DCR-TRV940/TRV940E/TRV950/TRV950E
RMT-811

SECTION 6 ADJUSTMENTS

ADJ

Link

- **Before starting adjustments**
  - Adjusting items when replacing main parts and boards

- **CAMERA SECTION ADJUSTMENTS**
  - PREPARATIONS BEFORE ADJUSTMENTS
  - INITIALIZATION OF 8, A, B, C, D, E, F, 1B, 1E, 1F PAGE DATA
  - CAMERA SYSTEM ADJUSTMENTS
  - ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS
  - LCD SYSTEM ADJUSTMENTS

- **MECHANISM SECTION ADJUSTMENTS**
  - HOW TO ENTER RECORD MODE WITHOUT CASSETTE
  - HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE
  - TAPE PATH ADJUSTMENT

- **VIDEO SECTION ADJUSTMENTS**
  - PREPARATIONS BEFORE ADJUSTMENTS
  - SYSTEM CONTROL SYSTEM ADJUSTMENTS
  - SERVO AND RF SYSTEM ADJUSTMENTS
  - VIDEO SYSTEM ADJUSTMENTS
  - AUDIO SYSTEM ADJUSTMENTS

- **SERVICE MODE**
  - ADJUSTMENT REMOTE COMMANDER
  - DATA PROCESS
  - SERVICE MODE

Contents of LEVEL 2 and LEVEL 3 Service Manual

CONTENTS	LEVEL 2	LEVEL 3
1. SERVICE NOTE	○	✕
2. DISASSEMBLY	○	✕
3. BLOCK DIAGRAMS	OVERALL POWER	✕
4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS	CD-389, CK-116, JK-222, LB-080, MA-410, PD-168, SE-132 BOARD FP-100, FP-102, FP-228, FP-495, FP-497, FP-500, FP-503, FP-504 FLEXIBLE	DB-014, VC-288 BOARD
5. REPAIR PARTS LIST	EXPLODED VIEWS	✕
	ELECTRICAL PARTS	○ (DB-014, VC-288 BOARD)

SONY®

DCR-TRV940/TRV940E/TRV950/TRV950E

TABLE OF CONTENTS

> ＊ The color reproduction frame is shown on page 6-75

SECTION 6
ADJUSTMENTS

1. Before starting adjustments

EVR Data Re-writing Procedure When Replacing Board
The data that is stored in the repair board, is not necessarily correct.
Perform either procedure 1 or procedure 2 or procedure 3 when replacing board.

Procedure 1
Save the EVR data of the machine in which a board is going to be replaced. Download the saved data after a board is replaced.

(Machine before starting repair)   PC   PC   (Machine after a board is replaced)

Save the EVR data
to a personal computer.

Download the saved
data to a machine.
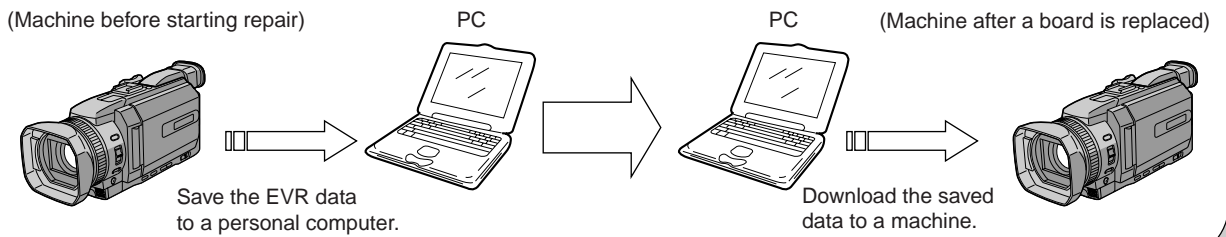
Procedure 2
Remove the EEPROM from the board of the machine that is going to be repaired. Install the removed EEPROM to the replaced board.

Remove the EEPROM and install it.

(Former board)   (New board)
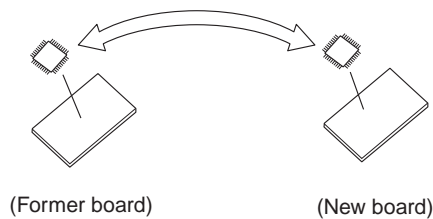
Procedure 3
When the data cannot be saved due to defective EEPROM, or when the EEPROM cannot be removed or installed, save the data from the same model of the same destination, and download it.

(Machine to be repaired)   (Machine to be repaired)

PC

Download the data.

Save the data.

(The same model of the same destination)
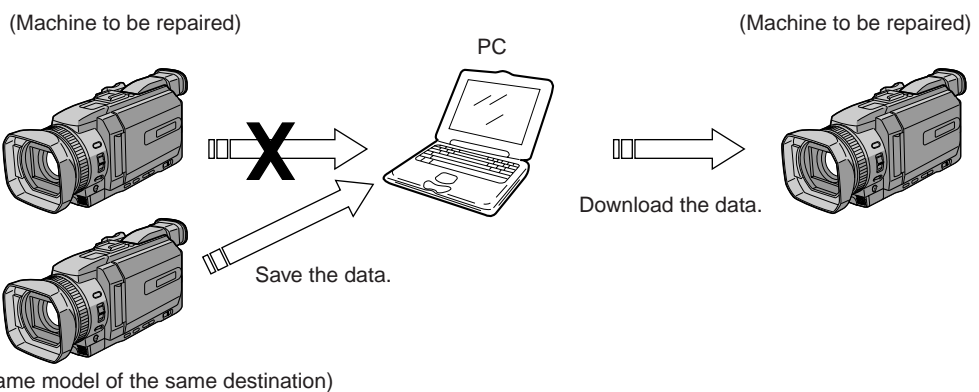
After the EVR data is saved and downloaded, check the
respective items of the EVR data.
(Refer to page 6-3 for the items to be checked)

DCR-TRV940/TRV940E/TRV950/TRV950E

COVER

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

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

Replaced part — Block replacement: Lens device; FLASH unit; LASER unit D501; Mechanism deck (Note 1); EVF block LCD903 (LCD panel (EVF)); LCD block LCD901 (LCD panel (LCD)); LCD block ND901 (Fluorescent tube); LCD block TA901 (Touch panel); Mechanism deck M901 (Drum assembly (Note 1)); Mechanism deck M902 (Capstan motor).
Mounted part replacement: CD-389 board IC100, 101, 105 (Prism block (CCD imager)); CD-389 board IC102, 103, 104 (S/H); VC-288 board IC1202, X1201 (Timing generator); VC-288 board IC1203, 1204, 1205 (A/D converter); VC-288 board IC1801 (EVR); VC-288 board IC2101 (DV signal process); VC-288 board IC1901 (EQ, A/D CONV., PLL); VC-288 board IC1902 (REC/PB AMP); DB-014 board IC7001 (Video IN/OUT); DB-014 board IC4201 (LCD driver (EVF)); DB-014 board IC4202 (Timing generator (EVF)); LB-080 board D6102 (Back light (EVF)); SE-132 board SE4001, 4002 (PITCH, YAW sensor); PD-168 board IC5701 (LCD driver (LCD)); PD-168 board IC5702 (Timing generator (LCD)).

Adjustment Section	Adjustment	Lens device	FLASH unit	LASER unit D501	Mechanism deck (Note 1)	EVF block LCD903	LCD block LCD901	LCD block ND901	LCD block TA901	Mechanism deck M901	Mechanism deck M902	CD-389 IC100,101,105	CD-389 IC102,103,104	VC-288 IC1202,X1201	VC-288 IC1203,1204,1205	VC-288 IC1801	VC-288 IC2101	VC-288 IC1901	VC-288 IC1902	DB-014 IC7001	DB-014 IC4201	DB-014 IC4202	LB-080 D6102	SE-132 SE4001,4002	PD-168 IC5701	PD-168 IC5702
Initialization of 8, A, B, C, D, E, F, 1B, 1E, 1F page data	Initialization of A, D page data																									
	Initialization of 8, C page data																									
	Initialization of E, F, 1E, 1F page data																									
	Initialization of B, 1B page data																									
Camera	66MHz/54MHz origin oscillation adj.													●		●										
	HALL adj.	●														●										
	MR adj.	●														●										
	Flange back adj.	●										●														
	AWB standard data input											●	●		●											
	MAX GAIN adj.											●	●		●											
	F No. & ND light quality standard data input	●																								
	LV standard data input											●	●		●											
	Auto white balance adj.											●	●		●											
	Color reproduction adj.											●	●		●											
	PSD sensor gain adj.	●																						●		
	Angular velocity sensor sensitivity adj.	●																						●		
	Mechanical shutter adj.	●																								
	Strobe light level adj.		●																							
	Strobe white balance adj.		●									●	●		●											
	Hologram AF output adj.			●																						
	Hologram AF angle check			●																						
Color EVF	VCO adj.																				●	●				
	RGB AMP adj.																				●					
	Contrast adj.																●				●					
	Back light adj.																				●		●			
	White balance adj.							●																		
LCD	VCO adj.																								●	●
	RGB AMP adj.																								●	
	Contrast adj.																●								●	
	V-COM level adj.																								●	
	V-COM adj.						●																			
	White balance adj.						●	●																		
System control	Touch panel adj.								●																	
	Node uniqe ID No. input																									
Servo, RF	CAP FG duty adj.				●						●															
	Switching position adj.				●					●																
	AGC center level adj.				●					●								●	●							
	APC & AEQ adj.				●					●								●	●							
	PLL fo & LPF fo adj.				●					●								●	●							
Video	Chroma BPF fo adj.																			●						
	S VIDEO OUT Y level adj.																			●						
	S VIDEO OUT chroma level adj.																			●						
Mechanism	Tape path adj.				●					●	●															

Table 6-1-1 (1)

Note 1: When replacing the drum assy or mechanism deck, reset the drum rotation counted time.
(Refer to "Record of Use Check" of "6-4. SERVICE MODE")

• Adjusting items when replacing a board or EEPROM

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

Adjustment Section	Adjustment	BT-003 board (COMPLETE) (Note 2, 3)	CD-389 board (COMPLETE)	SE-132 board (COMPLETE)	DB-014 board (COMPLETE)	LB-080 board (COMPLETE)	PD-168 board (COMPLETE)	VC-288 board (COMPLETE) (Note 4)	VC-288 board IC2502 (EEP ROM)	VC-288 board IC2901 (EEP ROM)	Supporting Radar W
Initialization of 8, A, B, C, D, E, F, 1B, 1E, 1F page data	Initialization of A, D page data							●		●	
	Initialization of 8, C page data							●	●		
	Initialization of E, F, 1E, 1F page data							●	●		
	Initialization of B, 1B page data							●		●	
Camera	66MHz/54MHz origin oscillation adj.							●	●		
	HALL adj.							●	●		●
	MR adj.							●	●		●
	Flange back adj.							●	●		●
	AWB standard data input	●						●	●		●
	MAX GAIN adj.	●						●	●		●
	F No. & ND light quality standard data input							●	●		●
	LV standard data input	●						●	●		●
	Auto white balance adj.	●						●	●		●
	Color reproduction adj.	●						●	●		
	PSD sensor gain adj.			●				●	●		
	Angular velocity sensor sensitivity adj.			●				●	●		
	Mechanical shutter adj.							●	●		●
	Strobe light level adj.							●	●		●
	Strobe white balance adj.	●						●	●		●
	Hologram AF output adj.							●	●		●
	Hologram AF angle check										●
Color EVF	VCO adj.			●				●	●		
	RGB AMP adj.			●				●	●		
	Contrast adj.			●				●	●		
	Back light adj.			●	●			●	●		
	White balance adj.			●	●			●	●		
LCD	VCO adj.						●	●	●		
	RGB AMP adj.						●	●	●		
	Contrast adj.						●	●	●		
	V-COM level adj.						●	●	●		
	V-COM adj.						●	●	●		
	White balance adj.						●	●	●		
System control	Touch panel adj.							●		●	
	Node uniqe ID No. input							●	●		
Servo, RF	CAP FG duty adj.							●	●		●
	Switching position adj.							●	●		●
	AGC center level adj.							●	●		●
	APC & AEQ adj.							●	●		●
	PLL f_0 & LPF f_0 adj.							●	●		●
Video	Chroma BPF f_0 adj.				●			●	●		
	S VIDEO OUT Y level adj.				●			●	●		
	S VIDEO OUT chroma level adj.				●			●	●		
Mechanism	Tape path adj.										

Table 6-1-1 (2)

Note 2: DCR-TRV950/TRV950E only

Note 3: After BT-003 board is replaced, check the "Info." is correctly displayed with the following procedure.
1) Turn the power switch to "MEMORY/NETWORK".
2) Press the "NETWORK" button.
3) Select/Execute the "Setup" at the network menu.
4) Select/Execute the "Bluetooth" at the network menu.
5) Select/Execute the "Info." at the network menu.
6) Check that the following information is displayed.

Name	SONY DCR-TRV950 (or DCR-TRV950E)
Address	08 : 00 : 46 : XX : XX : XX

Note 4: When VC-288 board is replaced, before and after the replacement, execute "Initializing of Network Setting Data" and initialize network personal information (mail address, bookmark).
(DCR-TRV950/TRV950E only)
(Refer to "1-2-4. Initialization of B, 1B Page Data")

DCR-TRV940/TRV940E/TRV950/TRV950E

COVER

6-1. CAMERA SECTION ADJUSTMENTS

1-1. PREPARATIONS BEFORE ADJUSTMENTS (CAMERA SECTION)

1-1-1. List of Service Tools

- Oscilloscope
- Color monitor
- Vectorscope
- Regulated power supply
- Digital voltmeter
- Frequency counter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.4	J-6080-806-A	White balance check
	ND filter 0.1	J-6080-807-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 upgraded). (Note)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	CPC-8 jig	J-6082-388-A	For adjusting the video section For adjusting the color viewfinder
J-9	Extension cable (60 P, 0.5 mm)	J-6082-466-A	For extension between the CD-389 board (CN100) and VC-288 board (CN1201)
J-10	Mini pattern box	J-6082-353-B	For adjusting the flange back
J-11	Camera table	J-6082-384-A	For adjusting the flange back
J-12	CPC-jig for LCD panel	J-6082-529-A	For adjusting the LCD system
J-13	Background paper	J-2501-130-A	

Note 1: If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).
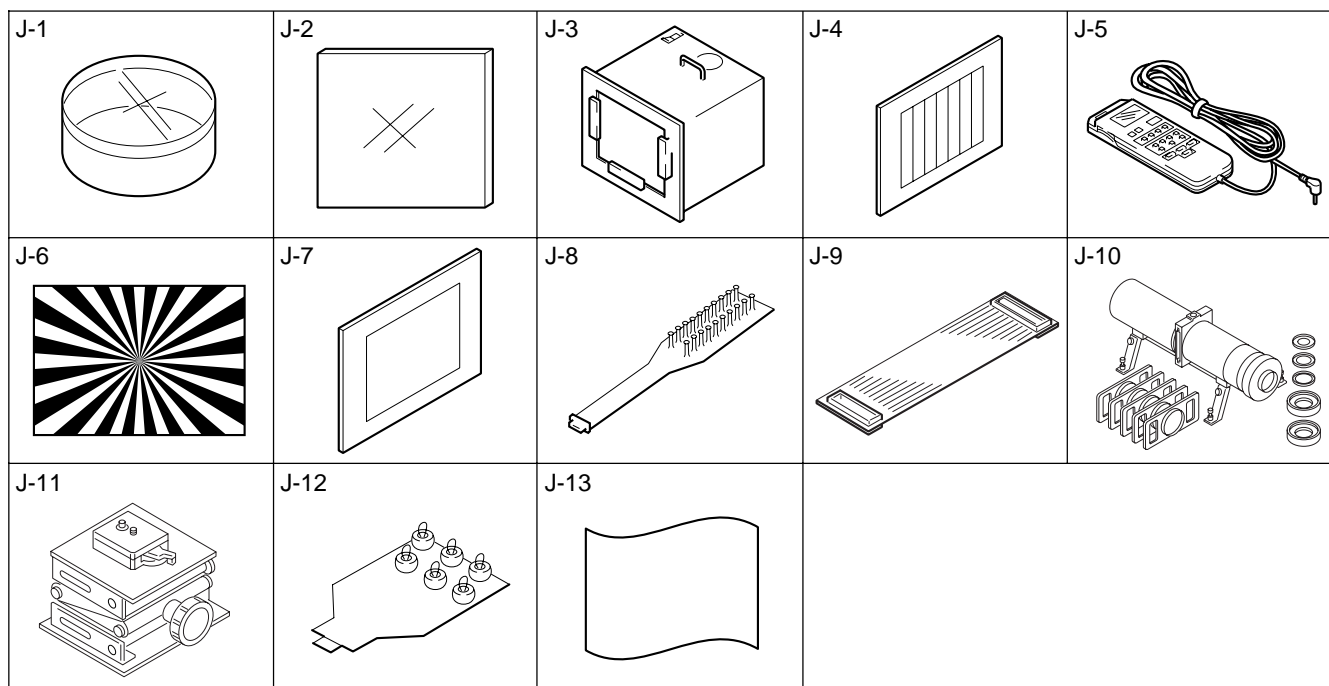
Fig. 6-1-1

1-1-2. Preparations

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

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

Note 3: Before perform the adjustment, check that the data of page: 0, address: 10 is "00".
If not, select page: 0, address: 10, and set data "00".
1) Connect the equipment for adjustments according to Fig. 6-1-3.

Note 4: As removing the cabinet (R) (removing the CK-116 board CN5203) means removing the lithium 3V power supply (BT5201), data such as date, time, user-set menus will be lost. After completing adjustments, reset these data. If the NS-014 board has been removed, the self-diagnosis data, data on history of use (total drum rotation time, etc.) will not be lost. (Refer to "SELF-DIAGNOSIS FUNCTION" for the self-diagnosis data, and to "6-4. Service Mode" for the data on the history use)

Note 5: Setting the "Forced Camera Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the camera power to be turned on with the power switch (PS-1870 block) removed. After completing adjustments, be sure to exit the "Forced Camera Power ON Mode".

Note 6: Exiting the "Forced Camera Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.
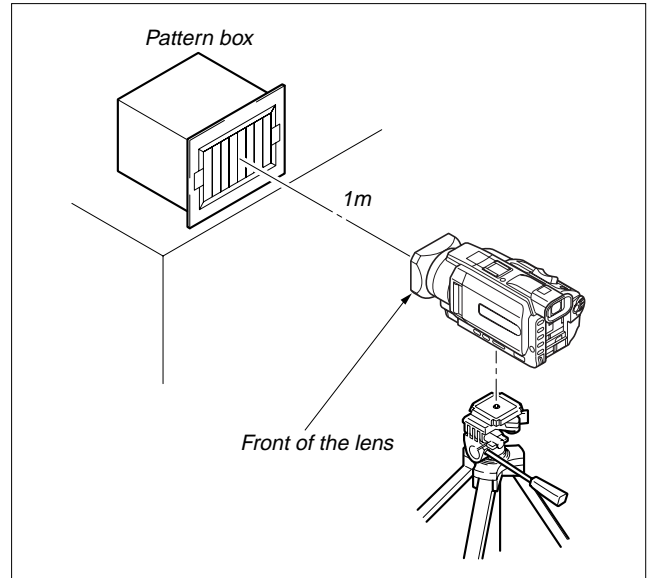
Fig. 6-1-2
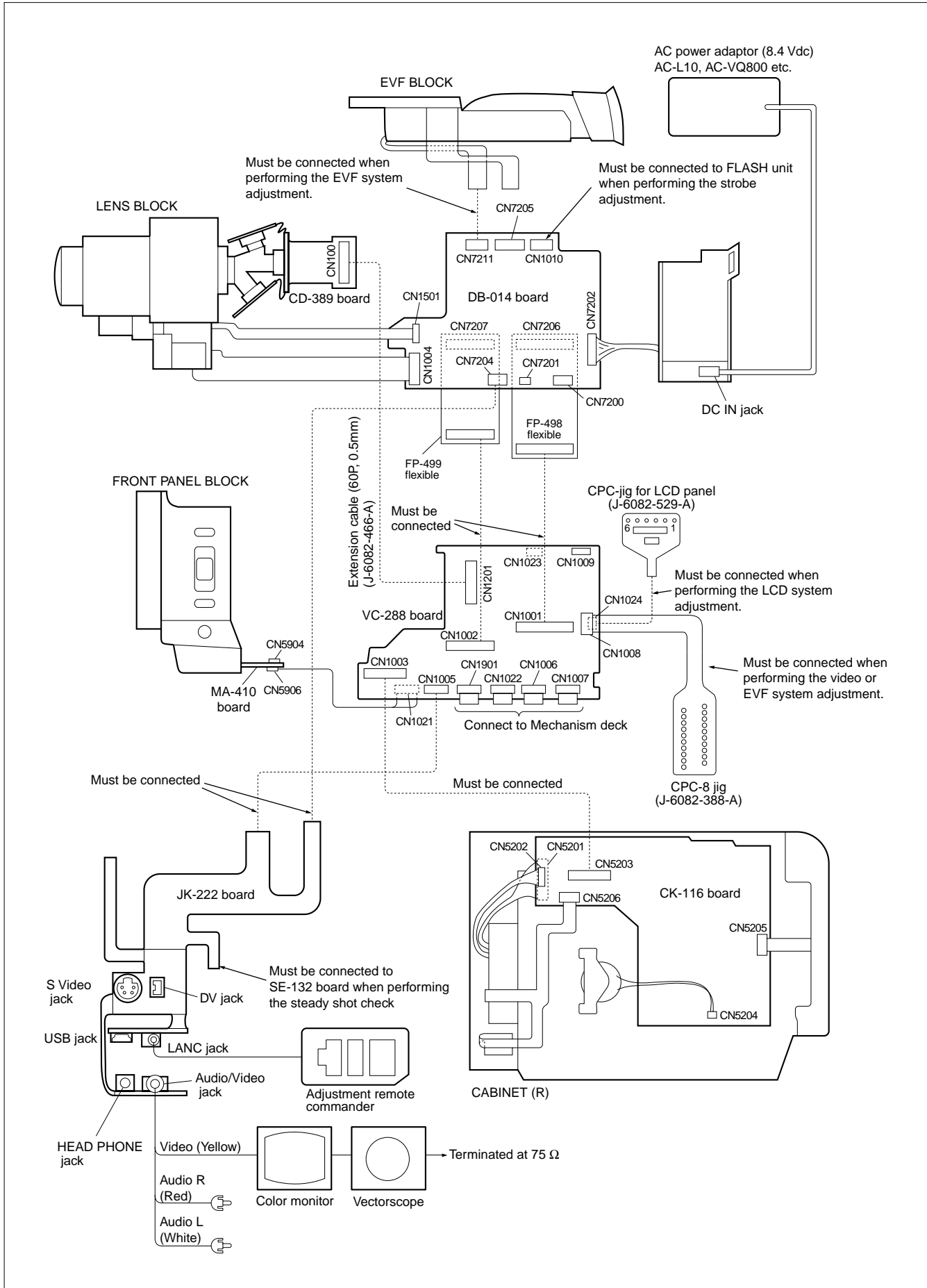
Fig. 6-1-3

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 (PS-1870 block) ....CAMERA
2. FOCUS (FP-504 flexible) .... MAN
3. BACK LIGHT (CK-116 board) .... OFF
4. SPOT LIGHT (CK-116 board) .... OFF
5. ZEBRA (CK-116 board) .... OFF
6. PROGRAM AE (KP-1870 block) .... OFF
7. SHUTTER SPEED (KP-1870 block) .... AUTO

8. WHITE BAL (KP-1870 block) .... OFF
9. EXPOSURE (KP-1870 block) .... AUTO
10. P EFFECT (MENU setting) .... OFF
11. FLASH LVL (MENU setting) .... NORMAL
12. D ZOOM (MENU setting) .... OFF
13. STEADY SHOT (MENU setting) .... OFF
14. DEMO MODE (MENU setting) .... OFF

2. Order of Adjustments

Basically carry out adjustments in the order given.

Color bar chart (Color reproduction adjustment frame)

Fig. a
(VIDEO terminal of A/V jack output waveform)

Enlargement

Difference in level

Fig. b (monitor TV picture)

Electronic beam scanning frame

CRT picture frame

Adjust the camera zoom and direction to obtain the output waveform shown in Fig. a and the monitor TV display shown in Fig. b.
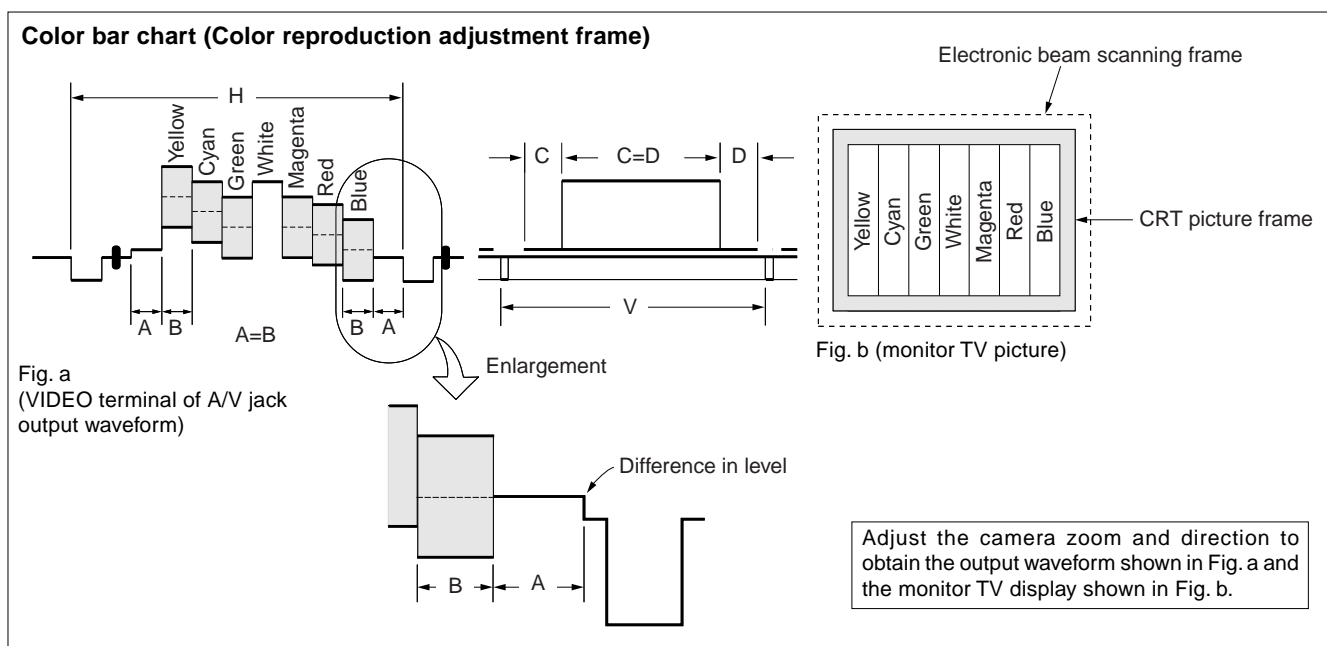
Fig. 6-1-4

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. 6-1-4. (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) Chart for flange back adjustment
   Join together a piece of white A0 size paper (1189mm × 841 mm) and a piece of black paper to make the chart shown in Fig. 6-1-5.

Note: Use a non-reflecting and non-glazing vellum paper. The size must be A0 or larger and the joint between the white and black paper must not have any undulations.

White

Black

841 mm

1189 mm
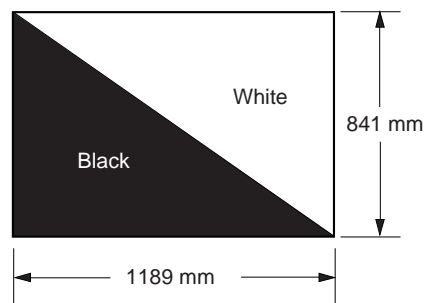
Fig. 6-1-5

4. Preparing the Flash Adjustment Box

A dark room is required to provide an accurate flash adjustment.
If it is not available, prepare the flash adjustment box as given
below;

1) Provide woody board A, B and C of 15 mm thickness.

woody board A (2)   woody board B (2)   woody board C (1)
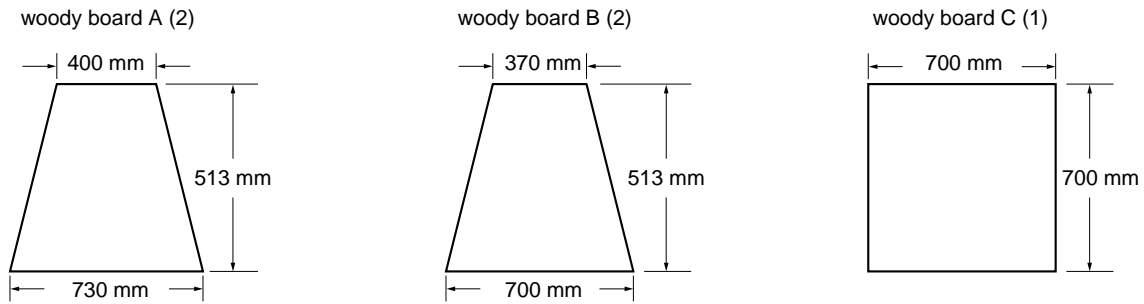
Fig. 6-1-6

2) Apply black mat paint to one side of woody board A and B.
3) Attach background paper (J-2501-130-A) to woody board C.
4) Assemble so that the black sides and the background paper
   side of woody board A, B and C are internal. (Fig. 6-1-7)

Fig. 6-1-7

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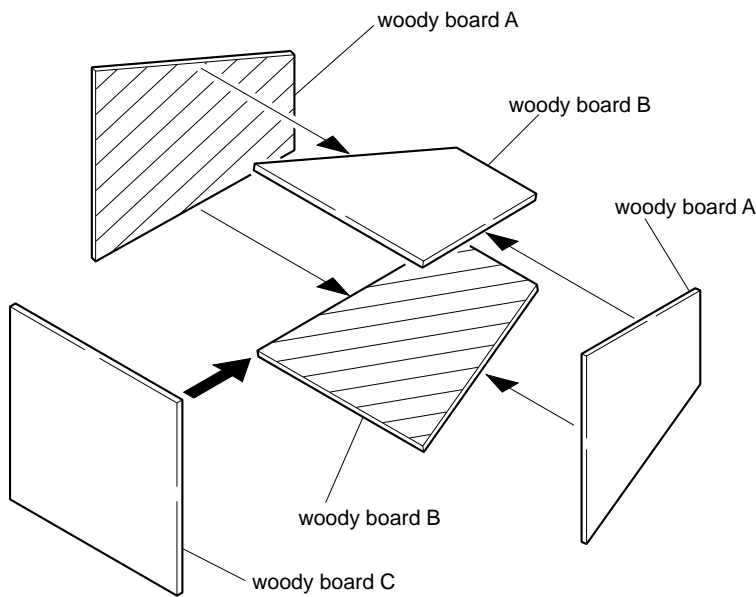
1-2. INITIALIZATION OF 8, A, B, C, D, E, F, 1B, 1E, 1F PAGE DATA

Note 1: If reading/writing data on pages 1B, 1E, 1F, set data: 01 to page: 0, address: 10, and then select pages B, E, F. By this data setting, the pages 1B, 1E, 1F can be selected. After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

[Connection of power supply for data initialization]

1) Connect the regulated power supply and a digital voltmeter, as shown in Fig. 6-1-8.
2) Adjust the output voltage of the regulated power supply so that the digital voltmeter indicates 6.0 ± 0.1 Vdc.
3) Turn off the power switch.
4) Turn on the HOLD switch of the adjusting remote commander.
5) Turn on the power switch.
6) Initialize the data.

Note 2: Though the following message will be displayed on the LCD screen, this is normal.
"Use info lithium battery"

[Adjusting Procedure]

1. Initialaizing of A, D Page Data
2. Initialaizing of 8, C Page Data
3. Initialaizing of E, F, 1E, 1F Page Data
4. Initialaizing of B, 1B Page Data
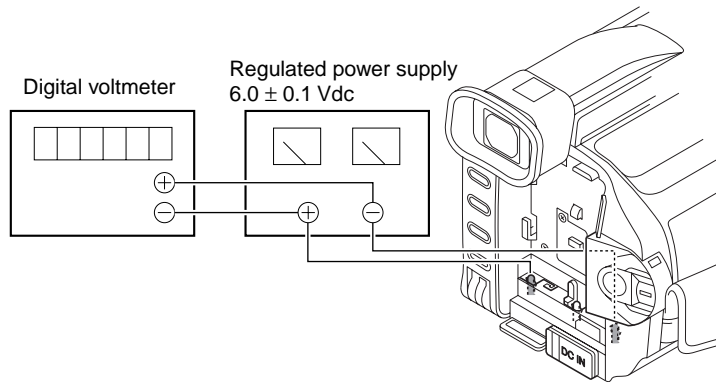
Fig. 6-1-8

1-2-1. Initialization of A, D Page Data
Note: Check that the data of page: 0, address: 10 is "00".

1. Initializing of A, D Page Data
Note 1: If the A, D page data has been initialized, the following
adjustments need to be performed again.
1) Modification of A, D page data
2) Touch panel adjustment
Note 2: Check that the voltage of power supply is 6.0 ± 0.1Vdc.
Note 3: NTSC model: DCR-TRV940/TRV950
PAL model: DCR-TRV940E/TRV950E

Adjustment Page	A
Adjustment Address	10 to FF
Adjustment Page	D
Adjustment Address	10 to 7F

A page initializing method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	0	10	00	
3	7	03		Set the following data 07: NTSC model 87: PAL model
4	7	00	20	
5	7	01	20	Press PAUSE button.
6	7	02		Check the data changes to "01".
7	2	00	29	
8	2	01	29	Press PAUSE button.
9				Perform "Modification of A, D Page Data"

D page initializing method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	0	10	00	
3	7	03		Set the following data 07: NTSC model 87: PAL model
4	7	00	22	
5	7	01	22	Press PAUSE button.
6	7	02		Check the data changes to "01".
7	2	00	29	
8	2	01	29	Press 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 table by manual
input.

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

Processing after Completing Modification A, D page data:

Order	Page	Address	Data	Procedure
1	2	00	29	
2	2	01	29	Press PAUSE button.

Note 2: If the following symptoms occur after completing of
the"Modification A, D page data", check that the data of
the "Fixed data-2" addresses of A, D page are same as
those of the same model of the same destination.
1) "E: 20: 00" of self-diagnosis code on LCD screen is
flashing.
2) The power is shut off so that unit cannot operate.

3. A Page table

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: 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 NTSC	PAL	Remark
10 to 17			Fixed data-1 (Initialized data)
18			Fixed data-2
19 to 2A			Fixed data-1 (Initialized data)
2B			Fixed data-2
2C to 2E			Fixed data-1 (Initialized data)
2F			Fixed data-2
30 to 41			Fixed data-1 (Initialized data)
42			Fixed data-2
43 to 51			Fixed data-1 (Initialized data)
52			Fixed data-2
53			Fixed data-1 (Initialized data)
54			Fixed data-2
55 to 5C			Fixed data-1 (Initialized data)
5D			Fixed data-2 (TRV950/TRV950E) / Fixed data-1 (TRV940/TRV940E)
5E to 61			Fixed data-1 (Initialized data)
62			Fixed data-2
63			Fixed data-2
64 to 8F			Fixed data-1 (Initialized data)
90	DA	DB	Touch panel adj.
91	27	25	Touch panel adj.
92	E1	DA	Touch panel adj.
93	1C	23	Touch panel adj.
94 to CF			Fixed data-1 (Initialized data)
D0			Fixed data-2
D1			Fixed data-2
D2 to FF			Fixed data-1 (Initialized data)

4. D Page table

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: 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 NTSC	PAL	Remark
10	00	00	Test mode
11			Fixed data-1 (Initialized data)
12			Fixed data-2
13 to 15			Fixed data-1 (Initialized data)
16			Fixed data-2
17 to 21			Fixed data-1 (Initialized data)
22			Fixed data-2
23			Fixed data-2
24			Fixed data-2
25			Fixed data-2
26			Fixed data-2
27 to 29			Fixed data-1 (Initialized data)
2A			Fixed data-2
2B			Fixed data-2
2C to 36			Fixed data-1 (Initialized data)
37			Fixed data-2
38, 39			Fixed data-1 (Initialized data)
3A			Fixed data-2
3B to 50			Fixed data-1 (Initialized data)
51			Fixed data-2
52			Fixed data-2
53			Fixed data-2
54			Fixed data-2
55, 56			Fixed data-1 (Initialized data)
57			Fixed data-2
58			Fixed data-1 (Initialized data)
59			Fixed data-2
5A			Fixed data-2
5B			Fixed data-2
5C			Fixed data-2
5D			Fixed data-2
5E			Fixed data-2
5F			Fixed data-2
60			Fixed data-2 (TRV950/TRV950E)
61			Fixed data-1 (TRV940/TRV940E)
62 to 7F			Fixed data-1 (Initialized data)

1-2-2. Initialization of 8, C Page Data

Note: Check that the data of page: 0, address: 10 is "00".

1. Initializing of 8, C Page Data

Note1: If "Initialization of Pages 8, C" is executed, all data on pages 8, C are initialized. (Only an individual page cannot be initialized)

Note 2: If the 8, C page data has been initialized, the following adjustments need to be performed again.
1) Modification of 8, C page data
2) Color electronic viewfinder system adjustments
3) LCD system adjustments
4) Node unique ID No. input
5) Servo, RF system adjustments
6) Video system adjustments

Note 3: Check that the voltage of power supply is 6.0 ± 0.1Vdc.

Adjustment Page	8
Adjustment Address	00 to A3
Adjustment Page	C
Adjustment Address	10 to FF

Initializing method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	0	10	00	
3	3	81		Check the data changes to "00".
4	3	80	0C	Press PAUSE button.
5	3	80		Check the data changes to "1C".
6				Perform "Modification of 8, C Page Data"

2. Modification of 8, C Page Data

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

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

Processing after Completing Modification 8, C page data:

Order	Page	Address	Data	Procedure
1	2	00	29	
2	2	01	29	Press PAUSE button.

3. 8 Page table

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of 8, C Page Data")

Address	Initial value NTSC	Initial value PAL	Remark
00 to 2E			Fixed data-1 (Initialized data)
2F			Fixed data-2
30 to 3A			Fixed data-1 (Initialized data)
3B			Fixed data-2
3C to 49			Fixed data-1 (Initialized data)
4A			Fixed data-2
4B to 51			Fixed data-1 (Initialized data)
52			Fixed data-2
53 to 79			Fixed data-1 (Initialized data)
7A			
7B			
7C			
7D			
7E			
7F			Fixed data-2
80			
81			
82			
83			
84			
85 to 89			Fixed data-1 (Initialized data)
8A			Fixed data-2
8B			Fixed data-1 (Initialized data)
8C	08	08	
8D	00	00	
8E	46	46	
8F	01	01	
90	02	02	Node unique ID No. input
91	00	00	
92	00	00	
93	00	00	
94 to 99			Fixed data-1 (Initialized data)
9A			
9B			Fixed data-2
9C			Fixed data-1 (Initialized data)
9D			
9E			
9F			
A0			Fixed data-2
A1			
A2			
A3			Fixed data-1 (Initialized data)

4. C Page table

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: Fixed data-1: Initialized data. (Refer to "1. Initializing the 8, C Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of 8, C Page Data")

Address	Initial value NTSC	Initial value PAL	Remark
10	EE	EE	
11	00	00	Switching position adj.
12	00	00	
13	00	00	
14, 15			Fixed data-1 (Initialized data)
16	E0	E0	CAP FG duty adj.
17			Fixed data-1 (Initialized data)
18	2A	2A	APC & AEQ adj.
19	2A	2A	
1A			Fixed data-1 (Initialized data)
1B	32	32	APC & AEQ adj.
1C	32	32	
1D			Fixed data-1 (Initialized data)
1E	25	25	AGC center level adj.
1F	3E	3E	PLL f_0 & LPF f_0 adj.
20	3E	3E	
21	DC	DC	APC & AEQ adj.
22	99	99	PLL f_0 & LPF f_0 adj.
23, 24			Fixed data-1 (Initialized data)
25	88	88	S VIDEO OUT Y level adj.
26	E3	E3	S VIDEO OUT chroma level adj.
27	A1	A1	
28	04	04	Chroma BPF f_0 adj.
29	20	20	PLL f_0 & LPF f_0 adj.
2A, 2B			Fixed data-1 (Initialized data)
2C	03	03	APC & AEQ adj.
2D to 4E			Fixed data-1 (Initialized data)
4F	64	64	Back light adj. (EVF)
50	CA	CA	
51	5D	7D	VCO adj. (EVF)
52	5D	7D	
53			Fixed data-2
54	AC	AC	RGB AMP adj. (EVF)
55			Fixed data-1 (Initialized data)
56	80	80	White balance adj. (EVF)
57	80	80	
58	1D	1D	Contrast adj. (EVF)
59			Fixed data-1 (Initialized data)
5A			
5B			
5C			Fixed data-2
5D			
5E			

C Page table

Address	Initial value NTSC	Initial value PAL	Remark
5F			Fixed data-2
60			
61	98	98	VCO adj. (LCD)
62	98	98	
63	91	91	V-COM adj. (LCD)
64	2C	2C	RGB AMP adj. (LCD)
65			Fixed data-1 (Initialized data)
66	A1	A1	V-COM level adj. (LCD)
67	7F	7F	White balance adj. (LCD)
68	87	87	
69	3F	3F	Contrast adj. (LCD)
6A			Fixed data-2
6B			
6C			
6D			
6E			
6F			
70			
71			Fixed data-1 (Initialized data)
72			Fixed data-2
73 to 75			Fixed data-1 (Initialized data)
76			Fixed data-2
77 to 79			Fixed data-1 (Initialized data)
7A			Fixed data-2
7B to 80			Fixed data-1 (Initialized data)
81			Fixed data-2
82			
83, 84			Fixed data-1 (Initialized data)
85			Fixed data-2
86 to 88			Fixed data-1 (Initialized data)
89			Fixed data-2
8A			
8B			Fixed data-1 (Initialized data)
8C			Fixed data-2
8D to A2			Fixed data-1 (Initialized data)
A3			Fixed data-2
A4 to A9			Fixed data-1 (Initialized data)
AA			Fixed data-2
AB			Fixed data-1 (Initialized data)
AC			Fixed data-2
AD			
AE			
AF to C0			Fixed data-1 (Initialized data)
C1			Fixed data-2
C2			
C3			
C4			

Address	Initial value NTSC	Initial value PAL	Remark
C5			Fixed data-2
C6			
C7, C8			Fixed data-1 (Initialized data)
C9			Fixed data-2
CA			
CB			
CC			
CD			
CE			
CF, D0			Fixed data-1 (Initialized data)
D1			Fixed data-2
D2			
D3			
D4			Fixed data-1 (Initialized data)
D5			Fixed data-2
D6			
D7			Fixed data-1 (Initialized data)
D8			Fixed data-2
D9			
DA			
DB			
DC			
DD			
DE			
DF to E1			Fixed data-1 (Initialized data)
E2			Fixed data-2
E3			
E4, E5			Fixed data-1 (Initialized data)
E6			Fixed data-2
E7			Fixed data-1 (Initialized data)
E8			Fixed data-2
E9 to F3			Fixed data-1 (Initialized data)
F4	00	00	Emergency memory address
F5	00	00	
F6	00	00	
F7	00	00	
F8	00	00	
F9	00	00	
FA	00	00	
FB	00	00	
FC	00	00	
FD	00	00	
FE	00	00	
FF	00	00	

1-2-3. Initialization of E, F, 1E, 1F Page Data

Note: If reading/writing data on pages 1E, 1F, set data: 01 to page: 0, address: 10, and then select pages E, F. By this data setting, the pages 1E, 1F can be selected.
After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

1. Initializing of E, F, 1E, 1F Page Data

Note 1: If "Initialization of Pages E, F, 1E, 1F" is executed, all data on pages E, F, 1E, 1F are initialized. (Only an individual page cannot be initialized)

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

Note 3: Check that the voltage of power supply is 6.0 ± 0.1 Vdc.

Note 4: NTSC model: DCR-TRV940/TRV950
    PAL model: DCR-TRV940E/TRV950E

Adjustment Page	E
Adjustment Address	00 to FF
Adjustment Page	F
Adjustment Address	10 to FF
Adjustment Page	1E
Adjustment Address	00 to C3
Adjustment Page	1F
Adjustment Address	00 to FF

Initializing method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	0	10	00	
3	6	01		Set the following data, and press PAUSE button. 2D: NTSC model 2F: PAL model
4	6	03	01	Press PAUSE button.
5	6	02		Check the data changes to "01".
6				Perform "Modification of E, F, 1E, 1F Page Data"

2. Modification of E, F, 1E, 1F Page Data

If the E, F, 1E, 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) If modification of data on pages E, F, set data: 01 to page: 0, address: 00, and then select pages E, F.

3) If modification of data on pages 1E, 1F, set data: 01 to page: 0, address: 10, and then select pages E, F. After the modification of data finished, return the data on page: 0, address: 10 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 E, F, 1E, 1F page data:

Order	Page	Address	Data	Procedure
1	0	10	00	
2	2	00	29	
3	2	01	29	Press PAUSE button.
4				Perform "66MHz/54MHz Origin Oscillation Adjustment" of "CAMERA SYSTEM ADJUSTMENTS"

3. E Page table

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1E, 1F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1E, 1F Page Data")

Address	Initial value NTSC	PAL	Remark
00 to 10			Fixed data-1 (Initialized data)
11			Fixed data-2
12			
13			
14			
15 to 19			Fixed data-1 (Initialized data)
1A			Fixed data-2
1B, 1C			Fixed data-1 (Initialized data)
1D			Fixed data-2
1E			
1F			
20			Fixed data-1 (Initialized data)
21			Fixed data-2
22			
23			
24 to 2A			Fixed data-1 (Initialized data)
2B			Fixed data-2
2C			
2D to 33			Fixed data-1 (Initialized data)
34			Fixed data-2
35 to 38			Fixed data-1 (Initialized data)
39			Fixed data-2
3A			
3B, 3C			Fixed data-1 (Initialized data)
3D			Fixed data-2
3E			
3F to 57			Fixed data-1 (Initialized data)
58			Fixed data-2
59			
5A to 5D			Fixed data-1 (Initialized data)
5E			Fixed data-2
5F, 60			Fixed data-1 (Initialized data)
61			Fixed data-2
62			
63			
64			
65			
66			
67, 68			Fixed data-1 (Initialized data)
69			Fixed data-2
6A			Fixed data-1 (Initialized data)
6B			Fixed data-2
6C to 6E			Fixed data-1 (Initialized data)

Address	Initial value NTSC	PAL	Remark
6F			Fixed data-2
70			
71			Fixed data-1 (Initialized data)
72			Fixed data-2
73			Fixed data-1 (Initialized data)
74			Fixed data-2
75			Fixed data-1 (Initialized data)
76			Fixed data-2
77, 78			Fixed data-1 (Initialized data)
79			Fixed data-2
7A			
7B			
7C			
7D to 94			Fixed data-1 (Initialized data)
95			Fixed data-2
96			
97 to B2			Fixed data-1 (Initialized data)
B3			Fixed data-2
B4 to C6			Fixed data-1 (Initialized data)
C7			Fixed data-2
C8			
C9			
CA to CC			Fixed data-1 (Initialized data)
CD			Fixed data-2
CE			
CF to E2			Fixed data-1 (Initialized data)
E3			Fixed data-2
E4			
E5 to FF			Fixed data-1 (Initialized data)

4. F Page table

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: Fixed data-1: Initialized data. (Refer to "1. Initializing the E, F, 1E, 1F Page Data")
Fixed data-2: Modified data. (Refer to "2. Modification of E, F, 1E, 1F Page Data")

Address	Initial value NTSC	PAL	Remark
10	40	40	66MHz/54MHz origin oscillation adj.
11, 12			Fixed data-1 (Initialized data)
13	80	80	Hall adj.
14	90	90	
15	18	18	
16	75	75	
17	4A	4A	
18	89	89	
19	80	80	MAX GAIN adj.
1A	80	80	LV standard data input
1B	7A	7A	
1C	80	80	F No. & ND light quality standard data input
1D	80	80	
1E	80	80	
1F	80	80	
20	80	80	
21	80	80	
22	80	80	
23	80	80	
24 to 29			Fixed data-1 (Initialized data)
2A	14	14	AWB standard data input
2B	17	17	
2C	04	04	
2D	79	79	
2E to 35			Fixed data-1 (Initialized data)
36	2D	2D	Strobe white balance adj.
37	64	64	
38	00	01	Color reproduction adj.
39	EF	E8	
3A	1E	1B	
3B	2F	24	
3C			Fixed data-2
3D			
3E			
3F			
40	0A	0A	Auto white balance adj.
41	19	19	
42	07	07	
43	DD	DD	
44 to 5F			Fixed data-1 (Initialized data)
60	11	11	Flange back adj.
61	EB	EB	
62	53	53	

Address	Initial value NTSC	PAL	Remark
63	0A	0A	Flange back adj.
64	1E	1E	
65	AC	AC	
66	00	00	
67	00	00	
68	00	00	
69	00	00	
6A	86	86	
6B	19	19	
6C	19	19	
6D	38	38	
6E	00	00	
6F	00	00	
70	00	00	MR adj./Flange back adj.
71	80	80	MR adj.
72	80	80	
73	80	80	
74	80	80	
75	40	40	
76	C0	C0	
77	40	40	
78	C0	C0	
79	40	40	
7A	C0	C0	
7B	40	40	
7C	C0	C0	
7D	20	20	Hologram AF output adj.
7E	00	00	
7F	00	00	
80	00	00	
81	00	00	
82	00	00	
83	00	00	
84	80	80	PSD sensor gain adj.
85	80	80	
86	50	50	Angular velocity sensor sensitivity adj.
87	50	50	
88, 89			Fixed data-1 (Initialized data)
8A	01	01	Strobe light level adj.
8B	E0	E0	
8C	80	80	
8D	80	80	
8E	80	80	
8F	20	20	
90	00	00	Mechanical shutter adj.
91	00	00	
92	00	00	
93	00	00	

DCR-TRV940/TRV940E/TRV950/TRV950E

F Page table

Address	Initial value NTSC	Initial value PAL	Remark
94	00	00	Mechanical shutter adj.
95	00	00	
96	00	00	
97	00	00	
98	00	00	
99	00	00	
9A	00	00	
9B	00	00	
9C	00	00	
9D	00	00	
9E	00	00	
9F	00	00	
A0	00	00	
A1	00	00	
A2	00	00	
A3	00	00	
A4	00	00	
A5	00	00	
A6 to B3			Fixed data-1 (Initialized data)
B4			Fixed data-2
B5			Fixed data-1 (Initialized data)
B6			Fixed data-2
B7			
B8 to C4			Fixed data-1 (Initialized data)
C5			Fixed data-2
C6 to FF			Fixed data-1 (Initialized data)

5. 1E Page table

Note 1: If reading/writing data on pages 1E, set data: 01 to page: 0, address: 10, and then select pages E. By this data setting, the pages 1E can be selected.

After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

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

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

Address	Initial value		Remark
	NTSC	PAL	
00			Fixed data-2
01 to 07			Fixed data-1 (Initialized data)
08			Fixed data-2
09			
0A to 14			Fixed data-1 (Initialized data)
15			Fixed data-2
16 to 1F			Fixed data-1 (Initialized data)
20			Fixed data-2
21			Fixed data-1 (Initialized data)
22			Fixed data-2
23			
24			
25			
26			
27 to 2B			Fixed data-1 (Initialized data)
2C			Fixed data-2
2D			
2E			
2F to 33			Fixed data-1 (Initialized data)
34			Fixed data-2
35 to 48			Fixed data-1 (Initialized data)
49			Fixed data-2
4A, 4B			Fixed data-1 (Initialized data)
4C			Fixed data-2
4D			
4E			Fixed data-1 (Initialized data)
4F			Fixed data-2
50 to 53			Fixed data-1 (Initialized data)
54			Fixed data-2
55			
56 to 5B			Fixed data-1 (Initialized data)
5C			Fixed data-2
5D			Fixed data-1 (Initialized data)
5E			Fixed data-2
5F			
60 to 63			Fixed data-1 (Initialized data)
64			Fixed data-2
65			
66 to 69			Fixed data-1 (Initialized data)
6A			Fixed data-2

Address	Initial value		Remark
	NTSC	PAL	
6B			Fixed data-2
6C			
6D			
6E			
6F to 71			Fixed data-1 (Initialized data)
72			Fixed data-2
73			
74			Fixed data-1 (Initialized data)
75			Fixed data-2
76			
77			
78			
79			
7A to B4			Fixed data-1 (Initialized data)
B5			Fixed data-2
B6 to C3			Fixed data-1 (Initialized data)

6. 1F Page table

Note 1: If reading/writing data on pages 1F, set data: 01 to page: 0, address: 10, and then select pages F. By this data setting, the pages 1F can be selected.

After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

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

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

Address	Initial value		Remark
	NTSC	PAL	
00 to 0A			Fixed data-1 (Initialized data)
0B			
0C			
0D			
0E			Fixed data-2
0F			
10			
11			
12 to 16			Fixed data-1 (Initialized data)
17			Fixed data-2
18 to 61			Fixed data-1 (Initialized data)
62			Fixed data-2
63			
64 to 67			Fixed data-1 (Initialized data)
68			Fixed data-2
69 to 6C			Fixed data-1 (Initialized data)
6D			Fixed data-2
6E to B8			Fixed data-1 (Initialized data)
B9			Fixed data-2
BA, BB			Fixed data-1 (Initialized data)
BC			Fixed data-2
BD			
BE to C5			Fixed data-1 (Initialized data)
C6			Fixed data-2
C7 to CF			Fixed data-1 (Initialized data)
D0			Fixed data-2
D1 to D9			Fixed data-1 (Initialized data)
DA			Fixed data-2
DB			
DC			Fixed data-1 (Initialized data)
DD			Fixed data-2
DE			
DF to E7			Fixed data-1 (Initialized data)
E8			Fixed data-2
E9			
EA to EC			Fixed data-1 (Initialized data)
ED			Fixed data-2
EE			
EF to F4			Fixed data-1 (Initialized data)
F5			Fixed data-2
F6 to FF			Fixed data-1 (Initialized data)

1-2-4. Initialization of B, 1B Page Data

Note: If reading/writing data on pages 1B, set data: 01 to page: 0, address: 10, and then select pages B. By this data setting, the pages 1B can be selected.

After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

1. Initializing of B, 1B Page Data

Note 1: If "Initialization of Pages B, 1B" is executed, all data on pages B, 1B are initialized. (Only an individual page cannot be initialized)

Note 2: If the B, 1B page data has been initialized, the following adjustments need to be performed again.
1) Modification of B, 1B page data

Note 3: Check that the voltage of power supply is 6.0 ± 0.1 Vdc.

Adjustment Page	B
Adjustment Address	00 to FF
Adjustment Page	1B
Adjustment Address	00 to FF

Initializing method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	0	10	00	
3	5	02	FF	
4	5	01	F3	Press PAUSE button.
5	5	00	01	Press PAUSE button.
6	5	02		Check the data changes to "00".
7	5	0E	00	Press PAUSE button.
8	5	03	20	Press PAUSE button.
9	5	01	FA	Press PAUSE button.
10	5	00	01	Press PAUSE button.
11	5	0E		Check the data changes to "01".
12				Turn off the power supply, then turn on them again.
13				Perform "Modification of B 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 table by manual input.

Modifying Method:
1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) If modification of data on pages B, set data: 01 to page: 0, address: 00, and then select pages B.
3) If modification of data on pages 1B, set data: 01 to page: 0, address: 10, and then select pages B. After the modification of data finished, return the data on page: 0, address: 10 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 B page data:

Order	Page	Address	Data	Procedure
1	2	00	29	
2	2	01	29	Press PAUSE button.

3. B Page table

Note 1: Check that the data of page: 0, address: 10 is "00".

Note 2: 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	Initial value		Remark
	NTSC	PAL	
00 to AF			Fixed data-1 (Initialized data)
B0			Fixed data-2 (TRV950/TRV950E)
			Fixed data-1 (TRV940/TRV940E)
B1 to FF			Fixed data-1 (Initialized data)

4. 1B Page table

Note 1: If reading/writing data on pages 1B, set data: 01 to page: 0, address: 10, and then select pages B. By this data setting, the pages 1B can be selected.

After the data reading/writing finished, return the data on page: 0, address: 10 to "00".

Note 2: 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	Initial value		Remark
	NTSC	PAL	
00 to FF			Fixed data-1 (Initialized data)

**5. Initializing of Network Setting Data
(DCR-TRV950/TRV950E)**

Initializing method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	0	10	00	
3	5	01	E7	Press PAUSE button.
4	5	09	80	Press PAUSE button.
5	5	0A		Set the following data, and press PAUSE button. 01: CND, E, HK, AU model 03: US model 04: AEP, UK, EE, NE, RU model
6	5	00	01	Press PAUSE button.
7	5	0E		Check the data is "00".

- Abbreviation
  AUS : Australian model   HK : Hong Kong model
  CND : Canadian model   NE : North European model
  EE : East European model   RU : Russian model

COVER

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, check that the specified values of "VIDEO SYSTEM ADJUSTMENTS" are satisfied. (Except "66MHz/54MHz Origin Oscillation Adjustment")
Check that the data of page: 0, address: 10 is "00".
If not, select page: 0, address: 10, and set the data "00".

1. 66MHz/54MHz Origin Oscillation Adjustment (VC-288 board)

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

Subject	Not required
Measurement Point	Pin ⑥ of IC1202 (R1209)
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	10
Specified value	f = 33000000 ± 165 Hz (NTSC) f = 27000000 ± 135 Hz (PAL)

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: NTSC model: DCR-TRV940/TRV950
PAL model: DCR-TRV940E/TRV950E

Adjusting method:

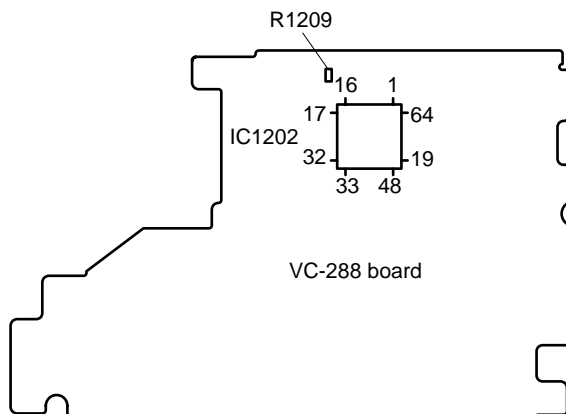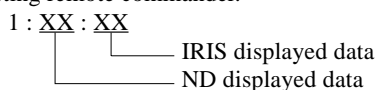| Order	Page	Address	Data	Procedure
1	0	01	01	
2	F	10		Change the data and set the frequency (f) to the specified value.
3	F	10		Press PAUSE button.
4	0	01	00	

Fig. 6-1-9

2. HALL Adjustment RadarW

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

Subject	Not required
Measurement Point	Displayed data of page: 1 (Note 1)
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	13 to 18
Specified value 1	14 to 18
Specified value 2	84 to 88
Specified value 3	84 to 88
Specified value 4	14 to 18

Note 1: The right four digits of the page: 1 displayed data of the adjusting remote commander.

$$1 : \underline{XX} : \underline{XX}$$

         IRIS displayed data
        ND displayed data

Note 2: Check that the data of page: 0, address: 10 is "00".
Note 3: Check that the data of page: 6, address: 02 is "00".
      If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	94	16	
3	6	95	86	
4	6	01	6D	Press PAUSE button. (Note 4)
5	6	02		Check the data changes to "01".
6	6	01	00	Press PAUSE button.

Note 4: The adjustment data will be automatically input to page: F, address: 13 to 18.

Checking method:

Order	Page	Address	Data	Procedure
1	0	03	03	
2	6	01	01	Press PAUSE button.
3	1			Check that the IRIS displayed data (Note 1) satisfied the specified value 1.
4	6	01	03	Press PAUSE button.
5	1			Check that the IRIS displayed data (Note 1) satisfied the specified value 2.
6	6	01	69	Press PAUSE button.
7	1			Check that the ND displayed data (Note 1) satisfied the specified value 3.
8	6	01	6B	Press PAUSE button.
9	1			Check that the ND displayed data (Note 1) satisfied the specified value 4.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	94	00	
3	6	95	00	
4	0	03	00	
5	0	01	00	

3. MR Adjustment *RadarW*

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

Subject	Not required
Measurement Point	Adjusting remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	70 to 7C
Specified value 1	40 to C0
Specified value 2	03 to 78
Specified value 3	88 to F8

Note 1: Perform the adjustment with the lens in horizontal state.
Note 2: Perform "Flange Back Adjustment" after this adjustment.
Note 3: Check that the data of page: 0, address: 10 is "00".
Note 4: Check that the data of page: 6, address: 02 is "00".
　　　　　 If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	01	BD	Press PAUSE button. (Note 5)
3	6	02		Check the data changes to "01".
4	F	71 72 73 74		Check that the data of each address satisfied the specified value 1.
5	F	75 77 79 7B		Check that the data of each address satisfied the specified value 2.
6	F	76 78 7A 7C		Check that the data of each address satisfied the specified value 3.

Note 5: The adjustment data will be automatically input to page: F, address: 70 to 7C.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	0	01	00	

4. Flange Back Adjustment RadarW
(Using the 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 minipattern box (Note 1)
Measurement Point	Adjusting remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	60 to 70
Specified value	Data of page: F, address: 6F is "00" to "0E"

Note 1: Dark Siemens star chart.
Note 2: Perform "HALL Adjustment" "MR Adjustment" before this adjustment.
Note 3: Perform the adjustment with the lens in horizontal state.
Note 4: Check that the data of page: 0, address: 10 is "00".
Note 5: Check that the data of page: 6, address: 02 is "00".
If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA

Preparations before adjustments:
1) The minipattern box is installed as shown in the following figure.
   Note 6: The attachment lenses are not used.
2) Install the minipattern box so that the distance between it and the front of lens of camcorder is less than 3 cm.
3) Make the height of minipattern box and the camera equal.
4) Check the output voltage of the regulated power supply is the specified voltage ± 0.01 Vdc.
5) Check that the center of Siemens star chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

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	
2	6	01	13	Press PAUSE button.
3	6	01	27	Press PAUSE button. (Note 7)
4	6	02		Check the data changes to "01".
5	F	6F		Check the data is "00" to "0E".

Note 7: The adjustment data will be automatically input to page: F, address: 60 to 70.

Processing after Completing Adjustment:

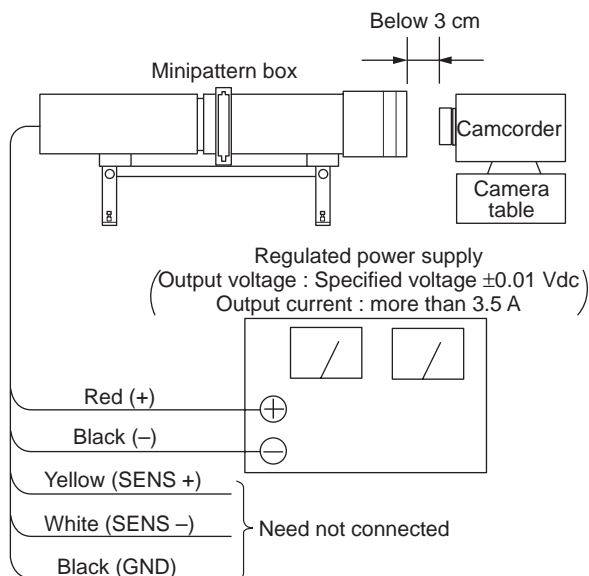| Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	0	01	00	
3				Turn OFF the main power supply.
4				Perform "Flange Back Check".

Fig. 6-1-10

5. Flange Back Adjustment (Using the flange back adjustment chart and Subject More than 500 m Away)

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

5-1. Flange Back Adjustment (1) RadarW

Subject	Flange back adjustment chart (2.0 m from the front of lens) (Luminance: 300 to 400 lux)
Measurement Point	Adjusting remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	60 to 70
Specified value	Data of page: F, address: 6F is "00" to "0E"

Note 1: Perform "HALL Adjustment" and "MR Adjustment" before this adjustment.
Note 2: Perform the adjustment with the lens in horizontal state.
Note 3: Check that the data of page: 0, address: 10 is "00".
Note 4: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA

Preparations before adjustments:
1) Check that the center of Flange back adjustment chart meets the center of shot image screen with the zoom lens at TELE end and WIDE end respectively.

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	01	13	Press PAUSE button.
3	6	01	15	Press PAUSE button. (Note 5)
4	6	02		Check the data changes to "01".
5	F	6F		Check the data is "00" to "0E".

Note 5: The adjustment data will be automatically input to page: F, address: 60 to 70.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	0	01	00	
3				Turn OFF the main power supply.
4				Perform "Flange Back Adjustment (2)".

5-2. Flange Back Adjustment (2) RadarW

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

Subject	Subject more than 500 m away (Subject with clear contrast such as buildings, etc.)
Measurement Point	Adjusting remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	60 to 70
Specified value	Data of page: F, address: 6F is "00" to "0E"

Note 1: Perform the adjustment with the lens in horizontal state.
Note 2: Check that the data of page: 0, address: 10 is "00".
Note 3: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA

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

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	01	13	Press PAUSE button.
3				Place ND filter on the lens so that the optimum image is obtain.
4	6	01	29	Press PAUSE button. (Note 4)
5	6	02		Check the data changes to "01".
6	F	6F		Check the data is "00" to "0E".

Note 4: The adjustment data will be automatically input to page: F, address: 60 to 70.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	0	01	00	
3				Turn OFF the main power supply.
4				Perform "Flange Back Check".

6. Flange Back Check

Subject	Siemens star (2.0 m from the front of the lens) (Luminance: 300 to 400 lux)
Measurement Point	Check operation on monitor TV
Measuring Instrument	
Specified value	Focused at the TELE end and WIDE end

Note 1: Check that the data of page: 0, address: 10 is "00".

Switch setting
1) POWER .... CAMERA

Note 2: 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 adjusting remote commander.

       1 : 00 : XX

               Odd: Focused
               Even: Unfocused

Preparations before adjustments:
1) Place the Siemens star 2.0 m from the front of the lens.

Checking method:

Order	Page	Address	Data	Procedure
1	6	40	01	
2	6	41	01	
3				Shoot the Siemens star with the zoom TELE end.
4				Turn on the auto focus.
5	0	03	0F	
6	1			Check that the lens is focused. (Note 2)
7	6	21	10	
8				Shoot the Siemens star with the zoom WIDE end.
9				Observe the TV monitor and check that the lens is focused.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	21	00	
2	6	40	00	
3	6	41	00	
4	0	03	00	

7. Picture Frame Setting

Subject	Color bar chart (Color reproduction adjustment frame) (1.0 m from the front of lens)
Measurement Point	Video terminal of A/V jack (75 Ω terminated)
Measuring Instrument	Oscilloscope and monitor TV
Specified Value	A=B, C=D, E=F

Switch setting
1) POWER ....CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF
4) FOCUS .... MAN

Setting method:

Order	Procedure
1	Adjust the zoom and the camera direction, and set the specified position.
2	Mark the position of the picture frame on the monitor TV, and adjust the picture frame to the this position in following adjustment using "Color reproduction adjustment frame".

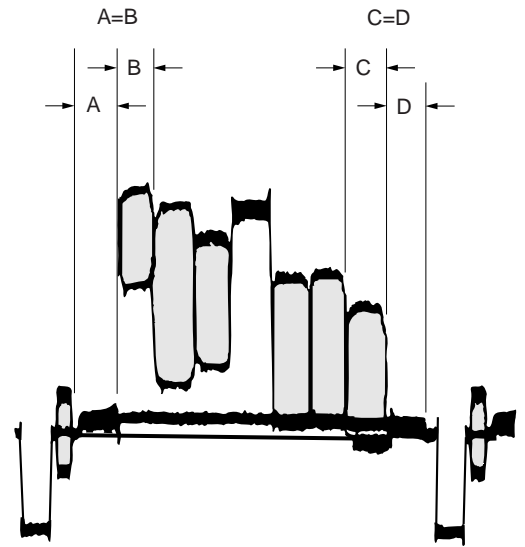### Check on the oscilloscope
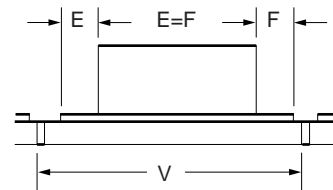
1. Horizontal period

Fig. 6-1-11

2. Vertical period

Fig. 6-1-12

Check on the monitor TV (Underscanned mode)

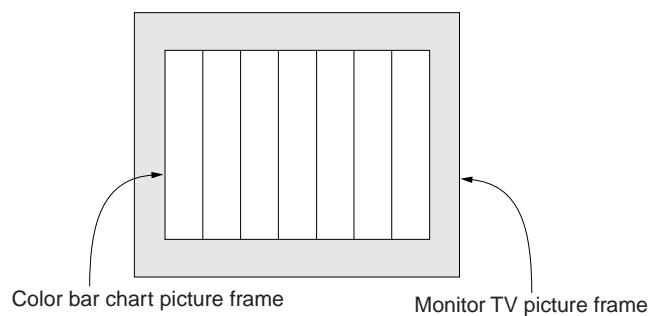Color bar chart picture frame   Monitor TV picture frame

Fig. 6-1-13

8. AWB Standard Data Input `RadarW`

Adjust the white balance reference at 3200K.

Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	2A to 2D

Note 1: "AWB Standard Data Input" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.
Note 2: Check that the data of page: 0, address: 10 is "00".
Note 3: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	01	11	Press PAUSE button.
3	6	01	0B	Press PAUSE button. (Note 4)
4	6	02		Check the data changes to "01".

Note 4: The adjustment data will be automatically input to page: F, address: 2A to 2D.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	0	01	00	

9. MAX GAIN Adjustment `RadarW`

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

Subject	Clear chart (Color reproduction adjustment frame)
Adjustment Page	F
Adjustment Address	19

Note 1: Perform "AWB Standard Data Input" before this adjustment.
Note 2: Check that the data of page: 0, address: 10 is "00".
Note 3: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.
Note 4: NTSC model: DCR-TRV940/TRV950
PAL model: DCR-TRV940E/TRV950E

Switch setting
1) POWER .... CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	96		Set the following data 32: NTSC model 19: PAL model
3	6	97	00	
4	6	01	6F	Press PAUSE button. (Note 5)
5	6	02		Check the data changes to "01".

Note 5: The adjustment data will be automatically input to page: F, address: 19.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	96	00	
2	6	97	00	
3	6	01	00	Press PAUSE button.
4	0	01	00	

10. F No. & ND Light Quality Standard Data Input *RadarW*

Correct the lens iris and the dispersion of the ND filter light quantity.

Subject	Clear chart (All white) (Zoom lens at WIDE end) (Note 2)
Adjustment Page	F
Adjustment Address	1C to 23

Note 1: Perform "Mechanical Shutter Adjustment" after this adjustment.
Note 2: With the ZOOM at WIDE end, set the distance where the clear chart is shot with all-white signal.
Note 3: Check that the data of page: 0, address: 10 is "00".
Note 4: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Switch setting
1) POWER ....CAMERA
2) ZOOM .... WIDE end
3) DIGITAL ZOOM (Menu setting) .... OFF
4) STEADY SHOT (Menu setting) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	30	01	
3	6	01	BB	Press PAUSE button. (Note 5)
4	6	02		Check the data changes to "01".

Note 5: The adjustment data will be automatically input to page: F, address: 1C to 23.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	30	00	
3	0	01	00	

11. LV Standard Data Input *RadarW*

Adjust the normal coefficient of the light value.

Subject	Clear chart (Color reproduction adjustment frame)
Measurement Point	Displayed data of page: 1 (Note 4)
Measuring Instrument	Adjusting remote commander
Adjustment Page	F
Adjustment Address	1A, 1B
Specified Value	0FE0 to 1020

Note 1: Perform "AWB Standard Data Input" before this adjustment.
Note 2: Check that the data of page: 0, address: 10 is "00".
Note 3: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.
Note 4: The right four digits of the page: 1 displayed data of the adjusting remote commander.

$$1 : XX : \underline{XX}$$
Displayed data

Switch setting
1) POWER ....CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	30	01	
3	6	01	0D	Press PAUSE button. (Note 5)
4	6	02		Check the data changes to "01".
5	6	04	1E	
6	1			Check that the displayed data (Note 4) satisfied the specified value. (Note 6)

Note 5: The adjustment data will be automatically input to page: F, address: 1A, 1B.
Note 6: Retry adjustment if the displayed data did not satisfy the specified value.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	04	00	
3	6	30	00	
4	0	01	00	

12. Auto White Balance Adjustment `RadarW`

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
Adjustment Page	F
Adjustment Address	40 to 43

Note 1: "Auto White Balance Adjustment" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.
Note 2: Check that the data of page: 0, address: 10 is "00".
Note 3: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Switch setting

1) POWER .... CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1				Place the C14 filter on the lens.
2	0	01	01	
3	6	01	83	Press PAUSE button.
4	6	01	81	Press PAUSE button. (Note 4)
5	6	02		Check the data changes to "01".

Note 4: The adjustment data will be automatically input to page: F, address: 40 to 43.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	0	01	00	
3				Remove the C14 filter on the lens.

13. Auto White Balance Check RadarW

Subject	Clear chart (Color reproduction adjustment frame)	
Filter	Filter C14 for color temperature correction	
	ND filter 1.0, 0.4 and 0.1	
Measurement Point	Video terminal of A/V jack (75 Ω terminated)	Displayed data of page: 1 (Note 2)
Measuring Instrument	Vectorscope	Adjusting remote commander
Specified Value	Fig. 6-1-14 (A) and (B)	8000 to 8BC0

Note 1: Perform "Auto White Balance Adjustment" before this adjustment.
Note 2: The right four digits of the page: 1 displayed data of the adjusting remote commander.

      1 : <u>XX : XX</u>

             └────── Displayed data
Note 3: Check that the data of page: 0, address: 10 is "00".

Switch setting
1) POWER ....CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF

Checking method:

Order	Page	Address	Data	Procedure
1				Check that the lens is not covered with either filter.
INDOOR luminance point check				
2	6	01	0F	Press PAUSE button.
3				Check that the center of the white luminance point within the circle shown Fig. 6-1-14. (A)
4	6	01	00	Press PAUSE button.
OUTDOOR luminance point check				
5				Place the C14 filter on the lens.
6	6	01	3F	Press PAUSE button.
7				Check that the center of the white luminance point within the circle shown Fig. 6-1-14. (B)
8	6	01	00	Press PAUSE button.
Data check				
9				Remove the C14 filter, and place the ND filter 1.5 (1.0 + 0.4 + 0.1) on the lens.
10	0	03	06	
11	1			Check that the displayed data (Note 2) satisfied the specified value.

Processing after Completing Adjustment:

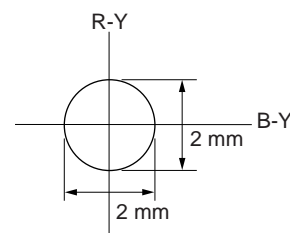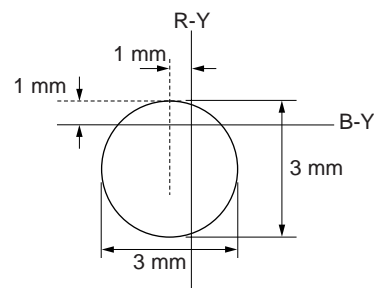| Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	0	03	00	
3				Remove the ND filter 1.5 (1.0 + 0.4 + 0.1) on the lens.

Fig. 6-1-14 (A)

Fig. 6-1-14 (B)

14. 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 terminal of A/V jack (75 Ω terminated)
Measuring Instrument	Vectorscope, Oscilloscope
Adjustment Page	F
Adjustment Address	38 to 3B
Specified Value	All color luminance points should settle within each color reproduction frame.

Note 1: NTSC model: DCR-TRV940/TRV950
PAL model: DCR-TRV940E/TRV950E
Note 2: "Color Reproduction Adjustment" is available only once after the power is turned on. Turn the power off, then on again if the adjustment is retried.
Note 3: Check that the data of page: 0, address: 10 is "00".
Note 4: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	01	3D	Press PAUSE button.
3	6	9D		Change the data and set the white level (A) of color bar to the following value. (Fig. 6-1-15) NTSC: 90IRE (642.6 mVp-p) PAL: 630 mVp-p
4	6	01	61	Press PAUSE button. (Note 5)
5	6	02		Check the data changes to "01".
6				Adjust the GAIN and PHASE of the vectorscope, and set to the burst luminance point to the burst position of color reproduction frame.
7				Check the each color luminance point is in each color reproduction frame.

Note 5: The adjustment data will be automatically input to page: F, address: 38 to 3B.

Processing after Completing Adjustment:

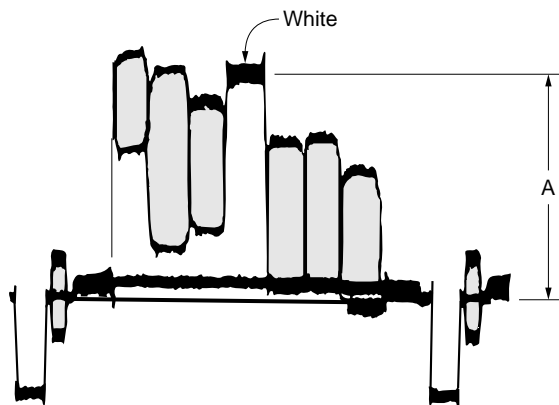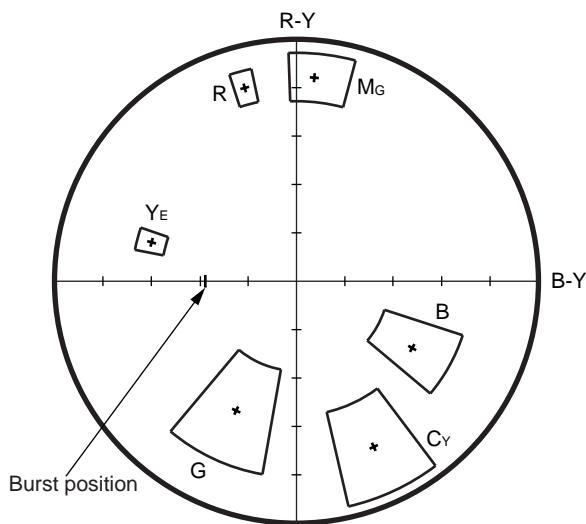| Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	9D	00	
3	0	01	00	

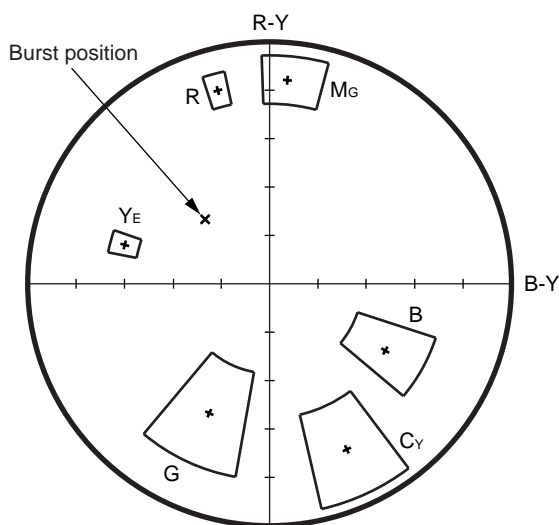*Fig. 6-1-15*

NTSC model

PAL model

Fig. 6-1-16

15. PSD Sensor Gain Adjustment

Adjust the gain of the PSD sensor for the steady shot.

• Perform the angular velocity sensor sensitivity adjustment only when replacing the angular velocity sensor or lens block. When the microprocessor, circuit, etc. malfunctions, do not perform this adjustment but check operations only.

**Note 1:** Check that the data of page: 0, address: 10 is "00".

Note 2: NTSC model: DCR-TRV940/TRV950
PAL model: DCR-TRV940E/TRV950E

Switch setting

1) POWER ....CAMERA
2) ZOOM .... TELE end
3) DIGITAL ZOOM (Menu setting) .... OFF
4) STEADY SHOT (Menu setting) .... ON

15-1. PSD Sensor Gain Adjustment (1)

Subject	Pattern A (1.5 m from the front of lens)
Measurement Point	Video terminal of A/V jack
Measuring Instrument	Oscilloscope (V period)
Adjustment Page	F
Adjustment Address	84

Pattern A

White
Black
White
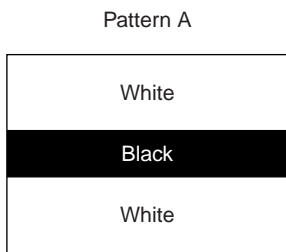
A4 size (297 x 210 mm)

Fig. 6-1-17

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	F	84	80	Press PAUSE button.
3	6	01	8F	Press PAUSE button.
4				Shoot the pattern A at the TELE end.
5				Adjust the focus.
6				Measure the falling edge of waveform, SV1 (msec).
7	6	01	91	Press PAUSE button.
8				Measure the falling edge of waveform, SV2 (msec).
9				Calculate D_{SV} using following equations. (decimal calculation) (Note 1) NTSC: $D_{SV} = 2.751 \div (SV2 - SV1)$ PAL: $D_{SV} = 3.298 \div (SV2 - SV1)$

Order	Page	Address	Data	Procedure
10				Calculate D_{84}' using following equations. (decimal calculation) $D_{84}' = 128 \times D_{SV}$
11				Convert D_{84}' to a hexadecimal number, and obtain D_{84}. (Note 2)
12	F	84	D_{84}	Press PAUSE button.

Note 1: Keep a note of D_{SV} value to use at "16. Angular Velocity Sensor Sensitivity Adjustment".

Note 2: Refer to table 6-4-1. "Hexadecimal-decimal conversion table"

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	0	01	00	
3				Check that the steady shot function operates normally.

Falling edge of waveform when data is "8F"

Falling edge of waveform when data is "91"

SV2–SV1

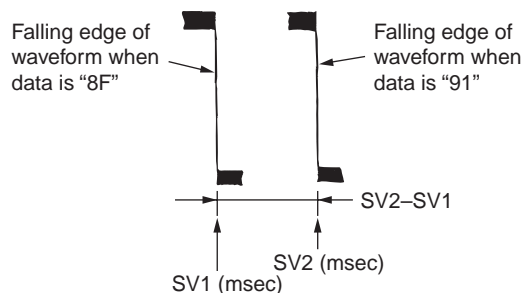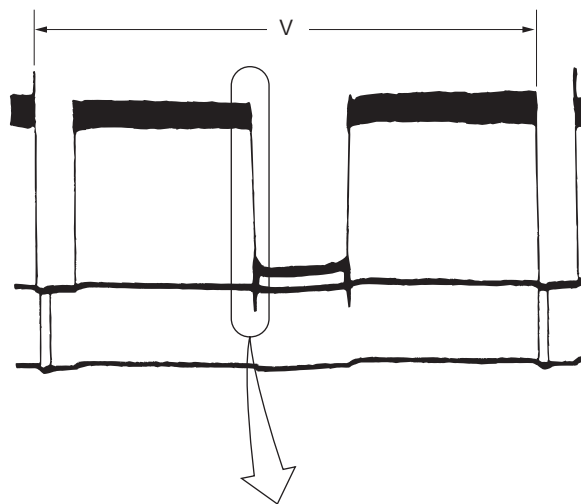SV2 (msec)

SV1 (msec)

Fig. 6-1-18

15-2. PSD Sensor Gain Adjustment (2)

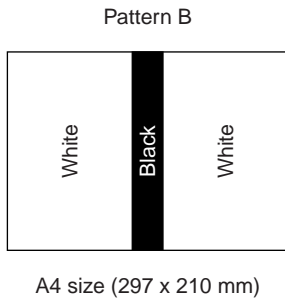| Subject	Pattern B (1.5 m from the front of lens)
Measurement Point	Video terminal of A/V jack
Measuring Instrument	Oscilloscope (H period)
Adjustment Page	F
Adjustment Address	85

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	0	01	00	
3				Check that the steady shot function operates normally.

Pattern B

A4 size (297 x 210 mm)

Fig. 6-1-19
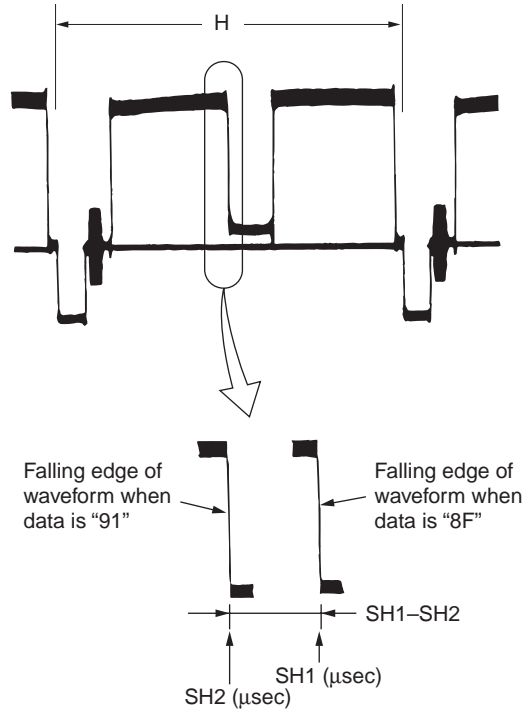
Fig. 6-1-20

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	F	85	80	Press PAUSE button.
3	6	01	8F	Press PAUSE button.
4				Shoot the pattern B at the TELE end.
5				Adjust the focus.
6				Measure the falling edge of waveform, SH1 (μsec).
7	6	01	91	Press PAUSE button.
8				Measure the falling edge of waveform, SH2 (μsec).
9				Calculate D_{SH} using following equations. (decimal calculation) (Note 1) NTSC: $D_{SH} = 7.821 \div (SH1 - SH2)$ PAL: $D_{SH} = 7.876 \div (SH1 - SH2)$
10				Calculate D_{85}' using following equations. (decimal calculation) $D_{85}' = 128 \times D_{SH}$
11				Convert D_{85}' to a hexadecimal number, and obtain D_{85}. (Note 2)
12	F	85	D_{85}	Press PAUSE button.

Note 1: Keep a note of D_{SH} value to use at "16. Angular Velocity Sensor Sensitivity Adjustment".

Note 2: Refer to table 6-4-1. "Hexadecimal-decimal conversion table"

16. Angular Velocity Sensor Sensitivity Adjustment

- Perform the angular velocity sensor sensitivity adjustment only when replacing the angular velocity sensor or lens block. When the microprocessor, circuit, etc. malfunctions, do not perform this adjustment but check operations only.
- Record the sensitivity label of the angular velocity sensor (repair part), including to which side of the board it was attached to, etc. If it has been attached incorrectly, the image will move up and down or to the left and right during steady shot operation. Be sure to take note of this.

Precautions on the Parts Replacement

There are two types of repair parts.

    Type A   ENC03MA
    Type B   ENC03MB

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, readjust 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.

Adjustment Page	F
Adjustment Address	86, 87

Note 1: Check that the data of page: 0, address: 10 is "00".

Note 2: The sensor sensitivity (SE4001, SE4002 of SE-132 board) is labeled only on the repair parts.

Switch setting

1) POWER .... CAMERA
2) ZOOM .... TELE end
3) DIGITAL ZOOM (Menu setting) .... OFF
4) STEADY SHOT (Menu setting) .... ON

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2				Read the sensor sensitivity of SE4001, and it is named S_{4001}.
3				Read the sensor sensitivity of SE4002, and it is named S_{4002}.
4				Calculate D_{86}', D_{87}' using following equations. (decimal calculation) (Note 3) $D_{86}' = D_{SV} \times (0.60 \div S_{4001}) \times 88$ $D_{87}' = D_{SH} \times (0.60 \div S_{4002}) \times 88$
5				Convert D_{86}', D_{87}' to a hexadecimal number, and obtain D_{86}, D_{87}. (Note 4)
6	F	86	D_{86}	Press PAUSE button.
7	F	87	D_{87}	Press PAUSE button.

Note 3: The value that is calculated at "15. PSD Sensor Gain Adjustment" is used for D_{SV} and D_{SH}.

Note 4: Refer to table 6-4-1. "Hexadecimal-decimal conversion table"

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	01	00	
2				Check that the steady shot function operates normally.

17. Mechanical Shutter Adjustment *RadarW*

Adjust the close time and loss time every F number of the mechanical shutter and the high-speed shutter correction value to correct the luminous exposure.

Subject	Clear chart (All white) (Zoom lens at WIDE end) (Note 2)
Measurement Point	Adjusting remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	90 to A5
Specified Value	Data of page: 6, address: A8 is "00"

Note 1: Perform "HALL Adjustment", "Flange Back Adjustment" and "F No. & ND Light Quality Standard Data Input" before this adjustment.
Note 2: With the ZOOM at WIDE end, set the distance where the clear chart is shot with all-white signal.
Note 3: Check that the data of page: 0, address: 10 is "00".
Note 4: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA
2) ZOOM .... WIDE end
3) DIGITAL ZOOM (Menu setting) .... OFF
4) STEADY SHOT (Menu setting) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	30	01	
3	6	9C	01	
4	6	01	AD	Press PAUSE button. (Note 5)
5	6	02		Check the data changes to "01".
6	6	A8		Check the data is "00".

Note 5: The adjustment data will be automatically input to page: F, address: 90 to A5.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	30	00	
3	6	9C	00	
4	0	01	00	

18. Strobe Light Level Adjustment *RadarW*

Adjust the strobe light level.

Subject	Flash adjustment box (Note 3) (50 cm from the front of the lens)
Measurement Point	Adjusting remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	8A to 8F
Specified Value	Data of page: F, address: B8 is "00"

Note 1: Perform "Hall Adjustment", "Flange Back Adjustment" and "F No. & ND Light Quality Standard Data Input" before this adjustment.
Note 2: Restrict external light to enter the Flash adjustment box as less as possible.
Note 3: Refer to "4. Preparing the Flash adjustment box".
Note 4: Check that the data of page: 0, address: 10 is "00".
Note 5: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF
4) Flash .... OPEN
(Press the FLASH button to activate the Flash mode, and then press the PHOTO button.)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	7	05	04	(Note 6)
3	6	30	02	
4	6	01	67	Press PAUSE button. (Note 7)
5				Check the flashing of strobe light
6	6	02		Check the data changes to "01".
7	6	B8		Check the data is "00".

Note 6: Press the STOP button on the adjusting remote commander, and set the data.
Note 7: The adjustment data will be automatically input to page: F, address: 8A to 8F.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	30	00	
3	7	05	00	
4	0	01	00	

19. Strobe White Balance Adjustment *RadarW*

Adjust the white balance when the strobe light flashed.

Subject	Flash adjustment box (Note 3) (50 cm from the front of the lens)
Measurement Point	Video terminal of A/V jack (75 Ω terminated)
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	36, 37
Specified Value	Fig. 6-1-21

Note 1: Perform "Hall Adjustment", "Flange Back Adjustment", "F No. & ND Light Quality Standard Data Input", "AWB Adjustment" and "Strobe Light Level Adjustment" before this adjustment.
Note 2: Restrict external light to enter the Flash adjustment box as less as possible.
Note 3: Refer to "4. Preparing the Flash adjustment box".
Note 4: Check that the data of page: 0, address: 10 is "00".

Switch setting
1) POWER ....CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF
4) Flash .... OPEN
   (Press the FLASH button to activate the Flash mode, and then press the PHOTO button.)

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	7	05	04	(Note 5)
3	E	00	00	Press PAUSE button.
4	E	01	06	Press PAUSE button.
5	6	B6	41	
6	6	B2	01	
7				Check that the LED of the FLASH button is lit.
8	6	B2	00	
9	6	30	02	
10	6	01	B9	Press PAUSE button. (Note 6)
11				Check the flashing of strobe light
12	6	02		Check the data changes to "01".
13	6	02	00	
14	6	01	E7	Press PAUSE button.
15				Check the flashing of strobe light
16	6	02		Check the data changes to "01".
17				Wait for 3 seconds.
18				Check that the center of the white luminance point within the circle shown Fig. 6-1-21.

Note 5: Press the STOP button on the adjusting remote commander, and set the data.
Note 6: The adjustment data will be automatically input to page: F, address: 36, 37.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	30	00	
3	6	B6	00	
4	7	05	00	
5	E	00	00	Press PAUSE button.
6	E	01	00	Press PAUSE button.
7	0	01	00	
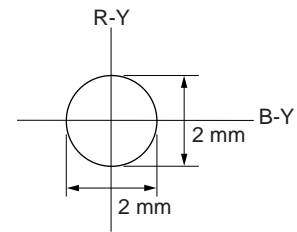
Fig. 6-1-21

20. Hologram AF Output Adjustment *RadarW*

Adjust so that the laser output of the hologram AF becomes proper value.

Subject	Flash adjustment box (Note 3) (50 cm from the front of the lens)
Measurement Point	Adjusting remote commander
Measuring Instrument	
Adjustment Page	F
Adjustment Address	7D to 83
Specified Value 1	10 to FF
Specified Value 2	34 to 4C
Specified Value 3	00 to F0
Specified Value 4	0A to FF

Note 1: Perform "Hall Adjustment", "Flange Back Adjustment", "F No. & ND Light Quality Standard Data Input" and "AWB Standard Data Input" before this adjustment.
Note 2: Restrict external light to enter the Flash adjustment box as less as possible.
Note 3: Refer to "4. Preparing the Flash adjustment box".
Note 4: Make adjustment with the lens hood removed.
Note 5: Check that the data of page: 0, address: 10 is "00".
Note 6: Check that the data of page: 6, address: 02 is "00". If not, turn the power of unit OFF/ON.

Switch setting
1) POWER .... CAMERA
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	6	30	02	
3	6	01	AF	Press PAUSE button. (Note 7)
4	6	02		Check the data changes to "01".
5	F	7D		Check that the data satisfied the specified value 1.
6	F	82		Check that the data satisfied the specified value 2.
7	F	7E		Check that the data satisfied the specified value 3.
8	F	7F		Check that the data satisfied the specified value 4.

Note 7: The adjustment data will be automatically input to page: F, address: 7D to 83.
At this time, check that the laser holograms are all displayed on the monitor TV screen.

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	6	01	00	Press PAUSE button.
2	6	30	00	
3	0	01	00	

21. Hologram AF Angle Check *RadarW*

Subject	Dark homogeneous subject (Note 2) (1 m from the front of the lens)
Measurement Point	Monitor TV
Measuring Instrument	
Specified Value	A total of two or more lines in laser hologram length must be seen in the specified frame. The laser hologram lines must be seen in four directions outside the specified frame.

Note 1: Perform "AWB Standard Data Input" before this adjustment.
Note 2: To observe the laser hologram, use a black box or darken the ambience.

Switch setting
1) POWER .... MEMORY
2) DIGITAL ZOOM (Menu setting) .... OFF
3) STEADY SHOT (Menu setting) .... OFF
4) FOCUS .... MAN

Checking method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	0	10	01	
3	E	47	0A	Press PAUSE button.
4	0	10	00	
5	6	23	04	
6	6	5B	B6	
7	6	5C	A5	
8	6	90	A9	
9	6	91	02	
10	6	92	67	
11	6	93	46	
12	6	01	79	Press PAUSE button.
13	6	01	78	Press PAUSE button.
14				Check on the monitor TV screen that the laser hologram satisfies the specified value (Fig. 6-1-22). (Note 3)

Note 3: When the specified value is not satisfied, angle of the laser hologram can be adjusted by turning the screw as shown in the Fig. 6-1-23. (in horizontal direction only)

Processing after Completing Adjustment:

Order	Page	Address	Data	Procedure
1	0	10	01	
2	E	47	00	Press PAUSE button.
3	0	10	00	
4	6	01	00	Press PAUSE button.
5	6	23	00	
6	6	5B	00	
7	6	5C	00	
8	6	90	00	
9	6	91	00	
10	6	92	00	
11	6	93	00	
12	0	01	00	

Specification frame

Fig. 6-1-22

To adjust the laser hologram to the left

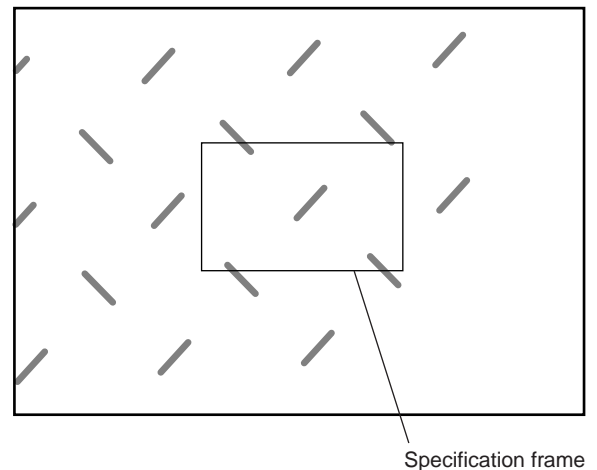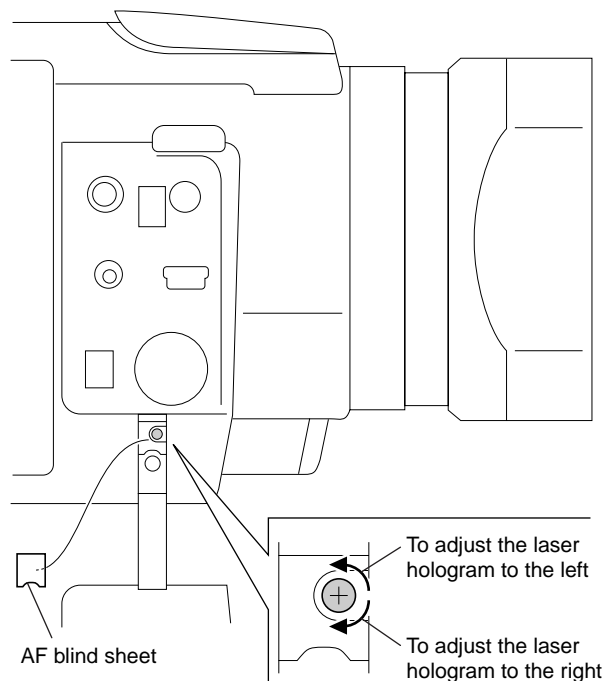To adjust the laser hologram to the right

AF blind sheet

Fig. 6-1-23

COVER

1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS

Before perform the viewfinder system adjustments, check the data of page: 0, address: 10 is "00".
If not, select page: 0, address: 10, and set the data "00".

Note 1: Taken an extreme care not to destroy the liquid crystal display module by static electricity when replacing it.
Note 2: Set the VF B. L. (Menu setting) to the BRT NORMAL.
Note 3: Perform the following data setting before the viewfinder system adjustments.
1) Select page: 3, address: C4, and set data: 67.
2) Select page: 3, address: C5, and set data: 01.
Reset the data after completing adjustment.
1) Select page: 3, address: C4, and set data: 00.
2) Select page: 3, address: C5, and set data: 00.

[Adjusting connector]

Most of the measuring points for adjusting the viewfinder system are concentrated in CN1008 of the VC-288 board.
Connect the Measuring Instruments via the CPC-8 jig (J-6082-388-A).
The following table shown the Pin No. and signal name of CN1008.

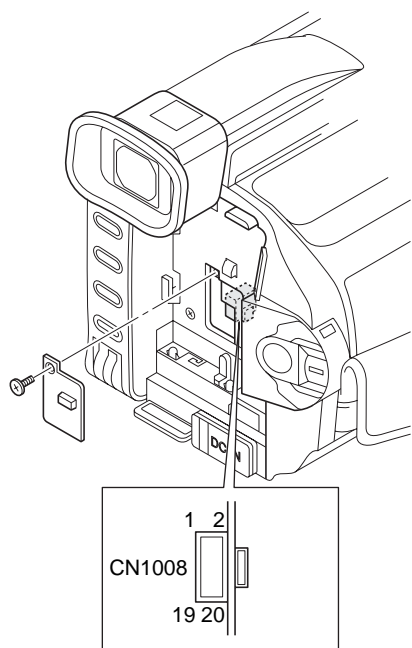| Pin No.	Signal Name	Pin No.	Signal Name
1	N.C.	2	D_2.8V
3	EVF_LED_DA	4	EVF_VG
5	EVF_VCO	6	GND
7	MD2	8	XCS_MC_FLASH
9	XINIT	10	XCS_ST_IMAGE_IC
11	DRUM_ON	12	FRRV
13	REC_CRRT1	14	REC_CRRT0
15	REG_GND	16	HI_XRESET
17	SWP	18	RF_IN
19	GND	20	RF_MON

CN1008
1 2
19 20

Fig. 6-1-24

1. VCO Adjustment (DB-014 board)

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

Mode	CAMERA
Subject	Not required
Measurement Point	Pin ⑤ of CN1008 (EVF_VCO) on VC-288 board
Measuring Instrument	Frequency counter
Adjustment Page	C
Adjustment Address	51, 52
Specified Value	f = 15734 ± 30 Hz (NTSC) f = 15625 ± 30 Hz (PAL)

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: NTSC model: DCR-TRV940/TRV950
PAL model: DCR-TRV940E/TRV950E

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	51		Change the data and set the 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}'. (Note 3)
6				Calculate D_{52}' using following equations. (decimal calculation) $D_{52}' = D_{51}' + 24$ (NTSC model) $D_{52}' = D_{51}' - 24$ (PAL model)
7				Convert D_{52}' to a hexadecimal number, and obtain D_{52}. (Note 3, 4)
8	C	52	D_{52}	Press PAUSE button.
9	0	01	00	

Note 3: Refer to table 6-4-1. "Hexadecimal-decimal conversion table"
Note 4: If $D_{52}' > 255$, then D_{52} = FF (NTSC model)
If $D_{52}' < 0$, then D_{52} = 00 (PAL model)

2. RGB AMP Adjustment (DB-014 board)

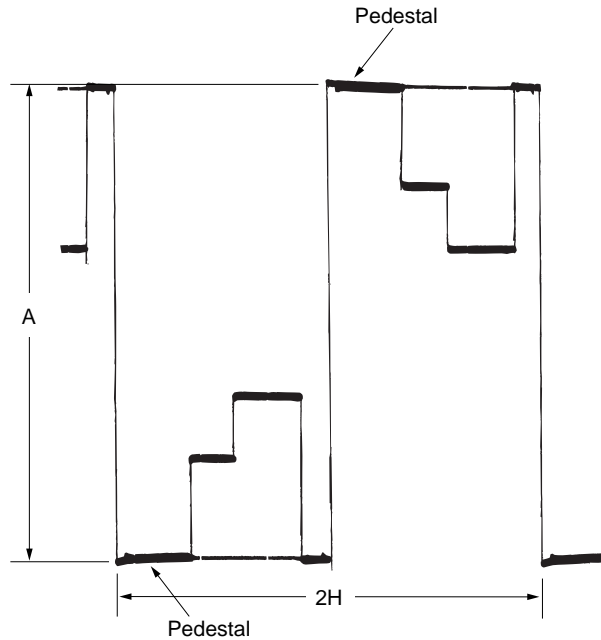Set the D Range of the RGB decoder for driving the LCD to the specified value.

If deviated, the EVF screen image will be blackish or saturated (whitish).

Mode	CAMERA
Subject	Not required
Measurement Point	Pin ④ of CN1008 (EVF_VG) on VC-288 board
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	54
Specified Value	A = 7.00 ± 0.05 Vp-p

Note: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	54		Change the data and set the voltage (A) to the specified value.
3	C	54		Press PAUSE button.
4	0	01	00	

3. Contrast Adjustment (DB-014 board)

Set the video signal level for driving the LCD to the specified value.

If deviated, the EVF screen image will be blackish or saturated (whitish).

Mode	CAMERA
Subject	Not required
Measurement Point	Pin ④ of CN1008 (EVF_VG) on VC-288 board
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	58
Specified Value	A = 2.40 ± 0.05 Vp-p

Note: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	58		Change the data and set the voltage (A) to the specified value. (The data should be "00" to "7F")
3	C	58		Press PAUSE button.
4	0	01	00	

A: Between the reversed waveform pedestal and non-reversed waveform pedestal
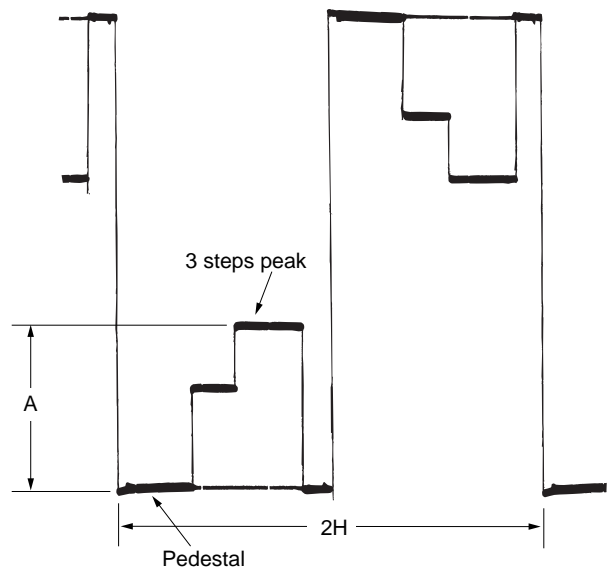
Fig. 6-1-25

A: Between the pedestal and 3 steps peak

Fig. 6-1-26

4. Back Light Adjustment (DB-014 board)
Set the back light luminance.
If deviated, the image may become dark or bright.

Mode	CAMERA
Subject	Not required
Measurement Point	Pin ③ of CN1008 (EVF_LED_DA) on VC-288 board
Measuring Instrument	Digital voltmeter
Adjustment Page	C
Adjustment Address	4F, 50

Specified Value	BRIGHT mode:
	    A = 2.10 ± 0.05 Vdc
	NORMAL mode:
	    B = 1.12 ± 0.05 Vdc

Note: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	3	0C	20	Press PAUSE button.
3	3	22	11	Press PAUSE button.
4	C	50		Change the data and set the DC voltage (A) to the specified value of BRIGHT mode.
5	C	50		Press PAUSE button.
6	C	4F		Change the data and set the DC voltage (B) to the specified value of NORMAL mode.
7	C	4F		Press PAUSE button.
8	3	0C	00	Press PAUSE button.
9	3	22	00	Press PAUSE button.
10	0	01	00	

5. White Balance Adjustment (DB-014 board)
Correct the white balance.
If deviated, the EVF screen color cannot be reproduced.

Mode	CAMERA
Subject	Not required
Measurement Point	Check on EVF screen
Measuring Instrument	
Adjustment Page	C
Adjustment Address	56, 57
Specified Value	EVF screen must not be colored

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: Check the white balance only when replacing the following parts. If necessary, adjust them.
    1. LCD panel
    2. Light induction plate
    3. IC4201

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	56	80	Press PAUSE button.
3	C	57	80	Press PAUSE button.
4				Check that the EVF screen is not colored. If not colored, proceed to step 6.
5	C	56 57		Change the data so that the EVF screen is not colored. (Note 3)
6	0	01	00	

Note 3: To write in the non-volatile memory (EEPROM), press the PAUSE button each time to set the data.

COVER

1-5. LCD SYSTEM ADJUSTMENTS

Before perform the LCD system adjustments, check that the data of page: 0, address: 10 is "00".
If not, select page: 0, address: 10, and set the data "00".

Note 1: The back light (fluorescent tube) is driven with high voltage AC power. Therefore, do not touch the back light directly, otherwise you will feel an electric shock.
Note 2: Taken an extreme care not to destroy the liquid crystal display module by static electricity when replacing it.
Note 3: Set the LCD B. L. (Menu setting) to the BRT NORMAL. Set the LCD COLOR (Menu setting) to the center.

[Adjusting connector]

Most of the measuring points for adjusting the LCD system are concentrated in CN1024 of the VC-288 board.
Connect the Measuring Instruments via the CPC-jig for LCD (J-6082-529-A).
The following table shown the Pin No. and signal name of CN1024.

Pin No.	Signal Name
1	PANEL_VG
2	PANEL_COM
3	GND
4	XHD_OUT
5	N.C.
6	N.C.
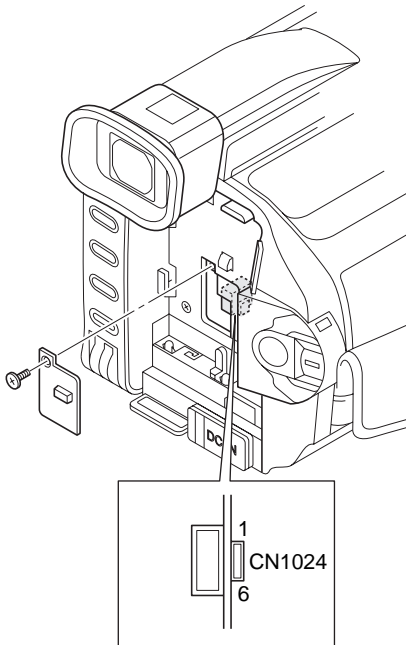
Fig. 6-1-27

1. VCO Adjustment (PD-168 board)

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

Mode	CAMERA
Subject	Not required
Measurement Point	Pin ④ of CN1024 (XHD_OUT) on VC-288 board
Measuring Instrument	Frequency counter
Adjustment Page	C
Adjustment Address	61, 62
Specified Value	f = 15734 ± 30 Hz (NTSC) f = 15625 ± 30 Hz (PAL)

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: NTSC model: DCR-TRV940/TRV950
PAL model: DCR-TRV940E/TRV950E

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	61		Change the data and set the 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	C	62	D_{61}	Press PAUSE button.
6	0	01	00	

2. RGB AMP Adjustment (PD-168 board)

Set the D Range of the RGB decoder for driving the LCD to the specified value.

If deviated, the LCD screen image will be blackish or saturated (whitish).

Mode	CAMERA
Subject	Not required
Measurement Point	Pin ① of CN1024 (PANEL_VG) on VC-288 board External trigger: Pin ② of CN1024 (PANEL_COM) on VC-288 board
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	64
Specified Value	A = 3.50 ± 0.05 Vp-p

**Note:** Check that the data of page: 0, address: 10 is "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	64		Change the data and set the voltage (A) to the specified value. (The data should be "00" to "3F")
3	C	64		Press PAUSE button.
4	0	01	00	

3. Contrast Adjustment (PD-168 board)

Set the video signal level for driving the LCD to the specified value.

If deviated, the LCD screen image will be blackish or saturated (whitish).

Mode	CAMERA
Subject	Not required
Measurement Point	Pin ① of CN1024 (PANEL_VG) on VC-288 board External trigger: Pin ② of CN1024 (PANEL_COM) on VC-288 board
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	69
Specified Value	A = 3.45 ± 0.05 Vp-p

Note: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	69		Change the data and set the voltage (A) to the specified value. (The data should be "00" to "7F")
3	C	69		Press PAUSE button.
4	0	01	00	
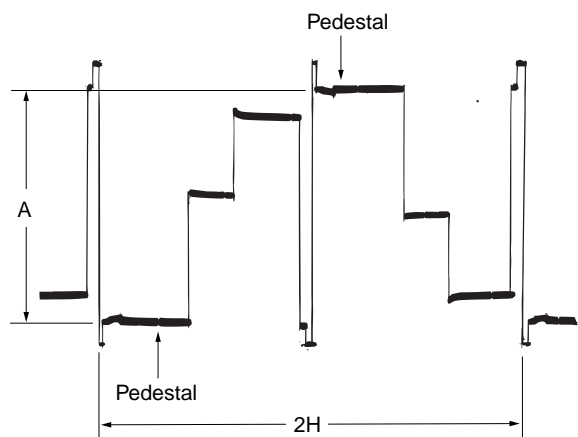
A: Between the reversed waveform pedestal and non-reversed waveform pedestal

Fig. 6-1-28
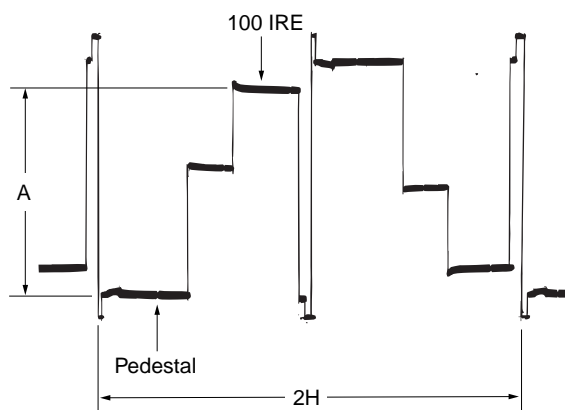
A: Between the pedestal (0 IRE) and 100 IRE

Fig. 6-1-29

4. V-COM Level Adjustment (PD-168 board)

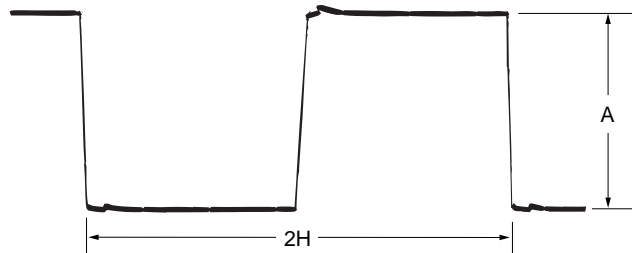Set the common electrode drive signal level of LCD to the specified value.

Mode	CAMERA
Subject	Not required
Measurement Point	Pin ② of CN1024 (PANEL_COM) on VC-288 board
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	66
Specified Value	A = 5.40 ± 0.05 Vp-p

Note 1: Perform "RGB AMP Adjustment" and "Contrast Adjustment" before this adjustment.
Note 2: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	66		Change the data and set the voltage (A) to the specified value.
3	C	66		Press PAUSE button.
4	0	01	00	

A: PANEL COM signal level

Fig. 6-1-30

5. V-COM Adjustment (PD-168 board)

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

Mode	CAMERA
Subject	Not required
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	C
Adjustment Address	63
Specified Value	The brightness difference between the section-A and section-B is minimum

Note 1: Perform "RGB AMP Adjustment", "Contrast Adjustment" and "V-COM Level Adjustment" before this adjustment.
Note 2: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

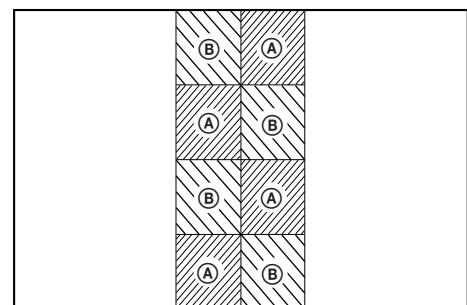| Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	63		Change the data so that brightness of the section A and section B is equal.
3	C	63		Subtract 8 from the data.
4	C	63		Press PAUSE button.
5	0	01	00	

Fig. 6-1-31

6. White Balance Adjustment (PD-168 board)

Correct the white balance.

If deviated, the LCD screen color cannot be reproduced.

Mode	CAMERA
Subject	Not required
Measurement Point	Check on LCD screen
Measuring Instrument	
Adjustment Page	C
Adjustment Address	67, 68
Specified Value	LCD screen must not be colored

Note 1: Check that the data of page: 0, address: 10 is "00".

Note 2: Check the white balance only when replacing the following parts. If necessary, adjust them.
   1. LCD panel
   2. Light induction plate
   3. IC5701

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	67	7F	Press PAUSE button.
3	C	68	87	Press PAUSE button.
4				Check that the LCD screen is not colored. If not colored, proceed to step 6.
5	C	67 68		Change the data so that the LCD screen is not colored. (Note 3)
6	0	01	00	

Note 3: To write in the non-volatile memory (EEPROM), press the PAUSE button each time to set the data.

6-2. MECHANISM SECTION ADJUSTMENTS

On the mechanism section adjustment

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

2-1. HOW TO ENTER RECORD MODE WITHOUT CASSETTE

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

2-2. HOW TO ENTER PLAYBACK MODE WITHOUT CASSETTE

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

2-3. TAPE PATH ADJUSTMENT

1. Preparation for Adjustment

1) Clean the tape running side (tape guide, drum, capstan shaft, pinch roller, etc.).
2) Connect the adjustment remote commander to the LANC jack.
3) Turn the HOLD switch of the adjustment remote commander to the ON position.
4) Connect an oscilloscope to VC-288 board CN1008 via the CPC-8 jig (J-6082-388-A).
   Channel 1: VC-288 board, CN1008 Pin ⑳ (Note)
   External trigger: VC-288 board, CN1008 Pin ⑰
   Note: Connect a 75 Ω resistor between pins ⑳ of CN1008 and ⑲ (GND).
   75 Ω resistor (Parts code: 1-247-804-11)
5) Playback the alignment tape for tracking. (XH2-1)
6) Select page: 3, address: 33, and set data: 08.
7) Select page: 3, address: 26, and set data: 31.
8) Check that the oscilloscope RF waveform is normal at the entrance and exit.
   If not normal, adjust according to the separate volume "DV MECHANICAL ADJUSTMENT MANUAL VI [J Mechanism] " .

CN1008 of VC-288 board

Pin No.	Signal Name	Pin No.	Signal Name
1	N.C.	2	D_2.8V
3	EVF_LED_DA	4	EVF_VG
5	EVF_VCO	6	GND
7	MD2	8	XCS_MC_FLASH
9	XINIT	10	XCS_ST_IMAGE_IC
11	DRUM_ON	12	FRRV
13	REC_CRRT1	14	REC_CRRT0
15	REG_GND	16	HI_XRESET
17	SWP	18	RF_IN
19	GND	20	RF_MON

2. Procedure after operations

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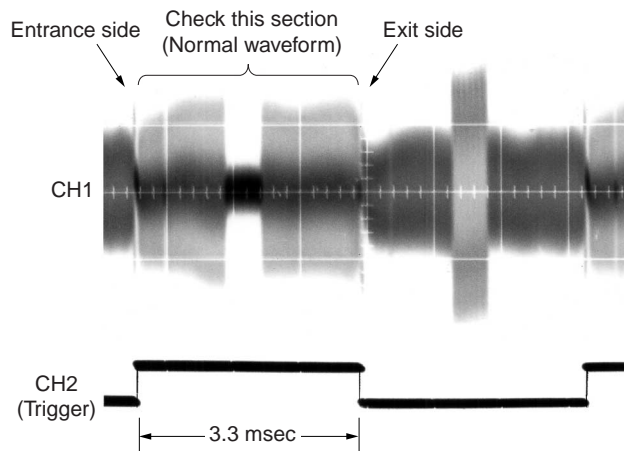3) Select page: 3, address: 33, and set data: 00.

Fig. 6-2-1

DCR-TRV940/TRV940E/TRV950/TRV950E

COVER

6-3. VIDEO SECTION ADJUSTMENTS

NTSC model : **DCR-TRV940/TRV950**
PAL model : **DCR-TRV940E/TRV950E**

3-1. PREPARATIONS BEFORE ADJUSTMENTS (VIDEO SECTION)

Use the following measuring instruments for video section adjustments.

3-1-1. Equipment Required

1) TV monitor
2) Oscilloscope (dual-phenomenon, band above 30 MHz with delay mode) (Unless specified otherwise, use a 10 : 1 probe.)
3) Frequency counter
4) Pattern generator with video output terminal.
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuator
10) Regulated power supply
11) Alignment tapes
    - Tracking standard (XH2-1)
      Parts code: 8-967-997-01
    - SW/OL standard (XH2-3)
      Parts code: 8-967-997-11
    - Audio operation check for NTSC (XH5-3)
      Parts code: 8-967-997-51
    - System operation check for NTSC (XH5-5)
      Parts code: 8-967-997-61
    - Audio operation check for PAL (XH5-3P)
      Parts code: 8-967-997-55
    - System operation check for PAL (XH5-5P)
      Parts code: 8-967-997-66
12) Adjustment remote commander (J-6082-053-B)
13) CPC-8 jig (J-6082-388-A)

3-1-2. Precautions on Adjusting

1) This set is adjusted in two modes, VTR mode and CAMERA mode.

   To activate the VTR mode, set the POWER switch to the "VIDEO" position, or select the "Forced VTR Power ON Mode" with the adjusting remote commander. (Note 1)

   To activate the CAMERA mode, set the POWER switch to the "CAMERA" position, or select the "Forced CAMERA Power ON Mode" with the adjusting remote commander. (Note 2)

   After the adjustment finished, be sure to cancel the "Forced VTR Power ON Mode" or "Forced CAMERA Power ON Mode". (Note 4)

2) The VTR can be operated even if the cabinet (R) (operation switch (CK-116 board), LCD block) is removed. However, the lithium 3V power is removed if the cabinet (R) is removed (CN5203 on the CK-116 board is disconnected), causing the data such as date and time, user set menu, etc. to be cleared. These data must be re-set after the adjustment finished. The diagnostic data and log data (drum running hours, user first power ON date, last dew date) are saved even if the lithium 3V power is removed. When the cabinet (R) is removed, disconnect the following connector:

   1. CK-116 board CN5203 (60P, 0.5mm)

3) The VTR can be operated even if the front panel block (MA-410 board, focus ring, micro unit) is removed. When the front panel block is removed, disconnect the following connectors:

   1. MA-410 board CN5906 (33P, 0.5mm)
   2. MA-410 board CN5904 (8P, 0.5mm)

4) The BT-003 board (DCR-TRV950/TRV950E only) and the flash unit need not be connected. If removed, disconnect the following connectors:

   1. BT-003 board CN101 (15P, 0.3mm) (DCR-TRV950/TRV950E only)
   2. BT-003 board CN102 (Bluetooth antenna terminal) (DCR-TRV950/TRV950E only)
   3. DB-014 board CN1010 (23P, 0.3mm)

5) The view finder block (LB-080 board) and the intelligent accessory shoe need not be connected. If removed, disconnect the following connectors:

   1. DB-014 board CN7211 (21P, 0.3mm)
   2. DB-014 board CN7205 (27P, 0.3mm)

6) The lens block (CD-389 board) need not be connected. If removed, disconnect the following connectors:

   1. VC-288 board CN1201 (60P, 0.5mm)
   2. DB-014 board CN1501 (10P, 0.5mm)
   3. DB-014 board CN1004 (39P, 0.3mm)

7) With the "forced power ON mode" activated, the VTR can be operated even if the operation switch block (PS-1870) is removed. If removed, disconnect the following connector:

   1. DB-014 board CN7201 (6P, 0.5mm)

Note 1: Setting the "Forced VTR Power ON" mode (VTR mode)

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.

   The above procedure will enable the VTR power to be turned on with the power switch (PS-1870 block) removed.

   After completing adjustments, be sure to exit the "Forced VTR Power ON mode".

Note 2: Setting the "Forced Camera Power ON" mode (Camera mode)

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 01, and press the PAUSE button of the adjustment remote commander.

   The above procedure will enable the camera power to be turned on with the power switch (PS-1870 block) removed.

   After completing adjustments, be sure to exit the "Forced Camera Power ON mode".

Note 3: Setting the "Forced Memory Power ON" mode (Memory mode)

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 05, and press the PAUSE button of the adjustment remote commander.

   The above procedure will enable the memory power to be turned on with the power switch (PS-1870 block) removed.

   After completing adjustments, be sure to exit the "Forced Memory Power ON mode".

Note 4: Exiting the "Forced Power ON" mode

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

3-1-3. Adjusting Connectors

Some of the adjusting points of the video section are concentrated at VC-288 board CN1008. Connect the measuring instruments via the CPC-8 jig (J-6082-388-A). The following table lists the pin numbers and signal names of CN1008.

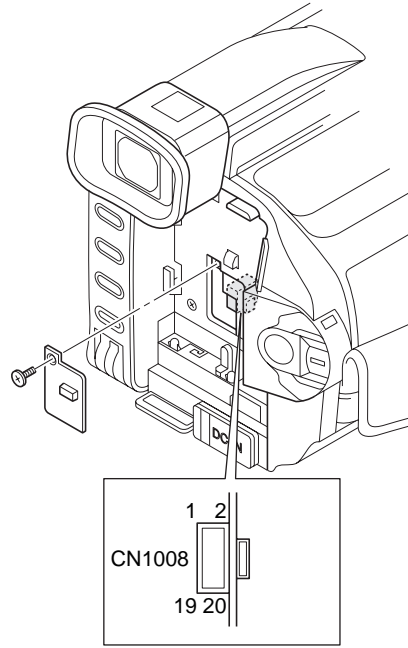| Pin No.	Signal Name	Pin No.	Signal Name
1	N.C.	2	D_2.8V
3	EVF_LED_DA	4	EVF_VG
5	EVF_VCO	6	GND
7	MD2	8	XCS_MC_FLASH
9	XINIT	10	XCS_ST_IMAGE_IC
11	DRUM_ON	12	FRRV
13	REC_CRRT1	14	REC_CRRT0
15	REG_GND	16	HI_XRESET
17	SWP	18	RF_IN
19	GND	20	RF_MON

Table 6-3-1

Fig. 6-3-1

3-1-4. Connecting the Equipment

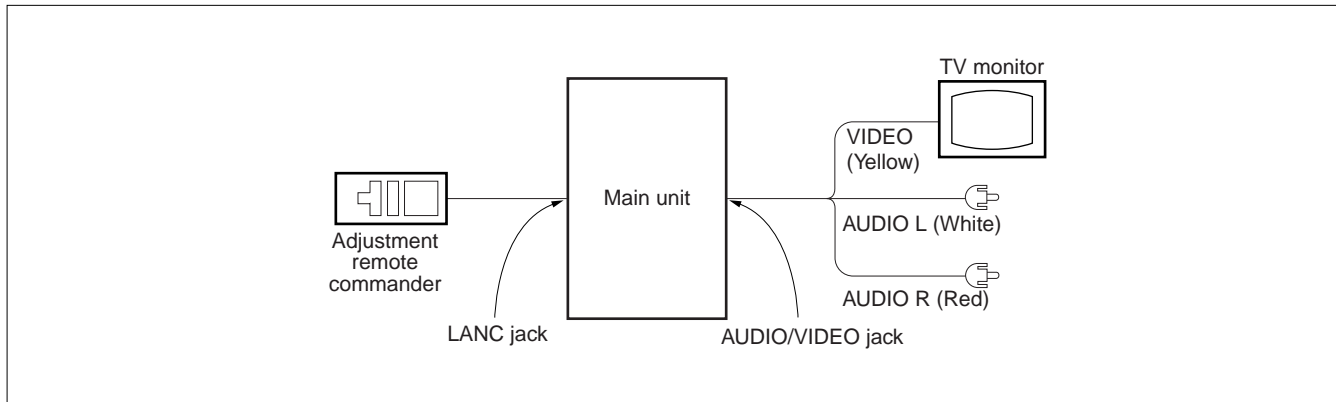Connect the measuring instruments as shown in Fig. 6-3-2, and perform the adjustments.

Fig. 6-3-2

3-1-5. Alignment Tapes

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

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

Fig. 6-3-3 shows the 75% color bar signals recorded on the alignment tape for Audio Operation Check.

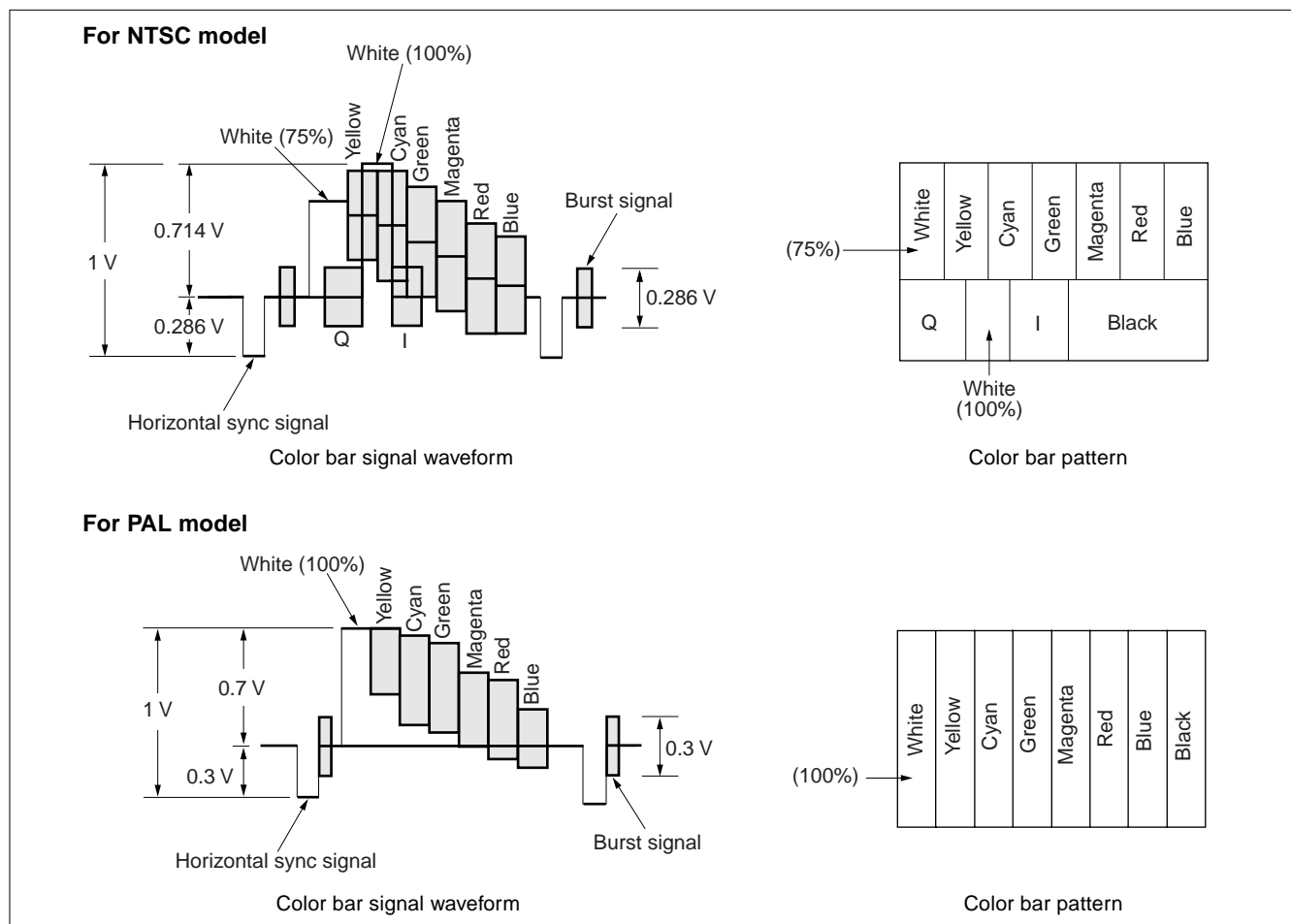**Note:** Measure with video terminal (Terminated at 75 Ω)

Fig. 6-3-3. Color bar signal of alignment tapes

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

S video input/output
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative
Chrominance signal:
DCR-TRV940/TRV950: 0.286 Vp-p
DCR-TRV940E/TRV950E: 0.3 Vp-p
75 Ω (ohms), unbalanced

A/V (Audio/Video) input/output
AV MINI JACK, input/output auto switch
Video signal: 1 Vp-p, 75 Ω (ohms), unbalanced, sync negative
Audio signal: 327 mV, (at output impedance more than 47 kΩ (kilohms))

Input impedance with more than 47 kΩ (kilohms)
Output impedance with less than 2.2 kΩ (kilohms)

COVER

3-2. SYSTEM CONTROL SYSTEM ADJUSTMENTS

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

If the 8, A, B, C, D, E, F, 1B, 1E, 1F page data is erased due to some reason, perform "1-2. INITIALIZATION OF 8, A, B, C, D, E, F, 1B, 1E, 1F PAGE DATA" of "CAMERA SYSTEM ADJUST-MENTS".

Check that the data of page: 0, address: 10 is "00".

If not, select page: 0, address: 10, and set the data "00".

2. Touch Panel Adjustment

Adjust the calibration of touch panel.

Mode	VTR stop
Signal	Arbitrary
Adjustment Page	A
Adjustment Address	90 to 93

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: Adjustment must be performed while observing the LCD screen from the front.

Adjusting method:
1) Select page: 7, address: 05, and set data: 01.
2) Using a ball-point pen etc., push the center of "×" indicated in the part A.
3) Using a ball-point pen etc., push the center of "×" indicated in the part B.
4) Using a ball-point pen etc., push the center of "×" indicated in the part C.
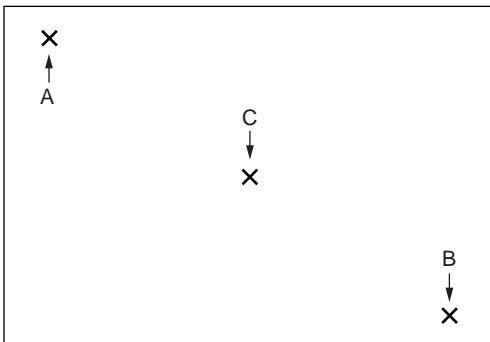5) Select page: 7, address: 05, and set data: 00.

Fig. 6-3-4

3. Node Unique ID No. Input

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: Perform "3-2. Input of Serial No." if the data on page 8
has been cleared and the node unique ID No. is not found.

3-1. Input of Company ID

Write the company ID to 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) Select page: 8, and enter the following data.
Note 2: Each time the data is set, press the PAUSE button on the
adjusting remote commander.

Address	Data
8C	08
8D	00
8E	46
8F	01
90	02

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

3-2. Input of Serial No.

Write the serial No. and model code to the EEPROM (nonvolatile memory).

In writing the serial No., a decimal number should be converted into a hexadecimal number.

Page	8
Address	91, 92, 93

1) Select page: 0, address: 01, and set data: 01.
2) Read the serial No. from the model name label, and it is assumed to be D_1.
Example: If serial No. is "77881",
$D_1 = 77881$
3) From Table 6-3-2, obtain D_2 and H_1 that correspond to D_1.
Example: If $D_1 = 77881$,
$D_2 = D_1 - 65536 = 12345$
$H_1 = FE$

D_1 (decimal)	D_2 (decimal)	H_1 (hexadecimal) (Service model code)
00001 to 65535	D_1	FE
65536 to 131071	$D_1 - 65536$	FE
131072 to196607	$D_1 - 131072$	FE

Table 6-3-2

4) Enter H_1 to address: 91 on page: 8.
Example: If $H_1 = FE$,
select page: 8, address: 91, and set data: FE, then press the PAUSE button.
5) From Table 6-3-3, obtain the maximum decimal number less than D_2, and it is assumed to be D_3.
Example: If $D_2 = 12345$.
$D_3 = 12288$
6) From Table 6-3-3, obtain a hexadecimal number that corresponds to D_3, and it is assumed to be H_3.
Example: If $D_3 = 12288$,
$H_3 = 3000$
7) Caluculate D_4 using following equations (decimal caluculation). ($0 \leqq D_4 \leqq 225$)
$D_4 = D_2 - D_3$
Example: If $D_2 = 12345$ and $D_3 = 12288$,
$D_4 = 12345 - 12288 = 57$
8) Convert D_4 into a hexadecimal number to obtain H_4. (See Table 6-4-1 "Hexadecimal - decimal conversion table" in 6-4. Service Mode)
Example: If $D_4 = 57$,
$H_4 = 39$
9) Enter higher two digits of H_3 to address: 92 on page: 8.
Example: If $H_3 = 3000$,
select page: 8, address: 92, and set data: 30, then press the PAUSE button.
10) Enter H_4 to address: 93 on page: 8.
Example: If $H_4 = 39$,
select page: 8, address: 93, and set data: 39, then press the PAUSE button.
11) Select page: 0, address: 01, and set data: 00.

D₃	H₃	D₃	H₃	D₃	H₃	D₃	H₃	D₃	H₃	D₃	H₃	D₃	H₃	D₃	H₃
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

Note: D₃: Decimal
H₃: Hexadecimal

Table 6-3-3

3-3. SERVO AND RF SYSTEM ADJUSTMENTS

Before perform the servo and RF system adjustments, check that the specified values of "66MHz/54MHz Origin Oscillation Adjustment" of "1-3. CAMERA SYSTEM ADJUSTMENTS" is satisfied.

Check that the data of page: 0, address: 10 is "00".

If not, select page: 0, address: 10, and set the data "00".

Adjusting Procedure:
1. CAP FG duty adjustment
2. PLL f_0 & LPF f_0 Pre-adjustment
3. Switching position adjustment
4. AGC center level and APC & AEQ adjustment
5. PLL f_0 & LPF f_0 final adjustment

1. CAP FG Duty Adjustment (VC-288 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 LP mode.

Mode	VTR stop
Signal	No signal
Measurement Point	Displayed data of page: 3, address: 03
Measuring Instrument	Adjusting remote commander
Adjustment Page	C
Adjustment Address	16
Specified value	The data of page: 3, address: 03 is "00"

Note 1: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

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

Note 2: If the data is "01", adjustment has errors or the mechanism deck is defective.

2. PLL f_0 & LPF f_0 Pre-Adjustment (VC-288 board)

RadarW

Mode	VTR stop
Signal	No signal
Measurement Point	Displayed data of page: 3, address: 02 and 03
Measuring Instrument	Adjusting remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified value	The data of page: 3, address: 02 is "00" The data of page: 3, address: 03 is "00"

Note 1: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	C	21	DC	Press PAUSE button.
3	3	01	30	Press PAUSE button.
4	3	02		Check the data changes to "00" within 5 seconds. (Note 2)
5	3	03		Check the data is "00". (Note 2, 3)
6	0	01	00	

Note 2: If check is NG, select page: C, address: 21, set the following data, and press the PAUSE button, and repeat steps 3 to 5.

	Setting data
When the data of page: C, address: 21 is "DC"	E0
When the data of page: C, address: 21 is "E0"	D8
When the data of page: C, address: 21 is "D8"	E4
When the data of page: C, address: 21 is "E4"	D4

The adjustment is defective, if the above procedure results in NG.

Note 3: If bit value of bit2, bit3, bit4, bit5 or bit6 is "1", adjustment has errors. For the error contents, see the following table. (For the bit values, refer to "6-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03 data	Error contents
bit2 = 1 or bit 3 =1	PLL f_0 fine adjustment is defective
bit4 = 1 or bit 5 =1	PLL f_0 adjustment is defective
bit6 = 1	LPF f_0 adjustment is defective

3. Switching Position Adjustment (VC-288 board)

RadarW

Mode	VTR playback
Signal	SW/OL standard (XH2-3)
Measurement Point	Displayed data of page: 3, address: 03
Measuring Instrument	Adjusting remote commander
Adjustment Page	C
Adjustment Address	10, 11, 12, 13
Specified value	The data of page: 3, address: 03 is "00"

Note 1: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1				Insert the SW/OL standard tape and enter the VTR stop mode.
2	0	01	01	
3	C	10	EE	Press PAUSE button.
4	3	21		Check the data is "02". (Note 2)
5	3	01	0D	Press PAUSE button.
6	3	02		Check the data changes to "00".
7	3	03		Check the data is "00". (Note 3)
8	0	01	00	

Note 2: If the data is "72", the tape top being played. After playing the tape for 1 to 2 seconds, stop it, perform step 5 and higher.
If the data is "62", the tape end being played. After rewind the tape, perform step 5 and higher.

Note 3: If bit0 of the data is "1", the EVEN channel is defective. If bit1 of the data is "1", the ODD channel is defective. Contents of the defect is see written into page: C, address: 10 and 12. See following table. (For the bit values, refer to "6-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)
If bit3 of the data is "1", the tape end being played, so rewind the tape and perform the adjustment again.

When the EVEN channel is defective

Data of page: C, address: 10	Contents of defect
EE	Writing into EEP ROM (IC2502) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC2101

When the ODD channel is defective

Data of page: C, address: 12	Contents of defect
EE	Writing into EEP ROM (IC2502) is defective
E8	Adjustment data is out of range
E7	No data is returned from IC2101

4. AGC Center Level and APC & AEQ Adjustment

Note: Check that the data of page: 0, address: 10 is "00".

4-1. Preparations before adjustments

Mode	CAMERA recording
Subject	Arbitrary

Adjusting method:

Order	Page	Address	Data	Procedure
1	7	30	80	
2				Record camera signal for 3 minutes, and rewind the tape.

4-2. AGC Center Level Adjustment (VC-288 board)

RadarW

Mode	VTR playback
Subject	Recorded signal at "Preparations before adjustments"
Measurement Point	CH1: Pin ⑳ of CN1008 (RF MON) (Note 1) CH2 (Trigger): Pin ⑰ of CN1008 (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 75 Ω resistor (1-247-804-11) between Pin ⑳ and Pin ⑲ (GND) of CPC jig.

Adjusting method:

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

Note 2: If the data is other than "00", adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table)

Data of page: 3, address: 03	Contents of defect
20	Perform re-adjustment. (Note 3)
30	The machine is defective.
40	Perform re-adjustment. (Note 3)
50	The machine is defective.

Note 3: If this data displayed twice successively, the machine is defective.
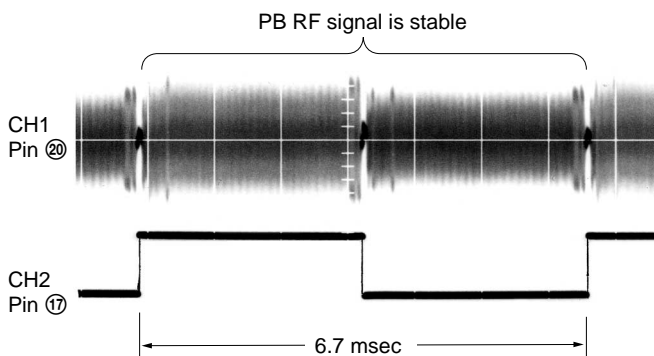
PB RF signal is stable

CH1 Pin ⑳

CH2 Pin ⑰

6.7 msec

Fig. 6-3-5

4-3. APC & AEQ Adjustment (VC-288 board)

RadarW

Mode	VTR playback
Subject	Recorded signal at "Preparations before adjustments"
Measurement Point	CH1: Pin ⑳ of CN1008 (RF MON) (Note 1) CH2 (Trigger): Pin ⑰ of CN1008 (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 75 Ω resistor (1-247-804-11) between Pin ⑳ and Pin ⑲ (GND) of CPC jig.

Note 2: Perform "AGC Center Level Adjustment" before this adjustment.

Adjusting method:

Order	Page	Address	Data	Procedure
1				Playback the recorded signal at"Preparations before adjustments".
2	0	01	01	
3	3	33	08	
4				Confirm that the playback RF signal is stable. (Fig. 6-3-5)
5	3	01	07	Press PAUSE button.
6	3	02		Check the data changes from "07"to "00" in about 20 seconds after pressing PAUSE button
7	3	03		Check the data is "00". (Note 3)
8	7	30	00	
9	3	33	00	
10	0	01	00	

Note 3: If the data is other than "00", adjustment has errors. (Take an appropriate remedial measures according to the errors referring to the following table)

Data of page: 3, address: 03	Contents of defect
20	Perform re-adjustment. (Note 4)
30	The machine is defective.
50	Perform re-adjustment. (Note 4)
60	The machine is defective.
80	The machine is defective.

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

5. PLL f_0 & LPF f_0 Final Adjustment (VC-288 board)

RadarW

Mode	VTR stop
Signal	No signal
Measurement Point	Displayed data of page: 3, address: 02 and 03
Measuring Instrument	Adjusting remote commander
Adjustment Page	C
Adjustment Address	1F, 20, 22, 29
Specified value	The data of page: 3, address: 02 is "00" The data of page: 3, address: 03 is "00"

Note 1: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	3	01	30	Press PAUSE button.
3	3	02		Check the data changes to "00" within 5 seconds. (Note 2)
4	3	03		Check the data is "00". (Note 2, 3)
5	0	01	00	

Note 2: If check is NG, the machine is defective.
Note 3: If bit value of bit2, bit3, bit4, bit5 or bit6 is "1", adjustment has errors. For the error contents, see the following table. (For the bit values, refer to "6-4. SERVICE MODE", "4-3. 3. Bit value discrimination".)

Bit value of page: 3, address: 03 data	Error contents
bit2 = 1 or bit 3 =1	PLL f_0 fine adjustment is defective
bit4 = 1 or bit 5 =1	PLL f_0 adjustment is defective
bit6 = 1	LPF f_0 adjustment is defective

COVER

3-4. VIDEO SYSTEM ADJUSTMENTS

Before perform the video system adjustments, check that the specified values of "66MHz/54MHz Origin Oscillation Adjustment" of "1-3. CAMERA SYSTEM ADJUSTMENTS" is satisfied.
Check that the data of page: 0, address: 10 is "00".
If not, select page: 0, address: 10, and set the data "00".

Adjusting Procedure:
1. Chroma BPF f_0 adjustment
2. S VIDEO OUT Y level adjustment
3. S VIDEO OUT chroma level adjustment
4. VIDEO OUT level check

1. Chroma BPF f_0 Adjustment (DB-014 board)

Set the center frequency of IC7001 chroma band-pass filter.

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

Note: Check that the data of page: 0, address: 10 is "00".

Adjusting method:

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

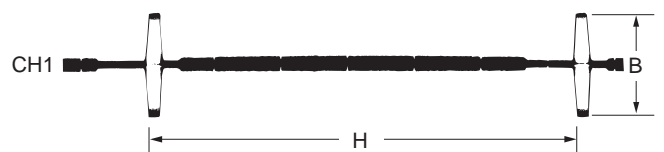**When the data of page: 3, address: 0C, is 04:**
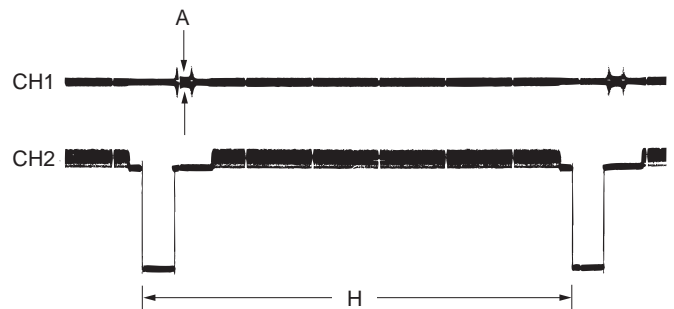
When the data of page: 3, address: 0C, is 00:

Fig. 6-3-6

2. S VIDEO OUT Y Level Adjustment (DB-014 board)

Mode	CAMERA
Subject	Arbitrary
Measurement Point	Y signal terminal of S VIDEO jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	C
Adjustment Address	25
Specified value	A = 1000 ± 14 mVp-p

Note: Check that the data of page: 0, address: 10 is "00".

Switch setting
1) DEMO MODE (Menu display) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	3	0C	02	Press PAUSE button.
3	C	25		Change the data and set the Y signal level (A) to the specified value.
4	C	25		Press PAUSE button.
5	3	0C	00	Press PAUSE button.
6	0	01	00	

Center of luminance line →
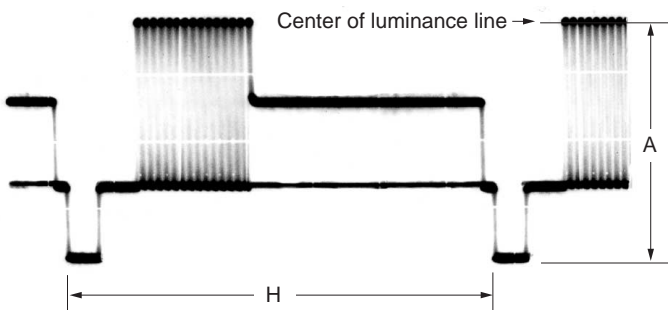
Fig. 6-3-7

3. S VIDEO OUT Chroma Level Adjustment (DB-014 board)

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

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: NTSC model: DCR-TRV940/TRV950
        PAL model: DCR-TRV940E/TRV950E

Switch setting
1) DEMO MODE (Menu display) .... OFF

Adjusting method:

Order	Page	Address	Data	Procedure
1	0	01	01	
2	3	0C	02	Press PAUSE button.
3	C	26		Change the data and set the Cr signal level (A) to the specified value.
4	C	26		Press PAUSE button.
5	C	27		Change the data and set the Cb signal level (B) to the specified value.
6	C	27		Press PAUSE button.
7				Check the burst signal (C) to the specified value.
8	3	0C	00	Press PAUSE button.
9	0	01	00	

0.28 μsec (NTSC)
0.23 μsec (PAL)

0.28 μsec (NTSC)
0.23 μsec (PAL)
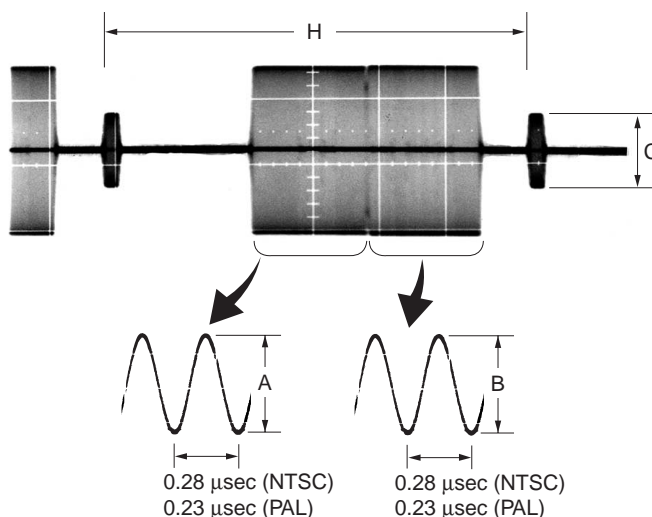
Fig. 6-3-8

4. VIDEO OUT Level Check (DB-014 board)

Mode	CAMERA
Subject	Arbitrary
Measurement Point	Video terminal of A/V jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Specified value	Sync level: A = 286 ± 18 mVp-p (NTSC) A = 300 ± 18 mVp-p (PAL) Burst level: B = 286 ± 18 mVp-p (NTSC) B = 300 ± 18 mVp-p (PAL)

Note 1: Check that the data of page: 0, address: 10 is "00".
Note 2: NTSC model: DCR-TRV940/TRV950
　　　　　PAL model: DCR-TRV940E/TRV950E

Switch setting
1) DEMO MODE (Menu display) .... OFF

Checking method:

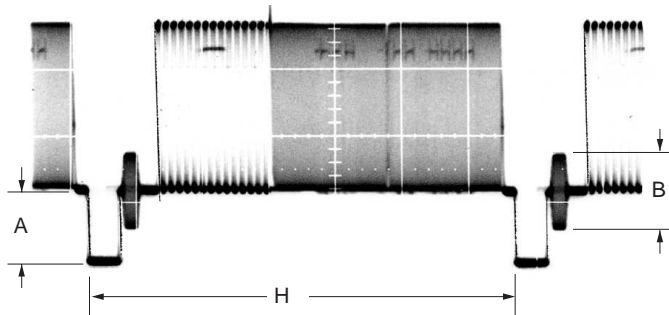| Order	Page	Address	Data	Procedure
1	3	0C	02	Press PAUSE button.
2				Check the sync signal level (A) to the specified value.
3				Check the burst signal level (B) to the specified value.
4	3	0C	00	Press PAUSE button.

Fig. 6-3-9

COVER

3-5. AUDIO SYSTEM ADJUSTMENTS

[Connecting the measuring instruments for the audio]
Connect the audio system measuring instruments in addition to
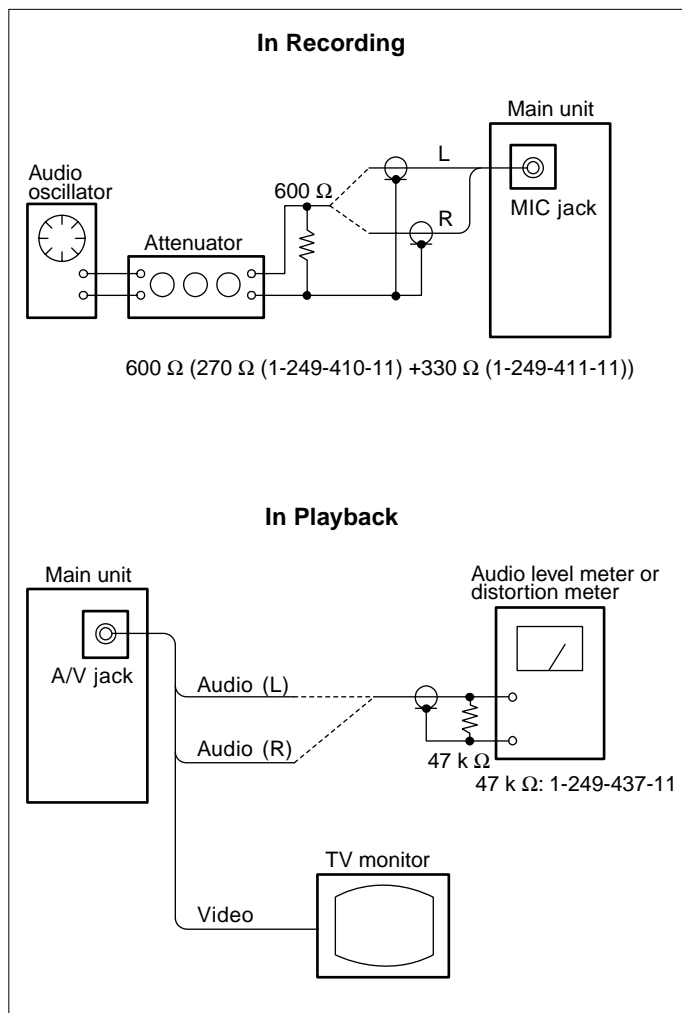the video system measuring instruments as shown in Fig. 6-3-10.

In Recording

600 Ω (270 Ω (1-249-410-11) +330 Ω (1-249-411-11))

In Playback

47 k Ω: 1-249-437-11

Fig. 6-3-10

1. Playback Level Check

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

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

2. Overall Level Characteristics Check

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

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

3. Overall Distortion Check

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

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

4. Overall Noise Level Check

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

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

5. Overall Separation Check

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

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

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

COVER

6-4. 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. 6-4-1.
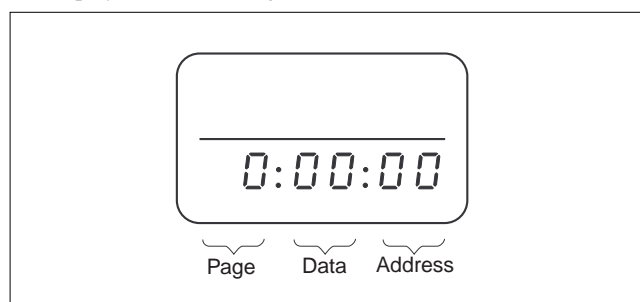
```
        _____
       /                \
      |                  |
      |    0:00:00       |
      |                  |
       _____/
         Page  Data  Address
```

Fig. 6-4-1

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

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

   • Changing the address
     The address increases when the FF (►►) button is pressed, and decreases when the REW (◄◄) button is pressed. There are altogether 256 addresses, from 00 to FF.
   • Changing the data (Data setting)
     The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   • Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed)
4) After completing all adjustments, turn off the main power supply (8.4 V) once.

2. Precautions Upon Using the Adjustment Remote Commander

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

COVER

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

Upper digit of hexadecimal \ Lower digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
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

① (marks rows A–F column)

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

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

Table 6-4-1

COVER

4-3. SERVICE MODE

Additional note on adjustment

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

1) After data on page: D is restored, press the RESET button to reset the unit. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting)

2) After data on page: D is restored, select page: 0, address: 01, and return the data to 00. And when data on page: 2 and 3 are changed, return data to the original condition.

1. Setting the Test Mode

Page D	Address 10

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

• Before setting the data , select page: 0, address: 01, and set data: 01.

• For page D, the data set 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 (8.4 Vdc).

• After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE button of the adjustment remote commander. And select page: 0, address: 01, and set data: 00.

2. Emergence Memory Address

2-1. C Page Emergence Memory Address

Page C	Address F4 to FF

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

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

Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (FC to FF).

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

Initializing method:

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

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

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

2-2.   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

2-3.   MSW Code

MSW when errors occur:
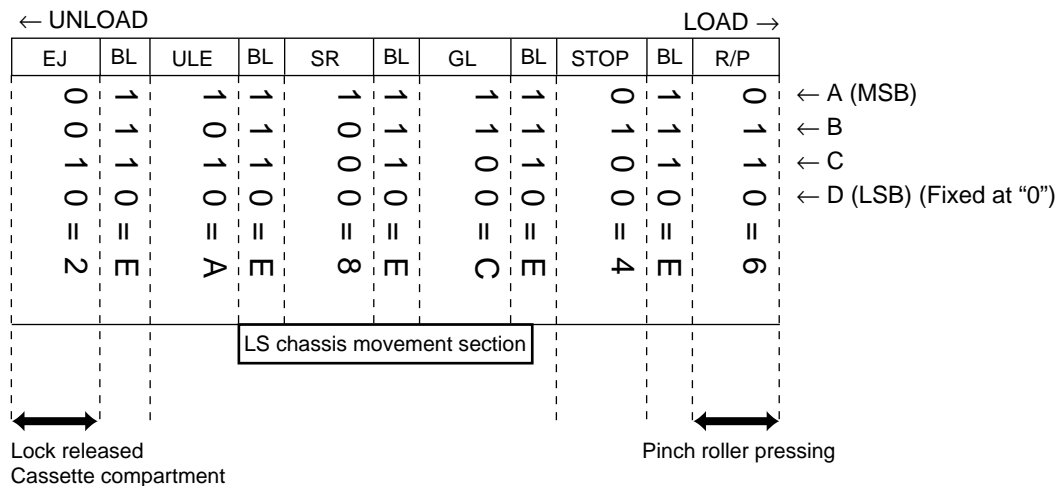Information on MSW (mode SW) when errors occur

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

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

Mechanical Position

← UNLOAD   LOAD →

	EJ	BL	ULE	BL	SR	BL	GL	BL	STOP	BL	R/P	
	O	→	→	→	→	→	→	→	O	→	O	← A (MSB)
	O	→	O	→	O	→	→	→	→	→	→	← B
	→	→	→	→	O	→	O	→	O	→	→	← C
	O	O	O	O	O	O	O	O	O	O	O	← D (LSB) (Fixed at "0")
	=	=	=	=	=	=	=	=	=	=	=	
	2	E	A	E	8	E	C	E	4	E	6	

LS chassis movement section

Lock released
Cassette compartment

Pinch roller pressing

Position	Code	Contents
EJ	2	Position at which the cassette component lock is released, at the farthest unload side mechanically at which the mechanism can move no further in the UNLOAD direction.
BL	E	BLANK code, at the boundary between codes.
ULE	A	EJECT completion position. when the cassette is ejected, the mechanism will stop at this position. Cassette IN standby. The guide will start protruding out as the mechanism moves towards the LOAD position.
SR	8	Position at which it is possible to release the S ratchet.
GL	C	Guide loading are performed here.
STOP	4	Stop position in the loading state. The pinch roller separates, the tension regulator returns, and the brake is imposed on both reels.
R/P	6	PB, REC, CUE, REVIEW, PAUSE positions. When pinch roller is pressed, and the tension regulator is ON, the mechanism is operating at this position in modes in which normal images are shown.
NULL	0	Code not existing in the MD. Default value.
	F	Status before finding any mechanism position.

3. Bit Value Discrimination

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

Display on the adjustment remote commander

Page

bit3 to bit0 discrimination

bit7 to bit4 discrimination

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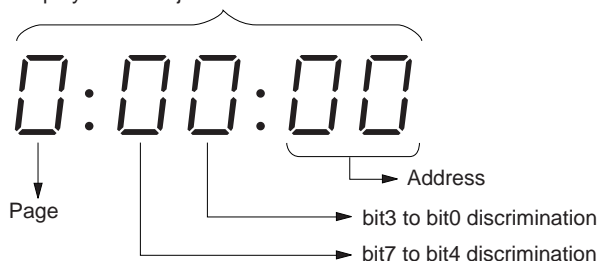
(Example) If the remote commander display is "8E", bit value from bit 7 to bit 4 can be discriminated from the column Ⓐ, and those from bit 3 to bit 0 from column Ⓑ.

Display on the adjustment remote commander	Bit values			
	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
A (ﾊ)	1	0	1	0
B (ﾋ)	1	0	1	1
C (ﾚ)	1	1	0	0
D (ﾌ)	1	1	0	1
E (ﾓ)	1	1	1	0
F (ﾍ)	1	1	1	1

Ⓐ (rows 0–9), Ⓑ (rows A–F)

4. Jack Check (1)

Page 7	Address 0C

Bit	Function	When bit value = 1	When bit value = 0
1	MIC jack (MA-410 board J5901)	Used	Not used
2	VIDEO/AUDIO jack (JK-222 board J404)	Used	Not used
3	S VIDEO jack (JK-222 block J401)	Used	Not used

Using method:
1) Select page: 7, address: 0C.
2) By discriminating the bit value of display data, the state of jack can be discriminated.

5. Jack Check (2)

Page 3	Address 61

Bit	Function	When bit value = 1	When bit value = 0
6	Head Phone jack (JK-222 block J403)	Used	Not used

Using method:
1) Select page: 3, address: 61.
2) By discriminating the bit value of display data, the state of jack can be discriminated.

6. Switch Check

Page 2	Address 61 to 66

Using method:

1) Select page: 2, address: 61 to 66.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data							
	00	19	32	4E	6F	96	C1	EB
	00 to 0C	0D to 24	25 to 3F	40 to 5D	5E to 81	82 to AA	AB to D7	D8 to FF
61 (KEY AD1) (IC3101 ⑥⓪)		PHOTO (REC) (CF-1870 block) (S001)	NETWORK *1 (FP-497 flexible) (S001)	FADER (FP-504 flexible) (S604)	FLASH (FP-504 flexible) (S603)	FOCUS INFINITY (FP-504 flexible) (S601)	FOCUS AUTO/ PUSH AUTO (FP-504 flexible) (S601, S602)	FOCUS MAN (FP-504 flexible) (S601)
62 (KEY AD2) (IC3101 ⑥①)		SEL/PUSH EXEC (EXEC) (KP-1870 block) (S007)	DATA CODE (CK-116 board) (S5203)	EDIT SEARCH – (CK-116 board) (S5204)	EDIT SEARCH + (CK-116 board) (S5205)	ZEBRA 100 (CK-116 board) (S5202)	ZEBRA OFF (CK-116 board) (S5202)	ZEBRA 70 (CK-116 board) (S5202)
63 (KEY AD3) (IC3101 ⑥⑤)	STOP (CK-116 board) (S5206)	REW (CK-116 board) (S5207)	PLAY (CK-116 board) (S5208)	FF (CK-116 board) (S5209)		REC (CK-116 board) (S5211, S5212)	PANEL CLOSE (FP-495 flexible) (S001)	PANEL OPEN (FP-495 flexible) (S001)
64 (KEY AD4) (IC3101 ⑥⑥)	COLOR BAR (CK-116 board) (S5213)	VOLUME + (CK-116 board) (S5214)	VOLUME – (CK-116 board) (S5215)	DISPLAY/ TOUCH PANEL (CK-116 board) (S5216)	MENU (KP-1870 block) (S001)	AUDIO DUB (CK-116 board) (S5217)	PANEL REVERSE (FP-495 flexible) (S002)	PANEL NORMAL (FP-495 flexible) (S002)
65 (KEY AD5) (IC3101 ⑥⑦)	AUDIO LEVEL (KP-1870 block) (S002)	EXPOSURE (KP-1870 block) (S003)	WHITE BAL (KP-1870 block) (S004)	SHUTTER SPEED (KP-1870 block) (S005)	PROGRAM AE (KP-1870 block) (S006)	AUTO LOCK (AUTO LOCK) (CK-116 board) (S5201)	AUTO LOCK (HOLD) (CK-116 board) (S5201)	AUTO LOCK (RELEASE) (CK-116 board) (S5201)
66 (KEY AD6) (IC3101 ⑥⑧)				PAUSE (CK-116 board) (S5210)	BACK LIGHT (CK-116 board) (S5218)	SPOT LIGHT (CK-116 board) (S5219)	CUSTOM PRESET (CK-116 board) (S5220)	No key input

*1: DCR-TRV950/TRV950E only

7. LED, LCD (Display Window) Check

Page 7	Address 07	Bit4, Bit5

Using method:

1) Select page: 7, address: 07, and set the bit value of Bit4 and Bit5 to "1".
2) Check that the LED (Camera recording, Flash) are lit and all segments of LCD (display window) are lit.
3) Select page: 7, address: 07, and set the bit value of Bit4 and Bit5 to "0".

8. Record of Use Check (1)

Page 7	Address A7 to A9

Note 1: This data will not be erased (reset) when the lithium 3 V power supply (CK-116 board BT5201) is removed.
Note 2: When the drum was replaced, initialize the drum rotation counted time.
Note 3: Check that the data of page: 0, address: 10 is "00".

Address	Function		Remarks
A7	Drum rotation	Hour (H)	100000th place digit and 10000th place digit of counted time (decimal digit)
A8	counted time	Hour (M)	1000th place digit and 100th place digit of counted time (decimal digit)
A9	(BCD code)	Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)

Using method:
1) The record of use data is displayed at page: 7, addresses: A7 to A9.

Initializing method of drum rotation counted time:
1) Select page: 7, address: 00, and set data: 71.
2) Select page: 7, address: 01, set data: 71, and press the PAUSE button.
3) Select page: 7, address: 02, and check that the data is "01".

9. Record of Use Check (2)

Page 7	Address C8 to CD

Note 1: This data will not be erased (reset) when the lithium 3 V power supply (CK-116 board BT5201) is removed.
Note 2: Check that the data of page: 0, address 10 is "00".

Address	Function		Remarks
C8	User initial power	Year	
C9	on date	Month	After setting the clock, set the date of power on next
CA	(BCD code)	Day	
CB	Final condensation	Year	
CC	occurrence date	Month	
CD	(BCD code)	Day	

Using method:
1) The record of use data is displayed at page: 7, addresses: C8 to CD.

10. Record of Self-diagnosis check

Page 7	Address B0 to C6

Note 1: This data will not be erased (reset) when the lithium 3 V power supply (CK-116 board BT5201) is removed.

Note 2: Check that the data of page: 0, address 10 is "00".

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

*1 : "01" → "C", "03" → "E"

Using method:
1) The past self-diagnosis codes are displayed at page: 7, address: B0 to C6. Refer to "1-6. SELF-DIAGNOSIS FUNCTION" of "SERVICE MANUAL, LEVEL 2 (992997831.pdf)" for detail of the self-diagnosis code.

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

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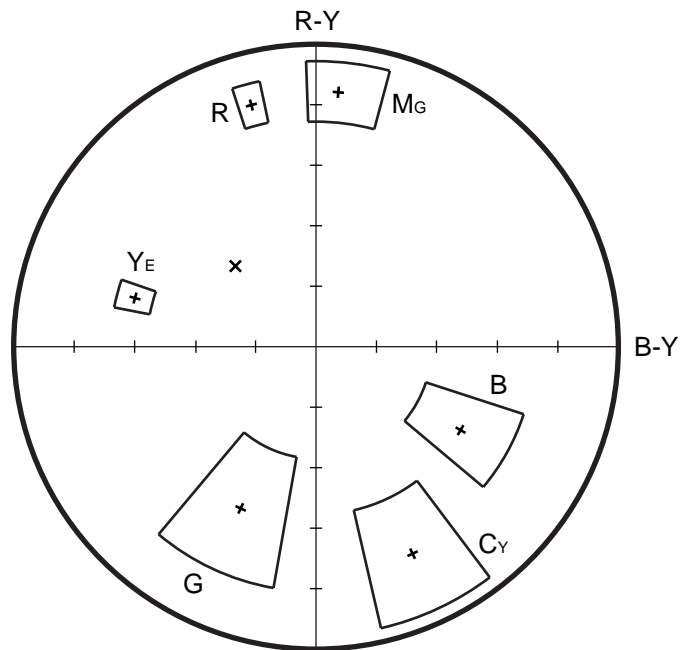REPRODUCTION FRAME with a
clear sheet for use.

For NTSC model

R-Y

R
M_G

Y_E

B-Y

B

G
C_Y
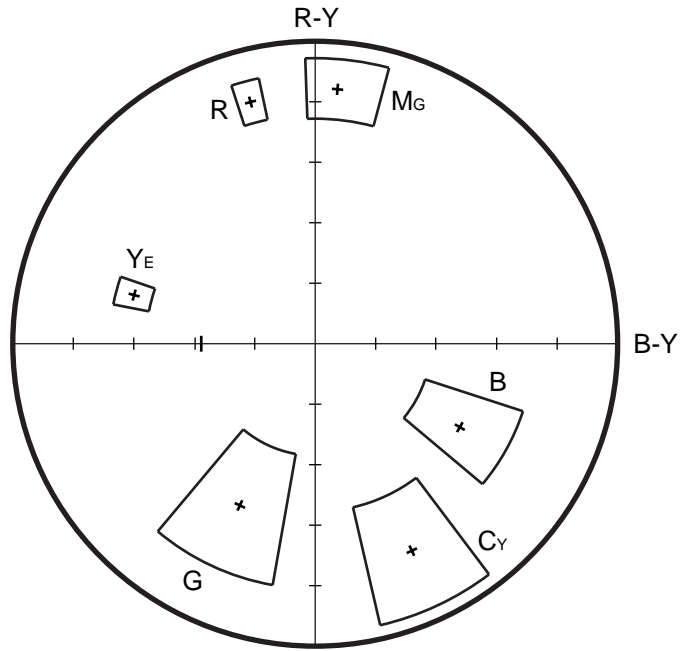
DCR-TRV940/TRV950

For PAL model

R-Y

R
M_G

Y_E

B-Y

B

G
C_Y

DCR-TRV940E/TRV950E

Revision History

Ver.	Date	History	Contents	S.M. Rev. issued
1.0	2002.05	Official Release	—	—