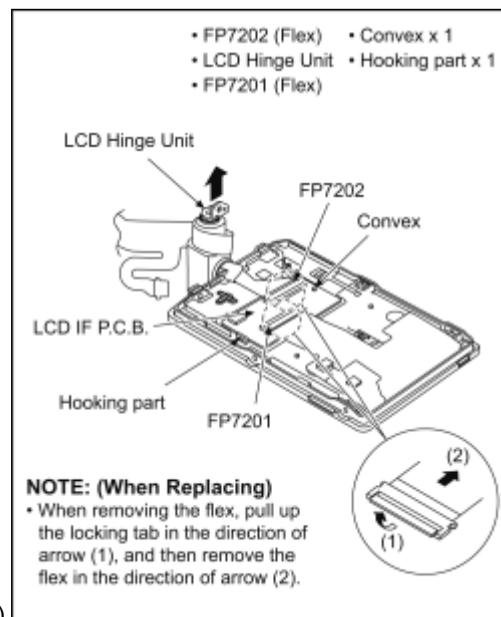


D22)

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

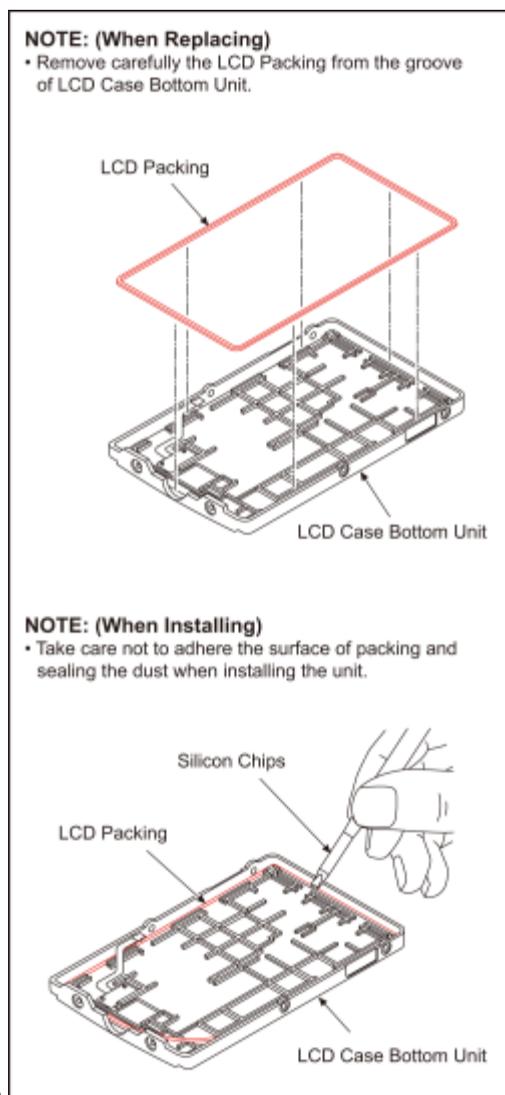


(Fig. D23)



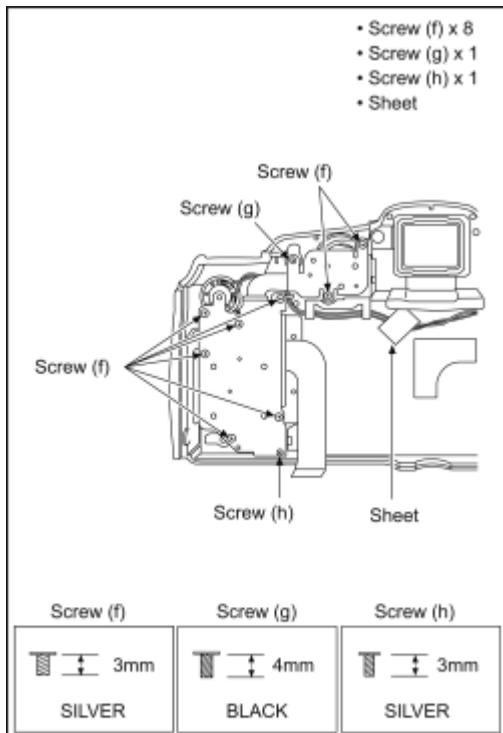
(Fig. D24)

9.1.3.13 Removal of the LCD Packing

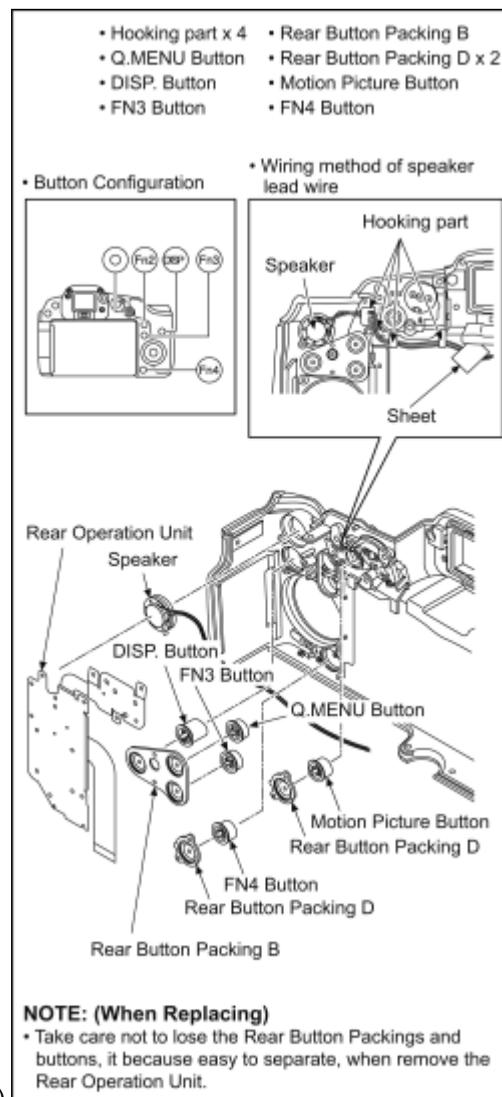


(Fig. D25)

9.1.3.14 Removal of the Rear Operation Unit and Speaker

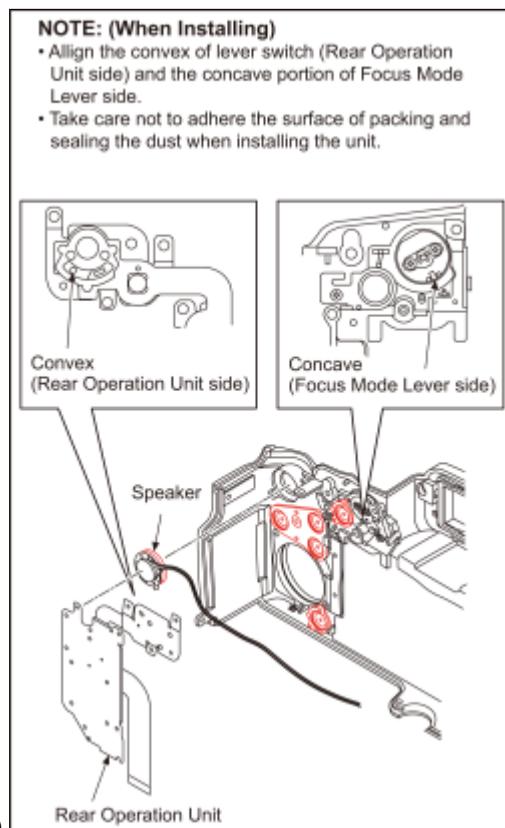


(Fig. D26)



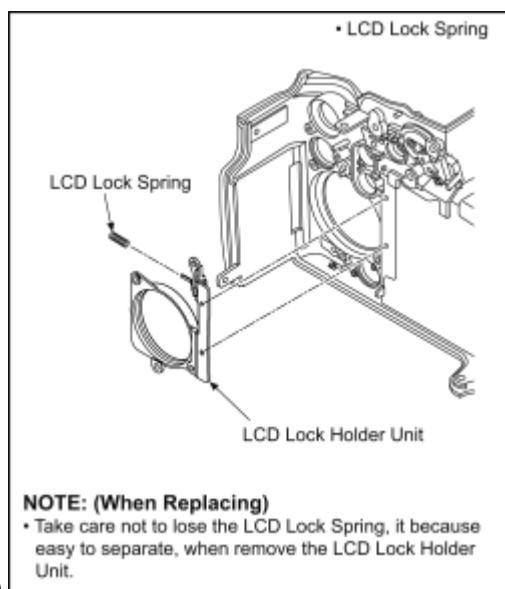
(Fig. D27)

(Fig.



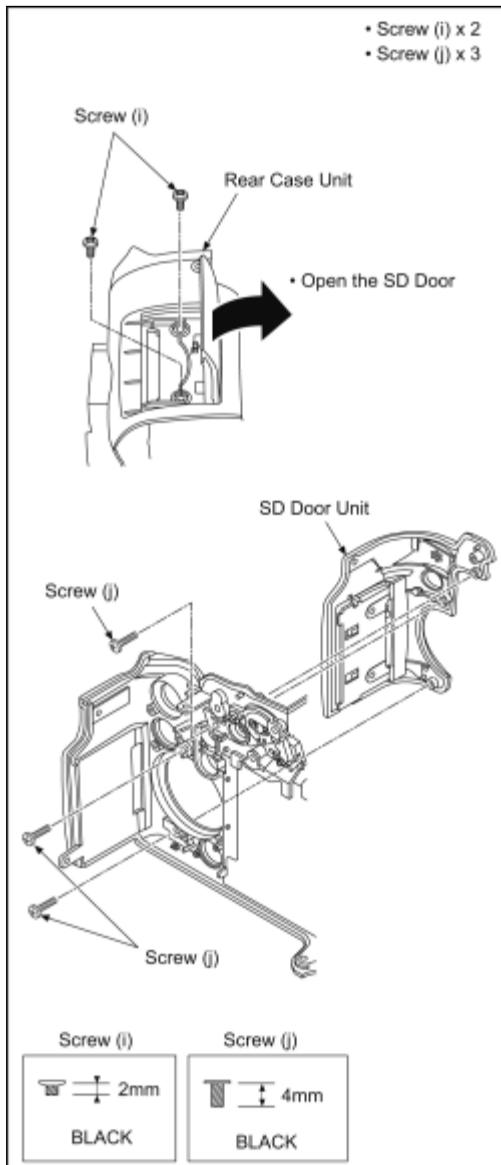
D28)

9.1.3.15 Removal of the LCD Lock Holder Unit



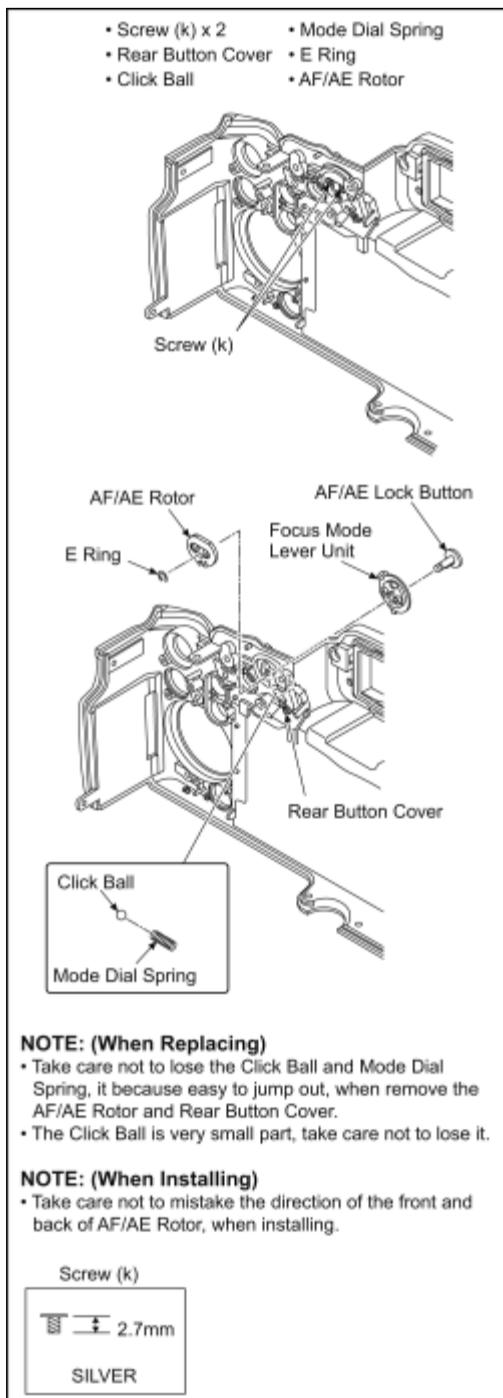
(Fig. D29)

9.1.3.16 Removal of the SD Door Unit



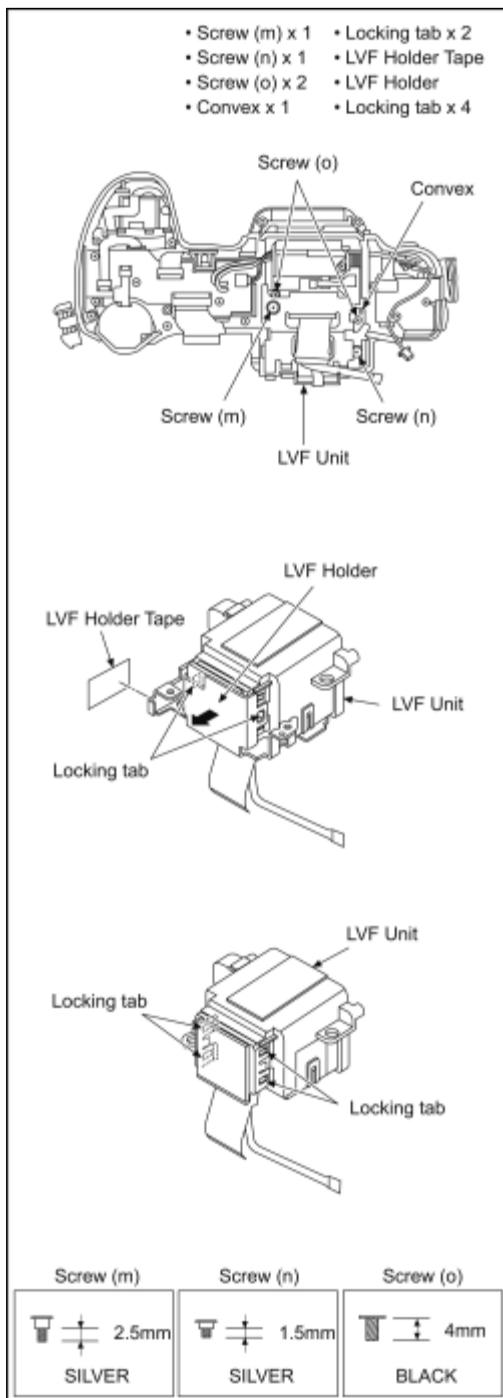
(Fig. D30)

9.1.3.17 Removal of the Focus Mode Lever Unit and AF/AE Lock Button

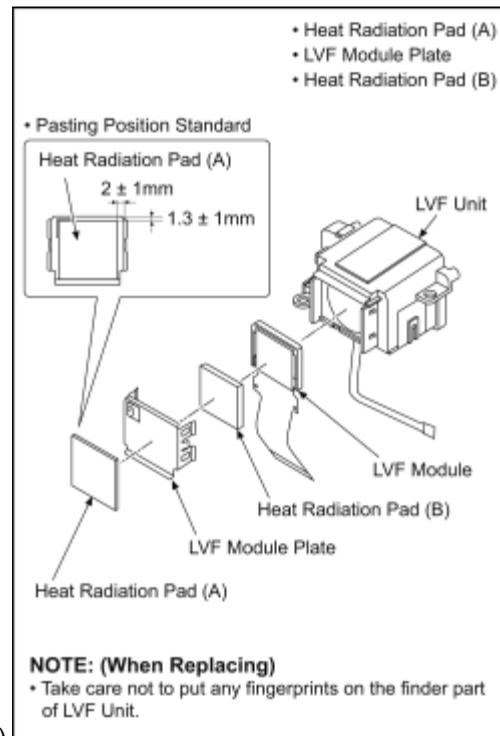


(Fig. D31)

9.1.3.18 Removal of the LVF Module and LVF Unit

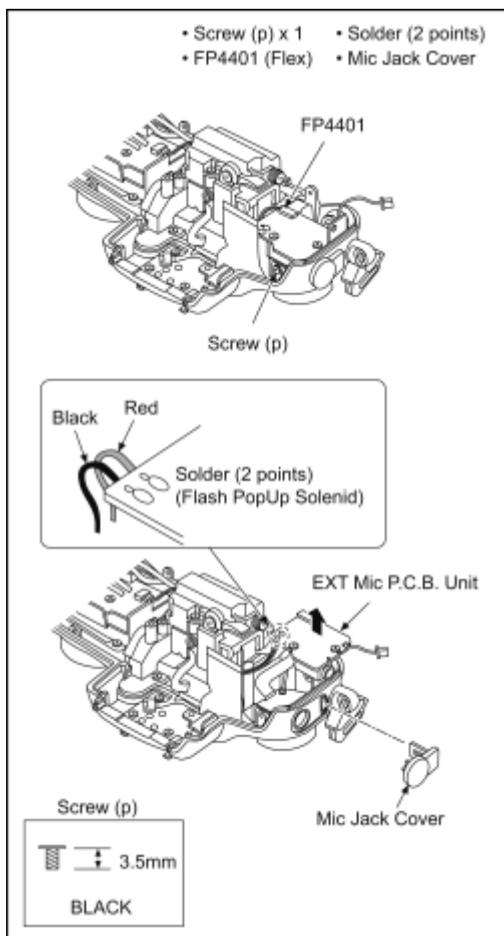


(Fig. D32)



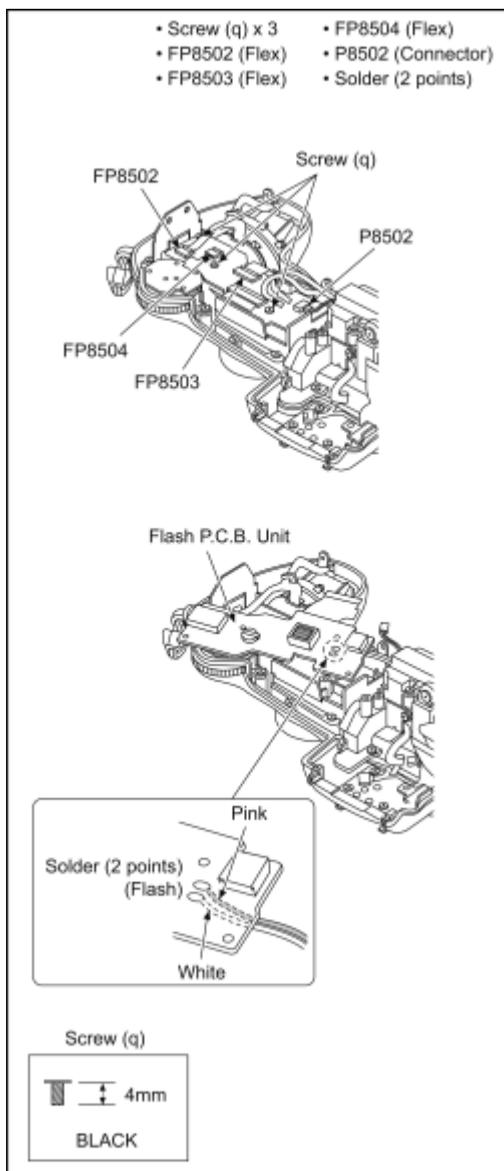
(Fig. D33)

9.1.3.19 Removal of the EXT Mic P.C.B. Unit

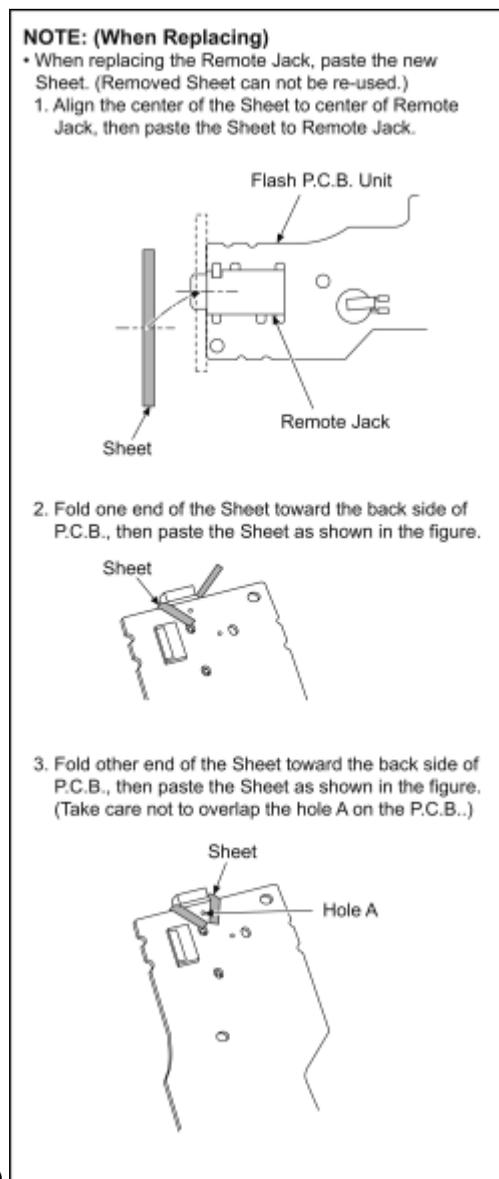


(Fig. D34)

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

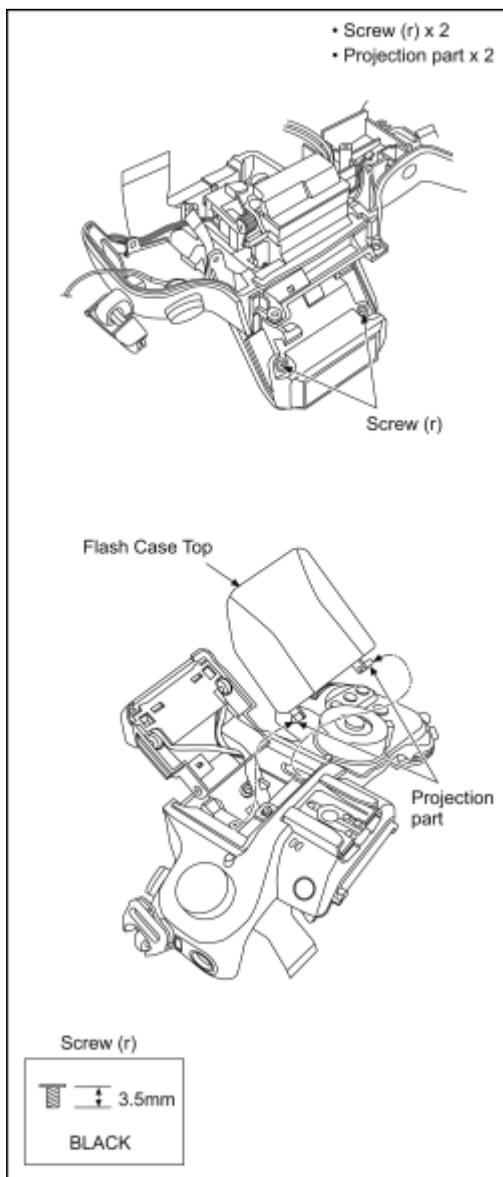


(Fig. D35)



(Fig. D36)

9.1.3.21 Removal of the Flash Case Top



(Fig. D37)

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 image sensor surface. (live mos)
- LCD image is fine. (No dust and dirt on it, and no gradient images.)

9.2 Disassembly and Assembly Procedure for the Lens

Please refer to the following service manuals about Disassembly and Assembly of bundled lenses.

- H-HS12035PP/E/GK : Order No [DSC1206029CE](#)
- H-FS14140PP/E/GK : Order No [DSC1305023CE](#)

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 (IC6003) (*2)	Eye sensor	G sensor (IC2701)	NFC (IC8102)
S e c t i o n	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 (BKl)	○	○	---	○	---	---	---
	Eye sensor sensitivity (EYE)	---	○	---	○	○	---	---
	G sensor (*6)	○	○	---	○	---	○	---
	Mount Box Adjustment data writing	○	---	---	---	---	---	---
	Mount Box U readjustment	---	○	---	○	---	---	---
	AVCHD function inspection	---	○(*4)	---	○(*4)	---	---	---
Initial Setting of NFC (*7)	---	○	---	○	---	---	○	
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. and/or Flash-ROM)

IMPORTANT NOTICE (After Replacing the Main P.C.B. and/or Flash-ROM)

After replacing the Main P.C.B. and/or Flash-ROM, 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 (IC6003) data backup from the unit. After replacing, overwrite the Flash-ROM (IC6003) 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.

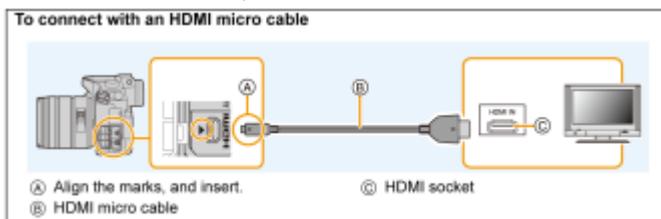
***3 NOTE: (After Exchange the Mount Box Unit)**

- 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.

***7 NOTE: (Initialization Data of NFC)**

Make sure to perform the following procedure (from 1 to 4).

*NFC IC and Main P.C.B. have no initialization data.

So, make sure to perform Initial Setting of NFC.

*NFC IC may lose the initialization data due to heat during repair process.

Therefore, make sure to perform Initial Setting of NFC when the component parts on Main P.C.B. are replaced.

1. After inserting a memory card, release the Initial Settings.

2. After execute [MENU]→ [Setup] → [ROM BACKUP] → [NFC RESET], turn off. Then, turn on again.
3. Switch [NFC Operation] to [ON]. ([MENU] → [Setup] → [Wi-Fi] → [Wi-Fi Setup] → [NFC Operation])
*If [NFC Operation] is [ON], change it to [OFF] once. Then, change it to [ON].
4. Perform the Initial Settings operation. (Refer to 3.6.2. Initial Settings.)
*The default setting of [NFC Operation] is [ON].

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.

About motion pictures in 4K

There are no special circuits and no special parts for motion pictures in 4K.

Therefore, if motion pictures in VGA or HD mode are normally recorded, motion pictures in 4K are usually all right.

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 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. Refer to the “Disassembly & Assembly Instructions” and disassemble the LVF Unit.
2. Blow off the dust of LVF Lens Unit with a blower.
3. Wipe off the dirt on the surface of glasses with Lens Cleaning KIT (VFK1900BK), if necessary.

11.1.2 About the Lens

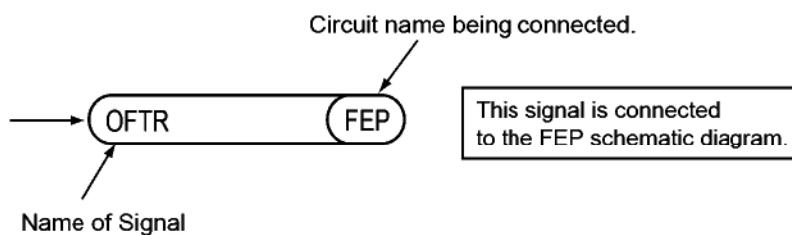
Please refer to the following service manuals about Maintenance of bundled lenses.

- H-HS12035PP/E/GK: Order No [DSC1206029CE](#)
- H-FS14140PP/E/GK: Order No [DSC1305023CE](#)

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-GH11/GH11A/GH11H Parts List Note

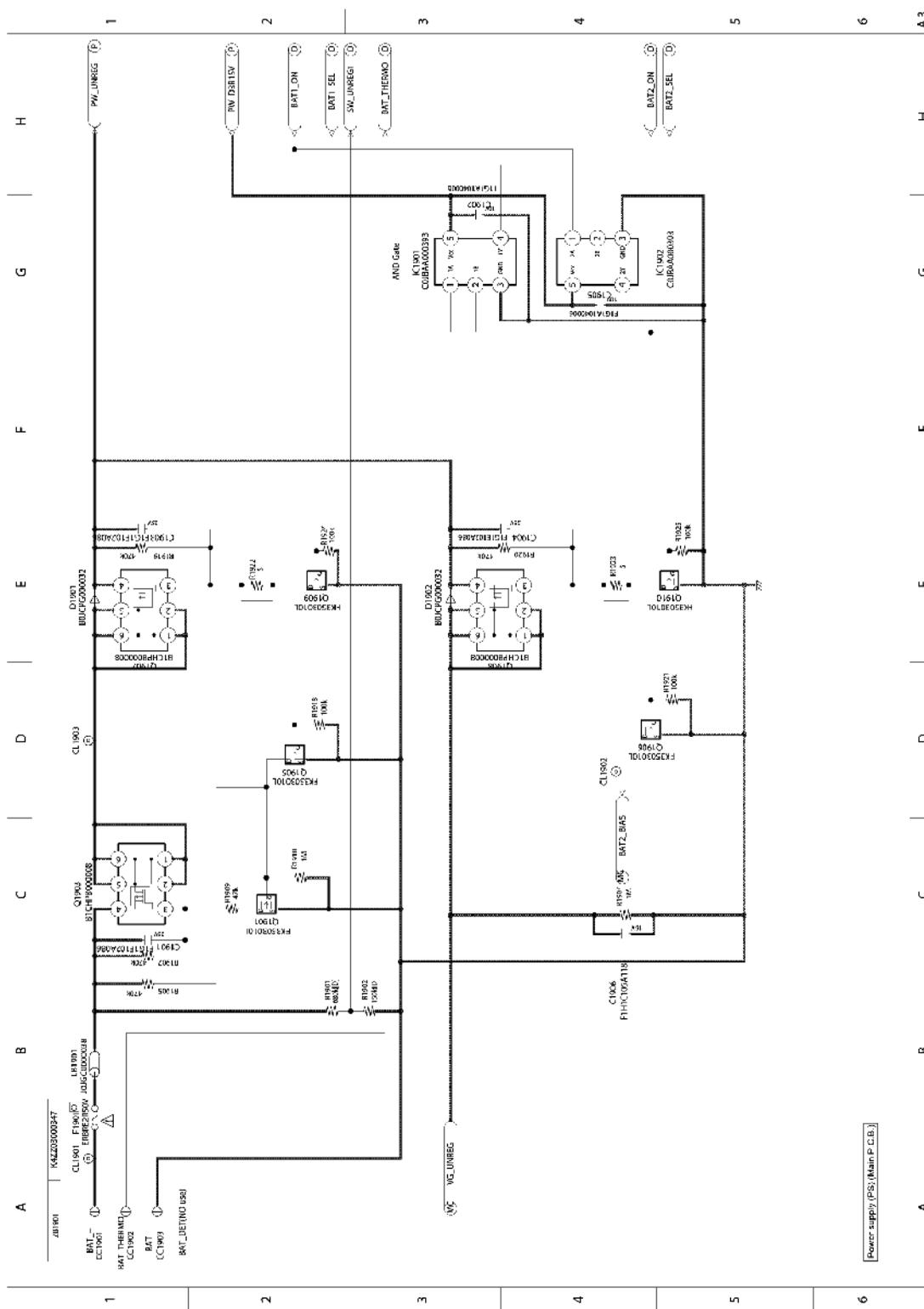
- Note:
1. * Be sure to make your orders of replacement parts according to this list.
 2. **IMPORTANT SAFETY NOTICE**
Components identified with the mark  have the special characteristics for safety.
When replacing any of these components, use only the same type.
 3. Unless otherwise specified,
All resistors 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.

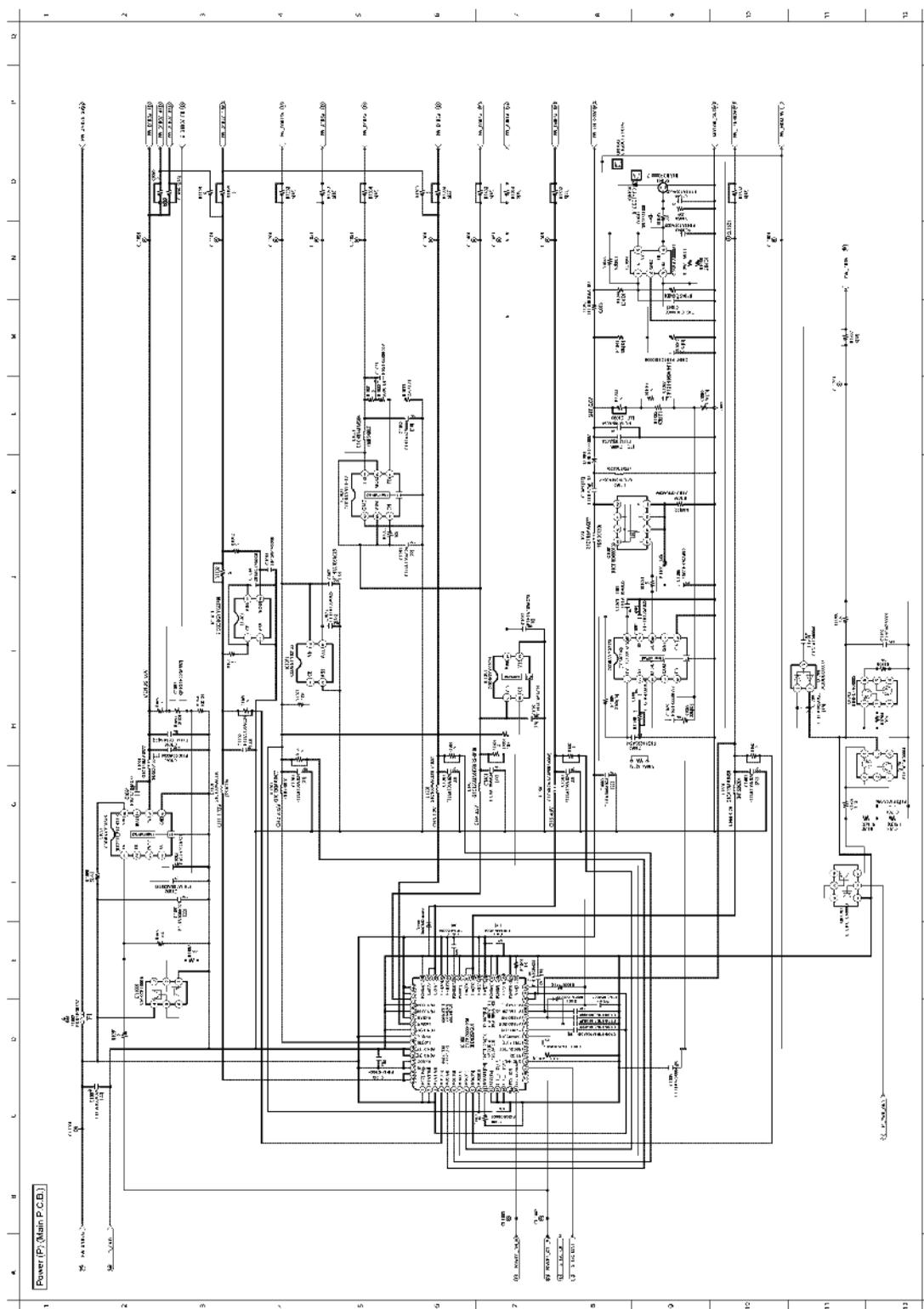
Definition of Parts supplier:

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.

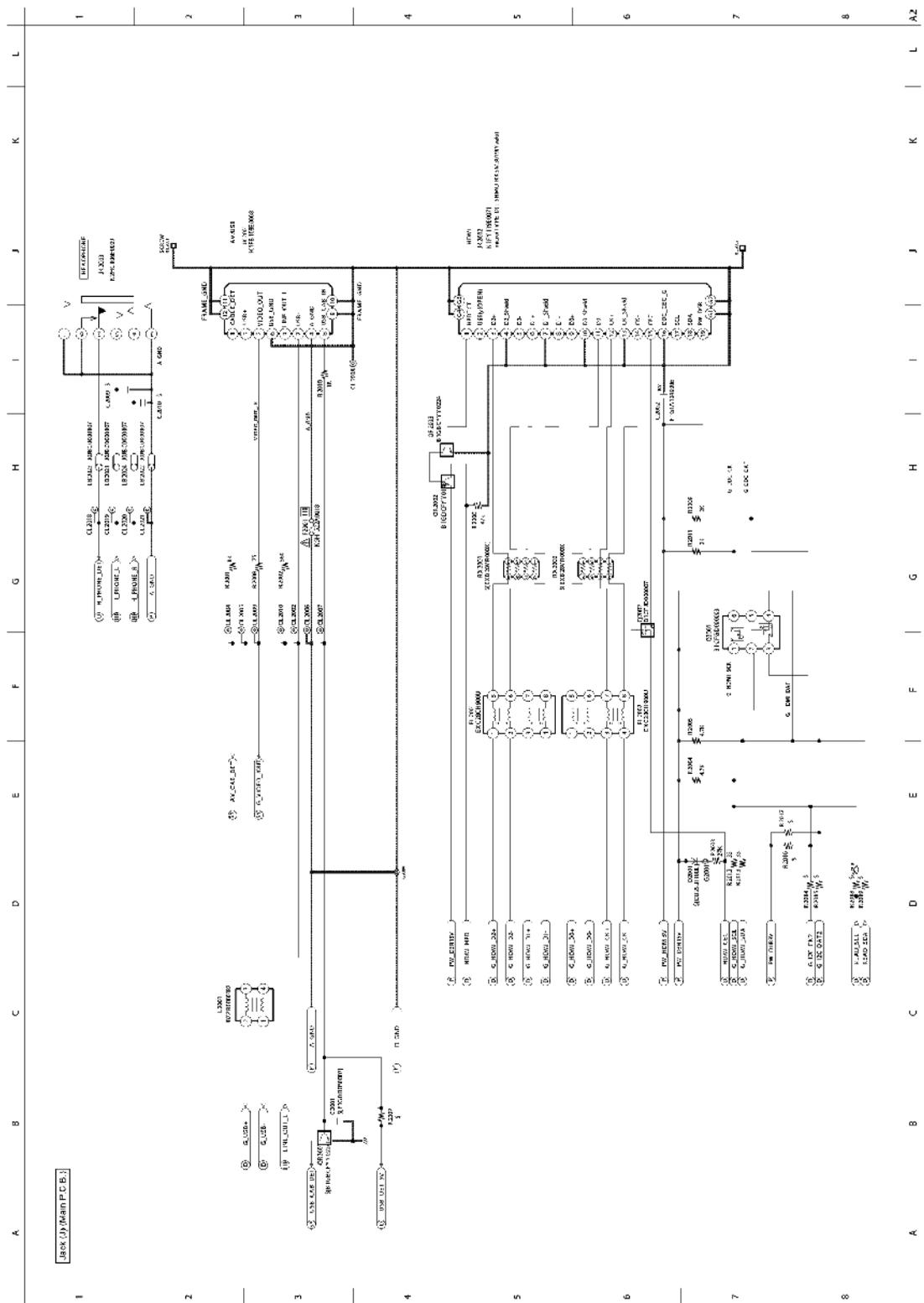
Model No. : DMC-GH1/GH1A/GH1H Power supply (P.S) (Main P.C.B.)



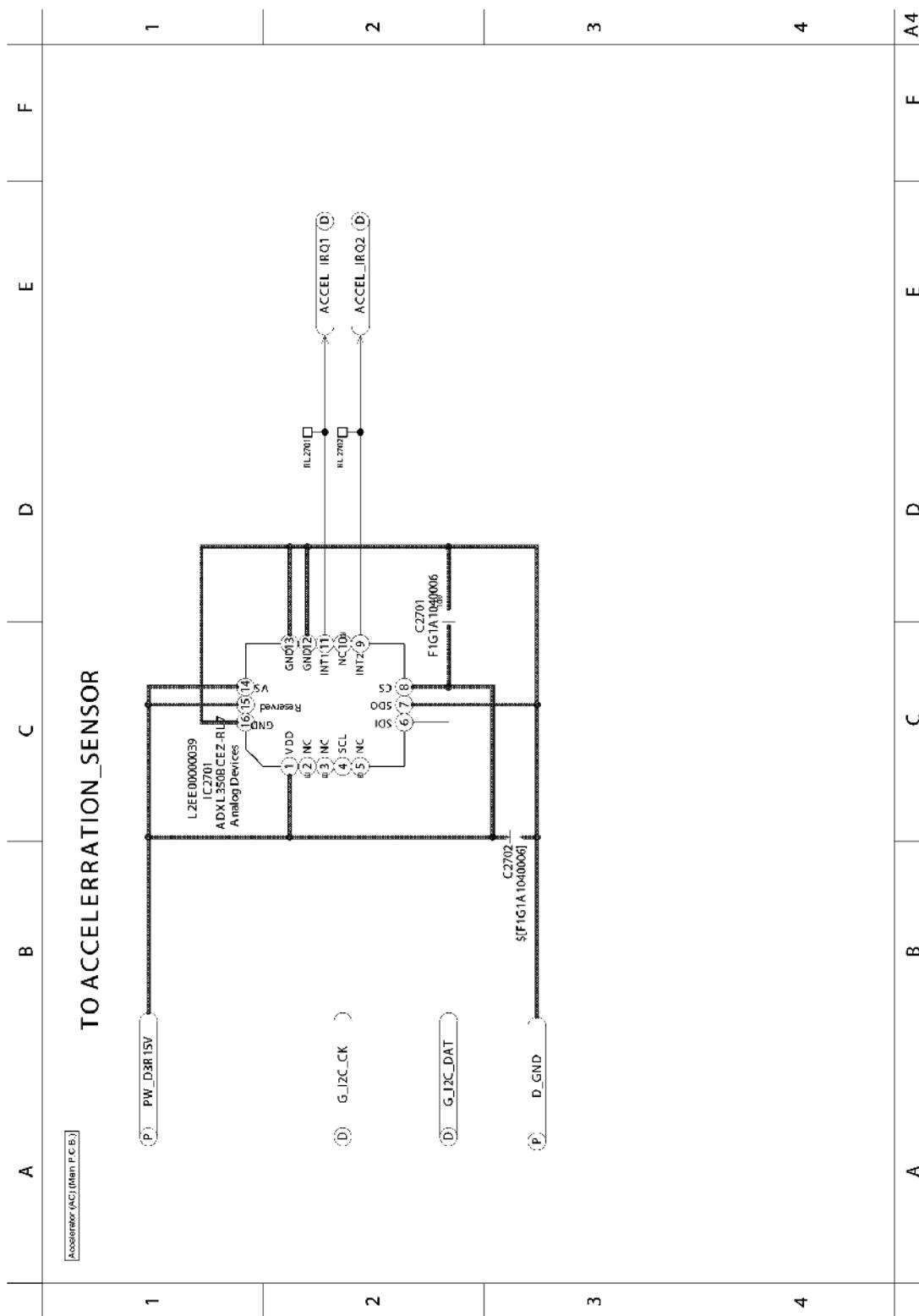
Model No. : DMC-GH1/GH1A/GH1H Power (P) (Main P.C.B.)



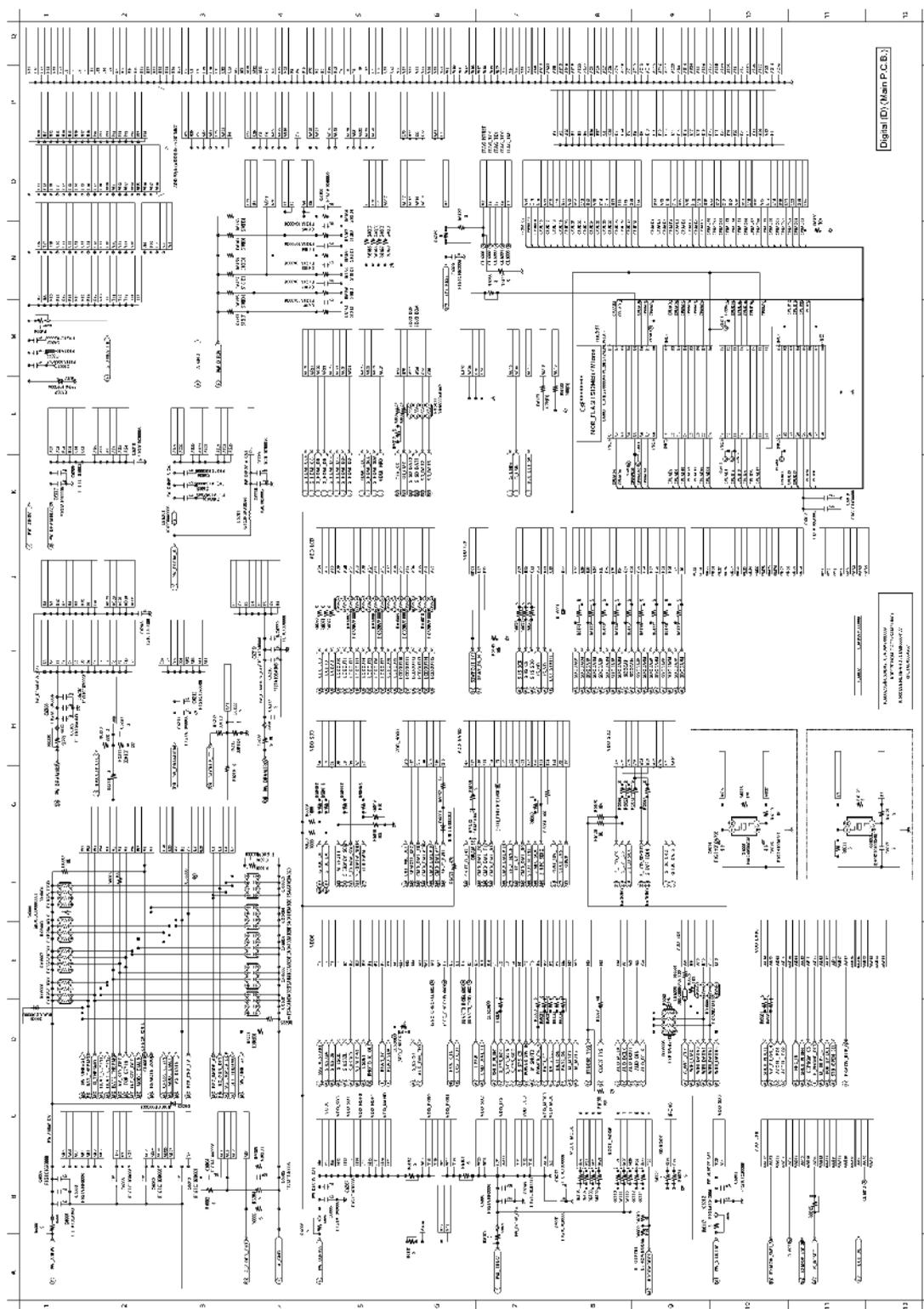
Model No. : DMC-GH1/GH1A/GH1H Jack (D) (Main P.C.B.)



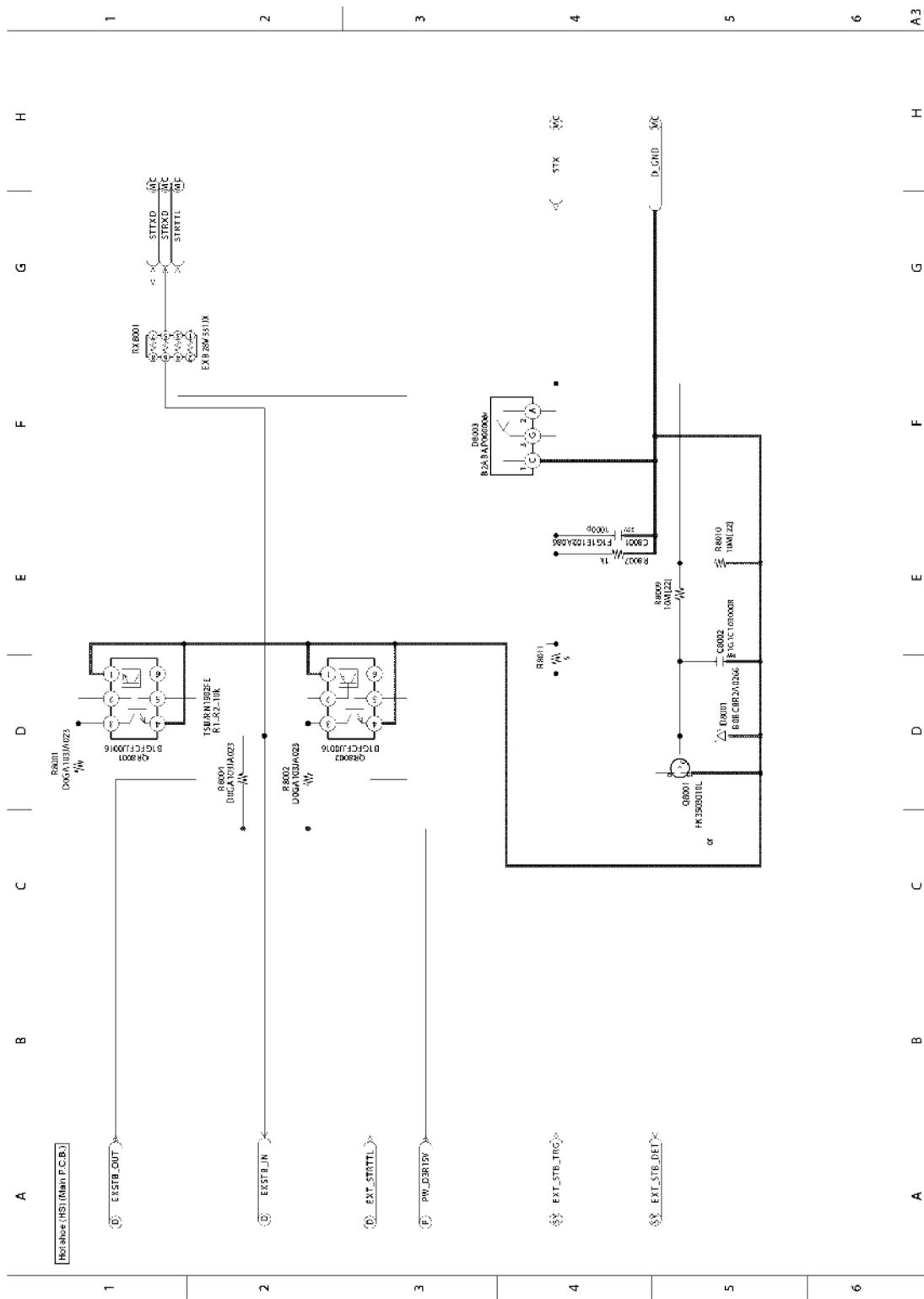
Model No. : DMC-GH1/GH1A/GH1H Accelerator (AC) (Main P.C.B.)



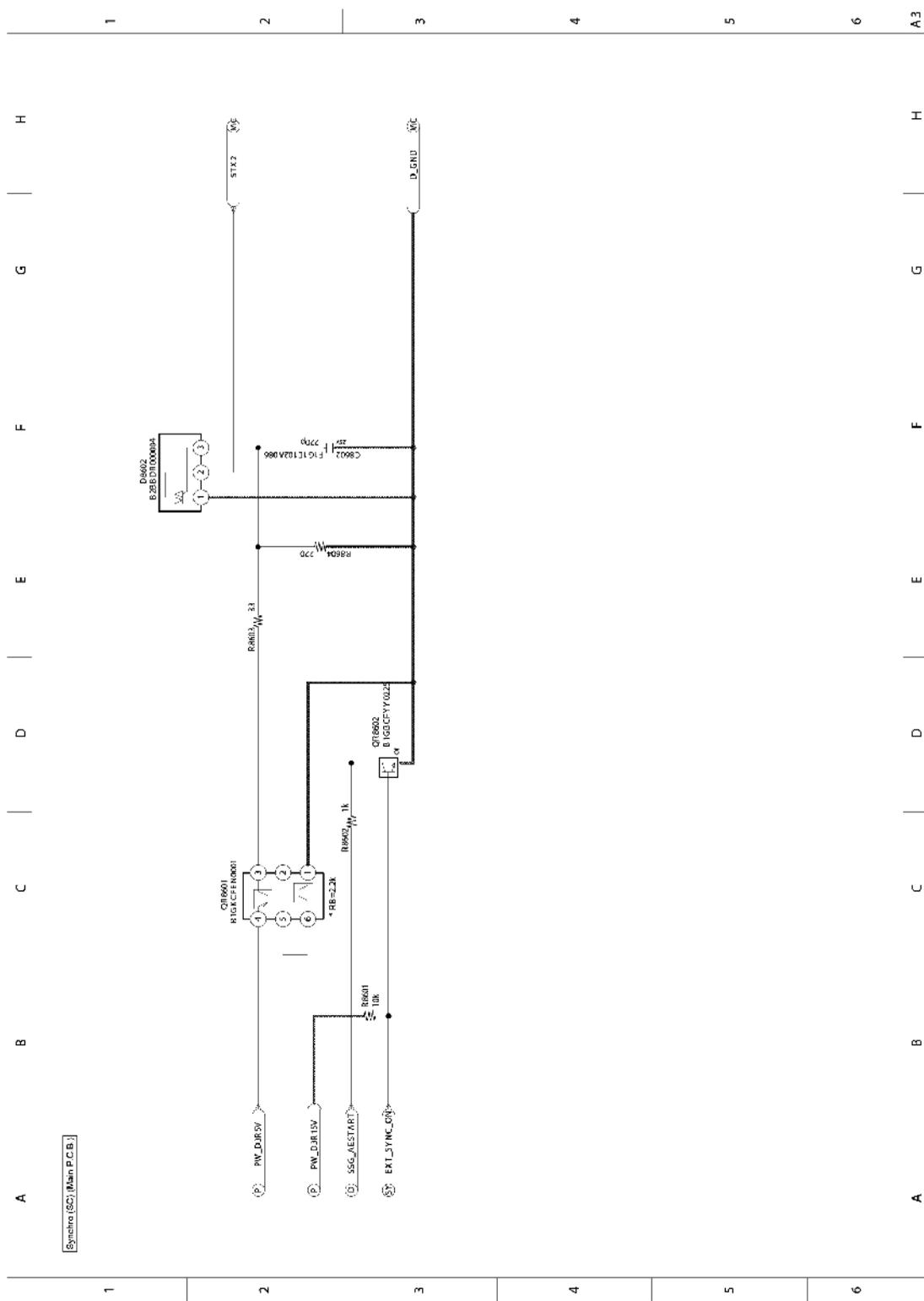
Model No. : DMC-GH1/GH1A/GH1H Digital (D) (Main P.C.B.)



Model No. : DMC-GH1/GH1A/GH1H Hot shoe (HS) (Main P.C.B.)

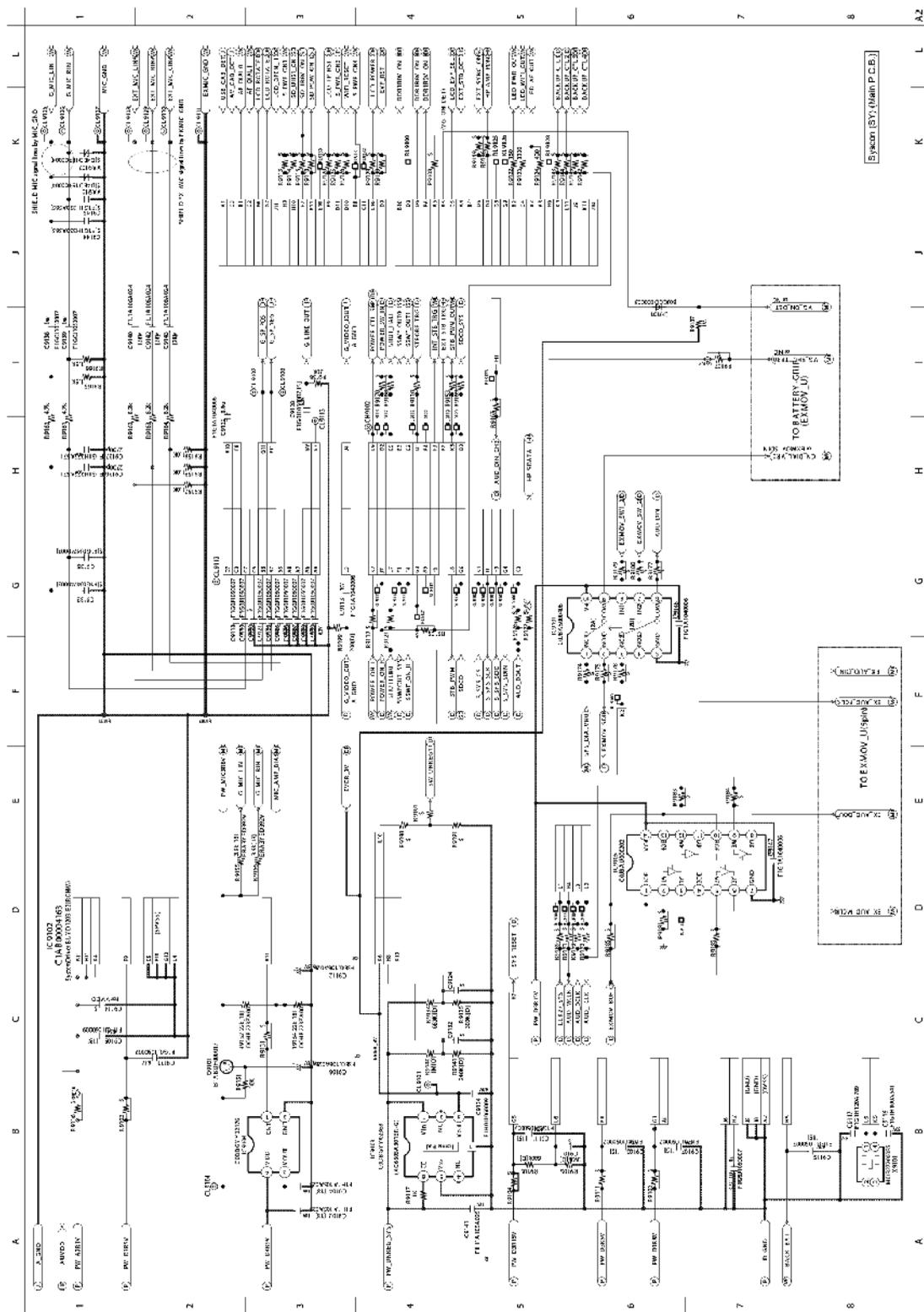


Model No. : DMC-GH1/GH1A/GH1H1 Synchro (SC) (Main P.C.B.)

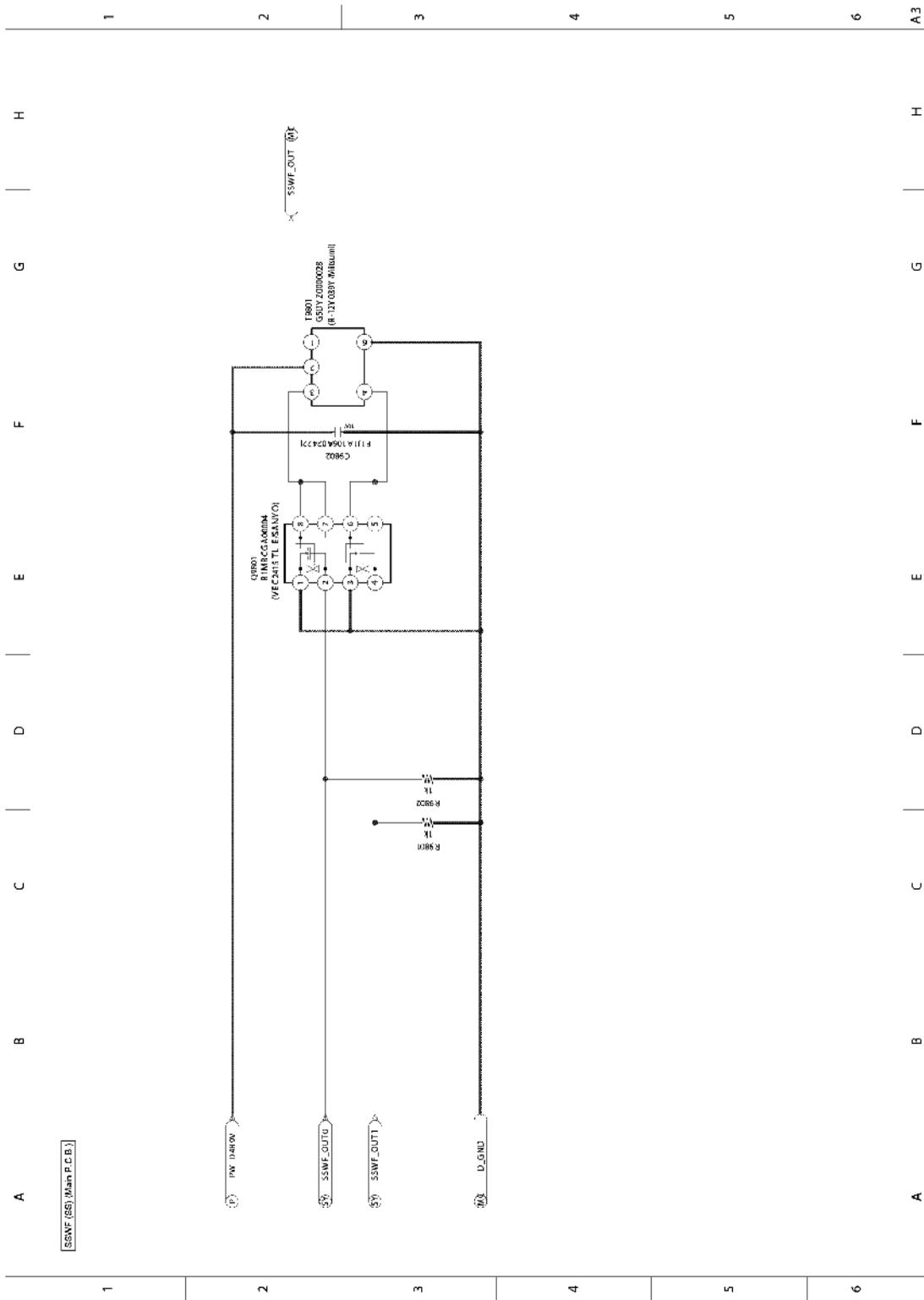


Synchro (SC) (Main P.C.B.)

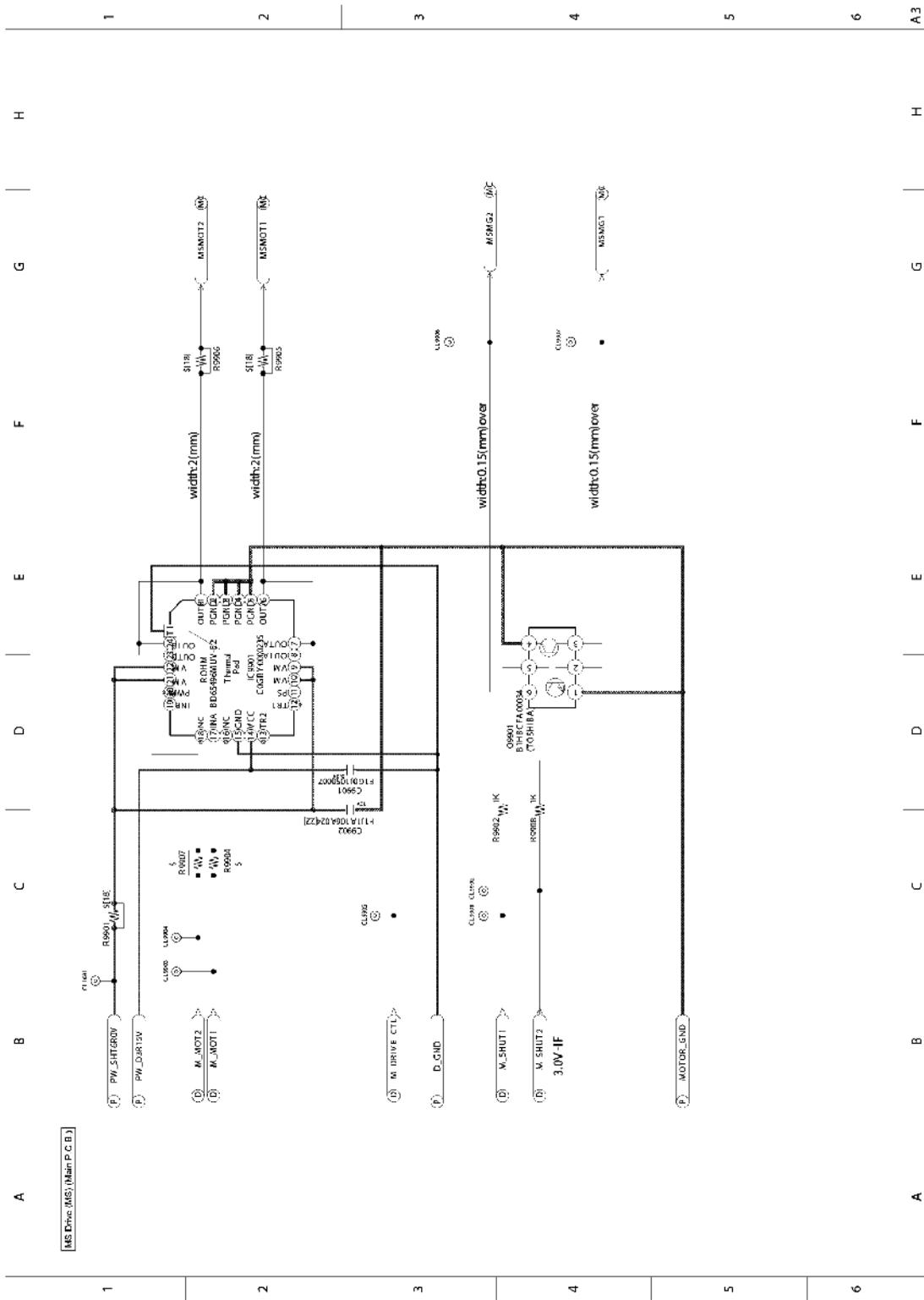
Model No. : DMC-GH/GH.L/GH.H System (SY) (Main P.C.B.)



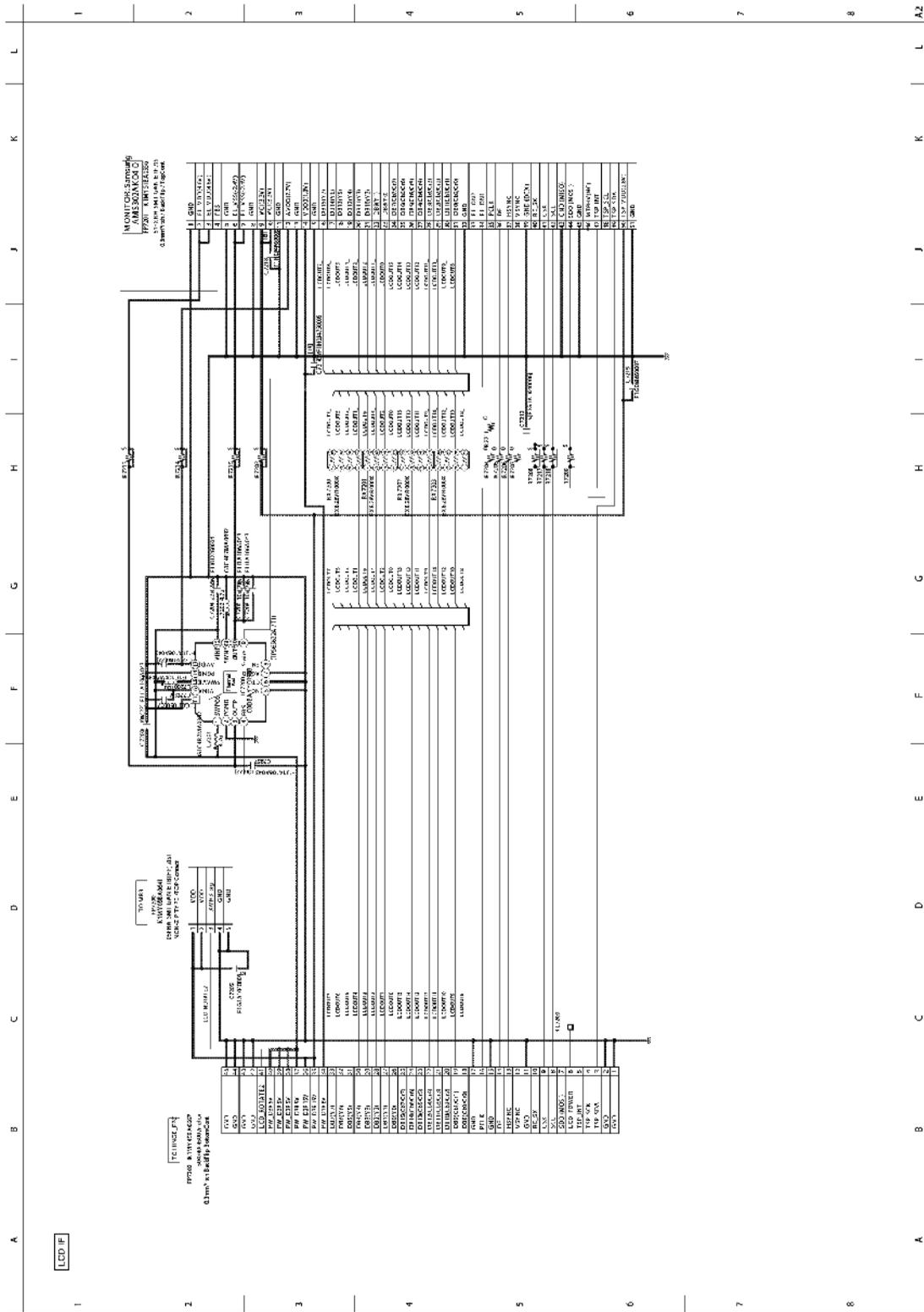
Model No. : DMC-GH1/GH1A/GH1H SSWF (SS) (Main P.C.B.)



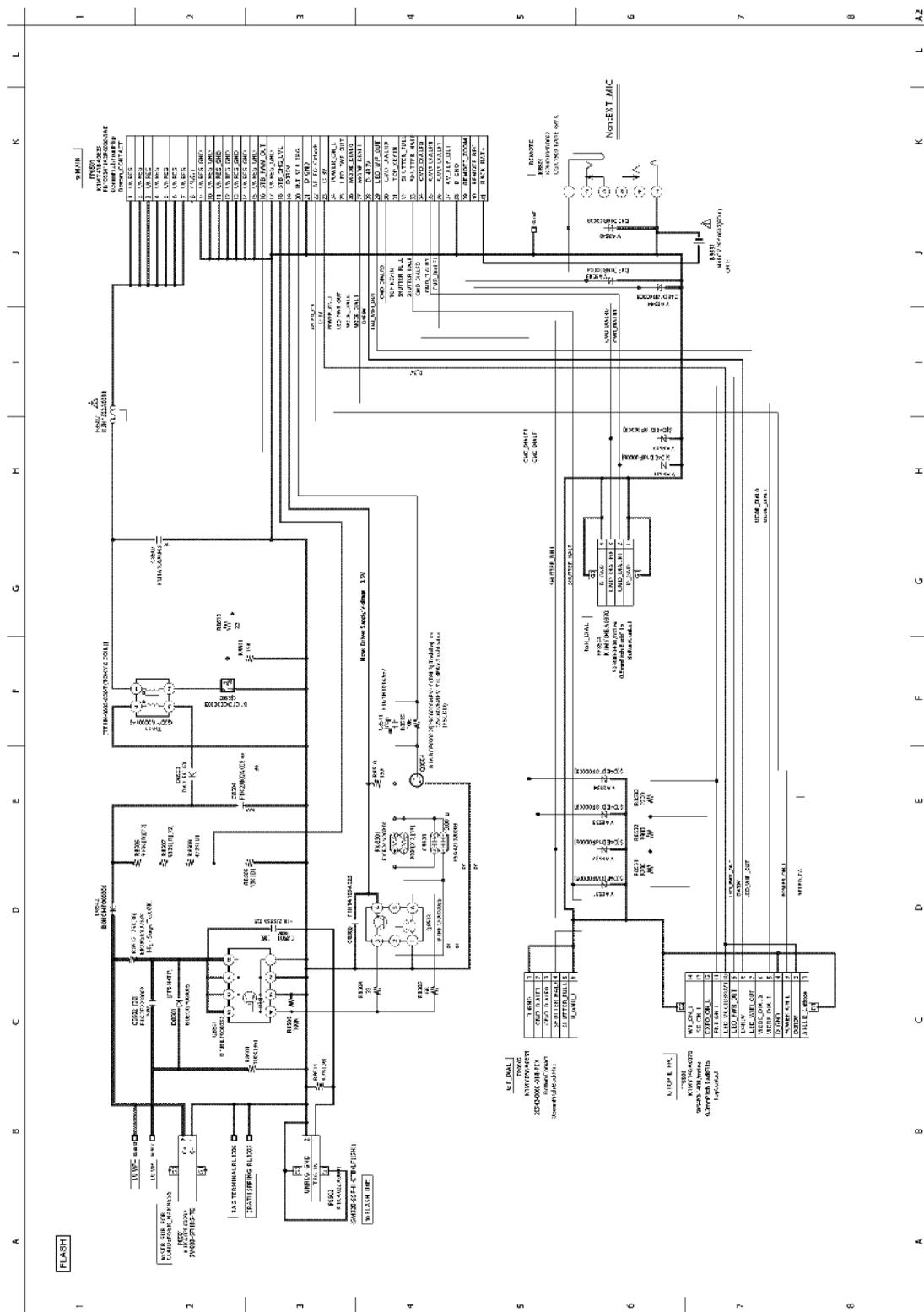
Model No. : DMC-GH1/GH1A/GH1H MS Drive (MS) (Main P.C.B.)



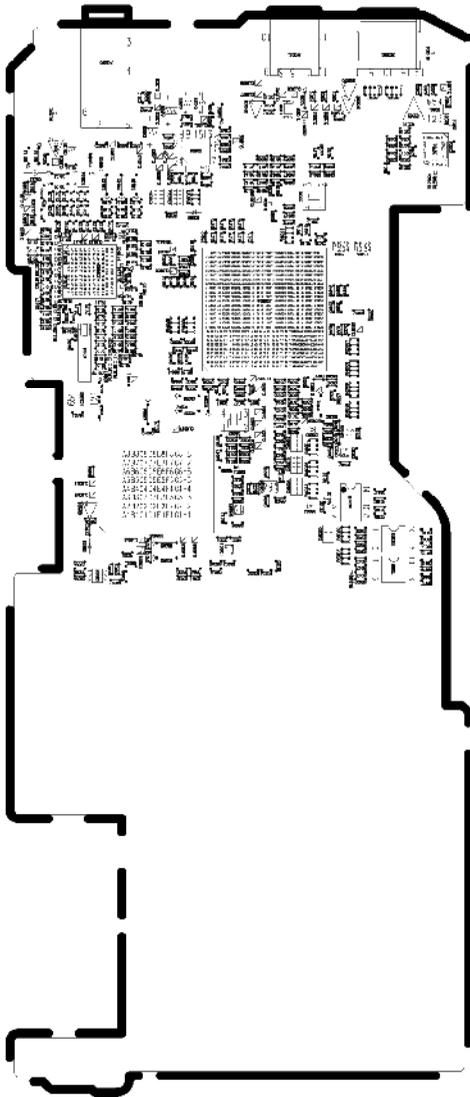
Model No. : DMC-GH1/GH1A/GH1H LCD IF



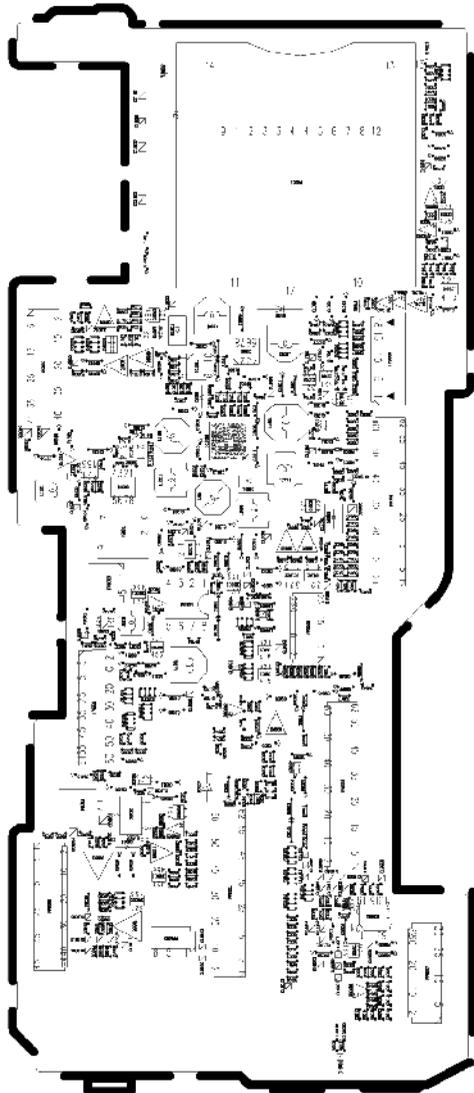
Model No. : DMC-GH1/GH1A/GH1H FLASH



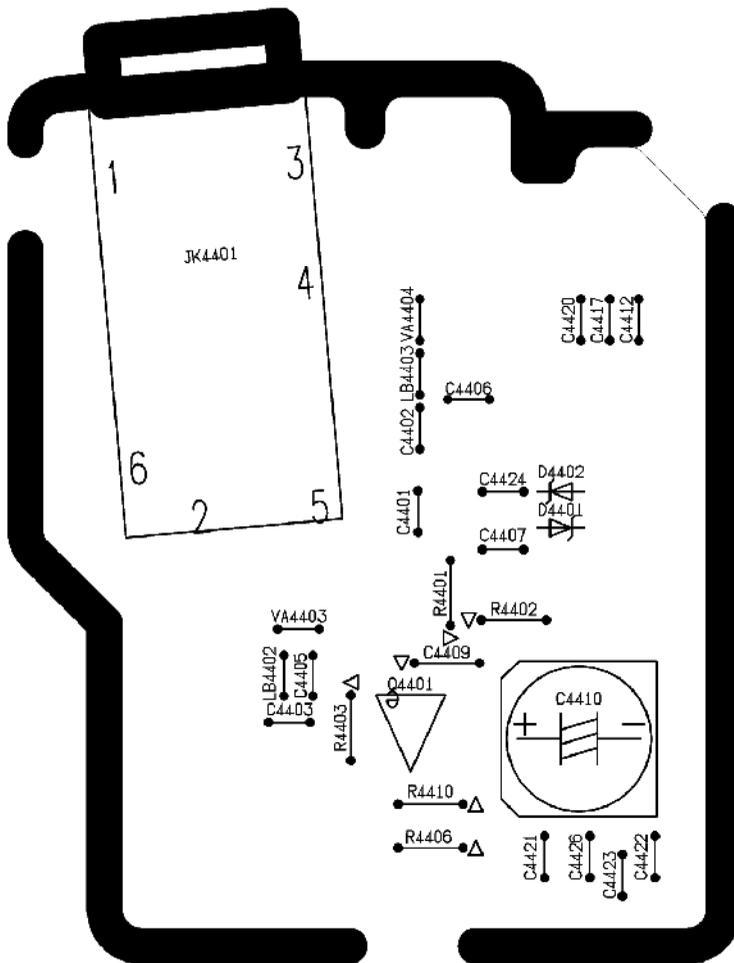
Model No. : DMC-GH1/GH1A/GH1H1 - MAIN P.C.B. (Component Side)



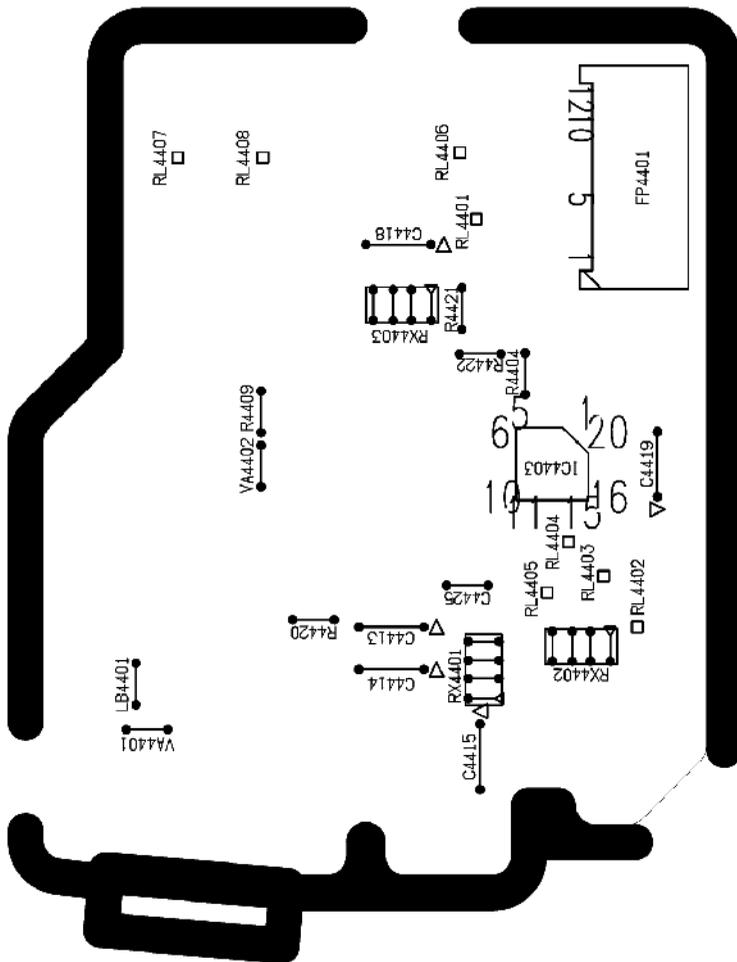
Model No. : DMC-GH1/GH1A/GH1H1 - MAIN P.C.B. (Foil Side)



Model No. : DMC-GH1/GH1A/GH1H EXT MIC P.C.B. (Component Side)



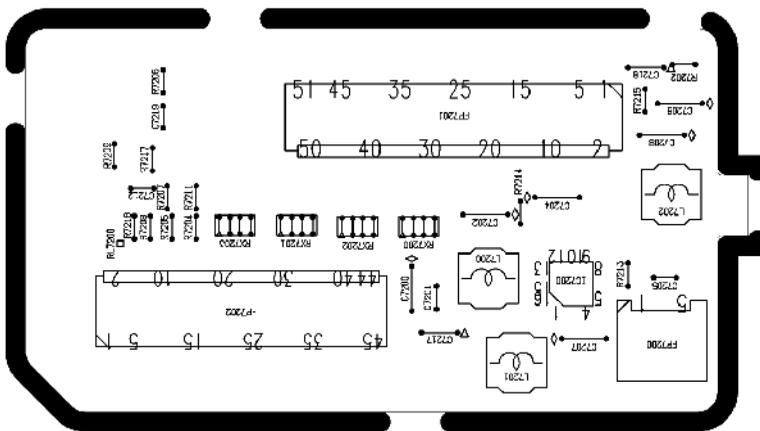
Model No. : DMC-GH1/GH1A/GH1H EXT MIC P.C.B. (Foil Side)



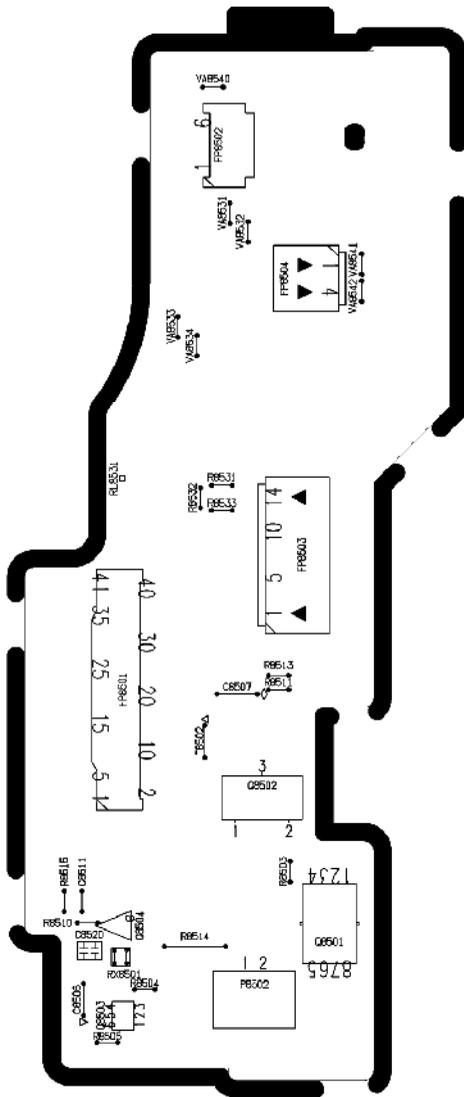
Model No. : DMC-GH1/GH1A/GH1H LCD IF P.C.B. (Component Side)



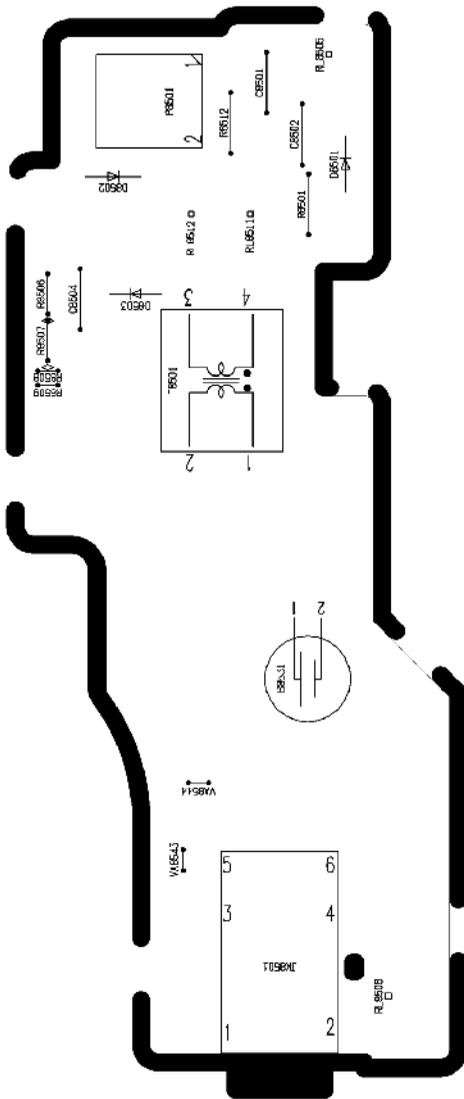
Model No. : DMC-GH1/GH1A/GH1H LCD IF P.C.B. (Foil Side)



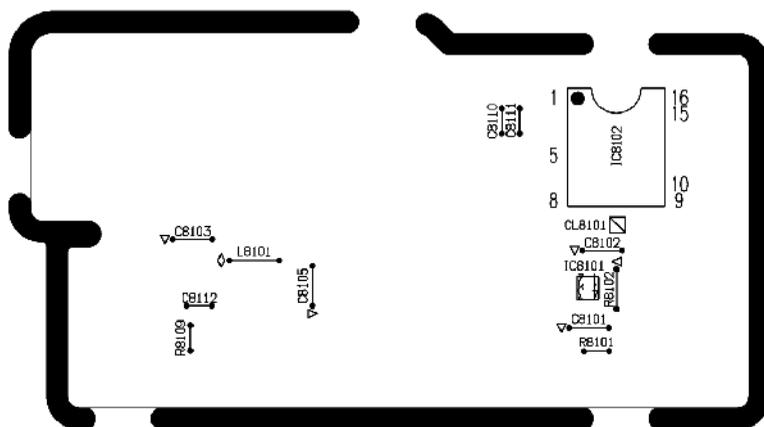
Model No. : DMC-GH1/GH1A/GH1H FLASH P.C.B. (Component Side)



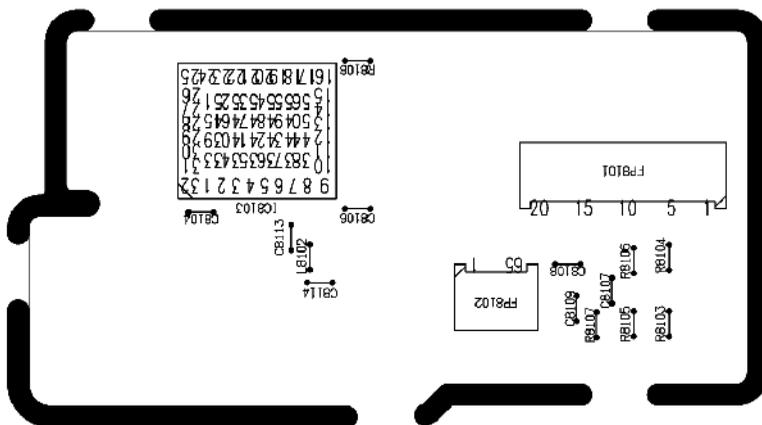
Model No. : DMC-GH1/GH1A/GH1H FLASH P.C.B. (Foil Side)



Model No. : DMC-GH1/GH1A/GH1H - WiFi NFC P.C.B. (Component Side)



Model No. : DMC-GH1/GH1A/GH1H (WiFi/NFC P.C.B. (Foil Side))



Model No. : DMC-GH/GH1/GH11 Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	⚠	B8531	N4ECY25Y0002	BUTTON BATTERY	1	
		C1001	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1002	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C1003	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1004	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1005	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1006	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1007	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1008	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1009	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1010	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1011	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1012	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1013	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1031	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1032	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1033	F1G1H220A557	C.CAPACITOR CH 50V 22P	1	
		C1041	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C1042	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C1043	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1044	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1051	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1052	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1071	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1072	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1080	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1081	F1G1A473A054	C.CAPACITOR CH 10V 0.047U	1	
		C1082	F1G1H820A541	C.CAPACITOR CH 50V 82P	1	
		C1083	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1084	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1085	F1J1E475A182	C.CAPACITOR CH 25V 4.7U	1	
		C1086	F1G1H470A659	C.CAPACITOR CH 50V 47P	1	
		C1088	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1089	F1G1H222A737	C.CAPACITOR CH 50V 2200P	1	
		C1090	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1091	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1092	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1093	F1G1H392A571	C.CAPACITOR CH 50V 3900P	1	
		C1094	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C1095	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C1096	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1102	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1201	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1301	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1401	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1501	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1601	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C1701	F1G1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C1702	F1H0J4750005	C.CAPACITOR CH 6.3V 4.7U	1	
		C1703	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C1704	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C1901	F1G1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C1902	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C1903	F1G1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C1904	F1G1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C1905	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C1906	F1H1C105A118	C.CAPACITOR CH 16V 1U	1	
		C2002	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C2701	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C4401	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4402	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4403	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	

Model No. : DMC-GH/GH4/GH4H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C4405	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4406	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4407	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4409	F1H0J4750004	C.CAPACITOR CH 6.3V 4.7U	1	
		C4410	F2G0J2200042	E.CAPACITOR CH 6.3V 22U	1	
		C4412	F1G1H100A541	C.CAPACITOR CH 50V 10P	1	
		C4413	F1H1A225A051	C.CAPACITOR CH 10V 2.2U	1	
		C4414	F1H1A225A051	C.CAPACITOR CH 10V 2.2U	1	
		C4415	F1H1A225A051	C.CAPACITOR CH 10V 2.2U	1	
		C4417	F1G1H100A541	C.CAPACITOR CH 50V 10P	1	
		C4418	F1H1E104A029	C.CAPACITOR CH 25V 0.1U	1	
		C4419	F1H1E104A029	C.CAPACITOR CH 25V 0.1U	1	
		C4420	F1G1H100A541	C.CAPACITOR CH 50V 10P	1	
		C4421	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4422	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4423	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4424	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4425	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4426	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
		C4501	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C4502	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C4503	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C4504	F3E0J106A026	C.CAPACITOR CH 6.3V 10U	1	
		C4505	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C4506	F3F0J107A087	C.CAPACITOR CH 6.3V 100U	1	
		C4507	F3E0J106A026	C.CAPACITOR CH 6.3V 10U	1	
		C4508	F3F0J107A087	C.CAPACITOR CH 6.3V 100U	1	
		C4509	F1H0J1060009	C.CAPACITOR CH 6.3V 10U	1	
		C6001	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C6002	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6003	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6004	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6005	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6006	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6007	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6008	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6009	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6010	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6012	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6013	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6014	F1G1H9R0A796	C.CAPACITOR CH 50V 9P	1	
		C6015	F1G1H100A541	C.CAPACITOR CH 50V 10P	1	
		C6018	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C6019	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6020	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6021	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C6022	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6023	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6034	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C6035	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6036	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6037	F3G0J1070004	E.CAPACITOR CH 6.3V 100U	1	
		C6038	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6039	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6040	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6041	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6042	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6101	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6102	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6103	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6104	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6105	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	

Model No. : DMC-GH/GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C6106	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6201	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6202	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6203	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6204	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6205	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C6206	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6207	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6208	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6209	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6210	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6211	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6212	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6213	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C6214	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6215	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6216	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C6218	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C6219	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6220	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6223	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6224	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6225	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6226	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6227	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6228	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C6229	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6231	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C7200	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C7201	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C7202	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C7204	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C7205	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C7206	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C7207	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C7208	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C7217	F1H0J4750005	C.CAPACITOR CH 6.3V 4.7U	1	
		C7218	F1H0J4750005	C.CAPACITOR CH 6.3V 4.7U	1	
		C7219	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C8001	F1G1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C8002	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C8103	-----	C.CAPACITOR CH 6.3V 4.7U	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		C8104	-----	C.CAPACITOR CH 10V 0.1U	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		C8105	-----	C.CAPACITOR CH 6.3V 4.7U	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		C8106	-----	C.CAPACITOR CH 6.3V 1U	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		C8107	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C8108	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C8109	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	
		C8110	F1G1H151A722	C.CAPACITOR CH 50V 150P	1	
		C8111	F1G1H7R0A798	C.CAPACITOR CH 50V 7P	1	
		C8112	-----	C.CAPACITOR CH 10V 0.1U	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		C8114	-----	C.CAPACITOR CH 50V 0.5P	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		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	

Model No. : DMC-GH/GH4/GH4H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C8507	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C8511	F1G1H101A557	C.CAPACITOR CH 50V 100P	1	
		C8520	F5A421020003	CAPACITOR	1	
		C8602	F1G1E102A086	C.CAPACITOR CH 25V 1000P	1	
		C9001	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9002	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C9010	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9011	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9012	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9013	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9014	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9026	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9027	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9031	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9034	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9035	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9039	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9040	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9041	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9043	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9044	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9045	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9046	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9047	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9048	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9049	F1G1H100A541	C.CAPACITOR CH 50V 10P	1	
		C9050	F1G1H100A541	C.CAPACITOR CH 50V 10P	1	
		C9051	F1G1H100A541	C.CAPACITOR CH 50V 10P	1	
		C9052	F1G1H100A541	C.CAPACITOR CH 50V 10P	1	
		C9053	F1H0J106A009	C.CAPACITOR CH 6.3V 10U	1	
		C9054	F1H0J106A009	C.CAPACITOR CH 6.3V 10U	1	
		C9102	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9103	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9104	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9105	F1H0J1060009	C.CAPACITOR CH 6.3V 10U	1	
		C9107	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9108	F3E0J106A026	C.CAPACITOR CH 6.3V 10U	1	
		C9110	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9111	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9112	F3E0J106A026	C.CAPACITOR CH 6.3V 10U	1	
		C9113	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9115	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9116	F1G1H100A541	C.CAPACITOR CH 50V 10P	1	
		C9117	F1G1H120A789	C.CAPACITOR CH 50V 12P	1	
		C9118	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9119	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9121	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9122	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9123	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9125	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9126	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9127	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9128	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9129	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9130	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9131	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9134	F1H0J1060009	C.CAPACITOR CH 6.3V 10U	1	
		C9136	F1G1H272A571	C.CAPACITOR CH 50V 2700P	1	
		C9137	F1G1H272A571	C.CAPACITOR CH 50V 2700P	1	
		C9138	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9139	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9140	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C9141	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9142	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9143	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9146	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9147	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9201	F1H0J4750005	C.CAPACITOR CH 6.3V 4.7U	1	
		C9202	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C9208	F1H0J1060009	C.CAPACITOR CH 6.3V 10U	1	
		C9210	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9211	F1H1A105A025	C.CAPACITOR CH 10V 1U	1	
		C9300	F1H1C105A167	C.CAPACITOR CH 16V 1U	1	
		C9303	F1G1H221A834	C.CAPACITOR CH 50V 220P	1	
		C9305	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C9306	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C9307	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C9308	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C9309	F1H1C105A167	C.CAPACITOR CH 16V 1U	1	
		C9310	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C9311	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C9312	F1H1C105A167	C.CAPACITOR CH 16V 1U	1	
		C9313	F1H1C105A167	C.CAPACITOR CH 16V 1U	1	
		C9314	F1H1C105A167	C.CAPACITOR CH 16V 1U	1	
		C9315	F1H1C105A167	C.CAPACITOR CH 16V 1U	1	
		C9316	F1H1C104A041	C.CAPACITOR CH 16V 0.1U	1	
		C9317	F1G1A473A069	C.CAPACITOR CH 10V 0.047U	1	
		C9802	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		C9901	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9902	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	
		CX6001	F1L1E103A065	C.CAPACITOR CH 25V 0.01U	1	
		CX6002	F1L1E103A065	C.CAPACITOR CH 25V 0.01U	1	
		CX6003	F1L1E103A065	C.CAPACITOR CH 25V 0.01U	1	
		CX6004	F1L1E103A065	C.CAPACITOR CH 25V 0.01U	1	
		CX6005	F1L1E103A065	C.CAPACITOR CH 25V 0.01U	1	
		CX9001	F5A84104A021	CAPACITOR NETWORKS	1	
		CX9002	F5A84104A021	CAPACITOR NETWORKS	1	
		D1001	B0JCGD000016	DIODE	1	E.S.D.
		D1041	DB2S31100L	DIODE	1	E.S.D.
		D1081	B0JCRC000002	DIODE	1	E.S.D.
		D1501	B0JCMD000066	DIODE	1	E.S.D.
		D1701	B0JDD0000017	DIODE	1	E.S.D.
		D1901	B0JCPG000032	DIODE	1	E.S.D.
		D1902	B0JCPG000032	DIODE	1	E.S.D.
		D4401	B0BC6R8A0169	DIODE	1	E.S.D.
		D4402	B0BC6R8A0169	DIODE	1	E.S.D.
		D6001	B0JCCD000003	DIODE	1	E.S.D.
		D6002	B0JCCD000003	DIODE	1	E.S.D.
		D6003	B0JCCD000003	DIODE	1	E.S.D.
		D8001	B0BC8R2A0266	DIODE	1	E.S.D.
		D8003	B2ABAP000007	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	B2BDR000004	DIODE	1	E.S.D.
		D9001	B0BD6R800011	DIODE	1	E.S.D.
		D9002	B0BD6R800011	DIODE	1	E.S.D.
		D9003	B0JCF0000004	DIODE	1	E.S.D.
		D9101	B0JCCD000003	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	

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		FL2002	EXC28CH900U	FILTER	1	
		FP4401	K1MY12BA0557	CONNECTOR 12P	1	
		FP7200	K1MY05BA0641	CONNECTOR 5P	1	
		FP7201	K1MY51BA0556	CONNECTOR 51P	1	
		FP7202	K1MY45BA0667	CONNECTOR 45P	1	
		FP8101	K1MY20BA0557	CONNECTOR 20P	1	
		FP8102	K1MY06BA0557	CONNECTOR 6P	1	
		FP8501	K1MY41BA0623	CONNECTOR 41P	1	
		FP8502	K1MY06BA0633	CONNECTOR 6P	1	
		FP8503	K1MY14BA0370	CONNECTOR 14P	1	
		FP8504	K1MY04BA0370	CONNECTOR 4P	1	
		FP9001	K1MY61BA0667	CONNECTOR 61P	1	
		FP9002	K1MY41BA0667	CONNECTOR 41P	1	
		FP9003	K1MY05BA0641	CONNECTOR 5P	1	
		FP9004	K1MY61BA0667	CONNECTOR 61P	1	
		FP9005	K1MY45BA0667	CONNECTOR 45P	1	
		FP9007	K1MY33BA0556	CONNECTOR 33P	1	
		FP9008	K1MY18BA0370	CONNECTOR 18P	1	
		FP9009	K1MY23BA0667	CONNECTOR 23P	1	
		FP9301	K1MY61BA0667	CONNECTOR 61P	1	
		FP9302	K1MY61AA0288	CONNECTOR 61P	1	
		FP9303	K1MY08BA0633	CONNECTOR 8P	1	
		IC1001	C12BZ0004906	IC	1	E.S.D.
		IC1031	C0DBAYY01512	IC	1	E.S.D.
		IC1041	C0BBAA000034	IC	1	E.S.D.
		IC1051	C0DBGYY02024	IC	1	E.S.D.
		IC1071	C0DBGYY02122	IC	1	E.S.D.
		IC1081	C0DBAYY02125	IC	1	E.S.D.
		IC1091	C0DBAYY01645	IC	1	E.S.D.
		IC1901	C0JBAA000393	IC	1	E.S.D.
		IC1902	C0JBAA000393	IC	1	E.S.D.
		IC2701	VUEALLPT053	IC	1	E.S.D. [SPC]
		IC4403	C0ABCA000141	IC	1	E.S.D.
		IC4501	C1AB00003981	IC	1	E.S.D.
		IC6001	VSG1025	IC	1	E.S.D. [SPC]
		IC6003	RS10626	IC	1	E.S.D.
		IC6201	C0DBGYY05584	IC	1	E.S.D.
		IC6202	C0DBGYY05590	IC	1	E.S.D.
		IC6203	C0DBGYY05582	IC	1	E.S.D.
		IC6204	C0ZBZ0002095	IC	1	E.S.D.
		IC6205	C0ZBZ0002095	IC	1	E.S.D.
		IC6206	C0ZBZ0002223	IC	1	E.S.D.
		IC7200	C0DBAYY01938	IC	1	E.S.D.
		IC8102	MN63Y1009-E1	IC	1	E.S.D.
		IC8103	-----	IC	1	E.S.D. (NOT SUPPLIED) REPLACE WITH VEP56200A
		IC9001	C0JBAS000406	IC	1	E.S.D.
		IC9002	C0DBGYY00779	IC	1	E.S.D.
		IC9101	C0JBAS000406	IC	1	E.S.D.
		IC9102	C1AB00004163	IC	1	E.S.D.
		IC9103	C0DBGYY02368	IC	1	E.S.D.
		IC9104	C0DBGYY02176	IC	1	E.S.D.
		IC9105	C0JBAU000202	IC	1	E.S.D.
		IC9201	C0DBGYY00779	IC	1	E.S.D.
		IC9300	C0DBAYY02115	IC	1	E.S.D.
		IC9301	C0CBCYY00086	IC	1	E.S.D.
		IC9901	SUBF000005	IC	1	E.S.D. [SPC]
		JK2001	K1FB108E0008	JACK	1	
		JK2002	K1FY119E0071	JACK	1	
		JK2003	K2HC106E0009	JACK	1	
		JK4401	K2HC106E0009	JACK	1	
		JK8501	K2HD104D0002	JACK	1	

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		L1031	G1C4R7MA0584	CHIP INDUCTOR 4.7UH	1	
		L1081	G1C1R5MA0577	CHIP INDUCTOR 1.5UH	1	
		L1082	G1C1R5MA0577	CHIP INDUCTOR 1.5UH	1	
		L1091	G1C1R5MA0577	CHIP INDUCTOR 1.5UH	1	
		L1101	G1C100MA0328	CHIP INDUCTOR 10UH	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	J0ZZB0000182	FILTER	1	
		L6201	G1C2R2KA0096	CHIP INDUCTOR 2.2UH	1	
		L7200	G1C100MA0392	CHIP INDUCTOR 10UH	1	
		L7201	G1C4R7MA0392	CHIP INDUCTOR 4.7UH	1	
		L7202	G1C4R7MA0392	CHIP INDUCTOR 4.7UH	1	
		L8101	-----	CHIP INDUCTOR 2.2UH	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		L8102	-----	CHIP INDUCTOR 4.3NH	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		L9201	G1C1R0MA0172	CHIP INDUCTOR 1UH	1	
		L9300	G1C100MA0392	CHIP INDUCTOR 10UH	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	
		LB6001	J0JCC0000408	FILTER	1	
		LB6201	J0JFC0000006	FILTER	1	
		LB9001	J0JHC0000032	FILTER	1	
		LB9002	J0JHC0000032	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	J0JCC0000408	FILTER	1	
		LB9010	J0JCC0000408	FILTER	1	
		LB9011	J0JCC0000408	FILTER	1	
		LB9012	J0JCC0000408	FILTER	1	
		LB9013	J0JCC0000408	FILTER	1	
		LB9014	J0JCC0000408	FILTER	1	
		P8501	K1KA02B00292	CONNECTOR 2P	1	
		P8502	K1KA02ZA0001	CONNECTOR 2P	1	
		P9003	K1KA02BA0014	CONNECTOR 2P	1	
		P9201	K1NA09E00153	MEMORY CARD CONNECTOR	1	
		Q1041	B1ABDF000017	TRANSISTOR	1	E.S.D.
		Q1081	B1CFRD000100	TRANSISTOR	1	E.S.D.
		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.
		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.
		Q2001	B1CFGD000003	TRANSISTOR	1	E.S.D.

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		Q2002	B1CFJD000007	TRANSISTOR	1	E.S.D.
		Q4401	B1ABDF000017	TRANSISTOR	1	E.S.D.
		Q8001	FK3503010L	TRANSISTOR	1	E.S.D.
		Q8501	B1JBLP000037	TRANSISTOR	1	E.S.D.
		Q8502	B1CFQG000003	TRANSISTOR	1	E.S.D.
		Q8503	B1HFCFA00035	TRANSISTOR	1	E.S.D.
		Q8504	B1ABCF000301	TRANSISTOR	1	E.S.D.
		Q9001	B1CFJD000006	TRANSISTOR	1	E.S.D.
		Q9002	B1CFQC000004	TRANSISTOR	1	E.S.D.
		Q9003	B1HFCFA00035	TRANSISTOR	1	E.S.D.
		Q9101	B1ABDF000017	TRANSISTOR	1	E.S.D.
		Q9201	B1CHMB000007	TRANSISTOR	1	E.S.D.
		Q9300	B1CHMB000007	TRANSISTOR	1	E.S.D.
		Q9801	B1MBCGA00004	TRANSISTOR	1	E.S.D.
		Q9901	B1HBCFA00034	TRANSISTOR	1	E.S.D.
		QR1001	B1GKCFJJ0016	TRANSISTOR-RESISTOR	1	E.S.D.
		QR1041	B1GDCFYY0147	TRANSISTOR-RESISTOR	1	E.S.D.
		QR1042	B1GDCFYY0147	TRANSISTOR-RESISTOR	1	E.S.D.
		QR1701	B1GKCFGN0003	TRANSISTOR-RESISTOR	1	E.S.D.
		QR2002	B1GDCFYY0148	TRANSISTOR-RESISTOR	1	E.S.D.
		QR2003	B1GBCFYY0224	TRANSISTOR-RESISTOR	1	E.S.D.
		QR6201	B1GBCFJJ0064	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8001	B1GFCFJJ0016	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8002	B1GFCFJJ0016	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8601	B1GKCFEN0001	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8602	B1GBCFYY0225	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9001	B1GBCFYY0221	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9002	B1GBCFNN0015	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9201	B1GBCFJJ0064	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9202	B1GDCFCGN0024	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9300	B1GBCFJJ0064	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9301	B1GFCFLL0009	TRANSISTOR-RESISTOR	1	E.S.D.
		R1001	D1BA4702A022	M.RESISTOR CH 1/16W 47K	1	
		R1002	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R1003	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R1004	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R1032	D1BA5603A022	RESISTOR	1	
		R1033	D1BA2703A022	M.RESISTOR CH 1/16W 220K	1	
		R1035	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R1036	D1BDR010A099	RESISTOR	1	
		R1041	D1BA1302A022	RESISTOR	1	
		R1042	D1BA6801A022	M.RESISTOR CH 1/16W 6.8K	1	
		R1043	D1BDR056A100	RESISTOR	1	
		R1044	D1BA1302A022	RESISTOR	1	
		R1045	D1BA6801A022	M.RESISTOR CH 1/16W 6.8K	1	
		R1046	D1BA6202A022	RESISTOR	1	
		R1047	ERJ2RKD105X	M.RESISTOR CH 1/16W 1M	1	
		R1048	D1BA5102A022	M.RESISTOR CH 1/16W 51K	1	
		R1049	D0GA563JA023	RESISTOR	1	
		R1050	D0GA223JA023	M.RESISTOR CH 1/10W 22K	1	
		R1051	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R1071	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R1083	D1BA2202A022	M.RESISTOR CH 1/16W 22K	1	
		R1085	D1BA6202A022	RESISTOR	1	
		R1086	D1BA7501A022	RESISTOR	1	
		R1089	D1BA2203A022	M.RESISTOR CH 1/16W 220K	1	
		R1093	D1BA1002A022	M.RESISTOR CH 1/16W 10K	1	
		R1094	D1BA3002A022	RESISTOR	1	
		R1099	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R1100	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R1701	D1BA5101A022	RESISTOR	1	
		R1702	D1BA1541A023	RESISTOR	1	

Model No. : DMC-GH/GH4/GH4H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R1703	D0GA332JA023	M.RESISTOR CH 1/10W 3.3K	1	
		R1704	D0GA393JA023	RESISTOR	1	
		R1705	D0GA393JA023	RESISTOR	1	
		R1706	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R1901	ERJ2RKD684X	M.RESISTOR CH 1/16W 680K	1	
		R1902	D1BA1503A022	M.RESISTOR CH 1/16W 150K	1	
		R1904	D0GA105JA023	M.RESISTOR CH 1/10W 1M	1	
		R1905	D0GA474JA023	RESISTOR	1	
		R1907	D0GA474JA023	RESISTOR	1	
		R1909	D0GA473JA023	M.RESISTOR CH 1/10W 47K	1	
		R1910	D0GA105JA023	M.RESISTOR CH 1/10W 1M	1	
		R1918	D0GA104JA023	M.RESISTOR CH 1/16W 100K	1	
		R1919	D0GA474JA023	RESISTOR	1	
		R1920	D0GA474JA023	RESISTOR	1	
		R1921	D0GA104JA023	M.RESISTOR CH 1/16W 100K	1	
		R1924	D0GA104JA023	M.RESISTOR CH 1/16W 100K	1	
		R1925	D0GA104JA023	M.RESISTOR CH 1/16W 100K	1	
		R2001	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R2002	D0GA561JA023	M.RESISTOR CH 1/10W 560	1	
		R2003	D0GA273JA023	M.RESISTOR CH 1/10W 27K	1	
		R2004	D0GA472JA023	M.RESISTOR CH 1/10W 4.7K	1	
		R2005	D0GA472JA023	M.RESISTOR CH 1/10W 4.7K	1	
		R2006	D0GA473JA023	M.RESISTOR CH 1/10W 47K	1	
		R2008	D0GA750JA023	M.RESISTOR CH 1/10W 75	1	
		R2009	D0GA202JA023	M.RESISTOR CH 1/10W 2K	1	
		R2010	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R2011	D0GA202JA023	M.RESISTOR CH 1/10W 2K	1	
		R2012	D0GA330JA023	M.RESISTOR CH 1/10W 33	1	
		R2013	D0GA330JA023	M.RESISTOR CH 1/10W 33	1	
		R4401	D1BB5601A074	RESISTOR	1	
		R4402	D1BB5601A074	RESISTOR	1	
		R4403	D1BB5601A074	RESISTOR	1	
		R4404	D0GA223JA023	M.RESISTOR CH 1/10W 22K	1	
		R4406	D1BB6802A074	RESISTOR	1	
		R4409	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R4410	D1BB1502A074	RESISTOR	1	
		R4420	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R4421	D1BA6802A022	RESISTOR	1	
		R4422	D1BA1102A022	RESISTOR	1	
		R4501	D0GA100JA023	RESISTOR	1	
		R4502	D0GA100JA023	RESISTOR	1	
		R4508	D0GA100JA023	RESISTOR	1	
		R6005	D1BA6801A022	M.RESISTOR CH 1/16W 6.8K	1	
		R6007	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R6008	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	EG, EC, EF, EB
		R6009	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R6010	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R6016	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R6023	D0GA473JA023	M.RESISTOR CH 1/10W 47K	1	
		R6037	D0GA680JA023	M.RESISTOR CH 1/10W 68	1	
		R6038	D0GA182JA023	RESISTOR	1	
		R6039	D0GA182JA023	RESISTOR	1	
		R6048	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R6049	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R6057	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R6061	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R6063	D0GA473JA023	M.RESISTOR CH 1/10W 47K	1	
		R6064	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R6065	D0GA181JA023	RESISTOR	1	
		R6070	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R6071	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R6072	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R6087	D0GA270JA023	RESISTOR	1	
		R6089	D0GA270JA023	RESISTOR	1	
		R6118	D0GA105JA023	M.RESISTOR CH 1/10W 1M	1	
		R6119	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R6122	D1BA2000A022	M.RESISTOR CH 1/16W 200	1	
		R6123	D1BA4701A022	M.RESISTOR CH 1/16W 4.7K	1	
		R6128	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R6149	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R6150	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R6151	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R6153	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6154	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6155	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6156	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6157	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6158	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6159	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6160	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6161	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6162	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6163	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6164	D1BA5100A022	M.RESISTOR CH 1/16W 510	1	
		R6165	D1BA2400A022	M.RESISTOR CH 1/16W 240	1	
		R6166	D1BA2400A022	M.RESISTOR CH 1/16W 240	1	
		R6167	D1BA2400A022	M.RESISTOR CH 1/16W 240	1	
		R6168	D1BA2400A022	M.RESISTOR CH 1/16W 240	1	
		R6170	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R6203	ERJ2BQJR51X	RESISTOR	1	
		R6204	ERJ2BQJR51X	RESISTOR	1	
		R6210	D1BA3302A022	RESISTOR	1	
		R6211	D1BA2202A022	M.RESISTOR CH 1/16W 22K	1	
		R6212	D1BA3302A022	RESISTOR	1	
		R6213	D1BA2202A022	M.RESISTOR CH 1/16W 22K	1	
		R6215	ERJ2BQJR51X	RESISTOR	1	
		R6221	D1BA1503A022	M.RESISTOR CH 1/16W 150K	1	
		R6234	D0GA104JA023	M.RESISTOR CH 1/16W 100K	1	
		R7204	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R7205	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R7206	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R7207	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R7211	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R8001	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R8002	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R8004	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R8007	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R8009	D0GD106JA052	RESISTOR	1	
		R8010	D0GD106JA052	RESISTOR	1	
		R8103	D0GA332JA023	M.RESISTOR CH 1/10W 3.3K	1	
		R8105	D0GA332JA023	M.RESISTOR CH 1/10W 3.3K	1	
		R8106	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R8108	-----	M.RESISTOR CH 1/10W 10K	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		R8109	-----	M.RESISTOR CH 1/10W 0	1	(NOT SUPPLIED) REPLACE WITH VEP5620 0A
		R8501	D0GF104JA048	RESISTOR	1	
		R8503	D0GA104JA023	M.RESISTOR CH 1/16W 100K	1	
		R8504	D0GA330JA023	M.RESISTOR CH 1/10W 33	1	
		R8505	D0GA680JA023	M.RESISTOR CH 1/10W 68	1	
		R8506	D1BD9103A077	RESISTOR	1	
		R8507	D1BD9103A077	RESISTOR	1	
		R8508	D1BA4703A022	RESISTOR	1	
		R8509	D1BA1002A022	M.RESISTOR CH 1/16W 10K	1	

Model No. : DMC-GH/GH4/GH4H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R8510	D0GA181JA023	RESISTOR	1	
		R8511	D0GA153JA023	RESISTOR	1	
		R8512	D0GF753JA048	M.RESISTOR CH 1/4W 75K	1	
		R8513	D0GA220JA023	M.RESISTOR CH 1/10W 22	1	
		R8514	D0GF472JA048	RESISTOR	1	
		R8515	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R8531	D0GA822JA023	RESISTOR	1	
		R8532	D0GA392JA023	M.RESISTOR CH 1/10W 3.9K	1	
		R8533	D0GA222JA023	M.RESISTOR CH 1/10W 2.2K	1	
		R8601	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R8602	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R8603	D0GA330JA023	M.RESISTOR CH 1/10W 33	1	
		R8604	D0GA221JA023	M.RESISTOR CH 1/10W 220	1	
		R9013	D0GB8R2JA065	RESISTOR	1	
		R9018	D0GA472JA023	M.RESISTOR CH 1/10W 4.7K	1	
		R9019	D0GB8R2JA065	RESISTOR	1	
		R9023	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R9024	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R9025	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R9026	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R9031	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	P, PC, EE, GC, GH, GT, GK, GN, GD, PU
		R9032	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	EG, EC, EF, EB
		R9039	D0GA391JA023	M.RESISTOR CH 1/10W 390	1	
		R9040	D0GA391JA023	M.RESISTOR CH 1/10W 390	1	
		R9041	D0GA391JA023	M.RESISTOR CH 1/10W 390	1	
		R9042	D0GA271JA023	RESISTOR	1	
		R9043	D0GA222JA023	M.RESISTOR CH 1/10W 2.2K	1	
		R9044	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R9045	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R9046	D0GA392JA023	M.RESISTOR CH 1/10W 3.9K	1	
		R9047	D0GA333JA023	RESISTOR	1	
		R9048	D0GA822JA023	RESISTOR	1	
		R9049	D0GA393JA023	RESISTOR	1	
		R9050	D0GA223JA023	M.RESISTOR CH 1/10W 22K	1	
		R9051	D0GA393JA023	RESISTOR	1	
		R9052	D0GA393JA023	RESISTOR	1	
		R9054	D1BA1202A022	RESISTOR	1	
		R9055	D1BA6802A022	RESISTOR	1	
		R9056	D1BA1502A022	M.RESISTOR CH 1/16W 15K	1	
		R9057	D1BA3901A022	M.RESISTOR CH 1/16W 3.9K	1	
		R9059	D0GA473JA023	M.RESISTOR CH 1/10W 47K	1	
		R9061	D0GA331JA023	M.RESISTOR CH 1/10W 330	1	
		R9063	D0GA474JA023	RESISTOR	1	
		R9081	D0GA222JA023	M.RESISTOR CH 1/10W 2.2K	1	
		R9082	D0GA392JA023	M.RESISTOR CH 1/10W 3.9K	1	
		R9083	D0GA822JA023	RESISTOR	1	
		R9084	D0GA222JA023	M.RESISTOR CH 1/10W 2.2K	1	
		R9085	D0GA392JA023	M.RESISTOR CH 1/10W 3.9K	1	
		R9086	D0GA822JA023	RESISTOR	1	
		R9087	D0GA222JA023	M.RESISTOR CH 1/10W 2.2K	1	
		R9088	D0GA392JA023	M.RESISTOR CH 1/10W 3.9K	1	
		R9105	ERJ2RKD684X	M.RESISTOR CH 1/16W 680K	1	
		R9106	D1BA3903A022	RESISTOR	1	
		R9117	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R9122	D0GA151JA023	M.RESISTOR CH 1/10W 150	1	
		R9123	D0GA332JA023	M.RESISTOR CH 1/10W 3.3K	1	
		R9124	D0GA431JA023	RESISTOR	1	
		R9134	ERJ2RKD684X	M.RESISTOR CH 1/16W 680K	1	
		R9135	D1BA3003A022	RESISTOR	1	
		R9138	D0GA203JA023	M.RESISTOR CH 1/10W 20K	1	
		R9140	ERJ2RKD105X	M.RESISTOR CH 1/16W 1M	1	
		R9141	D1BA2403A022	RESISTOR	1	

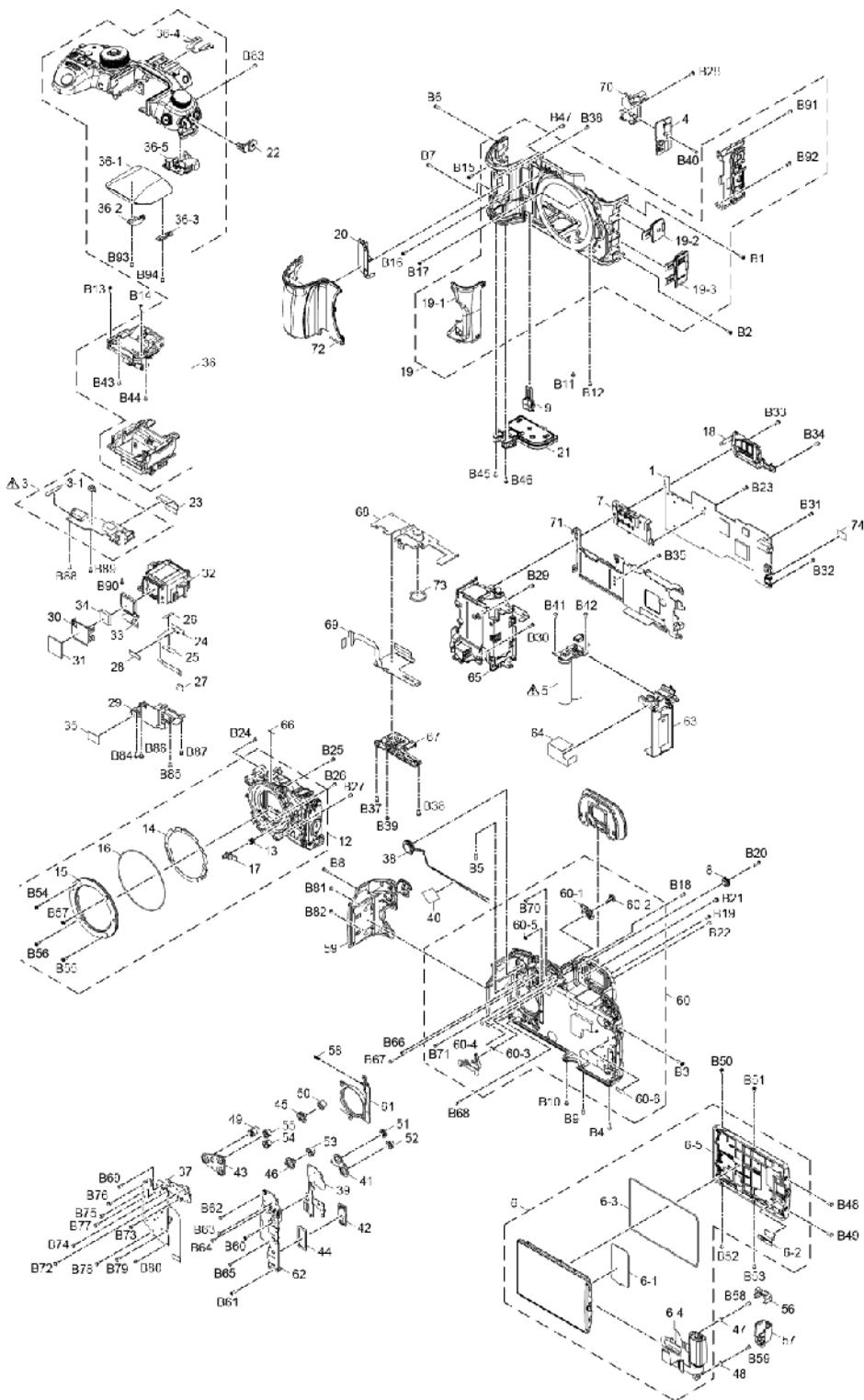
Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R9151	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R9152	D1BB2202A074	RESISTOR	1	
		R9154	D1BB2202A074	RESISTOR	1	
		R9155	D1BB3901A074	RESISTOR	1	
		R9156	D1BB3901A074	RESISTOR	1	
		R9157	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R9158	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R9159	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R9160	D0GA472JA023	M.RESISTOR CH 1/10W 4.7K	1	
		R9161	D0GA472JA023	M.RESISTOR CH 1/10W 4.7K	1	
		R9162	D0GA822JA023	RESISTOR	1	
		R9163	D0GA822JA023	RESISTOR	1	
		R9164	D0GA822JA023	RESISTOR	1	
		R9165	D0GA152JA023	M.RESISTOR CH 1/10W 1.5K	1	
		R9166	D0GA152JA023	M.RESISTOR CH 1/10W 1.5K	1	
		R9187	D0GA105JA023	M.RESISTOR CH 1/10W 1M	1	
		R9199	D1BA2000A022	M.RESISTOR CH 1/16W 200	1	
		R9201	D0GA104JA023	M.RESISTOR CH 1/16W 100K	1	
		R9202	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R9204	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R9205	D0GA332JA023	M.RESISTOR CH 1/10W 3.3K	1	
		R9250	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R9301	D0GA470JA023	RESISTOR	1	
		R9302	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R9303	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R9305	D0GA332JA023	M.RESISTOR CH 1/10W 3.3K	1	
		R9309	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R9315	D0GA472JA023	M.RESISTOR CH 1/10W 4.7K	1	
		R9316	D0GA472JA023	M.RESISTOR CH 1/10W 4.7K	1	
		R9322	D0GA472JA023	M.RESISTOR CH 1/10W 4.7K	1	
		R9323	D0GA332JA023	M.RESISTOR CH 1/10W 3.3K	1	
		R9324	D0GAR00J0005	M.RESISTOR CH 1/10W 0	1	
		R9326	D0GD6R8JA052	RESISTOR	1	
		R9327	D0GA103JA023	M.RESISTOR CH 1/10W 10K	1	
		R9328	D0GA473JA023	M.RESISTOR CH 1/10W 47K	1	
		R9332	D0GA223JA023	M.RESISTOR CH 1/10W 22K	1	
		R9333	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R9334	D0GA101JA023	M.RESISTOR CH 1/10W 100	1	
		R9335	D0GA680JA023	M.RESISTOR CH 1/10W 68	1	
		R9336	D0GA202JA023	M.RESISTOR CH 1/10W 2K	1	
		R9337	D1BA2002A022	RESISTOR	1	
		R9338	D1BA1803A022	M.RESISTOR CH 1/16W 180K	1	
		R9339	D0GA152JA023	M.RESISTOR CH 1/10W 1.5K	1	
		R9801	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R9802	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R9902	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		R9908	D0GA102JA023	M.RESISTOR CH 1/10W 1K	1	
		RX4401	D1H82224A042	RESISTOR NETWORKS	1	
		RX4402	D1H81534A042	RESISTOR NETWORKS	1	
		RX4403	D1H81044A042	RESISTOR NETWORKS	1	
		RX6001	D1H81034A042	RESISTOR NETWORKS	1	
		RX6002	D1H81034A042	RESISTOR NETWORKS	1	
		RX6003	D1H81034A042	RESISTOR NETWORKS	1	
		RX6004	D1H81034A042	RESISTOR NETWORKS	1	
		RX6005	D1H84734A042	RESISTOR NETWORKS	1	
		RX6006	D1H81814A042	RESISTOR NETWORKS	1	
		RX6007	D1H8R0040016	RESISTOR NETWORKS	1	
		RX6008	D1H8R0040016	RESISTOR NETWORKS	1	
		RX6009	D1H8R0040016	RESISTOR NETWORKS	1	
		RX6010	D1H8R0040016	RESISTOR NETWORKS	1	
		RX6011	D1H83304A042	RESISTOR NETWORKS	1	
		RX7200	D1H8R0040016	RESISTOR NETWORKS	1	

Model No. : DMC-GH1/GH1A/GH1H Parts List

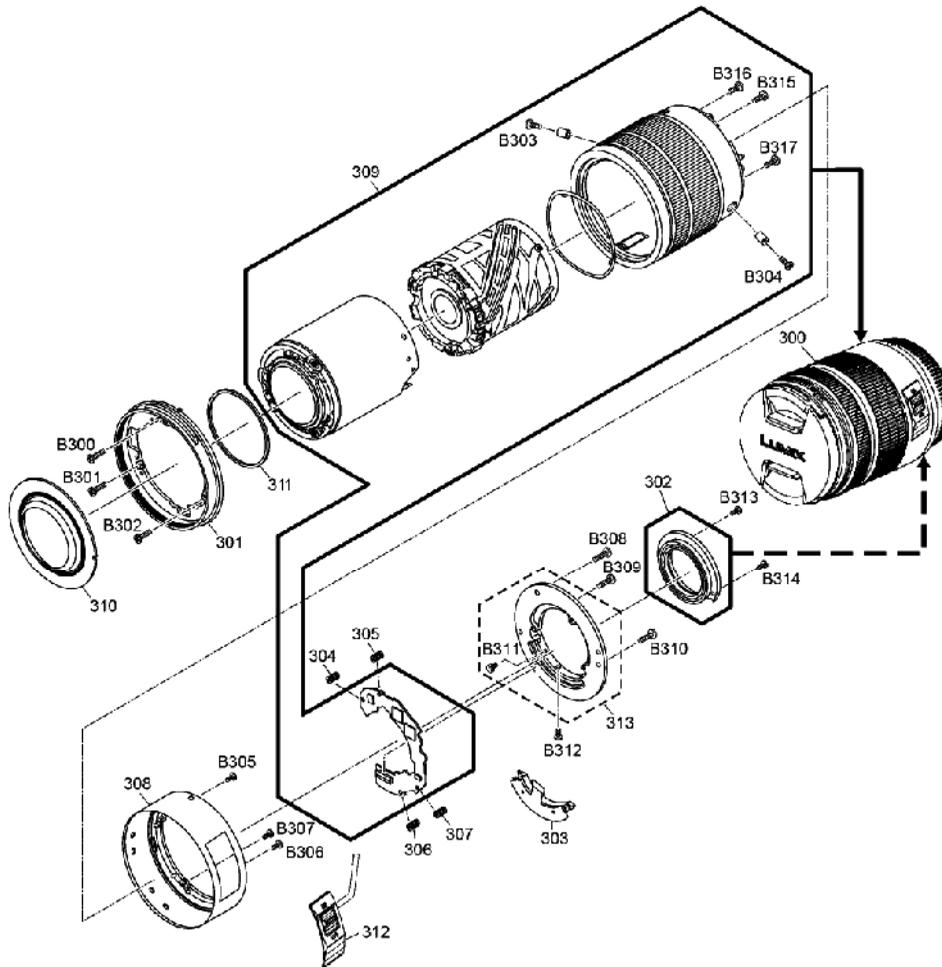
Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		RX7201	D1H8R0040016	RESISTOR NETWORKS	1	
		RX7202	D1H8R0040016	RESISTOR NETWORKS	1	
		RX7203	D1H8R0040016	RESISTOR NETWORKS	1	
		RX8001	D1H83314A042	RESISTOR NETWORKS	1	
		RX8501	EXB24N202JX	RESISTOR NETWORKS	1	
		RX9001	D1H83924A042	RESISTOR NETWORKS	1	
		RX9002	D1H83924A042	RESISTOR NETWORKS	1	
		RX9003	D1H81034A042	RESISTOR NETWORKS	1	
		RX9004	D1H81034A042	RESISTOR NETWORKS	1	
		RX9005	D1H81014A042	RESISTOR NETWORKS	1	
		RX9006	D1H81014A042	RESISTOR NETWORKS	1	
		RX9007	D1H81044A042	RESISTOR NETWORKS	1	
		RX9008	D1H83924A042	RESISTOR NETWORKS	1	
		RX9009	D1H81034A042	RESISTOR NETWORKS	1	
		RX9201	D1H81034A042	RESISTOR NETWORKS	1	
		RX9300	D1H84704A042	RESISTOR NETWORKS	1	
		RX9301	D1H84704A042	RESISTOR NETWORKS	1	
		RX9302	D1H84704A042	RESISTOR NETWORKS	1	
		RX9303	D1H84704A042	RESISTOR NETWORKS	1	
		RX9304	D1H81014A042	RESISTOR NETWORKS	1	
		RX9305	D1H81014A042	RESISTOR NETWORKS	1	
		RX9306	D1H81014A042	RESISTOR NETWORKS	1	
		RX9307	D1H81014A042	RESISTOR NETWORKS	1	
		T8501	G5DYA0000143	TRANSFORMER	1	
		T9801	G5DYZ0000028	TRANSFORMER	1	
		VA4401	D4ED18R00008	VARISTOR	1	
		VA4402	D4ED18R00008	VARISTOR	1	
		VA4403	D4ED18R00008	VARISTOR	1	
		VA4404	D4ED18R00008	VARISTOR	1	
		VA8540	D4ED18R00008	VARISTOR	1	
		VA8543	D4ED18R00008	VARISTOR	1	
		VA8544	D4ED18R00008	VARISTOR	1	
		VA9005	D4ED18R00008	VARISTOR	1	
		X6001	H0J240500048	CRYSTAL OSCILLATOR	1	
		X9101	H0J327200085	CRYSTAL OSCILLATOR	1	

Model No. : DMC-GH1/GH1A/GH1H1 Frame and Casing Section

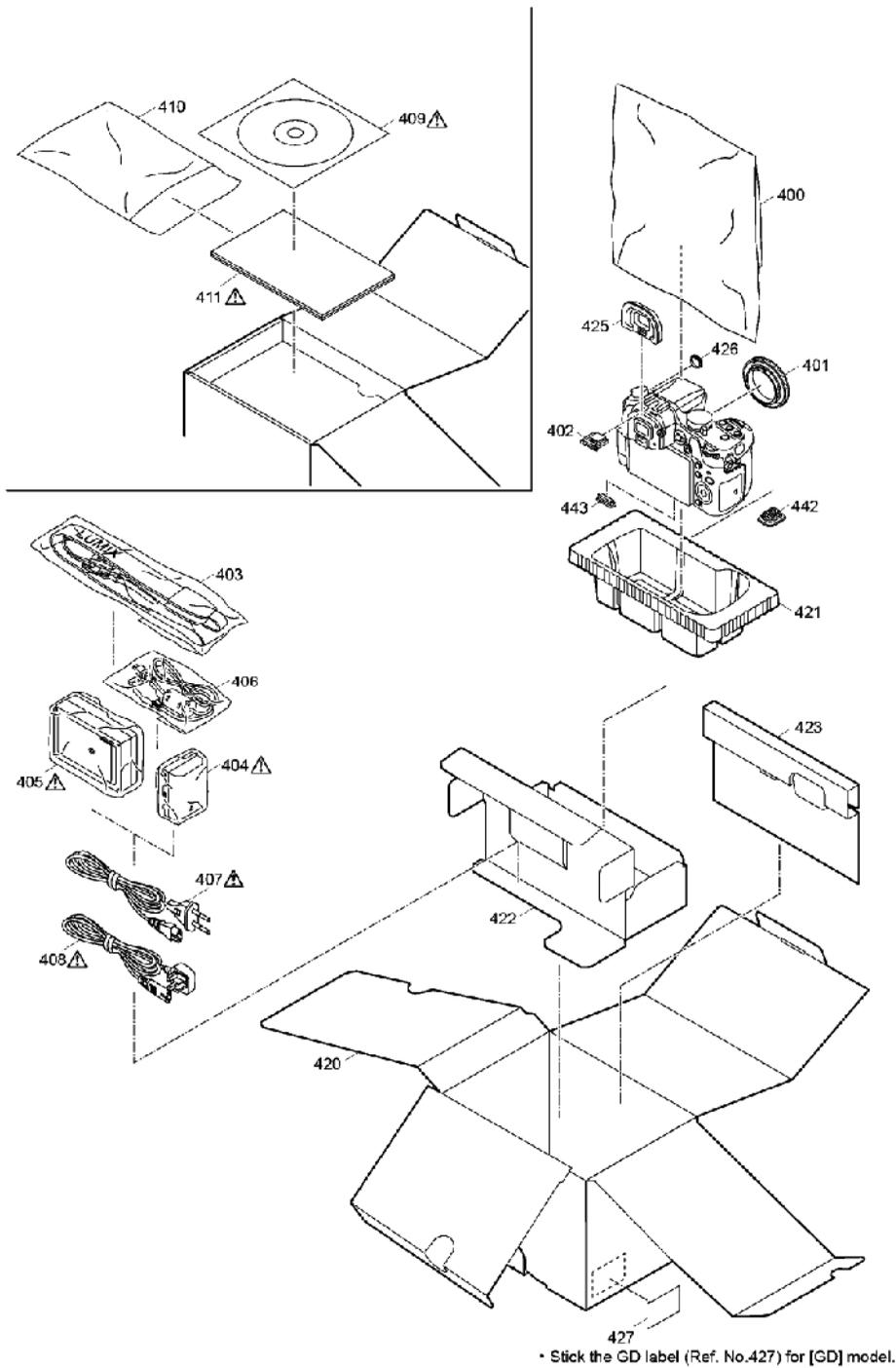


Model No. : DMC-GH1/GH1A/GH1H Camera Lens section (2) (H-FS14140)

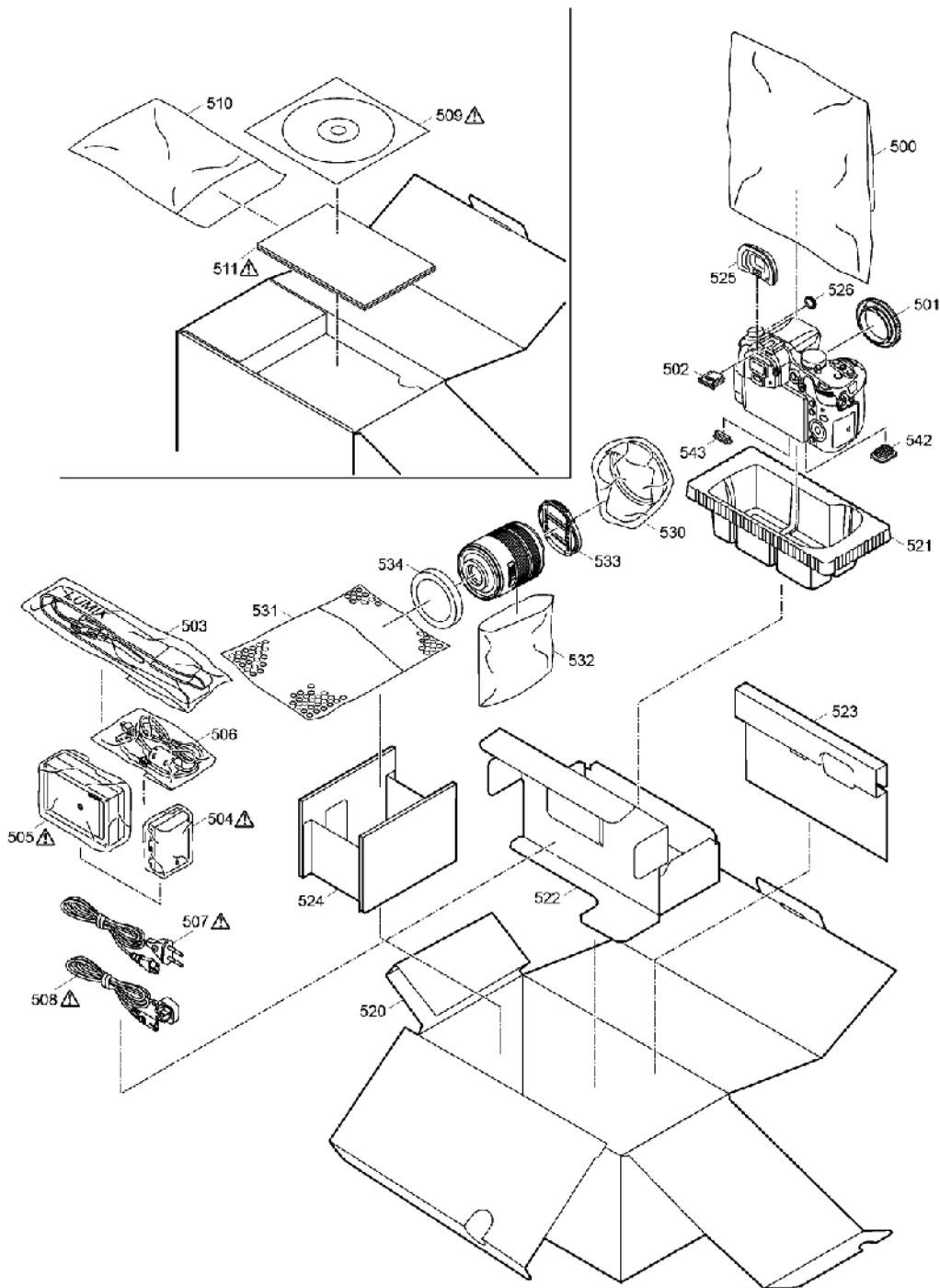
H-FS14140



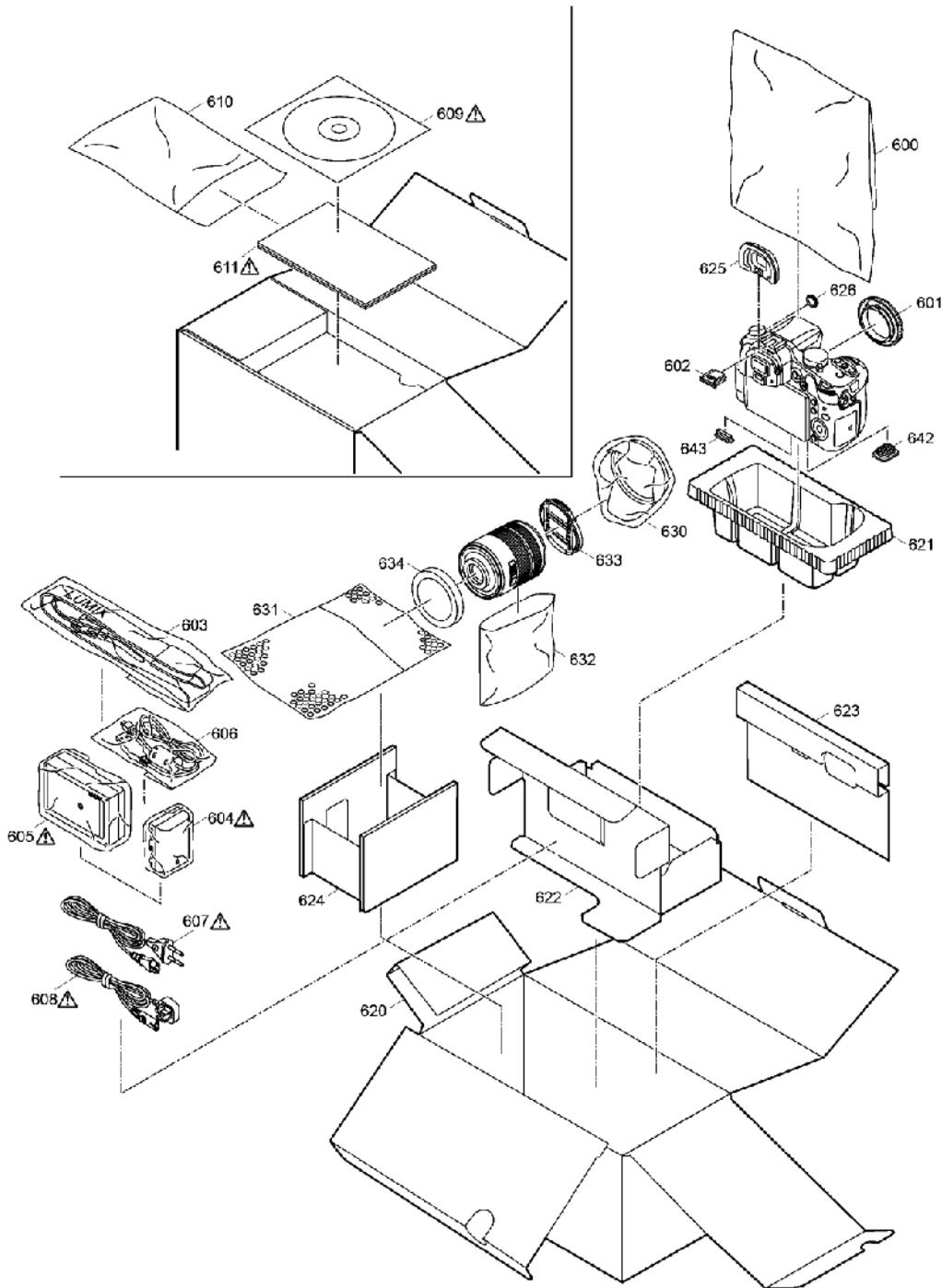
Model No. : DMC-GH1/GH1A/GH1H Packing Parts and Accessories Section (D) (GH1)



Model No. : DMC-GH11/GH11A/GH11H Packing Parts and Accessories Section (2) (GH11A)



Model No. : DMC-GH1/GH1A/GH1H Packing Parts and Accessories Section (3) (GH1H)



Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		1	VEP56199B	MAIN P.C.B.	1	(RTL)E.S.D. EG,EC,EF,EB
		1	VEP56199A	MAIN P.C.B.	1	(RTL)E.S.D. P,PC,EE,GC,GH,GT,GK,GN,GD,PU
	⚠	3	VEK0V28	FLASH P.C.B. UNIT	1	(RTL)E.S.D.
		3-1	VGQ1L45	SHEET	1	
		4	VEP56200A	WI-FI NFC P.C.B.	1	E.S.D.
	⚠	5	VYQ8973	CAPACITOR P.C.B. UNIT	1	
		6	VYK6T31	LCD UNIT	1	
		6-1	VEP59132A	LCD IF P.C.B.	1	(RTL)E.S.D.
		6-2	VEP50135A	MR3 SWITCH FPC UNIT	1	
		6-3	VGQ1F96	LCD PACKING	1	
		6-4	VYK6B49	LCD HINGE UNIT	1	
		6-5	VYK6T18	LCD CASE BOTTOM UNIT	1	
		7	K4ZZ03000347	BATTERY CONTACT UNIT	1	(ZB1901)
		8	VGU0M80	LVF DPT KNOB	1	
		9	VKF5101	DC COVER	1	
		12	VXQ2550	MOUNT BOX UNIT	1	
		13	VMB4497	LENS LOCK PIN SPRING	1	
		14	VMC2063	MOUNT SPRING	1	
		15	VMD6702	B MOUNT	1	
		16	VMG2060	B MOUNT RING	1	
		17	VXA8935	LENS LOCK PIN UNIT	1	
		18	VYK6B42	BATTERY CONTACT COVER UNIT	1	
		19	VYK6T66	FRONT CASE UNIT	1	
		19-1	VYK6T65	FRONT GRIP R UNIT	1	
		19-2	VKF5287	JACK COVER C	1	
		19-3	VKF5288	JACK COVER B	1	
		20	VYK6T40	NFC UNIT	1	
		21	VYF3508	BATTERY DOOR UNIT	1	
		22	VKF5107	MIC JACK COVER	1	
		23	VWJ2460	MAIN-FLASH FPC	1	
		24	VEP59133A	EYE SENSOR FPC	1	
		25	VGQ0Q18	FIX TAPE	1	
		26	VGQ0X15	FPC TAPE	1	
		27	VGQ1K74	EYE SENSOR TAPE	1	
		28	VGQ1N38	TAPE	1	
		29	VMA1A47	LVF HOLDER	1	
		30	VMC2268	LVF MODULE PLATE	1	
		31	VMT2375	HEAT RADIATION PAD	1	
		32	VYQ8938	LVF UNIT	1	
		33	L5ZZ00000196	LVF MODULE	1	
		34	VMT2182	HEAT RADIATION PAD	1	
		35	VGQ0T64-A	LVF HOLDER TAPE	1	
		36	VYK6T68	TOP CASE UNIT	1	
		36-1	VKM0J80	FLASH CASE TOP	1	
		36-2	VYQ9000	FLASH TOP PLATE L UNIT	1	
		36-3	VYQ8999	FLASH TOP PLATE R UNIT	1	
		36-4	VMC2111	SHOE SPRING	1	
		36-5	VEK0V27	EXT MIC P.C.B. UNIT	1	(RTL)E.S.D.
		37	K0RB01500003	REAR OPERATION UNIT	1	
		38	L0AA01A00163	SPEAKER	1	
		39	VEP50134A	MR1 SWITCH FPC UNIT	1	
		40	VGQ1F53	SHEET	1	
		41	VGQ1F73	REAR BUTTON PACKING C	1	
		42	VGQ1F77	HINGE FIX COVER	1	
		43	VGQ1F84	REAR BUTTON PACKING B	1	
		44	VGQ1F95	HINGE CUSHION 4	1	
		45	VGQ1L75	REAR BUTTON PACKING D	1	
		46	VGQ1L75	REAR BUTTON PACKING D	1	
		47	VGQ1R59	SPACER	1	
		48	VGQ1R59	SPACER	1	
		49	VGU0M75	DISP. BUTTON	1	

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		50	VGU0N08	MOTION PICTURE BUTTON	1	
		51	VGU0R08	LVF BUTON	1	
		52	VGU0R09	PLAYBACK BUTTON	1	
		53	VGU0R10	FN4 BUTTON	1	
		54	VGU0R11	FN3 BUTTON	1	
		55	VGU0R12	Q.MENU BUTTON	1	
		56	VKM0C56	HINGE ARM COVER TOP	1	
		57	VKM0C55	HINGE ARM COVER BOTTOM	1	
		58	VMB4668	LCD LOCK SPRING	1	
		59	VYF3509	SD DOOR UNIT	1	
		60	VYK6T67	REAR CASE UNIT	1	
		60-1	VYQ9051	FOCUS MODE LEVER UNIT	1	
		60-2	VGU0M79	AF/AE LOCK BUTTON	1	
		60-3	VMB4568	MODE DIAL SPRING	1	
		60-4	VMD6196	CLICK BALL	1	
		60-5	XUC12VW	E RING	1	
		60-6	VGQ1F76	FPC TAPE	1	
		61	VYK6F58	LCD LOCK HOLDER UNIT	1	
		62	VYK6F59	HINGE PACKING COVER UNIT	1	
		63	VGQ1F98	CAPACITOR COVER	1	
		64	VGQ1M13	BATTERY CASE SHEET	1	
		65	VYK6T17	BATTERY CASE UNIT	1	
		66	VGQ9405	WATER LABEL	1	
		67	VGQ1T41	BG CONTACT HOLDER	1	
		68	VMP0J55	TRIPOD	1	
		69	VWJ2461	WI-FI BG FPC	1	
		70	VGQ1T40	WI-FI HOLDER	1	
		71	VYK6T93	HEAT RADIATION PLATE UNIT	1	
		72	VYK6T38	FRONT GRIP L UNIT	1	
		73	VGQ1F64	TRIPOD PLATE PORON	1	
		74	VGQ0Y02	FPC TAPE	1	
		B1	VHD2438	SCREW	1	
		B2	VHD2438	SCREW	1	
		B3	VHD2438	SCREW	1	
		B4	VHD2438	SCREW	1	
		B5	VHD2438	SCREW	1	
		B6	VHD2438	SCREW	1	
		B7	VHD2438	SCREW	1	
		B8	VHD2438	SCREW	1	
		B9	VHD2149	SCREW	1	
		B10	VHD2149	SCREW	1	
		B11	VHD2149	SCREW	1	
		B12	VHD2149	SCREW	1	
		B13	VHD2166	SCREW	1	
		B14	VHD2166	SCREW	1	
		B15	VHD2166	SCREW	1	
		B16	VHD2166	SCREW	1	
		B17	VHD2166	SCREW	1	
		B18	VHD2166	SCREW	1	
		B19	VHD2166	SCREW	1	
		B20	XQN14+BJ6FJK	SCREW	1	
		B21	VHD2342	SCREW	1	
		B22	VHD2342	SCREW	1	
		B23	VHD2342	SCREW	1	
		B24	VHD1919	SCREW	1	
		B25	VHD1919	SCREW	1	
		B26	VHD1919	SCREW	1	
		B27	VHD1919	SCREW	1	
		B28	XQN16+B4FN	SCREW	1	
		B29	XQN16+B4FN	SCREW	1	
		B30	XQN16+B4FN	SCREW	1	
		B31	XQN16+B4FN	SCREW	1	

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		B32	XQN16+B4FN	SCREW	1	
		B33	XQN16+B4FN	SCREW	1	
		B34	XQN16+B4FN	SCREW	1	
		B35	XQN16+B2FJ	SCREW	1	
		B36	XQN16+BJ4FN	SCREW	1	
		B37	XQN16+B4FN	SCREW	1	
		B38	XQN16+B4FN	SCREW	1	
		B39	XQN16+B2FJ	SCREW	1	
		B40	XQN14+BJ4FJK	SCREW	1	
		B41	XQN16+B3FJ	SCREW	1	
		B42	XQN16+B3FJ	SCREW	1	
		B43	VHD2342	SCREW	1	
		B44	VHD2342	SCREW	1	
		B45	VHD2179	SCREW	1	
		B46	VHD2179	SCREW	1	
		B47	XQN16+BJ4FN	SCREW	1	
		B48	VHD2337	SCREW	1	
		B49	VHD2337	SCREW	1	
		B50	VHD2149	SCREW	1	
		B51	VHD2149	SCREW	1	
		B52	VHD2149	SCREW	1	
		B53	VHD2149	SCREW	1	
		B54	VHD2124	SCREW	1	
		B55	VHD2124	SCREW	1	
		B56	VHD2190	SCREW	1	
		B57	VHD2190	SCREW	1	
		B58	VHD2138	SCREW	1	
		B59	VHD2138	SCREW	1	
		B60	XQN16+BJ65FC	SCREW	1	
		B61	XQN16+BJ65FC	SCREW	1	
		B62	VHD2333	SCREW	1	
		B63	VHD2333	SCREW	1	
		B64	VHD2333	SCREW	1	
		B65	VHD2333	SCREW	1	
		B66	XQN14+BJ4FJK	SCREW	1	
		B67	XQN14+BJ4FJK	SCREW	1	
		B68	XQN14+BJ4FJK	SCREW	1	
		B69	XQN14+BJ4FJK	SCREW	1	
		B70	VHD2314	SCREW	1	
		B71	VHD2314	SCREW	1	
		B72	XQN16+B3FJ	SCREW	1	
		B73	XQN16+B3FJ	SCREW	1	
		B74	XQN16+B3FJ	SCREW	1	
		B75	XQN16+B3FJ	SCREW	1	
		B76	XQN16+B3FJ	SCREW	1	
		B77	XQN16+B3FJ	SCREW	1	
		B78	XQN16+B3FJ	SCREW	1	
		B79	XQN16+B3FJ	SCREW	1	
		B80	VHD1924	SCREW	1	
		B81	VHD2367	SCREW	1	
		B82	VHD2367	SCREW	1	
		B83	VHD2342	SCREW	1	
		B84	XQN14+BJ4FJK	SCREW	1	
		B85	XQN14+BJ4FJK	SCREW	1	
		B86	VHD2436	SCREW	1	
		B87	VHD2459	SCREW	1	
		B88	XQN14+BJ4FJK	SCREW	1	
		B89	XQN14+BJ4FJK	SCREW	1	
		B90	XQN14+BJ4FJK	SCREW	1	
		B91	XQN16+B4FN	SCREW	1	
		B92	XQN16+B4FN	SCREW	1	
		B93	XQN16+BJ3FJK	SCREW	1	

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		B94	XQN16+BJ3FJK	SCREW	1	
		200	VXW1447	LENS UNIT	1	(GH4A) [SPC]
		201	F127HJ0	DECO. RING	1	(GH4A) [SPC]
		202	F12F010	HOOD ADAPTER	1	(GH4A) [SPC]
		203	F12F350	OIS SW UNIT	1	(GH4A) [SPC]
		204	F12F320	ZOOM RUBBER	1	(GH4A) [SPC]
		205	F1279H0	MOUNT CONTACT UNIT	1	(GH4A) [SPC]
		206	F128H50	L MOUNT UNIT	1	(GH4A) [SPC]
		206-1	9630230	LENS MOUNT RUBBER	1	(GH4A) [SPC]
		210	----	LENS MAIN BLOCK UNIT	1	(GH4A) (NOT SUPPLIED) [SPC]
		B201	0242050	SCREW	1	(GH4A) [SPC]
		B202	0242050	SCREW	1	(GH4A) [SPC]
		B203	9580270	SCREW	1	(GH4A) [SPC]
		B204	0B44035	SCREW	1	(GH4A) [SPC]
		B205	0242070	SCREW	1	(GH4A) [SPC]
		B206	0242070	SCREW	1	(GH4A) [SPC]
		B207	0242070	SCREW	1	(GH4A) [SPC]
		B208	0242070	SCREW	1	(GH4A) [SPC]
		B209	0554020	SCREW	1	(GH4A) [SPC]
		B210	0HF4025	SCREW	1	(GH4A) [SPC]
		B211	0HF4025	SCREW	1	(GH4A) [SPC]
		B212	0HF4025	SCREW	1	(GH4A) [SPC]
		B213	0254035	SCREW	1	(GH4A) [SPC]
		B214	0254035	SCREW	1	(GH4A) [SPC]
		B215	0257060	SCREW	1	(GH4A) [SPC]
		B216	0257060	SCREW	1	(GH4A) [SPC]
		B217	0257060	SCREW	1	(GH4A) [SPC]
		B218	0257060	SCREW	1	(GH4A) [SPC]
		300	VXW1616	LENS UNIT	1	(GH4H) [SPC]
		301	VDW2635	FILTER RING	1	(GH4H) [SPC]
		302	---	SHADING FRAME	1	(GH4H) (NOT SUPPLIED) [SPC]
		303	VEJ2336	LENS MOUNT CONTAT UNIT	1	(GH4H) [SPC]
		304	VMG1855	FLOATING RUBBER	1	(GH4H) [SPC]
		305	VMG1855	FLOATING RUBBER	1	(GH4H) [SPC]
		306	VMG1855	FLOATING RUBBER	1	(GH4H) [SPC]
		307	VMG1855	FLOATING RUBBER	1	(GH4H) [SPC]
		308	VYF3536	REAR FRAME UNIT	1	(GH4H) [SPC]
		309	---	LENS MAIN BLOCK UNIT	1	(GH4H) (NOT SUPPLIED) [SPC]
		310	VYC1120	DECORATION RING	1	(GH4H) [SPC]
		311	VMG2090	DUST PROOF RING	1	(GH4H) [SPC]
		312	K0ZZ00000641	OIS SWITCH	1	(GH4H) [SPC]
		313	VXQ2372	L MOUNT UNIT	1	(GH4H) [SPC]
		B300	VHD2096	SCREW	1	(GH4H) [SPC]
		B301	VHD2096	SCREW	1	(GH4H) [SPC]
		B302	VHD2096	SCREW	1	(GH4H) [SPC]
		B303	VHD2096	SCREW	1	(GH4H) [SPC]
		B304	VHD2096	SCREW	1	(GH4H) [SPC]
		B305	VHD2296	SCREW	1	(GH4H) [SPC]
		B306	VHD2296	SCREW	1	(GH4H) [SPC]
		B307	VHD2296	SCREW	1	(GH4H) [SPC]
		B308	VHD2299	SCREW	1	(GH4H) [SPC]
		B309	VHD2299	SCREW	1	(GH4H) [SPC]
		B310	VHD2299	SCREW	1	(GH4H) [SPC]
		B311	VHD1868	SCREW	1	(GH4H) [SPC]
		B312	VHD2298	SCREW	1	(GH4H) [SPC]
		B313	VHD2246	SCREW	1	(GH4H) [SPC]
		B314	VHD2246	SCREW	1	(GH4H) [SPC]
		B315	VHD2096	SCREW	1	(GH4H) [SPC]
		B316	VHD2096	SCREW	1	(GH4H) [SPC]
		B317	VHD2096	SCREW	1	(GH4H) [SPC]
		400	VPF1565	CAMERA BAG	1	(GH4)
		401	VKF4971	BODY CAP	1	(GH4)

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		402	VYF3522	HOT SHOE COVER	1	(GH4)
		403	VFC5122	SHOULDER STRAP	1	(GH4)
	⚠	404	-----	BATTERY	1	(GH4)
	⚠	405	VSK0794	BATTERY CHARGER	1	(GH4) EG, EC, EF, EB, EE
	⚠	405	VSK0793	BATTERY CHARGER	1	(GH4) P, PC
	⚠	405	VSK0795	BATTERY CHARGER	1	(GH4) GC, GH, GK, GN, GD
	⚠	405	VSK0796	BATTERY CHARGER	1	(GH4) GT
		406	K1HY08YY0031	USB CABLE W/PLUG	1	(GH4)
	⚠	407	K2CQ2YY00082	AC CORD W/PLUG	1	(GH4) EG, EC, EF, EE, GC
	⚠	407	K2CA2CA00025	AC CORD W/PLUG	1	(GH4) P, PC
	⚠	407	K2CA2YY00129	AC CORD W/PLUG	1	(GH4) GT
	⚠	407	K2CA2YY00130	AC CORD W/PLUG	1	(GH4) GK
	⚠	407	K2CJ2YY00052	AC CORD W/PLUG	1	(GH4) GN
	⚠	407	K2CR2YY00026	AC CORD W/PLUG	1	(GH4) GD
	⚠	408	K2CT3YY00034	AC CORD W/PLUG	1	(GH4) EB, GC, GH
	⚠	409	VFW0107	DVD (SOFT/INSTRUCTION BOOK)	1	(GH4) EG, EC, EF, EB See "Notes"
	⚠	409	VFW0106	DVD (SOFT/INSTRUCTION BOOK)	1	(GH4) P, PC See "Notes"
	⚠	409	VFW0108	DVD (SOFT/INSTRUCTION BOOK)	1	(GH4) EE, GC, GH, GN, GT, GD See "Notes"
	⚠	409	VFW0110	DVD (SOFT/INSTRUCTION BOOK)	1	(GH4) GK See "Notes"
		410	VPF1542	BAG, POLYETHYLENE	1	(GH4)
	⚠	411	VQT5H73	BASIC O/I (GERMAN)	1	(GH4) EG
	⚠	411	VQT5H74	BASIC O/I (FRENCH)	1	(GH4) EG, EF
	⚠	411	VQT5H75	BASIC O/I (ITALIAN)	1	(GH4) EG
	⚠	411	VQT5H76	BASIC O/I (DUTCH)	1	(GH4) EG, EF
	⚠	411	VQT5H68	BASIC O/I (ENGLISH)	1	(GH4) P, PC
	⚠	411	VQT5H69	BASIC O/I (SPANISH)	1	(GH4) P
	⚠	411	VQT5H70	BASIC O/I (CANADIAN FRENCH)	1	(GH4) PC
	⚠	411	VQT5H77	BASIC O/I (SPANISH)	1	(GH4) EC
	⚠	411	VQT5H78	BASIC O/I (PORTUGUESE)	1	(GH4) EC
	⚠	411	VQT5H79	BASIC O/I (SWEDISH)	1	(GH4) EC
	⚠	411	VQT5H80	BASIC O/I (DANISH)	1	(GH4) EC
	⚠	411	VQT5H81	BASIC O/I (FINNISH)	1	(GH4) EC
	⚠	411	VQT5H82	BASIC O/I (ENGLISH)	1	(GH4) EB
	⚠	411	VQT5H83	BASIC O/I (RUSSIAN)	1	(GH4) EE
	⚠	411	VQT5H84	BASIC O/I (UKRAINIAN)	1	(GH4) EE
	⚠	411	VQT5H85	BASIC O/I (ENGLISH)	1	(GH4) GC
	⚠	411	VQT5H86	BASIC O/I (CHINESE (TRADITIONAL))	1	(GH4) GC
	⚠	411	VQT5H87	BASIC O/I (ARABIC)	1	(GH4) GC
	⚠	411	VQT5H88	BASIC O/I (VIETNAMESE)	1	(GH4) GC
	⚠	411	VQT5H89	BASIC O/I (ENGLISH)	1	(GH4) GH
	⚠	411	VQT5H90	BASIC O/I (CHINESE (TRADITIONAL))	1	(GH4) GH
	⚠	411	VQT5H91	BASIC O/I (CHINESE (TRADITIONAL))	1	(GH4) GT
	⚠	411	VQT5H92	BASIC O/I (CHINESE (SIMPLIFIED))	1	(GH4) GK
	⚠	411	VQT5H93	BASIC O/I (ENGLISH)	1	(GH4) GN
	⚠	411	VQT5H94	BASIC O/I (KOREAN)	1	(GH4) GD
		420	VPK5760	PACKING CASE	1	(GH4) Except GK
		420	VPK5761	PACKING CASE	1	(GH4) GK
		421	VPN7782	TRAY	1	(GH4)
		422	VPN7784	PAD C	1	(GH4)
		423	VPN7785	PAD D	1	(GH4)
		425	VYK6T25	EYE CUP UNIT	1	(GH4)
		426	VKF5108	FLASH SYNCHRO SOCKET CAP	1	(GH4)
		427	VQL2J61	GD LABEL	1	(GH4) GD
		442	VKF5104	BATTERY GRIP CONNECTOR COVER	1	(GH4)
		443	VKF5289	INTERFACE UNIT CONNECTOR COVER	1	(GH4)
		500	VPF1565	CAMERA BAG	1	(GH4A)
		501	VKF4971	BODY CAP	1	(GH4A)
		502	VYF3522	HOT SHOE COVER	1	(GH4A)
		503	VFC5122	SHOULDER STRAP	1	(GH4A)
	⚠	504	-----	BATTERY	1	(GH4A)
	⚠	505	VSK0794	BATTERY CHARGER	1	(GH4A) EG
	⚠	505	VSK0795	BATTERY CHARGER	1	(GH4A) GC, GH, GN

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		506	K1HY08YY0031	USB CABLE W/PLUG	1	(GH4A)
	⚠	507	K2CQ2YY00082	AC CORD W/PLUG	1	(GH4A) EG,GC
	⚠	507	K2CJ2YY00052	AC CORD W/PLUG	1	(GH4A) GN
	⚠	508	K2CT3YY00034	AC CORD W/PLUG	1	(GH4A) GC,GH
	⚠	509	VFW0107	DVD (SOFT/INSTRUCTION BOOK)	1	(GH4A) EG See "Notes"
	⚠	509	VFW0108	DVD (SOFT/INSTRUCTION BOOK)	1	(GH4A) GC,GH,GN See "Notes"
		510	VPF1542	BAG, POLYETHYLENE	1	(GH4A)
	⚠	511	VQT5H73	BASIC O/I (GERMAN)	1	(GH4A) EG
	⚠	511	VQT5H74	BASIC O/I (FRENCH)	1	(GH4A) EG
	⚠	511	VQT5H75	BASIC O/I (ITALIAN)	1	(GH4A) EG
	⚠	511	VQT5H76	BASIC O/I (DUTCH)	1	(GH4A) EG
	⚠	511	VQT5H85	BASIC O/I (ENGLISH)	1	(GH4A) GC
	⚠	511	VQT5H86	BASIC O/I (CHINESE (TRADITIONAL))	1	(GH4A) GC
	⚠	511	VQT5H87	BASIC O/I (ARABIC)	1	(GH4A) GC
	⚠	511	VQT5H88	BASIC O/I (VIETNAMESE)	1	(GH4A) GC
	⚠	511	VQT5H89	BASIC O/I (ENGLISH)	1	(GH4A) GH
	⚠	511	VQT5H90	BASIC O/I (CHINESE (TRADITIONAL))	1	(GH4A) GH
	⚠	511	VQT5H93	BASIC O/I (ENGLISH)	1	(GH4A) GN
		520	VPK5770	PACKING CASE	1	(GH4A)
		521	VPN7782	TRAY	1	(GH4A)
		522	VPN7784	PAD C	1	(GH4A)
		523	VPN7785	PAD D	1	(GH4A)
		524	VPN7786	PAD E	1	(GH4A)
		525	VYK6T25	EYE CUP UNIT	1	(GH4A)
		526	VKF5108	FLASH SYNCHRO SOCKET CAP	1	(GH4A)
		530	VYC1084	LENS HOOD UNIT	1	(GH4A) [SPC]
		531	VPF1483	AIR CAP BAG	1	(GH4A)
		532	VPF1513	LENS BAG	1	(GH4A) [SPC]
		533	VYF3480	LENS CAP	1	(GH4A) [SPC]
		534	VFC4605	LENS REAR CAP	1	(GH4A)
		542	VKF5104	BATTERY GRIP CONNECTOR COVER	1	(GH4A)
		543	VKF5289	INTERFACE UNIT CONNECTOR COVER	1	(GH4A)
		600	VPF1565	CAMERA BAG	1	(GH4H)
		601	VKF4971	BODY CAP	1	(GH4H)
		602	VYF3522	HOT SHOE COVER	1	(GH4H)
		603	VFC5122	SHOULDER STRAP	1	(GH4H)
	⚠	604	----	BATTERY	1	(GH4H)
	⚠	605	VSK0794	BATTERY CHARGER	1	(GH4H)
		606	K1HY08YY0031	USB CABLE W/PLUG	1	(GH4H)
	⚠	607	K2CQ2YY00082	AC CORD W/PLUG	1	(GH4H) EG,EC,EF,EE
	⚠	607	K2CA2CA00025	AC CORD W/PLUG	1	(GH4H) PU
	⚠	608	K2CT3YY00034	AC CORD W/PLUG	1	(GH4H) EB
	⚠	609	VFW0107	DVD (SOFT/INSTRUCTION BOOK)	1	(GH4H) EG,EC,EF,EB See "Notes"
	⚠	609	VFW0106	DVD (SOFT/INSTRUCTION BOOK)	1	(GH4H) PU See "Notes"
	⚠	609	VFW0108	DVD (SOFT/INSTRUCTION BOOK)	1	(GH4H) EE See "Notes"
		610	VPF1542	BAG, POLYETHYLENE	1	(GH4H)
	⚠	611	VQT5H71	BASIC O/I (SPANISH)	1	(GH4H) PU
	⚠	611	VQT5H72	BASIC O/I (PORTUGUESE)	1	(GH4H) PU
	⚠	611	VQT5H73	BASIC O/I (GERMAN)	1	(GH4H) EG
	⚠	611	VQT5H74	BASIC O/I (FRENCH)	1	(GH4H) EG,EF
	⚠	611	VQT5H75	BASIC O/I (ITALIAN)	1	(GH4H) EG
	⚠	611	VQT5H76	BASIC O/I (DUTCH)	1	(GH4H) EG,EF
	⚠	611	VQT5H77	BASIC O/I (SPANISH)	1	(GH4H) EC
	⚠	611	VQT5H78	BASIC O/I (PORTUGUESE)	1	(GH4H) EC
	⚠	611	VQT5H79	BASIC O/I (SWEDISH)	1	(GH4H) EC
	⚠	611	VQT5H80	BASIC O/I (DANISH)	1	(GH4H) EC
	⚠	611	VQT5H81	BASIC O/I (FINNISH)	1	(GH4H) EC
	⚠	611	VQT5H82	BASIC O/I (ENGLISH)	1	(GH4H) EB
	⚠	611	VQT5H83	BASIC O/I (RUSSIAN)	1	(GH4H) EE
	⚠	611	VQT5H84	BASIC O/I (UKRAINIAN)	1	(GH4H) EE
		620	VPK5762	PACKING CASE	1	(GH4H)
		621	VPN7782	TRAY	1	(GH4H)

Model No. : DMC-GH1/GH1A/GH1H Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		622	VPN7784	PAD C	1	(GH4H)
		623	VPN7785	PAD D	1	(GH4H)
		624	VPN7786	PAD E	1	(GH4H)
		625	VYK6T25	EYE CUP UNIT	1	(GH4H)
		626	VKF5108	FLASH SYNCHRO SOCKET CAP	1	(GH4H)
		630	VYC1119-B	LENS HOOD UNIT	1	(GH4H)
		631	VPF1483	AIR CAP BAG	1	(GH4H)
		632	VPF1509	LENS BAG	1	(GH4H) [SPC]
		633	VYF3514	LENS CAP	1	(GH4H) [SPC]
		634	VFC4605	LENS REAR CAP	1	(GH4H)
		642	VKF5104	BATTERY GRIP CONNECTOR COVER	1	(GH4H)
		643	VKF5289	INTERFACE UNIT CONNECTOR COVER	1	(GH4H)