

DCR-TRV240/TRV340

RMT-814

SERVICE MANUAL

Level 2

Ver 1.3 2003.10

Self Diagnosis
Supported model

Digital 8

Digital Handycam



InfoLITHIUM



MEMORY STICK



Photo : DCR-TRV340

US Model
Canadian Model
E Model
Hong Kong Model
DCR-TRV240/TRV340
Korea Model
Tourist Model
Argentina Model
Brazilian Model
DCR-TRV340

M2000 MECHANISM

On the VC-276 board

This service manual provides the information that is premised the circuit board replacement service and not intended repair inside the VC-276 board.

Therefore, schematic diagram, printed wiring board, waveforms, mounted parts location and electrical parts list of the VC-276 board are not shown.

The following pages are not shown.

Schematic diagram Pages 4-29 to 4-78
Printed wiring board Pages 4-79 to 4-82
Waveforms and mounted parts location Pages 4-85 to 4-89
Electrical parts list Pages 6-14 to 6-25

For MECHANISM ADJUSTMENT, refer to the
"8mm Video MECHANICAL ADJUSTMENT
MANUAL IX **M2000 MECHANISM**" (9-929-
861-11).

SPECIFICATIONS

Video camera recorder

System

Video recording system

2 rotary heads

Helical scanning system

Audio recording system

Rotary heads, PCM system

Quantization: 12 bits (Fs 32 kHz,

stereo 1, stereo 2), 16 bits

(Fs 48 kHz, stereo)

Video signal

NTSC color, EIA standards

Recommended cassette

Hi8/ Digital8 video cassette

Recording/playback time (using

120 min. Hi8 video cassette)

SP mode: 1 hour

LP mode: 1 hour and 30 minutes

Fast-forward/rewind time (using

120 min. Hi8 video cassette)

Approx. 5 min.

Viewfinder

Electric Viewfinder, Monochrome

Image device

3 mm (1/6 type CCD)

(Charge Coupled Device)

Gross: Approx. 460 000 pixels

Effective: Approx. 290 000 pixels

Lens

Combined power zoom lens

Filter diameter 37 mm (1 1/2 in.)

25× (Optical), 700× (Digital)

Focal length

2.4 – 60 mm (1/8 – 2 3/8 in.)

When converted to a 35 mm still camera

42 – 1 050 mm (1 11/16 – 41 3/8 in.)

Color temperature

Auto

Minimum illumination

4 lx (lux) (F 1.6)

0 lx (lux) (in the NightShot mode)*

* Objects unable to be seen due to the dark can be shot with infrared lighting.

Input/output connectors

S video input/output

4-pin mini DIN

Luminance signal: 1 Vp-p,

75 Ω (ohms), unbalanced

Chrominance signal: 0.286 Vp-p,

75 Ω (ohms), unbalanced

Audio/Video input/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)/Stereo minijack

(ø 3.5 mm)

Input impedance more than 47 kΩ

(kilohms)

Headphone jack

Stereo minijack (ø 3.5 mm)

USB jack

mini-B

LANC jack

Stereo mini-minijack (ø 2.5 mm)

MIC jack

Stereo minijack (ø 3.5 mm)

DV input/output

4-pin connector

LCD screen

Picture

6.2 cm (2.5 type)

50.3 × 37.4 mm (2 × 1 1/2 in.)

Total dot number

61 600 (280 × 220)

— Continued on next page —

DIGITAL VIDEO CAMERA RECORDER

SONY®

DCR-TRV240/TRV340

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 using LCD
3.8 W
Viewfinder
3.0 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.)
206 × 101 × 85 mm
(8 1/8 × 4 × 3 3/8 in.) (w / h / d)
Mass (approx.)
DCR-TRV240:
890 g (1 lb 15 oz)
DCR-TRV340:
900 g (1 lb 15 oz)
excluding the battery pack, cassette, lens cap and shoulder strap

DCR-TRV240:
1 030 g (2 lb 4 oz)
DCR-TRV340:
1 040 g (2 lb 4 oz)
including the battery pack
NP-FM30, 120min. Hi8 cassette,
lens cap 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 the 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
Mean output voltage
DC 7.2 V
Capacity
5.0 Wh (700 mAh)
Operating temperature
0°C to 40°C (32°F to 104°F)
Dimensions (approx.)
38.2 × 20.5 × 55.6 mm
(1 9/16 × 13/16 × 2 1/4 in.) (w / h / d)
Mass (approx.)
65 g (2.3 oz)
Type
Lithium ion

“Memory Stick”

(DCR-TRV340 only)
Memory
Flash memory
8MB: MSA-8A
Operating voltage
2.7 – 3.6 V
Power consumption
Approx. 45 mA in the operating mode
Approx. 130 µA in the standby mode
Dimensions (approx.)
50 × 2.8 × 21.5 mm
(2 × 1/8 × 7/8 in.) (w / h / d)
Mass (approx.)
4 g (0.14 oz)

Design and specifications are subject to change without notice.

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

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 IDENTIFIÉS 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 PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS 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.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

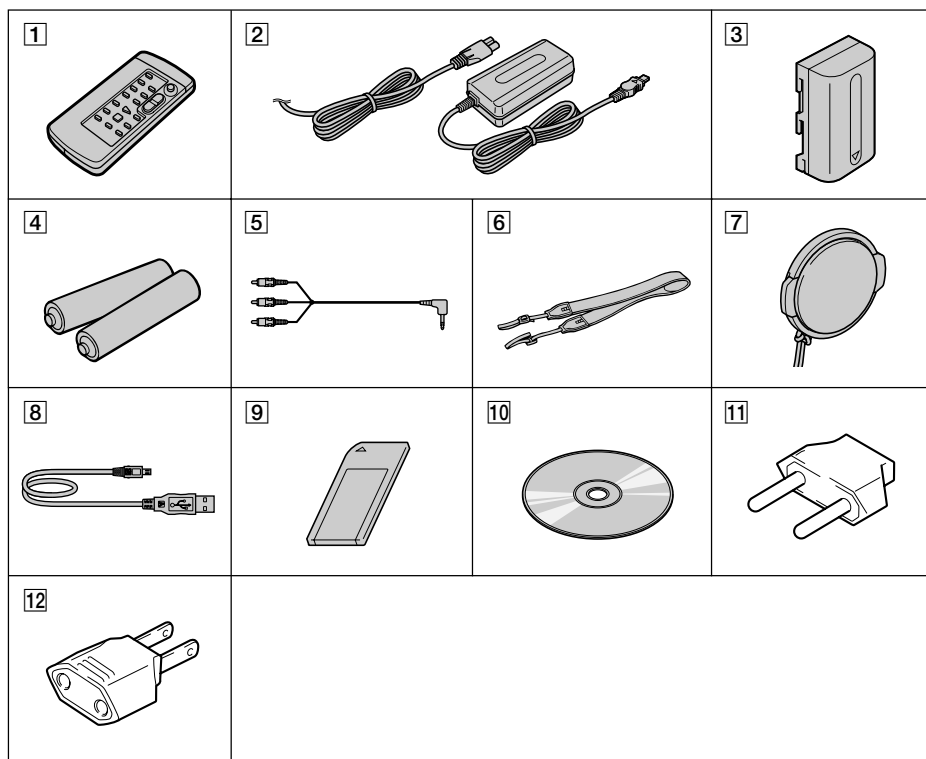
 : LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350°C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

• SUPPLIED ACCESSORIES

Make sure that the following accessories are supplied with your camcorder.



1 Wireless Remote Commander (1)

2 AC-L10A/L10B/L10C AC power adaptor (1), Power cord (1)

3 NP-FM30 battery pack (1)

4 Size AA (R6) battery for Remote Commander (2)

5 A/V connecting cable (1)

6 Shoulder strap (1)

7 Lens cap (1)

8 USB cable (1)

9 "Memory Stick" (1) (DCR-TRV340 only)

10 CD-ROM (SPVD-008 USB Driver) (1)

11 2-pin conversion adaptor (1)
DCR-TRV340 : Tourist model

12 2-pin conversion adaptor (1)
DCR-TRV240 : E, Hong Kong /
TRV340 : E, Hong Kong model

Table for difference of function

Model	DCR-TRV240	DCR-TRV340	Remark
Destination	US, CND, E, HK	US, CND, E, HK, KR, JE, AR, BR	
Memory Stick	×	○	○ : with VC-276 board IC4901, 4903, 4905, 5001, 5101, 5102
MPEG Movie	×	△	×
Intelligent Accessory Shoe	8p	15p	15p : Printer ready

• Abbreviation

CND : Canadian model
HK : Hong Kong model
KR : Korea model
JE : Tourist model
AR : Argentina model
BR : Brazilian model

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Parts list of the VC-276 board are not shown.
Pages from 6-14 to 6-25 are not shown.

* Optical axis frame and Color reproduction frame are shown on pages 206 and 207.

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 code (J-6082-223-A), the power is shut off so that the unit cannot operate.

These following two methods are available to prevent this. Take note of which to use during repairs.

Method 1.

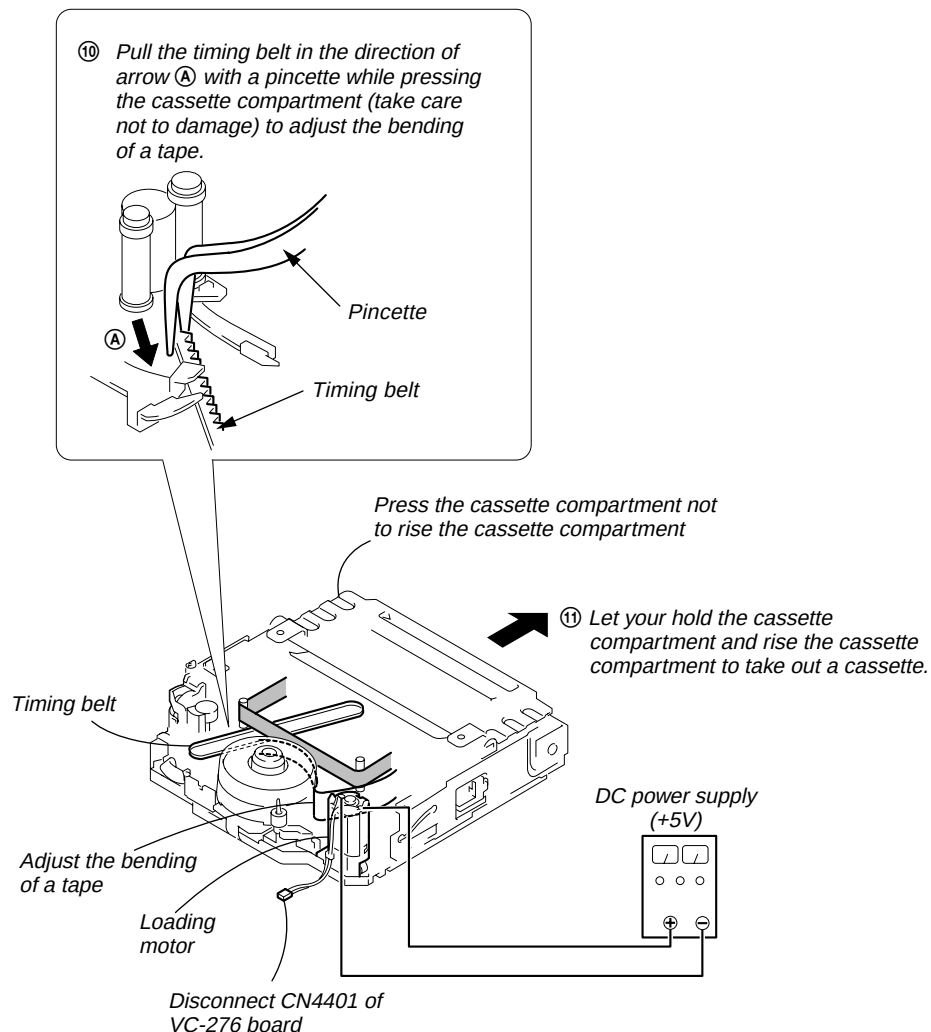
Use the DC IN terminal. (Use the AC power adaptor.)

Method 2.

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

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

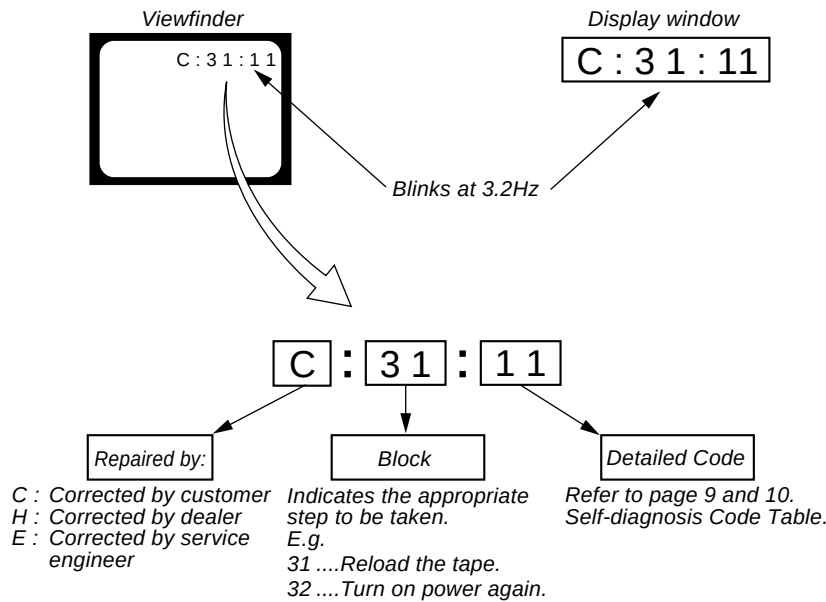
- ① Refer to 2-2. to remove the front panel section.
- ② Refer to 2-3. to remove the cabinet (upper) section.
- ③ Refer to 2-3. to remove the cabinet (R) section.
- ④ Refer to 2-4. to remove the lens section.
- ⑤ Refer to 2-5. to remove the EVF section.
- ⑥ Refer to 2-6. to remove the battery panel section.
- ⑦ Refer to 2-8. and 2-9. to remove the cabinet (L) section. (Include the CS frame assembly and control switch block (SS-1380).)
- ⑧ Disconnect CN4401 (2P) of VC-276 board.
- ⑨ Add +5V from the DC POWER SUPPLY and unload with a pressing the cassette compartment.



SELF-DIAGNOSIS FUNCTION

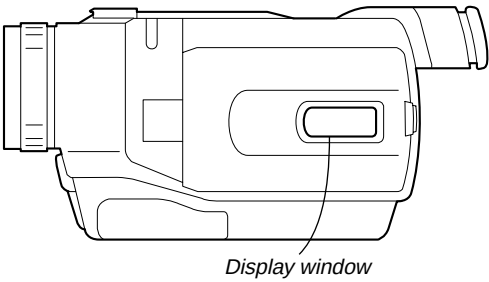
1. Self-diagnosis Function

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the viewfinder or 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 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.

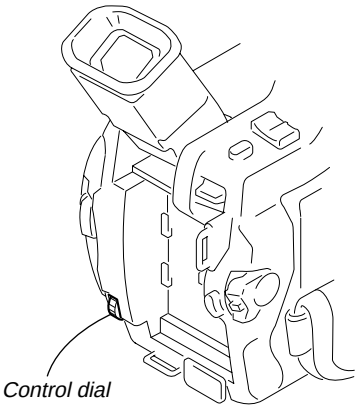
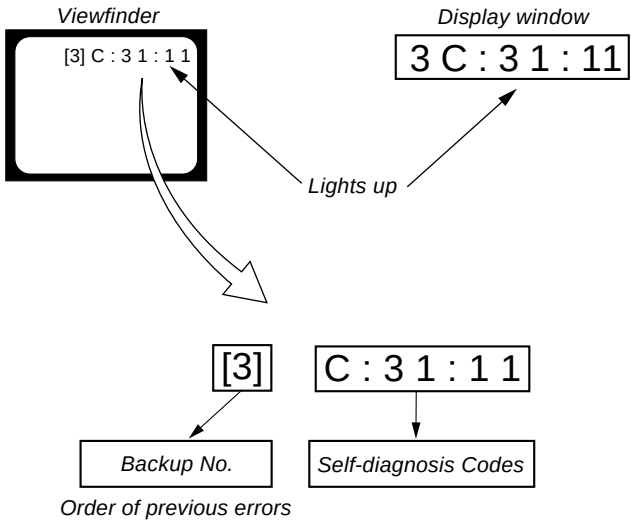


3. Service Mode Display

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
- [2] : Occurred second time
- [3] : Occurred third time
- [4] : Occurred fourth time
- [5] : Occurred fifth 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 coin-type lithium battery (CF-2500 block BT001). When the CF-2500 block 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.

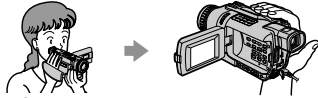
Self-diagnosis Code			Symptom/State	Correction
Repaired by:	Block Function	Detailed Code		
E	6 1	0 0	Difficult to adjust focus (Cannot initialize focus.)	Inspect the lens block focus reset sensor (Pin ⑬ of CN1551 of VC-276 board) when focusing is performed when the focus ring is rotated in the focus manual mode and the focus motor drive circuit (IC1553 of VC-276 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 ⑫ of CN1551 of VC-276 board) when zooming is performed when the zoom switch is operated and the zoom motor drive circuit (IC1553 of VC-276 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 (SE301 of SE-032 board) peripheral circuits.
E	6 2	0 1	Handshake correction function does not work well. (With yaw angular velocity sensor output stopped.)	Inspect yaw angular velocity sensor (SE302 of SE-032 board) peripheral circuits.

This section is extracted from instruction manual.

Main features

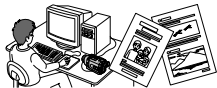
Recording moving or still images, and playing them back

- Recording moving pictures on a tape (p. 20)
- Recording still images on a tape (p. 38)
- Playing back a tape (p. 33)
- Recording still images on "Memory Stick"s (DCR-TRV340 only) (p. 122)
- Recording moving pictures on "Memory Stick"s (DCR-TRV340 only) (p. 138)
- Viewing still images recorded on "Memory Stick"s (DCR-TRV340 only) (p. 148)
- Viewing moving pictures on "Memory Stick"s (DCR-TRV340 only) (p. 151)



Capturing images on your computer

- Viewing images recorded on "Memory Stick"s using the USB cable (DCR-TRV340 only) (p. 153)
- Viewing images recorded on a tape using the USB cable (p. 93)
- Viewing images live on your computer from your camcorder using the USB cable (p. 102)
- Capturing images from an analog video unit on your computer (p. 87)



Other uses

Functions for adjusting exposure in the recording mode

- BACKLIGHT (p. 27)
- NightShot/Super NightShot/Color Slow Shutter (p. 28)
- PROGRAM AE (p. 50)
- Adjusting the exposure manually (p. 52)

Functions for giving images more impact

- Digital zoom [MENU] (p. 23) The default setting is OFF. (To zoom greater than 25×, select the digital zoom power in D ZOOM in the menu settings.)
- Fader (p. 43)
- Picture effects (p. 46)
- Digital effects (p. 47)
- Titles (p. 57, 59)
- MEMORY MIX (DCR-TRV340 only) (p. 127)

Functions for giving a natural appearance to your recordings

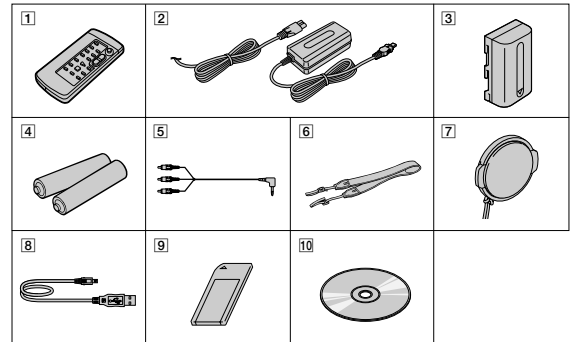
- Sports lesson (p. 50)
- Landscape (p. 50)
- Manual focus (p. 53)

Functions for use on recorded tapes

- END SEARCH/EDITSEARCH/Rec Review (p. 31)
- DATA CODE (p. 34)
- Tape PB ZOOM (p. 64)
- ZERO SET MEMORY (p. 66)
- Digital program editing (on tapes) (p. 73)/(on "Memory Stick"s) (DCR-TRV340 only) (p. 144)

Checking supplied accessories

Make sure that the following accessories are supplied with your camcorder.



- | | |
|--|--|
| 1 Wireless Remote Commander (1) (p. 205) | 7 Lens cap (1) (p. 20) |
| 2 AC-L10A/L10B/L10C AC power adaptor (1), Power cord (1) (p. 13) | 8 USB cable (1) (p. 95, 154) |
| 3 NP-FM30 battery pack (1) (p. 12, 13) | 9 "Memory Stick" (1) (DCR-TRV340 only) (p. 115) |
| 4 Size AA (R6) battery for Remote Commander (2) (p. 205) | 10 CD-ROM (SPVD-008 USB Driver) (1) (p. 95, 154) |
| 5 A/V connecting cable (1) (p. 37) | |
| 6 Shoulder strap (1) (p. 199) | |

Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, storage media, etc.

4

5

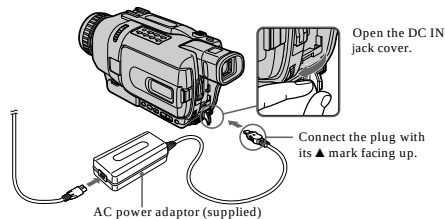
Quick Start Guide



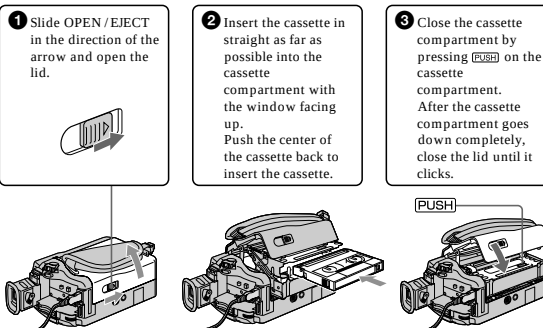
This chapter introduces you to the basic features of your camcorder. See the page in parentheses "()" for more information.

1 Connecting the power cord (p. 16)

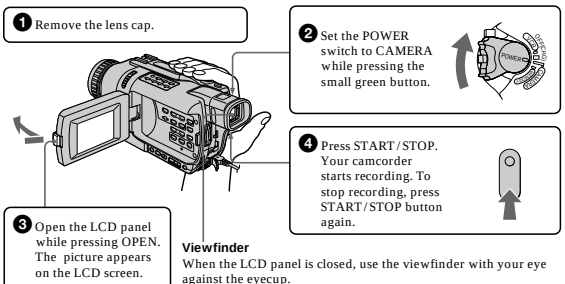
Use the battery pack when using your camcorder outdoors (p. 12).



2 Inserting a cassette (p. 19)



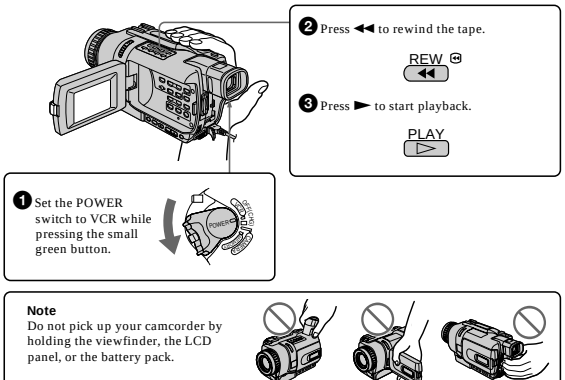
3 Recording a picture (p. 20)



When the LCD panel is closed, use the viewfinder with your eye against the eyecup. The picture in the viewfinder is black and white.

When you purchase your camcorder, the clock setting is set to off. If you want to record the date and time for a picture, set the clock setting before recording (p. 17).

4 Monitoring the playback picture on the LCD screen (p. 33)



Quick Start Guide

Quick Start Guide

8

9

— Getting Started —
Using this manual

The instructions in this manual are for the two models listed in the table below. Before you start reading this manual and operating your camcorder, check the model number by looking at the bottom of your camcorder. The DCR-TRV340 is the model used for illustration purposes. Otherwise, the model name is indicated in the illustrations. Any differences in operation are clearly indicated in the text, for example, "DCR-TRV340 only."

As you read through this manual, buttons and settings on your camcorder are shown in capital letters.

e.g. Set the POWER switch to CAMERA.

When you carry out an operation, you can hear a beep to indicate that the operation is being carried out.

Differences by camcorder model		
DCR-	TRV240	TRV340
MEMORY mark* (on the POWER switch)	—	●
Self-timer	—	●

- Provided
- Not provided

* The models with MEMORY marked on the POWER switch is provided with memory functions. See page 115 for details.

Before using your camcorder

With your digital camcorder, you can use Hi8 **Hi8** / Digital8 **D8** video cassettes. Your camcorder records and plays back pictures in the Digital8 **D8** system. Also, your camcorder plays back tapes recorded in the Hi8 **Hi8** / standard 8 **8** (analog) system. You, however, cannot use the functions in "Advanced Playback Operations" on page 62 to 69 for playback in the Hi8 **Hi8** / standard 8 **8** system. To enable smooth transition, we recommend that you do not mix pictures recorded in the Hi8 **Hi8** / standard 8 **8** with the Digital8 **D8** system on a tape.

Note on TV color systems

TV color systems differ from country to country. To view your recordings on a TV, you need an NTSC system-based TV.

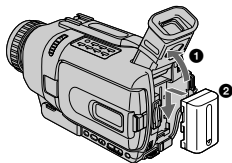
Copyright precautions

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

Step 1 Preparing the power supply

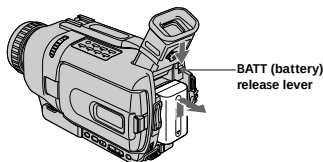
Installing the battery pack

- (1) Lift up the viewfinder.
- (2) Slide the battery pack down until it clicks.



To remove the battery pack

- (1) Lift up the viewfinder.
- (2) Slide the battery pack out in the direction of the arrow while pressing BATT (battery) release lever down.



If you install the large-capacity battery pack

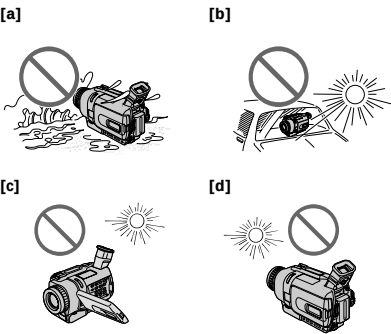
If you install the NP-FM70 / QM71 / FM90 / QM91 / FM91 battery pack on your camcorder, extend its viewfinder.

Using this manual

Precautions on camcorder care

Lens and LCD screen/finder

- The LCD screen and the finder are manufactured using extremely high-precision technology so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and the finder. These points are normal in the manufacturing process and do not affect the recording in any way.
- Do not let your camcorder become wet. Keep your camcorder away from rain and sea water. Letting your camcorder become wet may cause your camcorder to malfunction. Sometimes this malfunction cannot be repaired [a].
- Never leave your camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight [b].
- Be careful when placing the camera near a window or outdoors. Exposing the LCD screen, the finder or the lens to direct sunlight for long periods may cause malfunctions [c].
- Do not directly shoot the sun. Doing so might cause your camcorder to malfunction. Take pictures of the sun in low light conditions such as dusk [d].



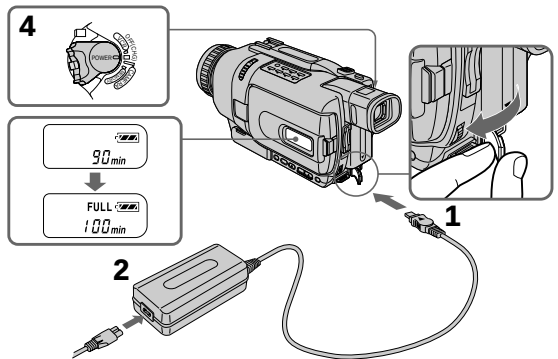
Step 1 Preparing the power supply

Charging the battery pack

Use the battery pack after charging it for your camcorder. Your camcorder operates only with the "InfoLITHIUM" battery pack (M series). See page 187 for details of "InfoLITHIUM" battery pack.

- (1) Open the DC IN jack cover and connect the AC power adaptor supplied with your camcorder to the DC IN jack with the plug's ▲ mark facing up.
- (2) Connect the power cord to the AC power adaptor.
- (3) Connect the power cord to a wall outlet.
- (4) Set the POWER switch to OFF (CHG). Charging begins. The remaining battery time is indicated in minutes on the display window.

When the remaining battery indicator changes to , normal charge is completed. To fully charge the battery (full charge), leave the battery pack attached after normal charge is completed until FULL appears on the display window. Fully charging the battery allows you to use the battery longer than usual.



The number in the illustration of the display window may differ from that on your camcorder.

After charging the battery pack

Disconnect the AC power adaptor from the DC IN jack on your camcorder.

Step 1 Preparing the power supply

Note

Prevent metallic objects from coming into contact with the metal parts on the DC plug of the AC power adaptor. This may cause a short-circuit, damaging the AC power adaptor.

When the battery pack is charged fully

The LCD backlight of the display window is turned off.

Remaining battery time indicator

The remaining battery time indicator in the display window roughly indicates the recording time when recording using the viewfinder.

Until your camcorder calculates the actual remaining battery time

"--- min" appears in the display window.

While charging the battery pack

No indicator appears or the indicator flashes in the display window in the following cases:

- The battery pack is not installed correctly.
- Something is wrong with the battery pack.

If the power may go off although the remaining battery time indicator indicates that the battery pack has enough power to operate

Charge the battery pack fully again so that the indication on the remaining battery time indicator is correct.

When you use the AC power adaptor

Place the AC power adaptor near a wall outlet. If any trouble occurs with this unit, disconnect the plug from the wall outlet as soon as possible to cut off the power.

Recommended charging temperature

We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F).

What is "InfoLITHIUM"?

The "InfoLITHIUM" is a lithium ion battery pack that can exchange data such as battery consumption with compatible electronic equipment. This unit is compatible with the "InfoLITHIUM" battery pack (M series). Your camcorder operates only with the "InfoLITHIUM" battery. "InfoLITHIUM" M series battery packs have the  mark.

"InfoLITHIUM" is a trademark of Sony Corporation.

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Step 1 Preparing the power supply

Charging time

Battery pack	Full charge (Normal charge)
NP-FM30 (supplied)	145 (85)
NP-FM50	150 (90)
NP-FM70	240 (180)
NP-QM71	260 (200)
NP-FM90	330 (270)
NP-QM91 / FM91	360 (300)

The charging time may increase if the battery's temperature is extremely high or low because of the ambient temperature.

Approximate number of minutes to charge an empty battery pack at 25°C (77°F)

Recording time

Battery pack	Recording with the viewfinder		Recording with the LCD screen	
	Continuous*	Typical**	Continuous*	Typical**
NP-FM30 (supplied)	100	55	80	45
NP-FM50	165	95	130	75
NP-FM70	345	200	270	155
NP-QM71	400	230	315	180
NP-FM90	520	300	410	235
NP-QM91 / FM91	605	350	475	275

Approximate number of minutes when you use a fully charged battery

* Approximate continuous recording time at 25°C (77°F). The battery life will be shorter if you use your camcorder in a cold environment.

** Approximate number of minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.

Playing time

Battery pack	Playing time on LCD screen	Playing time with LCD closed
NP-FM30 (supplied)	80	110
NP-FM50	130	180
NP-FM70	270	370
NP-QM71	315	430
NP-FM90	410	560
NP-QM91 / FM91	475	645

Approximate number of minutes when you use a fully charged battery

Approximate continuous playing time at 25°C (77°F). The battery life will be shorter if you use your camcorder in a cold environment.

Note

The table shows the playing time for tapes recorded in the Digital8  system. The playing time of tapes recorded in the Hi8/standard 8 system is reduced by about 20%.

Getting Started

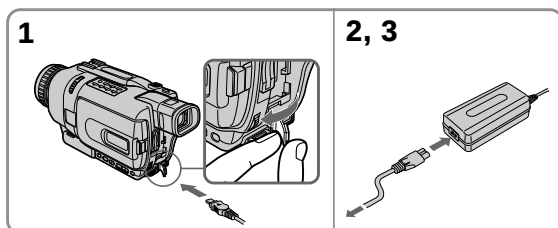
15

Step 1 Preparing the power supply

Connecting to a wall outlet

When you use your camcorder for a long time, we recommend that you power it from a wall outlet using the AC power adaptor.

- (1) Open the DC IN jack cover, and connect the AC power adaptor to the DC IN jack on your camcorder with the plug's  mark facing up.
- (2) Connect the power cord to the AC power adaptor.
- (3) Connect the power cord to a wall outlet.

**PRECAUTION**

The set is not disconnected from the AC power source (house current) as long as it is connected to the wall outlet, even if the set itself has been turned off.

Notes

- The AC power adaptor can supply power even if the battery pack is attached to your camcorder.
- The DC IN jack has "source priority". This means that the battery pack cannot supply any power if the power cord is connected to the DC IN jack, even when the power cord is not plugged into a wall outlet.

Using a car battery

Use Sony DC Adaptor / Charger (optional).

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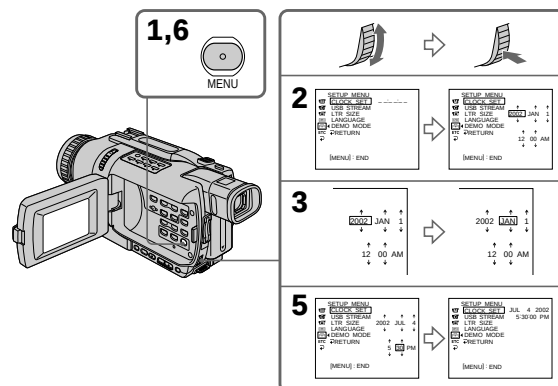
Step 2 Setting the date and time

Set the date and time settings when you use your camcorder for the first time.

"CLOCK SET" will be displayed each time that you set the POWER switch to CAMERA/MEMORY (DCR-TRV340 only) unless you set the date and time settings. If you do not use your camcorder for about half a year, the date and time settings may be cleared from memory (bars may appear) because the built-in rechargeable battery installed in your camcorder will have been discharged (p. 194).

Set the year, then the month, the day, the hour and then the minute.

- (1) Set the POWER switch to CAMERA or MEMORY (DCR-TRV340 only), and then press MENU to display the menu settings.
- (2) Turn the SEL/PUSH EXEC dial to select CLOCK SET in , then press the dial.
- (3) Turn the SEL/PUSH EXEC dial to adjust the desired year, then press the dial.
- (4) Set the month, day and hour by turning the SEL/PUSH EXEC dial and pressing the dial.
- (5) Set the minute by turning the SEL/PUSH EXEC dial and pressing the dial by the time signal. The clock starts to move.
- (6) Press MENU to make the menu settings disappear.

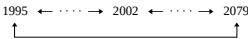


Getting Started

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Step 2 Setting the date and time

The year changes as follows:



If you do not set the date and time

"--- --" "----" is recorded on the tape and the "Memory Stick". (DCR-TRV340 only)

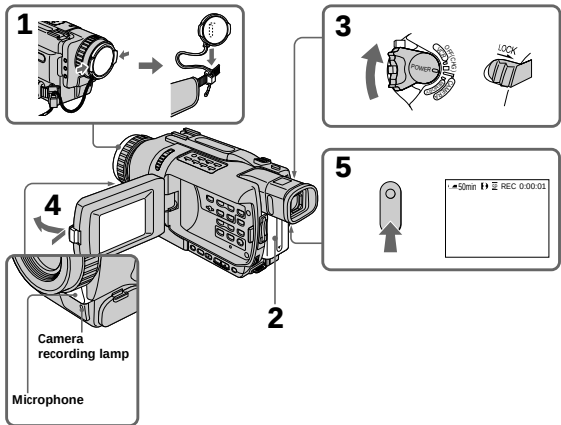
Note on the time indicator

The internal clock of your camcorder operates on a 12-hour cycle.
• 12:00 AM stands for midnight.
• 12:00 PM stands for noon.

Recording - Basics
Recording a picture

Your camcorder automatically focuses for you.

- (1) Remove the lens cap by pressing both knobs on its sides and attach the lens cap to the grip strap.
- (2) Install the power source and insert a cassette. See "Step 1" to "Step 3" for more information (p. 12 to 19).
- (3) Set the POWER switch to CAMERA while pressing the small green button. This sets your camcorder to the standby mode.
- (4) Open the LCD panel while pressing OPEN. The viewfinder automatically turns off.
- (5) Press START/STOP. Your camcorder starts recording. The REC indicator appears on the screen. The camera recording lamp located on the front of your camcorder lights up. To stop recording, press START/STOP again. The recording lamp lights up in the viewfinder when you record with the viewfinder.



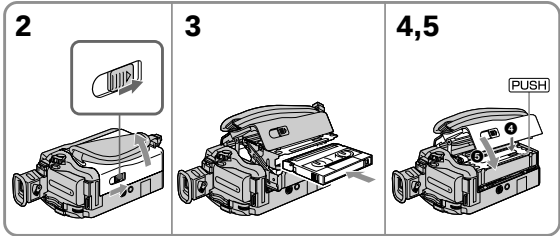
Notes

- Fasten the grip strap firmly.
- Do not touch the built-in microphone during recording.

Step 3 Inserting a cassette

We recommend using Hi8 Hi8/Digital8 video cassettes.

- (1) Prepare the power source (p. 12).
- (2) Slide OPEN / EJECT in the direction of the arrow and open the lid. The cassette compartment automatically lifts up and opens.
- (3) Insert the cassette straight as far as possible into the cassette compartment with the window facing up. Push the center of the cassette back to insert.
- (4) Close the cassette compartment by pressing **PUSH** on the cassette compartment. The cassette compartment automatically goes down.
- (5) After the cassette compartment going down completely, close the lid until it clicks.



To eject a cassette

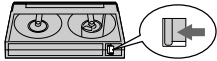
Follow the procedure above, and take out the cassette in step 3.

Notes

- Do not press the cassette compartment down. Doing so may cause a malfunction.
- Your camcorder records pictures in the Digital8 system.
- The recording time when you use your camcorder is half of indicated time on Hi8 Hi8 tape. If you select the LP mode in the menu settings, 3/4 of indicated time on Hi8 Hi8 tape.
- If you use standard 8 tape, be sure to play back the tape on your camcorder. Mosaic pattern noise may appear when you play back standard 8 tape on other camcorders (including other DCR-TRV240/TRV340).
- The cassette compartment may not be closed when you press any part of the lid other than the **PUSH** mark.

To prevent accidental erasure

Slide the write-protect tab on the cassette to expose the red mark.



Recording a picture

Note on recording mode

Your camcorder records and plays back in the SP (standard play) mode and in the LP (long play) mode. Select SP or LP in the menu settings (p. 104). In the LP mode, you can record 1.5 times as long as in the SP mode. When you record a tape in the LP mode on your camcorder, we recommend that you play back the tape on your camcorder.

Note on the LOCK switch (DCR-TRV340 only)

When you slide the LOCK switch to the right, the POWER switch can no longer be set to MEMORY accidentally. The LOCK switch is released as the default setting.

To enable smooth transition

Transition between the last scene you recorded and the next scene is smooth as long as you do not eject the cassette even if you turn off your camcorder.

However, check the following:

- Do not mix recordings in the SP mode and in the LP mode on one tape.
- When you change the battery pack, set the POWER switch to OFF (CHG).

If you leave your camcorder in the standby mode for three minutes while the cassette is inserted

Your camcorder automatically turns off. This is to save battery power and to prevent battery and tape wear. To resume the standby mode, set the POWER switch to OFF (CHG) once, then turn it to CAMERA again. However, your camcorder does not turn off automatically while the cassette is not inserted.

When you record in the SP and LP modes on one tape or you record some scenes in the LP mode

- The transition between scenes may not be smooth.
- The playback picture may be distorted or the time code may not be written properly between scenes.

Recording data

The recording data (date / time or various settings when recorded) are not displayed while recording. However, they are recorded automatically onto the tape. To display the recording data, press DATA CODE on the Remote Commander during playback.

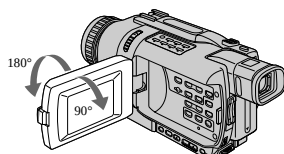
After recording

- (1) Set the POWER switch to OFF (CHG).
- (2) Close the LCD panel.
- (3) Eject the cassette.
- (4) Remove the battery pack.

Recording a picture

Adjusting the LCD screen

The LCD panel can be opened up to 90 degrees. The LCD panel moves about 90 degrees to the viewfinder side and about 180 degrees to the lens side.



When closing the LCD panel, set it vertically until it clicks, and swing it into the camcorder body.

Note

When using the LCD screen except in the mirror mode, the viewfinder automatically turns off.

When you use the LCD screen outdoors in direct sunlight

The LCD screen may be difficult to see. If this happens, we recommend that you use the viewfinder.

When you adjust angles of the LCD panel

Make sure if the LCD panel is opened up to 90 degrees.

When recording with the LCD panel opened

Recording time becomes shorter a little compared with when recording with the LCD panel closed.

Brightness of the LCD screen

You can adjust the brightness of the LCD screen. Select LCD B.L. or LCD BRIGHT in the menu settings (p. 104). Even if you adjust the LCD B.L. or LCD BRIGHT, the recorded picture will not be affected.

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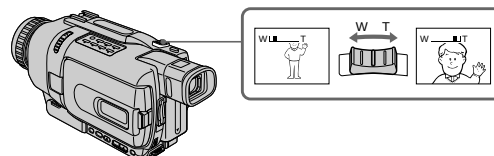
Recording a picture

Using the zoom feature

Move the power zoom lever a little for a slower zoom. Move it further for a faster zoom. Using the zoom function sparingly results in better-looking recordings.

“T” side: for telephoto (subject appears closer)

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



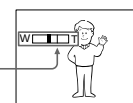
To use zoom greater than 25×

Zoom greater than 25× is performed digitally. To activate digital zoom, select the digital zoom power in D ZOOM in the menu settings. (p. 104)

The digital zoom function is set to OFF as the default setting.

The right side of the bar shows the digital zooming zone.

The digital zooming zone appears when you select the digital zoom power in the menu settings.



Notes on digital zoom

- Digital zoom starts to function when zoom exceeds 25×.
- The picture quality deteriorates as you go towards the “T” side.

When you shoot close to a subject

If you cannot get a sharp focus, move the power zoom lever to the “W” side until the focus is sharp. You can shoot a subject that is at least about 80 cm (about 2 feet 5/8 inch) away from the lens surface in the telephoto position, or about 1 cm (about 1/2 inch) away in the wide-angle position.

When the POWER switch is set to MEMORY (DCR-TRV340 only)

You cannot use the digital zoom.

Recording - Basics

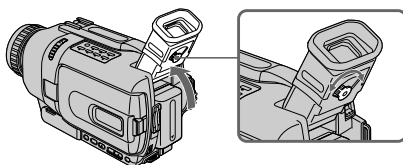
23

Recording a picture

Adjusting the viewfinder

If you record pictures with the LCD panel closed, check the picture with the viewfinder. Adjust the viewfinder lens to your eyesight so that the indicators in the viewfinder come into sharp focus.

Lift up the viewfinder and move the viewfinder lens adjustment lever.



Viewfinder backlight

You can change the brightness of the backlight. Select VF B.L. in the menu settings (p. 104). Even if you adjust the VF B.L., the recorded picture will not be affected.

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Recording a picture

Shooting with the Mirror Mode

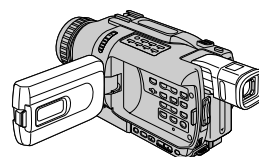
This feature allows the camera subject to view him- or herself on the LCD screen. The subject uses this feature to check his or her own image on the LCD screen while you look at the subject in the viewfinder.

Set the POWER switch to CAMERA or MEMORY (DCR-TRV340 only).

Rotate the LCD screen 180 degrees.

The ☺ indicator appears in the viewfinder and on the LCD screen.

☺ appears in the standby mode, and ● appears in the recording mode. Some of other indicators appear mirror-reversed and others are not displayed.



Pictures in the mirror mode

The picture on the LCD is a mirror-image. However, the picture will be normal when recorded.

During recording in the mirror mode

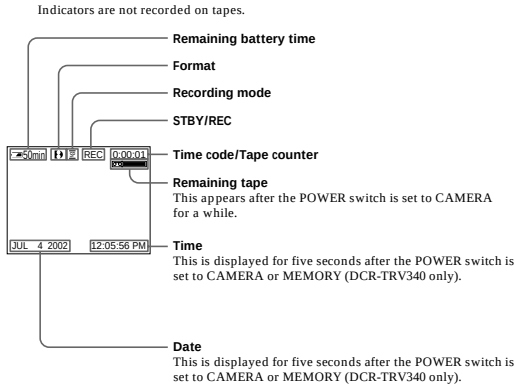
ZERO SET MEMORY on the Remote Commander does not work.

Recording - Basics

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Recording a picture

Indicators displayed in the recording mode



Remaining battery time indicator during recording
The remaining battery time indicator roughly indicates the continuous recording time. The indicator may not be correct, depending on the conditions in which you are recording. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time in minutes to be displayed.

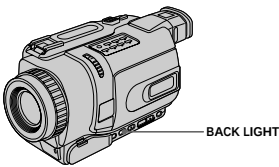
Time code (for tapes recorded in the Digital8 i system only)
The time code indicates the recording or playback time, "0:00:00" (hours:minutes:seconds) in CAMERA mode and "0:00:00:00" (hours:minutes:seconds:frames) in VCR mode. You cannot rewrite only the time code.
When you play back tapes recorded in the Hi8 / standard 8 system, the tape counter appears on the screen.
You cannot reset the time code or the tape counter.

Recording a picture

Shooting backlit subjects – BACK LIGHT

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

In CAMERA or MEMORY (DCR-TRV340 only) mode, press BACK LIGHT.
The indicator appears on the screen.
To cancel, press BACK LIGHT again.



If you press EXPOSURE when shooting backlit subjects
The backlight function will be canceled.

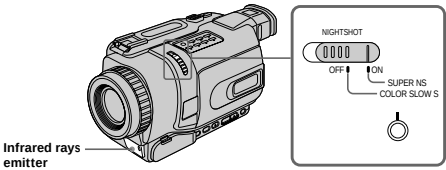
Recording - Basics

Recording a picture

Shooting in the dark
– NightShot/Super NightShot/Color Slow Shutter

The NightShot function enables you to shoot a subject in a dark place. For example, you can satisfactorily record the environment of nocturnal animals for observation when you use this function.

In CAMERA or MEMORY (DCR-TRV340 only) mode, slide NIGHTSHOT to ON.
The and "NIGHTSHOT" indicators flash on the screen.
To cancel the NightShot function, slide NIGHTSHOT to OFF.



Using Super NightShot
The Super NightShot function makes subjects up to 16 times brighter than those recorded in the NightShot mode.

(1) In CAMERA mode, slide NIGHTSHOT to ON. The and "NIGHTSHOT" indicators flash on the screen.
(2) Press SUPER NS. The and "SUPER NIGHTSHOT" indicators flash on the screen.
To cancel the Super NightShot mode, press SUPER NS again.

Using the NightShot Light
The picture will be clearer with the NightShot Light on. To enable NightShot Light, set N.S.LIGHT to ON in the menu settings (The default setting is ON.) (p. 104).

Using Color Slow Shutter
The Color Slow Shutter function enables you to record color images in a dark place.

(1) Slide NIGHTSHOT to OFF in CAMERA mode.
(2) Press COLOR SLOW S.
The and COLOR SLOW SHUTTER indicators flash on the screen.
To cancel the Color Slow Shutter function, press COLOR SLOW S again.

Recording a picture

Notes

- Do not use the NightShot mode in bright places (e.g. outdoors in the daytime). This may cause your camcorder to malfunction.
- When you keep NIGHTSHOT set to ON in normal recording, the picture may be recorded in incorrect or unnatural colors.
- If focusing is difficult with the autofocus mode when using the NightShot function, focus manually.
- You cannot use the Color Slow Shutter function in dark places where the illumination is 0 lux.

While using the NightShot function, you can not use the following functions:

- Exposure
- PROGRAM AE

While using the Super NightShot or Color Slow Shutter function, you cannot use the following functions:

- Fader
- Digital effects
- Exposure
- PROGRAM AE
- Memory Photo recording

While using the Super NightShot or Color Slow Shutter function
The shutter speed is automatically adjusted depending on the brightness. At this time, moving pictures may slow down.

When the POWER switch is set to MEMORY (DCR-TRV340 only)
You cannot use the following functions:
– Super NightShot
– Color Slow Shutter

NightShot Light
NightShot Light rays are infrared and so are invisible. The maximum shooting distance using the NightShot Light is about 3 m (10 feet).

Recording - Basics

Recording a picture

Self-timer recording

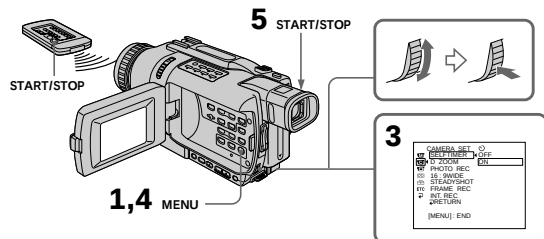
- DCR-TRV340 only

Recording with the self-timer starts in 10 seconds automatically. You can also use the Remote Commander for this operation.

- (1) In the standby mode, press MENU to display the menu settings.
- (2) Turn the SEL / PUSH EXEC dial to select SELFTIMER in , then press the dial.
- (3) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (4) Press MENU to make the menu settings disappear.
- (5) Press START / STOP.

The self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.

To stop recording, press START / STOP again.



To stop the countdown

Press START / STOP.

To restart the countdown, press START / STOP again.

To record still images on tapes using the self-timer

Press PHOTO in step 5 (P. 40).

To cancel self-timer recording

Set SELFTIMER to OFF in the menu settings in the standby mode.

Note

The self-timer recording mode is automatically canceled when:

- Self-timer recording is finished.
- The POWER switch is set to OFF (CHG) or VCR.

When the POWER switch is set to MEMORY (DCR-TRV340 only)

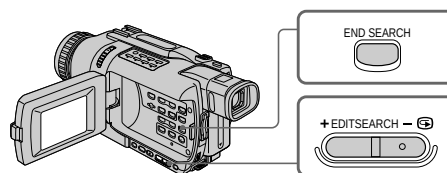
You can also record still images on "Memory Stick"s with the self-timer (p. 126).

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Checking recordings

- END SEARCH/EDITSEARCH/Rec Review

You can use these buttons to check the recorded picture or shoot so that the transition between the last recorded scene and the next scene you record is smooth.



Recording - Basics

END SEARCH

You can go to the end of the recorded section after you record.

In the standby mode, press END SEARCH.

The last five seconds of the recorded section are played back and your camcorder returns to the standby mode. You can monitor the sound from the speaker or headphones.

EDITSEARCH

You can search for the next recording start point.

In the standby mode, hold down the +/- side of EDITSEARCH. The recorded portion is played back.

- + : to go forward
- : to go backward

Release EDITSEARCH to stop playback. If you press START / STOP, re-recording begins from the point you released EDITSEARCH. You cannot monitor the sound.

Rec Review

You can check the last recorded section.

In the standby mode, press the - side of EDITSEARCH momentarily.

The section you have stopped most recently will be played back for a few seconds, and then your camcorder will return to the standby mode. You can monitor the sound from the speaker or headphones.

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Checking recordings - END SEARCH/EDITSEARCH/Rec Review

Notes

- END SEARCH, EDITSEARCH and Rec Review work only for tapes recorded in the Digital8 system.
- If you start recording after using the end search function, occasionally, the transition between the last scene you recorded and the next scene may not be smooth.
- Once you eject the cassette after you have recorded on the tape, the end search function does not work.

If a tape has a blank portion between recorded portions

The end search function may not work correctly.

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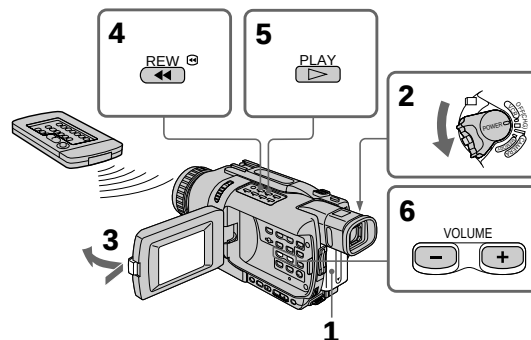
- Playback - Basics -

Playing back a tape

You can monitor the playback picture on the LCD screen. If you close the LCD panel, you can monitor the playback picture in the viewfinder.

You can control playback using the Remote Commander supplied with your camcorder.

- (1) Install the power source and insert the recorded tape.
- (2) Set the POWER switch to VCR while pressing the small green button.
- (3) Open the LCD panel while pressing OPEN.
- (4) Press  to rewind the tape.
- (5) Press  to start playback.
- (6) To adjust the volume, press either of the two buttons on VOLUME. When you close the LCD panel, sound is muted.



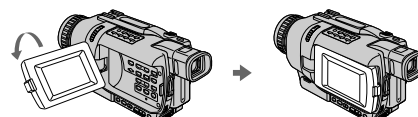
Playback - Basics

To stop playback

Press .

When monitoring on the LCD screen

You can turn the LCD panel over and move it back to the camcorder body with the LCD screen facing out.

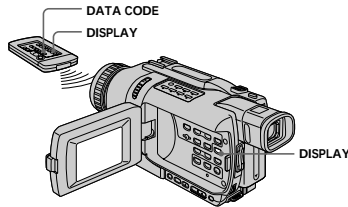


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Playing back a tape

To display the screen indicators – Display function

Press DISPLAY on your camcorder or the Remote Commander supplied with your camcorder. The indicators appear on the screen.
To make the indicators disappear, press DISPLAY again.



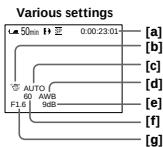
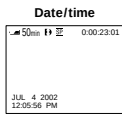
About date/time and various settings

Your camcorder automatically records not only pictures on the tape but also the recording data (date/time or various settings when recorded) (Data code).
Use the Remote Commander for this operation.

- ① Set the POWER switch to VCR, then playback a tape.
- ② Press DATA CODE on the Remote Commander.

The display changes as follows:

date/time → various settings (SteadyShot, exposure, white balance, gain, shutter speed, aperture value) → no indicator



- [a] Time code/Tape counter
- [b] SteadyShot off
- [c] Exposure mode
- [d] White balance
- [e] Gain
- [f] Shutter speed
- [g] Aperture value

Playing back a tape

To not display various settings

Set DATA CODE to DATE in the menu settings (p. 104).
The display changes as follows when you press DATA CODE on the Remote Commander:
date/time ↔ no indicator

Notes on the data code function

- The data code function works only for tapes recorded in the Digital8 system.
- Various settings of the recording data are not recorded when recording images on "Memory Stick"s (DCR-TRV340 only).

Recording data

Recording data is your camcorder's information when you have recorded. In the recording mode, the recording data will not be displayed.

When you use data code function, bars (— — —) appear if:

- A blank portion of the tape is being played back.
- The tape is unreadable due to tape damage or noise.
- The tape was recorded by a camcorder without the date and time set.

Data code

When you connect your camcorder to the TV, the data code appears on the TV screen.

Remaining battery time indicator during playback

The indicator indicates the approximate continuous playback time. The indicator may not be correct, depending on the conditions in which you are playing back. When you close the LCD panel and open it again, it takes about one minute for the correct remaining battery time to be displayed.

Various playback modes

To operate video control buttons, set the POWER switch to VCR.

To playback pause (view a still image)

Press II during playback. To resume normal playback, press II or ►.

To advance the tape

Press ►► in the stop mode. To resume normal playback, press ►.

To rewind the tape

Press ◀◀ in the stop mode. To resume normal playback, press ►.

To change the playback direction

Press < on the Remote Commander during playback to reverse the playback direction. To resume normal playback, press ►.

To locate a scene monitoring the picture (picture search)

Keep pressing ◀◀ or ►► during playback. To resume normal playback, release the button.

Playing back a tape

To monitor high-speed pictures while advancing or rewinding the tape (skip scan)

Keep pressing ◀◀ while rewinding or ►► while advancing the tape. To resume rewinding or advancing, release the button.

To view pictures at slow speed (slow playback)

Press ► on the Remote Commander during playback. For slow playback in the reverse direction, press <, then press ► on the Remote Commander. To resume normal playback, press ►.

To view pictures at double speed

Press ×2 on the Remote Commander during playback. For double speed playback in the reverse direction, press <×2, then press ×2 on the Remote Commander. To resume normal playback, press ►.

To view pictures frame-by-frame

Press II► on the Remote Commander in the playback pause mode. For frame-by-frame playback in the reverse direction, press ◀II. To resume normal playback, press ►.

To search the last scene recorded (END SEARCH)

Press END SEARCH in the stop mode. The last five seconds of the recorded section plays back and stops.

In the various playback modes

- Noise may appear when your camcorder plays back tapes recorded in the Hi8/standard 8 system.
- Sound is muted.
- The previous recording may appear as a mosaic image when playing back in the Digital8 system.

Notes on the playback pause mode

- When the playback pause mode lasts for three minutes, your camcorder automatically enters the stop mode. To resume playback, press ►.
- The previous recording may appear.

Slow playback for tapes recorded in the Digital8 system

Slow playback can be performed smoothly on your camcorder; however, this function does not work for an output signal through the DV IN / OUT jack.

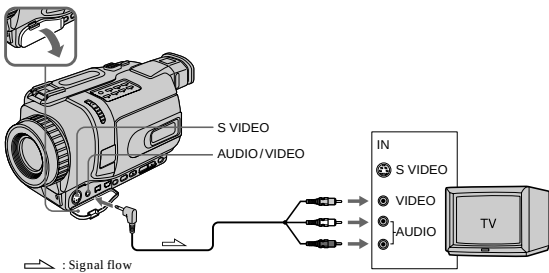
When you play back a tape in reverse

Horizontal noise may appear at the center, or top and bottom of the screen. This is not a malfunction.

Viewing recordings on TV

Connect your camcorder to your TV with the A/V connecting cable supplied with your camcorder to watch playback pictures on the TV screen. You can operate the video control buttons in the same way as when you monitor playback pictures on the LCD screen. When monitoring playback pictures on the TV screen, we recommend that you power your camcorder from a wall outlet using the AC power adaptor (p. 16). Refer to the operating instructions of your TV.

Open the jack cover. Connect your camcorder to the TV using the A/V connecting cable supplied with your camcorder. Then, set the TV/VCR selector on the TV to VCR.



If your TV is already connected to a VCR

Connect your camcorder to the LINE IN input on the VCR by using the A/V connecting cable supplied with your camcorder. Set the input selector on the VCR to LINE.

If your TV or VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. If you connect the white plug, the sound is L (left) signal. If you connect the red plug, the sound is R (right) signal.

If your TV has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable. Connect the S video cable (optional) to the S video jacks on both your camcorder and the TV.

To display the screen indicators on TV

Set DISPLAY to V-OUT/LCD in the menu settings (p. 104).
Then, press DISPLAY on your camcorder. To turn the screen indicators off, press DISPLAY on your camcorder again.

— Advanced Recording Operations —

**Recording still images on a tape
– Tape Photo recording**

You can record still images such as photographs.

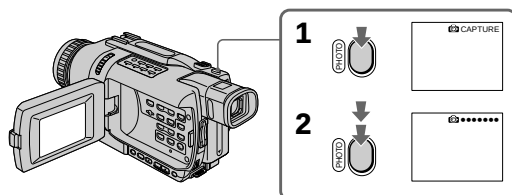
You can record about 510 images in the SP mode and about 765 images in the LP mode on a tape which can record for 60 minutes in the SP mode.

Besides the operation described here, your camcorder can record still images on "Memory Stick"s (DCR-TRV340 only) (p. 122).

Before operation

Set PHOTO REC to TAPE in the menu settings. (The default setting is MEMORY.) (DCR-TRV340 only) (p. 104)

- (1) In the standby mode, keep pressing PHOTO lightly until a still image appears. The CAPTURE indicator appears. Recording does not start yet.
To change the still image, release PHOTO, select a still image again, and then press and hold PHOTO lightly.
- (2) Press PHOTO deeper.
The still image on the screen is recorded for about seven seconds. The sound during those seven seconds is also recorded.
The still image is displayed on the screen until recording is completed.

**Notes**

- During Tape Photo recording, you cannot change the mode or setting.
- You cannot use PHOTO during the following operations:
 - Fader
 - Digital effects
- When recording a still image, do not shake your camcorder. The image may fluctuate.

If you record a moving subject with tape photo recording function

The image may fluctuate when you play back the still image on other equipment. This is not a malfunction.

To use tape photo recording function using the Remote Commander

Press PHOTO on the Remote Commander. Your camcorder records an image on the screen immediately.

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Recording still images on a tape – Tape Photo recording**To use the tape photo recording function during normal CAMERA recording**

You cannot check an image on the screen by pressing PHOTO lightly. Press PHOTO deeper. The still image is then recorded for about seven seconds, and your camcorder returns to the standby mode.

To record clear and less fluctuated still images

We recommend that you record on "Memory Stick"s.

You can record still images on "Memory Stick"s even in CAMERA mode. (P.122) (DCR-TRV340 only)

Advanced Recording Operations

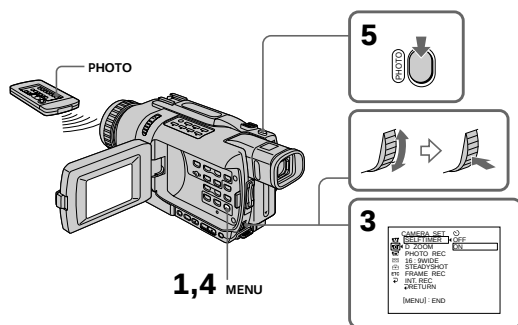
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Recording still images on a tape – Tape Photo recording**Self-timer recording****– DCR-TRV340 only**

You can record still images on tapes with the self-timer.

You can also use the Remote Commander for this operation.

- (1) In the standby mode, press MENU to display the menu settings.
 - (2) Turn the SEL / PUSH EXEC dial to select SELFTIMER in [a], then press the dial.
 - (3) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
 - (4) Press MENU to make the menu settings disappear.
 - (5) Press PHOTO deeper.
- The self-timer starts counting down from 10 with a beep sound. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.

**To cancel self-timer recording**

In the standby mode, set SELFTIMER to OFF in the menu settings.

You cannot cancel self-timer recording using the Remote Commander.

Note

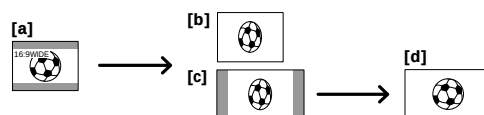
The self-timer recording mode is automatically canceled when:

- Self-timer recording is finished.
- The POWER switch is set to OFF (CHG) or VCR.

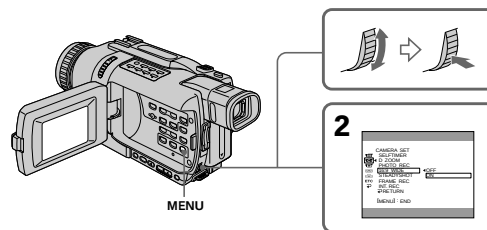
40

Using the wide mode

You can record a 16:9 wide picture to watch on a 16:9 wide-screen TV (16:9WIDE). Black bands appear on the screen during recording in 16:9 WIDE mode [a]. The picture during playing back on a normal TV [b] or a wide-screen TV [c] are compressed in the widthwise direction. If you set the screen mode of the wide-screen TV to the full mode, you can watch pictures of normal images [d].



- (1) In the standby mode, press MENU to display the menu settings.
- (2) Turn the SEL / PUSH EXEC dial to select 16:9 WIDE in [a], then press the dial.
- (3) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.

**To cancel the wide mode**

Set 16:9WIDE to OFF in the menu settings.

In the wide mode

You cannot operate the following functions:

- OLD MOVIE
- BOUNCE
- Memory Photo recording

During recording

You cannot select or cancel the wide mode.

When you cancel the wide mode, set your camcorder to the standby mode and then set 16:9WIDE to OFF in the menu settings.

Connection for a TV

Pictures recorded in the 16:9WIDE mode automatically appear on the TV screen at full size when:

- You connect your camcorder to a TV that is compatible with the video ID (ID-1 / ID-2) system.
- You connect your camcorder to the S video jack on the TV.

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Using the wide mode

ID-1 system
The ID-1 system sends aspect ratio (screen horizontal / vertical ratio) information (16:9, 4:3, or letter box) with video signals. If you connect a TV compatible with the ID-1 system, the screen size is automatically selected.

ID-2 system
The ID-2 system sends a copyright protection signal with ID-1 signals inserted between video signals when you connect your camcorder to other equipment by an A / V connecting cable.

If 16:9WIDE is set to ON
The SteadyShot function does not work. If you set 16:9WIDE to ON in the menu settings when the SteadyShot function is working, "SS" flashes and the SteadyShot function does not function.

Using the fader function

You can fade in or out to give your recording a more professional appearance.

[a]

STBY

REC

FADER

M.FADER (mosaic)

BOUNCE ¹⁾ ²⁾

OVERLAP ²⁾

WIPE ²⁾

DOT ²⁾

[b]

STBY

REC

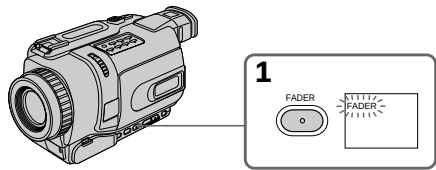
Advanced Recording Operations

MONOTONE
When fading in, the picture gradually changes from black-and-white to color.
When fading out, the picture gradually changes from color to black-and-white.

¹⁾ You can use this function when D ZOOM is set to OFF in the menu settings.
²⁾ Fade in only

Using the fader function

- (1) When fading in [a]
In the standby mode, press FADER until the desired fader indicator flashes.
- When fading out [b]**
In the recording mode, press FADER until the desired fader indicator flashes.
The indicator changes as follows:
FADER → M.FADER → BOUNCE → MONOTONE
no indicator ← DOT ← WIPE ← OVERLAP
The last selected fader mode is indicated first of all.
- (2) Press START/STOP. The fader indicator stops flashing.
After fade in / out ends, your camcorder automatically returns to the normal mode.



To cancel the fader function
Before pressing START / STOP, press FADER repeatedly until the indicator disappears.

- Notes**
- The overlap, wipe and dot functions work only for tapes recorded in the Digital8 system.
 - You cannot use the following functions while using the fader function. Also, you cannot use the fader function while using the following functions:
 - Digital effects
 - Color Slow Shutter
 - Super NightShot
 - Photo recording
 - Interval recording
 - Frame recording

When you select OVERLAP, WIPE, or DOT
Your camcorder automatically stores the picture recorded on tape. While the picture is being stored, the indicators flash fast, and the picture from the tape appears on the screen. At this stage, the picture may not be recorded clearly, depending on the tape condition.

Using the fader function

- While using the bounce function, you cannot use the following functions:**
- Focus
 - Zoom
 - Picture effects
- Note on the bounce function**
The BOUNCE indicator does not appear in the following mode or functions:
- When D ZOOM is activated in the menu settings
 - Wide mode
 - Picture effects
 - PROGRAM AE

Using special effects – Picture effect

You can digitally process pictures to obtain special effects like those in films or on the TV.

NEG. ART [a] : The color and brightness of the picture is reversed.

SEPIA : The picture appears in sepia.

B&W : The picture appears in monochrome (black-and-white).

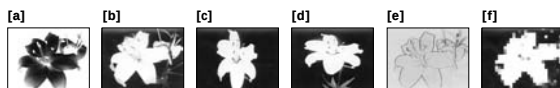
SOLARIZE [b] : The light intensity becomes clearer to make the picture look more like an illustration.

SLIM [c] : The picture expands vertically.

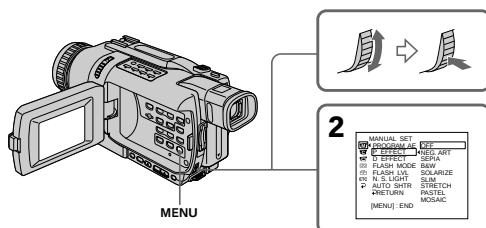
STRETCH [d] : The picture expands horizontally.

PASTEL [e] : The contrast of the picture is emphasized to make the picture look more like an animated cartoon.

MOSAIC [f] : The picture appears mosaic-patterned.



- (1) In CAMERA mode, press MENU to display the menu settings.
- (2) Turn the SEL/PUSH EXEC dial to select P EFFECT in **PM**, then press the dial.
- (3) Turn the SEL/PUSH EXEC dial to select the desired picture effect mode, then press the dial.



To cancel the picture effect

Set P EFFECT to OFF in the menu settings.

While using the picture effect function

You cannot operate the following functions:

- OLD MOVIE with the digital effect function.
- Memory Photo recording

When you set the POWER switch to OFF (CHG)

Picture effects are automatically canceled.

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Using special effects – Digital effect

You can add special effects to recorded picture using the various digital functions. Sound is recorded normally.

STILL

You can record a still image so that it is superimposed on a moving picture.

FLASH (FLASH MOTION)

You can record still images successively at constant intervals.

LUMI. (LUMINANCEKEY)

You can swap a brighter area in a still image with a moving picture.

TRAIL

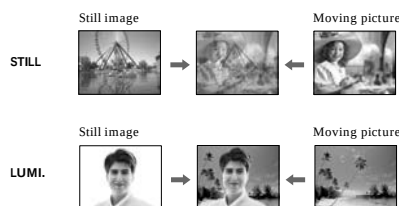
You can record the picture so that an incidental image like a trail is left.

SLOW SHTR (SLOW SHUTTER)

You can slow down the shutter speed. The slow shutter mode is good for recording dark picture more brightly.

OLD MOVIE

You can add an old movie type atmosphere to pictures. Your camcorder automatically sets the wide mode to ON, picture effect to SEPIA, and sets the appropriate shutter speed.



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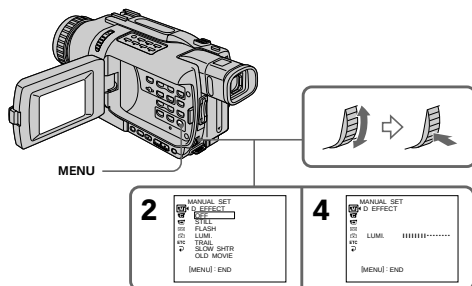
Using special effects – Digital effect

- (1) In CAMERA mode, press MENU to display the menu settings.
- (2) Turn the SEL/PUSH EXEC dial to select D EFFECT in **DM**, then press the dial.
- (3) Turn the SEL/PUSH EXEC dial to select the desired digital effect mode.
- (4) Press the SEL/PUSH EXEC dial. The bars appear on the screen. In the STILL and LUMI. modes, the still image is stored in memory.
- (5) Turn the SEL/PUSH EXEC dial to adjust the effect as follows:

Items to be adjusted

STILL	The rate of the still image you want to superimpose on the moving picture
FLASH	The interval of flash motion
LUMI.	The color scheme of the area in the still image which is to be swapped with a moving picture
TRAIL	The vanishing time of the incidental picture
SLOW SHTR	Shutter speed. The larger the shutter speed number, the slower the shutter speed becomes.
OLD MOVIE	No adjustment necessary

The more bars there are on the screen, the stronger the digital effect. The bars appear in the following modes: STILL, FLASH, LUMI. and TRAIL.



To cancel the digital effect

Set D EFFECT to OFF in the menu settings.

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Using special effects – Digital effect

Notes

- The following functions do not work during digital effects:
 - Fader
 - Photo recording
 - Super NightShot
 - Color Slow Shutter
- The PROGRAM AE function does not work in the slow shutter mode.
- The following functions do not work in the old movie mode:
 - Wide mode
 - Picture effects
 - PROGRAM AE

When you set the POWER switch to OFF (CHG)

Digital effects are automatically canceled.

When recording in the slow shutter mode

Auto focus may not be effective. Focus manually using a tripod.

Shutter speed

Shutter speed number	Shutter speed
SLOW SHTR 1	1/30
SLOW SHTR 2	1/15
SLOW SHTR 3	1/8
SLOW SHTR 4	1/4

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Using the PROGRAM AE function

You can select the PROGRAM AE (Auto Exposure) mode to suit your specific shooting requirements.

- Spotlight**
This mode prevents people's faces, for example, from appearing excessively white when shooting subjects lit by strong light in the theater.
- Soft portrait**
This mode brings out the subject while creating a soft background for subjects such as people or flowers.
- Sports lesson**
This mode minimizes camera shake on fast-moving subjects such as in tennis or golf.
- Beach & ski**
This mode prevents peoples' faces from appearing dark in strong light or reflected light, such as at a beach in midsummer or on a ski slope.
- Sunset & moon**
This mode allows you to maintain atmosphere when you are recording sunsets, general night views, fireworks displays and neon signs.

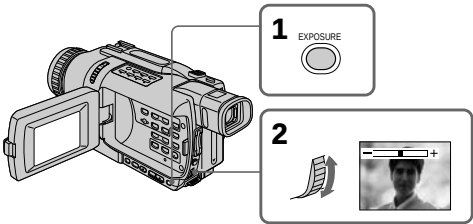
Landscape
This mode is for when you are recording distant subjects such as mountains and prevents your camcorder from focusing on glass or metal mesh in windows' when you are recording a subject behind glass or a screen.



Adjusting the exposure manually

You can manually adjust and set the exposure. Normally, exposure is automatically adjusted.
Adjust the exposure manually in the following cases:
– When the subject is backlit
– When shooting bright subjects and dark backgrounds
– When recording dark pictures (e.g. night scenes) faithfully

- (1) In CAMERA or MEMORY (DCR-TRV340 only) mode, press EXPOSURE. The exposure indicator appears on the screen.
- (2) Turn the SEL/PUSH EXEC dial to adjust the brightness.



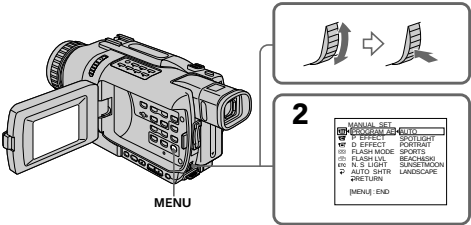
To return to the automatic exposure mode
Press EXPOSURE to turn off the indicator.

Note
When you adjust the exposure manually, the following functions do not work:
– BACKLIGHT
– Color Slow Shutter

Your camcorder automatically returns to the automatic mode:
– If you change the PROGRAM AE mode
– If you slide NIGHTSHOT to ON

Using the PROGRAM AE function

- (1) In CAMERA or MEMORY (DCR-TRV340 only) mode, press MENU to display the menu settings.
- (2) Turn the SEL/PUSH EXEC dial to select PROGRAM AE in , then press the dial.
- (3) Turn the SEL/PUSH EXEC dial to select the desired mode.



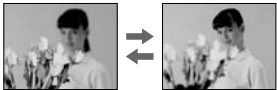
To cancel the PROGRAM AE function
Set PROGRAM AE to AUTO in the menu settings.

- Notes**
- Because your camcorder is set to focus only on subjects in the middle to far distance, you cannot take close-ups in the following modes:
– Spotlight
– Sports lesson
– Beach & ski
 - Your camcorder is set to focus only on distant subjects in the following modes:
– Sunset & moon
– Landscape
 - The following functions do not work in the PROGRAM AE mode:
– Color Slow Shutter
– Slow shutter
– OLD MOVIE
– BOUNCE
 - While setting NIGHTSHOT to ON, the PROGRAM AE function does not work. (The indicator flashes.)
 - The PROGRAM AE function does not work in the Color Slow Shutter mode.

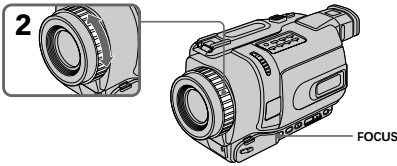
If you are recording under a discharge tube such as a fluorescent lamp, sodium lamp or mercury lamp
Flickering or changes in color may occur in the following modes. If this happens, turn the PROGRAM AE function off.
– Soft portrait
– Sports lesson

Focusing manually

You can gain better results by manually adjusting the focus in the following cases. Normally, focus is automatically adjusted:
• The autofocus mode is not effective when shooting:
– Subjects through glass coated with water droplets.
– Horizontal stripes.
– Subjects with little contrast with backgrounds such as walls and sky.
• When you want to change the focus from a subject in the foreground to a subject in the background.
• Shooting a stationary subject when using a tripod.



- (1) In CAMERA or MEMORY (DCR-TRV340 only) mode, press FOCUS. The  indicator appears on the screen.
- (2) Turn the focus ring to sharpen focus.



To return to the autofocus mode
Press FOCUS to turn off the indicator.

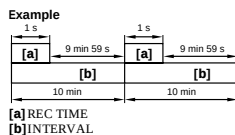
To focus precisely
It is easier to focus on subjects if you adjust the zoom to shoot at the "W" (wide-angle) after focusing at the "T" (telephoto) position.

When you shoot close to the subject
Focus at the end of the "W" (wide-angle) position.

-  changes to the following indicators:**
-  when recording a distant subject.
 -  when the subject is too close to focus on.

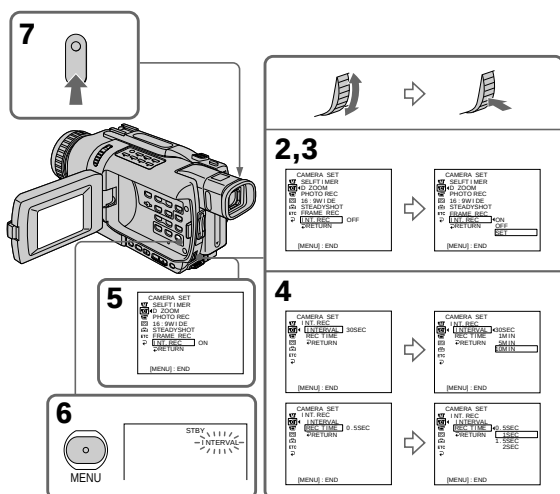
Interval recording

You can make a time-lapse recording by setting your camcorder to automatically record and standby sequentially. You can achieve an excellent recording for flowering, gradual appearances, etc., with this function.



- (1) In the standby mode, press MENU to display the menu settings.
- (2) Turn the SEL / PUSH EXEC dial to select INT. REC in **☐**, then press the dial.
- (3) Turn the SEL / PUSH EXEC dial to select SET, then press the dial.
- (4) Set INTERVAL and REC TIME.
 - ① Turn the SEL / PUSH EXEC dial to select INTERVAL, then press the dial.
 - ② Turn the SEL / PUSH EXEC dial to select the desired interval time, then press the dial.
The time: 30SEC ↔ 1MIN ↔ 5MIN ↔ 10MIN
 - ③ Turn the SEL / PUSH EXEC dial to select REC TIME, then press the dial.
 - ④ Turn the SEL / PUSH EXEC dial to select the desired recording time, then press the dial.
The time: 0.5SEC ↔ 1SEC ↔ 1.5SEC ↔ 2SEC
 - ⑤ Turn the SEL / PUSH EXEC dial to select RETURN, then press the dial.
- (5) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (6) Press MENU to make the menu settings disappear. The INTERVAL indicator flashes.
- (7) Press START/STOP to start interval recording. The INTERVAL indicator lights up.

Interval recording



To cancel interval recording

- Perform either of the following:
- Set INT. REC to OFF in the menu settings.
 - Set the POWER switch to other than CAMERA.

To perform normal recording during interval recording

You can perform normal recording only once during INTERVAL. Press START/STOP. The INTERVAL indicator flashes, and normal recording starts. To stop normal recording, press START/STOP again.

On recording time

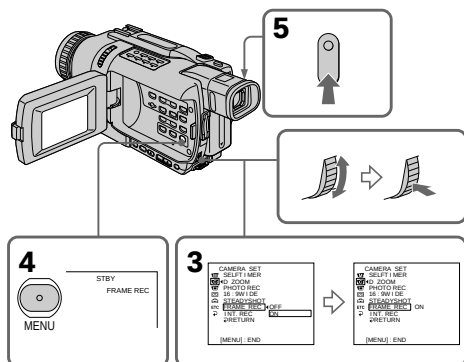
There may be a discrepancy in the recording time of up to +/- six frames from the selected time.

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Frame by frame recording – Frame recording

You can make a recording with a stop-motion animated effect using frame recording. To create this effect, alternately move the subject a little and make a frame recording. We recommend that you use a tripod, and operate your camcorder using the Remote Commander after step 5.

- (1) In the standby mode, press MENU to display the menu settings.
- (2) Turn the SEL / PUSH EXEC dial to select FRAME REC in **☐**, then press the dial.
- (3) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (4) Press MENU to make the menu settings disappear. The FRAME REC indicator appears.
- (5) Press START/STOP to start frame recording. Your camcorder makes a recording for about six frames, and returns to recording standby.
- (6) Move the subject, and repeat step 5.



To cancel the frame recording

- Perform either of the following:
- Set FRAME REC to OFF in the menu settings.
 - Set the POWER switch to other than CAMERA.

Note

The remaining tape time is not indicated correctly if you use this function continuously.

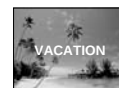
When using the frame recording function

The last recorded cut is longer than other cuts.

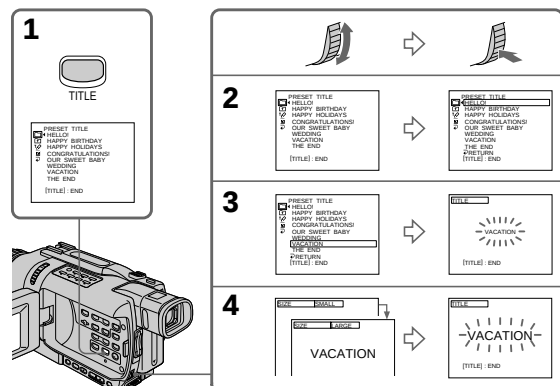
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Superimposing a title

You can select one of eight preset titles and two custom titles (p. 59). You can also select the language, color, size and position of titles.



- (1) In the standby mode, press TITLE to display the title menu. The title menu display appears on the screen.
- (2) Turn the SEL / PUSH EXEC dial to select **☐**, then press the dial.
- (3) Turn the SEL / PUSH EXEC dial to select the desired title, then press the dial. The titles are displayed in the language you selected.
- (4) Change the color, size, or position, if necessary.
 - ① Turn the SEL / PUSH EXEC dial to select COLOR, SIZE, or POSITION, then press the dial. The selected item appears on the screen.
 - ② Turn the SEL / PUSH EXEC dial to select the desired item, then press the dial.
 - ③ Repeat steps ① and ② until the title is laid out as desired.
- (5) Press the SEL / PUSH EXEC dial again to complete the setting.
- (6) Press START/STOP to start recording.
- (7) When you want to stop recording the title, press TITLE.



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Superimposing a title

To superimpose the title while you are recording
Press TITLE while you are recording, and carry out steps 2 to 5. When you press the SEL/PUSH EXEC dial at step 5, the title is recorded.

To select the language of a preset title
If you want to change the language, select [L] before step 2. Then select the desired language and return to step 2.

If you display the menu while superimposing a title
The title is not recorded while the menu is displayed.

To use a custom title
If you want to use a custom title, select [C] in step 2.

Title setting
• The title color changes as follows:
WHITE ↔ YELLOW ↔ VIOLET ↔ RED ↔ CYAN ↔ GREEN ↔ BLUE
• The title size changes as follows:
SMALL ↔ LARGE
You cannot input 13 characters or more in LARGE size. If you input more than 12 characters, the title size returns to SMALL even you select LARGE.
• The title position changes as follows:
1 ↔ 2 ↔ 3 ↔ 4 ↔ 5 ↔ 6 ↔ 7 ↔ 8 ↔ 9
The larger the position number, the lower the title is positioned.
When you select the title size LARGE, you cannot choose position 9.

When you are selecting and setting the title
You cannot record the title displayed on the screen.

When you superimpose a title while you are recording
The beep does not sound.

While you are playing back
You can superimpose a title. However, the title is not recorded on tape.
You can record a title when you dub a tape connecting your camcorder to the VCR with the A/V connecting cable. If you use the i.LINK cable instead of the A/V connecting cable, you cannot record the title.

Making your own titles

To change a title you have stored
In step 3, select CUSTOM1 SET or CUSTOM2 SET, depending on which title you want to change, then press the SEL/PUSH EXEC dial.
Turn the SEL/PUSH EXEC dial to select [E], then press the dial to delete the title. The last character is erased. Enter the new title as desired.

If you take three minutes or longer to enter characters in the standby mode while a cassette is in your camcorder
The power automatically goes off. The characters you have entered remain stored in memory. Set the POWER switch to OFF (CHG) once, and turn it to CAMERA again, then proceed from step 1.
We recommend setting the POWER switch to VCR or removing the cassette so that your camcorder does not automatically turn off while you are entering title characters.

If you select [→P2]
The menu for selecting alphabet and Russian characters appear. Select [→P1] to return to the previous screen.

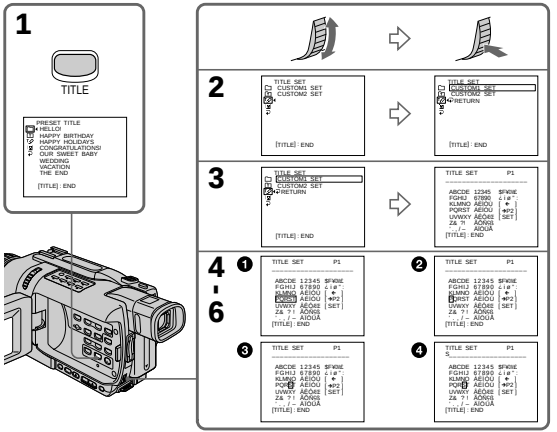
To erase a character
Select [E]. The last character is erased.

To enter a space
Select [Z& ?], then select the blank part.

Making your own titles

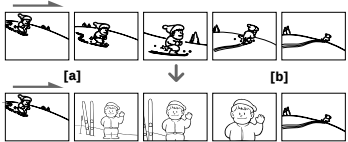
You can make up to two titles and store them in your camcorder. Each title can have up to 20 characters.

- (1) In the standby or VCR mode, press TITLE.
- (2) Turn the SEL/PUSH EXEC dial to select [C], then press the dial.
- (3) Turn the SEL/PUSH EXEC dial to select CUSTOM1 SET or CUSTOM2 SET, then press the dial.
- (4) Turn the SEL/PUSH EXEC dial to select the column of the desired character, then press the dial.
- (5) Turn the SEL/PUSH EXEC dial to select the desired character, then press the dial.
- (6) Repeat steps 4 and 5 until you have selected all characters and completed the title.
- (7) To finish making your own titles, turn the SEL/PUSH EXEC dial to select [SET], then press the dial. The title is stored in memory.
- (8) Press TITLE to make the title menu disappear.

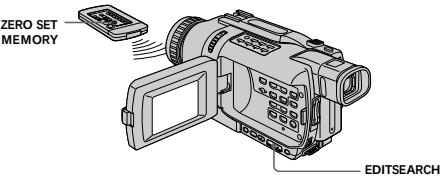


Inserting a scene

You can insert a scene in the middle of a recorded tape by setting the start and end points. The previously recorded frames between these start and end points will be erased.
Use the Remote Commander for this operation.



- (1) In the standby mode, keep pressing EDITSEARCH, and release the button at the insert end point [b].
- (2) Press ZERO SET MEMORY on the Remote Commander.
The ZERO SET MEMORY indicator flashes and the counter resets to zero.
- (3) Keep pressing the - side of EDITSEARCH and release the button at the insert start point [a].
- (4) Press START/STOP to start recording.
The scene is inserted. Recording stops automatically near the counter zero point. Your camcorder returns to the standby mode.



Notes
• The zero set memory function works only for tapes recorded in the Digital8 system.
• The picture and the sound may be distorted at the end of the inserted section when it is played back.
If a tape has a blank portion between recorded portions
The zero set memory function may not work correctly.

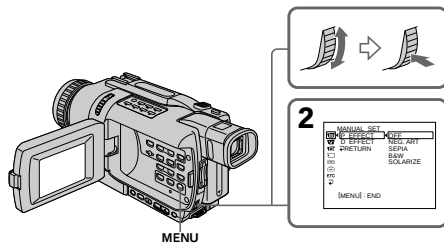
— Advanced Playback Operations —

Playing back tapes with picture effects

During playback, you can process a scene using the following picture effect functions: NEG.ART, SEPIA, B&W and SOLARIZE.

- (1) In the playback or playback pause mode, press MENU to display the menu settings.
- (2) Turn the SEL/PUSH EXEC dial to select P EFFECT in , then press the dial.
- (3) Turn the SEL/PUSH EXEC dial to select the desired picture effect mode, then press the dial.

For details of each picture effect function, see page 46.

**To cancel the picture effect**

Set P EFFECT to OFF in the menu settings.

Notes

- Picture effect functions work only for tapes recorded in the Digital8  system.
- You cannot process externally input scenes using the picture effect functions.
- You cannot record pictures on a tape on your camcorder when you have processed the picture using the picture effect function. However, you can record pictures on a "Memory Stick" (DCR-TRV340 only) (p. 133, 140), or on a VCR using your camcorder as a player.

Pictures processed by picture effect functions

Pictures processed by picture effect functions are not output through the  DV IN/OUT jack.

When you set the POWER switch to OFF (CHG) or stop playing back

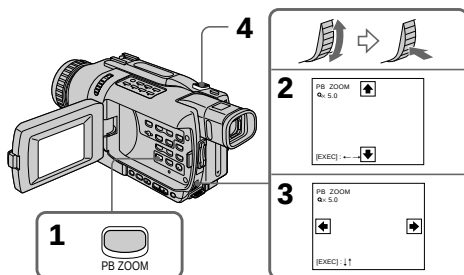
The picture effect function is automatically canceled.

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Enlarging recorded images – Tape PB ZOOM

You can enlarge moving and still images recorded on tapes. Besides the operation described here, your camcorder can enlarge still images recorded on "Memory Stick"s (DCR-TRV340 only) (p. 164).

- (1) In the playback or playback pause mode, press PB ZOOM. The image is enlarged, and   indicators showing the direction to move the image appear on the screen.
- (2) Turn SEL/PUSH EXEC dial to move the enlarged image, then press the dial.
 : The image moves downwards.
 : The image moves upwards.
- (3) Turn SEL/PUSH EXEC dial to move the enlarged image, then press the dial.
 : The image moves rightward (Turn the dial downwards.)
 : The image moves leftward (Turn the dial upwards.)
- (4) For DCR-TRV340 only:
 Adjust the zoom ratio by the power zoom lever.
 You can enlarge the image from 1.1 times up to five times its size.
 W : Decreases the zoom ratio.
 T : Increase the zoom ratio.

**To cancel the PB ZOOM function**

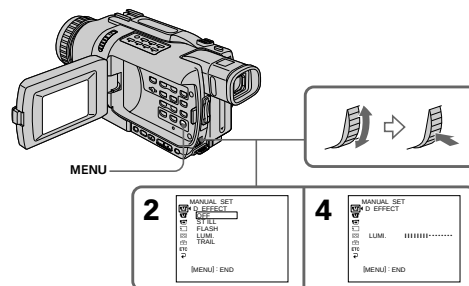
Press PB ZOOM to turn off the indicator.

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Playing back tapes with digital effects

During playback, you can process a scene using the following digital effect functions: STILL, FLASH, LUMI. and TRAIL.

- (1) In the playback mode, press MENU to display the menu settings.
- (2) Turn SEL/PUSH EXEC dial to select D EFFECT in , then press the dial.
- (3) Turn SEL/PUSH EXEC dial to select the desired digital effect mode, then press the dial.
 The bars appear on the screen.
 In the STILL or LUMI. mode, the picture is captured and is stored in memory as a still image at the time you press the SEL/PUSH EXEC dial.
- (4) Turn the SEL/PUSH EXEC dial to adjust the effect.
 For details of each digital effect function, see page 47.

**To cancel the digital effect**

Set D EFFECT to OFF in the menu settings.

Notes

- Digital effect functions work only for tapes recorded in the Digital8  system.
- You cannot process externally input scenes using digital effect functions.
- You cannot record images on a tape on your camcorder when you have processed the image using digital effect functions. However, you can record images on a "Memory Stick" (DCR-TRV340 only) (p. 133, 140), or on a VCR using your camcorder as a player.

Pictures processed by digital effect functions

Pictures processed by digital effect functions are not output through the  DV IN/OUT jack.

When you set the POWER switch to OFF (CHG) or stop playing back

The digital effect function is automatically canceled.

Advanced Playback Operations

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Enlarging recorded images – Tape PB ZOOM**Notes**

- The PB ZOOM function works only for tapes recorded in the Digital8  system.
- You cannot process externally input scenes using the PB ZOOM function.
- You cannot record images on a tape on your camcorder when you have processed the image using the PB ZOOM function. However, you can record images on a "Memory Stick" (DCR-TRV340 only) (p. 133), or on a VCR using your camcorder as a player.

Images in the PB ZOOM function

Images in the PB ZOOM function are not output through the  DV IN/OUT jack.

PB ZOOM function is automatically canceled when:

- The POWER switch is set to OFF (CHG)
- You stop playing back
- You press MENU
- You press TITLE
- You insert a "Memory Stick" (DCR-TRV340 only)

To record an image processed by Tape PB ZOOM on "Memory Stick"s (DCR-TRV340 only)

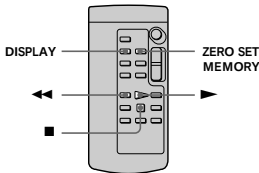
Press PHOTO to record the image processed by Tape PB ZOOM.

Advanced Playback Operations

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Quickly locating a scene
- ZERO SET MEMORY

- Your camcorder goes forward or backward to automatically stop at a desired scene having a tape counter value of "0:00:00". Use the Remote Commander for this operation. Use this function, for example, to view a desired scene later on during playback.
- (1) In the playback mode, press DISPLAY.
 - (2) Press ZERO SET MEMORY at the point you want to locate later. The tape counter shows "0:00:00" and the ZERO SET MEMORY indicator flashes on the screen.
 - (3) Press ■ when you want to stop playback.
 - (4) Press ◀ to rewind the tape to the counter's zero point. The tape stops automatically when the counter reaches approximately zero. The ZERO SET MEMORY indicator disappears, and the time code appears.
 - (5) Press ▶. Playback starts from the counter's zero point.



- Notes**
- The zero set memory function works only for tapes recorded in the Digital8 i system.
 - When you press ZERO SET MEMORY before rewinding the tape, the zero set memory function is canceled.
 - There may be a discrepancy of several seconds from the time code.

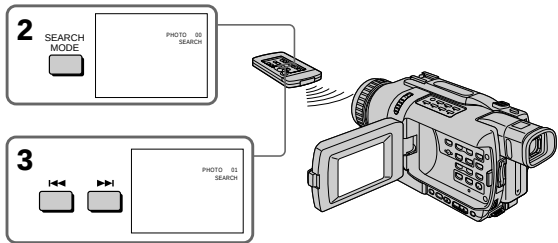
If a tape has a blank portion between recorded portions
The zero set memory function may not work correctly.

Searching for a photo
- PHOTO SEARCH/PHOTO SCAN

You can search for the recorded still image recorded on tape (photo search). You can also search for still images one after another and display each image for five seconds automatically (photo scan). Use the Remote Commander for these operations.

Searching for a photo

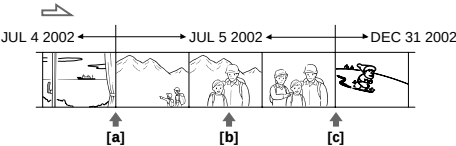
- (1) Set the POWER switch to VCR.
- (2) Press SEARCH MODE on the Remote Commander repeatedly until the photo search indicator appears on the screen. The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator)
- (3) Press ◀ or ▶ to select the photo for playback. Each time you press ◀ or ▶ your camcorder searches for the previous or next photo. Your camcorder automatically starts playback from the photo.



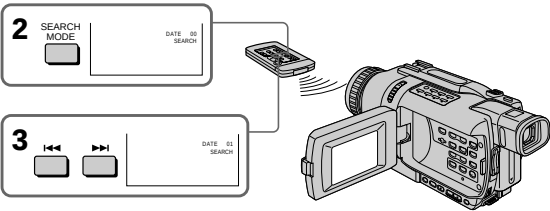
To stop searching
Press ■.

Searching a recording by date
- DATE SEARCH

You can automatically search for the point where the recording date changes and start playback from that point (date search). Use the Remote Commander for this operation. Use this function to check where recording dates change or to edit the tape at each recording date.



- (1) Set the POWER switch to VCR.
- (2) Press SEARCH MODE on the Remote Commander repeatedly until the DATE SEARCH indicator appears on the screen. The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator)
- (3) When the current position is [b], press ◀ to search towards [a] or press ▶ to search towards [c]. Your camcorder automatically starts playback at the point where the date changes. Each time you press ◀ or ▶ your camcorder searches for the previous or next date.



To stop searching
Press ■.

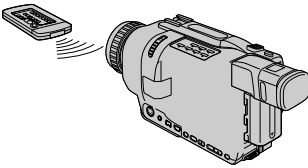
- Notes**
- The date search function works only for tapes recorded in the Digital8 i system.
 - If one day's recording is less than two minutes, your camcorder may not accurately find the point where the recording date changes.

If a tape has a blank portion between recorded portions
The date search function may not work correctly.

Searching for a photo - PHOTO SEARCH/PHOTO SCAN

Scanning photo

- (1) Set the POWER switch to VCR.
- (2) Press SEARCH MODE on the Remote Commander repeatedly until the photo scan indicator appears on the screen. The indicator changes as follows:
DATE SEARCH → PHOTO SEARCH → PHOTO SCAN → (no indicator)
- (3) Press ◀ or ▶. Each photo is played back for about five seconds automatically.



To stop scanning
Press ■.

- Note**
- The photo search and photo scan functions work only for tapes recorded in the Digital8 i system.
- If a tape has a blank portion between recorded portions**
The photo search / photo scan function may not work correctly.

— Editing —

Dubbing a tape

Using the A/V connecting cable

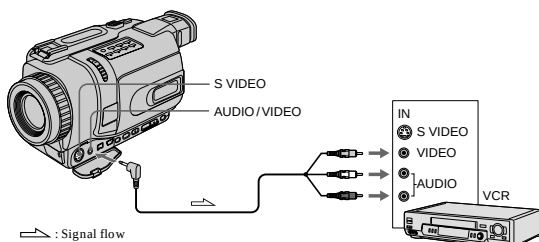
You can dub or edit on the VCR connected to your camcorder using your camcorder as a player. Connect your camcorder to the VCR using the A/V connecting cable supplied with your camcorder.

Before operation

- Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)
- Press the following buttons to make the indicators disappear so that they will not be superimposed on the edited tape:
 - DISPLAY
 - DATA CODE on the Remote Commander
 - SEARCH MODE on the Remote Commander

- (1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
- (2) Prepare the VCR for recording, then set the input selector to LINE. Connect the A/V connecting cable to the AUDIO/VIDEO jack. Refer to the operating instructions of your VCR.
- (3) Set the POWER switch to VCR on your camcorder.
- (4) Play back the recorded tape on your camcorder.
- (5) Start recording on the VCR.

Refer to the operating instructions of your VCR.



When you have finished dubbing a tape

Press **■** on both your camcorder and the VCR.

You can edit on VCRs that support the following systems:

8 8 mm, **Hi8** Hi8, **VHS** VHS, **S-VHS** S-VHS, **Hi8C** Hi8C, **S-VHS-C** S-VHS-C, **Beta** Betamax, **ED Beta** ED Betamax, **Mini DV** Mini DV, **DV** DV or **Digital8** Digital8

Dubbing a tape

If your VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video input jack and the white or the red plug to the audio input jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and when the red plug is connected, the right channel audio is output.

If your VCR has an S video jack

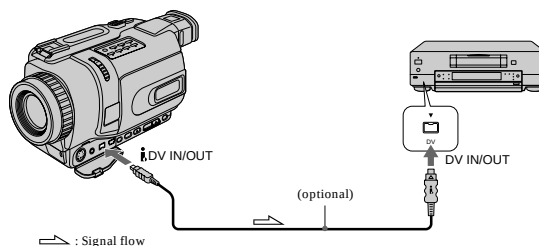
Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable. Connect an S video cable (optional) to the S video jacks of both your camcorder and the VCR.

Using the i.LINK cable (DV connecting cable)

Simply connect the i.LINK cable (DV connecting cable) (optional) to **i.LINK IN / OUT** on your camcorder and to **DV IN / OUT** on the DV products. With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing. You cannot dub the screen indicators.

- (1) Insert a blank tape (or a tape you want to record over) into the VCR, and insert the recorded tape into your camcorder.
- (2) Set the input selector on the VCR to DV IN if it is available. Refer to the operating instructions of your VCR.
- (3) Set the POWER switch to VCR on your camcorder.
- (4) Play back the recorded tape on your camcorder.
- (5) Start recording on the VCR.

Refer to the operating instructions of your VCR.



When you have finished dubbing a tape

Press **■** on both your camcorder and the VCR.

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Dubbing a tape

Note on tapes that are not recorded in the Digital8 system

The picture may fluctuate. This is not a malfunction.

During playback of tapes recorded in the Hi8/standard 8 system

Digital signals are output as the image signals from the **i.LINK IN / OUT** jack.

You can connect one VCR only using the i.LINK cable (DV connecting cable)

See page 189 for more information about i.LINK.

Pictures processed by picture effects, digital effects or the PB ZOOM function

Pictures processed by picture effects, digital effects or the PB ZOOM function are not output through the **i.LINK IN / OUT** jack.

If you record playback pause picture with the **i.LINK IN / OUT** jack

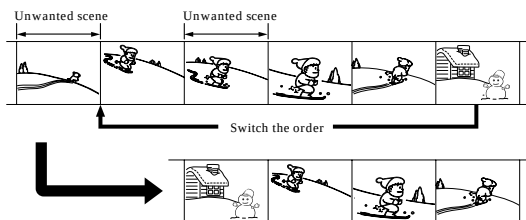
The recorded picture becomes rough. Also, when you play back the picture using other video equipment, the picture may jitter.

Dubbing only desired scenes – Digital program editing (on tapes)

You can duplicate selected scenes (programs) for editing onto a tape without operating the VCR.

Scenes can be selected by frame. You can set up to 20 programs.

Your camcorder can dub on "Memory Stick" (DCR-TRV340 only). See page 144 for more information.



Before operating the Digital program editing function on tapes recorded other equipment

- Step 1** Connecting the VCR (p. 74).
- Step 2** Setting the VCR for operation (p. 74, 79).
- Step 3** Adjusting the synchronization of the VCR (p. 81).

When you dub using the same VCR again, you can skip steps 2 and 3.

Using the Digital program editing function on tapes recorded other equipment

- Operation 1** Making a program (p. 83).
- Operation 2** Performing the program (dubbing a tape) (p. 86).

Notes

- The Digital program editing works only for tapes recorded in the Digital8 system.
- When you connect with an i.LINK cable (DV connecting cable), you may not be able to operate the dubbing function correctly, depending on the VCR. Set CONTROL to IR in the menu settings of your camcorder.
- When editing digital video, the operation signals cannot be sent with LANC.

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Editing

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Dubbing only desired scenes – Digital program editing (on tapes)

Step 1: Connecting the VCR

You can connect both an A/V connecting cable and an i.LINK cable (DV connecting cable).
When you use the A/V connecting cable, connect the devices as illustrated in page 70.
When you use an i.LINK cable (DV connecting cable), connect the devices as illustrated on page 71.

If you connect using an i.LINK cable (DV connecting cable)

With a digital-to-digital connection, video and audio signals are transmitted in digital format for high-quality editing.

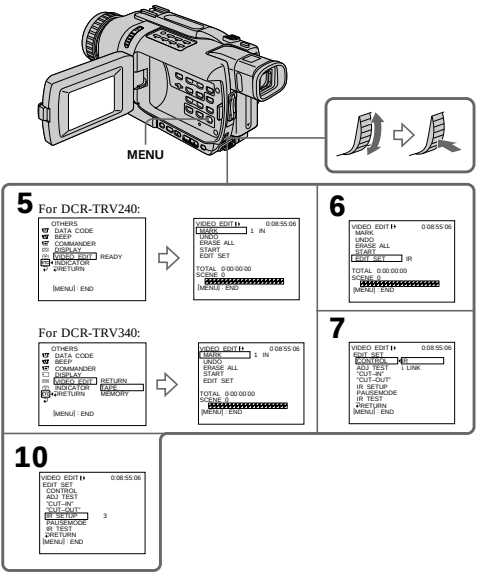
Step 2: Setting the VCR to operate with the A/V connecting cable

To edit using the VCR, send the control signal by infrared rays to the remote sensor on the VCR.
When you connect using an A/V connecting cable, follow the procedure below, steps (1) to (4), to send the control signal correctly.

(1) Set the IR SETUP code

- ① Set the POWER switch to VCR on your camcorder.
 - ② Turn the power of the connected VCR on, then set the input selector to LINE.
 - ③ Press MENU to display the menu settings.
 - ④ Turn the SEL/PUSH EXEC dial to select **EDIT**, then press the dial.
 - ⑤ For DCR-TRV240:
Turn the SEL/PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Turn the SEL/PUSH EXEC dial to select TAPE in VIDEO EDIT, then press the dial.
 - ⑥ Turn the SEL/PUSH EXEC dial to select EDIT SET, then press the dial.
 - ⑦ Turn the SEL/PUSH EXEC dial to select CONTROL, then press the dial.
 - ⑧ Turn the SEL/PUSH EXEC dial to select IR, then press the dial.
 - ⑨ Turn the SEL/PUSH EXEC dial to select IR SETUP.
 - ⑩ Turn the SEL/PUSH EXEC dial to select IR SETUP code number of your VCR, then press the dial.
- Check the code in "About IR SETUP codes." (p. 76)

Dubbing only desired scenes – Digital program editing (on tapes)



Editing

Dubbing only desired scenes – Digital program editing (on tapes)

About IR SETUP codes

The IR SETUP code is stored in the memory of your camcorder. Be sure to set the correct code to match your VCR. The default setting is code number 3.

Brand	IR SETUP code	Brand	IR SETUP code
Sony	1, 2, 3, 4, 5, 6	Mitsubishi/MGA	22, 23, 24, 28, 29
Admiral (M. Wards)	89	Multitech	23, 32, 80
Aiwa	47, 54, 80	NEC	21, 33, 35
Akai	49, 51	Olympic	77, 78
Audio Dynamic	21, 35	Optimus	22
Bell&Howell	36	Orion	60
(M. Wards)		Panasonic	16, 17, 77, 78
Broksonic	21, 70, 82	Pentax	8, 42
Canon	77, 78	Philco	26, 70, 77, 78
Citizen	47	Philips	47, 77, 78, 83
Craig	47, 73	Pioneer	78
Curtis Mathis	8, 77, 80	Quasar	6, 16, 17, 77, 78
Daewoo	26, 40, 77	RCA/PROSCAN	7, 8, 16, 40, 41, 42, 77, 78, 78*, 83, 101
DBX	21, 33, 35	Realistic	22, 36, 37, 77, 80, 88
Dimensia	8	Sansui	21
Emerson	26, 48, 59, 70, 80, 81, 82	Singer	73
Fisher	36, 37, 44, 45	Samsung	24, 24*, 32, 32*, 41, 94, 94*
Funai	80	Sanyo	26, 36, 37, 47
General Electric	8, 32*, 77, 94*, 101	Scott	22, 23, 24, 28, 32, 37, 40, 41
Goldstar/LG	47	Sharp	88, 89
GO VIDEO	71	Shintom	73
Hitachi	8, 42, 78	Signature 2000	80, 89
HQ	40	Sylvania	77, 78, 80, 83
Instant Replay	77, 78	Symphonic	80
JC Penny	8, 21, 33, 35, 36, 42, 77	Tashiro	47
JVC	12, 13, 14, 21, 33, 35	Tatung	21, 33, 35
Kenwood	21, 33, 35, 47	Teac	21, 33, 35, 80
LXI (Sears)	36, 37, 42, 44, 45, 47, 49, 80	Technics	77, 78
Magnavox	17, 77, 78, 83	Toshiba	7, 40, 49
Marantz	21, 33, 35	Wards	37, 47, 88, 89, 95
Marta	47	Yamaha	21, 33, 35, 36
Memorex	37, 77	Zenith	95
Molnita	8, 42		

* TV/VCR component

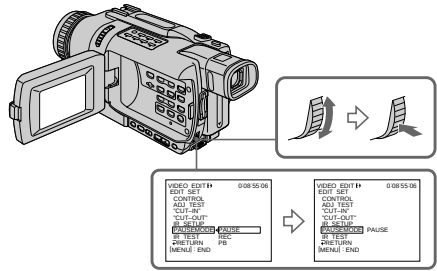
Note on IR SETUP codes

Digital program editing is not possible if the VCR does not support IR SETUP codes.

Dubbing only desired scenes – Digital program editing (on tapes)

(2) Setting the modes to cancel the recording pause on the VCR

- ① Turn the SEL/PUSH EXEC dial to select PAUSEMODE, then press the dial.
 - ② Turn the SEL/PUSH EXEC dial to select the mode to cancel recording pause on the VCR, then press the dial.
- Refer to the operating instructions of your VCR.



Editing

Buttons to cancel recording pause on the VCR

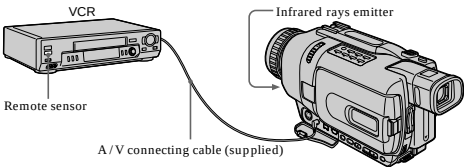
The buttons vary depending on your VCR. To cancel recording pause:

- Select PAUSE if the button to cancel recording pause is **II**.
- Select REC if the button to cancel recording pause is **●**.
- Select PB if the button to cancel recording pause is **▶**.

(3) Setting your camcorder and the VCR to face each other

Locate the infrared rays emitter of your camcorder and face it towards the remote sensor of the VCR.

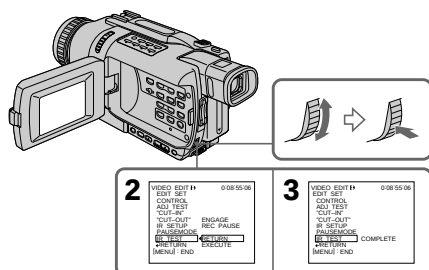
Set the devices about 30 cm (12 in.) apart, and remove any obstacles between the devices.



Dubbing only desired scenes – Digital program editing (on tapes)

(4) Confirming VCR operation

- ① Insert a recordable tape into the VCR, then set to recording pause.
 - ② Turn the SEL / PUSH EXEC dial to select IR TEST, then press the dial.
 - ③ Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
- If the VCR starts recording, the setting is correct.
When recording is finished, the indicator changes to COMPLETE.



When the VCR does not operate correctly

- After checking the code in "About IR SETUP codes", set the IR SETUP or the PAUSEMODE again.
- Place your camcorder at least 30 cm (12 in.) away from the VCR.
- Refer to the operating instructions of your VCR.

Dubbing only desired scenes – Digital program editing (on tapes)

Step 2: Setting the VCR to operate with the i.LINK cable (DV connecting cable)

When you connect using i.LINK cable (DV connecting cable) (optional), follow the procedure below.

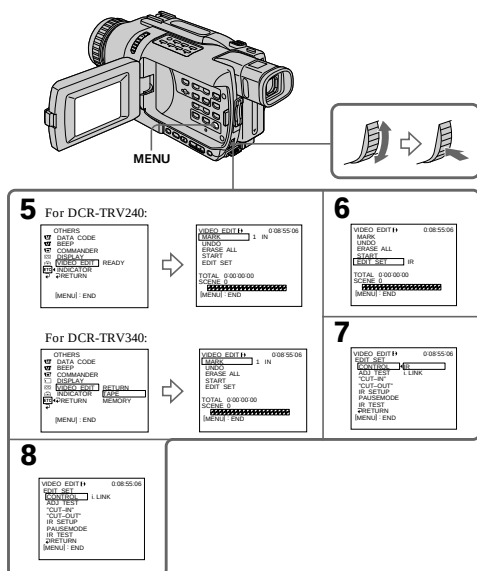
- (1) Set the POWER switch to VCR on your camcorder.
- (2) Turn the power of the connected VCR on, then set the input selector to DV input. When you connect a digital video camera recorder, set its power switch to VCR/VTR.
- (3) Press MENU to display the menu settings.
- (4) Turn the SEL / PUSH EXEC dial to select **IR**, then press the dial.
- (5) For DCR-TRV240:
Turn the SEL / PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Turn the SEL / PUSH EXEC dial to select TAPE in VIDEO EDIT, then press the dial.
- (6) Turn the SEL / PUSH EXEC dial to select EDIT SET, then press the dial.
- (7) Turn the SEL / PUSH EXEC dial to select CONTROL, then press the dial.
- (8) Turn the SEL / PUSH EXEC dial to select i.LINK, then press the dial.

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Dubbing only desired scenes – Digital program editing (on tapes)



When you connect using an i.LINK cable (DV connecting cable)

You cannot dub the titles and display indicators.

Dubbing only desired scenes – Digital program editing (on tapes)

Step 3: Adjusting the synchronization of the VCR

You can adjust the synchronization of your camcorder and the VCR. Have a pen and paper ready for notes. Before operation, eject the cassette from your camcorder if inserted.

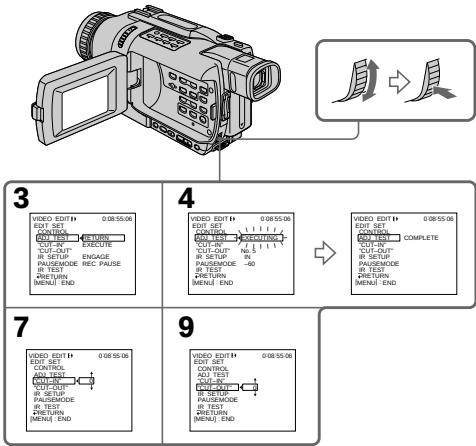
- (1) Set the POWER switch to VCR on your camcorder.
- (2) Insert a blank tape (or a tape you want to record over) into the VCR, then set to recording pause.
When you select i.LINK in CONTROL, you do not need to set to recording pause.
- (3) Turn the SEL / PUSH EXEC dial to select ADJ TEST, then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
IN and OUT are recorded on an image for five times each to calculate the number values for adjusting the synchronization.
The EXECUTING indicator flashes on the screen.
When finished, the indicator changes to COMPLETE.
- (5) Rewind the tape in the VCR, then start slow playback.
Take a note of the first number value of each IN and the last number value of each OUT.
- (6) Calculate the average of all the first number values of each IN, and the average of all the last number values of each OUT.
- (7) Turn the SEL / PUSH EXEC dial to select "CUT-IN", then press the dial.
- (8) Turn the SEL / PUSH EXEC dial to select the average number value of IN, then press the dial.
The calculated start position for recording is set.
- (9) Turn the SEL / PUSH EXEC dial to select "CUT-OUT", then press the dial.
- (10) Turn the SEL / PUSH EXEC dial to select the average number value of OUT, then press the dial.
The calculated stop position for recording is set.
- (11) Turn the SEL / PUSH EXEC dial to select **RETURN**, then press the dial.

Editing

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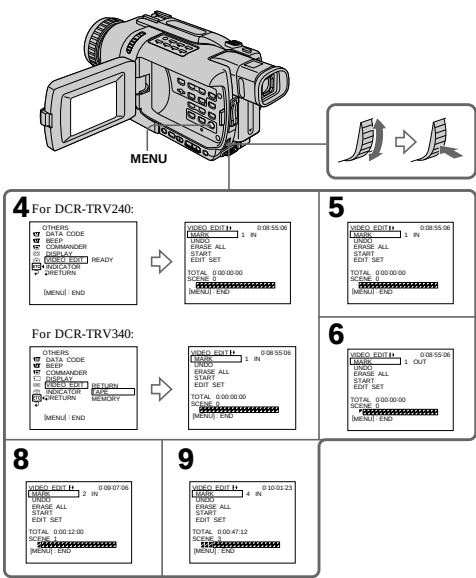
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Dubbing only desired scenes – Digital program editing (on tapes)



- Notes**
- When you complete step 3, the image used to adjust synchronization is recorded for about 50 seconds.
 - If you start recording from the very beginning of the tape, the first few seconds of the tape may not record properly. Be sure to allow about 10 seconds' lead before starting recording.
 - When you connect with an i.LINK cable (DV connecting cable) you may not be able to operate the dubbing function correctly, depending on the VCR. Keep the i.LINK connection, and set CONTROL to IR in the menu settings. Video and audio signals are transmitted in digital format.

Dubbing only desired scenes – Digital program editing (on tapes)



Dubbing only desired scenes – Digital program editing (on tapes)

Operation 1: Making a program

- (1) Insert the tape for playback into your camcorder, and insert a tape for recording into the VCR.
- (2) Press MENU to display the menu settings.
- (3) Turn the SEL / PUSH EXEC dial to select **EDIT**, then press the dial.
- (4) For DCR-TRV240:
Turn the SEL / PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Turn the SEL / PUSH EXEC dial to select TAPE in VIDEO EDIT, then press the dial.
- (5) Search for the beginning of the first scene you want to insert using the video operation buttons, then pause playback.
You can fine-adjust one frame at a time with EDITSEARCH.
- (6) Press the SEL / PUSH EXEC dial.
The IN point of the first program is set, and the top part of the program mark changes to light blue.
- (7) Search for the end of the first scene you want to insert using the video operation buttons, then pause playback.
- (8) Press the SEL / PUSH EXEC dial.
The OUT point of the first program is set, then the bottom part of the program mark changes to light blue.
- (9) Repeat steps 5 to 8, then set the program.
When the program is set, the program mark changes to light blue.
You can set up to 20 programs.

Editing

Dubbing only desired scenes – Digital program editing (on tapes)

Erasing the program you have set

Erase OUT first and then IN from of the last program.

- (1) Turn the SEL / PUSH EXEC dial to select UNDO, then press the dial.
- (2) Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
The last set program mark flashes, then the setting is canceled.

To cancel erasing

Select RETURN in step 2.

Erasing all programs

- (1) For DCR-TRV240:
Turn the SEL / PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Select VIDEO EDIT in the menu settings. Turn the SEL / PUSH EXEC dial to select TAPE, then press the dial.
- (2) Select ERASE ALL in the menu settings. Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
All the program marks flash, then the settings are canceled.

To cancel erasing all programs

Select RETURN in step 2.

To cancel a program you have set

Press MENU.

The program is stored in memory until the tape is ejected.

Notes

- Digital program editing does not work when PB MODE is set to **H18 / B** in the menu settings.
- You cannot operate recording during Digital program editing.

You cannot set IN or OUT to the following portions of the tape:

- A blank portion of the tape
- A portion recorded in a system other than Digital8 **1**

The total time code may not be displayed correctly in the following cases:

- The tape is not recorded in the Digital8 **1** system.
- There is a blank portion between IN and OUT on the tape.

Editing

Dubbing only desired scenes – Digital program editing (on tapes)

Operation 2: Performing the program (Dubbing a tape)

Make sure that your camcorder and VCR are connected, and that the VCR is set to recording pause. When you use an i.LINK cable (DV connecting cable), the following procedure is not necessary.
When you use a digital video camera recorder, set its power switch to VCR/VTR.

- (1) For DCR-TRV240:
Turn the SEL/PUSH EXEC dial to select VIDEO EDIT, then press the dial.
For DCR-TRV340:
Select VIDEO EDIT in the menu settings. Turn the SEL/PUSH EXEC dial to select TAPE, then press the dial.
- (2) Select START in the menu settings. Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.
Search for the beginning of the first program, then start dubbing.
The program mark flashes.
The SEARCH indicator appears during search, and the EDITING indicator appears during edit on the screen.
The program mark changes to light blue after dubbing ends.
When dubbing ends, your camcorder and the VCR automatically stop.

To stop dubbing during editing

Press  on your camcorder.

To end the Digital program editing function

Your camcorder stops when the dubbing ends. Then the display returns to VIDEO EDIT in the menu settings.
Press MENU to end the Digital program editing function.

You cannot record on the VCR when:

- The cassette has run out of tape.
- The write-protect tab on the cassette is set to lock.
- The IR SETUP code is not correct (when IR is selected).
- The button to cancel recording pause is not correct (when IR is selected).

NOT READY appears on the LCD screen when:

- The program to operate Digital program editing has not been made.
- i.LINK is selected but an i.LINK cable (DV connecting cable) is not connected.
- The power of the connected VCR is not turned on (when you set i.LINK).

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Capturing images from an analog video unit on your computer – Signal convert function

You can capture images and sound from an analog video unit connected to your computer which has the i.LINK (DV) jack connected to your camcorder.

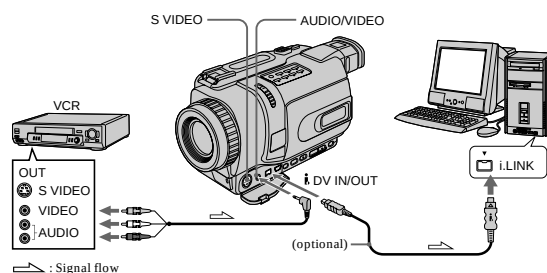
Before operation

Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

- (1) Set the POWER switch to VCR.
- (2) Press MENU to display the menu settings.
- (3) Turn the SEL/PUSH EXEC dial to set A/V → DV OUT in  to ON. (p. 104)
- (4) Start playback on the analog video unit.
- (5) Start procedures for capturing images and sound on your computer.

The operation procedures depend on your computer and the software you are using.

For details on how to capture images, refer to the operating instructions of your computer and the software you are using.



After capturing images and sound

Stop capturing procedures on your computer, and stop the playback on the analog video unit.

Notes

- You need to install software that supports the exchange video signals.
- Depending on the state of the analog video signals, your computer may not be able to output the images correctly when you convert analog video signals into digital video signals via your camcorder. Depending on the analog video unit, the image may contain noise or incorrect colors.
- You cannot record or capture video output via your camcorder when the video tapes include copyright protection signals such as the ID-2 system.
- You can capture images and sound with an S video cable (optional) instead of the A/V connecting cable (supplied).

If your computer has a USB jack

You can connect your camcorder to your computer using the USB cable supplied with your camcorder. Note, however, that the image may flicker.

Editing

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Recording video or TV programs

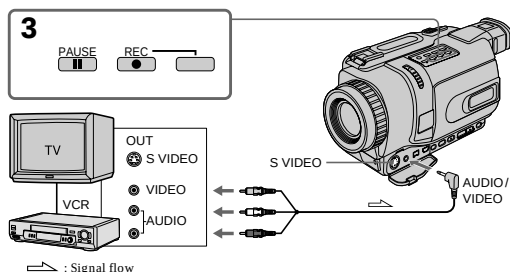
Using the A/V connecting cable

You can record a tape from another VCR or a TV program from a TV that has video / audio outputs. Use your camcorder as a recorder.

Before operation

Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

- (1) Insert a blank tape (or a tape you want to record over) into your camcorder. If you are recording a tape from the VCR, insert a recorded tape into the VCR.
- (2) Set the POWER switch to VCR on your camcorder.
- (3) Press  and the button on its right simultaneously on your camcorder, then immediately press  on your camcorder.
- (4) Press  on the VCR to start playback if you are recording a tape from VCR. Select a TV program if you are recording from TV.
The picture from a TV or VCR appears on the screen of your camcorder.
- (5) Press  on your camcorder at the scene where you want to start recording from.



When you have finished dubbing a tape

Press  on both your camcorder and the VCR.

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Recording video or TV programs

Notes

- To enable smooth transition, we recommend that you do not mix pictures recorded in the Hi8 / standard 8 with the Digital8  system on a tape.
- If you fast-forward or slow-playback on the other equipment, the image being recorded may fluctuate. When recording from other equipment, be sure to play back the original tape at normal speed.

If your VCR is a monaural type

Connect the yellow plug of the A/V connecting cable to the video output jack and the white or the red plug to the audio output jack on the VCR or the TV. When the white plug is connected, the left channel audio is output, and when the red plug is connected, the right channel audio is output.

If your TV or VCR has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable.
Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

Editing

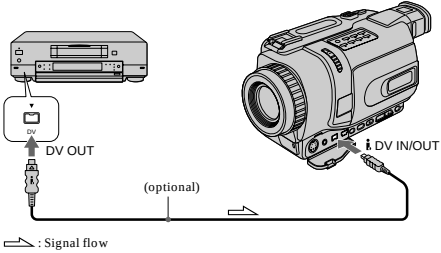
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Recording video or TV programs

Using the i.LINK cable (DV connecting cable)

Simply connect the i.LINK cable (DV connecting cable) (optional) to DV IN / OUT of your camcorder and to DV OUT of the DV products. With a digital-to-digital connection, video and audio signals are transmitted in digital form for high-quality editing.

- (1) Insert a blank tape (or a tape you want to record over) into your camcorder, and insert the recorded tape into the VCR on your camcorder.
- (2) Set the POWER switch to VCR on your camcorder.
- (3) Press ● REC and the button on its right simultaneously on your camcorder, then immediately press II on your camcorder.
- (4) Press ► on the VCR to start playback.
- (5) Press II on your camcorder at the scene where you want to start recording from.



When you have finished dubbing a tape

Press ■ on both your camcorder and the VCR.

You can connect one VCR only using the i.LINK cable (DV connecting cable).

During digital editing

The color of the display may be uneven. However this does not affect the dubbed picture.

If you record playback pause picture with the DV IN/OUT jack

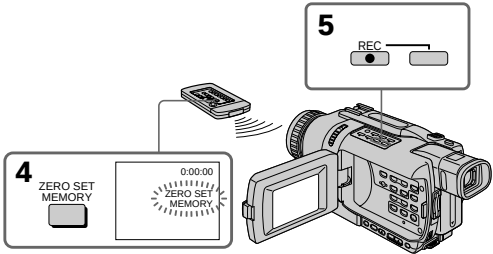
The recorded picture becomes rough. When you play back the picture using your camcorder, the picture may jitter.

Before recording

Make sure that the DV IN indicator appears on the screen of your camcorder by pressing DISPLAY. The DV IN indicator may appear on both equipment.

Inserting a scene from a VCR – Insert Editing

- (1) Set the POWER switch to VCR on your camcorder.
- (2) On the connected VCR, locate just before the insert start point [a], then press II to set the VCR to the playback pause mode.
- (3) On your camcorder, locate the insert end point [c] by pressing ◀◀ or ▶▶. Then press II to set your camcorder to the playback pause mode.
- (4) Press ZERO SET MEMORY on the Remote Commander. The ZERO SET MEMORY indicator flashes and the end point of the insert is stored in memory. The tape counter shows “0:00:00.”
- (5) On your camcorder, locate the insert start point [b] by pressing ◀◀, then press ● REC and the button on its right simultaneously to set your camcorder to the recording pause mode.
- (6) First press II on the VCR, and after a few seconds press II on your camcorder to start inserting the new scene. Inserting automatically stops near the zero point on the counter. Your camcorder automatically stops. The end point [c] of the insert stored in memory is canceled.



To change the insert end point

Press ZERO SET MEMORY again after step 5 to make the ZERO SET MEMORY indicator disappear and begin from step 3.

Notes

- The zero set memory function works only for tapes recorded in the Digital8 system.
- Pictures and sound recorded on the section between the insert start and end points will be erased when you insert the new scene.

When the inserted picture is played back

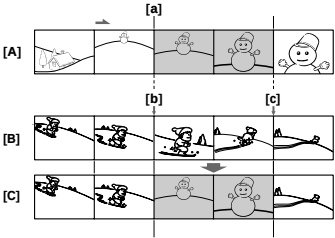
Pictures may be distorted at the end of the inserted section. This is not a malfunction.

To insert a scene without setting the insert end point

Skip step 3 and 4. Press ■ when you want to stop inserting.

Inserting a scene from a VCR – Insert Editing

You can insert a new scene from a VCR onto your originally recorded tape by specifying the insert start and end points. Use the Remote Commander for this operation. Connections are the same as on page 88, 90. Insert a cassette containing the desired scene to insert into the VCR.



- [A]: A tape that contains the scene to be superimposed
- [B]: A tape before editing
- [C]: A tape after editing

Editing

Viewing images recorded on a tape on your computer (Windows users only)

If you connect your camcorder and your computer using the USB cable, you can view pictures live from your camcorder and pictures recorded on a tape on your computer (USB Streaming function). Furthermore, if you capture images recorded on a tape from your camcorder to your computer, you can process or edit them in image processing software and append them to e-mail.

Connecting with USB cable and viewing images on your computer

- Installing the USB driver (p. 95)
- Installing “PIXELA ImageMixer Ver.1.0 for Sony” (p. 99)
- Capturing images with “PIXELA ImageMixer Ver.1.0 for Sony” (p. 100)

Recommended computer environment

- OS:** Microsoft Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP Home Edition or Windows XP Professional (standard installation) However, operation is not assured if the above environment is an upgraded OS. If you are using Windows 98, you cannot capture sounds.
- CPU:** Minimum 500 MHz Intel Pentium III or faster (800 MHz or faster recommended)
- Application:** DirectX 8.0a or later
- Sound system:** 16 bit stereo sound card and speakers
- Memory:** 64 MB or more
- Hard disk:** Minimum 200 MB available hard disk space for installation 1 GB hard disk space or more recommended for working area (depending on the file size of editing images)
- Display:** 4 MB VRAM video card, Minimum 800 × 600 dot Hi color (16 bit color, 65,000 colors). Direct Draw display driver capability (At 800 × 600 dot or less, 256 colors and less, this product will not operate correctly.)
- Others:** This product is compatible with DirectX technology, so it is necessary to install DirectX.

The USB connector is provided as standard.

You cannot use this function in the Macintosh environment.

Editing

Viewing images recorded on a tape on your computer (Windows users only)

Notes

- Operations are not guaranteed for either the Windows or Macintosh environment if you connect two or more USB equipment to a single computer at the same time, or when using a hub.
- Some equipment may not operate depending on the type of USB equipment that is used simultaneously.
- Operations are not guaranteed for all the recommended computer environments mentioned above.

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Viewing images recorded on a tape on your computer (Windows users only)

Installing the USB driver

Before connecting your camcorder to your computer, install the USB driver on the computer. The USB driver is packaged together with application software for viewing images on the CD-ROM supplied with your camcorder.

**Start the following operation without connecting the USB cable to your computer.
Connect the USB cable in step 8.**

If the USB driver has been registered incorrectly because your computer was connected to your camcorder before installation of the USB driver was complete, reinstall the USB driver following the procedure on page 96.

For Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP users
If you are using Windows 2000 Professional or Windows XP, log in with permission of administrator.

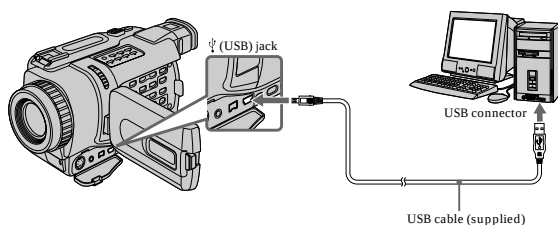
- (1) Turn on your computer and allow Windows to load.
- (2) Insert the supplied CD-ROM into the CD-ROM drive of your computer. The application software screen appears.
- (3) Move the cursor to "USB Driver" and click. This starts USB driver installation.



- (4) Follow the on-screen messages to install the USB driver.
- (5) Connect the AC power adaptor to your camcorder and then to a wall outlet.
- (6) Set the POWER switch to CAMERA or VCR.
- (7) Select USB STREAM to ON in [] in the menu settings (p. 104).
- (8) With the CD-ROM inserted, connect the USB jack on your camcorder to the USB connector on your computer using the supplied USB cable.
Your computer recognizes the camcorder, and the Windows Add Hardware Wizard starts.

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Viewing images recorded on a tape on your computer (Windows users only)



- (9) Follow the on-screen messages so that the Add Hardware Wizard recognizes that the USB drivers have been installed. The Add Hardware Wizard starts three times because three different USB drivers are installed. Be sure to allow the installation to complete without interrupting it.

If the "Files Needed" screen appears (For Windows 2000 Professional/Windows XP users)

- (10) Insert the supplied CD-ROM into the CD-ROM drive of your computer, then select "Browse..." → "My computer" → "ImageMixer" → "sonyhcb.sys", and click the "OK" button.

When the installation is complete, go to "Installing 'PIXELA ImageMixer Ver.1.0 for Sony'" on page 99.

If you cannot install the USB driver

The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Perform the following procedure to correctly install the USB driver.

Step 1: Uninstall the incorrect USB driver

- (1) Turn on your computer and allow Windows to load.
- (2) Connect the USB connector on your computer to the (USB) jack on your camcorder using the USB cable supplied with your camcorder.
- (3) Connect the AC power adaptor, and set the POWER switch to CAMERA or VCR.

Viewing images recorded on a tape on your computer (Windows users only)

- (4) Open your computer's "Device Manager".

For Windows XP:
Select "Start" → "Control Panel" → "System" → "Hardware" tab, and click the "Device Manager" button.

If there is no "System" inside "Pick a Category" after clicking "Control Panel", click "Switch to Classic View" instead.

For Windows 2000 Professional:
Select "My Computer" → "Control Panel" → "System" → "Hardware" tab, and click the "Device Manager" button.

For Windows 98SE/Windows Me:
Select "My Computer" → "Control Panel" → "System", and click the "Device Manager" button.

- (5) Select and delete the underlined devices below.



Windows 98SE



Windows Me

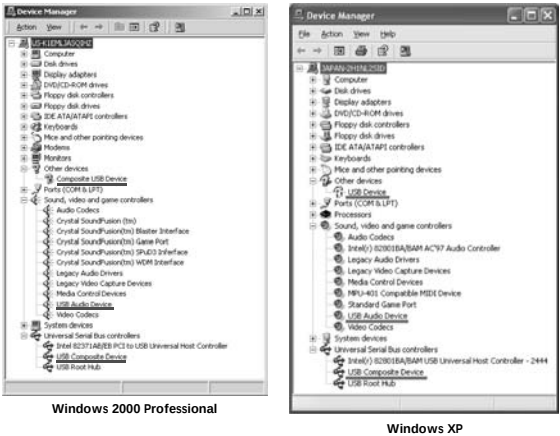
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Viewing images recorded on a tape on your computer
(Windows users only)



- ⑥ Set the POWER switch to OFF (CHG) on your camcorder, and then disconnect the USB cable.
- ⑦ Restart your computer.

Step 2: Install the USB driver on the CD-ROM
Perform the entire procedure described in "Installing the USB driver" on page 95.

Viewing images recorded on a tape on your computer
(Windows users only)

Installing "PIXELA ImageMixer Ver.1.0 for Sony"

Install "PIXELA ImageMixer Ver.1.0 for Sony" on your computer. "PIXELA ImageMixer Ver.1.0 for Sony" is packaged on the CD-ROM supplied with your camcorder. "PIXELA ImageMixer Ver.1.0 for Sony" allows you to easily view images on your camcorder on your computer for your enjoyment.

To install and use this software in Windows 2000 Professional, you must be authorized as a Power User or Administrator. For Windows XP, you must be authorized as an Administrator.

- (1) Turn on your computer and allow Windows to load.
If you are using your computer, close all running applications.
- (2) Insert the supplied CD-ROM into the CD-ROM drive of your computer.
The application software screen appears. If the application software screen does not appear, double-click "My Computer" and then "ImageMixer" (CD-ROM Drive). The application software screen appears after a while.



- (3) Move the cursor to "PIXELA ImageMixer" and click.
The language selection dialog box appears.
 - (4) Select the language for installation.
 - (5) Follow the on-screen messages.
- Follow the directions on the screen to install DirectX. DirectX 8.0 will be installed.

Editing

Viewing images recorded on a tape on your computer
(Windows users only)

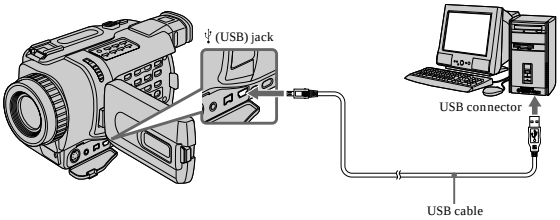
Capturing images with "PIXELA ImageMixer Ver.1.0 for Sony"

To use this software in Windows 2000 Professional, you must be authorized as a Power User or Administrator. For Windows XP, you must be authorized as an Administrator.

Viewing images

Viewing images recorded on a tape

- (1) Turn on your computer and allow Windows to load.
- (2) Connect one end of the USB cable to the (USB) jack on your camcorder and the other end to the USB connector on your computer.



- (3) Connect the AC power adaptor to your camcorder and then to a wall outlet, and insert a cassette into your camcorder.
- (4) Set the POWER switch to VCR.
Select USB STREAM to ON in [] in the menu settings (p. 104).
- (5) Select "Start" → "Program" → "PIXELA" → "ImageMixer" → "ImageMixer Ver.1.0 for Sony" on Windows.

Viewing images recorded on a tape on your computer
(Windows users only)

- (6) Click [] on the screen.



The "PIXELA ImageMixer Ver.1.0 for Sony" startup screen appears on your computer.

- (7) Click [].



- (8) Start playback on your camcorder.
The image from the tape appears in the preview window.

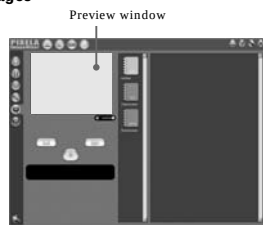
Editing

Viewing images recorded on a tape on your computer (Windows users only)

Viewing images live from your camcorder

- Follow the steps (1), (2) on page 100, then connect the AC power adaptor to your camcorder and then to a wall outlet.
- Set the POWER switch to CAMERA.
Select USB STREAM to ON in  in the menu settings (p. 104).
- Follow the steps (5) to (7) on page 100, 101.
The image from your camcorder appears live in the preview window.

Capturing images



Capturing still images

- Click .
- Click  at the point to capture using the preview window. The captured image appears on the thumbnail list window.

Capturing moving pictures

- Click .
- Click  at the start point to capture using the preview window.
The  changes to . Then click  at the stop point to capture. The captured image appears on the thumbnail list window.

Viewing images recorded on a tape on your computer (Windows users only)

Notes

- When you view the image using your computer with USB connection, the image may fluctuate.
- When your camcorder is in the standby mode with a cassette inserted, it turns off automatically after three minutes.
- We recommend setting DEMO MODE to OFF in the menu settings when your camcorder is in the standby mode, and no cassette is inserted.
- Indicators in the camcorder LCD screen do not appear on images that are captured into your computer.

If image data cannot be transferred by the USB connection

The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Reinstall the USB driver following the procedure on page 96.

If any trouble occurs

Close all running applications, then restart it.

Carry out the following operations after quitting the application:

- Disconnect the USB cable
- Turn on/off your camcorder.

Seeing the on-line help (operating instructions) of "PIXELA ImageMixer Ver.1.0 for Sony"

"PIXELA ImageMixer Ver.1.0 for Sony" is provided with on-line help (operating instructions).

- Click  button located in the upper-right corner of the screen.
The ImageMixer's Manual screen appears.
- You can access the desired topics from the contents.

To close on-line help

Click  located in the upper-right corner of the "ImageMixer's Manual" screen.

If you have any questions about "PIXELA ImageMixer Ver.1.0 for Sony"

"ImageMixer Ver.1.0 for Sony" is a trademark of PIXELA corporation. Refer to the information web site at: "http://www.imagemixer.com".

Notes on using your computer

Communications with your computer

Communications between your camcorder and your computer may not recover after recovering from Suspend, Resume, or Sleep.

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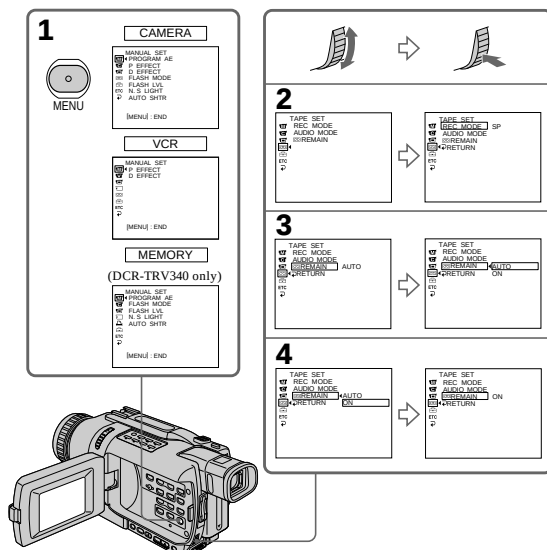
— Customizing Your Camcorder —

Changing the menu settings

To change the mode settings in the menu settings, select the menu items with the SEL/PUSH EXEC dial. The default settings can be partially changed. First, select the icon, then the menu item and then the mode.

- In CAMERA, VCR or MEMORY (DCR-TRV340 only) mode, press MENU to display the menu settings.
- Turn the SEL/PUSH EXEC dial to select the desired icon, then press the dial to set.
- Turn the SEL/PUSH EXEC dial to select the desired item, then press the dial to set.
- Turn the SEL/PUSH EXEC dial to select the desired mode, and press the dial to set.
- If you want to change other items, select  RETURN and press the dial, then repeat steps from 2 to 4.

For details, see "Selecting the mode setting of each item" (p. 105).



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Changing the menu settings

To make the menu display disappear

Press MENU.

Menu items are displayed as the following icons:

-  MANUAL SET
-  CAMERA SET
-  VCR SET
-  LCD/VF SET
-  MEMORY SET (DCR-TRV340 only)
-  PRINT SET (DCR-TRV340 only)
-  TAPE SET
-  SETUP MENU
-  OTHERS

Selecting the mode setting of each item ● is the default setting.

Menu items differ depending on the position of the POWER switch.
The screen shows only the items you can operate at the moment.

Icon/Item	Mode	Meaning	POWER switch
 PROGRAM AE	—	To suit your specific shooting requirement (p. 50)	CAMERA MEMORY
P EFFECT	—	To add special effects like those in films or on the TV to images (p. 46, 62)	CAMERA VCR
D EFFECT	—	To add special effects using the various digital functions (p. 47, 63)	CAMERA VCR
FLASH MODE	● ON	To fire the flash (optional) regardless of the brightness of the surroundings	CAMERA MEMORY
	AUTO	The flash fires automatically.	
	AUTO 	To fire the flash before recording to reduce the red-eye	
FLASH LVL	HIGH	Makes the flash level higher than normal.	CAMERA MEMORY
	● NORMAL	Normal setting	
	LOW	Makes the flash level lower than normal.	
N.S. LIGHT	● ON	To use the NightShot Light function (p. 28)	CAMERA MEMORY
	OFF	To cancel the NightShot Light function	
AUTO SHTR	● ON	To automatically activate the electronic shutter when shooting in bright conditions	CAMERA MEMORY
	OFF	To not automatically activate the electronic shutter even when shooting in bright conditions	

Notes on FLASH MODE and FLASH LVL

- You cannot adjust FLASH MODE or FLASH LVL if the flash (optional) is not compatible with FLASH MODE or FLASH LVL.
- FLASH MODE and FLASH LVL are displayed only when an external flash (optional) is connected to the intelligent accessory shoe.

(continued on the following page)

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Customizing Your Camcorder

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Changing the menu settings

Icon/Item	Mode	Meaning	POWER switch
	● OFF	To not use the self-timer function	CAMERA MEMORY
	● ON	To use the self-timer function	
D ZOOM	● OFF	To deactivate the digital zoom. Up to 25× zoom is performed.	CAMERA MEMORY
	50×	To activate the digital zoom. More than 25× to 50× zoom is performed digitally (p. 23).	
	700×	To activate the digital zoom. More than 25× to 700× zoom is performed digitally (p. 23).	
PHOTO REC*	● MEMORY	To record still images on "Memory Stick"™s in CAMERA mode while you are in the standby mode or recording moving pictures to tape by pressing PHOTO (p. 122)	CAMERA
	TAPE	To record still images on tape in CAMERA mode while you are in the standby mode or recording moving pictures to tape by pressing PHOTO (p. 38)	
16:9WIDE	● OFF	—	CAMERA
	ON	To record a 16:9 wide picture (p. 41)	
STEADYSHOT	● ON	To compensate for camera-shake	CAMERA MEMORY
	OFF	To cancel the SteadyShot function. Natural pictures are produced when shooting a stationary object with a tripod.	
FRAME REC	● OFF	To deactivate the frame recording	CAMERA
	ON	To activate the frame recording (p. 56)	
INT. REC	ON	To activate the interval recording function (p. 54)	CAMERA
	● OFF	To deactivate the interval recording function	
	SET	To set INTERVAL and REC TIME for interval recording	

* DCR-TRV340 only

Notes on the SteadyShot function

- The SteadyShot function will not correct excessive camera-shake.
- Attachment of a conversion lens (optional) may influence the SteadyShot function.

If you cancel the SteadyShot function

The SteadyShot off indicator appears on the screen. Your camcorder prevents excessive compensation for camera-shake.

Changing the menu settings

Icon/Item	Mode	Meaning	POWER switch
	●STEREO	To play back a stereo tape or dual sound track tape with main and sub sound (p. 186)	VCR
	1	To play back a stereo tape with the left sound or a dual sound track tape with main sound	
	2	To play back a stereo tape with the right sound or a dual sound track tape with sub sound	
TBC*	●ON	To correct jitter	VCR
	OFF	To not correct jitter. Set TBC to OFF when playing back a tape on which you have dubbed over and recorded the signal of a TV game or similar machine.	
TBC stands for "Time Base Corrector".			
DNR*	●ON	To reduce picture noise	VCR
	OFF	To reduce a conspicuous afterimage when the picture has a lot of movement	
DNR stands for "Digital Noise Reduction".			
AUDIO MIX	—	To adjust the balance between the stereo 1 and stereo 2	VCR
			
A/V → DV OUT	●OFF	To output digital images and sound in analog format using your camcorder	VCR
	ON	To output analog images and sound in digital format using your camcorder (p. 87)	
PB MODE	●AUTO	To automatically select the system (Hi8/standard 8 or Digital8 ) that was used to record on the tape, and play back the tape	VCR
		To play back a tape that was recorded in the Hi8/standard 8 system when your camcorder does not automatically distinguish the recording system	

* When you play back tapes recorded in the Hi8/standard 8 system only

Notes on AUDIO MIX

- When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance.
- You can adjust the balance only for tapes recorded in the Digital8 system.

Note on PB MODE

The mode will return to the default setting when:
– you remove the battery pack or power source.
– you turn the POWER switch.

(continued on the following page)

Customizing Your Camcorder

Changing the menu settings

Icon/item	Mode	Meaning	POWER switch
 LCD BRIGHT	—	To adjust the brightness on the LCD screen with the SEL/PUSH EXEC dial.	CAMERA VCR MEMORY
To darken ←  → To lighten			
LCD B. L.	● BRT NORMAL	To set the brightness on the LCD screen to normal	CAMERA VCR MEMORY
	BRIGHT	To brighten the LCD screen	
LCD COLOR	—	To adjust the color on the LCD screen, turning the SEL/PUSH EXEC dial to adjust the following bar	CAMERA VCR MEMORY
	To get low-intensity ←  → To get high-intensity		
VF B.L.	● BRT NORMAL	To set the brightness on the viewfinder screen to normal	CAMERA VCR MEMORY
	BRIGHT	To brighten the viewfinder screen	

Notes on LCD B.L. and VF B.L.

- When you select BRIGHT, battery life is reduced by about 10 percent during recording.
- When you use power sources other than the battery pack, BRIGHT is automatically selected.

Even if you adjust LCD BRIGHT, LCD B.L., LCD COLOR and/or VF B.L.

The recorded picture will not be affected.

Changing the menu settings

Icon/Item	Mode	Meaning	POWER switch
* STILL SET			
PIC MODE	● SINGLE	To not record continuously	MEMORY
	MULTI SCRNL	To record nine images continuously, display the images on a single page divided into nine boxes.	
QUALITY	● FINE	To record still images in the fine image quality mode (p. 118)	VCR MEMORY
	STANDARD	To record still images in the standard image quality mode	
FLD/FRAME	● FIELD	To record moving subjects correcting jitter (p. 122)	MEMORY
	FRAME	To record stopping subjects in high quality	
MOVIE SET			
IMAGESIZE	● 320 × 240	To record moving pictures at 320 × 240 size (p. 120)	VCR MEMORY
	160 × 112	To record moving pictures at 160 × 112 size	
REMAIN	● AUTO	To display the remaining capacity of the "Memory Stick"™ in the following cases: • For five seconds after inserting a "Memory Stick"™ into your camcorder • When the capacity of the "Memory Stick"™ is less than one minute in MEMORY mode • For five seconds after completing a moving picture recording	VCR MEMORY
	ON	To always display the remaining capacity of the "Memory Stick"™	
PRINT MARK	ON	To write a print mark on recorded still images you want to print out later (p. 172)	VCR MEMORY
	● OFF	To cancel print marks on still images	
PROTECT	ON	To protect selected images against accidental erasure (p. 168)	VCR MEMORY
	● OFF	To not protect images	
SLIDE SHOW	——	To play back images in a continuous loop (p. 166)	MEMORY
PHOTO SAVE	——	To copy still images on tape onto "Memory Stick"™ (p. 136)	VCR
FILE NO.	● SERIES	To assign numbers to file in sequence even if the "Memory Stick"™ is changed	VCR MEMORY
	RESET	To reset the file numbering each time the "Memory Stick"™ is changed	

* DCR-TRV340 only

(continued on the following page)

Customizing Your Camcorder

Changing the menu settings

Icon/Item	Mode	Meaning	POWER switch
* DELETE ALL	● RETURN	To cancel deleting all images	MEMORY
	OK	To delete all unprotected images	
FORMAT	● RETURN	To cancel formatting	MEMORY
	OK	To format an inserted "Memory Stick" 1. Select FORMAT with the SEL / PUSH EXEL dial, then press the dial. 2. Select OK with the SEL / PUSH EXEC dial, then press the dial. 3. After EXECUTE appears, press the SEL / PUSH EXEC dial. FORMATTING flashes during formatting. COMPLETE appears when formatting is finished.	
* 9PIC PRINT	● RETURN	To cancel prints of split screens	MEMORY
	SAME	To make prints of the same split screen (p. 174)	
	MULTI	To make prints of different split screens	
	MARKED	To make prints of images with print marks in recording order	
DATE/TIME	● OFF	To make prints without the recording date and time	MEMORY
	DATE	To make prints with the recording date	
	DAY&TIME	To make prints with the recording date and time (p. 174)	

Notes on formatting *

- Supplied "Memory Stick"s have been formatted at factory. Formatting "Memory Stick"s on your camcorder is not required.
- Do not turn the POWER switch or press any button while the display shows FORMATTING.
- You cannot format the "Memory Stick" if the write-protect tab on the "Memory Stick" is set to LOCK.
- Format the "Memory Stick" when "FORMAT ERROR" is displayed.

Formatting erases all information on the "Memory Stick" *

- Check the contents of the "Memory Stick" before formatting.
- Formatting erases sample images on the "Memory Stick."
- Formatting erases protected image data on the "Memory Stick."

Note on PRINT SET *

9PIC PRINT and DATE/TIME are displayed only when an external printer (optional) is connected to the intelligent accessory shoe.

* DCR-TRV340 only

Changing the menu settings

Icon/Item	Mode	Meaning	POWER switch
REC MODE	● SP	To record in the SP (Standard Play) mode	CAMERA VCR
	LP	To increase the recording time to 1.5 times the SP mode	
AUDIO MODE	● 12BIT	To record in the 12-bit mode (two stereo sounds)	CAMERA VCR*
	16BIT	To record in the 16-bit mode (one stereo sound with high quality)	
REMAIN	● AUTO	To display the remaining tape bar: • For about eight seconds after your camcorder is turned on and calculates the remaining amount of tape • For about eight seconds after a cassette is inserted and your camcorder calculates the remaining amount of tape • For about eight seconds after ► is pressed in VCR mode • For about eight seconds after DISPLAY is pressed to display the screen indicators • For the period of tape rewinding, forwarding or picture search in VCR mode	CAMERA VCR
	ON	To always display the remaining tape bar	

Notes on the LP mode

- When you record a tape in the LP mode on your camcorder, we recommend playing back the tape on your camcorder. When you play back the tape on other camcorders or VCRs, noise may occur in pictures or sound.
- When you record in the LP mode, we recommend using a Sony cassette so that you can get the most out of your camcorder.
- When you record in the SP and LP modes on one tape or you record some scenes in the LP mode, the playback picture may be distorted or the time code may not be written properly between scenes.

Note on AUDIO MODE

When playing back a tape recorded in the 16-bit mode, you cannot adjust the balance in AUDIO MIX.

***To dub a tape to another VCR**

You cannot select AUDIO MODE for tapes recorded in the Digital8 system. You, however, can select AUDIO MODE when you dub tapes recorded in the Hi8/standard 8 system to another VCR using the i.LINK cable.

(continued on the following page)

Customizing Your Camcorder

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Changing the menu settings

Icon/Item	Mode	Meaning	POWER switch
CLOCK SET	—	To set the date or time (p. 17)	CAMERA MEMORY
USB STREAM	● OFF	To deactivate the USB Streaming function	CAMERA VCR
	ON	To activate the USB Streaming function	
LTR SIZE	● NORMAL	To display selected menu items in normal size	CAMERA VCR MEMORY
	2×	To display selected menu items at twice the normal size	
LANGUAGE	● ENGLISH	To display the following information indicators in English: REC, STBY, min, CAPTURE, END SEARCH and VOL, etc.	CAMERA VCR MEMORY
	FRANÇAIS	To display the information indicators in French	
	ESPAÑOL	To display the information indicators in Spanish	
	PORTUGUÊS	To display the information indicators in Portuguese	
	中文	To display the information indicators in Chinese	
	한국어	To display the information indicators in Korean	
DEMO MODE	● ON	To make the demonstration appear	CAMERA
	OFF	To cancel the demonstration mode	

Notes on DEMO MODE

- You cannot select DEMO MODE when a cassette is inserted in your camcorder.
- The DEMO MODE default setting is STBY (Standby), and the demonstration starts about 10 minutes after you have set the POWER switch to CAMERA without a cassette inserted.
- To cancel the demonstration, insert a cassette, set the POWER switch to other than CAMERA, or set DEMO MODE to OFF. To set to STBY (Standby) again, leave the DEMO MODE at ON in the menu settings, turn the POWER switch to OFF (CHG), and return the POWER switch to CAMERA.
- When NIGHTSHOT is set to ON, the "NIGHTSHOT" indicator appears on the screen and you cannot select DEMO MODE in the menu settings.

Changing the menu settings

Icon/Item	Mode	Meaning	POWER switch
DATA CODE	● DATE / CAM	To display date, time and recording data during playback	VCR MEMORY
	DATE	To display date and time during playback	
WORLD TIME	—	To set the clock to the local time Turn the SEL / PUSH EXEC dial to set a time difference. The clock changes by the time difference you set here. If you set the time difference to 0, the clock returns to the originally set time.	CAMERA MEMORY
	—	—	
BEEP	● MELODY	To output the melody when you start/stop recording or when an unusual condition occurs on your camcorder	CAMERA VCR MEMORY
	NORMAL	To output the beep instead of the melody	
	OFF	To cancel all sound including shutter sound	
COMMANDER	● ON	To activate the Remote Commander supplied with your camcorder	CAMERA VCR MEMORY
	OFF	To deactivate the Remote Commander to avoid erroneous remote control operation caused by other VCR's remote control	
DISPLAY	● LCD	To show the display on the LCD screen and in the viewfinder	CAMERA VCR MEMORY
	V-OUT / LCD	To show the display on the TV screen, LCD screen and in the viewfinder	

Note

If you press DISPLAY with DISPLAY set to V-OUT / LCD in the menu settings, the picture from a TV or VCR will not appear on the screen even when your camcorder is connected to outputs on the TV or VCR. (Except when your camcorder is connected with the i.LINK cable)

In more than five minutes after removing the power source

The AUDIO MIX, FLASH LVL, COMMANDER and HiFi SOUND settings are returned to their default settings.

Other menu settings are held in memory even when the battery is removed.

(continued on the following page)

Customizing Your Camcorder

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Changing the menu settings

Icon/Item	Mode	Meaning	POWER switch
REC LAMP	● ON	To light up the camera recording lamp at the front of your camcorder	CAMERA MEMORY
	OFF	To turn the camera recording lamp off so that the person is not aware of the recording	
VIDEO EDIT	● RETURN*	To cancel video editing	VCR
	TAPE*	To make a program and perform video editing (p. 73)	
	MEMORY*	To make a program and perform MPEG editing (p. 144)	
INDICATOR	● BL OFF	To turn off the backlight on display window	CAMERA VCR MEMORY
	BL ON	To turn on the backlight on display window	

- * DCR-TRV340 only
- When recording a close subject**
When REC LAMP is set to ON, the red camera recording lamp on the front of the camcorder may reflect on the subject if it is close. In this case, we recommend that you set REC LAMP to OFF.
- Notes on INDICATOR**
- When you select BL ON, battery life is reduced by about 10 percent during recording.
 - When you use power sources other than the battery pack, BL ON is automatically selected.

Using “Memory Stick”– Introduction

“Memory Stick”s formatted on computer

“Memory Stick”s formatted on Windows OS or Macintosh computers are not guaranteed compatible with your camcorder.

Notes on image data compatibility

- Image data files recorded on “Memory Stick”s by your camcorder conform with the Design Rules for Camera File Systems universal standard established by the JEITA (Japan Electronics and Information Technology Industries Association). You cannot play back on your camcorder still images recorded on other equipment (DCR-TRV890E / TRV900 / TRV900E or DSC-D700 / D770) that does not conform with this universal standard. (These models are not sold in some areas.)
- If you cannot use the “Memory Stick” that is used with other equipment, format it with this camcorder (p. 110). However, formatting erases all information on the “Memory Stick.”

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- Furthermore, “TM” and “®” are not mentioned in each case in this manual.

— “Memory Stick” operations —

Using “Memory Stick”– Introduction

– DCR-TRV340 only

You can record and play back images on a “Memory Stick” supplied with your camcorder. You can easily play back, record or delete images. You can exchange image data with other equipment such as your computer etc., using the USB cable for “Memory Stick” supplied with your camcorder.

On file format

Still image (JPEG)

Your camcorder compresses image data in JPEG format (extension .jpg).

Moving picture (MPEG)

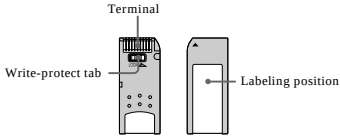
Your camcorder compresses picture data in MPEG format (extension .mpg).

Typical image data file name

Still image
100-0001: This file name appears on the screen of your camcorder.
Dsc00001.jpg: This file name appears on the display of your computer.

Moving picture
MOV00001: This file name appears on the screen of your camcorder.
Mov00001.mpg: This file name appears on the display of your computer.

Using a “Memory Stick”



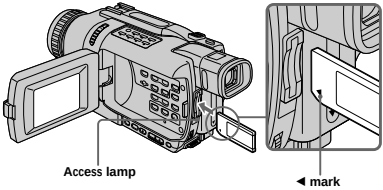
- You cannot record or erase images when the write-protect tab on the “Memory Stick” is set to LOCK.
- The position and shape of the write-protect tab may be different depending on the model.
- We recommend backing up important data on the hard disk of your computer.
- Image data may be damaged in the following cases:
 - If you remove the “Memory Stick” or turn the power off during reading or writing.
 - If you use “Memory Stick”s near static electricity or magnetic fields.
- Prevent metallic objects or your finger from coming into contact with the metal parts of the terminal.
- Stick the label at the labeling position.
- Do not bend, drop or apply strong shock to “Memory Stick”s.
- Do not disassemble or modify “Memory Stick”s.
- Do not let “Memory Stick”s become wet.
- Do not use or keep “Memory Stick”s in locations that are:
 - Extremely hot such as in a car parked in the sun or under the scorching sun
 - Under direct sunlight
 - Very humid or subject to corrosive gases
- When you carry or store a “Memory Stick,” put it in its case.

“Memory Stick” operations

Using “Memory Stick”– Introduction

Inserting “Memory Stick”

Insert a “Memory Stick” in the “Memory Stick” slot as far as it can go with the ◀ mark facing toward the “Memory Stick” slot as illustrated.



Ejecting the “Memory Stick”

Press the “Memory Stick” once lightly.

When the access lamp is lit or flashing

Do not shake or knock your camcorder because your camcorder is reading the data from the “Memory Stick” or recording the data on the “Memory Stick”. Do not turn the power off , eject the “Memory Stick” or remove the battery pack. Otherwise, image data may become damaged.

If “MEMORY STICK ERROR” is displayed

Reinsert “Memory Stick” a few times. The “Memory Stick” may be damaged if the indicator is still displayed. If this occurs, use another “Memory Stick.”

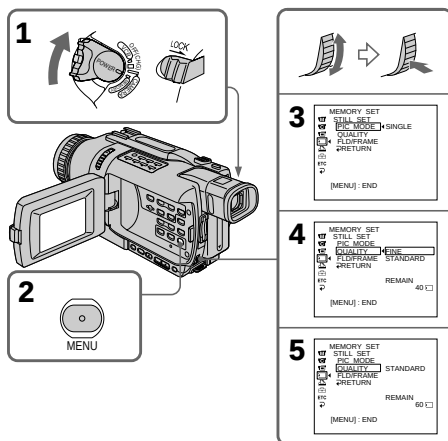
“Memory Stick” operations

Using "Memory Stick"– Introduction

Selecting the still image quality mode

You can select the image quality mode in still image recording. The default setting is FINE.

- (1) Set the POWER switch to VCR or MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU to display the menu settings.
- (3) Turn the SEL / PUSH EXEC dial to select STILL SET in , then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select QUALITY, then press the dial.
- (5) Turn the SEL / PUSH EXEC dial to select the desired image quality, then press the dial.



Note

In some cases, changing the image quality mode may not affect the image quality, depending on the type of images you are shooting.

Using "Memory Stick"– Introduction

Image quality settings

Setting	Meaning
FINE (FINE)	Use this mode when you want to record high quality images. Fine images are compressed to about 1/6.
STANDARD (STD)	This is the standard image quality. Standard images are compressed to about 1/10.

Differences in image quality mode

Recorded images are compressed in JPEG format before being stored into memory. The memory capacity allotted to each image varies depending on the selected image quality mode. Details are shown in the table below. (The number of pixels is 640 × 480, regardless of image quality mode. The data size before compression is about 600 KB.)

Image quality mode	Memory capacity
FINE	About 100 KB
STANDARD	About 60 KB

Image quality mode indicator

The image quality mode indicator is not displayed during playback.

When you select image quality

The number of images you can shoot in the currently selected image quality appears on the screen.

"Memory Stick" operations

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Using "Memory Stick"– Introduction

Selecting the moving image size

You can select either 320 × 240 or 160 × 112 for moving image sizes. The default setting is 320 × 240.

- (1) Set the POWER switch to VCR or MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU to display the menu settings.
- (3) Turn the SEL / PUSH EXEC dial to select MOVIE SET in , then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select IMAGESIZE, then press the dial.
- (5) Turn the SEL / PUSH EXEC dial to select the desired image size, then press the dial.

The indicator changes as follows:

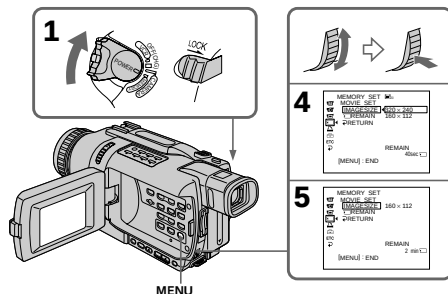
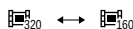


Image size settings

Setting	Meaning	Indicator (Recording/Playback)
320 × 240	Records 320 × 240 moving pictures.	
160 × 112	Records 160 × 112 moving pictures.	

Maximum recording time of moving pictures

Image size	Maximum recording time
320 × 240	15 seconds
160 × 112	60 seconds

Using "Memory Stick"– Introduction

Approximate number of still images you can record on a "Memory Stick"

The number of images you can record varies depending on which image quality you select and the complexity of the subject.

Image quality	Type of "Memory Stick"s				
	8MB (supplied)	16MB (optional)	32MB (optional)	64MB (optional)	128MB (optional)
FINE	80 images	160 images	325 images	650 images	1310 images
STANDARD	120 images	240 images	485 images	980 images	1970 images

Approximate time of moving pictures you can record on a "Memory Stick"

The time of moving pictures you can record varies depending on which image size you select and the complexity of the subject.

Image size	Type of "Memory Stick"s				
	8MB (supplied)	16MB (optional)	32MB (optional)	64MB (optional)	128MB (optional)
160 × 112	5 min. 20 sec.	10 min. 40 sec.	21 min. 20 sec.	42 min. 40 sec.	85 min. 20 sec.
320 × 240	1 min. 20 sec.	2 min. 40 sec.	5 min. 20 sec.	10 min. 40 sec.	21 min. 20 sec.

The table above shows approximate number of still images and times of moving pictures you can record on a "Memory Stick" formatted on your camcorder.

"Memory Stick" operations

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Recording still images on “Memory Stick”s – Memory Photo recording

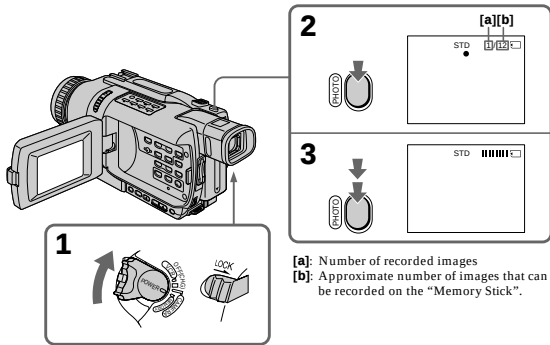
– DCR-TRV340 only

You can select the FIELD or FRAME mode in still image recording. Your camcorder compensates for camera-shake when recording moving subjects in the FIELD mode. Your camcorder records still images in high quality in the FRAME mode. Select the FIELD or FRAME in the menu settings (p. 104).

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
 - (2) Keep pressing PHOTO lightly until the desired still image appears. The green ● mark stops flashing, then lights up. The brightness of the image and focus are adjusted, being targeted for the middle of the image and are fixed. Recording does not start yet.
 - (3) Press PHOTO deeper.
- Recording is complete when the bar scroll indicator disappears. The image when you pressed PHOTO deeper will be recorded on the “Memory Stick.”



[a]: Number of recorded images
[b]: Approximate number of images that can be recorded on the “Memory Stick”.

Recording still images on “Memory Stick”s – Memory Photo recording

Recording images continuously

You can record still images continuously.

MULTI SCRN

Your camcorder shoots nine still images at about 0.4 sec intervals and displays the images on a single page divided into nine boxes. ()



- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU to display the menu settings.
- (3) Turn the SEL / PUSH EXEC dial to select STILL SET in , then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select PIC MODE, then press the dial.
- (5) Turn the SEL / PUSH EXEC dial to select the desired setting, then press the dial.
- (6) Press MENU to make the menu settings disappear.
- (7) Press PHOTO deeper.

Recording still images on “Memory Stick”s – Memory Photo recording

Notes

- When recording fast-moving subjects in the FRAME mode, the recorded image blurry.
- When recording in the FRAME mode, your camcorder may not correct camera-shake. We recommend that you shoot objects with a tripod.
- When recording still images at step 2 with PHOTO pressed lightly, the image momentarily flickers. This is not a malfunction.

When the POWER switch is set to MEMORY

The following functions do not work:

- Wide mode
- SUPER NIGHTSHOT
- Color Slow Shutter
- Fader
- Picture effects
- Digital effects
- Titles

When you press PHOTO lightly in step 2

The image momentarily flickers. This is not a malfunction.

While you are recording a still image

You can neither turn off the power nor press PHOTO.

When you press PHOTO on the Remote Commander

Your camcorder immediately records the image that is on the screen when you press the button.

Recording data

The recording data (date/ time or various settings when recorded) are not displayed while recording. However, they are recorded automatically onto the “Memory Stick.” To display the recording data, press DATA CODE on the Remote Commander during playback.

You can record still images on “Memory Stick”s in CAMERA mode, even while you are in the standby mode or recording moving pictures to tape

Set PHOTO REC to MEMORY in the menu settings before operation. (The default setting is MEMORY.)

Press PHOTO to record still images on “Memory Stick”s in CAMERA mode, while you are standing by for recording or recording moving pictures to tape.

You cannot record still images on “Memory Stick”s in CAMERA mode in the following functions:

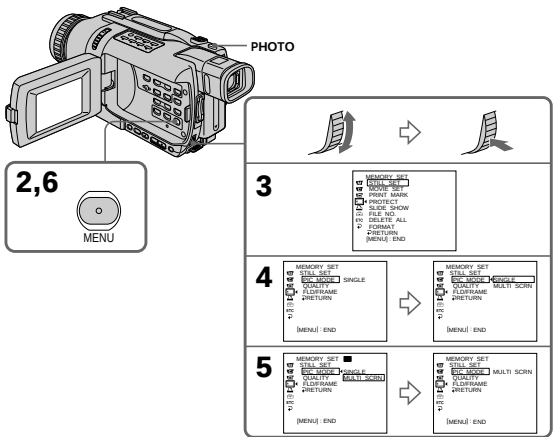
- Fader
- Wide mode
- Super NightShot
- Color Slow Shutter
- Picture effects
- Digital effects
- MEMORY MIX

While recording still images on “Memory Stick”s in CAMERA mode

- While the title is displayed, images can be recorded but titles cannot.
- The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

“Memory Stick” operations

Recording still images on “Memory Stick”s – Memory Photo recording



If the capacity of the “Memory Stick” becomes full

“FULL” appears on the screen and you cannot record still images on the “Memory Stick”.

When recording in the multi screen mode

The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

“Memory Stick” operations

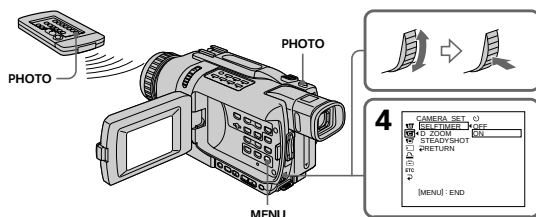
Recording still images on "Memory Stick"s – Memory Photo recording

Self-timer memory photo recording

You can record images on "Memory Stick"s with the self-timer.
You can use the Remote Commander for this operation.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) In the standby mode, press MENU to display the menu settings.
- (3) Turn the SEL / PUSH EXEC dial to select SELFTIMER in , then press the dial.
- (4) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (5) Press MENU to make the menu settings disappear.
- (6) Press PHOTO deeper.

Self-timer starts counting down from 10 with a beep. In the last two seconds of the countdown, the beep gets faster, then recording starts automatically.



To record moving pictures on "Memory Stick"s with the self-timer

Press START/STOP in step 6. To cancel recording, press START/STOP again.

To cancel self-timer recording

Set SELFTIMER to OFF in the menu settings while your camcorder is in the standby mode. You cannot cancel self-timer recording with Remote Commander.

Note

- The self-timer recording mode is automatically canceled when:
 - Self-timer recording is finished.
 - The POWER switch is set to OFF (CHG) or VCR.

To check the image to be recorded

You can check the image by lightly pressing PHOTO, then press it deeper to start self-timer recording.

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Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX

– DCR-TRV340 only

You can superimpose a still image you have recorded on the "Memory Stick" on the moving picture you are recording. You can record the superimposed images on a tape or a "Memory Stick". (However, you can record only superimposed still images on the "Memory Stick".)

M. CHROM (memory chroma key)

You can swap a blue area of a still image such as an illustration or a frame with a moving picture.

M. LUMI (memory luminance key)

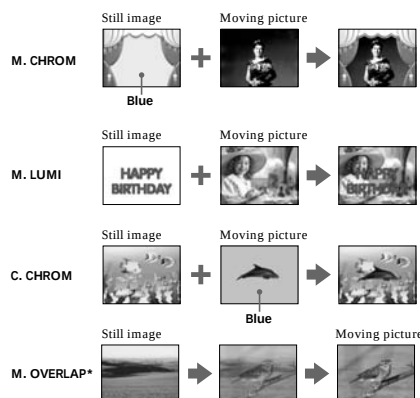
You can swap a brighter area of a still image such as a handwritten illustration or title with a moving picture. Record a title on the "Memory Stick" before a trip or event for convenience.

C. CHROM (camera chroma key)

You can superimpose a moving picture on a still image such as an image can be used as background. Shoot the subject against a blue background. The blue area of the moving image will be swapped with a still image.

M. OVERLAP* (memory overlap)

You can make a moving picture fade in on top of a still image recorded on the "Memory Stick" as the overlap function.



* The superimposed image using Memory overlap function can be recorded on tapes only.

"Memory Stick" operations

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Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX

Recording superimposed images on a tape

Before operation

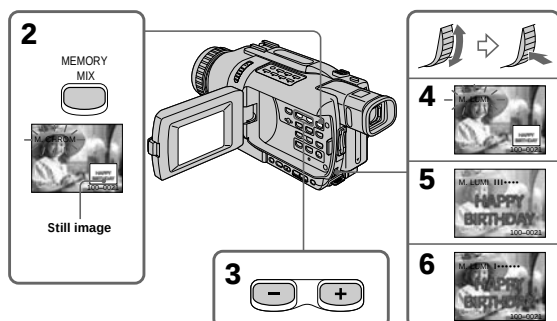
- Insert a tape for recording into your camcorder.
- Insert a "Memory Stick" is recorded still images into your camcorder.

- (1) Set the POWER switch to CAMERA.
- (2) In the standby mode, press MEMORY MIX.
The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
- (3) Press MEMORY+ / – to select the still image you want to superimpose.
To see the previous image, press MEMORY –. To see the next image, press MEMORY+.
- (4) Turn the SEL / PUSH EXEC dial to select the desired mode.
The mode changes as follows:
M. CHROM ↔ M. LUMI ↔ C. CHROM ↔ M. OVERLAP
- (5) Press the SEL / PUSH EXEC dial.
The still image is superimposed on the moving picture.
- (6) Turn the SEL / PUSH EXEC dial to adjust the effect.

- M. CHROM – The color (blue) scheme of the area in the still image which is to be swapped with a moving picture
- M. LUMI – The color (bright) scheme of the area in the still image which is to be swapped with a moving picture
- C. CHROM – The color (blue) scheme of the area in the moving picture which is to be swapped with a still image
- M. OVERLAP – No adjustment necessary

The fewer bars there are on the screen, the stronger the effect becomes.

- (7) Press START/STOP to start recording.



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Superimposing a still image in the "Memory Stick" on an image – MEMORY MIX

To change the still image to superimpose

Do either of the following:

- Press MEMORY+ / – before step 7.
- Press the SEL / PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To change the mode setting

Press the SEL / PUSH EXEC dial before step 7, and repeat the procedure from step 4.

To cancel MEMORY MIX

Press MEMORY MIX.

Notes

- You cannot use the MEMORY MIX function for moving pictures recorded on "Memory Stick"s.
- When the overlapping still image has a large amount of white, the thumbnail image of the picture may not be clear.

Image data modified on your computer or shot with other equipment

You may not be able to play modified images back with your camcorder.

When you select M. OVERLAP

You cannot change the still image or the mode setting.

During recording

You cannot change the mode setting.

To record the superimposed image as a still image

Press PHOTO deeper in step 7.

Images processed by MEMORY MIX

You cannot record the images on "Memory Stick"s in CAMERA mode. Record them in MEMORY mode. (p. 130)

"Memory Stick" operations

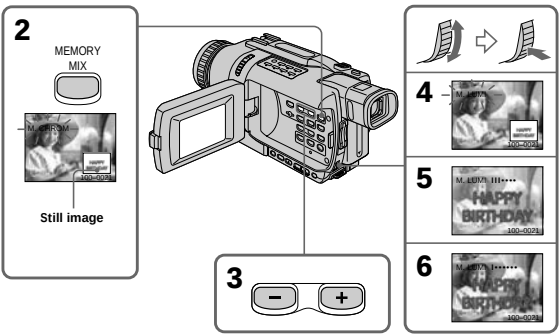
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Superimposing a still image in the “Memory Stick” on an image
– MEMORY MIX

Recording superimposed images on a “Memory Stick” as a still image

- Before operation**
Insert a “Memory Stick” is recorded still images into your camcorder.
- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MEMORY MIX.
The last recorded or last composed image appears on the lower part of the screen as a thumbnail image.
- (3) Press MEMORY+/- to select the still image you want to superimpose.
To see the previous image, press MEMORY-. To see the next image, press MEMORY+.
- (4) Turn the SEL / PUSH EXEC dial to select the desired mode.
The mode changes as follows:
M. CHROM ↔ M. LUMI ↔ C. CHROM
- (5) Press the SEL / PUSH EXEC dial.
The still image is superimposed on the moving picture.
- (6) Turn the SEL / PUSH EXEC dial to adjust the effect.
M. CHROM – The color (blue) scheme of the area in the still image which is to be swapped with a moving picture
M. LUMI – The color (bright) scheme of the area in the still image which is to be swapped with a moving picture
C. CHROM – The color (blue) scheme of the area in the moving picture which is to be swapped with a still image
The fewer bars there are on the screen, the stronger the effect becomes.
- (7) Press PHOTO deeper to start recording.
The image displayed on the screen will be recorded on a “Memory Stick.”
Recording is complete when the bar scroll indicator disappears.

Superimposing a still image in the “Memory Stick” on an image
– MEMORY MIX



- To change the still image to superimpose**
Do either of the following:
– Press MEMORY+/- before step 7.
– Press the SEL / PUSH EXEC dial before step 7, and repeat the procedure from step 4.
- To change the mode setting**
Press the SEL / PUSH EXEC dial before step 7, and repeat the procedure from step 4.
- To cancel MEMORY MIX**
Press MEMORY MIX.

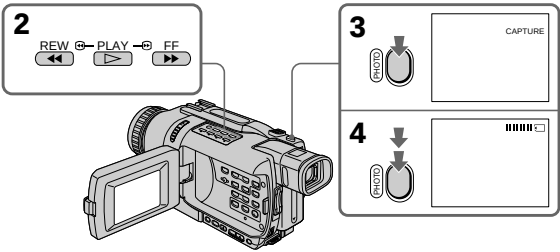
“Memory Stick” operations

Superimposing a still image in the “Memory Stick” on an image
– MEMORY MIX

- Notes**
- You cannot use the MEMORY MIX function for moving pictures recorded on “Memory Stick”s.
 - When the overlapping still image has a large amount of white, the thumbnail image of the picture may not be clear.
- Image data modified on your computer or shot with other equipment**
You may not be able to play modified images back with your camcorder.
- During recording**
You cannot change the mode setting.
- When recording images on a “Memory Stick” using the MEMORY MIX function**
The PROGRAM AE function does not work. (The indicator flashes.)
- The “Memory Stick” supplied with your camcorder is already stored with 20 images**
– For M. CHROM: 18 images (such as a frame) 100-0001~100-0018
– For C. CHROM: two images (such as a background) 100-0019~100-0020
- Sample images**
Sample images stored in the “Memory Stick” supplied with your camcorder are protected (p. 168).
- While using the MEMORY MIX function**
The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

Recording images from a tape as still images

- DCR-TRV340 only**
Your camcorder can read moving image data recorded on a tape recorded in the Digital8 system, and record it as a still image on a “Memory Stick.”
Your camcorder can also capture moving image data through the input connector and record it as a still image on a “Memory Stick.”
- Before operation**
- Insert a tape recorded in the Digital8 system into your camcorder.
 - Insert a “Memory Stick” into your camcorder.
- (1) Set the POWER switch to VCR.
- (2) Press ►. Moving pictures recorded on the tape are played back.
- (3) Keep pressing PHOTO lightly until the picture from the tape freezes.
“CAPTURE” appears on the screen.
- (4) Press PHOTO deeper. The image displayed on the screen will be recorded on the “Memory Stick”. Recording is complete when the bar scroll indicator disappears.



“Memory Stick” operations

- When the access lamp is lit or flashing**
Do not shake or knock the unit. Also do not turn the power off, eject the “Memory Stick” or remove the battery pack. Otherwise, image data may become damaged.
- If [X] appears on the screen**
The inserted “Memory Stick” is incompatible with your camcorder because its format does not conform with your camcorder. Check the format of the “Memory Stick.”
- If you press PHOTO lightly in the playback mode**
Your camcorder stops momentarily.
- Sound recorded on a tape**
You cannot record audio from a tape.

Recording images from a tape as still images

When you press PHOTO on the Remote Commander

Your camcorder immediately records the image that is on the screen when you press the button.

Titles superimposed on tapes

You cannot record titles on the "Memory Stick." However, you can record titles which have already been recorded on tapes.

Recording date/time

The recording data (date/time) when it is recorded on "Memory Stick" is recorded. Various settings are not recorded.

While recording still images from a tape as still images

The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

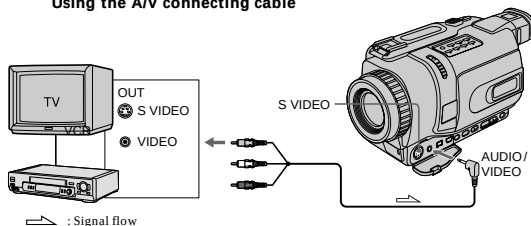
Recording a still image from external equipment

Before operation

Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

- (1) Set the POWER switch to VCR.
- (2) Play back the recorded tape, or turn the TV on to see the desired program. The picture from TV or VCR appears on the screen of your camcorder.
- (3) Follow the steps 3 and 4 on page 133.

Using the A/V connecting cable



Connect the yellow plug of the A/V connecting cable to the video jack on the VCR or the TV.

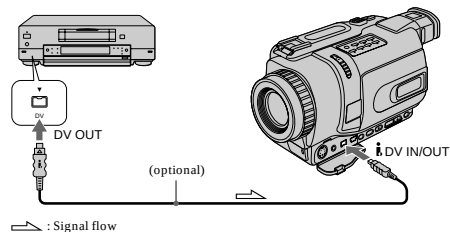
If your TV or VCR has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable. Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

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Recording images from a tape as still images

Using the i.LINK cable (DV connecting cable)



Note

In the following instances, "REC ERROR" is displayed and recording is not possible. Record undistorted images.

- When recording on a tape in a poor recording state, for example, on a tape that has been repeatedly used for dubbing
- Between scenes or in the various playback modes on the tape recorded in Hi8/standard 8 system
- When attempting to input images that are distorted due to poor radio wave reception when a TV tuner unit is in use

"Memory Stick" operations

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Copying still images from a tape - PHOTO SAVE

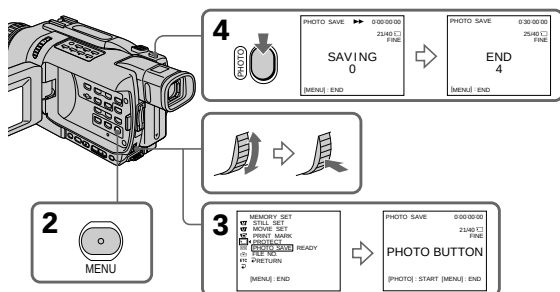
- DCR-TRV340 only

Using the search function, you can automatically capture only still images from tapes recorded in the Digital8 system and record them on a "Memory Stick" in sequence.

Before operation

- Insert a tape recorded in the Digital8 system and rewind the tape.
- Insert a "Memory Stick" into your camcorder.

- (1) Set the POWER switch to VCR.
- (2) Press MENU to display the menu settings.
- (3) Turn the SEL/PUSH EXEC dial to select PHOTO SAVE in , then press the dial. PHOTO BUTTON appears on the screen.
- (4) Press PHOTO deeper. The still image from the tape is recorded on the "Memory Stick." The number of still images copied is displayed. END is displayed when copying ends.



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Copying still images from a tape - PHOTO SAVE

To stop copying

Press MENU.

When the "Memory Stick" becomes full

"MEMORY FULL" appears on the screen, and copying stops. Insert another "Memory Stick" and repeat the procedure from step 2.

When the access lamp is lit or flashing

Do not shake or knock your camcorder. As well do not turn the power off, eject the "Memory Stick" or remove the battery pack. Otherwise, image data may become damaged.

If the write-protect tab on the "Memory Stick" is set to LOCK

"NOT READY" appears on the screen when you select PHOTO SAVE in the menu settings.

When you change the "Memory Stick" during copying

Your camcorder resumes copying from the last image recorded on the previous "Memory Stick".

While copying still images from a tape

The image is recorded in the FIELD mode automatically even you select FRAME in the menu settings.

"Memory Stick" operations

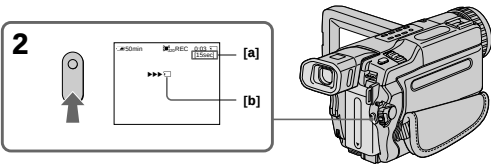
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Recording moving pictures on “Memory Stick”s – MPEG movie recording

– DCR-TRV340 only
You can record moving pictures with sound on “Memory Stick”s.

Before operation
Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press START / STOP. Your camcorder starts recording. The camera recording lamp located on the front of your camcorder lights up. When IMAGESIZE in the menu settings is set to 320 × 240, the maximum recording time is 15 seconds. However, when IMAGESIZE in the menu settings is set to 160 × 112, the maximum recording time is 60 seconds.



- [a]: The recording time can be recorded on the “Memory Stick”
- [b]: This indicator is displayed for five seconds after pressing START / STOP. This indicator is not recorded.

To stop recording
Press START / STOP.

Note
Sound is recorded in monaural.

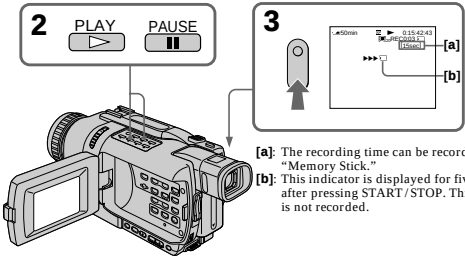
When the POWER switch is set to MEMORY
The following functions do not work:
– Wide mode
– SUPER NIGHTSHOT
– Color Slow Shutter
– Fader
– Picture effects
– Digital effects
– Titles

Recording pictures from a tape as moving pictures

– DCR-TRV340 only
Your camcorder can read moving picture data recorded on tapes and record it as a moving picture on a “Memory Stick.” Your camcorder can also capture moving picture data through the input connector and record it as a moving picture on a “Memory Stick.”

Before operation
• Insert a recorded tape into your camcorder.
• Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to VCR.
- (2) Press ►. The picture recorded on the tape is played back. And press II at the scene where you want to start recording from.
- (3) Press START / STOP on your camcorder. When IMAGESIZE in the menu settings is set to 320 × 240, the maximum recording time is 15 seconds. However, when IMAGESIZE in the menu settings is set to 160 × 112, the maximum recording time is 60 seconds.



- [a]: The recording time can be recorded on the “Memory Stick.”
- [b]: This indicator is displayed for five seconds after pressing START / STOP. This indicator is not recorded.

To stop recording
Press START / STOP or ■.

Recording moving pictures on “Memory Stick”s – MPEG movie recording

When the POWER switch is set to MEMORY
The angle of view is slightly larger compared with the angle of view in CAMERA mode.

When using an external flash (optional)
Turn the power of the external flash off when recording moving pictures on “Memory Stick”s.
Otherwise, the charging sound for the flash may be recorded.

Recording date/time
The date/time are not displayed while recording. However, they are automatically recorded onto the “Memory Stick.”
To display the recording date/time, press DATA CODE on the Remote Commander during playback. Various settings cannot be recorded.

During recording on “Memory Stick”
Do not eject the cassette tape from your camcorder. During ejecting the tape, sound is not recorded on the “Memory Stick.”

“Memory Stick” operations

Recording pictures from a tape as moving pictures

Notes
• Sound recorded in 48 kHz is converted to 32 kHz sound when recording pictures from a tape to “Memory Stick”s.
• Sound recorded in stereo is converted to monaural sound when recording from tape.

When the access lamp is lit or flashing
Do not shake or knock the unit. Also, do not turn the power off, eject a “Memory Stick” or remove the battery pack. Otherwise, image data may become damage.

If “AUDIO ERROR” is displayed
Sound that cannot be recorded by your camcorder has been recorded. Connect the A / V connecting cable to input images from external equipment used to play back the image (p. 142).

Recording date/time
The recording data (date/time) when it is recorded on “Memory Stick” is recorded. Various settings are not recorded.

The picture may be recorded on the “Memory Stick” incorrectly if:
– You turn the POWER switch during recording
– You press any video control buttons during recording
– Between the scenes recorded in the Digital8 system and in the Hi8 / standard 8 system.

“Memory Stick” operations

Recording pictures from a tape as moving pictures

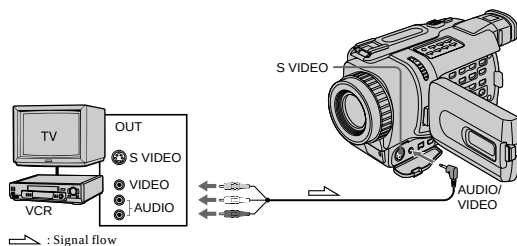
Recording a moving picture from external equipment

Before operation

Set DISPLAY to LCD in the menu settings. (The default setting is LCD.)

- (1) Set the POWER switch to VCR.
- (2) Play back the recorded tape, or turn the TV on to see the desired program. The picture of the other equipment is displayed on the LCD screen or viewfinder.
- (3) Follow the procedure on page 140 from step 3 onwards at the point where you want to start recording from.

Using the A/V connecting cable



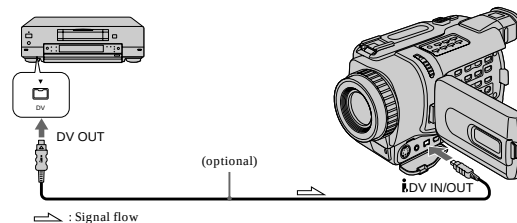
Connect the yellow plug of the A/V connecting cable to the video jack on the VCR or the TV.

If your TV or VCR has an S video jack

Pictures can be reproduced more faithfully by using an S video cable (optional). With this connection, you do not need to connect the yellow (video) plug of the A/V connecting cable. Connect an S video cable (optional) to the S video jacks of both your camcorder and the TV or VCR.

Recording pictures from a tape as moving pictures

Using the i.LINK cable (DV connecting cable)



Note

In the following instances, recording is discontinued.

- When recording on a tape in a poor recording state, for example, on a tape that has been repeatedly used for dubbing
- Between scenes or in the various playback modes on the tape recorded in Hi8/standard 8 system
- When attempting to input images that are distorted due to poor radio wave reception when a TV tuner unit is in use
- The recording stops automatically if the picture is disrupted.
- When the input signal is cut off

When "REC ERROR" is displayed

Recording is discontinued, and image data is not saved.

During recording on "Memory Stick"

Do not eject the cassette tape from your camcorder. During ejecting the tape, sound is not recorded on the "Memory Stick."

"Memory Stick" operations

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Recording edited pictures as a moving picture – Digital program editing (on "Memory Stick"s)

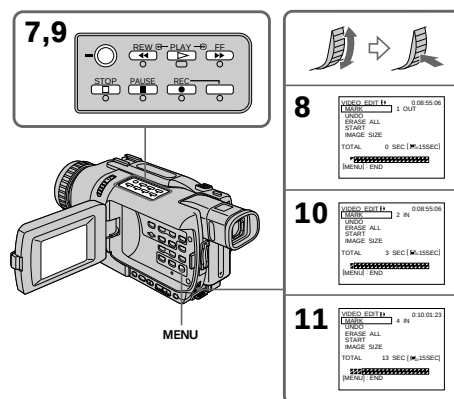
– DCR-TRV340 only

You can duplicate selected scenes (programs) for editing onto "Memory Stick"s.

Making the program

- (1) Set the POWER switch to VCR on your camcorder.
- (2) Insert the tape for playback, and a "Memory Stick" for recording into your camcorder.
- (3) Press MENU to display the menu settings.
- (4) Turn the SEL/PUSH EXEC dial to select VIDEO EDIT in , then press the dial.
- (5) Turn the SEL/PUSH EXEC dial to select MEMORY, then press the dial.
- (6) Turn the SEL/PUSH EXEC dial to select IMAGE SIZE, then press the dial.
- (7) Search for the beginning of the first scene you want to insert using the video operation buttons, then pause playback. You can fine-adjust one frame at a time with EDITSEARCH.
- (8) Press the SEL/PUSH EXEC dial. The IN point of the first program is set, and the top part of the program mark changes to light blue.
- (9) Search for the end of the first scene you want to insert using the video operation buttons, then pause playback.
- (10) Press the SEL/PUSH EXEC dial. The OUT point of the first program is set, then the bottom part of the program mark changes to light blue.
- (11) Repeat steps 7 to 10, then set the program. When one program is set, the program mark changes to light blue. You can set 20 programs in maximum.

Recording edited pictures as a moving picture – Digital program editing (on "Memory Stick"s)



Erasing the program you have set

Erase OUT first and then IN from of the last program.

- (1) Turn the SEL/PUSH EXEC to select UNDO, then press the dial.
- (2) Turn the SEL/PUSH EXEC to select EXECUTE, then press the dial.

To cancel erasing

Select RETURN in step 2.

Erasing all programs

- (1) Select VIDEO EDIT in the menu settings. Turn the SEL/PUSH EXEC dial to select MEMORY, then press the dial.
- (2) Select ERASE ALL in the menu settings. Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial.

To cancel erasing all programs

Select RETURN in step 2.

To cancel a program you have set

Press MENU. The program is stored in memory until the tape is ejected.

"Memory Stick" operations

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Recording edited pictures as a moving picture
– Digital program editing (on “Memory Stick”s)

- Notes**
- Digital program editing works only for tapes recorded in the Digital8 system.
 - You cannot dub the titles or display indicators.
 - You cannot operate recording during Digital program editing on “Memory Stick”s.
 - You cannot set IN or OUT on a blank portion of the tape.
 - If there is a blank portion between IN and OUT on the tape, the total time code may not be displayed correctly.

During making a program

If you eject the cassette, NOT READY appears on the screen. The program will be erased.

If you set over the maximum recording time

The program mark changes to yellow, and OVER 15 SEC LIMIT appears when IMAGE SIZE is set to 320 × 240, or OVER 60 SEC LIMIT appears when IMAGE SIZE is set to 160 × 112. However, you can record up to the maximum recording time.

Recording edited pictures as a moving picture
– Digital program editing (on “Memory Stick”s)

Performing the program (Dubbing a “Memory Stick”)

- (1) Select VIDEO EDIT in the menu settings. Turn the SEL / PUSH EXEC dial to select MEMORY, then press the dial.
- (2) Select START in the menu settings. Turn the SEL / PUSH EXEC dial to select EXECUTE, then press the dial.
Search for the beginning of the first program, then start dubbing.
The program mark flashes.
The SEARCH indicator appears during search, the EDITING indicator appears during writing of data on your camcorder, and REC appears during dubbing on the screen.
The program mark changes to light blue after dubbing is complete.
When the dubbing ends, your camcorder automatically stops.

To stop dubbing during editing

Press ■ using the video operation buttons.
The program you made is recorded on a “Memory Stick” up to the place where you pressed ■.

To end the Digital program editing function

Your camcorder stops when the dubbing ends. Then the display returns to VIDEO EDIT in the menu settings.
Press MENU to end the Digital program editing function.

NOT READY appears on the LCD screen when:

- The program to operate Digital program editing has not been made.
- The “Memory Stick” is not inserted.
- The write-protect tab on the “Memory Stick” is set to LOCK.
- “Memory Stick” does not have enough space to record.

When “Memory Stick” does not have enough space to record

LOW MEMORY appears on the screen. However, you can record pictures up to the time indicated.

If you set over the maximum recording time

OVER MEMORY LIMIT appears on the screen. However, you can record moving pictures up to the maximum recording time.

“Memory Stick” operations

Viewing still images
– Memory Photo playback

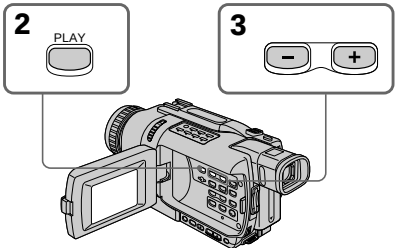
– DCR-TRV340 only

You can play back still images recorded on a “Memory Stick”. You can also play back six images including moving pictures in order at a time by selecting the index screen.

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MEMORY PLAY. The last recorded image is displayed.
- (3) Press MEMORY +/- to select the desired still image. To see the previous image, press MEMORY -. To see the next image, press MEMORY +.



To stop memory photo playback

Press MEMORY PLAY.

Note

- You may not be able to play back images with your camcorder:
 - When playing back image data modified on your computer.
 - When playing back image data shot with other equipment.

Notes on the file name

- The directory number may not be displayed and only the file name may be displayed if the structure of the directory does not conform to the DCF standard.
- “NO DIRECTORY ERROR” may appear on the screen if the structure of the directory does not conform to the DCF standard. While this message appears, you can play back images but cannot record them on the “Memory Stick.”
- The file name flashes on the screen if the file is corrupted or the file is unreadable.

Viewing still images – Memory Photo playback

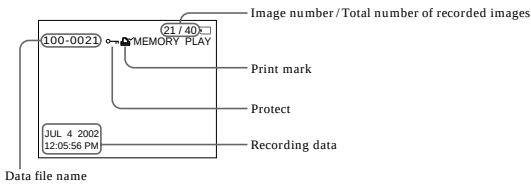
To play back recorded images on a TV screen

- Before operation connect your camcorder to the TV with the A / V connecting cable supplied with your camcorder.
- When operating memory photo playback on a TV or the LCD screen, image quality may appear to have deteriorated. This is not a malfunction. The image data is as good as ever.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

When no still image is recorded on the “Memory Stick”

The message “NO FILE” appears.

Screen indicators during still image playback



Recording data

You can view recording data (date/time or various settings when recorded) by pressing DATA CODE on the Remote Commander.

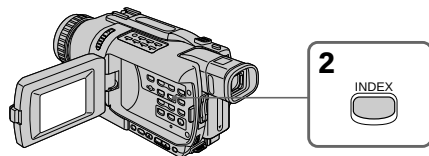
“Memory Stick” operations

Viewing still images – Memory Photo playback

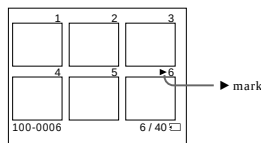
Playing back six recorded images at a time (index screen)

You can play back six recorded images at a time. This function is especially useful when searching for a particular image.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MEMORY INDEX to display the index screen.



A red ► mark appears above the image that is displayed before changing to the index screen mode.



- To see the next six images, keep pressing MEMORY +.
- To see the previous six images, keep pressing MEMORY –.

To return to the normal playback screen (single screen)

Press MEMORY +/- to move the ► mark to the image you want to display on full screen, then press MEMORY PLAY.

Note

When displaying the index screen, the number appears above each image. This indicates the order in which images are recorded on the “Memory Stick”. These numbers are different from the data file names (p. 115).

Image data modified on your computer or shot with other equipment
These files are sometimes not displayed on the index screen.

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Viewing moving pictures – MPEG movie playback

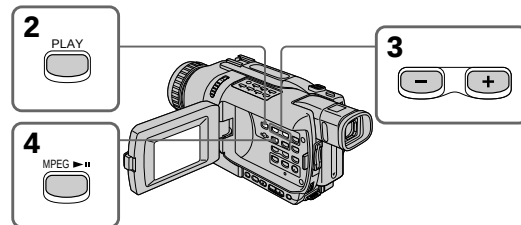
– DCR-TRV340 only

You can play back moving pictures recorded on a “Memory Stick.” You can also play back six images including still images in order at a time by selecting the index screen.

Before operation

Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MEMORY PLAY. The last recorded image is displayed.
- (3) Press MEMORY +/- to select the desired moving pictures. To see the previous picture, press MEMORY –. To see the next picture, press MEMORY +.
- (4) Press MPEG ► II to start playback.



“Memory Stick” operations

To stop MPEG movie playback

Press MPEG ► II .

Note

You may not be able to play back images with your camcorder:
– When playing back image data modified on your computer.
– When playing back image data shot with other equipment.

To play back recorded images on a TV screen

- Before operation, connect your camcorder to the TV with the A/V connecting cable supplied with your camcorder.
- Turn the audio volume of the TV down before operation, or noise (howling) may be output from the TV speakers.

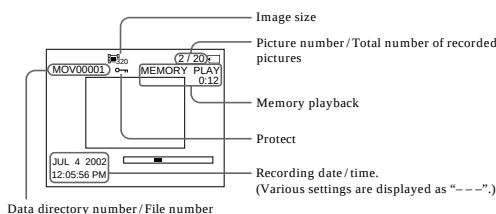
When no image is recorded on the “Memory Stick”

The message “NO FILE” appears.

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Viewing moving pictures – MPEG movie playback

Screen indicators during moving picture playback



Recording date/time

You can view recording date/time by pressing DATA CODE on the Remote Commander during playback.

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Viewing images recorded on “Memory Stick”s on your computer

– DCR-TRV340 only

You can view data recorded on the “Memory Stick” on your computer.

Note

Data recorded on the “Memory Stick” is stored in the following formats. Make sure that applications that support these file formats are installed on your computer.
– Still images: JPEG format
– Moving pictures / audio: MPEG format

Viewing images using computer

For Windows users (p. 154)
For Macintosh users (p. 158)

Notes

- Operations are not guaranteed for either the Windows or Macintosh environment if you connect two or more USB equipment to a single computer at the same time, or when using a hub.
- Some equipment may not operate depending on the type of USB equipment that is used simultaneously.
- Operations are not guaranteed for all the recommended computer environments mentioned above.
- All other product names mentioned herein may be the trademarks or registered trademarks of their respective companies. Furthermore, “TM” and “®” are not mentioned in each case in this manual.

“Memory Stick” operations

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Viewing images recorded on “Memory Stick”s on your computer

For Windows users

Recommended Windows environment
OS: Microsoft Windows 98, Windows 98SE, Windows Me, Windows 2000 Professional, Windows XP Home Edition or Windows XP Professional standard installation is required.
However, operation is not assured if the above environment is an upgraded OS.
CPU: MMX Pentium 200 MHz or faster

The USB connector must be provided as standard.

Windows Media Player must be installed (to play back moving pictures).

Installing the USB driver

Before connecting your camcorder to your computer, install the USB driver on the computer. The USB driver is packaged together with application software for viewing images on the CD-ROM supplied with your camcorder.
If you installed the USB driver in “Viewing images recorded on tape on your computer” (p. 95), start from step 5.

For Windows XP users
The USB driver needs not be installed. Your computer is automatically recognized as a driver just by connecting your computer using the USB cable.

For Windows 98/98SE/Me, Windows 2000 Professional users
If you are using Windows 2000 Professional, log in with permission of administrator.

Start the following operation without connecting the USB cable to your computer.
Connect the USB cable in step 6.

If the USB driver has been registered incorrectly because your computer was connected to your camcorder before installation of the USB driver was completed. Reinstall the USB driver following the procedure on page 156.

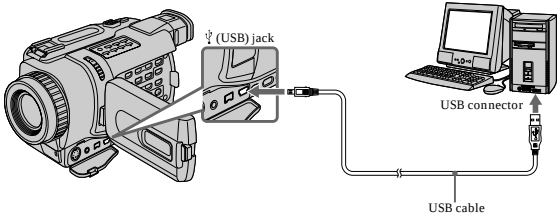
- (1) Turn on the power of your computer and allow Windows to load.
- (2) Insert the supplied CD-ROM into the CD-ROM drive of your computer. The application software screen appears.

Viewing images recorded on “Memory Stick”s on your computer

- (3) Move the cursor to “USB Driver” and click. This starts USB driver installation.



- (4) Follow the on-screen messages to install the USB driver.
- (5) Insert a “Memory Stick” into your camcorder, connect the AC power adaptor and set the POWER switch to MEMORY.
- (6) Connect the ¼ (USB) jack on your camcorder with the USB connector on your computer using the supplied USB cable.
USB MODE appears on the LCD screen of your camcorder. Your computer recognizes the camcorder, and the Windows Add Hardware Wizard starts.
- (7) Follow the on-screen messages to make the Add Hardware Wizard recognize the hardware. The Add Hardware Wizard starts two times because two different USB drivers are installed. Be sure to allow each installation to complete without interrupting them.



Note
You cannot install the USB driver if a “Memory Stick” is not in your camcorder. Be sure to insert a “Memory Stick” into your camcorder before installing the USB driver.

“Memory Stick” operations

Viewing images recorded on “Memory Stick”s on your computer

If you cannot install the USB driver

The USB driver has been registered incorrectly as your computer was connected to your camcorder before installation of the USB driver was completed. Perform the following procedure to correctly install the USB driver.

Step1: Uninstall the incorrect USB driver

- ① Turn on your computer and allow Windows to load.
- ② Insert a “Memory Stick” into your camcorder.
- ③ Connect the AC power adaptor, and set the POWER switch to MEMORY.
- ④ Connect the USB connector on your computer to the ¼ (USB) jack on your camcorder using the USB cable supplied with your camcorder.
- ⑤ Open your computer’s “Device Manager”.
Windows 2000 Professional:
Select “My Computer” → “Control Panel” → “Hardware” tab, and click the “Device Manager” button.
Other OS:
Select “My Computer” → “Control Panel” → “System”, and click “Device Manager”.- ⑥ Select “Other devices”.
Select the device prefixed with the “?” mark and delete.
Ex: (?)Sony Camcorder
- ⑦ Turn the POWER switch to OFF (CHG), and then disconnect the USB cable.
- ⑧ Restart your computer.

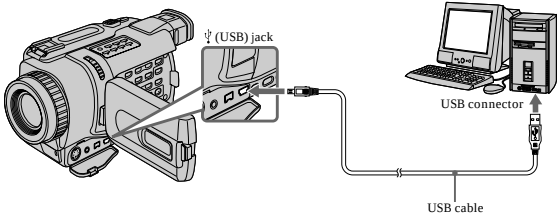
Step2: Install the USB driver on the CD-ROM
Perform the entire procedure described in “Installing the USB driver” on page 154.

Viewing images recorded on “Memory Stick”s on your computer

Viewing images on Windows

An application such as Windows Media Player must be installed to play back moving pictures in Windows environment.

- (1) Turn on your computer and allow Windows to load.
- (2) Insert a “Memory Stick” into your camcorder, and connect the AC power adaptor to your camcorder and then to a wall outlet.
- (3) Set the POWER switch to MEMORY.
- (4) Connect one end of the USB cable to the ¼ (USB) jack on the camcorder and the other end to the USB connector on your computer.
USB MODE appears on the screen of your camcorder.
- (5) Open “My Computer” on Windows and double-click the newly recognized drive (Example: “Removable Disk (E:)”).
The folders inside the “Memory Stick” are displayed.
- (6) Select and double-click the desired image file from the folder.
For the detailed folder and file name, see “Image file storage destinations and image files” (p. 161).



Desired file type	Double-click in this order
Still image	“Dcim” folder → “100msdcf” folder → Image file
Moving picture*	“Mssony” folder → “Mom0001” folder → Image file*

* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the “Memory Stick,” the image and sound may break off.

Unplug the USB cable or eject the “Memory Stick”

– For Windows 2000 Professional/Me, Windows XP users
To unplug the USB cable or eject the “Memory Stick,” follow the procedure below.

- (1) Move the cursor to the “Unplug or Eject Hardware” icon on the Task Tray and click to cancel the applicable drive.
- (2) A message to remove the device from the system appears, then unplug the USB cable or eject the “Memory Stick.”
- (3) Set the POWER switch of your camcorder to OFF(CHG).

“Memory Stick” operations

Viewing images recorded on "Memory Stick"s on your computer

For Macintosh users

Recommended Macintosh environment

Mac OS 8.5.1/8.6/9.0/9.1/9.2 or Mac OS X (v10.0/v10.1) standard installation is required.

However, note that the update to Mac OS 9.0/9.1 should be used for the following models.

- iMac with the Mac OS 8.6 standard installation and a slot loading type CD-ROM drive
- iBook or Power Mac G4 with the Mac OS 8.6 standard installation

The USB connector must be provided as standard.

Installing the USB driver

Before connecting your camcorder to your computer, install the USB driver on the computer. The USB driver is packaged together with application software for viewing images on the CD-ROM supplied with your camcorder. Do not connect the USB cable to your computer before installation of the USB driver is completed.

For Mac OS 9.1/9.2/Mac OS X (v10.0/v10.1)

The USB driver need not be installed. Your Mac is automatically recognized as a driver just by connecting your Mac using the USB cable.

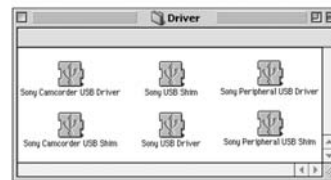
For Mac OS 8.5.1/8.6/9.0 users

- (1) Turn on your computer and allow the Mac OS to load.
- (2) Insert the supplied CD-ROM into the CD-ROM drive of your computer.
The application software screen appears.



Viewing images recorded on "Memory Stick"s on your computer

- (3) Click "USB Driver" to open the folder containing the six files related to "Driver".



- (4) Select all six files, and drag and drop them into the System Folder.
- (5) When the message appears, click "OK."
- (6) Restart your computer.

"Memory Stick" operations

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Viewing images recorded on "Memory Stick"s on your computer

Viewing images on Macintosh

QuickTime 3.0 or newer must be installed to play back moving pictures in Macintosh environment.

- (1) Turn on your computer and allow Mac OS to load.
- (2) Insert a "Memory Stick" into your camcorder, and connect the AC power adaptor to your camcorder and then to a wall outlet.
- (3) Set the POWER switch to MEMORY.
- (4) Connect one end of the USB cable to the $\frac{1}{4}$ (USB) jack on the camcorder and the other end to the USB connector on your computer.
USB MODE appears on the screen of your camcorder.
- (5) Double click the newly recognized icon on the desktop.
The folders inside the "Memory Stick" are displayed.
- (6) Select and double-click the desired image file from the folder.

Desired file type	Double-click in this order
Still image	"Dcim" folder → "100msdcf" folder → Image file
Moving picture*	"Mssony" folder → "MOML0001" folder → Image file*

* Copying a file to the hard disk of your computer before viewing it is recommended. If you play back the file directly from the "Memory Stick," the image and sound may break off.

Unplug the USB cable or eject the "Memory Stick"

To unplug the USB cable or eject the "Memory Stick", follow the procedure below.

- (1) Close all running applications.
Make sure that the access lamp of the hard disk is not lit.
- (2) Drag and drop the "Memory Stick" icon to the Trash or select Eject under the Special menu.
- (3) Unplug the USB cable or eject the "Memory Stick." Set the POWER switch of your camcorder to OFF(CHG).

For Mac OS X (v10.0) users

Shutting down your computer, then unplug the USB cable or eject the "Memory Stick".

Viewing images recorded on "Memory Stick"s on your computer

Notes on using your computer

"Memory Stick"

- "Memory Stick" operations on your camcorder cannot be assured if a "Memory Stick" formatted on your computer is used on your camcorder, or if the "Memory Stick" in your camcorder was formatted from your computer when the USB cable was connected.
- Do not compress the data on the "Memory Stick." Compressed files cannot be played back on your camcorder.

Software

- Depending on your application software, the file size may increase when you open a still image file.
- When you load an image modified using retouching software from your computer to your camcorder or when you directly modify the image on your camcorder, the image format will differ so a file error indicator may appear and you may be unable to open the file.

Communications with your computer

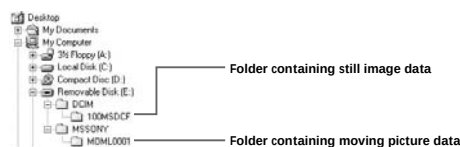
Communications between your camcorder and your computer may not recover after recovering from Suspend, Resume, or Sleep.

Image file storage destinations and image files

Image files recorded with your camcorder are grouped in folders by recording mode. The meanings of the file names are as follows. □□□□ stands for any number within the range from 0001 to 9999.

For Windows Me users

(The drive recognizing your camcorder is [E:].)



Folder	File	Meaning
100MSDCF	DSC0□□□□.JPG	Still image file
MOML0001	MOV0□□□□.MPG	Moving picture file

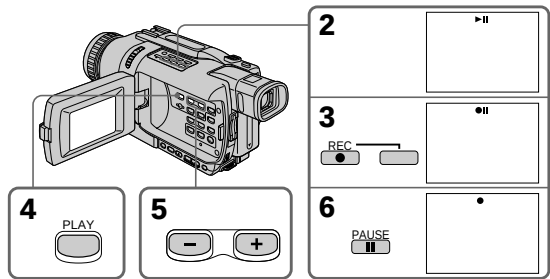
"Memory Stick" operations

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Copying images recorded on “Memory Stick”s to tape

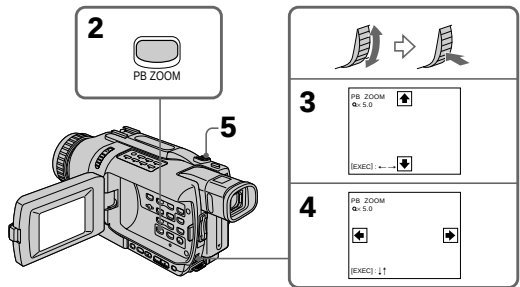
- DCR-TRV340 only
- You can copy still images recorded on “Memory Stick”s and record them to tapes.
- Before operation**
- Insert a tape for recording into your camcorder.
 - Insert a “Memory Stick” into your camcorder.
- (1) Set the POWER switch to VCR.
 - (2) Using the video control buttons, search a point where you want to record the desired still image. Set the tape to playback pause mode.
 - (3) Press ● REC and the button on its right simultaneously on your camcorder. The tape is set to the recording pause mode.
 - (4) Press MEMORY PLAY. The last recorded image is displayed.
 - (5) Press MEMORY+/- to select the desired image.
To see the previous image, press MEMORY-. To see the next image, press MEMORY+.
 - (6) Press II to start recording and press II again to stop.
● appears on the screen during recording.
 - (7) If you have more to copy, repeat steps 4 to 6.



To stop copying
Press ■.

Enlarging still images recorded on “Memory Stick”s – Memory PB ZOOM

- DCR-TRV340 only
- You can enlarge still images recorded on a “Memory Stick.” You can select and view a desired part from the enlarged still image. Also, you can copy the desired part of the enlarged still image to tapes or “Memory Stick”s.
- Before operation**
- Insert a “Memory Stick” into your camcorder.
- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
 - (2) Press PB ZOOM on your camcorder while you are playing back images recorded on “Memory Stick.” The still image is enlarged, and ↑↓ indicators showing the direction to move the image appear on the screen.
 - (3) Turn SEL/PUSH EXEC dial to move the enlarged image, then press the dial.
↑ : The image moves downward.
↓ : The image moves upward.
↔ becomes available.
 - (4) Turn SEL/PUSH EXEC dial to move the enlarged image, then press the dial.
← : The image moves rightward. (Turn the dial downward.)
→ : The image moves leftward. (Turn the dial upward.)
 - (5) Adjust the zoom ratio by the power zoom lever.
You can enlarge the image from 1.1 times up to five times its size.
W : Decreases the zoom ratio.
T : Increase the zoom ratio.



Copying images recorded on “Memory Stick”s to tape

- During copying**
- You cannot operate the following buttons:
- MEMORY PLAY
 - MEMORY INDEX
 - MEMORY DELETE
 - MEMORY MIX
 - MEMORY +/-
- Note on the index screen**
- You cannot record the index screen.
- If you press EDITSEARCH during pause mode**
- Memory playback stops.
- Image data modified on your computer or shot with other equipment**
- You may not be able to copy modified images with your camcorder.
- If you press DISPLAY in the standby or recording mode**
- You can see memory playback and the file name indicators in addition to the indicators pertinent to tapes, such as the time code indicator.

“Memory Stick” operations

Enlarging still images recorded on “Memory Stick”s – Memory PB ZOOM

- To cancel memory PB ZOOM mode**
- Press PB ZOOM.
- The PB ZOOM mode is canceled when the following buttons are pressed:**
- MENU
 - MEMORY PLAY
 - MEMORY INDEX
 - MEMORY +/-
- Moving pictures recorded on “Memory Stick”s**
- The PB ZOOM mode does not work.
- To record an image processed by PB ZOOM on “Memory Stick”s**
- Press PHOTO to record the image processed by PB ZOOM.
- To record an image processed by PB ZOOM on tape**
- Press REC to record the image processed by Memory PB ZOOM.

“Memory Stick” operations

Playing back images in a continuous loop – SLIDE SHOW

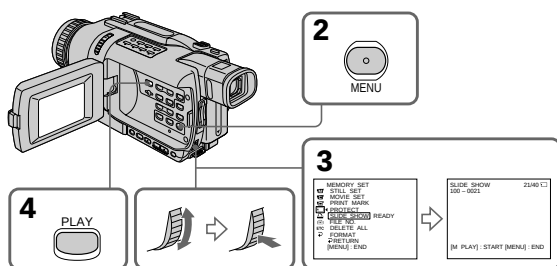
– DCR-TRV340 only

You can automatically play back images in sequence. This function is useful especially when checking recorded images or during a presentation.

Before operation

Insert a "Memory Stick" into your camcorder.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU to display the menu settings.
- (3) Turn the SEL / PUSH EXEC dial to select SLIDE SHOW in , then press the dial.
- (4) Press MEMORY PLAY. Your camcorder plays back the images recorded on the "Memory Stick" in sequence.



To stop the slide show

Press MENU.

To pause during a slide show

Press MEMORY PLAY.

To start the slide show from a particular image

Select the desired image using MEMORY +/- buttons before step 2.

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Preventing accidental erasure – Image protection

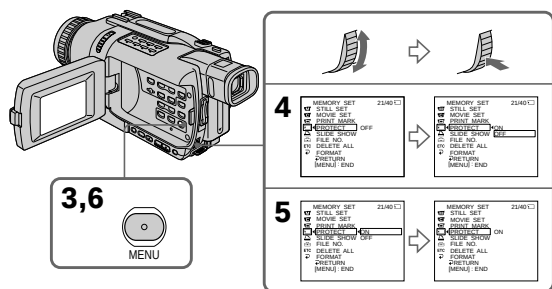
– DCR-TRV340 only

You can protect selected images, to prevent accidental erasure of important images.

Before operation

Insert a "Memory Stick" into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Play back the image you want to protect.
- (3) Press MENU to display the menu settings.
- (4) Turn the SEL / PUSH EXEC dial to select PROTECT in , then press the dial.
- (5) Turn the SEL / PUSH EXEC dial to select ON, then press the dial.
- (6) Press MENU to make the menu settings disappear. The  mark is displayed beside the data file name of the protected image.



To cancel image protection

Select OFF in step 5, then press the SEL / PUSH EXEC dial.

Note

Formatting erases all information on the "Memory Stick", including the protected image data. Before formatting a "Memory Stick", check its contents.

If the write-protect tab on the "Memory Stick" is set to LOCK

You cannot protect images.

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Playing back images in a continuous loop – SLIDE SHOW

To view recorded images on TV

Before operation, connect your camcorder to a TV with the A / V connecting cable supplied with your camcorder.

If you change the "Memory Stick" during operation

The slide show function does not operate. If you change the "Memory Stick", be sure to follow the steps again from the beginning.

"Memory Stick" operations

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Deleting images – DELETE

– DCR-TRV340 only

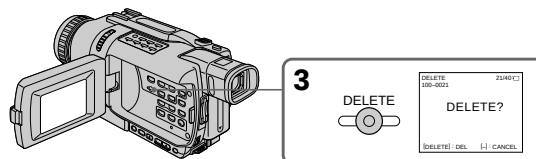
You can delete images stored in a "Memory Stick." You can delete all images or only selected images.

Deleting selected images

Before operation

Insert a "Memory Stick" into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Play back the image you want to delete.
- (3) Press MEMORY DELETE. "DELETE?" appears on the screen.
- (4) Press MEMORY DELETE again. The selected image is deleted.



To cancel deleting an image

Press MEMORY – in step 4.

To delete an image displayed on the index screen

Press MEMORY +/- to move the  indicator to the image and follow steps 3 and 4.

Notes

- You cannot delete a protected image. To delete a protected image, first cancel image protection.
- Once you delete an image, you cannot restore it. Before deleting an image, carefully check the image.

If the write-protect tab on the "Memory Stick" is set to LOCK

You cannot delete images.

"Memory Stick" operations

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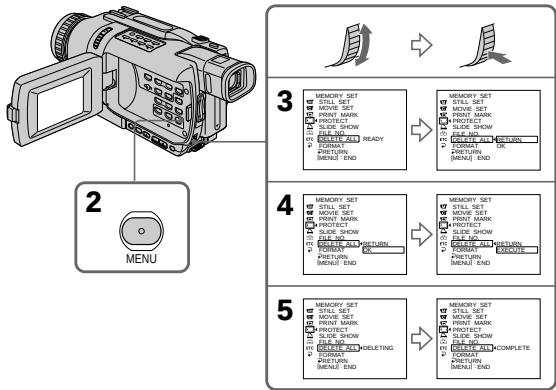
Deleting images – DELETE

Deleting all images

You can delete all unprotected images in the “Memory Stick.”

Before operation
Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Press MENU to display the menu settings.
- (3) Turn the SEL/PUSH EXEC dial to select DELETE ALL in , then press the dial.
- (4) Turn the SEL/PUSH EXEC dial to select OK, then press the dial. OK changes to EXECUTE.
- (5) Turn the SEL/PUSH EXEC dial to select EXECUTE, then press the dial. DELETING appears on the screen. When all unprotected images are deleted, COMPLETE is displayed.

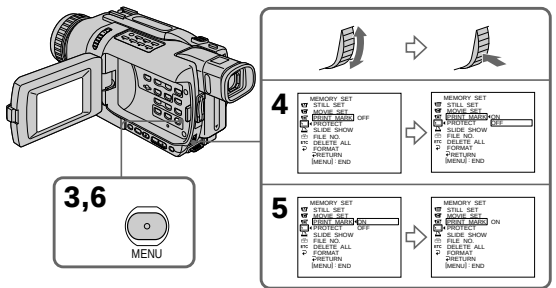


Writing a print mark – PRINT MARK

– DCR-TRV340 only
You can specify a recorded still image to print out by writing a print mark. This function is useful for printing out still images later. Your camcorder conforms to the DPOF (Digital Print Order Format) standard for specifying still images to print out.

Before operation
Insert a “Memory Stick” into your camcorder.

- (1) Set the POWER switch to MEMORY or VCR. Make sure that the LOCK switch is set to the left (unlock) position.
- (2) Play back the still image you want to write a print mark on.
- (3) Press MENU to display the menu settings.
- (4) Turn the SEL/PUSH EXEC dial to select PRINT MARK in , then press the dial.
- (5) Turn the SEL/PUSH EXEC dial to select ON, then press the dial.
- (6) Press MENU to make the menu settings disappear. The  mark is displayed beside the data file name of the image with a print mark.



To cancel writing of print marks
Select OFF in step 5, then press the SEL/PUSH EXEC dial.

Deleting images – DELETE

To cancel deleting all the images in the “Memory Stick”
Select RETURN in step 4, then press the SEL/PUSH EXEC.

While DELETING appears
Do not turn the POWER switch or press any buttons.

If the write-protect tab on the “Memory Stick” is set to LOCK
You cannot delete images.

“Memory Stick” operations

Writing a print mark – PRINT MARK

If the write-protect tab on the “Memory Stick” is set to LOCK
You cannot write print marks on still images.

Moving pictures
You cannot write print marks on moving pictures.

While the file name is flashing
You cannot write the print mark on the still image.

“Memory Stick” operations

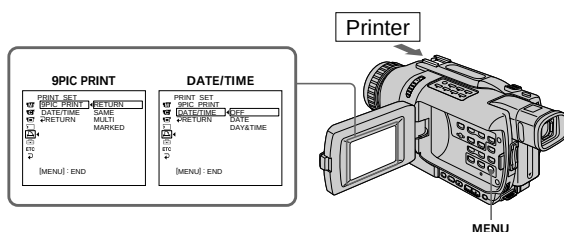
Using the optional printer

– DCR-TRV340 only

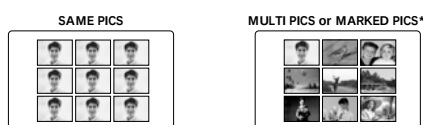
You can use the printer (optional) on your camcorder to print images on print paper. For details, refer to the operating instructions of the printer. There are various ways of printing still images. The following, however, describes how to print by selecting  in the menu settings on your camcorder. (p. 104)

Before operation

- Insert a recorded "Memory Stick" into your camcorder.
- Attach the optional printer to your camcorder.

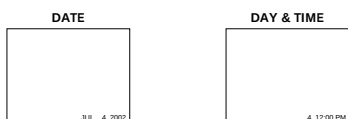


You can print nine still images on the 9-split print paper. Select the desired mode in the menu settings.



* Nine still images with print marks are printed together.

You can make prints with the recording date and/or recording time. Select the desired mode in the menu settings.



Using the optional printer

Images recorded in the multi screen mode

You cannot print images recorded in the multi screen mode on sticker type print paper.

Moving pictures recorded on "Memory Stick"

You cannot print moving pictures.

When "Memory Stick" has no files

"NO STILL IMAGE FILE" appears on the screen.

When there are no files with a PRINT MARK

"NO PRINT MARK" appears on the screen.

— Troubleshooting —

Types of trouble and how to correct trouble

If you run into any problem using your camcorder, use the following table to troubleshoot the problem. If the problem persists, disconnect the power source and contact your Sony dealer or local authorized Sony service facility. If "C:□□:□□" appears on the screen or the display window, the self-diagnosis display function has worked. See page 182.

In the recording mode

Symptom	Cause and/or Corrective Actions
START / STOP does not operate.	• The POWER switch is not set to CAMERA. → Set it to CAMERA (p. 20). • The tape has run out. → Rewind the cassette or insert a new one (p. 19, 33). • The write-protect tab is set to expose the red mark. → Use a new tape or slide the tab (p. 19). • The tape is stuck to the drum (moisture condensation). → Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 192).
The power goes off.	• While being operated in CAMERA mode, your camcorder has been in the standby mode for more than three minutes. → Set the POWER switch to OFF (CHG) and then to CAMERA again (p. 20). • The battery pack is dead or nearly dead. → Install a charged battery pack (p. 12, 13).
The image on the viewfinder screen is not clear.	• The viewfinder lens is not adjusted. → Adjust the viewfinder lens (p. 24).
The SteadyShot function does not work.	• STEADYSHOT is set to OFF in the menu settings. → Set it to ON (p. 104). • 16:9WIDE is set to ON in the menu settings. → Set it to OFF (p. 104).
The autofocus function does not work.	• The setting is the manual focus mode. → Set FOCUS to the autofocus mode (p. 53). • Shooting conditions are not suitable for autofocus. → Adjust for manual focusing (p. 53).
The picture does not appear in the viewfinder.	• The LCD panel is open. → Close the LCD panel (p. 22).
A vertical band appears when you shoot a subject such as lights or a candle flame against a dark background.	• The contrast between the subject and background is too high. This is not a malfunction.
A vertical band appears when you shoot a very bright subject.	• This is not a malfunction.
Some tiny white spots appear on the screen.	• Slow shutter, Super NightShot or Color Slow Shutter mode is activated. This is not a malfunction.

Types of trouble and how to correct trouble

Symptom	Cause and/or Corrective Actions
An unknown picture is displayed on the screen.	• If 10 minutes elapse after you set the POWER switch to CAMERA or DEMO MODE is set to ON in the menu settings without a cassette inserted, your camcorder automatically starts the demonstration. → Insert a cassette and the demonstration stops. You can also cancel DEMO MODE (p. 104).
The picture is recorded in incorrect or unnatural colors.	• NIGHTSHOT is set to ON. → Set it to OFF (p. 28).
Picture appears too bright, and the subject does not appear on the screen.	• NIGHTSHOT is set to ON in a bright place. → Set it to OFF (p. 28). • The backlight function is active. → Set it off (p. 27).
The shutter does not sound.	• BEEP is set to OFF in the menu settings. → Set it to MELODY or NORMAL (p. 104).
A horizontal black band appears when shooting a TV screen or a computer screen.	• Set STEADYSHOT to OFF in the menu setting (p. 104).
An external flash (optional) does not work.	• The power of the external flash is off or the power source does not install. → Turn on the external flash or install the power source. • Two or more external flashes are attached. → Only one external flash can be attached. • AUTO is selected in FLASH MODE in the menu settings while recording in a bright place. → Set it to ON (p. 104).

In the playback mode

Symptom	Cause and/or Corrective Actions
The tape does not move when a video control button is pressed.	• The POWER switch is not set to VCR. → Set it to VCR (p. 33).
The playback button does not work.	• The cassette has run out of tape. → Rewind the tape (p. 33).
There are horizontal lines on the picture, or the playback picture is not clear or does not appear.	• The video heads may be dirty. → Clean the heads using the Sony V8-25CLD cleaning cassette (optional) (p. 193).
No sound or only a low sound is heard when playing back a tape.	• The stereo tape is played back with HiFi SOUND set to 2 in the menu settings. → Set it to STEREO (p. 104). • The volume is turned to minimum. → Press VOLUME + (p. 33). • AUDIO MIX is set to the ST2 side in the menu settings. → Adjust AUDIO MIX (p. 104).
The date search does not work correctly.	• The tape has a blank portion between recorded portion (p. 67).
The picture which is recorded in the Digital  system is not played back.	• PB MODE is set to  in the menu settings. → Set it to AUTO (p. 104).
The tape which is recorded in the Hi8 / standard 8 system is not played back correctly.	• Set PB MODE to  in the menu settings (p. 104).

(continued on the following page)

Types of trouble and how to correct trouble

In the recording and playback modes	
Symptom	Cause and/or Corrective Actions
The power does not turn on.	• The battery pack is not installed, or is dead or nearly dead. ➔ Install a charged battery pack (p. 12, 13). • The AC power adaptor is not connected to a wall outlet. ➔ Connect the AC power adaptor to a wall outlet (p. 16).
The end search function does not work.	• The tape was ejected after recording. • You have not recorded on the new cassette yet.
The end search function does not work correctly.	• The tape has a blank portion at the beginning or midway.
The battery pack is quickly discharged.	• The operating temperature is too low. • The battery pack is not charged enough. ➔ Charge the battery pack fully again (p. 13). • The battery pack is completely dead, and cannot be recharged. ➔ Replace with a new battery pack (p. 12).
The remaining battery time indicator does not indicate the correct time.	• You have used the battery pack in an extremely hot or cold environment for a long time. • The battery pack is completely dead, and cannot be recharged. ➔ Replace with a new battery pack (p. 12). • The battery is dead. ➔ Use a fully charged battery pack (p. 12, 13). • A deviation has occurred in the remaining battery time. ➔ Charge the battery pack fully so that the remaining battery time indicator indicates correct time (p. 13).
The power goes off although the remaining battery time indicator indicates that the battery pack has enough power to operate.	• A deviation has occurred in the remaining battery time. ➔ Charge the battery pack fully so that the remaining battery time indicator indicates correct time (p. 13).
The cassette cannot be removed from the holder.	• The power source is disconnected. ➔ Connect it firmly (p. 12, 16). • The battery is dead. ➔ Use a charged battery pack (p. 12, 13).
The [] and [] indicators flash and no functions except for cassette ejection work.	• Moisture condensation has occurred. ➔ Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 192).

Types of trouble and how to correct trouble

Others	
Symptom	Cause and/or Corrective Actions
Digital program editing to a tape does not function.	• The input selector on the VCR is not set correctly. ➔ Check the connection and set the input selector on the VCR again (p. 74). • Your camcorder is connected to DV equipment of other than Sony using the i.LINK cable (DV connecting cable). ➔ Set it to IR (p. 74). • You have attempted to set a program on a blank portion of the tape. ➔ Set the program again on a recorded portion (p. 83). • Your camcorder and the VCR are not synchronized. ➔ Adjust the synchronization (p. 81). • The IR SETUP code is incorrect. ➔ Set the correct code (p. 76). • PB MODE is set to Hi8/B in the menu settings. ➔ Set it to AUTO. (p. 104)
Digital program editing to a "Memory Stick" does not function. (DCR-TRV340 only)	• Setting program on a blank portion of the tape is attempted. ➔ Set the program again on a recorded portion (p. 144).
The Remote Commander supplied with your camcorder does not work.	• COMMANDER is set to OFF in the menu settings. ➔ Set it to ON (p. 104). • Something is blocking the infrared rays. ➔ Remove the obstacle. • The batteries are inserted with + and – incorrectly matching + and – inside the battery compartment. ➔ Insert the batteries correctly (p. 205). • The batteries are dead. ➔ Insert new ones (p. 205).
The picture from a TV or VCR does not appear on the screen even when your camcorder is connected to outputs on the TV or VCR.	• DISPLAY is set to V-OUT/LCD in the menu settings. ➔ Set it to LCD (p. 104).
The melody or beep sounds for five seconds.	• Moisture condensation has occurred. ➔ Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 192). • Some trouble have occurred in your camcorder. ➔ Remove the cassette and insert it again, then operate your camcorder.
You cannot charge the battery pack.	• The POWER switch is not set to OFF (CHG). ➔ Set it to OFF (CHG).
While charging the battery pack, the backlight of the display window does not light.	• Charging is completed. • The AC power adaptor is disconnected. ➔ Connect it firmly (p. 13). • Something is wrong with the battery pack. ➔ Contact your Sony dealer or local authorized Sony service facility.

Types of trouble and how to correct trouble

When operating using the "Memory Stick"	
– DCR-TRV340 only	
Symptom	Cause and/or Corrective Actions
The "Memory Stick" does not function.	• The POWER switch is not set to MEMORY. ➔ Set it to MEMORY (p. 122). • The "Memory Stick" is not inserted. ➔ Insert a "Memory Stick" (p. 117).
Recording does not function.	• The "Memory Stick" is full. ➔ Delete unnecessary images and record again (p. 169). • The "Memory Stick" formatted incorrectly is inserted. ➔ Format the "Memory Stick" on your camcorder or use another "Memory Stick" (p. 110, 117). • The write-protect tab on the "Memory Stick" is set to LOCK. ➔ Release the lock (p. 115).
The image cannot be deleted.	• The image is protected. ➔ Cancel image protection (p. 168). • The write-protect tab on the "Memory Stick" is set to LOCK. ➔ Release the lock (p. 115).
You cannot format the "Memory Stick".	• The write-protect tab on the "Memory Stick" is set to LOCK. ➔ Release the lock (p. 115).
Deleting all the images cannot be carried out.	• The write-protect tab on the "Memory Stick" is set to LOCK. ➔ Release the lock (p. 115).
You cannot protect the image.	• The write-protect tab on the "Memory Stick" is set to LOCK. ➔ Release the lock (p. 115). • The image to protect is not played back. ➔ Press MEMORY PLAY to play back the image (p. 148).
You cannot write a print mark on the still image.	• The write-protect tab on the "Memory Stick" is set to LOCK. ➔ Release the lock (p. 115). • The image to write a print mark to is not played back. ➔ Press MEMORY PLAY to play back the image (p. 148). • You are trying to write a print mark on a moving picture. ➔ Print marks cannot be written on a moving picture.
The photo save function does not work.	• The write-protect tab on the "Memory Stick" is set to LOCK. ➔ Release the lock (p. 115).

(continued on the following page)

Types of trouble and how to correct trouble

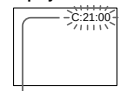
Others	
Symptom	Cause and/or Corrective Actions
While charging the battery pack, the remaining battery time indicator flashes.	• The battery pack is not properly installed. ➔ Install it properly. • Something is wrong with the battery pack. ➔ Contact your Sony dealer or local authorized Sony service facility.
No function works though the power is on.	• Disconnect the power cord of the AC power adaptor or remove the battery, then reconnect it in about one minute. Turn the power on. If the functions still do not work, open the LCD panel and press the RESET button under TITLE button using a sharp-pointed object (If you press the RESET button, all the settings including the date and time return to their defaults.) (p. 201).
Image data cannot be transferred by the USB connection.	• The USB cable was connected before installation of the USB driver was completed. ➔ Uninstall the incorrect USB driver and re-install the USB driver (p. 96, 156).

Self-diagnosis display

Your camcorder has a self-diagnosis display function. This function displays the current state of your camcorder as a 5-digit code (a combination of a letter and figures) on the screen or in the display window.

If a 5-digit code is displayed, check the following list of codes. The last two digits (indicated by □□) differ depending on the state of your camcorder.

LCD screen, viewfinder or display window



Self-diagnosis display

- C:□□:□□
You can service your camcorder yourself.
- E:□□:□□
Contact your Sony dealer or local authorized Sony facility.

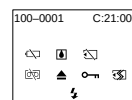
Five-digit display	Cause and/or Corrective Actions
C:04:□□	• You are using a battery pack that is not an "InfoLITHIUM" battery pack. → Use an "InfoLITHIUM" battery pack (p. 14, 187).
C:21:□□	• Moisture condensation has occurred. → Remove the cassette and leave your camcorder for at least one hour to acclimatize (p. 192).
C:22:□□	• The video heads are dirty. → Clean the heads using the Sony V8-25CLD cleaning cassette (optional) (p. 193).
C:31:□□ C:32:□□	• A malfunction other than the above that you can service has occurred. → Remove the cassette and insert it again, then operate your camcorder. → Disconnect the power cord of the AC power adaptor or remove the battery pack. After reconnecting the power source, operate your camcorder.
E:20:□□ E:61:□□ E:62:□□	• A malfunction that you cannot service has occurred. → Contact your Sony dealer or local authorized Sony service facility and inform them of the 5-digit code. (example: E:61:10)

If you are unable to rectify the problem even if you try corrective actions a few times, contact your Sony dealer or local authorized Sony service facility.

Warning indicators and messages

If indicators and messages appear on the screen or in the display window, check the following. See the page in parentheses “()” for more information.

Warning indicators



100-0001 Warning indicator as to file (DCR-TRV340 only)

Slow flashing:

- The file is corrupted.
- The file is unreadable.
- You are trying to use the MEMORY MIX function on a moving picture (p. 129).

C:21:00 Self-diagnosis display (p. 182).

Warning indicator as to battery

Slow flashing:

- The battery is nearly dead.
- The indicator sometimes flashes even if the remaining battery time is about five to 10 minutes depending on the operating conditions, environment and battery condition.

Fast flashing:

- The battery is dead.

Moisture condensation has occurred*

Fast flashing:

- Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment open (p. 192).

Warning indicator as to "Memory Stick" (DCR-TRV340 only)

Slow flashing:

- No "Memory Stick" is inserted.

Warning indicator as to "Memory Stick" formatting (DCR-TRV340 only)

Fast flashing:

- "Memory Stick" data is corrupted (p. 115).*
- "Memory Stick" is not formatted correctly (p. 110).

Warning indicator as to tape

Slow flashing:

- The tape is near the end.
- No tape is inserted.*
- The write-protect tab on the cassette is exposed (red) (p. 19).*

Fast flashing:

- The cassette has run out of tape.*

You need to eject the cassette*

Slow flashing:

- The write-protect tab on the cassette is exposed (red) (p. 19).

Fast flashing:

- Moisture condensation has occurred (p. 192).
- The cassette has run out of tape.
- The self-diagnosis display function is activated (p. 182).

The image is protected* (DCR-TRV340 only)

Slow flashing:

- The image is protected (p. 168).

Warning indicator as to the flash (optional)

Fast flashing:

- There is something wrong with the external flash (optional).

* You hear the melody or beep.

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Warning indicators and messages

Warning messages

• CLOCK SET	Set the date and time (p. 17).
• FOR "InfoLITHIUM" BATTERY ONLY	Use an "InfoLITHIUM" battery pack (p. 187).
• TAPE END	The cassette has run out of tape.*
• NO TAPE	Insert a cassette tape.*
• CLEANING CASSETTE	The video heads are dirty. (The indicator and "CLEANING CASSETTE" message appear one after another on the screen.) (p. 193)
• COPY INHIBIT	You tried to record a picture that has a copyright control signal* (p. 185).
• FULL**	The "Memory Stick" is full* (p. 125).
• **	The write-protect tab on the "Memory Stick" is set to LOCK* (p. 115).
• NO FILE**	No still image is recorded on the "Memory Stick" (p. 149).
• NO MEMORY STICK**	No "Memory Stick" is inserted.*
• AUDIO ERROR**	You are trying to record an image with sound that cannot be recorded by your camcorder on "Memory Stick" (p. 141).
• MEMORY STICK ERROR**	The "Memory Stick" data is corrupted* (p. 117).
• FORMAT ERROR**	Check the type of formatting* (p. 110).
• DIRECTORY ERROR**	The "Memory Stick" has more than one directory such as 100msdc* (p. 148).
• PLAY ERROR**	The image is distorted and cannot be played back.*
• REC ERROR**	Check the input signal before retrying recording* (p. 135, 143).
• NO PRINT MARK**	You selected MARKED in 9PIC PRINT in the menu settings using a "Memory Stick" contains no image with a print mark* (p. 175).
• NO STILL IMAGE FILE**	You selected MULTI in 9PIC PRINT in the menu settings using a "Memory Stick" contains no still image* (p. 175).
• DELETING**	You have pressed PHOTO during deleting all images on "Memory Stick."**
• FORMATTING**	You have pressed PHOTO during formatting a "Memory Stick."**
• NOW CHARGING	Charging an external flash (optional) does not work correctly.*

* You hear the melody or beep.

** DCR-TRV340 only

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— Additional Information —

Digital8 system, recording and playback

What is the "Digital8 system"?

This video system has been developed to enable digital recording to Hi8 /Digital8 video cassette.

Usable cassette tapes

We recommend using Hi8 /Digital8 video cassette.*

The recording time when you use your Digital8 system camcorder on Hi8 /standard 8 tape is half the recording time when using the conventional Hi8 /standard 8 system camcorder. (120 minutes of recording time becomes 60 minutes in the SP mode.)

* If you use standard 8 tape, be sure to play back the tape on this camcorder. Mosaic pattern noise may appear when you play back standard 8 tape on other VCRs (including other DCR-TRV240/TRV340).

Note

Tapes recorded in the Digital8 system cannot be played back on Hi8 /standard 8 (analog) system machine.

is a trademark.

is a trademark.

is a trademark.

Playback system

The Digital8 system or Hi8 /standard 8 system is automatically detected before the tape is played back. During playback of tapes recorded in the Hi8 /standard 8 system, digital signals are output as the image signals from the DV IN/OUT jack.

Display during automatic detection of system

The Digital8 system or Hi8 /standard 8 system is automatically detected, and the playback system is automatically switched to. During switching of systems, the screen turns blue, and the following displays appear on the screen. A hissing noise also sometimes can be heard.

→ / : During switching from Digital8 to Hi8 /standard 8

/ → : During switching from Hi8 /standard 8 to Digital8

Copyright signal

When you play back

Using any other video camera recorder, you cannot record on a tape that has recorded copyright control signals for copyright protection of software which is played back on your camcorder.

When you record

You cannot record software on your camcorder that contains copyright control signals for copyright protection of software. COPY INHIBIT appears on the LCD screen, in the viewfinder or on the TV screen if you try to record such software. Your camcorder does not record copyright control signals on the tape when it records.

Troubleshooting

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Additional information

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Digital8 8mm system, recording and playback

When you playback a dual sound track tape

When you use tapes recorded in the Digital8 8mm system

When you play back a Digital8 8mm system tape which is dubbed from a dual sound track tape recorded in the DV system, set HiFi SOUND to the desired mode in the menu settings (p. 104).

Sound from speaker		
HiFi Sound Mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Lch	Main sound
2	Rch	Sub sound

When you use a tape recorded in the Hi8/standard 8 system

When you play back a dual sound track tape recorded in an AFM HiFi stereo system, set HiFi SOUND to the desired mode in the menu settings (p. 104).

Sound from speaker		
HiFi Sound Mode	Playing back a stereo tape	Playing back a dual sound track tape
STEREO	Stereo	Main sound and sub sound
1	Monaural	Main sound
2	Unnatural Sound	Sub sound

You cannot record dual sound programs on your camcorder.

About the “InfoLITHIUM” battery pack

How to store the battery pack

- If the battery pack is not used for a long time, do the following procedure once per year to maintain proper function.
 1. Fully charge the battery.
 2. Discharge on your electronic equipment.
 3. Remove the battery from the equipment and store it in a dry, cool place.
- To use the battery pack up on your camcorder, leave your camcorder in the standby mode until the power goes off without a cassette inserted.

Battery life

- The battery life is limited. Battery capacity drops little by little as you use it more and more, and as time passes. When the available battery time is shortened considerably, a probable cause is that the battery pack has reached the end of its life. Buy a new battery pack.
- The battery life varies according to how it is stored and operating conditions and environment for each battery pack.

About the “InfoLITHIUM” battery pack

What is the “InfoLITHIUM” battery pack?

The “InfoLITHIUM” battery pack is a lithium-ion battery pack that has functions for communicating information related to operating conditions between your camcorder and an AC adaptor/charger (optional). The “InfoLITHIUM” battery pack calculates the power consumption according to the operating conditions of your camcorder, and displays the remaining battery time in minutes.

Charging the battery pack

- Be sure to charge the battery pack before you start using your camcorder.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F) until the backlight of the display window goes out, indicating that the battery pack is fully charged. If you charge the battery outside of this temperature range, you may not be able to efficiently charge the battery pack.
- After charging is completed, either disconnect the cable from the DC IN jack on your camcorder or remove the battery pack.

Effective use of the battery pack

- Battery pack performance decreases in low-temperature surroundings. So, the time that the battery pack can be used is shorter in cold places. We recommend the following to ensure longer battery pack use:
 - Put the battery pack in a pocket to warm it up, and insert it in your camcorder immediately before you start taking shots.
 - Use the large-capacity battery pack (NP-FM70/QM71/FM90/FM91/QM91, optional).
- Frequently using the LCD panel or frequently operating playback, fast-forward or rewind wears out the battery pack faster. We recommend using the large-capacity battery pack (NP-FM70/QM71/FM90/FM91/QM91, optional).
- Be sure to turn the POWER switch to OFF (CHG) when not taking shots or playing back on your camcorder. The battery pack is also consumed when your camcorder is in the standby mode or playback is paused.
- Have spare battery packs handy for two or three times the expected recording time, and make a trial recordings before taking the actual recording.
- Do not expose the battery pack to water. The battery pack is not water-resistant.

Remaining battery time indicator

- If the power may go off although the remaining battery time indicator indicates that the battery pack has enough power to operate, charge the battery pack fully again so that the indication on the remaining battery time indicator is correct. Note, however, that the correct battery indication sometimes will not be restored if it is used in high temperatures for a long time or left in a fully charged state, or the battery pack is frequently used. Regard the remaining battery time indication as the approximate shooting time.
- The CV mark indicating that there is little remaining battery time sometimes flashes depending on the operating conditions or ambient temperature and environment even if the remaining battery time is about five to 10 minutes.

Additional Information

About i.LINK

The DV jack on this unit is an i.LINK-compliant DV input/output jack. This section describes the i.LINK standard and its features.

What is “i.LINK”?

i.LINK is a digital serial interface for handling digital video, digital audio and other data in two directions between equipment having the i.LINK jack, and for controlling other equipment.

i.LINK-compatible equipment can be connected by a single i.LINK cable. Possible applications are operations and data transactions with various digital AV equipment. When two or more i.LINK-compatible equipment are connected to this unit in a daisy chain, operations and data transactions are possible with not only the equipment that this unit is connected to but also with other devices via the directly connected equipment.

Note, however, that the method of operation sometimes varies according to the characteristics and specifications of the equipment to be connected, and that operations and data transactions are sometimes not possible on some connected equipment.

Note

Normally, only one piece of equipment can be connected to this unit by the i.LINK cable (DV cable). When connecting this unit to i.LINK-compatible equipment having two or more i.LINK jacks (DV jacks), refer to the operating instructions of the equipment to be connected.

About the name “i.LINK”

i.LINK is a more familiar term for IEEE 1394 data transport bus proposed by SONY, and is a trademark approved by many corporations. IEEE 1394 is an international standard standardized by the Institute of Electrical and Electronic Engineers.

i.LINK baud rate

i.LINK’s maximum baud rate varies according to the equipment. Three maximum baud rates are defined:

- S100 (approx. 100 Mbps*)
- S200 (approx. 200 Mbps)
- S400 (approx. 400 Mbps)

The baud rate is listed under “Specifications” in the operating instructions of each equipment. It is also indicated near the i.LINK jack on some equipment. The maximum baud rate of equipment on which it is not indicated such as this unit is “S100”.

When units are unit is connected to equipment having a different maximum baud rate, the baud rate sometimes differs from the indicated baud rate.

* What is “Mbps”?

Mbps stands for megabits per second, or the amount of data that can be sent or received in one second. For example, a baud rate of 100 Mbps means that 100 megabits of data can be sent in one second.

Additional Information

About i.LINK

i.LINK functions on this unit

For details on how to dub when this unit is connected to other video equipment having DV jacks, see page 71, 135.
This unit can also be connected to other i.LINK (DV) compatible equipment made by SONY (e.g. VAIO series personal computer) other than video equipment.
Before connecting this unit to a personal computer, make sure that application software supported by this unit is already installed on the personal computer.
For details on precautions when connecting this unit, also refer to the operating instructions of the equipment to be connected.

Required i.LINK cable

Use the Sony i.LINK 4-pin-to-4-pin cable (during DV dubbing).

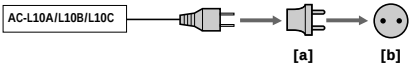
i.LINK and  are trademarks.

Using your camcorder abroad

Using your camcorder abroad

You can use your camcorder in any country or area with the AC power adaptor supplied with your camcorder within 100 V to 240 V AC, 50/60 Hz.

When charging the battery pack, use a commercially available AC plug adaptor [a], if necessary, depending on the design of the wall outlet [b].



Your camcorder is an NTSC system based camcorder. If you want to view the playback picture on a TV, it must be an NTSC system based TV with VIDEO/AUDIO input jack. The following shows TV color systems used overseas.

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

PAL system
Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

PAL-N system
Argentina, Paraguay, Uruguay

SECAM system
Bulgaria, France, Guyana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Ukraine, etc.

Simple setting of clock by time difference

You can easily set the clock to the local time by setting a time difference. Select WORLD TIME in the menu settings. See page 104 for more information.

Additional information

Maintenance information and precautions

Moisture condensation

If your camcorder is brought directly from a cold place to a warm place, moisture may condense inside your camcorder, on the surface of the tape, or on the lens. In this state, the tape may stick to the head drum and be damaged or your camcorder may not operate correctly. If there is moisture inside your camcorder, the beep sounds and the  indicator flashes. When the  indicator flashes at the same time, the cassette is inserted in your camcorder. If moisture condenses on the lens, the indicator will not appear.

If moisture condensation has occurred

None of the functions except cassette ejection will work. Eject the cassette, turn off your camcorder, and leave it for about one hour with the cassette compartment open. Your camcorder can be used again if the  indicator does not appear when the power is turned on again.

Note on moisture condensation

Moisture may condense when you bring your camcorder from a cold place into a warm place (or vice versa) or when you use your camcorder in a hot place as follows:

- You bring your camcorder from a ski slope into a place warmed up by a heating device.
- You bring your camcorder from an air-conditioned car or room into a hot place outside.
- You use your camcorder after a squall or a shower.
- You use your camcorder in a high temperature and humidity place.

How to prevent moisture condensation

When you bring your camcorder from a cold place into a warm place, put your camcorder in a plastic bag and tightly seal it. Remove the bag when the air temperature inside the plastic bag has reached the surrounding temperature (after about one hour).

Maintenance information and precautions

Maintenance information

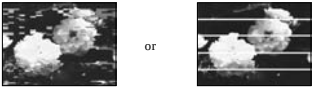
Cleaning the video heads

To ensure normal recording and clear pictures, clean the video heads.

When you playback/record in the Digital8 system

The video head may be dirty when:

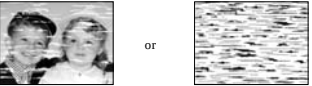
- Mosaic-pattern noise appears on the playback picture.
- Playback pictures do not move.
- Playback pictures are hardly visible.
- Playback pictures do not appear.
- The  indicator and "CLEANING CASSETTE" message appear one after another.



When you play back in the Hi8/Standard 8 (analog) system

The video head may be dirty when:

- Playback pictures contain noise.
- Playback pictures are hardly visible.
- Playback pictures do not appear.



Additional information

If the above problem occurs, clean the video heads with the Sony V8-25CLD cleaning cassette (optional). Check the picture and if the above problem persists, repeat cleaning.

Cleaning the LCD screen

If fingerprints or dust make the LCD screen dirty, we recommend using the LCD Cleaning Kit (optional) to clean the LCD screen.

Maintenance information and precautions

Charging the built-in rechargeable battery

Your camcorder is supplied with a built-in rechargeable battery installed to retain the date and time, etc., regardless of the setting of the POWER switch. The built-in rechargeable battery is always charged as long as you are using your camcorder. The battery, however, will become discharged gradually if you do not use your camcorder. It will be completely discharged in about half a year if you do not use your camcorder at all. Even if the built-in rechargeable battery is not charged, it will not affect camcorder operation. To retain the date, time, and other information, charge the battery if the battery is discharged.

Charging the built-in rechargeable battery:

- Connect your camcorder to wall outlet using the AC power adaptor supplied with your camcorder, and leave your camcorder with the POWER switch turned off for more than 24 hours.
- Or, install a fully charged battery pack in your camcorder, and leave your camcorder with the POWER switch set to OFF (CHG) for more than 24 hours.

Precautions

Camcorder operation

- Operate your camcorder on 7.2 V (battery pack) or 8.4 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in these operating instructions.
- If any solid object or liquid gets inside the casing, unplug your camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF (CHG) when you are not using your camcorder.
- Do not wrap your camcorder with a towel, for example, and operate it. Doing so might cause heat to build up inside.
- Keep your camcorder away from strong magnetic fields or mechanical vibration. Noise may appear on the image.
- Do not touch the LCD screen with your fingers or a sharp-pointed object.
- If your camcorder is used in a cold place, a residual image may appear on the screen. This is not a malfunction.
- While using your camcorder, the back of the LCD screen may heat up. This is not a malfunction.

On handling tapes

- Do not insert anything into the small holes on the rear of the cassette. These holes are used to sense the type and thickness of the tape and if the recording tab is in or out.
- Do not open the tape protect cover or touch the tape.

Maintenance information and precautions

Camcorder care

- Remove the tape, and periodically turn on the power, operate the CAMERA and VCR sections and play back a tape for about three minutes when your camcorder is not to be used for a long time.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Do not let sand get into your camcorder. When you use your camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause your camcorder to malfunction, and sometimes this malfunction cannot be repaired.

Connection to your computer

When inputting the image recorded by Hi8/standard 8 system into Sony VAIO
The Program Capture function of DVgate motion doesn't work. To use this function, dub the image into a Digital8  or DV tape first, and then input it into your Sony VAIO.

AC power adaptor

- Unplug the unit from the wall outlet when you are not using it for a long time. To disconnect the power cord, pull it out by the plug. Never pull the power cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the power cord forcibly, or place a heavy object on it. This will damage the cord and may cause fire or electric shock.
- Prevent metallic objects from coming into contact with the metal parts of the connecting section. If this happens, a short may occur and the unit may be damaged.
- Always keep metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment. AM receivers and video equipment disturb AM reception and video operation.
- The unit becomes warm during use. This is not a malfunction.
- Do not place the unit in locations that are:
 - Extremely hot or cold
 - Dusty or dirty
 - Very humid
 - Vibrating

Additional Information

Maintenance information and precautions

About care and storage of the lens

- Wipe the surface of the lens clean with a soft cloth in the following instances:
 - When there are fingerprints on the lens surface
 - In hot or humid locations
 - When the lens is used in environments susceptible to salt such as the seaside
- Store the lens in a well-ventilated location subject to little dirt or dust.

To prevent mold from occurring, periodically perform the above.
We recommend turning on and operating your camcorder about once per month to keep your camcorder in an optimum state for a long time.

Battery pack

- Use only the specified charger or video equipment with the charging function.
- To prevent accident from a short circuit, do not allow metal objects to come into contact with the battery terminals.
- Keep the battery pack away from fire.
- Never expose the battery pack to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.
- Keep the battery pack dry.
- Do not expose the battery pack to any mechanical shock.
- Do not disassemble nor modify the battery pack.
- Attach the battery pack to the video equipment securely.
- Charging while some capacity remains does not affect the original battery capacity.

Notes on dry batteries

To avoid possible damage from battery leakage or corrosion, observe the following:
– Be sure to insert the batteries with the + and – correctly matching the + and – inside the battery compartment.
– Dry batteries are not rechargeable.
– Do not use a combination of new and old batteries.
– Do not use different types of batteries.
– Current flows from batteries when you are not using them for a long time.
– Do not use leaking batteries.

If batteries are leaking

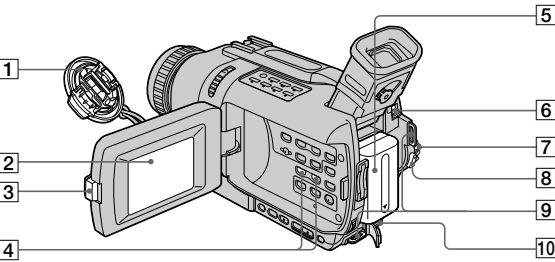
- Wipe off the liquid in the battery compartment carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid gets into your eyes, wash your eyes with a lot of water and then consult a doctor.

If any problem occurs, unplug your camcorder and contact your nearest Sony dealer.

— Quick Reference —

Identifying parts and controls

Camcorder



- | | |
|-----------------------------|--|
| 1 Lens cap (p. 20) | 6 BATT (battery) release lever (p. 12) |
| 2 LCD screen (p. 20) | 7 POWER switch (p. 20) |
| 3 OPEN button (p. 20) | 8 START/STOP button (p. 20) |
| 4 VOLUME +/- button (p. 33) | 9 Hooks for shoulder strap |
| 5 Battery pack (p. 12) | 10 DC IN jack (p. 13) |

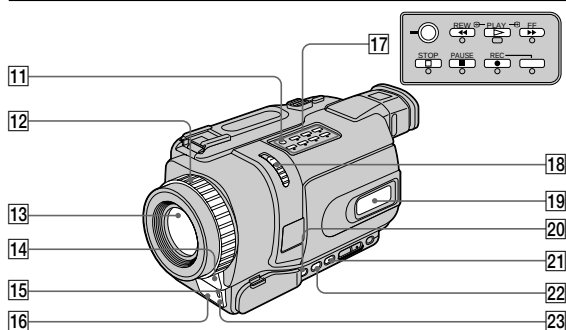
Attaching the shoulder strap

Attach the shoulder strap supplied with your camcorder to the hooks for the shoulder strap.



Quick Reference

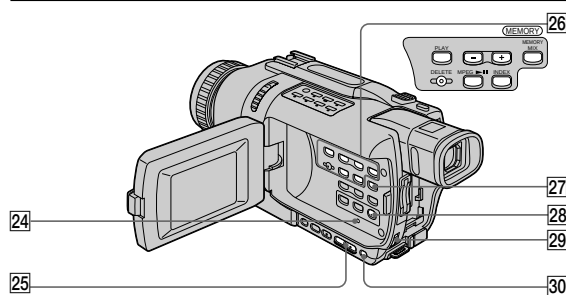
Identifying parts and controls



- | | |
|---|------------------------------|
| 11 SUPER NS/COLOR SLOW S button (p. 28) | 18 NIGHTSHOT switch (p. 28) |
| 12 Focus ring (p. 53) | 19 Display window (p. 206) |
| 13 Lens | 20 FOCUS button (p. 53) |
| 14 Microphone | 21 FADER button (p. 44) |
| 15 Camera recording lamp (p. 20) | 22 BACK LIGHT button (p. 27) |
| 16 Infrared rays emitter (p. 28) | 23 Remote sensor |
| 17 Video control buttons (p. 33, 35) | |

- STOP (stop)
- ◀ REW (rewind)
- ▶ PLAY (playback)
- ▶▶ FF (fast-forward)
- || PAUSE (pause)
- REC (recording)

Identifying parts and controls

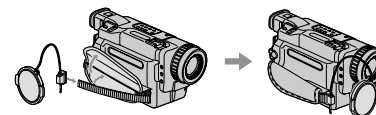


- | | |
|-------------------------------|--------------------------------|
| 24 RESET button (p. 181) | 27 DISPLAY button (p. 34) |
| 25 EDIT/SEARCH button (p. 31) | 28 MENU button (p. 104) |
| 26 MEMORY operation buttons* | 29 SEL/PUSH EXEC dial (p. 104) |
| MEMORY PLAY button (p. 148) | 30 EXPOSURE button (p. 52) |
| MEMORY - button (p. 148) | |
| MEMORY + button (p. 148) | |
| MEMORY MIX button (p. 128) | |
| MEMORY DELETE button (p. 169) | |
| MPEG button (p. 151) | |
| MEMORY INDEX button (p. 150) | |

* DCR-TRV340 only

Attaching the lens cap

Attach the lens cap to the grip strap as illustrated.

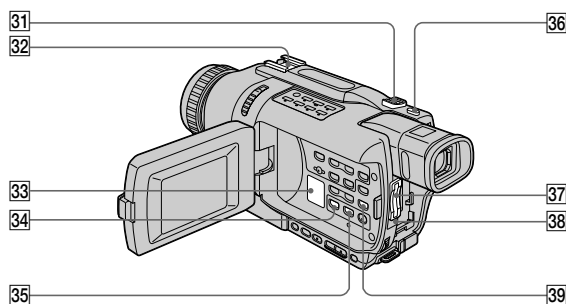


Quick Reference

200

201

Identifying parts and controls



- | | |
|--------------------------------|----------------------------------|
| 31 Power zoom lever (p. 23) | 36 PHOTO button (p. 38, 122) |
| 32 Intelligent accessory shoe | 37 "Memory Stick" slot* (p. 117) |
| 33 Speaker | 38 Access lamp* (p. 117) |
| 34 PB ZOOM button (p. 64, 164) | 39 END SEARCH button (p. 31, 36) |
| 35 TITLE button (p. 57) | |

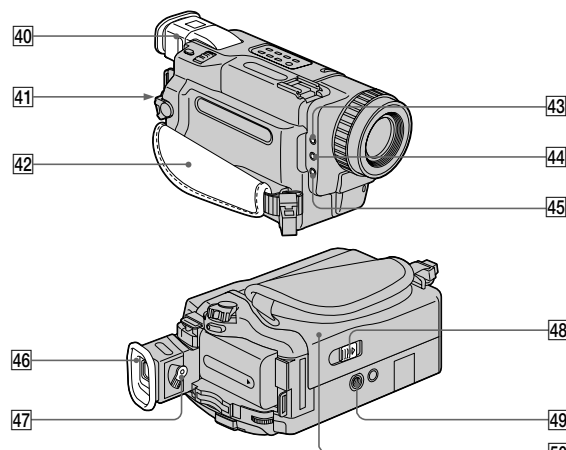
* DCR-TRV340 only



Notes on the intelligent accessory shoe

- The intelligent accessory shoe supplies power to optional accessories such as a video light or microphone or printer (DCR-TRV340 only).
- The intelligent accessory shoe is linked to the POWER switch, allowing you to turn the power supplied by the shoe on and off. Refer to the operating instructions of the accessory for further information.
- The intelligent accessory shoe has a safety device for fixing the installed accessory securely. To connect an accessory, press down and push it to the end, and then tighten the screw.
- To remove an accessory, loosen the screw, and then press down and pull out the accessory.

Identifying parts and controls



- | | |
|---|--|
| 40 Viewfinder (p. 24) | 46 Eyecup |
| 41 LOCK switch* (p. 20) | 47 Viewfinder lens adjustment lever (p. 24) |
| 42 Grip strap | 48 OPEN/EJECT switch (p. 19) |
| 43 MIC (PLUG IN POWER) jack | 49 Tripod receptacle (base) |
| Connect an external microphone (optional). This jack also accepts a "plug-in-power" microphone. | Make sure that the length of the tripod screw is less than 5.5 mm (7/32 inch). Otherwise, you cannot attach the tripod securely and the screw may damage your camcorder. |
| 44 (headphones) jack | 50 Cassette compartment (p. 19) |
| 45 LANC jack | |
| LANC stands for Local Application Control Bus System. The LANC control jack is used for controlling the tape transport of video equipment and other peripherals connected to the video equipment. This jack has the same function as the jack indicated as CONTROL L or REMOTE. | |

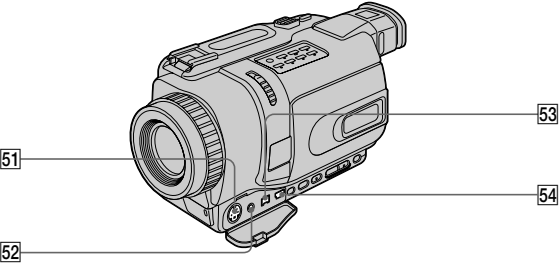
* DCR-TRV340 only

Quick Reference

202

203

Identifying parts and controls

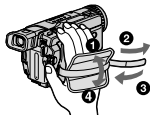


- 51 S VIDEO jack (p. 37, 70, 134)

52 AUDIO/VIDEO jack (p. 37, 70, 134)
- 53 i DV IN/OUT jack (p. 71, 135)
The DV IN / OUT jack is iLINK compatible.

54 USB jack (p. 96, 155)

Fastening the grip strap

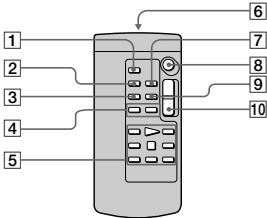


Fasten the grip strap firmly.

Identifying parts and controls

Remote Commander

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



- 1 PHOTO button (p. 38, 122)

2 DISPLAY button (p. 34)

3 SEARCH MODE button (p. 67, 68)

4 I◀/▶I buttons (p. 67, 68)

5 Tape transport buttons (p. 35)

6 Transmitter
Point toward the remote sensor to control the camcorder after turning on the camcorder.
- 7 ZERO SET MEMORY button (p. 66)

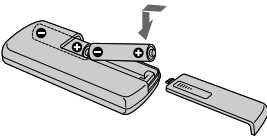
8 START/STOP button (p. 20)

9 DATA CODE button (p. 34)

10 Power zoom button (p. 23)

To prepare the Remote Commander

Insert 2 size AA (R6) batteries by matching the + and – on the batteries to the + and – in the battery compartment.



Notes on the Remote Commander

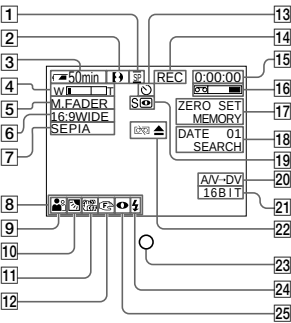
- Point the remote sensor away from strong light sources such as direct sunlight or overhead lighting. Otherwise, the Remote Commander may not function properly.
- Your camcorder works in the Commander mode VTR 2. Commander modes 1, 2 and 3 are used to distinguish your camcorder from other Sony VCRs to avoid erroneous remote control operation. If you use another Sony VCR in the Commander mode VTR 2, we recommend changing the Commander mode or covering the sensor of the VCR with black paper.

Quick reference

Identifying parts and controls

Operation indicators

LCD screen and Viewfinder



- 1 Recording mode (p. 20)
/Mirror mode (p. 25)

2 Format (p. 185)
i, Hi8 or 8 indicator appears.

3 Remaining battery time (p. 26, 34)

4 Zoom (p. 23)/Exposure (p. 52)

5 Fader (p. 44)/Digital effect (p. 48, 63)

6 Wide mode (p. 41)/FRAME indicator (DCR-TRV340 only) (p. 122)

7 Picture effect (p. 46, 62)

8 Volume (p. 33)/Data code (p. 34)

9 PROGRAM AE (p. 51)

10 Backlight (p. 27)

11 SteadyShot off (p. 106)

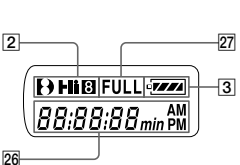
12 Manual focusing (p. 53)

13 Self-timer (DCR-TRV340 only) (p. 30, 40, 126)

14 STBY/REC (p. 20)/Video control mode (p. 35)

15 Tape counter (p. 26)/Time code (p. 26)/Self-diagnosis display (p. 182)/Tape Photo recording (p. 38)

Display window



- 16 Remaining tape (p. 26)

17 ZERO SET MEMORY (p. 66)

18 Search mode (p. 31, 67, 68)

19 NIGHTSHOT (p. 28)/SUPER NIGHTSHOT (p. 28)/COLOR SLOW SHUTTER (p. 28)

20 A/V → DV (p. 87)/DV IN (p. 90)

21 Audio mode (p. 111)

22 Warning (p. 183)

23 Recording lamp (p. 20)
This indicator appears in the viewfinder.

24 Video flash ready (p. 105)
This indicator appears when you use the video flash light (optional).

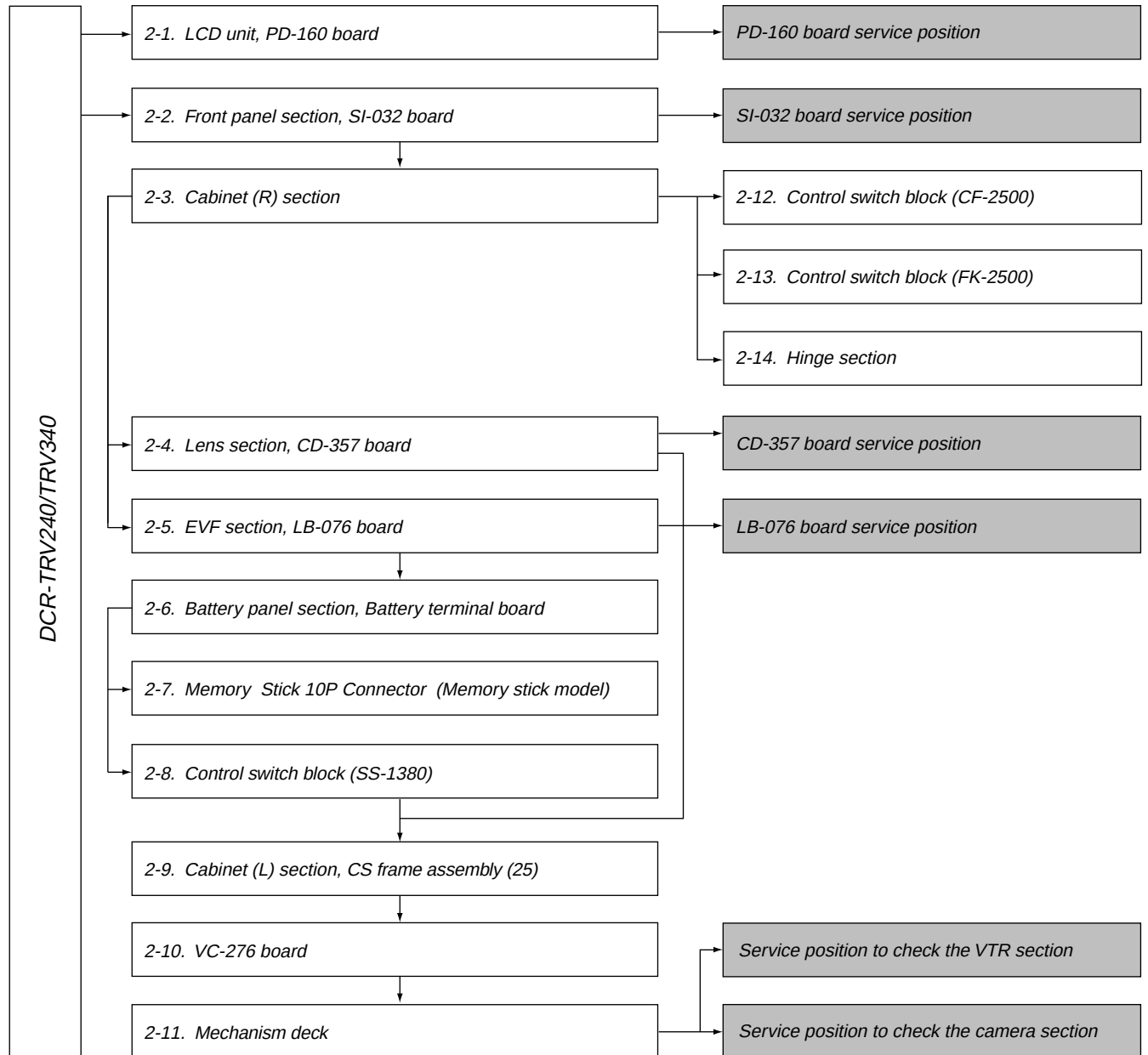
25 Video flash mode (p. 105)
This indicator appears when you use the video flash light (optional).

26 Tape counter (p. 26)/Time code (p. 26)/Self-diagnosis display (p. 182)/Remaining battery time (p. 13)

27 FULL charge (p. 13)

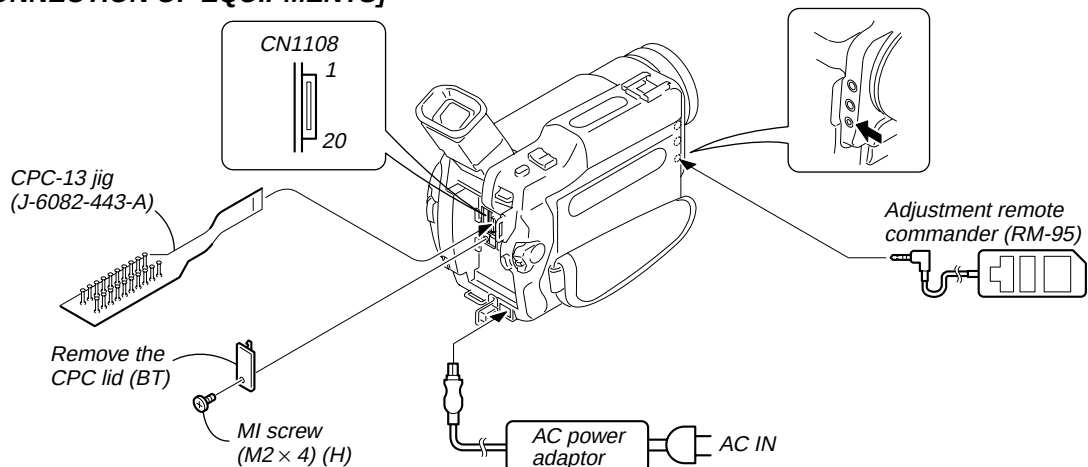
SECTION 2 DISASSEMBLY

The following flowchart shows the disassembly procedure.



Memory stick model : DCR-TRV340

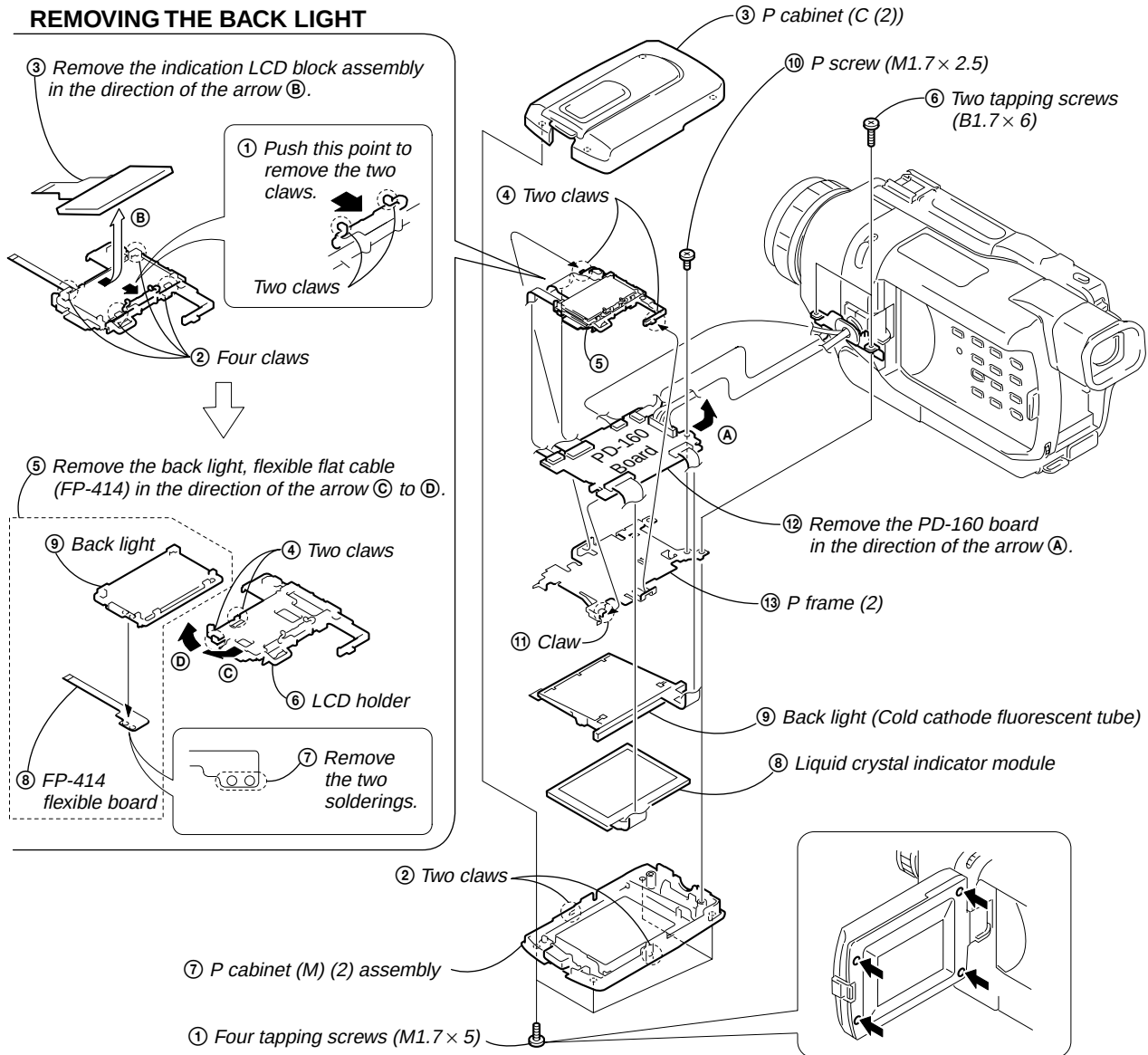
[CONNECTION OF EQUIPMENTS]



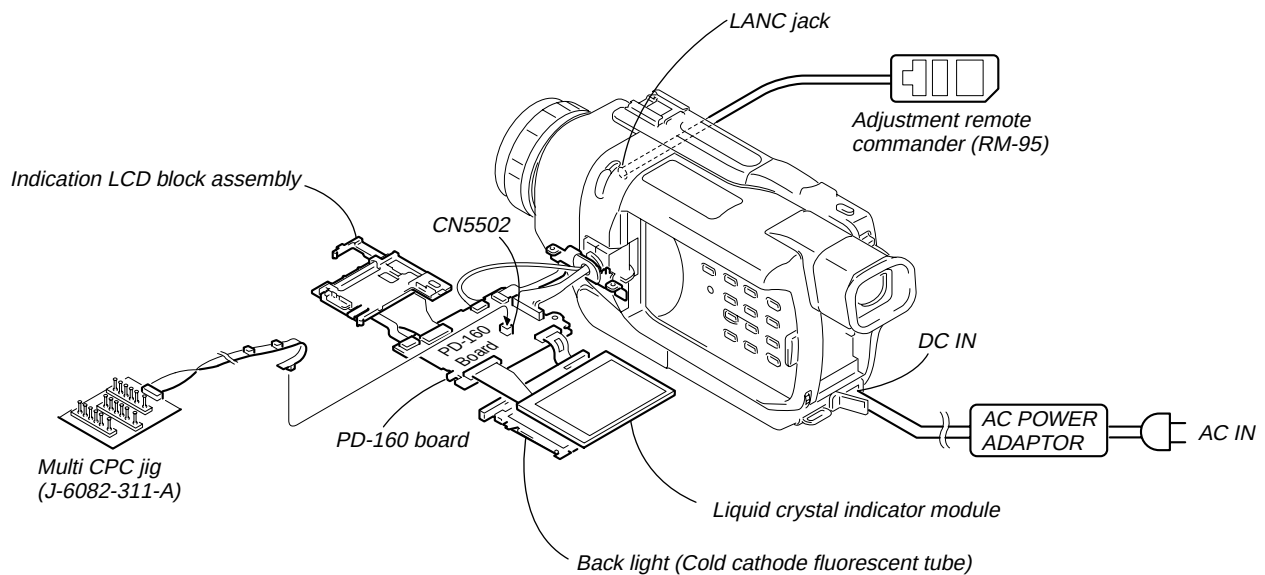
NOTE: Follow the disassembly procedure in the numerical order given.

2-1. LCD UNIT, PD-160 BOARD

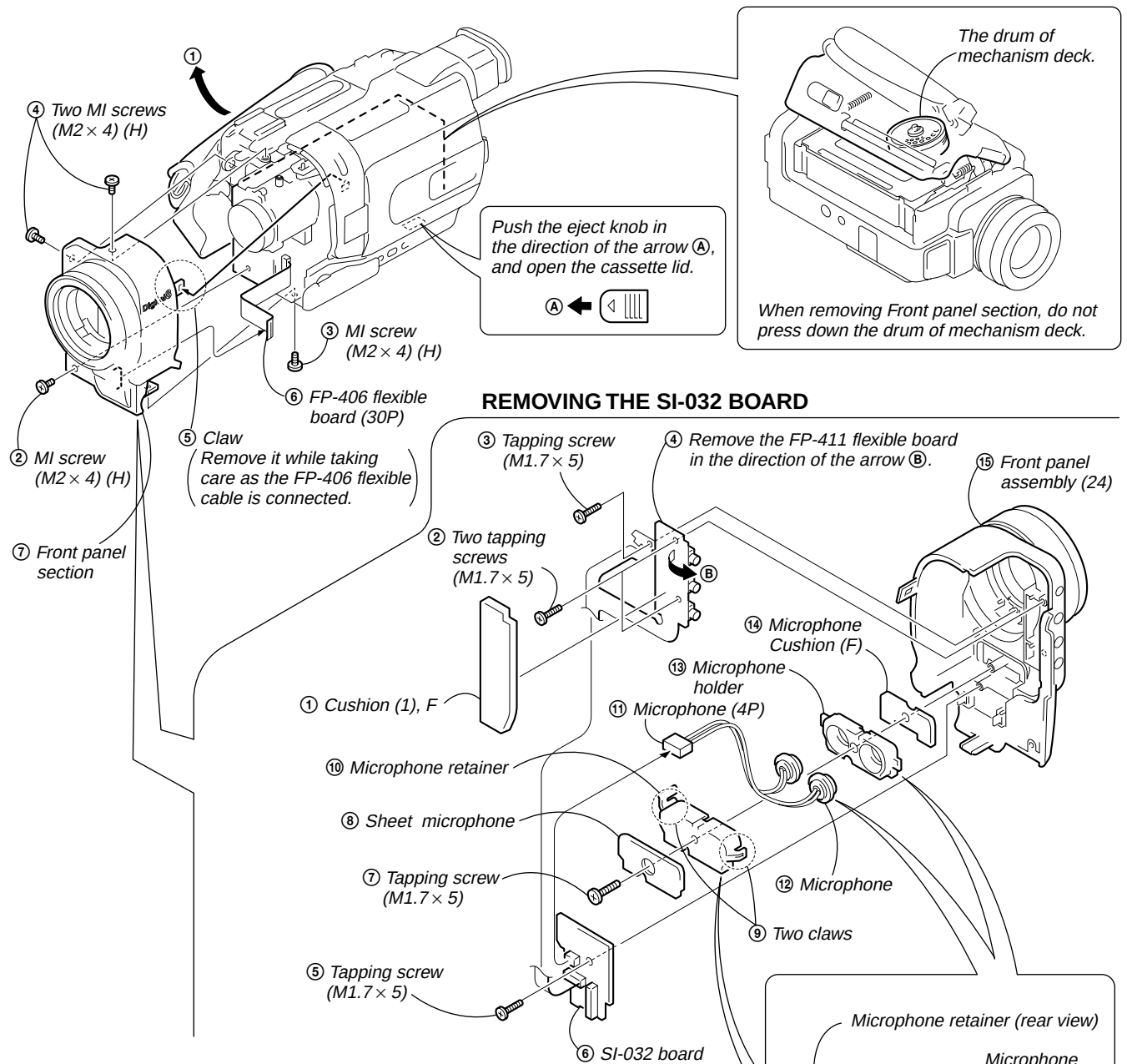
REMOVING THE BACK LIGHT



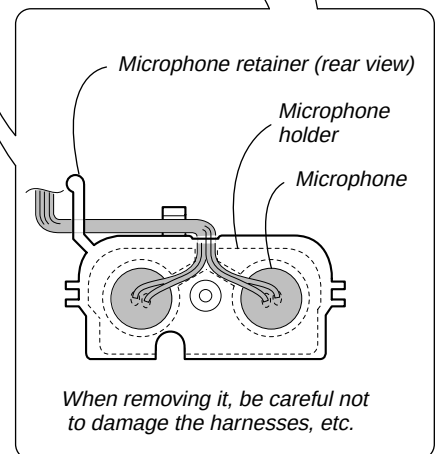
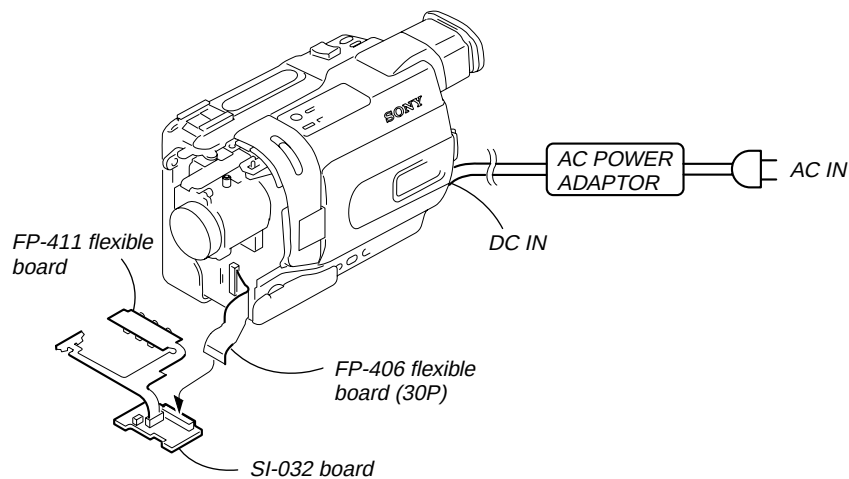
[PD-160 BOARD SERVICE POSITION]



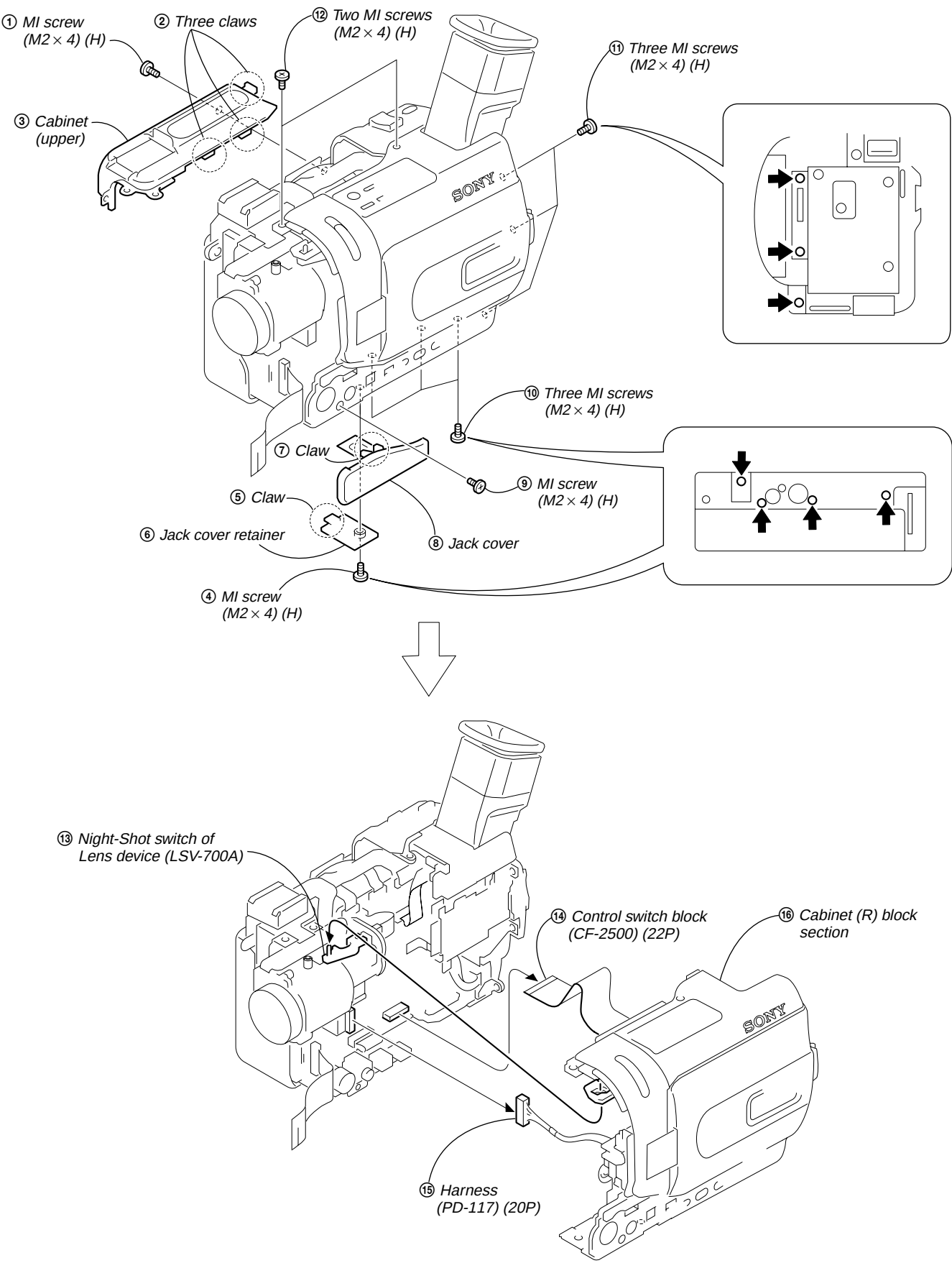
2-2. FRONT PANEL SECTION, SI-032 BOARD



[SI-032 BOARD SERVICE POSITION]

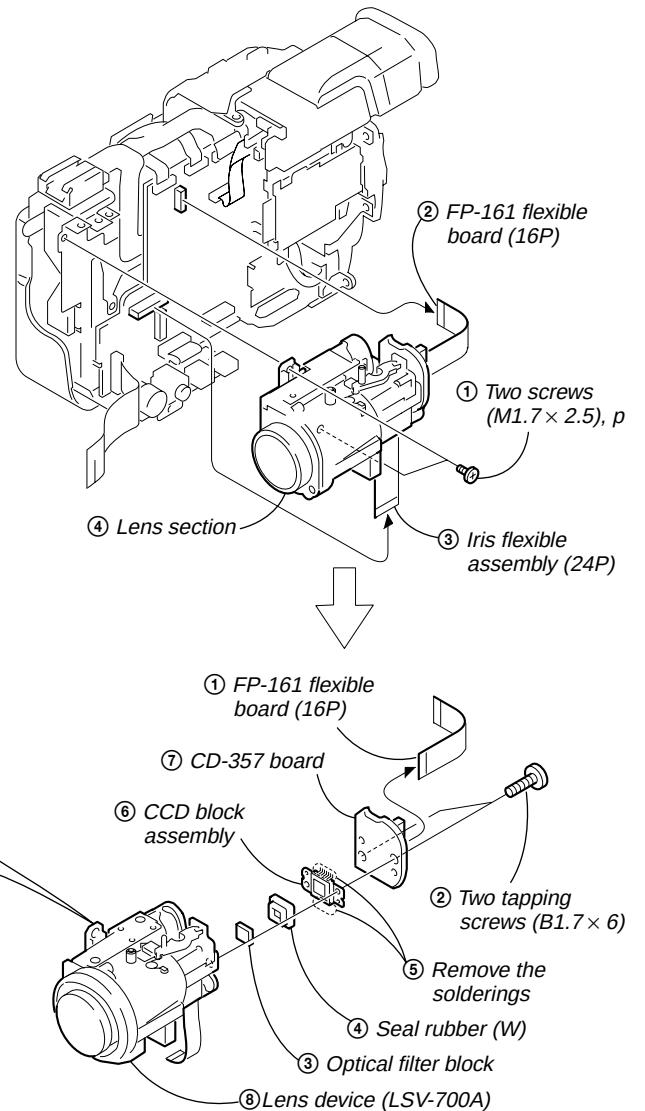
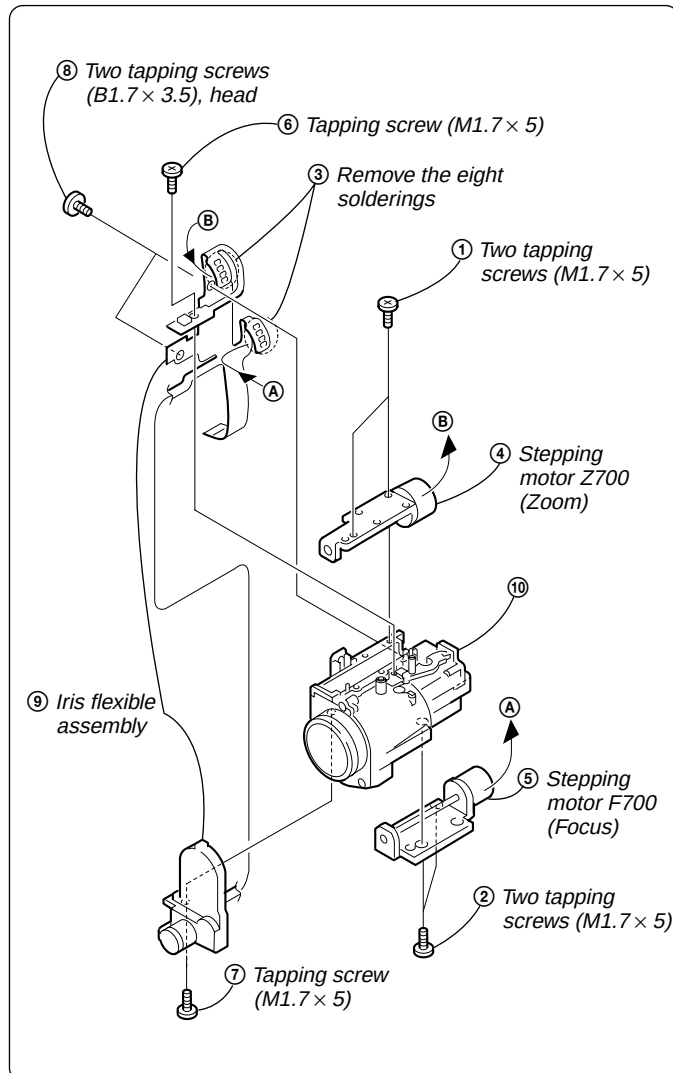


2-3. CABINET (R) SECTION

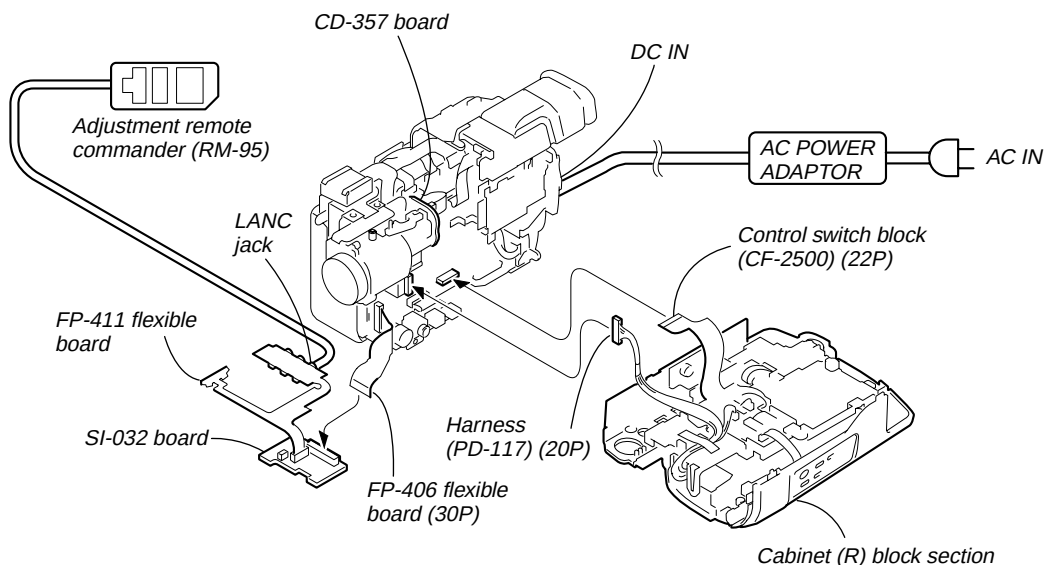


2-4. LENS SECTION, CD-357 BOARD

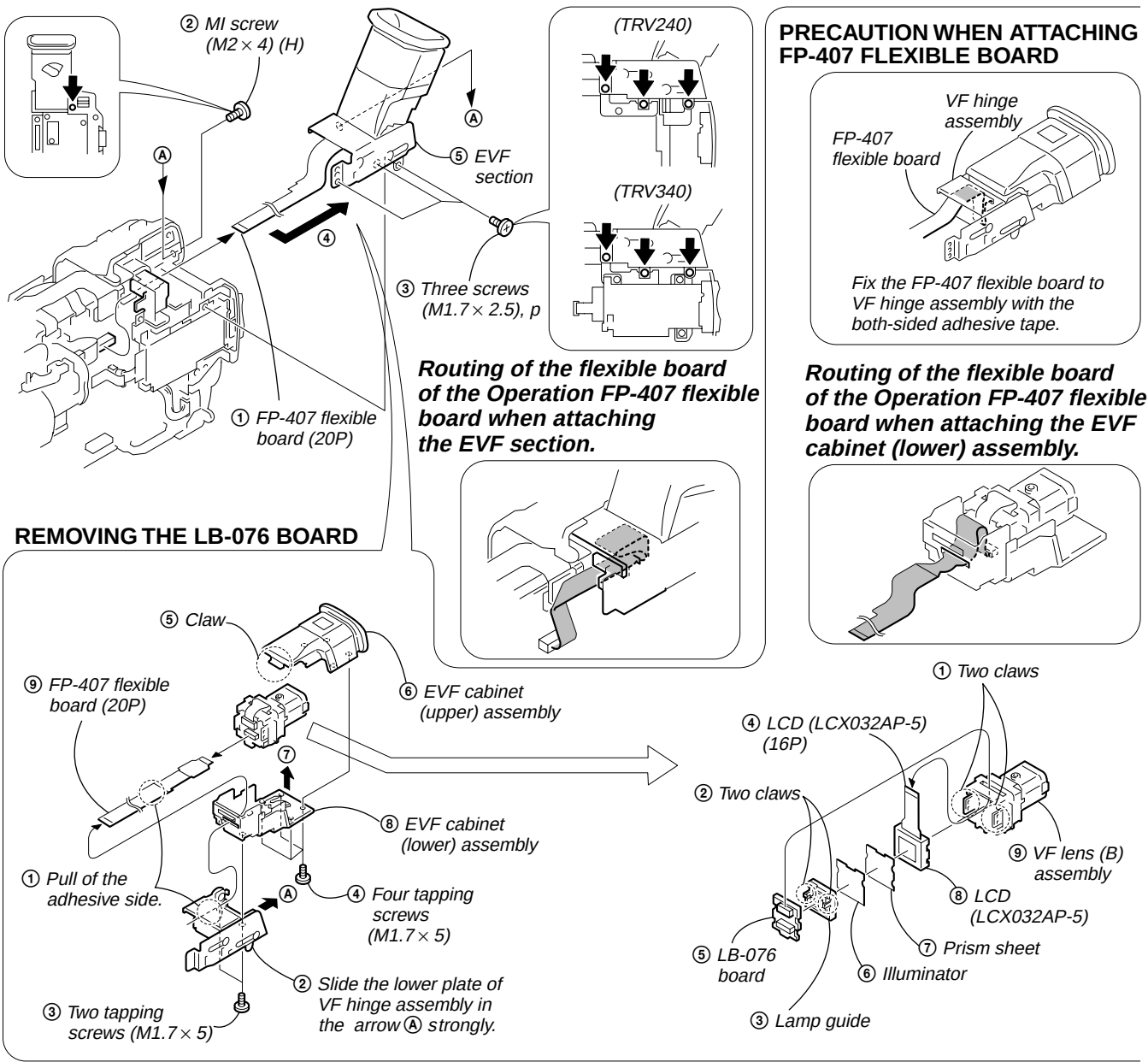
REMOVING THE IRIS FLEXIBLE ASSEMBLY



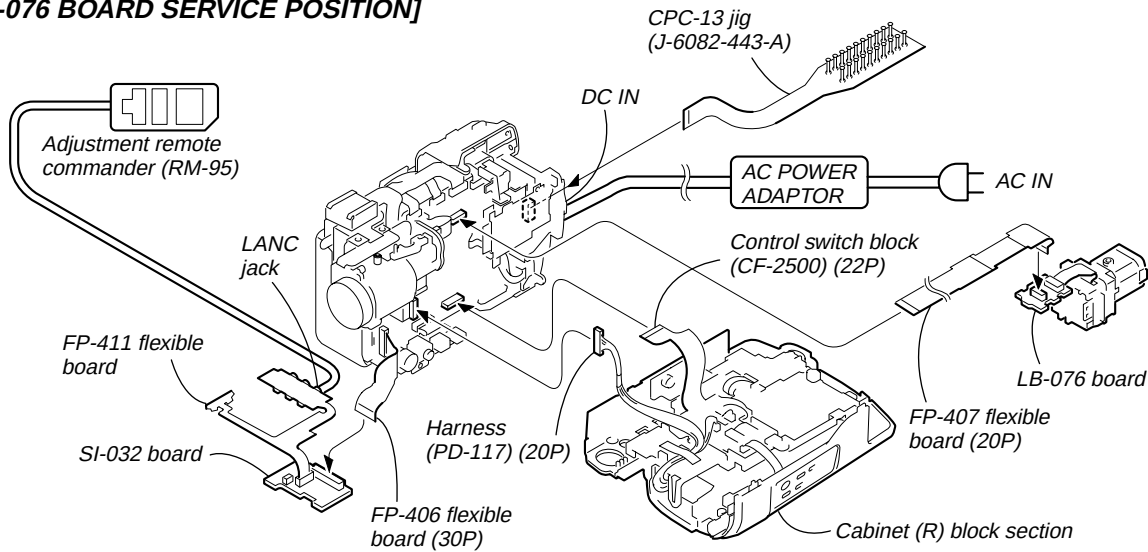
[CD-357 BOARD SERVICE POSITION]



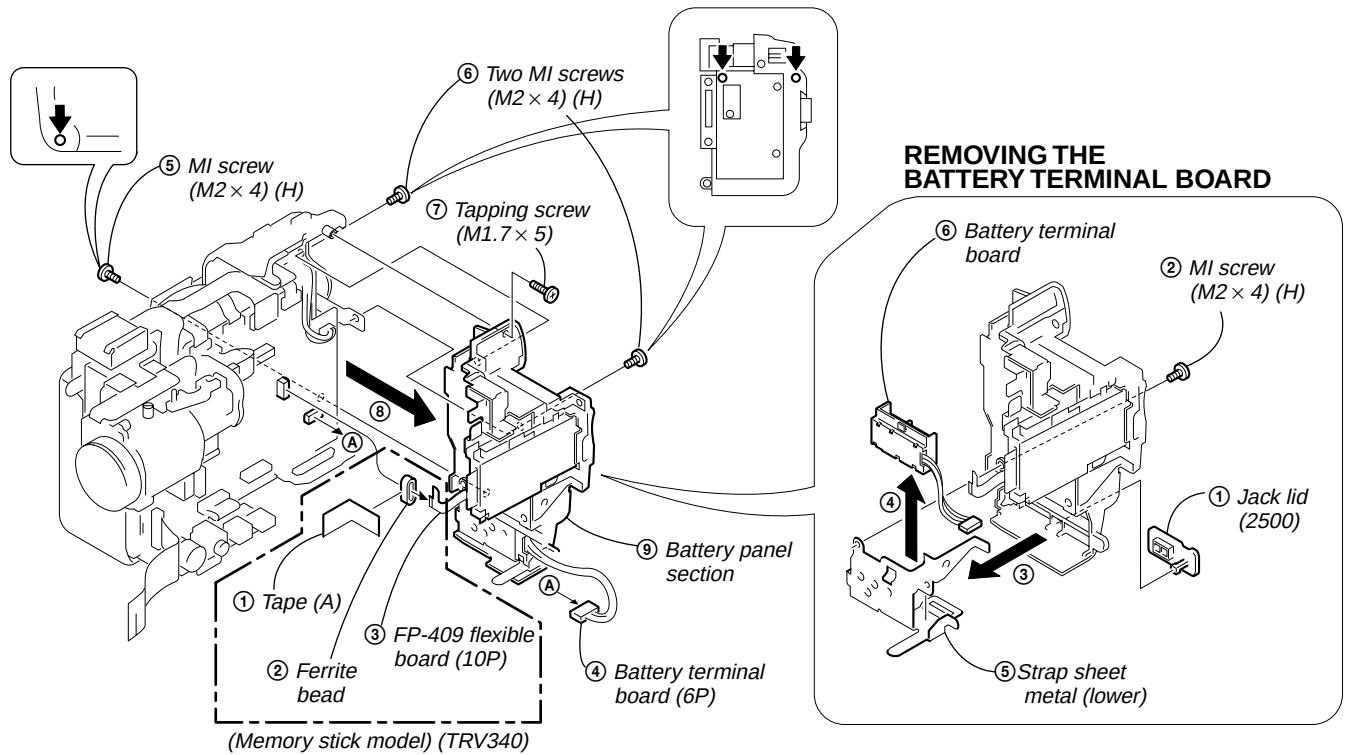
2-5. EVF SECTION, LB-076 BOARD



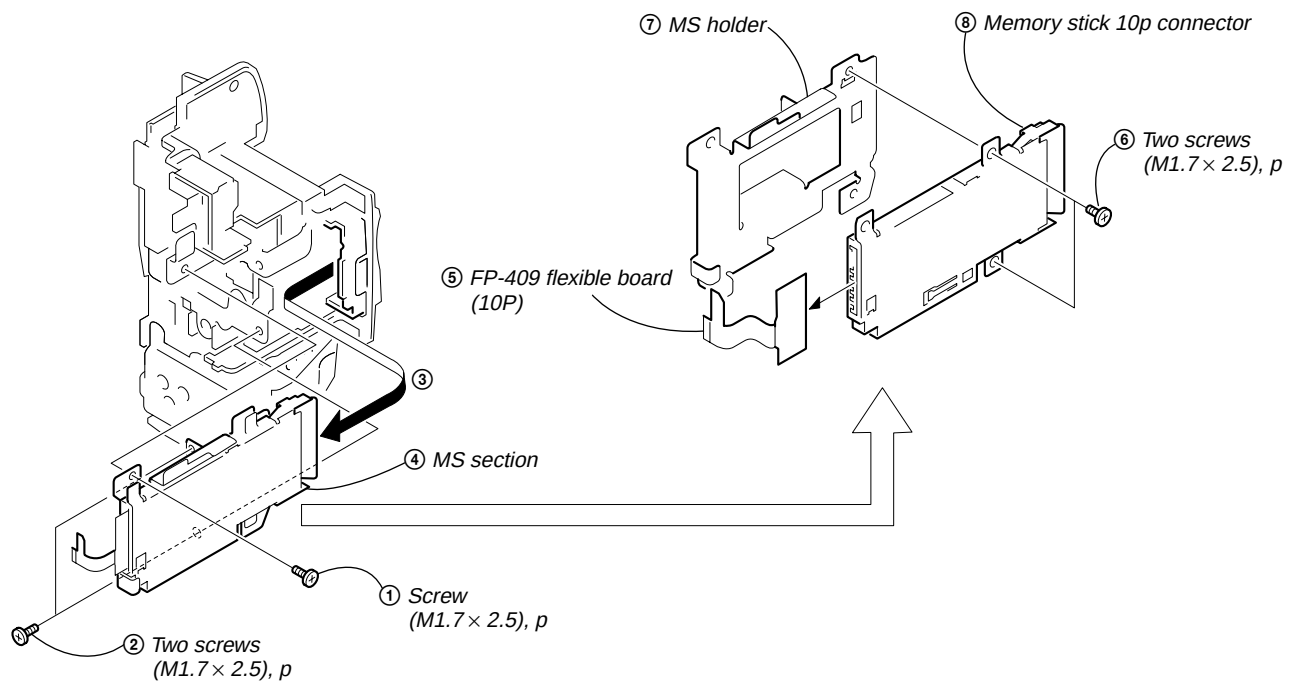
[LB-076 BOARD SERVICE POSITION]



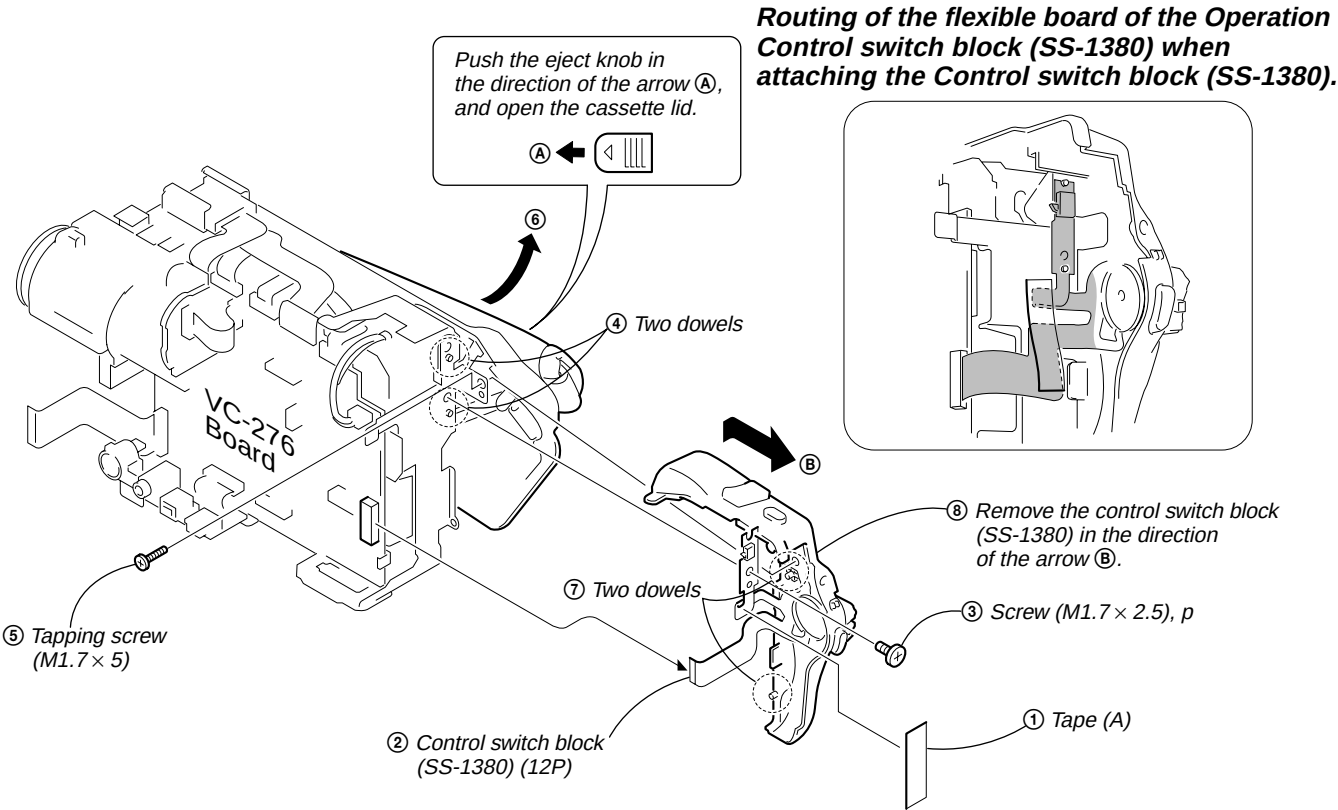
2-6. BATTERY PANEL SECTION, BATTERY TERMINAL BOARD



2-7. MEMORY STICK 10P CONNECTOR (MEMORY STICK MODEL) (TRV340)

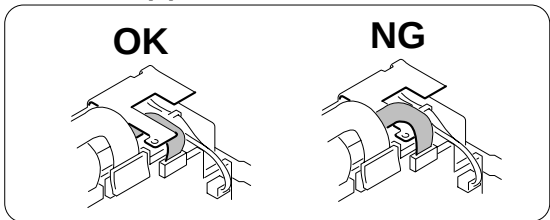


2-8. CONTROL SWITCH BLOCK (SS-1380)

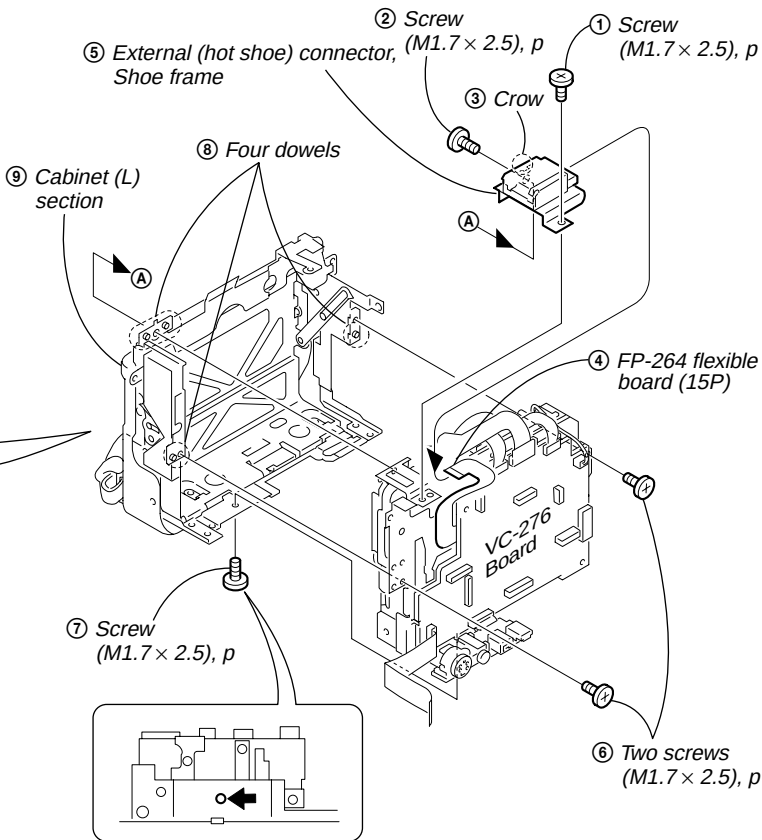
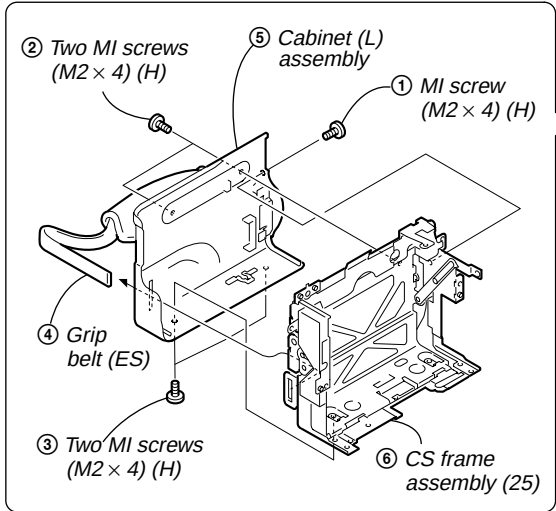


2-9. CABINET (L) SECTION, CS FRAME ASSEMBLY (25)

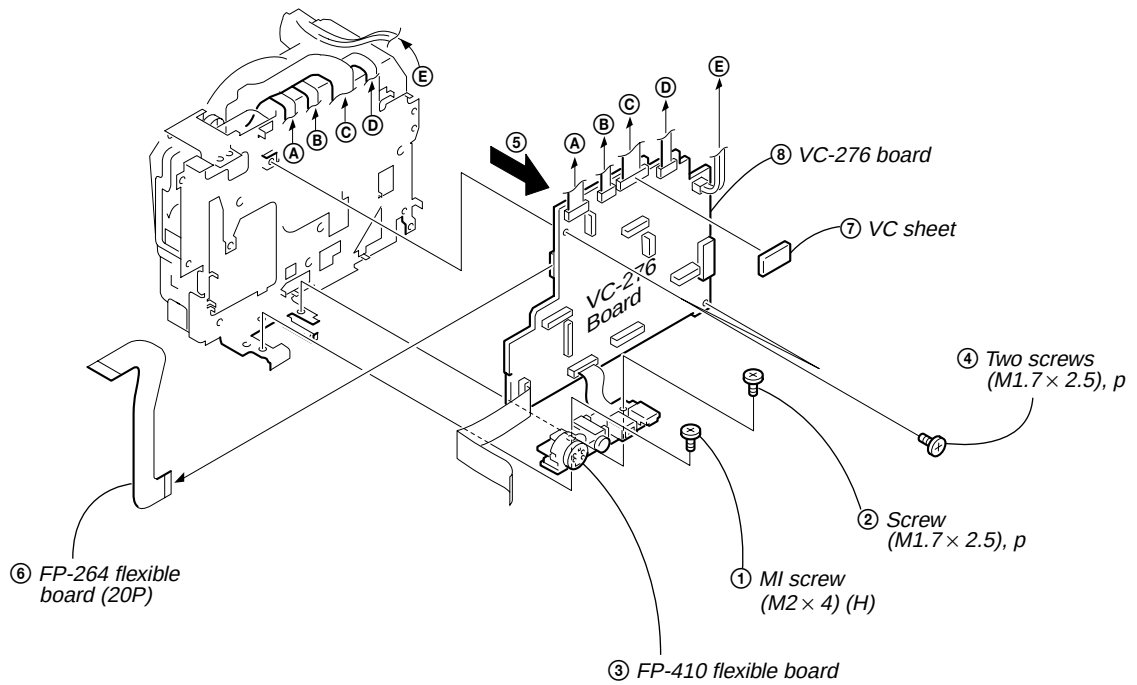
PRECAUTION DURING CABINET (L) SECTION INSTALLATION



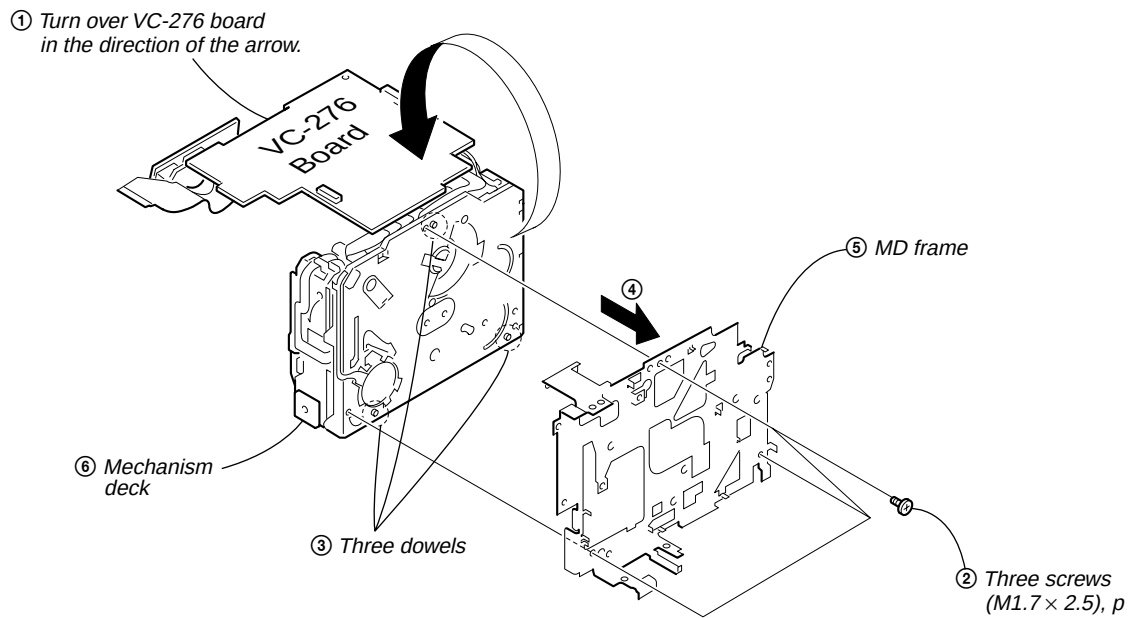
REMOVING THE CS FRAME ASSEMBLY (25)



2-10.VC-276 BOARD



2-11.MECHANISM DECK



[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).

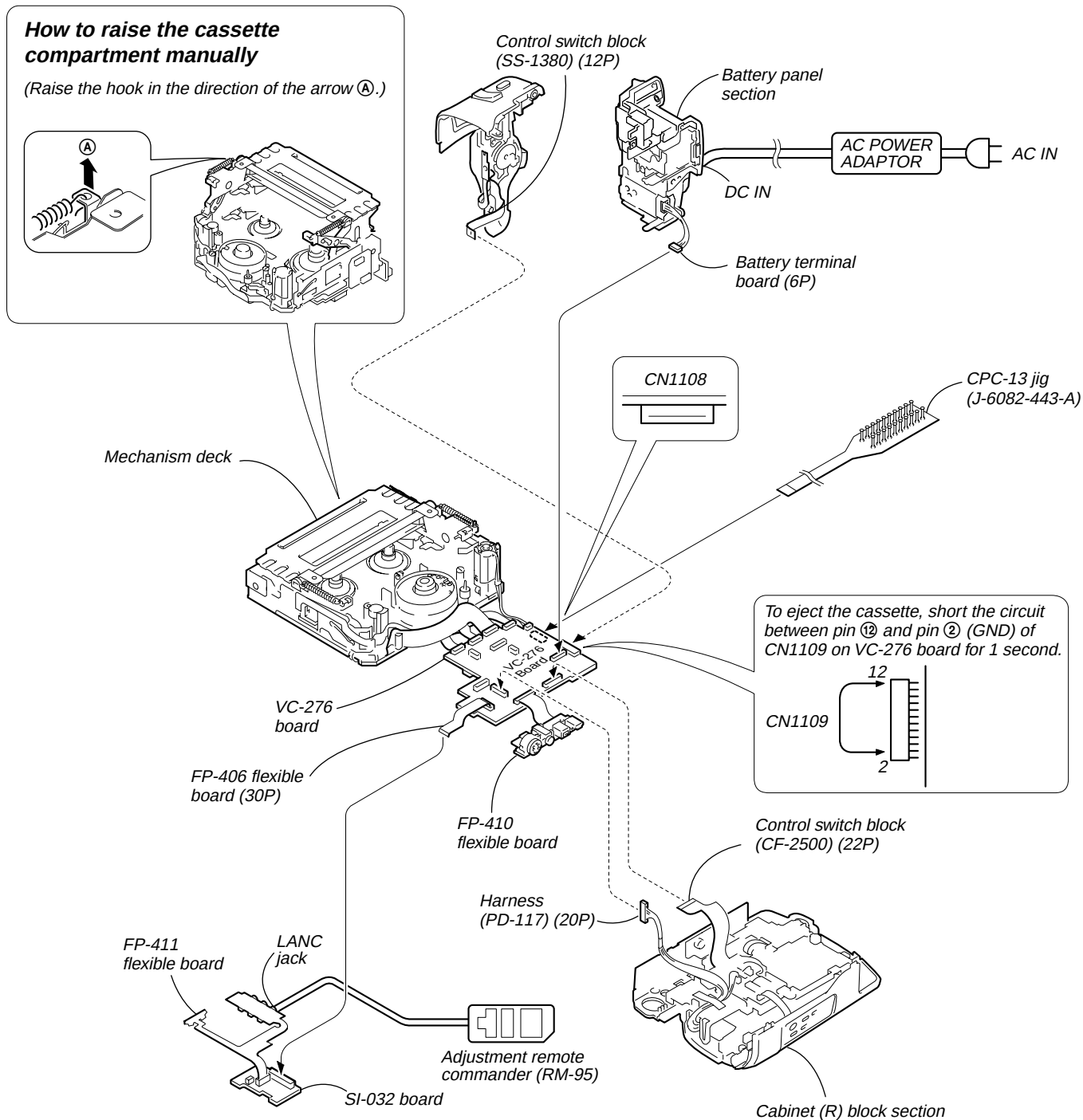
Setting the "Forced VTR Power ON" mode

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- 3) 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: 0, address: 10, and set data: 00.
- 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.

Note : If the machine malfunctions (the operating mode changes by itself), connect the Cabinet (R) section.



[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.

When you want to operate to zoom and focus, use the controls on the remote commander (with the HOLD switch off).

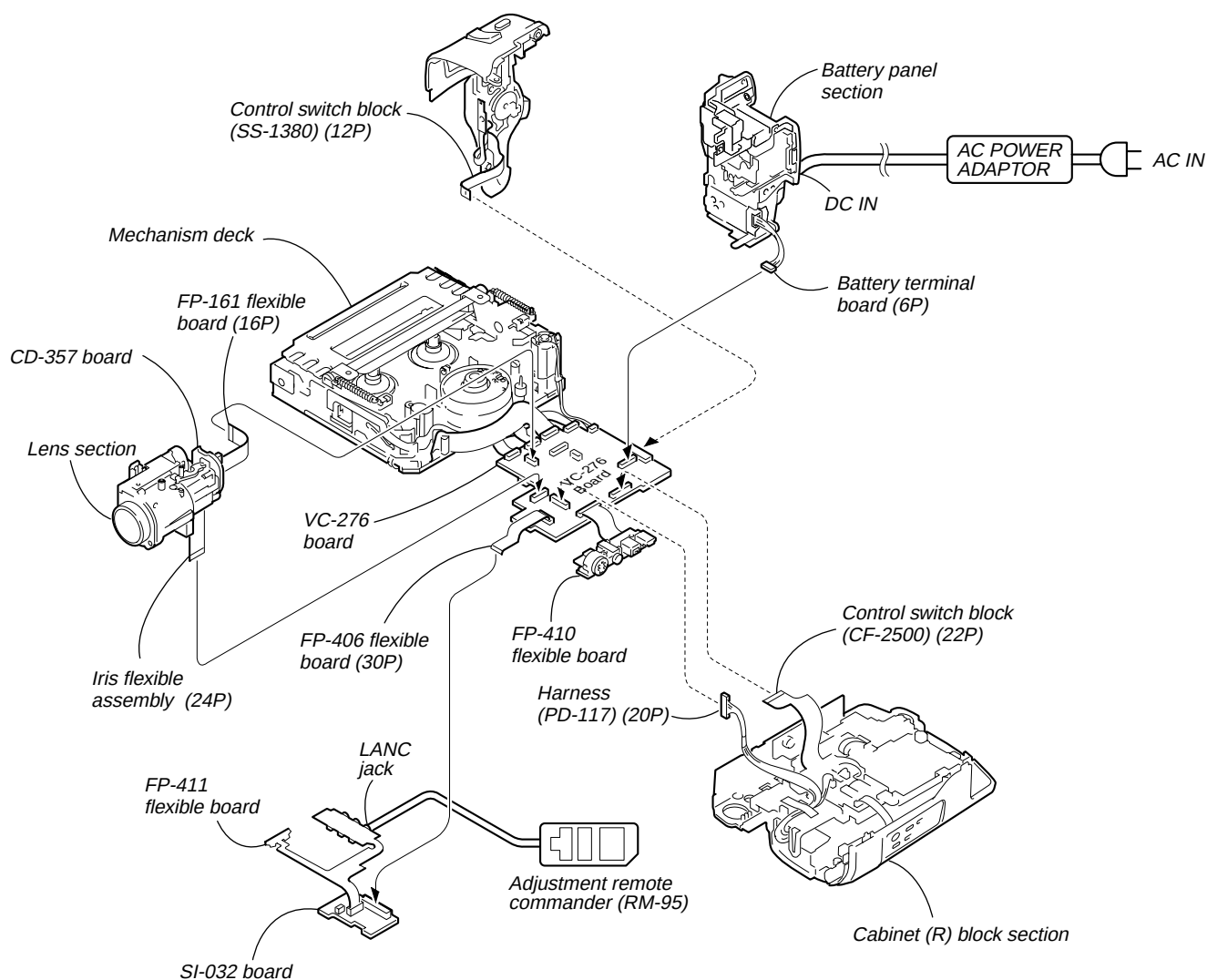
Setting the "Forced Camera Power ON" mode

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- 3) Select page: D, address: 10, set data: 01 and press the PAUSE button of the adjustment remote commander.

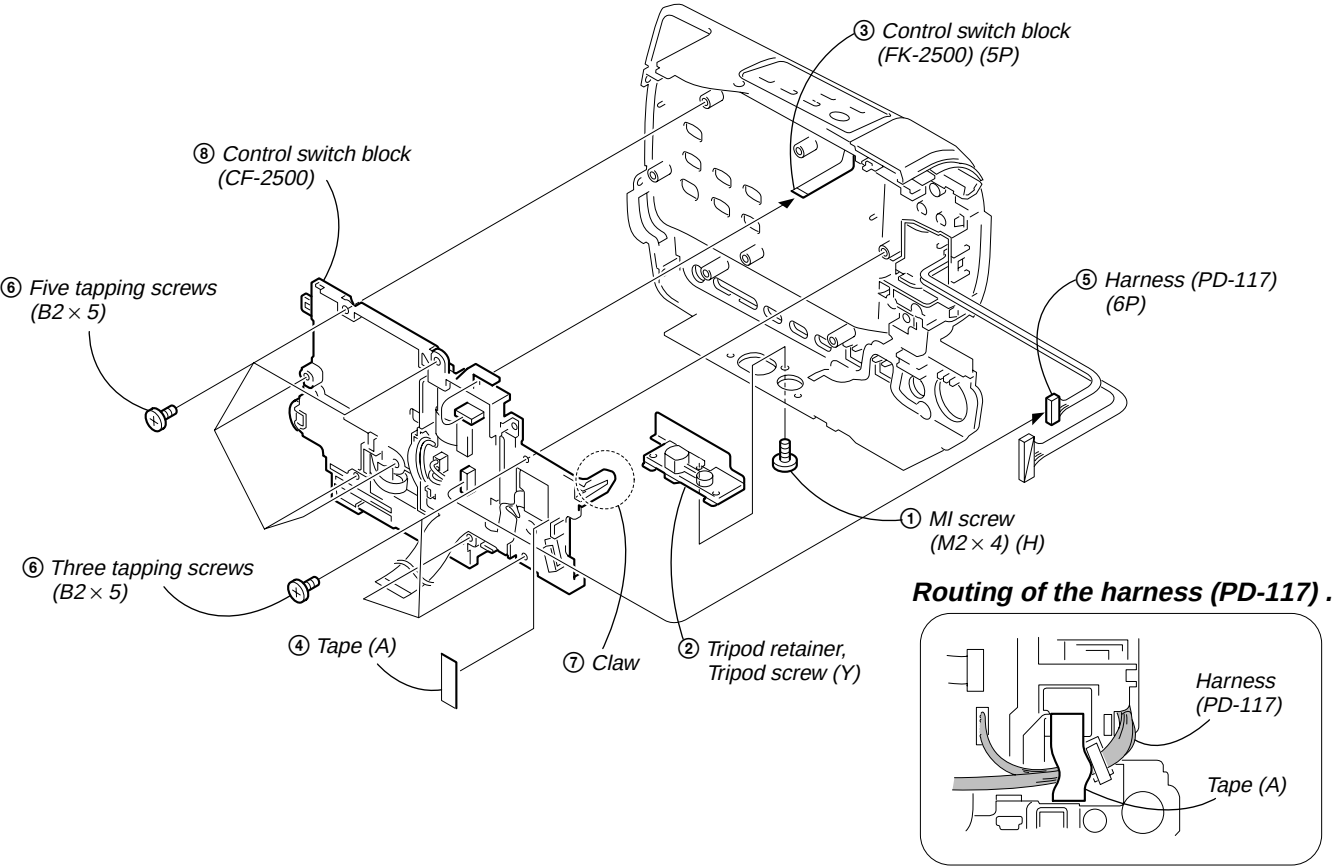
Exiting the "Forced Camera Power ON" mode

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 0, address: 10, and set data: 00.
- 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.

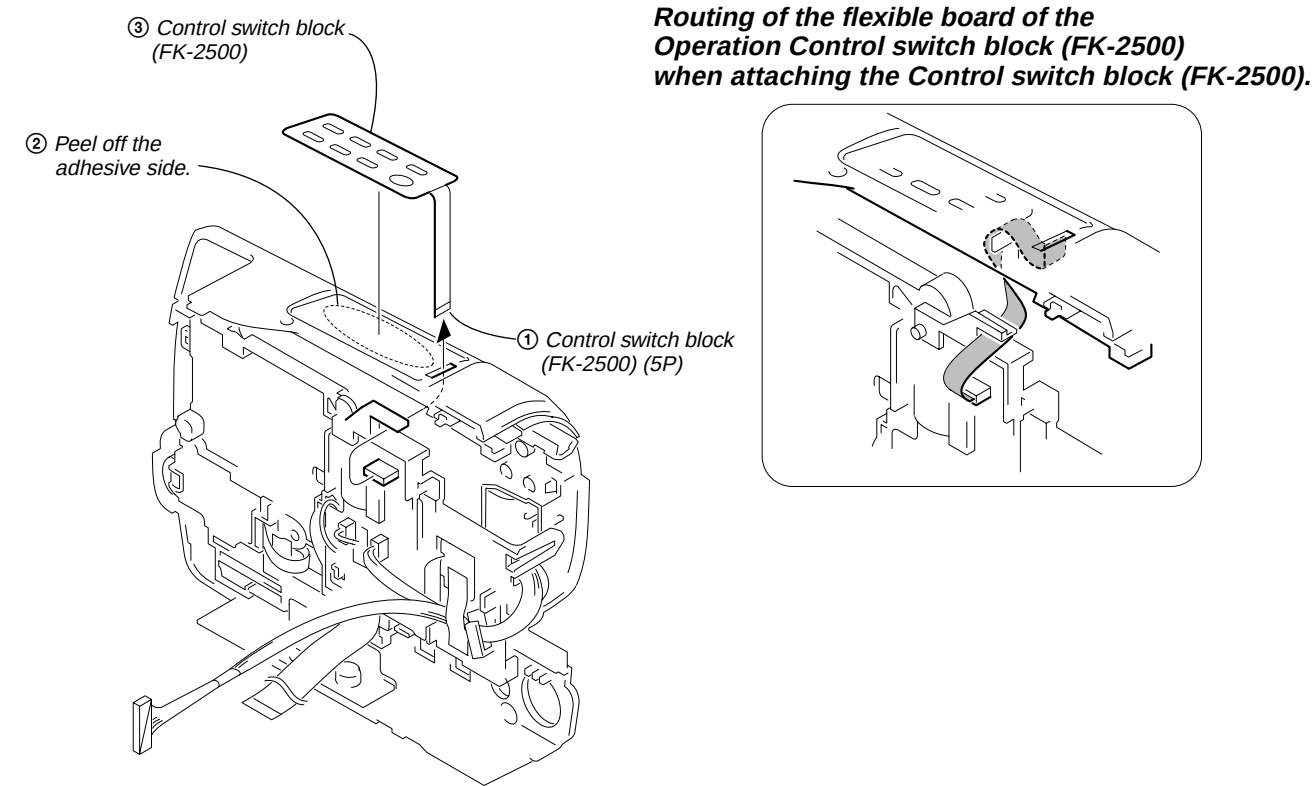
Note : If the machine malfunctions (the operating mode changes by itself), connect the Cabinet (R) section.



2-12.CONTROL SWITCH BLOCK (CF-2500)

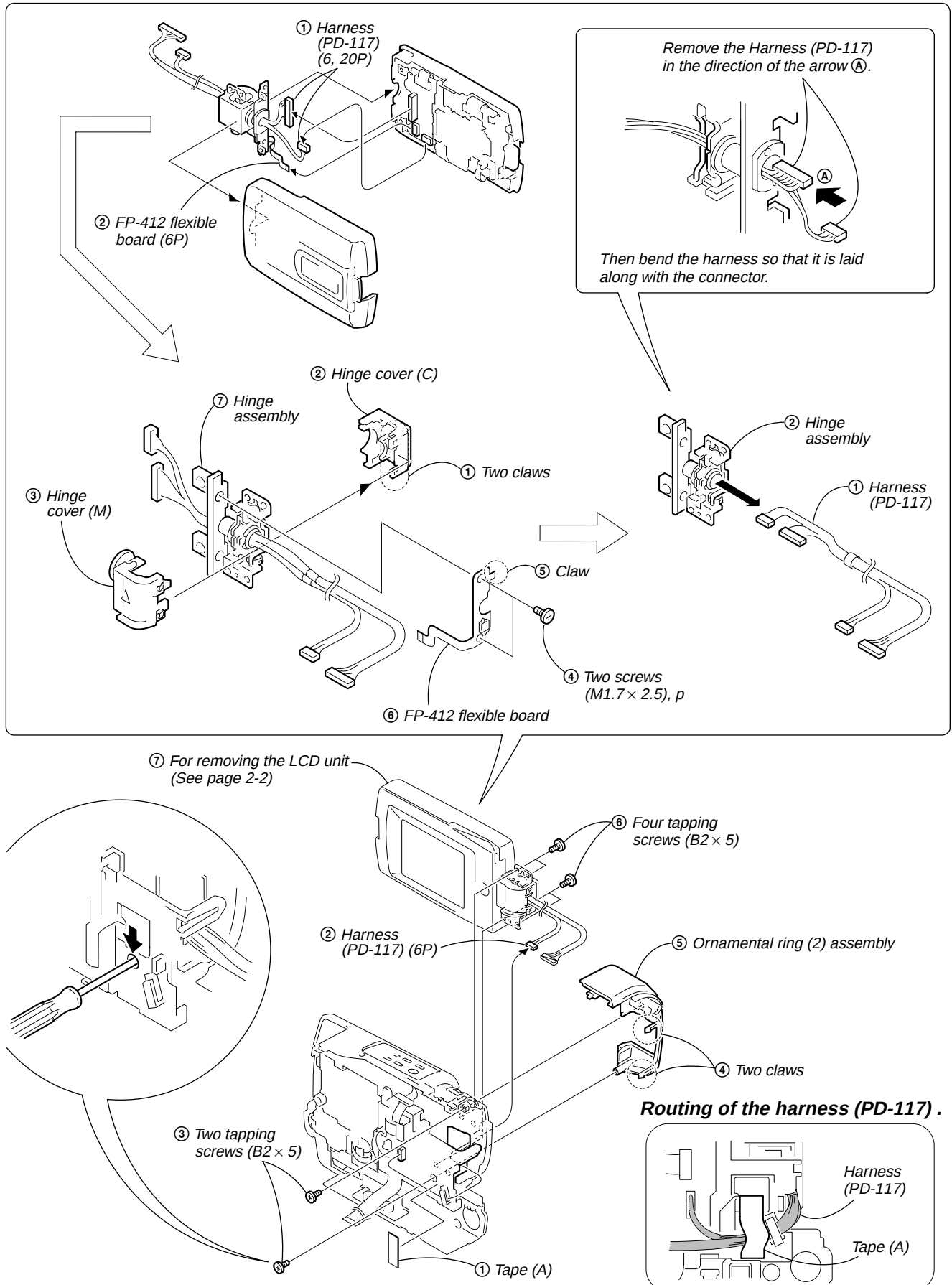


2-13.CONTROL SWITCH BLOCK (FK-2500)

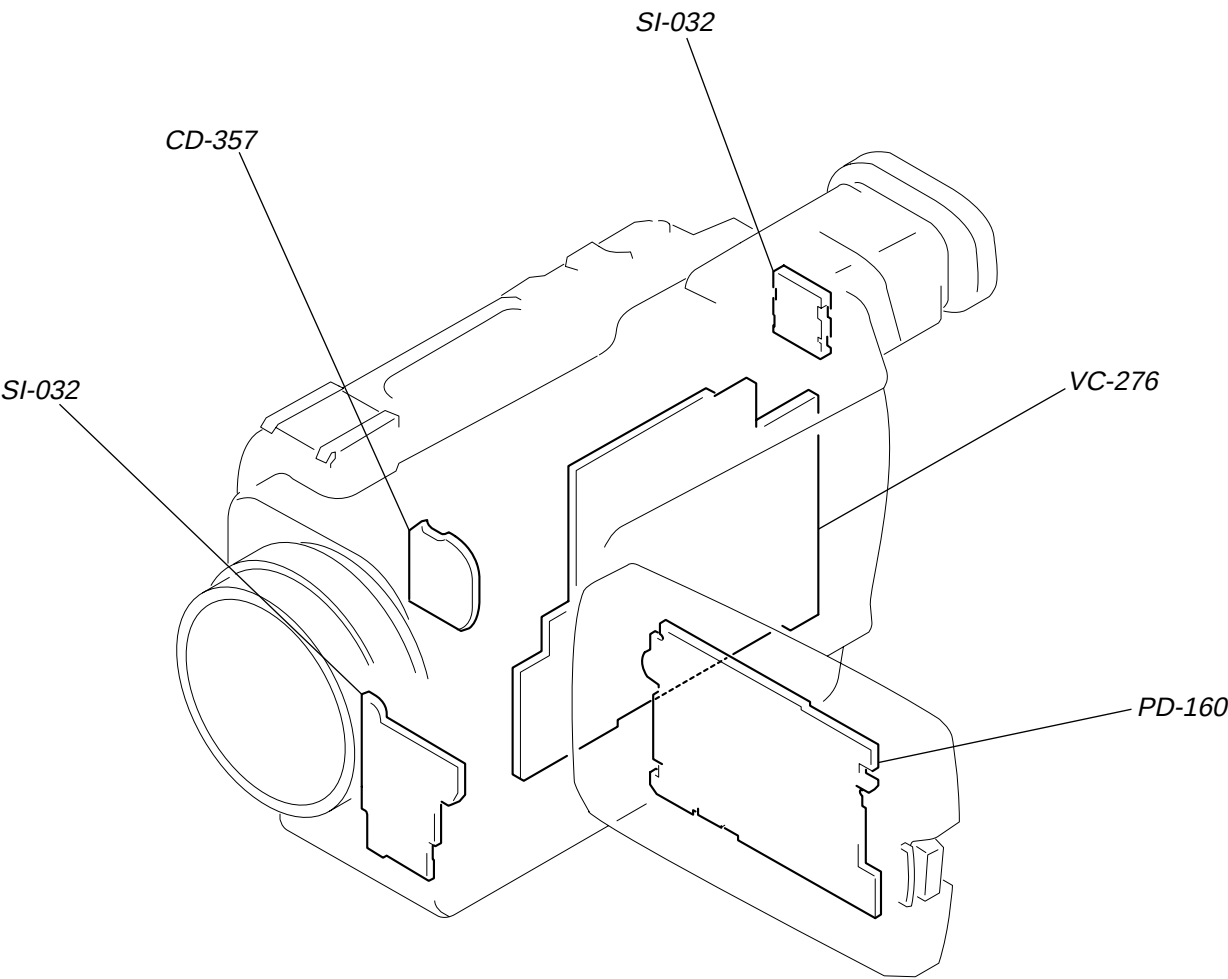


2-14.HINGE SECTION

REMOVING THE HINGE ASSEMBLY



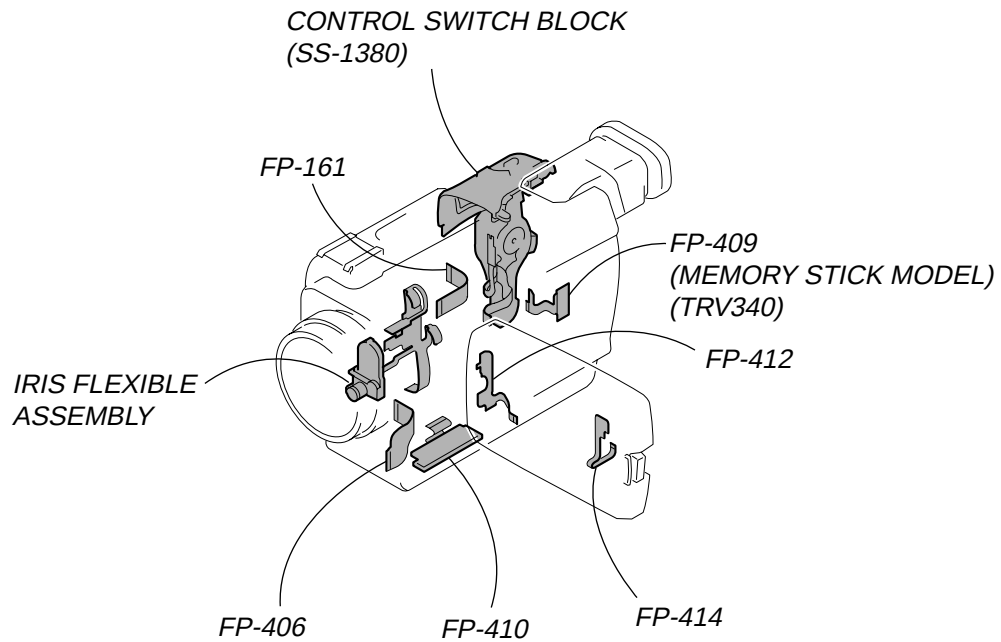
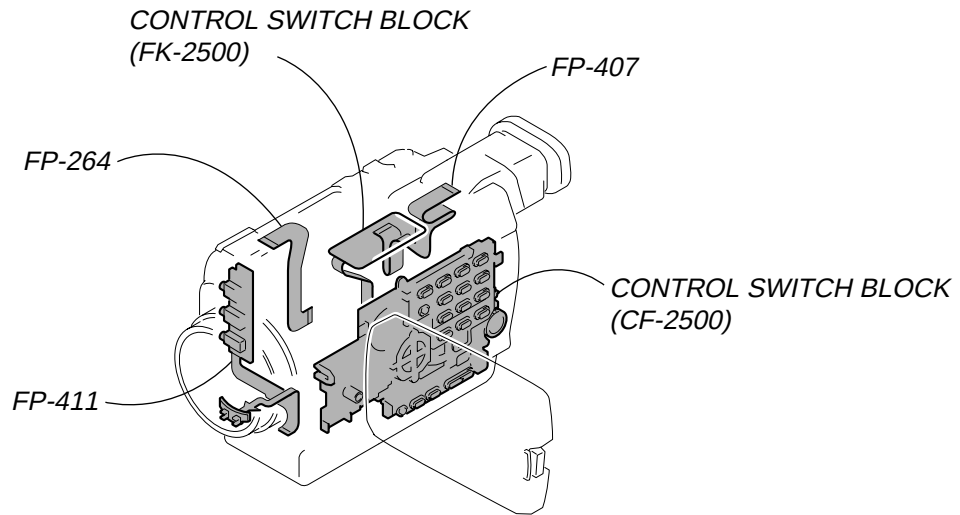
2-15.CIRCUIT BOARDS LOCATION



NAME	FUNCTION
CD-357	CCD IMAGER
LB-076	EVF BACK LIGHT
PD-160	CHA, DISPLAY DRIVE, BACK LIGHT/LCD DRIVE, TG
SI-032	STEADY SHOT, LASER LINK
VC-276	CAMERA, VIDEO, DV INTERFACE, CAMERA/MECHA/HI CONTROL, AUDIO, D/D CONVERTER

2-16.FLEXIBLE BOARDS LOCATION

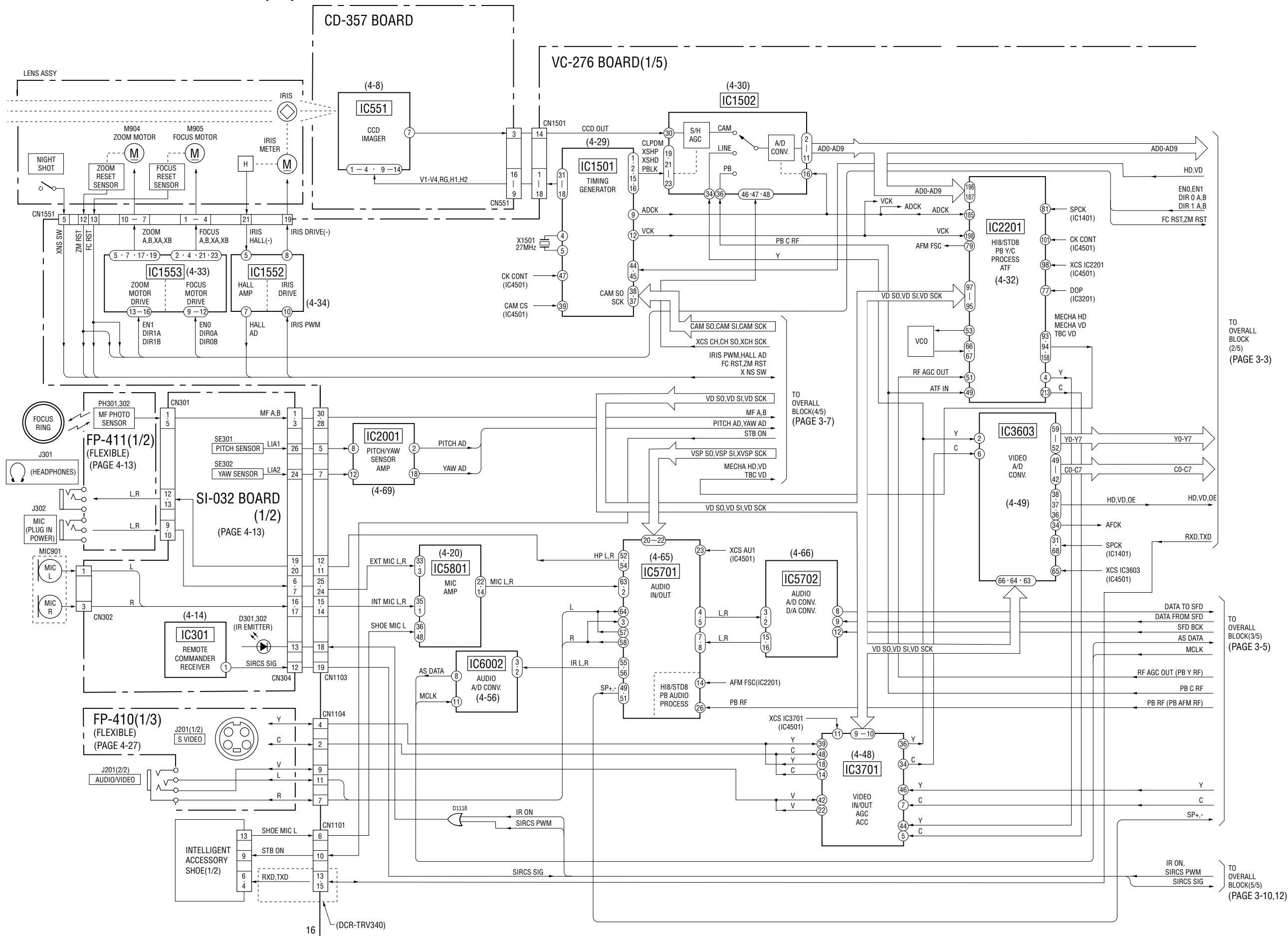
The flexible boards contained in the mechanism deck are not shown.

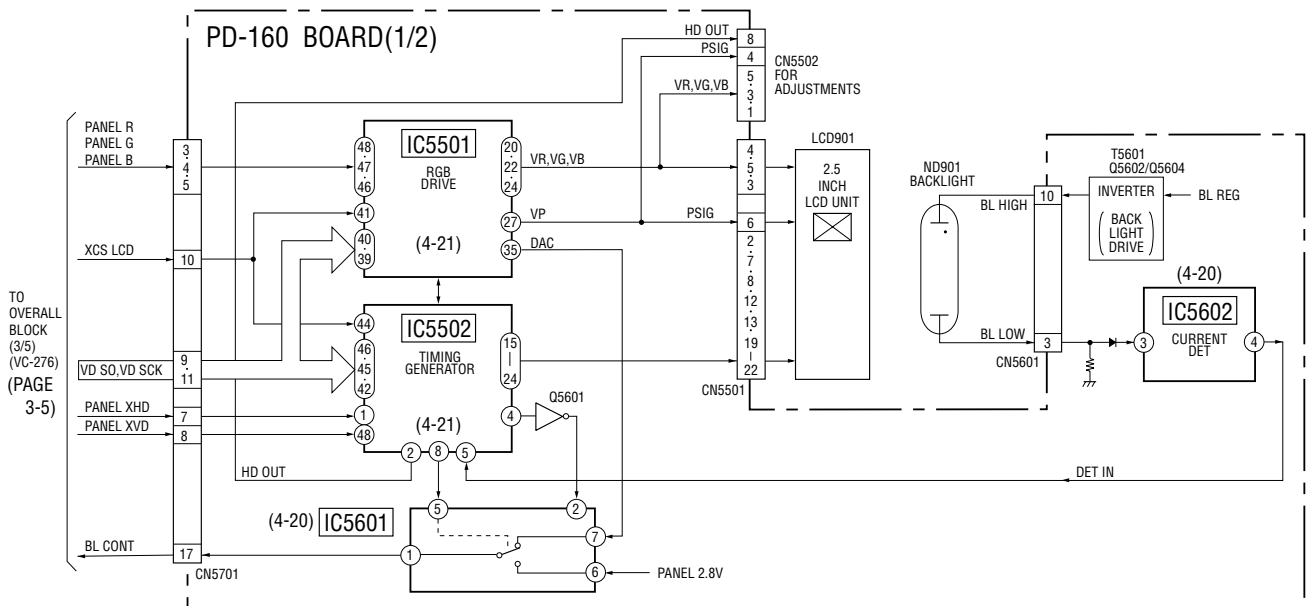


SECTION 3 BLOCK DIAGRAMS

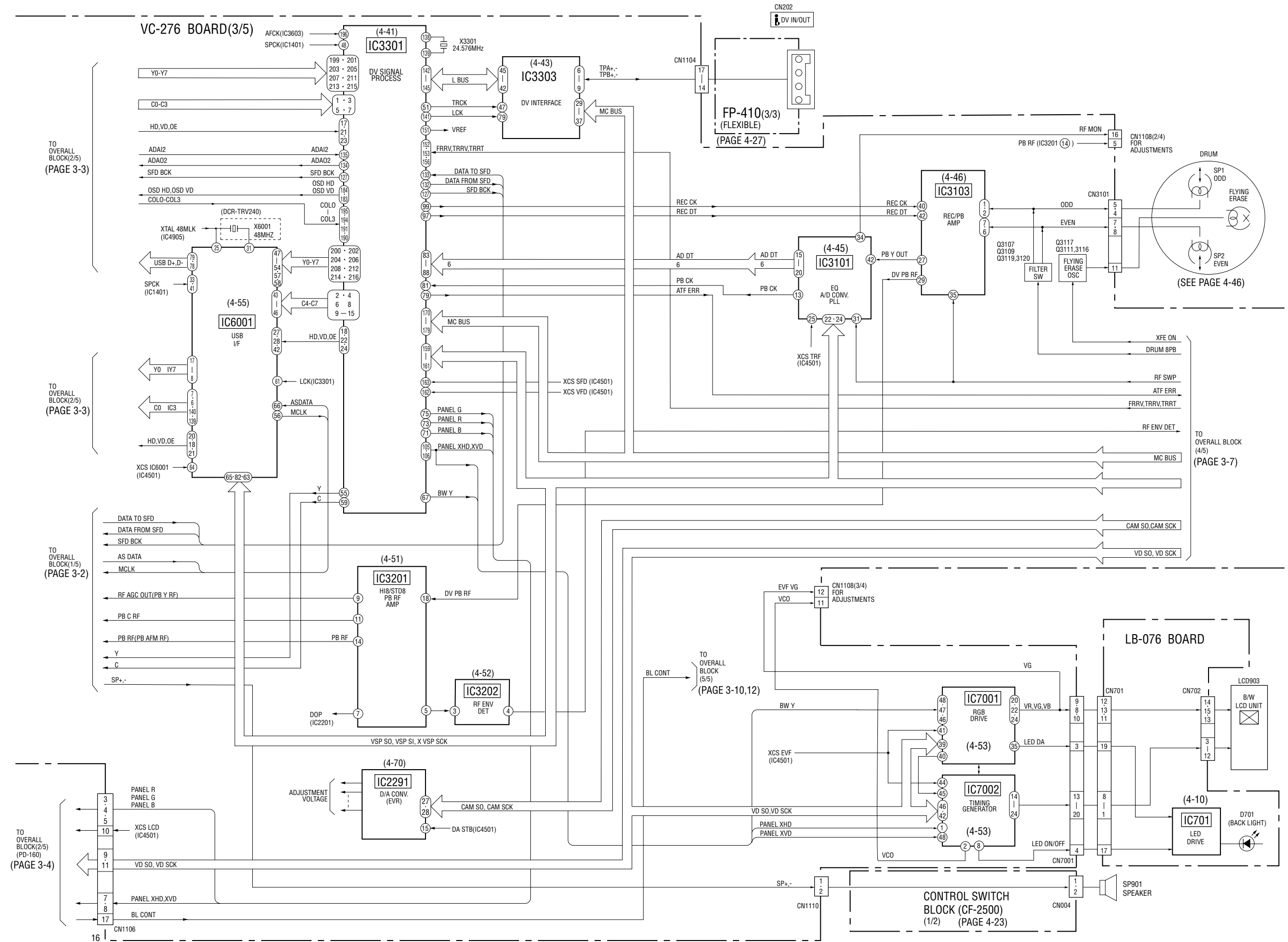
3-1. OVERALL BLOCK DIAGRAM (1/5)

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



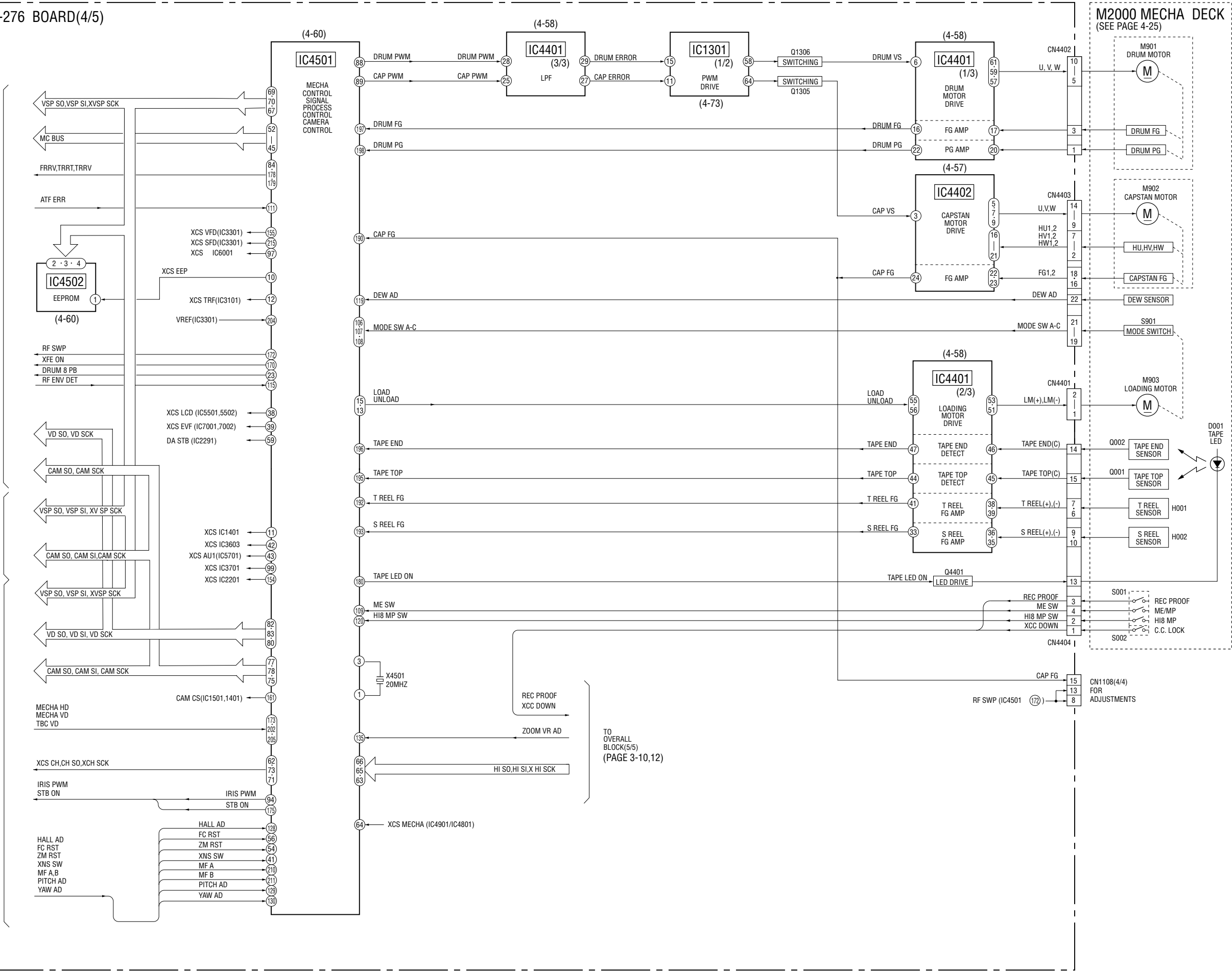


3-3. OVERALL BLOCK DIAGRAM (3/5) () : Page No. shown in () indicates the page to refer on the schematic diagram.



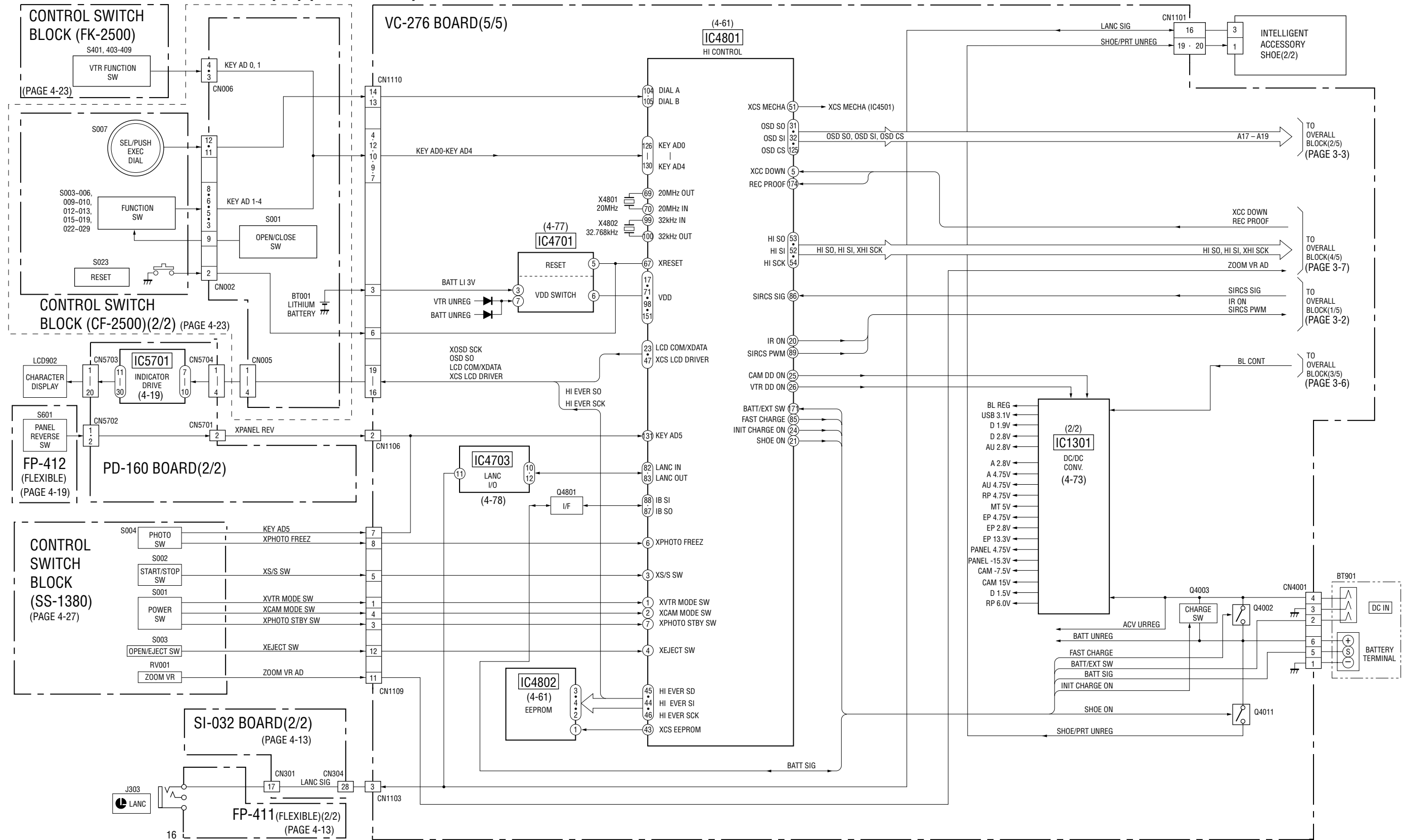
() : Page No. shown in () indicates the page to refer on the schematic diagram.

TO
OVERALL
BLOCK(1/5)
(PAGE 3-2)

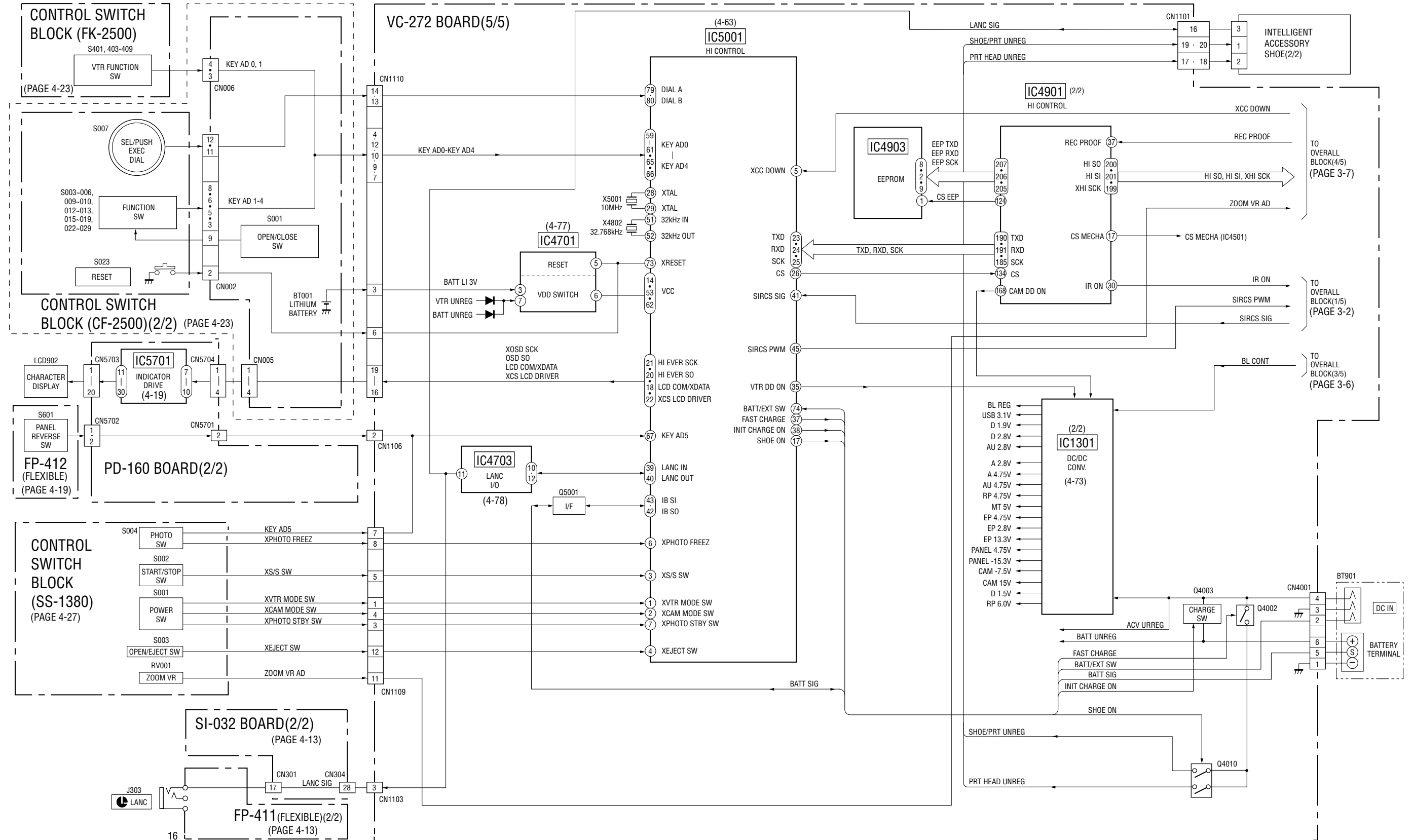


3-5. OVERALL BLOCK DIAGRAM (5/5) (DCR-TRV240)

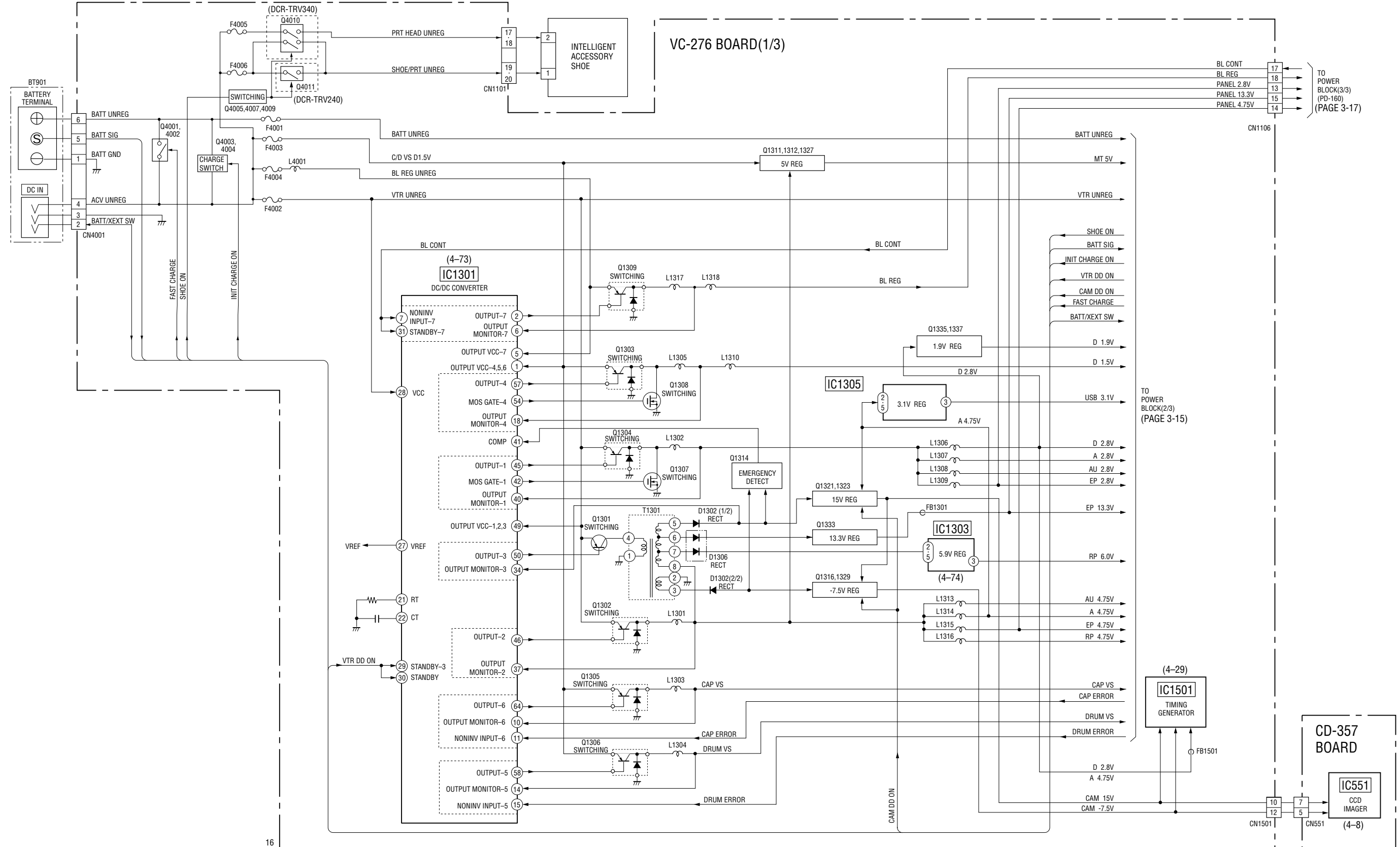
() : Page No. shown in () indicates the page to refer on the schematic diagram.



3-5. OVERALL BLOCK DIAGRAM (5/5) (DCR-TRV340) () : Page No. shown in () indicates the page to refer on the schematic diagram.

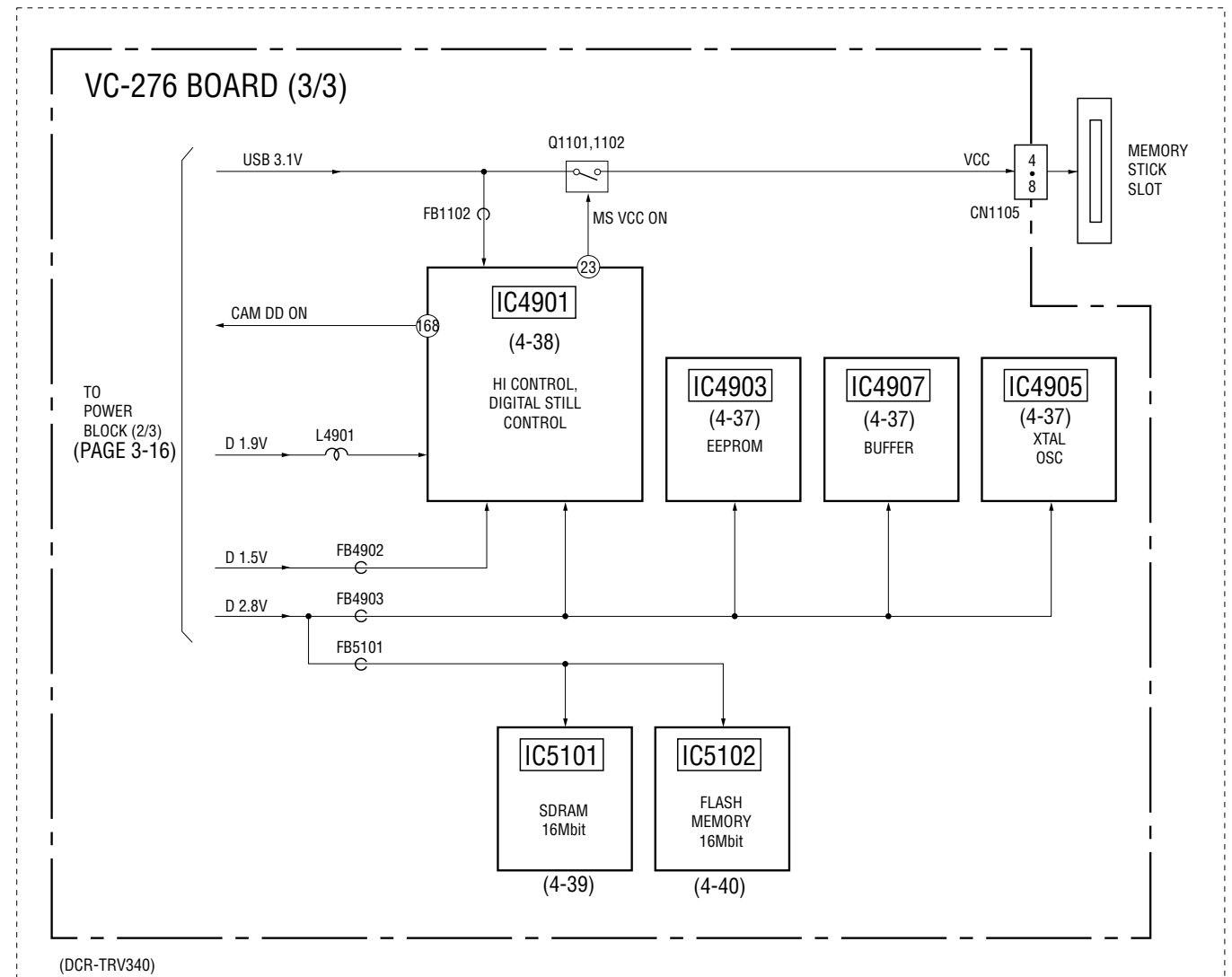
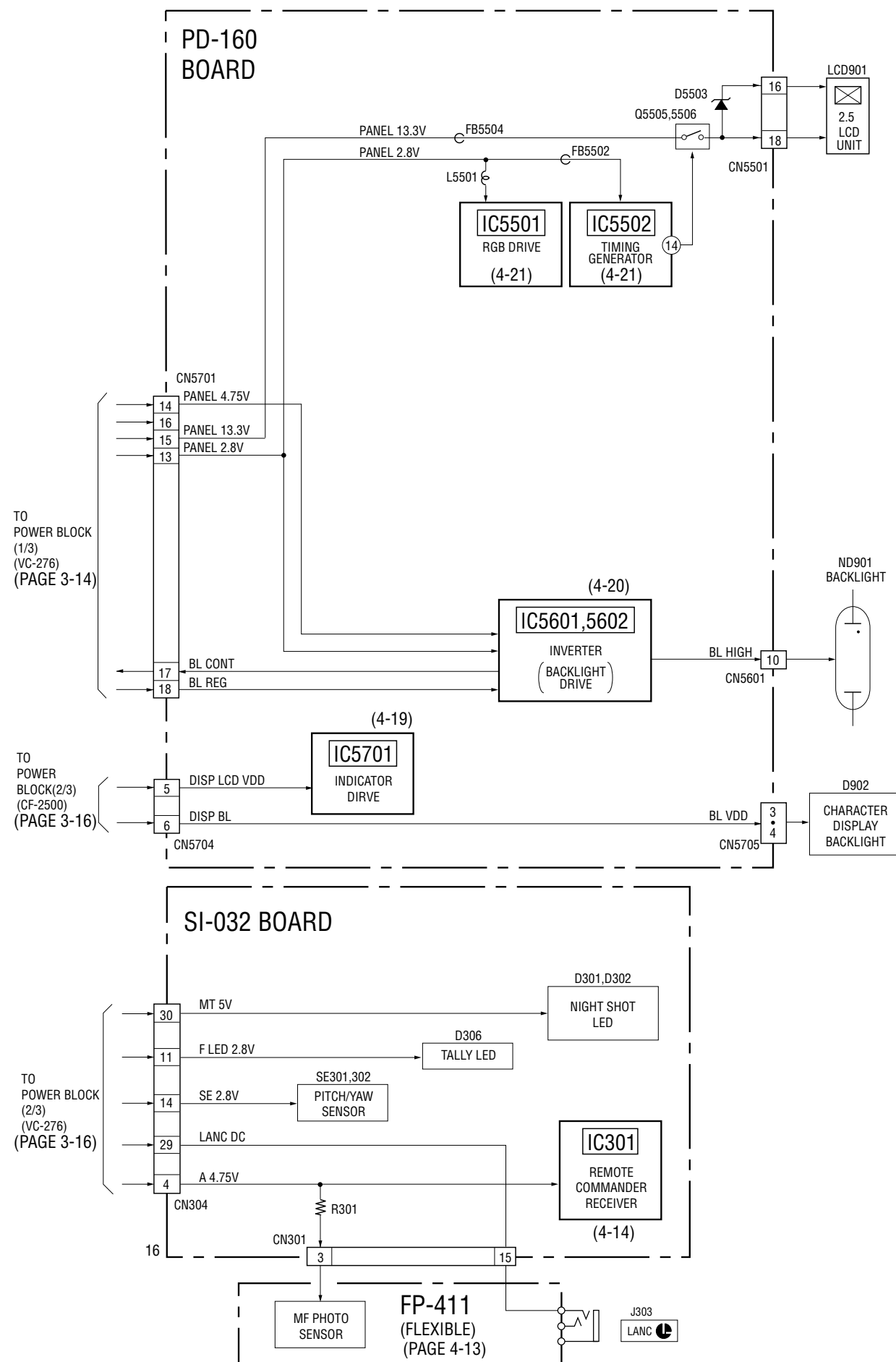


3-6. POWER BLOCK DIAGRAM (1/3) () : Page No. shown in () indicates the page to refer on the schematic diagram.





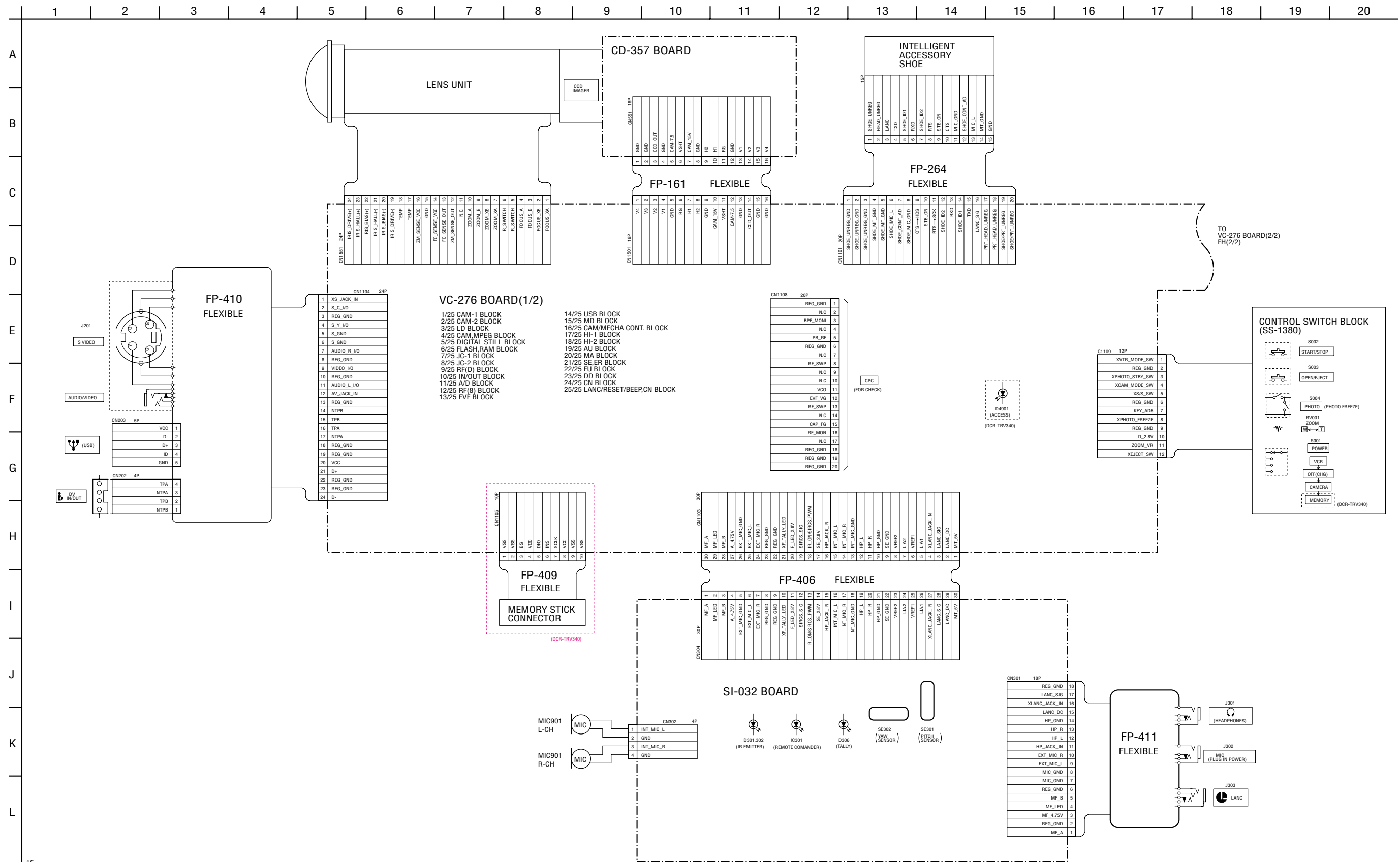
3-8. POWER BLOCK DIAGRAM (3/3) () : Page No. shown in () indicates the page to refer on the schematic diagram.



SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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



4-3

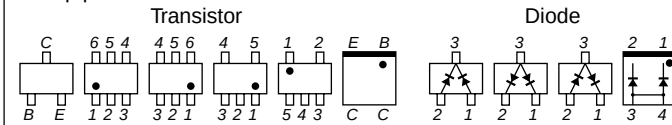


4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

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

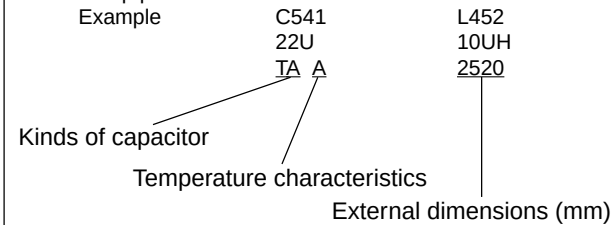
(For printed wiring boards)

- 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 μF unless otherwise noted. p: pF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted. $k\Omega=1000\Omega$, $M\Omega=1000k\Omega$.
- 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.



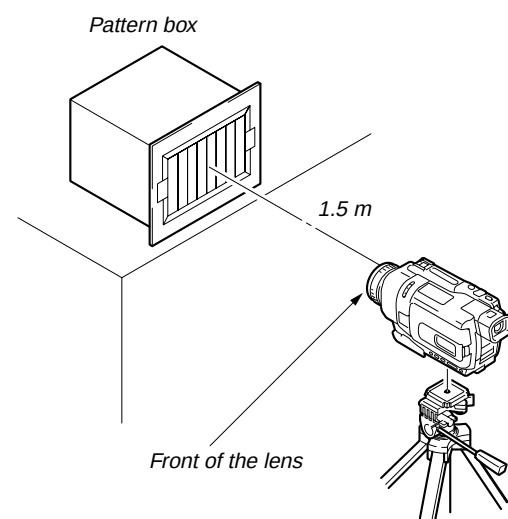
- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
In such cases, the unused circuits may be indicated.
 - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
 - Signal name
XEDIT $\rightarrow$ EDIT PB/XREC $\rightarrow$ PB/REC
 - 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 : The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Note : Les composants identifiés par une marque Δ 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 M Ω input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.) *

1. Connection



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

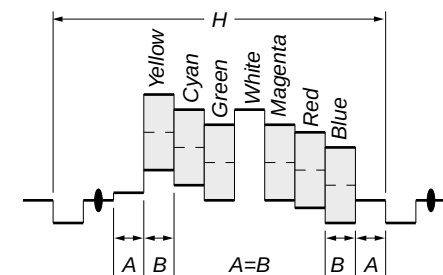


Fig. a (Video output terminal output waveform)

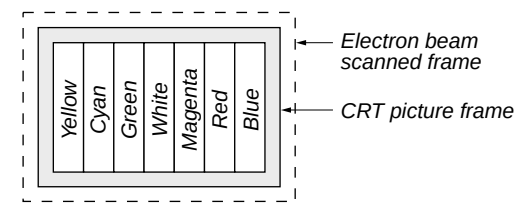
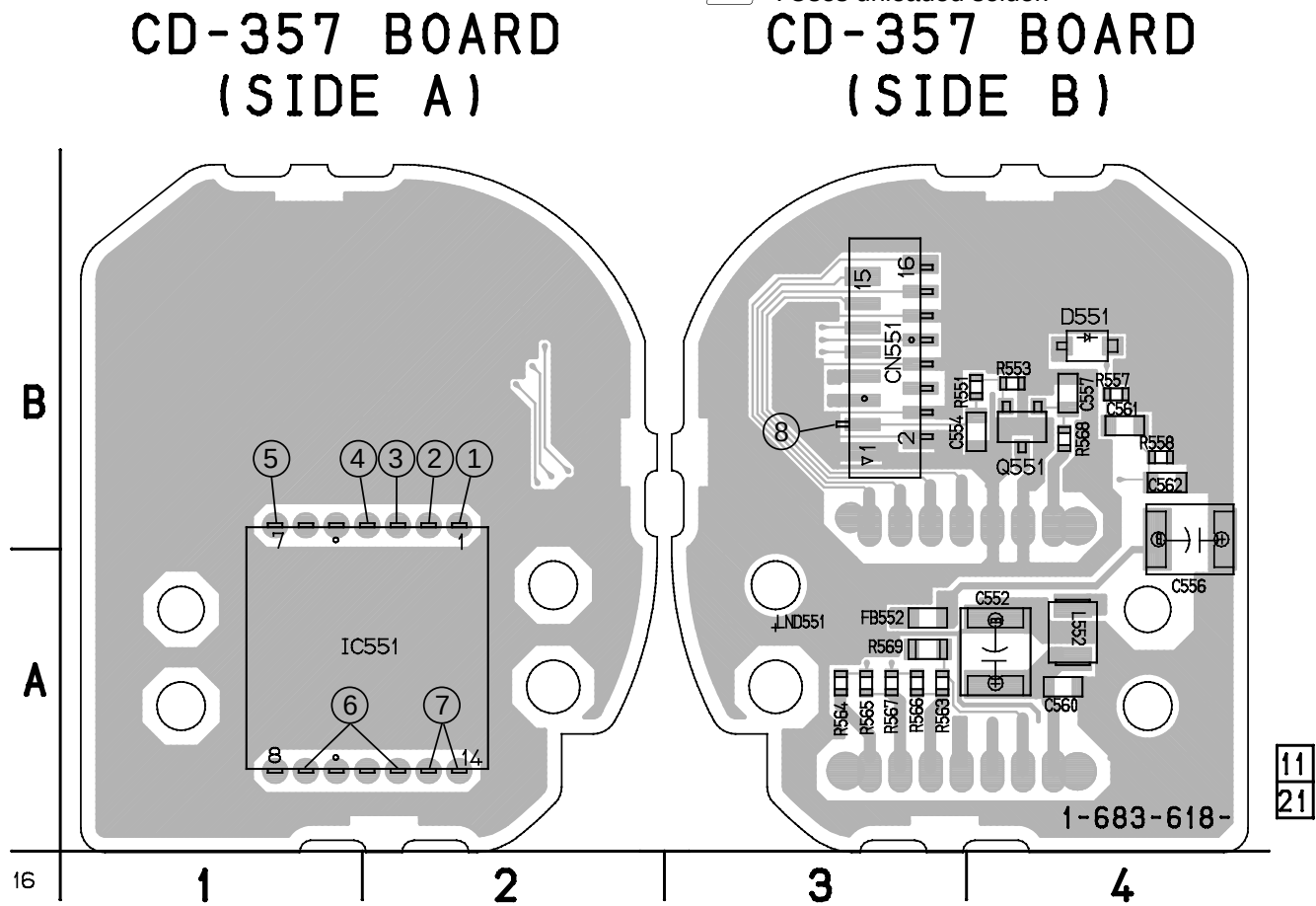


Fig.b (Picture on monitor TV)

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

CD-357 (CCD IMAGER) PRINTED WIRING BOARD



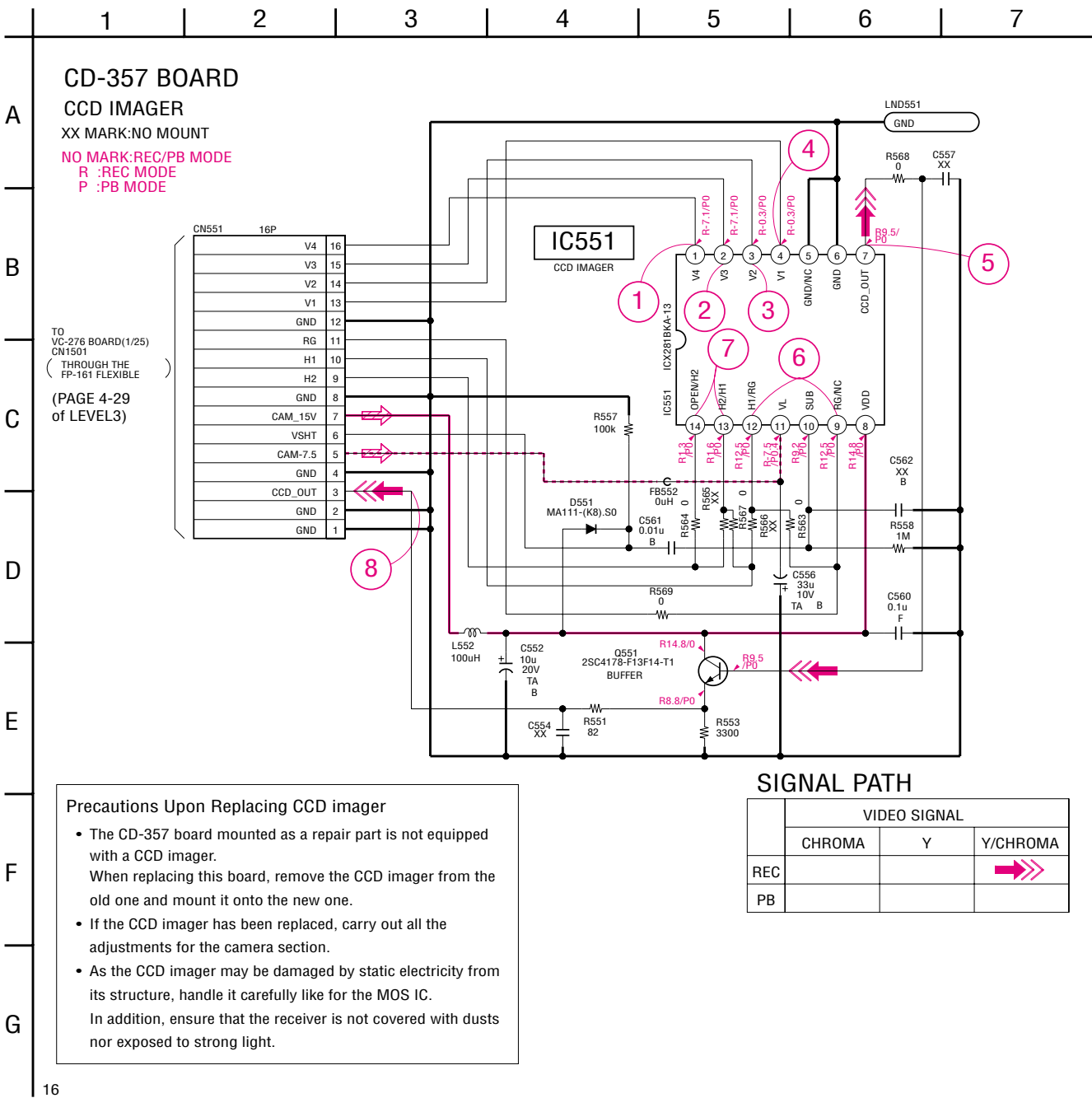
- For printed wiring board**
- Refer to page 4-90 for parts location.
 - This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.
 - Chip parts

Transistor

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

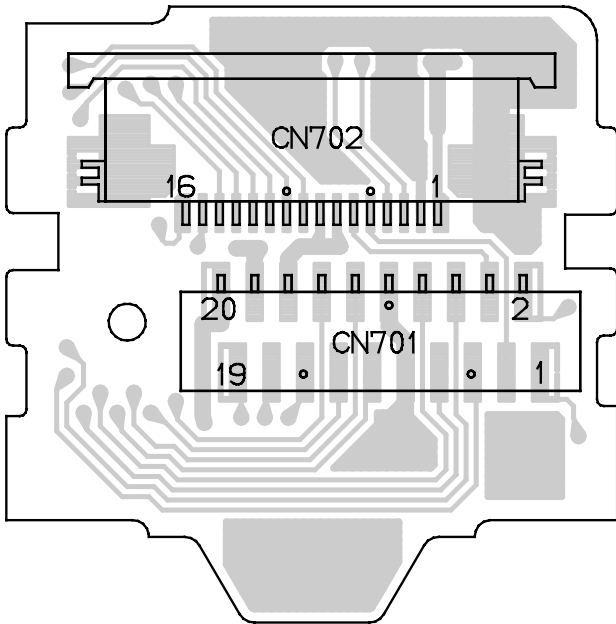
• : Uses unleaded solder.

For Schematic Diagram
• Refer to page 4-83 for waveforms.



LB-076 (EVF, BACK LIGHT) PRINTED WIRING BOARD

LB-076 BOARD
(SIDE A)



- For printed wiring board**
- This board is eight-layer print board. However, the patterns of layers two to seven have not been included in the diagram.
 - Chip parts

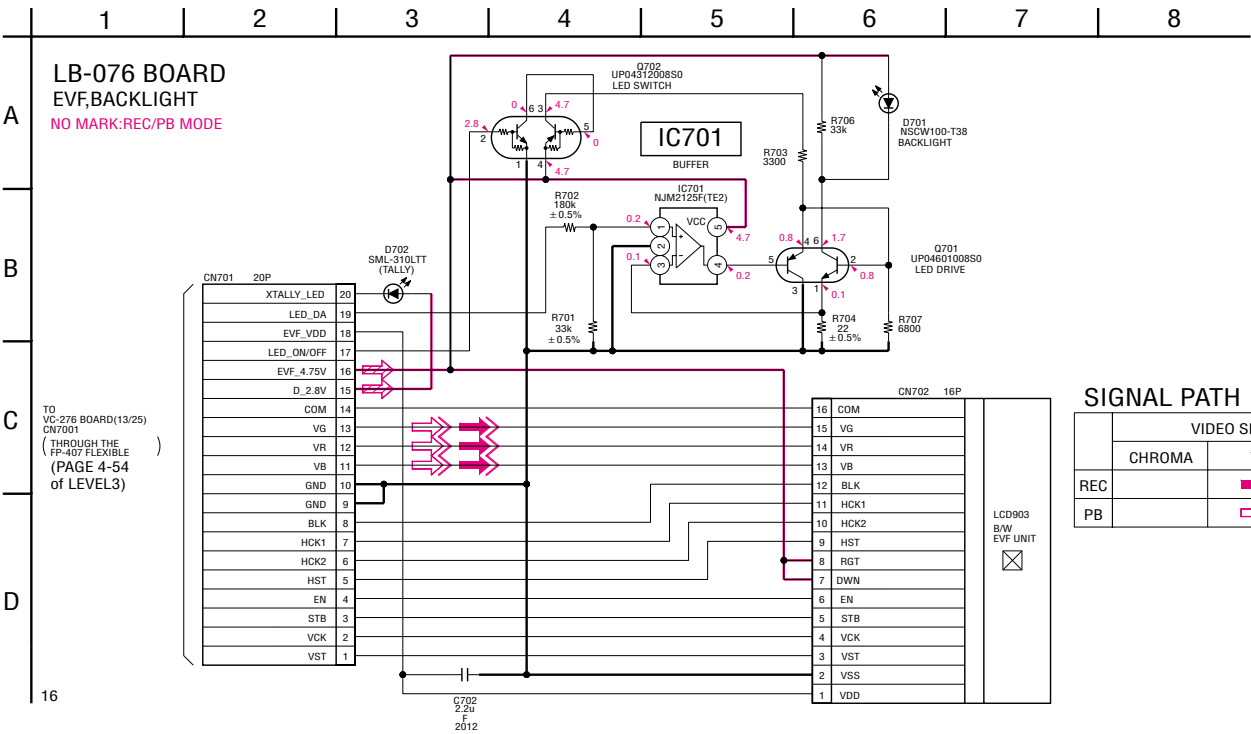
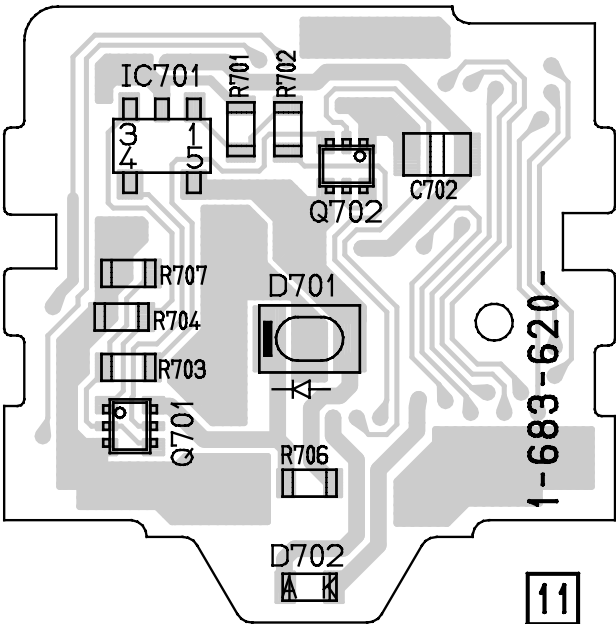
Transistor



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

•  : Uses unleaded solder.

LB-076 BOARD
(SIDE B)



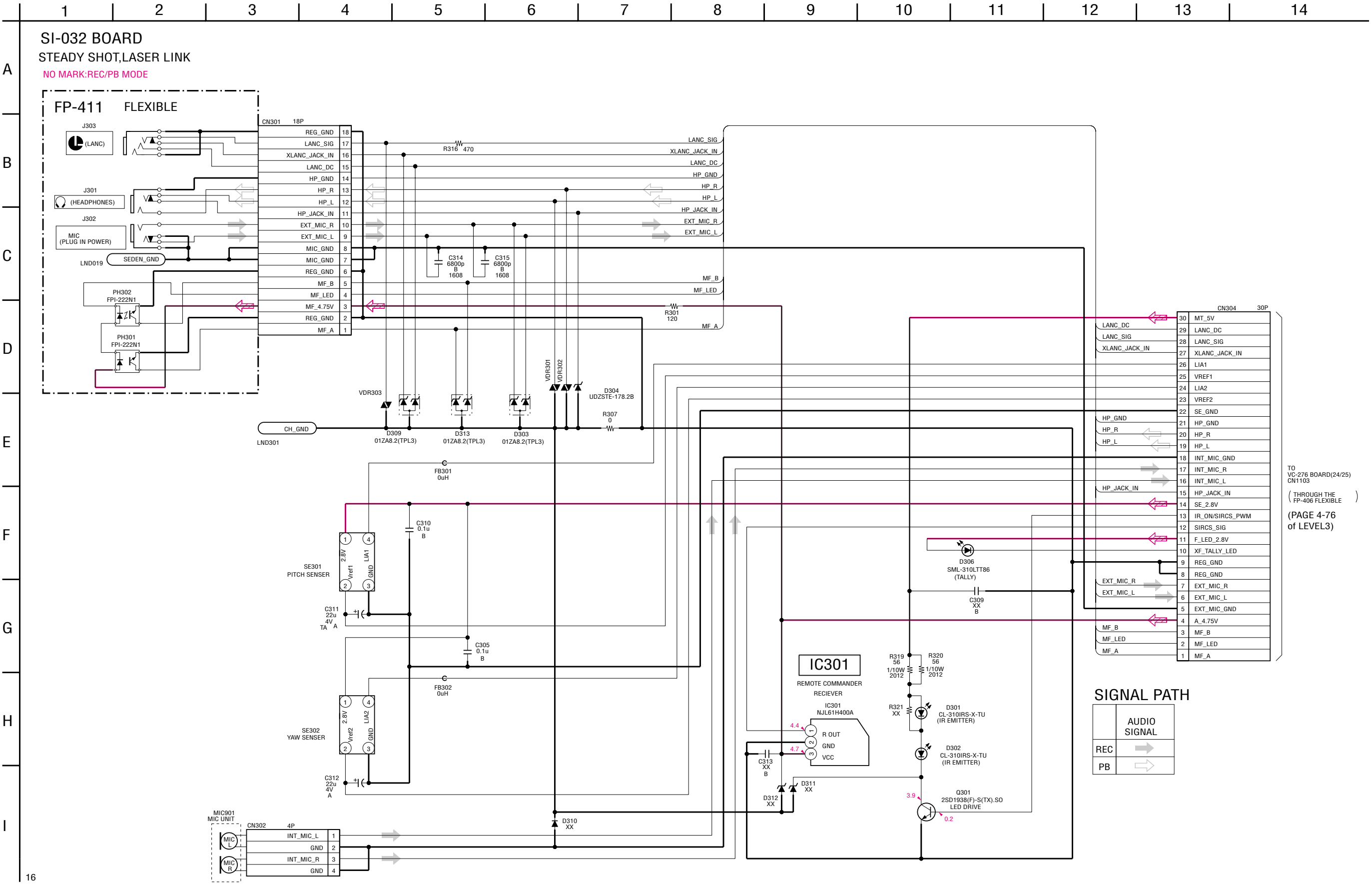
SIGNAL PATH			
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB			

- : Uses unleaded solder.

- : Uses unleaded solder.



For Schematic Diagram
• Refer to page 4-11 for printed wiring board.

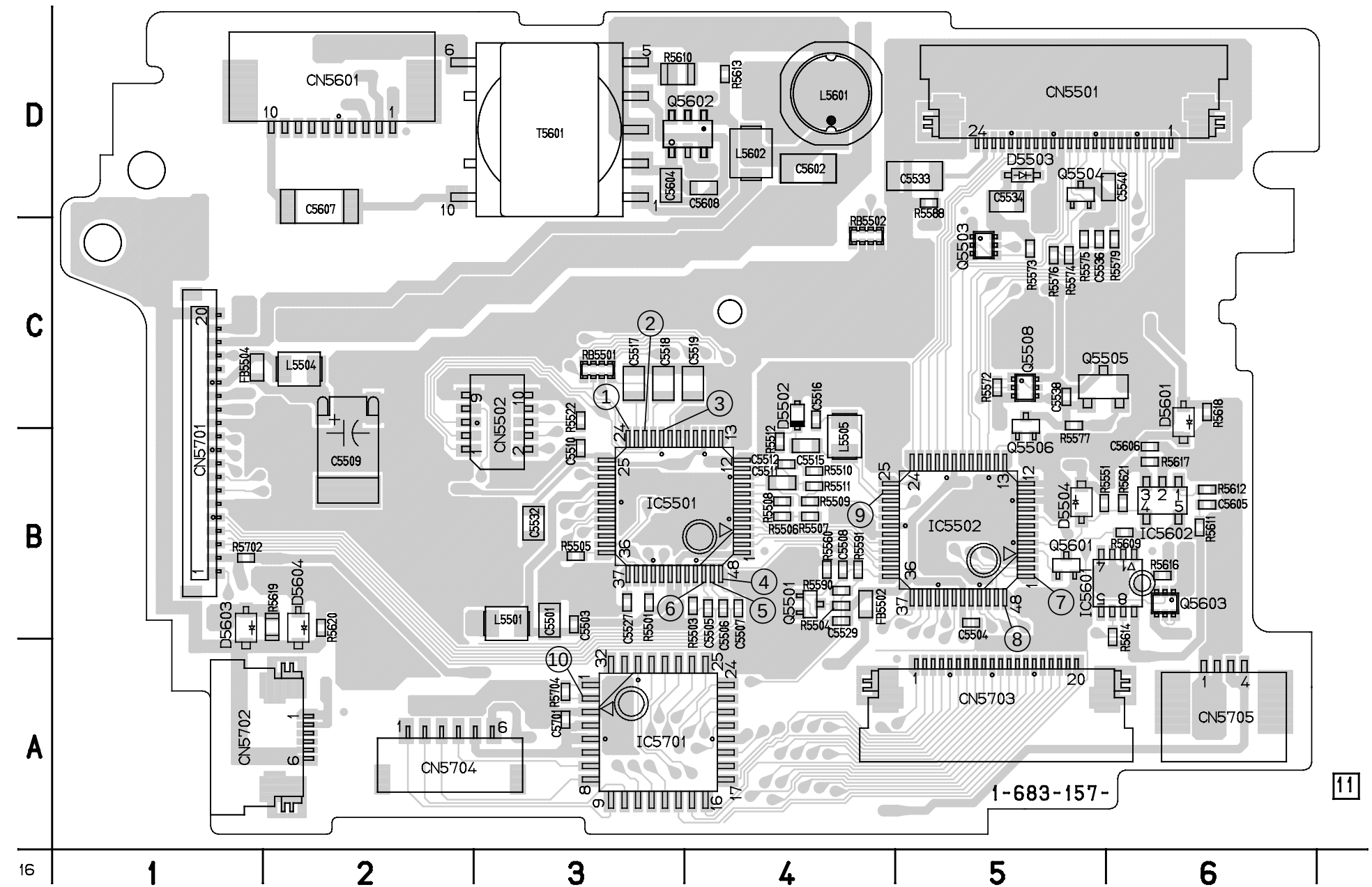


TO
VC-276 BOARD(24/25)
CN1103
(THROUGH THE
FP-406 FLEXIBLE)
(PAGE 4-76
of LEVEL3)

PD-160 (CHA, DISPLAY DRIVE, BACK LIGHT, LCD DRIVE, TG) PRINTED WIRING BOARD

- : Uses unleaded solder.

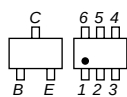
PD-160 BOARD(SIDE A)



For printed wiring board

- Refer to page 4-90 for parts location.
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

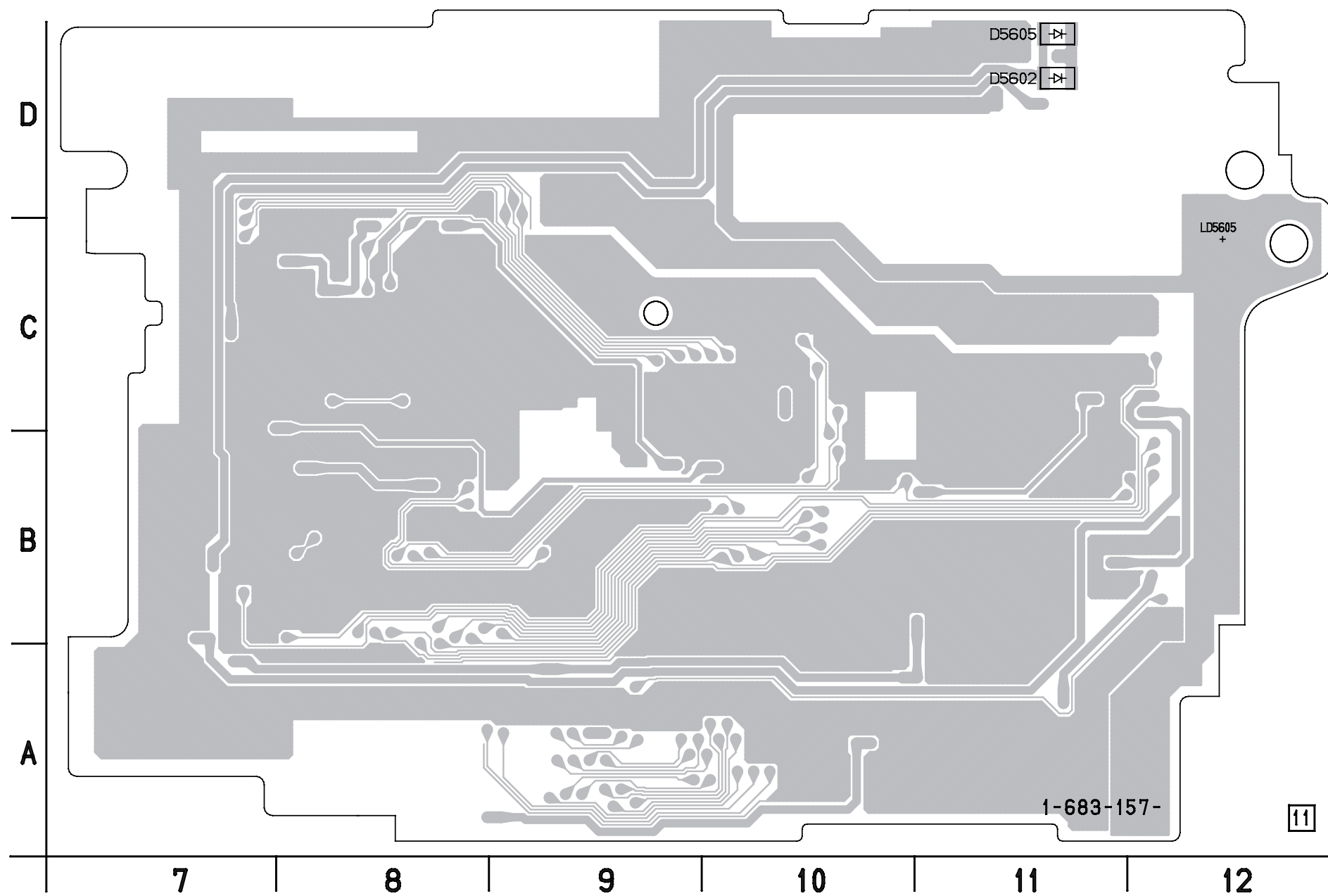
Transistor



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

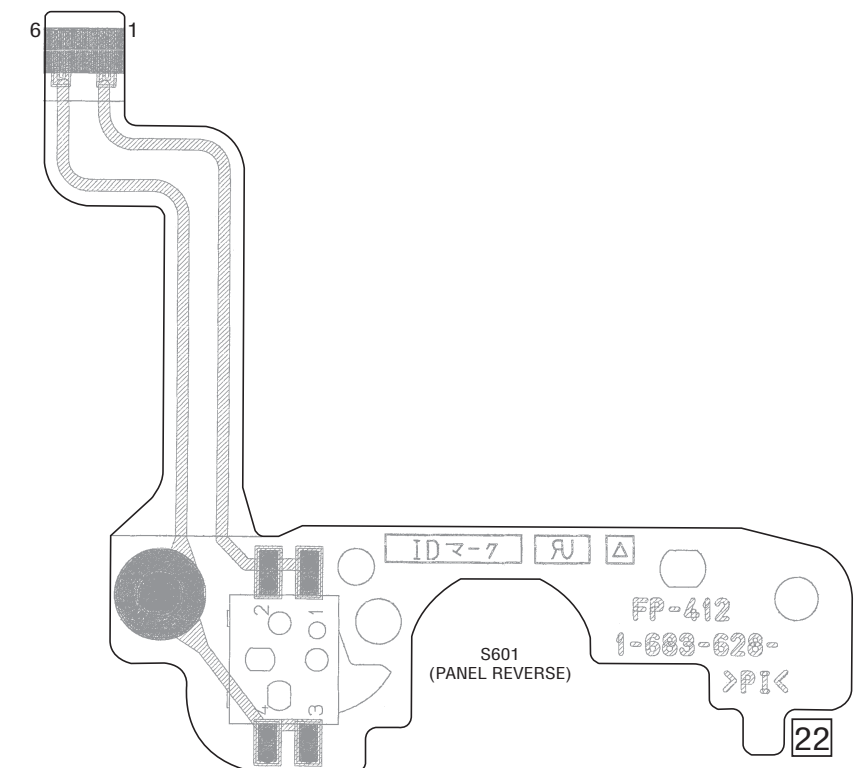
PD-160 BOARD (SIDE B)

•  : Uses unleaded solder.



FP-412 FLEXIBLE BOARD

FP-412 FLEXIBLE

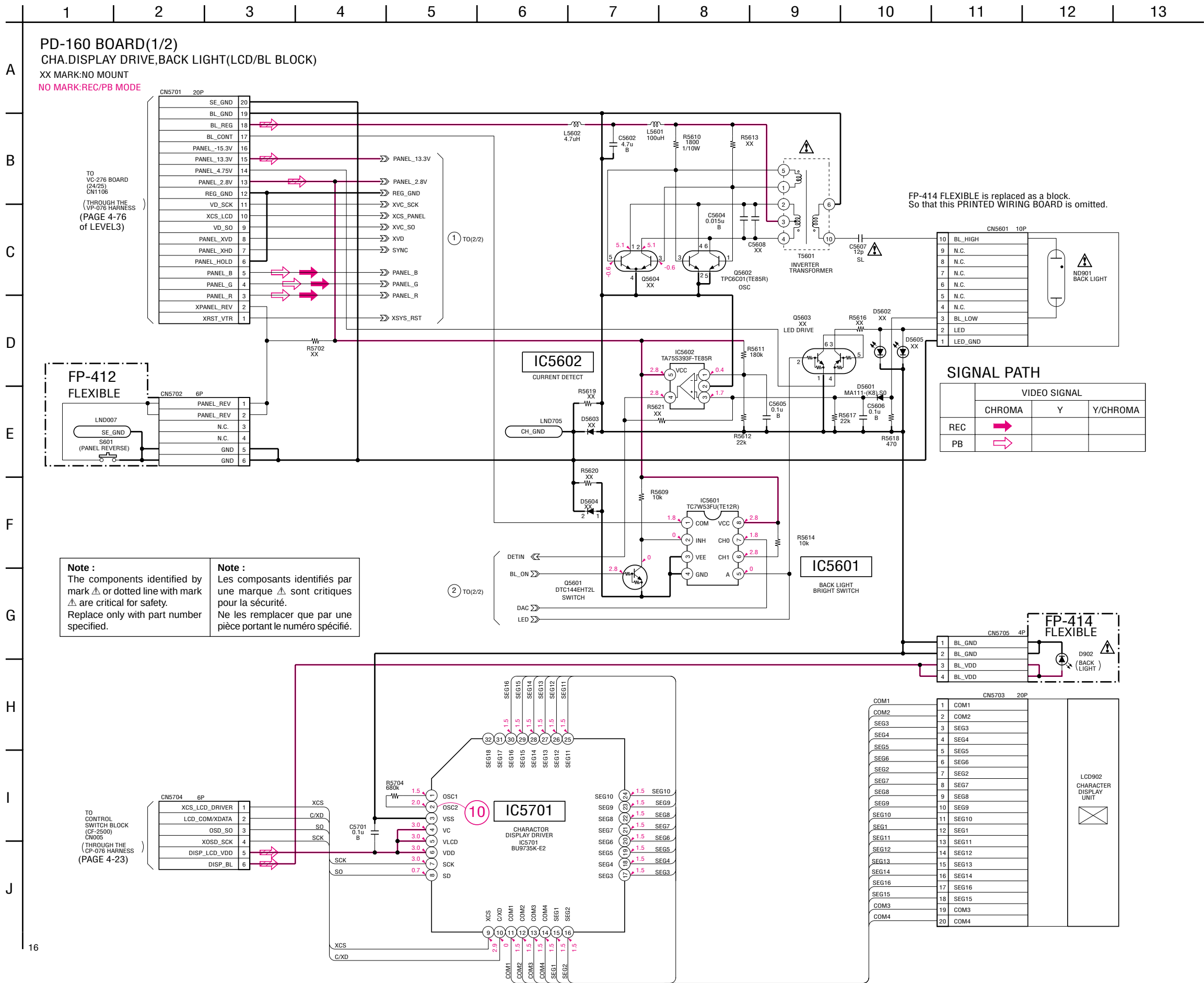


For printed wiring board

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

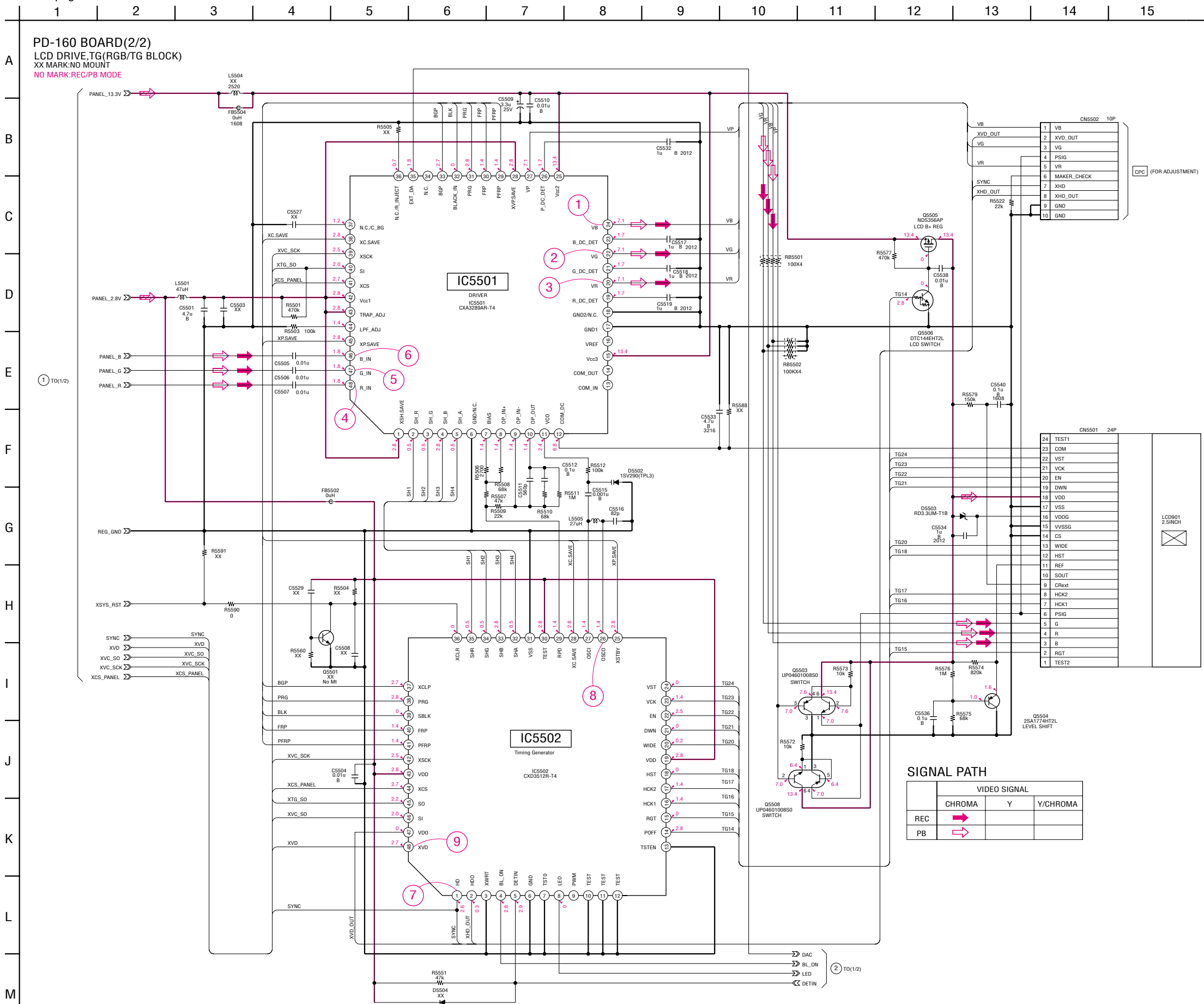
For Schematic Diagram

- Refer to page 4-15 for printed wiring board.
- Refer to page 4-84 for waveform.



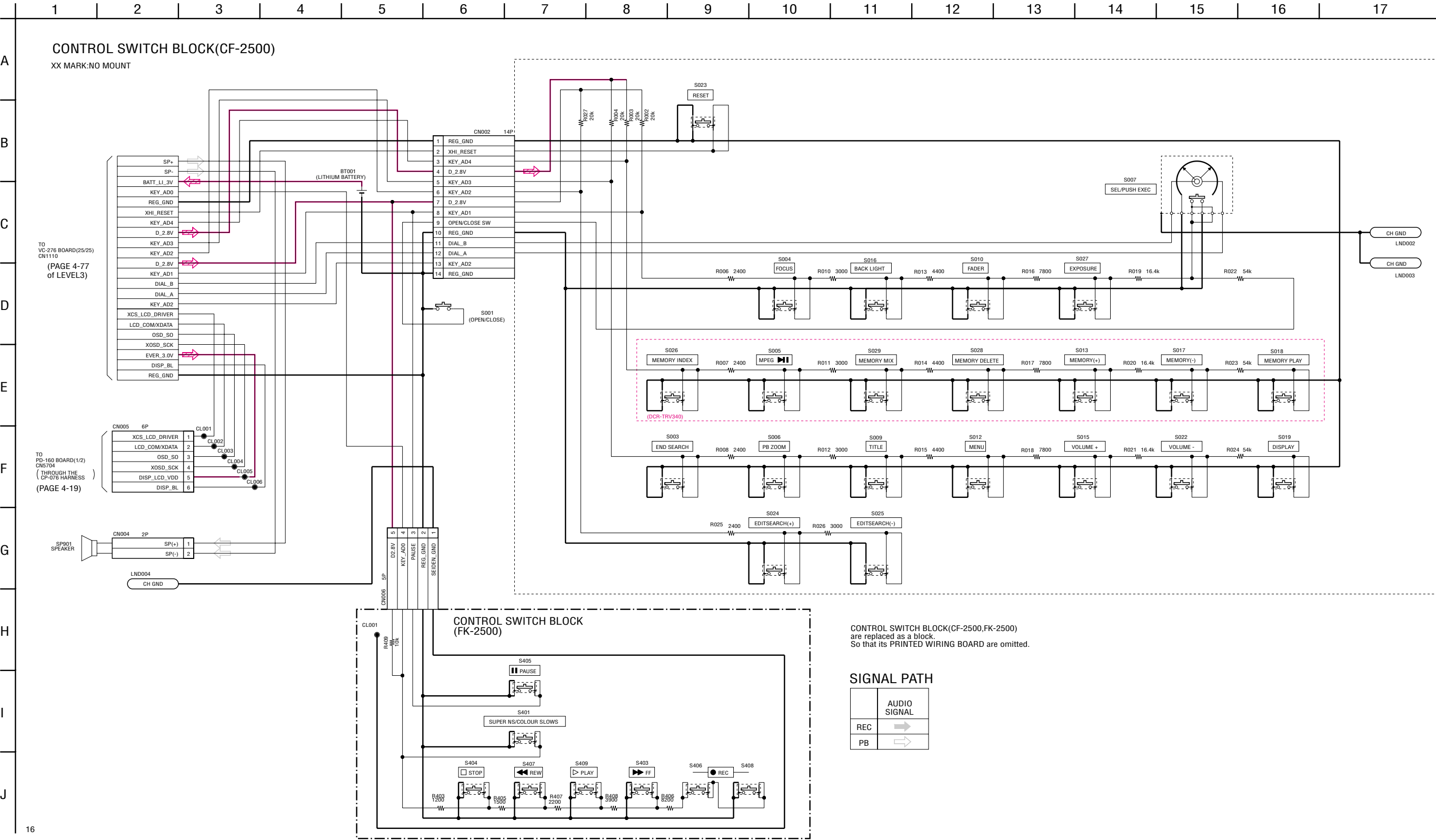
For Schematic Diagram

- Refer to page 4-15 for printed wiring board.
- Refer to page 4-84 for waveforms.

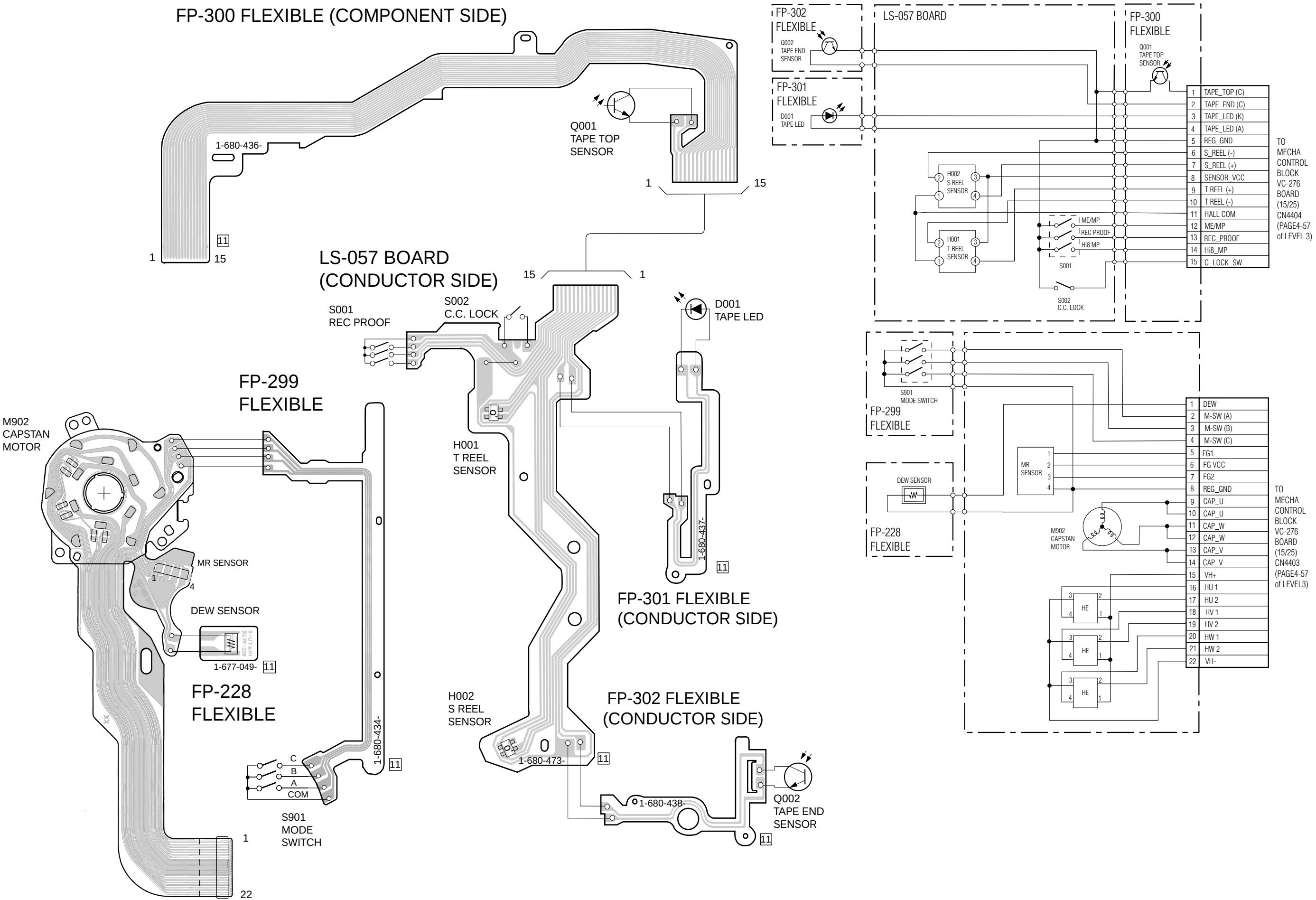


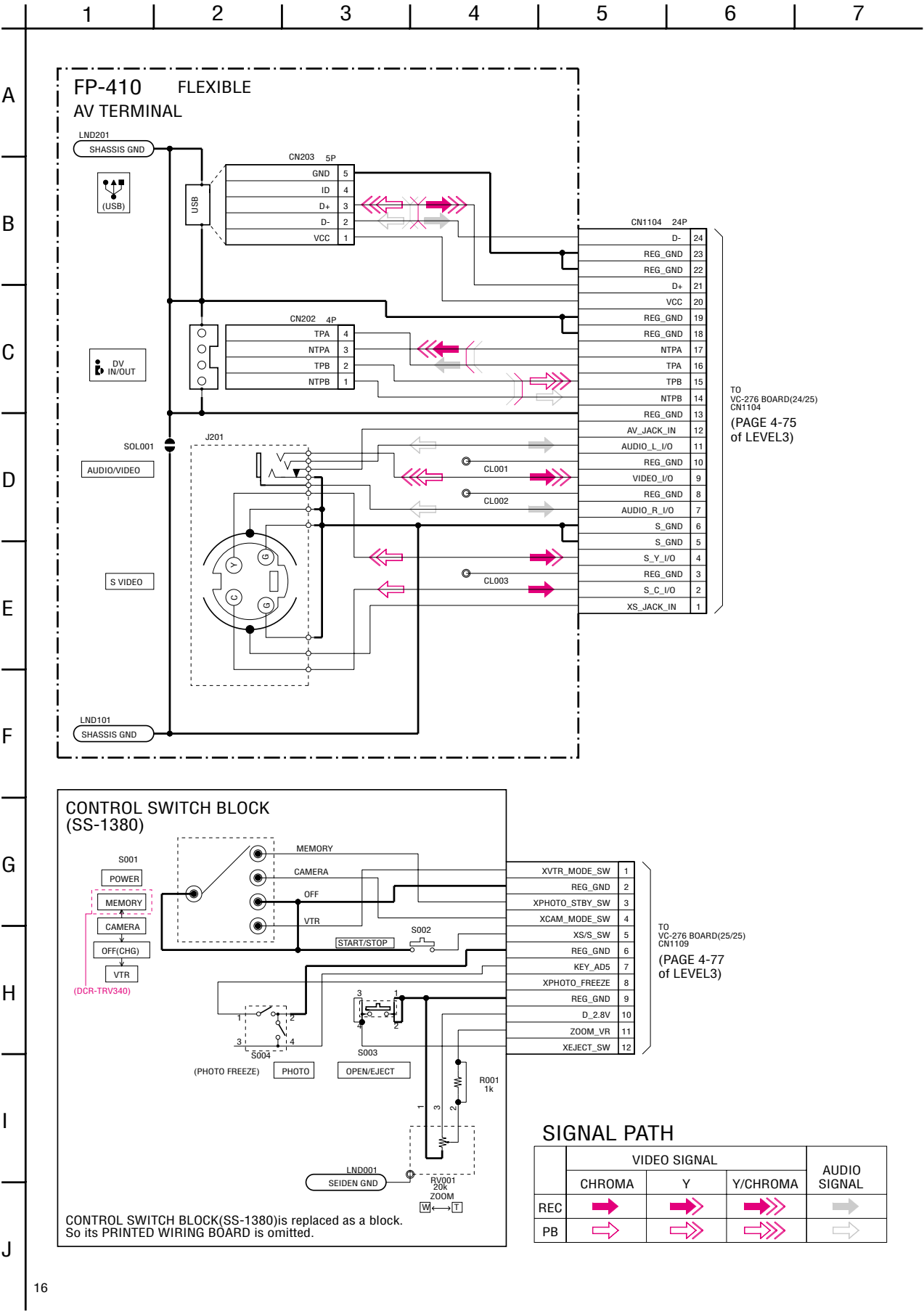
SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	→		
PB	→		



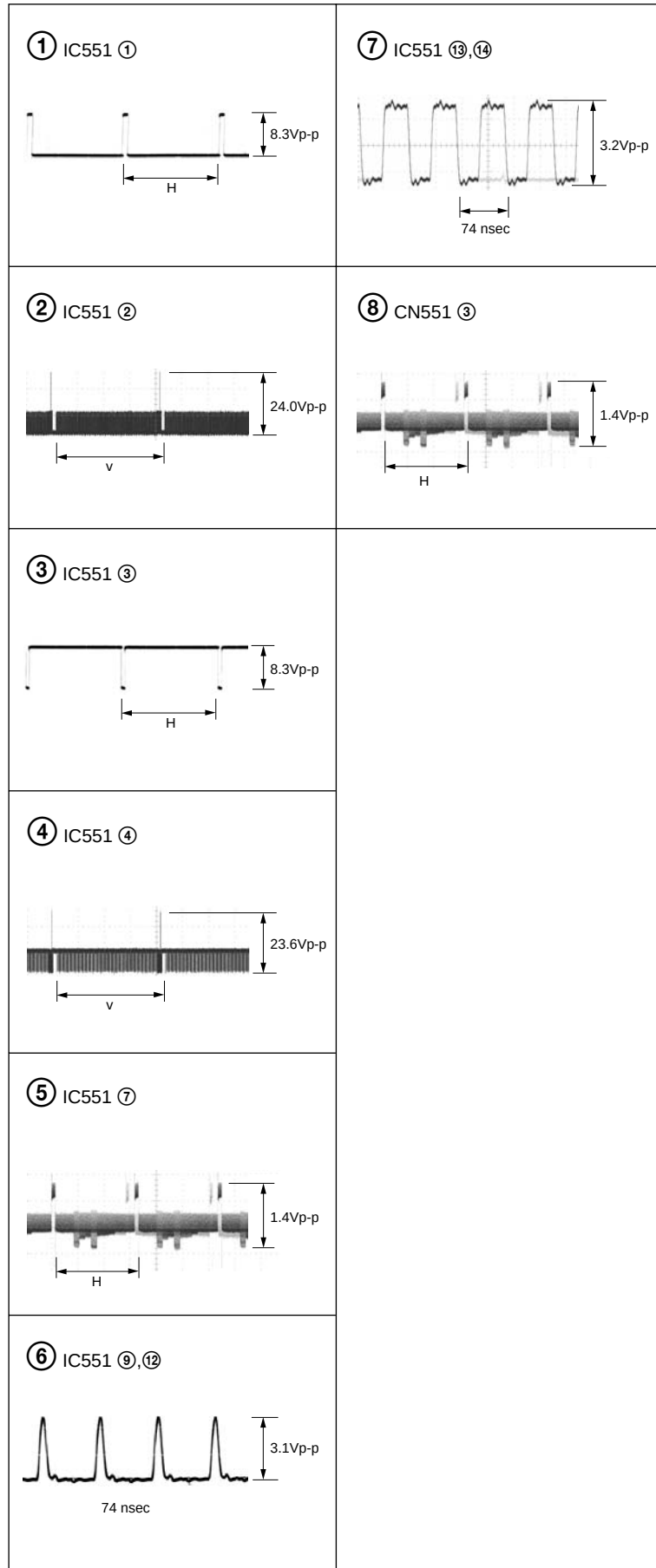
LS-057 (S/T REEL SENSOR), FP-228 (DEW SENSOR), FP-299 (MODE SWITCH), FP-300 (TAPE TOP), FP-302 (TAPE END), FP-301 (TAPE LED) FLEXIBLE BOARDS



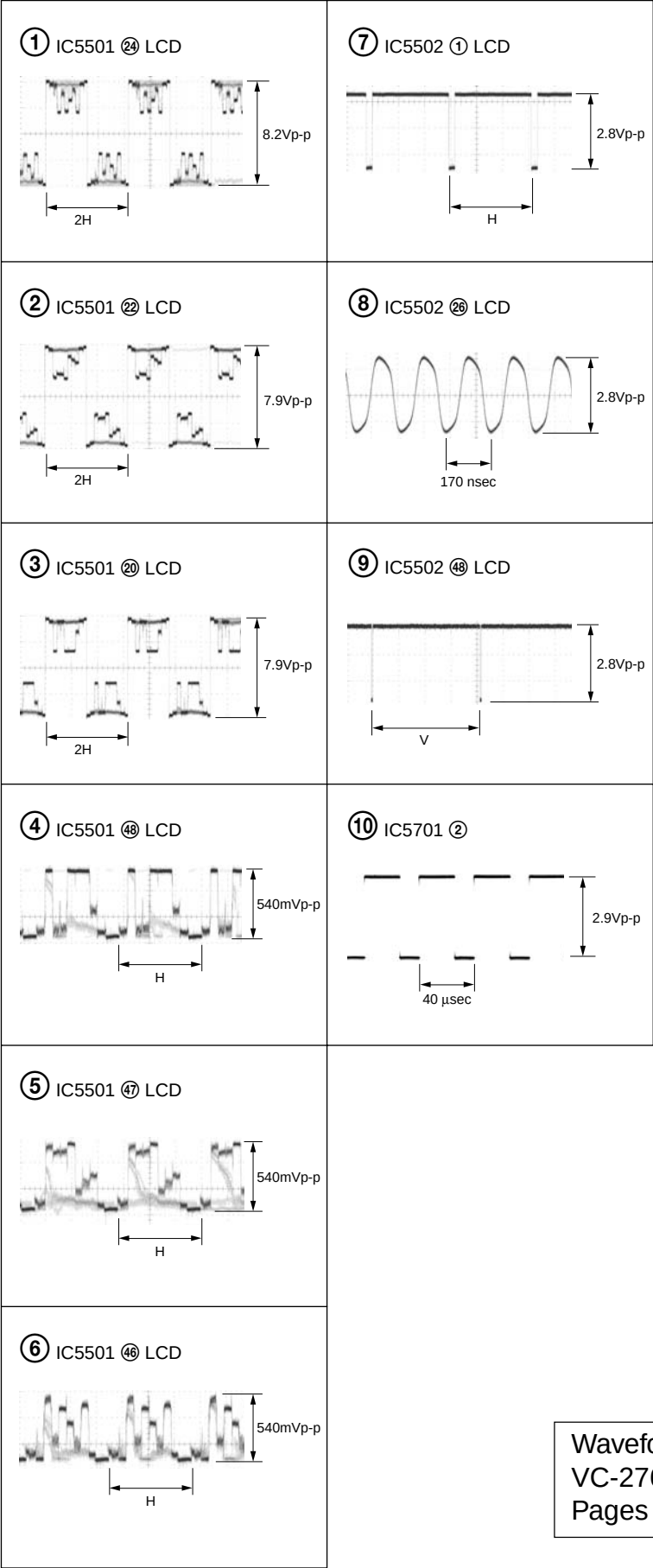


4-3. WAVEFORMS

CD-357 BOARD CAMERA REC



PD-160 BOARD



Waveforms and mounted parts location of the VC-276 board are not shown.
Pages from 4-85 to 4-89 are not shown.

4-4. MOUNTED PARTS LOCATION

no mark : side A
* mark : side B

CD-357 BOARD	SI-032 BOARD	PD-160 BOARD
* C552 A-4	C305 B-1	C5501 B-3
* C554 B-4	C309 B-1	C5503 B-3
* C556 A-4	C310 C-2	C5504 B-5
* C557 B-4	C311 C-2	C5505 B-4
* C560 A-4	C312 C-1	C5506 B-4
* C561 B-4	* C313 A-5	C5507 B-4
* C562 B-4	* C314 A-5	C5508 B-4
	* C315 A-5	C5509 B-2
* CN551 B-3		C5510 B-3
	* CN301 B-5	C5511 B-4
* D551 B-4	* CN302 B-5	C5512 B-4
	* CN304 A-6	C5515 B-4
* FB552 A-3		C5516 C-4
	D301 A-2	C5517 C-3
IC551 A-1	D302 A-2	C5518 C-3
	* D303 B-5	C5519 C-4
* L552 A-4	* D304 B-5	C5527 B-3
	D306 B-2	C5529 B-4
* Q551 B-4	* D309 B-5	C5532 B-3
	* D310 B-5	C5533 D-5
* R551 B-4	D311 B-2	C5534 D-5
* R553 B-4	D312 B-2	C5536 C-5
* R557 B-4	* D313 B-5	C5538 C-5
* R558 B-4		C5540 D-6
* R563 A-3	FB301 C-2	C5602 D-4
* R564 A-3	FB302 B-1	C5604 D-3
* R565 A-3		C5605 B-6
* R566 A-3	IC301 A-1	C5606 B-6
* R567 A-3		C5607 D-2
* R568 B-4	Q301 B-2	C5608 D-4
* R569 A-3		C5701 A-3
	R301 B-2	
	R307 B-2	CN5501 D-5
	* R316 B-5	CN5502 C-3
	R319 A-1	CN5601 D-2
	R320 A-1	CN5701 B-1
	R321 B-2	CN5702 A-1
		CN5703 A-5
	* SE301 C-5	CN5704 A-2
	* SE302 C-6	CN5705 A-6
	* VDR301 B-5	D5502 C-4
	* VDR302 B-5	D5503 D-5
	* VDR303 B-5	D5504 B-5
		D5601 C-6
		* D5602 D-11
		D5603 B-1
		D5604 B-2
		* D5605 D-11
		FB5502 B-4
		FB5504 C-1
		IC5501 B-3
		IC5502 B-5
		IC5601 B-6
		IC5602 B-6
		IC5701 A-3
		L5501 B-3
		L5504 C-2
		L5505 B-4
		L5601 D-4
		L5602 D-4
		Q5501 B-4
		Q5503 C-5
		Q5504 D-5
		Q5505 C-5
		Q5506 B-5
		Q5508 C-5
		Q5601 B-5
		Q5602 D-3
		Q5603 B-6
		R5501 B-3
		R5503 B-4
		R5504 B-4
		R5505 B-3
		R5506 B-4
		R5507 B-4
		R5508 B-4
		R5509 B-4
		R5510 B-4
		R5511 B-4
		R5512 B-4
		R5522 C-3
		R5551 B-6
		R5560 B-4
		R5572 C-5
		R5573 C-5
		R5574 C-5
		R5575 C-5
		R5576 C-5
		R5577 B-5
		R5579 C-6
		R5588 D-5
		R5590 B-4
		R5591 B-4
		R5609 B-6
		R5610 D-3
		R5611 B-6
		R5612 B-6
		R5613 D-4
		R5614 B-6
		R5616 B-6
		R5617 B-6
		R5618 C-6
		R5619 B-2
		R5620 B-2
		R5621 B-6
		R5702 B-1
		R5704 A-3
		RB5501 C-3
		RB5502 C-4
		T5601 D-3

**SECTION 5
ADJUSTMENTS**

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						Parts replacement																																					
		Lens device	LCD block	ND901 (Fluorescent tube)	LCD block	LCD901 (LCD panel)	Mechanism deck *1	Mechanism deck M901 (Drum assy.) *1	Mechanism deck M902 (Capstan motor)	Mechanism deck LS chassis assy	CD-357 board	IC551 (CCD imager)	PD-160 board	IC5501 (RGB driver (LCD))	PD-160 board	IC5502 (Timing generator (LCD))	PD-160 board	Q5602/5604, T5601 (Inverter)	SI-032 board	SE301,302 (PITCH,YAW sensor)	VC-276 board	IC1501, X1501 (Timing generator)	VC-276 board	IC1502 (S/H, AGC)	VC-276 board	IC2201 (Hi8/Std8 Y/C process)	VC-276 board	IC3103 (REC/PB AMP)	VC-276 board	IC3101 (EQ, A/D conv. PLL)	VC-276 board	IC3701 VIDEO IN/OUT)	VC-276 board	IC3301 (DV signal process)	VC-276 board	IC2291 (EVR)	VC-276 board	IC5701 (AUDIO IN/OUT, AFM)	VC-276 board	IC7001 (LCD driver (EVF))	VC-276 board	IC7002 (Timing generator (EVF))			
Initialization of 8, A, B, C, D, E, F, 1B, 1C, 1F page data	Initialization of D page data *3																																												
	Initialization of A, D page data *2																																												
	Initialization of B, 1B page data *2																																												
	Initialization of 8, C, 1C page data																																												
	Initialization of E, F, 1F page data																																												
Camera	HALL adj.	●																																											
	Flange back adj.	●									●																																		
	Optical axis adj.	●									●																																		
	Color reproduction adj.										●												●																						
	AWB & LV standard data input										●												●																						
	Auto white balance adj.										●												●																						
	Steady shot check.																		●				●																						
EVF	VCO adj.																																												
	RGB AMP adj.																																												
	Contrast adj.																																												
LCD	VCO adj.											●	●																																
	PSIG gray adj.											●		●																															
	RGB AMP adj.											●																																	
	Black limit adj.											●																																	
	Contrast adj.											●																																	
	Center level adj											●																																	
	V-COM adj.				●							●																																	
	White balance adj.		●	●								●			●																														
System control	Serial No. input																																												
Servo & RF	REEL FG adj.					●				●																																			
	Switching position adj.					●	●																																						
	AGC center level adj.					●	●																				●	●																	
	APC & AEQ adj.					●	●																				●	●																	
	PLL f ₀ & LPF f ₀ adj.					●	●																				●	●																	
	Hi8/Std8 switching position adj.					●	●																																						
	CAP FG duty adj.					●			●																																				
Video	27MHz origin oscillation adj.																				●																								
	S VIDEO OUT Y level adj.																																												
	S VIDEO OUT chroma level adj.																																												
	Hi8/Std8 Y/C level setting																									●																			
	Hi8/Std8 AFC f ₀ adj.																									●																			
Audio	Hi8/Std8 AFM BPF f ₀ adj.																																												
	Hi8/Std8 AFM 1.5MHz deviation adj.																																												
	Hi8/Std8 AFM 1.7MHz deviation adj.																																												
Mechanism	Tape path adj.				●	●	●	●																																					

Table. 5-1-1 (1).

Adjustment Section	Adjustment	Board replacement			EEPROM replacement				Supporting
		SI-032 board (COMPLETE)	PD-160 board (COMPLETE)	VC-276 board (COMPLETE)	VC-276 board IC4502 (EEPROM)	VC-276 board IC4802 (EEPROM) *3	VC-276 board IC4903 (EEPROM) *2 *4	VC-276 board IC5102 (FLASH MEMORY) *2	
Initialization of 8, A, B, C, D, E, F, 1B, 1C, 1F page data	Initialization of D page data *3			●		●			
	Initialization of A, D page data *2			●			●		
	Initialization of B, 1B page data *2			●			●		
	Initialization of 8, C, 1C page data			●	●				
	Initialization of E, F, 1F page data			●	●				
Camera	HALL adj.			●	●				●
	Flange back adj.			●	●				●
	Optical axis adj.			●	●				
	Color reproduction adj.			●	●				
	AWB & LV standard data input			●	●				●
	Auto white balance adj.			●	●				●
	Steady shot check.	●		●	●				
EVF	VCO adj.			●	●				
	RGB AMP adj.			●	●				
	Contrast adj.			●	●				
LCD	VCO adj.		●	●	●				
	PSIG gray adj.		●	●	●				
	RGB AMP adj.		●	●	●				
	Black limit adj.		●	●	●				
	Contrast adj.		●	●	●				
	Center level adj		●	●	●				
	V-COM adj.		●	●	●				
	White balance adj.		●	●	●				
System control	Serial No. input			●	●				
Servo & RF	REEL FG adj.			●	●				●
	Switching position adj.			●	●				●
	AGC center level adj.			●	●				●
	APC & AEQ adj.			●	●				●
	PLL f ₀ & LPF f ₀ adj.			●	●				●
	Hi8/Std8 switching position adj.			●	●				
	CAP FG duty adj.			●	●				●
Video	27MHz origin oscillation adj.			●	●				
	S VIDEO OUT Y level adj.			●	●				
	S VIDEO OUT chroma level adj.			●	●				
	Hi8/Std8 Y/C level setting			●	●				●
	Hi8/Std8 AFC f ₀ adj.			●	●				●
Audio	Hi8/Std8 AFM BPF f ₀ adj.			●	●				
	Hi8/Std8 AFM 1.5MHz deviation adj.			●	●				
	Hi8/Std8 AFM 1.7MHz deviation adj.			●	●				
Mechanism	Tape path adj.								

- *1: When replacing the drum assy. or mechanism deck, reset the data of page: <D>[7], address: <D0 to D7>[A7 to A9] to "00". (Refer to "Record of Use check" of "5-4. SERVICE MODE")
 < > : DCR-TRV240,
 [] : DCR-TRV340
- *2: DCR-TRV340
 *3: DCR-TRV240
 *4: When replacing the IC4903, set the loader writing inhibit mode. (Refer to "1-2-3. INITIALIZATION OF B, 1B PAGE DATA")

Table. 5-1-1 (2).

5-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

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

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) (Note1)	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-13 jig	J-6082-443-A	For adjusting the video section For adjusting the viewfinder
J-10	Minipattern box	J-6082-353-B	For adjusting the flange back
J-11	Camera base	J-6082-384-A	For adjusting the flange back

Note1: 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).

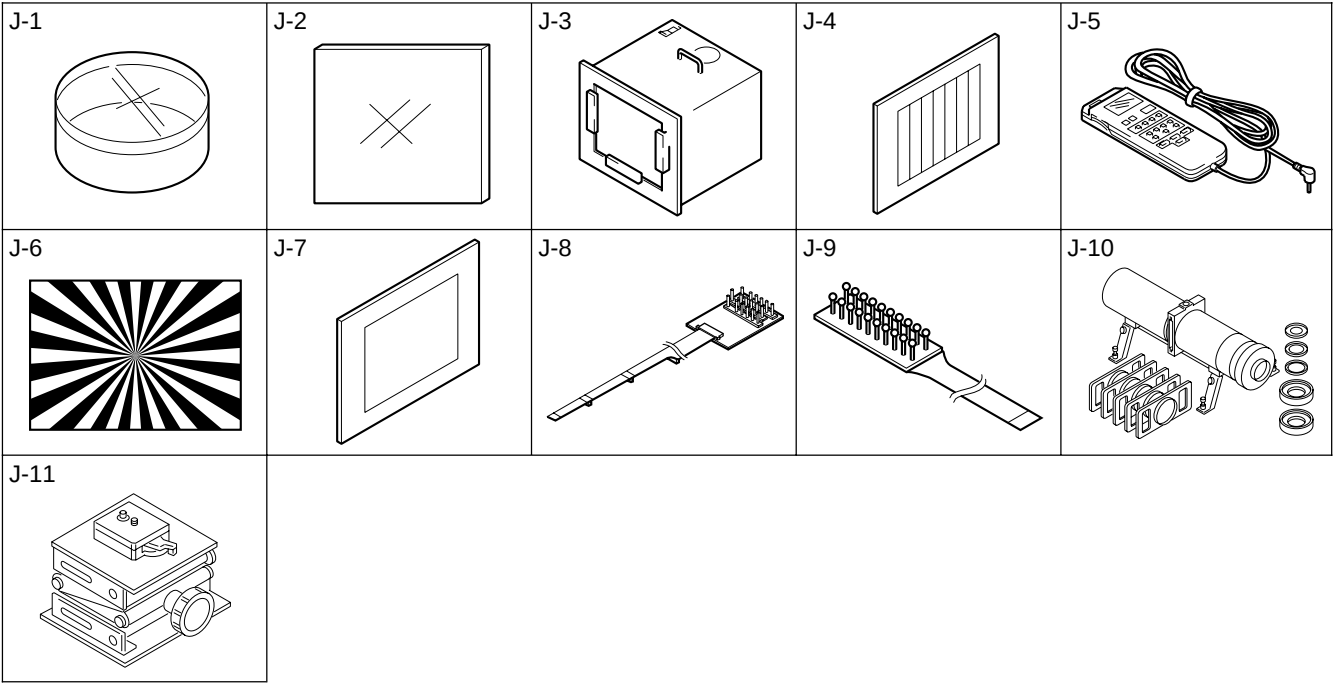


Fig. 5-1-1.

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: Before performing the adjustments, check the data of page: 0, address: 10 is “00”. If not, set data: 00 to this address.

- 1) Connect the equipment for adjustments according to Fig. 5-1-3.
- 2) The front panel block (SI-032 board (Microphone amp, remote commander receiver), FP-411 flexible (MIC jack, Headphone jack, LANC jack, MF photo sensor)) must be assembled for connecting the adjustment remote commander.

Note4: Only for DCR-TRV240 model, as removing the cabinet (R) (removing the VC-276 board CN1110) means removing the lithium 3V power supply (CF-2500 block BT001), 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 data on history use (data of page: 2, address: A5 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-1380 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.

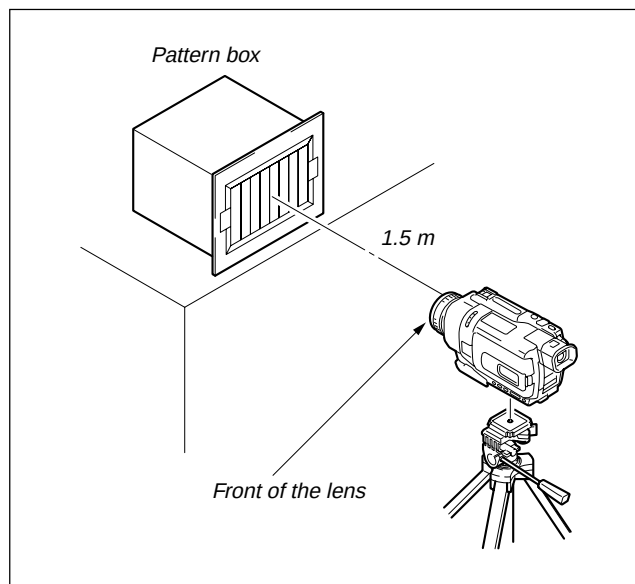


Fig. 5-1-2.

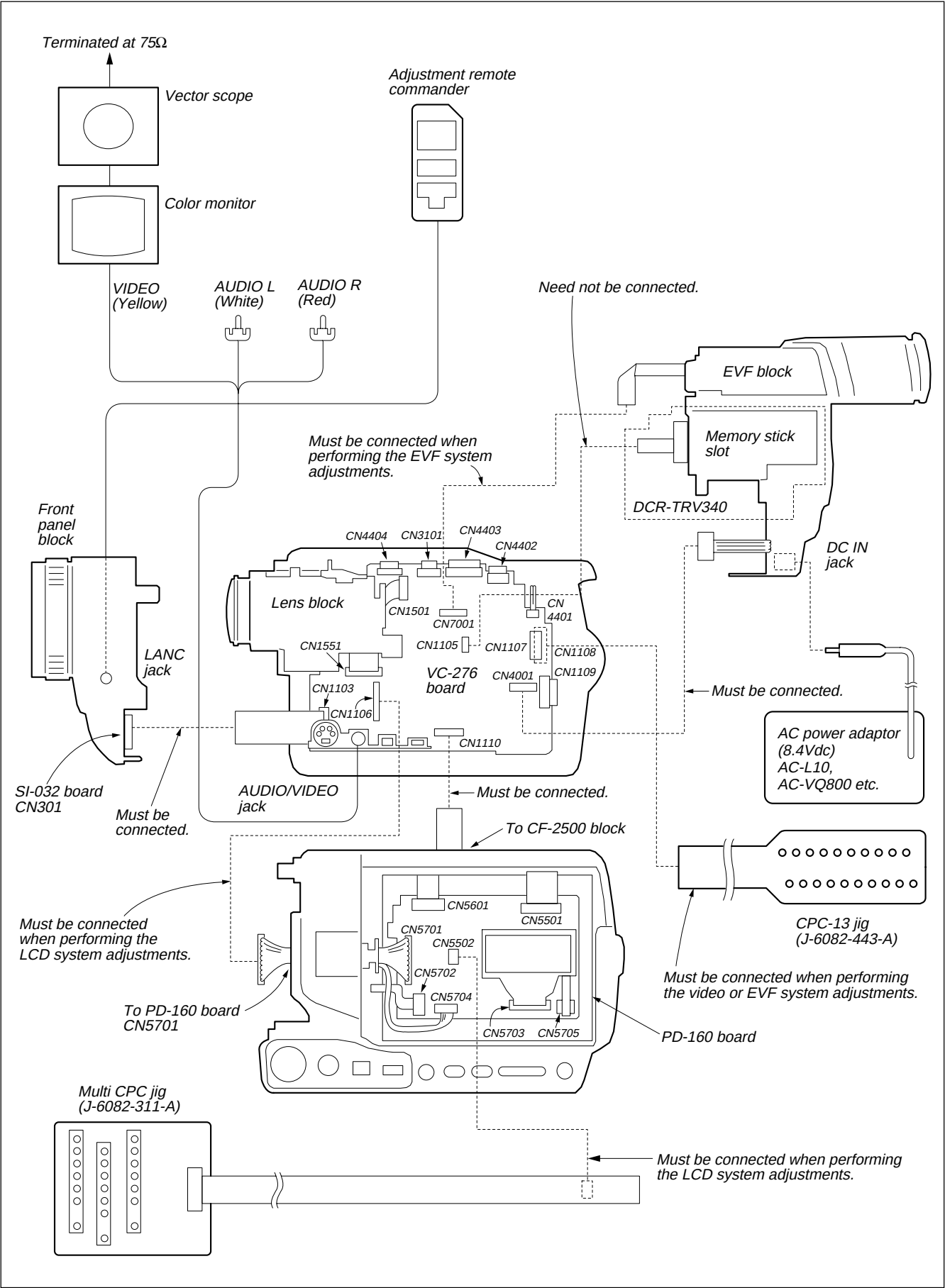


Fig. 5-1-3.

1-1-3. Precaution

1. Setting the Switch

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

- | | | | |
|---|-----------|--|-----|
| 1. POWER switch (SS-1380 block) | CAMERA | 9. BACK LIGHT (CF-2500 block) | OFF |
| 2. NIGHT SHOT switch (Lens block) | OFF | 10. PROGRAM AE (Menu display) | OFF |
| 3. DEMO MODE (Menu display) | OFF | 11. PICTURE EFFECT (Menu display) | OFF |
| 4. DIGITAL ZOOM (Menu display) | OFF | 12. DIGITAL EFFECT (Menu display) | OFF |
| 5. STEADY SHOT (Menu display) | OFF | 13. AUTO SHUTTER (Menu display) | OFF |
| 6. DISPLAY (Menu display) | V-OUT/LCD | 14. 16 : 9 WIDE (MENU display) | OFF |
| 7. DISPLAY (CF-2500 block) | ON | 15. SUPER NIGHT SHOT (FK-2500 block) | OFF |
| 8. FOCUS switch (CF-2500 block) | MANUAL | | |

2. Order of Adjustments

Basically carry out adjustments in the order given.

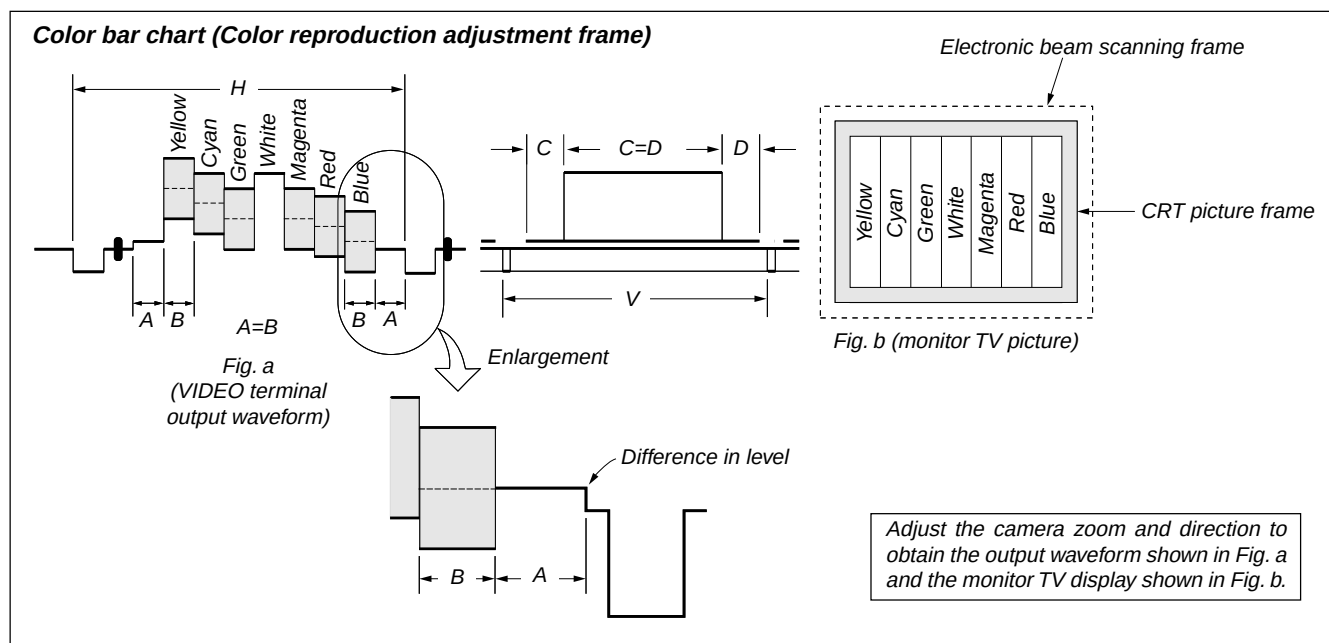


Fig.5-1-4.

3. Subjects

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

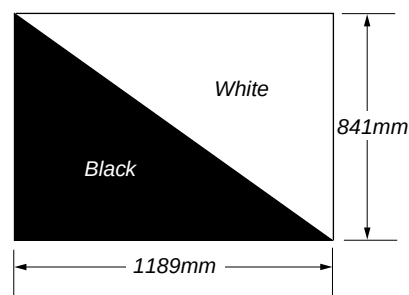


Fig. 5-1-5.

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

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

Note1: When reading or writing the 1B, 1C, 1D page data, select page: 0, address: 10, and set data: 01, then select B, C or D page. The 1B, 1C or 1D page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: The A, B and 1B page are DCR-TRV340 model only.

[Connection of the power supply during the initialization of the data.]

- 1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 5-1-6.
- 2) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is $6.1 \pm 0.1\text{Vdc}$.
- 3) Turn off the power supply.
- 4) Turn on the HOLD switch of the adjusting remote commander.
- 5) Turn on the power supply.
- 6) Perform the initialization of the data.

Note3: This is normal though the following message is indicated on the LCD screen.

"FOR InfoLITHIUM BATTERY ONLY"

[Initialization Procedure]

DCR-TRV240 :

1. Initialization of D page data
2. Initialization of 8, C, 1C page data
3. Initialization of E, F, 1F page data

DCR-TRV340 :

1. Initialization of A, D page data
2. Initialization of B, 1B page data
3. Initialization of 8, C, 1C page data
4. Initialization of E, F, 1F page data

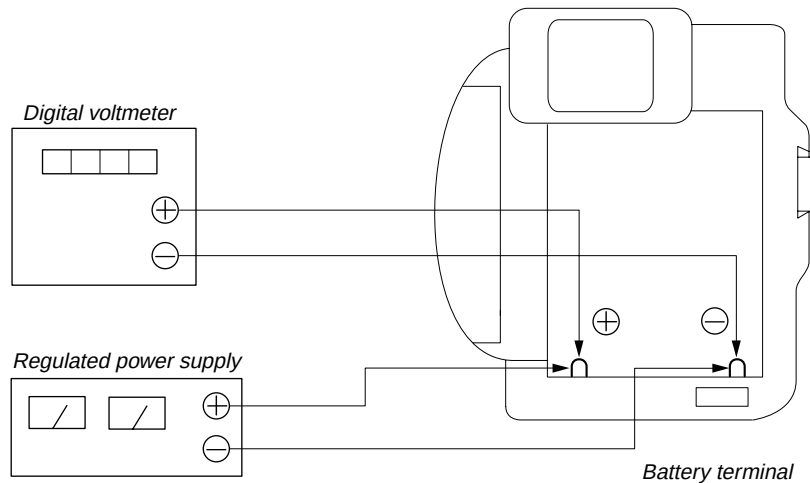


Fig. 5-1-6.

1-2-1. INITIALIZATION OF D PAGE DATA (DCR-TRV240)

Note: The data of page: 0, address: 10 must be "00".

1. Initializing the D Page Data

Note1: If the D page data has been initialized, the following adjustments need to be performed again.

1) Modification of D page data

Note2: The power supply voltage must be $6.1 \pm 0.1\text{Vdc}$.

Adjusting page	D
Adjusting Address	10 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data
2	0	10	00	Set the data
3	2	00	2D	Set the data
4	2	01	2D	Set the data, and press the PAUSE button.
5	2	02		Check that the data changes to "01"
6	2	00	29	Set the data
7	2	01	29	Set the data, and press the PAUSE button.
8				Perform "Modification of D Page Data".

2. Modification of D Page Data

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

Modifying Method:

- Before changing the data, select page: 0, address: 01, and set data: 01.
- 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.
- When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of D Page data

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

Note: If the following symptoms occur after completing of the "Modification of D 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.

- The self-diagnosis code "E:20:00" is displayed on the LCD screen.
- The power is shut off so that unit cannot operate.

3. D Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the D Page Data".)

Fixed data-2: Modified data. (Refer to "2. Modification of D Page Data".)

Address	Initial value	Remark
00 to 0F		
10	00	Test mode
11		Fixed data-1
12		Fixed data-2
13 to 32		Fixed data-1
33		Fixed data-2
34 to 42		Fixed data-1
43		Fixed data-2
44		
45		
46		Fixed data-1
47		Fixed data-2
48		Fixed data-1
49		Fixed data-2
4A to 4C		Fixed data-1
4D		Fixed data-2
4E to 4F		Fixed data-1
50		Fixed data-2
51		(Modified data. Copy the data built in the same model.)
52		
53		
54		
55 to 57		Fixed data-1
58		Fixed data-2
59		(Modified data. Copy the data built in the same model.)
5A		
5B		
5C		
5D to 64		Fixed data-1
65		Fixed data-2
66		Fixed data-1
67		Fixed data-2
68		
69 to 6B		Fixed data-1
6C		Fixed data-2
6D		(Modified data. Copy the data built in the same model.)
6E		
6F		
70 to 77		Fixed data-1
78		Fixed data-2
79		(Modified data. Copy the data built in the same model.)
7A		
7B		
7C		
7D to 8D		Fixed data-1
8E		Fixed data-2
8F		
90 to B6		Fixed data-1
B7		Fixed data-2
B8 to CF		Fixed data-1
D0	00	Drum rotation counted time.
D1	00	(Refer to "4-3. SERVICE MODE".)
D2 to FF		Fixed data-1

Table. 5-1-2.

DCR-TRV240/TRV340

1-2-2. INITIALIZATION OF A, D PAGE DATA (DCR-TRV340)

Note: The data of page: 0, address: 10 must be “00”.

1. Initializing the A, D Page Data

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

Note2: If the A, D page data has been initialized, the following adjustments need to be performed again.

1) Modification of A, D page data

Note3: The power supply voltage must be $6.1 \pm 0.1\text{Vdc}$.

Adjusting page	D
Adjusting Address	10 to 67
Adjusting page	A
Adjusting Address	10 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data
2	0	10	00	Set the data
3	7	03	00	Set the data
4	7	00	28	Set the data
5	7	01	28	Set the data, and press the PAUSE button.
6	7	02		Check that the data changes to “01”
7	2	00	29	Set the data
8	2	01	29	Set the data, and press the PAUSE button.
9				Perform “Modification of A, D Page Data”.

2. Modification of A, D Page Data

If the A, D page data has been initialized, change the data of the “Fixed data-2” address shown in the following tables by manual input.

Modifying Method:

- Before changing the data, select page: 0, address: 01, and set data: 01.
- 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.
- When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of A, D Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

Note: If the following symptoms occur after completing of the “Modification of A, D 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.

- The self-diagnosis code “E: 20:00” is displayed on the LCD screen.
- The power is shut off so that unit cannot operate.

3. D Page Table

Note1: The data of page: 0, address: 10 must be “00”.

Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the A, D Page Data”.)

Fixed data-2: Modified data. (Refer to “2. Modification of A, D Page Data”.)

Address	Initial value	Remark
00 to 0F		
10	00	Test mode
11 to 15		Fixed data-1
16		Fixed data-2
17 to 21		Fixed data-1
22		Fixed data-2 (Modified data. Copy the data built in the same model.)
23		
24		
25		
26		
27 to 29		Fixed data-1
2A		Fixed data-2
2B		
2C to 36		Fixed data-1
37		Fixed data-2
38 to 39		Fixed data-1
3A		Fixed data-2
3B to 49		Fixed data-1
4A		Fixed data-2 (Modified data. Copy the data built in the same model.)
4B		
4C		
4D		
4E		
4F to 67		Fixed data-1

Table. 5-1-3.

4. A Page Table

Note1: The data of page: 0, address: 10 must be “00”.

Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the A, D Page Data”.)

Fixed data-2: Modified data. (Refer to “2. Modification of A, D Page Data”.)

Address	Remark
00 to 0F	
10 to 17	Fixed data-1
18	Fixed data-2
19 to FF	Fixed data-1

Table. 5-1-4.

1-2-3. INITIALIZATION OF B, 1B PAGE DATA (DCR-TRV340)

Note: When reading or writing the B page data, select page: 0, address: 10, and set data: 00.
When reading or writing the 1B page data, select page: 0, address: 10, and set data: 01, then select B page. The 1B page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the B, 1B Page Data

Note1: If "Initializing the B, 1B Page Data" is performed, all data of the B page and 1B page will be initialized. (It is impossible to initialize a single page.)

Note2: If the B, 1B page data has been initialized, the following adjustments need to be performed again.

1) Modification of B, 1B page data

Note3: The power supply voltage must be $6.1 \pm 0.1\text{Vdc}$.

Adjusting page	B
Adjusting Address	00 to FF
Adjusting page	1B
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	5	02	FF	Set the data.
4	5	01	F3	Set the data, and press PAUSE button.
5	5	00	01	Set the data, and press PAUSE button.
6	5	02		Check that the data changes to "00".
7	2	00	29	Set the data
8	2	01	29	Set the data, and press the PAUSE button.
9				Perform "Modification of B, 1B Page Data".

2. Modification of B, 1B Page Data

If the B, 1B page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

- Before changing the data, select page: 0, address: 01, and set data: 01.
- When changing the B page data, select page: 0, address: 10, and set data: 00.
- When changing the 1B page data, select page: 0, address: 10, and set data: 01.
After completing the modification of 1B page data, reset the data of this address to "00".

- 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.

- When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.

Processing after Completing Modification of B, 1B Page data:

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

3. Loader writing inhibit mode setting

When replacing the IC4903 (EEPROM), set the loader writing inhibit mode.

Setting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	5	0E	00	Set the data, and press PAUSE button.
4	5	03	20	Set the data, and press PAUSE button.
5	5	01	FA	Set the data, and press PAUSE button.
6	5	00	01	Set the data, and press PAUSE button.
7	5	0E		Check that the data is "01".
8	2	00	29	Set the data.
9	2	01	29	Set the data, and press PAUSE button.

4. B Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, 1B Page Data".)

Address	Remark
00 to 8C	Fixed data-1
8D	Fixed data-2
8E to FF	Fixed data-1

Table. 5-1-5.

5. 1B Page Table

Note1: When reading or writing the 1B page data, select page: 0, address: 10, and set data: 01, then select B page. The 1B page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the B, 1B Page Data".)
Fixed data-2: Modified data. (Refer to "2. Modification of B, 1B Page Data".)

Address	Remark
00 to FF	Fixed data-1

Table. 5-1-6.

1-2-4. INITIALIZATION OF 8, C, 1C PAGE DATA

Note: When reading or writing the 8, C page data, select page: 0, address: 10, and set data: 00.

When reading or writing the 1C page data, select page: 0, address: 10, and set data: 01, then select C page. The 1C page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

1. Initializing the 8, C, 1C Page Data

Note1: If "Initializing the 8, C, 1C Page Data" is performed, all data of the 8 page, C page and 1C page will be initialized. (It is impossible to initialize a single page.)

Note2: If the 8, C, 1C page data has been initialized, following adjustments need to be performed again.

- 1) Modification of 8, C, 1C page data
- 2) Serial No. input
- 3) Viewfinder system adjustments
- 4) LCD system adjustments
- 5) Servo and RF system adjustments
- 6) Video system adjustments
- 7) Audio system adjustments

Note3: The power supply voltage must be $6.1 \pm 0.1\text{Vdc}$.

Adjusting page	8
Adjusting Address	00 to A3
Adjusting page	C
Adjusting Address	10 to FF
Adjusting page	1C
Adjusting Address	00 to FF

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	3	81	10	Set the data.
4	3	80	0C	Set the data, and press PAUSE button.
5	3	80		Check that the data changes to "1C".
6	2	00	29	Set the data
7	2	01	29	Set the data, and press the PAUSE button.
8				Perform "Modification of 8, C, 1C Page Data".

2. Modification of 8, C, 1C Page Data

If the 8, C, 1C page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

- 1) Before changing the data, select page: 0, address: 01, and set data: 01.
- 2) When changing the 8, C page data, select page: 0, address: 10, and set data: 00.
- 3) When changing the 1C page data, select page: 0, address: 10, and set data: 01.
After completing the modification of 1C page data, reset the data of this address to "00".
- 4) 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.
- 5) 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.
- 6) 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 8, C, 1C Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

3. C Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C, 1C Page Data".)

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

Address	Initial value	Remark
00 to 0F		
10	EE	Switching position adj.
11	00	
12	00	
13	00	
14 to 15		Fixed data-1
16	E0	Hi8/std8 CAP FG duty adj.
17	E0	Reel FG adj.
18	20	AEQ adj.
19	20	
1A		Fixed data-1
1B	25	AEQ adj.
1C	25	
1D		Fixed data-1
1E	25	AGC center level adj.
1F	3E	PLL fo adj.
20	3E	
21	CA	APC adj.
22	99	LPF fo adj.
23 to 24		Fixed data-1
25	88	S VIDEO out Y level adj.

C page

Address	Initial value	Remark
26	E3	S VIDEO out Cr level adj.
27	A1	S VIDEO out Cb level adj.
28		Fixed data-2
29	20	PLL fo adj.
2A to 2B		Fixed data-1
2C	03	APC adj.
2D		Fixed data-1
2E		Fixed data-2
2F	E0	Reel FG adj.
30 to 3F		Fixed data-1
40	0A	Hi8/std8 switching position adj.
41	00	
42		Fixed data-1
43	50	Hi8/std8 AFC fo adj.
44	69	Hi8/Std8 Y/C output level set
45	64	
46 to 4B		Fixed data-1
4C	A6	Hi8/std8 AFM 1.5MHz deviation adj.
4D	94	Hi8/std8 AFM 1.7MHz deviation adj.
4E	80	Hi8/std8 AFM BPF fo adj.
4F		Fixed data-2
50		
51	61	VCO adj. (EVF)
52	76	
53		Fixed data-1
54	9D	RGB AMP adj. (EVF)
55 to 57		Fixed data-1
58	2B	Contrast adj. (EVF)
59		Fixed data-1
5A		Fixed data-2
5B to 5E		Fixed data-1
5F		Fixed data-2
60		
61	5C	VCO adj. (LCD)
62	70	
63	21	V-COM adj. (LCD)
64	9D	RGB AMP adj. (LCD)
65	08	Black limit adj. (LCD)
66	3D	PSIG gray adj. (LCD)
67	7E	White balance adj. (LCD)
68	6C	
69	20	Contrast adj. (LCD)
6A	37	Center level adj. (LCD)
6B		Fixed data-2
6C		
6D		Fixed data-1
6E		Fixed data-2
6F to 81		Fixed data-1
82		Fixed data-2
83 to 85		Fixed data-1
86		Fixed data-2
87 to 88		Fixed data-1
89		Fixed data-2
8A		
8B to AE		Fixed data-1

Address	Initial value	Remark
AF		Fixed data-2
B0 to E1		Fixed data-1
E2		Fixed data-2
E3		
E4 to F3		Fixed data-1
F4	00	Emergency memory address
F5	00	
F6	00	
F7	00	
F8	00	
F9	00	
FA	00	
FB	00	
FC	00	
FD	00	
FE	00	
FF	00	

Table. 5-1-7.

4. 8 Page Table

Note1: The data of page: 0, address: 10 must be “00”.

Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the 8, C, 1C Page Data”.)

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

Address	Initial value	Remark
00 to 18		Fixed data-1
19		Fixed data-2
20 to 34		Fixed data-1
35		Fixed data-2
36 to 49		Fixed data-1
4A		Fixed data-2
4B to 79		Fixed data-1
7A		Fixed data-2 (Modified data. Copy the data built in the same model.)
7B		
7C		
7D		
7E		
7F		
80		
81		
82		
83		
84 to 89		Fixed data-1
8A		Fixed data-2
8B		Fixed data-1
8C	08	Serial No. input
8D	00	
8E	46	
8F	01	
90	02	
91	00	
92	00	
93	00	
94 to A3		Fixed data-1

Table. 5-1-8.

5. 1C Page Table

Note1: When reading or writing the 1C page data, select page: 0, address: 10, and set data: 01, then select C page. The 1C page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to “00”.

Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the 8, C, 1C Page Data”.)

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

Address	Remark
00 to 49	Fixed data-1
4A	Fixed data-2
4B to FF	Fixed data-1

Table. 5-1-9.

1-2-5. INITIALIZATION OF E, F, 1F PAGE DATA

Note: When reading or writing the E, F page data, select page: 0, address: 10, and set data: 00.

When reading or writing the 1F page data, select page: 0, address: 10, and set data: 01, then select F page. The 1F page can be chosen by this data setting.

After reading or writing, reset the data of page: 0, address: 10 to "00".

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

Note1: If "Initializing the E, F, 1F Page Data" is performed, all data of the E page, F page and 1F page will be initialized. (It is impossible to initialize a single page.)

Note2: If the E, F, 1F page data has been initialized, following adjustments need to be performed again.

- 1) Modification of E, F, 1F page data
- 2) 27MHz origin osc. Adj.
- 3) Camera system adjustments

Note3: The power supply voltage must be $6.1 \pm 0.1\text{Vdc}$.

Adjusting page	E
Adjusting Address	00 to FF
Adjusting page	F
Adjusting Address	10 to FF
Adjusting page	1F
Adjusting Address	00 to D9

Initializing Method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	0	10	00	Set the data.
3	6	01	2D	Set the data, and press PAUSE button.
4	6	03	01	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to "01".
6	2	00	29	Set the data
7	2	01	29	Set the data, and press the PAUSE button.
8				Perform "Modification of E, F, 1F Page Data".

2. Modification of E, F, 1F Page Data

If the E, F, 1F page data has been initialized, change the data of the "Fixed data-2" address shown in the following table by manual input.

Modifying Method:

- 1) Before changing the data, select page: 0, address: 01, and set data: 01.
- 2) When changing the E, F page data, select page: 0, address: 10, and set data: 00.
- 3) When changing the 1F page data, select page: 0, address: 10, and set data: 01.
After completing the modification of 1F page data, reset the data of this address to "00".
- 4) 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.
- 5) 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.
- 6) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.

Processing after Completing Modification of E, F, 1F Page data

Order	Page	Address	Data	Procedure
1	0	10	00	Set the data.
2	2	00	29	Set the data.
3	2	01	29	Set the data, and press PAUSE button.

3. F Page Table

Note1: The data of page: 0, address: 10 must be "00".

Note2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1F Page Data".)

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

Address	Initial value		Remark
00 to 0F			
10 to 11			Fixed data-1
12	80		27MHz origin osc. Adj.
13 to 16			Fixed data-1
17	81		HALL adj.
18	5D		
19	8A		
1A to 1D			Fixed data-1
1E	80		AWB & LV standard data input
1F	7A		
20 to 29			Fixed data-1
2A	4D		AWB & LV standard data input
2B	3E		
2C	64		
2D	59		
2E	96		Auto white balance adj.
2F	7A		
30 to 32			Fixed data-1
33	22		Color reproduction adj.
34			Fixed data-1
35	27		Color reproduction adj.
36 to 39			Fixed data-1

F page

Address	Initial value	Remark
3A	00	Color reproduction adj.
3B	F1	
3C to 45		Fixed data-1
46	2A	Flange back adj.
47	18	
48	37	
49	0D	
4A	13	
4B	08	
4C	00	
4D	00	
4E	00	
4F	00	
50	6E	
51	19	
52	00	
53	19	
54	04	
55	00	
56	00	
57 to 5B		Fixed data-1
5C		Fixed data-2
5D		
5E	00	Optical axis adj.
5F to 8D		Fixed data-1
8E		Fixed data-2
8F to 93		Fixed data-1
94		Fixed data-2
95 to 99		Fixed data-1
9A		Fixed data-2
9B to C7		Fixed data-1
C8		Fixed data-2
C9 to D6		Fixed data-1
D7		Fixed data-2
D8 to ED		Fixed data-1
EE		Fixed data-2
EF to F6		Fixed data-1
F7		Fixed data-2
F8 to FF		Fixed data-1

Table. 5-1-10.

4. E Page Table

Note1: The data of page: 0, address: 10 must be “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 1F Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 1F Page Data”.)

Address	Remark
00 to 05	Fixed data-1
06	Fixed data-2
07	
08 to 35	Fixed data-1
36	Fixed data-2
37 to 9B	Fixed data-1
9C	Fixed data-2
9D	Fixed data-1
9E	Fixed data-2 (Modified data. Copy the data built in the same model.)
9F	
A0	
A1	
A2 to AA	Fixed data-1
AB	Fixed data-2
AC to BE	Fixed data-1
BF	Fixed data-2
C0	
C1	Fixed data-1
C2	Fixed data-2
C3	Fixed data-1
C4	Fixed data-2
C5 to E9	Fixed data-1
EA	Fixed data-2
EB	
EC to FF	Fixed data-1

Table. 5-1-11.

5. 1F Page Table

Note1: When reading or writing the 1F page data, select page: 0, address: 10, and set data: 01, then select F page. The 1F page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to “00”.
Note2: Fixed data-1: Initialized data. (Refer to “1. Initializing the E, F, 1F Page Data”.)
Fixed data-2: Modified data. (Refer to “2. Modification of E, F, 1F Page Data”.)

Address	Remark
00 to 51	Fixed data-1
52	Fixed data-2
53 to 5A	Fixed data-1
5B	Fixed data-2
5C to 64	Fixed data-1
65	Fixed data-2
66	
67 to D8	Fixed data-1
D9	Fixed data-2

Table. 5-1-12.

1-3. CAMERA SYSTEM ADJUSTMENTS

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

And check that the data of page: 0, address: 10 is “00”. If not, set data: 00 to this address.

1. HALL Adjustment

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

Subject	Not required
Measurement Point	Display data of page 1 (Note1)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	17, 18, 19
Specified Value 1	89 to 8D
Specified Value 2	15 to 19

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

1 : 00 : XX

IRIS display data

Note2: The data of page: 0, address: 10 must be “00”.

Switch setting:

POWER..... CAMERA

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	94	8B	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”. (Note3)
6	6	01	00	Set the data, and press PAUSE button.

Note3: The adjustment data will be automatically input to page: F, address: 17, 18, 19.

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	0	03	00	Set the data.
4	6	01	00	Set the data, and press PAUSE button.
5	0	01	00	Set the data.

2. Flange Back Adjustment **RadarW**
(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	46 to 56

- Note1:** Dark Siemens star chart.
Note2: This adjustment should be carried out upon completion of “HALL adjustment”.
Note3: Make the lens horizontal and perform this adjustment.
Note4: The data of page: 0, address: 10 must be “00”.
Note5: Check that the data of page: 6, address: 02 is “00”. If not, set data: 00 to this address, and press the PAUSE button.

Switch setting:

- 1) POWER CAMERA
- 2) NIGHT SHOT OFF
- 3) SLOW SHUTTER/SUPER NIGHT SHOT OFF

Preparations:

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

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

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	48	01	Set the data.
3	6	01	13	Set the data, and press PAUSE button.
4	6	01	27	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to “01”. (Note6)

Note6: The adjustment data will be automatically input to page: F, address: 46 to 56.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	48	00	Set the data.
2	0	01	00	Set the data.
3				Turn off the power and turn on again.
4				Perform “Flange Back Check”.

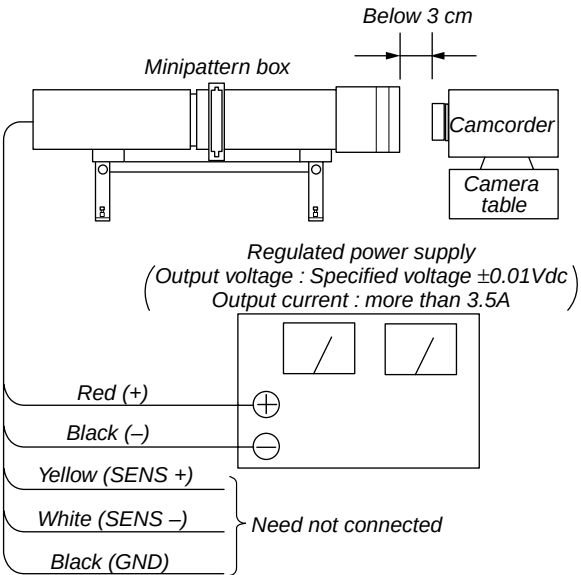


Fig. 5-1-7.

3. 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.

3-1. Flange Back Adjustment (1)

Subject	Flange back adjustment chart (2.0 m from the front of the protection glass) (Luminance: 350 ± 50 lux)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	46 to 56

Note1: This adjustment should be carried out upon completion of “HALL adjustment”.

Note2: Make the lens horizontal and perform this adjustment.

Note3: The data of page: 0, address: 10 must be “00”.

Note4: Check that the data of page: 6, address: 02 is “00”. If not, set data: 00 to this address, and press the PAUSE button.

Switch setting:

- 1) POWER CAMERA
- 2) NIGHT SHOT OFF
- 3) SLOW SHUTTER/SUPER NIGHT SHOT OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	48	01	Set the data.
3	6	01	13	Set the data, and press PAUSE button.
4	6	01	15	Set the data, and press PAUSE button.
5	6	02		Check that the data changes to “01”. (Note5)

Note5: The adjustment data will be automatically input to page: F, address: 46 to 56.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1				Turn off the power and turn on again.
2				Perform “Flange Back Adjustment (2)”

3-2. 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	46 to 56

Note1: Make the lens horizontal and perform this adjustment.

Note2: The data of page: 0, address: 10 must be “00”.

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

Switch setting:

- 1) POWER CAMERA
- 2) NIGHT SHOT OFF
- 3) SLOW SHUTTER/SUPER NIGHT SHOT OFF

Preparations:

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

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	48	01	Set the data.
3	6	01	13	Set the data, and press PAUSE button.
4				Place a ND filter on the lens so that the optimum image is obtain.
5	6	01	29	Set the data, and press PAUSE button.
6	6	02		Check that the data changes to “01”. (Note4)

Note4: The adjustment data will be automatically input to page: F, address: 46 to 56.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	48	00	Set the data.
2	0	01	00	Set the data.
3				Turn off the power and turn on again.
4				Perform “Flange Back Check”.

4. 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: The data of page: 0, address: 10 must be “00”.

Switch setting:

- 1) POWER CAMERA
- 2) NIGHT SHOT OFF
- 3) SLOW SHUTTER/SUPER NIGHT SHOT OFF

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

- 1) Select page: 0, address: 03, and set data: 0F.
- 2) Page 1 shows the state of the focus.
 - 1 : 00 : XX
 - Odd: Focused
 - Even: Unfocused

Checking method:

- 1) Select page: 6, address: 40, and set data: 01.
- 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.

5. Optical Axis Adjustment

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

Subject	Siemens star
Measurement Point	Check on the monitor TV
Measuring Instrument	
Adjustment Page	F
Adjustment Address	5E

Note1: This adjustment should be carried out upon completion of “Flange back adjustment”.

Note2: The data of page: 0, address: 10 must be “00”.

Note3: Check that the data of page: 6, address: 48 is “00”. If not, set data: 00 to this address.

Switch setting:

- 1) POWER CAMERA
- 2) DIGITAL ZOOM (Menu display) OFF
- 3) STEADY SHOT (Menu display) OFF

Preparations before adjustments:

- 1) Playback the monoscope segment of the system check tape (WR5-5ND).
- 2) Attach the optical axis frame chart (transparent) on the monitor TV screen. Center of monoscope image and that of optical axis frame must be agree.
- 3) Set to the camera mode.

Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: F, address: 5E, set data: 00, and press the PAUSE button.
- 3) Place the Siemens star 2.0 m away from the front of the lens.
- 4) Shoot the Siemens star with the zoom TELE end.
- 5) Point the lens toward the Siemens star chart until center of the Siemens star is located in the center of the optical axis frame.
- 6) Shoot the Siemens star with the zoom WIDE end.
- 7) Measure on the monitor TV screen in which area of the optical axis frame the center of the Siemens star is located. Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame.) The measurement value is named L1.
- 8) Read the correction data corresponding to the area from Table 5-1-13.
- 9) Input the correction data to page: F, address: 5E, and press the PAUSE button
- 10) Shoot the Siemens star with the zoom TELE end.
- 11) Point the lens toward the Siemens star chart until center of the Siemens star is located in the center of the optical axis frame.
- 12) Shoot the Siemens star with the zoom WIDE end.
- 13) Measure the amount of displacement (distance between the center of the Siemens star and the center of the optical axis frame.) The measurement value is named L2.
- 14) Compare the values L1 and L2, and confirm that L2 is smaller than L1. If L2 is larger than L1, select page: F, address: 5E, set data: 00, and press the PAUSE button.

Area	Display phase	Correction data Page: F, Address: 5E
1	22.6° to 67.5°	01
2	67.6° to 112.5°	02
3	112.6° to 157.5°	03
4	157.6° to 202.5°	04
5	202.6° to 247.5°	05
6	247.6° to 292.5°	06
7	292.6° to 337.5°	07
8	337.6° to 22.5°	08

Table 5-1-13.

Processing after Completing Adjustments:

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

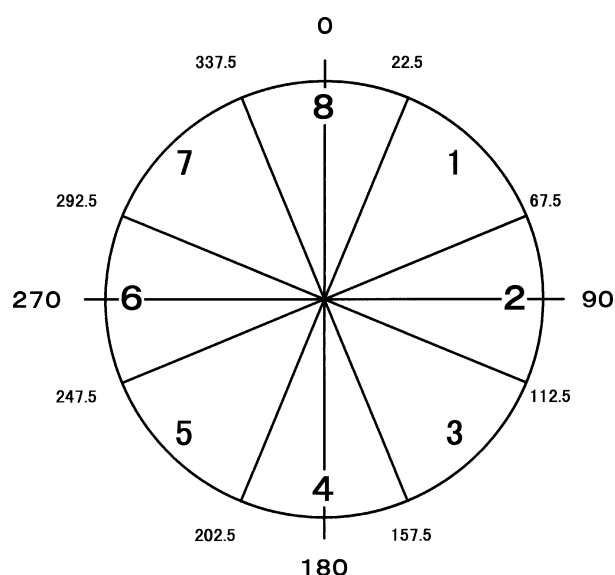


Fig. 5-1-8.

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

- Note1:** The following adjustments should be carried out upon completion of “Flange back adjustment”.
- Note2:** The data of page: 0, address: 10 must be “00”.

Switch setting:

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

Setting method:

- 1) Select page: 6, address: 48, and set data: 01.
- 2) Adjust the zoom and the camera direction, and set to the specified position.
- 3) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color reproduction adjustment frame”.

Processing after Completing Camera System Adjustments:

- After completing the camera system adjustments, release the data settings.
- 1) Select page: 6, address: 48, and set data: 00.

Check on the oscilloscope

1. Horizontal period

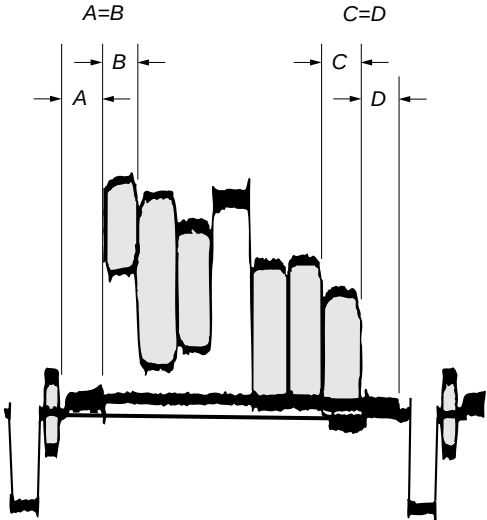


Fig. 5-1-9.

2. Vertical period

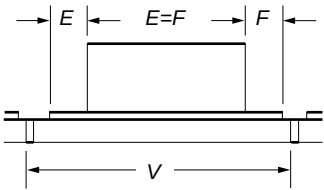


Fig. 5-1-10.

Check on the monitor TV (Underscanned mode)

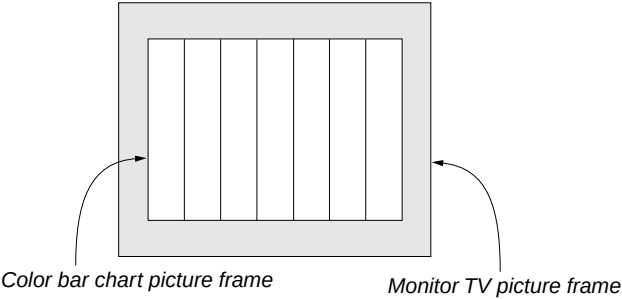


Fig. 5-1-11.

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	33, 35, 3A, 3B
Specified Value	All color luminance points should settle within each color reproduction frame.

Note: The data of page: 0, address: 10 must be "00".

Switch setting:

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

Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: 6, address: 48, and set data: 01.
- 3) Select page: 6, address: 9D, set data: 30.
- 4) Select page: 6, address: 01, set data: 3D, and press the PAUSE button.
- 5) Select page: F, address: D0, set data: 37, 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: 33, 35, 3A, 3B, 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: 6, address: 01, set data: 00, and press the PAUSE button.
- 2) Select page: 6, address: 48, and set data: 00.
- 3) Select page: 6, address: 9D, and set data: 00.
- 4) Select page: 0, address: 01, and set data: 00.

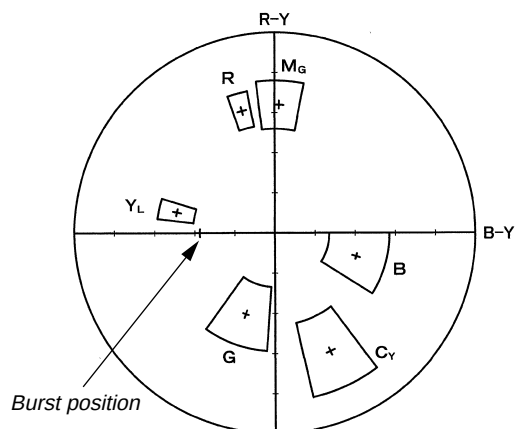


Fig. 5-1-12.

8. Auto White Balance & LV Standard Data Input RadarW

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 (Note5)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	1E, 1F, 2A to 2D
Specified Value	0FF0 to 1010

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: The data of page: 0, address: 10 must be "00".

Note4: Check that the data of page: 6, address: 02 is "00". If not, set data: 00 to this address, and press the PAUSE button.

Note5: Displayed data of page 1 of the adjustment remote commander.
1 : XX : XX

Display data

Switch setting:

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

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	6	48	01	Set the data.
3	6	16	02	Set the data.
4				Wait for 2 sec.
5	6	01	11	Set the data, and press PAUSE button.
6	6	01	0D	Set the data, and press PAUSE button.
7	6	02		Check that the data changes to "01". (Note6)
8	0	03	1E	Set the data.
9	1			Check that the display data (Note5) satisfies the specified value.

Note6: The adjustment data will be automatically input to page: F, address: 1E, 1F and 2A to 2D.

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	16	00	Set the data.
3	6	48	00	Set the data.
4	0	01	00	Set the data.
5	0	03	00	Set the data.
6				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 (Note3)
Measuring Instrument	Adjustment remote commander
Adjustment Page	F
Adjustment Address	2E, 2F
Specified Value	R ratio: 2BC0 to 2CC0 B ratio: 5920 to 5A20

Note1: This adjustment should be carried out upon completion of “Auto White Balance & LV Standard Data Input”.

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

Note3: The data of page: 0, address: 10 must be “00”.

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

1 : XX : XX
 └─── Display data

Switch setting:

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

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter for color temperature correction on the lens.
2	0	01	01	Set the data.
3	6	48	01	Set the data.
4	F	3E		Write down the data.
5	F	3E	2C	Set the data, and press PAUSE button.
6	F	3F		Write down the data.
7	F	3F	40	Set the data, and press PAUSE button.
8	F	40		Write down the data.
9	F	40	59	Set the data, and press PAUSE button.
10	F	41		Write down the data.
11	F	41	A0	Set the data, and press PAUSE button.
12	6	01	83	Set the data, and press PAUSE button.
13	6	01	81	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: 2E, 2F.

Processing after Completing Adjustments:

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	48	00	Set the data.
3	F	3E		Set the data that is written down at step 4, and press PAUSE button.
4	F	3F		Set the data that is written down at step 6, and press PAUSE button.
5	F	40		Set the data that is written down at step 8, and press PAUSE button.
6	F	41		Set the data that is written down at step 10, and press PAUSE button.
7	0	03	00	Set the data.
8	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

Note: The data of page: 0, address: 10 must be "00".

Switch setting:

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

Checking method:

Order	Page	Address	Data	Procedure
				Indoor white balance check
1				Check that the lens is not covered with either filter.
2	6	48	01	Set the data.
3	6	01	0F	Set the data, and press PAUSE button.
4				Check that the center of the white luminance point is within the circle shown Fig. 5-1-13. A.
5	6	01	00	Set the data, and press PAUSE button.
				Outdoor white balance check
6				Place the C14 filter on the lens.
7	6	01	3F	Set the data, and press PAUSE button.
8				Check that the center of the white luminance point is within the circle shown Fig. 5-1-13. B.
9				Remove the C14 filter.
				LV data check
10				Place the ND filter 1.5 (1.0 + 0.1 + 0.4) on the lens.
11	6	01	00	Set the data, and press PAUSE button.
12	0	03	06	Set the data.
13	1			Check that the display data (Note) satisfies the specified value. Specified value: 8000 to 8BC0

Note: Displayed data of the adjustment remote commander.

1 : XX : XX

Display data

Processing after Completing Adjustments

Order	Page	Address	Data	Procedure
1	6	01	00	Set the data, and press PAUSE button.
2	6	48	00	Set the data.
3	0	03	00	Set the data.

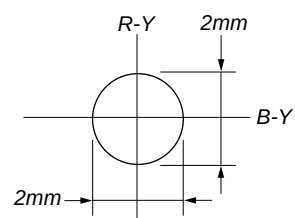


Fig. 5-1-13. (A)

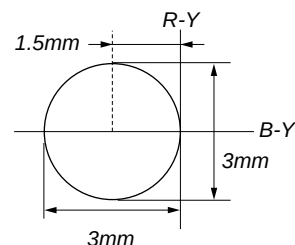


Fig. 5-1-13. (B)

11. Steady Shot Check

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
Specified Value	2B00 to 4B00

Note1: Displayed data of the adjustment remote commander.

1 : XX : XX
 |
 Display data

Note2: The data of page: 0, address: 10 must be “00”.

Switch setting:

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

Adjusting method:

Order	Page	Address	Data	Procedure
				Pitch sensor check (SI-032 board SE301)
1	0	03	11	Set the data.
2	1			Check that the display data (Note1) satisfies the specified value.
				Yaw sensor check (SI-032 board SE302)
3	0	03	12	Set the data.
4	1			Check that the display data (Note1) satisfies the specified value.

Processing after Completing Adjustments

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

1-4. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENT

Note1: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

Note2: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note3: Switch setting:
LCD panel Close

[Adjusting connector]

Most of the measuring points for adjusting the viewfinder system are concentrated in CN1108 of VC-276 board.

Connect the Measuring Instruments via the CPC-13 jig (J-6082-443-A).

The following table shows the Pin No. and signal name of CN1108.

Pin No.	Signal Name	Pin No.	Signal Name
1	REG GND	11	VCO
2	N. C.	12	EVF VG
3	BPF MONI	13	RF SWP
4	N. C.	14	N. C.
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	N. C.	17	N. C.
8	RF SWP	18	REG GND
9	N. C.	19	REG GND
10	N. C.	20	REG GND

Table 5-1-14.

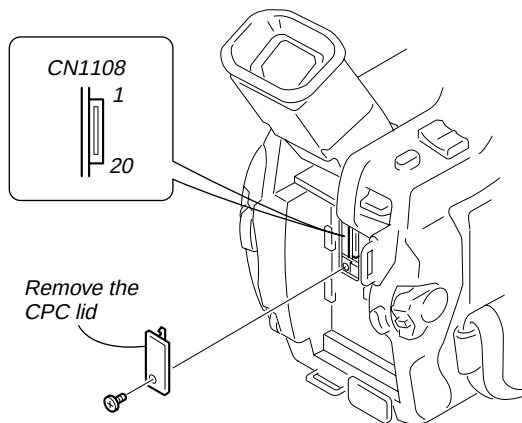


Fig. 5-1-14.

1. VCO Adjustment (VC-276 board)

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

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑪ of CN1108 (VCO)
Measuring Instrument	Frequency counter
Adjustment Page	C
Adjustment Address	51, 52
Specified Value	$f = 15734 \pm 30\text{Hz}$

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	51		Change the data and set the VCO frequency (f) to the specified value.
3	C	51		Press PAUSE button.
4	C	51		Read the data, and this data is named D ₅₁ .
5				Convert D ₅₁ to decimal notation, and obtain D ₅₁ '. (Note1)
6				Calculate D ₅₂ ' using following equations (Decimal calculation) When $D_{51}' \leq 236$ $D_{52}' = D_{51}' + 19$ When $D_{51}' > 236$ $D_{52}' = 255$
7				Convert D ₅₂ ' to a hexadecimal number, and obtain D ₅₂ . (Note)
8	C	52	D ₅₂	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

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

2. RGB AMP Adjustment (VC-276 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	Pin ⑫ of CN1108 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	54
Specified Value	A = 7.50 ± 0.10V

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	54		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	C	54		Press PAUSE button.
4	0	01	00	Set the data.

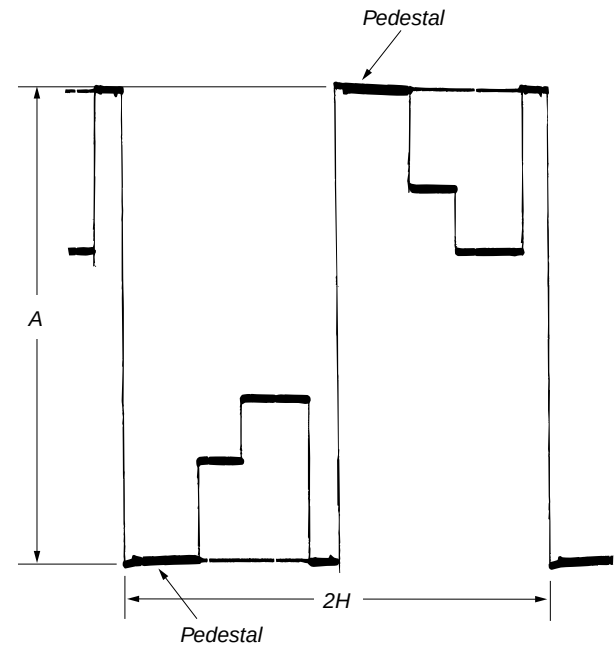


Fig. 5-1-15.

3. Contrast Adjustment (VC-276 board)

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

Mode	Camera
Subject	Arbitrary
Measurement Point	Pin ⑫ of CN1108 (EVF VG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	58
Specified Value	A = 2.49 ± 0.10V

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	58		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	C	58		Press PAUSE button.
4	0	01	00	Set the data.

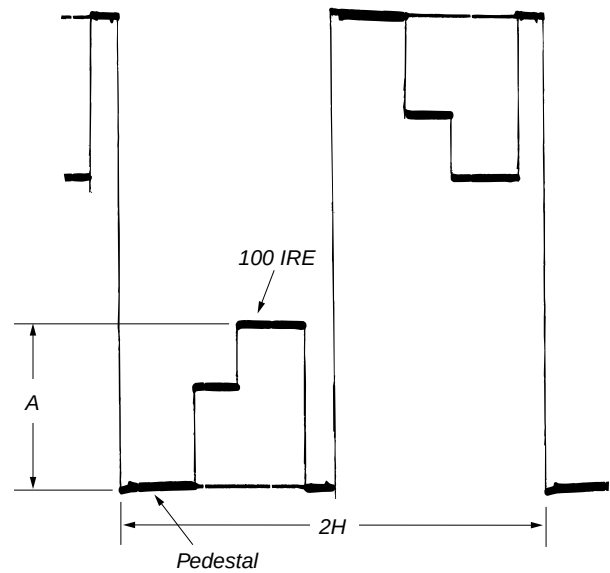


Fig. 5-1-16.

1-5. LCD SYSTEM ADJUSTMENT

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

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

Note 3: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note 4: Set the LCD BRIGHT (Menu display) to the center.
Set the LCD COLOR (Menu display) to the center.

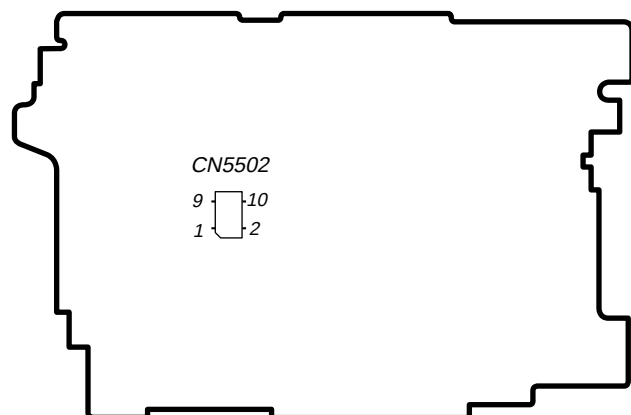
[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN5502 of the PD-160 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	PSIG
5	VR	6	MAKER CHECK
7	XHD	8	XHD OUT
9	GND	10	GND

Table 5-1-15.

PD-160 board



1. VCO Adjustment (PD-160 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 (HSY)
Measuring Instrument	Frequency counter
Adjustment Page	C
Adjustment Address	61, 62
Specified Value	$f = 15734 \pm 30\text{Hz}$

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	61		Change the data and set the VCO frequency (f) to the specified value.
3	C	61		Press PAUSE button.
4	C	61		Read the data, and this data is named D ₆₁ .
5				Convert D ₆₁ to decimal notation, and obtain D ₆₁ '. (Note2)
6				Calculate D ₆₂ ' using following equations (Decimal calculation) When $D_{61}' \leq 238$ $D_{62}' = D_{61}' + 17$ When $D_{61}' > 238$ $D_{62}' = 255$
7				Convert D ₆₂ ' to a hexadecimal number, and obtain D ₆₂ . (Note2)
8	C	62	D ₆₂	Set the data, and press PAUSE button.
9	0	01	00	Set the data.

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

2. PSIG Gray Adjustment (PD-160 board)

Set the uniformity improvement signal to an appropriate level.

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	66
Specified Value	A = 5.00 ± 0.1V

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	66		Change the data and set the PSIG signal level (A) to the specified value. (The data should be “00” to “7F”)
3	C	66		Press PAUSE button.
4	0	01	00	Set the data.

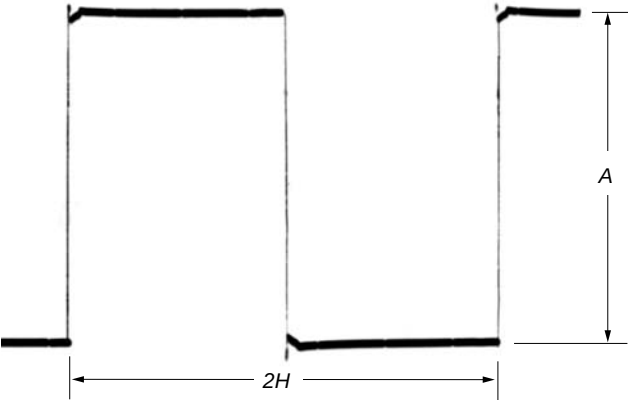


Fig. 5-1-17.

3. RGB AMP Adjustment (PD-160 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) Ext. trigger: Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	64
Specified Value	A = 7.68 ± 0.05V

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	64		Change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
3	C	64		Press PAUSE button.
4	0	01	00	Set the data.

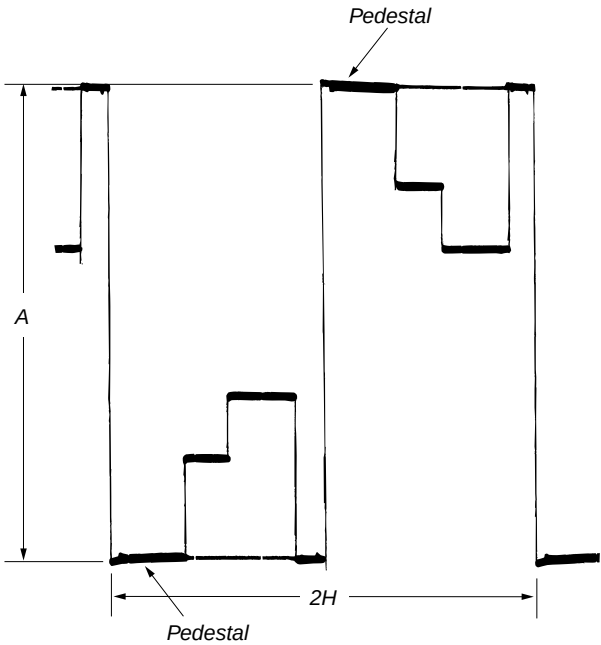


Fig. 5-1-18.

4. Black Limit Adjustment (PD-160 board)

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

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	65
Specified Value	$A = 8.30 \pm 0.08V$

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	C4	61	Set the data.
3	3	C5	58	Set the the data.
4	C	65		Change the data and set the PSIG signal amplitude (A) to the specified value. (The data should be "00" to "0F".)
5	C	65		Press PAUSE button.
6	3	C4	00	Set the data.
7	3	C5	00	Set the data.
8	0	01	00	Set the data.
9				Check that the specified value of "RGB AMP Adjustment" is satisfied.

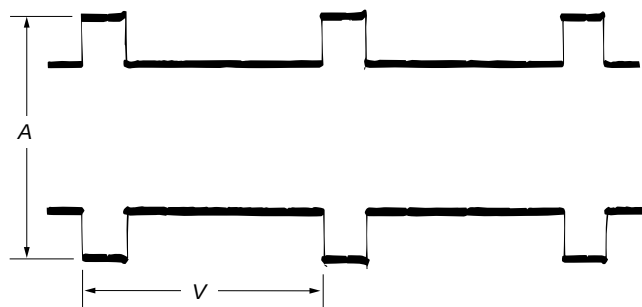


Fig. 5-1-19.

5. Contrast Adjustment (PD-160 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) Ext. trigger: Pin ④ of CN5502 (PSIG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	69
Specified Value	$A = 2.72 \pm 0.05V$

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	69		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	C	69		Press PAUSE button.
4	0	01	00	Set the data.

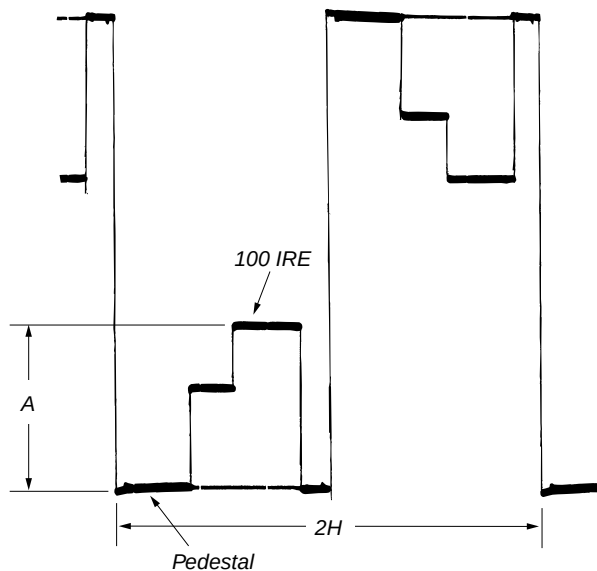


Fig. 5-1-20.

6. Center Level Adjustment (PD-160 board)

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

Mode	VTR stop
Signal	No signal
Measurement Point	Pin ③ of CN5502 (VG)
Measuring Instrument	Digital voltmeter
Adjustment Page	C
Adjustment Address	6A
Specified Value	A = 7.00 ± 0.03Vdc

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

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

7. V-COM Adjustment (PD-160 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	C
Adjustment Address	63
Specified Value	The brightness difference between the section A and section B is minimum.

Note1: This adjustment should be carried out upon completion of the following adjustments.
RGB AMP Adjustment
Black Limit Adjustment
Contrast Adjustment
Center Level Adjustment

Note2: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	63		Change the data so that the brightness of the section A and that of the section B is equal. (The data should be “00” to “3F”.)
3	C	63		Subtract 2 from the data.
4	C	63		Press PAUSE button.
5	0	01	00	Set the data.

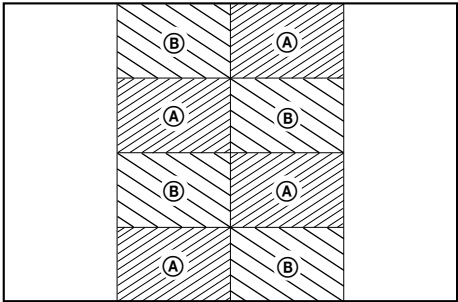


Fig. 5-1-21.

8. White Balance Adjustment (PD-160 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	C
Adjustment Address	67, 68
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

Note2: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	67	7E	Set the data, and press PAUSE button.
3	C	68	6C	Set the data, and press PAUSE button.
4	C	68		Check that the LCD screen is not colored. If not colored, proceed to step 10.
5	C	67		Change the data so that the LCD screen is not colored.
6	C	67		Press PAUSE button.
7	C	68		Change the data so that the LCD screen is not colored.
8	C	68		Press PAUSE button.
9	C	68		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 [M2000 Mechanism]”.

2-1. Hi8/STANDARD 8 MODE

Note1: Before performing the adjustments, check the data of page: 0, address: 10 is “00”. If not, set data: 00 to this address.

Note2: < >: DCR-TRV240, []: DCR-TRV340

2-1-1. 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 to the LANC jack.
- 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: C, address: 3E, set data: 01, and press the PAUSE button of the adjustment remote commander.
- 7) Select page: <D>[A], address: 10, set data: 10, and press the PAUSE button. (Note2)
- 8) Disconnect the power supply of the unit, and connect it again.
- 9) Select page: <2>[7], address: <4D>[62], and set data: <80>[02]. (Note2)

By carrying out the above procedure, the unit can be operated without loading a cassette. (Note3)

Be sure to carry out “Processing after Operations” after checking the operations.

Set the data of page: D, address: 10 to “<12>[02]”, if the sensor ineffective mode, forced VTR power supply ON mode is to be used together. (Note2)

Note3: Except for the camera recording mode and VTR recording mode.

[Procedure after checking operations]

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Select page: C, address: 3E, set data: 00, and press the PAUSE button.
- 3) Select page: D, address: 10, set data: 00, and press the PAUSE button.
- 4) Select page: A, address: 10, set data: 00, and press the PAUSE button. (DCR-TRV340)
- 5) Select page: <2>[7], address: <4D>[62], and set data: 00. (Note2)
- 6) Select page: 0, address: 01, and set data: 00.
- 7) Disconnect the power supply of the unit.

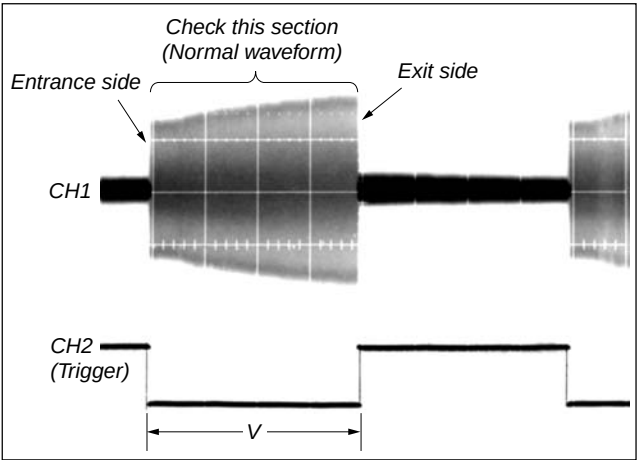


Fig. 5-2-1.

2-1-2. 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 to the LANC jack.
- 3) Turn on the HOLD switch of the adjustment remote commander.
- 4) Select page: 0, address: 01, and set data: 01.
- 5) Select page: <2>[7], address: <4D>[62], and set data: <80>[02]. (Note2)
- 6) Select page: C, address: 3E, set data: 08, and press the PAUSE button of the adjustment remote commander. (Be sure to perform “Processing after operation” after completing adjustments.)
- 7) Connect the oscilloscope to VC-276 board CN1108 via CPC-13 jig (J-6082-443-A).
Channel 1: VC-276 board, CN1108 Pin ⑤
External trigger: VC-276 board, CN1108 Pin ⑧
- 8) Playback Hi8/standard 8mm alignment tape for tracking. (WR5-1NP)
- 9) Check that the oscilloscope RF waveform is normal at the entrance and exit. (Fig. 5-2-1.)
If not normal, adjust according to the separate volume “8mm Video Mechanical Adjustment Manual [M2000 Mechanism]”.
- 10) Perform “Processing after operations”, after completing adjustment.

CN1108 of VC-276 board

Pin No.	Signal Name	Pin No.	Signal Name
1	REG GND	11	VCO
2	N. C.	12	EVF VG
3	BPF MONI	13	RF SWP
4	N. C.	14	N. C.
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	N. C.	17	N. C.
8	RF SWP	18	REG GND
9	N. C.	19	REG GND
10	N. C.	20	REG GND

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: <2>[7], address: <4D>[62], and set data: 00. (Note2)
- 4) Select page: C, address: 3E, set data: 00, and press the PAUSE button.
- 5) Select page: 0, address: 01, and set data: 00.
- 6) Remove the power supply from the unit.

2-2. DIGITAL8 MODE

Note1: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

Note2: <>: DCR-TRV240, []: DCR-TRV340

2-2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

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

2-2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

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

2-2-3. OVERALL TAPE PATH CHECK

1. Recording of the tape path check signal

- 1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
- 2) Connect the adjustment remote commander to the LANC jack.
- 3) Turn the HOLD switch of the adjustment remote commander to the ON position.
- 4) Set to the camera recording mode.
- 5) Select page: 3, address: 1C, set data: 5D, and press the PAUSE button of the adjustment remote commander.
- 6) Record for several minutes.
- 7) Release the camera recording mode.
- 8) Select page: 3, address: 1C, set data: 00, and press the PAUSE button.

2. Tape path check

- 1) Clean the tape running side (tape guide, capstan shaft, pinch roller).
- 2) Connect the adjustment remote commander to the LANC jack.
- 3) Turn the HOLD switch of the adjustment remote commander to the ON position.
- 4) Connect an oscilloscope to VC-276 board CN1108 via the CPC-13 jig (J-6082-443-A).
Channel 1: VC-276 board, CN1108 Pin ⑩ (Note)
External trigger: VC-276 board, CN1108 Pin ⑬
Note: Connect a 75Ω resistor between Pins ⑩ of CN1108 and ⑥ (GND).
- 5) Select page: <2>[7], address: <4D>[62], and set data: <40>[01]. (Note2)
- 6) Playback the tape path check signal.
- 7) Select page: 3, address: 26, and set data: 31.
- 8) Select page: 3, address: 33, and set data: 08.
- 9) Check that the oscilloscope RF waveform is flat at the entrance and exit.
If not flat, perform "2-1-2. TAPE PATH ADJUSTMENT" of "2-1. Hi8/STANDARD 8mm MODE".
- 10) Select page: 3, address: 26, and set data: 00.
- 11) Select page: 3, address: 33, and set data: 00.
- 12) Select page: <2>[7], address: <4D>[62], and set data: 00. (Note2)

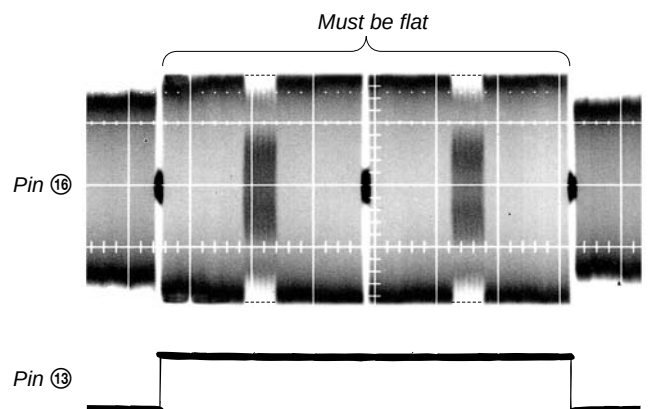


Fig. 5-2-2.

5-3. VIDEO SECTION ADJUSTMENT

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) Digital8 alignment tapes
 - SW/OL standard (WR5-2D)
Parts code: 8-967-993-22
 - Audio operation check for NTSC (WR5-3ND)
Parts code: 8-967-993-32
 - System operation check for NTSC (WR5-5ND)
Parts code: 8-967-993-42
 - 12) Hi8/standard8 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 Checking AFM stereo operations (WR5-9NS)
Parts code : 8-967-995-23
 - For BPF adjustment (WR5-11NS)
Parts code : 8-967-995-71
- 13) Adjustment remote commander (J-6082-053-B)
 - 14) CPC-13 jig (J-6082-443-A)

3-1-2. Precautions on Adjusting

Note1: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

- 1) The adjustments of this unit are performed in the VTR mode or camera mode.

To set to the VTR mode, set the power switch to "VCR or PLAYER" or set the "Forced VTR Power ON mode" using the adjustment remote commander (Note2).

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 (Note3).

After completing adjustments, be sure to exit the "Forced VTR Power ON Mode" or "Forced Camera Power ON Mode". (Note4)

- 2) The front panel block (SI-032 board (Microphone amp, remote commander receiver), FP-411 flexible (MIC jack, Head phone jack, LANC jack, MF photo sensor)) must be assembled for connecting the adjustment remote commander.

To remove it, disconnect the following connector.

VC-276 board CN1103 (30P 0.5mm)

- 3) Only for DCR-TRV240 model, as removing the cabinet (R) assembly (removing CN1110 of the VC-276 board) means removing the lithium 3V power supply (BT001 on the CF-2500 block), 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: A5 to AA). (Refer to "5-4.Service Mode".)

- 4) The cabinet (R) assembly (CF-2500 block, LCD block) need not be connected to operate the VTR block. (Use the adjustment remote commander, to operate the VTR block.) When removing the cabinet (R) assembly, disconnect the following connector.

1. VC-276 board CN1110 (22P, 0.5mm)

2. VC-276 board CN1106 (20P, 0.8mm)

- 5) The memory stick connector is need not be connected. To remove it, disconnect the following connector. (DCR-TRV340)

VC-276 board CN1105 (10P, 0.5mm)

- 6) The viewfinder block is need not be connected. To remove it, disconnect the following connector.

VC-276 board CN7001 (20P, 0.5mm)

- 7) The lens block (CD-357 board) need not be connected. To remove, disconnect the following connectors.

1. VC-276 board CN1501 (16P, 0.5mm)

2. VC-276 board CN1551 (24P, 0.5mm)

- 8) By setting the "Forced VTR Power ON mode" or "Forced Camera Power ON mode", the video section can be operate even if the cabinet (L) assembly (SS-1380 block) has been removed. When removing the cabinet (L) assembly, disconnect the following connector.

1. VC-276 board CN1109 (12P 0.8mm)

Note2: 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 cabinet (L) assembly (SS-1380 block) removed.

After completing adjustments, be sure to exit the "Forced VTR Power ON mode".

Note3: 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 cabinet (L) assembly (SS-1380 block) removed.

After completing adjustments, be sure to exit the "Forced Camera Power ON mode".

Note4: 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 at VC-276 board CN1108. Connect the measuring instruments via the CPC-13 jig (J-6082-443-A). The following table lists the pin numbers and signal names of CN1108.

Pin No.	Signal Name	Pin No.	Signal Name
1	REG GND	11	VCO
2	N. C.	12	EVF VG
3	BPF MONI	13	RF SWP
4	N. C.	14	N. C.
5	PB RF	15	CAP FG
6	REG GND	16	RF MON
7	N. C.	17	N. C.
8	RF SWP	18	REG GND
9	N. C.	19	REG GND
10	N. C.	20	REG GND

Table 5-3-1.

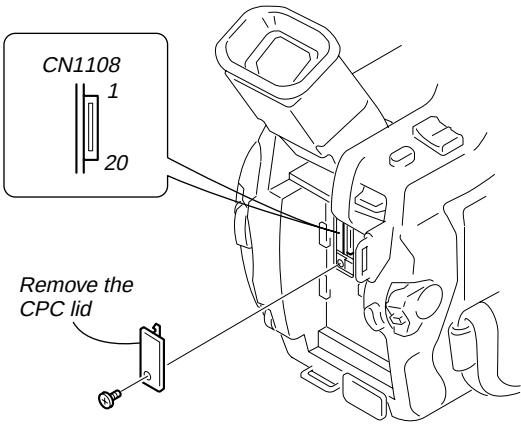


Fig. 5-3-1.

3-1-4. Connecting the Equipment

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

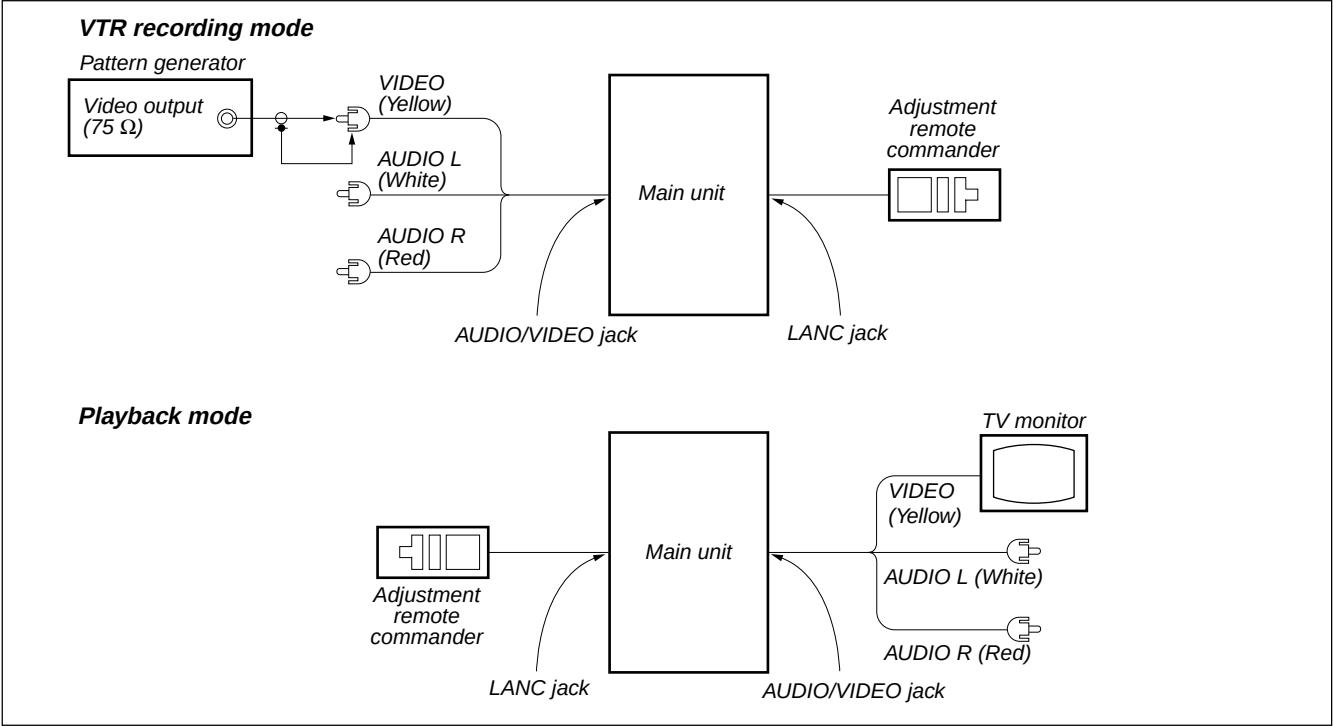


Fig. 5-3-2.

3-1-5. Alignment 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.

Digital8 alignment tape

Name	Usage
SW/OL standard (WR5-2D)	Switching position adjustment
Audio operation check (WR5-3ND),	Audio system adjustment
System operation check (WR5-5ND)	Operation check

Hi8/standard 8 alignment tape

Name	Record-ing mode	Tape type	Tape speed	Usage
Tracking WR5-1NP	Standard 8	MP	SP	Tape path adjustment Switching position adjustment
Video frequency characteristics WR5-7NE	Hi8	ME	SP	Frequency characteristics adjustment
Operation check (SP mode) WR5-5NSP	Standard 8	MP	SP	Checking operations
Operation check (SP mode) WR5-8NSE	Hi8	ME	SP	
Operation check (LP mode) WR5-4NL	Standard 8	MP	LP	
Operation check (LP mode) WR5-8NLE	Hi8	ME	LP	
AFM stereo Operation check WR5-9NS	Standard 8	MP	SP	AFM stereo Checking operations
BPF adjustment WR5-11NS	Standard 8	MP	SP	BPF adjustment

Tape type

ME Particle type metal tape

MP Evaporated type metal tape

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

Note: Measure using the VIDEO terminal (Terminated at 75Ω).

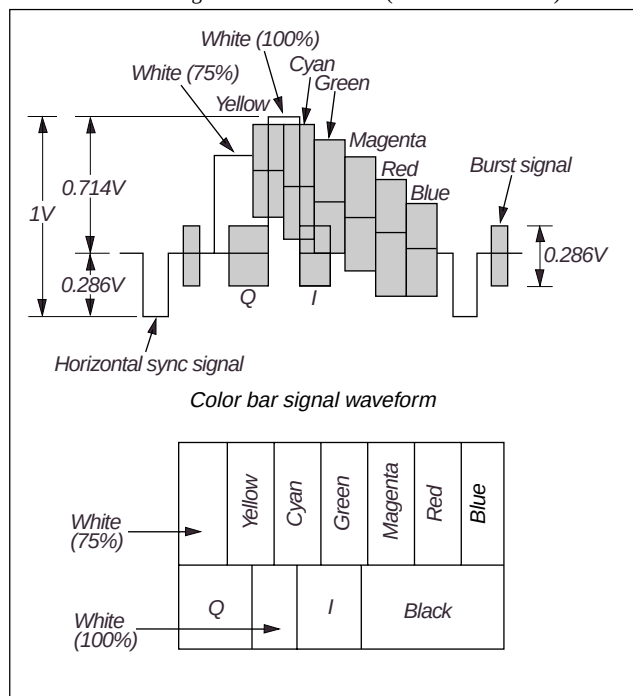


Fig. 5-3-3. Color Bar Signal of the Alignment Tape

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

Video input/output

Special stereo minijack, 1Vp-p, 75Ω, unbalanced, sync negative

S video input/output

4-pin mini DIN

Luminance signal: 1Vp-p, 75Ω, unbalanced, sync negative

Chrominance signal: 0.286Vp-p, 75Ω, unbalanced

Audio input/output

Special stereo minijack:

Input: -7.5dBs, input impedance more than 47kΩ

Output: -7.5dBs, (at load impedance 47kΩ), impedance less than 2.2kΩ

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

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

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

Note1: When reading or writing the 1B, 1C, 1D page data, select page: 0, address: 10, and set data: 01, then select B, C or D page. The 1B, 1C or 1D page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to “00”.

Note2: A page, B page and 1B page are DCR-TRV340 model only.

2. Serial No. Input

Note: Before performing the adjustments, check the data of page: 0, address: 10 is “00”. If not, set data: 00 to this address.

2-1. Company ID Input

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

Page	8
Address	8C, 8D, 8E, 8F, 90

Input method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Input the following data to page: 8, addresses: 8C to 90.
Note: Press the PAUSE button of the adjustment remote commander each time to set the data.
- 3) Select page: 0, address: 01, and set data: 00.

Address	Data
8C	08
8D	00
8E	46
8F	01
90	02

2-2. Serial No. Input

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

Page	8
Address	91, 92, 93

Input method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Read the serial No. on the name plate, and take it as D₁.
Example: If the serial No. is 77881.
D₁=77881
Note: Use six digits of the low rank when a serial No. is more than seven digits.
- 3) Obtain D₂ and H₁ corresponding to D₁ from Table 5-3-2.
Example: If D₁ is “77881”.
D₂=D₁–65536=12345
H₁=FE

D ₁ (Decimal)	D ₂ (Decimal)	H ₁ (Hexadecimal) (Service model code)
000001 to 065535	D ₁	FE
065536 to 131071	D ₁ –65536	FE
131072 to 196607	D ₁ –131072	FE

Table 5-3-2.

- 4) Input H₁ to page: 8, address: 91. (Model code input)
Example: If H₁ is “FE”.
Select page: 8, address: 91, set data: FE, and press the PAUSE button.
- 5) Obtain the maximum decimal not exceeding D₂ from Table 5-3-3, and take this as D₃.
Example: If D₂ is “12345”.
D₃ = 12288
- 6) Obtain the hexadecimal corresponding to D₃ from Table 5-3-3, and take this as H₃.
Example: If D₃ is “12288”.
H₃ = 3000
- 7) Obtain the difference D₄ between D₂ and D₃. (Decimal calculation, 0 ≤ D₄ ≤ 255)
D₄ = D₂ – D₃
Example: If D₂ is “12345” and D₃ is “12288”.
D₄ = 12345 – 12288 = 57
- 8) Convert D₄ to hexadecimal, and take this as H₄. (Refer to “Hexadecimal-decimal conversion table” in “5-4. Service Mode”).
Example: If D₄ is “57”.
H₄ = 39
- 9) Input the upper 2 digits of H₃ to page: 8, address: 92.
Example: If H₃ is “3000”.
Select page: 8, address: 92, set data: 30, and press the PAUSE button.
- 10) Input H₄ to page: 8, address: 93.
Example: If H₄ is “39”.
Select page: 8, address: 93, set data: 39, and press the PAUSE button.
- 11) Select page: 0, address: 01, and set data: 00.

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

Table 5-3-3.

3-3. SERVO AND RF SYSTEM ADJUSTMENT

Before perform the servo and RF system adjustments, check that the specified value of “27 MHz Origin Oscillation Adjustment” of “VIDEO SYSTEM ADJUSTMENT” is satisfied.

And check that the data of page: 0, address: 10 is “00”. If not, set data: 00 to this address.

Adjusting Procedure:

1. REEL FG adjustment
2. PLL f₀ & LPF f₀ adjustment
3. Switching position adjustment
4. AGC center level and APC & AEQ adjustment
5. PLL f₀ & LPF f₀ fine adjustment
6. Hi8/Standrd8 switching position adjustment
7. Cap FG duty adjustment

1. REEL FG Adjustment (VC-276 board)



Compensates the dispersion of the hall elements.

Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	17, 2F
Specified Value	00 or 01 or 04 or 05

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Close the cassette compartment without inserting a cassette.
2	0	01	01	Set the data.
3	3	01	1C	Set the data, and press PAUSE button.
4	3	02		Check that the data changes to “00”.
5	3	03		Check that the data is “00” or “01” or “04” or “05”. (Note)
6	0	01	00	Set the data.

Note: If the data is other value, adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table.)

Data	Contents of defect
02, 03, 06, 07	T reel is defective
08, 09, 0C, 0D	S reel is defective
0A, 0B, 0E, 0F	S reel and T reel are defective

2. PLL f₀ & LPF f₀ Adjustment (VC-276 board)



Mode	VTR stop
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified Value	Data of page: 3, address: 02 is “00”. Data of page: 3, address: 03 is “00”.

Note1: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	21	CA	Set the data, and press PAUSE button.
3	3	01	00	Set the data, and press PAUSE button.
4	3	01	30	Set the data, and press PAUSE button.
5	3	02		Check that the data changes to “00” with in 10 sec. (Note2)
6	3	03		Check that the data is “00”. (Note2)
7	0	01	00	Set the data.

Note2: If it isn't satisfied, select page: C, address: 21, set the following data, and press the PAUSE button, and repeat steps 3 to 6.

	Setting data
When the data of page: C, address: 21 is “CA”.	CE
When the data of page: C, address: 21 is “CE”.	C6
When the data of page: C, address: 21 is “C6”.	D2
When the data of page: C, address: 21 is “D2”.	C2

There are errors when it isn't satisfied even if the above treatment is done.

If bit2, bit3, bit4, bit5 or bit 6 of the data of page: 3, address: 03 is “1”, there are errors. For the error contents, see the following table. (For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)

Bit value of page: 3, address: 03 data	Error contents
bit 2 = 1 or bit 3 = 1	PLL f ₀ fine adjustment is defective
bit 4 = 1 or bit 5 = 1	PLL f ₀ adjustment is defective
bit 6 = 1	LPF f ₀ adjustment is defective

3. Switching Position Adjustment (VC-276 board)

To obtain normal playback waveform output during the Digital8 playback mode, adjust the switching position.

Mode	VTR playback
Signal	SW/OL reference tape (WR5-2D)
Measurement Point	Display data of page: 3, address: 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified Value	00

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert the SW/OL reference tape and enter the VTR STOP mode.
2	0	01	01	Set the data.
3	C	10	EE	Set the data, and press PAUSE button.
4	3	21		Check that the data is "02". (Note2)
5	3	01	0D	Set the data, and press PAUSE button.
6	3	02		Check that the data changes to "00" in the following order. "0E"→"29"→"0E"→"20"→"00"
7	3	03		Check that the data is "00". (Note3)
8	C	10		Check that the data is other than "EE". (Note4)
9	0	01	00	Set the data.

Note2: If the data of page: 3, address: 21 is "72", the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 5 and higher.

Note3: If the data is other value, adjustment has errors. If bit 0 of the data is "1", the A channel is defective. If bit 1 is "1", the B channel is defective. Contents of the defect is written into page: C, addresses: 10 and 12. See the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".) If bit 3 of the data is "1", the tape end being played, and adjustment has errors.

Note4: If the data is "EE", rewind the tape and repeat steps 1 to 7.

When the A channel is defective

Data of page: C, address: 10	Contents of defect
EE	Writing into EEPROM (IC4502) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC3301

When the B channel is defective

Data of page: C, address: 12	Contents of defect
E8	Adjustment data is out of range
E7	No data is returned from IC3301

4. AGC Center Level and APC & AEQ Adjustment

Note: The data of page: 0, address: 10 must be "00".
Use a Hi8 MP tape.

4-1. Preparations before adjustments

Mode	Camera recording
Subject	Arbitrary

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	8	21	C8	Set the data.
3				Record the camera signal for three minutes.

4-2. AGC Center Level Adjustment (VC-276 board)

Mode	Playback
Signal	Recorded signal at "Preparations before adjustments"
Measurement Point	Pin ⑩ of CN1108 (RF MON) (Note 1) Ext. trigger: Pin ⑬ of CN1108 (RF SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	1E
Specified Value	The data of page: 3, address: 03 is "00"

Note 1: Connect a 75Ω resistor between Pin ⑩ and Pin ⑳ (GND) of CN1108.
75Ω resistor (Parts code: 1-247-804-11)

Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at "Preparations before adjustments"
2	0	01	01	Set the data.
3	<2> [7]	<4D> [62]	<40> [01]	Set the data. (Note2)
4	3	33	08	Set the data.
5				Confirm that the playback RF signal is stable. (Fig. 5-3-4.)
6	3	01	23	Set the data, and press PAUSE button.
7	3	02		Check that the data is "00".
8	3	03		Check that the data is "00". (Note3)
9				Perform "APC & AEQ Adjustment".

Note 2: <>: DCR-TRV240, []: DCR-TRV340

Note 3: If the data of page: 3, address: 03 is other than "00", adjustment has errors.

4-3. APC & AEQ Adjustment (VC-276 board) RadarW

Mode	Playback
Signal	Recorded signal at “Preparations before adjustments”
Measurement Point	Pin ⑩ of CN1108 (RF MON) (Note 1) Ext. trigger: Pin ⑬ of CN1108 (RF SWP)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	18, 19, 1B, 1C, 21, 2C
Specified Value	The data of page: 3, address: 03 is “00”

- Note 1:** Connect a 75Ω resistor between Pin ⑩ and Pin ⑳ (GND) of CN1108.
75Ω resistor (Parts code: 1-247-804-11)
- Note 2:** The “AGC Center Level Adjustment” must have already been completed before starting this adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	C	18	20	Set the data, and press PAUSE button.
3	C	19	20	Set the data, and press PAUSE button.
4	C	1B	25	Set the data, and press PAUSE button.
5	C	1C	25	Set the data, and press PAUSE button.
6	C	21	CA	Set the data, and press PAUSE button.
7	C	2C	03	Set the data, and press PAUSE button.
8				Playback the recorded signal at “Preparations before adjustments”
9	<2> [7]	<4D> [62]	<40> [01]	Set the data. (Note3)
10	3	33	08	Set the data.
11				Confirm that the playback RF signal is stable. (Fig. 5-3-4.)
12	3	01	07	Set the data, and press PAUSE button.
13	3	02		Check that the data changes from “07” to “00” in about 20 seconds after pressing PAUSE button.
14	3	03		Check that the data is “00”. (Note4)
15				Perform “Processing after Completing Adjustments”.

- Note 3:** < >: DCR-TRV240, []: DCR-TRV340
- Note 4:** If the data is other than “00”, adjustment has errors.

4-4. Processing after Completing Adjustments RadarW

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	<2> [7]	<4D> [62]	<00> [00]	Set the data. (Note)
3	3	33	00	Set the data.
4	8	21	00	Set the data, and press PAUSE button.
5	0	01	00	Set the data.

Note: < >: DCR-TRV240, []: DCR-TRV340

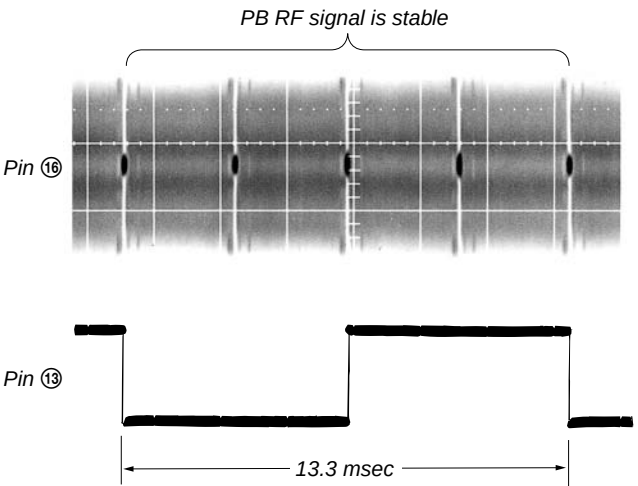


Fig. 5-3-4.

5. PLL f_0 & LPF f_0 Fine Adjustment (VC-276 board)

RadarW

Mode	VTR stop
Signal	Arbitrary
Measurement Point	Display data of page: 3, address: 02, 03
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified Value	Display data of page: 3, address: 02 is "00". Display data of page: 3, address: 03 is "00".

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	3	01	30	Set the data, and press PAUSE button.
3	3	02		Check that the data changes to "00" with in 10 sec. (Note2)
4	3	03		Check that the data is "00". (Note3)
5	0	01	00	Set the data.

Note2: If it isn't satisfied, there are errors.

Note3: If the data of page: 3, address: 03 is other than "00", there are errors. For the error contents, see the following table. (For the bit values, refer to "5-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03	Error contents
bit 2 = 1 or bit 3 = 1	PLL f_0 fine adjustment is defective
bit 4 = 1 or bit 5 = 1	PLL f_0 adjustment is defective
bit 6 = 1	LPF f_0 adjustment is defective

6. Hi8/Standard8 Switching Position Adjustment (VC-276 board)

If deviated in this case causes switching noise or jitter on the Hi8/Standard8 mode played back screen.

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For tracking adjustment (WR5-1NP)
Measurement Point	CH1: Pin ⑧ of CN1108 (RF SWP) CH2: Pin ⑤ of CN1108 (PB RF)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	40, 41
Specified Value	$t_1 = 0 \pm 10 \mu\text{sec}$

Note1: The data of page: 0, address: 10 must be "00".

Adjusting Method:

Order	Page	Address	Data	Procedure
1				Set to the stop mode.
2	0	01	01	Set the data.
3	C	3E	40	Set the data, and press PAUSE button.
4	<2> [7]	<4D> [62]	<80> [02]	Set the data. (Note2)
5				Set to the playback mode.
6	C	40		Change the data and minimize "t1". (Coarse adjustment)
7	C	40		Press PAUSE button
8	C	41		Change the data and adjust so that the switching position (t1) becomes the specified value. (Fine adjustment)
9	C	41		Press PAUSE button
10	C	3E	00	Set the data, and press PAUSE button.
11	<2> [7]	<4D> [62]	<00> [00]	Set the data. (Note2)
12	0	01	00	Set the data.

Note2: < >: DCR-TRV240, []: DCR-TRV340

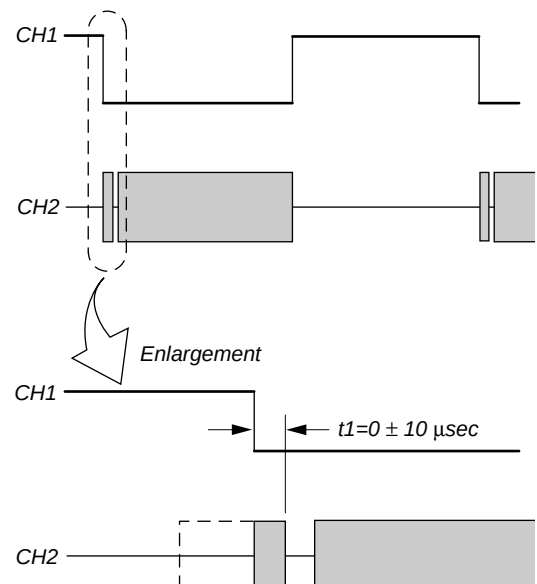


Fig. 5-3-5.

7. CAP FG Duty Adjustment (VC-276 board) **RadarW**

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 Hi8/Standard8 LP mode.

Mode	Playback
Signal	Hi8/standard 8 alignment tape : For checking operation (WR5-5NSP)
Measurement Point	Pin ①⑨ of CN1108 (CAP FG)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	16
Specified value	Duty = 50 ± 1 %

Note1: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Set to the playback mode.
2	0	01	01	Set the data.
3	3	01	00	Set the data, and press PAUSE button.
4	3	01	81	Set the data, and press PAUSE button.
5	3	02		Check that the data changes from “81” to “00”.
6	3	03		Check that the data is “00”. (Note2)
7				Check that Duty of CAP FG signal satisfies the specified value. If not, repeat steps 3 to 7.
8	0	01	00	Set the data.

Note2: If the data of page: 3, address: 03 is other than “00”, there are errors. For the error contents, see the following table. (For the bit values, refer to “5-4. SERVICE MODE”, “4-3. 3. Bit value discrimination”.)

Bit value of page: 3, address: 03	Error contents
bit 0 = 1	Adjustment time-out
bit 1 = 1	Hi8/Standard8 mode wasn’t set up.

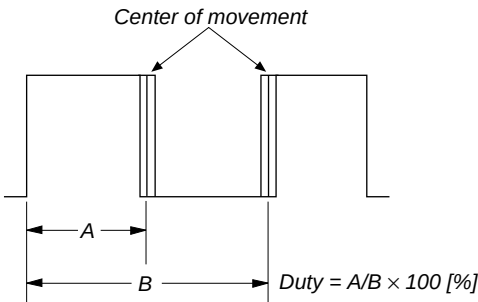


Fig. 5-3-6.

3-4. VIDEO SYSTEM ADJUSTMENTS

Note: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1. 27MHz Origin Oscillation Adjustment (VC-276 board)

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

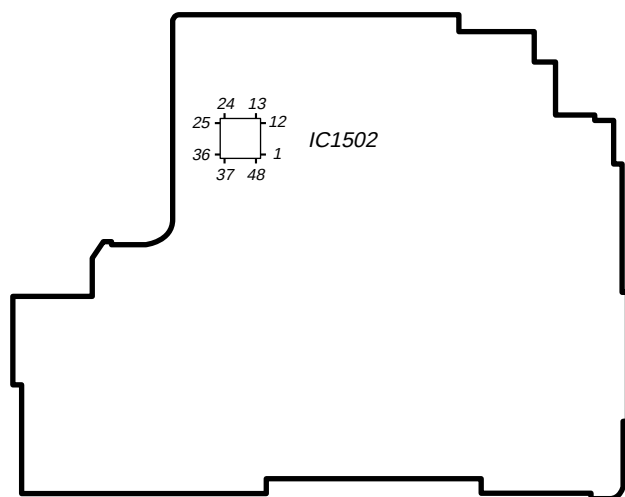
Mode	VTR stop
Signal	Not required
Measurement Point	Pin ⑩ of IC1502
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	12
Specified Value	$f = 13500000 \pm 68\text{Hz}$

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

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

VC-276 board



2. S VIDEO OUT Y Level Adjustment (VC-276 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Y signal terminal of S VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified Value	$A = 1000 \pm 20\text{mV}$

Note1: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	<D> [A]	<FE> [12]	10	Set the data, and press PAUSE button. (Note2)
3				Set the HOLD switch to OFF.
4				Set the POWER switch to OFF, then set to VCR again.
5				Set the HOLD switch to ON.
6	3	0C	02	Set the data, and press PAUSE button.
7	C	25		Change the data and set the Y signal level (A) to the specified value.
8	C	25		Press PAUSE button.
9	3	0C	00	Set the data, and press PAUSE button.
10	<D> [A]	<FE> [12]	00	Set the data, and press PAUSE button. (Note2)
11	0	01	00	Set the data.
12				Turn off the power and turn on again.

Note2: < >: DCR-TRV240, []: DCR-TRV340

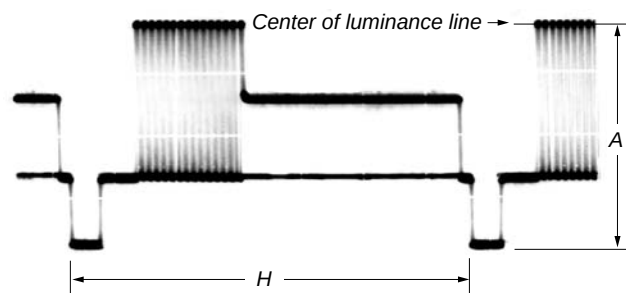


Fig. 5-3-7.

3. S VIDEO OUT Chroma Level Adjustment
(VC-276 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Chroma signal terminal of S VIDEO jack (75Ω terminated) External trigger: Y signal terminal of S VIDEO jack
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	26, 27
Specified Value	Cr level: A = 714 ± 14mV Cb level: B = 714 ± 14mV Burst level: C = 286 ± 6mV

Note1: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	<D> [A]	<FE> [12]	10	Set the data, and press PAUSE button. (Note2)
3				Set the HOLD switch to OFF.
4				Set the POWER switch to OFF, then set to VCR again.
5				Set the HOLD switch to ON.
6	3	0C	02	Set the data, and press PAUSE button.
7	C	26		Change the data and set the Cr signal level (A) to the specified value.
8	C	26		Press PAUSE button.
9	C	27		Change the data and set the Cb signal level (B) to the specified value.
10	C	27		Press PAUSE button.
11	3	0C	00	Set the data, and press PAUSE button.
12	<D> [A]	<FE> [12]	00	Set the data, and press PAUSE button. (Note2)
13	0	01	00	Set the data.
14				Turn off the power and turn on again.

Note2: < >: DCR-TRV240, []: DCR-TRV340

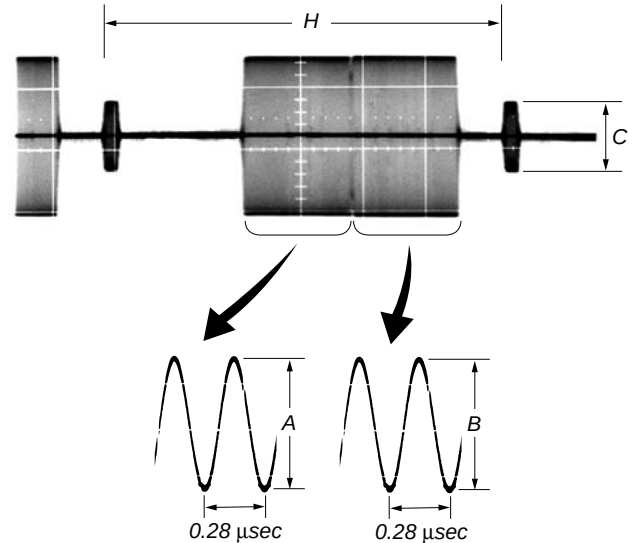


Fig. 5-3-8.

4. VIDEO OUT Y, Chroma Level Check (VC-276 board)

Mode	VTR stop
Signal	No signal
Measurement Point	Video signal terminal of AUDIO/ VIDEO jack (75Ω terminated)
Measuring Instrument	Oscilloscope
Specified Value	Sync level: A = 293 ± 18mV Burst level: B = 286 ± 18mV

Note1: The data of page: 0, address: 10 must be “00”.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	<D> [A]	<FE> [12]	10	Set the data, and press PAUSE button. (Note2)
3				Set the HOLD switch to OFF.
4				Set the POWER switch to OFF, then set to VCR again.
5				Set the HOLD switch to ON.
6	3	0C	02	Set the data, and press PAUSE button.
7				Check that the sync signal level (A) satisfies the specified value.
8				Check that the burst signal level (B) satisfies the specified value.
9	3	0C	00	Set the data, and press PAUSE button.
10	<D> [A]	<FE> [12]	00	Set the data, and press PAUSE button. (Note2)
11	0	01	00	Set the data.
12				Turn off the power and turn on again.

Note2: < >: DCR-TRV240, []: DCR-TRV340

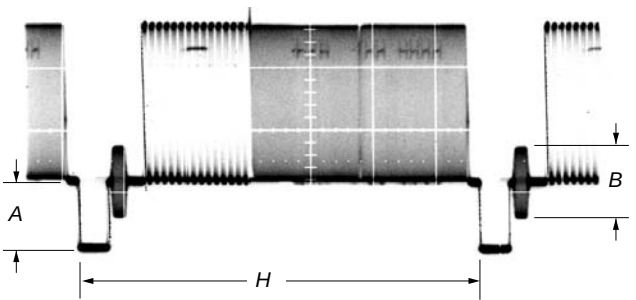


Fig. 5-3-9.

5. Hi8/Standard8 Y/C Output Level Setting

Set the Y/C signal output level during the Hi8/Standard8 playback mode.

Mode	VTR stop
Signal	No signal
Adjustment Page	C
Adjustment Address	44, 45

Note1: Perform this adjustment when IC2201 is replaced.

Note2: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	10	02	Set the data, and press PAUSE button.
3	3	9E	01	Set the data.
4	3	A4		Check that the data. When the data is "53", proceed to step 5. When the data is "03", proceed to step 8.
5	C	44	69	Set the data, and press PAUSE button.
6	C	45	64	Set the data, and press PAUSE button.
7				Proceed to step 10.
8	C	44	A0	Set the data, and press PAUSE button.
9	C	45	AA	Set the data, and press PAUSE button.
10	3	9E	00	Set the data.
11	D	10	00	Set the data, and press PAUSE button.
12	0	01	00	Set the data.

6. Hi8/standard 8mm AFC fo Adjustment

Adjust the pull-in range of the clock generator (IC2201) for A/D conversion during Hi8/standard 8mm playback.

Mode	VTR stop
Signal	No signal
Measurement Point	Display data of page: 3, address: 9D
Measuring Instrument	Adjustment remote commander
Adjustment Page	C
Adjustment Address	43
Specified Value	7C to 84

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	Set the data.
2	D	10	02	Set the data, and press PAUSE button.
3	3	0D	04	Set the data, and press PAUSE button.
4	3	93	04	Set the data.
5	3	9E	01	Set the data.
6	C	43	50	Set the data, and press PAUSE button.
7	3	01	60	Set the data, and press PAUSE button.
8	3	02		Check that the data changes from "60" to "00".
9	3	03		Check that the data is "00".
10	3	01	00	Set the data, and press PAUSE button.
11	3	9D		Check that the data satisfies the specifies value. When the data doesn't satisfy the specified value, return to step 6.
12	3	0D	00	Set the data, and press PAUSE button.
13	3	93	00	Set the data.
14	3	9E	00	Set the data.
15	D	10	00	Set the data, and press PAUSE button.
16	0	01	00	Set the data.

3-5. AUDIO SYSTEM ADJUSTMENTS

Note: Before performing the adjustments, check the data of page: 0, address: 10 is “00”. If not, set data: 00 to this address.

[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. 5-3-10.

[Adjustment Procedure]

- 1) Hi8/Standard8 AFM BPF f₀ adjustment
- 2) Hi8/Standard8 AFM 1.5MHz deviation adjustment
- 3) Hi8/Standard8 AFM 1.7MHz deviation adjustment
- 4) Digital8 playback level check
- 5) Overall level characteristics check
- 6) Overall distortion check
- 7) Overall noise level check
- 8) Overall separation check

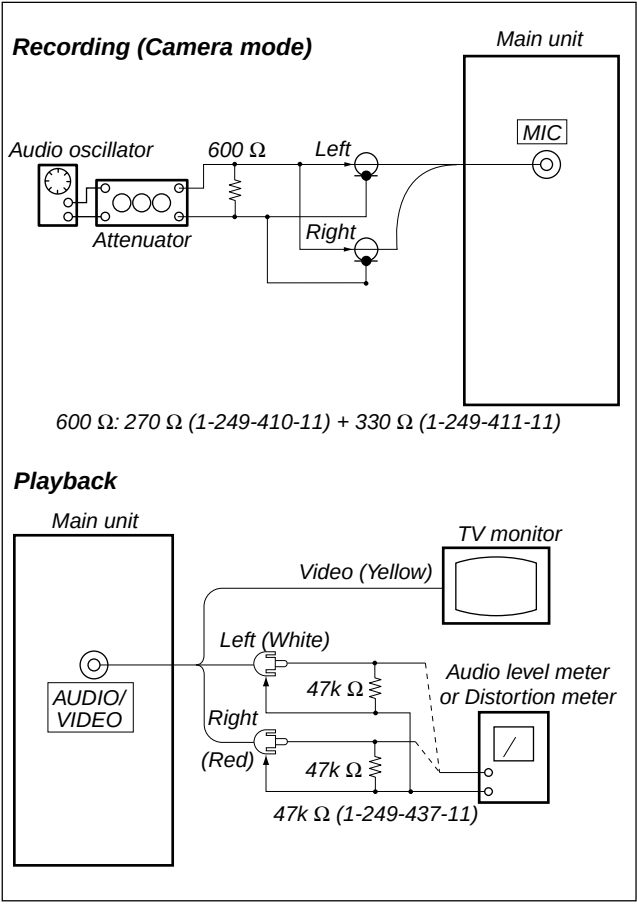


Fig. 5-3-10.

1. Hi8/Standard8 AFM BPF f₀ Adjustment (VC-276 board)

Sets the BPF passing frequency of IC5701 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	Hi8/Standard8 alignment tape: For BPF adjustment (WR5-11NS)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Distortion meter
Adjustment Page	C
Adjustment Address	4E
Specified Value	The Main and Sub channel distortion rate should be almost the same (within $\pm 1\%$) and minimum.

Note: The data of page: 0, address: 10 must be “00”.

Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Set the Hi-Fi SOUND switch (menu display) to “2”.
- 3) Select page: C, address: 4E, change the data and minimize the distortion rate.
- 4) Press the PAUSE button.
- 5) Set the Hi-Fi SOUND switch (menu display) to “1”.
- 6) Select page: C, address: 4E, change the data and minimize the distortion rate.
- 7) Press the PAUSE button.
- 8) Repeat steps 2) to 7) and set the data of address: 4E so that the distortions rates when the Hi-Fi SOUND switch is set to “2” and set to “1” respectively are almost the same and minimum.
- 9) Press the PAUSE button.
- 10) Select page: 0, address: 01, and set data: 00.
- 11) Set the Hi-Fi SOUND switch to “STEREO”.

2. Hi8/Standard8 AFM 1.5 MHz Deviation Adjustment (VC-276 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	Hi8/Standard8 alignment tape: For checking AFM stereo operation Monoscope section (WR5-9NS)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Adjustment Page	C
Adjustment Address	4C
Specified Value	$-7.5 \pm 2.0\text{dBs}$

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Set the Hi-Fi SOUND switch (menu display) to "1".
- 3) Select page: C, address: 4C, change the data and set the 400Hz signal level to the specified value.
- 4) Press the PAUSE button.
- 5) Set the Hi-Fi SOUND switch (menu display) to "STEREO".
- 6) Select page: 0, address: 01, and set data: 00.

3. Hi8/Standard8 AFM 1.7 MHz Deviation Adjustment (VC-276 board)

Adjust to the optimum 1.7MHz audio FM signal deviation.
If improper, this causes deteriorated separation (with stereo signal).

Mode	Playback
Signal	Hi8/Standard8 alignment tape: For checking AFM stereo operation Monoscope section (WR5-9NS)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	4D
Specified Value	$-7.5 \pm 2.0\text{dBs}$

Note: The data of page: 0, address: 10 must be "00".

Adjusting method:

- 1) Select page: 0, address: 01, and set data: 01.
- 2) Set the Hi-Fi SOUND switch (menu display) to "2".
- 3) Select page: C, address: 4D, change the data and set the 1kHz signal level to the specified value.
- 4) Press the PAUSE button.
- 5) Set the Hi-Fi SOUND switch (menu display) to "STEREO".
- 6) Select page: 0, address: 01, and set data: 00.

4. Digital8 Playback Level Check

Mode	Playback
Signal	Digital8 alignment tape: For audio operation check (WR5-3ND)
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter and frequency counter
Specified Value	32 kHz mode: $1\text{ kHz}, +3.0 \pm 2.0\text{dBs}$ 48 kHz mode: $1\text{ kHz}, +3.0 \pm 2.0\text{dBs}$ 44.1 kHz mode: The 7.35kHz signal level during EMP OFF is $+2.0 \pm 2.0\text{dBs}$. The 7.35kHz signal level during EMP ON is $-6 \pm 2\text{ dB}$ from the signal level during EMP OFF.

Checking Method:

- 1) Check that the playback signal level is the specified value.

5. Overall Level Characteristics Check

Mode	Recording and playback
Signal	400Hz, -66dBs signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Specified Value	$-7.5 \pm 3.0\text{dBs}$

Checking Method:

- 1) Input the 400Hz, -66dBs signal in the MIC jack left and right.
- 2) Record the signal.
- 3) Playback the recorded section.
- 4) Check that the 400Hz signal level is the specified value.

6. Overall Distortion Check

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

Checking Method:

- 1) Input the 400Hz, -66dBs signal in the MIC jack left and right.
- 2) Record the signal.
- 3) Playback the recorded section.
- 4) Check that the distortion is the specified value.

7. Overall Noise Level Check

Mode	Recording and playback
Signal	No signal: MIC jack left and right
Measurement Point	AUDIO/VIDEO jack left or right
Measuring Instrument	Audio level meter
Specified Value	Below -45dBs (IHF-A filter ON, 20kHz LPF ON)

Checking Method:

- 1) Connect the left terminal of MIC jack and its ground terminal with a jumper wire.
- 2) Connect the right terminal of MIC jack and its ground terminal with a jumper wire.
- 3) Record the signal.
- 4) Playback the recorded section.
- 5) Check that the noise level is the specified value.
- 6) Remove the jumper wires.

8. Overall Separation Check

Mode	Recording and playback
Signal	No signal: MIC jack <left> [right] 400Hz, -66dBs signal: MIC jack <right> [left]
Measurement Point	AUDIO/VIDEO jack <left> [right]
Measuring Instrument	Audio level meter
Specified Value	Below -40dBs

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

Checking Method:

- 1) Connect the <left> [right] terminal of MIC jack and its ground terminal with a jumper wire.
- 2) Input the 400Hz, -66dBs signal in the MIC jack <right> [left].
- 3) Record the signal.
- 4) Playback the recorded section.
- 5) Check that the signal level of the AUDIO/VIDEO jack <left> [right] is the specified value.
- 6) Remove the jumper wire.

5-4. SERVICE MODE

4-1. ADJUSTMENT REMOTE COMMANDER

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

1. Using the Adjustment Remote Commander

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

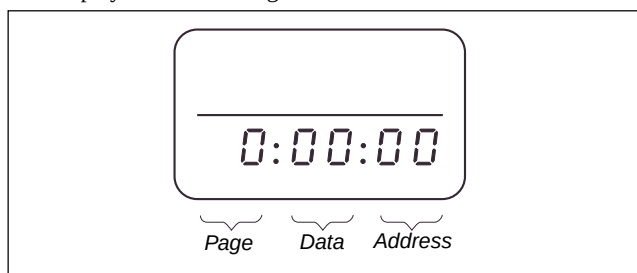


Fig. 5-4-1.

- 3) Operate the adjustment remote commander as follows.
 - Changing the page
The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH- button is pressed. There are altogether 19 pages, from 0 to F, 1B, 1C, 1D (Note1).

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 (8, A, B, C, D, E, F, 1B, 1C, 1D page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)(Note2)
- 4) After completing all adjustments, turn off the main power supply (8.4 V) once.

Note1: When reading or writing the 1B, 1C, 1D page data, select page: 0, address: 10, and set data: 01, then select B, C or D page. The 1B, 1C or 1D page can be chosen by this data setting.
After reading or writing, reset the data of page: 0, address: 10 to "00".

Note2: The A, B and 1B page are DCR-TRV340 model only.

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																②
Lower digit of hexadecimal Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (H)	B (b)	C (c)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	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 (H)	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

Additional note on adjustment

Note1: After the completion of the all adjustments, cancel the service mode by either of the following ways.

- 1) After data on page: C and D is restored, unplug the main power supply and remove the coin 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: C and D is restored, select page: 0, address: 01, and return the data to 00. And when data on page: 2, 3 and 7 are changed, return data to the original condition.

Note2: Before performing the adjustments, check the data of page: 0, address: 10 is "00". If not, set data: 00 to this address.

1. Setting the Test Mode

Page C	Address 3E
--------	------------

Data	Function
00	Normal
01	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	Forced camera power ON
02	Forced VTR power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page C and D, the data set will be recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off (8.4Vdc).
- After completing adjustments/repairs, be sure to return the data of page: C address: 3E to 00, and the data of page: D address: 10 to 00, and press the PAUSE button of the adjustment remote commander. And select page: 0, address: 01, and set data: 00.

2. Emergency Memory Address

Page C	Address F4 to FF
--------	------------------

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

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

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (FC to FF).

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

Initializing method:

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

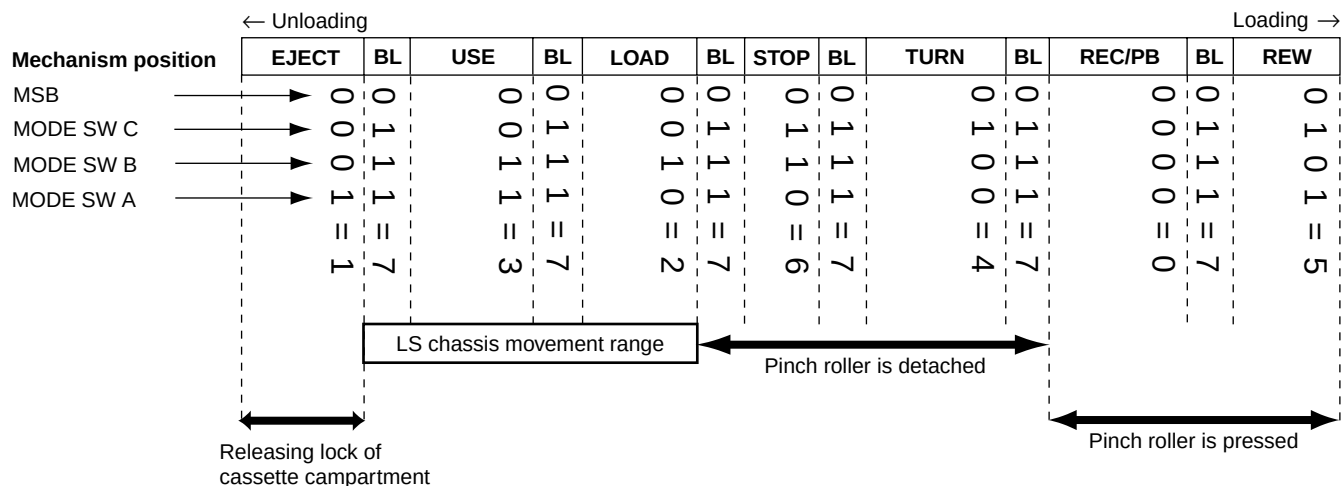
2-1. EMG Code (Emergency Code)

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

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

2-2. MSW Code

- The lower parts of the data of C page, addresses F6, FA and FE represent the MSW codes (mode switch mechanism position) when errors occurs.
- The upper parts of the data of C page, addresses F6, FA and FE represent, when the mechanism position is to be moved, the MSW codes at the start movement (when moving the loading motor).
- The lower parts of the data of C page, addresses F7, FB and FF represent the MSW codes of the desired movement when the mechanism position is to be moved.

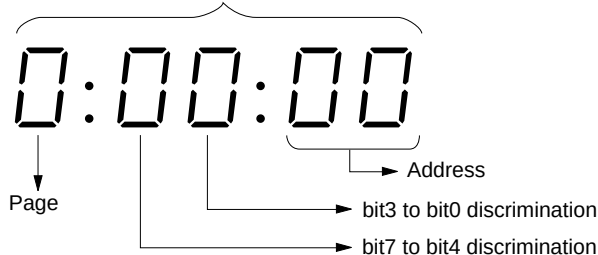


Mechanism Position	MSW Code	Contents
EJECT	1	Position at which the cassette compartment lock is released. The mechanism will not move any further in the unloading direction.
BL	7	BLANC code. Between two codes. The mechanism will not be stopped by this code while it is operating.
USE	3	EJECT completion 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.
REC/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. Use the table below to discriminate if the bit value is "1" or "0".

Display on the adjustment remote commander



(Example) If the remote commander display is "8E", bit value from bit 7 to bit 4 can be discriminated from the column ㉑, and those from bit 3 to bit 0 from column ㉒.

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
㉑ 8	1	0	0	0
9	1	0	0	1
A (P)	1	0	1	0
B (b)	1	0	1	1
C (L)	1	1	0	0
D (d)	1	1	0	1
㉒ E (E)	1	1	1	0
F (F)	1	1	1	1

4. Switch check (1)

• DCR-TRV240

Page 2	Address 42
--------	------------

Bit	Function	When bit value = 1	When bit value = 0
0	POWER SW (VTR MODE SW) (SS-1380 block S001)	OFF	ON (VCR/PLAYER)
1	POWER SW (CAM MODE SW) (SS-1380 block S001)	OFF	ON (CAMERA)
2	START/STOP SW (SS-1380 block S002)	OFF	ON
3	EJECT SW (SS-1380 block S003)	OFF	ON
4	CC DOWN SW (Mechanism chassis)	OFF (UP)	ON (DOWN)
5	PHOTO FREEZE SW (SS-1380 block S004)	OFF	ON
6	POWER SW (PHOTO STBY SW) (SS-1380 block S001)	OFF	ON (MEMORY)
7			

Using method:

- 1) Select page: 2, address: 42.
- 2) By discriminating the bit value of display data, the state of the switch can be discriminated.

• DCR-TRV340

Page 7	Address 0E
--------	------------

Bit	Function	When bit value = 1	When bit value = 0
0	POWER SW (VTR MODE SW) (SS-1380 block S001)	ON (VCR/PLAYER)	OFF
1	POWER SW (CAM MODE SW) (SS-1380 block S001)	ON (CAMERA)	OFF
2	START/STOP SW (SS-1380 block S002)	ON	OFF
3	EJECT SW (SS-1380 block S003)	ON	OFF
4	CC DOWN SW (Mechanism chassis)	ON (DOWN)	OFF (UP)
5	PHOTO FREEZE SW (SS-1380 block S004)	ON	OFF
6	POWER SW (PHOTO STBY SW) (SS-1380 block S001)	ON (MEMORY)	OFF
7			

Using method:

- 1) Select page: 7, address: 0E.
- 2) By discriminating the bit value of display data, the state of the switch can be discriminated.

DCR-TRV240/TRV340

5. Switch check (2)

• DCR-TRV240

Page 2	Address 81
--------	------------

Bit	Function	When bit value = 1	When bit value = 0
4	AUDIO/VIDEO jack (FP-410 flexible J201)	Used	Not used
5	S VIDEO jack (FP-410 flexible J201)	Not used	Used
6	MIC jack (FP-411 flexible J302)	Used	Not used

Using method:

- 1) Select page: 2, address: 81.
- 2) By discriminating the bit value of display data, the state of the switch can be discriminated.

• DCR-TRV340

Page 7	Address 0C
--------	------------

Bit	Function	When bit value = 1	When bit value = 0
1	AUDIO/VIDEO jack (FP-410 flexible J201)	Used	Not used
2	S VIDEO jack (FP-410 flexible J201)	Used	Not used
3	MIC jack (FP-411 flexible J302)	Used	Not used

Using method:

- 1) Select page: 7, address: 0C.
- 2) By discriminating the bit value of display data, the state of the switch can be discriminated.

6. Switch check (3)

Page 3	Address 61
--------	------------

Bit	Function	When bit value = 1	When bit value = 0
6	HEADPHONS jack (FP-411 flexible J301)	Used	Not used

Using method:

- 1) Select page: 3, address: 61.
- 2) By discriminating the bit value of display data, the state of the switch can be discriminated.

7. Switch check (4)

Page 2	Address 5C to 61	(DCR-TRV240)
Page 2	Address 60 to 65	(DCR-TRV340)

Using method:

- 1) Select page: 2, address: 5C to 61 (TRV240) or 60 to 65 (TRV340).
- 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
5C/60 (KEY AD0) (IC4801 128) (IC5001 59) *1	SUPER NIGHT SHOT (FK-2500) (S401)	STOP (FK-2500) (S404)	FF (FK-2500) (S407)	REW (FK-2500) (S409)	PLAY (FK-2500) (S403)	REC (FK-2500) (S406,408)		No key input
5D/61 (KEY AD1) (IC4801 127) (IC5001 60) *1	PAUSE (FK-2500) (S405)	FOCUS (CF-2500) (S004)	BACK LIGHT (CF-2500) (S016)	FADER (CF-2500) (S010)	EXPOSURE (CF-2500) (S027)	MENU EXECUTE (CF-2500) (S007)	PANEL CLOSE (CF-2500) (S001)	PANEL OPEN (CF-2500) (S001)
5E/62 (KEY AD2) (IC4801 128) (IC5001 61) *1		EDIT SEARCH + (CF-2500) (S024)	EDIT SEARCH – (CF-2500) (S025)					No key input
5F/63 (KEY AD3) (IC4801 129) (IC5001 65) *1	END SEARCH (CF-2500) (S003)	PB ZOOM (CF-2500) (S006)	TITLE (CF-2500) (S009)	MENU (CF-2500) (S012)	VOLUME + (CF-2500) (S015)	VOLUME – (CF-2500) (S022)	DISPLAY (CF-2500) (S019)	No key input
60/64 (KEY AD4) (IC4801 130) (IC5001 66) *1	MEMORY INDEX (CF-2500) (S026) *2	MPEG PLAY (CF-2500) (S005)	MEMORY MIX (CF-2500) (S029) *2	MEMORY DELETE (CF-2500) (S028) *2	MEMORY + (CF-2500) (S013) *2	MEMORY – (CF-2500) (S017) *2	MEMORY PLAY (CF-2500) (S018)*2	No key input
61/65 (KEY AD5) (IC4801 131) (IC5001 67) *1		PHOTO (PHOTO START) (SS-1380) (S004)	PANEL REVERSE (FP-412) (S601)					PANEL NORMAL (FP-412) (S601)

*1: IC4801 (DCR-TRV240), IC5001 (DCR-TRV340)

*2: DCR-TRV340

DCR-TRV240/TRV340

8. Record of Use check (1)

Page 2	Address A5 to AA	(DCR-TRV240)
Page 7	Address C8 to CD	(DCR-TRV340)

Address	Function		Remarks
<A5>[C8]	User initial power on date (BCD code)	Year	After setting the clock, set the date of power on next
<A6>[C9]		Month	
<A7>[CA]		Day	
<A8>[CB]	Final condensation occurrence date (BCD code)	Year	
<A9>[CC]		Month	
<AA>[CD]		Day	

< > : DCR-TRV240, [] : DCR-TRV340

Using method:

- The record of use data is displayed at addresses: <A5 to AA>[C8 to CD].
Note: Only for DCR-TRV240 model, this data will be erased (reset) when the CF-2500 board (VC-276 board CN1110 (22P)) is removed.

Initializing method for DCR-TRV240:

- Using the adjustment remote commander, select address A5 to AA and set data: 00.

Initializing method for DCR-TRV340:

- Select page: 7, address: 00, set data: 30, and press PAUSE button.
- Select page: 7, address: 01, set data: 30, and press PAUSE button.
- Select page: 7, address: 02, and check the data is "01".

9. Record of Use check (2)

Note: When replacing the drum assembly, initialize the data.

Page D	Address D0 to D1	(DCR-TRV240)
--------	------------------	--------------

Address	Function		Remarks
D0	Drum rotation counted time (BCD code)	Hour (L)	100th place digit and 10th place digit (decimal digit)
D1		Hour (H)	1000th place digit and 100th place digit (decimal digit)

Using method:

- The record of use data is displayed at addresses: D0, D1.

Initializing method:

- Select page: 0, address: 01, and set data: 01.
- Select page: D, address D0 to D7 and set data: 00.
- Select page: 0, address: 01, and set data: 00.

Page 7	Address A7 to A9	(DCR-TRV340)
--------	------------------	--------------

Address	Function		Remarks
A7	Drum rotation counted time (BCD code)	Hour (H)	10000th place digit and 1000th place digit (decimal digit)
A8		Hour (M)	1000th place digit and 100th place digit (decimal digit)
A9		Hour (L)	10th place digit and 1st place digit (decimal digit)

Using method:

- The record of use data is displayed at addresses: A7 to A9.

Initializing method:

- Select page: 7, address: 00, set data: 71, and press PAUSE button.
- Select page: 7, address: 01, set data: 71, and press PAUSE button.
- Select page: 7, address: 02, and check the data is "01".

10. Record of Self-diagnosis check

Page 2	Address B0 to C6	(DCR-TRV240)
Page 7	Address B0 to C6	(DCR-TRV340)

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 addresses: BC to C6. Refer to “SELF-DIAGNOSIS FUNCTION” for detail of the self-diagnosis code.

Note: Only for DCR-TRV240 model, this data will be erased (reset) when the CF-2500 board (VC-276 board CN1110 (22P)) is removed.

SECTION 6

REPAIR PARTS LIST

6-1. EXPLODED VIEWS

NOTE:

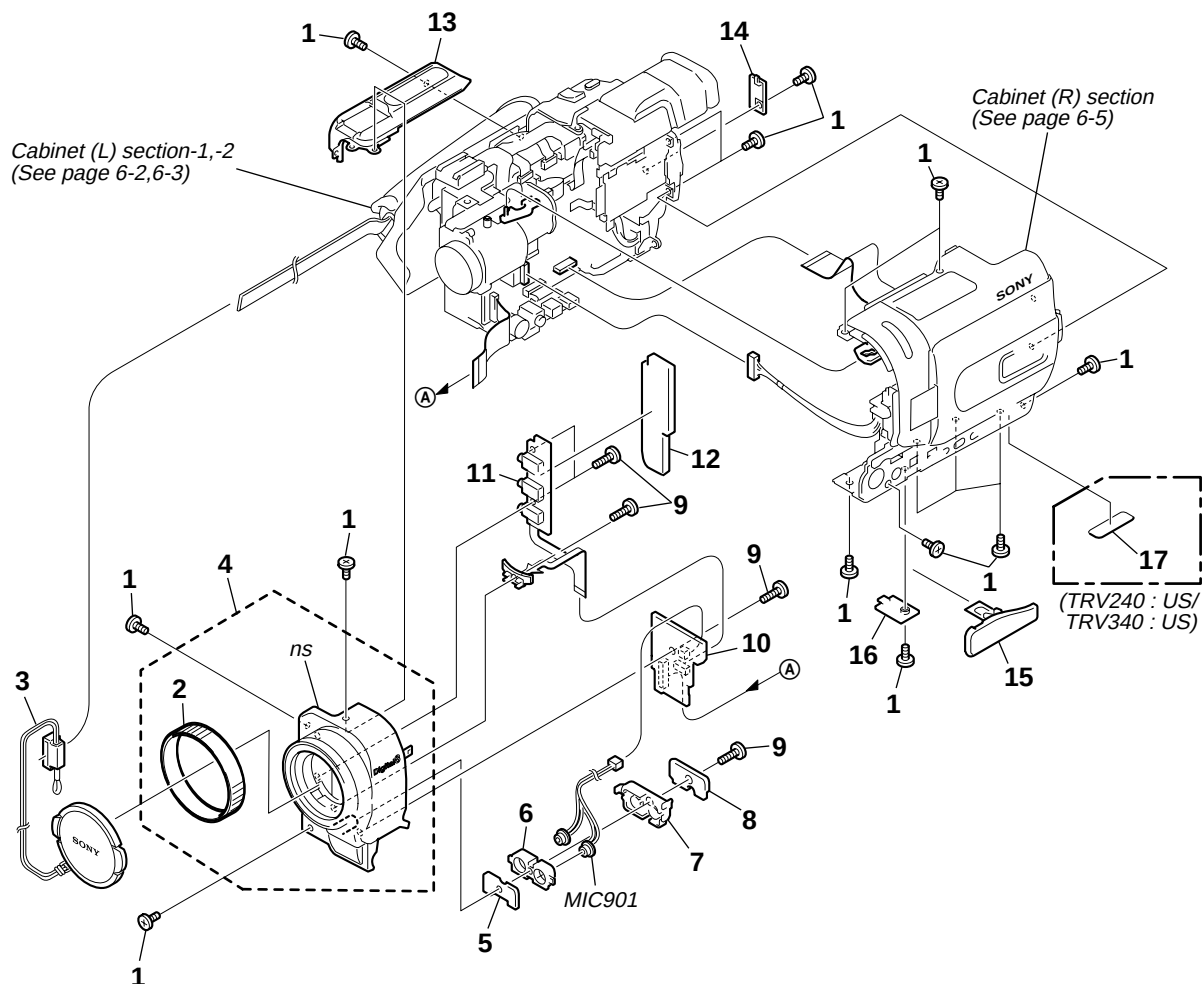
- -XX, -X mean standardized parts, so they may have some differences from the original one.
 - Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
 - The mechanical parts with no reference number in the exploded views are not supplied.
- Abbreviation
CND : Canadian model
HK : Hong Kong model
KR : Korea model
JE : Tourist model
AR : Argentina model
BR : Brazilian model

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

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

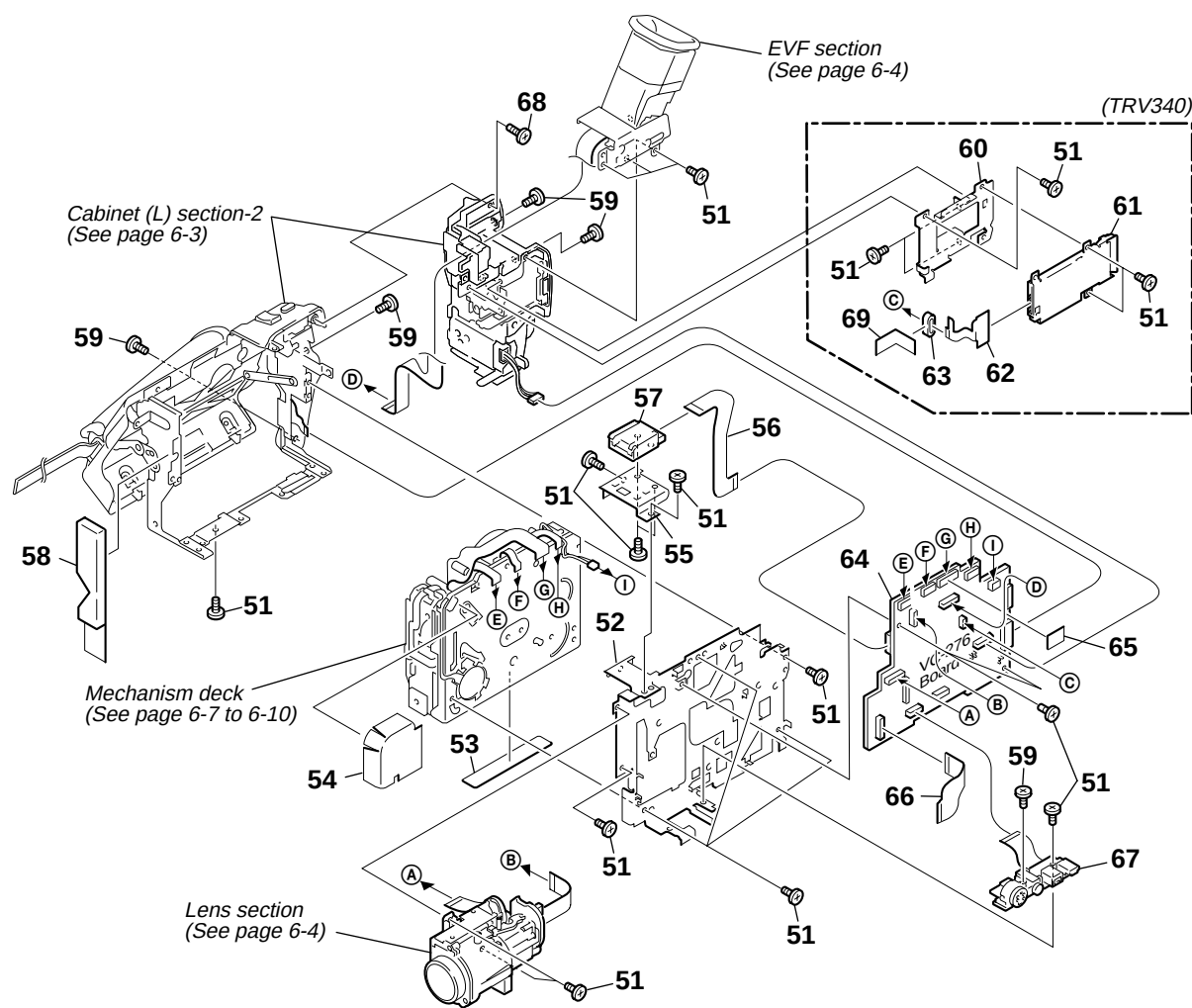
6-1-1. OVERALL SECTION

ns : not supplied



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	3-067-347-01	MI SCREW M2 (H)		10	A-7078-047-A	SI-032 BOARD, COMPLETE	
2	3-065-310-01	RING, RUBBER		11	1-683-627-21	FP-411 FLEXIBLE BOARD	
3	X-3949-376-1	CAP (N) ASSY, LENS		12	3-072-309-01	CUSHION (1), F	
4	X-3952-131-1	PANEL ASSY (24), FRONT		13	3-065-326-01	CABINET (UPPER)	
5	3-072-279-01	CUSHION (F), MICROPHONE		14	3-072-271-01	LID (BT), CPC	
6	3-072-278-01	HOLDER, MICROPHONE		15	3-072-343-01	COVER, JACK	
7	3-072-277-01	RETAINER, MICROPHONE		16	3-072-344-01	RETAINER, JACK COVER	
8	3-072-307-01	SHEET, MICROPHONE		* 17	3-704-367-01	LABEL (TRV240:US/TRV340:US)	
9	3-065-567-01	TAPPING (M1.7)		MIC901	1-542-477-11	MICROPHONE	

6-1-2. CABINET (L) SECTION-1

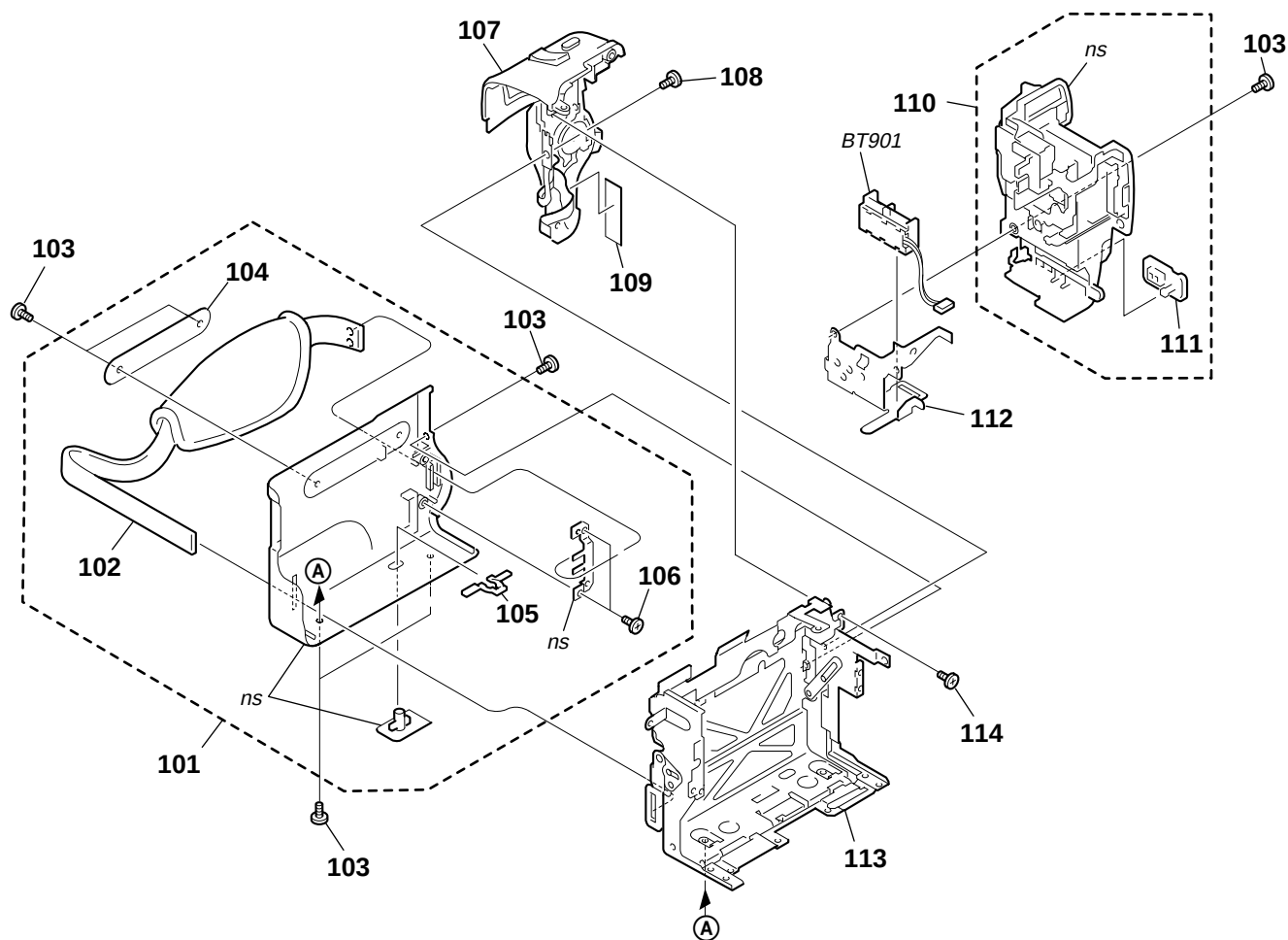


Ref. No.	Part No.	Description	Remarks
51	4-974-725-01	SCREW (M1.7X2.5), P	
52	3-072-267-01	FRAME, MD	
53	3-065-662-01	LABEL, LS CAUTION	
54	3-066-169-01	SHEET, MD	
55	3-072-268-01	FRAME, SHOE	
56	1-680-118-11	FP-264 FLEXIBLE BOARD	
57	1-815-124-11	CONNECTOR, EXTERNAL (HOT SHOE)(TRV340)	
57	1-815-124-21	CONNECTOR, EXTERNAL (HOT SHOE)(TRV240)	
58	3-072-308-01	COVER, MD	
59	3-067-347-01	MI SCREW M2 (H)	
60	3-072-273-01	HOLDER, MS (TRV340)	

Ref. No.	Part No.	Description	Remarks
61	1-816-271-11	CONNECTOR, MEMORY STICK 10P (TRV340)	
62	1-683-625-11	FP-409 FLEXIBLE BOARD (TRV340)	
63	1-500-226-11	BEAD, FERRITE (TRV340)	
64	A-7028-802-A	VC-276 (NS) BOARD, COMPLETE (SERVICE)	(TRV240)
64	A-7028-804-A	VC-276 (NFS) BOARD, COMPLETE (SERVICE)	(TRV340)
65	3-066-759-01	SHEET, VC	
66	1-683-623-11	FP-406 FLEXIBLE BOARD	
67	1-683-626-21	FP-410 FLEXIBLE BOARD	
68	3-065-567-01	TAPPING (M1.7)	
69	3-941-343-21	TAPE (A) (TRV340)	

6-1-3. CABINET (L) SECTION-2

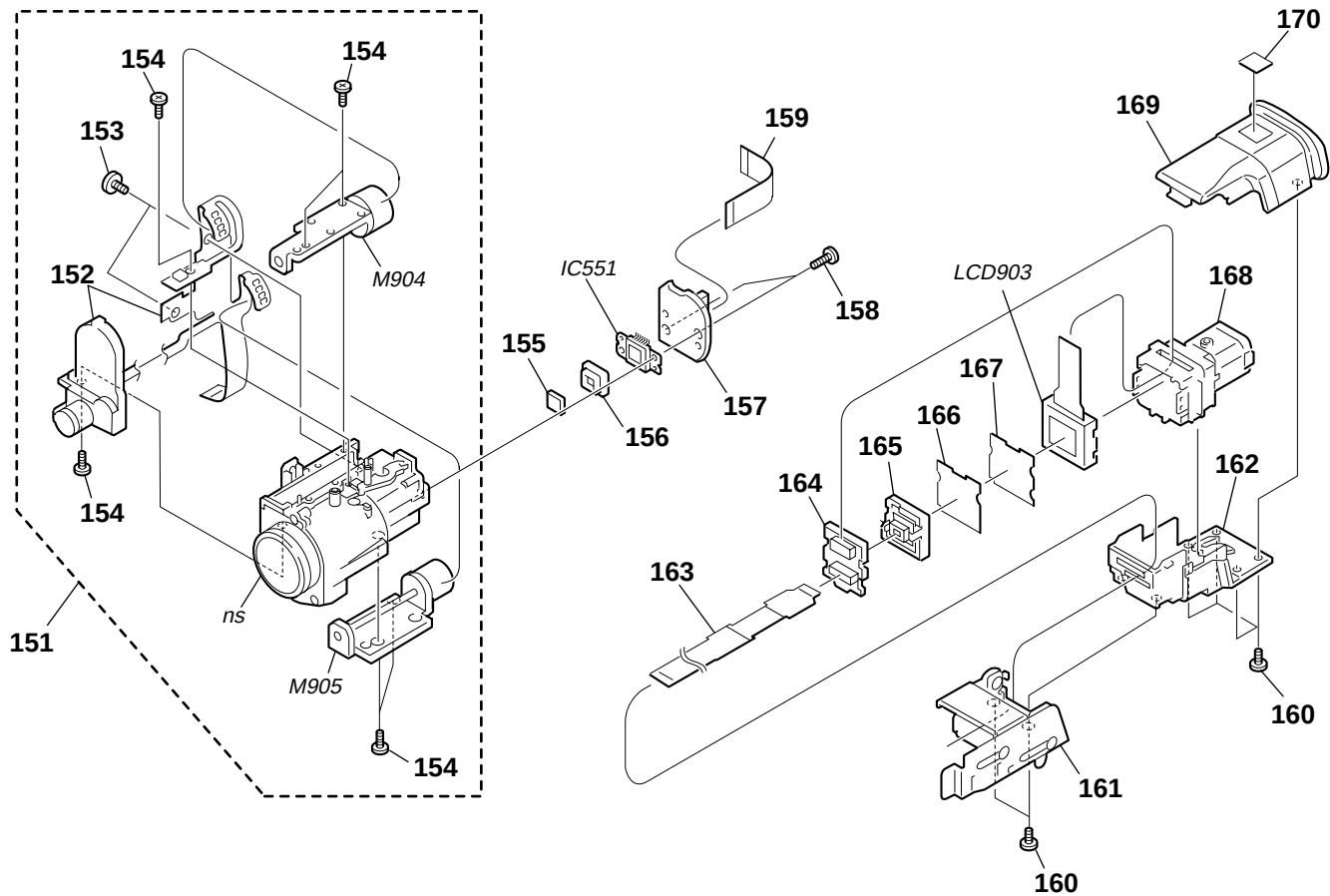
ns : not supplied



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
101	X-3951-159-1	CABINET (L) ASSY		110	X-3952-148-1	PANEL ASSY (MS), BATTERY (TRV340:US,CND,E,HK,KR,JE,AR)	
102	3-052-815-01	BELT (ES), GRIP		110	X-3952-149-1	PANEL ASSY, BATTERY (TRV240)	
103	3-067-347-01	M1 SCREW M2 (H)		110	X-3952-276-1	PANEL ASSY (MS), BATTERY (TRV340:BR)	
104	3-065-308-01	LABEL (L)		111	3-072-305-01	LID (2500), JACK	
105	3-978-765-01	SLIDER, G LOCK		112	3-072-274-01	SHEET METAL (LOWER), STRAP	
106	3-713-791-01	SCREW (M1.7X4), TAPPING, P2		113	X-3952-136-1	FRAME ASSY (25), CS	
107	1-476-415-11	SWITCH BLOCK, CONTROL (SS-1380)(TRV340)		114	3-065-567-01	TAPPING (M1.7)	
107	1-476-415-21	SWITCH BLOCK, CONTROL (SS-1380)(TRV240)		BT901	1-694-772-11	TERMINAL BOARD, BATTERY	
108	4-974-725-01	SCREW (M1.7X2.5), P					
109	3-941-343-21	TAPE (A)					

6-1-4. LENS, EVF SECTION

ns : not supplied

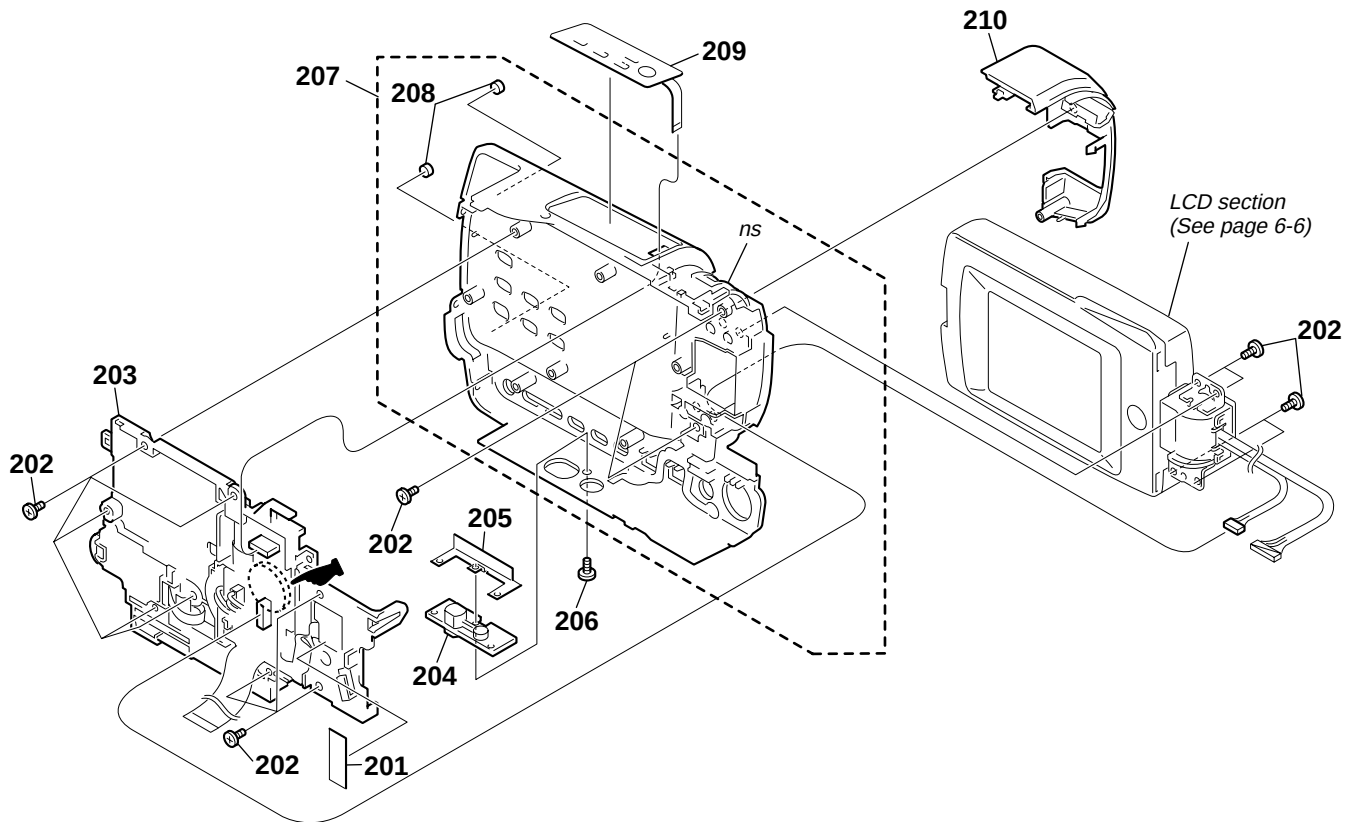


Be sure to read “Precautions upon replacing CCD imager” on page 4-8 when changing the CCD imager.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
151	8-848-740-01	DEVICE, LENS LSV-700A		163	1-683-624-11	FP-407 FLEXIBLE BOARD	
152	X-3951-248-1	IRIS FLEXIBLE, ASSY		164	A-7078-049-A	LB-076 BOARD, COMPLETE	
153	3-065-022-01	TAPPING (B1.7X3.5), HEAD		165	3-065-058-01	GUIDE, LAMP	
154	3-713-791-41	SCREW, TAPPING (M1.7X5), P2		166	3-072-211-01	ILLUMINATOR	
155	1-758-554-11	FILTER BLOCK, OPTICAL		167	3-072-210-01	SHEET, PRISM	
156	3-053-973-01	RUBBER (W), SEAL		168	X-3952-214-1	LENS (B) ASSY, VF	
157	A-7078-046-A	CD-357 BOARD, COMPLETE		169	X-3952-132-1	CABINET (UPPER) ASSY, EVF	
158	3-318-203-11	SCREW (B1.7X6), TAPPING		* 170	3-065-376-01	LABEL (138), B	
159	1-676-822-11	FP-161 FLEXIBLE BOARD		IC551	A-7028-780-A	CCD BLOCK ASSY (CCD IMAGER)	
160	3-065-567-01	TAPPING (M1.7)		LCD903	8-753-028-49	LCX032AP-5	
161	X-3951-165-1	HINGE ASSY, VF		M904	1-763-634-11	MOTOR STEPPING Z700 (ZOOM)	
162	X-3952-134-1	CABINET (LOWER) ASSY, EVF		M905	1-763-635-11	MOTOR,STEPPING F700 (FOCUS)	

6-1-5. CABINET (R) SECTION

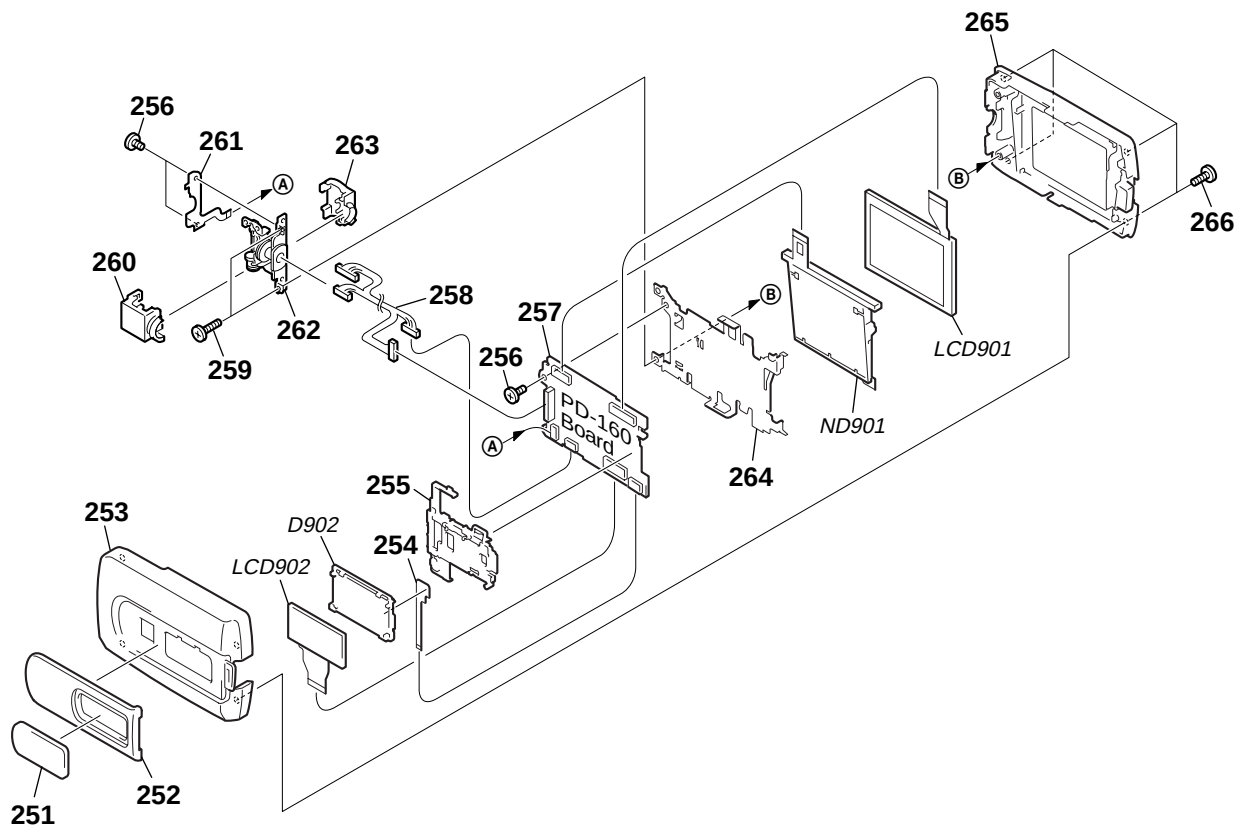
ns : not supplied

**CAUTION :**

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

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
201	3-941-343-21	TAPE (A)		207	X-3952-129-1	CABINET R (2) ASSY (TRV340)	
202	3-948-339-61	TAPPING		207	X-3952-135-1	CABINET R (2) ASSY (TRV240)	
203	1-477-085-11	SWITCH BLOCK, CONTROL (CF-2500)(TRV240)		208	3-959-978-02	CUSHION, PANEL	
203	1-477-085-21	SWITCH BLOCK, CONTROL (CF-2500)(TRV340)		209	1-477-084-31	SWITCH BLOCK, CONTROL (FK-2500)	
204	3-065-373-01	SCREW (Y), TRIPOD		210	X-3952-133-1	RING (2) ASSY, ORNAMENTAL (TRV340)	
205	3-072-455-01	RETAINER, TRIPOD		210	X-3952-137-1	RING (2) ASSY, ORNAMENTAL (TRV240)	
206	3-067-347-01	M2 SCREW M2 (H)					

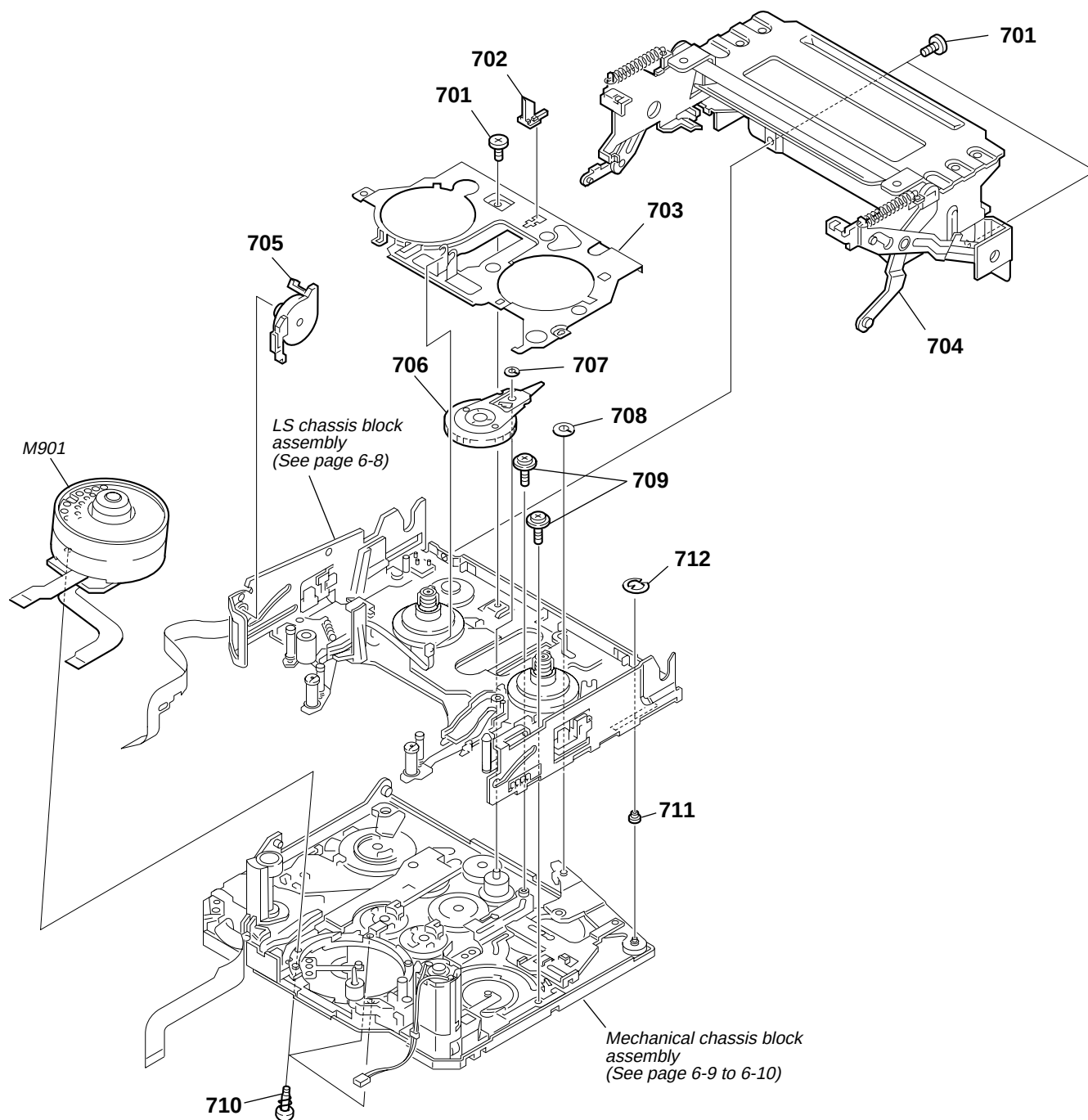
6-1-6. LCD SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
251	3-072-272-01	WINDOW, LCD		261	1-683-628-22	FP-412 FLEXIBLE BOARD	
252	X-3952-189-1	COVER (2) ASSY, CPC (TRV340)		262	X-3952-147-1	HINGE ASSY	
252	X-3952-192-1	COVER (2) ASSY, CPC (TRV240)		263	3-072-287-01	COVER (M), HINGE	
253	3-072-341-01	CABINET (C (2)), P		264	3-072-403-01	FRAME (2), P	
254	1-683-629-11	FP-414 FLEXIBLE BOARD		265	X-3952-150-1	CABINET (M) (2) ASSY, P	
255	3-072-286-01	HOLDER, LCD		266	3-065-567-01	TAPPING (M1.7)	
256	4-974-725-01	SCREW (M1.7X2.5), P		△ D902	1-518-721-11	LIGHT, BACK	
257	A-7078-052-A	PD-160 (X6) BOARD, COMPLETE		LCD901	8-753-050-65	ACX308AK-1	
258	1-961-556-11	HARNESS (PD-117)		LCD902	A-7028-811-A	INDICATION LCD BLOCK ASSY	
259	3-318-203-11	SCREW (B1.7X6), TAPPING		△ ND901	1-518-796-11	TUBE, FLUORESCENT,COLD CATHODE	
260	3-072-288-01	COVER (C), HINGE					

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.
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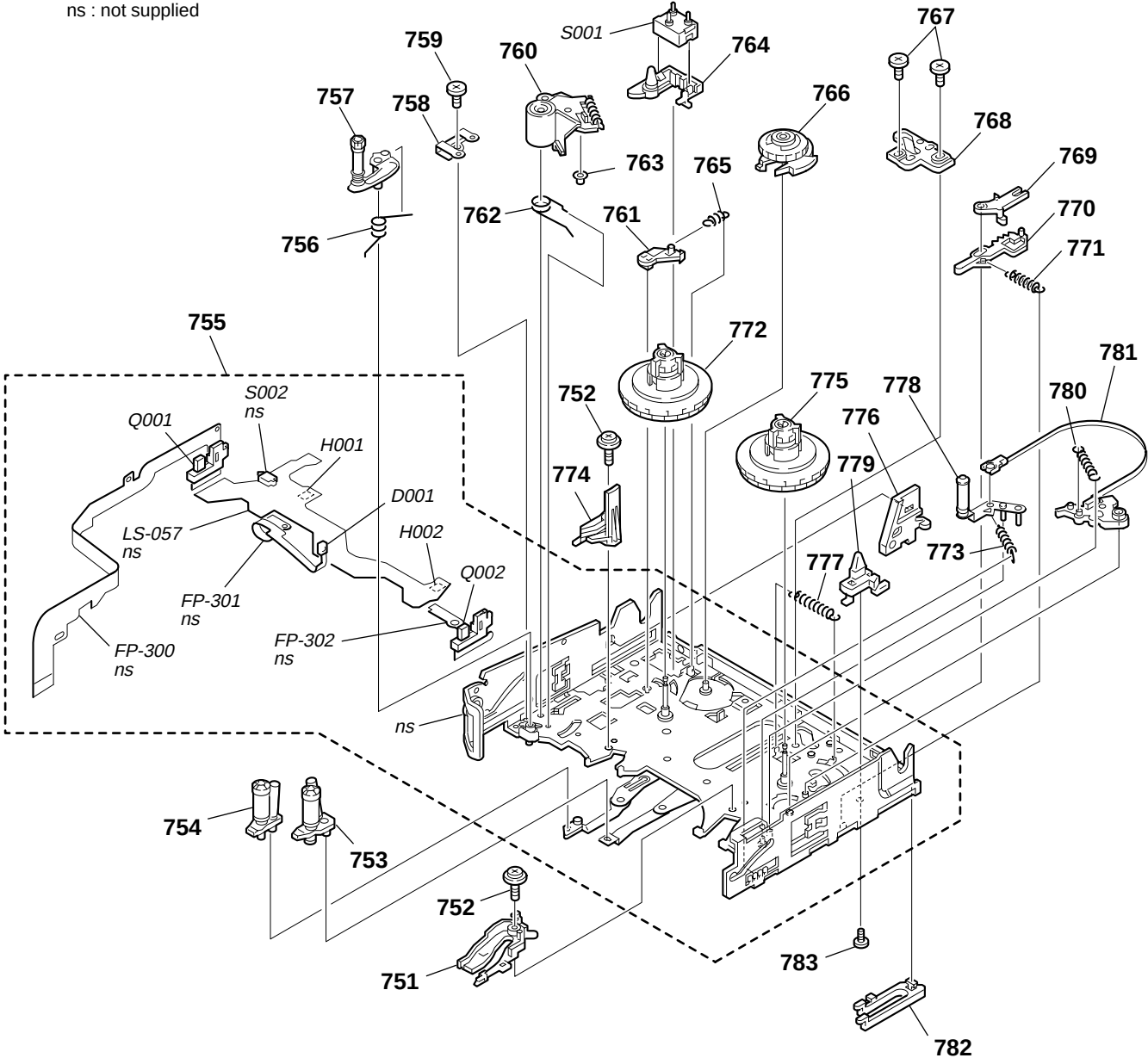
6-1-7. CASSETTE COMPARTMENT ASSY, DRUM ASSY



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
701	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA		708	3-065-935-01	HLC CUT 1.8X4X0.5	
702	3-065-895-01	LEVER, REEL RELEASE		709	3-947-503-01	SCREW (M1.4)	
703	3-065-896-01	PLATE, BLIND		710	X-3951-299-1	SCREW ASSY, DRUM FITTING	
704	X-3951-298-1	CASSETTE COMPARTMENT ASSY		711	3-074-309-01	ROLLER A, LS GUIDE	
705	X-3951-302-1	DAMPER ASSY		712	7-624-101-04	STOP RING 1.2 (E TYPE)	
706	X-3951-297-1	GEAR ASSY, R DRIVE					
707	3-065-840-01	CUT (0.98X3X0.13), LUMILER (W)		M901	A-7048-951-A	DRUM (DKH-04A-R) (SERVICE)	

6-1-8. LS CHASSIS BLOCK ASSEMBLY

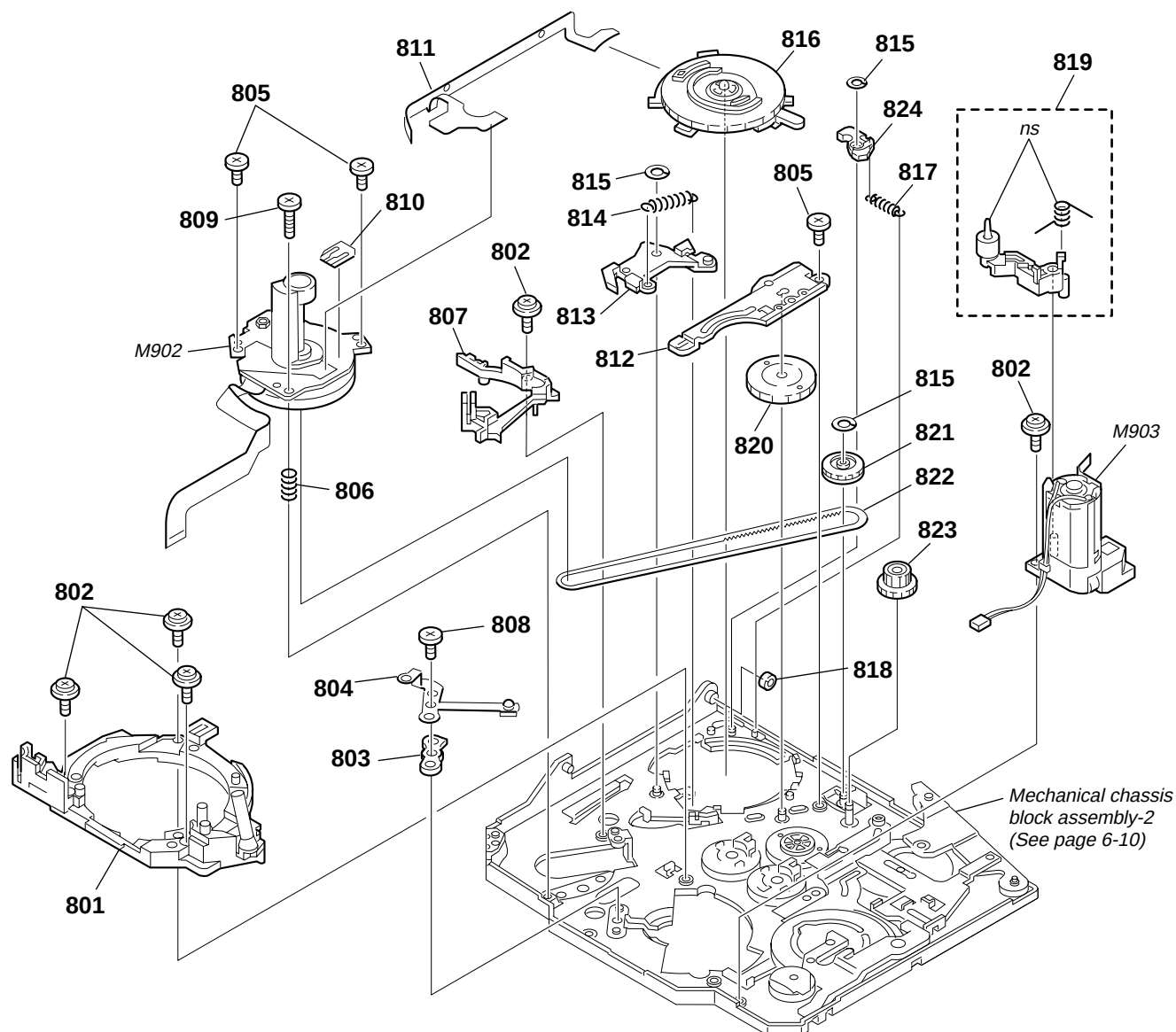
ns : not supplied



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
751	3-065-822-02	RAIL (S), GUIDE		771	3-065-830-01	SPRING, S RATCHET	
752	3-947-503-01	SCREW (M1.4)		772	X-3951-288-1	TABLE (T) ASSY, REEL	
753	A-7096-416-B	BASE (S) BLOCK ASSY, GUIDE		773	3-065-819-01	SPRING, TG1 ARM	
754	A-7096-415-A	BASE (T) BLOCK ASSY, GUIDE		774	3-065-821-01	RAIL (T), GUIDE	
755	A-7096-426-A	CHASSIS ASSY, LS		775	X-3951-289-1	TABLE (S) ASSY, REEL	
756	3-065-802-01	SPRING, TG7 ARM		776	3-065-833-01	GUIDE, LOCK	
757	A-7096-414-A	ARM BLOCK ASSY, TG7		777	3-065-831-01	PLATE (SPR), RE RETURN	
758	3-065-801-01	RETAINER, TG7		778	X-3951-304-1	ARM ASSY, TG1	
759	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA		779	3-065-835-01	GUIDE (S), CASSETTE	
760	X-3951-303-1	ARM ASSY, PINCH		780	3-065-820-01	SPRING, RVS ARM	
761	3-065-823-01	ARM, T RATCHET		781	X-3951-296-1	BAND (ASSY), BT	
762	3-065-794-01	ROAD (SPR), PINCH ARM		782	3-065-836-01	COVER, LS GREASE	
763	3-065-792-01	ROLLER, P LIM ARM		783	3-067-167-01	SCREW (M1.4X2), CAMERA TAPPING	
764	3-065-834-01	GUIDE (T), CASSETTE		D001	8-719-988-42	DIODE GL453 (TAPE LED)	
765	3-065-824-01	SPRING, T RATCHET		H001	8-719-033-37	ELEMENT, HALL HW-105C (T REEL)	
766	A-7096-417-A	SOFT ASSY, T		H002	8-719-033-37	ELEMENT, HALL HW-105C (S REEL)	
767	7-627-852-38	SCREW,PRECISION +P1.7X1.8TYPE3		Q001	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE TOP)	
768	3-065-832-01	PLATE, LS CAM		Q002	8-729-907-25	PHOTO TRANSISTOR PT4850F (TAPE END)	
769	3-065-828-01	ARM, S RATCHET		S001	1-692-614-11	SWITCH, PUSH (3 KEY) (REC PROOF)	
770	3-065-829-01	PLATE, S RATCHET (RE)					

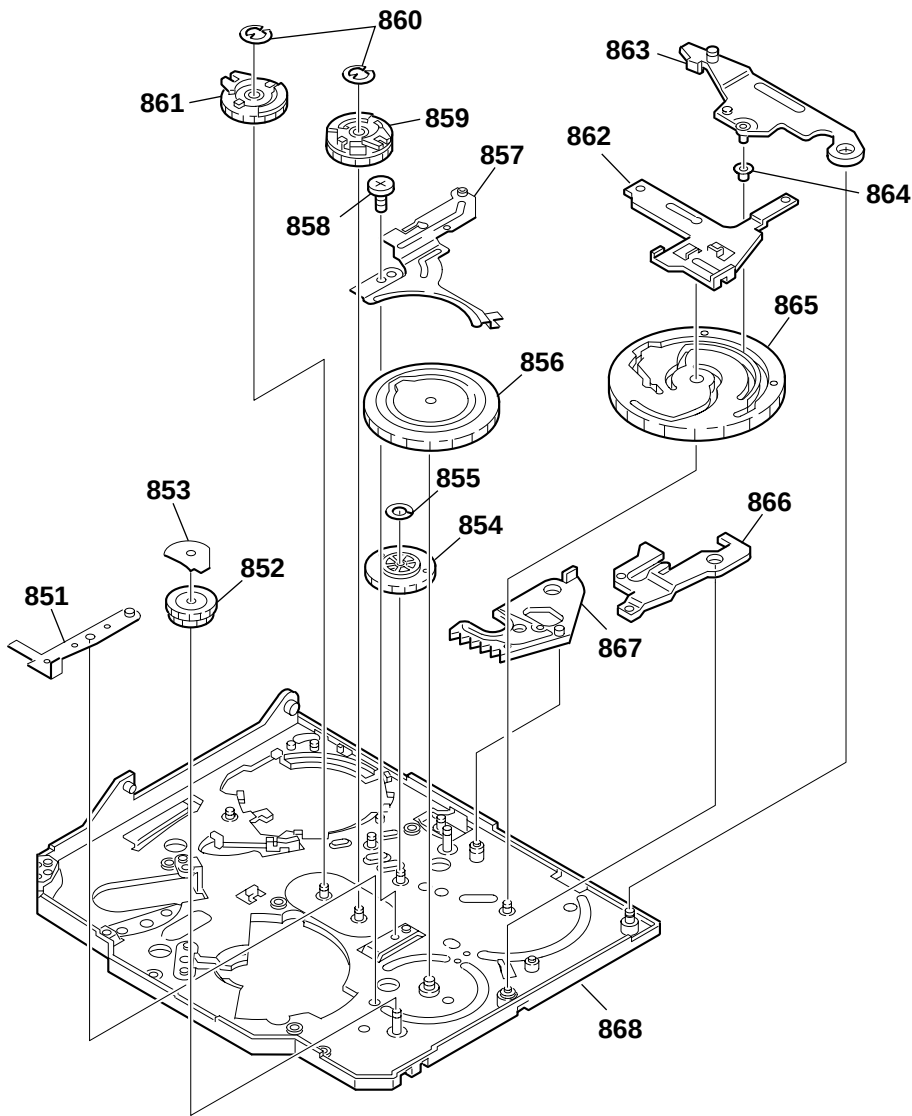
6-1-9. MECHANICAL CHASSIS BLOCK ASSEMBLY-1

ns : not supplied



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
801	A-7096-422-A	BASE ASSY, DRUM		814	3-065-881-01	SPRING, P PRESSURE PLATE	
802	3-947-503-01	SCREW (M1.4)		815	3-065-934-01	HLW CUT 0.98X3X0.25	
803	3-065-928-01	SPACER, GROUND		816	1-786-096-11	SWITCH, ROTARY	
804	3-065-927-01	GROUND, DRUM		817	3-065-898-01	SPRING, EJECT ARM	
805	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA		818	3-065-870-01	ROLLER, LS GUIDE	
806	3-067-154-01	SPRING, CAPSTAN		819	A-7096-421-A	ARM ASSY, HCL	
807	3-065-931-01	RAIL (T2), GUIDE		820	3-065-918-01	GEAR (2), CAM RELAY	
808	X-3947-398-1	SCREW ASSY, M1.7 PW		821	A-7096-419-A	GEAR ASSY, CHANGE	
809	3-065-933-01	PAN (2 MAIN 1.4X4.5), CAMERA		822	3-065-902-01	BELT, TIMING	
810	1-677-049-11	FP-228 FLEXIBLE BOARD (DEW SENSOR)		823	3-065-905-01	GEAR, RELAY	
811	1-680-434-11	FP-299 FLEXIBLE BOARD		824	3-065-882-01	ARM, EJECT	
812	3-065-877-01	PLATE (T), GUIDE LOCK		M902	8-835-701-01	MOTOR, DC SCE13A/C-NP (CAPSTAN)	
813	X-3951-301-1	PLATE ASSY, PINCH PRESSURE		M903	A-7096-420-A	MOTOR ASSY, LD (LOADING)	

6-1-10. MECHANICAL CHASSIS BLOCK ASSEMBLY-2



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
851	3-065-920-01	ARM, HC DRIVE		860	7-624-101-04	STOP RING 1.2 (E TYPE)	
852	3-065-913-01	GEAR (4), LD		861	A-7096-412-A	GEAR (T) ASSY, GUIDE	
853	3-065-914-01	SHEET, COVER		862	X-3951-307-1	PLATE ASSY, M SLIDE	
854	3-065-917-01	GEAR (1), CAM RELAY		863	X-3951-305-1	ARM ASSY, LS	
855	3-065-934-01	HLW CUT 0.98X3X0.25		864	3-065-901-01	ROLLER, LS ARM	
856	3-065-915-01	GEAR (1), CAM		865	3-065-916-01	GEAR (2), CAM	
857	3-065-878-01	PLATE (S), GUIDE LOCK		866	3-065-919-01	ARM, T1 LIMITTER	
858	3-065-932-01	PAN (2 MAIN M1.4X1.6), CAMERA		867	X-3951-308-1	ARM ASSY, GL	
859	A-7096-413-A	GEAR (S) ASSY, GUIDE		868	X-3951-300-2	CHASSIS ASSY, MECHANICAL	

Ref. No.	Part No.	Description	Remarks
C5509	1-110-457-11	ELECT CHIP 3.3uF 20%	25V
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
C5515	1-162-964-11	CERAMIC CHIP 0.001uF 10%	50V
C5516	1-164-872-11	CERAMIC CHIP 82PF 5%	50V
C5517	1-109-982-11	CERAMIC CHIP 1uF 10%	10V
C5518	1-109-982-11	CERAMIC CHIP 1uF 10%	10V
C5519	1-109-982-11	CERAMIC CHIP 1uF 10%	10V
C5532	1-109-982-11	CERAMIC CHIP 1uF 10%	10V
C5533	1-115-566-11	CERAMIC CHIP 4.7uF 10%	10V
C5534	1-109-982-11	CERAMIC CHIP 1uF 10%	10V
C5536	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C5538	1-164-943-11	CERAMIC CHIP 0.01uF 10%	16V
C5540	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C5602	1-115-566-11	CERAMIC CHIP 4.7uF 10%	10V
C5604	1-164-657-11	CERAMIC CHIP 0.015uF 10%	50V
C5605	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
C5606	1-125-777-11	CERAMIC CHIP 0.1uF 10%	10V
△ C5607	1-131-959-91	CERAMIC CHIP 12PF 10%	3KV
C5701	1-125-777-11	CERAMIC CHIP 0.1uF 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 10P	
CN5701	1-794-998-31	PIN, CONNECTOR 20P	
CN5702	1-816-176-11	CONNECTOR, FFC/FPC (ZIF) 6P	
CN5703	1-816-178-11	CONNECTOR, FFC/FPC (ZIF) 20P	
CN5704	1-778-508-21	PIN, CONNECTOR (PC BOARD) 6P	
CN5705	1-766-759-11	CONNECTOR, FFC/FPC 4P	
< DIODE >			
D5502	8-719-084-47	DIODE 1SV290(TPL3)	
D5503	8-719-050-42	DIODE RD3.3UM-T1B	
D5601	8-719-073-01	DIODE MA111-(K8).S0	
< FERRITE BEAD >			
FB5502	1-414-760-21	FERRITE 0uH	
FB5504	1-414-760-21	FERRITE 0uH	
< IC >			
IC5501	8-752-100-95	IC CXA3289AR-T4	
IC5502	8-752-407-33	IC CXD3512R-T4	
IC5601	8-759-564-49	IC TC7W53FU(TE12R)	
IC5602	8-759-075-70	IC TA75S393F-TE85R	
IC5701	8-759-573-02	IC BU9735K-E2	
< COIL >			
L5501	1-469-527-91	INDUCTOR 47uH	
L5505	1-412-956-21	INDUCTOR 27uH	
L5601	1-419-387-21	INDUCTOR 100uH	
L5602	1-412-056-11	INDUCTOR 4.7uH	

Ref. No.	Part No.	Description	Remarks		
< TRANSISTOR >					
Q5503	8-759-054-48	TRANSISTOR	UP04601008S0		
Q5504	8-729-052-65	TRANSISTOR	2SA1774HT2L		
Q5505	8-729-041-23	TRANSISTOR	NDS356AP		
Q5506	8-729-052-64	TRANSISTOR	DTC144EHT2L		
Q5508	8-759-054-48	TRANSISTOR	UP04601008S0		
Q5601	8-729-052-64	TRANSISTOR	DTC144EHT2L		
Q5602	6-550-083-01	TRANSISTOR	TPC6C01(TE85R)		
< RESISTOR >					
R5501	1-218-985-11	RES-CHIP	470K	5%	1/16W
R5503	1-208-935-11	METAL CHIP	100K	0.5%	1/16W
R5506	1-218-958-11	RES-CHIP	2.7K	5%	1/16W
R5507	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5508	1-218-975-11	RES-CHIP	68K	5%	1/16W
R5509	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5510	1-218-975-11	RES-CHIP	68K	5%	1/16W
R5511	1-218-989-11	RES-CHIP	1M	5%	1/16W
R5512	1-218-977-11	RES-CHIP	100K	5%	1/16W
R5522	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5551	1-218-973-11	RES-CHIP	47K	5%	1/16W
R5572	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5573	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5574	1-208-957-11	RES-CHIP	820K	5%	1/16W
R5575	1-218-975-11	RES-CHIP	68K	5%	1/16W
R5576	1-218-989-11	RES-CHIP	1M	5%	1/16W
R5577	1-218-985-11	RES-CHIP	470K	5%	1/16W
R5579	1-218-979-11	RES-CHIP	150K	5%	1/16W
R5590	1-218-990-11	SHORT	0		
R5609	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5610	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R5611	1-218-980-11	RES-CHIP	180K	5%	1/16W
R5612	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5614	1-218-965-11	RES-CHIP	10K	5%	1/16W
R5617	1-218-969-11	RES-CHIP	22K	5%	1/16W
R5618	1-218-949-11	RES-CHIP	470	5%	1/16W
R5704	1-218-987-11	RES-CHIP	680K	5%	1/16W
< COMPOSITION CIRCUIT BLOCK >					
RB5501	1-234-372-21	RES, NETWORK	100X4	(1005)	
< TRANSFORMER >					
T5601	1-435-227-11	TRANSFORMER, INVERTER			
A-7078-047-A SI-032 BOARD, COMPLETE					

< CAPACITOR >					
C305	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C310	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C311	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C312	1-104-847-11	TANTAL CHIP	22uF	20%	4V
C314	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C315	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V

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.
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Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
CN301	1-764-526-11	CONNECTOR, FFC/FPC 18P	
CN302	1-816-232-11	PIN, CONNECTOR (PC BOARD) 4P	
CN304	1-779-339-21	CONNECTOR, FFC/FPC 30P	
		< DIODE >	
D301	8-719-067-44	DIODE CL-310IRS-X-TU	
D302	8-719-067-44	DIODE CL-310IRS-X-TU	
D303	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D304	8-719-056-85	DIODE UDZSTE-178.2B	
D306	8-719-074-30	DIODE SML-310LTT86	
D309	8-719-062-16	DIODE 01ZA8.2(TPL3)	
D313	8-719-062-16	DIODE 01ZA8.2(TPL3)	
		< FERRITE BEAD >	
FB301	1-414-760-21	FERRITE 0uH	
FB302	1-414-760-21	FERRITE 0uH	
		< IC >	
IC301	6-701-681-01	IC NJL61H400A	
		< TRANSISTOR >	
Q301	8-729-141-73	TRANSISTOR 2SD1938(F)-S(TX).SO	
		< RESISTOR >	
R301	1-216-810-11	METAL CHIP 120 5% 1/16W	
R307	1-216-864-11	METAL CHIP 0 5% 1/16W	
R316	1-216-817-11	METAL CHIP 470 5% 1/16W	
R319	1-216-019-00	METAL CHIP 56 5% 1/10W	
R320	1-216-019-00	METAL CHIP 56 5% 1/10W	
		< SENSOR >	
SE301	1-803-042-31	SENSOR, ANGULAR VELOCITY (PITCH) (SERVICE)	
SE302	1-803-042-41	SENSOR, ANGULAR VELOCITY (YAW) (SERVICE)	
		< VARISTOR >	
VDR301	1-801-923-11	VARISTOR, CHIP	
VDR302	1-801-923-11	VARISTOR, CHIP	
VDR303	1-801-923-11	VARISTOR, CHIP	

Ref. No.	Part No.	Description	Remarks
A-7028-802-A	VC-276 (NS)	BOARD, COMPLETE (SERVICE) (TRV240)	

A-7028-804-A	VC-276 (NFS)	BOARD, COMPLETE (SERVICE) (TRV340)	

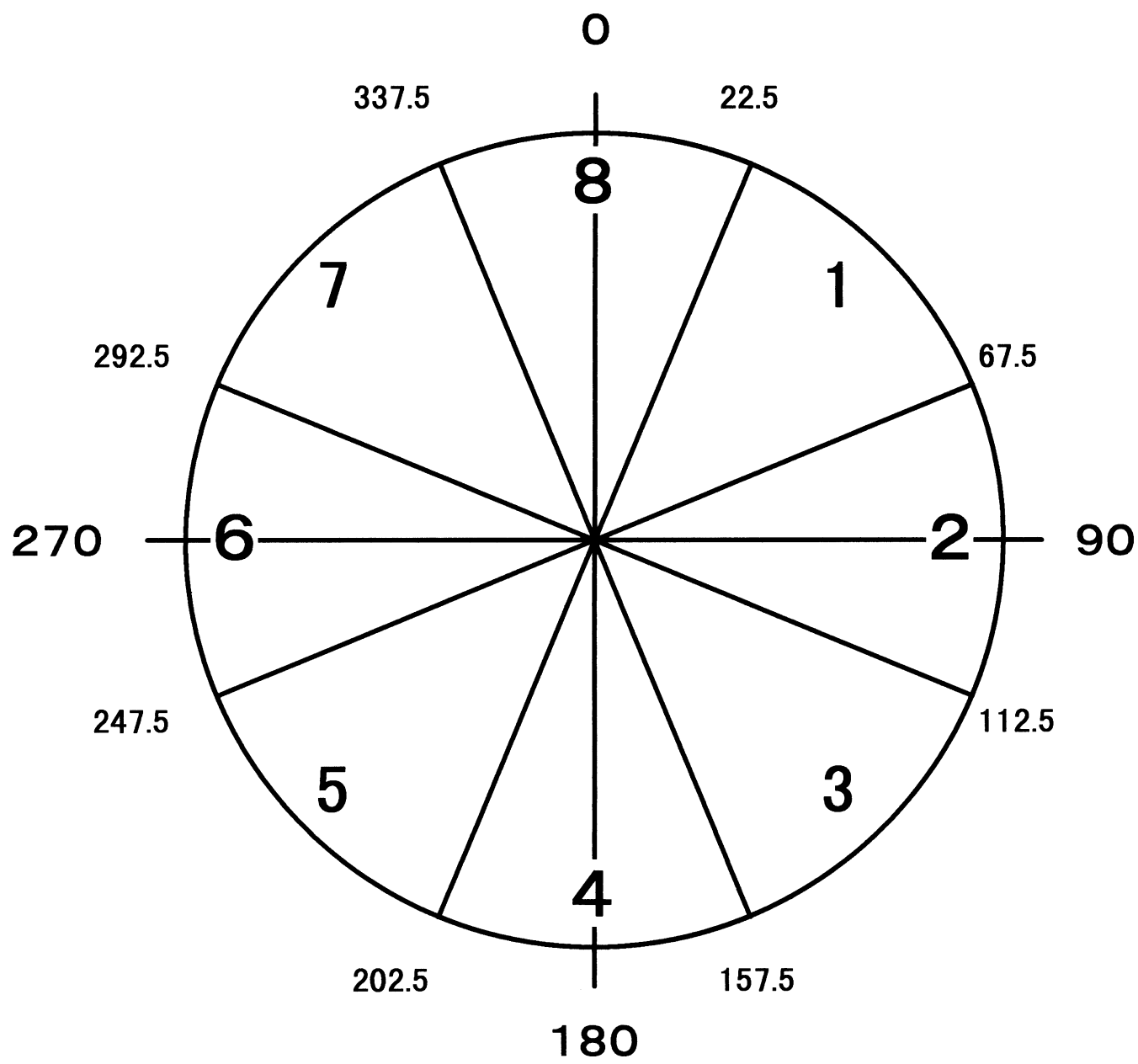
**Electrical parts list of the VC-276 board
are not shown.
Pages 6-14 to 6-25 are not shown.**

DCR-TRV240/TRV340

Ref. No.	Part No.	Description	Remarks
		ACCESSORIES	

	1-475-141-61	REMOTE COMMANDER (RMT-814) (TRV240/TRV340:US,CND,E,HK,JE,KR)	
△	1-475-599-11	ADAPTOR, AC (AC-L10A) (TRV240/TRV340:US,CND,E,HK,JE)	
△	1-475-599-71	ADAPTOR, AC (AC-L10A) (TRV340:KR)	
△	1-569-007-11	ADAPTOR, CONVERSION 2P (TRV340:JE)	
△	1-569-008-21	ADAPTOR, CONVERSION 2P (TRV240:E,HK/TRV340:E,HK)	
	1-757-293-21	CORD, CONNECTION (USB 5P) (TRV240/TRV340:US,CND,E,HK,JE)	
	1-765-080-11	CORD, CONNECTION(AV CABLE 1.5m) (TRV240/TRV340:US,CND,E,HK,JE)	
△	1-769-608-11	CORD, POWER (TRV240:E/TRV340:E)	
△	1-776-985-11	CORD, POWER (TRV340:KR)	
△	1-783-374-11	CORD, POWER (TRV240:HK/TRV340:HK)	
△	1-790-107-22	CORD, POWER (TRV240:US,CND/TRV340:US,CND)	
△	1-790-732-11	CORD, POWER (TRV340:JE)	
	3-072-414-01	SPVD-008 (CD-ROM USB DRIVER) (TRV240:E,HK/TRV340:E,JE,HK,KR)	
	3-072-455-01	RETAINER, TRIPOD (TRV240/TRV340:US,CND,E,HK,KR,JE)	
	3-072-650-11	MANUAL, INSTRUCTION (ENGLISH) (TRV240/TRV340:US,CND,E,JE,HK)	
	3-072-650-21	MANUAL, INSTRUCTION (FRENCH) (TRV240:CND/TRV340:CND)	
	3-072-650-31	MANUAL, INSTRUCTION (SPANISH/PORTUGUESE) (TRV240:E/TRV340:E,JE)	
	3-072-650-41	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (TRV240:HK/TRV340:E,HK)	
	3-072-650-51	MANUAL, INSTRUCTION (ARABIC) (TRV340:E)	
	3-072-650-61	MANUAL, INSTRUCTION (KOREAN) (TRV340:JE,KR)	
	3-072-654-01	SPVD-008 (I)(CD-ROM USB DRIVER) (TRV240:US,CND/TRV340:US,CND)	
	3-742-854-01	LID, BATTERY CASE (FOR RMT-814)	
	3-987-015-01	BELT (S), SHOULDER (TRV240/TRV340:US,CND,E,HK,KR,JE)	
	A-7024-735-A	MEMORY STICK (TRV340:US,CND,E,HK,KR,JE)	
	X-3949-376-1	CAP (N) ASSY, LENS (TRV240/TRV340:US,CND,E,HK,KR,JE)	
		NP-FM30 BATTERY PACK (NOT SUPPLIED)	

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.
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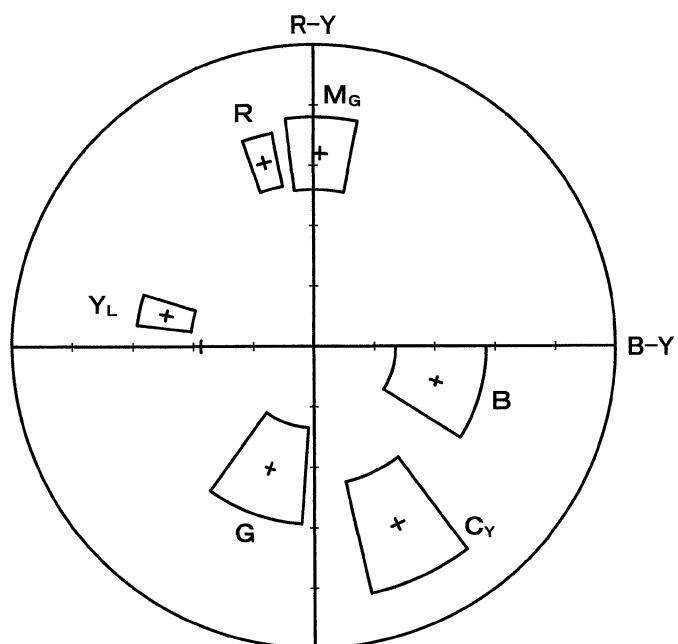


Take a copy of OPTICAL AXIS
FRAME with a clear sheet for use.



〈FOR CAMERA COLOR REPRODUCTION ADJUSTMENT〉

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



DCR-TRV240/TRV340

RMT-814

SONY®

SERVICE MANUAL

Level 2

Ver 1.2 2003. 04

US Model
Canadian Model
E Model
Hong Kong Model
DCR-TRV240/TRV340
Korea Model
Tourist Model
Argentina Model
Brazilian Model
DCR-TRV340

SUPPLEMENT-1

File this supplement-1 with the Service Manual.
(PV02-016)

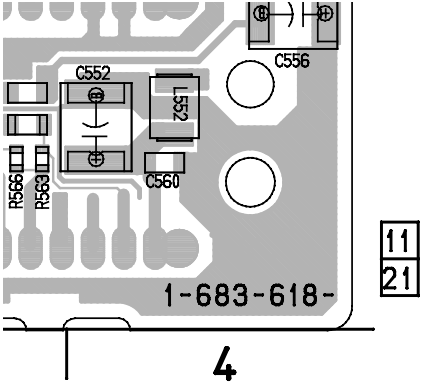
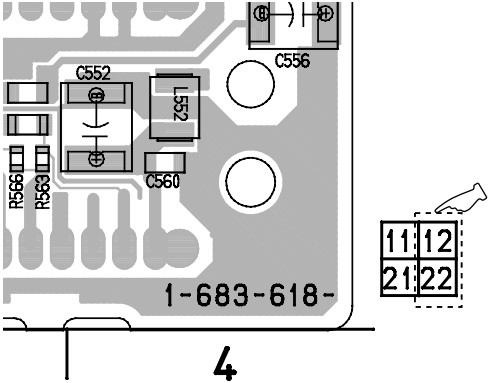
CD-357 board part No. suffix is changed.

	Before changed	After changed
CD-357 BOARD	1-683-618-11	1-683-618- <u>12</u>
	1-683-618-21	1-683-618- <u>22</u>

4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Added portion.

Page	Before change (-11/-21)	After change (-12/-22)
4-7	CD-357 BOARD 	CD-357 BOARD 

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2002.01	Official Release	—	—
1.1	2002.06	Correction-1	Correction of Printed Wiring Boards and Parts No. S.M. correction: Page 4-12 , 4-18 , 6-6	Yes
1.2	2003.04	Supplement-1	CD-357 board part No. suffix is changed.	No
1.3	2003.10	Correction-1	Correction of the Parts No. S.M. correction: Page 6-4	Yes