CCD-TR618/TR618E/TR718E/TR728E/TR818
CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/
TRV78/TRV78E/TRV88/TRV98/TRV98E
RMT-708

SERVICE MANUAL

Self Diagnosis Supported model

Ver 1.0 2000. 12

Handycam

Handycam Vision™

video Hi8

InfoLITHIUM™ L SERIES

B MECHANISM

Photo : CCD-TRV98E

US Model
CCD-TR818/TRV58/TRV68/TRV88/TRV98
Canadian Model
CCD-TR818/TRV58/TRV68/TRV98
AEP Model
UK Model
CCD-TR718E/TR728E/TRV58E/TRV59E/TRV78E/TRV98E
E Model
CCD-TR618/TR618E/TR818/TRV49/TRV49E/TRV58/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
Australian Model
CCD-TR618E/TRV49E/TRV78E/TRV98E
Hong Kong Model
CCD-TR618E/TRV49/TRV49E/TRV78/TRV78E/TRV98/TRV98E
Tourist Model
CCD-TRV49/TRV49E/TRV78/TRV78E/TRV98/TRV98E
Chinese Model
CCD-TR618E/TRV49E/TRV98E
Brazilian Model
CCD-TR818/TRV58/TRV98
Argentina Model
CCD-TR818/TRV58
Korea Model
CCD-TRV49/TRV78/TRV98

NTSC model : CCD-TR618/TR818/TRV49/TRV58/ TRV68/TRV78/TRV88/TRV98
PAL model : CCD-TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E

For MECHANISM ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL Ⅶ" (9-973-801-11).

SPECIFICATIONS

Video camera recorder

System

Video recording system
2 rotary heads
Helical scanning FM system
Audio recording system
Rotary heads, FM system
Video signal
CCD-TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98:
NTSC color, EIA standards
CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E/TRV78E/TRV98E:
PAL colour, CCIR standards
Usable cassette
8mm video format cassette
Hi8 or standard 8
Recording/playback time
CCD-TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98:
(using 120 min. cassette)
SP mode: 2 hours
LP mode: 4 hours
CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E/TRV78E/TRV98E: **(using 90 min. cassette)**
SP mode: 1 hour and 30 minutes
LP mode: 3 hours
Fastforward/rewind time
CCD-TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98:
(using 120 min. cassette)
CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E/TRV78E/TRV98E: **(using 90 min. cassette)**
Approx. 5 min.

Viewfinder
Electric viewfinder
CCD-TR818: Color
CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E:
Monochrome
Image device
CCD-TR618/TRV49/TRV58:
3 mm (1/6 type) CCD
(Charge Coupled Device)
Approx. 270 000 pixels
(Effective: Approx. 250 000 pixels)
CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E:
3 mm (1/6 type) CCD
(Charge Coupled Device)
Approx. 320 000 pixels
(Effective: Approx. 290 000 pixels)
CCD-TR818/TRV68/TRV78/TRV88/TRV98:
4.5 mm (1/4 type) CCD
(Charge Coupled Device)
Approx. 320 000 pixels
(Effective: Approx. 200 000 pixels)
CCD-TRV78E/TRV98E:
4.5 mm (1/4 type) CCD
(Charge Coupled Device)
Approx. 380 000 pixels
(Effective: Approx. 230 000 pixels)
Lens
Combined power zoom lens
Filter diameter 37 mm (1 7/16 in.)
CCD-TR618/TR618E/TRV49/TRV49E:
20× (Optical), 450× (Digital)
CCD-TR718E/TR818/TRV58/TRV58E/TRV68:
20× (Optical), 460× (Digital)
CCD-TR728E/TRV59E/TRV78/TRV78E/TRV88/TRV98/TRV98E:
20× (Optical), 560× (Digital)
Focal length
3.6 - 72 mm (5/32 - 2 7/8 in.)
When converted to a 35 mm still camera
CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E:
51.8 - 1 036 mm (2 - 40 6/8 in.)
CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E:
41 - 820 mm (1 5/8 - 32 3/8 in.)
Colour temperature
Auto
Minimum illumination
CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E:
1 l x (lux) (F 1.4)
CCD-TR818/TRV68/TRV78/TRV88/TRV98:
0.4 l x (lux) (F 1.4)
CCD-TRV78E/TRV98E:
0.3 l x (lux) (F 1.4)
0 l x (lux) (in the NightShot mode)*
* Objects unable to be seen due to the dark can be shot with infrared lighting.

Output connectors

S video output
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced
Chrominance signal:
CCD-TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98:
0.286 Vp-p,
CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E/TRV78E/TRV98E:
0.3 Vp-p,
75 Ω (ohms), unbalanced
Audio/Video output
AV MINIJACK, 1 Vp-p,
75 Ω (ohms), unbalanced, sync negative
327 mV,
(at output impedance more than 47 kΩ (kilohms))
Output impedance with less than 2.2 kΩ (kilohms)/Monaural
minijack (ø 3.5 mm)
RFU DC OUT
Mini-mini jack (ø 2.5 mm), DC 5V
Earphone jack
CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E:
Monaural minijack (ø 3.5 mm)

— Continued on next page —

Hi8 VIDEO CAMERA RECORDER

SONY®

LCD screen

Picture
CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E:
6.2 cm (2.5 type)
50.3 × 37.4 mm. (2 × 11/2 in.)
CCD-TRV88:
7.5 cm (3.0 type)
61.0 × 43.8 mm (2 1/2 × 1 3/4 in.)
CCD-TRV98/TRV98E:
8.8 cm (3.5 type)
72.2 × 50.4 mm (2 7/8 × 2 in.)
Total dot number
CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E:
61 600 (280 × 220)
CCD-TRV88/TRV98/TRV98E:
123 200 (560 × 220)

General

Power requirements
7.2 V (battery pack)
8.4 V (AC power adaptor)
Average power consumption (when using the battery pack)
During camera recording
CCD-TR618/TR618E/TR718E/TR728E: 2.3 W
CCD-TR818: 2.0 W
During camera recording using LCD
CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E: 2.7 W
CCD-TRV88/TRV98/TRV98E: 3.4 W
Viewfinder
2.3 W
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Recommended charging temperature
10 °C to 30 °C (50 °F to 86 °F)
Storage temperature
–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (approx.)
CCD-TR618/TR618E/TR718E/TR728E:
104 × 105 × 223 mm
(4 1/8 × 4 1/4 × 9 1/8 in.)
(w/h/d)
CCD-TR818:
104 × 105 × 197 mm
(4 1/8 × 4 1/4 × 7 7/8 in.)
(w/h/d)
CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E:
104 × 109 × 223 mm
(4 1/8 × 4 3/8 × 9 1/8 in.)
(w/h/d)
Mass (approx.)
CCD-TR618/TR618E/TR718E/TR728E:
780 g (1 lb 11 oz)
CCD-TR818:
760 g (1 lb 10 oz)
CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E:
910 g (2 lb)
CCD-TRV88:
920 g (2 lb)
CCD-TRV98/TRV98E:
930 g (2 lb)
excluding the battery pack, cassette and shoulder strap
CCD-TR618/TR618E/TR718E/TR728E:
930 g (2 lb)
CCD-TR818:
910 g (2 lb)
CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E:
1.1 kg (2 lb 7 oz)
including the battery pack NP-F330, cassette and shoulder strap
Supplied accessories
See page 3.

AC power adaptor

Power requirements
100 - 240 V AC, 50/60 Hz
Power consumption
23 W
Output voltage
DC OUT: 8.4 V, 1.5 A in operating 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.)
125 × 39 × 62 mm
(5 × 1 9/16 × 2 1/2 in.) (w/h/d)
excluding projecting parts
Mass (approx.)
280 g (9.8 oz)
excluding power cord

Battery pack

Maximum output voltage
DC 8.4 V
Output voltage
DC 7.2 V
Capacity
5.0 Wh (700mAh)
Dimensions (approx.)
38.4 × 20.6 × 70.8 mm
(1 9/16 × 13/16 × 2 7/8 in.)
(w/h/d)
Mass (approx.)
70 g (2.5 oz)
Operating temperature
0 °C to 40 °C (32 °F to 104 °F)
Type
Lithium ion

Design and specifications are subject to change without notice.

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.

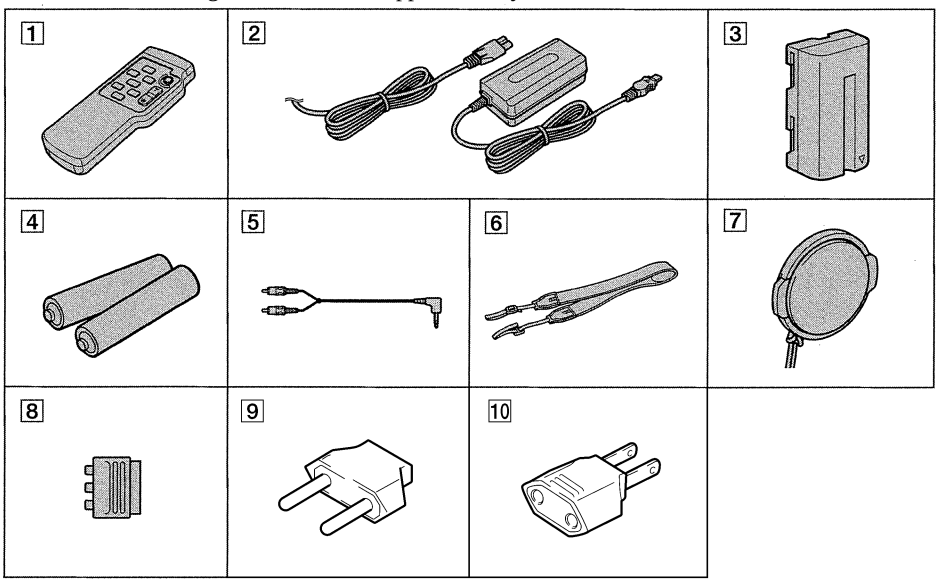
SAFETY CHECK-OUT

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.

• SUPPLIED ACCESSORIES

Check that the following accessories are supplied with your camcorder.



1 **Wireless Remote Commander** (1)
CCD-TR728E/TRV49/TRV49E/TRV59E/TRV78/TRV78E/TRV98/TRV98E only

2 **AC-L10A/L10B/L10C AC power adaptor** (1), **Mains lead** (1)

3 **NP-F330 battery pack** (1)

4 **R6 (size AA) battery for Remote Commander** (2)
CCD-TR728E/TRV49/TRV49E/TRV59E/TRV78/TRV78E/TRV98/TRV98E only

5 **A/V connecting cable** (1)

6 **Shoulder strap** (1)

7 **Lens cap** (1)

8 **21-pin adaptor** (1)
CCD-TR718E/TR728E/TRV58E/TRV59E/TRV78E/TRV98E (European models only)

9 **2-pin convesion adaptor** (1)
CCD-TRV49: JE/TRV49E: JE/TRV78: JE/TRV78E: JE/TRV98: JE/TRV98E: JE

10 **2-pin convesion adaptor** (1)
CCD-TR618/TR618E: E,HK/TR818: E,BR/TRV49: E,HK/TRV49E: E,HK/TRV58: E,BR/TRV68: E/TRV78: E,HK/TRV78E: E,HK/TRV88: E/TRV98: E,HK,BR/TRV98E: E,HK

• Abbreviation
HK : Hong Kong model
JE : Tourist model
BR : Brazilian model

Table for difference of function

Model		CCD-TR618	CCD-TR618E	CCD-TR718E	CCD-TR728E	CCD-TR818	CCD-TRV49	CCD-TRV49E	CCD-TRV58	CCD-TRV58E	CCD-TRV59E	CCD-TRV68	CCD-TRV78	CCD-TRV78E	CCD-TRV88	CCD-TRV98	CCD-TRV98E	Remark
Destination		E	E,HK, AUS,CN	AEP,UK	AEP,UK	US,CND, E,BR, AR	E,HK, KR,JE	E,HK, AUS,JE, CN	US,CND, E,BR, AR	AEP,UK	AEP,UK	US,CND, E	E,HK, KR,JE	AEP,UK, E,HK,AUS, JE	US,E	US,CND, E,HK,KR, JE,BR	AEP,UK, E,HK,AUS, JE,CN	
Color system		NTSC	PAL			NTSC		PAL	NTSC	PAL		NTSC		PAL	NTSC		PAL	
Remote commander		××			RMT-708	××	RMT-708		××	RMT-708		××	RMT-708		XX	RMT-708		
Lens	Optical	20×																
	Digital	450×		460×	560×	460×	450×		460×	560×		460×	560×					
CCD imager size		1/6 inch				1/4 inch	1/6 inch					1/4 inch						
LCD	size	××					2.5 inch								3 inch	3.5 inch		
	pixel	××					61K								123K			
View finder		B/W				Color	B/W											
Steady shot		××				○	××					○						
Headphone jack		××					○											
LASER LINK		××														○	××	
Video Light		○				××	○											
Board	CD-	CD-286					CD-281											
	CF-	CF-077					CF-1000 block											
	VF-	VF-129				VF-141	VF-129											VF-129 : B/W EVF VF-141 : Color EVF
	PD-	××					PD-131											
	MI-	MI-040					MI-041											
	LB-	××				LB-062	××											LB-062 : Color EVF

• Abbreviation
CND : Canadian model
HK : Hong Kong model
KR : Korea model
JE : Tourist model
AUS : Australian model
CN : Chinese model
BR : Brazilian model
AR : Argentina model

TABLE OF CONTENTS

6. REPAIR PARTS LIST

* Color reproduction frame is shown on page 239.

SERVICE NOTE

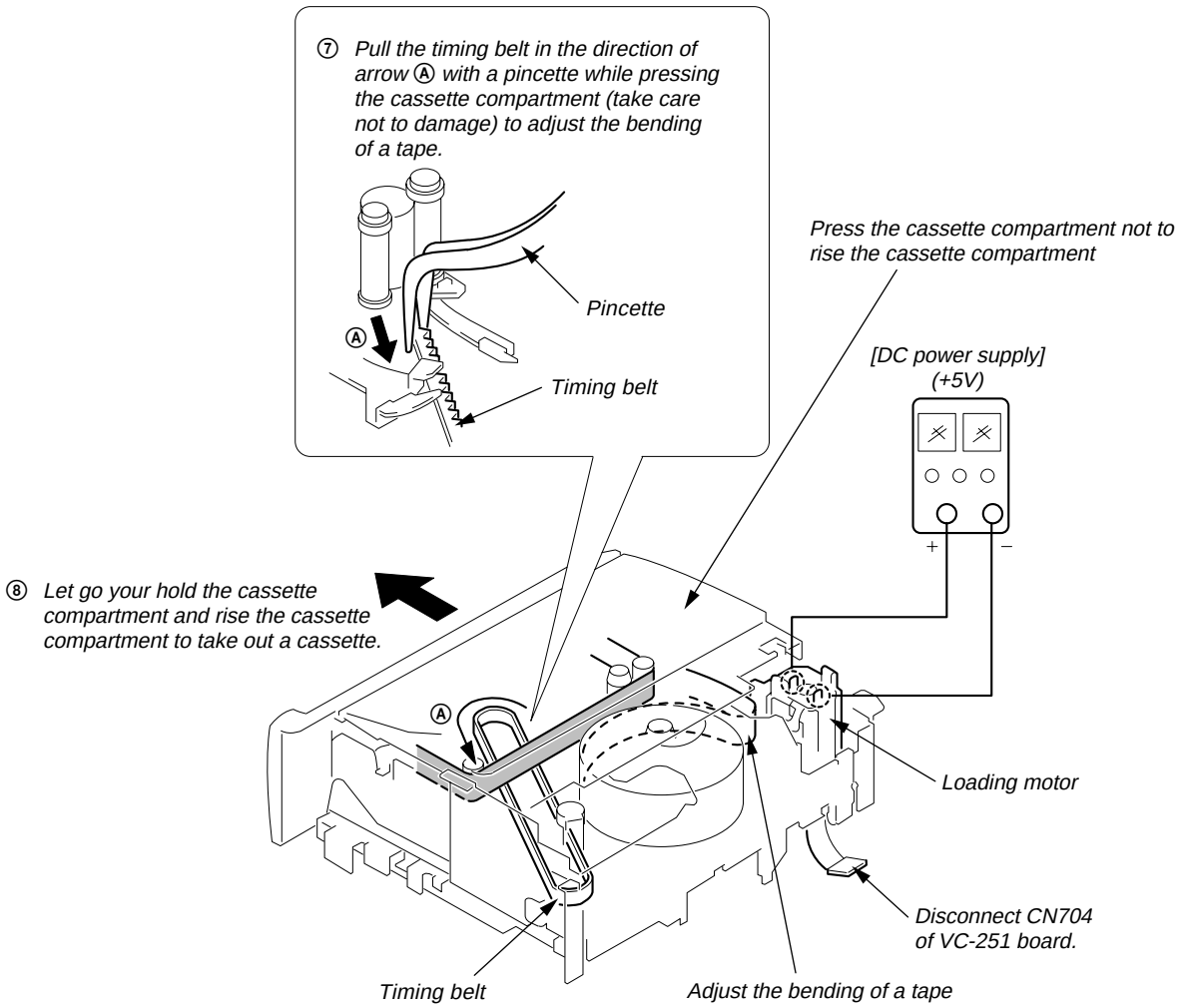
1. POWER SUPPLY DURING REPAIRS

In this unit, about 10 seconds after power is supplied (8.4V) to the battery terminal using the service power cord (J-6082-223-A), the power is shut off so that the unit cannot operate.
This following method is available to prevent this.

Method:
Use the DC IN terminal. (Use the AC power adaptor.)

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

① Refer to 2-3. to remove the front panel assembly.
② Refer to 2-5 (TR model). or 2-6 (TRV model). to remove the cabinet (R) assembly.
③ Open the control switch block (FK-1000).
④ Refer to 2-4. to remove the cabinet (L) assembly.
⑤ Disconnect CN704 (8P) of VC-251 board.
⑥ Add +5V from the DC POWER SUPPLY and unload with a pressing the cassette compartment.



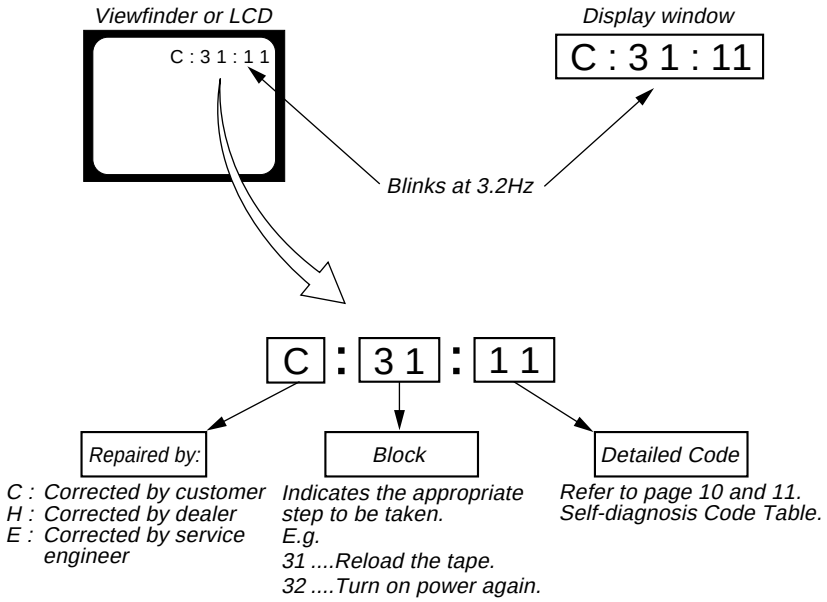
SELF-DIAGNOSIS FUNCTION

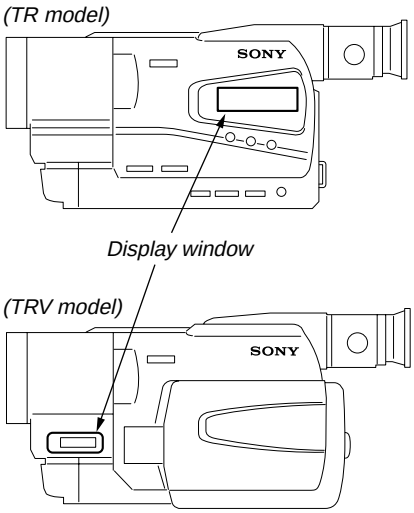
1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or LCD or Display window 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 or Display window shows a 4-digit display consisting of an alphabet and 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.



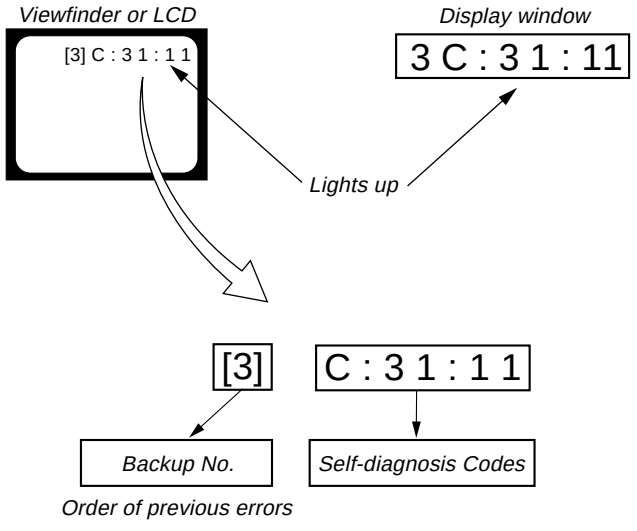


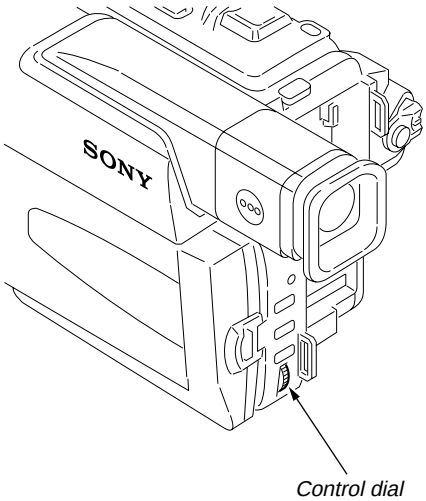
3. Service Mode Display

The service mode display shows up to six self-diagnosis codes shown in the past.

3-1. Display Method

While pressing the "STOP" key, set the switch from OFF to "VTR or PLAYER", and continue pressing the "STOP" 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. Switching of Backup No.

By rotating the control dial, past self-diagnosis codes will be shown in order. 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

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 built-in rechargeable lithium battery (CF-1000 block/CF-077 board BT101). When the cabinet (R) assembly is disconnected, the "self-diagnosis display" data will be lost by initialization.

4. Self-diagnosis Code Table

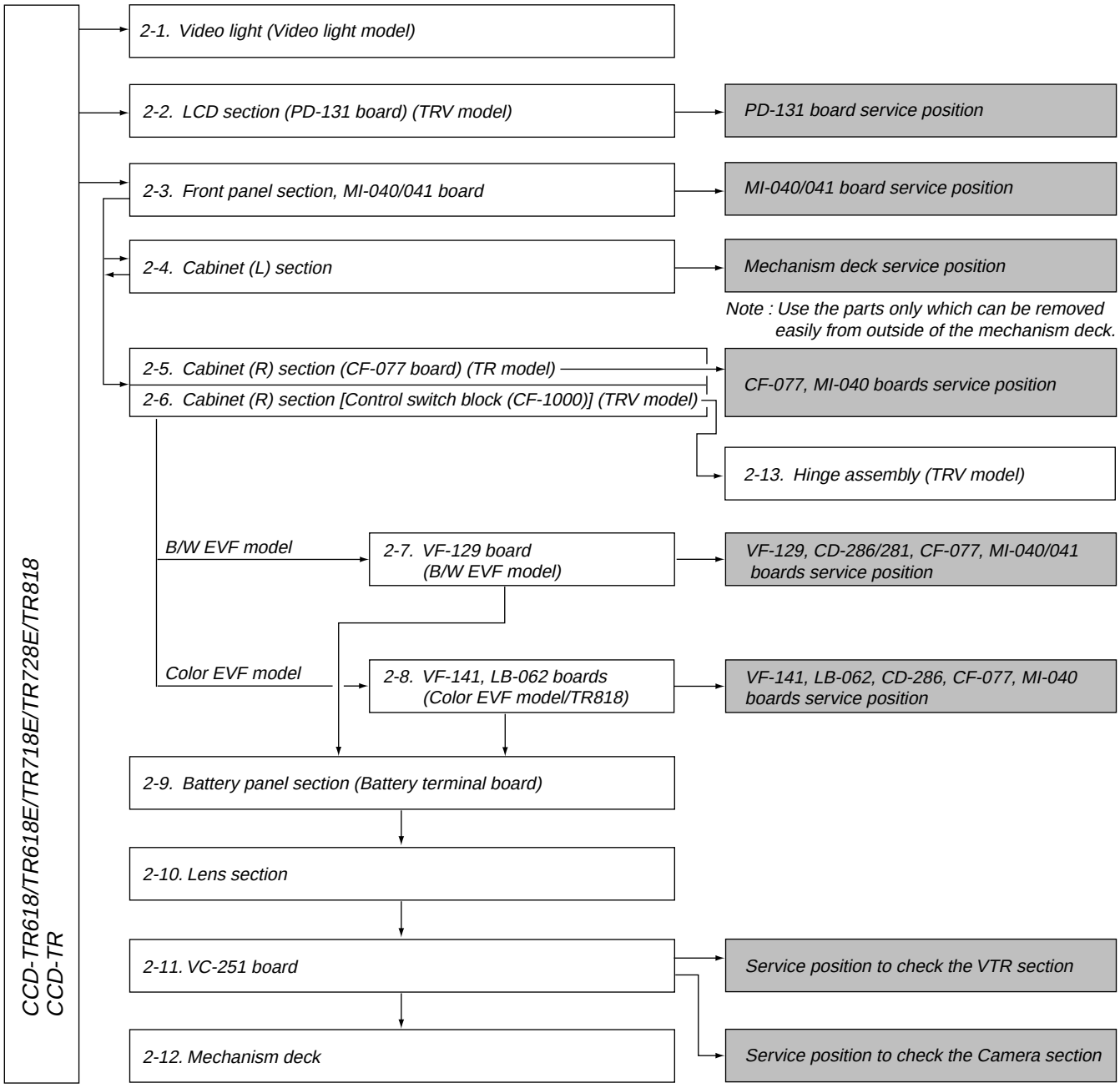
Self-diagnosis Code					Symptom/State	Correction
Repaired by:	Block Function		Detailed Code			
C	0	4	0	0	Non-standard battery is used.	Use the InfoLITHIUM battery.
C	2	1	0	0	Condensation.	Remove the cassette, and insert it again after one hour.
C	2	2	0	0	Video head is dirty.	Clean with the optional cleaning 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	S reel side tape slacking when unloading.	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	3	0	FG fault when starting capstan.	Load the tape again, and perform operations from the beginning.
C	3	1	3	1	FG fault during normal capstan operations.	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	1	PG 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	4	3	PG fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	1	4	4	Phase fault during normal drum operations.	Load the tape again, and perform operations from the beginning.
C	3	2	1	0	LOAD direction loading motor time-out.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	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	S reel side tape slacking when unloading.	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	3	0	FG fault when starting capstan.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	3	1	FG fault during normal capstan operations.	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	1	PG 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.
C	3	2	4	3	PG fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.
C	3	2	4	4	Phase fault during normal drum operations.	Remove the battery or power cable, connect, and perform operations from the beginning.

Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
E	6 1	0 0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ⑫ of CN301 of VC-251 board) when focusing is performed when the control dial is rotated in the focus manual mode and the focus motor drive circuit (IC301 of VC-251 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 ⑭ of CN301 of VC-251 board) when zooming is performed when the zoom lens is operated and the zoom motor drive circuit (IC301 of VC-251 board) when zooming is not performed.
E	6 2	0 0	Handshake correction function does not work well. (With pitch angular velocity sensor output stopped.)	Inspect pitch angular velocity sensor (SE751 of MI-040/041 board) peripheral circuits. *1
E	6 2	0 1	Handshake correction function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE752 of MI-040/041 board) peripheral circuits. *1

*1: STEADY SHOT model (CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)

SECTION 2
DISASSEMBLY

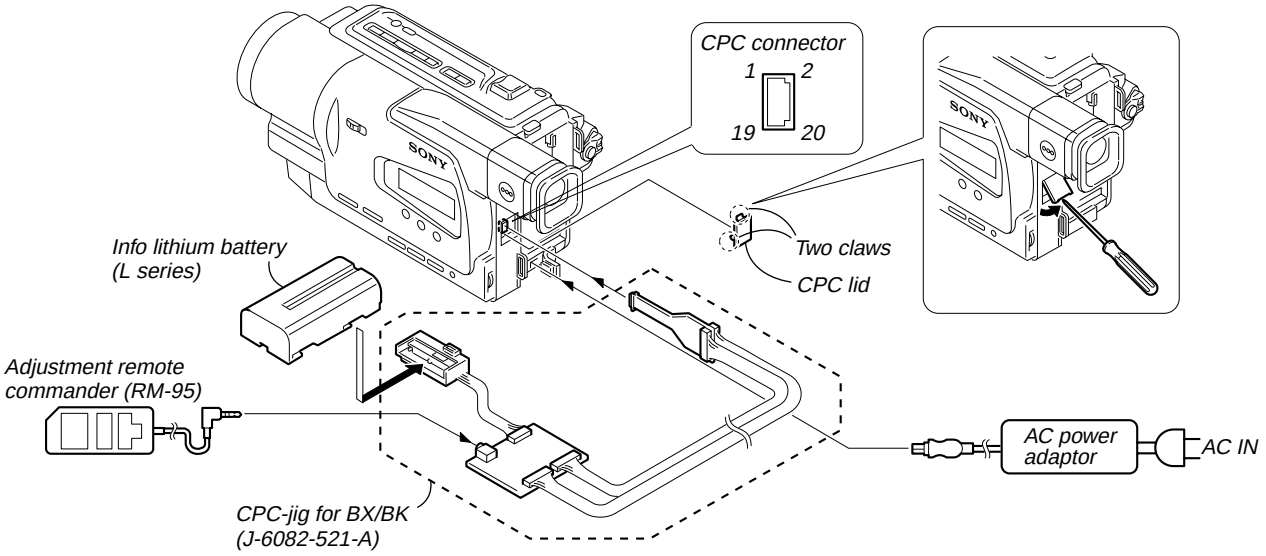
The following flow chart shows the disassembly procedure.



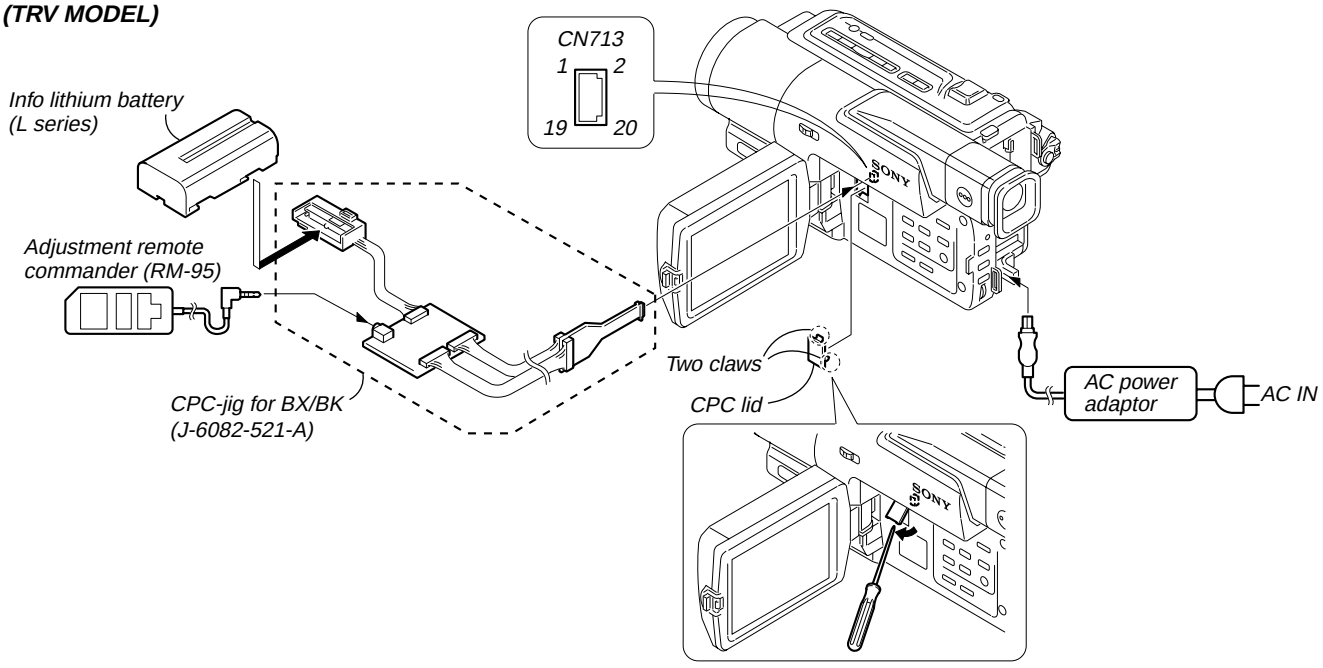
TR model	*:CCD-TR618/TR618E/TR718E/TR728E/TR818*
TRV model	*:CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E*
Video light model	*:CCD-TR618/TR618E/TR718E/TR728E/ TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E*
No video light model	*:CCD-TR818*
B/W EVF model	*:CCD-TR618/TR618E/TR718E/TR728E/ TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E*
Color EVF model	*:CCD-TR818*

[CONNECTION OF EQUIPMENTS]

(TR MODEL)

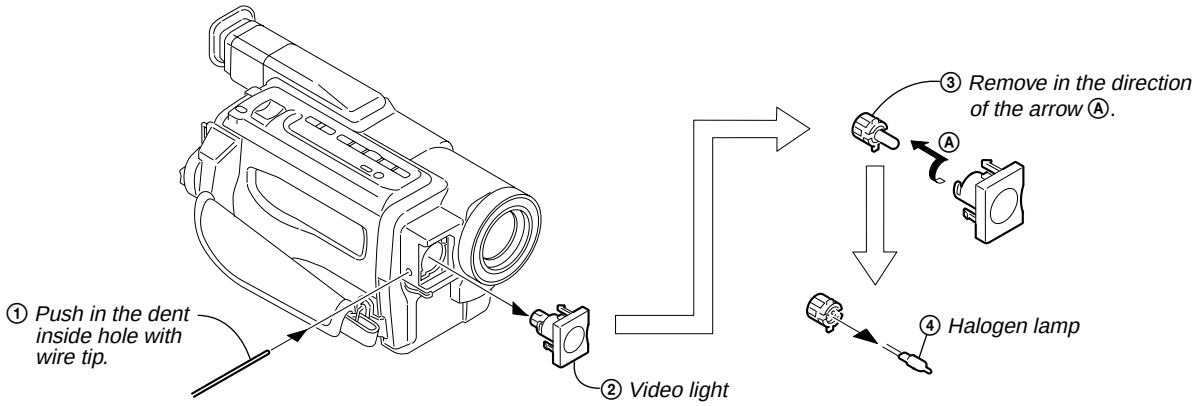


(TRV MODEL)

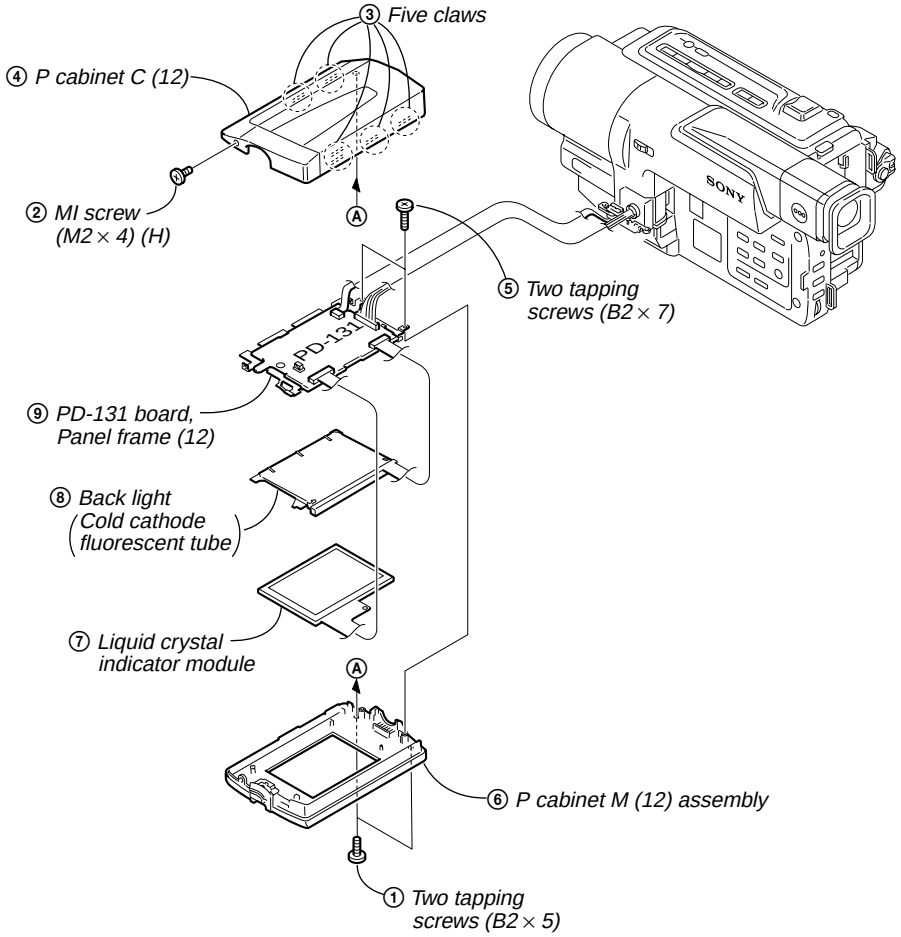


NOTE: Follow the disassembly procedure in the numerical order given.

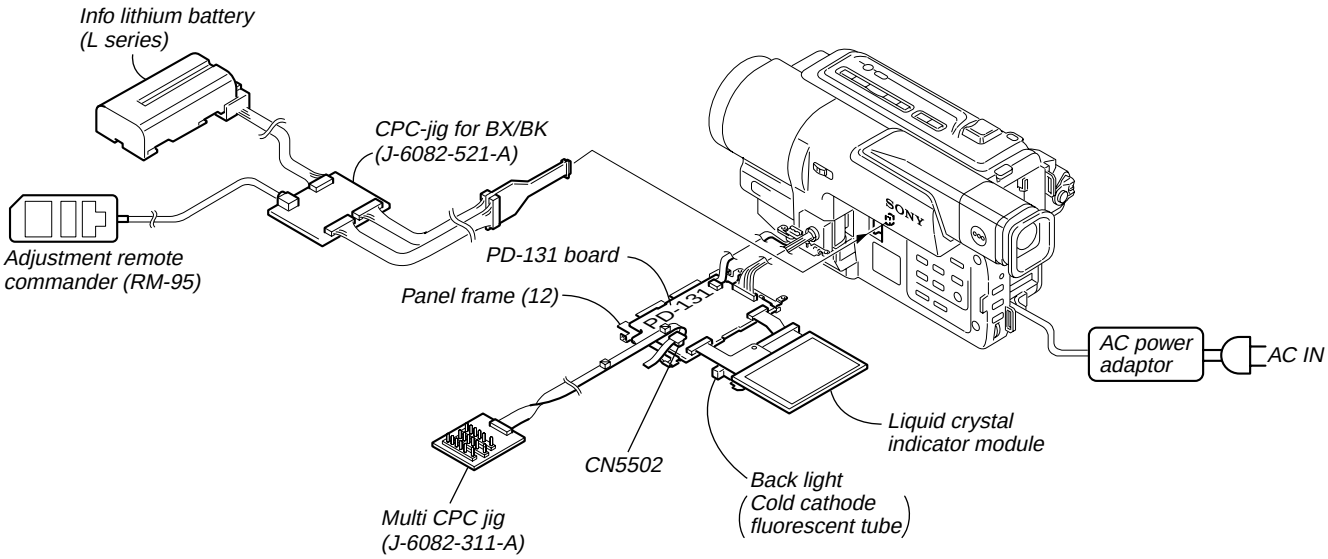
2-1. VIDEO LIGHT (VIDEO LIGHT MODEL)



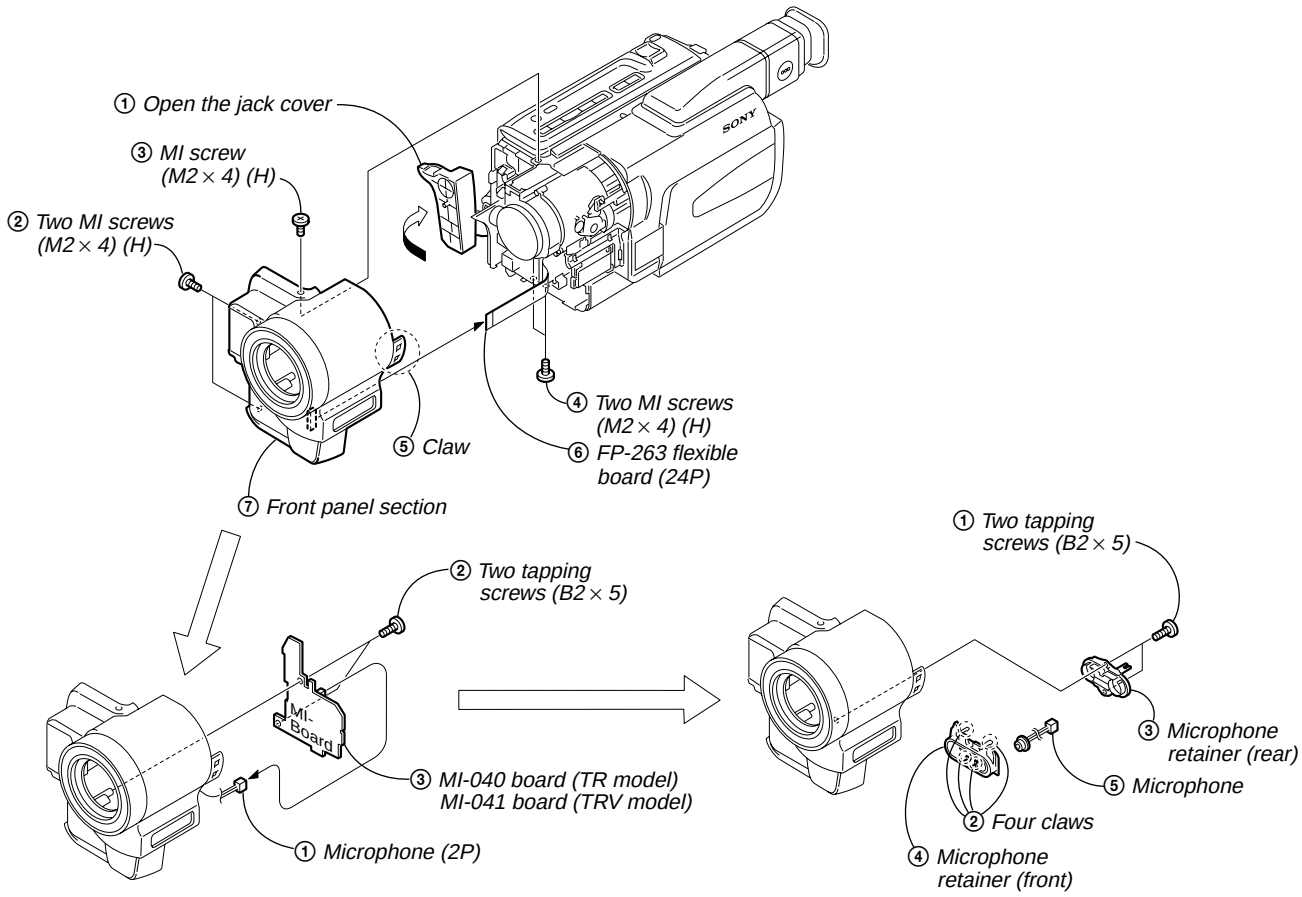
2-2. LCD SECTION (PD-131 BOARD) (TRV MODEL)



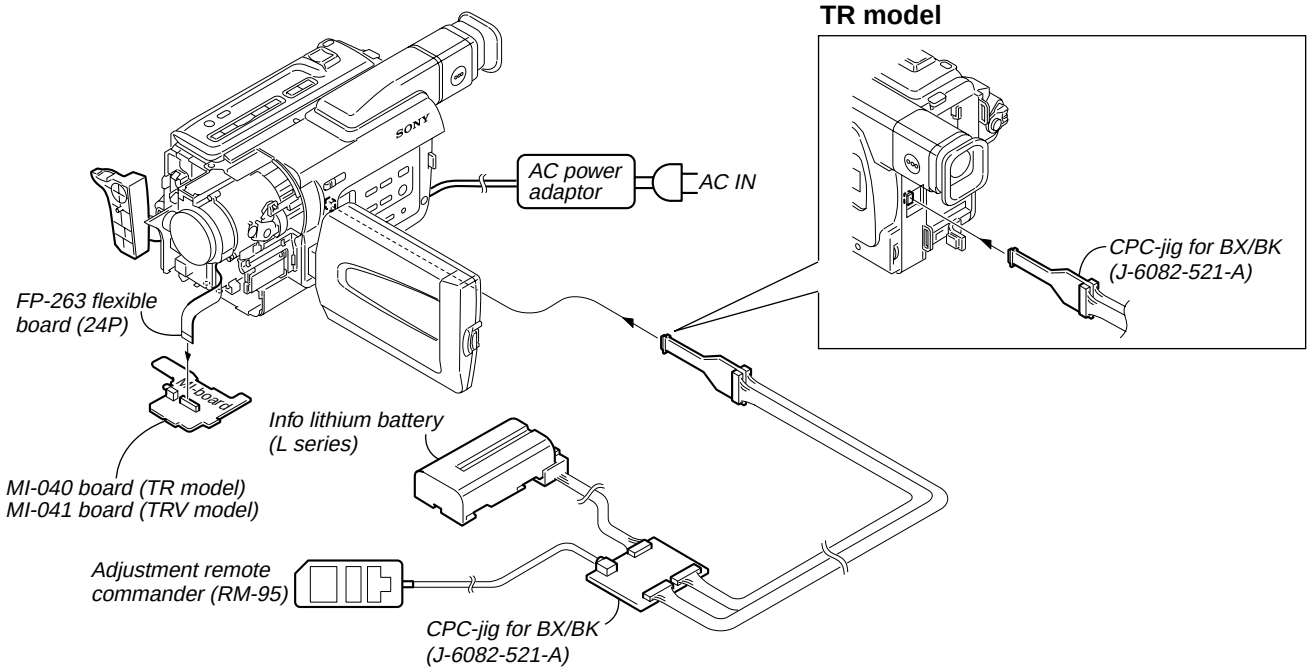
[PD-131 BOARD SERVICE POSITION]



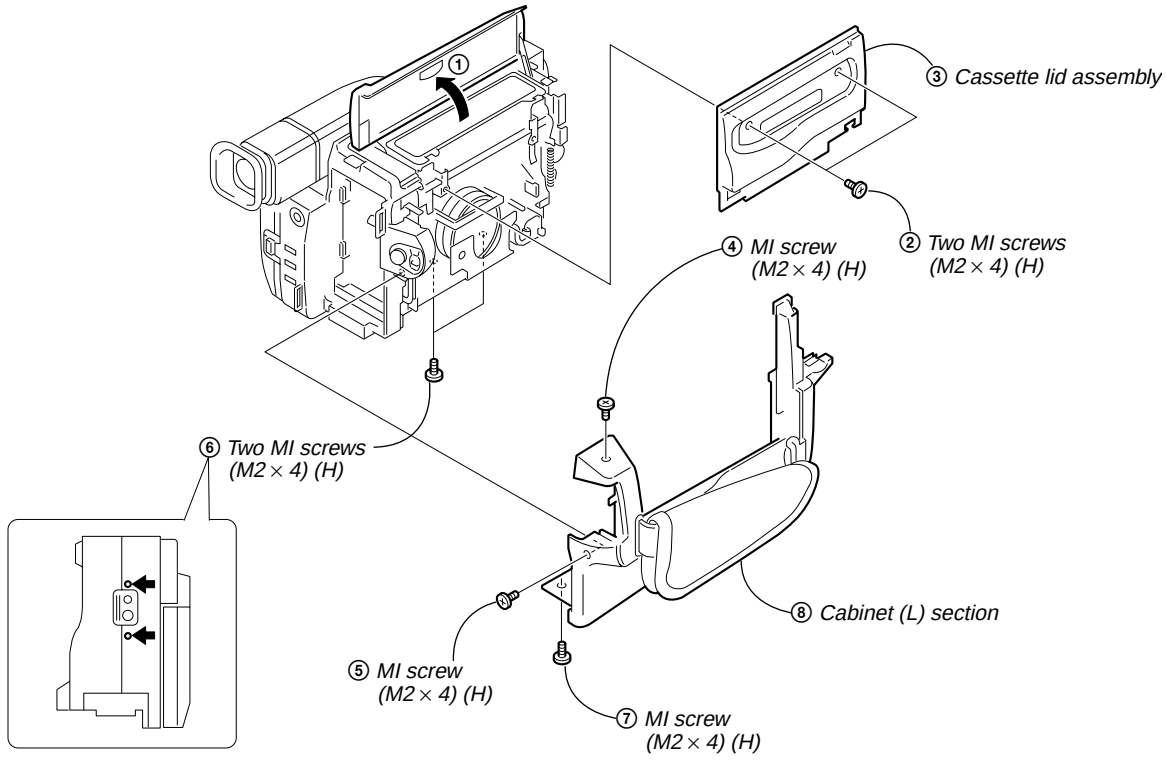
2-3. FRONT PANEL SECTION, MI-040/041 BOARD



[MI-040/041 BOARD SERVICE POSITION]

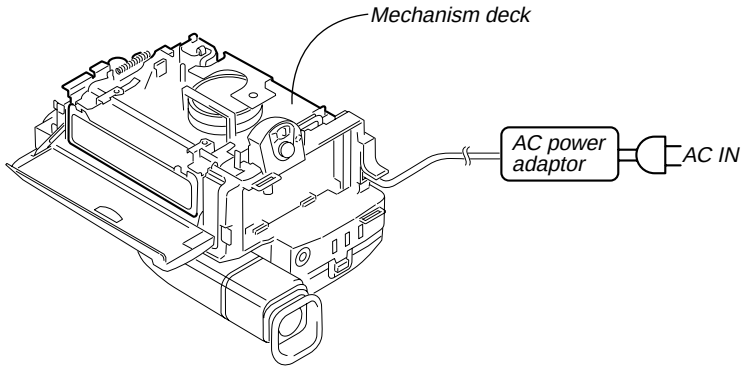


2-4. CABINET (L) SECTION

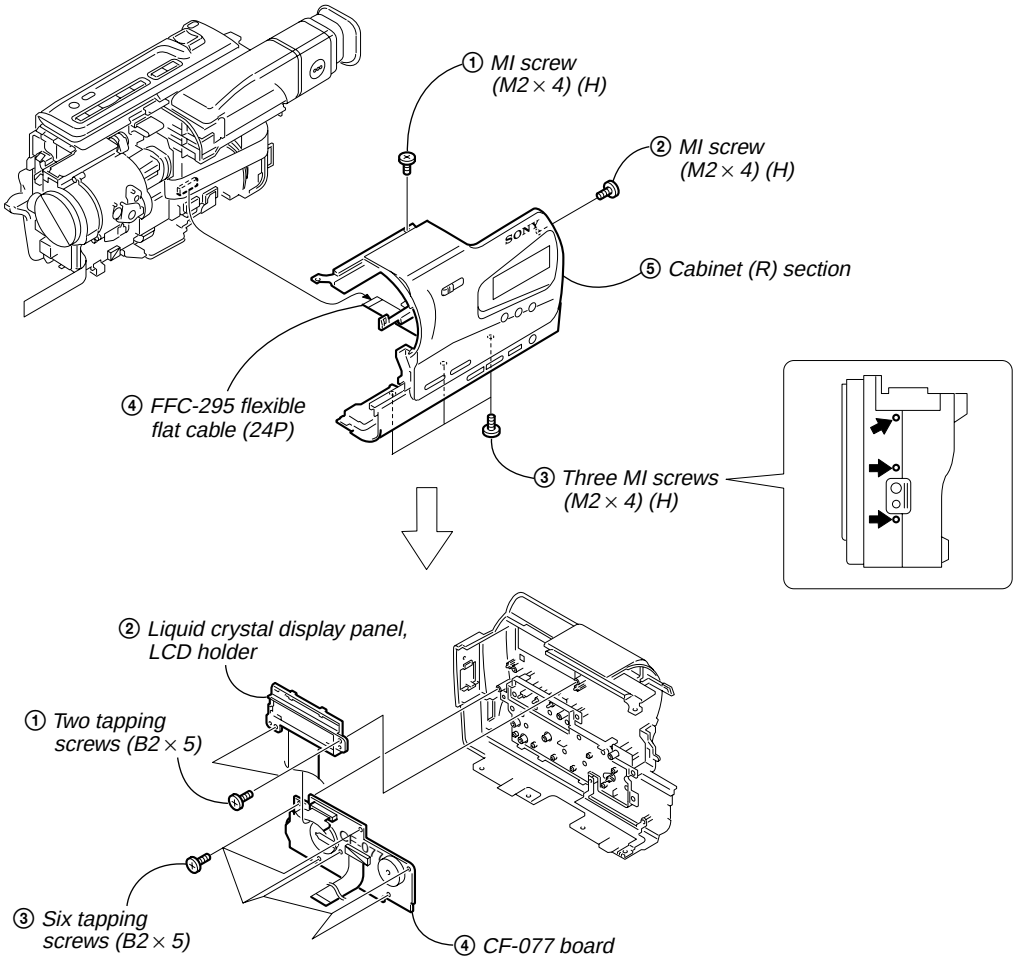


[MECHANISM DECK SERVICE POSITION]

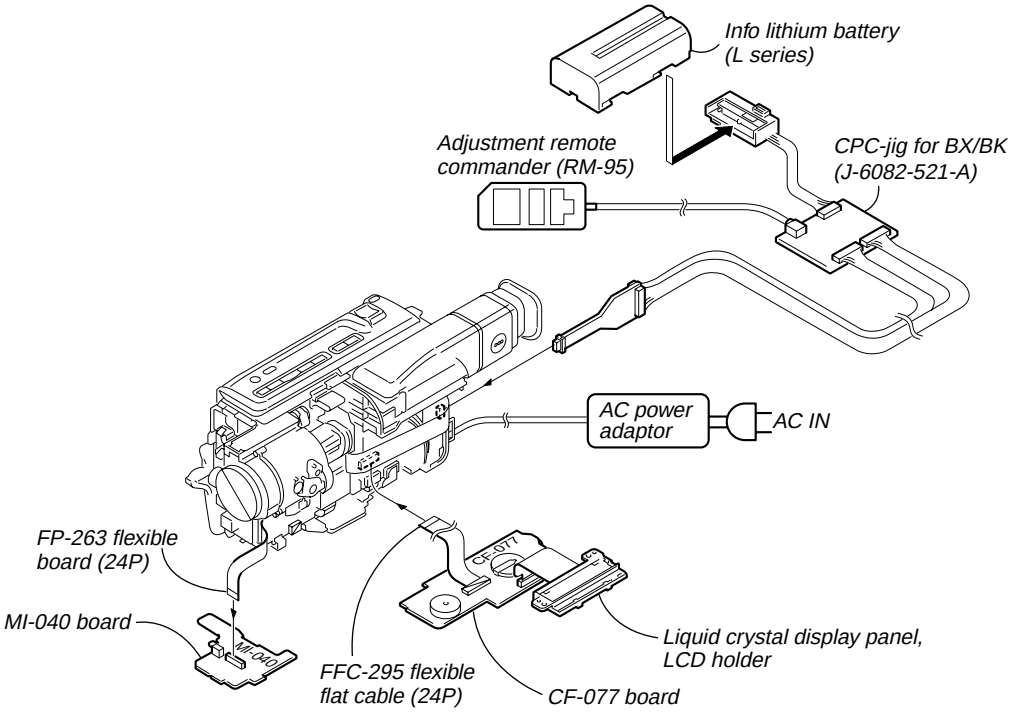
Note: *Use the parts only which can be removed easily from outside of the mechanism deck.*



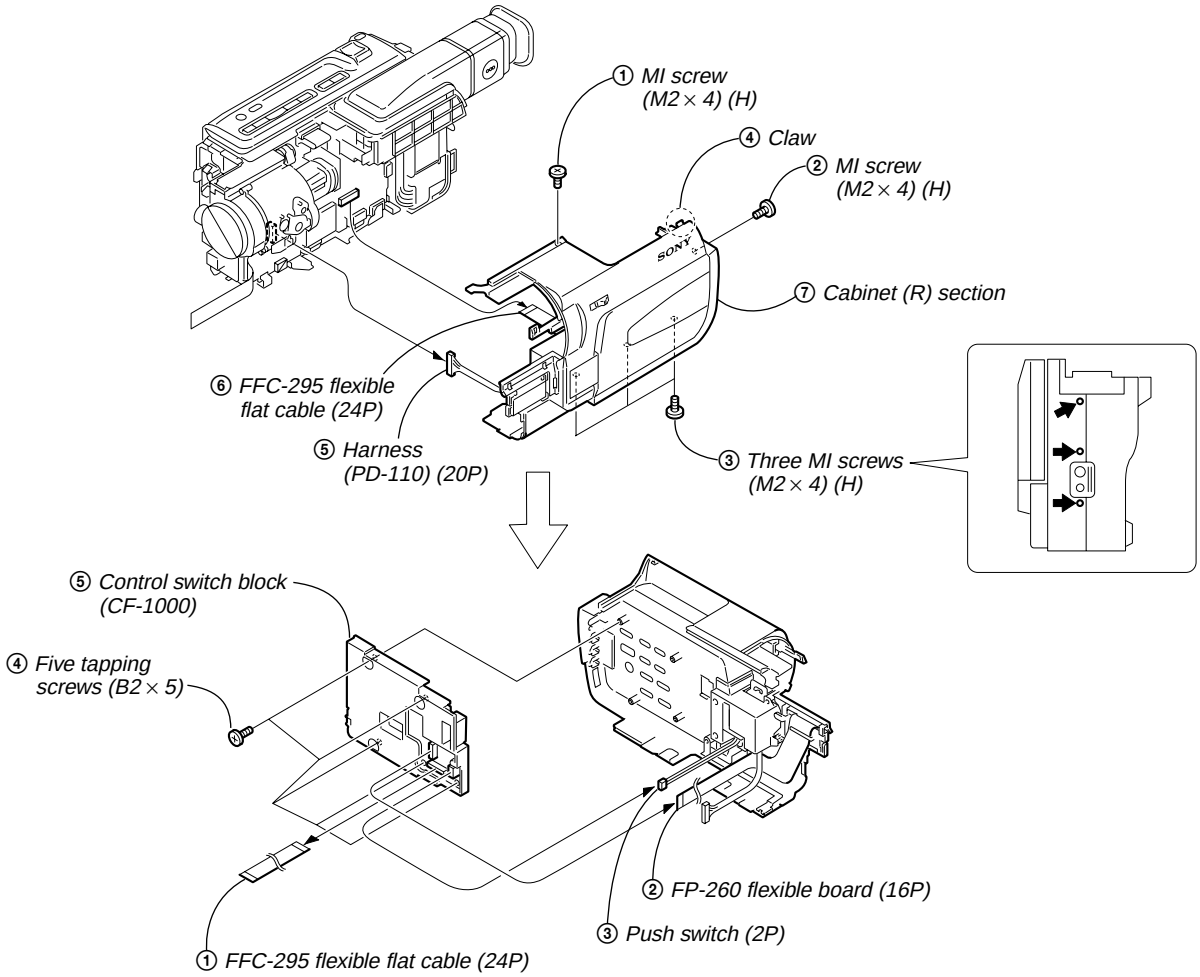
2-5. CABINET (R) SECTION (CF-077 BOARD) (TR MODEL)



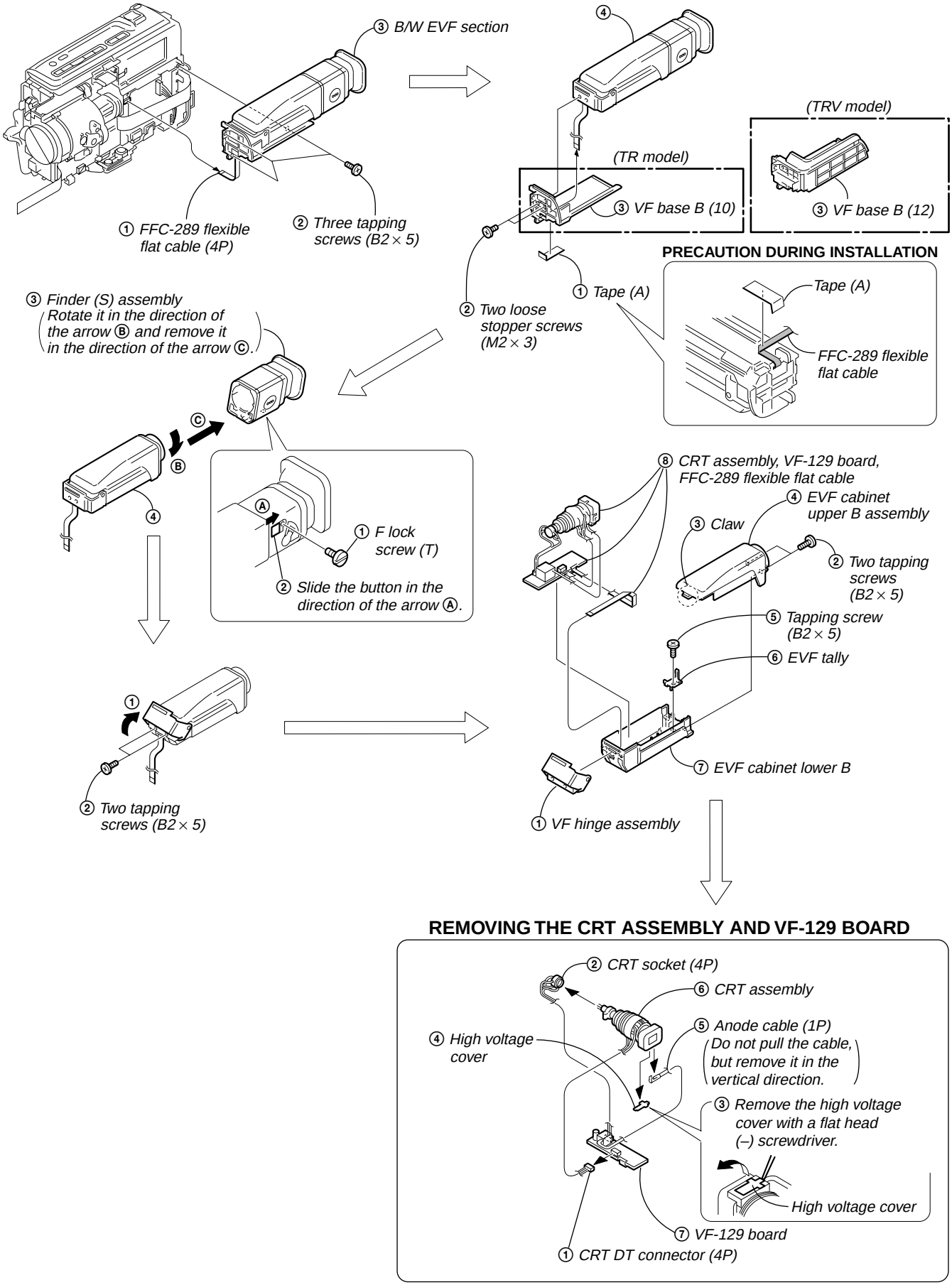
[CF-077, MI-040 BOARDS SERVICE POSITION]



2-6. CABINET (R) SECTION [CONTROL SWITCH BLOCK (CF-1000)] (TRV MODEL)

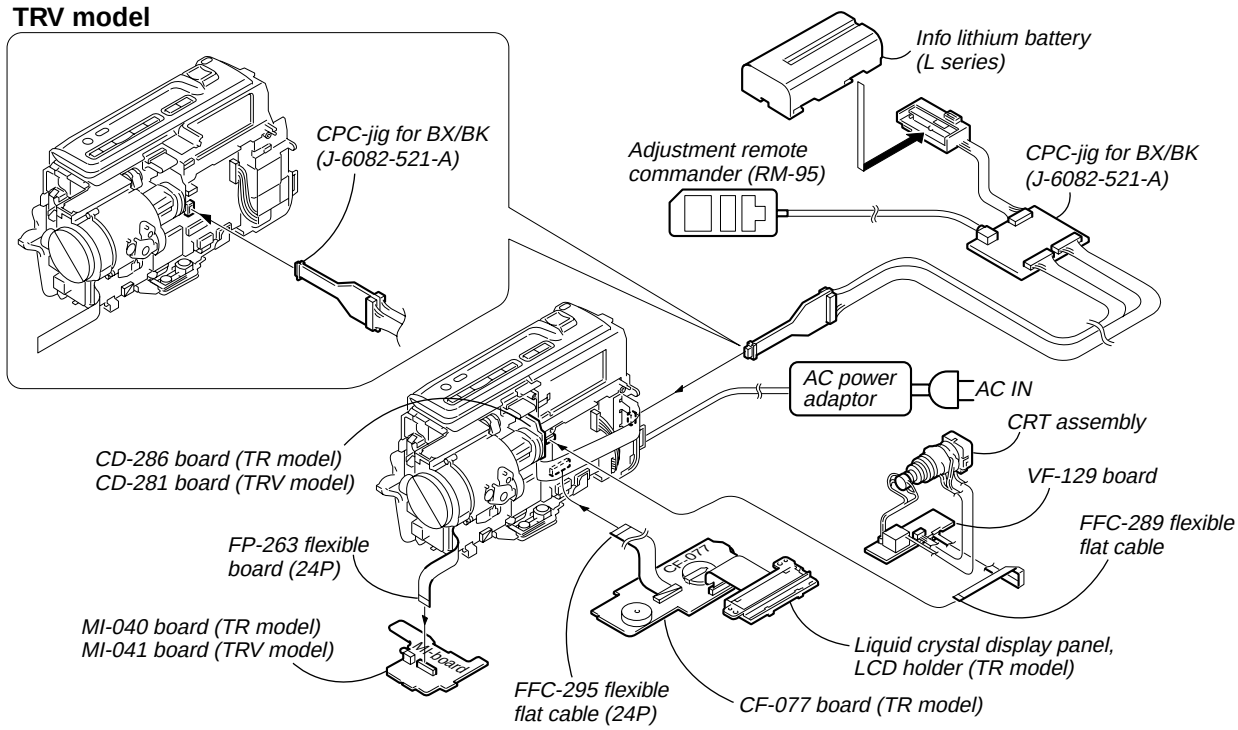


2-7. VF-129 BOARD (B/W EVF MODEL)

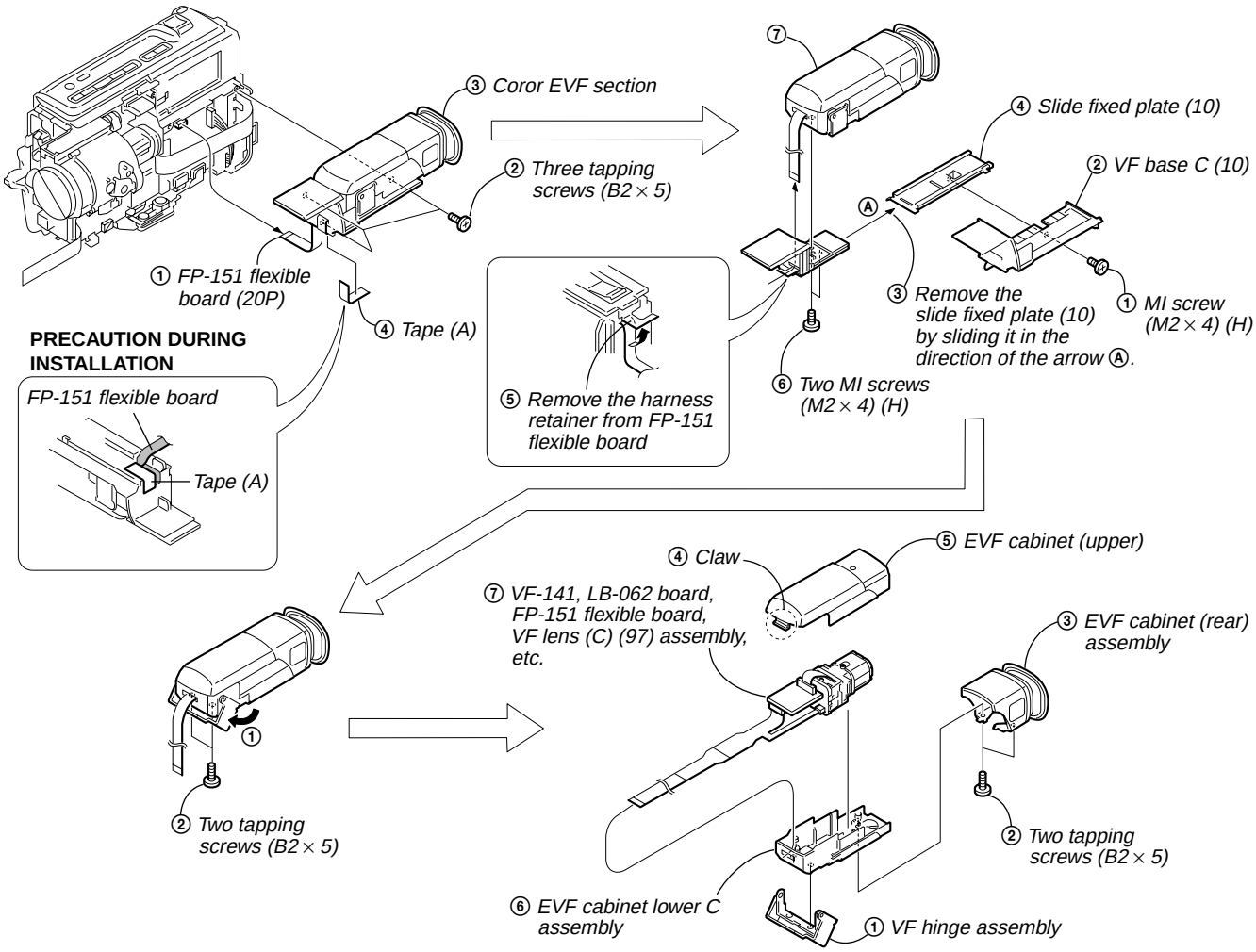


REMOVING THE CRT ASSEMBLY AND VF-129 BOARD

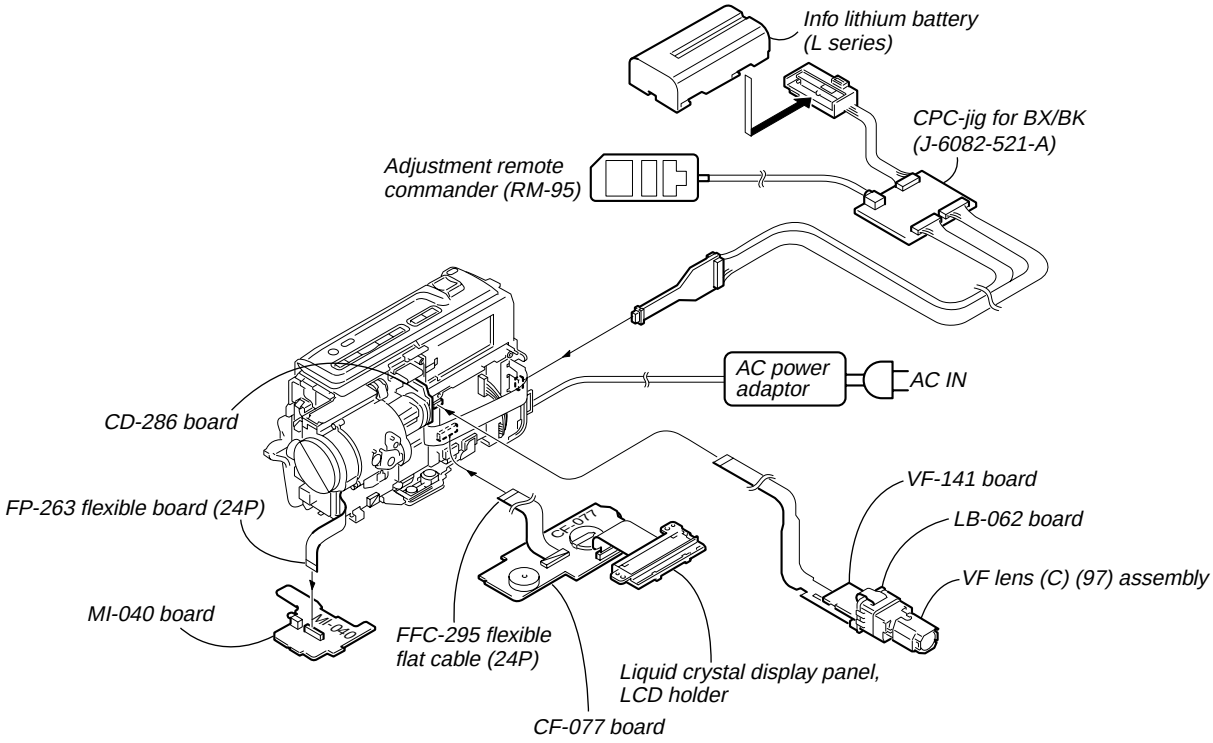
[VF-129, CD-286/281, CF-077, MI-040/041 BOARDS SERVICE POSITION]



2-8. VF-141, LB-062 BOARDS (COLOR EVF MODEL/TR818)

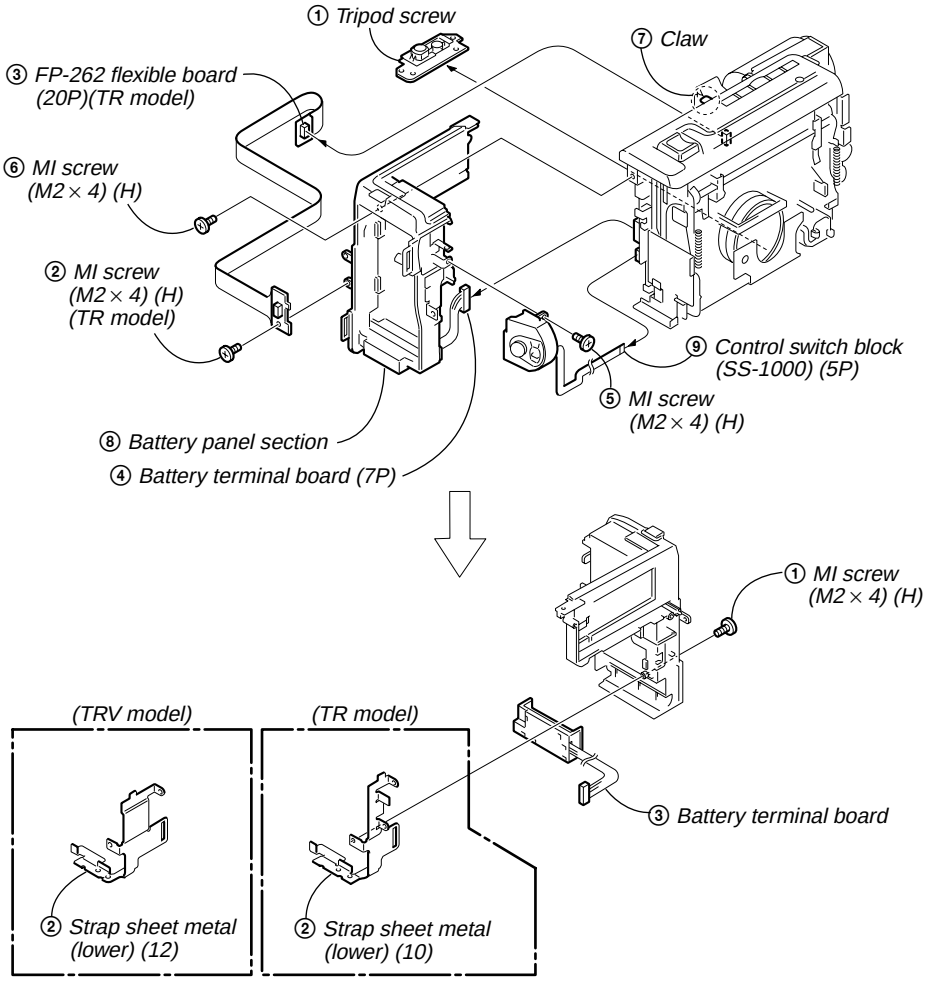


[VF-141, LB-062, CD-286, CF-077, MI-040 BOARDS SERVICE POSITION]

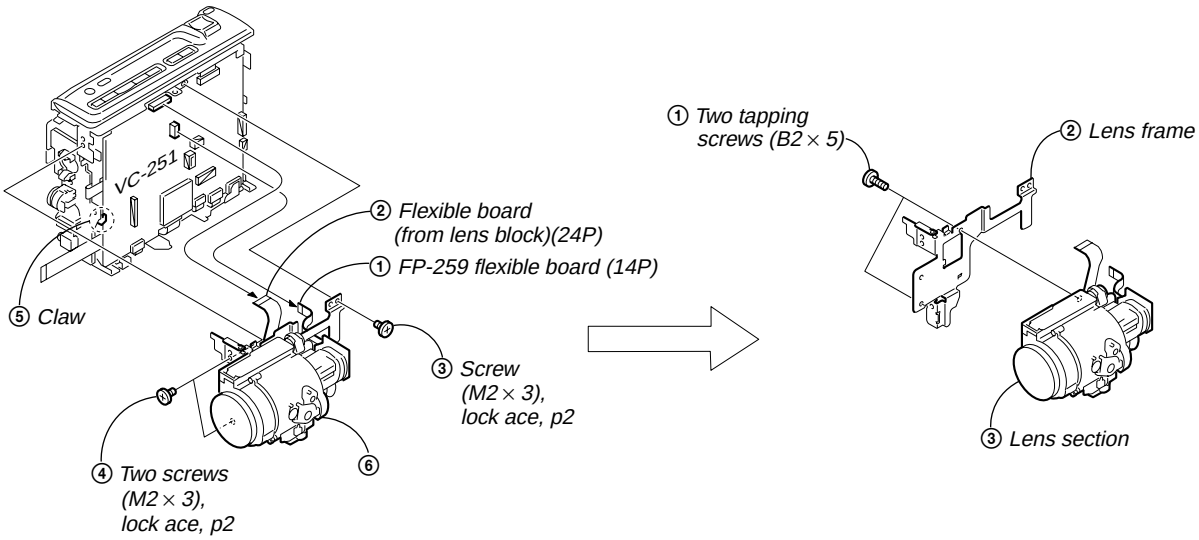


2-9. BATTERY PANEL SECTION (BATTERY TERMINAL BOARD)

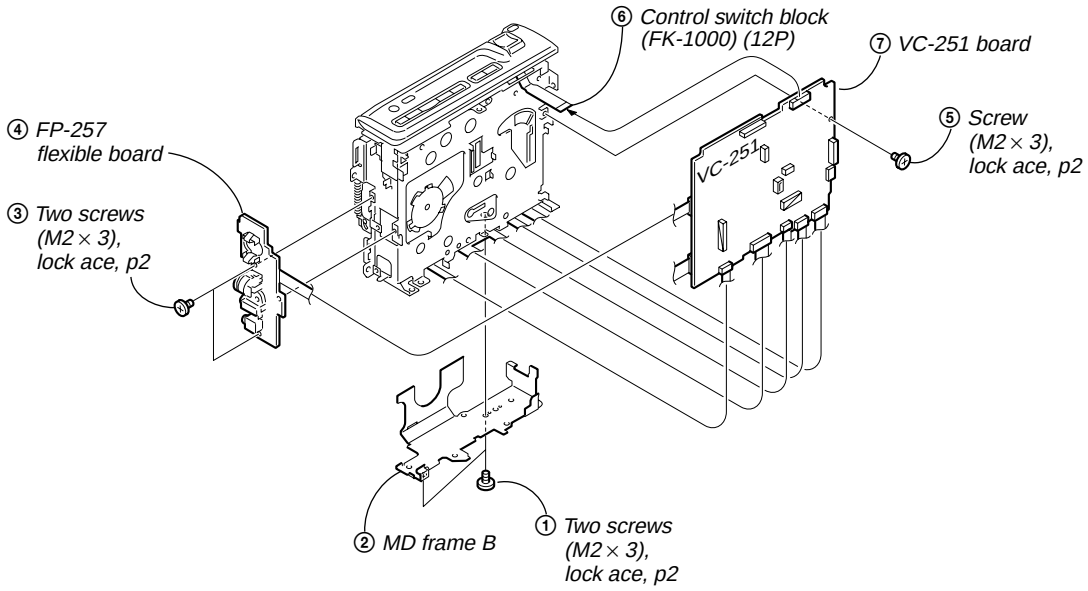
(Remove the Cabinet (L) section reffering to section 2-4 before starting disassembling.)



2-10. LENS SECTION



2-11. VC-251 BOARD



[SERVICE POSITION TO CHECK THE VTR SECTION]

Connection to Check the VTR Section

To check the VTR section, set the VTR to the "Forced VTR power ON" mode.
Operate the VTR functions using the adjustment remote commander (with the HOLD switch set in the OFF position).

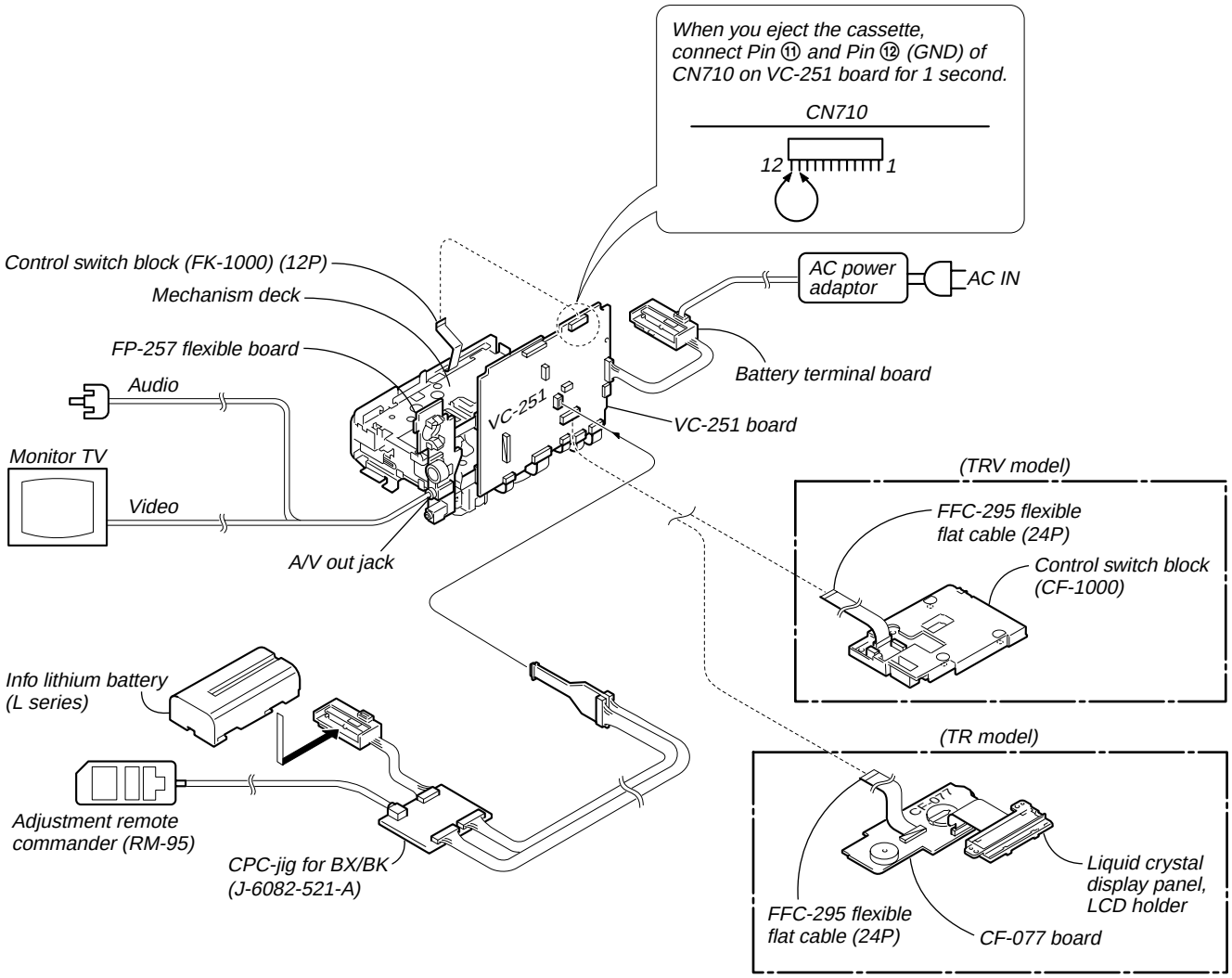
Setting the "Forced VTR Power ON" mode

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.

Exiting the "Forced VTR 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.

Note: If the machine malfunctions (the operating mode changes by itself), connect the FK-1000 block, CF-1000 block/CF-077 board.



[SERVICE POSITION TO CHECK THE CAMERA SECTION]

Connection to Check the Camera Section

To check the camera section, set the camera to the "Forced camera power ON" mode.

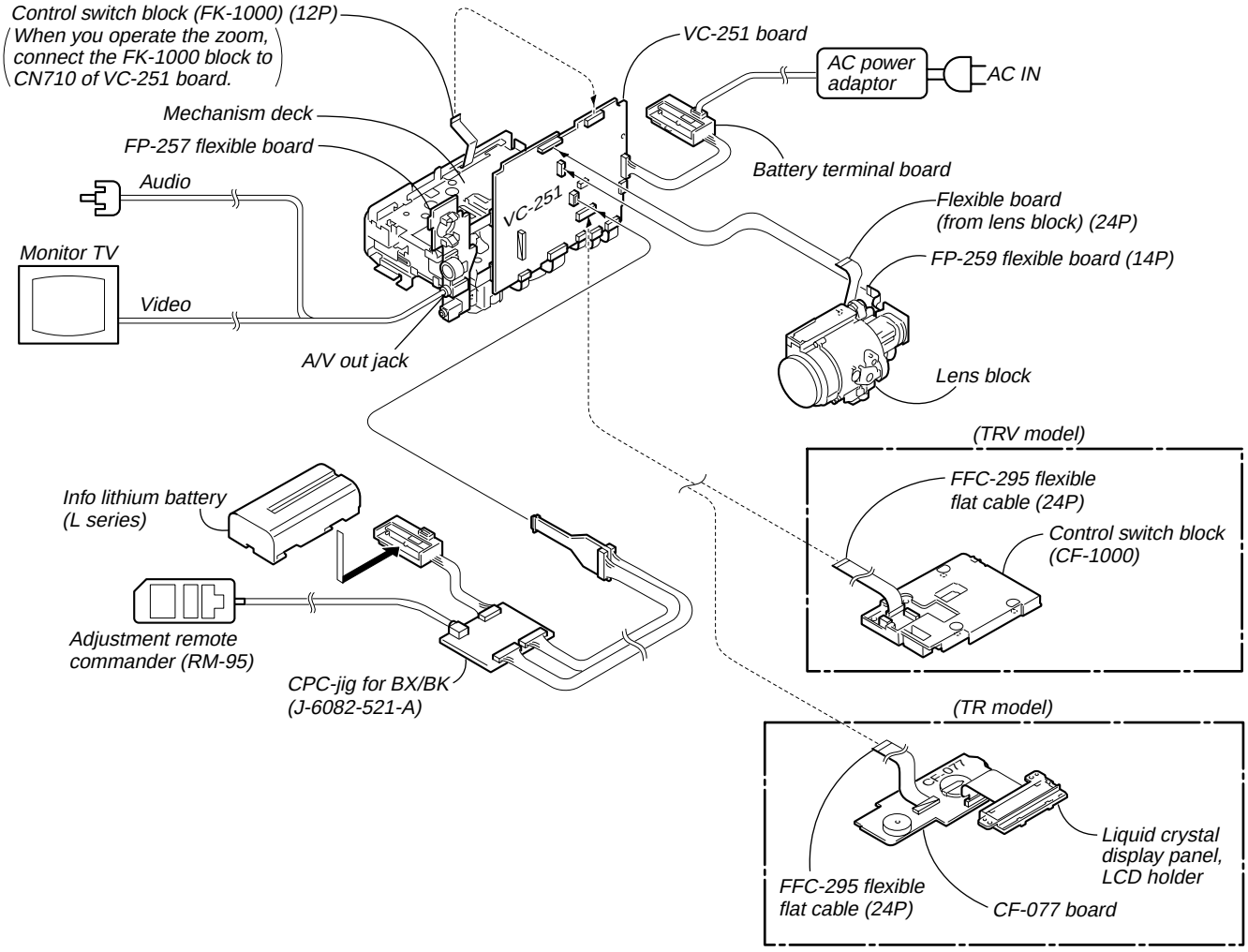
Setting the "Forced Camera Power ON" mode

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.

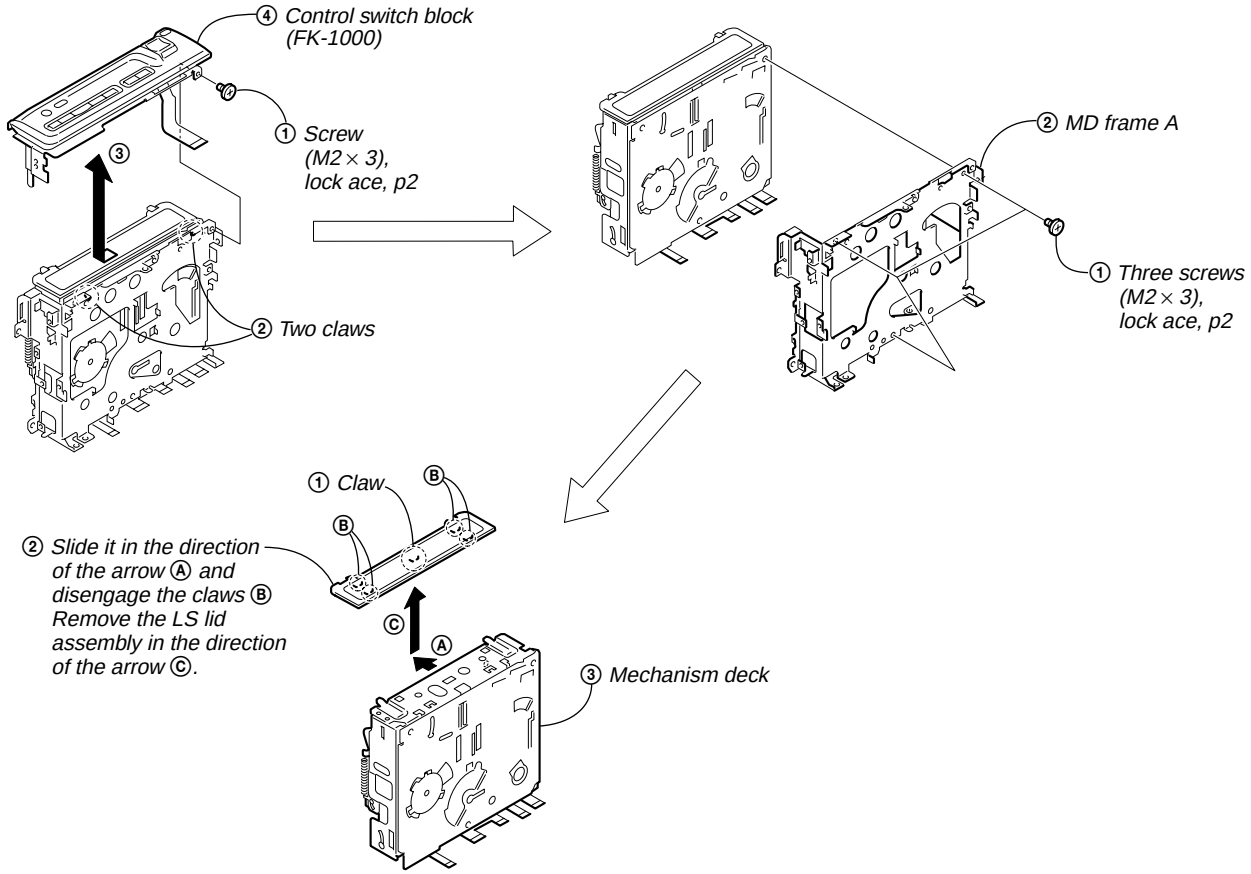
Exiting the "Forced Camera Power ON" mode

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.

Note: If the machine malfunctions (the operating mode changes by itself), connect the FK-1000 block, CF-1000 block/CF-077 board.

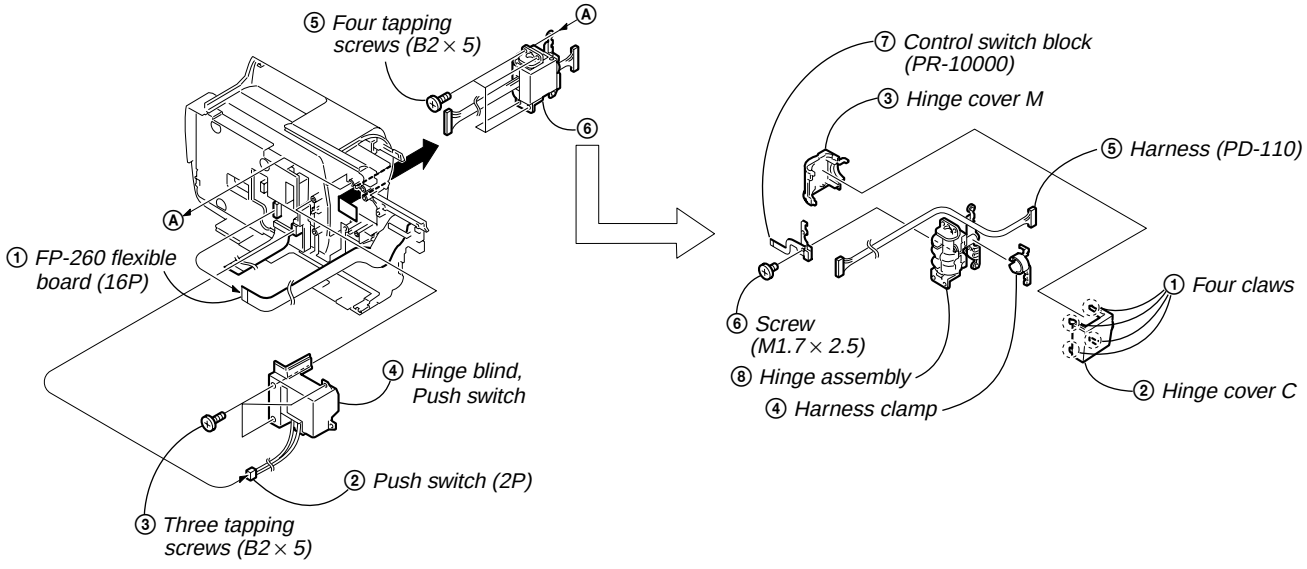


2-12. MECHANISM DECK

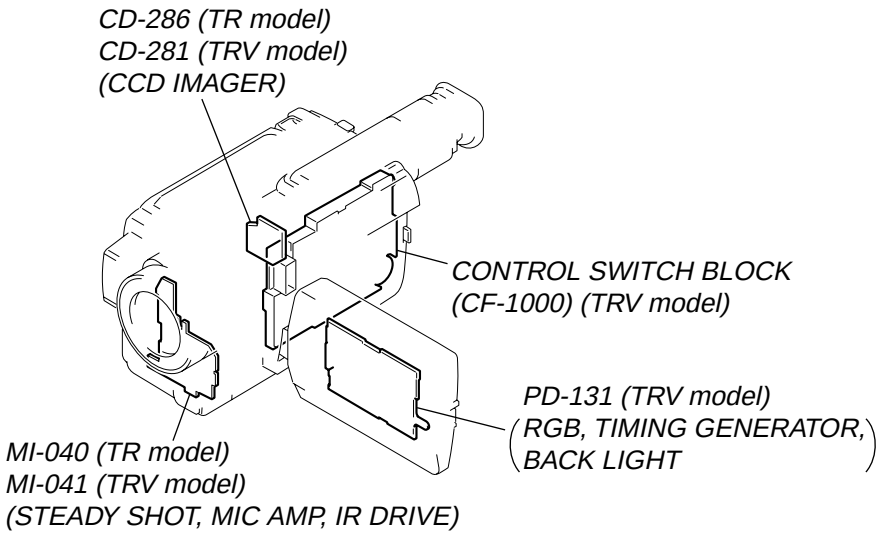


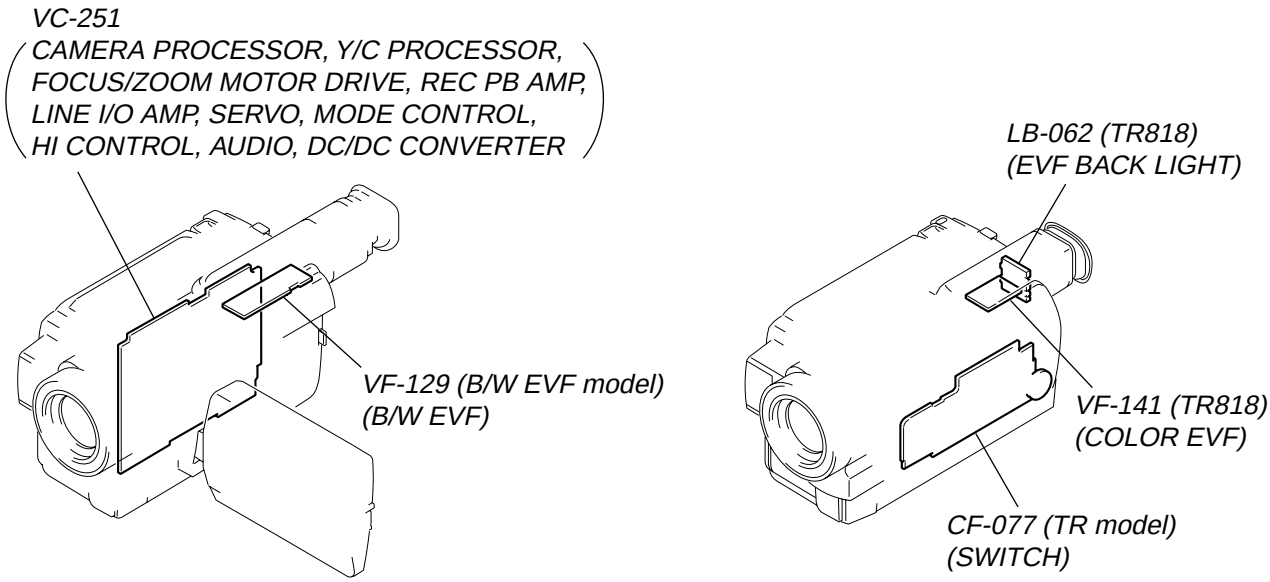
2-13. HINGE ASSEMBLY (TRV MODEL)

(Remove the LCD unit reffering to section 2-2 before starting disassembling.)



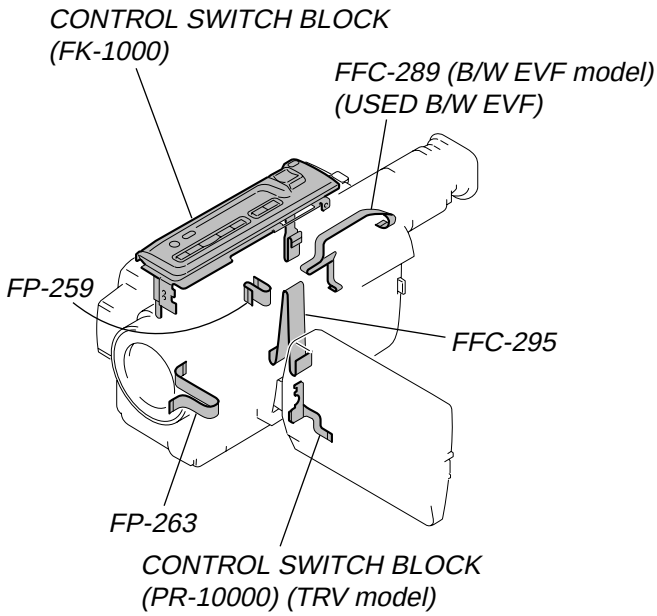
2-14. CIRCUIT BOARDS LOCATION

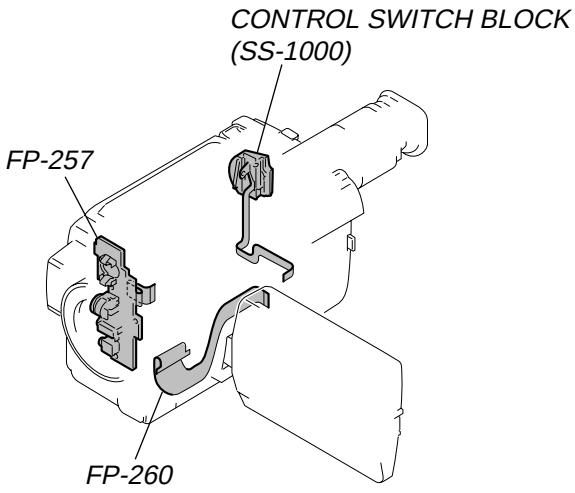


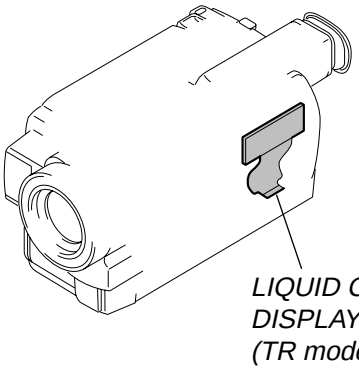


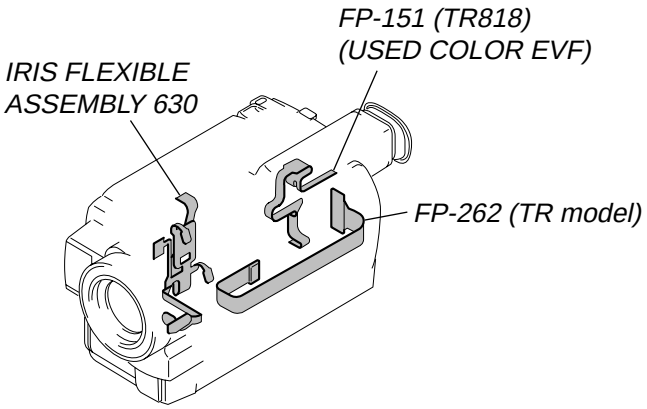
2-15. FLEXIBLE BOARDS LOCATION

The flexible boards contained in the mechanism deck are not shown.





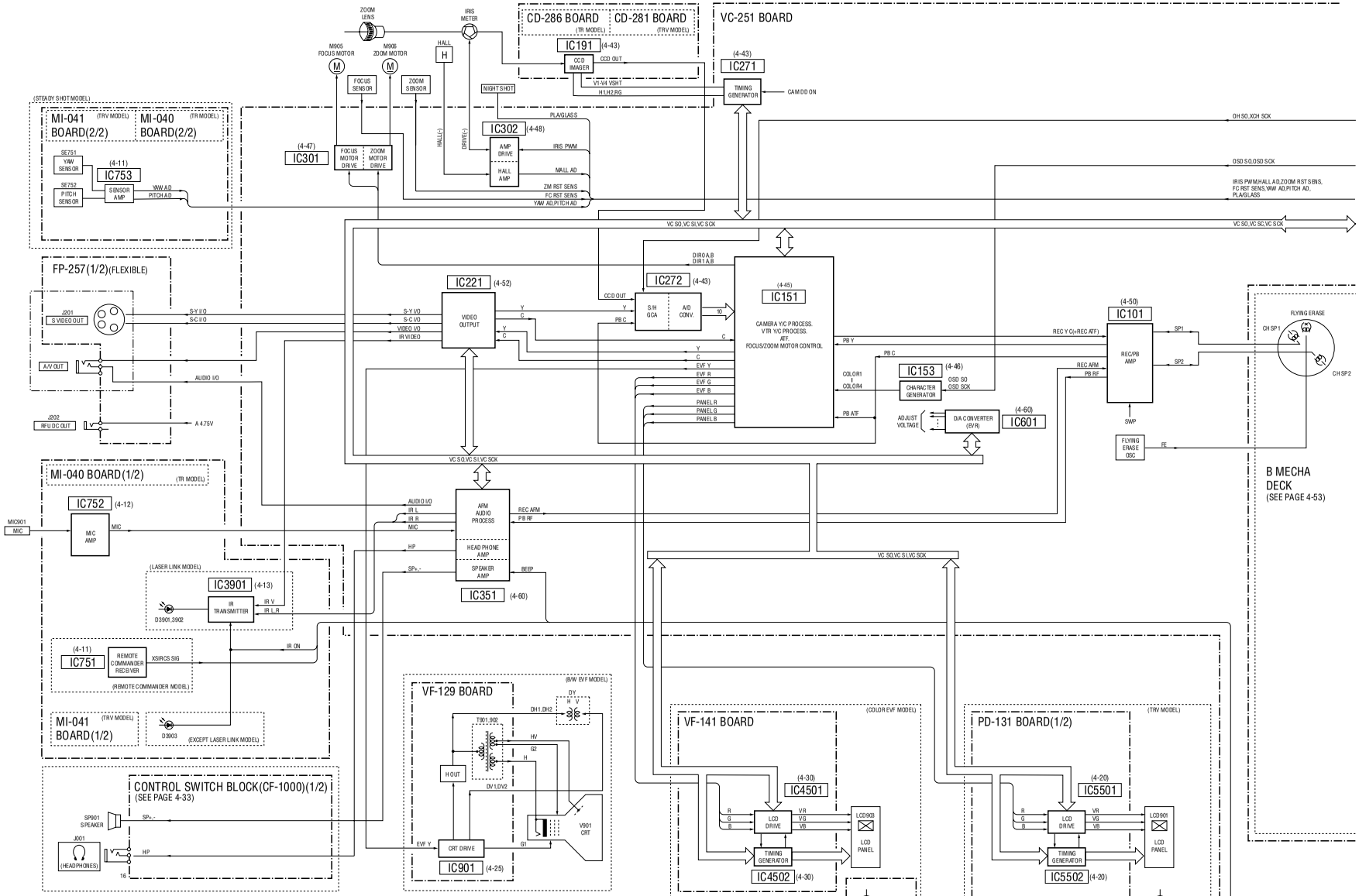




SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAM (1/2)

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

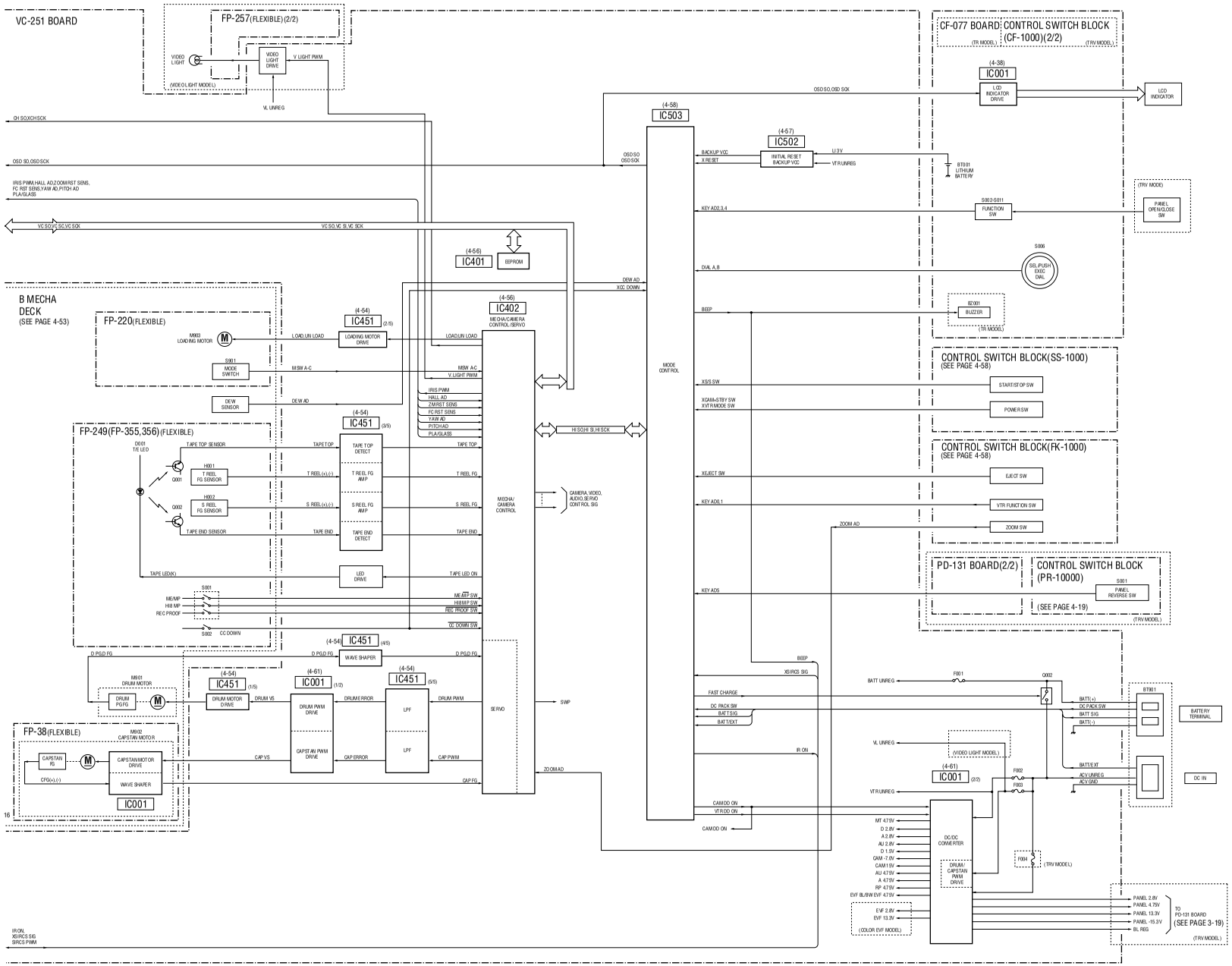


TRV MODEL : CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
TR MODEL : CCD-TR618/TR618E/TR718E/TR728E/TR818
REMOTE COMMANDER MODEL : CCD-TR728E/TRV49/TRV49E/TRV59E/TRV78/TRV78E/TRV98/TRV98E
LASER LINK MODEL : CCD-TRV98
STEADY SHOT MODEL : CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
B/W EVF MODEL : CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
COLOR EVF MODEL : CCD-TR818

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

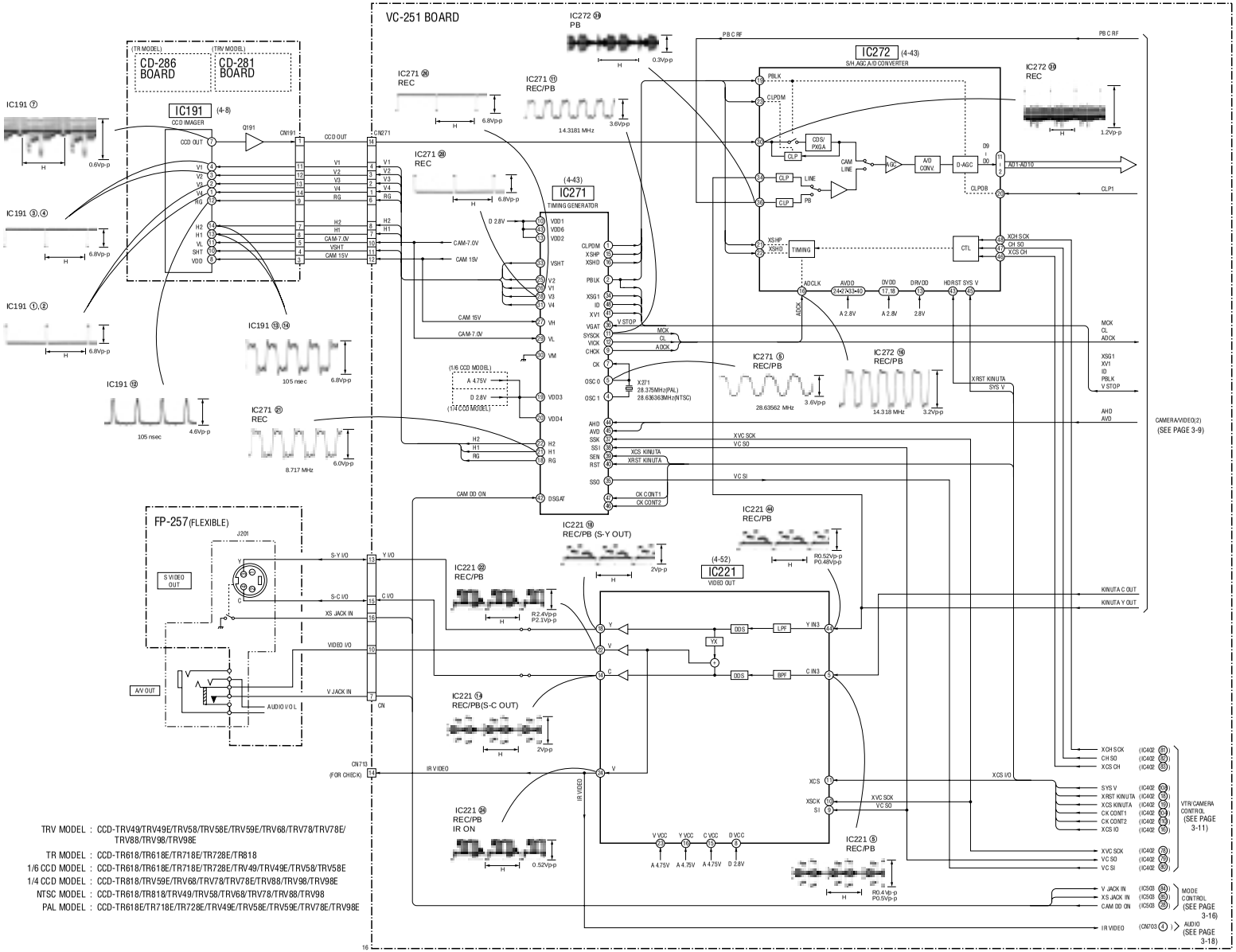
( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.

TRV MODEL : CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
TR MODEL : CCD-TR618/TR618E/TR718E/TR728E/TR818
VIDEO LIGHT MODEL : CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
COLOR EVF MODEL : CCD-TR818



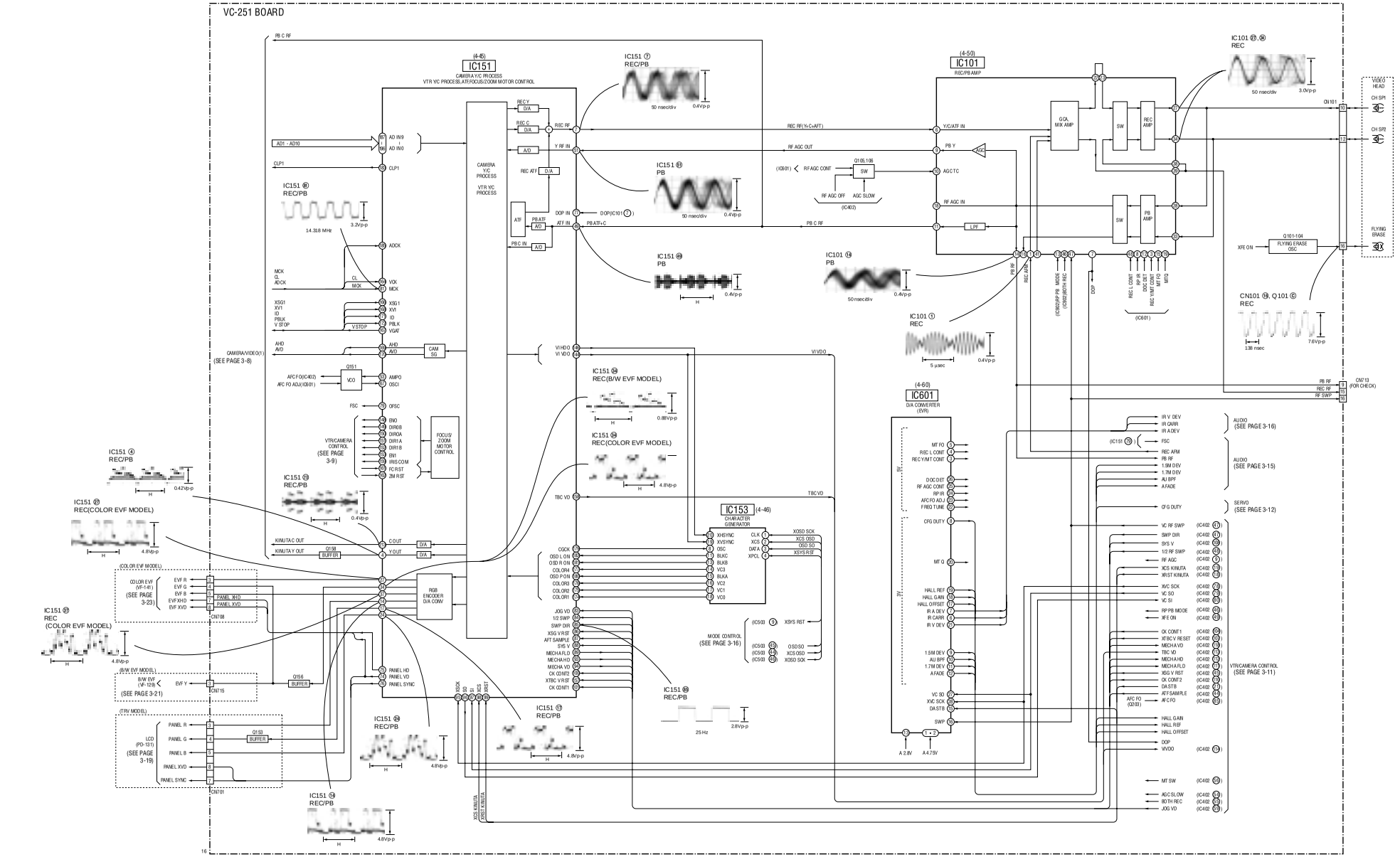
3-3. CAMERA/VIDEO BLOCK DIAGRAM (1/2)

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



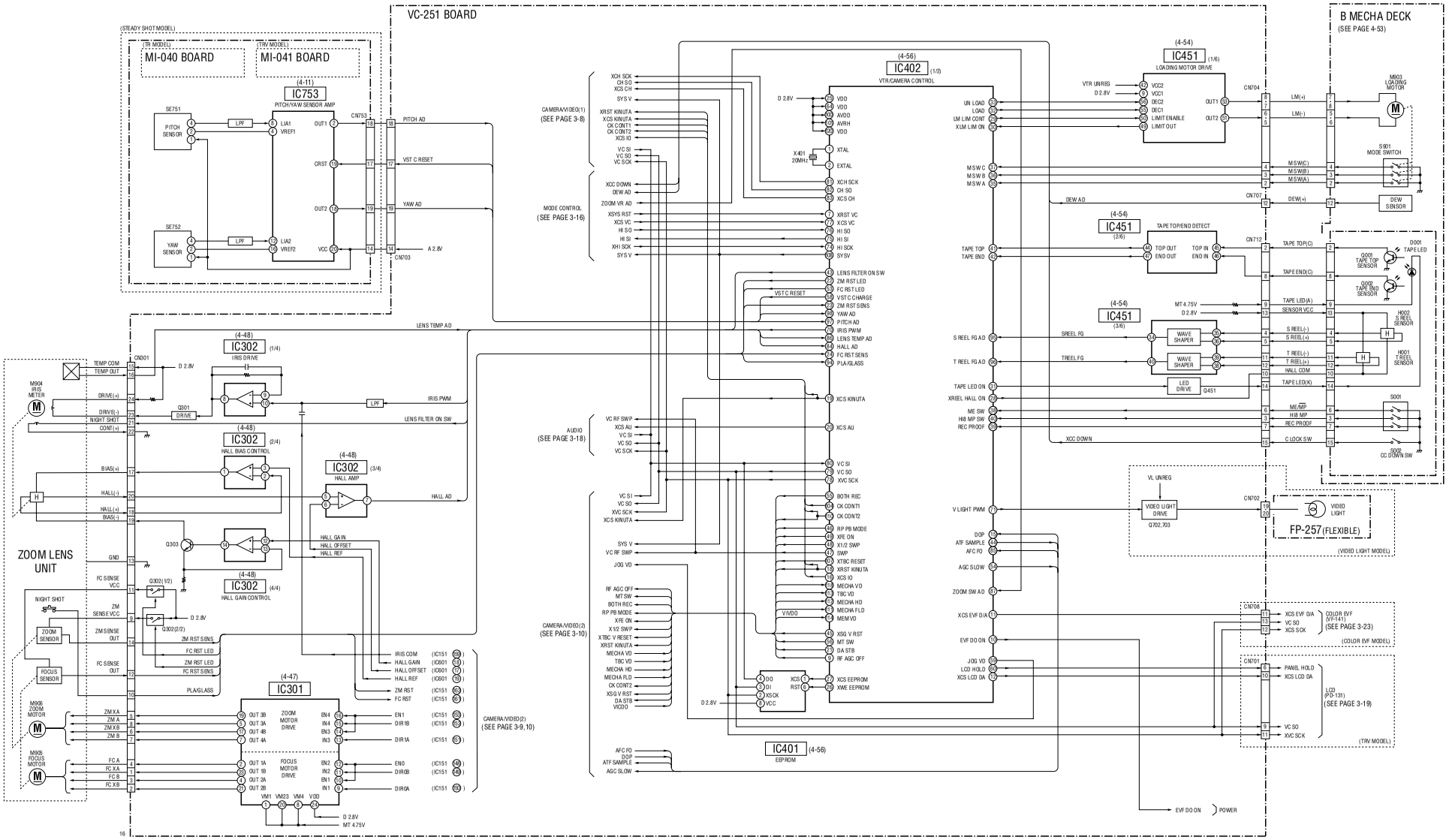
3-4. CAMERA/VIDEO BLOCK DIAGRAM (2/2)

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



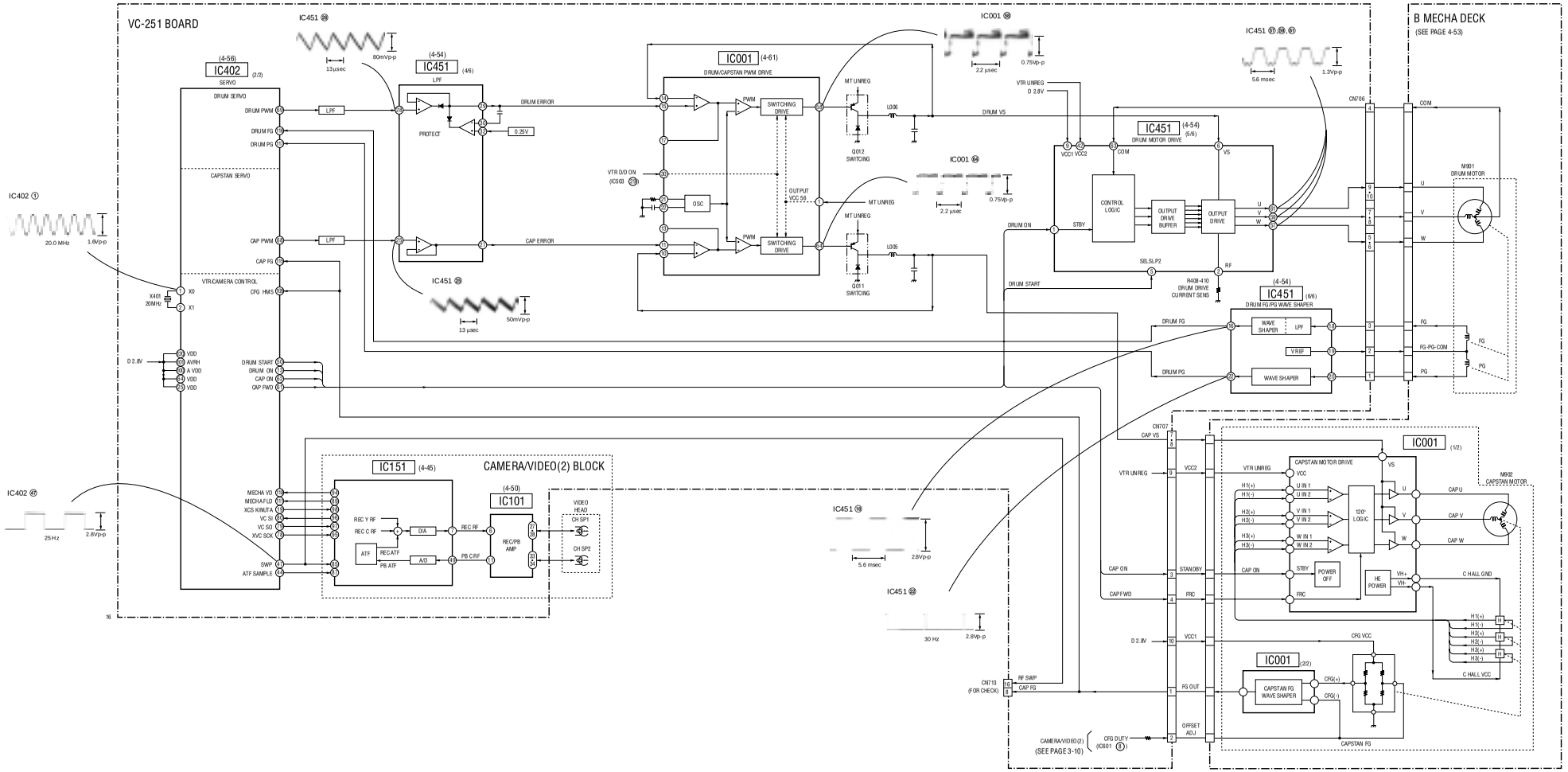
3-5. VTR/CAMERA CONTROL BLOCK DIAGRAM

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



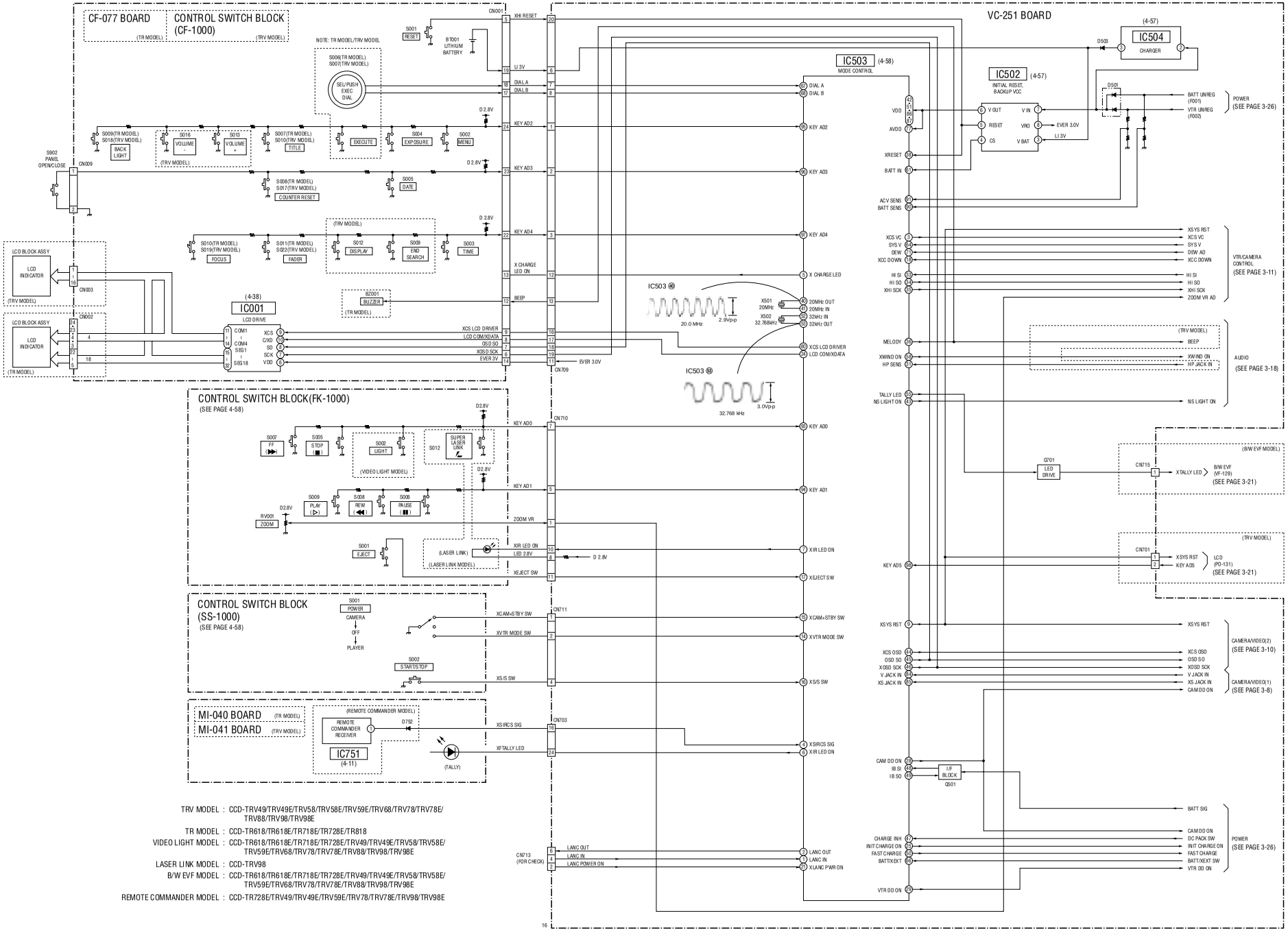
3-6. SERVO BLOCK DIAGRAM

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



3-7. MODE CONTROL BLOCK DIAGRAM

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



TRV MODEL : CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

TR MODEL : CCD-TR618/TR618E/TR718E/TR728E/TR818

VIDEO LIGHT MODEL : CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

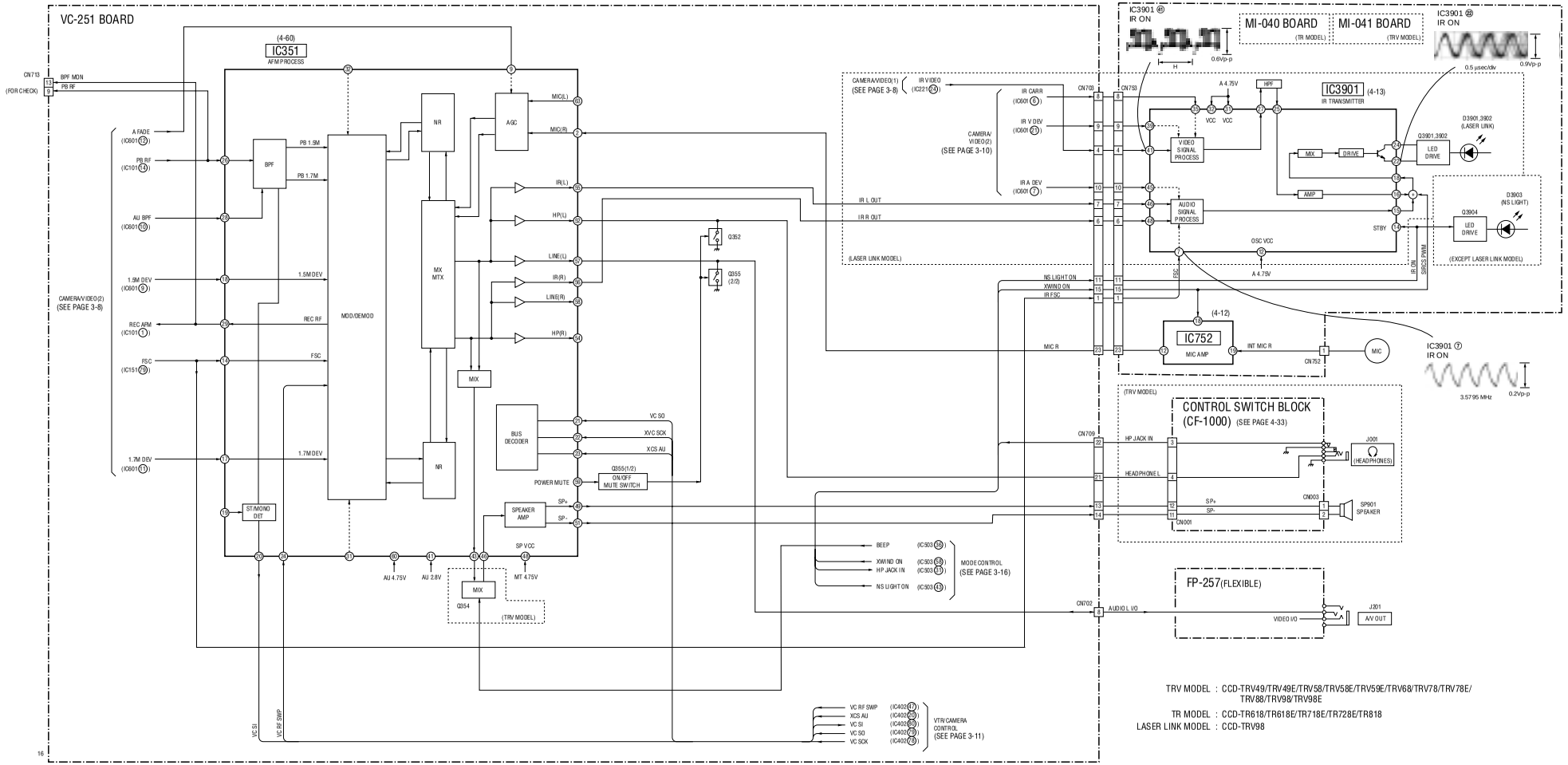
LASER LINK MODEL : CCD-TRV98

B/W EVF MODEL : CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

REMOTE COMMANDER MODEL : CCD-TR728E/TRV49/TRV49E/TRV59E/TRV78/TRV78E/TRV98/TRV98E

3-8. AUDIO BLOCK DIAGRAM

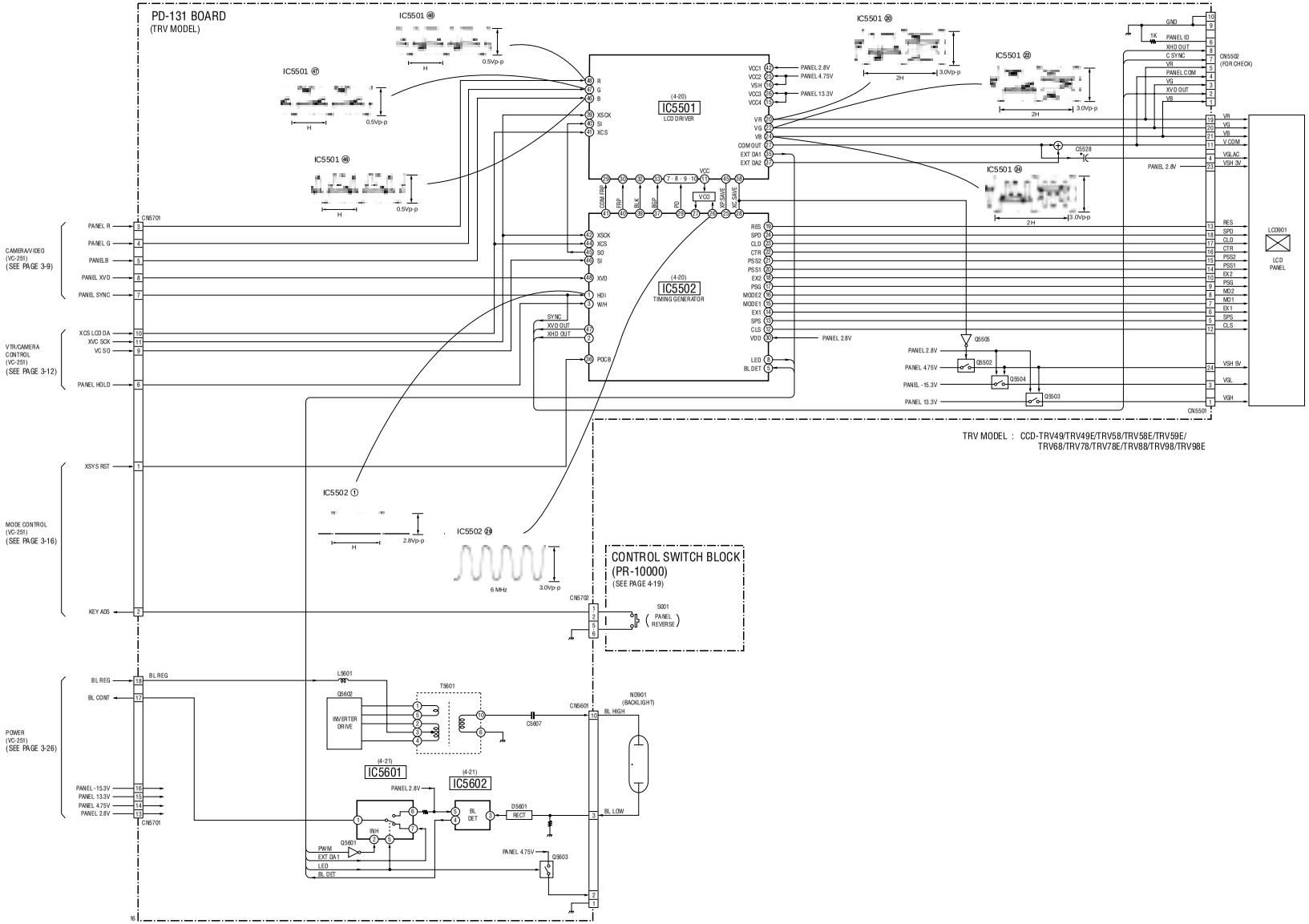
( ) : Page No. shown in ( ) indicates the page to refer on the schematic diagram.



TRV MODEL : CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/
TRV88/TRV98/TRV98E
TR MODEL : CCD-TR618/TR618E/TR718E/TR728E/TR818
LASER LINK MODEL : CCD-TRV98

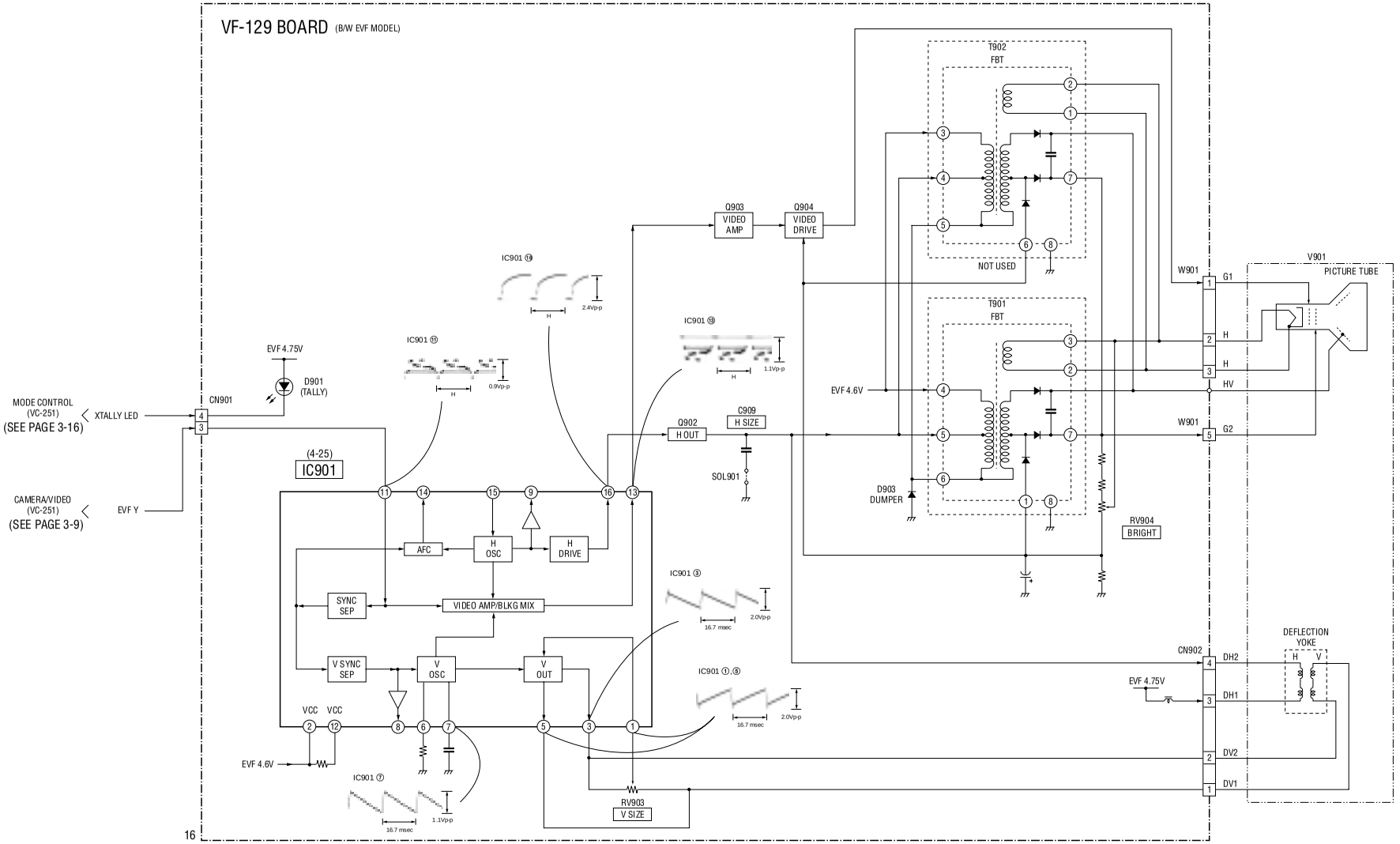
3-9. LCD BLOCK DIAGRAM

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



3-10. B/W EVF BLOCK DIAGRAM

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



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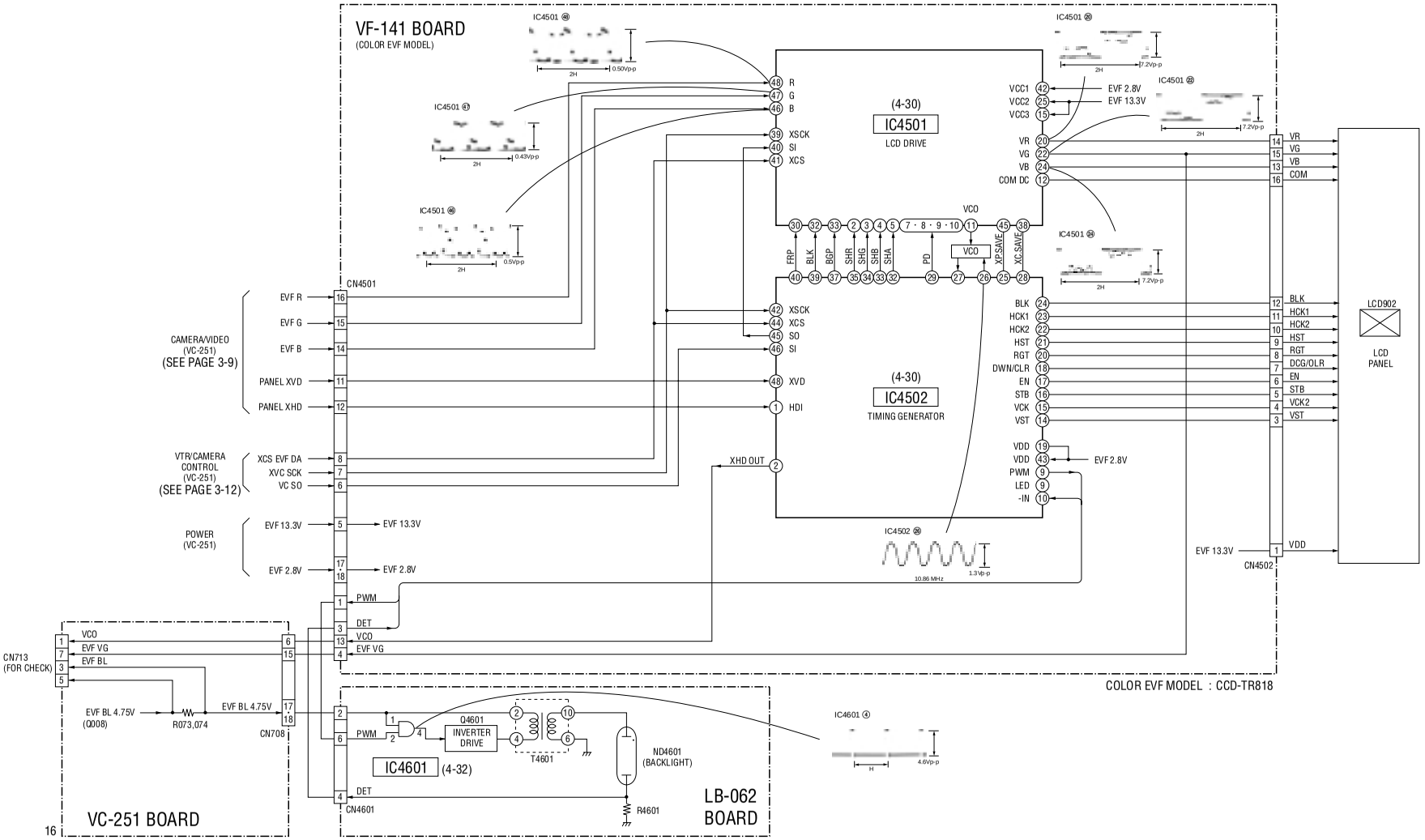
B/W EVF MODEL : CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

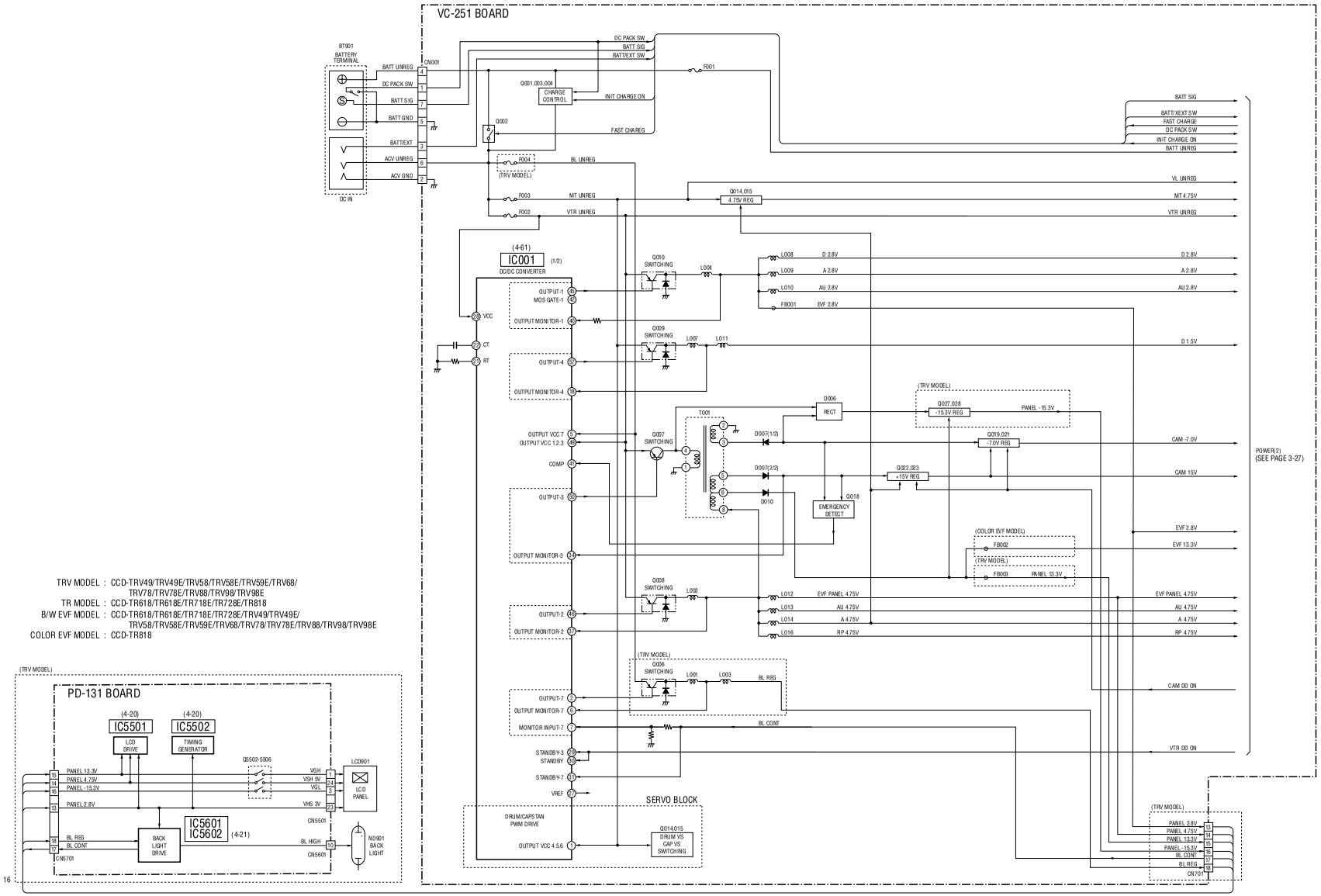
3-11.COLOR EVF BLOCK DIAGRAM

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



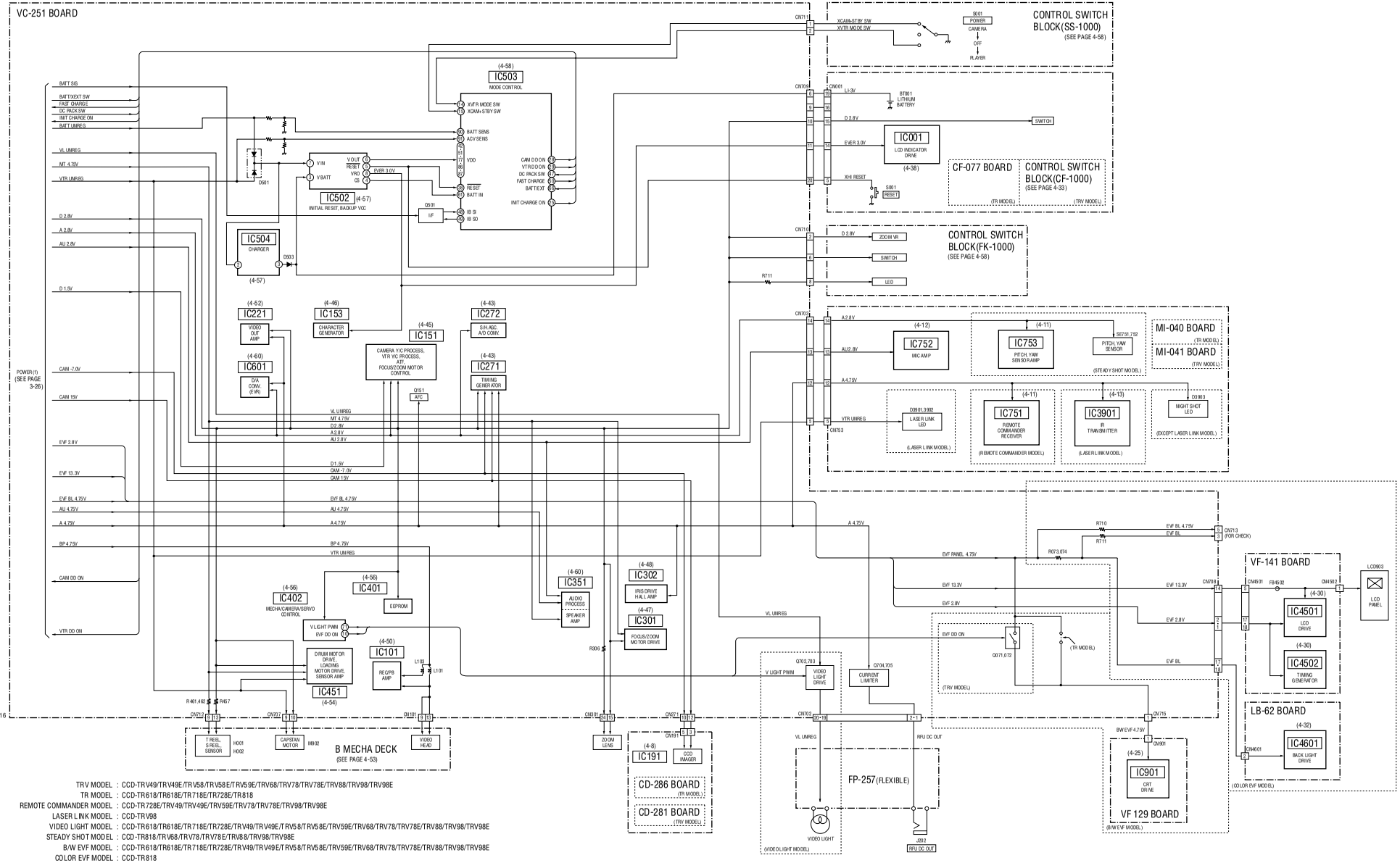
3-12. POWER BLOCK DIAGRAM (1/2)

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



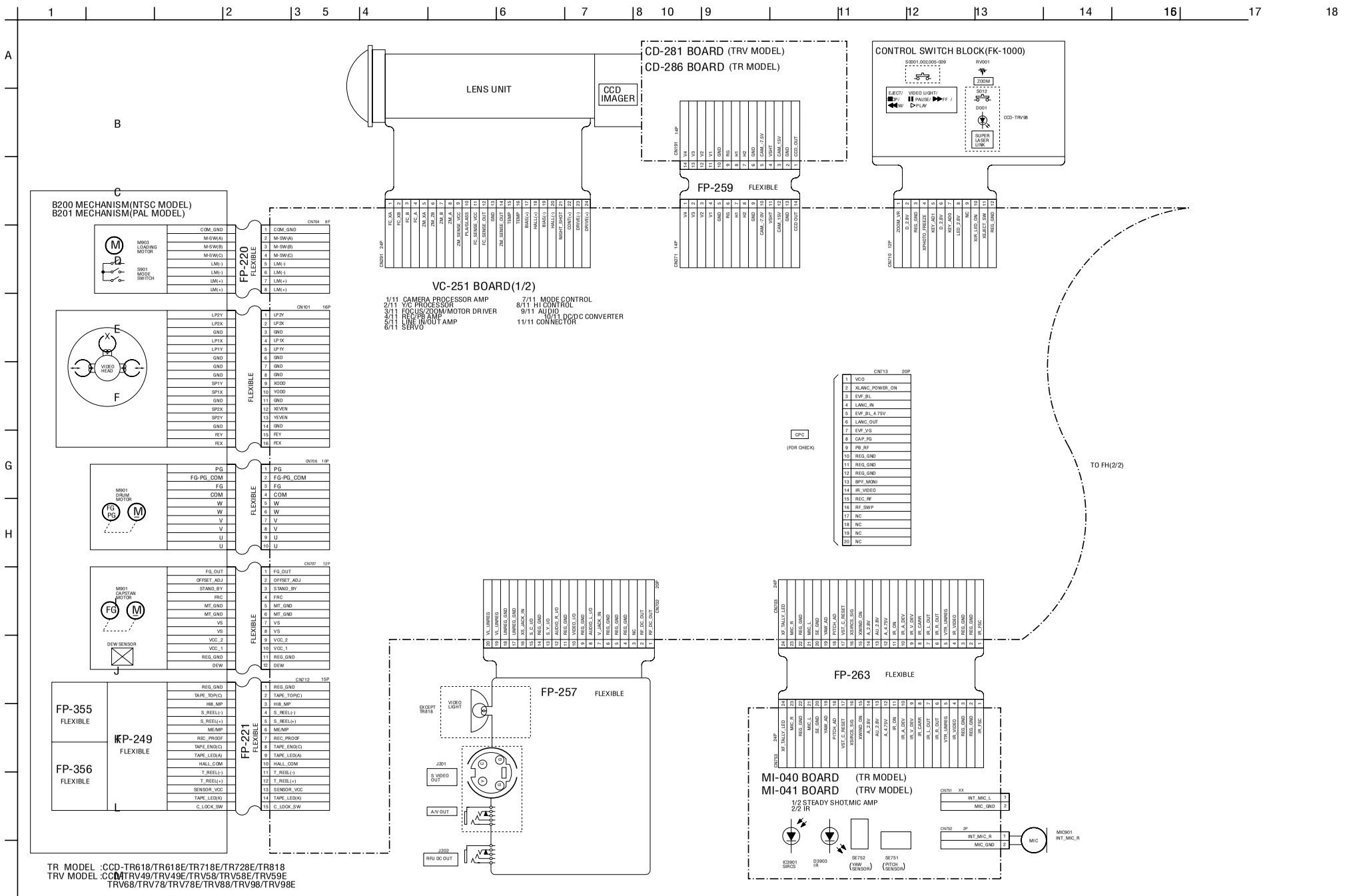
3-13. POWER BLOCK DIAGRAM (2/2)

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

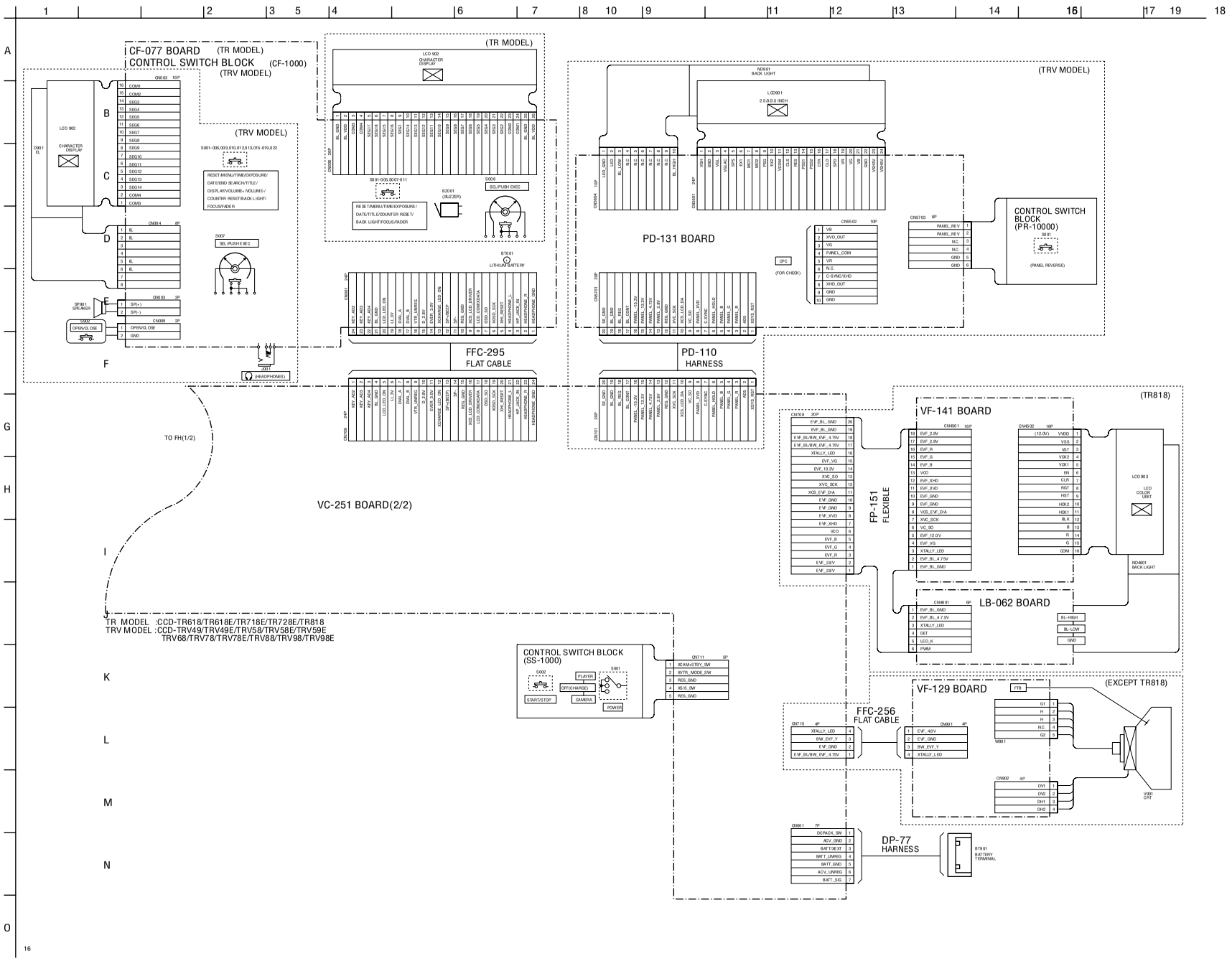


TRV MODEL : CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
TR MODEL : CCD-TR618/TR618E/TR718E/TR728E/TR818
REMOTE COMMANDER MODEL : CCD-TR728E/TRV49/TRV49E/TRV59E/TRV78/TRV78E/TRV98/TRV98E
LASER LINK MODEL : CCD-TRV98
VIDEO LIGHT MODEL : CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
STEADY SHOT MODEL : CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
B/W EVF MODEL : CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
COLOR EVF MODEL : CCD-TR818

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



FRAME SCHEMATIC DIAGRAM (2/2)



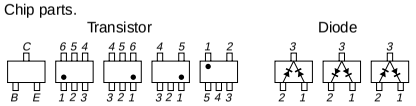
4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

n bo

(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.



(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.

(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.) *

atter

1. Connection

ame

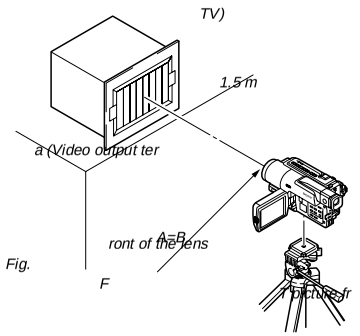
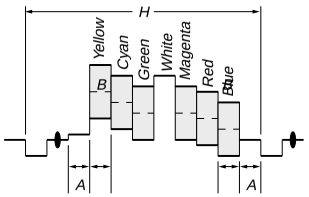


Fig.

ame

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

CR



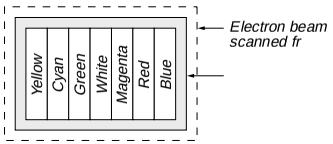
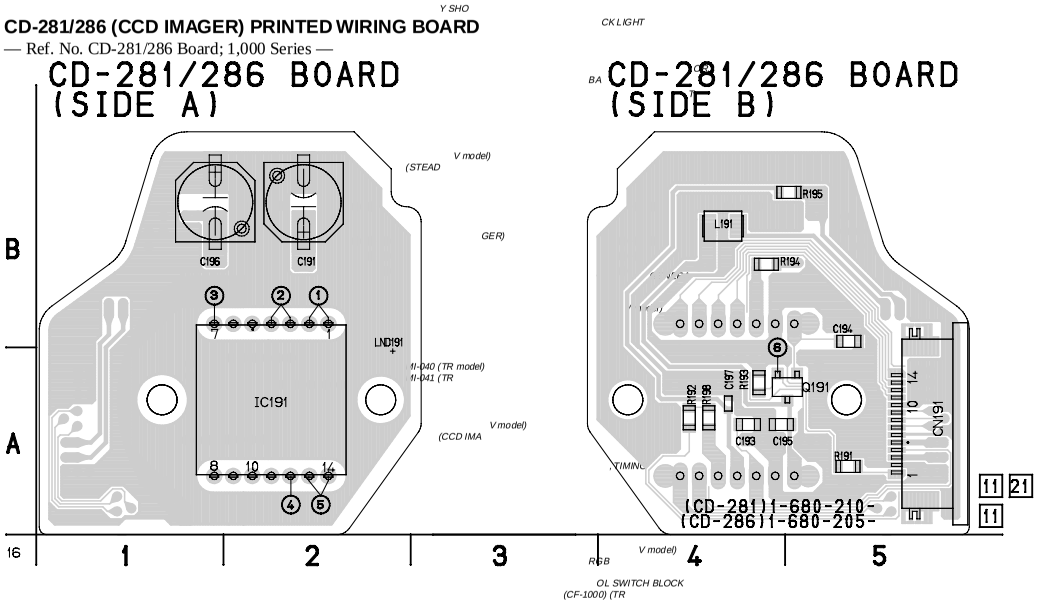


Fig.b (Picture on monitor

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

CD-281/286 (CCD IMAGER) PRINTED WIRING BOARD

— Ref. No. CD-281/286 Board; 1,000 Series —

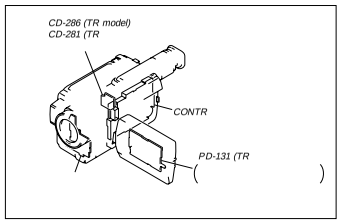


For printed wiring board

- Refer to page 4-70 for parts location.
- CD-281/286 board consists of multiple layers. However, only the sides (layers) A and B are shown.
- Chip parts

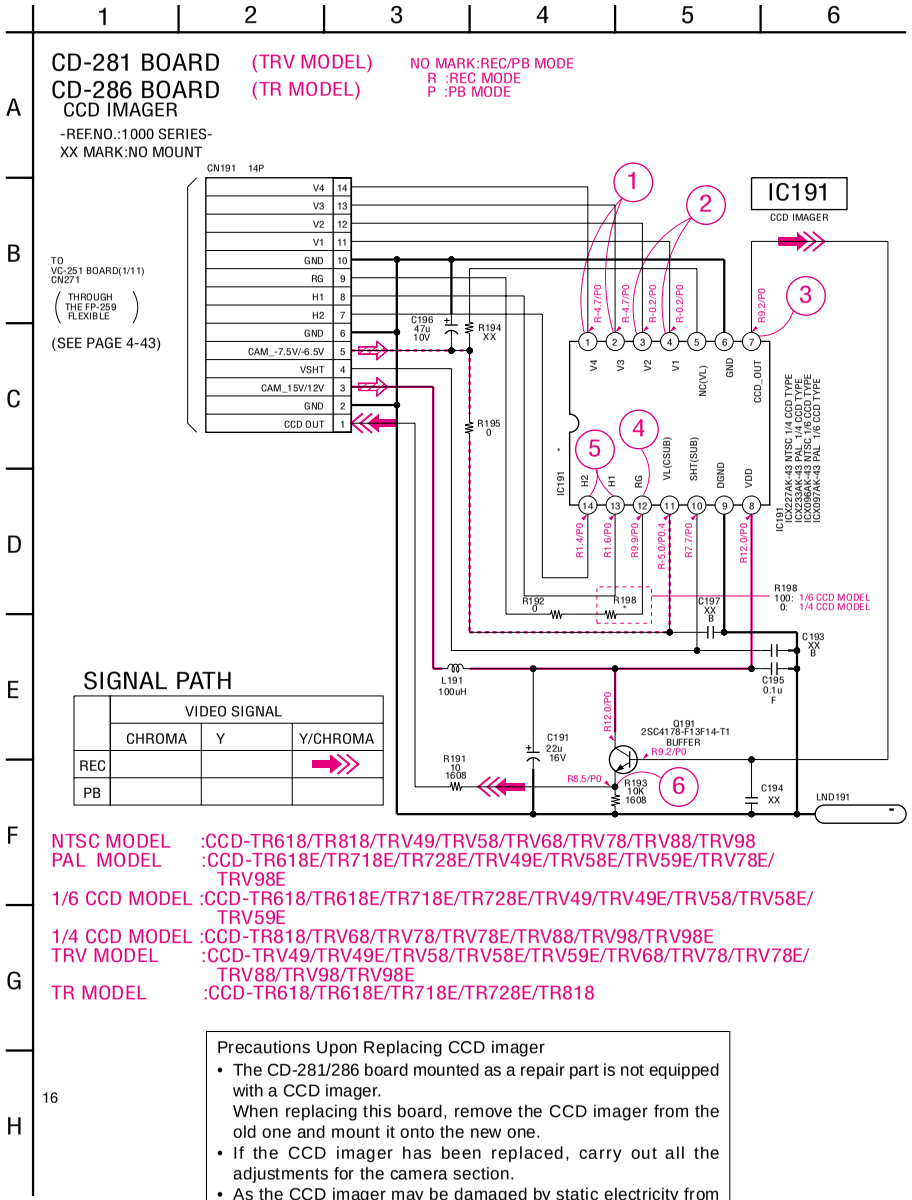
Transistor

There are a few cases that the part printed on this diagram isn't mounted in this model.



For Schematic Diagram

- Refer to page 4-66 for waveforms.



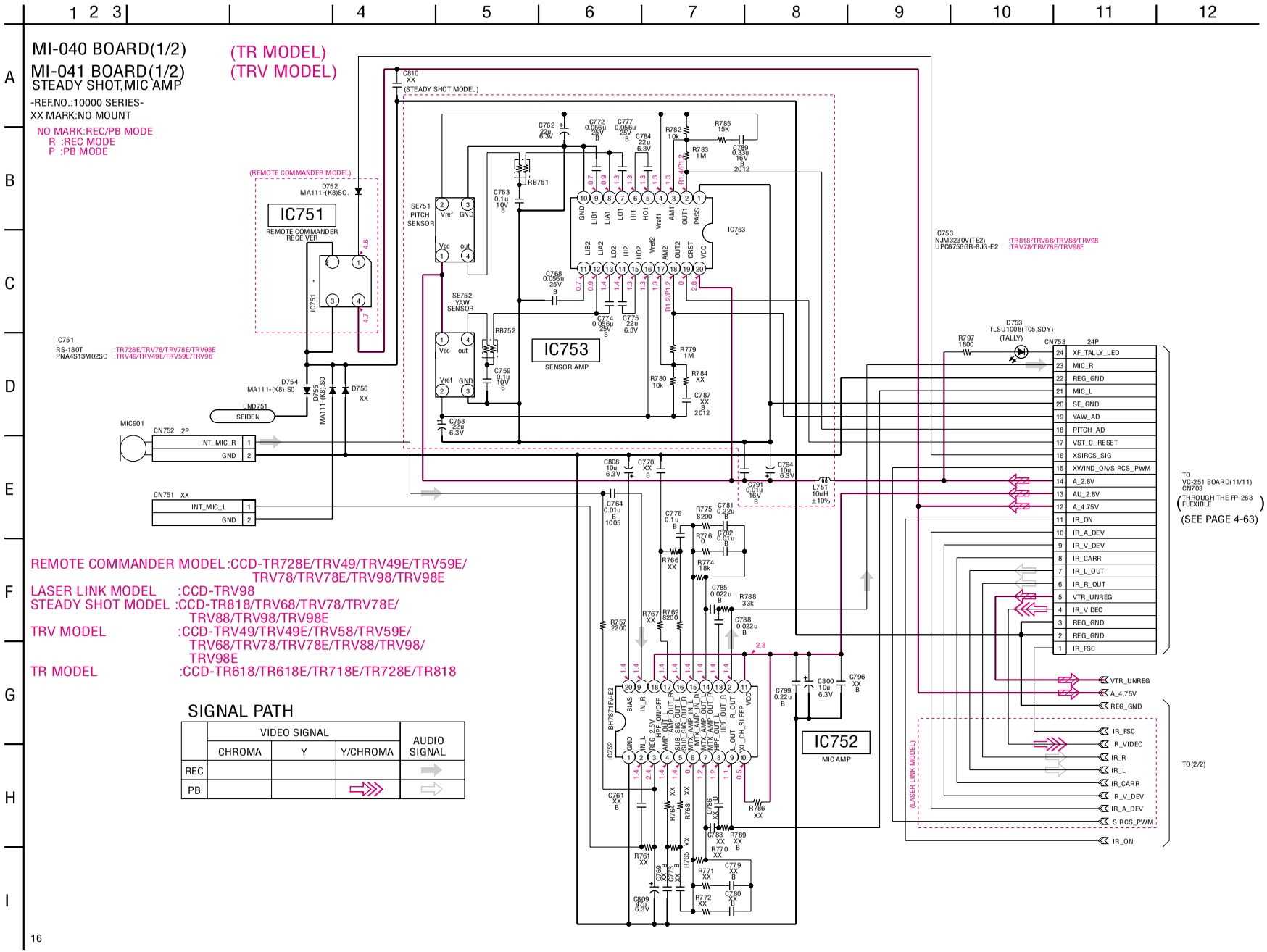
NTSC MODEL :CCD-TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98
PAL MODEL :CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E/TRV78E/TRV98E
1/6 CCD MODEL :CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E
1/4 CCD MODEL :CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
TRV MODEL :CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
TR MODEL :CCD-TR618/TR618E/TR718E/TR728E/TR818

Precautions Upon Replacing CCD imager

- The CD-281/286 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.

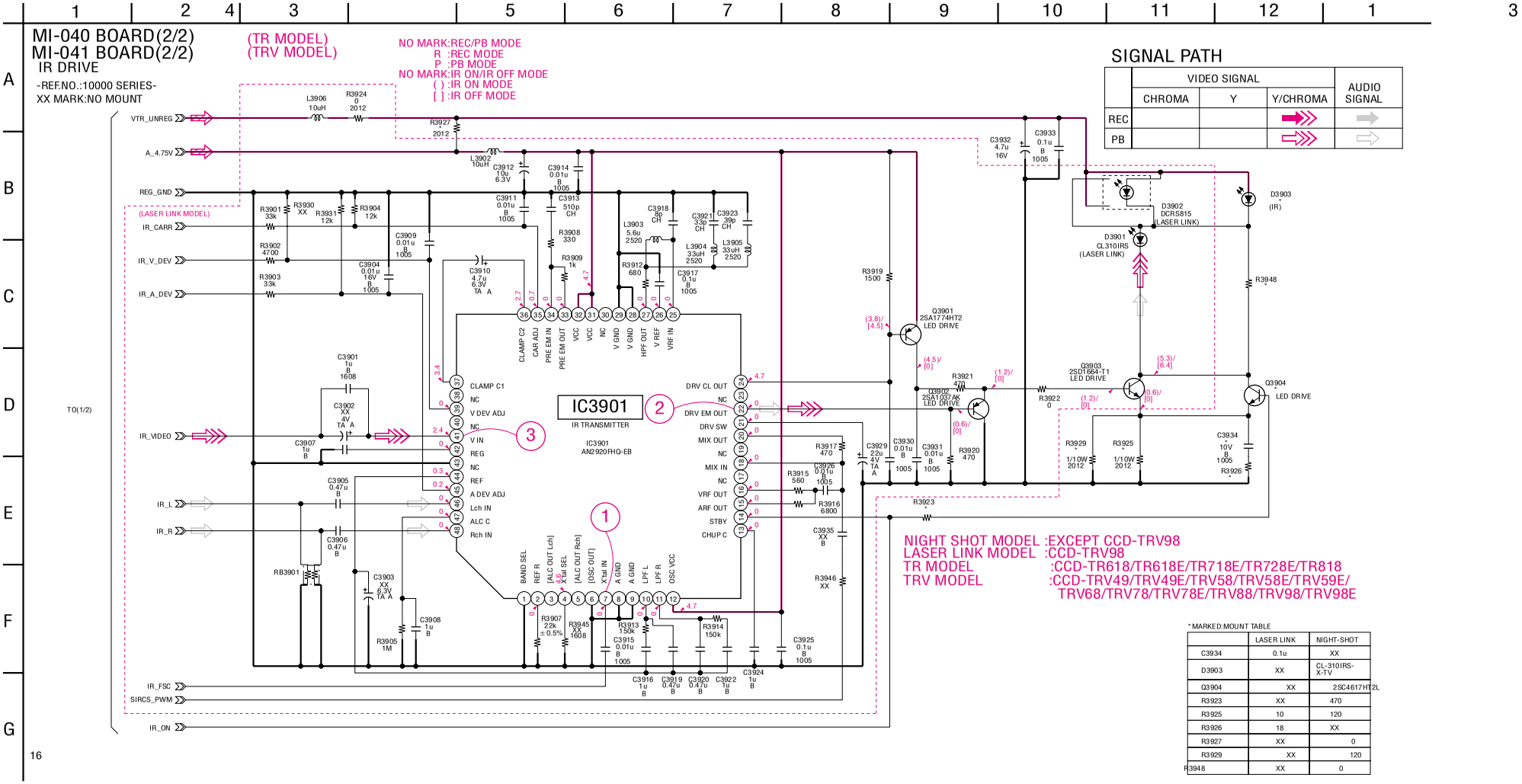
For Schematic Diagram

• Refer to page 4-9 for printed wiring board.



For Schematic Diagram

- Refer to page 4-9 for printed wiring board.
- Refer to page 4-66 for waveforms.

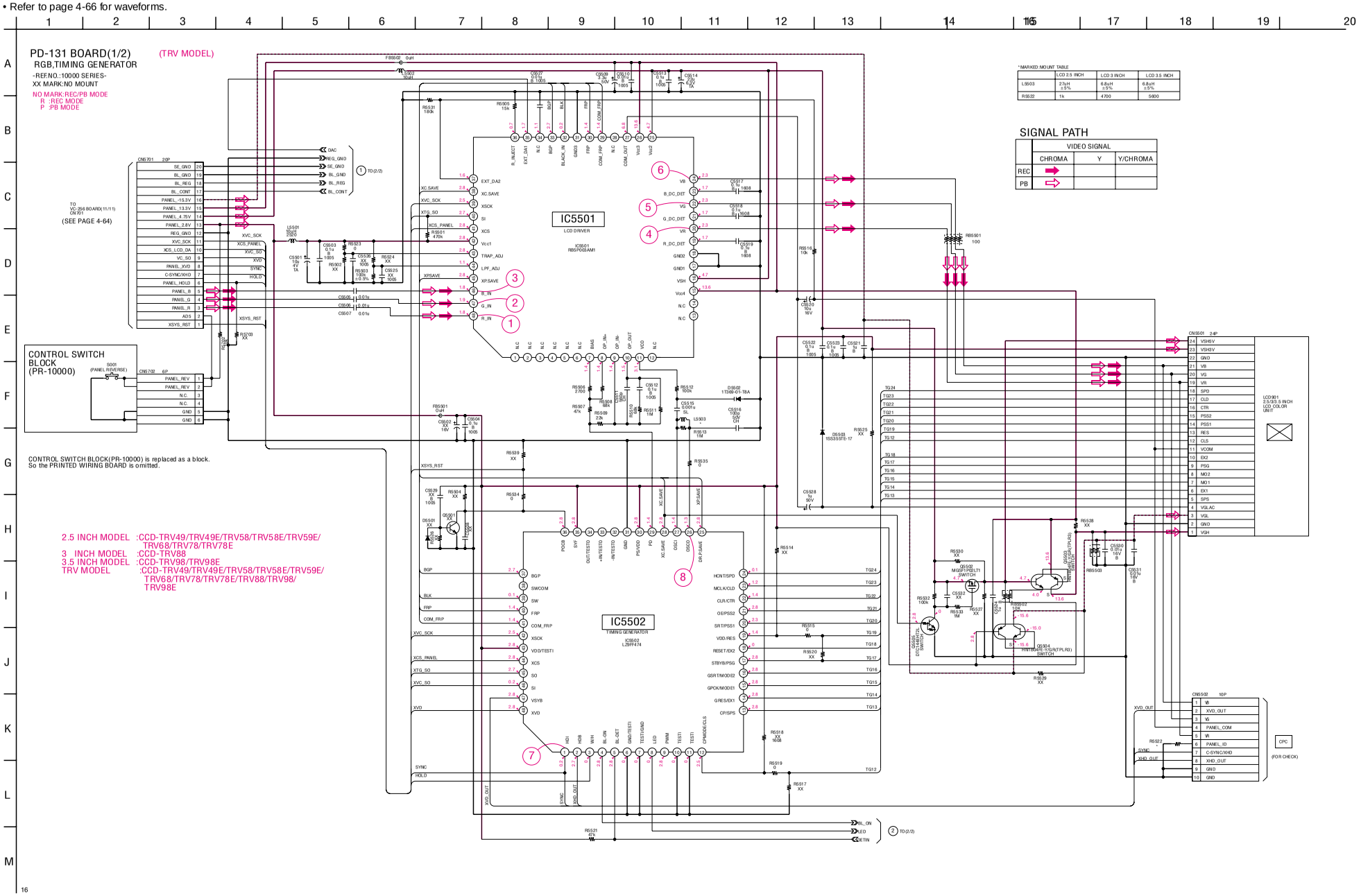


* MARKED:MOUNT TABLE

	LASER LINK	NIGHT-SHOT
C3934	0.1u	XX
D3903	XX	CL-310IRS-X-TV
Q3904	XX	2SC4617HT2L
R3923	XX	470
R3925	10	120
R3926	18	XX
R3927	XX	0
R3929	XX	120
R3948	XX	0

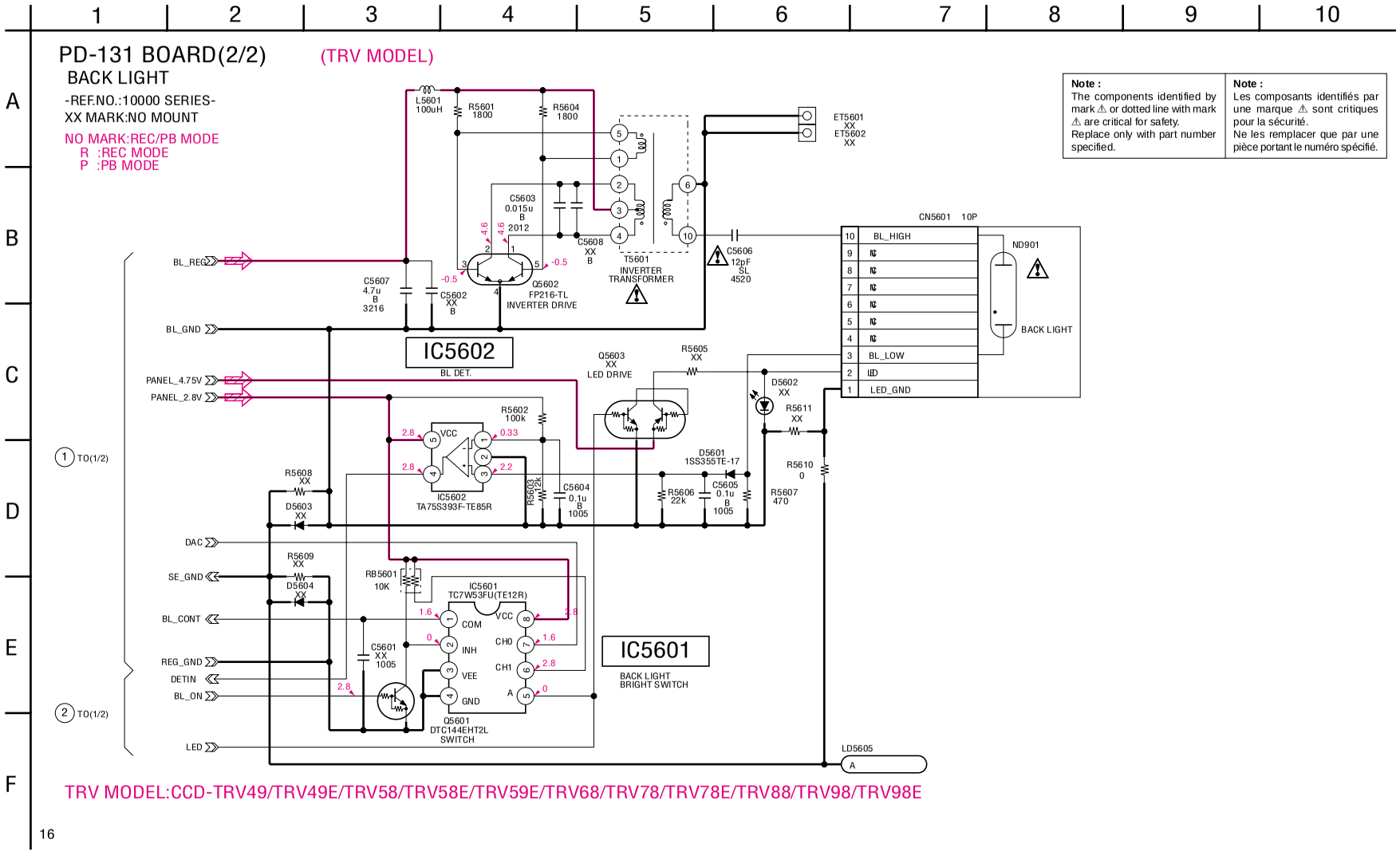
For Schematic Diagram

- Refer to page 4-15 for printed wiring board.
- Refer to page 4-66 for waveforms.



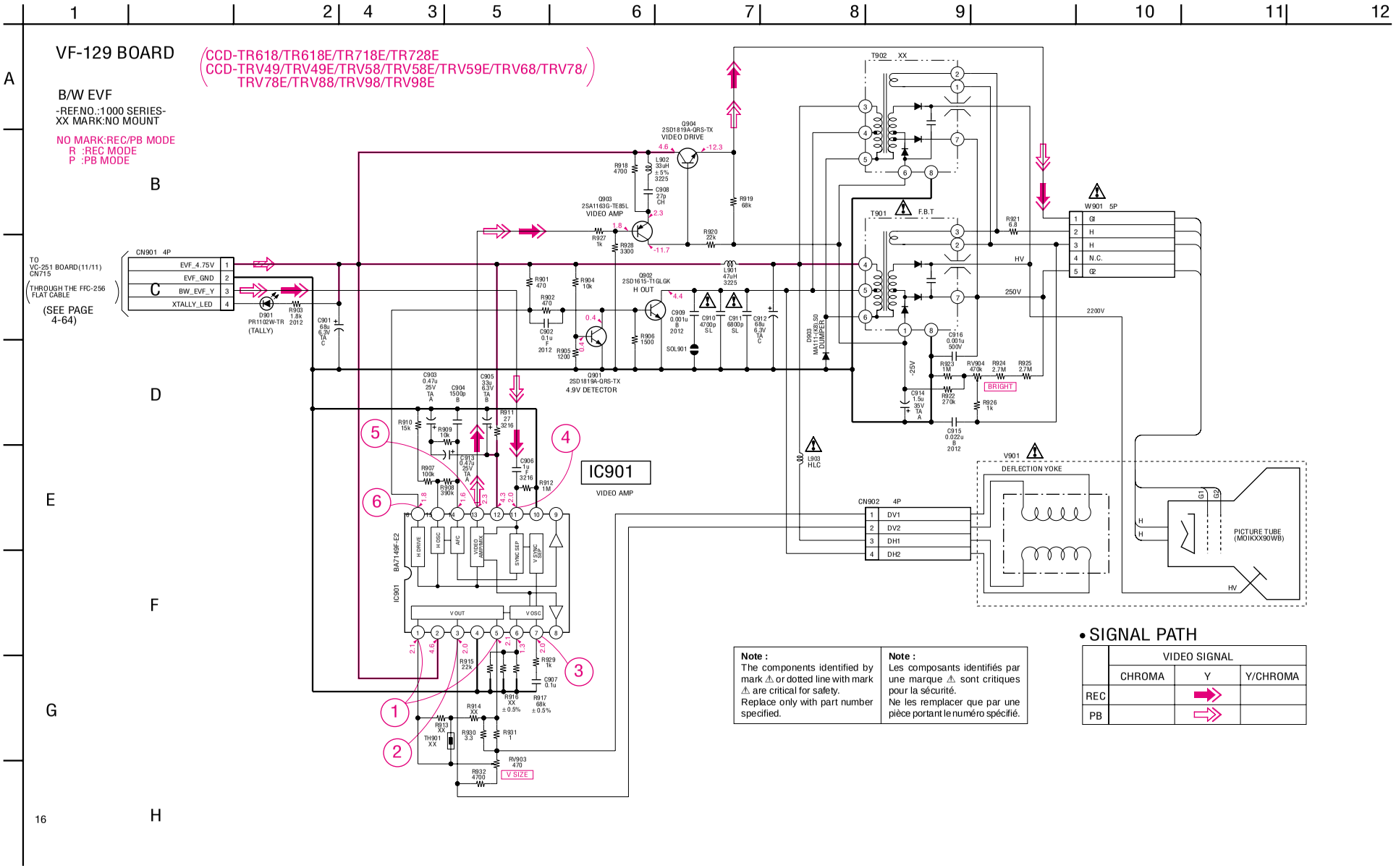
For Schematic Diagram

• Refer to page 4-15 for printed wiring board.



For Schematic Diagram

• Refer to page 4-66 for waveforms.

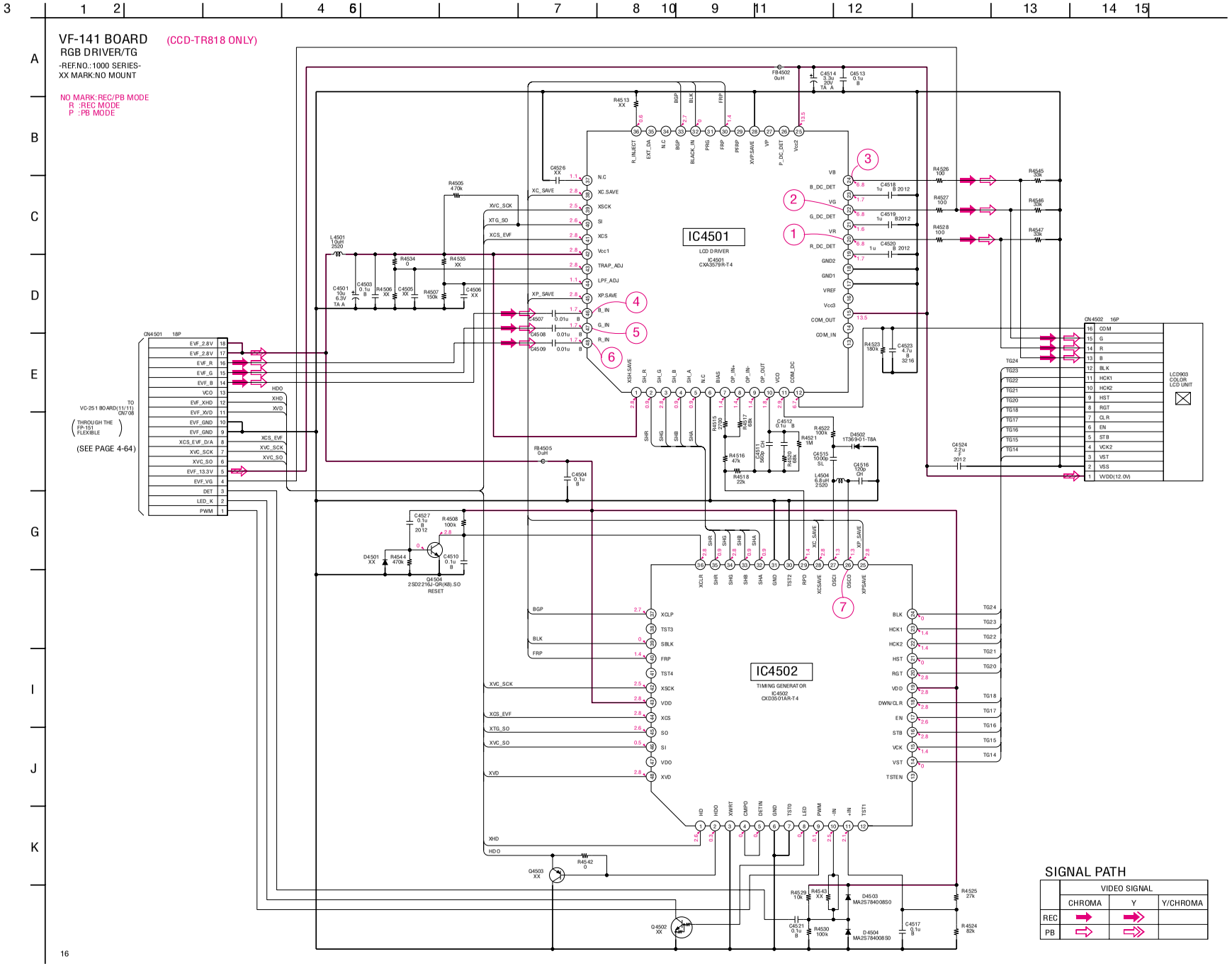


• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC		⇒	
PB		⇨	

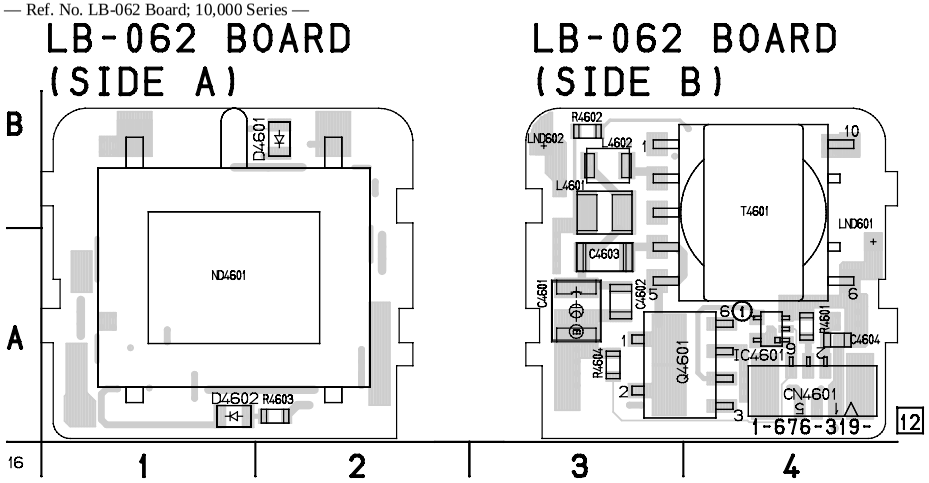
For Schematic Diagram

- Refer to page 4-27 for printed wiring board.
- Refer to page 4-67 for waveforms.



LB-062 (EVF BACK LIGHT) PRINTED WIRING BOARD

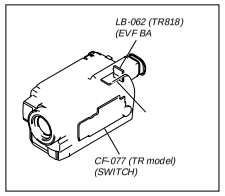
— Ref. No. LB-062 Board; 10,000 Series —



For printed wiring board

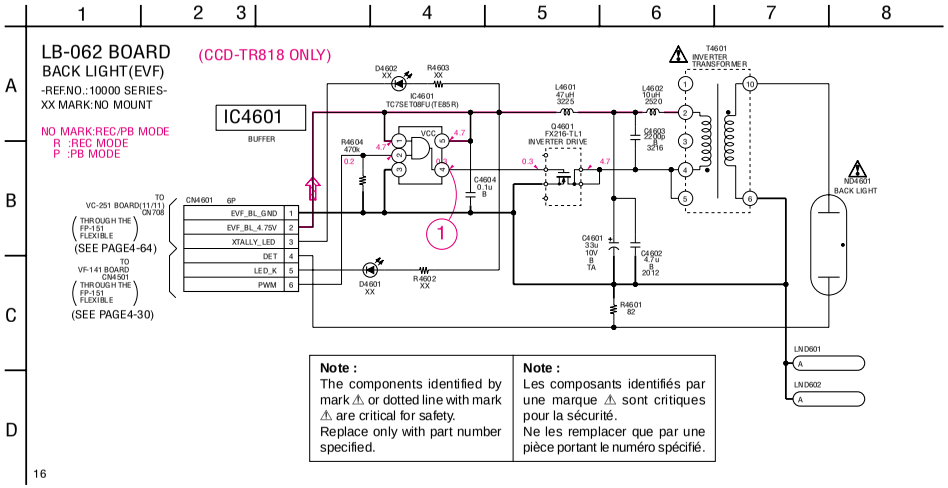
- Refer to page 4-71 for parts location.
- LB-062 board consists of multiple layers. However, only the sides (layers) A and B are shown.

There are a few cases that the part printed on this diagram isn't mounted in this model.



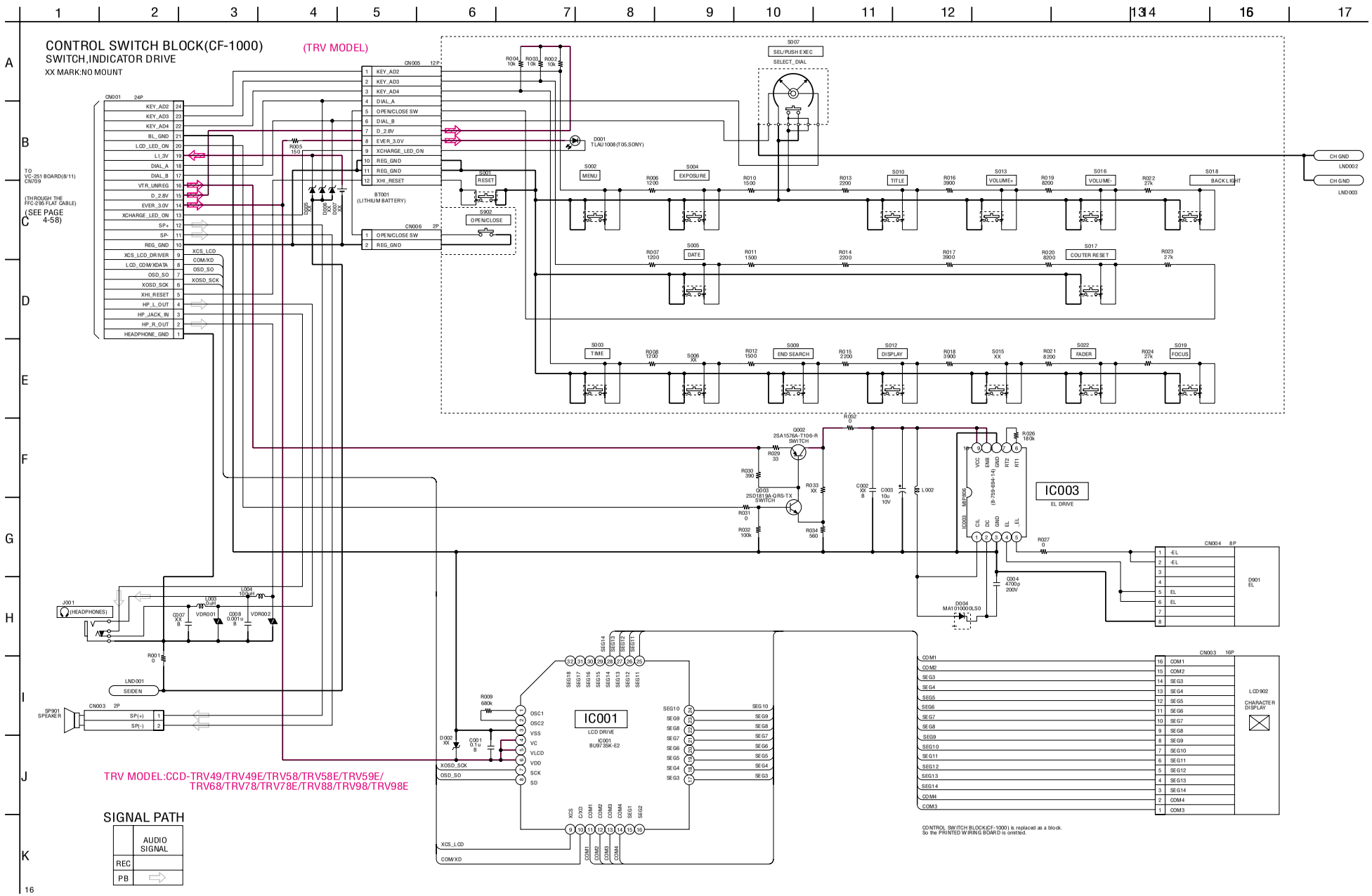
For Schematic Diagram

- Refer to page 4-67 for waveform.



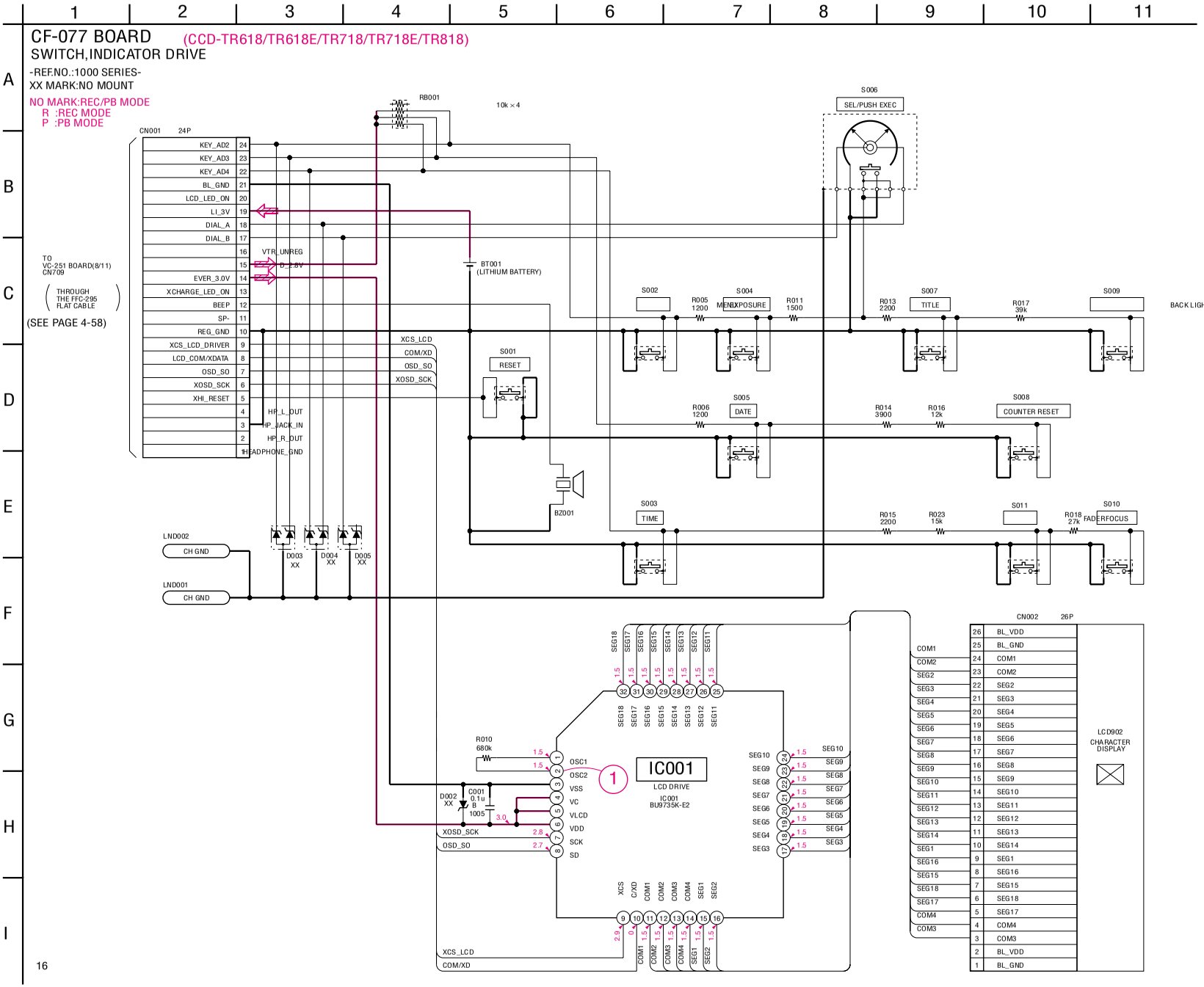
Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

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


CONTROL SWITCH BLOCK(CF-1000)
SWITCH,INDICATOR DRIVE
XX MARK:NO MOUNT
(TRV MODEL)
IC003
EL DRIVE
IC001
LCD DRIVE
IC001
BU9735K-E2
LCD902
CHARACTER DISPLAY
TRV MODEL:CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/
TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
SIGNAL PATH
AUDIO SIGNAL
REC
PB
CONTROL SWITCH BLOCK(CF-1000) is replaced as a block.
So the PRINTED WIRING BOARD is omitted.

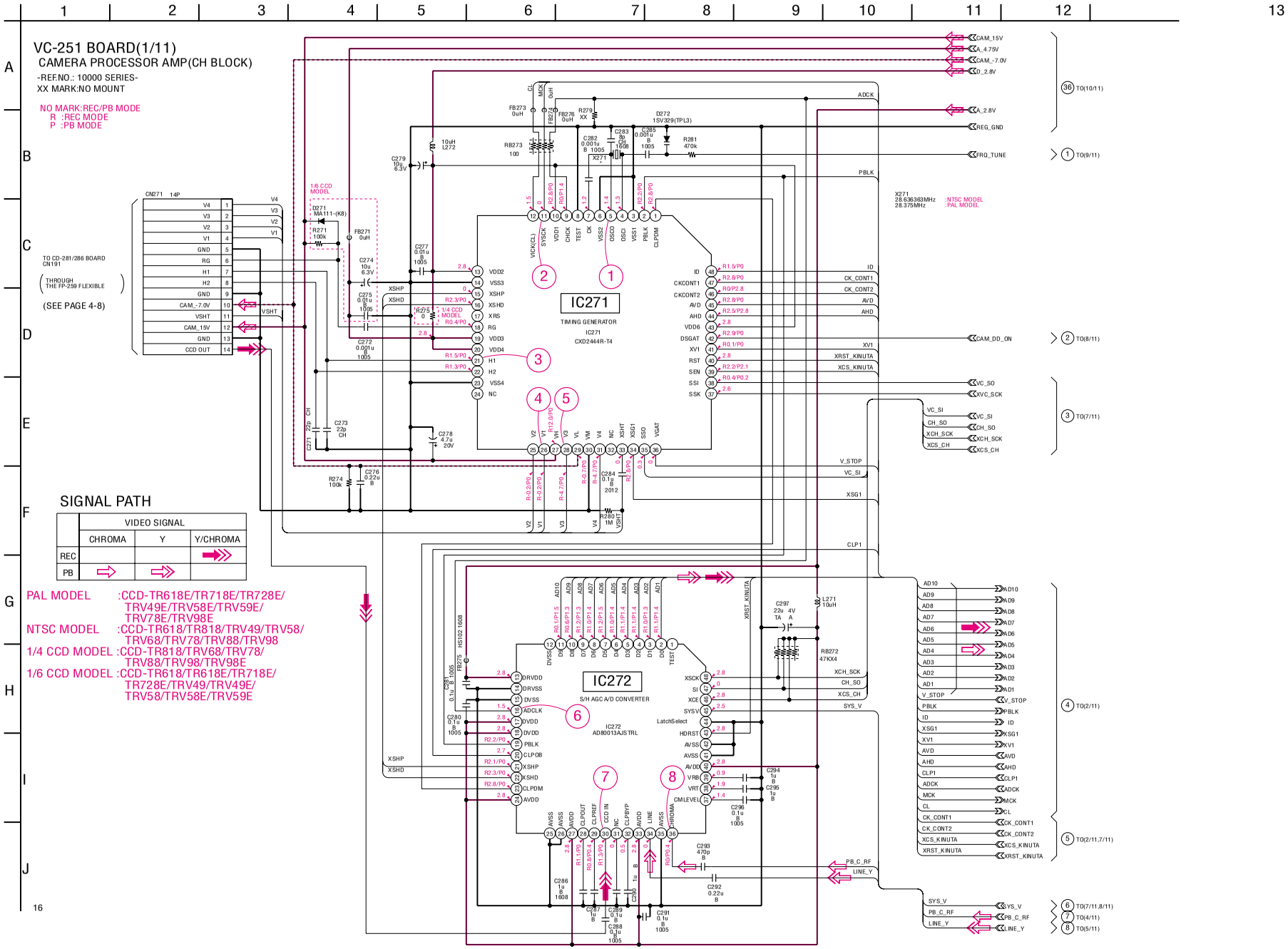
For Schematic Diagram

• Refer to page 4-67 for waveform.



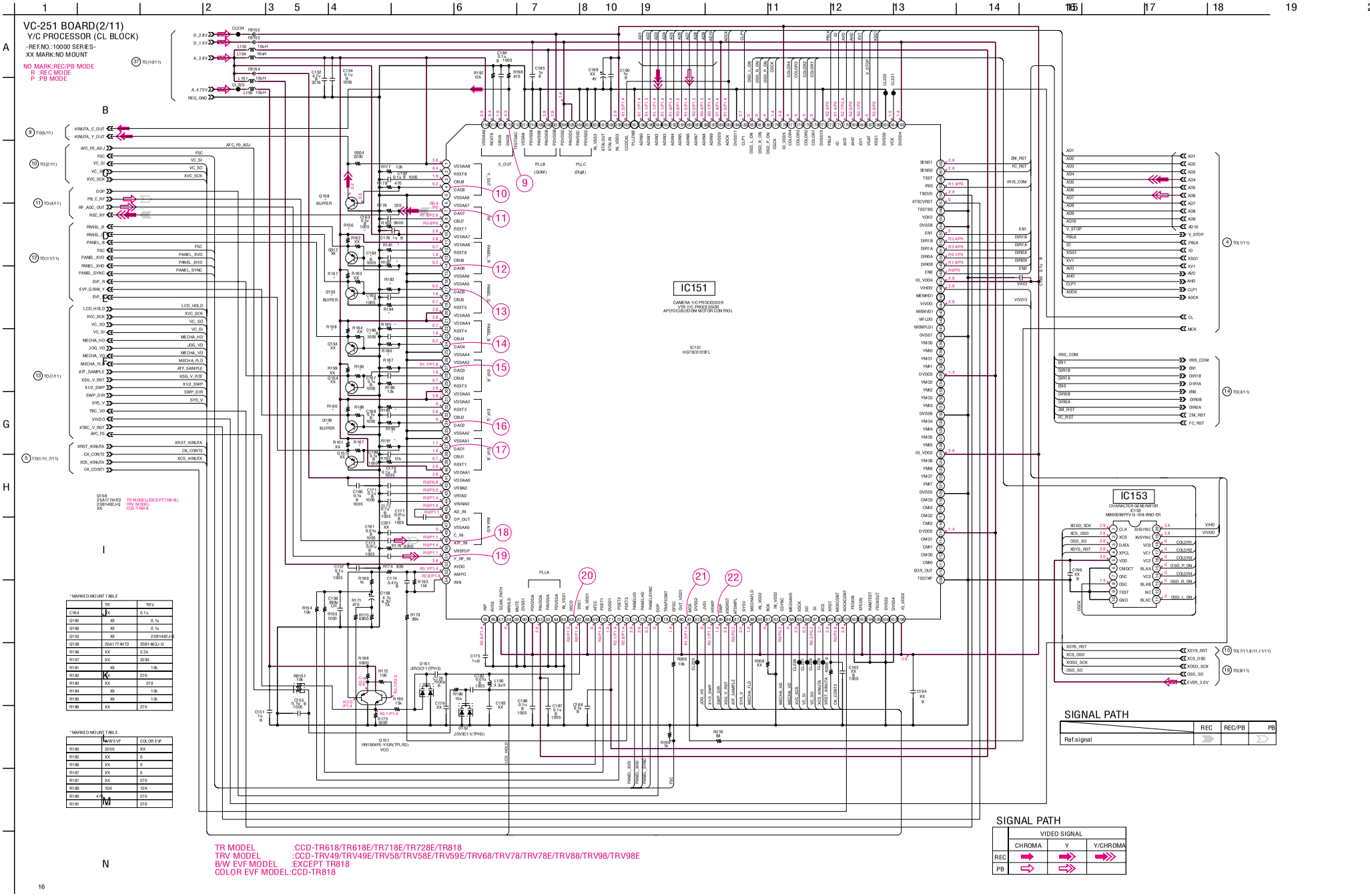
For Schematic Diagram

- Refer to page 4-39 for printed wiring board.
- Refer to page 4-68 for waveforms.



For Schematic Diagram

- Refer to page 4-39 for printed wiring board.
- Refer to page 4-68 for waveforms.



* MARKED MOUNT TABLE

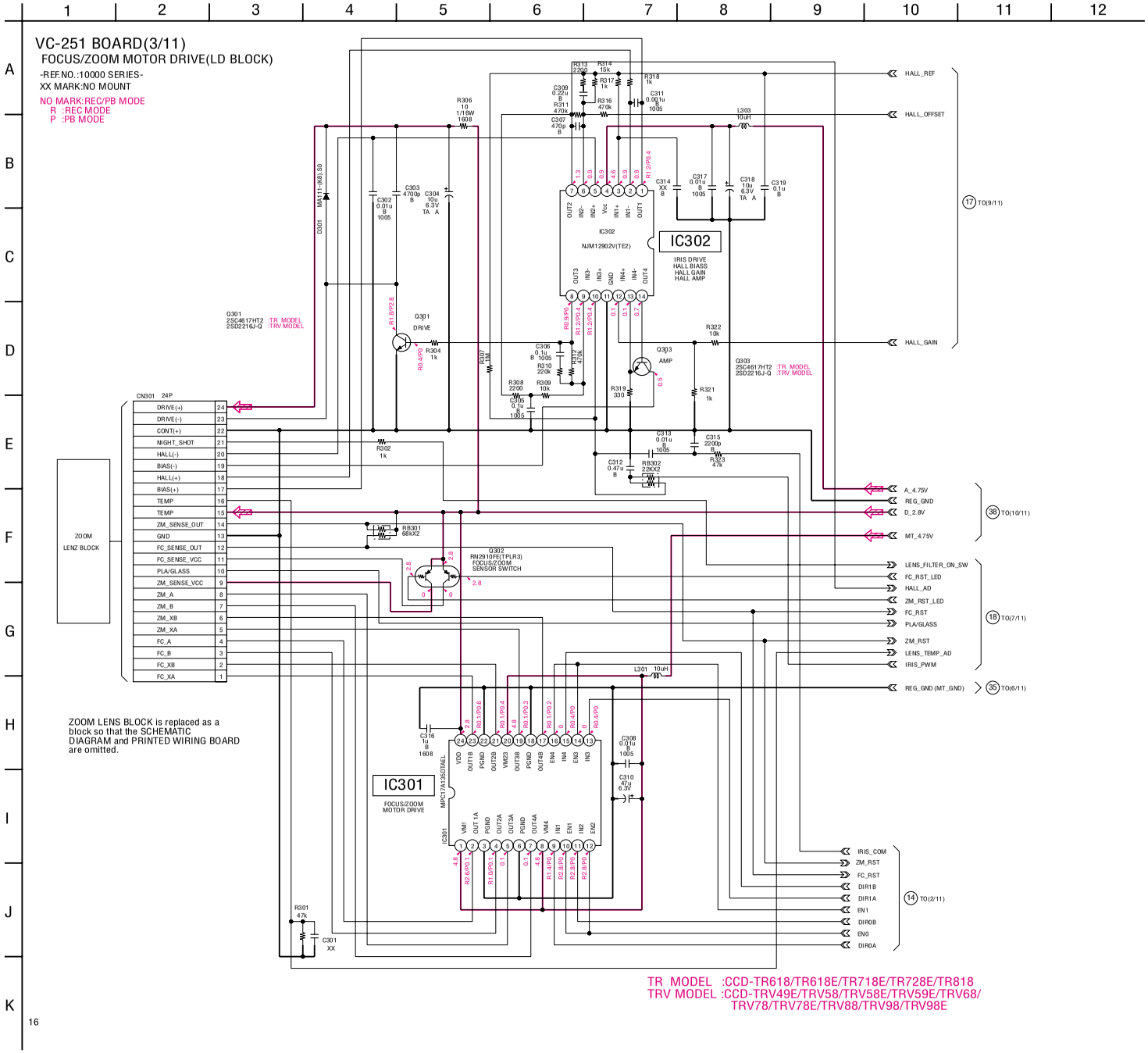
	TR	TRV
C164	XX	0.1u
Q1 66	XX	0.1u
Q1 66	XX	0.1u
Q1 53	XX	2SB1462J-Q
Q1 58	2SA1774HT2	2SB1462J-Q
R1 56	XX	3.2k
R1 57	XX	3200
R1 81	XX	12k
R1 82	XX	270
R1 83	XX	270
R1 84	XX	12k
R1 85	XX	12k
R1 86	XX	270

* MARKED MOUNT TABLE

	B&W EVF	COLOR EVF
R1 60	2200	XX
R1 65	XX	0
R1 66	XX	0
R1 67	XX	0
R1 87	XX	270
R1 89	10K	12K
R1 90	47k	270
R1 91	XX	270

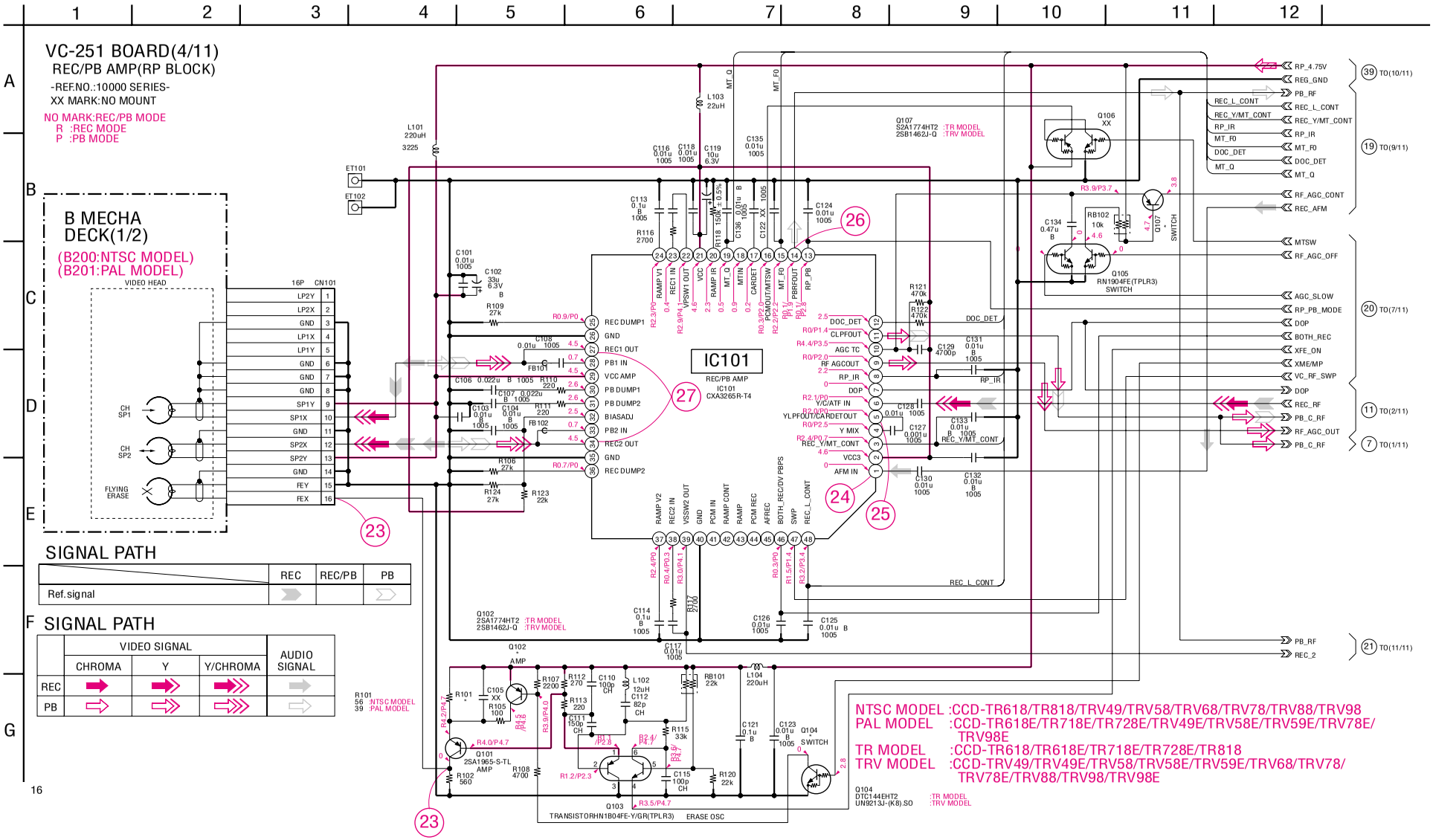
For Schematic Diagram

• Refer to page 4-39 for printed wiring board.



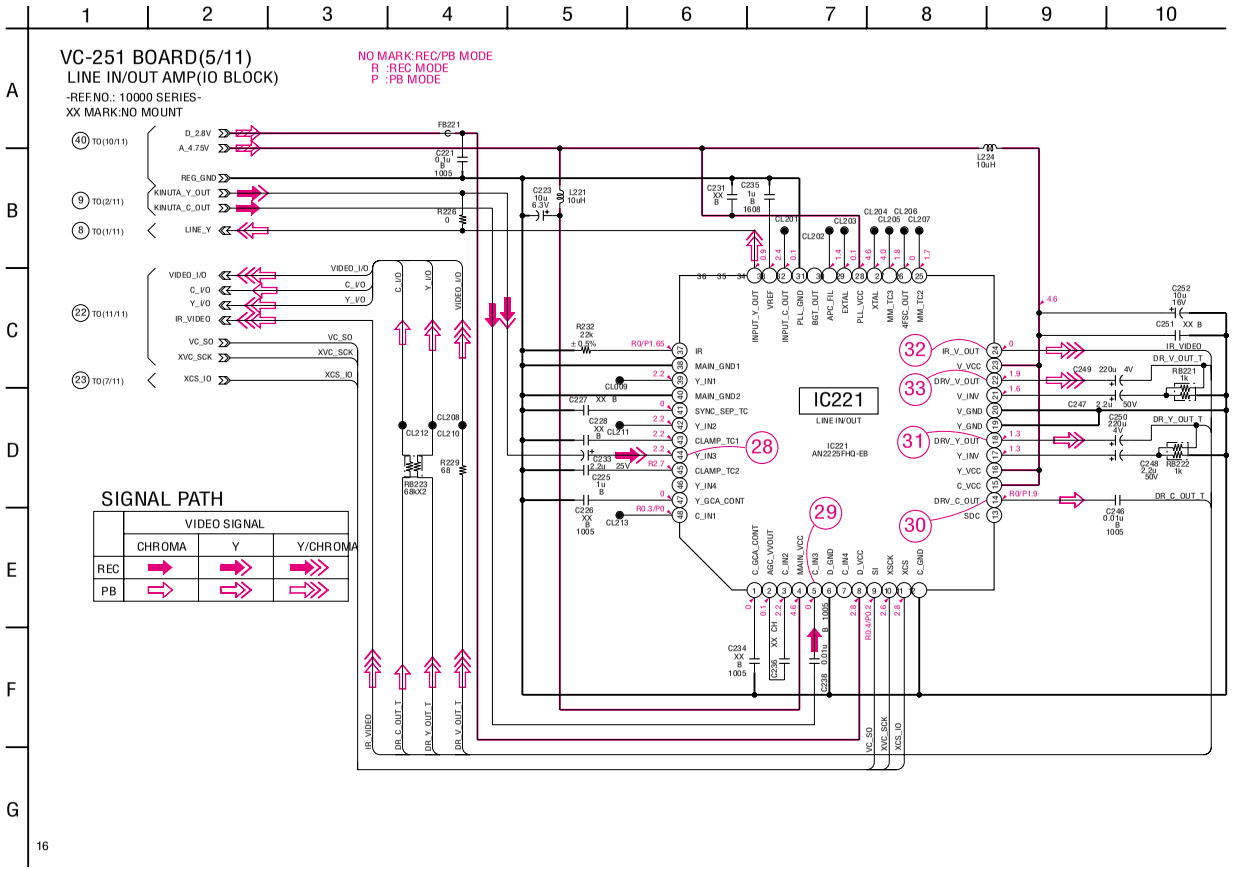
For Schematic Diagram

- Refer to page 4-39 for printed wiring board.
- Refer to page 4-68 for waveforms.



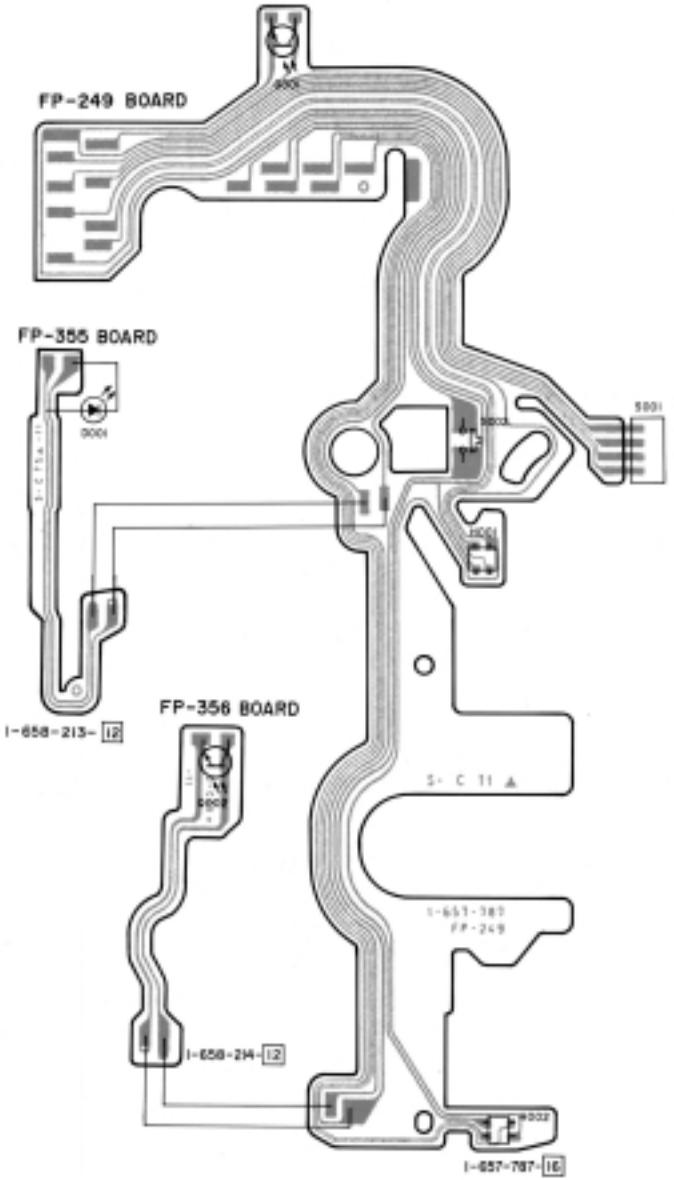
For Schematic Diagram

- Refer to page 4-39 for printed wiring board.
- Refer to pages 4-68,69 for waveforms.



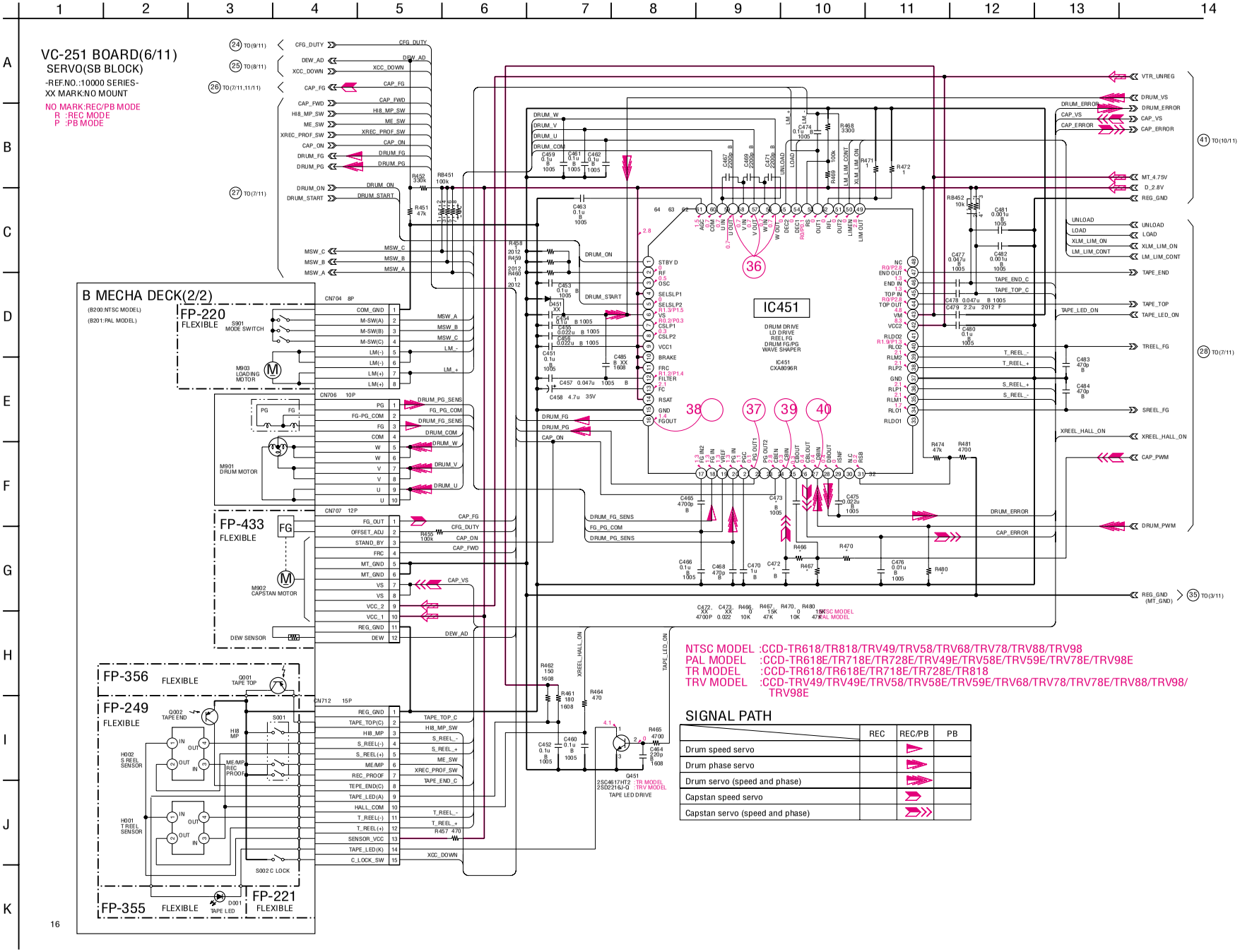
FP-249 (S/T REEL SENSOR, TAPE TOP), FP-356 (TAPE END), FP-355 (TAPE LED) FLEXIBLE BOARD

— Ref. No. FP-249, 356, 355 Flexible board; 5,000 series —



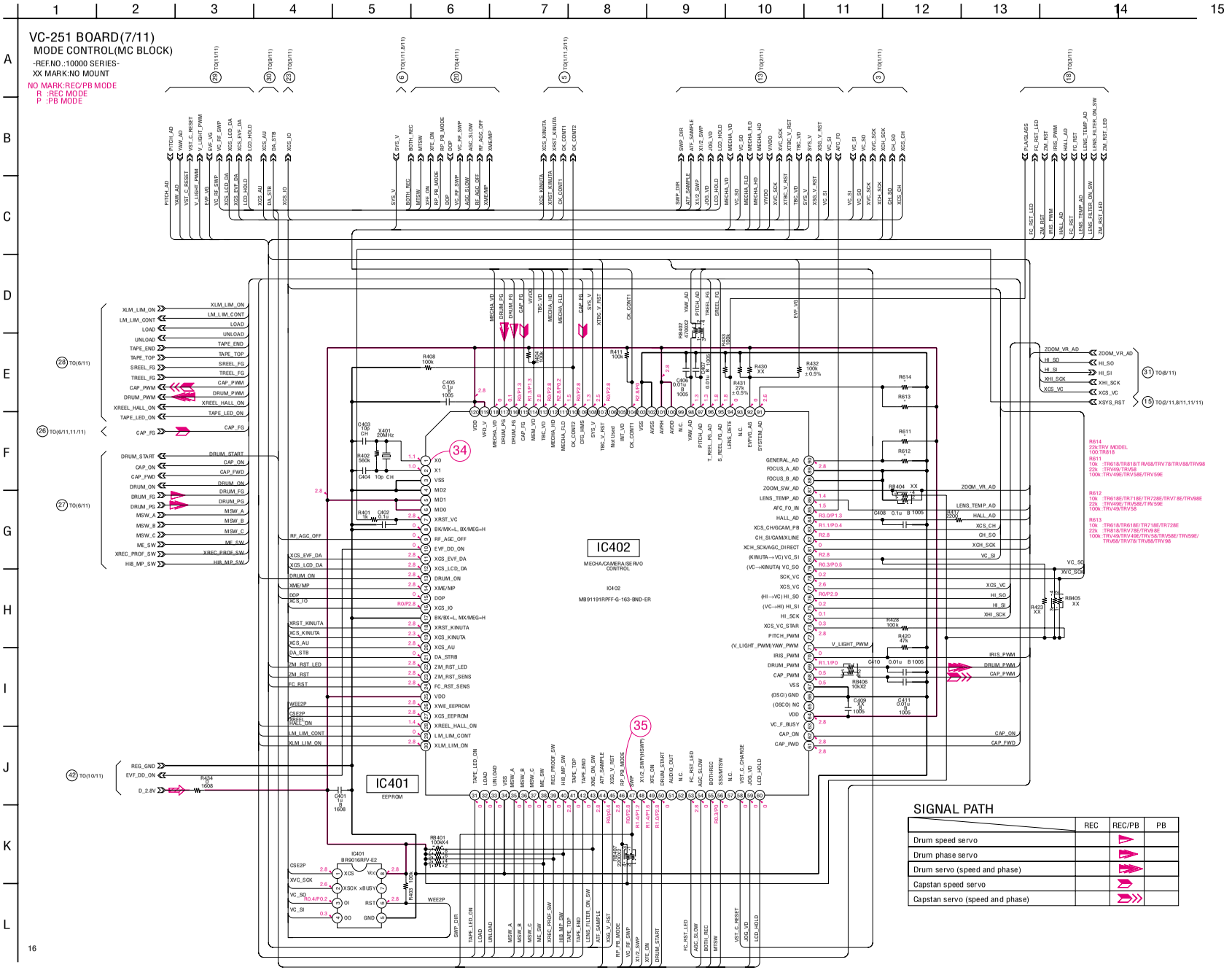
For Schematic Diagram

- Refer to page 4-39 for printed wiring board.
- Refer to page 4-69 for waveforms.



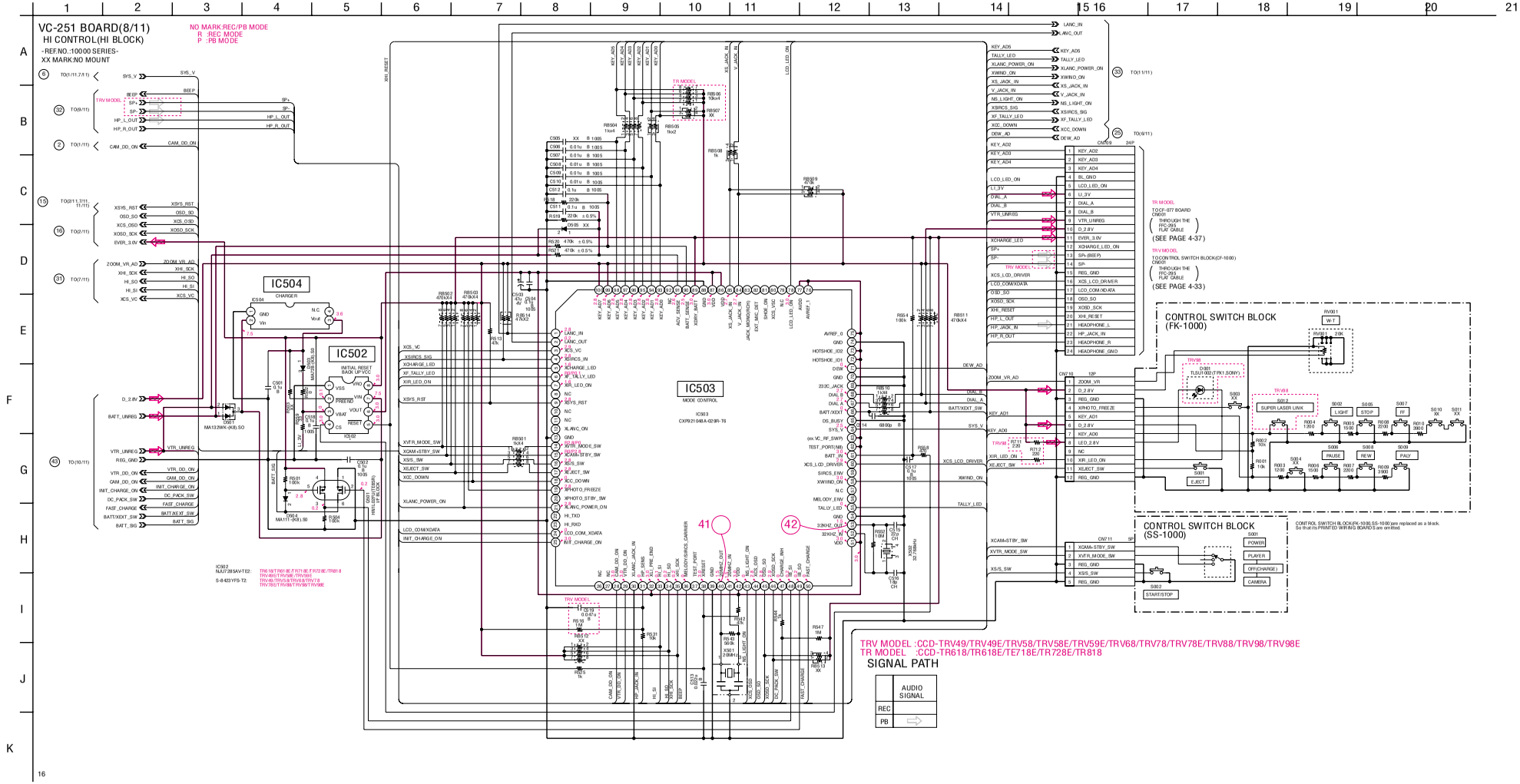
For Schematic Diagram

- Refer to page 4-39 for printed wiring board.
- Refer to page 4-69 for waveforms.



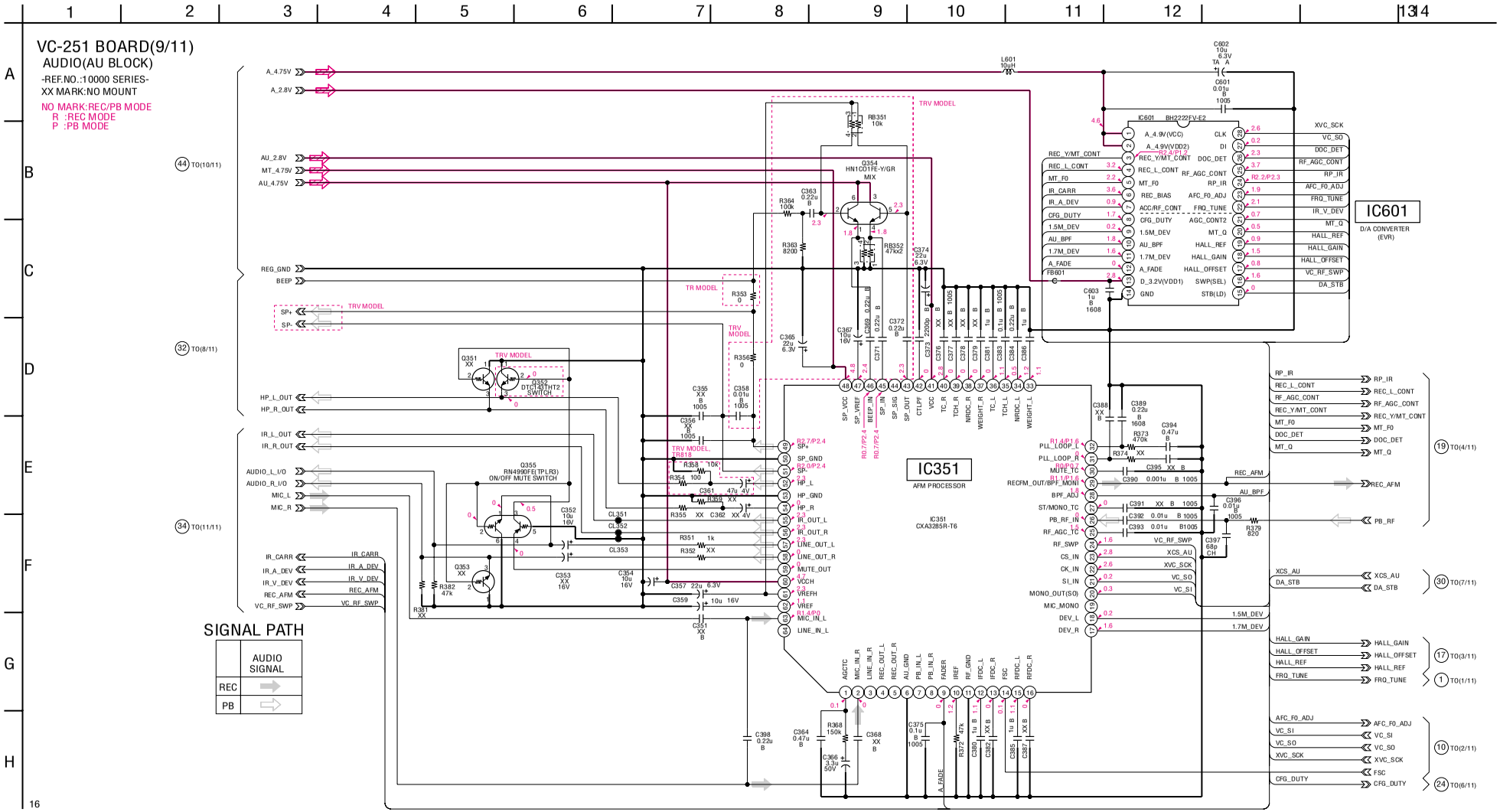
For Schematic Diagram

- Refer to page 4-39 for printed wiring board.
- Refer to page 4-69 for waveforms.



For Schematic Diagram

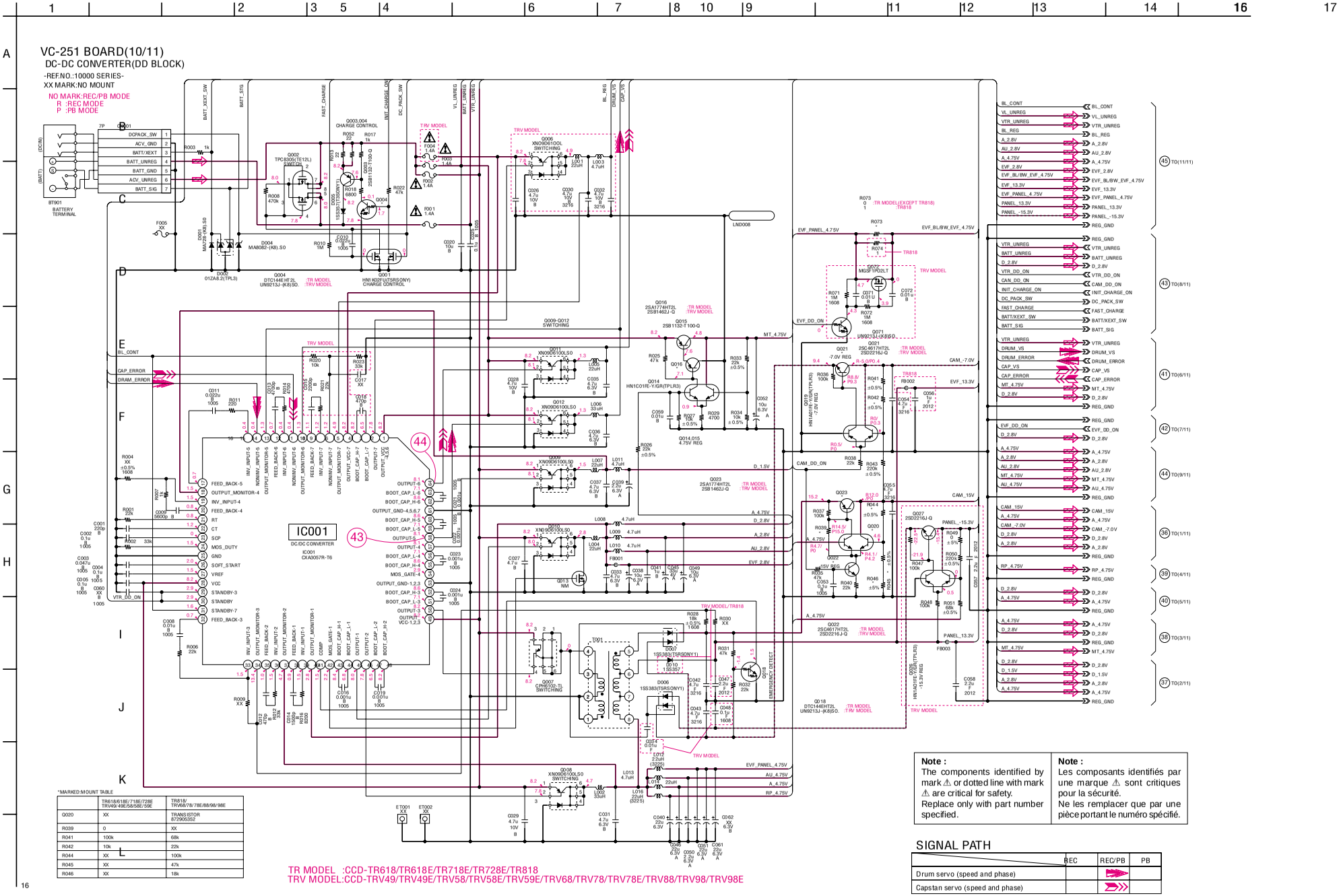
• Refer to page 4-39 for printed wiring board.



TR MODEL :CCD-TR618/TR618E/TR718E/TR728E/TR818
TRV MODEL :CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

For Schematic Diagram

- Refer to page 4-39 for printed wiring board.
- Refer to page 4-69 for waveforms.



*MARKED:MOUNT TABLE

	TR618/618E/718E/728E TRV49/49E/58/58E/59E	TR818/ TRV68/78/78E/88/98/98E
Q020	XX	TRANSISTOR 872905352
R039	0	XX
R041	100k	68k
R042	10k	22k
R044	XX	100k
R045	XX	47k
R046	XX	18k

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

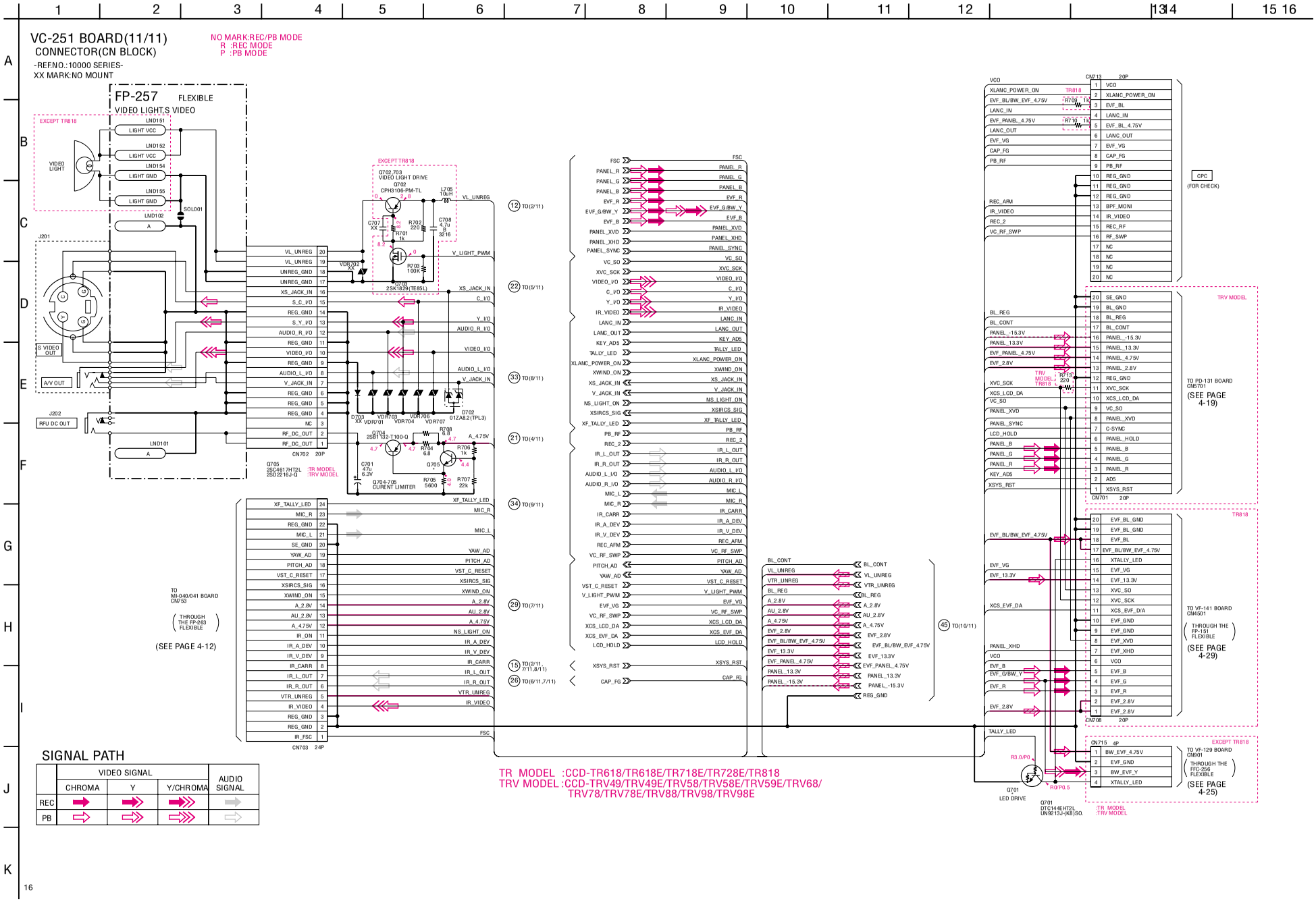
Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

SIGNAL PATH

	REC	REC/PB	PB
Drum servo (speed and phase)		▶	
Capstan servo (speed and phase)		▶▶	

For Schematic Diagram

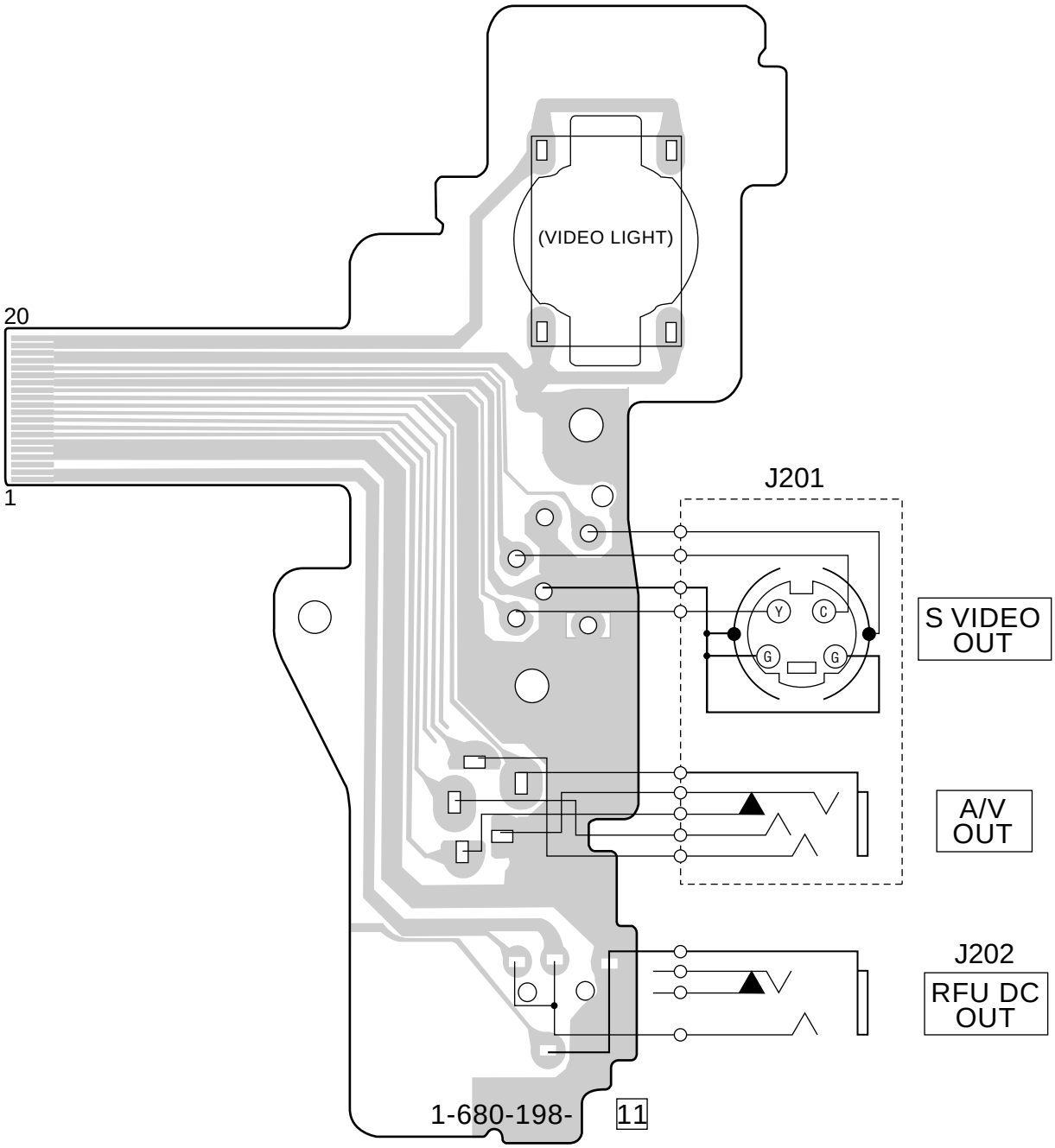
• Refer to page 4-39 for printed wiring board.

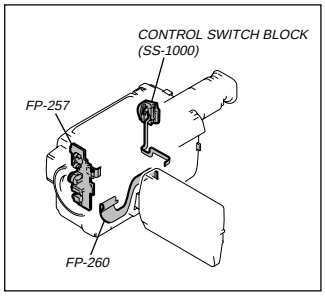


FP-257 (VIDEO LIGHT, S VIDEO) FLEXIBLE BOARD

— Ref. No. FP-257 Flexible board; 10,000 Series —

FP-257 FLEXIBLE

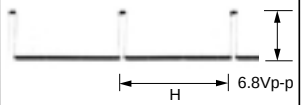




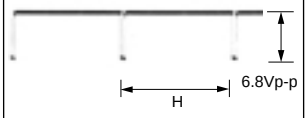
4-3. WAVEFORMS

CD-281/286 BOARD
REC

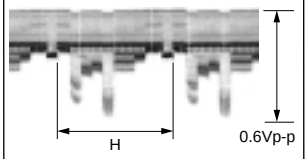
① IC191 ①,②



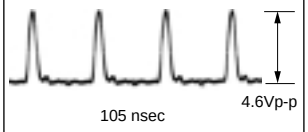
② IC191 ③,④



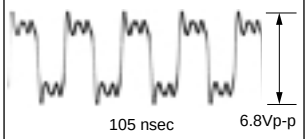
③ IC191 ⑦



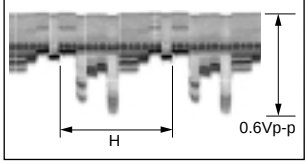
④ IC191 ⑫



⑤ IC191 ⑬,⑭

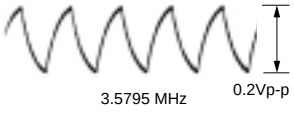


⑥ Q191 Ⓔ

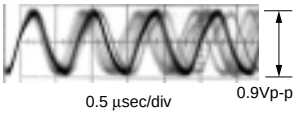


MI-040/041 BOARD
REC/PB

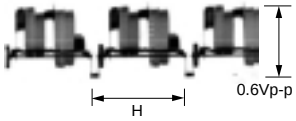
① IC3901 ⑦
IR ON



② IC3901 ㉒
IR ON

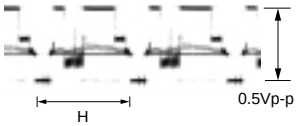


③ IC3901 ㊶
IR ON

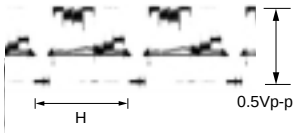


PD-131 BOARD

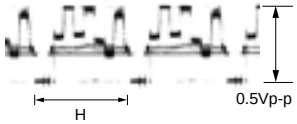
① IC5501 ㊽



② IC5501 ㊼



③ IC5501 ㊻

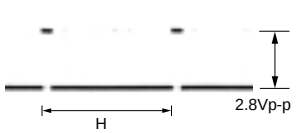


④ IC5501 ⑳

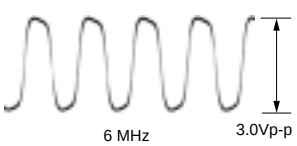
⑤ IC5501 ㉒

⑥ IC5501 ㉔

⑦ IC5502 ①

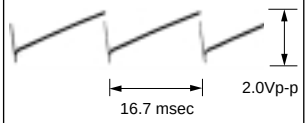


⑧ IC5502 ㉖

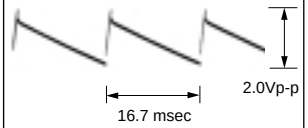


VF-129 BOARD
REC/PB

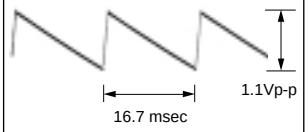
① IC901 ①,⑤



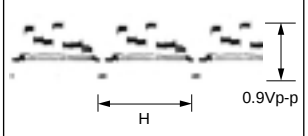
② IC901 ③



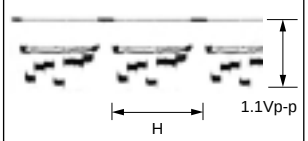
③ IC901 ⑦



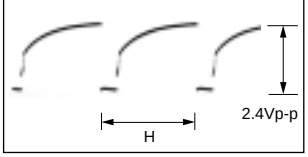
④ IC901 ⑪



⑤ IC901 ⑬

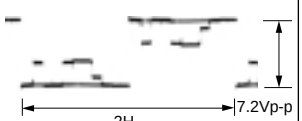


⑥ IC901 ⑯

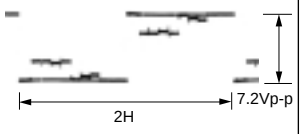


VF-141 BOARD

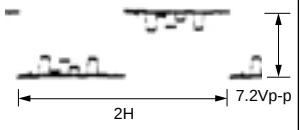
① IC4501 ⑳



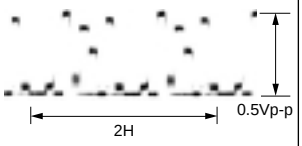
② IC4501 ㉒



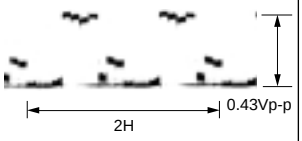
③ IC4501 ㉔



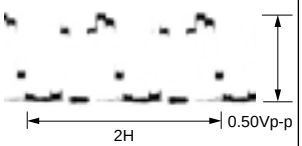
④ IC4501 ㊻



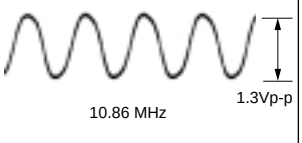
⑤ IC4501 ㊼



⑥ IC4501 ㊽

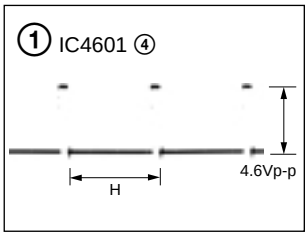


⑦ IC4502 ㉖



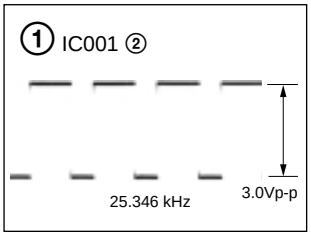
LB-062 BOARD

① IC4601 ④



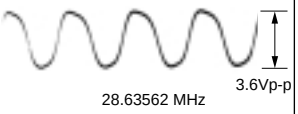
CF-077 BOARD

① IC001 ②

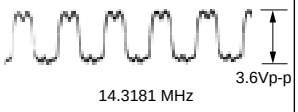


VC-251 BOARD

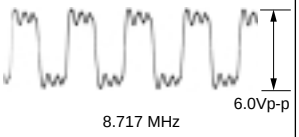
① IC271 ⑤
REC/PB



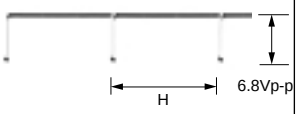
② IC271 ⑪
REC/PB



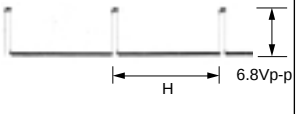
③ IC271 ㉑
REC



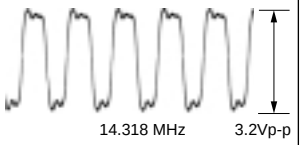
④ IC271 ㉖
REC



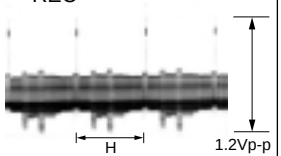
⑤ IC271 ㉘
REC



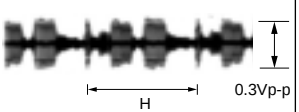
⑥ IC272 ⑯
REC/PB



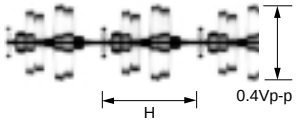
⑦ IC272 ㉚
REC



⑧ IC272 ㊱
PB

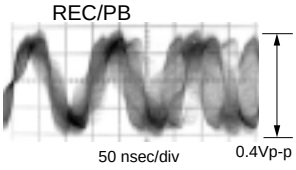


⑨ IC151 ㉓
REC/PB

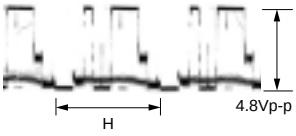


⑩ IC151 ④
REC/PB

⑪ IC151 ⑦
REC/PB

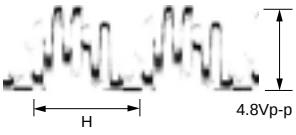


⑫ IC151 ⑭
REC/PB

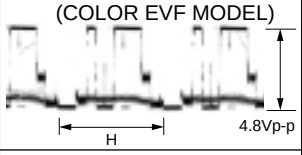


⑬ IC151 ⑰
REC/PB

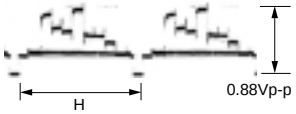
⑭ IC151 ㉔
REC/PB



⑮ IC151 ㉗
REC
(COLOR EVF MODEL)

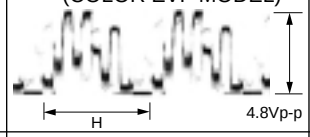


⑯ IC151 ㉞
REC
(B/W EVF MODEL)



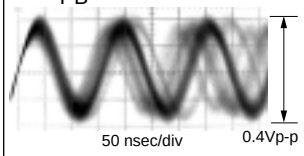
⑯ IC151 ㉞
REC
(COLOR EVF MODEL)

⑰ IC151 ㊲
REC
(COLOR EVF MODEL)

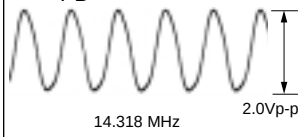


⑱ IC151 ㊾
PB

⑲ IC151 ㊶
PB

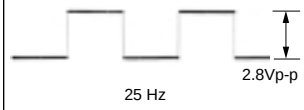


⑳ IC151 ㊻
PB

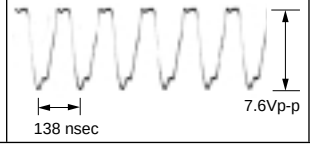


㉑ IC151 ㊶
REC/PB

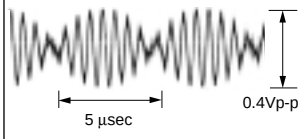
㉒ IC151 ㊺
REC/PB



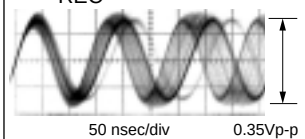
㉓ CN101 ⑯, Q101 Ⓒ
REC



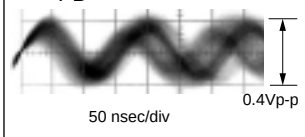
㉔ IC101 ①
REC



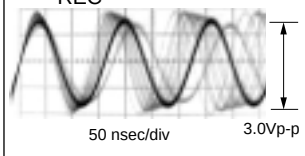
㉕ IC101 ⑤
REC



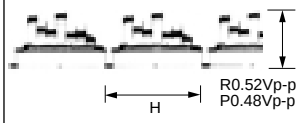
㉖ IC101 ⑭
PB



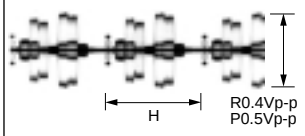
㉗ IC101 ㉗,㉞
REC



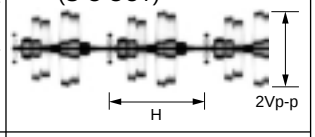
㉘ IC221 ㊹
REC/PB



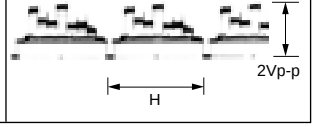
㉙ IC221 ⑤
REC/PB



㉚ IC221 ⑭
REC/PB
(S-C OUT)



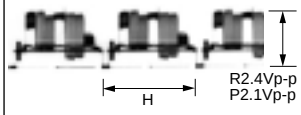
㉛ IC221 ⑱
REC/PB
(S-Y OUT)



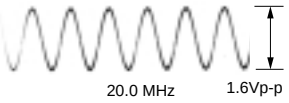
VC-251 BOARD

(32) IC221 (24)
REC/PB
IR ON

(33) IC221 (22)
REC/PB



(34) IC402 (1)
REC/PB



(35) IC402 (47)
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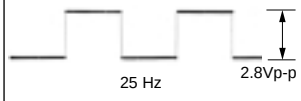
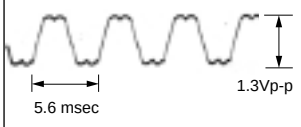
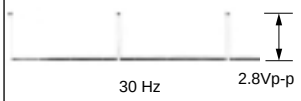


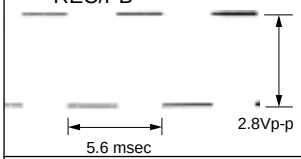
(36) IC451 (57),(59),(61)
REC/PB



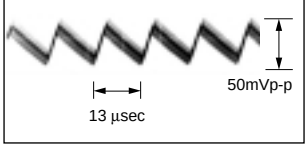
(37) IC451 (22)
REC/PB



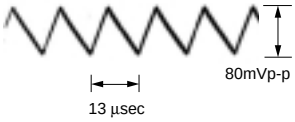
(38) IC451 (16)
REC/PB



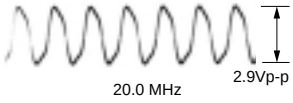
(39) IC451 (25)
REC/PB



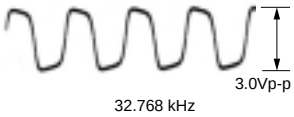
(40) IC451 (28)
REC/PB



(41) IC503 (40)
REC/PB

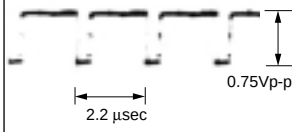


(42) IC503 (53)
REC/PB



(43) IC001 (58)
REC/PB

(44) IC001 (64)
REC/PB



4-4. MOUNTED PARTS LOCATION

CD-281/286 BOARD (SIDE A)

C191	B-2
C196	B-1
IC191	A-2

CD-281/286 BOARD (SIDE B)

C194	B-5
C195	A-4
C197	A-4
CN191	A-5
L191	B-4
Q191	A-5
R191	A-5
R192	A-4
R193	A-4
R194	B-4
R195	B-5
R198	A-4

MI-040/041 BOARD (SIDE A)

C758	D-2
C762	D-1
C775	B-2
C784	C-2
C791	B-2
C794	C-3
C799	B-4
C800	C-4
C808	C-4
C809	C-4
C810	B-3
C3901	B-2
C3902	B-2
C3903	B-2
C3904	B-2
C3905	B-1
C3906	B-1
C3907	B-2
C3908	B-1
C3910	B-2
C3911	B-2
C3912	C-3
C3913	B-3
C3914	A-2
C3915	A-1
C3916	A-1
C3917	A-2
C3918	A-2
C3919	A-1
C3920	A-1
C3921	A-3
C3922	A-1
C3923	A-3
C3924	A-1
C3925	A-1
C3926	A-2
C3929	A-2
C3930	A-2
C3932	C-3
C3934	A-3
C3935	A-2
D752	B-3
D753	B-4
D754	A-1
D755	C-4
D756	C-4
D3901	B-4
D3902	A-3
D3903	A-4
IC751	B-3
IC3901	A-2
L3903	A-3
R786	B-4
R797	C-3
R3901	A-3
R3903	B-2
R3904	B-2
R3905	B-1
R3907	B-1
R3908	A-3
R3909	A-2
R3912	A-3
R3913	A-1
R3914	A-1
R3915	A-2
R3916	A-2
R3917	A-2
R3926	A-3
R3927	B-3
R3931	B-2
R3945	A-1
R3946	A-3
SE751	C-2
SE752	E-2

MI-040/041 BOARD (SIDE B)

C759	E-7
C761	B-5
C763	C-7
C764	C-5
C768	C-7
C769	B-5
C770	C-5
C772	C-7
C773	B-5
C774	C-7
C776	C-5
C777	C-7
C779	B-5
C780	B-5
C781	C-5
C782	C-5
C783	B-5
C785	B-5
C786	B-5
C787	C-6
C788	B-5
C789	B-8
C796	C-5
C3909	B-7
C3931	A-7
C3933	B-6
CN751	C-5
CN752	C-6
CN753	B-6
IC752	B-5
IC753	B-7
L751	B-6
L3902	B-7
L3904	A-6
L3905	A-6
L3906	B-6
Q3901	A-7
Q3902	A-7
Q3903	A-5
Q3904	A-5
R757	C-5
R761	B-5
R764	B-5
R765	B-5
R766	C-5
R767	C-5
R768	B-5
R769	C-5
R770	B-5
R771	B-5
R772	B-5
R774	C-5
R775	C-6
R776	C-6
R779	B-7
R780	C-7
R782	B-7
R783	B-7
R784	B-7
R785	B-7
R788	B-5
R789	B-5
R3902	B-7
R3919	A-7
R3920	A-7
R3921	A-7
R3922	A-5
R3923	A-6
R3924	B-6
R3925	A-6
R3928	B-6
R3929	A-6
R3930	B-7
RB751	C-7
RB752	E-7
RB3901	B-8

PD-131 BOARD (SIDE A)

C5501	C-3
C5502	C-3
C5503	B-4
C5504	B-3
C5505	B-4
C5506	B-4
C5507	B-4
C5508	C-3
C5509	C-4
C5510	B-4
C5511	B-3
C5512	B-3
C5513	B-4
C5514	C-4
C5515	B-3
C5516	A-3
C5517	A-4
C5518	A-4
C5519	A-4
C5520	C-3
C5521	B-2
C5522	B-1
C5523	A-3
C5524	A-1
C5525	B-4
C5526	B-4
C5527	B-4
C5528	C-2
C5529	B-3
C5530	A-2
C5531	A-2
C5532	B-1
C5601	A-4
C5602	C-5
C5603	C-6
C5604	A-5
C5605	A-5
C5606	A-6
C5607	C-5
C5608	C-6
CN5501	A-2
CN5502	B-2
CN5601	A-6
CN5701	B-6
CN5702	D-6
D5501	C-3
D5502	A-4
D5503	A-2
D5601	A-5
D5603	D-2
D5604	D-2
ET5601	A-5
ET5602	C-6
FB5501	C-3
FB5502	C-4
IC5501	B-4
IC5502	B-3
IC5601	A-4
IC5602	A-5
L5501	C-3
L5502	C-4
L5503	B-3
L5601	C-5
Q5501	C-3
Q5502	B-1
Q5503	A-2
Q5504	A-2
Q5505	B-1
Q5601	A-4
Q5602	C-6
Q5603	A-5
R5501	C-4
R5502	C-4
R5503	C-4
R5504	B-3
R5505	B-4
R5506	B-4
R5507	B-4
R5508	B-4
R5509	B-4
R5510	B-3
R5511	B-3
R5512	B-4
R5513	B-3
R5514	A-3
R5515	A-3
R5516	C-2
R5517	B-2
R5518	B-2
R5519	B-2
R5520	A-3
R5521	B-2
R5522	B-2
R5523	C-4
R5524	C-4
R5525	C-2
R5526	C-3
R5527	A-1
R5528	A-2
R5529	A-2
R5530	A-2
R5531	C-4
R5532	B-1
R5533	B-2
R5534	B-3
R5535	B-3
R5539	D-6
R5601	C-5
R5602	A-5
R5603	B-5
R5604	C-5
R5605	A-6
R5606	A-5
R5607	A-5
R5608	D-2
R5609	D-2
R5610	A-5
R5611	A-5
R5702	D-6
R5703	C-6
RB5501	A-3
RB5502	A-2
RB5503	A-2
RB5601	A-4
T5601	B-6

PD-131 BOARD (SIDE B)

D5602	A-8

VF-129 BOARD (SIDE A)

C903 A-2
C904 B-2
C906 A-2
C907 A-1
C909 B-1
C913 A-2

CN902 B-1

D901 A-1

IC901 A-1

L901 B-1
L903 D-1

R903 A-1
R907 B-1
R908 B-2
R909 B-2
R910 B-2
R912 A-2
R913 C-2
R914 C-1
R915 A-1
R916 A-1
R917 A-1
R922 D-1
R927 B-1
R928 B-1
R929 A-1
R930 C-1
R931 C-1
R932 C-1

RV903 C-2
RV904 D-1

T901 D-1
T902 D-1

TH901 C-2

W901 D-2

VF-129 BOARD (SIDE B)

C901 A-3
C902 A-2
C905 A-3
C908 B-2
C910 C-3
C911 C-3
C912 B-3
C914 D-3
C915 D-3
C916 C-3

CN901 B-3

D903 D-3

L902 B-2

Q901 A-2
Q902 B-2
Q903 C-3
Q904 C-2

R901 A-3
R902 A-2
R904 A-3
R905 A-2
R906 A-2
R911 A-3
R918 C-2
R919 C-2
R920 C-2
R921 D-2
R923 D-3
R924 C-3
R925 C-3
R926 D-2

VF-141 BOARD (SIDE A)

C4501 B-1
C4504 B-1
C4510 B-2
C4515 B-2
C4516 B-2
C4517 A-2
C4521 A-2
C4524 A-2
C4527 B-2

CN4502 A-2

D4501 B-2
D4502 B-2
D4503 A-2
D4504 A-2

FB4505 B-1

IC4502 A-2

L4501 B-1
L4504 B-2

Q4502 A-1
Q4503 A-1
Q4504 B-2

R4505 A-1
R4506 A-1
R4507 A-1
R4508 B-2
R4522 B-2
R4524 A-2
R4525 A-2
R4529 A-2
R4530 A-1
R4534 A-1
R4535 A-1
R4542 A-1
R4543 A-2
R4544 B-1

VF-141 BOARD (SIDE B)

C4503 A-5
C4505 A-5
C4506 A-5
C4507 A-5
C4508 B-5
C4509 B-5
C4511 B-4
C4512 B-4
C4513 A-4
C4514 A-4
C4518 A-4
C4519 A-4
C4520 A-4
C4523 B-4
C4526 A-5

CN4501 A-5

FB4502 A-4

IC4501 A-4

R4515 B-4
R4516 B-4
R4517 B-4
R4518 A-4
R4520 B-4
R4521 B-4
R4523 B-4
R4526 A-4
R4527 A-4
R4528 A-4
R4545 B-4
R4546 B-4
R4547 A-4

LB-062 BOARD (SIDE A)

D4601 B-2
D4602 A-1

ND4601 A-1

R4603 A-2

LB-062 BOARD (SIDE B)

C4601 A-3
C4602 A-3
C4603 A-3
C4604 A-4

CN4601 A-4

IC4601 A-4

L4601 B-3
L4602 B-3

Q4601 A-3

R4601 A-4
R4602 B-3
R4604 A-3

T4601 B-4

CF-077 BOARD (SIDE A)

C001 F-6

D002 F-6
D003 F-3
D004 F-3
D005 F-4

IC001 F-6

R005 E-6
R006 G-4
R010 F-6
R011 E-5
R013 E-6
R014 G-5
R015 G-5
R016 G-6
R017 E-3
R018 E-4
R023 G-4

S001 E-1
S002 E-7
S003 G-6
S004 E-5
S005 G-5
S006 E-8
S007 E-6
S008 G-6
S009 F-2
S010 E-3
S011 F-1

CF-077 BOARD (SIDE B)

BT001 B-6

BZ001 B-2

CN001 B-4
CN002 A-6

RB001 B-3

VC-251 BOARD (SIDE A)

C010	E-8	C290	F-3	F002	E-8	R157	E-2	R711	G-7
C020	E-8	C291	F-4	F003	E-9	R158	D-2	R712	F-6
C025	D-8	C292	F-3	F004	E-8	R159	D-2	R713	C-2
C038	F-7	C293	F-3	F005	E-7	R160	D-2		
C040	F-6	C294	F-3			R161	D-2	RB101	B-5
C041	F-7	C295	F-3	FB001	F-7	R162	E-2	RB221	C-1
C045	F-7	C296	F-3	FB002	F-7	R163	E-2	RB222	D-1
C046	G-6	C297	F-4	FB003	F-7	R164	D-2	RB223	D-1
C049	G-7	C301	G-4	FB101	A-4	R165	D-2	RB272	F-3
C050	G-6	C302	G-4	FB102	A-5	R166	D-2	RB302	G-3
C051	F-6	C303	G-3	FB154	D-2	R167	D-2	RB510	D-8
C056	F-7	C304	G-3	FB275	E-4	R169	C-3	RB512	C-7
C058	F-7	C305	G-3	FB301	G-4	R170	C-3	RB514	D-7
C061	F-6	C306	G-3			R171	C-3		
C062	F-6	C307	G-4	IC101	B-4	R173	C-3	T001	F-8
C105	B-5	C308	G-6	IC151	D-4	R174	C-3		
C108	B-4	C309	G-4	IC272	F-3	R176	C-3	X501	C-7
C109	B-5	C310	E-5	IC301	G-5	R177	E-3	X502	C-8
C110	B-5	C311	F-4	IC302	G-4	R178	E-2		
C111	B-5	C312	G-3	IC503	D-7	R179	E-2		
C113	B-4	C313	G-3			R180	E-3		
C114	B-5	C314	F-4	L001	G-8	R181	E-3		
C115	B-5	C315	G-3	L002	F-8	R182	E-3		
C116	B-4	C316	G-6	L004	G-8	R183	E-3		
C117	B-5	C317	F-4	L005	G-9	R184	E-3		
C118	B-4	C318	F-4	L006	F-9	R185	D-3		
C119	B-4	C319	G-4	L007	G-8	R186	D-3		
C121	B-5	C352	B-1	L008	G-7	R187	D-3		
C122	B-4	C353	B-1	L009	F-7	R188	D-3		
C124	B-4	C354	A-3	L010	F-7	R189	D-3		
C125	B-5	C357	B-2	L012	F-7	R190	D-3		
C126	B-5	C359	B-3	L013	G-7	R191	D-3		
C127	B-5	C361	A-1	L014	G-7	R192	D-3		
C128	B-4	C362	A-1	L016	F-7	R193	C-3		
C129	B-4	C365	A-2	L151	D-2	R197	E-3		
C130	B-5	C366	B-3	L154	F-3	R198	E-3		
C131	C-5	C367	A-2	L271	E-4	R199	C-4		
C132	B-5	C374	A-3	L301	G-6	R200	C-4		
C133	B-5	C403	B-7	L303	F-4	R204	E-2		
C135	B-4	C404	B-7	L705	D-1	R206	C-4		
C136	B-4	C458	B-8			R208	C-5		
C152	D-3	C459	B-8	Q001	E-7	R218	C-4		
C154	E-2	C461	B-8	Q002	E-9	R229	D-1		
C156	C-3	C462	B-8	Q003	E-8	R301	G-4		
C157	C-3	C503	E-7	Q004	E-8	R302	G-4		
C158	C-3	C504	E-7	Q101	A-5	R304	G-3		
C160	D-2	C511	E-7	Q102	B-5	R306	G-3		
C161	C-3	C512	E-7	Q103	B-5	R307	G-4		
C162	E-3	C513	C-7	Q104	B-5	R308	G-4		
C163	E-3	C514	D-8	Q152	E-3	R309	G-3		
C164	E-3	C515	C-9	Q153	E-3	R310	G-3		
C165	E-3	C516	C-8	Q154	D-3	R311	G-4		
C166	D-3	C517	D-8	Q155	D-3	R312	G-3		
C167	D-3	C519	C-7	Q156	D-3	R313	G-4		
C168	D-3	C701	C-2	Q157	D-3	R314	G-4		
C169	D-3			Q158	E-2	R316	G-4		
C170	C-3	CN001	D-9	Q301	G-3	R317	G-4		
C171	C-3	CN101	A-4	Q302	G-5	R318	F-4		
C172	C-3	CN271	F-5	Q303	F-3	R319	F-3		
C173	C-3	CN301	G-4	Q701	E-6	R321	F-3		
C174	C-3	CN701	C-2			R322	F-3		
C175	C-3	CN704	A-2	R003	D-8	R323	G-3		
C177	C-3	CN706	A-6	R008	E-8	R354	A-1		
C184	E-3	CN707	A-7	R010	E-8	R355	A-1		
C185	E-4	CN708	E-6	R013	E-8	R358	A-1		
C186	C-3	CN709	B-6	R017	E-8	R359	A-1		
C187	C-4	CN710	G-7	R018	E-8	R402	B-7		
C188	C-4	CN711	C-9	R022	E-7	R451	D-8		
C189	E-3	CN712	A-8	R052	E-8	R452	E-8		
C190	E-4	CN713	D-6	R101	A-5	R455	A-7		
C192	C-5	CN715	D-6	R102	A-5	R457	A-8		
C194	C-5			R105	B-5	R513	D-7		
C201	C-3	D001	D-8	R107	B-5	R516	C-7		
C223	C-2	D002	D-8	R108	B-5	R518	E-7		
C233	B-2	D004	D-8	R112	B-5	R519	E-7		
C247	B-2	D005	D-8	R113	B-5	R520	E-7		
C248	B-3	D301	G-3	R115	B-5	R521	E-7		
C249	C-1	D501	E-7	R116	B-4	R525	C-8		
C250	B-1	D505	E-7	R117	B-5	R542	C-8		
C252	B-3			R118	B-4	R543	C-7		
C280	F-4	ET001	G-7	R120	B-5	R544	C-8		
C281	F-4	ET002	G-9	R121	B-4	R552	C-8		
C286	F-3	ET101	B-5	R122	B-4	R554	D-8		
C287	F-3	ET102	B-4	R154	C-3	R558	D-8		
C288	F-3			R155	C-3	R709	D-6		
C289	F-3	F001	D-9	R156	E-2	R710	D-6		

VC-251 BOARD (SIDE B)

C001	E-12	C283	F-16	C518	D-10	Q353	A-18	R401	B-12
C002	E-12	C284	E-14	C601	D-15	Q354	A-17	R403	C-11
C003	E-12	C285	E-15	C602	D-15	Q355	A-18	R404	C-12
C004	E-12	C351	B-18	C603	D-16	Q451	A-11	R408	C-12
C005	E-12	C355	B-17	C707	E-17	Q501	D-10	R411	C-12
C008	E-12	C356	B-17	C708	E-18	Q702	E-18	R417	B-13
C009	E-12	C358	B-17			Q703	E-17	R420	B-13
C011	E-11	C363	A-18	CN702	E-18	Q704	D-18	R423	B-13
C012	E-13	C364	B-17	CN703	B-18	Q705	D-18	R428	B-13
C013	E-11	C368	B-17	CN714	C-10			R430	C-13
C014	E-13	C369	A-17			R001	E-12	R431	B-13
C015	E-11	C371	A-17	D006	F-12	R002	E-12	R432	C-13
C016	F-11	C372	A-17	D007	F-11	R004	E-11	R433	B-13
C017	E-11	C373	A-17	D010	F-12	R006	E-13	R434	A-12
C018	F-13	C375	B-17	D151	C-16	R007	E-12	R458	B-11
C019	F-13	C376	A-17	D152	C-16	R009	E-13	R459	B-11
C021	F-12	C377	A-17	D271	F-15	R011	E-11	R460	B-11
C022	F-12	C378	A-17	D272	E-16	R012	E-13	R461	B-10
C023	F-12	C379	A-17	D451	B-10	R014	E-11	R462	C-10
C024	F-12	C380	B-17	D503	E-10	R016	E-13	R464	A-12
C026	G-11	C381	A-17	D504	D-11	R020	E-11	R465	A-12
C027	G-11	C382	B-17	D702	D-18	R021	E-11	R466	B-10
C028	G-10	C383	A-16	D703	F-18	R023	E-11	R467	B-10
C029	F-10	C384	A-16			R025	F-10	R468	B-11
C030	G-11	C385	B-16	FB152	E-16	R026	F-11	R469	A-11
C031	F-11	C386	A-16	FB153	E-14	R027	F-11	R470	B-10
C032	G-11	C387	B-16	FB221	C-18	R028	G-12	R471	A-11
C033	G-11	C388	B-16	FB271	F-15	R029	F-11	R472	A-11
C034	F-11	C389	A-16	FB273	F-16	R030	G-12	R474	A-10
C035	F-10	C390	B-16	FB274	F-16	R031	G-12	R480	A-10
C036	F-10	C391	B-16	FB276	F-16	R032	G-12	R481	A-11
C037	G-11	C392	B-16	FB601	D-16	R033	F-10	R501	D-10
C039	G-11	C393	B-16			R034	F-11	R502	E-10
C042	G-12	C394	A-16	IC001	E-12	R035	G-13	R503	E-10
C043	F-12	C395	B-16	IC153	E-14	R036	G-12	R504	D-10
C047	G-12	C396	B-16	IC221	C-18	R037	G-12	R531	C-12
C048	F-12	C397	B-16	IC271	F-15	R038	G-13	R547	C-11
C052	F-10	C398	B-17	IC351	B-17	R039	G-12	R559	D-11
C053	G-13	C401	C-11	IC401	C-11	R040	G-12	R611	B-13
C054	G-13	C402	B-12	IC402	B-12	R041	G-13	R612	B-13
C055	G-12	C405	C-12	IC451	B-11	R042	G-12	R613	C-13
C057	F-13	C406	C-13	IC502	E-11	R043	G-12	R614	B-13
C059	F-10	C407	C-13	IC504	E-11	R044	G-12	R701	E-17
C060	E-12	C408	B-13	IC601	D-15	R045	G-12	R702	E-17
C071	F-13	C409	A-13			R046	G-12	R703	E-17
C072	F-13	C410	B-13	L003	G-11	R047	F-12	R704	D-18
C101	A-14	C411	B-13	L011	G-11	R048	G-12	R705	D-17
C102	A-15	C451	B-11	L101	A-15	R049	F-12	R706	D-18
C103	A-15	C452	B-11	L102	B-14	R050	G-13	R707	D-18
C104	B-14	C453	B-11	L103	B-15	R051	G-13	R708	D-18
C106	B-15	C454	B-11	L104	B-14	R071	F-13		
C107	B-14	C455	B-11	L152	E-16	R072	F-13	RB102	B-14
C112	B-14	C456	B-11	L155	C-16	R073	F-12	RB151	C-15
C123	B-14	C457	B-11	L156	C-16	R074	F-13	RB273	F-16
C134	B-14	C460	A-12	L221	C-17	R106	B-14	RB351	A-17
C151	C-16	C463	B-11	L224	C-18	R109	B-15	RB352	A-17
C155	C-15	C464	A-11	L272	F-16	R110	B-15	RB401	A-12
C176	D-16	C465	B-10	L601	D-15	R111	B-14	RB402	C-13
C178	C-16	C466	B-10			R123	B-15	RB404	B-13
C179	C-16	C467	B-11	Q006	G-11	R124	B-15	RB405	B-13
C182	C-16	C468	B-10	Q007	F-11	R168	D-15	RB406	B-13
C183	C-16	C469	B-11	Q008	F-11	R172	C-15	RB407	A-13
C195	D-14	C470	B-10	Q009	G-10	R175	C-16	RB451	A-12
C196	E-14	C471	B-11	Q010	G-11	R195	C-16	RB452	A-11
C221	C-18	C472	B-10	Q011	G-10	R196	C-15	RB501	D-12
C225	C-17	C473	B-10	Q012	F-10	R226	D-17	RB502	D-12
C226	C-17	C474	A-11	Q013	G-11	R232	D-17	RB503	D-12
C227	C-17	C475	A-10	Q014	F-11	R271	F-15	RB504	D-12
C228	C-17	C476	A-10	Q015	F-10	R274	F-14	RB505	D-12
C231	D-18	C477	A-11	Q016	F-10	R275	F-15	RB506	D-12
C234	C-17	C478	A-11	Q018	G-12	R279	F-16	RB507	D-12
C235	D-17	C479	A-11	Q019	G-13	R280	E-15	RB508	E-12
C236	C-17	C480	A-11	Q020	G-12	R281	E-16	RB509	E-11
C238	C-18	C481	A-11	Q021	G-12	R351	B-18	RB511	D-11
C246	C-18	C482	A-11	Q022	G-13	R352	B-17	RB513	C-11
C251	C-18	C483	A-11	Q023	G-12	R353	B-17		
C271	F-15	C484	A-11	Q026	F-13	R356	B-17	VDR701	E-18
C272	F-15	C485	B-11	Q027	F-12	R363	B-18	VDR702	E-18
C273	F-15	C501	E-11	Q071	F-13	R364	A-18	VDR703	E-18
C274	F-15	C502	E-11	Q072	F-13	R368	B-17	VDR704	E-18
C275	F-15	C505	E-12	Q105	B-14	R372	B-17	VDR706	E-18
C276	F-15	C506	E-12	Q106	B-15	R373	A-16	VDR707	E-18
C277	F-15	C507	E-12	Q107	B-14	R374	B-16		
C278	F-15	C508	E-12	Q151	C-15	R379	B-16	X271	E-16
C279	F-15	C509	E-12	Q351	A-18	R381	E-18	X401	B-12
C282	F-15	C510	E-12	Q352	A-18	R382	E-18		

1. Before starting adjustment

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

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

Adjustment Section	Adjustment	Replaced parts: Block replacement: Lens device	Video light *8	LCD block	ND901 (Fluorescent tube) *4	LCD block	LCD901 (LCD panel) *4	B/W EVF block	V901 (Picture tube) *3	Color EVF block	LCD903 (LCD panel) *2	Mechanism deck *1	Mechanism deck	M901 (Drum assy.) *1	Mechanism deck	M902 (Capstan motor)	Parts replacement: CD-286/281 board	IC191 (CCD imager)	VC-251 board	IC271, X271 (Timing generator)	VC-251 board	IC272 (S/H, AGC)	VC-251 board	IC151 (Camera, video process)	VC-251 board	IC101 (REC/PB AMP)	VC-251 board	IC221 (Video out)	VC-251 board	IC601 (EVR)	VC-251 board	IC351 (Audio process)	MI-040/041 board	SE751,752 (PITCH,YAW sensor) *6	MI-040/041 board	IC3901 (IR transmitter) *5	PD-131 board	IC5501 (RGB driver (LCD)) *4	PD-131 board	IC5502 (Timing generator (LCD)) *4	VF-129 board	IC901 (CRT drive (EVF)) *3	VF-129 board	T901 (FBT (EVF)) *3	VF-141 board	IC4501 (RGB driver (EVF)) *2	VF-141 board	IC4502 (Timing generator (EVF)) *2	LB-62 board	ND4601 (Fluorescent tube (EVF)) *2
Initialization of D, E, F, 7 page data	Initialization of D, E, F, 7 page data																																																
	Modification of D, E, F, 7 page data																																																
Camera	Lens type input	●																																															
	HALL adj.	●																																															
	Flange back adj.	●															●																																
	Color reproduction adj.																●				●																												
	AWB & LV standard data input																●				●																												
	Auto white balance adj.																●				●																												
	Angular velocity sensor sens. adj. *6																																	●																
Color EVF *2	VCO adj.																																													●		
	RGB AMP adj.																																															
	Contrast adj.																																															
	Backlight consumption current adj.																																															●
	White balance adj.									●																																						●
B/W EVF *3	Centering adj.							●																																			●	●				
	Focus adj.							●																																			●	●				
	Aberration adj.							●																																			●	●				
	Horizontal amplitude adj.							●																																			●	●				
	Vertical amplitude adj.							●																																			●	●				
	Brightness adj.							●																																			●	●				
LCD *4	VCO adj.																																									●							
	RGB AMP adj.																																															
	Contrast adj.																																															
	COM-AMP adj.																																															
	V-COM adj.					●																																										
	White balance adj.			●		●																																										
Servo	CAP FG offset adj.											●			●																																	
	Switching position adj.											●		●																																		
Video	28MHz origin oscillation adj.																			●									●																			
	AFC fo adj.																						●																								
	Filter fo adj.																										●																				
	Y OUT level adj.																						●				●																				
	C OUT level adj.																						●				●																				
	REC Y current adj.																						●		●																						
	REC C/AFM current adj.																						●		●																						
IR *5	IR video carrier frequency adj.																										●				●																
	IR video deviation adj.																										●				●																
	IR audio deviation adj.																													●			●														
Audio	1.5MHz deviation adj.																													●																	
	BPF fo adj.																													●																	
Mechanism	Tape path adj.											●		●		●																																

Table. 5-1-1(1).

Adjustment Section	Adjustment	Board replacement					EEPROM
		VC-251 board (COMPLETE)	MI-040/041 board (COMPLETE) *7	PD-131 board (COMPLETE) *4	VF-129 board (COMPLETE) *3	VF-141 board (COMPLETE) *2	VC-251 board IC4502
Initialization of D, E, F, 7 page data	Initialization of D, E, F, 7 page data						●
	Modification of D, E, F, 7 page data	●					●
Camera	Lens type input	●					●
	HALL adj.	●					●
	Flange back adj.	●					●
	Color reproduction adj.	●					●
	AWB & LV standard data input	●					●
	Auto white balance adj.	●					●
	Angular velocity sensor sens. adj. *6	●	●				●
Color EVF *2	VCO adj.	●				●	●
	RGB AMP adj.	●				●	●
	Contrast adj.	●				●	●
	Backlight consumption current adj.	●				●	●
	White balance adj.	●				●	●
B/W EVF *3	Centering adj.				●		
	Focus adj.				●		
	Aberration adj.				●		
	Horizontal amplitude adj.				●		
	Vertical amplitude adj.				●		
	Brightness adj.				●		
LCD *4	VCO adj.	●		●			●
	RGB AMP adj.	●		●			●
	Contrast adj.	●		●			●
	COM-AMP adj.	●		●			●
	V-COM adj.	●		●			●
	White balance adj.	●		●			●
Servo	CAP FG offsett adj.	●					●
	Switching position adj.	●					●
Video	28MHz origin oscillation adj.						●
	AFC fo adj.						●
	Filter fo adj.						●
	Y OUT level adj.						●
	C OUT level adj.						●
	REC Y current adj.						●
	REC C/AFM current adj.						●
IR *5	IR video carrier frequency adj.		●				●
	IR video deviation adj.		●				●
	IR audio deviation adj.		●				●
Audio	1.5MHz deviation adj.						●
	BPF fo adj.						●
Mechanism	Tape path adj.						

Table. 5-1-1(2).

*1: When replacing the drum assy. or 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")
*2: Color EVF model (CCD-TR818)
*3: B/W EVF model (CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)
*4: TRV model: (CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)
*5: LASER LINK model (CCD-TRV98)
*6: Steady shot model (CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)
*7: MI-040 board: TR model
MI-041 board: TRV model
*8: When replacing the video light, reset the data of page: 2, address: E0 to E2 to "00". (Except for CCD-TR818)

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)	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	Multi CPC jig	J-6082-311-A	For adjusting the LCD block
J-9	CPC jig for BX/BK	J-6082-521-A	For connecting the adjustment remote commander
J-10	IR receiver jig	J-6082-383-A	For adjusting the IR transmitter
J-11	Minipattern box	J-6082-353-B	For adjusting the flange back
J-12	Camera base	J-6082-384-A	For adjusting the flange back

Note: 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).

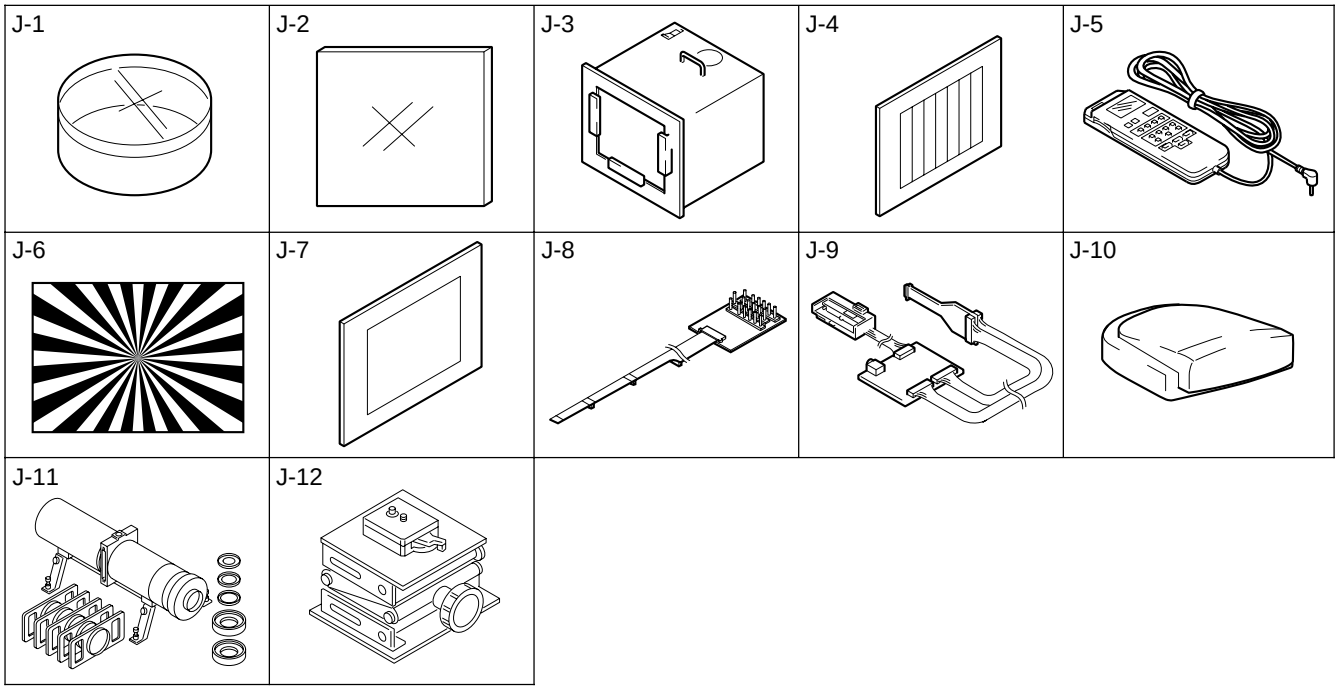


Fig. 5-1-1.

1-1-2. Preparations

Note1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note2: When performing only the adjustments, the lens block and boards need not be disassembled.

Note3: CF-077 board, MI-040 board: TR model
CF-1000 block, MI-041 board: TRV model
TR model: CCD-TR618/TR618E/TR718E/TR728E/TR818
TRV model: CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

1) Connect the equipment for adjustments according to Fig. 5-1-4, 5-1-5.
2) Connect the adjustment remote commander to CN713 of VC-251 board or CPC connector of FP-262 flexible via CPC jig for BX/BK (J-6082-521-A). To operate the adjustment remote commander, connect the AC power adapter to the DC IN jack of CPC jig for BX/BK, or connect the L series Info-LITHIUM battery to the battery terminal of CPC jig for BX/BK. (Fig. 5-1-3.)
3) The front panel block (MI-040/041 board, microphone unit, video light) need not be assembled except during the steady shot operation check.

Note4: As removing the cabinet (R) (removing the VC-251 board CN709) means removing the lithium 3V power supply (CF-1000 block/CF-077 board BT101), 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 E0 to E2) and data on history use (data of page: 2, address: A2 to AA). (Refer to "5-4. Service Mode" for the self-diagnosis data and data on the history use.)

Note5: 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.

The above procedure will enable the camera power to be turned on with the SS-1000 block removed. After completing adjustments, be sure to exit the "Forced Camera Power ON Mode".

Note6: 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.
3) Select page: 0, address: 01, and set data: 00.

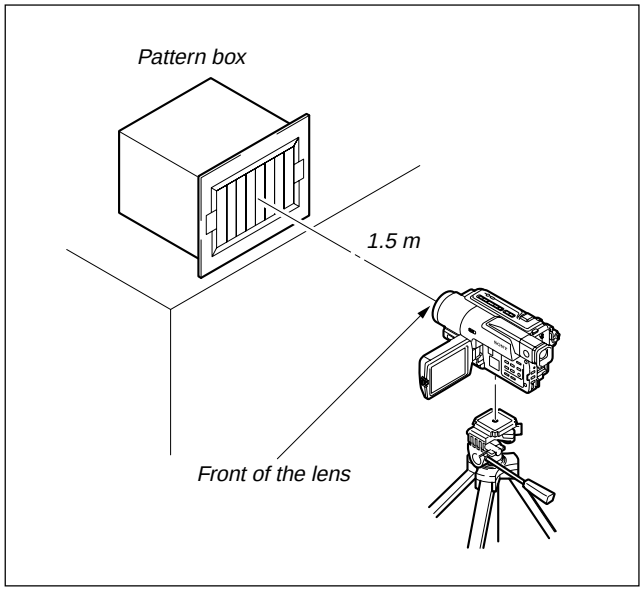
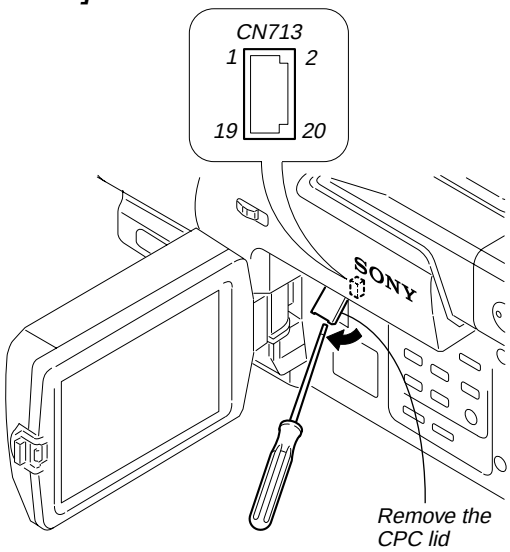


Fig. 5-1-2.

[TRV model]



[TR model]

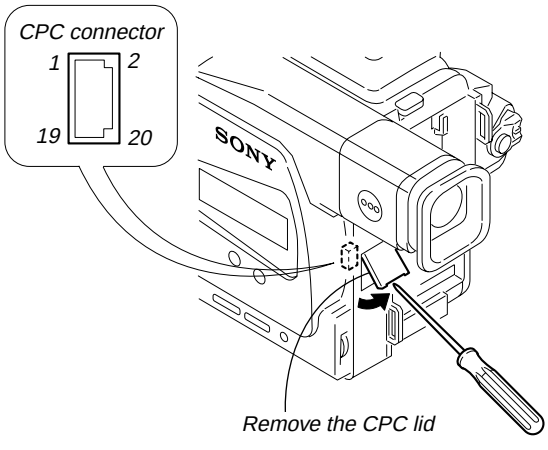


Fig. 5-1-3.

TR model (CCD-TR618/TR618E/TR718E/TR728E/TR818)

Note: Use either a AC power adaptor or a Info-LITHIUM battery as the power supply of the CPC jig for BX/BK.

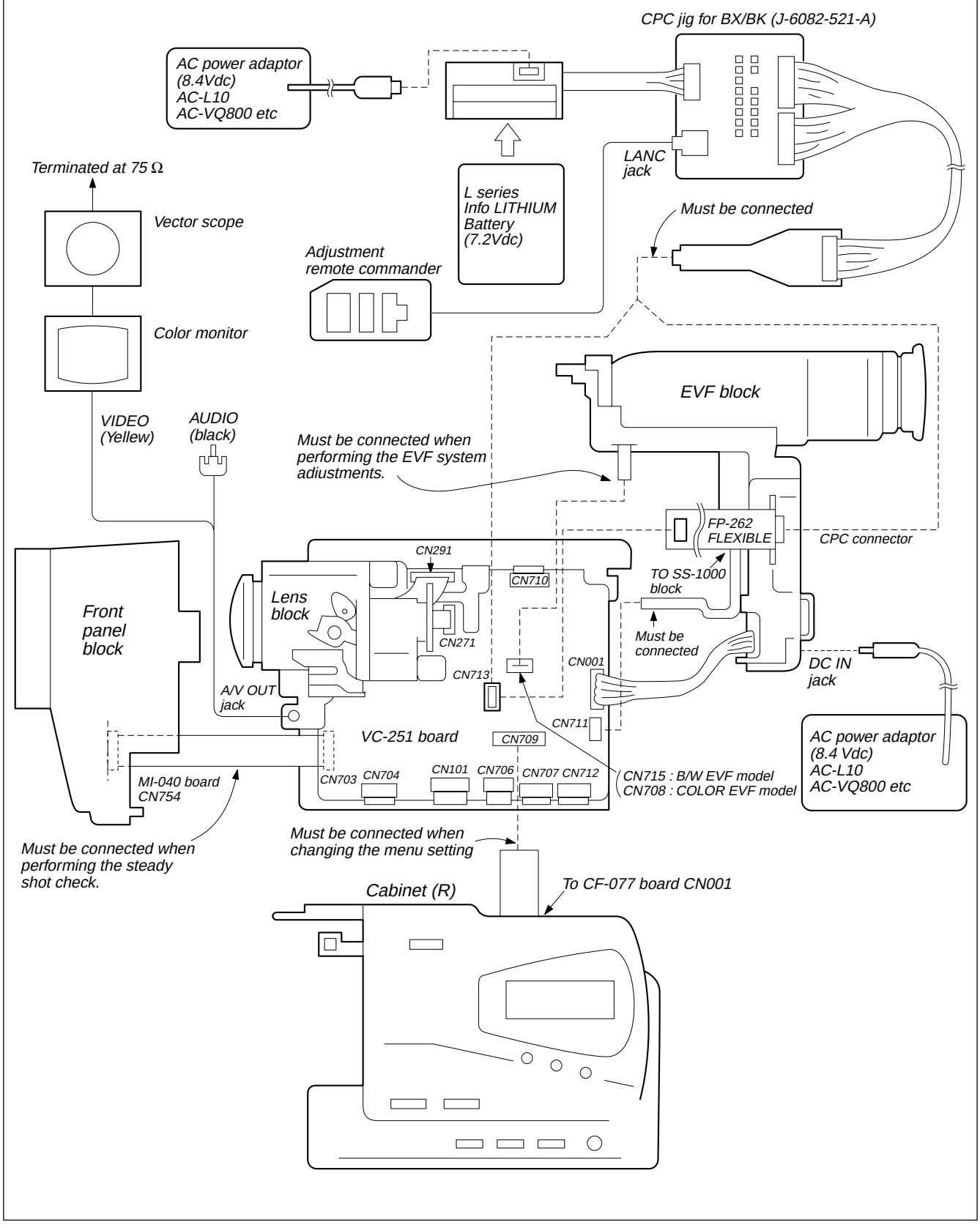


Fig. 5-1-4.

TRV model (CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)

Note: Use either a AC power adaptor or a Info-LITHIUM battery as the power supply of the CPC jig for BX/BK.

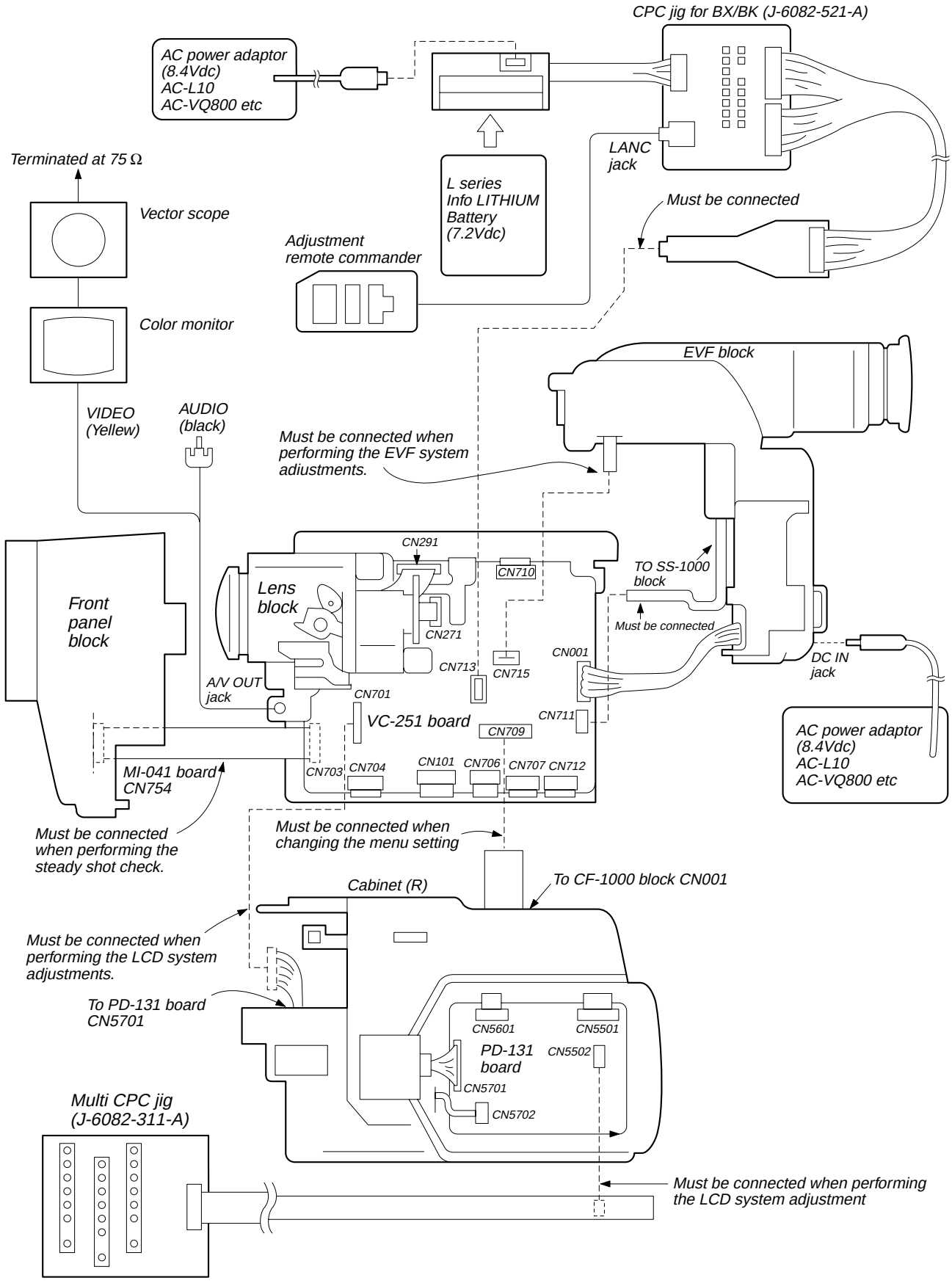


Fig. 5-1-5.

1-1-3. Precaution

1. Setting the Switch

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

1. POWER switch (SS-1000 block) ..... CAMERA
2. NIGHT SHOT switch (Lens block) ..... OFF
3. LIGHT switch (FK-1000 block) *1 ..... OFF
4. DEMO MODE (Menu display) ..... OFF
5. DIGITAL ZOOM (Menu display) ..... OFF
6. STEADY SHOT (Menu display) *2 ..... OFF
7. DISPLAY (Menu display) *3 ..... V-OUT/LCD
8. DISPLAY (CF-1000 block) *3 ..... ON
9. FOCUS switch (CF-1000 block/CF-077 board) ... MANUAL
10. BACK LIGHT (CF-1000 block/CF-077 board) ..... OFF
11. PROGRAM AE (Menu display) ..... OFF
12. PICTURE EFFECT (Menu display) ..... OFF
13. 16 : 9 WIDE (MENU display) ..... OFF

*1: Video light model (CCD-TR618/TR618E/TR718E/TR728E/TR818/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)
*2: Steady shot model (CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)
*3: TRV model (CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)

2. Order of Adjustments

Basically carry out adjustments in the order given.

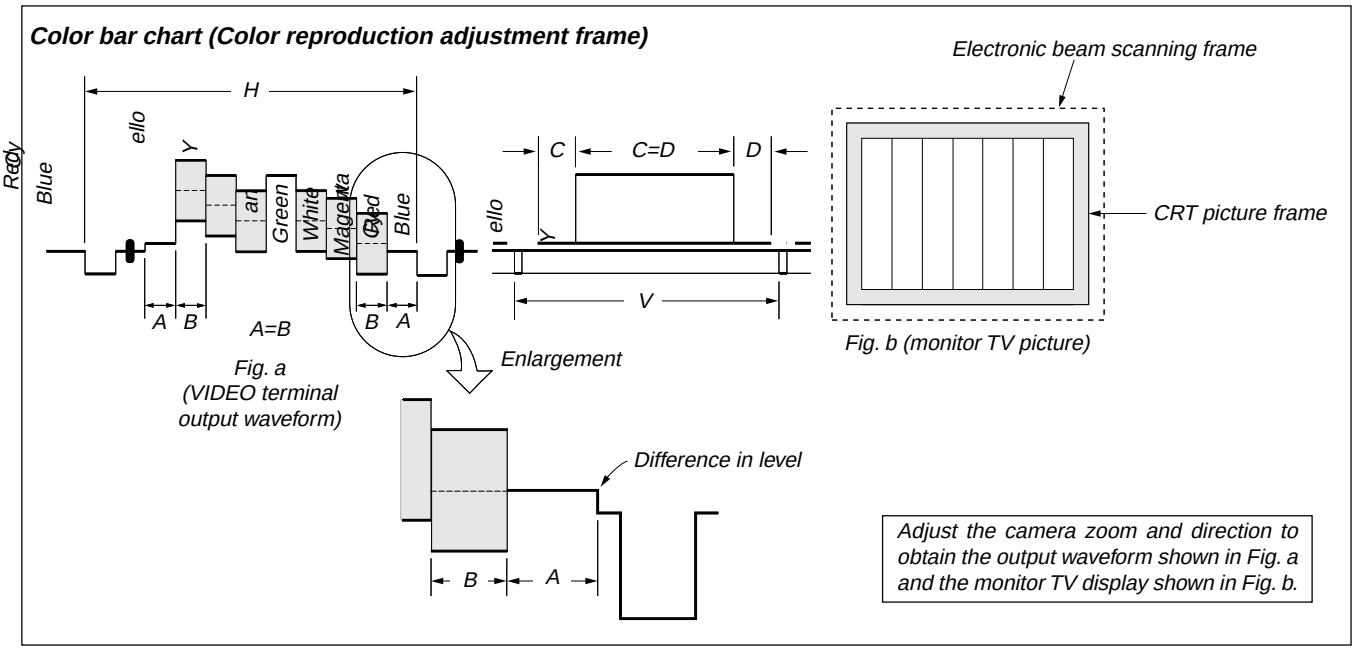


Fig.5-1-6.

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. 5-1-6. (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. 5-1-7 using A0 size (1189mm × 841mm) black and white vellum paper.

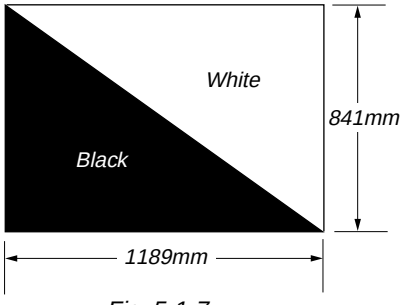


Fig. 5-1-7.

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 D, E, F, 7 PAGE DATA

1. Initializing the D, E, F, 7 Page Data

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

Note2: If the D, E, F, 7 page data has been initialized, "Modification of D, E, F, 7 Page Data" and all adjustments need to be performed again.

Adjustment page	D
Adjustment Address	10 to FF
Adjustment page	F
Adjustment Address	10 to FF
Adjustment page	E
Adjustment Address	00 to FF
Adjustment page	7
Adjustment Address	00 to FF

Note: NTSC model: CCD-TR618/TR818/TRV49/TRV58/TRV68/ TRV78/TRV88/TRV98
PAL model: CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/ TRV59E/TRV78E/TRV98E

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	00		Set the following data. 55: NTSC model 51: PAL model
3	6	01		Set the following data, and press PAUSE button. 55: NTSC model 51: PAL model
4	6	02		Check that the data changes to "01".
5	2	00	29	Set the data
6	2	01	29	Set the data, and press PAUSE button.
7				Perform "Modification of D, E, F, 7 Page Data".

2. Modification of D, E, F, 7 Page Data

If the D, E, F, 7 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 D, E, F, 7 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.

Note: If the following symptoms occur after completing of the "Modification of D, E, F, 7 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. D Page Table

Note1: Fixed data-1: Initialized data. (Refer to "1. Initializing the D, E, F, 7 Page Data".)
Fixed data-1: Modified data. (Refer to "2. Modification of D, E, F, 7 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			Fixed data-1
15			Fixed data-2
16 to 19			Fixed data-1
1A			Fixed data-2
1B to 1E			Fixed data-1
1F			Fixed data-2
20			(Modified data. Copy the data built in
21			the same model.)
22			
23			
24 to 26			Fixed data-1
27			Fixed data-2
28 to 2C			Fixed data-1
2D			Fixed data-2
2E			(Modified data. Copy the data built in
2F			the same model.)
30			
31 to 3F			Fixed data-1
40			Fixed data-2
41			(Modified data. Copy the data built in
42			the same model.)
43			
44			
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.)

Address	Initial value		Remark
	NTSC	PAL	
53	Fixed data-1		
54	Fixed data-2		
55 to 57	Fixed data-1		
58	Fixed data-2 (Modified data. Copy the data built in the same model.)		
59			
5A			
5B			
5C			
5D to 63	Fixed data-1		
64	Fixed data-2 (Modified data. Copy the data built in the same model.)		
65			
66			
67			
68			
69 to 87	Fixed data-1		
88	Fixed data-2 (Modified data. Copy the data built in the same model.)		
89			
8A			
8B			
8C to FF	Fixed data-1		

Table. 5-1-2.

4. F Page table

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

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	00	00	Emergency memory address
11	00	00	
12	00	00	
13	00	00	
14	00	00	
15	00	00	
16	00	00	
17	00	00	
18	00	00	
19	00	00	
1A	00	00	
1B	00	00	
1C	Fixed data-1		
1D	Fixed data-2		
1E to 22	Fixed data-1		
23	Fixed data-2		
24			
25	Fixed data-1		
26	Fixed data-2		
27 to 2B	Fixed data-1		
2C	D7	D7	Lens type input
2D to 32	Fixed data-1		
33	Fixed data-2		
34 to 37	Fixed data-1		
38	68	68	HALL adj.
39	80	80	
3A	8D	8D	
3B	Fixed data-2		
3C	80	80	AWB & LV standard data input
3D	7A	7A	
3E	2B	2B	
3F	80	80	
40	65	65	
41	80	80	
42	8D	8D	Auto white balance adj.
43	87	87	
44 to 46	Fixed data-1		
47	33	33	Color reproduction adj.
48	Fixed data-1		
49	34	34	Color reproduction adj.
4A	Fixed data-1 (Initialized data)		
4B			
4C			
4D	8C	8C	28MHz origin osc. Adj.
4E	28	28	Flange back adj.
4F	07	07	
50	3A	3A	
51	4A	4A	
52	12	12	

Address	Initial value		Remark
	NTSC	PAL	
53	0B	0B	Flange back adj.
54	54	54	
55	00	00	
56	19	19	
57	00	00	
58	37	37	
59	00	00	
5A	00	00	
5B	04	04	
5C	00	00	
5D	00	00	
5E	5A	74	Angular velocity sensor sens. adj.
5F	57	5D	*1
60			Fixed data-1
61	00	00	Flange back adj.
62	0A	0A	Switching position adj.
63	00	00	
64	83	83	CAP FG offset adj.
65	50	50	AFC fo adj.
66	77	77	Filter fo adj.
67	62	62	Y OUT level adj.
68	62	62	C OUT level adj.
69			Fixed data-1
6A	B4	D7	REC Y current adj.
6B	B4	D7	
6C to 70			Fixed data-1
71	A0	A0	REC C/AFM current adj.
72 to 7A			Fixed data-1
7B	A6	A6	1.5MHz deviation adj.
7C			Fixed data-1
7D	80	80	BPF fo adj.
7E	41	41	IR video deviation Adj. *2
7F	33	33	IR audio deviation Adj. *2
80	C7	C7	IR video carrier freq. Adj. *2
81 to 89			Fixed data-1
8A			Fixed data-2
8B to 8D			Fixed data-1
8E			Fixed data-2
8F			
90 to 99			Fixed data-1
9A			Fixed data-2
9B to 9F			Fixed data-1
A0			Fixed data-2
A1 to B7			Fixed data-1
B8			Fixed data-2
B9			(Modified data. Copy the data built in
BA			the same model.)
BB			
BC to CC			Fixed data-1
CD			Fixed data-2
CE to D3			Fixed data-1
D4			Fixed data-2
D5 to D6			Fixed data-1

Address	Initial value		Remark
	NTSC	PAL	
D7	FD	FC	Color reproduction adj.
D8	F4	F2	
D9	0F	11	
DA	31	33	
DB to DD			Fixed data-1
DE			Fixed data-2
DF			
F0 to F2			Fixed data-1
F3			Fixed data-2
F4			
F5			Fixed data-1
F6			Fixed data-2
F7 to FF			Fixed data-1

*1: Steady shot model (CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)

*2: LASER LINK model (CCD-TRV98)

Table. 5-1-3.

5. E Page Table

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

Address	Initial value		Remark
	NTSC	PAL	
00 to 01			Fixed data-1
02			Fixed data-2
03			(Modified data. Copy the data built in
04			the same model.)
05			
06			
07			Fixed data-1
08			Fixed data-2
09			
0A to 0E			Fixed data-1
0F			Fixed data-2
10			(Modified data. Copy the data built in
11			the same model.)
12			
13			
14			
15 to 17			Fixed data-1
18			Fixed data-2
19			
1A to 27			Fixed data-1
28			Fixed data-2
29 to 2F			Fixed data-1
30			Fixed data-2
31 to 33			Fixed data-1
34			Fixed data-2
35			Fixed data-1
36			Fixed data-2
37			Fixed data-1
38			Fixed data-2
39			
3A			Fixed data-1
3B			Fixed data-2
3C			
3D to 50			Fixed data-1
51			Fixed data-2
52 to 53			Fixed data-1
54			Fixed data-2
55			
56			Fixed data-1
57			Fixed data-2
58			Fixed data-1
59			Fixed data-2
5A to 5B			Fixed data-1
5C	22	22	Lens type input
5D	51	51	
5E	FD	FD	
5F	C4	C4	
60 to 71			Fixed data-1
72			Fixed data-2
73 to 7B			Fixed data-1
7C			Fixed data-2
7D			(Modified data. Copy the data built in
7E			the same model.)
7F			Fixed data-1
80			Fixed data-2
81 to 8B			Fixed data-1
8C			Fixed data-2
8D			
8E to 8F			Fixed data-1
90			Fixed data-2
91 to B7			Fixed data-1
B7			Fixed data-2
B8 to BA			Fixed data-1
BB			Fixed data-2
BC to FB			Fixed data-1
FC			Fixed data-2
FD			
FE to FF			Fixed data-1

Table. 5-1-4.

6. 7 Page Table

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

Address	Initial value		Remark
	NTSC	PAL	
00 to B4			Fixed data-1
B5			Fixed data-2
B6			
B7			Fixed data-1
B8			Fixed data-2
B9			(Modified data. Copy the data built in
BA			the same model.)
BB			
BC			Fixed data-1
BD			Fixed data-2
BE			(Modified data. Copy the data built in
BF			the same model.)
C0			
C1			Fixed data-1
C2			Fixed data-2
C3			
C4 to D4			Fixed data-1
D5			Fixed data-2
D6			Fixed data-1
D7			Fixed data-2
D8	A0	*1	RGB AMP adj. (Color EVF) *2
D9			Fixed data-1
DA	8D	*1	White balance adj. (Color EVF) *2
DB	83	*1	
DC	2F	*1	Contrast adj. (Color EVF) *2
DD			Fixed data-1
DE			Fixed data-2
DF	CA	*1	Back light consumption current adj.
E0	07	*1	(Color EVF) *2
E1	91	*1	
E2			Fixed data-1
E3			Fixed data-2
E4			
E5	6E	6E	VCO adj.(LCD) *3
E6	*1	63	VCO adj.(LCD) (PAL) *3
E7	8E	8E	V-COM adj.(LCD) *3
E8	29	29	RGB AMP adj.(LCD) *3
E9			Fixed data-1
EA	C3	C3	COM AMP adj.(LCD) *3
EB	60	60	White balance adj.(LCD) *3
EC	65	65	
ED	50	50	Contrast adj.(LCD) *3
EE			Fixed data-1
EF			Fixed data-2
F1 to F8			Fixed data-1
F9	FF	FF	REC Y current adj.
EA to FF			Fixed data-1

*1: Fixed data-1.
*2: Color EVF model (CCD-TR818)
*3: TRV model (CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)

Table. 5-1-5.

1-3. CAMERA SYSTEM ADJUSTMENTS

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

Note: NTSC model: CCD-TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98
PAL model: CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E/TRV78E/TRV98E

1. Lens Type Input

Distinguish the type of the lens being used for the camcorder, and input data corresponding to the type.

Subject	Not required	
Measurement Point	Display data of page 1 (Note)	
Measuring Instrument	Adjustment remote commander	
Adjustment Page	E	F
Adjustment Address	5C, 5D, 5E, 5F	2C

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

1 : XX : XX
└ Display data

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	65	Set the data, and press PAUSE button.
3	0	03	19	Set the data.
4	1			Check that the data. When the data is "0000", proceed to step 5. (Glass lens type) When the data is "0001", proceed to step 11. (Plastic lens type)
5	E	5C	21	Set the data, and press PAUSE button.
6	E	5D	84	Set the data, and press PAUSE button.
7	E	5E	FC	Set the data, and press PAUSE button.
8	E	5F	F7	Set the data, and press PAUSE button.
9	F	2C	D6	Set the data, and press PAUSE button.
10				Proceed to step 16.
11	E	5C	22	Set the data, and press PAUSE button.
12	E	5D	51	Set the data, and press PAUSE button.
13	E	5E	FD	Set the data, and press PAUSE button.
14	E	5F	C4	Set the data, and press PAUSE button.
15	F	2C	D7	Set the data, and press PAUSE button.
16	6	01	00	Set the data, and press PAUSE button.
17	0	03	00	Set the data.
18	0	01	00	Set the data.

2. 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	38, 39, 3A
Specified Value 1	86 to 8A
Specified Value 2	15 to 19

Note1: Displayed data of page 1 of the adjustment remote commander.

1 : 00 : XX
└ IRIS display data

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	94	88	Set the data.
3	6	95	17	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: 38, 39, 3A.

Checking method:

Order	Page	Address	Data	Procedure
1	0	03	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	0	03	00	Set the data.
5	0	01	00	Set the data.

3. 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)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	4E to 5D, 61

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.
Note3: 1/4 CCD model: CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

Switch setting:

NIGHT SHOT (Lens block) ..... 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.

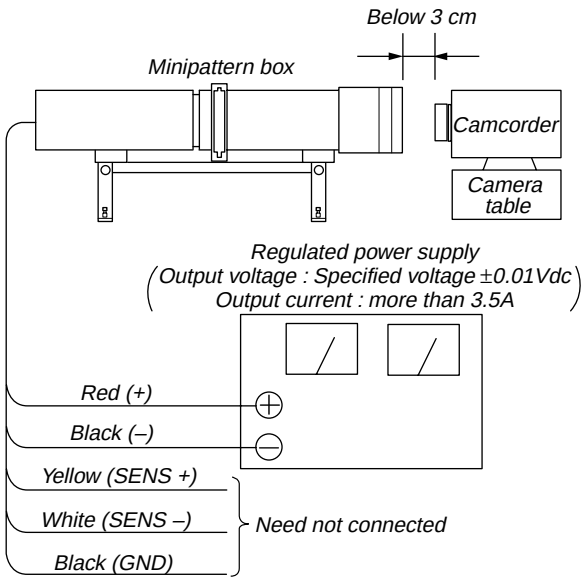


Fig. 5-1-8.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	A0		Only for 1/4 CCD model, write down the data.
3	F	A0	00	Only for 1/4 CCD model, set the data and press PAUSE button.
4	6	01	13	Set the data, and press PAUSE button.
5	6	01	27	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01". (Note4)
7	F	A0		Only for 1/4 CCD model, set the data that is written down at step 2 and press PAUSE button.

Note4: The adjustment data will be automatically input to page: F, address: 4E to 5D, 61.

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				Turn off the power and turn on again.
4				Perform "Flange Back Check".

4. 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.

4-1. Flange Back Adjustment (1)

Subject	Flange back adjustment chart (2.0 m from the front of the protection glass) (Luminance: 350 ± 30 lux)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	4E to 5D, 61

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.
Note2: 1/4 CCD model: CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

Switch setting:

NIGHT SHOT (Lens block) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	A0		Only for 1/4 CCD model, write down the data.
3	F	A0	00	Only for 1/4 CCD model, set the data and press PAUSE button.
4	6	01	13	Set the data, and press PAUSE button.
5	6	01	15	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to "01". (Note3)
7	F	A0		Only for 1/4 CCD model, set the data that is written down at step 2 and press PAUSE button.

Note3: The adjustment data will be automatically input to page: F, address: 4E to 5D, 61.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2				Turn off the power and turn on again.
3				Perform "Flange Back Adjustment (2)"

4-2. 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	4E to 5D, 61

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:

NIGHT SHOT (Lens block) ..... 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	F	A0		Only for 1/4 CCD model, write down the data.
3	F	A0	00	Only for 1/4 CCD model, set the data and press PAUSE button.
4	6	01	13	Set the data, and press PAUSE button.
5				Place a ND filter on the lens so that the optimum image is obtain.
6	6	01	29	Set the data, and press PAUSE button.
7	6	02		Check that the data changes to "01". (Note2)
8	F	A0		Only for 1/4 CCD model, set the data that is written down at step 2 and press PAUSE button.

Note2: The adjustment data will be automatically input to page: F, address: 4E to 5D, 61.

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				Turn off the power and turn on again.
4				Perform "Flange Back Check".

5. 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.

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: 0, address: 03, and set data: 0F.
2) Page 1 shows the state of the focus.

1 : 00 : XX
- Odd: Focused
- Even: Unfocused

Switch setting:

NIGHT SHOT (Lens block) ..... OFF

Checking method:

1) Select page: 6, address: 40, and set data: 02.
2) Select page: 6, address: 41, and set data: 01.
3) Place the Siemens star 2.0m from the front of the lens.
4) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
5) Shoot the Siemens star with the zoom TELE end.
6) Turn on the auto focus.
7) Check that the lens is focused (Note).
8) Select page: 6, address: 21, and set data: 10.
9) Shoot the Siemens star with the zoom WIDE end.
10) 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: 40, and set data: 00.
3) Select page: 6, address: 41, and set data: 00.
4) Select page: 0, address: 03, and set data: 00.

6. 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) NIGHT SHOT (Lens block) ..... OFF
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF
4) LIGHT (FK-1000 block) ..... OFF

Setting method:

1) Adjust the zoom and the camera direction, and set to the specified position.
2) 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”.

Check on the oscilloscope

1. Horizontal period

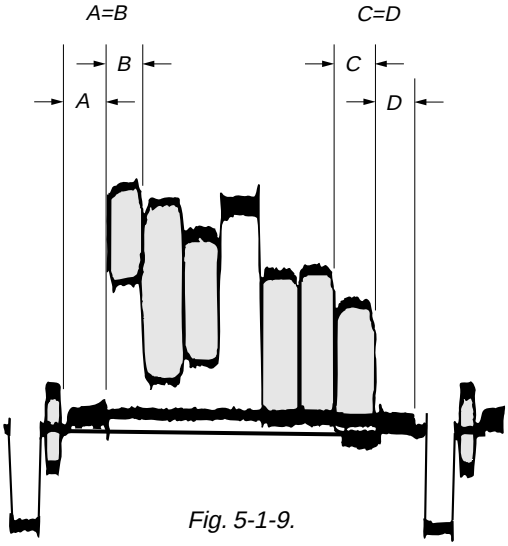


Fig. 5-1-9.

2. Vertical period

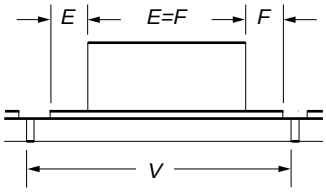


Fig. 5-1-10.

Check on the monitor TV (Underscanned mode)

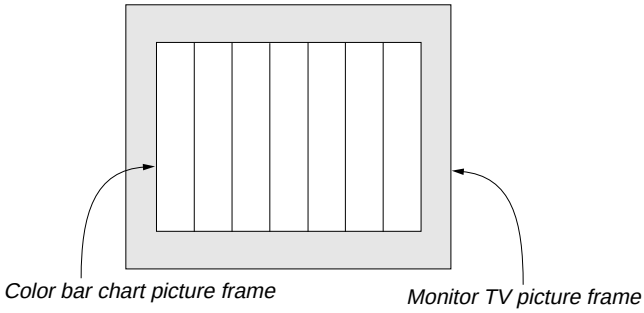


Fig. 5-1-11.

7. 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	47, 49, D7, D8
Specified Value	All color luminance points should settle within each color reproduction frame.

Note: NTSC model: CCD-TR618/TR818/TRV49/TRV58/TRV68/ TRV78/TRV88/TRV98
PAL model: CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/ TRV59E/TRV78E/TRV98E

Switch setting:

1) NIGHT SHOT (Lens block) ..... OFF
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF
4) LIGHT (FK-1000 block) ..... OFF

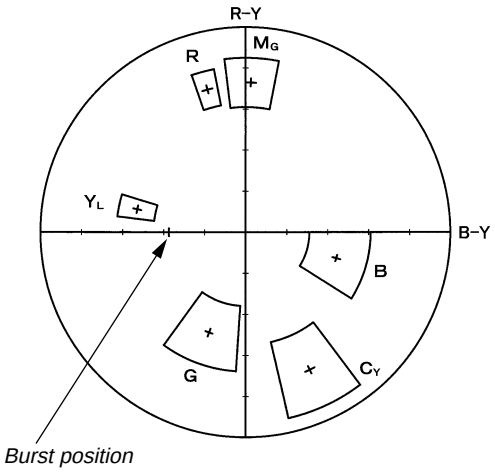
Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 8B, and write down the data.
3) Select page: F, address: 8B, set data: 29 and press the PAUSE button.
4) Select page: F, address: 2B, set the following data and press the PAUSE button.
   17: NTSC model
   97: PAL model
5) Select page: 6, address: 01, set data: 3D, and press the PAUSE button.
6) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
7) Change the data of page: F, address: 47, 49, D7 and D8, 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: 8B, set the data written down at step 2), 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

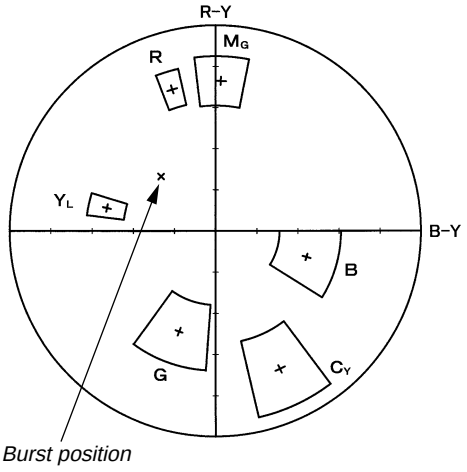


Fig. 5-1-12.

8. 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 (Note3)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	3C to 41

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

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.

Switch setting:

1) NIGHT SHOT (Lens block) ..... OFF
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF
4) LIGHT (FK-1000 block) ..... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2				Wait for 2 sec.
3	6	01	11	Set the data, and press PAUSE button.
4	6	01	0D	Set the data, and press PAUSE button
5	6	02		Check that the data changes to "01". (Note4)

Note4: The adjustment data will be automatically input to page: E, address: 3C to 41.

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 "Auto White Balance Adjustment".

9. 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 (Note4)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	42, 43
Specified Value	1/6 CCD NTSC model: R ratio: 2AC0 to 2B40 B ratio: 5E20 to 5EE0 1/6 CCD PAL model: R ratio: 2B40 to 2BC0 B ratio: 61A0 to 6260 1/4 CCD NTSC model: R ratio: 2D40 to 2DC0 B ratio: 5D20 to 5DE0 1/4 CCD PAL model: R ratio: 2B40 to 2BC0 B ratio: 5D20 to 5DE0

Note1: 1/6 CCD NTSC model: CCD-TR618/TRV49/TRV58
1/6 CCD PAL model: CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E
1/4 CCD NTSC model: CCD-TR818/TRV68/TRV78/TRV88/TRV98
1/4 CCD PAL model: CCD-TRV78E/TRV98E

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

Note3: Perform "Auto White Balance & LV Standard Data Input" before this adjustment.

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

1 : XX : XX
└──── Display data

Switch setting:

1) NIGHT SHOT (Lens block) ..... OFF
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF
4) LIGHT (FK-1000 block) ..... 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	B8		Write down the data.
4	F	B8		Set the following data, and press PAUSE button. 2B: 1/6 CCD NTSC model 2B: 1/6 CCD PAL model 2D: 1/4 CCD NTSC model 2B: 1/4 CCD PAL model
5	F	B9		Write down the data.
6	F	B9		Set the following data, and press PAUSE button. 00: 1/6 CCD NTSC model 80: 1/6 CCD PAL model 80: 1/4 CCD NTSC model 80: 1/4 CCD PAL model
7	F	BA		Write down the data.
8	F	BA		Set the following data, and press PAUSE button. 5E: 1/6 CCD NTSC model 62: 1/6 CCD PAL model 5D: 1/4 CCD NTSC model 5D: 1/4 CCD PAL model
9	F	BB		Write down the data.
10	F	BB		Set the following data, and press PAUSE button. 80: 1/6 CCD NTSC model 00: 1/6 CCD PAL model 80: 1/4 CCD NTSC model 80: 1/4 CCD PAL model
11	6	01	A7	Set the data, and press PAUSE button.
12				Wait for 2 sec.
13	6	01	A5	Set the data, and press PAUSE button.
14	6	02		Check that the data changes to "01". (Note5)
15	6	01	3F	Set the data, and press PAUSE button.
16	0	03	04	Set the data.
17	1			Check that the display data (Note4) satisfies the R ratio specified value.
18	0	03	05	Set the data.
19	1			Check that the display data (Note4) satisfies the B ratio specified value.

Note5: The adjustment data will be automatically input to page: F, address: 42,43.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	F	B8		Set the data that is written down at step 3, and press PAUSE button.
3	F	B9		Set the data that is written down at step 3, and press PAUSE button.
4	F	BA		Set the data that is written down at step 3, and press PAUSE button.
5	F	BB		Set the data that is written down at step 3, and press PAUSE button.
6	0	03	00	Set the data.
7	0	01	00	Set the data.

10. 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) NIGHT SHOT (Lens block) ..... OFF
2) DIGITAL ZOOM (Menu display) ..... OFF
3) STEADY SHOT (Menu display) ..... OFF
4) LIGHT (FK-1000 block) ..... 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.
4	6	01	00	Set the data, and press PAUSE button.
				Outdoor white balance check
5				Place the C14 filter on the lens.
6	6	01	3F	Set the data, and press PAUSE button.
7				Check that the center of the white luminance point is within the circle shown Fig. 5-1-13. B.
8				Remove the C14 filter.
				LV data check
9				Place the ND filter 1.5 (1.0+0.1+0.4) on the lens.
10	6	01	0F	Set the data, and press PAUSE button.
11				Wait for 2 sec.
12	0	03	06	Set the data.
13	1			Check that the display data (Note) satisfies the specified value. Specified value: 0000 to 0BC0

Note: Displayed data of the adjustment remote commander.

1 : XX : XX
└── Display data

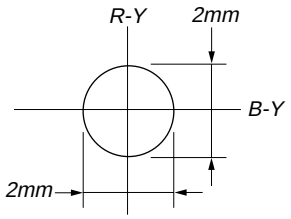


Fig. 5-1-13. (A)

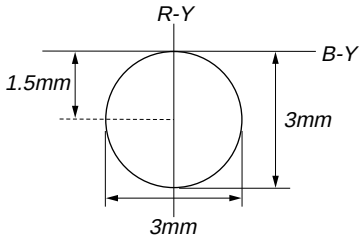


Fig. 5-1-13. (B)

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	0	03	00	Set the data.

11. Angular Velocity Sensor Sensitivity Adjustment (CCD-TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/ TRV98E)

Precautions on the Parts Replacement

There are two types of repair parts.

Type A: ENC03JA

Type B: ENC03JB

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, re-adjust according to the adjusting method after replacement.

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
Adjustment Page	F
Adjustment Address	5E, 5F
Specified Value	2700 to 5100

Note1: Displayed data of the adjustment remote commander.

1 : XX : XX

└──── Display data

Note2: MI-040 board: CCD-TR818

MI-041 board: CCD-TRV68/TRV78/TRV78E/TRV88/TRV98/ TRV98E

Switch setting:

1) STEADY SHOT (Menu display) ..... ON
2) ZOOM ..... Center

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	5E		Set the following data, and press PAUSE button. 5A (NTSC), 74 (PAL)
3	F	5F		Set the following data, and press PAUSE button. 57 (NTSC), 5D (PAL)
				Pitch sensor check (MI-040/041 board SE751)
4	0	03	11	Set the data.
5	1			Check that the display data (Note1) satisfies the specified value.
				Yaw sensor check (MI-040/041 board SE752)
6	0	03	12	Set the data.
7	1			Check that the display data (Note1) satisfies the specified value.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	0	01	00	Set the data.
2	0	03	00	Set the data.
3				Move the camcorder, and check that the steady shot operations have been performed normally

1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT (CCD-TR818)

Note1: 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.

Note2: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

[Adjusting connector]

Most of the measuring points for adjusting the viewfinder system are concentrated in CN713 of VC-251 board or CPC connector of FP-262 flexible.

Connect the Measuring instruments and the adjustment remote commander via the CPC jig for BX/BK (J-6082-521-A) to CN713 or CPC connector. To operate the adjustment remote commander, connect the AC power adapter to the DC IN jack of CPC jig for BX/BK, or connect the L series Info-LITHIUM battery to the battery terminal of CPC jig for BX/BK.

The following table shows the Pin No. and signal name of CN713 or CPC connector.

Pin No.	Signal Name	Pin No.	Signal Name
1	VCO	2	XLANC POWER ON
3	EVF BL	4	LANC IN
5	EVF BL 4.75V	6	LANC OUT
7	EVF VG	8	CAP FG
9	PB RF	10	REG GND
11	REG GND	12	REG GND
13	BPF MONI	14	IR VIDEO
15	REC RF	16	RF SWP
17	NC	18	NC
19	NC	20	NC

Table. 5-1-6.

The following table shows the arrangement of the test points of CPC jig for BX/BK. (Pin No. are those of CN713 or CPC connector.)

Pin No.	Signal Name	Pin No.	Signal Name
3	BL	1	EVF VCO
7	EVF VG	5	BL 4.75
9	PB RF (MON)		
13	BPF MONI	10	GND
17	TMS	15	REC RF (RF IN)
20	TDI	19	TDO
16	SWP	18	TCK
15	CAP FG	14	IR VIDEO

Table. 5-1-7.

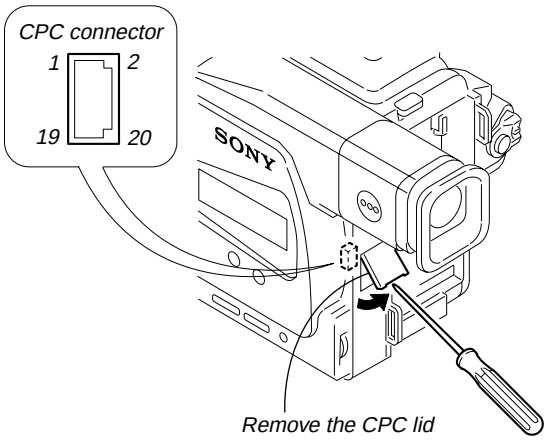


Fig. 5-1-14.

1. RGB AMP Adjustment (VF-141 board)

Set the D range of the RGB driver 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	EVF VG (Pin ⑦ of CPC connector of FP-262 flexible or Pin ⑦ of CN713 of VC-251 board)
Measuring Instrument	Oscilloscope
Adjustment Page	7
Adjustment Address	D8
Specified Value	A = 7.20 ± 0.10V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	D8		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	7	D8		Press PAUSE button.
4	0	01	00	Set the data.

2. Contrast Adjustment (VF-141 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	EVF VG (Pin ⑦ of CPC connector of FP-262 flexible or Pin ⑦ of CN713 of VC-251 board)
Measuring Instrument	Oscilloscope
Adjustment Page	7
Adjustment Address	DC
Specified Value	A=2.20 ± 0.10V

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	DC		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be “00” to “7F”.)
3	7	DC		Press PAUSE button.
4	0	01	00	Set the data.

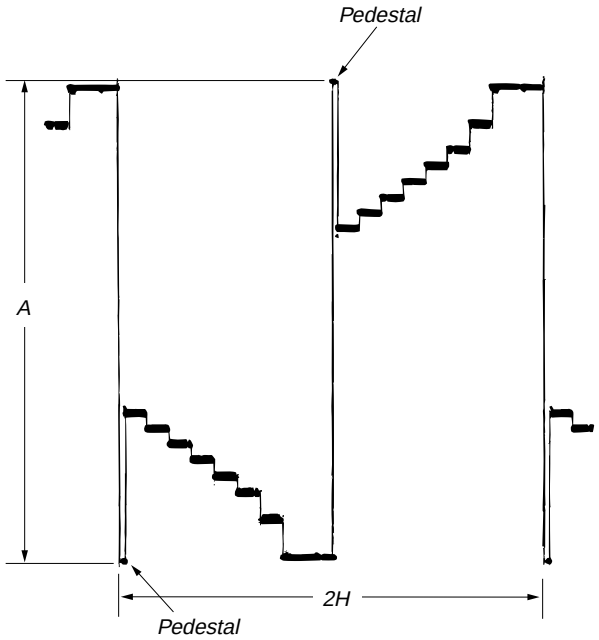


Fig. 5-1-15.

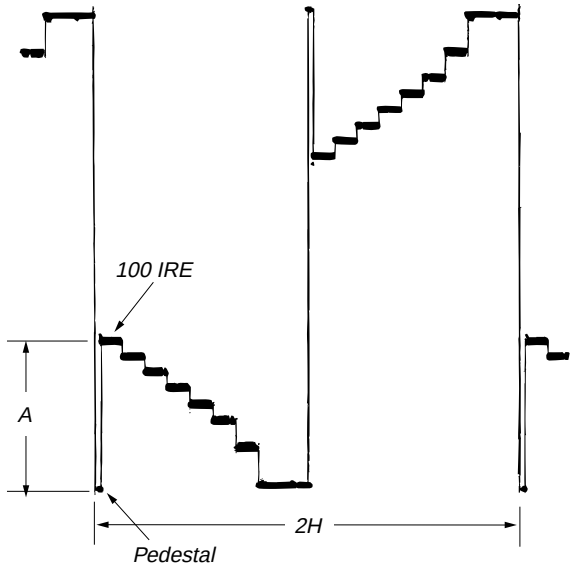


Fig. 5-1-16.

3. Backlight Consumption Current Adjustment (LB-062 board)

Set the backlight luminance and color temperature.
If deviated, the image may become dark or bright.

Mode	Camera
Subject	Arbitrary
Measurement Point	+ Probe: BL 4.75V (Pin ⑤ of CPC connector of FP-262 flexible or Pin ⑤ of CN713 of VC-251 board) – Probe: BL (Pin ③ of CPC connector of FP-262 flexible or Pin ③ of CN713 of VC-251 board)
Measuring Instrument	Digital voltmeter
Adjustment Page	7
Adjustment Address	DF, E0, E1
Specified Value	BRIGHT mode : A=15.5 ± 1mVdc NORMAL mode : A=9.5 ± 1mVdc

Note1: Perform the adjustment in the following order.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	DF	CA	Set the data, and press PAUSE button.
3	7	E0	07	Set the data, and press PAUSE button.
4	7	E1	91	Set the data, and press PAUSE button.
5	7	E0		Change the data and set the voltage difference (A) between BL4.75V and BL to the specified value of BRIGHT mode. (The data should be “00” to “3F”.)
6	7	E0		Press PAUSE button.
7	7	E0		Read the data, and this data is named D_{E0}.
8				Convert D_{E0} to decimal notation, and obtain D_{E0}’. (Note2)
9				Calculate D_{DF}’ using following equations (Decimal calculation) D_{DF}’ = D_{E0}’ + 192
10				Convert D_{DF}’ to a hexadecimal number, and obtain D_{DF}. (Note2) (The data should be “C0” to “FF”.)
11	7	DF	D_{DF}	Set the data, and press PAUSE button.
12	7	E1		Change the data and set the voltage difference (A) between BL4.75V and BL to the specified value of NORMAL mode. (The data should be “80” to “9F”.)
13	7	E1		Press PAUSE button.
14	0	01	00	Set the data.

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

4. White Balance Adjustment (VF-141 board)

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

Mode	Camera
Signal	Arbitrary
Measurement Point	Check on EVF screen
Measuring Instrument	
Adjustment Page	7
Adjustment Address	DA, DB
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. IC4501

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	DA	8D	Set the data, and press PAUSE button.
3	7	DB	83	Set the data, and press PAUSE button.
4	7	DA		Check that the EVF screen is not colored. If not colored, proceed to step 10.
5	7	DA		Change the data so that the EVF screen is not colored.
6	7	DA		Press PAUSE button.
7	7	DB		Change the data so that the EVF screen is not colored.
8	7	DB		Press PAUSE button.
9	7	DB		If the EVF screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

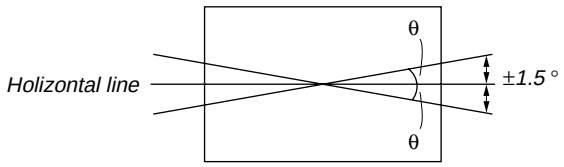
1-5. MONOCHROME ELECTRONIC VIEWFINEDER SYSTEM ADJUSTMENT (CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)

1-5-1. Horizontal Slant Check

Mode	Playback
Signal	Alignment tape : For checking operation (WR5-5NSP (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Specified Value	± 1.5°

Adjusting method:

1) Adjust RV904 (BRIGHT) (VF-129 board) so that the CRT can be seen easily and clearly.
2) Check that the difference between the horizontal line and the tilt of black mask satisfies the specified value.



Specified value : The image should be within ± 1.5 ° of the holizontal line.

Fig. 5-1-17.

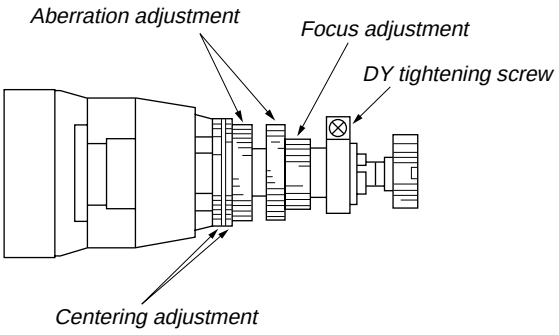
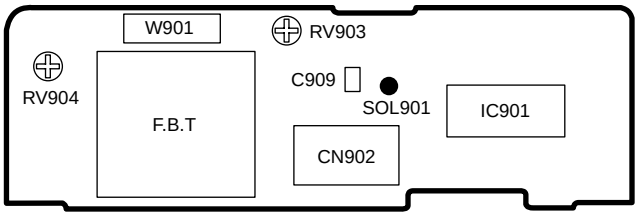


Fig. 5-1-18.

VF-129 BOARD



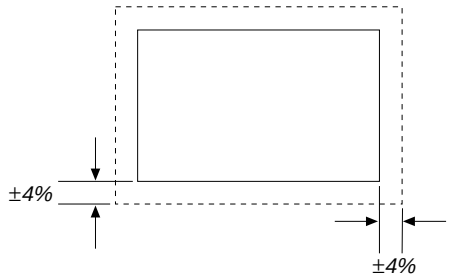
1-5-2. Centering Adjustment

Mode	Playback
Signal	Alignment tape : For checking operation (WR5-5NSP (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Specified Value	± 4%

Adjusting method:

1) Use the centering adjustment ring and adjust so that the left, light, top, and bottom sides of the display are uniform. (Refer to Fig. 5-1-18.)

   Note: As the centering position changes due to earth magnetism, rotate it 360° in the horizontal direction, and adjust with the center section of the modifying position.



Adjustment value : ±4%

Fig. 5-1-19.

1-5-3. Focus Adjustment

Mode	Playback
Signal	Alignment tape : For checking operation (WR5-5NSP (NTSC)) (WR5-5CSP (PAL)) Monoscope section

Adjusting method:

1) Adjust the focus ring to obtain the optimum focus. (Refer to Fig. 5-1-18.)

1-5-4. Aberration Adjustment

Mode	VTR stop
Signal	Dot pattern
Specified Value	b1 ≦ 2 × a1 b2 ≦ 0.8 × a2

Adjusting method:

1) Adjust the aberration adjustment ring so that the tracing of the dot satisfies the specified value.
2) If the centering becomes displaced here, perform the centering adjustment from the beginning again.

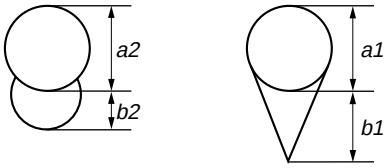


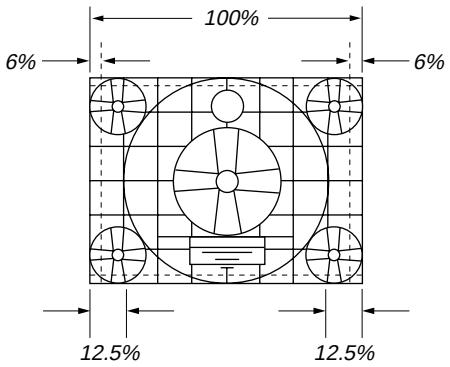
Fig. 5-1-20.

1-5-5. Horizontal Amplitude Adjustment (VF-129 board)

Mode	Playback
Signal	Alignment tape : For checking operation (WR5-5NSP (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Adjusting Element	C909 (SOL901)
Specified Value	12 ± 6%

Adjusting method:

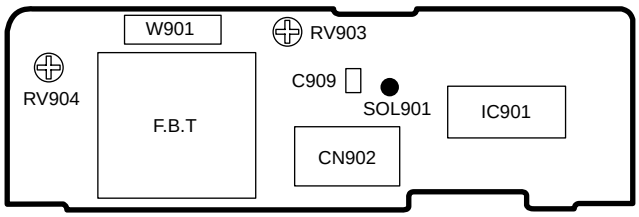
1) Rotate RV903, and adjust the top and bottom side of the monoscope image to the top and bottom edges of the display.
2) Rotate RV904 so that the brightness is the normal level.
3) Solder or unsolder SOL901 pattern of the H size adjustment capacitor (C909) to “short” or “open”, so that the horizontal direction over scan becomes 10 ± 6% (Left and right totals).



SOL901	Size H
Open	Small
Short	Big

Fig. 5-1-21.

VF-129 BOARD



1-5-6. Vertical Amplitude Adjustment (VF-129 board)

Mode	Playback
Signal	Alignment tape : For checking operation (WR5-5NSP (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Adjusting Element	RV903
Specified Value	10 ± 3%

Adjusting method:

1) Adjust RV903 so that the vertical direction over scan becomes 10 ± 3% (Top and bottom totals).

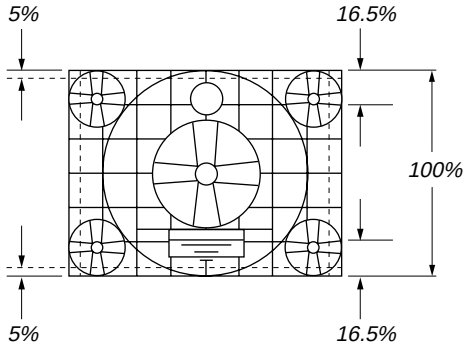


Fig. 5-1-22.

1-5-7. Brightness Adjustment (VF-129 board)

Mode	Playback
Signal	Alignment tape : For checking operation (WR5-5NSP (NTSC)) (WR5-5CSP (PAL)) Monoscope section
Adjusting Element	RV904

Adjusting method:

1) Rotate RV904, and adjust so that the bright/dark sections of gray scale are displayed correctly. (The bright section should be unsatisfactory till the cross hatch appears vague in the monoscope circle. The dark section should be unsatisfactory till the darkest section of the gray scale cannot be differentiate.)

1-5-8. Horizontal Amplitude, Vertical Amplitude, Focus Check

"1-5-5. Horizontal Amplitude Adjustment" and "1-5-6. Vertical Amplitude Adjustment" should be both satisfy the specified values. If not, perform the adjustments from the beginning again. In this case, perform "1-5-7. Brightness Adjustment" again.
Moreover, check the focus, and if it found to be vague, perform "1-5-3. Focus Adjustment" and "1-5-4. Aberration Adjustment".

1-6. LCD SYSTEM ADJUSTMENT (CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/ TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)

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.

Note 3: Set the LCD BRIGHT (Menu display) to the center.
Set the LCD COLOR (Menu display) to the center.

Note 4: Connect the adjustment remote commander to CN713 of VC-251 board or CPC connector of FP-262 flexible via CPC jig for BX/ BK (J-6082-521-A). To operate the adjustment remote commander, connect the AC power adapter (8.4Vdc) to the DC IN jack of CPC jig for BX/BK, or connect the L series Info-LITHIUM battery to the battery terminal of CPC jig for BX/BK.

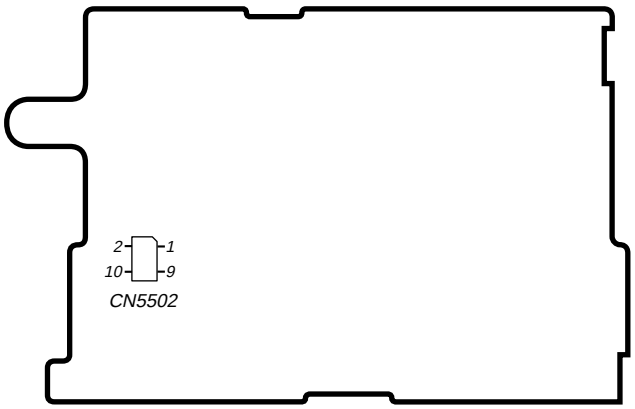
[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN5502 of the PD-131 board. Connect the measuring instruments via the multi CPC jig (J-6082-311-A). The following table shows the Pin No. and signal name of CN5502.

Pin No.	Signal Name	Pin No.	Signal Name
1	VB	2	XVD OUT
3	VG	4	PANEL COM/PSIG
5	VR	6	PANEL ID
7	C-SYNC/XHD	8	XHD OUT
9	GND	10	GND

Table. 5-1-8.

PD-131 board



1. LCD Type Check

By measuring the resistor value between Pin ⑥ of CN5502 and GND, the type of LCD can be discriminated.

Resistor value	LCD type	CCD-
1.0kΩ	2.5 LCD TYPE S (61k)	TRV49,TRV49E,TRV58, TRV58E,TRV59E, TRV68,TRV78,TRV78E
4.7kΩ	3.0 LCD TYPE S (123k)	TRV88
5.6kΩ	3.5 LCD TYPE S (123k)	TRV98,TRV98E

Table. 5-1-9.

2. VCO Adjustment (PD-131 board)

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

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ⑧ of CN5502 (XHD OUT)
Measuring Instrument	Frequency counter
Adjustment Page	7
Adjustment Address	E5, E6
Specified Value	f = 15734 ± 30Hz (NTSC) f = 15625 ± 30Hz (PAL)

Note1: NTSC model: CCD-TRV49/TRV58/TRV68/TRV78/TRV88/TRV98
PAL model: CCD-TRV49E/TRV58E/TRV59E/TRV78E/TRV98E

Note2: Refer to "1. LCD Type Check" for the discrimination of the LCD type.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	E5		Change the data and set theVCO frequency (f) to the specified value.
3	7	E5		Press PAUSE button.
4	7	E5		Read the data, and this data is named D_{E5}.
5				Convert D_{E5} to decimal notation, and obtain D_{E5}'. (Note3)
6				Calculate D_{E6}' using following equations (Decimal calculation) [2.5 LCD TYPE S] When D_{E5}' ≧ 20 D_{E6}' = D_{E5}' – 20 When D_{E5}' < 20 D_{E6}' = 00 [3.0 LCD TYPE S] When D_{E5}' ≧ 23 D_{E6}' = D_{E5}' – 23 When D_{E5}' < 23 D_{E6}' = 00 [3.5 LCD TYPE S] When D_{E5}' ≧ 4 D_{E6}' = D_{E5}' – 4 When D_{E5}' < 4 D_{E6}' = 00
7				Convert D_{E6}' to a hexadecimal number, and obtain D_{E6}. (Note3)
8	7	E6	D_{E6}	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note3: Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

3. RGB AMP Adjustment (PD-131 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 ③ of CN5502 (VG) External trigger: Pin ④ of CN5502 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	7
Adjustment Address	E8
Specified Value	A = 3.60 ± 0.05V

Note: Refer to "1. LCD Type Check" for the discrimination of the LCD type.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	E8		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value. (The data should be "00" to "3F".)
3	7	E8		Press PAUSE button.
4	0	01	00	Set the data.

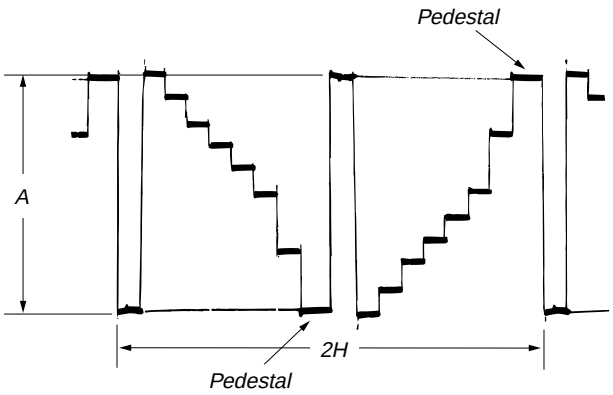


Fig. 5-1-23.

4. Contrast Adjustment (PD-131 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 ③ of CN5502 (VG) External trigger: Pin ④ of CN5502 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	7
Adjustment Address	ED
Specified Value	2.5 LCD TYPE S: A = 3.55 ± 0.07V 3.0/3.5 LCD TYPE S: A = 3.35 ± 0.07V

Note: Refer to "1. LCD Type Check" for the discrimination of the LCD type.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	ED		Change the data and set the voltage (A) between the 100 IRE and 0 IRE (pedestal) to the specified value. (The data should be "00" to "7F".)
3	7	ED		Press PAUSE button.
4	0	01	00	Set the data.

5. COM AMP Adjustment (PD-131 board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN5502 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	7
Adjustment Address	EA
Specified Value	2.5 LCD TYPE S: A = 6.30 ± 0.05V (NTSC) A = 6.10 ± 0.05V (PAL) 3.0 LCD TYPE S: A = 6.00 ± 0.05V (NTSC) 3.5 LCD TYPE S: A = 5.90 ± 0.05V (NTSC) A = 6.00 ± 0.05V (PAL)

Note1: Refer to "1. LCD Type Check" for the discrimination of the LCD type.

Note2: NTSC model: CCD-TRV49/TRV58/TRV68/TRV78/TRV88/TRV98
PAL model: CCD-TRV49E/TRV58E/TRV59E/TRV78E/TRV98E

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	EA		Change the data and set the PANEL COM signal level (A) to the specified value.
3	7	EA		Press PAUSE button.
4	0	01	00	Set the data.

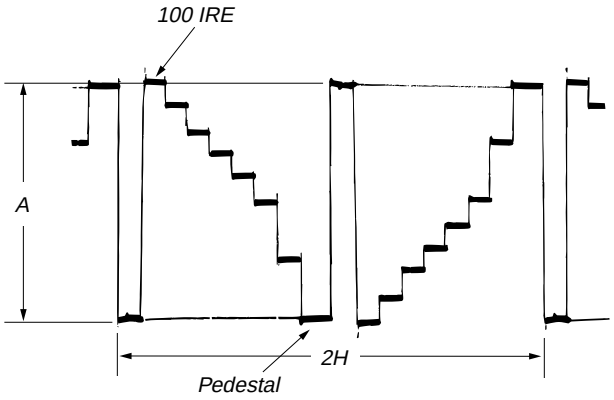


Fig. 5-1-24.

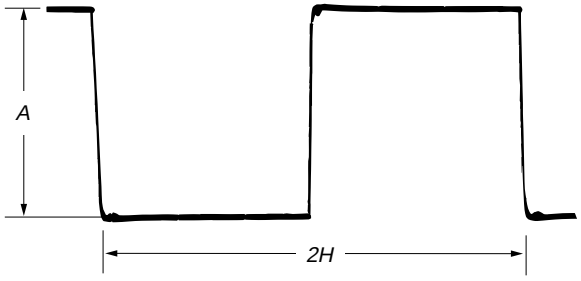


Fig. 5-1-25.

6. V-COM Adjustment (PD-131 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	7
Adjustment Address	E7
Specified Value	The brightness difference between the section A and section B is minimum.

Note: This adjustment should be carried out upon completion of the following adjustments.
RGB AMP Adjustment
Contrast Adjustment
COM AMP Adjustment

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	7	E7		Change the data so that the brightness of the section A and that of the section B is equal.
3	7	E7		Subtract 8 from the data.
4	7	E7		Press PAUSE button.
5	0	01	00	Set the data.

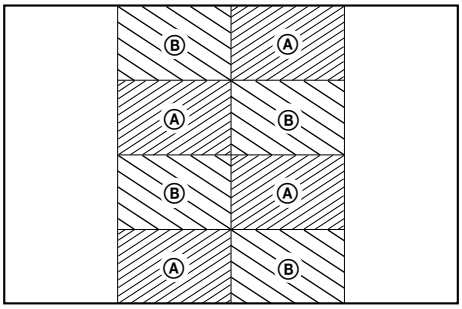


Fig. 5-1-26.

7. White Balance Adjustment (PD-131 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	7
Adjustment Address	EB, EC
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. IC5501

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	E	EB	60	Set the data, and press PAUSE button.
3	E	EC	65	Set the data, and press PAUSE button.
4	E	EB		Check that the LCD screen is not colored. If not colored, proceed to step 10.
5	E	EB		Change the data so that the LCD screen is not colored.
6	E	EB		Press PAUSE button.
7	E	EC		Change the data so that the LCD screen is not colored.
8	E	EC		Press PAUSE button.
9	E	EC		If the LCD screen is colored, repeat steps 5 to 9.
10	0	01	00	Set the data.

5-2. MECHANISM SECTION ADJUSTMENT

Mechanism Section adjustments, checks, and replacement of mechanism parts, refer to the separate volume "8mm Video Mechanism Adjustment Manual Ⅶ B Mechanism ".

2-1. ADJUSTMENT REMOTE COMMANDER

Connect the adjustment remote commander to CN713 of VC-251 board or CPC connector of FP-262 flexible via CPC jig for BX/BK (J-6082-521-A). To operate the adjustment remote commander, connect the AC power adapter (8.4Vdc) to the DC IN jack of CPC jig for BX/BK, or connect the L series Info-LITHIUM battery to the battery terminal of CPC jig for BX/BK.

2-2. OPERATING WITHOUT CASSETTE

1) Refer to "Section 2. DISASSEMBLY" and supply the power with the cabinet assembly removed. (So that the mechanical deck can be operated.)
2) Connect the adjustment remote commander.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Close the cassette compartment without loading a cassette and complete loading.
5) Select page: 0, address: 01, and set data: 01.
6) Select page: F, address: 22, set data: 81, and press the PAUSE button of the adjustment remote commander.
7) Select page: D, address: 10, set data: 10, and press the PAUSE button of the adjustment remote commander.
8) Disconnect the power supply of the unit.
   By carrying out the above procedure, the unit can be operated without loading a cassette.
   Be sure to carry out "Processing after Operations" after checking the operations.
   Set the data of page: D, address: 10 to the following if the sensor ineffective mode, forced VTR power supply On mode or forced camera power supply ON mode are to be used together.
   Forced VTR power ON mode 12
   Forced camera power ON mode 11

[Procedure after checking operations]

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 22, set data: 80, and press the PAUSE button of the adjustment remote commander.
3) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.
5) Disconnect the power supply of the unit.

2-3. TAPE PATH ADJUSTMENT

1. Preparations for Adjustment

1) Clean the tape path face (tape guide, capstan shaft, pinch roller).
2) Connect the adjustment remote commander.
3) Turn on the HOLD switch of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 01.
5) Select page: F, address: 22, set data: 88, and press the PAUSE button of the adjustment remote commander.
   (Be sure to perform "Processing after operation" after completing adjustments.)
6) Connect the oscilloscope to CPC jig for BX/BK.
   Channel 1: PB RF (MON)
   External trigger: SWP
7) Playback the alignment tape for tracking. (WR5-1NP (NTSC), WR5-1CP (PAL))
8) Check that the oscilloscope RF waveform is normal at the entrance and exit.
   If not normal, adjust according to the separate volume "8mm Video Mechanical Adjustment Manual Ⅶ B Mechanism ".
9) Perform "Processing after operations", after completing adjustment.

Test point of CPC jig for BX/BK

Pin No.	Signal Name	Pin No.	Signal Name
3	BL	1	EVF VCO
7	EVF VG	5	BL 4.75
9	PB RF (MON)		
13	BPF MONI	10	GND
17	TMS	15	REC RF (RF IN)
20	TDI	19	TDO
16	SWP	18	TCK
8	CAP FG	14	IR VIDEO

Note: Pin No. are those of CN713 or CPC connector.

Table 5-2-1.

[Procedure after operations]

1) Connect the adjustment remote commander, and turn on the HOLD switch.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: F, address: 22, set data: 80, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.
5) Remove the power supply from the unit.

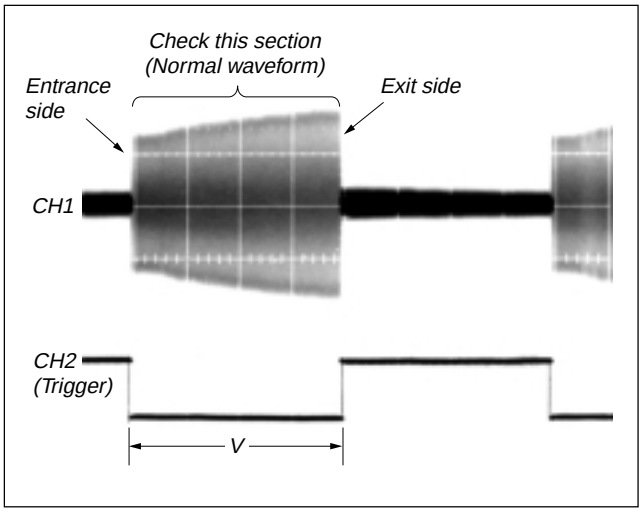


Fig. 5-2-1.

5-3. VIDEO SECTION ADJUSTMENTS

3-1. PREPARATIONS BEFORE ADJUSTMENTS

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment to Required

1) TV monitor
2) Oscilloscope (dual-phenomenon, band width 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) NTSC alignment tapes
    - For tracking adjustment (WR5-1NP)
      Parts code : 8-967-995-02
    - For video frequency characteristics adjustment (WR5-7NE)
      Parts code : 8-967-995-13
    - For checking Standard 8 mode operations
    - For LP (WR5-4NL)
      Parts code : 8-967-995-51
    - For SP (WR5-5NSP)
      Parts code : 8-967-995-42

    Note: The following alignment tapes can also be used.
      WR5-4NSP (8-967-995-41)

    - For checking Hi8 mode operations
    - For LP (WR5-8NLE)
      Parts code : 8-967-995-52
    - For SP (WR5-8NSE)
      Parts code : 8-967-995-43
    - For BPF adjustment (WR5-11NS)
      Parts code : 8-967-995-71
12) PAL alignment tapes
    - For tracking adjustment (WR5-1CP)
      Parts code : 8-967-995-07
    - For video frequency characteristics adjustment (WR5-7CE)
      Parts code : 8-967-995-18
    - For checking Standard 8 mode operations
    - For LP (WR5-4CL)
      Parts code : 8-967-995-56
    - For SP (WR5-5CSP)
      Parts code : 8-967-995-47

    Note: The following alignment tapes can also be used.
      1) WR5-3CL (8-967-995-36)
      2) WR5-4CSP (8-967-995-46)

    - For checking Hi8 mode operations
    - For LP (WR5-8CLE)
      Parts code : 8-967-995-57
    - For SP (WR5-8CSE)
      Parts code : 8-967-995-48
    - For BPF adjustment (WR5-11CS)
      Parts code : 8-967-995-76
13) Adjustment remote commander (J-6082-053-B)
14) CPC jig for BX/BK (J-6082-521-A)
15) IR receiver jig (J-6082-383-A)

3-1-2. Precautions on Adjusting

1) Connect the adjustment remote commander to CN713 of VC-251 board or CPC connector of FP-262 flexible via CPC jig for BX/BK (J-6082-521-A). To operate the adjustment remote commander, connect the AC power adapter to the DC IN jack of CPC jig for BX/BK, or connect the L series Info-LITHIUM battery to the battery terminal of CPC jig for BX/BK.
2) 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 "PLAYER" or set the "Forced VTR Power ON mode" using the adjustment remote commander (Note3).
   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 (Note4).
   After completing adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note6)
3) The front panel block (MI-040/041 board, microphone unit, video light) need not be connected except during "IR transmitter adjustment (CCD-TRV98)". To remove, disconnect the following connector.
   MI-040/041 board CN754 (24P 0.5mm)
4) As removing the cabinet (R) assembly (removing CN709 of the VC-251 board) means removing the lithium 3V power supply (CF-1000 block/CF-077 board BT101), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the cabinet (R) assembly 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 and E0 to E2). (Refer to "5-4.Service Mode".)
5) The cabinet (R) assembly (CF-077 board (TR model), CF-1000 block, LCD block (TRV model)) need not be connected to operate the VTR block. When removing the cabinet (R) assembly, disconnect the following connectors.
   1. VC-251 board CN709 (24P, 0.5mm)
   2. VC-251 board CN701 (20P, 0.8mm) (TRV model)
6) The lens block (CD-281/286 board) need not be connected. To remove, disconnect the following connectors.
   1. VC-251 board CN271 (14P, 0.5mm)
   2. VC-251 board CN291 (24P, 0.5mm)
7) The EVF block (VF-129/144 board) need not be connected. To remove, disconnect the following connectors.
   1. VC-251 board CN715 (4P, 1.0mm) (B/W EVF model)
   2. VC-251 board CN708 (20P, 0.5mm) (Color EVF model)
8) By setting the "Forced VTR Power ON mode" or "Forced Camera Power ON mode", the video section can be operate even if the control switch block (SS-1000) has been removed. When removing the control switch block (SS-1000), disconnect the following connector.
   VC-251 board CN711 (5P 0.8mm)

Note1: TRV model:
CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
TR model:
CCD-TR618/TR618E/TR718E/TR728E/TR818
Color EVF model:
CCD-TR818
B/W EVF model:
CCD-TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

Note2: MI-040 board, CF-1000 block, CD-281 board: TRV model
MI-041 board, CF-077 board, CD-286 board: TR model
VF-129 board: B/W EVF model
VF-141 board: Color EVF model

Note3: 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.
The above procedure will enable the VTR power to be turned on with the control switch block (SS-1000) removed.
After completing adjustments, be sure to exit the "Forced VTR Power ON mode".

Note4: 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.
The above procedure will enable the camera power to be turned on with the control switch block (SS-1000) removed.
After completing adjustments, be sure to exit the "Forced Camera Power ON mode".

Note5: 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.
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 in CN713 of VC-251 board or CPC connector of FP-262 flexible. Connect the Measuring instruments and the adjustment remote commander via the CPC jig for BX/BK (J-6082-521-A) to CN713 or CPC connector. To operate the adjustment remote commander, connect the AC power adapter to the DC IN jack of CPC jig for BX/BK, or connect the L series Info-LITHIUM battery to the battery terminal of CPC jig for BX/BK.

The following table shows the Pin No. and signal name of CN713 or CPC connector.

Pin No.	Signal Name	Pin No.	Signal Name
1	VCO	2	XLANC POWER ON
3	EVF BL	4	LANC IN
5	EVF BL 4.75V	6	LANC OUT
7	EVF VG	8	CAP FG
9	PB RF	10	REG GND
11	REG GND	12	REG GND
13	BPF MONI	14	IR VIDEO
15	REC RF	16	RF SWP
17	NC	18	NC
19	NC	20	NC

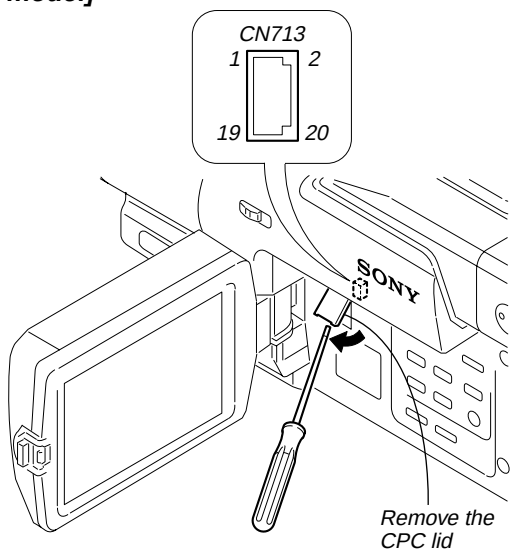
Table 5-3-1.

The following table shows the arrangement of the test points of CPC jig for BX/BK. (Pin No. are those of CN713 or CPC connector.)

Pin No.	Signal Name	Pin No.	Signal Name
3	BL	1	EVF VCO
7	EVF VG	5	BL 4.75
9	PB RF (MON)		
13	BPF MONI	10	GND
17	TMS	15	REC RF (RF IN)
20	TDI	19	TDO
16	SWP	18	TCK
8	CAP FG	14	IR VIDEO

Table 5-3-2.

[TRV model]



[TR model]

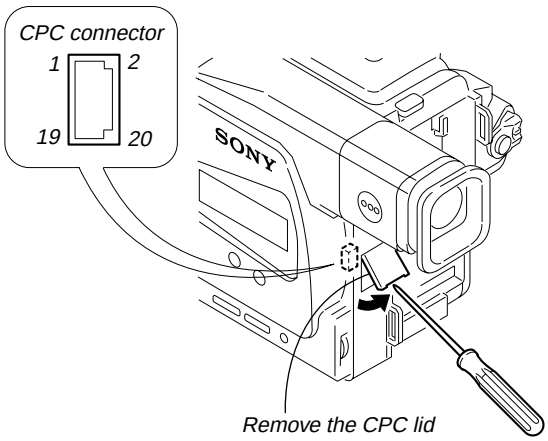


Fig. 5-3-1.

3-1-4. Connecting the Equipment

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

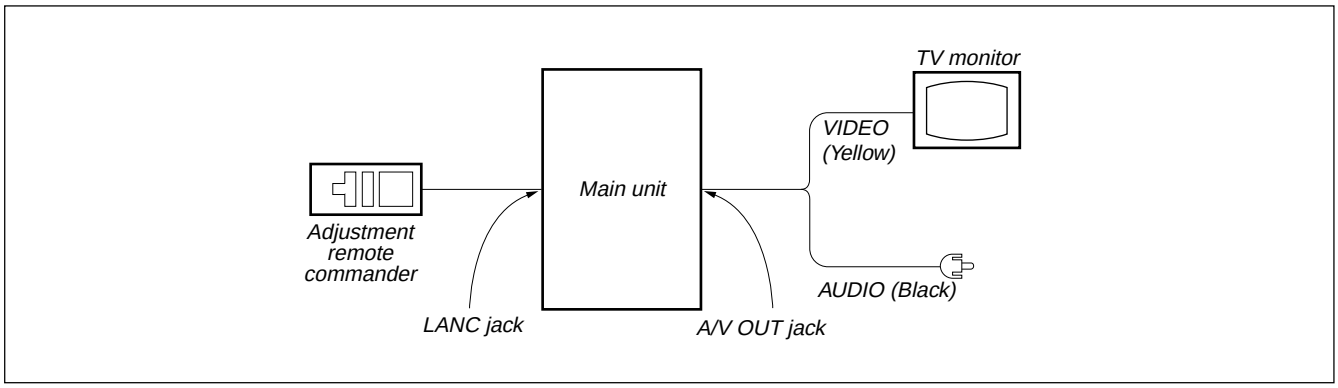


Fig. 5-3-2.

3-1-5. Alignment Tape

The following table lists alignment tapes which are available.
Use the tape specified in the signal column for each adjustment. If the type of tape to be used for checking operations is not specified, use whichever type.

Alignment tape

Name	Recording mode	Tape type	Tape speed	Usage
Tracking (WR5-1NP(NTSC), WR5-1CP(PAL))	Standard 8	MP	SP	Tape path adjustment, Switching position adjustment
Video frequency characteristics (WR5-7NE(NTSC), WR5-7CE(PAL))	Hi8	ME	SP (NTSC) LP (PAL)	Frequency characteristics adjustment
Operation check (WR5-5NSP(NTSC), WR5-5CSP(PAL))	Standard 8	MP	SP	Operation check
Operation check (WR5-8NSE(NTSC), WR5-8CSE(PAL))	Hi8	ME	SP	
Operation check (WR5-4NL(NTSC), WR5-4CL(PAL))	Standard 8	MP	LP	
Operation check (WR5-8NLE(NTSC), WR5-8CLE(PAL))	Hi8	ME	LP	
BPF adjustment (WR5-11NS(NTSC), WR5-11CS(PAL))	Standard 8	MP	SP	BPF adjustment

Tape type:
ME ..... Particle type metal tape
MP ..... Evaporated type metal tape

Table. 5-3-3.

Fig.5-3-3. shows the 75% color bar signals recorded on the alignment tape.
Note: Measure using the VIDEO terminal (Terminated at 75Ω).

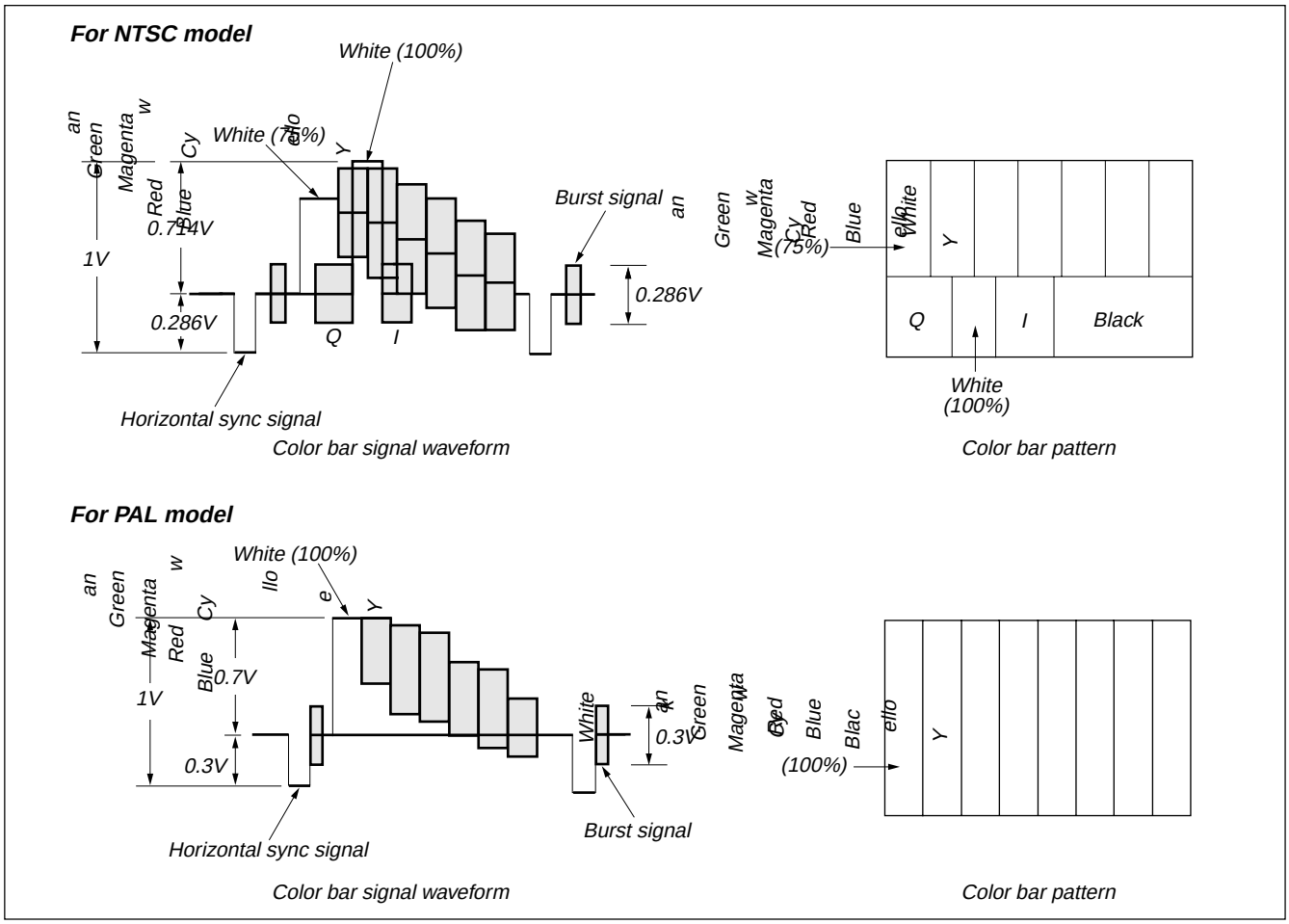


Fig. 5-3-3. Color bar signal of alignment tapes

3-1-6. Output Level and Impedance

Video output

Stereo minijack,
1Vp-p, 75Ω, unbalanced, sync negative

S video output

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

Audio output

Stereo minijack:
–7.5dBs, (at load impedance 47kΩ), impedance less than 2.2kΩ

3-1-7. Recording Mode (Standard 8/Hi8) switching

The record mode (Standard 8/Hi8) of this unit switches as shown in the following table. The playback mode (Standard 8/Hi8) switches automatically according to the recording mode of the tape played back.

Tape Used	Recording Mode
ME	Hi8
Hi8 MP	
MP	Standard 8

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Initialization of D, E, F, 7 Page Data

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

3-3. SERVO SYSTEM ADJUSTMENT

1. CAP FG Offset Adjustment (VC-251 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 in the LP mode.

Mode	Camera recording (SP mode)
Subject	Arbitrary
Measurement Point	CAP FG (Pin ⑧ of CN713 or Pin ⑧ of CPC connector of FP-262 flexible)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	64
Specified value	Duty = 50 ± 1 %

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	01	81	Set the data, and press PAUSE button.
3	6	02		Check that the data changes to "01".
4	6	01	00	Set the data, and press PAUSE button.
5				Check that Duty of CAP FG signal satisfies the specified value. If not, repeat steps 2 to 5.
6	0	01	01	Set the data.

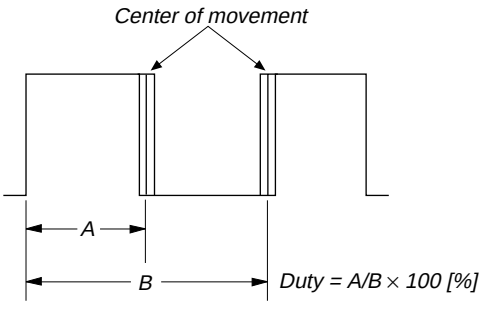


Fig. 5-3-4.

2. Switching Position Adjustment (VC-251 Board)

If deviated in this case causes switching noise or jitter on the played back screen.

Mode	Playback
Signal	Alignment tape: For tracking adjustment (WR5-1NP (NTSC)) (WR5-1CP (PAL))
Measurement Point	CH1: SWP (Pin ⑯ of CN713 or Pin ⑯ of CPC connector of FP-262 flexible) CH2: PB RF (Pin ⑨ of CN713 or Pin ⑨ of CPC connector of FP-262 flexible)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	62, 63
Specified Value	t1= 0 ± 10µ sec

Note: NTSC model: CCD-TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98
PAL model: CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E/TRV78E/TRV98E

Adjusting Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	22	C0	Set the data, and press PAUSE button.
3	F	62		Change the data and minimize "t1". (Coarse adjustment)
4	F	62		Press PAUSE button
5	F	63		Change the data and adjust so that the switching position (t1) becomes the specified value. (Fine adjustment)
6	F	63		Press PAUSE button
7	F	22	80	Set the data, and press PAUSE button.
8	0	01	01	Set the data.

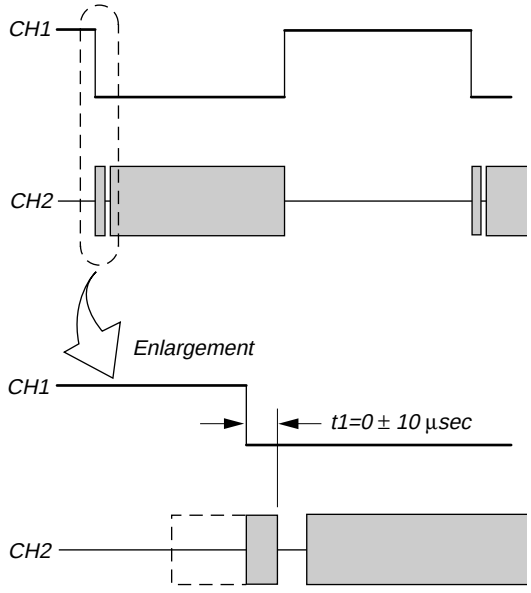


Fig. 5-3-5.

3-4. VIDEO SYSTEM ADJUSTMENTS

Video system adjustments must be performed in the following order.

Note: NTSC model: CCD-TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98
PAL model: CCD-TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E/TRV78E/TRV98E

[Adjusting Order]

1. 28MHz origin oscillation adjustment
2. AFC fo adjustment
3. Filter fo adjustment
4. Y OUT level adjustment
5. C OUT level adjustment
6. REC Y current adjustment
7. REC C/REC AFM current adjustment

1. 28 MHz Origin Oscillation Adjustment (VC-251 board)

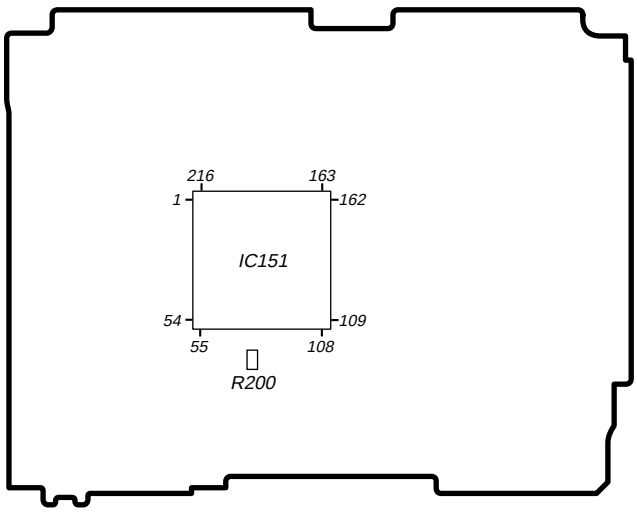
Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

Mode	VTR stop
Signal	No signal
Measurement Point	R200 (Pin ⑲ of IC151)
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	4D
Specified Value	f=3579545 ± 17Hz (NTSC) f=4433594 ± 17Hz (PAL)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	61	30	Set the data.
3	2	01	41	Set the data, and press PAUSE button.
4	F	4D		Change the data and set the frequency (f) to the specified value.
5	F	4D		Press PAUSE button.
6	2	01	00	Set the data, and press PAUSE button.
7	6	61	10	Set the data.
8	0	01	00	Set the data.

VC-251 BOARD



2. AFC fo Adjustment (VC-251 board)

Adjust the pull-in range of the A/D converted clock generator during playback.

Mode	VTR stop
Signal	No signal
Adjustment Page	F
Adjustment Address	65

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	65	50	Set the data, and press PAUSE button.
3	2	01	4D	Set the data, and press PAUSE button.
4				Wait for 0.5 sec.
5	6	01	C5	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to “01”. (Note)
7	2	01	00	Set the data, and press PAUSE button.
8	6	01	00	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

Note: The adjustment data will be automatically input to page: F, address: 65.

3. Filter fo Adjustment (VC-251 board)

Adjust the fo frequency of the IC151 built-in filter.

Mode	VTR stop
Signal	No signal
Measurement Point	IR VIDEO (Pin ⑭ of CN713 or Pin ⑭ of CPC connector of FP-262 flexible)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	66
Specified Value	Minimum residual chroma signal components (A= Bellow 35mV)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	01	4F	Set the data, and press PAUSE button.
3	2	05	40	Set the data,.
4	F	66		Change the data and minimize the residual chroma signal components (A). (The data should be “70” to “7F”.)
5	F	66		Press PAUSE button.
6	2	01	00	Set the data, and press PAUSE button.
7	2	05	00	Set the data,.
8	0	01	00	Set the data.

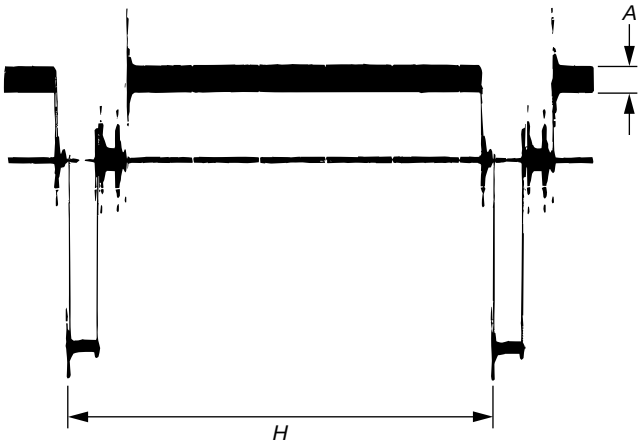


Fig. 5-3-6.

4. Y OUT Level Adjustment (VC-251 board)

Set the Y signal output level. (Adjust the D/A converter out put level of IC151.)

Mode	VTR stop
Signal	No signal
Measurement Point	Y signal terminal of S VIDEO terminal (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	67
Specified Value	A=286 ± 5mV (NTSC) A=300 ± 5mV (PAL)

Note1: Insert a plug into the S video terminal.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	01	41	Set the data, and press PAUSE button.
3	6	61	30	Set the data,.
4	F	67		Change the data and set the SYNC level (A) to the specified value.
5	F	67		Press PAUSE button.
6	2	01	00	Set the data, and press PAUSE button.
7	6	61	10	Set the data.
8	0	01	00	Set the data.

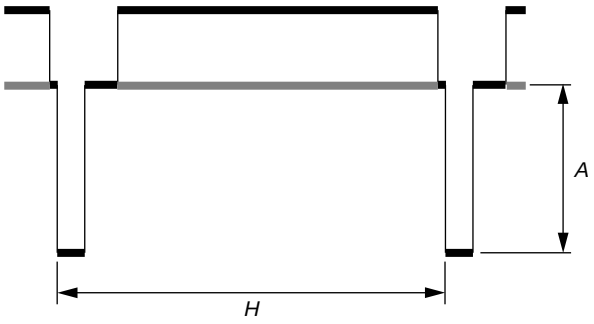


Fig. 5-3-7.

5. C OUT Level Adjustment (VC-251 board)

Set the chroma signal output level. (Adjust the D/A converter out put level of IC151.)

Mode	VTR stop
Signal	No signal
Measurement Point	Chroma signal terminal of S VIDEO terminal (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	68
Specified Value	A=286 ± 5mV (NTSC) A=300 ± 5mV (PAL)

Note1: Insert a plug into the S video terminal.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	01	41	Set the data, and press PAUSE button.
3	6	61	30	Set the data,.
4	F	68		Change the data and set the burst level (A) to the specified value.
5	F	68		Press PAUSE button.
6	2	01	00	Set the data, and press PAUSE button.
7	6	61	10	Set the data,.
8	0	01	00	Set the data.

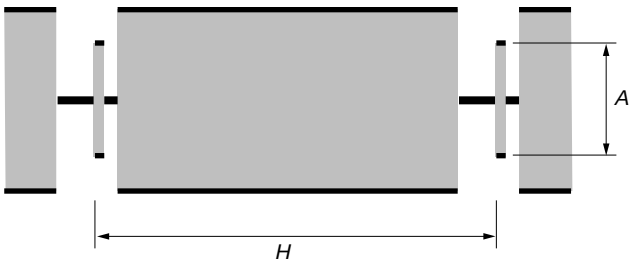


Fig. 5-3-8.

6. REC Y Current Adjustment (VC-251 board)

Adjust the Y FM signal recording current.

Mode	VTR recording (SP mode)	
Signal	No signal	
Measurement Point	REC RF (Pin ⑮ of CN713 or Pin ⑮ of CPC connector of FP-262 flexible)	
Measuring Instrument	Oscilloscope (20 MHz BW LIMIT: OFF)	
Adjustment Page	F	7
Adjustment Address	6A, 6B	F9
Specified Value	A=235 ± 5mV (NTSC) A=280 ± 5mV (PAL)	

Note1: Don't disconnect the DC power supply of the camcorder during the following adjustments.
When the following symptom occurs, reset the data of D page to the values written down.
1) The power is shut off so that unit cannot operate.

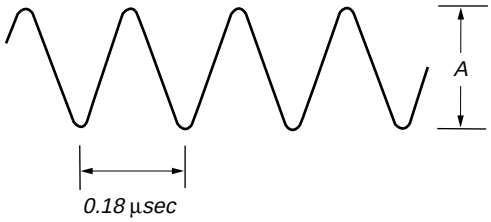


Fig. 5-3-9.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Set to the stop mode.
2	0	01	01	Set the data.
3	D	14		Write down the data.
4	D	14		Set the following data, and press PAUSE button. 06 (NTSC), 26 (PAL)
5	D	15		Write down the data.
6	D	15		Set the following data, and press PAUSE button. 6D (NTSC), 6F (PAL)
7				Set to VTR recording mode. (Note2)
8	E	FB		Write down the data.
9	E	FB	06	Set the data, and press PAUSE button.
10	F	71		Write down the data.
11	F	71	00	Set the data, and press PAUSE button.
12	2	01	41	Set the data, and press PAUSE button.
13	6	63	01	Set the data.
14	F	6B		Change the data and set the Y signal level (A) to the specified value.
15	F	6B		Read the data, and this data is named D_{6B}.
16	F	6A	D_{6B}	Set the data, and press PAUSE button.
17				Convert D_{6B} to decimal notation, and obtain D_{6B}'. (Note3)
18				Calculate D_{F9}' using following equations (Decimal calculation) When $D_{6B}' \leqq 243$ $D_{F9}' = D_{6B}' + 12$ When $D_{6B}' > 243$ $D_{F9}' = 255$
19				Convert D_{F9}' to a hexadecimal number, and obtain D_{F9}. (Note3)
20	7	F9	D_{F9}	Set the data, and press PAUSE button.
21	6	63	00	Set the data.
22	2	01	00	Set the data, and press PAUSE button.
23	F	71		Set the data written down at step 10, and press PAUSE button.
24	E	FB		Set the data written down at step 8, and press PAUSE button.
25	D	14		Set the data written down at step 3, and press PAUSE button.
26	D	15		Set the data written down at step 5, and press PAUSE button.
27	0	01	00	Set the data.

Note2: Use the REC buttons of the adjustment remote commander (with the HOLD switch set in the OFF position).
Note3: Refer to "Table 5-4-1. Hexadecimal-decimal Conversion Table".

7. REC C/AFM Current Adjustment

7-1. Preparations

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	14		Write down the data.
3	D	14		Set the following data, and press PAUSE button. 06 (NTSC), 26 (PAL)
4	D	15		Write down the data.
5	D	15		Set the following data, and press PAUSE button. 6D (NTSC), 6F (PAL)

Note: Don't disconnect the DC power supply of the camcorder during the following adjustments.
When the following symptom occurs, reset the data of D page to the values written down.
1) The power is shut off so that unit cannot operate.

7-2. REC C Current Check (VC-251 board)

Check the recording current level of the REC Chroma signal. If it is too low, chroma signal noise in played back picture will be increased. If too high, Y signal noises will increase and white modulation noises will be produced.

Mode	VTR recording (SP mode)
Signal	No signal
Measurement Point	REC RF (Pin ⑮ of CN713 or Pin ⑮ of CPC connector of FP-262 flexible)
Measuring Instrument	Oscilloscope (20 MHz BW LIMIT: OFF)
Specified Value	A=50.8 ± 3.0mV (NTSC) A=54.0 ± 3.0mV (PAL)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert a Hi8 ME tape, and set to VTR recording mode. (Note)
2	0	01	01	Set the data.
3	2	01	41	Set the data, and press PAUSE button.
4	6	61	30	Set the data.
5	E	FB		Write down the data.
6	E	FB	05	Set the data, and press PAUSE button.
7	F	71		Write down the data.
8	F	71	00	Set the data, and press PAUSE button.
9				Check that the REC chroma signal level (A) satisfies the specified value, and write down the signal level.
10	F	71		Set the data written down at step 7, and press PAUSE button.
11	E	FB		Set the data written down at step 5, and press PAUSE button.
12	6	61	10	Set the data.
13	2	01	00	Set the data, and press PAUSE button.
14	0	01	00	Set the data.
15				Perform "REC AFM Current Adjustment" and "Processing after completed adjustment".

Note: Use the REC buttons of the adjustment remote commander (with the HOLD switch set in the OFF position).

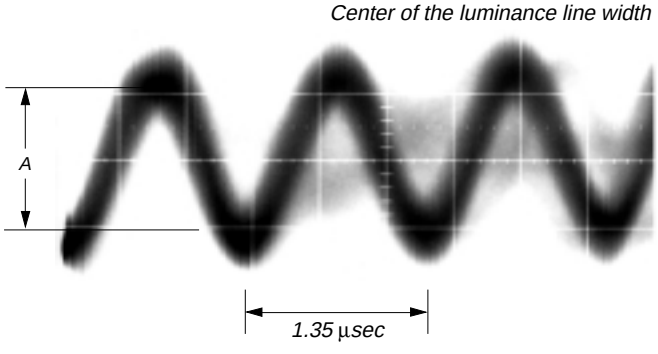


Fig. 5-3-10.

7-3. REC AFM Current Adjustment (VC-251 board)

Set the recording levels of the REC AFM signal. If the level is too low, the audio S/N will be deteriorated. If too high, color beets will be produced on the self-recording / playback image.

Mode	VTR recording (SP mode)
Signal	No signal
Measurement Point	REC RF (Pin ⑮ of CN713 or Pin ⑮ of CPC connector of FP-262 flexible)
Measuring Instrument	Oscilloscope (20 MHz BW LIMIT: OFF)
Adjustment Page	F
Adjustment Address	71
Specified Value	NTSC model: A= (REC Chroma signal level) × 0.292 ± 0.9mV (Note) PAL model: A= (REC Chroma signal level) × 0.309 ± 0.9mV (Note)

Note1: REC chroma signal level is written down at step 9 of "REC C Current Check".

Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert a Hi8 ME tape, and set to recording mode. (Note2)
2	0	01	01	Set the data.
3	2	01	41	Set the data, and press PAUSE button.
4	E	FB		Write down the data.
5	E	FB	07	Set the data, and press PAUSE button.
6	F	71		Change the data and set the REC AFM signal level (A) to the specified value.
7	F	71		Press PAUSE button.
8	E	FB		Set the data written down at step 4, and press PAUSE button.
9	2	01	00	Set the data, and press PAUSE button.
10	0	01	00	Set the data.
11				Perform "Processing after completed adjustment".

Note2: Use the REC buttons of the adjustment remote commander (with the HOLD switch set in the OFF position).

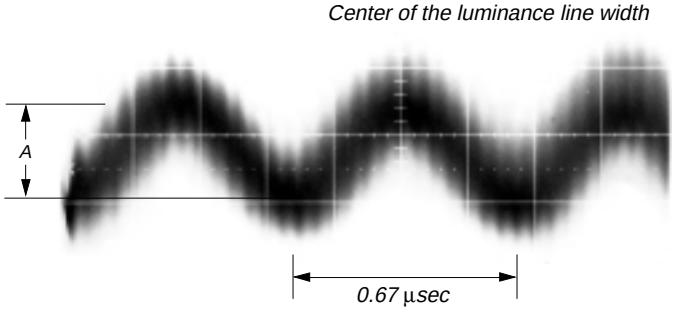


Fig. 5-3-11.

7-4. Processing after completed adjustment

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	14		Set the data written down at step 2 of "7-1. Preparations", and press PAUSE button.
3	D	15		Set the data written down at step 4 of "7-1. Preparations", and press PAUSE button.
4	0	01	00	Set the data.

3-5. IR TRANSMITTER ADJUSTMENTS (CCD- TRV98)

Adjust using the IR receiver jig (J-6082-383-A).

Note: If the distance between the IR receiver jig and the camcorder is below 1m, cover the LASER LINK emitter with a ND filter. (For example, when the distance is 30cm to 50cm, cover the LASER LINK emitter with a ND filter 1.0.)

Switch setting:

LASER LINK ..... ON (Red LED is lit)

1. IR Video Carrier Frequency Adjustment (MI-041 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Pin ⑤ of CN003 of IR receiver jig (RF) (Or Pin ⑯ of IC3901 of MI-041 board)
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	80
Specified Value	f = 11.85 ± 0.05 MHz (*1) f = 11.55 ± 0.05 MHz (*2)

*1: IC3901 of MI-041 board is LA9511.
*2: IC3901 of MI-041 board is AN2920.

Connection of Equipment:

Connect the measuring device as shown in the following figure, and adjust.

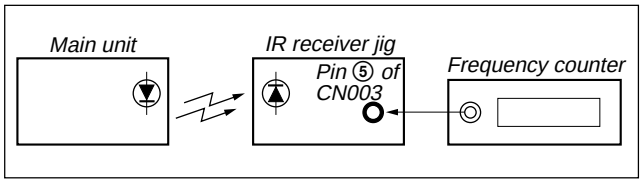


Fig. 5-3-12.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	01	37	Set the data, and press PAUSE button.
3	F	80		Change the data, and set the video carrier frequency (f) to the specified value.
4	F	80		Press PAUSE button.
5	2	01	00	Set the data, and press PAUSE button.
6	0	01	00	Set the data.

2. IR Video Deviation Adjustment (MI-041 board)

Mode	VTR stop
Signal	Arbitrary
Measurement Point	VIDEO OUT terminal of IR receiver jig (Terminated at 75Ω)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	7E
Specified Value	A = 0.87 ± 0.05 V

Connection of Equipment:

Connect the measuring device as shown in the following figure, and adjust.

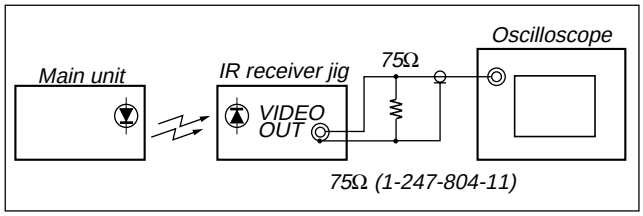


Fig. 5-3-13.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	2	01	39	Set the data, and press PAUSE button.
3	F	7E		Change the data, set the video signal amplitude (A) to the specified value.
4	F	7E		Press PAUSE button.
5	2	01	00	Set the data, and press PAUSE button.
6	0	01	00	Set the data.

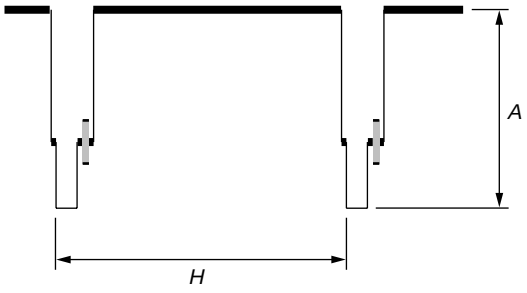


Fig. 5-3-14.

3. IR Audio Deviation Adjustment (MI-041 board)

Mode	Playback
Signal	Alignment tape: For checking operation (WR5-5NSP(NTSC))
Measurement Point	AUDIO L terminal and AUDIO R terminal of IR receiver jig (Terminated at 47kΩ)
Measuring Instrument	Audio level meter
Adjustment Page	F
Adjustment Address	7F
Specified Value	Signal level: –7.5 ± 2.0 dBs

Note: This adjustment should be carried out upon completion of the audio system adjustments.

Connection of Equipment:
Connect the measuring device as shown in the following figure, and adjust.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2				Connect the audio level meter to the AUDIO L terminal of the IR receiver jig.
3	F	7F		Change the data and set the 400Hz audio signal level to the specified value.
4	F	7F		Press PAUSE button.
5				Connect the audio level meter to the AUDIO R terminal of the IR receiver jig.
6	F	7F		Check that the 400Hz audio signal level is within the specified value. If outside, repeat from step 2.
7	0	01	00	Set the data.

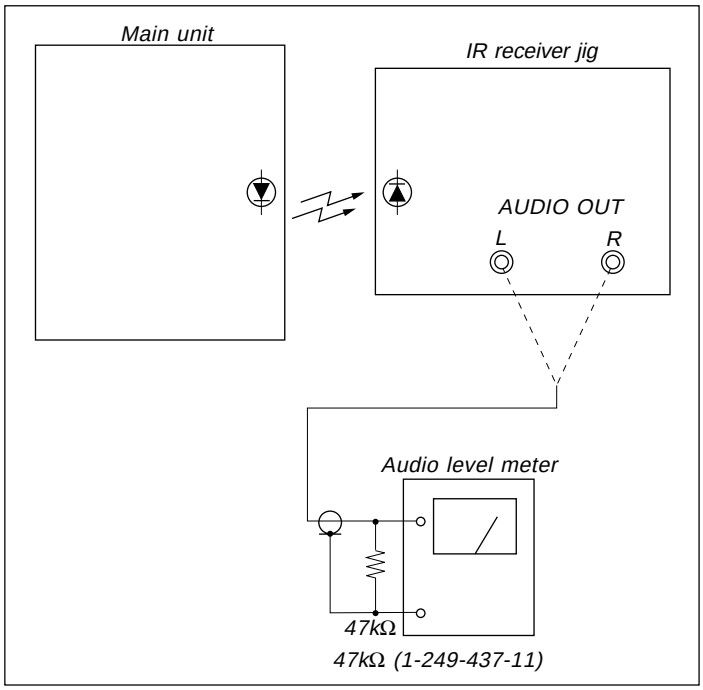


Fig. 5-3-15.

3-6. AUDIO SYSTEM ADJUSTMENTS

[Connecting the measuring instruments for the audio]
Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig. 5-3-16.

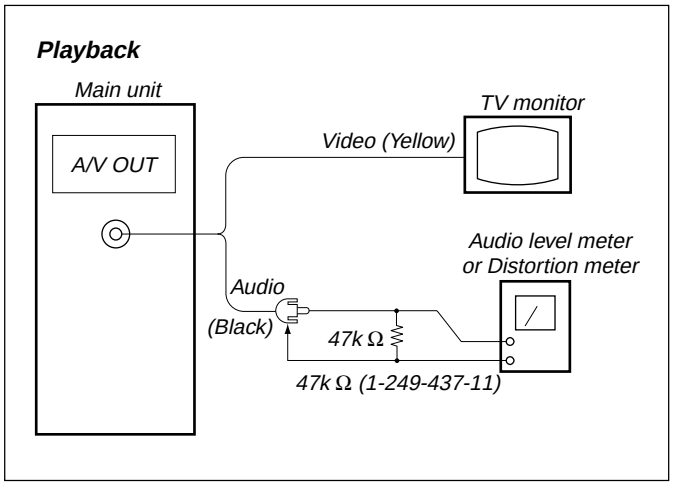


Fig. 5-3-16.

1. 1.5MHz Deviation Adjustment (VC-251 board)

Adjust to the optimum 1.5MHz audio FM signal deviation.
If the adjustment is not correct, its playback level will differ from that of other units.

Mode	Playback
Signal	Alignment tape: For checking operation (WR5-5NSP (NTSC)) (WR5-5CSP (PAL))
Measurement Point	Audio terminal of A/V OUT jack
Measuring Instrument	Audio level meter
Adjustment Page	F
Adjustment Address	7B
Specified Value	–7.5 ± 2.0 dBs

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	7B		Change the data and set the 400Hz audio signal level to the specified value.
3	F	7B		Press PAUSE button.
4	0	01	00	Set the data.

2. BPF fo Adjustment (VC-251 board)

Sets the BPF passing frequency of IC760 so that the AFM signal can separate from the playback RF signal properly. If deviated. the mono/stereo mode will be differentiated incorrectly, and noises and distortions will increase during high volume playback.

Mode	Playback
Signal	Alignment tape: For BPF adjustment (WR5-11NS (NTSC) (WR5-11CS (PAL))
Measurement Point	Audio terminal of A/V OUT jack
Measuring Instrument	Distortion meter
Adjustment Page	F
Adjustment Address	7D
Specified Value	The distortion rate should be minimum.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	F	7D		Change the data and minimize the distortion rate.
3	F	7D		Press PAUSE button.
4	0	01	00	Set the data.

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 CN713 of VC-251 board or CPC connector of FP-262 flexible via CPC jig for BX/BK (J-6082-521-A). To operate the adjustment remote commander, connect the AC power adapter (8.4Vdc) to the DC IN jack of CPC jig for BX/BK, or connect the L series Info-LITHIUM battery to the battery terminal of CPC jig for BX/BK.
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.

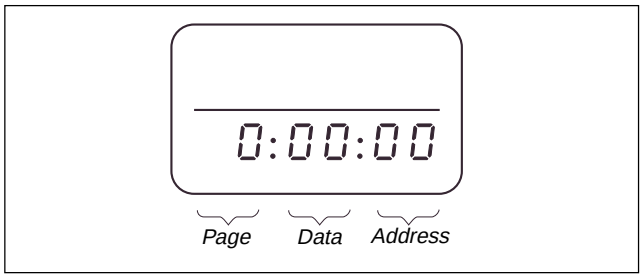


Fig. 5-4-1.

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 (D, E, F, 7 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 (8.4 V) 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) ②	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

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

Note: After the completion of the all adjustments, cancel the service mode by either of the following ways.

1) Unplug the main power supply and remove the lithium battery. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting.)
2) After data on page: D and F is restored, return data of the address: 01 on page: 0 to 00. And when data on page: 2 is changed, return the data to the original condition.

1. Test Mode Setting

Set/release each test mode. Set page: 0, address: 01, data: 01 before setting the data of page D and F.

Page F	Address 22

Data	Function
80	Normal
81	Test mode Various emergency prohibitions and releases Drum emergency, capstan emergency, loading motor emergency, reel emergency, tape top and end, DEW detection

Page D	Address 10

Data	Function
00	Normal
01	Camera power ON
02	VTR power ON
03	Camera + VTR power ON

* For page D and F, the data set will be recorded in the nonvolatile memory by pressing the PAUSE button on the adjustment remote commander. Take note that, in this case, the test mode will not be released even if the main power has been turned off.

* Be sure to return the data of page: F, address: 22 to 80, and the data of page : D, address: 10 to 00 after completing adjustments/ repairs and press the PAUSE button of the adjustment remote commander. And set page: 0, address: 01, data: 00.

2. Emergency Memory Address

Page F	Address 10 to 1B

Address	Contents
10	1st EMG code
12	Upper: MSW code when the mechanism starts shifting the 1st time Lower: MSW code when the 1st emergency occurs
13	Lower: Target MSW code of the 1st emergency occurs
14	2nd EMG code
16	Upper: MSW code when the mechanism starts shifting the 2nd time Lower: MSW code when the 2nd emergency occurs
17	Lower: Target MSW code of the 2nd emergency occurs
18	Last EMG code
1A	Upper: MSW code when the mechanism starts shifting the last time Lower: MSW code when the last emergency occurs
1B	Lower: Target MSW code of the last emergency occurs

When there are no emergency, data 00 will be written in the above addresses (10 to 1B). When the first emergency occurs, the data corresponding to the emergency will be written in the address (10 to 13) for this first emergency. In the same way, when the second emergency occurs, the data corresponding to the emergency will be written in the address (14 to 17) for this second emergency.
The data corresponding to the emergency occurring the last will be written in the address (18 to 1B) for this last emergency.
Therefore the data of addresses 18 to 1B are renewed each time an emergency occurs.

Note 1: Be sure to rewrite the data of addresses 10 to 1B to 00 after repairs/adjustments.

Note 2: When rewriting the data, be sure to press the PAUSE button of the remote commander after setting the data.

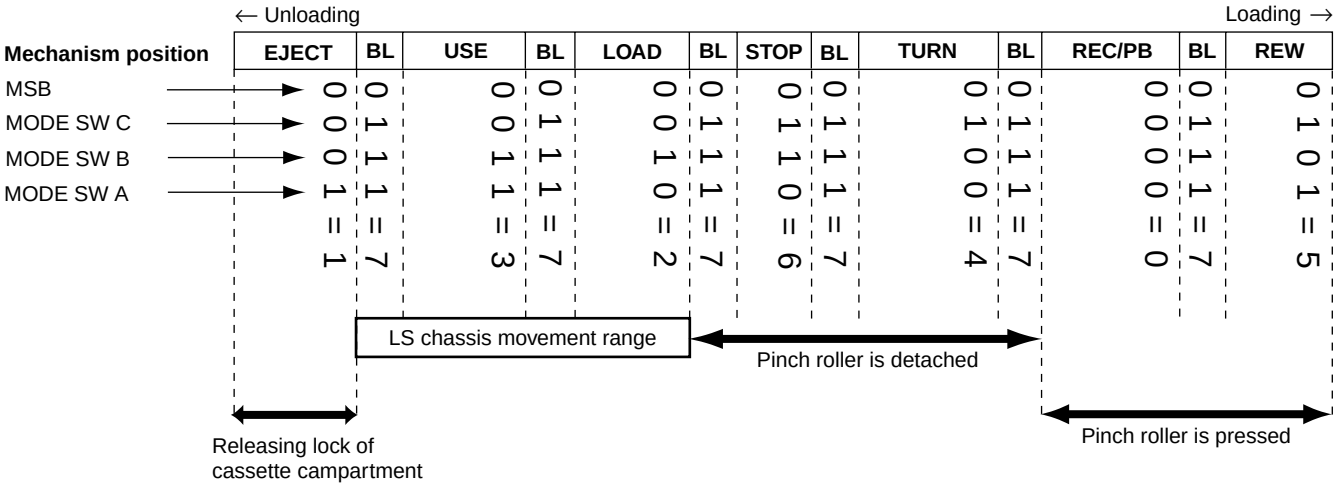
2-1. EMG code (Emergency code)

The codes shown in the following table which correspond to errors that occur are recorded in addresses 10, 14, and 18.

Code	Type of Emergency
00	No error
10	Loading motor time-out during load
11	Loading motor time-out during unload
20	T reel emergency (reel slack) during unloading
21	S reel emergency (reel slack) during unloading
22	T reel emergency
23	S reel emergency
30	FG emergency at the start up of the capstan
31	FG emergency during the normal rotation of the capstan
40	FG emergency at the start up of the drum
41	PG emergency at the start up of the drum
42	FG emergency during the normal rotation of the drum
43	PG emergency during the normal rotation of the drum
44	Phase emergency during the normal rotation of the drum

2-2. MSW codes

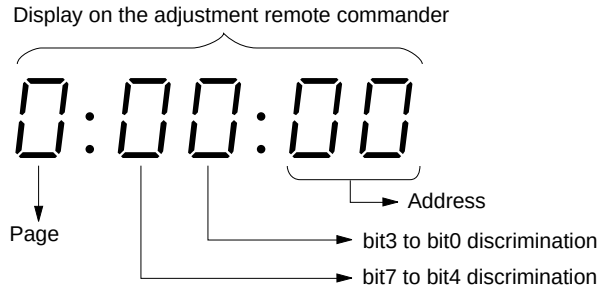
- The lower parts of the data of addresses 12, 16 and 1A represent the MSW codes (mode switch, mechanism position) when errors occurs.
- The upper parts of the data of addresses 12, 16 and 1A represent, when the mechanism position is to be moved, the MSW codes at the start of movement (when moving the loading motor).
- The lower parts of the data of addresses 13, 17 and 1B represent the MSW codes of the desired movement when the mechanism position is to be moved.



Mechanism Position	MSW Code	Contents
EJECT	1	Position at which the cassette compartment lock is released. The mechanism will not move any further in the unloading direction.
BL	7	BLANC code. Between two codes. The mechanism will not be stopped by this code while it is operating.
USE	3	EJECT completion position. When the cassette is ejected, the mechanism will stop at this position.
LOAD	2	Code during loading/unloading. Code that is used while the LS chassis is moving.
STOP	6	Normal stop position. The pinch roller separates, the tension regulator returns, and the brakes of both reels turn on.
TURN	4	Position at which is used when the pendulum gear swings from S to T or from T to S.
RECP/PB	0	PB, REC, CUE, REV, PAUSE, FF positions. The pinch roller is pressed and tension regulator is on.
REW	5	REW position. REW are carried at this position. The mechanism will not move any further in the loading direction.

3. Bit Value Discrimination

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



(Example) If the remote commander display is "8E", bit value from bit 7 to bit 4 can be discriminated from the column Ⓐ, and those from bit 3 to bit 0 from column Ⓑ.

	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 (R)	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

4. Switch check (1)

Page 2	Address 43

Bit	Function	When bit value = 1	When bit value = 0
0	POWER SW (VTR MODE SW) (SS-1000 block)	OFF	ON (PLAYER)
1	POWER SW (CAM MODE SW) (SS-1000 block)	OFF	ON (CAMERA)
2	START/STOP SW (SS-1000 block)	OFF	ON
3	EJECT SW (FK-1000 block)	OFF	ON
4	CC DOWN SW (Mechanism chassis)	OFF (UP)	ON (DOWN)
5			
6			
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 49

Bit	Function	When bit value = 1	When bit value = 0
6	A/V OUT jack (FP-257 flexible)	Used	Not used
7	S VIDEO jack (FP-257 flexible)	Not used	Used

Using method:

1) Select page: 2, address: 49.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

6. Switch check (3)

(TRV model: CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)

Page 2	Address 45

Bit	Function	When bit value = 1	When bit value = 0
1	HEADPHONE jack (CF-1000 block)	Used	Not used

Using method:

1) Select page: 2, address: 45.
2) By discriminating the bit value of display data, the state of the switch can be discriminated.

7. Switch check (4)

Page 2	Address 60 to 65

Using method:

1) Select page: 2, address: 60 to 65.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data							
	00 to 0C	0D to 24	25 to 3F	40 to 5D	5E to 81	82 to AA	AB to D7	D8 to FF
60 (KEY AD0) (IC4803 ⑨③)	SUPER LASER LINK (FK-1000) *1	LIGHT (FK-1000) *2	STOP (FK-1000)	FF (FK-1000)				No key input
61 (KEY AD1) (IC4803 ⑨④)			PAUSE (FK-1000)	REW (FK-1000)	PLAY (FK-1000)			No key input
62 (KEY AD2) (IC4803 ⑨⑤)	MENU (CF-077 S002) (CF-1000) *4	EXPOSURE (CF-077 S004) (CF-1000) *4	MENU EXECUTE (CF-077 S006) (CF-1000) *4	TITLE (CF-077 S007) (CF-1000) *4	VOLUME + (CF-1000) *4	VOLUME – (CF-1000) *4	BACKLIGHT (CF-077 S009) (CF-1000) *4	No key input
63 (KEY AD3) (IC4803 ⑨⑥)		DATA (CF-077 S005) (CF-1000) *4				COUNTER RESET (CF-077 S008) (CF-1000) *4	PANEL CLOSE (S902) *3	PANEL OPEN (S902) *3
64 (KEY AD4) (IC4803 ⑨⑦)	TIME (CF-077 S003) (CF-1000) *4		END SEARCH (CF-1000) *4	DISPLAY (CF-1000) *4		FADER (CF-077 S011) (CF-1000) *4	FOCUS (CF-077 S010) (CF-1000) *4	No key input
65 (KEY AD5) (IC4803 ⑨⑧)	PANEL REVERSE (PR-10500) *3							PANEL NORMAL (PR-10500) *3

*1: LASER LINK model (CCD-TRV98)
*2: Video light model (CCD-TR618/TR618E/TR718E/TR728E/TR818/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)
*3: TRV model (CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)
*4: CF-1000 block: TRV model
CF-077 board: TR model

8. Record of Use check

Note: When replacing the drum assembly, initialize the data of address: A2 to A4.
When replacing the video light, initialize the data of address: E0 to E2.

Page 2	Address A2 to AA, E0 to E2

Address	Function		Remarks
A2	Drum rotation	Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
A3	counted time	Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
A4	(BCD code)	Minutes	
A5	User initial power	Year	After setting the clock, set the date of power on next
A6	on date	Month	
A7	(BCD code)	Day	
A8	Final condensation	Year	
A9	occurrence date	Month	
AA	(BCD code)	Day	
E0	Video light	Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
E1	counted time	Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
E2	(BCD code)	Minutes	

Using method:

1) The record of use data is displayed at page: 2, addresses: A2 to AA and E0 to E2.
Note: This data will be erased (reset) when the cabinet (R) assembly (VC-251 board CN709 (24P)) is removed.

Initializing method:

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

9. 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 cabinet (R) assembly (VC-251 board CN709 (24P)) is removed.

SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

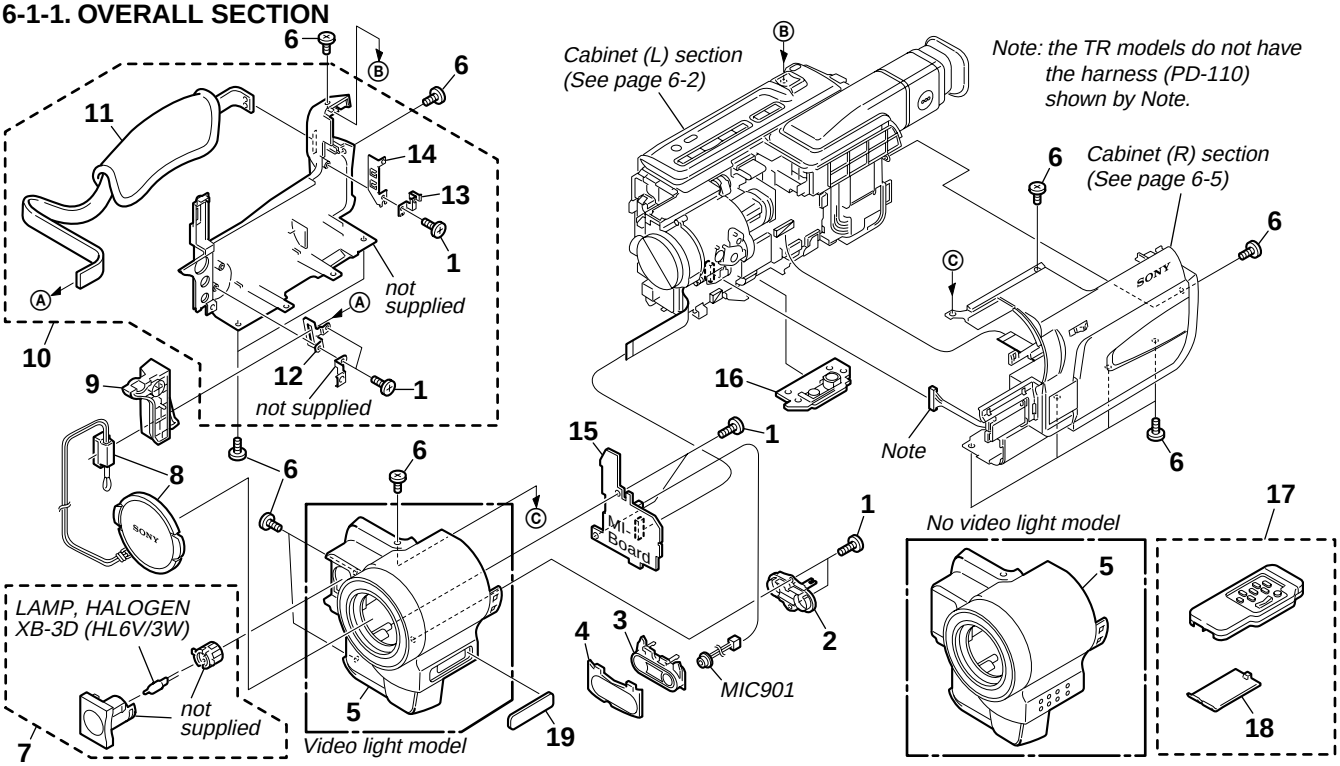
NOTE:

- -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
  CND : Canadian model
  HK : Hong Kong model
  KR : Korea model
  JE : Tourist model
  AUS : Australian model
  CN : Chinese model
  BR : Brazilian model
  AR : Argentina 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.

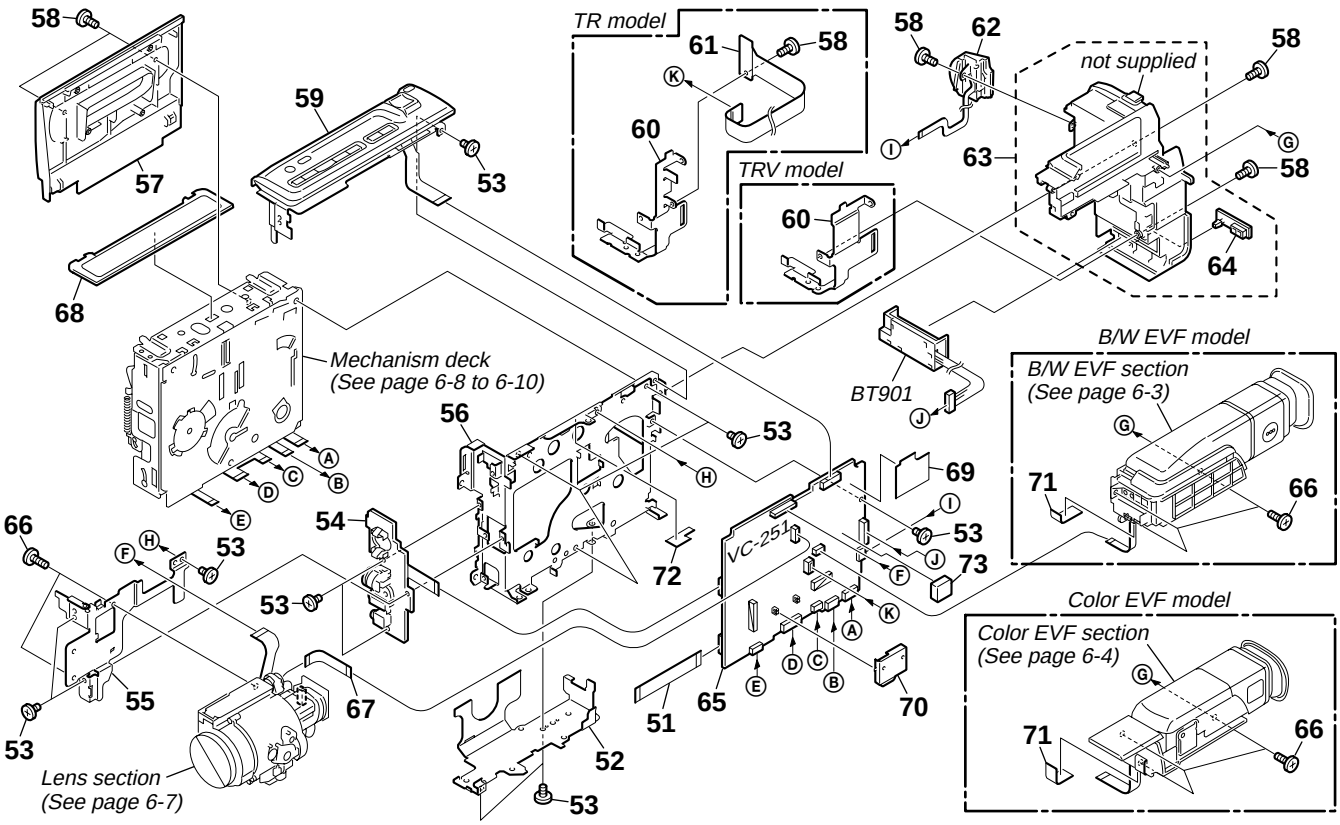
6-1-1. OVERALL SECTION



TR model :CCD-TR618/TR618E/TR718E/TR728E/TR818
Video light model :CCD-TR618/TR618E/TR718E/TR728E/ TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
No video light model :CCD-TR818

Ref. No.	Part No.	Description	Remarks
1	3-948-339-61	TAPPING	
2	3-065-468-01	RETAINER (REAR), MICROPHONE	
3	3-065-467-11	RETAINER (FRONT), MICROPHONE	
* 4	3-065-470-01	CUSHION (10), MICROPHONE	
5	X-3951-213-1	PANEL(10) ASSY, F (TRV88)	
5	X-3951-214-1	PANEL(10) ASSY, F (TR728E)	
5	X-3951-215-1	PANEL(10) ASSY, F (TR818)	
5	X-3951-216-1	PANEL(10) ASSY, F (TRV98)	
5	X-3951-217-1	PANEL(10) ASSY, F (TR618/TR618E)	
5	X-3951-218-1	PANEL(10) ASSY, F (TRV59E)	
5	X-3951-219-1	PANEL(10) ASSY, F (TR718E)	
5	X-3951-221-1	PANEL(10) ASSY, F (TRV68)	
5	X-3951-368-1	PANEL(10) ASSY, F (TRV78/TRV78E/TRV98E)	
5	X-3951-383-1	PANEL(10) ASSY, F (TRV49/TRV49E)	
5	X-3951-384-1	PANEL(10) ASSY, F (TRV58/TRV58E)	
6	3-067-347-01	MI SCREW M2 (H)	
7	1-518-723-21	LIGHT, VIDEO (TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
8	X-3949-376-1	CAP(N) ASSY, LENS	
9	3-065-433-01	COVER(10), JACK	
10	X-3951-193-1	CABINET L (10) ASSY	
11	3-052-815-01	BELT(ES), GRIP	
* 12	3-065-455-01	STOPPER (FRONT) (10), BELT	
* 13	3-065-457-01	PLATE REAR (10), L GROUND	
14	3-058-622-01	STOPPER (REAR), BELT	
15	A-7074-659-A	MI-040 (L0) BOARD, COMPLETE (TR618/TR618E/TR718E)	
15	A-7074-661-A	MI-040 (MM0) BOARD, COMPLETE (TR818)	
15	A-7074-665-A	MI-041 (MMI) BOARD, COMPLETE (TRV98)	
15	A-7074-682-A	MI-041 (MM) BOARD, COMPLETE (TRV78/TRV78E/TRV98E)	
15	A-7074-683-A	MI-040 (0) BOARD, COMPLETE (TR728E)	
15	A-7074-700-A	MI-041 (ML) BOARD, COMPLETE (TRV58/TRV58E)	
15	A-7074-707-A	MI-041 (MML) BOARD, COMPLETE (TRV68/TRV88)	
15	A-7074-719-A	MI-041 (M) BOARD, COMPLETE (TRV49/TRV49E/TRV59E)	
16	3-987-717-01	SCREW, TRIPOD	
17	1-467-574-21	REMOTE COMMANDER (RMT-708) (TR728E/TRV49/TRV49E/TRV59E/TRV78/TRV78E/TRV98/TRV98E)	
18	3-958-131-01	LID,BATTERY CASE (FOR RMT-708)	
19	3-065-464-11	WINDOW (12), LCD (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
MIC901	1-542-312-11	MICROPHONE	

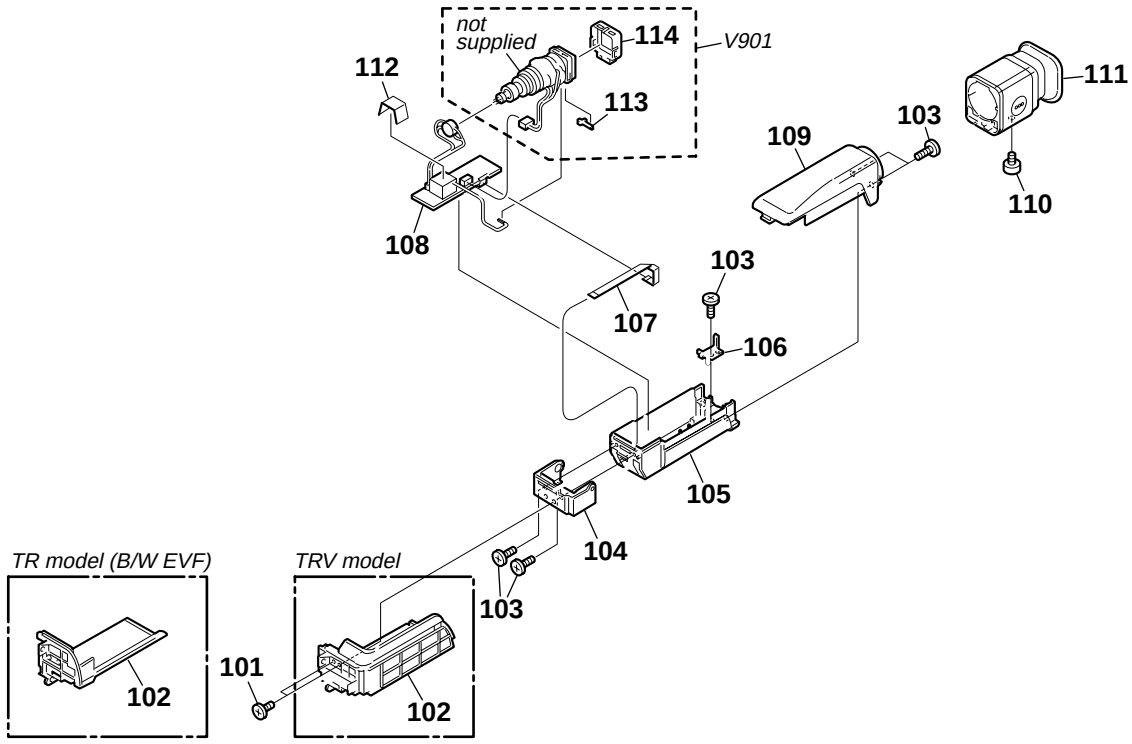
6-1-2. CABINET (L) SECTION



TR model :CCD-TR618/TR618E/TR718E/TR728E/TR818
TRV model :CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
B/W EVF model :CCD-TR618/TR618E/TR718E/TR728E/ TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
Color EVF model :CCD-TR818

Ref. No.	Part No.	Description	Remarks
51	1-680-203-11	FP-263 FLEXIBLE BOARD	
* 52	3-065-428-01	FRAME B (10), MD	
53	3-968-729-51	SCREW (M2), LOCK ACE, P2	
54	1-680-198-11	FP-257 FLEXIBLE BOARD	
* 55	3-065-429-01	FRAME (10), LENS	
* 56	3-065-427-01	FRAME A (10), MD	
57	X-3951-228-1	LID(10) ASSY, CASSETTE	
58	3-067-347-01	MI SCREW M2 (H)	
59	1-476-424-11	SWITCH BLOCK, CONTROL (FK-1000) (TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/ TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98E)	
59	1-476-424-21	SWITCH BLOCK, CONTROL (FK-1000)(TR818)	
59	1-476-424-51	SWITCH BLOCK, CONTROL (FK-1000)(TRV98)	
60	3-065-421-01	SHEET METAL (LOWER)(12), STRAP (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
60	3-065-422-01	SHEET METAL (LOWER)(10), STRAP (TR618/TR618E/TR718E/TR728E/TR818)	
61	1-680-202-11	FP-262 FLEXIBLE BOARD (TR618/TR618E/TR718E/TR728E/TR818)	
62	1-476-423-11	SWITCH BLOCK, CONTROL (SS-1000)	
63	X-3951-196-1	PANEL (12) ASSY, BATTERY (TRV49/TRV49E/TRV58:US,CND,E,AR/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98:US,CND,E,HK,KR,JE/TRV98E)	
63	X-3951-198-1	PANEL (10) ASSY, BATTERY (TR618/TR618E/TR718E/TR728E/TR818:US,CND,E,AR)	
63	X-3951-470-1	PANEL (B)(10) ASSY, BATTERY (TR818:BR)	
63	X-3951-471-1	PANEL (B)(12) ASSY, BATTERY (TRV58:BR/TRV98:BR)	
64	3-987-656-01	LID,JACK	
65	A-7096-402-A	VC-251 (N-B) BOARD, COMPLETE (SERVICE) (TR618)	
65	A-7096-403-A	VC-251 (N-C) BOARD, COMPLETE (SERVICE) (TR818)	
65	A-7096-404-A	VC-251 (P-B) BOARD, COMPLETE (SERVICE) (TR618E/TR718E/TR728E)	
65	A-7096-405-A	VC-251 (N-VMMB) BOARD, COMPLETE (SERVICE)(TRV68/TRV78/TRV88/TRV98)	
65	A-7096-406-A	VC-251 (P-VMMB) BOARD, COMPLETE (SERVICE)(TRV78E/TRV98E)	
65	A-7096-409-A	VC-251 (N-VB) BOARD, COMPLETE (SERVICE) (TRV49/TRV58)	
65	A-7096-456-A	VC-251 (P-VB) BOARD, COMPLETE (SERVICE) (TRV49E/TRV58E/TRV59E)	
66	3-948-339-61	TAPPING	
67	1-680-200-11	FP-259 FLEXIBLE BOARD	
68	X-3950-697-1	LID ASSY, LS	
* 69	3-065-654-01	SHIELD (10), DD	
* 70	3-065-432-01	CASE (10), RP SHIELD	
71	3-941-343-21	TAPE(A)	
72	3-067-254-01	SHEET (10), ABSORBING	
* 73	3-062-053-01	SPACER, PC	
BT901	1-694-384-11	TERMINAL BOARD, BATTERY	

6-1-3. B/W EVF SECTION (TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)

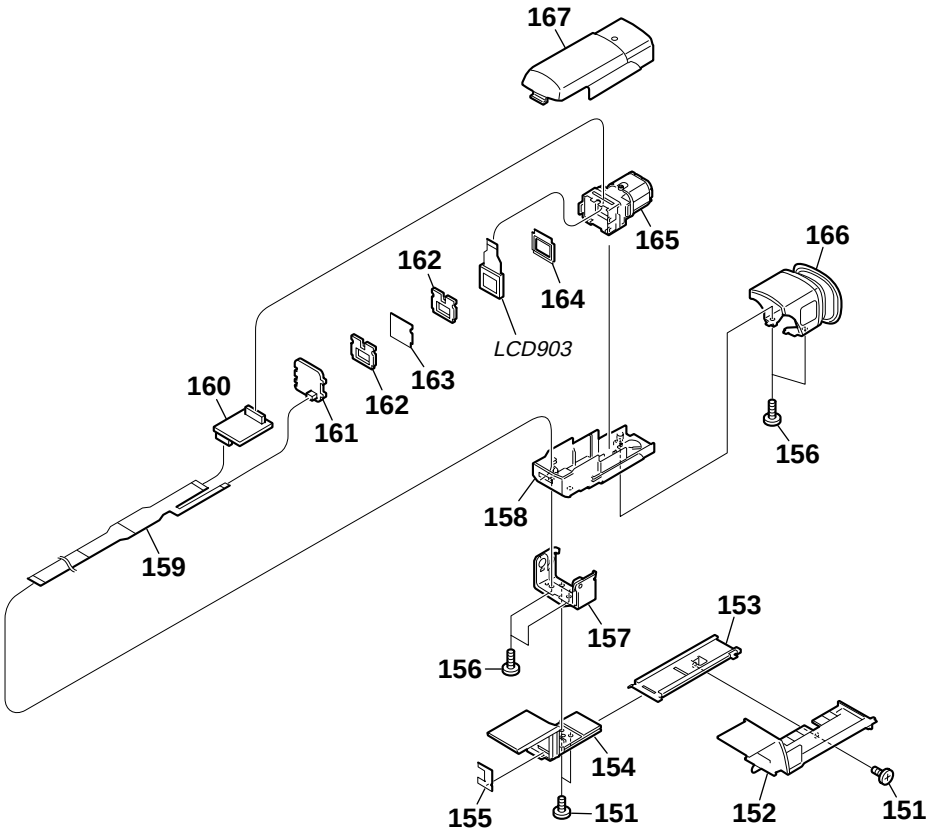


TR model (B/W EVF) :CCD-TR618/TR618E/TR718E/TR728E
TRV model :CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E

Ref. No.	Part No.	Description	Remarks
101	3-061-794-01	SCREW, LOOSE STOPPER	
102	3-065-481-01	BASE B (12), VF (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
102	3-065-482-01	BASE B (10), VF (TR618/TR618E/TR718E/TR728E)	
103	3-948-339-81	TAPPING	
104	X-3950-230-1	HINGE ASSY, VF	
105	3-058-644-11	CABINET (LOWER) (B) (100), EVF (TR618/TR618E/TR718E/TR728E)	
105	3-065-480-01	CABINET LOWER B (12), EVF (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
106	3-053-681-01	TALLY, EVF	
107	1-792-454-11	CABLE, FLEXIBLE FLAT (FFC-289)	
108	A-7073-838-A	VF-129 (N) BOARD, COMPLETE (TR618/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98)	
108	A-7073-855-A	VF-129 (P) BOARD, COMPLETE (TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E/TRV78E/TRV98E)	
109	X-3951-202-1	CABINET UPPER B (12) ASSY, EVF (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
109	X-3951-203-1	CABINET UPPER B (10) ASSY, EVF (TR618/TR618E/TR718E/TR728E)	
110	3-975-898-01	SCREW (T), F LOCK	
111	X-3949-329-1	FINDER (S) ASSY	
112	3-941-343-21	TAPE (A)	
113	3-709-272-01	COVER, HIGH VOLTAGE	
114	3-709-273-01	MASK, CRT	
⚠V901	1-452-673-61	CRT ASSY (M01KXX90WB)	

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.

6-1-4. COLOR EVF SECTION (TR818)

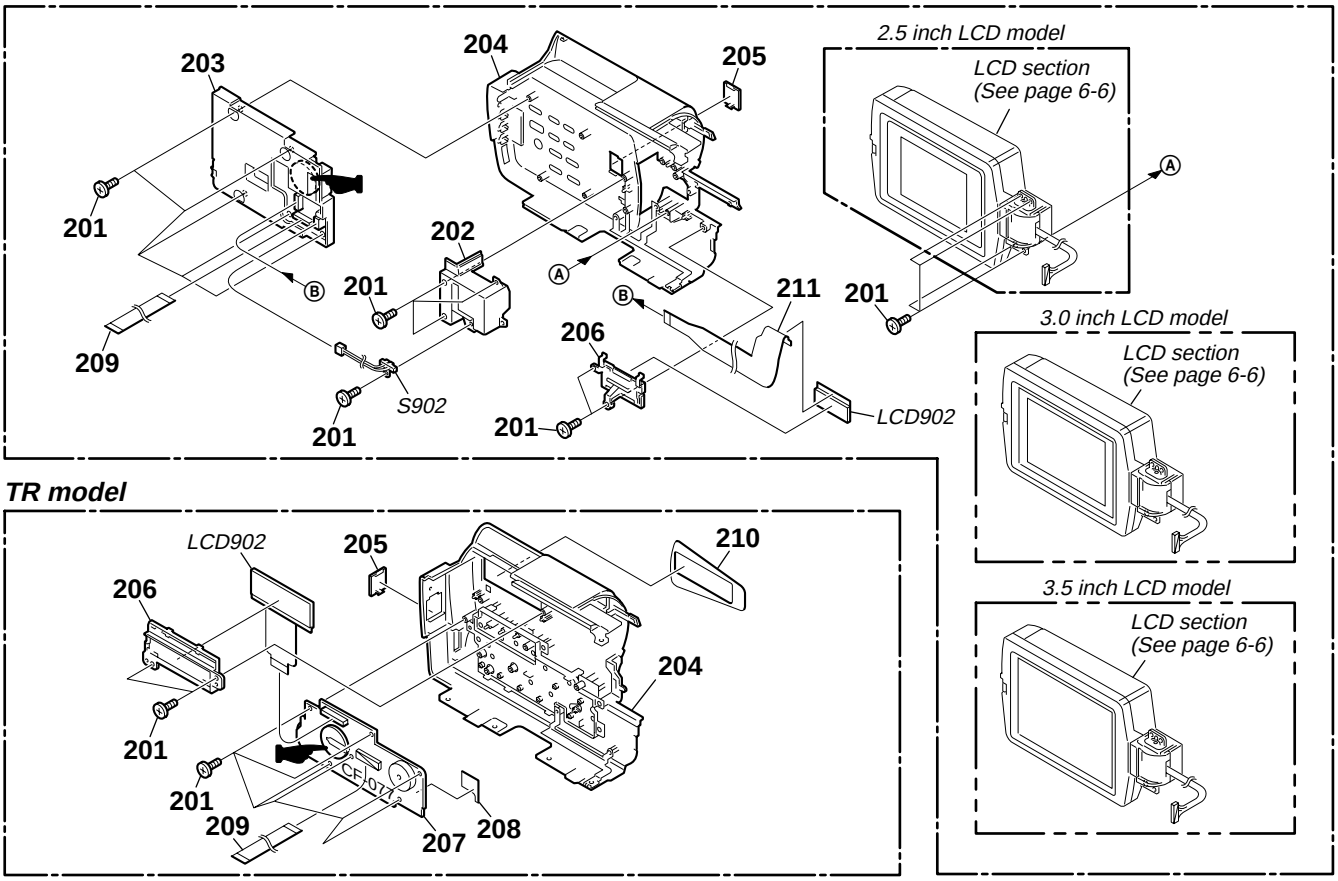


Ref. No.	Part No.	Description	Remarks
151	3-067-347-01	MI SCREW M2 (H)	
152	3-065-484-01	BASE C (10), VF	
153	3-065-483-01	PLATE (10), SLIDE FIXED	
154	X-3951-205-1	BASE (10) ASSY, SLIDE	
* 155	3-058-640-01	RETAINER (100), HARNESS	
156	3-948-339-81	TAPPING	
157	X-3950-230-1	HINGE ASSY, VF	
158	X-3951-204-1	CABINET LOWER C (10) ASSY, EVF	
159	1-676-299-11	FP-151 FLEXIBLE BOARD	

Ref. No.	Part No.	Description	Remarks
160	A-7074-193-A	VF-141 BOARD, COMPLETE	
161	A-7074-192-A	LB-62 BOARD, COMPLETE	
* 162	3-058-234-02	CUSHION (2) (97), LCD	
163	3-058-233-01	ILLUMINATOR (97), BL	
* 164	3-058-232-01	CUSHION (1) (97), LCD	
165	X-3950-101-1	LENS (C) (97) ASSY, VF	
166	X-3950-227-1	CABINET (REAR) (100) ASSY, EVF	
167	3-058-638-11	CABINET (UPPER) (100), EVF	
LCD903	8-753-028-47	LCX032AN-J	

6-1-5. CABINET (R) SECTION

TRV model

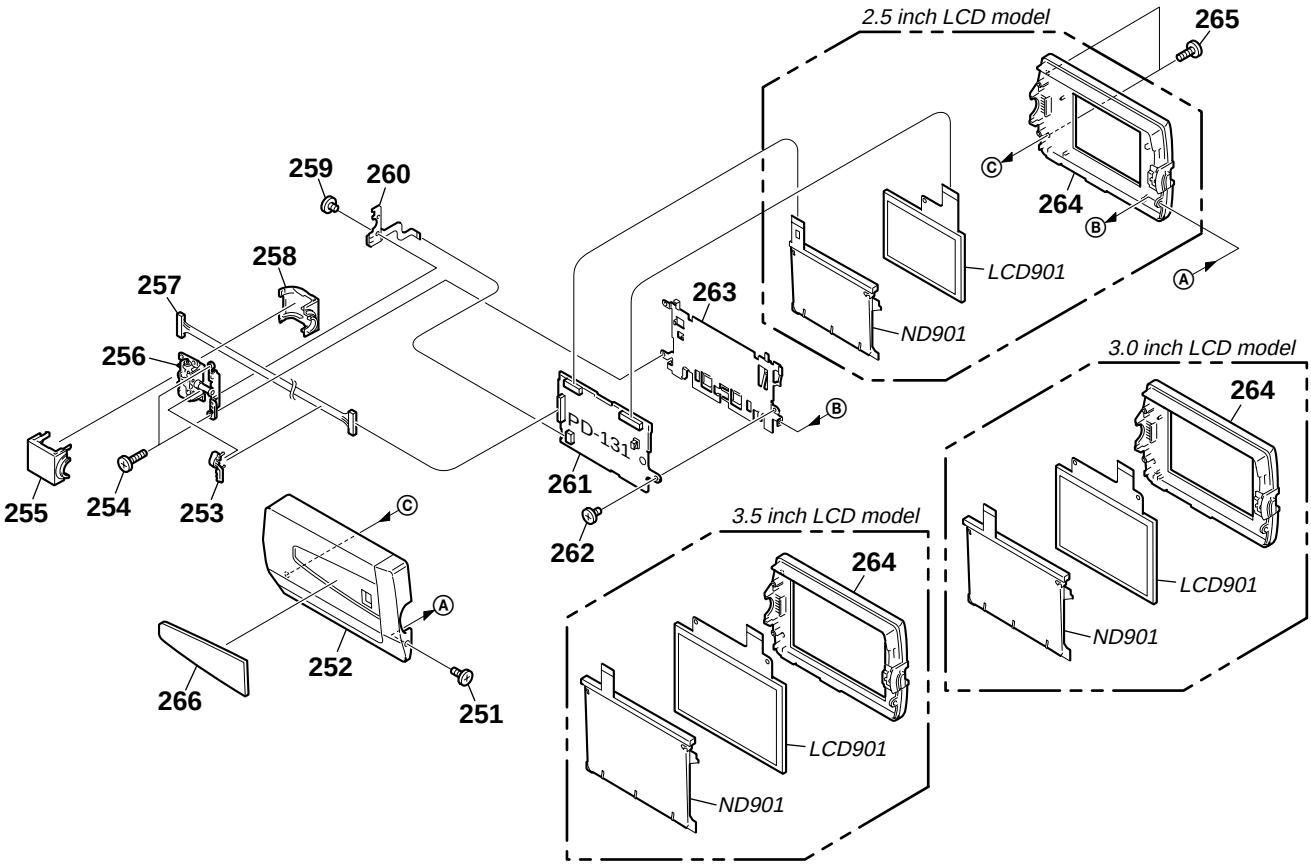


: BT001(Lithium battary) CF board on the mount position. (See page 4-36/TR model)
[In the TRV model, the printed wiring board of the control switch block (CF-1000) on which lithium battery is mounted, is not shown.]

TR model :CCD-TR618/TR618E/TR718E/TR728E/TR818
TRV model :CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E
2.5 inch LCD model :CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E
3.0 inch LCD model :CCD-TRV88
3.5 inch LCD model :CCD-TRV98/TRV98E

Ref. No.	Part No.	Description	Remarks
201	3-948-339-61	TAPPING	
202	3-065-436-01	BLIND (12), HINGE (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
203	1-476-425-11	SWITCH BLOCK, CONTROL (CF-1000) (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
204	X-3951-224-1	CABINET R (12) ASSY (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
204	X-3951-226-1	CABINET R (10) ASSY (TR618/TR618E/TR718E/TR728E/TR818)	
205	3-059-539-11	LID(103P), CPC	
206	3-065-451-01	HOLDER (12), LCD (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
206	3-065-452-01	HOLDER (10), LCD (TR618/TR618E/TR718E/TR728E/TR818)	
207	A-7074-663-A	CF-077 BOARD, COMPLETE (TR618/TR618E/TR718E/TR728E/TR818)	
* 208	3-065-453-01	SHEET (10), MUFFLE (TR618/TR618E/TR718E/TR728E/TR818)	
209	1-757-397-21	CABLE, FLEXIBLE FLAT (FFC-295)	
210	3-065-434-01	WINDOW (10), LCD (TR818)	
210	3-065-434-11	WINDOW (10), LCD (TR728E)	
210	3-065-434-21	WINDOW (10), LCD (TR618)	
210	3-065-434-31	WINDOW (10), LCD (TR618E)	
210	3-065-434-41	WINDOW (10), LCD (TR718E)	
211	1-680-201-11	FP-260 FLEXIBLE BOARD (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
LCD902	1-803-844-91	DISPLAY PANEL, LIQUID CRYSTAL (TR618/TR618E/TR718E/TR728E/TR818)	
LCD902	1-804-255-11	DISPLAY PANEL, LIQUID CRYSTAL (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
S902	1-771-848-11	SWITCH, PUSH (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	

6-1-6. LCD SECTION (TRV MODEL)
(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)



2.5 inch LCD model :CCD-TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E
3.0 inch LCD model :CCD-TRV88
3.5 inch LCD model :CCD-TRV98/TRV98E

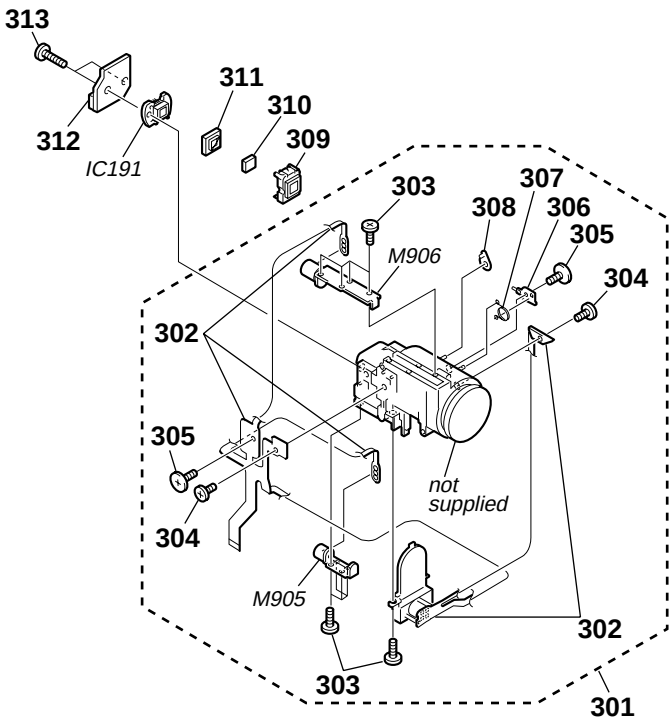
Ref. No.	Part No.	Description	Remarks
251	3-067-347-01	MI SCREW M2 (H)	
252	3-065-474-11	CABINET C (12), P	
* 253	3-058-672-01	CLAMP, HARNESS	
254	3-948-339-31	SCREW, TAPPING	
255	3-065-477-11	COVER C (12), HINGE	
256	X-3951-206-1	HINGE (12) ASSY	
257	1-960-975-11	HARNESS (PD-110)	
258	3-065-478-01	COVER M (12), HINGE	
259	4-974-725-01	SCREW (M1.7X2.5), P	
260	1-418-802-11	SWITCH BLOCK, CONTROL (PR-10000)	
261	A-7074-667-A	PD-131 (S-3.5) BOARD, COMPLETE (TRV98/TRV98E)	
261	A-7074-680-A	PD-131 (S-2.5) BOARD, COMPLETE (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E)	
261	A-7074-701-A	PD-131 (S-3.0) BOARD, COMPLETE (TRV88)	
262	3-968-729-51	SCREW (M2), LOCK ACE, P2	
263	3-065-475-01	FRAME (12), PANEL (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E)	
* 263	3-065-475-11	FRAME (12), PANEL (TRV88/TRV98/TRV98E)	
264	X-3951-199-1	CABINET M (12) ASSY, P (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E)	
264	X-3951-200-1	CABINET M (12) ASSY, P (TRV98/TRV98E)	
264	X-3951-201-1	CABINET M (12) ASSY, P (TRV88)	
265	3-948-339-81	TAPPING	

Ref. No.	Part No.	Description	Remarks
266	3-065-435-01	PLATE (12), PANEL ORNAMENTAL (TRV98)	
266	3-065-435-21	PLATE (12), PANEL ORNAMENTAL (TRV88)	
266	3-065-435-31	PLATE (12), PANEL ORNAMENTAL (TRV78)	
266	3-065-435-41	PLATE (12), PANEL ORNAMENTAL (TRV59E)	
266	3-065-435-51	PLATE (12), PANEL ORNAMENTAL (TRV68)	
266	3-065-435-61	PLATE (12), PANEL ORNAMENTAL (TRV98E)	
266	3-065-435-81	PLATE (12), PANEL ORNAMENTAL (TRV78E)	
266	3-065-529-21	PLATE (12), PANEL ORNAMENTAL (TRV58)	
266	3-065-529-31	PLATE (12), PANEL ORNAMENTAL (TRV49)	
266	3-065-529-41	PLATE (12), PANEL ORNAMENTAL (TRV58E)	
266	3-065-529-51	PLATE (12), PANEL ORNAMENT (TRV49E)	
LCD901	1-803-852-31	INDICATOR MODULE LIQUID CRYSTAL (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E)	
LCD901	1-803-854-21	INDICATOR MODULE LIQUID CRYSTAL(TRV88)	
LCD901	1-803-855-21	INDICATOR MODULE LIQUID CRYSTAL (TRV98/TRV98E)	
⚠ND901	1-517-752-41	TUBE, FLUORESCENT,COLD CATHODE (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E)	
⚠ND901	1-517-855-31	TUBE, FLUORESCENT,COLD CATHODE (TRV98/TRV98E)	
⚠ND901	1-517-856-31	TUBE, FLUORESCENT,COLD CATHODE (TRV88)	

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.

6-1-7. LENS SECTION

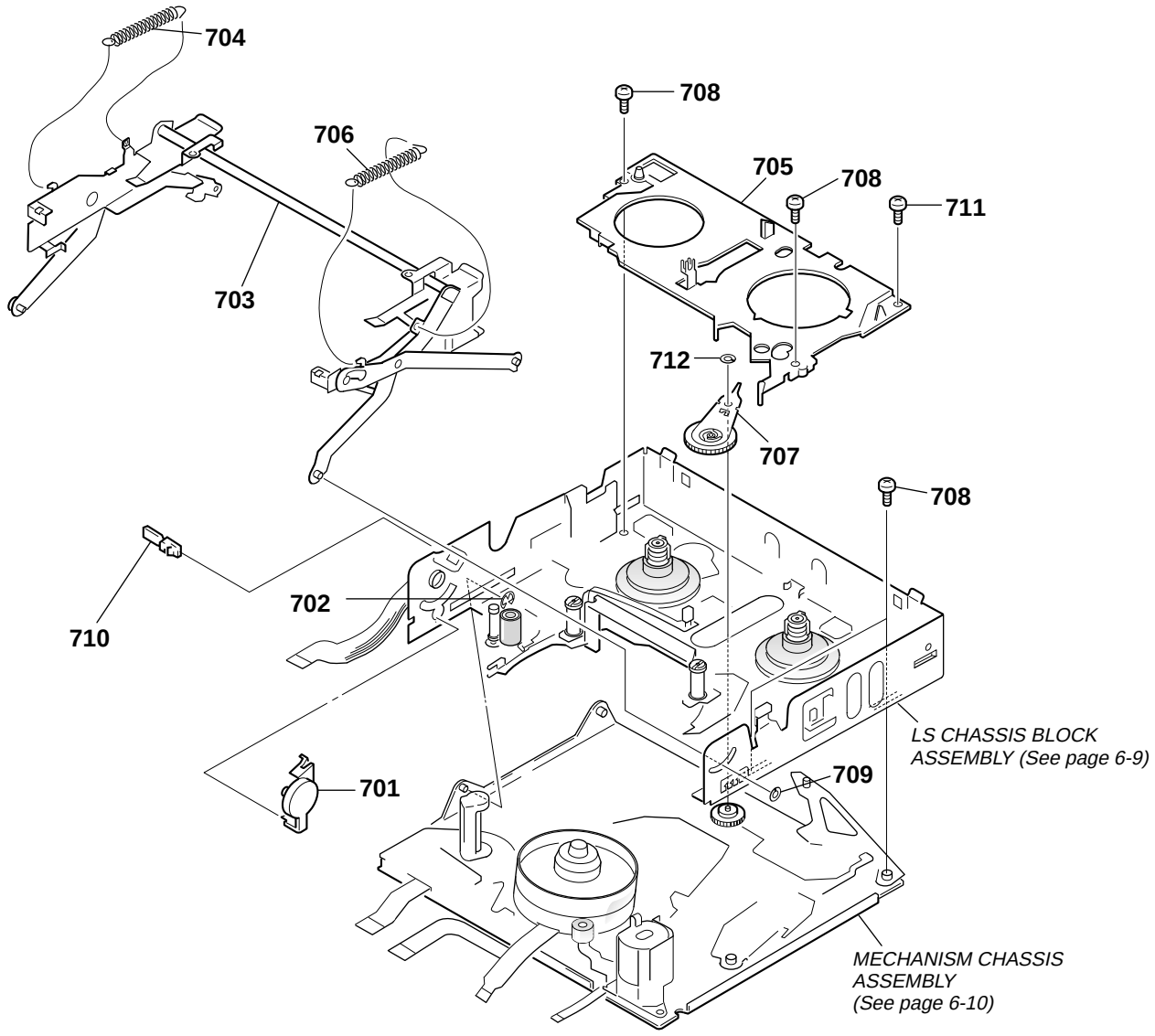


Be sure to read “Precautions upon replacing CCD imager” on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description	Remarks
301	8-848-729-01	DEVICE, LENS LSV-630A	
302	X-3949-355-2	FLEXIBLE ASSY (630), IRIS	
303	3-713-791-41	SCREW (M1.7X5), TAPPING, P2	
304	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2	
305	3-056-022-01	TAPPING (B1.7X3.5), HEAD	
306	3-053-827-01	LEVER, IR	
307	3-053-800-01	SPRING, RETURN	
308	3-053-799-01	GEA, IR	
309	3-978-981-11	ADAPTOR (FK), CCD FITTING	
310	1-758-084-21	FILTER BLOCK, OPTICAL (TR618/TR618E/TR718E/TR728E/TRV49/ TRV49E/TRV58/TRV58E/TRV59E)	
310	1-758-133-21	FILTER BLOCK, OPTICAL (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
311	3-953-817-01	RUBBER (F), SEAL (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
311	3-968-054-11	RUBBER (FM), SHIELD (TR618/TR618E/TR718E/TR728E/TRV49/ TRV49E/TRV58/TRV58E/TRV59E)	

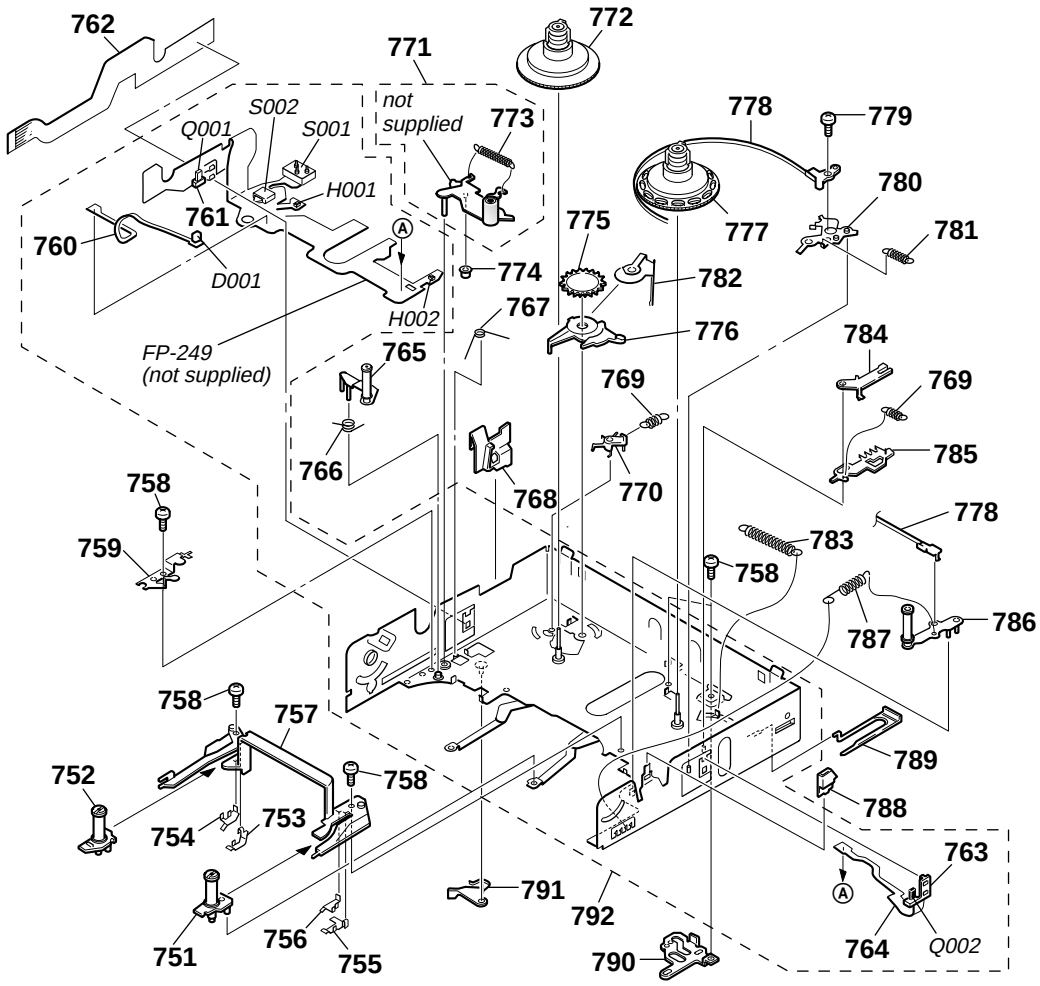
Ref. No.	Part No.	Description	Remarks
312	A-7074-658-A	CD-286 BOARD, COMPLETE (TR618/TR618E/TR718E/TR728E)	
312	A-7074-662-A	CD-286 (MM) BOARD, COMPLETE (TR818)	
312	A-7074-666-A	CD-281 (MM) BOARD, COMPLETE (TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
312	A-7074-698-A	CD-281 BOARD, COMPLETE (TRV49/TRV49E/TRV58/TRV58E/TRV59E)	
313	3-318-203-11	SCREW (B1.7X6), TAPPING	
IC191	A-7031-040-A	CCD BLOCK ASSY (TR618/TRV49/TRV58)	
IC191	A-7031-043-A	CCD BLOCK ASSY (TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E)	
IC191	A-7031-049-A	CCD BLOCK ASSY (TRV78E/TRV98E)	
IC191	A-7031-207-A	CCD BLOCK ASSY (TR818/TRV68/TRV78/TRV88/TRV98)	
M905	1-763-262-11	MOTOR, STEPPING F630 (FOCUS)	
M906	1-763-046-21	MOTOR, STEPPING Z600 (ZOOM)	

6-1-8. CASSETTE COMPARTMENT ASSEMBLY



Ref. No.	Part No.	Description	Remarks
701	A-7040-421-A	DAMPER ASSY	
702	7-624-102-04	STOP RING 1.5, TYPE -E	
703	X-3949-153-2	CASSETTE COMPARTMENT ASSY	
704	3-965-587-03	SPRING(POWER TENSION),TENSION	
705	3-989-479-01	RETAINER (2), GOOSENECK	
706	3-973-268-01	SPRING(POWER TENSION),TENSION	
707	X-3945-399-1	GEAR ASSY, GOOSENECK	
708	3-947-503-01	SCREW (M1.4)	
709	3-979-686-01	WASHER, STOPPER	
710	3-971-076-01	FASTENER, D	
711	3-976-055-01	SCREW (M1.4X1)	
712	3-331-007-21	WASHER	

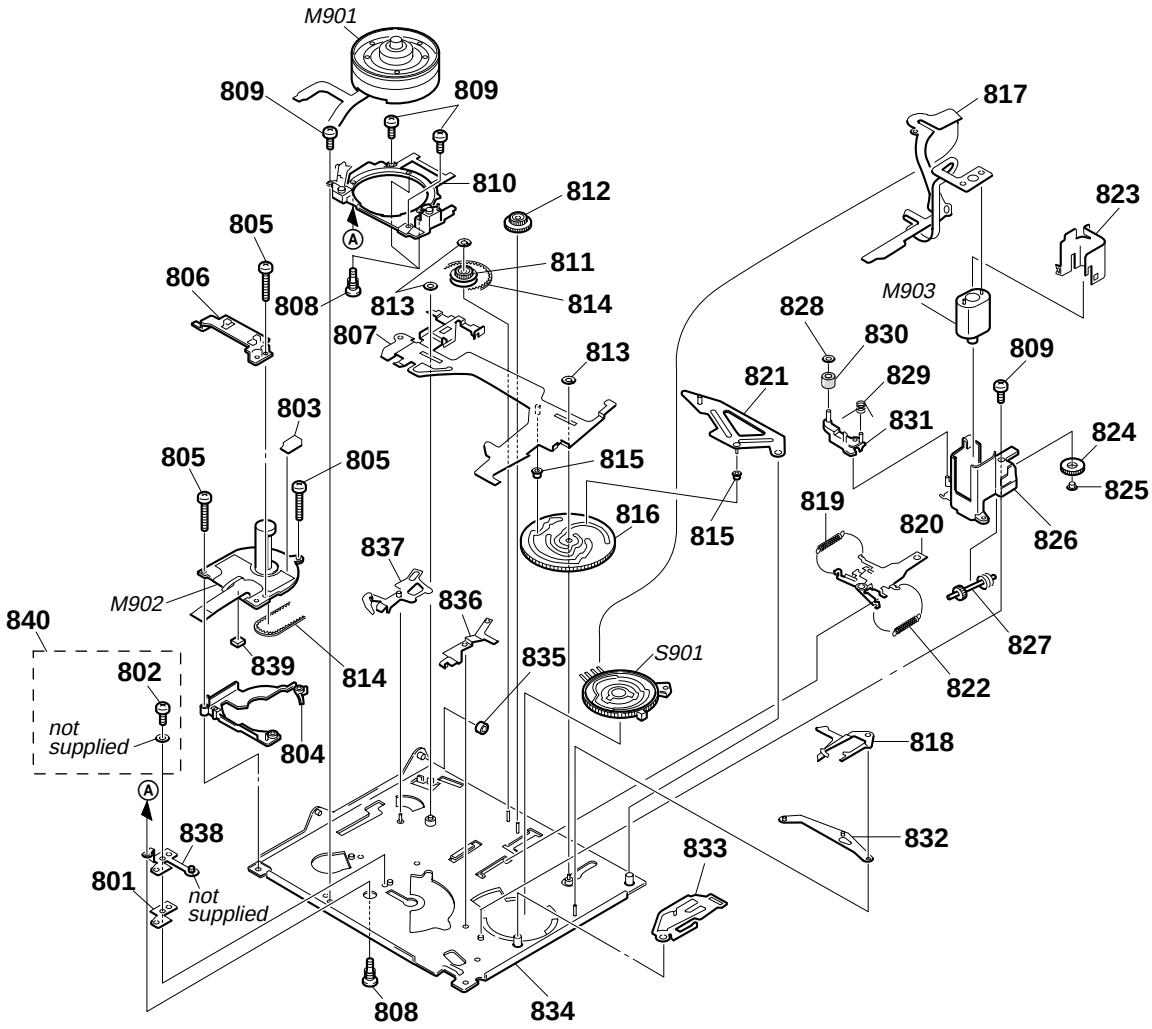
6-1-9. LS CHASSIS BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remarks
751	A-7040-419-A	BASE (S) BLOCK ASSY, GUIDE	
752	A-7040-418-B	BASE (T) BLOCK ASSY, GUIDE	
753	3-965-559-01	STOPPER (T)	
754	3-965-557-01	STOPPER (T), GB	
755	3-965-558-01	STOPPER (S)	
756	3-965-556-01	STOPPER (S), GB	
757	3-965-553-01	RAIL, GUIDE	
758	3-947-503-01	SCREW (M1.4)	
759	3-965-573-01	RETAINER, TG4	
760	1-658-213-11	FP-355 FLEXIBLE BOARD	
761	3-965-552-01	HOLDER, SENSOR (T)	
762	1-657-786-13	FP-221 FLEXIBLE PRINT BOARD	
763	3-965-551-01	HOLDER, SENSOR (S)	
764	1-658-214-11	FP-356 FLEXIBLE BOARD	
765	A-7040-417-A	ARM BLOCK ASSY, TG4	
766	3-965-574-01	SPRING (RETURN, TG4), TORSION	
767	3-965-575-01	SPRING (PINCH), TORSION	
768	3-965-568-11	GUIDE, LOCK	
769	3-965-562-01	SPRING (RATCHET), TENSION	
770	3-965-581-03	RATCHET, T	
771	X-3949-380-1	ARM ASSY (E), PINCH	
772	X-3945-398-6	DECK ASSY, REEL, T	
773	3-965-648-01	SPRING (PINCH), TENSION	
774	3-965-579-01	ROLLER, PINCH PRESS	
775	3-965-563-01	GEAR, T SOFT	

Ref. No.	Part No.	Description	Remarks
776	3-965-565-01	CLAW, T SOFT	
777	X-3945-397-4	DECK ASSY, REEL, S	
778	X-3945-396-1	BAND ASSY, TENSION REGULATOR	
779	3-945-756-01	SCREW (M1.4X3)	
780	3-965-583-01	ARM, RVS	
781	3-965-580-01	SPRING (ARM, RVS), TENSION	
782	3-966-384-01	SPRING, T SOFT	
783	3-965-578-01	SPRING, TENSION COIL	
784	3-965-560-01	RATCHET, S	
785	3-965-561-01	PLATE, RELEASE, S RATCHET	
786	X-3945-395-1	ARM ASSY, TG1	
787	3-965-576-01	SPRING (TG1), TENSION	
788	3-965-567-01	LID OPEN	
789	3-965-566-01	COVER, LS GUIDE	
* 790	3-965-577-01	PLATE, CAM, LS	
791	3-965-569-01	ARM, EJ	
792	A-7018-245-B	CHASSIS (S1) ASSY, LS	
D001	8-719-988-42	DIODE GL453 (TAPE LED)	
H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL SENSOR)	
H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL SENSOR)	
Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE TOP)	
Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE END)	
S001	1-692-614-11	SWITCH, PUSH (3KEY)	(Hi8 MP, ME/MP, REC PROOF)
S002	1-572-688-11	SWITCH, PUSH (1KEY) (C.C.LOCK)	

6-1-10. MECHANISM CHASSIS ASSEMBLY



Ref. No.	Part No.	Description	Remarks
801	3-975-900-03	SPACER, GROUND	
802	3-965-550-02	SCREW (M1.7X1.6)	
803	1-657-785-11	FP-248 FLEXIBLE BOARD	
804	3-054-404-01	SPACER, CAPSTAN	
805	3-965-549-01	SCREW (M1.4 X 6.5)	
806	3-966-349-01	HOLDER, FLEXIBLE	
807	3-971-644-02	SLIDER (2), M	
808	X-3947-895-1	SCREW ASSY, DRUM ATTACHED	
809	3-947-503-01	SCREW (M1.4)	
810	A-7096-321-A	DRUM BASE BLOCK ASSY (BA)	
811	3-965-527-01	GEAR, CHANGE	
812	3-965-544-01	GEAR, RELAY	
813	3-331-007-21	WASHER	
814	3-965-546-01	BELT, TIMING	
815	3-965-533-01	ROLLER, LS	
816	3-965-528-01	GEAR, CAM	
817	1-657-784-11	FP-220 FLEXIBLE BOARD	
818	3-965-529-01	PLATE, REGULATOR, TENSION	
819	3-965-536-01	SPRING (LIMITTER ARM T), COIL	
820	X-3945-388-1	SLIDER ASSY, GL	
821	3-965-532-21	ARM, LS	
822	3-965-535-01	SPRING (LIMITTER ARM S), COIL	
823	3-965-542-01	SHIELD, MOTOR	

Ref. No.	Part No.	Description	Remarks
824	3-965-539-01	GEAR (A)	
825	3-965-538-01	SLEEVE, MOTOR HOLDER	
826	3-965-540-01	HOLDER, MOTOR	
827	3-965-541-01	SHAFT, WORM	
828	3-321-393-01	WASHER, STOPPER	
829	3-965-724-01	SPRING (RETURN, HC), TORSION	
830	A-7040-423-A	ROLLER BLOCK ASSY, HC	
831	X-3945-407-1	ARM ASSY, HC ROLLER	
832	3-965-531-01	ARM, GL	
833	3-965-530-01	PLATE (2), REGULATOR, TENSION	
834	X-3949-589-3	CHASSIS ASSY, MECHANICAL	
835	3-965-526-02	ROLLER, LS GUIDE	
836	3-965-547-01	ARM, HC DRIVING	
837	3-965-534-01	PLATE, PRESS, PINCH	
838	3-974-320-02	GROUND (IM), SHAFT	
839	3-987-953-01	SPACER, RUBBER	
840	X-3947-398-1	SCREW ASSY, M1.7 PW	
S901	1-762-436-15	SWITCH, ROTARY (ENCODER)	
M901	A-7048-953-A	DRUM BLOCK ASSY (DGH-0F0B-R) (NTSC)	
M901	A-7048-955-A	DRUM BLOCK ASSY (DGH-0F1B-R) (PAL)	
M902	8-835-531-32	MOTOR, DC SCE-0601A/C-NP (CAPSTAN)	
M903	X-3945-401-1	MOTOR ASSY, DC (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
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  CND : Canadian model
  HK : Hong Kong model
  KR : Korea model
  JE : Tourist model
  AUS : Australian model
  CN : Chinese model
  BR : Brazilian model
  AR : Argentina 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.

Ref. No.	Part No.	Description			Remarks
	A-7074-658-A	CD-286 BOARD, COMPLETE (TR618/TR618E/TR718E/TR728E)			
		**********			
	A-7074-662-A	CD-286 BOARD, COMPLETE (TR818)			
		**********			
	A-7074-666-A	CD-281 BOARD, COMPLETE (TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
		**********			
	A-7074-698-A	CD-281 BOARD, COMPLETE (TRV49/TRV49E/TRV58/TRV58E/TRV59E)			
		**********			
					(Ref.No.;1000 Series)
		(IC191 is not included in this mounted board)			
		< CAPACITOR >			
C191	1-126-395-11	ELECT	22uF	20%	16V
C195	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C196	1-128-994-21	ELECT CHIP	47uF	20%	10V
		< CONNECTOR >			
CN191	1-766-344-21	CONNECTOR, FFC/FPC 14P			
		< IC >			
IC191	A-7031-040-A	CCD BLOCK ASSY (TR618/TRV49/TRV58)			
IC191	A-7031-043-A	CCD BLOCK ASSY (TR618E/TR718E/TR728E/TRV49E/TRV58E/TRV59E)			
IC191	A-7031-049-A	CCD BLOCK ASSY (TRV78E/TRV98E)			
IC191	A-7031-207-A	CCD BLOCK ASSY (TR818/TRV68/TRV78/TRV88/TRV98)			
		< COIL >			
L191	1-469-528-91	INDUCTOR	100uH		
		< TRANSISTOR >			
Q191	8-729-117-73	TRANSISTOR	2SC4178-F13F14-T1		
		< RESISTOR >			
R191	1-216-797-11	METAL CHIP	10	5%	1/16W
R192	1-216-864-91	SHORT	0		
R193	1-216-833-11	METAL CHIP	10K	5%	1/16W
R195	1-216-864-91	SHORT	0		
R198	1-216-809-11	METAL CHIP	100	5%	1/16W
		(TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E)			

Be sure to read "Precautions upon replacing CCD imager" on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description			Remarks
R198	1-216-864-91	SHORT	0		
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
	A-7074-663-A	CF-077 BOARD, COMPLETE (TR618/TR618E/TR718E/TR728E/TR818)			
		**********			
					(Ref.No.;1000 Series)
		< BATTERY >			
BT001	1-756-146-11	BATTERY, LITHIUM (SECONDARY)			
		< BUZZER >			
BZ001	1-529-107-11	BUZZER, PIEZOELECTRIC			
		< CAPACITOR >			
C001	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN001	1-815-031-11	CONNECTOR, FFC/FPC (ZIF) 24P			
CN002	1-794-050-21	CONNECTOR, FFC/FPC (ZIF) 26P			
		< IC >			
IC001	8-759-573-02	IC BU9735K-E2			
		< RESISTOR >			
R005	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R006	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R010	1-216-855-11	METAL CHIP	680K	5%	1/16W
R011	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R013	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R014	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R015	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R016	1-216-834-11	METAL CHIP	12K	5%	1/16W
R017	1-216-840-11	METAL CHIP	39K	5%	1/16W
R018	1-216-838-11	METAL CHIP	27K	5%	1/16W
R023	1-216-835-11	METAL CHIP	15K	5%	1/16W
		< SWITCH >			
S001	1-771-138-82	SWITCH, KEY BOARD (RESET)			
S002	1-771-138-82	SWITCH, KEY BOARD (MENU)			
S003	1-771-138-82	SWITCH, KEY BOARD (TIME)			
S004	1-771-138-82	SWITCH, KEY BOARD (EXPOSURE)			
S005	1-771-138-82	SWITCH, KEY BOARD (DATE)			

Ref. No.	Part No.	Description	Remarks
S006	1-771-025-41	SWITCH, ROTARY (ENCODER) (SEL/PUSH EXEC.)	
S007	1-771-138-82	SWITCH, KEY BOARD (TITLE)	
S008	1-771-138-82	SWITCH, KEY BOARD (COUNTER RESET)	
S009	1-771-138-82	SWITCH, KEY BOARD (BACK LIGHT)	
S010	1-771-138-82	SWITCH, KEY BOARD (FOCUS)	
S011	1-771-138-82	SWITCH, KEY BOARD (FADER)	
		**********FP-249 BOARD, COMPLETE (Not supplied)********** (Ref.No.;20000 Series)	
	3-965-552-01	HOLDER (T), SENSOR	
		< HOLE ELEMENT >	
H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL)	
H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL)	
		< TRANSISTOR >	
Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE END)	
		< SWITCH >	
S001	1-692-614-11	SWITCH, PUSH (3 KEY) (Hi8 MP,ME/MP,REC PROOF)	
S002	1-572-688-11	SWITCH, PUSH (1 KEY)(C.C.DOWN)	
	1-658-213-11	FP-355 FLEXIBLE BOARD ********** (Ref.No.;20000 Series)	
		< DIODE >	
D001	8-719-988-42	DIODE GL453 (TAPE LED)	
	1-658-214-11	FP-356 FLEXIBLE BOARD ********** (Ref.No.;20000 Series)	
	3-965-551-01	HOLDER (S), SENSOR	
		< TRANSISTOR >	
Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE TOP)	
	A-7074-192-A	LB-062 BOARD, COMPLETE (TR818) ********** (Ref.No.;10000 Series)	
		< CAPACITOR >	
C4601	1-113-682-11	TANTAL. CHIP 33uF 20% 10V	
C4602	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V	
C4603	1-115-464-91	CERAMIC CHIP 0.0022uF 10% 630V	
C4604	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
		< CONNECTOR >	
CN4601	1-764-516-21	CONNECTOR, FFC/FPC (ZIF) 6P	
		< IC >	
IC4601	8-759-485-79	IC TC7SET08FU(TE85R)	

Ref. No.	Part No.	Description	Remarks
		< COIL >	
L4601	1-412-031-11	INDUCTOR CHIP 47uH	
L4602	1-469-525-91	INDUCTOR 10uH	
		< FLUORESCENT INDICATOR >	
⚠ND4601	1-517-933-11	FLUORESCENT TUBE (0.44)	
		< TRANSISTOR >	
Q4601	8-729-039-24	TRANSISTOR FX216-TL1	
		< RESISTOR >	
R4601	1-216-808-11	METAL CHIP 82 5% 1/16W	
R4604	1-216-853-11	METAL CHIP 470K 5% 1/16W	
		< TRANSFORMER >	
⚠T4601	1-435-225-21	TRANSFORMER, INVERTER	
	A-7074-659-A	MI-040 BOARD, COMPLETE (TR618/TR618E/TR718E) **********	
	A-7074-661-A	MI-040 BOARD, COMPLETE (TR818) **********	
	A-7074-665-A	MI-041 BOARD, COMPLETE (TRV98) **********	
	A-7074-682-A	MI-041 BOARD, COMPLETE (TRV78/TRV78E/TRV98E) **********	
	A-7074-683-A	MI-040 BOARD, COMPLETE (TR728E) **********	
	A-7074-700-A	MI-041 BOARD, COMPLETE (TRV58/TRV58E) **********	
	A-7074-707-A	MI-041 BOARD, COMPLETE (TRV68/TRV88) **********	
	A-7074-719-A	MI-041 BOARD, COMPLETE (TRV49/TRV49E/TRV59E) ********** (Ref.No.;10000 Series)	
		< CAPACITOR >	
C758	1-124-778-00	ELECT CHIP 22uF 20% 6.3V (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C759	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C762	1-124-778-00	ELECT CHIP 22uF 20% 6.3V (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C763	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C764	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C768	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C772	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C774	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C775	1-110-666-11	ELECT CHIP 22uF 20% 6.3V (TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C776	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	

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.

Ref. No.	Part No.	Description			Remarks
C777	1-164-343-11	CERAMIC CHIP	0.056uF	10%	25V
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C781	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C782	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C784	1-110-666-11	ELECT CHIP	22uF	20%	6.3V
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C785	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C788	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C789	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C791	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C794	1-110-410-11	ELECT CHIP	10uF	20%	6.3V
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C799	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C800	1-110-446-11	ELECT CHIP	10uF	20%	6.3V
C808	1-110-446-11	ELECT CHIP	10uF	20%	6.3V
C809	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C3901	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
					(TRV98)
C3904	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
					(TRV98)
C3905	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
					(TRV98)
C3906	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
					(TRV98)
C3907	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
					(TRV98)
C3908	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
					(TRV98)
C3909	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
					(TRV98)
C3910	1-135-181-11	TANTALUM CHIP	4.7uF	20%	10V
					(TRV98)
C3911	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
					(TRV98)
C3912	1-110-410-11	ELECT CHIP	10uF	20%	6.3V
					(TRV98)
C3913	1-164-668-11	CERAMIC CHIP	510PF	5%	50V
					(TRV98)
C3914	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
					(TRV98)
C3915	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
					(TRV98)
C3916	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
					(TRV98)
C3917	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
					(TRV98)
C3918	1-162-913-11	CERAMIC CHIP	8PF	0.50PF	50V
					(TRV98)
C3919	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
					(TRV98)
C3920	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
					(TRV98)
C3921	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
					(TRV98)
C3922	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
					(TRV98)
C3923	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
					(TRV98)
C3924	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
					(TRV98)
C3925	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
					(TRV98)
C3926	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
					(TRV98)
C3929	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
					(TRV98)
C3930	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
					(TRV98)
C3931	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
					(TRV98)
C3932	1-110-453-11	ELECT CHIP	4.7uF	20%	16V
C3933	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C3934	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
					(TRV98)
		< CONNECTOR >			
* CN752	1-695-320-21	PIN, CONNECTOR (1.5MM)(SMD) 2P			
CN753	1-779-336-11	CONNECTOR, FFC/FPC 24P			
		< DIODE >			
D752	8-719-073-01	DIODE MA111-(K8).S0			
		(TR728E/TRV49/TRV49E/TRV59E/			
		TRV78/TRV78E/TRV98/TRV98E)			
D753	8-719-070-91	DIODE TLSU1008(T05,SOY)			
D754	8-719-073-01	DIODE MA111-(K8).S0			
D755	8-719-073-01	DIODE MA111-(K8).S0			
D3901	8-719-067-44	DIODE CL-310IRS-X-TU (TRV98)			
D3902	8-719-083-13	DIODE DCS2815 (TRV98)			
D3903	8-719-067-44	DIODE CL-310IRS-X-TU			
		< IC >			
IC751	8-749-012-83	IC RS-180-T			
		(TR728E/TRV78/TRV78E/TRV98E)			
IC751	8-749-018-83	IC PNA4S13M02			
		(TRV49/TRV49E/TRV59E/TRV98)			
IC752	8-759-712-78	IC BH7871FV-E2			
IC753	8-759-489-19	IC UPC6756GR-8JG-E2			
		(TRV78/TRV78E/TRV98E)			
IC753	8-759-637-19	IC NJM3230V(TE2)			
		(TR818/TRV68/TRV88/TRV98)			
IC3901	8-759-566-96	IC AN2920FHQ-EB (TRV98)			
		< COIL >			
L751	1-469-525-91	INDUCTOR	10uH		
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
L3902	1-469-525-91	INDUCTOR	10uH	(TRV98)	
L3903	1-412-948-11	INDUCTOR	5.6uH	(TRV98)	
L3904	1-412-957-11	INDUCTOR	33uH	(TRV98)	
L3905	1-412-957-11	INDUCTOR	33uH	(TRV98)	
L3906	1-469-525-91	INDUCTOR	10uH	(TRV98)	
		< TRANSISTOR >			
Q3901	8-729-037-53	TRANSISTOR	2SA1832F-Y/GR(TPL3)		
					(TRV98)
Q3902	8-729-026-48	TRANSISTOR	2SA1037AK-T146-Q (TRV98)		
Q3903	8-729-920-85	TRANSISTOR	2SD1664-T100-QR (TRV98)		
Q3904	8-729-052-52	TRANSISTOR	2SC4738F-Y/GR(TPL3)		
					(EXCEPT TRV98)

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R757	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R769	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R774	1-216-836-11	METAL CHIP	18K	5%	1/16W
R775	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R776	1-216-864-91	SHORT	0		
R779	1-216-857-11	METAL CHIP	1M	5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R780	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R782	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R783	1-216-857-11	METAL CHIP	1M	5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R785	1-216-835-11	METAL CHIP	15K	5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R788	1-216-839-11	METAL CHIP	33K	5%	1/16W
R797	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R3901	1-216-839-11	METAL CHIP	33K	5%	1/16W
					(TRV98)
R3902	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
					(TRV98)
R3903	1-216-839-11	METAL CHIP	33K	5%	1/16W
					(TRV98)
R3904	1-216-834-11	METAL CHIP	12K	5%	1/16W
					(TRV98)
R3905	1-216-857-11	METAL CHIP	1M	5%	1/16W
					(TRV98)
R3907	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
					(TRV98)
R3908	1-216-815-11	METAL CHIP	330	5%	1/16W
					(TRV98)
R3909	1-216-821-11	METAL CHIP	1K	5%	1/16W
					(TRV98)
R3912	1-216-819-11	METAL CHIP	680	5%	1/16W
					(TRV98)
R3913	1-216-847-11	METAL CHIP	150K	5%	1/16W
					(TRV98)
R3914	1-216-847-11	METAL CHIP	150K	5%	1/16W
					(TRV98)
R3915	1-216-818-11	METAL CHIP	560	5%	1/16W
					(TRV98)
R3916	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
					(TRV98)
R3917	1-216-817-11	METAL CHIP	470	5%	1/16W
					(TRV98)
R3919	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
					(TRV98)
R3920	1-216-817-11	METAL CHIP	470	5%	1/16W
					(TRV98)
R3921	1-216-817-11	METAL CHIP	470	5%	1/16W
					(TRV98)
R3922	1-216-864-91	SHORT	0		(TRV98)
R3923	1-216-817-11	METAL CHIP	470	5%	1/16W
R3924	1-216-295-11	SHORT	0		(TRV98)
R3925	1-216-001-00	METAL CHIP	10	5%	1/10W
					(TRV98)
R3925	1-216-027-00	METAL CHIP	120	5%	1/10W
					(EXCEPT TRV98)
R3926	1-216-800-11	RES-CHIP	18	5%	1/16W
					(TRV98)
R3927	1-216-295-11	SHORT	0		(EXCEPT TRV98)
R3929	1-216-027-00	METAL CHIP	120	5%	1/10W
					(EXCEPT TRV98)
R3931	1-216-834-11	METAL CHIP	12K	5%	1/16W
					(TRV98)
R3948	1-216-295-11	SHORT	0		(EXCEPT TRV98)
		< COMPOSITION CIRCUIT BLOCK >			
RB751	1-239-702-81	RESISTOR, NETWORK 22K			
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
RB752	1-239-702-81	RESISTOR, NETWORK 22K			
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
		< SENSOR >			
SE751	1-418-042-11	SENSOR, ANGULAR VELOCITY (PITCH)			
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
SE752	1-418-042-21	SENSOR, ANGULAR VELOCITY (YAW)			
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
	A-7074-667-A	PD-131 BOARD, COMPLETE (TRV98/TRV98E)			
		**********			
	A-7074-680-A	PD-131 BOARD, COMPLETE			
		(TRV49/TRV49E/TRV58/TRV58E/			
		TRV59E/TRV68/TRV78/TRV78E)			
		**********			
	A-7074-701-A	PD-131 BOARD, COMPLETE (TRV88)			
		**********			
		(Ref.No.;10000 Series)			
		< CAPACITOR >			
C5501	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C5503	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5504	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5505	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5506	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5507	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5509	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C5510	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5511	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C5512	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5513	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5514	1-119-750-11	TANTAL. CHIP	22uF	20%	6.3V
C5515	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C5516	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C5517	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5518	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5519	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5520	1-124-779-00	ELECT CHIP	10uF	20%	16V
C5521	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
C5522	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5523	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5524	1-127-573-11	CERAMIC CHIP	1uF	10%	16V
C5527	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5528	1-126-193-11	ELECT	1uF	20%	50V
C5530	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

Ref. No.	Part No.	Description			Remarks
C5531	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5603	1-164-657-11	CERAMIC CHIP	0.015uF	10%	50V
C5604	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5605	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
⚠C5606	1-131-959-91	CERAMIC CHIP	12PF	10%	3KV
C5607	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
		< CONNECTOR >			
CN5501	1-815-031-11	CONNECTOR, FFC/FPC (ZIF) 24P			
* CN5502	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P			
CN5601	1-764-709-11	CONNECTOR, FFC/FPC (LIF) 10P			
CN5701	1-794-998-21	PIN, CONNECTOR 20P			
CN5702	1-573-346-21	CONNECTOR, FFC/FPC 6P			
		< DIODE >			
D5502	8-713-102-80	DIODE 1T369-01-T8A			
D5503	8-719-073-01	DIODE MA111-(K8).S0			
D5503	8-719-988-61	DIODE 1SS355TE-17			
D5601	8-719-073-01	DIODE MA111-(K8).S0			
D5601	8-719-988-61	DIODE 1SS355TE-17			
		< FERRITE BEAD >			
FB003	1-414-760-21	FERRITE	0UH		
FB5501	1-414-760-21	FERRITE	0UH		
FB5501	1-414-760-21	FERRITE	0UH		
FB5501	1-414-760-21	FERRITE	0UH		
FB5501	1-500-329-21	FERRITE	0UH		
FB5502	1-414-760-21	FERRITE	0UH		
FB5502	1-414-760-21	FERRITE	0UH		
FB5502	1-414-760-21	FERRITE	0UH		
FB5502	1-500-329-21	FERRITE	0UH		
		< IC >			
IC5501	8-759-660-92	IC RB5P003AM1			
IC5502	8-759-714-77	IC LZ9FF474			
IC5601	8-759-564-49	IC TC7W53FU(TE12R)			
IC5602	8-759-075-70	IC TA75S393F-TE85R			
		< COIL >			
L001	1-419-354-21	INDUCTOR	22uH		
L5501	1-469-525-91	INDUCTOR	10uH		
L5502	1-469-525-91	INDUCTOR	10uH		
L5503	1-412-949-21	INDUCTOR	6.8uH		(TRV88/TRV98/TRV98E)
L5503	1-412-956-21	INDUCTOR	27uH		(TRV49/TRV49E/TRV58/TRV58E/ TRV59E/TRV68/TRV78/TRV78E)
L5601	1-419-387-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q5502	8-729-041-23	TRANSISTOR	NDS356AP		
Q5503	8-729-054-48	TRANSISTOR	N1B04FE-Y/GR(TPLR3)		
Q5504	8-729-054-48	TRANSISTOR	N1B04FE-Y/GR(TPLR3)		
Q5505	8-729-042-29	TRANSISTOR	RN1104F(TPL3)		
Q5601	8-729-042-29	TRANSISTOR	RN1104F(TPL3)		
Q5602	8-729-039-43	TRANSISTOR	FP216-TL		

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R5501	1-216-853-11	METAL CHIP	470K	5%	1/16W
R5503	1-218-893-11	METAL CHIP	82K	0.5%	1/16W (TRV88/TRV98/TRV98E)
R5503	1-218-895-11	METAL CHIP	100K	0.5%	1/16W (TRV49/TRV49E/TRV58/TRV58E/ TRV59E/TRV68/TRV78/TRV78E)
R5505	1-216-835-11	METAL CHIP	15K	5%	1/16W
R5506	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R5507	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5508	1-216-843-11	METAL CHIP	68K	5%	1/16W
R5509	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5510	1-216-843-11	METAL CHIP	68K	5%	1/16W
R5511	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5512	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5513	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5515	1-216-864-91	SHORT	0		
R5516	1-216-833-11	METAL CHIP	10K	5%	1/16W
R5519	1-216-864-91	SHORT	0		
R5521	1-216-841-11	METAL CHIP	47K	5%	1/16W
R5522	1-216-821-11	METAL CHIP	1K	5%	1/16W (TRV49/TRV49E/TRV58/TRV58E/ TRV59E/TRV68/TRV78/TRV78E)
R5522	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (TRV88)
R5522	1-216-830-11	METAL CHIP	5.6K	5%	1/16W (TRV98/TRV98E)
R5523	1-216-864-91	SHORT	0		
R5531	1-216-848-11	METAL CHIP	180K	5%	1/16W
R5532	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5533	1-216-857-11	METAL CHIP	1M	5%	1/16W
R5534	1-216-864-91	SHORT	0		
R5535	1-216-864-91	SHORT	0		
R5601	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R5602	1-216-845-11	METAL CHIP	100K	5%	1/16W
R5603	1-216-834-11	METAL CHIP	12K	5%	1/16W
R5604	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R5606	1-216-837-11	METAL CHIP	22K	5%	1/16W
R5607	1-216-817-11	METAL CHIP	470	5%	1/16W
R5610	1-216-864-91	SHORT	0		
R5702	1-216-833-11	METAL CHIP	10K	5%	1/16W
		< COMPOSITION CIRCUIT BLOCK >			
RB5501	1-234-372-21	RES, NETWORK 100X4 (1005)			
RB5502	1-239-698-11	RESISTOR, NETWORK 10K			
RB5503	1-239-661-81	RESISTOR, NETWORK 1M			
RB5601	1-239-698-11	RESISTOR, NETWORK 10K			(TRV49/TRV49E/TRV58/TRV58E/ TRV59E/TRV68/TRV78/TRV78E)
RB5601	1-239-701-81	RESISTOR, NETWORK 18K			(TRV88/TRV98/TRV98E)
		< TRANSFORMER >			
⚠T5601	1-435-227-11	TRANSFORMER, INVERTER			

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.

VC-251

Ref. No.	Part No.	Description	Remarks
	A-7096-402-A	VC-251 BOARD, COMPLETE (SERVICE)(TR618)	
		**********	
	A-7096-403-A	VC-251 BOARD, COMPLETE (SERVICE)(TR818)	
		**********	
	A-7096-404-A	VC-251 BOARD, COMPLETE (SERVICE)	
		(TR618E/TR718E/TR728E)	
		**********	
	A-7096-405-A	VC-251 BOARD, COMPLETE (SERVICE)	
		(TRV68/TRV78/TRV88/TRV98)	
		**********	
	A-7096-406-A	VC-251 BOARD, COMPLETE (SERVICE)	
		(TRV78E/TRV98E)	
		**********	
	A-7096-409-A	VC-251 BOARD, COMPLETE (SERVICE)	
		(TRV49/TRV58)	
		**********	
	A-7096-456-A	VC-251 BOARD, COMPLETE (SERVICE)	
		(TRV49E/TRV58E/TRV59E)	
		**********	
		(Ref.No.;10000 Series)	
		< CAPACITOR >	
C001	1-162-960-11	CERAMIC CHIP 220PF 10% 50V	
C002	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C003	1-119-923-81	CERAMIC CHIP 0.047uF 10% 10V	
C004	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C005	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C008	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C009	1-164-172-11	CERAMIC CHIP 0.0056uF 10% 25V	
C010	1-107-819-11	CERAMIC CHIP 0.022uF 10% 16V	
C011	1-107-819-11	CERAMIC CHIP 0.022uF 10% 16V	
C012	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C013	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C014	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C015	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C016	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V	
C018	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C019	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V	
C020	1-117-808-91	CERAMIC CHIP 10uF 10% 10V	
C021	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V	
C022	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V	
C023	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V	
C024	1-164-937-11	CERAMIC CHIP 0.001uF 10% 16V	
C025	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C026	1-115-566-11	CERAMIC CHIP 4.7uF 10% 10V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C027	1-115-566-11	CERAMIC CHIP 4.7uF 10% 10V	
C028	1-115-566-11	CERAMIC CHIP 4.7uF 10% 10V	
C029	1-115-566-11	CERAMIC CHIP 4.7uF 10% 10V	
C030	1-115-566-11	CERAMIC CHIP 4.7uF 10% 10V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C031	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V	
C032	1-115-566-11	CERAMIC CHIP 4.7uF 10% 10V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C033	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V	
C034	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C035	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V	
C036	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V	
C037	1-127-760-11	CERAMIC CHIP 4.7uF 10% 6.3V	
C038	1-127-688-21	TANTAL. CHIP 10uF 20% 6.3V	
C039	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V	
C040	1-119-750-11	TANTAL. CHIP 22uF 20% 6.3V	
C041	1-125-837-91	CERAMIC CHIP 1uF 10% 6.3V	
C042	1-164-506-11	CERAMIC CHIP 4.7uF 16V	
C043	1-164-506-11	CERAMIC CHIP 4.7uF 16V	
C045	1-119-749-11	TANTAL. CHIP 33uF 20% 4V	
C046	1-119-750-11	TANTAL. CHIP 22uF 20% 6.3V	
C047	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
		(TR818/TRV49/TRV49E/TRV58/TRV58E/TRV59E/	
		TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C048	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C049	1-127-688-21	TANTAL. CHIP 10uF 20% 6.3V	
C050	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V	
C051	1-119-750-11	TANTAL. CHIP 22uF 20% 6.3V	
C052	1-127-688-21	TANTAL. CHIP 10uF 20% 6.3V	
C053	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C054	1-164-506-11	CERAMIC CHIP 4.7uF 16V	
C055	1-164-506-11	CERAMIC CHIP 4.7uF 16V	
C056	1-164-346-11	CERAMIC CHIP 1uF 16V	
		(TR818)	
C057	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C058	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C059	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C061	1-119-750-11	TANTAL. CHIP 22uF 20% 6.3V	
C071	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C072	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/	
		TRV78/TRV78E/TRV88/TRV98/TRV98E)	
C101	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C102	1-104-752-11	TANTAL. CHIP 33uF 20% 6.3V	
C103	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C104	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C106	1-107-819-11	CERAMIC CHIP 0.022uF 10% 16V	
C107	1-107-819-11	CERAMIC CHIP 0.022uF 10% 16V	
C108	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C109	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C110	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C111	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C112	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	
C113	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C114	1-125-777-11	CERAMIC CHIP 0.1uF 10% 10V	
C115	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C116	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C117	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	
C118	1-164-943-11	CERAMIC CHIP 0.01uF 10% 16V	

Ref. No.	Part No.	Description			Remarks
C119	1-127-688-21	TANTAL. CHIP	10uF	20%	6.3V
C121	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C123	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C124	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C125	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C126	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C127	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C128	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C129	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C130	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C131	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C132	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C133	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C134	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C135	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C136	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C151	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C152	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C154	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C155	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C156	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C157	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C158	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C160	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C161	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C162	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C163	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C164	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C165	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C166	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C167	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C168	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C169	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C170	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C171	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C172	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C173	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C174	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C175	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C176	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C177	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C178	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C182	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C184	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C185	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C186	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C187	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C188	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C190	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C195	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C221	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C223	1-110-446-11	ELECT CHIP	10uF	20%	6.3V
C225	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C233	1-110-423-11	ELECT CHIP	2.2uF	20%	25V
C235	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V

Ref. No.	Part No.	Description			Remarks
C238	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C246	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C247	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C248	1-126-601-11	ELECT CHIP	2.2uF	20%	50V
C249	1-126-246-11	ELECT CHIP	220uF	20%	4V
C250	1-126-246-11	ELECT CHIP	220uF	20%	4V
C252	1-124-779-00	ELECT CHIP	10uF	20%	16V
C271	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C272	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C273	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C274	1-127-688-21	TANTAL. CHIP	10uF	20%	6.3V
		(TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E)			
C275	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
		(TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E)			
C276	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C277	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C278	1-131-861-91	TANTAL. CHIP	4.7uF	20%	20V
C279	1-127-688-21	TANTAL. CHIP	10uF	20%	6.3V
C280	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C281	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C282	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C283	1-162-913-11	CERAMIC CHIP	8PF	0.50PF	50V
C284	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C285	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C286	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C287	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C288	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C289	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C290	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C291	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C292	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C293	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C294	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C295	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C296	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C297	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C302	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C303	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C304	1-127-688-21	TANTAL. CHIP	10uF	20%	6.3V
C305	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C306	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C307	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C308	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C309	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C310	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C311	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C312	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C313	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C315	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C316	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C317	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C318	1-127-688-21	TANTAL. CHIP	10uF	20%	6.3V
C319	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C352	1-124-779-00	ELECT CHIP	10uF	20%	16V
C354	1-124-779-00	ELECT CHIP	10uF	20%	16V
C357	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C358	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			

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Ref. No.	Part No.	Description			Remarks
C359	1-124-779-00	ELECT CHIP	10uF	20%	16V
C361	1-126-607-11	ELECT CHIP	47uF	20%	4V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C363	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C364	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C365	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C366	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C367	1-124-779-00	ELECT CHIP	10uF	20%	16V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C369	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C371	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C372	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C374	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C375	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C380	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C381	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C383	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C384	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C385	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C386	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C389	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C390	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C392	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C393	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C394	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C396	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C397	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C398	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C401	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C402	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C403	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C404	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C405	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C406	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C407	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C408	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C410	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C411	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C451	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C452	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C453	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C454	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C455	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C456	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C457	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C458	1-126-603-11	ELECT CHIP	4.7uF	20%	35V
C459	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

Ref. No.	Part No.	Description			Remarks
C460	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C461	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C462	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C463	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C464	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C465	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C466	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C467	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C468	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C469	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C470	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C471	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C472	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
		(TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E)			
C473	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
		(TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E)			
C474	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C475	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C476	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C477	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C478	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
C479	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C480	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C481	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C482	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C483	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C484	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C501	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C502	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C503	1-126-607-11	ELECT CHIP	47uF	20%	4V
C504	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C506	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C507	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C508	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C509	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C510	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C511	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C512	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C513	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C514	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C515	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C516	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C517	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C518	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C519	1-119-923-81	CERAMIC CHIP	0.047uF	10%	10V
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
C601	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C602	1-127-688-21	TANTAL. CHIP	10uF	20%	6.3V
C603	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C701	1-135-639-21	ELECT CHIP	47uF	20%	6.3V
C708	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
					(EXCEPT TR818)

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
* CN001	1-764-177-11	PIN, CONNECTOR (SMD)(1.5MM) 7P	
CN101	1-766-346-21	CONNECTOR, FFC/FPC 16P	
CN271	1-779-331-11	CONNECTOR, FFC/FPC 14P	
CN301	1-750-360-21	CONNECTOR, FFC/FPC (ZIF) 24P	
CN701	1-794-998-21	PIN, CONNECTOR 20P (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
CN702	1-766-350-21	CONNECTOR, FFC/FPC 20P	
CN703	1-766-354-21	CONNECTOR, FFC/FPC 24P	
CN704	1-766-644-21	CONNECTOR, FFC/FPC 8P	
CN706	1-766-340-21	CONNECTOR, FFC/FPC 10P	
CN707	1-766-342-21	CONNECTOR, FFC/FPC 12P	
CN708	1-779-334-11	CONNECTOR, FFC/FPC 20P (TR818)	
CN709	1-815-031-11	CONNECTOR, FFC/FPC (ZIF) 24P	
CN710	1-750-076-21	CONNECTOR, FFC/FPC 12P	
CN711	1-764-704-21	CONNECTOR, FFC/FPC (LIF) 5P	
CN712	1-766-345-21	CONNECTOR, FFC/FPC 15P	
CN713	1-774-711-41	CONNECTOR, BOARD TO BOARD 20P	
* CN715	1-778-283-11	CONNECTOR, FFC/FPC 4P (EXCEPT TR818)	
		< DIODE >	
D001	8-719-421-27	DIODE MA728-(K8).S0	
D002	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D004	8-719-073-03	DIODE MA8082-(K8).S0	
D005	8-719-078-02	DIODE 1SS357(T3SONY1)	
D006	8-719-081-19	DIODE 1SS383(T5RSONY1)	
D007	8-719-081-19	DIODE 1SS383(T5RSONY1)	
D010	8-719-078-02	DIODE 1SS357(T3SONY1) (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
D151	8-719-081-25	DIODE JDV3C11(TPH3)	
D152	8-719-081-25	DIODE JDV3C11(TPH3)	
D271	8-719-073-01	DIODE MA111-(K8).S0 (TR618/TR618E/TR718E/TR728E/TRV49/ TRV49E/TRV58/TRV58E/TRV59E)	
D272	8-719-082-63	DIODE 1SV329(TPL3)	
D301	8-719-073-01	DIODE MA111-(K8).S0	
D501	8-719-421-67	DIODE MA132WK-(K8).SO	
D503	8-719-421-27	DIODE MA728-(K8).S0	
D504	8-719-073-01	DIODE MA111-(K8).S0	
D702	8-719-062-16	DIODE 01ZA8.2(TPL3)	
		< PIN CONNECTOR >	
ET101	1-815-032-21	PIN, CONNECTOR (CASE, SHIELD)	
ET102	1-815-032-21	PIN, CONNECTOR (CASE, SHIELD)	
		< FUSE >	
⚠ F001	1-576-406-21	FUSE, MICRO (1.4A) (1608)	
⚠ F002	1-576-406-21	FUSE, MICRO (1.4A) (1608)	
⚠ F003	1-576-406-21	FUSE, MICRO (1.4A) (1608)	
⚠ F004	1-576-406-21	FUSE, MICRO (1.4A) (1608) (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	

Ref. No.	Part No.	Description	Remarks
		< FERRITE BEAD >	
FB001	1-414-760-21	FERRITE 0UH	
FB003	1-414-760-21	FERRITE 0UH (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
FB101	1-414-228-11	FERRITE 0UH	
FB102	1-414-228-11	FERRITE 0UH	
FB152	1-414-760-21	FERRITE 0UH	
FB153	1-414-760-21	FERRITE 0UH	
FB154	1-414-760-21	FERRITE 0UH	
FB221	1-414-760-21	FERRITE 0UH	
FB271	1-414-760-21	FERRITE 0UH (TR618/TR618E/TR718E/TR728E/TRV49/ TRV49E/TRV58/TRV58E/TRV59E)	
FB273	1-500-284-21	FERRITE 0UH	
FB274	1-500-284-21	FERRITE 0UH	
FB275	1-414-760-21	FERRITE 0UH	
FB276	1-500-284-21	FERRITE 0UH	
FB601	1-414-760-21	FERRITE 0UH	
		< IC >	
IC001	8-752-090-20	IC CXA3057R-T6	
IC101	8-752-093-69	IC CXA3265R-T4	
IC151	8-759-670-78	IC HG75C012SFL	
IC153	8-759-714-10	IC BU3095-01FV-E2	
IC221	8-759-599-37	IC AN2225FHQ-EB	
IC271	8-752-386-72	IC CXD2444R-T4	
IC272	8-759-699-92	IC AD80013AJSTRL	
IC301	8-759-637-96	IC MPC17A135DTAEL	
IC302	8-759-681-42	IC NJM12902V(TE2)	
IC351	8-752-093-74	IC CXA3285R-T6	
IC401	8-759-593-47	IC AK6417AM-E2 (TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98)	
IC401	8-759-640-87	IC BR9016RFV-E2 (TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E)	
IC402	8-759-836-63	IC MB91191RPFF-G-166-BND-ER	
IC451	8-759-640-85	IC CXA8096R-TBM	
IC502	8-759-424-79	IC S-8423YFS-T2 (TRV49/TRV58/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
IC502	8-759-660-94	IC NJU7285AV-TE2 (TR618/TR618E/TR718E/TR728E/ TR818/TRV49E/TRV58E/TRV59E)	
IC503	8-752-921-65	IC CXP921048A-033R-T6	
IC504	8-759-653-63	IC S-817A36ANB-CUZ-T2	
IC601	8-759-713-19	IC BH2222FV-E2	
		< COIL >	
L001	1-416-669-11	INDUCTOR 22uH (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
L002	1-416-670-11	INDUCTOR 33uH	
L003	1-412-056-11	INDUCTOR 4.7uH (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
L004	1-416-669-11	INDUCTOR 22uH	
L005	1-419-354-21	INDUCTOR 22uH	

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.

Ref. No.	Part No.	Description		Remarks
L006	1-416-670-11	INDUCTOR	33uH	
L007	1-419-354-21	INDUCTOR	22uH	
L008	1-469-524-91	INDUCTOR	4.7uH	
L009	1-469-524-91	INDUCTOR	4.7uH	
L010	1-469-524-91	INDUCTOR	4.7uH	
L011	1-469-524-91	INDUCTOR	4.7uH	
L012	1-414-400-41	INDUCTOR	22uH	
L013	1-469-524-91	INDUCTOR	4.7uH	
L014	1-469-526-91	INDUCTOR	22uH	
L016	1-414-400-41	INDUCTOR	22uH	
L101	1-414-406-41	INDUCTOR	220uH	
L102	1-412-952-11	INDUCTOR	12uH	
L103	1-469-526-91	INDUCTOR	22uH	
L104	1-414-406-41	INDUCTOR	220uH	
L151	1-469-570-21	INDUCTOR	10uH	
L152	1-469-570-21	INDUCTOR	10uH	
L154	1-469-570-21	INDUCTOR	10uH	
L155	1-469-570-21	INDUCTOR	10uH	
L156	1-412-945-11	INDUCTOR	3.3uH	
L221	1-469-525-91	INDUCTOR	10uH	
L224	1-469-525-91	INDUCTOR	10uH	
L271	1-469-570-21	INDUCTOR	10uH	
L272	1-469-525-91	INDUCTOR	10uH	
L301	1-469-525-91	INDUCTOR	10uH	
L303	1-469-570-21	INDUCTOR	10uH	
L601	1-469-570-21	INDUCTOR	10uH	
L705	1-419-860-21	INDUCTOR	10uH (EXCEPT TR818)	
		< TRANSISTOR >		
Q001	8-729-038-05	TRANSISTOR	HN1K02FU(T5RSONY)	
Q002	8-729-051-49	TRANSISTOR	TPC8305(TE12L)	
Q003	8-729-101-07	TRANSISTOR	2SB798-T1-DLDK	
Q004	8-729-042-31	TRANSISTOR	UN9213J-(K8).SO (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q004	8-729-052-64	TRANSISTOR	DTC144EHT2L (TR618/TR618E/TR718E/TR728E/TR818)	
Q006	8-729-054-82	TRANSISTOR	XN09D6100LS0 (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q007	8-729-043-60	TRANSISTOR	CPH6102-TL	
Q008	8-729-054-82	TRANSISTOR	XN09D6100LS0	
Q009	8-729-054-82	TRANSISTOR	XN09D6100LS0	
Q010	8-729-054-82	TRANSISTOR	XN09D6100LS0	
Q011	8-729-054-82	TRANSISTOR	XN09D6100LS0	
Q012	8-729-054-82	TRANSISTOR	XN09D6100LS0	
Q014	8-729-053-52	TRANSISTOR	N1C01FE-Y/GR(TPLR3)	
Q015	8-729-101-07	TRANSISTOR	2SB798-T1-DLDK	
Q016	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO	
Q018	8-729-052-64	TRANSISTOR	DTC144EHT2L	
Q019	8-729-053-54	TRANSISTOR	HN1A01FE-Y/GR(TPLR3)	
Q020	8-729-053-52	TRANSISTOR	HN1C01FE-Y/GR(TPLR3) (TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q021	8-729-052-66	TRANSISTOR	2SC4617HT2L	
Q022	8-729-052-65	TRANSISTOR	2SC4617HT2L	
Q023	8-729-052-65	TRANSISTOR	2SA1774HT2L	
Q026	8-729-053-54	TRANSISTOR	HN1A01FE-Y/GR(TPLR3) (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q027	8-729-042-28	TRANSISTOR	2SD2216J-QR(K8).SO (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q071	8-729-042-31	TRANSISTOR	UN9213J-(K8).SO (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q072	8-729-041-76	TRANSISTOR	NDS356AP (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q101	8-729-047-19	TRANSISTOR	2SA1965-S-TL	
Q102	8-729-052-65	TRANSISTOR	2SA1774HT2L	
Q103	8-729-054-48	TRANSISTOR	HN1B04FE-Y/GR(TPLR3)	
Q104	8-729-052-64	TRANSISTOR	DTC144EHT2L	
Q105	8-729-053-58	TRANSISTOR	RN1904FE(TPLR3)	
Q107	8-729-052-65	TRANSISTOR	2SA1774HT2L	
Q151	8-729-053-53	TRANSISTOR	HN1B04FE-Y/GR(TPLR3)	
Q152	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q153	8-729-042-26	TRANSISTOR	2SB1462J-QR(K8).SO (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q154	8-729-042-26	TRANSISTOR	2SA1832F-Y/GR(TPL3) (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q156	8-729-052-65	TRANSISTOR	2SA1774HT2L	
Q158	8-729-052-65	TRANSISTOR	2SA1774HT2L	
Q301	8-729-052-66	TRANSISTOR	2SC4617HT2L	
Q302	8-729-054-51	TRANSISTOR	RN2910FE(TPLR3)	
Q303	8-729-052-66	TRANSISTOR	2SC4617HT2L	
Q352	8-729-052-63	TRANSISTOR	DTC143THT2L (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q354	8-729-053-52	TRANSISTOR	HN1C01FE-Y/GR(TPLR3) (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)	
Q355	8-729-053-56	TRANSISTOR	RN4990FE(TPLR3)	
Q451	8-729-052-66	TRANSISTOR	2SC4617HT2L	
Q501	8-729-041-43	TRANSISTOR	HN1L02FU(TE85R)	
Q701	8-729-052-64	TRANSISTOR	DTC144EHT2L	
Q702	8-729-043-94	TRANSISTOR	CPH3106-PM-TL (EXCEPT TR818)	
Q703	8-729-028-26	TRANSISTOR	2SK1829(TE85L) (EXCEPT TR818)	
Q704	8-729-903-53	TRANSISTOR	2SB1132-T1 00Q	
Q705	8-729-052-66	TRANSISTOR	2SC4617HT2L	
		< RESISTOR >		
R001	1-216-837-11	METAL CHIP	22K 5% 1/16W	
R002	1-216-839-11	METAL CHIP	33K 5% 1/16W	
R003	1-216-821-11	METAL CHIP	1K 5% 1/16W	
R006	1-216-837-11	METAL CHIP	22K 5% 1/16W	
R007	1-216-821-11	METAL CHIP	1K 5% 1/16W	
R008	1-216-853-11	METAL CHIP	470K 5% 1/16W	
R010	1-216-857-11	METAL CHIP	1M 5% 1/16W	
R011	1-216-813-11	METAL CHIP	220 5% 1/16W	
R012	1-216-839-11	METAL CHIP	33K 5% 1/16W	
R013	1-216-801-11	METAL CHIP	22 5% 1/16W	

Ref. No.	Part No.	Description			Remarks
R014	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R016	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R017	1-216-821-11	METAL CHIP	1K	5%	1/16W
R018	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R020	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R021	1-216-837-11	METAL CHIP	22K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R022	1-216-841-11	METAL CHIP	47K	5%	1/16W
R023	1-216-839-11	METAL CHIP	33K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R025	1-216-841-11	METAL CHIP	47K	5%	1/16W
R026	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R027	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R028	1-218-877-11	METAL CHIP	18K	0.5%	1/16W
R029	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R031	1-216-841-11	METAL CHIP	47K	5%	1/16W
R032	1-216-837-11	METAL CHIP	22K	5%	1/16W
R033	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R034	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R035	1-216-841-11	METAL CHIP	47K	5%	1/16W
R036	1-216-845-11	METAL CHIP	100K	5%	1/16W
R037	1-216-845-11	METAL CHIP	100K	5%	1/16W
R038	1-216-837-11	METAL CHIP	22K	5%	1/16W
R039	1-216-864-91	SHORT	0		
		(TR618/TR618E/TR718E/TR728E/TRV49/ TRV49E/TRV58/TRV58E/TRV59E)			
R040	1-216-837-11	METAL CHIP	22K	5%	1/16W
R041	1-218-891-11	METAL CHIP	68K	0.5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R041	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
		(TR618/TR618E/TR718E/TR728E/TRV49/ TRV49E/TRV58/TRV58E/TRV59E)			
R042	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
		(TR618/TR618E/TR718E/TR728E/TRV49/ TRV49E/TRV58/TRV58E/TRV59E)			
R042	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R043	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R044	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R045	1-218-887-11	METAL CHIP	47K	0.5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R046	1-218-877-11	METAL CHIP	18K	0.5%	1/16W
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R047	1-216-845-11	METAL CHIP	100K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R048	1-216-845-11	METAL CHIP	100K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R049	1-216-864-91	SHORT	0		
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R050	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R051	1-218-891-11	METAL CHIP	68K	0.5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R052	1-216-801-11	METAL CHIP	22	5%	1/16W
R071	1-216-857-11	METAL CHIP	1M	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R072	1-216-857-11	METAL CHIP	1M	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R073	1-216-864-11	METAL CHIP	1	5%	1/16W
					(TR818)
R073	1-216-864-91	SHORT	0		
		(TR618/TR618E/TR718E/TR728E)			
R074	1-218-446-11	METAL CHIP	1	5%	1/16W
					(TR818)
R101	1-216-804-11	METAL CHIP	39	5%	1/16W
		(TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E)			
R101	1-216-806-11	RES-CHIP	56	5%	1/16W
		(TR618/TRV818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98)			
R102	1-216-818-11	METAL CHIP	560	5%	1/16W
R105	1-216-809-11	METAL CHIP	100	5%	1/16W
R106	1-216-838-11	METAL CHIP	27K	5%	1/16W
R107	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R108	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R109	1-216-838-11	METAL CHIP	27K	5%	1/16W
R110	1-216-813-11	METAL CHIP	220	5%	1/16W
R111	1-216-813-11	METAL CHIP	220	5%	1/16W
R112	1-216-814-11	METAL CHIP	270	5%	1/16W
R113	1-216-813-11	METAL CHIP	220	5%	1/16W
R115	1-216-839-11	METAL CHIP	33K	5%	1/16W
R116	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R117	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R118	1-218-899-11	METAL CHIP	150K	0.5%	1/16W
R120	1-216-837-11	METAL CHIP	22K	5%	1/16W
R121	1-216-853-11	METAL CHIP	470K	5%	1/16W
R122	1-216-853-11	METAL CHIP	470K	5%	1/16W
R123	1-216-837-11	METAL CHIP	22K	5%	1/16W
R124	1-216-838-11	METAL CHIP	27K	5%	1/16W
R154	1-216-833-11	METAL CHIP	10K	5%	1/16W
R155	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R156	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R157	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R158	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/ TRV68/TRV78/TRV88/TRV98)			
R160	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
					(EXCEPT TR818)
R165	1-216-864-91	SHORT	0		(TR818)
R166	1-216-864-91	SHORT	0		(TR818)
R167	1-216-864-91	SHORT	0		(TR818)
R168	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R169	1-216-821-11	METAL CHIP	1K	5%	1/16W
R170	1-216-831-11	METAL CHIP	6.8K	5%	1/16W

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Ref. No.	Part No.	Description			Remarks
R171	1-216-817-11	METAL CHIP	470	5%	1/16W
R172	1-216-809-11	METAL CHIP	100	5%	1/16W
R173	1-216-840-11	METAL CHIP	39K	5%	1/16W
R174	1-216-820-11	METAL CHIP	820	5%	1/16W
R175	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R176	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R177	1-216-834-11	METAL CHIP	12K	5%	1/16W
R178	1-216-817-11	METAL CHIP	470	5%	1/16W
R179	1-216-813-11	METAL CHIP	220	5%	1/16W
R180	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R181	1-216-834-11	METAL CHIP	12K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R182	1-216-814-11	METAL CHIP	270	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R183	1-216-814-11	METAL CHIP	270	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R184	1-216-834-11	METAL CHIP	12K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R185	1-216-834-11	METAL CHIP	12K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R186	1-216-814-11	METAL CHIP	270	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R187	1-216-814-11	METAL CHIP	270	5%	1/16W
		(TR818)			
R188	1-216-834-11	METAL CHIP	12K	5%	1/16W
R189	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(EXCEPT TR818)			
R189	1-216-834-11	METAL CHIP	12K	5%	1/16W
		(TR818)			
R190	1-216-814-11	METAL CHIP	270	5%	1/16W
		(TR818)			
R190	1-216-817-11	METAL CHIP	470	5%	1/16W
		(EXCEPT TR818)			
R191	1-216-814-11	METAL CHIP	270	5%	1/16W
		(TR818)			
R192	1-216-834-11	METAL CHIP	12K	5%	1/16W
R193	1-216-857-11	METAL CHIP	1M	5%	1/16W
R195	1-216-835-11	METAL CHIP	15K	5%	1/16W
R196	1-216-835-11	METAL CHIP	15K	5%	1/16W
R197	1-216-834-11	METAL CHIP	12K	5%	1/16W
R198	1-216-817-11	METAL CHIP	470	5%	1/16W
R199	1-216-821-11	METAL CHIP	1K	5%	1/16W
R200	1-216-833-11	METAL CHIP	10K	5%	1/16W
R204	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R208	1-216-864-91	SHORT	0		
R216	1-216-807-11	METAL CHIP	68	5%	1/16W
R226	1-216-864-91	SHORT	0		
R229	1-216-807-11	METAL CHIP	68	5%	1/16W
R232	1-218-879-11	METAL CHIP	22K	0.5%	1/16W
R271	1-216-845-11	METAL CHIP	100K	5%	1/16W
		(TR618/TR618E/TR718E/TR728E/TRV49/TRV49E/TRV58/TRV58E/TRV59E)			
R274	1-216-845-11	METAL CHIP	100K	5%	1/16W
R275	1-216-864-91	SHORT	0		
		(TR818/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			

Ref. No.	Part No.	Description			Remarks
R280	1-216-857-11	METAL CHIP	1M	5%	1/16W
R281	1-216-853-11	METAL CHIP	470K	5%	1/16W
R301	1-216-841-11	METAL CHIP	47K	5%	1/16W
R302	1-216-821-11	METAL CHIP	1K	5%	1/16W
R304	1-216-821-11	METAL CHIP	1K	5%	1/16W
R306	1-216-797-11	METAL CHIP	10	5%	1/16W
R307	1-216-857-11	METAL CHIP	1M	5%	1/16W
R308	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R309	1-216-833-11	METAL CHIP	10K	5%	1/16W
R310	1-216-849-11	METAL CHIP	220K	5%	1/16W
R311	1-216-853-11	METAL CHIP	470K	5%	1/16W
R312	1-216-853-11	METAL CHIP	470K	5%	1/16W
R313	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R314	1-216-835-11	METAL CHIP	15K	5%	1/16W
R316	1-216-853-11	METAL CHIP	470K	5%	1/16W
R317	1-216-821-11	METAL CHIP	1K	5%	1/16W
R318	1-216-821-11	METAL CHIP	1K	5%	1/16W
R319	1-216-815-11	METAL CHIP	330	5%	1/16W
R321	1-216-821-11	METAL CHIP	1K	5%	1/16W
R322	1-216-833-11	METAL CHIP	10K	5%	1/16W
R323	1-216-841-11	METAL CHIP	47K	5%	1/16W
R351	1-216-821-11	METAL CHIP	1K	5%	1/16W
R353	1-216-864-91	SHORT	0		
		(TR818/TR618/TR618E/TR718E/TR728E)			
R354	1-216-809-11	METAL CHIP	100	5%	1/16W
		(TR818/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R356	1-216-864-91	SHORT	0		
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R358	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(TR818/TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R363	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R364	1-216-845-11	METAL CHIP	100K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R368	1-216-847-11	METAL CHIP	150K	5%	1/16W
R372	1-216-841-11	METAL CHIP	47K	5%	1/16W
R373	1-216-853-11	METAL CHIP	470K	5%	1/16W
R379	1-216-820-11	METAL CHIP	820	5%	1/16W
R382	1-216-841-11	METAL CHIP	47K	5%	1/16W
R401	1-216-821-11	METAL CHIP	1K	5%	1/16W
R402	1-216-854-11	METAL CHIP	560K	5%	1/16W
R403	1-216-845-11	METAL CHIP	100K	5%	1/16W
R404	1-216-845-11	METAL CHIP	100K	5%	1/16W
R408	1-216-845-11	METAL CHIP	100K	5%	1/16W
R411	1-216-845-11	METAL CHIP	100K	5%	1/16W
R417	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R420	1-216-841-11	METAL CHIP	47K	5%	1/16W
R428	1-216-845-11	METAL CHIP	100K	5%	1/16W
R431	1-218-881-11	METAL CHIP	27K	0.5%	1/16W
R432	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
R433	1-216-845-11	METAL CHIP	100K	5%	1/16W
R434	1-216-864-91	SHORT	0		
R451	1-216-841-11	METAL CHIP	47K	5%	1/16W
R452	1-216-851-11	METAL CHIP	330K	5%	1/16W
R455	1-216-845-11	METAL CHIP	100K	5%	1/16W
R457	1-216-817-11	METAL CHIP	470	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R458	1-217-671-11	METAL CHIP	1	5%	1/10W
R459	1-217-671-11	METAL CHIP	1	5%	1/10W
R460	1-217-671-11	METAL CHIP	1	5%	1/10W
R461	1-216-812-11	METAL CHIP	180	5%	1/16W
R462	1-216-811-11	METAL CHIP	150	5%	1/16W
R464	1-216-817-11	METAL CHIP	470	5%	1/16W
R465	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R466	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E)			
R466	1-216-864-91	SHORT	0		
		(TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98)			
R467	1-216-835-11	METAL CHIP	15K	5%	1/16W
		(TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98)			
R467	1-216-841-11	METAL CHIP	47K	5%	1/16W
		(TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E)			
R468	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R469	1-216-845-11	METAL CHIP	100K	5%	1/16W
R470	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E)			
R470	1-216-864-91	SHORT	0		
		(TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98)			
R471	1-218-446-11	METAL CHIP	1	5%	1/16W
R472	1-218-446-11	METAL CHIP	1	5%	1/16W
R474	1-216-841-11	METAL CHIP	47K	5%	1/16W
R480	1-216-835-11	METAL CHIP	15K	5%	1/16W
		(TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98)			
R480	1-216-841-11	METAL CHIP	47K	5%	1/16W
		(TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E)			
R481	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R501	1-216-845-11	METAL CHIP	100K	5%	1/16W
R502	1-216-864-91	SHORT	0		
R504	1-216-845-11	METAL CHIP	100K	5%	1/16W
R513	1-216-841-11	METAL CHIP	47K	5%	1/16W
R516	1-216-857-11	METAL CHIP	1M	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R519	1-218-903-11	METAL CHIP	220K	0.5%	1/16W
R520	1-218-911-11	METAL CHIP	470K	0.5%	1/16W
R521	1-218-911-11	METAL CHIP	470K	0.5%	1/16W
R525	1-216-821-11	METAL CHIP	1K	5%	1/16W
R531	1-216-833-11	METAL CHIP	10K	5%	1/16W
R542	1-216-841-11	METAL CHIP	47K	5%	1/16W
R543	1-216-854-11	METAL CHIP	560K	5%	1/16W
R544	1-216-821-11	METAL CHIP	1K	5%	1/16W
R547	1-216-857-11	METAL CHIP	1M	5%	1/16W
R552	1-219-570-11	RES-CHIP	10M	5%	1/16W
R554	1-216-845-11	METAL CHIP	100K	5%	1/16W
R558	1-216-817-11	METAL CHIP	470	5%	1/16W
R559	1-216-803-11	METAL CHIP	33	5%	1/16W
R611	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(TR618/TR818/TRV68/TRV78/TRV88/TRV98)			
R611	1-216-837-11	METAL CHIP	22K	5%	1/16W
		(TRV49/TRV58)			
R611	1-216-845-11	METAL CHIP	100K	5%	1/16W
		(TRV49E/TRV58E/TRV59E)			
R612	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(TR618E/TR718E/TR728E/TRV78E/TRV98E)			
R612	1-216-837-11	METAL CHIP	22K	5%	1/16W
		(TRV49E/TRV58E/TRV59E)			
R612	1-216-845-11	METAL CHIP	100K	5%	1/16W
		(TRV49/TRV58)			
R613	1-216-833-11	METAL CHIP	10K	5%	1/16W
		(TR618/TR618E/TR718E/TR728E)			
R613	1-216-837-11	METAL CHIP	22K	5%	1/16W
		(TR818/TRV78E/TRV98E)			
R613	1-216-845-11	METAL CHIP	100K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/ TRV68/TRV78/TRV88/TRV98)			
R614	1-216-837-11	METAL CHIP	22K	5%	1/16W
		(TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R614	1-216-845-11	METAL CHIP	100K	5%	1/16W
		(TR818)			
R701	1-216-821-11	METAL CHIP	1K	5%	1/16W
		(EXCEPT TR818)			
R702	1-216-813-11	METAL CHIP	220	5%	1/16W
		(EXCEPT TR818)			
R703	1-216-845-11	METAL CHIP	100K	5%	1/16W
		(EXCEPT TR818)			
R704	1-216-795-11	RES-CHIP	6.8	5%	1/16W
R705	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R706	1-216-821-11	METAL CHIP	1K	5%	1/16W
R707	1-216-837-11	METAL CHIP	22K	5%	1/16W
R708	1-216-795-11	RES-CHIP	6.8	5%	1/16W
R709	1-216-821-11	METAL CHIP	1K	5%	1/16W
		(TR818)			
R710	1-216-821-11	METAL CHIP	1K	5%	1/16W
		(TR818)			
R711	1-216-813-11	METAL CHIP	220	5%	1/16W
		(TRV68/TRV78/TRV88/TRV98)			
R712	1-216-813-11	METAL CHIP	220	5%	1/16W
		(TRV68/TRV78/TRV88/TRV98)			
R713	1-216-813-11	METAL CHIP	220	5%	1/16W
		(TR818/TRV49/TRV49E/TRV58/TRV58E/TRV59E/ TRV68/TRV78/TRV78E/TRV88/TRV98/TRV98E)			
R916	1-218-881-11	METAL CHIP	27K	0.5%	1/16W
R917	1-218-893-11	METAL CHIP	82K	0.5%	1/16W

< COMPOSITION CIRCUIT BLOCK >

RB101	1-239-702-81	RESISTOR, NETWORK 22K
RB102	1-239-698-11	RESISTOR, NETWORK 10K
RB151	1-239-698-11	RESISTOR, NETWORK 10K
RB221	1-239-686-11	RESISTOR, NETWORK 1K
RB222	1-239-686-11	RESISTOR, NETWORK 1K
RB223	1-239-672-81	RESISTOR, NETWORK 68
RB272	1-234-380-21	RES, NETWORK 47KX4 (1005)
RB273	1-234-372-21	RES, NETWORK 100X4 (1005)
RB301	1-239-708-81	RESISTOR, NETWORK 68K
RB302	1-239-702-81	RESISTOR, NETWORK 22K
RB351	1-239-698-11	RESISTOR, NETWORK 10K (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)
RB352	1-239-706-81	RESISTOR, NETWORK 47K (TRV49/TRV49E/TRV58/TRV58E/TRV59E/TRV68/ TRV78/TRV78E/TRV88/TRV98/TRV98E)
RB401	1-234-381-21	RES, NETWORK 100KX4 (1005)
RB402	1-239-694-81	RESISTOR, NETWORK 4.7K
RB406	1-239-698-11	RESISTOR, NETWORK 10K
RB407	1-239-690-81	RESISTOR, NETWORK 2.2K
RB451	1-234-381-21	RES, NETWORK 100KX4 (1005)
RB452	1-239-698-11	RESISTOR, NETWORK 10K
RB501	1-234-375-21	RES, NETWORK 1KX4 (1005)
RB502	1-234-383-21	RES, NETWORK 470KX4 (1005)

Ref. No.	Part No.	Description	Remarks
RB503	1-234-383-21	RES, NETWORK 470KX4 (1005)	
RB504	1-234-375-21	RES, NETWORK 1KX4 (1005)	
RB505	1-239-686-11	RESISTOR, NETWORK 1K	
RB506	1-234-378-21	RES, NETWORK 10KX4 (1005) (TR618/TR618E/TR718E/TR728E/TR818)	
RB508	1-239-686-11	RESISTOR, NETWORK 1K	
RB509	1-239-657-81	RESISTOR, NETWORK 470K	
RB510	1-234-375-21	RES, NETWORK 1KX4 (1005)	
RB511	1-234-383-21	RES, NETWORK 470KX4 (1005)	
RB514	1-239-706-81	RESISTOR, NETWORK 47K	
		< TRANSFORMER >	
T001	1-435-252-11	TRANSFORMER, DC-DC CONVERTER	
		< VARISTOR >	
VDR701	1-803-974-21	VARISTOR, CHIP	
VDR703	1-803-974-21	VARISTOR, CHIP	
VDR704	1-803-974-21	VARISTOR, CHIP	
VDR706	1-803-974-21	VARISTOR, CHIP	
VDR707	1-803-974-21	VARISTOR, CHIP	
		< VIBRATOR >	
X271	1-760-320-11	VIBRATOR, CRYSTAL (28.636363MHz) (TR618/TR818/TRV49/TRV58/TRV68/TRV78/TRV88/TRV98)	
X271	1-760-321-11	VIBRATOR, CRYSTAL (28.375MHz) (TR618E/TR718E/TR728E/TRV49E/ TRV58E/TRV59E/TRV78E/TRV98E)	
X401	1-760-655-41	VIBRATOR, CRYSTAL (20MHz)	
X501	1-767-980-21	VIBRATOR, CERAMIC (20MHz)	
X502	1-760-458-21	VIBRATOR, CRYSTAL (32.768kHz)	
	A-7073-838-A	VF-129 (N) BOARD, COMPLETE (EXCEPT TR818)	
		********** (Ref.No.;1000 Series)	
		< CAPACITOR >	
C901	1-107-854-11	TANTAL. CHIP 68uF 20% 6.3V	
C902	1-163-038-11	CERAMIC CHIP 0.1uF 25V	
C903	1-135-145-11	TANTALUM CHIP 0.47uF 10% 35V	
C904	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C905	1-104-752-11	TANTAL. CHIP 33uF 20% 6.3V	
C906	1-162-638-11	CERAMIC CHIP 1uF 16V	
C907	1-104-563-11	FILM CHIP 0.1uF 5% 16V	
C908	1-162-920-11	CERAMIC CHIP 27PF 5% 50V	
C909	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
⚠C910	1-162-625-11	CERAMIC CHIP 0.0047uF 5% 50V	
⚠C911	1-164-715-11	CERAMIC CHIP 0.0068uF 5% 50V	
C912	1-107-854-11	TANTAL. CHIP 68uF 20% 6.3V	
C913	1-135-145-11	TANTALUM CHIP 0.47uF 10% 35V	
C914	1-113-984-11	TANTAL. CHIP 1.5uF 20% 35V	
C915	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C916	1-135-475-91	CERAMIC CHIP 0.001uF 10% 630V	
		< CONNECTOR >	
* CN901	1-785-379-01	CONNECTOR, FFC/FPC 4P	
* CN902	1-580-057-11	PIN, CONNECTOR (SMD) 4P	

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D901	8-719-951-21	DIODE PR1102W-TR	
D903	8-719-073-01	DIODE MA111-(K8).S0	
		< IC >	
IC901	8-759-196-14	IC BA7149F-E2	
		< COIL >	
L901	1-412-031-11	INDUCTOR CHIP 47uH	
L902	1-410-387-11	INDUCTOR CHIP 33uH	
⚠L903	1-411-697-11	COIL, FERRITE (HLC)	
		< TRANSISTOR >	
Q901	8-729-230-63	TRANSISTOR 2SD1819A-QRS-TX	
Q902	8-729-106-68	TRANSISTOR 2SD1615-T1GLGK	
Q903	8-729-216-31	TRANSISTOR 2SA1163G-TE85L	
Q904	8-729-230-63	TRANSISTOR 2SD1819A-QRS-TX	
		< RESISTOR >	
R901	1-216-817-11	METAL CHIP 470 5% 1/16W	
R902	1-216-817-11	METAL CHIP 470 5% 1/16W	
R903	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R904	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R905	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
R906	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R907	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R908	1-216-852-11	METAL CHIP 390K 5% 1/16W	
R909	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R910	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R911	1-216-160-00	RES-CHIP 27 5% 1/8W	
R912	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R915	1-218-879-11	METAL CHIP 22K 0.5% 1/16W	
R917	1-218-891-11	METAL CHIP 68K 0.5% 1/16W	
R918	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R919	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R920	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R921	1-216-795-11	RES-CHIP 6.8 5% 1/16W	
R921	1-216-800-11	RES-CHIP 18 5% 1/16W	
R922	1-216-850-11	METAL CHIP 270K 5% 1/16W	
R923	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R924	1-216-862-11	RES-CHIP 2.7M 5% 1/16W	
R925	1-216-862-11	RES-CHIP 2.7M 5% 1/16W	
R926	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R927	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R928	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R929	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R930	1-216-791-11	METAL CHIP 3.3 5% 1/16W	
R931	1-217-671-11	METAL CHIP 1 5% 1/10W	
R932	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
		< VARIABLE RESISTOR >	
RV903	1-238-852-11	RES, ADJ, CERMET 470	
RV904	1-238-095-11	RES, ADJ, CERMET 470K	

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.

Ref. No.	Part No.	Description			Remarks
		< TRANSFORMER >			
⚠T901	1-453-124-11	TRANSFORMER ASSY, FLYBACK			
T902	1-431-915-11	TRANSFORMER ASSY, FLYBACK (M)			
		< FLAT CABLE >			
⚠W901	1-540-019-21	SOCKET ASSY, CRT			
	A-7074-193-A	VF-141 BOARD, COMPLETE (TR818)			
		**********			
		(Ref.No.;10000 Series)			
		< CAPACITOR >			
C4501	1-127-688-21	TANTAL. CHIP	10uF	20%	6.3V
C4501	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C4503	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4504	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4507	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4508	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4509	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C4510	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4511	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C4512	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4513	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4514	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C4515	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C4516	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C4517	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4518	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C4519	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C4520	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C4521	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C4523	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C4524	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C4526	1-107-726-11	CERAMIC CHIP	0.01uF	10%	25V
C4527	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
		< CONNECTOR >			
CN4501	1-764-526-11	CONNECTOR, FFC/FPC 18P			
CN4502	1-750-630-11	CONNECTOR, FFC/FPC (ZIF) 16P			
		< DIODE >			
D4502	8-713-102-80	DIODE 1T369-01-T8A			
D4503	8-719-077-74	DIODE MA2S784008S0			
D4504	8-719-077-74	DIODE MA2S784008S0			
		< FERRITE BEAD >			
FB4502	1-500-329-21	FERRITE	0UH		
FB4505	1-500-329-21	FERRITE	0UH		
		< IC >			
IC4501	8-759-660-93	IC RB5P004AM1			
IC4502	8-752-405-57	IC CXD3501AR-T4			

Ref. No.	Part No.	Description			Remarks
		< COIL >			
L4501	1-469-525-91	INDUCTOR	10uH		
L4504	1-412-949-21	INDUCTOR	6.8uH		
		< TRANSISTOR >			
Q4504	8-729-037-52	TRANSISTOR	2SD2216J-QR(K8).SO		
		< RESISTOR >			
R4505	1-216-853-11	METAL CHIP	470K	5%	1/16W
R4507	1-218-895-11	METAL CHIP	100K	0.5%	1/16W
R4508	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4513	1-216-835-11	METAL CHIP	15K	5%	1/16W
R4515	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R4516	1-216-841-11	METAL CHIP	47K	5%	1/16W
R4517	1-216-843-11	METAL CHIP	68K	5%	1/16W
R4518	1-216-837-11	METAL CHIP	22K	5%	1/16W
R4520	1-216-843-11	METAL CHIP	68K	5%	1/16W
R4521	1-216-857-11	METAL CHIP	1M	5%	1/16W
R4522	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4523	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4524	1-216-844-11	METAL CHIP	82K	5%	1/16W
R4525	1-216-838-11	METAL CHIP	27K	5%	1/16W
R4526	1-216-809-11	METAL CHIP	100	5%	1/16W
R4527	1-216-809-11	METAL CHIP	100	5%	1/16W
R4528	1-216-809-11	METAL CHIP	100	5%	1/16W
R4529	1-216-833-11	METAL CHIP	10K	5%	1/16W
R4530	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4534	1-216-864-91	SHORT	0		
R4542	1-216-864-91	SHORT	0		
R4544	1-216-853-11	METAL CHIP	470K	5%	1/16W
R4545	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4546	1-216-845-11	METAL CHIP	100K	5%	1/16W
R4547	1-216-845-11	METAL CHIP	100K	5%	1/16W

		ACCESSORIES
		**********
	1-467-574-21	REMOTE COMMANDER (RMT-708) (TR728E/TRV49/TRV49E/TRV59E/TRV78/TRV78E/TRV98/TRV98E)
	1-467-574-73	REMOTE COMMANDER (RMT-708) (TRV49E:E/TRV78E:E/TRV98E:E)
⚠	1-475-599-11	ADAPTOR, AC (AC-L10A) (TR618/TR618E:E,HK,AUS/TR718E:AEP,UK/TR728E:AEP,UK/TR818/TRV49:E,HK,JE/TRV49E:E,HK,AUS,JE/TRV58/TRV58E/TRV59E/TRV68/TRV78:E,HK,JE/TRV78E/TRV88/TRV98:US,CND,E,HK,JE,BR/TRV98E:AEP,UK,E,HK,AUS,JE)
⚠	1-475-599-71	ADAPTOR, AC (AC-L10A) (TRV49:KR/TRV78:KR/TRV98:KR)
⚠	1-475-599-81	ADAPTOR, AC (AC-L10B) (TR618E:CN/TRV49E:CN/TRV98E:CN)

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
⚠	1-569-007-11	ADAPTOR, CONVERSION 2P (TRV49:JE/TRV49E:JE/TRV78:JE/TRV78E:JE/TRV98:JE/TRV98E:JE)	
⚠	1-569-008-21	ADAPTOR, CONVERSION 2P (TR618/TR618E:E,HK/TR818:E,BR/TRV49:E,HK/TRV49E:E,HK/TRV58:E,BR/TRV68:E/TRV78:E,HK/TRV78E:E,HK/TRV88:E/TRV98:E,HK/TRV98E:E,HK)	
	1-573-291-11	ADAPTOR, CONVERSION 21P (TR718E/TR728E/TRV58E/TRV59E/TRV78E:AEP,UK/TRV98E:AEP,UK)	
* ⚠	1-575-131-11	CORD, POWER (TR818:E,BR/TRV49:E/TRV49E:E/TRV58:E,BR/TRV68:E/TRV78:E/TRV78E:E/TRV88:E/TRV98:E,BR/TRV98E:E)	
⚠	1-690-827-11	CORD SET, POWER (TR718E:AEP/TR728E:AEP/TRV58E:AEP/TRV59E:AEP/TRV78E:AEP/TRV98E:AEP)	
⚠	1-696-819-11	CORD, POWER (TR618E:AUS/TRV49E:AUS/TRV78E:AUS/TRV98E:AUS)	
⚠	1-769-608-11	CORD, POWER (TR618/TR618E:E/TR818:E/TRV49:E/TRV49E:E/TRV58:E/TRV68:E/TRV78:E/TRV78E:E/TRV88:E/TRV98:E/TRV98E:E)	
⚠	1-775-843-21	CORD, POWER (WITH FILTER) (TR718E:UK/TR728E:UK/TRV58E:UK/TRV59E:UK/TRV78E:UK/TRV98E:UK)	
⚠	1-776-985-11	CORD, POWER (TRV49:KR/TRV78:KR/TRV98:KR)	
⚠	1-782-476-11	CORD, POWER (TR618E:CN/TRV49E:CN/TRV98E:CN)	
⚠	1-783-374-11	CORD, POWER (TR618E:HK/TRV49:HK/TRV49E:HK/TRV78:HK/TRV78E:HK/TRV98:HK/TRV98E:HK)	
⚠	1-783-952-11	CORD, POWER (TR818:AR/TRV58:AR)	
	1-783-738-31	CORD, CONNECTION (AV CABLE)(1.5m)	
⚠	1-790-107-22	CORD, POWER (TR818:US,CND/TRV58:US,CND/TRV68:US,CND/TRV88:US/TRV98:US,CND)	
⚠	1-790-732-11	CORD, POWER (TRV49:JE/TRV49E:JE/TRV78:JE/TRV78E:JE/TRV98:JE/TRV98E:JE)	
	3-065-645-11	MANUAL, INSTRUCTION (ENGLISH) (TR618/TR818:US,CND)	
	3-065-645-21	MANUAL, INSTRUCTION (FRENCH) (TR818:CND)	
	3-065-645-31	MANUAL, INSTRUCTION (SRANISH/PORTUGUESE) (TR618/TR818:E,AR)	
	3-065-645-41	MANUAL, INSTRUCTION (TRANDTIONAL CHINESE) (TR618)	
	3-065-645-61	MANUAL, INSTRUCTION (ARABIC) (TR618)	
	3-065-646-11	MANUAL, INSTRUCTION (ENGLISH/RUSSIAN) (TR618E/TR718E:AEP/TR728E:AEP)	
	3-065-646-21	MANUAL, INSTRUCTION (FRENCH/GERMAN) (TR618E:E/TR718E:AEP/TR728E:AEP)	
	3-065-646-31	MANUAL, INSTRUCTION (ENGLISH/DUTCH) (TR718E:AEP/TR728E:AEP)	
	3-065-646-41	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (TR718E:AEP/TR728E:AEP)	
	3-065-646-51	MANUAL, INSTRUCTION (ITALIAN/GREEK) (TR718E:AEP/TR728E:AEP)	
	3-065-646-61	MANUAL, INSTRUCTION (ENGLISH/SWEDISH) (TR718E:AEP/TR728E:AEP)	
	3-065-646-71	MANUAL, INSTRUCTION (FINNISH/DANISH) (TR718E:AEP/TR728E:AEP)	
	3-065-646-81	MANUAL, INSTRUCTION (POLISH/CZECH) (TR718E:AEP/TR728E:AEP)	
	3-065-646-91	MANUAL, INSTRUCTION (SLOVAKIAN) (TR718E:AEP/TR728E:AEP)	
	3-065-647-11	MANUAL, INSTRUCTION (ARABIC/PERSIAN) (TR618E:E)	
	3-065-647-21	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (TR618E:E,CN)	
	3-065-647-31	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (TR618E:HK)	
	3-065-648-11	MANUAL, INSTRUCTION (ENGLISH) (TRV49:E,HK,JE/TRV58/TRV68/TRV78:E,HK,JE/TRV88/TRV98:US,CND,E,HK,JE)	
	3-065-648-21	MANUAL, INSTRUCTION (FRENCH) (TRV58:CND/TRV68:CND/TRV98:CND)	
	3-065-648-31	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (TRV49:E,JE/TRV58:E,AR/TRV68:E/TRV78:E,JE/TRV88:E/TRV98:E,JE)	
	3-065-648-41	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (TRV49:E,HK/TRV78:E,HK/TRV98:E,HK)	
	3-065-648-51	MANUAL, INSTRUCTION (KOREAN) (TRV49:KR,JE/TRV78:KR,JE/TRV98:KR,JE)	
	3-065-648-61	MANUAL, INSTRUCTION (ARABIC) (TRV49:E/TRV78:E/TRV98:E)	
	3-065-649-11	MANUAL, INSTRUCTION (ENGLISH/RUSSIAN) (TRV49E/TRV58E:AEP/TRV59E:AEP/TRV78E:AEP,E,HK,AUS,JE/TRV98E:AEP,E,HK,AUS,JE,CN)	
	3-065-649-21	MANUAL, INSTRUCTION (FRENCH/GERMAN) (TRV49E:E,JE/TRV58E:AEP/TRV59E:AEP/TRV78E:AEP,E,JE/TRV98E:AEP,E,JE)	
	3-065-649-31	MANUAL, INSTRUCTION (ENGLISH/DUTCH) (TRV58E:AEP/TRV59E:AEP/TRV78E:AEP/TRV98E:AEP)	
	3-065-649-41	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (TRV58E:AEP/TRV59E:AEP/TRV78E:AEP/TRV98E:AEP)	
	3-065-649-51	MANUAL, INSTRUCTION (ITALIAN/GREEK) (TRV58E:AEP/TRV59E:AEP1/TRV78E:AEP/TRV98E:AEP)	
	3-065-649-61	MANUAL, INSTRUCTION (EHGLISH/SWEDISH) (TRV58E:AEP/TRV59E:AEP/TRV78E:AEP/TRV98E:AEP)	
	3-065-649-71	MANUAL, INSTRUCTION (FINNISH/DANISH) (TRV58E:AEP/TRV59E:AEP/TRV78E:AEP/TRV98E:AEP)	
	3-065-649-81	MANUAL, INSTRUCTION (POLISH/CZECH) (TRV58E:AEP/TRV59E:AEP/TRV78E:AEP/TRV98E:AEP)	
	3-065-649-91	MANUAL, INSTRUCTION (SLOVSAKIAN/HUNGARIAN) (TRV58E:AEP/TRV59E:AEP/TRV78E:AEP/TRV98E:AEP)	
	3-065-650-11	MANUAL, INSTRUCTION (ARABIC/PERSIAN) (TRV49E:E/TRV78E:E/TRV98E:E)	
	3-065-650-21	MANUAL, INSTRUCTION (SIMPLIFIED CHINESE) (TRV49E:E,JE,CN/TRV78E:E,JE/TRV98E:E,JE,CN)	
	3-065-650-31	MANUAL, INSTRUCTION (TRANDTIONAL CHINESE) (TRV49E:HK/TRV78E:HK/TRV98E:HK)	
	3-958-131-01	LID,BATTERY CASE (FOR RMT-708)	

Note :	**Note :**
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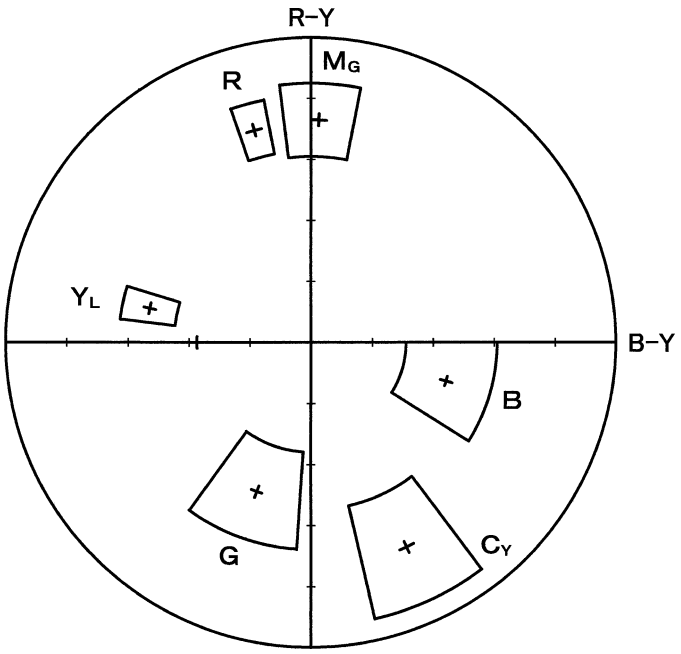
〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

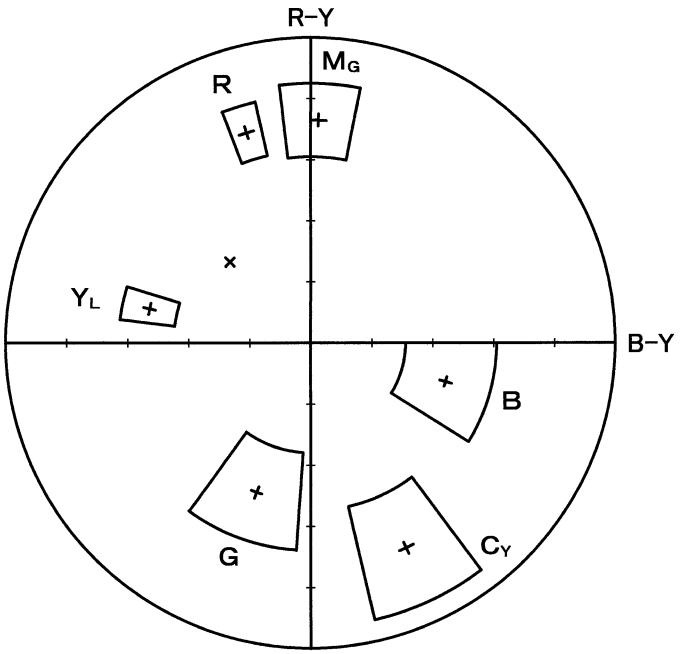
For NTSC model



**CCD-TR618/TR818/TRV49/TRV58/
TRV68/TRV78/TRV88/TRV98**

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

For PAL model



**CCD-TR618E/TR718E/TR728E/TRV49E/
TRV58E/TRV59E/TRV78E/TRV98E**