Service Manual

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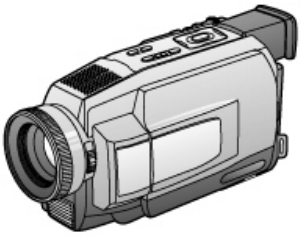
ORDER NO. VMD0202007C8

Service Manual

Digital Video Camcorder

- NV-DS50EN/NV-DS50ENT/NV-DS50A

VOL.1



⚠ WARNING

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

Panasonic

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1 SAFETY PRECAUTIONS

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GENERAL GUIDELINES

1. IMPORTANT SAFETY NOTICE

   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these criticalparts 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 personalinjury 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.

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 thechassis, the reading should be between 1 MΩ and 5.2 MΩ. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

LEAKAGE CURRENT HOT CHECK

(See Figure 1.)

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

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

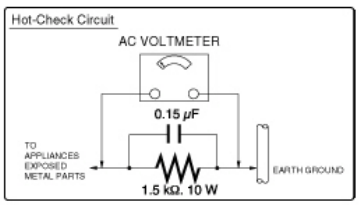
3. Use an AC voltmeter, with 1 kΩ/V or more sensitivity, to measure the potential across the resistor.

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

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

6. The potential at any point should not exceed 0.75 V RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 mA. In case a measurement is outside of thelimits 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



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2 PREVENTION OF ELECTRO STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

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Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistorsand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static 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 comparableconductive 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).

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3 INTRODUCTION

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3.1 INTORODUCTION

3.2 CAUTION FOR AC CORD(VJA0940 TYPE)

3.2.1 INFORMATION FOR YOUR SAFETY

3.3 CAUTION FOR AC MAINS LEAD

3.3.1 Important

3.3.2 Before use

3.3.3 How to replace the Fuse

TOP PREVIOUS NEXT

3.1 INTORODUCTION

TOP PREVIOUS NEXT

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 unmbers.

If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with orginal service manual.

Note 1:

These movie cameras use AC Adaptor is DE-855AB This AC Adaptor is supplied as unit.

(See Parts List of this Service)

Note 2:

1. This service manual does not contain the following information, because of the impossibility of servicing at component level.

   A. Schematic Diagram, Block Diagram and Main C.B.A.

   B. Parts List for individual parts of Main C.B.A.

2. The following category is/are recycle module part. Please send it/them to Central Repair Center.

   *Main C.B.A. (LSEP8165P1/Q1/R1/S1)

When a part replacements is required for repairing each Main C.B.A., replace the assembly parts.

The following circuits are contained in Main Circuit.

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3.2 CAUTION FOR AC CORD/(VJA0940 TYPE)

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3.2.1 INFORMATION FOR YOUR SAFETY

TOP PREVIOUS NEXT

3.2.1 INFORMATION FOR YOUR SAFETY

TOP PREVIOUS NEXT

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 COVE

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

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3.3 CAUTION FOR AC MAINS LEAD

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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 safety.

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

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

If in any doubt, please consult a qualified electrician.

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3.3.1 Important

TOP PREVIOUS NEXT

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

Blue	Neutral
Brown	Live

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

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

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

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

Earth Symbol	⏚

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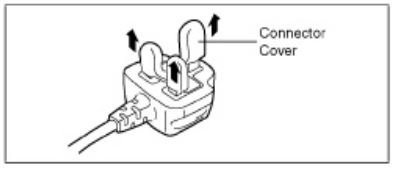
3.3.2 Before use

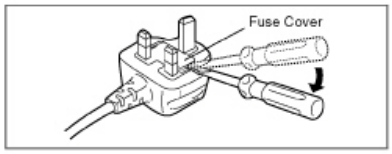
remove the Connector Cover as follows.



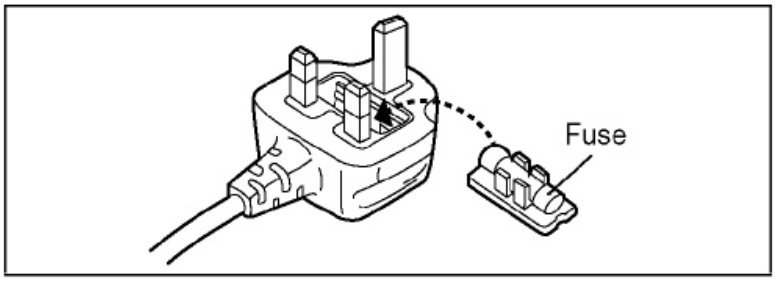
3.3.3 How to replace the Fuse

TOP PREVIOUS NEXT

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.



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4 OPERATION GUIDE

5 HOW TO REPLACE THE LITHIUM BATTERY (PROCEDURE)

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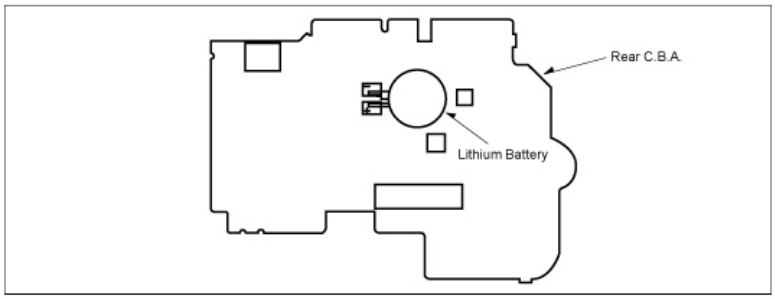
1. Remove the Rear C.B.A.. (Refer to Disassembly Procedures.)
2. Unsolder the Lithium Battery “LSSB0004” and then replace the new one. (See Fig. B1 .)

Fig. B1



Note:

The lithium battery is a critical component. (Type No.: LSSB0004.)

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.

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.

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.

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

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

ADVARSEL!
Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning má kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

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

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6 SERVICE NOTES (PLEASE READ)

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6.1 SERVICE NOTES

TOP PREVIOUS NEXT

6.1.1 EXTENSION CABLES FOR SERVICE POSITION

6.1.2 SIMPLIFIED FAULT FINDING DATA (SELF-DIAGNOSTIC SYSTEM)

6.1.3 REMOVAL/INSTALLATION OF F.P.C. FROM NON ZIF (Zero Insertion Force) CONNECTOR

6.1.4 METHOD FOR LOADING/UNLOADING OF MECHANISM

6.1.5 METHOD FOR EJECTING WITH POWER OFF

6.1.6 SIGNAL DESCRIPTION ON MEASURING BOARD FOR ELECTRICAL ADJUSTMENT (VFK1308E)

6.1.7 HOW TO REMOVE A JAMMED TAPE

6.1.8 EEPROM DATA

6.1.9 HOW TO USE THE DVC HEAD CLEANING TAPE/ VFK1451

6.1.10 HOW TO REPLACE THE LAMP (LSLL0028) OF BUILT-IN LIGHT

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6.1.1 EXTENSION CABLES FOR SERVICE POSITION

Using the following Extension Cables, place the unit as shown for check and service.

Extension Cables (No.5 ~ No.8) are used for improving serviceability. (They are not necessarily used.)

Note :

1. The LCD open/close SW. is for changing between LCD Display or EVF Display. When turning on LCD Display, place some paper or tape, etc. on LCD open/close SW. so that this SW. stays ON.
2. Connect the F.P.C.s to the connectors, verifying the direction of F.P.C. as shown.
3. Use a grounded ESD wrist strap while disassembling the Lens portion.
4. Use extreme care when unplugging or plugging in connectors.

Fig. 1

6.1.2 SIMPLIFIED FAULT FINDING DATA (SELF-DIAGNOSTIC SYSTEM)

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When following conditions occur, the Power LED will flash according to the condition.

Fig. 2-1

(For model with SD/MMC Slot)

If any of the following numbers appear on-screen, the palmcorder may need service. Do not remove the battery (if attached) and write down the displayed number.

Fig. 2-2

Note:

While battery remains, the Error No. will be displayed again when the power is switched off and on again. (Once the Battery is removed or dead, Error No. will not remain in the memory.)

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6.1.3 REMOVAL/INSTALLATION OF F.P.C. FROM NON ZIF (Zero Insertion Force) CONNECTOR

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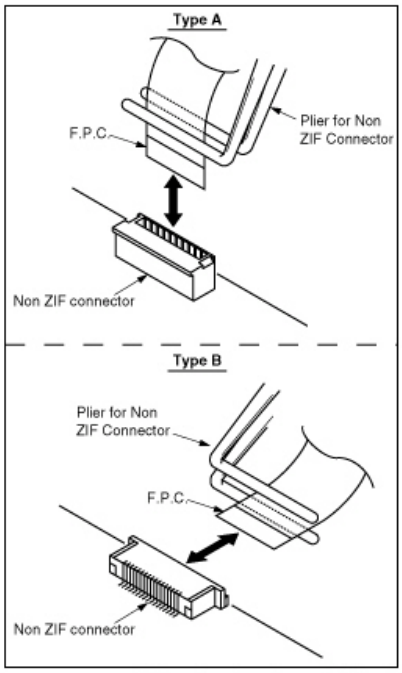
Removal/Installation of F.P.C. from the Non ZIF (Zero Insertion Force) connector:

1. The Non ZIF connectors and the ZIF connectors are used on the unit. And there are 2 types (Type A, Type B) of Non ZIF connectors.

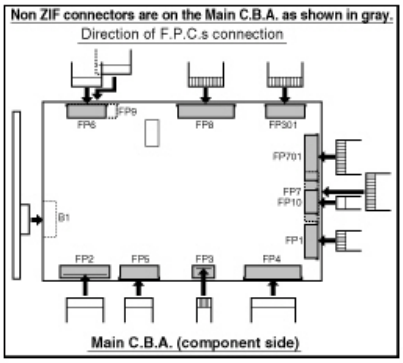
2. To remove the F.P.C. from the Non ZIF connector, use the Plier for Non ZIF Connector (LSVQ0028) to pull out the F.P.C. as shown. The same Plier for Non ZIF Connector (LSVQ0028) should also be used to install the F.P.C. to the Non ZIF Connector.

Fig. 3-1



3. Connect the F.P.C.s to the Non ZIF connectors, verifying the direction of F.P.C as shown.

Fig. 3-2



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6.1.4 METHOD FOR LOADING/UNLOADING OF MECHANISM

TOP PREVIOUS NEXT

CAUTION:

If loading does not start after DC Power Supply is applied, DO NOT continue to applying DC Power Supply.

Apply +3 VDC Power Supply to the Loading Motor terminals.

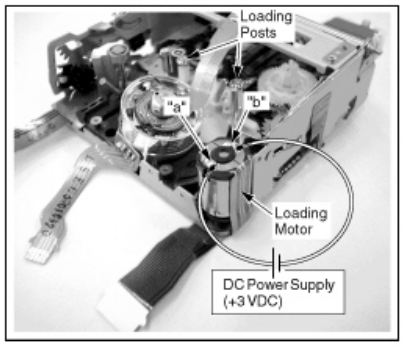
Loading:

DC (-) to Portion "a," DC (+) to Portion "b"

Unloading:

DC (+) to Portion "a," DC (-) to Portion "b"

Fig. 4



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6.1.5 METHOD FOR EJECTING WITH POWER OFF

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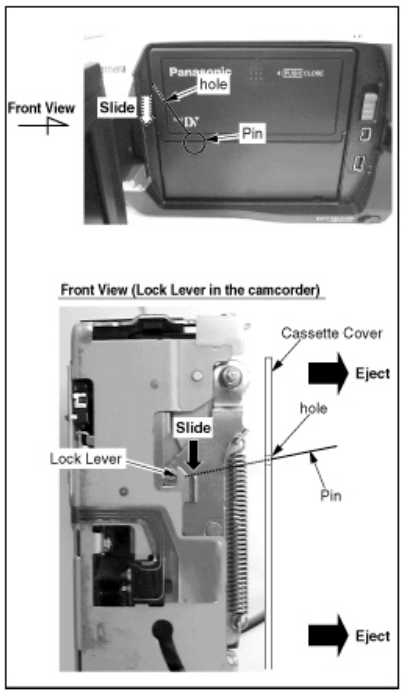
CAUTION:

Make sure that a cassette tape is not in when this method is used, or a cassette tape will be damaged. When a cassette tape is jammed, DO NOT eject manually. Refer to "HOW TO REMOVE A JAMMED TAPE."

1. Insert the Pin or Straightened Paper Clip into the hole on the Cassette Cover.
2. Slide the Lock Lever of Mechanism Chassis Ass'y.
3. The Cassette Cover will open. (Eject)

Fig. 5



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6.1.6 SIGNAL DESCRIPTION ON MEASURING BOARD FOR ELECTRICAL ADJUSTMENT (VFK1308E)

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A signal check can be performed using the Interface Board.

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6.1.7 HOW TO REMOVE A JAMMED TAPE

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Remove a jammed tape in Electrical Method as follows:

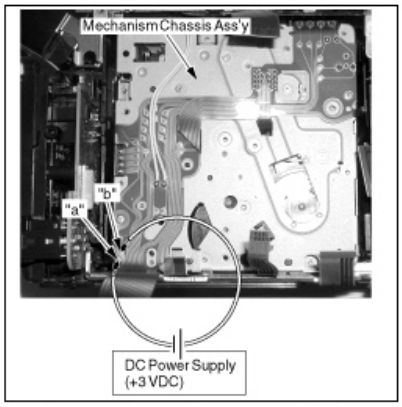
1. Remove the Cabinet Parts. Then, remove the 3 Screws and the Mechanism Base Unit from the Mechanism Chassis Ass'y as shown. Refer to " CABINET SECTION " & "MECHANISM SECTION"in DISASSEMBLY/ASSEMBLY PROCEDURES.

2. Apply +3 V DC Power Supply to the Portion "a" and "b" on the Mechanism F.P.C. Unit.

   Note:

   DO NOT let eject the Garage Unit with grasping the Cassette Cover. If the Garage Unit is in the up position, a cassette tape may be damaged.

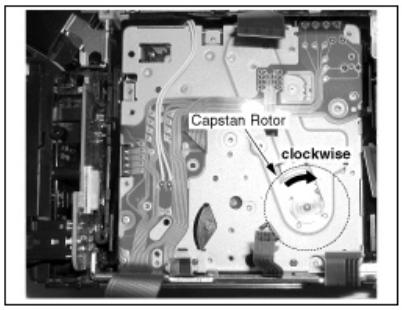
Fig. 6-1



3. When the Mechanism is in EJECT position (snapped sound), remove the Power Supply immediately.

4. Rewind the tape into a cassette tape by turning the Capstan Rotor clockwise with grasping the Cassette Cover.

Fig. 6-2



5. Take out a cassette tape from the Garage Unit.

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6.1.8 EEPROM DATA

CAUTION:

Be sure to save the EEPROM data using PC-EVR Adjustment Program before service and adjustment in order to make sure to avoid an accidental data loss, etc. as follows. Refer to "SET UP OF PC-EVR ADJUSTMENT PROGRAM" in ELECTRICAL ADJUSTMENT.

EEPROM IC

C.B.A.	EEPROM IC Ref. No.
Main C.B.A.	IC6007

1.How to save the EEPROM data to your PC

1. Start up the PC-EVR Adjustment Program.
2. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
3. Select "5. Save all EEPROM data." in Read (Save)/Write All EEPROM data menu, and then press "Enter" key.
4. Input the file name, and then press the "Enter" key. The data of EEPROM IC will be stored to your PC.

2.How to write the EEPROM data which was stored in your PC to EEPROM IC

1. Start up the PC-EVR Adjustment Program.
2. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
3. Select "6. Writing from stored data files." in Read (Save)/Write All EEPROM data menu, and then press "Enter" key.
4. Input the saved file name, and then press "Enter" key. The data of EEPROM IC will be written in EEPROM IC.

3.How to initialize the EEPROM IC

When the Main C.B.A. is replaced, be sure to write the initial data to EEPROM IC. And adjust the camcorder.

1. Start up the PC-EVR Adjustment Program.
2. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
3. Select "6. Writing from stored data files." in Read (Save)/Write All EEPROM data menu, and then press "Enter" key.
4. Input the saved file name, and then press "Enter" key. The data of EEPROM IC will be written in EEPROM IC.

   OR;

   Select "7. Writing of Initial data." and then press "Enter" key. And press "Enter" key once again.

4.How to input ID Number

The ID number is in the EEPROM.

There are two ways to write the data of EEPROM IC after replacing Main C.B.A. as follows:

- Selecting "6. Writing from stored data files," ID Number with stored data file will be written automatically.
- Selecting "7. Writing of initial data," ID Number needs to be input. There are two methods, "a" or "b," to input ID Number as follows.

  a When writing ID Number from the saved data:

  1. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
  2. Input the saved file name, and then press "Enter" key. ID Number will be written automatically.

  b When the original ID information can not be read because of destruction of EEPROM etc.:

  1. Select "3. Read (Save)/Write All EEPROM data." in Main menu, and then press "Enter" key.
  2. Select "8. Write ID from stored file." and then press "Enter" key. ID Number will be written automatically.

6.1.9 HOW TO USE THE DVC HEAD CLEANING TAPE/ VFK1451

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Please use the cleaning tape as described below.

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6.1.10 HOW TO REPLACE THE LAMP (LSLL0028) OF BUILT-IN LIGHT

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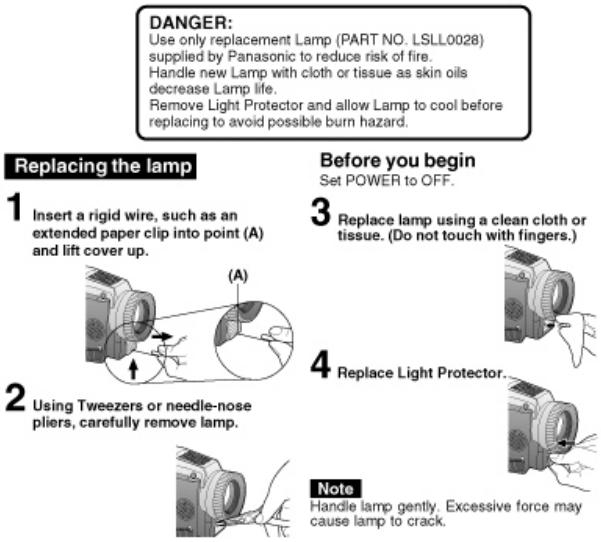
Fig. 7



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7 DISASSEMBLY/ASSEMBLY PROCEDURES

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7.1 CABINET SECTION

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7.1.1 DISASSEMBLY FLOWCHART

7.1.2 Disassembly Method

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7.1.1 DISASSEMBLY FLOWCHART

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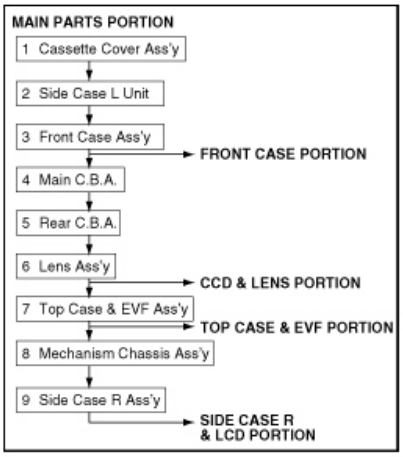
This flow chart indicates the disassembly steps of the cabinet parts and the P.C.Boards in order to gain access to item (s) to be serviced. When reassembling, perform the step (s) in the reverse order. Bend, route and dress the wires as they wereoriginally.

Fig. D1



Note :

1. When removing the cabinet, work with care so as not to break the Locking Tabs.
2. Place a cloth or some other soft material under the P.C. Boards or Unit to prevent damage.
3. When reinstalling, ensure that the connectors are connected and electrical components have not been damaged.
4. Do not supply power to the unit during disassembly and reassembly.

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7.1.2 Disassembly Method

7.2 MECHANISM SECTION

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TOP PREVIOUS NEXT

7.2.1 Inner Parts Location

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Note: BOX indicates alignment (Gear alignment or Tape Path Alignment with L.I.S.T.A.) required when a part is replaced.

7.2.1.1 TOP VIEW

Fig. DM1-1

7.2.1.2 BOTTOM VIEW

Fig. DM1-2

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7.2.2 STOP Position Confirmation

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Check the following points to confirm that the Mechanism is in STOP Position from the top side.

Fig. DM2

Perform all disassembly/reassembly and alignments procedures in STOP Position except disassembly/reassembly and alignment procedures which have the special notes.

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7.2.3 Mechanism Base Unit

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Fig. DM3

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7.2.4 Guide Piece L, Guide Piece R, Garage Unit

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Fig. DM4

TOP PREVIOUS NEXT

7.2.5 Cylinder Unit

TOP PREVIOUS NEXT

Fig. DM5

TOP PREVIOUS NEXT

7.2.6 Dumper Unit

TOP PREVIOUS NEXT

Fig. DM6

TOP PREVIOUS NEXT

7.2.7 DEW Sensor, DEW Cable

TOP PREVIOUS NEXT

Fig. DM7

TOP PREVIOUS NEXT

7.2.8 Mechanism F.P.C. Unit

TOP PREVIOUS NEXT

Fig. DM8

TOP PREVIOUS NEXT

7.2.9 Reduction Gear B

TOP PREVIOUS NEXT

Fig. DM9

TOP PREVIOUS NEXT

7.2.10 Mechanism Cover Unit

TOP PREVIOUS NEXT

Fig. DM10

TOP PREVIOUS NEXT

7.2.11 Idler Arm Unit, Center Gear

TOP PREVIOUS NEXT

Fig. DM11

TOP PREVIOUS NEXT

7.2.12 Tension Arm Unit

TOP PREVIOUS NEXT

Fig. DM12

TOP PREVIOUS NEXT

7.2.13 S Reel Table, T Reel Table

TOP PREVIOUS NEXT

Fig. DM13

TOP PREVIOUS NEXT

7.2.14 T Break Unit

TOP PREVIOUS NEXT

Fig. DM15

TOP PREVIOUS NEXT

7.2.15 Pinch Arm Unit

TOP PREVIOUS NEXT

Fig. DM16

TOP PREVIOUS NEXT

7.2.16 Rail

TOP PREVIOUS NEXT

Fig. DM17

TOP PREVIOUS NEXT

7.2.17 Cylinder Base Unit

TOP PREVIOUS NEXT

Fig. DM18

TOP PREVIOUS NEXT

7.2.18 S& T Arm Unit, S& T Post Unit

TOP PREVIOUS NEXT

Fig. DM19

TOP PREVIOUS NEXT

7.2.19 Loading Motor Unit

TOP PREVIOUS NEXT

Fig. DM20

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7.2.20 Sensor F.P.C.

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Fig. DM21

TOP PREVIOUS NEXT

7.2.21 Tension Drive Arm, S Brake Drive Lever

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Fig. DM22

TOP PREVIOUS NEXT

7.2.22 Cam Gear

TOP PREVIOUS NEXT

Fig. DM23

TOP PREVIOUS NEXT

7.2.23 Pinch Drive Arm, Intermediate Gear

TOP PREVIOUS NEXT

Fig. DM24

TOP PREVIOUS NEXT

7.2.24 Mode Switch

TOP PREVIOUS NEXT

Fig. DM25

TOP PREVIOUS NEXT

7.2.25 MIC Switch

TOP PREVIOUS NEXT

Fig. DM26

TOP PREVIOUS NEXT

7.2.26 Main Plate Unit

TOP PREVIOUS NEXT

Fig. DM27

TOP PREVIOUS NEXT

7.2.27 T4 Drive Arm

TOP PREVIOUS NEXT

Fig. DM28

TOP PREVIOUS NEXT

7.2.28 Drive Pulley

TOP PREVIOUS NEXT

Fig. DM29

TOP PREVIOUS NEXT

7.2.29 Capstan Unit, Timing Belt, Capstan Adjust Spring

TOP PREVIOUS NEXT

Fig. DM30

TOP PREVIOUS NEXT

7.2.30 Lock Lever Unit, Lock Pick Lever

TOP PREVIOUS NEXT

Fig. DM31

TOP PREVIOUS NEXT

8 ADJUSTMENT PROCEDURES

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TOP PREVIOUS NEXT

8.1 SERVICE FIXTURES& TOOLS

8.2 MECHANICAL ADJUSTMENT

TOP PREVIOUS NEXT

8.2.1 Comparison between adjustment items and replacement parts

8.2.2 TENSION POST ADJUSTMENT

8.2.3 CAPSTAN TILT ADJUSTMENT

8.2.4 T4 POST HEIGHT CONFIRMATION

8.2.5 ENVELOPE OUTPUT ADJUSTMENT

TOP PREVIOUS NEXT

8.2.1 Comparison between adjustment items and replacement parts

8.2.2 TENSION POST ADJUSTMENT

TOP PREVIOUS NEXT

- Purpose:

  To maintain a constant tape tension so that the tape runs with stability.

- Symptom of Misadjustment:

  1. If the adjusted value is below the specification, the tape tension is not sufficient, thus causing a tape slack.

  2. If the adjusted value is above the specification, the tape tension is too high, thus causing tape damage.

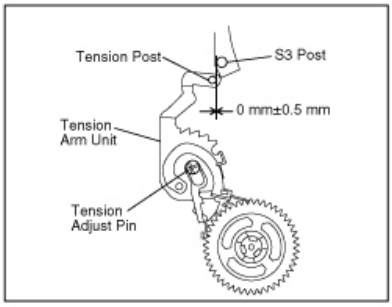
- Equipment Required:

  Flat Headed (-) Screwdriver (Purchase Locally)

1. Without cassette tape, place the Mechanism in the PLAY Position (the Tension Post goes to the most left side) by applying DC Power Supply (3 V) to the Loading Motor terminal.

2. Confirm that there is a space of 0 mm±0.5 mm between the right edge of the Tension Post and the left edge of the S3 Post. If not, with Flat Headed (-) Screwdriver, adjust the Tension Adjust Pin so that the space of 0 mm±0.5mm is made.

Fig. T1



TOP PREVIOUS NEXT

8.2.3 CAPSTAN TILT ADJUSTMENT

- Purpose:

  To adjust the tilt of the Capstan Shaft properly.

- Symptom of Misadjustment:

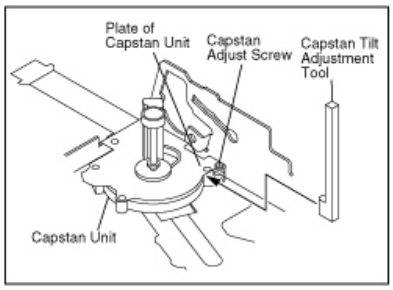
  If the tilt of the Capstan Shaft is poorly adjusted, the tape might be damaged.

- Equipment Required:

  Capstan Tilt Adjustment Tool (LSVQ0020)

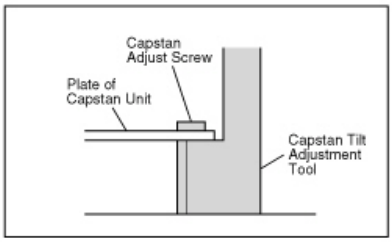
1. Set the Capstan Tilt Adjustment Tool between Capstan Unit and Chassis.

Fig. T2-1



2. Tighten the Capstan Adjust Screw so that the plate of Capstan Unit just touches to the Capstan Tilt Adjustment Tool.

Fig. T2-2



8.2.4 T4 POST HEIGHT CONFIRMATION

TOP PREVIOUS NEXT

- Purpose:

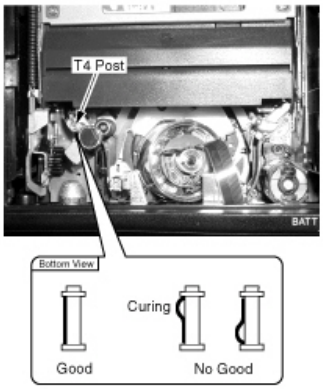
  To confirm so that the height of the T4 Post is proper.

- Symptom:

  If the height of the T4 Post is incorrect, the tape might be damaged.

1. To remove the Cassette Cover, refer to "Disassembly Method" of CABINET SECTION in DISASSEMBLY/ASSEMBLY PROCEDURES.
2. Insert the tape without the Cassette Cover.
3. Confirm that the tape travels without curing at T4 post in both PLAY and REVIEW modes. If curing is apparent, replace the Pinch Arm Unit.

Fig. T3-2



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8.2.5 ENVELOPE OUTPUT ADJUSTMENT

1. Connect the Camcorder and the Measuring Board with Camera Connecting Cable.
2. Connect the oscilloscope to "Envelope TP" on the Measuring Board.
3. Playback the Tape Path Alignment Tape (LSVQ0041).
4. Adjust the S1 post by turning the top of post with Post Height Adjustment Fixture (LSVQ0021) so that the left half of envelope signal becomes flat as possible.
5. Adjust the T1 post by turning the top of post with Post Height Adjustment Fixture (LSVQ0021) so that the right half of envelope signal becomes flat as possible.

Note:
After the adjustment, be sure to confirm BER (Bit Error Ratio) using EVR Adjustment Software.
If it is NG, try this adjustment once again.

8.3 ELECTRICAL ADJUSTMENT

TOP PREVIOUS NEXT

8.3.1 INITIAL GUIDELINE

8.3.2 TEST EQUIPMENT

8.3.3 PREPARATION

8.3.4 SET UP OF PC-EVR ADJUSTMENT PROGRAM

8.3.5 HOW TO USE MAIN MENU

TOP PREVIOUS NEXT

8.3.1 INITIAL GUIDELINE

TOP PREVIOUS NEXT

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.

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8.3.2 TEST EQUIPMENT

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1. Dual-Trace Oscilloscope

   Voltage Range: 0.001 to 50 V/Div.

   Frequency Range: DC to 50 MHz

   Probes: 10:1, 1:1

2. Frequency Counter
3. Vectorscope
4. Plastic Tip Driver
5. Personal Computer

   PC: IBM PC/AT or compatible

   OS: MS-DOS or MS-Windows

   CPU: 486 or higher

   Drive: 3.5 inch 1.44 MB floppy disk drive

   Port: D-Sub-9-pin Serial or D-Sub-25-pin Serial

   Monitor: VGA Color

6. PC-EVR Adjustment Program (VF2D2002DV10)

   Note:

   Ask latest version when placing order for PC-EVR Adjustment program.

7. Measuring Board (VFK1308E)
8. 232C (M3) I/F Cable (VFK1395)
9. Camera Connecting Cable (LSUP0017)
10. DC Output Cable and AC Adaptor (VJA0941)
11. Color Bar Standard Tape (VFM3010EDS)

    (Keeping condition: Keep at 18 °C ~ 28 °C)

12. Gray Scale Chart (VFK1164TFGS2)
13. White Chart (VFK1164TFWC2)
14. Color Bar Chart (VFK1164TFCB2)
15. Light Box and AC Adaptor (for VHS-C)
16. Infinity Lens (with Focus Chart) (VFK1164TCM02)
17. AC Adaptor (for DVC)
18. 43 mm Ring (VFK1164TAR43)
19. Color Conversion Filter (C14) (VFK1164TFCT2)

TOP PREVIOUS NEXT

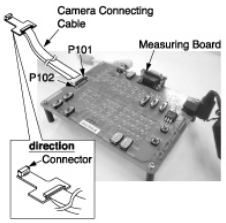
8.3.3 PREPARATION

1. Insert a flat headed (-) Screwdriver or similar object into the hole, remove the EVR Cover.

Fig. E1-1

2. Connect the Camera Connecting Cable to P101 and P102 on the Measuring Board.

Fig. E1-2

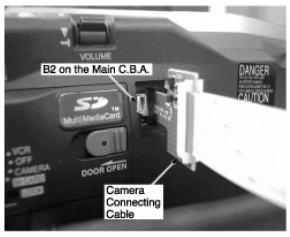


Note:

Install Camera Connecting Cable so that the Connector is upward as shown.

3. Connect the Camera Connecting Cable to the Connector B2 on the Main C.B.A.

Fig. E1-3



4. Connect the AC Adaptor to the unit.
5. Connect the DC Output Cable (and AC Adaptor) to the J101 on the Measuring Board.
6. Connect the J102 on the Measuring Board to RS232C of the PC with 232C (M3) I/F Cable.
7. Set the SW101 (RS232C SEL) on the Interface Board to "M3."
8. Set the SW102 (FLUSH1) on the Interface Board to "NORMAL."
9. Set the SW103 (VTR TEST) on the Interface Board to "L."
10. Set the SW104 (BST TEST) on the Interface Board to "NORMAL."
11. Set the SW105 on the Interface Board to "L."
12. Set the SW106 on the Interface Board to "ON."
13. Set the SW107 on the Interface Board to center.
14. Set the SW108 on the Interface Board to "L."
15. Set the SW109 (FLUSH2) on the Measuring Board to "FLUSH."
16. Power on the unit.

Fig. E1-4

8.3.4 SET UP OF PC-EVR ADJUSTMENT PROGRAM

TOP PREVIOUS NEXT

1. Turn on the Personal Computer.

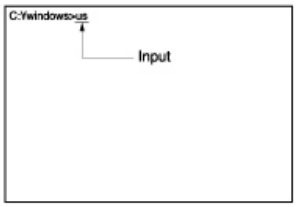
   MS-Windows will be set up automatically.

2. Restart it in MS-DOS mode.

3. Change the current directory to the one including the PC-EVR Adjustment Program and start up the PC-EVR Adjustment Program as follows.

   A. If MS-DOS is Japanese mode, input "us," and then press "ENTER" key to be US mode on.

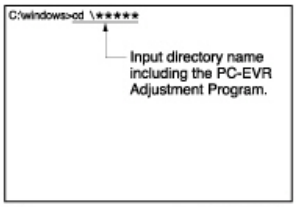
   Fig. E2-1

   B. Input "cd \

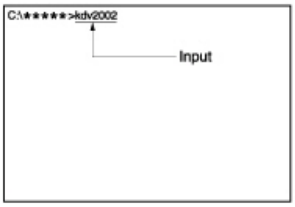
      *****," and then press "ENTER" key to change the directory to the one including the PC-EVR Adjustment Program.

   Fig. E2-2

   C. Input "kdv2002," and then press "ENTER" key to start up the PC-EVR Adjustment Program.

   Fig. E2-3

   "Select Model Number Menu" will be displayed.

4. Select the model number which you are servicing, and then press "Enter" key. The starting display will be displayed.

5. Perform set up items according to menu until "Main Menu" is displayed.

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8.3.5 HOW TO USE MAIN MENU

TOP PREVIOUS NEXT

8.3.5.1 Main Menu

Select a Sub Menu to check, adjust the unit. by pressing

▲▼ (UP/DOWN) Key in Main Menu. Then, press "ENTER" Key. The Sub Menu will be displayed.

Note:

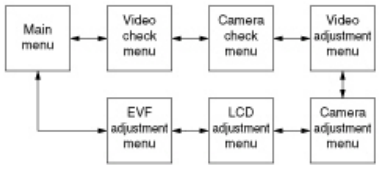
Menu 6 through 9 are needed for adjustment.

Fig. E3-1

With using

◄► key, you can also see sub menu in order.

Fig. E3-2



Note:

The adjusted data is stored to EEPROM IC after each adjustment.

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9 SCHEMATIC DIAGRAMS

TOP PREVIOUS NEXT

9.1 SCHEMATIC DIAGRAM& CIRCUIT BOARD LAYOUT NOTES

9.2 REAR SCHEMATIC DIAGRAM

9.3 MICROPHONE/FRONT/EVF BACKLIGHT SCHEMATIC DIAGRAMS

9.4 LCD SCHEMATIC DIAGRAM

9.5 INTERCONNECTION SCHEMATIC DIAGRAM

9.6 VOLTAGE CHART

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9.1 SCHEMATIC DIAGRAM& CIRCUIT BOARD LAYOUT NOTES

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TOP PREVIOUS NEXT

9.2 REAR SCHEMATIC DIAGRAM

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9.3 MICROPHONE/FRONT/EVF BACKLIGHT SCHEMATIC DIAGRAMS

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TOP PREVIOUS NEXT

9.4 LCD SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

9.5 INTERCONNECTION SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

9.6 VOLTAGE CHART

10 CIRCUIT BOARD LAYOUT

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10.1 REAR C.B.A.

10.2 MICROPHONE/FRONT/EVF BACKLIGHT C.B.A.

10.3 LCD C.B.A.

TOP PREVIOUS NEXT

10.1 REAR C.B.A.

10.2 MICROPHONE/FRONT/EVF BACKLIGHT C.B.A.

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

10.3 LCD C.B.A.

11 BLOCK DIAGRAMS

12 EXPLODED VIEWS

TOP PREVIOUS NEXT

12.1 MAIN PARTS SECTION

12.2 FRONT CASE SECTION

12.3 CCD AND LENS SECTION

12.4 TOP CASE AND EVF SECTION

12.5 SIDE CASE R AND LCD SECTION

12.6 MECHANISM SECTION

12.7 PACKING PARTS AND ACCESSORIES SECTION

TOP PREVIOUS NEXT

12.1 MAIN PARTS SECTION

12.2 FRONT CASE SECTION

12.3 CCD AND LENS SECTION

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

12.4 TOP CASE AND EVF SECTION

12.5 SIDE CASE R AND LCD SECTION

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

12.6 MECHANISM SECTION

12.7 PACKING PARTS AND ACCESSORIES SECTION

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

13 REPLACEMENT PARTS LISTS

TOP PREVIOUS NEXT

BEFORE REPLACING PARTS, READ THE FOLLOWING:

TOP PREVIOUS NEXT

13.1 REPLACEMENT NOTES

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

13.1.1 General Notes

TOP PREVIOUS NEXT

1. Use only original replacement parts:

   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.

2. IMPORTANT SAFETY NOTICE

   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.

3. SPECIAL NOTE

   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

4. Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.

5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.

6. Parts with mark "VED" in the Remarks column are supplied from VED. Others are supplied from MKE.

7. Item numbers with capital letter E (Example: E10, E20,...) in the Ref. No. column are shown in the exploded views.

8. Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.

9. Battery (Ref. No. 731) replacement note:

   WARNING: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE.

10. SPECIAL NOTE*

    The following parts are supplied only as units: Front C.B.A. (Ref. No. E40), LCD Case A Unit (Ref. No. 94), Front Case Unit (Ref. No. 301), Front Cover Unit (Ref. No. 302), Top/Electronic Viewfinder Unit (Ref. No. 303), Microphone C.B.A.(Ref. No. E30), Cassette Cover (Ref. No. 304) and Side Case R Unit (Ref. No. 305). Therefore, parts indicated by (*NOTE) in the Remarks column are not supplied as separate replacement parts.

    In case any parts indicated by (*NOTE) require replacing, be sure to replace the whole unit (e.g., entire Front Case Unit).

Ref. No.	Part No.	Ref. No.	Consisting Parts *NOTE	
E40	FRONT C.B.A.		Individual parts on FRONT C.B.A. (Electrical parts)	*NOTE
94	LCD CASE A UNIT	267	LCD LOCK KNOB SPRING	*NOTE
		268	LCD LOCK KNOB	*NOTE
301	FRONT CASE UNIT	81	FRONT CASE,ABS RESIN	*NOTE
		82	INFRARED PANEL	*NOTE
		83	LENS HOOD	*NOTE
		84	LENS RING	*NOTE
		89	FRONT ESD ANGLE	*NOTE
302	FRONT COVER UNIT	33	MAGICVU KNOB	*NOTE
		63	MAGICVU KNOB HOLDER	*NOTE
		261	FRONT COVER	*NOTE
303	TOP/ELECTRONIC VIEWFINDER UNIT	31	TOP CASE UNIT,ABS RESIN	*NOTE
		40	EYE CAP	*NOTE
		41	EVF CASE,ABS RESIN	*NOTE
		43	EVE ANGLE UNIT	*NOTE
		44	LED HOLDER	*NOTE
		50	ELECTRONIC VIEWFINDER UNIT	*NOTE
		51	EVF ESD ANGLE	*NOTE
		52	EYE SIGHT LEVER B	*NOTE
		53	EYE SIGHT LEVER A	*NOTE
		54	LIQUID CRYSTAL DISPLAY PANEL	*NOTE
		55	LENS HOLDER	*NOTE
		56	LENS	*NOTE
		57	LED DIFFUSION SHEET,PLASTIC	*NOTE
		58	PROTECT PLATE A,PLASTIC	*NOTE
		59	EVF PROTECT B	*NOTE
		60	EVF PROTECT A	*NOTE
		274	EVF MASK	*NOTE
		276	PROTECT PLATE B,PLASTIC	*NOTE
		277	TOP FLEXIBLE PRINTED CIRCUIT	*NOTE
		287	MASK CUSHION,URETHANE	*NOTE
		288	SHEET,NYLON-RAYON	*NOTE
		289	CUSHION,NYLON-RAYON	*NOTE
		407	SCREW,STEEL	*NOTE
		ESO	ELECTRONIC VIEWFINDER BACK LIGHT C.B.A.	*NOTE
			Individual parts on ELECTRONIC VIEWFINDER BACK LIGHT C.B.A. (Electrical parts)	*NOTE
E30	MICROPHONE C.B.A.	701	ELECTORIC CONDENSER MICROPHONE UNIT	*NOTE
		703	MICROPHONE DAMPER	*NOTE
		705	FLEXIBLE FLAT CABLE W/OUT PLUG,4.8V	*NOTE
			Individual parts on MICROPHONE C.B.A. (Electrical parts)	*NOTE
304	CASSETTE COVER UNIT	2	CASSETTE COVER A	*NOTE
		6	CASSETTE COVER B	*NOTE
305	SIDE CASE R UNIT	14	CASSETTE EJECT KNOB	*NOTE
		15	CASSETTE EJECT PIECE	*NOTE
		20	CASSETTE EJECT SPRING	*NOTE
		54	LENS RUBBER	*NOTE
		71	SIDE CASE R,ABS RESIN	*NOTE
		72	TRIPOD FRAME	*NOTE
		76	STRAP ANGLE	*NOTE

TOP PREVIOUS NEXT

13.1.2 Mechanical Replacement Notes

TOP PREVIOUS NEXT

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.

2. Abbreviation

   RTL: Retention Time Limited

   This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.

3. Cut Washers (Ref No. 473, 475, and 477) are not reusable. If removed, install a new one.

4. Lamp (Ref No. 283) replacement note:/ DANGER: Use only replacement Lamp (PART NO. LSLL0028) supplied by Panasonic to reduce risk of fire. Handle new Lamp with cloth or tissue as skin oils decrease Lamp life. Remove LightProtector and allow Lamp to cool before replacing to avoid possible burn hazard.

5. DEW Sensor (Ref. No. 236) and DEW Cables (Ref. No. 286) replacement note:

   The DEW Sensor (Ref. No. 236) or DEW Cables (Ref. No. 286) is supplied separately as replacement parts. When replacing the DEW Sensor in early products, be sure to replace both the DEW Sensor and the DEW Cables. Refer to "DEW Sensor, DEW Cable"of MECHANISM SECTION in DISASSEMBLY/ASSEMBLY PROCEDURES.

6. Mechanism Chassis Ass'y (Ref. No. 1) replacement note:

   When replacing the Mechanism Chassis Ass'y, be sure to perform the Envelope Output Adjustment. Refer to "ENVELOPE OUTPUT ADJUSTMENT" in MECHANICAL ADJUSTMENT.

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13.2 MECHANICAL REPLACEMENT PARTS LIST

MECHANICAL REPLACEMENT PARTS

SERVICE FIXTURES AND TOOLS

13.3 ELECTRICAL REPLACEMENT PARTS LIST

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COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
NV-DS29EG	A	NV-DS30EN	I
NV-DS29EGM	B	NV-DS30ENT	J
NV-DS29B	C	NV-DS30ENC	K
NV-DS29EGE	D	NV-DS30A	L
NV-DS30EG	E	NV-DS50EN	M
NV-DS30EGM	F	NV-DS50ENT	N
NV-DS30B	G	NV-DS50A	O
NV-DS30EGE	H		

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSEP8165P1	MAIN C.B.A. (A,B,C,D)	E.S.D.
E10	LSEP8165Q1	MAIN C.B.A. (E,F,G,H)	E.S.D.
E10	LSEP8165R1	MAIN C.B.A. (I,J,K,L)	E.S.D.
E10	LSEP8165S1	MAIN C.B.A. (M,N,O)	E.S.D.
E20	LSEP8183P1	REAR C.B.A. (A,B,C,D,E,F,G,H,I,J,K,L)	E.S.D. RTL
E20	LSEP8183Q1	REAR C.B.A. (M,N,O)	RTL
E30	LSXM0024	MICROPHONE C.B.A.	RTL
E40	LSEP8193A1	FRONT C.B.A.	RTL
E50	LSEP8169B1	ELECTRONIC VIEWFINDER BACK LIGHT C.B.A.	RTL *NOTE
E60	LSEP8188B1	LIQUID CRYSTAL DISPLAY C.B.A.	RTL
E70	LSEQ0639	CCD C.B.A. NR	
E80	LSEP8177C1	TOP OPERATION C.B.A. NR	

TOP PREVIOUS NEXT

13.3.1 REAR C.B.A.

TOP PREVIOUS NEXT

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
NV-DS29EG	A	NV-DS30EN	I
NV-DS29EGM	B	NV-DS30ENT	J
NV-DS29B	C	NV-DS30ENC	K
NV-DS29EGE	D	NV-DS30A	L
NV-DS30EG	E	NV-DS50EN	M
NV-DS30EGM	F	NV-DS50ENT	N
NV-DS30B	G	NV-DS50A	O
NV-DS30EGE	H		

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC6701	C0ZBZ0000275	IC, LINEAR (A,B,C,D,E,F,G,H,J,K,L)	
IC6701	C0ZBZ0000540	IC, LINEAR (A,B,C,D,E,F,G,H,J,K,L)	
IC6701	C1ZBZ0001923	IC, LINEAR (A,B,C,D,E,F,G,H,J,K,L)	
IC6702	S814A33AMC-B	IC, CMOS STANDARD LOGIC (A,B,C,D,E,F,G,H,J,K,L)	E.S.D.

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1201	RD12S-T1B	DIODE ZENER CHIP 12V	
D1202	RD12S-T1B	DIODE ZENER CHIP 12V	
D6701	MA2S728008	DIODE SI CHIP (A,B,C,D,E,F,G,H,J,K,L)	
D6701	B0JCDD000002	DIODE SI CHIP (A,B,C,D,E,F,G,H,J,K,L)	
D6701	MA2S72800L	DIODE SI CHIP (A,B,C,D,E,F,G,H,J,K,L)	
D7001	B0BD6R800009	DIODE ZENER CHIP 6.8V	
D7002	B0BD6R800009	DIODE ZENER CHIP 6.8V	
D7003	B0BD6R800009	DIODE ZENER CHIP 6.8V	
D7004	RD6.2S	DIODE ZENER CHIP 6.2V	
D7005	B0BD6R800009	DIODE ZENER CHIP 6.8V	
D7006	RD6.2S	DIODE ZENER CHIP 6.2V	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R6703	LSRJ0002	VARIABLE RESISTOR (A,B,C,D,E,F,G,H,J,K,L)	
R6704	LSRJ0002	VARIABLE RESISTOR (A,B,C,D,E,F,G,H,J,K,L)	
R6706	ERJ3GEY0R00V	MGF CHIP 1/16W 0 (M,N,O)	
R6707	ERJ3GEY0R00V	MGF CHIP 1/16W 0 (M,N,O)	
R7001	ERJ3GEYJ331V	MGF CHIP 1/16W 330	
R7003	ERJ3GEYJ561V	MGF CHIP 1/16W 560	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1201	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C1202	ECJ1VF1H103Z	C CHIP 50V 0.01UF	
C6701	F1J1A1050002	C CHIP 10V 1UF (A,B,C,D,E,F,G,H,J,K,L)	
C6702	ECJ1VB1C104K	C CHIP 16V 0.1UF (A,B,C,D,E,F,G,H,J,K,L)	
C6703	ECJ1VB1C104K	C CHIP 16V 0.1UF (A,B,C,D,E,F,G,H,J,K,L)	
C6704	ECJ1VB1C104K	C CHIP 16V 0.1UF (A,B,C,D,E,F,G,H,J,K,L)	
C6705	ECJ1VB1C104K	C CHIP 16V 0.1UF (A,B,C,D,E,F,G,H,J,K,L)	
C6706	ECJ2YB1A105K	C CHIP 10V 1UF (A,B,C,D,E,F,G,H,J,K,L)	
C6708	ECJ2YB1A105K	C CHIP 10V 1UF (A,B,C,D,E,F,G,H,J,K,L)	
C7001	ECJ1VB1H472K	C CHIP 50V 4700PF	
C7002	ECJ1VB1H472K	C CHIP 50V 4700PF	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL1201	J0MAB0000062	FILTER	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L6701	ERJ3GEYJ821V	MGF CHIP 1/16W 820 (A,B,C,D,E,F,G,H,J,K,L)	
L6702	ERJ3GEYJ821V	MGF CHIP 1/16W 820 (A,B,C,D,E,F,G,H,J,K,L)	
L6703	ERJ3GEY0R00V	MGF CHIP 1/16W 0 (A,B,C,D,E,F,G,H,J,K,L)	
L6704	ERJ3GEY0R00V	MGF CHIP 1/16W 0 (M,N,O)	
L6705	ERJ3GEY0R00V	MGF CHIP 1/16W 0 (M,N,O)	
L6706	ERJ3GEY0R00V	MGF CHIP 1/16W 0 (M,N,O)	
L6707	VLQ0807K100	COIL CHIP 10UH (A,B,C,D,E,F,G,H,J,K,L)	
L7001	J0JBC0000027	FERRITE BEAD CHIP	
L7002	J0JBC0000027	FERRITE BEAD CHIP	
L7003	J0JBC0000027	FERRITE BEAD CHIP	
L7004	J0JBC0000027	FERRITE BEAD CHIP	
L7005	J0JBC0000027	FERRITE BEAD CHIP	

FUSE& PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
IP1201	K5H2022A0008	CIRCUIT PROTECTOR CHIP 32V 2A	⚠
IP1202	K5H1022A0008	CIRCUIT PROTECTOR CHIP 32V 1A	⚠

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW1201	ESE22MH4	SWITCH PUSH	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK6701	K2HZ105E0001	USB MINI JACK SOCKET (M,N,O)	
JK6703	LSJJ0187	MINI JACK SOCKET (A,B,C,D,E,F,G,H,J,K,L)	
JK7001	LSYK0830	BATTERY COVER UNIT	
JK7003	K1FB104B0026	DV JACK SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
731	LSSB0004	BATTERY	

TOP PREVIOUS NEXT

13.3.2 MICROPHONE C.B.A.

TOP PREVIOUS NEXT

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q4001	2SD1819AEL	TRANSISTOR SI NPN CHIP	*NOTE
Q4001	B1ABCF000020	TRANSISTOR SI NPN CHIP	*NOTE
Q4002	2SD1819AEL	TRANSISTOR SI NPN CHIP	*NOTE
Q4002	B1ABCF000020	TRANSISTOR SI NPN CHIP	*NOTE
Q4003	2SB1218AEL	TRANSISTOR SI PNP CHIP	*NOTE
Q4003	B1ADCF000063	TRANSISTOR SI PNP CHIP	*NOTE
Q4005	2SD1819AEL	TRANSISTOR SI NPN CHIP	*NOTE
Q4005	B1ABCF000020	TRANSISTOR SI NPN CHIP	*NOTE
Q4006	2SB1218AEL	TRANSISTOR SI PNP CHIP	*NOTE
Q4006	B1ADCF000063	TRANSISTOR SI PNP CHIP	*NOTE
Q4008	2SD1819AEL	TRANSISTOR SI NPN CHIP	*NOTE
Q4008	B1ABCF000020	TRANSISTOR SI NPN CHIP	*NOTE
Q4009	2SD1819AEL	TRANSISTOR SI NPN CHIP	*NOTE
Q4009	B1ABCF000020	TRANSISTOR SI NPN CHIP	*NOTE

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D4803	MA3J14300L	DIODE SI CHIP	*NOTE
D4803	B0ADCC000004	DIODE SI CHIP	*NOTE

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R4001	D0HB392ZA002	MGF CHIP 1/16W 3.9K	*NOTE
R4002	D0HB392ZA002	MGF CHIP 1/16W 3.9K	*NOTE
R4003	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	*NOTE
R4004	ERJ3GEYJ363V	MGF CHIP 1/16W 36K	*NOTE
R4005	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	*NOTE
R4006	ERJ3GEYJ104V	MGF CHIP 1/16W 100K	*NOTE
R4007	ERJ3GEYJ363V	MGF CHIP 1/16W 36K	*NOTE
R4008	ERJ3GEYJ822V	MGF CHIP 1/16W 8.2K	*NOTE
R4009	ERJ3GEYJ471V	MGF CHIP 1/16W 470	*NOTE
R4010	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	*NOTE
R4011	D0HB154ZA002	MGF CHIP 1/16W 150K	*NOTE
R4012	D0HB563ZA002	MGF CHIP 1/16W 56K	*NOTE
R4013	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	*NOTE
R4014	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	*NOTE
R4015	ERJ3GEYJ151V	MGF CHIP 1/16W 150	*NOTE
R4017	ERJ3GEYJ471V	MGF CHIP 1/16W 470	*NOTE
R4018	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	*NOTE
R4019	D0HB154ZA002	MGF CHIP 1/16W 150K	*NOTE
R4020	D0HB563ZA002	MGF CHIP 1/16W 56K	*NOTE
R4021	ERJ3GEYJ122V	MGF CHIP 1/16W 1.2K	*NOTE
R4022	ERJ3GEYJ562V	MGF CHIP 1/16W 5.6K	*NOTE
R4023	ERJ3GEYJ151V	MGF CHIP 1/16W 150	*NOTE
R4025	ERJ3GEYJ222V	MGF CHIP 1/16W 2.2K	*NOTE
R4027	ERJ3GEY0R00V	MGF CHIP 1/16W 0	*NOTE
R4030	ERJ3GEYJ563V	MGF CHIP 1/16W 56K	*NOTE
R4031	ERJ3GEYJ332V	MGF CHIP 1/16W 3.3K	*NOTE
R4032	ERJ3GEYJ563V	MGF CHIP 1/16W 56K	*NOTE
R4033	ERJ3GEYJ332V	MGF CHIP 1/16W 3.3K	*NOTE
R4037	ERJ3GEY0R00V	MGF CHIP 1/16W 0	*NOTE
R4038	ERJ3GEY0R00V	MGF CHIP 1/16W 0	*NOTE

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C4001	ECJ1VB1H102K	C CHIP 50V 1000PF	*NOTE
C4002	ECJ1VB1H102K	C CHIP 50V 1000PF	*NOTE
C4003	ECJ1VB1C273K	C CHIP 16V 0.027UF	*NOTE
C4004	ECJ1VB1C273K	C CHIP 16V 0.027UF	*NOTE
C4005	F1J1A1050002	C CHIP 10V 1UF	*NOTE
C4006	ECJ1VB1H102K	C CHIP 50V 1000PF	*NOTE
C4007	ECS700Y226	TANTALUM CHIP 4V 22UF	*NOTE
C4008	F1J1A1050002	C CHIP 10V 1UF	*NOTE
C4009	ECJ1VB1H102K	C CHIP 50V 1000PF	*NOTE
C4010	ECS700Y226	TANTALUM CHIP 4V 22UF	*NOTE
C4011	ECS70JY226R	TANTALUM CHIP 6.3V 22UF	*NOTE
C4012	ECJ1VB1H103K	C CHIP 50V 0.01UF	*NOTE
C4013	ECJ1VB1H821K	C CHIP 50V 820PF	*NOTE
C4014	ECJ1VB1H821K	C CHIP 50V 820PF	*NOTE
C4015	ECJ1VB1E223K	C CHIP 25V 0.022UF	*NOTE
C4016	ECJ1VB1E223K	C CHIP 25V 0.022UF	*NOTE
C4017	F1J1A1050002	C CHIP 10V 1UF	*NOTE
C4018	F1J1A1050002	C CHIP 10V 1UF	*NOTE
C4019	ECJ1VB1H222K	C CHIP 50V 0.0022UF	*NOTE
C4020	ECJ1VB1H222K	C CHIP 50V 0.0022UF	*NOTE
C4021	ECUE1C104ZFV	C CHIP 16V 0.1UF	*NOTE

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L4001	J0JBC0000036	FERRITE BEAD CHIP	*NOTE
L4002	J0JBC0000036	FERRITE BEAD CHIP	*NOTE

FPC CONNECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
FP4001	K1MN07B00022	CONNECTOR 7P	*NOTE

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JS04001	K2HC104B0017	STERO MICROPHONE JACK SOCKET	*NOTE

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
701	L5ED20447	ELECTORSC CONDENSER MICROPHONE UNIT	*NOTE
703	L5MC00111	MICROPHONE DAMPER	*NOTE
705	L5JW0033	FLEXIBLE FLAT CABLE W/OUT PLUG,8.8V	*NOTE

TOP PREVIOUS NEXT

13.3.3 FRONT C.B.A.

TOP PREVIOUS NEXT

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q6501	XP0150100L	TRANSISTOR COMPLX CMP SI NPN CHIP	*NOTE
Q6502	B1BCEF000003	TRANSISTOR SI PNP CHIP	*NOTE

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D6502	SLR7123A50AB	LIGHT EMITTING DIODE	*NOTE

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R6501	ERJ3GEYJ560V	MGF CHIP 1/16W 56	*NOTE
R6502	ERJ8GEYJ270V	MGF CHIP 1/8W 27	*NOTE
R6503	D0HB122ZA002	MGF CHIP 1/16W 1.2K	*NOTE
R6504	D0HB562ZA002	MGF CHIP 1/16W 5.6K	*NOTE
R6505	D0HB122ZA002	MGF CHIP 1/16W 1.2K	*NOTE
R6506	ERJ3GEYJ821V	MGF CHIP 1/16W 820	*NOTE

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C6501	ECST0JY106	TANTALUM CHIP 6.3V 10UF	*NOTE
C6502	ECJ1VF1C104Z	C CHIP 16V 0.1UF	*NOTE
C6503	ECJ1VB1C104K	C CHIP 16V 0.1UF	*NOTE

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P6501	K1KA03A00304	CONNECTOR 3P	*NOTE

FPC CONNECTRO

Ref. No.	Part No.	Part Name & Description	Remarks
FP6501	K1MN10A00030	CONNECTOR 10P	*NOTE

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
U6501	B3RAD0000039	INFRARED RECEOVER	*NOTE

TOP PREVIOUS NEXT

13.3.4 ELECTRONIC VIEWFINDER BACK LIGHT C.B.A.

TOP PREVIOUS NEXT

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q951	2SD2216J0L	TRANSISTOR SI NPN CHIP	*NOTE
Q951	2SC4617-R	TRANSISTOR SI NPN CHIP	*NOTE

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D951	B3AFB0000016	LIGHT EMITTING DIODE	*NOTE

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R951	ERJ3GEY0R00V	MGF CHIP 1/16W 0	*NOTE
R952	ERJ3GEY0R00V	MGF CHIP 1/16W 0	*NOTE
R953	ERJ3GEYJ223V	MGF CHIP 1/16W 22K	*NOTE
R954	ERJ3GEYJ103V	MGF CHIP 1/16W 10K	*NOTE
R955	ERJ3GEYJ101V	MGF CHIP 1/16W 100	*NOTE
R956	ERJ3GEYJ102V	MGF CHIP 1/16W 1K	*NOTE
R957	ERJ3GEY0R00V	MGF CHIP 1/16W 0	*NOTE

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C952	ECJ1VF1C104Z	C CHIP 16V 0.1UF	*NOTE
C953	ECJ1VF1C104Z	C CHIP 16V 0.1UF	*NOTE
C954	ECJ1VF1C104Z	C CHIP 16V 0.1UF	*NOTE
C955	ECJ1VF1C104Z	C CHIP 16V 0.1UF	*NOTE

FPC CONNECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
FP951	K1MN19B00052	CONNECTOR 19P	*NOTE
FP952	K1MN20B00085	CONNECTOR 20P	*NOTE

TOP PREVIOUS NEXT

13.3.5 LIQUID CRYSTAL DISPLAY C.B.A.

TOP PREVIOUS NEXT

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
NV-[illegible]	A	NV-[illegible]	I
NV-[illegible]	B	NV-[illegible]	J
NV-[illegible]	C	NV-[illegible]	K
NV-[illegible]	D	NV-[illegible]	L
NV-[illegible]	E	NV-[illegible]	M
NV-[illegible]	F	NV-[illegible]	N
NV-[illegible]	G	NV-[illegible]	O
NV-[illegible]	H		

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	IC, LINEAR	

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	[illegible]	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	[illegible]	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	[illegible]	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	[illegible]	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	[illegible]	

FPC CONNECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	[illegible]	

FUSE& PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	[illegible]	

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	TRANSFORMER	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
[illegible]	[illegible]	[illegible]	

TOP PREVIOUS NEXT

13.3.6 ELECTRICAL PARTS LOCATED ON CHASSIS

TOP PREVIOUS NEXT

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK	MODEL	MARK
NV-DS29EG	A	NV-DS30EN	I
NV-DS29EGM	B	NV-DS30ENT	J
NV-DS29B	C	NV-DS30ENC	K
NV-DS29EGE	D	NV-DS30A	L
NV-DS30EG	E	NV-DS50EN	M
NV-DS30EGM	F	NV-DS50ENT	N
NV-DS30B	G	NV-DS50A	O
NV-DS30EGE	H		

Ref. No.	Part No.	Part Name & Description	Remarks
735	LSEP8172A1	SD HOLDER UNIT NR (M,N,O)	

TOP PREVIOUS NEXT

14 SCHEMATIC DIAGRAMS FOR PRINTING WITH LETTER SIZE

TOP PREVIOUS

TOP PREVIOUS