

CCD-FX730V

RMT-708

SERVICE MANUAL

*US Model
Canadian Model
E Model*



**Video8
Handycam**

A MECHANISM

Differences Manual

For MECHANISM ADJUSTMENTS, refer to the "8 mm Video MECHANICAL ADJUSTMENT MANUAL IV" (9-973-199-11).

- CCD-FX730V is based on model CCD-FX430 (CCD-FX430/FX435/FX530/FX630 SERVICE MANUAL).
[Main differences]
- 1. LCD screen addition (SD-14, PD-53 boards addition).
- 2. Speaker addition.
- 3. **REC** switch addition on control switch block (FK).
- 4. **FADER** switch addition on control switch block (CK).
- 5. Boards are changed.

CCD-FX430		CCD-FX730V	
Name	Part number	Name	Part number
AU-157	A-7063-943-A	AU-175	A-7066-153-A
MA-197	A-7063-941-A	MA-209	A-7066-152-A
DD-64	A-7063-946-A	DD-71	A-7066-154-A
VC-143	A-7063-949-A	VC-151	A-7066-155-A
VS-110	A-7063-944-A	VS-119	A-7066-156-A (US, Canadian) A-7066-210-A (E)

The printed wiring board and schematic diagram for the AU-175 board and MA-209 board are not shown because basically they are identical to the **CCD-FX430's** AU-157 board and MA-197 board.

In this service manual, only the differences from CCD-FX430 is mentioned.

When servicing, see the **CCD-FX430/FX435/FX530/FX630** service manual (9-973-530-1 1) with this.



8 VIDEO CAMERA RECORDER
SONY®

TABLE OF CONTENTS

Section	Title	Page	<u>Section</u>	Title	<u>Page</u>
SERVICE NOTE			3. BLOCK DIAGRAMS		
	Parts Location Diagram Related to Power Supply	6	3-1.	Overall Block Diagram	3-1
	Semiconductor Location	6	3-2.	Video (1) Block Diagram	3-5
	Head Cleaning	6	3-3.	System Control Block Diagram	3-9
1. GENERAL			3-4.	Audio Block Diagram	3-14
	Notes and precautions	1-1	3-5.	LCD Block Diagram	3-17
	Checking Supplied Accessories	1-1	3-6.	Power Block Diagram	3-21
	Charging and Installing the Battery Pack	1-2	4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS		
	Inserting a Cassette	1-3	4-1.	Frame Schematic Diagram	4-1
	Camera Recording	1-4	4-2.	Printed Wiring Boards and Schematic Diagrams	4-4
	Hints for Better Shooting	1-6		• VC-151 (Camera, Lens Drive) Board	4-5
	Checking the Recorded Picture	1-6		• VC-151 (Camera (1)) Board	4-7
	Playing Back a Tape	1-7		• VC-151 (Camera (2)) Board	4-10
	Using Alternative Power Sources	1-8		• VC-151 (Lens Drive) Board	4-13
	Recording with the Date or Time	1-8		• VS-11 9 (REC/PB Head Amplifier, Y/C Process, I/O Switch, Electric Volume, Servo/System Control, Signal I/O)	4-17
	Recording with the Age	1-9		• VS-11 9 (REC/PB Head Amplifier) Board	4-21
	Shooting with Backlighting	1-10		• VS-119 (Y/C process) Board	4-24
	Using the PROGRAM AE Function	1-10		• VS-11 9 (I/O Switch, Electric Volume) Board	4-27
	Fade-in and Fade-out	1-11		• VS-11 9 (Servo/System Control) Board	4-30
	Changing the Mode Settings	1-11		• VS-119 (Signal I/O) Board	4-33
	Connections for Playback	1-12		• SD-14 (Speaker Amp, LCD Panel Switch) Board ...	4-35
	Editing onto Another Tape	1-13		• PD-53 (LCD Video) Board	4-45
	Recording from a TV or VCR	1-13		• DD-71 (Power Supply) Board	4-53
	Changing the Lithium Battery	1-14	5. REPAIR PARTS LIST		
	Resetting the Date or Time	1-14	5-1.	Exploded Views	5-1
	Playback Modes	1-15	5-1-1.	Front Case Block Assembly	5-1
	Tips for Using the Battery Pack	1-15	5-1-2.	Cabinet(L) Block Assembly	5-2
	Maintenance information and Precautions	1-16	5-1-3.	Cabinet(R) Block Assembly	5-3
	Using Your Camcorder Abroad	1-18	5-1-4.	EVF Block Assembly	5-4
	Identifying the Parts	1-19	5-1-5.	Main Boards Assembly	5-5
	Indicators in the Viewfinder	1-22	5-1-6.	CCD Block Assembly	5-6
2. DISASSEMBLY			5-1-7.	Zoom Lens Assemblies (LSV-140A) (VCL-5412WA) (VCL-5412WB)	5-7
	2-5-1. Removal of Cabinet (R) Assembly	2-1	5-1-12.	Panel Block Assembly	5-8
	2-S-2. Removal of Control Switch Block (CK)	2-1	5-2.	Electrical Parts List	5-9
	2-5-3. Removal of Panel Block	2-2	HARDWARE LIST		
	2.54. Removal of LCD Module and PD-53 Board	2-2			5-24
	2-13. Circuit Boards Location	2-3			

<u>Section</u>	<u>Title</u>	<u>Page</u>
7.	ADJUSTMENTS	
7-1.	CAMERA SECTION ADJUSTMENTS	7-1
1-1.	Preparations Before Adjustment (Camera Section)	7-1
1-1 -2.	Preparations	7-1
7-3.	VIDEO SECTION ADJUSTMENTS	7-3
3-1.	Preparations Before Adjustment	7-3
3-1 -2.	Adjusting Precautions	7-3
3-1 -8.	Service Mode	7-4
3-5.	Video Adjustments	7-9
5.	Comb Filter Adjustment (VS-119 board)	7-Q
3-8.	LCD System Adjustments	7-9
1.	Power Supply Voltage Check (PD-53 board)	7-10
2.	PNL – 8V Adjustment (PD-53 board)	7-10
3.	EVR Initial Data Input	7-10
4.	Bright Adjustment (PD-53 board)	7-10
5.	VCO Adjustment (PD-53 board)	7-1 ,
8.	Horizontal Display position Adjustment (PD-53 board)	7-11
7.	Contrast Adjustment (PD-53 board)	7-12
8.	V COM Adjustment	7-12
9.	White Balance preset Adjustment (1) (PD-53 board)	7-13
10.	White Balance preset Adjustment (2) (PD-53 board)	7-13
11.	White Balance Adjustment	7-14
3-Q.	Arrangement Diagram For Adjustment Parts	7-18

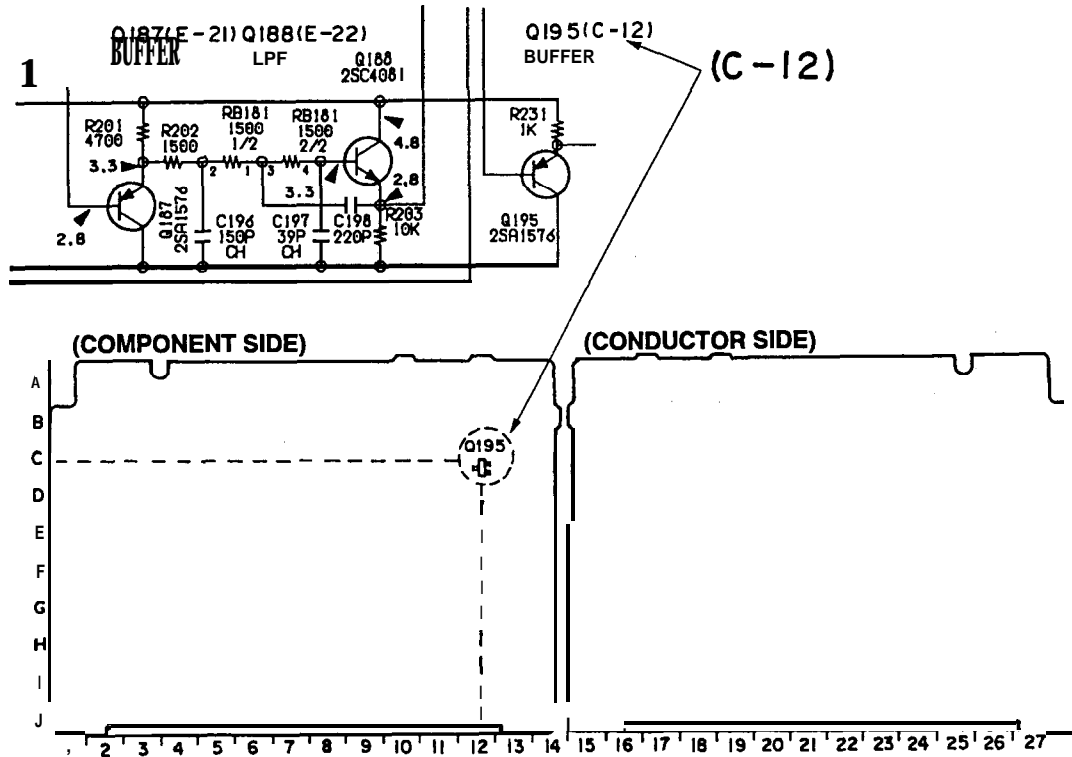
SERVICENOTE

[PARTS LOCATION DIAGRAM RELATED TO POWER SUPPLY]

The parts location diagram for the power supply which are often checked and replaced when repairing the fuse and IC link and so on. (See pages 4-20, 4-30 and 4-31.) This diagram is useful for repair.

[SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red in schematic diagrams. This enables to find the location on the board easily when servicing.



[HEAD CLEANING]

After an extended period of use the video image may become indistinct or may not appear at all during playback of a tape. The cause of this usually are dirty video heads. For remedy, cleaning of the heads is required.

Check for Head Clogs During Recording

- ① Use a blank tape, record a short section, then press the stop button to stop.
- ② Set to recording mode again.
- ③ If the [✖] mark is flashing in the viewfinder at this time, head clogs are occurred.

Check During Playback of a Tape

- ① Play back a pre-recorded tape and display the image on a TV screen.
- ② If there is no sound and the image is unstable, no image appears on the screen, or tape transport is unstable, head clogs are occurred.

Remedy

[Cleaning method using a cleaning tape]

- Use the Cleaning Tape. (Please follow the instructions attached to the cleaning tape.)

Video Camera Recorder

System

Video recording system

Two rotary heads,
Helical scanning FM system

Audio recording system

Rotary heads, FM system

Video signal

NTSC color, EIA standards

Usable cassette

8 mm video format cassette
(standard 8 mm)

Tape speed

SP mode: Approx.
19/32 inches (1.43 cm)/second
LP mode: Approx.
5/16 inches (0.72 cm)/second
(playback only)

Recording time

SP mode: 2 hours (K-120)

Playback time

SP mode: 2 hours (P6-120)
LP mode: 4 hours (P6-120)

Fastforward/rewind time

Approx. 6 min 30 sec (P6-120)

Image device

CCD (Charge Coupled
Device)

Viewfinder

Electronic viewfinder
(monochrome)

Lens

Combined 12 x Power zoom
lens
Filter diameter 2 1/8 inches
(52 mm)

TTL autofocus system

Inner focus wide macro
system

Focal distance

$f = 7/32 - 2 5/8$ inches
(5.4 - 64.8 mm)

F1.8 - 2.7

(1 9/16 - 18 1/2 inches (39 -
468 mm) when converted to
a 35 mm still camera)

Color temperature

Auto

Minimum illumination

2 lux (F1.8)

Illumination range

2 lux to 100,000 lux

Recommended illumination

More than 100 lux

LCD screen

Picture

3 inches measured diagonally
2 1/2 x 1 3/4 inches
(61.5 x 44.0 mm)

On-screen display

TN LCD/TFT active matrix
method
Total dot number:
75,816 (324 x 234)

Input and output connectors

Video input/output

Phono jack, 1 Vp-p, 75 Ω ,
unbalanced, sync negative

Audio input/output

Phono jack
Input: 7.5 dB, input
impedance more than 47 k Ω
Output: 7.5 dB, (at output
impedance 47 k Ω)
impedance less than 2.2 k Ω

RFU DC OUT

Special minijack, DC 5 V

Earphone jack

Minijack

LANC control jack

Stereo mini-minijack
(ϕ 2.5 mm)

MIC jack

Minijack, -66 dB low
impedance with 2.5 to
3.0 V DC, output impedance
6.8 k Ω (ϕ 3.5 mm)

Speaker

8 Ω

General

Power requirements

On battery mounting surface
6.0 V (battery pack)
7.5 V (AC power adaptor)

Average power consumption

6.9 W (camera recording)
including the viewfinder

Installation

Vertically, horizontally

Operating temperature

32°F to 104°F
(0° c to 40° C)

Storage temperature

-4° F to +140° F
(-20° C to +60° C)

Dimensions

Approx.
4 3/4 x 4 3/8 x 10 1/4 inches
(120 x 111 x 260 mm) (w/h/d)

Mass

Approx. 2 lb 7 oz (1,100 g)
Excluding the battery pack,
lithium battery, cassette
and shoulder strap
Approx. 3 lb 2 oz (1,430 g)
Including the battery pack
NP-66, lithium battery
CR2025, cassette P6-120,
and shoulder strap

Microphone

Electret condenser
microphone, monaural type

Supplied accessories

See page 5.

AC power adaptor

Power requirements

110 - 240 V AC*, 50/60 Hz

Power consumption

17 w

Output voltage

IX OUT: 7.5 V, 1.5 A
in operating mode
Battery charge terminal:
10 V, 1.1 A in charge mode

Application

Sony battery packs NP-55H,
NP-60D, NP-66/66H,
NP-77H, NP-80/80D

Operating temperature

32°F to 104°F
(0° c to 40° C)

Storage temperature

-4° F to +140° F
(-20° C to +60° C)

Dimensions

Approx.
4 1/8 x 1 15/16 x 2 1/2 inches
(103 x 49 x 63 mm) (w/h/d)
including projecting parts
and controls

Mass

Approx. 11 oz (320 g) (AC-V25A)
Approx. 10 oz (290 g) (AC-V25B)

* Canadian Standard Association
(CSA) certifies 120 V AC only.

Design and specifications are
subject to change without notice.

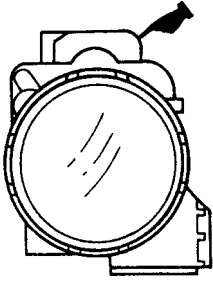
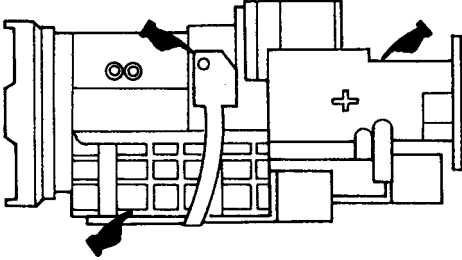
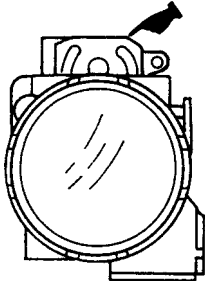
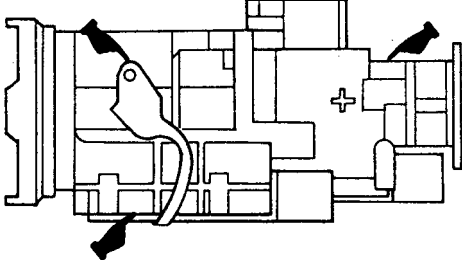
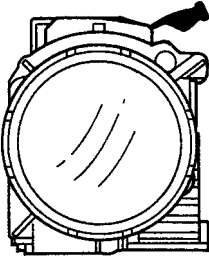
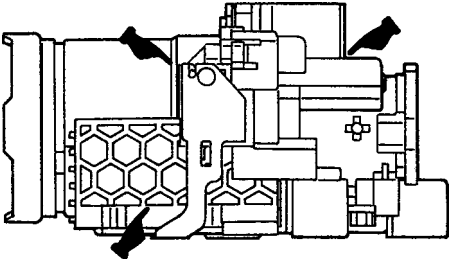
[Zoom lens]

This unit employs two types of lens.

Note that the lenses are interchangeable, however their components are not.

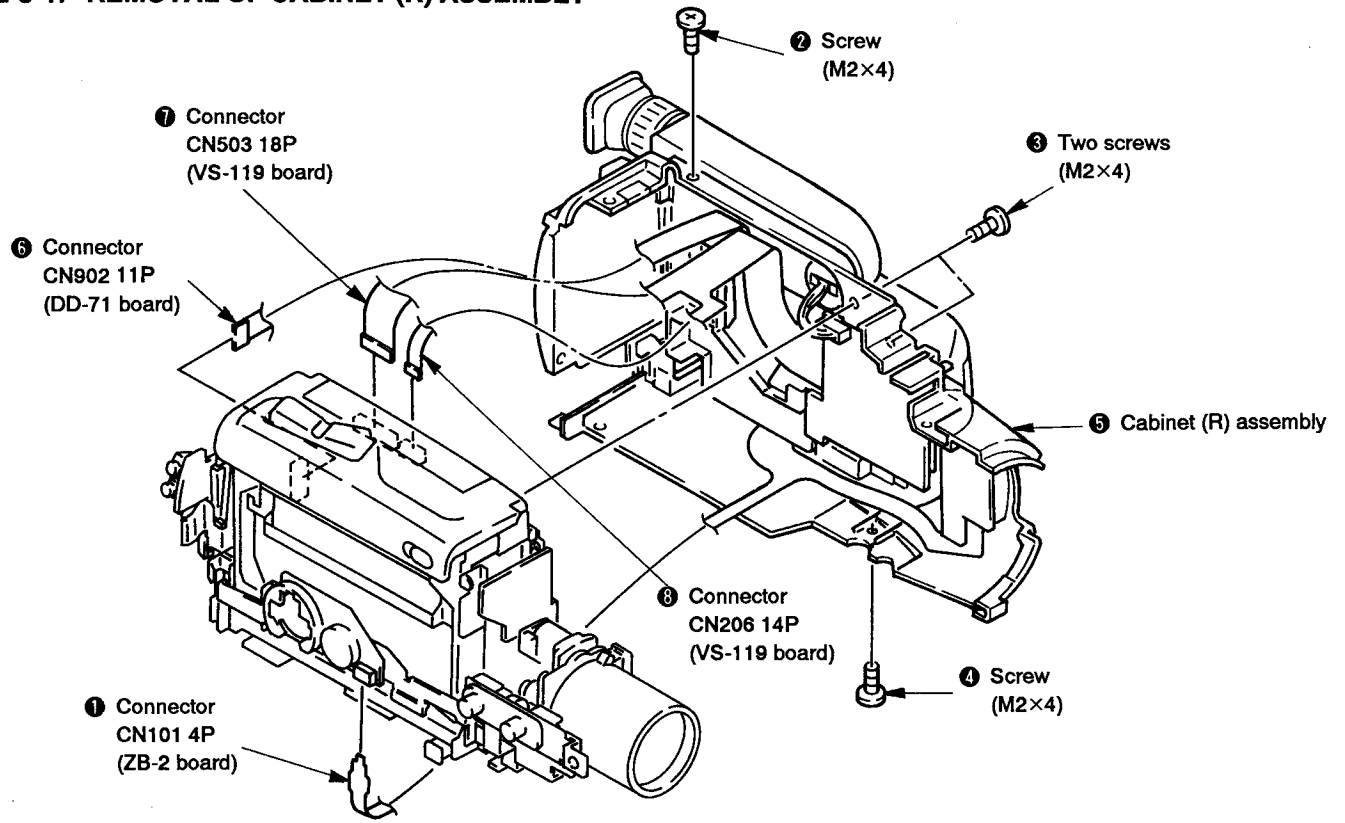
Differentiating the lens

 : difference point

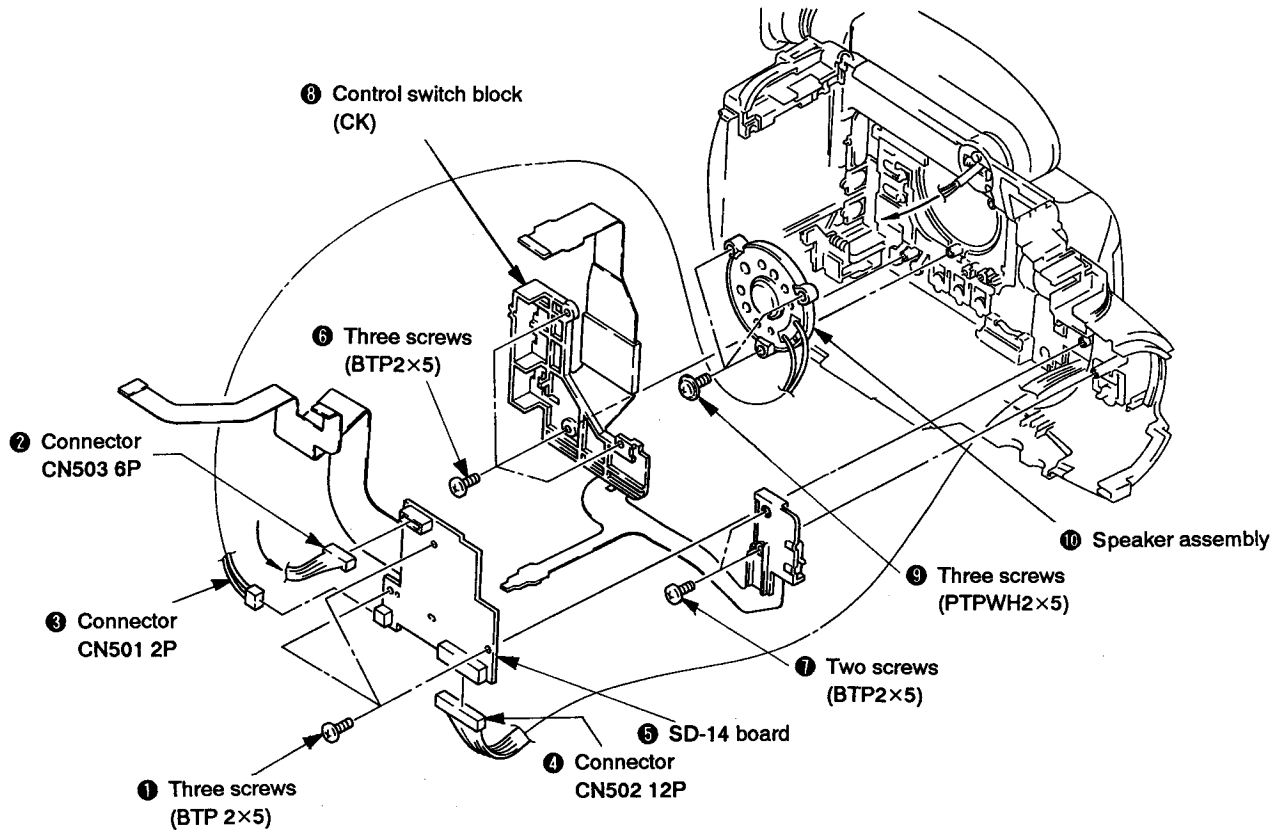
TYPE I (LBV-140A)	TYPE II (VCL-5412WA)
<p>From the front of the lens</p>  <p>From the right side of the lens (as seen from the front)</p> 	<p>From the front of the lens</p>  <p>From the right side of the lens (as seen from the front)</p> 
TYPE III (VCL-5412WB)	
<p>From the front of the lens</p>  <p>From the right side of the lens (as seen from the front)</p> 	

SECTION 2 DISASSEMBLY

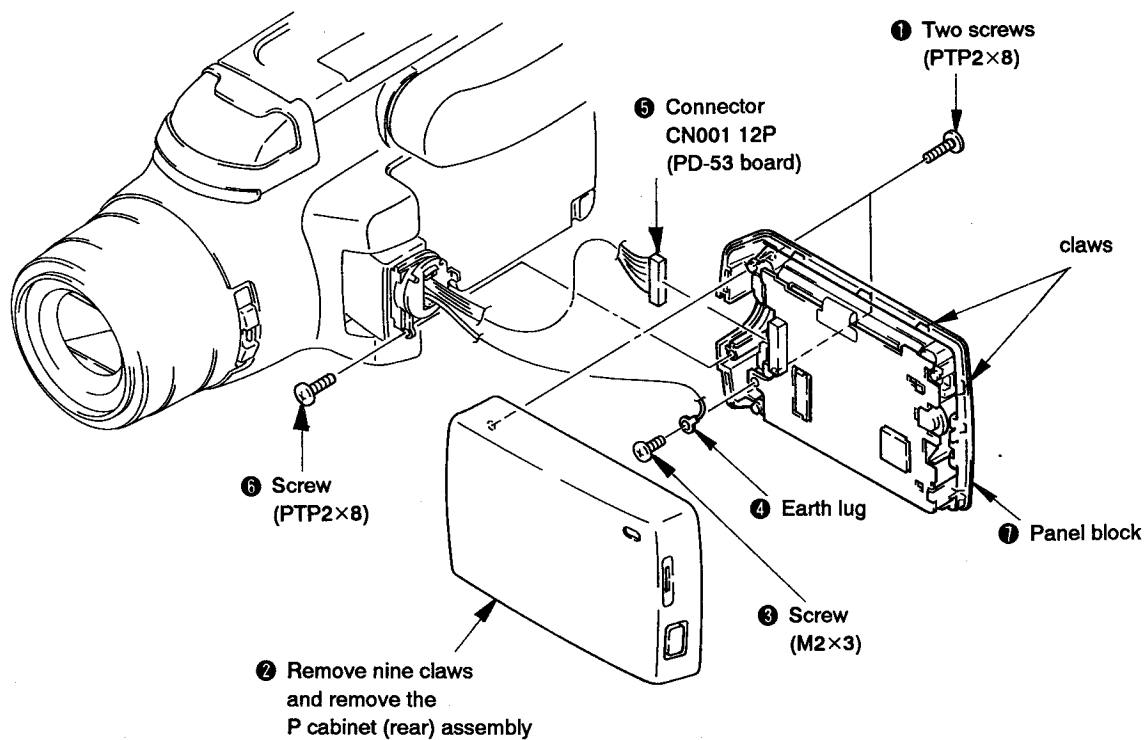
2-5-1. REMOVAL OF CABINET (R) ASSEMBLY



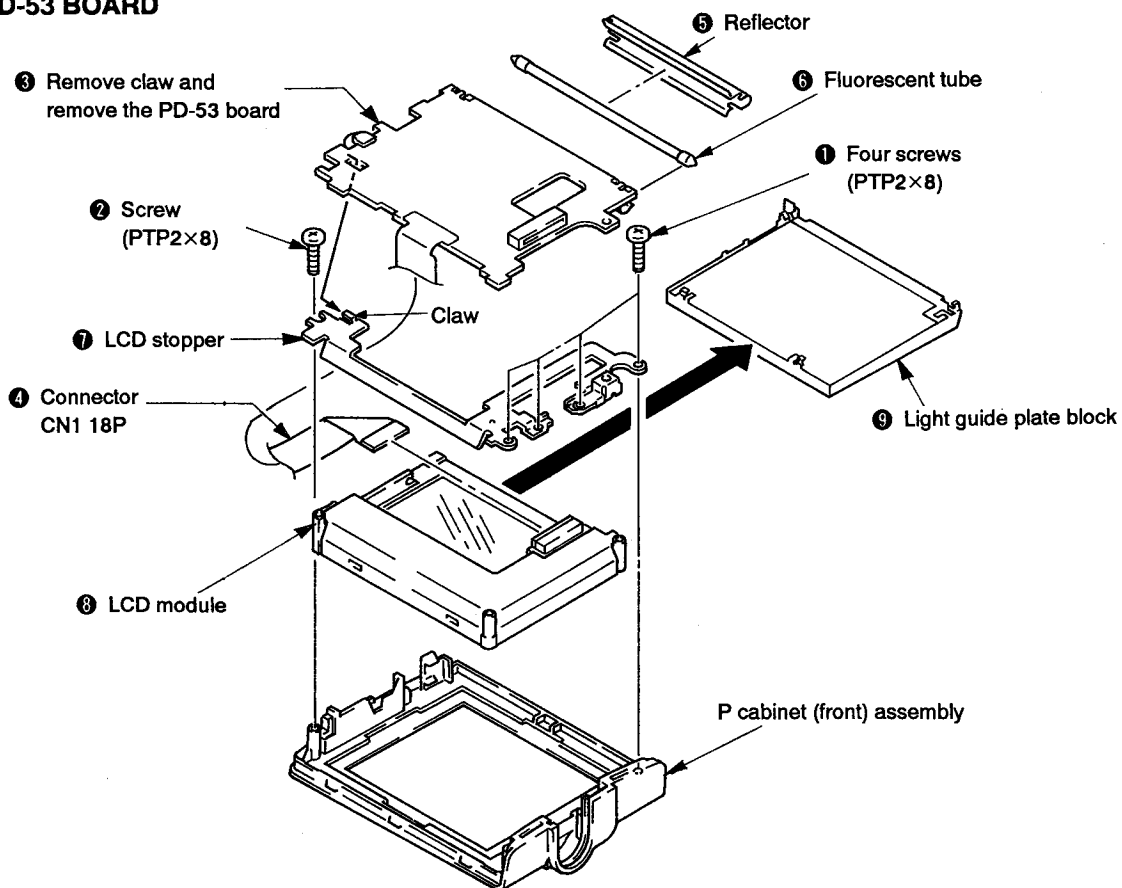
2-5-2. REMOVAL OF CONTROL SWITCH BLOCK (CK)



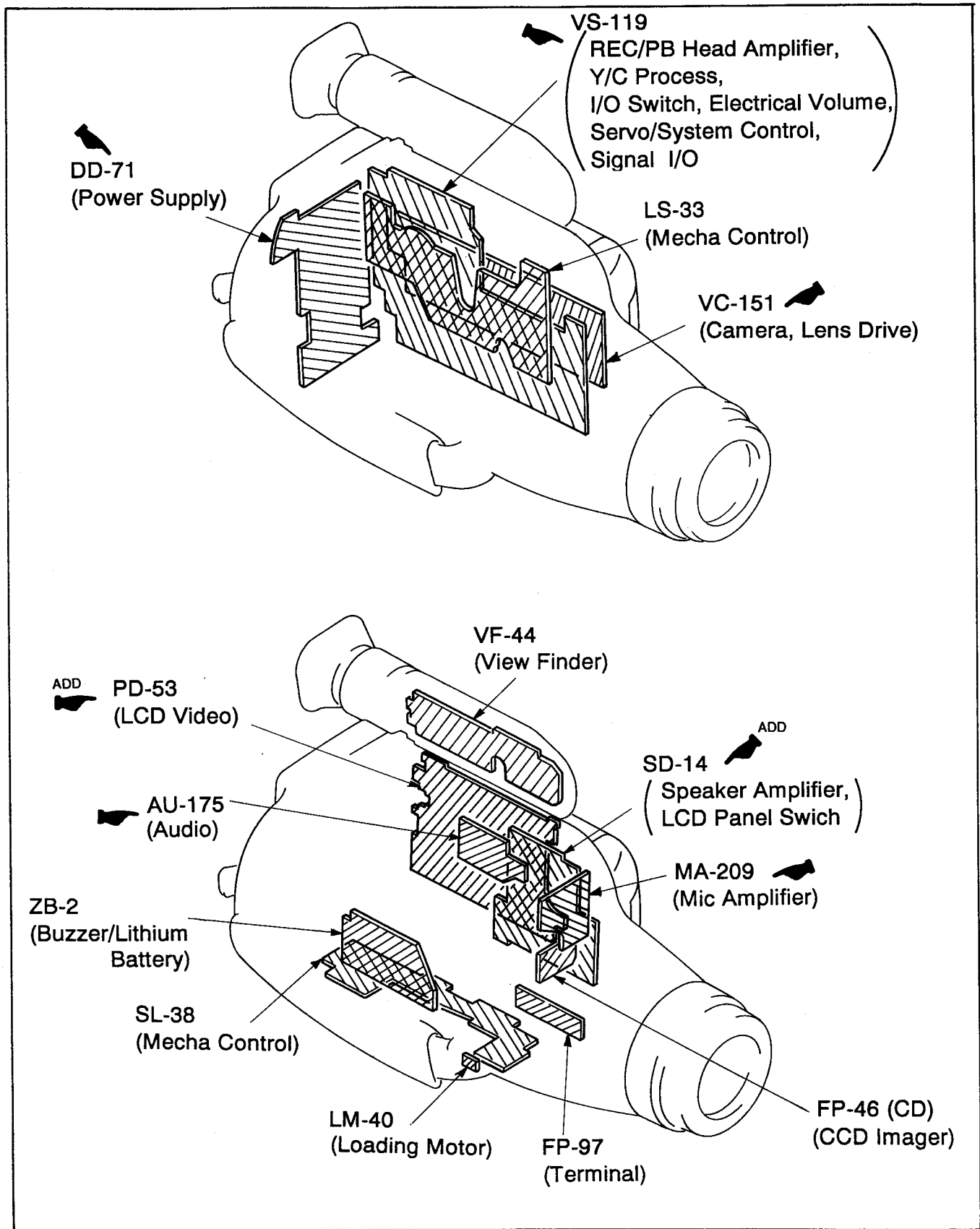
2-5-3. REMOVAL OF PANEL BLOCK



2-5-4. REMOVAL OF LCD MODULE AND PD-53 BOARD



2-13. CIRCUIT BOARDS LOCATION



SECTION 7 ADJUSTMENTS

CCD-FX730V

7-1. CAMERA SECTION ADJUSTMENTS

I-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

I-1 -2. Preparations

Page. 7-2

Note 1: For further details of how to remove the cabinet and each board, refer to “2. Disassembly”.

Note 2: When adjusting only, the lens block and VC-151 board need not be taken apart.

- 1) Connect the equipments for adjusting as shown in Fig. 7-1-3.
- 2) If remove the cabinet (R) (Power switch, camera function switch, LCD unit and electronic view-finder), set to the camera power supply ON mode (Note 1), and disconnect the following connectors.
 1. CN503 of VS-119 board
 2. CN206 of VS-119 board
 3. CN101 of ZB-2 board
 4. CN902 of DD-71 boardBe sure to exit this mode after completing the adjustment. (Note 2)
- 3) Turning OFF the Auto Focus Using the Adjusting Remote Commander
 1. Set data: 01 to page: 6, address: 25.
(The auto focus will turn OFF. The focus can be adjusted using the focus button on the adjusting remote commander. But the HOLD switch must be set to OFF.)
 2. After completing the adjustment/operation check, set data: 00 to page: 6, address: 25.

Note 1: Setting the Forced Camera Power Supply ON Mode

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
By carrying out the above, the camera can be operated even if the cabinet (R) has been removed. Be sure to exit the forced camera power ON mode after completing the adjustment.

Note 2: Exiting the Forced Camera Power Supply ON Mode

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 00 to page: 1, address: 00.

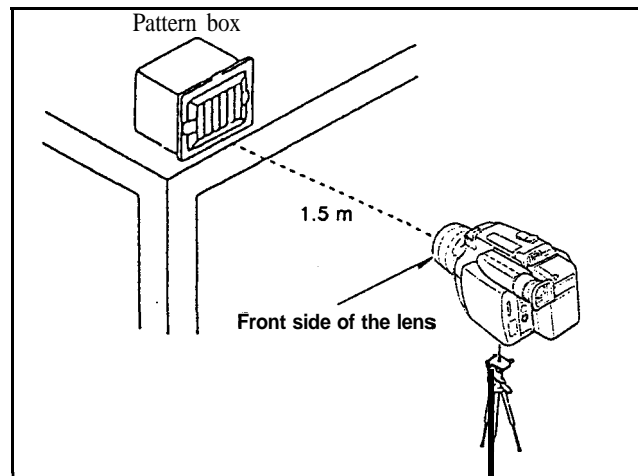


Fig. 7-1-2.

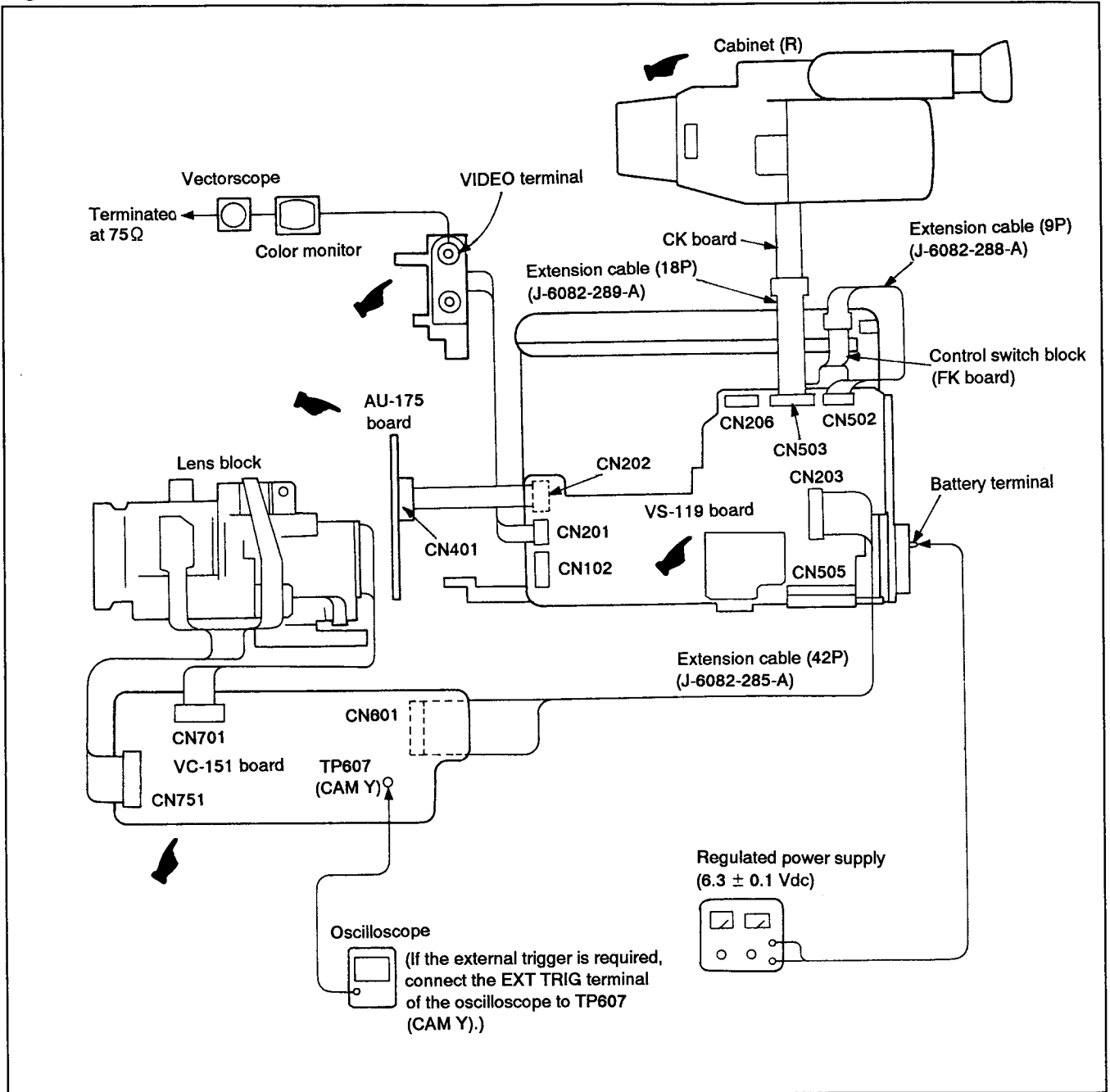


Fig. 7-1-3.

7-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 7-1 6.

(AU-175 board : Refer to the AU-157 board in the CCD-FX430/FX435/FX530/FX630 Service Manual page 7-66.)

3-1. PREPARATIONS BEFORE ADJUSTMENT

3-1-2. Adjusting Precautions

Page. 7-31

- 1) The adjustment for this unit is performed using the VIDEO input (VIDEO terminal input) or the camera input. The camera input can be used for video adjustments only. Use the VIDEO input for the other adjustments.

When using the VIDEO input, set the power supply switch to "VTR" or set the "forcible VTR power supply ON mode" using the adjusting remote commander. (Note 1).

When using the camera input, set the power supply switch to "CAMERA" or set the "Forcible camera+VTR power supply ON mode" using the adjusting remote commander (Note 2).

After completing adjustments, be sure to exit the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode" (Note 3).

- 2) The MA-209 board is not used for video adjustments. Disconnect the following connecton in these adjustments.
 1. CN402 of the AU-I 75 board
- 3) The cabinet (R) (Power supply switch, camera function switch, speaker amp.), LCD unit and the view finder need not be connected if the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode" is set. In this case, disconnect the following connectors.
 1. CN503 of the VS-119 board (18P, 0.8 mm)
 2. CN101 of the ZB-2 board (4P, 0.8 mm)
 3. CN206 of the VS-119 board (14P, 0.5 mm)
 4. CN902 of the DD-71 board (11 P, 0.8 mm)

However, as disconnecting CN503 of the VS-119 board and CN101 of the ZB-2 board means disconnecting the 3V lithium power supply, data set by the user such as the date, time, and menu will be lost. After completing the adjustments, set these data again, and be sure to exit the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode". (Note 3)

When connecting the cabinet (R) using the extension cord, use the following type.

1. J-6080-289-A (18P, 0.8 mm)

Page. 7-32

- 4) The lens block and VC-151 board are not used for video adjustments. Disconnect the following connectors in these adjustments.

1. CN203 of the VS- 1 19 board (42P, 0.8 mm)

Connect the following when removing the VC-151 board.

1. Connect Pin ② (REG H) and Pin ⑦ (D3.6V) of CN203 of the VS- 1 19 board with a jumper wire.

When connecting the VC-151 board using the extension cord, use the following type.

1. J-6080-285-A (42P, 0.8 mm)

- 5) The audio board (AU-175 board) is required only for audio adjustments. When not using it, disconnect the following connector..

1. CN202 of the VS-119 board (24P, 0.8 mm)

- 6) When opening the VS-119 board, disconnect the following connectors.

1. CN502 of the VS-I 19 board (9P, 0.8 mm)

The VTR function keys will not work. Use the remote commander to perform operations other than EJECT.

When connecting the FK board and CN.502 of VS-119 board using the extension cord, use the following type.

1. J-6080-288-A (9P, 0.8 mm)

Note 1: Setting the "forcible VTR power supply ON mode (VIDEO input mode)"

- 1) Set data: 01 to page: 1, address: 00.

(Releasing the page D protect)

- 2) Set data: 02 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.

(Setting the forcible VTR power supply ON mode)

By performing the above, the VTR can be operated with the cabinet (R) removed. After completing adjustments, be sure to exit the "forcible power supply ON mode".

Note 2: Setting the "forcible camera+VTR power supply ON mode (camera input mode)"

- 1) Set data: 01 to page: 1, address: CO.

(Releasing the page D protect)

- 2) Set data: 03 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.

(Setting the forcible camera+VTR power supply ON mode)

By performing the above, the VTR can be operated with the cabinet (R) removed. After completing adjustments, be sure to exit the "forcible power supply ON mode".

Note 3: Exiting the "forcible power supply ON mode"

- 1) Set data: 01 to page: 1, address: 00.

(Releasing the page D protect)

- 2) Set data: 00 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.

(Setting the forcible power supply ON mode)

- 3) Set data: 00 to page: 1, address: 00.

(Setting the page D protect)

3-I-8. Service Mode

12. Page D address list

Page. 7-45

Note 1: The adjustment data initial value is the data input before performing video section adjustments (Page D) if the Page D data has been erased due to some reason.

Note 2: The data written in the adjustment data memo column are fixed.

After adjusting, check that these data have not been rewritten by mistake.

Note 3: In some case, data have been input to the page D address 91 to AF, BC to D3 and F0 to FF. This has no relation to the adjustment.

Address	Name	Function [] contains the adjustment voltage output terminal	Adjustment data	
			initial value	Memo column
00		Not used		
01		Not used		
02	TEST MODE (MECHA-CON)	Mecha-con (IC505) test mode	00	00
03	TEST MODE (MODE-CON)	Mode-con (IC503) test mode	00	00
04	SW POSITION (L)	Switching position adjustment (Low)	80	
05	SW POSITION (H)	Switching position adjustment (High)	0B	
06	BATTERY END	Battery end adjustment	66	
07	BATTERY PRE-END	Battery end adjustment	7F	
08	BATTERY LOW	Battery end adjustment	84	
09	BATTERY MIDDLE	Battery end adjustment	8A	
0A	BATTERY HIGH	Battery end adjustment	8E	
0B			00	00
0C		Not used		
0D		Not used		
0E		Not used		
0F		Not used		
10		Design data	00	00
11		Design data	00	00
12		Design data	00	00
13		Design data	00	00
14		Design data	95	95
15		Design data	77	77
16		Design data	01	01
17	VARIATION	No mark : US/Canadian model () : E model	12 (13)	12 (13)
18	FEATURE		04	04
19	FEATURE		40	40
1A	FEATURE		58	58
1B	FEATURE		2c	2c
1C	FEATURE		00	00
1D	FEATURE		00	00
1E		Not used		
1F		Not used		

Table 7-3-2. (1)

Address	Name	Function [] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
20		Not used		
21		Not used		
22		Not used		
23			00	00
24		Design data	00	00
25		Design data	00	00
26		Design data	14	14
27		Design data	14	14
28		Design data	64	64
29		Design data	64	64
2A		Design data	6E	6E
2B		Design data	6E	6E
2C		Design data	64	64
2D		Design data	64	64
2E		Design data	6E	6E
2F		Design data	6E	6E
30		Design data	DC	DC
31		Design data	DC	DC
32	EVR REC C (SP L ME)	SP Normal ME REC C adjustment [IC951 ⑩]	DC	
33	EVR REC C (SP L MP)	SP Normal MP REC C adjustment [IC951 ⑩]	DC	
34			DC	DC
35			DC	DC
36	EVR REC C (LP L ME)	LP Normal ME REC C adjustment [IC951 ⑩]	DC	
37	EVR REC C (LP L MP)	LP Normal MP REC C adjustment [IC951 ⑩]	DC	
38	EVR REC LOW 1 (ME)	1ch ME REC L adjustment [IC951 ⑪]	E4	
39	EVR REC LOW 1 (MP)	1ch MP REC L adjustment [IC951 ⑪]	EB	
3A	EVR REC LOW 2 (ME)	2ch ME REC L adjustment [IC951 ⑪]	E4	
3B	EVR REC LOW 2 (MP)	2ch MP REC L adjustment [IC951 ⑪]	EB	
3C		Not used		
3D		Not used		
3E		Not used		
3F		Not used		
40		Not used		
41		Not used		
42	EVR REC Y 1CH (L ME)	1ch Normal ME REC Y level adjustment [IC951 ⑫]	A9	
43	EVR REC Y 1CH (L MP)	1ch Normal MP REC Y level adjustment [IC951 ⑫]	A9	
44		Not used		
45		Not used		
46	EVR REC Y 2CH (L ME)	2ch Normal ME REC Y level adjustment [IC951 ⑫]	A9	
47	EVR REC Y 2CH (L MP)	2ch Normal MP REC Y level adjustment [IC951 ⑫]	A9	
48		Not used		
49		Not used		

Table 7-3-2. (2)

Address	Name	Function [] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
4A		Not used		
4B		Not used		
4C		Not used		
4D		Not used		
4E		Not used		
4F		Not used		
50			A2	A2
51			A1	A1
52		Not used		
53		Not used		
54			00	00
55			00	00
56			90	90
57			00	00
58			00	00
59			75	75
5A			E6	E6
5B			E6	E6
5C			E6	E6
5D			E6	E6
5E	EVR MT 1CH (L)	1ch Normal frequency characteristic adjustment [IC951 ⑩]	E6	
5F			E2	E2
60			E2	E2
61			E2	E2
62			E2	E2
63	EVR MT 2CH (L)	2ch Normal frequency characteristic adjustment [IC951 ⑪]	E2	
64		Not used		
65		Not used		
66		Not used		
67		Not used		
68		Not used		
69			E6	E6
6A			E6	E6
6B			E6	E6
6C			E6	E6
6D			E6	E6
6E		Not used		
6F		Not used		
70	EVR SYNC AGC	SYNC AGC adjustment [IC951 ⑫]	A4	
71	EVR COMB ADJ	Chroma comb filter adjustment [IC951 ⑬]	95	
72			B0	B0
73			B0	B0

Table 7-3-2. (3)

Address	Name	Function [] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
74		Not used		
75	EVR CARRIER (L)	Normal Y-FM carrier frequency adjustment [IC951 ④]	BB	
76		Not used		
77	EVR DEVIATION (L)	Normal Y-FM deviation adjustment [IC951 ④]	97	
78			00	00
79			00	00
7A			86	86
7B			86	86
7C			00	00
7D			1.00	00
7E			00	00
7F			00	00
80	EVR C EMPH (EE)	EE chroma emphasis adjustment [IC951 ④]	99	
81	EVR C EMPH (PB)	PB chroma emphasis adjustment [IC951 ④]	99	
82	EVR EMPH (EE)	EE EMPH input level adjustment [IC951 ④]	A5	
83	EVR EMPH (PB)	PB EMPH input level adjustment [IC951 ④]	A9	
84		Not used		
85			69	69
86			00	00
87	EVR DE-EMPH (PB L)	Normal PB DE-EMPH level adjustment [IC951 ④]	69	
88			B5	B5
89			B5	B5
8A			00	00
8B			48	48
8C			AF	AF
8D			AF	AF
8E	EVR 1.5 MHz IR	1.5 MHz IR adjustment [IC951 ④]	AF	
8F	EVR 1.5 MHz DEV	1.5 MHz deviation adjustment [IC951 ④]	AF	
90			60	60
91 to AF				
B0	BRIGHT	Bright adjustment [IC001 ①]	55	
B1			90	90
B2			95	95
B3	SUB BRI. R	White balance adjustment [IC001 ④]	A2	
B4	SUB BRI. B	White balance adjustment [IC001 ⑤]	70	
B5	CONTRAST	Contrast adjustment [IC001 ⑥]	99	
B6	VCO	VCO adjustment [IC001 ⑦]	CD	
B7	V COM	V COM adjustment [IC001 ⑧]	7B	
B8			6B	6B
B9			78	78
BA	H. POSITION	Horizontal display position adjustment [IC001 ⑩]	B7	
BB			92	92

Table 7-3-2. (4)

Address	Name	Function [] contains the adjustment voltage output terminal	Adjustment data	
			initial value	Memo column
BC to D3				
D4	CCD FLAW PATTERN	CCDimager correction data (for backup)		
D5	CCD FLAW DATA			
D6	CCD FLAW DATA			
D7	CCD FLAW DATA			
D8	CCD FLAW DATA			
D9	CCD FLAW DATA			
DA	CCD FLAW DATA			
DB	CCD FLAW DATA			
DC	CCD FLAW DATA			
DD	CCD FLAW DATA			
DE	CCD FLAW DATA			
DF	CCD FLAW DATA			
E0	CCD FLAW DATA			
E1	CCD FLAW DATA			
E2	CCD FLAW DATA			
E3	CCD FLAW DATA			
E4	EMERGENCY LAST CODE	Last emergency code	00	
Es	EMERGENCY LAST MODE	Last emergency mode	00	
E6		N.C.	00	
E7		N.C.	00	
E8	EMERGENCY 2ND CODE	2nd emergency code	00	
E9	EMERGENCY 2ND MODE	2nd emergency mode	00	
EA		N.C.	00	
EB		N.C.	00	
EC	EMERGENCY 1 ST CODE	1st emergency code	00	
ED	EMERGENCY 1 ST MODE	1st emergency mode	00	
EE		N.C.	00	
EF		N.C.	00	

Table 7-3-2. (5)

3-5. VIDEO ADJUSTMENTS

5. Comb Filter Adjustment (VS-1 19 board)

Page. 7-54

Mode	Record
Signal	Color bar (Video input)
Measurement Point	Pin ⑩ of IC201 (Y COMB OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 (PHASE)
Adjustment Page	D
Adjustment Address	71 (COMB ADJ)
Specified Value	Residual chroma component (A) is minimum.

Adjusting method:

- 1) Set to the VIDEO input mode.
- 2) Set to the record mode.
- 3) Release the protect.
Page: 1, address: 00, data: 01
- 4) Set data: 00 to page: 2, address: 00.
(Specification of category 00)
- 5) Set data: 04 to page: 2, address: BO.
- 6) After memorizing the data of address: 9A of page: 2, set data: 10 to the address. (TEST A mode setting)
- 7) Change the data of page: D, address: 71, and adjust the residual chroma component (A) to minimum.
- 8) Adjust RV202 so that the residual chroma component becomes minimum.
- 9) Repeat 7) and 8).
- 10) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

- 1) Set the data memorized at step 6) to address: 9A of page: 2.
- 2) Set data: 00 to page: 2, address: BO.
(Release of TEST A, B mode)

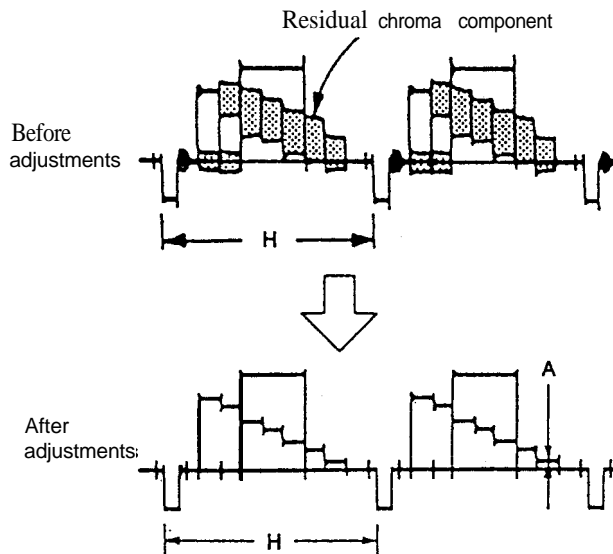


Fig. 7-3-11.

ADD

3-8: LCD SYSTEM ADJUSTMENTS

This adjustments does not have in the CCD-FX430 series, but it is newly added in the CCD-FX730V.

Note 1: The backlight (fluorescent tube) is driven by a 700 Vp-p, 70 kHz AC power supply.

Therefore, be careful not to touch the backlight holder as you will receive an electric shock.

Note 2: When replacing the LCD unit, ensure there will be no damages by static electricity.

[Adjusting connector]

Most measuring points for adjusting the LCD system are concentrated at CN002 of the PD-53 board. Connect the measuring equipments via the measuring pin tool. The following table lists the pin numbers and signal names of CNO02.

Pin No.	Signal Name	Pin No.	Signal Name
1	VB	2	-OV
3	VG	4	+13V
5	VR	6	SPD
7	SYNC	6	HSY
9	GND	10	GND

Table 7-3-31.

Measuring pin tool for LCD
LCD CPC conversion board

Parts Code: J-6082-192-A
Parts Code: J-6082-290-A

[Positions of RVs during adjustments]

Unless specified otherwise, set RV to the following positions and adjust.
RV001(BRIGHT)..... Center click

[Menu Setting]

Set COLOR and HUE as follows on the menu screen.

COLOR..... Center
HUE..... Center

[Power supply voltage]

Adjust the power supply voltage for the battery terminal so that Pin ⑩ of the CN001 of the PD-53 board (LCD UNREG) become 6.5 ± 0.1 Vdc.

[Video Input Signal for Adjusting]

If the signal column specifies "Color bar signal whose chroma signal and burst signal are turned off", input a color bar signal whose chroma signal and burst signal have been turned off to the video terminal as the video input signal for adjusting. Check that the signal level of Pin ⑨ of CN001 of the PD-53 board is approx. 1.0 Vp-p before adjusting.

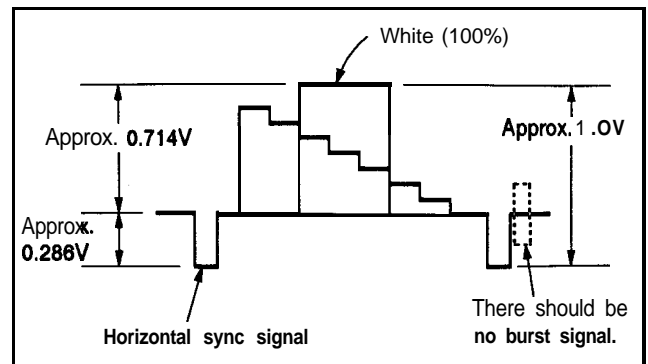


Fig. 7-3-32. Color bar signal whose chroma signal and burst signals are turned off

1. Power Supply Voltage Check (PD-53 Board)

Mode	Record
Measuring Instrument	Digital voltmeter
LCD 5V check	
Measurement Point	Pin ⑦ of CN001
Specified Value	4.85 ± 0.05 Vdc
DAC 5V check	
Measurement Point	Pin ⑤ of CN001
Specified Value	4.85 ± 0.05 Vdc

2. PNL -8V Adjustment (PD-53 board)

Mode	Record
Signal	Color bar signal whose chroma signal and burst signal are turned off
Measurement Point	Pin ② of CN002
Measuring Instrument	Digital voltmeter
Adjustment Element	RVO02
Specified Value	-8.0 ± 0.05 Vdc

Adjusting method:

- 1) Adjust the voltage to specified value with RVO02.

3. EVR Initial Data Input

Mode	STOP
Signal	Arbitrary
Adjustment Page	D

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Select page D, and input the data in the following table.
Note: To write in the nonvolatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time the data is set.

Address	Data
BO (BRIGHT)	55
B1	90
B2	95
B3 (SUB BRI. R)	A2
B4 (SUB BRI. B)	70
B5 (CONTRAST)	99
B6 (VCO)	CD
B7 (V COM)	7B
B8	6B
B9	78
BA (H. POSITION)	B7
BB	92

4. Bright Adjustment (PD-53 board)

Adjust to the proper LCD panel driving video signal level. If it is not correct, the image will be saturated (whitish) or blackish.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ③ of CNO02 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑤ of IC005
Adjustment Page	D
Adjustment Address	BO (BRIGHT)
Specified Value	$A=4.6 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: BO, and adjust the amplitude level (A) of the VG signal to the specified value.
Amplitude: Level difference between the reverse waveform pedestal and non-reversed **waveform** pedestal.
- 3) Press the PAUSE button of the adjusting remote commander.

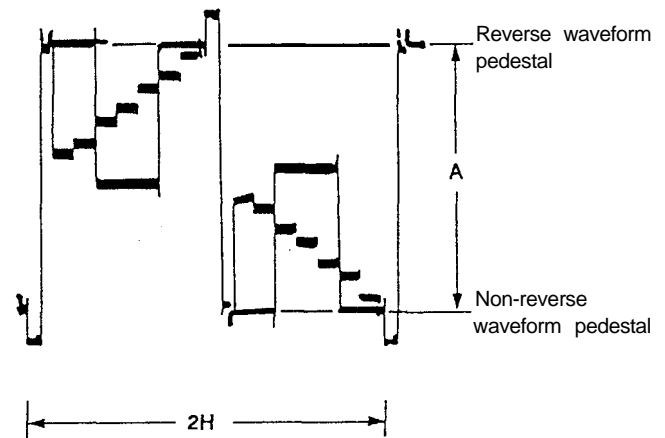


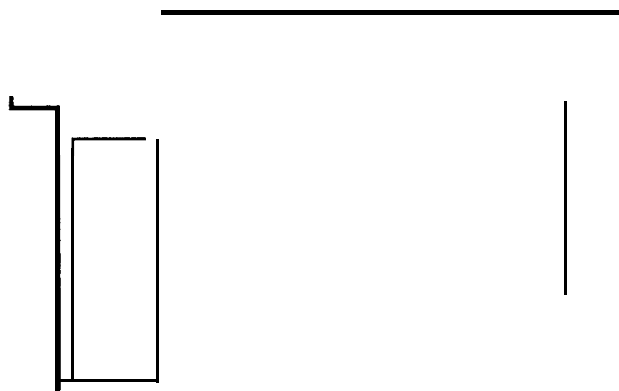
Fig. 7-3-33.

5. VCO Adjustment (PD-53 board)

Set the free running frequency of the VCO.
If it is not correct, the image will waver.

Mode	

Connection:



Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: B6 and adjust the frequency to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

6. Horizontal Display Position Adjustment (PD-53 board)

Adjust the position of the image.

If its position is not correct, it will slip to the right or left.

Mode	Record
Signal	Color bar
Measurement Point	CH1: Pin ⑦ of CNO02 (H SYNC) CH2: Pin ⑥ of CNO02 (SPD)
Measuring Instrument	Oscilloscope
Adjustment Page	ID
Adjustment Address	BA (I-I POSITION)
Specified Value	$T=3.0 \pm 0.4 \mu\text{sec}$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: BA, and adjust the delay time (T) to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

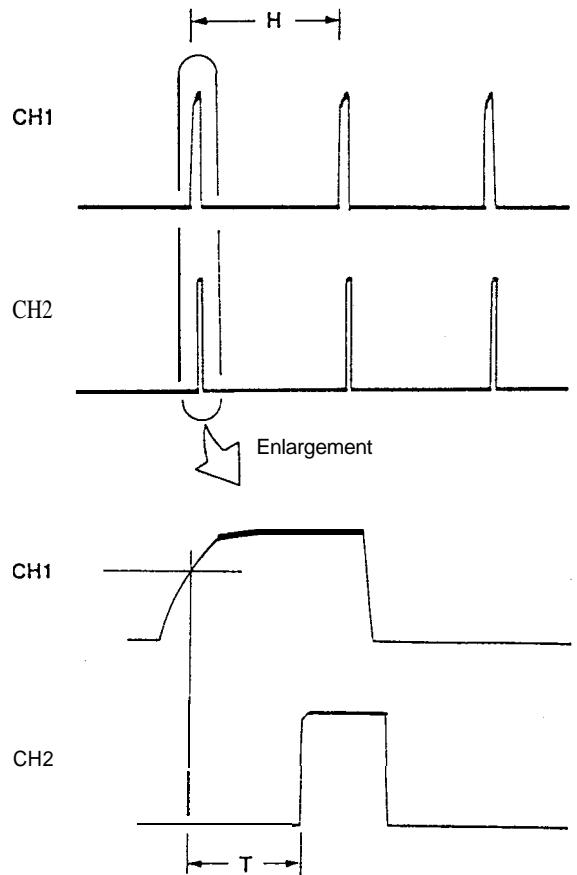


Fig. 7-3-34.

7. Contrast Adjustment (PD-53 board)

Set the contrast of the image.

If the contrast is not correct, the image will be blur (whitish) or saturated.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ③ of CNO02 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑤ of IC005
Adjustment Page	D
Adjustment Address	B5 (CONTRAST)
Specified Value	$A=3.0 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: B5, and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

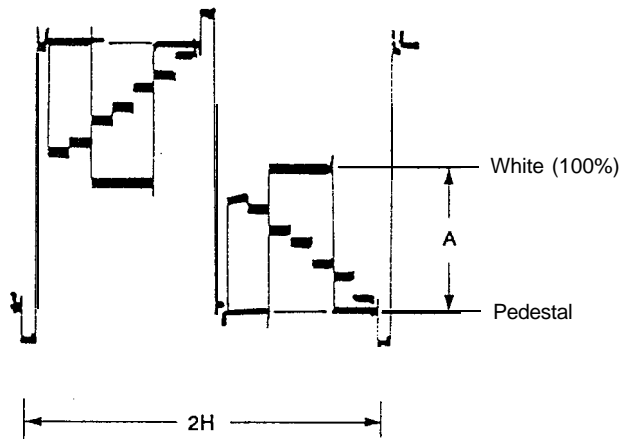


Fig. 7-3-35.

8. V COM Adjustment

Adjust to the proper DC bias of the common polarity drive signal of the LCD panel. If it is not correct, the image will be rough, flickers will be produced easily, and vertical lines will stand out.

Mode	Playback • pause
Signal	Alignment tape: For checking operations (WR5-5NSP) Color bar section
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B7 (V COM CONT)
Specified Value	Vertical Lines with Intervals of 3 dots between them at the noise bar disappears.

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: B7, and adjust so that the vertical lines with intervals of 3 dots between them at the noise bar disappears.
- 3) Press the PAUSE button of the adjusting remote commander.

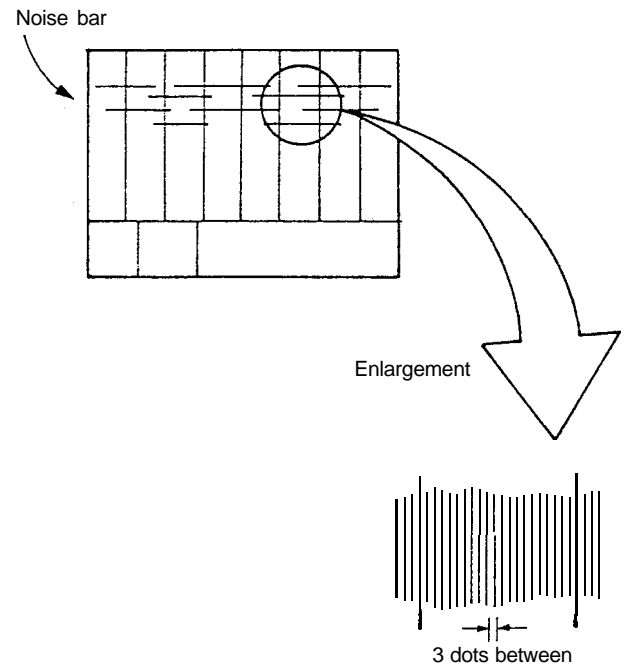


Fig. 7-3-36.

9. White Balance Preset Adjustment (1) (PD-53 board)

White balance rough adjustment (1)

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ③ of CNO02 (VG) CH2: Pin ⑤ of CNO02 (VR)
Measuring Instrument	Oscilloscope External trigger: Pin ⑤ of IC005
Adjustment Page	D
Adjustment Address	B3 (SUB BRIGHT R)
Specified Value	Amplitude level difference between VR and VG signals= $0 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: B3 and equalize the amplitude of VR and VG signal.
Amplitude: Level difference between the reverse waveform pedestal and non-reverse waveform pedestal.
- 3) Press the PAUSE button of the adjusting remote commander.

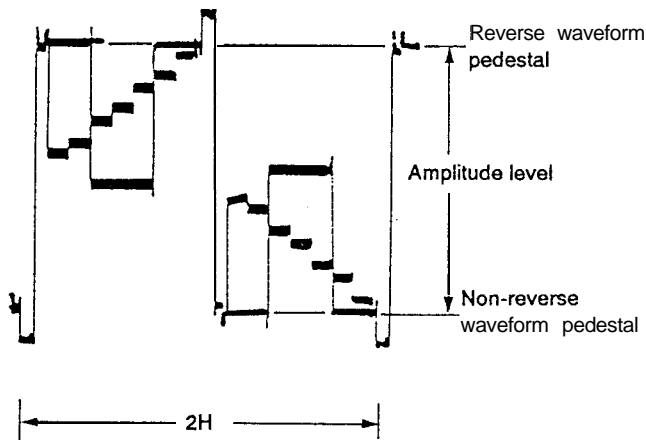


Fig. 7-3-37.

10. White Balance Preset Adjustment (2) (PD-53 board)

White balance rough adjustment (2)

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ③ of CNO02 (VG) CH2: Pin ① of CNO02 (VB)
Measuring Instrument	Oscilloscope External trigger: Pin ⑤ of IC005
Adjustment Page	D
Adjustment Address	B4 (SUB BRIGHT B)
Specified Value	Amplitude level difference between VR and VG signals= $0 \pm 0.1V$

Adjusting method:

- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: B4 and equalize the amplitude of VB and VG signal.
Amplitude: Level difference between the reverse waveform pedestal and non-reverse waveform pedestal.
- 3) Press the PAUSE button of the adjusting remote commander.

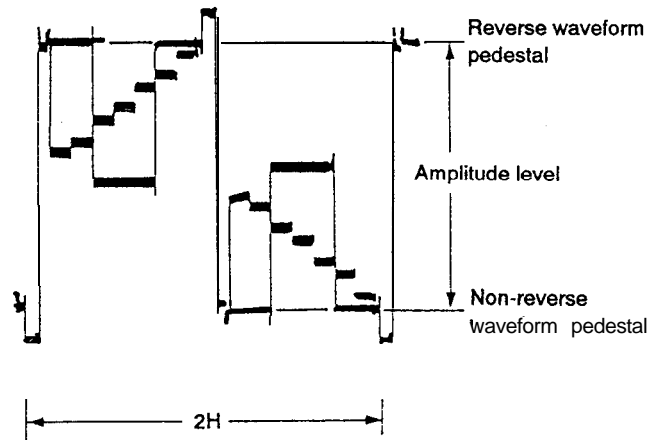


Fig. 7-3-38.

11. White Balance Adjustment

Adjust to the proper white balance level.

If it is not correct, the color reproducibility of the LCD panel will be poor.

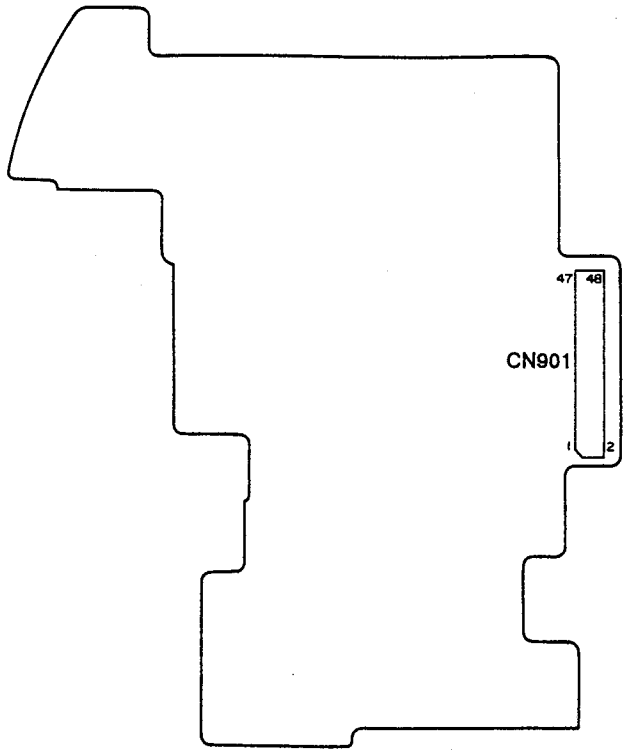
Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B3 (SUB BRIGHT R), B4 (SUB BRIGHT B)
Specified Value	The display should not be colored

Adjusting method:

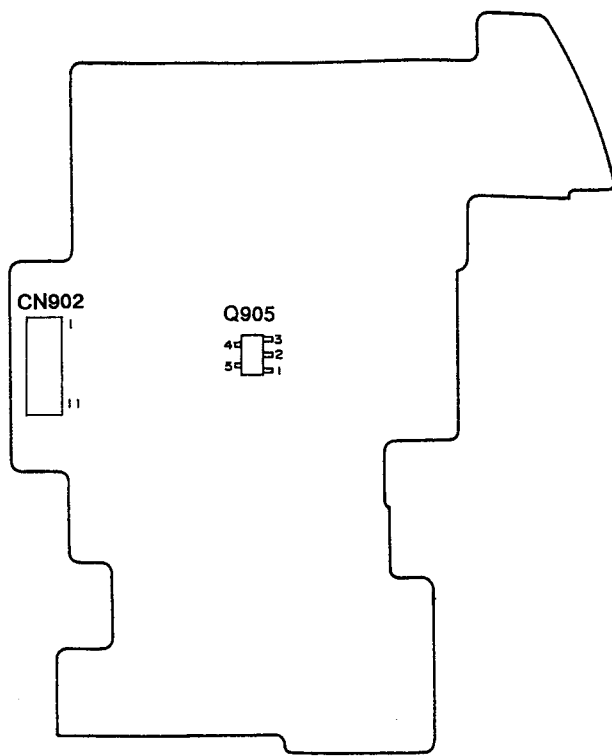
- 1) Release the protect.
Page: 1, address: 00, data: 01
- 2) Check that the LCD display is not colored. If it is, change the data of address: B3 and address: B4 of page: D, and adjustment the display is not colored.
- 3) Press the PAUSE button of the adjusting remote commander.

3-9. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

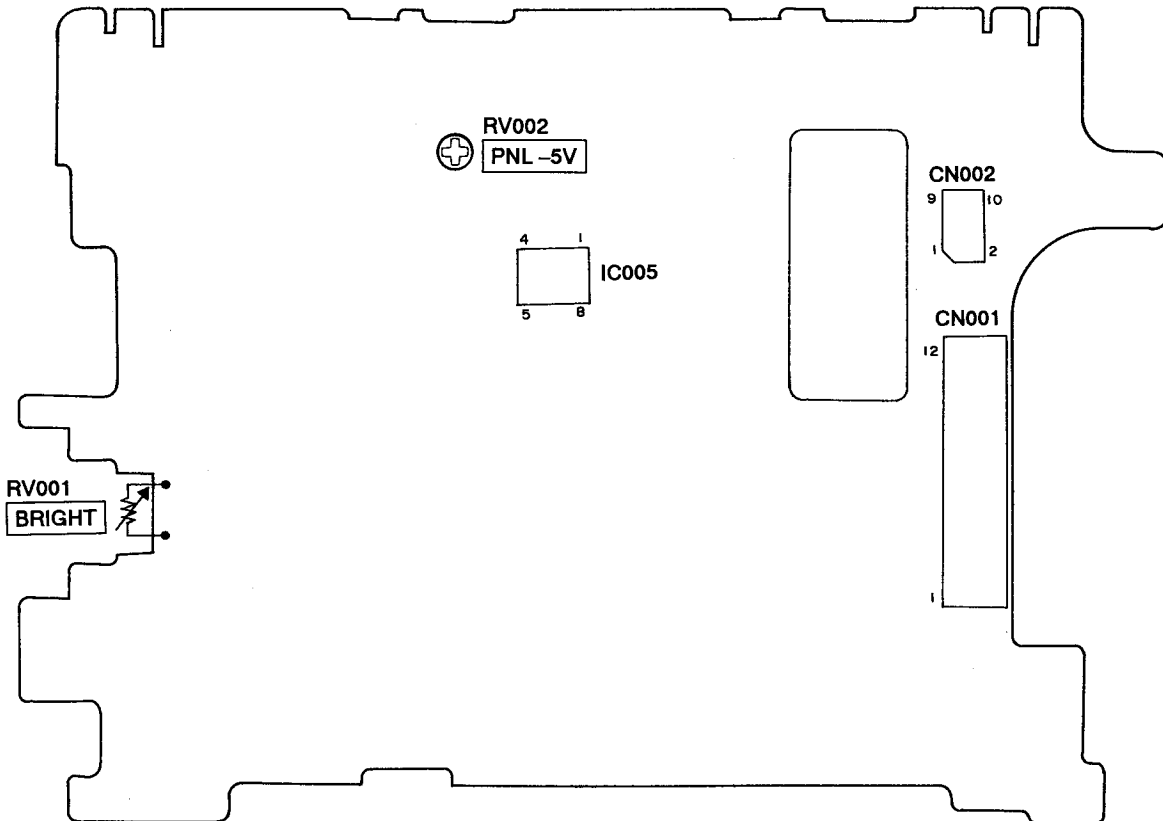
DD-71 BOARD (COMPONENT SIDE)



DD-71 BOARD (CONDUCTOR SIDE)



PD-53 BOARD (CONDUCTOR SIDE)




4-2 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this, the necessary note is printed in each block.)

For printed wiring boards.

 : Pattern from the side which enables seeing.

(The other **layers' patterns** are not indicated.)

Circled numbers refer to waveforms.

(B) or (F), etc. of capacitors indicate the temperature characteristics.

○ : Through hole .

* Caution:

Pattern face side: Parts on the pattern face side seen from (Conductor Side) **the pattern face are indicated.**

Parts face side: Parts on the parts face side seen from the (Component side) **parts face are indicated.**

For schematic diagrams.

Caution when replacing chip parts.

New parts must be attached after removal of chip.

Be careful not to heat the minuts side of tantalum capacitor, because it is damaged by the heat.

All resistors are in ohms, **1/4W unless otherwise** noted.


Chip resistor are **1/16W** unless otherwise noted.


kΩ : 1000Ω , MΩ : 1000kΩ .

All capacitors are in **μF** unless otherwise noted. **pF: μμF.**


50V or less are not indicated except for **electrolytics** and tantalums.

All variable and adjustable resistors have characteristic curve **B**, unless otherwise noted.


 : nonflammable resistor.


 : fusible resistor.

 : panel designation.

 : internal component.

 : adjustment for **repair.***



 : B+ Line.*

 : B-Line.*


 : **IN/OUT** direction of (+, -) B LINE.*

Circled numbers refer to waveforms.*

Note:

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

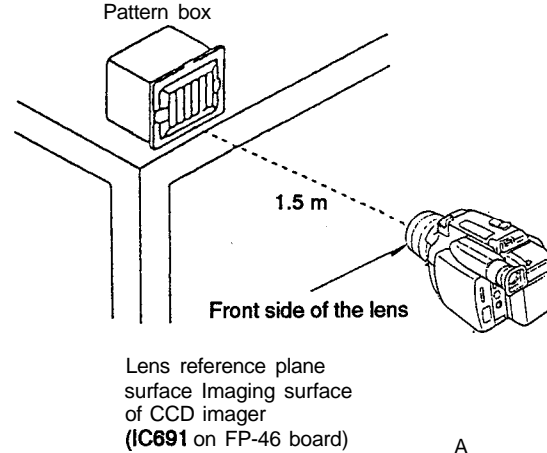
When indicating parts by **reference** number, please include the board name.

; indicated by the color red.

• Measuring conditions voltage value and waveform. (CAMERA block)

- The object is color bar chart of pattern **box**.
- Voltages are dc between ground and measurement points.* Readings are taken with a digital multimeter (DC **10MΩ**).*
- Voltage variations may be noted due to normal production tolerances.*

1. Connection



- Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

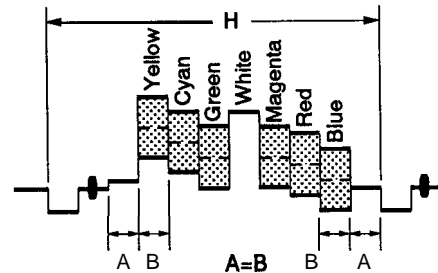


Fig. a (Video output terminal output waveform)

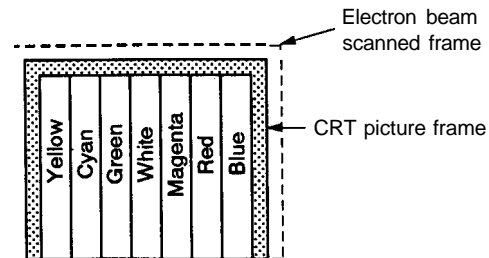


Fig. b (Picture on monitor TV)

(VIDEO, SERVO/SYSTEM CONTROL, AUDIO, LCD CONTROL block)

- Voltages are dc between ground and measurement points.*
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (**DC10MΩ**).*
- Voltage variations may **be** noted due to normal production tolerances.*

SECTION 5 REPAIR PARTS LIST

5-1. EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.

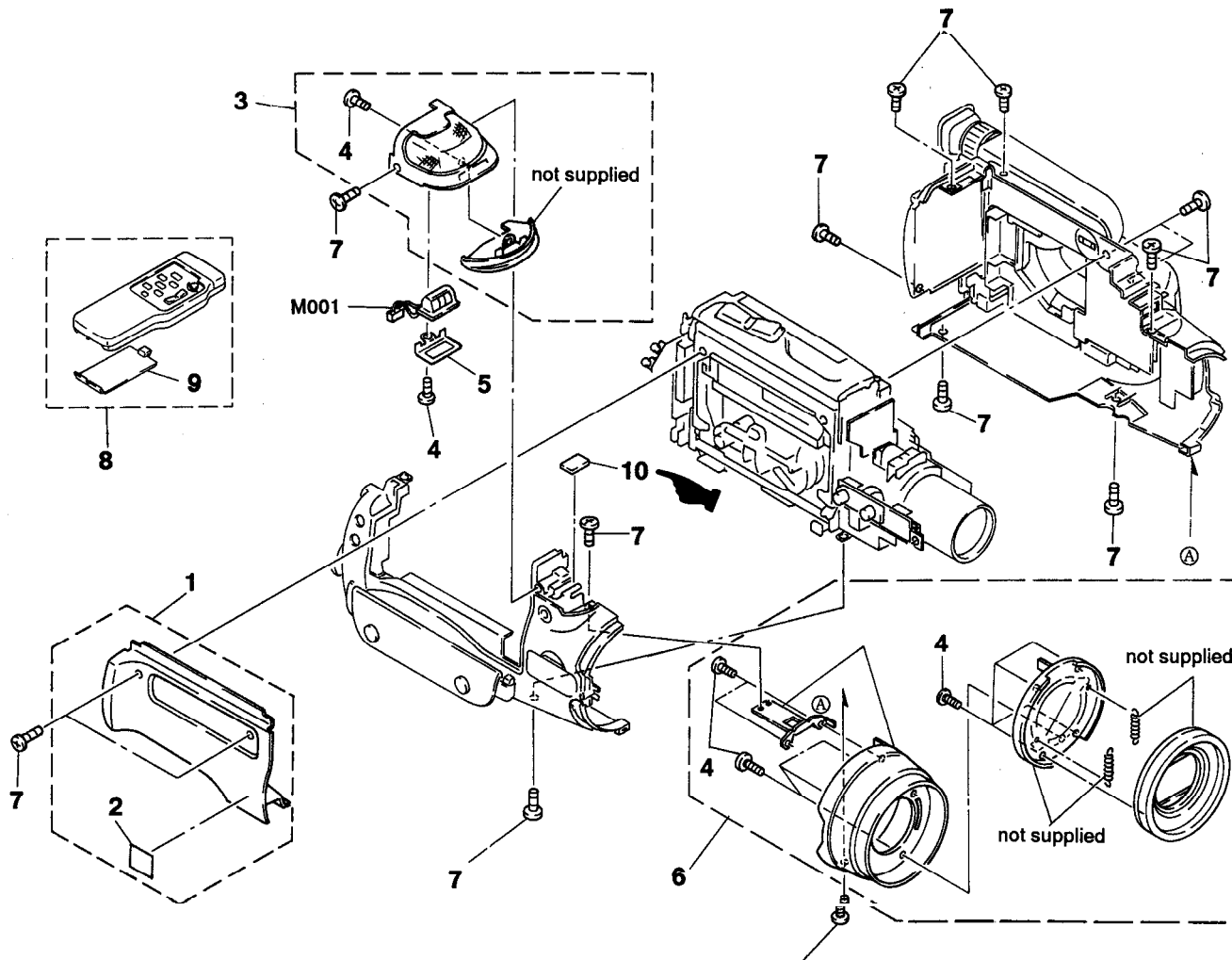
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Hardware (# mark) list is given in the last of this parts list.
- Canadian model is abbreviated as CND.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Page. 5-1

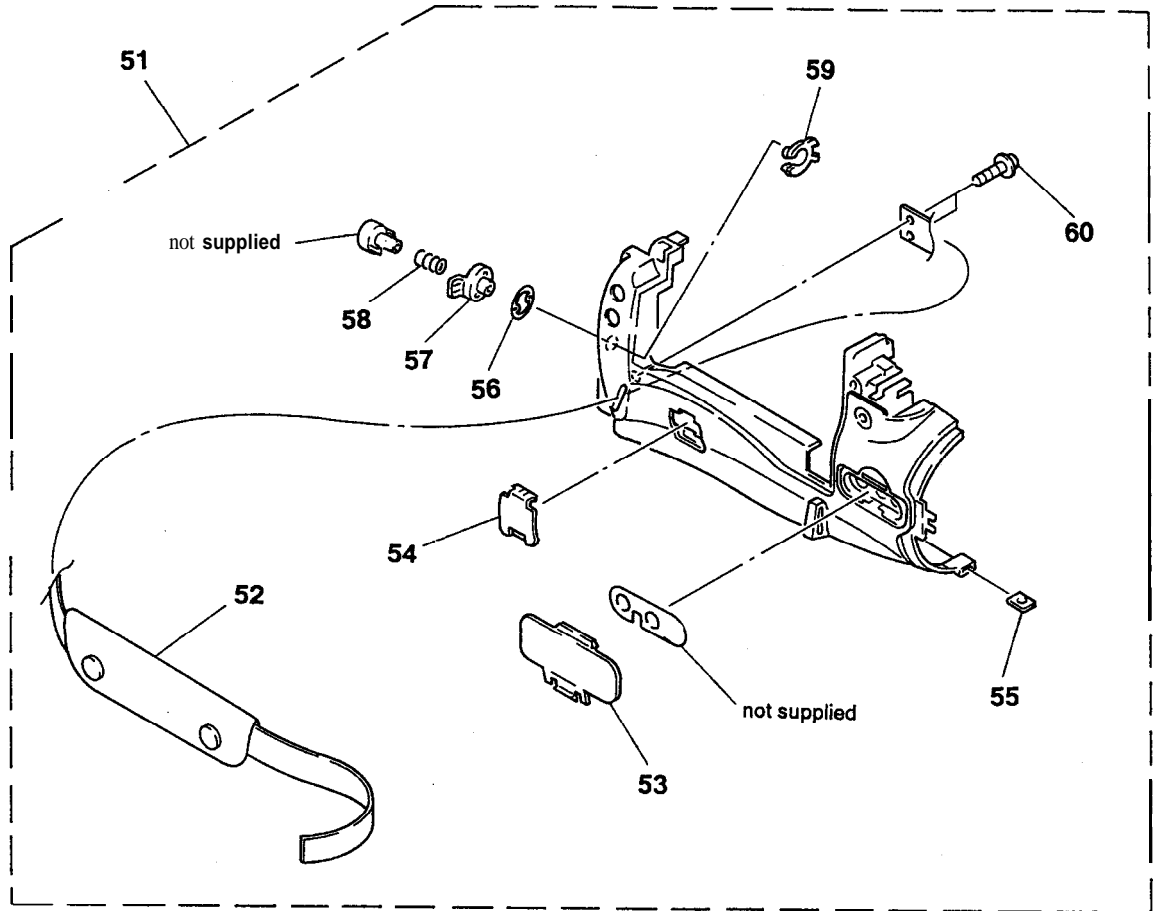
5-1-1. FRONT CASE BLOCK ASSEMBLY



Ref. No.	Part No.	Description
1	X-3944-277-1	LID ASSY, CASSETTE
2	3-703-710-41	STICKER, SONY SYMBOL (12)
3	X-3943-847-1	HOLDER (M) ASSY, MICROPHONE
4	3-948-339-01	SCREW (BTP) (2X5), HEAD
* 5	3-958-672-01	PLATE, FIXED (W), MICROPHONE
6	A-7082-608-A	CASE (L) BLOCK ASSY, FRONT

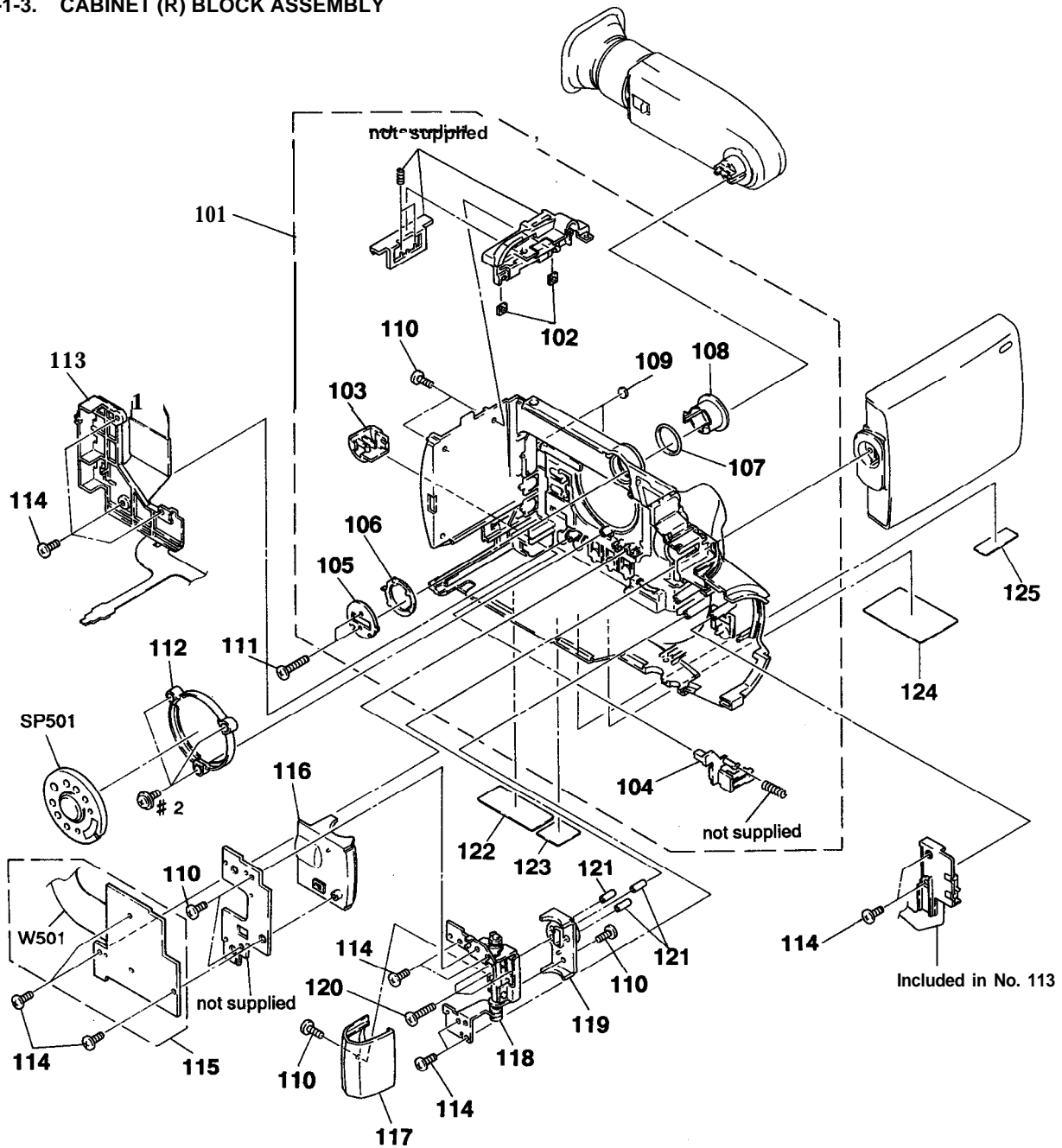
Remark	Ref. No.	Part No.	Description	Remark
	7	3-719-381-01	SCREW (M2X4)	
	8	1-467-574-21	REMOTE COMMANDER (RMT-708)	
	9	3-958-131-01	LID, BATTERY CASE (for RMT-708)	
	10	3-961-121-01	CUSHION, MICROPHONE	
	M001	1-542-162-11	MICROPHONE UNIT	

Page. 5-2
 5-1-2. CABINET (L) BLOCK ASSEMBLY

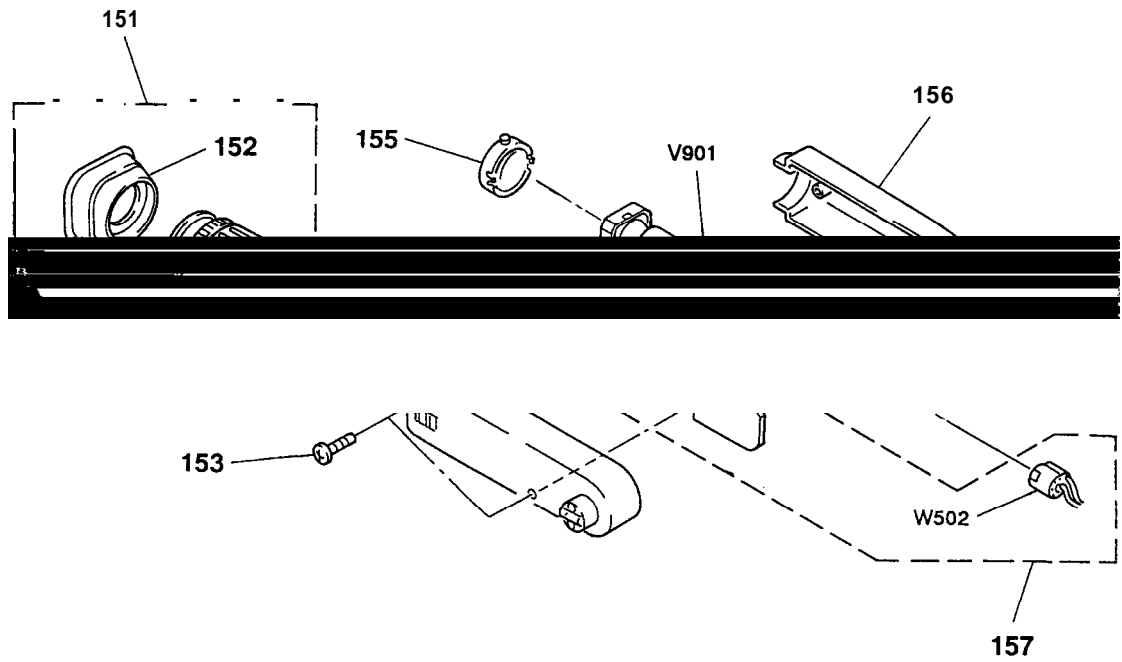


<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
51	A-7082-581-A	CABINET (L) BLOCK ASSY
52	3-736-807-01	BELT, GRIP
53	3-958-335-01	COVER, JACK
54	3-958-334-01	LID, BATTERY CASE, LITHIUM
55	3-718-233-01	NUT, PLATE

<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
	56			
	57	3-736-364-01 3-942-985-01	KNOB STAND-BY	
	58	3-578-221-00	SPRING, COMPRESSION	
	59	3-942-953-01	HOLDER, STAND-BY KNOB	
	60	3-669-480-X + PTPWH 2		



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-3944-272-1	CABINET (R) ASSY		# 116	3-959-999-01	BLIND. HINGE	
102	3-718-233-01	NUT, PLATE		117	3-959-998-01	COVER; HINGE	
103	3-959-975-01	KNOB, BATT		118	x-3944-273-1	HINGE ASSY	
104	3-959-976-01	LOCK, BATT		* 119	3-959-997-01	BASE, TILT	
* 105	3-958-297-01	PLATE, LOCK, TILT		120	3-740-546-81	SCREW (M2X11)	
* 106	3-958-296-01	SPRING, PLATE, TILT		* 121	3-657-841-41	SPACER (2X8)	
107	3-747-112-01	RING, TILT		* 122	3-959-967-01	LABEL, MODEL NUMBER (U) (US, CND)	
108	3-747-109-01	SLEEVE, EVF		* 122	3-960-889-01	LABEL, MODEL NUMBER (E)	
109	3-959-978-01	CUSHION, PANEL		123	3-704-256-01	LABEL, CAUTION (US)	
110	3-719-381-01	SCREW (M2X4)		124	3-957-897-01	LABEL, FAROUDJA RECYCLE FCC (US)	
111	3-740-546-51	SCREW (M2X9)		125	3-954-355-01	LABEL (C), NI-CD RECYCLE (CND)	
112	3-959-995-01	CUSHION, SPEAKER		SP501	1-504-666-11	SPEAKER (4CM)	
113	1-467-835-21	SWITCH BLOCK, CONTROL (CK)		W501	1-653-930-11	FP-148 FLEXIBLE BOARD	
114	3-948-339-01	SCREW (BTP) (2X5), HEAD					
* 115	A-7072-055-A	SD-14 BOARD, COMPLETE					

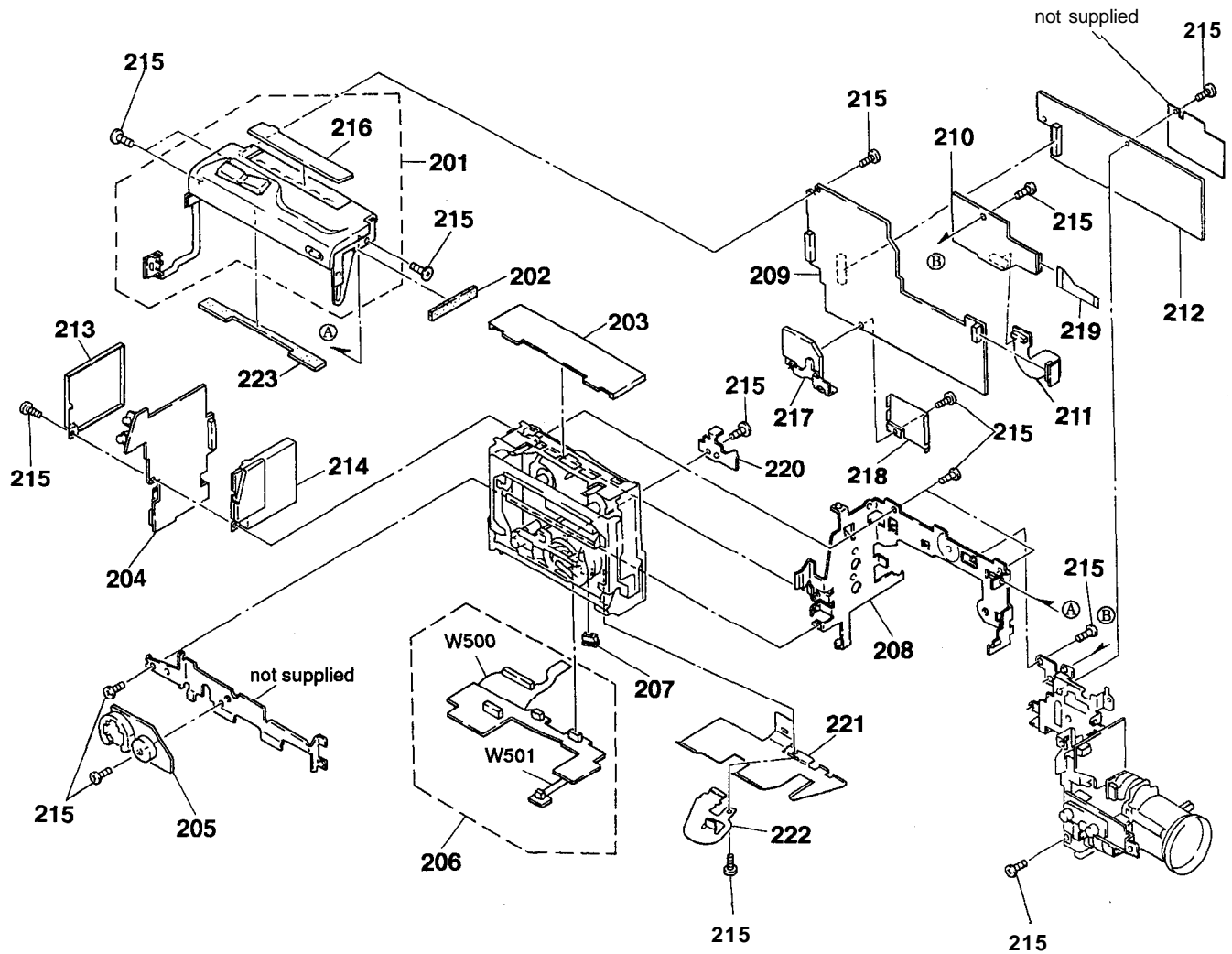


The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

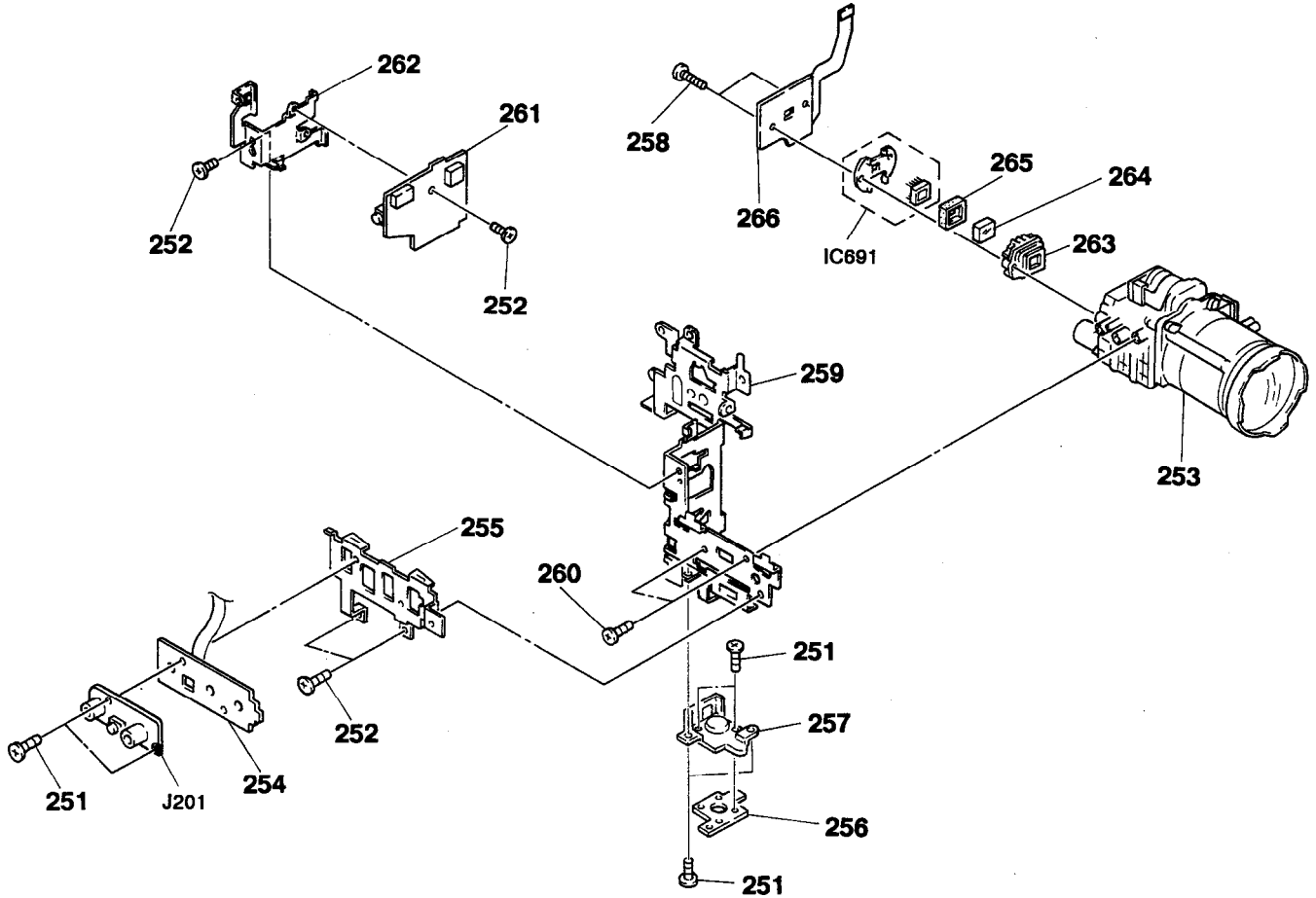
Ref. No.	Part No.	Description
151	A-7081-897-C	HOLDER BLOCK ASSY, FINDER
152	3-946-212-01	EYE CUP
153	3-713-790-31	SCREW (M2X8), TAPPING, P3
154	X-3943-848-1	CABINET (L) ASSY, EVF
155	A-7081-905-E	LENS ASSY, VF

Remark	Ref. No.	Part No.	Description	Remark
	156	X-3943-844-1	CABINET (R) ASSY, EVF	
	* 157	A-7063-947-A	VF-44 BOARD, COMPLETE	
	\triangle V901	1-452-566-11	CRT ASSY (M01KKX07WB10)	
	\triangle W502	1-526-978-51	SOCKET ASSY, CRT	



Ref. No.	Part No.	Description
	201	1-467-649-31 SWITCH BLOCK, CONTROL (FK)
	202	3-959-113-01 CUSHION, FK FRAME
	203	3-958-341-01 COVER, LS
*	204	A-7066-154-A DD-71 BOARD, COMPLETE
*	205	A-7072-002-A ZB-2 BOARD, COMPLETE
* 206	A-7072-000-A	SL-38 BOARD, COMPLETE
	207	1-691-471-11 CONNECTOR, TRANSLATION 11P
	208	3-958-345-01 FRAME (U)
*	209	A-7066-156-A VS-119 BOARD, COMPLETE (US, CND)
*	209	A-7066-210-A VS-119 BOARD, COMPLETE (E)
*	210	A-70667153-A AU-175 BOARD, COMPLETE
	211	1-651-935-11 FP-95 FLEXIBLE BOARD
*	212	A-7066-155-A VC-151 BOARD, COMPLETE
*	213	3-958-925-01 CASE (MAIN), SHIELD, DD

Remark	Ref. No.	Part No.	Description	Remark
	* 214	X-3944-169-1	SHIELD (LID) ASSY, DD	
	215	3-713-786-21	SCREW (M2X3)	
	216	3-958-720-01	LID	
	* 217	X-3943-976-1	SHIELD (MAIN) ASSY, RP	
	* 218	3-958-924-01	CASE (LID), SHIELD, RP	
	219	1-651-936-11	FP-96 FLEXIBLE BOARD	
	* 220	3-958-667-01	FRAME (B)	
	* 221	3-958-928-01	PLATE, SHIELD, RP	
	222	1-651-891-11	FP-52 FLEXIBLE BOARD	
	223	3-958-719-01	CUSHION, FK	
	W500	1-651-889-11	FP-48 FLEXIBLE BOARD	
	W501	1-642-186-11	FP-437 FLEXIBLE BOARD	

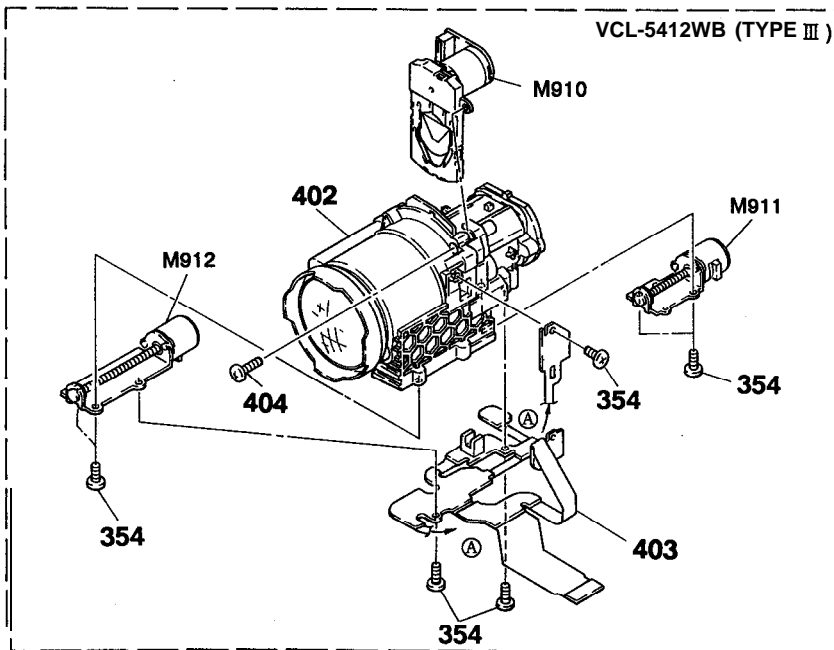
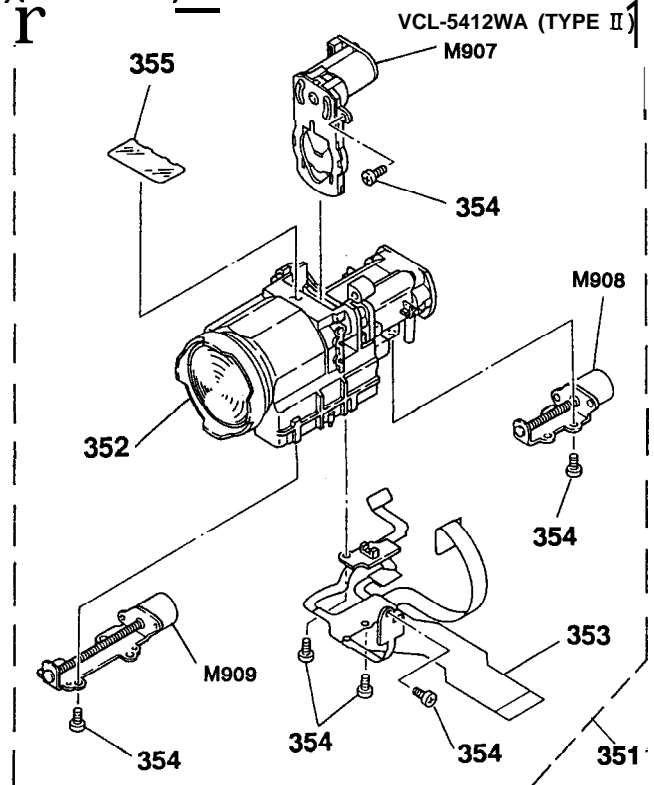
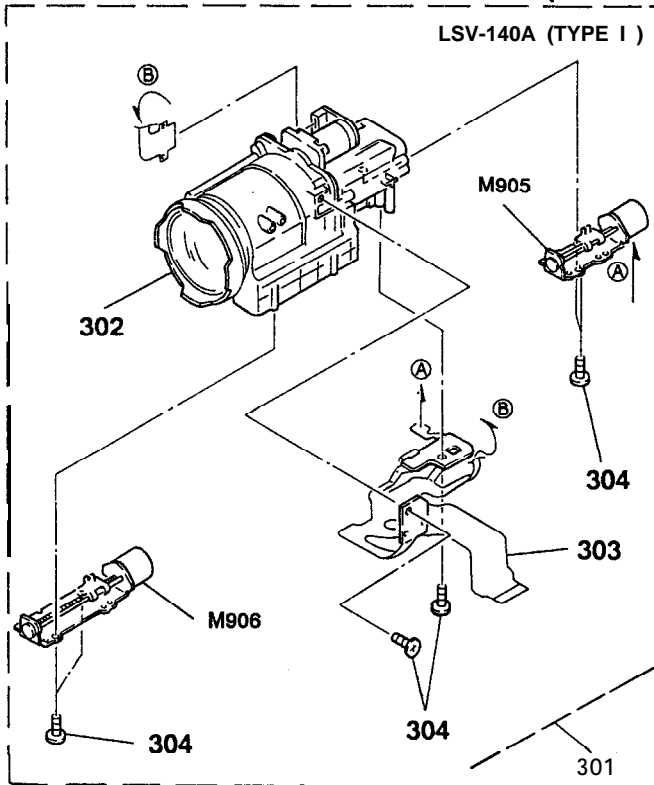


Be sure to read "Note on the CCD Imager replacement" on page 4-6(CCD-FX403/FX435/FX530/FX630)when changing the CCD imager.

Ref. No.	Part No.	Description
251	3-719-381-01	SCREW (M2X4)
252	3-713-786-21	SCREW (M2X3)
253	1-547-716-11	LENS, ZOOM (VCL-5412WA) (TYPE II)
253	i-547-739-11	LENS, ZOOM (VCL-5412WB) (TYPE II I)
253	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)
254	1-651-904-11	FP-97 FLEXIBLE BOARD
* 255	3-958-333-01	FRAME (PJ)
256	3-958-286-01	SHEET METAL, TRIPOD
257	3-958-310-01	HOLDER, TRIPOD
258	3-947-268-01	SCREW (P TIGHT)(Z), TAPPING, +B

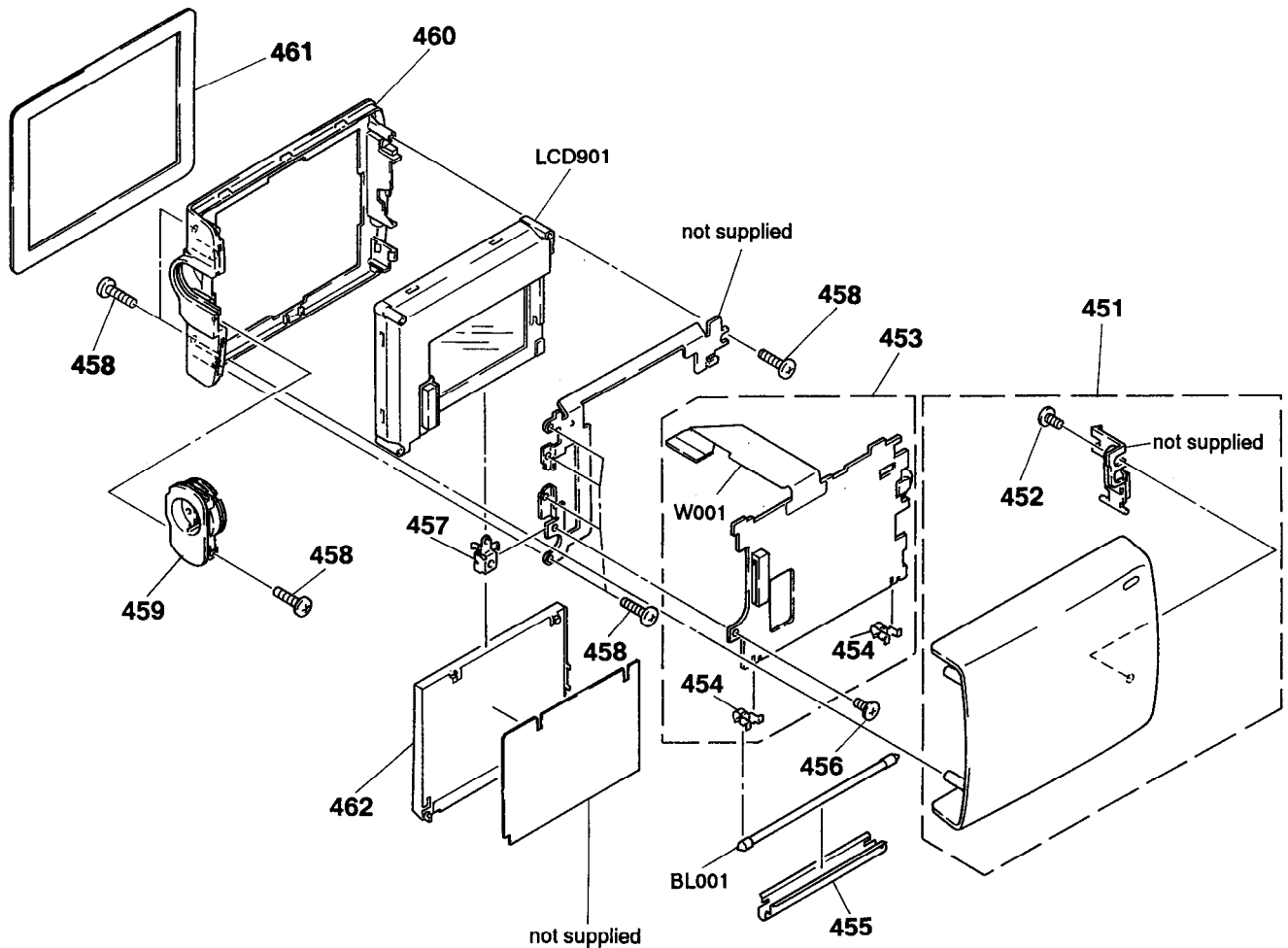
Remark	Ref. No.	Part. No.	Description	Remark
	* 259	X-3944-147-1	FRAME (L) ASSY	
	260	3-948-339-01	SCREW (BTP) (2X5), HEAD	
	* 261	A-7066-152-A	MA-209 BOARD, COMPLETE4	
	* 262	3-958-328-01	FRAME (MA)	
	263	3-946-856-01	ADAPTOR (H), CCD FITTING	
	264	1-547-558-21	FILTER BLOCK, OPTICAL	
	265	3-946-857-01	RUBBER (S), SEAL	
	* 266	A-7072-003-A	FP-46 (CD) BOARD, COMPLETE	
	IC691	A-7030-368-A	CCD BLOCK ASSY (054 SERVICE) (CCD IMAGER)	
	5201	1-537-726-11	TERMINAL BOARD	

5-1-7. ZOOM LENS ASSEMBLIES (LSV-140A)(VCL-5412WA)(VCL-5412WB)



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
301	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)		M907	3-708-888-01	METER, IG (IRIS)	
302	A-4910-598-A	DEVICE ASSY, LSV-140A (RP)		M908	3-708-889-01	MOTOR ASSY, FOCUS	
303	A-4915-338-A	FLEXIBLE MOUNT		M909	3-708-887-01	MOTOR ASSY, ZOOM	
304	3-713-791-41	SCREW (M1.7X5), TAPPING, P2		401	1-547-739-11	LENS, ZOOM (VCL-5412WB) (TYPE III)	
M905	1-698-364-01	MOTOR ASSY, FOCUS		402	3-708-900-01	TUBE, MIRROR ASSY	
M906	1-698-363-01	MOTOR ASSY, ZOOM		403	3-708-899-01	PC BOARD ASSY, FLEXIBLE	
351	1-547-716-11	LENS, ZOOM (VCL-5412WA)(TYPE II)		404	3-708-617-01	SCREW (BT3 PL. 7X7C)	
352	3-708-891-01	TUBE, MIRROR ASSY		M910	3-708-898-01	IRIS ASSY	
353	3-708-890-01	FLEXIBLE, MAIN		M911	3-708-897-01	MOTOR ASSY, FOCUS	
354	3-708-302-01	SCREW (BT3 PL. 7X4C)		M912	3-708-896-01	MOTOR ASSY, ZOOM	
355	3-708-886-01	COVER, IG					

Add
5-1-12. PANEL BLOCK ASSEMBLY



The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

This cut does not have in the CCD-FX430 series, but it is newly added in the CCD-FX730V.

Ref. No.	Part No.	Description
	451	x-3944-276-1 CABINET (REAR) ASSY, P
	452	3-948-339-01 SCREW (BTP) (2X5), HEAD
*	453	A-7066-157-A PD-53 BOARD, COMPLETE
*	454	3-960-000-01 TERMINAL, FL
*	455	3-958-726-02 REFLECTOR
	456	3-713-786-21 SCREW (M2X3)
*	457	3-959-966-01 SPRING, P GROUND PLATE
	458	3-713-790-31 SCREW (M2X8), TAPPING, p3

Remark	Ref. No.	Part No.	Description	Remark
	*	459	X-3944-274-1 TILT ASSY	
		460	X-3944-275-1 CABINET (FRONT) ASSY, P	
		461	3-959-968-01 PLATE, ORNAMENTAL	
		462	1-467-479-21 PLATE, LIGHT GUIDE BLOCK	
	\triangle	BL001	1-517-300-11 TUBE, FLUORESCENT (BACK LIGHT)	
		LCD901	1-810-328-21 DISPLAY MODULE, LIQUID CRYSTAL	
		W001	1-653-931-11 FP-150 FLEXIBLE BOARD	

5-2. ELECTRICAL PARTS LIST

NOTE:

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Hardware (# mark) list is given in the last of this parts list.

- * RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-7066-154-A	DD-71 BOARD, COMPLETE ***** (Ref. No. 9,000 Series)		c941	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50v
		< CAPACITOR >		c942	1-163-009-11	CERAMIC CHIP	0.001uF 10% 50v
C901	1-164-492-11	CERAMIC CHIP	0.15uF 10% 16V	c943	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50v
C902	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	c944	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V
C903	1-163-121-00	CERAMIC CHIP	150PF 5% 50v				
C904	1-163-121-00	CERAMIC CHIP	150PF 5% 50v	c945	1-128-530-11	ELECT CHIP	33uF 20% 10V
C906	1-164-245-11	CERAMIC CHIP	0.015uF 10% 25V	C950	1-128-004-11	ELECT CHIP	10uF 20% 16V
		< CONNECTOR >					
C907	1-162-963-11	CERAMIC CHIP	680PF 10% 50v	CN901	1-695-324-11	CONNECTOR, BOARD TO BOARD	42P
C908	1-162-963-11	CERAMIC CHIP	680PF 10% 50v	CN902	1-691-490-21	CONNECTOR, FFC/FPC	11P
C909	1-162-963-11	CERAMIC CHIP	680PF 10% 50V				
C910	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50v				
C911	1-162-963-11	CERAMIC CHIP	680PF 10% 50v				
		< DIODE >		D900	8-719-045-87	DIODE MA4Z082WA-TX	
C912	1-128-530-11	ELECT CHIP	33uF 20% 10V	D901	8-719-027-77	DIODE MA796	
C913	1-128-004-11	ELECT CHIP	10uF 20% 16V	D909	8-719-404-49	DIODE MA111	
c914	1-128-004-11	ELECT CHIP	10uF 20% 16V	D910	8-719-404-49	DIODE MA111	
c915	1-165-178-11	CERAMIC CHIP	6.8uF 16V				
C916	1-128-004-11	ELECT CHIP	10uF 20% 16V				
		< FUSE >		F251	1-576-213-11	FUSE, CHIP (SOC 1.6)	125V, 1.6A
c917	1-165-178-11	CERAMIC CHIP	6.8uF 16V	F252	1-576-213-11	FUSE, CHIP (SOC 1.6)	125V, 1.6A
C918	1-165-178-11	CERAMIC CHIP	6.8uF 16V	F253	1-576-213-11	FUSE, CHIP (SOC 1.6)	125V, 1.6A
C920	1-165-178-11	CERAMIC CHIP	6.8uF 16V	F254	1-576-213-11	FUSE, CHIP (SOC 1.6)	125V, 1.6A
c921	1-165-178-11	CERAMIC CHIP	6.8uF 16V				
C923	1-165-178-11	CERAMIC CHIP	6.8uF 16V				
		< IC >		IC901	8-759-249-14	IC MB3799-02PFV-GBND-ER	(DC/DC CONVERTER, PWM DRIVE)
		< JACK >					
C925	1-165-178-11	CERAMIC CHIP	6.8uF 16V	J901	1-537-281-41	TERMINAL BOARD (BATTERY)	
C926	1-164-337-11	CERAMIC CHIP	2.2uF 16V	J902	1-565-276-21	JACK, ULTRA SMALL 1P (LANC)	
C927	1-165-178-11	CERAMIC CHIP	6.8uF 16V	J903	1-568-027-11	JACK, SMALL TYPE 1P (EARPHONE)	
C928	1-165-178-11	CERAMIC CHIP	6.8uF 16V				
		< COIL >		L901	1-424-653-11	COIL, CHOKE	10uH
C929	1-135-216-11	TANTALUM CHIP	10uF 20% 10V	L902	1-424-653-11	COIL, CHOKE	10uH
C930	1-107-418-11	ELECT CHIP	10uF 20% 35v	L903	1-424-653-11	COIL, CHOKE	10uH
c931	1-128-004-11	ELECT CHIP	10uF 20% 16V	L904	1-409-556-11	COIL, CHOKE	47uH
c932	1-128-004-11	ELECT CHIP	10uF 20% 16V	L905	1-424-674-11	COIL, CHOKE	22uH
c934	1-128-004-11	ELECT CHIP	10uF 20% 16V				
		< COIL >		L906	1-409-556-11	COIL, CHOKE	47uH
C935	1-128-004-11	ELECT CHIP	10uF 20% 16V	L907	1-424-674-11	COIL, CHOKE	22uH
C936	1-128-004-11	ELECT CHIP	10uF 20% 16V	L908	1-424-674-11	COIL, CHOKE	22uH
c937	1-128-004-11	ELECT CHIP	10uF 20% 16V				
C938	1-128-004-11	ELECT CHIP	10uF 20% 16V				
c939	1-163-023-00	CERAMIC CHIP	0.015uF 5% 50v				
C940	1-163-023-00	CERAMIC CHIP	0.015uF 5% 50v				

Ref. No. Part No. DescriptionRe

L909 1-412-056-11 INDUCTOR CHIP 4.7uH
 L910 1-412-056-11 INDUCTOR CHIP 4.7uH

L911 1-412-056-11 INDUCTOR CHIP 4.7uH
 L912 1-412-056-11 INDUCTOR CHIP 4.7uH
 L913 1-412-056-11 INDUCTOR CHIP 4.7uH
 L914 1-412-064-11 INDUCTOR CHIP 100uH
 L915 1-412-064-11 INDUCTOR CHIP 100uH

L916 1-412-056-11 INDUCTOR CHIP 4.7uH
 L917 1-412-056-11 INDUCTOR CHIP 4.7uH

< TRANSISTOR >

Q901 8-729-420-12 TRANSISTOR XN4213
 Q902 S-729-804-41 TRANSISTOR 2SB1122-S
 Q903 8-729-823-82 TRANSISTOR FPIOI
 Q904 8-729-823-84 TRANSISTOR FP102
 Q905 8-729-823-82 TRANSISTOR FPIOI

Q906 8-729-823-82 TRANSISTOR FPIOI
 Q907 8-729-823-82 TRANSISTOR FPIOI
 Q909 8-729-805-25 TRANSISTOR 2SB1121-S
 Q911 8-729-402-42 TRANSISTOR UN5213
 Q912 8-729-420-24 TRANSISTOR 2SB1218A-QRS

Q914 S-729-402-42 TRANSISTOR UN5213
 Q915 S-729-402-42 TRANSISTOR UN5213

< RESISTOR >

R901 1-218-872-11 METAL CHIP
 R902 1-216-833-11 METAL CHIP
 R903 1-216-827-11 METAL CHIP
 R904 1-216-827-11 METAL CHIP
 R905 1-216-836-11 METAL CHIP

R906 1-216-827-11 METAL CHIP
 R907 1-216-035-00 METAL CHIP
 R908 1-216-834-11 METAL CHIP
 R909 1-216-031-00 METAL CHIP
 R910 1-216-029-00 METAL CHIP

R911 1-216-029-00 METAL CHIP
 R912 1-216-029-00 METAL CHIP
 R913 1-216-041-00 METAL CHIP
 R915 1-216-864-11
 R918

R919
 R920
 R921
 R922
 R923

R924
 R925
 R926
 R927
 R928

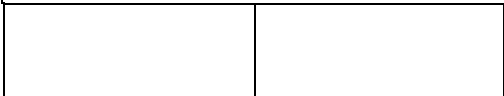
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
co35	1-135-145-11	TANTALUM CHIP	10%	35v	C087	1-164-505-11 CERAMIC CHIP	2. 2uF 16V
C036	1-162-974-11	CERAMIC CHIP		50V	C088	1-135-179-21 TANTAL. CHIP	2. 2uF 20% 16V
co31	1-135-161-21	TANTALUM CHIP	10%	10V	C089	1-135-216-11 TANTALUM CHIP	10uF 20% 10V
C038	1-162-974-11	CERAMIC CHIP		50v	co91	1-162-944-11 CERAMIC CHIP	18PF 5% 50V
Co39	1-135-091-91	TANTAL. CHIP		16V	co92	1-162-946-11 CERAMIC CHIP	27PF 5% 50V
co40	1-135-213-21	TANTAL. CHIP		25V	co94	1-135-166-21 TANTALUM CHIP	47uF 10% 10V
co41	1-135-179-21	TANTAL. CHIP		16V	co95	1-107-561-11 FILM CHIP	0. 01uF 5% 50v
co42	1-162-957-11	CERAMIC CHIP		50v	CO96	1-107-561-11 FILM CHIP	0. 01uF 5% 50V
co43	1-164-351-11	CBRAMIC CHIP		50v	co97	1-107-561-11 FILM CHIP	0. 01uF 5% 50v
co44	1-164-363-11	CERAMIC CHIP		50v	ΔC099	1-107-525-11 CERAMIC CHIP	18PF 10% 3KV
co45	1-164-001-11	CERAMIC CHIP		50v	C101	1-135-259-11 TANTAL. CHIP	10uF 20% 6. 3V
C046	1-164-357-11	CERAMIC CHIP		50v	C102	1-162-974-11 CERAMIC CHIP	0. 01uF 50v
C047	1-162-914-11	CERAMIC CHIP		50V	C103	1-135-259-11 TANTAL. CHIP	10uF 20% 6. 3V
C048	1-135-259-11	TANTAL. CHIP		6. 3V	C104	1-164-227-11 CERAMIC CHIP	0. 022uF 10% 25V
co49	1-162-974-11	CERAMIC CHIP		50v	C105	1-162-919-11 CERAMIC CHIP	22PF 5% 50V
co50	1-162-974-11	CBRAMIC CHIP		50v			
co51	1-135-259-11	TANTAL. CHIP		6. 3V		< CONNECTOR >	
co52	1-104-329-11	CERAMIC CHIP		50v	CN001	1-764-007-11 PIN, CONNECTOR (SMD) 12P	
Co53	1-164-363-11	CERAMIC CHIP		50v	CN002	1-573-984-11 CONNECTOR, BOARD TO BOARD 10P	
co54	1-104-329-11	CERAMIC CHIP		50v			
co55	1-135-259-11	TANTAL. CHIP		6. 3V		< DIODE >	
C056	1-162-974-11	CERAMIC MIP		50v	D0018-719-420-76	DIODE LN1251CAL-TR (TALLY)	
co57	1-162-974-11	CERAMIC CHIP		50v	DO02	8-719-420-76 DIODE LN1251CAL-TR (TALLY)	
C058	1-162-926-11	CERAMIC CHIP		50v	D003	8-719-420-14 DIODE MA8082-M	
co59	1-162-957-11	CERAMIC CHIP		50v	D004	8-719-404-49 DIODE MA1111	
C060	1-162-959-11	CERAMIC CHIP		50v	D006	8-719-423-32 DIODE MA8120-M	
C061	1-162-974-11	CERAMIC CHIP		50V	D007	8-719-422-97 DIODE MA8091-M	
C062	1-135-259-11	TANTAL. CHIP		6. 3V	D008	8-719-404-49 DIODE MA1111	
C063	1-164-505-11	CERAMIC CHIP		16V	D009	8-719-025-91 DIODE MA365 (E)	
C064	1-135-211-11	TANTAL. CHIP		6. 3V	D010	S-719-404-49 DIODE MA1111	
C065	1-163-077-00	CERAMIC CHIP		25V	D011	8-719-989-33 DIODE FC806	
C066	1-164-360-11	CBRAMIC CHIP		16V	D012	8-719-941-86 DIODE DAN202U	
C068	1-164-360-11	CERAMIC CHIP		16V	D013	8-719-404-49 DIODE MA1111	
C069	1-164-505-11	CERAMIC CHIP		16V	D015	8-719-049-57 DIODE CL-170B-X-T	
co70	1-164-505-11	CERAMIC CHIP		16V	D016	8-719-404-49 DIODE MA1111	
C071	1-135-216-11	TANTALUM CHIP		10V	D018	8-719-404-49 DIODE MA1111	
co72	1-162-944-11	CERAMIC CHIP		50v		< IC >	
co73	1-162-954-11	CERAMIC CHIP		50v	IC001	S-759-251-40 IC MB88E346PFV-G-BND-ER (ELECTRIC VOL)	
co74	1-162-964-11	CERAMIC CHIP		50v	IC002	8-752-067-59 IC CXA1785R-T4(R, G. B. DECODER)	
C075	1-135-212-21	TANTAL CHIP		25V	IC003	8-759-710-82 IC NJM2406F (DELAY)	
C076	1-164-156-11	CERAMIC CHIP		25V	IC004	8-759-198-04 IC LZ93A53 (LCDTIMING GENERATOR)	
co77	1-164-156-11	CERAMIC CHIP		25V	IC005	8-759-701-24 IC NJM3414M (FRPC AMP. LFP)	
C078	1-164-505-11	CERAMIC CHIP		16V	IC006	8-759-521-35 IC TL5001CD (DC/DC CONVERTER)	
co79	1-164-505-11	CERAMIC CHIP		16V	IC007	8-159-521-35 IC TL5001CD (DC/DC CONVERTER)	
CO80	1-164-505-11	CERAMIC CHIP		16V		< COIL >	
CO81	1-164-505-11	CERAMIC CHIP		16V	L001	1-412-058-11 INDUCTOR CHIP10uH	
CO83	1-135-149-21	TANTALUM CHIP		10V	LOO2	1-412-058-11 INDUCTOR CHIP10uH	
CO84	1-135-211-11	TANTAL. CHIP		6. 3V	LOO5	1-412-058-11 INDUCTOR CBIP 10uH	
CO85	1-164-360-11	CERAMIC CHIP		16V			
CO86	1-164-360-11	CERAMIC CHIP		16V			

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
---	--

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
LO06	1-412-955-11	INDUCTOR 22uH		R023	1-218-722-11	METAL CHIP 18K 0.50%	1/16W
LO07	1-412-062-11	INDUCTOR CHIP 47uH		R024	1-216-857-11	METAL CHIP 1M 5%	1/16W
LO08	1-412-746-11	INDUCTOR CHIP 10uH		R025	1-216-842-11	METAL CHIP 56K 5%	1/16W
LO09	1-412-963-11	INDUCTOR 100uH		R026	1-216-841-11	METAL CHIP 47K 5%	1/16W
LO10	1-412-963-11	INDUCTOR 100uH		R028	1-216-821-11	METAL CHIP 1K 5%	1/16W
LO11	1-412-963-11	INDUCTOR 100uH		R029	1-216-840-11	METAL CHIP 39K 5%	1/16W
LO12	1-412-028-11	INDUCTOR CHIP 4.7uH		R032	1-216-821-H	METAL CHIP 1K 5%	1/16W
LO13	1-424-674-11	COIL, CHOKE 22uH		R035	1-216-821-11	METAL CHIP 1K 5%	1/16W
LO14	1-406-924-11	COIL, CHOKE 150uH		R038	1-220-397-11	METAL GLAZE 4.7M 5%	1/16W
LO15	1-412-058-11	INDUCTOR CHIP 10uH		R039	1-216-809-11	METAL CHIP 100 5%	1/16W
LO16	1-412-962-11	INDUCTOR 82uH		R040	1-216-809-11	METAL CHIP 100 5%	1/16W
< IC LINK >				R041	1-216-809-11	METAL CHIP 100 5%	1/16W
ΔPS001	1-576-122-21	LINK, IC CCP2E10(N10)		R042	1-216-821-11	METAL CHIP 1K 5%	1/16W
< TRANSISTOR >				R043	1-216-841-11	METAL CHIP 47K 5%	1/16W
Q002	8-729-117-32	TRANSISTOR 2SC4177-L6		R044	1-216-839-11	METAL CHIP 33K 5%	1/16W
Q004	8-729-015-74	TRANSISTOR UN5111		R046	1-216-864-11	METAL CHIP 0 5%	1/16W
9005	8-729-020-99	TRANSISTOR UN5215-RS-TX		R051	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
Q006	g-729-420-53	TRANSISTOR UN5115		R052	1-216-843-11	METAL CHIP 68K 5%	1/16W
Q007	8-729-402-42	TRANSISTOR UN5213		R053	1-216-828-11	METAL CHIP 3.9K 5%	1/16W
9008	8-729-230-63	TRANSISTOR 2SC4116-YG		R054	1-216-818-11	METAL CHIP 560 5%	1/16W
Q009	8-729-804-41	TRANSISTOR 2SB1122-S		R055	1-216-821-11	METAL CHIP 1K 5%	1/16W
Q010	8-729-402-42	TRANSISTOR UN5213		R056	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q011	8-729-230-63	TRANSISTOR 2SC4116-YG		R057	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q012	8-729-823-84	TRANSISTOR FP102		R058	1-216-833-11	METAL CHIP 10K 5%	1/16W
Q013	8-729-821-55	TRANSISTOR 2SC3647S		R059	1-216-833-11	METAL CHIP 10K 5%	1/16W
9014	8-729-821-55	TRANSISTOR 2SC3647S		R061	1-216-840-11	METAL CHIP 39K 5%	1/16W
9015	8-729-015-74	TRANSISTOR UN5111		R062	1-216-843-11	METAL CHIP 68K 5%	1/16W
Q016	8-729-230-63	TRANSISTOR 2SC4116-YG		R063	1-216-836-11	METAL CHIP 18K 5%	1/16W
Q017	8-729-403-27	TRANSISTOR XN4401		R064	1-216-844-11	METAL CHIP 82K 5%	1/16W
< RESISTOR >				R065	1-216-845-11	METAL CHIP 100K 5%	1/16W
R001	1-216-840-11	METAL CHIP 39K 5%	1/16W	R066	1-216-846-11	METAL CHIP 120K 5%	1/16W
R002	1-216-840-11	METAL CHIP 39K 5%	1/16W	R067	1-216-842-11	METAL CHIP 56K 5%	1/16W
R003	1-216-839-11	METAL CHIP 33K 5%	1/16W	R068	1-216-840-11	METAL CHIP 39K 5%	1/16W
R004	1-216-847-11	METAL CHIP 150K 5%	1/16W	R069	1-216-843-11	METAL CHIP 68K 5%	1/16W
R005	1-216-845-11	METAL CHIP 100K 5%	1/16W	R070	1-216-831-11	METAL CHIP 6.8K 5%	1/16W
R007	1-216-840-11	METAL CHIP 39K 5%	1/16W	R071	1-216-831-11	METAL CHIP 6.8K 5%	1/16W
R011	1-216-840-11	METAL CHIP 39K 5%	1/16W	R072	1-216-841-11	METAL CHIP 47K 5%	1/16W
R012	1-216-839-11	METAL CHIP 33K 5%	1/16W	ROT3	1-216-837-11	METAL CHIP 22K 5%	1/16W
R013	1-216-839-11	METAL CHIP 33K 5%	1/16W	R074	1-216-843-11	METAL CHIP 68K 5%	1/16W
R014	1-216-840-11	METAL CHIP 39K 5%	1/16W	R075	1-216-857-11	METAL CHIP 1M 5%	1/16W
R015	1-216-839-11	METAL CHIP 33K 5%	1/16W	R076	1-216-845-11	METAL CHIP 100K 5%	1/16W
R016	1-216-839-11	METAL CHIP 33K 5%	1/16W	R077	1-216-857-11	METAL CHIP 1M 5%	1/16W
R017	1-216-821-11	METAL CHIP 1K 5%	1/16W	ROT8	1-216-828-11	METAL CHIP 3.9K 5%	1/16W
R018	1-216-839-11	METAL CHIP 33K 5%	1/16W	R079	1-216-838-11	METAL CHIP 27K 5%	1/16W
R019	1-216-839-11	METAL CHIP 33K 5%	1/16W	R080	1-216-845-11	METAL CHIP 100K 5%	1/16W
R021	1-216-833-11	METAL CHIP 10K 5%	1/16W	R081	1-216-838-11	METAL CHIP 27K 5%	1/16W
R022	1-216-814-11	METAL CHIP 270 5%	1/16W	R082	1-216-844-11	METAL CHIP 82K 5%	1/16W
				R083	1-216-844-11	METAL CHIP 82K 5%	1/16W
				R084	1-216-837-11	METAL CHIP 22K 5%	1/16W
				R085	1-216-837-11	METAL CHIP 22K 5%	1/16W

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
---	--

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R086	1-216-841-11	METAL CHIP	47K 5%	1/16W		< FLEXIBLE BOARD >	
R087	1-216-833-11	METAL CHIP	10K 5%	1/16W			
R088	1-216-833-11	METAL CHIP	10K 5%	1/16W	W001	1-653-931-11 FP-150 FLXBILE BOARD 18P	
R089	1-216-818-11	METAL CHIP	560 5%	1/16W		< VIBRATOR >	
R090	1-216-818-11	METAL CHIP	560 5%	1/16W			
R091	1-216-818-11	METAL CHIP	560 5%	1/16W	X001	1-579-466-11 VIBRATOR, CRYSTAL (3.58MHz)	
R092	1-216-818-11	METAL CHIP	560 5%	1/16W		*****	
R093	1-216-818-11	METAL CHIP	560 5%	1/16W			
R094	1-216-818-11	METAL CHIP	560 5%	1/16W		A-7072-055-A SD-14 BOARD, COMPLETE	
R098	1-216-813-11	METAL CHIP	220 5%	1/16W		*****	
R099	1-216-846-11	METAL CHIP	120K 5%	1/16W		(Ref. No. 2,000 Series)	
R100	1-216-829-11	METAL CHIP	4.7K 5%	1/16W			
R101	1-216-824-11	METAL CHIP	1.8K 5%	1/16W		3-960-914-01 SHEET, FP	
R102	1-216-838-11	METAL CHIP	27K 5%	1/16W		< CAPACITOR >	
R103	1-216-832-11	METAL CHIP	8.2K 5%	1/16W			
R104	1-216-837-11	METAL CHIP	22K 5%	1/16W	C502	1-164-232-11 CERAMIC CHIP	0.01uF 50v
R105	1-218-720-11	METAL CHIP	15K 0.50%	1/16W	C503	1-164-004-11 CERAMIC CHIP	0.1uF 10% 25V
R106	1-216-838-11	METAL CHIP	27K 5%	1/16W	C505	1-135-259-11 TANTAL. CHIP	10uF 20% 6.3V
R107	1-216-819-11	METAL CHIP	680 5%	1/16W	C506	1-104-752-11 TANTAL. CHIP	33uF 20% 6.3V
R108	1-216-836-11	METAL CHIP	18K 5%	1/16W	C507	1-162-974-11 CERAMIC CHIP	0.01uF 50V
R109	1-216-837-11	METAL CHIP	22K 5%	1/16W	C508	1-135-259-11 TANTAL. CHIP	10uF 20% 6.3V
R110	1-218-688-11	METAL CHIP	680 0.50%	1/16W	C509	1-162-974-11 CERAMIC CHIP	0.01uF 50V
R111	1-216-298-00	METAL CHIP	2.2 5%	1/10W	C510	1-165-319-11 CERAMIC CHIP	0.1uF 50v
R112	1-216-813-11	METAL CHIP	220 5%	1/16W	C512	1-165-319-11 CERAMIC CHIP	0.1uF 50v
R113	1-216-829-11	WAL MIP	4.7K 5%	1/16W	C513	1-162-974-11 CERAMIC CHIP	0.01uF 50v
R114	1-216-851-11	METAL CHIP	330K 5%	1/16W	C514	1-162-974-11 CERAMIC CHIP	0.01uF 50v
R115	1-216-838-11	METAL CHIP	27K 5%	1/16W	C515	1-135-259-11 TANTAL CHIP	10uF 20% 6.3V
R116	1-216-831-11	METAL CHIP	6.8K 5%	1/16W	C516	1-135-259-11 TANTAL. CHIP	10uF 20% 6.3V
R117	1-216-837-11	METAL CHIP	22K 5%	1/16W		< CONNECTOR >	
R118	1-216-818-11	METAL CHIP	560 5%	1/16W			
R119	1-216-818-11	METAL CHIP	560 5%	1/16W		: CN501 1-580-055-21 PIN, CONNECTOR 2P	
R120	1-216-864-11	METAL CHIP	0 5%	1/16W		CN502 1-764-007-11 PIN, CONNECTOR (SMD)12P	
R121	1-216-812-11	METAL CHIP	180 5%	1/16W		CN503 1-573-806-21 PIN, CONNECTOR	
R122	1-216-829-11	METAL CHIP	4.7K 5%	1/16W			
R123	1-216-821-11	METAL CHIP	1K 5%	1/16W			
R124	1-216-051-00	METAL CHIP	1.2K 5%	1/10W			
R125	1-216-051-00	METAL CHIP	1.2K 5%	1/10W			
R126	1-216-841-11	METAL CHIP	47K 5%	1/16W			
R127	1-216-857-11	METAL CBIP	1M 5%	1/16W			
R128	1-216-825-11	METAL CHIP	2.2K 5%	1/16W			
R129	1-216-809-11	METAL CHIP	100 5%	1/16W			
		< VARIABLE RESISTOR >					
RV001	1-223-733-11	RES, VAR, CARBON 10K (BRIGHT)					
RV002	1-238-853-11	RES, ADJ, CERMET 1K					
		< TRANSFORMER >					
T001	1-426-714-21	TRANSFORMER, CONVERTER					
▲T002	1-423-869-51	TRANSFORMER, INVERTER					



SD-14 **VC-151**

Ref. No.	Part No.	Description	Remark	ef. No.	Part No.	Description	Remark	
Q504	a-729-015-76	TRANSISTOR	UN5211	C610	1-164-360-11	CFRAMIC CHIP	0.1uF 16V	
Q505	8-729-015-60	TRANSISTOR	2SJ316	C611	1-164-360-11	CFRAMIC CHIP	0.1uF 16V	
9506	a-729-015-74	TRANSISTOR	UN5111	C613	1-162-974-11	CFRAMIC CHIP	0.01uF 50V	
9507	8-729-402-42	TRANSISTOR	UN5213	C614	1-162-974-11	CFRAMIC CHIP	0.01uF 50V	
Q508	a-729-025-60	TRANSISTOR	2SJ318-01STL	C616	1-135-091-91	TANTAL. CHIP	1uF 20% 16V	
9509	8-729-015-76	TRANSISTOR	UN5211	C617	1-164-004-11	CFRAMIC CHIP	0.1uF 10% 25V	
		< RESISTOR >		C618	1-165-176-11	CFRAMIC CHIP	0.047uF 10% 16V	
R501	1-216-841-11	METAL CHIP	47K 5%	1/16W	C619	1-164-360-11	CRRAMIC CHIP	0.1uF 16V
R503	1-216-298-00	METAL CHIP	2.2 5%	1/10W	C620	1-164-360-11	CRRAMIC CHIP	0.1uF 16V
R504	1-216-813-11	METAL CHIP	220 5%	1/16W	C621	1-162-974-11	CRRAMIC CHIP	0.01uF 50v
R505	1-216-821-11	METAL CHIP	1K 5%	1/16W	C622	1-164-360-11	CRRAMIC CHIP	0.1uF 16V
R506	1-216-830-11	METAL CHIP	5.6K 5%	1/16W	C623	1-164-360-11	CERAMIC CHIP	0.1uF 16V
R507	1-216-845-11	METAL CHIP	100K 5%	1/16W	C624	1-162-974-11	CERAMIC CHIP	0.01uF 50v
R508	1-216-864-11	METAL CHIP	0 5%	1/16W	C627	1-162-949-11	CERAMIC CHIP	47PF 5% 50v
R509	1-216-813-11	METAL CHIP	220 5%	1/16W	C628	1-162-974-11	CERAMIC CHIP	0.01uF 50v
R510	1-216-831-11	METAL CHIP	6.8K 5%	1/16W	C629	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R511	1-216-817-11	METAL CHIP	470 5%	1/16W	C630	1-162-946-11	CERAMIC CHIP	27PF 5% 50v
R512	1-216-837-11	METAL CHIP	22K 5%	1/16W	C631	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
R513	1-216-817-11	METAL CHIP	410 5%	1/16W	C632	1-162-974-11	CERAMIC CHIP	0.01uF 50v
R514	1-216-845-11	METAL CHIP	100K 5%	1/16W	C633	1-162-947-11	CERAMIC CHIP	33PF 5% 50v
R515	1-216-845-11	METAL CHIP	100K 5%	1/16W	C634	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
R516	1-216-840-11	METAL CHIP	39K 5%	1/16W	C637	1-164-360-11	CFRAMIC CHIP	0.1uF 16V
R517	1-216-833-11	METAL CHIP	10K 5%	1/16W	C638	1-162-974-11	CERAMIC CHIP	0.01uF 50v
R518	1-216-833-11	METAL CHIP	10K 5%	1/16W	C639	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
R519	1-216-839-11	METAL CHIP	33K 5%	1/16W	C690	1-162-949-11	CRRAMIC CHIP	47PF 5% 50v
		< VARIABLE RESISTOR >		C701	1-163-059-91	CERAMIC CHIP	0.01uF 10% 50v	
RV501	1-223-746-11	RES. VAR. CARBON 2K (VOLUME)		C702	1-162-638-11	CERAMIC CHIP	1uF 16V	
		< SWITCH >		C703	1-164-360-11	CRRAMIC CHIP	0.1uF 16V	
SW501	1-692-280-11	SWITCH, PUSH (1 KEY)		C704	1-164-360-11	CRRAMIC CHIP	0.1uF 16V	
		< FLEXIBLE BOARD >		C705	1-135-145-11	TANTALUM CHIP	0.47uF 10% 35V	
W501	1-653-930-11	FP-148 FLEXIBLE BOARD 25P		C706	1-164-360-11	CRRAMIC CHIP	0.1uF 16V	
*****				C708	1-164-360-11	CRRAMIC CHIP	0.1uF 16V	
*	A-7066-155-A	VC-151 BOARD, COMPLETE		C709	1-135-214-21	TANTAL. CHIP	4.7uF 20% 20v	
		*****		C710	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V	
		(Ref. No. 1,000 Series)		c711	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50v	
		< CAPACITOR >		C712	1-164-360-11	CERAMIC CHIP	0.1uF 16V	
C601	1-162-949-11	CERAMIC CHIP	47PF 5%	50V	C713	1-104-752-11	TANTAL. CHIP	33uF 20% 6.3V
C604	1-164-360-11	CERAMIC CHIP	0.1uF	16V	c714	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C605	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V	C715	1-162-974-11	CERAMIC CHIP	0.01uF 50v
C606	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	C716	1-164-360-11	CRRAMIC CHIP	0.1uF 16V
C607	1-162-974-11	CERAMIC CHIP	0.01uF	50v	C717	1-162-974-11	CERAMIC CHIP	0.01uF 50v
C608	1-104-847-11	TANTAL. CHIP	22uF	20% 4v	C718	1-162-637-11	CERAMIC CHIP	0.47uF 18V
C609	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	c719	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C620	1-164-360-11	CRRAMIC CHIP	0.1uF	16V	C720	1-162-974-11	CERAMIC CHIP	0.01uF 50v
C621	1-162-974-11	CRRAMIC CHIP	0.01uF	50v	C721	1-162-917-11	CERAMIC CHIP	15PF 5% 50v
C622	1-164-360-11	CRRAMIC CHIP	0.1uF	16V	CT22	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
C623	1-164-360-11	CERAMIC CHIP	0.1uF	16V	CT25	1-162-974-11	CFRAMIC CHIP	0.01uF 50V
C624	1-162-974-11	CERAMIC CHIP	0.01uF	50v	CT26	1-135-259-11	TANTAL. CHIP	20% 6.3V
C627	1-162-949-11	CERAMIC CHIP	47PF	5% 50v	CI27	1-162-974-11	CERAMIC CHIP	0.01uF 50v
C628	1-162-974-11	CERAMIC CHIP	0.01uF	50v	C728	1-162-974-11	CERAMIC CHIP	0.01uF 50v
C629	1-162-974-11	CERAMIC CHIP	0.01uF	50V				
C630	1-162-946-11	CERAMIC CHIP	27PF	5% 50v				
C631	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V				
C632	1-162-974-11	CERAMIC CHIP	0.01uF	50v				
C633	1-162-947-11	CERAMIC CHIP	33PF	5% 50v				
C634	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V				
C637	1-164-360-11	CFRAMIC CHIP	0.1uF	16V				
C638	1-162-974-11	CERAMIC CHIP	0.01uF	50v				
C639	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V				
C690	1-162-949-11	CRRAMIC CHIP	47PF	5% 50v				
C701	1-163-059-91	CERAMIC CHIP	0.01uF	10% 50v				
C702	1-162-638-11	CERAMIC CHIP	1uF	16V				
C703	1-164-360-11	CRRAMIC CHIP	0.1uF	16V				
C704	1-164-360-11	CRRAMIC CHIP	0.1uF	16V				
C705	1-135-145-11	TANTALUM CHIP	0.47uF	10% 35V				
C706	1-164-360-11	CRRAMIC CHIP	0.1uF	16V				
C708	1-164-360-11	CRRAMIC CHIP	0.1uF	16V				
C709	1-135-214-21	TANTAL. CHIP	4.7uF	20% 20v				
C710	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V				
c711	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50v				
C712	1-164-360-11	CERAMIC CHIP	0.1uF	16V				
C713	1-104-752-11	TANTAL. CHIP	33uF	20% 6.3V				
c714	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V				
C715	1-162-974-11	CERAMIC CHIP	0.01uF	50v				
C716	1-164-360-11	CRRAMIC CHIP	0.1uF	16V				
C717	1-162-974-11	CERAMIC CHIP	0.01uF	50v				
C718	1-162-637-11	CERAMIC CHIP	0.47uF	18V				
c719	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V				
C720	1-162-974-11	CERAMIC CHIP	0.01uF	50v				
C721	1-162-917-11	CERAMIC CHIP	15PF	5% 50v				
CT22	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V				
CT25	1-162-974-11	CFRAMIC CHIP	0.01uF	50V				
CT26	1-135-259-11	TANTAL. CHIP	20%	6.3V				
CI27	1-162-974-11	CERAMIC CHIP	0.01uF	50v				
C728	1-162-974-11	CERAMIC CHIP	0.01uF	50v				

Ref. No.	Part No.	Description	Remark	f. No.	Part No.	Description	Remark	
C729	1-162-974-11	CERAMIC CHIP	0.01uF	50v	IC609	8-752-369-24 IC	CXD2150AR-T6 (CAMERA CORE)	
C730	1-164-298-11	CBRAMIC CHIP	0.15uF	10%	25V	IC610	8-752-365-72 IC	CXD2151R-T6 (SYNC GENERATOR)
CT31	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35v	IC611	8-759-262-36 IC	CXD2133BR-T6 (OPTICAL DETECTOR)
C732	1-162-638-11	CERAMIC CHIP	1uF	16V	IC614	8-759-255-09 IC	uPD6461GS-802-GLG-EZ (ON SCREEN DISPLAY)	
C733	1-162-638-11	CERAMIC CHIP	1uF	16V	IC701	8-752-355-07 IC	CXD1267N-T4 (V DRIVE, V SUB RBG)	
C734	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35v	IC702	8-752-365-74 IC	CXD1266R-T4 (TIMING GENERATOR)
C735	1-162-974-11	CERAMIC CHIP	0.01uF	50v	IC703	8-752-069-21 IC	CXA1690Q-T4 (AGC/IRIS CONTROL, A/D BIAS AMP)	
C737	1-162-946-11	CERAMIC CHIP	27PF	5%	50v	IC704	8-759-173-24 IC	AD875JST-REEL (A/D CONVERTER)
C739	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	IC705	8-752-365-76 IC	CXD2407R-T4 (DEFECT COMPENSATION)
C741	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	IC751	8-759-701-24 IC	NJM3414M (IRIS METER DRIVE)
C742	1-164-360-11	CERAMIC CHIP	0.1uF	16V	IC752	8-759-058-52 IC	XRA10324AF-E2 (HALL AMP)	
C743	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	IC753	8-752-365-65 IC	CXD2126N-T4 (FOCUS/ZOOM PRB DRIVE)
CI44	1-162-974-11	CERAMIC CHIP	0.01uF	50V	IC754	8-759-247-07 IC	MPC17A34VMEL (FOCUS/ZOOM MOTOR DRIVE)	
c745	1-162-974-11	CERAMIC CHIP	0.01uF	50v	IC755	8-759-031-58 IC	SC750U4F (INVERTER)	
C746	1-164-360-11	CERAMIC CHIP	0.1uF	16V			< COIL >	
C747	1-164-360-11	CERAMIC CHIP	0.1uF	16V	L601	1-412-058-11	INDUCTOR CHIP 10uH	
CI48	1-164-360-11	CERAMIC CHIP	0.1uF	16V	L602	1-414-078-11	INDUCTOR 10uH	
C749	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V	L603	1-412-058-11	INDUCTOR CHIP 10uH
C750	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50v	L604	1-414-078-11	INDUCTOR 10uH
c751	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	L605	1-410-391-11	INDUCTOR CHIP 68uH
CI52	1-162-964-11	CBRAMIC CHIP	0.001uF	10%	50v	L606	1-414-078-11	INDUCTOR 10uH
C753	1-162-974-11	CERAMIC CHIP	0.01uF	50v	L608	1-412-006-31	INDUCTOR CHIP 10uH	
C754	1-162-974-11	CERAMIC CHIP	0.01uF	50v	L609	1-412-919-21	INDUCTOR 1uH	
C755	1-162-974-11	CERAMIC CHIP	0.01uF	50v	L610	1-412-979-21	INDUCTOR 1uH	
C756	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V	L611	1-412-052-21	INDUCTOR CHIP 1uH
C757	1-162-974-11	CERAMIC CHIP	0.01uF	50v	L612	1-412-052-21	INDUCTOR CHIP 1uH	
		< CONNECTOR >			L614	1-412-052-21	INDUCTOR CHIP 1uH	
*CN601	1-764-395-21	CONNECTOR, BOARD TO BOARD	42P		L702	1-412-058-11	INDUCTOR CHIP 10uH	
CN701	1-573-925-11	CONNECTOR, FFC/FPC (ZIF)	16P		L703	1-412-058-11	INDUCTOR CHIP 10uH	
CN751	1-573-361-11	CONNECTOR, FFC/FPC	21P		L704	1-412-058-11	INDUCTOR CHIP 10uH	
		< TRIMMER >			L705	1-412-058-11	INDUCTOR CHIP 10uH	
CT701	1-141-430-51	CAP. CHIP TRIMMER			L706	1-412-058-11	INDUCTOR CHIP 10uH	
		< DIODE >			L751	1-412-062-11	INDUCTOR CHIP 47uH	
D701	8-719-404-49	DIODE MA111			L752	1-412-058-11	INDUCTOR CHIP 10uH	
D702	8-719-404-49	DIODE MA111			L753	1-412-058-11	INDUCTOR CHIP 10uH	
D703	8-719-404-49	DIODE MA111					< TRANSISTOR >	
D705	8-719-404-49	DIODE MA111			Q604	8-729-010-60	TRANSISTOR MSA1586-BC	
		< FILTER >			Q605	8-729-010-60	TRANSISTOR MSA1586-BC	
FL601	1-239-766-11	FILTER. LOW PAS5			Q606	8-729-010-75	TRANSISTOR MSC4116-BC	
		< IC >			Q607	8-729-010-75	TRANSISTOR MSC4116-BC	
IC601	8-759-278-57	IC AK6420HF-E2 (EEP ROM)			Q701	8-729-403-27	TRANSISTOR XN4401	
IC602	8-759-277-18	IC MC68HC11MA8PU (SC4246)			9751	8-729-010-75	TRANSISTOR MSC4116-BC	
		(CAMERA CONTROL)			Q752	8-729-013-88	TRANSISTOR RN1302-TE85L	
IC603	8-759-064-36	IC MB88346BPPFV (D/A CONVERTER)						
IC604	8-759-710-29	IC NJM2235M (CHARACTER MIX)						

VC-151

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< RESISTOR >				R667	1-216-820-11	METAL CHIP	820 5% 1/16W
R601	1-216-851-11	METAL CHIP	330K 5% 1/16W	R668	1-216-824-11	METAL CHIP	1.8K 5% 1/16W
R602	1-216-833-11	METAL CHIP	10K 5% 1/16W	R669	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R603	1-216-857-11	METAL CHIP	1M 5% 1/16W	R670	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R604	1-216-833-11	METAL CHIP	10K 5% 1/16W	R701	1-216-857-11	METAL CHIP	1M 5% 1/16W
R605	1-216-864-11	METAL CHIP	0 5% 1/16W	R702	1-216-833-11	METAL CHIP	10K 5% 1/16W
R606	1-216-847-11	METAL CHIP	150K 5% 1/16W	R703	1-216-845-11	METAL CHIP	100K 5% 1/16W
R607	1-216-839-11	METAL CHIP	33K 5% 1/16W	R705	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R608	1-216-864-11	METAL CHIP	0 5% 1/16W	R709	1-216-845-11	METAL CHIP	100K 5% 1/16W
R609	1-216-838-11	METAL CHIP	21K 5% 1/16W	R710	1-216-864-11	METAL CHIP	0 5% 1/16W
R610	1-216-839-11	METAL CHIP	33K 5% 1/16W	R712	1-216-864-11	METAL CHIP	0 5% 1/16W
R611	1-216-838-11	METAL CHIP	27K 5% 1/16W	R713	1-216-807-11	METAL CHIP	68 5% 1/16W
R612	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R714	1-216-864-11	METAL CHIP	0 5% 1/16W
R613	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R716	1-216-847-11	METAL CHIP	1K 0.50% 1/16W
R619	1-216-803-11	METAL CHIP	33 5% 1/16W	R718	1-216-807-11	METAL CHIP	68 5% 1/16W
R620	1-216-841-11	METAL CHIP	47K 5% 1/16W	R719	1-218-876-11	METAL CHIP	16K 0.50% 1/16W
R621	1-216-841-11	METAL CHIP	47K 5% 1/16W	R720	1-216-844-11	METAL CHIP	82K 5% 1/16W
R624	1-216-864-11	METAL CHIP	0 5% 1/16W	R723	1-216-864-11	METAL CHIP	0 5% 1/16W
R626	1-216-841-11	METAL CHIP	47K 5% 1/16W	R725	1-216-841-11	METAL CHIP	47K 5% 1/16W
R627	1-216-841-11	METAL CHIP	47K 5% 1/16W	R740	1-216-864-11	METAL CHIP	0 5% 1/16W
R628	1-216-831-11	METAL CHIP	22K 5% 1/16W	R741	1-218-855-11	METAL CHIP	2.2K 0.50% 1/16W
R629	1-216-834-11	METAL CHIP	12K 5% 1/16W	R742	1-218-865-11	METAL CHIP	5.6K 0.50% 1/16W
R630	1-216-834-11	METAL CHIP	12K 5% 1/16W	R743	1-216-833-11	METAL CHIP	10K 5% 1/16W
R631	1-216-864-11	METAL CHIP	0 5% 1/16W	R744	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R634	1-216-821-11	METAL CHIP	1K 5% 1/16W	R745	1-216-837-11	METAL CHIP	22K 5% 1/16W
R635	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R746	1-216-837-11	METAL CHIP	22K 5% 1/16W
R636	1-216-845-11	METAL CHIP	100K 5% 1/16W	R747	1-216-820-11	METAL CHIP	820 5% 1/16W
R637	1-216-837-11	METAL CHIP	22K 5% 1/16W	R748	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R638	1-216-839-11	METAL CHIP	33K 5% 1/16W	R749	1-216-851-11	METAL CHIP	330K 5% 1/16W
R640	1-216-815-11	METAL CHIP	330 5% 1/16W	R750	1-216-841-11	METAL CHIP	47K 5% 1/16W
R642	1-216-834-11	METAL CHIP	12K 5% 1/16W	R751	1-216-809-11	METAL CHIP	100 5% 1/16W
R643	1-216-833-11	METAL CHIP	10K 5% 1/16W	R752	1-216-821-11	METAL CHIP	1K 5% 1/16W
R645	1-216-834-11	METAL CHIP	12K 5% 1/16W	R753	1-216-845-11	METAL CHIP	100K 5% 1/16W
R646	1-216-818-11	METAL CHIP	560 5% 1/16W	R754	1-216-848-11	METAL CHIP	180K 5% 1/16W
R647	1-216-834-11	METAL CHIP	12K 5% 1/16W	R755	1-216-855-11	METAL CHIP	680K 5% 1/16W
R648	1-216-818-11	METAL CHIP	560 5% 1/16W	R756	1-216-848-11	METAL CHIP	180K 5% 1/16W
R649	1-216-841-11	METAL CHIP	47K 5% 1/16W	R757	1-216-833-11	METAL CHIP	10K 5% 1/16W
R650	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R758	1-216-837-11	METAL CHIP	22K 5% 1/16W
R651	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R759	1-216-831-11	METAL CHIP	22K 5% 1/16W
R652	1-216-841-11	METAL CHIP	47K 5% 1/16W	R760	1-216-826-11	METAL CHIP	2.7K 5% 1/16W
R654	1-216-864-11	METAL CHIP	0 5% 1/16W	R761	1-216-842-11	METAL CHIP	56K 5% 1/16W
R656	1-216-864-11	METAL CHIP	0 5% 1/16W	R762	1-216-842-11	METAL CHIP	56K 5% 1/16W
R658	1-216-864-11	METAL CHIP	0 5% 1/16W	R764	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R659	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	< VIBRATOR >			
R661	1-216-841-11	METAL CHIP	47K 5% 1/16W	X601	1-760-081-21	VIBRATOR, CERAMIC (24MHz)	
R662	1-216-821-11	METAL CHIP	1K 5% 1/16W	X701	1-760-320-11	VIBRATOR, CRYSTAL (28.6363MHz)	
R663	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	*****			
R664	1-216-821-11	METAL CHIP	1K 5% 1/16W				
R665	1-216-825-11	METAL CHIP	2.2K 5% 1/16W				
R666	1-216-827-11	METAL CHIP	3.3K 5% 1/16W				

Ref. No.	Part No.	Description	Remark	sf. No.	Part No.	Description	Remark	
*	A-7066-156-A	V-119 BOARD, COMPLETE (US, Canadian) *****		C160	1-162-946-11	CERAMIC CHIP	27PF 5% 50v	
				C161	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50v	
*	A-7066-210-A	VS-119 BOARD, COMPLETE (E) ***** (Ref. No. 10,000 Series)		C163	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	
				C164	1-162-942-11	CERAMIC CHIP	12PF 5% 50v	
				C165	1-162-956-11	CERAMIC CHIP	180PF 5% 50v	
				C166	1-162-958-11	CERAMIC CHIP	270PF 5% 50v	
		< CAPACITOR >		C167	1-164-382-11	CERAMIC CHIP	91PF 5% 50v	
	C101	1-162-921-11	CERAMIC CHIP	33PF 5% 50v	C168	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
	C102	1-162-922-11	CERAMIC CHIP	39PF 5% 50v	C169	1-162-949-11	CERAMIC CHIP	47PF 5% 50v
	C103	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C172	1-162-921-11	CERAMIC CHIP	33PF 5% 50v
	C104	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C177	1-135-259-11	TANTAL CHIP	10uF 20% 6.3V
	C106	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	C178	1-162-974-11	CFRAMIC CHIP	0.01uF 50v
	C107	1-162-927-11	CERAMIC CHIP	100PF 5% 50v	C179	1-162-914-11	CFRAMIC CHIP	0.01uF 50v
	C108	1-162-926-11	CERAMIC CHIP	82PF 5% 50v	C190	1-162-974-11	CERAMIC CHIP	0.01uF 50v
	C109	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V	C203	1-135-259-11	TANTAL CHIP	10uF 20% 6.3V
	C110	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V	C204	1-162-974-11	CERAMIC CHIP	0.01uF 50v
	C111	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C205	1-162-974-11	CERAMIC CHIP	0.01uF 50v
	C112	1-162-927-11	CERAMIC CHIP	100PF 5% 50v	C206	1-164-489-11	CERAMIC CHIP	0.22uF 10% 16V
	C113	1-164-217-11	CERAMIC CHIP	150PF 5% 50v	C207	1-162-927-11	CERAMIC CHIP	100PF 5% 50v
	C114	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C208	1-135-149-21	TANTALUM CHIP	2.2uF 20% 10V
	C115	1-162-974-11	CFHAMIC CHIP	0.01uF 50v	C209	1-126-246-11	ELECT CHIP	220uF 20% 4v
	C116	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C210	1-162-961-11	CERAMIC CHIP	330PF 10% 50v
	C117	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V	C211	1-135-091-91	TANTAL. CHIP	1uF 20% 16V
	C118	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V	C212	1-162-995-11	CERAMIC CHIP	0.022uF 50v
	C119	1-162-961-11	CFHAMIC CHIP	330PF 10% 50v	C213	1-135-176-21	TANTALUM CHIP	0.68uF 10% 20v
	C120	1-162-974-11	CFRAMIC CHIP	0.01uF 50v	C214	1-164-005-11	CERAMIC CHIP	0.47uF 25V
	C121	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C215	1-162-974-11	CERAMIC CHIP	0.01uF 50v
	C122	1-162-961-11	CERAMIC CHIP	330PF 10% 50v	C216	1-135-259-11	TANTAL CHIP	10uF 20% 6.3V
	C123	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C217	1-135-091-91	TANTAL. CHIP	1uF 20% 16V
	C124	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C218	1-107-682-11	CERAMIC CHIP	1uF 10% 16V
	C128	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C220	1-135-259-11	TANTAL CHIP	10uF 20% 6.3V
	C131	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C221	1-107-682-11	CERAMIC CHIP	1uF 10% 16V
	C134	1-162-974-11	CERAMIC CHIP	0.01uF 50v	c222	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
	C136	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C223	1-164-360-11	CERAMIC CHIP	0.1uF 16V
	C137	1-162-919-11	CERAMIC CHIP	22PF 5% 50v	C225	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
	C143	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50v	C226	1-162-926-11	CERAMIC CHIP	82PF 5% 50v
	C144	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V	c227	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
	C145	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V	C228	1-162-974-11	CFRAMIC CHIP	0.01uF 50v
	C146	1-164-360-11	CERAMIC CHIP	0.1uF 16V	c229	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
	C147	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C230	1-135-180-21	TANTALUM CHIP	3.3uF 20% 6.3V
	C148	1-162-958-11	CERAMIC CHIP	270PF 5% 50v	C231	1-164-005-11	CERAMIC CHIP	0.47uF 25v
	C149	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C234	1-162-957-11	CERAMIC CHIP	220PF 5% 50v
	C150	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C235	1-126-207-11	ELECT CHIP	33uF 20% 4v
	C151	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V	C231	1-162-974-11	CERAMIC CHIP	0.01uF 50v
	C152	1-162-974-11	CERAMIC CHIP	0.01uF 50v	C238	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
	C153	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C239	1-162-974-11	CERAMIC CHIP	0.01uF 50v
	C154	1-162-945-11	CERAMIC CHIP	22PF 5% 50v	C240	1-164-392-11	CERAMIC CHIP	390PF 5% 50v
	C157	1-162-916-11	CERAMIC CHIP	12PF 5% 50v	C241	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
	C158	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V	C242	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
	C159	1-162-922-11	CFHAMIC CHIP	39PF 5% 50v	C243	1-135-091-91	TANTAL. CHIP	1uF 20% 16V

VS-119

Ref. No.	Part No.	Description		Remark	ef. No.	Part No.	Description		Remark			
C244	1-162-959-11	CERAMIC CHIP	330PF	5%	50v	C511	1-164-361-11	CERAMIC CHIP	0.047uF	16V		
C245	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C512	1-164-360-11	CERAMIC CHIP	0.1uF	16V		
C247	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C513	1-164-361-11	CERAMIC CHIP	0.047uF	16V		
C251	1-162-956-11	CERAMIC CHIP	180PF	5%	50v	C514	1-162-974-11	CERAMIC CHIP	0.01uF	50v		
C258	1-164-346-11	CERAMIC CHIP	1uF		16V	C515	1-162-974-11	CERAMIC CHIP	0.01uF	50v		
C262	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C516	1-164-361-11	CERAMIC CHIP	0.047uF	16V		
C263	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C518	1-164-004-11	CRRAMIC CHIP	0.1uF	10%	25V	
C264	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	C519	1-164-346-11	CERAMIC CHIP	1uF		16V	
C265	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C521	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C266	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C522	1-164-361-11	CERAMIC CHIP	0.047uF		16V	
C267	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	C523	1-164-492-11	CERAMIC MIP	0.15uF	10%	16V	
C268	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C524	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C271	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C526	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V	
C272	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V	C527	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C273	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C528	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C274	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C529	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V	
C275	1-162-955-U	CERAMIC CHIP	150PF	5%	50v	C530	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C276	1-162-944-11	CERAMIC CHIP	18PF	5%	50v	C531	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C278	1-162-949-11	CERAMIC CHIP	47PF	5%	50v	C532	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
e279	1-164-145-11	CERAMIC CHIP	390PF	5%	50v	C533	1-162-964-11	CRRAMIC CHIP	0.001uF	10%	50v	
C281	1-162-954-U	CERAMIC CHIP	120PF	5%	50v	C534	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50v	
C282	1-162-927-11	CERAMIC CHIP	100PF	5%	50v	C535	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V	
C284	1-162-927-11	CERAMIC CHIP	100PF	5%	50v	C536	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V	
C285	1-135-318-11	TANTAL. CHIP	33uF	20%	4v	C537	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C286	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C538	1-162-995-11	CRRAMIC CHIP	0.022uF		50v	
C287	1-162-949-11	CERAMIC CHIP	47PF	5%	50v	C539	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C289	1-164-360-11	CFRAMIC CHIP	0.1uF		16V	C540	1-162-913-11	CRRAMIC CHIP	8PF		0.5PF	50v
C290	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C541	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
e291	1-162-949-11	CFRAMIC CHIP	41PF	5%	50v	C543	1-162-913-11	CERAMIC CHIP	8PF		0.5PF	50V
C299	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C544	1-162-974-11	CERAMIC CHIP	0.01uF		50v	
C301	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C545	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C305	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	C547	1-164-360-11	CERAMIC CHIP	0.1uF		16V	
C307	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C548	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C310	1-135-259-11	TANTAL. MIP	10uF	20%	6.3V	C549	1-162-995-11	CERAMIC CHIP	0.022uF		50v	
C312	1-162-974-11	CERAMIC CHIP	0.01uF		50V	C550	1-128-530-11	ELECT CHIP	33uF	20%	10V	
C319	1-164-360-11	CRRAMIC MIP	0.1uF		16V	C552	1-164-362-11	CERAMIC CHIP	470PF	5%	50V	
C328	1-164-361-11	CRRAMIC MIP	0.047uF		16V	C559	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
e331	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C560	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	
C333	1-162-941-11	CRRAMIC CHIP	10PF		0.5PF	50V	C561	1-128-004-11	ELECT CHIP	10uF	20%	16V
e334	1-162-935-11	CERAMIC CHIP	4PF		0.25PF	50V	C562	1-162-974-11	CERAMIC CHIP	0.01uF		50v
C500	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50v	C563	1-164-816-11	CERAMIC CHIP	220PF	2%	50v	
C501	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C564	1-164-816-11	CERAMIC CHIP	220PF	2%	50v	
C502	1-164-361-11	CERAMIC CHIP	0.047uF		16V	C565	1-162-995-11	CERAMIC CHIP	0.022uF		50v	
C503	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	C566	1-162-995-11	CERAMIC CHIP	0.022uF		50v	
C504	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C567	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50v	
C506	1-124-778-00	ELECT CHIP	22uF	20%	6.3V	C568	1-162-974-11	CERAMIC CHIP	0.01uF		50V	
C507	1-162-918-11	CERAMIC CHIP	18PF	5%	50V	C569	1-162-974-11	CERAMIC CHIP	0.01uF		50v	
C508	1-162-919-11	CERAMIC CHIP	22PF	5%	50v	C570	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	
C509	1-162-974-11	CERAMIC CHIP	0.01uF		50v	C571	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C510	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C572	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C573	1-162-909-11	CERAMIC CHIP	4PF	0.25PF	50V		
C574	1-216-845-11	METAL CHIP	100K	5%	1/16W		
c951	1-164-156-11	CBRAMIC CHIP	0.1uF		25V		
c952	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		
c953	1-126-205-11	ELECT CHIP	47uF	20%	6.3V		
C955	1-162-974-11	CERAMIC CHIP	0.01uF		50v		
c959	1-164-156-11	CERAMIC CHIP	0.1uF		25V		
C961	1-164-346-11	CERAMIC CHIP	1uF		16V		
C962	1-162-945-11	CERAMIC CHIP	22PF	5%	50V		
CI251	1-164-156-11	CERAMIC CHIP	0.1uF		25V		
CI252	1-164-505-11	CERAMIC CHIP	2.2uF		16V		
CI256	1-164-005-11	CERAMIC CHIP	0.47uF		25V		
CI263	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		
CI264	1-164-156-11	CERAMIC CHIP	0.1uF		25V		
CI268	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V		
CI274	1-164-005-11	CERAMIC CHIP	0.47uF		25V		
CI275	1-162-945-11	CERAMIC CHIP	22PF	5%	50V		
< CONNECTOR >							
CN101	1-691-492-21	CONNECTOR, FFC/FPC 13P					
CN102	1-580-789-21	PIN. CONNECTOR (SMD) 6P					
CN201	1-573-353-11	CONNECTOR, FFC/FPC 13P					
CN202	1-691-536-11	CONNECTOR, BOARD TO BOARD 24P					
* CN203	1-764-396-21	CONNECTOR, BOARD TO BOARD 42P					
CN206	1-573-923-21	CONNECTOR, FFC/FPC (ZIF) 14P					
CN502	1-764-708-11	CONNECTOR, FFC/FPC (LIF) 9P					
CN503	1-764-717-11	CONNECTOR, FFC/FPC (LIF) 18P					
CN504	1-695-325-11	CONNECTOR, BOARD TO BOARD 42P					
* CN505	1-764-397-21	CONNECTOR, BOARD TO BOARD 42P					
< DIODE >							
D101	8-719-800-76	DIODE 1SS226					
D102	8-719-404-49	DIODE MA111					
D201	8-719-027-50	DIODE MA142WK					
D204	S-719-027-50	DIODE MA142WK					
D208	8-719-027-50	DIODE MA142WK					
D216	8-719-027-50	DIODE MA142WK					
D217	S-719-404-49	DIODE MA111					
D218	8-719-800-76	DIODE 1SS226					
D321	8-719-045-87	DIODE MA4Z082WA-TX					
△D501	8-719-421-27	DIODE MA728					
D504	X-119-404-49	DIODE MA111					
D505	8-719-404-49	DIODE HA111					
D1251	X-719-027-50	DIODE MA142WK					
< FILTER >							
FL201	1-236-757-21	FILTER, LOW PASS (C)					
< IC >							
IC102	X-152-069-78	IC CXA1704R-T4 (VIDEO HEAD AMP)					
IC201	8-752-068-58	1d					
IC203	8-752-351-22	IC					
IC205	8-752-053-21	IC					
IC251	8-752-069-60	IC					
IC501	8-759-278-57	IC					
IC502	8-159-295-62	IC					
IC503	8-759-285-21	IC					
IC505	S-752-851-31	IC CXP87132-009R (SERVO, SYSTEM CONTROL)					
IC506	8-759-169-11	IC CXA1575M-E2 (DRUM MOTOR DRIVE)					
IC508		MB4470PFG-G-BND-ER (ATF SERVO, CLOG/SP, LP DETECT)					
IC951		MB88344BFFV-G-BND-ER (D/A CONVERTER)					
< COIL >							
L102	1-412-066-21	INDUCTOR CHIP 220uH					
L103	1-412-066-21	INDUCTOR CHIP 220uH					
L104	1-412-951-11	INDUCTOR 10uH					
L105	1-412-066-21	INDUCTOR CHIP 220uH					
L108	1-412-060-11	INDUCTOR CHIP 22uH					
L109	1-412-957-11	INDUCTOR 33uH					
L110	1-410-657-21	INDUCTOR CHIP 180uH					
L111	1-412-950-11	INDUCTOR 8.2uH					
L112	1-412-280-31	INDUCTOR 330uH					
L113	1-412-957-11	INDUCTOR 33uH					
L114	1-412-282-41	INDUCTOR 470uH					
L115	1-412-280-31	INDUCTOR 330uH					
L116	1-410-651-21	INDUCTOR CHIP 180uH					
L118	1-410-655-31	INDUCTOR CHIP 120uH					
L120	1-412-951-11	INDUCTOR 10uH					
L122	1-412-058-11	INDUCTOR CHIP 10uH					
L202	1-414-018-11	INDUCTOR 10uH					
L203	1-412-955-11	INDUCTOR 22uH					
L204	1-412-963-11	INDUCTOR 100uH					
L207	1-412-945-11	INDUCTOR 3.3uH					
L209	1-412-960-21	INDUCTOR 56uH					
L213	1-412-953-11	INDUCTOR 15uH					
L214	1-412-962-11	INDUCTOR 82uH					
L500	1-414-018-11	INDUCTOR 10uH					
L501	1-414-078-11	INDUCTOR 10uH					
L502	1-414-072-11	INDUCTOR 1uH					
L503	1-412-961-11	INDUCTOR 68uH					
L504	1-414-078-11	INDUCTOR 10uH					
L506	1-414-078-11	INDUCTOR 10uH					
L951	1-414-078-11	INDUCTOR 10uH					
L952	1-414-072-11	INDUCTOR 1uH					
L954	1-410-393-11	INDUCTOR CHIP 100uH					
L1252	1-414-078-11	INDUCTOR 10uH					
L1253	1-412-963-11	INDUCTOR 100uH					

<p>The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
---	---

VS-119

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< IC LINK >							
△PS500	1-576-122-21	LINK, IC CCP2E10 (N10)		Q257	8-729-230-63	TRANSISTOR	2SC4116-YG
△PS501	1-576-122-21	LINK, IC CCP2E10 (N10)		Q258	8-729-420-24	TRANSISTDR	2SB1218A-QRS
< TRANSISTGR >							
Q101	8-729-905-23	TRANSISTDR	2SA1576-R	Q265	8-729-823-16	TRANSISTOR	2SC4116-YG
Q102	8-729-420-24	TRANSISTOR	2SB1218A-QRS	Q266	8-729-402-42	TRANSISTOR	UN5213
Q103	8-729-216-22	TRANSISTOR	2SA1162-G	Q267	8-729-230-63	TRANSISTOR	2SC4116-YG
Q104	g-729-230-63	TRANSISTOR	2SC4116-YG	Q501	8-729-403-27	TRANSISTOR	XN4401
Q105	8-729-402-42	TRANSISTOR	UN5213	0502	8-729-120-28	TRANSISTOR	2SC1623-1.5L6
Q106	8-729-402-42	TRANSISTOR	UN5213	9503	8-729-402-81	TRANSISTOR	XN4501
Q109	8-729-230-63	TRANSISTOR	2SC4116-YG	9504	8-729-120-28	TRANSISTOR	2SC1623-1.5L6
Q111	8-729-015-74	TRANSISTOR	UN5111	Q506	8-729-402-42	TRANSISTOR	UN5213
Q112	8-729-117-73	TRANSISTOR	2SC4178-F14	Q507	8-729-120-28	TRANSISTOR	2SC1623-1.5L6
Q113	8-729-420-24	TRANSISTOR	2SB1218A-QRS	9951	8-729-101-07	TRANSISTOR	2SB798-DL
Q114	g-729-230-63	TRANSISTOR	2SC4116-YG	9952	8-729-230-63	TRANSISTOR	2SC4116-YG
Q115	8-729-012-50	TRANSISTOR	2SC4400-3/4/5	Q956	8-729-230-63	TRANSISTOR	2SC4116-YG
Q117	8-729-230-63	TRANSISTOR	2SC4116-YG	9958	8-729-230-63	TRANSISTOR	2SC4116-YG
Q119	8-729-230-63	TRANSISTOR	2SC4116-YG	Q959	8-729-402-42	TRANSISTDR	UN5213
9126	8-729-230-63	TRANSISTOR	2SC4116-YG	Q960	8-729-230-63	TRANSISTOR	2SC4116-YG
9129	8-729-230-63	TRANSISTOR	2SC4116-YG	Q1252	8-729-402-42	TRANSISTOR	UN5213
Q132	8-729-230-63	TRANSISTOR	2SC4116-YG	Q1257	8-729-420-24	TRANSISTOR	2SB1218A-QRS
Q133	8-729-012-50	TRANSISTOR	2SC4400-3/4/5	Q1258	8-729-230-63	TRANSISTOR	2SC4116-YG
9134	X-729-402-48	TRANSISTOR	UN521E	Q1259	8-729-420-20	TRANSISTOR	XN4312
Q135	8-729-402-48	TRANSISTOR	UN521E	< RESISTOR >			
Q202	8-729-420-24	TRANSISTOR	2SB1218A-QRS	R101	1-216-864-11	METAL CHIP	0 5% 1/16W
Q204	8-729-402-42	TRANSISTOR	UN5213	R102	1-216-837-11	METAL CHIP	22K 5% 1/16W
Q216	8-729-402-42	TRANSISTOR	UN5213	R103	1-216-839-11	METAL CHIP	33K 5% 1/16W
Q217	8-729-420-12	TRANSISTOR	XN4213	R104	1-216-819-11	METAL CHIP	680 5% 1/16W
Q219	8-729-230-63	TRANSISTOR	2SC4116-YG	R105	1-216-819-11	METAL CHIP	680 5% 1/16W
9225	8-729-015-76	TRANSISTOR	UN5211	R106	1-216-814-11	METAL CHIP	270 5% 1/16W
Q226	8-729-807-86	TRANSISTOR	2SB1295-UL5	R107	1-216-813-11	MBTAL CHIP	220 5% 1/16W
Q227	S-729-402-42	TRANSISTOR	UN5213	R108	1-216-800-11	METAL GLAZB	18 5% 1/16W
Q228	8-729-807-86	TRANSISTOR	2SB1295-UL5	R109	1-216-804-11	MBTAL CHIP	39 5% 1/16W
Q232	8-729-420-24	TRANSISTOR	2SB1218A-QRS	R110	1-216-818-11	METAL CHIP	560 5% 1/16W
Q234	8-729-230-63	TRANSISTOR	2SC4116-YG	R111	1-218-875-11	METAL CHIP	15K 0.50% 1/16W
Q235	8-729-420-24	TRANSISTOR	2SB1218A-QRS	R112	1-216-836-11	METAL CHIP	18K 5% 1/16W
Q236	g-729-230-63	TRANSISTGR	2SC4116-YG	R114	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
Q237	8-729-402-81	TRANSISTOR	XN4501	R118	1-216-836-11	METAL CHIP	18K 5% 1/16W
Q238	8-729-230-63	TRANSISTOR	2SC4116-YG	R119	1-216-864-11	METAL CHIP	0 5% 1/16W
Q240	8-729-230-63	TRANSISTOR	2SC4116-YG	R120	1-216-831-11	METAL CHIP	6.8K 5% 1/16W
Q242	8-729-420-24	TRANSISTGR	2SB1218A-QRS	R122	1-216-853-11	MBTAL CHIP	470K 5% 1/16W
Q244	8-729-402-42	TRANSISTGR	UN5213	R123	1-216-836-11	METAL CHIP	18K 5% 1/16W
Q245	8-729-403-35	TRANSISTOR	UN5113	R124	1-216-864-11	METAL CHIP	0 5% 1/16W
9246	8-729-402-81	TRANSISTGR	XN4501	R126	1-216-837-11	METAL CHIP	22K 5% 1/16W
Q247	8-729-402-42	TRANSISTOR	UN5213	R127	1-216-837-11	METAL CHIP	22K 5% 1/16W
9253	8-729-420-56	TRANSISTOR	UN511E	R128	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
Q254	8-729-403-35	TRANSISTGR	UN5113	R130	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
Q255	8-729-230-63	TRANSISTOR	2SC4116-YG	R132	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
Q256	8-729-230-63	TRANSISTGR	2SC4116-YG	R133	1-216-819-11	METAL CHIP	680 5% 1/16W

<p>The components identified by mark △ or dotted line with mark △are critical for safety.</p> <p>Replace only with part number specified.</p>	<p>Les composants identifiés par une marque △ sont critiques pour la sécurité.</p> <p>Ne les remplacer que par une pièce portant le numéro spécifié.</p>
---	---

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark		
R134	I-216-834-11	METAL CHIP	12K 5%	1/16W	R206	I-216-864-11	METAL CHIP	0 5%	1/16W
R135	I-216-833-11	METAL CHIP	10K 5%	1/16W	R207	I-216-804-11	METAL CHIP	39 5%	1/16W
R136	I-216-820-11	METAL CHIP	820 5%	1/16W	R209	I-216-814-11	METAL CHIP	270 5%	1/16W
R137	I-216-821-11	METAL CHIP	1K 5%	1/16W	R210	I-216-821-11	METAL CHIP	1K 5%	1/16W
R138	I-216-835-11	METAL CHIP	15K 5%	1/16W	R211	I-216-803-11	METAL CHIP	33 5%	1/16W
R139	I-216-839-11	METAL CHIP	33K 5%	1/16W	R213	I-216-833-11	METAL CHIP	10K 5%	1/16W
R140	I-216-813-11	METAL CHIP	220 5%	1/16W	R214	I-216-828-11	METAL CHIP	3.9K 5%	1/16W
R141	I-216-817-11	METAL CHIP	470 5%	1/16W	R215	I-216-819-11	METAL CHIP	680 5%	1/16W
R142	I-216-818-11	METAL CHIP	560 5%	1/16W	R216	I-216-825-11	METAL CHIP	2.2K 5%	1/16W
R143	I-216-808-11	METAL CHIP	82 5%	1/16W	R218	I-216-821-11	METAL CHIP	1K 5%	1/16W
R144	I-216-818-11	METAL CHIP	560 5%	1/16W	R219	I-216-831-11	METAL CHIP	6.8K 5%	1/16W
R146	I-216-809-11	METAL CHIP	100 5%	1/16W	R224	I-216-829-11	METAL CHIP	4.7K 5%	1/16W
R147	I-216-864-11	METAL CHIP	0 5%	1/16W	R226	I-216-831-11	METAL CHIP	6.8K 5%	1/16W
R148	I-216-813-11	METAL CHIP	220 5%	1/16W	R230	I-216-830-11	METAL CHIP	5.6K 5%	1/16W
R149	I-216-813-11	METAL CHIP	220 5%	1/16W	R231	I-216-833-11	METAL CHIP	10K 5%	1/16W
R150	I-216-829-11	METAL CHIP	4.7K 5%	1/16W	R232	I-216-830-11	METAL CHIP	5.6K 5%	1/16W
R151	I-216-823-11	METAL CHIP	1.5K 5%	1/16W	R234	I-216-864-11	METAL CHIP	0 5%	1/16W
R152	I-216-824-11	METAL CHIP	1.8K 5%	1/16W	R235	I-218-877-11	METAL CHIP	18K 0.50%	1/16W
R153	I-216-830-11	METAL CHIP	5.6K 5%	1/16W	R241	I-216-833-11	METAL CHIP	10K 5%	1/16W
R154	I-216-821-11	METAL CHIP	1K 5%	1/16W	R245	I-216-829-11	METAL CHIP	4.7K 5%	1/16W
R158	I-216-836-11	METAL CHIP	18K 5%	1/16W	R246	I-216-819-11	METAL CHIP	680 5%	1/16W
R159	I-216-836-11	METAL CHIP	18K 5%	1/16W	R247	I-216-815-11	METAL CHIP	330 5%	1/16W
R160	I-216-818-11	METAL CHIP	560 5%	1/16W	R253	I-218-849-11	METAL CHIP	1.2K 0.50%	1/16W
R162	I-216-818-11	METAL CHIP	560 5%	1/16W	R255	I-216-821-11	METAL CHIP	1K 5%	1/16W
R163	I-216-821-11	METAL CHIP	1K 5%	1/16W	R256	I-216-821-11	METAL CHIP	1K 5%	1/16W
R164	I-216-864-11	METAL CHIP	0 5%	1/16W	R259	I-218-859-11	METAL CHIP	3.3K 0.50%	1/16W
R165	I-216-821-11	METAL CHIP	1K 5%	1/16W	R261	I-216-821-11	METAL CHIP	1K 5%	1/16W
R166	I-216-816-11	METAL CHIP	390 5%	1/16W	R262	I-216-825-11	METAL CHIP	2.2K 5%	1/16W
R171	I-216-823-11	METAL CHIP	1.5K 5%	1/16W	R263	I-218-839-11	METAL GLAZE	470 0.50%	1/16W
R175	I-216-821-11	METAL CHIP	1K 5%	1/16W	R265	I-216-818-11	METAL CHIP	560 5%	1/16W
R178	I-216-809-11	METAL CHIP	100 5%	1/16W	R272	I-216-826-11	METAL CHIP	2.7K 5%	1/16W
R179	I-216-825-11	METAL CHIP	2.2K 5%	1/16W	R273	I-216-830-11	METAL CHIP	5.6K 5%	1/16W
R180	I-216-809-11	METAL CHIP	100 5%	1/16W	R274	I-216-823-11	METAL CHIP	1.5K 5%	1/16W
R181	I-216-821-11	METAL CHIP	1K 5%	1/16W	R279	I-216-819-11	METAL CHIP	680 5%	1/16W
R185	I-216-847-11	METAL CHIP	150K 5%	1/16W	R280	I-216-841-11	METAL CHIP	47K 5%	1/16W
R186	I-216-837-11	METAL CHIP	22K 5%	1/16W				0 5%	
R187	I-216-837-11	METAL CHIP	22K 5%	1/16W	R281	I-216-864-11	METAL CHIP	3.3K 5%	1/16W
R188	I-216-837-11	METAL CHIP	22K 5%	1/16W	R282	I-216-827-11	METAL CHIP	0 5%	1/16W
R189	I-216-837-11	METAL CHIP	22K 5%	1/16W	R283	I-216-864-11	METAL CHIP	0 5%	1/16W
R193	I-216-815-11	METAL CHIP	330 5%	1/16W	R285	I-216-857-11	METAL CHIP	1M 5%	1/16W
R194	I-216-818-11	METAL CHIP	560 5%	1/16W	R286	I-216-825-11	METAL CHIP	2.2K 5%	1/16W
R195	I-216-839-11	METAL CHIP	33K 5%	1/16W	R288	I-216-844-11	METAL CHIP	82K 5%	1/16W
R196	I-216-836-11	METAL CHIP	18K 5%	1/16W	R289	I-216-821-11	METAL CHIP	1K 5%	1/16W
R197	I-216-864-11	METAL CHIP	0 5%	1/16W	R290	I-216-864-11	METAL CHIP	0 5%	1/16W
R198	I-216-864-11	METAL CHIP	0 5%	1/16W	R291	I-216-833-11	METAL CHIP	10K 5%	1/16W
R199	I-216-864-11	METAL CHIP	0 5%	1/16W	R293	I-216-825-11	METAL CHIP	2.2K 5%	1/16W
R201	I-216-829-11	METAL CHIP	4.7K 5%	1/16W	R295	I-216-864-11	METAL CHIP	0 5%	1/16W
R202	I-216-832-11	METAL CHIP	8.2K 5%	1/16W	R296	I-216-815-11	METAL CHIP	330 5%	1/16W
R203	I-216-829-11	METAL CHIP	4.7K 5%	1/16W	R297	I-216-825-11	METAL CHIP	2.2K 5%	1/16W
R205	I-216-864-11	METAL CHIP	0 5%	1/16W	R300	I-216-817-11	METAL CHIP	470 5%	1/16W
					R302	I-216-864-11	METAL CHIP	0 5%	1/16W

VS-119

Ref. No.	Part No.	Description			Remark	sf. No.	Part No.	Description
R303	1-216-810-11	METAL CHIP	120	5%	1/16W	R507	1-216-857-11	METAL CHIP
R304	1-216-833-11	METAL CHIP	10K	5%	1/16W	R508	1-216-821-11	METAL CHIP
R305	1-216-820-11	METAL CHIP	820	5%	1/16W	R509	1-216-851-11	METAL CHIP
R307	1-216-813-11	METAL CHIP	220	5%	1/16W	R510	1-216-841-11	METAL CHIP
R308	1-216-842-11	METAL CHIP	56K	5%	1/16W	R511	1-216-839-11	METAL CHIP
R309	1-216-839-11	METAL CHIP	33K	5%	1/16W	R512	1-216-837-11	METAL CHIP
R312	1-216-821-11	METAL CHIP	1K	5%	1/16W	R513	1-216-837-11	METAL CHIP
R313	1-216-817-11	METAL CHIP	470	5%	1/16W	R514	1-216-845-11	METAL CHIP
R314	1-216-864-11	METAL CHIP	0	5%	1/16W	R515	1-216-853-11	METAL CHIP
R315	1-216-821-11	METAL CHIP	1K	5%	1/16W	R517	1-216-821-11	METAL CHIP
R316	1-216-815-11	METAL CHIP	330	5%	1/16W	R518	1-216-857-11	METAL CHIP
R317	1-216-820-11	METAL CHIP	820	5%	1/16W	R519	1-216-817-11	METAL CHIP
R318	1-216-820-11	METAL CHIP	820	5%	1/16W	R520	1-216-845-11	METAL CHIP
R319	1-216-818-11	METAL CHIP	560	5%	1/16W	R522	1-216-841-11	METAL CHIP
R321	1-216-813-11	METAL CHIP	220	5%	1/16W	R523	1-216-831-11	METAL CHIP
R322	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R525	1-216-853-11	METAL CHIP
R323	1-216X325-11	METAL CHIP	2.2K	5%	1/16W	R526	1-216-841-11	METAL CHIP
R324	1-216-821-11	METAL CHIP	1K	5%	1/16W	R527	1-216-829-11	METAL CHIP
R325	1-216-821-11	METAL CHIP	1K	5%	1/16W	R528	1-216-829-11	METAL CHIP
R326	1-216-813-11	METAL CHIP	220	5%	1/16W	R529	1-216-845-11	METAL CHIP
R328	1-216-820-11	METAL CHIP	820	5%	1/16W	R530	1-216-019-00	METAL CHIP
R329	1-216-833-11	METAL CHIP	10K	5%	1/16W	R531	1-216-829-11	METAL CHIP
R331	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R532	1-216-833-11	METAL CHIP
R333	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R533	1-217-671-11	METAL CHIP
R334	1-216-815-11	METAL CHIP	330	5%	1/16W	R534	1-217-671-11	METAL CHIP
R338	1-216-812-11	METAL CHIP	180	5%	1/16W	R535	1-217-671-11	METAL CHIP
R339	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	R536	1-217-671-11	METAL CHIP
R342	1-216-831-11	METAL MIP	6.8K	5%	1/16W	R537	1-216-829-11	METAL CHIP
R347	1-216-837-11	METAL CHIP	22K	5%	1/16W	R538	1-216-821-11	METAL CHIP
R348	1-216-839-11	METAL CHIP	33K	5%	1/16W	R539	1-216-841-11	METAL CHIP
R349	1-216-864-11	METAL CHIP	0	5%	1/16W	R540	1-216-829-11	METAL CHIP
R354	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R541	1-216-835-11	METAL CHIP
R357	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R542	1-216-864-11	METAL CHIP
R364	1-216-864-11	METAL CHIP	0	5%	1/16W	R543	1-216-864-11	METAL CHIP
R366	1-216-864-11	METAL CHIP	0	5%	1/16W	R544	1-216-833-11	METAL CHIP
R368	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R546	1-216-833-11	METAL CHIP
R373	1-216-833-11	METAL CHIP	10K	5%	1/16W	R548		
R380	1-216-837-11	METAL CHIP	22K	5%	1/16W	R549		
R381	1-216-837-11	METAL CHIP	22K	5%	1/16W	R550		
R383	1-216-842-11	METAL CHIP	56K	5%	1/16W	R551		
R387	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	R552		
R391	1-216-864-11	METAL CHIP	0	5%	1/16W	R553		
R398	1-216-821-11	METAL CHIP	1K	5%	1/16W	R554		
R399	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R555		
R500	1-216-841-11	METAL CHIP	47K	5%	1/16W	R556		
R501	1-216-833-11	METAL CHIP	10K	5%	1/16W	R558		
R502	1-216-295-91	METAL GLAZE	0	5%	1/10W	R560		
R503	1-216-841-11	METAL CHIP	47K	5%	1/16W	R561		
R505	1-216-864-11	METAL CHIP	0	5%	1/16W	R562		
R506	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	R563		

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R567	1-216-821-11	METAL CHIP	1K 5%	1/16W	R1403	1-216-845-11 METAL CHIP	100K 5% 1/16W
R570	1-216-821-11	METAL CHIP	1K 5%	1/16W	R1404	1-216-845-11 METAL CHIP	100K 5% 1/16W
R572	1-216-841-11	METAL CHIP	47K 5%	1/16W	R1406	1-216-821-11 METAL CHIP	1K 5% 1/16W
R573	1-216-845-11	METAL CHIP	100K 5%	1/16W			
R575	1-216-864-11	METAL CHIP	0 5%	1/16W			< COMPOSITION CIRCUIT BLOCK >
R577	1-216-845-11	METAL CHIP	100K 5%	1/16W	RB199	1-236-971-11 NETWORK, RES 0	
R578	1-216-833-11	METAL CHIP	10K 5%	1/16W	RB500	1-236-436-11 NETWORK, RES 100K	
R579	1-216-864-11	METAL CHIP	0 5%	1/16W	RB501	1-236-432-11 NETWORK, RES 47K	
R580	1-216-845-11	METAL CHIP	100K 5%	1/16W	RB502	1-236-971-11 NETWORK, RES 0	
R581	1-216-821-11	METAL CHIP	1K 5%	1/16W	RB503	1-236-432-11 NETWORK, RES 47K	
R582	1-216-821-11	METAL CHIP	1K 5%	1/16W	RB504	1-236-412-11 NETWORK, RES 1.0K	
R583	1-216-833-11	METAL CHIP	10K 5%	1/16W	RB505	1-236-412-11 NETWORK, RES 1.0K	
R584	1-216-864-11	METAL CHIP	0 5%	1/16W	RB506	1-236-412-11 NETWORK, RES 1.0K	
R585	1-216-821-11	METAL CHIP	1K 5%	1/16W	RB507	1-236-448-11 NETWORK, RES 1.0M	
R586	1-216-849-11	METAL CHIP	220K 5%	1/16W	RB508	1-236-436-11 NETWORK, RES 100K	
R587	1-216-853-11	METAL CHIP	470K 5%	1/16W	RB509	1-236-432-11 NETWORK, RES 47K	
R588	1-216-827-11	METAL CHIP	3.3K 5%	1/16W	RB510	1-236-412-11 NETWORK, RES 1.0K	
R589	1-216-864-11	METAL CHIP	0 5%	1/16W	RB512	1-236-412-11 NETWORK, RES 1.0K	
R591	1-216-821-11	METAL CHIP	1K 5%	1/16W	RB513	1-236-971-11 NETWORK, RES 0	
R592	1-216-841-11	METAL CHIP	47K 5%	1/16W	RB514	1-236-907-11 RESISTOR, NETWORK (CHIP TYPE) 100K	
R593	1-216-845-11	METAL CHIP	100K 5%	1/16W	RB515	1-236-904-11 RESISTOR, NETWORK (CHIP TYPE) 1.0K	
R594	1-216-821-11	METAL CHIP	1K 5%	1/16W	RB516	1-236-904-11 RESISTOR, NETWORK (CHIP TYPE) 1.0K	
R595	1-216-821-11	METAL CHIP	1K 5%	1/16W	RB518	1-236-971-11 NETWORK, RES 0	
R596	1-216-833-11	METAL CHIP	10K 5%	1/16W	RB519	1-236-971-11 NETWORK, RES 0	
R597	1-216-821-11	METAL CHIP	1K 5%	1/16W	RB520	1-236-904-11 RESISTOR, NETWORK (CHIP TYPE) 1.0K	
R954	1-216-138-00	METAL CHIP	3.3 5%	1/8W	RB521	1-236-412-11 NETWORK, RES 1.0K	
R955	1-216-830-11	METAL MIP	5.6K 5%	1/16W	RB522	1-236-448-11 NETWORK, RES 1.0M	
R956	1-216-836-11	METAL CHIP	18K 5%	1/16W	RB523	1-236-432-11 NETWORK, RES 47K	
R957	1-216-820-11	METAL CHIP	820 5%	1/16W	RB524	1-236-908-11 RESISTOR, NETWORK (CHIP TYPE) 10K	
R961	1-216-818-11	METAL CHIP	560 5%	1/16W	RB525	1-236-424-11 NETWORK, RES 10K	
R962	1-216-837-11	METAL CHIP	22K 5%	1/16W	RB526	1-236-908-11 RESISTOR, NETWORK (CHIP TYPE) 10K	
R964	1-216-822-11	METAL CHIP	1.2K 5%	1/16W	RB527	1-236-424-11 NETWORK, RES 10K	
R965	1-216-826-11	METAL CHIP	2.7K 5%	1/16W	RB528	1-236-424-11 NETWORK, RES 10K	
R966	1-216-826-11	METAL CHIP	2.7K 5%	1/16W	RB529	1-236-424-11 NETWORK, RES 10K	
R967	1-216-832-11	METAL CHIP	8.2K 5%	1/16W	RB530	1-236-424-11 NETWORK, RES 10K	
R968	1-216-834-11	METAL CHIP	12K 5%	1/16W	RB531	1-236-424-11 NETWORK, RES 10K	
R969	1-216-817-11	METAL CHIP	470 5%	1/16W	RB532	1-236-424-11 NETWORK, RES 10K	
R972	1-216-823-11	METAL CHIP	1.5K 5%	1/16W	RB533	1-236-412-11 NETWORK, RES 1.0K	
R1251	1-216-829-11	METAL CHIP	4.7K 5%	1/16W	RB534	1-236-412-11 NETWORK, RES 1.0K	
R1252	1-216-864-11	METAL CHIP	0 5%	1/16W	RB535	1-236-908-11 RESISTOR, NETWORK (CHIP TYPE) 10K	
R1270	1-216-864-11	METAL CHIP	0 5%	1/16W	RB536	1-236-412-11 NETWORK, RES 1.0K	
R1276	1-216-829-11	METAL CHIP	4.7K 5%	1/16W	RB537	1-236-412-11 NETWORK, RES 1.0K	
R1277	1-216-825-11	METAL CHIP	2.2K 5%	1/16W	RB542	1-236-412-11 NETWORK, RES 1.0K	
R1278	1-216-825-11	METAL CHIP	2.2K 5%	1/16W	RB543	1-236-412-11 NETWORK, RES 1.0K	
R1281	1-216-829-11	METAL CHIP	4.7K 5%	1/16W	RB544	1-236-412-11 NETWORK, RES 1.0K	
R1282	1-216-825-11	METAL CHIP	2.2K 5%	1/16W	RB548	1-236-416-11 NETWORK, RES 2.2K	
R1284	1-216-864-11	METAL CHIP	0 5%	1/16W	RB549	1-236-911-11 NETWORK, RES 0	
R1285	1-216-864-11	METAL CHIP	0 5%	1/16W	RB550	1-236-971-11 NETWORK, RES 0	
R1400	1-216-864-11	METAL CHIP	0 5%	1/16W	RB551	1-236-412-11 NETWORK, RES 1.0K	
R1401	1-216-864-11	METAL CHIP	0 5%	1/16W	RB552	1-236-412-11 NETWORK, RES 1.0K	

VS-119

Ref. No.	Part No.	Description	Remark	ef. No.	Part No.	Description	Remark
RB553	1-236-412-11	NETWORK, RES 1. OK		M910	3-708-898-01	IRIS ASSY	
RB554	1-236-971-11	NETWORK, RES0		M911	3-708-897-01	MOTOR ASSY, FOCUS	
P&55	1-236-971-11	NETWORK, RES0		M912	3-708-896-01	MOTOR ASSY, ZOOM	
		< VARIABLE RESISTOR >		S001	i-572-986-11	SWTICH, ROTARY (ENCODER)	
RY202	1-238-852-11	RES, ADJ, CERMET 470		S002	1-572-987-11	SWITCH, PUSH (3KEY) (REC PROOF, ME/MP, MP/MP-HG)	
		< VIBRATOR >		S005	1-570-771-21	SWITCH (C DOWN)	
X201	1-579-365-21	VIBRATOR, CRYSTAL (3.58MHz)		SP501	1-504-666-11	SPEAKER (4CM)	
X501	1-579-550-11	VIBRATOR, CRYSTAL (32kHz)		V901	1-452-566-11	CRT ASSY (M01KXX07WB10)	
X502	1-760-314-11	VIBRATOR, CRYSTAL (11.895MHz)		W500	1-651-889-11	m-48 FLEXIBLE BOARD	
		< VIBRATOR >		W501	1-642-186-11	FP-437 FLEXIBLE BOARD	
XT1501	1-579-369-21	VIBRATOR (10MHz)		W501	1-653-930-11	FP-148 FLEXIBLE BOARD	
				W502	1-526-978-51	SOCKET ASSY, CRT	
				W001	1-653-931-11	FP-150 FLEXIBLE BOARD	
*****				*****			
		MISCELLANEOUS		ACCESSORIES & PACKING MATERIALS			
		*****		*****			
113	1-467-835-21	SWITCH BLOCK, CONTROL (CK)			1-467-574-21	REMOTE COMMANDER (RMT-708)	
201	1-467-649-31	SWITCH BLOCK, CONTROL (FK)			1-528-389-11	BATTERY, MANGANESE (RGP) (NS-H)	
207	1-691-471-11	CONNECTOR, TRANSLATION 11P			1-574-039-11	CORD, CONNECTION	
211	1-651-935-11	FP-95 FLEXIBLE BOARD				(A/V connecting cable (monaural)) (1.5m)	
219	1-651-936-11	FP-96 FLEXIBLE BOARD			3-759-182-21	MANUAL, INSTRUCTION (ENGLISH) (US, CND)	
222	1-651-891-11	FP-52 FLEXIBLE BOARD			3-759-182-31	MANUAL, INSTRUCTION (FRENCH) (CND)	
254	1-651-904-11	FP-97 FLEXIBLE BOARD			3-759-540-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH) (E)	
264	1-547-558-21	FILTER BLOCK, OPTICAL			3-759-540-41	MANUAL, INSTRUCTION (CHINESE) (E)	
301	8-848-704-01	DEVICE, LENS 1SW-140A (TYPE I)			3-795-581-21	SAFEGUARD (SONY), IMPORTANT (US)	
351	1-547-716-11	LENS, ZOOM (VCL-5412WA) (TYPE II)			3-951-912-01	BELT (S), SHOULDER	
401	1-547-739-11	LENS, ZOOM (VCL-5412WB) (TYPE III)			3-956-563-01	CLEANER, LCD	
462	1-467-479-21	PLATE, LIGHT GUIDE BLOCK			3-958-570-41	INDIVIDUAL CARTON (US, CND)	
801	A-7049-501-A	DRUM ASSY, UPPER (DGR-78-R)			3-958-570-81	INDIVIDUAL CARTON (E)	
814	1-568-323-11	CONNECTOR, BOARD TO BOARD 4P			3-960-746-01	CUSHION, ACC	
871	1-641-643-12	FP-444 FLEXIBLE BOARD			3-960-747-01	CUSHION (LOWER)	
872	1-691-254-13	CONNECTOR, TRANSLATION 10P		**	AC-V25A/V25B	AC POWER ADAPTOR	
874	1-641-639-13	FP-442 FLEXIBLE BOARD		***	NP-66	BATTERY PACK	
875	1-645-271-11	FP-575 FLEXIBLE BOARD		Note.			
BL001	1-517-300-11	TUBE, FLUORESCENT (BACK LIGHT)		**		MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.	
IC691	A-7030-368-A	CCD BLOCK ASSY (054 SERVICE) (CCD IMAGER)		***		MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.	
J201	1-537-726-11	TERMINAL BOARD		*****			
LCD901	1-810-328-21	DISPLAY MODULE, LIQUID CRYSTAL		*****			
M001	1-542-162-11	MICROPHONE UNIT		*****			
M901	A-7048-564-A	DRUM ASSY (DGH-78A-R)		*****			
M902	8-835-477-01	MOTOR, DC SCE-0101A (CAPS-TAN)					
M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)		#1	7-627-553-47	PRECISION SCREW +P2X4 TYPE 3	
M905	1-698-364-01	MOTOR ASSY, FOCUS		#2	7-685-103-19	+ PTPWH (2X5)	
M906	1-698-363-01	MOTOR ASSY, ZOOM					
M907	3-708-888-01	METER, IG (IRIS)					
M908	3-708-889-01	MOTOR ASSY, FOCUS					
M909	3-708-887-01	MOTOR ASSY, ZOOM					

<p>Be sure to read "Note on the CCD Imager replacement" on page 4-6 (CCD-FX403/FX435/FX530/FX630) when changing the CCD imager.</p>	<p>The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.</p>
--	---

<p>Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>

- Only the following parts are different for the AU-175 board.

<u>Ref. No.</u> <u>Part No.</u>	<u>Description</u>	Location (CCD-FX430)		(CCD-FX430)	(CCD-FX730V)
		<u>PRINTED</u>	<u>SCHEMATIC</u>		
* A-7063-943-A	AU-157 BOARD, COMPLETE (Ref. No. 5,000 Series)	—	—	0	x
* A-7066-153-A	AU-175 BOARD, COMPLETE (Ref. No. 5,000 Series)	—	—	x	0
R425 1-216-810-11	METAL CHIP 120 5% 1/16W	D-Z	E-9	0	x
R425 1-216-864-11	METAL CHIP 0 5% 1/16W	—	—	x	0

0: MOUNT
x: NO MOUNT

- Only the following parts are different for the MA-209 board.

<u>Ref. No.</u> <u>Part No.</u>	<u>Description</u>	Location (CCD-FX430)		(CCD-FX430)	(CCD-FX730V)
		<u>PRINTED</u>	<u>SCHEMATIC</u>		
* A-7063-941-A	MA-197 BOARD, COMPLETE (Ref. No. 6,000 Series)	—	—	0	x
* A-7066-152-A	WI-209 BOARD, COMPLETE (Ref. No. 6,000 Series)	—	—	x	0

0: MOUNT
x: NO MOUNT

- Only the following parts are different for the SL-38 board.

<u>Ref. No.</u> <u>Part No.</u>	<u>Description</u>	Location (CCD-FX430)		(CCD-FX430)	(CCD-FX730V)
		<u>PRINTED</u>	<u>SCHEMATIC</u>		
* A-7072-000-A	SL-38 BOARD, COMPLETE (Ref. No. 4,000 Series)	—	—	0	0
CN500 1-691-473-21	CONNECTOR, FFC/FPC 7P	A-7	C-4	0	x
CN500 1-691-481-11	CONNECTOR, FFC/FPC 7P	—	—	x	0
CN501 1-691-472-21	CONNECTOR, FFC/FPC 6P	A-5	D-4	0	x
CN501 1-691-480-11	CONNECTOR, FFC/FPC 6P	—	—	x	0

0: MOUNT
x: NO MOUNT

Before You Begin

Notes and Precautions

As you read through this manual, buttons and settings on the camcorder are shown in capital letters. e.g., "Set the POWER switch to CAMERA. Photographs taken with a still camera are used for in the descriptions of the images seen in the viewfinder and on the LCD. These photos will differ from what you will actually be able to see in the viewfinder and on the LCD.

Note on TV Color Systems

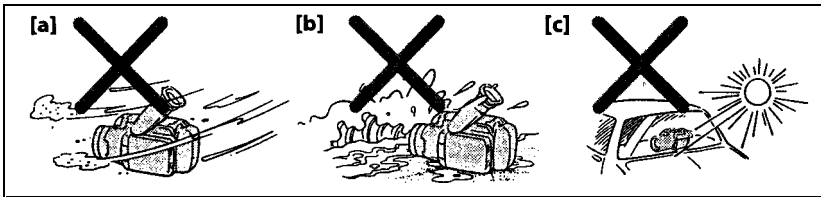
TV color systems differ from country to country. To view your recordings on a TV, you need an NTSC system-based TV. When you want to use a PAL-M system-based TV, you will need an NTSC/PAL-M transcoder (as this is an NTSC system based camcorder). Please check the list on page 39 to find out the TV color system used in your country.

Precaution on Copyright

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Precautions on Camcorder Care

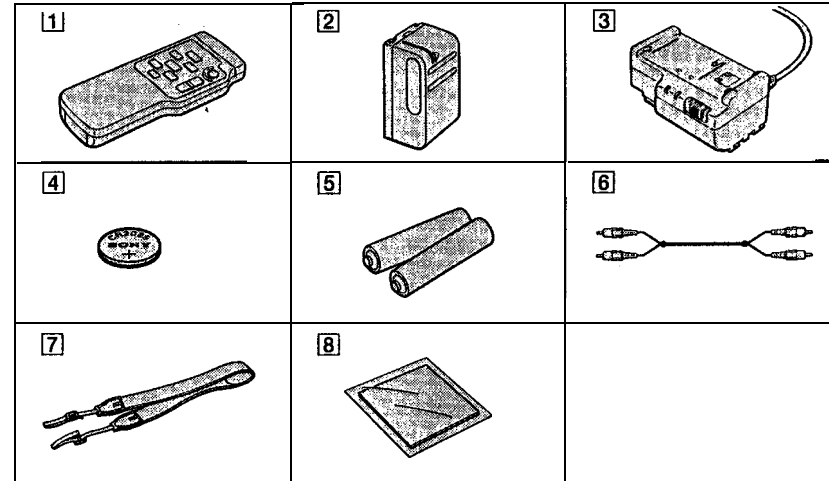
- Do not let sand get into the camcorder. When you use the camcorder on a sandy beach or dusty place, protect it from the sand or dust. Sand or dust may cause the unit to malfunction and sometimes the malfunction cannot be repaired. [a]
- Do not let the camcorder get wet. Keep the camcorder away from rain and sea water. Letting the camcorder get wet may cause the unit to malfunction and sometimes the malfunction cannot be repaired. [b]
- Never leave the camcorder exposed to temperatures above 140°F (60°C), such as in a car parked in the sun or under direct sunlight. [c]



Please also refer to the precautions starting on p. 37 in addition to the above precautions.

Checking Supplied Accessories

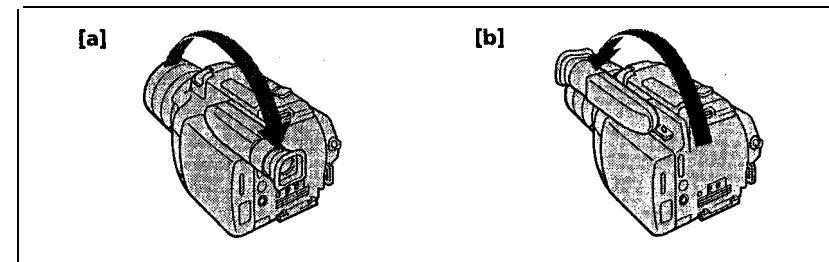
Check that the following accessories are supplied with your camcorder.



- Wireless remote commander (1) (p. 47)
- NP-66 battery pack (1) (p. 6)
- AC-V25A/V25B AC power adaptor (1) (p. 6, 18)
- CR2025 lithium battery (1) (p. 30)
(The lithium battery is already installed in your camcorder.)
- Size AA(R6) battery for remote commander (2) (p. 47)
- A/V connecting cable (1) (p. 27)
- Shoulder strap (1) (p. 46)
- LCD screen cleaner cloth (p. 38)

After Taking the Camcorder out of the Box

Turn the viewfinder barrel in the direction of the arrow [a]. When storing your camcorder, turn the viewfinder barrel in the direction of the arrow [b].



Before You Begin

SECTION 1
GENERAL

This section is extracted from
instruction manual.

5

CCD-FX730V

Getting Started

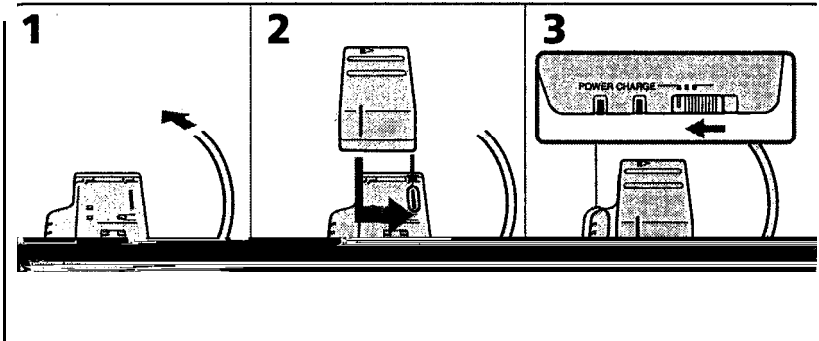
Charging and Installing the Battery Pack

Before using your camcorder, you first need to charge and install the battery pack. To charge the battery pack, use the supplied AC-V25A/V25B AC power adaptor.

Charging the Battery Pack

Charge the battery pack on a flat surface without vibration.

- (1) Connect the power cord to a wall outlet.
- (2) Align the right side of the battery pack with the line on the AC power adaptor, then slide the battery pack in the direction of the arrow.
- (3) Set the selector to CHARGE. The CHARGE lamp (orange) lights **up**. Charging begins. When charging is completed, the CHARGE lamp goes out. Set the selector to the center position and unplug the unit from the wall outlet. Then remove the battery pack and install it on the camcorder. To stop charging, set the selector to the center position.



Charging Time

Battery pack	NP-66 (supplied)	NP-80 NP-80D	NP-77H	NP-66H	NP-60D	NP-55H
Charging time*	70	180	160	120	90	80

* Approximate minutes to charge an empty battery pack using the AC-V25A/V25B (Lower temperatures require a longer charging time.)

Battery Life

Battery Pack		NP-66 (supplied)	NP-80 NP-80D	NP-77H	NP-66H	NP-60D	NP-55H
While recording**	LCD open	40 (75)	80 (150)	70 (135)	55 (100)	35 (70)	35 (65)
	LCD close	50 (90)	95 (180)	85 (160)	65 (120)	45 (85)	40 (75)
While playing back on LCD***		90	180	160	120	85	75

- ** Approximate minutes when recording while you repeat recording start/stop or zooming and turning the power on/off. The actual battery life may be shorter.
- Approximate continuous recording time indoors is indicated in parentheses.
- *** Approximate continuous playback time indoors.

Important!

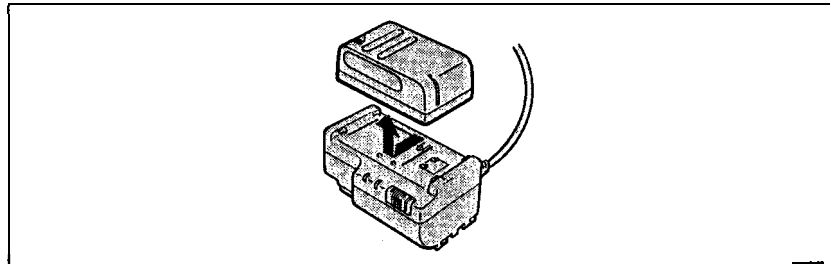
Use the battery completely before re-charging!

Before you recharge the battery pack, make sure the battery has been used up (discharged) completely. Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you use the battery completely and charge it fully again.

To use up the battery, remove the cassette and slide the POWER switch to CAMERA with the battery pack attached, and leave the camcorder until the indicator flashes and the red lamp flashes rapidly in the viewfinder or on the LCD screen.

Removing the Battery Pack

Slide the battery pack in the direction of the arrow.



Notes on charging the battery pack

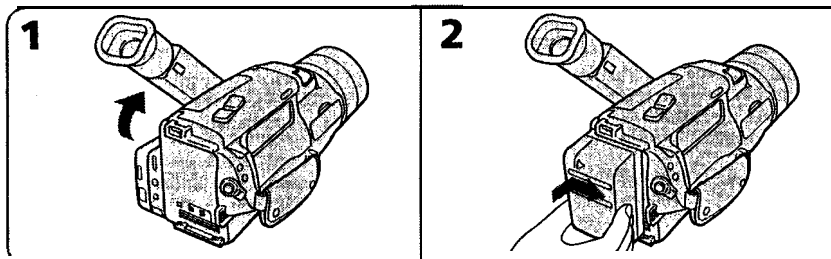
- The POWER lamp will remain lit for a while even if the battery pack is removed and the power cord is unplugged after charging the battery pack. This is normal.
- If the POWER lamp does not light, set the selector to the center position and disconnect the power cord. After about one minute, reconnect the power cord and set the selector to CHARGE again.
- You cannot operate the camcorder using the AC power adaptor while charging the battery pack.

See the next page for further information.

Charging and Installing the Battery Pack

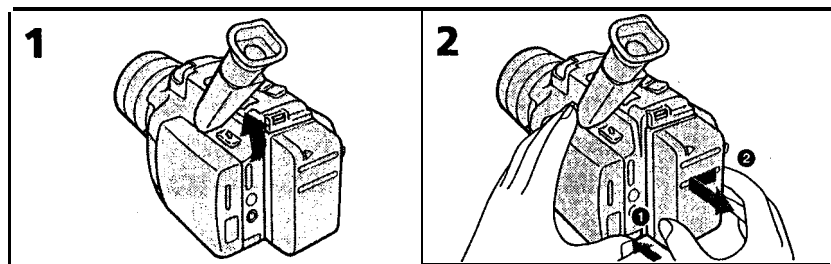
Installing the Battery Pack

- (1) Lift up the viewfinder.
- (2) Align the right side of the battery pack with the white line on the camcorder, and slide the battery pack to the right.



To Remove the Battery Pack

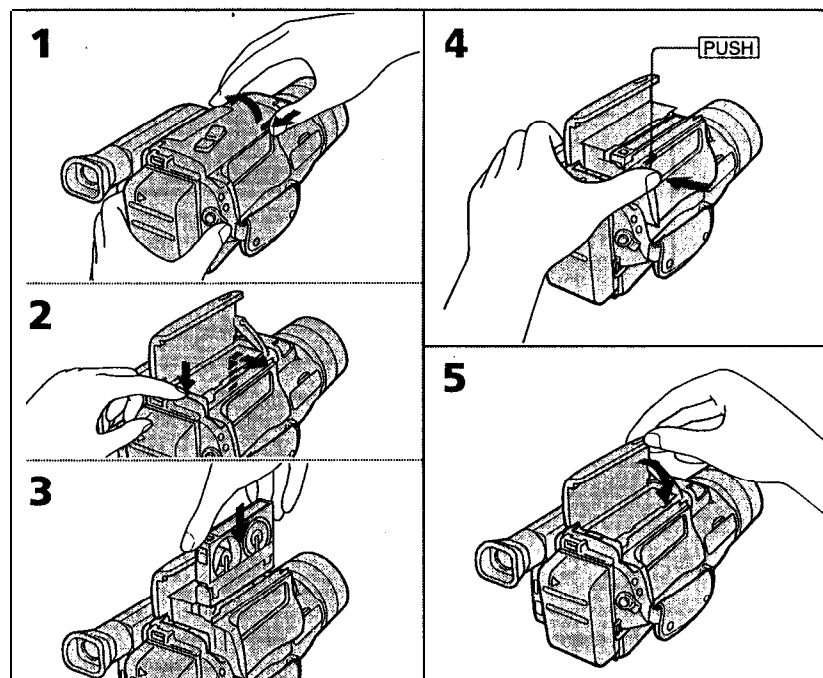
- (1) Lift up the viewfinder.
- (2) While pressing BATT, slide the battery pack to the left.



Inserting a Cassette

Make sure that the power source is installed.



- (1) While sliding the lid lock in the direction of the arrow, lift up the lid.
- (2) Press EJECT. The cassette compartment automatically lifts up and opens.
- (3) Insert a cassette with the window facing out.
- (4) Close the cassette compartment by pressing the "PUSH" mark on the cassette compartment.
- (5) After the cassette compartment has gone down, close the lid.

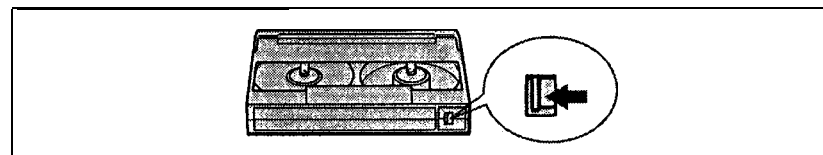


To Eject the Cassette

While sliding the lid lock in the direction of the arrow, lift up the lid of the cassette holder and press EJECT.

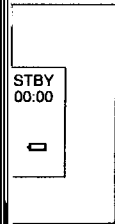
Preventing Accidental Erasure

To prevent accidental erasure, slide the tab on the cassette to expose the red mark. If you try to record with the red mark exposed, the  and  indicators flash in the viewfinder, and you cannot record. To rerecord on this tape, slide the tab back out covering the red mark.

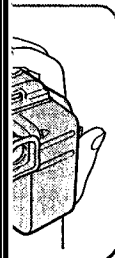




is used it,
in the



Basic Operations



.CD screen

e camcorder



Camera Recording

Note on Standby mode

If you leave the camcorder in Standby mode for 5 minutes while the cassette is inserted, the camcorder turns off automatically. This prevents wearing down the battery and wearing out the tape. To resume Standby mode, turn STANDBY down once and turn it up again. To start recording, press START/STOP.

Note on recording


When you record from the beginning of a tape, run the tape for about 15 seconds before starting the actual recording. This will ensure that you won't miss any start-up scenes when you play back the tape.

You can record tapes in SP (standard play) mode only.

Note on the tape counter

The tape counter indicates the recording or playback time. Use it as a guide. There will be a time lag of several seconds from the actual time. To set the counter to zero, press COUNTER RESET.

Note on beep sound

As indicated by the  mark in the illustrations, a beep sounds when you turn the power on or when you start recording and two beeps sound when you stop recording, confirming the operation. Several beeps also sound as a warning of any unusual condition of the camcorder (p. 50).

Note that the beep sound is not recorded on the tape. If you do not want to hear the beep sound, select "OFF" in the menu system.

Note on the AUTO DATE feature

The clock is set to the East Coast Standard Time at the factory, but you can reset the clock in the menu system (p. 31). You can change the AUTO DATE settings by selecting ON or OFF in the menu system. The AUTO DATE feature works once a day. However, the date may automatically appear more than once a day when:

- you reset the date and time.
- you eject and insert the tape again.
- you stop recording within 10 seconds.
- you set AUTO DATE to OFF once and set to ON again in the menu system.

When moving from indoors to outdoors (or vice versa)

Turn STANDBY up and point the camcorder at a white object for about 15 seconds so that the white balance is properly adjusted.

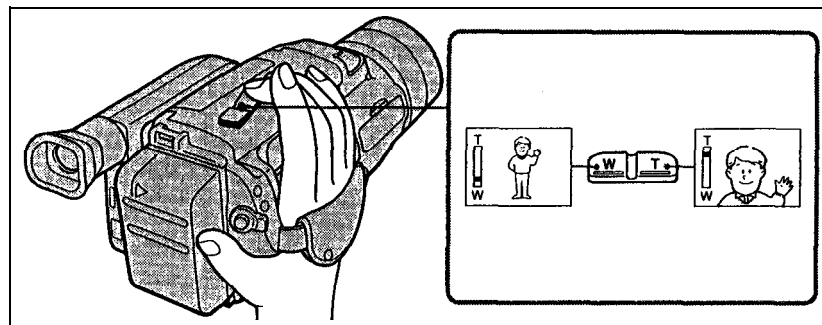
Using the Zoom Feature

Zooming is a recording technique that lets you change the size of the subject in the scene.

For more professional-looking recordings, use the zoom function sparingly.

"T" side: for telephoto (subject appears closer)

"W" side: for wide-angle (subject appears farther away)



Zooming Speed (Dual speed zooming)

Press the power zoom button firmly for a high-speed zoom; press it softly for a relatively slow zoom.

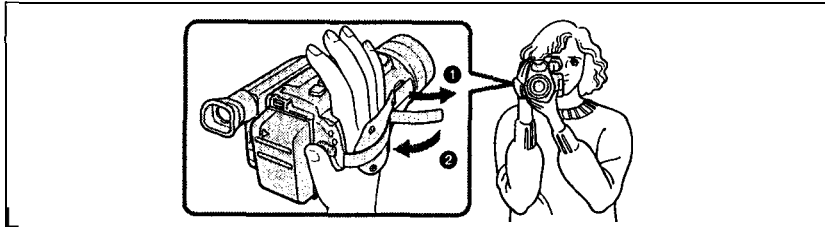
When you shoot a subject using a telephoto zoom

If you cannot get a sharp focus while in extreme telephoto zoom, press the "W" side of the power zoom button until the focus is sharp. You can shoot a subject that is at least about 3 1/4 feet (100 cm) away from the lens surface in the telephoto position, or about 1/2 inches (1 cm) in the wide-angle position.

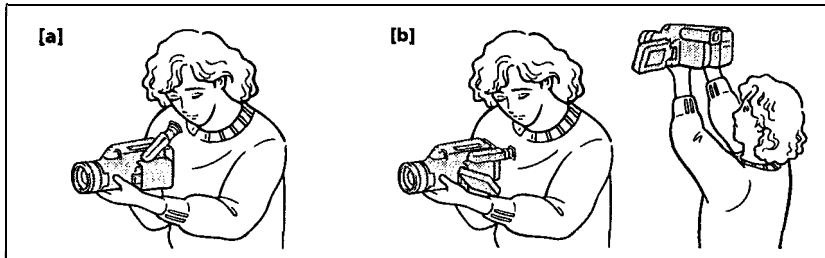
Hints for Better Shooting

For hand-held shots, you'll get better results by holding the camcorder according to the following suggestions:

- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb.



- Place your right elbow against your side.
- Place your left hand under the camcorder to support it.
- Place your eye firmly against the viewfinder **eyecup**.
- Use the viewfinder frame as a guide to determine the horizontal plane.
- You can record in a low position to get an interesting recording angle. Lift the viewfinder up for recording from a low position. (You can turn it up to 180 degrees.) **[a]**
- You can also record in a low position or even in a high position using the LCD panel. **[b]**

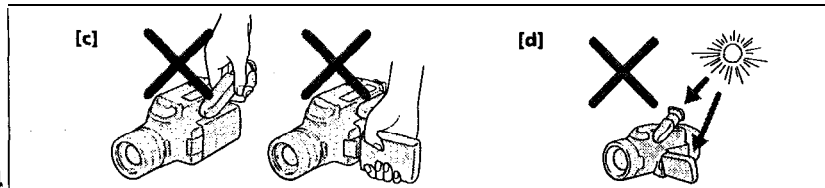


Place the camcorder on a flat surface or use a tripod

Try placing the camcorder on a table top or any other flat surface of suitable height. If you have a tripod for a still camera, you can also use it with the camcorder (p. 44). When attaching a **non-Sony** tripod, make sure that the length of the tripod screw is less than 9/32 in (6.5 mm). Otherwise, the screw may damage the inner parts of the camcorder.

Cautions on the viewfinder and the LCD

- Do not pick up the camcorder by the viewfinder or by the LCD panel. **[c]**
- Do not place the camcorder so as to point the viewfinder or the LCD screen toward the sun. The inside of the viewfinder or the LCD panel may be deformed. Be careful when placing the camcorder under sunlight or by the window. **[d]**



Checking the Recorded Picture

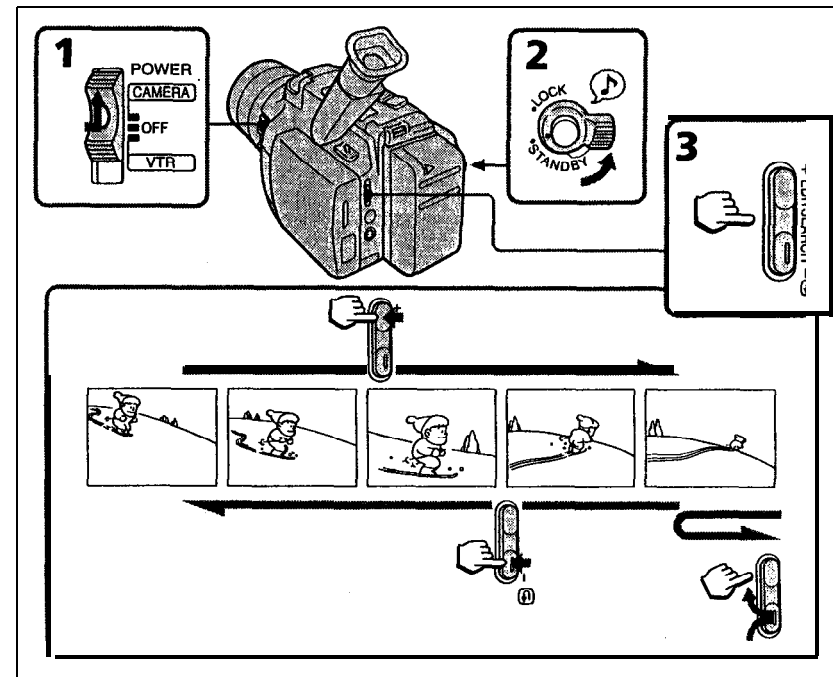
The EDITSEARCH function is used to view the recorded picture for a moment during recording. Using EDITSEARCH, you can review the last recorded scene or check the recorded picture in the viewfinder. You can also review the picture on the LCD screen.

- (1) While pressing the small green button on the POWER switch, slide it to CAMERA.

- (2) Turn STANDBY up.

- (3) Press the - (Ⓜ) side of EDITSEARCH momentarily; the last few seconds of the recorded portion plays back (Rec Review). You can also monitor the sound by using an earphone (not supplied).

Hold down the side of EDITSEARCH until the camcorder goes back to the scene you want. The last recorded portion is played back. To go forward, hold down the + side (Edit Search).



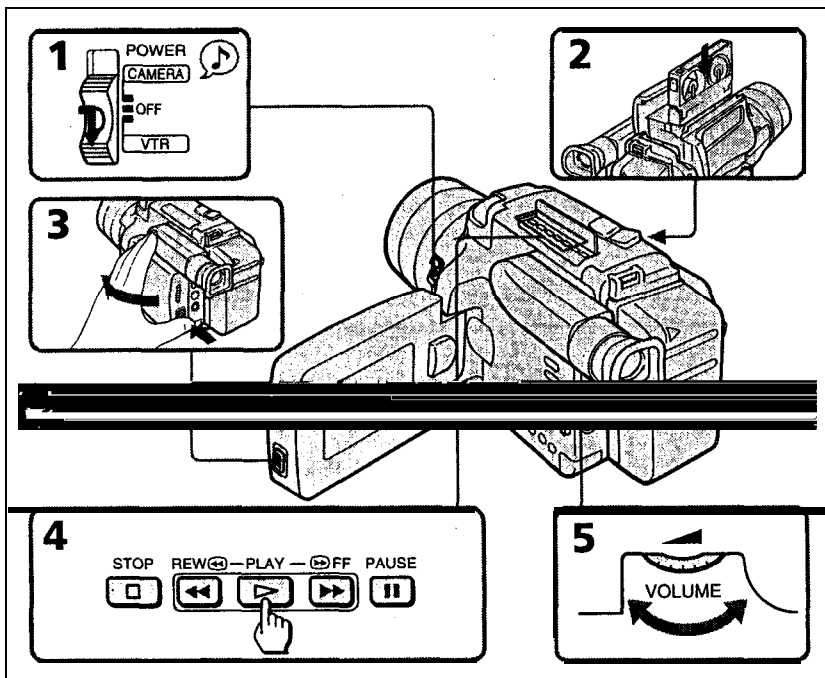
To Begin Re-recording

Press START/STOP. Rerecording begins from the point you released EDITSEARCH. **Provided** you do not eject the tape, the transition between the last scene you recorded and the next scene you record **will** be smooth.

Playing Back a Tape

You can monitor the playback picture on the LCD screen.

- (1) While pressing the small green button on the POWER switch, slide it to VTR.
 - (2) Insert the recorded **tape** with the window facing out.
 - (3) While pressing PUSH OPEN, open the LCD panel. Adjust the angle of the LCD panel or the brightness of the LCD screen if necessary (p. 11).
 - (4) Press \blacktriangleright to start playback.
 - (5) Adjust the volume using VOLUME.
- You can also monitor the picture on a TV screen, after connecting the camcorder to a TV or VCR (p. 27).



To Stop Playback
Press CI during playback.

To Rewind the Tape
Press \blacktriangleleft .

To Advance the Tape Rapidly
Press \blacktriangleright .

Note on DISPLAY button

Press DISPLAY to erase the screen indicators on the LCD screen. To display the indicators, press again. The indicators don't appear on the TV.

Using an earphone

Connect an earphone (not supplied) to the \odot jack. You can adjust the volume of the earphone using VOLUME.

To view the playback picture in the viewfinder

Close the LCD panel. The viewfinder turns on automatically. When using the viewfinder, you can monitor the sound only by using an earphone. To view on the LCD screen again, open the LCD panel. The viewfinder turns off automatically.

Various Playback Modes

To View a Still Picture (Playback pause)

Press II during playback. To resume playback, press II or D.

To Locate a Scene (Picture search)

Keep pressing \blacktriangleleft or \blacktriangleright during playback. To resume normal playback, release the button.

To Monitor the High-speed Picture while Advancing the Tape or Rewinding (Skip scan)

Keep pressing \blacktriangleleft while rewinding or \blacktriangleright while advancing the tape. To resume normal playback, press D.

To View the Picture in a Sequence of Stop-motion Images

Press EDITSEARCH in Playback pause mode. If you keep pressing EDITSEARCH, you can view the picture play back in the forward (+) or reverse (-) direction.

To View the Picture at 1/5 Speed (Slow playback) (only with the Remote Commander)

Press \blacktriangleright on the Remote Commander during playback. To resume normal playback, press \blacktriangleright . If slow playback lasts for about 1 minute, it shifts to normal speed automatically.

Notes on playback

- Streaks appear and the sound is muted in the various playback modes.
- When Playback pause mode lasts for 5 minutes, the camcorder automatically enters stop mode.

Advanced Operations

Using Alternative Power Sources

You can choose any of the following power sources for your camcorder: battery pack (p. 6), house current, and 12/24 V car battery. Choose the appropriate power source depending on where you want to use your camcorder.

Place	Power source	Accessory to be used
Indoors	House current	AC Power adaptor AC-V25A/V25B (supplied). AC-S10, AC-V55
Outdoors	Battery pack	Battery pack Np-66 (supplied), NP-55H, NP-60D, NP-66H, NP-77H, NP-80, NP-80D
In the car	12 V or 24 V car battery	DC pack DCP-77

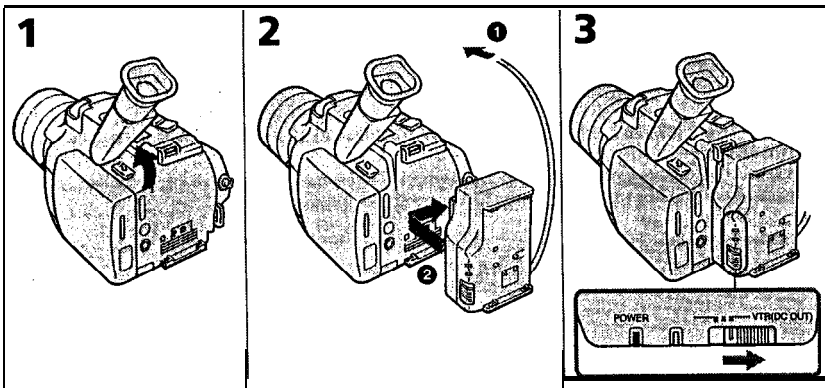
Note on power sources

Disconnecting the power source or removing the battery pack during recording or playing may damage the inserted tape. If this happens, restore the power supply again immediately.

Using House Current

To use the supplied AC-V25A/V25B AC power adaptor:

- (1) Lift up the viewfinder.
- (2) Connect the AC power cord to a wall outlet. Connect the bottom of the AC power adaptor to the battery mounting surface of the camcorder.
- (3) Set the selector to VTR (IX OUT).



Notes on the POWER lamp

- The POWER lamp will remain lit for a while even if the unit is unplugged after use. This is normal.
- If the POWER lamp does not light, set the selector to the center position and disconnect the power cord. After about one minute, reconnect the power cord and set the selector to VTR (DC OUT) again.

To Remove the Adaptor

The adaptor is removed in the same way as the battery pack. (p. 8)

Using a Car Battery

Use the DCP-77 DC pack (not supplied). Connect the cord of the DC pack to the cigarette lighter socket of the car (12 V or 24 V). Connect the DC pack to the battery mounting surface of the camcorder.

To Remove the DC Pack

The DC pack is removed in the same way as the battery pack. (p. 8)

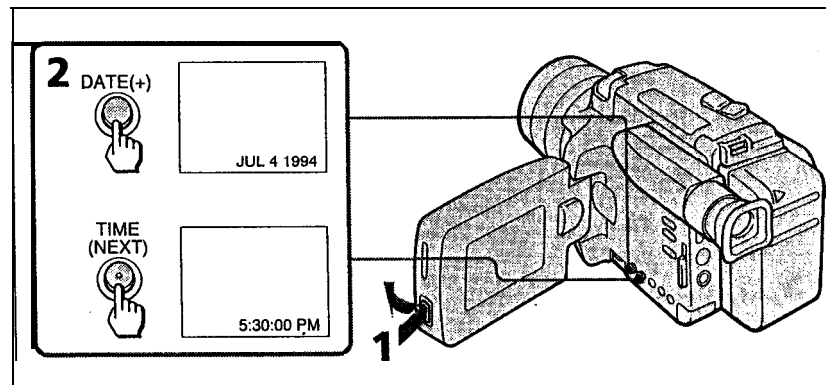
Options for Charging the Battery Pack

- **AC-S10 AC power adaptor:**
You can charge a battery pack whether it is used up or not with this adaptor because it has a discharging function.
- **BC-S10 portable battery charger (ideal for travel):**
You can charge a battery pack on 100 - 240 V AC current.

Recording with the Date or Time

You can record the date or time displayed on the LCD screen or in the viewfinder with the picture. You cannot record the date and time at the same time. Except for the date or time indicator, no indicator on the LCD screen or in the viewfinder is recorded. The clock is set to the East Coast Standard Time at the factory. You can reset the clock in the menu system (p. 31).

- (1) While pressing PUSH OPEN, open the LCD panel.
- (2) Press DATE(+) or TIME(NEXT) before you start recording.



To Stop Recording with the Date or Time

Press DATE(+) or TIME(NEXT) again. The date or time indicator disappears. The recording continues without the date or time.

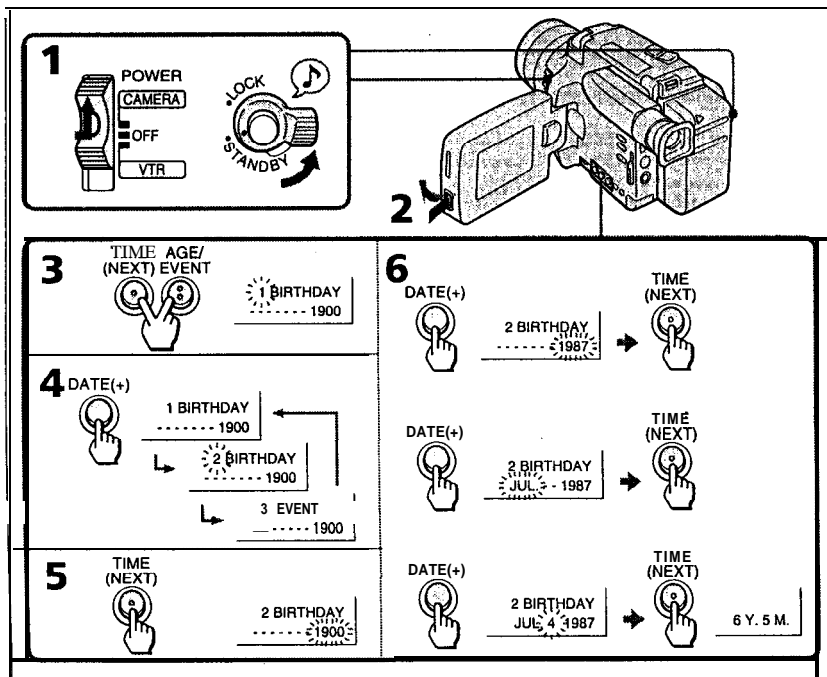
Recording with the Age

By presetting your child's birth date in your camcorder, you can record with your child's age in years and months. Once you enter the birth date of your child, the camcorder's clock will automatically update the age of your child. You can preset up to three birth dates or events in the camcorder's memory.

Storing a Birth Date in Your Camcorder

Before storing a birth date, make sure a power source and the lithium battery are installed, and the date setting is correct. The following procedure stores "Jul. 4 1987" in memory number 2 as an example.

- (1) Set the camcorder in Standby mode.
- (2) While pressing PUSH OPEN, open the LCD panel.
- (3) Press **TIME(NEXT)** and **AGE/EVENT** simultaneously for a few seconds until the "1 BIRTHDAY --- 1900" indicator appears in the viewfinder or on the LCD screen.
- (4) Press **DATE(+)** to select "2 BIRTHDAY".
- (5) Press **TIME(NEXT)**. The "1900" indicator flashes.
- (6) Enter the birth date by adjusting the flashing indicators of the year, month and day by pressing **DATE(+)** and **TIME(NEXT)**. Note that when you hold down **DATE(+)**, the digits advance faster.



Erasing the Age indicator

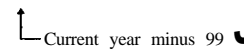
Press **AGE/EVENT** repeatedly until no indicator appears.

If You Missed the Correct Number with **DATE(+)**

Keep pressing **DATE(+)**.

The year indicator changes as follows:

"1900" → "1901" → -- → Current year



To Correct the **Setting**

Repeat steps from 3 to 6.

To Preset the Year before 1900

- (1) After step 5, keep pressing **DATE(+)** until the current year is displayed.
- (2) Press **DATE(+)** again. The year goes back 99 years.
- (3) Go to step 6.

When in 2000

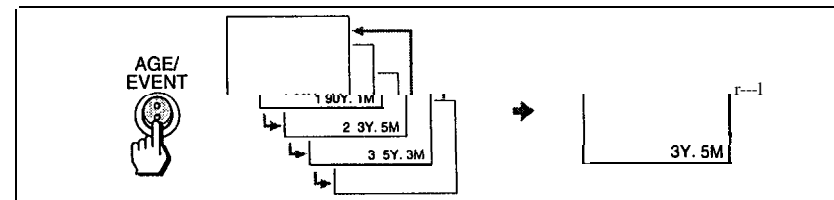
"--- 1901" is displayed in step 3. After that, it advances every year as "1902, 1903".

To Cancel the Stored Birth Date

- (1) Press **AGE/EVENT** and **TIME(NEXT)** simultaneously until "1 BIRTHDAY" appears. Press **DATE(+)** to select a birth date to cancel.
- (2) Press **TIME(NEXT)** twice. The month indicator flashes.
- (3) Press **DATE(+)** repeatedly until "---" appears.
- (4) Press **TIME(NEXT)**. The selected birth date is canceled from the memory and will not be displayed when you press **AGE/EVENT**.

Recording with the Age

You can record the time elapsed since the date set, for example, your child's birthday. Except for the age, date **OR** time (p. 19) indicator, no indicator on the LCD screen or in the viewfinder is recorded. Make sure the age is set. While recording, press **AGE/EVENT** to select memory 1, 2 or 3.



Note on the age indicator

Each time you press **AGE/EVENT**, the indicator changes from 1 "The first age" to 2 "The second age", 3 "The third age" and back to no indicator. Items for which no setting has been made will be skipped. The 1, 2 or 3 indicator disappears after one second.

To Stop Recording with the Age

Press **AGE/EVENT** repeatedly until the age indicator disappears.

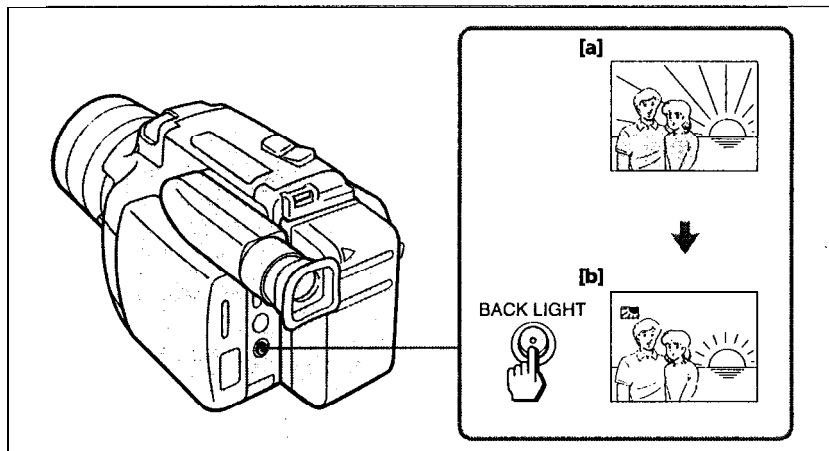
To Correct the Age Settings while Recording

Press **AGE/EVENT** repeatedly until the desired age appears. The recording starts after the 1, 2 or 3 indicator disappears.

Shooting with Backlighting

When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACKLIGHT function.


Press BACK LIGHT. The  indicator appears in the viewfinder or on the LCD screen.



[a] Subject is too dark because of backlight.

[b] Subject becomes bright with backlight compensation.

After shooting

Be sure to release this adjustment condition by pressing BACK LIGHT again. The  indicator disappears. Otherwise, the picture will be too bright under normal lighting condition.

This function is also effective under the following conditions:

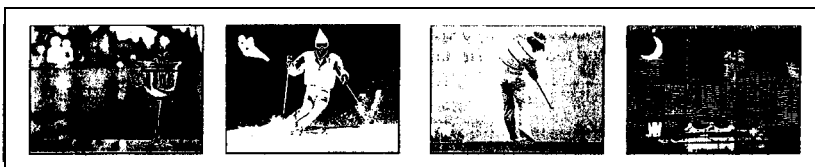
- On snow, e.g. at a ski resort
- At the beach under strong sunshine
- A subject with a light source nearby or a mirror reflecting light
- A white subject against a white background. Especially when you shoot a person wearing shiny clothes made of silk or synthetic fabric, his or her face tends to become dark if you do not use this function.

Using the PROGRAM AE Function

You can select from four PROGRAM AE (Auto Exposure) modes to suit your shooting situation. When you use PROGRAM AE, you can get a Portrait effect (the subject is in focus and the background is out of focus), capture high-speed action, or record night views.

Selecting the Best Mode

Select one of four modes, referring to the following.



Portrait mode

- A still subject such as a person or a flower
- Zooming in on a subject in the telephoto mode
- A subject behind a net obstacle such as a net

Sports mode

- Outdoor sports scenes such as football, tennis, golf or skiing
- A landscape from a moving car

High-speed shutter mode

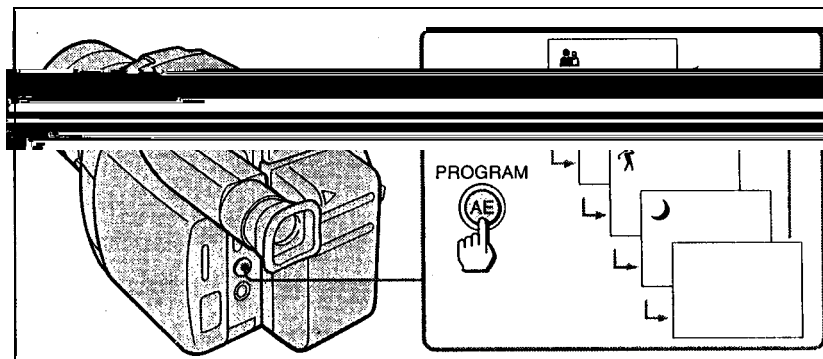
- A golf swing or a tennis match in fine weather with the ball captured clearly
- Playing back certain scenes with high-speed movements in a clear, sharp picture

Twilight mode

- Recording night views, neon signs or fireworks

Using the PROGRAM AE Function

Keep pressing PROGRAM AE until the desired mode appears. The indicator of the selected PROGRAM AE mode appears in the viewfinder or on the LCD screen.



Note on shutter speed

The shutter speed in each PROGRAM AE mode is as follows:

- | | |
|--------------------------------------|---------------------|
| Portrait mode-between 1/60 to 1/2000 | Twilight mode —1/60 |
| Sports mode-between 1/60 to 1/500 | Normal mode —1/60 |
| High-speed shutter mode —1/4000 | |

Fade-in and Fade-out

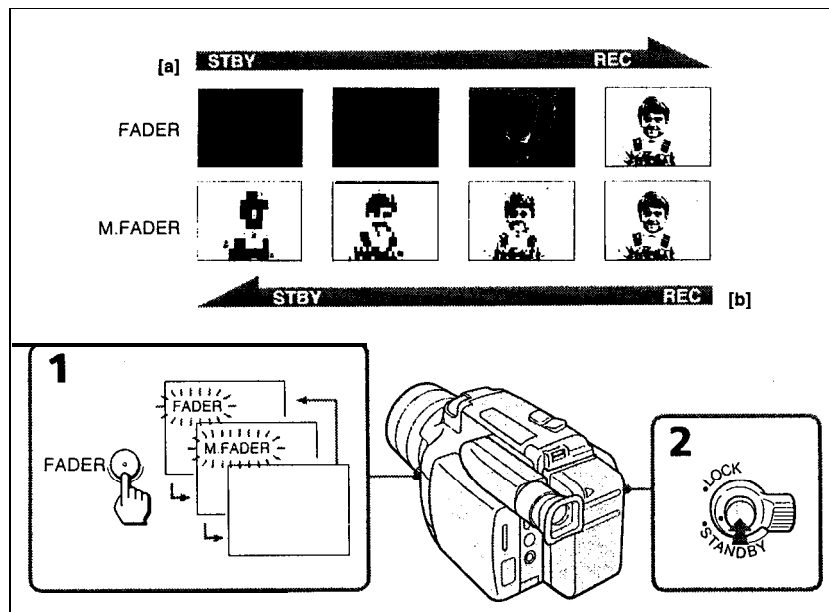
You can fade in or out to give your recording a professional appearance. When fading in, the picture gradually fades in from black or mosaic while the sound increases. When fading out, the picture gradually fades to black or mosaic while the sound decreases.

When Fading in [a]

- (1) While the camcorder is in Standby mode, press FADER. The fade indicator starts flashing.
- (2) Press START/STOP to start recording. The fade indicator stops flashing.

When Fading out [b]

- (1) During recording, press FADER. The fade indicator starts flashing.
- (2) Press START/STOP to stop recording. The fade indicator stops flashing, and then recording stops.



To Cancel the Fade-in/Fade-out Function

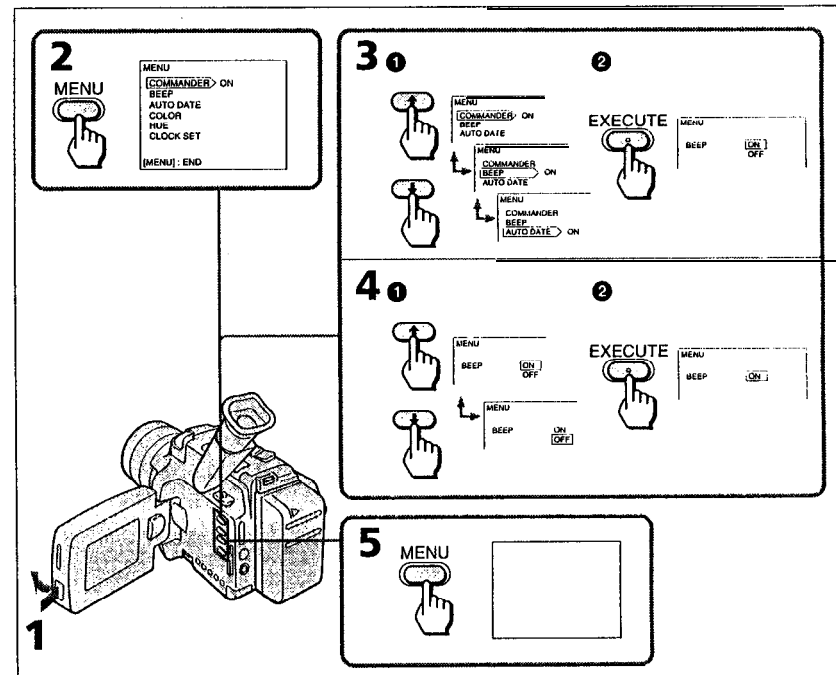
Before pressing START/STOP, press FADER until the fade indicator disappears.

When the date, time or age indicator is displayed
The date, time or age indicator does not fade in nor fade out.

Changing the Mode Settings

You can change the mode settings in the menu system to further enjoy the features and functions of the camcorder.

- (1) While pressing PUSH OPEN, open the LCD panel.
- (2) Press MENU to display the menu on the LCD screen.
- (3) Press \blacktriangle or \blacktriangledown to select the desired item, then press EXECUTE.
- (4) Press \blacktriangle or \blacktriangledown to set the desired mode, then press EXECUTE. If you want to change the other modes, repeat steps 2 and 3.
- (5) Press MENU to erase the menu display.



Note on BACK UP

When the BACK UP indicator appears on the menu display, the settings are retained even when the battery is removed, as long as the lithium battery is in place.

Selecting the Mode Setting of Each Item

Item for both VTR and CAMERA Mode

BEEP <ON/OFF>

- Select ON to turn the beep sound on.
- Select OFF to turn the beep sound off.

See the next page for further information.

Changing the Mode Settings

COMMANDER <ON/OFF>

- Select ON when using the supplied Remote Commander for the camcorder.
- Select OFF when not using the Remote Commander.

COLOR

Select this item and change the level of the indicator by pressing \blacktriangle or \blacktriangledown to adjust the color intensity of the picture when using the LCD.

HUE

Select this item and move the indicator by pressing \blacktriangle or \blacktriangledown to adjust the hue (greenish or reddish tone) of the picture when using the LCD.

Items for CAMERA Mode only

AUTO DATE <ON/OFF>

- Select ON to record the date for 10 seconds after recording has started.
- Select OFF to not record the date.

CLOCK SET

Select this item to reset the date or time.

items for VTR Mode only

EDIT <ON/OFF>

- Select ON to minimize **picture** deterioration when editing.
- Normally select OFF.

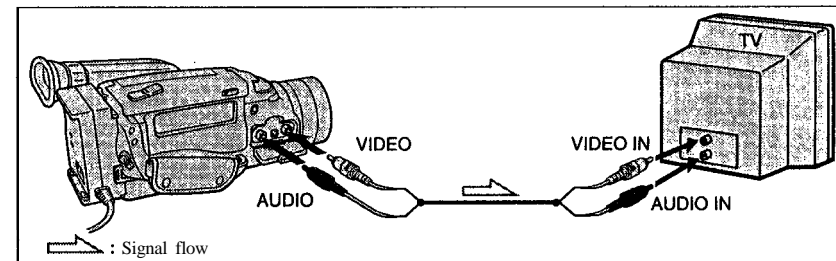
Connections for Playback

You can use the camcorder as a VCR. Connect the camcorder to the TV by using the supplied A/V connecting cable. There are **two** ways to connect the camcorder to your TV. When monitoring the playback picture by connecting the camcorder to your TV, we recommend you use house current for the power source (p. 18).

While playing back on a TV screen, turn off the speaker volume control of the camcorder. Otherwise, picture distortion may **occur**.

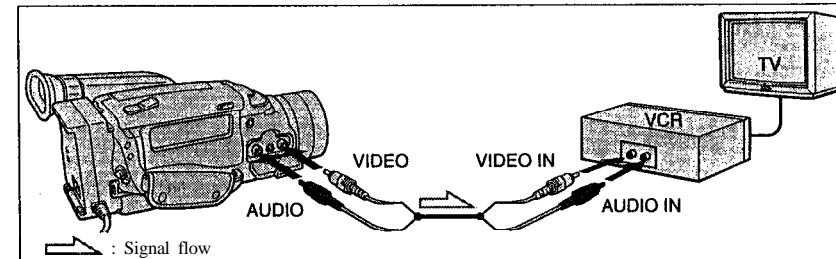
Connecting Directly to a TV

Connect the camcorder to the inputs on the TV by using the supplied A/V connecting cable. Set the TV/VCR selector on the TV to VCR.



If your VCR is already connected to a TV

Connect the camcorder to the LINE IN inputs on the VCR by using the A/V connecting cable. Set the input selector on the VCR to LINE. Set the TV/VCR selector on the TV to VCR.



To connect a N or a VTR without **audio/video** input jacks
Use an optional RFU adaptor.

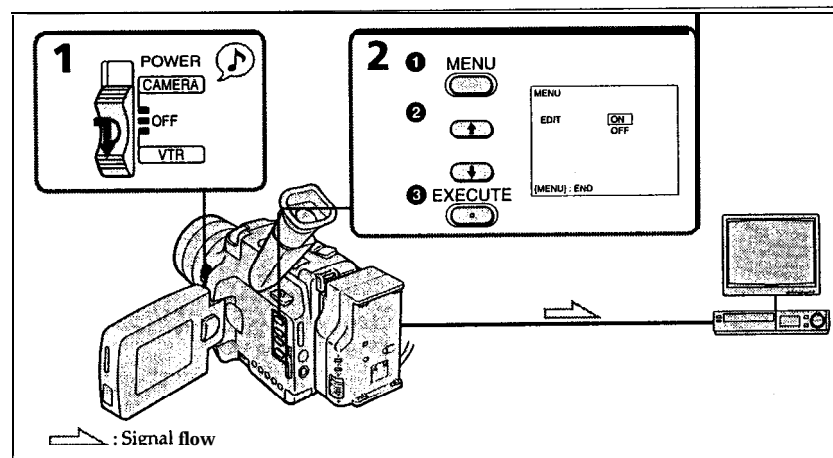
Editing onto Another Tape

You can create your own video program by editing with any other 8 mm Hi8 Hi8. MS VHS.

Connect the camcorder to the VCR using the supplied A/V connecting cable. (p. 27)

Set the input selector on the VCR to LINE, if available.

- (1) Set the POWER switch to VTR.
- (2) Set EDIT to ON in the menu system (p. 26).



Starting Editing

Turn down the volume of the camcorder while editing. Otherwise, picture distortion may occur.

- (1) Insert a blank tape (or a tape you want to record over) into the VCR and insert your recorded tape into the camcorder.
- (2) Play back the recorded tape on the camcorder until you locate the point where you want to start editing, then put the camcorder in Playback pause mode.
- (3) On the VCR, locate the recording start point and put the VCR in recording pause mode.
- (4) Press II on the camcorder and VCR simultaneously to start editing.

To Edit More Scenes

Repeat steps 2 to 4.

To Stop Editing

Press \square on both the camcorder and the VCR

Use of the EDITSEARCH button

You can play back the tape in the normal/reverse direction by holding down EDITSEARCH during playback pause mode. You can also play back still pictures successively at specific intervals by pressing EDITSEARCH intermittently.

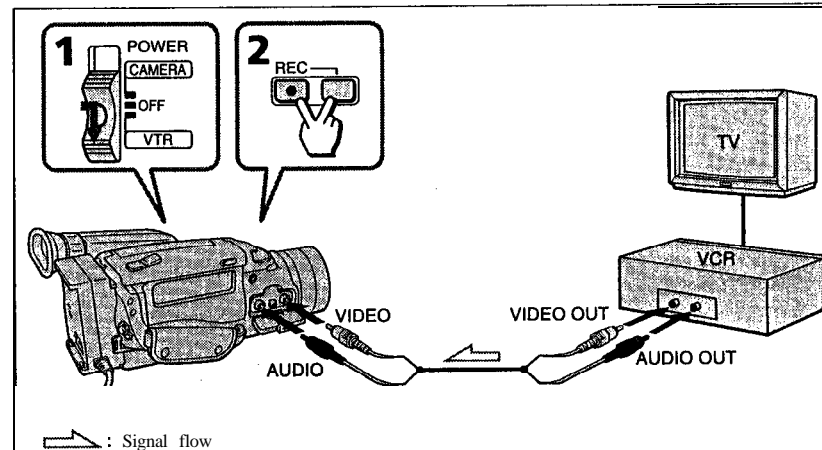
Recording from a TV or VCR

You can record a tape from another VCR or a TV program from a TV that has audio/video outputs.

Connect the camcorder to the TV or VCR.

Turn down the volume of the camcorder while editing. Otherwise, the picture distortion may occur.

- (1) Set the POWER switch to VTR.
- (2) Press REC and the button on the right together at the point where you want to start recording



To Check the Picture from a TV or VCR before Recording


You can check the picture in the viewfinder or on the LCD screen.

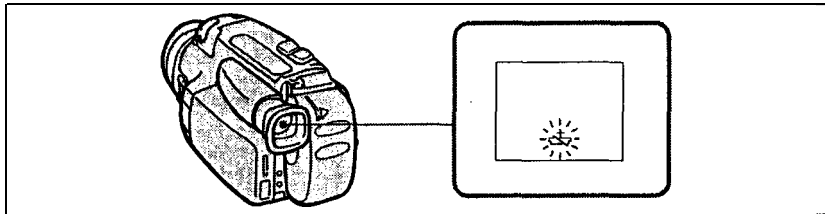
To stop Recording

Press 0.

Additional Information

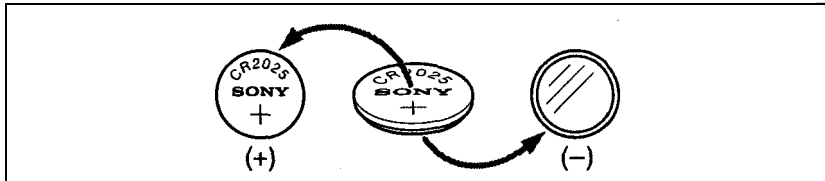
Changing the Lithium Battery

Your camcorder is supplied with a lithium battery installed. The lithium battery for the camcorder lasts for about 1 year under normal operation. When the battery becomes weak or dead, the  indicator flashes in the viewfinder or on the LCD screen for about 5 seconds when you set the POWER switch to CAMERA. In this case, replace the battery with a Sony CR2025 or Duracell DL-2025 lithium battery. Use of any other battery may present a risk of fire or explosion.



Note on Lithium Battery

The lithium battery has a positive (+) side and a negative (-) side as illustrated. Be sure to insert the lithium battery with the positive side facing out.



WARNING

The battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

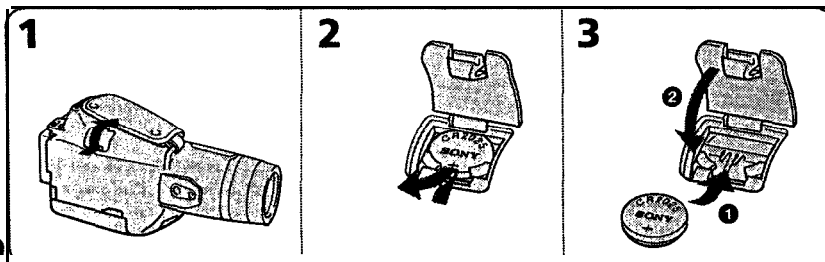
Caution

Keep the lithium battery out of the reach of children. Should the battery be swallowed, consult a doctor immediately.

Changing the Lithium Battery







When replacing the lithium battery, keep the battery pack or other power source attached. Otherwise, you will need to reset the date, time, age and other BACK UP items in the menu system.

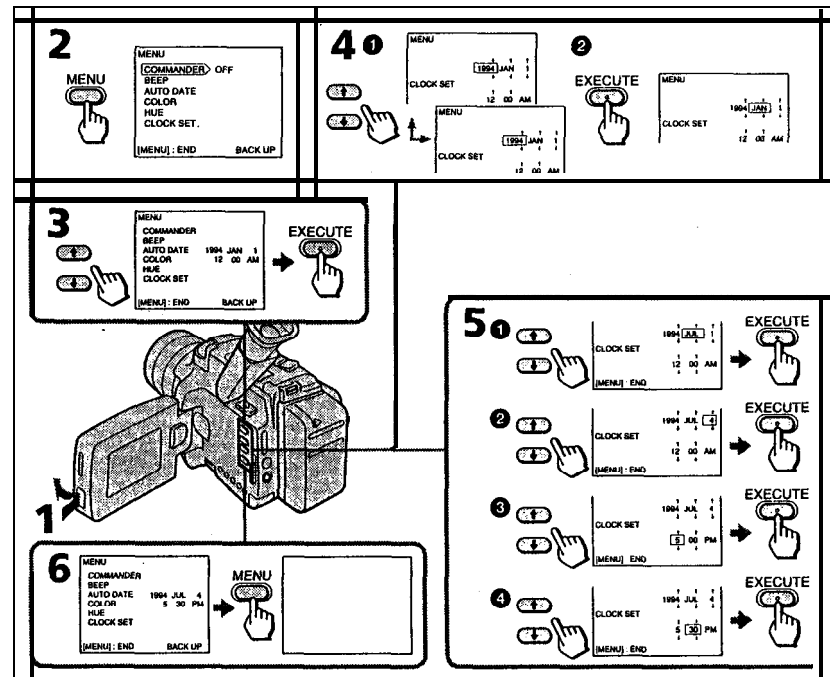
- (1) Open the lid of the lithium battery compartment under the grip strap of the camcorder.
- (2) Push the battery down once and pull it out from the holder.
- (3) Install the lithium battery with the positive (+) side facing out. Close the lid.



Resetting the Date or Time

You can reset the date or time in the menu system.

- (1) While pressing PUSH OPEN, open the LCD panel.
- (2) Press MENU to display the menu on the LCD screen.
- (3) Select CLOCK SET, then press EXECUTE.
- (4) Press  or  to adjust the year, and then press EXECUTE.
- (5) Press  or  to adjust the month, day, hour and minutes, and then press EXECUTE. Note that when you hold down  or , the indications in the menu display advance faster.
- (6) Press MENU to erase the menu display.



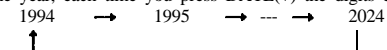
To Check the Preset Date and Time

Press DATE(+) to display the date indicator.

Press TIME(NEXT) to display the time indicator. When you press the same button again, the indicator goes off.

Note on the setting of the year

When you set the year, each time you press DATE(+) the digits change as follows.



Note on the time indicator

The internal clock of this camcorder operates on a 12-hour cycle.

12:00 AM stands for midnight.

12:00 PM stands for noon.

Playback Modes

The playback mode (SP or LP) is selected automatically according to the format in which the tape has been recorded. The quality of the recorded picture in LP mode, however, will not be as good as that in SP mode.

LP (long play) mode

When you play back a tape recorded in LP mode, the LP indicator lights up on the LCD screen or in the viewfinder. This camcorder cannot record a tape in LP mode.

Foreign 8 mm video

You cannot play back software recorded on a different TV color system. Because the TV color systems differ from country to country, you may not be able to play back foreign pre-recorded software. Refer to page 39 to check the TV color system of foreign countries.

Tips for Using the Battery Pack

This section shows you how you can get the most out of your battery pack.

Preparing the Battery Pack

Always Carry Additional Batteries

Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned.

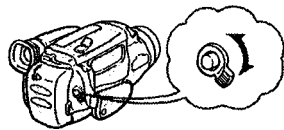
Battery Life is Shorter in Cold Environment

Battery efficiency is decreased and the battery will be used up more quickly if you are recording in a cold environment.

To Save Battery Power

Turn STANDBY on the camcorder down when not recording to save battery power.

A smooth transition between scenes can be made even if recording is stopped and started again. While you are positioning the subject, selecting an angle, looking through the viewfinder lens or at the LCD screen, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.





Tips for Using the Battery Pack

When to Replace the Battery Pack

While you are using your camcorder, the remaining battery indicator in the viewfinder or on the LCD screen decreases gradually as battery power is used up.



When the remaining battery indicator reaches the lowest point, the  indicator appears and starts flashing in the viewfinder or on the LCD screen. [a]

When the  indicator in the viewfinder changes from slow flashing to rapid flashing while you are recording, slide the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain a smooth transition between scenes after the battery pack is replaced.

Note on the remaining battery indicator

The remaining battery indicator of the camcorder may indicate a different remaining capacity from that of a battery pack with its own indicator (not supplied). The indicator on the battery pack is more accurate.

Notes on the Rechargeable Battery Pack

The Battery Pack Heats Up

During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern.

Battery Pack Care

- Remove the battery pack from the camcorder after using the battery pack, and keep it in a cool place. When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF, which shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery pack right before using the camcorder.

How to Use the Switch on the Battery Pack

This switch is provided so that you can mark the charged battery pack. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up (or in whichever direction you want to remind yourself). [b]

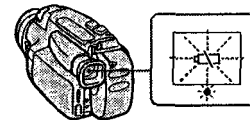
The Life of the Battery Pack

If the battery indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

Charging Temperature

You should charge batteries at temperatures from 50°F to 86°F (from 10°C to 30°C). Lower temperatures require a longer charging time.

[a]



[b]



Tips for Using the Battery Pack

Notes on Charging

A Brand-new Battery Pack

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

Before Recharging a Used Battery Pack

- Make sure to use up the battery before **recharging**.
- If recording is completed before the **⏻** indicator appears in the viewfinder, **you should remove the tape, slide the POWER switch to CAMERA, turn STANDBY up, and leave the camcorder until the battery indicator flashes rapidly.**
- When you use the AC-S10 power adaptor or the BC-S10 portable battery charger, you can use the discharging function.
- Charging a usable battery pack causes a lowering of battery capacity. Battery capacity can be recovered if **you fully discharge and charge the battery pack again.**

After Long Storage

Recharge the battery pack after a long period of storage. If the battery pack is **charged** fully but not used for a long time (about 1 year), it becomes discharged. Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

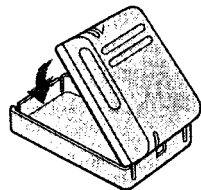
Notes on the Terminals

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened. When the terminals are not clean or when the battery pack has not been used for a long time, repeatedly install and remove the battery pack. This improves the contact condition. Also, wipe the + and - terminals with a soft cloth or paper.

Be Sure to Observe the Following

- To prevent an accident caused by a short circuit, do not allow metal objects such as a necklace to touch the battery terminals. When carrying the battery pack, attach the terminal cover. **[c]**
- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor convert the battery pack.
- Do not expose the battery pack to any mechanical shock.

[c]



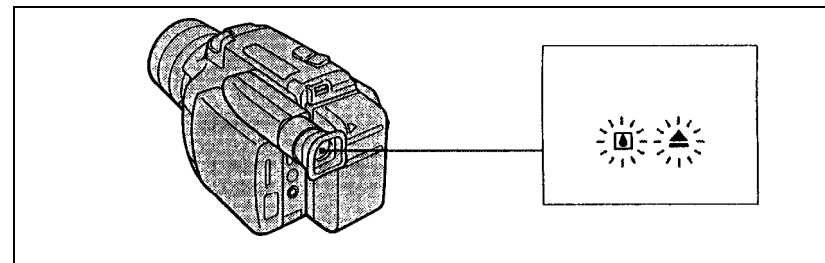
Maintenance Information and Precautions

Moisture Condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the camcorder may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. However, take the following precautions.

Inside the Camcorder

When the **⏻** and **▲** indicators flash in the viewfinder or on the LCD screen, moisture has condensed inside the camcorder. If this happens, no other functions except for tape ejection will work. Eject the tape, turn off the camcorder and leave it with **the cassette holder open for at least one hour.** The camcorder can be used again if the **⏻** indicator does not appear when the power is turned on again.



Additional Information

On the Surface of the Tape

If there is moisture on the surface of the tape, when you insert the cassette and press a tape transport button (D PLAY, etc.), the **▲** indicator in the viewfinder or on the LCD screen flashes.

In this case, no other functions except for tape ejection will work.

Eject **the tape, turn off the camcorder and leave it with the cassette holder open for at least one hour.** The camcorder can be used again if the **▲** indicator does not appear when you insert the cassette and press one of the tape transport buttons.

On the Lens

If moisture condenses on the lens, no indicator appears, but the picture becomes dim. Turn off the power and do not use the camcorder for about one hour.

How to Prevent Moisture Condensation

When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.

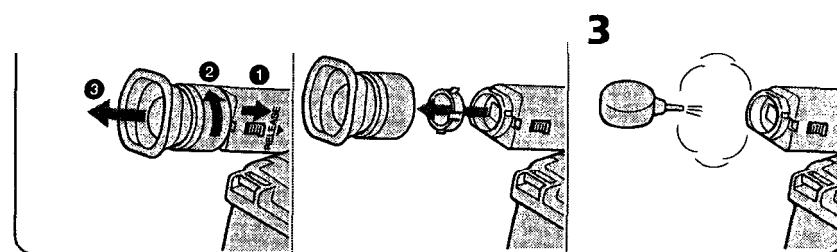
(1) Be sure to tightly seal the plastic bag containing the camcorder.

(2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about 1 hour).

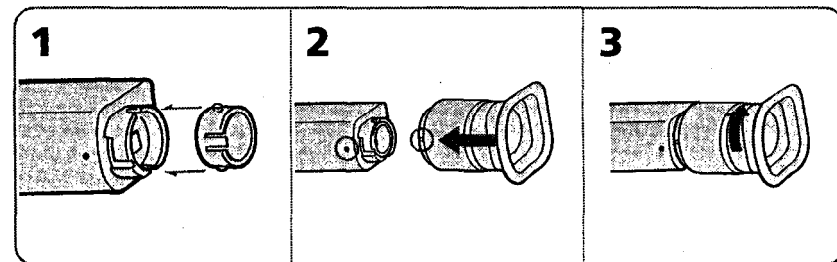
Maintenance Information and Precautions

Video Head Cleaning

Removing Dust from Inside the Viewfinder



- (1) Replace the small lens inside the viewfinder. Be sure to replace it with the correct side.
- (2) Align the groove on the **eyecup** with the ● mark on the barrel.
- (3) Turn the **eyecup** clockwise.



Precautions

Camcorder Operation

- Operate the camcorder on 6.0 V (battery pack) or 7.5 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in this manual.
- Should any solid object or liquid get inside the casing, unplug the camcorder and have it checked by Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when not using the camcorder.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.
- Do not push the LCD screen.
- If the camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.
- Constant bright points of light (red, blue, or green) may appear on the LCD screen. This is not a malfunction.
- While using the camcorder, the back of the LCD screen may heat up. This is not a malfunction.

Maintenance Information and Precautions

On Handling Tapes

Do not insert anything in the small holes on the rear of the cassette. These holes are used to sense the type, thickness of tape or if the tab is out or in.

Camcorder Care

- When the camcorder is not to be used for a long time, disconnect the power source and remove the tape. Periodically **turn** on the power, operate the camera and player sections and play back a tape for about 3 minutes.
- **Clean** the lens with **a** soft brush to remove dust. If there are fingerprints on it, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Clean the supplied LCD screen with the supplied LCD screen cleaner cloth to remove fingerprints.

AC Power Adaptor

Charging

- Repeated charging **while some capacity remains causes a lowering of battery capacity.**
However, the original battery capacity can be recovered if you use the battery completely and charge it fully again.
- **Charge** the battery pack on a flat surface without vibration.
- The battery pack will get hot during charging. This is normal.

Others

- Model for the USA and Canada: One blade of the plug is wider than the other for safety purposes and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- Unplug the unit from the wall (mains) outlet when not in use for a long time. To disconnect the cord (mains lead), pull it out by the plug. Never pull the cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the AC power cord forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or an electrical shock.
- Be sure that nothing metallic comes into contact with the metal parts of the connecting plate. If this happens, a short may occur and the unit may be damaged.
- Always keep the metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, **keep** it away from AM receivers and video equipment because it will disturb AM reception and video operation.
- The unit becomes warm while in use. This is normal.
- Do not place the unit in locations that are:
 - Extremely hot or cold
 - Dusty or dirty
 - Very humid
 - Vibrating

If any difficulty should arise, unplug the unit and contact your nearest Sony dealer.

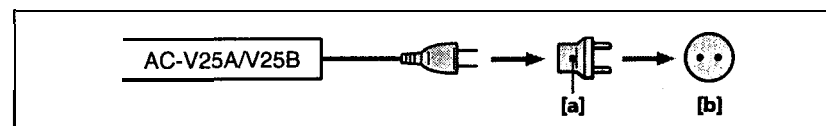
Using Your Camcorder Abroad

Each country has its own electric and TV color systems. Before using your camcorder abroad, check the following points.

Power Sources

You can use your camcorder in any country with the supplied AC power adaptor within 110 V to 240 V AC, 50/60Hz.

Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet **[b]**.



Difference in Color Systems

This camcorder is an NTSC system based camcorder. If you want to view the playback picture on a TV, it must be an NTSC system based TV or a PAL-M system based TV with an NTSC/PAL-M transcoder. Check the following list.

NTSC system countries

Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, **Surinam**, Taiwan, the Philippines, the U.S.A., **Venezuela, etc.**

PAL system countries

Australia, Austria, Belgium, China, Denmark, Finland, former West Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system country

Brazil

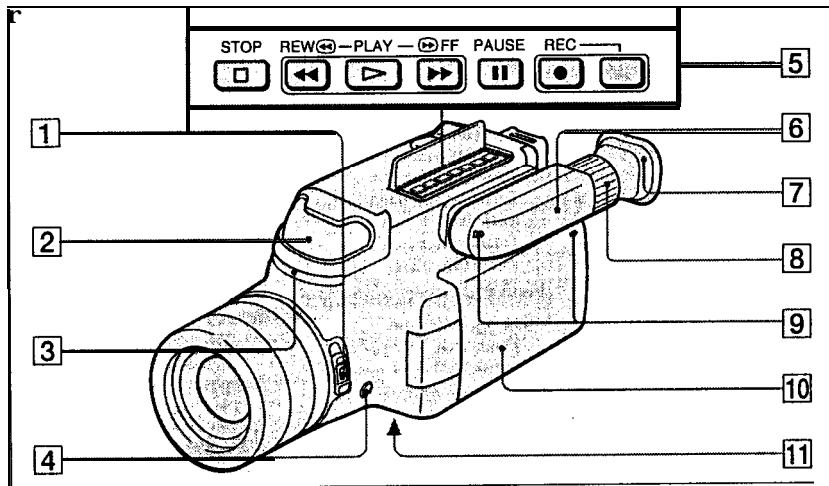
PAL-N system countries

Argentina, Paraguay, Uruguay

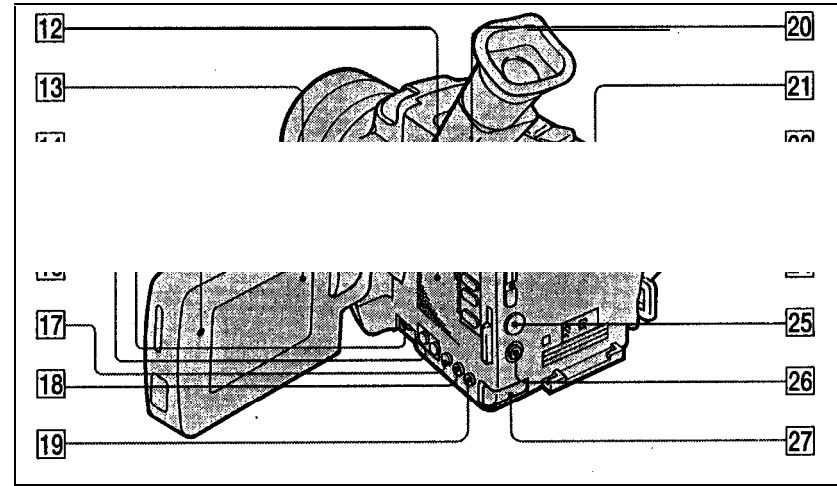
SECAM system countries

Bulgaria, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, former Soviet Union, etc.

Identifying the Parts



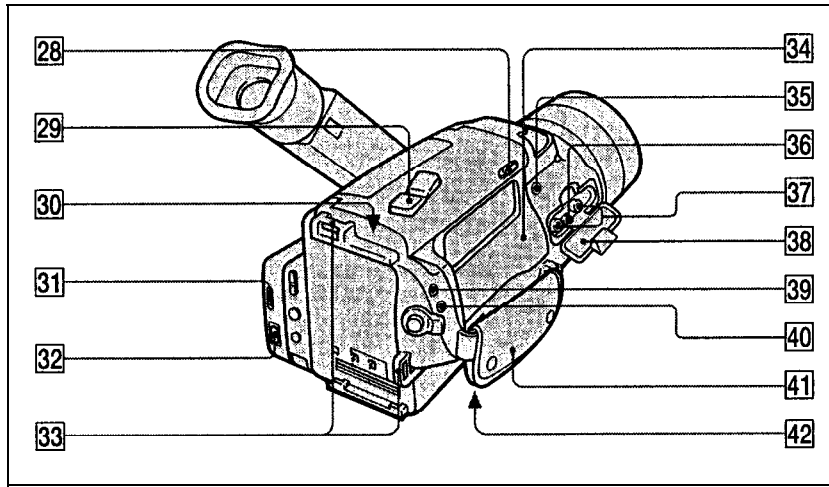
- | | |
|---|--|
| <input type="checkbox"/> POWER switch (p. 10.16) | <input type="checkbox"/> Viewfinder (p. 11) |
| <input type="checkbox"/> Built-in microphone | <input type="checkbox"/> Eyecup |
| <input type="checkbox"/> Remote sensor (p. 48)
Aim the Remote Commander here for remote control. | <input type="checkbox"/> Viewfinder lens adjustment ring (p. 11) |
| <input type="checkbox"/> FADER button (p.24) | <input type="checkbox"/> Camera recording/battery lamp |
| <input type="checkbox"/> Tape transport buttons (p. 16) | <input type="checkbox"/> LCD panel(p.11) |
| | <input type="checkbox"/> Tripod receptacle (p. 14) |
- I STOP (stop)
 REW (rewind)
 PLAY (playback)
 FF (fastforward)
 PAUSE
 REC (recording)



- | | |
|---|---|
| <input type="checkbox"/> Speaker | <input type="checkbox"/> Menu operation buttons (p. 25) |
| <input type="checkbox"/> LCD screen (p. 11) | <input type="checkbox"/> Battery mounting surface (p.8) |
| <input type="checkbox"/> Tally lamp | <input type="checkbox"/> START/STOP button (p. 10) |
| <input type="checkbox"/> Volume dial (p. 16) | <input type="checkbox"/> STANDBY switch (p. 10) |
| <input type="checkbox"/> DATE(+) and TIME(NEXT) buttons (p. 19) | <input type="checkbox"/> EDITSEARCH button (p. 15) |
| <input type="checkbox"/> AGE/EVENT button (p. 20) | <input type="checkbox"/> PROGRAM AE button (p. 23) |
| <input type="checkbox"/> COUNTER RESET button (p. 12) | <input type="checkbox"/> BACK LIGHT button (p. 22) |
| <input type="checkbox"/> DISPLAY button (p. 17) | <input type="checkbox"/> BATT (battery eject) knob (p. 8) |

Additional Information

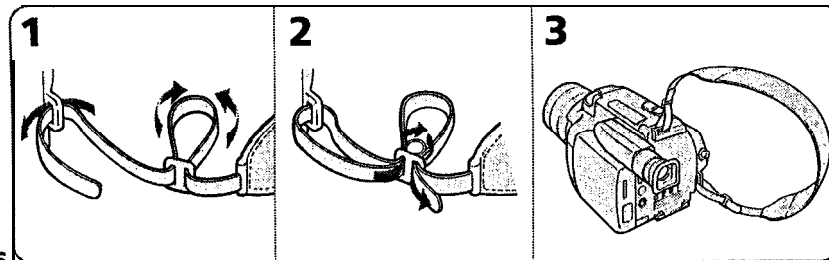
Identifying the Parts



- Lid lock (p. 9)
- Power zoom button (p. 13)
- Eject button (under the cover) (p. 9)
- BRIGHT dial (p. 11)
- PUSH OPEN button (p. 11)
- Hooks for shoulder strap (See below.)
- 34** Cassette compartment (p. 9)
- MIC jack (PLUG IN POWER)
Connect an optional external microphone.
This jack also accepts a "plug-in-power" microphone.
- RFU DC OUT (RFU adaptor DC output) jack
- Audio/Video jacks (p. 27)
- Jack cover
- LANC control jack
stands for Local Application Control Bus System. The U control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the jack indicated as CONTROL L or REMOTE.
- Earphone jack (p. 17)
- Grip strap (p. 14)
- Lithium battery compartment (p. 30)
- Size AA (R6) battery holder
- START/STOP button
- Power zoom button
The zooming speed is unchangeable in the Remote Commander.

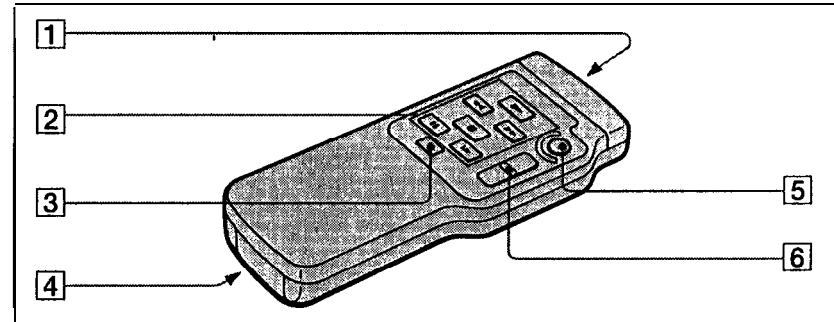
Attaching the Shoulder Strap

Attach the supplied shoulder strap to the hooks for the shoulder strap (33).



Remote Commander

The buttons that have the same name on the Remote Commander as on the camcorder function identically.

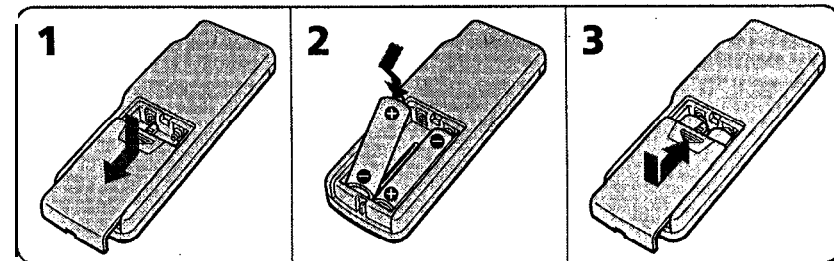


- Transmitter
Point toward the remote sensor to control the camcorder after turning on the POWER switch on the camcorder.
- Tape transport buttons
- jDISPLAY button
Press to erase the screen indicators on the LCD screen. To display the indicators, press again.
The indicators don't appear on the TV.
- Size AA (R6) battery holder
- START/STOP button
- Power zoom button
The zooming speed is unchangeable in the Remote Commander.

Preparing the Remote Commander

To use the Remote Commander, you must insert two size AA (R6) batteries. Use the supplied size AA (R6) batteries.

- (1) Remove the battery cover from the Remote Commander.
- (2) Insert both of the size AA (R6) batteries with correct polarity.
- (3) Put the battery cover back onto the Remote Commander.



Identifying the Parts

Note on battery life

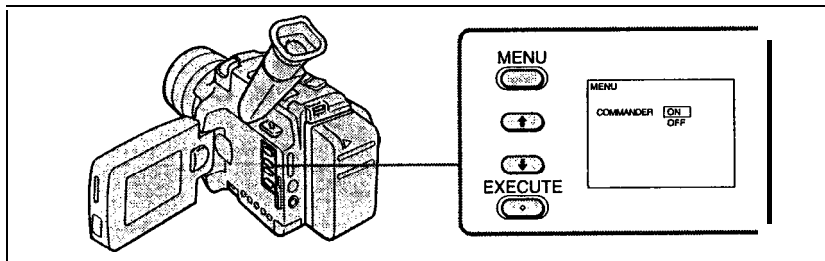
The batteries for the Remote Commander last about 6 months under normal operation. When the batteries become weak or dead, the Remote Commander does not work.

To avoid damage from possible battery leakage

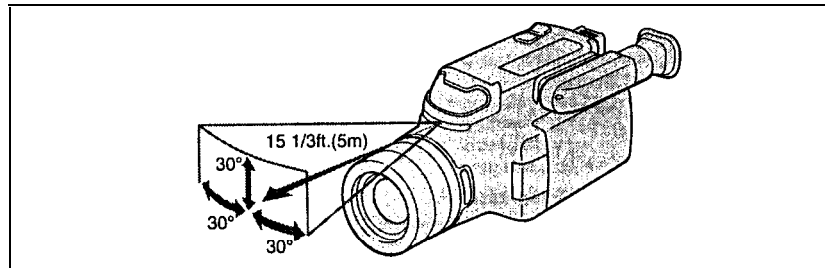
Remove the batteries when you will not use the Remote Commander for a long time.

Using the Remote Commander

Make sure that the COMMANDER mode is set to ON in the menu system.



Remote Control Direction

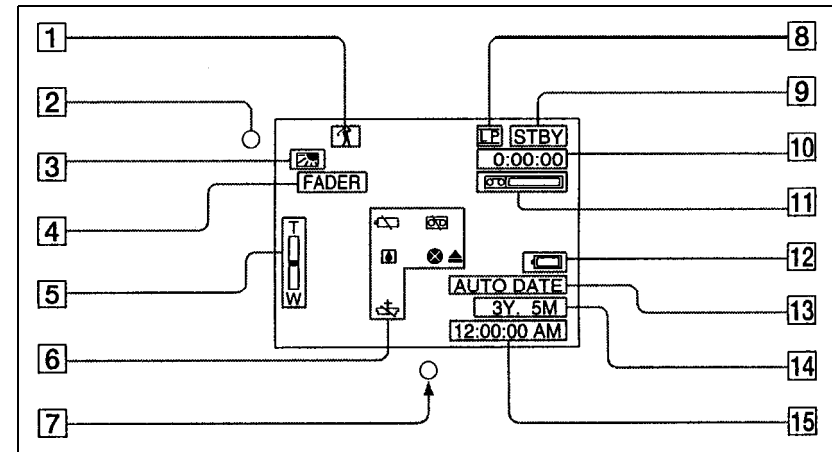


Notes on the Remote Commander

- Keep the remote sensor away from strong light sources such as direct sunlight or illumination. Otherwise, the remote control may not be effective.
- Be sure that there is no obstacle between the remote sensor and the Remote Commander.
- This camcorder works at commander mode VTR 2. The commander modes (1, 2 and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control **misoperation**. If you use another Sony VCR at commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper.

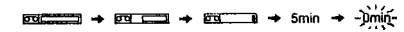
Operation Indicators

For details on each indicator, refer to the pages indicated in the parentheses.



- Q PROGRAM AE indicator (p. 23)
- Q Recording lamp (on the LCD panel)
- 3 Back Light indicator (p. 22)
- Q FADER indicator (p. 24)
- Power zoom indicator (p. 13)
- Q Warning indicators (p. 50)
- Q Recording lamp/Battery lamp (in the viewfinder)
- Q Lights up when playing back a tape recorded in LP mode.
- Q Tape transport mode (p. 10)
- Q Tape counter (p. 12)

- Q Remaining tape indicator



- Q Remaining battery indicator (p. 33, 50)



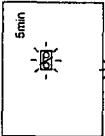
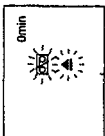

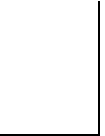
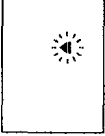


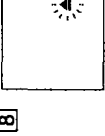
- Q AUTO DATE indicator (p. 10, 12)

- Q AGE/EVENT indicator (p. 20)

- Q Date or Time (p. 19)

Viewfinder

the LCD screen or a caution lamp on the camcorder flash, check the when the BEEP is set to ON.

 <p>5min</p>	 <p>0min</p>
	
	
	

- 1 The battery is weak or dead.
Slow flashing: The battery is weak.
Fast flashing: The battery is dead.
- 2 The tape is near the end.
The flashing is slow.
- 3 The tape has run out.
The flashing becomes rapid.
- 4 No tape has been inserted.
- 5 The tab on the tape is out (red).
- 6 Moisture condensation has occurred. (p. 35)
- 7 The video heads may be contaminated. (p. 36)
- 8 Some other trouble has occurred.
Disconnect the power source and contact your Sony dealer or local authorized facility.
- 9 The lithium battery is weak or is not installed.