Panasonic

ORDER NO. DSC1407014CE

B26

Service Manual

Digital Camera

Model No. **DMC-FZ1000P**

DMC-FZ1000PC

DMC-FZ1000PU

DMC-FZ1000EB

DMC-FZ1000EE

DMC-FZ1000EF

DMC-FZ1000EG

DMC-FZ1000EP

DMC-FZ1000GN

Colour
(K).....Black Type

⚠ WARNING

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

1 Safety Precautions

1.1 General Guidelines

1. **IMPORTANT SAFETY NOTICE**

   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.

3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.

4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.

5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2 Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.

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

1.3 Leakage Current Hot Check (See Figure. 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.

2. Connect a 1.5 kΩ, 10 W resistor, in parallel with a 0.15 µF capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure. 1.

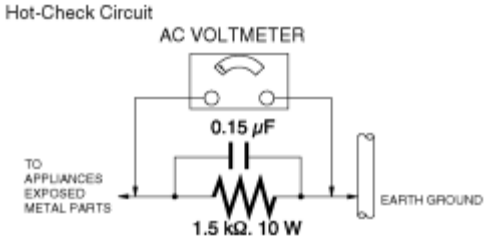
3. Use an AC voltmeter, with 1 kΩ/V or more sensitivity, to measure the potential across the resistor.

4. Check each exposed metallic part, and measure the voltage at each point.

5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.

6. The potential at any point should not exceed 0.75 V RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Figure. 1



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

CAUTION:

- **Be sure to discharge the E.Capacitor on Flash P.C.B. Unit before disassembling.**
- **Be careful of the high voltage circuit on Flash P.C.B. Unit when servicing.**

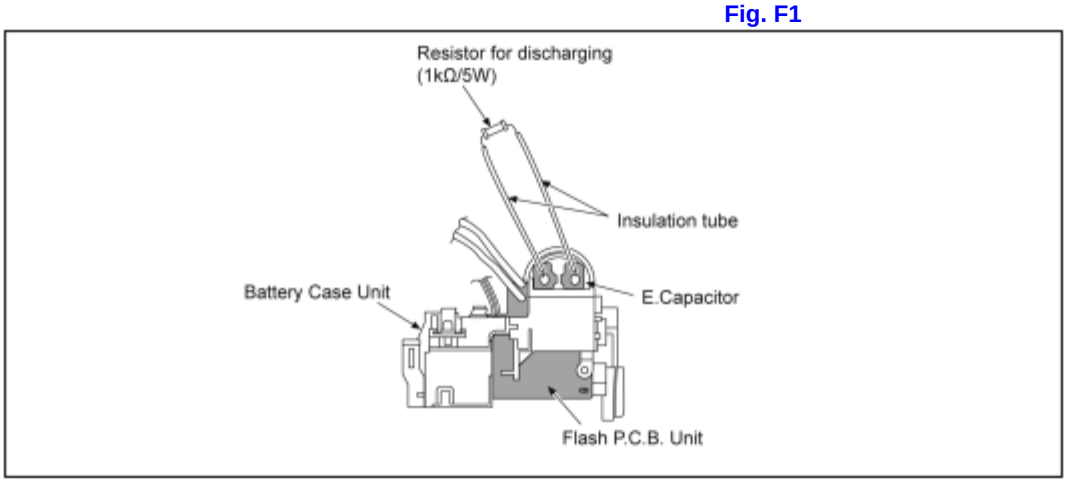
[Discharging Procedure]

1. Put the insulation tube on the lead part of resistor (ERG5SJ102:1kΩ /5W).

   (An equivalent type of resistor may be used.)

2. Put the resistor between both terminals of E.Capacitor on the Flash P.C.B. Unit for approx. 5 seconds.
3. 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 MOS image sensor, IC (integrated circuits) and some field-effect transistors and semiconductor "chip" components.

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

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

   CAUTION :

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

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

ENGLISH

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

FRANÇAIS

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

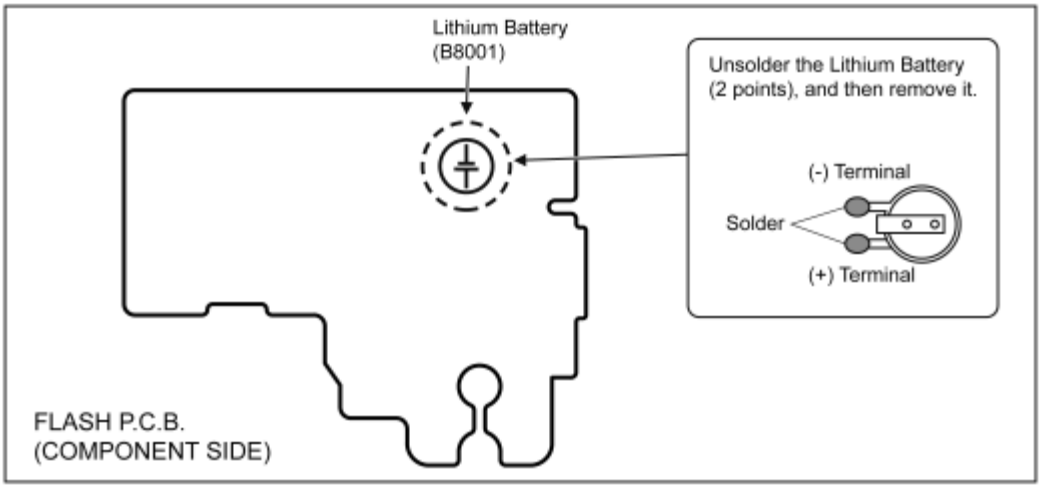
2.3 How to Replace the Lithium Battery

2.3.1 Replacement Procedure

1. Remove the Flash P.C.B.. (Refer to Disassembly Procedures.)
2. Unsolder the each soldering point of electric lead terminal for Lithium battery (Ref. No. “B8001” at component 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-FZ1000 series, as well.

2.4 Caution for AC Cord

(For EB)

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 safety.

There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt, please consult a qualified electrician.

2.4.2.1 Important

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

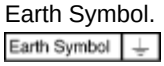
Blue	Neutral
Brown	Live

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.

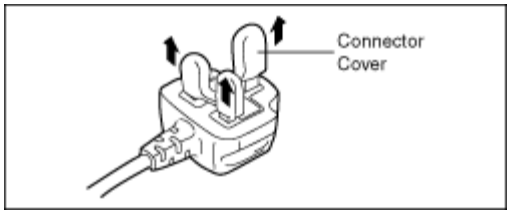
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

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.



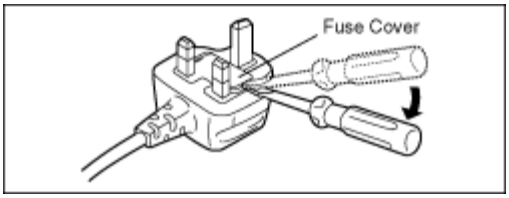
2.4.2.2 Before Use

Remove the Connector Cover as follows.

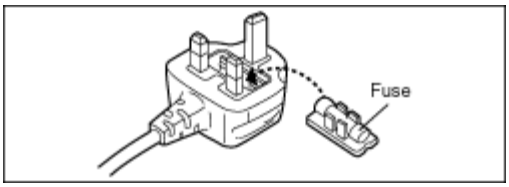


2.4.2.3 How to Replace the Fuse

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.

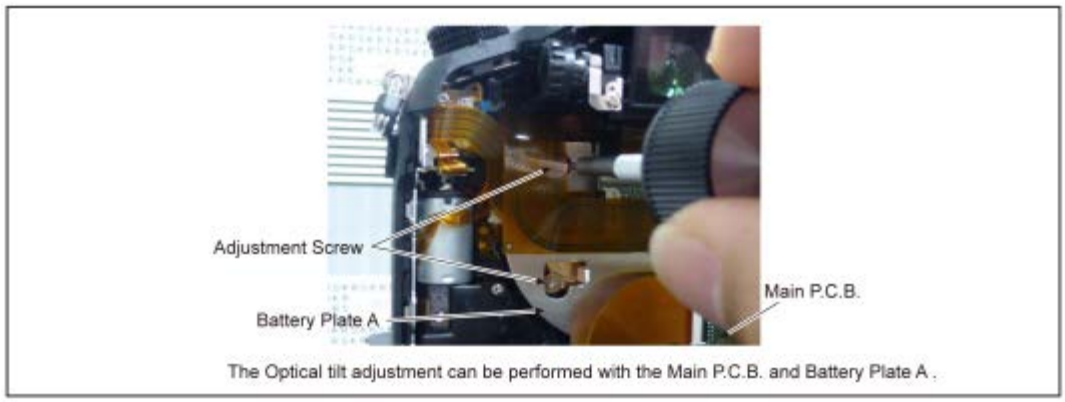
3.2 Important Notice

3.2.1 About Lens Block

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

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

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



The Optical tilt adjustment can be performed with the Main P.C.B. and Battery Plate A .

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

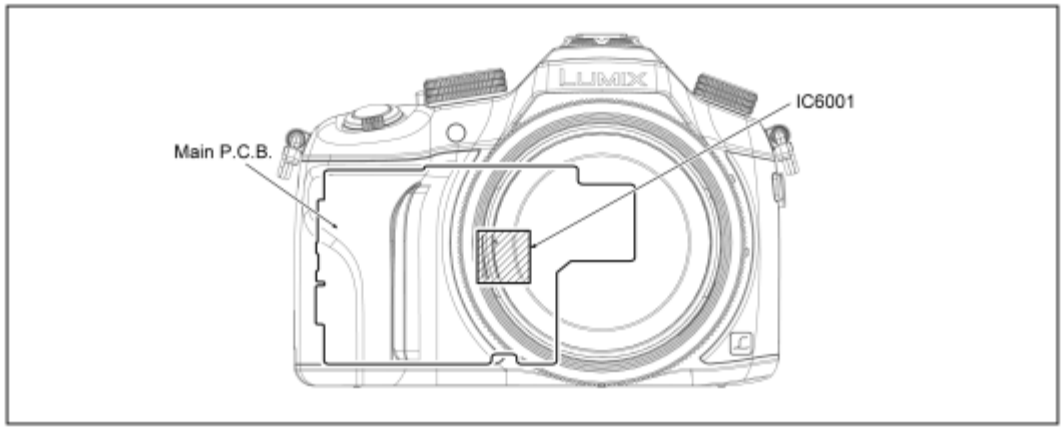
The Venus Engine (IC6001) consists of two IC chips (DRAM and Venus) , which are fixed together with solder.

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

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

NOTE:

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



3.2.3 About Flexible Cable and Connector

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

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

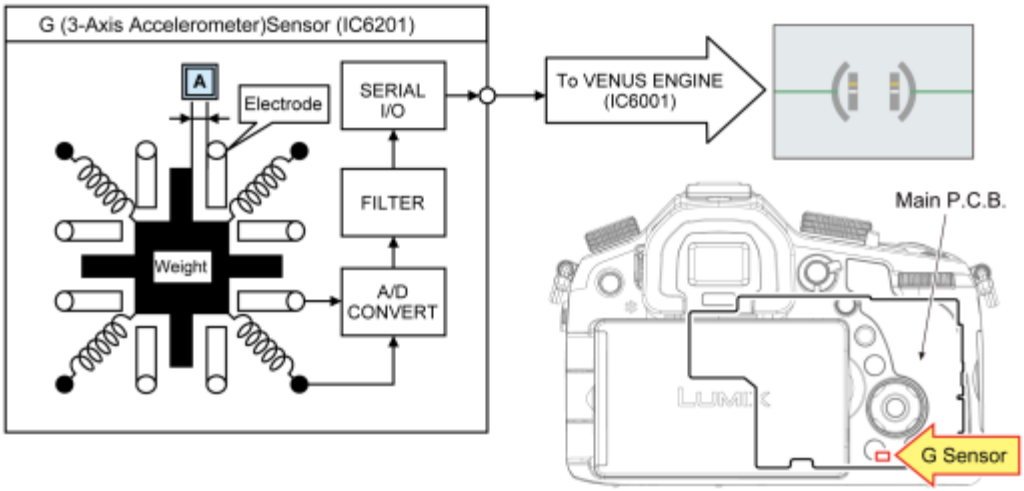
3.3 Service Notes

3.3.1 About Tilt Sensor Display

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

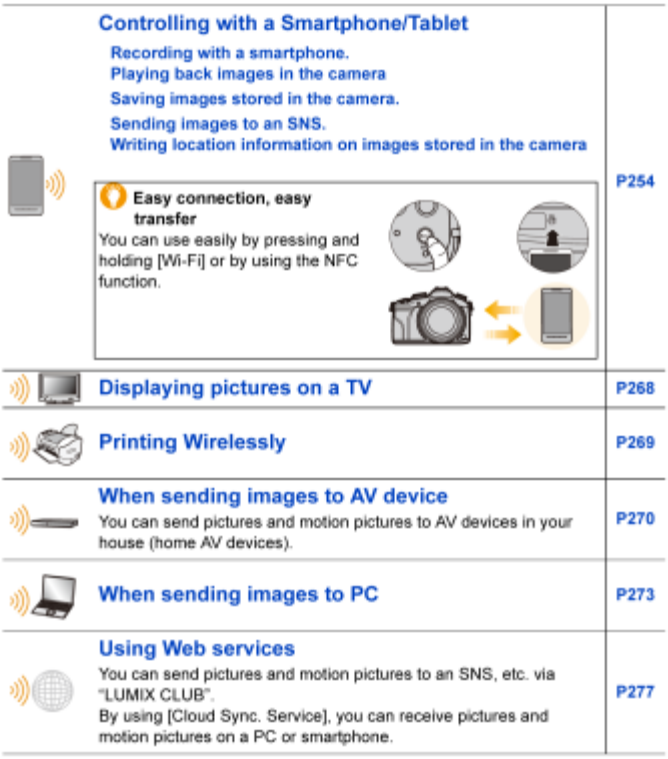
[Principal of Operation]

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.



3.3.2 About Wi-Fi Function

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



3.3.3 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]

3.4 General Description About Lead Free Solder (PbF)

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

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

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

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

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

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.

  (Definition: The letter of “PbF” is printed on the P.C.B. using the lead free solder.)

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

Recommended Lead Free Solder (Service Parts Route.)

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

  RFKZ03D01KS----------(0.3mm 100g Reel)

  RFKZ06D01KS----------(0.6mm 100g Reel)

  RFKZ10D01KS----------(1.0mm 100g Reel)

Note

* Ingredient: tin (Sn) 96.5%, silver (Ag) 3.0%, copper (Cu) 0.5%, cobalt (Co) / germanium (Ge) 0.1 to 0.3%

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

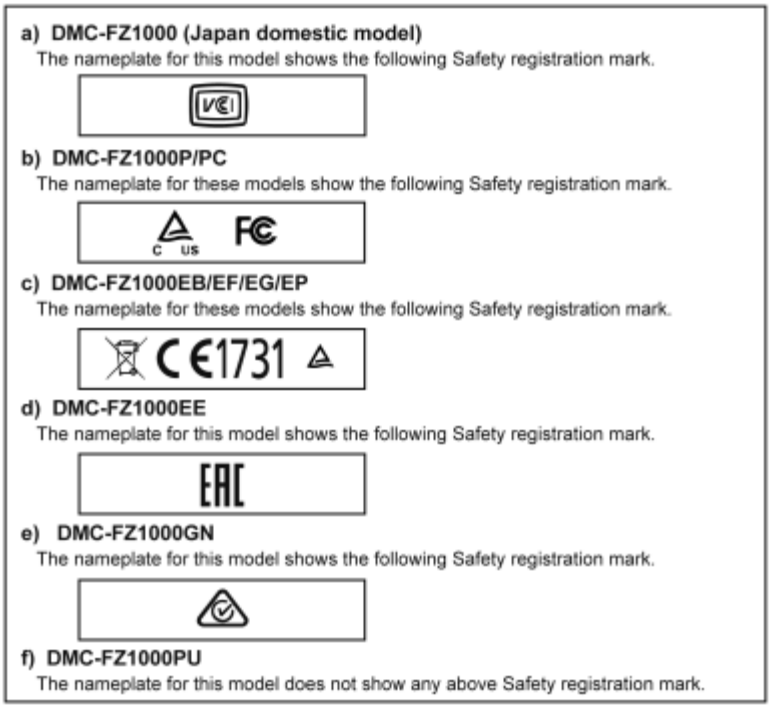
There are six kinds of DMC-FZ1000 regardless of the colours.

- a) FZ1000 (Japan domestic model)
- b) FZ1000P/PC
- c) FZ1000EB/EF/EG/EP
- d) FZ1000EE
- e) FZ1000GN
- f) FZ1000PU

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

3.5.1 Defining methods:

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



NOTE:

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

3.5.2 Initial Settings:

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

1. Important Notice:

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

CAUTION :(Initial Settings)

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

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

*. The model suffix can be chosen **JUST ONE TIME.**
(Effective model suffix : "P/PC/PU/EE/GN 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.

2. Procedures:

- Precautions: Read the above "CAUTION" carefully.
- Preparation:

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

  Remove the lens cap.
- **Step 1. The Temporary Cancellation of "Initial Settings":**

  Set the [Mode dial] to "[P](Program AE mode)" and [Drive mode dial] to "Single".

  While 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.

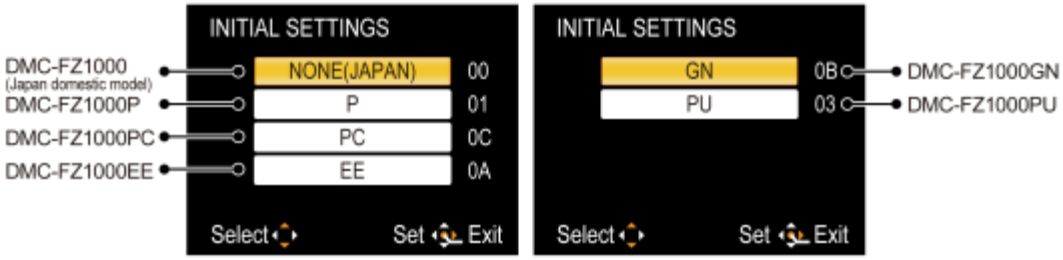
  The “Initial Settings” menu is displayed.

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

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

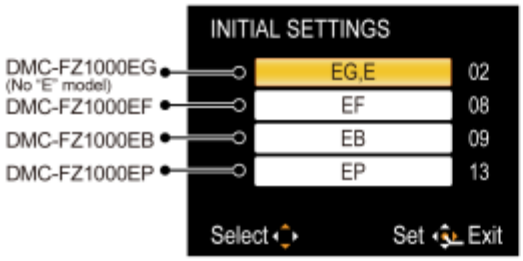
  [Except “EB/EF/EG/EP” models: (SEP0093AA is used as a Main P.C.B.)]

  When Main P.C.B. has just been replaced, 6 model suffixes are displayed as follows. (Two pages in total)



  [Only “EB/EF/EG/EP” models: SEP0093AB is used as a Main P.C.B.]

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



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

- **Step 5. Choose the model suffix in “Initial Settings”: (Refer to “CAUTION”)**
  [Caution: After replacing Main P.C.B. and/or Flash-ROM]

  The model suffix can been 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.

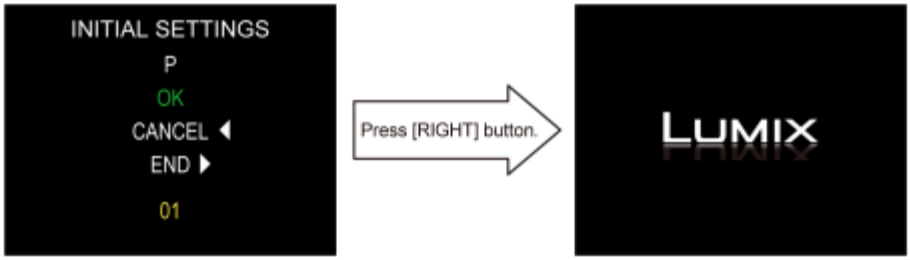
Select the area with pressing “[UP] / [DOWN] of Cursor buttons”.

- **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.

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-FZ1000 (Japan domestic model)	NTSC	Japanese	Year/Month/Date	
b)	DMC-FZ1000P	NTSC	English	Month/Date/Year	
c)	DMC-FZ1000PC	NTSC	English	Month/Date/Year	
d)	DMC-FZ1000PU	NTSC	Spanish	Month/Date/Year	
e)	DMC-FZ1000EB	PAL	English	Date/Month/Year	
f)	DMC-FZ1000EE	PAL	Russian	Date/Month/Year	
g)	DMC-FZ1000EF	PAL	French	Date/Month/Year	
h)	DMC-FZ1000EG	PAL	English	Date/Month/Year	
i)	DMC-FZ1000EP	PAL	English	Date/Month/Year	
j)	DMC-FZ1000GN	PAL	English	Date/Month/Year	

4 Specifications

The following specification is for DMC-FZ1000P.

Some specifications may differ depending on model suffix.

Digital Camera:
Information for your safety

Power Source:	DC 8.4 V
Power Consumption:	2.4 W (When recording with Monitor) 2.8 W (When recording with Viewfinder) 1.7 W (When playing back with Monitor) 1.7 W (When playing back with Viewfinder)

Camera effective pixels	20,100,000 pixels	
Image sensor	1" MOS sensor, total pixel number 20,900,000 pixels, Primary color filter	
Lens	Optical 16× zoom, f = 9.12 mm to 146 mm (35 mm film camera equivalent: 25 mm to 400 mm) Wide: F2.8 to F8.0 (when recording motion pictures: F2.8 to F11) Tele: F4.0 to F8.0 (when recording motion pictures: F4.0 to F11)	
Image Stabilizer	Optical method	
Focus range		
AF	30 cm (0.98 feet) (Wide)/1 m (3.3 feet) (Tele) to ∞	
AF Macro/MF/ Intelligent Auto/ Motion Picture	3 cm (0.098 feet) (Wide)/1 m (3.3 feet) (Tele) to ∞	
Shutter system	Electronic shutter+Mechanical shutter	
Minimum Illumination	Approx. 9 lx (when i-Low light is used, the shutter speed is 1/30th of a second)	
Shutter speed		
Still picture	B (Bulb) (Max. approx. 120 second), 60 to 1/4000th seconds (with the mechanical shutter) 1 to 1/16000th seconds (with the electronic shutter)	
Motion picture	1/25th seconds to 1/16000th of a second (when [FHD/24M/24p] in [AVCHD] is set) 1/2th seconds to 1/16000th of a second (when [M] is selected in Creative Video Mode, MF) 1/30th seconds to 1/16000th of a second (other than the above)	
Exposure (AE)	Program AE (P)/Aperture-priority AE (A)/Shutter-priority AE (S)/ Manual exposure (M)/AUTO	
Light metering mode	Multiple/Center weighted/Spot	
Monitor	3.0" Monitor (3:2) (Approx. 920,000 dots) (field of view ratio about 100%)	

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)

Battery Charger (Panasonic DE-A79B):
Information for your safety

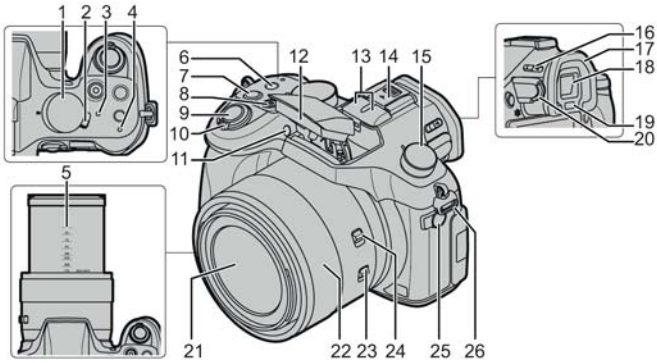
Input:	~ 110 V to 240 V, 50/60 Hz, 0.2 A
Output:	⎓ 8.4 V, 0.65 A

Equipment mobility:
Movable

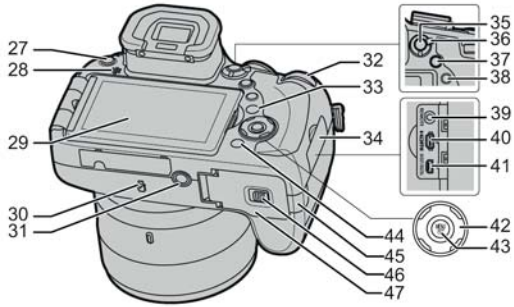
Battery Pack (lithium-ion) (Panasonic DMW-BLC12PP):
Information for your safety

Voltage/capacity:	7.2 V/1200 mAh

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 AUTO, AUTO/Red-Eye Reduction, Forced ON, Forced ON/ Red-Eye Reduction, Slow Sync., Slow Sync./Red-Eye Reduction, Forced OFF	
Microphone	Stereo	
Speaker	Monaural	
Recording media	SD Memory Card/SDHC Memory Card*/SDXC Memory Card* (* UHS-I UHS Speed Class 3)	
Recording file format		
Still Picture	RAW/JPEG (based on "Design rule for Camera File system", based on "Exif 2.3" standard, DPOF corresponding)	
Motion pictures	AVCHD Progressive/AVCHD/MP4	
Audio compression	AVCHD	Dolby® Digital (2 ch)
	MP4	AAC (2 ch)
Interface		
Digital	"USB 2.0" (High Speed)	
Analog video/audio	NTSC Audio line output (monaural)	
Terminal		
[MIC]	∅ 3.5 mm jack	
[MIC/REMOTE]	∅ 2.5 mm jack	
[AV OUT/DIGITAL]	Dedicated jack (8 pin)	
[HDMI]	MicroHDMI Type D	
Dimensions	Approx. 136.8 mm (W)×98.5 mm (H)×130.7 mm (D) [5.39" (W)×3.88"(H)×5.15" (D)]	
Mass (weight)	Approx. 831 g/1.83 lb (with card and battery) Approx. 780 g/1.72 lb (excluding card and battery)	
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)	
Operating humidity	10%RH to 80%RH	
Language select	[ENGLISH]/[ESPAÑOL](DMC-FZ1000P) [ENGLISH]/[DEUTSCH]/[FRANÇAIS]/[ESPAÑOL]/ [PORTUGUÊS]/[ITALIANO]/[繁體中文]/[日本語] (DMC-FZ1000PC)	



1	Mode dial (P21)
2	Camera ON/OFF switch (P18)
3	Status indicator (P18)
4	Wi-Fi® connection lamp (P56)
5	Focal length scale (35 mm film camera equivalent) • Indicates values for the [3:2] aspect ratio. (When recording motion pictures, refer to the focal length displayed on the screen.)
6	[Wi-Fi] button (P56)/[Fn2] button
7	[Fn1] button
8	Motion picture button (P22)
9	Shutter button (P22)
10	Zoom lever (P54)
11	Self-timer indicator (P49)/ AF Assist Lamp
12	Flash (P55)
13	Stereo microphone • Be careful not to cover the microphone with your finger. Doing so may make sound difficult to record.
14	Hot shoe (Hot shoe cover) • Keep the Hot Shoe Cover out of reach of children to prevent swallowing.
15	Drive mode dial Single (P46): Burst (P47): Auto Bracket (P48): Self-timer (P49): Time Lapse/Animation (P49, 51):
16	Flash open lever (P55) • The flash opens, and recording with the flash becomes possible.
17	Eye Cup
18	Viewfinder (P16)
19	Eye sensor (P16)
20	Diopter adjustment dial (P16)
21	Lens surface
22	Manual ring (P41, 54)
23	O.I.S switch (P53)
24	Manual ring selector switch (P41, 54)
25	[MIC] socket
26	Shoulder strap eyelet (P15)



27	[LVF] button (P16)/[Fn5] button
28	Speaker • Be careful not to cover the speaker with your finger. Doing so may make sound difficult to hear.
29	Monitor (P15)
30	NFC antenna [ ] (P59)
31	Tripod mount • A tripod with a screw length of 5.5 mm (0.22 inch) or more may damage this unit if attached.
32	Rear dial • This Owner's Manual describes operations of the rear dial as follows: 
33	[DISP.] button (P24) • Each time this is pressed, the display on the monitor is switched.
34	Terminal cover
35	[AF/AE LOCK] button (P43)
36	Focus mode lever (P40, 41)
37	[Q.MENU] button (P20)/[Fn3] button
38	[ ] (Playback) button (P25)
39	[REMOTE] socket
40	[HDMI] socket (P65)
41	[AV OUT/DIGITAL] socket (P65, 68)
42	Cursor buttons • This Owner's Manual expresses the up, down, left, and right of the cursor button as ▲/▼/◀/▶. ▲/ISO button (P44) ▶/WB (White Balance) (P37) ◀/AF Mode button (P40) ▼/AF button (P43)
43	[MENU/SET] button (P19)
44	[/] (Delete/Cancel) button (P27)/[Fn4] button
45	DC coupler cover • When using an AC adaptor, ensure that the Panasonic DC coupler (DMW-DCC8: optional) and AC adaptor (DMW-AC10PP: optional) are used. • Always use a genuine Panasonic AC adaptor (DMW-AC10PP: optional). • It is recommended to use a fully charged battery or AC adaptor when recording motion pictures. • If while recording motion pictures using the AC adaptor and the power supply is cut off due to a power outage or if the AC adaptor is disconnected etc., the motion picture will not be recorded.
46	Release lever (P17)
47	Card/Battery door (P17)

6 Service Mode

6.1 Error Code Memory Function

1. **General description**

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

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

2. **How to display**

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

   - **Preparation**

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

     Remove the lens cap.

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

     Set the [Mode dial] to "[P](Program AE mode)" and [Drive mode dial] to "Single".

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

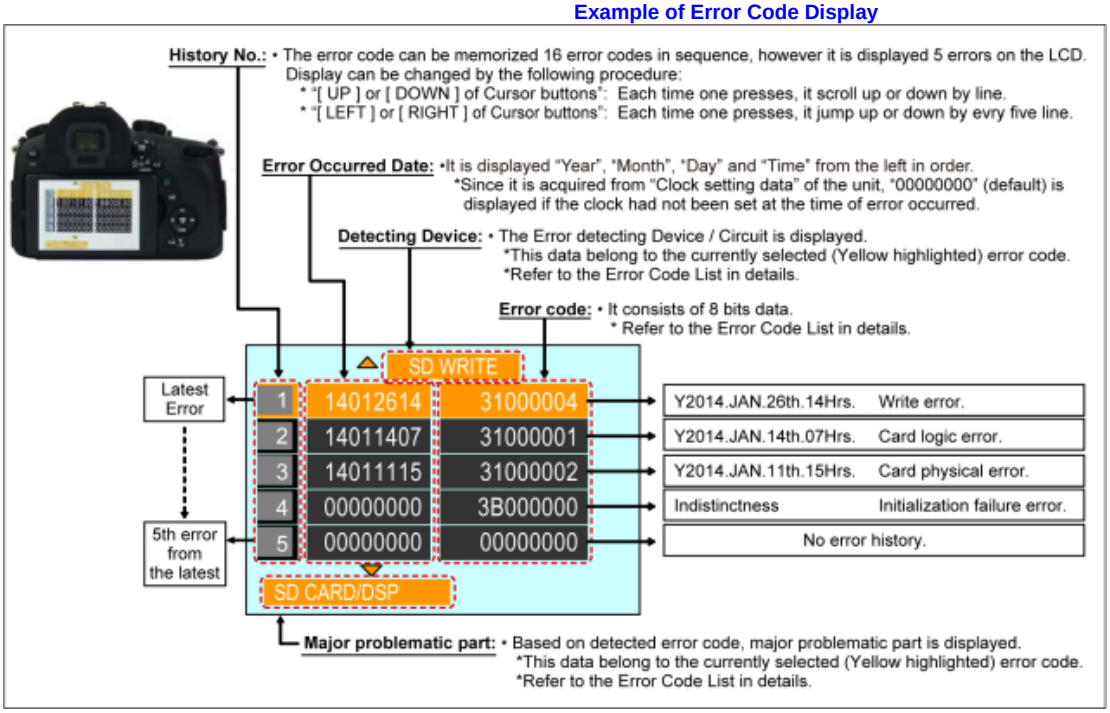
   - **Step 2. Execute the Error Code Display Mode:**

     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



- **Error Code List**

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

Attribute	Main item	Sub item	Error code		Contents (Upper line)	Error Indication	
			High 4 bits	Low 4 bits	Problematic Part & Check point (Lower line)	Detecting device	Problematic Part/Circuit
LENS	Lens drive	OIS	1C*0	1000	PSD (X) error. Hall element (X axis) position detect error in OIS unit.	OIS X	LENSu NG
					OIS Unit		
				2000	PSD (Y) error. Hall element (Y axis) position detect error in OIS unit.	OIS Y	
					OIS Unit		
				3000	GYRO (X) error. Gyro (IC7101: X axis) detect error on MAIN P.C.B..	GYRO X	GYRO NG
					IC7101 (Gyro element) or IC6001 (VENUS ENGINE)		
				4000	GYRO (Y) error. Gyro (IC7101: Y axis) detect error on MAIN P.C.B..	GYRO Y	
					IC7101 (Gyro element) or IC6001 (VENUS ENGINE)		
				6000	Drive voltage (X) error.	OISX REF	LENSu/LENS FPC
					LENS Unit, LENS flex breaks, IC6001 (VENUS ENGINE) AD value error, etc.		
				7000	Drive voltage (Y) error.	OISY REF	
					LENS Unit, LENS flex breaks, IC6001 (VENUS ENGINE) AD value error, etc.		
				8000	OIS GYRO-Digital communication error	(No indication)	(No indication)
					IC7101(Gyro element) or IC6001(VENUS ENGINE)		
		Zoom		0?10	Collapsible barrel Low detect error (Collapsible barrel encoder always detects Low.)	ZOOM L	ZOOMm/ LENSu
					Mechanical lock, FP9005-(27) signal line or IC6001 (VENUS ENGINE)		
				0?20	Collapsible barrel High detect error (Collapsible barrel encoder always detects High.)	ZOOM H	
					Mechanical lock, FP9005-(27) signal line or IC6001 (VENUS ENGINE)		
				0?30	Zoom motor sensor error.	ZOOM ENC	
					Mechanical lock, FP9005-(42), (44) signal line or IC6001 (VENUS ENGINE)		
				0?40	Zoom motor sensor error. (During monitor mode.)		
					Mechanical lock, FP9005-(42), (44) signal line or IC6001 (VENUS ENGINE)		
				0?50	Zoom motor sensor error. (During monitor mode with slow speed.)		
					Mechanical lock, FP9005-(42), (44) signal line or IC6001 (VENUS ENGINE)		
				0?60	Detection of zoom misregistration by impact such as fails.	(No indication)	(No indication)
					Lens Unit		
		Focus		0?01	HP Low detect error (Focus encoder always detects High, and not becomes Low)	FOCUS L	LENS FPC/ DSP
					Mechanical lock, FP9005-(30) signal line or IC6001 (VENUS ENGINE)		
				0?02	"HP High detect error (Focus encoder always detects Low, and not becomes High)"	FOCUS H	
					Mechanical lock, FP9005-(30) signal line or IC6001 (VENUS ENGINE)		
		Lens	1C*1	0000	Power ON time out error.	LENS DRV	LENSu
					Lens drive system		
			1C*2	0000	Power OFF time out error.		
					Lens drive system		
	Adj. History	OIS	1D*0	2000	OIS adj. Yaw direction amplitude error (small)	OIS ADJ	OIS ADJ
				3000	OIS adj. Pitch direction amplitude error (small)		
				4000	OIS adj. Yaw direction amplitude error (large)		
				5000	OIS adj. Pitch direction amplitude error (large)		
				8000	OIS adj. Yaw direction off set error		
				9000	OIS adj. Pitch direction off set error		
				A000	OIS adj. Yaw direction gain error		
				B000	OIS adj. Pitch direction gain error		
				C000	OIS adj. Yaw direction position sensor error		
				D000	OIS adj. Pitch direction position sensor error		
				E000	OIS adj. other error		
HARD	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	IC6003 (Flash-ROM) data reading error is detected when the unit turns ON	FROM RE	FROM
				0002	IC6003 (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.	SD WRITE	
	Recording	Motion Image Recording	3F*0	0001	File time out error in recording motion image	(No indication)	(No indication)
				0002	File data cue send error in recording motion image		
Wi-Fi			3211	**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”

1) About “*” indication:

The third digit from the left is different as follows.

- In case of 0 (example: 18**0** 01000)

  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: 18**8** 01000)

  When the third digit from the left shows “8”, this error occurred under the condition of Initial Settings has been released.

  (Example; Factory assembling-line before unit shipment, Service mode etc.)

  It means that this error is occurred at service side.

2) About “?” indication: (“18*0 0?01” to “18*0 0?60”):

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

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

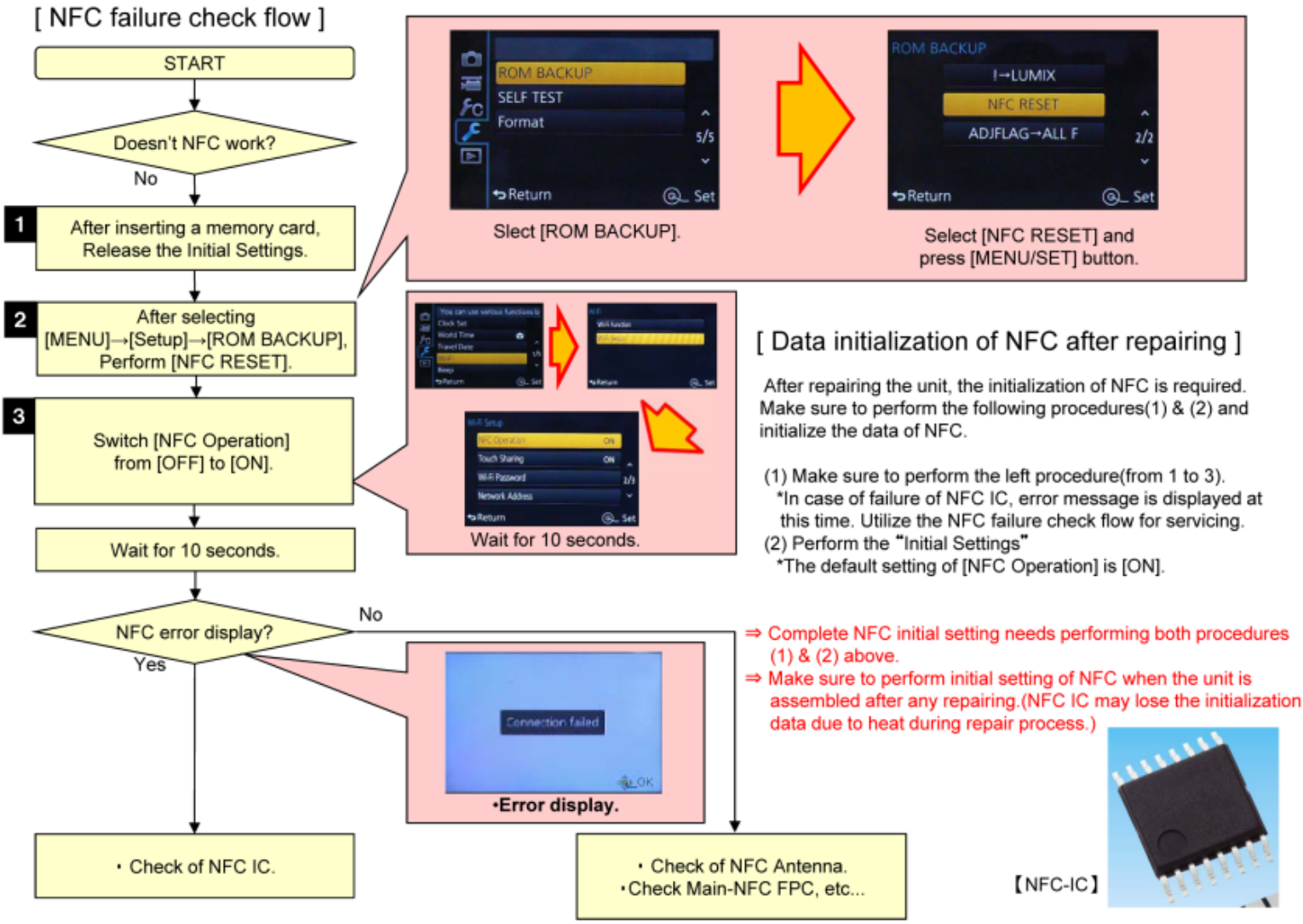
Simply, turn the power off. (Since Error code display mode is executed under the condition of temporary cancellation of “Initial Settings”, it wake up with normal condition when turn off the power.)

NOTE:

The error code can not be initialized.

7 Troubleshooting Guide

7.1 Failure Diagnosis of NFC



7.2 Wi-Fi Module (Flash P.C.B. Unit)

7.2.1 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.)

7.2.2 Checking of Trouble Caused by Wi-Fi Module or Not

The Wi-Fi module 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.

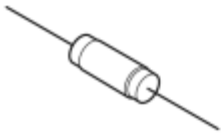
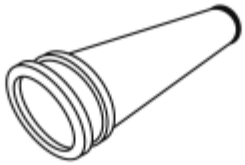
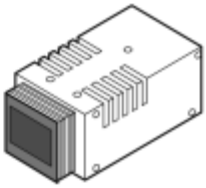
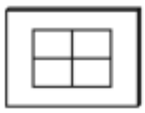
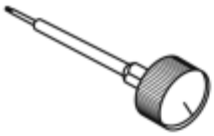
(Procedure)
1) Press [Wi-Fi] button.
2) Select [New Connection] in [Wi-Fi] menu.
3) Select optional function in [select a function] menu, then select [Direct] in [Select connection method] menu.
4) Select [Manual Connection] in [Select connection method] menu.
5) The Wi-Fi module works properly if the wireless access point (broadband router) name (SSID) in use is displayed.

*Change the Flash P.C.B. Unit, when the above checking detected the abnormal of Wi-Fi module.

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 (1kΩ/5W) **ERG5SJ102**  * An equivalent type of resistor may be used.	Collimator (built-in Focus Chart) **RFKZ0422** 	Light Box (with DC Cable) **RFKZ0523** 
TR Chart **SUKZ000006**  * Use new one on an about 3-year cycle. (Adjustment accuracy degrades by discoloring caused by long use.)	Lens Cleaning Kit (BK) **VFK1900BK**  * Only supplied 10 set/box.	Diffuser **RFKZ0591** 
Driver (for Optical Axis Adjustment) **RFKZ0569**  * T4 Torx type	Optical Axis Adjustment Chart **RFKZ0570** 	Camera Stand **RFKZ0333J** 
LBB Filter (LBB12) **VFK1164LBB12** 	Gray Card **RFKZ0506** 	Torque Driver **RFKZ0542** 

8.2 When Replacing the Main P.C.B.

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

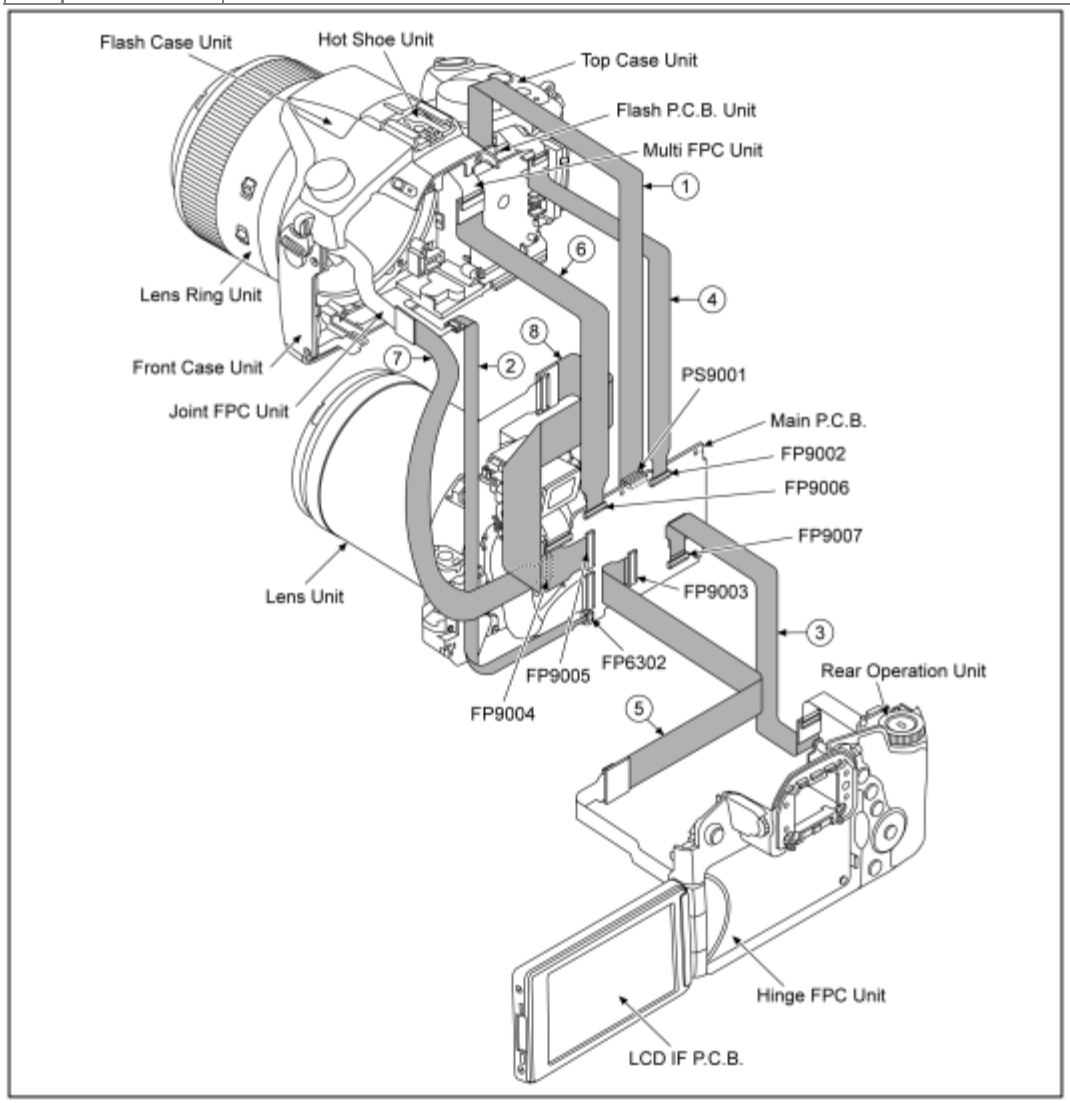
8.3 Service Position

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

Table S1 Extension Cable List

No.	Parts No.	Connection	Form
1	VFK1870	PS9001(MAIN) ←→PP8001(FLASH)	30pin B to B
2	VFK1974	FP6302(MAIN) ←→FRONT CASE UNIT	4pin / 0.5

			FFC
3	VFK1175	FP9007(MAIN) ←→REAR OPERATION UNIT	16pin / 0.5 FFC
4	VFK1175	FP9002(MAIN) ←→TOP CASE UNIT	16pin / 0.5 FFC
5	RFKZ0477	FP9003(MAIN) ←→HINGE FPC UNIT-FP4101(LCD IF)	45pin / 0.3 FFC
6	VFK1443	FP9006(MAIN) ←→MULTI FPC UNIT-HOT SHOE UNIT / FLASH CASE UNIT	18pin / 0.5 FFC
7	VFK1443	FP9004(MAIN) ←→JOINT FPC UNIT-FP9301(MIC JACK)/ LENS RING UNIT/ TOP CASE UNIT	18pin / 0.5 FFC
8	VFK2024	FP9005(MAIN) ←→LENS UNIT	51pin / 0.3 FFC



CAUTION (When servicing Flash P.C.B. Unit)

1. Be sure to discharge the E.Capacitor on Flash P.C.B. Unit.

   Refer to “How to Discharge the E.Capacitor on Flash 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 Flash P.C.B. Unit.

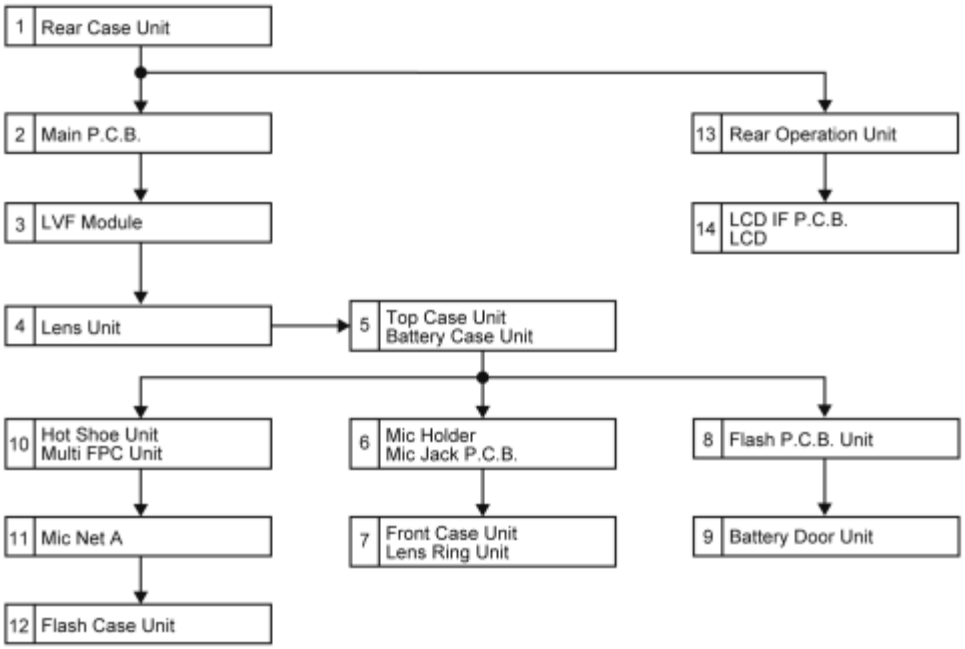
3. DO NOT allow other parts to touch the high voltage circuit on Flash P.C.B. Unit.

9 Disassembly and Assembly Instructions

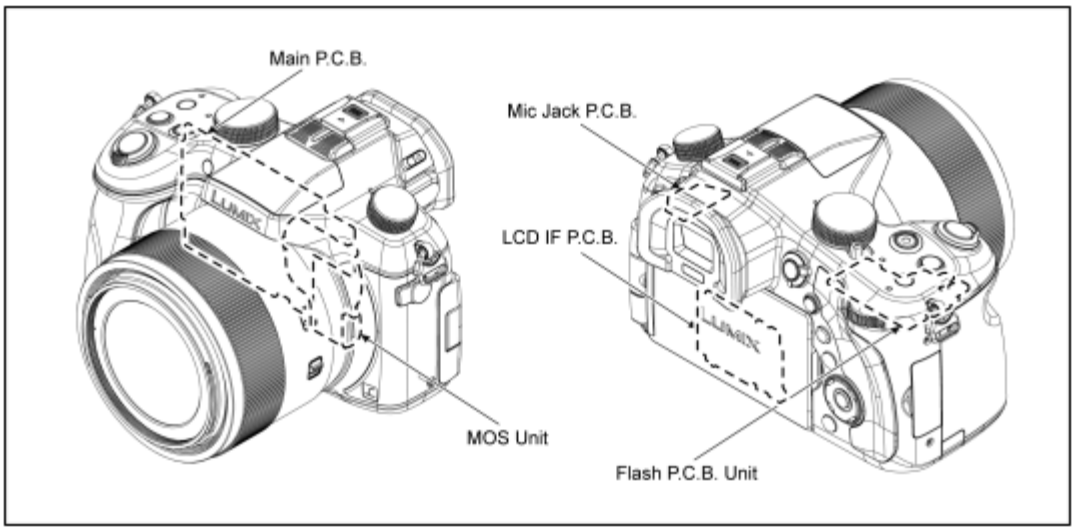
9.1 Disassembly Flow Chart

This is a disassembling chart.

When assembling, perform this chart conversely.



9.2 P.C.B. Location



9.3 Disassembly Procedure

No.	Item	Fig.	Removal
1	Rear Case Unit	(Fig. D1)	Memory Card
			Battery

			Screw (A) x 3
			Screw (B) x 1
			Screw (C) x 2
			Screw (D) x 2
		(Fig. D2)	Locking tab x 2
			Eye Cap Unit
			Screw (E) x 2
		(Fig. D3)	FP9003 (Flex)
			FP9007 (Flex)
			Rear Case Unit
2	Main P.C.B.	(Fig. D4)	Screw (F) x 4
			FP6302 (Flex)
			FP9001 (Flex)
			FP9002 (Flex)
			FP9005 (Flex)
			FP9006 (Flex)
			FP9009 (Flex)
			PS9001 (Connector)
			Main P.C.B.
		(Fig. D5)	When Replacing
3	LVF Module	(Fig. D6)	Screw (G) x 1
			Convex x 2
			Hooking part x 2
			LVF Cover Unit
			LVF Unit
			Heat Radiation Pad
			LVF Module
4	Lens Unit	(Fig. D7)	Locking tab x 2
			Battery Plate A
			Screw (H) x 4
		(Fig. D8)	Lens Unit
5	Top Case Unit Battery Case Unit	(Fig. D9)	Screw (I) x 1
			Screw (J) x 1
			Screw (K) x 1
			FP5501 (Flex)
			FP5502 (Flex)
			FP9301 (Flex)
			Hooking part x 1
			Joint FPC Unit
			Grip Piece Front L

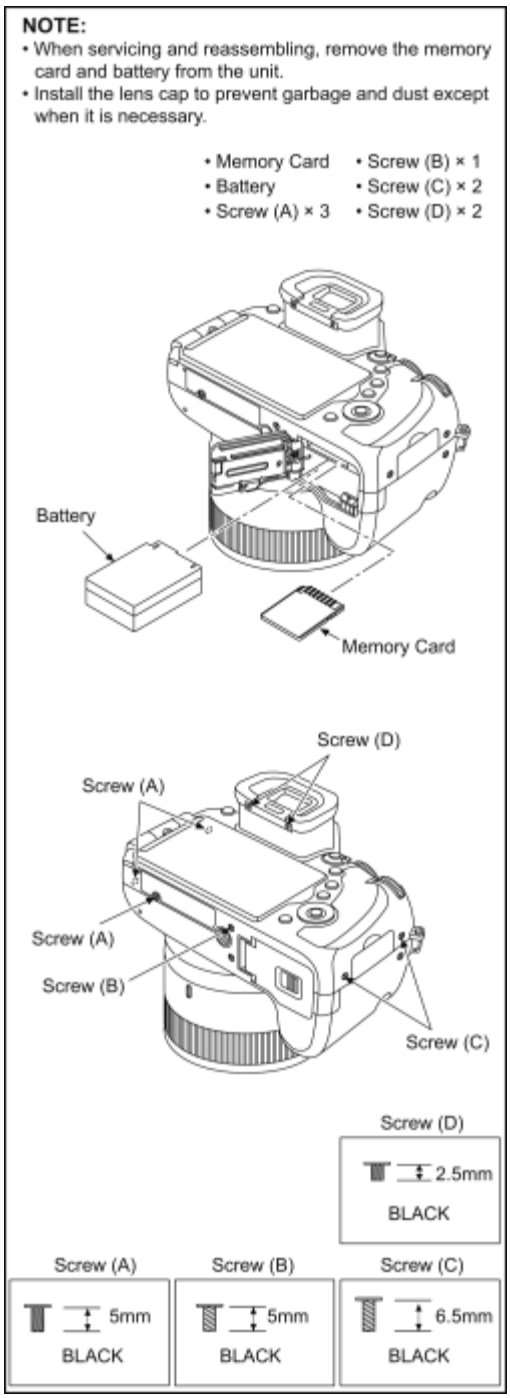
		(Fig. D10)	Screw (L) x 1
			Screw (M) x 5
			Top Case Unit
			Battery Case Unit
		(Fig. D11)	When Installing
		(Fig. D12)	
6	Mic Holder, Mic Jack P.C.B.	(Fig. D13)	Screw (N) x 1
			Side Frame R
			Convex x 2
		(Fig. D14)	Convex x 1
			Screw (O) x 2
			Mic Holder
			Mic Jack P.C.B.
7	Front Case Unit Lens Ring Unit	(Fig. D15)	Screw (P) x 4
			Lens Holder Plate
			Front Case Unit
			Lens Ring Unit
8	Flash P.C.B. Unit	(Fig. D16)	Convex x 1
			Locking tab x 1
		(Fig. D17)	Locking tab x 3
			Capacitor Cover
			Battery Plate B
			Locking tab x 2
		(Fig. D18)	Solder (4 points)
			Flash P.C.B. Unit
9	Battery Door Unit	(Fig. D19)	Battery Door Shaft
			Battery Door Spring
			Battery Door Unit
10	Hot Shoe Unit, Multi FPC Unit	(Fig. D20)	Screw (Q) x 1
			Convex x 2
			Flash Wire Cover
			Screw (R) x 1
			Screw (S) x 1
			Convex x 4
			Flash Earth Plate
			Shoe Spring
		(Fig. D21)	Screw (T) x 4
			Convex x 3
			Hot Shoe Plate B
			Hot Shoe Plate A

			Connector x 1
			Convex x 4
			Hooking part x 1
		(Fig. D22)	Solder (4 points)
			Hot Shoe Unit
			Multi FPC Unit
11	Mic Net A	(Fig. D23)	Locking tab x 1
			Mic Cushion Top
			Mic Net B
			Mic Tape
			Mic Net A
		(Fig. D24)	When Replacing
12	Flash Case Unit	(Fig. D25)	Locking tab x 2
			Flash Lock Knob
			Screw (U) x 2
			Screw (V) x 1
			Convex x 2
			Flash Case Unit
		(Fig. D26)	When Replacing
13	Rear Operation Unit	(Fig. D27)	Screw (W) x 4
			Convex x 2
			Rear Earth Plate
			Screw (X) x 6
			Convex x 4
			Rear Operation Unit
			Locking tab x 2
			Grip Peace Rear
		(Fig. D28)	When Installing
14	LCD IF P.C.B., LCD	(Fig. D29)	Screw (Y) x 2
			Screw (Z) x 2
			Locking tab x 6
			LCD Case Bottom
		(Fig. D30)	FP4101 (Flex)
			FP4102 (Flex)
			Locking tab x 1
		(Fig. D31)	LCD IF P.C.B.
		(Fig. D32)	LCD Case Top
			LCD Bezel Sheet
			Locking tab x 4
			LCD Bezel

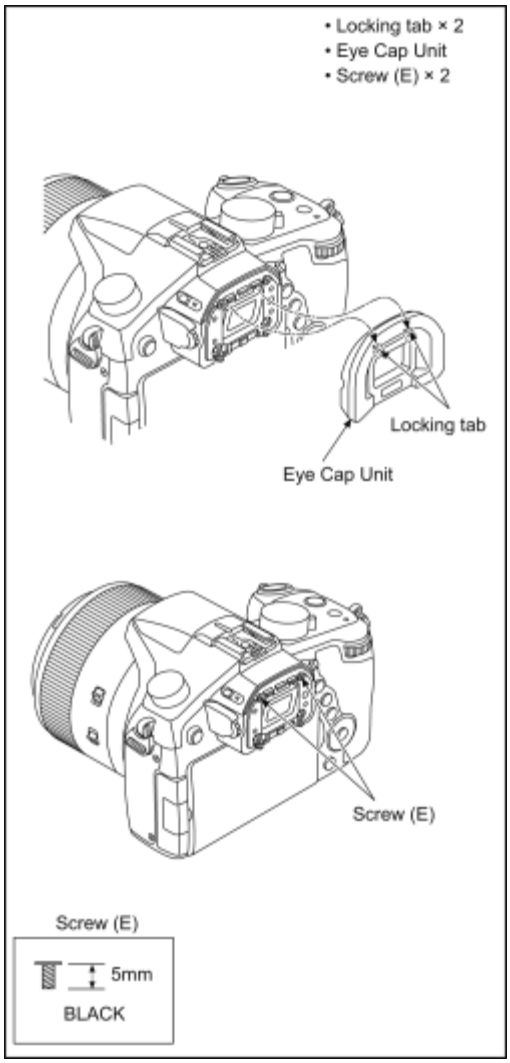
			LCD

9.3.1 Removal of the Rear Case Unit

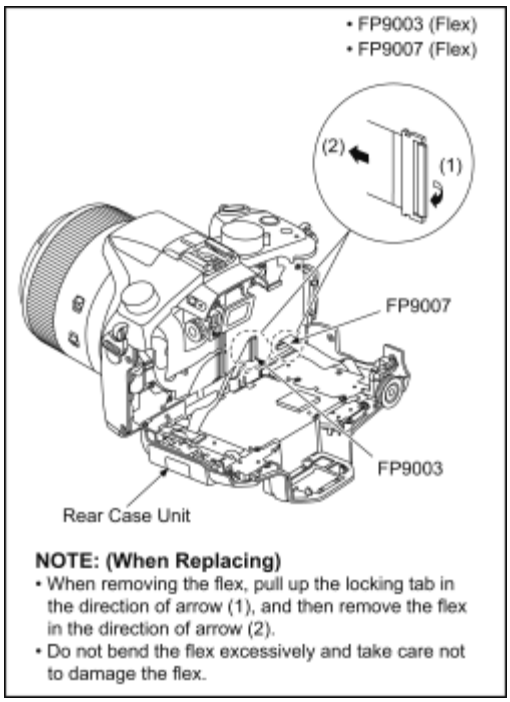
(Fig. D1)



(Fig. D2)



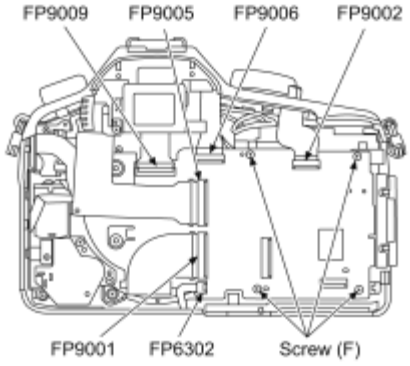
(Fig. D3)

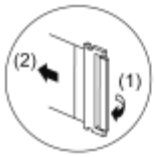


9.3.2 Removal of the Main P.C.B.

(Fig. D4)

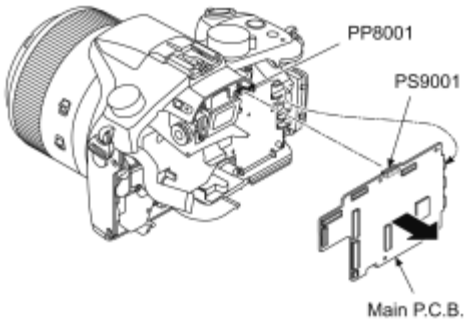
- Screw (F) x 4
- FP6302 (Flex)
- FP9001 (Flex)
- FP9002 (Flex)
- FP9005 (Flex)
- FP9006 (Flex)
- FP9009 (Flex)
- PS9001 (Connector)



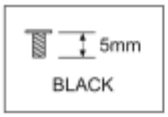


NOTE: (When Replacing)

- When removing the flex, pull up the locking tab in the direction of arrow (1), and then remove the flex in the direction of arrow (2).
- Do not bend the flex excessively and take care not to damage the flex.



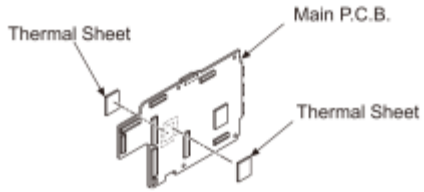
Screw (F)



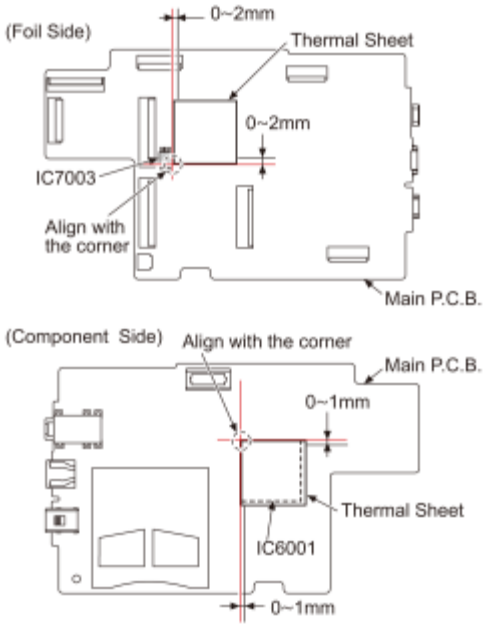
(Fig. D5)

NOTE: (When Replacing)

- Paste the Thermal Sheet to the foil and component side.
- When pasting the Thermal Sheet, should not press hard. (Cause damage.)
- When pasting the Thermal Sheet, make sure the paste standard.



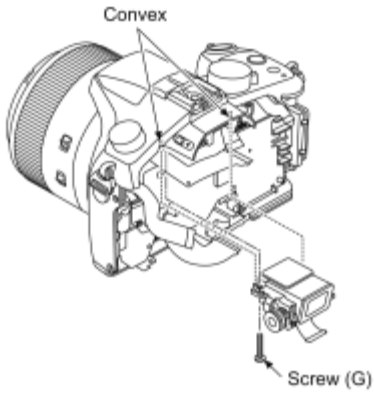
Paste standard (Thermal Sheet)

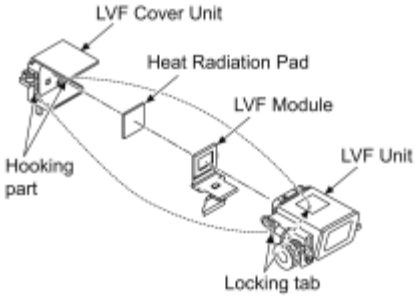


9.3.3 Removal of the LVF Module

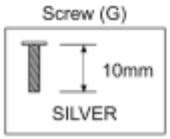
(Fig. D6)

• Screw (G) x 1
• Convex x 2
• Hooking part x 2
• LVF Cover Unit
• LVF Unit
• Heat Radiation Pad

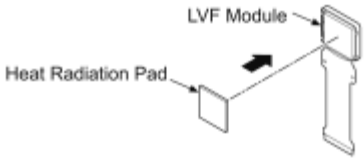




NOTE: (When Replacing)
• Take care not to put any fingerprints on the finder part of LVF Unit.



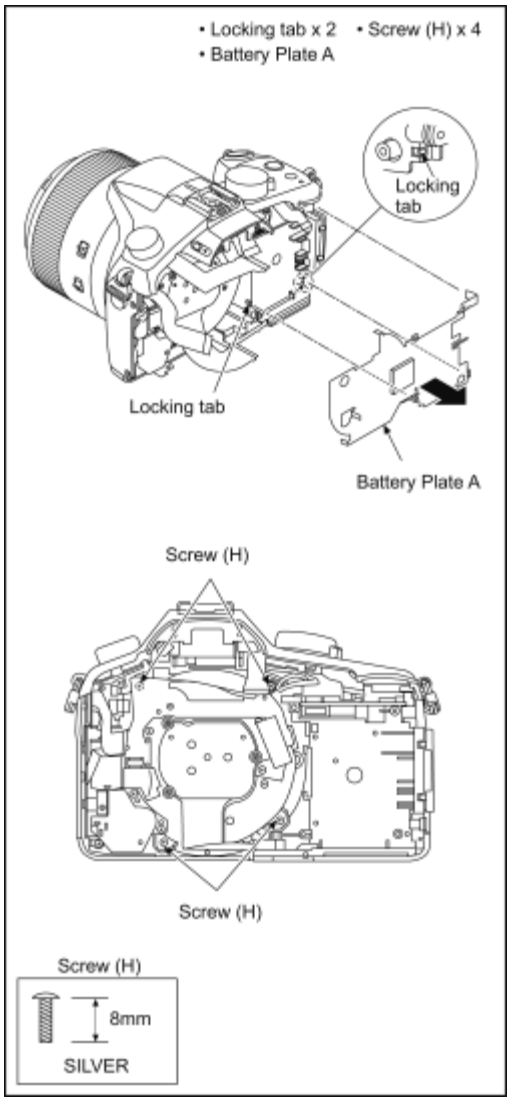
How to Install
1. Paste the Heat Radiation Pad to the LVF Module. (Do not overlap the P.C.B. of LVF Module.)



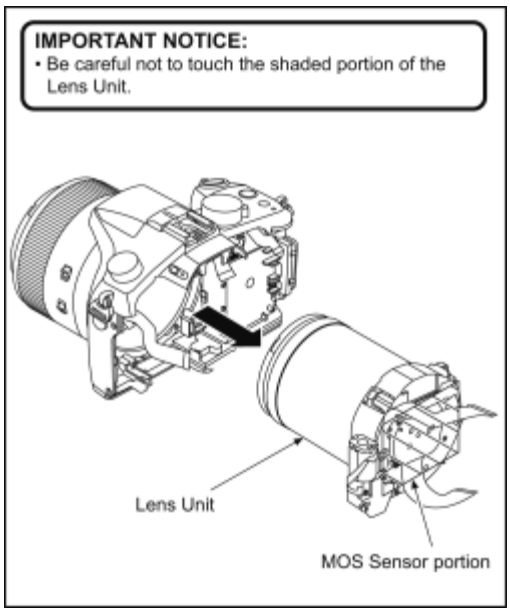
2. Install the LVF Module to the LVF Unit. (Heat Radiation Pad is outside.)
3. Install the LVF Cover Unit at the locking tabs. (Do not put in the flex.)

9.3.4 Removal of the Lens Unit

(Fig. D7)

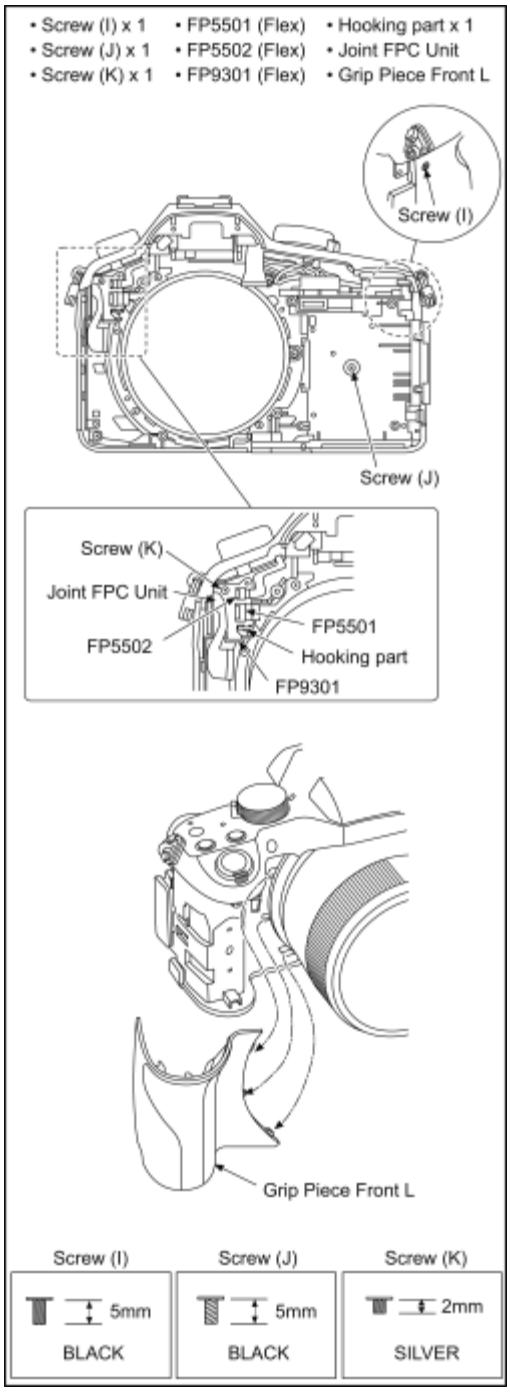


(Fig. D8)

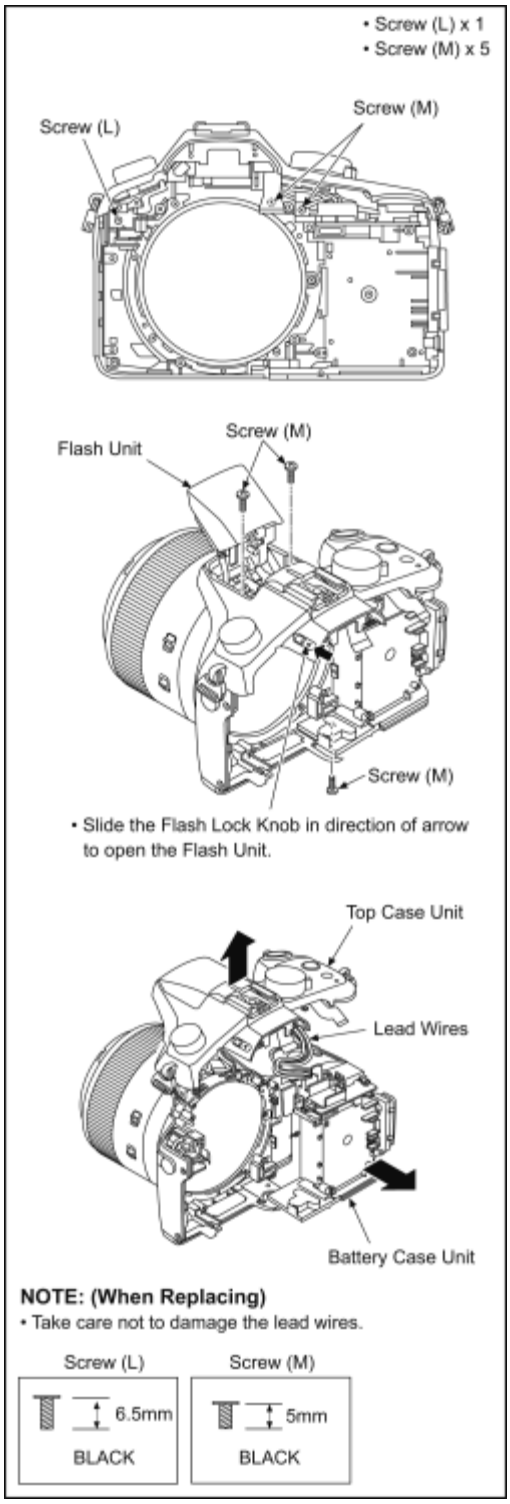


9.3.5 Removal of the Top Case Unit and Battery Case Unit

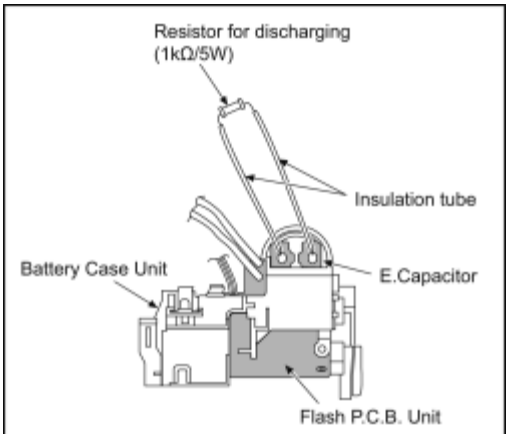
(Fig. D9)


• Screw (I) x 1
• Screw (J) x 1
• Screw (K) x 1
• FP5501 (Flex)
• FP5502 (Flex)
• FP9301 (Flex)
• Hooking part x 1
• Joint FPC Unit
• Grip Piece Front L
Screw (I)
Screw (J)
Screw (K)
Joint FPC Unit
FP5502
FP5501
Hooking part
FP9301
Grip Piece Front L
Screw (I)
5mm
BLACK
Screw (J)
5mm
BLACK
Screw (K)
2mm
SILVER

(Fig. D10)


• Screw (L) x 1
• Screw (M) x 5
Screw (L)
Screw (M)
Flash Unit
Screw (M)
Screw (M)
• Slide the Flash Lock Knob in direction of arrow to open the Flash Unit.
Top Case Unit
Lead Wires
Battery Case Unit
NOTE: (When Replacing)
• Take care not to damage the lead wires.
Screw (L)
6.5mm
BLACK
Screw (M)
5mm
BLACK

(Fig. D11)



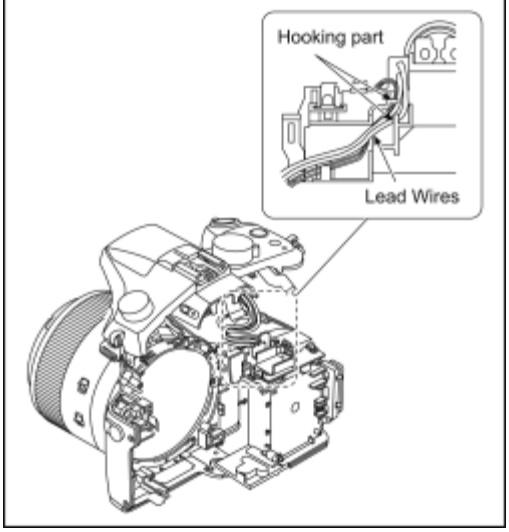
⚠ CAUTION

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

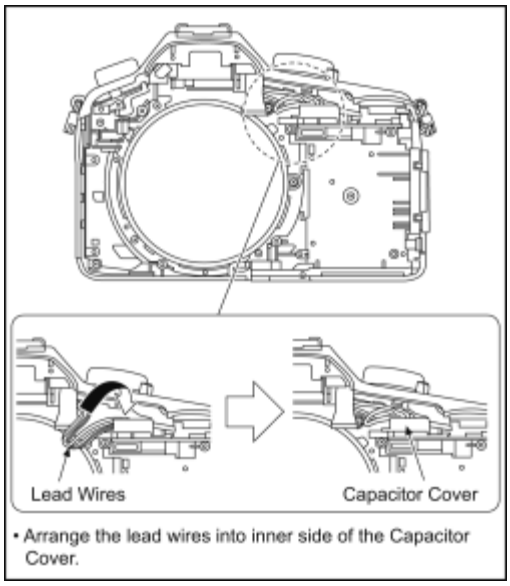
1. Put the insulation tube on the lead part of resistor (ERG5SJ102: 1kΩ / 5W). (An equivalent type of resistor may be used.)
2. Put the resistor between both terminals of E.Capacitor on Flash P.C.B. Unit for approx. 5 seconds.
3. After discharging, confirm that the E.Capacitor voltage is lower than 10V by using a voltmeter.

NOTE: (When Installing)

• Arrange the lead wires under the hooking part.

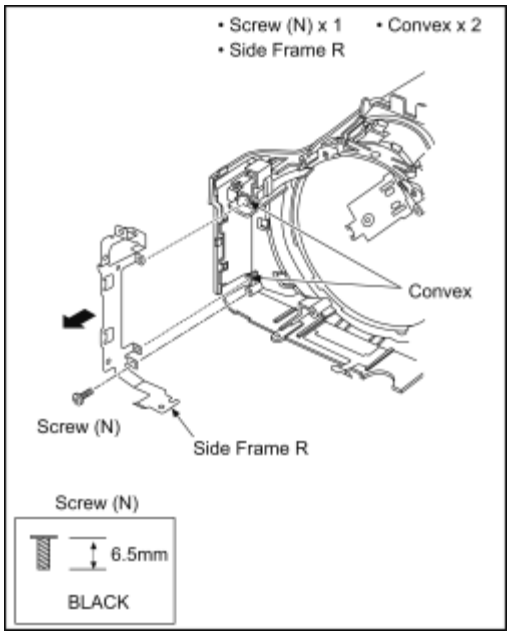


(Fig. D12)

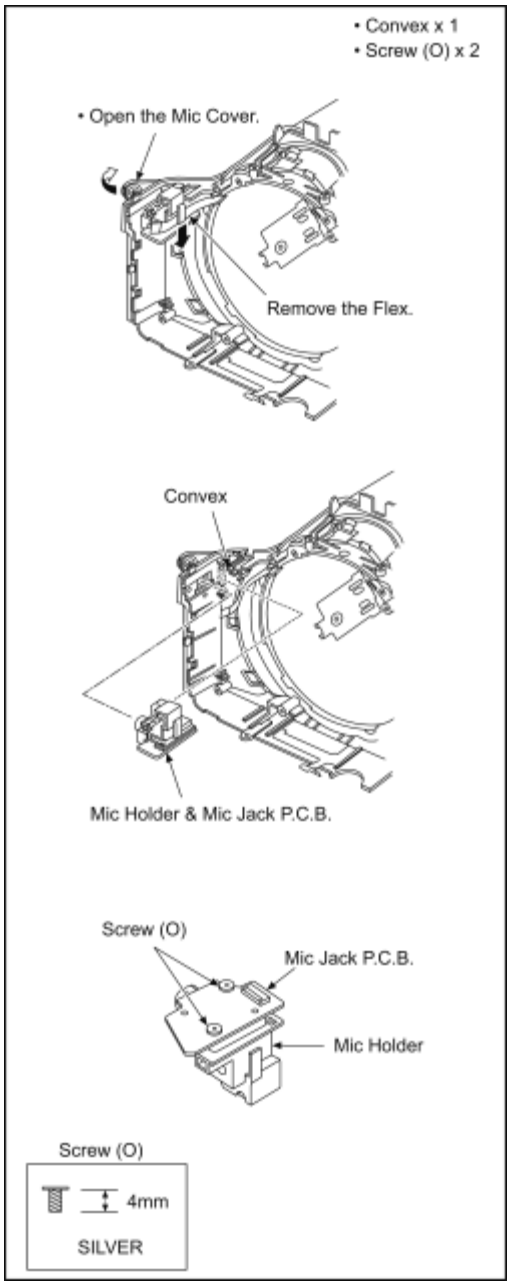


9.3.6 Removal of the Mic Holder and Mic Jack P.C.B.

(Fig. D13)

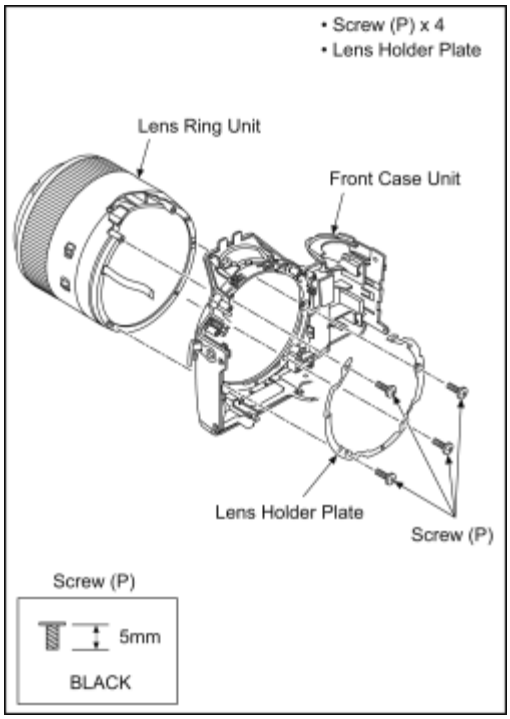


(Fig. D14)



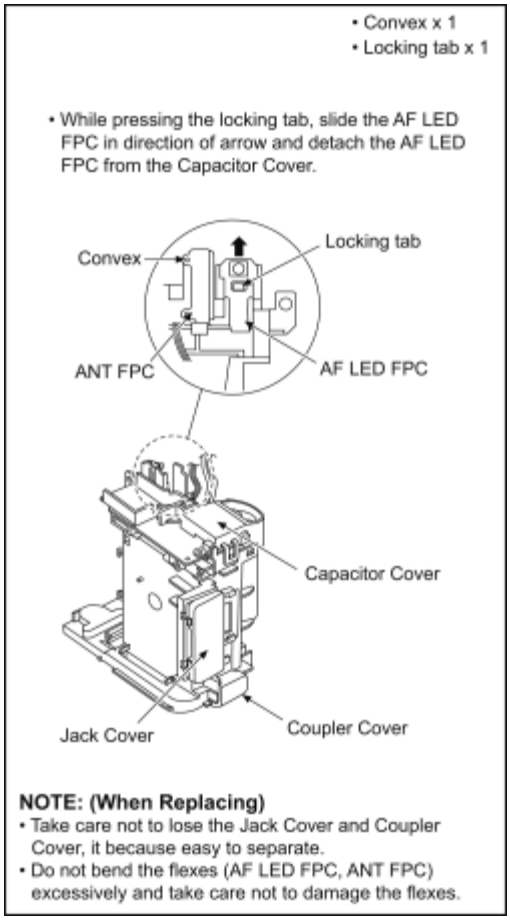
9.3.7 Removal of the Front Case Unit and Lens Ring Unit

(Fig. D15)

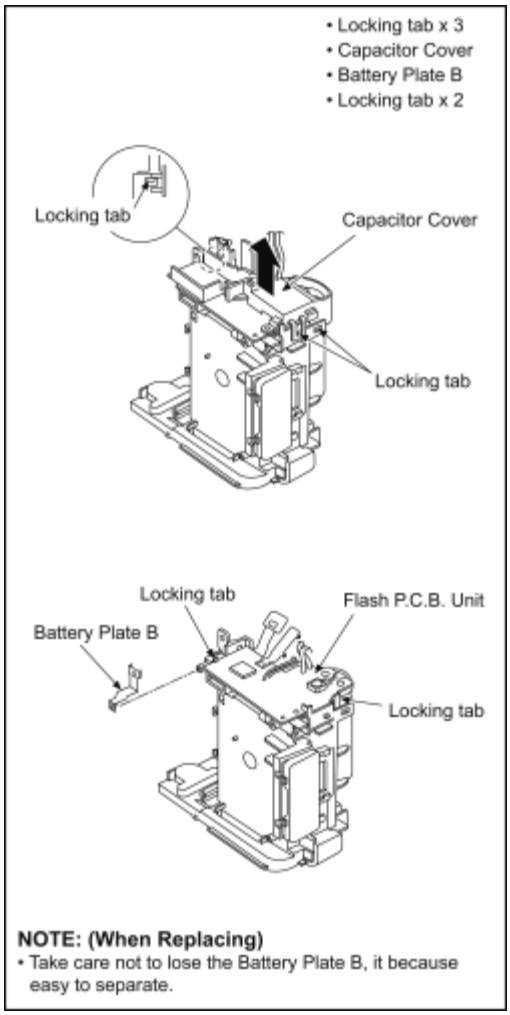


9.3.8 Removal of the Flash P.C.B. Unit

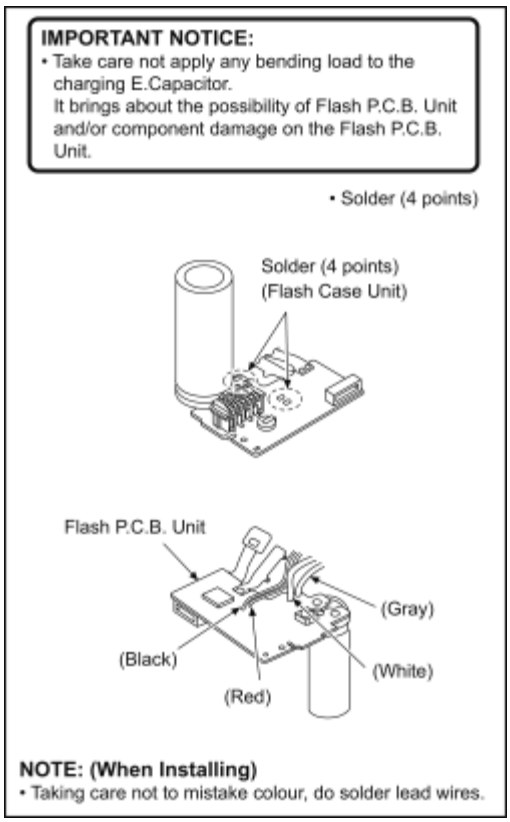
(Fig. D16)



(Fig. D17)

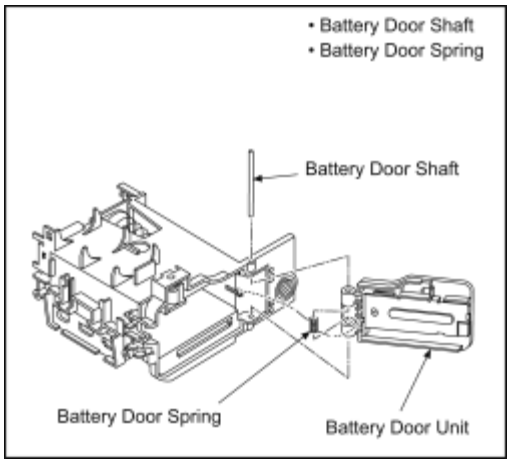


(Fig. D18)



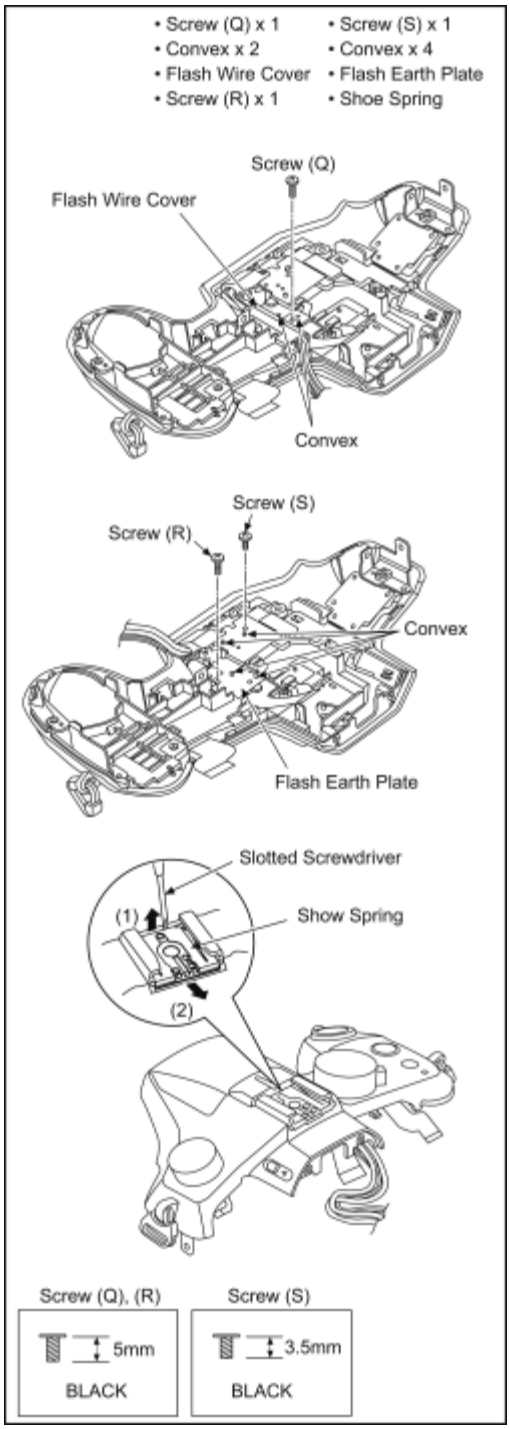
9.3.9 Removal of the Battery Door Unit

(Fig. D19)

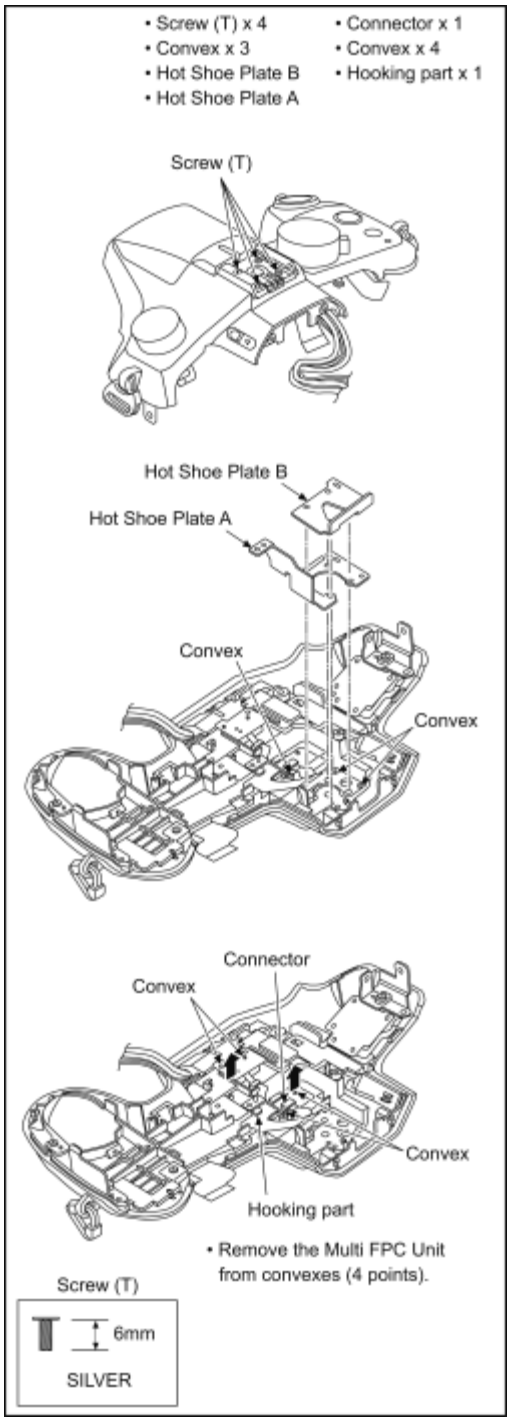


9.3.10 Removal of the Hot Shoe Unit and Multi FPC Unit

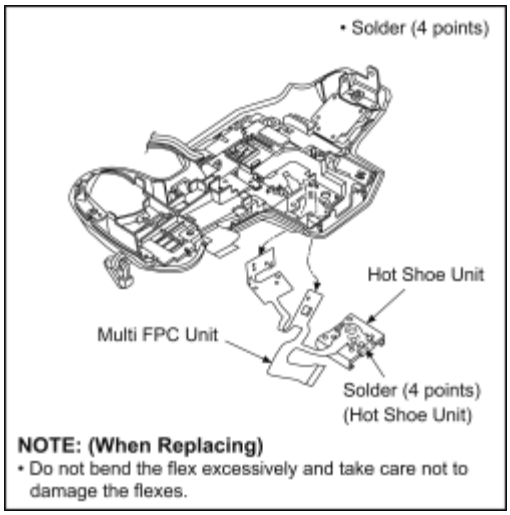
(Fig. D20)


• Screw (Q) x 1
• Convex x 2
• Flash Wire Cover
• Screw (R) x 1
• Screw (S) x 1
• Convex x 4
• Flash Earth Plate
• Shoe Spring
Screw (Q)
Flash Wire Cover
Convex
Screw (S)
Screw (R)
Convex
Flash Earth Plate
Slotted Screwdriver
(1)
Show Spring
(2)
Screw (Q), (R)
5mm
BLACK
Screw (S)
3.5mm
BLACK

(Fig. D21)


• Screw (T) x 4
• Convex x 3
• Hot Shoe Plate B
• Hot Shoe Plate A
• Connector x 1
• Convex x 4
• Hooking part x 1
Screw (T)
Hot Shoe Plate B
Hot Shoe Plate A
Convex
Convex
Connector
Convex
Convex
Hooking part
• Remove the Multi FPC Unit from convexes (4 points).
Screw (T)
6mm
SILVER

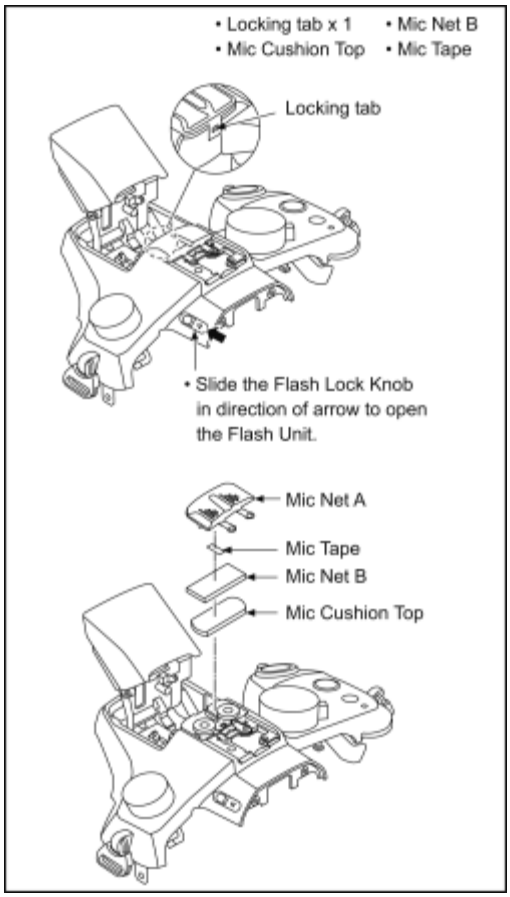
(Fig. D22)



NOTE: (When Replacing)
• Do not bend the flex excessively and take care not to damage the flexes.

9.3.11 Removal of the Mic Net A

(Fig. D23)

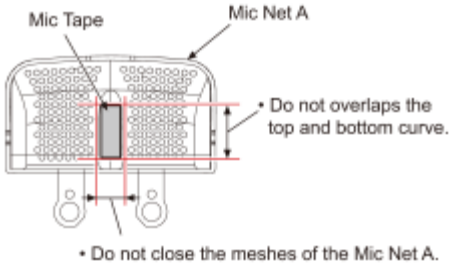


(Fig. D24)

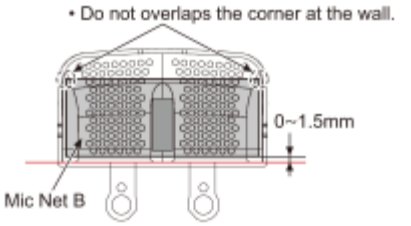
NOTE: (When Replacing)

- When pasting the Mic Tape and Mic Net B, make sure the paste standard.
- Paste the Mic Tape on the Mic Net A, then paste the Mic Net B.

Paste standard (Mic Tape)



Paste standard (Mic Net B)



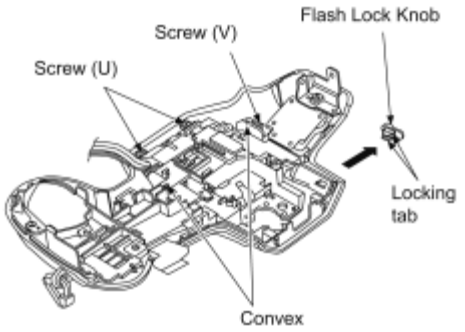
9.3.12 Removal of the Flash Case Unit

(Fig. D25)

• Locking tab x 2
• Flash Lock Knob
• Screw (U) x 2
• Screw (V) x 1
• Convex x 2

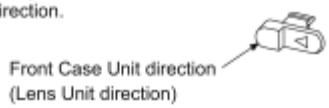
NOTE: (When Replacing)

• Pull out the Flash Lock Knob after narrowing the interval of its locking tabs by pressing the tabs of the top and bottom inward.



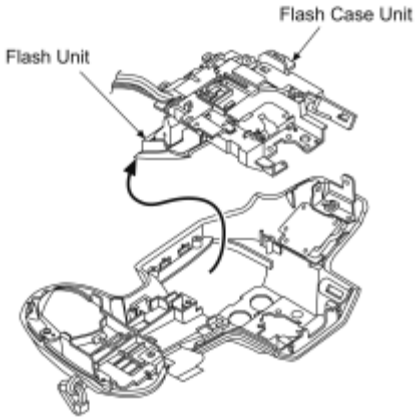
NOTE: (When Installing)

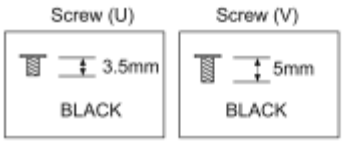
• When installing the Flash Lock Knob, Take care on its installing direction.



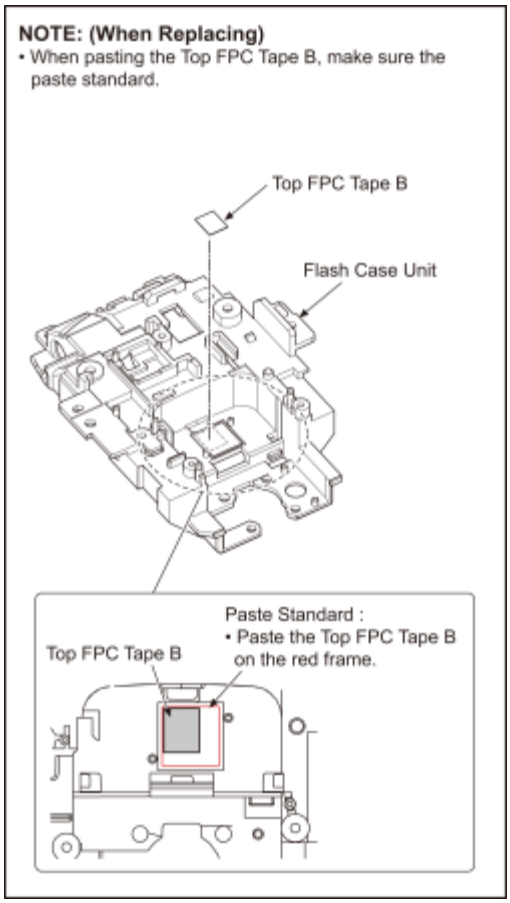
NOTE: (When Replacing)

• Before removing the Flash Case Unit, open the Flash Unit.



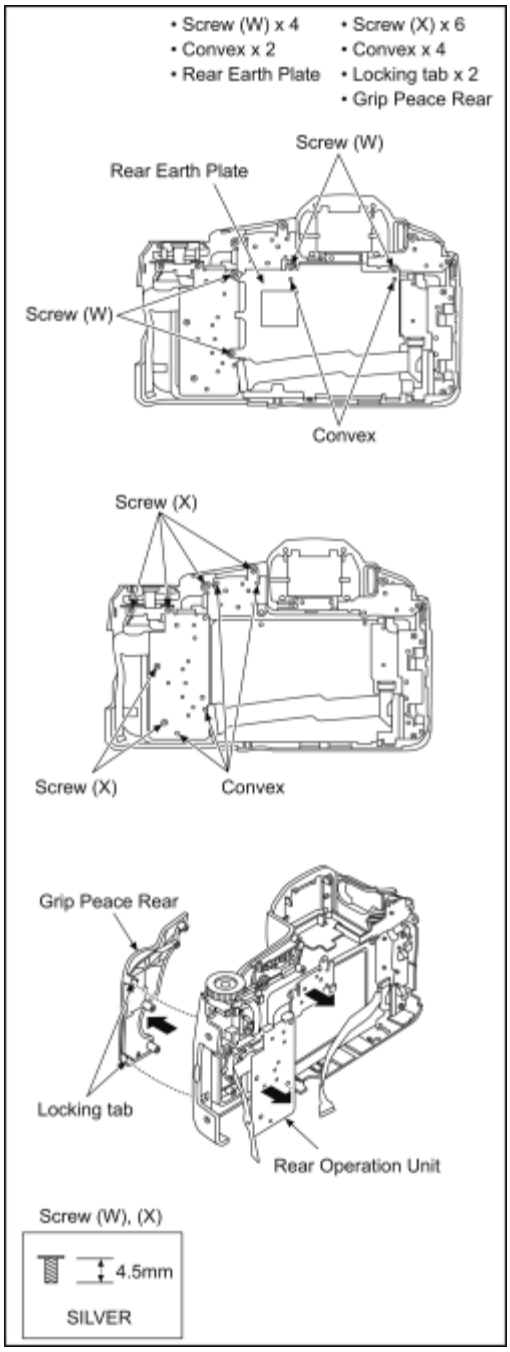


(Fig. D26)



9.3.13 Removal of the Rear Operation Unit

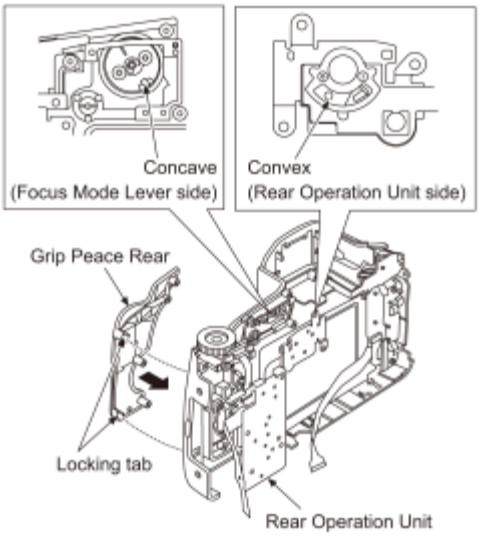
(Fig. D27)


• Screw (W) x 4
• Convex x 2
• Rear Earth Plate
• Screw (X) x 6
• Convex x 4
• Locking tab x 2
• Grip Peace Rear
Screw (W)
Rear Earth Plate
Screw (W)
Convex
Screw (X)
Screw (X)
Convex
Grip Peace Rear
Locking tab
Rear Operation Unit
Screw (W), (X)
4.5mm
SILVER

(Fig. D28)

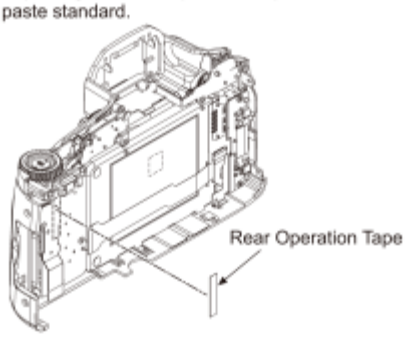
NOTE: (When Installing)

- Align the convex of lever switch (Rear Operation Unit side) and the concave portion of Focus Mode Lever side.

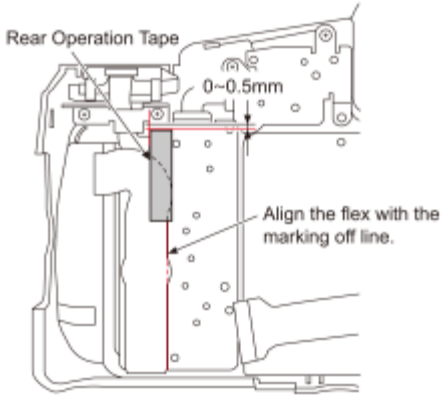


NOTE: (When Replacing)

- When pasting the Rear Operation Tape, make sure the paste standard.

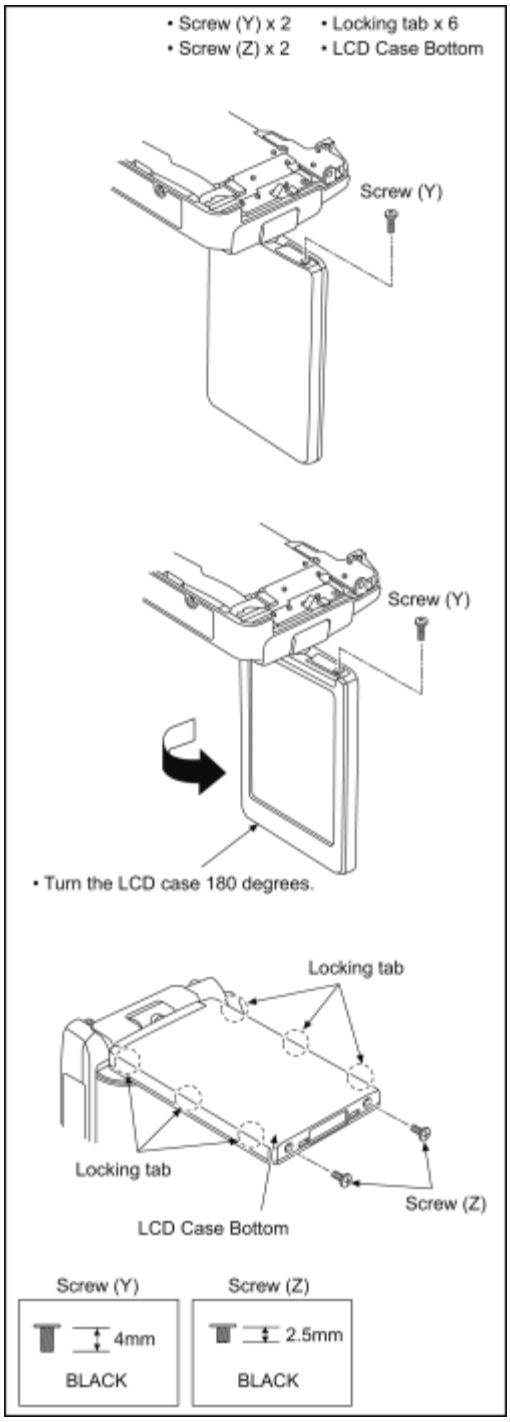


Paste standard (Rear Operation Tape)

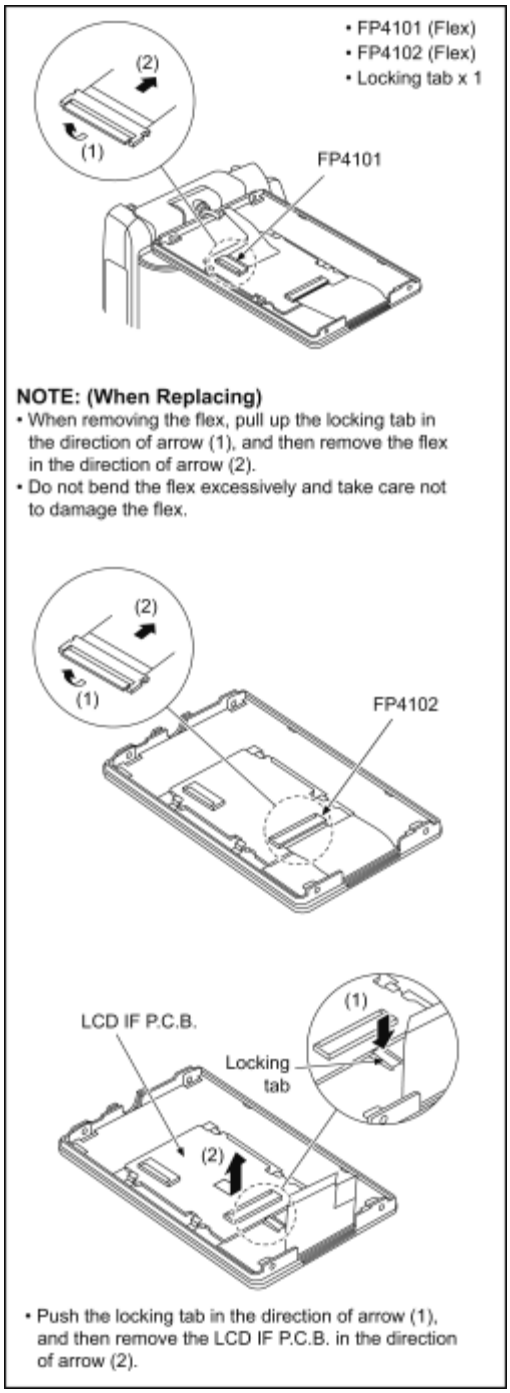


9.3.14 Removal of the LCD IF P.C.B. and LCD

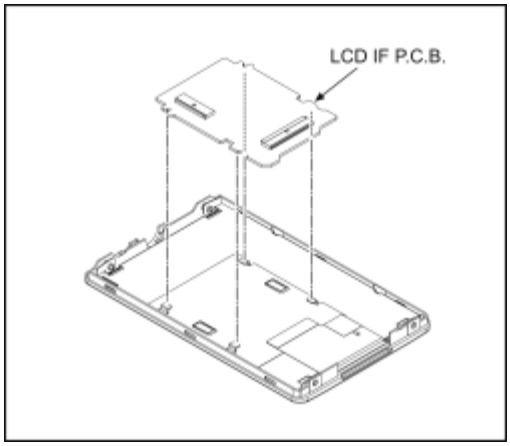
(Fig. D29)


• Screw (Y) x 2
• Screw (Z) x 2
• Locking tab x 6
• LCD Case Bottom
Screw (Y)
Screw (Y)
• Turn the LCD case 180 degrees.
Locking tab
Locking tab
Screw (Z)
LCD Case Bottom
Screw (Y)
4mm
BLACK
Screw (Z)
2.5mm
BLACK

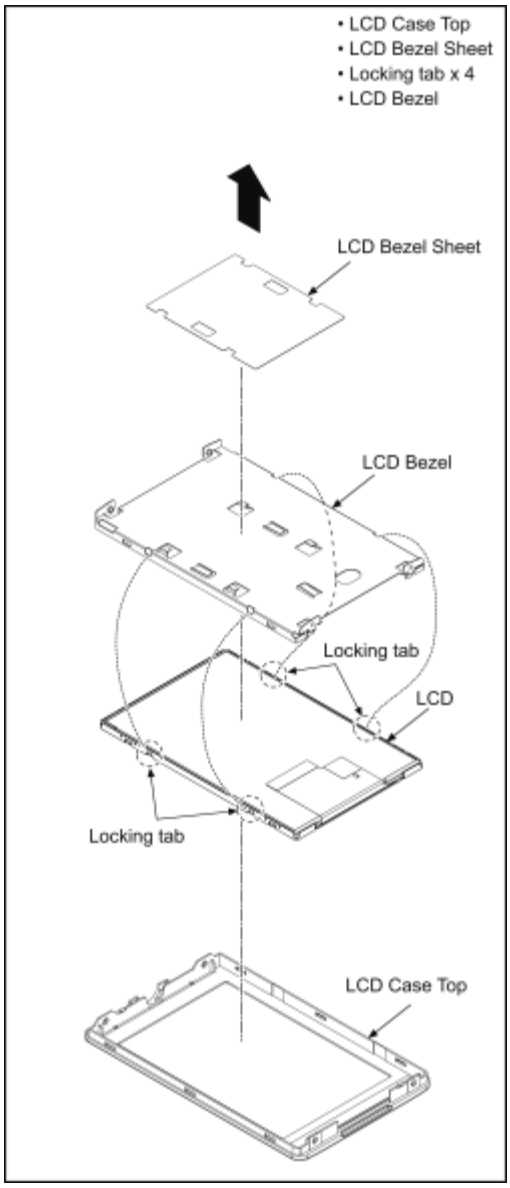
(Fig. D30)



(Fig. D31)



(Fig. D32)



NOTE: (When Installing)

Make sure to confirm the following points when installing:

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

9.4 Lens Disassembly Procedure

Precaution:

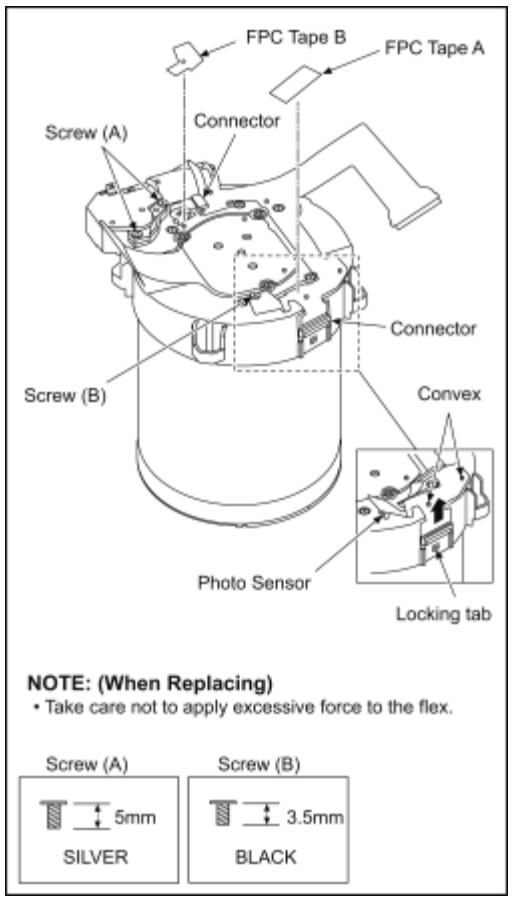
1. Do not remove the MOS Unit when disassembling or reassembling the lens in order to maintain it clean.

   When remove it, refer to item “9.6.”.
2. Keep dust or dirt away from the lens.

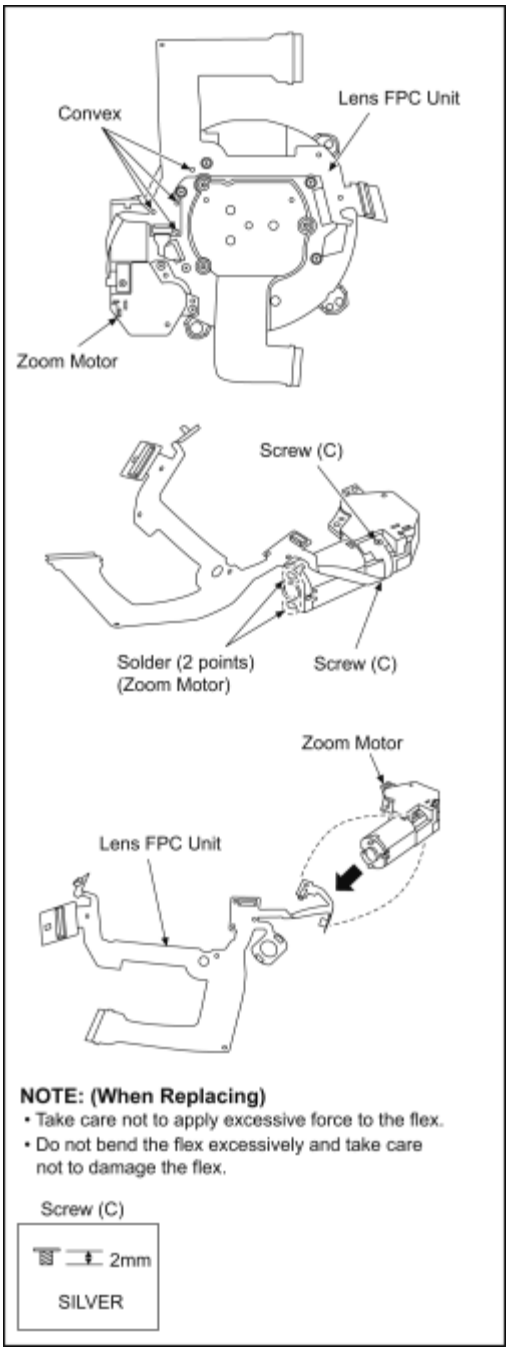
   To remove dirt or dust from the lens, blow with dry air.
3. Do not touch the lens surface.
4. Use Lens Cleaning Kit (VFK1900BK).

9.4.1 Removal of the Zoom Motor and Lens FPC Unit

1. Peel the FPC Tape A and FPC Tape B.
2. Unscrew the 2 screws (A).
3. Unscrew the screw (B).
4. Remove the Photo Sensor.
5. Disconnect 2 connectors.
6. Unlock the locking tab and remove connector portion.
7. Remove the 2 convexes.

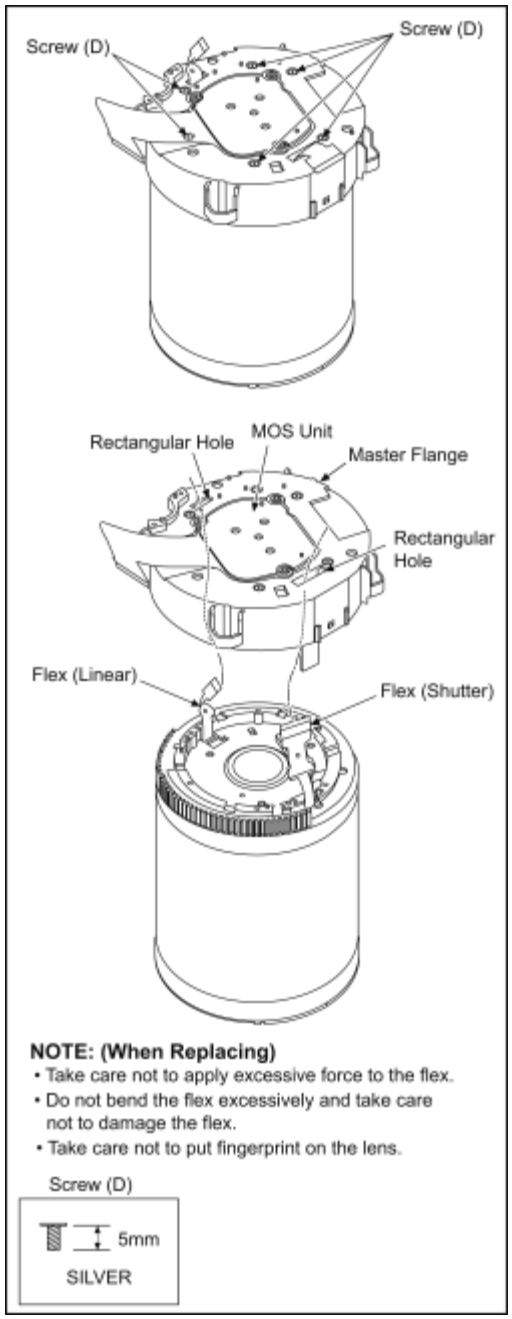


8. Remove the 4 convexes.
9. Remove the Zoom Motor and Lens FPC Unit.
10. Unscrew the 2 screws (C).
11. Unsolder the 2 soldering points.
12. Remove the Lens FPC Unit from the Zoom Motor.



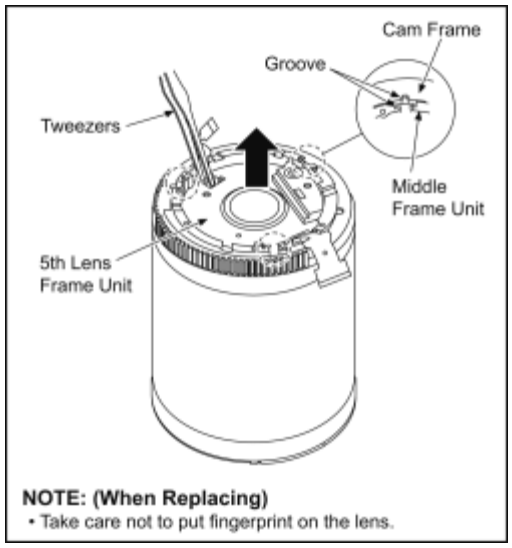
9.4.2 Removal of the Master Flange

1. Unscrew the 6 screws (D).
2. Put the 2 flexes (for shutter and linear) out through each rectangular hole, then remove the Master Flange.



9.4.3 Removal of the 5th Lens Frame Unit

1. Confirm that the groove of Middle Frame Unit and groove of Cam Frame are aligned. (Phase alignment)
2. Remove the 5th Lens Frame Unit by using tweezers, etc..

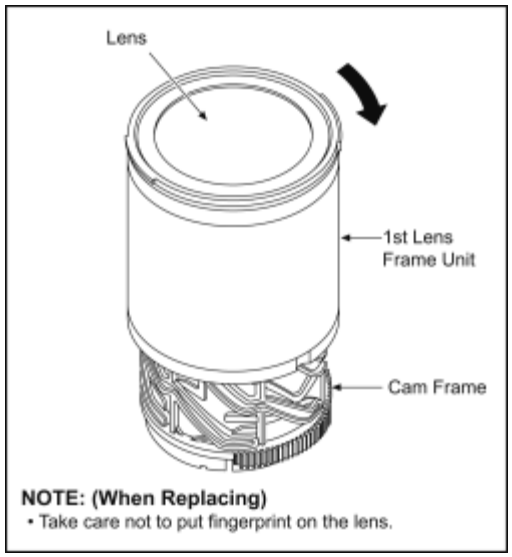


9.4.4 Removal of the 1st Lens Frame Unit

1. Put the lens side up of 1st Lens Frame Unit.

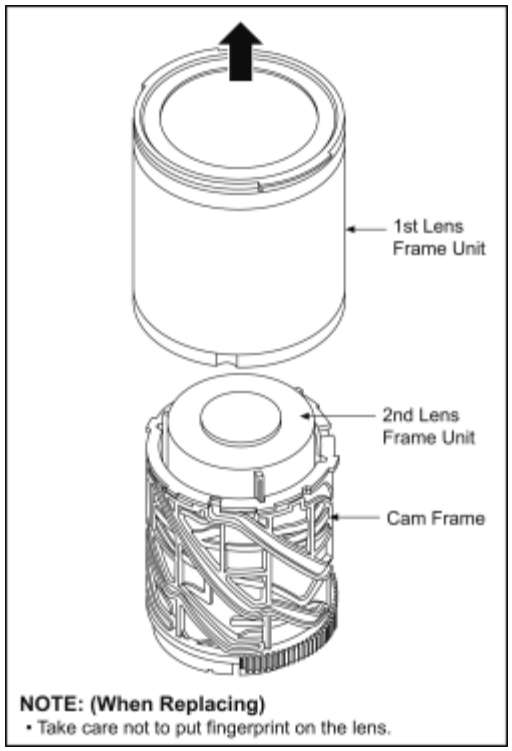
   (To prevent dropping of the 2nd Lens Frame Unit)

2. Rotate the 1st Lens Frame Unit clockwise fully.



3. Pull up the 1st Lens Frame Unit in direction of arrow,

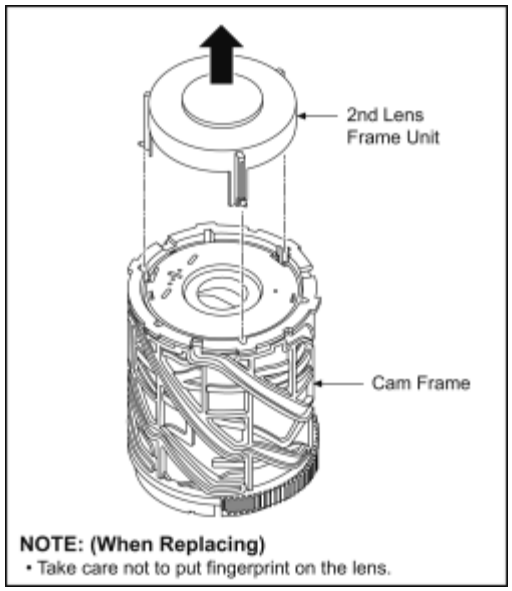
   then remove it.



9.4.5 Removal of the 2nd Lens Frame Unit

1. Pull up the 2nd Lens Frame Unit in direction of arrow,

   then remove it.



9.4.6 Removal of the 3rd Lens Frame Unit

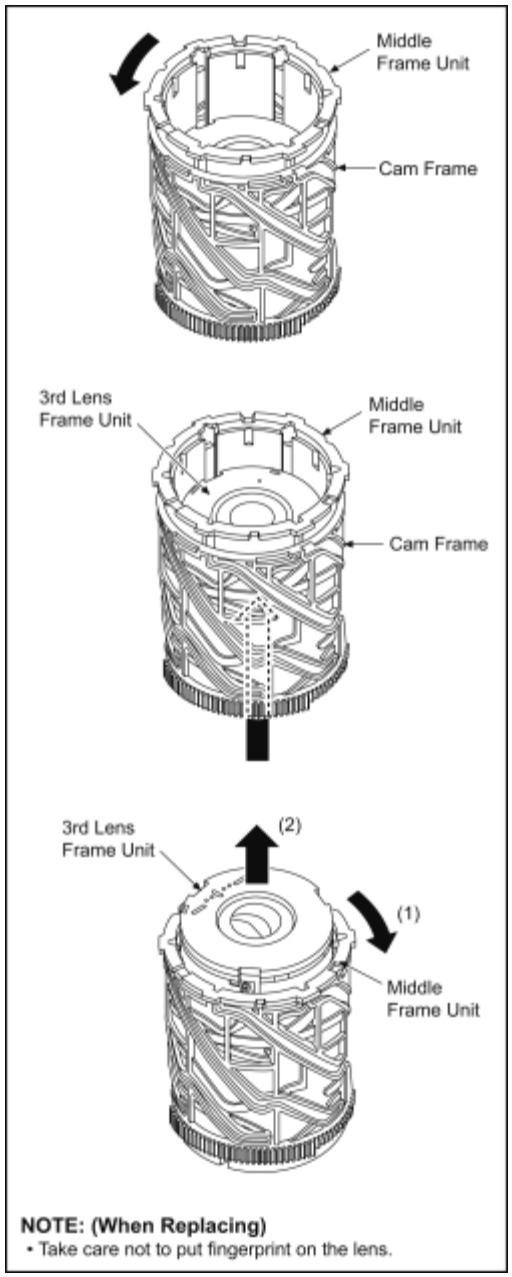
1. Rotate the Middle Frame Unit counterclockwise fully.

   (Until the 3rd Lens Frame Unit stops.)

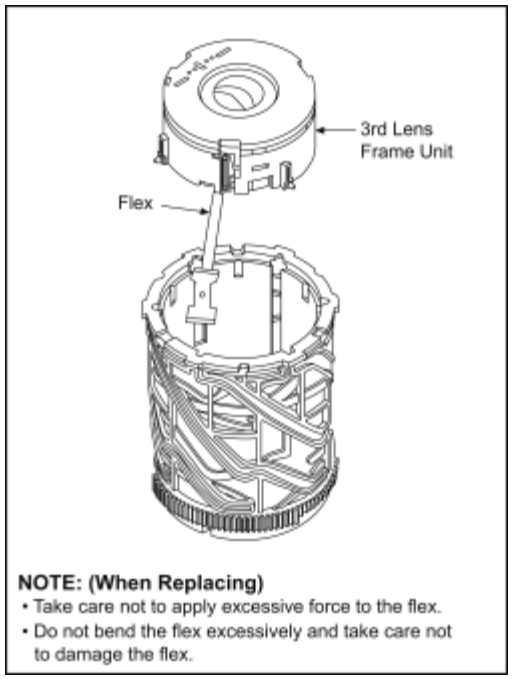
2. Push up the 3rd Lens Frame Unit fully from the lower side.
3. Rotate the Middle Frame Unit clockwise until the 3rd Lens

   Frame Unit is automatically little lifted and sounds “click”,

   then lift up the 3rd Lens Frame Unit.



4. Remove the 3rd Lens Frame Unit with care to flex.

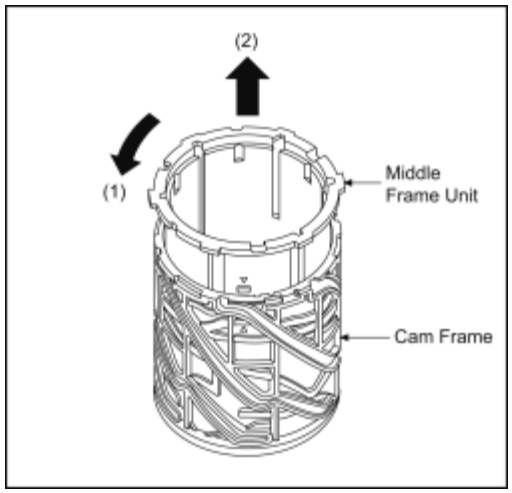


NOTE: (When Replacing)
- Take care not to apply excessive force to the flex.
- Do not bend the flex excessively and take care not to damage the flex.

9.4.7 Removal of the Middle Frame Unit

1. Rotate the Middle Frame Unit fully counterclockwise,

   and remove it upward.



9.5 Assembly Procedure for the Lens (Phase Alignment)

Precaution:

1. Do not remove the MOS Unit when disassembling or reassembling the lens in order to maintain it clean.

   When remove it, refer to item “9.6.”.

2. Keep dust or dirt away from the lens.

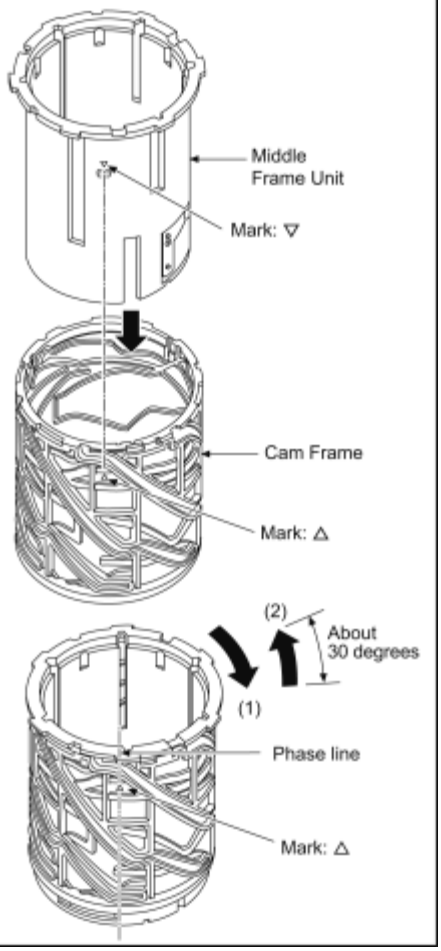
   To remove dirt or dust from the lens, blow with dry air.

3. Do not touch the lens surface.

4. Use lens cleaning KIT (VFK1900BK).

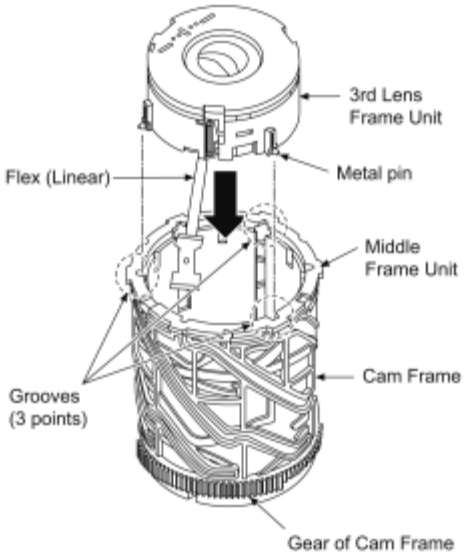
9.5.1 Assembly of the Middle Frame Unit and Cam Frame

1. Align the mark "▽" of Middle Frame Unit and mark "△" of Cam Frame, and then insert Middle Frame Unit into Cam Frame.
2. Rotate the Middle Frame Unit clockwise fully, then put back until the phase line of Middle Frame Unit and the mark "△" of Cam Frame has aligned. (About 30 degrees)

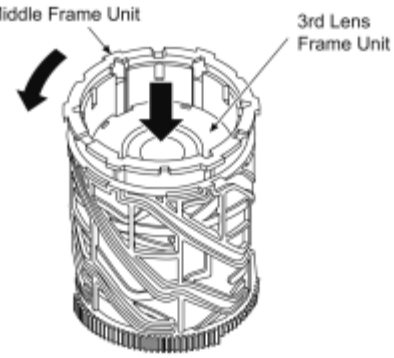


9.5.2 Assembly of the 3rd Lens Frame Unit

1. Align the Middle Frame Unit and 3 grooves of Cam Frame (Phase Alignment).
2. Keep the flex (linear) passed through the Middle Frame Unit.
3. In a state in which the gear of Cam Frame comes to the front, insert the metal pin of the 3rd Lens Frame Unit into the groove of Middle Frame Unit.

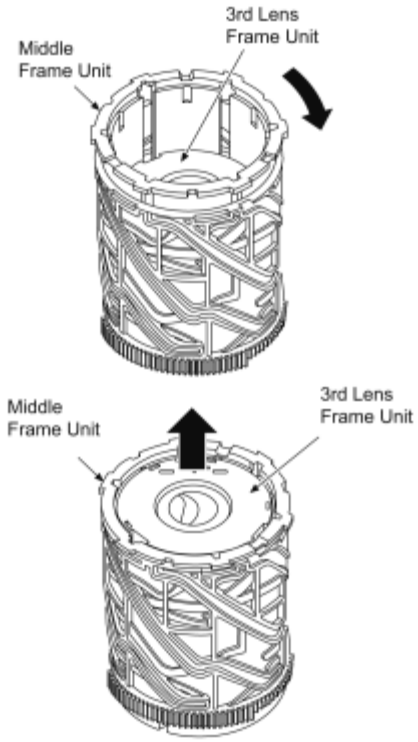


4. Rotate the Middle Frame Unit counterclockwise until the moves of 3rd Lens Frame Unit is stopped, then push down the 3rd Lens Frame Unit.



NOTE: (When Replacing)
- Take care not to apply excessive force to the flex.
- Do not bend the flex excessively and take care not to damage the flex.

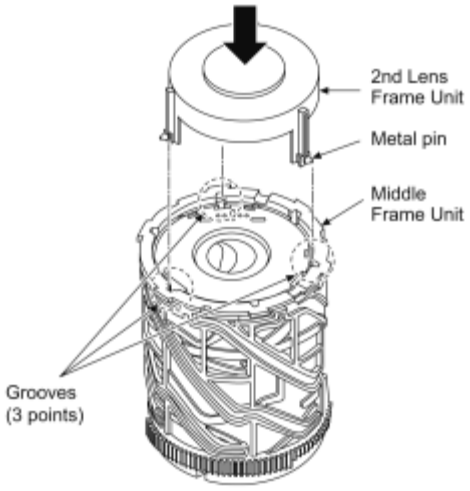
5. Rotate the Middle Frame Unit clockwise fully. (3rd Lens Frame Unit sunken is lifted.)



NOTE: (When Replacing)
- Take care not to put fingerprint on the lens.

9.5.3 Assembly of the 2nd Lens Frame Unit

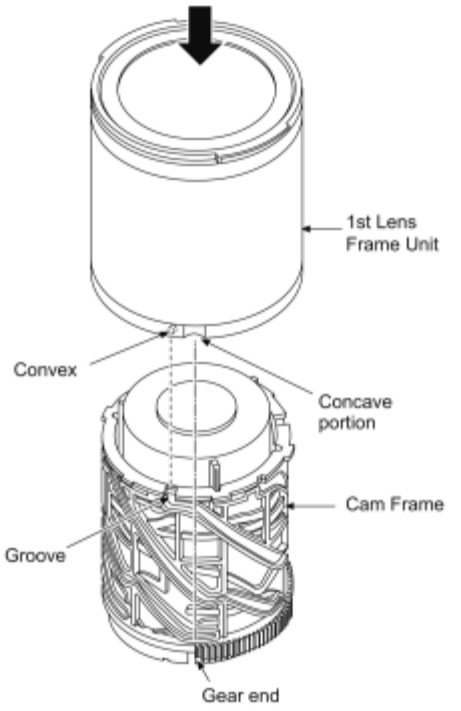
1. In a state in which the gear of Cam Frame comes to the front, insert the metal pin of the 2nd Lens Frame Unit into the groove of Middle Frame Unit.



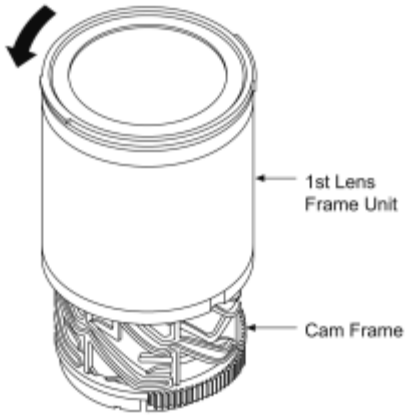
NOTE: (When Replacing)
• Take care not to put fingerprint on the lens.

9.5.4 Assembly of the 1st Lens Frame Unit

1. Align the concave portion of 1st Lens Frame Unit and the gear end of Cam Frame.
Then align the convex of 1st Lens Frame Unit and the groove of Cam Frame, and insert 1st Lens Frame Unit.



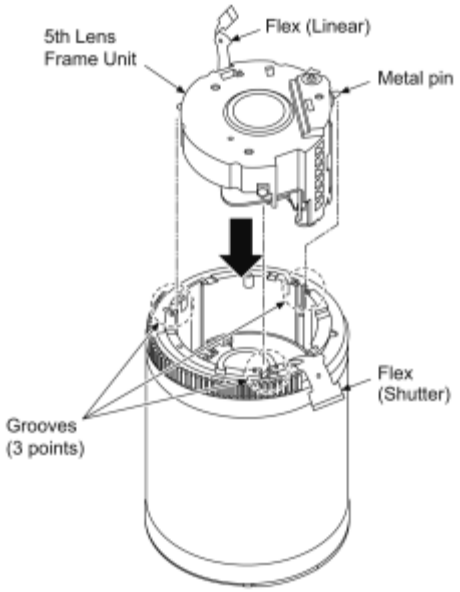
2. Rotate the 1st Lens Frame Unit counterclockwise fully.



NOTE: (When Replacing)
• Take care not to put fingerprint on the lens.

9.5.5 Assembly of the 5th Lens Frame Unit

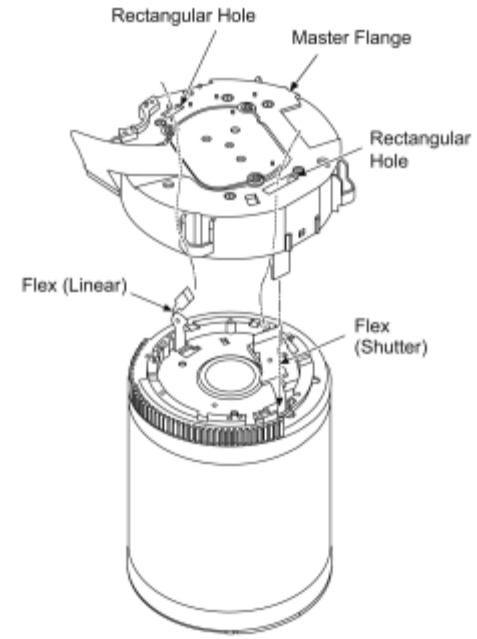
1. In a state in which the gear of Cam Frame comes to the front, insert the metal pin of the 5th Lens Frame Unit into the groove of Middle Frame Unit.

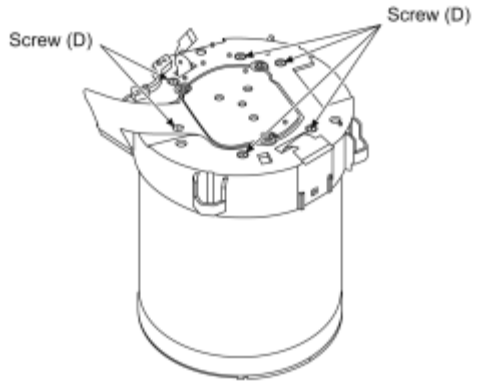


NOTE: (When Replacing)
- Take care not to put fingerprint on the lens.
- Take care not to pinch the flex.

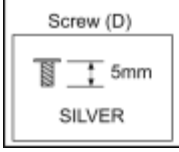
9.5.6 Assembly of the Master Flange

1. Put the 2 flexes (for shutter and linear) out through each rectangular hole.
2. Install the Master Flange.
3. Tighten the 6 Screws (D).

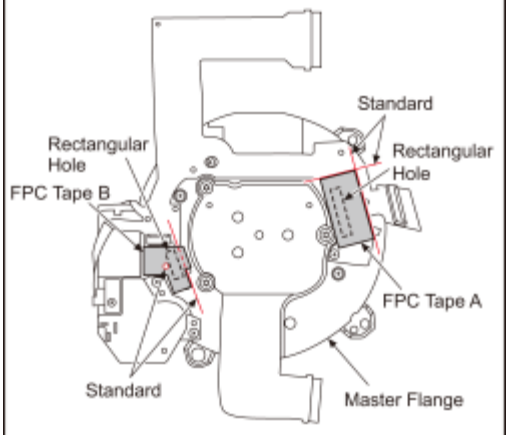




NOTE: (When Replacing)
- Take care not to pinch the flex.
- Do not bend the flex excessively and take care not to damage the flex.
- Take care not to put fingerprint on the lens.



NOTE: (When Replacing)
- When pasting the FPC Tape A and B, make sure the paste standard.
- When pasting the FPC Tape A and B, cover the rectangular hole of Master Flange.



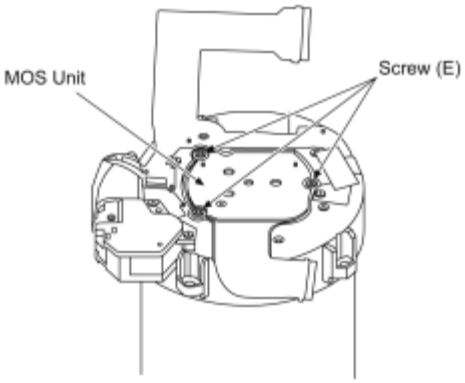
9.6 Removal of the MOS Unit

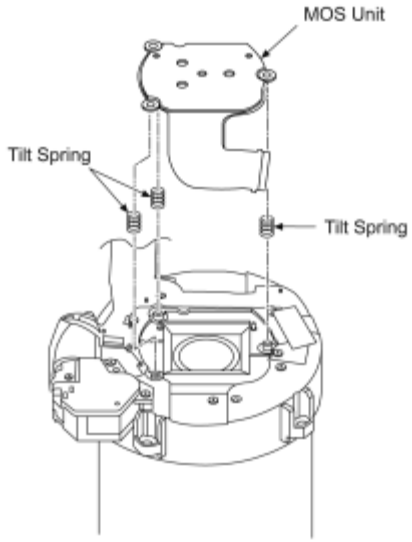
When remove the MOS Unit once (the screw (E) is loosened even a little), the optical tilt adjustment is required.

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

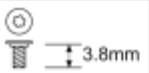
To prevent the MOS Unit from catching the dust and dirt, do not remove the MOS Unit except for replacing.

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





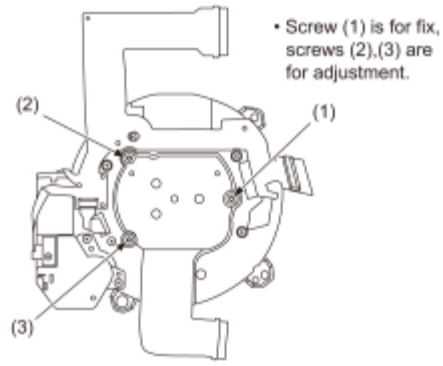
Screw (E)



SILVER
Special Screw
(T4 Torx type)

NOTE: (When Installing)

- Take new screw.
  (Don't reuse the screw)
- Tighten the 3 special screws according to the following.
  * Set the bit of optical tilt adjustment driver (RFKZ0569) to the torque driver (RFKZ0542).
  [Screw order]: (1)→(2)→(3).
  [Screw torque]: 10 ± 1 N•cm.
- Be sure to execute the optical tilt adjustment with the screw (2) and (3).
- After the adjustment is finished, the screw locking glue is unnecessary.



10 Measurements and Adjustments

10.1 Introduction

When servicing this unit, make sure to perform the adjustments necessary based on the part (s) replaced.

Before disassembling the unit, it is recommended to back up the camera data stored in Flash-ROM as a data file.

NOTE: (When replacing the Lens unit, Master Flange Unit and MOS Unit)

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

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

- Number of necessary adjustment items decreases by copying the backup data to new Main P.C.B. when adjustment data in old Main P.C.B. can be read by ROM_BACKUP “DSC→SD” in “10.2.2. Flash-ROM Data Backup”.

  For more details, please refer an item “Main P.C.B. (to which the backup data was copied)” in the table of “10.3.2. Adjustment Specifications”.

10.2 Before Disassembling the unit

10.2.1 Initial Setting Release

The cameras specification are initially set in accordance with model suffix (such as EB/EG/GN and so on.).

Unless the initial setting is not released, an automatic alignment software in the camera is not able to be executed when the alignment is carried out.

Note:

The initial setting should be again done after completing the alignment. Otherwise, the camera may not work properly.

Therefore as a warning, the camera display a warning symbol “ ! ” on the LCD monitor every time the camera is turned off.

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

[How to Release the camera initial setting]

- Preparation:

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

  Remove the lens cap.

- **Step 1. The temporary cancellation of “Initial Settings”:**

  Set the [Mode dial] to “[P](Program AE mode)” and [Drive mode dial] to “Single”.

  While 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.

10.2.2 Flash-ROM Data Backup

Number of necessary adjustment items decreases by copying the backup data to new Main P.C.B. when adjustment data in old Main P.C.B. is usually read by ROM_BACKUP “DSC→SD”. It is recommended to backup the Flash-ROM data as the way of return when trouble occurs before disassembling the unit depending on each case.

[ROM_BACKUP (Method of Non-PC backup)]

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

   From the “SETUP” menu, select “ROM_BACKUP”.

   NOTE:

   This item is not listed on the customer’s “SETUP” menu.
4. When this “ROM_BACKUP” item is selected, the following submenus are displayed.

Fig. 2-1

Item	Function	Details
DSC → SD	Save all the DSC’s Flash-ROM data to Memory Card	• DSC’s Flash-ROM data is saved to the Memory Card as a data file. (DATA BACKUP) - File location: ROOT DIRECTORY in Memory Card. - File Name: 1) User Setup Information data:<Model No.>U.TXT [Depending on the model, more than one file may be generated (e.g. <Model No.>U.TXT and <Model No.>U3.TXT).] 2) Electrical Adjustment data:<Model No.>F.TXT [Depending on the model, more than one file may be generated (e.g. <Model No.>F.TXT and <Model No.>F3.TXT).] • If the concerned file already exists, “OVERWRITE?” message is displayed.
SDALL → DSC (ID CHECK)	Write the all data to DSC’s Flash-ROM from Memory Card	• The backup data stored in the Memory Card is transferred to DSC unit. - ID CHECK: When the model ID is different, data is not transferred. - FORCE: Even if the model ID is different, data is transferred. * If the Main P.C.B. is replaced, select “SDALL→DSC(FORCE)”.
SDALL → DSC (FORCE)	Write the all data to DSC’s Flash-ROM from Memory Card	
SDUSER → DSC (FORCE)	Only “User setup information” is written from the saved file in the Memory Card to DSC’s Flash-ROM	• Only the user’s “setup” setting condition is transferred to DSC unit. • FORCE: Even if the model ID is different, the data is not transferred.
! → LUMIX	Shipping set without initializing “User setup information”	• Initial setting is executed without initializing the user’s set up setting condition. * The initial setting must be performed while the Self-timer LED is blinking. * The picture data stored in the built-in memory of the DSC is not erased, with this operation.
ADJFLAG → ALL F	Set all adjustment flags completion	• Status of the all adjustment flags are changed to “F” (completion).

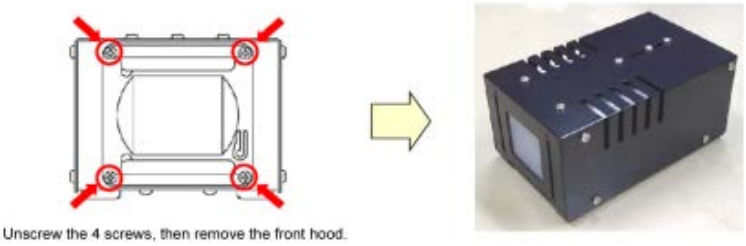
10.2.3 About Light Box

How to remove the Front Hood

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

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

[For RFKZ0523 Light Box]



10.3 Details of Electrical Adjustment

10.3.1 How to execute the Electrical Adjustment

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

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

10.3.1.1 Startup Electrical Adjustment mode

1. Release the initial settings.
2. Insert a recordable memory card (32MB or more).

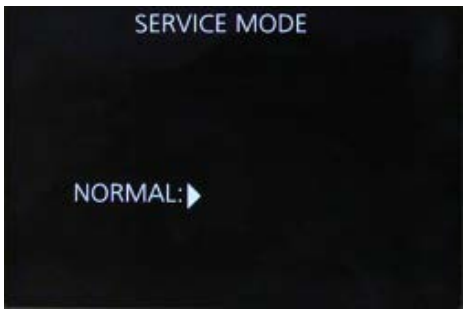
   (Without a memory card, the automatic adjustment can not executed.)
3. Procedure to set the camera into adjustment mode:
   a. Set the mode dial to “[P](Program AE mode)”.
   b. Turn the Power on pressing [Q.MENU/Fn3] button,

      [(Delete/Cancel)/Fn4] button and [Motion picture]

      button simultaneously.

      LCD monitor displays “SERVICE MODE”. (Refer to Fig. 3-1)

Fig. 3-1



10.3.1.2 Status Adjustment Flag Setting

Reset (Not yet adjusted) the status flag condition.

1. After pressing the [DISP.] button, the LCD monitor displays the Flag status screen. (Refer to Fig.3-2)
2. Select item by pressing the Cursor buttons. (Gray cursor is moved accordingly.)
3. Press the [(Delete/Cancel)/Fn4] button.

   NOTE:

   The selected item’s flag has been changed from

   “F (green)” to “0 (yellow)”.

   *Flag conditions:

   F (green)

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

   0 (yellow)

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

Fig. 3-2

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

10.3.1.3 Execute Adjustment

(In case of “OIS Adjustment”)

1. Perform step “10.3.1.1.” to “10.3.1.2.”, to reset the OIS flag status “F” (Set) to “0” (Reset)
2. Press [DISP.] button after Flag reset.

   OIS Adjustment screen is displayed on the LCD panel. (Refer to Fig.3-3)
3. Press the [Shutter] button.

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

Fig. 3-3

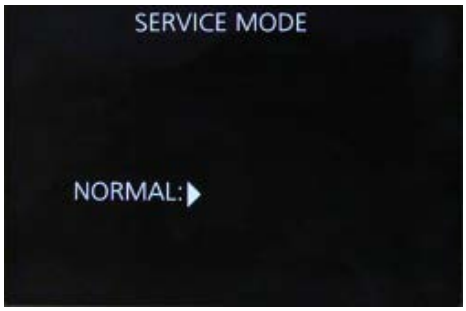
Fig. 3-4

10.3.1.4 Attention point during Adjustment

1. Step “10.3.1.3.” procedure shows OIS adjustment as an example. To perform the adjustment, refer to the “10.3.2. Adjustment Specifications” table which shows key point for each adjustment.
2. Do not move the light box, the camera or the chart while adjusting. If one of these is moved accidentally, start the adjustment again.

3. Do not press any buttons/keys until the default menu (Refer to Fig.3-5) is displayed on the LCD monitor. Otherwise, adjustment data may not be stored properly.
4. If the adjustment is interrupted accidentally, the alignment data may not be properly saved in the Flash-ROM.

Fig. 3-5



10.3.1.5 Finalizing the Adjustment

1. Several adjustment flags can be reset (“F” into “0”) at the same time. In this case, when the adjustment has been completed, the screen will change showing the adjustment for the next item until all reset items are completed.

   Also, when the [Shutter] button is pressed, the screen jump to the next adjustment item.
2. To cancel the adjustment mode while in the process of performing the adjustment, follow this procedures.
3. Operate the following, when escaping the Electrical Adjustment mode on the way.

   (1) Press “[DISP.] button”.

   (2) Press “[RIGHT] of Cursor buttons”.

   NOTE:

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

10.3.2 Adjustment Specifications

The following matrix table shows the relation between the replaced part and the Necessary Adjustment.

When a part is replaced, make sure to perform the necessary adjustment(s) in the order indicated.

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

Adjustment order	Adjustment Item	FLAG	Purpose	Replacing Parts								JIG/TOOLS	SETUP	How to Operate
				MAIN P.C.B./Flash-ROM/VENUS ENGINE	MAIN P.C.B. (When written the Backup data)	Lens part (Excluding Image Sensor)	Image Sensor	Microphone	FLash Part	Electronic Level (IC6201)	NFC-IC(IC6301)	Rear Case Unit				
1	Optical Tilt	–	Adjustment of MOS Unit installation angle to the Lens	–	–	○	○	–	–	–	–	–	NOTE: It is necessary to use the "DSC_Tilt" software to allow the "Optical tilt adjustment". The Adjustment software "DSC_Tilt" is available at “TSN Website”. • Optical Tilt Adjustment Driver RFKZ0569 : T4 • Optical Tilt Adjustment Chart RFKZ0570 • Camera Stand RFKZ0333J • Torque Driver RFKZ0542 * The screw locking glue is unnecessary, after adjustment.		
2	Venus Zoom	PZM	Venus Zoom Inspection	○	○	–	–	–	–	–	–	–	NONE	NONE	1) Change the flag into the “0”, and then proceed to the adjustment mode. 2) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)

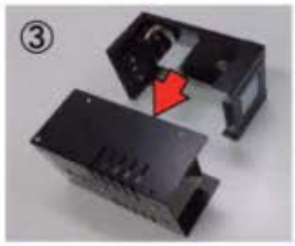
3	OIS sensor	OIS	OIS sensor output level adjustment	○	–	○	○	–	–	–	–	–	NONE	NONE	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
4	Backfocus / GYRO	BF	To have the focus tracking curve be appropriate shape and GYRO sensor adjustment	○	○	○	○ *1	–	–	○	–	–	• Collimator RFKZ0422	1) Set the camera in front of collimator so that the distance between collimator and camera body becomes 8 cm as shown in Fig.A. (It is not distance between lens barrel top and collimator.) • Set the camera on a tripod to prevent it from falling down.	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Set the camera angle so that the star chart is displayed to the center, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
5	Iris	IRS	Iris adjustment	○	–	○	○	–	–	–	–	–	• Light Box RFKZ0523	1) Set the camera in front of light box so that the distance between diffusing surface of light box and camera body becomes 4.5 cm as shown in Fig.B. (It is not distance between lens barrel top and diffusing surface of light box.)	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Set the camera angle so that the diffusing surface of light box is displayed on the full of LCD monitor, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
6	Shutter	SHTc	Shutter speed adjustment	○	–	○	○	–	–	–	–	–	• Light Box RFKZ0523	1) Set the camera in front of light box so that the distance between diffusing surface of light box and camera body becomes 4.5 cm as shown in Fig.B. (It is not distance between lens barrel top and diffusing surface of light box.)	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Set the camera angle so that the diffusing surface of light box is displayed on the center of LCD monitor, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
		SHD	Do not use "SHD" adjustment flag for this unit. Use "BK2" adjustment flag, instead.												

Adjustment order	Adjustment Item	FLAG	Purpose	Replacing Parts									JIG/TOOLS	SETUP	How to Operate
				MAIN P.C.B./Flash-ROM/VENUS ENGINE	MAIN P.C.B. (When written the Backup data)	Lens part (Excluding Image Sensor)	Image Sensor	Microphone	FLash Part	Electronic Level (IC6201)	NFC-IC(IC6301)	Rear Case Unit			
	Shading Compensation		Compensation of Shading and Compensation										• Light Box RFKZ0523	1) Remove the top case of the light box. And put the top case and the bottom case as shown in the following figure. 2) Set the diffuser and LBB12 filter on	1) Change the flag into the "0", and then proceed to the adjustment mode. (BK2 flag is 2nd pages.) 2) Press the shutter button fully. → Green ● mark is displayed on LCD. 3) Attach the Camera Lens on the LBB12 filter. And set the camera angle so that the diffusing surface of light box is displayed on the full of LCD monitor, and press the shutter button fully. → The 1st adjustment is executed, and then green ● mark is displayed on LCD. 4) Set the camera in front of LBB12 filter so that the distance between LBB12 filter and camera body becomes 6 cm, and press the shutter button fully. → The lens starts zooming and stops automatically, then green ● mark is displayed on LCD. 5) Attach the Camera Lens on the LBB12

	and MOS SENSOR Missing Pixels (Black) *3	BK2	Compensation of MOS SENSOR Missing Pixels (Black)	○	–	○	○ *1	–	–	–	–	–	• Diffuser RFKZ0591 • LBB12 Filter VFK1164LBB12	the edge of light guide frame. (Refer to Fig(b)) 3) Attach the Camera Lens on the LBB12 filter. (Refer to Fig(a)) • Take care not to occur vigneeting. • Set the camera on a tripod to prevent it from falling down.	filter. And set the camera angle so that the diffusing surface of light box is displayed on the full of LCD monitor, and press the shutter button fully. → The 2nd adjustment is executed, and then green ● mark is displayed on LCD. 6) Set the camera in front of LBB12 filter so that the distance between LBB12 filter and camera body becomes 8 cm, and press the shutter button fully. → The lens starts zooming and stops automatically, then green ● mark is displayed on LCD. 7) Attach the Camera Lens on the LBB12 filter. And set the camera angle so that the diffusing surface of light box is displayed on the full of LCD monitor, and press the shutter button fully. → The 3rd adjustment is executed. When a result is OK, it is the completion of an inspection.
7														

Remove the side 8 screws. (Both left and right side.)

Rotate the light box at this side.



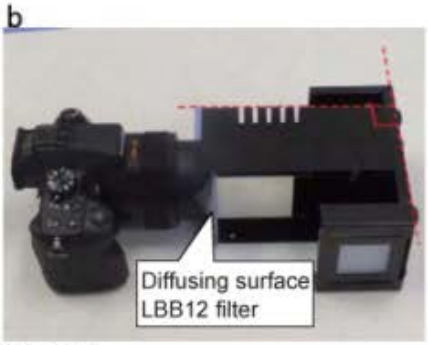
Remove the top case.

Rotate the top case. And combine top case and bottom case.

a

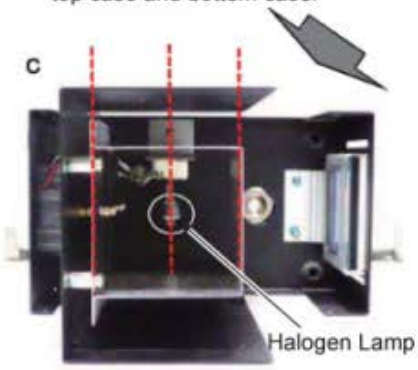
Standard:
* Check the LCD Screen.(especially the left lower)
If there are shade of screw which sets the light guide frame on it, reset the position.

b



Standard:
* Put the top case in a vertical position of the bottom case.

c



Standard:
* Adjust the bottom case's position to put the halogen lamp at the center posion of the light guide frame.
* Left-down side of fig.4.

Adjustment order	Adjustment Item	FLAG	Purpose	Replacing Parts: MAIN P.C.B./Flash-ROM/VENUS ENGINE	MAIN P.C.B. (When written the Backup data)	Lens part (Excluding Image Sensor)	Image Sensor	Microphone	FLash Part	Electronic Level (IC6201)	NFC-IC(IC6301)	Rear Case Unit	JIG/TOOLS	SETUP	How to Operate
8	ISO	ISO	ISO sensitivity adjustment	○	–	○	○	–	–	–	–	–			
9	Offset gain	SAT	Setting up the offset gain.	○	–	○	○	–	–	–	–	–	• Light Box RFKZ0523	1) Insert the TR chart into the slot of light box as shown in Fig.D. 2) Set the camera in front of light box so that the distance between	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Set the camera angle so that the TR chart

10	White balance (Low color temp.)	WBL	Setting up the white in low color temperature	○	–	○	○	–	–	–	–	–	• TR Chart SUKZ000006	diffusing surface of light box and camera body becomes 8 cm as shown in Fig.B. * Be careful not to mistake the direction of TR chart.	is displayed on the center of LCD monitor, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
11	White balance (High color temp.)	WBM	Setting up the white in high color temperature	○	–	○	○	–	–	–	–	–			
12	Eye sensor	EYE	Inspecting sensitivity of eye sensor	○	–	–	–	–	–	–	–	○	• Gray Card RFKZ0506	1) Set the camera in front of gray card so that the distance between gray card and eye sensor of camera body becomes 4.5 cm as shown in Fig.C.	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Set the camera so that the attachment side of eye sensor and center of the gray card is perpendicular, and press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
13	Flash adjustment	STB	Flash adjustment	○	○	–	–	–	○	–	–		NONE	NONE	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Press the shutter button fully. 3) Check that a flash shines. (It is different for every model how many times it shines.) * When a flash does not shine, there is a possibility that the flash unit is out of order. 4) Check a test result. * Results of the tests are usually NG. (When a result is OK, it is the completion of an inspection.) 5) When a result is NG, rewrite STB flag to an adjustment using ADJFLG - ALL F of ROM BACKUP. * The flag "STB" is an item which checks shines operation of a flash automatically at a Manufacturing facility. For this reason, except environment for exclusive use, a result will be NG, but it is no problem if shines operation can be checked visually.
14	MOS sensor Temp. white missing pixels *2	SKI	Registration of the Temp. white missing pixels	○	–	○	○	–	–	–	–	–	NONE	NONE	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
15	MOS sensor FD white missing pixels *2	WKI	Registration of the FD (floating diffusion) white missing pixels	○	–	○	○ *1	–	–	–	–	–	NONE	NONE	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.)
16	Color reproduction inspection and Microphone check	COL	Color reproduction inspection and Microphone check	○	–	○	○	○	–	–	–	–	NONE	NONE	1) Change the flag into the "0", and then proceed to the adjustment mode. 2) Press the shutter button fully. 3) Utter the voice for about 5 seconds into the microphone, just before pushing a shutter release. * Utter the voice at the above the LVF. * Comparatively high voice is Ideal. (Standard:about 1KHz) (When a result is OK, it is the completion of an inspection.)
		BKI	Do not use "BKI" adjustment flag for this unit. Use "BK2" adjustment flag, instead. (In case of most DSC models, the adjustment flag for MOS SENSOR Missing Pixcels is "BKI". But, in this model, "BK2" the adjustment flag for MOS SENSOR Missing Pixcels.)											

Adjustment order	Adjustment Item	FLAG	Purpose	Replacing Parts: MAIN P.C.B./Flash-ROM/VENUS ENGINE	MAIN P.C.B. (When written the Backup data)	Lens part (Excluding Image Sensor)	Image Sensor	Microphone	FLash Part	Electronic Level (IC6201)	NFC-IC(IC6301)	Rear Case Unit	JIG/TOOLS	SETUP	How to Operate
17	Electronic Level	AA2 + AA3	Electronic Level adjustment	○	○	–	–	–	–	○	–	–	• ACC Adjustment Chart	1) Download the "ACC Adjustment chart.pdf" and print it to A3 size (or equivalent size) paper. ("ACC Adjustment chart.pdf" is available at "TSN Website". To download, click on "Support Information from NWBG/VDBG-AVC".) 2) Hang in the string with weight, then put the printed ACC adjustment chart on the wall or panel horizontally. (Fig. 1) • After putting the adjustment chart horizontally, remove the string with weight. • Attach the camera to tripod. <Setup procedures> 3-1) Adjust the height of tripod to match the lens of camera and center of the adjustment chart. 3-2) Apply the triangle (or equivalent) in center of the chart, then adjust center of the lens of camera on the vertical extension. 3-3) Confirm that the chart is displayed on the LCD monitor fully. 3-4) Fine adjust the camera angle so that the horizontal bar of chart is displayed horizontally on the LCD monitor and matches the cross guide line of the LCD monitor. (Fig.2.)	1) Change the flag "AA2" and "AA3" into the "0", and then press DISPLAY button and proceed to the adjustment mode. <Offset adjustment> 2) Set the camera to the horizontal position. Then set the distance between adjustment chart and camera body becomes 28 cm. And optical axis of the lens and center of the chart crosses right-angled.(Fig. 3) 3) Press the shutter button fully. (When a result is OK, it is the completion of an inspection.) <Tilt adjustment> 4) Rotate the camera to the 90 degrees, so that the grip side down, and press the shutter button.(Fig. 4) 5) Set the camera to the horizontal position, and press the shutter button.(Fig. 5) 6) Rotate the camera to the 90 degrees, so that the grip side up, and press the shutter button.(Fig. 6) (When a result is OK, it is the completion of an inspection.)

Fig.1: Setting of the adjustment chart horizontally

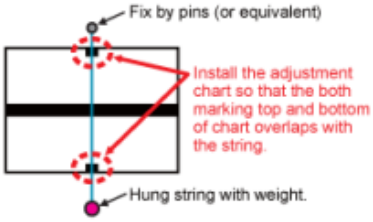


Fig.2: Setting of the camera to the front of adjustment chart

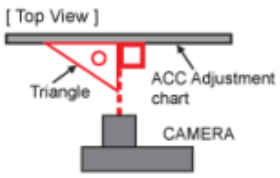


Fig.3: [Offset] (Horizontal Position)

Fig.4: [Vertical Position] (Grip side Down)

Fig.5: [Horizontal Position]

Fig.6: [Vertical Position] (Grip side Up)

18	NFC Initialization	–	Initial setting of NFC	○	○	–	–	–	–	–	○	–		Perform the following procedures "1)" & "2)", initialize the data of NFC and write to NFC IC. • No initial data of NFC function is written in NFC IC and/or repair parts including NFC IC (P.C.B. unit, etc.), therefor, when replacing any of them, make sure to perform NFC initialization and write initial data to NFC IC. • NFC IC may lose the initialization data due to heat during repair process. When replacing NFC IC or P.C.B., make sure to perform NFC initialization and write initial data to NFC IC. **< NFC Initialization >** 1) Reset the NFC operation. • After inserting a memory card, release the Initial Settings. • After selecting [MENU]→[Setup]→[ROM BACKUP], perform [NFC RESET]. • [Wi-Fi Setup]→[NFC Operation], and switch [NFC Operation] from [OFF] to [ON]. * When [NFC Operation] is already [ON], once switch to [OFF], then switch to [ON] again. * In case of failure of NFC IC, error message is displayed at this time. Utilize for servicing. 2) Perform the "INITIAL SETTINGS". (It is OK in "INITIAL SETTINGS" as usual be performed after repairing.) * Complete NFC initial setting needs performing both procedures "1)" & "2)" above. * The default setting of [NFC Operation] is [ON].	
	Wi-Fi check	WiFi	Do not use "WiFi" adjustment flag for servicing. This adjustment is for factory procedure. (For confirmation of Wi-Fi function, use the reception level of Wi-Fi access point as usual.)												

Fig.A Distance between Collimator and Camera

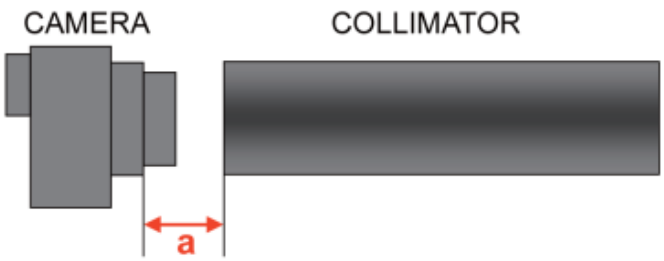


Fig.B Distance between Light Box and Camera

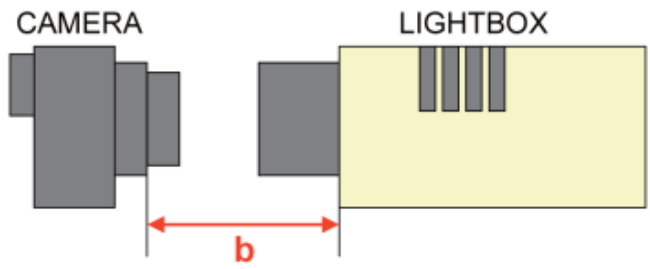


Fig.C Distance between Gray Card and Camera

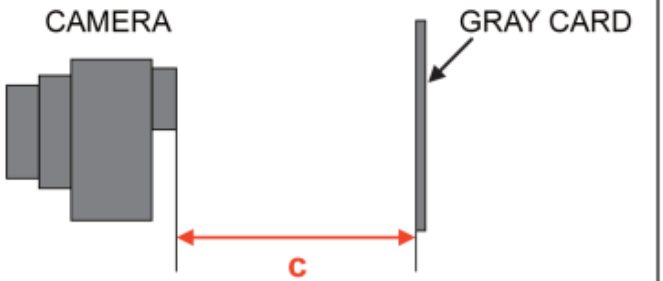
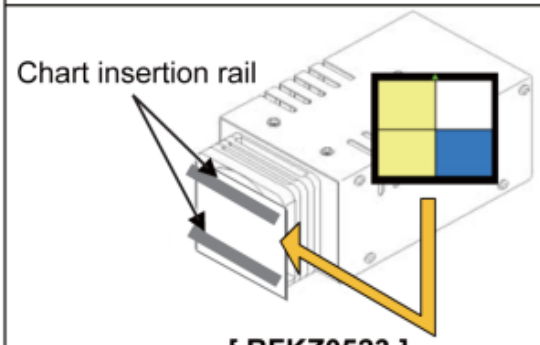


Fig.D How to Insert the TR Chart into Light Box



* 1: This adjustment must be performed not only replacing the MOS Unit, but also simply removing the MOS Unit.
* 2: The pixel that always lights while shaded is called a white wound.
* 3: The pixel that does not light while complete exposed is called a black wound.

IMPORTANT NOTICE: (After replacing the Main P.C.B. (Venus Engine is included) or Venus Engine)
After replacing the Main P.C.B. (Venus Engine is included) or Venus Engine, make sure to perform the "Initial Settings" first, then release the "Initial Settings" in order to proceed the electrical adjustment.
NOTE:
1) If electrical adjustment or data re-writing is executed before "Initial Settings", suffix code list is never displayed, and it cannot be chosen suitable suffix code.
2) Never remove the battery during initial setting in process.

10.4 After Adjustment

10.4.1 Initial Setting

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

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

[IMPORTANT]

1. The initial setting should be done again after completing the alignment. Otherwise, the camera will not work properly.

   Therefore as a warning, the camera display a warning symbol " ! " on the LCD monitor every time the camera is turned off.

2. Confirm that status of all adjustment flag show "F". Even if one of the adjustment flag shows "0", initial setting programmed is never executed.

11 Maintenance

11.1 Cleaning Lens and LCD Panel

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

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

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

Note:

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

(25mm ~ 400mm/35mm film camera equivalent)

MOS IMAGE SENSOR
● 1" 20.1MEGA PIX
(Build in AFE)

LOGIC IC

ZOOM | OIS UNIT | IRIS | SHUTTER | FOCUS

IC7302,7303,7305
IC7306,7307
EXT AMP & MOTOR DRIVE

IC7301
BUS TRANCEIVER

IC9101
SYSTEM IC
MOTOR DRIVE,
OIS DRIVE &
PREPROCESS

IC7304
LINEAR DRIVER

IC7101,7201,7202
GYRO SENSOR &
AMP

EXT. FLASH
(OPTION)

HOT SHOE
UNIT

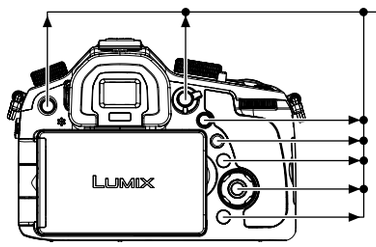
Q8101
QR8101,8102,8103
QR9002

FLASH
UNIT

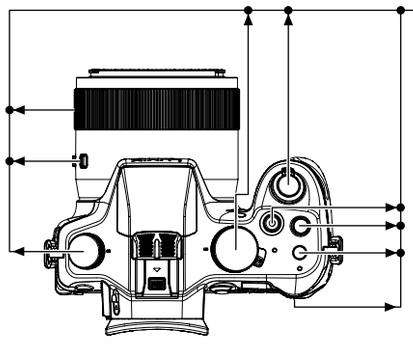
Q8001

IC8001
IGBT DRIVER

REAR OPERATION CONTROLS



TOP OPERATION/SIDE OPERATION CONTROLS



X6001
(24MHz)

IC6001
VENUS ENGINE
- CAMERA PROCESS
- J-PEG COMP/EXPANDS
- MEDIA I/F
- USB I/F
- MAIN MICROPROCESSOR
- OIS CONTROL
- LENS DRIVE
- LCD DRIVE
- SDRAM/4G-bit
- HDMI DRIVE

IC6201
TILT SENSOR

EYE SENSOR

X9101
(32.768KHz)

IC9101
SYSTEM IC

IC9001
LOGIC IC

IC6003
NAND FLASH ROM/1G-bit

MEMORY
CARD

REMOTE
TERMINAL

IC5403
SINGLE COMPARATOR

IC5102
BUS SWITCH

EXT. MIC
TERMINAL

IC5101
BUS
SWITCH

ECM(L)
ECM(R)
STEREO
MICROPHONE

IC9101
SYSTEM IC
- AUDIO AMP
- SPEAKER CONTROL
- VIDEO OUT

SPEAKER

AV OUT/DIGITAL
TERMINAL

IC2001
VIDEO DRIVER

HDMI
TERMNINAL

NFC
ANTENNA

IC6301
DUAL INTERFACE
RFID

Wi-Fi
ANTENNA

W-LAN MODULE

COLOR LCD PANEL
- 3.0" PANEL/3:2
920k dots

COLOR OLED LVF
- 0.39" PANEL/4:3
EQUIVALENT TO
2360k dots

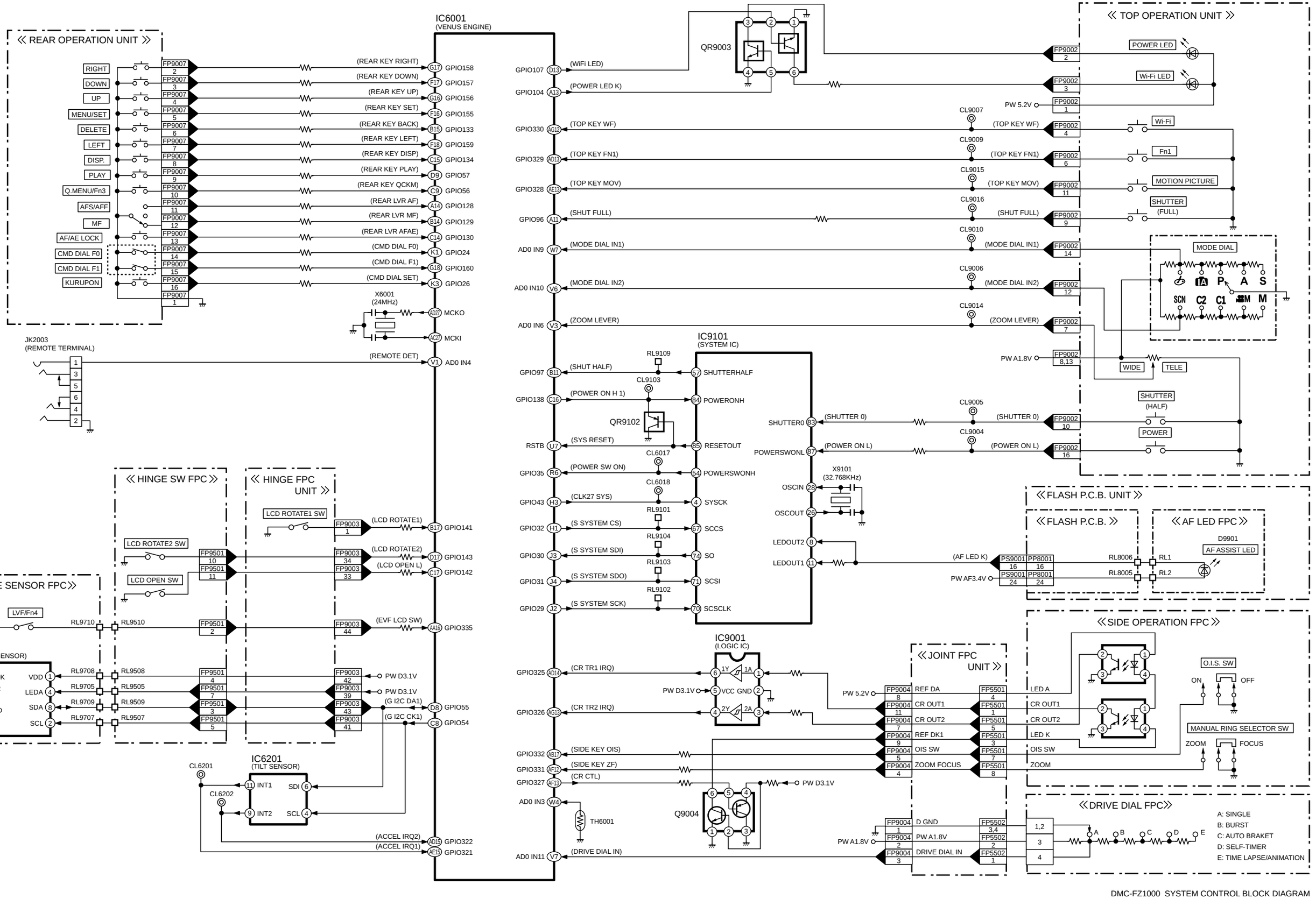
IC6602,6609
IC6610,6611
LOGIC IC

IC1060,1061,1080,1090,1120,1140,1220,1240,1320,1420
IC1910,5304,6601,6603,6604,6605,6606,6607,6608
REGULATOR/LOAD SW/
DC-DC CONVERTER/
SYNCHRONOUS STEP-DOWN CONVERTER

IC1001
7CH SWITCHING REGULATOR
(POWER SUPPLY)

BATTERY

DMC-FZ1000 OVERALL BLOCK DIAGRAM



DMC-FZ1000 SYSTEM CONTROL BLOCK DIAGRAM

IC6003
(NAND FLASH ROM/1G-bit)
ADDRESS/DATA
CTL SIG
NAND D0
NAND D7
NRB
NRE
NCE
CLE
ALE
NWE
NWP
IC6001
(VENUS ENGINE)
GPIO231
GPIO232
GPIO233
GPIO234
GPIO235
GPIO236
GPIO237
GPIO238
GPIO227
GPIO229
GPIO228
GPIO224
GPIO225
GPIO230
GPIO226
SDRAM AREA/4G-bit
PRE PROCESS BLOCK
MEMORY CONTROL BLOCK
YC PROCESS BLOCK
JPEG PROCESS BLOCK
VIDEO OUTPUT BLOCK
INTERNAL BUS CONTROL
USB I/F
SD CORE
MOS SSG
MOS IMAGE SENSOR 20.1M
(Built in AFE)
(LOGIC IC)
PW SE1.8V
FP9001 47 (BUS288 D0P0) M27 LVDS RX12P
FP9001 46 (BUS288 D0M0) M26 LVDS RX12M
FP9001 45 (BUS288 D0P1) J27 LVDS RX7P
FP9001 44 (BUS288 D0M1) J26 LVDS RX7M
FP9001 43 (BUS288 D0P3) L27 LVDS RX10P
FP9001 42 (BUS288 D0M3) L26 LVDS RX10M
FP9001 41 (BUS288 D0P2) H27 LVDS RX5P
FP9001 40 (BUS288 D0M2) H26 LVDS RX5M
FP9001 39 (BUS288 D0P4) H25 LVDS RX6P
FP9001 38 (BUS288 D0M4) H24 LVDS RX6M
FP9001 37 (BUS288 DCKP) G27 LVDS RXCAP
FP9001 36 (BUS288 DCKM) G26 LVDS RXCAM
FP9001 35 (BUS288 D0P5) G25 LVDS RX4P
FP9001 34 (BUS288 D0M5) G24 LVDS RX4M
FP9001 33 (BUS288 D0P7) F27 LVDS RX2P
FP9001 32 (BUS288 D0M7) F26 LVDS RX2M
FP9001 31 (BUS288 D0P8) F25 LVDS RX3P
FP9001 30 (BUS288 D0M8) F24 LVDS RX3M
FP9001 29 (BUS288 D0P6) E27 LVDS RX0P
FP9001 28 (BUS288 D0M6) E26 LVDS RX0M
FP9001 27 (BUS288 D0P9) E25 LVDS RX1P
FP9001 26 (BUS288 D0M9) E24 LVDS RX1M
CL9031
FP9001 12 (MOS HD) A23 GPIO198
CL9030
FP9001 13 (MOS VD) B23 GPIO199
FP9001 9 (MOS RESET) C23 GPIO200
RL9020
FP9001 14 (S MOS CS) B22 GPIO196
RL9019
FP9001 11 (S MOS SDO) C22 GPIO197
FP9001 15 (S MOS SCK) A22 GPIO195
FP9001 1 (MOS THERMO) W3 AD0 IN2
FP9001 50 (CLK72 MCLK) R27 FCK
P6501
(MEMORY CARD CONNECTOR)
D0 7 (SD DAT0) W27 GPIO290
D1 8 (SD DAT1) W26 GPIO291
D2 9 (SD DAT2) V27 GPIO292
D3 1 (SD DAT3) V26 GPIO293
CMD 2 (SD CMD) U26 GPIO289
CLK 5 (SD CLK) U27 GPIO288
C.DET 10 (SDCD) (SDCD SYS) F19 GPIO161
WP 12 (SDWP) G19 GPIO162
11
6
GPIO256 U25 (S LCD CS)
GPIO384 AG9 (CLK27 LCD)
GPIO385 AF9 (LCDHD)
GPIO386 AE9 (LCDVD)
GPIO387 AD9 ~ GPIO402 AE5 (LCDOUT0–15)
GPIO260 W25 (S LCD EVF SDO)
GPIO258 V24 (S LCD EVF SCK)
GPIO259 V23 (S LCD EVF SDI)
GPIO261 W24 (S EVF CS)
GPIO257 V25 (EVF RESET)
AD0 IN8 W6 (EVF THERMO)
USB VBUS AC18 (USB CAB IN)
GPIO102 C12 (CABLE DET)
IO DA AD1 (G SDTV OUT12)
GPIO320 AG14 (VIDEO MUTE)
USB DP AG16 (G USB+)
USB DM AF16 (G USB-)
GPIO44 H4 (CLK A MCLK) RL5004 14 MCLKO
GPIO45 G1 (CLK A DCLK) RL5005 17 BCLK
GPIO47 G3 (A DIN) RL5002 6 ADOUT
GPIO46 G2 (A DOUT) RL5001 3 DAIN
GPIO48 G4 (CLK A FCLK) RL5003 5 LRCLK
RSTB U7 (SYS RESET) 85 RESETOU T
RL9112
51 SDDETOUT
82 SDDETIN
CL9101
IC9101
(SYSTEM IC)
LINEOUTL 89 (G LINE OUT)
MUTEL 92
VOUT 61 (G SDTV OUT6)
CL9040
CL9041
CL9045
CL9046
CL9044
CL9047
CL9049
CL5006
≪HINGE FPC UNIT≫
≪LCD IF P.C.B.≫
(LCDOUT0–15)
(LCDVD)
(LCDHD)
(LCD CLK)
(LCD CS)
(LCD SDOUT)
(LCD SCK)
(D1.8V)
(D3.1V)
PW EVF1.8V
PW D3.1V
FP9003 9 / 24 / 3 / 4 / 5 / 28 / 26 / 27 / 25 / 7,8
FP4101 24 / 9 / 32 / 31 / 30 / 5 / 7 / 6 / 8 / 25-27
DR0-7/DG0-7
VSYNC
HSYNC
DCLK
CS
SDA
SCL
VDDIO
VDD
SP1
VINT1
DRV
Q4101
FP4102 22 / 7 / 26 / 25 / 23 / 2 / 4 / 3 / 5 / 43 / 33 / 34 / 32
LCD
CbCrin0-7/Yin0-7
FP9009 41 / 34 / 31 / 24
MCLK FP9009 53
XHD FP9009 52
XVD FP9009 51
SI FP9009 18
XSCK FP9009 19
SO FP9009 17
XCS FP9009 20
XCLR FP9009 50
VCAL FP9009 12
LVF
PW EVF10.0V
CL9042
VDD2 FP9009 3,59
VCCP I FP9009 2
VCCP O FP9009 60
PW A3.1V
C1
C2
VCC
IN
CHARGE PUMP
OUT
NVCC
VIN
LPF
12dB
150K
GND
VOUT
STBY
IC2001
(VIDEO DRIVER)
L2001
CL2002
CL2005
CL2006
CL2007
CL2001
CL2003
JK2001
(AV/USB TERMINAL)
VIDEO OUT 2
USB+ 5
USB- 7
USB CAB IN 8
CABLE DET 1
LINE OUT 3

DMC-FZ1000 VIDEO/AUDIO PROCESS(1) BLOCK DIAGRAM

IC6001
(VENUS ENGINE)

HDMI TX2P AG24 (G HDMI D2+)
HDMI TX2M AF24 (G HDMI D2-)
HDMI TX1P AG23 (G HDMI D1+)
HDMI TX1M AF23 (G HDMI D1-)
HDMI TX0P AG22 (G HDMI D0+)
HDMI TX0M AF22 (G HDMI D0-)
HDMI TXCP AG21 (G HDMI CK+)
HDMI TXCM AF21 (G HDMI CK-)
HDMI CEC AA23 (HDMI CEC)
HDMI SDA AB24 (G HDMI SDA)
GPIO98 C11 (READ SCL)
HDMI SCL AB23 (G HDMI SCL)
HDMI HPD AC24 (HDMI HPD)
GPIO25 K2 (S NFC IRQ)
GPIO22 L3 (S NFC SDIO)
GPIO23 L4
GPIO21 L2 (S NFC SCLK)
GPIO64 A9 (WiFi CLK)
GPIO65 B9 (WiFi CMD)
GPIO69 D10 (WiFi DAT3)
GPIO66 A10 (WiFi DAT0)
GPIO67 B10 (WiFi DAT1)
GPIO68 C10 (WiFi DAT2)
GPIO106 C13 (WiFi RESET)
AD0 IN5 V2 (NO GUN DET)
GPIO324 AE14 (GUN MIC ON H)
GPIO105 B13 (EXT MIC ON H)
GPIO323 AF14 (EXT MIC DET)

FL2001
FL2002

JK2002
(HDMI TERMINAL)

3	D2+
5	D2−
6	D1+
8	D1−
9	D0+
11	D0−
12	CK+
14	CK−
15	CEC
17	SCL
18	SDA
1	HPDTCT

Q2002
PW A3.1V
PW D3.1V
Q2001
PW HDMI5.0V
QR2009

IC6301
(DUAL INTERFACE RFID)
(S NFC IRQ) 14 IRQ3V
(S NFC SDIO) 12 TX3V
RL6303
(S NFC SCK) 11 RX
VA 7
VB 2
CL6302
CL6301
FP6302 1,2
FP6302 3,4
≪ NFC ANTENNA FPC ≫
NFC ANTENNA

≪ FLASH P.C.B. UNIT ≫
(W-LAN MODULE)

PS9001 7	PP8001 7	RL6413	(G WiFi CLK)
PS9001 8	PP8001 8	RL6414	(WiFi CMD)
PS9001 9	PP8001 9	RL6415	(WiFi DA3)
PS9001 6	PP8001 6	RL6412	(WiFi DA0)
PS9001 5	PP8001 5	RL6411	(WiFi DA1)
PS9001 10	PP8001 10	RL6416	(WiFi DA2)
PS9001 1	PP8001 1		(WiFi RESET)

12 SDIO CLK
13 SDIO CMD
14 SDIO D3
11 SDIO D0
10 SDIO D1
15 SDIO D2
29 RESET N
2.4G ANT 31
RL6400
Wi-Fi ANTENNA

IC5304
(REGULATOR)
1 CNT VDD 4 PW HDMI5.0V
2 GND VOUT 3
CL5303
Q5301
RL5401

IC5403
(SINGLE COMPARATOR)
RL5402

IC9101
(SYSTEM IC)
MICINL 96 (G MIC LIN)
MICINR 99 (G MIC RIN)
CL5001
CL5007

IC5101
(BUS SWITCH)
1 D+(L) S 10
2 D-(R) VCC 9 PW EXMIC A3.1V
3 GND OE 8
4 ID-(R) 2D+(L) 7
5 ID+(L) 2D-(R) 6

IC5102
(BUS SWITCH)
CL5118
CL5119
1 D+(L) S 10
2 D-(R) VCC 9 PW EXMIC A3.1V
3 GND OE 8
4 ID-(R) 2D+(L) 7
5 ID+(L) 2D-(R) 6

≪ JOINT FPC UNIT ≫

(PW EX MIC)	FP9004 12	FP9301 1 (PW EXT MIC 3.8V)
(G EX-GUN IN)	FP9004 17	FP9301 6 (EX MIC GUN IN)
(G EX-MIC C)	FP9004 14	FP9301 3 (EX MIC CINA)
(G EX-MIC L)	FP9004 16	FP9301 5 (EX MIC LINA)
(G EX-MIC R)	FP9004 15	FP9301 4 (EX MIC RINA)
(EXT MIC DET)	FP9004 13	FP9301 2 (EX MIC DET)

≪ MIC JACK P.C.B. ≫
Q9301
RL9301
RL9302
RL9305
RL9303
RL9304
JK9301
(EXT MIC)
1 6 2 5 4 3

RL5405
RL5403
RL5404

MREG 100 (PW MREG)
CL5111 CL9051 (G INT MIC LIN)
CL5117 CL9057 (G INT MIC RIN)
CL9050

≪MULTI FPC UNIT ≫

FP9006 4	(MIC L IN)	FP9401 4
FP9006 5	(MIC L GND)	FP9401 3
FP9006 6	(MIC R IN)	FP9401 2
FP9006 7	(MIC R GND)	FP9401 1

≪ ECM FPC ≫
RL5104
RL5103
RL5102
RL5101
ECM(L)
ECM(R)

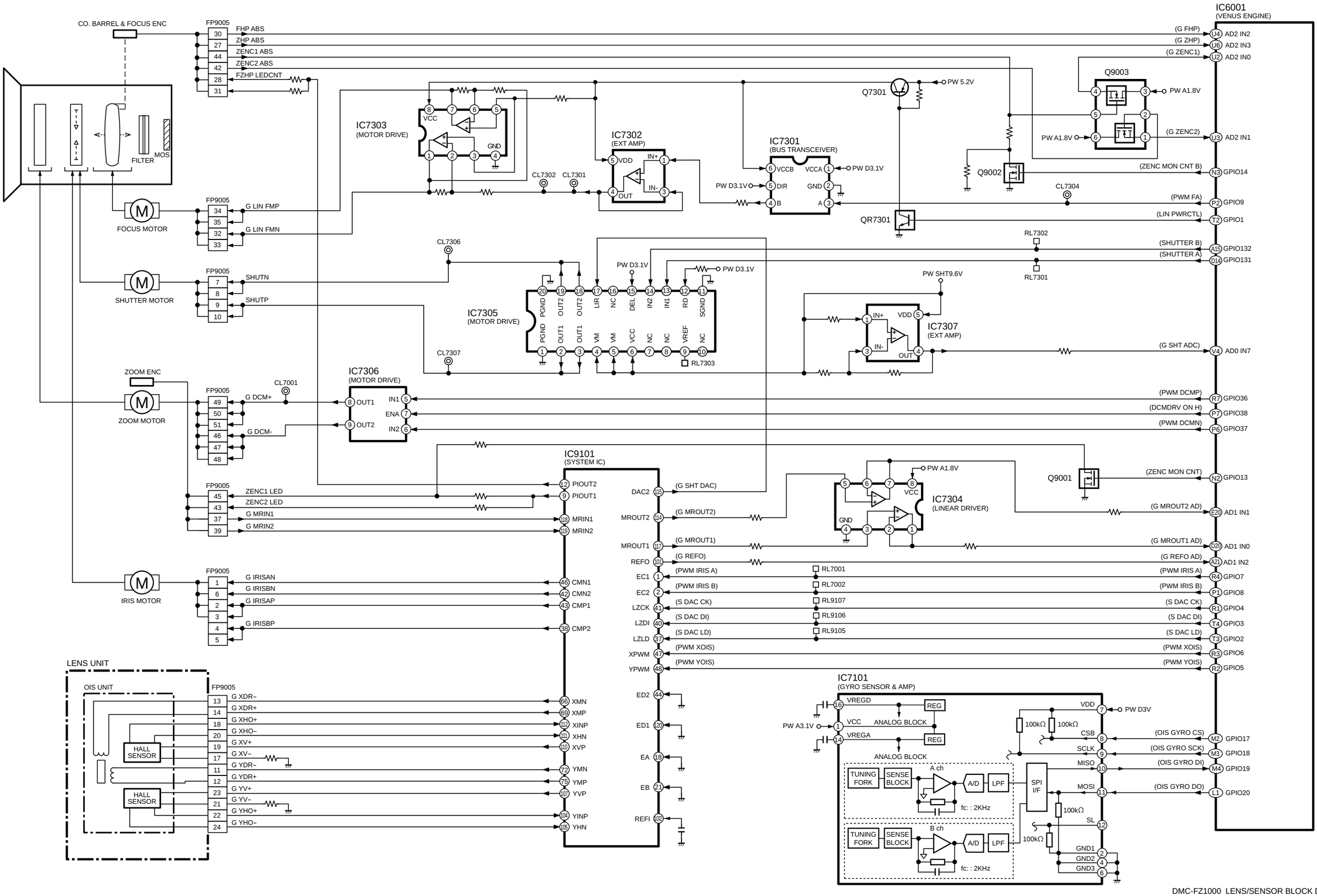
≪ HINGE FPC UNIT ≫
≪ HINGE SW FPC ≫
≪EYE SENSOR FPC≫

SPPOS 76 (G SP POS)
SPNEG 79 (G SP NEG)
CL5002
CL5003

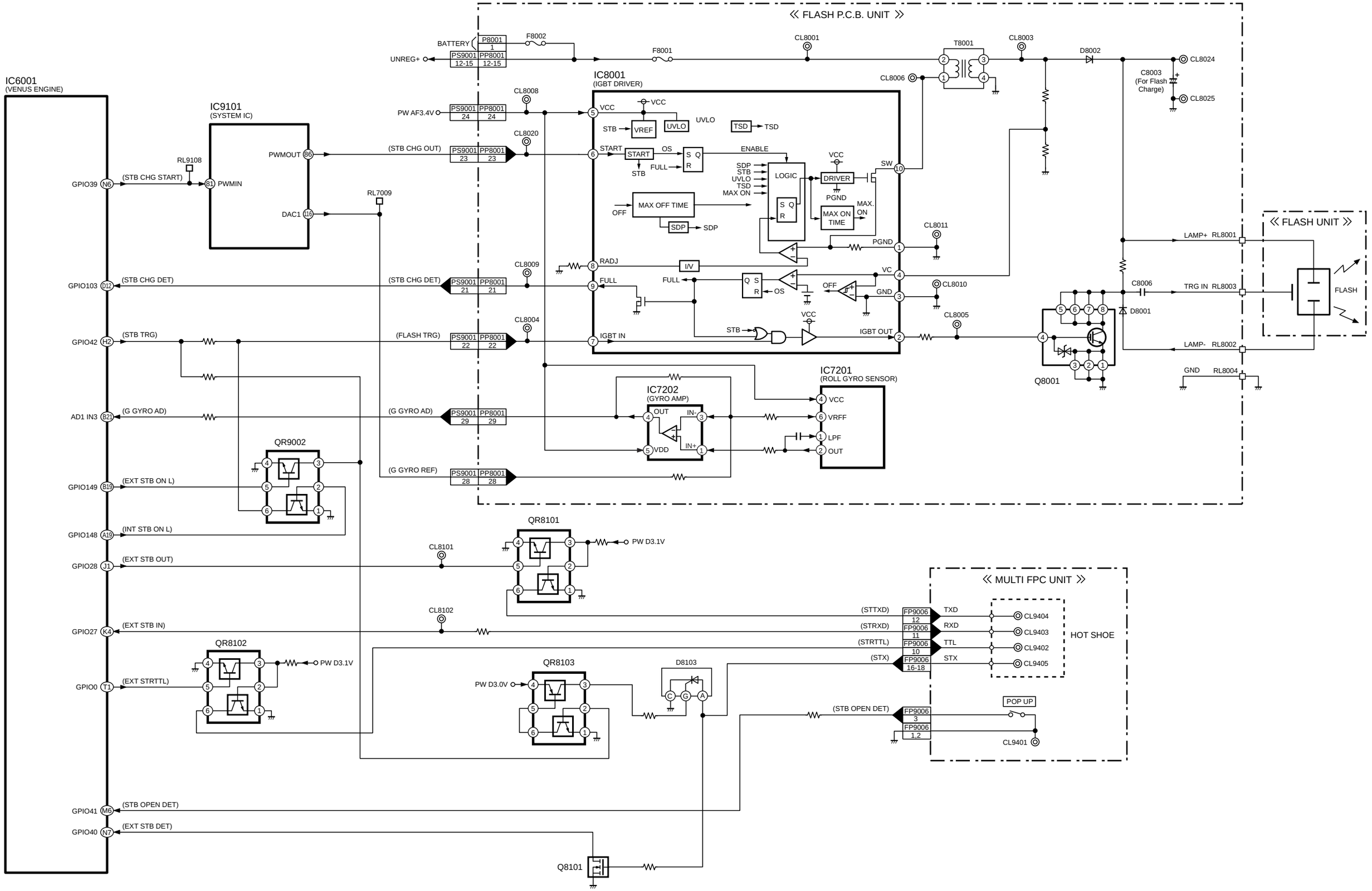
FP9003 35,36	FP9501 9	SP+	RL9503	RL9703
FP9003 37,38	FP9501 8	SP-	RL9504	RL9704

RL9701
RL9702
SPEAKER

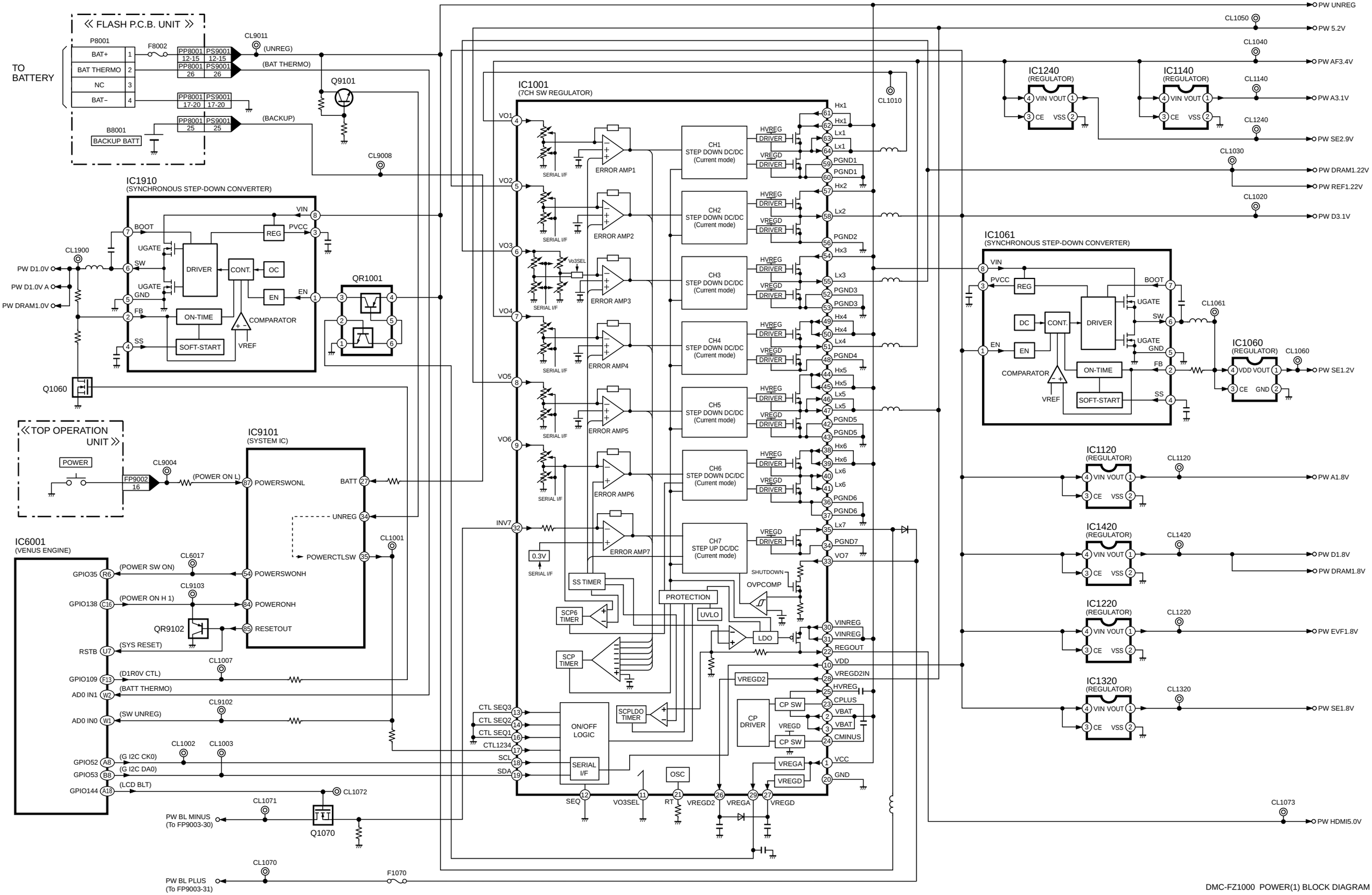
DMC-FZ1000 VIDEO/AUDIO PROCESS(2) BLOCK DIAGRAM



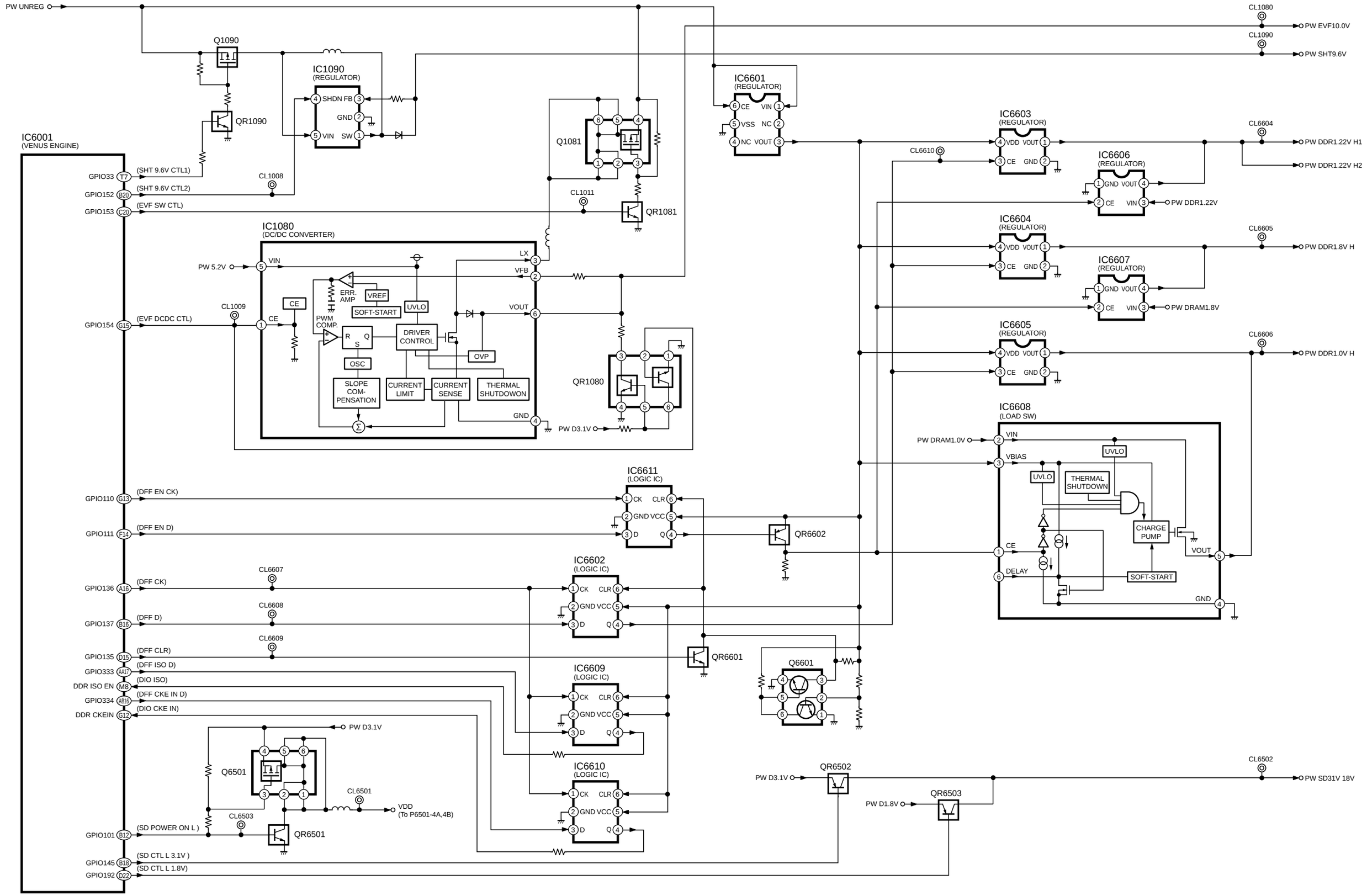
DMC-FZ1000 LENS/SENSOR BLOCK DIAGRAM



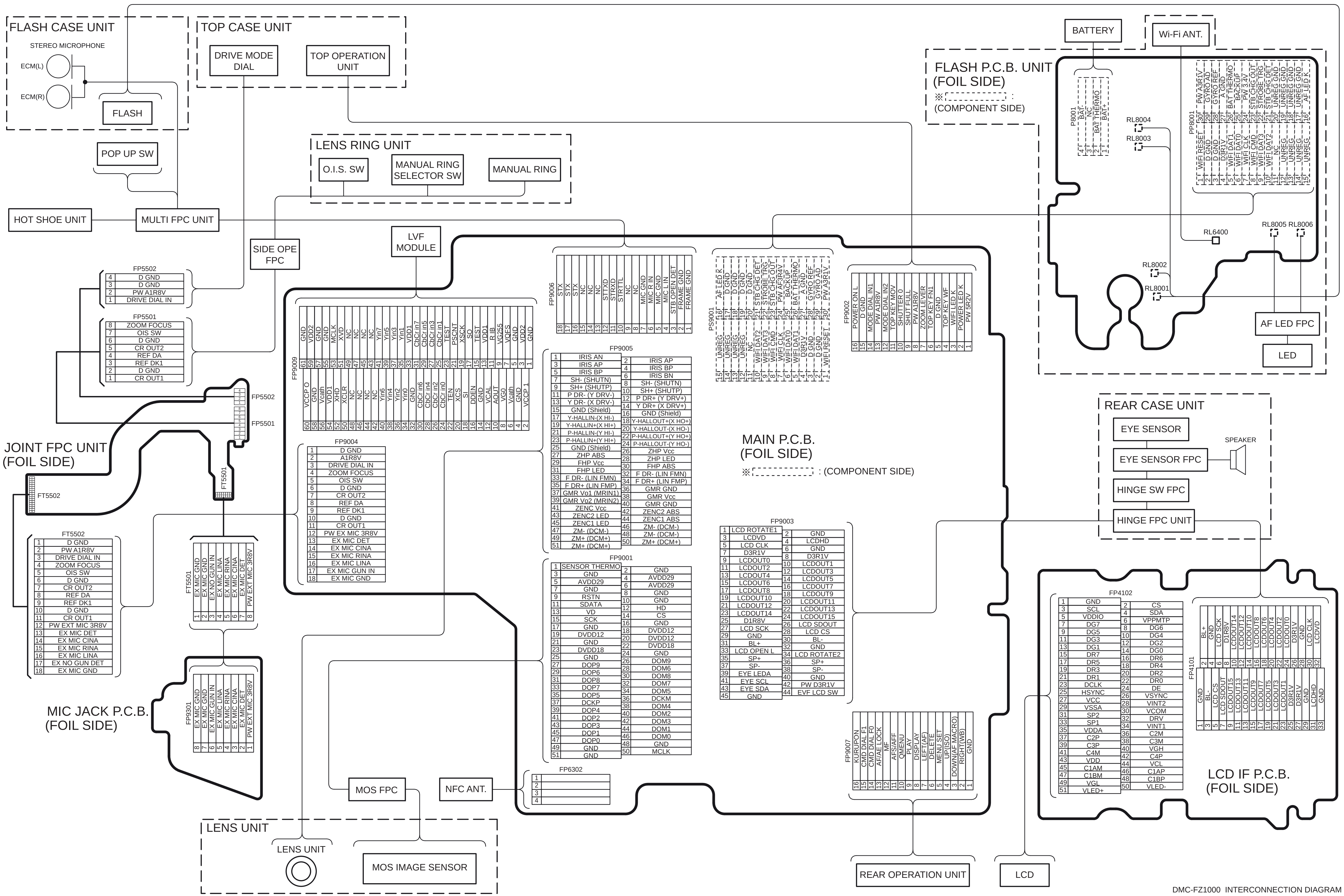
DMC-FZ1000 FLASH/HOT SHOE BLOCK DIAGRAM



DMC-FZ1000 POWER(1) BLOCK DIAGRAM



DMC-FZ1000 POWER(2) BLOCK DIAGRAM



DMC-FZ1000 INTERCONNECTION DIAGRAM

Model No. : DMC-FZ1000 Schematic Diagram Note

IMPORTANT SAFETY NOTICE:

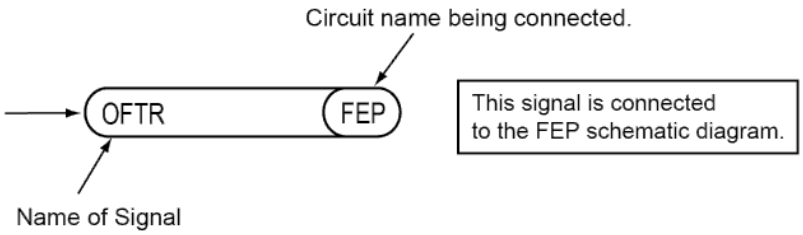
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

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-FZ1000 Parts List Note

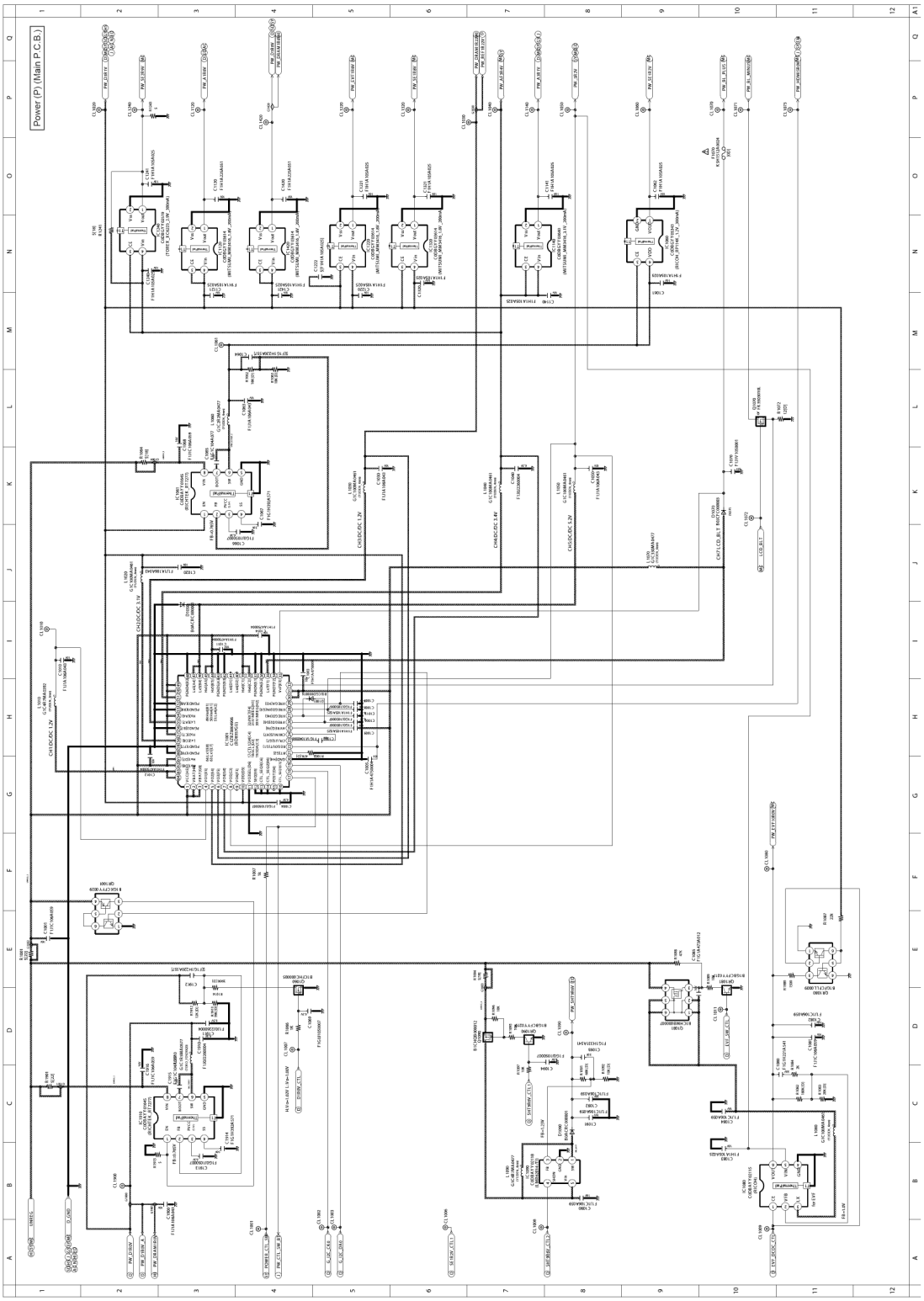
Note:
1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠have the special characteristics for safety.
   When replacing any of these components, use only the same type.
3. Unless otherwise specified,
   All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

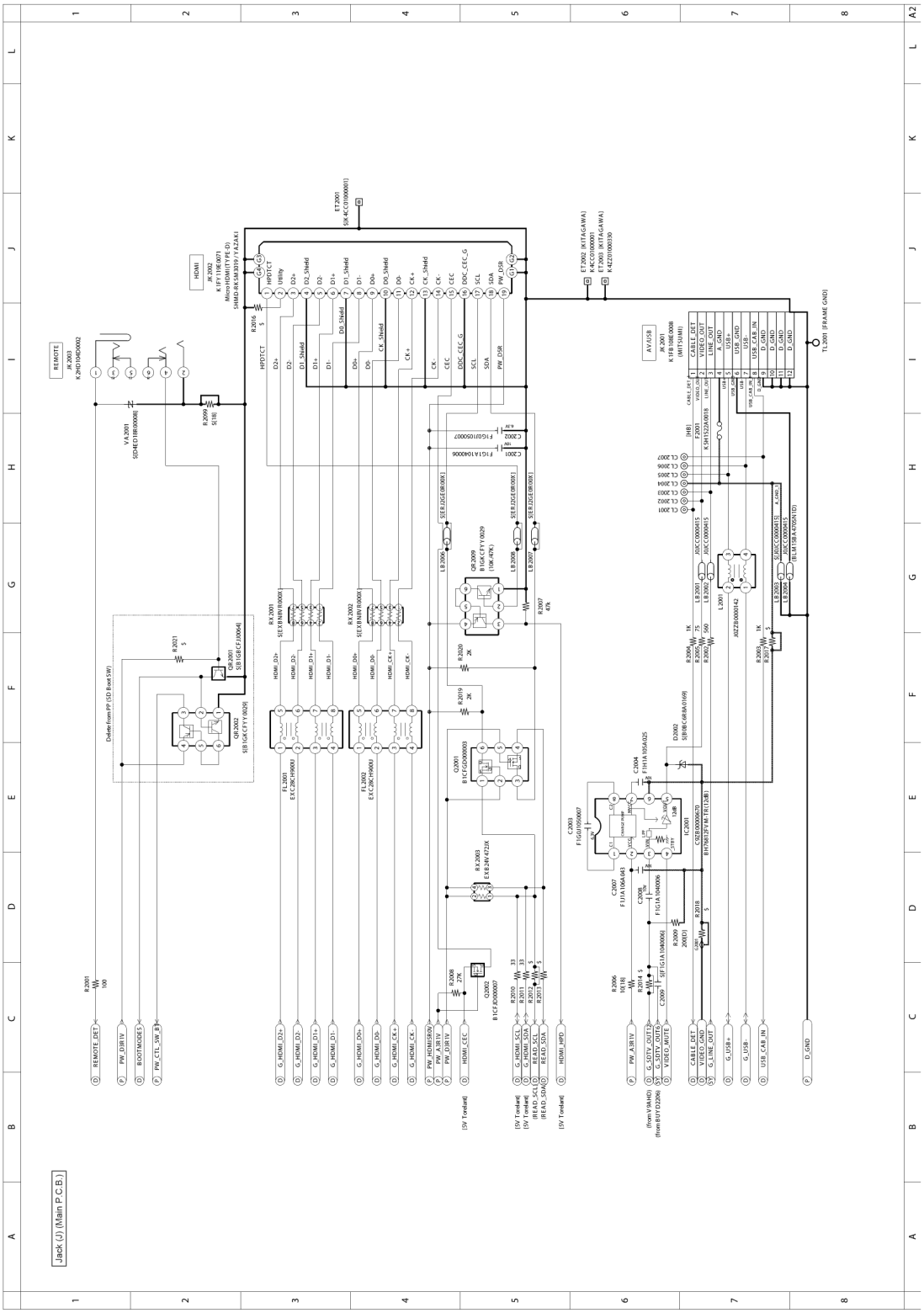
Definition of Parts supplier:

1. **Parts marked with [PAVCX] in the remarks column are supplied from PAVCX. Others are supplied from AVC-CSC-SPC.**

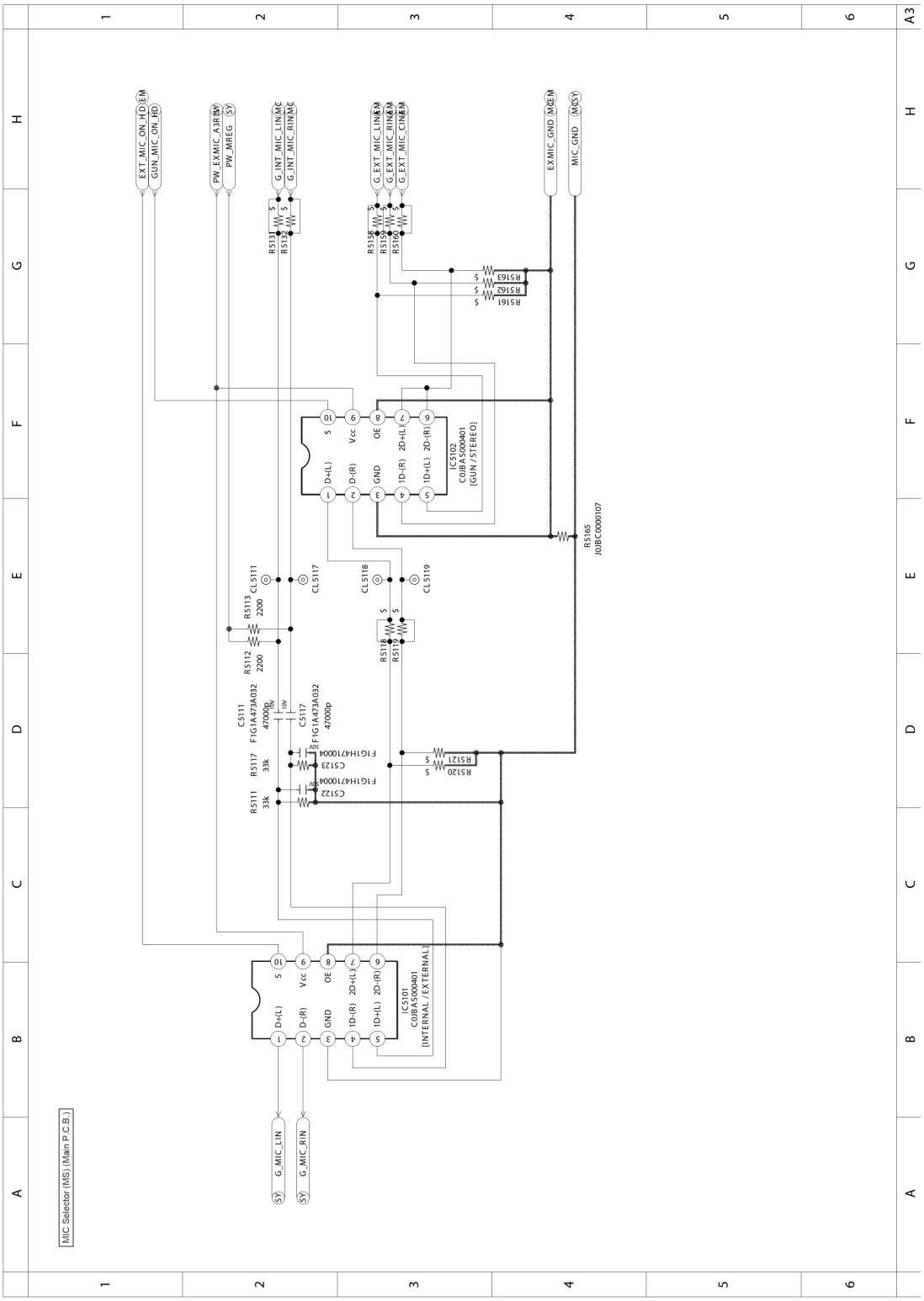
Model No. : DMC-FZ1000 Power (P) (Main P.C.B.)



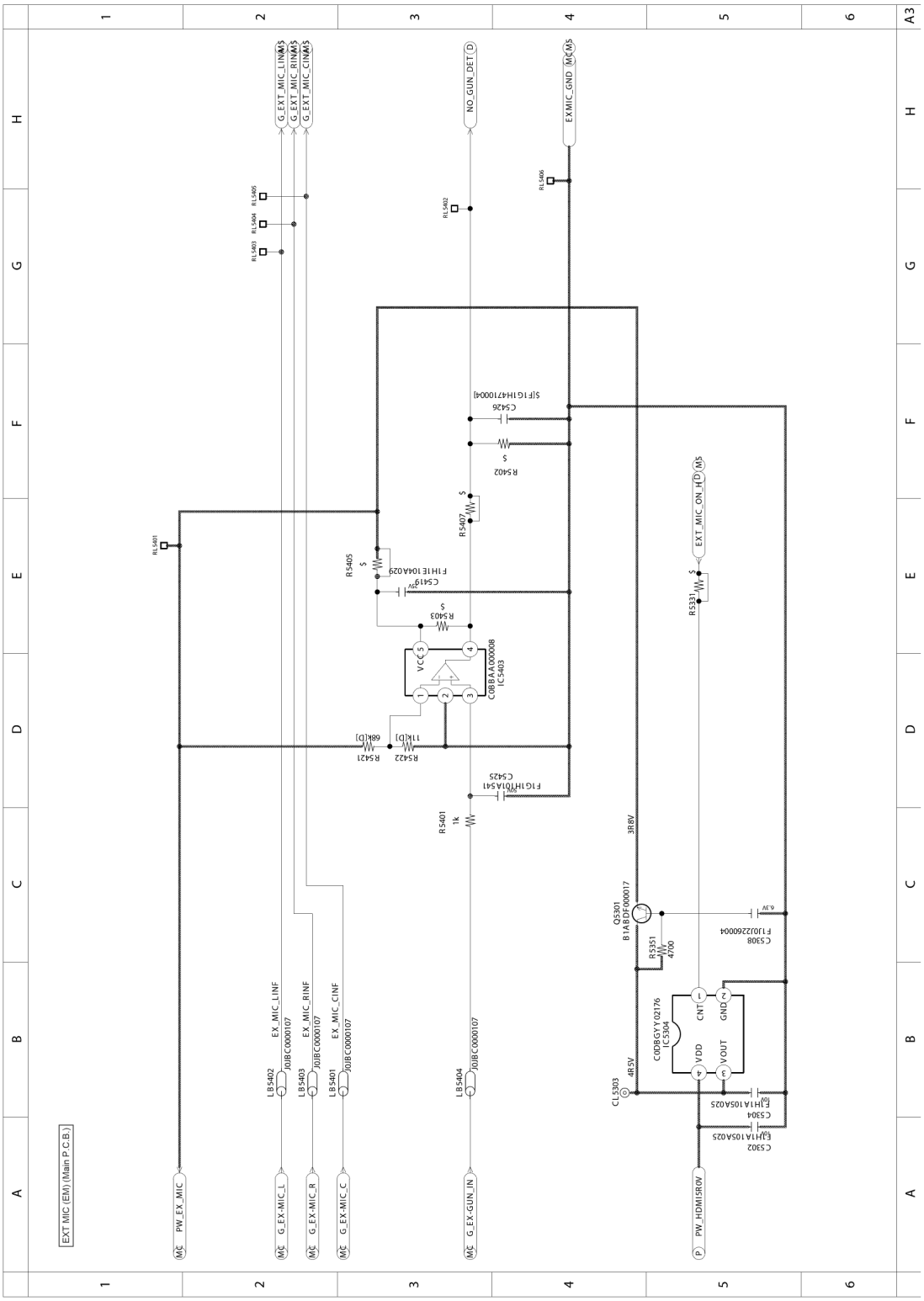
Model No. : DMC-FZ1000 Jack (J) (Main P.C.B.)



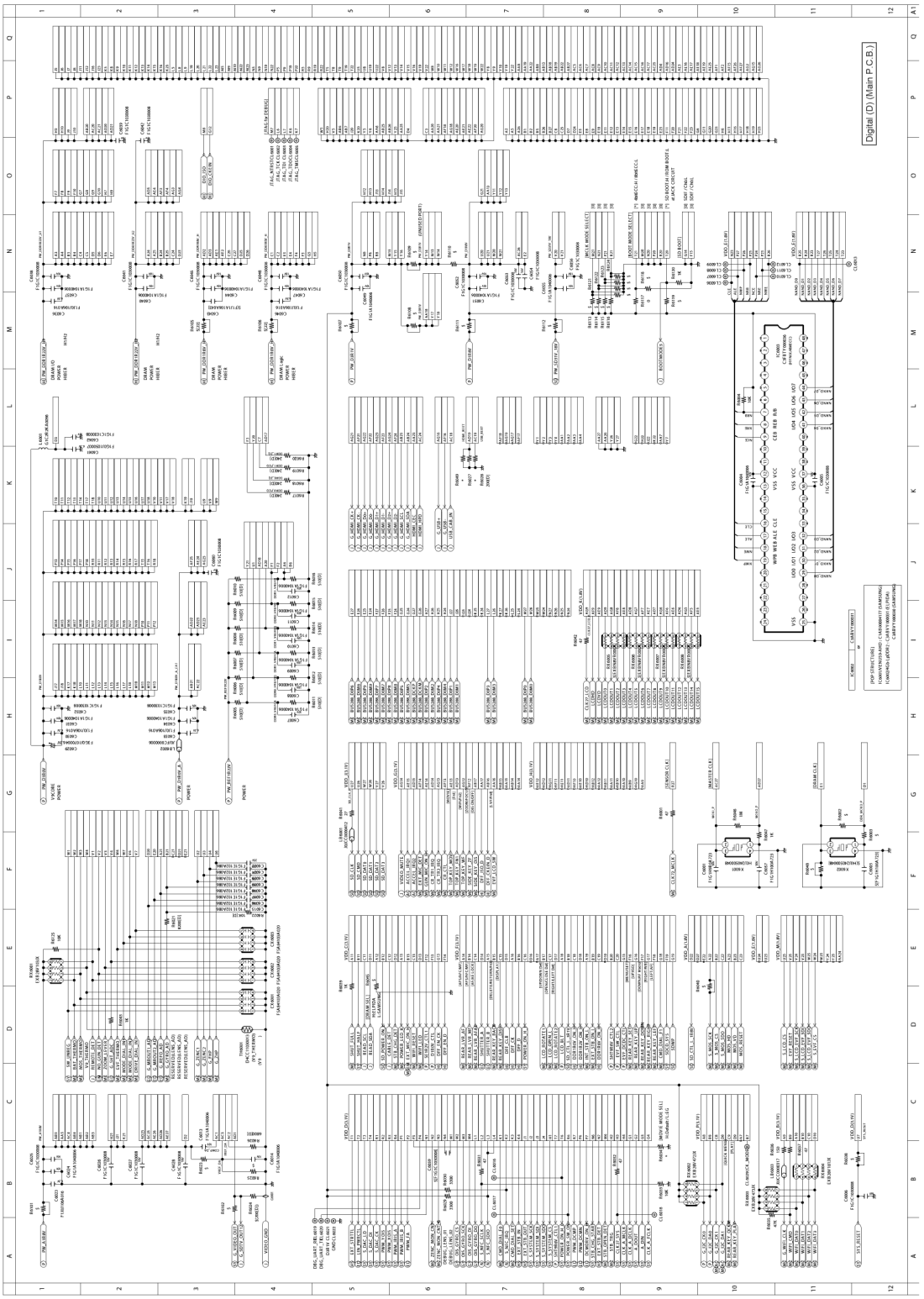
Model No. : DMC-FZ1000 MIC Selector (MS) (Main P.C.B.)



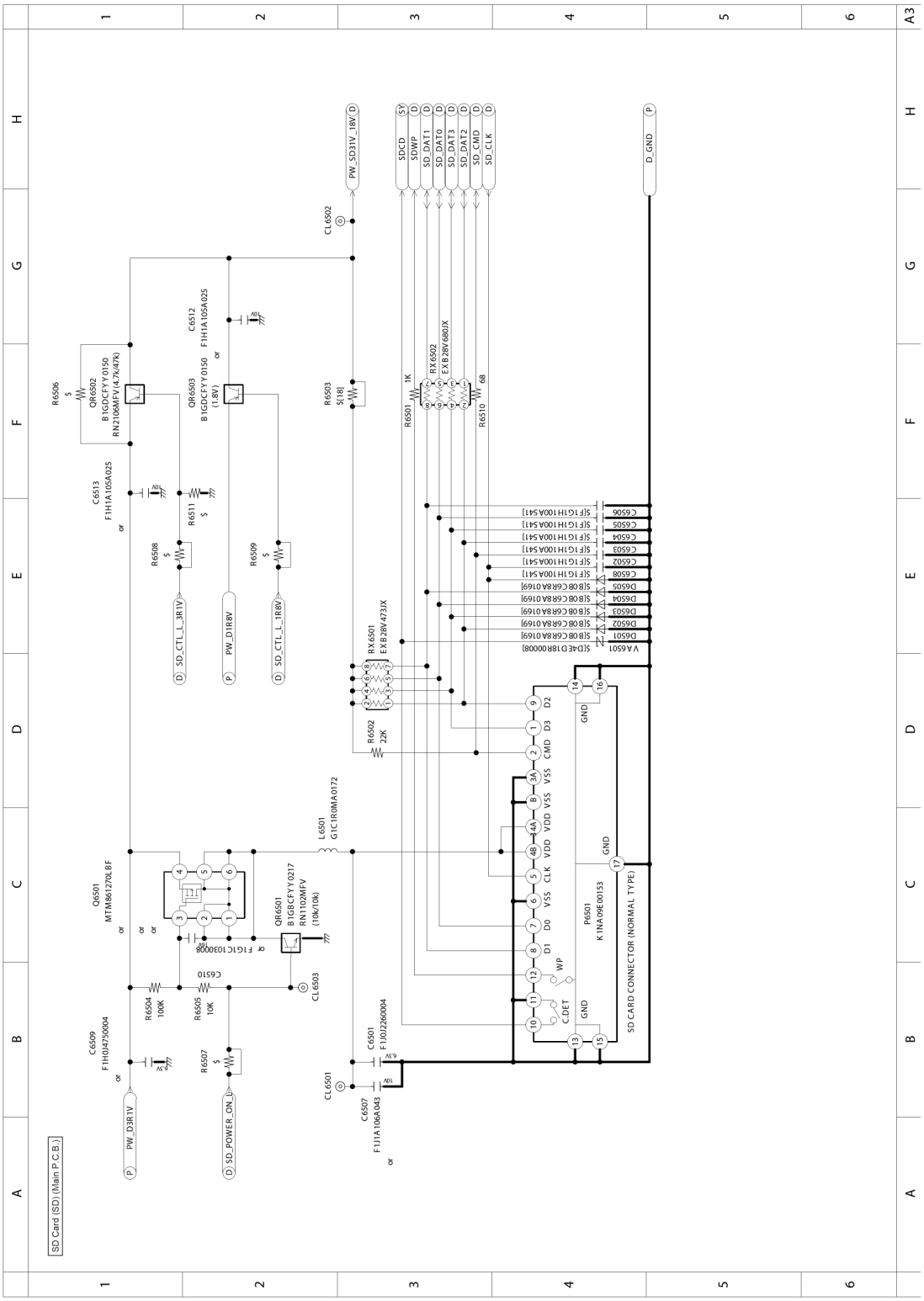
Model No. : DMC-FZ1000 EXT MIC (EM) (Main P.C.B.)



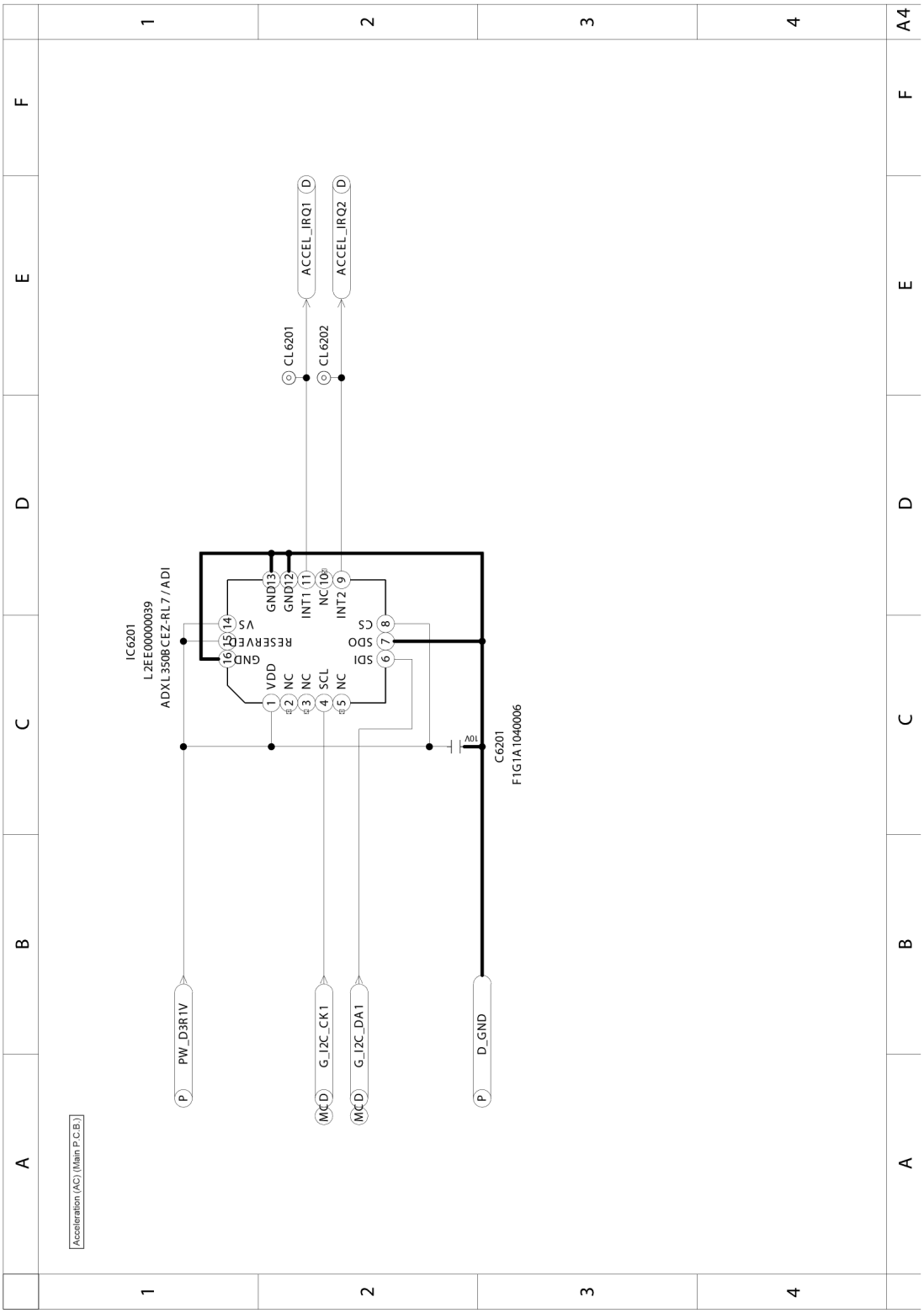
Model No. : DMC-FZ1000 Digital (D) (Main P.C.B.)



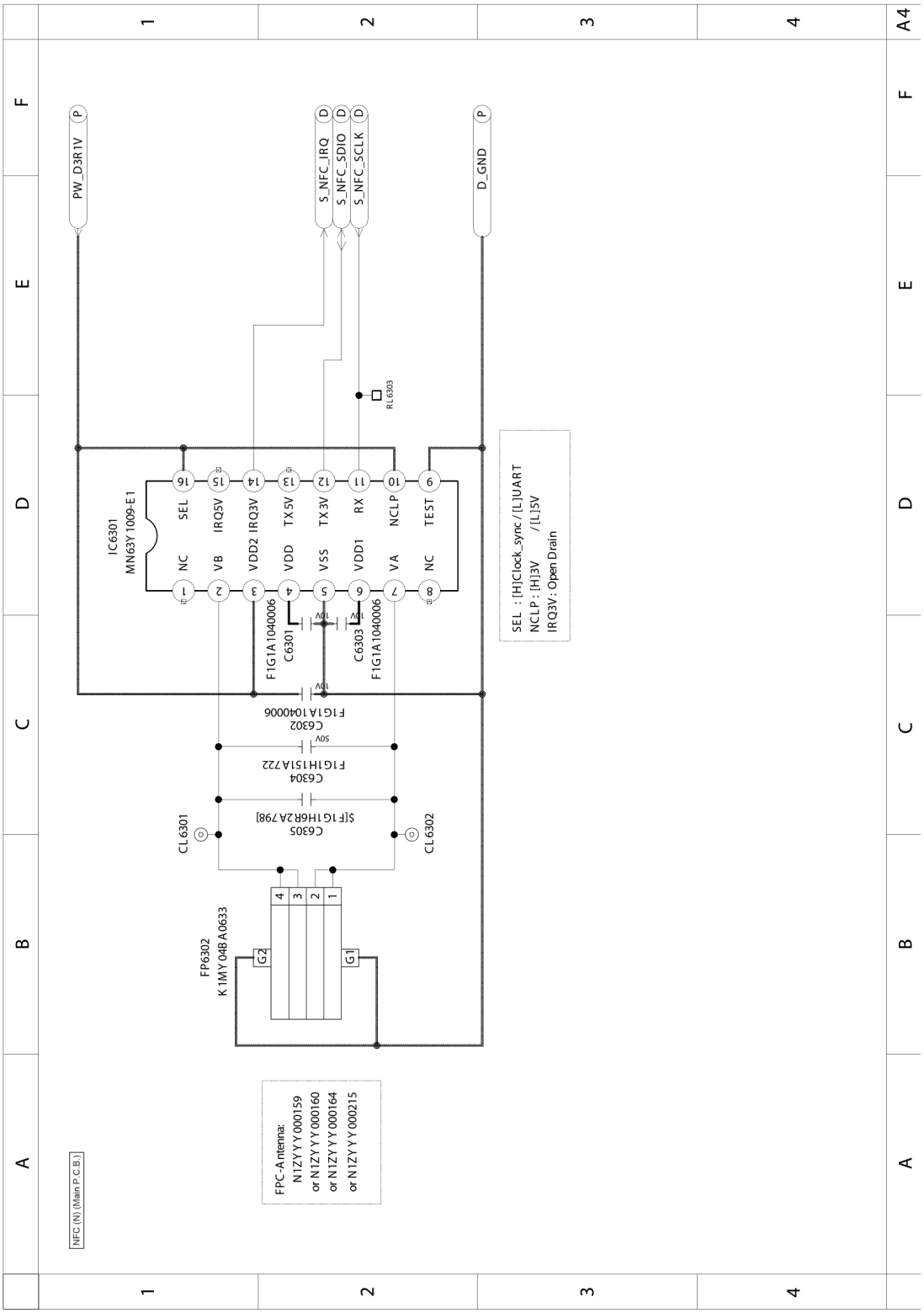
Model No. : DMC-FZ1000 SD Card (SD) (Main P.C.B.)



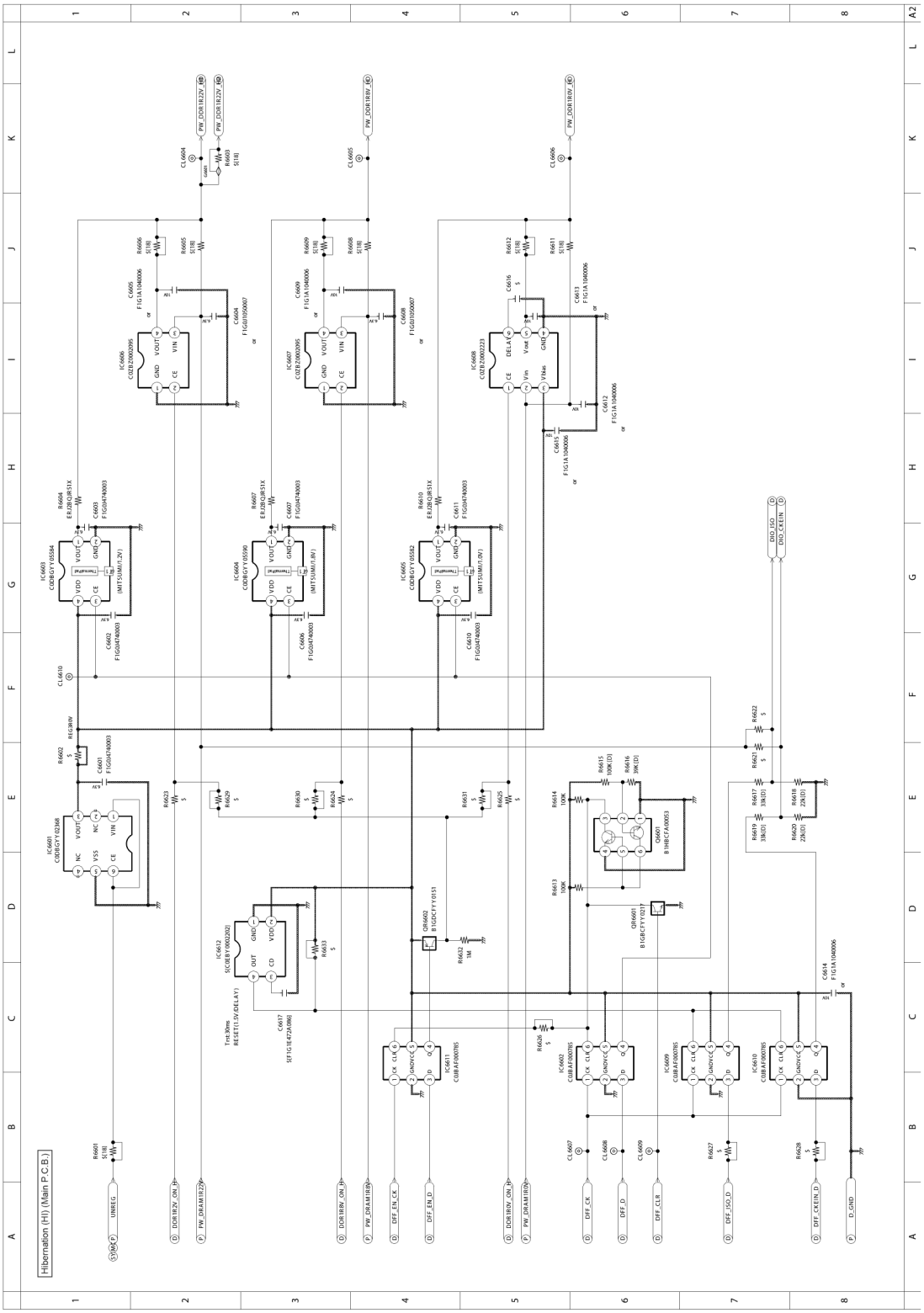
Model No. : DMC-FZ1000 Acceleration (AC) (Main P.C.B.)



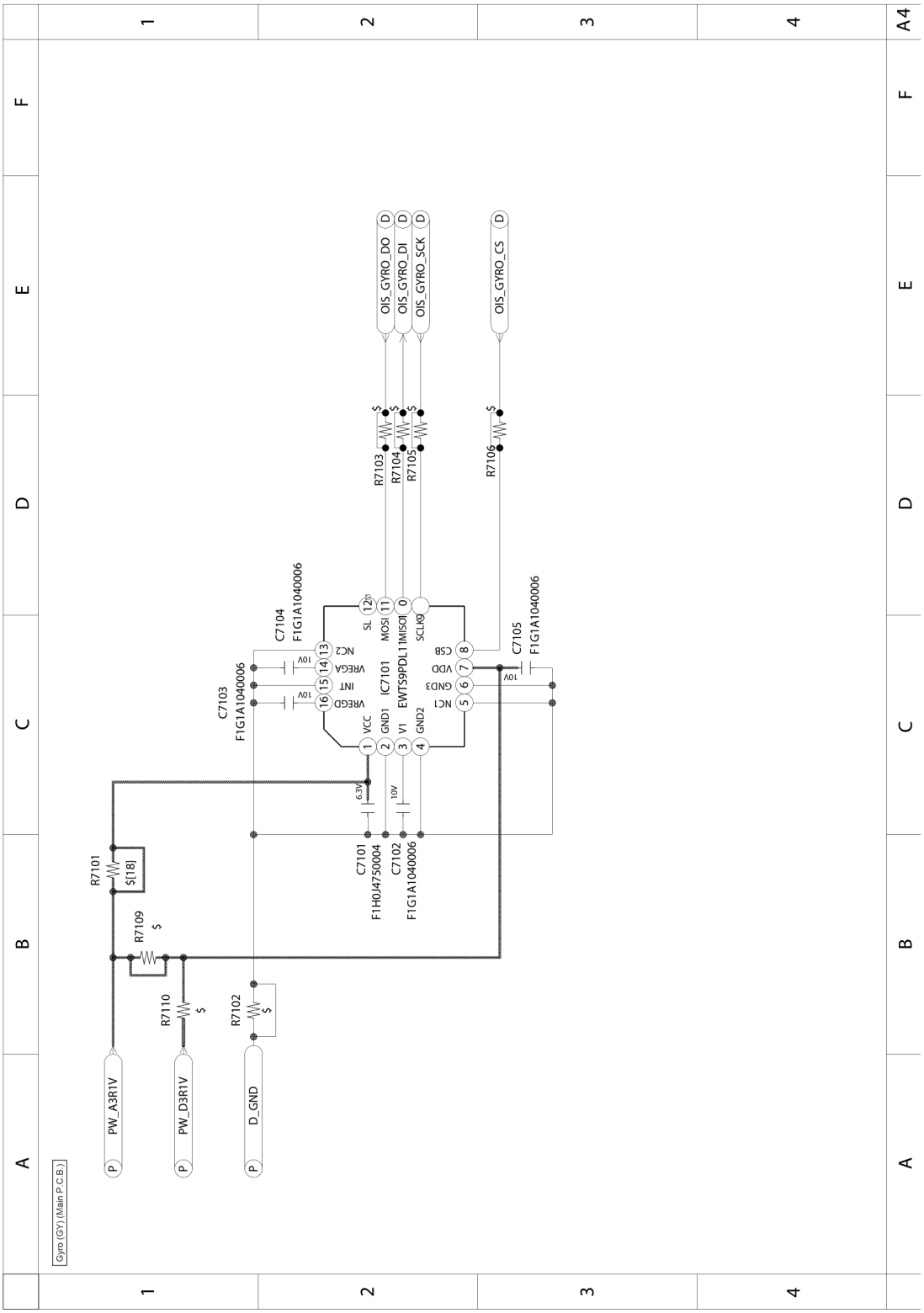
Model No. : DMC-FZ1000 NFC (N) (Main P.C.B.)



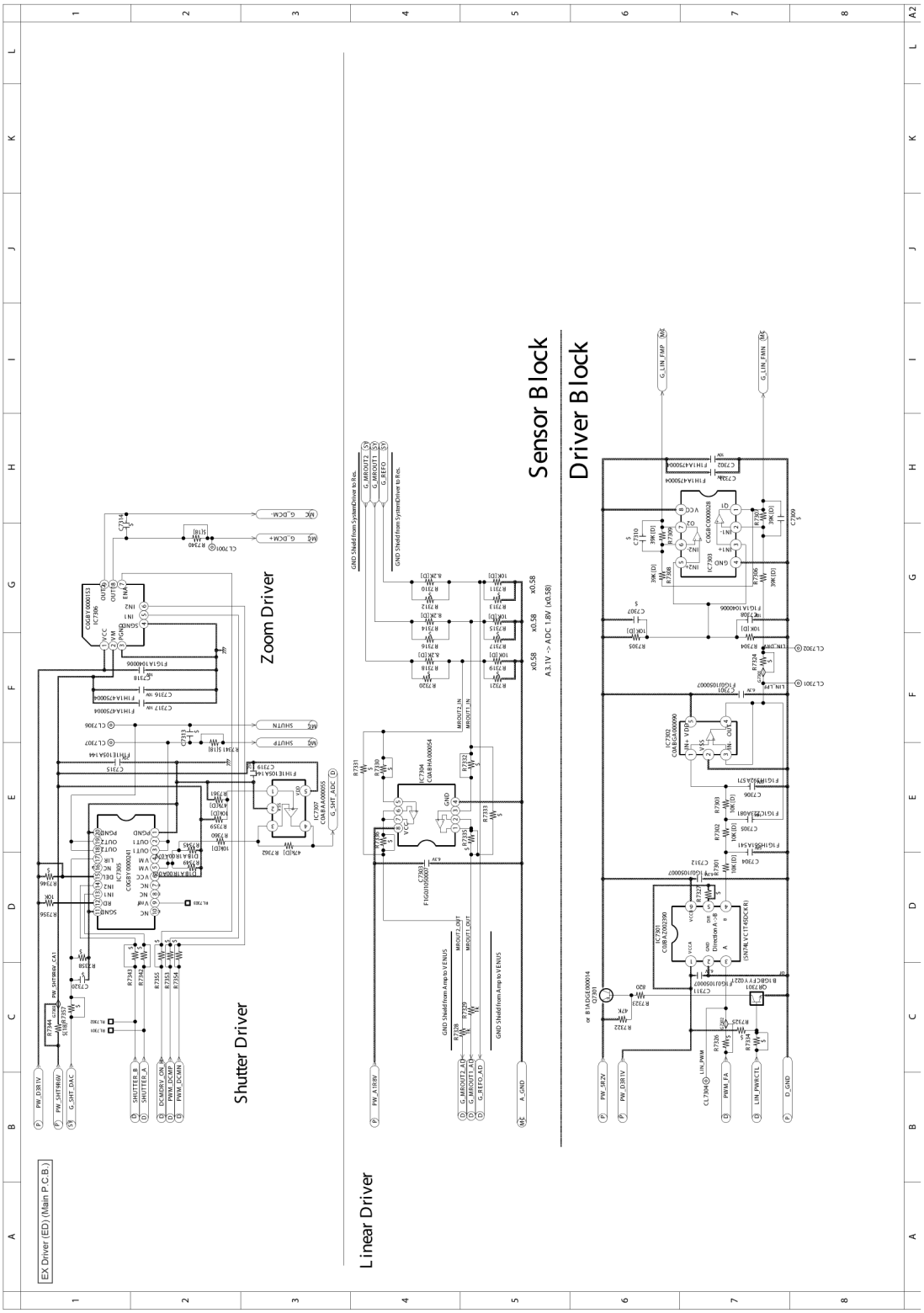
Model No. : DMC-FZ1000 Hibernation (HI) (Main P.C.B.)



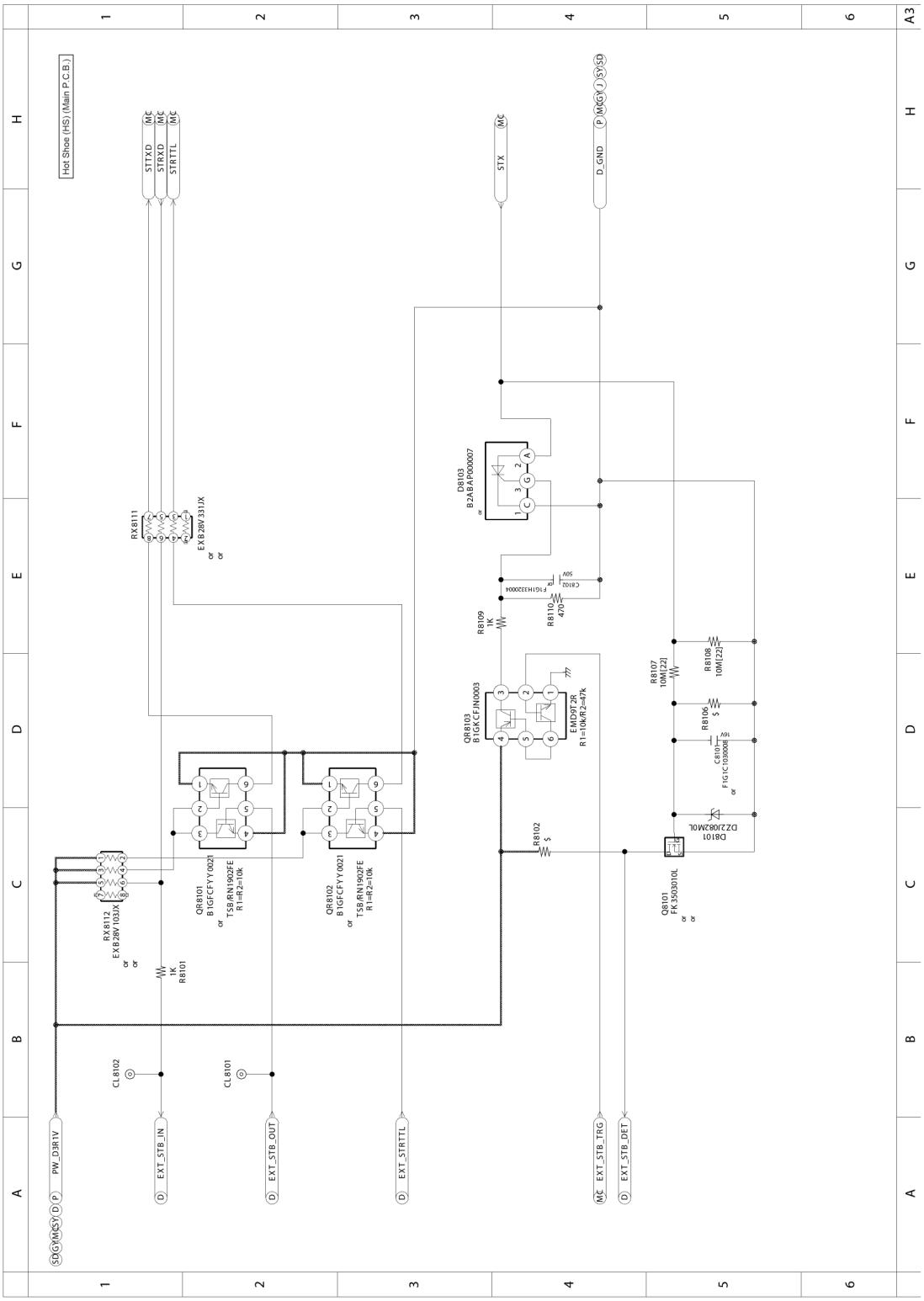
Model No. : DMC-FZ1000 Gyro (GY) (Main P.C.B.)



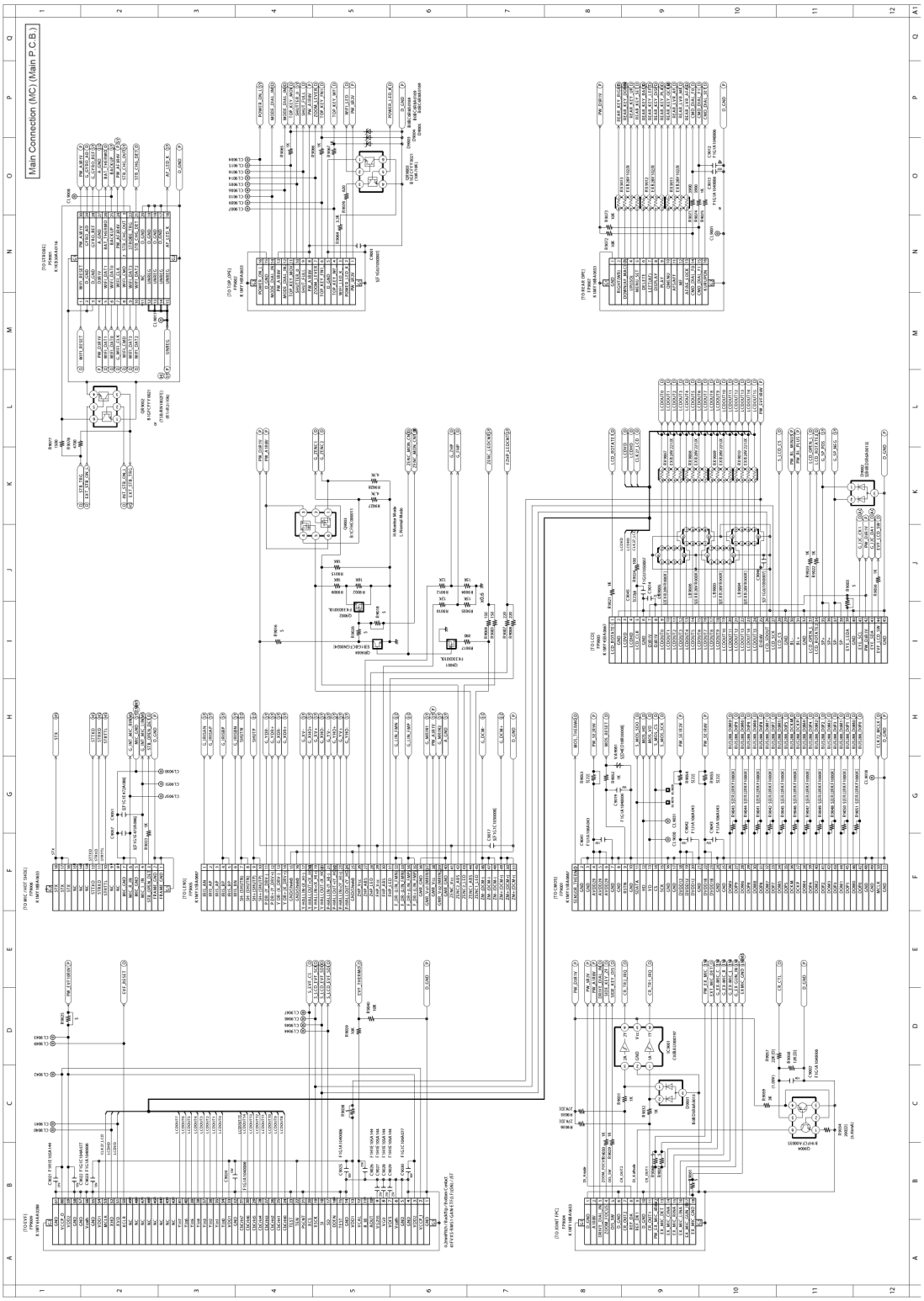
Model No. : DMC-FZ1000 EX Driver (ED) (Main P.C.B.)



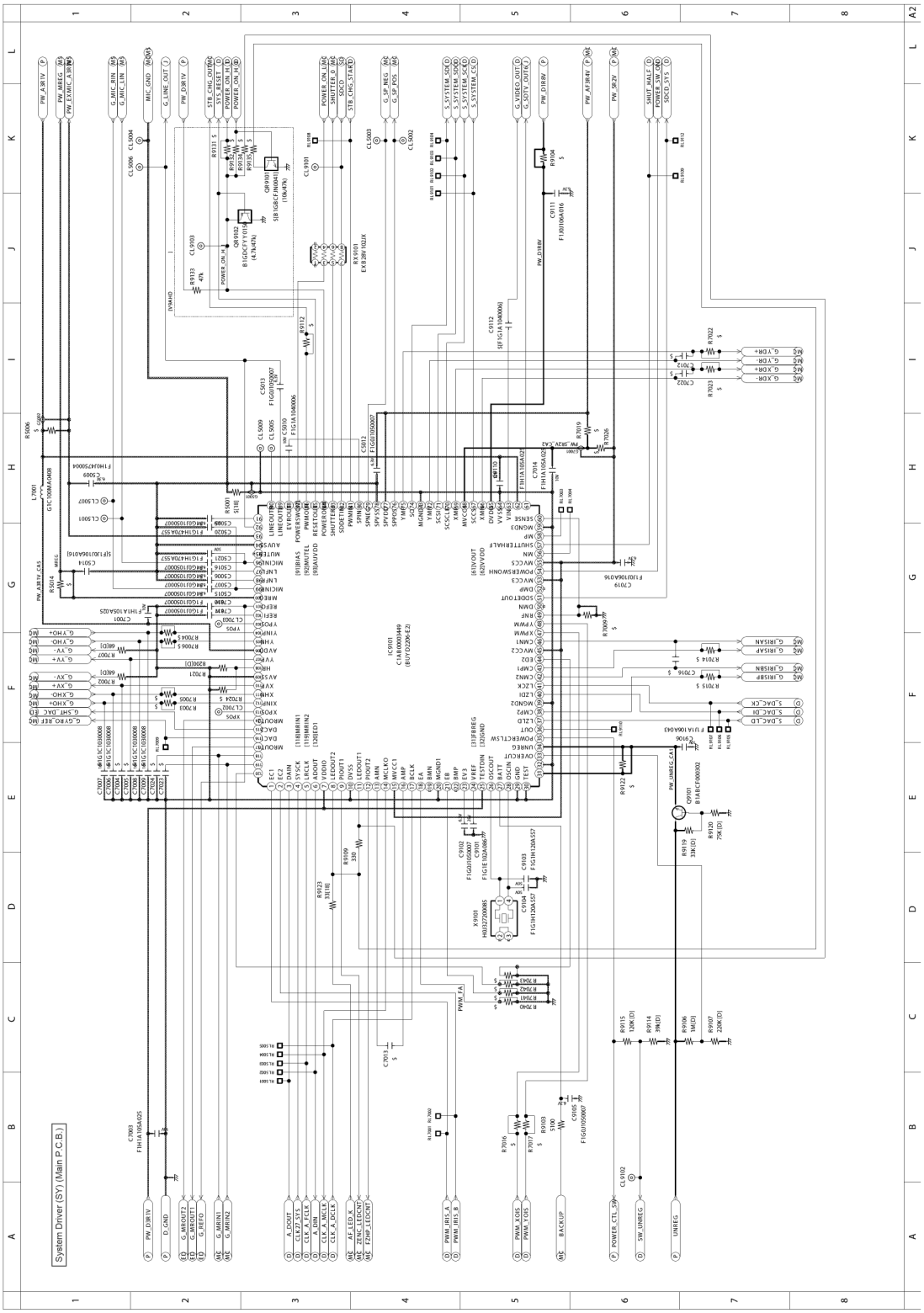
Model No. : DMC-FZ1000 Hot Shoe (HS) (Main P.C.B.)



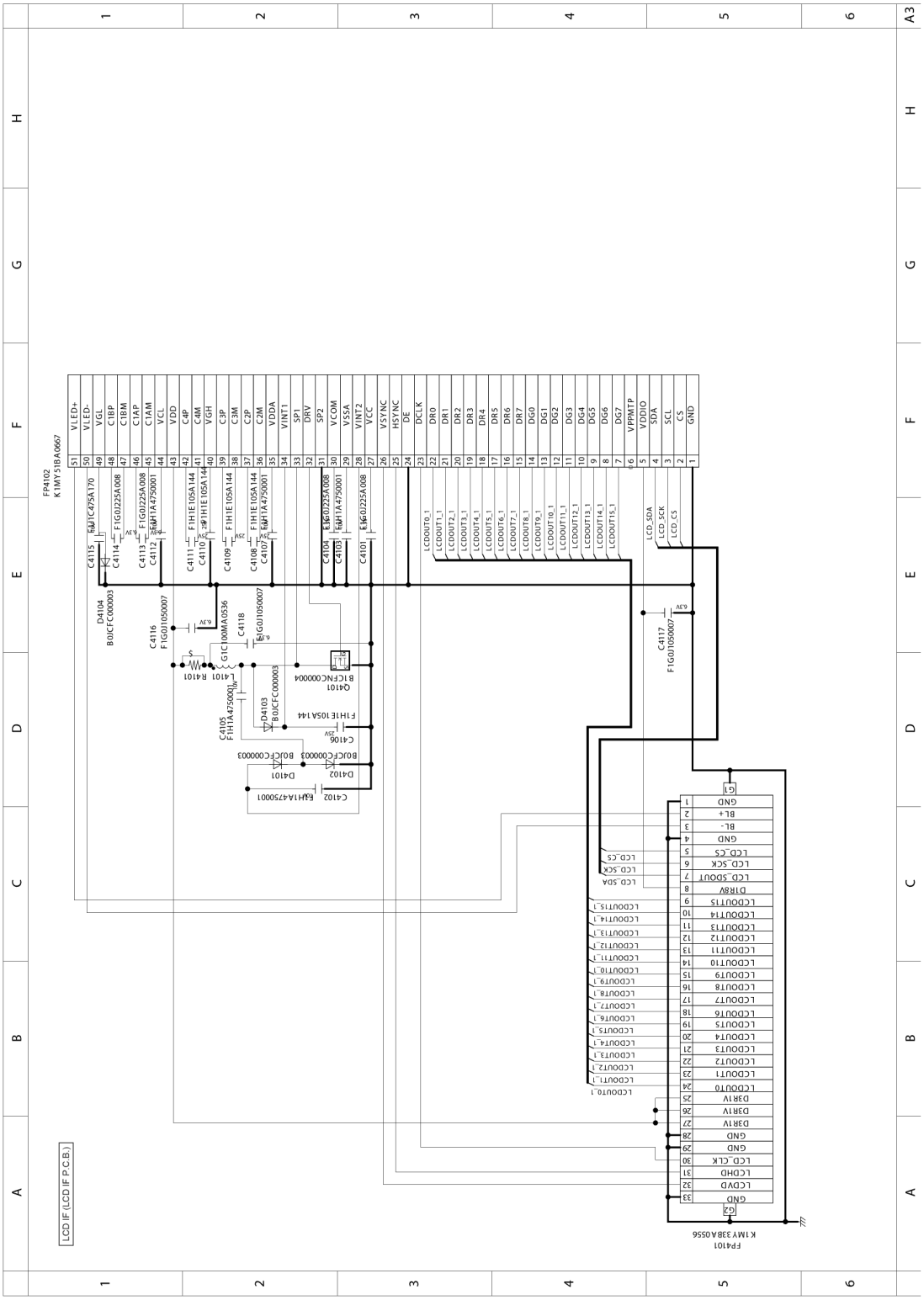
Model No. : DMC-FZ1000 Main Connection (MC) (Main P.C.B.)



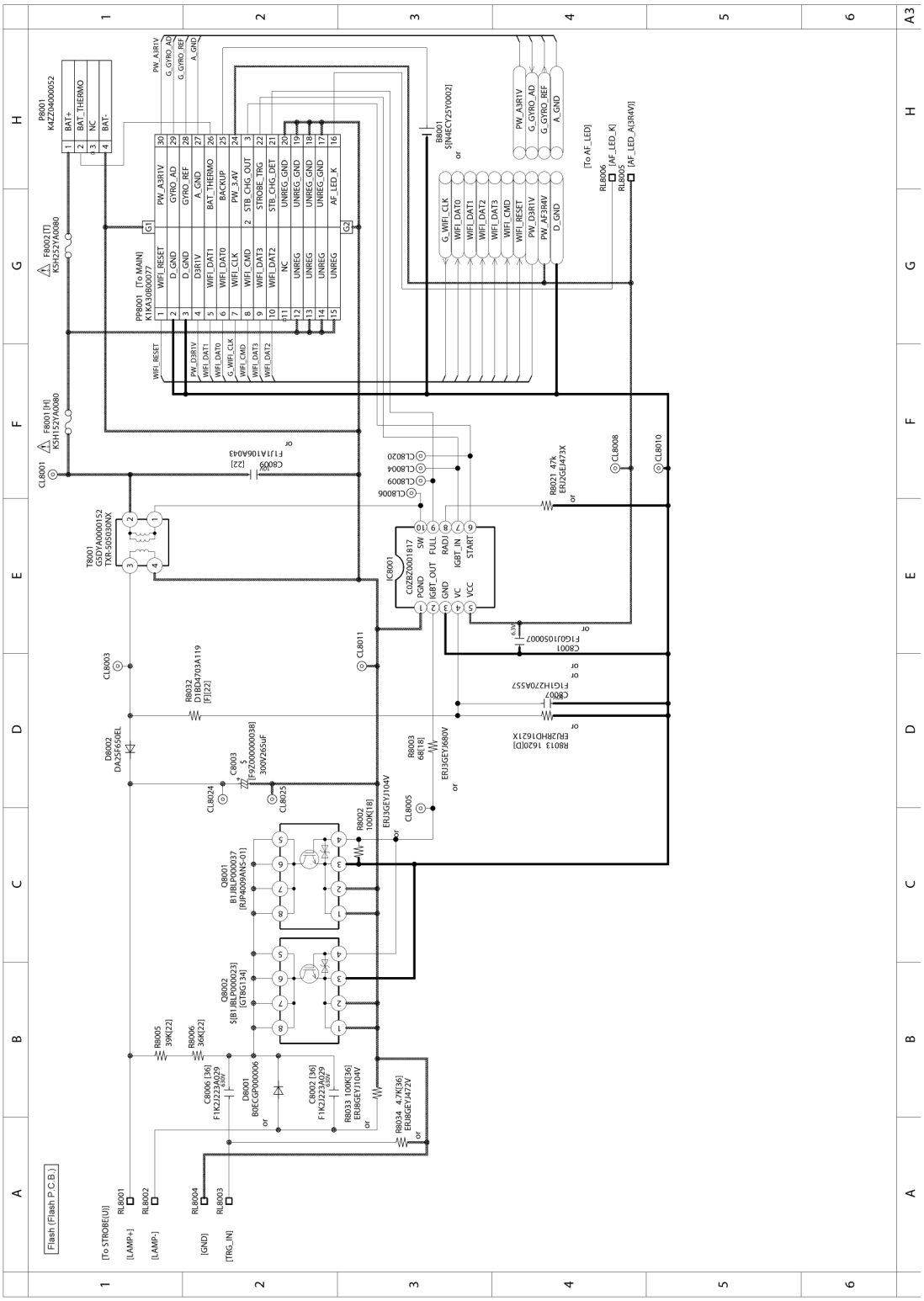
Model No. : DMC-FZ1000 System Driver (SY) (Main P.C.B.)



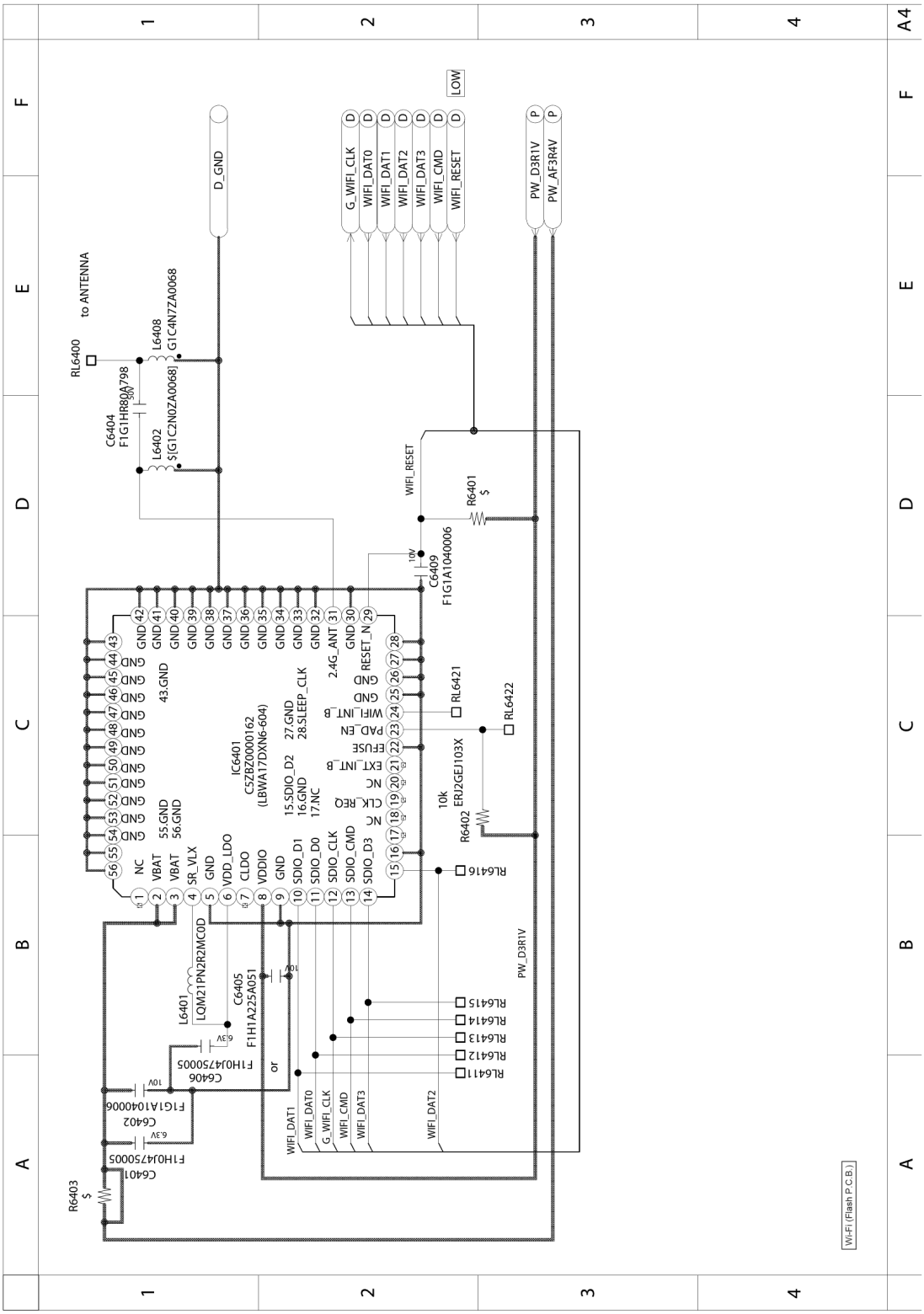
Model No. : DMC-FZ1000 LCD IF (LCD IF P.C.B.)



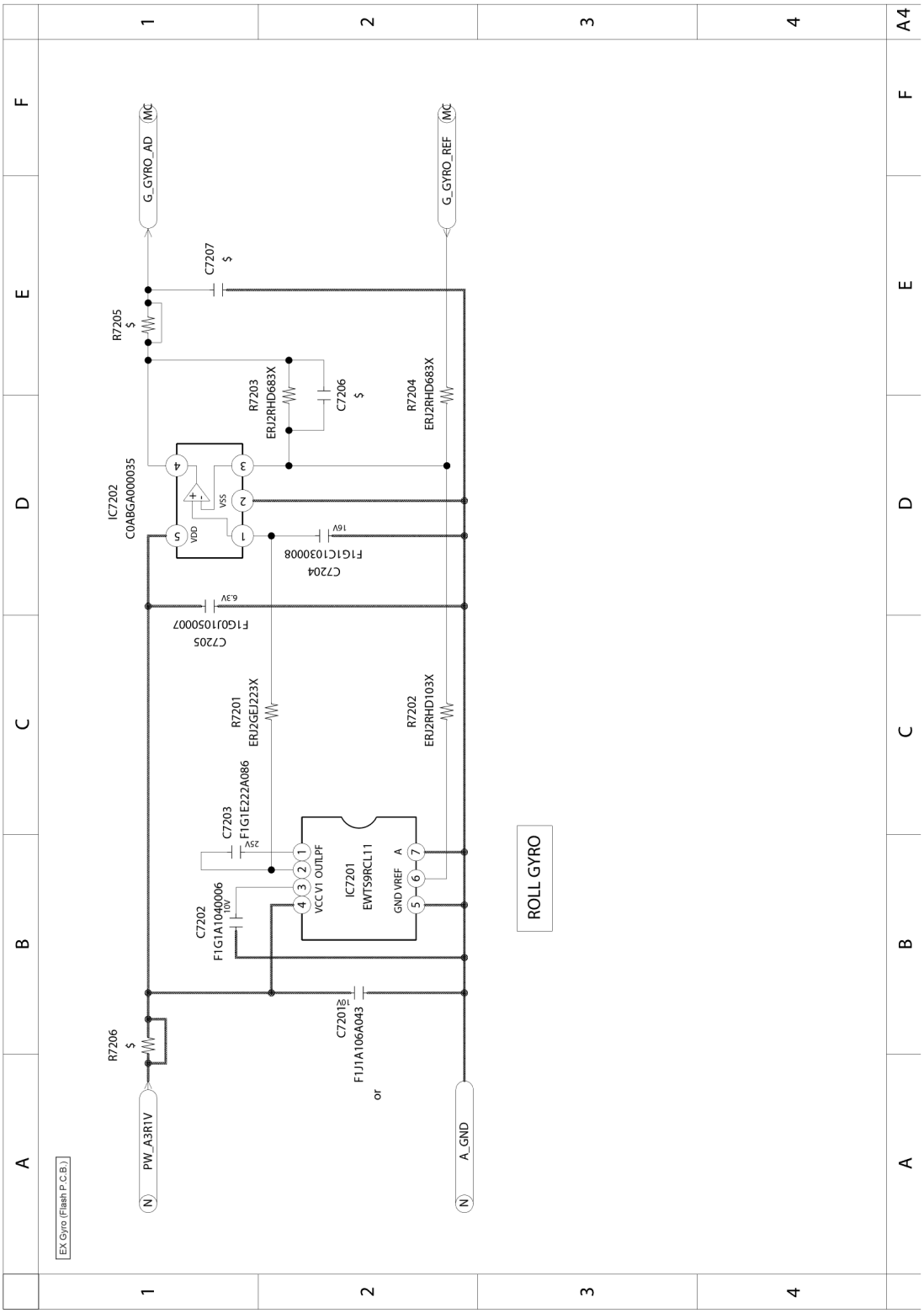
Model No. : DMC-FZ1000 Flash (Flash P.C.B.)



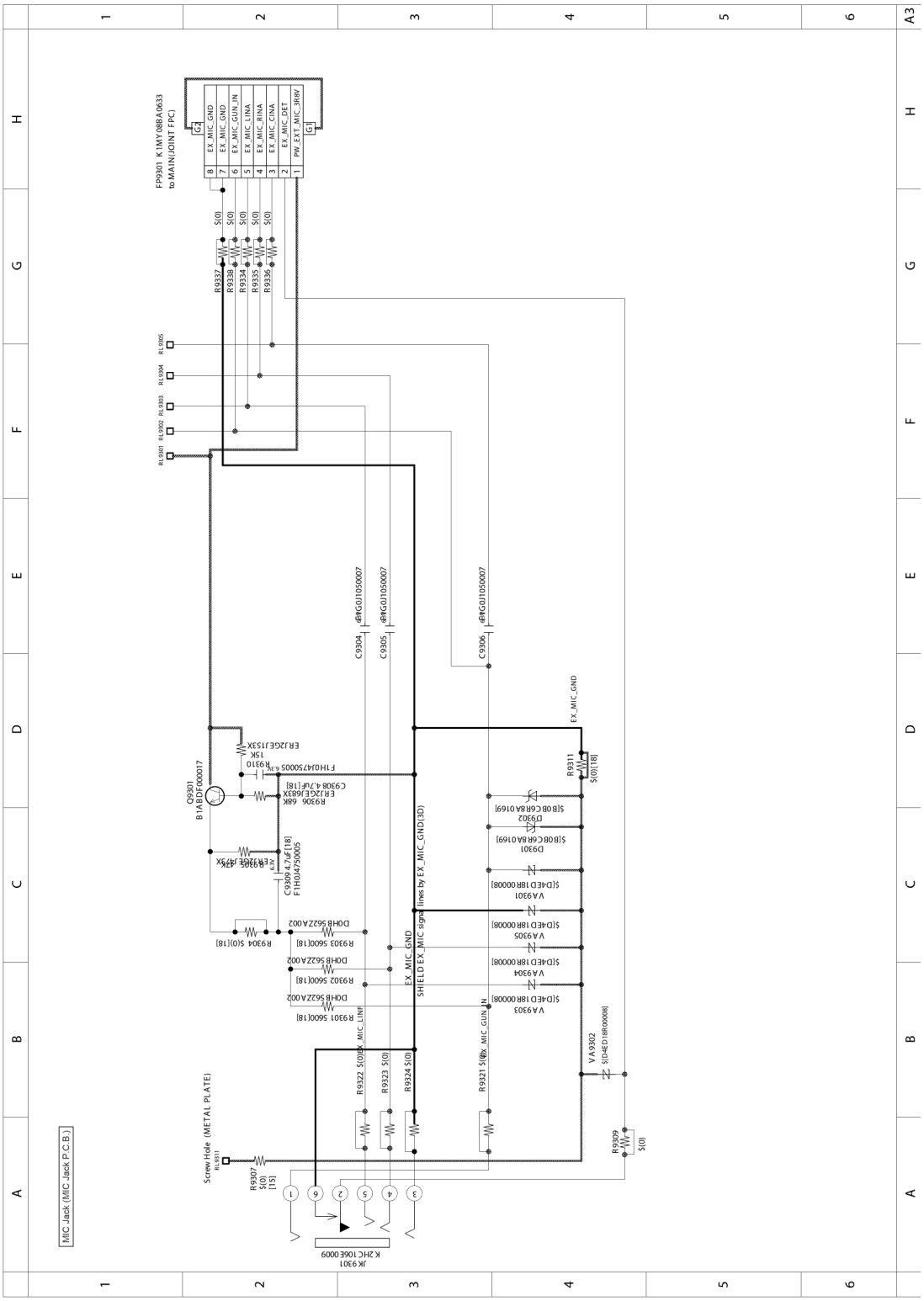
Model No. : DMC-FZ1000 Wi-Fi (Flash P.C.B.)



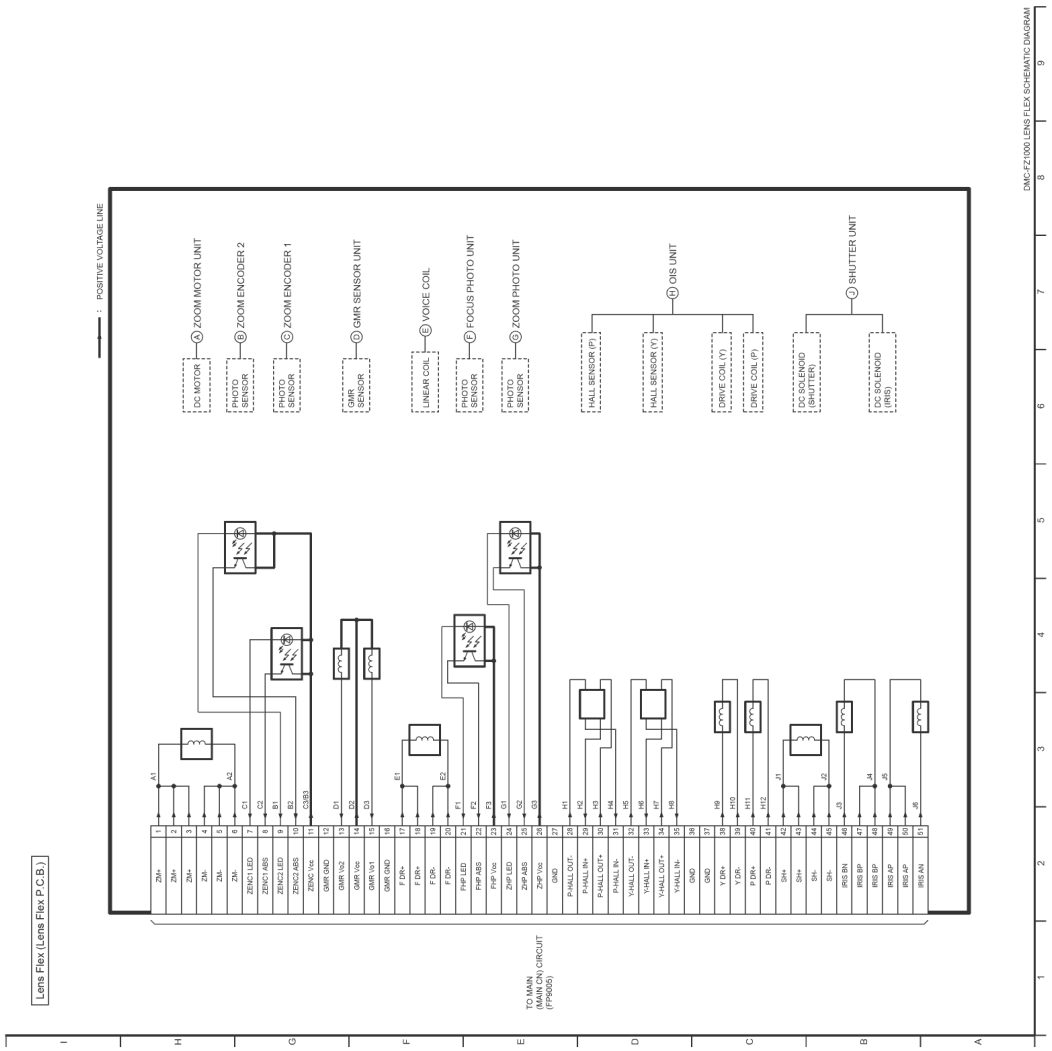
Model No. : DMC-FZ1000 EX Gyro (Flash P.C.B.)



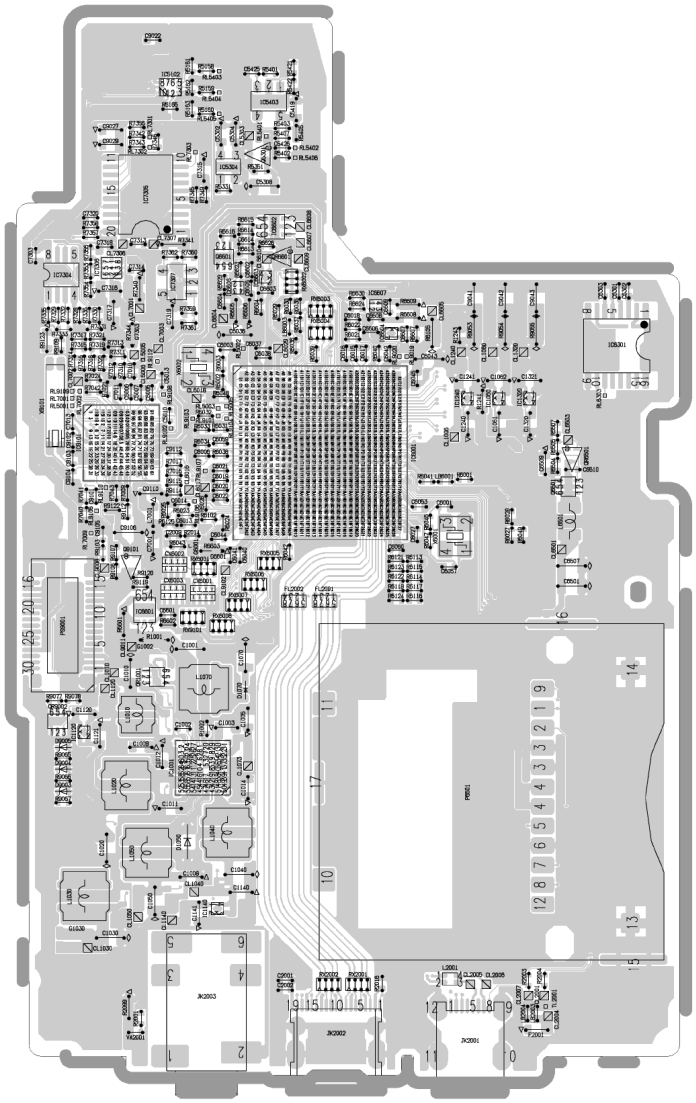
Model No. : DMC-FZ1000 MIC Jack (MIC Jack P.C.B.)



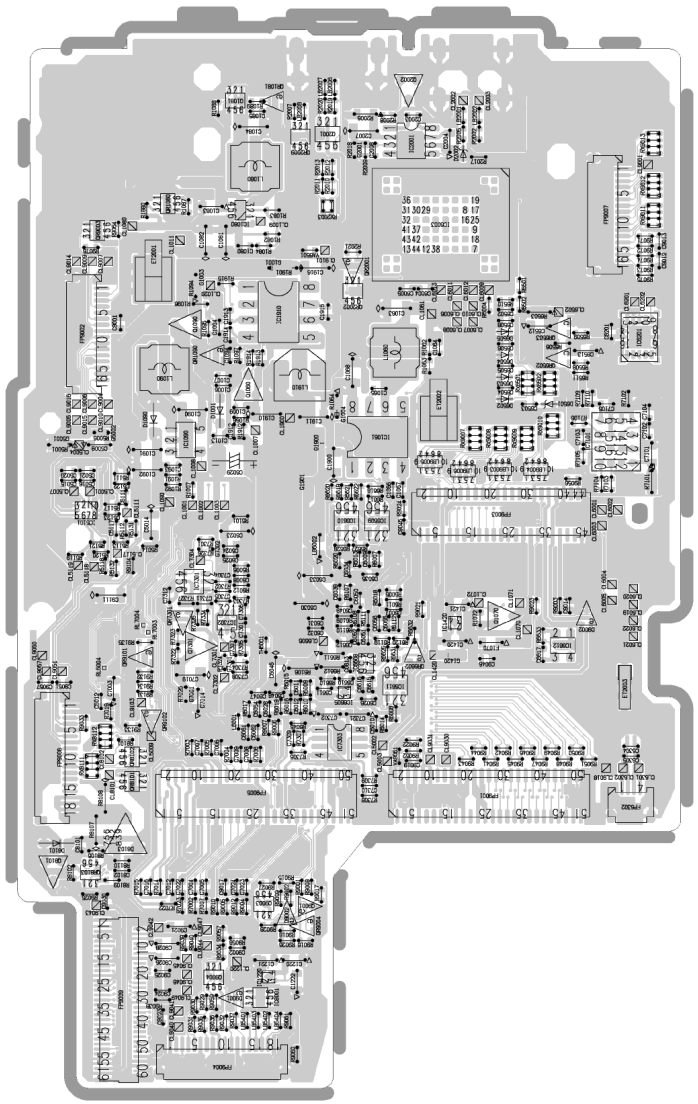
Model No. : DMC-FZ1000 Lens Flex (Lens Flex P.C.B.)



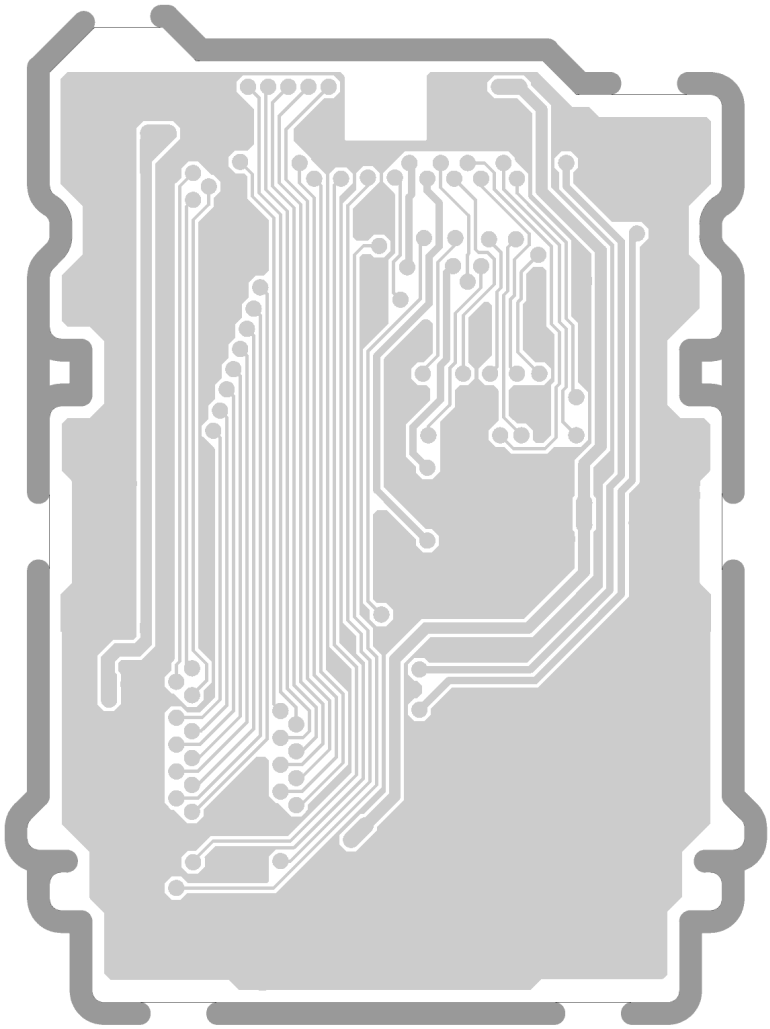
Model No. : DMC-FZ1000 Main P.C.B. (Component Side)



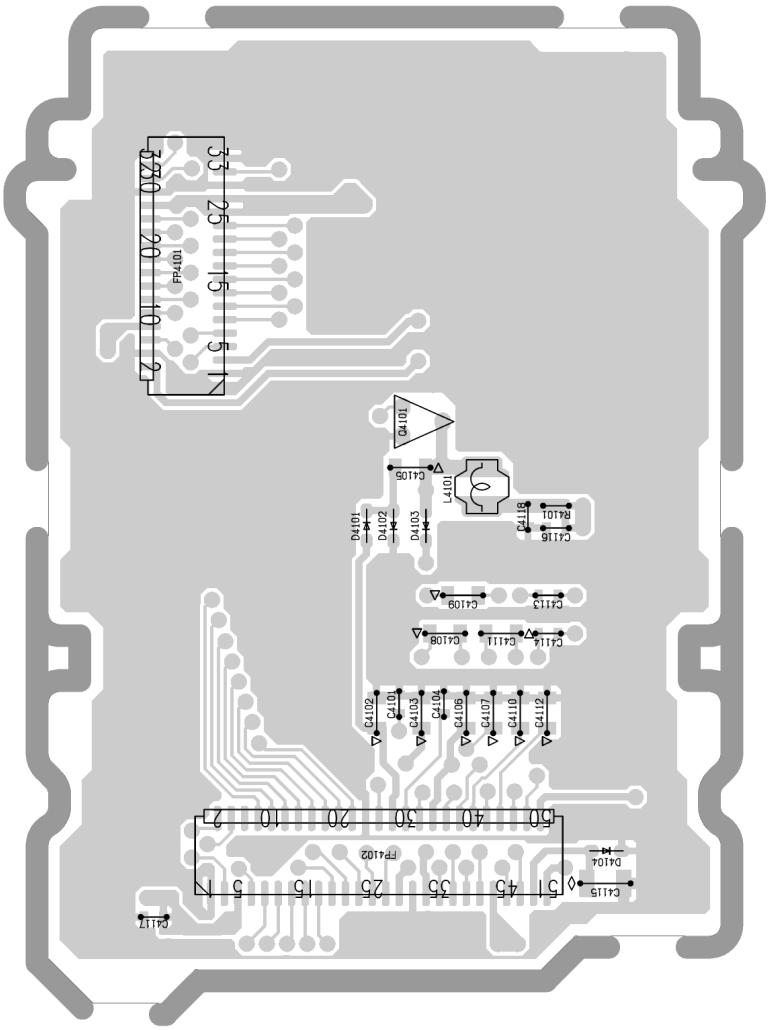
Model No. : DMC-FZ1000 Main P.C.B. (Foil Side)



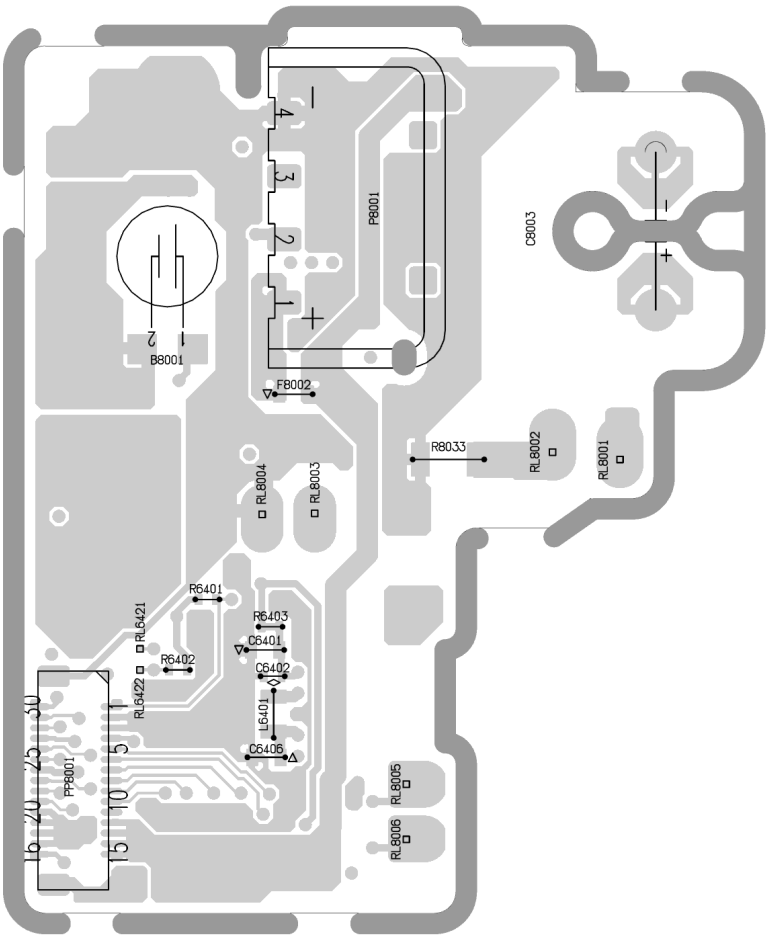
Model No. : DMC-FZ1000 LCD IF P.C.B. (Component Side)



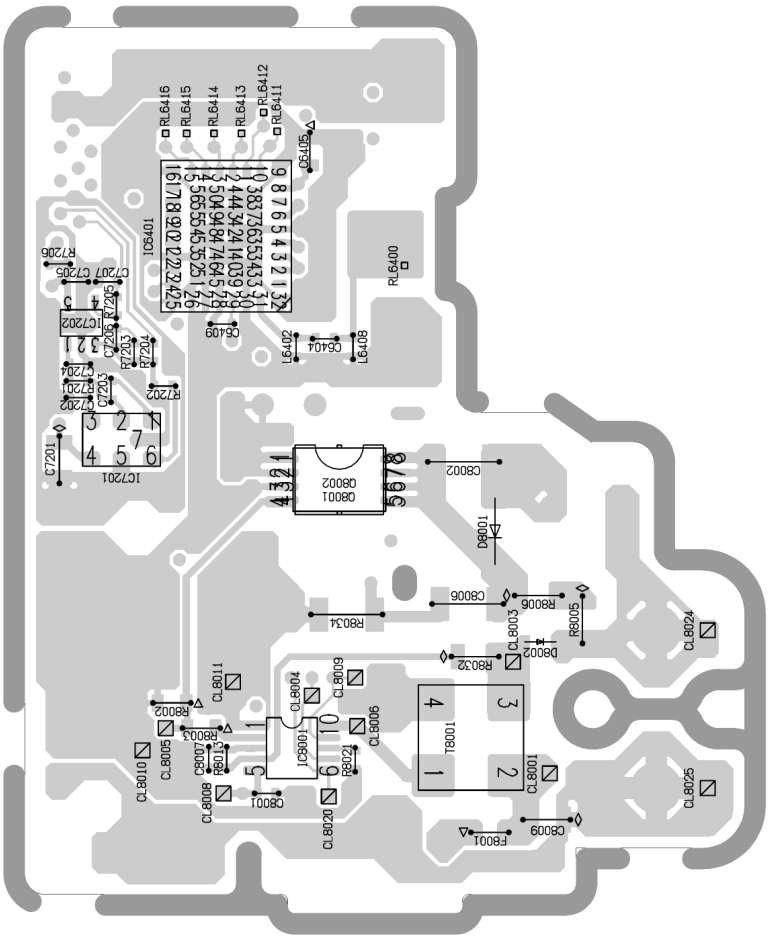
Model No. : DMC-FZ1000 LCD IF P.C.B. (Foil Side)



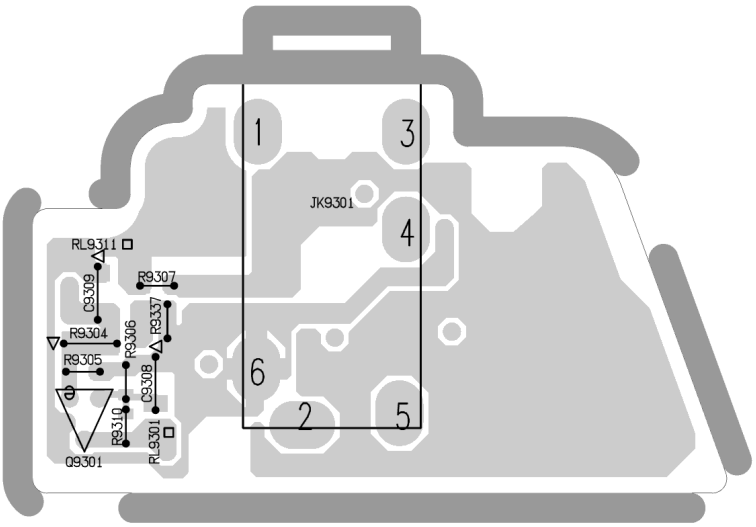
Model No. : DMC-FZ1000 Flash P.C.B. (Component Side)



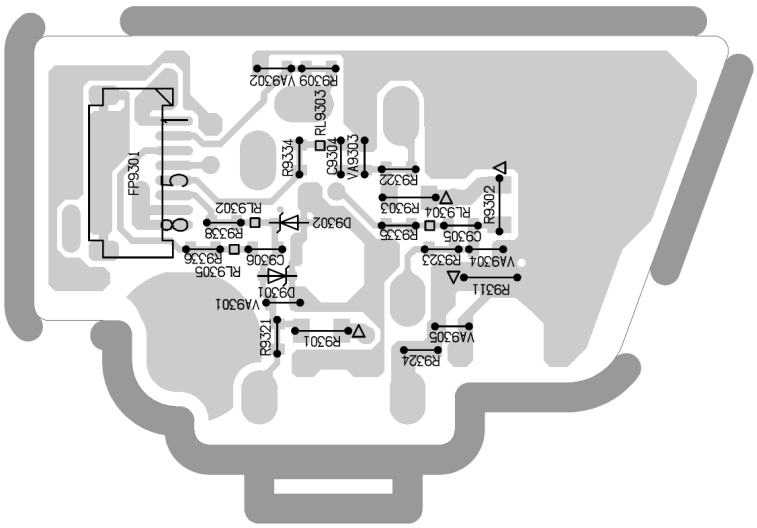
Model No. : DMC-FZ1000 Flash P.C.B. (Foil Side)



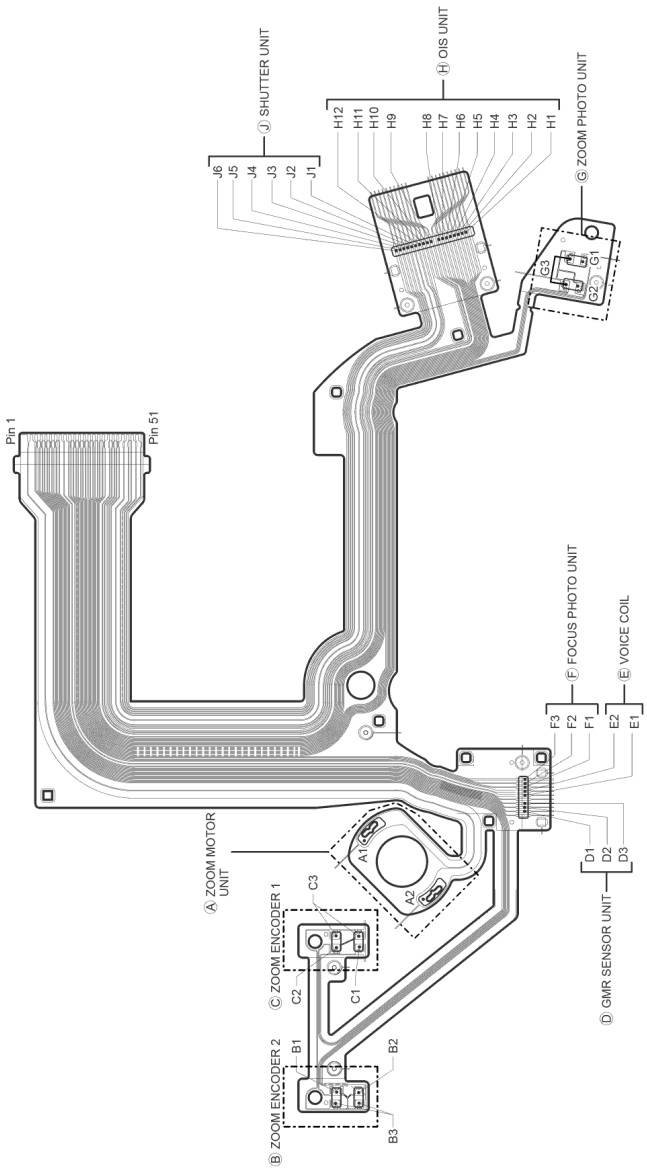
Model No. : DMC-FZ1000 MIC Jack P.C.B. (Component Side)



Model No. : DMC-FZ1000 MIC Jack P.C.B. (Foil Side)



Model No. : DMC-FZ1000 Lens Flex P.C.B.



Model No. : DMC-FZ1000 Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C1001	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C1002	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C1003	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	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	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1009	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1010	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C1011	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1012	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1013	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1014	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C1020	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C1030	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C1040	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C1050	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C1061	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1062	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1063	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C1065	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C1066	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1067	F1G1H392A571	C.CAPACITOR CH 50V 3900P	1	
		C1068	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C1069	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1070	F1J1V1050001	C.CAPACITOR CH 35V 1U	1	
		C1080	ECJ0EC1H221J	C.CAPACITOR CH 50V 220P	1	
		C1081	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C1082	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C1083	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1084	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C1085	F1G1A473A012	C.CAPACITOR CH 10V 0.047U	1	
		C1090	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C1091	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C1092	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C1093	F1G1H331A541	C.CAPACITOR CH 50V 330P	1	
		C1094	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1120	F1H1A225A051	C.CAPACITOR CH 10V 2.2U	1	
		C1121	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1140	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1141	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1220	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1221	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1240	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1241	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1320	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1321	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1420	F1H1A225A051	C.CAPACITOR CH 10V 2.2U	1	
		C1421	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C1900	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C1910	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C1911	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C1913	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C1914	F1G1H392A571	C.CAPACITOR CH 50V 3900P	1	
		C1915	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C1916	F1J1C106A059	C.CAPACITOR CH 16V 10U	1	
		C2001	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C2002	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C2003	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C2004	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C2007	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	

Model No. : DMC-FZ1000 Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C2008	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C4101	F1G0J225A008	C.CAPACITOR CH 6.3V 2.2U	1	[PAVCX]
		C4102	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	[PAVCX]
		C4103	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	[PAVCX]
		C4104	F1G0J225A008	C.CAPACITOR CH 6.3V 2.2U	1	[PAVCX]
		C4105	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	[PAVCX]
		C4106	F1H1H105B027	C.CAPACITOR CH 50V 1U	1	[PAVCX]
		C4107	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	[PAVCX]
		C4108	F1H1H105B027	C.CAPACITOR CH 50V 1U	1	[PAVCX]
		C4109	F1H1H105B027	C.CAPACITOR CH 50V 1U	1	[PAVCX]
		C4110	F1H1H105B027	C.CAPACITOR CH 50V 1U	1	[PAVCX]

		C4111	F1H1H105B027	C.CAPACITOR CH 50V 1U	1	[PAVCX]
		C4112	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	[PAVCX]
		C4113	F1G0J225A008	C.CAPACITOR CH 6.3V 2.2U	1	[PAVCX]
		C4114	F1G0J225A008	C.CAPACITOR CH 6.3V 2.2U	1	[PAVCX]
		C4115	F1J1C475A170	C.CAPACITOR CH 16V 4.7U	1	[PAVCX]
		C4116	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCX]
		C4117	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCX]
		C4118	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCX]
		C5005	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C5006	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C5007	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C5009	F1H0J4750004	C.CAPACITOR CH 6.3V 4.7U	1	
		C5010	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C5012	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C5013	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C5015	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C5016	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C5020	F1G1H470A557	C.CAPACITOR CH 50V 47P	1	
		C5021	F1G1H470A557	C.CAPACITOR CH 50V 47P	1	
		C5111	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
		C5117	ECJ0EB1A473K	C.CAPACITOR CH 10V 0.047U	1	
		C5122	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
		C5123	F1G1H4710004	C.CAPACITOR CH 50V 470P	1	
		C5302	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C5304	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C5308	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C5419	ECJ1VB1E104K	C.CAPACITOR CH 25V 0.1U	1	
		C5425	ECJ0EC1H101J	C.CAPACITOR CH 50V 100P	1	
		C6001	F1G1H9R0A723	C.CAPACITOR CH 50V 9P	1	
		C6004	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6005	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6006	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6007	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6008	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6009	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6010	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6011	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6012	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6013	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6014	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6015	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C6016	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C6017	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C6018	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C6019	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C6020	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C6021	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C6022	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C6023	ECJ2FB0J106M	C.CAPACITOR CH 6.3V 10U	1	
		C6024	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6025	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C6026	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6027	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6028	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6029	F3G0J1070004	E.CAPACITOR CH 6.3V 100U	1	
		C6030	ECJ2FB0J106M	C.CAPACITOR CH 6.3V 10U	1	
		C6031	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6032	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6033	ECJ2FB0J106M	C.CAPACITOR CH 6.3V 10U	1	
		C6034	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6035	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6036	ECJ2FB0J106M	C.CAPACITOR CH 6.3V 10U	1	
		C6037	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6038	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6039	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6040	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6041	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	

		C6042	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6044	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6045	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6046	ECJ2FB0J106M	C.CAPACITOR CH 6.3V 10U	1	
		C6047	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6048	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6049	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6050	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6051	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6052	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6053	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6054	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6055	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6056	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6057	F1G1H100A723	C.CAPACITOR CH 50V 10P	1	
		C6060	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6061	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C6062	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6201	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6301	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6302	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6303	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6304	F1G1H151A722	C.CAPACITOR CH 50V 150P	1	
		C6501	F1J0J2260004	C.CAPACITOR CH 6.3V 22U	1	
		C6507	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C6509	F1H0J4750004	C.CAPACITOR CH 6.3V 4.7U	1	
		C6510	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C6512	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C6513	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C6601	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6602	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6603	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6604	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C6605	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6606	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6607	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6608	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C6609	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6610	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6611	F1G0J4740003	C.CAPACITOR CH 6.3V 0.47U	1	
		C6612	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6613	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6614	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C6615	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C7001	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C7003	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C7006	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C7007	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C7008	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C7009	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C7010	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C7011	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C7014	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C7019	ECJ2FB0J106M	C.CAPACITOR CH 6.3V 10U	1	
		C7101	F1H0J4750004	C.CAPACITOR CH 6.3V 4.7U	1	
		C7102	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C7103	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C7104	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C7105	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C7201	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	[PAVCX]
		C7202	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	[PAVCX]
		C7203	F1G1E222A086	C.CAPACITOR CH 25V 2200P	1	[PAVCX]
		C7204	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	[PAVCX]
		C7205	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCX]
		C7301	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C7302	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C7303	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	

		C7304	F1G1H561A541	C.CAPACITOR CH 50V 560P	1	
		C7305	ECJ0EB1C223K	C.CAPACITOR CH 16V 0.022U	1	
		C7306	F1G1H392A571	C.CAPACITOR CH 50V 3900P	1	
		C7308	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C7311	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C7312	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C7315	F1H1E105A144	C.CAPACITOR CH 25V 1U	1	
		C7316	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C7317	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C7318	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C7319	F1H1E105A144	C.CAPACITOR CH 25V 1U	1	
		C7321	F1H1A4750004	C.CAPACITOR CH 10V 4.7U	1	
		C8001	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCX]
		C8002	F1K2J223A029	C.CAPACITOR 630V 0.022U	1	[PAVCX]
		C8006	F1K2J223A029	C.CAPACITOR 630V 0.022U	1	[PAVCX]
		C8007	F1G1H270A834	C.CAPACITOR CH 50V 27P	1	[PAVCX]
		C8009	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	[PAVCX]
		C8101	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	
		C8102	F1G1H3320004	C.CAPACITOR CH 50V 3300P	1	
		C9002	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9012	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9013	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9014	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9019	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9021	F1H1E105A144	C.CAPACITOR CH 25V 1U	1	
		C9022	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C9023	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9024	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9025	F1G1A104A012	C.CAPACITOR CH 10V 0.1U	1	
		C9026	F1H1E105A144	C.CAPACITOR CH 25V 1U	1	
		C9027	F1H1E105A144	C.CAPACITOR CH 25V 1U	1	
		C9028	F1H1E105A144	C.CAPACITOR CH 25V 1U	1	
		C9029	F1H1E105A144	C.CAPACITOR CH 25V 1U	1	
		C9030	F1G1C104A077	C.CAPACITOR CH 16V 0.1U	1	
		C9041	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C9042	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C9043	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C9101	F1G1H1020008	C.CAPACITOR CH 50V 1000P	1	
		C9102	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9103	F1G1H120A557	C.CAPACITOR CH 50V 12P	1	
		C9104	F1G1H120A557	C.CAPACITOR CH 50V 12P	1	

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		C9105	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	
		C9106	F1J1A106A043	C.CAPACITOR CH 10V 10U	1	
		C9110	ECJ1VB1A105K	C.CAPACITOR CH 10V 1U	1	
		C9111	ECJ2FB0J106M	C.CAPACITOR CH 6.3V 10U	1	
		C9304	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCX]
		C9305	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCX]
		C9306	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCX]
		C9308	F1H0J4750005	C.CAPACITOR CH 6.3V 4.7U	1	[PAVCX]
		C9309	F1H0J4750005	C.CAPACITOR CH 6.3V 4.7U	1	[PAVCX]
		CX6001	F5A84103A020	CAPACITOR NETWORKS	1	
		CX6002	F5A84103A020	CAPACITOR NETWORKS	1	
		CX6003	F5A84103A020	CAPACITOR NETWORKS	1	
		D1001	B0JCGD000016	DIODE	1	E.S.D.
		D1050	B0ACRC000001	DIODE	1	E.S.D.
		D1070	B0JCFC000003	DIODE	1	E.S.D.
		D1090	B0ACRC000001	DIODE	1	E.S.D.
		D4101	B0JCFC000003	DIODE	1	[PAVCX]E.S.D.
		D4102	B0JCFC000003	DIODE	1	[PAVCX]E.S.D.
		D4103	B0JCFC000003	DIODE	1	[PAVCX]E.S.D.
		D4104	B0JCFC000003	DIODE	1	[PAVCX]E.S.D.
		D8001	B0ECGP000006	DIODE	1	[PAVCX]E.S.D.
		D8002	DA2SF650EL	DIODE	1	[PAVCX]E.S.D.
		D8101	DZ2J082M0L	DIODE	1	E.S.D.
		D8103	B2ABAP000007	DIODE	1	E.S.D.
		D9001	B0BD5R6A0013	DIODE	1	E.S.D.
		D9003	B0BC5R6A0169	DIODE	1	E.S.D.

		D9004	B0BC5R6A0169	DIODE	1	E.S.D.
		D9005	B0BC5R6A0169	DIODE	1	E.S.D.
		D9901	B3ADB0000244	DIODE	1	[PAVCX]E.S.D.
		ET2002	K4CC01000001	EARTH SPRING	1	
		ET2003	K4ZZ01000330	EARTH TERMINAL	1	
	⚠	F1070	K5H1512A0024	FUSE 50V 0.15A	1	
	⚠	F2001	K5H1522A0018	FUSE 32V 1.5A	1	
	⚠	F8001	K5H152YA0080	FUSE 32V 2.0A	1	[PAVCX]
	⚠	F8002	K5H252YA0080	FUSE 32V 2.5A	1	[PAVCX]
		FL2001	EXC28CH900U	FILTER	1	
		FL2002	EXC28CH900U	FILTER	1	
		FP4101	K1MY33BA0556	CONNECTOR 33P	1	[PAVCX]
		FP4102	K1MY51BA0667	CONNECTOR 51P	1	[PAVCX]
		FP5501	K1MY08BA0633	CONNECTOR 8P	1	[PAVCX]
		FP5502	K1MY04BA0633	CONNECTOR 4P	1	[PAVCX]
		FP6302	K1MY04BA0633	CONNECTOR 4P	1	
		FP9001	K1MY51BA0667	CONNECTOR 51P	1	
		FP9002	K1MY16BA0633	CONNECTOR 16P	1	
		FP9003	K1MY45BA0667	CONNECTOR 45P	1	
		FP9004	K1MY18BA0633	CONNECTOR 18P	1	
		FP9005	K1MY51BA0667	CONNECTOR 51P	1	
		FP9006	K1MY18BA0633	CONNECTOR 18P	1	
		FP9007	K1MY16BA0633	CONNECTOR 16P	1	
		FP9009	K1MY61AA0288	CONNECTOR 61P	1	
		FP9301	K1MY08BA0633	CONNECTOR 8P	1	[PAVCX]
		IC1001	C1ZBZ0004906	IC	1	E.S.D.
		IC1060	C0DBGYY05343	IC	1	E.S.D.
		IC1061	C0DBAYY01645	IC	1	E.S.D.
		IC1080	C0DBAYY02115	IC	1	E.S.D.
		IC1090	C0DBAYY02118	IC	1	E.S.D.
		IC1120	C0DBGYY03614	IC	1	E.S.D.
		IC1140	C0DBGYY03640	IC	1	E.S.D.
		IC1220	C0DBGYY03614	IC	1	E.S.D.
		IC1240	C0DBGYY02519	IC	1	E.S.D.
		IC1320	C0DBGYY03614	IC	1	E.S.D.
		IC1420	C0DBGYY03614	IC	1	E.S.D.

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		IC1910	C0DBAYY01645	IC	1	E.S.D.
		IC2001	C9ZB00000670	IC	1	E.S.D.
		IC5101	C0JBAS000401	IC	1	E.S.D.
		IC5102	C0JBAS000401	IC	1	E.S.D.
		IC5304	C0DBGYY02176	IC	1	E.S.D.
		IC5403	C0BBAA000008	IC	1	E.S.D.
		IC6001	SCG0001	IC	1	E.S.D.
		IC6003	SCM0001	IC	1	E.S.D.
		IC6201	VUEALLPT053	IC	1	E.S.D.
		IC6301	MN63Y1009-E1	IC	1	E.S.D.
		IC6601	C0DBGYY02368	IC	1	E.S.D.
		IC6602	C0JBAF000785	IC	1	E.S.D.
		IC6603	C0DBGYY05584	IC	1	E.S.D.
		IC6604	C0DBGYY05590	IC	1	E.S.D.
		IC6605	C0DBGYY05582	IC	1	E.S.D.
		IC6606	C0ZBZ0002095	IC	1	E.S.D.
		IC6607	C0ZBZ0002095	IC	1	E.S.D.
		IC6608	C0ZBZ0002223	IC	1	E.S.D.
		IC6609	C0JBAF000785	IC	1	E.S.D.
		IC6610	C0JBAF000785	IC	1	E.S.D.
		IC6611	C0JBAF000785	IC	1	E.S.D.
		IC7101	EWTS9PDL1A	IC	1	E.S.D.
		IC7201	EWTS9RCL1A	IC	1	E.S.D.
		IC7202	C0ABGA000035	IC	1	[PAVCX]E.S.D.
		IC7301	C0JBAZ002390	IC	1	E.S.D.
		IC7302	C0ABGA000090	IC	1	E.S.D.
		IC7303	C0GBC0000028	IC	1	E.S.D.
		IC7304	C0ABHA000054	IC	1	E.S.D.
		IC7305	C0GBY0000241	IC	1	E.S.D.
		IC7306	C0GBY0000153	IC	1	E.S.D.
		IC7307	C0ABAA000055	IC	1	E.S.D.

		IC8001	C0ZBZ0001817	IC	1	[PAVCX]E.S.D.
		IC9001	C0JBAU000197	IC	1	E.S.D.
		IC9101	C1AB00003449	IC	1	E.S.D.
		JK2001	K1FB108E0008	JACK	1	
		JK2002	K1FY119E0071	JACK	1	
		JK2003	K2HD104D0002	JACK	1	
		JK9301	K2HC106E0009	JACK	1	[PAVCX]
		L1010	G1C4R7MA0392	CHIP INDUCTOR 4.7UH	1	
		L1020	G1C100MA0461	CHIP INDUCTOR 10UH	1	
		L1030	G1C100MA0461	CHIP INDUCTOR 10UH	1	
		L1040	G1C100MA0461	CHIP INDUCTOR 10UH	1	
		L1050	G1C100MA0461	CHIP INDUCTOR 10UH	1	
		L1060	G1C2R2MA0477	CHIP INDUCTOR 2.2UH	1	
		L1070	G1C330MA0477	CHIP INDUCTOR 33UH	1	
		L1080	G1C100MA0461	CHIP INDUCTOR 10UH	1	
		L1090	G1C4R7MA0477	CHIP INDUCTOR 4.7UH	1	
		L1910	G1C1R5MA0577	CHIP INDUCTOR 1.5UH	1	
		L2001	J0ZZB0000142	CHIP INDUCTOR	1	
		L4101	G1C100MA0536	CHIP INDUCTOR 10UH	1	[PAVCX]
		L6001	G1C2R2KA0096	CHIP INDUCTOR 2.2UH	1	
		L6501	G1C1R0MA0172	CHIP INDUCTOR 1UH	1	
		L7001	G1C100MA0408	CHIP INDUCTOR 10UH	1	
		LB2001	J0JCC0000415	FILTER	1	
		LB2002	J0JCC0000415	FILTER	1	
		LB2004	J0JCC0000415	FILTER	1	
		LB5401	J0JBC0000107	FILTER	1	
		LB5402	J0JBC0000107	FILTER	1	
		LB5403	J0JBC0000107	FILTER	1	
		LB5404	J0JBC0000107	FILTER	1	
		LB6001	J0JCC0000412	FILTER	1	
		LB6002	J0JFC0000006	FILTER	1	

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	⚠	LB6003	J0JCC0000317	FILTER	1	
		P6501	K1NA09E00153	MEMORY CARD CONNECTOR	1	
		P8001	K4ZZ04000052	CONNECTOR 4P	1	[PAVCX]
		PP8001	K1KA30B00077	CONNECTOR 30P	1	[PAVCX]
		PS9001	K1KB30AA0116	CONNECTOR 30P	1	
		Q1060	B1CFHC000005	TRANSISTOR	1	E.S.D.
		Q1070	FK3503010L	TRANSISTOR	1	E.S.D.
		Q1081	B1CHMB000007	TRANSISTOR	1	E.S.D.
		Q1090	B1CHQB000012	TRANSISTOR	1	E.S.D.
		Q2001	B1CFGD000003	TRANSISTOR	1	E.S.D.
		Q2002	B1CFJD000007	TRANSISTOR	1	E.S.D.
		Q4101	B1CFNC000004	TRANSISTOR	1	[PAVCX]E.S.D.
		Q5301	B1ABDF000017	TRANSISTOR	1	E.S.D.
		Q6501	MTM861270LBF	TRANSISTOR	1	E.S.D.
		Q6601	B1HBCFA00053	TRANSISTOR	1	E.S.D.
		Q7301	B1ADGE000014	TRANSISTOR	1	E.S.D.
		Q8001	B1JBLP000037	TRANSISTOR	1	[PAVCX]E.S.D.
		Q8101	FK3503010L	TRANSISTOR	1	E.S.D.
		Q9001	FK3303010L	TRANSISTOR	1	E.S.D.
		Q9002	FK3303010L	TRANSISTOR	1	E.S.D.
		Q9003	B1CFHC000011	TRANSISTOR	1	E.S.D.
		Q9004	B1HFCFA00035	TRANSISTOR	1	E.S.D.
		Q9101	B1ABCF000302	TRANSISTOR	1	E.S.D.
		Q9301	B1ABDF000017	TRANSISTOR	1	[PAVCX]E.S.D.
		QR1001	B1GKCFYY0029	TRANSISTOR-RESISTOR	1	E.S.D.
		QR1080	B1GFCFLL0009	TRANSISTOR-RESISTOR	1	E.S.D.
		QR1081	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
		QR1090	B1GBCFYY0219	TRANSISTOR-RESISTOR	1	E.S.D.
		QR2009	B1GKCFYY0029	TRANSISTOR-RESISTOR	1	E.S.D.
		QR6501	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
		QR6502	B1GDCFYY0150	TRANSISTOR-RESISTOR	1	E.S.D.
		QR6503	B1GDCFYY0150	TRANSISTOR-RESISTOR	1	E.S.D.
		QR6601	B1GBCFYY0217	TRANSISTOR-RESISTOR	1	E.S.D.
		QR6602	B1GDCFYY0148	TRANSISTOR-RESISTOR	1	E.S.D.
		QR7301	B1GBCFYY0221	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8101	B1GFCFYY0021	TRANSISTOR-RESISTOR	1	E.S.D.

		QR8102	B1GFCFYY0021	TRANSISTOR-RESISTOR	1	E.S.D.
		QR8103	B1GKCFJN0003	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9002	B1GFCFYY0021	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9003	B1GFCFYY0021	TRANSISTOR-RESISTOR	1	E.S.D.
		QR9102	B1GDCFYY0150	TRANSISTOR-RESISTOR	1	E.S.D.
		R1002	ERJ2RHD473	M.RESISTOR CH 1/16W 47K	1	
		R1007	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R1062	ERJ2RHD183	M.RESISTOR CH 1/16W 18K	1	
		R1063	ERJ2RHD183	M.RESISTOR CH 1/16W 18K	1	
		R1066	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R1072	ERJ2RKD120	M.RESISTOR CH 1/16W 12	1	
		R1082	ERJ2RKD184	M.RESISTOR CH 1/16W 180K	1	
		R1083	ERJ2RHD203	M.RESISTOR CH 1/16W 20K	1	
		R1084	ERJ2GEJ202	M.RESISTOR CH 1/10W 2K	1	
		R1087	ERJ2GEJ223	M.RESISTOR CH 1/10W 22K	1	
		R1088	ERJ2GEJ473	M.RESISTOR CH 1/10W 47K	1	
		R1089	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R1091	ERJ2RHD683	M.RESISTOR CH 1/16W 68K	1	
		R1092	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R1095	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R1096	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R1097	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R1880	ERJ2GEJ152	M.RESISTOR CH 1/10W 1.5K	1	
		R1912	ERJ2RHD123X	M.RESISTOR CH 1/16W 12K	1	
		R1913	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	1	
		R1914	ERJ2RKD394	M.RESISTOR CH 1/16W 390K	1	

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R2001	ERJ2GEJ101	M.RESISTOR CH 1/10W 100	1	
		R2002	ERJ2GEJ561	M.RESISTOR CH 1/10W 560	1	
		R2003	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R2004	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R2005	ERJ2GEJ750	M.RESISTOR CH 1/10W 75	1	
		R2006	ERJ3GEYJ100	M.RESISTOR CH 1/10W 10	1	
		R2007	ERJ2GEJ473	M.RESISTOR CH 1/10W 47K	1	
		R2008	ERJ2GED273X	M.RESISTOR CH 1/10W 27K	1	
		R2009	ERJ2RHD201	M.RESISTOR CH 1/16W 200	1	
		R2010	ERJ2RKD330	M.RESISTOR CH 1/16W 33	1	
		R2011	ERJ2RKD330	M.RESISTOR CH 1/16W 33	1	
		R2019	ERJ2GEJ202	M.RESISTOR CH 1/10W 2K	1	
		R2020	ERJ2GEJ202	M.RESISTOR CH 1/10W 2K	1	
		R5111	ERJ2GEJ333	M.RESISTOR CH 1/10W 33K	1	
		R5112	ERJ2GEJ222	M.RESISTOR CH 1/10W 2.2K	1	
		R5113	ERJ2GEJ222	M.RESISTOR CH 1/10W 2.2K	1	
		R5117	ERJ2GEJ333	M.RESISTOR CH 1/10W 33K	1	
		R5165	J0JBC0000107	FILTER	1	
		R5351	ERJ2GEJ472	M.RESISTOR CH 1/10W 4.7K	1	
		R5401	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R5421	ERJ2RHD683	M.RESISTOR CH 1/16W 68K	1	
		R5422	ERJ2RHD113	M.RESISTOR CH 1/16W 11K	1	
		R6001	ERJ2GEJ470	M.RESISTOR CH 1/10W 47	1	
		R6004	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R6005	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6006	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6007	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6008	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6009	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6010	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6011	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6012	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6013	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6014	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6015	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6016	ERJ2RHD511	M.RESISTOR CH 1/16W 510	1	
		R6017	ERJ2RHD241	M.RESISTOR CH 1/16W 240	1	
		R6018	ERJ2RHD241	M.RESISTOR CH 1/16W 240	1	
		R6019	ERJ2RHD241	M.RESISTOR CH 1/16W 240	1	
		R6020	ERJ2RHD241	M.RESISTOR CH 1/16W 240	1	
		R6021	ERJ2RHD822X	M.RESISTOR CH 1/16W 8.2K	1	

		R6022	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R6026	ERJ2RHD682X	M.RESISTOR CH 1/10W 6.8K	1	
		R6027	ERJ2RHD472X	M.RESISTOR CH 1/16W 4.7K	1	P,PC,PU,EE,GN
		R6028	ERJ2RHD201	M.RESISTOR CH 1/16W 200	1	
		R6029	ERJ2GEJ332	M.RESISTOR CH 1/10W 3.3K	1	
		R6030	ERJ2GEJ332	M.RESISTOR CH 1/10W 3.3K	1	
		R6031	ERJ2GEJ470	M.RESISTOR CH 1/10W 47	1	
		R6032	ERJ2GEJ470	M.RESISTOR CH 1/10W 47	1	
		R6033	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R6034	D0YAR0000007	M.RESISTOR CH 1/10W 0	1	EG,EP,EF,EB
		R6035	ERJ2GEJ473	M.RESISTOR CH 1/10W 47K	1	
		R6036	ERJ2GEJ151	M.RESISTOR CH 1/10W 150	1	
		R6037	ERJ2GEJ470	M.RESISTOR CH 1/10W 47	1	
		R6039	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R6041	ERJ2GEJ270	M.RESISTOR CH 1/10W 27	1	
		R6042	ERJ2GEJ470	M.RESISTOR CH 1/10W 47	1	
		R6043	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R6046	ERJ2GEJ105	M.RESISTOR CH 1/10W 1M	1	
		R6047	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R6049	ERJ2RHD472X	M.RESISTOR CH 1/16W 4.7K	1	EG,EP,EF,EB
		R6117	D0YAR0000007	M.RESISTOR CH 1/10W 0	1	

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Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R6120	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R6125	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R6501	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R6502	ERJ2GEJ223	M.RESISTOR CH 1/10W 22K	1	
		R6504	ERJ2GEJ104	M.RESISTOR CH 1/10W 100K	1	
		R6505	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R6510	ERJ2GEJ680	M.RESISTOR CH 1/10W 68	1	
		R6604	ERJ2BQJR51	M.RESISTOR CH 1/10W 0.5	1	
		R6607	ERJ2BQJR51	M.RESISTOR CH 1/10W 0.5	1	
		R6610	ERJ2BQJR51	M.RESISTOR CH 1/10W 0.5	1	
		R6613	ERJ2GEJ104	M.RESISTOR CH 1/10W 100K	1	
		R6614	ERJ2GEJ104	M.RESISTOR CH 1/10W 100K	1	
		R6615	ERJ2RHD104	M.RESISTOR CH 1/16W 100K	1	
		R6616	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	1	
		R6617	ERJ2RHD333X	M.RESISTOR CH 1/16W 33K	1	
		R6618	ERJ2RHD223	M.RESISTOR CH 1/16W 22K	1	
		R6619	ERJ2RHD333X	M.RESISTOR CH 1/16W 33K	1	
		R6620	ERJ2RHD223	M.RESISTOR CH 1/16W 22K	1	
		R6632	ERJ2GEJ105	M.RESISTOR CH 1/10W 1M	1	
		R7002	ERJ2RKD680	M.RESISTOR CH 1/16W 68	1	
		R7007	ERJ2RKD680	M.RESISTOR CH 1/16W 68	1	
		R7021	ERJ2RHD822X	M.RESISTOR CH 1/16W 8.2K	1	
		R7201	D0GA223JA023	M.RESISTOR CH 1/10W 22K	1	[PAVCX]
		R7202	D1BA1002A022	M.RESISTOR CH 1/16W 10K	1	[PAVCX]
		R7203	D1BA6802A022	M.RESISTOR CH 1/16W 68K	1	[PAVCX]
		R7204	D1BA6802A022	M.RESISTOR CH 1/16W 68K	1	[PAVCX]
		R7301	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7302	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7303	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7304	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7305	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7306	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	1	
		R7307	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	1	
		R7308	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	1	
		R7309	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	1	
		R7310	ERJ2RHD822X	M.RESISTOR CH 1/16W 8.2K	1	
		R7311	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7314	ERJ2RHD822X	M.RESISTOR CH 1/16W 8.2K	1	
		R7315	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7318	ERJ2RHD822X	M.RESISTOR CH 1/16W 8.2K	1	
		R7319	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7322	ERJ2GEJ473	M.RESISTOR CH 1/10W 47K	1	
		R7323	ERJ2GEJ821	M.RESISTOR CH 1/10W 820	1	
		R7328	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R7329	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R7345	D1BA1R00A079	M.RESISTOR CH 1/16W 1	1	

		R7349	D1BA1R00A079	M.RESISTOR CH 1/16W 1	1	
		R7356	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R7359	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7360	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	1	
		R7361	ERJ2RHD473	M.RESISTOR CH 1/16W 47K	1	
		R7362	ERJ2RHD473	M.RESISTOR CH 1/16W 47K	1	
		R8002	D0GB104JA065	M.RESISTOR CH 1/10W 100K	1	[PAVCX]
		R8003	D0GB680JA065	M.RESISTOR CH 1/10W 68	1	[PAVCX]
		R8005	D0GD393JA052	RESISTOR	1	[PAVCX]
		R8006	D0GD363JA052	RESISTOR	1	[PAVCX]
		R8013	D1BA1621A022	M.RESISTOR CH 1/16W1.621K	1	[PAVCX]
		R8021	D0GA473JA023	M.RESISTOR CH 1/10W 47K	1	[PAVCX]
		R8032	D1BD4703A119	M.RESISTOR CH 1/3W 470K	1	[PAVCX]
		R8033	D0GF104JA048	RESISTOR	1	[PAVCX]
		R8034	D0GF472JA048	RESISTOR	1	[PAVCX]
		R8101	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	

Model No. : DMC-FZ1000 Parts List

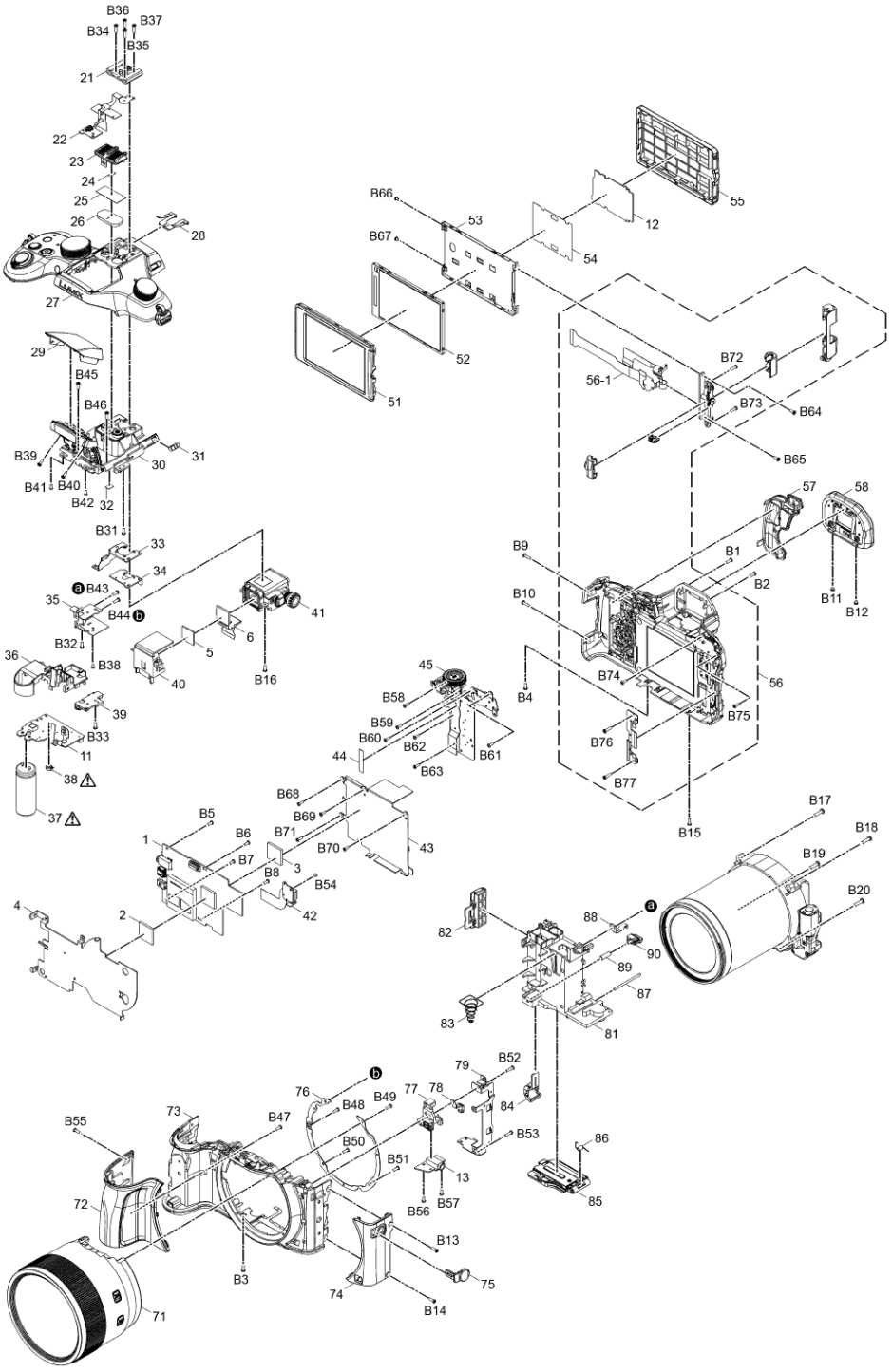
Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R8107	ERJ6GEYJ106V	M.RESISTOR CH 1/10W 10M	1	
		R8108	ERJ6GEYJ106V	M.RESISTOR CH 1/10W 10M	1	
		R8109	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R8110	ERJ2GEJ471	M.RESISTOR CH 1/10W 470	1	
		R9001	ERJ2GEJ151	M.RESISTOR CH 1/10W 150	1	
		R9002	ERJ2GEJ183	M.RESISTOR CH 1/10W 18K	1	
		R9004	ERJ2GEJ153	M.RESISTOR CH 1/10W 15K	1	
		R9005	ERJ2GEJ153	M.RESISTOR CH 1/10W 15K	1	
		R9006	ERJ2GEJ221	M.RESISTOR CH 1/10W 220	1	
		R9007	ERJ2GEJ221	M.RESISTOR CH 1/10W 220	1	
		R9008	ERJ2GEJ151	M.RESISTOR CH 1/10W 150	1	
		R9009	ERJ2GEJ183	M.RESISTOR CH 1/10W 18K	1	
		R9010	ERJ2GEJ123	M.RESISTOR CH 1/10W 12K	1	
		R9012	ERJ2GEJ123	M.RESISTOR CH 1/10W 12K	1	
		R9015	ERJ2GEJ183	M.RESISTOR CH 1/10W 18K	1	
		R9017	ERJ2GEJ391	M.RESISTOR CH 1/10W 390	1	
		R9021	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9022	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9023	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9024	ERJ2GEJ101	M.RESISTOR CH 1/10W 100	1	
		R9027	ERJ2GEJ472	M.RESISTOR CH 1/10W 4.7K	1	
		R9028	ERJ2GEJ472	M.RESISTOR CH 1/10W 4.7K	1	
		R9029	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9030	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9031	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9032	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9033	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9034	ERJ2RHD201	M.RESISTOR CH 1/16W 200	1	
		R9035	ERJ2RHD273	M.RESISTOR CH 1/16W 27K	1	
		R9036	ERJ2RHD273	M.RESISTOR CH 1/16W 27K	1	
		R9039	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R9040	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R9052	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9056	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9057	ERJ2RHD223	M.RESISTOR CH 1/16W 22K	1	
		R9058	ERJ2RHD123X	M.RESISTOR CH 1/16W 12K	1	
		R9059	ERJ2GEJ302	M.RESISTOR CH 1/10W 3K	1	
		R9064	ERJ2GEJ332	M.RESISTOR CH 1/10W 3.3K	1	
		R9065	D0YAR0000007	M.RESISTOR CH 1/10W 1K	1	
		R9066	D0YAR0000007	M.RESISTOR CH 1/10W 1K	1	
		R9067	D0YAR0000007	M.RESISTOR CH 1/10W 1K	1	
		R9071	ERJ2GEJ392	M.RESISTOR CH 1/10W 3.9K	1	
		R9072	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R9073	ERJ2GEJ103	M.RESISTOR CH 1/10W 10K	1	
		R9074	ERJ2GEJ392	M.RESISTOR CH 1/10W 3.9K	1	
		R9075	ERJ2GEJ102X	M.RESISTOR CH 1/10W 1K	1	
		R9076	ERJ2GEJ621	M.RESISTOR CH 1/10W 620	1	
		R9077	ERJ2GEJ152	M.RESISTOR CH 1/10W 1.5K	1	
		R9078	ERJ2GEJ472	M.RESISTOR CH 1/10W 4.7K	1	
		R9103	ERJ2GEJ512X	M.RESISTOR CH 1/10W 5.1K	1	
		R9106	ERJ2RKD105	M.RESISTOR CH 1/16W 1M	1	

		R9107	ERJ2RKD224	M.RESISTOR CH 1/16W 220K	1	
		R9109	ERJ2GEJ331	M.RESISTOR CH 1/10W 330	1	
		R9114	ERJ2RHD393	M.RESISTOR CH 1/16W 39K	1	
		R9115	ERJ2RKD124	M.RESISTOR CH 1/16W 120K	1	
		R9119	ERJ2RHD333X	M.RESISTOR CH 1/16W 33K	1	
		R9120	ERJ2RHD753	M.RESISTOR CH 1/16W 75K	1	
		R9123	ERJ3GEYJ330	M.RESISTOR CH 1/10W 33	1	
		R9133	ERJ2GEJ473	M.RESISTOR CH 1/10W 47K	1	
		R9301	D1BB5601A074	RESISTOR	1	[PAVCX]
		R9302	D1BB5601A074	RESISTOR	1	[PAVCX]
		R9303	D1BB5601A074	RESISTOR	1	[PAVCX]

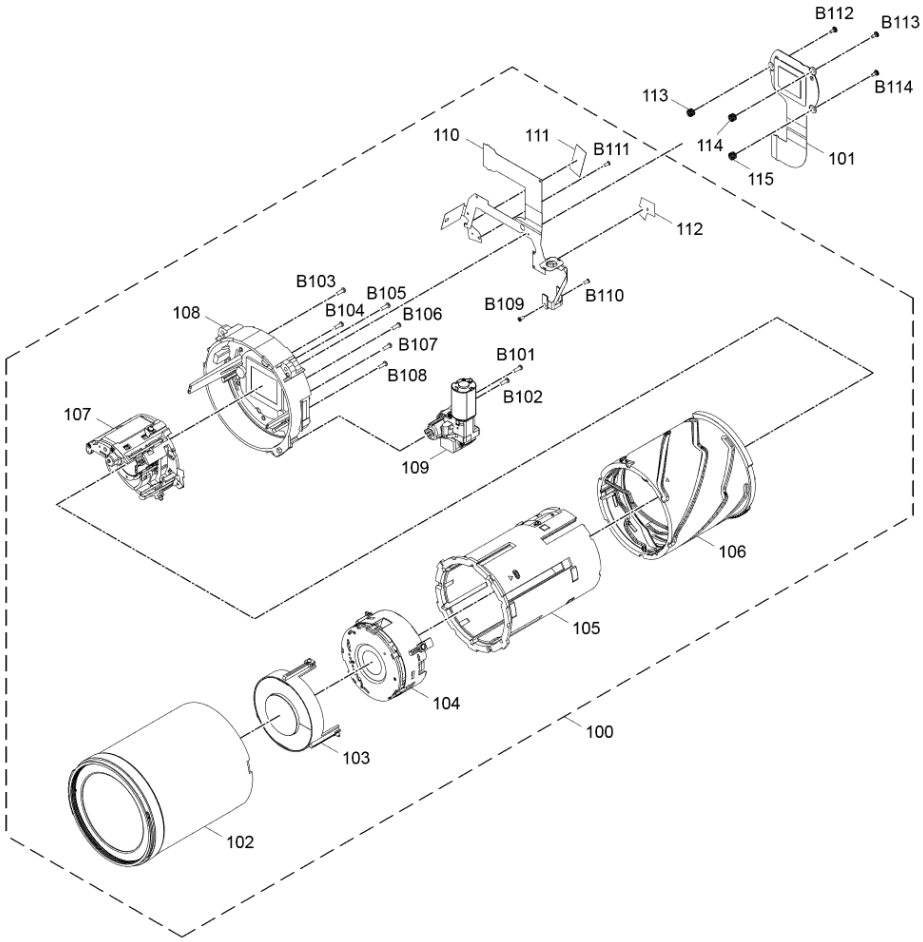
Model No. : DMC-FZ1000 Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		R9305	D0GA473JA023	M.RESISTOR CH 1/10W 47K	1	[PAVCX]
		R9306	D0GA683JA023	M.RESISTOR CH 1/10W 68K	1	[PAVCX]
		R9310	D0GA153JA023	M.RESISTOR CH 1/10W 15K	1	[PAVCX]
		RX2003	EXB24V472JX	RESISTOR NETWORKS	1	
		RX6001	EXB28V103JX	RESISTOR NETWORKS	1	
		RX6002	EXB28V472JX	RESISTOR NETWORKS	1	
		RX6003	EXB28V473JX	RESISTOR NETWORKS	1	
		RX6004	EXB28V181J	RESISTOR NETWORKS	1	
		RX6501	EXB28V473JX	RESISTOR NETWORKS	1	
		RX6502	EXB28V680JX	RESISTOR NETWORKS	1	
		RX8111	EXB28V331J	RESISTOR NETWORKS	1	
		RX8112	EXB28V103JX	RESISTOR NETWORKS	1	
		RX9007	EXB28V221J	RESISTOR NETWORKS	1	
		RX9008	EXB28V221J	RESISTOR NETWORKS	1	
		RX9009	EXB28V221J	RESISTOR NETWORKS	1	
		RX9010	EXB28V221J	RESISTOR NETWORKS	1	
		RX9011	EXB28V102JX	RESISTOR NETWORKS	1	
		RX9012	EXB28V102JX	RESISTOR NETWORKS	1	
		RX9013	EXB28V102JX	RESISTOR NETWORKS	1	
		RX9101	EXB28V102JX	RESISTOR NETWORKS	1	
		T8001	G5DYA0000152	TRANSFORMER	1	[PAVCX]
		TH6001	D4CC11030013	THERMISTORS	1	
		X6001	H0J240500048	CRYSTAL OSCILLATOR	1	
		X9101	H0J327200085	CRYSTAL OSCILLATOR	1	

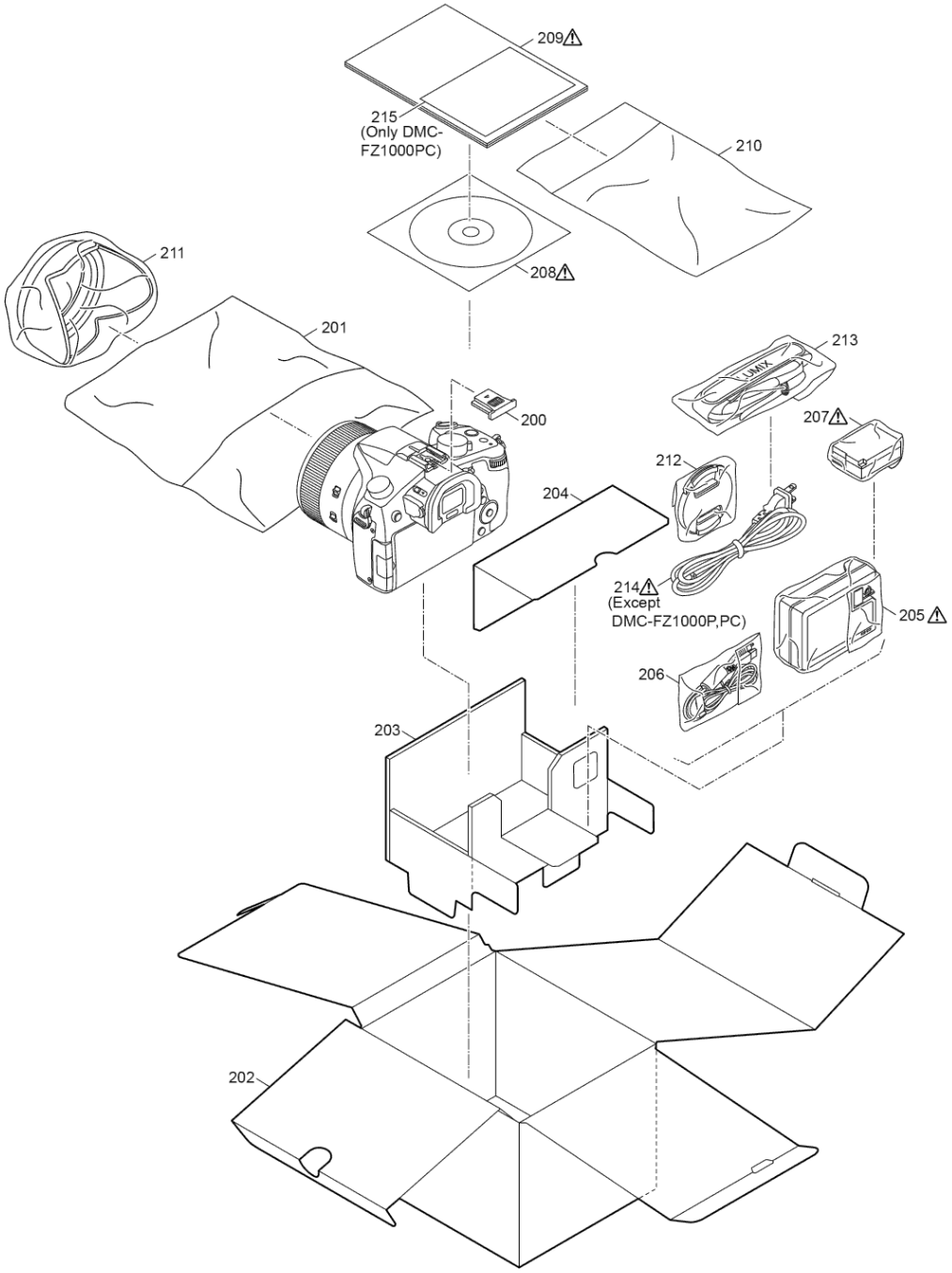
Model No. : DMC-FZ1000 Frame and Casing Section



Model No. : DMC-FZ1000 Camera Lens Section



Model No. : DMC-FZ1000 Packing Parts and Accessories Section



Model No. : DMC-FZ1000 Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		1	SEP0093AA	MAIN P.C.B.	1	(RTL) E.S.D. P,PC,PU,EE,GN
		1	SEP0093AB	MAIN P.C.B.	1	(RTL) E.S.D. EG,EP,EF,EB
		2	SGQ0212	THERMAL SHEET	1	
		3	SGQ0212	THERMAL SHEET	1	
		4	SMP0005	BATTERY PLATE A	1	
		5	VMT2329	HEAT RADIATION PAD	1	

		6	L5ZZ00000196	LVF MODULE	1	
		11	SEQ0032	FLASH P.C.B. UNIT	1	[PAVCX]E.S.D.
		12	SEP0094AA	LCD IF P.C.B.	1	[PAVCX](RTL) E.S.D.
		13	SEP0096AA	MIC JACK P.C.B.	1	[PAVCX](RTL) E.S.D.
		21	VEK0U23	HOT SHOE UNIT	1	[PAVCX]
		22	SEP0098AA	MULTI FPC UNIT	1	[PAVCX]
		23	SKM0002K	MIC NET A	1	[PAVCX]
		24	VGQ8918	MIC TAPE	1	[PAVCX]
		25	SGQ0066	MIC NET B	1	[PAVCX]
		26	SGQ0072	MIC CUSHION TOP	1	[PAVCX]
		27	SYK0363	TOP CASE UNIT	1	[PAVCX]
		28	VMC2111	SHOE SPRING	1	[PAVCX]
		29	SKK0088K	FLASH CASE TOP	1	[PAVCX]
		30	SYK0356	FLASH CASE UNIT	1	[PAVCX]
		31	SGU0021	FLASH LOCK KNOB	1	[PAVCX]
		32	VGQ0Q83	TOP FPC TAPE B	1	[PAVCX]
		33	SMP0013	HOT SHOE PLATE A	1	[PAVCX]
		34	SMP0033	HOT SHOE PLATE B	1	[PAVCX]
		35	SMP0012	FLASH EARTH PLATE	1	[PAVCX]
		36	SGQ0076	CAPACITOR COVER	1	[PAVCX]
	⚠	37	F9Z000000038	E.CAPACITOR	1	[PAVCX](C8003)
	⚠	38	N4ECY25Y0002	BUTTON BATTERY	1	[PAVCX](B8001)
		39	SGQ0067	FLASH WIRE COVER	1	[PAVCX]
		40	SYQ0071	LVF COVER UNIT	1	[PAVCX]
		41	SYQ0070	LVF UNIT	1	[PAVCX]
		42	SEQ0022	JOINT FPC UNIT	1	[PAVCX]
		43	SMC0016	REAR EARTH PLATE	1	[PAVCX]
		44	SGQ0128	REAR OPERATION TAPE	1	[PAVCX]
		45	K0RB01500004	REAR OPERATION UNIT	1	[PAVCX]
		51	SKK0090K	LCD CASE TOP	1	[PAVCX]
		52	L5BDDYY00126	LCD	1	[PAVCX]
		53	SMP0006	LCD BEZEL	1	[PAVCX]
		54	SGQ0075	LCD BEZEL SHEET	1	[PAVCX]
		55	SKK0091K	LCD CASE BOTTOM	1	[PAVCX]
		56	SYK0422	REAR CASE UNIT	1	[PAVCX]
		56-1	SEP0104AA	HINGE FPC UNIT	1	[PAVCX]
		57	SGQ0056	GRIP PIECE REAR	1	[PAVCX]
		58	SYK0366	EYE CAP UNIT	1	[PAVCX]
		71	SYK0359	LENS RING UNIT	1	[PAVCX]
		72	SGQ0054	GRIP PIECE FRONT L	1	[PAVCX]
		73	SYQ0107	FRONT CASE UNIT	1	[PAVCX]
		74	SYQ0084	GRIP PIECE FRONT R UNIT	1	[PAVCX]
		75	SKF0008K	MIC COVER	1	[PAVCX]
		76	SJD0006	LENS HOLDER PLATE	1	[PAVCX]
		77	SGQ0057	MIC HOLDER	1	[PAVCX]
		78	SMP0007	MIC JACK EARTH PLATE	1	[PAVCX]
		79	SMP0008	SIDE FRAME R	1	[PAVCX]
		81	SYQ0135	BATTERY CASE UNIT	1	[PAVCX]
		82	SKF0011K	JACK COVER	1	[PAVCX]
		83	VMB4409	BATTERY OUT SPRING	1	[PAVCX]
		84	SKF0010K	COUPLER COVER	1	[PAVCX]
		85	SYK0368	BATTERY DOOR UNIT	1	[PAVCX]
		86	SMB0038	BATTERY DOOR SPRING	1	[PAVCX]
		87	VMS8026	BATTERY DOOR SHAFT	1	[PAVCX]
		88	SMP0018	BATTERY PLATE B	1	[PAVCX]
		89	VMB4199	BATTERY LOCK SPRING	1	[PAVCX]

Model No. : DMC-FZ1000 Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		90	VGU0M45	BATTERY LOCK KNOB	1	[PAVCX]
		B1	VHD1870	SCREW	1	
		B2	VHD1870	SCREW	1	
		B3	VHD1870	SCREW	1	
		B4	VHD1870	SCREW	1	
		B5	VHD1870	SCREW	1	
		B6	VHD1870	SCREW	1	
		B7	VHD1870	SCREW	1	
		B8	VHD1870	SCREW	1	
		B9	VHD2178	SCREW	1	
		B10	VHD2178	SCREW	1	

		B11	VHD2333	SCREW	1	
		B12	VHD2333	SCREW	1	
		B13	VHD2438	SCREW	1	
		B14	VHD2438	SCREW	1	
		B15	VHD2438	SCREW	1	
		B16	XQN14+BJ10FN	SCREW	1	
		B17	XTV2+8JFN	SCREW	1	
		B18	XTV2+8JFN	SCREW	1	
		B19	XTV2+8JFN	SCREW	1	
		B20	XTV2+8JFN	SCREW	1	
		B31	VHD1870	SCREW	1	[PAVCX]
		B32	VHD1870	SCREW	1	[PAVCX]
		B33	VHD1870	SCREW	1	[PAVCX]
		B34	VHD2291	SCREW	1	[PAVCX]
		B35	VHD2291	SCREW	1	[PAVCX]
		B36	VHD2291	SCREW	1	[PAVCX]
		B37	VHD2291	SCREW	1	[PAVCX]
		B38	VHD2476	SCREW	1	[PAVCX]
		B39	VHD2476	SCREW	1	[PAVCX]
		B40	VHD2476	SCREW	1	[PAVCX]
		B41	VHD2476	SCREW	1	[PAVCX]
		B42	VHD2476	SCREW	1	[PAVCX]
		B43	VHD1870	SCREW	1	[PAVCX]
		B44	VHD1870	SCREW	1	[PAVCX]
		B45	VHD1870	SCREW	1	[PAVCX]
		B46	VHD1870	SCREW	1	[PAVCX]
		B47	VHD1870	SCREW	1	[PAVCX]
		B48	VHD1870	SCREW	1	[PAVCX]
		B49	VHD1870	SCREW	1	[PAVCX]
		B50	VHD1870	SCREW	1	[PAVCX]
		B51	VHD1870	SCREW	1	[PAVCX]
		B52	VHD2178	SCREW	1	[PAVCX]
		B53	VHD2178	SCREW	1	[PAVCX]
		B54	VHD2305	SCREW	1	[PAVCX]
		B55	VHD2438	SCREW	1	[PAVCX]
		B56	XQN16+BJ4FN	SCREW	1	[PAVCX]
		B57	XQN16+BJ4FN	SCREW	1	[PAVCX]
		B58	VHD2369	SCREW	1	[PAVCX]
		B59	VHD2369	SCREW	1	[PAVCX]
		B60	VHD2369	SCREW	1	[PAVCX]
		B61	VHD2369	SCREW	1	[PAVCX]
		B62	VHD2369	SCREW	1	[PAVCX]
		B63	VHD2369	SCREW	1	[PAVCX]
		B64	VHD2179	SCREW	1	[PAVCX]
		B65	VHD2179	SCREW	1	[PAVCX]
		B66	VHD2333	SCREW	1	[PAVCX]
		B67	VHD2333	SCREW	1	[PAVCX]
		B68	VHD2369	SCREW	1	[PAVCX]
		B69	VHD2369	SCREW	1	[PAVCX]
		B70	VHD2369	SCREW	1	[PAVCX]
		B71	VHD2369	SCREW	1	[PAVCX]

Model No. : DMC-FZ1000 Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
		B72	VHD2291	SCREW	1	[PAVCX]
		B73	VHD2291	SCREW	1	[PAVCX]
		B74	VHD2369	SCREW	1	[PAVCX]
		B75	VHD2369	SCREW	1	[PAVCX]
		B76	VHD2178	SCREW	1	[PAVCX]
		B77	VHD2178	SCREW	1	[PAVCX]
		100	SXW0016	LENS UNIT (W/O MOS)	1	
		101	SEQ0019	MOS UNIT	1	
		102	SXP0058	1ST LENS FRAME UNIT	1	
		103	SXP0008	2ND LENS FRAME UNIT	1	
		104	SXP0009	3RD LENS FRAME UNIT	1	
		105	SXQ0057	MIDDLE FRAME UNIT	1	
		106	SDW0039K	CAM FRAME	1	
		107	SXP0013	5TH LENS FRAME UNIT	1	
		108	SDW0042K	MASTER FLANGE	1	
		109	SEM0006	ZOOM MOTOR	1	

		110	SEQ0012	LENS FPC UNIT	1	
		111	SZT0042	FPC TAPE A	1	
		112	SZT0043	FPC TAPE B	1	
		113	VMB4541	TILT SPRING	1	
		114	VMB4541	TILT SPRING	1	
		115	VMB4541	TILT SPRING	1	
		B101	VHD1974	SCREW	1	
		B102	VHD1974	SCREW	1	
		B103	VHD1974	SCREW	1	
		B104	VHD1974	SCREW	1	
		B105	VHD1974	SCREW	1	
		B106	VHD1974	SCREW	1	
		B107	VHD1974	SCREW	1	
		B108	VHD1974	SCREW	1	
		B109	VHD2492	SCREW	1	
		B110	VHD2492	SCREW	1	
		B111	VHD2109	SCREW	1	
		B112	VHD2351	SCREW	1	
		B113	VHD2351	SCREW	1	
		B114	VHD2351	SCREW	1	
		200	VYF3522	HOT SHOE COVER	1	[PAVCX]
		201	SPF0012	CAMERA BAG	1	
		202	SPK0002	PACKING CASE	1	
		203	SPN0066	CUSHION A	1	
		204	SPN0067	CUSHION B	1	
	⚠	205	DE-A79BB	BATTERY CHARGER	1	P,PC
	⚠	205	DE-A80AD	BATTERY CHARGER	1	PU,EG,EP,EF,EB,EE,GN
		206	K1HY08YY0031	USB CABLE W/PLUG	1	
	⚠	207	-----	BATTERY PACK	1	
	⚠	208	SFM0022	DVD(SOFT/INSTRUCTION BOOK)	1	P,PC,PU See "Notes"
	⚠	208	SFM0023	DVD(SOFT/INSTRUCTION BOOK)	1	EG,EP,EF,EB See "Notes"
	⚠	208	SFM0024	DVD(SOFT/INSTRUCTION BOOK)	1	EE,GN See "Notes"
	⚠	209	SQT0196	BASIC O/I (ENGLISH)	1	P,PC
	⚠	209	SQT0197	BASIC O/I (SPANISH)	1	P
	⚠	209	SQT0198	BASIC O/I (CANADIAN FRENCH)	1	PC
	⚠	209	SQT0199	BASIC O/I (SPANISH)	1	PU
	⚠	209	SQT0200	BASIC O/I (PORTUGUESE)	1	PU
	⚠	209	SQT0201	BASIC O/I (GERMAN)	1	EG
	⚠	209	SQT0202	BASIC O/I (FRENCH)	1	EG,EF
	⚠	209	SQT0203	BASIC O/I (ITALIAN)	1	EG
	⚠	209	SQT0204	BASIC O/I (DUTCH)	1	EG,EF
	⚠	209	SQT0205	BASIC O/I (SPANISH)	1	EG
	⚠	209	SQT0206	BASIC O/I (PORTUGUESE)	1	EG
	⚠	209	SQT0208	BASIC O/I (FINNISH)	1	EP
	⚠	209	SQT0209	BASIC O/I (DANISH)	1	EP
	⚠	209	SQT0210	BASIC O/I (SWEDISH)	1	EP

Model No. : DMC-FZ1000 Parts List

Change	Safety	Ref. No.	Part No.	Part Name & Description	Q'ty	Remarks
	⚠	209	SQT0211	BASIC O/I (POLISH)	1	EP
	⚠	209	SQT0212	BASIC O/I (CZECH)	1	EP
	⚠	209	SQT0213	BASIC O/I (HUNGARIAN)	1	EP
	⚠	209	SQT0214	BASIC O/I (ENGLISH)	1	EB
	⚠	209	SQT0215	BASIC O/I (RUSSIAN)	1	EE
	⚠	209	SQT0216	BASIC O/I (UKRAINIAN)	1	EE
	⚠	209	SQT0217	BASIC O/I (ENGLISH)	1	GN
		210	VPF1545	BAG, POLYETHYLENE	1	
		211	SYQ0081	LENS HOOD	1	
		212	SYQ0103	LENS CAP	1	
		213	VFC4453	SHOULDER STRAP	1	
	⚠	214	K2CA2CA00025	AC CORD W/PLUG	1	PU
	⚠	214	K2CQ2YY00082	AC CORD W/PLUG	1	EG,EP,EF,EE
	⚠	214	K2CT3YY00034	AC CORD W/PLUG	1	EB
	⚠	214	K2CJ2YY00052	AC CORD W/PLUG	1	GN
		215	VQL2C67-4	OPERATING LABEL	1	PC