DCR-PC4E/PC5/PC5E

RMT-809/811/812

SERVICE MANUAL

Ver 1.0 2000. 05

Level 2

Self Diagnosis Supported model

Digital Handycam

InfoLITHIUM TM SERIES

Cassette Memory

MEMORY STICK

Photo : DCR-PC5 (GRAY)
RMT-811

US Model
Canadian Model
Korea Model
DCR-PC5
AEP Model
UK Model
DCR-PC4E/PC5E
Australian Model
Chinese Model
DCR-PC5E
E Model
Hong Kong Model
Tourist Model
DCR-PC5/PC5E

J MECHANISM

On the VC-245 board

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the VC-245 board.
Therefore, schematic diagram, printed wiring board and electrical parts list of the VC-245 board are not shown.
The following pages are not shown.

Schematic diagram ..... Pages 4-17 to 4-54
Printed wiring board ..... Pages 4-55 to 4-58
Electrical parts list ..... Pages 6-13 to 6-25

For MECHANISM ADJUSTMENTS, refer to the "DV MECHANICAL ADJUSTMENT MANUAL VI J MECHANISM " (9-929-807-11).

DCR-PC5 : NTSC model
DCR-PC4E/PC5E : PAL model

• Table showing differences is shown on page 3.

SPECIFICATIONS

Video camera recorder

System

Video recording system
2 rotary heads
Helical scanning system
Audio recording system
Rotary heads, PCM system
Quantization: 12 bits (Fs 32 kHz, stereo 1, stereo 2), 16 bits (Fs 48 kHz, stereo)
Video signal
DCR-PC5:
NTSC color, EIA standards
DCR-PC4E/PC5E:
PAL colour, CCIR standards
Usable cassette
Mini DV cassette with the Mini DV mark printed
Tape speed
SP: Approx. 18.81 mm/s
LP: Approx. 12.56 mm/s
Recording/playback time (using cassette DVM60)
SP: 1 hour
LP: 1.5 hours
Fastforward/rewind time (using cassette DVM60)
Approx. 3 min. and 30 seconds
Viewfinder
Electric viewfinder (colour)
Image device
1/4 type CCD (Charge Coupled Device)
Approx. 800,000 pixels
(Effective: Approx. 400,000 pixels)
Lens
Carl Zeiss
Combined power zoom lens
Filter diameter 30 mm. (1 3/16 in.)
10× (Optical),
DCR-PC5:
120× (Digital)
DCR-PC4E/PC5E:
40× (Digital)
Focal length
3.3 - 33 mm (5/32 - 1 5/16 in.)
When converted to a 35 mm still camera
42 - 420 mm (1 11/16 - 16 5/8 in.)
Colour temperature
Auto, HOLD (Hold), Indoor (3200K), Outdoor (5800K)
Minimum illumination
5 lux (F 1.7)
0 lux (in the NightShot mode)**
** Objects unable to be seen due to the dark can be shot with infrared lighting.

Input/Output connectors

S video input/output (DCR-PC5)
S video output (DCR-PC4E/PC5E)
Input/output auto switch (DCR-PC5)
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
Chrominance signal: 0.3 Vp-p, 75 ohms, unbalanced
Audio/Video input/output (DCR-PC5)
Audio/Video output (DCR-PC4E/PC5E)
Input/output auto switch (DCR-PC5)
AV MINI JACK
Video signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
Audio signal: 327 mV, (at output impedance more than 47 kilohms)
Input impedance more than 47 kilohms (DCR-PC5)
Output impedance with less than 2.2 kilohms (DCR-PC4E/PC5E)
DV input/output (DCR-PC5)
DV output (DCR-PC4E/PC5E)
4-pin connector
Headphone jack
Stereo minijack (ø 3.5 mm)
LANC control jack (DCR-PC4E)
Stereo mini- minijack (ø 2.5 mm)
(LANC)/DIGITAL I/O jack (DCR-PC5/PC5E)
Special mini-minijack (ø 2.5 mm)
Transfer rate:
Max 115.2Kbps
RS232C based
MIC jack
Minijack, 0.388 mV low impedance with 2.5 to 3.0 V DC, output impedance 6.8 kilohms
(ø 3.5 mm)
Stereo type

LCD screen

Picture
2.5 type measured diagonally
50 × 37 mm (2 × 1 1/2 in.)
Total dot number
200,640 (880 × 228)

— Continued on next page —

Mini DV Digital Video Cassette

DIGITAL VIDEO CAMERA RECORDER

SONY®

General

Power requirements
3.6 V (battery pack)
4.2 V (AC power adaptor)
Average power consumption (when using the battery pack)
During camera recording using
DCR-PC4E:
LCD 3.5 W
Viewfinder 2.7 W
DCR-PC5/PC5E:
LCD 3.6 W
Viewfinder 2.8 W
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Storage temperature
–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (approx.)
54 × 101 × 97 mm
(2 1/8 × 4 × 3 7/8 in.) (w/h/d)
Mass (approx.)
DCR-PC4E: 440 g (15 oz)
DCR-PC5/PC5E: 450 g (15 oz)
excluding the battery pack and cassette
DCR-PC4E: 510 g (1 lb 1 oz)
DCR-PC5/PC5E: 520 g (1 lb 2 oz)
including the battery pack, NP-FS11, cassette DVM60 and lens cap
Supplied accessories
See page 2.

AC adaptor

Power requirements
100 - 240 V AC, 50/60 Hz
Power consumption
13 W
Output voltage
DC OUT: 4.2 V, 1.8 A in the operating mode
Battery charge terminal:
4.2 V, 1.5 A in charge mode
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Storage temperature
–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (approx.)
49 × 39 × 85 mm (1 15/16 × 1 9/16 × 3 3/8 in.) (w/h/d) excluding projecting parts
Mass (approx.)
120 g (4.2 oz)
excluding mains lead

Battery pack

Output voltage
DC 3.6 V
Capacity
4.1 Wh
Dimensions (approx.)
30.3 × 16.3 × 50.2 mm
(1 1/4 × 21/32 × 2 in.) (w/h/d)
Mass (approx.)
40 g (1.4 oz)
Type
Lithium ion

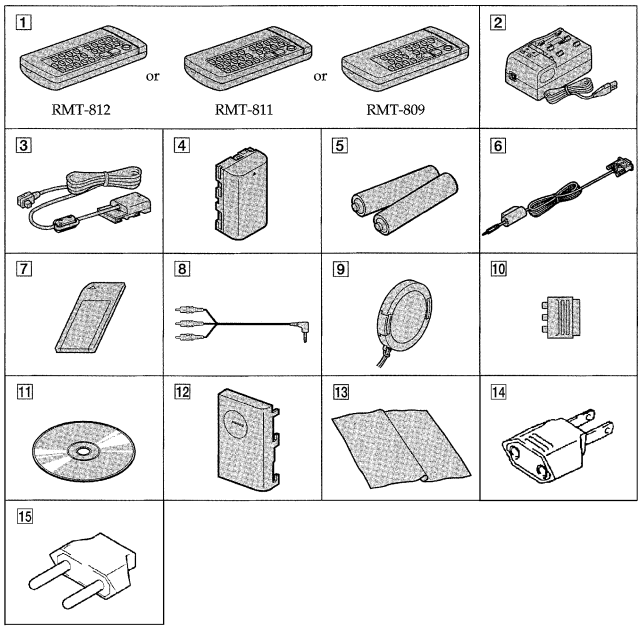
"Memory Stick" (DCR-PC5/PC5E only)

Memory
Flash memory
4MB: MSA-4A
Operating voltage
2.7-3.6V
Power consumption
Approx. 45mA in the operating mode
Approx. 130µA in the standby mode
Dimensions (approx.)
50 × 2.8 × 21.5 mm
(2 × 1/8 × 7/8 in.) (w/h/d)
Mass (approx.)
4 g (0.14 oz)

Design and specifications are subject to change without notice.

• SUPPLIED ACCESSORIES

Check that the following accessories are supplied with your camcorder.



1 **Wireless Remote Commander** (1)
RMT-812: DCR-PC5E
RMT-811: DCR-PC5
RMT-809: DCR-PC4E
2 **AC-VF10 power adaptor** (1), **Mains lead** (1)
3 **DK-115 Connecting cord** (1)
4 **NP-FS11 battery pack** (1)
5 **R6 (size AA) battery for Remote Commander** (2)
6 **PC serial cable** (1)
DCR-PC5/PC5E only
7 **"Memory Stick"** (1)
DCR-PC5/PC5E only
8 **A/V connecting cable** (1)
9 **Lens cap** (1)
10 **21-pin adaptor** (1)
DCR-PC4E/PC5E: AEP, UK
11 **Application software: PictureGear 4.1 Lite (CD-ROM)** (1) DCR-PC5/PC5E only
12 **Battery terminal cover** (1)
13 **Cleaning cloth** (1)
14 **2-pin conversion adaptor** (1)
DCR-PC5: E, HK/PC5E: E, HK
15 **2-pin conversion adaptor** (1)
DCR-PC5: JE/PC5E: JE

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

Table for differences of function

Model	DCR-PC4E	DCR-PC5	DCR-PC5E	DCR-PC5E	Remark
Destination	AEP, UK	US, CND, E, HK, KR, JE	AEP, UK	E, AUS, HK, CN, JE	
Color system	PAL	NTSC	PAL	PAL	
Remote commander	RMT-809	RMT-811	RMT-812	RMT-811	
Digital zoom	40 ×	120 ×	40 ×	120 ×	
MEMORY STICK slot	×	○	○	○	○: with IC1402 to IC1407 of VC-245 board.
DIGITAL I/O (RS232C)	×	○	○	○	
LINE IN	×	○	×	○	○: with REC button and IC903 of VC-245 board.
EVF (pixel)	113 K	180 K	180 K	180 K	

Abbreviation

CND: Canadian mode
HK: Hong Kong model
AUS: Austrarian model
CN: Chinese model
JE: Tourist model
KR: Korea model

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6-1-1. OVERALL SECTION ····· 6-1
6-1-2. CABINET (R) BLOCK ASSEMBLY-1 ····· 6-2
6-1-3. CABINET (R) BLOCK ASSEMBLY-2 ····· 6-3
6-1-4. LENS-EVF SECTION ····· 6-4
6-1-5. CABINET (L) SECTION ····· 6-5
6-1-6. CASSETTE COMPARTMENT AND DRUM BLOCK ASSEMBLY ····· 6-6
6-1-7. LS CHASSIS BLOCK ASSEMBLY ····· 6-7
6-1-8. MECHANISM CHASSIS BLOCK ASSEMBLY ····· 6-8
6-2. ELECTRICAL PARTS LIST ····· 6-9

Parts list of the VC-245 board are not shown.
Pages from 6-13 to 6-25 are not shown.

* Optical axis frame and color reproduction frame are shown on page 198 to 199.

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

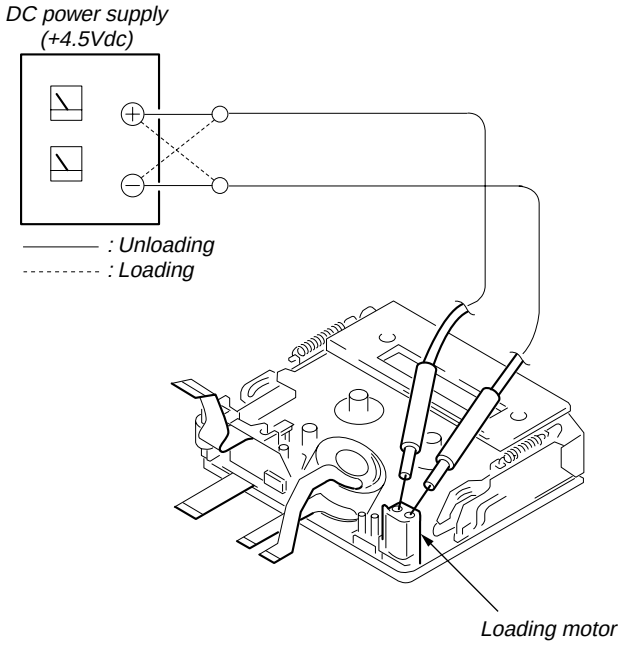
In this unit, about 10 seconds after power is supplied to the battery terminal using the regulated power supply (4.2V), the power is shut off so that the unit cannot operate.
This following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.
Connect the servicing remote commander RM-95 (J-6082-053-B) to the LANC jack, and set the commander switch to the "ADJ" side.

Method 2.
Use the AC power adaptor (AC-VF10 or AC-VQ11) and connecting cord (DK-115).

2. TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT)

① Refer to 2-2 to remove the accessory shoe.
② Refer to 2-2, 2-3 to remove the cabinet (R) assembly.
③ Refer to 2-5 to remove the lens-EVF block assembly.
④ Refer to 2-7 to remove VC-245 board.
⑤ Refer to 2-8 to remove the mechanism deck.
⑥ Supply +4.5V from the DC power supply to the loading motor and unload with a pressing the cassette compartment.



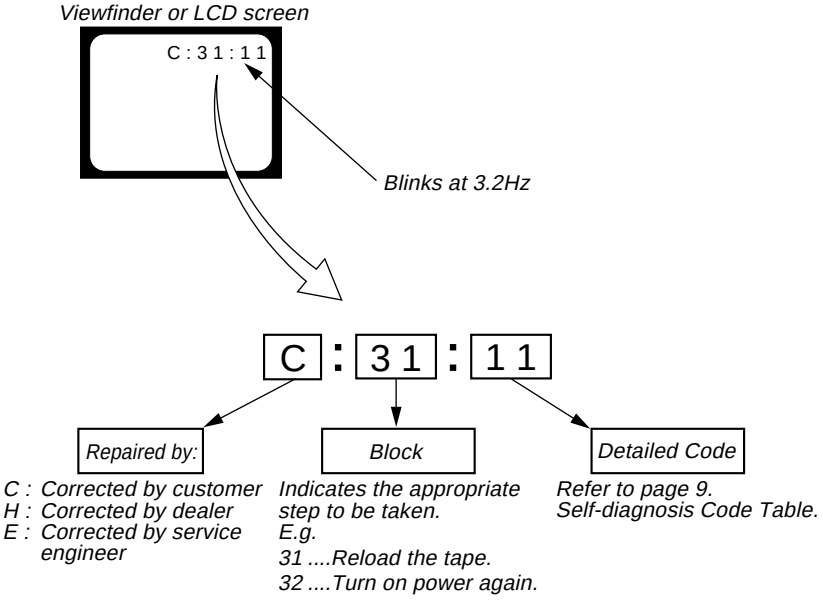
SELF-DIAGNOSIS FUNCTION

1. SELF-DIAGNOSIS FUNCTION

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or LCD screen what to do. This function consists of two display; self-diagnosis display and service mode display.
Details of the self-diagnosis functions are provided in the Instruction manual.

2. SELF-DIAGNOSIS DISPLAY

When problems occur while the unit is operating, the counter of the viewfinder or LCD screen consists of an alphabet and 4-digit numbers, which blinks at 3.2 Hz. This 5-character display indicates the "repaired by:", "block" in which the problem occurred, and "detailed code" of the problem.

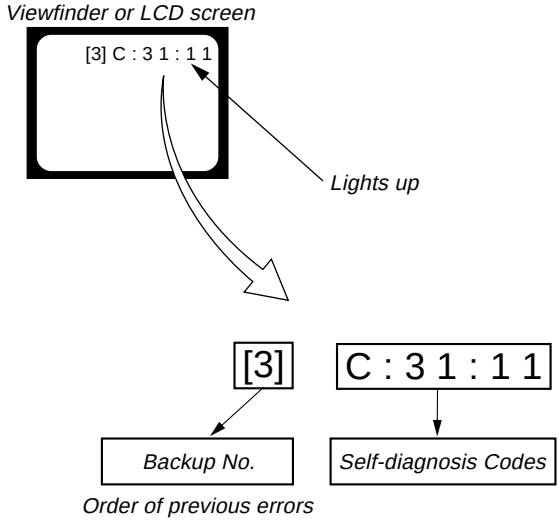


3. SERVICE MODE DISPLAY

The service mode display shows the last self-diagnosis codes shown in the past.

3-1. Display Method

While pressing the "BACK LIGHT" key, set the switch from OFF to "VCR or PLAYER", and continue pressing the "BACK LIGHT" key for 5 seconds continuously. The service mode will be displayed, and the counter will show the backup No. and the 5-character self-diagnosis codes.



3-2. Backup No.

The backup No. in the [] indicates the order in which the problem occurred. (If the number of problems which occurred is less than 6, only the number of problems which occurred will be shown.)
[1] : Occurred first time [4] : Occurred fourth time
[2] : Occurred second time [5] : Occurred fifth time
[3] : Occurred third time [6] : Occurred the last time
Note: Switching of the backup No. can't be done.

3-3. End of Display

Turning OFF the power supply will end the service mode display.

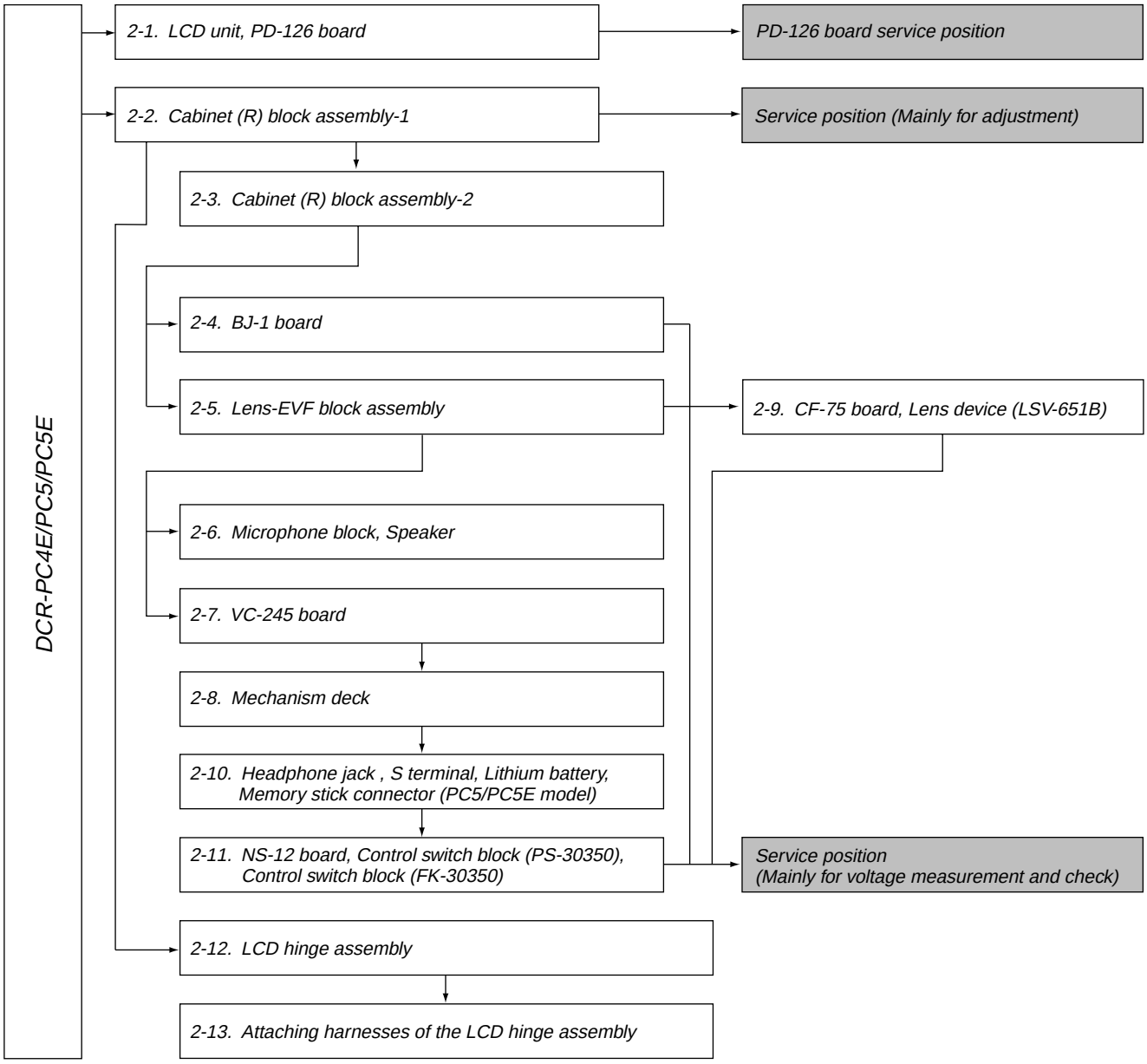
Note: The "self-diagnosis display" data will be backed up by the coin-type lithium battery of control switch block (FK-30350) BT4001. When this coin-type lithium battery is removed, the "self-diagnosis display" data will be lost by initialization.

4. SELF-DIAGNOSIS CODE TABLE

Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
C	0	4	0	0	Non-standard battery is used.	Use the info LITHIUM battery.
C	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2	2	0	0	Video head is dirty.	Clean with the optional cleaning cassette.
C	3	1	1	0	LOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	1	1	UNLOAD direction. Loading does not complete within specified time	Load the tape again, and perform operations from the beginning.
C	3	1	2	0	T reel side tape slacking when unloading.	Load the tape again, and perform operations from the beginning.
C	3	1	2	1	Winding S reel fault when counting the rest of tape.	Load the tape again, and perform operations from the beginning.
C	3	1	2	2	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	3	S reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	2	4	T reel fault.	Load the tape again, and perform operations from the beginning.
C	3	1	3	0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3	1	4	0	FG fault when starting drum.	Load the tape again, and perform operations from the beginning.
C	3	1	4	2	FG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	1	1	0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	1	1	1	UNLOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	0	T reel side tape slacking when unloading.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	1	Winding S reel fault when counting the rest of tape.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	2	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	3	S reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	2	4	T reel fault.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	0	FG fault when starting drum	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	2	FG fault during normal drum operations	Remove the battery or power cable, connect, and perform operations from the beginning.
E	6	1	0	0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ⑦ of CF-75 board) when focusing is performed when the control dial is rotated in the focus manual mode, and the focus motor drive circuit (IC204 of VC-245 board) when the focusing is not performed.
E	6	1	1	0	Zoom operations fault (Cannot initialize zoom lens.)	Inspect the lens block zoom reset sensor (Pin ⑳ of CF-75 board) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC204 of VC-245 board) when zooming is not performed.
E	6	2	0	0	Steadyshot function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE3450 of CF-75 board) peripheral circuits.
E	6	2	0	1	Steadyshot function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE3451 of CF-75 board) peripheral circuits.

SECTION 2
DISASSEMBLY

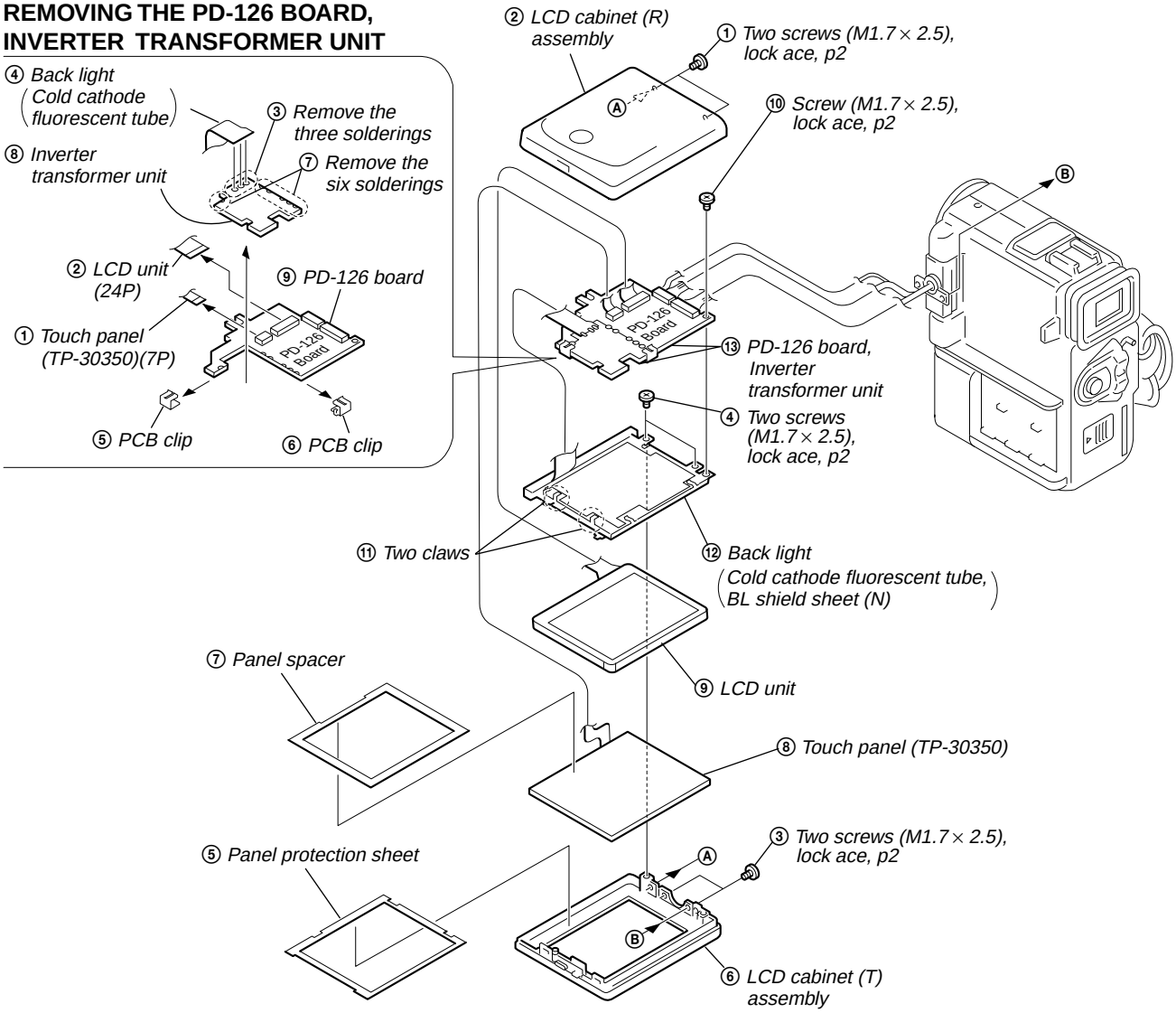
The following flow chart shows the disassembly procedure.



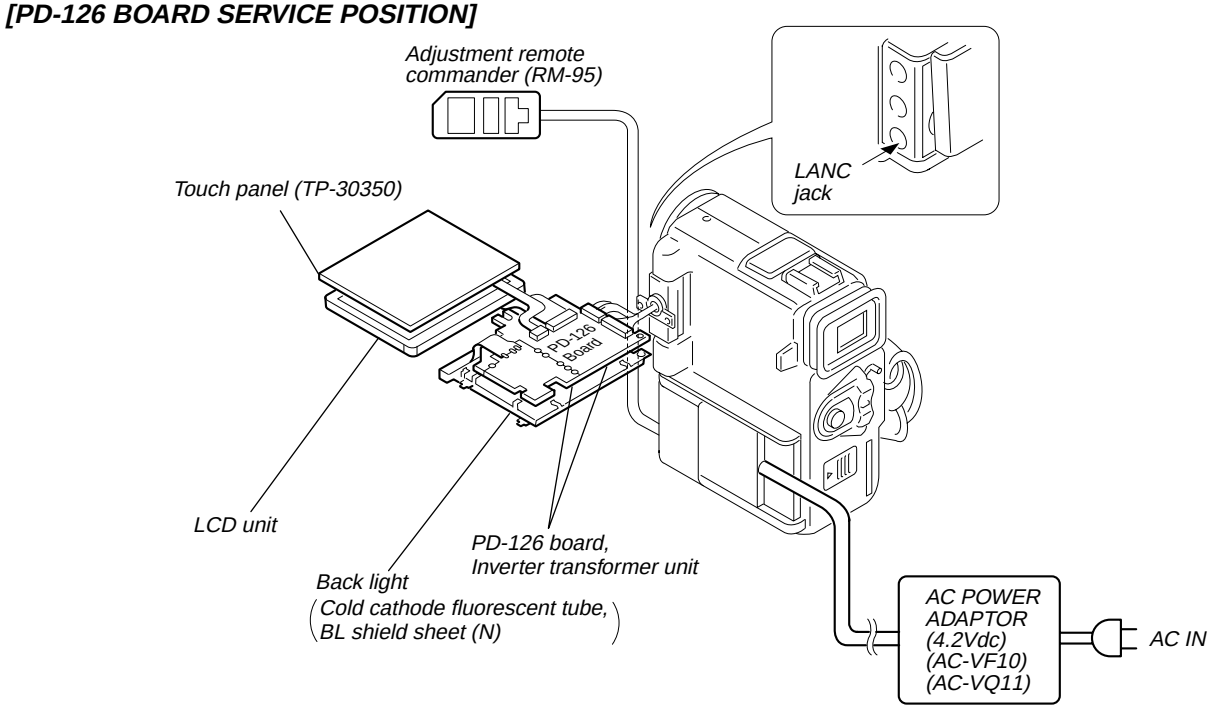
NOTE: Follow the disassembly procedure in the numerical order given.

2-1. LCD UNIT, PD-126 BOARD

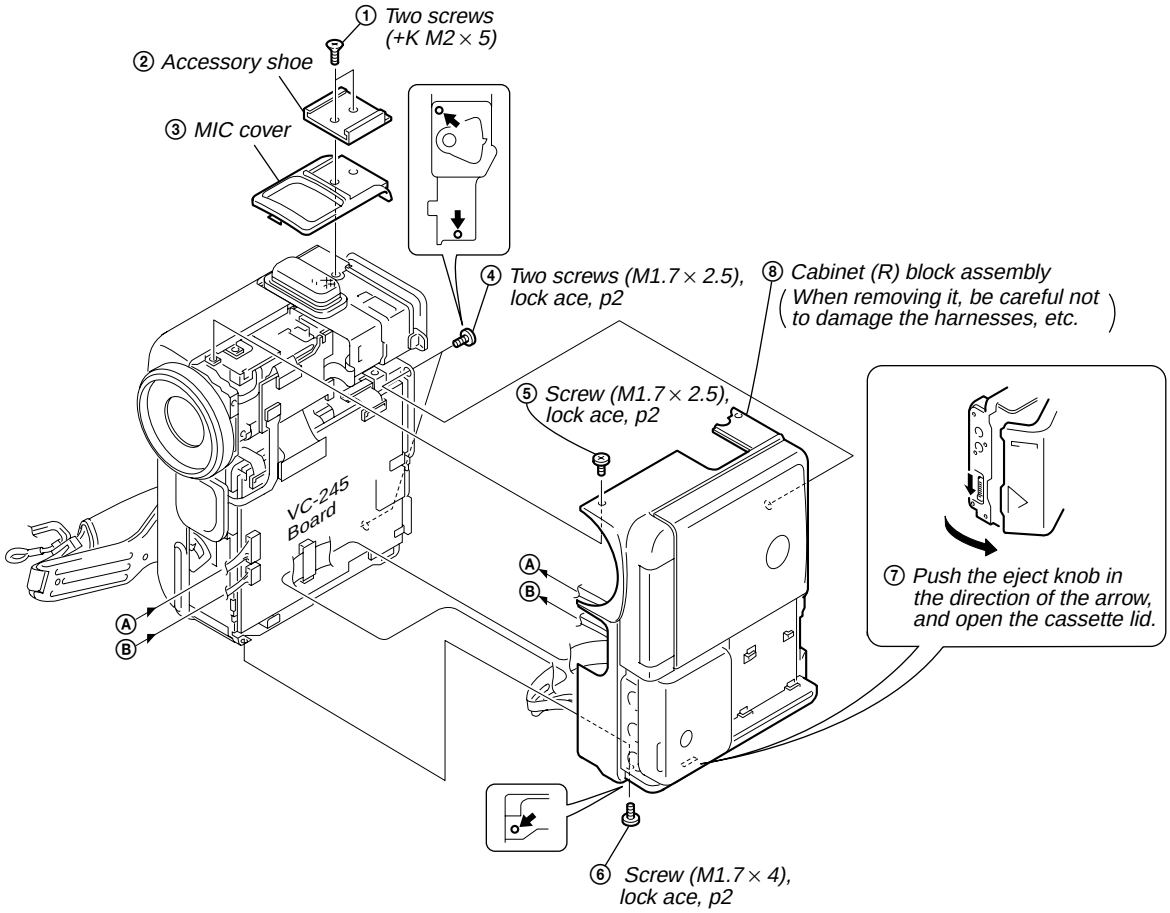
REMOVING THE PD-126 BOARD, INVERTER TRANSFORMER UNIT



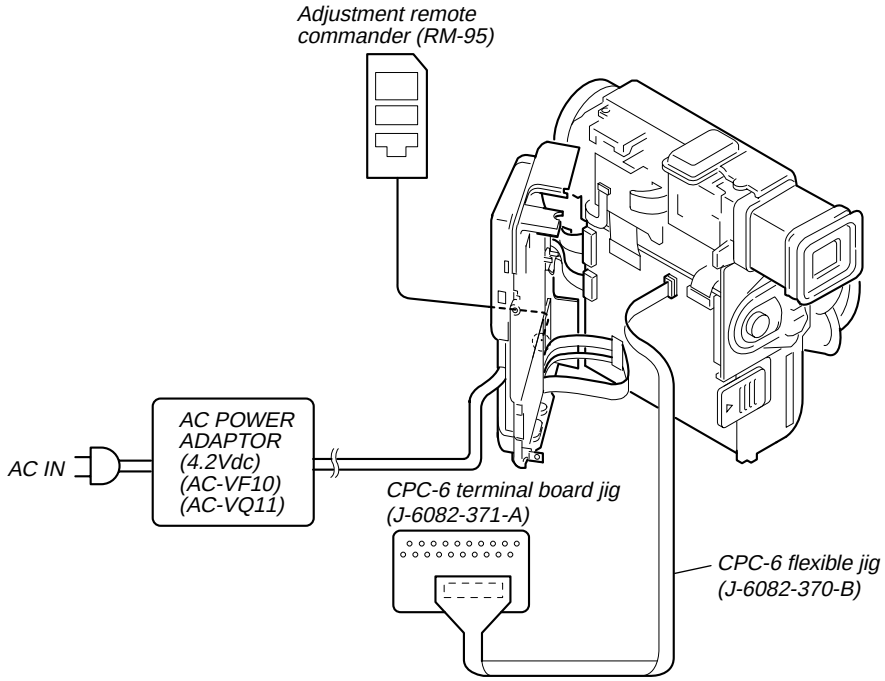
[PD-126 BOARD SERVICE POSITION]



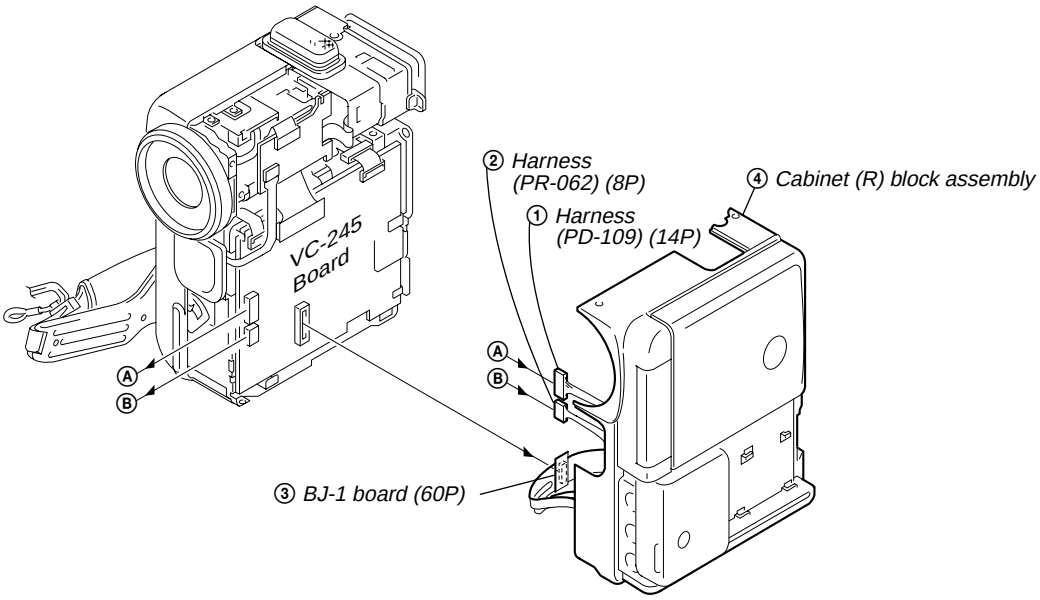
2-2. CABINET (R) BLOCK ASSEMBLY-1



[SERVICE POSITION (Mainly for adjustment)]

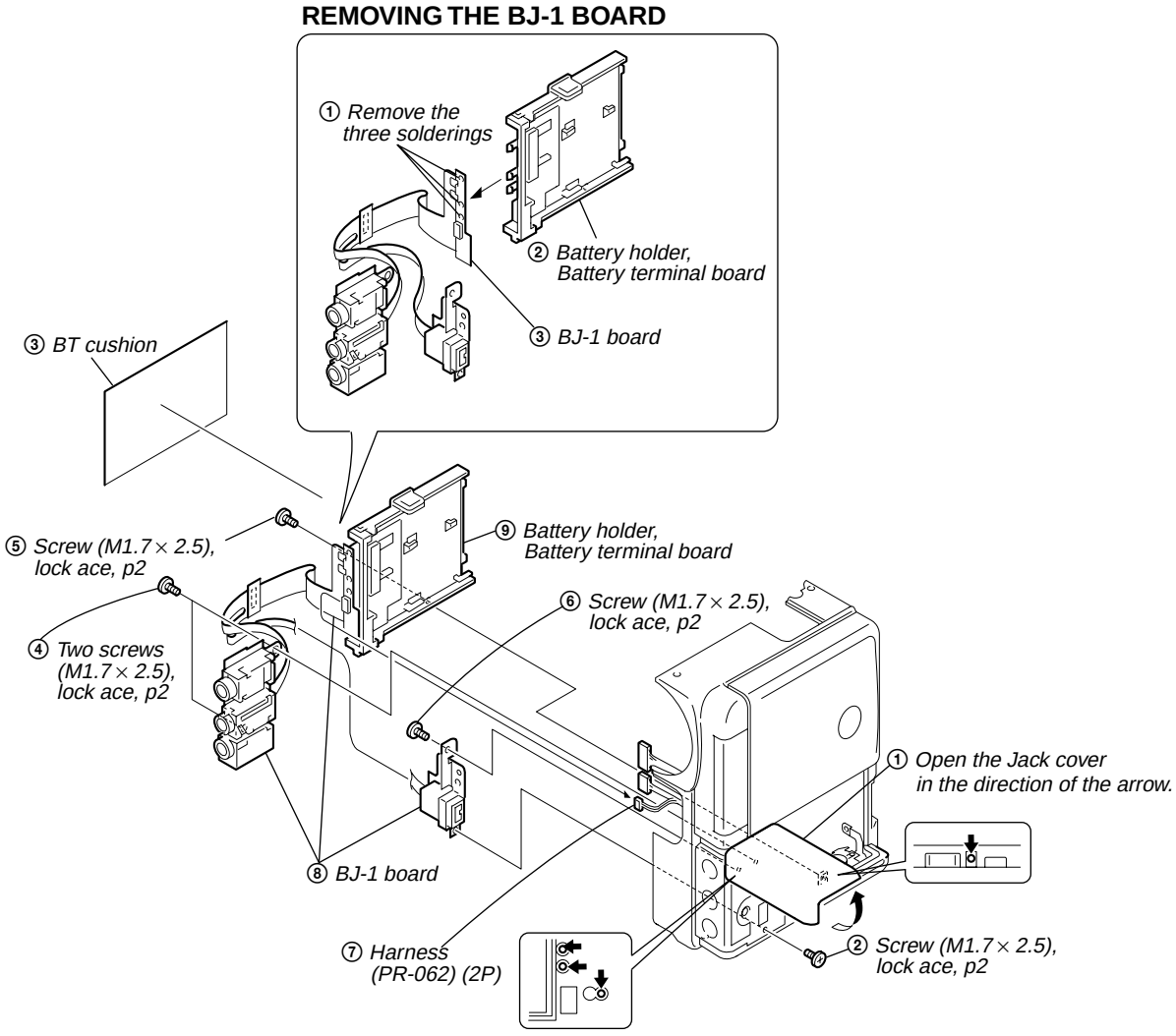


2-3. CABINET (R) BLOCK ASSEMBLY-2

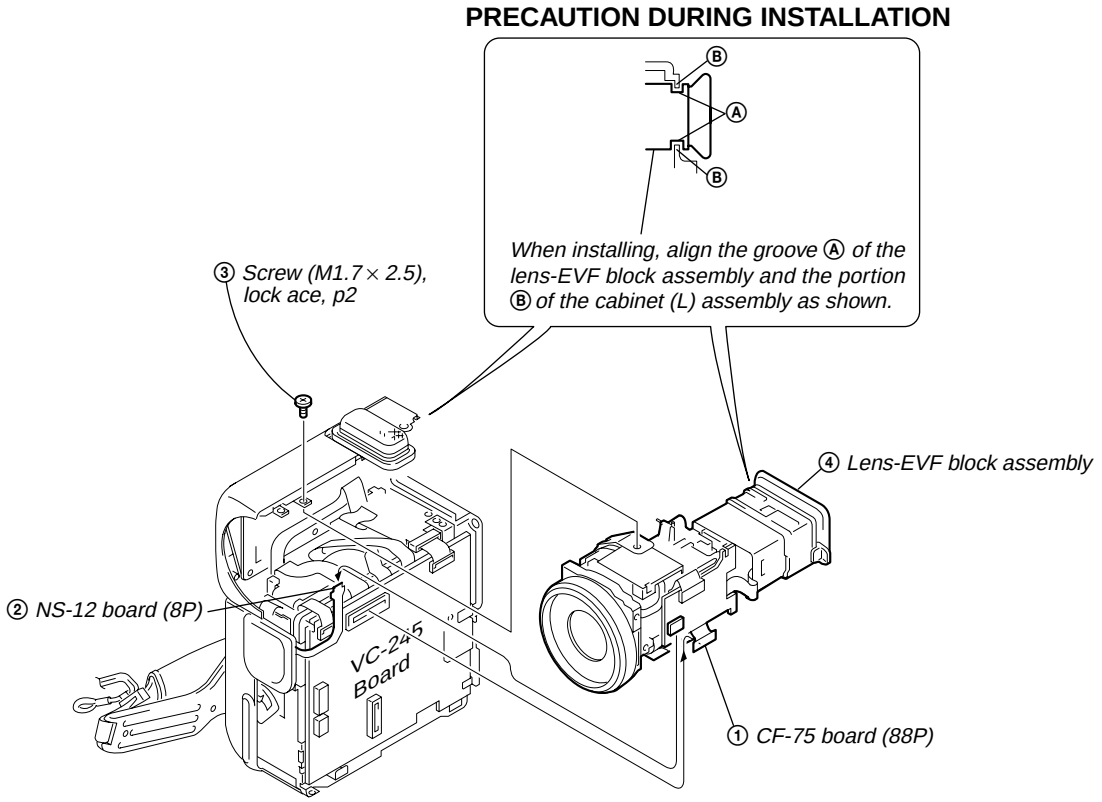


2-4. BJ-1 BOARD

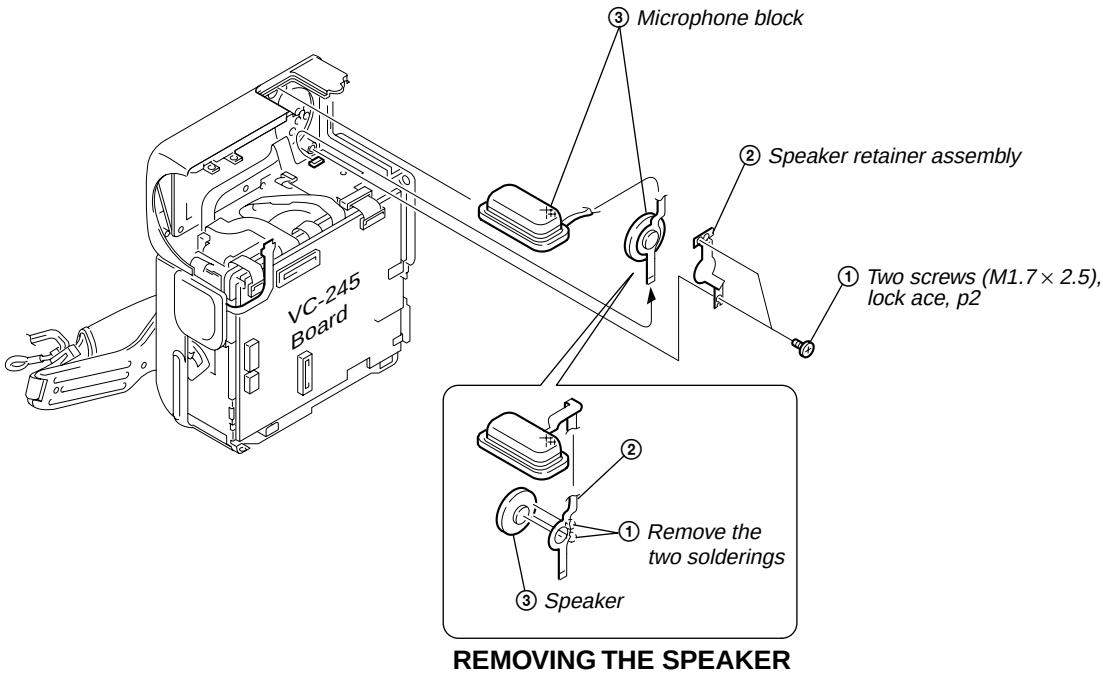
REMOVING THE BJ-1 BOARD



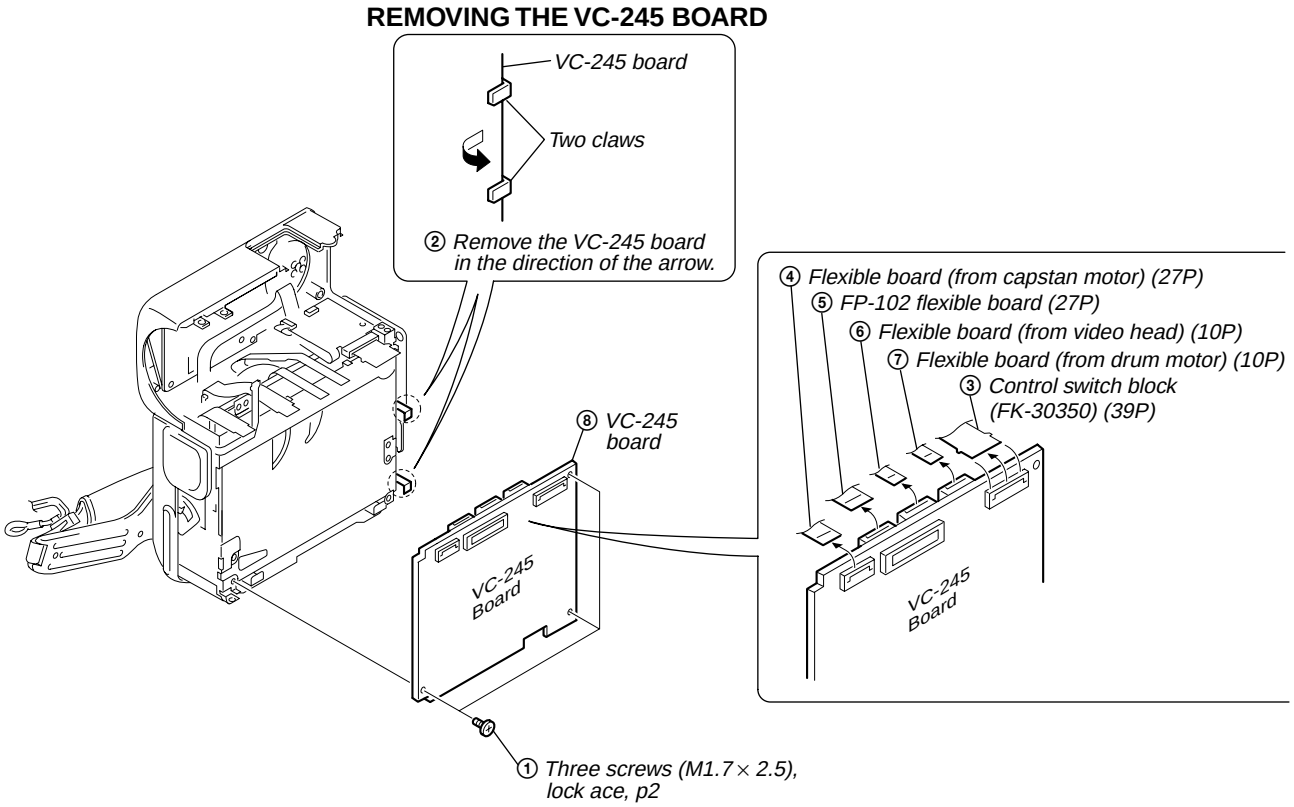
2-5. LENS-EVF BLOCK ASSEMBLY



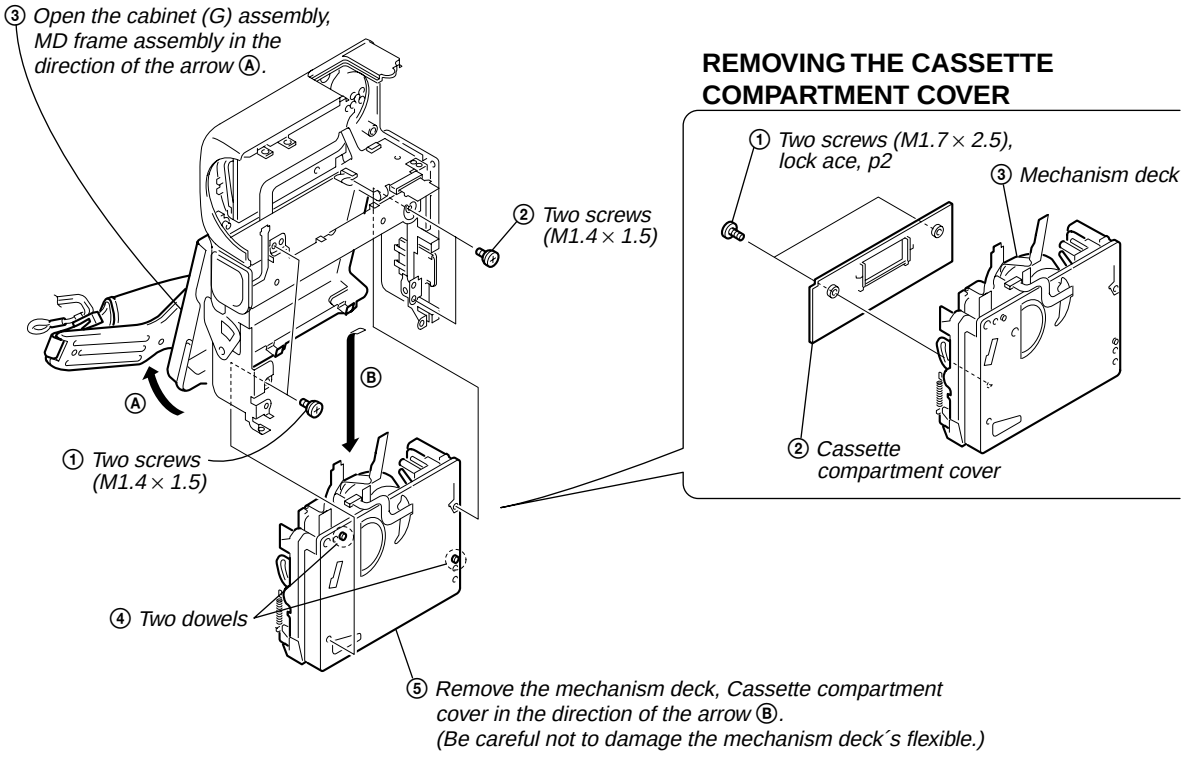
2-6. MICROPHONE BLOCK, SPEAKER



2-7. VC-245 BOARD

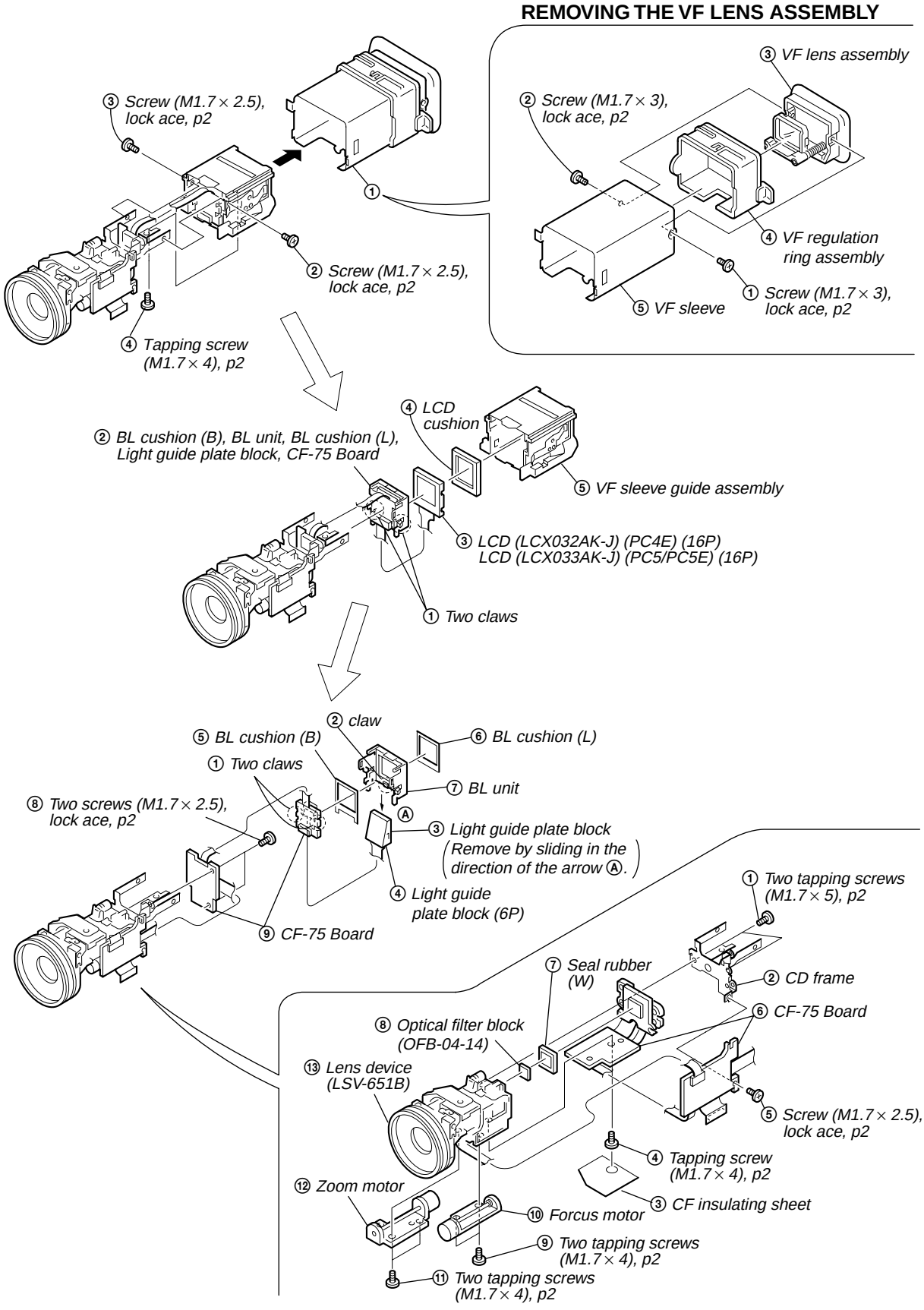


2-8. MECHANISM DECK

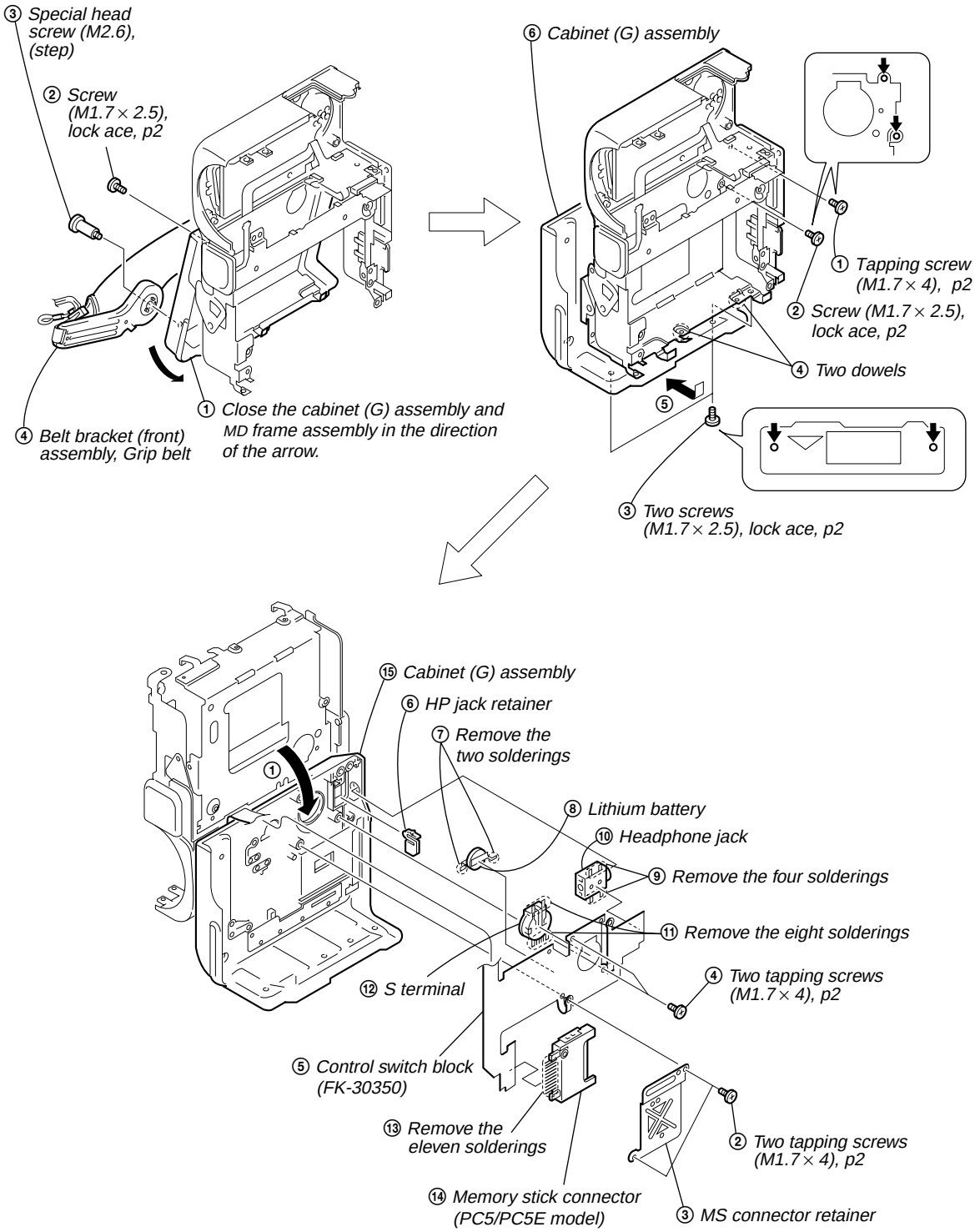


2-9. CF-75 BOARD, LENS DEVICE (LSV-651B)

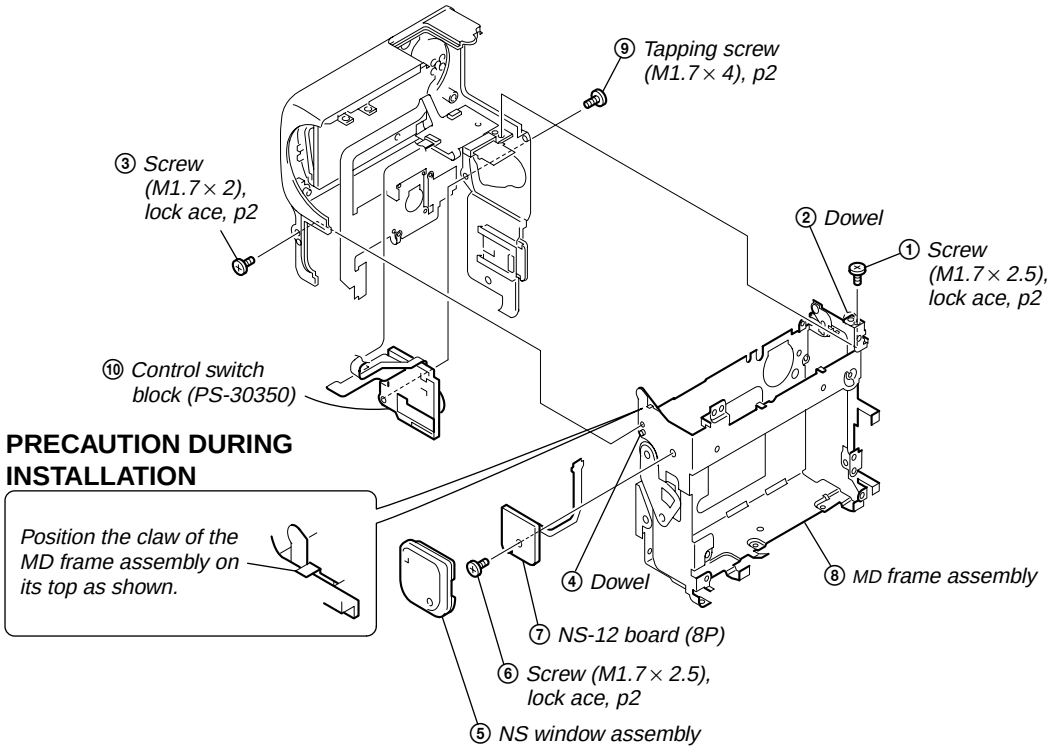
Note: Be careful that dust must not enter during re-assembly.

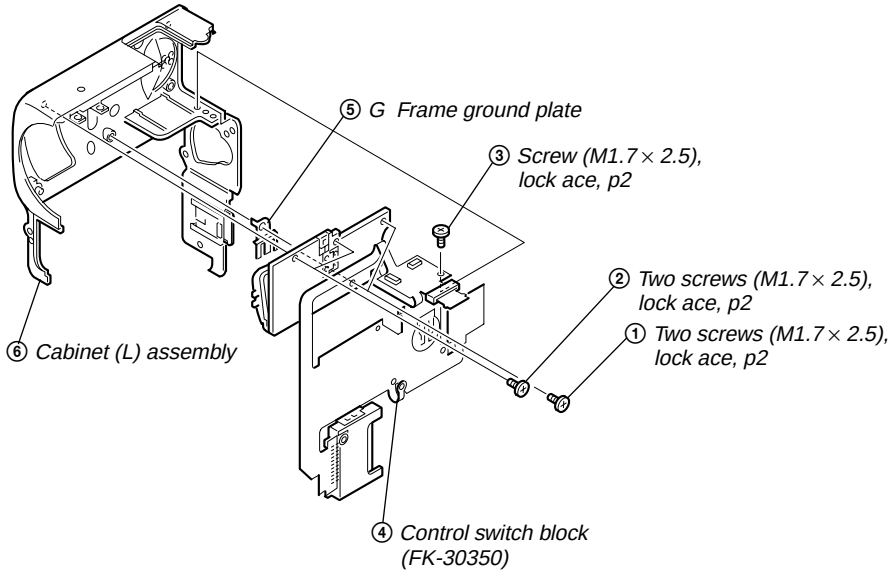


2-10. HEADPHONE JACK, S TERMINAL, LITHIUM BATTERY, MEMORY STICK CONNECTOR (PC5/PC5E MODEL)

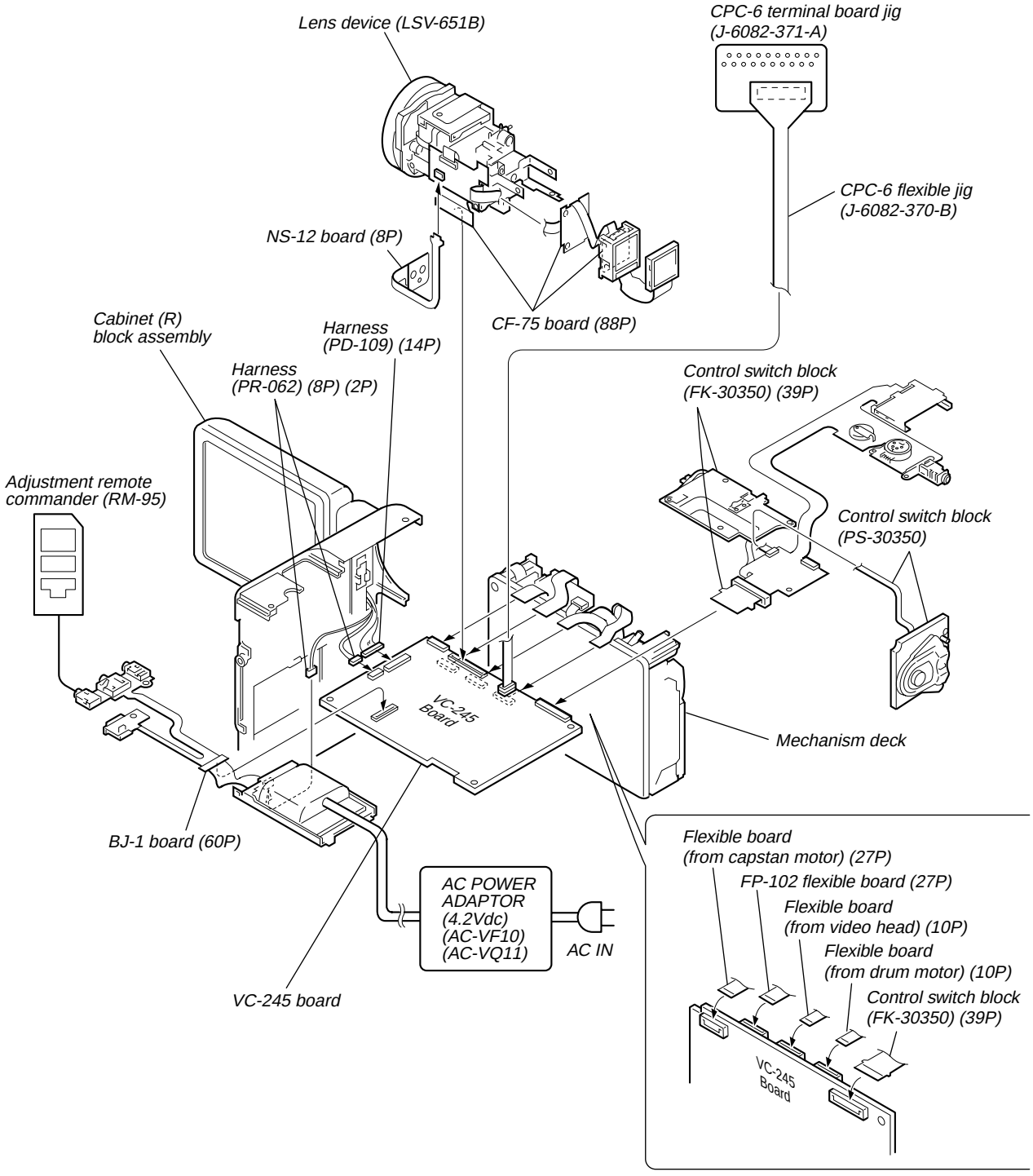


2-11. NS-12 BOARD, CONTROL SWITCH BLOCK (PS-30350), CONTROL SWITCH BLOCK (FK-30350)

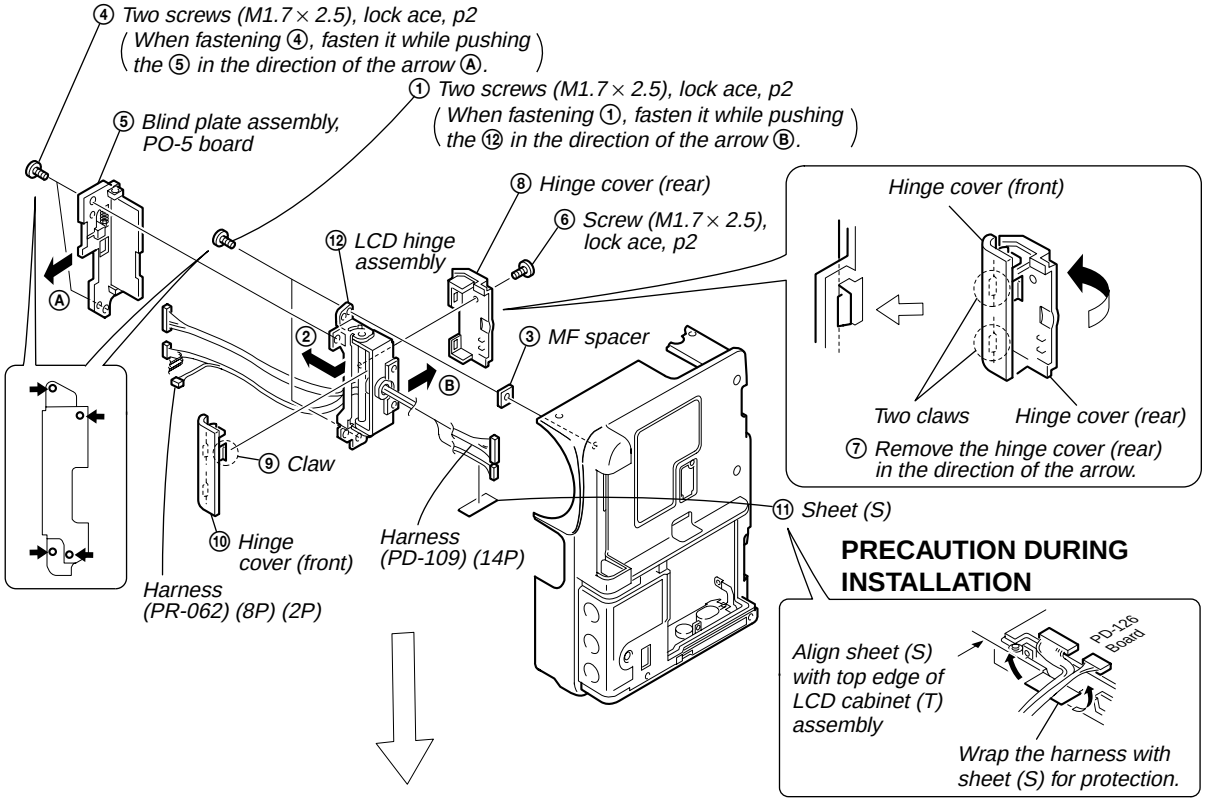


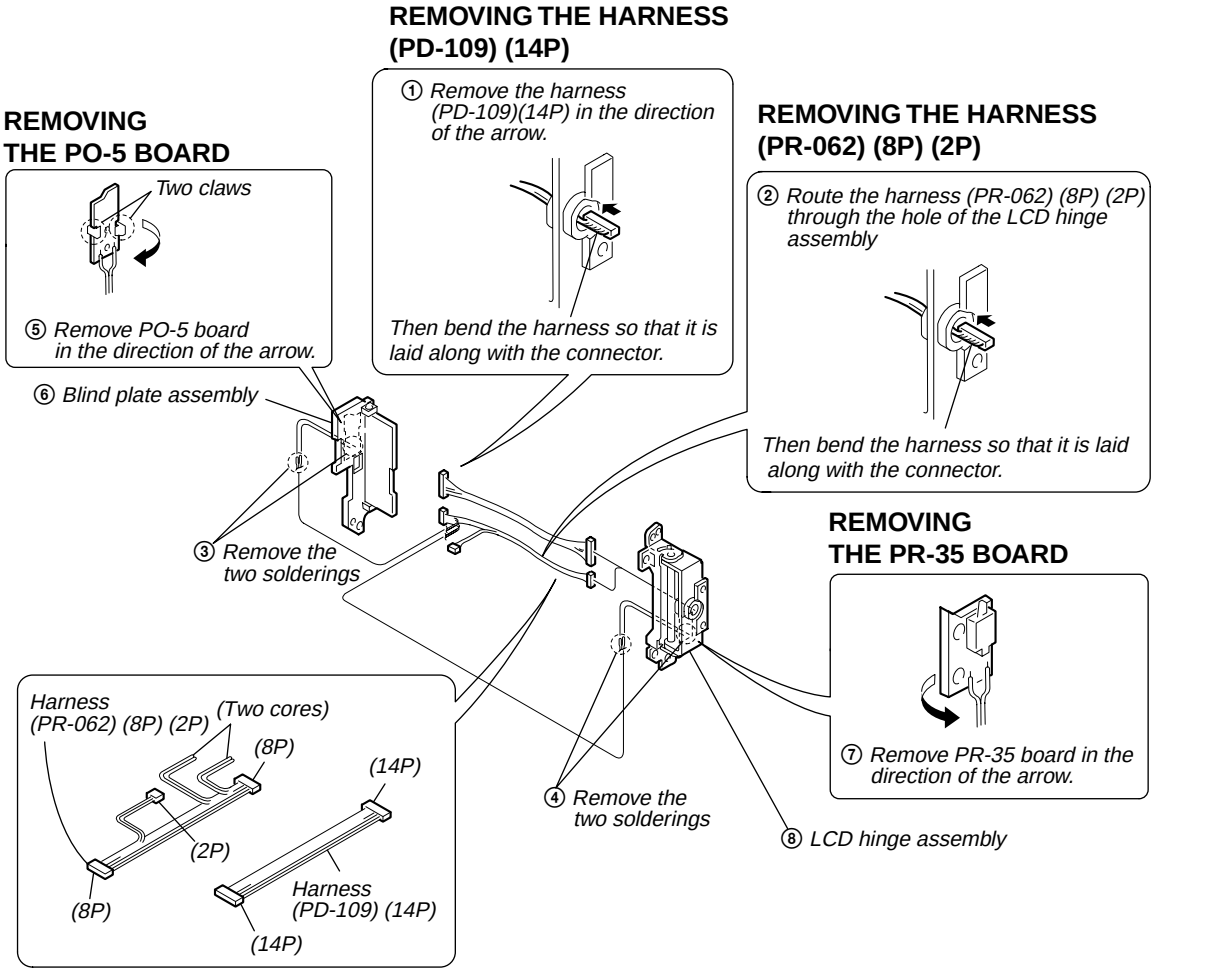


[SERVICE POSITION (Mainly for voltage measurement and check)]



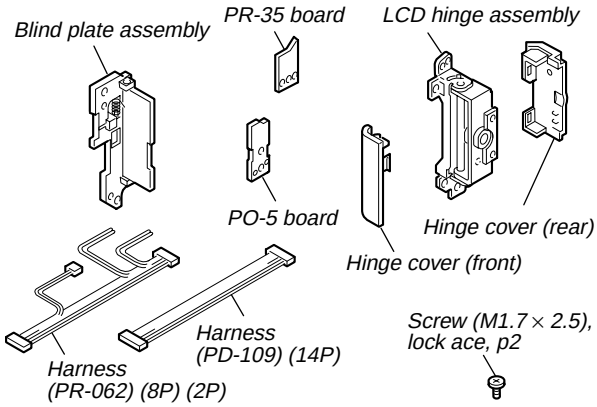
2-12. LCD HINGE ASSEMBLY



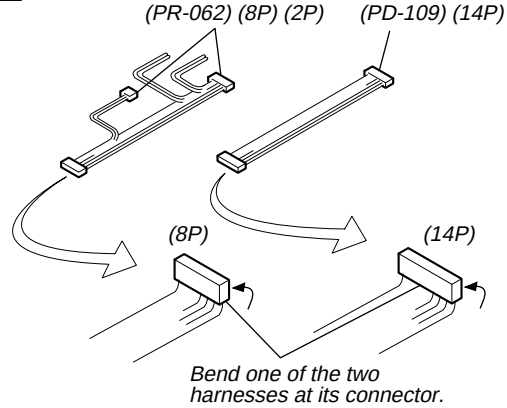


2-13. ATTACHING HARNESSES OF THE LCD HINGE ASSEMBLY

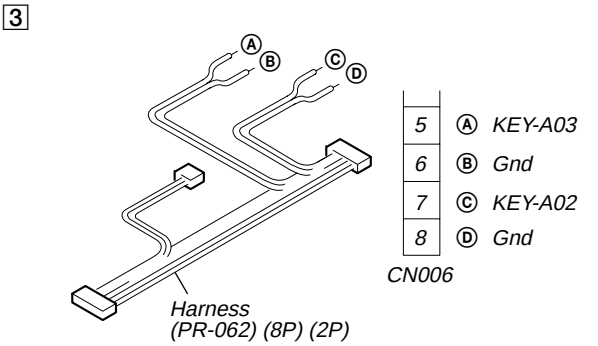
1



2



3



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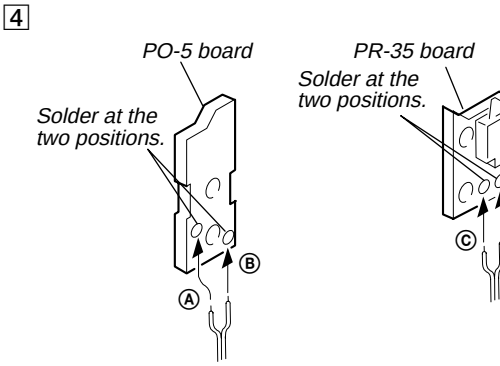

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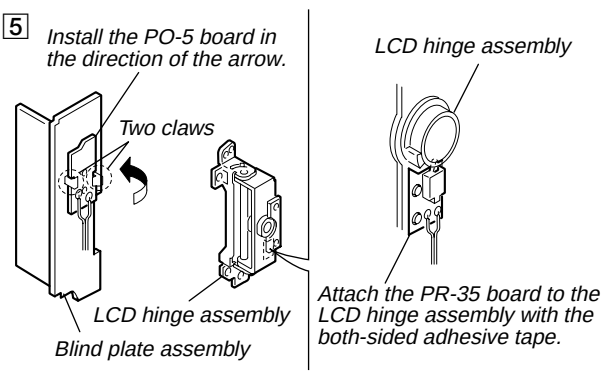

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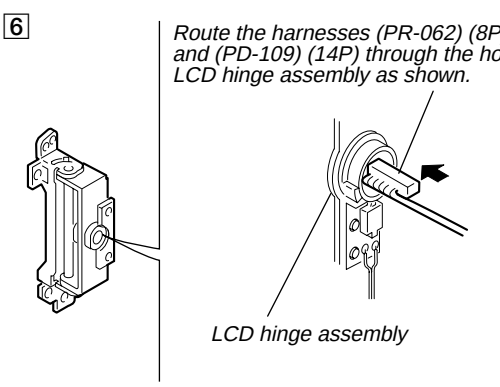
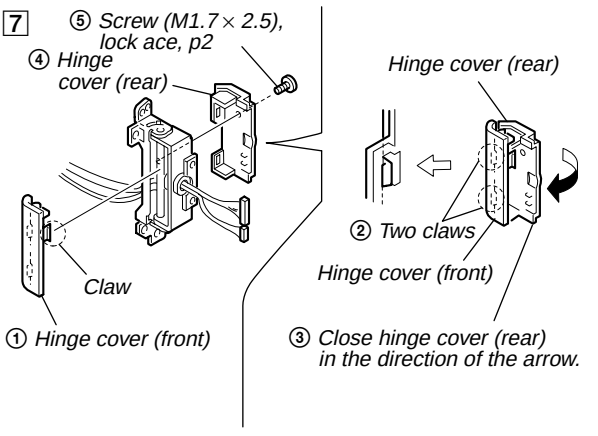
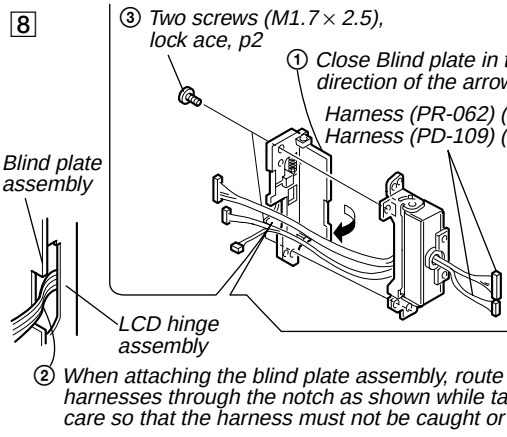


7

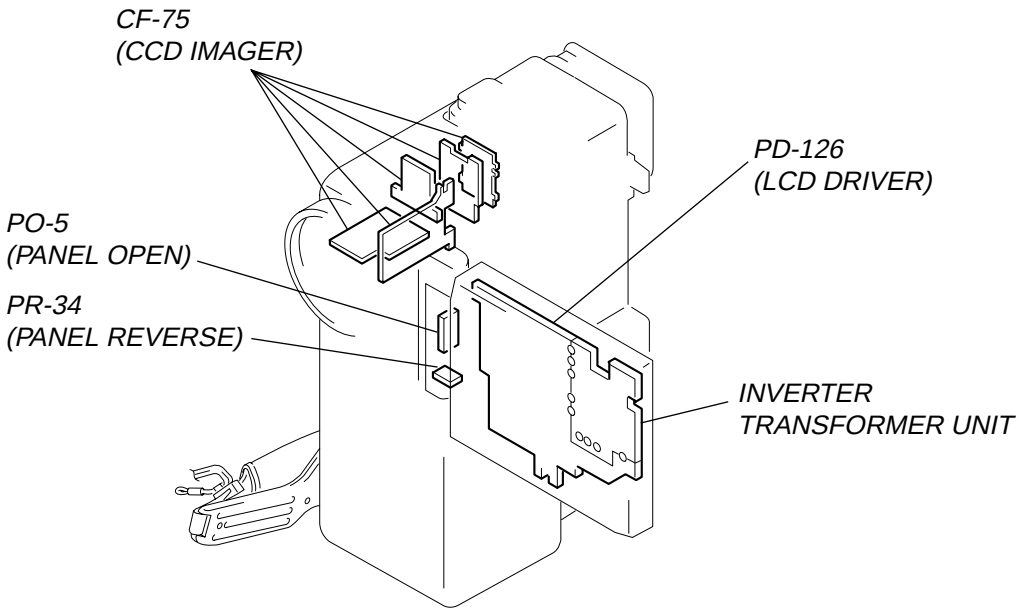


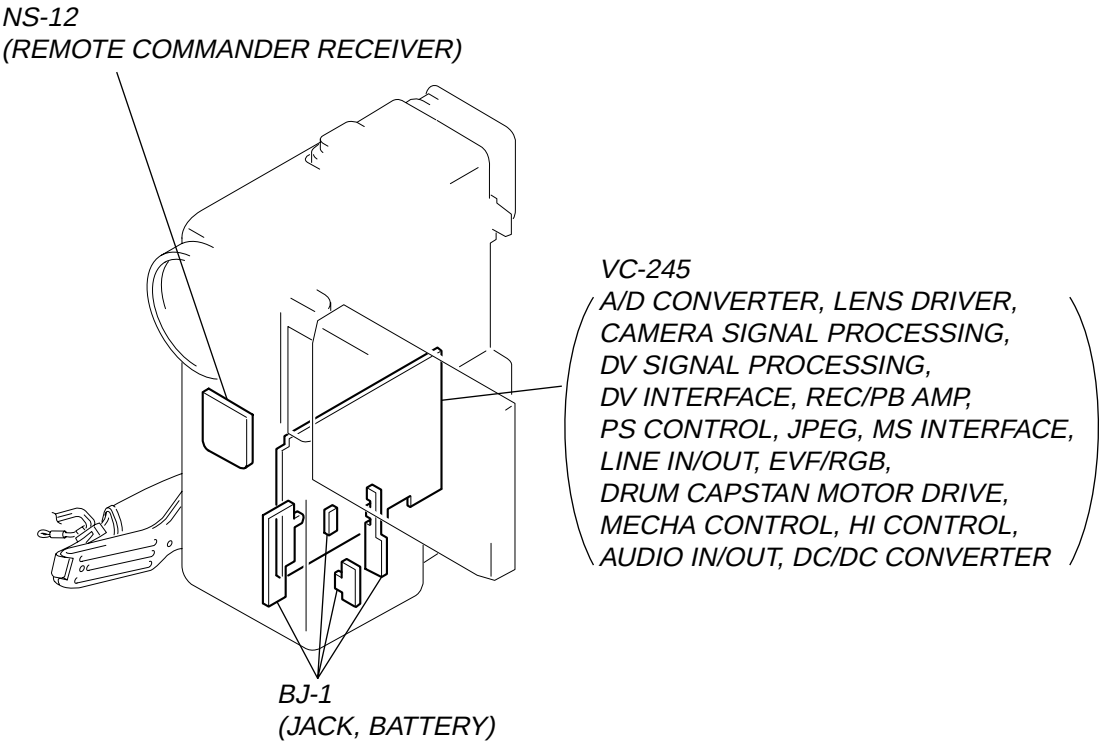
8



2-14. CIRCUIT BOARDS LOCATION

The circuit boards contained in the zoom lens are not shown.

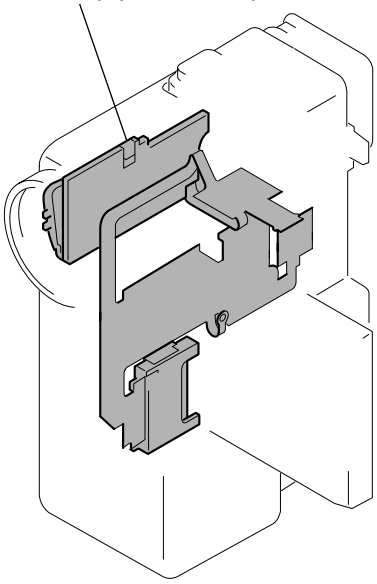




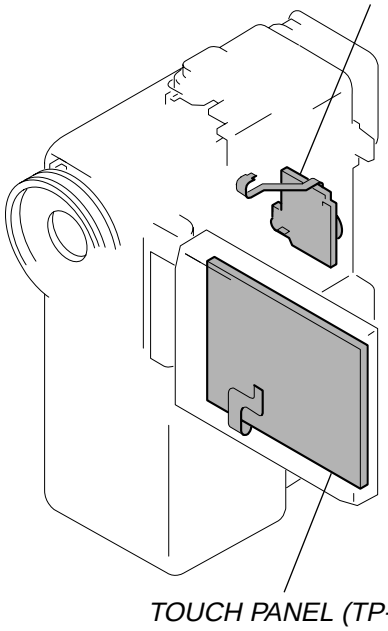
2-15. FLEXIBLE BOARDS LOCATION

The flexible boards contained in the mechanism deck and that in the zoom lens are not shown.

CONTROL SWITCH BLOCK (FK-30350) (PC5/PC5E)

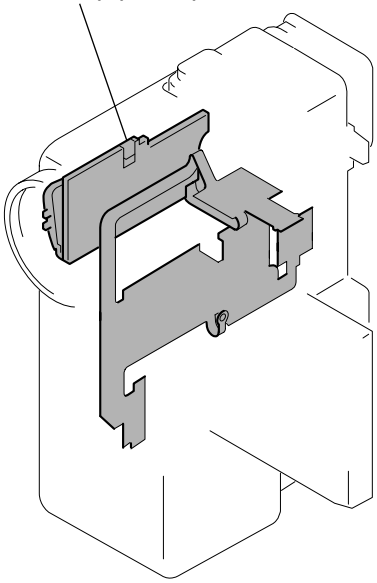


CONTROL SWITCH BLOCK (PS-30350)



TOUCH PANEL (TP-30350)

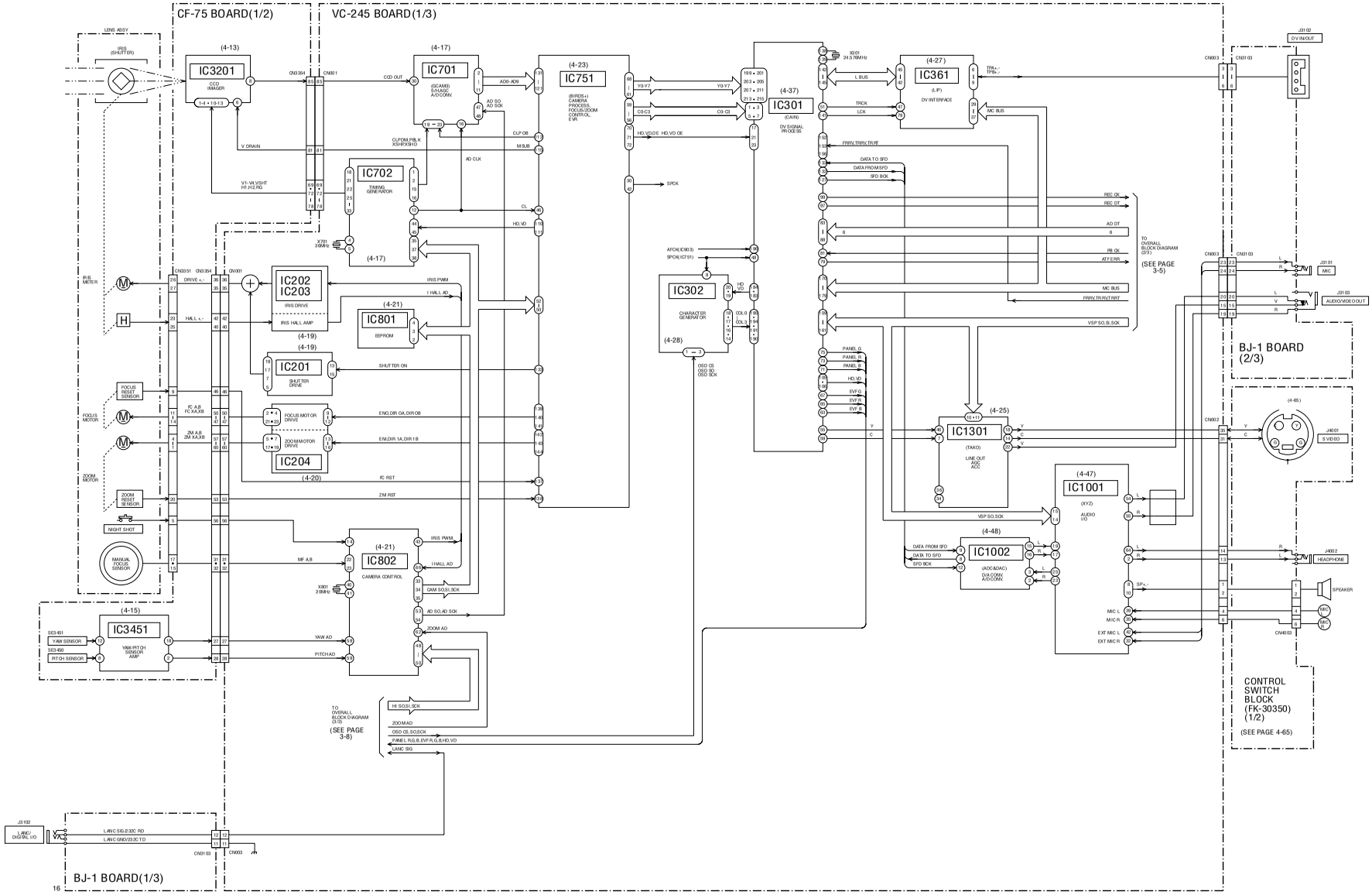
CONTROL SWITCH BLOCK (FK-30350) (PC4E)



SECTION 3
BLOCK DIAGRAMS

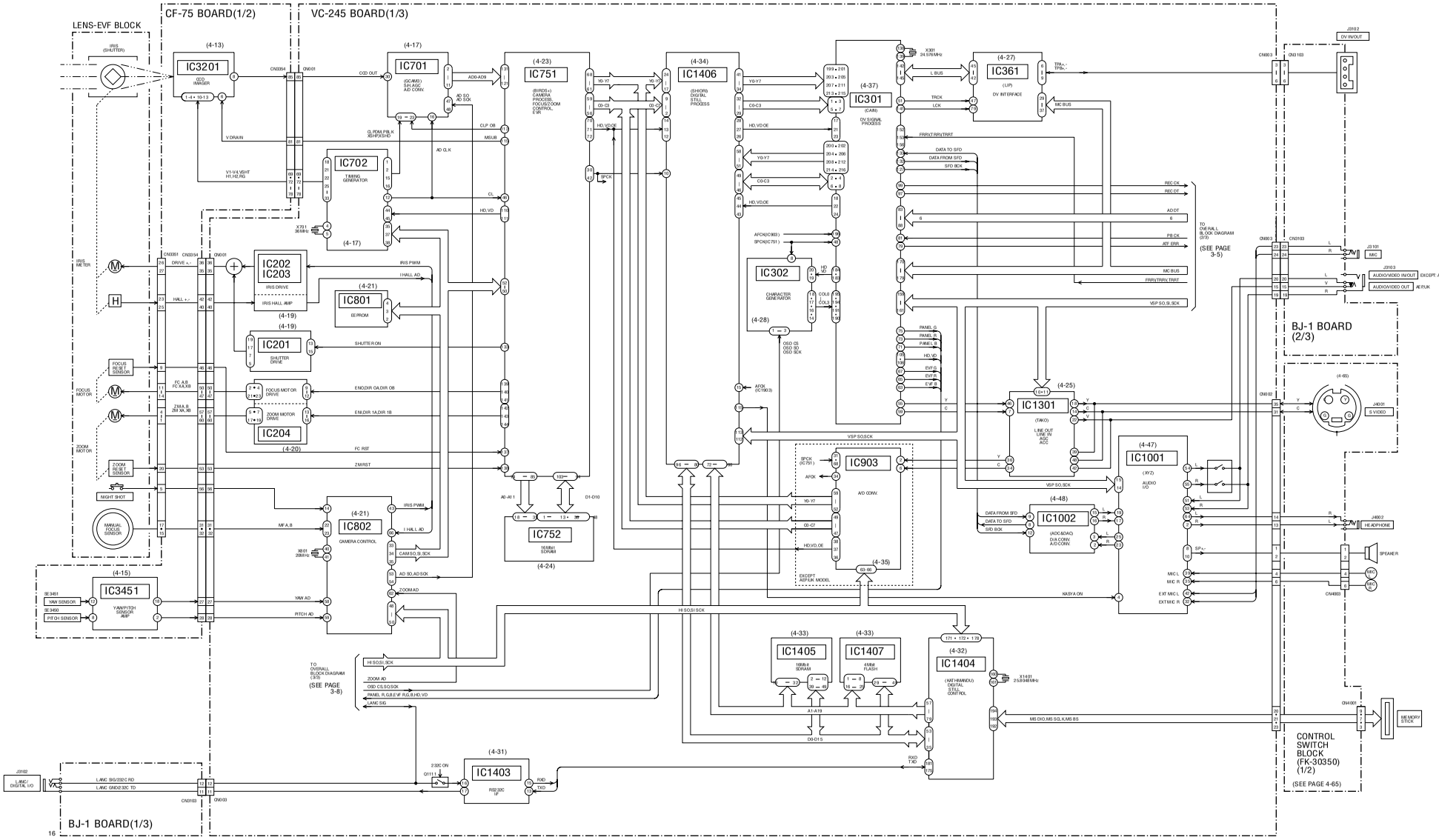
3-1. OVERALL BLOCK DIAGRAM (1/3)(DCR-PC4E)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



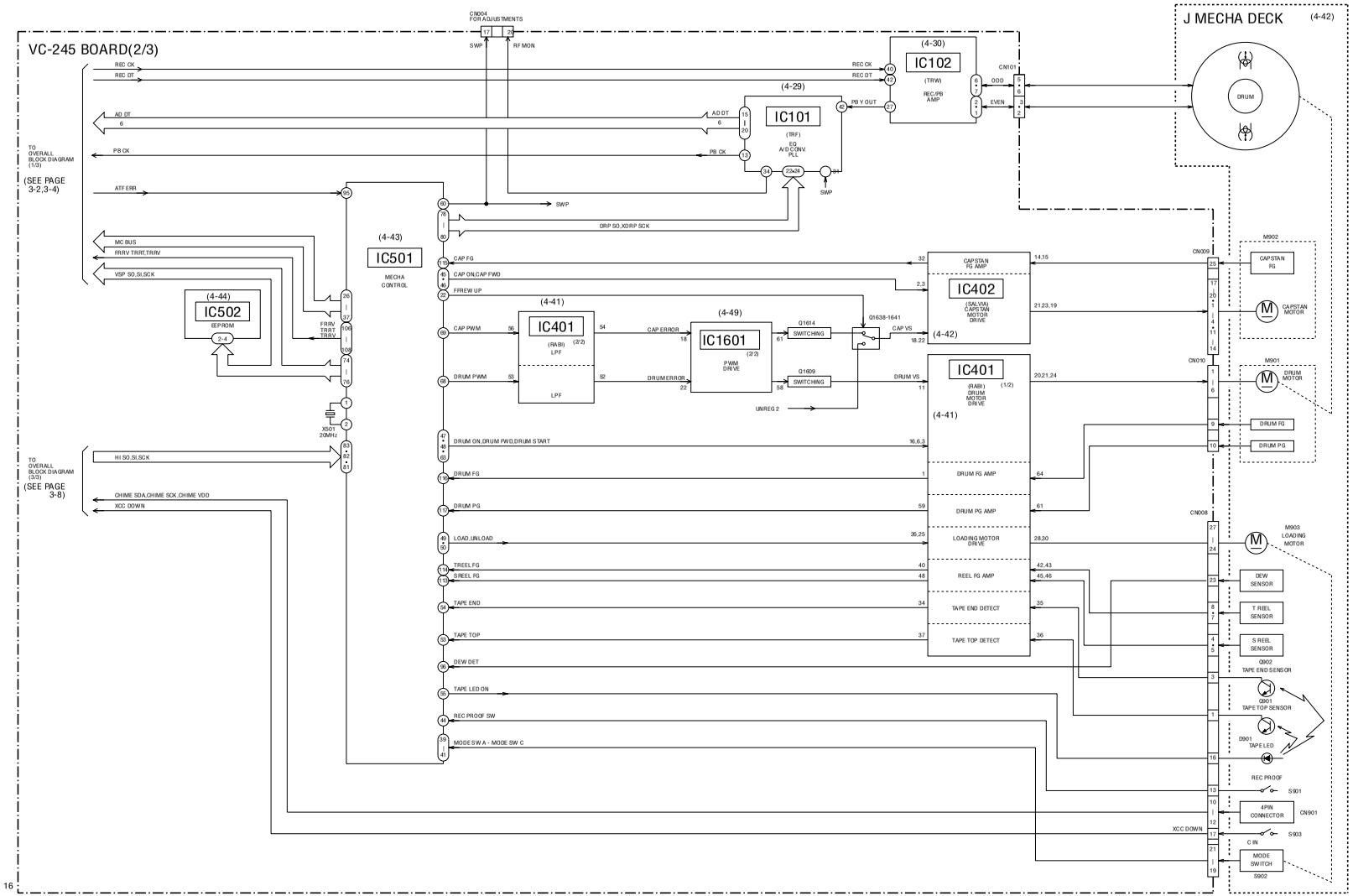
3-2. OVERALL BLOCK DIAGRAM (1/3)(DCR-PC5/PC5E)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



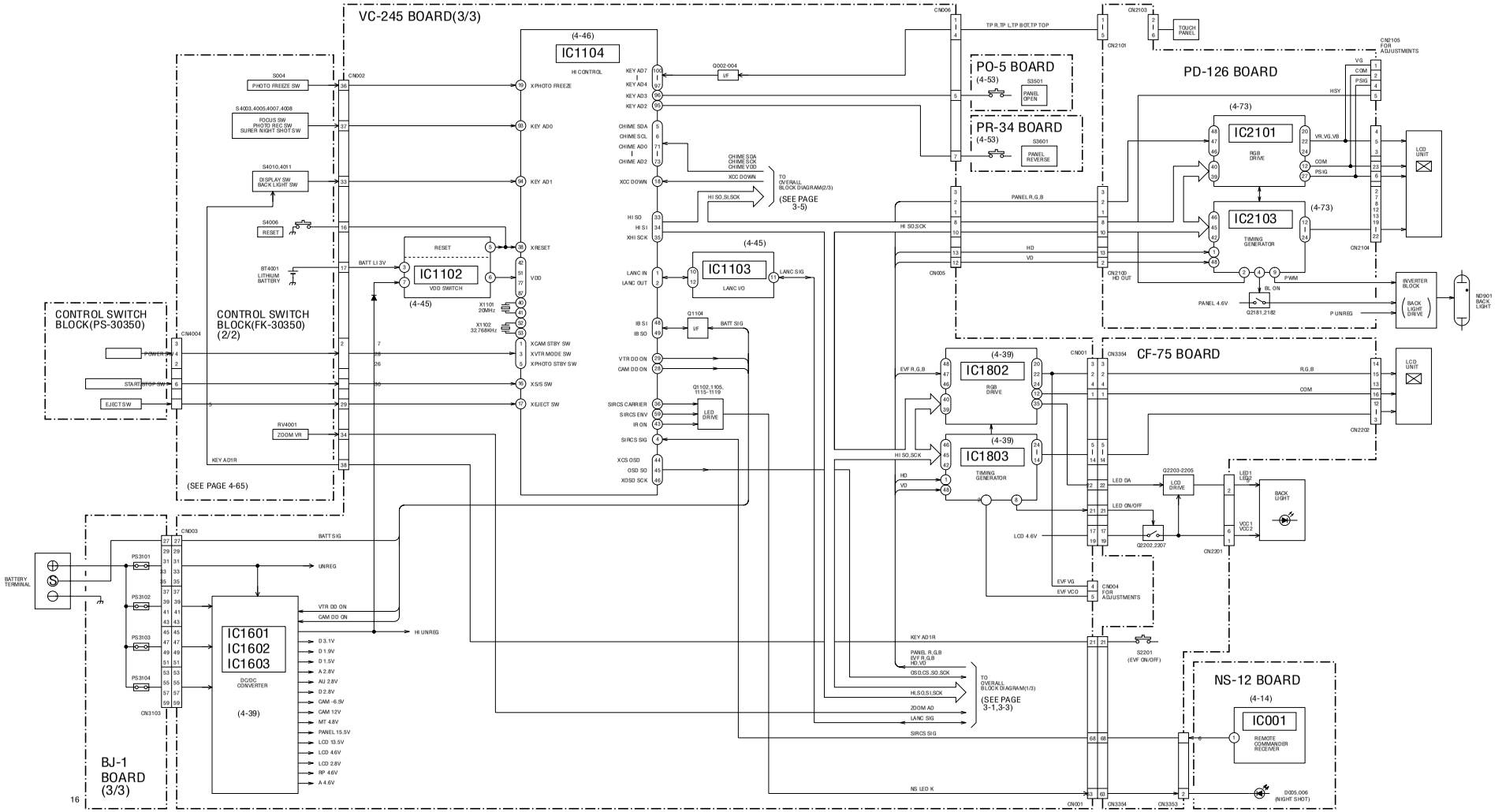
3-3. OVERALL BLOCK DIAGRAM (2/3)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



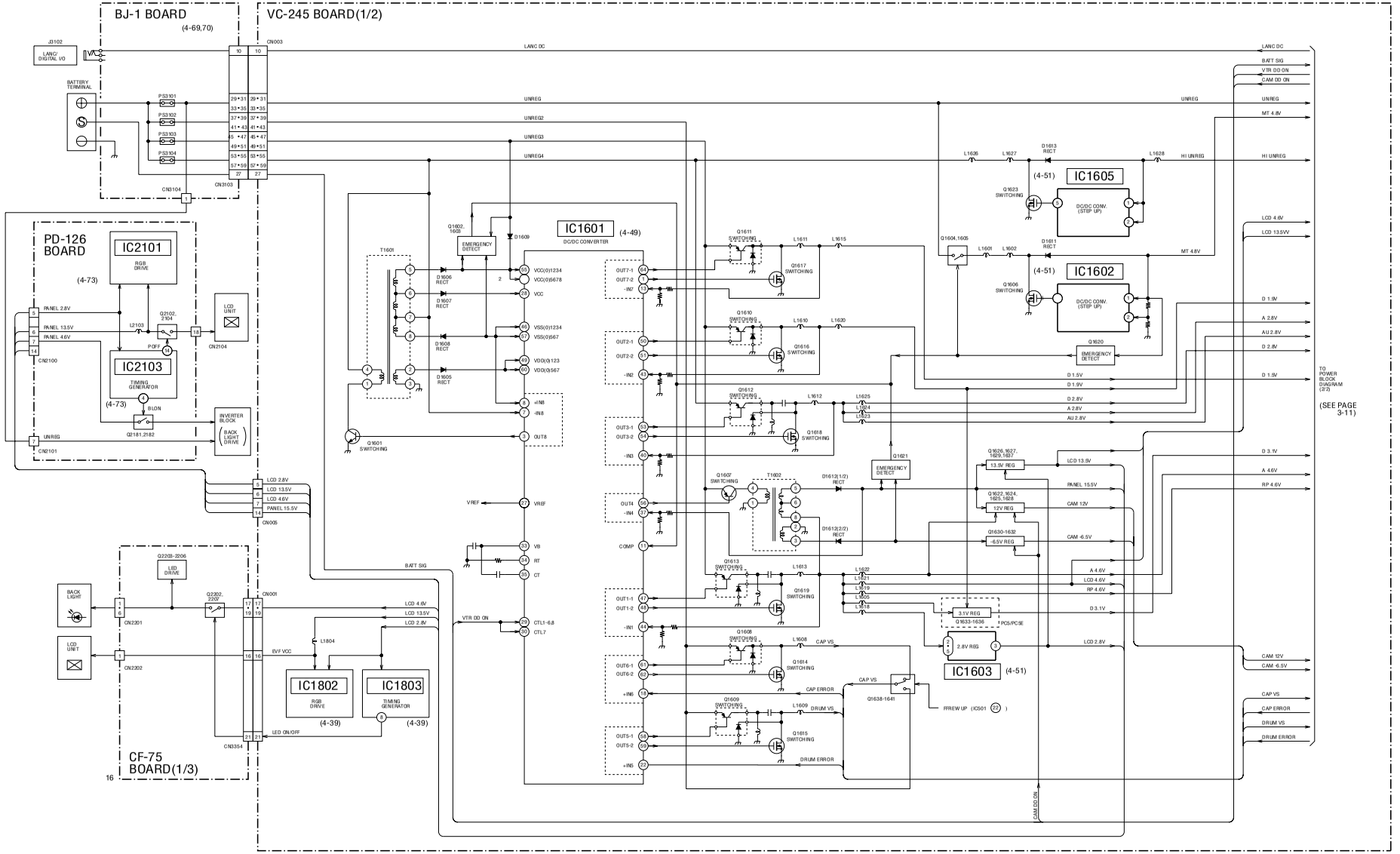
3-4. OVERALL BLOCK DIAGRAM (3/3)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



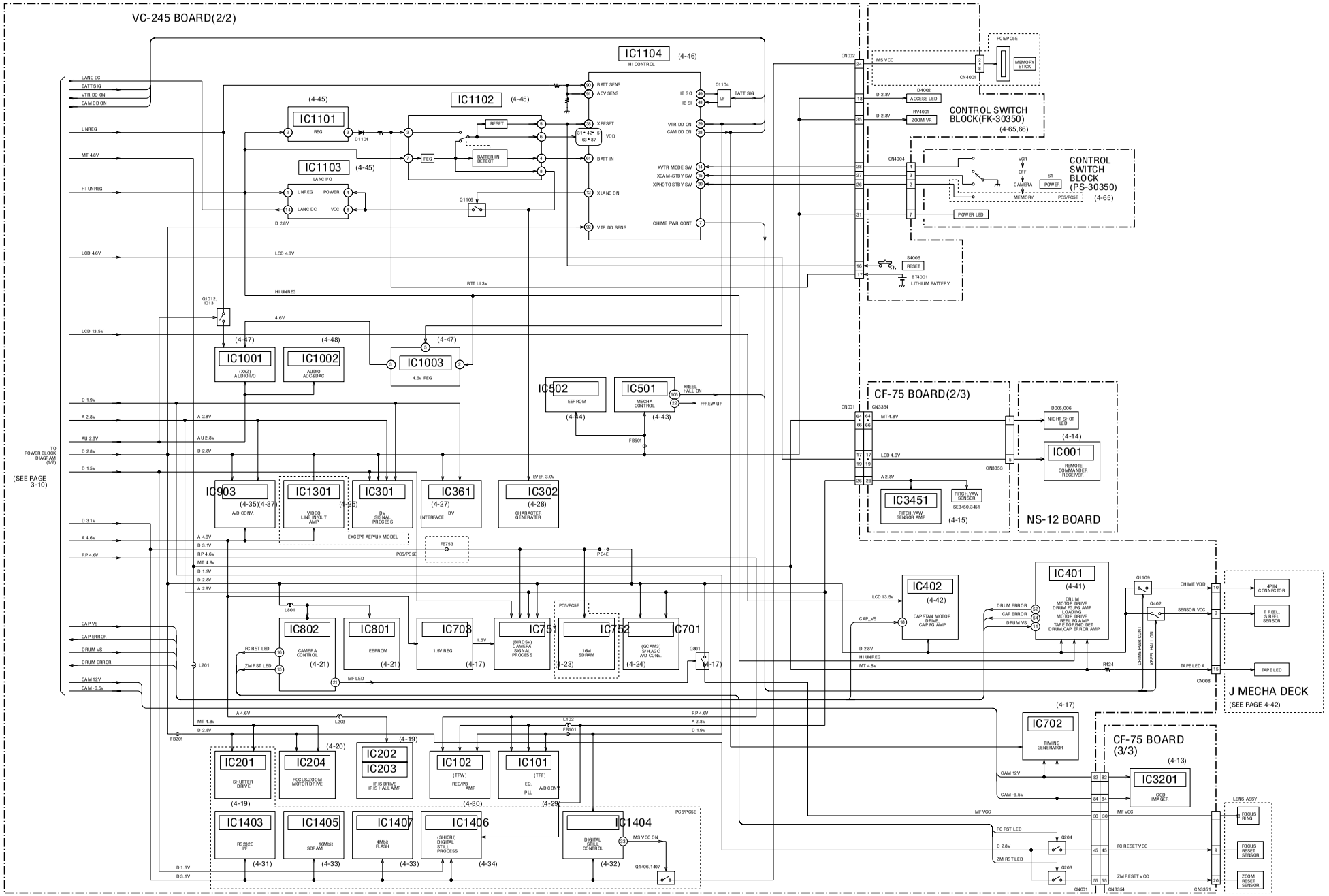
3-5. POWER BLOCK DIAGRAM (1/2)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



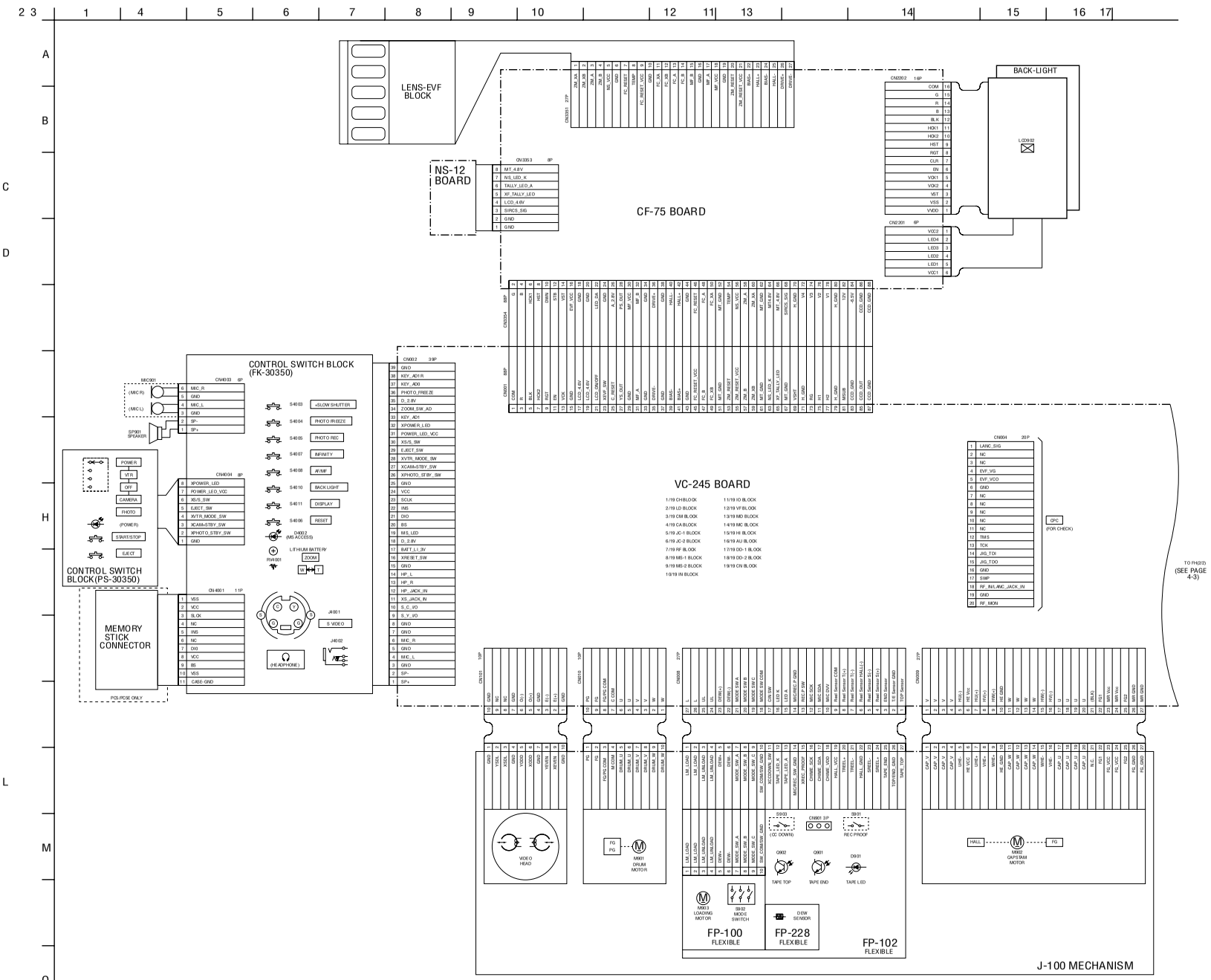
3-6. POWER BLOCK DIAGRAM (2/2)

( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.

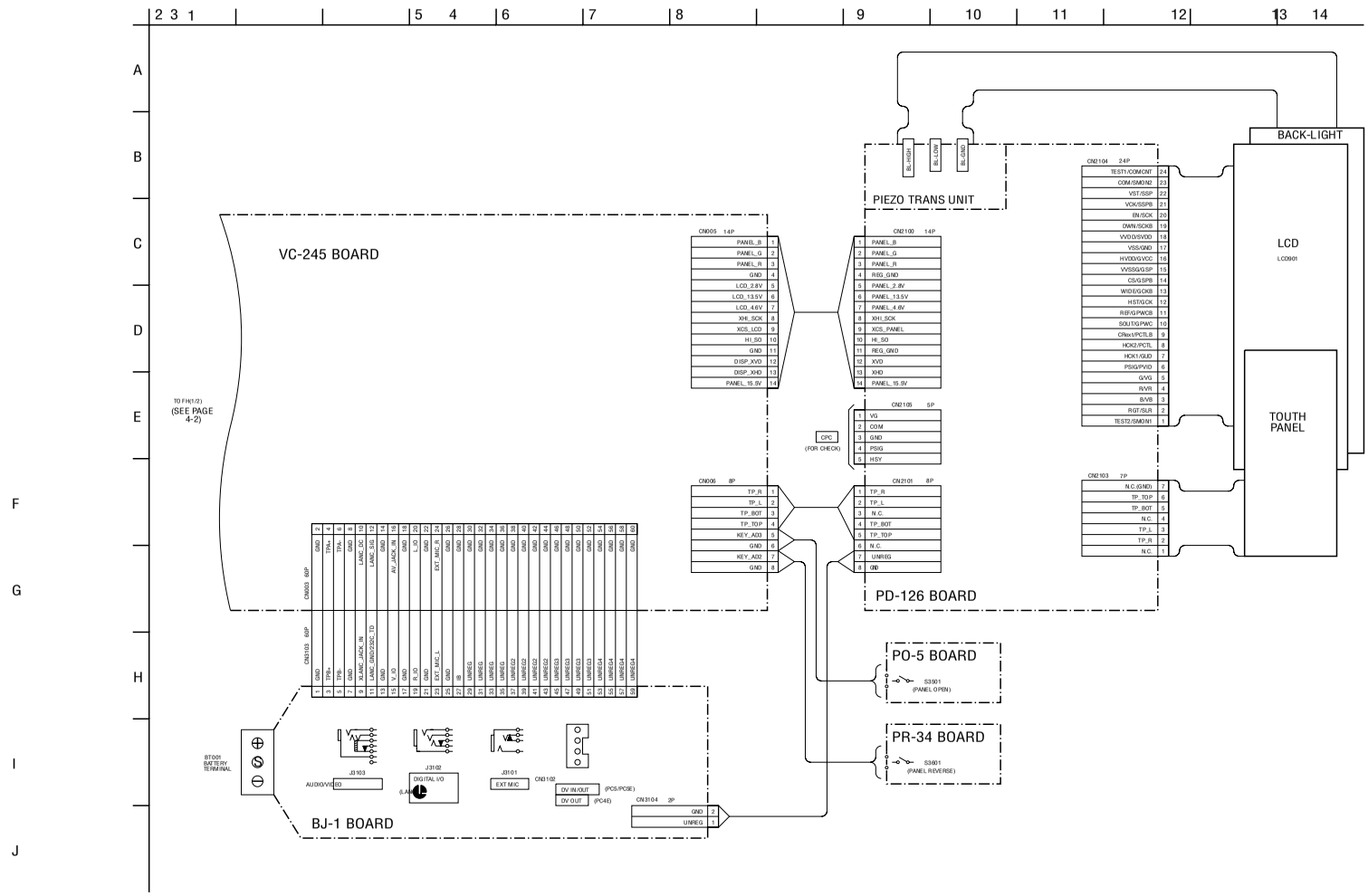


SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM (1/2)



FRAME SCHEMATIC DIAGRAM (2/2)



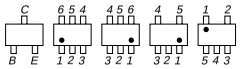
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS x

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

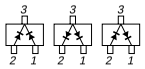
(For printed wiring boards)

- ▒▒▒: Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.

Transistor



Diode



(For schematic diagrams)

- All capacitors are in mF unless otherwise noted. pF : m mF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted.
  kW=1000W, MW=1000kW.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example	C541	L452
	22U	10UH
	TA A	2520

Kinds of capacitor
Temperature characteristics
External dimensions (mm)

- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
  In such cases, the unused circuits may be indicated.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
  XEDIT → $\overline{\text{EDIT}}$ PB/XREC → PB/$\overline{\text{REC}}$
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line *
- : B– Line *
- : IN/OUT direction of (+,–) B LINE. *
- : adjustment for repair. *
- Circled numbers refer to waveforms. *

* Indicated by the color red.

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

1.5 m

(Measuring conditions voltage and waveform)

- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. *
  (VOM of DC 10 MΩ input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.) *

F
atter

1. Connection ame

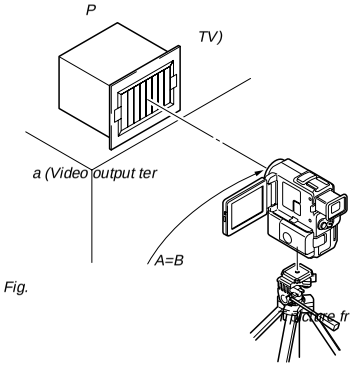
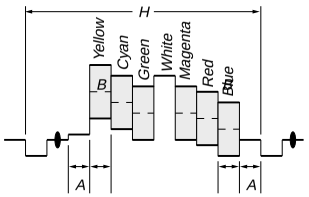


Fig.

ame

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

CR



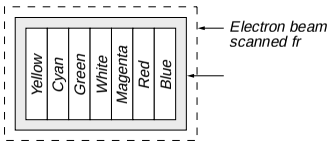
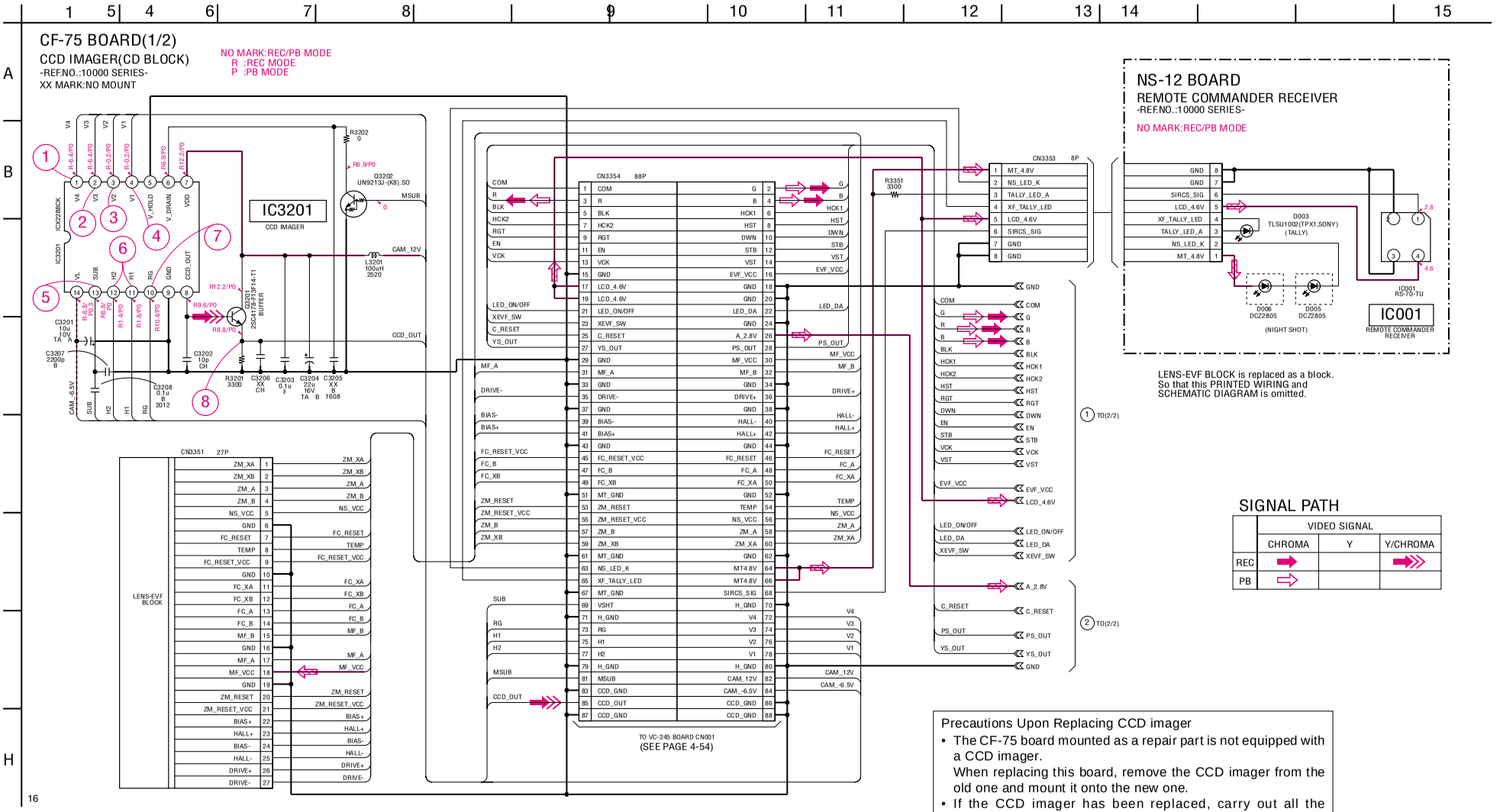


Fig.b (Picture on monitor

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

For Schematic Diagram

- Refer to page 4-7 for CF-75 printed wiring board.
- Refer to page 4-77 for CF-75 board waveforms.



SIGNAL PATH

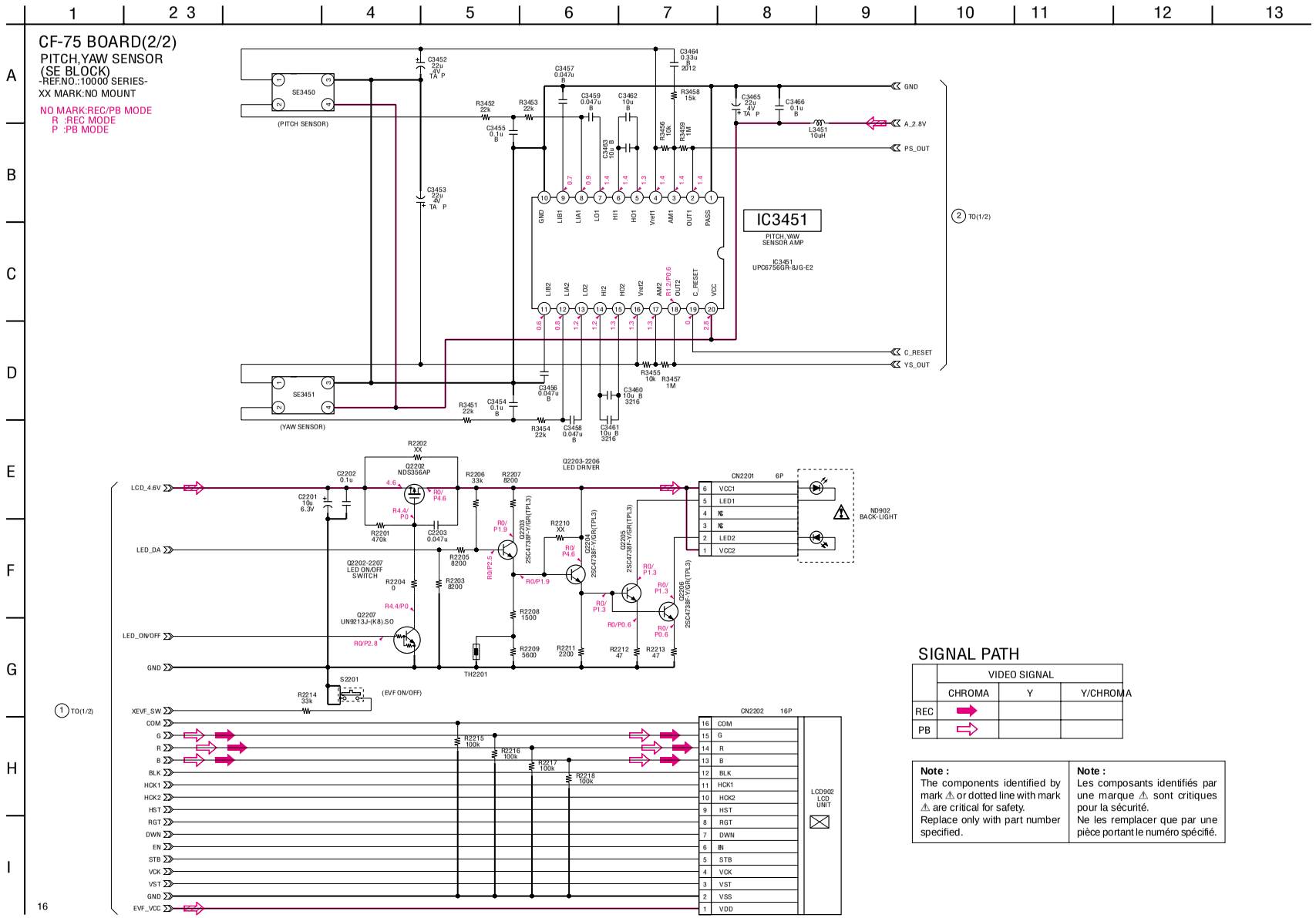
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		➡
PB	⇨		

Precautions Upon Replacing CCD imager

- The CF-75 board mounted as a repair part is not equipped with a CCD imager.
  When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
  In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

For Schematic Diagram

• Refer to page 4-7 for printed wiring board.



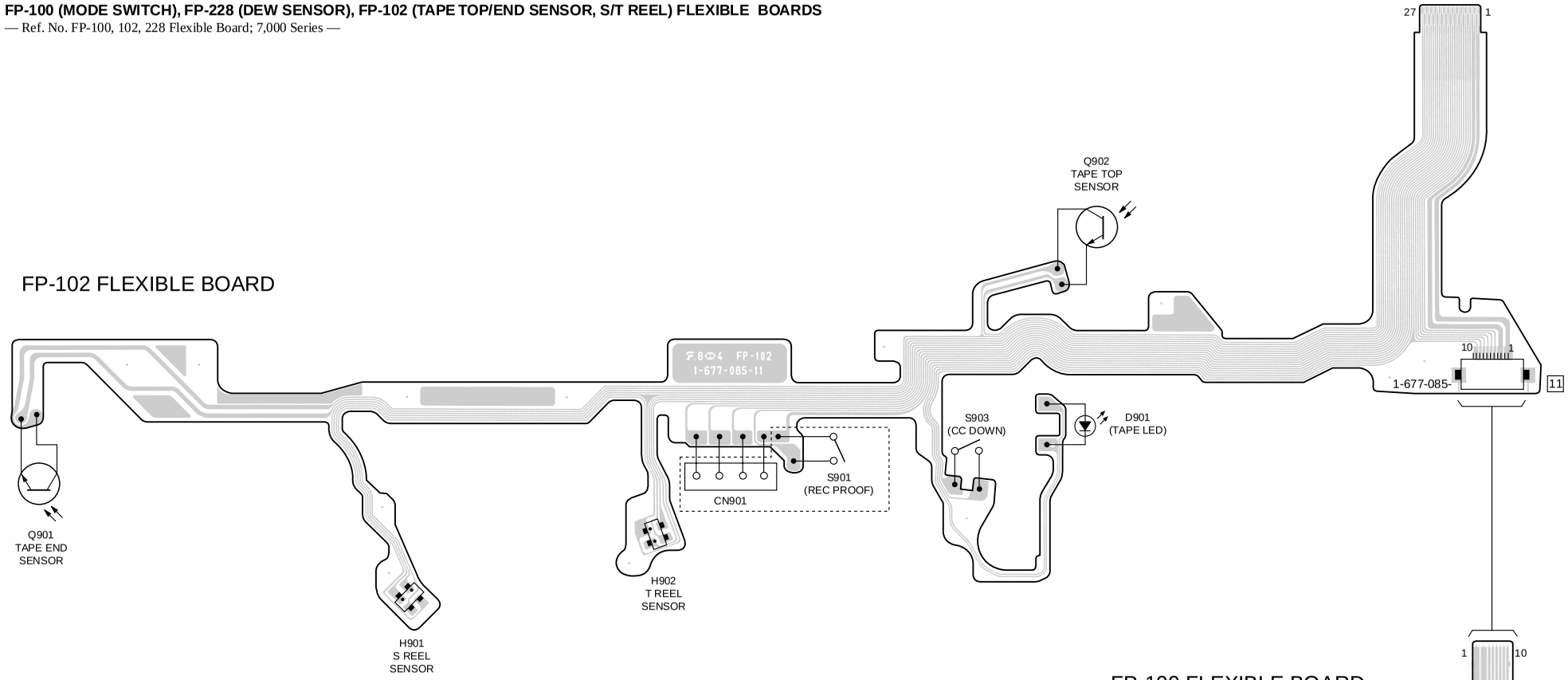
SIGNAL PATH

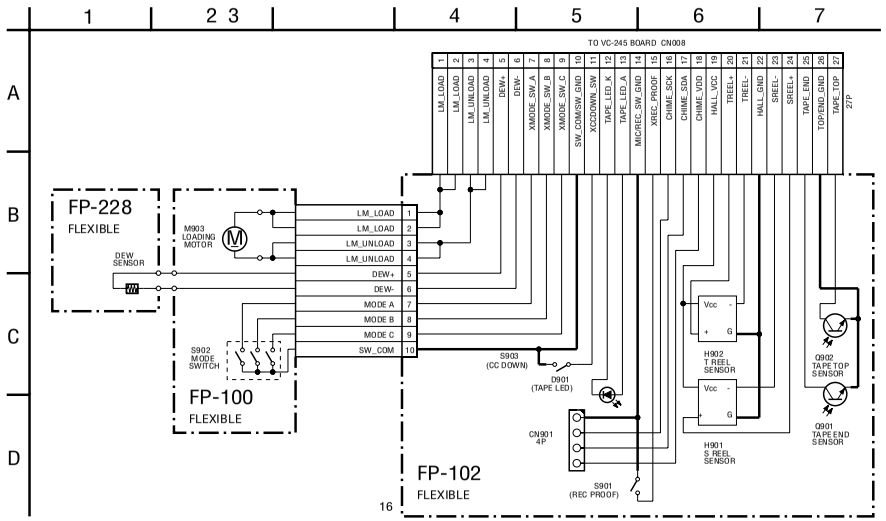
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

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.

FP-100 (MODE SWITCH), FP-228 (DEW SENSOR), FP-102 (TAPE TOP/END SENSOR, S/T REEL) FLEXIBLE BOARDS
— Ref. No. FP-100, 102, 228 Flexible Board; 7,000 Series —



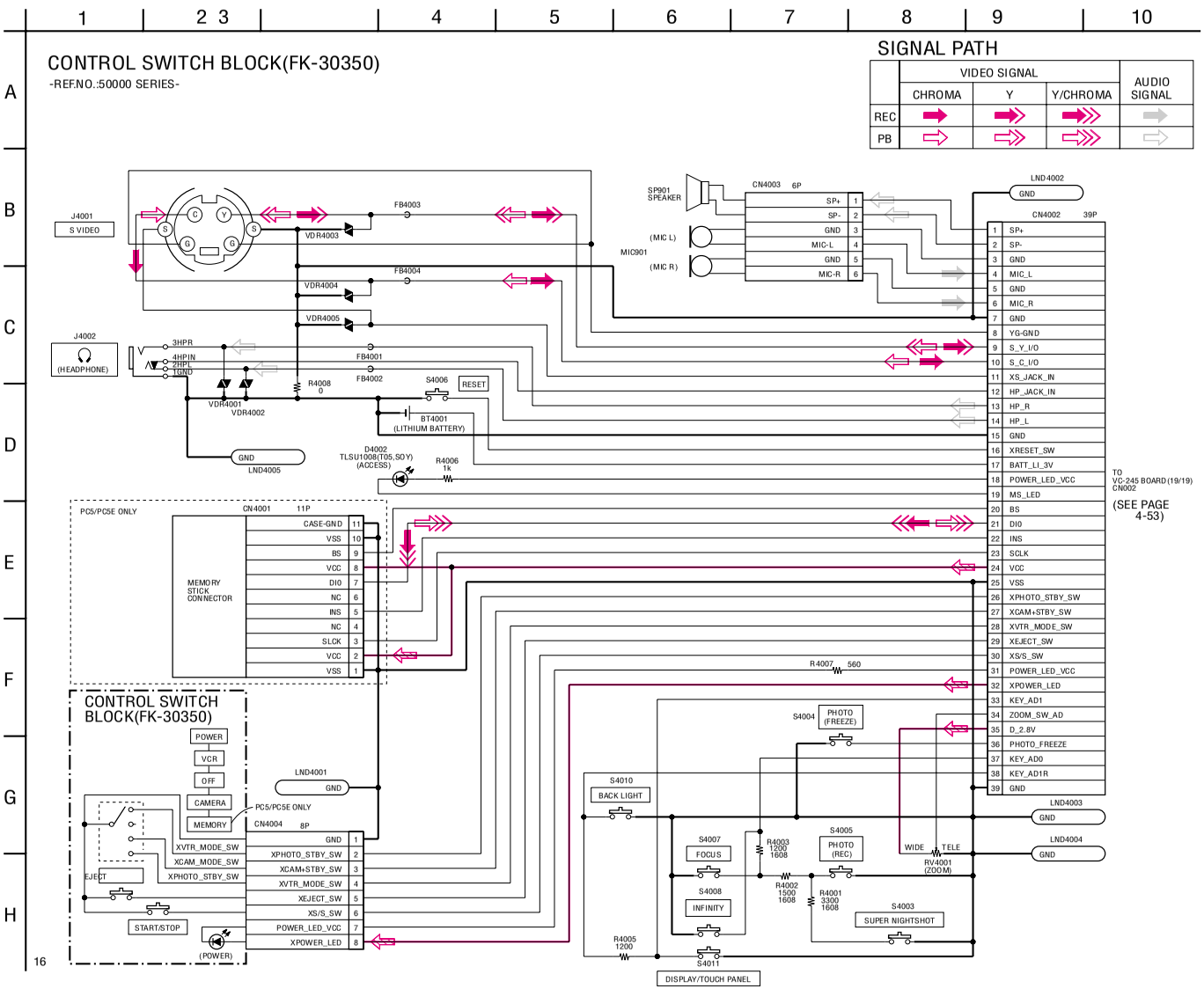


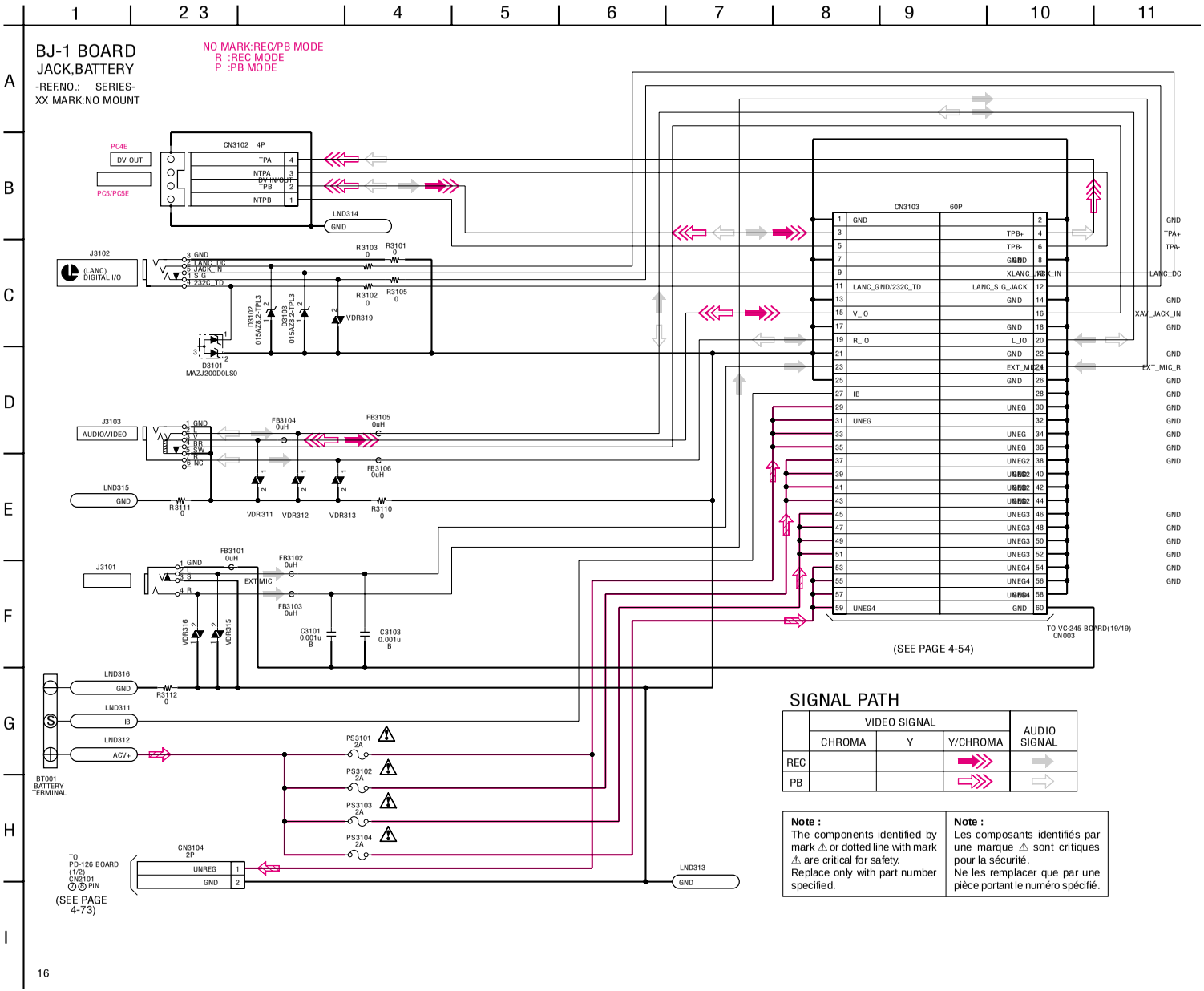
CONTROL SWITCH BLOCK(FK-30350)

-REF.NO.:50000 SERIES-

SIGNAL PATH

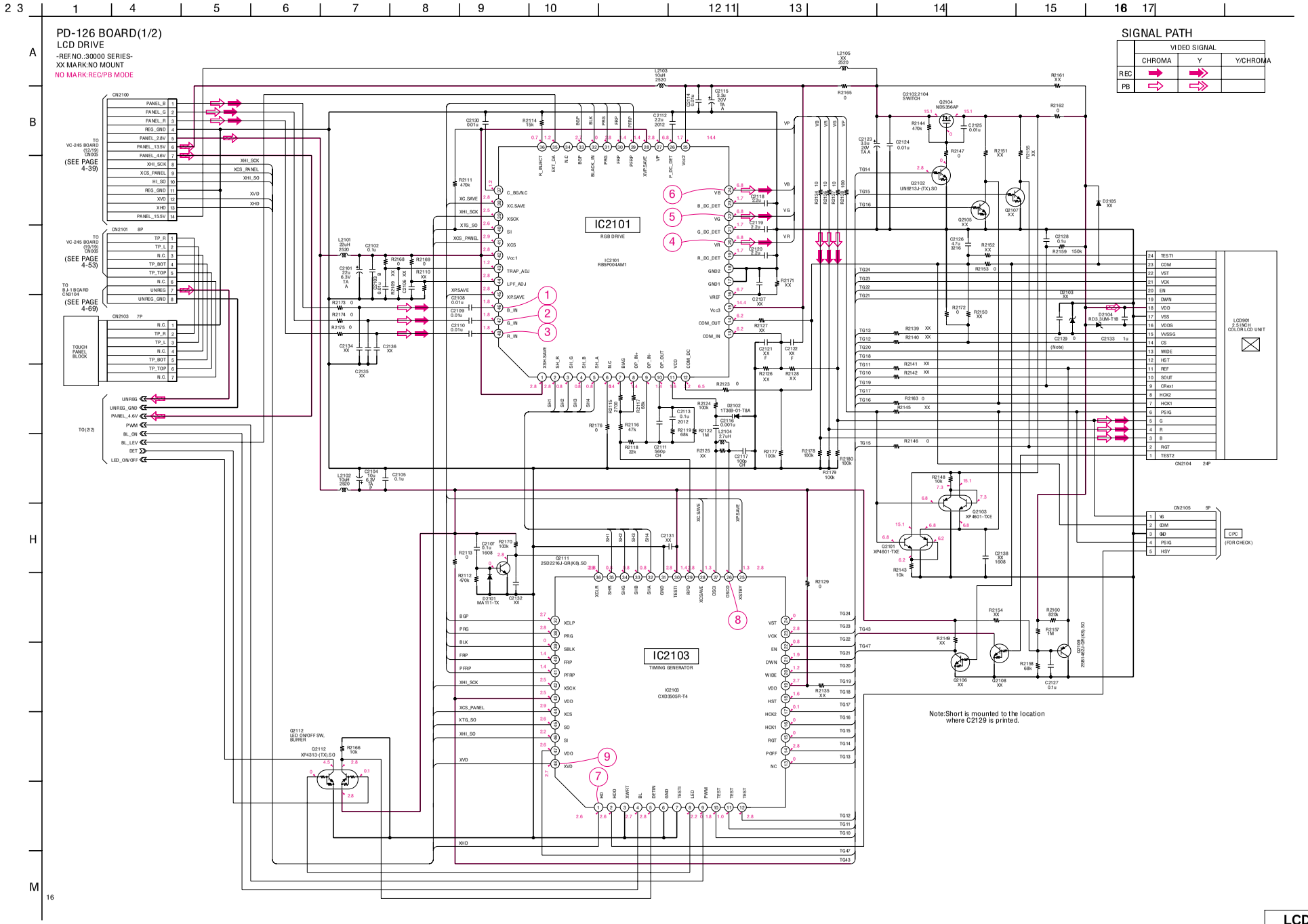
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨




BJ-1 BOARD
JACK,BATTERY
-REF.NO.: SERIES-
XX MARK:NO MOUNT
NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE
PC4E
DV OUT
PC5/PC5E
CN3102 4P
TPA
NTPA
TPB
NTPB
DV IN/OUT
LND314
GND
J3102
(LANC) DIGITAL I/O
GND
LANC_DC
JACK_IN
SIG
232C_TD
R3103 0
R3101 0
R3102 0
R3105 0
D3102 DTL3
D3103 DTL3
VDR319
D3101 MAZJ200D0LS0
J3103
AUDIO/VIDEO
L
V
BR
SW
R
NC
FB3104 0uH
FB3105 0uH
FB3106 0uH
LND315
R3111 0
R3110 0
VDR311
VDR312
VDR313
J3101
FB3101 0uH
FB3102 0uH
FB3103 0uH
EXT MIC
VDR316
VDR315
C3101 0.001u B
C3103 0.001u B
LND316
R3112 0
LND311
IB
LND312
ACV+
BT001 BATTERY TERMINAL
PS3101 2A
PS3102 2A
PS3103 2A
PS3104 2A
CN3104 2P
UNREG
GND
TO PD-126 BOARD (1/2) CN2101 ⑦⑧ PIN
(SEE PAGE 4-73)
LND313
GND
CN3103 60P
GND
TPB+
TPB-
XLANC_JACK_IN
LANC_GND/232C_TD
LANC_SIG_JACK
GND
V_IO
GND
R_IO
L_IO
GND
EXT_MIC_L
GND
IB
UNEG
UNEG
UNEG
UNEG2
UNEG2
UNEG2
UNEG2
UNEG3
UNEG3
UNEG3
UNEG3
UNEG4
UNEG4
UNEG4
UNEG4
GND
TPA+
TPA-
LANC_DC
XAV_JACK_IN
EXT_MIC_R
TO VC-245 BOARD(19/19) CN003
(SEE PAGE 4-54)
SIGNAL PATH
VIDEO SIGNAL
CHROMA
Y
Y/CHROMA
AUDIO SIGNAL
REC
PB
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.

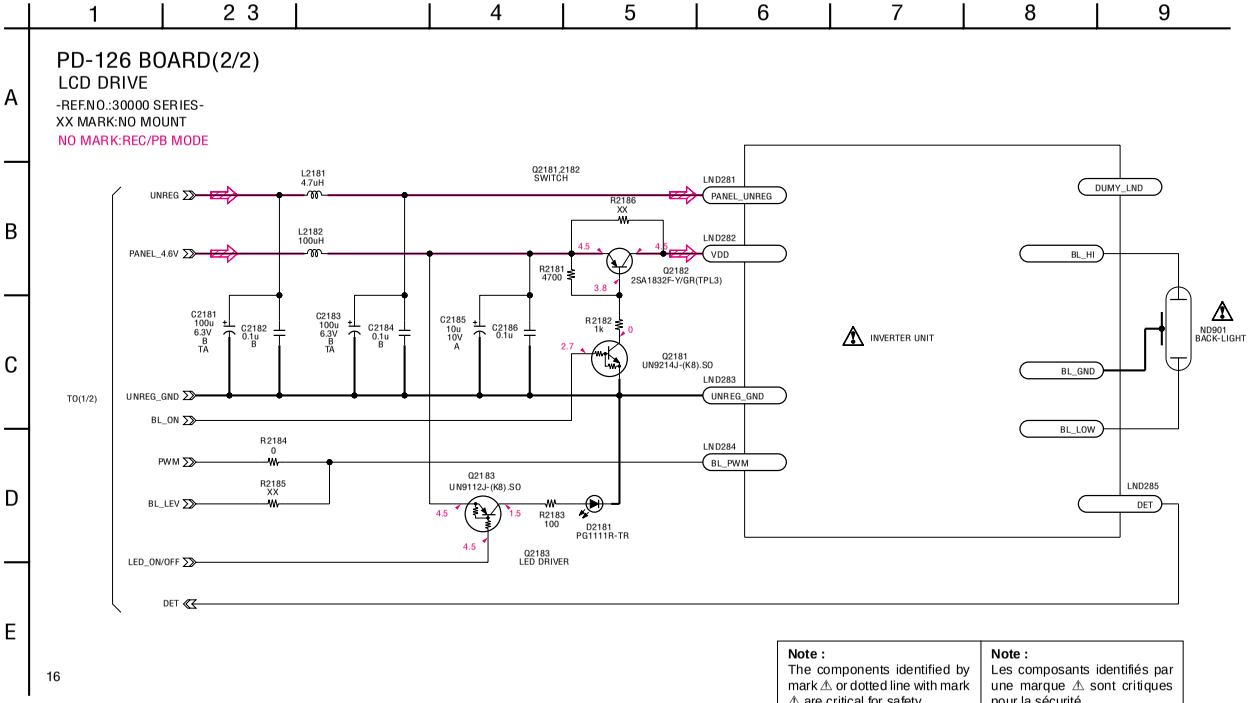
For Schematic Diagram

• Refer to page 4-77 for waveforms.



For Schematic Diagram

• Refer to page 4-71 for printed wiring board.

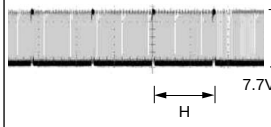


Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

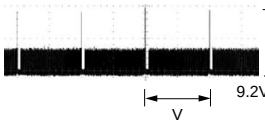
4-3. WAVEFORMS

CF-75 BOARD
CAMERA REC

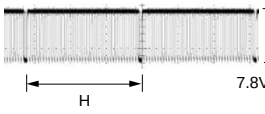
① IC3201 ①



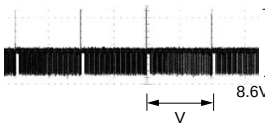
② IC3201 ②



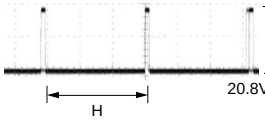
③ IC3201 ③



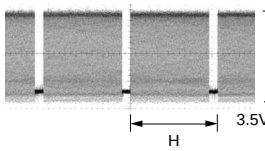
④ IC3201 ④



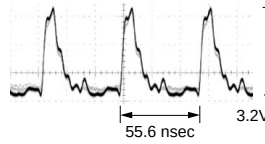
⑤ IC3201 ⑬



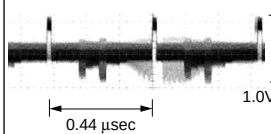
⑥ IC3201 ⑪, ⑫



⑦ IC3201 ⑩

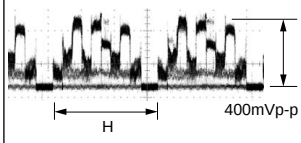


⑧ Q3201 Ⓔ

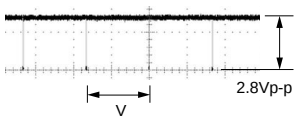


PD-126 BOARD (1/2)
REC/PB

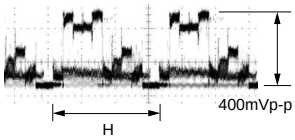
① IC2101 ㊻



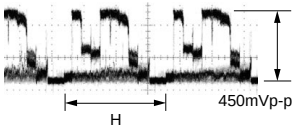
⑨ IC2103 ㊽



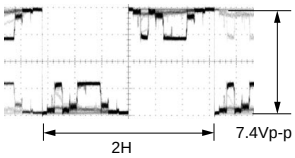
② IC2101 ㊼



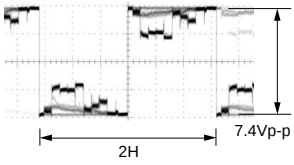
③ IC2101 ㊽



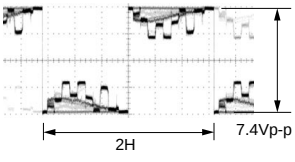
④ IC2101 ⑳



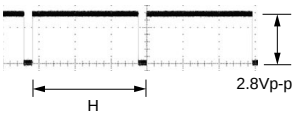
⑤ IC2101 ㉒



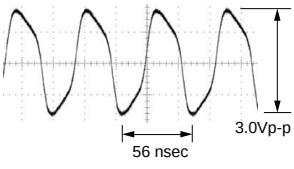
⑥ IC2101 ㉔



⑦ IC2103 ①



⑧ IC2103 ㉖



4-4. MOUNTED PARTS LOCATION

CF-75 BOARD (SIDE A)

C2201 B-4
C2202 B-4
C2203 B-4
C3201 C-6
C3202 C-7
C3203 C-7
C3205 C-7
C3206 C-7
C3207 C-6
C3208 A-4
C3454 E-3
C3455 E-3
C3456 E-3
C3457 E-3
C3458 E-3
C3459 E-3
C3460 E-4
C3461 E-4

CN2202 E-1
CN3351 A-4
CN3353 A-4

IC3201 D-6
IC3451 E-4

L3201 C-7

Q2202 B-4
Q2203 E-1
Q2204 E-1
Q2205 E-1
Q2206 E-1
Q2207 B-4
Q3201 C-7
Q3202 C-7

R2201 B-4
R2202 B-4
R2203 E-1
R2204 B-4
R2205 E-1
R2206 E-1
R2207 E-1
R2208 E-1
R2209 E-1
R2210 E-1
R2211 E-1
R2212 E-1
R2213 E-1
R2214 E-4
R2215 E-4
R2216 E-4
R2217 E-4
R2218 E-4
R3201 C-7
R3202 C-7
R3351 A-4
R3452 E-3
R3453 E-3
R3454 E-3
R3455 E-4
R3456 E-4
R3457 E-4
R3459 E-4

S2201 E-5

CF-75 BOARD (SIDE B)

C3204 C-9
C3452 E-12
C3453 E-12
C3462 E-12
C3463 E-12
C3464 E-12
C3465 E-12
C3466 E-12

CN2201 E-15
CN3354 B-10

L3451 E-12

R3451 E-12
R3458 E-12

SE3450 E-12
SE3451 E-12

TH2201 E-15

NS-12 BOARD (SIDE A)

D003 A-2
D005 A-2
D006 A-1

IC001 A-1

BJ-1 BOARD (SIDE A)

C3101 A-2
C3103 A-2

CN3102 C-3
CN3103 B-6
CN3104 F-9

D3101 C-2
D3102 C-2
D3103 C-2

FB3101 A-2
FB3102 A-2
FB3103 A-2
FB3104 B-2
FB3105 B-2
FB3106 B-2

J3101 G-2
J3102 E-2
J3103 F-2

PS3101 E-9
PS3102 E-9
PS3103 E-9
PS3104 E-9

R3101 B-1
R3102 C-2
R3103 B-2
R3105 C-2
R3110 B-1
R3111 B-2
R3112 A-2

VDR311 B-2
VDR312 B-2
VDR313 B-2
VDR315 A-2
VDR316 A-2
VDR319 C-2

PD-126 BOARD (SIDE A)

C2101 C-1
C2102 D-1
C2103 D-1
C2104 C-1
C2105 C-1
C2106 D-1
C2107 C-1
C2108 D-1
C2109 D-1
C2110 C-1
C2111 C-2
C2112 D-2
C2113 C-2
C2114 D-2
C2115 D-3
C2116 C-2
C2117 C-2
C2118 D-2
C2119 D-3
C2120 D-2
C2121 C-2
C2122 C-2
C2123 C-3
C2124 C-3
C2125 C-3
C2126 B-3
C2127 C-3
C2128 B-3
C2129 B-2
C2130 D-1
C2131 C-2
C2132 C-1
C2133 B-2
C2134 D-1
C2135 D-1
C2136 C-1
C2137 D-2
C2138 C-3
C2181 C-3
C2182 B-3
C2183 C-3
C2184 C-3
C2185 C-3
C2186 D-3

CN2100 C-1
CN2101 B-1
CN2103 B-3
CN2104 B-2
CN2105 D-3

D2101 C-1
D2102 C-2
D2103 B-2
D2104 B-2
D2105 B-3
D2181 A-3

IC2101 D-2
IC2103 B-2

L2101 C-1
L2102 C-1
L2103 D-2
L2104 C-2
L2105 B-1
L2181 C-3
L2182 C-3

Q2101 D-3
Q2102 C-3
Q2103 C-3
Q2104 C-3
Q2105 C-2
Q2106 B-2
Q2107 B-1

Q2108 B-1
Q2109 B-3
Q2111 C-2
Q2112 B-3
Q2181 C-3
Q2182 D-3
Q2183 B-3

R2109 D-1
R2110 D-1
R2111 D-1
R2112 C-1
R2113 B-1
R2114 D-2
R2115 C-2
R2116 C-2
R2117 C-2
R2118 C-2
R2119 C-2
R2122 C-2
R2123 C-3
R2124 C-2
R2125 C-2
R2126 C-3
R2127 D-3
R2128 C-3
R2129 C-2
R2134 C-3
R2135 C-2
R2136 C-2
R2137 C-3
R2138 C-3
R2139 B-2
R2140 B-2
R2141 B-2
R2142 B-2
R2144 C-3
R2145 C-3
R2146 B-1
R2147 C-3
R2148 C-3
R2149 B-2
R2150 B-3
R2151 C-2
R2152 B-3
R2153 B-3
R2154 B-3
R2155 A-3
R2157 B-3
R2158 C-3
R2159 B-3
R2160 B-3
R2161 B-3
R2162 B-2
R2163 C-2
R2165 B-3
R2166 B-3
R2168 D-1
R2169 D-1
R2170 C-2
R2171 D-3
R2172 B-3
R2173 D-1
R2174 D-1
R2175 C-1
R2176 C-2
R2177 B-3
R2178 C-2
R2179 C-2
R2180 C-2
R2181 D-3
R2182 D-3
R2183 A-4
R2184 B-2
R2185 D-2
R2186 D-3

SECTION 5
ADJUSTMENTS

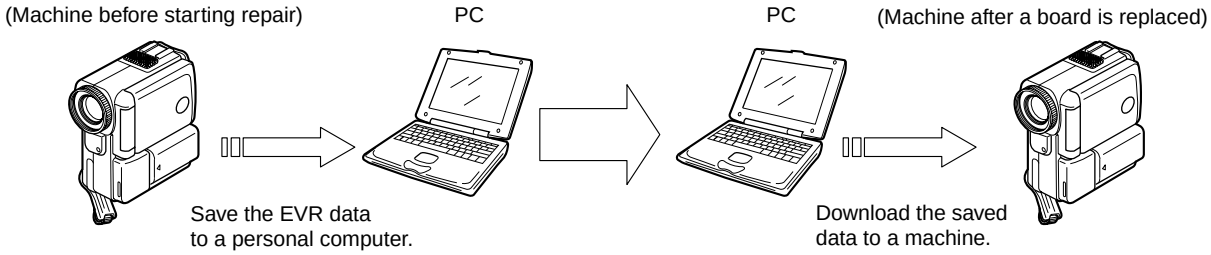
1. Before starting adjustment

EVR Data Re-writing Procedure When Replacing Board

The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

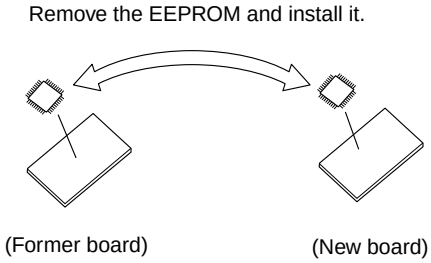
Procedure 1

Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.



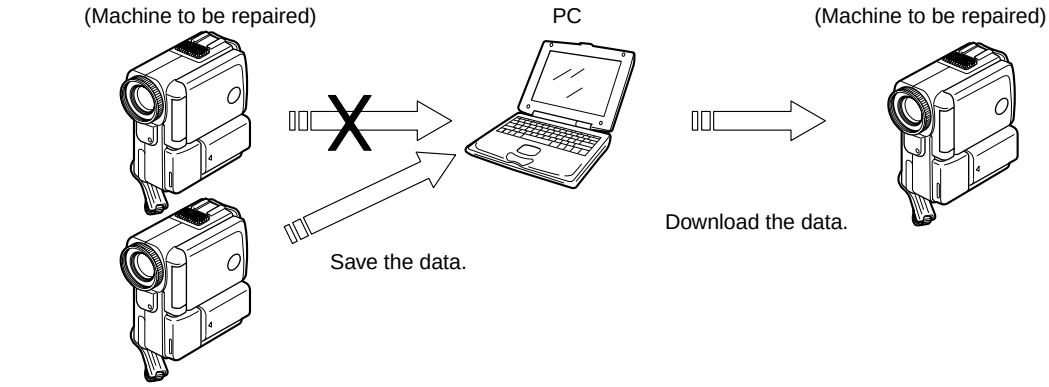
Procedure 2

Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.



Procedure 3

When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.



After the EVR data is saved and downloaded, check the respective items of the EVR data.
(Refer to page 5-3 for the items to be checked.)

1-1. Adjusting items when replacing main parts and boards.

• Adjusting items when replacing main parts

When replacing main parts, adjust the items indicated by ● in the following table.

Note1: When replacing the drum assy. or the mechanism deck, reset the data of page: 2, address: A2 to A4 to "00". (Refer to "Record of Use check" of "5-4. SERVICE MODE")

Adjustment Section	Adjustment	Replaced parts																											
		Block replacement												Parts replacement															
		Lens device	Mechanism deck Note1	Color EVF block LCD902 (LCD panel (EVF))	Color EVF block LED902 (Back light LED (EVF))	LCD block LCD901 (LCD panel (LCD))	LCD block ND901 (Fluorescent tube (LCD))	LCD block Inverter unit (LCD)	LCD block Touch panel	Control switch board (FK-30350)	Mechanism deck M901 (Drum assy) Note1	Mechanism deck M902 (Capstan motor)	CF-75 board SE3450/3451 (PITCH/YAW sensor)	PD-126 board IC2101 (RGB driver (LCD))	PD-126 board IC2103 (Timing generator (LCD))	VC-245 board IC1802 (RGB driver (EVF))	VC-245 board IC1803 (Timing generator (EVF))	CF-75 board IC3201 (CCD imager)	VC-245 board IC702, X701 (Timing generator)	VC-245 board IC701 (CDS, AGC, A/D conv.)	VC-245 board IC204 (Lens pre-driver)	VC-245 board IC751 (Camera process, EVR)	VC-245 board IC1301 (LINE IN/OUT AMP)	VC-245 board IC301 (DV signal process)	VC-245 board IC101 (EQ, A/D CONV., PLL)	VC-245 board IC102 (REC/PB AMP)
Initialization of B, C, D, E, F, 7, 8 page data	Initialization of C, D, 8 page data																												
	Initialization of B page data *1																												
	Initialization of E, F, 7 page data																												
Camera	36MHz origin oscillation adj.																		●			●							
	Zoom key center adj.									●																			
	HALL adj.	●																				●							
	Flange back adj.	●																●			●	●							
	Optical axis adj.	●																●											
	Color reproduction adj.																	●		●									
	MAX GAIN adj.																	●		●									
	AWB & LV standard data input																	●		●									
	Auto white balance adj.																	●		●									
	Mechanical shutter adj.	●																											
	Steady shot check												●																
Color EVF	VCO adj.																●												
	Bright adj.															●													
	Contrast adj.															●										●			
	White balance adj.			●	●											●										●			
LCD	VCO adj.														●														
	Bright adj.													●															
	Black limit adj.													●															
	Contrast adj.													●												●			
	Center level adj.													●															
	V-COM adj.					●								●															
	White balance adj.					●	●	●						●												●			
System control	Serial No. input																												
	Touch panel adj.								●																				
Servo, RF	CAP FG duty adj.		●									●															●		
	PLL fo & LPF fo adj.		●								●																●	●	
	Switching position adj.		●								●																		
	AGC center level adj.		●								●																●	●	
	APC & AEQ adj.		●								●																●	●	
Video	Chroma BPF fo adj.																						●						
	S VIDEO OUT Y level adj.																						●	●					
	S VIDEO OUT Cr, Cb level adj.																						●	●					
Mechanism	Tape path adj.		●								●	●																	

Table. 5-1-1(1).

• Adjusting items when replacing a board or EEPROM

When replacing a board or EEPROM, adjust the items indicated by ● in the following table.

Adjustment Section	Adjustment	Board replacement: VC-245 board (COMPLETE)	Board replacement: CF-75 board (COMPLETE)	Board replacement: PD-126 board (COMPLETE)	IC801 (EEPROM) VC-245 board	IC502 (EEPROM) VC-245 board	IC1407 (Flash memory) *1 VC-245 board
Initialization of B, C, D, E, F, 7, 8 page data	Initialization of C, D, 8 page data	●				●	
	Initialization of B page data *1	●					●
	Initialization of E, F, 7 page data	●			●		
Camera	36MHz origin oscillation adj.	●			●		
	Zoom key center adj.	●			●		
	HALL adj.	●			●		
	Flange back adj.	●			●		
	Optical axis adj.	●			●		
	Color reproduction adj.	●			●		
	MAX GAIN adj.	●			●		
	AWB & LV standard data input	●			●		
	Auto white balance adj.	●			●		
	Mechanical shutter adj.	●			●		
	Steady shot check	●	●		●		
Color EVF	VCO adj.	●				●	
	Bright adj.	●				●	
	Contrast adj.	●				●	
	White balance adj.	●				●	
LCD	VCO adj.	●		●		●	
	Bright adj.	●		●		●	
	Black limit adj.	●		●		●	
	Contrast adj.	●		●		●	
	Center level adj.	●		●		●	
	V-COM adj.	●		●		●	
	White balance adj.	●		●		●	
System control	Serial No. input	●				●	
	Touch panel adj.	●				●	
Servo, RF	CAP FG duty adj.	●				●	
	PLL fo & LPF fo adj.	●				●	
	Switching position adj.	●				●	
	AGC center level adj.	●				●	
	APC & AEQ adj.	●				●	
Video	Chroma BPF fo adj.	●				●	
	S VIDEO OUT Y level adj.	●				●	
	S VIDEO OUT Cr, Cb level adj.	●				●	
Mechanism	Tape path adj.						

*1: DCR-PC5/PC5E model only

Table. 5-1-1(2).

5-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

• Oscilloscope • Color monitor • Vectorscope
• Regulated power supply • Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.4	J-6080-806-A	White balance check
	ND filter 0.1	J-6080-807-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded). (Note 1)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	CPC-6 flexible jig (Note 2)	J-6082-370-B	For adjusting the video section For adjusting the color viewfinder
J-9	CPC-6 terminal board jig	J-6082-371-A	For adjusting the video section For adjusting the color viewfinder
J-10	Mini pattern box	J-6082-353-B	For adjusting the flange back
J-11	Camera table	J-6082-384-A	For adjusting the flange back

Note 1: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

Note 2: When using the old CPC-6 flexible jig (J-6082-370-A), open the cabinet (R) assembly.

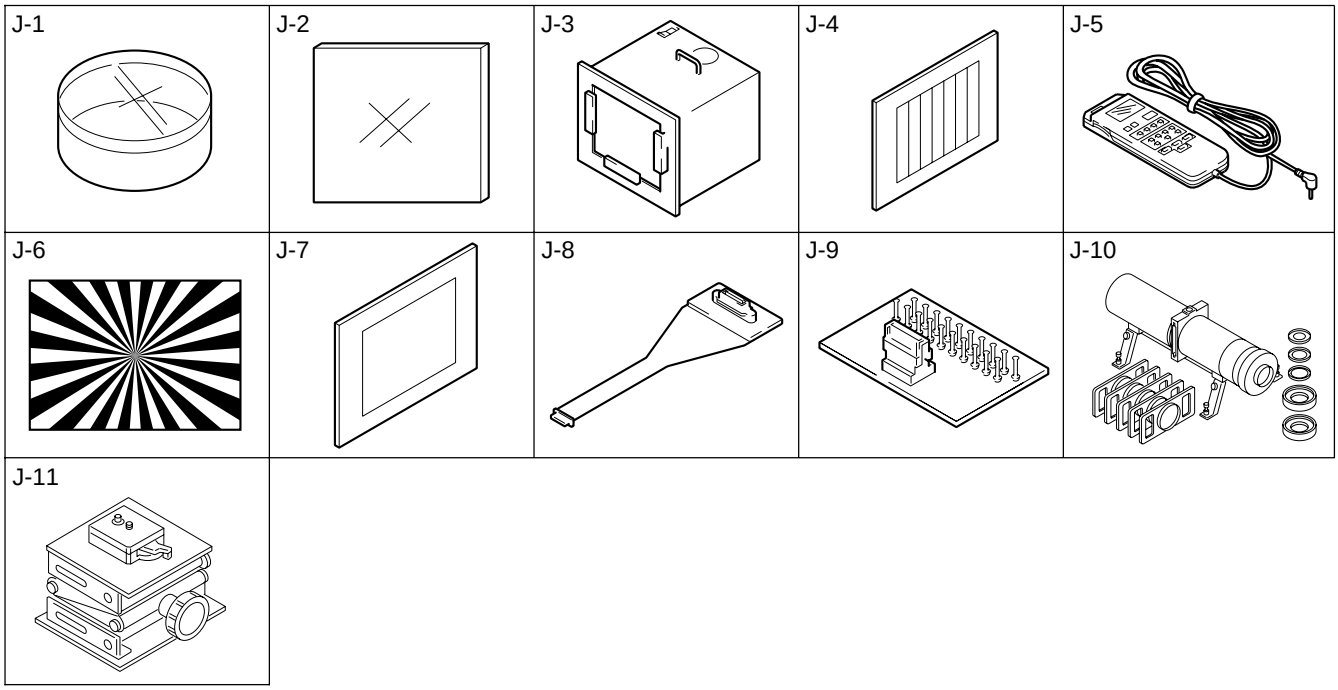


Fig. 5-1-1.

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to “2. DISASSEMBLY”.

Note 2: When performing only the adjustments, the lens block and boards need not be disassembled.

1) Connect the equipment for adjustments according to Fig. 5-1-2.

Note 3: As removing the control switch block (FK-30350)(removing the VC-245 board CN002) means removing the lithium 3V power supply (BT4001), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (R) has been removed, the self-diagnosis data, data on history of use (total drum rotation time etc.) will be lost. Before removing, note down the self-diagnosis data (data of page:2, address: B0 to C6) and the data on history use (data of page: 2, address: A2 to AA). (Refer to “SELF-DIAGNOSIS FUNCTION” for the self-diagnosis data, and to “5-4.Service Mode” for the data on the history use.)

Note 4: Setting the “Forced Camera Power ON” Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the camera power to be turned on with the control switch block (FK-30350) removed. After completing adjustments, be sure to exit the “Forced Camera Power ON Mode”.

Note 5: Exiting the “Forced Camera Power ON” Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

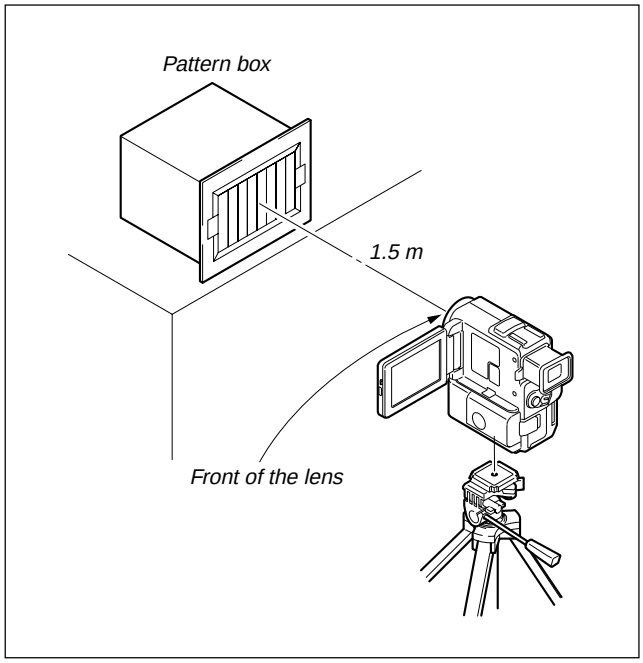


Fig. 5-1-2.

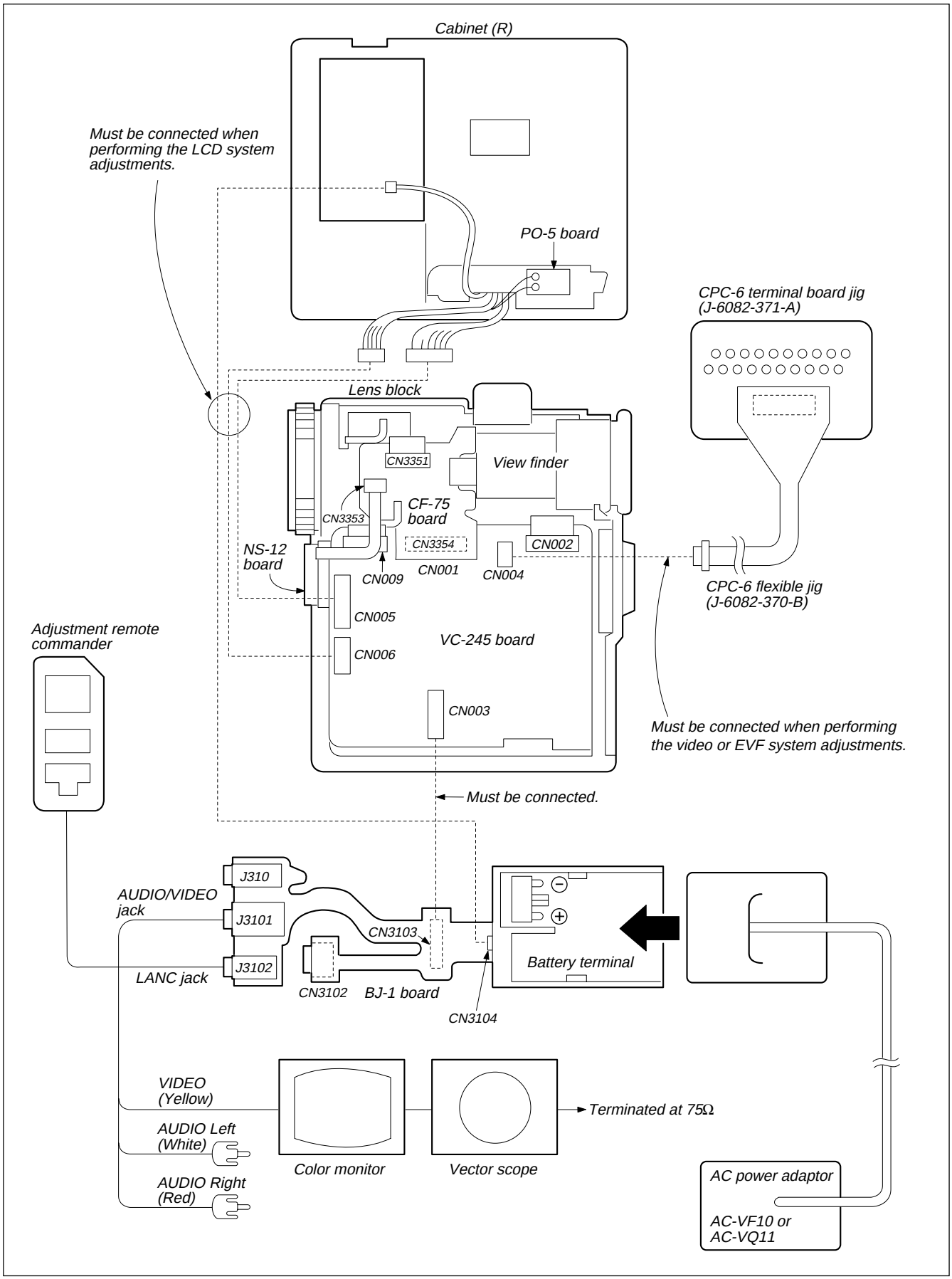

Cabinet (R)
Must be connected when performing the LCD system adjustments.
PO-5 board
CPC-6 terminal board jig (J-6082-371-A)
Lens block
CN3351
View finder
CF-75 board
CN3353
CN3354
CN002
NS-12 board
CN009
CN001
CN004
CPC-6 flexible jig (J-6082-370-B)
CN005
VC-245 board
Adjustment remote commander
CN006
CN003
Must be connected when performing the video or EVF system adjustments.
Must be connected.
J310
AUDIO/VIDEO jack
J3101
CN3103
J3102
LANC jack
CN3102
BJ-1 board
Battery terminal
CN3104
VIDEO (Yellow)
AUDIO Left (White)
AUDIO Right (Red)
Color monitor
Vector scope
Terminated at 75Ω
AC power adaptor
AC-VF10 or AC-VQ11

Fig. 5-1-3.

1-1-3. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows and perform adjustments without loading cassette.

1. POWER (Control switch block) ..... CAMERA
2. NIGHT SHOT (Lens block) ..... OFF
3. FUNCTION settings of the touch panel
   - DIGITAL EFFECT ..... OFF
   - EXPOSURE ..... OFF
   - MANUAL SET of the MENU settings
     - PROGRAM AE ..... AUTO
     - PICTURE EFFECT ..... OFF
     - WHITE BALANCE ..... AUTO
   - CAMERA SET of the MENU settings
     - DIGITAL ZOOM ..... OFF
     - 16:9 WIDE ..... OFF
     - STEADY SHOT ..... OFF
   - SETUP MENU of the MENU settings
     - DEMO MODE ..... OFF
4. FOCUS (FK-30350 block) ..... Manual
5. BACK LIGHT (FK-30350 block) ..... OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.

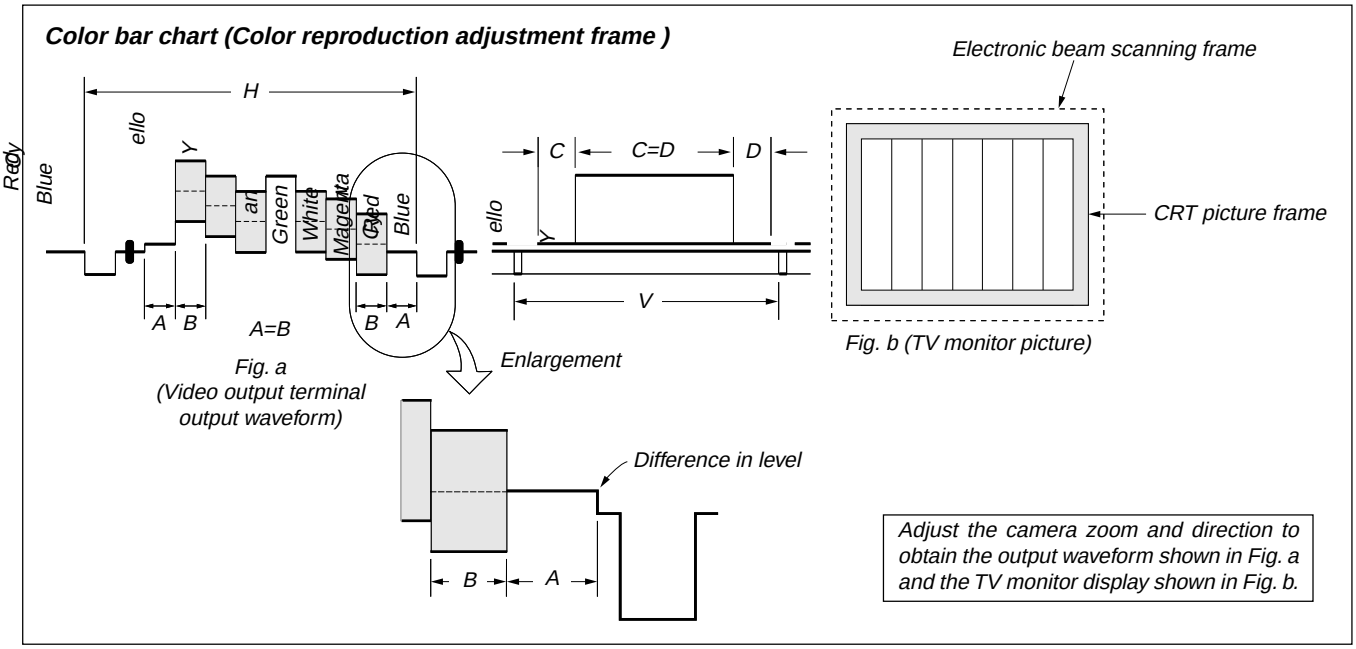


Fig.5-1-4.

3. Subjects

1) Color bar chart (Color reproduction adjustment frame)
   When performing adjustments using the color bar chart, adjust the picture frame as shown in Fig. 5-1-4. (Color reproduction adjustment frame)
2) Clear chart (Color reproduction adjustment frame)
   Remove the color bar chart from the pattern box and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Flange back adjustment chart
   Make the chart shown in Fig. 5-1-5 using A0 size (1189mm × 841mm) black and white vellum paper.

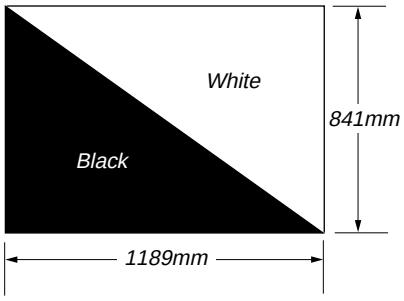


Fig. 5-1-5.

Note: Use matte vellum paper bigger than A0, and make sure the edges of the black and white paper joined together are not rough.

1-2. INITIALIZATION OF B, C, D, E, F, 7, 8 PAGE DATA

1-2-1. INITIALIZATION OF C, D, 8 PAGE DATA

1. Initializing the C, D, 8 Page Data

Note1: If "Initializing the C, D, 8 Page Data" is performed, all data of the C page, D page and 8 page will be initialized. (It is impossible to initialize a single page.)

Note2: If the C, D, 8 page data has been initialized, the following adjustments need to be performed again.
1) Modification of C, D, 8 page data
2) Serial No. input
3) Servo and RF system adjustments
4) Video system adjustments
5) Color viewfinder system adjustments
6) LCD system Adjustments

Adjusting page	C
Adjusting Address	10 to FF
Adjusting page	D
Adjusting Address	10 to FF
Adjusting page	8
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data
2	3	81		Check that the data is "00".
3	3	80	0A	Set the data, and press the PAUSE button.
4	3	80		Check that the data changes to "1A"
5				Perform "Modification of C, D, 8 Page Data".

2. Modification of C, D, 8 Page Data

If the C, D, 8 page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of C, D, 8 Page data

Order	Page	Address	Data	Procedure
1	2	00	29	Set the data
2	2	01	29	Set the data, and press the PAUSE button.

Note: If the following symptoms occur after completing of the "Modification of C, D, 8 page data", check that the data of the "Fixed data-2" addresses of D page are same as those of the same model of the same destination.
1) The battery end mark on the LCD or viewfinder screen is flashing.
2) The power is shut off so that unit cannot operate.

3. C Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the C, D, 8 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of C, D, 8 Page Data".)

Address	Initial value	Remark
00 to 0F		
10	EE	Switching position adj.
11	00	
12	00	
13	00	
14 to 15		Fixed data-1
16	E0	Cap FG duty adj.
17		Fixed data-2
18	2A	AEQ adj.
19	2A	
1A		Fixed data-1
1B	32	AEQ adj.
1C	32	
1D		Fixed data-1
1E	25	AGC center level adj.
1F	3E	PLL fo adj.
20	3E	
21	D5	APC adj.
22	99	LPF fo adj.
23 to 24		Fixed data-1
25	88	S VIDEO out Y level adj.
26	E3	S VIDEO out Cr level adj.
27	A1	S VIDEO out Cb level adj.
28	04	Chroma BPF fo adj.
29	20	PLL fo fine adj.
2A to 2B		Fixed data-1
2C	03	APC adj.
2D to 3F		Fixed data-1(Initialized data)
40		Fixed data-2
41		Fixed data-1
42		Fixed data-2
43 to 48		Fixed data-1(Initialized data)
49		Fixed data-2
4A		
4B to 4C		Fixed data-1
4D		Fixed data-2
4E to 4F		Fixed data-1
50		Fixed data-2
51		

Address	Initial value	Remark
52 to 63		Fixed data-1
64		Fixed data-2
65 to 85		Fixed data-1
86		Fixed data-2
87		(Modified data. Copy the data built in
88		the same model.)
89		
8A to 9A		Fixed data-1
9B		Fixed data-2
9C		(Modified data. Copy the data built in
9D		the same model.)
9E		
9F		
A0		
A1 to A2		Fixed data-1
A3		Fixed data-2
A4		(Modified data. Copy the data built in
A5		the same model.)
A6		
A7		
A8		
A9 to AA		Fixed data-1
AB		Fixed data-2
AC		(Modified data. Copy the data built in
AD		the same model.)
AE		Fixed data-1
AF		Fixed data-2
B0		
B1		Fixed data-1
B2		Fixed data-2
B3		(Modified data. Copy the data built in
B4		the same model.)
B5		
B6		
B7		
B8		
B9		
BA		
BB to C1		Fixed data-1
C2		Fixed data-2
C3		(Modified data. Copy the data built in
C4		the same model.)
C5		
C6		
C7		
C8 to CB		Fixed data-1
CC		Fixed data-2
CD to D5		Fixed data-1
D6		Fixed data-2
D7		(Modified data. Copy the data built in
D8		the same model.)
D9		
DA		
DB		
DC		
DD		

Address	Initial value	Remark
DE to E3		Fixed data-1
E4		Fixed data-2
E5		(Modified data. Copy the data built in
E6		the same model.)
E7		Fixed data-1
E8	08	Serial No. input
E9	00	
EA	46	
EB	01	
EC	01	
ED	00	
EE	00	
EF	00	
F0 to F3		Fixed data-1
F4	00	Emergency memory address
F5	00	
F6	00	
F7	00	
F8	00	
F9	00	
FA	00	
FB	00	
FC	00	
FD	00	
FE	00	
FF	00	

Table. 5-1-2.

4. D Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the C, D, 8 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of C, D, 8 Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	00	00	Test mode
11 to 12			Fixed data-1
13			Fixed data-2
14			
15 to 19			Fixed data-1
1A			Fixed data-2
1B to 1C			Fixed data-1
1D			Fixed data-2
1E			(Modified data. Copy the data built in
1F			the same model.)
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
2A			
2B			
2C			
2D			
2E			
2F			
30			
31 to 32			Fixed data-1
33			Fixed data-2
34 to 41			Fixed data-1
42			Fixed data-2
43			(Modified data. Copy the data built in
44			the same model.)
45			
46 to 47			Fixed data-1
48			Fixed data-2
49			
4A to 4C			Fixed data-1
4D			Fixed data-2
4E			
4F			Fixed data-1
50			Fixed data-2
51			(Modified data. Copy the data built in
52			the same model.)
53			
54			
55			
56			
57			Fixed data-1
58			Fixed data-2
59			(Modified data. Copy the data built in
5A			the same model.)
5B			
5C			
5D			
5E to 60			Fixed data-1
61			Fixed data-2
62 to 63			Fixed data-1
64			Fixed data-2
65			(Modified data. Copy the data built in
66			the same model.)
67			
68			
69			Fixed data-1
6A			Fixed data-2
6B to 8D			Fixed data-1
8E			Fixed data-2
8F			(Modified data. Copy the data built in
90			the same model.)
91			
92	3B	58 [4B]	VCO adj. (EVF)
93	58	3B [20]	[ ] : DCR-PC4E
94			Fixed data-2
95	8F	8F	Bright adj.(EVF)
96			Fixed data-2
97	80	80	White balance adj. (EVF)
98	80	80	
99	38	38	Contrast adj. (EVF)
9A			Fixed data-1
9B			Fixed data-2
9C			(Modified data. Copy the data built in
9D			the same model.)
9E			
9F			
A0			
A1			
A2	5C	7E	VCO adj. (LCD)
A3	7E	5C	
A4	A2	A2	V-COM adj. (LCD)
A5	B0	B0	Bright adj. (LCD)
A6	08	08	Black limit adj. (LCD)
A7			Fixed data-2
A8	90	90	White balance adj. (LCD)
A9	6F	6F	
AA	2D	2D	Contrast adj. (LCD)
AB	2D	2D	Center level adj. (LCD)
AC			Fixed data-2
AD			(Modified data. Copy the data built in
AE			the same model.)
AF			
B0			
B1			
B2			
B3			Fixed data-1

Address	Initial value		Remark
	NTSC	PAL	
B4			Fixed data-2
B5			
B6			Fixed data-1
B7			
B8			
B9			Fixed data-2
BA			
BB to C1			Fixed data-1
C2			Fixed data-2
C3 to C5			Fixed data-1
C6			Fixed data-2
C7			(Modified data. Copy the data built in
C8			the same model.)
C9 to CB			Fixed data-1
CC			Fixed data-2
CD to D0			Fixed data-1
D1			Fixed data-2
D2 to D5			Fixed data-1
D6			Fixed data-2
D7			
D8 to D9			Fixed data-1
DA			Fixed data-2
DB			(Modified data. Copy the data built in
DC			the same model.)
DD			
DE to DF			Fixed data-1
E0	D0	D0	Touch panel adj.
E1	26	26	
E2	CE	CE	
E3	1E	1E	
E4 to FF			Fixed data-1

Table. 5-1-3.

5. 8 Page Table

Note: Fixed data-1: Initialized data. (Refer to “1. Initializing the C, D, 8 Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of C, D, 8 Page Data”.)

Address	Remark
00 to 52	Fixed data-1
53	Fixed data-2
54 to 59	Fixed data-1
5A	Fixed data-2
5B	(Modified data. Copy the data built in the same model.)
5C to 98	Fixed data-1
99	Fixed data-2
9A to A7	Fixed data-1
A8	Fixed data-2
A9 to FF	Fixed data-1

Table. 5-1-4.

1-2-2. INITIALIZATION OF B PAGE DATA (DCR-PC5/PC5E)

Note: When reading the B page data, insert a "Memory Stick" into the "Memory Stick" slot.

Switch setting:

POWER ..... MEMORY

1. Initializing the B Page Data

Note: If the B page data has been initialized, the following adjustments need to be performed again.
1) Modification of B page data

Adjusting page	B
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	8F	02	Set the data, and press PAUSE button.
3	2	8F	03	Set the data, and press PAUSE button.
4	2	8F	02	Set the data, and press PAUSE button.
5	2	8F	00	Set the data, and press PAUSE button.
6	5	0E	00	Set the data, and press PAUSE button.
7	5	01	F3	Set the data, and press PAUSE button.
8	5	00	01	Set the data, and press PAUSE button.
9	5	0E		Check that the data changes to "01".
10				Perform "Modification of B Page Data".

2. Modification of B Page Data

If the B page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Preparations:

Order	Page	Address	Data	Procedure
1	2	8F	02	Set the data, and press PAUSE button.
2	2	8F	03	Set the data, and press PAUSE button.
3	2	8F	02	Set the data, and press PAUSE button.
4	2	8F	00	Set the data, and press PAUSE button.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of B Page data:

Order	Page	Address	Data	Procedure
1	2	00	29	Set the data.
2	2	01	29	Set the data, and press PAUSE button.

3. B Page Table

Note: Fixed data-1: Initialized data. (Refer to "1. Initializing the B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B Page Data".)

Address	Remark
00 to 13	Fixed data-1
14	Fixed data-2 (Modified data. Copy the data built in the same model.)
15	
16	
17	
18	
19	
1A to 4F	Fixed data-1
50	Fixed data-2
51 to 53	Fixed data-1
54	Fixed data-2
55 to 6F	Fixed data-1
70	Fixed data-2
71 to FF	Fixed data-1

Table. 5-1-5.

1-2-3. INITIALIZATION OF E, F, 7 PAGE DATA

1. Initializing the E, F, 7 Page Data

Note1: If "Initializing the E, F, 7 Page Data" is performed, all data of the E page, F page and 7 page will be initialized. (It is impossible to initialize a single page.)

Note2: If the E, F, 7 page data has been initialized, following adjustments need to be performed again.
1) Modification of E, F, 7 page data
2) Camera system adjustments
3) IR transmitter adjustments

Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	7
Adjusting Address	00 to 59

Switch setting:

POWER ..... CAMERA

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01		Set the following data, and press PAUSE button. 2D: DCR-PC5 (NTSC) 2F: DCR-PC4E/PC5E (PAL)
3	6	03	01	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01".
5				Perform "Modification of E, F, 7 Page Data".

2. Modification of E, F, 7 Page Data

If the E, F, 7 page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note: If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of E, F, 7 Page data

1) Select page: 0, address: 01, and set data: 00.
2) Turn off the power and turn on again.

3. F Page Table

Note1: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 7 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 7 Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10 to 11			Fixed data-1
12	80	80	36MHz origin osc adj.
13	80	80	Zoom key center adj.
14 to 16			Fixed data-1
17	81	81	HALL adj.
18	A0	A0	
19	17	17	
1A to 1C			Fixed data-1
1D	9A	9A	Max gain adj.
1E	80	80	AWB & LV standard data input
1F	7A	7A	
20 to 30			Fixed data-1
30	90	90	AWB & LV standard data input
31	3E	3E	
32	43	43	
33	59	59	
34			Fixed data-1
35	22	22	Color reproduction adj.
36			Fixed data-1
37	27	24	Color reproduction adj.
38 to 3B			Fixed data-1
3C	00	00	Color reproduction adj.
3D	F1	EF	
3E to 3F			Fixed data-1
40	80	80	Auto white balance adj.
41	40	40	
42 to 49			Fixed data-1
4A	51	51	Flange back adj.
4B	19	19	
4C	22	22	
4D	20	20	
4E	93	93	
4F	13	13	
50	00	00	
51	00	00	
52 to 59			Fixed data-1
5A	46	46	Flange back adj.
5B	00	00	
5C	19	19	
5D	00	00	
5E	2A	2A	
5F	00	00	
60 to 65			Fixed data-1
66			Fixed data-2
67			
68			Fixed data-1
69	00	00	Optical axis adj.
6A to 6F			Fixed data-1
70	C4	C4	Mechanical shutter adj.

Address	Initial value		Remark
	NTSC	PAL	
71	0E	0E	Mechanical shutter adj.
72	75	75	
73	0C	0C	
74	26	26	
75	0B	0B	
76	35	35	
77	0A	0A	
78	6E	6E	
79	09	09	
7A	A5	A5	
7B	61	61	
7C	A1	A1	
7D	79	79	
7E	64	64	
7F	81	81	
80	82	82	
81	84	84	
82	B5	B5	
83	7B	7B	
84	20	20	
85 to 8D	Fixed data-1		
8E	Fixed data-2		
8F			
90 to 9E	Fixed data-1		
9F	Fixed data-2		
A0 to AF	Fixed data-1		
B0	Fixed data-2		
B1			
B2 to B3	Fixed data-1		
B4	Fixed data-2		
B5 to D0	Fixed data-1		
D1	Fixed data-2		
D2 to D4	Fixed data-1		
D5	Fixed data-2		
D6 to DC	Fixed data-1		
DD	Fixed data-2		
DE to FF	Fixed data-1		

Table. 5-1-6.

4. E Page Table

Note1: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 7 Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 7 Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 64	Fixed data-1		
65	Fixed data-2		
66 to 69	Fixed data-1		
6A	Fixed data-2		
6B to 71	Fixed data-1		
72	Fixed data-2		
73			
74 to 7E	Fixed data-1		
7F	Fixed data-2		
80 to 83	Fixed data-1		
84	Fixed data-2		
85			
86			
87			
88 to 8B	Fixed data-1		
8C	Fixed data-2		
8D to 8E	Fixed data-1		
8F	Fixed data-2		
90			
91			
92 to 94	Fixed data-1		
95	Fixed data-2		
96 to 97	Fixed data-1		
98	Fixed data-2		
99 to AF	Fixed data-1		
B0	Fixed data-2 (Modified data. Copy the data built in the same model.)		
B1			
B2			
B3			
B4			
B5			
B6			
B7			
B8 to CE	Fixed data-1		
CF	Fixed data-2		
D0	26	24	Optical axis adj.
D1 to DD	Fixed data-1		
DE	5F	71	Optical axis adj.
DF to FF	Fixed data-1		

Table. 5-1-7.

5. 7 Page Table

Note1: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 7 Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 7 Page Data”.)

Address	Initial value		Remark
	NTSC	PAL	
00 to 1B			Fixed data-1
1C			Fixed data-2 (Modified data. Copy the data built in the same model.)
1D			
1E			
1F			
20			
21 to 22			Fixed data-1 (Initialized data)
23	7C	7C	Mechanical shutter adj.
24	7F	7F	
25	7C	7C	
26	7B	7B	
27 to 3C			Fixed data-1
3D			Fixed data-2
3E to 51			Fixed data-1
52			Fixed data-2
53			
54 to 59			Fixed data-1

Table. 5-1-8.

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENT" are satisfied.

Note: NTSC model: DCR-PC5
PAL model: DCR-PC4E/PC5E

1. 36MHz Origin Oscillation Adjustment (VC-245 board)

Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

Subject	Not required
Measurement Point	Pin ⑫ of IC702
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	12
Specified Value	Pin ⑫ of IC702: f=18000000 ± 90Hz

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	12		Change the data and set the frequency (f) to the specified value.
3	F	12		Press PAUSE button.
4	0	01	00	Set the data.

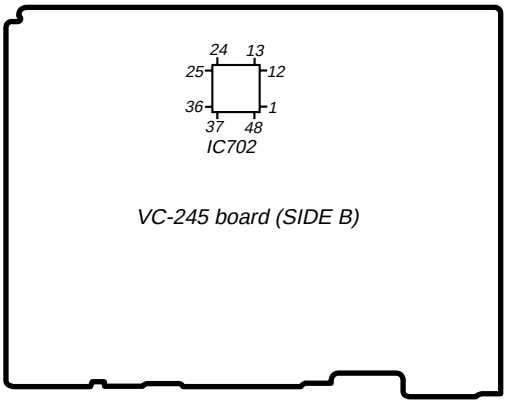


Fig. 5-1-6.

2. Zoom Key Center Adjustment

Set the A/D value center of the microprocessor to the center voltage of the zoom key.
If deviated, the zoom lens operates of itself ,even if the zoom key is the center position.

Subject	Not required
Measurement Point	Display data of page: 6, address: 50
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	13

Note: Don't touch the zoom lever during adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	50		Read the data, and this data is named D_{50}.
3	F	13	D_{50}	Set the data, and press PAUSE button.
4	0	01	00	Set the data.

3. HALL Adjustment

For detecting the position of the lens iris, adjust AMP gain and offset.

Subject	Not required
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	17, 18, 19
Specified Value 1	15 to 19
Specified Value 2	88 to 8C

Note1: Displayed data of page 1 of the adjustment remote commander.
1 : XX : XX
└── IRIS display data

Switch setting:
POWER ..... CAMERA

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	94	17	Set the data.
3	6	95	8A	Set the data.
4	6	01	6D	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note2)
6	6	01	00	Set the data, and press PAUSE button.

Note2: The adjustment data will be automatically input to page: F, address: 17, 18, 19.

Checking method:

Order	Page	Address	Data	Procedure
1	6	04	03	Set the data.
2	6	01	01	Set the data, and press PAUSE button.
3	1			Check that the IRIS display data (Note1) satisfies the specified value 1.
4	6	01	03	Set the data, and press PAUSE button.
5	1			Check that the IRIS display data (Note1) satisfies the specified value.2.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	94	00	Set the data.
2	6	95	00	Set the data.
3	6	01	00	Set the data, and press PAUSE button.
4	6	04	00	Set the data.
5	0	01	00	Set the data.

4. Flange Back Adjustment (Using Minipattern Box)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

Subject	Siemens star chart with ND filter for the minipattern box (Note1)
Measurement Point	Display data of page: F, address: 5F
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	13, 4A to 51, 5A to 5F
Specified Value	Upper digit: 0 to B Lower digit: 0 to 9

Note1: Dark Siemens star chart.
Note2: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF

Preparations:

1) The minipattern box is installed as shown in the following figure.
   Note: The attachment lenses are not used.
2) Install the minipattern box so that the distance between it and the front of the lens of the camcorder is less than 3cm.
3) Make the height of the minipattern box and the camcorder equal.
4) Check that the output voltage of the regulated power supply is the specified voltage.
5) Check that at both the zoom lens TELE end and WIDE end, the center of the Siemens star chart and center of the exposure screen coincide.

Specified voltage: The specified voltage varies according to the minipattern box, so adjust the power supply output voltage to the specified voltage written on the sheet which is supplied with the minipattern box.

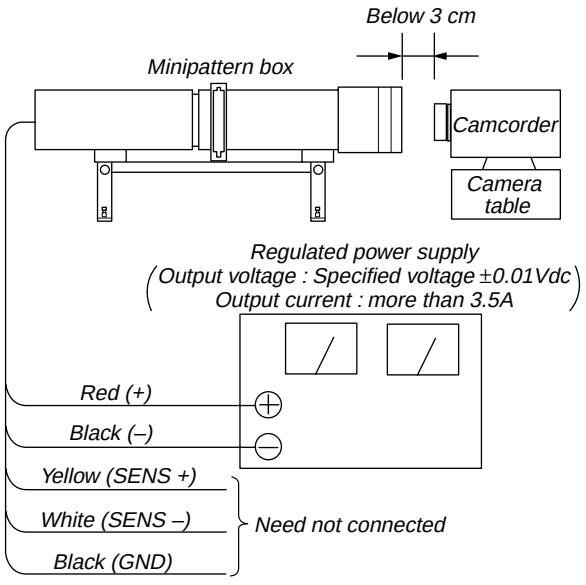


Fig. 5-1-7.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button. (Note3)
3	6	01	27	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note4)
5	F	5F		Check that the upper digit of the data is "0" to "B".
6	F	5F		Check that the lower digit of the data is "0" to "9".

Note3: Don't touch the zoom lever. If you touch the zoom lever, the zoom center adjustment data will be rewritten in the value which isn't correct.
Note4: The adjustment data will be automatically input to page: F, address: 13, 4A to 51, 5A to 5F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Perform "Flange Back Check".

5. Flange Back Adjustment (Using Flange Back Adjustment Chart and Subject More Than 500m Away)

The inner focus lens flange back adjustment is carried out automatically. In whichever case, the focus will be deviated during auto focusing/manual focusing.

5-1. Flange Back Adjustment (1)

Subject	Flange back adjustment chart (2.0 m from the front of the protection glass) (Luminance: 350 ± 30 lux)
Measurement Point	Display data of page: F, address: 5F
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	13, 4A to 51, 5A to 5F
Specified Value	Upper digit: 0 to B Lower digit: 0 to 9

Note1: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button. (Note2)
3	6	01	15	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note3)
5	F	5F		Check that the upper digit is "0" to "B".
6	F	5F		Check that the lower digit is "0" to "9".

Note2: Don't touch the zoom lever. If you touch the zoom lever, the zoom center adjustment data will be rewritten in the value which isn't correct.

Note3: The adjustment data will be automatically input to page: F, address: 13, 4A to 51, 5A to 5F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2				Perform "Flange Back Adjustment (2)"

5-2. Flange Back Adjustment (2)

Perform this adjustment after performing "Flange Back Adjustment (1)".

Subject	Subject more than 500m away (Subjects with clear contrast such as buildings, etc.)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	13, 4A to 51, 5A to 5F

Note1: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF

Preparations:

1) Set the zoom lens to the TELE end and expose a subject that is more than 500m away (subject with clear contrast such as building, etc.). (Nearby subjects less than 500m away should not be in the screen.)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	13	Set the data, and press PAUSE button. (Note2)
				Place a ND filter on the lens so that the optimum image is obtain.
3	6	01	29	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note3)

Note2: Don't touch the zoom lever. If you touch the zoom lever, the zoom center adjustment data will be rewritten in the value which isn't correct.

Note3: The adjustment data will be automatically input to page: F, address: 13, 4A to 51, 5A to 5F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3				Perform "Flange Back Check".

6. Flange Back Check

Subject	Siemens star (2.0m from the front of the lens) (Luminance : approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

Note: When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on the page 1 of the adjustment remote commander.

1) Select page: 6, address: 04, and set data: 0F.
2) Page 1 shows the state of the focus.

1 : 00 : XX
Odd: Focused
Even: Unfocused

Checking method:

1) Place the Siemens star 2.0m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
3) Shoot the Siemens star with the zoom TELE end.
4) Turn on the auto focus.
5) Check that the lens is focused (Note).
6) Select page: 6, address: 21, and set data: 10.
7) Shoot the Siemens star with the zoom WIDE end.
8) Observe the TV monitor and check that the lens is focused.

Processing after Completing Adjustments:

1) Select page: 6, address: 21, and set data: 00.
2) Select page: 6, address: 04, and set data: 00.

7. Optical Axis Adjustment

Align the lens Optical Axis with that of the CCD imager. If deviated, center of picture can lose focus when zoom is operated from the WIDE end to the TELE end.

Subject	Siemens star	
Measurement Point	Check on the monitor TV	
Measuring Instrument		
Adjustment Page	F	E
Adjustment Address	69	D0, DE

Switch setting:

1) POWER ..... CAMERA

Preparations before adjustments:

1) Playback the monoscope segment of the system check tape (XH5-5 (NTSC), XH5-5P (PAL)).
2) Attach the optical axis frame chart (transparent) on the monitor TV screen. Center of monoscope image and that that of optical axis frame must be agree.
3) Set to the camera mode.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 6, address: 40, and set data: 02.
3) Select page: 6, address: 41, and set data: 01.
4) Input the data of Table 5-1-9 to each adjustment addresses.
   Note: Press the PAUSE button each time to set the data.

Page: F	Page: E			
Address: 69	Address: D0		Address: DE	
	NTSC	PAL	NTSC	PAL
00	22	26	5F	71

Table. 5-1-9.

5) Place the Siemens star 2.0 m away from the front of the lens.
6) Shoot the Siemens star with the zoom TELE end.
7) Point the lens toward the Siemens star chart until center of the Siemens star is located in the center of the optical axis frame.
8) Shoot the Siemens star with the zoom WIDE end.
9) Measure on the monitor TV screen in which area of the optical axis frame the center of the Siemens star is located. Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame.) The measurement value is named L1.
10) Read the correction data corresponding to the area from Table 5-1-10.
11) Input the correction data to each adjustment address.
    Note: Press the PAUSE button each time to set the data.
12) Shoot the Siemens star with the zoom TELE end.
13) Point the lens toward the Siemens star chart until center of the Siemens star is located in the center of the optical axis frame.
14) Shoot the Siemens star with the zoom WIDE end.
15) Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame.) The measurement value is named L2.
16) Compare the values L1 and L2, and confirm that L2 is smaller than L1. If L2 is lager than L1, input the data of Table 5-1-9 to each adjustment address.
    Note: Press the PAUSE button each time to set the data.

Note: NTSC model: DCR-PC5
PAL model: DCR-PC4E/PC5E

Area	Display phase	Connection data				
		Page: F	Page: E			
		Address: 69	Address: D0		Address: DE	
			NTSC	PAL	NTSC	PAL
1	22.6° to 67.5°	01	22	26	57	69
2	67.6° to 112.5°	02	22	26	5F	71
3	112.6° to 157.5°	03	22	26	67	79
4	157.6° to 202.5°	04	02	26	69	7D
5	202.6° to 247.5°	05	22	26	67	79
6	247.6° to 292.5°	06	22	26	5F	71
7	292.6° to 337.5°	07	22	26	57	69
8	337.6° to 22.5°	08	02	26	55	65

Table. 5-1-10.

Processing after Completing Adjustments:

1) Select page: 0, address: 01, and set data: 00.
2) Select page: 6, address: 40, and set data: 00.
3) Select page: 6, address: 41, and set data: 00.

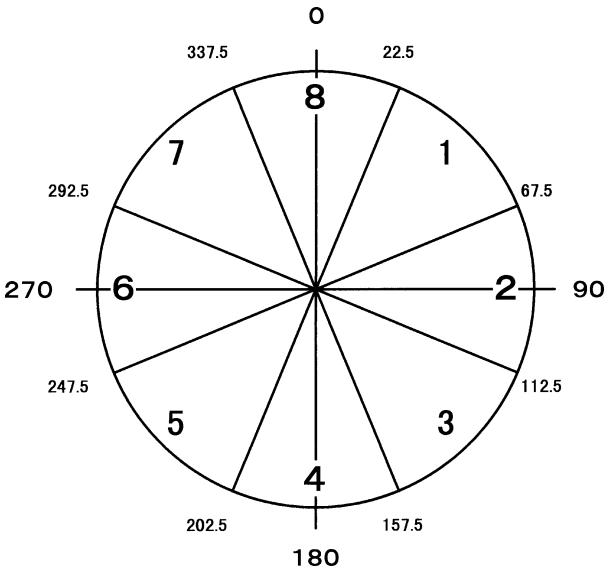


Fig. 5-1-8.

8. Picture Frame Setting

Subject	Color bar chart (Color reproduction adjustment frame) (1.5m from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, E=F

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

Setting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 69, after noting down the data, set data: 00, and press the PAUSE button.
3) Adjust the zoom and the camera direction, and set to the specified position.
4) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color reproduction adjustment frame”.

Processing after Completing Camera System Adjustments:

After completing the camera system adjustments, release the data settings.

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 69, set the data noted down at step 2), and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

Check on the oscilloscope

1. Horizontal period

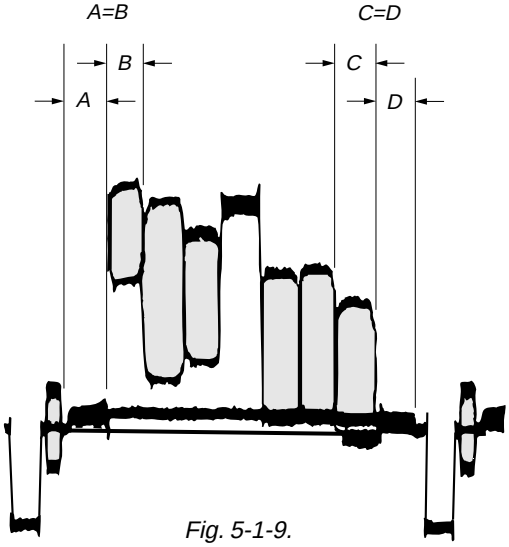


Fig. 5-1-9.

2. Vertical period

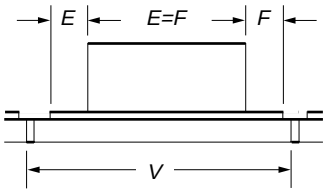


Fig. 5-1-10.

Check on the monitor TV (Underscanned mode)

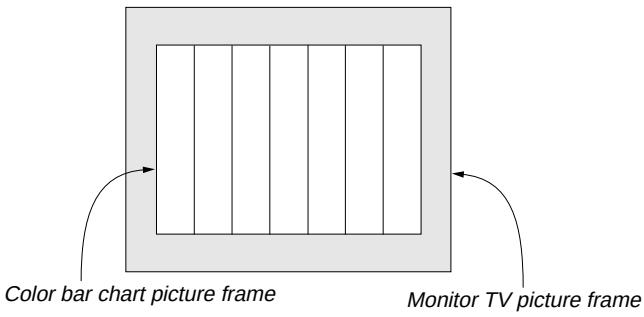


Fig. 5-1-11.

9. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart (Color reproduction adjustment frame)
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	35, 37, 3C, 3D
Specified Value	All color luminance points should settle within each color reproduction frame.

Note: NTSC model: DCR-PC5
PAL model: DCR-PC4E/PC5E

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF
4) STEADY SHOT (Menu display) ..... OFF

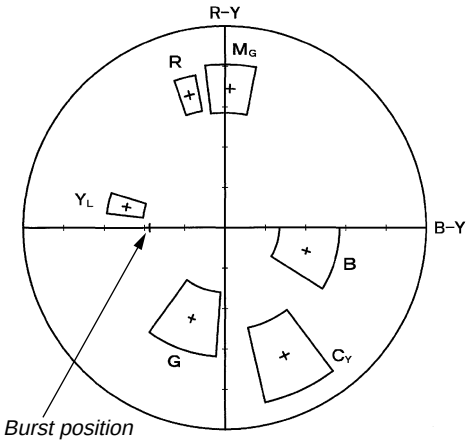
Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 8E, set data: 29, and press the PAUSE button.
3) Select page: F, address: C0, set the following data and press the PAUSE button.
   37: NTSC model
   B7: PAL model
4) Select page: 6, address: 01, set data: 3D, and press the PAUSE button.
5) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
6) Change the data of page: F, address: 35, 37, 3C and 3D, and settle each color luminance point in each color reproduction frame.
   Note: Be sure to press the PAUSE button of the adjustment remote commander before changing the addresses. If not, the new data will not be written to the memory.

Processing after Completing Adjustments:

1) Select page: F, address: 8E, set data: 2E, and press the PAUSE button.
2) Select page: 6, address: 01, set data: 00, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model

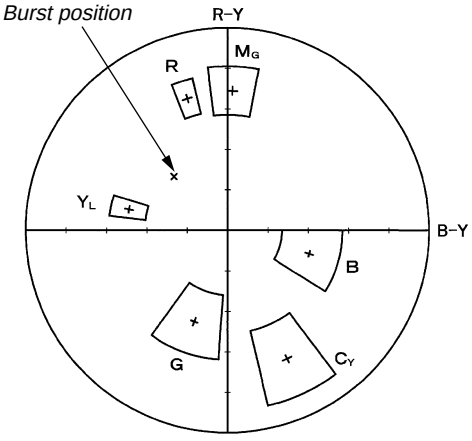


Fig. 5-1-12.

10. MAX GAIN Adjustment

Setting the minimum illumination.
If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	1D

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) STEADY SHOT (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	96	00	Set the data.
3	6	97	27	Set the data.
4	6	01	6F	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01". (Note)

Note: The adjustment data will be automatically input to page: F, address: 1D

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	96	00	Set the data.
2	6	97	00	Set the data.
3	6	01	00	Set the data, and press PAUSE button.
4	0	01	00	Set the data.

11. Auto White Balance & LV Standard Data Input

Adjust the white balance reference at 3200K, and adjust the normal coefficient of the light value.

Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Display data of page 1 (Note4)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	1E, 1F, 30 to 33
Specified Value	0FF0 to 1010

Note1: This adjustment should be carried out upon completion of " Color reproduction Adjustment".

Note2: After the power is turned on, this adjustment can be done only once.

Note3: Check that the data of page: 6, address: 02 is "00". If not, to page: 6, address: 01, set data: 00, and press the PAUSE button.

Note4: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└── LV data

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	11	Set the data, and press PAUSE button.
3	6	01	0D	Set the data, and press PAUSE button.
4	6	02		Check that the data changes to "01". (Note5)
5	F	10	2E	Set the data, and press PAUSE button.
6	1			Check that the display data (Note4) satisfies the specified value.

Note5: The adjustment data will be automatically input to page: F, address: 1E, 1F, 30 to 33.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	F	10	00	Set the data, and press PAUSE button.
3	0	01	00	Set the data.
4				Perform "Auto White Balance Adjustment".

12. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction
Measurement Point	Display data of page 1 (Note3)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	40, 41
Specified Value	DCR-PC5(NTSC): R ratio: 2B00 to 2C00 B ratio: 5B00 to 5C00 DCR-PC4E/PC5E (PAL): R ratio: 2D00 to 2E00 B ratio: 5B00 to 5C00

Note1: After the power is turned on, this adjustment can be done only once.

Note2: Perform "Auto White Balance & LV Standard Data Input" before this adjustment.

Note3: Displayed data of page 1 of the adjustment remote commander.

1 : XX : XX
└── Display data

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter for color temperature correction on the lens.
2	0	01	01	Set the data.
3	F	42		Write down the data.
4	F	42		Set the following data, and press PAUSE button. 2B: DCR-PC5 (NTSC) 2D: DCR-PC4E/PC5E (PAL)
5	F	43		Write down the data.
6	F	43	80	Set the data, and press PAUSE button.
7	F	44		Write down the data.
8	F	44	5B	Set the data, and press PAUSE button.
9	F	45		Write down the data.
10	F	45	80	Set the data, and press PAUSE button.
11	6	01	83	Set the data, and press PAUSE button.
12	6	01	81	Set the data, and press PAUSE button.
13	6	02		Check that the data changes to "01". (Note4)
14	6	01	3F	Set the data, and press PAUSE button.
15	6	04	04	Set the data.
16	1			Check that the display data (Note3) satisfies the R ratio specified value.
17	6	04	05	Set the data.
18	1			Check that the display data (Note3) satisfies the B ratio specified value.

Note4: The adjustment data will be automatically input to page: F, address: 40, 41.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	04	00	Set the data.
3	F	42		Set the data that is written down at step 3, and press PAUSE button.
4	F	43		Set the data that is written down at step 5, and press PAUSE button.
5	F	44		Set the data that is written down at step 7, and press PAUSE button.
6	F	45		Set the data that is written down at step 9, and press PAUSE button.
7	0	01	00	Set the data.

13. White Balance Check

Subject	Clear chart (Color reproduction adjustment frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.4 and 0.1
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-13. A to B

Switch setting:

1) POWER ..... CAMERA
2) NIGHT SHOT ..... OFF
3) DIGITAL ZOOM (Menu display) ..... OFF

Checking method:

Order	Page	Address	Data	Procedure
				Indoor white balance check
1				Check that the lens is not covered with either filter.
2	6	01	0F	Set the data, and press PAUSE button.
3				Check that the center of the white luminance point is within the circle shown Fig. 5-1-13. A.
				Outdoor white balance check
4	6	01	3F	Set the data, and press PAUSE button.
5				Place the C14 filter on the lens.
6				Check that the center of the white luminance point is within the circle shown Fig. 5-1-13. B.
7				Remove the C14 filter.
				Indoor white balance data check
8	6	01	00	Set the data, and press PAUSE button.
9				Place the ND filter 1.5 (1.0+0.1+0.4) on the lens.
10	0	01	01	Set the data.
11	F	10	A9	Set the data, and press PAUSE button.
12	1			Check that the display data (Note) satisfies the specified value. Specified value: 0000 to 0BC0
13	F	10	A1	Set the data, and press PAUSE button.
14	1			Check that the second digit of the display data (Note) is an odd number. Specified value: 1 : XX : XX └── Odd number

Note: Displayed data of the adjustment remote commander.

1 : XX : XX
└── Display data

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	F	10	00	Set the data, and press PAUSE button.
3	0	01	00	Set the data.

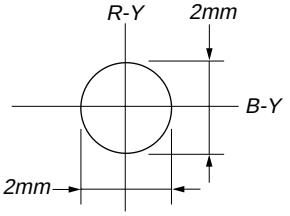


Fig. 5-1-13. (A)

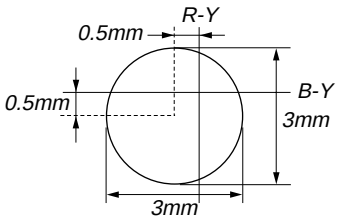


Fig. 5-1-13. (B)

14. Mechanical Shutter Adjustment (DCR-PC5/PC5E)

Adjust the period which the mechanical shutter is closed, and compensate the exposure.

Adjustment Page	F	7
Adjustment Address	70 to 84	23 to 26

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to page: F, addresses: 70 to 84.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
70	C4
71	0E
72	75
73	0C
74	26
75	0B
76	35
77	0A
78	6E
79	09
7A	A5
7B	61
7C	A1
7D	79
7E	64
7F	81
80	82
81	84
82	B5
83	7B
84	20

3) Input the following data to page: 7, addresses: 23 to 26.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
23	7C
24	7F
25	7C
26	7B

4) Select page: 0, address: 01, and set data: 00.

15. Steady Shot Check

Precautions on the Parts Replacement

There are two types of repair parts.

Type A: ENC03LA
Type B: ENC03LB

Replace the broken sensor with a same type sensor. If replace with other type parts, the image will vibrate up and down or left and right during hand-shake correction operations. After replacing, perform the following procedure.

Precautions on Angular Velocity Sensor

The sensor incorporates a precision oscillator. Handle it with care as if it dropped, the balance of the oscillator will be disrupted and operations will not be performed properly.

Subject	Arbitrary
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Specified Value	1A00 to 2600

Note1: Displayed data of the adjustment remote commander.

1 : XX : XX
└── Display data

Switch setting:

1) STEADY SHOT (Menu display) ..... ON
2) ZOOM ..... TELE end

Check method:

Order	Page	Address	Data	Procedure
				Pitch sensor check (CF-75 board SE3450)
1	6	04	11	Set the data.
2	1			Check that the display data (Note1) satisfies the specified value. (Note2)
				Yaw sensor check (CF-75 board SE3451)
3	6	04	12	Set the data.
4	1			Check that the display data (Note1) satisfies the specified value. (Note2)
				Steady shot check
5	0	01	01	Set the data.
6	F	10	E2	Set the data, and press PAUSE button.
7	1			Move the camcoder, and check that the display data (Note1) is changing.
8	F	10	E3	Set the data, and press PAUSE button.
9	1			Move the camcoder, and check that the display data (Note1) is changing.

Note2: Don't move the camcoder during data check.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	F	10	00	Set the data, and press PAUSE button.
2	0	01	00	Set the data.
3	6	04	00	Set the data.
4				Move the camcoder, and check that the steady shot operations have been performed normally

1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.
Note2: Set the switches as follows.
Viewfinder ..... ON (Viewfinder is Pulled out.)
Note3: Perform the following data setting before the viewfinder system adjustments.
1) Select page: 2, address: 0E, and set data: 67.
2) Select page: 2, address: 0F, and set data: 01.
Reset the data after completing adjustment.
1) Select page: 2, address: 0E, and set data: 00.
2) Select page: 2, address: 0F, and set data: 00.

[Adjusting connector]

Most of the measuring points for adjusting the viewfinder system are concentrated in CN004 of the VC-245 board.
Connect the Measuring Instruments via the CPC-6 flexible jig (J-6082-370-B) and CPC-6 terminal board jig (J-6082-371-A).
The following table shows the Pin No. and signal name of CN004.

Pin No.	Signal Name	Pin No.	Signal Name
1	LANC SIG	2	
3		4	EVF VG
5	EVF VCO	6	GND
7		8	
9		10	
11		12	TMS
13	TCK	14	TDI
15	TDO	16	GND
17	SWP	18	RF IN/LANC JACK IN
19	GND	20	RF MON

Table 5-1-11.

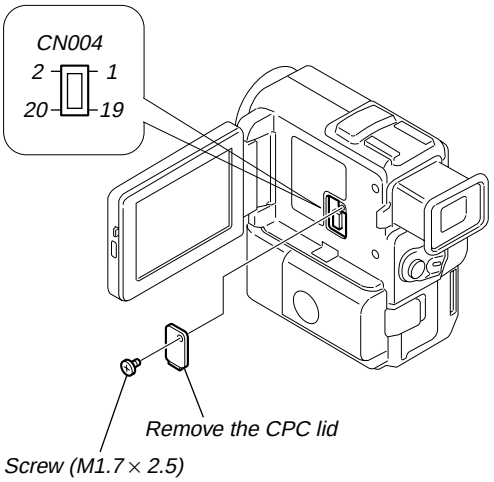


Fig. 5-1-14.

1. VCO Adjustment (VC-245 board)

Set the VCO free-run frequency. If deviated, the EVF screen will be blurred.

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑤ of CN004 (EVF VCO)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	92, 93
Specified Value	f = 15734 ± 30Hz (NTSC) f = 15625 ± 30Hz (PAL)

Note1: NTSC: DCR-PC5
PAL: DCR-PC4E/PC5E

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	92		Change the data and set the VCO frequency (f) to the specified value.
3	D	92		Press PAUSE button.
4	D	92		Read the data, and this data is named D_{92}.
5				Convert D_{92} to decimal notation, and obtain D_{92}'. (Note2)
6				Calculate D_{93}' using following equations (Decimal calculation) NTSC model: When $D_{92}' \leqq 226$ $D_{93}' = D_{92}' + 29$ When $D_{92}' > 226$ $D_{93}' = 255$ PAL model: When $D_{92}' \geqq 29$ $D_{93}' = D_{92}' - 29$ When $D_{92}' < 29$ $D_{93}' = 00$
7				Convert D_{93}' to a hexadecimal number, and obtain D_{93}. (Note2)
8	D	93	D_{93}	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note2: Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

2. Bright Adjustment (VC-245 board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ④ of CN004 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	95
Specified Value	A = 7.60 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	95		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	D	95		Press PAUSE button.
4	0	01	00	Set the data.

3. Contrast Adjustment (VC-245 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ④ of CN004 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	99
Specified Value	A=2.45 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	99		Change the data and set the voltage (A) between the 3 steps peak and pedestal to the specified value. (The data should be “00” to “7F”.)
3	D	99		Press PAUSE button.
4	0	01	00	Set the data.

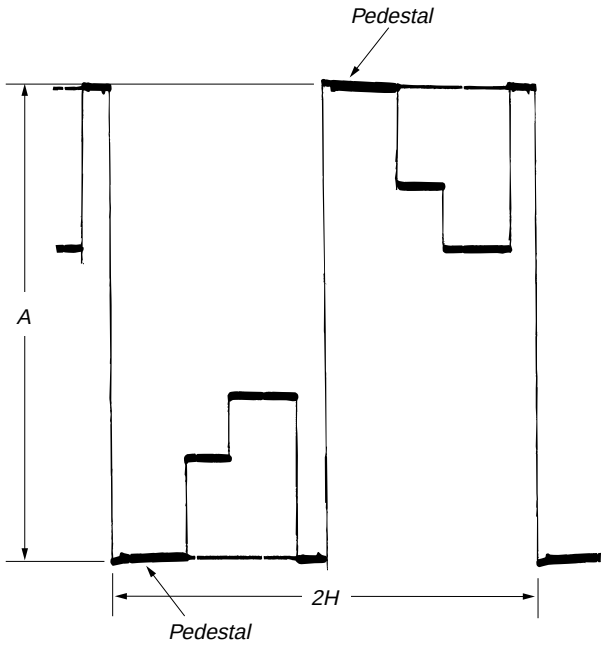


Fig. 5-1-15.

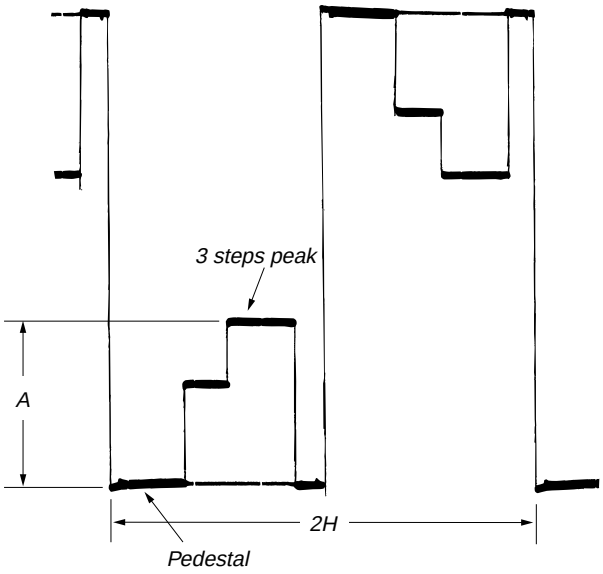


Fig. 5-1-16.

4. White Balance Adjustment (VC-245 board)

Correct the white balance.
If deviated, the reproduction of the EVF screen may degenerate.

Mode	Camera
Subject	Arbitrary
Measurement Point	Check on EVF screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	97, 98
Specified Value	The EVF screen should not be colored.

Note1: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC1802

Note2: Use the AC power adaptor.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	97	80	Set the data, and press PAUSE button.
3	D	98	80	Set the data, and press PAUSE button.
4	D	98		Check that the EVF screen is not colored. If not colored, proceed to step 10.
5	D	97		Change the data so that the EVF screen is not colored.
6	D	97		Press PAUSE button.
7	D	98		Change the data so that the EVF screen is not colored.
8	D	98		Press PAUSE button.
9	D	98		If the EVF screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

1-5. LCD SYSTEM ADJUSTMENT

Note 1: The back light (fluorescent tube) is driven by a high voltage AC power supply. Therefore, do not touch the back light holder to avoid electrical shock.

Note 2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN2105 of the PD-126 board. The following table shows the Pin No. and signal name of CN2105.

Pin No.	Signal Name
1	VG
2	COM
3	GND
4	PSIG
5	HSY

Table 5-1-12.

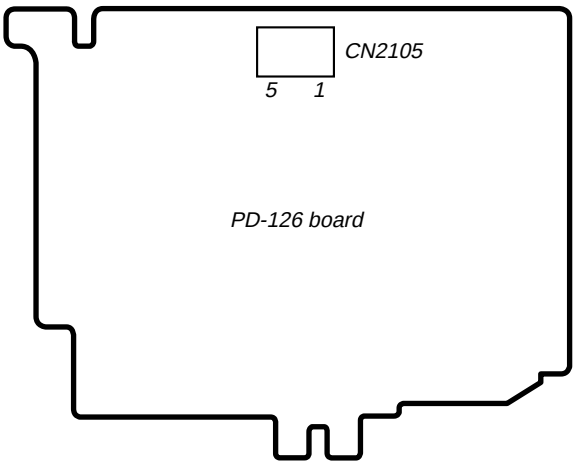


Fig. 5-1-17.

1. VCO Adjustment (PD-126 board)

Set the VCO free-run frequency. If deviated, the LCD screen will be blurred.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑤ of CN2105 (HSY)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	A2, A3
Specified Value	f = 15734 ± 30Hz (NTSC) f = 15625 ± 30Hz (PAL)

Note1: NTSC: DCR-PC5
PAL: DCR-PC4E/PC5E

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A2		Change the data and set the VCO frequency (f) to the specified value.
3	D	A2		Press PAUSE button.
4	D	A2		Read the data, and this data is named D_{A2}.
5				Convert D_{A2} to decimal notation, and obtain D_{A2}'. (Note2)
6				Calculate D_{A3}' using following equations (Decimal calculation) NTSC model: When $D_{A2}' \leqq 221$ $D_{A3}' = D_{A2}' + 34$ When $D_{A2}' > 221$ $D_{A3}' = 255$ PAL model: When $D_{A2}' \geqq 34$ $D_{A3}' = D_{A2}' - 34$ When $D_{A2}' < 34$ $D_{A3}' = 00$
7				Convert D_{A3}' to a hexadecimal number, and obtain D_{A3}. (Note2)
8	D	A3	D_{A3}	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note2: Refer to “Table 5-4-1. Hexadecimal-decimal Conversion Table”.

2. Bright Adjustment (PD-126 board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ① of CN2105 (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	A5
Specified Value	A = 7.8 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A5		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	D	A5		Press PAUSE button.
4	0	01	00	Set the data.
5				Perform “Black Limit Adjustment”.

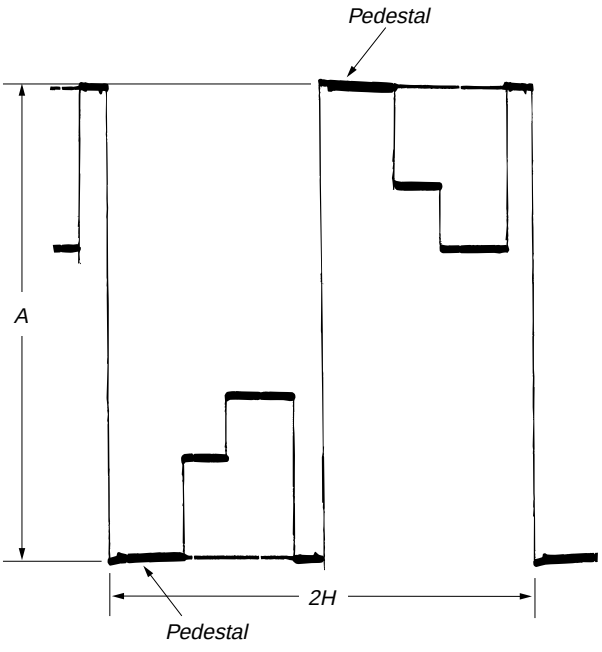


Fig. 5-1-18.

3. Black Limit Adjustment (PD-126 board)

Set the dynamic range of the LCD driver to an appropriate level. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN2105 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	A6
Specified Value	A = 8.60 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	0E	61	Set the data.
3	2	0F		Set the following data. 5B: DCR-PC5 (NTSC) 53: DCR-PC4E/PC5E (PAL)
4	D	A6		Change the data and set the PSIG signal amplitude (A) to the specified value. (The data should be “00” to “0F”.)
5	D	A6		Press PAUSE button.
6	2	0E	00	Set the data.
7	2	0F	00	Set the data.
8	0	01	00	Set the data.
9				Check that the spacified value of “Bright Adjustment” is satisfied. If not, perform “Bright Adjustment”.

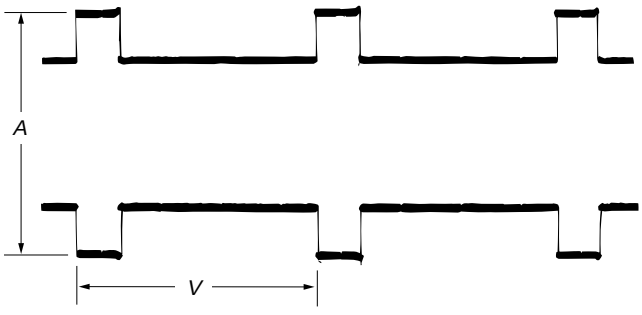


Fig. 5-1-19.

4. Contrast Adjustment (PD-126 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ① of CN2105 (VG)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	AA
Specified Value	A = 2.95 ± 0.05V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	AA		Change the data and set the voltage (A) between the 3 steps peak and pedestal to the specified value. (The data should be “00” to “7F”.)
3	D	AA		Press PAUSE button.
4	0	01	00	Set the data.
5				Check that the specified value of “Bright Adjustment” is satisfied.

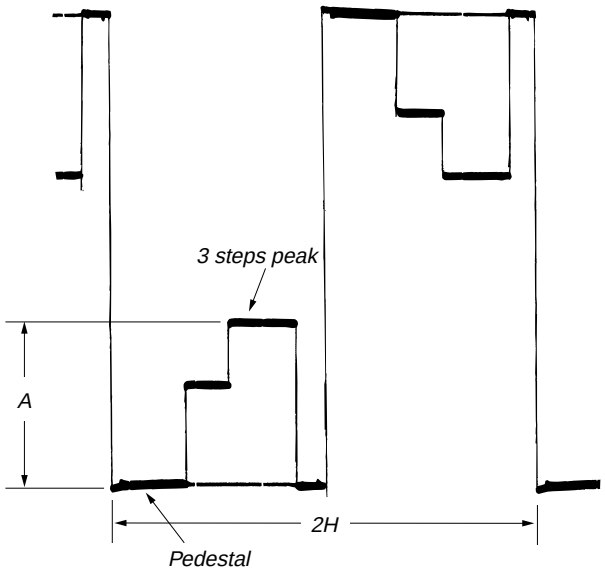


Fig. 5-1-20.

5. Center Level Adjustment (PD-126 board)

Set the video signal center level of LCD panel to an appropriate level.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ① of CN2105 (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	D
Adjustment Address	AB
Specified Value	A = 7.00 ± 0.05Vdc

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	0C	60	Set the data, and press PAUSE button.
3	3	22	08	Set the data, and press PAUSE button.
4	D	AB		Change the data and set the DC voltage (A) to the specified value. (The data should be “00” to “7F”.)
5	D	AB		Press PAUSE button.
6	3	0C	00	Set the data, and press PAUSE button.
7	3	22	00	Set the data, and press PAUSE button.
8	0	01	00	Set the data.

6. V-COM Adjustment (PD-126 board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	A4
Specified Value	The brightness difference between the section A and section B is minimum.

Note: Perform "Bright Adjustment", "Black Limit Adjustment", "Contrast Adjustment" and "Center Level Adjustment" before this adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A4		Change the data so that the brightness of the section A and that of the section B is equal. (The data should be "80" to "BF".)
3	D	A4		Subtract 3 from the data.
4	D	A4		Press PAUSE button.
5	0	01	00	Set the data.

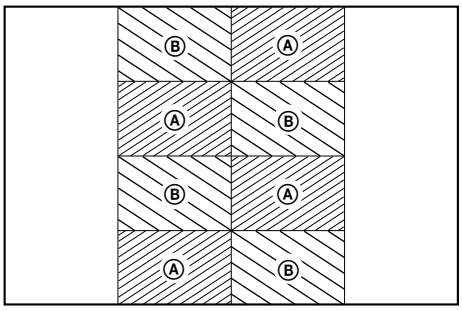


Fig. 5-1-21.

7. White Balance Adjustment (PD-126 board)

Correct the white balance.
If deviated, the reproduction of the LCD screen may degenerate.

Mode	VTR stop
Signal	No signal
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	D
Adjustment Address	A8, A9
Specified Value	The LCD screen should not be colored.

Note1: Check the white balance only when replacing the following parts. If necessary, adjust them.
1. LCD panel
2. Light induction plate
3. IC2101

Note2: Use the AC power adaptor.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	A8	90	Set the data, and press PAUSE button.
3	D	A9	6F	Set the data, and press PAUSE button.
4	D	A9		Check that the LCD screen is not colored. If not colored, proceed to step 10.
5	D	A8		Change the data so that the LCD screen is not colored.
6	D	A8		Press PAUSE button.
7	D	A9		Change the data so that the LCD screen is not colored.
8	D	A9		Press PAUSE button.
9	D	A9		If the LCD screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

5-2. MECHANISM SECTION ADJUSTMENT

On the mechanism section adjustment

For details of mechanism section adjustments, checks, and replacement of mechanism parts, refer to the separate volume "DV MECHANICAL ADJUSTMENT MANUAL Ⅵ J Mechanism ".

2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, set data: 0C, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the record mode automatically.)
   Note: The function buttons become inoperable.
5) To quit the record mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the record mode, be sure to quit following this procedure.)

2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

1) Connect the adjustment remote commander to the LANC jack.
2) Turn the HOLD switch of the adjustment remote commander to the ON position.
3) Close the cassette compartment without the cassette.
4) Select page: 3, address: 01, set data: 0B, and press the PAUSE button of the adjustment remote commander.
   (The mechanism enters the playback mode automatically.)
   Note: The function buttons become inoperable.
5) To quit the playback mode, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander. (Whenever you want to quit the playback mode, be sure to quit following this procedure.)

2-3. TAPE PATH ADJUSTMENT

1. Preparation for Adjustment

1) Clean the tape running side (tape guide, drum, capstan shaft, pinch roller, etc.).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Connect an oscilloscope to VC-245 board CN004 via the CPC-6 flexible jig (J-6082-370-B) and CPC-6 terminal board jig (J-6082-371-A).
   Channel 1: VC-245 board, CN004 Pin ⑳ (Note)
   External trigger: VC-245 board, CN004 Pin ⑰
   Note: Connect a 75 Ω resistor between pins ⑳ of CN004 and ⑲ (GND).
   75 Ω resistor (Parts code: 1-247-804-11)
5) Playback the alignment tape for tracking. (XH2-1)
6) Select page: 3, address: 33, and set data: 08.
7) Select page: 3, address: 26, and set data: 31.
8) Check that the oscilloscope RF waveform is normal at the entrance and exit.
   If not normal, adjust according to the separate volume "DV MECHANICAL ADJUSTMENT MANUAL Ⅵ J Mechanism" .

CN004 of VC-245 board

Pin No.	Signal Name	Pin No.	Signal Name
1	LANC SIG	2	
3		4	EVF VG
5	EVF VCO	6	GND
7		8	
9		10	
11		12	TMS
13	TCK	14	TDI
15	TDO	16	GND
17	SWP	18	RF IN/LANC JACK IN
19	GND	20	RF MON

2. Procedure after operations

1) Connect the adjustment remote commander to the LANC jack and set the HOLD switch to the ON position.
2) Select page: 3, address: 26, and set data: 00.
3) Select page: 3, address: 33, and set data: 00.

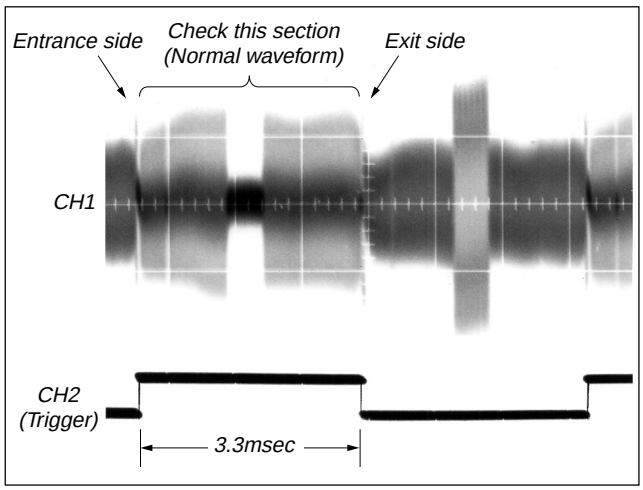


Fig. 5-2-1.

5-3. VIDEO SECTION ADJUSTMENTS

NTSC model : DCR-PC5
PAL model : DCR-PC4E/PC5E

3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment Required

1) TV monitor
2) Oscilloscope (dual-phenomenon, band above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
3) Frequency counter
4) Pattern generator with video output terminal.
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Alignment tapes
    - Tracking standard (XH2-1)
      Parts code: 8-967-997-01
    - SW/OL standard (XH2-3)
      Parts code: 8-967-997-11
    - Audio operation check for NTSC (XH5-3)
      Parts code: 8-967-997-51
    - System operation check for NTSC (XH5-5)
      Parts code: 8-967-997-61
    - BIST check for NTSC (XH5-6)
      Parts code: 8-967-997-71
    - Audio operation check for PAL (XH5-3P)
      Parts code: 8-967-997-55
    - System operation check for PAL (XH5-5P)
      Parts code: 8-967-997-66
    - BIST check for PAL (XH5-6P)
      Parts code: 8-967-997-76
12) Adjustment remote commander (J-6082-053-B)
13) CPC-6 flexible jig (J-6082-370-B) (Note)
14) CPC-6 terminal board jig (J-6082-371-A)

Note: When using the old CPC-6 jig (J-6082-370-A), open the cabinet (R) assembly.

3-1-2. Precautions on Adjusting

1) The adjustments of this unit are performed in the VTR mode or camera mode.
   To set to the VTR mode, set the power switch to "VCR" (or "PLAYER") or set the "Forced VTR Power ON mode" using the adjustment remote commander (Note 1).
   To set to the Camera mode, set the power switch to "CAMERA" or set the "Forced Camera Power ON mode" using the adjustment remote commander (Note 2).
   After completing adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note 3)
2) To remove the cabinet (R), disconnect the following connectors.
   1. VC-245 board CN005 (14P, 0.8mm)
   2. VC-245 board CN006 (8P, 0.8mm)
   3. VC-245 board CN003 (60P, 0.4mm)

   As the Battery terminal, AUDIO/VIDEO jack and LANC jack are provided on the BJ-1 board of the cabinet (R), the BJ-1 board must be connected to the VC-245 board. So remove the BJ-1 board from the cabinet (R). To remove The BJ-1 board from the cabinet (R), disconnect the following connector (The LCD block needs not to be connected.)
   BJ-1 board CN3104 (2P, 0.8mm)
   And connect the BJ-1 board to the following connector of VC-245 board.
   VC-245 board CN003 (60P, 0.4mm)
3) The Lens block and EVF block need not to be connected. To remove them, disconnect the following connectors.
   1. VC-245 board CN001 (88P, 0.4mm)
   2. CF-75 board CN3353 (8P, 0.5mm)
4) As removing CN002 of VC-245 board (removing the control switch block (FK-30350)) means removing the lithium 3V power supply, data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the CN002 has been removed, the self-diagnosis data, data on history of use (total drum rotation time etc.) will be lost. Before removing, note down the self-diagnosis data (data of page: 2, address: B0 to C6) and the data on history use (data of page: 2, address: A2 to AA). (Refer to "5-4.Service Mode" for the data on the history use and the self-diagnosis data.)
5) If the "Forced VTR power ON" mode is set, the cabinet (L) (power switch, control switch block (FK-30350), and speaker) need not be connected. To remove the cabinet (L), disconnect the following connectors.
   VC-245 board CN002 (39P, 0.3mm)

Note 1: Setting the "Forced VTR Power ON" mode (VTR mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.

The above procedure will enable the VTR power to be turned on with the cabinet (L) (Control switch block (FK-30350)) removed.
After completing adjustments, be sure to exit the "Forced Power ON mode".

Note 2: Setting the "Forced Camera Power ON" mode (Camera mode)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.

The above procedure will enable the camera power to be turned on with the cabinet (L) (Control switch block (FK-30350)) removed.
After completing adjustments, be sure to exit the "Forced Power ON mode".

Note 3: Setting the "Forced Memory Power ON" mode (Memory mode) (DCR-PC5/PC5E)
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 05, and press the PAUSE button of the adjustment remote commander.

The above procedure will enable the memory power to be turned on with the cabinet (L) (Control switch block (FK-30350)) removed.
After completing adjustments, be sure to exit the "Forced Power ON mode".

Note 4: Exiting the "Forced Power ON" mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

3-1-3. Adjusting Connectors

Some of the adjusting points of the video section are concentrated at VC-245 board CN004. Connect the measuring instruments via the CPC-6 flexible jig (J-6082-370-B) and CPC-6 terminal board jig (J-6082-371-A). The following table lists the pin numbers and signal names of CN004.

Pin No.	Signal Name	Pin No.	Signal Name
1	LANC SIG	2	
3		4	EVF VG
5	EVF VCO	6	GND
7		8	
9		10	
11		12	TMS
13	TCK	14	TDI
15	TDO	16	GND
17	SWP	18	RF IN/LANC JACK IN
19	GND	20	RF MON

Table 5-3-1.

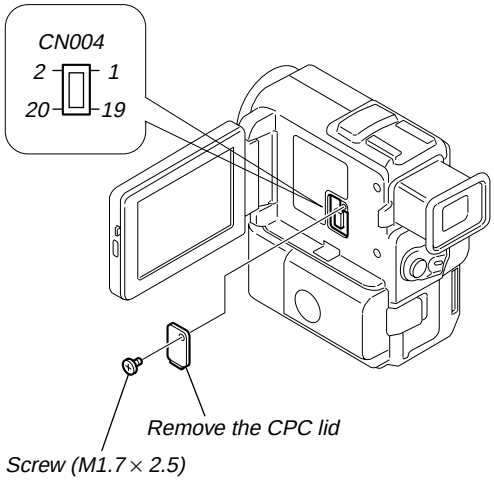


Fig. 5-3-1

3-1-4. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 5-3-2, and perform the adjustments.

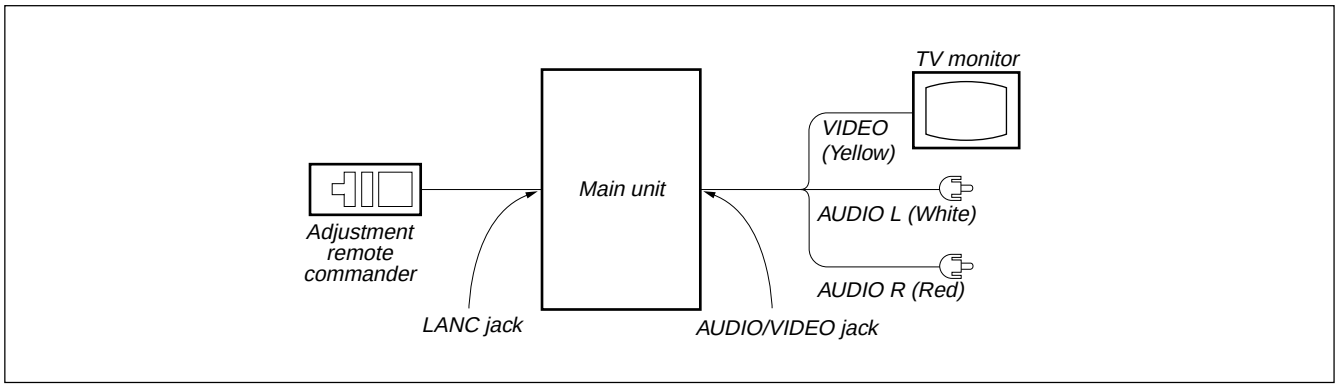


Fig. 5-3-2.

3-1-5. Alignment Tapes

Use the alignment tapes shown in the following table.
Use tapes specified in the signal column of each adjustment.

Name	Use
Tracking standard (XH2-1)	Tape path adjustment
SW/OL standard (XH2-3)	Switching position adjustment
Audio operation check (XH5-3 (NTSC), XH5-3P (PAL))	Audio system adjustment
System operation check (XH5-5 (NTSC), XH5-5P (PAL))	Operation check
BIST check (XH5-6 (NTSC), XH5-6P (PAL))	BIST check

Fig. 5-3-3 shows the 75% color bar signals recorded on the alignment tape for Audio Operation Check.

Note: Measure with video terminal (Terminated at 75 Ω)

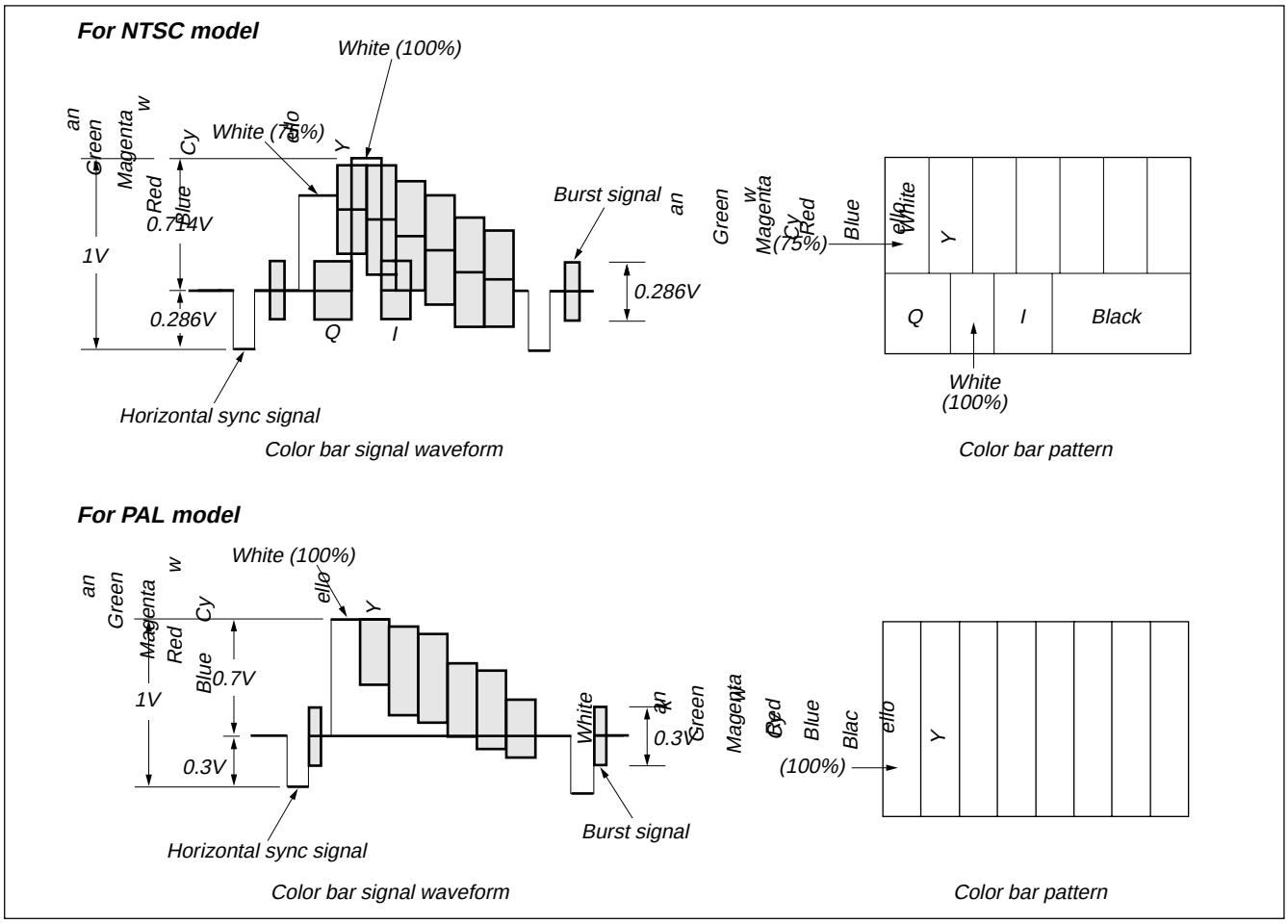


Fig. 5-3-3. Color bar signal of alignment tapes

3-1-6. Input/Output Level and Impedance

Video input/output
- Special stereo mini jack
- Video signal: 1 Vp-p, 75 Ω unbalanced, sync negative

S video input/output
- 4-pin mini DIN
- Luminance signal: 1 Vp-p, 75 Ω unbalanced, sync negative
- Chrominance signal: 0.286 Vp-p, 75 Ω unbalanced (NTSC)
  : 0.300 Vp-p, 75 Ω unbalanced (PAL)

Audio input/output
- Special stereo mini jack
- Input level: 327mV
- Input impedance: More than 47kΩ
- Output level: 327 mV (at load impedance 47 kΩ)
- Output impedance: Below 2.2 kΩ

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Initialization of B, C, D, E, F, 7, 8 Page Data

If the B, C, D, E, F, 7, 8 page data is erased due to some reason, perform "1-2. INITIALIZATION OF B, C, D, E, F, 7, 8 PAGE DATA", of "5-1. CAMERA SECTION ADJUSTMENT"

2. Serial No. Input

2-1. Company ID Input

Write the company ID in the EEPROM (nonvolatile memory).

Page	C
Address	E8, E9, EA, EB, EC

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Input the following data to page: C, addresses: E8 to EC.
   Note: Press the PAUSE button of the adjustment remote commander each time to set the data.

Address	Data
E8	08
E9	00
EA	46
EB	01
EC	01

3) Select page: 0, address: 01, and set data: 00.

2-2. Serial No. Input

Write the serial No. and model code in the EEPROM (nonvolatile memory). Convert the serial No. on the name plate from decimal to hexadecimal, and write in the EEPROM.

Page	C
Address	ED, EE, EF

Input method:

1) Select page: 0, address: 01, and set data: 01.
2) Read the serial No. on the name plate, and take it as D_1.
   Example: If the serial No. is 77881.
   D_1=77881
3) Obtain D_2 and H_1 corresponding to D_1 from Table 5-3-2.
   Example: If D_1 is "77881".
   $D_2=D_1-65536=12345$
   H_1=FE

D_1 (Decimal)	D_2 (Decimal)	H_1 (Hexadecimal) (Service model code)
000001 to 065535	D_1	FE
065536 to 131071	$D_1-65536$	FE
131072 to 196607	$D_1-131072$	FE

Table 5-3-2.

4) Input H_1 to page: C, address: ED. (Model code input)
   Example: If H_1 is "FE".
   Select page: C, address: ED, set data: FE, and press the PAUSE button.
5) Obtain the maximum decimal not exceeding D_2 from Table 5-3-3, and take this as D_3.
   Example: If D_2 is "12345".
   D_3=12288
6) Obtain the hexadecimal corresponding to D_3 from Table 5-3-3, and take this as H_3.
   Example: If D_3 is "12288".
   H_3=3000
7) Obtain the difference D_4 between D_2 and D_3. (Decimal calculation, $0 \leqq D_4 \leqq 255$)
   $D_4= D_2-D_3$
   Example: If D_2 is "12345" and D_3 is "12288".
   D_4=12345–12288=57
8) Convert D_4 to hexadecimal, and take this as H_4.
   (Refer to "Hexadecimal-decimal conversion table" in "5-4. Service Mode".)
   Example: If D_4 is "57".
   H_4=39
9) Input the upper 2 digits of H_3 to page: C, address: EE.
   Example: If H_3 is "3000".
   Select page: C, address: EE, set data: 30, and press the PAUSE button.
10) Input H_4 to page: C, address: EF.
    Example: If H_4 is "39".
    Select page: C, address: EF, set data: 39, and press the PAUSE button.
11) Select page: 0, address: 01, and set data: 00.

Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)	Decimal (D_3)	Hexa-decimal (H_3)
0	0000	8192	2000	16384	4000	24576	6000	32768	8000	40960	A000	49152	C000	57344	E000
256	0100	8448	2100	16640	4100	24832	6100	33024	8100	41216	A100	49408	C100	57600	E100
512	0200	8704	2200	16896	4200	25088	6200	33280	8200	41472	A200	49664	C200	57856	E200
768	0300	8960	2300	17152	4300	25344	6300	33536	8300	41728	A300	49920	C300	58112	E300
1024	0400	9216	2400	17408	4400	25600	6400	33792	8400	41984	A400	50176	C400	58368	E400
1280	0500	9472	2500	17664	4500	25856	6500	34048	8500	42240	A500	50432	C500	58624	E500
1536	0600	9728	2600	17920	4600	26112	6600	34304	8600	42496	A600	50688	C600	58880	E600
1792	0700	9984	2700	18176	4700	26368	6700	34560	8700	42752	A700	50944	C700	59136	E700
2048	0800	10240	2800	18432	4800	26624	6800	34816	8800	43008	A800	51200	C800	59392	E800
2304	0900	10496	2900	18688	4900	26880	6900	35072	8900	43264	A900	51456	C900	59648	E900
2560	0A00	10752	2A00	18944	4A00	27136	6A00	35328	8A00	43520	AA00	51712	CA00	59904	EA00
2816	0B00	11008	2B00	19200	4B00	27392	6B00	35584	8B00	43776	AB00	51968	CB00	60160	EB00
3072	0C00	11264	2C00	19456	4C00	27648	6C00	35840	8C00	44032	AC00	52224	CC00	60416	EC00
3328	0D00	11520	2D00	19712	4D00	27904	6D00	36096	8D00	44288	AD00	52480	CD00	60672	ED00
3584	0E00	11776	2E00	19968	4E00	28160	6E00	36352	8E00	44544	AE00	52736	CE00	60928	EE00
3840	0F00	12032	2F00	20224	4F00	28416	6F00	36608	8F00	44800	AF00	52992	CF00	61184	EF00
4096	1000	12288	3000	20480	5000	28672	7000	36864	9000	45056	B000	53248	D000	61440	F000
4352	1100	12544	3100	20736	5100	28928	7100	37120	9100	45312	B100	53504	D100	61696	F100
4608	1200	12800	3200	20992	5200	29184	7200	37376	9200	45568	B200	53760	D200	61952	F200
4864	1300	13056	3300	21248	5300	29440	7300	37632	9300	45824	B300	54016	D300	62208	F300
5120	1400	13312	3400	21504	5400	29696	7400	37888	9400	46080	B400	54272	D400	62464	F400
5376	1500	13568	3500	21760	5500	29952	7500	38144	9500	46336	B500	54528	D500	62720	F500
5632	1600	13824	3600	22016	5600	30208	7600	38400	9600	46592	B600	54784	D600	62976	F600
5888	1700	14080	3700	22272	5700	30464	7700	38656	9700	46848	B700	55040	D700	63232	F700
6144	1800	14336	3800	22528	5800	30720	7800	38912	9800	47104	B800	55296	D800	63488	F800
6400	1900	14592	3900	22784	5900	30976	7900	39168	9900	47360	B900	55552	D900	63744	F900
6656	1A00	14848	3A00	23040	5A00	31232	7A00	39424	9A00	47616	BA00	55808	DA00	64000	FA00
6912	1B00	15104	3B00	23296	5B00	31488	7B00	39680	9B00	47872	BB00	56064	DB00	64256	FB00
7168	1C00	15360	3C00	23552	5C00	31744	7C00	39936	9C00	48128	BC00	56320	DC00	64512	FC00
7424	1D00	15616	3D00	23808	5D00	32000	7D00	40192	9D00	48384	BD00	56576	DD00	64768	FD00
7680	1E00	15872	3E00	24064	5E00	32256	7E00	40448	9E00	48640	BE00	56832	DE00	65024	FE00
7936	1F00	16128	3F00	24320	5F00	32512	7F00	40704	9F00	48896	BF00	57088	DF00	65280	FF00

Table 5-3-3.

3. Touch Panel Adjustment (VC-245 board)

Adjust the calibration of the touch panel.

Mode	VTR stop
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	E0 to E3

Note 1: Protect the Touch panel (LCD screen) with a transparent sheet.
Note 2: Turn off the HOLD switch of the adjustment remote commander.

Adjusting method:

1) While pressing the DISPLAY button, set the POWER switch from OFF to VCR (or PLAYER).
2) Using a ball-point pen etc., push the center of "×" indicated in the part A.
3) Using a ball-point pen etc., push the center of "×" indicated in the part B.
4) Using a ball-point pen etc., push the center of "×" indicated in the part C.

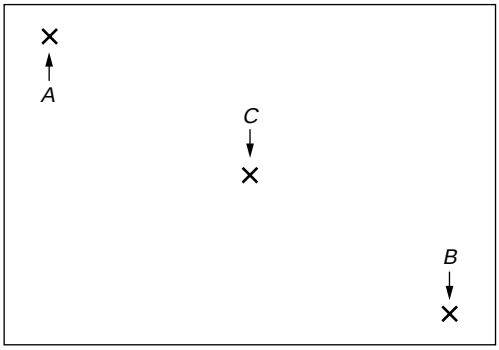


Fig. 5-3-4.

4. Battery End Check (VC-245 board)

Check the battery end voltage.

Mode	Camera recording and VTR playback
Subject	Arbitrary

Note: It is normal though the following symptoms appear during the battery end check.
1) The message of "FOR InfoLITHIUM BATTERY ONLY" on the LCD or viewfinder screen.
2) The tally lamp is flashing.

Connection:

1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-3-5.

Checking method:

1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 3.5 ± 0.1Vdc.
2) Turn off the power supply.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Turn on the power supply.
5) Load a cassette, and set to the camera recording mode.
6) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 3.3 ± 0.1Vdc.
7) Record the camera signal for a minute.
8) Playback the recorded section and check that the playback picture and sound are normal.

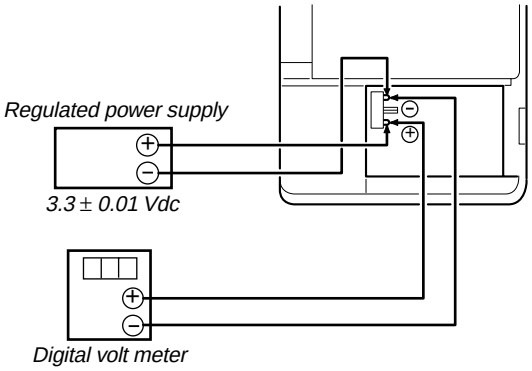


Fig. 5-3-5.

3-3. SERVO AND RF SYSTEM ADJUSTMENT

Before perform the servo and RF system adjustments, check that the specified value of "36 MHz Origin Oscillation Adjustment" of "CAMERA SYSTEM ADJUSTMENT" is satisfied.

Adjusting Procedure:

1. Cap FG duty adjustment
2. PLL f_0 & LPF f_0 adjustment
3. Switching position adjustment
4. AGC center level
5. APC & AEQ adjustment

1. Cap FG Duty Adjustment (VC-245 Board)

Set the Cap FG signal duty cycle to 50% to establish an appropriate capstan servo. If deviated, the uneven rotation of capstan and noise can occur.

Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	16
Specified Value	00

Adjusting method:

Order	Page	Address	Data	Procedure
1				Close the cassette compartment without inserting a cassette.
2	0	01	01	Set the data.
3	3	01	1B	Set the data, and press PAUSE button.
4	3	02		Check that the data changes in the following order. "1B" → "2B" → "00"
5	3	03		Check that the data is "00". (Note)
6	0	01	00	Set the data.

Note: If the data is "01", adjustment has errors or the mechanism deck is defective.

2. PLL f_0 & LPF f_0 Adjustment (VC-245 Board)

Mode	VTR stop
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified Value	Bit2, bit3, bit4 and bit6 are "0"

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	01	30	Set the data, and press PAUSE button.
3	3	02		Check that the data changes to "00".
4	3	03		Check that bit2, bit3, bit4 and bit6 are "0". (Note)
5	0	01	00	Set the data.

Note: If bit2, bit3, bit4 or bit6 of the data is "1", there are errors. For the error contents, see the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03 data	Error contents
bit 4 = 1	PLL f_0 is defective
bit 6 = 1	LPF f_0 is defective
bit 3 = 1	PLL f_0 final adjustment is defective
bit 2 = 1	PLL f_0 final adjustment time-out

3. Switching Position Adjustment (VC-245 Board)

Mode	VTR playback
Signal	SW/OL reference tape (XH2-3)
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	00

Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert the SW/OL reference tape and enter the VTR STOP mode.
2	0	01	01	Set the data.
3	3	21		Check that the data is “02”. (Note1)
4	3	01	0D	Set the data, and press PAUSE button.
5	3	02		Check that the data changes to “00”.
6	3	03		Check that the data is “00”. (Note2)
7	0	01	00	Set the data.

Note1: If the data of page: 3, address: 21 is “72”, the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 4 and higher.

Note2: If bit 0 of the data is “1”, the even channel is defective. If bit 1 is “1”, the odd channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)

When the even channel is defective

Data of page: C, address: 10	Contents of defect
EE	Writing into EEPROM (IC502) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC301 (CAIN)

When the odd channel is defective

Data of page: C, address: 12	Contents of defect
EE	Writing into EEPROM (IC502) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC301 (CAIN)

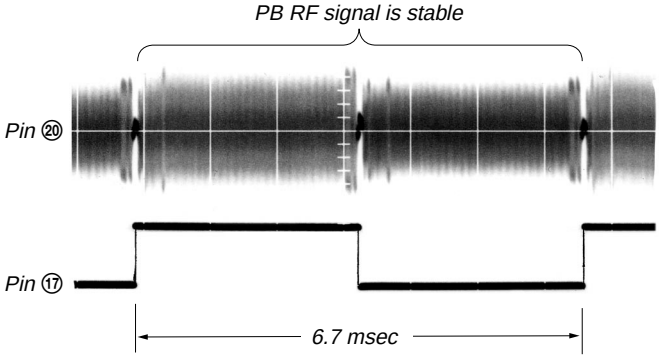


Fig. 5-3-5.

4. AGC Center Level and APC & AEQ Adjustment

4-1. Preparations before adjustments

Mode	Camera recording
Subject	Arbitrary

Adjusting method:

Order	Page	Address	Data	Procedure
1	2	30	40	Set the data.
2				Record the camera signal for three minutes.

4-2. AGC Center Level Adjustment (VC-245 Board)

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑳ of CN004 (RF MON) (Note 1) Ext. trigger: Pin ⑰ of CN004 (SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	1E
Specified Value	The data of page: 3, address: 03 is “00”

Note 1: Connect a 75Ω resistor between Pin ⑳ and Pin ⑲ (GND) of CN004.
75Ω resistor (Parts code: 1-247-804-11)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at “Preparations before adjustments”
2	0	01	01	Set the data.
3	3	33	08	Set the data.
4				Confirm that the playback RF signal is stable. (Fig. 5-3-5.)
5	3	01	23	Set the data, and press PAUSE button.
6	3	02		Check that the data is “00”.
7	3	03		Check that the data is “00”. (Note2)
8				Perform “APC & AEQ Adjustment”.

Note2: If the data of page: 3, address: 03 is other than “00”, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)

Data	Contents of defect
20	Perform re-adjustment. (Note 3)
30	The machine is defective
40	Perform re-adjustment. (Note 3)
50	The machine is defective

Note 3: If this data is displayed twice successively, the machine is defective.

4-3. APC & AEQ Adjustment (VC-245 Board)

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑳ of CN004 (RF MON) (Note 1) Ext. trigger: Pin ⑰ of CN004 (SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	18, 19, 1B, 1C, 21, 2C
Specified Value	The data of page: 3, address: 03 is “00”

Note 1: Connect a 75Ω resistor between Pin ⑳ and Pin ⑲ (GND) of CN004.
75Ω resistor (Parts code: 1-247-804-11)

Note 2: The “AGC Center Level Adjustment” must have already been completed before starting this adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at “Preparations before adjustments”
2	0	01	01	Set the data.
3	3	33	08	Set the data.
4				Confirm that the playback RF signal is stable. (Fig. 5-3-6.)
5	3	01	07	Set the data, and press PAUSE button.
6	3	02		Check that the data changes from “07” to “00” in about 20 seconds after pressing PAUSE button.
7	3	03		Check that the data is “00”. (Note3)
8				Perform “Processing after Completing Adjustments”.

Note3: If the data is other than “00”, adjustment has errors. Take an appropriate remedial measures according to the errors referring to the following table.

Data	Contents of defect
20	Perform re-adjustment. (Note 4)
30	The machine is defective
50	Perform re-adjustment. (Note 4)
60	The machine is defective
80	The machine is defective

Note 4: If this data is displayed twice successively, the machine is defective.

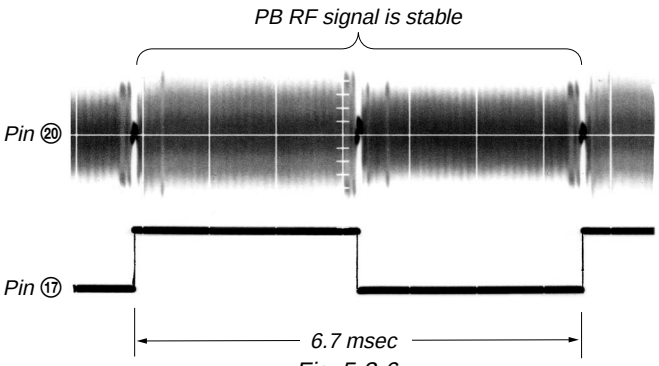


Fig. 5-3-6.

4-4. Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	2	30	00	Set the data.
2	3	33	00	Set the data.
3	0	01	00	Set the data.

3-4. VIDEO SYSTEM ADJUSTMENTS

Before perform the video system adjustments, check that the specified value of "36MHz Origin Oscillation Adjustment" of "CAMERA SYSTEM ADJUSTMENT" is satisfied.

3-4-1. Base Band Block Adjustments

1. Chroma BPF f_0 Adjustment (VC-245 Board)

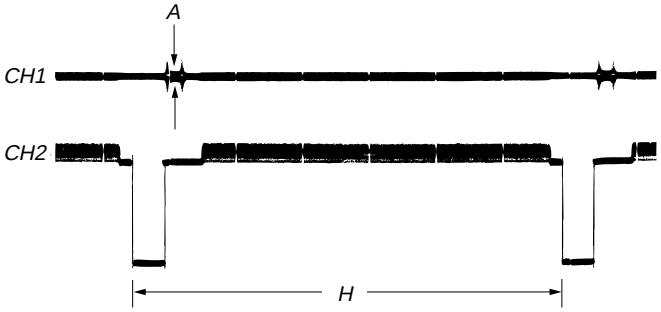
Set the center frequency of IC1301 chroma band-pass filter.

Mode	Camera
Subject	All black (Cover the lens with the lens cap)
Measurement Point	CH1: Chroma signal terminal of S VIDEO jack (75Ω terminated) CH2: Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	28
Specified Value	A = 100mVp-p or less B = 200mVp-p or more

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2				Check that the burst signal (B) is output to the chroma signal terminal of S VIDEO jack.
3	3	0C	04	Set the data, and press PAUSE button.
4	C	28		Change the data for minimum amplitude of the burst signal level (A). (The data should be "00" to "07".)
5	C	28		Press PAUSE button.
6	3	0C	00	Set the data, and press PAUSE button.
7				Check that the burst signal level (B) satisfies the specified value.
8	0	01	00	Set the data.

When the data of page: 3, address: 0C, is 04:



When the data of page: 3, address: 0C, is 00:

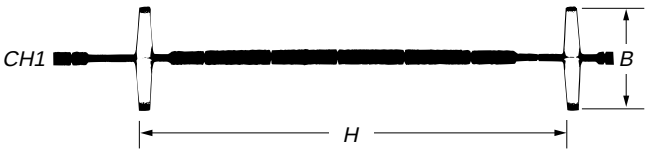


Fig. 5-3-7.

2. S VIDEO OUT Y Level Adjustment (VC-245 Board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified Value	A = 1000 ± 14mV

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	35		Note down the data.
3	2	35	01	Set the data.
4	3	0C	02	Set the data, and press PAUSE button.
5	C	25		Change the data and set the Y signal level (A) to the specified value.
6	C	25		Press PAUSE button.
7	3	0C	00	Set the data, and press PAUSE button.
8	2	35		Set the data that is noted down at step 2.
9	0	01	00	Set the data.

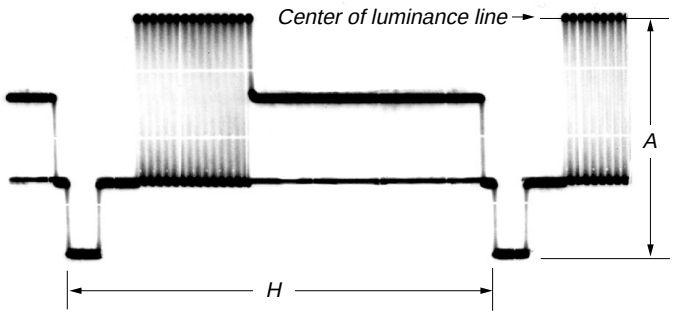


Fig. 5-3-8.

3. S VIDEO OUT Chroma Level Adjustment (VC-245 Board)

Mode	Camera
Subject	Arbitrary
Measurement Point	Chroma signal terminal of S VIDEO jack (75Ω terminated) External trigger: Y signal terminal of S VIDEO jack
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	26, 27
Specified Value	Cr level: A = 714 ± 14mV(NTSC) A = 700 ± 14mV(PAL) Cb level: B = 714 ± 14mV(NTSC) B = 700 ± 14mV(PAL) Burst level: C = 286 ± 6mV(NTSC) C = 300 ± 6mV(PAL)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	35		Note down the data.
3	2	35	01	Set the data.
4	3	0C	02	Set the data, and press PAUSE button.
5	C	26		Change the data and set the Cr signal level (A) to the specified value.
6	C	26		Press PAUSE button.
7	C	27		Change the data and set the Cb signal level (B) to the specified value.
8	C	27		Press PAUSE button.
9				Check that the burst signal level (C) is satisfied the specified value.
10	3	0C	00	Set the data, and press PAUSE button.
11	2	35		Set the data that is noted down at step 2.
12	0	01	00	Set the data.

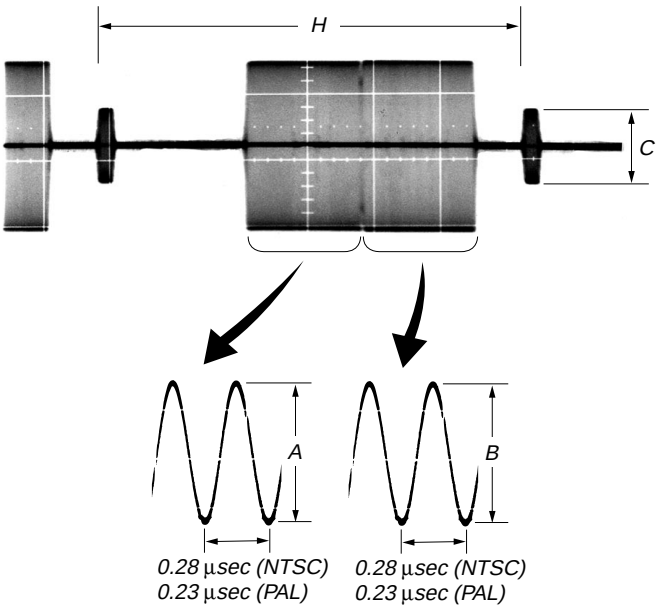


Fig. 5-3-9.

4. VIDEO OUT Y, Chroma Level Check (VC-245 Board)

Mode	Camera
Subject	Arbitrary
Measurement Point	VIDEO terminal of AUDIO/VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = 286 ± 18mV(NTSC) A = 300 ± 18mV(PAL) Burst level: B = 286 ± 18mV(NTSC) B = 300 ± 18mV(PAL)

Adjusting method:

Order	Page	Address	Data	Procedure
1	2	35		Note down the data.
2	2	35	01	Set the data.
3	3	0C	02	Set the data, and press PAUSE button.
4				Check that the sync signal level (A) satisfies the specified value.
5				Check that the burst signal level (B) satisfies the specified value.
6	3	0C	00	Set the data, and press PAUSE button.
7	2	35		Set the data that is noted down at step 1.
8	0	01	00	Set the data.

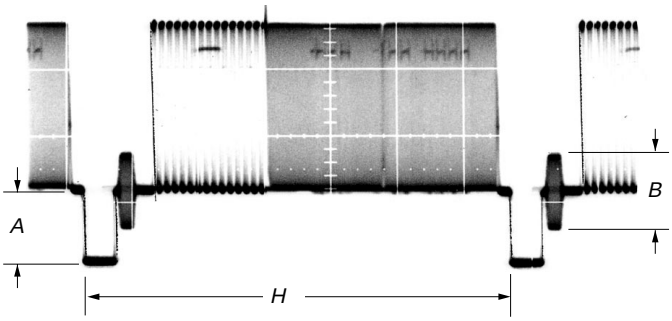


Fig. 5-3-10.

3-4-2. BIST Check

Switch setting:
LCD panel ..... Open

1. Playback System Check

1-1. Preparations for Playback

Order	Page	Address	Data	Procedure
1				Set the POWER switch to VCR or PLAYER position.
2				Connect the adjustment remote commander and set the HOLD switch to ON (SERVICE) position.
3	0	01	01	Set the data.
4	C	42	00	Set the data, and press PAUSE button.
5				Playback the BIST check tape. (XH5-6 (NTSC), XH5-6P (PAL))
6				Press DISPLAY button and erase the indicators on the LCD screen.

Note1: Perform the following checks in the playback mode.
Note2: Use the AC power adaptor or the battery (Info LITHIUM S series).

1-2. IC301 TRX (RF) PB BIST Check

Order	Page	Address	Data	Procedure
1	3	70	04	Set the data, and press PAUSE button.
2	3	70	00	Set the data, and press PAUSE button.
3	3	73		Check that the data is equal to either of the following values. And memorize the case number of the value. NTSC model: 63 (Case1), C5 (Case2), 75 (Case3), D3 (Case4), 59 (Case5), FF (Case6) PAL model: 86 (Case1), AA (Case2), 90 (Case3)
4	3	74		Check that the data is equal to the following value which case number is equal to that of address 73. NTSC model: 84 (Case1), 55 (Case2), 07 (Case3), D6 (Case4), 01 (Case5), D0 (Case6) PAL model: 35 (Case1), 33 (Case2), B6 (Case3)
5	3			If the data of address 73 and address 74 are correct, IC301 TRX (RF) playback system is normal.

1-3. IC301 AUD (ABUS) PB BIST Check

Order	Page	Address	Data	Procedure
1	3	11	04	Set the data, and press PAUSE button.
2	3	12	08	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	03	Set the data, and press PAUSE button.
5	3	14		Check that the data is the following value. NTSC model: 41 PAL model: 2D
6	3	15		Check that the data is the following value. NTSC model: 81 PAL model: 7C
7	3			If the data of address 14 and address 15 are correct, IC301 AUD (ABUS) playback system is normal.

1-4. IC301 VFD PB BIST Check
• EX Y BIST Check

Order	Page	Address	Data	Procedure
1	3	12	10	Set the data, and press PAUSE button.
2	3	12	00	Set the data, and press PAUSE button.
3	3	13	04	Set the data, and press PAUSE button.
4	3	14		Check that the data is the following value. NTSC model: FB PAL model: 54
5	3	15		Check that the data is the following value. NTSC model: F4 PAL model: ED
6	3			If the data of address 14 and address 15 are correct, IC301 EX Y playback system is normal.

• EVF Y BIST Check

Order	Page	Address	Data	Procedure
1	3	10	88	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is the following value. NTSC model: 9B PAL model: 20
6	3	15		Check that the data is the following value. NTSC model: C3 PAL model: F8
7	3			If the data of address 14 and address 15 are correct, IC301 EVF Y playback system is normal.

• EVF Cb BIST Check

Order	Page	Address	Data	Procedure
1	3	10	8A	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is the following value. NTSC model: A9 PAL model: AA
6	3	15		Check that the data is the following value. NTSC model: 39 PAL model: 03
7	3			If the data of address 14 and address 15 are correct, IC301 EVF Cb playback system is normal.

• EVF Cr BIST Check

Order	Page	Address	Data	Procedure
1	3	10	89	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is the following value. NTSC model: 2E PAL model: 33
6	3	15		Check that the data is the following value. NTSC model: 34 PAL model: DD
7	3			If the data of address 14 and address 15 are correct, IC301 EVF Cr playback system is normal.

• PANEL Y BIST Check

Order	Page	Address	Data	Procedure
1	3	10	98	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is the following value. NTSC model: 9B PAL model: 20
6	3	15		Check that the data is the following value. NTSC model: C3 PAL model: F8
7	3			If the data of address 14 and address 15 are correct, IC301 PANEL Y playback system is normal.

• PANEL Cr BIST Check

Order	Page	Address	Data	Procedure
1	3	10	99	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is the following value. NTSC model: 2E PAL model: 33
6	3	15		Check that the data is the following value. NTSC model: 34 PAL model: DD
7	3			If the data of address 14 and address 15 are correct, IC301 PANEL Cr playback system is normal.

• PANEL Cb BIST Check

Order	Page	Address	Data	Procedure
1	3	10	9A	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is the following value. NTSC model: A9 PAL model: AA
6	3	15		Check that the data is the following value. NTSC model: 39 PAL model: 03
7	3			If the data of address 14 and address 15 are correct, IC301 PANEL Cb playback system is normal.

1-5. IC301 ENCODER BIST Check

• Preparations

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	8	21	0F	Set the data, and press PAUSE button.

• ENCODER Ya BIST Check

Order	Page	Address	Data	Procedure
1	3	10	8B	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is the following value. NTSC model: FD PAL model: 58
6	3	15		Check that the data is the following value. NTSC model: 3E PAL model: BE
7	3			If the data of address 14 and address 15 are correct, IC301 ENCORDER Ya playback system is normal.

• ENCODER Yb BIST Check

Order	Page	Address	Data	Procedure
1	3	10	8C	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is the following value. NTSC model: 94 PAL model: A1
6	3	15		Check that the data is the following value. NTSC model: D6 PAL model: ED
7	3			If the data of address 14 and address 15 are correct, IC301 ENCORDER Yb playback system is normal.

• ENCODER Ca BIST Check

Order	Page	Address	Data	Procedure
1	3	10	8D	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is equal to either of the following values. And memorize the case number of the value. NTSC model: 11 (Case1), 4E (Case2) PAL model: E8 (Case1), 7B (Case2)
6	3	15		Check that the data is equal to the following value which case number is equal to that of address 14. NTSC model: FD (Case1), 3B (Case2) PAL model: 62 (Case1), B0 (Case2)
7	3			If the data of address 14 and address 15 are correct, IC301 ENCODER Ca playback system is normal.

• ENCODER Cb BIST Check

Order	Page	Address	Data	Procedure
1	3	10	8E	Set the data, and press PAUSE button.
2	3	12	10	Set the data, and press PAUSE button.
3	3	12	00	Set the data, and press PAUSE button.
4	3	13	04	Set the data, and press PAUSE button.
5	3	14		Check that the data is equal to either of the following values. And memorize the case number of the value. NTSC model: 5C (Case1), BC (Case2) PAL model: 96 (Case1), 35 (Case2)
6	3	15		Check that the data is equal to the following value which case number is equal to that of address 14. NTSC model: 20 (Case1), A8 (Case2) PAL model: 79 (Case1), 7C (Case2)
7	3			If the data of address 14 and address 15 are correct, IC301 ENCODER Cb playback system is normal.

1-6. Processing after Completing Playback System Check

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	42		Set the following data, and press PAUSE button. 00: DCR-PC4E 28: DCR-PC5/PC5E
3	8	21	03	Set the data, and press PAUSE button.
4	0	01	00	Set the data.
5				Turn off the power and turn on again.

2. Recording System Check

2-1. Preparations for recording

Order	Page	Address	Data	Procedure
1				Playback the BIST check tape. (XH5-6(NTSC), XH5-6P(PAL))
2	3	10	C0	Set the data, and press PAUSE button.
3	3	11	07	Set the data, and press PAUSE button.
4				Enter the stop mode.
5				While keep the HOLD switch of the adjustment remote commander at ON (SERVICE) position, eject the BIST check tape.
6				Close the cassette compartment without inserting a cassette.
7				Set the power switch to “CAMERA”.
8	3	01	0C	Set the data, and press PAUSE button.

2-2. IC301 TRX (RF) REC BIST Check

Order	Page	Address	Data	Procedure
1	3	70	04	Set the data, and press PAUSE button.
2	3	70	00	Set the data, and press PAUSE button.
3	3	71		Check that the data is equal to either of the following values. And memorize the case number of the value. NTSC model: 26 (Case1), 5E (Case2) PAL model: 53 (Case1), 77 (Case2)
4	3	72		Check that the data is equal to the following value which case number is equal to that of address 71. NTSC model: 95 (Case1), E3 (Case2) PAL model: DF (Case1), D5 (Case2)
5	3			If the data of address 71 and address 72 are correct, IC301 TRX (RF) recording system is normal.

2-3. Processing after Completing Recording System Check

Order	Page	Address	Data	Procedure
1	3	01	00	Set the data, and press PAUSE button.
2				Turn off the power and turn on again.

3-5. AUDIO SYSTEM ADJUSTMENTS

[Connection of Audio System Measuring Devices]

Connect the audio system measuring devices as shown in Fig. 5-3-11.

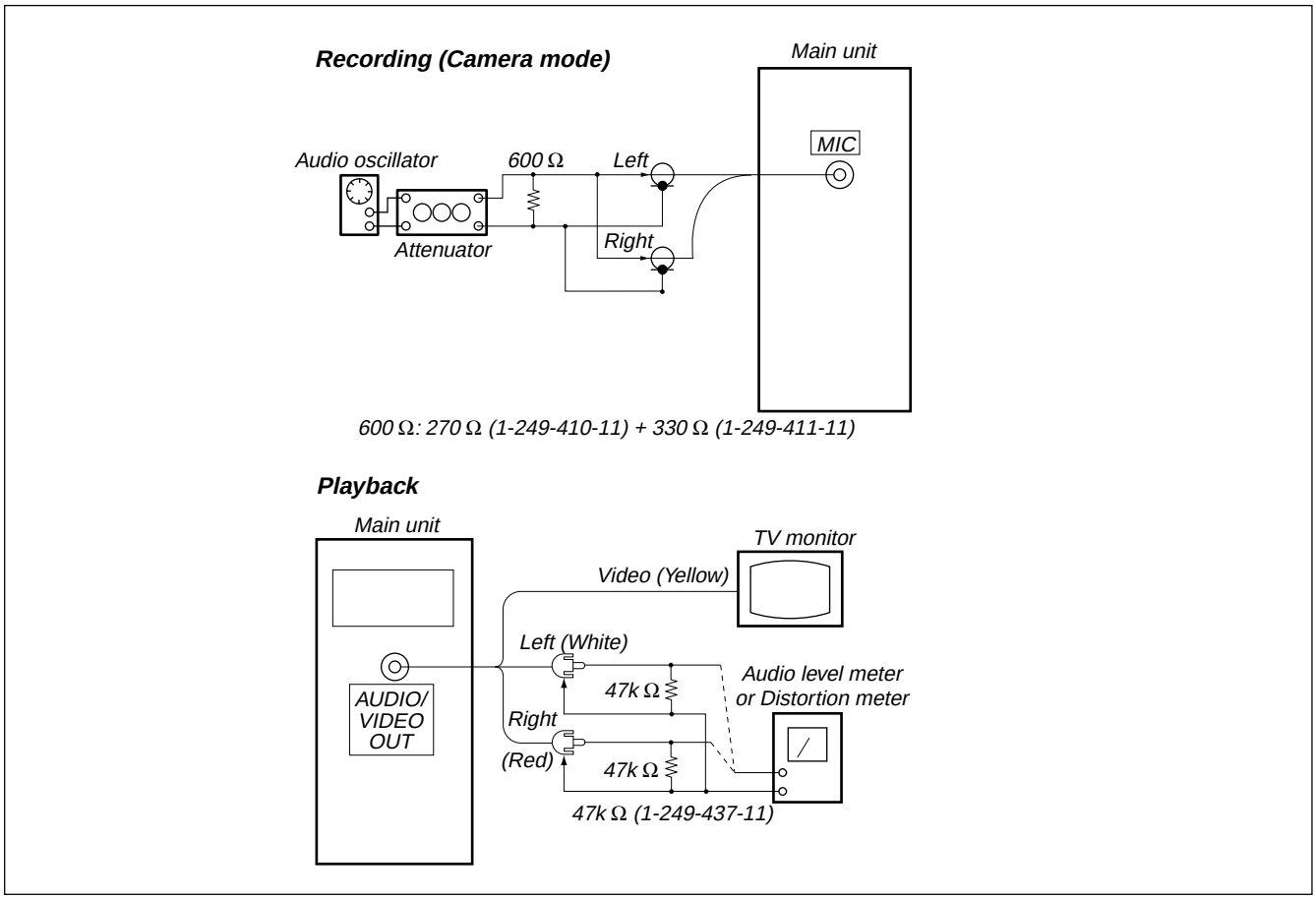


Fig. 5-3-11.

1. Playback Level Check

Mode	VTR playback
Signal	Alignment tape: For audio operation check (XH5-3 (NTSC)) (XH5-3P (PAL))
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: 1 kHz, +3.0 ± 2.0dBs 48 kHz mode: 1 kHz, +3.0 ± 2.0dBs 44.1 kHz mode: The 7.35kHz signal level during EMP OFF is +2.0 ± 2.0dBs. The 7.35kHz signal level during EMP ON is –6 ± 2 dB from the signal level during EMP OFF.

Checking Method:
1) Check that the playback signal level is the specified value.

2. Overall Level Characteristics Check

Mode	Camera recording and playback
Signal	400Hz, –66 dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	–7.5 ± 3.0dBs

Checking Method:
1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the 400Hz signal level is the specified value.

3. Overall Distortion Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack left and right
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.4% (200Hz to 6kHz BPF ON)

Checking Method:
1) Input the 400Hz, –66dBs signal in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the distortion is the specified value.

4. Overall Noise Level Check

Mode	Camera recording and playback
Signal	No signal: Insert a shorting plug in the MIC jack
Measurement Point	Audio left or right terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	Below –45dBs (IHF-A filter ON, 20kHz LPF ON)

Checking Method:
1) Insert a shorting plug in the MIC jack.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the noise level is the specified value.

5. Overall Separation Check

Mode	Camera recording and playback
Signal	400Hz, –66dBs signal: MIC jack <right> [left] (Connect the MIC jack <left> [right] to GND)
Measurement Point	Audio <left> [right] terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	Below –40dBs (IHF-A filter ON)

< > : Left channel check
[ ] : Right channel check

Checking Method:
1) Input the 400Hz, –66dBs signal in the <right> [left] terminal of the MIC jack only.
2) Record in the camera mode.
3) Playback the recorded section.
4) Check that the signal level of the audio <left> [right] terminal is the specified value.

5-4. SERVICE MODE

4-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the adjustment remote commander

1) Connect the adjustment remote commander to the LANC terminal.
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-4-1.

Fig. 5-4-1

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0 1 2 3 4 5 6 7 8 9 A B C D E F
LCD Display	0 1 2 3 4 5 6 7 8 9 A b c d E F
Decimal notation conversion value	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   - Changing the address
     The address increases when the FF (►►) button is pressed, and decreases when the REW (◄◄) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (B, C, D, F, 7, 8 page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply once.

2. Precautions upon using the adjustment remote commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

4-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table

	Lower digit of hexadecimal / Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (C)	D (d)	E (E)	F (F)
	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
	3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
	4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
	5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
	6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
	7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
	8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
	9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
	A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
①	B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
	C (C)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
	D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
	E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
	F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

② (above the D (d) column)

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-4-1.

4-3. SERVICE MODE

1. Setting the Test Mode

Page D	Address 10

Data	Function
00	Normal
01	Forced camera power ON
02	Forced VTR power ON
03	Forced camera + VTR power ON
05	Forced memory power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE button of the adjustment remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Emergence Memory Address

Page C	Address F4 to FF

Address	Contents
F4	EMG code when first error occurs
F6	Upper: MSW code when shift starts when first error occurs Lower: MSW code when first error occurs
F7	Lower: MSW code to be moved when first error occurs
F8	EMG code when second error occurs
FA	Upper: MSW code when shift starts when second error occurs Lower: MSW code when second error occurs
FB	Lower: MSW code to be moved when second error occurs
FC	EMG code when last error occurs
FE	Upper: MSW code when shift starts when last error occurs Lower: MSW code when last error occurs
FF	Lower: MSW code to be moved when last error occurs

When no error occurs in this unit, data “00” is written in the above addresses (F4 to FF). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (F4 to F7). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (F8 to FB). Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (FC to FF).

Note: After completing adjustments, be sure to initialize the data of addresses F4 to FF to “00”.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 37, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

2-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in addresses F4, F8 and FC. The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error
10	Loading motor emergency during loading
11	Loading motor emergency during unloading
22	T reel emergency during normal rotation
23	S reel emergency during normal rotation
24	T reel emergency (Short circuit between S reel terminal and T reel terminal)
30	FG emergency at the start up of the capstan
40	FG emergency at the start up of the drum
42	FG emergency during normal rotation of the drum

2-2. MSW Code

MSW when errors occur:

Information on MSW (mode SW) when errors occur

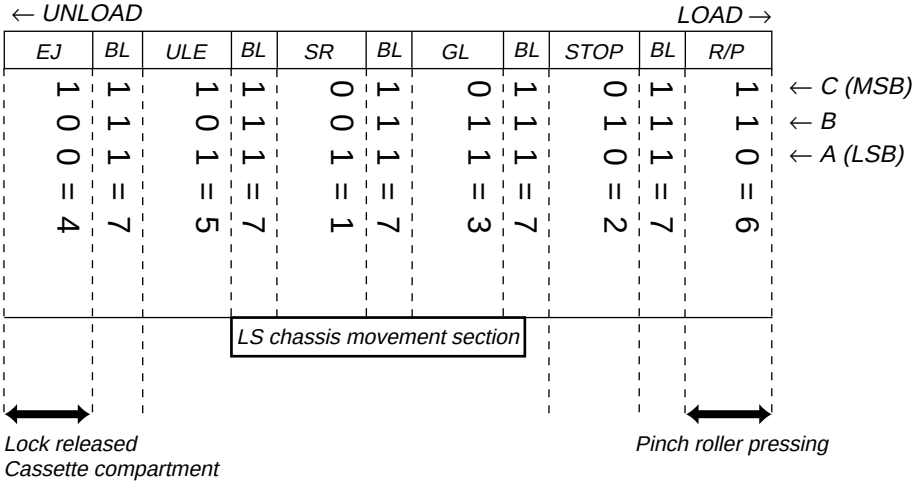
MSW when movement starts:

Information on MSW when movements starts when the mechanism position is moved (When the L motor is moved)

MSW of target of movement:

Information on target MSW of movement when the mechanism position is moved

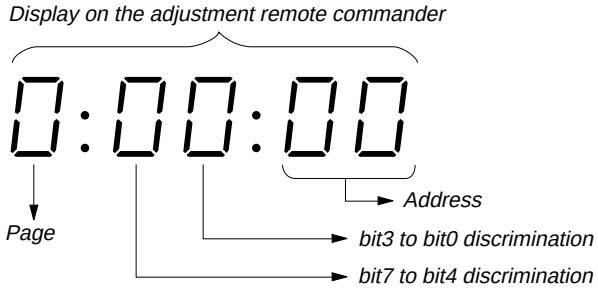
Mechanical Position



Position	Code	Contents
EJ	4	Position at which the cassette component lock is released, at the farthest unload side mechanically at which the mechanism can move no further in the UNLOAD direction.
BL	7	BLANK code, at the boundary between codes.
ULE	5	EJECT completion position. when the cassette is ejected, the mechanism will stop at this position. Cassette IN standby. The guide will start protruding out as the mechanism moves towards the LOAD position.
SR	1	Position at which it is possible to release the S ratchet.
GL	3	Guide loading are performed here.
STOP	2	Stop position in the loading state. The pinch roller separates, the tension regulator returns, and the brake is imposed on both reels.
R/P	6	PB, REC, CUE, REVIEW, PAUSE positions. When pinch roller is pressed, and the tension regulator is ON, the mechanism is operating at this position in modes in which normal images are shown.
NULL	0	Code not existing in the MD. Default value.

3. Bit value discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.



	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (A)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Example: If “8E” is displayed on the adjustment remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

4. Switch check (1)

Page 2	Address 43

Bit	Function	When bit value=1	When bit value=0
0	VTR MODE SW (Control switch block)	OFF	ON
1	CAM STBY SW (Control switch block)	OFF	ON
2	START/STOP SW (Control switch block)	OFF	ON
3	EJECT SW (Control switch block)	OFF	ON
4	CC DOWN SW (Mechanism chassis)	OFF (UP)	ON (DOWN)
5	PHOTO FREEZE SW (FK-30350 block S4004)	OFF	ON
6	PHOTO STBY SW (Control switch block)	OFF	ON
7			

Using method:

1) Select page: 2, address: 43.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

5. Switch check (2)

Page 2	Address 60 to 63

Using method:

1) Select page: 2, address: 60 to 63.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data						
	00 (00 to 0A)	19 (0B to 24)	32 (25 to 44)	59 (45 to 6E)	85 (6F to 9F)	B8 (A0 to D4)	EE (D5 to FF)
60 (KEY AD0) (IC1104 ⑨③)	FOCUS (INFINITY) (FK-30350)(S4007)	FOCUS (AUTO/MANUAL) (FK-30350)(S4008)	PHOTO (PHOTO REC) (FK-30350)(S4005)	SUPER NIGHT SHOT (FK-30350)(S4003)			No key input
61 (KEY AD1) (IC1104 ⑨④)	DISPLAY (FK-30350) (S4011)	BACK LIGHT (FK-30350) (S4010)				EVF OFF (CF-75) (S2201)	EVF ON (CF-75) (S2201)
62 (KEY AD2) (IC1104 ⑨⑤)	PANEL REVERSE (PR-34)(S3601)						PANEL NORMAL (PR-34)(S3601)
63 (KEY AD3) (IC1104 ⑨⑥)	PANEL CLOSE (PO-5) (S3501)						PANEL OPEN (PO-5) (S3501)

6. Record of Use check

Note: When replacing the drum assembly, initialize the data of address: A2 to A4.

Page 2	Address A2 to AA

Address	Function		Remarks
A2	Drum rotation counted time (BCD code)	Minutes	
A3		Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
A4		Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
A5	User initial power on date (BCD code)	Year	After setting the clock, set the date of power on next.
A6		Month	
A7		Day	
A8	Final condensation occurrence date (BCD code)	Year	
A9		Month	
AA		Day	

Using method:

1) The record of use data is displayed at page: 2, addresses: A2 to AA.
   Note: This data will be erased (reset) when the control switch block (FK-30350) is removed.

Initializing method:

1) Using the adjustment remote commander, select the object address and set data: 00.

7. Record of Self-diagnosis check

Page 2	Address B0 to C6

Address	Self-diagnosis code
B0	“Repaired by” code (Occurred 1st time) *1
B1	“Block function” code (Occurred 1st time)
B2	“Detailed” code (Occurred 1st time)
B4	“Repaired by” code (Occurred 2nd time) *1
B5	“Block function” code (Occurred 2nd time)
B6	“Detailed” code (Occurred 2nd time)
B8	“Repaired by” code (Occurred 3rd time) *1
B9	“Block function” code (Occurred 3rd time)
BA	“Detailed” code (Occurred 3rd time)
BC	“Repaired by” code (Occurred 4th time) *1
BD	“Block function” code (Occurred 4th time)
BE	“Detailed” code (Occurred 4th time)
C0	“Repaired by” code (Occurred 5th time) *1
C1	“Block function” code (Occurred 5th time)
C2	“Detailed” code (Occurred 5th time)
C4	“Repaired by” code (Occurred the last time) *1
C5	“Block function” code (Occurred the last time)
C6	“Detailed” code (Occurred the last time)

*1 : “01” → “C”, “03” → “E”

Using method:

1) The past self-diagnosis codes are displayed at page: 2, addresses: BC to C6. Refer to “SELF-DIAGNOSIS FUNCTION” for detail of the self-diagnosis code.
   Note: This data will be erased (reset) when the control switch block (FK-30350) is removed.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

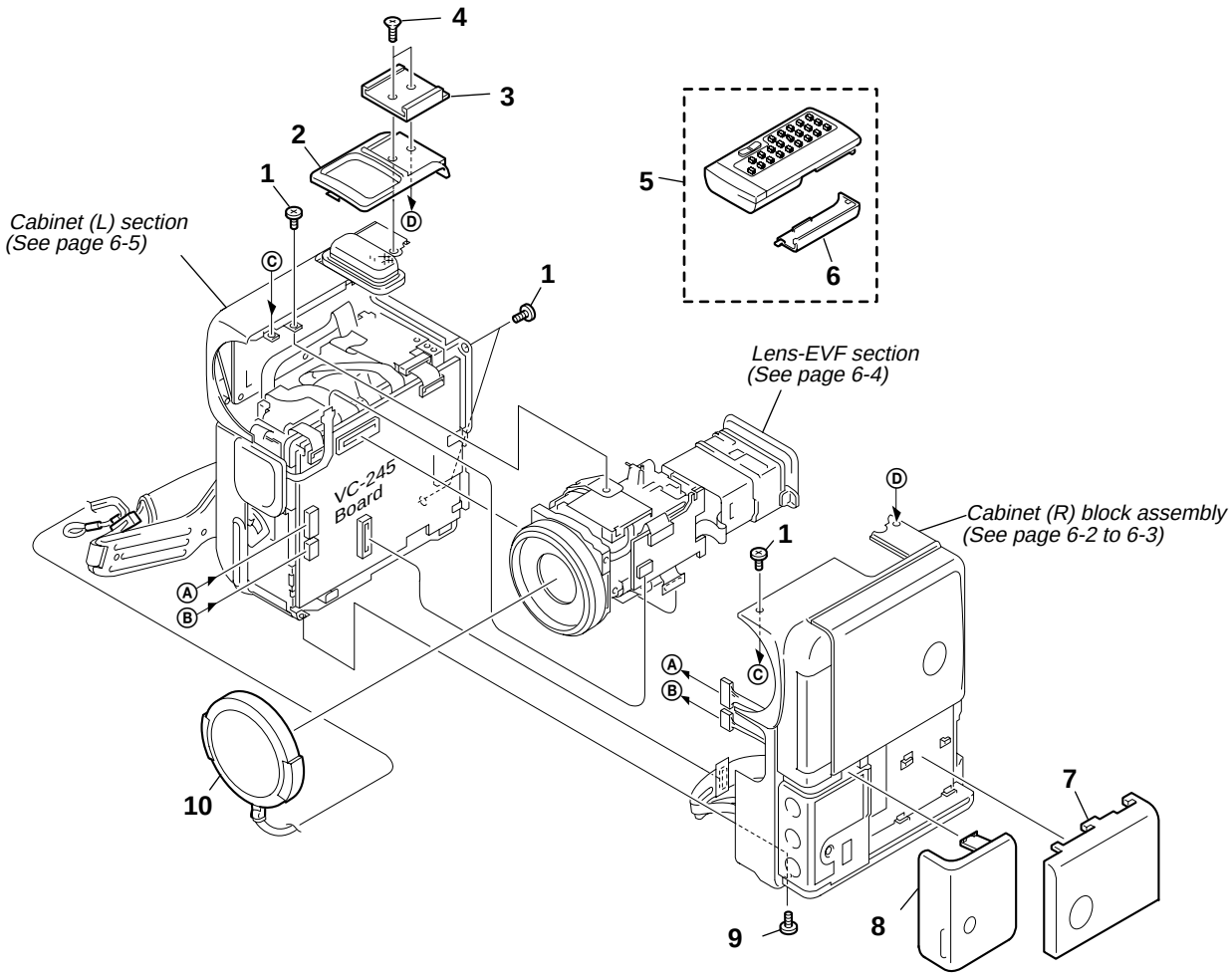
NOTE:

- -XX, -X mean standardized parts, so they may have some differences 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.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
  AUS: Australian model
  JE: Tourist model
  CND: Canadian model
  CN: Chinese model
  HK: Hong Kong model

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

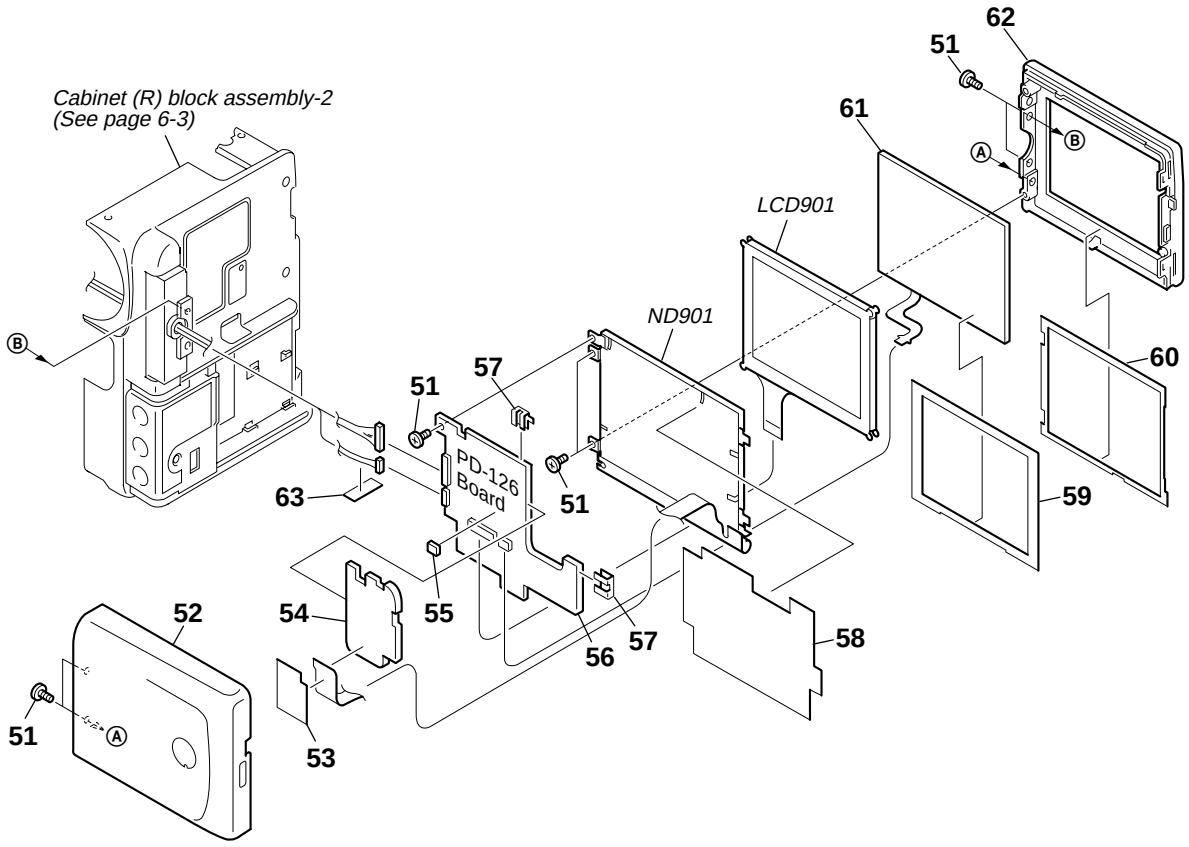
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1-1. OVERALL SECTION



Ref. No.	Part No.	Description	Remarks
1	3-989-735-11	SCREW(M1.7), LOCK ACE, P2	
2	3-062-213-01	COVER, MIC	
3	3-724-511-51	SHOE, ACCESSORY	
4	3-056-624-01	LOCK ACE, +K SCREW (M2)	
5	1-475-141-31	REMOTE COMMANDER (RMT-809)(PC4E)	
5	1-475-950-21	REMOTE COMMANDER (RMT-811)(PC5)	
5	1-475-950-31	REMOTE COMMANDER (RMT-812)(PC5E)	
6	3-053-056-01	LID,BATTERY CASE (FOR RMT-811, 812) (PC5/PC5E)	
6	3-742-854-21	LID,BATTERY CASE (FOR RMT-809)(PC4E)	
7	3-052-290-11	COVER, BATTERY TERMINAL	
8	3-062-110-02	COVER, JACK (PC5)	
8	3-062-110-11	COVER, JACK (PC5E:AEP,UK)	
8	3-062-110-21	COVER, JACK (PC5E:E,HK,AUS,CN,JE)	
8	3-062-110-31	COVER, JACK (PC4E)	
9	3-989-735-31	SCREW(M1.7), LOCK ACE, P2	
10	X-3950-754-1	CAP ASSY, LENS	

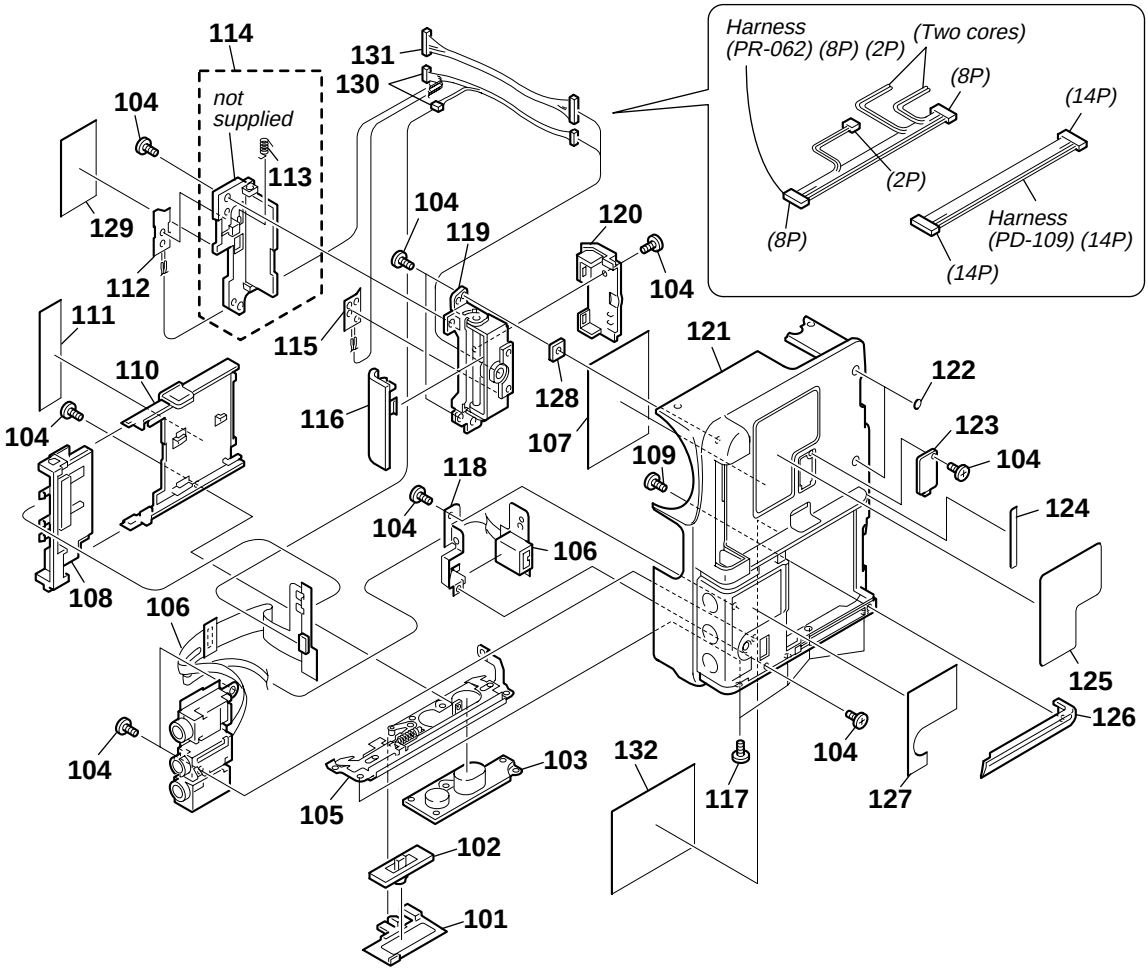
6-1-2. CABINET (R) BLOCK ASSEMBLY-1



Ref. No.	Part No.	Description	Remarks
51	3-989-735-11	SCREW (M1.7), LOCK ACE, P2	
52	X-3950-766-1	CABINET (R) ASSY, LCD (GRAY)(PC4E)	
52	X-3950-769-1	CABINET (R) ASSY, LCD (GRAY)(PC5/PC5E)	
52	X-3950-771-1	CABINET (R) ASSY, LCD (BLUE)(PC5/PC5E)	
* 53	3-062-196-01	SHEET, BL INSULATING	
⚠54	1-418-878-11	TRANSFORMER UNIT, INVERTER	
55	3-062-195-01	SPACER, PD	
56	A-7074-456-A	PD-126 BOARD, COMPLETE	
* 57	3-051-232-01	CLIP, PCB	
58	3-060-704-01	SHEET (N), BL SHIELD	
59	3-055-802-01	SPACER, PANEL	
60	3-055-839-01	SHEET, PANEL PROTECTION	
61	1-418-928-11	PANEL, TOUCH (TP-30350)	
62	X-3950-748-1	CABINET (T) ASSY, LCD (GRAY)	(PC4E/PC5/PC5E)
62	X-3950-757-1	CABINET (T) ASSY, LCD (BLUE)(PC5/PC5E)	
* 63	3-063-889-01	SHEET, (S)	
LCD901	8-753-050-52	ACX300CK-J	
⚠ND901	1-517-931-11	TUBE, FLUORESCENT,COLD CATHODE	

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

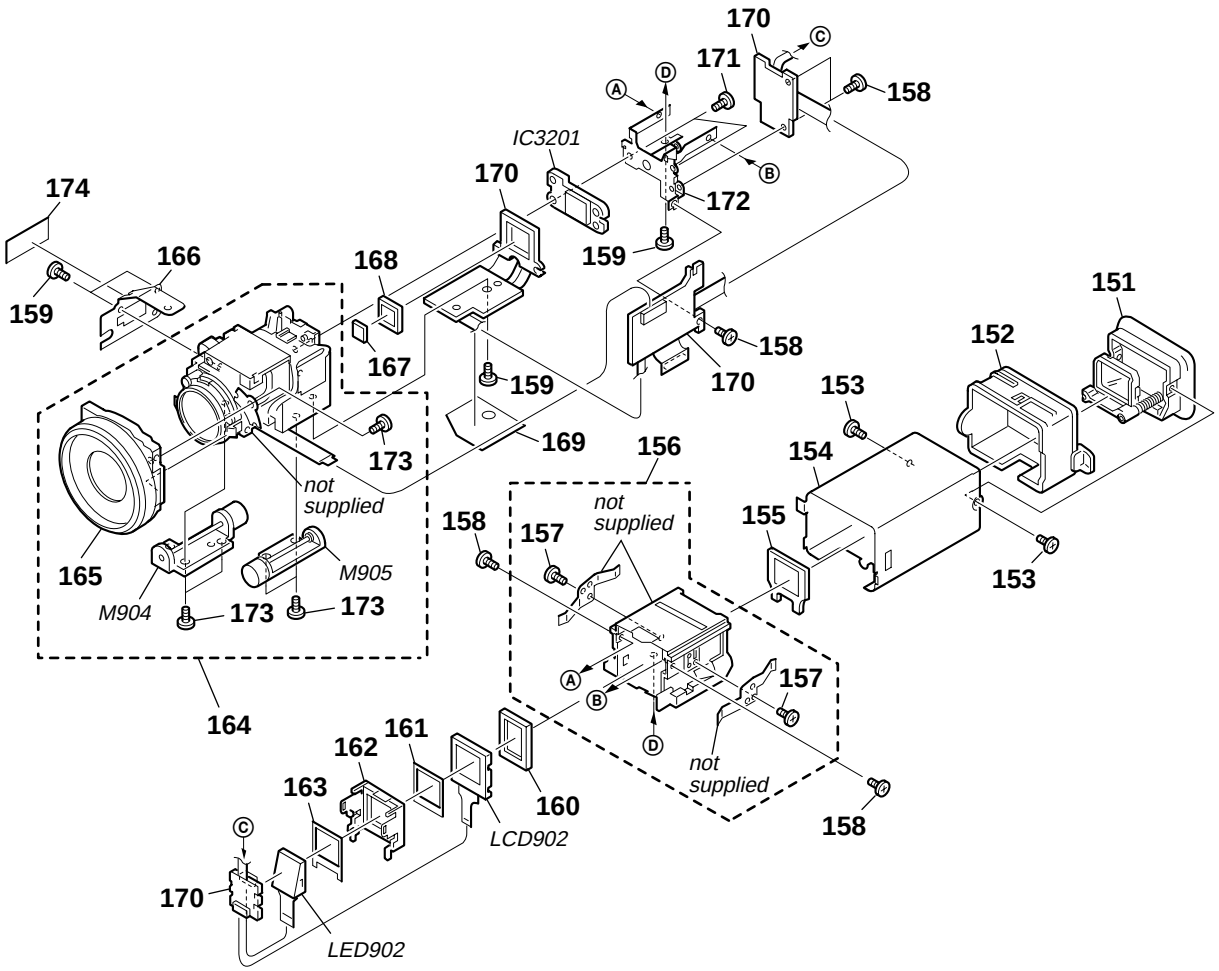
6-1-3. CABINET (R) BLOCK ASSEMBLY-2



Ref. No.	Part No.	Description	Remarks
101	3-062-193-01	SLIDER, EJECT KNOB	
102	3-062-192-01	KNOB, EJECT	
103	3-062-191-01	SCREW, TRIPOD	
104	3-989-735-11	SCREW (M1.7), LOCK ACE, P2	
105	X-3950-744-1	FRAME ASSY, BOTTOM	
106	A-7074-459-A	BJ-1 BOARD, COMPLETE	
107	3-062-211-01	SHEET, FLEXIBLE PROTECTION	
108	1-694-689-11	TERMINAL BOARD, BATTERY	
109	3-713-791-01	SCREW (M1.7X4), TAPPING, P2	
110	3-062-207-01	HOLDER, BATTERY	
111	3-062-208-01	SHEET, BATTERY HOLDER	
112	A-7074-457-A	PO-5 BOARD, COMPLETE	
* 113	3-055-323-01	SPRING (MK), TORSION	
114	X-3950-747-1	PLATE ASSY, BLIND (GRAY)(PC4E/PC5/PC5E)	
114	X-3950-756-1	PLATE ASSY, BLIND (BLUE)(PC5/PC5E)	
115	A-7074-458-A	PR-34 BOARD, COMPLETE	
116	3-062-105-01	COVER (FRONT), HINGE (GRAY) (PC4E/PC5/PC5E)	
116	3-062-105-11	COVER (FRONT), HINGE (BLUE)(PC5/PC5E)	
117	3-989-735-31	SCREW (M1.7), LOCK ACE, P2	
118	3-062-202-01	PLATE, DV FIXED	
119	X-3950-746-1	HINGE ASSY, LCD	
120	3-062-106-01	COVER (REAR), HINGE (GRAY) (PC4E/PC5/PC5E)	
120	3-062-106-11	COVER (REAR), HINGE (BLUE)(PC5/PC5E)	
121	3-062-217-01	CABINET (R) (M) (GRAY) (PC4E/PC5/PC5E)	

Ref. No.	Part No.	Description	Remarks
121	3-062-217-11	CABINET (R) (M) (BLUE)(PC5/PC5E)	
122	3-062-194-01	SPACER, LOCK	
123	3-062-109-01	LID, CPC (GRAY)(PC4E/PC5/PC5E)	
123	3-062-109-11	LID, CPC (BLUE) (PC5/PC5E)	
124	3-062-111-11	LABEL, POWER (GRAY) (PC5/PC5E:E,HK,AUS,CN,JE)	
124	3-062-111-21	LABEL, POWER (GRAY)(PC4E/PC5E:AEP,UK)	
124	3-062-111-41	LABEL, POWER (BLUE) (PC5/PC5E:E,HK,AUS,CN,JE)	
124	3-062-111-51	LABEL, POWER (BLUE)(PC5E:AEP,UK)	
125	3-062-108-11	SHEET, GUARD (GRAY)(PC4E/PC5/PC5E)	
125	3-062-108-31	SHEET, GUARD (BLUE)(PC5/PC5E)	
126	3-062-188-01	COVER, ORNAMENT	
127	3-062-112-11	LABEL, JACK (GRAY)(PC5)	
127	3-062-112-21	LABEL, JACK (GRAY)(PC5E:AEP,UK)	
127	3-062-112-31	LABEL, JACK (GRAY)(PC5E:E,HK,AUS,CN,JE)	
127	3-062-112-51	LABEL, JACK (BLUE)(PC5)	
127	3-062-112-61	LABEL, JACK (BLUE)(PC5E:AEP,UK)	
127	3-062-112-71	LABEL, JACK (BLUE)(PC5E:E,HK,AUS,CN,JE)	
127	3-062-112-81	LABEL, JACK (GRAY)(PC4E)	
* 128	3-062-786-01	SPACER, MF	
* 129	3-062-788-01	TAPE (2030)	
130	1-960-422-11	HARNESS (PR-062) (8P) (2P)	
131	1-960-421-11	HARNESS (PD-109) (14P)	
* 132	3-062-924-01	CUSHION, BT	

6-1-4. LENS-EVF SECTION



Be sure to read “Precautions upon replacing CCD imager” on page 4-14 when changing the CCD imager.

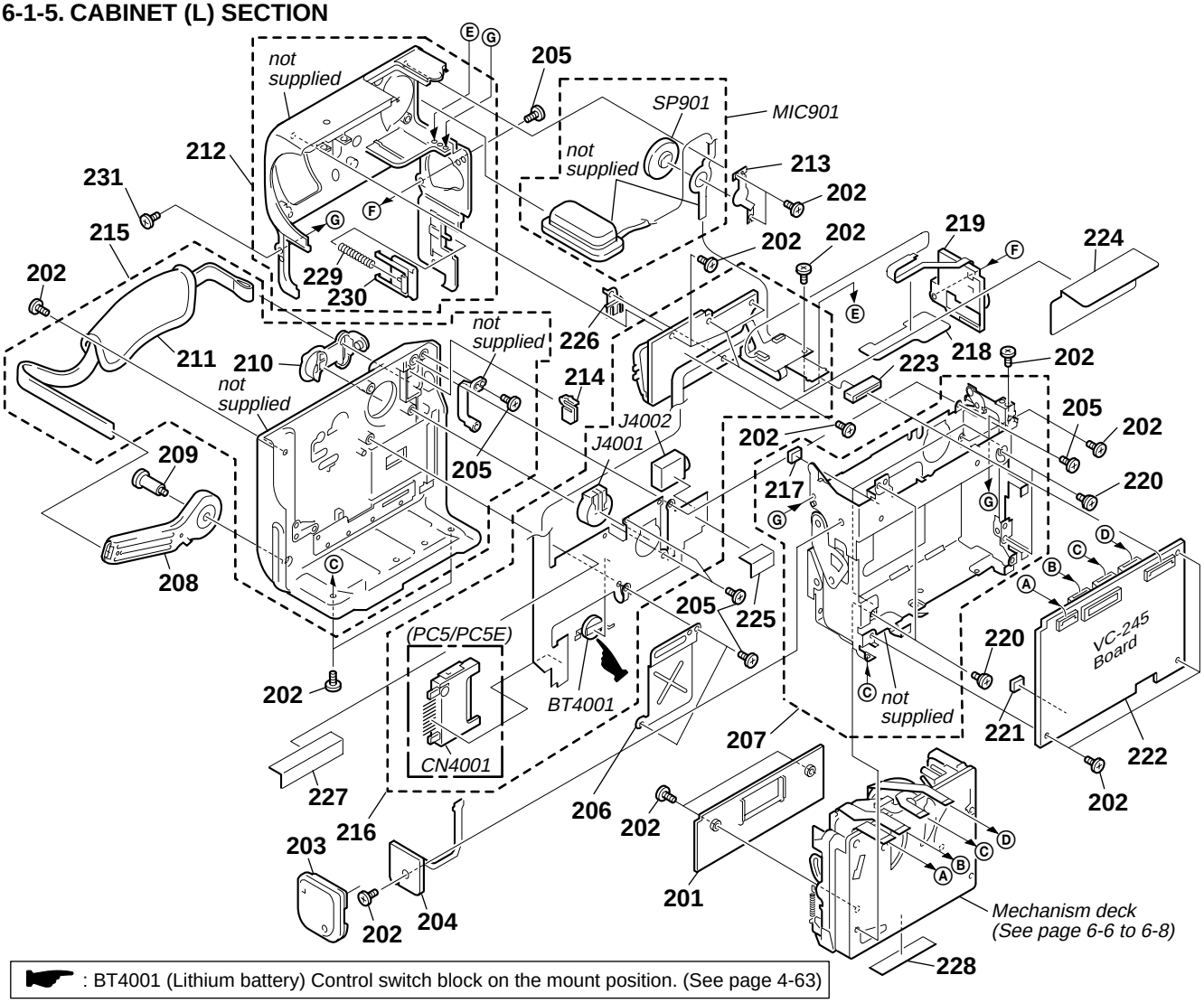
Ref. No.	Part No.	Description	Remarks
151	X-3950-751-1	LENS ASSY, VF	
152	X-3950-752-1	RING ASSY, VF REGULATION	
153	3-056-030-21	LOCK ACE (M1.7), 0 PLATE 2 MAIN	
154	3-062-190-01	SLEEVE, VF	
155	3-062-203-01	PLATE, VF ACRYLIC	
156	X-3950-750-1	GUIDE ASSY, VF SLEEVE	
157	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2	
158	3-989-735-11	SCREW (M1.7), LOCK ACE, P2	
159	3-713-791-01	SCREW (M1.7X4), TAPPING, P2	
* 160	3-062-767-01	CUSHION, LCD	
161	3-062-206-01	CUSHION (L), BL	
162	3-062-204-01	BLUNIT	
163	3-062-205-01	CUSHION (B), BL	
164	8-848-738-01	DEVICE, LENS (LSV-651B)	
165	A-7031-114-A	RING BLOCK ASSY, MF (SERVICE)	
* 166	3-062-200-01	FRAME, LN	

Ref. No.	Part No.	Description	Remarks
167	1-758-155-21	FILTER BLOCK, OPTICAL (OFB-04-14)	
168	3-053-973-01	RUBBER (W), SEAL	
169	3-062-212-01	SHEET, CF INSULATING	
170	A-7074-455-A	CF-75 BOARD, COMPLETE	
171	3-713-791-41	SCREW (M1.7X5), TAPPING, P2	
* 172	3-062-201-01	FRAME, CD	
173	3-713-791-91	SCREW (M1.7X4), TAPPING, P2	
* 174	3-062-889-01	SHEET, LF PROTECTION	
IC3201	A-7031-011-A	CCD BLOCK ASSY (CCD IMAGER)(PC5)	
IC3201	A-7031-012-A	CCD BLOCK ASSY (CCD IMAGER)(PC4E/PC5E)	
LCD902	8-753-026-74	LCX032AK-J (PC4E)	
LCD902	8-753-026-77	LCX033AK-J (PC5/PC5E)	
⚠LED902	1-418-738-11	BLOCK, LIGHT GUIDE PLATE (0.44)	
M904	1-763-168-12	ZOOM MOTOR	
M905	1-763-169-12	FOCUS MOTOR	

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.

6-1-5. CABINET (L) SECTION

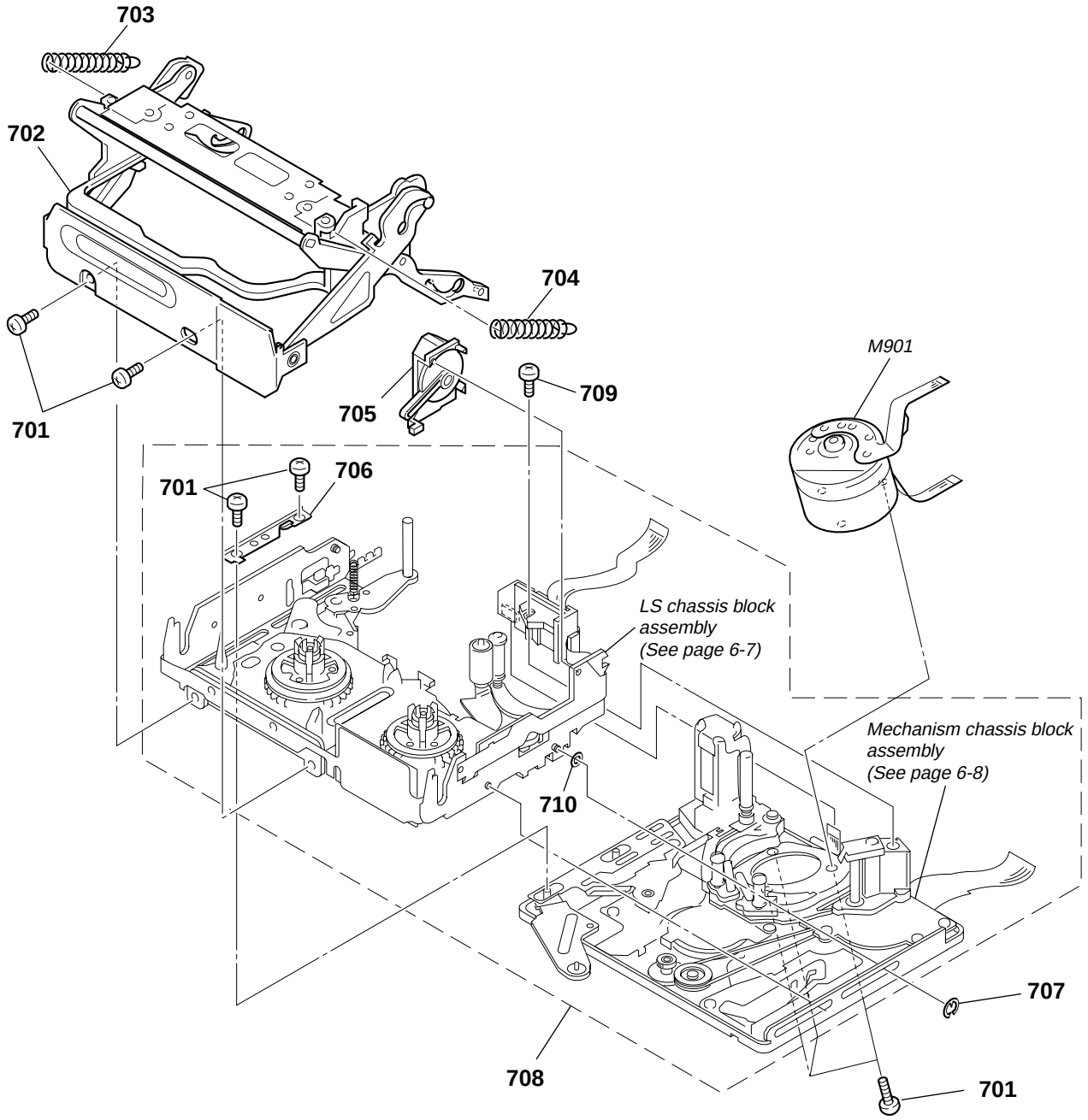


: BT4001 (Lithium battery) Control switch block on the mount position. (See page 4-63)

Ref. No.	Part No.	Description	Remarks
201	3-059-722-01	COVER, CASSETTE COMPARTMENT	
202	3-989-735-11	SCREW (M1.7), LOCK ACE, P2	
203	X-3950-753-1	WINDOW ASSY, NS	
204	A-7074-460-A	NS-12 BOARD, COMPLETE	
205	3-713-791-01	SCREW (M1.7X4), TAPPING, P2	
206	3-062-198-01	RETAINER, MS CONNECTOR	
207	X-3950-743-1	FRAME ASSY, MD	
208	X-3950-742-1	BRACKET (FRONT) ASSY, BELT	
209	3-062-189-02	SCREW (M2.6), SPECIAL HEAD(STEP)	
210	3-062-132-01	COVER (HP&S), JACK	
211	3-062-141-01	BELT, GRIP	
212	X-3950-764-1	CABINET (L) ASSY(PC4E)	
212	X-3950-767-1	CABINET (L) ASSY (GRAY)(PC5/PC5E)	
212	X-3950-770-1	CABINET (L) ASSY (BLUE)(PC5/PC5E)	
213	X-3950-745-1	RETAINER ASSY, SPEAKER	
214	3-062-199-01	RETAINER, HP JACK	
215	X-3950-765-1	CABINET (G) ASSY (BLUE)(PC4E)	
215	X-3950-768-1	CABINET (G) ASSY (PC5)	
215	X-3950-772-1	CABINET (G) ASSY (PC5E:AEP,UK)	
215	X-3950-773-1	CABINET (G) ASSY (PC5E:E,HK,AUS,CN,JE)	
216	1-418-927-11	SWITCH BLOCK, CONTROL (FK-30350)	(PC5/PC5E)
216	1-418-927-21	SWITCH BLOCK, CONTROL (FK-30350)(PC4E)	
217	3-975-921-01	SHEET, VIBRATION PROOF	
218	3-062-209-01	SHEET, FIXED	
219	1-418-925-11	SWITCH BLOCK, CONTROL (PS-30350)	(PC5/PC5E)

Ref. No.	Part No.	Description	Remarks
219	1-418-925-21	SWITCH BLOCK, CONTROL (PS-30350)(PC4E)	
220	3-062-214-01	SCREW (M1.4X1.5)	
221	3-062-210-01	CUSHION, VC	
222	A-7096-203-A	VC-245 BOARD, COMPLETE (SERVICE)	(PC5/PC5E:E,HK,AUS,CN,JE)
222	A-7096-277-A	VC-245 (P) BOARD, COMPLETE (SERVICE)	(PC5E:AEP,UK)
222	A-7096-278-A	VC-245 (L) BOARD, COMPLETE (SERVICE)	(PC4E)
223	1-469-833-11	BEAD, FERRITE	
* 224	3-062-827-01	SHEET, BJ INSULATING	
* 225	3-062-826-01	SHEET, DV INSULATING	
* 226	3-063-395-01	PLATE, G FRAME GROUND	
* 227	3-062-828-01	SHEET, TERMINAL BOARD	
228	3-059-725-01	LABEL, LS	
229	3-062-128-01	SPRING, COMPRESSION	
230	3-062-127-01	LOCK, BATTERY	
231	3-056-030-11	LOCK ACE (M1.7), 0 PLATE 2 MAIN	
BT4001	1-756-075-11	BATTERY, LITHIUM (SECONDARY)	
CN4001	1-794-262-11	CONNECTOR, MEMORY STICK (11P)	(PC5/PC5E)
J4001	1-694-688-11	TERMINAL, S (S VIDEO)	
J4002	1-784-943-41	JACK (SMALL TYPE)(HEADPHONE)	
MIC901	1-418-926-11	MICROPHONE BLOCK	
SP901	1-529-674-11	SPEAKER (16MM)	

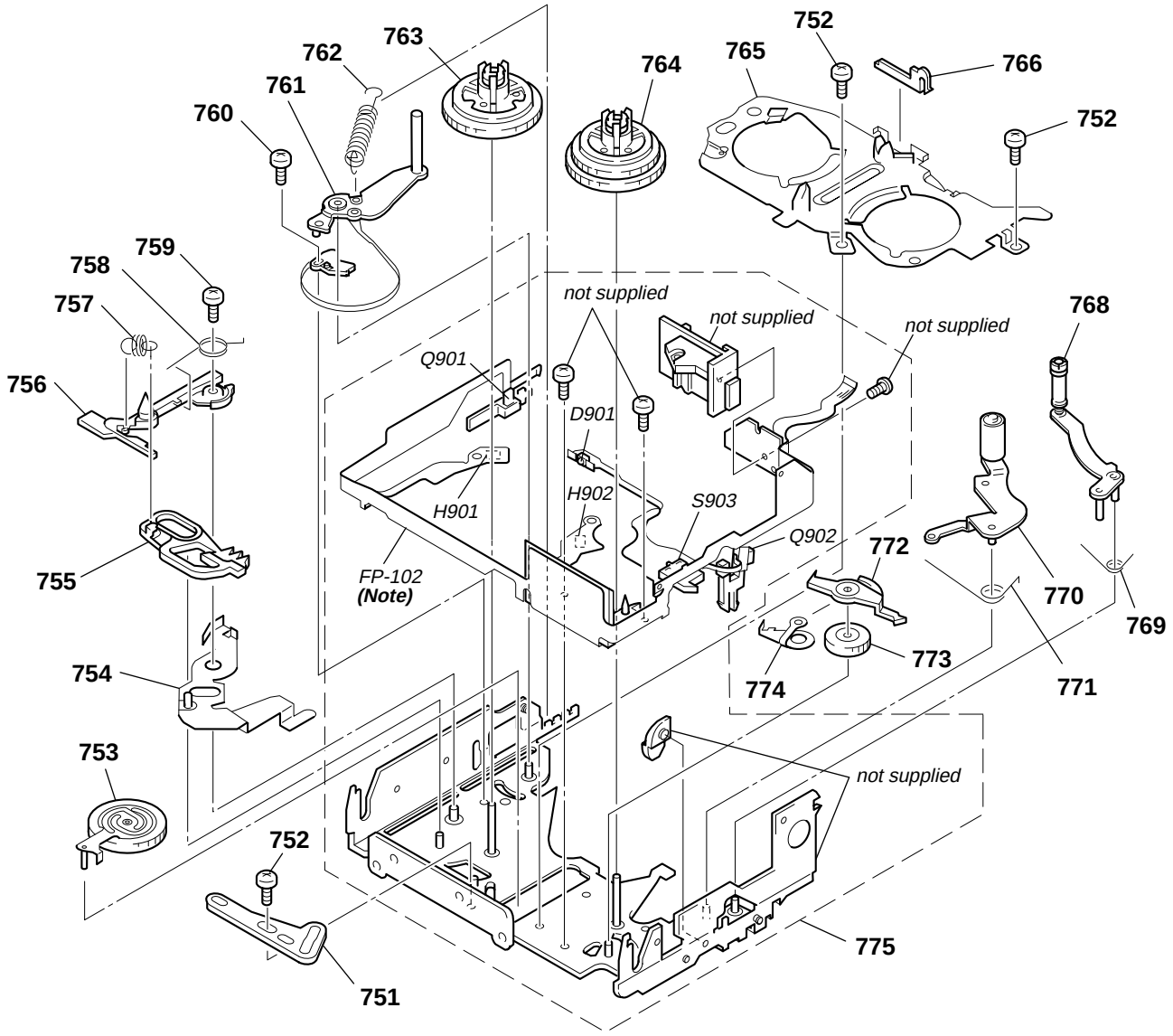
6-1-6. CASSETTE COMPARTMENT AND DRUM BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remarks
701	3-703-816-14	SCREW (M1.4)	
702	X-3950-369-2	CASSETTE COMPARTMENT ASSY	
703	3-059-082-01	SPRING, TENSION	
704	3-059-208-01	SPRING (CASSETTE COMPARTMENT T)	
705	X-3950-370-3	DAMPER ASSY	
706	3-059-101-03	RETAINER, LS GUIDE	

Ref. No.	Part No.	Description	Remarks
707	7-624-102-04	STOP RING 1.5, TYPE -E	
708	A-7028-133-B	MD (J100) SUB ASSY (K)	
709	3-703-816-41	SCREW (M1.4X2.5), SPECIAL HEAD	
710	3-063-036-01	SPACER, WASHER (PS)	
M901	A-7048-940-A	DRUM (DEH-18A-R)	

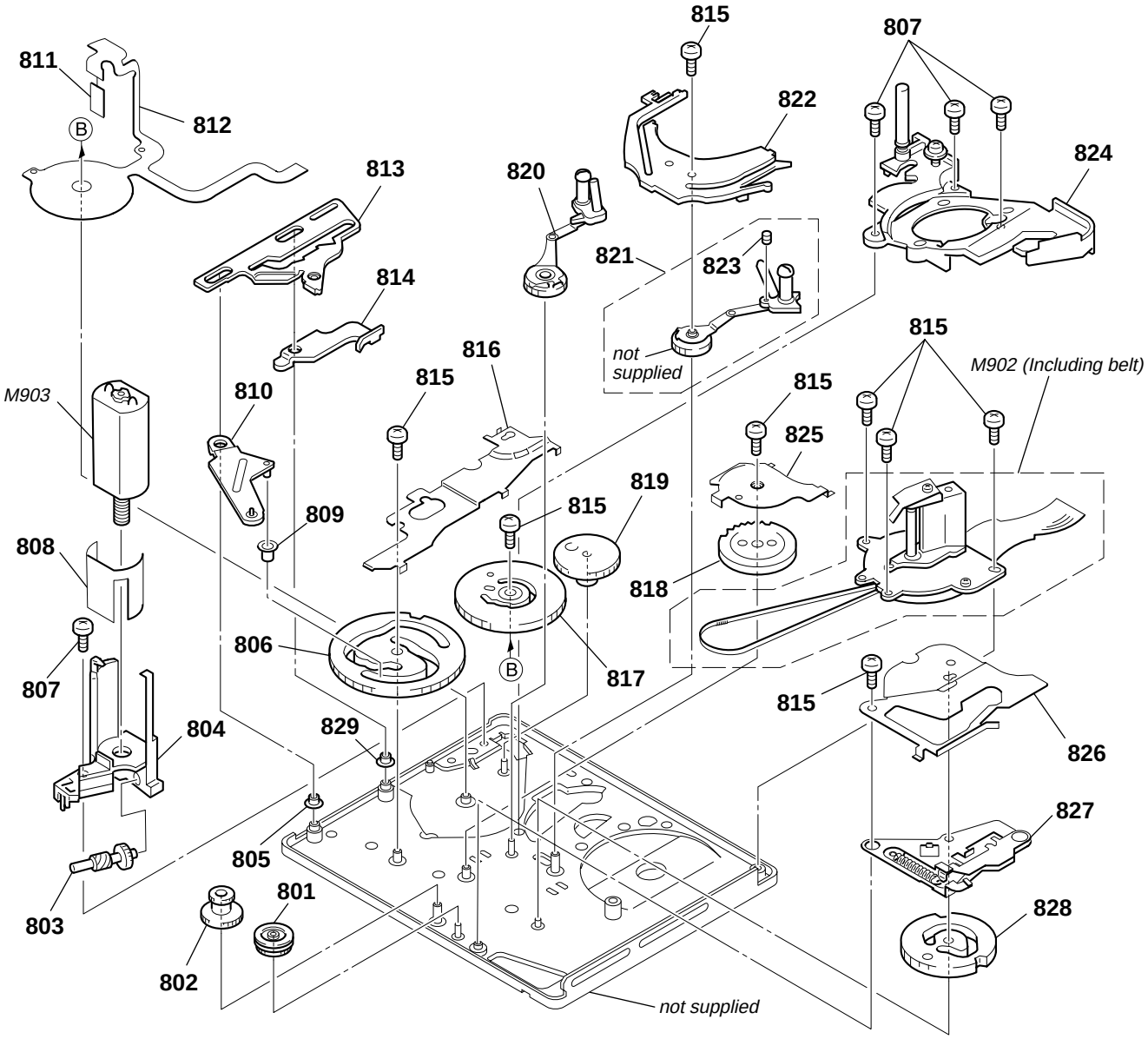
6-1-7. LS CHASSIS BLOCK ASSEMBLY



Note: *FP-102 is included in the LS sub assy and is attached to chassis by hot-press.*
Because installation of FP-102 requires a very high accuracy, FP-102 is not supplied as an independent service parts.

Ref. No.	Part No.	Description	Remarks
751	3-059-173-01	PLATE, LS CAM	
752	3-059-100-01	SCREW (M1.4X1.4), SPECIAL HEAD	
753	X-3950-364-1	GEAR ASSY, GOOSENECK	
754	X-3950-371-1	ARM ASSY, BRAKE (S) DRIVING	
755	3-059-166-01	BRAKE (S)	
756	3-059-146-01	POSITIONING (S), CASSETTE	
757	3-059-167-01	SPRING (BRAKE S), TENSION COIL	
758	3-059-169-01	SPRING (BRAKE S ARM), TORSION	
759	3-703-816-14	SCREW (M1.4)	
760	3-059-090-01	SCREW (M1.4X2.5), SPECIAL HEAD	
761	X-3950-358-3	TG1 ASSY	
762	3-059-156-01	SPRING (TENSION REGULATOR)	
763	X-3950-365-2	TABLE ASSY, S REEL	
764	X-3950-366-1	TABLE ASSY, T REEL	
765	X-3950-361-1	PLATE ASSY, RETAINER	
766	3-059-093-01	RETAINER, LED	
768	A-7094-819-A	TG7 BLOCK ASSY	
769	3-059-165-01	SPRING (TG7 RETURN), TORSION	
770	X-3950-359-1	ARM ASSY, PINCH	
771	3-059-161-01	SPRING (PINCH RETURN), TORSION	
772	3-059-170-01	BRAKE (T)	
773	3-059-171-01	GEAR (T), BRAKE	
774	3-059-172-01	SPRING (T), BRAKE	
775	A-7094-816-A	LS BLOCK ASSY	
D901	8-719-078-71	DIODE LA57A, SO (TAPE LED)	
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (S REEL)	
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (T REEL)	
Q901	8-729-028-71	TRANSISTOR PN166.SO (TAPE END)	
Q902	8-729-028-71	TRANSISTOR PN166.SO (TAPE TOP)	
S903	1-771-326-41	SWITCH, PUSH LEVER (1KEY) (CC DOWN)	

6-1-8. MECHANISM CHASSIS BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remarks
801	3-059-211-01	GEAR, CONVERSION	
802	3-059-220-01	GEAR, RELAY	
803	3-059-187-01	SHAFT, WORM	
804	3-059-186-03	HOLDER, MOTOR	
805	3-060-002-01	ROLLER, LS GUIDE	
806	3-059-189-01	GEAR (A), CAM	
807	3-703-816-41	SCREW (M1.4X2.5), SPECIAL HEAD	
808	3-059-225-01	SHIELD, MOTOR	
809	3-059-191-01	ROLLER, LS	
810	3-059-190-01	ARM, LS	
811	1-677-049-11	FP-228 FLEXIBLE BOARD	
812	1-677-084-11	FP-100 FLEXIBLE BOARD	
813	3-059-149-01	SLIDER, TG1 CAM	
814	3-059-148-01	ARM, TG1 DRIVING	
815	3-703-816-14	SCREW (M1.4)	
816	3-059-117-01	COVER (A), GEAR	

Ref. No.	Part No.	Description	Remarks
817	X-3950-367-1	GEAR ASSY, MODE	
818	3-059-139-01	GEAR, GL DRIVING	
819	3-059-188-01	GEAR, DECELERATION	
820	A-7094-818-A	COASTER (S) BLOCK ASSY	
821	A-7094-817-A	COASTER (T) BLOCK ASSY	
822	3-059-126-01	RAIL, GUIDE	
823	3-962-914-01	SCREW (M1.4X2)	
824	A-7094-822-A	DRUM BASE BLOCK ASSY	
825	3-059-118-01	COVER (B), GEAR	
826	3-059-083-01	COVER (C), GEAR	
827	X-3950-368-1	ARM ASSY, PINCH DRIVING	
828	3-059-192-01	GEAR (B), CAM	
829	3-063-355-01	ROLLER (S1), LS GUIDE	
M902	8-835-685-01	MOTOR, DC SCD18A/C-NP (INCLUDING BELT) CAPSTAN	
M903	A-7094-823-A	MOTOR BLOCK ASSY, LOADING	

6-2. ELECTRICAL PARTS LIST

NOTE:

- 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.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  AUS: Australian model
  JE: Tourist model

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

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

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

CND: Canadian model
CN: Chinese model
HK: Hong Kong model
KR: Korea model

Ref. No.	Part No.	Description			Remarks
	A-7074-459-A	BJ-1 BOARD, COMPLETE			
		**********			
		(Ref.No.;30000 Series)			
		< CAPACITOR >			
C3101	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C3103	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
		< CONNECTOR >			
CN3102	1-794-276-11	CONNECTOR, SQUARE TYPE 4P			
CN3103	1-794-403-21	CONNECTOR, BOARD TO BOARD 60P			
CN3104	1-794-375-21	PIN, CONNECTOR 2P			
		< DIODE >			
D3101	8-719-072-91	DIODE MAZJ200D0LS0			
D3102	8-719-056-61	DIODE 015AZ8.2-TPL3			
D3103	8-719-056-61	DIODE 015AZ8.2-TPL3			
		< FERRITE BEAD >			
FB3101	1-500-444-11	FERRITE	0UH		
FB3102	1-500-444-11	FERRITE	0UH		
FB3103	1-500-444-11	FERRITE	0UH		
FB3104	1-500-444-11	FERRITE	0UH		
FB3105	1-500-444-11	FERRITE	0UH		
FB3106	1-500-444-11	FERRITE	0UH		
		< JACK >			
J3101	1-691-737-11	JACK (SMALL TYPE)(EXT MIC)			
J3102	1-793-995-11	JACK, SUPER SMALL TYPE (LANC)			
J3103	1-778-040-11	JACK, SMALL TYPE (AV JACK)			
		< IC LINK >			
⚠PS3101	1-576-415-21	FUSE, MICRO (2A)(1608)			
⚠PS3102	1-576-415-21	FUSE, MICRO (2A)(1608)			
⚠PS3103	1-576-415-21	FUSE, MICRO (2A)(1608)			
⚠PS3104	1-576-415-21	FUSE, MICRO (2A)(1608)			
		< RESISTOR >			
R3101	1-216-864-11	METAL CHIP	0	5%	1/16W
R3102	1-216-864-11	METAL CHIP	0	5%	1/16W
R3103	1-216-864-11	METAL CHIP	0	5%	1/16W
R3105	1-216-864-11	METAL CHIP	0	5%	1/16W
R3110	1-216-864-11	METAL CHIP	0	5%	1/16W
R3111	1-216-864-11	METAL CHIP	0	5%	1/16W
R3112	1-216-864-11	METAL CHIP	0	5%	1/16W
		< VARISTOR >			
VDR311	1-803-742-21	VARISTOR, CHIP			
VDR312	1-803-742-21	VARISTOR, CHIP			
VDR313	1-803-742-21	VARISTOR, CHIP			
VDR315	1-803-742-21	VARISTOR, CHIP			
VDR316	1-803-742-21	VARISTOR, CHIP			
VDR319	1-803-742-21	VARISTOR, CHIP			

Ref. No.	Part No.	Description			Remarks
	A-7074-455-A	CF-75 BOARD, COMPLETE			
		**********			
		(Ref.No.;20000 Series)			
		(IC3201 is not included in this complete board.)			
		< CAPACITOR >			
C2201	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2202	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2203	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C3201	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C3202	1-164-850-11	CERAMIC CHIP	10PF	0.50PF	16V
C3203	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C3204	1-119-751-11	TANTAL. CHIP	22uF	20%	16V
C3207	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C3208	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C3452	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C3453	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C3454	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3455	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3456	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C3457	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C3458	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C3459	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C3460	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C3461	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C3462	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C3463	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C3464	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C3465	1-127-895-91	TANTAL. CHIP	22uF	20%	4V
C3466	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN2201	1-750-346-21	CONNECTOR, FFC/EPC (ZIF) 6P			
CN2202	1-750-340-21	CONNECTOR, FFC/EPC (ZIF) 16P			
CN3351	1-784-421-11	CONNECTOR, FPC (ZIF) 27P			
CN3353	1-794-411-21	CONNECTOR, FFC/FPC (LIF) 8P			
CN3354	1-794-404-21	CONNECTOR, BOARD TO BOARD 88P			

Ref. No.	Part No.	Description			Remarks
		< IC >			
IC3201	A-7031-011-A	CCD BLOCK ASSY (CCD IMAGER)(PC5)			
IC3201	A-7031-012-A	CCD BLOCK ASSY (CCD IMAGER)(PC4E/PC5E)			
IC3451	8-759-489-19	IC uPC6756GR-8JG-E2			
		< COIL >			
L3201	1-414-757-11	INDUCTOR	100uH		
L3451	1-414-771-91	INDUCTOR CHIP	10uH		
		< TRANSISTOR >			
Q2202	8-729-041-23	TRANSISTOR	NDS356AP		
Q2203	8-729-037-52	TRANSISTOR	2SC4738F-Y/GR(TPL3)		
Q2204	8-729-037-52	TRANSISTOR	2SC4738F-Y/GR(TPL3)		
Q2205	8-729-037-52	TRANSISTOR	2SC4738F-Y/GR(TPL3)		
Q2206	8-729-037-52	TRANSISTOR	2SC4738F-Y/GR(TPL3)		
Q2207	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
Q3201	8-729-117-73	TRANSISTOR	2SC4178-F13F14-T1		
Q3202	8-729-037-74	TRANSISTOR	UN9213J-(K8).SO		
		< RESISTOR >			
R2201	1-218-985-11	RES-CHIP	470K	5%	1/16W
R2203	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R2204	1-218-990-11	SHORT	0		
R2205	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R2206	1-218-971-11	RES-CHIP	33K	5%	1/16W
R2207	1-218-964-11	RES-CHIP	8.2K	5%	1/16W
R2208	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R2209	1-218-962-11	RES-CHIP	5.6K	5%	1/16W
R2211	1-218-957-11	RES-CHIP	2.2K	5%	1/16W
R2212	1-218-937-11	RES-CHIP	47	5%	1/16W
R2213	1-218-937-11	RES-CHIP	47	5%	1/16W
R2214	1-218-971-11	RES-CHIP	33K	5%	1/16W
R2215	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2216	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2217	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2218	1-218-977-11	RES-CHIP	100K	5%	1/16W
R3201	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R3202	1-218-990-11	SHORT	0		
R3351	1-218-959-11	RES-CHIP	3.3K	5%	1/16W
R3451	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3452	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3453	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3454	1-218-969-11	RES-CHIP	22K	5%	1/16W
R3455	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3456	1-218-965-11	RES-CHIP	10K	5%	1/16W
R3457	1-218-989-11	RES-CHIP	1M	5%	1/16W
R3458	1-218-967-11	RES-CHIP	15K	5%	1/16W
R3459	1-218-989-11	RES-CHIP	1M	5%	1/16W
		< SWITCH >			
S2201	1-762-805-21	SWITCH, PUSH (1 KEY)(EVF ON/OFF)			
		< SENSOR >			
SE3450	1-418-682-41	SENSOR, ANGULAR VELOCITY (YAW)			
SE3451	1-418-682-21	SENSOR, ANGULAR VELOCITY (PITCH)			

Ref. No.	Part No.	Description			Remarks
		< THERMISTOR >			
TH2201	1-810-812-21	THERMISTOR, NTC (1608)			
		FP-102 FLEXIBLE (Not supplied)			
		**********			
		(Ref.No.;4000 Series)			
		< DIODE >			
D901	8-719-078-71	DIODE LN57A.SO			
		< HOLE ELEMENT >			
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T			
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T			
		< TRANSISTOR >			
Q901	8-729-028-71	TRANSISTOR PN166.SO (TAPE END)			
Q902	8-729-028-71	TRANSISTOR PN166.SO (TAPE TOP)			
		< SWITCH >			
S903	1-771-326-41	SWITCH, PUSH LEVER (1KEY) (CC DOWN)			
	A-7074-460-A	NS-12 BOARD, COMPLETE			
		**********			
		(Ref No.;20000 Series)			
		< DIODE >			
D003	8-719-061-82	DIODE TLSU1002(TPX1,SONY)			
D005	8-719-078-78	DIODE DCZ2805			
D006	8-719-078-78	DIODE DCZ2805			
		< IC >			
IC001	8-749-013-13	IC RS-70-TU			
	A-7074-456-A	PD-126 BOARD, COMPLETE			
		**********			
		(Ref.No.;40000 Series)			
		< CAPACITOR >			
C2101	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C2102	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2103	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2104	1-117-919-11	TANTAL. CHIP	10uF	20%	6.3V
C2105	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2107	1-107-826-91	CERAMIC CHIP	0.1uF	10%	16V
C2108	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2109	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2110	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2111	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C2112	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C2113	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C2114	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2115	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C2116	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V

Be sure to read “Precautions upon replacing CCD imager” on page 4-14 when changing the CCD imager.

Ref. No.	Part No.	Description			Remarks
C2117	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C2118	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C2119	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C2120	1-125-838-91	CERAMIC CHIP	2.2uF	10%	6.3V
C2123	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C2124	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2125	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C2126	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C2127	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2128	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C2129	1-216-295-91	SHORT	0 (Note)		
C2130	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C2133	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C2181	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C2182	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2183	1-128-964-91	TANTAL. CHIP	100uF	20%	6.3V
C2184	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C2185	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C2186	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN2100	1-794-378-21	PIN, CONNECTOR 14P			
CN2101	1-794-377-21	PIN, CONNECTOR 8P			
* CN2103	1-778-155-11	CONNECTOR, FFC/FPC (ZIF) 7P			
* CN2104	1-778-172-11	CONNECTOR, FFC/FPC (ZIF) 24P			
CN2105	1-764-704-21	CONNECTOR, FFC/FPC (LIF) 5P			
		< DIODE >			
D2101	8-719-073-01	DIODE MA111-TX			
D2102	8-713-102-80	DIODE 1T369-01-T8A			
D2104	8-719-040-12	DIODE 015Z3.3-TPH3			
D2104	8-719-050-42	DIODE RD3.3UM-T1B			
D2181	8-719-059-47	DIODE PG1111R-TR			
		< IC >			
IC2101	8-759-660-93	IC RB5P004AM1			
IC2103	8-752-403-84	IC CXD3505R-T4			
		< COIL >			
L2101	1-414-755-11	INDUCTOR	22uH		
L2102	1-414-754-11	INDUCTOR	10uH		
L2103	1-414-754-11	INDUCTOR	10uH		
L2104	1-410-998-31	INDUCTOR	2.7uH		
L2181	1-412-056-11	INDUCTOR	4.7uH		
L2182	1-414-757-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q2101	8-729-427-74	TRANSISTOR	XP4601-TXE		
Q2102	8-729-037-74	TRANSISTOR	UN9213J-(TX).SO		
Q2103	8-729-427-74	TRANSISTOR	XP4601-TXE		
Q2104	8-729-041-23	TRANSISTOR	NDS356AP		
Q2109	8-729-037-53	TRANSISTOR	2SB1462J-QR(K8).SO		
Q2111	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
Q2112	8-729-048-77	TRANSISTOR	XP4313-(TX).SO		
Q2181	8-729-042-72	TRANSISTOR	UN9214J-(K8).SO		
Q2182	8-729-037-53	TRANSISTOR	2SA1832F-Y/GR(TPL3)		
Q2183	8-729-042-59	TRANSISTOR	UN9112J-(K8).SO		

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R2111	1-218-985-11	RES-CHIP	470K	5%	1/16W
R2112	1-218-985-11	RES-CHIP	470K	5%	1/16W
R2113	1-218-990-11	SHORT	0		
R2114	1-218-967-11	RES-CHIP	15K	5%	1/16W
R2115	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R2116	1-218-973-11	RES-CHIP	47K	5%	1/16W
R2117	1-218-975-11	RES-CHIP	68K	5%	1/16W
R2118	1-218-969-11	RES-CHIP	22K	5%	1/16W
R2119	1-218-975-11	RES-CHIP	68K	5%	1/16W
R2122	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2123	1-218-990-11	SHORT	0		
R2124	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2129	1-218-990-11	SHORT	0		
R2134	1-218-929-11	RES-CHIP	10	5%	1/16W
R2136	1-218-929-11	RES-CHIP	10	5%	1/16W
R2137	1-218-929-11	RES-CHIP	10	5%	1/16W
R2138	1-218-941-11	RES-CHIP	100	5%	1/16W
R2143	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2144	1-218-985-11	RES-CHIP	470K	5%	1/16W
R2146	1-218-990-11	SHORT	0		
R2147	1-218-990-11	SHORT	0		
R2148	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2153	1-218-990-11	SHORT	0		
R2157	1-218-989-11	RES-CHIP	1M	5%	1/16W
R2158	1-218-975-11	RES-CHIP	68K	5%	1/16W
R2159	1-218-979-11	RES-CHIP	150K	5%	1/16W
R2160	1-218-988-11	RES-CHIP	820K	5%	1/16W
R2162	1-218-990-11	SHORT	0		
R2163	1-218-990-11	SHORT	0		
R2165	1-218-990-11	SHORT	0		
R2166	1-218-965-11	RES-CHIP	10K	5%	1/16W
R2168	1-218-990-11	SHORT	0		
R2169	1-218-990-11	SHORT	0		
R2170	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2172	1-218-990-11	SHORT	0		
R2173	1-218-990-11	SHORT	0		
R2174	1-218-990-11	SHORT	0		
R2175	1-218-990-11	SHORT	0		
R2176	1-218-990-11	SHORT	0		
R2177	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2178	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2179	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2180	1-218-977-11	RES-CHIP	100K	5%	1/16W
R2181	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R2182	1-218-953-11	RES-CHIP	1K	5%	1/16W
R2183	1-218-941-11	RES-CHIP	100	5%	1/16W
R2184	1-218-990-11	SHORT	0		

	A-7074-457-A	PO-5 BOARD, COMPLETE	
		**********	
			(Ref.No.;30000 Series)
		< SWITCH >	
S3501	1-762-805-21	SWITCH, PUSH (1 KEY)(PANEL OPEN)	

Note : Short is mounted to the location where C2129 is printed.

PR-34 **VC-245**

Ref. No.	Part No.	Description	Remarks
	A-7074-458-A	PR-34 BOARD, COMPLETE ********** (Ref.No;30000 Series)	
		< SWITCH >	
S3601	1-771-338-21	SWITCH, PUSH (PANEL REVERSE)	

Ref. No.	Part No.	Description	Remarks
	A-7096-203-A	VC-245 BOARD, COMPLETE (PC5/PC5E:E,HK,AUS,CN,JE) **********	
	A-7096-277-A	VC-245 BOARD, COMPLETE (PC5E:AEP,UK) **********	
	A-7096-278-A	VC-245 (L) BOARD, COMPLETE (PC4E) ********** (Ref.No.;10000 Series)	

Electrical parts list of the VC-245 board are not shown.
pages 6-13 to 6-25 are not shown.

Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS	
		**********	
⚠54	1-418-878-11	TRANSFORMER UNIT, INVERTER	
61	1-418-928-11	PANEL, TOUCH (TP-30350)	
108	1-694-689-11	TERMINAL BOARD, BATTERY	
130	1-960-422-11	HARNESS (PR-062) (8P) (2P)	
131	1-960-421-11	HARNESS (PD-109) (14P)	
164	8-848-738-01	DEVICE, LENS (LSV-651B)	
167	1-758-155-21	FILTER BLOCK, OPTICAL (OFB-04-14)	
216	1-418-927-11	SWITCH BLOCK, CONTROL (FK-30350)	(PC5/PC5E)
216	1-418-927-21	SWITCH BLOCK, CONTROL (FK-30350)(PC4E)	
219	1-418-925-11	SWITCH BLOCK, CONTROL (PS-30350)	(PC5/PC5E)
219	1-418-925-21	SWITCH BLOCK, CONTROL (PS-30350)(PC4E)	
223	1-469-833-11	BEAD, FERRITE	
811	1-677-049-11	FP-228 FLEXIBLE BOARD	
812	1-677-084-11	FP-100 FLEXIBLE BOARD	
BT4001	1-756-075-11	BATTERY, LITHIUM (SECONDARY)	
CN4001	1-794-262-11	CONNECTOR, MEMORY STICK (11P)	(PC5/PC5E)
D901	8-719-078-71	DIODE LA57A, SO (TAPE LED)	
H901	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (S REEL)	
H902	8-719-067-74	ELEMENT, HOLE HW-105A-CDE-T (T REEL)	
IC3201	A-7031-011-A	CCD BLOCK ASSY (CCD IMAGER)(PC5)	
IC3201	A-7031-012-A	CCD BLOCK ASSY (CCD IMAGER)(PC4E/PC5E)	
J4001	1-694-688-11	TERMINAL, S (S VIDEO)	
J4002	1-784-943-41	JACK (SMALL TYPE)(HEADPHONE)	
LCD901	8-753-050-52	ACX300CK-J	
LCD902	8-753-026-74	LCX032AK-J (PC4E)	
LCD902	8-753-026-77	LCX033AK-J (PC5/PC5E)	
⚠LED902	1-418-738-11	BLOCK, LIGHT GUIDE PLATE (0.44)	
M901	A-7048-940-A	DRUM (DEH-18A-R)	
M902	8-835-685-01	MOTOR, DC SCD18A/C-NP (INCLUDING BELT)	CAPSTAN
M903	A-7094-823-A	MOTOR BLOCK ASSY, LOADING	
M904	1-763-168-12	ZOOM MOTOR	
M905	1-763-169-12	FOCUS MOTOR	
MIC901	1-418-926-11	MICROPHONE BLOCK	
⚠ND901	1-517-931-11	TUBE, FLUORESCENT,COLD CATHODE	
Q901	8-729-028-71	TRANSISTOR PN166.SO (TAPE END)	
Q902	8-729-028-71	TRANSISTOR PN166.SO (TAPE TOP)	
S903	1-771-326-41	SWITCH, PUSH LEVER (1KEY) (CC DOWN)	
SP901	1-529-674-11	SPEAKER (16MM)	
		ACCESSORIES	
		**********	
	1-475-141-31	COMMANDER, REMOTE (RMT-809)(PC4E)	
⚠	1-475-851-22	ADAPTOR, AC (AC-VF10)(PC5:US,CND)	
⚠	1-475-851-33	ADAPTOR, AC (AC-VF10)	(PC4E/PC5:E,HK,JE/PC5E:AEP,UK,E,HK,AUS,JE)
⚠	1-475-851-71	ADAPTOR, AC (AC-VF10)(PC5:KR)	
⚠	1-475-851-81	ADAPTOR, AC (AC-VF10)(PC5E:CN)	

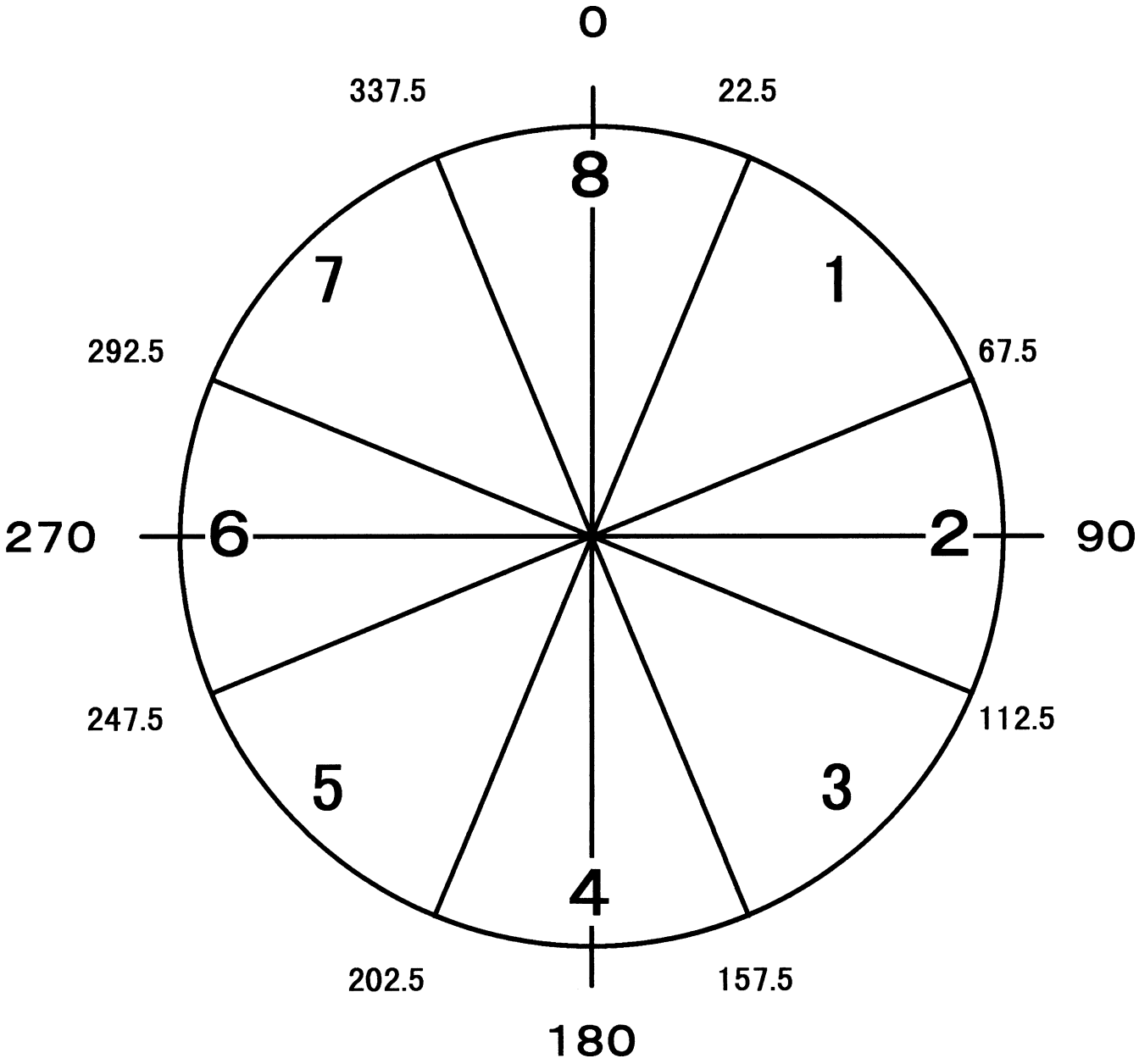
Ref. No.	Part No.	Description	Remarks
	1-475-950-21	REMOTE COMMANDER (RMT-811)	(PC5/PC5E:E,HK,AUS,CN,JE)
	1-475-950-31	REMOTE COMMANDER (RMT-812)	(PC5E:AEP,UK)
	1-543-798-11	FILTER, CLAMP (FERRITE CORE)	(PC4E/PC5E:AEP,UK)
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (PC5:JE/PC5E:JE)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P	(PC5:E,HK/PC5E:E,HK)
	1-573-291-11	CONNECTOR, CONVERSION (21P)	(PC4E/PC5E:AEP,UK)
* ⚠	1-575-131-11	CORD, POWER (PC5:E/PC5E:E)	
⚠	1-696-819-11	CORD, POWER (PC5E:AUS)	
	1-765-080-11	CORD, CONNECTION (A/V)(1.5M)	
⚠	1-769-608-11	CORD, POWER (PC4E:AEP/PC5E:AEP)	
⚠	1-776-985-11	CORD, POWER (PC5:KR)	
⚠	1-782-476-11	CORD, POWER (PC5E:CN)	
⚠	1-783-374-11	CORD, POWER (PC4E:UK/PC5:HK/PC5E:UK,HK)	
	1-783-739-22	CORD CONNECTION (DK-115)(PC5/PC5E)	
⚠	1-790-073-11	CORD, POWER 2P (PC5:JE/PC5E:JE)	
⚠	1-790-107-22	CORD, POWER (PC5:US,CND)	
	1-792-451-11	CORD WITH CONNECTOR (PC SERIAL CABLE)	(PC5/PC5E)
	3-053-056-01	LID, BATTERY CASE (FOR RMT-811,812)	(PC5/PC5E)
	3-060-457-11	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(ENGLISH)(PC5:US,CND,E,HK,JE)
	3-060-457-21	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(FRENCH)(PC5:CND)
	3-060-457-31	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(TRADITIONAL CHINESE) (PC5:E,HK/PC5E:HK)
	3-060-457-41	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(KOREAN)(PC5:KR,JE)
	3-060-458-11	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(ENGLISH,RUSSIAN)(PC5E)
	3-060-458-21	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(FRENCH,GERMAN) (PC5E:AEP,E,JE)
	3-060-458-31	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(ITALIAN,DUTCH)(PC5E:AEP)
	3-060-458-41	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(SPANISH,PORTUGUESE) (PC5:E.JE/PC5E:E)
	3-060-458-61	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(ARABIC,PERSIAN) (PC5:E/PC5E:E)
	3-060-458-71	MANUAL, INSTRUCTION	(PICTURE GEAR 4.1 LITE)(SIMPLIFIED CHINESE) (PC5E:E,CN,JE)
	3-060-476-01	DISK, SYSTEM (PICTURE GEAR 4.1 LITE)	(PC5/PC5E)
	3-062-114-11	MANUAL, INSTRUCTION (ENGLISH)	(PC5:US,CND,E,HK,JE)
	3-062-114-21	MANUAL, INSTRUCTION (FRENCH)(PC5:CND)	
	3-062-114-31	MANUAL, INSTRUCTION	(SPANISH,PORTUGUESE)(PC5:E,JE)
	3-062-114-41	MANUAL, INSTRUCTION	(TRADITIONAL CHINESE)(PC5:E,HK)
	3-062-114-51	MANUAL, INSTRUCTION (KOREAN)(PC5:KR,JE)	
	3-062-114-61	MANUAL, INSTRUCTION (ARABIC)(PC5:E)	

Be sure to read “Precautions upon replacing CCD imager” on page 4-14 when changing the CCD imager.

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

Ref. No.	Part No.	Description	Remarks
	3-062-115-11	MANUAL, INSTRUCTION (ENGLISH,RUSSIAN)	(PC5E:AEP,UK)
	3-062-115-21	MANUAL, INSTRUCTION (FRENCH,GERMAN)	(PC4E:AEP/PC5E:AEP)
	3-062-115-31	MANUAL, INSTRUCTION (SPANISH,PORTUGUESE)	(PC4E:AEP/PC5E:AEP)
	3-062-115-41	MANUAL, INSTRUCTION (ITALIAN,DUTCH)	(PC4E:AEP/PC5E:AEP)
	3-062-116-11	MANUAL, INSTRUCTION (ENGLISH, RUSSIAN)	(PC5E:E,AUS,HK,CN,JE)
	3-062-116-21	MANUAL, INSTRUCTION (FRENCH, GERMAN)	(PC5E:E,JE)
	3-062-116-31	MANUAL, INSTRUCTION (ABABIC, PERSIAN)	(PC5E:E)
	3-062-116-41	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE)	(PC5E:E,CN,JE)
	3-062-116-51	MANUAL, INSTRUCTION (TRANDITIONAL CHINESE)	(PC5E:HK)
	3-742-854-21	LID, BATTERY CASE (FOR RMT-809)	(PC4E)
	3-967-386-11	CLEANING CLOTH	
	A-7033-740-A	MEMORY STICK (MSA-4A)	(PC5/PC5E)

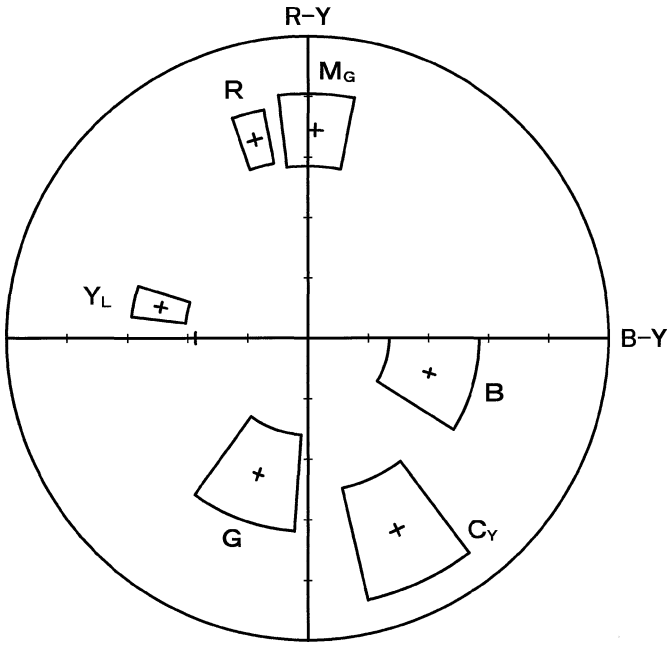
⟨OPTICAL AXIS FRAME⟩



Take a copy of OPTICAL AXIS FRAME with a clear sheet for use.

〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

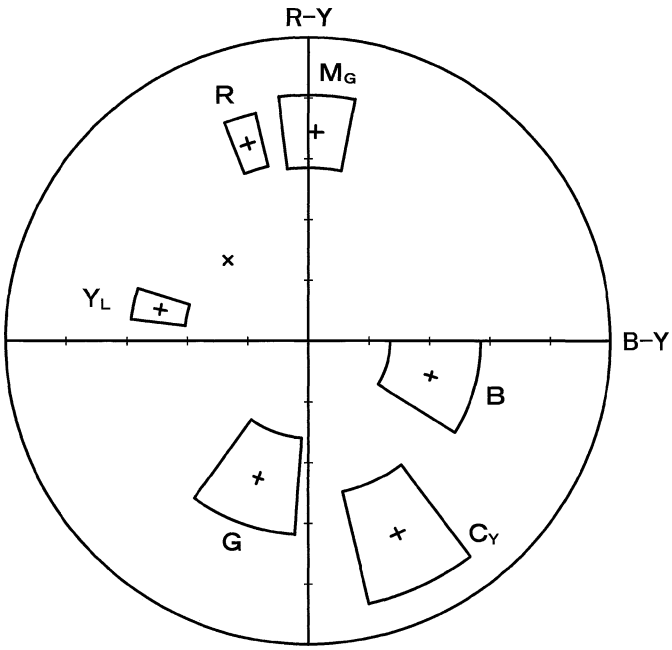
For NTSC model



DCR-PC5

Take a copy of CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

For PAL model



DCR-PC4E/PC5E