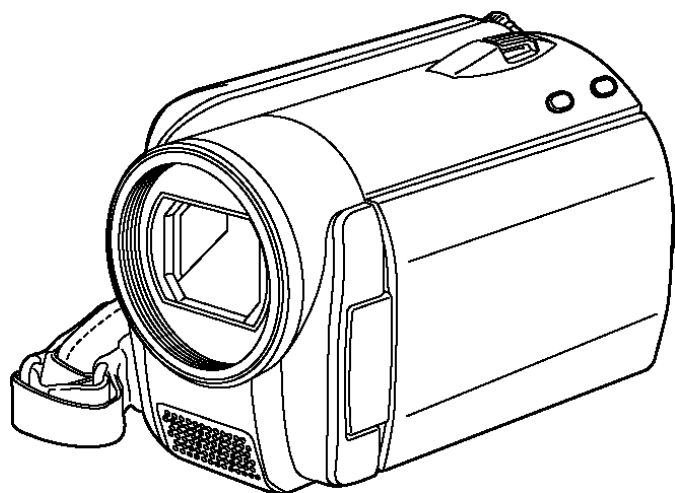


# Service Manual

SD Card / Hard Disk Video Camera



Model No. **SDR-H90P**

**SDR-H90PC**

**SDR-H90EG**

**SDR-H90EE**

**SDR-H90EB**

**SDR-H90EP**

**SDR-H90EF**

**SDR-H90EC**

**SDR-H90GC**

**SDR-H90GN**

**SDR-H90GJ**

**SDR-H90GK**

**SDR-H90PU**

**SDR-H80P**

**SDR-H80PC**

**SDR-H80EG**

**SDR-H80EE**

**SDR-H80EB**

**SDR-H80EP**

**SDR-H80EF**

**SDR-H80EC**

**SDR-H80GC**

**SDR-H80GN**

**SDR-H80GJ**

**SDR-H80GK**

**SDR-H80PU**

**SDR-H80PR**

**SDR-H81EE**

**SDR-H81EB****VOL.1****Colours**

(K).....Black Type (except DMR-H80GK)

(S).....Silver Type (except DMR-H80EF, H81, H90)

(A).....Blue Type (except DMR-H80EF/EE, H81, H90)

(R).....Red Type (except DMR-H80EE, H81, H90)

** 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.

**CONTENTS**

|                                                                                                   | <b>Page</b> |                                                                        | <b>Page</b> |
|---------------------------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------|-------------|
| <b>1 Safety Precaution</b> .....                                                                  | <b>3</b>    | 9.2. Service Positions .....                                           | 34          |
| 1.1. General Guidelines .....                                                                     | 3           | 9.3. Location for Connectors of the Main P.C.B. and Sub<br>P.C.B. .... | 36          |
| <b>2 Warning</b> .....                                                                            | <b>4</b>    | 9.4. Electrical Adjustment Procedures .....                            | 38          |
| 2.1. Prevention of Electrostatic Discharge (ESD) to<br>Electrostatic Sensitive (ES) Devices ..... | 4           | <b>10 Maintenance</b> .....                                            | <b>42</b>   |
| 2.2. Service caution based on legal restrictions .....                                            | 5           | 10.1. Cleaning Lens and LCD Panel .....                                | 42          |
| 2.3. Caution for AC Cord (For EB/GC) .....                                                        | 6           | <b>11 Schematic Diagrams</b> .....                                     | <b>43</b>   |
| 2.4. How to Replace the Lithium Battery (PROCEDURE) .....                                         | 7           | 11.1. OVERALL SCHEMATIC DIAGRAM .....                                  | 43          |
| 2.5. How to Recycle the Lithium Battery (U.S. Only) .....                                         | 8           | 11.2. INTERCONNECTION SCHEMATIC DIAGRAM .....                          | 44          |
| <b>3 Service Navigation</b> .....                                                                 | <b>9</b>    | 11.3. REAR SCHEMATIC DIAGRAM .....                                     | 46          |
| 3.1. Service Information .....                                                                    | 9           | 11.4. LCD BL SCHEMATIC DIAGRAM .....                                   | 47          |
| 3.2. Precautions for Handling HDD .....                                                           | 11          | 11.5. HDD RELAY FPC SCHEMATIC DIAGRAM .....                            | 48          |
| 3.3. Formatting HDD .....                                                                         | 15          | 11.6. LCD SHAFT FPC SCHEMATIC DIAGRAM .....                            | 49          |
| <b>4 Specifications</b> .....                                                                     | <b>16</b>   | 11.7. TERMINAL FPC SCHEMATIC DIAGRAM .....                             | 50          |
| <b>5 Location of Controls and Components</b> .....                                                | <b>17</b>   | 11.8. LCD OPERATION UNIT SCHEMATIC DIAGRAM .....                       | 50          |
| <b>6 Service Mode</b> .....                                                                       | <b>19</b>   | 11.9. ECM FPC SCHEMATIC DIAGRAM .....                                  | 51          |
| 6.1. Service Menu .....                                                                           | 19          | 11.10. LIGHT SCHEMATIC DIAGRAM (SDR-H81EE ONLY) ....                   | 51          |
| 6.2. About Default Setting .....                                                                  | 25          | 11.11. MODE OPERATION SCHEMATIC DIAGRAM .....                          | 52          |
| <b>7 Service Fixture &amp; Tools</b> .....                                                        | <b>26</b>   | 11.12. CCD SCHEMATIC DIAGRAM .....                                     | 52          |
| 7.1. Service Tools and Equipment .....                                                            | 26          | <b>12 Printed Circuit Board</b> .....                                  | <b>53</b>   |
| <b>8 Disassembly and Assembly Instructions</b> .....                                              | <b>27</b>   | 12.1. LCD BL P.C.B. ....                                               | 53          |
| 8.1. Disassembly Flow Chart .....                                                                 | 27          | 12.2. REAR P.C.B. ....                                                 | 54          |
| 8.2. P.C.B. Layout .....                                                                          | 27          | 12.3. LIGHT P.C.B. (SDR-H81EE ONLY) .....                              | 54          |
| 8.3. Disassembly Procedures .....                                                                 | 28          | <b>13 Parts and Exploded Views</b> .....                               | <b>55</b>   |
| 8.4. Disassembly Procedures of Camera Lens Unit .....                                             | 33          | 13.1. Exploded Views .....                                             | 55          |
| <b>9 Measurements and Adjustments</b> .....                                                       | <b>34</b>   | 13.2. Replacement Parts List .....                                     | 59          |
| 9.1. EEPROM Data for spare parts of the SUB P.C.B. ....                                           | 34          | <b>14 Schematic Diagram for printing with A4</b> .....                 | <b>65</b>   |

# 1 Safety Precaution

## 1.1. General Guidelines

### 1.1.1. 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.

### 1.1.1. Leakage Current Cold Check

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

### 1.1.2. 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" to exposed metallic part on the set. And connect "B" to a good earth ground, as shown in .
3. Use an AC voltmeter, with  $1\text{ k}\Omega/\text{V}$  or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed  $0.25\text{ V RMS}$ .

A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed  $1/2\text{ mA}$ . In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

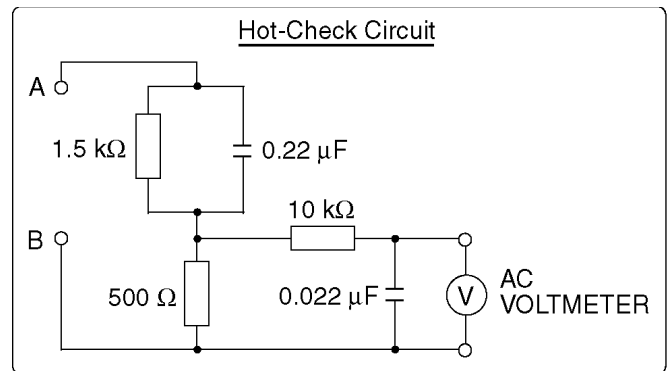


Figure 1

## 2 Warning

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

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatic Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

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

**CAUTION:**

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

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

#### 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, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

## 2.2. Service caution based on legal restrictions

### 2.2.1. 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 degrees C (86°F) more than that of the normal solder.

#### Definition of PCB Lead Free Solder being used

|                                                                                                                                 |     |
|---------------------------------------------------------------------------------------------------------------------------------|-----|
| The letter of "PbF" is printed either foil side or components side on the PCB using the lead free solder.<br>(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 PCB 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 PCB 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 degrees 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%

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

### 2.3.1. Information for your safety

#### IMPORTANT

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

#### WARNING

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

#### CAUTION

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

#### FOR YOUR SAFETY

##### DO NOT REMOVE THE OUTER COVER

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

### 2.3.2. Caution for AC mains lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362

Check for the ASRA mark or the BSI mark on the body of the fuse.



If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safely.

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

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

If in any doubt, please consult a qualified electrician.

#### 2.3.2.1. Important

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

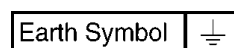
|       |         |
|-------|---------|
| Blue  | Neutral |
| Brown | Live    |

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

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

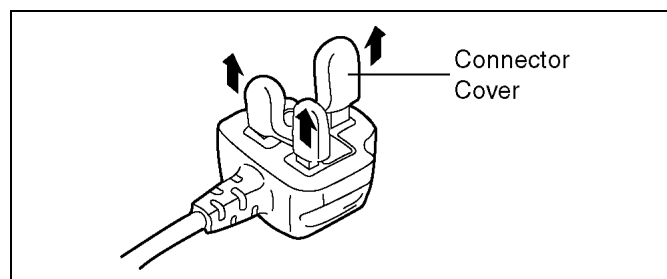
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

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



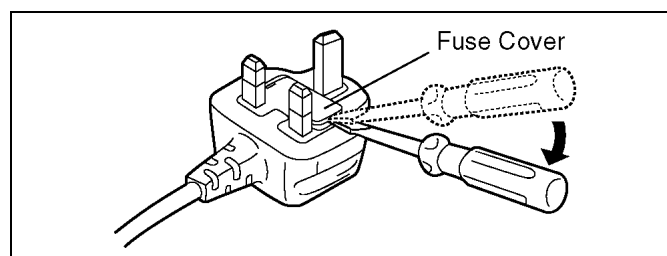
#### 2.3.2.2. Before use

remove the Connector Cover as follows.

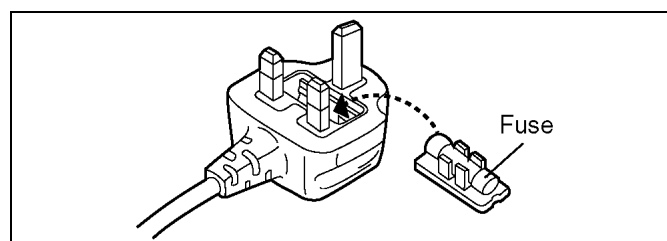


#### 2.3.2.3. How to replace the Fuse

1. Remove the Fuse Cover with a screwdriver.

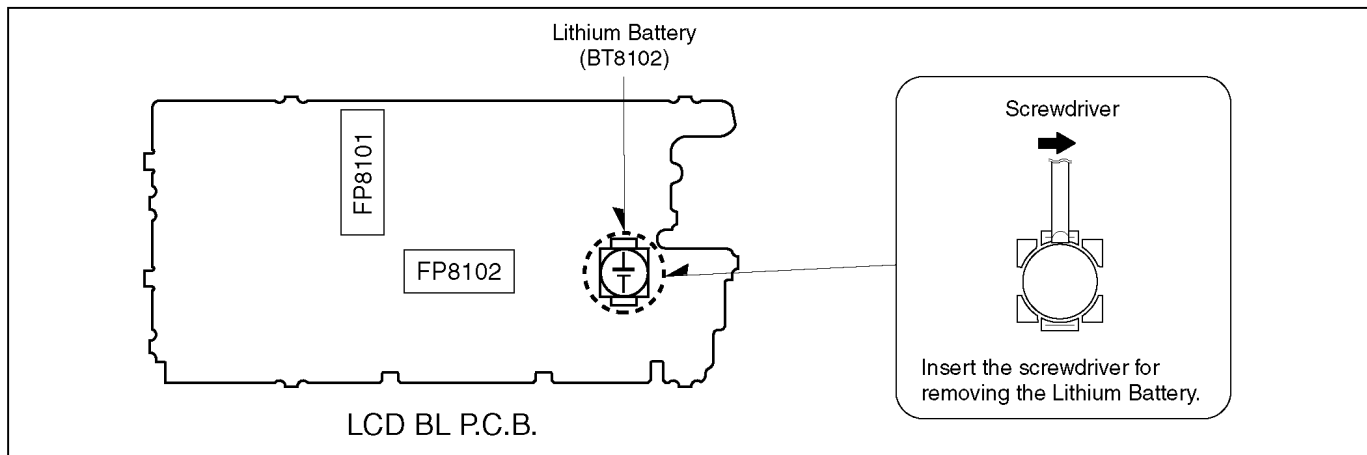


2. Replace the fuse and attach the Fuse cover.



## 2.4. How to Replace the Lithium Battery (PROCEDURE)

1. Remove the LCD BL P.C.B.. (Refer to Disassembly Procedures.)
2. Remove the Lithium Battery "ML-614S/ZTE" and then replace the new one. (See .)



### CAUTION

Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type.

### CAUTION

The battery used in this device may present a risk of fire or chemical burn if mistreated.  
Do not recharge, disassemble, heat above 100°C (212 F), or incinerate.  
Replace battery with Panasonic part number ML-614S/ZTE only.  
Use of another battery may present a risk of fire or explosion.  
Dispose of used battery promptly.  
Keep away from children.  
Do not disassemble and do not dispose of in fire.

Fig. B1

### Note:

The lithium battery is a critical component. (Type No.: ML-614S/ZTE Manufactured by Panasonic.)

It must never be subjected to excessive heat or discharge.

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

Replacement batteries must be of the 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 equipment manufacturer.  
 Discard used batteries according to manufacturer's instructions.

(For French)

**PRECAUTION**

Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.  
 Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant.

(For German)

**VORSICHT**

Bei einer falsch eingesetzten Batterie besteht Explosionsgefahr. Nur mit einer vom gleichen Typ ersetzen.  
 Verbrauchte Batterien beim Fachhändler oder einer Sammelstelle für Sonderstoffe abliefern.

(For Swedish)

**VARNING**

Explosionsfara vid felaktigt batteribyte.  
 Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.  
 Kassera använt batteri enligt fabrikantens instruktion.

(For Norwegian)

**ADVARSEL!**

Lithiumbatteri-Eksplodingsfare ved fejlagtig håndtering.  
 Udskiftning må kun ske med batteri af samme fabrikat og type.  
 Levér det brugte batteri tilbage til leverandøren.

(For Finnish)

**VAROITUS**

Paristo voi räjähtää, jos se on virheellisesti asennettu.  
 Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.  
 Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

## 2.5. How to Recycle the Lithium Battery (U.S. Only)

### U.S.A./CANADA CONSUMERS: ATTENTION:



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

## 3 Service Navigation

### 3.1. Service Information

This service manual contains technical information which will 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, this information will be followed by supplement service manual to be filed with original service manual.

#### Notes 1:

1. VSK0697 is indicated on AC Adapter used on the following models:  
SDR-H80P/PC, H90P/PC.  
However, the AC Adapter replacement part number is DE-A51BB which should be used when ordering.
2. VSK0698 is indicated on AC Adapter used in the following models:  
SDR-H80EG/EB/EP/EF/EC/EE/GC/GN/GJ/PU, H81EB/EE, H90EG/EB/EP/EF/EC/EE/GC/GN/GJ/PU.  
However, the AC Adapter replacement part number is DE-A51CB which should be used when ordering.
3. VSK0699 is indicated on AC Adapter used on the following model:  
SDR-H80GK, H90GK.  
However, the AC Adapter replacement part number is DE-A51DB which should be used when ordering.
4. VSK0705 is indicated on AC Adapter used on the following model:  
SDR-H80PR.  
However, the AC Adapter replacement part number is DE-A51FB which should be used when ordering.

#### Notes 2:

- 1) This service manual does not contain the following information, because of the impossibility of servicing at component level.
  1. Schematic Diagram, Block Diagram and P.C.B. layout of Main P.C.B. and Sub P.C.B.
  2. Parts List for individual parts of Main P.C.B. and Sub P.C.B.
- 2) The following category are recycle module part. Please send them to Central Repair Center.
  - \*Main P.C.B. (LSEP8462A1: SDR-H80P/PC/PU/PR, H90P/PC/PU)  
(LSEP8462P1: SDR-H80EG/EB/EP/EF/EC/EE/GC/GN/GJ/GK, H81EB/EE,  
90EG/EB/EP/EF/EC/EE/GC/GN/ GJ/GK)
  - \*Sub P.C.B. (LSEP8463A1: SDR-H80P/PC/PU/PR)  
(LSEP8463B1: SDR-H90P/PC/PU)  
(LSEP8463P1: SDR-H80EG/EB/EP/EF/EC/EE/GC/GN/GJ/GK, H81EB)  
(LSEP8463Q1: SDR-H81EE)  
(LSEP8463R1: SDR-H90EG/EB/EP/EF/EC/EE/GC/GN/GJ/GK)

When a part replacement is required for repairing each Main P.C.B. and Sub P.C.B., replace the assembly parts.

(Main P.C.B.)

The following circuits are contained in Main P.C.B.

1. Main Connection Circuit
2. AVIO Circuit
3. Video Circuit
4. Memory Circuit
5. USB Host Circuit
6. LCD Circuit
7. Resize Circuit
8. KAO Circuit
9. Lens Drive Circuit
10. TG/AFE Circuit
11. MIC Circuit
12. Sub Power Circuit

(Sub P.C.B.)

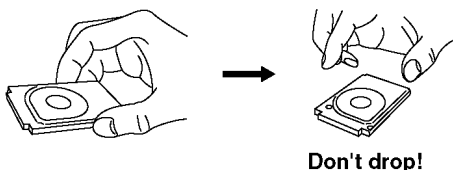
The following circuits are contained in Sub P.C.B.

1. Sub Connection Circuit
2. Power Circuit
3. G-Sensor Circuit
4. Sub SYSCON Circuit
5. SYSCON Circuit
6. Light Circuit (Only SDR-H81EE)

## 3.2. Precautions for Handling HDD

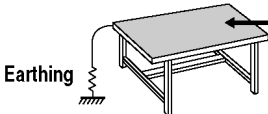
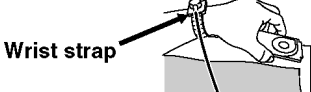
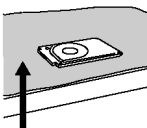
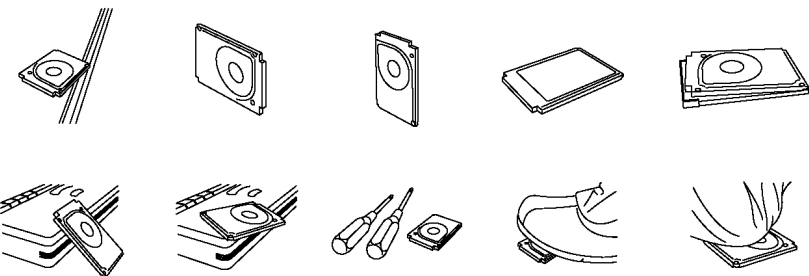
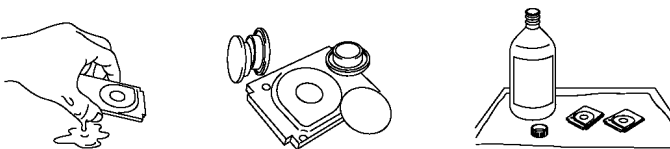
1. Handle HDD very carefully to prevent the static electricity and shock.
2. Set the HDD quickly after taking it out from the package. Make sure to put the HDD on buffer materials, etc.

### 3.2.1. Precautions at incoming process and for opening packages

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Preventing shock              | <ul style="list-style-type: none"> <li>• Do not throw down HDD from luggage carrier or avoid dropping accidentally when unloading. The HDD may not be reliable when impacts of dropping, throwing or rolling occur.</li> <li>• Avoid HDD hitting other equipment or other HDD. Hold HDD firmly but do not apply excessive force when taking out from the package because it is particularly slippery.</li> <li>• When taking out HDD from the package, make sure to put buffer materials such as conductive urethane materials on a work table. Also, a stable place is recommended to avoid impacts or vibration.</li> </ul> |
| Preventing condensation       | <ul style="list-style-type: none"> <li>• To prevent dew condensation on HDD due to sharp temperature change, keep it indoors without unpacking, and adjust the package of HDD to room temperature completely before unpacking.</li> <li>• Avoid entrance or window areas where temperature changes easily for storage.</li> </ul>                                                                                                                                                                                                                                                                                             |
| Holding example               | <ul style="list-style-type: none"> <li>• Take out HDD holding both sides, not to press the top cover and the center of the device label.</li> </ul> <div style="text-align: center;"> <p><b>&lt;OK&gt;</b></p>  <p><b>&lt;NG&gt;</b></p>  </div>                                                                                                                                                                                                           |
| Preventing static electricity | <ul style="list-style-type: none"> <li>• After opening package, HDD must be handled only by a specified worker in E.S.D.* free environment on a conductive mat. It may cause damage on HDD components due to overvoltage such as electrostatic discharge, etc.</li> </ul>                                                                                                                                                                                                                                                                                                                                                     |

\*E.S.D. = Electrostatically Sensitive Devices

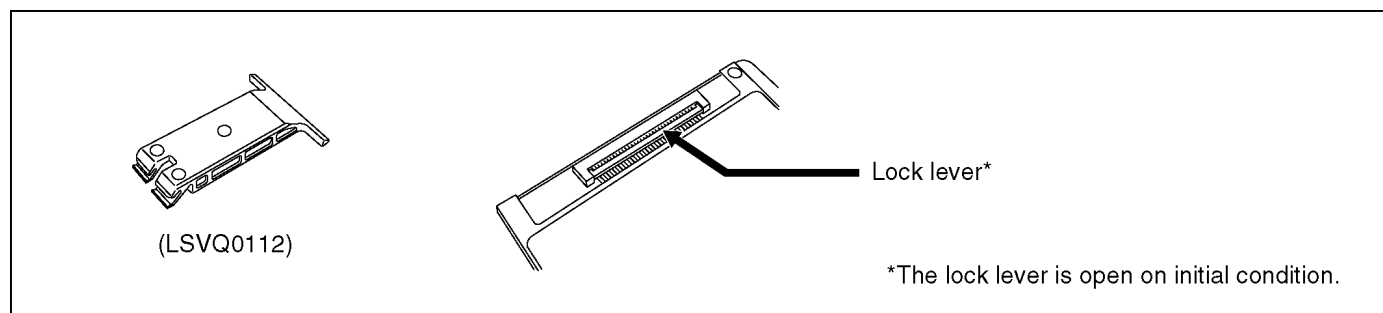
### 3.2.2. Precautions for installing HDD

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Preventing static electricity | <ul style="list-style-type: none"> <li>HDD may be destroyed by static electricity charged to clothes or human body. Place a conductive mat with removed earthing and use the wrist strap to prevent static charge.</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>&lt;OK&gt;</p>  <p>Conductive mat</p> </div> <div style="text-align: center;"> <p>&lt;OK&gt;</p>  <p>Wrist strap</p> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Preventing shock              | <ul style="list-style-type: none"> <li>Place HDD with its face upward (the device label upward) on the flat and stable surface using buffer materials, etc.</li> <li>Do not stand HDD. If it falls down, the excessive impacts may damage HDD.</li> <li>Do not store or carry HDD close to other HDD or other components. The components may be distorted due to impacts or weight, which may result in the performance deterioration of the HDD.</li> <li>Do not put HDD in the working area. Do not put HDD close to industrial tools in particular or temporarily put it on the floor.</li> <li>Be extremely careful not to drop HDD when working on it because even dropping HDD down on the work table with a mat on it may cause damage to HDD.</li> </ul> <div style="display: flex; align-items: center;"> <div style="text-align: center; margin-right: 20px;"> <p>&lt;OK&gt;</p>  <p>Buffer materials</p> </div> <div style="text-align: center;"> <p>&lt;NG&gt;</p>  </div> </div> |
| No water / solvent            | <ul style="list-style-type: none"> <li>Do not hold HDD with a wet hand or put magnets, solvent, tea, coffee, etc, close to HDD. This affects internal components and outside of HDD</li> </ul> <div style="text-align: center;"> <p>&lt;NG&gt;</p>  </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Connector                     | <ul style="list-style-type: none"> <li>The interface connector pin is easily damaged. Push it lightly and firmly to the end along the connector guide.</li> <li>For further details, refer to "Precautions for inserting and removing HDD FPC".</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

### 3.2.3. Precautions for inserting and removing HDD FPC

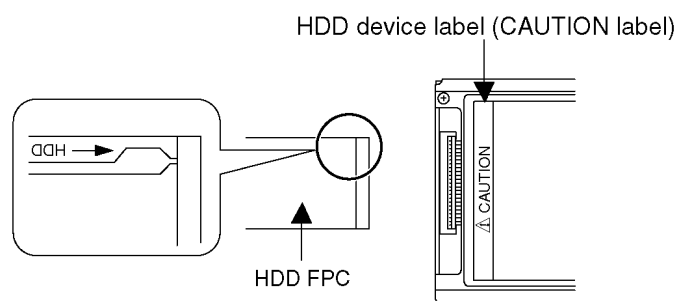
Make sure to use the tool (LSVQ0112) when locking and unlocking the lock lever of HDD FPC connector.

Do not lock the lock lever without inserting HDD FPC. Otherwise, the connector may be damaged.



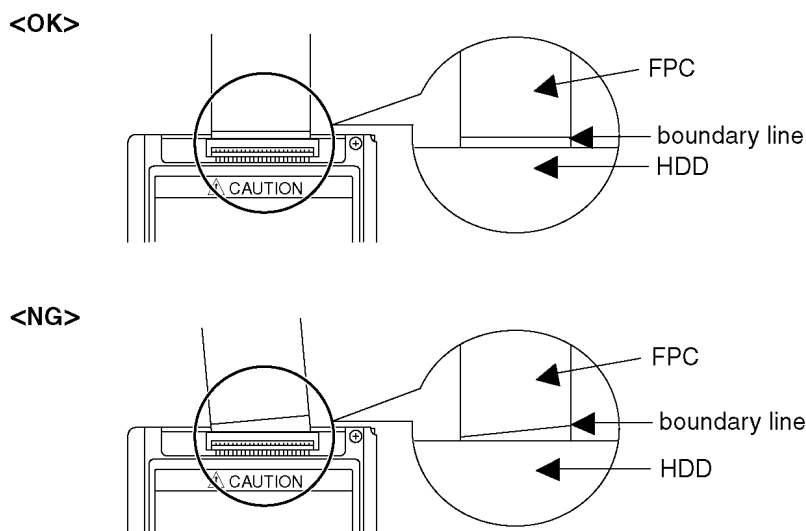
#### Insert HDD FPC

- ① Place HDD so that HDD device label (CAUTION label) faces up.  
**Caution:** Do not set the HDD cushion when installing HDD FPC.
- ② Insert HDD FPC straight to the connector, and make sure if HDD FPC has been inserted to the end.  
**Caution:** The connector surface of HDD FPC must face down and the letter "HDD" and the arrow must be seen as shown.



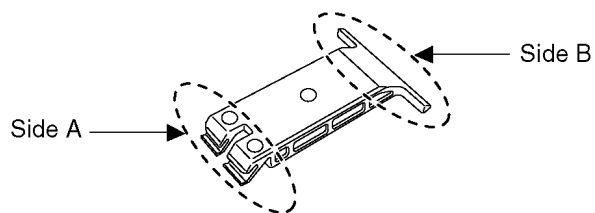
#### Check HDD FPC

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



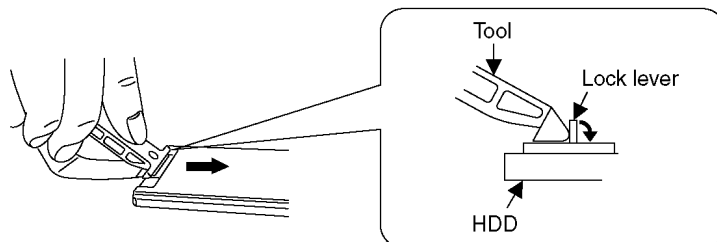
## Tool operation

Lock using the tool after inserting HDD FPC.



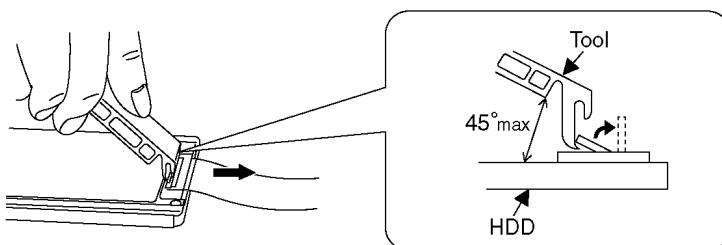
### <How to lock>

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



### <How to unlock>

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



Make sure to use the tool (LSVQ0112) when opening and closing the lock lever.

\*See "" () for attaching to the unit.

### 3.3. Formatting HDD

When HDD is exchanged, format HDD as the procedure below.

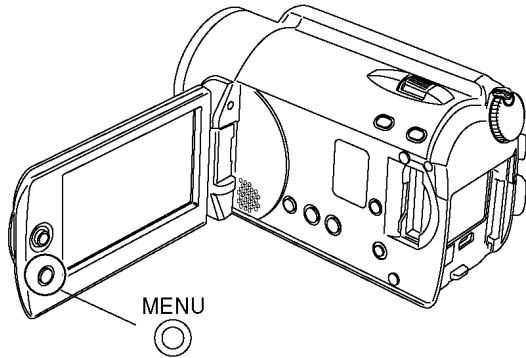
Without formatting, the error message appears on the LCD display when accessing HDD.

<Formatting procedure>

Rotate the mode dial to select  .

Select [HDD] in [MEDIA SELECT].

1. Press the MENU button, then  
select [SETUP] →  
[FORMAT HDD] → [YES] and  
press the joystick.



2. When the confirmation message appears, select [YES], then press the joystick.

- When formatting is complete, press the MENU button to exit the message screen.

**Note:**

- During formatting, do not turn this unit off.
- When you format the HDD, use a battery with sufficient battery power or the AC adaptor.
- During formatting, do not cause any vibrations or impacts to this unit.

# 4 Specifications

## SD Card / Hard Disk Video Camera

| ITEM                | SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ITEM                             | SPECIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|----|------------|----------|----------|----|------------|----------|----------|----|------------|----------|----------|--------------------------|---------------------------|
| POWER               | SD Card/Hard Disk Video Camera:<br>Power Source: DC 9.3/7.2 V<br>Power Consumption: 3.8 W (Recording)<br>AC Adaptor:<br>Power Source: AC 110-240 V, 50/60 Hz<br>Power Consumption: 19 W<br>DC Output: DC 9.3 V, 1.2 A<br>(Unit Operation)<br>DC 8.4 V, 0.65 A<br>(Battery Charging)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | STILL PICTURES                   | Recording Media:<br>SD Memory Card (removable type):<br>8 MB /16 MB /32 MB /64 MB /128 MB /256 MB /<br>512 MB /1 GB/2 GB<br>(FAT12 and FAT16 format corresponding)<br>SDHC Memory Card (removable type):<br>4 GB /6 GB /8 GB /12 GB /16 GB /32 GB<br>(FAT32 format corresponding)<br>HDD (fixed): 60 GB* <sup>2</sup> (SDR-H80,H81)<br>: 80 GB* <sup>3</sup> (SDR-H90)<br><br>Compression:<br>JPEG (Design rule for Camera File system,<br>based on Exif 2.2 standard), DPOF corresponding<br>Picture Size:<br>640 × 480 (4:3), 640 × 360 (16:9) |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
| RECORDING<br>FORMAT | SD Card: Based on the SD-Video standard<br>HDD: Independent standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | STANDARD<br>ILLUMINATION         | 1,400 lx                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
| CAMERA              | Filter Diameter: 37.0mm<br>Zoom: 70X optical, 100X/3500X digital<br>Monitor: 2.7-inch wide LCD (approx. 123K pixels)<br>Lens: Auto Iris, F1.9-F5.7, Focal Length; 1.5 - 105 mm<br>Macro (Full Range AF)<br>Image Sensor: 1/8-inch CCD Image Sensor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MINIMUM REQUIRED<br>ILLUMINATION | 6 lx<br>(Approx. 2lx with the colour night view function or<br>MagicPix function)                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
| VIDEO               | Television System :<br>EIA Standard : 525 Lines, 60 Fields NTSC Colour Signal<br>(SDR-H80P/PC/PU/PR, H90P/PC/PU)<br>CCIR : 625 Lines, 50 Fields PAL Colour Signal<br>(Except SDR-H80P/PC/PU/PR, H90P/PC/PU)<br><br>Video Output Level: 1.0 Vp-p, 75 ohm<br>(AV Multi Jack)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | USB                              | Card reader function (No copyright protection support)<br>HDD reader function<br>Hi-Speed USB (USB 2.0) compliant<br>USB terminal Type Mini AB.<br>PictBridge-compliant<br>USB host function (for DVD burner)                                                                                                                                                                                                                                                                                                                                    |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
| AUDIO               | Audio Output Level (Line): 316 mV, 600 ohm<br>(AV Multi Jack)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | MICROPHONE                       | Stereo (with a zoom function)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
| MOTION PICTURES     | Recording media:<br>SD Memory Card (removable type) :<br>32 MB* <sup>1</sup> /64 MB* <sup>1</sup> /128 MB* <sup>1</sup> /256 MB/512 MB/1 GB/2 GB<br>(FAT12 and FAT16 format corresponding)<br>SDHC Memory Card (removable type) :<br>4 GB /6 GB /8 GB /12 GB /16 GB /32 GB<br>(FAT32 format corresponding)<br>HDD (fixed type): 60 GB* <sup>2</sup> (SDR-H80,H81)<br>: 80 GB* <sup>3</sup> (SDR-H90)<br><br>Compression:<br>MPEG-2<br>Recording mode and transfer rate:<br>XP: 10 Mbps (VBR)<br>SP: 5 Mbps (VBR)<br>LP: 2.5 Mbps (VBR)<br>Recordable time:<br>Approx.<br><table border="1"> <tr> <th></th><th>SD Card (1GB)</th><th>HDD (60GB)</th><th>HDD (80GB)</th></tr> <tr> <td>XP</td><td>12 minutes</td><td>14 hours</td><td>18 hours</td></tr> <tr> <td>SP</td><td>25 minutes</td><td>27 hours</td><td>36 hours</td></tr> <tr> <td>LP</td><td>50 minutes</td><td>54 hours</td><td>72 hours</td></tr> </table><br>Audio compression:<br>SD card: Dolby Digital/MPEG-1 Audio Layer 2, 16bit<br>(48 kHz/2 ch)<br>HDD: Dolby Digital, 16 bit (48 kHz/2 ch)<br>Maximum number of recordable folders and scenes:<br>SD card: 99 folders × 99 scenes (9801 scenes)<br>HDD: 999 folders × 99 scenes (98901 scenes)<br>(When the date changes, a new folder is created and<br>scenes are recorded in this new folder even if the<br>number of scenes in the old folder has not reached 99.) |                                  | SD Card (1GB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | HDD (60GB) | HDD (80GB) | XP | 12 minutes | 14 hours | 18 hours | SP | 25 minutes | 27 hours | 36 hours | LP | 50 minutes | 54 hours | 72 hours | OPERATING<br>TEMPERATURE | 0°C - 40°C (32°F - 104°F) |
|                     | SD Card (1GB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | HDD (60GB)                       | HDD (80GB)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
| XP                  | 12 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 14 hours                         | 18 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
| SP                  | 25 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 27 hours                         | 36 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
| LP                  | 50 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 54 hours                         | 72 hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OPERATING<br>HUMIDITY            | 10 % - 80 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OPERATING<br>ALTITUDE            | Less than 3000 m (9800 feet) above sea level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | WEIGHT                           | SD Card/Hard Disk Video Camera: 310 g (0.6834lbs)<br>(without battery)<br>AC Adaptor: 115 g (0.25 lbs)                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DIMENSIONS                       | SD Card/Hard Disk Video Camera:<br>(excluding the projecting parts)<br>53 mm (W) × 66.3 mm (H) × 107 mm (D)<br>2.09 inch (W) × 2.61 inch (H) × 4.21 inch (D)<br>AC Adaptor:<br>92 mm (H) × 33 mm (H) × 61 mm (D)<br>3.6 inch (W) × 1.3 inch (H) × 2.4 inch (D)                                                                                                                                                                                                                                                                                   |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | STANDARD<br>ACCESSORIES          | 1 pc. AC Adaptor<br>1 pc. Battery Pack Unit<br>1 pc. DC Cable<br>1 pc. AC Cord (Except SDR-H80GC, H90GC)<br>2 pcs. AC Cord (SDR-H80GC, H90GC)<br>1 pc. AV Cable<br>1 pc. CD-ROM<br>1 pc. USB Cable                                                                                                                                                                                                                                                                                                                                               |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SOLDER                           | This model use lead free solder (PbF).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |            |    |            |          |          |    |            |          |          |    |            |          |          |                          |                           |

\*1 Cannot be guaranteed in operation.

\*2 The 60 GB hard drive utilizes a portion of the storage space for formatting, file management and other purposes. 60 GB is 60,000,000,000 bytes. Usable capacity will be less.

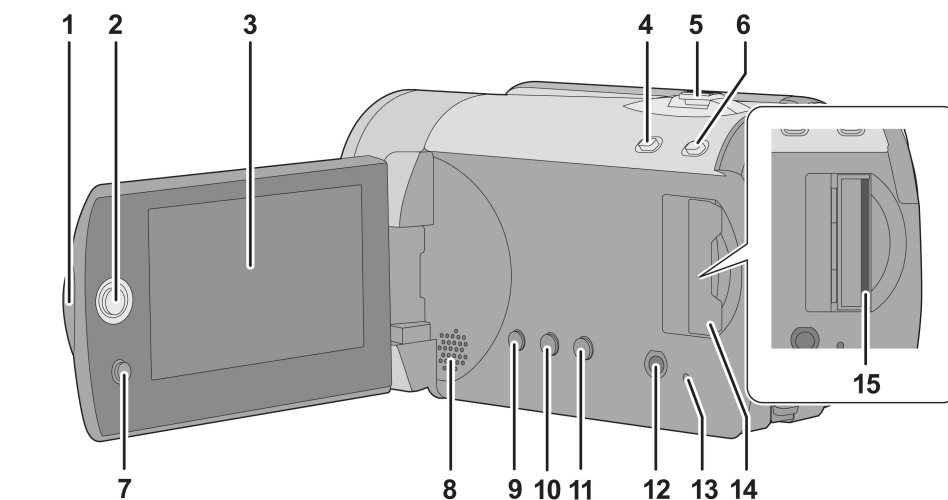
\*3 The 80 GB hard drive utilizes a portion of the storage space for formatting, file management and other purposes. 80 GB is 80,000,000,000 bytes. Usable capacity will be less.

Weight and dimensions are approximate values. Specifications may change without prior notice.

## 5 Location of Controls and Components

Followings are the Location of Controls and Components for SDR-H80P/PC, H90P/PC as a sample.

For other models, refer to each Operating Instructions.



1 LCD monitor open

2 Joystick

3 LCD monitor

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

4 Web mode button [WEB MODE]

5 When recording: Zoom lever [W/T]  
When playing back: Volume lever [–VOL+]

6 Intelligent auto button [iA]

7 Menu button [MENU]

8 Speaker

9 Delete button [🗑️]

10 Manual button [MANUAL AF/MF]

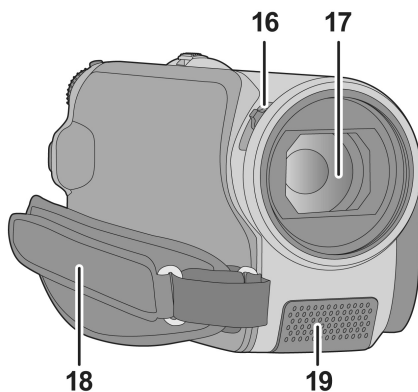
11 Optical image stabilizer button [O.I.S.]

12 Audio-video output terminal [A/V]

13 SD Card access lamp [ACCESS]

14 SD Card slot cover [SD CARD]

15 SD card slot

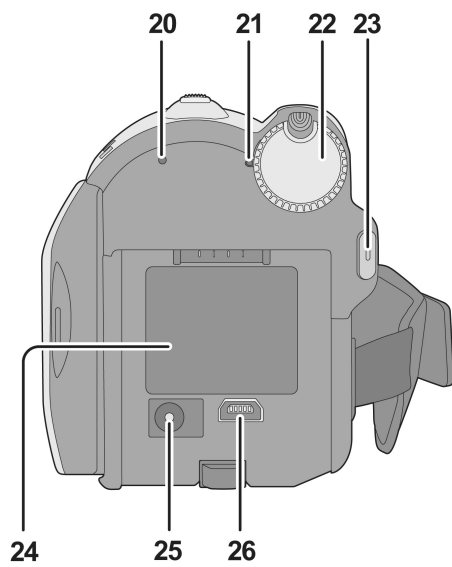


16 Open/close switch for the lens cover

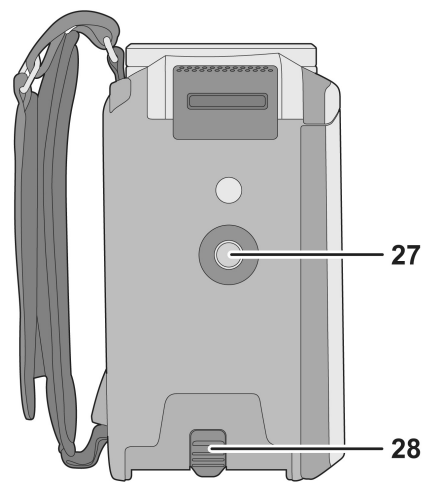
17 Lens

18 Grip belt

19 Microphone (built-in, stereo)



- 20 HDD access lamp [ACCESS HDD]
- 21 Status indicator
- 22 Mode dial
- 23 Recording start/stop button
- 24 Battery holder
- 25 DC input terminal [DC IN]
- 26 USB terminal [  ]



- 27 Tripod receptacle
- 28 Battery release lever [BATTERY]

## 6 Service Mode

### 6.1. Service Menu

When abnormal detection contents are confirmed, do the (Service Menu) following operation. Automatic diagnosis code will be displayed.

#### To enter the Service Menu

1. Turn the Power on and set the Mode Dial to [VIDEO RECORDING MODE].
2. Push the [OIS], [JOYSTICK CONTROL LEFT] and [iA] simultaneously for 3 seconds (with no SD Card inserted).

#### Note:

If a SD Card is inserted, the above operation will not work.

This operation displays the following Service Menu items.

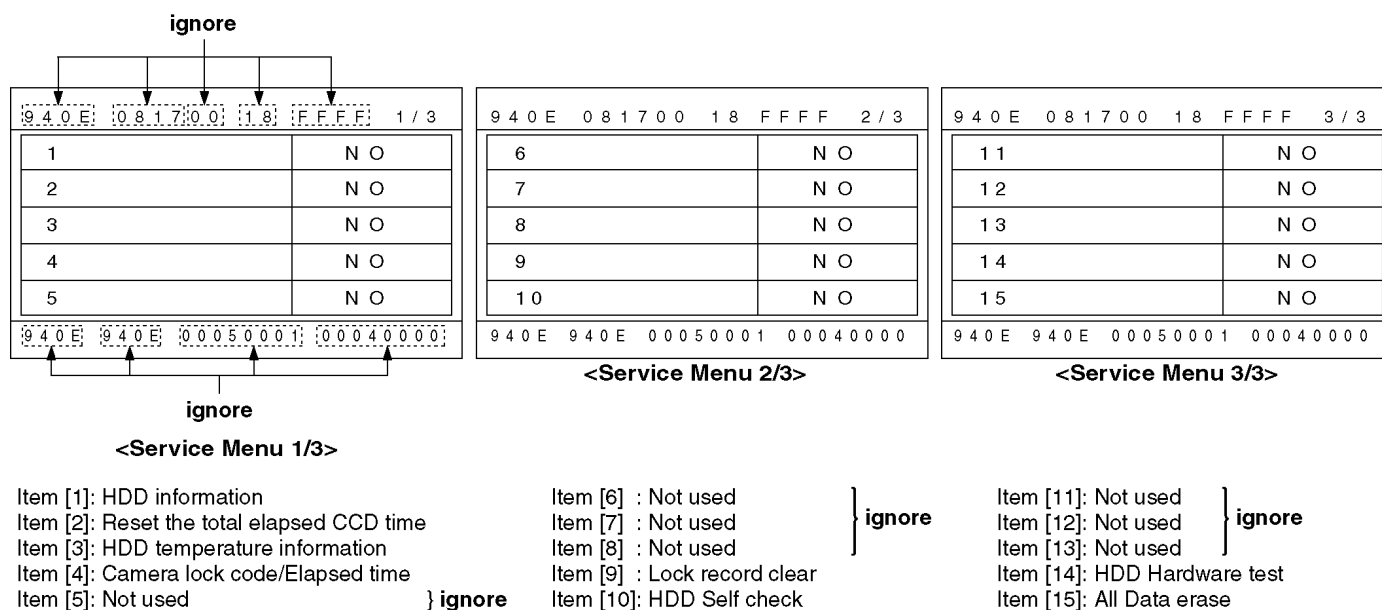


Fig. 1-1

#### Note:

Only perform items 1, 2, 3, 4, 9, 10, 14 and 15 in the Service Menu.

### To select the Item of Service Menu

1. Press [JOYSTICK CONTROL UP/DOWN] to select item [1], [2], [3], [4], [9], [10], [14] or [15].
2. Press [JOYSTICK CONTROL RIGHT] to display [YES/NO] screen.
3. Press [JOYSTICK CONTROL UP/DOWN] to select [YES].
4. Press [JOYSTICK CONTROL CENTER] to end.

<Item [1] screen : HDD information (1/7 screen)>

| DRIVE Information |                        | 1/7                                                                         |
|-------------------|------------------------|-----------------------------------------------------------------------------|
| 01. FALL          | ABCD                   | ← 01. Number of times of fall detection (Base 16 number)                    |
| 02. HIGH TEMP     | 9A                     | ← 02. Number of times of shut down due to high temperature (Base 16 number) |
| 03. LOW TEMP      | 9A                     | ← 03. Number of times of shut down due to low temperature (Base 16 number)  |
| 04. SERIAL        | } 0123456789ABCDEF0123 | ← <b>ignore</b>                                                             |
|                   |                        |                                                                             |

<Item [1] screen : HDD information (3/7 screen)>

Press [JOYSTICK CONTROL RIGHT] to display 3/7 screen.

| DRIVE Information      |                                          | 3/7 |
|------------------------|------------------------------------------|-----|
| 07.READ ERROR          |                                          |     |
| 010B006464000000000000 |                                          |     |
| 08.THROUPT             |                                          |     |
| 0205006464000000000000 |                                          |     |
| 09.SPINUP              |                                          |     |
| 0327006464330800000000 |                                          |     |
| 10.START/S             |                                          |     |
| 0432006464170100000000 |                                          |     |
| 11.REALLOC SECTOR      | } ← Re-allocated Sector Count (Quantity) |     |
| C532006464270000000000 |                                          |     |

For example :

| ignore     | A  | B          | C          | D          | E          | F          |
|------------|----|------------|------------|------------|------------|------------|
| C532006464 | 27 | 0000000000 | 0000000000 | 0000000000 | 0000000000 | 0000000000 |

↓ Sorting

F E D C B A  
000000000027  
(Base 16 number)

Change to decimal number

39 (Re-allocated Sector Count)

- If Re-allocated Sector Count is 500 and over, replace HDD.

Fig. 1-2

## &lt;Item [1] screen : HDD information (5/7 screen)&gt;

Press [JOYSTICK CONTROL RIGHT] to display 5/7 screen.

| DRIVE Information 5/7  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 17.P-OFF RETRACT       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C032006464060000000000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18.LOAD CYCLE          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C132006464BE0300000000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 19.TEMP                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C222006464170010002F00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20.RE-ALLOC EVENT      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C432006464000000000000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21.PENDING SECTOR      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C532006464270000000000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Current Pending Sector (Quantity)

For example :

ignore      A   B   C   D   E   F  
 C 5 3 2 0 0 6 4 6 4 2 7 0 0 0 0 0 0 0 0 0 0 0

Sorting

F   E   D   C   B   A  
 0 0 0 0 0 0 0 0 0 0 0 2 7  
 (Base 16 number)

Change to decimal number

39 (Current Pending Sector)

- If Current Pending Sector is 500 and over, replace HDD.

## &lt;Item [1] screen : HDD information (6/7 screen)&gt;

Press [JOYSTICK CONTROL RIGHT] to display 6/7 screen.

| DRIVE Information 6/7   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 22.UNCORRECTABLE SECTOR |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C630006464060000000000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 23.CRC ERROR            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C73200C8C8000000000000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24.DISK SHIFT           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| C532006464270000000000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25.LOADED HOURS         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DE32006464070000000000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26.LOAD RETRY           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DF32006464000000000000  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Disk Shift (Measure)

For example :

ignore      A   B   C   D   E   F  
 C 5 3 2 0 0 6 4 6 4 2 7 0 0 0 0 0 0 0 0 0 0 0

Sorting

F   E   D   C   B   A  
 0 0 0 0 0 0 0 0 0 0 0 2 7  
 (Base 16 number)

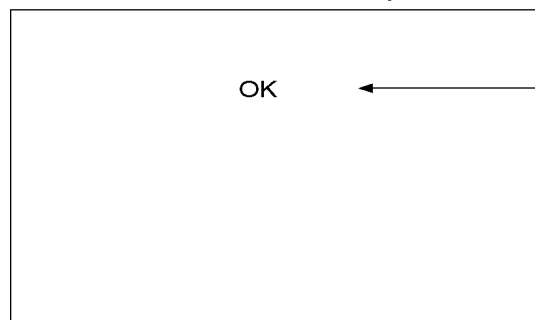
Change to decimal number

39 (Disk Shift)

- If Disk Shift is 400 and over, replace HDD.

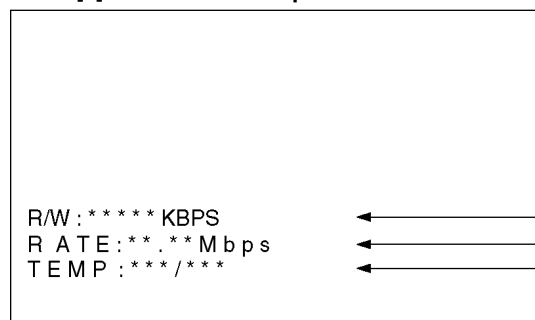
Fig. 1-3

## &lt;Item [2] screen : Reset the total elapsed CCD time&gt;



← "OK" is displayed after "Reset the total elapsed CCD time" is executed.

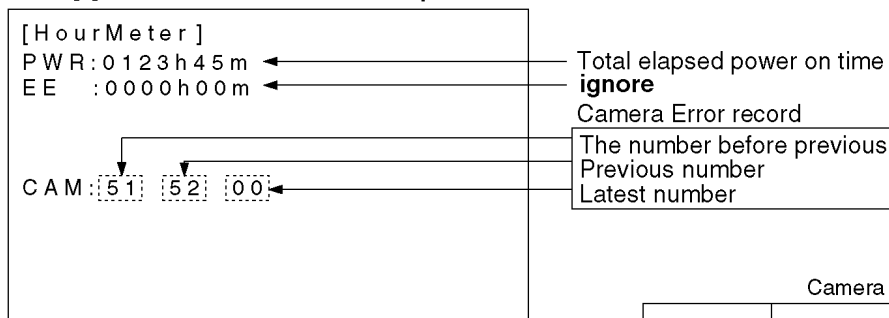
## &lt;Item [3] screen : HDD temperature information&gt;



← Reading/Writing speed (While ACCESS/PC lamp is lighting)  
← Recording bit rate  
← Main Unit temperature (current)/  
Maximum temperature after the power is turned on

Fig. 1-4

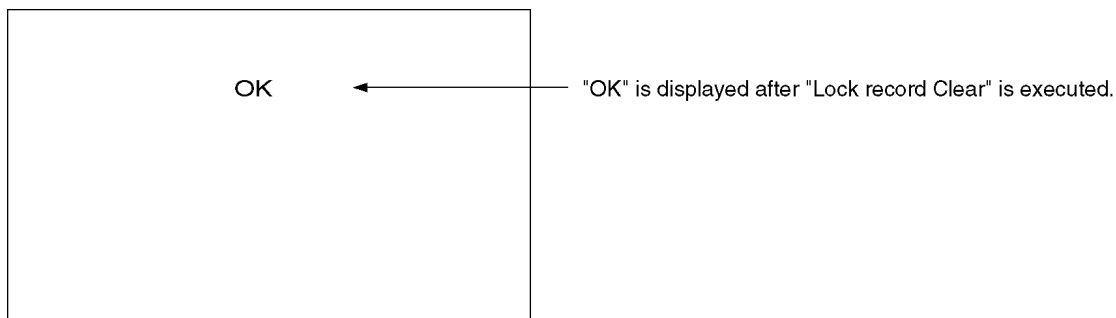
## &lt;Item [4] screen : Camera lock code/Elapsed time&gt;



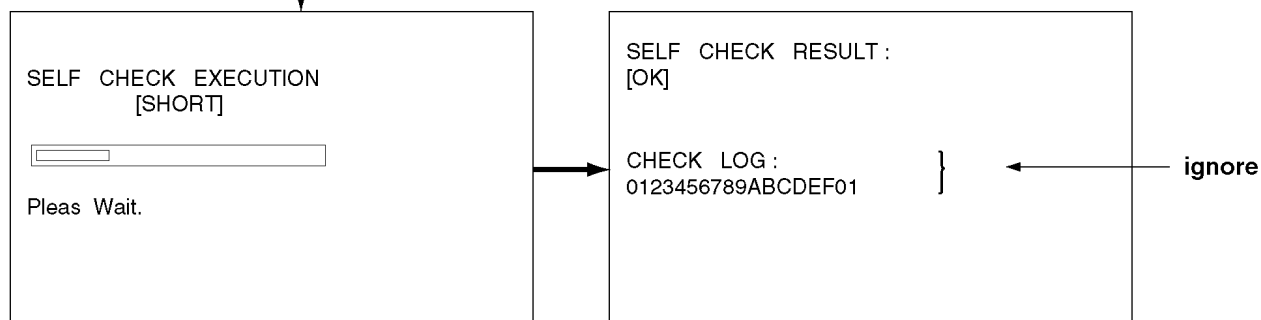
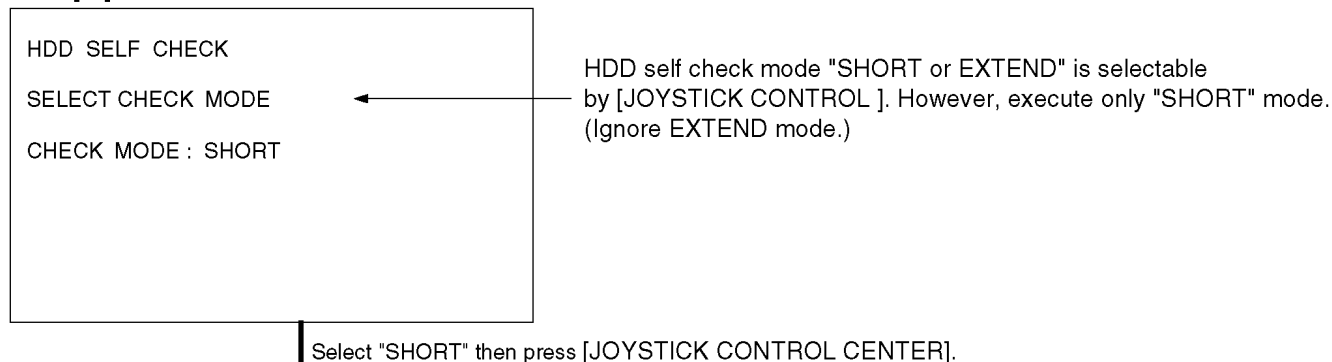
Camera Error code record in hexadecimal

| Display | Explanation of cause                       |
|---------|--------------------------------------------|
| 00      | No error                                   |
| 51      | Focus Motor Lock                           |
| 52      | Zoom Motor Lock                            |
| 53      | OIS Drive Error                            |
| 33      | Communication error between CAMERA and ARM |

## &lt;Item [9] screen : Lock record clear&gt;



## &lt;Item [10] screen : HDD Self check&gt;



(Execution time: 3 or 4 minutes)

●If "SELF CHECK RESULT" is [NG] or [COMMAND NG] in SHORT check mode, replace HDD.

Fig. 1-5

## &lt;Item [14] screen : HDD Hardware test&gt;

|                   |
|-------------------|
| HDD HARDWARE TEST |
| RESULT            |
| NO ERROR          |

| HDD HARDWARE TEST RESULT |
|--------------------------|
| NO ERROR                 |
| CTR ERROR                |
| BUFF RAM ERROR           |
| ECC DEV ERROR            |
| CPU ERROR                |
| COMMAND ERROR            |

} Replace HDD

- Replace HDD when "HDD HARDWARE TEST RESULT" is other than [NO ERROR].

Fig. 1-6

## &lt;Item [15] screen : All Data Erase&gt;

|                            |
|----------------------------|
| ERASE                      |
| Input Recorded Times [min] |
| 0123 ←                     |

↓ Press the [ENTER].

|             |
|-------------|
| Pleas Wait. |
|-------------|



|    |
|----|
| OK |
|----|

Erase the recorded data on HDD completely.  
(The normal format and erasure only rewrite the file system management data.  
The actual data remains on the disk.)

- To perform this item, make sure to set [MEDIA SELECT] to [HDD].
  - The default value is [0001]. The cursor is at left end.
  - The cursor is moved with right and left movement.
  - The number at the cursor position is displayed in orange.
  - The number from 0 to 9 is set with up-and-down movement.
  - The minimum value that can be set is [0001]
  - The maximum value that can be set is [\*\*\*]. (Depends on the HDD capacity.)

Specify the recording time (unit: min.) to erase from the start position,  
and then erase the specified recording time.  
If the recording time more than the total recording time of HDD is specified,  
the total recording time of HDD is erased.  
If the erasing procedure cannot be complete, [ERROR] is displayed.  
If mounting is not possible because HDD has not been formatted,  
[ERROR] is displayed.

- Turn the power off to cancel.

Fig. 1-7

**To exit the Service Menu**

Unplug the AC Cord.

## 6.2. About Default Setting

The data of Menu, Mode, Card and EEPROM setting, etc. is set to the default condition in factory.

### 6.2.1. How to set the Default Setting

1. Turn the Power on and set the Mode Dial to [VIDEO RECORDING MODE].
2. When pressing [OIS], [JOYSTICK CONTROL RIGHT] and [iA] for more than 3 minutes simultaneously (with no SD Card inserted), the items below are set to the Default Setting.
  1. Menu, Mode, Adjusted Value
  2. Card format
  3. Reset of picture files and directory number (Set the picture record file number to 1)
  4. Clear the information of Mechanism Lock
  5. Set the time setting to no-setting

## 7 Service Fixture & Tools

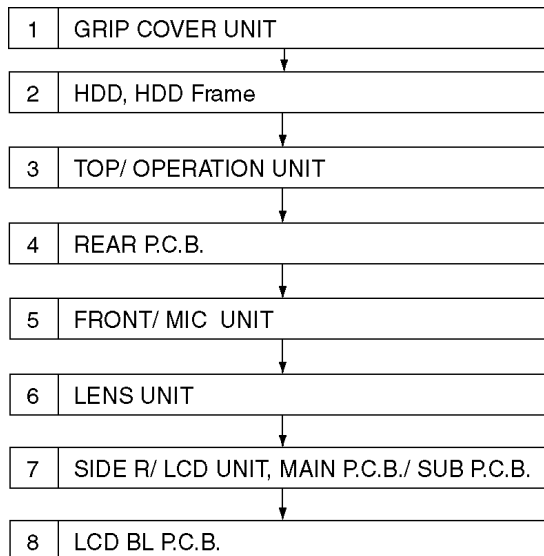
### 7.1. Service Tools and Equipment

| Parts Name                    | Parts No.    | Q'ty | Remarks                         |
|-------------------------------|--------------|------|---------------------------------|
| PC                            | ---          | 1    |                                 |
| AC Adaptor                    | ---          | 1    |                                 |
| DC Cable                      | ---          | 1    |                                 |
| AV Multi Cable                | ---          | 1    |                                 |
| USB Cable                     | ---          | 1    |                                 |
| PC-Adjustment Program         | ---          | 1    |                                 |
| Light Box                     | VFK1164LBX1  | 1    |                                 |
| Infinity Lens                 | VFK1164TCM02 | 1    | With Focus Chart                |
| Color Bar Chart               | VFK1164TFCB2 | 1    |                                 |
| Gray Scale Chart              | VFK1164TFGS2 | 1    |                                 |
| Color Conversion              | VFK1164TFCT2 | 1    |                                 |
| Light Box                     | VFK1164TDVLB | 1    |                                 |
| Color Conversion (C12)        | VFK1164LBB12 | 1    |                                 |
| Color Conversion (C2)         | VFK1164LBB2  | 1    |                                 |
| Color Conversion (C4)         | VFK1164LBB4  | 1    |                                 |
| Color Conversion (C8)         | VFK1164LBB8  | 1    |                                 |
| 37mm Ring                     | VFK1164TAR37 | 1    |                                 |
| Infinity Lens                 | VFK1164TCM02 | 1    | With Focus Chart                |
| Infinity Lens                 | RFKZ0422     | 1    |                                 |
| Tripod                        | VFK1164TST   | 1    |                                 |
| Tripod                        | RFKZ0333B    | 1    |                                 |
| Adapter for infinity Lens     | RFKZ0333H    | 1    |                                 |
| Grease                        | LSUQ0050     | 1    |                                 |
| Plier                         | LSUQ0028     | 1    |                                 |
| HDD Conector Tool             | LSVQ0112     | 1    |                                 |
| Pin For CCD                   | RFKZ0476     | 1    |                                 |
| Extension Flat Cable (6pin)   | VFK1480      | 1    | FP41 (Main) - Front/Mic Unit    |
| Extension Flat Cable (33pin)  | VFK1950      | 1    | FP81 (Main) - FP8101 (LCD BL)   |
| Extension Flat Cable (16pin)  | VFK1286      | 1    | FP61 (Sub) - TOP/Operation Unit |
| Extension Flat Cable (33pin)  | VFK1950      | 1    | FP71 (Main) - Lens Unit         |
| Extension Flat Cable (18pin)  | VFK1443      | 1    | FP31 (Main) - Prism Unit        |
| Extension Flat Cable (22pin)  | VFK1282      | 1    | FP51 (Main) - FP6301 (Rear)     |
| Extension Flat Cable (12pin)  | VFK1388      | 1    | FP11 (Sub) - TOP/Operation Unit |
| Extension Flat Cable (40pin)  | VFK1895      | 1    | FP21 (Main) - HDD Unit          |
| Extension Flat Cable (120pin) | VFK1877      | 1    | B9001 (Main) - B9002 (Sub)      |

## 8 Disassembly and Assembly Instructions

### 8.1. Disassembly Flow Chart

This flow chart indicates the disassembly steps the cabinet parts and P.C.B.. Unit in order to access to be serviced.  
When reinstalling, perform the steps in the reverse order.



### 8.2. P.C.B. Layout

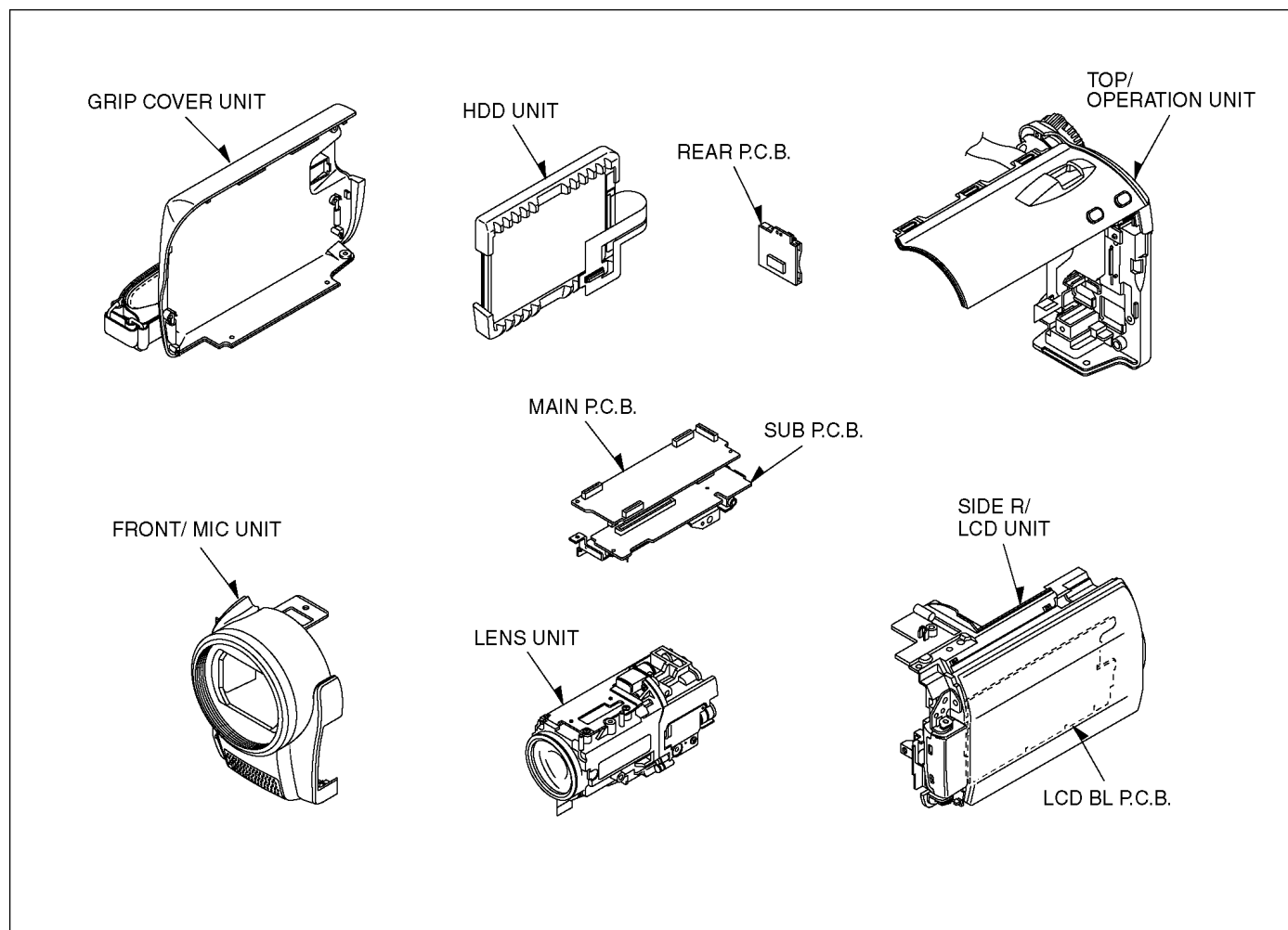


Fig. F1

## 8.3. Disassembly Procedures

### Flow-Chart for Disassembly Procedure

| No. | Item / Part                                     | Fig. | Removal (Screw, Connector, FPC. & Other)                                                                                                                                                            |
|-----|-------------------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   |                                                 |      | 5-Screws (A)<br>1-Screw (B)<br>5-Tabs<br>Grip Cover Unit                                                                                                                                            |
| 2   | HDD, HDD Frame                                  |      | HDD Damper Unit<br>1-Connector FP21                                                                                                                                                                 |
|     |                                                 |      | Note for replacing HDD<br>1) How to Remove<br>HDD Cushion<br>HDD                                                                                                                                    |
|     |                                                 |      | Note for replacing HDD<br>2) How to Attach                                                                                                                                                          |
|     |                                                 |      | 2-Screws (C)<br>1-Screw (D)<br>HDD Frame                                                                                                                                                            |
| 3   | Top/ Operation Unit                             |      | 2-Connectors FP11, FP61<br>Open the LCD Unit<br>2-Screws (E)<br>1-Screw (F)<br>Top/ Operation Unit                                                                                                  |
| 4   | Rear P.C.B.                                     |      | 1-Screw (G)<br>1-Connector FP51<br>Rear P.C.B.                                                                                                                                                      |
| 5   | Front/ Mic Unit                                 |      | 1-Connector FP41<br>1-Connector P92 (H81EE Only)<br>2-Screws (H)<br>1-Screw (I)<br>Front/ Mic Unit                                                                                                  |
| 6   | Lens Unit                                       |      | 2-Connectors FP31, FP71<br>1-Screw (J)<br>Lens Unit                                                                                                                                                 |
| 7   | Side R/ LCD Unit,<br>Main P.C.B./ Sub<br>P.C.B. |      | 2-Connectors FP81, P91<br>1-Screw (K)<br>Angle/ P.C.B. Unit<br>Side R/ LCD Unit                                                                                                                     |
|     |                                                 |      | 2-Screws (L)<br>2-Connectors B9001, B9002<br>Main P.C.B.<br>2-Screws (M)<br>PCB Angle<br>Sub P.C.B.                                                                                                 |
| 8   | LCD BL P.C.B.                                   |      | Turn the LCD Case to the arrow direction so that the screws can be seen, and remove the 2 screws (N).<br>8-Tabs<br>LCD Case A Unit<br>1-Connector FP8101<br>Side R/ Speaker Unit<br>LCD Case B Unit |
|     |                                                 |      | 1-Connector FP8104<br>2-Screws (O)<br>Menu selector Unit<br>Deco Piece                                                                                                                              |
|     |                                                 |      | 1-Connector FP8102<br>8-Tabs<br>LCD BL P.C.B.                                                                                                                                                       |

If the Card inserted, take out it before disassembling.

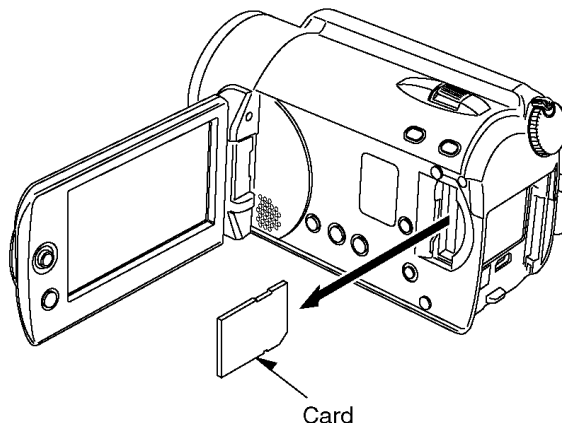
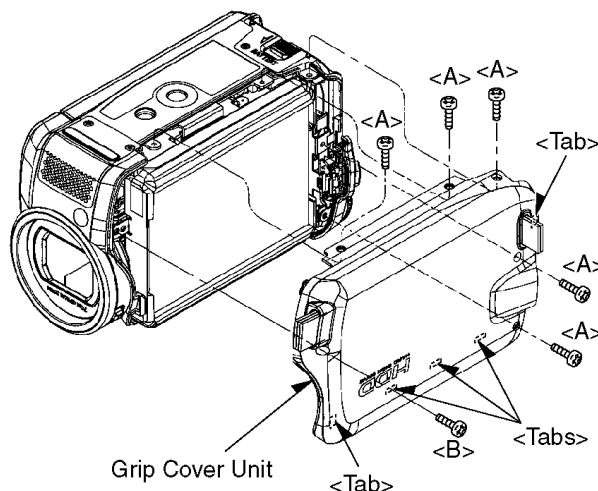
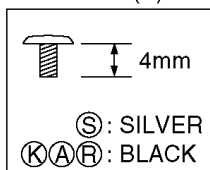


Fig. D1



Screw (A)



Screw (B)

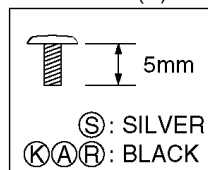


Fig. D2

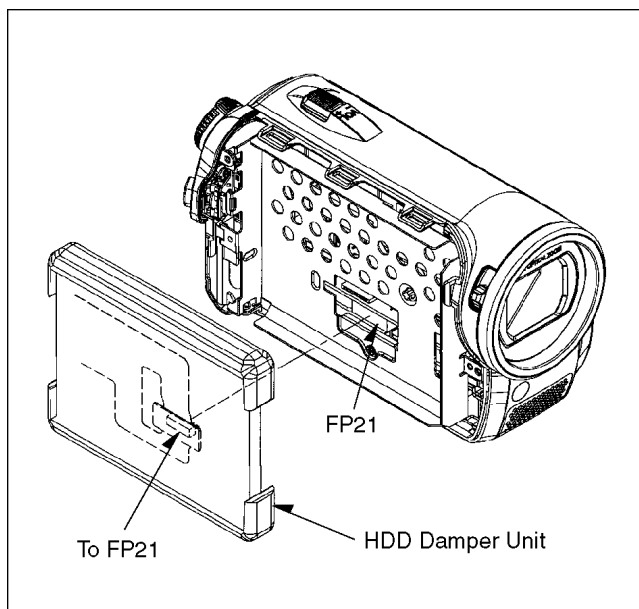


Fig. D3

### Note for replacing HDD

- Be sure to use the tool when inserting and removing HDD FPC.

After replacing the HDD, be sure to format the new HDD.  
See "Formatting HDD" in Service Navigation.

### 1) How to Remove

- ① Remove the HDD cushion from the HDD.
- ② Remove the HDD FPC from HDD using the tool.

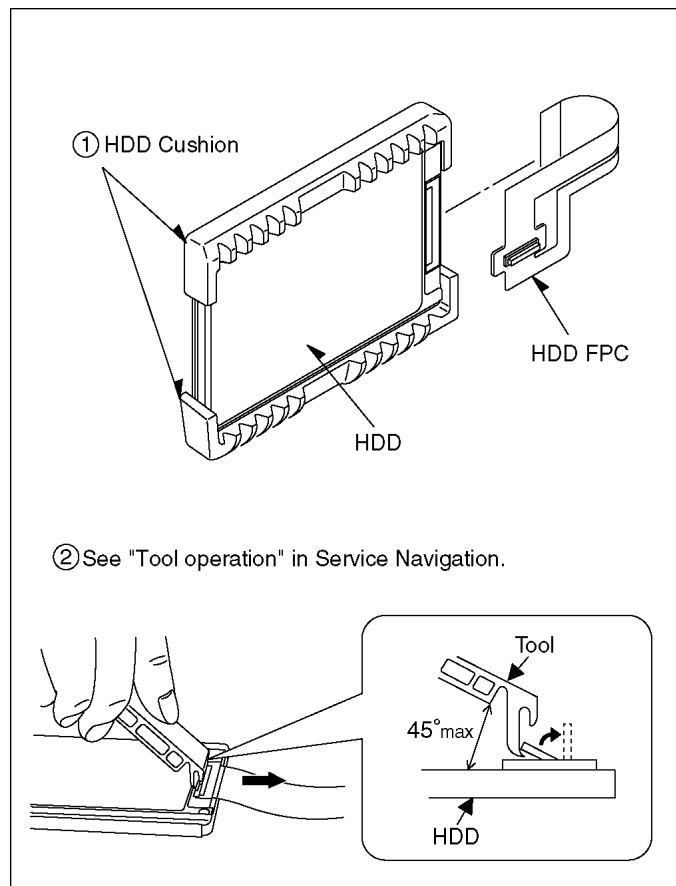


Fig. D4

### 2) How to Attach

- ① Attach the HDD FPC to the new HDD using the tool.
- ② Attach the HDD cushion to the HDD.

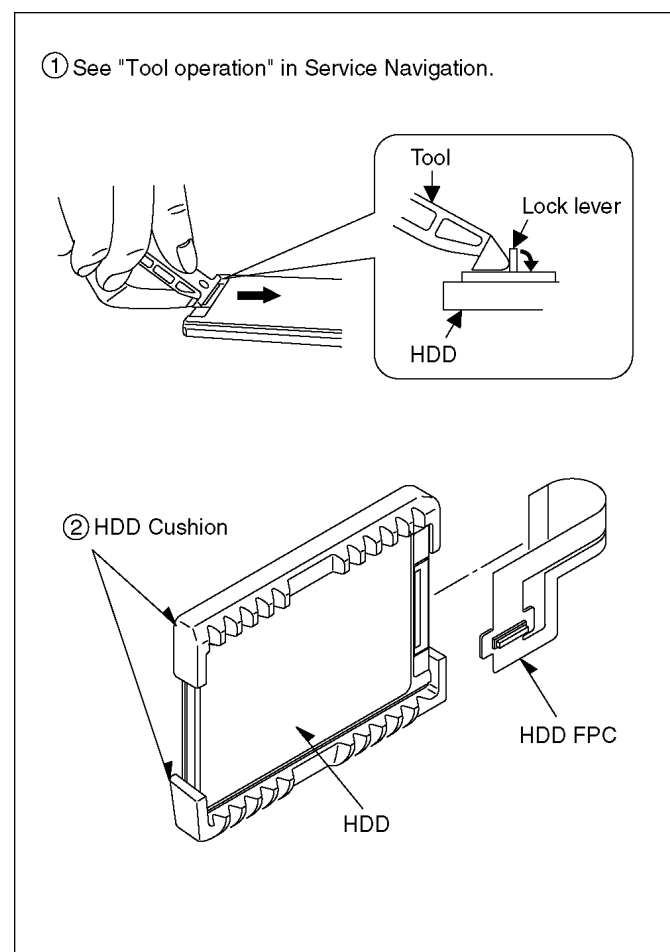


Fig. D5

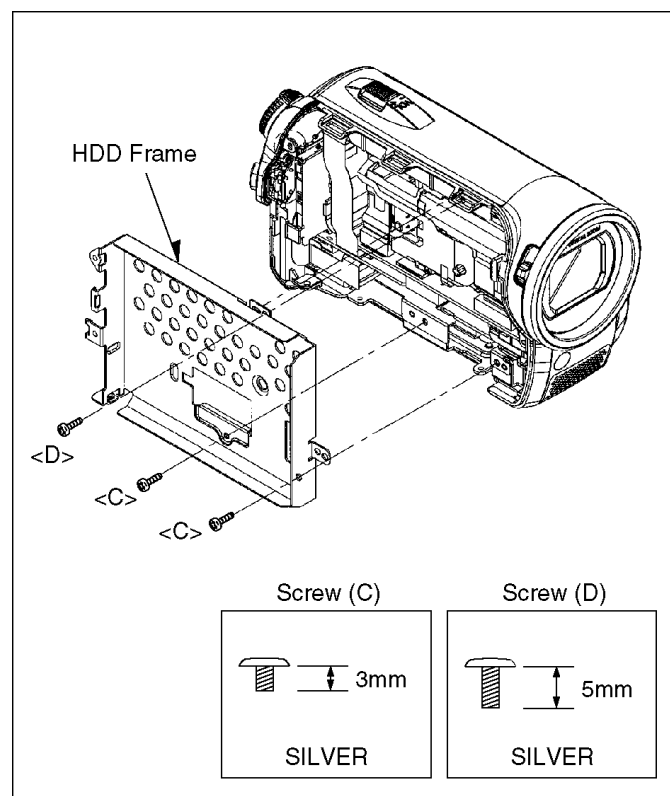


Fig. D6

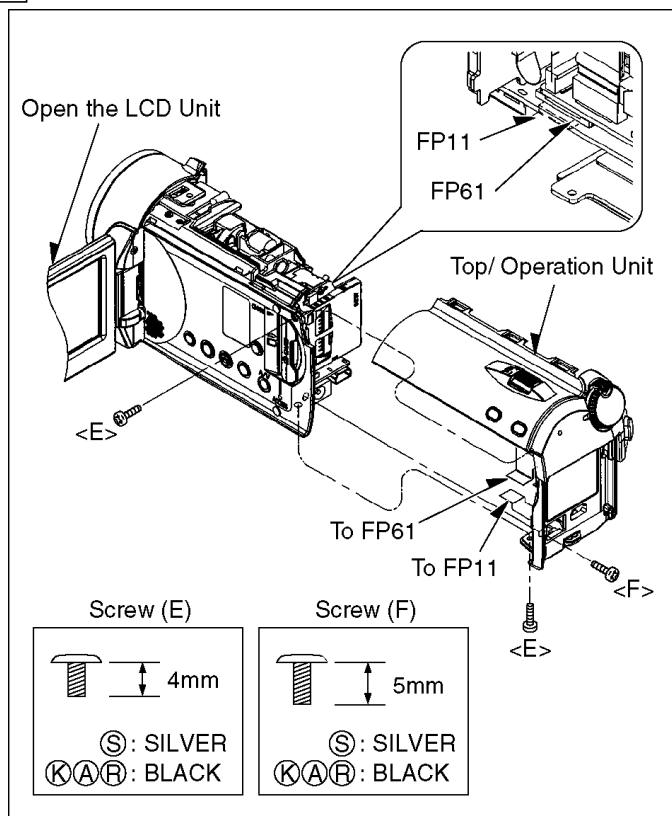


Fig. D7

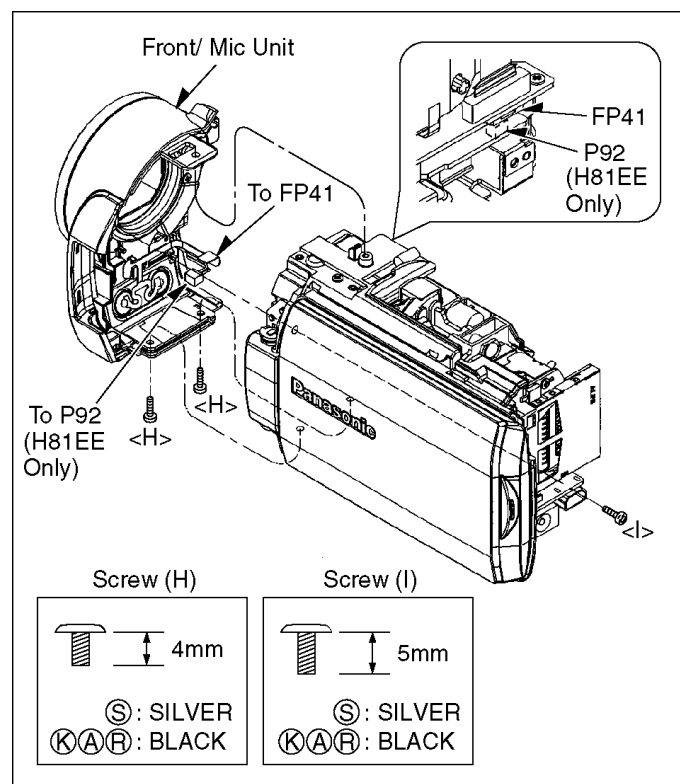


Fig. D9

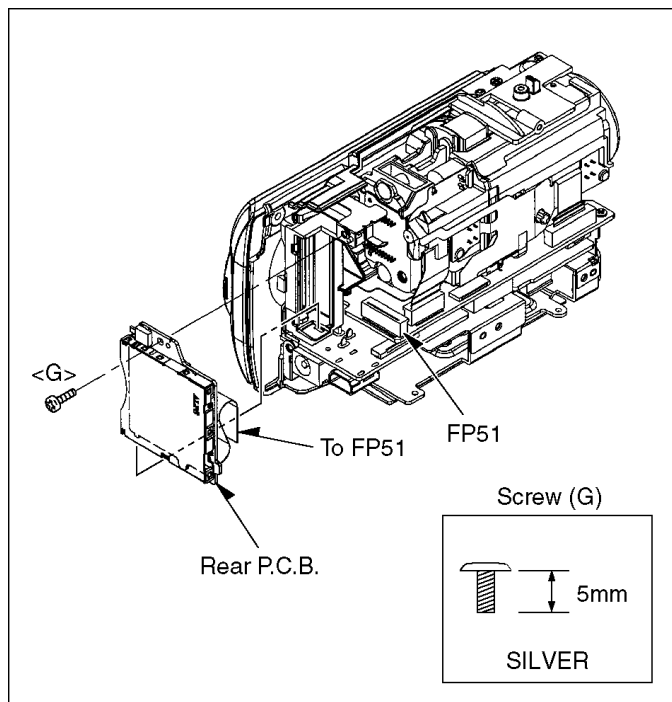


Fig. D8

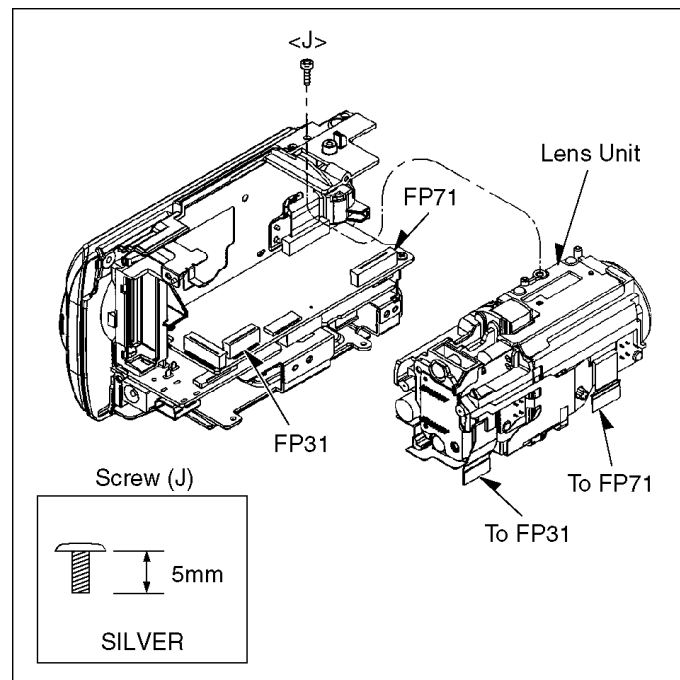


Fig. D10

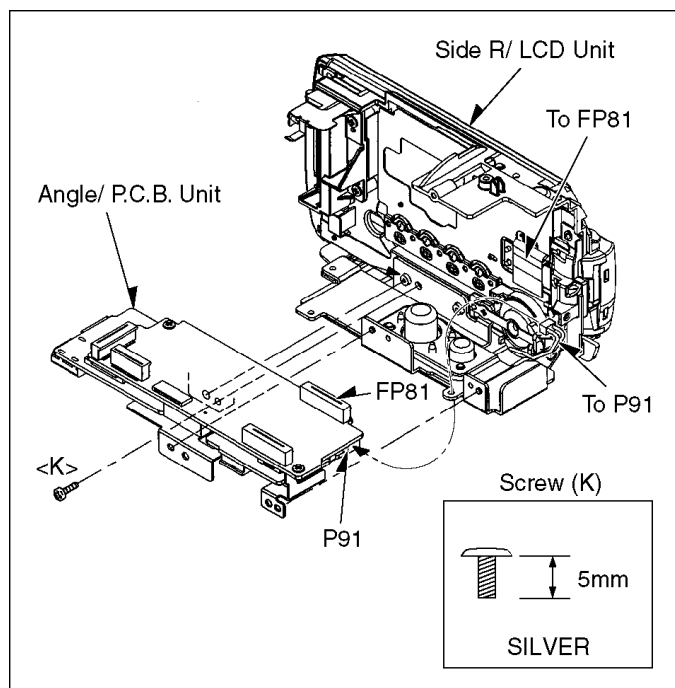


Fig. D11

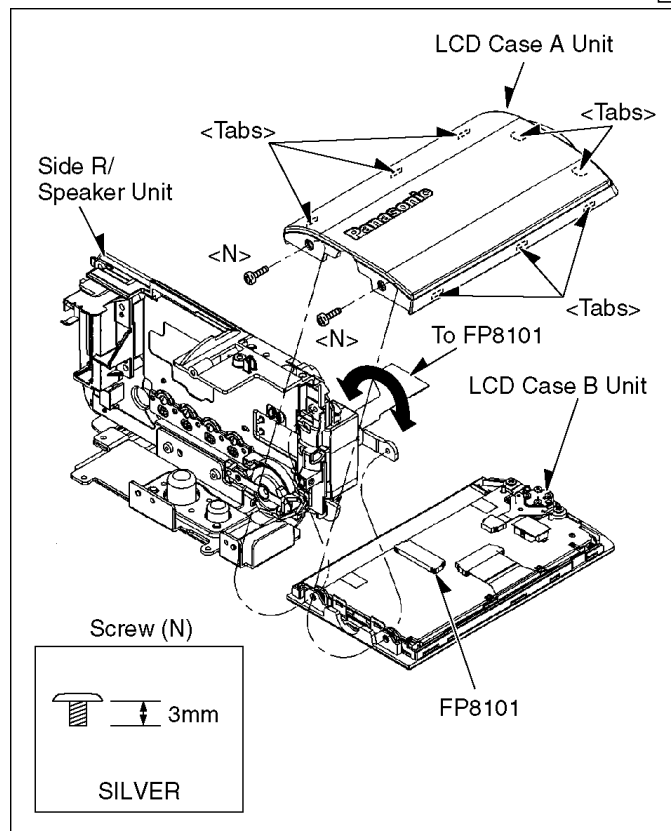


Fig. D13

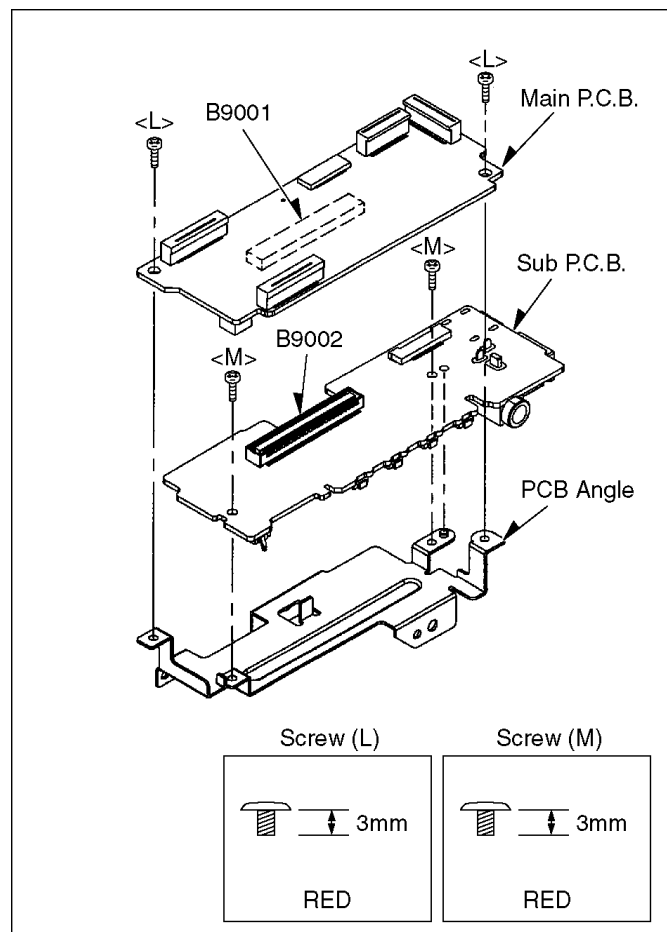


Fig. D12

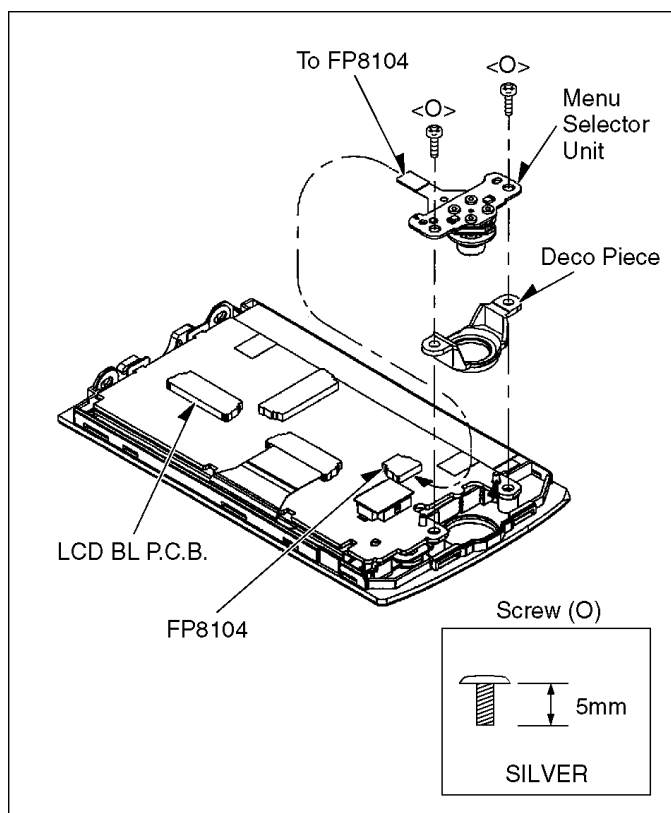


Fig. D14

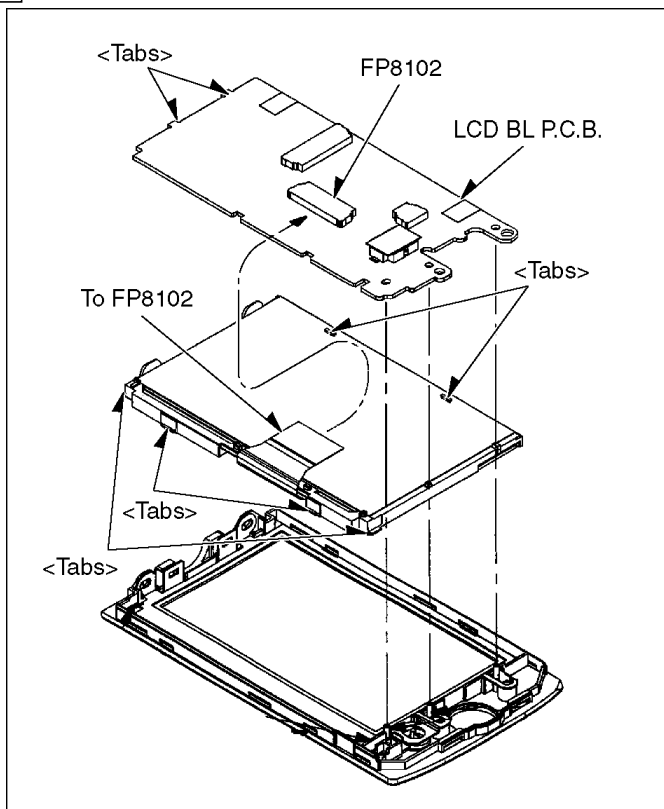


Fig. D15

## 8.4. Disassembly Procedures of Camera Lens Unit

The following flowchart describes order or steps for removing the Camera lens unit and certain printed circuit boards in order to make access to the item needing service.

To reassemble the unit follow the steps in reverse order.

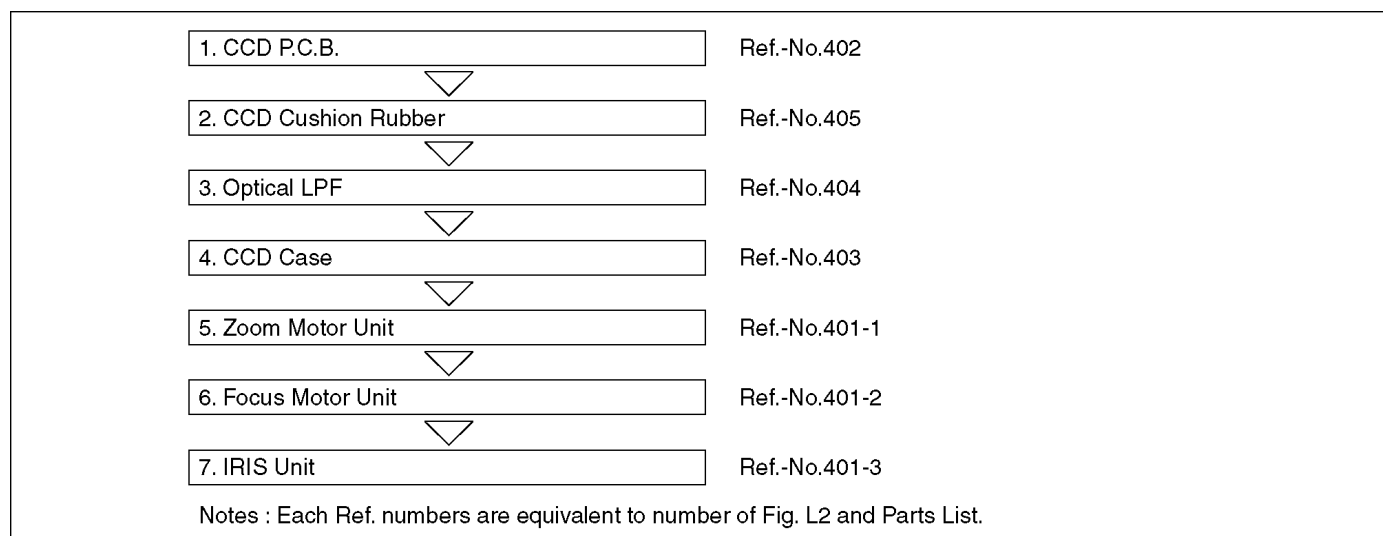


Fig. L1

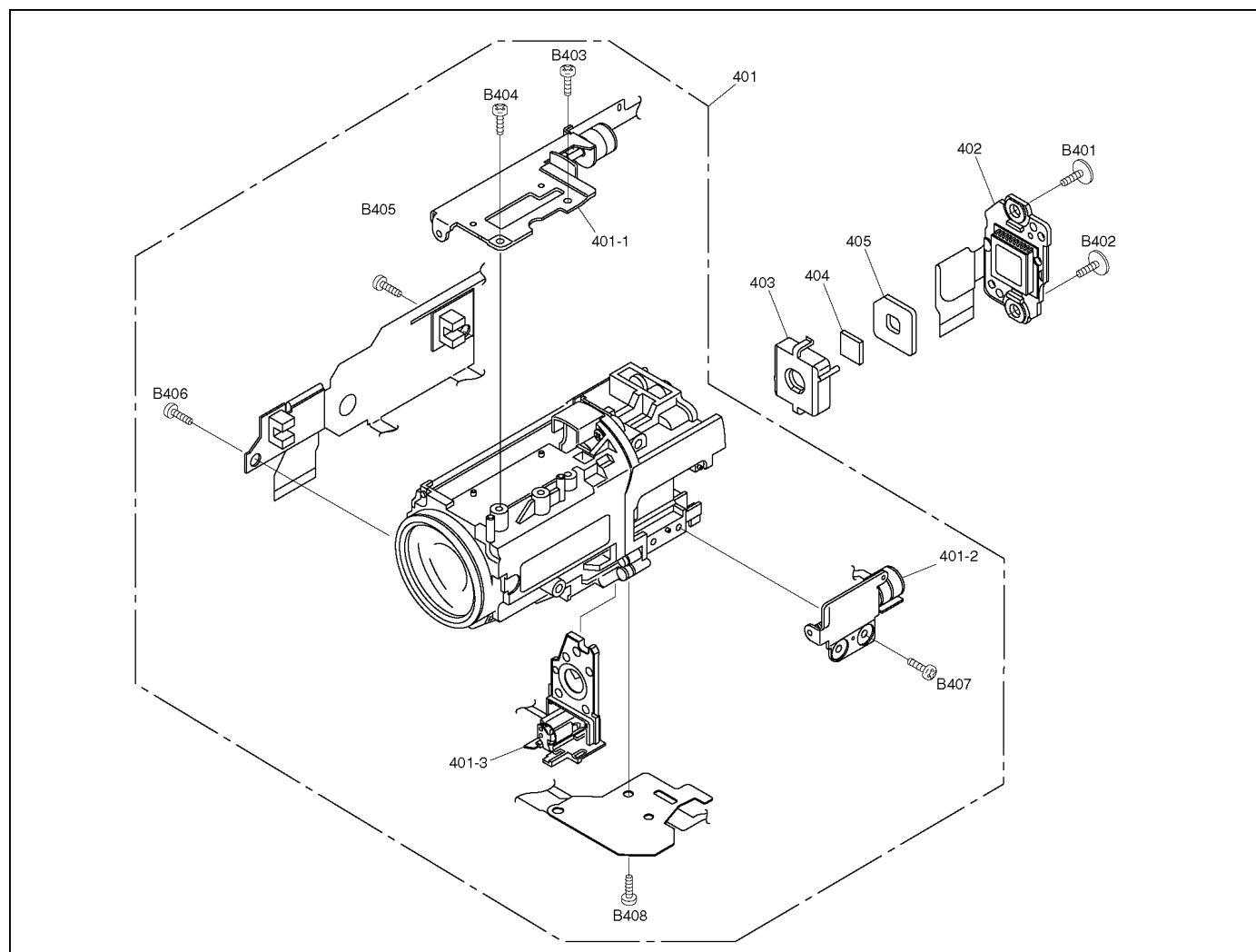


Fig. L2

## 9 Measurements and Adjustments

### 9.1. EEPROM Data for spare parts of the SUB P.C.B.

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

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

The Adjustment software is available at "TSN Website", therefore, access to "TSN Website" at "Support Information from NWBG/VDBG-PAVC".

### 9.2. Service Positions

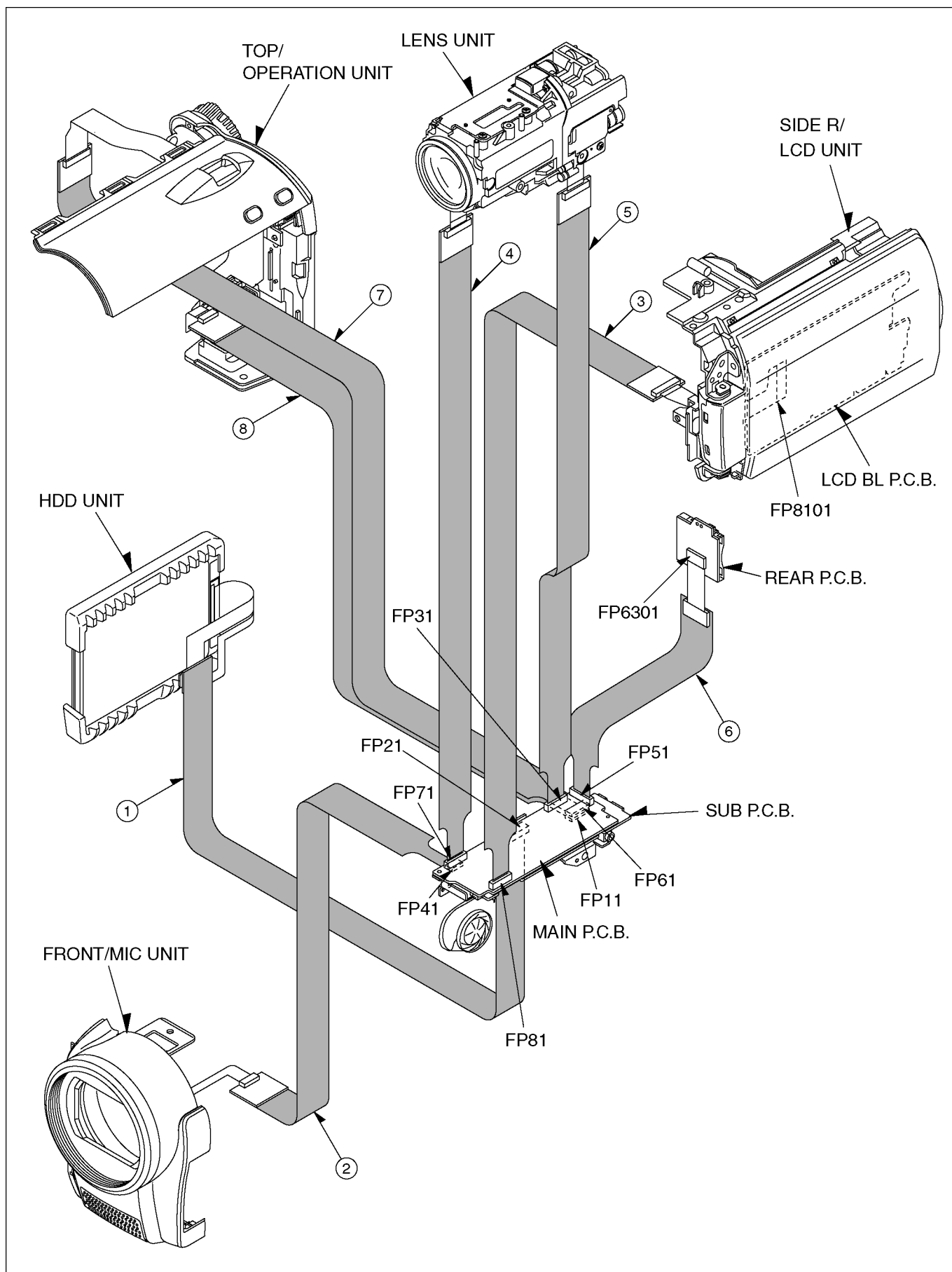
#### 9.2.1. List of the extension cables

Use the following extension cables when checking or adjusting individual circuit boards except module Parts (Main P.C.B. and Sub P.C.B.).

| Ref. | Part No. | Pin | Part Name  | Connection |        |                      | Q'ty |
|------|----------|-----|------------|------------|--------|----------------------|------|
| 1    | VFK1895  | 40  | Flat Cable | FP21       | (Main) | - HDD Unit           | 1    |
| 2    | VFK1480  | 6   | Flat Cable | FP41       | (Main) | - Front/Mic Unit     | 1    |
| 3    | VFK1950  | 33  | Flat Cable | FP81       | (Main) | - FP8101 (LCD BL)    | 1    |
| 4    | VFK1950  | 33  | Flat Cable | FP71       | (Main) | - Lens Unit          | 1    |
| 5    | VFK1443  | 18  | Flat Cable | FP31       | (Main) | - Prism Unit         | 1    |
| 6    | VFK1282  | 22  | Flat Cable | FP51       | (Main) | - FP6301 (Rear)      | 1    |
| 7    | VFK1286  | 16  | Flat Cable | FP61       | (Sub)  | - Top/Operation Unit | 1    |
| 8    | VFK1388  | 12  | Flat Cable | FP11       | (Sub)  | - Top/Operation Unit | 1    |

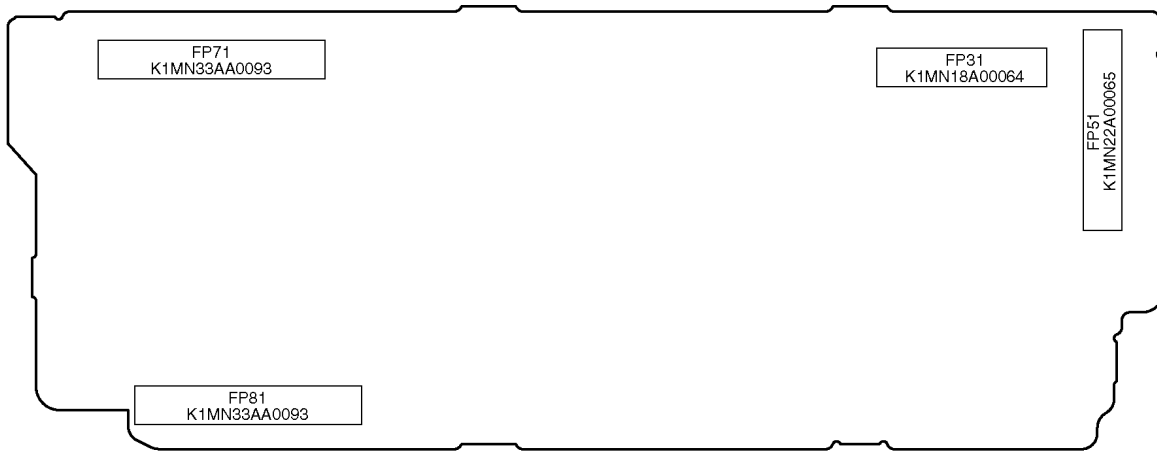
## 9.2.2. Checking and repairing individual circuit boards except module parts (Main P.C.B. and Sub P.C.B.)

How to use extension cables.

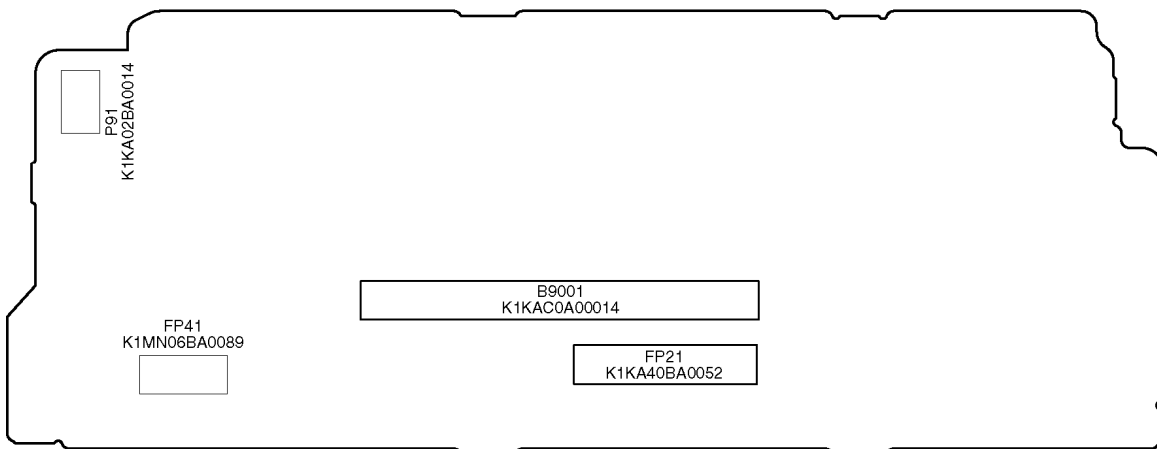


### 9.3. Location for Connectors of the Main P.C.B. and Sub P.C.B.

#### 9.3.1. Main P.C.B.

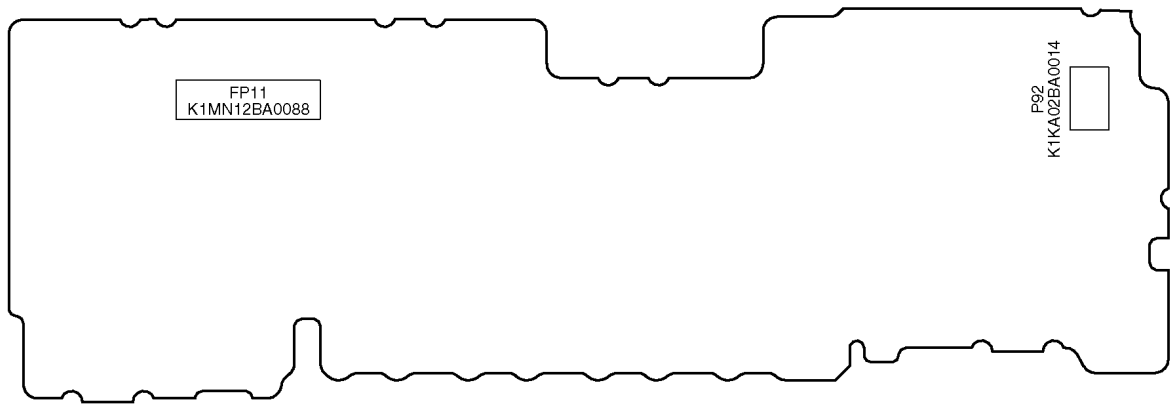


(COMPONENT SIDE)

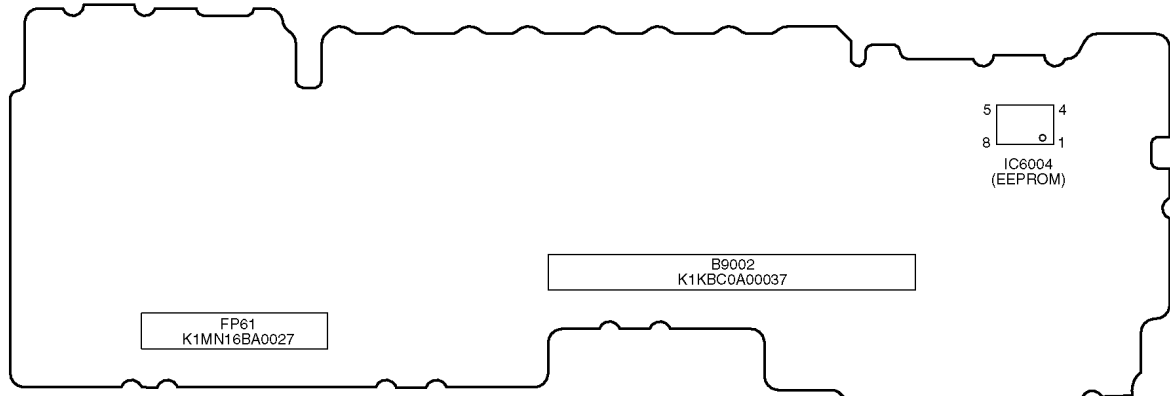


(FOIL SIDE)

### 9.3.2. Sub P.C.B.



(COMPONENT SIDE)



(FOIL SIDE)

## 9.4. Electrical Adjustment Procedures

### 9.4.1. Initial Guideline

The table below shows which adjustments are necessary according to the unit parts and individual parts to be replaced. Make sure to perform these adjustments shown below as necessary.

| Adjustment Item |                                 | Replacement Parts |             |                               |                                                            |                                                  |                                     |                                 |                 |            |           |
|-----------------|---------------------------------|-------------------|-------------|-------------------------------|------------------------------------------------------------|--------------------------------------------------|-------------------------------------|---------------------------------|-----------------|------------|-----------|
|                 |                                 | Sub P.C.B.        | Main P.C.B. | IC302 (CAMERA SIGNAL PROCESS) | IC701 (FOCUS/ZOOM/MOTOR DRIVE & OIS/IRIS/HALL AMP CONTROL) | IC3001 (CAMERA DIGITAL SIGNAL PROCESS/SHUFFLING) | IC3301 (VIDEO/AUDIO SIGNAL PROCESS) | IC6001 (SYSTEM MICROCONTROLLER) | IC6004 (EEPROM) | CCD P.C.B. | Lens Unit |
| Camera          | CAM hall amplifier and Iris PWM | ○                 | ○           |                               | ○                                                          |                                                  |                                     | ○                               | ○               |            | ○         |
|                 | CAM Tracking and De-focus       | ○                 |             |                               |                                                            |                                                  |                                     |                                 | ○               |            | ○         |
|                 | CAM WB rough                    | ○                 | ○           | ○                             |                                                            |                                                  |                                     |                                 | ○               | ○          |           |
|                 | CAM AWB 3100                    | ○                 | ○           | ○                             |                                                            | ○                                                |                                     |                                 | ○               | ○          |           |
|                 | CAM AWB 5100                    | ○                 | ○           | ○                             |                                                            | ○                                                |                                     |                                 | ○               | ○          |           |
|                 | CAM Revision CCD scratch        | ○                 |             |                               |                                                            |                                                  |                                     |                                 | ○               | ○          |           |
| Video           | VCR Luminance level             | ○                 | ○           |                               |                                                            | ○                                                | ○                                   |                                 | ○               |            |           |

Note : ○ : Adjustment Item

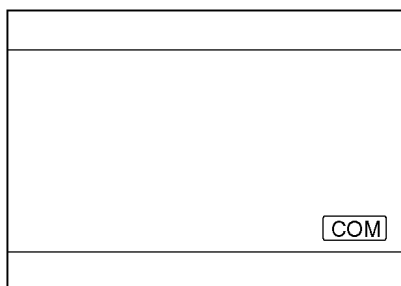
### 9.4.2. Set-up manual for SD Card/Hard Disk Video Camera.

#### 1. Installation of USB-SERIAL Driver

Execute the "Setup.exe" file in "Com Mass" folder by double clicking to install the USB-SERIAL driver.

#### 2. Set-Up

- Remove the SD card from this unit.
- To enter the PC connection (COM) mode, push the [OIS] button, [iA] button and [JOYSTICK CONTROL UP] simultaneously for 3 seconds without connecting the USB Cable.



<LCD Monitor>

c. Connect the PC and SD Card/Hard Disk Video Camera as shown in and E2.

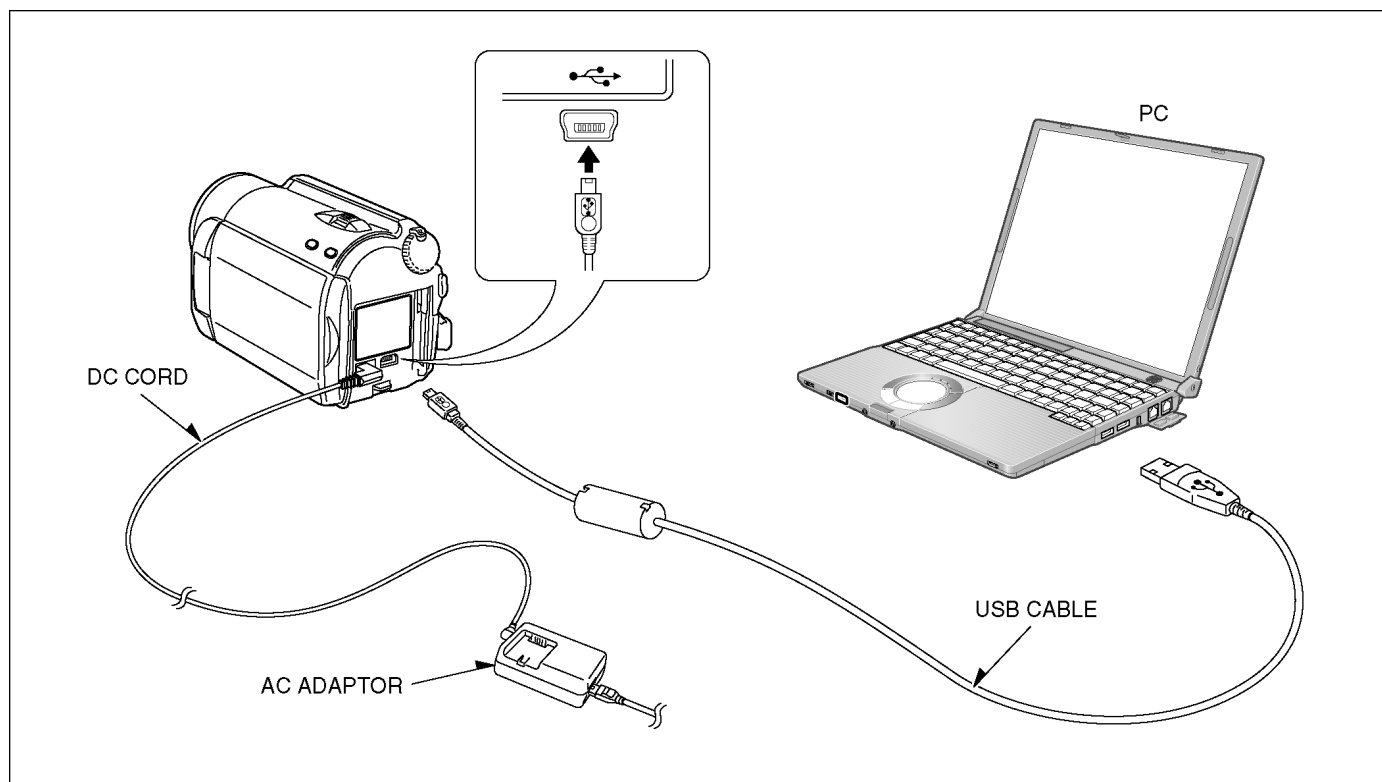


Fig. E1

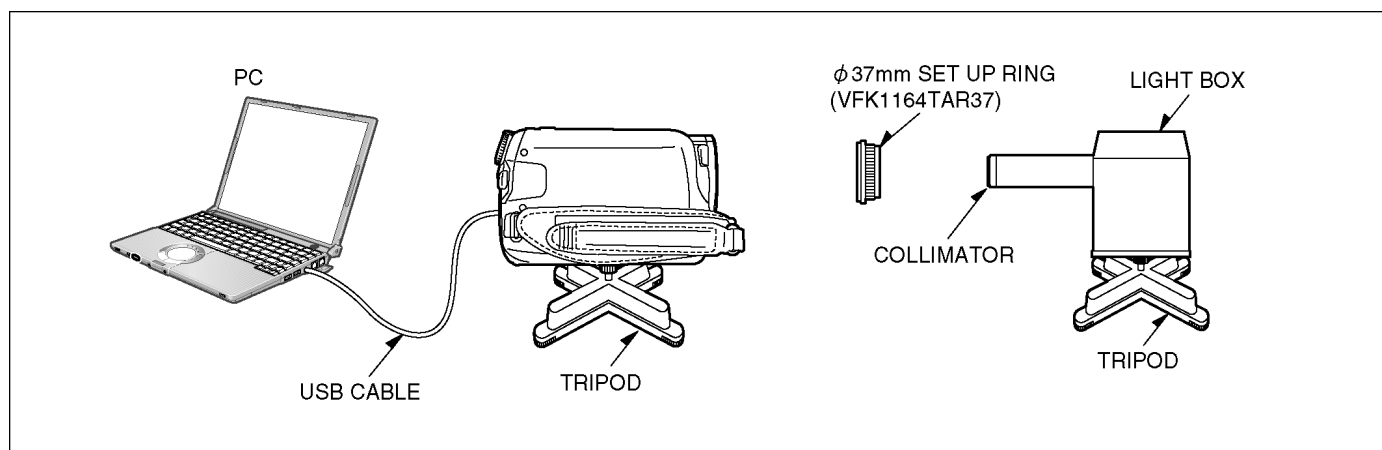


Fig. E2 Rough image of set-up connection

### 9.4.3. Set up of PC-EVR Adjustment Program

1. Turn on the PC and install the PC-EVR Adjustment Program into the PC.
2. Execute the "khd2009.exe" file by double clicking to start up the PC-EVR Adjustment Program.

The main menu will be displayed.

3. Select the appropriate model.
4. Turn on the camcorder and set to PC connection (COM) mode. Then click "Start".

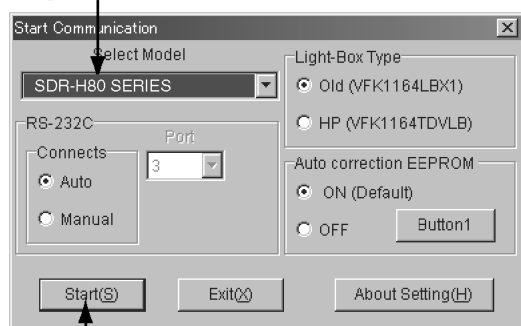
#### Note:

When the camcorder does not power on, turn the power on with forced power on function.

<How to turn the power on with forced power on function>

Push and hold the [MENU] and [JOYSTICK CONTROL RIGHT], then set [POWER SW] to ON until the power is turned on.

- ① Select the appropriate model.

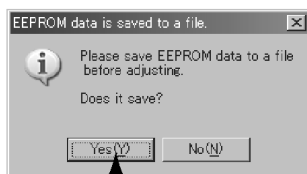


- ② Click to start.

Fig. E2-1

5. When the communication is complete, the dialog will appear.

Click "Yes" and "Save" to save the EEPROM data.



- ③ Click.

Fig. E2-2

6. When EEPROM data has been saved, the menu will appear.

To perform each adjustment, display the adjustment menu by selecting from "Camera Adjust" or "Video Adjust" and select each adjustment item.

- ④ Select the desired menu.

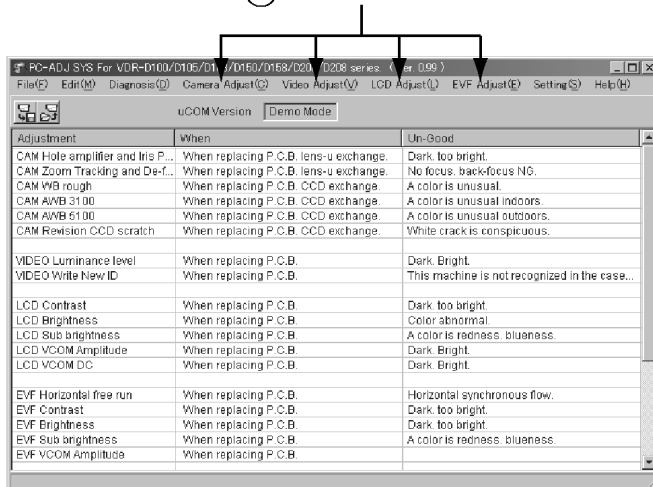


Fig. E2-3

#### Note:

The adjusted data is stored in the EEPROM IC after each adjustment.

7. After adjustment, to close the software, select "Exit" in the File menu or close the window.

- ⑤ Select "Exit" or close the window.

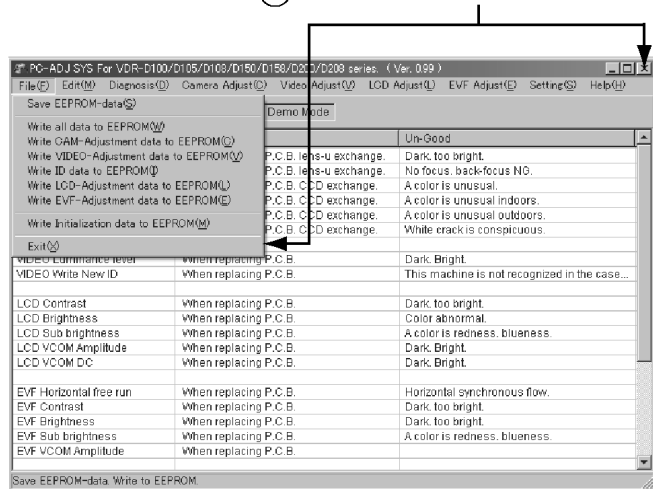


Fig. E2-4

8. To release the PC connection (COM) mode, push the [OIS], [iA] and [JOYSTICK CONTROL UP] simultaneously for 3 seconds with the USB Cable disconnected.

### 9.4.4. How to confirm "OneNAND-Flash ROM Error"

If there is a problem with Flash ROM (IC3203), the unit does not turn the power on.

(Problem: When the power SW is turned on, the power LED lights for 3 seconds and goes out. The power can not be turned on again.)

If this problem occurs, check if the Flash ROM (IC3203) has a problem in the following procedure.

1. Start PC-EVR Adjustment Program.

Refer to "9.4.3. Set up of PC-EVR Adjustment Program" and start PC-EVR Adjustment Program.

## 2. Select the "Diagnosis"

① Select the "Diagnosis"

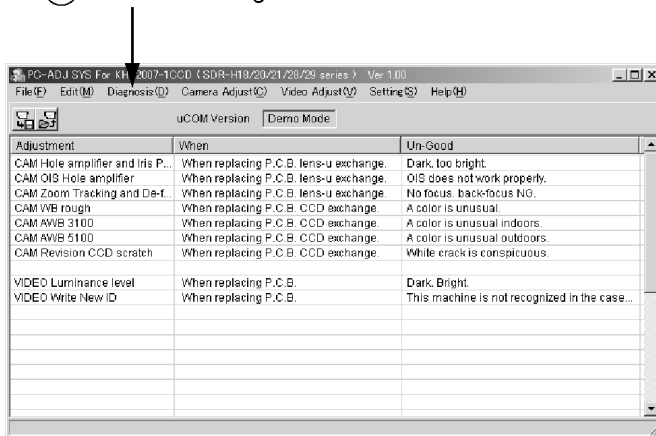


Fig. E2-5

③ Click the "Error Reset"

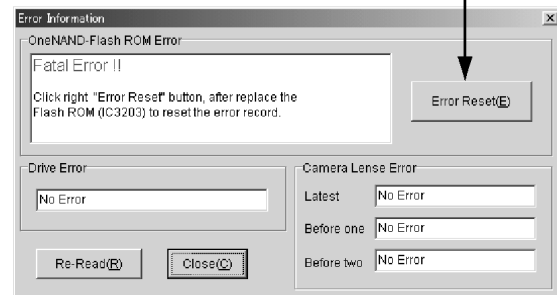


Fig. E2-8

## 3. Select the "Lock Info"

② Select the "Lock Info"

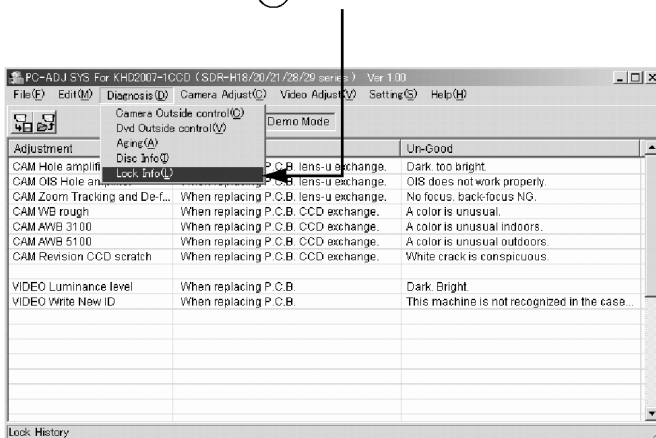


Fig. E2-6

## 4. Confirm the OneNAND-Flash ROM Error information.

OneNAND-Flash ROM Error information

No Error : Flash ROM (IC3203) is normal.

Fatal Error : Flash ROM (IC3203) is defective.

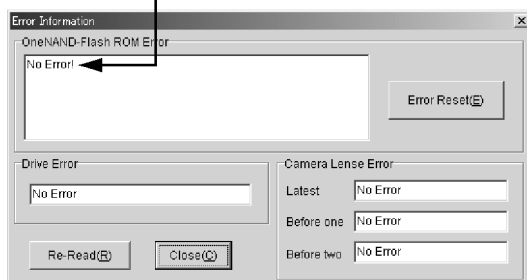


Fig. E2-7

## 5. If "Fatal Error" is displayed, Flash ROM (IC3203) is defective. Replace Main P.C.B.

**Note:**

This error information is recorded on EEPROM.

Click "Error Reset" to clear the error information after replacing Flash ROM (IC3203).

## 10 Maintenance

### 10.1. Cleaning Lens and LCD Panel

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

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

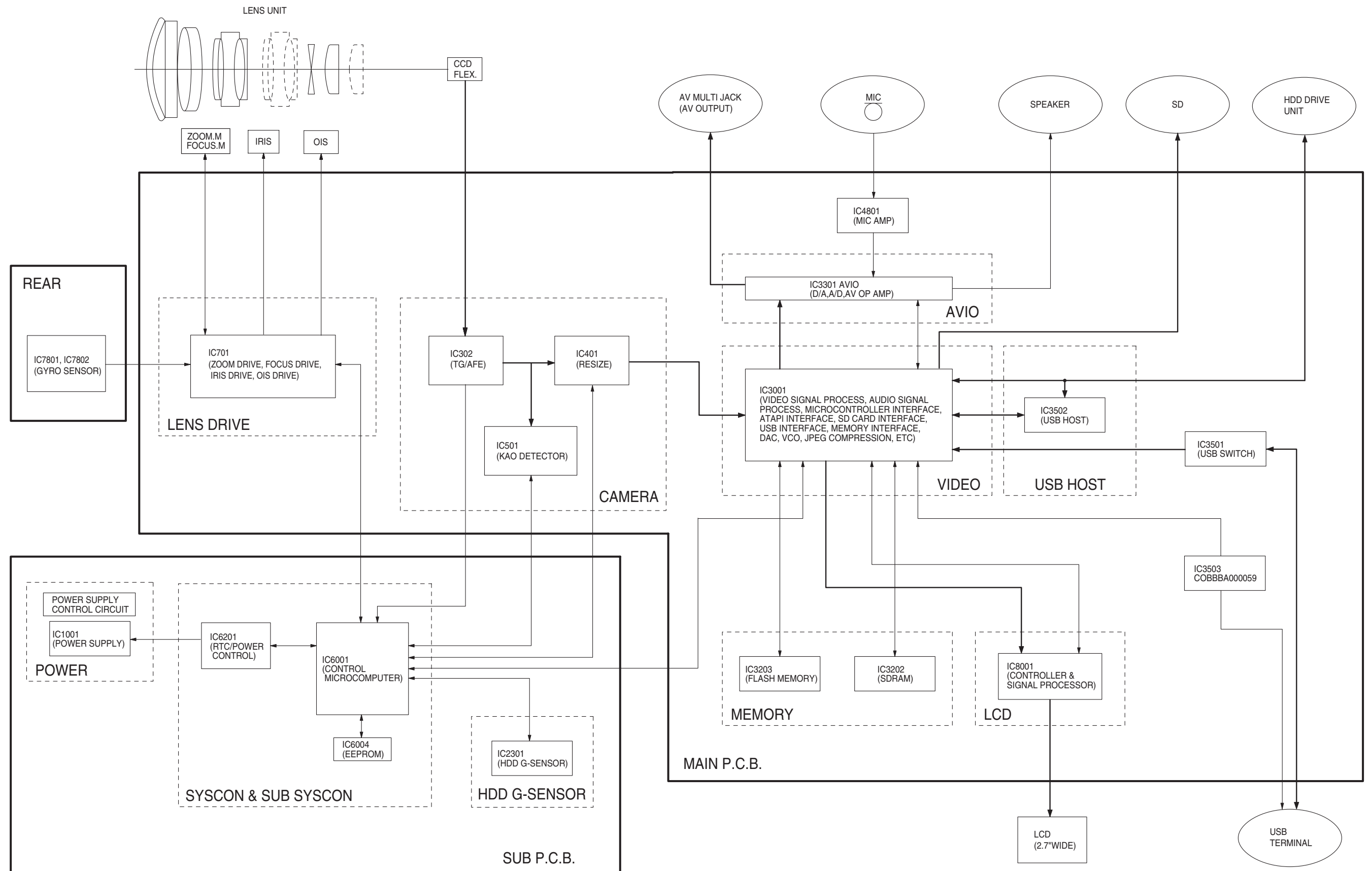
When cleaning the LCD Panel, dampen the lens cleaning paper with lens cleaner, and the gently wipe the their surface.

**Note:**

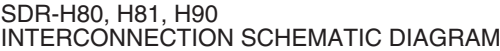
A lens cleaning paper and lens cleaner are available at local camera shops and market place.

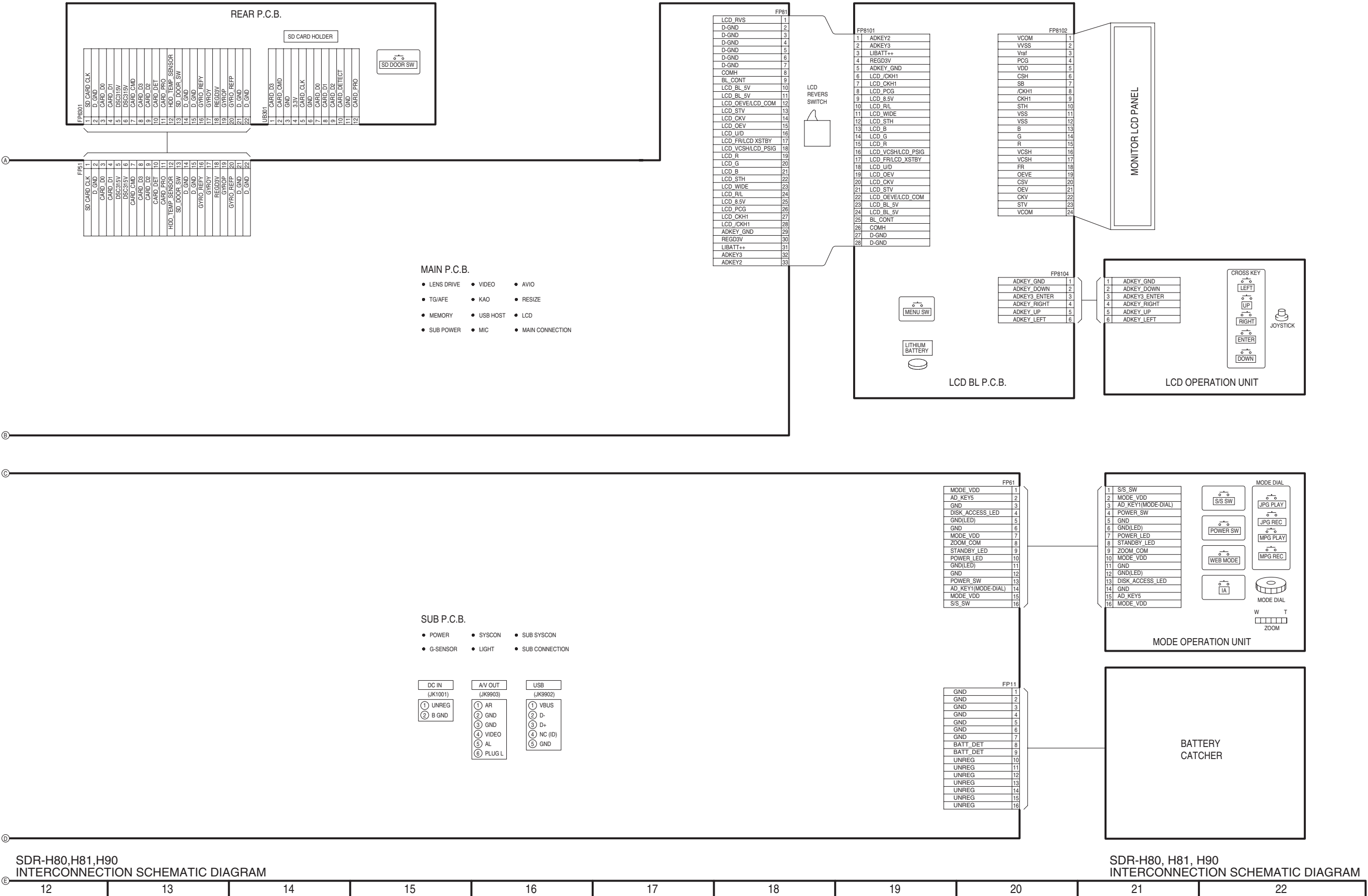
# 11 Schematic Diagrams

## 11.1. OVERALL SCHEMATIC DIAGRAM



SDR-H80, H81, H90  
OVERALL SCHEMATIC DIAGRAM

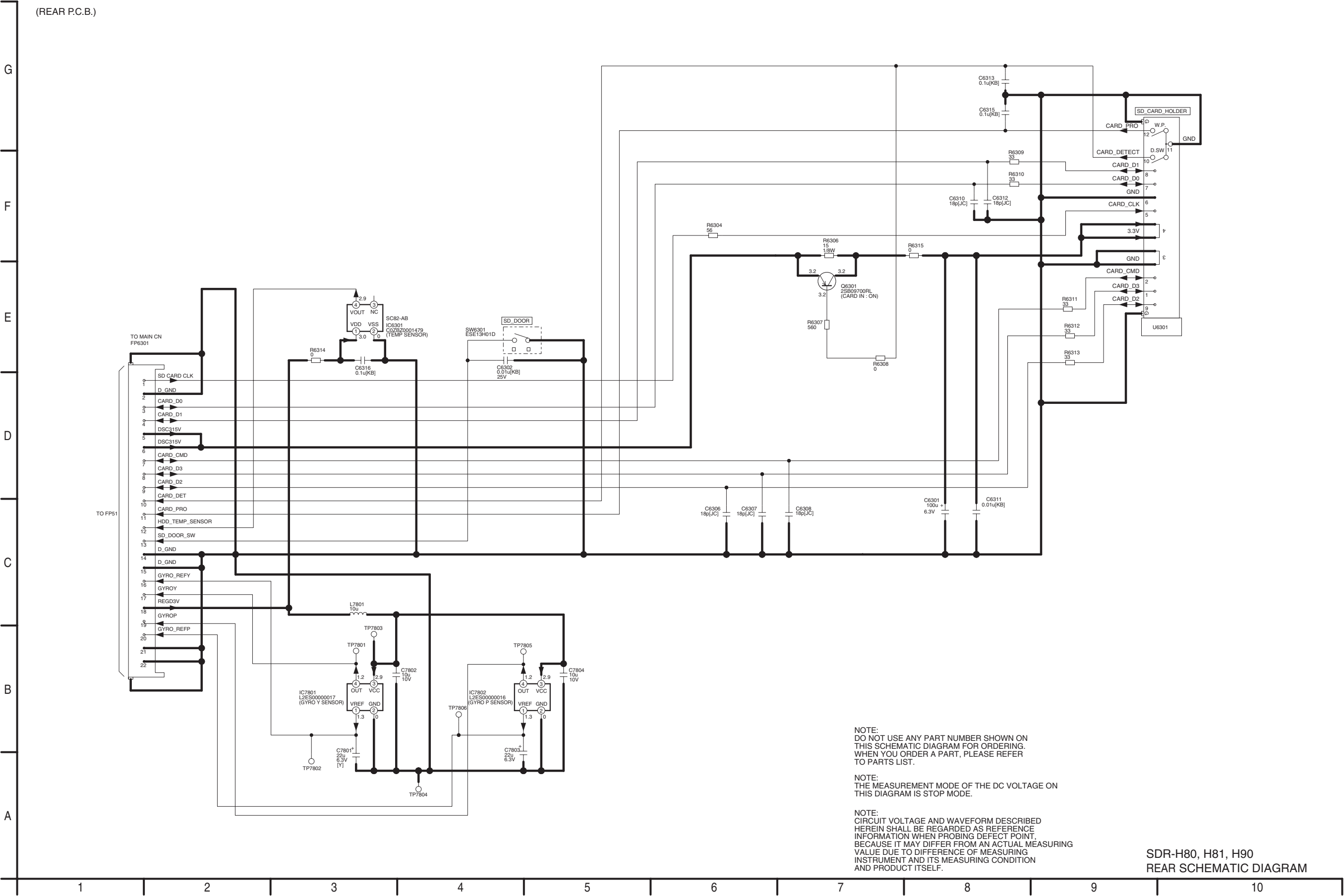


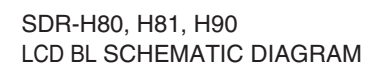


SDR-H80,H81,H90  
INTERCONNECTION SCHEMATIC DIAGRAM

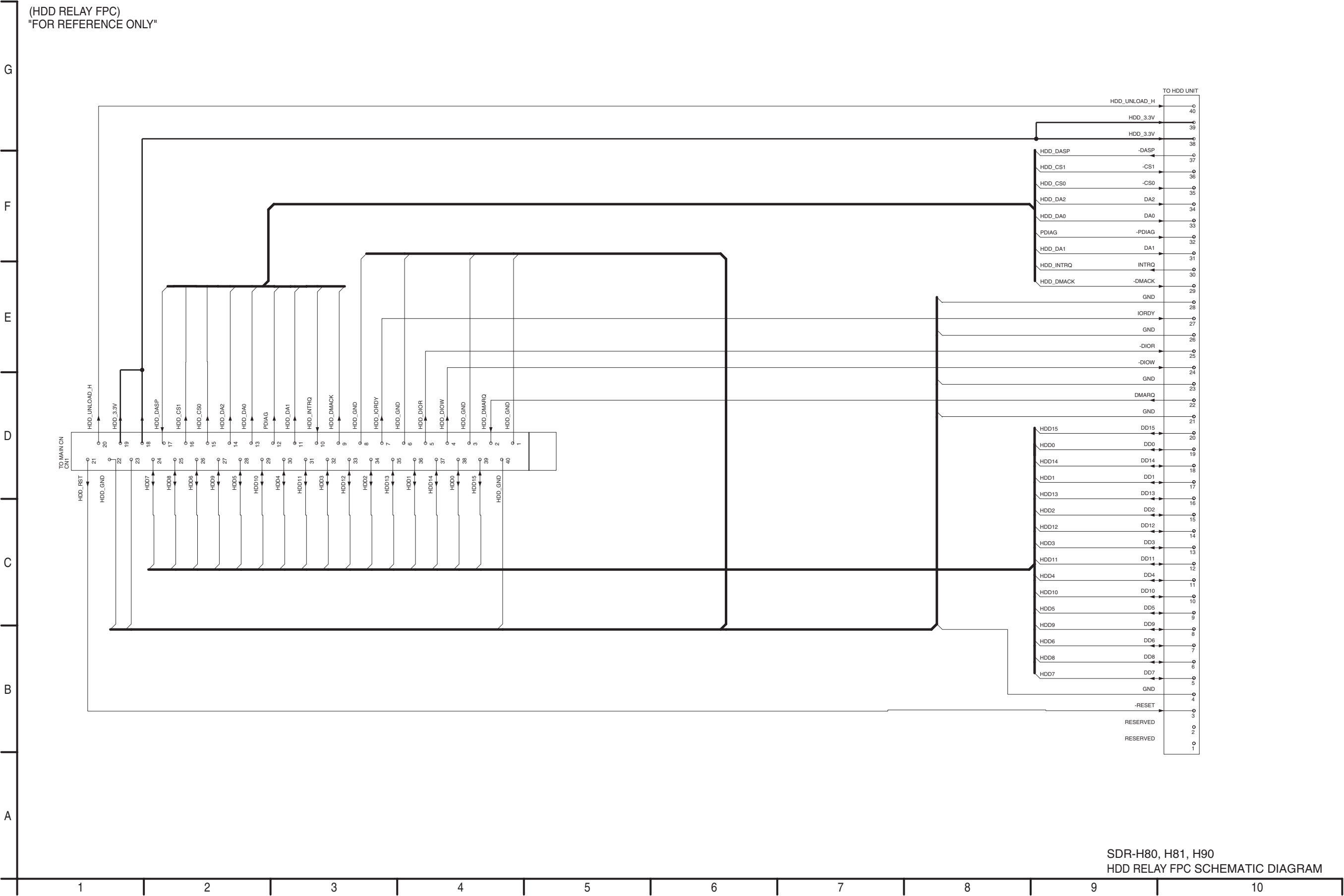
SDR-H80, H81, H90  
INTERCONNECTION SCHEMATIC DIAGRAM

11.3. REAR SCHEMATIC DIAGRAM

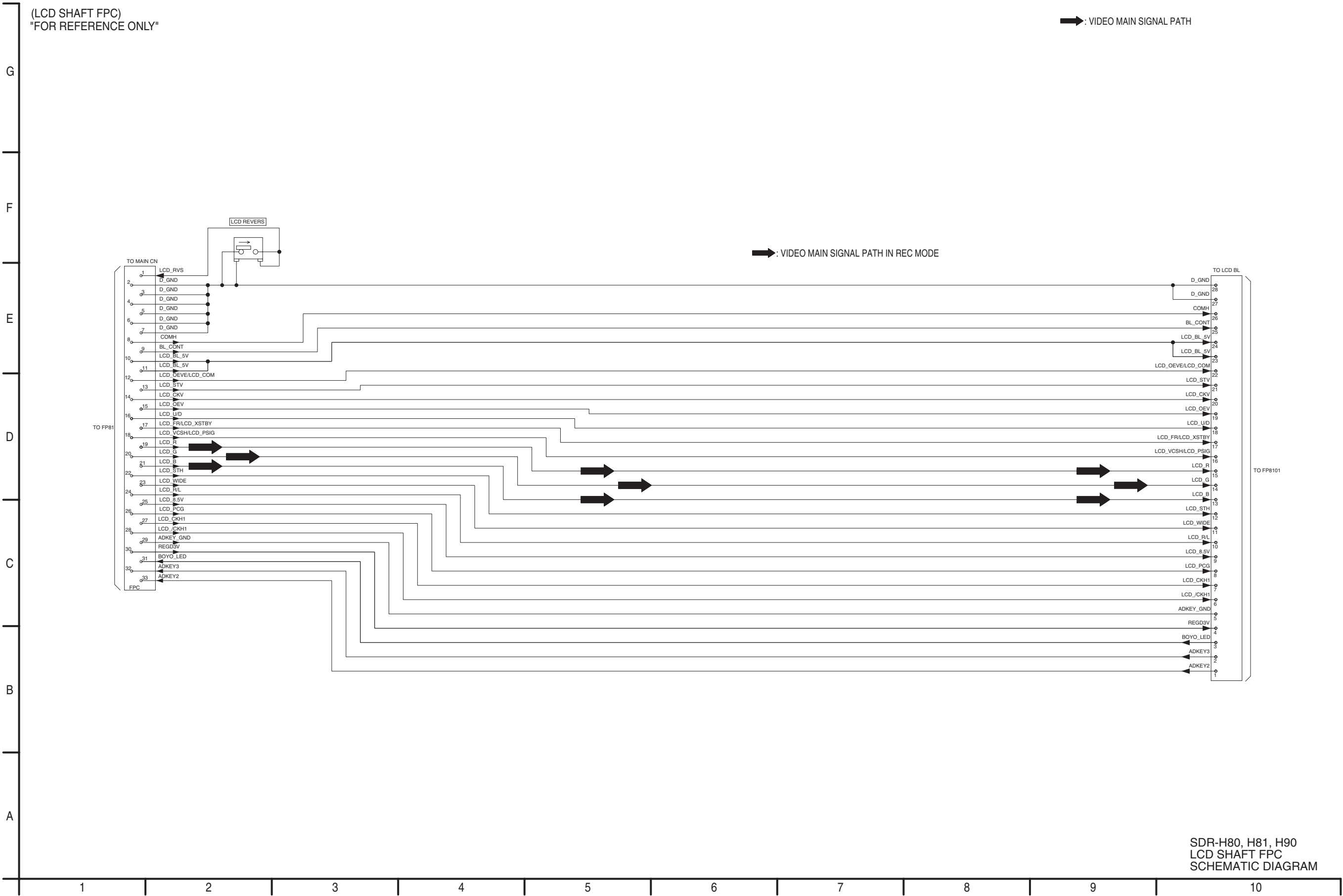


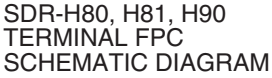


11.5. HDD RELAY FPC SCHEMATIC DIAGRAM

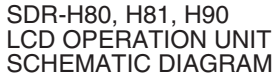


11.6. LCD SHAFT FPC SCHEMATIC DIAGRAM

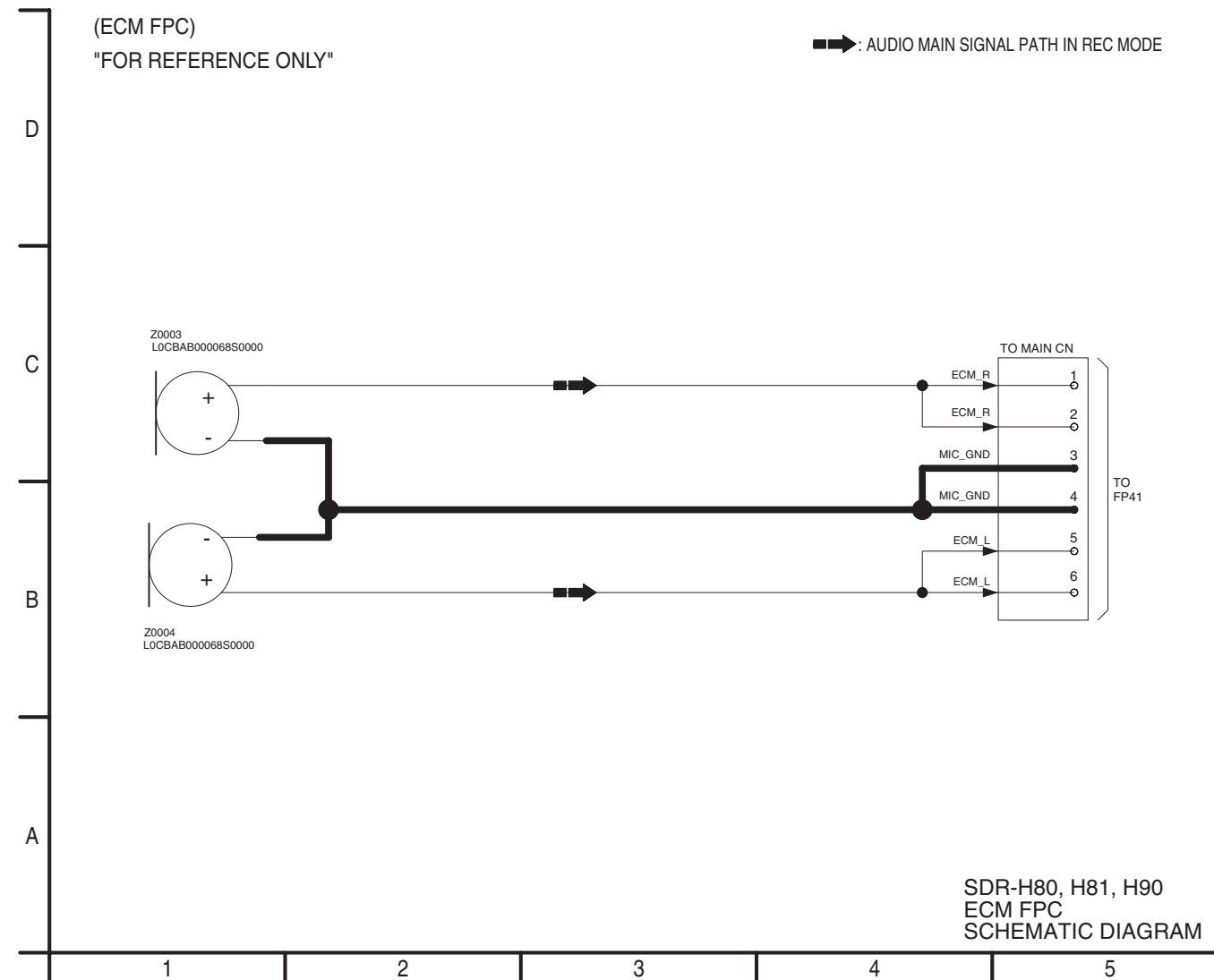




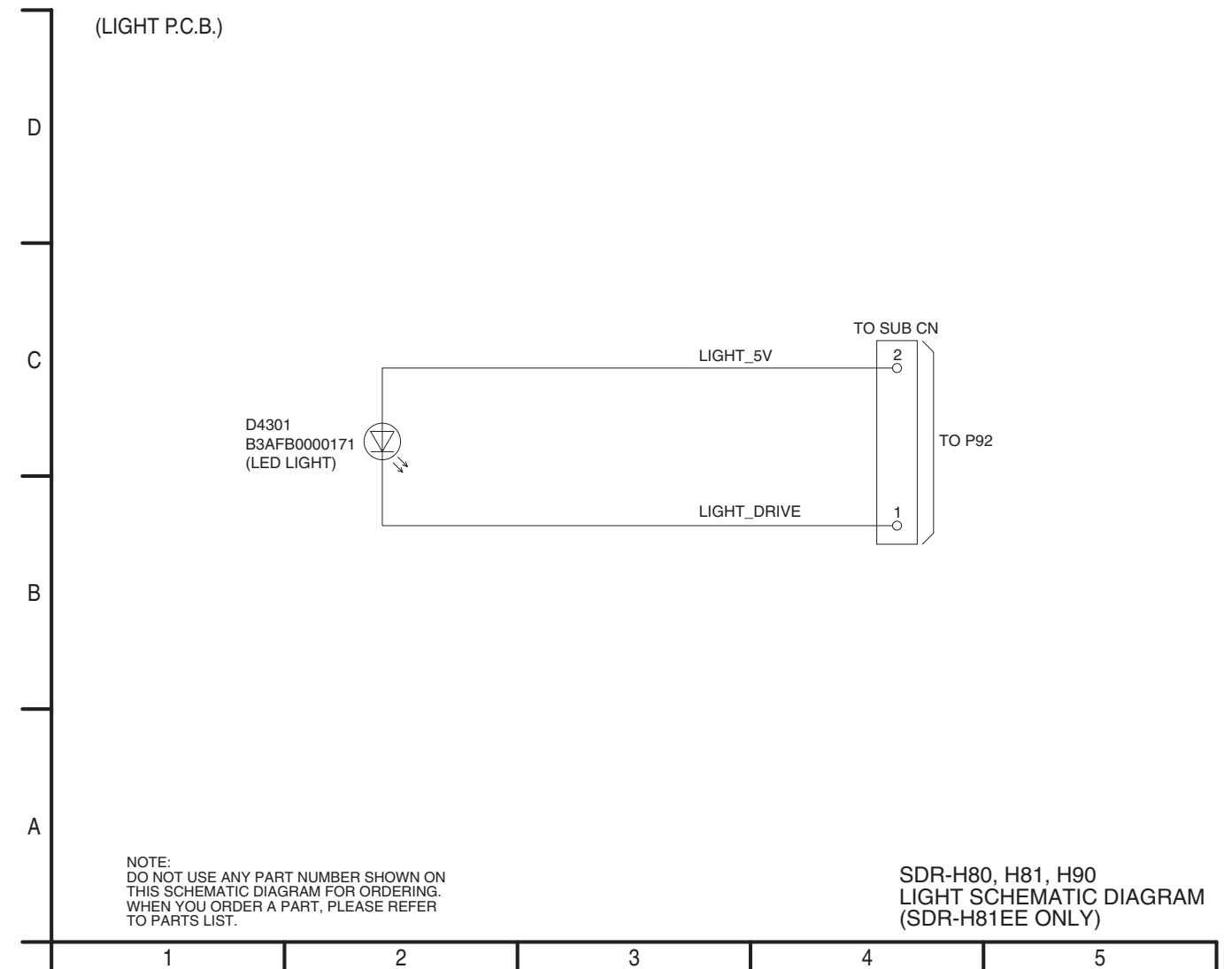
## 11.8. LCD OPERATION UNIT SCHEMATIC DIAGRAM



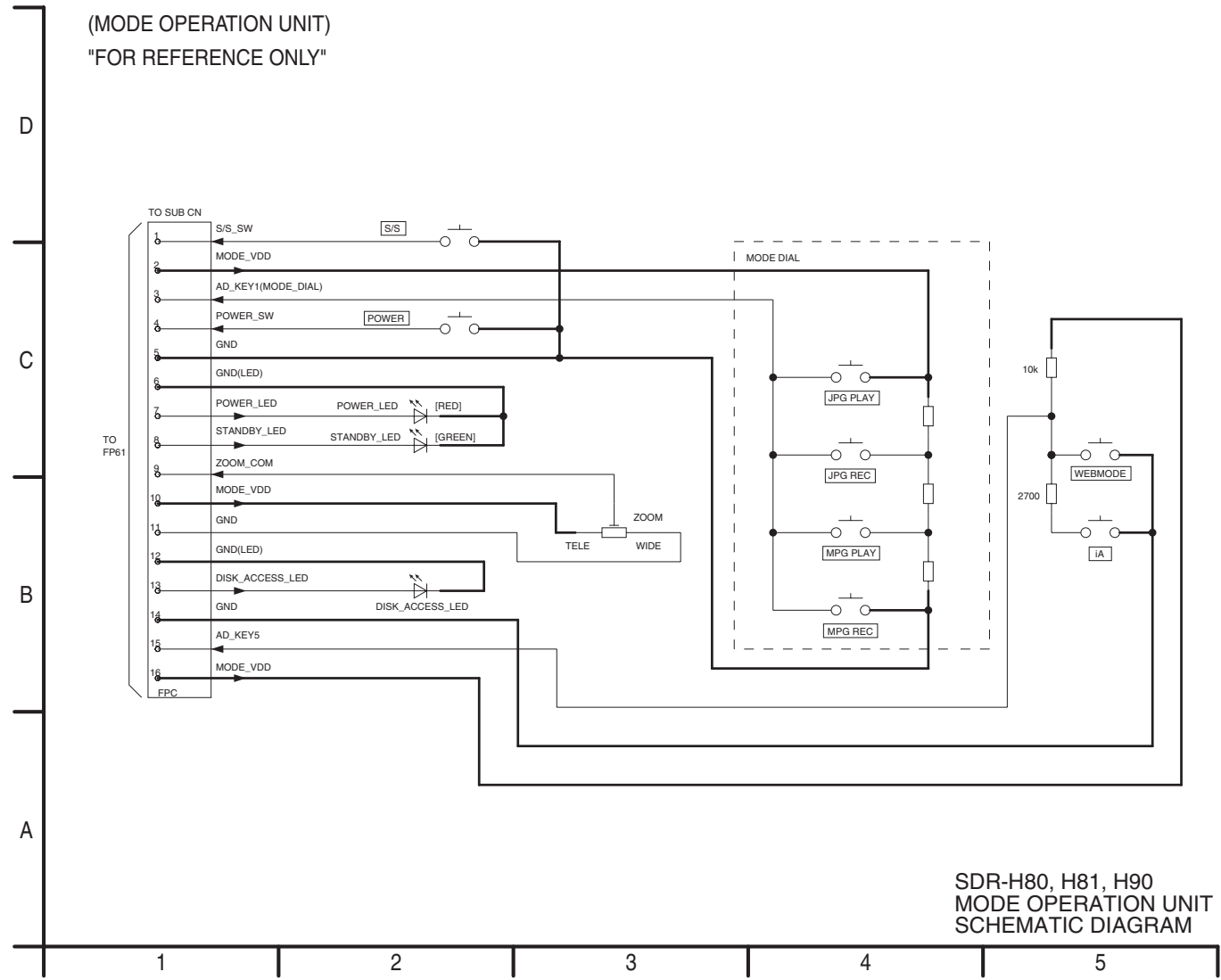
## 11.9. ECM FPC SCHEMATIC DIAGRAM



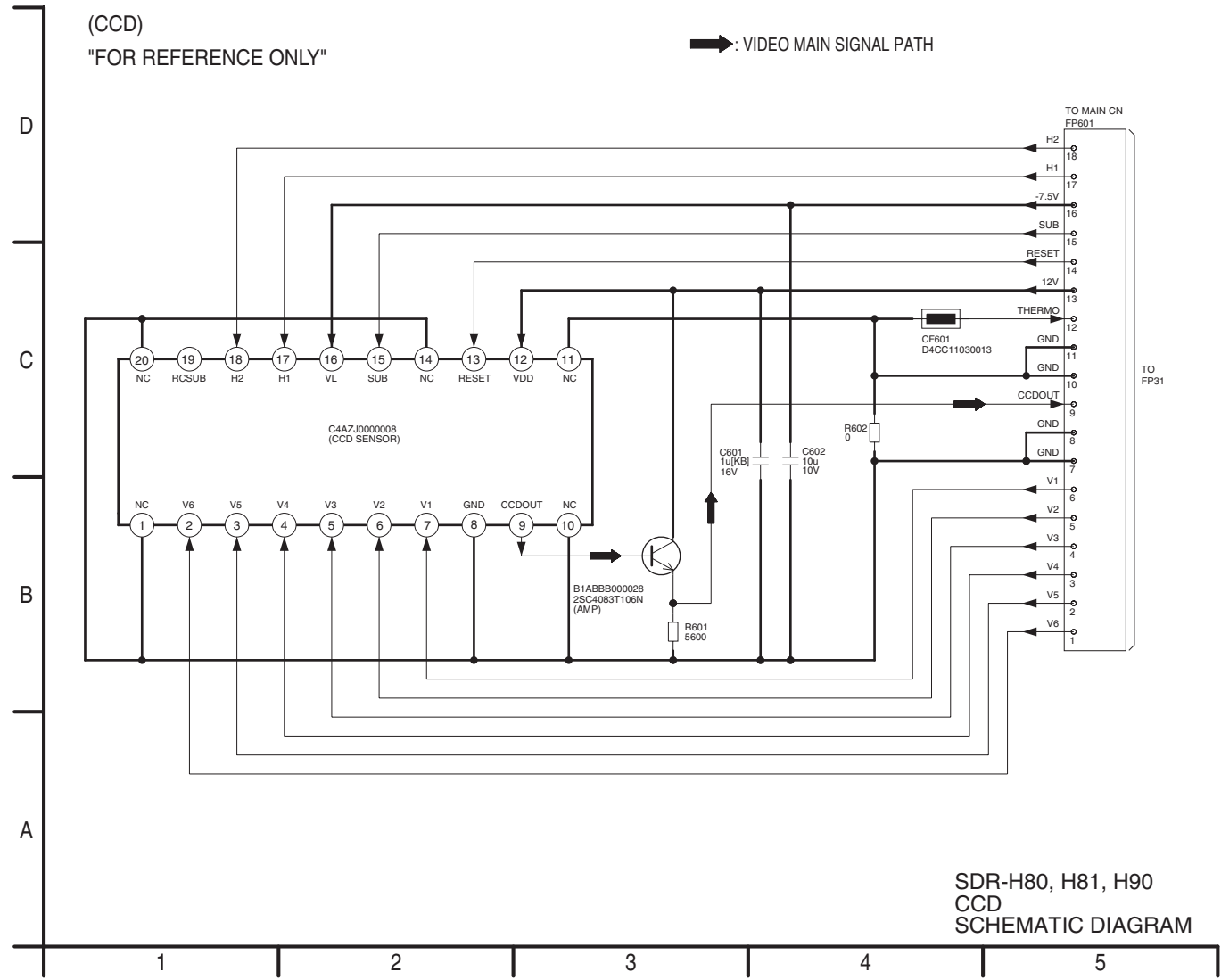
## 11.10. LIGHT SCHEMATIC DIAGRAM (SDR-H81EE ONLY)



11.11. MODE OPERATION SCHEMATIC DIAGRAM

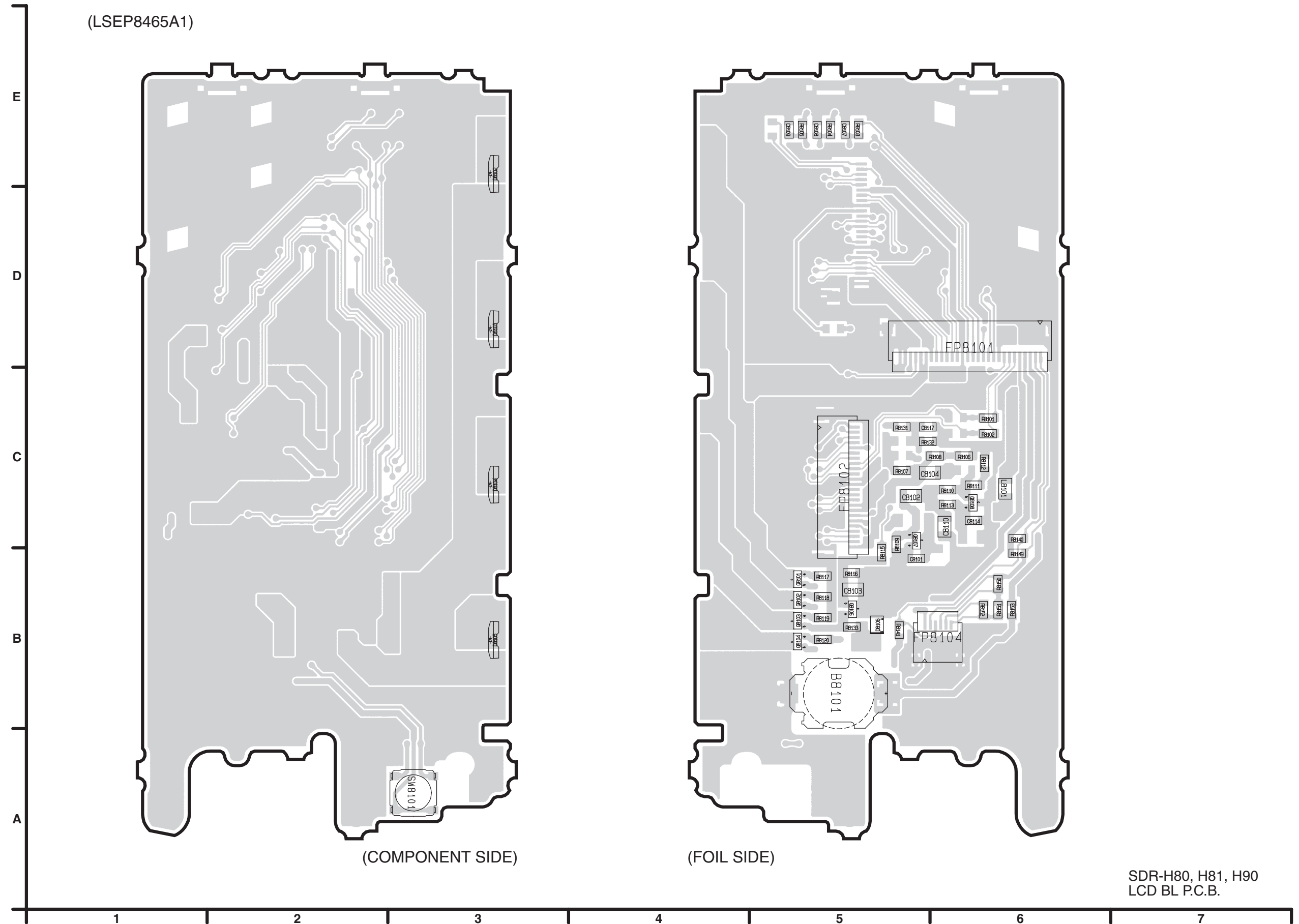


11.12. CCD SCHEMATIC DIAGRAM

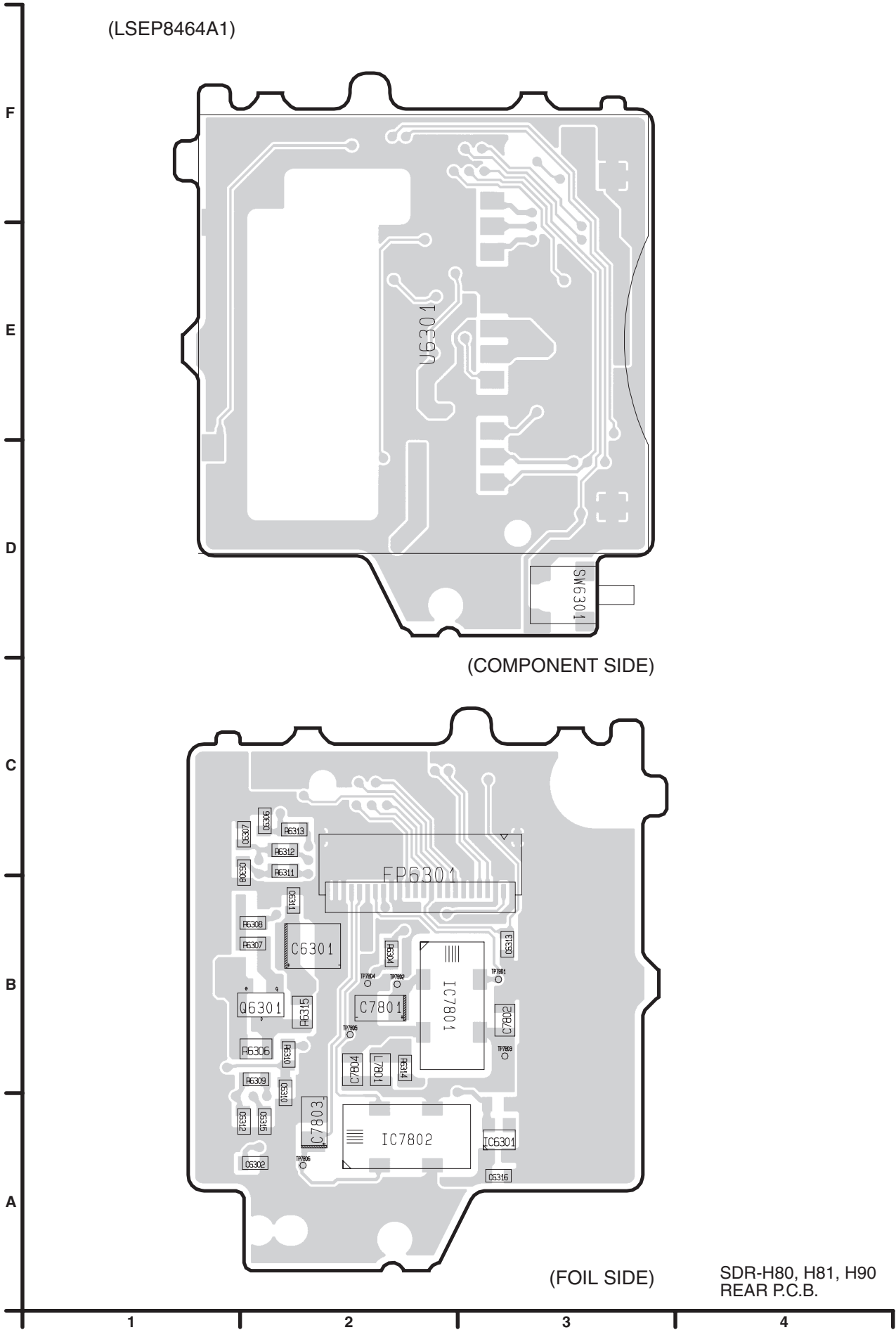


## 12 Printed Circuit Board

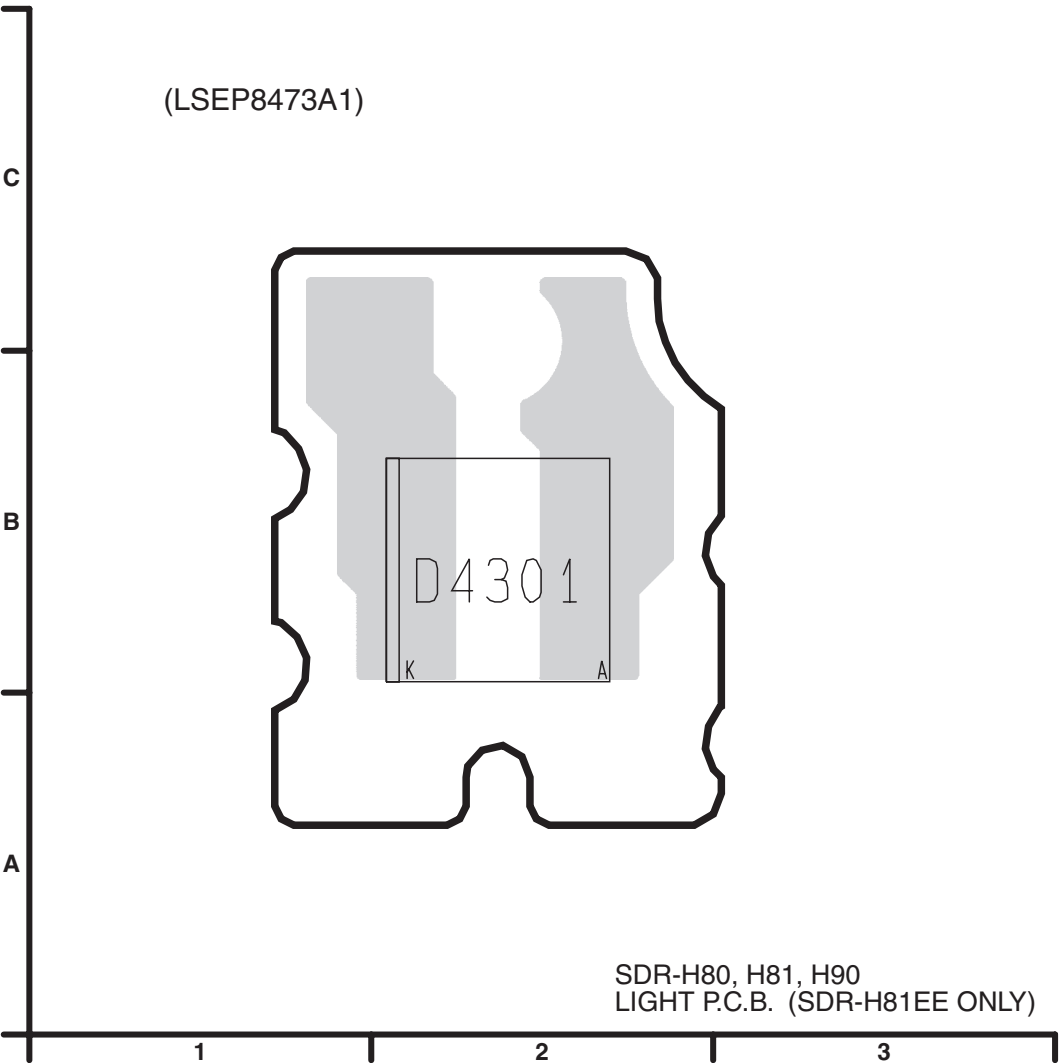
### 12.1. LCD BL P.C.B.



12.2. REAR P.C.B.



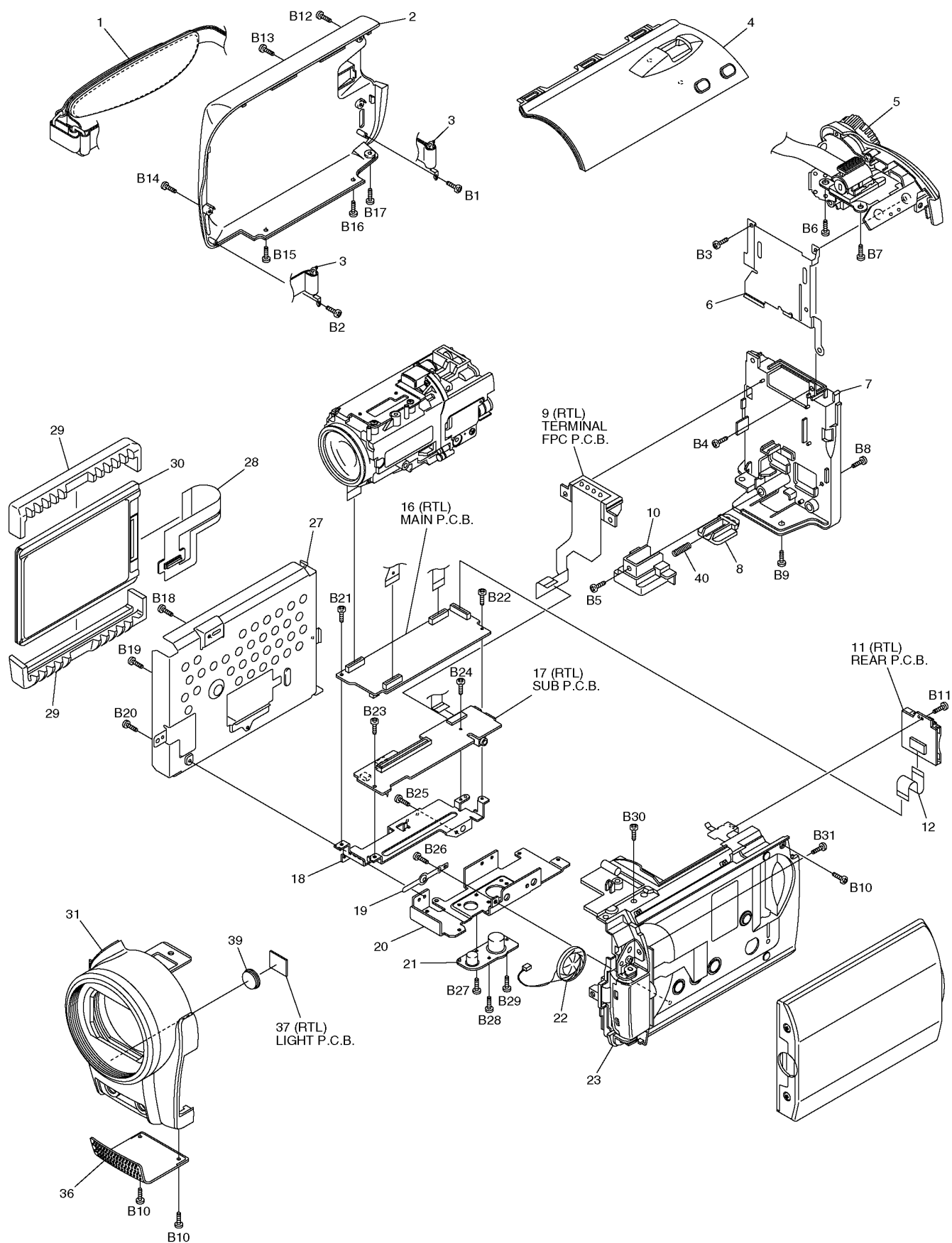
12.3. LIGHT P.C.B. (SDR-H81EE ONLY)



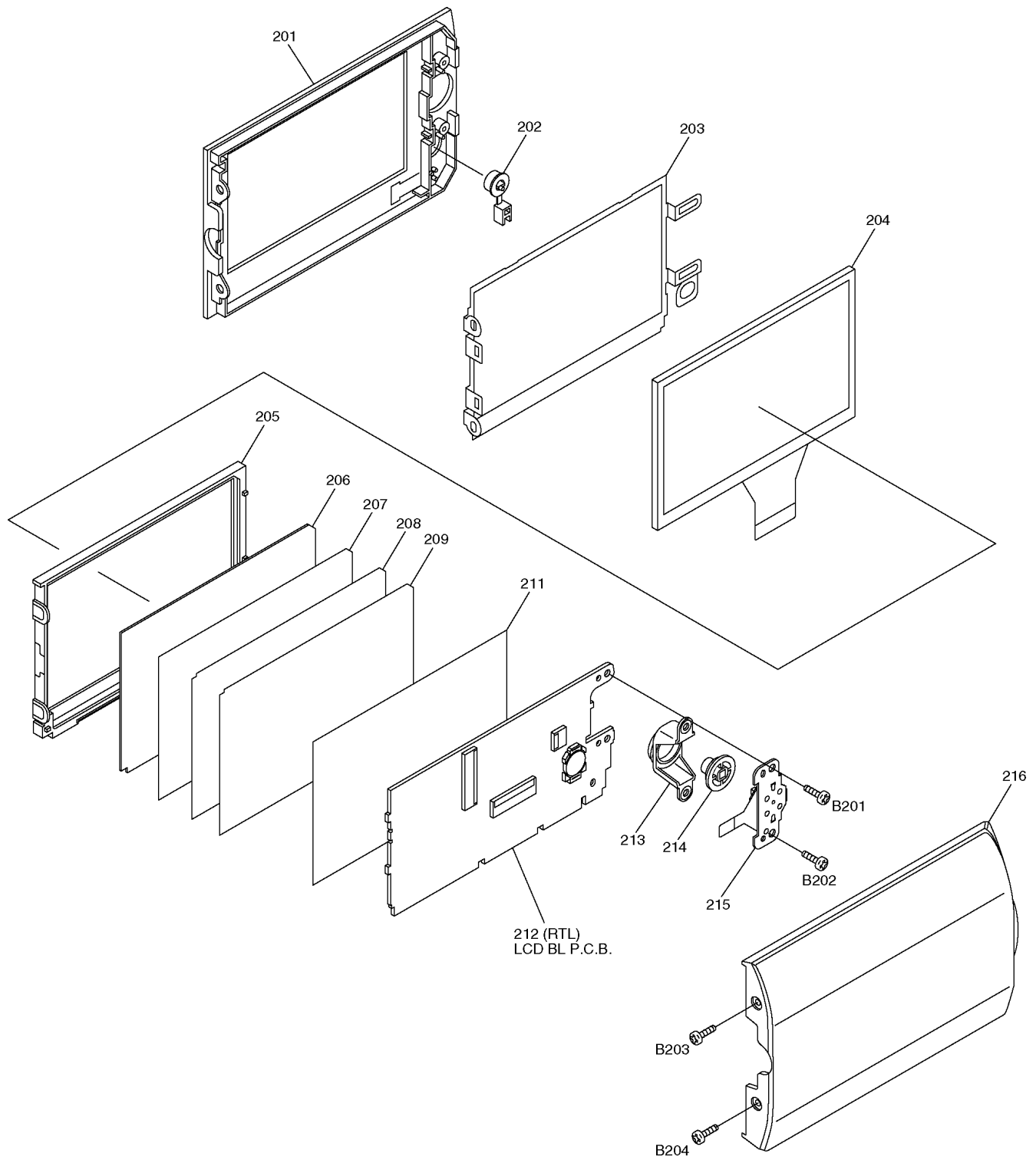
# 13 Parts and Exploded Views

## 13.1. Exploded Views

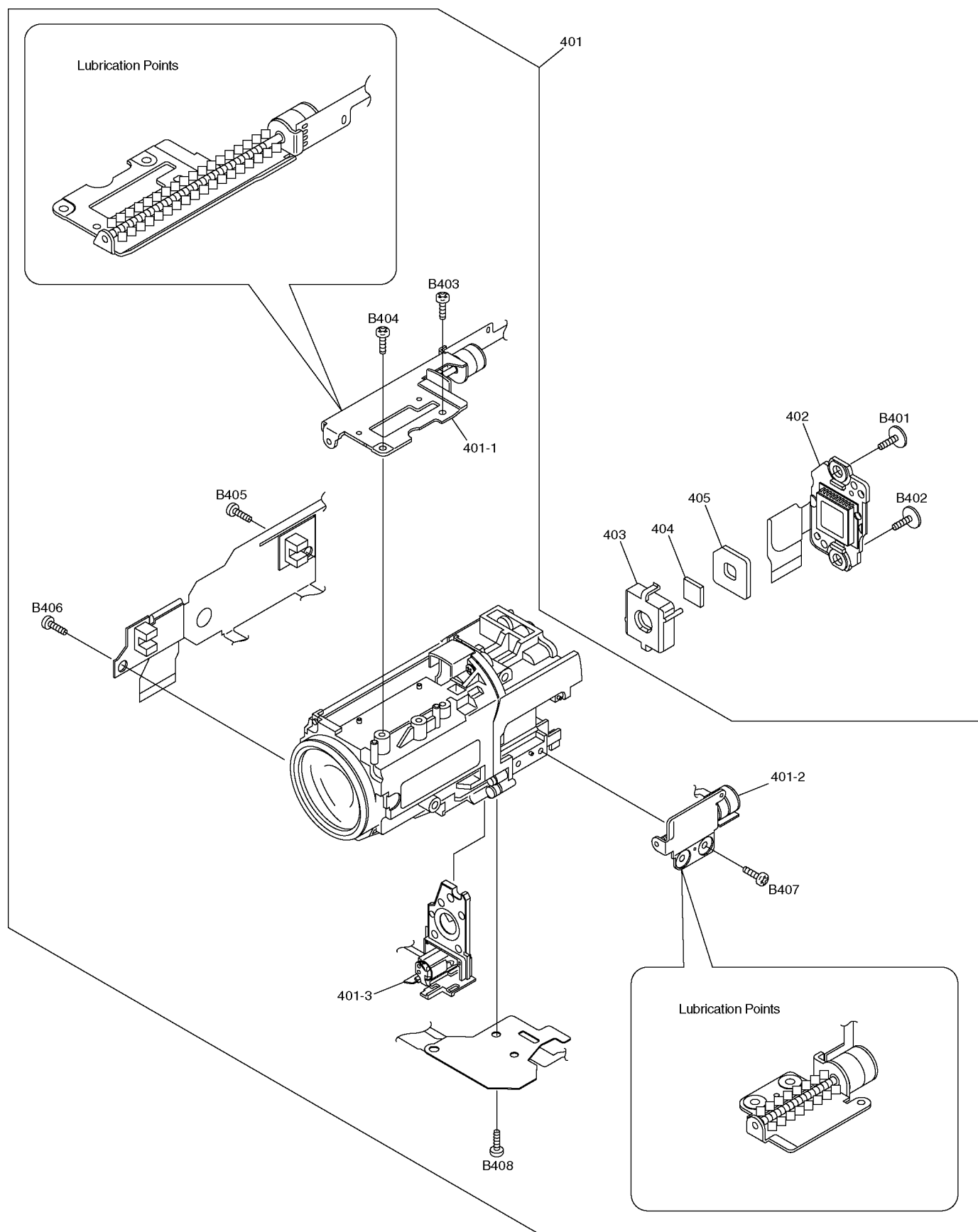
### 13.1.1. Frame & Casing Section



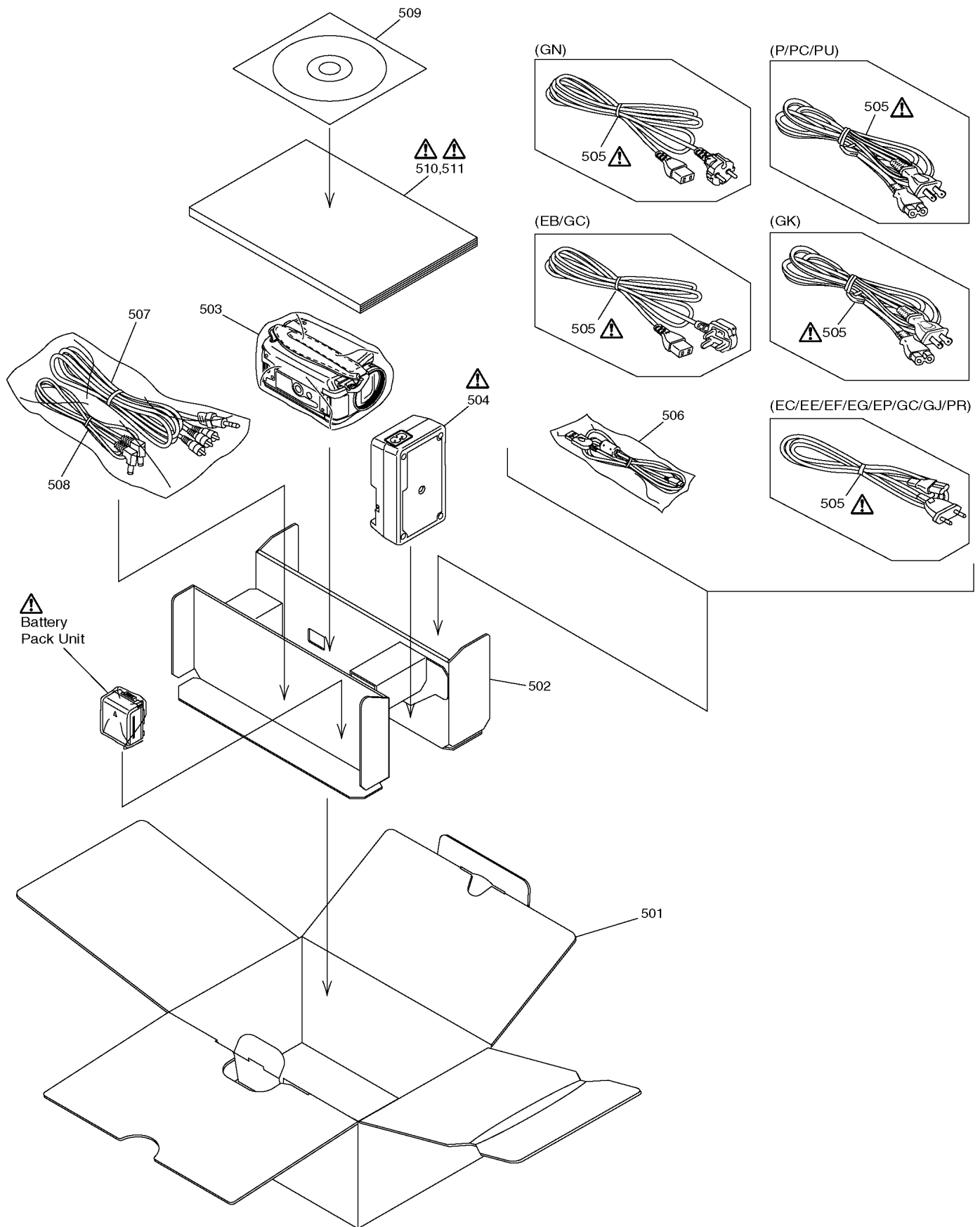
### 13.1.2. LCD Section



### 13.1.3. Camera Lens Section



### 13.1.4. Packing Parts & Accessories Section



## 13.2. Replacement Parts List

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:

- Parts indicated with PSECI in the Remarks column are supplied by PSECI.
- All parts except parts indicated with (PSECI) in the Remarks column are supplied by AVC-CSC-SPC.
- Parts marked with [Energy] in the Remarks column are supplied from "Panasonic Corporation Energy Company."

### 13.2.1. Frame & Casing Section Parts List

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

| Ref. No. | Part No.   | Part Name & Description | Pcs | Remarks                                                                                                                                                                |
|----------|------------|-------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | LSGQ0292   | GRIP BELT UNIT          | 1   |                                                                                                                                                                        |
| 2        | LSKM1783   | GRIP COVER              | 1   | H80EBA/S,ECA/S,<br>EES,EGA/S,EPA/S<br>,GCA/S,GJA/S,GK<br>A/S,GNA/S,PA/S,<br>PCA/S,PUA/S,PRA<br>/S                                                                      |
| 2        | LSKM1812   | GRIP COVER              | 1   | (-K)                                                                                                                                                                   |
| 2        | LSKM1836   | GRIP COVER              | 1   | (-R) H80                                                                                                                                                               |
| 3        | LSMA1064   | STRAP ANGLE             | 2   |                                                                                                                                                                        |
| 4        | LSYK2591   | TOP COVER UNIT          | 1   | (-A) H80                                                                                                                                                               |
| 4        | LSYK2590   | TOP COVER UNIT          | 1   | (-R) H80                                                                                                                                                               |
| 4        | LSYK2547   | TOP COVER UNIT          | 1   | (-K)                                                                                                                                                                   |
| 4        | LSYK2546   | TOP COVER UNIT          | 1   | (-S) H80                                                                                                                                                               |
| 5        | LSYK2489   | MODE OPERATION UNIT     | 1   | H80EBA/S,ECA/S,<br>EES,EGA/S,EPA/S<br>,GCA/S,GJA/S,GK<br>A/S,GNA/S,PA/S,<br>PCA/S,PUA/S,PRA<br>/S                                                                      |
| 5        | LSYK2515   | MODE OPERATION UNIT     | 1   | (-K)                                                                                                                                                                   |
| 5        | LSYK2596   | MODE OPERATION UNIT     | 1   | (-R) H80                                                                                                                                                               |
| 6        | LSSC1079-1 | EARTH PLATE             | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H90EG,EP,GC,GJ<br>,GK,GN,P,PC,PU |
| 6        | LSSC1079   | EARTH PLATE             | 1   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H81EB,<br>EE,H90EB,EC,EE,<br>EF                                                                      |
| 7        | LSKM1781   | BATTERY CASE            | 1   |                                                                                                                                                                        |
| 8        | LSGT0627   | BATTERY RELEASE KNOB    | 1   |                                                                                                                                                                        |
| 9        | LSEP8468A1 | TERMINAL FPC P.C.B.     | 1   | (RTL) E.S.D.                                                                                                                                                           |
| 10       | LSMD0921   | BATTERY RELEASE HOLDER  | 1   |                                                                                                                                                                        |
| 11       | LSEP8464A1 | REAR P.C.B.             | 1   | (RTL) E.S.D.                                                                                                                                                           |

| Ref. No. | Part No.     | Part Name & Description | Pcs | Remarks                                                                                               |
|----------|--------------|-------------------------|-----|-------------------------------------------------------------------------------------------------------|
| 12       | LSJW0126     | FPC 22PIN               | 1   |                                                                                                       |
| 16       | LSEP8462P1   | MAIN P.C.B.             | 1   | H80EB,EC,EE,EF,<br>EG,EP,GC,GJ,GK,<br>GN,H81,H90EB,EC<br>,EE,EF,EG,EP,GC<br>,GJ,GK,GN (RTL)<br>E.S.D. |
| 16       | LSEP8462A1   | MAIN P.C.B.             | 1   | H80P,PC,PU,PR,H<br>90P,PC,PU<br>[PSECI]<br>(RTL) E.S.D.                                               |
| 17       | LSEP8463P1   | SUB P.C.B.              | 1   | H80EB,EC,EE,EF,<br>EG,EP,GC,GJ,GK,<br>GN,H81EB (RTL)<br>E.S.D.                                        |
| 17       | LSEP8463A1   | SUB P.C.B.              | 1   | H80P,PC,PU,PR<br>[PSECI]<br>(RTL) E.S.D.                                                              |
| 17       | LSEP8463Q1   | SUB P.C.B.              | 1   | H81EE [PSECI]<br>(RTL) E.S.D.                                                                         |
| 17       | LSEP8463R1   | SUB P.C.B.              | 1   | H90EB,EC,EE,EF,<br>EG,EP,GC,GJ,GK,<br>GN (RTL) E.S.D.                                                 |
| 17       | LSEP8463B1   | SUB P.C.B.              | 1   | H90P,PC,PU<br>[PSECI]<br>(RTL) E.S.D.                                                                 |
| 18       | LSMP0583     | PCB ANGLE               | 1   |                                                                                                       |
| 19       | LSMC0173     | SPEAKER ANGLE           | 1   |                                                                                                       |
| 20       | LSMP0582     | TRIPOD FRAME            | 1   |                                                                                                       |
| 21       | LSHN0021     | TRIPOD SCREW            | 1   |                                                                                                       |
| 22       | L0AA01A00035 | LOUDSPEAKERS            | 1   |                                                                                                       |
| 23       | LSYK2618     | SIDE R/SHAFT UNIT       | 1   | (-A) H80                                                                                              |
| 23       | LSYK2538     | SIDE R/SHAFT UNIT       | 1   | H80EBK,ECK,EEK,<br>EFK,EGK,EPK,GCK<br>,GJK,GNK,PK,PCK<br>,PUK,PRK,H81EB,<br>H90                       |
| 23       | LSYK2576     | SIDE R/SHAFT UNIT       | 1   | (-R) H80                                                                                              |
| 23       | LSYK2471     | SIDE R/SHAFT UNIT       | 1   | (-S) H80                                                                                              |
| 23       | LSYK2539     | SIDE R/SHAFT UNIT       | 1   | H81EE                                                                                                 |
| 27       | LSMA1067-2U  | HDD FRAME               | 1   |                                                                                                       |
| 28       | LSEP8470A1   | HDD RELAY FPC           | 1   |                                                                                                       |
| 29       | LSMG0198     | HDD CUSHION             | 2   |                                                                                                       |
| 30       | RFKV0163HDKT | HDD                     | 1   | SDR-H80,SDR-H81                                                                                       |
| 30       | RFKV0164HDKT | HDD                     | 1   | H90                                                                                                   |
| 31       | LSYK2583     | FRONT/MIC UNIT          | 1   | (-A) H80                                                                                              |
| 31       | LSYK2526     | FRONT/MIC UNIT          | 1   | H80EBK,ECK,EEK,<br>EFK,EGK,EPK,GCK<br>,GJK,GNK,PK,PCK<br>,PUK,PRK,H81EB,<br>H90                       |
| 31       | LSYK2582     | FRONT/MIC UNIT          | 1   | (-R) H80                                                                                              |
| 31       | LSYK2480     | FRONT/MIC UNIT          | 1   | (-S) H80                                                                                              |
| 31       | LSYK2527     | FRONT/MIC UNIT          | 1   | H81EE                                                                                                 |
| 36       | LSYK2485     | FRONT PANEL UNIT        | 1   |                                                                                                       |
| 37       | LSEP8473A1   | LIGHT P.C.B.            | 1   | H81EE [PSECI]<br>(RTL) E.S.D.                                                                         |
| 39       | LSKW0278     | LIGHT PROTECTOR         | 1   | H81EE [PSECI]                                                                                         |
| 40       | LSMB0364-1   | BATTERY RELEASE SPRING  | 1   |                                                                                                       |
| B1       | XQN16+BJ4FN  | SCREW                   | 1   |                                                                                                       |
| B2       | XQN16+BJ4FN  | SCREW                   | 1   |                                                                                                       |
| B3       | XQN16+BJ5FN  | SCREW                   | 1   |                                                                                                       |
| B4       | XQN16+BJ5FN  | SCREW                   | 1   |                                                                                                       |
| B5       | XQN16+BJ5FN  | SCREW                   | 1   |                                                                                                       |
| B6       | XQN16+BJ4FN  | SCREW                   | 1   |                                                                                                       |

| Ref. No. | Part No.     | Part Name & Description | Pcs | Remarks                                                                                                                                                                             |
|----------|--------------|-------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B7       | XQN16+BJ4FN  | SCREW                   | 1   |                                                                                                                                                                                     |
| B8       | XQN16+BJ5FJK | SCREW                   | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG<br>,EP,GC,GJ,GK,GN<br>,P,PC,PU |
| B8       | XQN16+BJ5FN  | SCREW                   | 1   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H90EB,<br>EC,EE,EF                                                                                                |
| B9       | XQN16+BF4FJK | SCREW                   | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG<br>,EP,GC,GJ,GK,GN<br>,P,PC,PU |
| B9       | XQN16+BF4FN  | SCREW                   | 1   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H90EB,<br>EC,EE,EF                                                                                                |
| B10      | XQN16+BF4FJK | SCREW                   | 3   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG<br>,EP,GC,GJ,GK,GN<br>,P,PC,PU |
| B10      | XQN16+BF4FN  | SCREW                   | 3   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H90EB,<br>EC,EE,EF                                                                                                |
| B11      | XQN16+BJ5FN  | SCREW                   | 1   |                                                                                                                                                                                     |
| B12      | XQN16+BF4FJK | SCREW                   | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG<br>,EP,GC,GJ,GK,GN<br>,P,PC,PU |
| B12      | XQN16+BF4FN  | SCREW                   | 1   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H90EB,<br>EC,EE,EF                                                                                                |
| B13      | XQN16+BF4FJK | SCREW                   | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG<br>,EP,GC,GJ,GK,GN<br>,P,PC,PU |

| Ref. No. | Part No.     | Part Name & Description | Pcs | Remarks                                                                                                                                                                             |
|----------|--------------|-------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B13      | XQN16+BF4FN  | SCREW                   | 1   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H90EB,<br>EC,EE,EF                                                                                                |
| B14      | XQN16+BJ5FJK | SCREW                   | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG<br>,EP,GC,GJ,GK,GN<br>,P,PC,PU |
| B14      | XQN16+BJ5FN  | SCREW                   | 1   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H90EB,<br>EC,EE,EF                                                                                                |
| B15      | XQN16+BF4FJK | SCREW                   | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG<br>,EP,GC,GJ,GK,GN<br>,P,PC,PU |
| B15      | XQN16+BF4FN  | SCREW                   | 1   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H90EB,<br>EC,EE,EF                                                                                                |
| B16      | XQN16+BF4FJK | SCREW                   | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG<br>,EP,GC,GJ,GK,GN<br>,P,PC,PU |
| B16      | XQN16+BF4FN  | SCREW                   | 1   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H90EB,<br>EC,EE,EF                                                                                                |
| B17      | XQN16+BF4FJK | SCREW                   | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG<br>,EP,GC,GJ,GK,GN<br>,P,PC,PU |
| B17      | XQN16+BF4FN  | SCREW                   | 1   | H80EBS,ECS,EES,<br>EGS,EPS,GCS,GJS<br>,GKS,GNS,PS,PCS<br>,PUS,PRS,H90EB,<br>EC,EE,EF                                                                                                |
| B18      | XQN16+BJ5FJK | SCREW                   | 1   | H80EBA/K/R,ECA/<br>K/R,EEK,EFK/R,E<br>GA/K/R,EPA/K/R,<br>GCA/K/R,GJA/K/R<br>,GKA/R,GNA/K/R,<br>PA/K/R,PCA/K/R,<br>PUA/K/R,PRA/K/R<br>,H81EB,EE,H90EG                                |

| Ref. No. | Part No.     | Part Name & Description | Pcs | Remarks         |
|----------|--------------|-------------------------|-----|-----------------|
|          |              |                         |     | ,EP,GC,GJ,GK,GN |
|          |              |                         |     | ,P,PC,PU        |
| B18      | XQN16+BJ5FN  | SCREW                   | 1   | H80EBS,ECS,EES, |
|          |              |                         |     | EGS,EPS,GCS,GJS |
|          |              |                         |     | ,GKS,GNS,PS,PCS |
|          |              |                         |     | ,PUS,PRS,H90EB, |
|          |              |                         |     | EC,EE,EF        |
| B19      | XQN16+BF4FJK | SCREW                   | 1   | H80EBA/K/R,ECA/ |
|          |              |                         |     | K/R,EEK,EFK/R,E |
|          |              |                         |     | GA/K/R,EPA/K/R, |
|          |              |                         |     | GCA/K/R,GJA/K/R |
|          |              |                         |     | ,GKA/R,GNA/K/R, |
|          |              |                         |     | PA/K/R,PCA/K/R, |
|          |              |                         |     | PUA/K/R,PRA/K/R |
|          |              |                         |     | ,H81EB,EE,H90EG |
|          |              |                         |     | ,EP,GC,GJ,GK,GN |
|          |              |                         |     | ,P,PC,PU        |
| B19      | XQN16+BF4FN  | SCREW                   | 1   | H80EBS,ECS,EES, |
|          |              |                         |     | EGS,EPS,GCS,GJS |
|          |              |                         |     | ,GKS,GNS,PS,PCS |
|          |              |                         |     | ,PUS,PRS,H90EB, |
|          |              |                         |     | EC,EE,EF        |
| B20      | XQN16+BF4FJK | SCREW                   | 1   | H80EBA/K/R,ECA/ |
|          |              |                         |     | K/R,EEK,EFK/R,E |
|          |              |                         |     | GA/K/R,EPA/K/R, |
|          |              |                         |     | GCA/K/R,GJA/K/R |
|          |              |                         |     | ,GKA/R,GNA/K/R, |
|          |              |                         |     | PA/K/R,PCA/K/R, |
|          |              |                         |     | PUA/K/R,PRA/K/R |
|          |              |                         |     | ,H81EB,EE,H90EG |
|          |              |                         |     | ,EP,GC,GJ,GK,GN |
|          |              |                         |     | ,P,PC,PU        |
| B20      | XQN16+BF4FN  | SCREW                   | 1   | H80EBS,ECS,EES, |
|          |              |                         |     | EGS,EPS,GCS,GJS |
|          |              |                         |     | ,GKS,GNS,PS,PCS |
|          |              |                         |     | ,PUS,PRS,H90EB, |
|          |              |                         |     | EC,EE,EF        |
| B21      | LSHD0132     | SCREW                   | 1   |                 |
| B22      | LSHD0132     | SCREW                   | 1   |                 |
| B23      | LSHD0132     | SCREW                   | 1   |                 |
| B24      | LSHD0132     | SCREW                   | 1   |                 |
| B25      | XQN16+BJ5FJK | SCREW                   | 1   | H80EBA/K/R,ECA/ |
|          |              |                         |     | K/R,EEK,EFK/R,E |
|          |              |                         |     | GA/K/R,EPA/K/R, |
|          |              |                         |     | GCA/K/R,GJA/K/R |
|          |              |                         |     | ,GKA/R,GNA/K/R, |
|          |              |                         |     | PA/K/R,PCA/K/R, |
|          |              |                         |     | PUA/K/R,PRA/K/R |
|          |              |                         |     | ,H81EB,EE,H90EG |
|          |              |                         |     | ,EP,GC,GJ,GK,GN |
|          |              |                         |     | ,P,PC,PU        |
| B25      | XQN16+BJ5FN  | SCREW                   | 1   | H80EBS,ECS,EES, |
|          |              |                         |     | EGS,EPS,GCS,GJS |
|          |              |                         |     | ,GKS,GNS,PS,PCS |
|          |              |                         |     | ,PUS,PRS,H90EB, |
|          |              |                         |     | EC,EE,EF        |
| B26      | XQN16+BJ4FN  | SCREW                   | 1   |                 |
| B27      | XQN16+BF3FN  | SCREW                   | 1   |                 |
| B28      | XQN16+BF3FN  | SCREW                   | 1   |                 |
| B29      | XQN16+BF3FN  | SCREW                   | 1   |                 |
| B30      | XQN16+BJ5FJK | SCREW                   | 1   | H80EBA/K/R,ECA/ |
|          |              |                         |     | K/R,EEK,EFK/R,E |
|          |              |                         |     | GA/K/R,EPA/K/R, |
|          |              |                         |     | GCA/K/R,GJA/K/R |
|          |              |                         |     | ,GKA/R,GNA/K/R, |
|          |              |                         |     | PA/K/R,PCA/K/R, |
|          |              |                         |     | PUA/K/R,PRA/K/R |
|          |              |                         |     | ,H81EB,EE,H90EG |
|          |              |                         |     | ,EP,GC,GJ,GK,GN |
|          |              |                         |     | ,P,PC,PU        |
| B30      | XQN16+BJ5FN  | SCREW                   | 1   | H80EBS,ECS,EES, |
|          |              |                         |     | EGS,EPS,GCS,GJS |
|          |              |                         |     | ,GKS,GNS,PS,PCS |

| Ref. No. | Part No.     | Part Name & Description | Pcs | Remarks         |
|----------|--------------|-------------------------|-----|-----------------|
|          |              |                         |     | ,PUS,PRS,H90EB, |
|          |              |                         |     | EC,EE,EF        |
| B31      | XQN16+BJ5FJK | SCREW                   | 1   | H80EBA/K/R,ECA/ |
|          |              |                         |     | K/R,EEK,EFK/R,E |
|          |              |                         |     | GA/K/R,EPA/K/R, |
|          |              |                         |     | GCA/K/R,GJA/K/R |
|          |              |                         |     | ,GKA/R,GNA/K/R, |
|          |              |                         |     | PA/K/R,PCA/K/R, |
|          |              |                         |     | PUA/K/R,PRA/K/R |
|          |              |                         |     | ,H81EB,EE,H90EG |
|          |              |                         |     | ,EP,GC,GJ,GK,GN |
|          |              |                         |     | ,P,PC,PU        |
| B31      | XQN16+BJ5FN  | SCREW                   | 1   | H80EBS,ECS,EES, |
|          |              |                         |     | EGS,EPS,GCS,GJS |
|          |              |                         |     | ,GKS,GNS,PS,PCS |
|          |              |                         |     | ,PUS,PRS,H90EB, |
|          |              |                         |     | EC,EE,EF        |

### 13.2.2. LCD Section Parts List

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

#### 2. IMPORTANT SAFETY NOTICE

Components identified with the mark  $\Delta$  have the special characteristics for safety. When replacing any of these components, use only the same type.

| Ref. No. | Part No.     | Part Name & Description | Pcs | Remarks         |
|----------|--------------|-------------------------|-----|-----------------|
| 201      | LSKM1777-1   | LCD CASE B              | 1   | H80EBA/K/R,ECA/ |
|          |              |                         |     | K/R,EEK,EFK/R,E |
|          |              |                         |     | GA/K/R,EPA/K/R, |
|          |              |                         |     | GCA/K/R,GJA/K/R |
|          |              |                         |     | ,GKA/R,GNA/K/R, |
|          |              |                         |     | PA/K/R,PCA/K/R, |
|          |              |                         |     | PUA/K/R,PRA/K/R |
|          |              |                         |     | ,H90EG,EP,GC,GJ |
|          |              |                         |     | ,GK,GN,P,PC,PU  |
| 201      | LSKM1777     | LCD CASE B              | 1   | H80EBS,ECS,EES, |
|          |              |                         |     | EGS,EPS,GCS,GJS |
|          |              |                         |     | ,GKS,GNS,PS,PCS |
|          |              |                         |     | ,PUS,PRS,H81EB, |
|          |              |                         |     | EE,H90EB,EC,EE, |
|          |              |                         |     | EF              |
| 202      | LSGU0754-1   | MENU BUTTON             | 1   | H80EBA/K/R,ECA/ |
|          |              |                         |     | K/R,EEK,EFK/R,E |
|          |              |                         |     | GA/K/R,EPA/K/R, |
|          |              |                         |     | GCA/K/R,GJA/K/R |
|          |              |                         |     | ,GKA/R,GNA/K/R, |
|          |              |                         |     | PA/K/R,PCA/K/R, |
|          |              |                         |     | PUA/K/R,PRA/K/R |
|          |              |                         |     | ,H90EG,EP,GC,GJ |
|          |              |                         |     | ,GK,GN,P,PC,PU  |
| 202      | LSGU0754     | MENU BUTTON             | 1   | H80EBS,ECS,EES, |
|          |              |                         |     | EGS,EPS,GCS,GJS |
|          |              |                         |     | ,GKS,GNS,PS,PCS |
|          |              |                         |     | ,PUS,PRS,H81EB, |
|          |              |                         |     | EE,H90EB,EC,EE, |
|          |              |                         |     | EF              |
| 203      | LSSC1078     | LCD SHIELD CASE         | 1   |                 |
| 204      | L5BDDYH00023 | LCD                     | 1   |                 |
| 205      | LSYK2477     | PANEL HOLDER UNIT       | 1   |                 |
| 206      | LSGL1544     | LEAD LIGHT PANEL        | 1   |                 |
| 207      | LSGL1545     | LCD BEF SHEET A         | 1   |                 |
| 208      | LSGL1546     | LCD BEF SHEET B         | 1   |                 |
| 209      | LSGL1547     | LCD DIFFUSION SHEET     | 1   |                 |
| 211      | LSGL1548     | LCD REFLECT SHEET       | 1   |                 |
| 212      | LSEP8465A1   | LCD BL P.C.B.           | 1   | (RTL) E.S.D.    |
| 213      | LSGK0937     | DECO. PIECE             | 1   |                 |
| 214      | LSGU0755     | SELECT LEVER            | 1   |                 |

| Ref. No. | Part No.    | Part Name & Description | Pcs | Remarks         |
|----------|-------------|-------------------------|-----|-----------------|
| 215      | LSSQ1010    | LCD OPERATION UNIT      | 1   |                 |
| 216      | LSYK2579    | LCD CASE A UNIT         | 1   | (-A) H80        |
| 216      | LSYK2586    | LCD CASE A UNIT         | 1   | H80EBK,ECK,EEK, |
|          |             |                         |     | EFK,EGK,EPK,GCK |
|          |             |                         |     | ,GJK,GNK,PK,PCK |
|          |             |                         |     | ,PUK,PRK,H81EB  |
| 216      | LSYK2578    | LCD CASE A UNIT         | 1   | (-R) H80        |
| 216      | LSYK2479    | LCD CASE A UNIT         | 1   | (-S) H80        |
| 216      | LSYK2740    | LCD CASE A UNIT         | 1   | H81EEK [PSECI]  |
| 216      | LSYK2531    | LCD CASE A UNIT         | 1   | (-K) H90        |
|          |             |                         |     |                 |
| B201     | XQN16+BJ5FN | SCREW                   | 1   |                 |
| B202     | XQN16+BJ5FN | SCREW                   | 1   |                 |
| B203     | XQN16+B3FN  | SCREW                   | 1   |                 |
| B204     | XQN16+B3FN  | SCREW                   | 1   |                 |

### 13.2.3. Camera Lens Section Parts List

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

| Ref. No. | Part No.     | Part Name & Description | Pcs | Remarks      |
|----------|--------------|-------------------------|-----|--------------|
|          |              |                         |     |              |
| 401      | LSXN0057     | LENS UNIT               | 1   |              |
| 401-1    | L6HA66NB0011 | ZOOM MOTOR UNIT         | 1   |              |
| 401-2    | L6HA66NB0012 | FOCUS MOTOR UNIT        | 1   |              |
| 401-3    | LSEM0114     | AUTO IRIS UNIT          | 1   |              |
| 402      | LSEP8466A1   | CCD P.C.B.              | 1   | (RTL) E.S.D. |
| 403      | LSDW0141     | CCD CASE                | 1   |              |
| 404      | LSFL0343     | OPTICAL LPF             | 1   |              |
| 405      | LSMX0246     | CCD CUSHION             | 1   |              |
|          |              |                         |     |              |
| B401     | LSHD0136     | SCREW                   | 1   |              |
| B402     | LSHD0136     | SCREW                   | 1   |              |
| B403     | XQN16+BJ4FN  | SCREW                   | 1   |              |
| B404     | XQN16+BJ4FN  | SCREW                   | 1   |              |
| B405     | XQN16+BJ4FN  | SCREW                   | 1   |              |
| B406     | XQN16+BJ4FN  | SCREW                   | 1   |              |
| B407     | XQN16+BJ4FN  | SCREW                   | 1   |              |
| B408     | XQN16+BJ4FN  | SCREW                   | 1   |              |

### 13.2.4. Packing Parts & Accessories Section Parts List

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

| Ref. No. | Part No. | Part Name & Description | Pcs | Remarks         |
|----------|----------|-------------------------|-----|-----------------|
|          |          |                         |     |                 |
| 501      | LSPG2730 | PACKING CASE            | 1   | H80EBA,ECA,EGA, |
|          |          |                         |     | GJA,GNA         |
| 501      | LSPG2728 | PACKING CASE            | 1   | H80EBK,ECK,EFK, |
|          |          |                         |     | EGK,GJK,GNK,H81 |
|          |          |                         |     | EB              |
| 501      | LSPG2729 | PACKING CASE            | 1   | H80EBR,ECR,EFR, |
|          |          |                         |     | EGR,GJR,GNR     |
| 501      | LSPG2684 | PACKING CASE            | 1   | H80EBS,ECS,EGS, |
|          |          |                         |     | GJS,GNS         |
| 501      | LSPG2737 | PACKING CASE            | 1   | H80EEK [PSECI]  |
| 501      | LSPG2687 | PACKING CASE            | 1   | H80EES [PSECI]  |
| 501      | LSPG2733 | PACKING CASE            | 1   | H80EPA          |
| 501      | LSPG2731 | PACKING CASE            | 1   | H80EPK          |
| 501      | LSPG2732 | PACKING CASE            | 1   | H80EPR          |
| 501      | LSPG2685 | PACKING CASE            | 1   | H80EPS          |

| Ref. No. | Part No.     | Part Name & Description | Pcs | Remarks              |
|----------|--------------|-------------------------|-----|----------------------|
| 501      | LSPG2736     | PACKING CASE            | 1   | H80GCA               |
| 501      | LSPG2734     | PACKING CASE            | 1   | H80GCK               |
| 501      | LSPG2735     | PACKING CASE            | 1   | H80GCR               |
| 501      | LSPG2686     | PACKING CASE            | 1   | H80GCS               |
| 501      | LSPG2742     | PACKING CASE            | 1   | H80GKA               |
| 501      | LSPG2741     | PACKING CASE            | 1   | H80GKR               |
| 501      | LSPG2688     | PACKING CASE            | 1   | H80GKS               |
| 501      | LSPG2719     | PACKING CASE            | 1   | H80PA,PCA,PUA,P      |
|          |              |                         |     | RA [PSECI]           |
| 501      | LSPG2724     | PACKING CASE            | 1   | H80PK,PCK,PUK,P      |
|          |              |                         |     | RK [PSECI]           |
| 501      | LSPG2718     | PACKING CASE            | 1   | H80PR,PCR,PUR,P      |
|          |              |                         |     | RR [PSECI]           |
| 501      | LSPG2681     | PACKING CASE            | 1   | H80PS,PCS,PUS,P      |
|          |              |                         |     | RS [PSECI]           |
| 501      | LSPG2772     | PACKING CASE            | 1   | H81EE [PSECI]        |
| 501      | LSPG2715     | PACKING CASE            | 1   | H90EB,EC,EF,EG,      |
|          |              |                         |     | GJ,GN                |
| 501      | LSPG2690     | PACKING CASE            | 1   | H90EE [PSECI]        |
| 501      | LSPG2716     | PACKING CASE            | 1   | H90EP                |
| 501      | LSPG2689     | PACKING CASE            | 1   | H90GC                |
| 501      | LSPG2691     | PACKING CASE            | 1   | H90GK                |
| 501      | LSPG2717     | PACKING CASE            | 1   | H90P,PC,PU           |
|          |              |                         |     | [PSECI]              |
| 502      | LSPN0950     | PAD                     | 1   |                      |
| 503      | VPF1129      | PROTECTION BAG          | 1   |                      |
| 504      | DE-A51CB     | POWER CHARGERS          | 1   | H80EB,EC,EE,EF,      |
|          |              |                         |     | EG,EP,GC,GJ,GN,      |
|          |              |                         |     | PU, $\Delta$         |
|          |              |                         |     | H81,                 |
|          |              |                         |     | H90EB,EC,EE,EF,      |
|          |              |                         |     | EG,EP,GC,GJ,GN,      |
|          |              |                         |     | PU                   |
| 504      | DE-A51DA     | POWER CHARGERS          | 1   | H80GK,H90GK $\Delta$ |
| 504      | DE-A51BB     | POWER CHARGERS          | 1   | H80P,PC,H90P,PC      |
|          |              |                         |     | [PSECI] $\Delta$     |
| 504      | DE-A51FB     | POWER CHARGERS          | 1   | H80PR [PSECI]        |
|          |              |                         |     | $\Delta$             |
| 505      | K2CT3CA00004 | AC CORD                 | 1   | H80EB,GC,H81EB,      |
|          |              |                         |     | H90EB,GC $\Delta$    |
| 505      | K2CQ2CA00006 | AC CORD                 | 1   | H80EC,EE,EF,EG,      |
|          |              |                         |     | EP,GC, $\Delta$      |
|          |              |                         |     | H81EE,               |
|          |              |                         |     | H90EC,EE,EF,EG,      |
|          |              |                         |     | EP,GC                |
| 505      | K2CF2YY00001 | AC CORD                 | 1   | H80GJ,H90GJ $\Delta$ |
| 505      | K2CJ2DA00011 | AC CORD                 | 1   | H80GN,H90GN $\Delta$ |
| 505      | K2CA2CA00029 | AC CORD                 | 1   | H80P,PC,PU,H90P      |
|          |              |                         |     | ,PC,PU $\Delta$      |
|          |              |                         |     | [PSECI]              |
| 505      | K2CA2CA00020 | AC CORD                 | 1   | H80GK,H90GK $\Delta$ |
| 505      | K2CJ2DA00006 | AC CORD                 | 1   | H80PR [PSECI]        |
|          |              |                         |     | $\Delta$             |
| 506      | K1HA05AD0006 | USB CABLE               | 1   | H80EB,EC,EE,EF,      |
|          |              |                         |     | EG,EP,GC,GJ,         |
|          |              |                         |     | GK,GN,PUA/K/R,P      |
|          |              |                         |     | RA/K/R,              |
|          |              |                         |     | H81EB,EE,            |
|          |              |                         |     | H90EB,EC,EE,EF,      |
|          |              |                         |     | EG,EP,GC,GJ          |
|          |              |                         |     | ,GK,GN,PU            |
| 506      | K1HA05AD0005 | USB CABLE               | 1   | H80P,PC,PUS,PRS      |
|          |              |                         |     | ,                    |
|          |              |                         |     | H90P,PC [PSECI]      |
| 507      | K2KC4CB00022 | AV CABLE                | 1   |                      |
| 508      | K2GJ2DC00015 | DC CABLE                | 1   |                      |
| 509      | LSFT0771-R   | CD-ROM                  | 1   | H80EB,EC,EF,EG,      |
|          |              |                         |     | EP,GC,GJ,GK,         |
|          |              |                         |     | GN,H81EB,H90EB,      |
|          |              |                         |     | EC,EF,EG,EP,         |
|          |              |                         |     | GC,GJ,GK,GN See      |
|          |              |                         |     | "Notes"              |
| 509      | LSFT0771     | CD-ROM                  | 1   | H80EE,P,PC,PU,P      |
|          |              |                         |     | R,                   |
|          |              |                         |     | H81EE,H90EE,P,P      |
|          |              |                         |     | C,PU [PSECI]         |
|          |              |                         |     | See "Notes"          |

| Ref. No. | Part No.   | Part Name & Description                  | Pcs | Remarks                                |
|----------|------------|------------------------------------------|-----|----------------------------------------|
| 510      | LSQT1449-A | O/I (ENGLISH)                            | 1   | H80P,H90P,H80PC,H90PC [PSECI] $\Delta$ |
| 510      | LSQT1450-A | O/I (CANADIAN FRENCH)                    | 1   | H80PC,H90PC [PSECI] $\Delta$           |
| 510      | LSQT1451-A | O/I (ENGLISH)                            | 1   | H80PU,H90PU [PSECI] $\Delta$           |
| 510      | LSQT1528-A | O/I (SPANISH)                            | 1   | H80PU,H90PU,H80PR [PSECI] $\Delta$     |
| 510      | LSQT1460-A | O/I (FRENCH)                             | 1   | H80EF,H90EF $\Delta$                   |
| 510      | LSQT1473-A | O/I (ENGLISH)                            | 1   | H80EB,81EB,H90EB $\Delta$              |
| 510      | LSQT1483-A | O/I (RUSSIAN/UKRAINIAN)                  | 1   | H80EE,H81EE,H90EE [PSECI] $\Delta$     |
| 510      | LSQT1452-A | O/I (GERMAN/TURKISH)                     | 1   | H80EG,H90EG $\Delta$                   |
| 510      | LSQT1453-A | O/I (ITALIAN/DUTCH)                      | 1   | H80EG,H90EG $\Delta$                   |
| 510      | LSQT1454-A | O/I (FRENCH)                             | 1   | H80EG,H90EG $\Delta$                   |
| 510      | LSQT1461-A | O/I (PORTUGUESE/SPANISH)                 | 1   | H80EC,H90EC $\Delta$                   |
| 510      | LSQT1462-A | O/I (SWEDISE/DANISH)                     | 1   | H80EC,H90EC $\Delta$                   |
| 510      | LSQT1467-A | O/I (ENGLISH/POLISH)                     | 1   | H80EP,H90EP $\Delta$                   |
| 510      | LSQT1468-A | O/I (CZECH/HUNGARIAN)                    | 1   | H80EP,H90EP $\Delta$                   |
| 510      | LSQT1474-A | O/I (ENGLISH/THAI)                       | 1   | H80GC,H90GC $\Delta$                   |
| 510      | LSQT1475-A | O/I (ARABIC/PERSIAN)                     | 1   | H80GC,H90GC $\Delta$                   |
| 510      | LSQT1476-A | O/I (CHINESE (TRADITIONAL) /SINGAPOREAN) | 1   | H80GC,H90GC $\Delta$                   |
| 510      | LSQT1484-A | O/I (ENGLISH)                            | 1   | H80GN,H90GN $\Delta$                   |
| 510      | LSQT1485-A | O/I (ENGLISH/THAI)                       | 1   | H80GJ,H90GJ $\Delta$                   |
| 510      | LSQT1486-A | O/I (CHINESE (SIMPLIFIED))               | 1   | H80GK,H90GK $\Delta$                   |
| 511      | LSQT1455-A | O/I (GERMAN) (CD-ROM)                    | 1   | H80EG,H90EG $\Delta$                   |
| 511      | LSQT1456-A | O/I (FRENCH) (CD-ROM)                    | 1   | H80EG,H90EG $\Delta$                   |
| 511      | LSQT1457-A | O/I (ITALIAN) (CD-ROM)                   | 1   | H80EG,H90EG $\Delta$                   |
| 511      | LSQT1458-A | O/I (DUTCH) (CD-ROM)                     | 1   | H80EG,H90EG $\Delta$                   |
| 511      | LSQT1459-A | O/I (TURKISH) (CD-ROM)                   | 1   | H80EG,H90EG $\Delta$                   |
| 511      | LSQT1463-A | O/I (PORTUGUESE) (CD-ROM)                | 1   | H80EC,H90EC $\Delta$                   |
| 511      | LSQT1464-A | O/I (SPANISH) (CD-ROM)                   | 1   | H80EC,H90EC $\Delta$                   |
| 511      | LSQT1465-A | O/I (SWEDISH) (CD-ROM)                   | 1   | H80EC,H90EC $\Delta$                   |
| 511      | LSQT1466-A | O/I (DANISH) (CD-ROM)                    | 1   | H80EC,H90EC $\Delta$                   |
| 511      | LSQT1469-A | O/I (ENGLISH) (CD-ROM)                   | 1   | H80EP,H90EP $\Delta$                   |
| 511      | LSQT1470-A | O/I (POLISH) (CD-ROM)                    | 1   | H80EP,H90EP $\Delta$                   |
| 511      | LSQT1471-A | O/I (CZECH) (CD-ROM)                     | 1   | H80EP,H90EP $\Delta$                   |
| 511      | LSQT1472-A | O/I (HUNGARIAN) (CD-ROM)                 | 1   | H80EP,H90EP $\Delta$                   |
| 511      | LSQT1477-A | O/I (ENGLISH) (CD-ROM)                   | 1   | H80GC,H90GC $\Delta$                   |
| 511      | LSQT1478-A | O/I (THAI) (CD-ROM)                      | 1   | H80GC,H90GC $\Delta$                   |
| 511      | LSQT1479-A | O/I (ARABIC) (CD-ROM)                    | 1   | H80GC,H90GC $\Delta$                   |
| 511      | LSQT1480-A | O/I (PERSIAN) (CD-ROM)                   | 1   | H80GC,H90GC $\Delta$                   |
| 511      | LSQT1481-A | O/I (CHINESE (TRADITIONAL)) (CD-ROM)     | 1   | H80GC,H90GC $\Delta$                   |

| Ref. No. | Part No.   | Part Name & Description    | Pcs | Remarks              |
|----------|------------|----------------------------|-----|----------------------|
| 511      | LSQT1482-A | O/I (SINGAPOREAN) (CD-ROM) | 1   | H80GC,H90GC $\Delta$ |
|          |            |                            |     |                      |

### 13.2.5. Electrical Replacement Parts List

Note: 1. Be sure to make your orders of replacement parts according to this list.  
 2. IMPORTANT SAFETY NOTICE: Components identified with the mark  $\Delta$  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 MICROFARADS (uf), P=uuF.  
 4. The P.C. Board units marked with "■" show below the main assembled parts.  
 5. 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.

| Ref. No. | Part No.     | Part Name & Description  | Pcs | Remarks      |
|----------|--------------|--------------------------|-----|--------------|
| ■        | LSEP8464A1   | REAR P.C.B.              | 1   | (RTL) E.S.D. |
| C6301    | F3G0J107A017 | C.CAPACITOR CH 6.3V 100U | 1   |              |
| C6302    | ECJ1VB1E103K | C.CAPACITOR CH 25V 0.01U | 1   |              |
| C6306    | ECJ1VC1H180J | C.CAPACITOR CH 50V 18P   | 1   |              |
| C6307    | ECJ1VC1H180J | C.CAPACITOR CH 50V 18P   | 1   |              |
| C6308    | ECJ1VC1H180J | C.CAPACITOR CH 50V 18P   | 1   |              |
| C6310    | ECJ1VC1H180J | C.CAPACITOR CH 50V 18P   | 1   |              |
| C6311    | ECJ1VB1E103K | C.CAPACITOR CH 25V 0.01U | 1   |              |
| C6312    | ECJ1VC1H180J | C.CAPACITOR CH 50V 18P   | 1   |              |
| C6313    | ECJ1XB1C104K | C.CAPACITOR CH 16V 0.1U  | 1   |              |
| C6315    | ECJ1XB1C104K | C.CAPACITOR CH 16V 0.1U  | 1   |              |
| C6316    | ECJ1XB1C104K | C.CAPACITOR CH 16V 0.1U  | 1   |              |
| C7801    | F3F0J226A055 | E.CAPACITOR CH 6.3V 22U  | 1   |              |
| C7802    | F1J1A106A023 | C.CAPACITOR CH 10V 10U   | 1   |              |
| C7803    | F3F0J226A055 | E.CAPACITOR CH 6.3V 22U  | 1   |              |
| C7804    | F1J1A106A023 | C.CAPACITOR CH 10V 10U   | 1   |              |
| FP6301   | K1MN22BA0197 | CONNECTOR 22P            | 1   |              |
| IC6301   | C0ZBZ0001479 | IC                       | 1   | E.S.D.       |
| IC7801   | L2ES00000017 | GYROSCOPE                | 1   | E.S.D.       |
| IC7802   | L2ES00000016 | GYROSCOPE                | 1   | E.S.D.       |
| L7801    | G1C100KA0031 | COIL                     | 1   |              |
| Q6301    | 2SB09700RL   | TRANSISTOR               | 1   | E.S.D.       |
| R6304    | ERJ3GEYJ560  | M.RESISTOR CH 1/10W 56   | 1   |              |
| R6306    | ERJ6GEYJ150V | M.RESISTOR CH 1/10W 15   | 1   |              |
| R6307    | ERJ3GEYJ561  | M.RESISTOR CH 1/10W 560  | 1   |              |
| R6308    | ERJ3GEY0R00  | M.RESISTOR CH 1/10W 0    | 1   |              |
| R6309    | ERJ3GEYJ330  | M.RESISTOR CH 1/10W 33   | 1   |              |
| R6310    | ERJ3GEYJ330  | M.RESISTOR CH 1/10W 33   | 1   |              |
| R6311    | ERJ3GEYJ330  | M.RESISTOR CH 1/10W 33   | 1   |              |
| R6312    | ERJ3GEYJ330  | M.RESISTOR CH 1/10W 33   | 1   |              |
| R6313    | ERJ3GEYJ330  | M.RESISTOR CH 1/10W 33   | 1   |              |

| Ref. No. | Part No.     | Part Name & Description  | Pcs | Remarks      |
|----------|--------------|--------------------------|-----|--------------|
| R6314    | ERJ3GEY0R00  | M.RESISTOR CH 1/10W 0    | 1   |              |
| R6315    | ERJ6GEY0R00V | M.RESISTOR CH 1/10W 0    | 1   |              |
| SW6301   | ESE13H01D    | SWITCH                   | 1   |              |
|          |              |                          |     |              |
| U6301    | K1NA09E00063 | CONNECTOR 9P             | 1   |              |
|          |              |                          |     |              |
| ■        | LSEP8465A1   | LCD BL P.C.B.            | 1   | (RTL) E.S.D. |
|          |              |                          |     |              |
| B8101    | K3ZZ00500014 | CONNECTOR                | 1   |              |
|          |              |                          |     |              |
| BT8102   | ML-614S/ZTE  | BATTERY                  | 1   | [Energy] ⚠   |
|          |              |                          |     |              |
| C8101    | ECJ1VB1A105K | C.CAPACITOR CH 10V 1U    | 1   |              |
| C8102    | ECJ2FB1A225K | C.CAPACITOR CH 10V 2.2U  | 1   |              |
| C8103    | ECJ2FB0J475K | C.CAPACITOR CH 6.3V 4.7U | 1   |              |
| C8104    | ECJ2FB0J475K | C.CAPACITOR CH 6.3V 4.7U | 1   |              |
| C8107    | ECJ1VC1H390J | C.CAPACITOR CH 50V 39P   | 1   |              |
| C8108    | ECJ1VC1H390J | C.CAPACITOR CH 50V 39P   | 1   |              |
| C8109    | ECJ1VC1H390J | C.CAPACITOR CH 50V 39P   | 1   |              |
| C8110    | ECJ2FB1A475K | C.CAPACITOR CH 10V 4.7U  | 1   |              |
| C8114    | ECJ1XB1C104K | C.CAPACITOR CH 16V 0.1U  | 1   |              |
| C8117    | ECJ1VB0J105K | C.CAPACITOR CH 6.3V 1U   | 1   |              |
|          |              |                          |     |              |
| D8102    | B3AFB0000270 | LED                      | 1   | E.S.D.       |
| D8103    | B3AFB0000270 | LED                      | 1   | E.S.D.       |
| D8104    | B3AFB0000270 | LED                      | 1   | E.S.D.       |
| D8105    | B3AFB0000270 | LED                      | 1   | E.S.D.       |
| D8106    | MAZ80620ML   | DIODE                    | 1   | E.S.D.       |
|          |              |                          |     |              |
| FP8101   | K1MN28BA0197 | CONNECTOR 28P            | 1   |              |
| FP8102   | K1MN24BA0197 | CONNECTOR 24P            | 1   |              |
| FP8104   | K1MN06BA0197 | CONNECTOR 6P             | 1   |              |
|          |              |                          |     |              |
| L8101    | G1C101KA0055 | CHIP INDUCTOR 100UH      | 1   |              |
|          |              |                          |     |              |
| Q8101    | 2SC6054J0L   | TRANSISTOR               | 1   | E.S.D.       |
| Q8102    | 2SC6054J0L   | TRANSISTOR               | 1   | E.S.D.       |
| Q8103    | 2SC6054J0L   | TRANSISTOR               | 1   | E.S.D.       |
| Q8104    | 2SC6054J0L   | TRANSISTOR               | 1   | E.S.D.       |
| Q8106    | 2SA2174J0L   | TRANSISTOR               | 1   | E.S.D.       |
| Q8107    | 2SA2174J0L   | TRANSISTOR               | 1   | E.S.D.       |
| Q8108    | 2SA2174J0L   | TRANSISTOR               | 1   | E.S.D.       |
|          |              |                          |     |              |
| R8101    | ERJ3GEY0R00  | M.RESISTOR CH 1/10W 0    | 1   |              |
| R8102    | ERJ3GEY0R00  | M.RESISTOR CH 1/10W 0    | 1   |              |
| R8103    | ERJ3RBD271   | M.RESISTOR CH 1/10W 270  | 1   |              |
| R8104    | ERJ3RBD271   | M.RESISTOR CH 1/10W 270  | 1   |              |
| R8105    | ERJ3RBD271   | M.RESISTOR CH 1/10W 270  | 1   |              |
| R8106    | ERJ3RBD472   | M.RESISTOR CH 1/10W 4.7K | 1   |              |
| R8107    | ERJ3RBD102   | M.RESISTOR CH 1/10W 1K   | 1   |              |
| R8108    | ERJ3GEY0R00  | M.RESISTOR CH 1/10W 0    | 1   |              |
| R8109    | D0GB104JA057 | M.RESISTOR CH 1/10W 100K | 1   |              |
| R8110    | ERJ3RBD563V  | M.RESISTOR CH 1/10W 56K  | 1   |              |
| R8111    | ERJ3RBD122   | M.RESISTOR CH 1/10W 1.2K | 1   |              |

| Ref. No. | Part No.     | Part Name & Description  | Pcs | Remarks                    |
|----------|--------------|--------------------------|-----|----------------------------|
| R8112    | ERJ3RBD822   | M.RESISTOR CH 1/10W 8.2K | 1   |                            |
| R8113    | D0GB473JA057 | M.RESISTOR CH 1/10W 47K  | 1   |                            |
| R8115    | ERJ3RBD822   | M.RESISTOR CH 1/10W 8.2K | 1   |                            |
| R8116    | ERJ3RBD302   | M.RESISTOR CH 1/10W 3K   | 1   |                            |
| R8117    | ERJ3RED270   | M.RESISTOR CH 1/10W 27   | 1   |                            |
| R8118    | ERJ3RED270   | M.RESISTOR CH 1/10W 27   | 1   |                            |
| R8119    | ERJ3RED270   | M.RESISTOR CH 1/10W 27   | 1   |                            |
| R8120    | ERJ3RED270   | M.RESISTOR CH 1/10W 27   | 1   |                            |
| R8131    | ERJ3RBD182   | M.RESISTOR CH 1/10W 1.8K | 1   |                            |
| R8132    | ERJ3RBD153   | M.RESISTOR CH 1/10W 15K  | 1   |                            |
| R8133    | D0GB102JA057 | M.RESISTOR CH 1/10W 1K   | 1   |                            |
| R8140    | D0GB103JA057 | M.RESISTOR CH 1/10W 10K  | 1   |                            |
| R8141    | ERJ3GEYJ272  | M.RESISTOR CH 1/10W 2.7K | 1   |                            |
| R8149    | D0GB103JA057 | M.RESISTOR CH 1/10W 10K  | 1   |                            |
| R8150    | ERJ3GEYJ272  | M.RESISTOR CH 1/10W 2.7K | 1   |                            |
| R8151    | ERJ3GEYJ562  | M.RESISTOR CH 1/10W 5.6K | 1   |                            |
| R8152    | D0GB183JA057 | M.RESISTOR CH 1/10W 18K  | 1   |                            |
| R8153    | ERJ3GEYJ222  | M.RESISTOR CH 1/10W 2.2K | 1   |                            |
|          |              |                          |     |                            |
| SW8101   | K0F111A00547 | SWITCH                   | 1   |                            |
|          |              |                          |     |                            |
| ■        | LSEP8473A1   | LIGHT P.C.B.             | 1   | H81EE [PSECI] (RTL) E.S.D. |
|          |              |                          |     |                            |
| D4301    | B3AFB0000171 | LED                      | 1   | H81EE E.S.D.               |
|          |              |                          |     |                            |