SONY

COLOR VIDEO CAMERA

DXC-D55
DXC-D55P
DXC-D55WS
DXC-D55WSP

Power HAD EX

MEMORY STICK ™

SERVICE MANUAL

Volume 1 1st Edition

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠ WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠ WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

注意

指定以外の電池に交換すると，破裂する危険があります。
使用済の電池は，説明書に従って処理してください。

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Vorsicht!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.

Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

ADVARSEL

Lithiumbatteri - Eksplosjonsfare.
Ved utskifting benyttes kun batteri som anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en likvärdig typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

Paristo voi räjähtää jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

For the customers in the Netherlands
Voor de klanten in Nederland

Hoe u de batterijen moet verwijderen, leest u in de Gebruikshandleiding.

Gooi de batterij niet weg maar lever deze in als klein chemisch afval (KCA).

Für Kunden in Deutschland

Entsorgungshinweis: Bitte werfen Sie nur entladene Batterien in die Sammelboxen beim Handel oder den Kommunen. Entladen sind Batterien in der Regel dann, wenn das Gerät abschaltet und signalisiert “Batterie leer” oder nach längerer Gebrauchsdauer der Batterien “nicht mehr einwandfrei funktioniert”. Um sicherzugehen, kleben Sie die Batteriepole z.B. mit einem Klebestreifen ab oder geben Sie die Batterien einzeln in einen Plastikbeutel.

For the customers in Taiwan only

廢電池請回收

Table of Contents

Manual Structure

1. Service Overview

2. Replacement of Main Parts

3. Setup Menu

4. File System

5. Electrical Alignment

Manual Structure

Purpose of this manual

This manual is the service manual volume 1 of Color Video Camera DXC-D55/D55P/D55WS/D55WSP.
This manual is intended for use by trained system and service engineers, and is provided information that is premised parts levels service for this unit.

Related manuals

Besides this service manual volume 1, the following manuals are available.

- **Operating Instructions (Supplied with this unit)**
  This manual is necessary for use and the operation of this unit.
  Part number: 3-994-171-1X

- **CD-ROM Manual (Supplied with this unit)**
  This manual contains the English, French, German, Italian, and Spanish operating instructions (PDF) of DXC-D55/D55P/D55WS/D55WSP.
  Part number: 3-994-194-0X

- **Service Manual Volume 2 (Available on request)**
  This manual is provided information that is premised the parts level service (exploded views, block diagrams, board layouts, schematic diagrams, detailed parts lists and the like.) for this unit.
  For obtaining, contact your local Sony Sales Office/Service Center.
  Part No.: 9-968-329-0X

- **Service Manual DXF-801/801CE (Available on request)**
  This manual describes the replacement of the parts, alignments, parts list, semi-conductor pin assignments, block diagrams, schematic diagrams and board layouts of the viewfinder.
  For obtaining, contact your local Sony Sales Office/Service Center.
  Part No. 9-955-212-0X

- **Service Manual VCT-U14 (Available on request)**
  This manual describes exploded view and parts list of the tripod adaptor.
  For obtaining, contact your local Sony Sales Office/Service Center.
  Part number: 9-977-221-0X

- **Service Manual VCL-920BY (Available on request)**
  This manual describes exploded view and parts list of the zoom lens.
  For obtaining, contact your local Sony Sales Office/Service Center.
  Part number: 9-977-329-0X

- **“Semiconductor Pin Assignments” CD-ROM (Available on request)**
  This “Semiconductor Pin Assignments” CD-ROM allows you to search for semiconductors used in Broadcast and Professional equipment.
  Semiconductors that cannot be searched for on this CD-ROM are listed in the maintenance manual for the corresponding unit. The maintenance manual contains a complete list of semiconductors and their ID Nos., and thus should be used together with the CD-ROM.
  Part number: 9-968-546-06

Contents

The following is a summary of the sections of this manual.

Section 1
Service Overview

1-1. Compatibility of File Data

The file data of this unit does not have compatibility with any models other than DXC-D50 series and the Remote Control Panel RCP-D50/D51.
When using the file data stored in the memory stick, make sure that the file data for DXC-D55 series, DXC-D50 series or RCP-D50/D51 is stored.
(For details on the file system, refer to Section 4.)

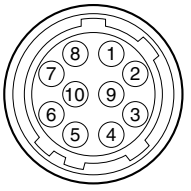
1-2. Connector Input/Output Signals

The main connector input/output signals are as follows:

MONITOR OUT (BNC) : 1.0 V p-p ±0.1 V, sync negative 75 Ω

VIDEO OUT (BNC) : 1.0 V p-p ±0.1 V, sync negative 75 Ω

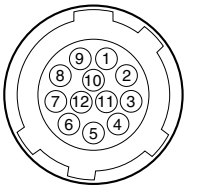
REMOTE (10P, FEMALE)



(EXTERNAL VIEW)

No.	Signal	I/O	Specifications
1	(SPARE)		
2	VBS (RM)	OUT	1.0 V p-p, SYNC NEGATIVE
3	VBS (RM)	OUT	
4	RS232C (C/RM)	IN	
5	VTR START/STOP	IN	Zi ≧ 10 kΩ OPEN (4.5 ±0.5 V) 0 ±0.5 V
6	S. DATA (X)		0 to 5 V Zi ≧ 10 kΩ
7	RS232C (RM/C)	OUT	GND for S. DATA
8	REC TALLY IND	OUT	Zo ≧ 600 Ω
9	POWER EXT DC GND	–	GND for EXT DC
10	POWER EXT DC	OUT	10.6 V to 17.0 V dc

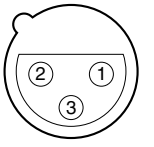
LENS (12P, FEMALE)



(EXTERNAL VIEW)

No.	Signal	I/O	Specifications
1	RET SW	IN	ON : 0 ±0.5 V dc
2	VTR START/STOP	IN	TRIG : 0 ±0.5 V
3	POWER EXT DC GND	–	GND for EXT DC
4	COMPULSORY AUTO IRIS CONT	OUT	AUTO : 4.5 ±0.5 V MANU : 0 +0.5 V or OPEN
5	IRIS CONT	OUT	F16 : 3.4 V dc F2.8 : 6.2 V dc
6	POWER EXT DC	OUT	10.6 V to 17.0 V dc
7	IRIS POSI	IN	F16 : 3.4 ±0.1 V dc F2.8 : 6.2 ±0.1 V dc
8	REMOTE/$\overline{\text{LOCAL}}$	OUT	REMOTE : 5 V LOCAL : 0 V
9	EXTND $\overline{\text{ON}}$/OFF	IN	
10	ZOOM POSI	IN	
11	(SPARE)		
12	(SPARE)		

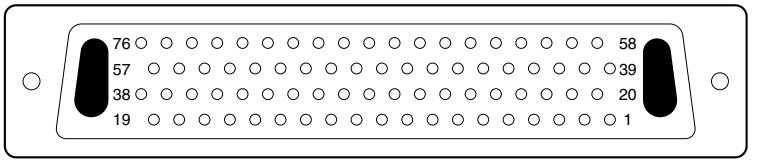
MIC (3P, FEMALE)



(EXTERNAL VIEW)

No.	Signal	I/O	Specifications
1	MIC (G)	IN	GND for MIC
2	MIC (X)	IN	–60 dB
3	MIC (Y)	IN	BALANCED (0 dB = 0.775 V)

CAMERA/CA (76P, MALE)



(EXTERNAL VIEW)

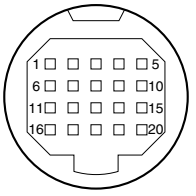
No.	Signal	I/O	Specifications
1	REC TALLY	IN	Zi ≧ 600 Ω
2	S.D. (V/C)	IN	H : 5 V L : 0 ±0.5 V
3	SCL VTR	IN	Zi ≧ 47 kΩ Zo ≦ 1 kΩ
4	GENLOCK (G)	–	GND for GENLOCK (X)
5	SYNC (G)	–	GND for SYNC (X)
6	PB (G)	–	GND for PB (VBS) (X)
7	PB (Y) (X)	IN	1.0 V p-p, NEGATIVE, Zi ≧ 1 kΩ
8	VBS (CA) (G)	–	GND for VBS (CA) (X)
9	$\overline{\text{VTR}}$/CCU	OUT	VTR : 0 ±0.25 V, Zo ≦ 1 kΩ CCU : 5.0 ±0.5 V
10	C (X)	OUT	NTSC : 0.286 V p-p ±10 % PAL : 0.300 V p-p ±10 % Zo ≦ 75 Ω ±5 %
11	Y (X)	OUT	1.0 V p-p, SYNC NEGATIVE Zo ≦ 75 Ω ±5 %
12	R/R-Y (CA)	OUT	R/G/B 1.4 V p-p, POSITIVE
13	B/B-Y (CA)	OUT	Zo ≦ 75 Ω ±5 % COMPONENT OUT *1
14	SKIN GATE	OUT	Gate area (H : 4 to 5.5 V dc) Non gate area (L : 0 ±0.2 V dc)
15	+5.0V	OUT	5 V ±0.1 V
16	AGND	–	REG, GND
17	EXT DC	IN	10.6 V to 17.0 V dc
18	EXT DC GND	–	GND for EXT DC
19	DCLK (X)	OUT	
20	VTR TRIG	OUT	
21	S.D. (C/V)	OUT	H : 5 V L : 0 ±0.5 V
22	CS VTR	IN	Zi ≧ 47 kΩ Zo ≦ 1 kΩ
23	GENLOCK (X)	IN	VBS : 1.0 V p-p Zi ≧ 1 kΩ
24	SYNC (X)	IN	H : 4.0 to 5.5 V p-p : NEGATIVE L : 0 ±0.4 V dc Zo ≦ 2 kΩ
25	PB (VBS) (X)	IN	1.0 V p-p, SYNC NEGATIVE Zo ≦ 75 Ω ±5 %
26	CF/V RESET	I/O	H : 4.0 to 5.5 V p-p, Zo ≦ 2 kΩ L : 0 ±0.4 V dc
27	VBS (CA) (X)	OUT	1.0 V p-p, SYNC NEGATIVE Zo = 75 Ω ±5 %
28	C (G)	–	GND for C (X)
29	Y (G)	–	GND for Y (X)
30	COMP GND	–	GND for G/Y (CA)
31	G/Y (CA)	OUT	R/G/B 1.4 V p-p, POSITIVE Zo ≦ 75 Ω ±5 % COMPONENT OUT *1
32	BATT S.DATA	IN	
33	+9.0 V	OUT	8.3 V to 9.1 V
34	–5.0 V	OUT	–5 V ±0.1 V
35	EXT DC	IN	10.6 V to 17.0 V dc
36	EXT DC GND	–	GND for EXT DC
37	DCF	OUT	
38	DCLK GND	–	
39	MODE ID	IN	OPEN : COMP, GND : R/G/B
40	MIC1 (G)	–	
41	AUDIO LEV	OUT	H : 4 to 5.5 V dc L : 0 ±0.2 V dc, 1 kΩ
42	(SPARE)		
43	DIGI/ANA	IN	H : Analog L : Digital
44	VF CONT	IN	CAM : OPEN Zi ≧ 1 kΩ, PB : 0 V
45	COM CONT (CA/CAM)	IN	
46	SDA (CA)	I/O	
47	(SPARE)		
48	(SPARE)		
49	(SPARE)		
50	(SPARE)		
51	(SPARE)		
52	DCLK GND	–	GND for DCLK (X)
53	BYRY (0)	OUT	H : 3 ±0.2 V dc
54	BYRY (2)	OUT	L : 0 ±0.2 V dc
55	BYRY (4)	OUT	
56	BYRY (6)	OUT	
57	BYRY (8)	OUT	
58	MIC1 (X)	OUT	–20 dBm, Zo ≦ 100 Ω
59	MIC1 (Y)	OUT	

No.	Signal	I/O	Specifications
60	(SPARE)		
61	(SPARE)		
62	76P ID		
63	COM DATA (CAM/CA)	OUT	
64	CLK (CA)	OUT	
65	(SPARE)		
66	(SPARE)		
67	(SPARE)		
68	(SPARE)		
69	(SPARE)		
70	(SPARE)		
71	(SPARE)		
72	BYRY (1)	OUT	H : 3 ±0.2 V dc
73	BYRY (3)	OUT	L : 0 ±0.2 V dc
74	BYRY (5)	OUT	
75	BYRY (7)	OUT	
76	BYRY (9)	OUT	

∗1

	UC	CE
Y	0.714 V p-p	0.700 V p-p
R-Y	0.700 V p-p	0.525 V p-p
B-Y	0.700 V p-p	0.525 V p-p

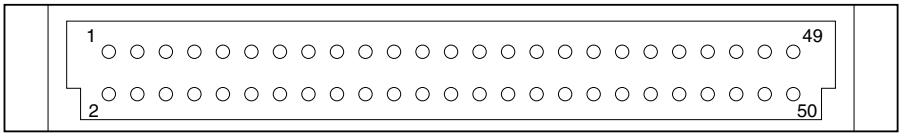
VF (20P, FEMALE)



(EXTERNAL VIEW)

No.	Signal	I/O	Specifications
1	PEAKING CONT	IN	Zi ≧ 5 kΩ
2	POWER EXT DC	OUT	10.5 V to 17.0 V dc, 2 A
3	REC TALLY IND	OUT	Zo ≦ 500 Ω
4	BATT IND	OUT	Zo ≦ 1.1 kΩ
5	(SPARE)		
6	VF VIDEO (X)	OUT	V = 1.0 V p-p
7	POWER EXT DC	OUT	10.5 V to 17.0 V dc, 2 A
8	(SPARE)		
9	(SPARE)		
10	SDA (VF)	OUT	Zo ≦ 500 Ω, 5 V p-p
11	VF VIDEO (G)	OUT	GND for VF VIDEO
12	EXT DC GND	–	GND for EXIT DC
13	(SPARE)		
14	DISPLAY SW	IN	ON : 4.5 ±0.5 or OPEN OFF : 0 +0.5 V
15	SCL (VF)	OUT	Zo ≦ 500 Ω, 5 V p-p
16	R-Y (VF)	OUT	V = 830 mV
17	EXT DC GND	–	GND for EXIT DC
18	B-Y (VF)	OUT	V = 830 mV
19	SYNC (VF)	OUT	V = 5 V p-p
20	LD (VF)	OUT	Zo ≦ 500 Ω, 5 V p-p

CAMERA/CA (50P, MALE)



(EXTERNAL VIEW)

No.	Signal	I/O	Specifications
1	MODE ID	IN	OPEN : COMP, GND : R/G/B
2	GND (CHASSIS)	–	
3	MIC (Y	OUT	–60 dBm
4	MIC (X)	OUT	
5	MIC (G)	–	
6	EAR (G)	–	
7	REC TALLY IND	IN	Zi ≧ 600 Ω
8	EAR (X)	IN	–6 dBu
9	VTR TRIG	OUT	
10	REC RESET	IN	
11	S.D (V/C)	IN	H : 5 V
12	S.D (V/C)	OUT	L : 0 ±0.5 V
13	CS VTR	IN	Zi ≧ 47 kΩ
14	SCL VTR	IN	Zo ≦ 1 kΩ
15	GENLOCK VIDEO (G)	–	VBS : 1.0 V p-p
16	GENLOCK VIDEO (X)	IN	Zi ≧ 1 kΩ
17	SYNC (G)	–	H : 4.0 to 5.5 V p-p : NEGATIVE
18	SYNC (X)	OUT	L : 0 ±0.4 V dc Zo ≧ 2 kΩ
19	PB RET VIDEO (G)	–	1.0 V p-p
20	PB RET VIDEO (X)	IN	Zi ≧ 10 kΩ
21	CF/V RESET	I/O	H : 4.0 to 5.5 V p-p Zo ≦ 2 kΩ L : 0 ±0.4 V dc
22	VF VIDEO CONT	IN	CAM : OPEN Zi ≧ 1 kΩ, PB : 0 V
23	VBS (CA) (G)	–	1.0 V p-p, SYNC NEGATIVE
24	VBS (CA) (X)	OUT	Zo = 75 Ω ±5 %
25	STBY/$\overline{\text{SAVE}}$	OUT	STBY : 4.0 to 5.5 V p-p Zo ≦ 100 Ω SAVE : 0 ±0.25 V
26	$\overline{\text{VTR}}$/CCU CONT	OUT	VTR : 0 ±0.25 V Zo ≦ 1 kΩ CCU : 5.0 ±0.5 V
27	CHROMA (G)	–	NTSC : 0.286 V p-p ±10 % PAL : 0.300 V p-p ±10 % Zo ≦ 75 Ω ±5 %
28	CHROMA (X)	OUT	

No.	Signal	I/O	Specifications
29	Y (G)	–	1.0 V p-p, SYNC NEGATIVE
30	Y (X)	OUT	Zo ≦ 75 Ω ±5 %
31	COMP (CA) GND	–	R/G/B
32	R/R-Y (CA)	OUT	1.4 V p-p, POSITIVE
33	G/Y (CA)	OUT	Zo ≦ 75 Ω ±5 %
34	B/B-Y (CA)	OUT	COMPONENT OUT *1
35	BATT ALARM/S. DATA		
36	REC REVIEW CONT	OUT	GND ; REC REVIEW
37	(SPARE)		
38	(SPARE)		
39	+8.5 V	OUT	8.3 V to 9.1 V
40	+5 V	OUT	5 V ±0.1 V
41	–5 V	OUT	–5 V ±0.1 V
42	AGND	–	REG, GND
43	POWER EXT DC	IN	10.6 V to 17.0 V dc
44	POWER EXT DC	IN	
45	POWER EXT DC GND	–	GND for EXT DC
46	POWER EXT DC GND	–	
47	(SPARE)		
48	(SPARE)		
49	GND (CHASSIS)	–	CHASSIS GND
50	GND (CHASSIS)	–	

*1

	UC	CE
Y	0.714 V p-p	0.700 V p-p
R-Y	0.756 V p-p	0.525 V p-p
B-Y	0.756 V p-p	0.525 V p-p

1-3. Connection Connector/Cable

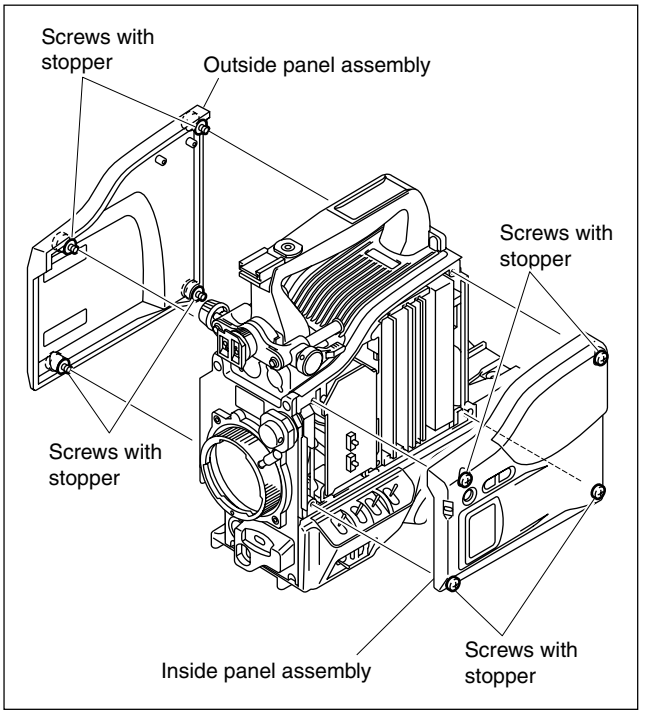
Connections made with the connector panels during installation or service, should be made with the connectors or complete cable assemblies specified in the following list, or equivalent parts.

Connector Name	Connection connectors/cables
REMOTE (10P, FEMALE)	1-506-522-11 CONNECTOR, ROUND 10P, MALE HIROSE HR 10A-10P-10P equality or CCA-7-20 Cable assembly (optional)
VIDEO OUT (BNC)	1-569-370-12 PLUG, BNC or Coaxial cable BELDEN 8281 or equivalent
MONITOR OUT (BNC)	1-569-370-12 PLUG, BNC or Coaxial cable BELDEN 8281 or equivalent
MIC (3P, FEMALE)	1-508-084-31 CONNECTOR, 3P, MALE CANNON XLA-3-12C equality

1-4. Removing and Reinstalling the Exterior Parts

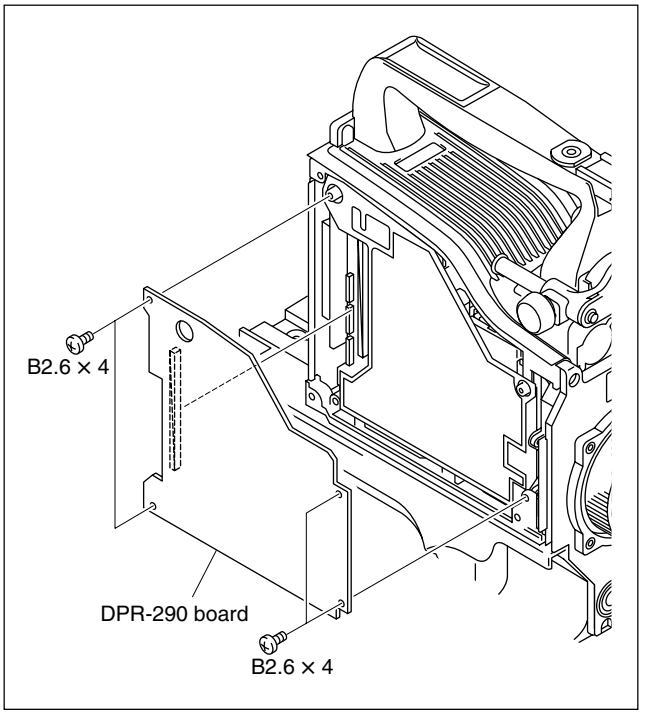
1-4-1. Removing the Side Panels

1. Loosen the four screws with stopper, and remove the inside panel assembly.
2. Loosen the four screws with stopper, and remove the outside panel assembly.

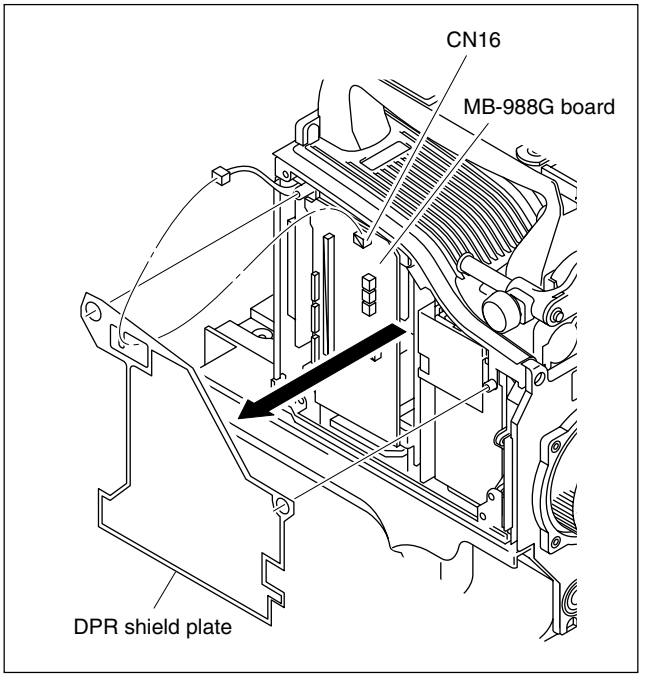


1-4-2. Removing/Reattaching the Top Chassis

1. Remove the inside panel assembly and outside panel assembly. (Refer to Section 1-4-1.)
2. Remove the four screws, and remove the DPR-290 board.



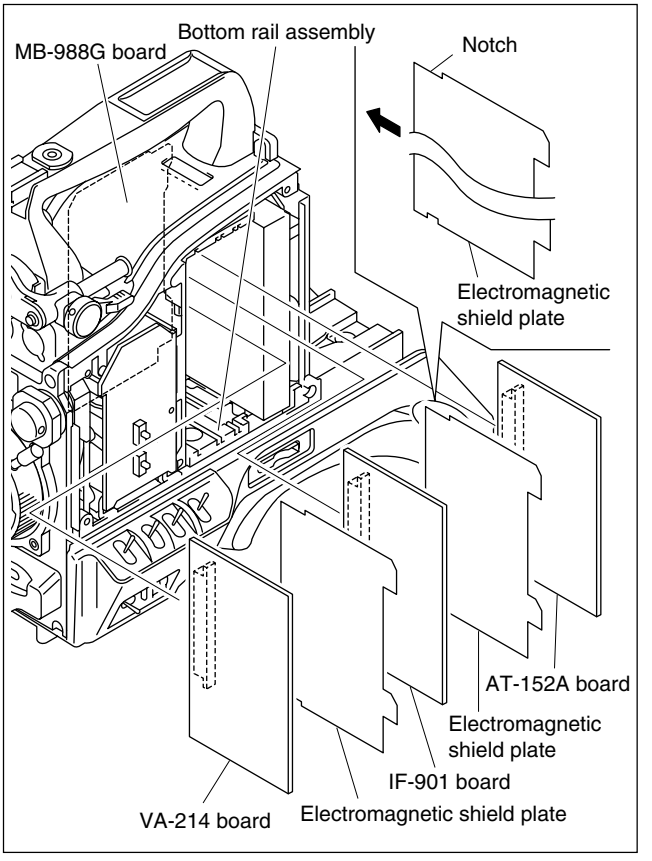
3. Disconnect the harness from the connector CN16 on the MB-988G board.
4. Remove the DPR shield plate.



5. Pull out the VA-214, IF-901 and AT-152A boards, and the two electromagnetic shield plates slowly.

   Notes at Installation

   - If the electromagnetic shield plate is caught on the bottom rail assembly at installing the electromagnetic shield plate, insert the electromagnetic shield plate while lifting up.
   - Insert the electromagnetic shield plate with the notch forward as shown in the figure.
     Incorrect orientation may cause the unit to short out.

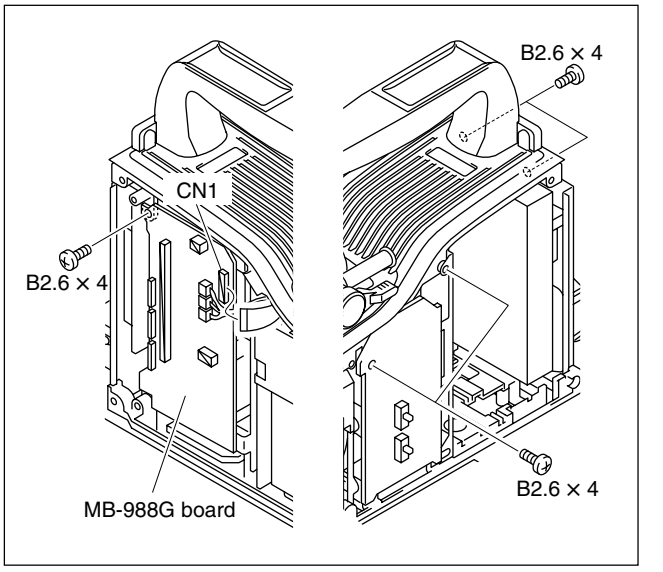


6. Disconnect the flexible card wire from the connector CN1 on the MB-988G board.

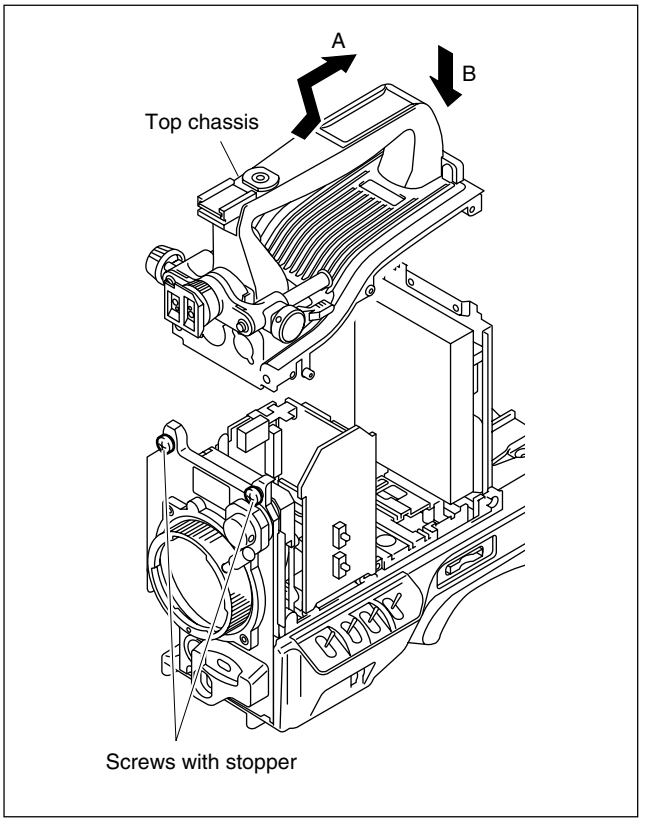
   Note

   Be careful not to bend the flexible card wires. This shortens the wire life.

7. Remove the five screws shown in the figure.



8. Loosen the two screws with stopper, and remove the top chassis in the arrow A direction.



9. Reattach the top chassis in the reverse order of removal.

Note

When reattaching the top chassis to the rear panel, tighten the two screws while pressing the top chassis in the arrow B direction.

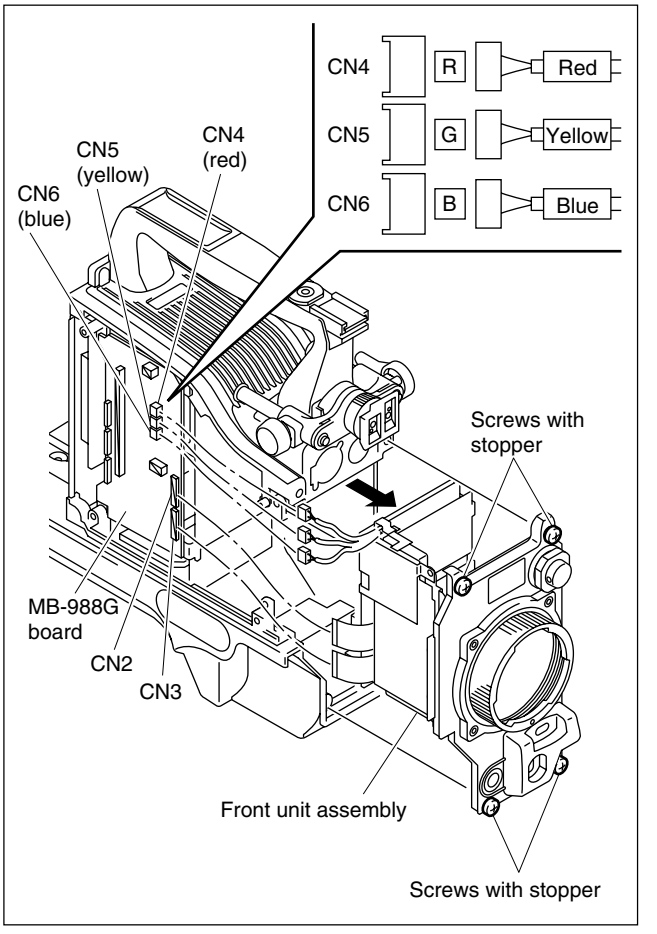
1-4-3. Removing/Reattaching the Front Unit Assembly

1. Remove the inside panel assembly and outside panel assembly. (Refer to Section 1-4-1.)
2. Remove the DPR-290 board and DPR shield plate. (Refer to Section 1-4-2.)
3. Disconnect the two flexible card wires from the connectors CN2 and CN3 on the MB-988G board, and three harnesses from the connectors CN4 (red), CN5 (yellow) and CN6 (blue).

Note

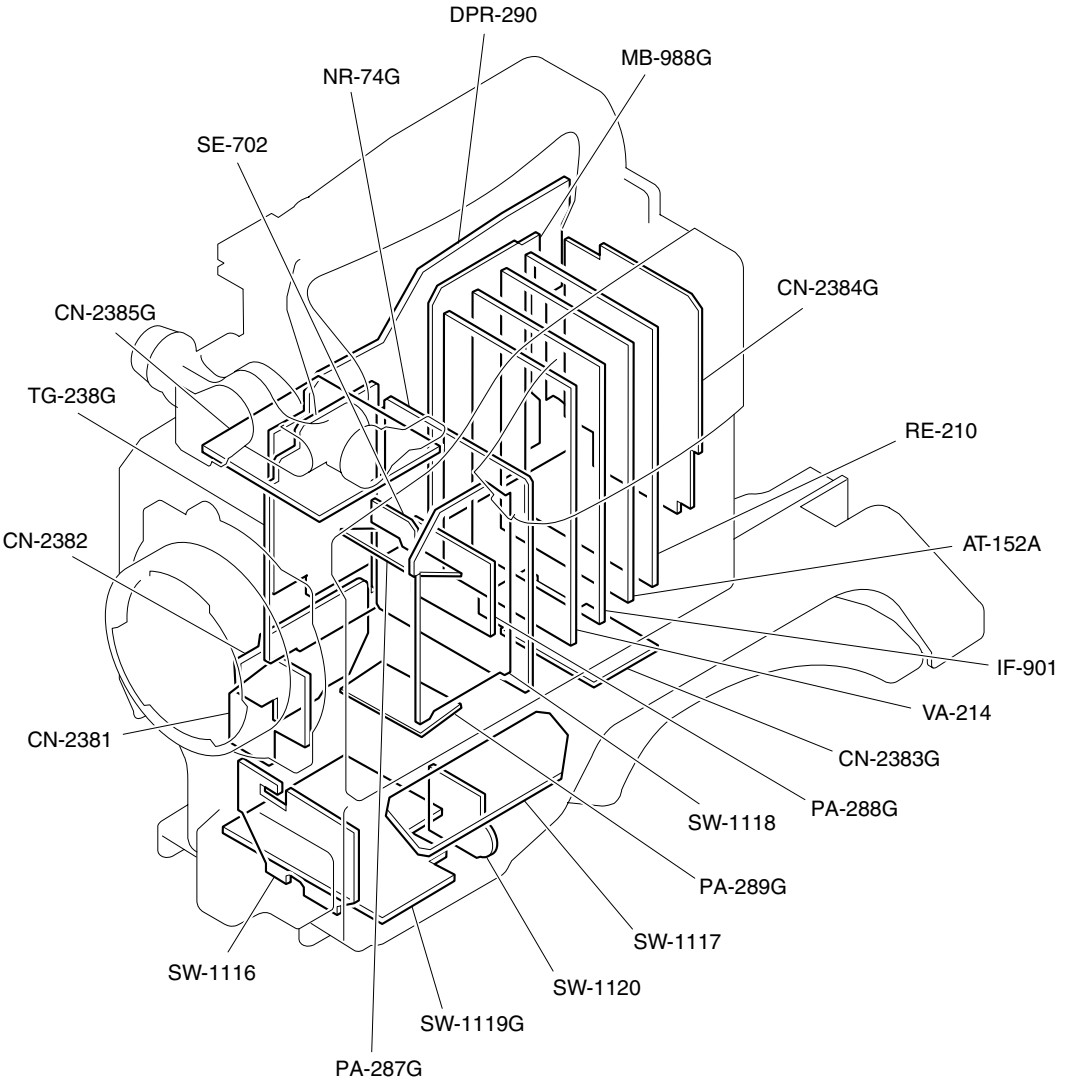
Be careful not to bend the flexible card wires.
This shortens the wire life.

4. Remove the four screws with stopper, and remove the front unit assembly.



5. Reattach the front unit assembly in the reverse order of removal.

1-5. Location of Printed Wiring Boards



1-6. Circuit Description

1-6-1. CCD Block (PA-287G/288G/289G Boards, TG-238G Board, and NR-74G Board)

PA-287G/288G/289G Boards

The PA boards contains the CCD bias circuit, horizontal register drive circuit (H1, H2, LH1 driver), CDS (Correlated Double Sampling) circuit which extracts video signals from the CCD and eliminates noise, and preamp circuit which adjusts sensitivity.

The temperature sensor (IC9) of PA-288G board detects temperature around the CCD block, and sends the detected signal to the AT-152A board.

Various CCD drive conditions, adjustment data (V-sub voltage, RG voltage, black/white shading, etc.) are written in IC8 (EEPROM) of PA-287G board.

TG-238G Board

The TG-238G board contains the CCD drive pulse generation circuit and its drive circuit.

The 18 MHz clock generated from the voltage control generation circuit (X1) is sent to the DPR-290 board through the NR-74G board, and used for generate the AHD, AVD pulse synchronized with the video output signal.

The TG IC (IC1) generates the CCD drive pulse synchronized with this AHD, AVD pulse and the sample and hold pulse for the CDS circuit of the PA boards.

These pulses are passed through the following drive circuit and are sent to each PA board.

- V clock: Passed through IC201 to IC206 drivers ICs
- RG pulse: Passed through IC309 and then the bias potential specific to each. CCD is added to the output of IC309.
- V-sub voltage: Enters IC310 and IC311 DC amplifier to be adjusted for the specified voltage.
- Shutter pulse: Passes through the drive circuit consisting of Q201 to Q204.
- SHD/SHP/H1/H2/LH1: Passes through IC312, IC313, and IC307 AND gate ICs.

NR-74G Board

The NR-74G board contains a power stabilization circuit to stabilize various power supply voltages to be supplied to the CCD block, black/white shading correction signal generation circuit, and optical filter interface circuits.

- The power stabilization circuit stabilizes the following power supply voltages to be supplied to the CCD block.
  +15.0 V +30.0V +6.0 V +5.3 V +3.3 V +2.5 V
  +1.8 V +1.1 V −10.0V −8.0 V −4.5 V
- The black/white shading correction signal and TEST SAW signal are generated in IC104. These signals are sent to the VA-214 board to mix with the video signal.

1-6-2. Video Signal System (VA-214 Board, DPR-290 Board, and IF-901 Board)

VA-214 Board

The VA-214 circuit amplifies the R, G, B video signals output from the PA boards, performs various correction, and then sends them to the DPR-290 board. As the R, G, and B circuits are basically the same, Rch is explained as an example below.

The video signal output from the PA board is passed through the trap filter (FL101), and input to the first amplifier stage composed of Q102 to Q108. In this amplifier, black shading correction, 5600K switching (Rch and Bch only) and clamping are performed.

The clamped signal is switched between 0 dB/6 dB/12 dB/18 dB by the amplifier composed of Q110 to Q117 and clamped again that is blanking-cleaned by IC102.

After this, white shading correction, white gain control (white balance), and flare correction are performed in the amplifier composed of IC103, IC104, and Q119 to Q131 and the signals are output to the DPR-290 board.

In addition, switching of the video signal and TEST SAW signal is also performed.

DPR-290 Board

The DPR-290 board is mainly composed of the block to A/D-convert the analog RGB signal input from the VA-214 board, camera digital processor block, and block to D/A-convert the digital-signal-processed video signal and to adjust its signal LEVEL.

In the A/D block, the analog RGB signal input from the VA-214 board receives the clamp and pre-knee processes. Then the resultant signal goes through the lowpass filter (FL101, FL201, and FL301) and is then converted into the 14-bit digital signal in the A/D converter (IC102, IC202, and IC203).

The digital signal that was A/D-converted is input into the camera digital signal processor LSI (IC1).

IC1 detects the average and peak values of the video signal that is necessary to the auto system operations (such as the auto-black balance, auto-white balance, and auto iris), and performs the matrix, detail, gamma and digital chroma encode processes.

The signal received these processes is output to the D/A block as various video signals of 10-bit digital signal. Also, the component digital signal that was rate-converted into 27 MHz is output as the video signal at the CA-D50 or DSR-1/1P connections.

In the D/A block, the Y/R-Y/B-Y, Y/TEST/SC, Y/F-Y/B/Y for VF, and C signals are D/A-converted in IC501, IC502, IC 503, and IC818 respectively. For the R/G/B output, the Y/R-Y/B-Y signal is switched to the R/G/B signal in IC1, and then the R/G/B signal is D/A-converted in IC501.

The DPR-290 board also performs the PLL and H-Phase/SC-Phase control at external synchronizing, and outputs various timing pulses such as HD/VD/SYNC.

IF-901 Board

The IF-901 board is composed of the two blocks: the video interface block that switches the D/A-converted analog video signal, and RET and PB signals for the CCU and VTR connections to the respective outputs to send; and the I/O block that inputs and outputs the control signal for VF and the control signal for switches and LEDs.

In the video interface block, the Y and C signals input from the DPR-290 board follow the two routes: one is sent to the CN-2384G board and output as the Y/C signal through the 50-pin and 76-pin connectors, and another is sent to the Y/C mixing circuit on the IF-901 board to generate the VBS signal. This VBS signal is used as the VBS outputs through the VIDEO OUT connector (BNC), 50-pin, and 76-pin.

The signal that is generated by mixing the VBS signal with the character and the marker is output from the REMOTE connecter (round 10-pin) and the MONITOR OUT connector (BNC) of CN-2382 board.

This MONITOR OUT connector can switch between the TEST signal from the DPR-290 board, RETURN signal from the CCU, and VBS signal using the analog switch circuit (Q41 to 48, Q50, and Q56 to 58) to output.

Also, VF_Y, VF_R-Y, and VF_B-Y are input from the DPR-290 board to the video interface block as the VIDEO signal for VF. Only the VF_Y signal is mixed with the character and the marker, and is output to the VF connector through the CN-2385G board with the VF_R-Y and VF_B-Y signals.

In the I/O block, the I/O expander (IC302) expands the microcomputer port on the AT-152A board. This I/O expander performs the serial communication with the CHB and the CA, the control of the parallel control line to the VF and the CA, and the input and output of the serial data and the sync signal for switches and LEDs.

1-6-3. System Control (AT-152A Board)

AT-152A Board

AT-152A board contains the microcomputer (IC11), which performs the system control.

The 36 MHz camera system clock supplied from outside of the board is divided in the dividing circuit (IC15, IC17 and IC19), and the resultant 4 MHz clock is input in the microcomputer.

This 4 MHz clock is multiplied by 4 in the microcomputer, and the microcomputer operates with the resultant 16 MHz clock. When the power is turned on, the microcomputer is reset by the voltage detection IC (IC16), and starts the processing.

The microcomputer processing is performed according to the operation program written in the Flash ROM (IC206 and IC207), which is connected through the 32-bit bus. This operation program can easily be upgraded from outside by the memory stick interface (IC217) using the memory stick.

The ICs on the bus line that contains these Flash ROM and memory stick interface are located on the memory space that is managed by the microcomputer using the chip select signal and address decoder circuit (IC13 and IC14).

In addition, the AT-152A board contains the SRAM (IC210 and IC211), which is used as the work memory for the microcomputer processing, and the FRAM (IC215 and IC216), which is the non-volatile memory to record and store the system setting values such as menu data.

The microcomputer controls the digital signal processor LSI (IC1) on the DPR-228 board and the I/O expander (IC302) on the IF-901 board through the bus lines (8-bit data, address and control).

The bus lines connected to outside of the board through the drive and 3.3 V - 2.5 V voltage conversion ICs (IC202, IC203, IC204, and IC205).

Also, the serial control lines, such as data and clock, control the TG IC (IC1) on the TG-238G board, the OHB-controlling LSI on the NR-74G board, the D/A converter (IC702 and IC704) on the VA-214 board, the D/A converter (IC504 and IC509) on the DPR-290 board, the SW input IC (IC400, IC402, and IC403) on the SW-1119G board, and the clock IC (IC901) on the CN-2384G board.

The microcomputer directly detects the menu operation device, rotary encoder.

The built-in A/D converter of the microcomputer detects the IRIS POSITION, ZOOM POSITION, and EXTENDER signals from the lens. These signals are used for various controls such as the indication control.

This A/D converter also detects the temperature sensor on the G ch of the CCD block (PA-288G board), FILTER POSI signals, the PEAKING CONT signal from the VF and the power voltage for use in each control.

The microcomputer communicates with the RCP connected to the REMOTE connecter through the RS-232C driver (IC223) and the serial communication IC (IC219).

The microcomputer directly communicates with the CA/CCU system connected to the Pro 50pin/76pin connector, the VTR, and the RM-M7G connected to the REMOTE connector.

1-6-4. Power Supply Block (DC-DC Converter) (RE-210 Board)

RE-210 Board

- The RE-210 board is a DC-DC converter which outputs 11 types of voltages altogether.

- PWM Clock Signal
  The PWM POWER CONTROL (IC8) generates and supplies the master clock (triangular wave of 90 ± 10 kHz) for all controller ICs (IC2, IC3, IC7, and IC8) .

- Input Voltage Monitoring Circuit
  The RE-210 board has an input voltage monitoring circuit (IC4). If the voltage is within the appropriate range, it supplies power to each controller IC (IC2, IC3, IC7, and IC8) and REF voltage IC (IC1).
  The power supply circuit starts up when the input power voltage is within the range of +10.0 V to +18.0 V. Once it has started up, the circuit keeps operating until the input power voltage decreases below the lower limit (+9.4 V).
  When the input power voltage decreases below the lower limit (+9.4 V), it does not restart until the power voltage decreases below the resetting voltage (+8.9 V).

- Protection Circuit for Shorting of Output Circuit
  Each output is connected with a diode or transistor. In normal operations, they are reverse-biased so that they are turned OFF.
  However if any single output is shorted, or if there is no output due to some defect, the diode and transistor of the corresponding block are turned ON and IC9 sends a L_SHUTDOWN signal. The master clock is stopped by this signal, and the outputs of all voltages stop.

- Output Overvoltage Protection Circuit
  An overvoltage detection circuit is equipped only for the +1.4 V output.
  When the +1.4 V output exceeds +2.0 V under abnormal conditions, the outputs of all voltages are stopped by the L_SHUTDOWN signal like the output short-circuit protection circuit.

- Voltage Control Circuit
  The eight output voltages out of the 11 voltages are stabilized with direct feedback control by the PWM POWER CONTROL (IC2, IC3, IC7, and IC8). Each control IC can independently control two voltages each.
  +1.4 V, +2.5 V, +5.3 V, +3.3 V, +6.6 V, and +9.3 V are output from the step-down chopper circuit while −5 V is output from the polarity reversed chopper circuit. The sync rectification circuit is adopted for all except +9.3V to obtain high efficiency.
  −10.5 V is output from the flyback regulator using the transformer T1. The three voltages +16.1 V, +32.0 V, and +48.0 V are also output by the T1 coil, however they are not directly stabilized.
  For +1.4 V, accurate voltage is required.
  Therefore, it detects the voltage in the DPR-290 board to absorb voltage drop during transmission.

1-6-5. Connector and Switch Block (CN Boards, SW Boards)

The following SW and CN boards are installed in this unit. The main circuit function of each board are as follows:

Board Name	Circuit Function
SW-1116	Front Panel SW
SW-1117	Gain SW
SW-1118	Side Panel SW
SW-1119G	Connection Broad
SW-1120	Rotary SW
CN-2381	Lens CN
CN-2382	VBS, RM CN
CN-2383G	Memory Stick CN
CN-2384G	50-pin/70-pin
CN-2385G	VF MIC CN

- Audio System (CN-2384G Board)
  The circuit block for the audio system outputs the three types of audio signals: MIC, MIC LOW CUT, and TONE.
  The MIC signal is the audio signal from the external microphone. It is input to the MIC IN connector (CN1000) on the CN-2385G board, is amplified in the 40 dB amplifier (IC1002), and is then sent to the Analog SW (IC910) on the CN-2384G board through the MB-988G board.
  The MIC LOW CUT signal is the audio signal generated from the MIC audio signal through the High pass Filter (IC909). It is sent to the Analog SW (IC910).
  The TONE signal is the 1 kHz reference signal. The rectangle wave of 1 kHz from the AT-152A board is converted into the sine wave through the Low pass Filter (IC919) on the CN-2384G board. This sine wave goes through the AUDIO LEVEL CONTROL IC (IC902), and sent to the Analog SW (IC910). The IC902 output level is detected (IC904) and compared (IC904), and is then fed back to automatically adjust the signal level.
  The Analog SW (IC910) on the CN-2384G board switches between the MIC, MIC LOW CUT, and TONE signals according to the control signals of TONE CONT (Q909) and MIC LOW CUT CONT (Q910) to output one of the audio signals. Only the output to the analog 50-pin connector on the rear panel goes through the −40 dB amplifier (IC916).

- Power System (CN-2384G Board)
  The FET (Q901, Q902, and Q911) on the CN-2384G board controls the UNREG power operation. The UNREG power line is connected to the thermistor (THP900) to protect from the overvoltage.

- SW/LED Control System (SW-1116, 1117, 1118, 1119G Boards)
  On the SW-1119G board, the parallel data, which is output from the Function SW, LENS connector, and VF connector on the SW-1116 and SW-1117 boards, is converted into the serial data by the P/S data converter (IC400, IC402, and IC403).
  The SW-1118 board has the P/S and S/P data converters. The P/S data converter (IC300 and IC301) converts the parallel data output from the AUTO system Function SW on the SW-1118 board into the serial data, and outputs it to the I/O expander (IC302) on the IF-901 board. The S/P data converter (IC304) converts the serial data output from the I/O expander on the IF-901 board into the parallel data to light the LED on the SW-1118 board.

1-7. Contents of the EEPROM and FRAM Data

The data that is stored in the EEPROM and FRAM on the respective boards, is shown below.

Note

Part numbers of the following ICs are shown in Vol. 2 Section “1. Spare Parts” of the separate Maintenance Manual are the ICs before saving the data contents.

Board	Ref. No. (address)	EEPROM/ FRAM	Contents of the saved data	Adjustment/setup upon replacement of EEPROM/FRAM
AT-152A	IC215 (A-4/A side) IC216 (A-5/A side)	FRAM	Reference file setting data Scene file setting data Lens file setting data Operator file setting data VF menu setting data	Refer to Section 1-8-5.
DPR-290	IC507 (B-9/A side)	EEPROM	Factory adjustment data of DPR-290 board (except SC Frequency data)	Refer to Section 1-8-4.
PA-287G	IC8 (B-1/B side)	EEPROM	Factory adjustment data of CCD block SC Frequency data	∗1
VA-214	IC701 (D-12/A side)	EEPROM	Factory adjustment data of VA-214 board	Refer to Section 1-8-3.

∗1: IC8 on the PA-287G board cannot be replaced because the data cannot be re-set.
When IC needs to be replaced due to defective IC, contact your local Sony Sales Office/Service Center.

1-8. Adjustment and Setting Items After Replacement of Board

When replacing the following boards, perform the adjustments or settings referring to the Referring section.
If no adjustment item is listed, no adjustment is required.

1-8-1. CCD Unit

Adjustment and Setting Items After CCD Unit is Replaced

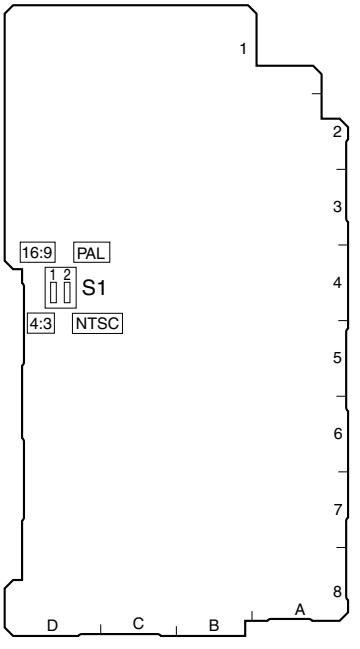
5-3-1. PA Gain Adjustment
5-4-4. SC Frequency Adjustment

1-8-2. TG-238G Board

Setting Item After Board is Replaced

Corresponding to the camera to be used, set the internal switches.

Ref. No.	Designation	Setting position	
S1-1	4:3/16:9	DXC-D55/D55P: DXC-D55WS/D55WSP:	4:3 16:9
S1-2	PAL/NTSC	DXC-D55/D55WS: DXC-D55P/D55WSP:	NTSC PAL



TG-238G board (B side)

1-8-3. VA-214 Board

The EEPROM (IC701) is mounted on the VA-214 board. Perform the following adjustments, when this IC is replaced, too.

Adjustment Items After Board or EEPROM is Replaced

5-2-1. Black Balance Adjustment
5-2-2. Offset Adjustment
5-2-3. White Modulation Balance Adjustment
5-2-4. Flare Offset Adjustment
5-2-5. Video Level Adjustment

1-8-4. DPR-290 Board

The EEPROM (IC507) is mounted on the DPR-290 board. Perform the following adjustments, when this IC is replaced, too.

Adjustment Items After Board or EEPROM is Replaced

5-4-1. Video Level Adjustment
5-4-2. VIDEO OUT Level Adjustment

1-8-5. AT-152A Board

The unique setting data that is set by user is written into IC215 and IC216 on the AT-152A board.
Therefore, when these ICs were replaced with new ICs in replacing the board or IC itself, the data set by user is lost, and is returned to their factory-setting values.
Perform the following settings, when these ICs are replaced, too.

Setting Item After Board or FRAM is Replaced

Reset the operator file and scene file. (Refer to Section 4.)

1-8-6. CN-2384G Board

Setting Item After Board is Replaced

Replace lithium battery on the CN-2384G board with a new one, and reset date. (Refer to the Operating Instructions “Chapter 2 Replacing the Lithium Battery”.)

1-9. Upgrading the Software

The version of the MAIN program and BOOT program can be upgraded using the memory stick. According to necessary, follow the procedures shown below.

Notes

- The upgrading program must have already been saved in a memory stick before.
- Refer to Section 5-1-5 to display of the SERVICE menu.
- Refer to Section 3-1 for the basic operations of the setup menu.

1-9-1. Upgrading MAIN Program

Upgrading by Powering ON the Unit

1. Insert the memory stick in which the upgrading program is already saved.
2. Turn on the power while pressing the VTR button on the camera front and MENU dial on the right side simultaneously.
3. The upgrading status is displayed on the viewfinder screen.
4. Make sure that upgrading is completed.
   Note
   Diplaying the message “completed” shows completion of upgrading, after the menu display advances to the FIRM UPDARE 2/2 page.

5. Restart the unit, and confirm the version indication using DIAGNOSIS page of SERVICE menu.

When the Setup Menu is Used for Version Upgrading

1. Insert the memory stick in which the upgrading program is already saved.
2. Display the FIRM UPDATE page of the SERVICE menu, and execute the MAIN PROGRAM.
3. The upgrading status is displayed on the viewfinder screen.
4. Make sure that upgrading is completed.
   Note
   Diplaying the message “completed” shows completion of upgrading, after the menu display advances to the FIRM UPDARE 2/2 page.

5. Restart the unit, and confirm the version indication using DIAGNOSIS page of SERVICE menu.

1-9-2. Upgrading BOOT Program

BOOT program is a software renewing the firmware using the memory stick. Do not operate this program except upgrading the program.

1. Insert the memory stick in which the upgrading program is already saved.
2. Display the FIRM UPDATE page of the SERVICE menu, and execute the BOOT PROGRAM.
3. When the version upgrade is completed, the message “Complete” will be displayed.

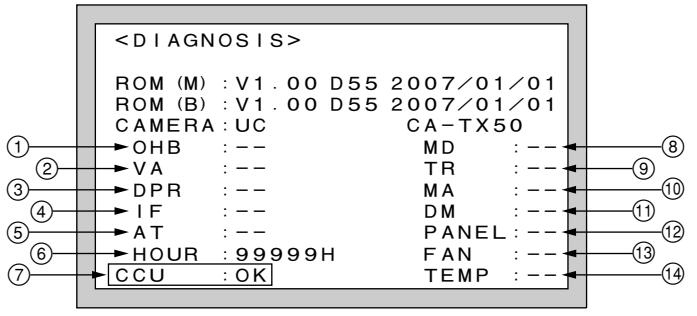
1-10. Diagnosis

The unit is provided with the diagnosis function which can be used for the self-diagnosis of each plug-in board, CA-TX50/TX50P (only at connection) and the OHB.

Operation

Display the “DIAGNOSIS” page of the SERVICE menu referring to Sections 5-1-5 and 3-1.

Display



Diagnosis of the unit

No.	Board/Block	Criteria for judging
①	OHB (CCD UNIT)	Communication error with IC8/PA-287G board
②	VA-214	Communication error with IC701 or defect of sub-regulator circuit operation inside the board.
③	DPR-290	Communication error with IC507 or defect of sub-regulator circuit operation inside the board.
④	IF-901	Communication error with IC302 or defect of sub-regulator circuit operation inside the board.
⑤	---	Does not function at preset.
⑥	HOUR	Indicates the power-on time of the camera. (The display stops in 99999 when the power-on time exceeds 99999H.)
⑦	CCU/RM*	The serial data is correctly received from the CCU or RM connected to the unit.

* When neither CCU nor RM is connected, “REMOTE : NC” is displays.

Diagnosis of CA-TX50/TX50P (only at connection)

No.	Board/Block	Criteria for judging
⑧	MD-132A	The MD-132A board is abnormal.
⑨	TR-132A	The TR-132A board is abnormal.
⑩	MA-128A	The MA-128A board is abnormal.
⑪	DM-139	The DM-139 board is abnormal.
⑫	---	Does not function at preset.
⑬	Power supply	The fan in the power supply block is abnormal.
⑭	Power supply	The temperature of the power supply block is abnormal.

1-11. Removing and Reinstalling the Flexible Card Wires

This unit uses two types of flexible card wire.

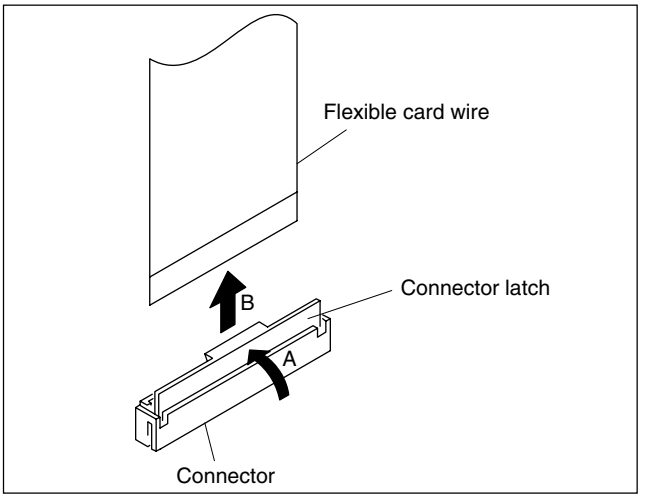
Note

Life of flexible card wire will be significantly shortened if it is folded. Be very careful not to fold the flexible card wire.

Type-A

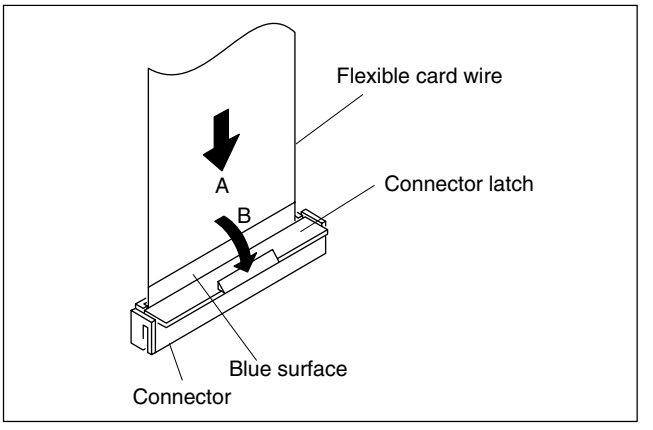
Removal

1. Open the connector latch in the direction of arrow A to release the lock.
2. Remove the flexible card wire in the direction of arrow B.



Reinstallation

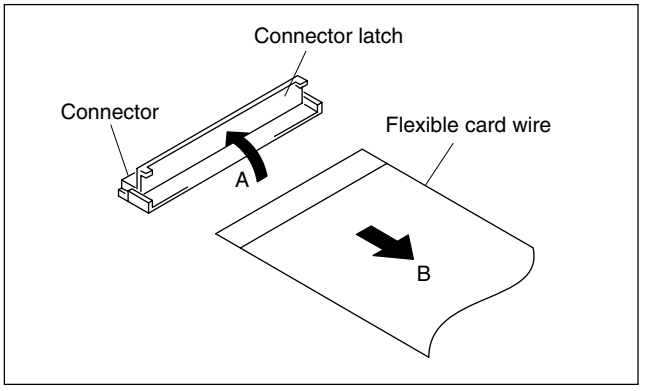
1. Hold the flexible card wire with its blue surface facing to the front, and insert it in the direction of arrow A.
2. Close the connector latch in the direction of arrow B to lock it.



Type-B

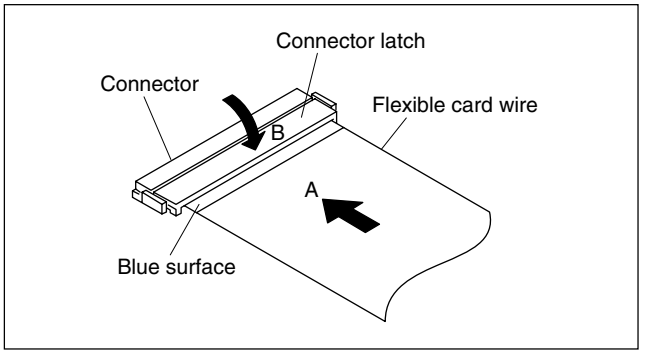
Removal

1. Open the connector latch in the direction of arrow A to release the lock.
2. Remove the flexible card wire in the direction of arrow B.



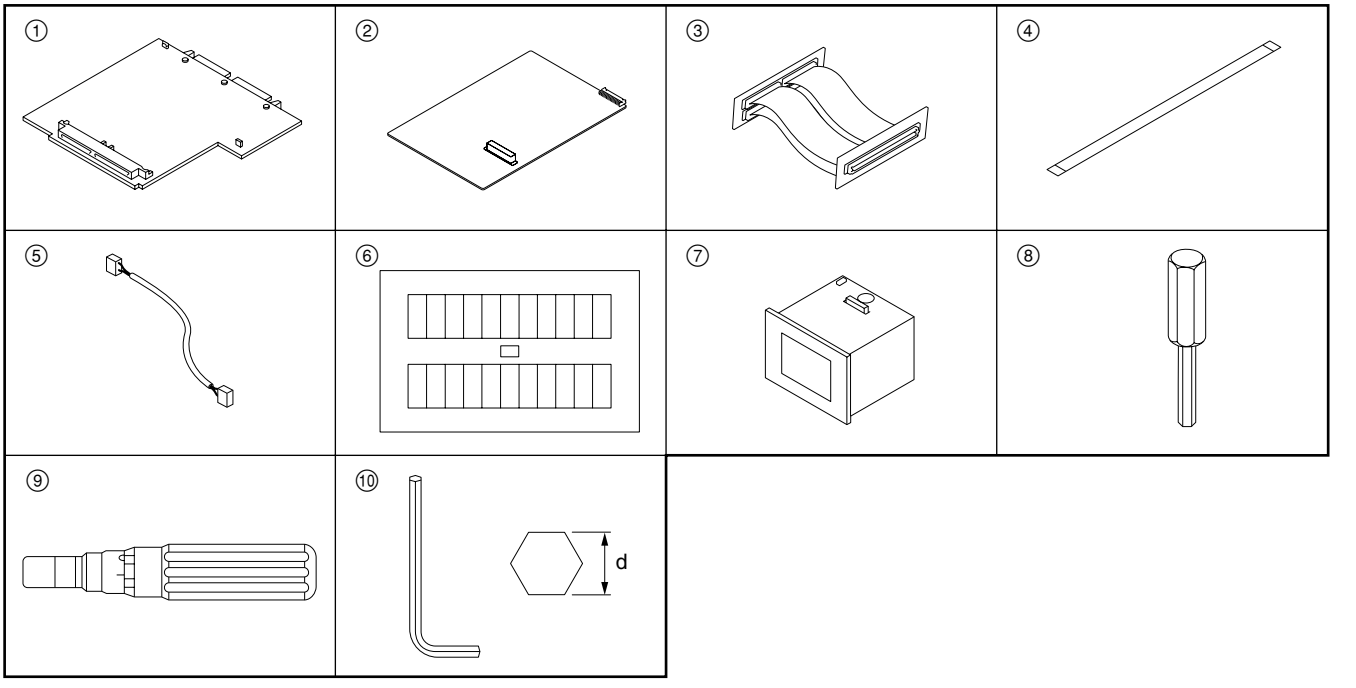
Reinstallation

1. Hold the flexible card wire with its blue surface facing upward, and insert it in the direction of arrow A.
2. Close the connector latch in the direction of arrow B to lock it.



1-12. Fixtures

Fig. No.	Part No.	Description	Purpose
①	A-8318-864-A	EX-464	Extending the plug-in boards
②	A-8344-323-A	EX-878	Extending the DC-DC convertar (Refer to Section 1-13-2.)
③	A-8347-458-A	DPR-228 board extension assembly	Extending the DPR-290 board (Refer to Section 1-13-1.)
④	1-823-429-11	Flexible card wire (30P, 140 mm)	Extending the CCD block (Refer to Section 1-13-3.) **Note** The two Flexible card wires of this type and three EX Harness are required to extend the CCD block.
⑤	1-961-653-21	EX Harness	
⑥	J-6026-130-B	Gray scale chart (4:3 transparent type)	To adjust camera
	commercially available	Gray scale chart (4:3 reflective type)	
	J-6394-080-A	Gray scale chart (16:9 transparent type)	
⑦	J-6029-140-B	Pattern box PTB-500	
⑧	J-6326-120-A	Hexagonal bit	To tighten screw
⑨	J-6325-400-A	Torque screwdriver (3 kg)	
⑩	7-700-736-05	Hexagon wrench (d = 1.5 mm)	To remove screw
	7-700-736-06	Hexagon wrench (d = 0.89 mm)	
–	–	Memory stick (commercially available)	To store the camera settings

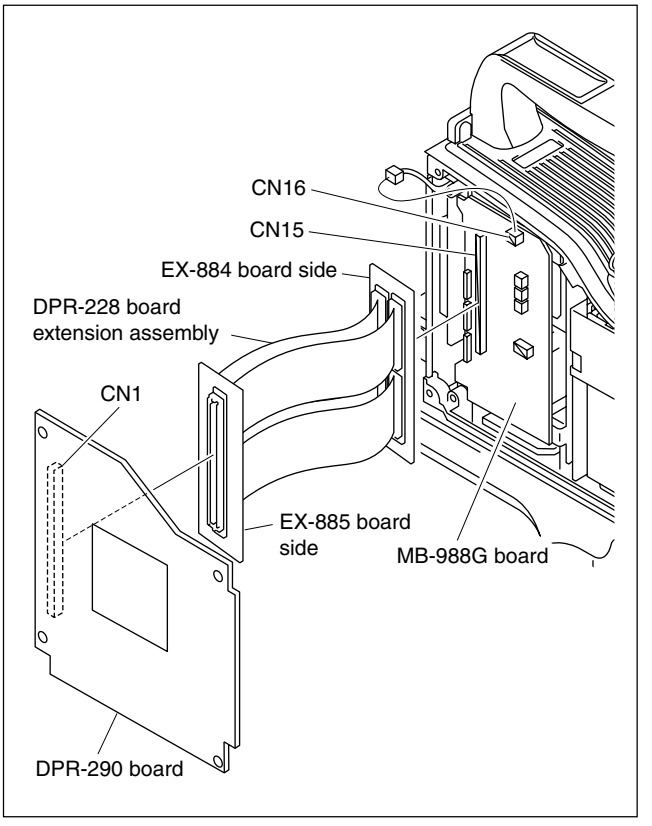


1-13. How to Extend the Circuit Board

1-13-1. Extending the DPR-290 Board

Tool: DPR-228 board extension assembly

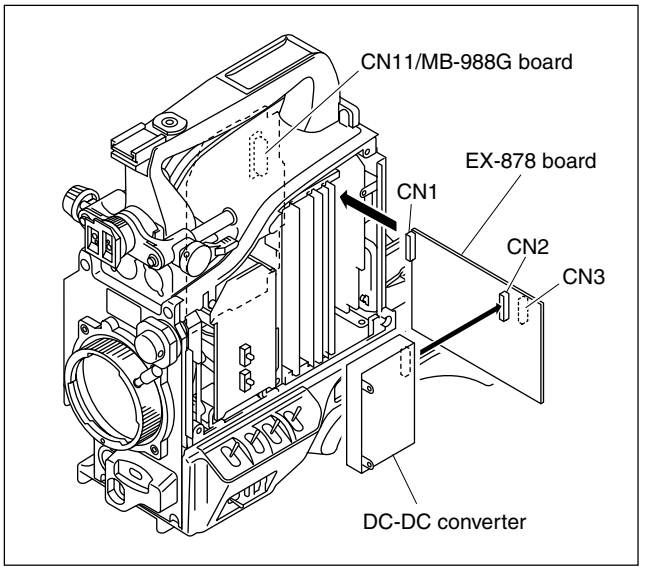
1. Perform the steps 1 to 4 of Section 1-4-2, and remove the DPR shield plate.
2. Connect the harness to the connector CN16 on the MB-988G board.
3. Extend the DPR-290 board as shown below using the DPR-228 board extension assembly.



1-13-2. Extending the DC-DC Converter

Tool: EX-878 Board

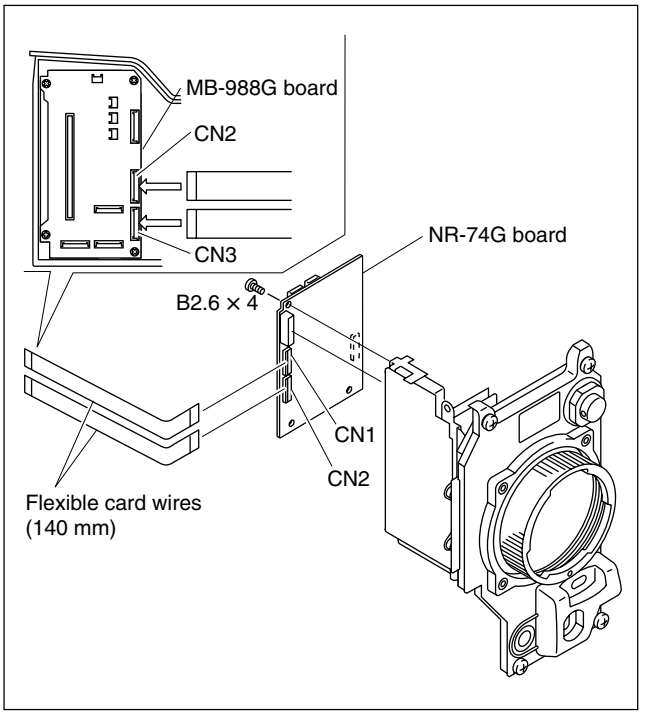
1. Remove the DC-DC converter (RE-210 board). (Refer to Section 2-8.)
2. Connect the connector CN1 on the EX-878 board to the connector CN11 on the MB-988G board.
3. Connect the DC-DC converter to the connector CN2 or CN3 on the EX-878 board.



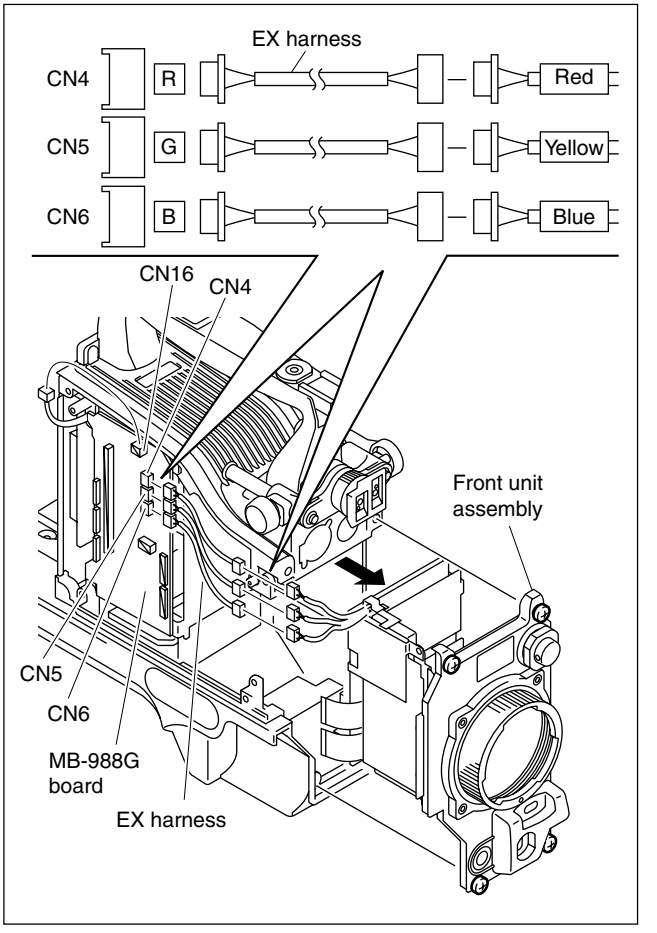
1-13-3. Extending the Front Unit Assembly (CCD Block)

Tools: Flexible card wire (30P, 140 mm) (2 pieces)
EX Harness (3 pieces)
Tweezers

1. Remove the front unit assembly.
   (Refer to Section 1-4-3.)
2. Remove the NR-74G board. (Refer to Section 2-1-3.)
3. Replace the two flexible card wires connected to the connectors CN2 and CN3 on the MB-988G board and the connectors CN1 and CN2 on the NR-74G board with the wires of 140 mm in length respectively. Return the NR-74G board to the normal position.



4. Connects the three EX harnesses between the connectors CN4, CN5, CN6 on the MB-988G board and the three harnesses connected the CCD block.
5. Connect the harness to the connector CN16 on the MB-988G board.



6. Return the DPR-290 board to the normal position.

1-14. Notes on Service

1-14-1. Note on PA-287G/288G/289G Boards

The PA-287G/288G/289G boards cannot be replaced as the mounted board level. If the component part mounted on the board cannot be replaced, replace with the whole CCD unit.

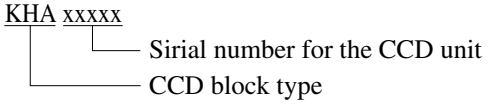
1-14-2. Error Messages Displayed when Memory Stick is Used

Describes the error messages displayed when the data is stored or read using a memory stick in the table below.

Error message	Description
NO MEMORY STICK	No memory stick is inserted.
FORMAT ERROR	The memory stick is not formatted.
OTHER MODEL'S FILE	The memory stick contains data cannot be read by this unit.
FILE NOT FOUND	No data is stored in the memory stick.
FILE ERROR	Circuit or memory stick fault and/or the data in the memory stick fault.

1-14-3. Description on CCD Block Number

Every CCD unit has its own ID number called CCD block number. It shows the CCD block type and serial number of the CCD block.
The CCD block number label is put in the CCD unit.
As for the replacement procedures of CCD block, refer to Section 2-1. "Replacing the CCD Block and Component Parts".



Model	CCD block type
DXC-D55	KHA
DXC-D55P	KIA
DXC-D55WS	KJA
DXC-D55WSP	KKA

1-14-4. Notes on Repair Parts

1. Safety Related Components Warning

WARNING

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
Parts list has the present standardized repair parts.

3. Stock of Parts

Parts marked with "o" at SP (Supply Code) column of the spare parts list may not be stocked. Therefore, the delivery date will be delayed.

4. Harness

Harnesses with no part number are not registered as spare parts.

1-14-5. Circuit Protection Device

The following boards are provided with positive thermistors for power line to protect circuits. This device limits a current by steeply increasing the inner resistance when the device rises to a certain temperature due to overcurrent or high ambient temperature. If the device is activates once, turn off the power and check an equipment concerned; the circuits in this unit. After the cause is eliminated and the device cools off, turn on the power again. If there is no trouble, the unit will operate normally. It takes about one minute for the device to cool off after powering off the unit.

AT-152A Board

Ref. No.	Address	Equipment protected
THP200	E3	Circuits in this unit

CN-2384G Board

Ref. No.	Address	Equipment protected
THP900	B2	Circuits in this unit

1-14-6. Unleaded Solder

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

: LEAD FREE MARK

Notes

- Be sure to use the unleaded solder for the printed circuit board printed with the lead free mark.
- The unleaded solder melts at a temperature about 40 ° higher than the ordinary solder, therefore, it is recommended to use the soldering iron having a temperature regulator.
- The ordinary soldering iron can be used but the iron tip has to be applied to the solder joint for a slightly longer time. The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful.

1-15. Attaching the 5-type Viewfinder

An optional 5-type viewfinder (DXF-50 series) can be attached to the unit in accordance with the following procedures:

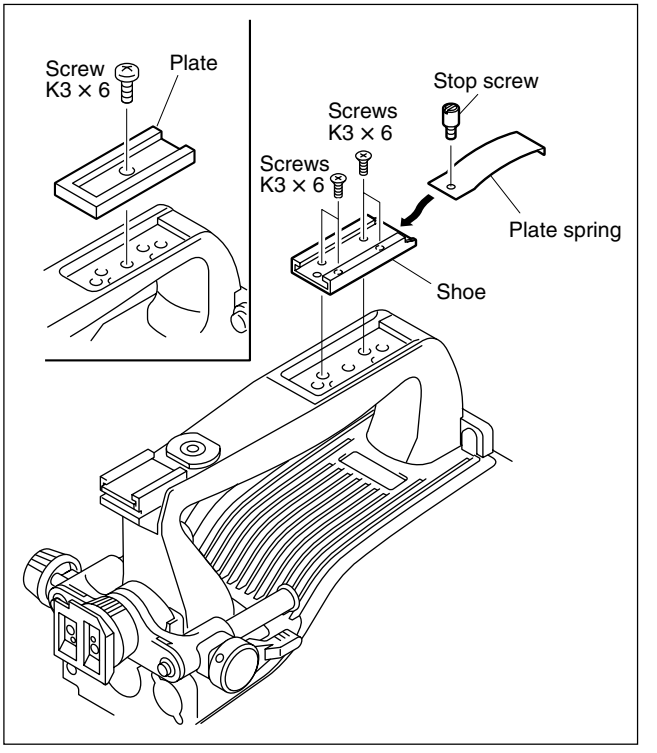
Parts Required (sold separately)

Name	Sony Part No.
Accessory shoe kit	A-8274-968-B
Shoe	3-664-218-0X
Plate spring	3-664-228-0X
Stop screw	3-664-213-0X
Screw K3 × 6 (4 pcs)	7-682-247-0X
Screw K3 x 12 (4pcs) *1	7-682-250-0X

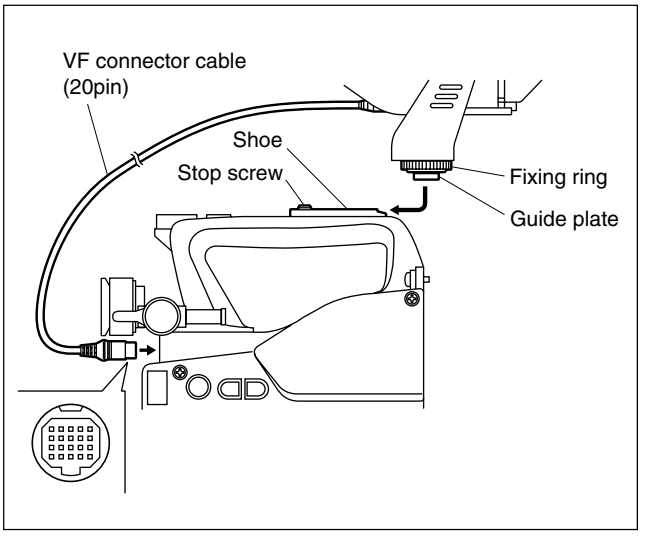
*1 : These screws are not used.

Attaching Procedure

1. Remove the screw and remove the plate.
2. Attach the shoe with the four screws (K3 × 6).
3. Fix the plate spring in the shoe in the arrow direction and tighten it with the stop screw.



4. Fit the guide plate in the shoe and tighten the fixing ring.
5. Connect the VF connection cable.



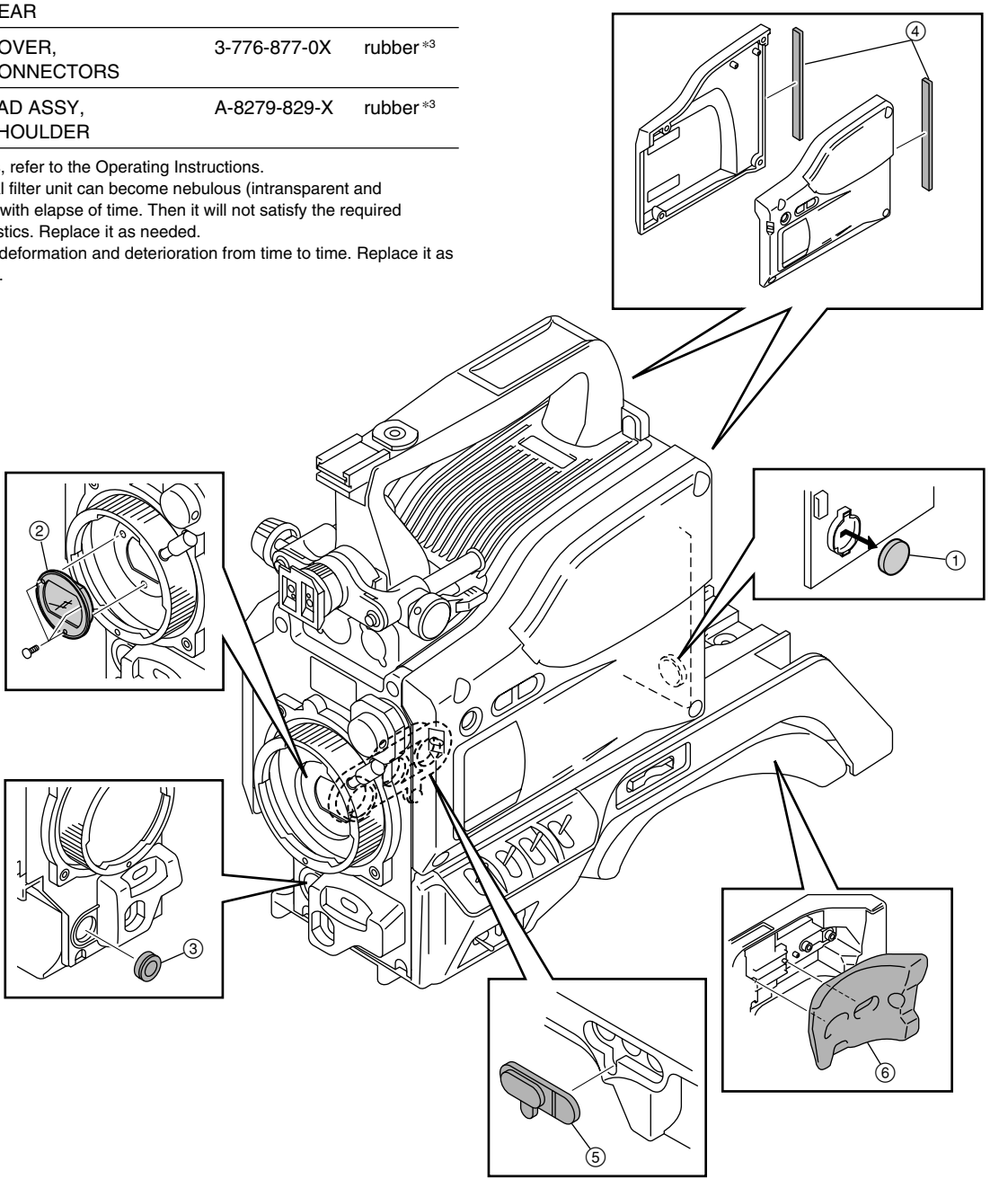
1-16. Inspection and Maintenance

1-16-1. Recommended Replacement Parts

Parts listed below are recommended replacement parts. Replace them according to necessary.

Fig No.	Description	Sony P/N	Remarks
①	BATTERY, LITHIUM CR-2032	⚠ 1-528-174-XX	every 7 years *1
②	FILTER UNIT, OPTICAL	1-758-994-1X	*2
③	PACKING, CONTROL	3-672-221-0X	rubber *3
④	BLIND SHEET, REAR	3-776-875-0X	rubber *3
⑤	COVER, CONNECTORS	3-776-877-0X	rubber *3
⑥	PAD ASSY, SHOULDER	A-8279-829-X	rubber *3

*1 : For details, refer to the Operating Instructions.
*2 : The optical filter unit can become nebulous (intransparent and whitened) with elapse of time. Then it will not satisfy the required characteristics. Replace it as needed.
*3 : Check for deformation and deterioration from time to time. Replace it as necessary.



1-16-2. Cares after Using under Special Environment

Checking the followings is recommended when returned from the news gathering at seaside, at the dusty locations, at hot spring, or if the unit is heavily splashed with water or water leaks in the unit in the rough weather or the like.

1. Carefully clean off sand and dust that entered the unit with airbrush or the like.
2. If salt contained in seawater or sulfur contained in hot spring attaches o the non-painted surface of outer cabinet, the cabinet may corrode in white. If it attaches, wipe it off immediately with alcohol.
3. If water leaks inside the unit, dry the unit with hair-dryer. Check especially that water does not remain in the CCD block or the power supply block.

   Note

   If the unit is not taken care of appropriately, corrosion may occur inside that may cause fire and electric shock.

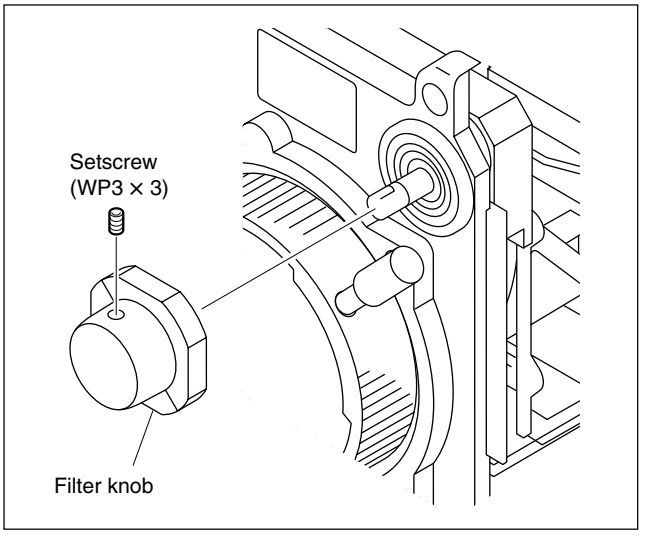
4. Clean out the contacting surface of connectors.
5. Perform the general operational check and confirm that the unit operates correctly without any abnormality.

Section 2
Replacement of Main Parts

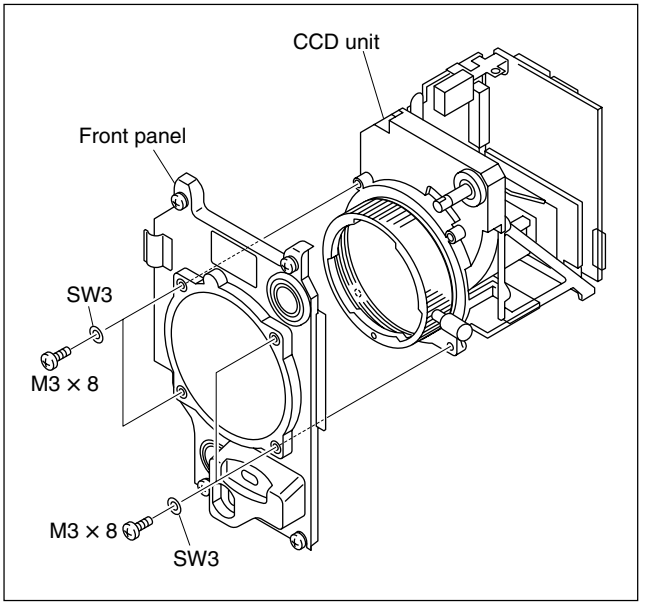
2-1. Replacing the CCD Block and Component Parts

2-1-1. Replacing the CCD Unit

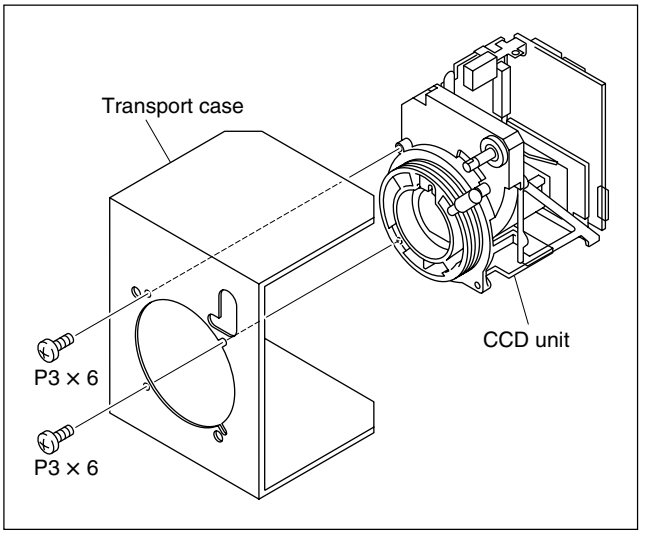
1. Remove the front unit assembly.
   (Refer to Section 1-4-3.)
2. Loosen a setscrew of the filter knob using an L shaped wrench (across flat has 1.5 mm), and remove the knob.



3. Remove the four screws, and remove the front panel.



4. Remove the two screws, and remove the transport case from the CCD unit for repair part (optional).



5. Reassemble a new CCD unit in the reverse order of removal.

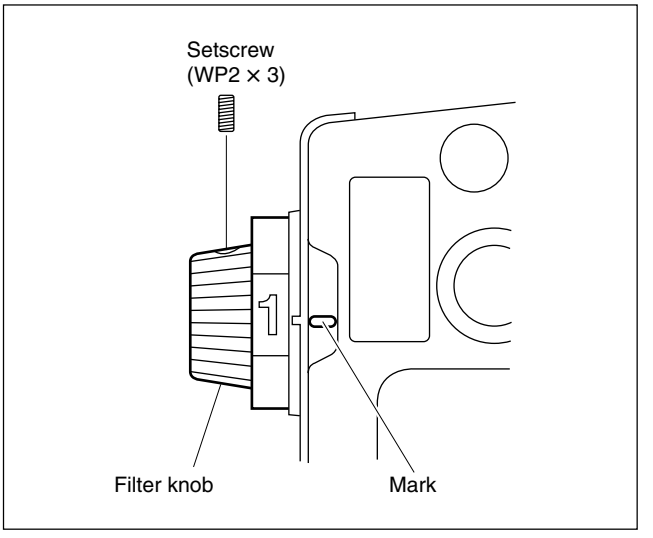
Note

After replacement, and adjust the position of the filter knob referring to Section 2-1-2.

2-1-2. Positioning Adjustment for Filter Knob

1. Rotate the knob shaft until the filter with the lightest color can be seen from th lens mount.
2. Align the filter knob number 1 with the mark on the front panel and tighten the setscrew.
   Tightening torque: 50×10^{-2} N•m (5.0 kgf•cm)

3. Rotate the filter knob, and check that it rotates smoothly.



2-1-3. Replacing the Boards Inside the CCD Unit

Remove the CCD unit first from the camera, and perform the following steps. (Refer to Section 2-1-1.)

Note

Be careful not to bend the flexible card wires.
This shortens the wire life.

1. Removing the NR-74G board

(1) Disconnect the harness from the connector CN4, and flexible card wires from the connectors CN1 and CN2 on the NR-74G board.
(2) Remove the two nylon rivets fixing the shield sheet and screw A.
(3) Remove the two screws.
(4) Disconnect the flexible card wires from the connectors CN1, CN2 on the NR-74G board.

2. Removing the TG-238G board

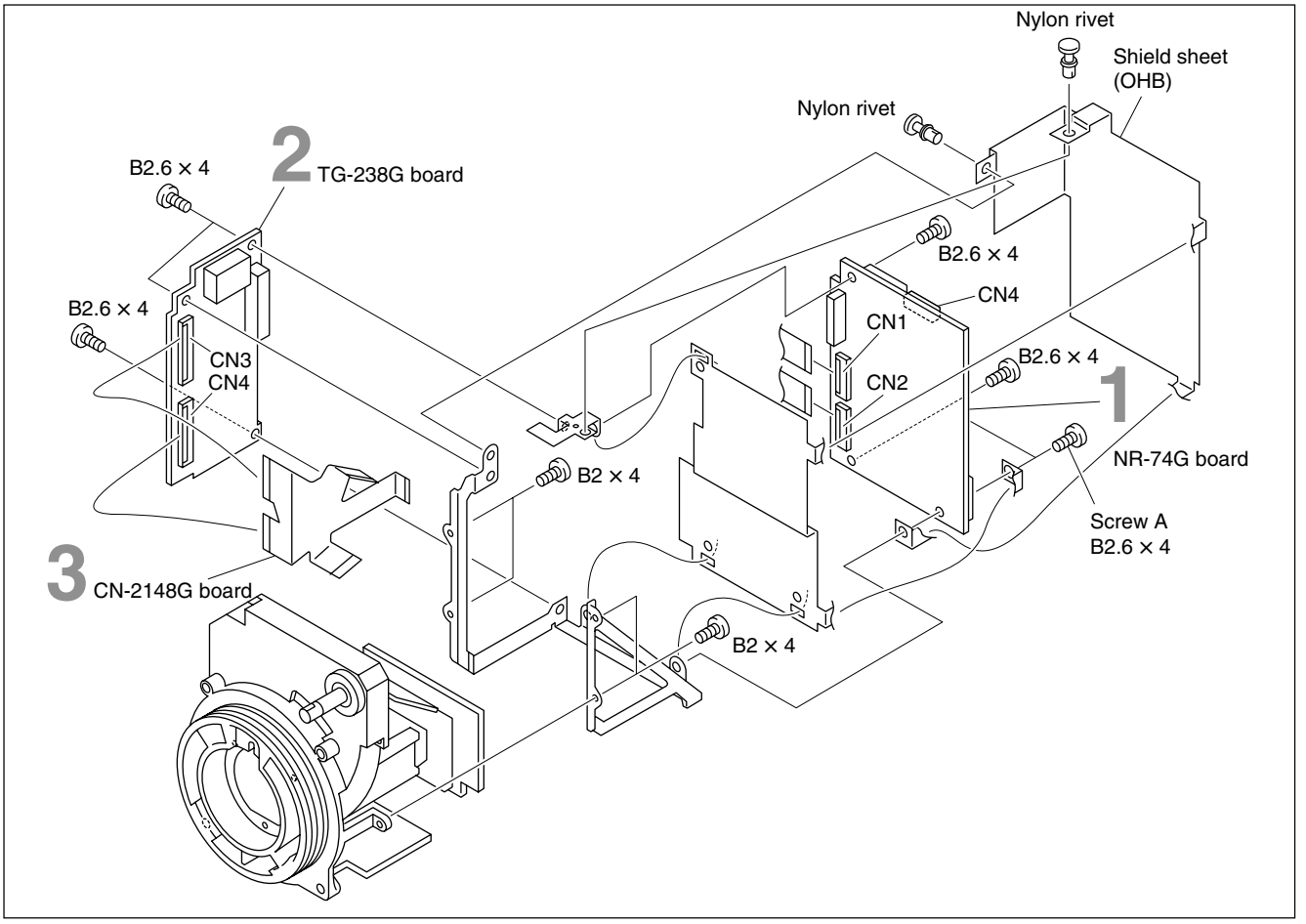
(1) Remove the three screws.
(2) Disconnect the flexible card board (CN-2148G board) from the connectors CN3, CN4 on the TG-238G board.

3. Removing the flexible card board (CN-2148G board)

Disconnect the flexible card board (CN-2148G board) from the connector CN1 on the PA-287G/288G/289G board.

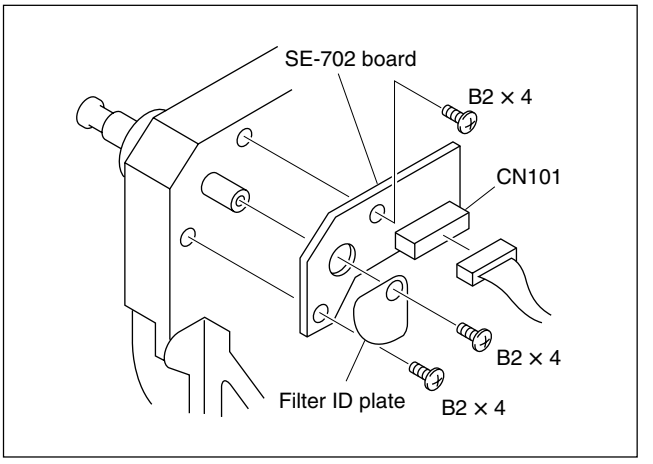
4. Installing

Install a new board in the reverse order of steps 1 to 3.



2-1-4. Replacing the SE-702 Board

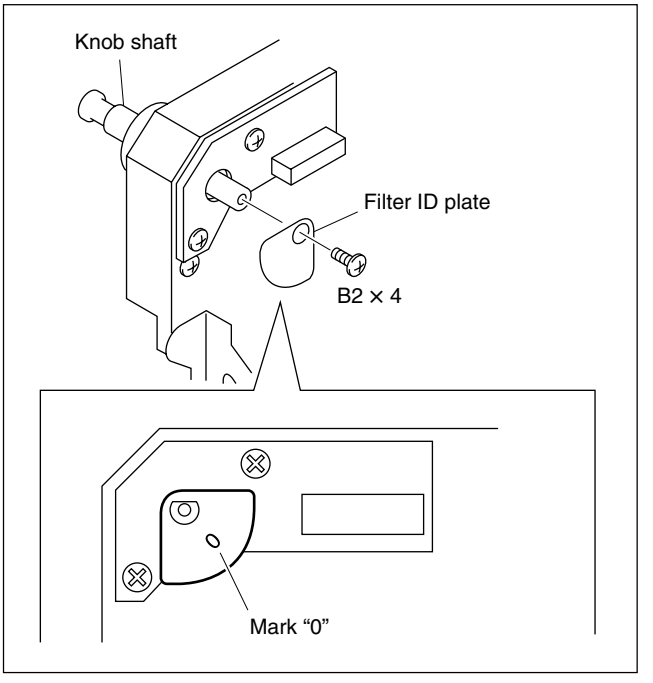
1. Remove the CCD unit. (Refer to Section 2-1-1.)
2. Disconnect the harness from the connector CN101 on the SE-702 board.
3. Remove the three screws, and remove the filter ID plate and SE-702 board.



4. Reattach a new SE-702 board using the two screws.
5. Rotate the knob shaft until the filter with the lightest color can be seen from the lens mount.
6. Reattach the filter ID plate using the screw as shown in the figure.

Note

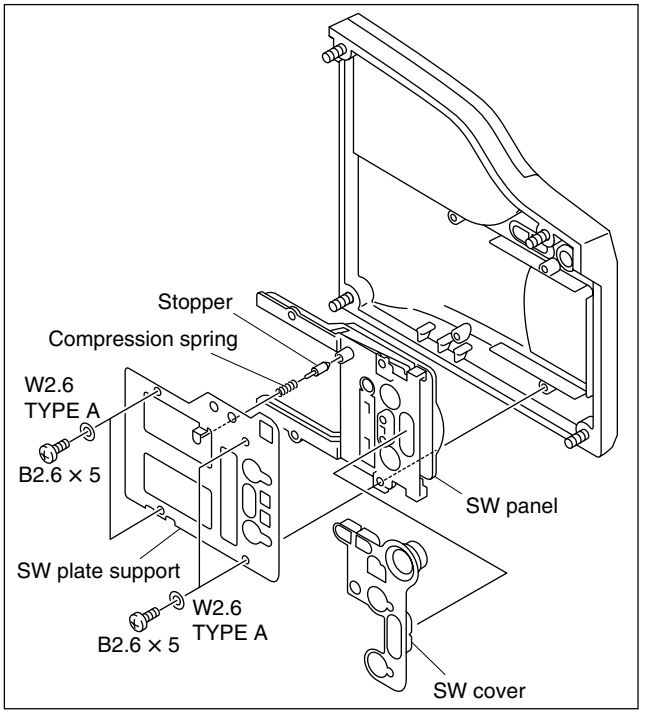
Reattach the filter ID plate in the direction where the mark "0" (imprinting) can be seen.



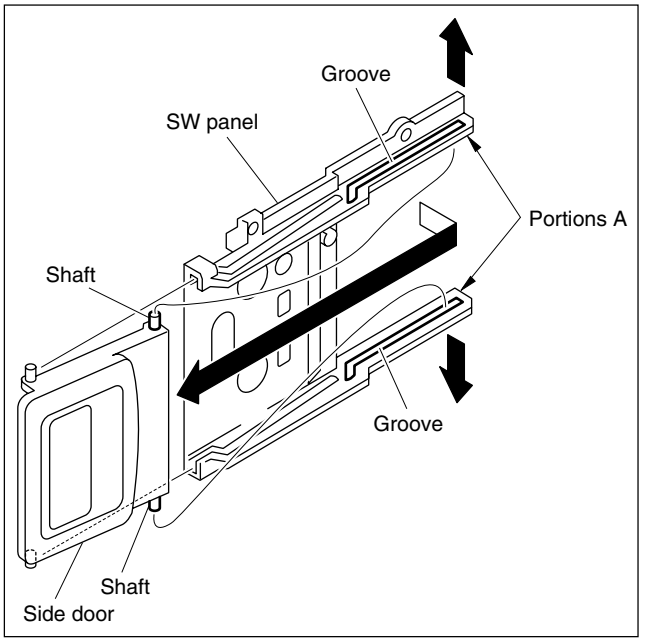
7. Perform steps 1 and 2 in the reverse order.

2-2. Removing/Reattaching the Side Door

1. Remove the inside panel assembly. (Refer to Section 1-4-1.)
2. Remove the four screws, and remove the SW plate support, compression spring, stopper, SW cover and SW panel.



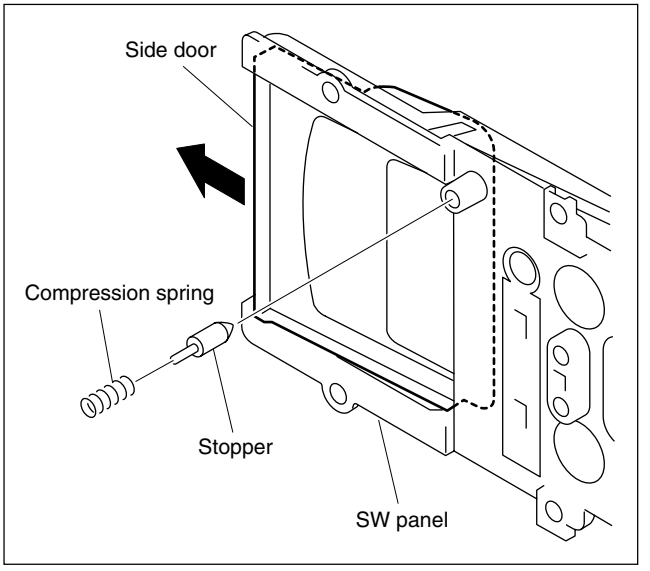
3. Lift up the portions A of the SW panel to remove the shafts of the side door from the grooves of SW panel, and remove the side door in the arrow direction.



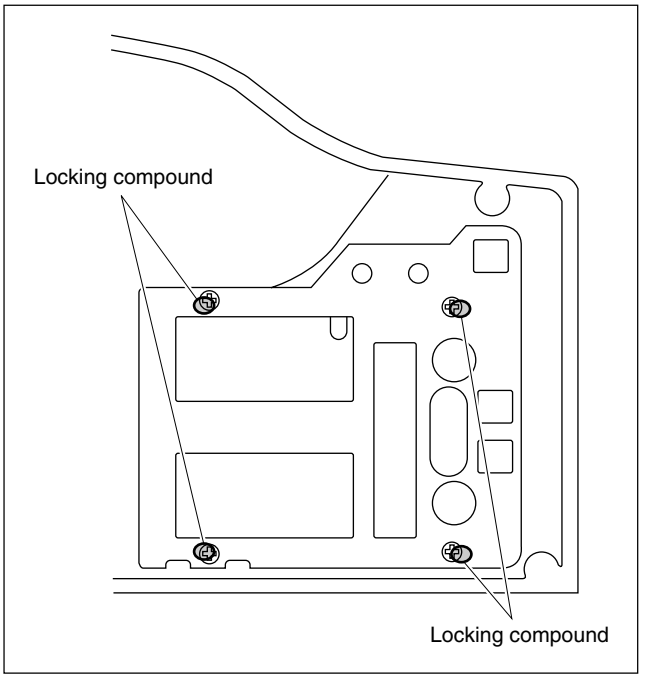
4. Reattach the side door in the reverse order of removal.

Notes

- Before reattach the compression spring and stopper to the SW panel, slide the side door to the position shown in the figure.

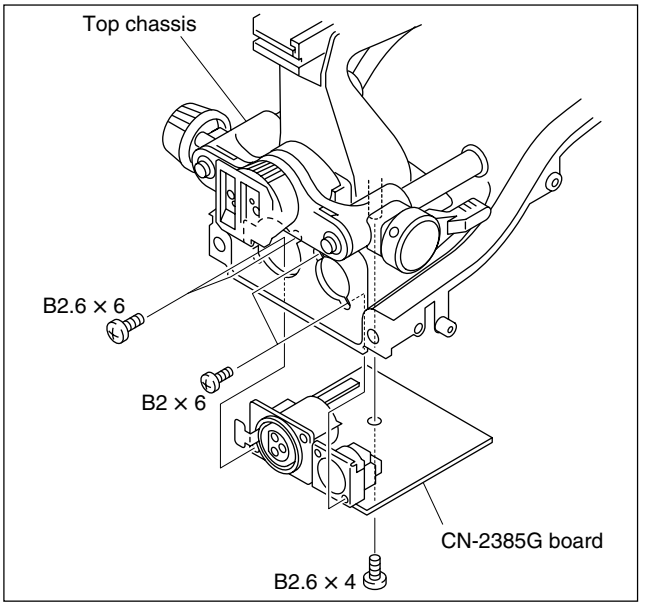


- Apply the locking compound to the screws shown in the figure after reattach the SW plate support to inside panel assembly.

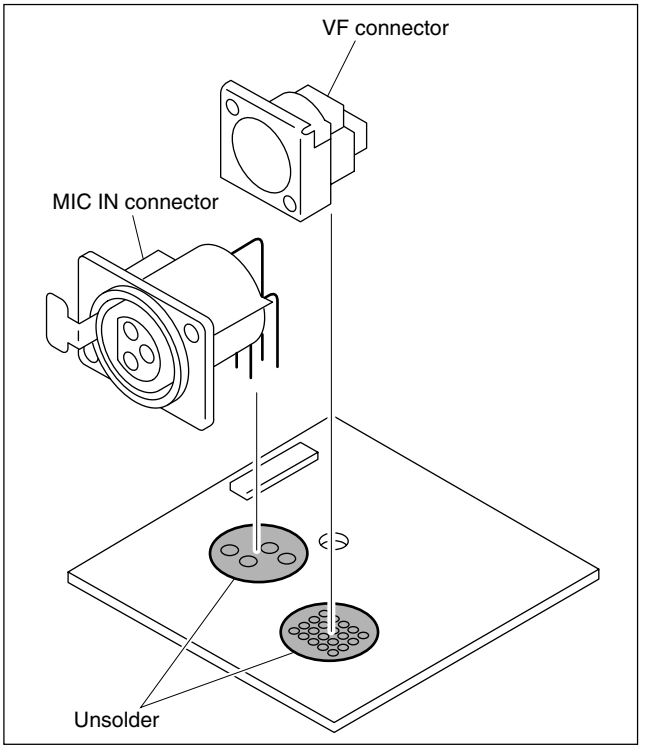


2-3. Replacing the VF Connector and MIC IN Connector

1. Remove the top chassis. (Refer to Section 1-4-2.)
2. Remove the five screws, and remove the CN-2385G board.



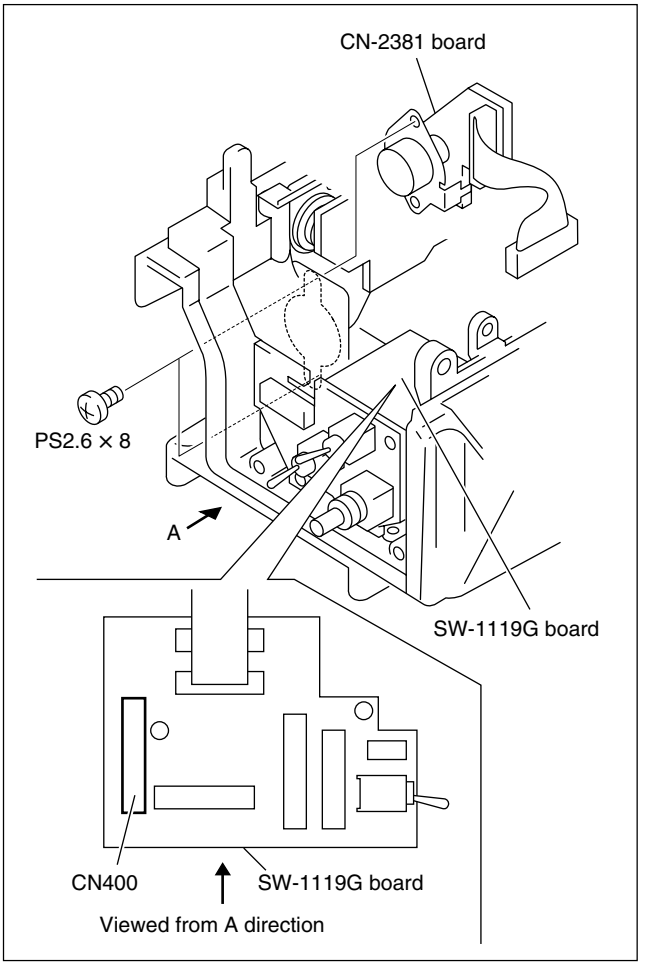
3. Unsolder the connector to be replaced, and remove the connector.



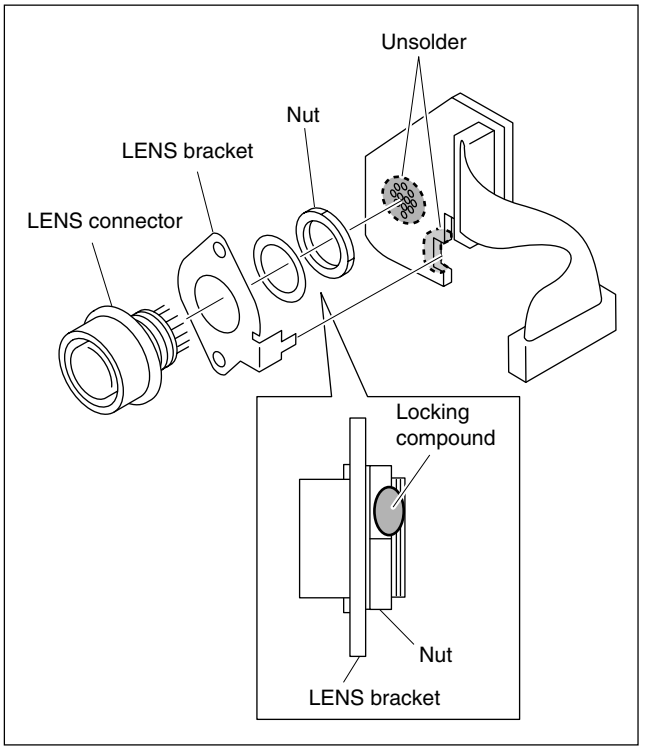
4. Solder the new VF connector or MIC IN connector to the CN-2385G board.
5. Perform the steps 1 and 2 in the reverse order.

2-4. Replacing the LENS Connector

1. Remove the front unit assembly.
   (Refer to Section 1-4-3.)
2. Disconnect the harness from the connector CN400 on the SW-1119G board.
3. Remove the two screws, and remove the CN-2381 board.



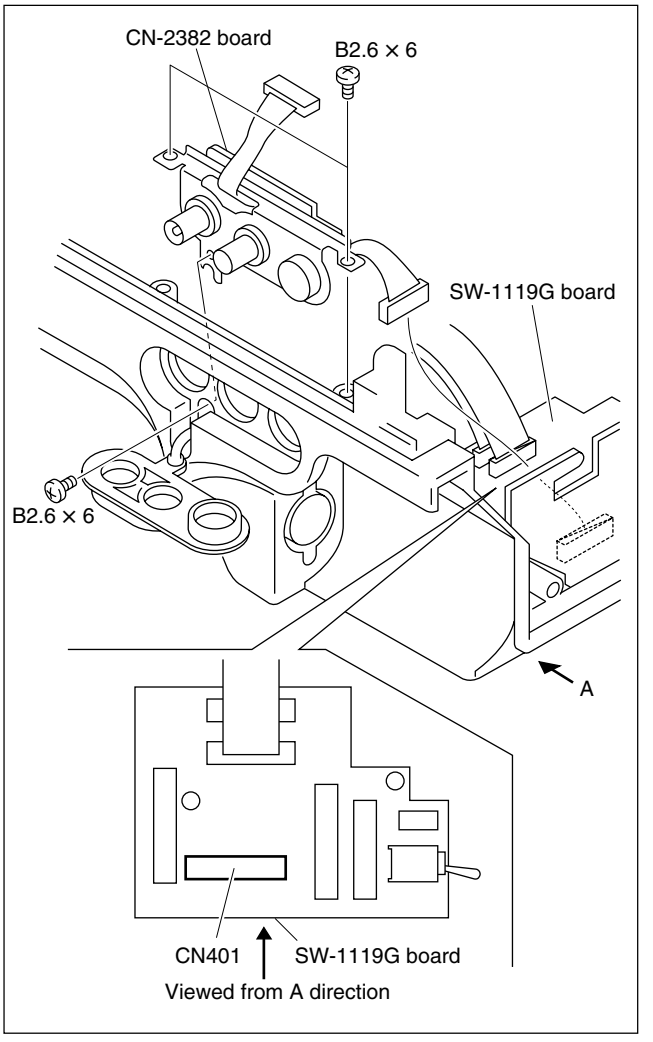
4. Unsolder the LENS connector, and remove the LENS connector and LENS bracket.
5. Remove the nut, and remove the LENS connector from the LENS bracket.



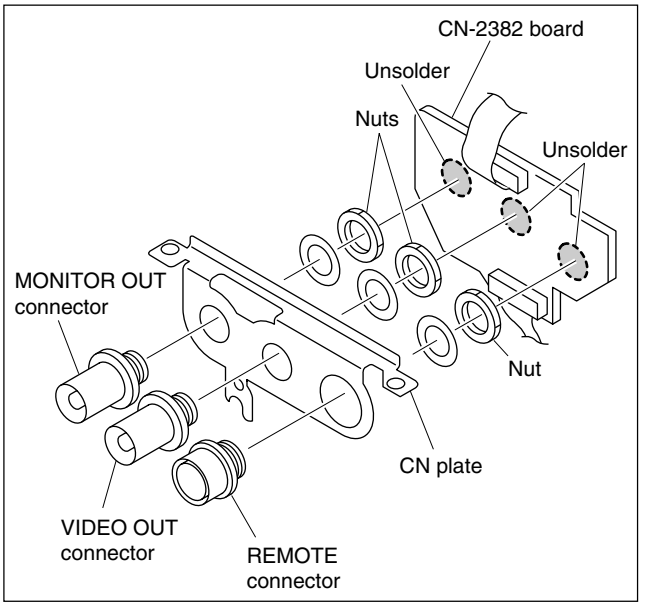
6. Reinstall a new LENS connector to the LENS bracket using the nut, and apply the locking compound.
7 Perform the steps 1 to 4 in the reverse order.

2-5. Replacing the MONITOR OUT/ VIDEO OUT/REMOTE Connectors

1. Remove the front unit assembly. (Refer to Section 1-4-3.)
2. Remove the MB-988G board. (Refer to Section 2-9.)
3. Disconnect the harness from the connector CN401 on the SW-1119G board.
4. Remove the three screws, and remove the CN-2382 board.



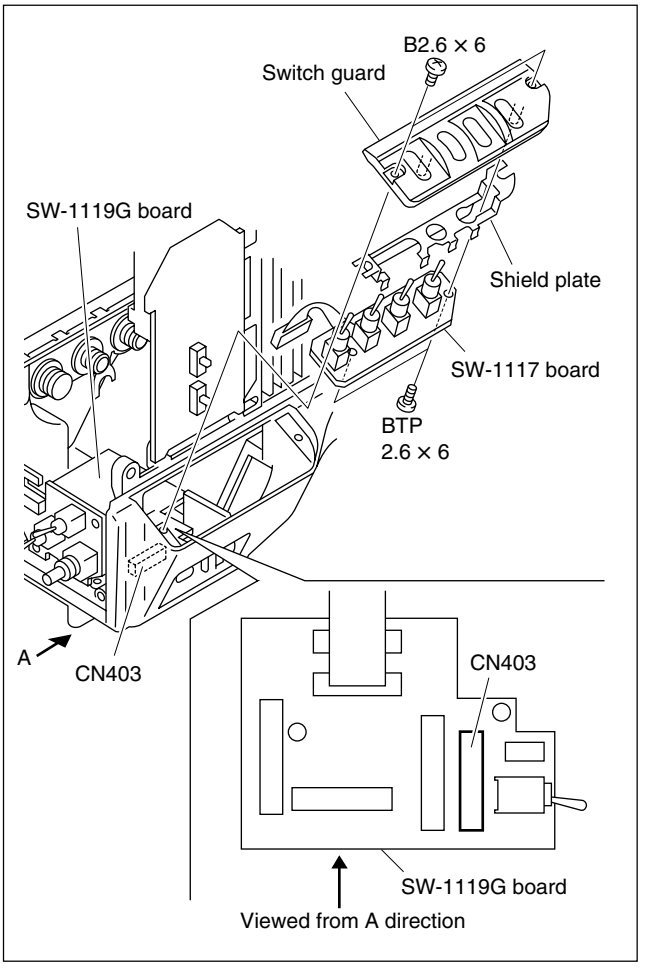
5. Unsolder the MONITOR OUT/VIDEO OUT/REMOTE connectors, and remove the CN plate.
6. Remove the nut, and remove the connector to be replaced from the CN plate.



7. Reinstall the new MONITOR OUT/VIDEO OUT/ REMOTE connectors in the reverse order of removal.

2-6. Replacing the Side Switch Panel Block

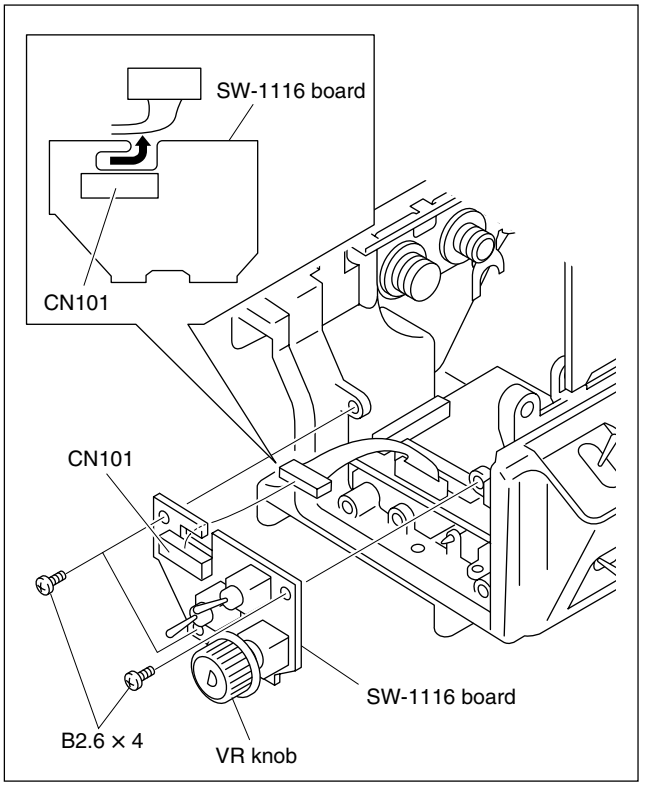
1. Remove the front unit assembly.
   (Refer to Section 1-4-3.)
2. Disconnect the harness from the connector CN403 on the SW-1119G board.
3. Remove the two screws, and remove the switch guard in which the SW-1117 board is attached.
4. Remove the two screws, and remove the SW-1117 board and shield plate from the switch guard.
5. Unsolder the switch to be replaced, and replace it.



6. Reassemble the side switch panel block in the reverse order of removal.

2-7. Replacing the Front Switch Panel Block

1. Remove the front unit assembly.
   (Refer to Section 1-4-3.)
2. Disconnect the harness from the connector CN101 on the SW-1116 board as shown in the figure.
3. Remove the three screws, and remove the SW-1116 board.



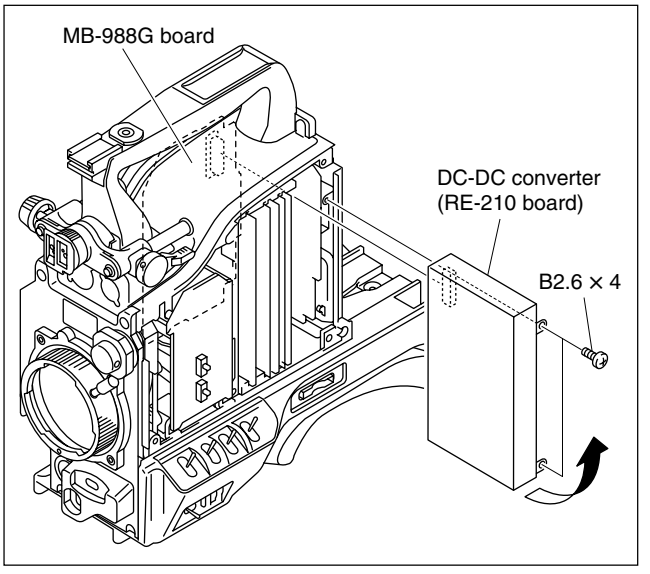
4. Unsolder the switch or volume to be replaced, and replace it.
5. Reassemble the front switch panel block in the reverse order of removal.

Note

When replacing the VTR knob, push the VR knob firmly.

2-8. Replacing the DC-DC Converter

1. Remove the inside panel assembly.
   (Refer to Section 1-4-1.)
2. Remove the two screws, and remove the DC-DC converter (RE-210 board) while pushing it up in the arrow direction, and replace it with a new one.



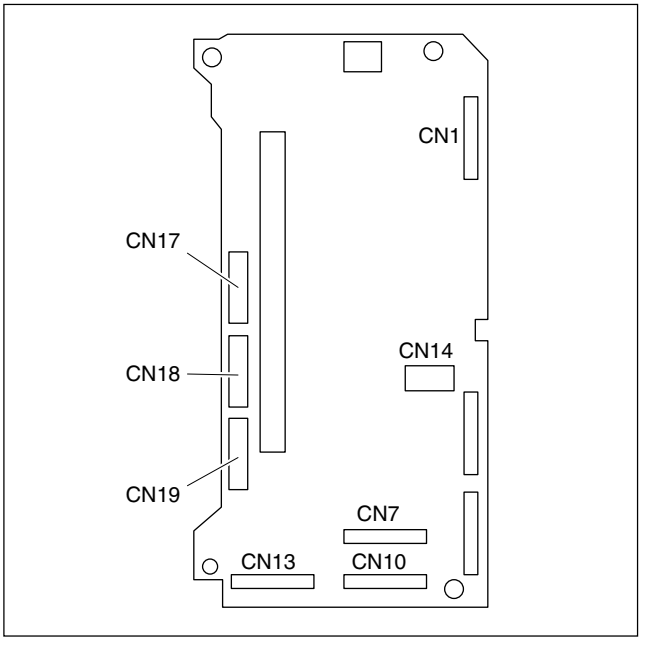
3. Reinstall a new DC-DC converter in the reverse order of removal.

2-9. Replacing the MB-988G Board

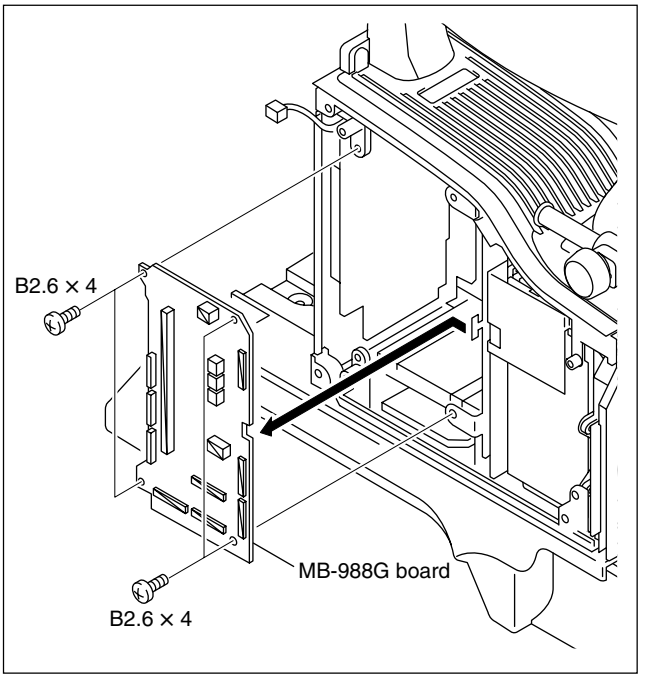
1. Remove the inside panel assembly and outside panel assembly. (Refer to Section 1-4-1.)
2. Perform the steps 2 to 5 of Section 1-4-2, and remove the plug-in boards and electromagnetic shield plates.
3. Perform the step 3 of Section 1-4-3, and disconnect the flexible card wires and harnesses from the MB-988G board.
4. Perform the step 2 of Section 2-8, and remove the DC-DC converter.
5. Disconnect the flexible card wires from the connectors CN1, CN7, CN10, CN13, CN17, CN18, CN19 and harness from the connector CN14 on the MB-988G board.

Note

Be careful not to bend the flexible card wires. This shortens the wire life.



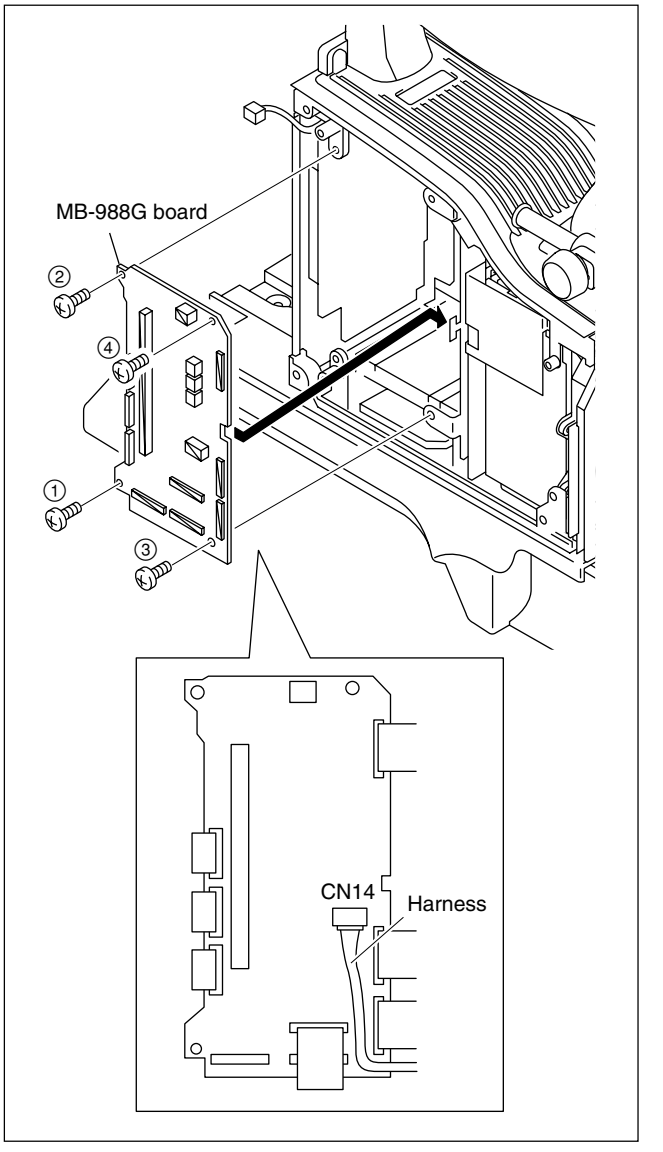
6. Remove the four screws, and remove the MB-988G board in the arrow direction.



7. Reinstall a new MB-988G board in the reverse order of removal.

Notes

- Reinstall the MB-988G board in the arrow direction, and tighten the four screws sequentially in accordance with the figure.
- Rearrange the harness connected to the connector CN14 on the MB-988G board as shown in the figure.



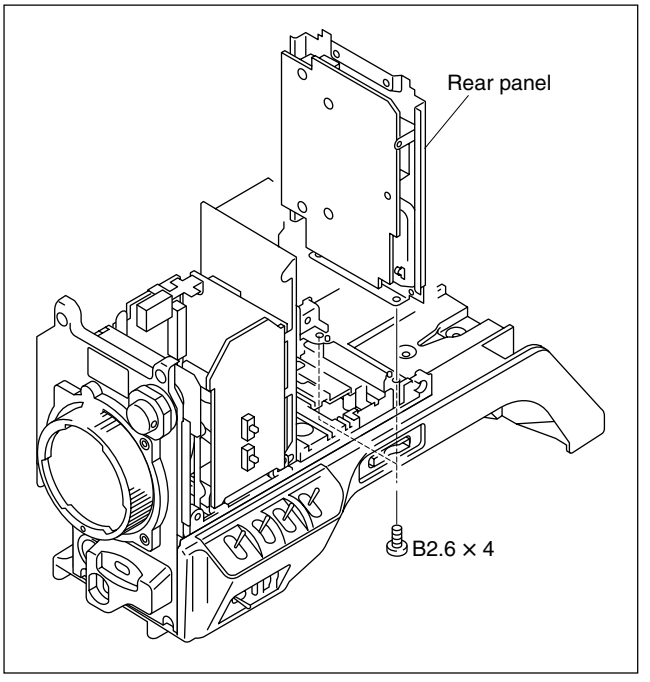
2-10. Replacing the CN-2384G Board

1. Remove the top chassis. (Refer to Section 1-4-2.)
2. Remove the shoulder pad.
3. Perform the step 2 of Section 2-8, and remove the DC-DC converter.
4. Disconnect the flexible card wires from the connectors CN17, CN18, CN19 on the MB-988G board referring to the step 5 of Section 2-9.

   Note

   Be careful not to bend the flexible card wires. This shortens the wire life.

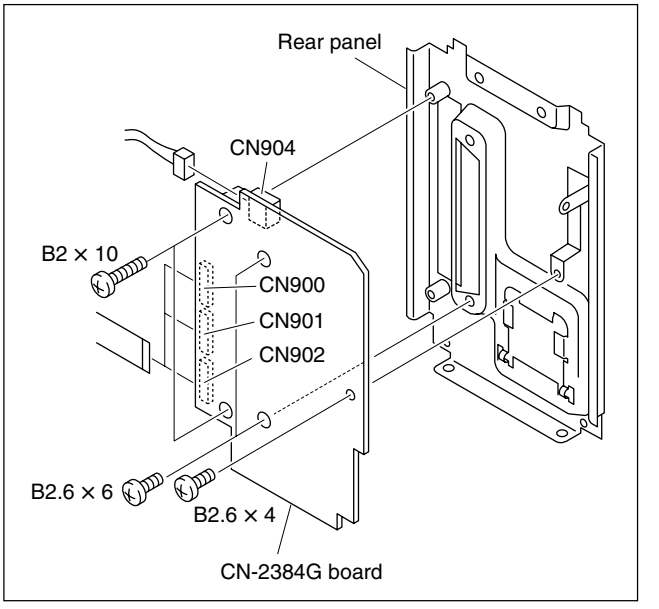
5. Remove the two screws, and remove the rear panel.



6. Remove the five screws, and remove the CN-2384G board.
7. Disconnect the flexible card wires from the connectors CN900, CN901, CN902 and the harness from the connector CN904 on the CN-2384G board.

   Note

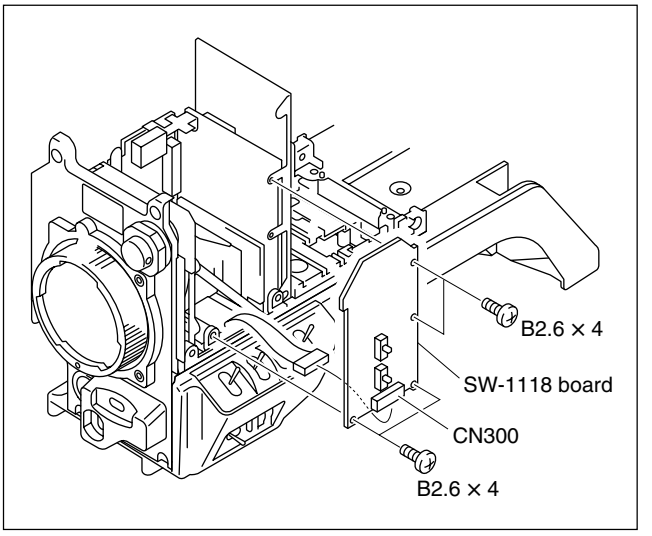
   Be careful not to bend the flexible card wires. This shortens the wire life.



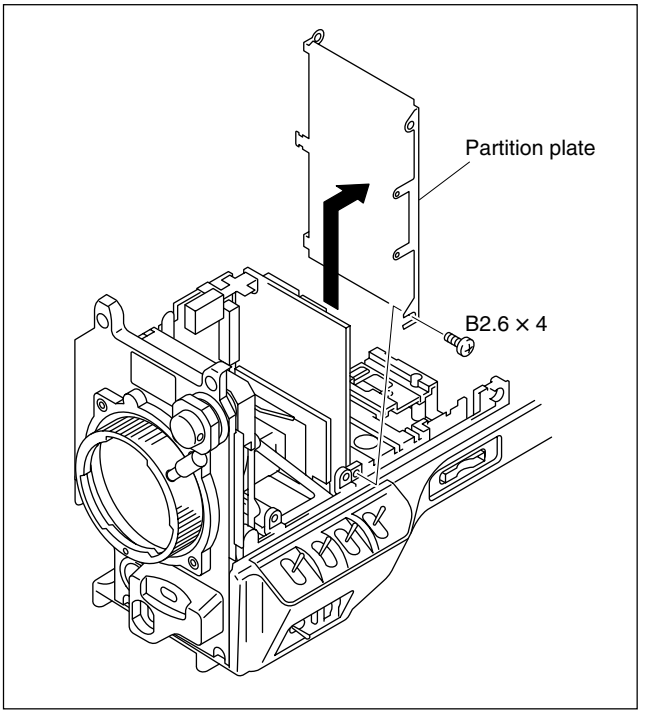
8. Reinstall a new CN-2384G board in the reverse order of removal.

2-11. Replacing the Memory Stick Case (CN-2383G Board)

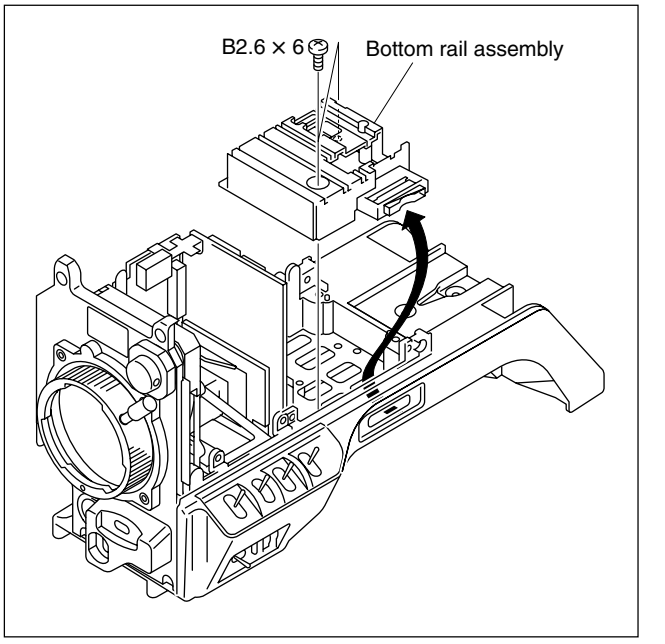
1. Remove the top chassis. (Refer to Section 1-4-2.)
2. Remove the MB-988G board. (Refer to Section 2-9.)
3. Remove the shoulder pad.
4. Perform the step 5 of Section 2-10, and remove the rear panel.
5. Remove the four screws, and remove the SW-1118 board.
6. Disconnect the harness from the connector CN300 on the SW-1118 board.



7. Remove the screw, and remove the partition plate.



8. Remove the two screws, and remove the bottom rail assembly in the arrow direction.

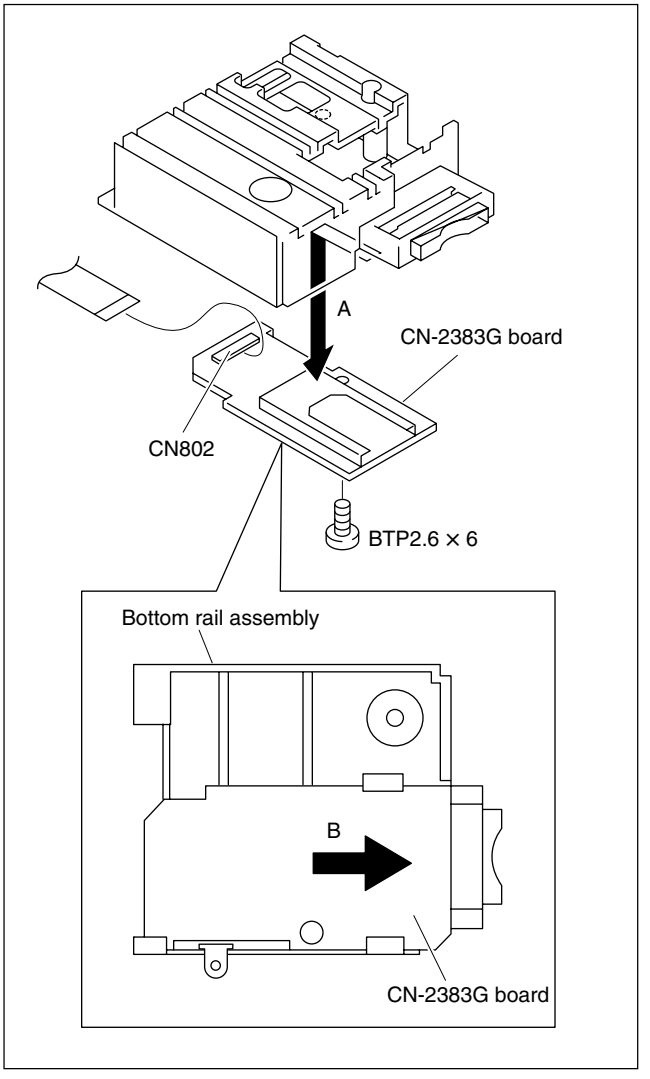


9. Remove the screw, and remove the memory stick case (CN-2383G board) in the arrow A direction.
10. Disconnect the flexible card wire from the connector CN802 on the CN-2383G board.

Note

Be careful not to bend the flexible card wires. This shortens the wire life.

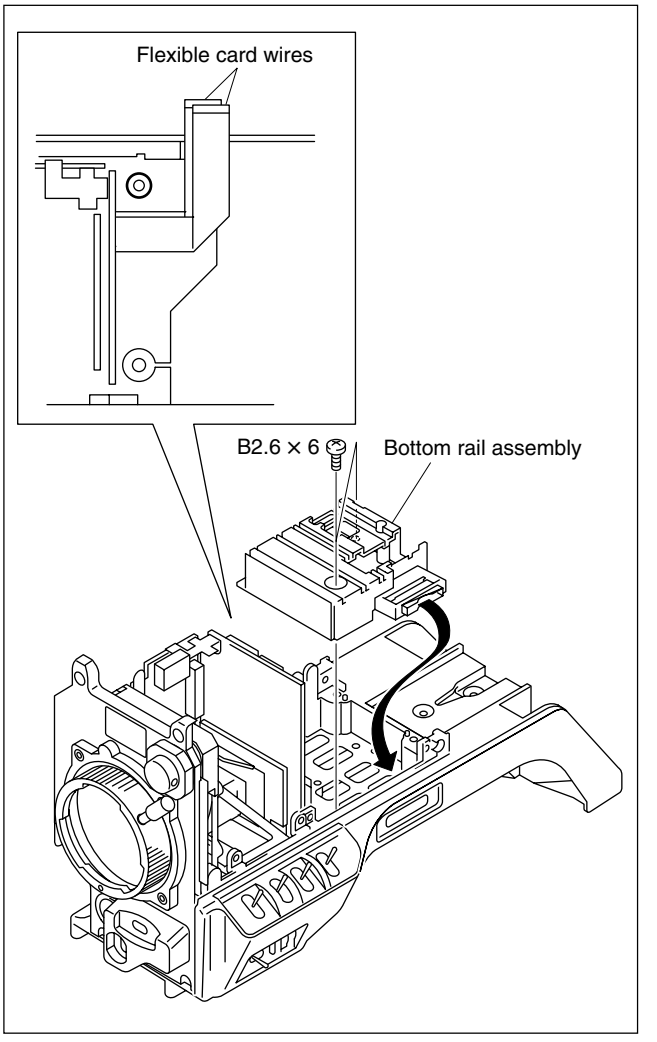
11. Connect the flexible card wire to the connector CN802 on a new CN-2383G board.
12. Reinstall a new CN-2383G board to the bottom rail assembly using the screw while pressing the CN-2383G board in the arrow B direction.



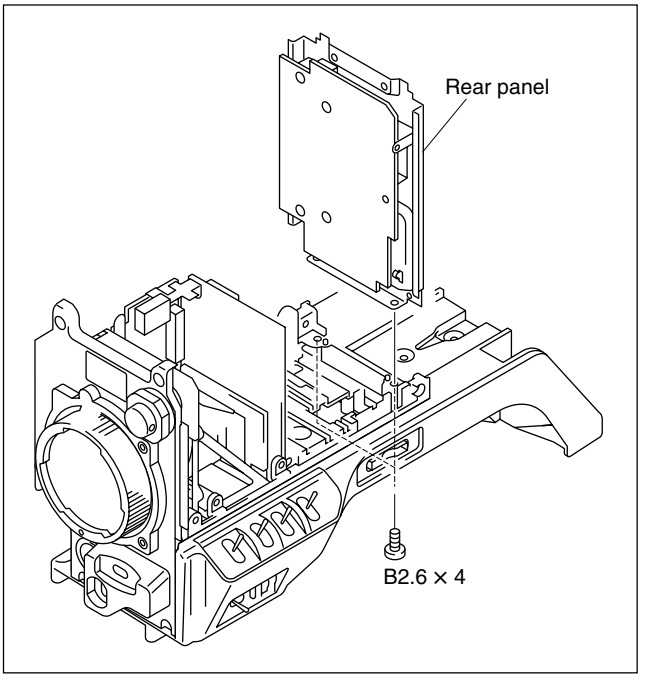
13. Reattach the bottom rail assembly in the arrow direction using the two screws.

Note

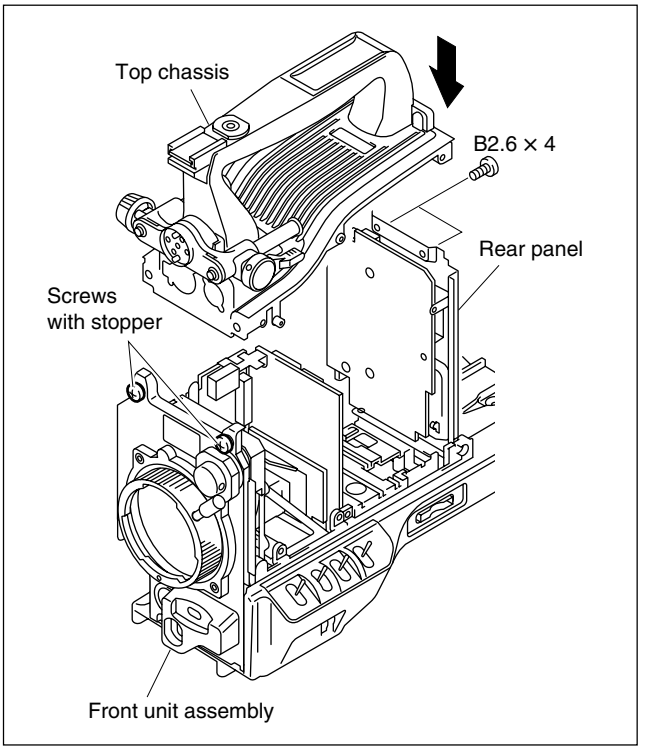
When reattaching the bottom rail assembly, make sure the flexible card wires shown in the figure are not caught between the base chassis of the unit and bottom rail assembly.



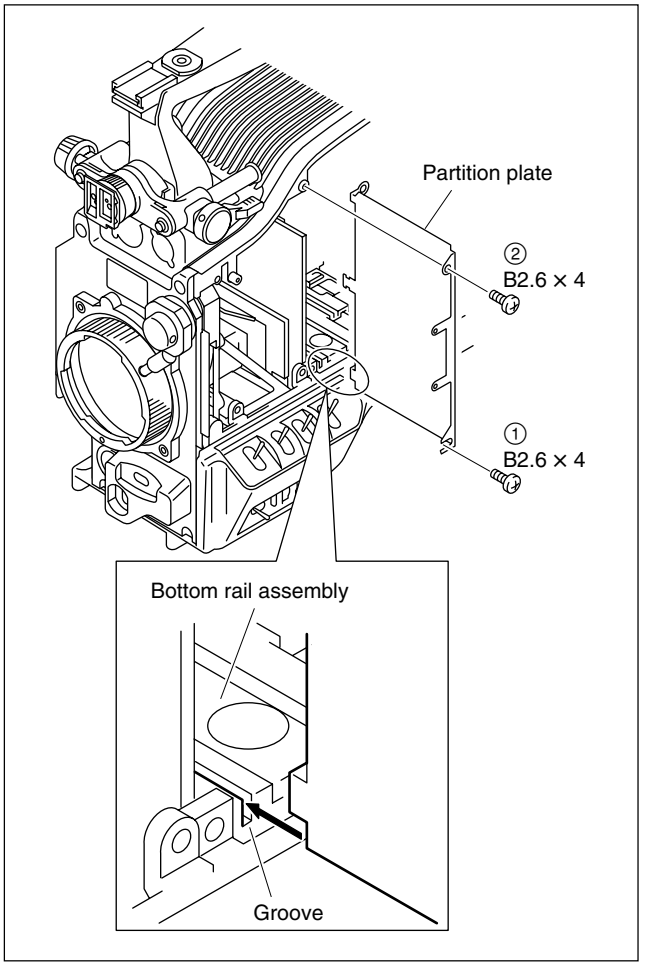
14. Reattach the rear panel using the two screws.



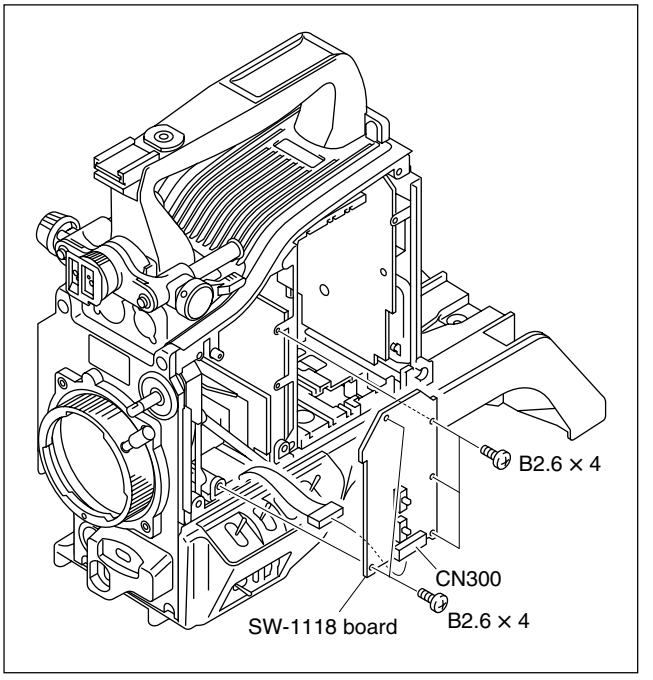
15. Tighten the two screws with stopper, and reattach the top chassis to the front unit assembly.
16. Reattach the top chassis to the rear panel using the two screws while pressing the top chassis in the arrow direction.



17. Insert the partition plate in the arrow direction, and tighten the two screws sequentially in accordance with the figure.



18. Connect the harness to the connector CN300 on the SW-1118 board.
19. Reinstall the SW-1118 board using the five screws.



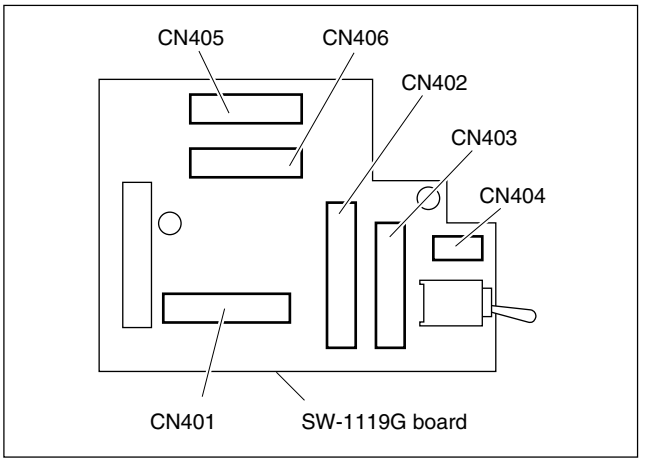
20. Perform the steps 1 to 3 in the reverse order.

2-12. Replacing the SW-1119G Board

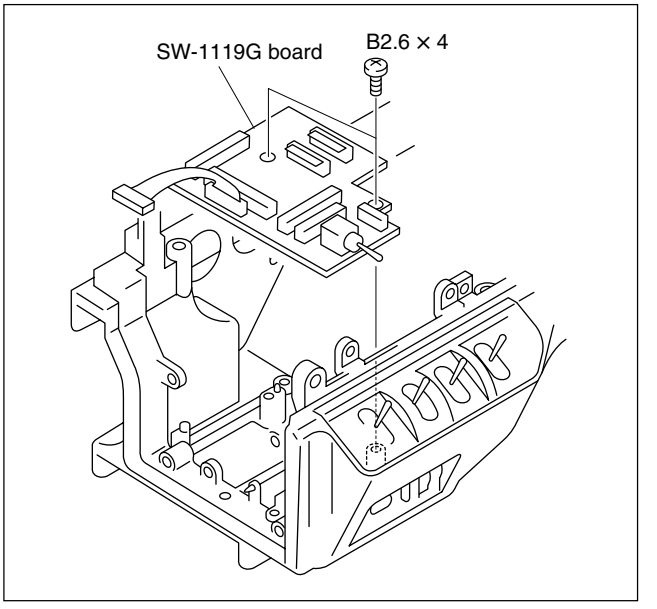
1. Remove the top chassis. (Refer to Section 1-4-2.)
2. Remove the front unit assembly.
   (Refer to Section 1-4-3.)
3. Perform the steps 2 and 3 of Section 2-4, and remove the CN-2381 board.
4. Perform the steps 2 and 3 of Section 2-7, and remove the SW-1116 board.
5. Disconnect the flexible card wires from the connectors CN405, CN406 and the harnesses from the connectors CN401 to CN404 on the SW-1119G board.

   Note

   Be careful not to bend the flexible card wires. This shortens the wire life.



6. Remove the two screws, and remove the SW-1119G board.



7. Reinstall a new SW-1119G board in the reverse order of removal.

Section 3
Setup Menu

3-1. Setup Menu

The setup menu is used for selecting various setting values, items displayed on the viewfinder screen, the method of displaying, and adjustments. The menu is displayed on the viewfinder screen. The menu can also be displayed on an external monitor by connecting it to the MONITOR OUT connector.

Structure of Setup Menu

The setup menu is composed of the following menus.

- USER menu
- USER MENU CUSTOMIZE menu
- OPERATION menu
- PAINT menu
- MAINTENANCE menu
- FILE menu
- SERVICE menu (Normally not displayed. For details on how to display this menu, refer to “Section 5-1-5. SERVICE Menu”.)

Note

Beside above menus, the TOP menu is provided for indicating the whole configuration of the menu items.

Equipment Required

- Viewfinder DXF-801/801CE (or black/white monitor, color monitor)
- Camera adaptor CA-D50/TX50/TX50P (or VTR DSR-1/1P and PVV-3/3P)
- AC adaptor AC-550/550CE

Switches

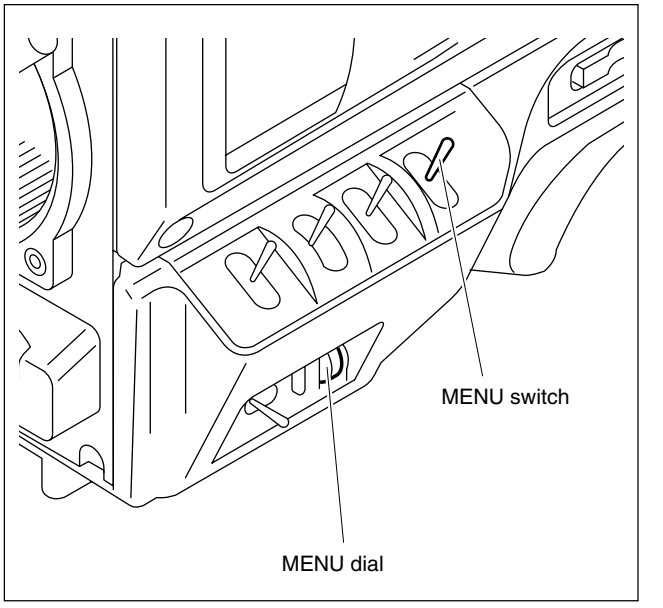
MENU dial

Selects the items displayed on the viewfinder screen and changes settings.

MENU switch

OFF/STATUS : Displays the setup menu or allows you to check the current setting.

ON/CANCEL : Exits the setup menu or cancels the menu setting mode and returns to the page selection mode or TOP menu.



Basic Operations

1. Displaying the menu
   To display the USER menu, turn the power on and press the MENU switch toward the ON/CANCEL side.
   To display the other menus, obtain the TOP menu screen. (Refer to Section 3-2.)
   Then, turning the MENU dial, select the menu to be displayed, and press the MENU dial.
2. To change pages, move the cursor to the page number and turn the MENU dial.
3. To shift the cursor, turn the MENU dial. (Pressing the MENU dial determines the setting.)
4. To change a setting value, move the cursor to the item to be changed and press the MENU dial, then the cursor turns to "?" and the value changes by turning the MENU dial.
   (Turning it fast, the value changes greatly, while turning it slowly, the value changes slightly for fine adjustment.) To determine the setting, press the MENU dial, and to cancel the change, press the MENU switch toward the ON/CANCEL side.
5. By every set of the MENU switch to ON/CANCEL side, the screen returns to the item selection mode, page selection mode, and then TOP menu (*1).

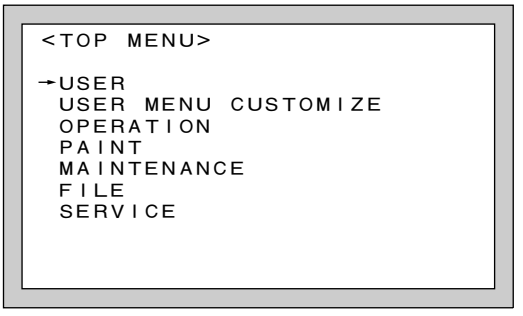
(*1) : The screen returns to the TOP menu, only when the basic operation step1 was performed and the operation started from the TOP menu.

3-2. TOP Menu

The TOP menu shows all menu items.
You can display the TOP MENU by one of the following methods:

- While holding down the MENU dial, press the MENU switch toward the ON/CANCEL side.
- Select TOP at the right top on the menu.

TOP MENU

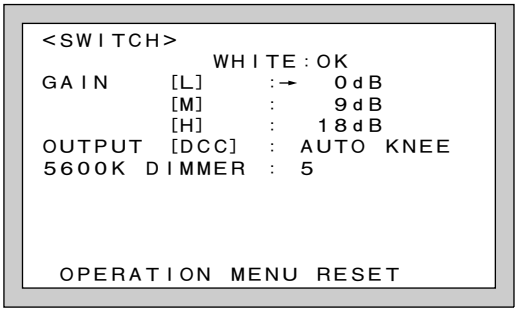


Menu	Description
USER	You can select desired pages and items from the OPERATION, PAINT, MAINTENANCE and FILE menu pages and set them on the USER MENU CUSTOMIZE menu. (For details, refer to the Operating Instructions.)
USER MENU CUSTOMIZE	Use this menu to edit menu pages and items to be set on the USER menu.
OPERATION	Use this menu to set camera settings for operation and to change camera settings to suit shooting conditions during normal camera operations.
PAINT	Use this menu to make fine adjustments to the image while monitoring the waveform of the camera output on a waveform monitor or other output device.
MAINTENANCE	Use this menu for the maintenance purposes or system changes. It also contains the paint items less frequently used.
FILE	Use this menu for the file operation such as when storing the reference file etc.
SERVICE	Use this menu to adjust the circuit boards etc., or to update the firmware for service purposes. (Normally not displayed. To display, refer to Section 5-1-5.)

3-3. OPERATION Menu

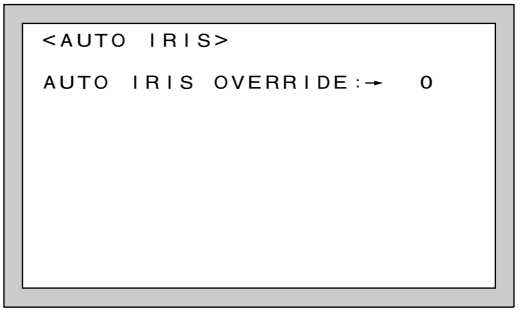
The OPERATION menu consists of items that a camera operator can set when changing the viewfinder screen display, etc.

SWITCH page



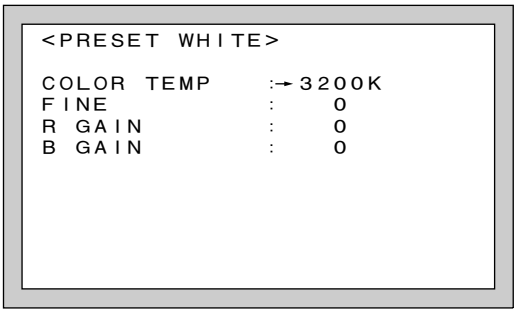
Item	Setting	Description
GAIN [L/M/H]	–3, 0, 3, 6, 9, 12, 18, 24, 30, 36	Sets the GAIN switch [L/M/H].
OUTPUT [DCC]	AUTO KNEE, ADAPTIVE	Sets the DCC operation mode. AUTO KNEE: Normal auto knee. ADAPTIVE: Adaptive auto knee.
5600K DIMMEER	0 to 9	Sets the brightness for the LED of the 5600K button when it is lit to indicate the button's activation. 0 (dark) ↔ 9 (bright)
OPERATION MENU RESET	Execute by pressing the MENU dial.	Returns the OPERATION menu to the factory setting value.

AUTO IRIS page



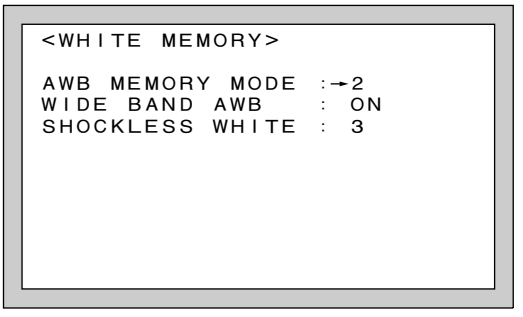
Item	Setting	Description
AUTO IRIS OVERRIDE	–99 to 99	Sets the reference value for auto aperture. –99 (on the 2 stops closed side) ↔ 99 (on the 2 stops opened side)

PRESET WHITE page



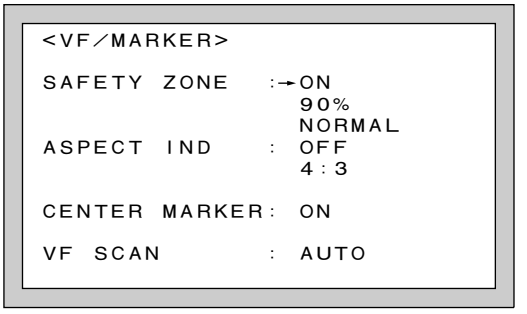
Item	Setting	Description
COLOR TEMP	1520K to 65535K	Sets the preset color temperature value (when the W.BAL switch is set to PRE) for white balance. The R GAIN and B GAIN values also change accordingly. **Note** The displayed value is an approximate.
FINE	–99 to 99	Fine adjusts the preset color temperature value for white balance.
R GAIN	–99 to 99	Sets the R (red) gain of the preset color temperature value for white balance.
B GAIN	–99 to 99	Sets the B (blue) gain of the preset color temperature value for white balance.

WHITE MEMORY page



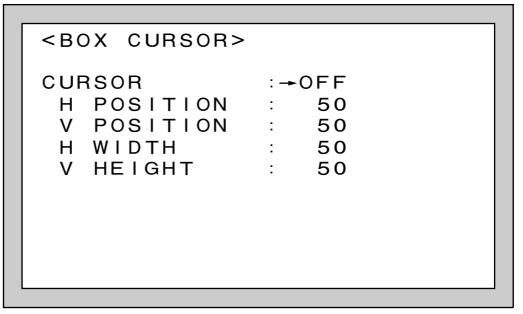
Item	Setting	Description
AWB MEMORY MODE	2.2 × 4FL	Sets whether the two A and B white balance values are interlocked with all settings of the FILTER control or not. 2: Not interlock with the FILTER control. The white balance memory can only be set for A and B of the WHITE BAL switch. 2 × 4FL: Interlocks with the FILTER control. The white balance memory can be set for each ND filter and for each A and B (total eight) of the WHITE BAL switch.
WIDE BAND AWB	ON, OFF	Turns ON or OFF the function of the 5600K button ON/OFF operation is to be automatically changed according to the color temperature value of the light source during AWB.
SHOCKLESS WHITE	OFF, 1, 2, 3, 4, 5	Sets the transient time of switching white balance. **Note** This setting does not apply to on/off of the 5600K button. 1 (fast) ↔ 5 (slow)

VF/MARKER page



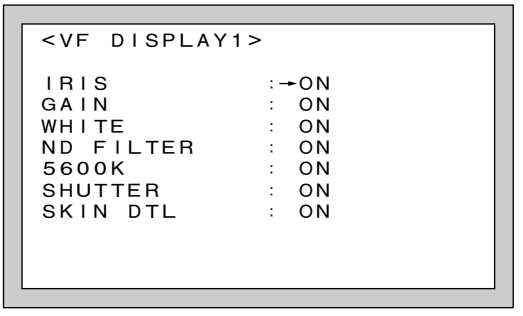
Item	Setting	Description
SAFETY ZONE	ON, OFF	Sets the safety zone marker display to ON or OFF.
	80%, 90%	Sets the safety zone marker range.
	NORMAL, ASPECT (DXC-D55WS/ D55WSP only)	Sets whether the safety zone is interlocked with the aspect or not. **Note** This become effective only when the aspect ratio is set to 16 : 9. (SCREEN MODE: 16 : 9) NORMAL: Safety zone of the full screen. ASPECT: Safety zone of the area selected by ASPECT IND.
ASPECT IND (DXC-D55WS/ D55WSP only)	LINE, MASK, LINE & MASK, OFF	Sets the method for displaying the ASPECT indication by line (LINE) or masking off the area (MASK). LINE: Displays the area using vertical lines. MASK: Dims the outside of the area. LINE & MASK: Combines LINE and MASK. OFF: Area is not displayed.
	15 : 9, 14 : 9, 13 : 9, 4 : 3	Selects the aspect ratio. **Note** This can be set only when LINE is selected at ASPECT IND. Fixed at 4 : 3 when the MASK and LINE & MASK are selected at ASPECT IND.
CENTER MARKER	ON, OFF	Sets the center marker display to ON or OFF.
VF SCAN (DXC-D55WS/ D55WSP only)	AUTO, 16 : 9, 4 : 3	Sets whether the aspect of the viewfinder is interlocked with the aspect aspect of the camera or fixed.

BOX CURSOR page



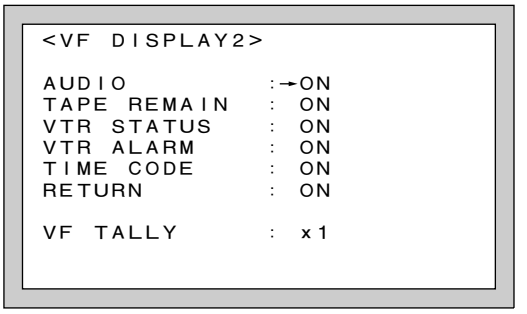
Item	Setting	Description
CURSOR	ON, OFF	Sets the box cursor display to ON or OFF.
H POSITION	0 to 99	Sets the box cursor position (horizontal direction).
V POSITION	0 to 99	Sets the box cursor position (vertical direction).
H WIDTH	0 to 99	Sets the horizontal width of the box cursor.
V HEIGHT	0 to 99	Sets the height of the box cursor.

VF DISPLAY 1 page



Item	Setting	Description
IRIS	ON, OFF	Sets the lens iris value indicator to ON or OFF.
GAIN	ON, OFF	Sets the gain value indicator to ON or OFF.
WHITE	ON, OFF	Sets the white balance indicator to ON or OFF.
ND FILTER	ON, OFF	Sets the ND filter selection indicator to ON or OFF.
5600K	ON, OFF	Sets the 5600K mode indicator to ON or OFF.
SHUTTER	ON, OFF	Sets the shutter speed/mode indicator to ON or OFF.
SKIN DTL	ON, OFF	Sets the skin detail indicator to ON or OFF.

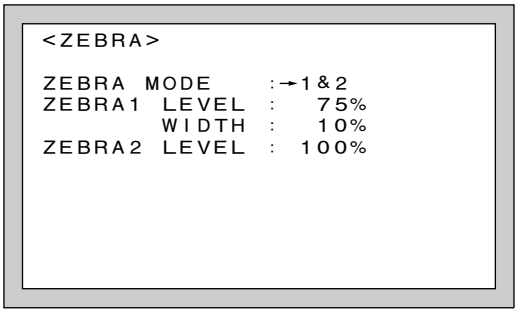
VF DISPLAY 2 page



Item	Setting	Description
AUDIO [a)]	ON, OFF	Sets the AUDIO level indicator to ON or OFF.
TAPE REMAIN [a)]	ON, OFF	Sets the tape remaining indicator to ON or OFF.
VTR STATUS [a)]	ON, OFF	Sets the VTR status indicator to ON or OFF.
VTR ALARM [a)]	ON, OFF	Sets the VTR alarm indicator to ON or OFF.
TIME CODE [a)]	ON, OFF	Sets the time code indicator to ON or OFF.
RETURN [b)]	ON, OFF	Sets the return video indicator to ON or OFF.
VF TALLY	×1, ×2	Sets the tally signal indicator to ON or OFF. ×1: Upper tally lamp ×2: Both upper and lower tally lamps

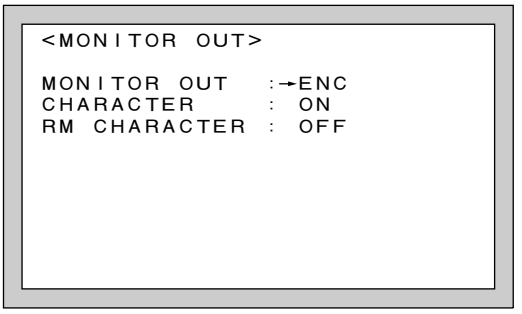
a) This item is displayed when PVV-3/3P or DSR-1/1P is connected.
b) This item is displayed when CA-TX50/TX50P or CCU-TX50/TX50P is connected.

ZEBRA page



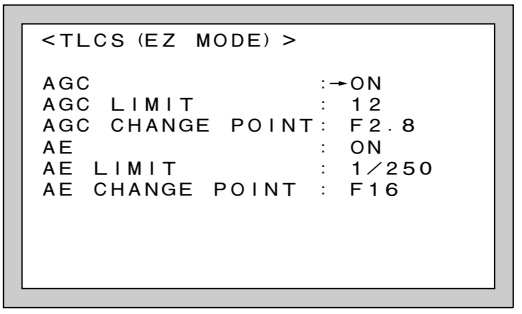
Item	Setting	Description
ZEBRA MODE	1, 2, 1&2	Sets the zebra pattern type to zebra 1 or zebra 2.
ZEBRA 1 LEVEL	50 to 109%	Sets the display level of zebra 1.
WIDTH	0 to 30%	Sets the width of the video level of zebra 1.
ZEBRA 2 LEVEL	50 to 109%	Sets the display level of zebra 2.

MONITOR OUT page



Item	Setting	Description
MONITOR OUT	ENC, Y	Selects the output signal from the MONITOR OUT connector.
CHARACTER	ON, OFF	Sets the character signal superimposing function on the MONITOR OUT signal to ON or OFF.
RM CHARACTER	ON, OFF	Sets the character signal superimposing function on the REMOTE OUT signal to ON or OFF.

TLCS (EZ MODE) page

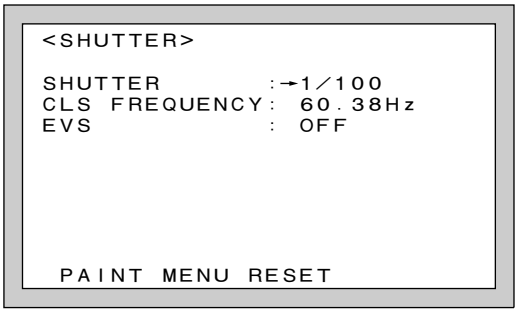


Item	Setting	Description
AGC	ON, OFF	Sets the AGC (Auto Gain Control) function to ON or OFF when EZ mode is set to ON.
AGC LIMIT	3, 6, 9, 12, 15, 18	Sets the upper limit value of the AGC adjustment when the EZ mode is set to ON or the TLCS (Total Level Control) function of the RCP side is set to ON.
AGC CHANGE POINT	F5.6, F4, F2.8, F2, OPEN	Sets the f-stop to be changed the iris adjustment into the AGC mode when the EZ mode is set to ON or the TLCS function of the RCP side is set to ON.
AE	ON, OFF	Sets the AE (Auto Exposure) function to ON or OFF when the EZ mode is set to ON.
AE LIMIT	1/100, 1/150, 1/200, 1/250	Sets the upper limit value of the AE adjustment when the EZ mode is set to ON or the TLCS function of the RCP side is set to ON.
AE CHANGE POINT	F16, F11, F8, F5.6	Sets the f-stop to be changed the iris adjustment into the AE mode when the EZ mode is set to ON or the TLCS function of the RCP side is set to ON.

3-4. PAINT Menu

The PAINT menu lists general paint adjustment items such as shutter.

SHUTTER page



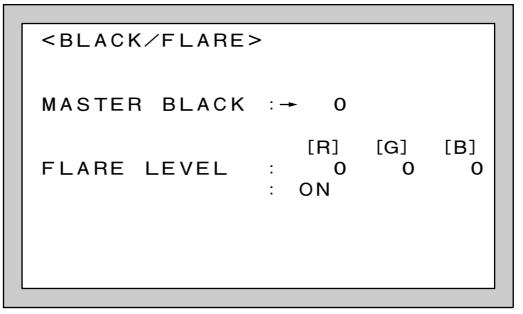
Item	Setting	Description
SHUTTER	Refer to table a) below.	Sets the shutter speed.
CLS FREQUENCY	Refer to table b) below.	Sets the CLS frequency.
EVS	ON, OFF	Sets the EVS mode to ON or OFF. (The vertical resolution is changed from 400 lines to 450 lines.) **Note** When the EVS is set to ON, the vertical resolution can be increased, but aliasing may be generated when shooting the moving subject.
PAINT MENU RESET	Execute by pressing the MENU dial.	Reset the pain menu settings.

a) Shutter speed setting
DXC-D55/D55WS: 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, CLS
DXC-D55P/D55WSP: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000, CLS

b) CLS frequency setting

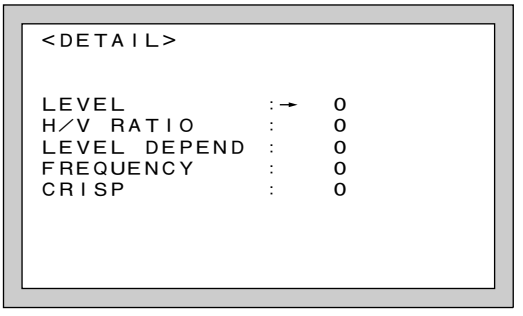
	When DXC-D55 series is used as stand alone unit	When RCP-D50/D51 is used
DXC-D55/D55WS	60.38 Hz to 6000 Hz	60.38 Hz to 6000 Hz
DXC-D55P/D55WSP	50.00 Hz to 6000 Hz	50.31 Hz to 6000 Hz

BLACK/FLARE page



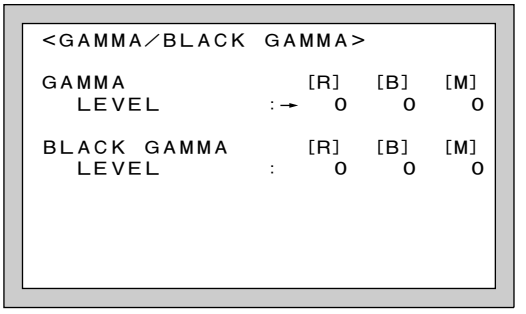
Item	Setting	Description
MASTER BLACK	–99 to 99	Sets the master black level.
FLARE LEVEL R/G/B	–99 to 99	Sets the flare level of R, G and B.
	ON, OFF	Sets the flare correction function to ON or OFF.

DETAIL page



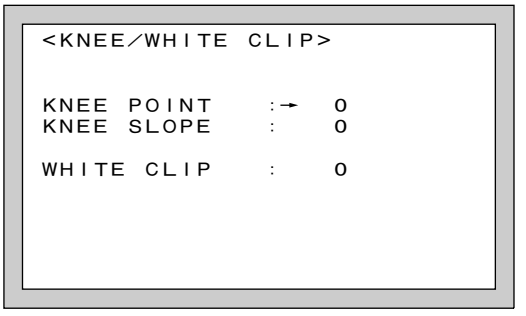
Item	Setting	Description
LEVEL	–99 to 99	Sets the level of the detail correction (contour correction) signal.
H/V RATIO	–99 to 99	Sets the mix ratio of vertical detail signal and horizontal detail signal of the detail correction (contour correction).
LEVEL DEPEND	–99 to 99	Sets the level for suppressing the detail amount at the low level.
FREQUENCY	–99 to 99	Sets the thickness of the detail waveform.
CRISP	–99 to 99	Sets the level for suppressing the noise components when the detail signal is added.

GAMMA/BLACK GAMMA page



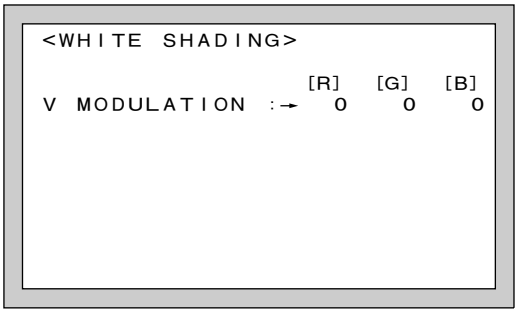
Item	Setting	Description
GAMMA LEVEL R/B/M	–99 to 99	Sets the gamma correction curve of R, B and master.
BLACK GAMMA LEVEL R/B/M	–99 to 99	Sets the black gamma level of R, B and master.

KNEE/WHITE CLIP page



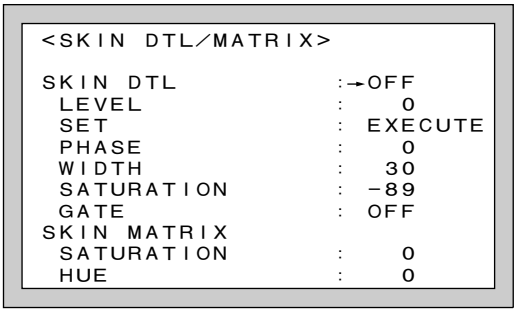
Item	Setting	Description
KNEE POINT	–99 to 99	Sets the knee point. (When the DCC is activated, "––" is displayed.)
KNEE SLOPE	–99 to 99	Sets the knee slope level. (When the DCC is activated, "––" is displayed.)
WHITE CLIP	–99 to 99	Sets the white clip level.

WHITE SHADING page



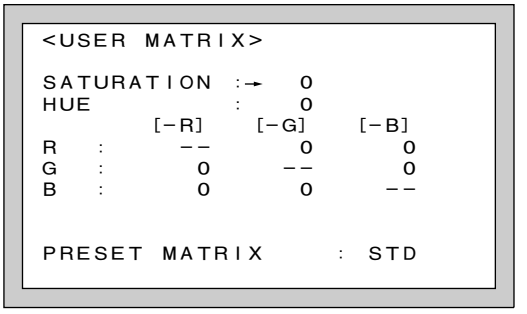
Item	Setting	Description
V MODULATION R/G/B	–99 to 99	Sets the vertical shading correction of R, G and B.

SKIN DTL/MATRIX page



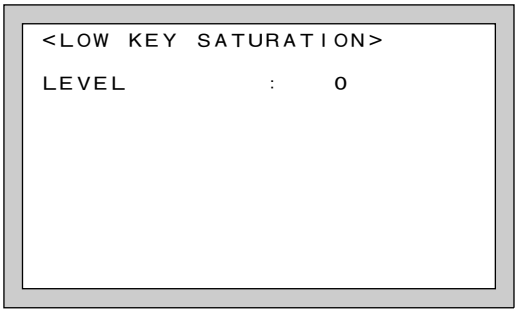
Item	Setting	Description
SKIN DTL	ON, OFF	Sets the skin detail function to ON or OFF.
LEVEL	–99 to 99	Sets the detail level when the skin-tone detail is set to ON. At 99, the maximum effects are obtained.
SET	Execute by pressing the MENU dial.	Execute the skin set. **How to execute SET:** 1. Move "→" to SET and press the MENU dial. A square-shaped zebra patter will be displayed at the center on the VF screen. 2. Sets the zebra pattern to the color to be given the effect of the skin-tone detail and press the MENU dial to set the PHASE.
PHASE	0 to 359	Sets the color phase when the skin-tone detail is activated. (The color phase is automatically calculated when SET is executed, but it can be manually changed.)
WIDTH	0 to 99	Sets the width of the color phase when the skin-tone detail is activated. (As value becomes smaller, the width of the detail effects decreases.)
SATURATION	–99 to 99	Sets the saturation (color intensity) of the color on which the skin-tone detail is to function.
GATE	ON, OFF	Sets the zebra indication at the position where the skin-tone detail function affects to ON or OFF. **Note** If the MONITOR OUT signal is monitored, the color tone of the area where the skin-tone detail is functioning changes. The GATE signal is not superimposed on the output from the VIDEO OUT connector.)
SKIN MATRIX SATURATION	–99 to 99	Sets the color saturation (color intensity) of the skin-tone matrix correction.
SKIN MATRIX HUE	–99 to 99	Sets the hue of the skin-tone matrix correction.

USER MATRIX page



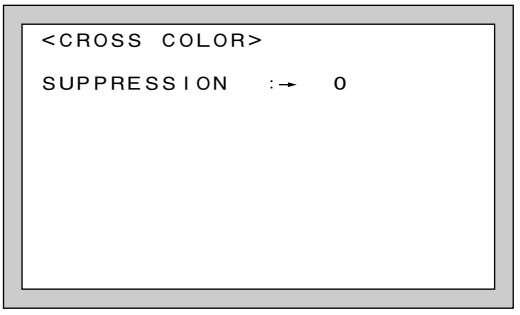
Item	Setting	Description
SATURATION	–99 to 99	Sets the color saturation (color intensity) of the whole picture.
HUE	–99 to 99	Sets the hue of the whole picture.
R-G, R-B	–99 to 99	Sets the matrix coefficients for R-G and R-B axes.
G-R, G-B	–99 to 99	Sets the matrix coefficients for G-R and G-B axes.
B-R, B-G	–99 to 99	Sets the matrix coefficients for B-R and B-G axes.
PRESET MATRIX	STD, HI SAT, FL	Sets the preset matrix. STD: Standard color tone HI SAT: For more vivid picture (The color intensity increases a little.) FL: For shooting under fluorescent light, to prevent the skin color's becoming greenish.)

LOW KEY SATURATION page



Item	Setting	Description
LEVEL	–99 to 99	Corrects the color saturation (color intensity) at the low level.

CROSS COLOR page

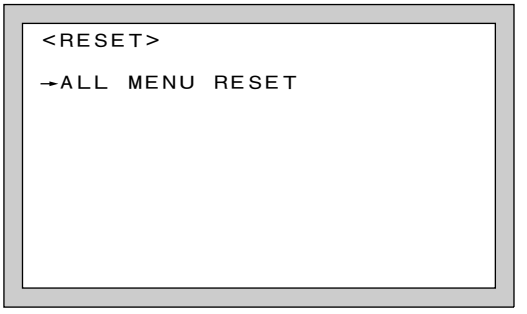


Item	Setting	Description
SUPPRESSION	0 to 99	Sets the function to reduce coloring caused by cross color when a fine pattern is shot.

3-5. MAINTENANCE Menu

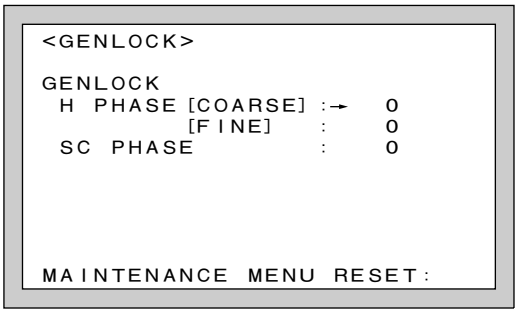
This MAINTENANCE menu consists of items required for camera maintenance such as date and time setting and systemic change, etc.

RESET page



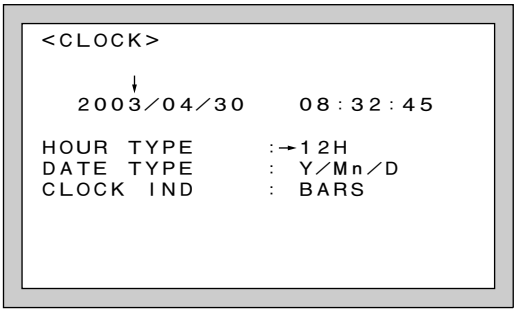
Item	Setting	Description
ALL MENU RESET	Execute by pressing the MENU dial.	Reset all user-set menus to the factory-preset values. (The date and time settings are not reset.)

GENLOCK page



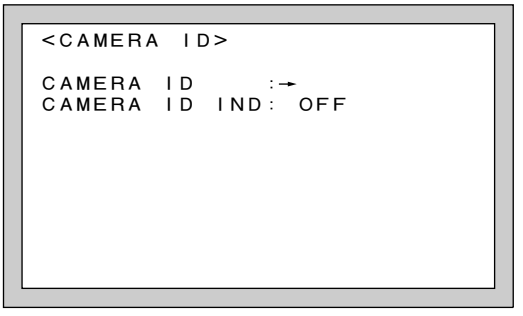
Item	Setting	Description
GENLOCK H PHASE [COARSE]	–99 to 99	Adjusts the H phase of GENLOCK (coarse).
GENLOCK H PHASE [FINE]	–99 to 99	Adjusts the H phase of GENLOCK (fine).
SC PHASE	–99 to 99	Adjusts the SC phase of GENLOCK.
MAINTENANCE MENU RESET	Execute by pressing the MENU dial.	Reset the MAINTENANCE menu settings to the factory-preset values. **Note** The date and time settings are not reset.

CLOCK page



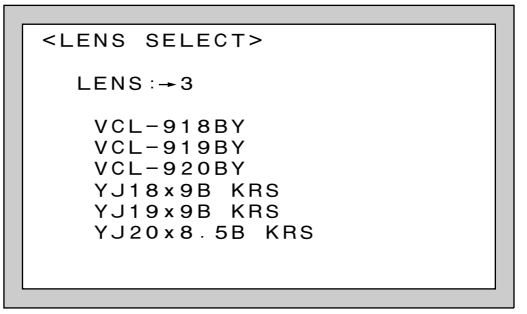
Item	Setting	Description
HOUR TYPE	12H, 24H	Sets the type of time indication.
DATE TYPE	Y/Mn/D, Mn/D, D/M/Y, D/M, M/D/Y, M/D	Sets the type of the date and time display. Y/Mn/D (year/month/day, month is a numeral.) Mn/D (month/day, month is a numeral.) D/M/Y (day/month/year) D/M (day/month) M/D/Y (month/day/year) M/D (month/day)
CLOCK IND	OFF, CAM, BARS	Sets the clock indication to be output from the VIDEO OUT connector. OFF: No clock indication. CAM: Displays the clock indication during video output and color-bar output. BARS: Displays the clock indication only during color-bar output.

CAMERA ID page



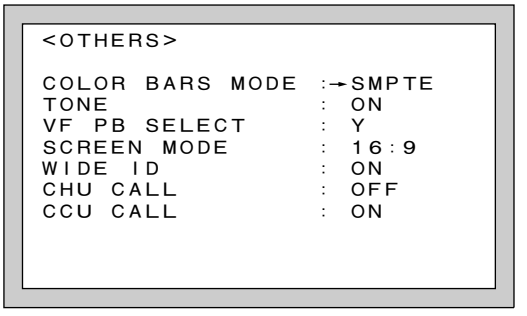
Item	Setting	Description
CAMERA ID	Up to 8 (alphanumeric, symbol and space)	Up to 8 characters are output during color-bar output. (On the character-input screen, press RET to register an entered camera ID.) **How to enter the comments:** 1. Move "→" to CAMERA ID and press the MENU dial, and the characters are displayed at the lower portion of the screen. 2. Select the character by turning the MENU dial, and move "→" to EXECUTE after the comment is entered, and press the MENU dial to store.
CAMERA ID IND	ON, OFF	Sets the function to display the camera ID on the color-bar to ON or OFF.

LENS SELECT page



Item	Setting	Description
LENS	1 to 16	Sets the lens number according to the lens to be used. (If the lens is not among the choices, shoot a white subject and select the lens number for which no color appears at the upper and lower portions of the screen.)

OTHERS page



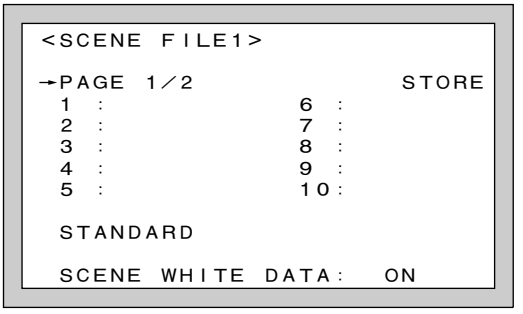
Item	Setting	Description
COLOR BAR MODE	SMPTE, FULL (75%), FULL (100%)	Sets the type of the color bars.
TONE	ON, OFF	Sets the 1 kHz tone signal output to ON or OFF. (When the TONE is set to ON, the tone signal is output in color bar mode.)
VF PB SELECT [a)]	Y, VBS	Sets the video output to the viewfinder. (Available when the VTR has the color output function.) Y: Monochrome signal VBS: Color signal
SCREEN MODE (DXC-D55WS/ D55WSP only)	16 : 9, 4 : 3	Sets the aspect ratio of the output signal.
WIDE ID (DXC-D55WS/ D55WSP only)	ON, OFF	Sets the function of wide ID output to ON or OFF when the SCREEN MODE is set to 16 : 9.
CHU CALL [b)]	ON, OFF	Sets the function of the TALLY indicator in the viewfinder to ON or OFF when the CALL button on the CA-TX50/TX50P is pressed.
CCU CALL [c)]	ON, OFF	Sets the function of the TALLY indicator in the viewfinder to ON or OFF when the CALL button on the CCU-TX50/TX50P or on the RCP connected to the CCU-TX50/TX50P is pressed.

a) Available when DSR-1/1P is connected.
b) Available when CA-TX50/TX50P is connected.
c) Available when CCU-TX50/TX50P is connected.

3-6. FILE Menu

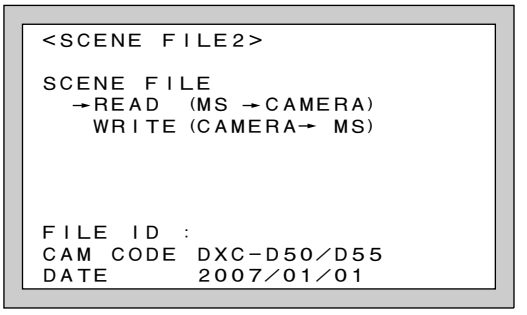
The FILE menu is used to store/call data in/from a file such as the scene file.
For the details on file operation, refer to Section 4. “File System”.

SCENE FILE 1 page



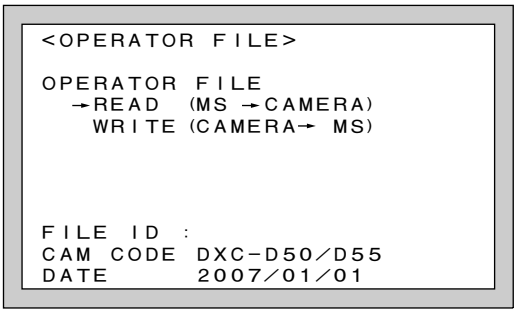
Item	Setting	Description
PAGE	1/2, 2/2	Selects the page of the scene file. Up to 20 files can be set or selected.
STORE		Stores the scene file. **How to store the scene file:** 1. Move “→” to STORE and press the MENU dial to change the display to STORE screen. 2. Select the file number for storing by turning the MENU dial, and enter the file name. (If the data is already stored, it will be replaced with a new one.)
PAGE 1/2: 1 to 10: PAGE 2/2: 11 to 20:		Calls the scene file corresponding to the selected number. **How to call the scene file:** Move “→” to the file number to be called and press the MENU dial. During calling up, the number will be highlighted. To cancel the operation and return the file before called, press the MENU dial while it is highlighted.
STANDARD	Execute by pressing the MENU dial.	Reset the settings to the standard setting values.
SCENE WHITE DATA	ON, OFF	Turns ON or OFF the function to read out the white balance data from the Memory Stick that are saved in the SCENE FILE during execution of SCENE FILE READ.

SCENE FILE 2 page



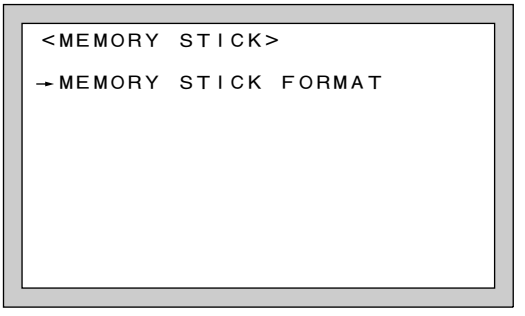
Item	Setting	Description
SCENE FILE READ	Execute by pressing the MENU dial.	Reads the scene files from the Memory Stick to the memory of the camera. **Note** If the scene files are stored in the camera, they are replaced by the data from the Memory Stick.
SCENE FILE WRITE	Execute by pressing the MENU dial.	Writes the scene files stored in the memory of the camera to the Memory Stick. **Note** If the scene files are stored in the Memory Stick, they are replaced by the data from the camera.
FILE ID	Up to 8 (alphanumeric, symbol and space)	Enters and displays comments to the scene file to be stored in the Memory Stick. **How to enter the comments:** 1. Move "→" to FILE ID and press the MENU dial, and the characters are displayed at the center of the screen. 2. Select the character by turning the MENU dial, and move "→" to WRITE after the comment is entered, and press the MENU dial to store.
CAM CODE	Display only	Displays the model code of camera which created the scene file saved in the Memory Stick.
DATE	Display only	Displays the date when the scene file was created in the Memory Stick. **Note** The date is displayed according to the DATE TYPE item of CLOCK page on MAINTENANCE menu.

OPERATOR FILE page



Item	Setting	Description
OPERATOR FILE READ	Execute by pressing the MENU dial.	Reads the operator file from the Memory Stick to the camera memory. **Note** The data stored in the camera are replaced by the data from the Memory Stick.
OPERATOR FILE WRITE	Execute by pressing the MENU dial.	Writes the data of operator file stored in the memory of the camera to the Memory Stick. **Note** If the operator files are stored in the Memory Stick, they are replaced by the data from the camera.
FILE ID	Up to 8 (alphanumeric, symbol and space)	Enters and displays comments to the operator file to be stored in the Memory Stick. **How to enter the comments:** 1. Move "→" to FILE ID and press the MENU dial, and the characters are displayed at the center of the screen. 2. Select the character by turning the MENU dial, and move "→" to WRITE after the comment is entered, and press the MENU dial to store.
CAM CODE	Display only	Displays the model code of camera which created the operator file saved in the Memory Stick.
DATE	Display only	Displays the date when the operator file was created in the Memory Stick. **Note** The date is displayed according to the DATE TYPE item of CLOCK page on MAINTENANCE menu.

MEMORY STICK page

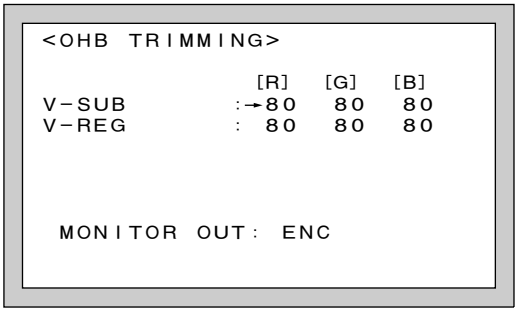


Item	Setting	Description
MEMORY STICK FORMAT	Execute by pressing the MENU dial.	Formats the Memory Stick. **Note** If the data is stored in the Memory Stick, all data stored in the Memory Stick will be erased.

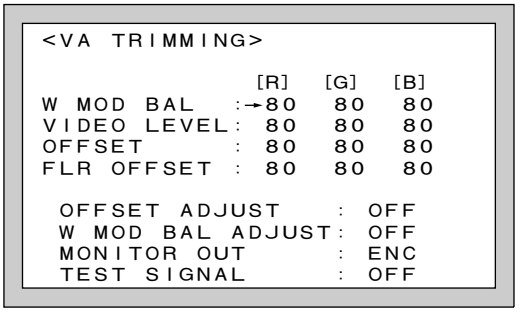
3-7. SERVICE Menu

The SERVICE menu is used for adjusting the board, etc.
For the details on how to display the SERVICE menu, refer to Section 5-1-5.
For the descriptions and operating procedures, see the respective sections shown inside the parentheses.

OHB TRIMMING page (Refer to Sections 5-8 and 5-9.)

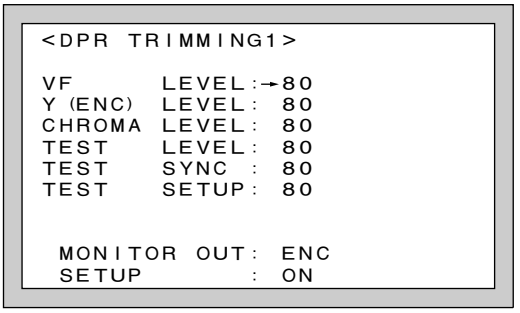


VA TRIMMING page



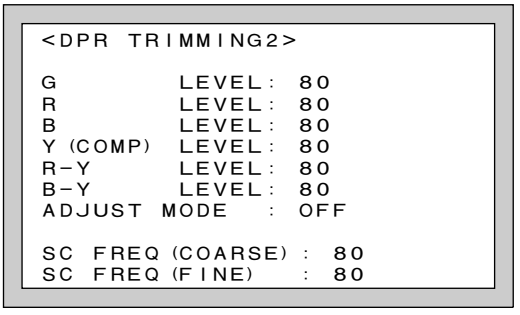
Item	Setting	Description
W MOD BAL	00 to FF	Adjusts the white modulation balance for R, G and B respectively.
VIDEO LEVEL	00 to FF	Adjusts the video level for R, G and B respectively.
OFFSET	00 to FF	Adjusts the offset for R, G and B respectively.
FLR OFFSET	00 to FF	Adjusts the flare offset for R, G and B respectively.
OFFSET ADJUST	OFF, R, G, B	Selects the channel during the offset adjustment.
W MOD BAL ADJUST	OFF, R, G, B	Selects the channel during the white modulation balance adjustment.
MONITOR OUT	ENC, Y, R, G, B	Selects the output signal from the MONITOR OUT connector.
TEST SIGNAL	OFF, 1, 2	Selects the test signal. OFF: No test signal is output. 1: Outputs the TEST SAW signal. 2: Outputs the 3 STEP TEST or 10 STEP TEST signal.

DPR TRIMMING 1 page



Item	Setting	Description
VF LEVEL	00 to FF	Adjusts the VF signal level.
Y (ENC) LEVEL	00 to FF	Adjusts the VBS Y signal level.
CHROMA LEVEL	00 to FF	Adjusts the VBS chrominance level.
TEST LEVEL	00 to FF	Adjusts the TEST VIDEO level.
TEST SYNC	00 to FF	Adjusts the TEST SYNC level.
TEST SETUP	00 to FF	Adjusts the TEST SETUP level.
MONITOR OUT	ENC, Y, R, G, B	Selects the output signal from the MONITOR OUT connector.
SETUP (DXC-D55/D55WS only)	ON, OFF	Selects the SETUP level.

DPR TRIMMING 2 page



Item	Setting	Description
G LEVEL	00 to FF	Adjusts the G ch video level.
R LEVEL	00 to FF	Adjusts the R ch video level.
B LEVEL	00 to FF	Adjusts the B ch video level.
Y (COMP)	00 to FF	Adjusts the COMPONENT Y level.
R-Y LEVEL	00 to FF	Adjusts the COMPONENT R-Y level.
B-Y LEVEL	00 to FF	Adjusts the COMPONENT B-Y level.
ADJUST MODE	OFF, RGB, COMP	Selects the video level adjustment.
SC FREQ (COARSE)	00 to FF	Adjusts the SC frequency (coarse).
SC FREQ (FINE)	00 to FF	Adjusts the SC frequency (fine).

CONCEAL page (Refer to Section 5-5.)

```
<CONCEAL>

CONCEAL MODE        :→OFF
CHANNEL SELECT      : G
MONITOR CHARACTER   : ON

CURSOR: OFF       H : OFF
                  V : ev25

  SAVE
  DELETE
```

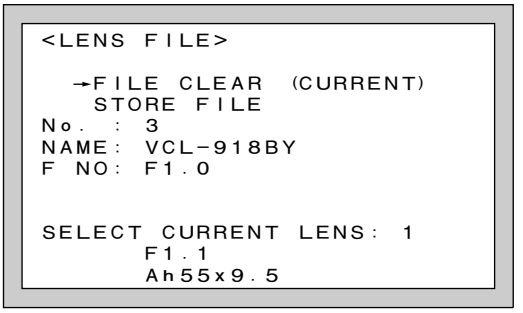
COMPENSATION page (Refer to Section 5-6.)

```
<COMPENSATION>

COMPENSATION MODE  :→OFF
CHANNEL SELECT     : G
MONITOR CHARACTER  : ON
CURSUR: OFF       H : 186
                  V : ev25
  EXEC
  LEVEL : 99
  SELECT: --
   SAVE   CANCEL
 AUTO COMPENSATION
```

V-LINE COMP page (Refer to Section 5-7.)

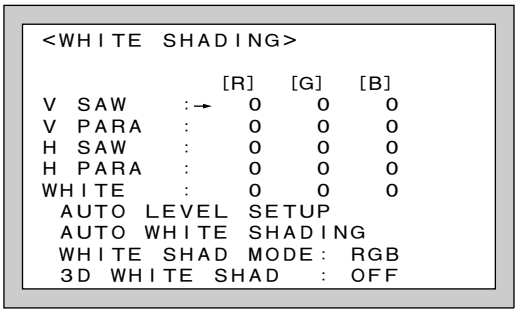
```
<V-LINE COMP>

VERTICALLINE MODE  :→OFF
CHANNEL SELECT     : G
MONITOR CHARACTER  : ON

CURSUR: OFF       H : 186
                  V : ev25
  EXEC
  LEVEL : 99
   SAVE
   CANCEL   DELETE
```

LENS FILE page



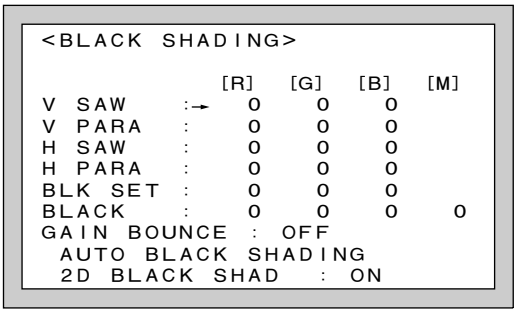
Item	Setting	Description
FILE CLEAR (CURRENT)	Execute by pressing the MENU dial.	Returns the selected lens file to the factory-set value (except Center H/V).
STORE FILE	Execute by pressing the MENU dial.	Registers the adjustment values for each item (excluding the center marker position) as the lens file.
No.	1 to 16	Selects the file for the current lens from the sixteen lens files.
NAME	Up to 15 (alphanumeric, symbol and space)	Displays the lens file name in accordance with the No. (1 to16) selected. **How to enter the file name:** 1. Move "→" to NAME and press the MENU dial, and the characters are displayed at the center of the screen. 2. Select the character by turning the MENU dial, and move "→" to STORE FILE after the file name is entered, and press the MENU dial to store.
F NO	F1.0 to F3.4	Sets the f-stop of the lens. **Note** This setting is not affects to the f-stop and its processing for the currently used lens.
SELECT CURRENT LENS	1 to 100	Selects the current lens.

WHITE SHADING page



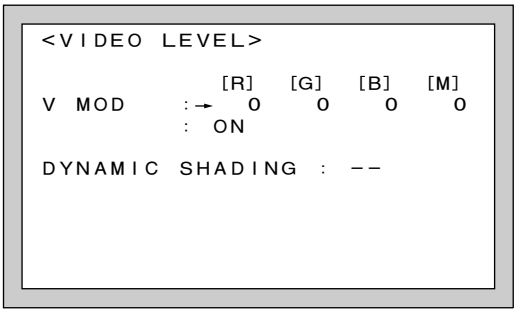
Item	Setting	Description
V SAW R/G/B	–99 to 99	Adjusts the white shading V SAW correction amount of R, G, and B.
V PARA R/G/B	–99 to 99	Adjusts the white shading V PARA correction amount of R, G, and B.
H SAW R/G/B	–99 to 99	Adjusts the white shading H SAW correction amount of R, G, and B.
H PARA R/G/B	–99 to 99	Adjusts the white shading H PARA correction amount of R, G, and B.
WHITE R/G/B	–99 to 99	Adjusts the white level of R, G, and B.
AUTO LEVEL SETUP	Execute by pressing the MENU dial.	Starts to adjust the level of the internal circuits of camera automatically. (Pressing the MENU dial during adjustment cancels the execution.)
AUTO WHITE SHADING	Execute by pressing the MENU dial.	Starts to adjust the white shading automatically. (Pressing the MENU dial during adjustment cancels the execution.)
WHITE SHAD MODE	RGB, RB	Selects the white shading automatic adjustment mode. RGB: Adjusts so that R G, and B becomes flat. RB: Adjusts so that R and B are matched to the G ch white shading. **Note** If consistent lighting is not available, use the RB mode only.
3D WHITE SHAD	ON, OFF	Sets the 3D white shading function to ON or OFF.

BLACK SHADING page



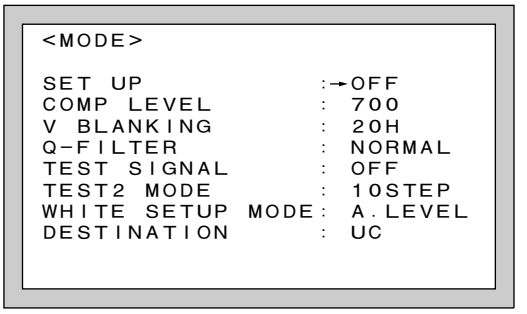
Item	Setting	Description
V SAW R/G/B	–99 to 99	Adjusts the black shading V SAW correction amount of R, G, and B.
V PARA R/G/B	–99 to 99	Adjusts the black shading V PARA correction amount of R, G, and B.
H SAW R/G/B	–99 to 99	Adjusts the black shading H SAW correction amount of R, G, and B.
H PARA R/G/B	–99 to 99	Adjusts the black shading H PARA correction amount of R, G, and B.
BLK SET R/G/B	–99 to 99	Adjusts the black set correction amount of R, G, and B.
BLACK R/G/B/M	–99 to 99	Adjusts the black level of R, G, B, and master.
GAIN BOUNCE	ON, OFF	Sets the function of the automatic switching of the gain to 0 dB ↔ 12 dB periodically to ON or OFF. **Note** When the power is turned off, this setting is automatically cleared.
AUTO BLACK SHADING	Execute by pressing the MENU dial.	Starts to adjust the black shading automatically. (Pressing the MENU dial during adjustment cancels the execution.)
2D BLACK SHAD	ON, OFF	Sets the 2D black shading function to ON or OFF.

VIDEO LEVEL page



Item	Setting	Description
V MOD R/G/B/M	–99 to 99	Adjusts the V modulation shading of R, G, B and master.
	ON, OFF	Sets the V modulation shading to ON or OFF.
DYNAMIC SHADING	ON, OFF	Sets the dynamic shading to ON or OFF.

MODE page



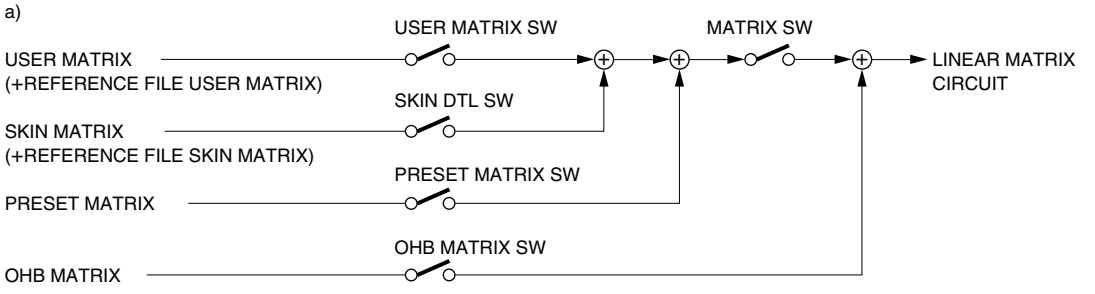
Item	Setting	Description
SET UP (DXC-D55/D55WS only)	ON, OFF	Selects the set up level. ON (7.5 %): UC OFF (0 %): J
COMP LEVEL (DXC-D55P/ D55WSP only)	700, 525	Sets the color difference level.
V BLANKING (DXC-D55/D55WS only)	19H, 20H, 21H	Sets the V blanking width for the camera encoder output.
Q-FILTER (DXC-D55/D55WS only)	NORMAL, WIDE	Selects the encoder Q filter band. NORMAL: 0.5 MHz WIDE: 1.3 MHz
TEST SIGNAL	OFF, 1, 2	Selects the test signal. OFF: No test signal is output. 1: Outputs the TEST SAW signal. 2: Outputs the 3 STEP TEST or 10 STEP TEST signal.
TEST2 MODE	3STEP, 10STEP	Selects the test signal when the above item of TEST SIGNAL is selected to 2. 3STEP: Outputs the 3STEP TEST signal. 10STEP: Outputs the 10STEP TEST signal.
WHITE SETUP MODE	AWB, A.LEVEL	Selects the white level adjustment value during the automatic level adjustment. AWB: Holds the white balance value just before performing the automatic level adjustment. A.LEVEL: Returns the value saved in the reference file.
DESTINATION	UC, J	Selects the signal standard.

FUNCTION SW page

```
<FUNCTION SW>

FLARE                 :→ON
GAMMA                 :  ON
MATRIX                :  ON
USER MATRIX           :  ON
PRESET MATRIX         :  ON
DETAIL                :  ON
DTL LEVEL DEPEND      :  ON
VF DTL                :  ON
C.C.SUPPRESSION       :  ON
```

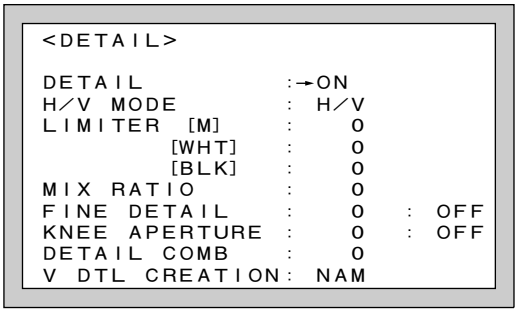
Item	Setting	Description
FLARE	ON, OFF	Sets the flare correction function to ON or OFF.
GAMMA	ON, OFF	Sets the gamma correction function to ON or OFF.
MATRIX [a)]	ON, OFF	Sets the linear matrix correction function to ON or OFF.
USER MATRIX [a)]	ON, OFF	Sets the linear matrix correction function set by the user to ON or OFF. When the above item of MATRIX setting is OFF, this setting is unavailable. ("–––" will be displayed.)
PRESET MATRIX [a)]	ON, OFF	Sets the PRESET MATRIX function to ON or OFF. When the above item of MATRIX setting is OFF, this setting is unavailable. ("–––" will be displayed.)
DETAIL	ON, OFF	Sets the function to add the detail signal to ON or OFF.
DTL LEVEL DEPEND	ON, OFF	Sets the level depend function to ON or OFF.
VF DTL	ON, OFF	Sets the VF detail function to ON or OFF.
C.C.SUPPRESSION	ON, OFF	Sets the cross color suppression function to ON or OFF.

a)



USER MATRIX : Linear matrix that can change R-G and R-B in the conventional camera.
SKIN MATRIX : Linear matrix which can be adjusted for the certain range of the hue set by SKIN DTL phase.
PRESET MATRIX : Addition of the linear matrix value which has been preset.
OHB MATRIX : Linear matrix for matching the color between the cameras.

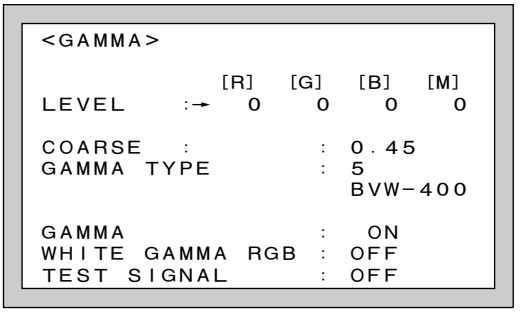
DETAIL page



Item	Setting	Description
DETAIL	ON, OFF	Turns ON and OFF the function to add the detail signal.
H/V MODE	H/V, V ONLY	Selects to control either both H and V details in synchronism or only V details when controlling DTL H/V RATIO from the DTL H/V RATIO menu.
LIMITER M/WHT/BLK	–99 to 99	Sets the level for clipping against the excessive detail signal.
MIX RATIO	–99 to 99	Sets the mix ratio of the H detail signal before and after the gamma correction circuit.
FINE DTL	0 to 99	Adjusts the thickness of the detail waveform.
	ON, OFF	Sets the fine detail function to ON or OFF.
KNEE APERTURE	–99 to 99	Sets the knee aperture [a)] level.
	ON, OFF	Sets the knee aperture [a)] function to ON or OFF.
DTL COMB	–99 to 0	Sets the effective amount of the comb filter to eliminate the cross color of the detail signal.
V DTL CREATION	NAM, Y, G, R+G	Selects the source signal from which the v-detail signal is created.

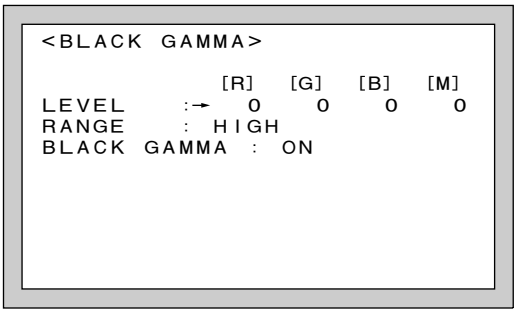
a) This function compensates for decreases by the knee aperture in the detail level at the high luminance level part of the camera subject.

GAMMA page



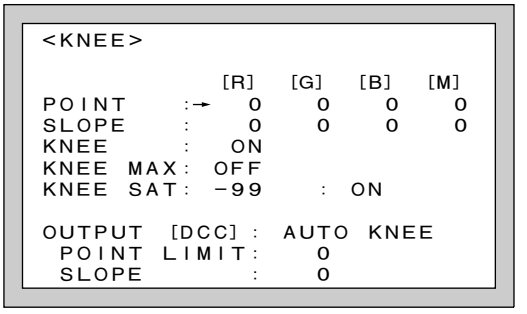
Item	Setting	Description
LEVEL	–99 to 99	Adjusts the gamma correction curve of R, G, B and master.
COARSE	0.35 to 0.90	Sets the correction curve of the master gamma in 0.05 step.
GAMMA TYPE	1 to 8 (Names)	Selects gamma type. 1: ×3.5 2: ×4.5 3: CAMCORDER 4: ×5 5: BVW-400 6: SMPTE-240M 7: ITC-R709 8: FILM
GAMMA	ON, OFF	Sets the gamma correction function to ON or OFF.
WHITE GAMMA RGB	ON, OFF	Selects the method of saving white level and gamma to the reference file. ON: Saves values for the R, G, and B respectively. OFF: Saves only the master values.
TEST SIGNAL	OFF, 1, 2	Selects the test signal. OFF: No test signal is output. 1: Outputs the TEST SAW signal. 2: Outputs the 3 STEP TEST or 10 STEP TEST signal.

BLACK GAMMA page



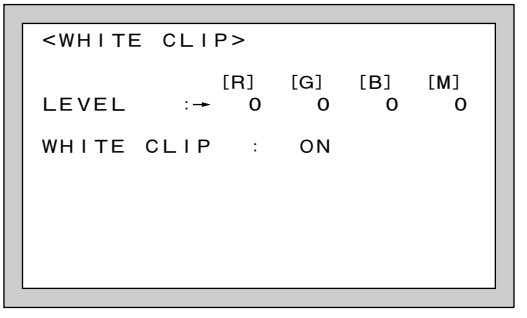
Item	Setting	Description
LEVEL	–99 to 99	Adjusts the black gamma of R, G, B and master.
RANGE	LOW, MID L, MID H, HIGH	Sets the upper limit of the video level which the RGB black gamma affects.
BLACK GAMMA	ON, OFF	Sets the RGB black gamma correction function to ON or OFF.

KNEE page



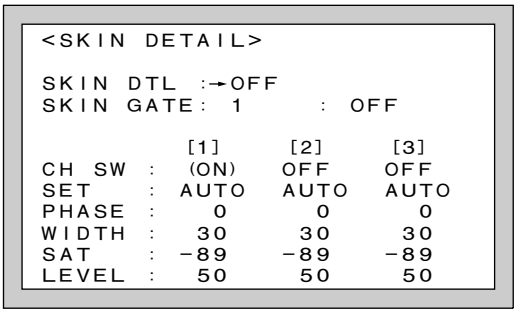
Item	Setting	Description
POINT R/G/B/M	–99 to 99	Sets the knee point level of R, G, B and master when the auto knee function is turned off.
SLOPE R/G/B/M	–99 to 99	Sets the knee slope level of R, G, B and master when the auto knee function is turned off.
KNEE	ON, OFF	Sets the knee correction circuit to ON or OFF.
KNEE MAX	ON, OFF	Turns ON or OFF the function to maximize the knee slope level (tilt 0) (for adjustment)
KNEE SAT	–99 to 99	Sets the knee saturation level.
	ON, OFF	Sets the knee saturation function to ON or OFF.
OUTPUT [DCC]	AUTO, ADAPTIVE	Selects the auto knee function. AUTO: Normal mode The knee correction amount changes automatically so that the peak level of the highlight becomes optimum. ADAPTIVE: Adaptive auto knee mode Contrast can be optimized by controlling the compression rate according to each level of the objects.
POINT LIMIT	–99 to 99	Sets the minimum knee point when the auto knee is turned on. If it is impossible to adjust by the minimum knee point due to high luminance object, adjusts the slope level automatically.
SLOPE	–99 to 99	Sets the knee slope level when the auto knee is turned on.

WHITE CLIP page



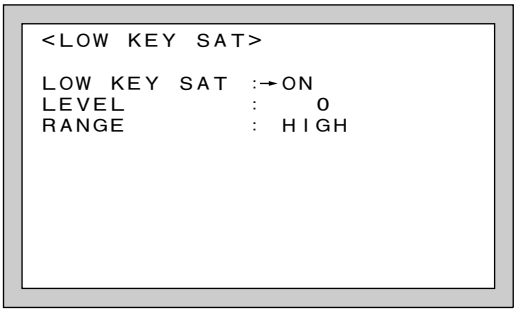
Item	Setting	Description
LEVEL R/G/B/M	–99 to 99	Sets the white clip level of R, G, B and master.
WHITE CLIP	ON, OFF	Sets the white clip function to ON or OFF.

SKIN DETAIL page



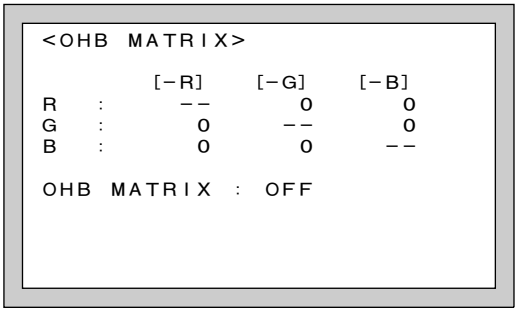
Item	Setting	Description
SKIN DTL	ON, OFF	Sets the skin detail function to ON or OFF.
SKIN GATE	1, 2, 3	Selects the channel of the zebra indication at the position where the skin tone detail function affects.
	ON, OFF	Sets the zebra indication at the portion where the skin tone detail function affects to ON or OFF.
CH SW	ON, OFF	Sets each channel of the skin tone detail function to ON or OFF. The setting of the channel 1 [1] is fixed to ON.
SET	Execute by pressing the MENU dial.	Automatically sets the region the skin tone detail function affects for each channel. **How to execute SET:** 1. Move "→" to SET and press the MENU dial. A square-shaped zebra pattern will be displayed on the viewfinder. 2. Set the zebra pattern to the color to be given the effect of the skin tone detail and press the MENU dial to set the PHASE.
PHASE	0° to 359°	Sets the center phase of hue the skin tone detail function affects for each channel.
WIDTH	0° to 90°	Adjusts the hue width the skin tone detail function affects for each channel.
SAT	–99 to 99	Adjusts the saturation level the skin tone detail function affects for each channel.
LEVEL	–99 to 99	Sets the skin tone detail amount to each channel.

LOW KEY SAT page



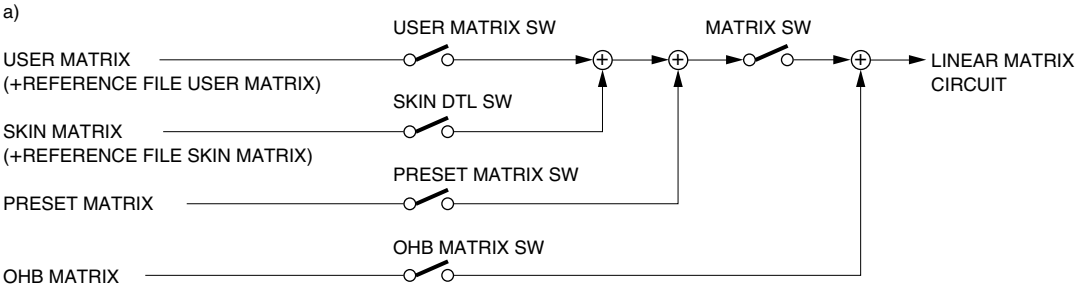
Item	Setting	Description
LOW KEY SAT	ON, OFF	Sets the low key saturation function to ON or OFF.
LEVEL	–99 to 99	Sets the saturation at the low level.
RANGE	LOW, MID L, MID H, HIGH	Sets the upper limit of the video level which the low key saturation function affects.

OHB MATRIX page



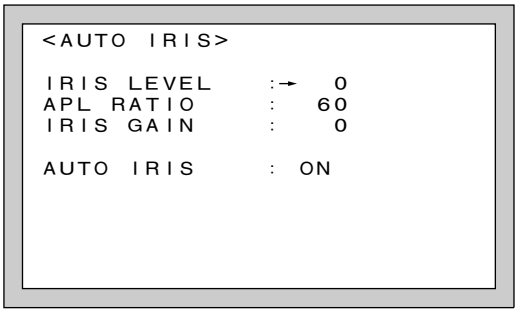
Item	Setting	Description
R-G, R-B	−99 to 99	Sets the respective linear matrix coefficient of R-G, R-B, G-R, G-B, B-R, and B-G freely.
G-R, G-B	−99 to 99	
B-R, B-G	−99 to 99	
OHB MATRIX a)	ON, OFF	Sets the correction function of the matrix deviation generated by the characteristics of each OHB to ON or OFF.

a)



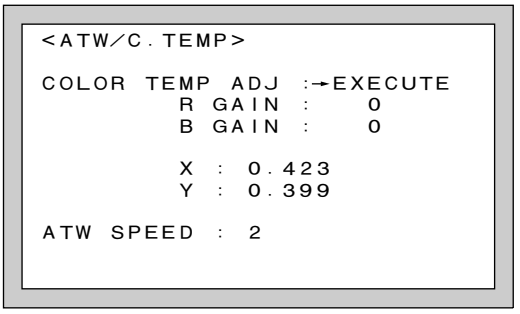
USER MATRIX : Linear matrix that can change R-G and R-B in the conventional camera.
SKIN MATRIX : Linear matrix which can be adjusted for the certain range of the hue set by SKIN DTL phase.
PRESET MATRIX : Addition of the linear matrix value which has been preset.
OHB MATRIX : Linear matrix for matching the color between the cameras.

AUTO IRIS page



Item	Setting	Description
IRIS LEVEL	−99 to 99	Sets the auto iris convergence level.
APL RATIO	−99 to 99	Sets the light amount detecting ratio which is used in the auto iris processing. −99 (peak light detection) ↔ 99 (average value detection of whole screen)
IRIS GAIN	−99 to 99	Sets the iris gain. (hunting and speed change)
AUTO IRIS	ON, OFF	Sets the auto iris function to ON and OFF. **Note** When the camera is used alone, set always ON. When the RM is connected, the display changes according to the IRIS Auto/Manual setting of RM.

ATW/C. TEMP page



Item	Setting	Description
COLOR TEMP ADJ a)	Execute by pressing the MENU dial.	Sets the standard values of ATW processing and color temperature display.
R GAIN	–99 to 99	Displays the standard setting value of Rch color temperature display and the result of the standard value of the color temperature display set by COLOR TEMP ADJ.
G GAIN	–99 to 99	Displays the standard setting value of Bch color temperature display and the result of the standard value of the color temperature display set by COLOR TEMP ADJ.
X	0.410 to 0.435	Sets the x-coordinate on the chromaticity diagram of the 3200K pattern used in the setting of the standard value. (0.01 step)
Y	0.380 to 0.420	Sets the y-coordinate on the chromaticity diagram of the 3200K pattern used in the setting of the standard value. (0.01 step)
ATW SPEED	1 to 5	Sets the response speed of ATW. 1 (fast) ↔ 5 (slow)

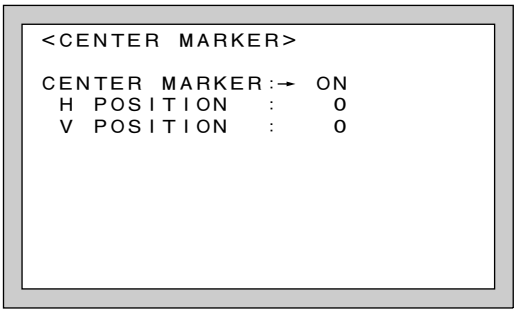
a) **Note**

In the COLOR TEMP ADJ, sets the calculated standard value of the color temperature displaying during the ATW processing and white balance automatic adjustment.
Normally, this adjustment is not required.

If this adjustment is required, perform the following steps to set the standard value after confirming the each board adjustment was completed.

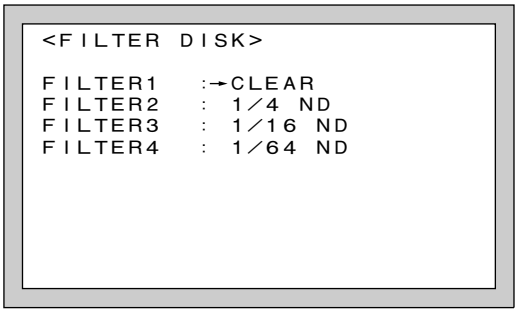
1. Shoot the 3200K pattern.
2. Measure “X” and “Y” values of the chromaticity of pattern, and input them to the items of X and Y of the menu. (Use the luminance meter or illuminance meter.)
3. Sets the WHT BAL switch to A or B, and execute AUTO WHITE.
4. Move “→” to COLOR TEMP ADJ, and press the MENU dial.

CENTER MARKER page



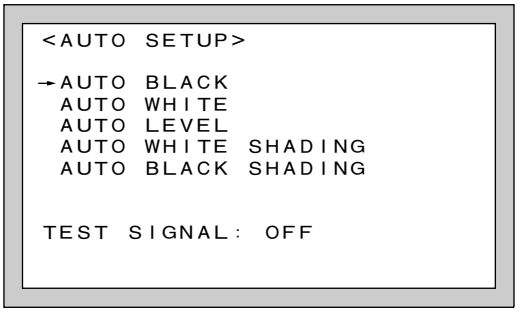
Item	Setting	Description
CENTER MARKER	ON, OFF	Sets the center marker display to ON or OFF.
H POSITION	–99 to 99	Sets the center marker position (Horizontal direction).
V POSITION	–99 to 99	Sets the center marker position (Vertical direction).

FILTER DISK page



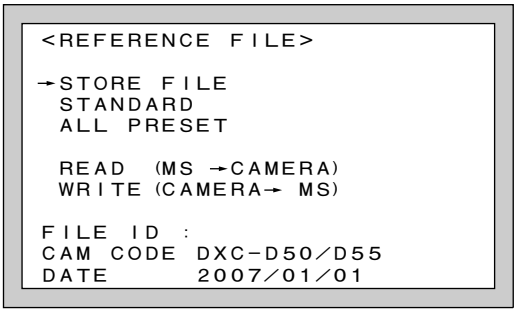
Item	Setting	Description
FILTER1	CLEAR, CROSS, 1/2 ND, 1/4 ND, 1/8 ND, 1/16 ND, 1/32 ND, 1/64 ND	Sets the type of the filter from FILTER1 to FILTER4.
FILTER2		
FILTER3		
FILTER4		

AUTO SETUP page



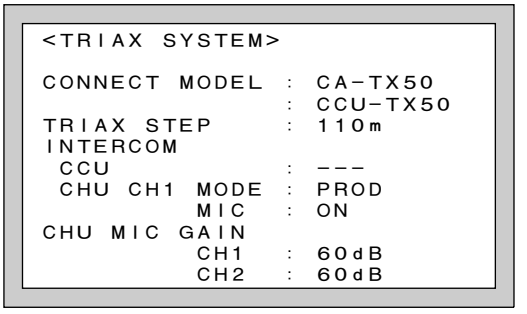
Item	Setting	Description
AUTO BLACK	Execute by pressing the MENU dial.	Starts to adjust the black balance automatically. (Pressing the MENU dial during adjustment cancels the execution.)
AUTO WHITE	Execute by pressing the MENU dial.	Starts to adjust the white balance automatically. (Pressing the MENU dial during adjustment cancels the execution.)
AUTO LEVEL	Execute by pressing the MENU dial.	Starts to adjust the level automatically of the internal camera circuit. (Pressing the MENU dial during adjustment cancels the execution.)
AUTO WHITE SHADING	Execute by pressing the MENU dial.	Starts to adjust the white shading automatically. (Pressing the MENU dial during adjustment cancels the execution.)
AUTO BLACK SHADING	Execute by pressing the MENU dial.	Starts to adjust the black shading automatically. (Pressing the MENU dial during adjustment cancels the execution.)
TEST SIGNAL	OFF, 1, 2	Selects the test signal. OFF: No test signal is output. 1: Outputs the TEST SAW signal. 2: Outputs the 3 STEP TEST or 10 STEP TEST signal.

REFERENCE FILE page



Item	Setting	Description
STORE FILE	Execute by pressing the MENU dial.	Registers the adjustment values of each item as the reference file.
STANDARD	Execute by pressing the MENU dial.	Returns the data registered in the reference file to the reference file value.
ALL PRESET	Execute by pressing the MENU dial.	Returns the current values in the reference file to the initial values.
READ	Execute by pressing the MENU dial.	Reads out the reference file from the Memory Stick to the memory of the camera.
WRITE	Execute by pressing the MENU dial.	Writes the reference file stored in the memory of the camera to the Memory Stick.
FIELD ID	Up to 14 (alphanumeric, symbol and space)	Enters and displays comments to a reference file to be stored in the Memory Stick. **How to enter the comments:** 1. Move "→" to FILE ID and press the MENU dial, and the characters are displayed the top of the screen. 2. Select the character by turning the MENU dial, and move "→" to WRITE after the comment is entered, and press the MENU dial to store.
CAM CODE	Display only	Displays the model name which created the reference file saved in the Memory Stick.
DATE	Display only	Displays the date when the reference file was created in the Memory Stick. **Note** The date is displayed according to the DATE TYPE item of CLOCK page on MAINTENANCE menu.

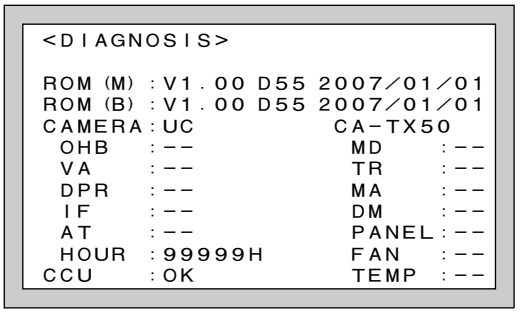
TRIAX page



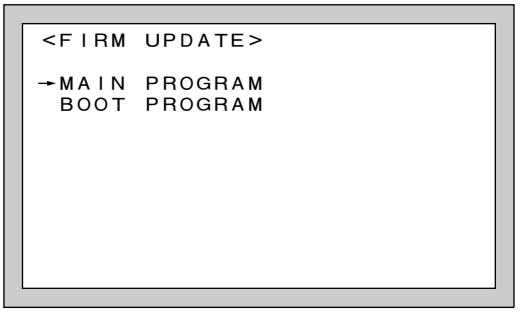
Item			Setting	Description
CONNECT MODEL			Display only	Displays the model name of the CA and CCU is connected.
TRIAX STEP [a)]			Display only	Displays the TRIAX cable length status.
INTERCOM	CCU		Display only	Does not function at preset.
	CHU CH1 MODE [a)]		Display only	Displays the intercom CH1 status. PROD: Producer line ENG: Engineer line
		MIC [a)]	Display only	Displays the intercom CH1 status ON or OFF.
CHU MIC GAIN	CH1 [a)]		Display only	Displays the CH1 gain status of the microphone circuit.
	CH2 [a)]		Display only	Displays the CH2 gain status of the microphone circuit.

a) This item is displayed when CA-TX50/TX50P and CCU-TX50/TX50P are connected.

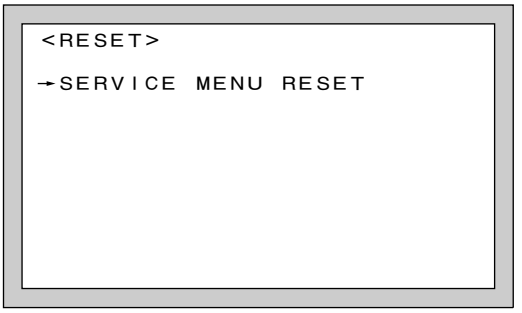
DIAGOSIS page (Refer to Section 1-10.)



FIRM UPDATE page (Refer to Section 1-9.)



RESET page



Item	Setting	Description
SERVICE MENU RESET	Execute by pressing the MENU dial.	Returns all items in the SERVICE (except the adjustment value of Trimming), USER CUSTOMIZE, OPERATION, PAINT, FILE (include the 20 scene files.), MAINTENANCE (except the setting of the DATE.) menu to the factory-set values.

Section 4
File System

This unit is equipped with various file systems for managing data.
In this section, the menu operations are described as follows.
Example: When executing WRITE (CAMERA → MS) at the OPERATOR FILE page of the FILE menu.
FILE → OPERATOR FILE → WRITE (CAMERA → MS)
As for the details on the setup menu, refer to Section 3. For details on how to display the SERVICE menu, refer to "Section 5-1-5. SERVICE Menu".

4-1. File Structure

The following six types of files are available. As for the items to be stored in each file, refer to Section 4-8. " File Items".

1. **Operator File**
   Stores the items displayed on the viewfinder and switch settings for camera operator. This file can be stored in the memory stick, yet the video data (paint data) cannot be stored.
2. **Scene File**
   Stores the temporary video setting data according to the scene. This file can be stored in the camera and memory stick.
3. **Reference File**
   Stores the standard image setting data adjusted in the factory, and this file contains the reference values of the auto setup adjustment. This file can be stored in the camera and memory stick.
4. **Lens File**
   Used for compensation of the deviation which generates by switching the lens extender from OFF to ON and for compensation of the difference in the characteristics between lenses. This file is stored in the camera.

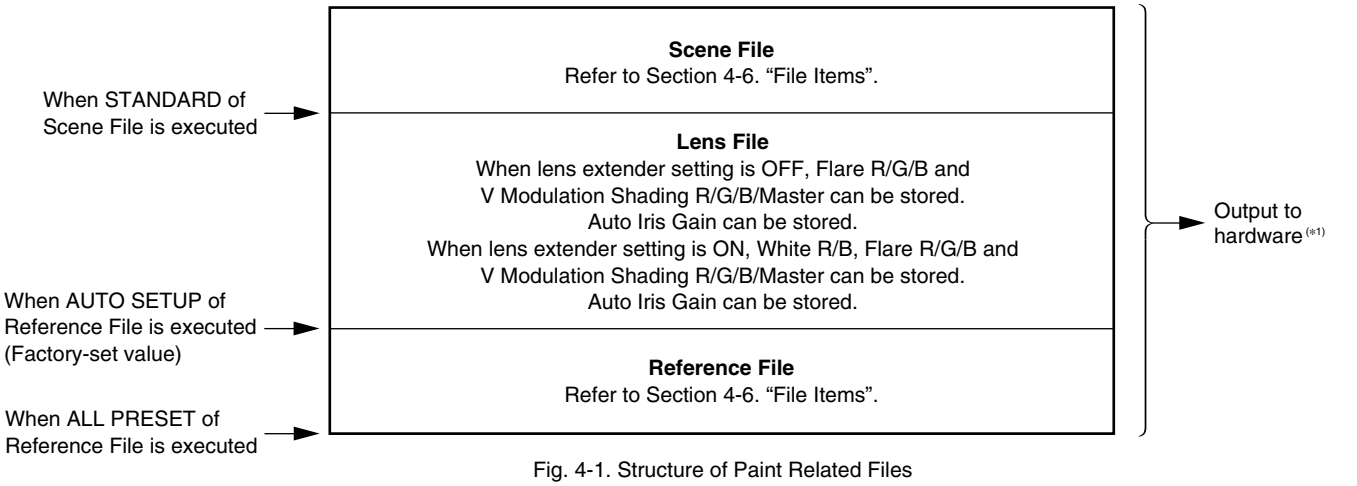


Fig. 4-1. Structure of Paint Related Files

(*1): The additional data of each file is sent to each circuit on the unit.

4-2. Operator File

Operator File stores data in the memory stick.
Storing and reading data are implemented using the setup menu.

Notes

- Operator file data stored in the memory stick cannot be read when the power is just turned ON.
- The current operator file data is retained even when the power is turned off by the power switch.
- Before storing the data in the memory stick, make sure that the LOCK switch on the memory stick is in OFF position.

Storing (Refer to step 1 of Fig. 4-2.)

Using FILE Menu

Stores the current status in the memory stick.

FILE → OPERATOR FILE → WRITE (CAMERA → MS)

Reading (Refer to step 2 of Fig. 4-2.)

Using FILE Menu

FILE → OPERATOR FILE → READ (MS → CAMERA)

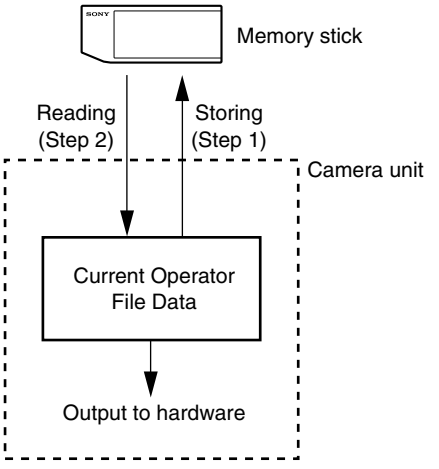


Fig. 4-2. Operating Procedure for Operator Files

4-3. Scene File

Scene File stores data in the camera and memory stick.
Storing and calling data are implemented using the setup menu.
Scene files can be copied between cameras using the memory stick.

Notes

- Scene Files are files for storing the differences from the Reference File. Therefore when the Reference File is changed, output of the Scene File item corresponding with the item changed in the Reference File is also changed.
- Before storing the data in the memory stick, make sure that the LOCK switch on the memory stick is in OFF position.

Storing (Refer to step 1 of Fig. 4-3.)

Using FILE Menu

(1) Change the scene file item to the desired value.
(2) FILE → SCENE FILE 1 → STORE
Select the scene file number and enter the file name to be stored.

Calling and Clearing the Call (Refer to step 2 of Fig. 4-3.)

Using FILE Menu

Select the scene file number to be called on the "SCENE FILE 1" page. A file currently being called is shown with its file number highlighted. Select the number again to cancel the call and resume the previous status. (Cancel is possible only once.)

Storing the Scene File to the Memory Stick (Refer to step 3 of Fig. 4-3.)

Using FILE Menu

Stores the scene files stored in the camera to the memory stick.
FILE → SCENE FILE 2 → WRITE (CAMERA → MS)

Reading the Scene File from the Memory Stick (Refer to step 4 of Fig. 4-3.)

Using FILE Menu

Reads the scene files stored in the memory stick to the camera.
FILE → SCENE FILE 2 → READ (MS → CAMERA)

Note

Scene File data stored in the memory stick cannot be read when the power is just turned on.

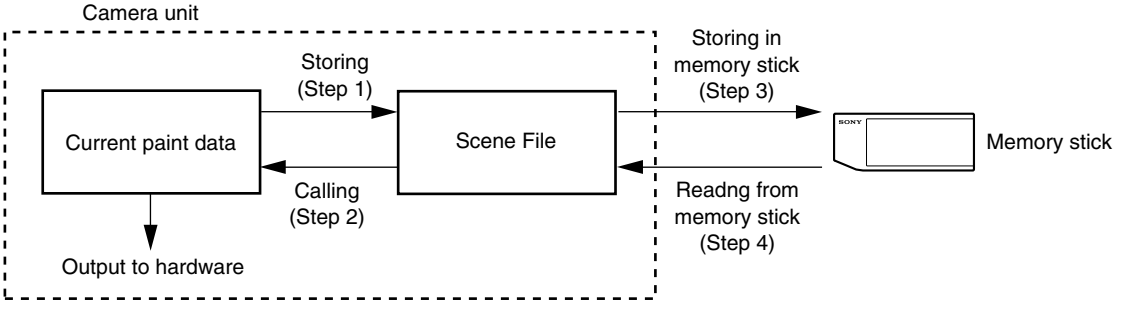


Fig. 4-3. Operating Procedure for Scene Files

4-4. Reference File

Reference File stores data in the camera and the memory stick.
Storing and calling the data are implemented using the setup menu.

Reference Files stores the differential data of the factory-setting. Therefore, the adjustment is required, when initializing the Reference File. To initialize data, use the setup menu. You can select whether to initialize the all file items.
Reference Files can be copied between cameras using the memory stick.

Note

Before storing the data in the memory stick, make sure that the LOCK switch on the memory stick is in OFF position.

Storing (Refer to step 1 of Fig. 4-4.)

Using SERVICE Menu

SERVICE → REFERENCE FILE → STORE FILE

The data will be stored in the camera and the numerical data will be displayed as 0. (Excluding some items. Refer to Section 4-6. “File Items”.)

Calling (Refer to step 2 of Fig. 4-4, Fig. 4-1.)

Using SERVICE Menu

SERVICE → REFERENCE FILE → STANDARD

The temporary paint amount and scene file amount will be cleared and the reference file will be reset to the state stored in.

Reading the Reference File from the Memory Stick (Refer to step 3 of Fig. 4-4.)

Using SERVICE Menu

(1) Reference File data stored in the camera can be changed by reading the Reference File data stored in the memory stick.
SERVICE → REFERENCE FILE → READ (MS → CAMERA)

(2) The Reference File data in the memory stick cannot be applied to the camera when the data are just read. For applying the data, adjust the level automatically.
SERVICE → AUTO SETUP → AUTO LEVEL

Note

Reference File data stored in the memory stick cannot be read when the power is just turned on.

Storing the Reference File to the Memory Stick (Refer to step 4 of Fig. 4-4.)

Using SERVICE Menu

Stores Reference File stored in the camera in the memory stick.

SERVICE → REFERENCE FILE → WRITE (CAMERA → MS)

Initializing All File Items (Refer to step 5 of Fig. 4-4.)

Using SERVICE Menu

SERVICE → REFERENCE FILE → ALL PRESET → STORE FILE

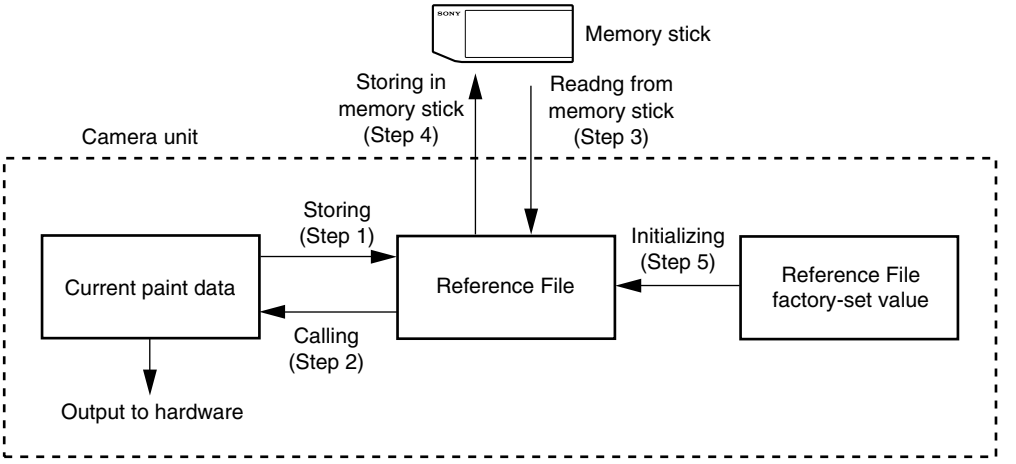


Fig. 4-4. Operating Procedure for Reference Files

4-5. Lens File

Lens File stores the data to compensate the differences of the white shading, flare balance, white balance, which occur when the lens extender is set to ON. It also stores the name of the lens. Lens File data of up to 16 files can be stored in the camera. (The data for general lenses has already been set to the files 1 to 8. Therefore, it is recommended to store the adjustment data to the files 9 to 16 for retained the individual adjustment data.) The adjustment data can be called by selecting the Lens File.
The Lens File stores the differential data from the Reference File.

Notes

Prior to creating the Lens File, perform the necessary adjustments by using the lens normally used to create the Reference File.

Adjusting the Lens File Data

(1) Mount the lens. Select the file with the same name as the lens mounted from the setup menu. If no file with the same name as the lens exists, select "NO OFFSET".
SERVICE → LENS FILE → No. → (Select the No.)
(2) Select the name of the lens.
(3) Set the lens extender to OFF.
(4) Shoot the white pattern, and adjust V modulation R/G/B/Master so that the video level is around 560 mV (80 %) with the lens iris set around F4 and the zoom control in the center of the ring.
SERVICE → VIDEO LEVEL → V MOD R/G/B/M
(5) Adjust the white balance and flare balance shooting the grayscale chart.
(6) Zooming the lens, and adjust the center marker to a position at which the object does not deviate.*1
(7) Store the data in the lens file.
SERVICE → LENS FILE → STORE FILE
(8) Set the lens extender to ON.
(9) Shoot the white pattern, and adjust V modulation R/G/B/Master so that the video level is around 560 mV (80 %) with the lens iris set around F4 and the zoom control in the center of the ring.
SERVICE → VIDEO LEVEL → V MOD R/G/B/M
(10) Adjust the white balance and flare balance shooting the grayscale chart.
(11) Zooming the lens, and adjust the center marker to a position at which the object does not deviate.*1
(12) Store the Lens File.
SERVICE → LENS FILE → STORE FILE

∗1 : The center marker position is stored in the Lens File immediately after the position is aligned and not when executing the Lens File store.

Calling

Using MAINTENANCE Menu

Select the Lens File.
MAINTENANCE → LENS SELECT

Initializing

Using SERVICE Menu

All data of the lens file being currently selected will be initialized to the factory setting values.
SERVICE → LENS FILE → FILE CLEAR (CURRENT)

4-6. File Items

You can save each setting data set using the setup menu in files.
This section shows the destination files to which the respective setting data can be stored.
It also shows the defalt settings when the unit was shipped from the factory.

Description on symbol

○ : When executing each file store, it indicates items that can be stored in the file. (If ON or OFF is described in the list, the setting is stored as it is.)

Function	Item	Reference file	Scene file	Lens file	Operator file	Factory Setting
GAIN	–3, 0, 3, 6, 9, 12, 18, 24, 30, 36 dB	0 dB	○	—	—	0dB
Shutter	Shutter On	OFF	○	—	—	OFF
	Shutter Speed	—	○	—	—	NTSC: 1/100 PAL: 1/60
	EVS	○	○	—	—	OFF
	CLS On	OFF	○	—	—	OFF
	CLS Speed	—	○	—	—	NTSC: 60.38Hz PAL: 50.00Hz
Optical Filter	Filter Position	—	○	—	—	1
5600k	5600K On	OFF	○	—	—	OFF
White	R White	○*	○	○	—	0
	G White	○	○	○	—	0
	B White	○*	○	○	—	0
	ATW	—	—	—	—	OFF
Black	Master Black	○	○	—	—	0
	R Black	—	○	—	—	0
	G Black	—	○	—	—	0
	B Black	—	○	—	—	0
Black Set	R Black Set	—	—	—	—	0
	G Black Set	—	—	—	—	0
	B Black Set	—	—	—	—	0
	Gain Bounce	OFF	—	—	—	OFF
Flare	Flare On	ON	○	—	—	ON
	R Flare	○	○	○	—	0
	G Flare	○	○	○	—	0
	B Flare	○	○	○	—	0

* : White Gamma RGB mode only.

(Continued)

Function	Item	Reference file	Scene file	Lens file	Operator file	Factory Setting
Detail	Detail On	ON	○	—	—	ON
	Detail Level	○	○	—	—	0
	Limiter	○	○	—	—	0
	White Limiter	○	○	—	—	0
	Black Limiter	○	○	—	—	0
	Crispening	○	○	—	—	0
	Frequency	○	○	—	—	0
	Mix Ratio	○	○	—	—	50
	Detail Comb	○	○	—	—	–50
	V Detail Creation Mode	○	—	—	—	NAM
	H/V Ratio Mode	○	—	—	—	H/V
	H/V Ratio	○	○	—	—	0
	Level Dep. On	○	○	—	—	ON
	Level Depend	○	○	—	—	0
	Fine Detail On	○	○	—	—	OFF
	Fine Detail	○	○	—	—	0
	Knee Aperture On	○	○	—	—	OFF
	Knee Aperture	○	○	—	—	0
Gamma	Gamma On	ON	○	—	—	ON
	Gamma Type	○	○	—	—	5
	Step Gmma (0.95 to 0.35)	○	○	—	—	0.45
	R Gamma	○*	○	—	—	0
	G Gamma	○	○	—	—	0
	B Gamma	○*	○	—	—	0
	M Gamma	○	○	—	—	0
	White Gamma RGB	—	—	—	—	OFF
Black Gamma	Black Gamma On	○	○	—	—	ON
	R Black Gamma	○	○	—	—	0
	G Black Gamma	○	○	—	—	0
	B Black Gamma	○	○	—	—	0
	M Black Gamma	○	○	—	—	0
	RGB Black Gamma Range	○	○	—	—	High

* : White Gamma RGB mode only.

(Continued)

Function	Item	Reference file	Scene file	Lens file	Operator file	Factory Setting
Knee	Knee On	○	○	—	—	ON
	R Knee Point	○	○	—	—	0
	G Knee Point	○	○	—	—	0
	B Knee Point	○	○	—	—	0
	M Knee Point	○	○	—	—	0
	R Knee Slope	○	○	—	—	0
	G Knee Slope	○	○	—	—	0
	B Knee Slope	○	○	—	—	0
	M Knee Slope	○	○	—	—	0
	Auto Knee (DCC) On	ON	○	—	—	ON
	Auto Knee Point Limit	○	○	—	—	0
	Auto Knee Slope	○	○	—	—	0
	Knee Max On	○	○	—	—	OFF
	Knee Saturation On	○	○	—	—	ON
	Knee Saturation	○	○	—	—	–99
White Clip	White Clip On	ON	—	—	—	ON
	R White Clip	○	○	—	—	0
	G White Clip	○	○	—	—	0
	B White Clip	○	○	—	—	0
	M White Clip	○	○	—	—	0
White Shading	R H Saw	—	—	—	—	0
	G H Saw	—	—	—	—	0
	B H Saw	—	—	—	—	0
	R V Saw	—	—	—	—	0
	G V Saw	—	—	—	—	0
	B V Saw	—	—	—	—	0
	R H Para	—	—	—	—	0
	G H Para	—	—	—	—	0
	B H Para	—	—	—	—	0
	R V Para	—	—	—	—	0
	G V Para	—	—	—	—	0
	B V Para	—	—	—	—	0
	Auto White Shading Mode	○	—	—	—	RGB
	3D White Shading On	—	—	—	—	OFF
V Modulation	V Mod On	ON	—	—	—	ON
	R V Mod	—	—	○	—	0
	G V Mod	—	—	○	—	0
	B V Mod	—	—	○	—	0
	M V Mod	—	—	○	—	0
	Dynamic Shading	—	—	○	—	OFF

(Continued)

Function	Item	Reference file	Scene file	Lens file	Operator file	Factory Setting
Black Shading	R H Saw	—	—	—	—	0
	G H Saw	—	—	—	—	0
	B H Saw	—	—	—	—	0
	R V Saw	—	—	—	—	0
	G V Saw	—	—	—	—	0
	B V Saw	—	—	—	—	0
	R H Para	—	—	—	—	0
	G H Para	—	—	—	—	0
	B H Para	—	—	—	—	0
	R V Para	—	—	—	—	0
	G V Para	—	—	—	—	0
	B V Para	—	—	—	—	0
	2D Black Shading On	—	—	—	—	ON
Skin Detail	Skin DTL On	○	○	—	—	OFF
	Skin Gate On	—	—	—	—	OFF
	Skin Gate Select	○	○	—	—	1
	Skin 1 On	ON	ON	—	—	ON
	Skin 1 Level	○	○	—	—	50
	Skin 1 Phase	○	○	—	—	0
	Skin 1 Width	○	○	—	—	30
	Skin 1 Sat	○	○	—	—	–89
	Skin 2 On	○	○	—	—	OFF
	Skin 2 Leval	○	○	—	—	50
	Skin 2 Phase	○	○	—	—	0
	Skin 2 Width	○	○	—	—	30
	Skin 2 Sat	○	○	—	—	–89
	Skin 3 On	○	○	—	—	OFF
	Skin 3 Level	○	○	—	—	50
	Skin 3 Phase	○	○	—	—	0
	Skin 3 Width	○	○	—	—	30
	Skin 3 Sat	○	○	—	—	–89
Skin Matrix	Skin Matrix Saturation	○	○	—	—	0
	Skin Matrix Hue	○	○	—	—	0

(Continued)

Function	Item	Reference file	Scene file	Lens file	Operator file	Factory Setting
Matrix	Matrix On	○	○	—	—	ON
	Preset Matrix On	○	○	—	—	ON
	Preset Matrix Select	○	○	—	—	STD
	User Matrix On	○	○	—	—	ON
	Saturation	○	○	—	—	0
	Hue	○	○	—	—	0
	R-G	○	○	—	—	0
	R-B	○	○	—	—	0
	G-R	○	○	—	—	0
	G-B	○	○	—	—	0
	B-R	○	○	—	—	0
	B-G	○	○	—	—	0
OHB Matrix	OHB Matrix On	○	—	—	—	OFF
	R-G	—	—	—	—	0
	R-B	—	—	—	—	0
	G-R	—	—	—	—	0
	G-B	—	—	—	—	0
	B-R	—	—	—	—	0
	B-G	—	—	—	—	0
Low Key Sat.	Low Key Saturation On	○	○	—	—	ON
	Range	○	○	—	—	High
	Low Key Saturation	○	○	—	—	0
Cross Color Suppress	On	○	○	—	—	ON
	Level	○	○	—	—	0
Switch Assign	5600k Switch Dimmer	—	—	—	○	5
	Gain [L]	—	—	—	○	0dB
	Gain [M]	—	—	—	○	+9dB
	Gain [H]	—	—	—	○	+18dB
	Outout [DCC]	—	—	—	○	Auto Knee
Iris	Auto Iris On	○	○	—	—	ON
	Auto Iris Orverride	—	—	—	○	0
	Auto Iris Mode	○	○	—	—	STD
	Level	○	○	○	—	0
	APL	○	○	—	—	60
	Gain	○	○	○	—	0
Preset White	Color Temp	—	—	—	○	3200k
	Fine	—	—	—	○	0

(Continued)

Function	Item	Reference file	Scene file	Lens file	Operator file	Factory Setting
White Memory	AWB MEMORY MODE	—	—	—	○	2
	WIDE BAND AWB	—	—	—	○	ON
	SHOCKLESS WHITE	—	—	—	○	3
VF Marker	Safety Zone On	—	—	—	○	ON
	Safety Zone Select	—	—	—	○	90 %
	Safety Zone Nomal/Aspect	—	—	—	○	Normal
	Aspect Ind Type	—	—	—	○	OFF
	Aspect Ind 4:3-15:9	—	—	—	○	4:3
	Center Maker On	—	—	—	○	ON
	Center Maker H Position	—	—	○	—	0
	Center Maker V Position	—	—	○	—	0
	Box Cursor On	—	—	—	○	OFF
	Box Cursor H Position	—	—	—	○	50
	Box Cursor V Position	—	—	—	○	50
	Box Cursor H Width	—	—	—	○	50
	Box Cursor V Width	—	—	—	○	50
	VF SCAN	—	—	—	○	AUTO
VF Display	ND	—	—	—	○	ON
	IRIS	—	—	—	○	ON
	White	—	—	—	○	ON
	5600k	—	—	—	○	ON
	Gain	—	—	—	○	ON
	Shutter	—	—	—	○	ON
	Skin DTL	—	—	—	○	ON
	Audio	—	—	—	○	ON
	Tape Remain	—	—	—	○	ON
	VTR Status	—	—	—	○	ON
	VTR Alarm	—	—	—	○	ON
	Time Code	—	—	—	○	ON
	Return	—	—	—	○	ON
	VF Tally	—	—	—	○	×1
VF DTL	VF DTL On	—	—	—	○	ON
Zebra	Zebra On	—	—	—	—	OFF
	Zebra 1/2/1&2	—	—	—	○	1&2
	Zebra 1 Level	—	—	—	○	75 %
	Zebra 1 Width	—	—	—	○	10 %
	Zebra 2 Level	—	—	—	○	100 %
Monitor Out Select	R*, G*, B*, Y, ENC	—	—	—	—	ENC
Character	MONITOR Character On	—	—	—	○	ON
	RM Character	—	—	—	○	OFF

* : Selectable by Service menu only.

(Continued)

Function	Item	Reference file	Scene file	Lens file	Operator file	Factory Setting
TLCS	AGC SW	—	—	—	○	ON
	AGC LIMIT	—	—	—	○	12dB
	AGC CHANGE POINT	—	—	—	○	F2.8
	AE SW	—	—	—	○	ON
	AE LIMIT	—	—	—	○	1/250
	AE CHANGE POINT	—	—	—	○	F16
Gen Lock	SC Phase	—	—	—	—	0
	H Phase (Coarse)	—	—	—	—	0
	H Phase (Fine)	—	—	—	—	0
Clock	HOUR TYPE	—	—	—	—	12H
	DATE TYPE	—	—	—	—	Y/Mn/D
	CLOCK IND	—	—	—	—	OFF
CAMERA ID	ID	—	—	—	—	ALL Spase
	ID IND	—	—	—	—	OFF
Lens	Select	—	—	—	—	1
Encoder	Q Filter Wide/Narrow (NTSC Only)	—	—	—	—	Normal
	BARS On	—	—	—	—	OFF
	BARS Mode	—	—	—	—	NTSC: SMPTE PAL: FULL (75 %)
Test	Test 1 On (TEST SAW)	OFF	—	—	—	OFF
	Test 2 On (10 Step)	OFF	—	—	—	OFF
Others	TONE SW	—	—	—	—	ON
	VF PB Select (Selectable only when the DSR-1 is connected.)	—	—	—	—	Y
	SCREEN MODE	—	—	—	—	16:9
	WIDE ID	—	—	—	—	ON
File	SCENE WHITE DATA	—	—	—	—	ON
VIDEO OUT	SETUP SW (NTSC Only)	—	—	—	—	ON
	COMP LEVEL (PAL Only)	—	—	—	—	525
Blanking	V BLKG 19/20/21	—	—	—	—	20
Level Auto Set Up	White Setup Mode	—	—	—	—	A.LEVEL
ATW/C.TEMP	COLOR TEMP ADJ R GAIN	—	—	—	—	0
	COLOR TEMP ADJ B GAIN	—	—	—	—	0
	X	—	—	—	—	0.423
	Y	—	—	—	—	0.399
	ATW SPEED	—	—	—	—	2
Filter Disk	FILTER 1	—	—	—	—	CLEAR
	FILTER 2	—	—	—	—	1/4ND
	FILTER 3	—	—	—	—	1/16ND
	FILTER 4	—	—	—	—	1/64ND

Section 5
Electrical Alignment

5-1. Preparation

5-1-1. Equipment Required

Tools

- Extension board EX-464 (Sony part No. : A-8318-864-A)
- Pattern box (PTB-500, 90-240 Vac) (Sony part No. : J-6029-140-B)
- Grayscale chart (4:3, transparent) (Sony part No. : J-6026-130-B)
- Grayscale chart (16:9, transparent) (Sony part No. : J-6394-080-A)
- Grayscale chart (4:3, reflective) (Commercially available, Refer to Section 5-1-7)
- Flexible card wire (30P, 140 mm) (2 pieces) (Sony part No. : 1-823-429-11)
- EX Harness (3 pieces) (Sony part No. : 1-961-653-21)

Equipment

- Digital oscilloscope : Tektronix TDS3034 or equivalent
- Waveform monitor/Vectorscope : Tektronix 1765 or equivalent
- Color monitor : Sony PVM-1320 or equivalent
- Frequency counter : Advantest R5362B or equivalent
- Digital voltmeter : Advantest R6441B or equivalent

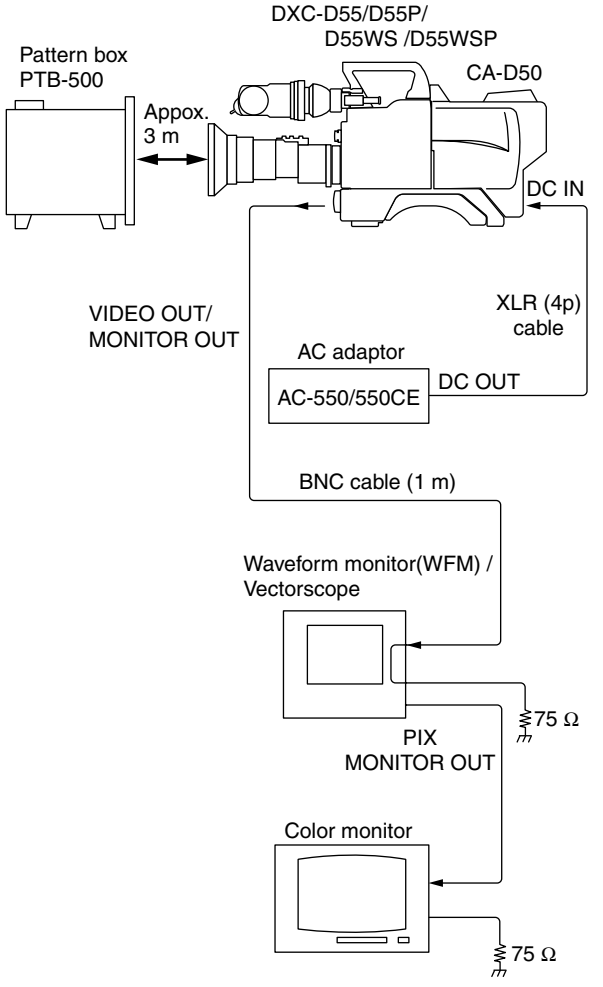
Peripheral equipment

- Camera adaptor : CA-D50
- Viewfinder : DXF-801/801CE
- AC adapter : AC-550/550CE

5-1-2. Notes on Adjustment

- All measuring equipment should be calibrated.
- "Section 5-1-4. Initial settings" must be completed.
- Be sure to turn off the power before disconnecting boards.
- Before adjustment, warm up the camera for about 10 minutes.

5-1-3. Connection



5-1-4. Initial Settings

- Side panel
  - GAIN switch → L
  - OUT PUT/DCC switch → CAM/DCC OFF
  - W.BAL switch → PRE
  - 5600K button → OFF
  - EZ MODE button → OFF
  - ATW button → OFF
  - IRIS MODE → STD
  - ZEBRA switch → OFF
- Front panel
  - SHUTTER switch → L
  - FILTER knob → 1 (CLEAR)
- Viewfinder
  - DISPLAY switch → ON
- Lens
  - IRIS → M (Manual)
  - ZOOM → M (Manual)

Menu setting

Perform STANDARD by the following procedure before beginning adjustments for reset the reference file items to standard values.

Menu settings :

MENU : SERVICE

PAGE : REFERENCE FILE

ITEM : STANDARD

Move the cursor → to "STANDARD", and press the MENU dial. "RECALL OK ?" will be displayed.

Press MENU dial again, "STANDARD RECALLED" will be displayed.

5-1-5. SERVICE Menu

In this section, the SERVICE menu is used to perform adjustment.

Double-click the 5600K button while pressing the MENU switch toward the ON side.
The SERVICE menu appears on the TOP menu.

In this section, the menu operations are described as follows :
Example : When selecting ENC of MONITOR OUT at the VA TRIMMING page of the SERVICE menu.

MENU : SERVICE
PAGE : VA TRIMMING
ITEM : MONITOR OUT → ENC

5-1-6. Presetting Compensation Data

Before beginning adjustment of VA-214 board, preset all compensation data output from the CPU. To preset proceed as follows. By presetting the data, the CPU will output the center value of each data. If you adjust each item without presetting, it cannot be regarded as completion of adjustment.

How to preset the data

Perform the preset operation on the camera using the viewfinder displays.

Note

Make sure the no display appears on the viewfinder before beginning presetting.

Use the MENU switch on the side panel of the camera and the MENU dial to preset.

1. Display the REFERENCE FILE page of SERVICE menu.
2. Select ALL PRESET and execute presetting. When presetting is normally executed, a message "CLEARED" is displayed.
3. Return the MENU switch to OFF.

5-1-7. Gray-Scale Chart and its Maintenance

Use of a reflective-type gray-scale chart (with reflectance of 89.9%) is recommended for the Gain adjustment. If a reflective-type gray-scale chart is not available, use a transparent-type gray-scale chart with a well-maintained pattern box.
Calibrate illuminance (or luminance) on the surface of the gray-scale chart to the specified value as follows. Also, calibrate the color temperature to exactly 3200K by adjusting the illumination.

Information on the reflective gray-scale chart (4:3)

Availability of reflective-type gray-scale chart

The reflective-type gray-scale chart (4:3) is commercially available.

Chart : Reflective-type gray-scale chart (GS-3 of Murakami Color Research Lab. Inc. or equivalent)
Available from : Murakami Color Research Lab. Inc.

Address : 3-11-3 Kachidoki, Chuo-ku, Tokyo 104-0054
TEL : (Japan) 03-3532-3011
FAX : (Japan) 03-3532-2056

Notes on handling

- Do not touch the chart surface with bare hands.
- Do not rub or stain the chart surface.
- Do not expose or use the chart under direct sunlight for a long time.
- Do not leave or store the chart in a place that is very humid or contains toxic gas.
- Do not place anything on top of the chart surface.
- When a chart is stored for a long time without using it, open the case and leave the chart to dry for 30 minutes or 1 hour once or twice every month.

Guideline of replacing the chart when used as the reference chart

The reflective characteristics of the reflective-type gray-scale chart can easily deteriorate over time. As a guideline, the chart should be replaced every 2 years, but the replacement interval depends on the storage conditions of the chart.

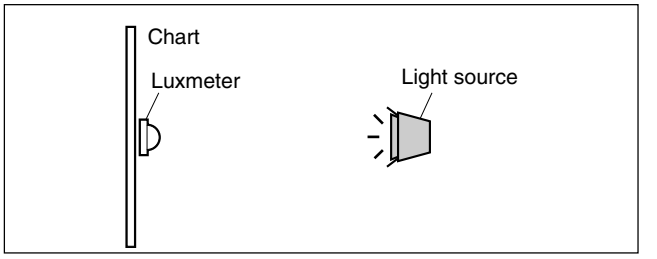
Setting Illuminance (In case of using reflective-type chart)

Measuring equipment : Luxmeter (pre-calibrated)

1. Turn on the light source that illuminates the chart and allow it to warm-up for about 30 minutes.
2. Fix a luxmeter in front of the reflective-type chart. Obtain an illuminance of 2000 lx uniformly over the entire surface of the chart by adjusting the position and angle of the illuminations.

Note

Place the light source at the same height and direction of the camera that shoots the chart surface.



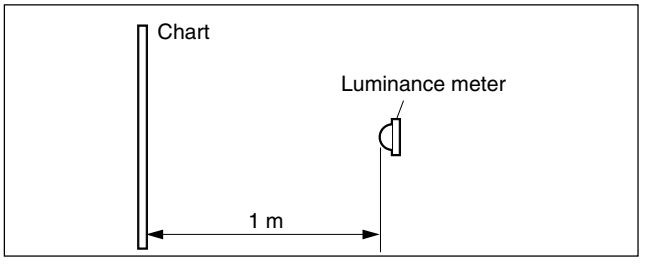
Setting Luminance (In case of using transparent-type chart)

Measuring equipment : Photometer (Minolta LS-110 or equivalent, pre-calibrated)

1. Turn on the pattern box and allow it to warm-up for about 30 minutes.
2. Place the pattern box such that direct light does not fall on the chart surface.
   (Alternatively, place a cover the inside of which is painted with unglazed black, around the entire chart.)
3. Fix a photometer 1 m in front of the chart in the pattern box.
4. Obtain the luminance of 573 ±6 cd/m^2 at the center of the chart by adjusting the BRIGHTNESS control of the pattern box.

Note

Adjusting luminance of 573 ±6 cd/m^2 creates the same illuminance of 2000 lx on the reflective-type gray-scale chart with reflection of 89.9%.



5-2. VA-214 Board Adjustment

Note

Before adjustments, be sure to perform Presetting Compensation Data referring to Section 5-1-6.

Perform the adjustments from Sections 5-2-1 to 5-2-4 in order.
However, the adjustment of Section 5-2-5 can be performed independently.

5-2-1. Black Balance Adjustment

Adjust the black balance automatically.
WHT/BLK switch (on the front panel) → BLK

5-2-2. Offset Adjustment

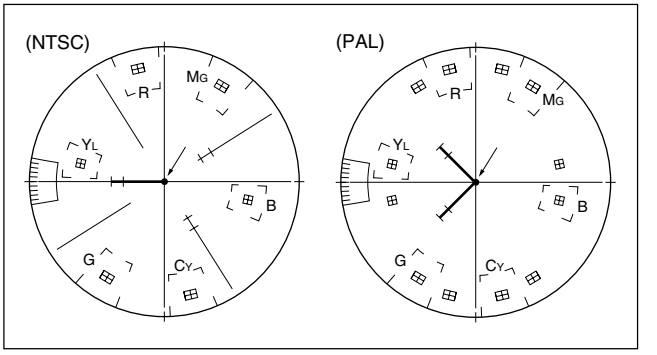
Equipment : Vectorscope (×5 range)
Test Point : VIDEO OUT connector

Preparations

- Iris of the lens → CLOSE
- Menu setting :
  MENU : SERVICE
  PAGE : VA TRIMMING
  ITEM : MONITOR OUT → ENC
  OFFSET ADJUST → R

Adjustment Procedures

1. OFFSET R Adjustment
   Adjustment Point :
   ITEM : OFFSET [R]
   Specifications : The spot of the vectorscope shall not change.
2. Menu setting :
   ITEM : OFFSET ADJUST → G
3. OFFSET G Adjustment
   Adjustment Point :
   ITEM : OFFSET [G]
   Specifications : The spot of the vectorscope shall not change.
4. Menu setting :
   ITEM : OFFSET ADJUST → B
5. OFFSET B Adjustment
   Adjustment Point :
   ITEM : OFFSET [B]
   Specifications : The spot of the vectorscope shall not change.



Setting after Adjustment

ITEM : OFFSET ADJUST → OFF

5-2-3. White Modulation Balance Adjustment

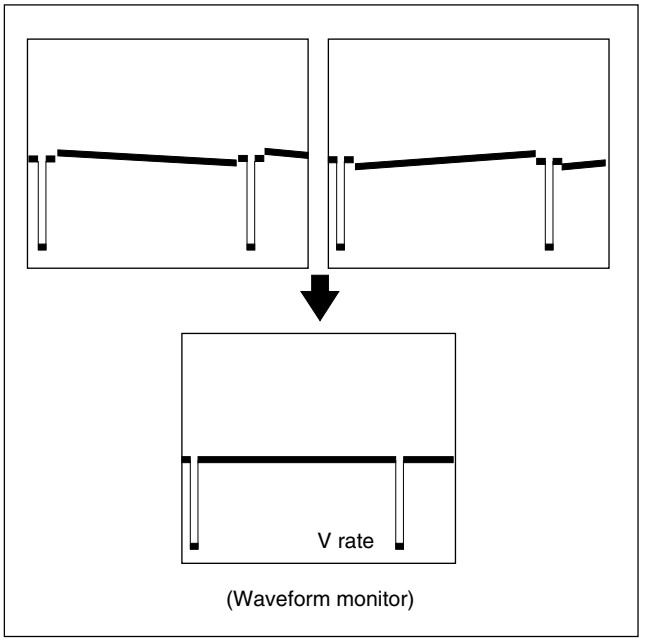
Equipment : Waveform monitor (×5 range)
Test Point : MONITOR OUT connector

Preparations

- Iris of the lens → CLOSE
- Menu settings :
  MENU : SERVICE
  PAGE : VA TRIMMING
  ITEM : MONITOR OUT → R
  W MOD BAL ADJUST → R

Adjustment Procedures

1. White Modulation Balance R Adjustment
   Adjustment Point :
   ITEM : W MOD BAL [R]
   Specifications : The waveform shall not change.
   Reference value : 3 mV (0.5 IRE) or less
2. Menu Setting :
   ITEM : MONITOR OUT → G
   W MOD BAL ADJUST → G
3. White Modulation Balance G Adjustment
   Adjustment Point :
   ITEM : W MOD BAL [G]
   Specifications : The waveform shall not change.
   Reference value : 3 mV (0.5 IRE) or less
4. Menu Setting :
   ITEM : MONITOR OUT → B
   W MOD BAL ADJUST → B
5. White Modulation Balance B Adjustment
   Adjustment Point :
   ITEM : W MOD BAL [B]
   Specifications : The waveform shall not change.
   Reference value : 3 mV (0.5 IRE) or less



(Waveform monitor)

Setting after Adjustment

ITEM : W MOD BAL ADJUST → OFF

5-2-4. Flare Offset Adjustment

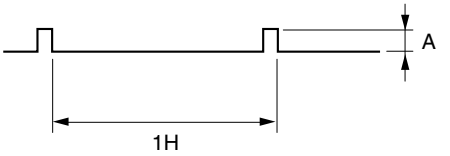
Equipment : Oscilloscope
Board extension : VA-214 board

Preparations

- Iris of the lens → CLOSE
- Menu settings :
  MENU : SERVICE
  PAGE : VA TRIMMING

Adjustment Procedures

1. Flare Offset R Adjustment
   Test Point : TP36 (GND : GND A)/
   EX-464 extension board
   Adjustment Point :
   ITEM : FLR OFFSET [R]
   Specifications : A = 0 ± 10 mV
2. Flare Offset G Adjustment
   Test Point : TP37 (GND : GND A)/
   EX-464 extension board
   Adjustment Point :
   ITEM : FLR OFFSET [G]
   Specifications : A = 0 ± 10 mV
3. Flare Offset B Adjustment
   Test Point : TP38 (GND : GND A)/
   EX-464 extension board
   Adjustment Point :
   ITEM : FLR OFFSET [B]
   Specifications : A = 0 ± 10 mV



(Oscilloscope)

Setting after Adjustment

Restore the VA-214 board to the original position.

5-2-5. Video Level Adjustment

Equipment : Waveform monitor
Test Point : MONITOR OUT connector

Preparations

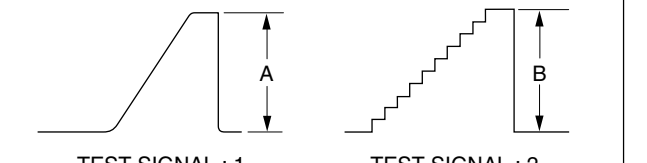
- Menu settings :
  MENU : SERVICE
  PAGE : FUNCTION SW
  ITEM : GAMMA → OFF

  PAGE : KNEE
  ITEM : KNEE → OFF

  PAGE : VA TRIMMING
  ITEM : MONITOR OUT → R

Adjustment Procedures

1. Video Level R Adjustment
   Adjustment Point :
   MENU : SERVICE
   PAGE : VA TRIMMING
   ITEM : VIDEO LEVEL [R]
   Specifications : When switching the TEST waveform between 1 ↔ 2, the levels A and B shall be A = B.
   Reference value :
   0.5 IRE (3 mV) or less.
   Menu settings :
   ITEM : TEST SIGNAL → 1, 2



(Waveform monitor)

2. Menu settings :
   ITEM : MONITOR OUT → G

3. Video Level G Adjustment
   Adjustment Point :
   ITEM : VIDEO LEVEL [G]
   Specifications : When switching the TEST waveform between 1 ↔ 2, the levels A and B shall be A = B.
   Reference value :
   0.5 IRE (3 mV) or less.
   Menu settings :
   ITEM : TEST SIGNAL → 1, 2
4. Menu settings :
   ITEM : MONITOR OUT → B
5. Video Level B Adjustment
   Adjustment Point :
   ITEM : VIDEO LEVEL [B]
   Specifications : When switching the TEST waveform between 1 ↔ 2, the levels A and B shall be A = B.
   Reference value :
   0.5 IRE (3 mV) or less.
   Menu settings :
   ITEM : TEST SIGNAL → 1,2

Setting after Adjustment

MENU : SERVICE
PAGE : VA TRIMMING
ITEM : MONITOR OUT → ENC

ITEM : TEST SIGNAL → OFF

PAGE : FUNCTION SW
ITEM : GAMMA → ON

PAGE : KNEE
ITEM : KNEE → ON

5-3. PA-287G/288G/289G Board Adjustment

5-3-1. PA Gain Adjustment

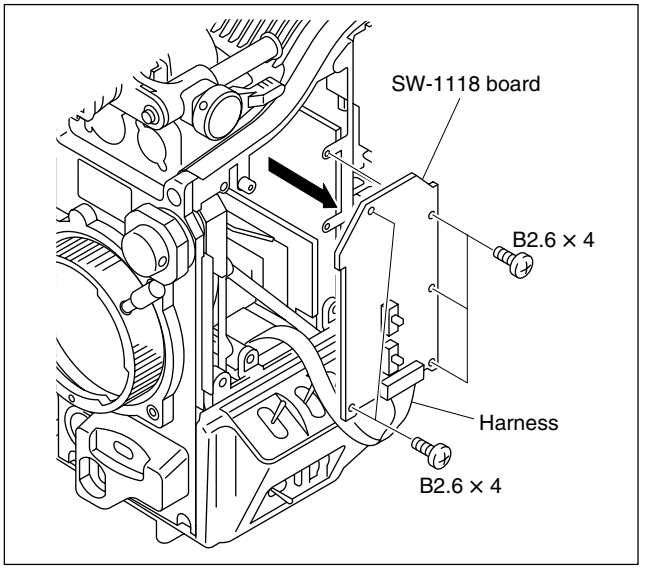
Note

For the PA gain adjustment, using an 89.9 %-reflective grayscale chart is preferable.
Before performing adjustment, be sure to set the illumination of the light source (or the luminous intensity on the chart surface) and to set the color temperature exactly.
For details, refer to Section 5-1-7. “Maintaining the Grayscale Chart”.

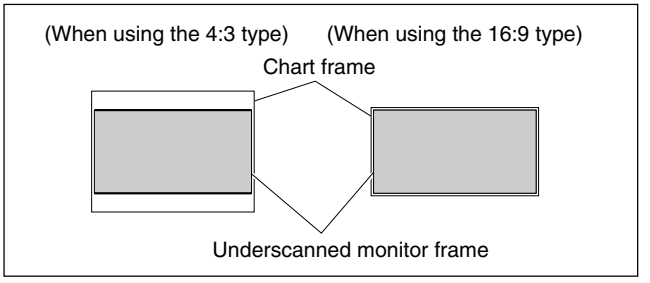
Equipment : Oscilloscope
Vectorscope
Object : Grayscale chart
Board extension : VA-214 board

Preparations

- Remove the inside panel assembly.
  (Refer to Section 1-4-1.)
- Remove the five screws fixing the SW-1118 board.
  (Do not disconnect the harness.)



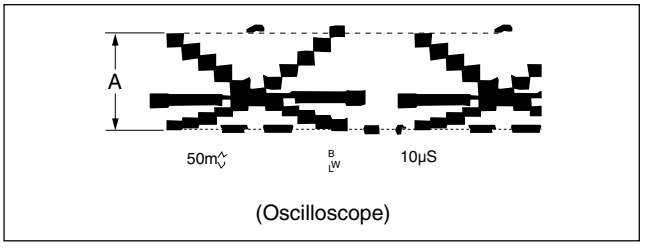
• Shoot the fully occupied grayscale chart in the full underscanned monitor frame adjusting the zoom control. (2000 lx and 3200 K)
For DXC-D55WS/D55WSP, shoot the chart as follows according to the chart to be used.



• Iris of the lens : F11
• Menu setting :
MENU : OPERATION
PAGE : PRESET WHITE
ITEM : COLOR TEMP → 3200k
• W.BAL switch (on the side panel) → PRE (3200 K)

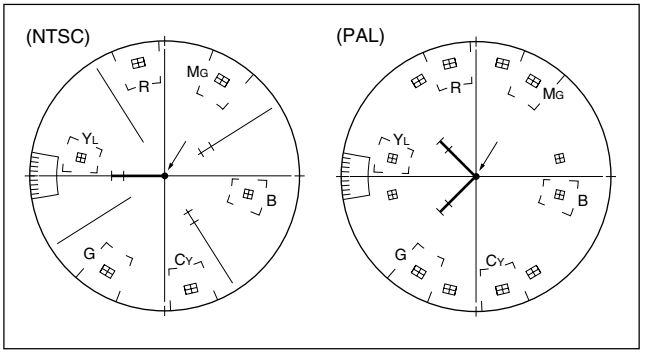
Adjustment Procedures

1. PA G Gain Adjustment
Test Point : TP71 (GND : GND A) / EX-464 extension board
Adjustment Point : ⊘ RV1/PA-288G board
Specifications : A = 165 ± 10 mV



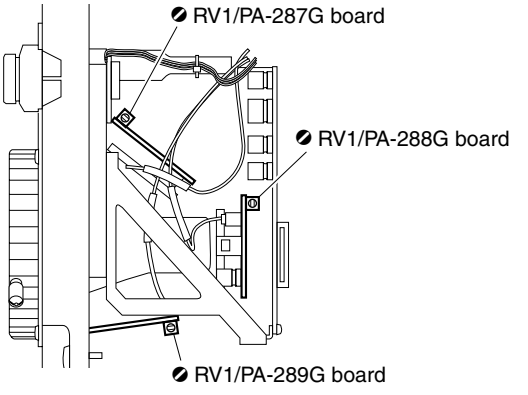
2. Menu setting :
MENU : SERVICE
PAGE : VA TRIMMING
ITEM : MONITOR OUT → ENC
Connect the vectorscope to the MONITOR OUT connector.

3. PA R/B Gain Adjustment
Adjustment Point : ⊘ RV1/PA-289G board [R ch]
⊘ RV1/PA-287G board [B ch]
Specifications : Center the beam spot on the vectorscope.



Setting after Adjustment

• Restore the VA-214 board to the original position.
• Restore the SW-1118 board to the original position, and reattach the inside panel assembly.



5-4. DPR-290 Board Adjustment

5-4-1. Video Level Adjustment

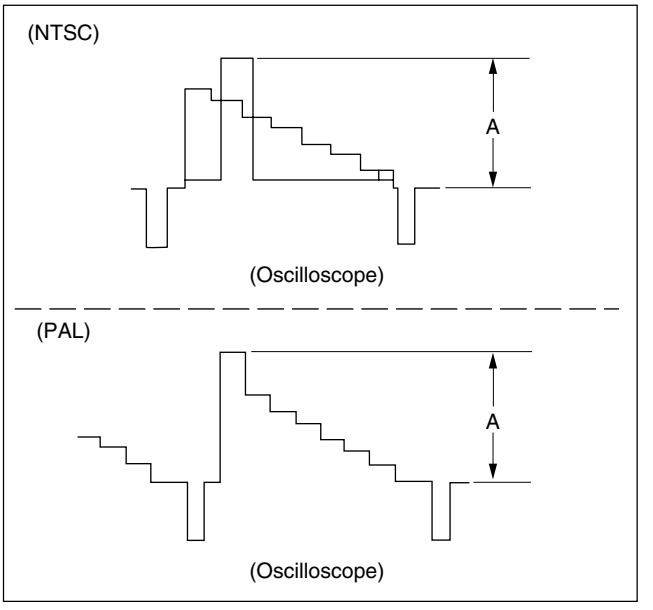
Equipment : Oscilloscope

Preparations

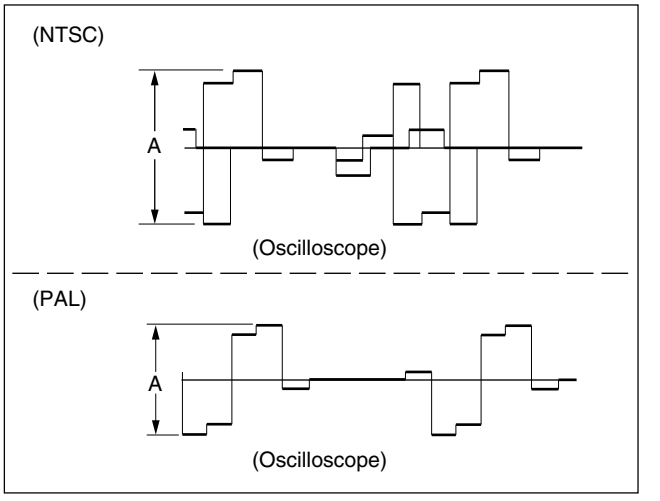
- Remove the outside panel assembly.
  (Refer to Section 1-4-1.)
- OUTPUT/DCC switch (on the side panel) → BARS/OFF
- Menu setting :
  MENU : SERVICE
  PAGE : DPR TRIMMING 2
  ITEM : ADJUST MODE → COMP

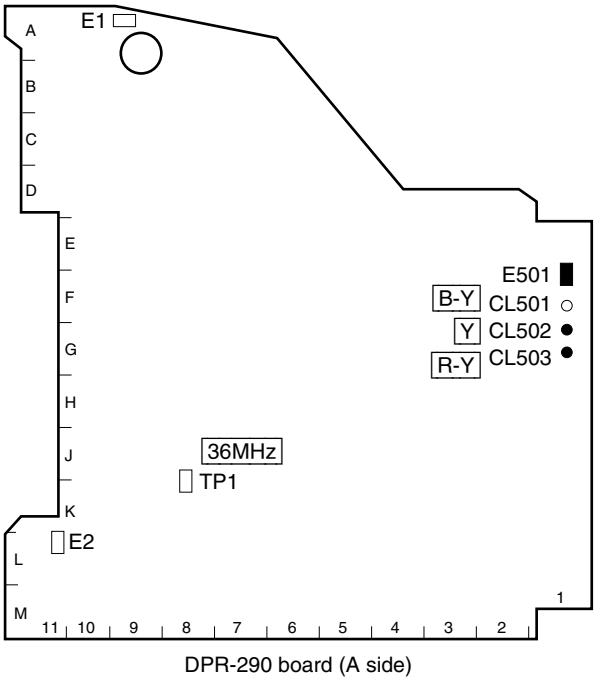
Adjustment Procedures

1. Y Level Adjustment
   Test Point : CL502 (GND : E501) /DPR-290
   Adjustment Point :
   ITEM : Y (COMP) LEVEL
   Specifications : NTSC : A = 714 ±2 mV
   PAL : A = 700 ±2 mV



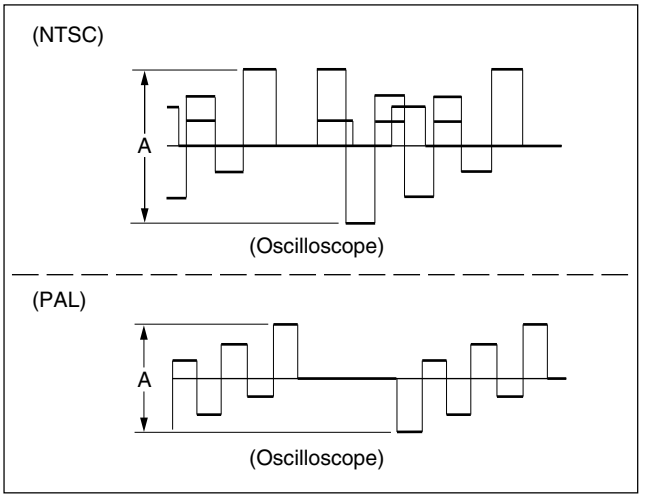
2. R-Y Level Adjustment
   Test Point : CL503 (GND : E501) /DPR-290
   Adjustment Point :
   ITEM : R-Y LEVEL
   Specifications : NTSC : A = 700 ±2 mV
   PAL : A = 525 ±2 mV



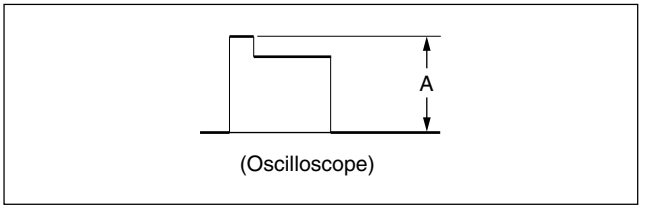


DPR-290 board (A side)

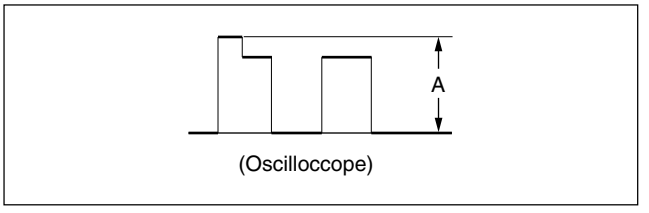
3. B-Y Level Adjustment
   Test Point : CL501 (GND : E501) /DPR-290
   Adjustment Point :
   ITEM : B-Y LEVEL
   Specifications : NTSC : A = 700 ±2 mV
   PAL : A = 525 ±2 mV



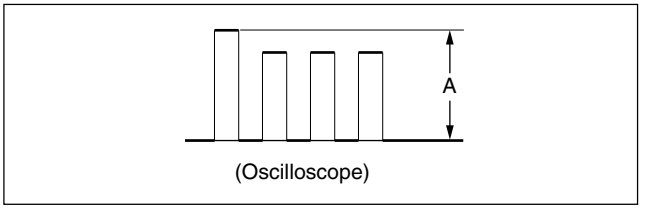
4. Menu settings :
   ITEM : ADJUST MODE → RGB
5. G Level Adjustment
   Test Point : CL502 (GND : E501) /DPR-290
   Adjustment Point :
   ITEM : G LEVEL
   Specifications : A = 1.4 ±0.1 V



6. R Level Adjustment
   Test Point : CL503 (GND : E501) /DPR-290
   Adjustment Point :
   ITEM : R LEVEL
   Specifications : A = 1.4 ±0.1 V

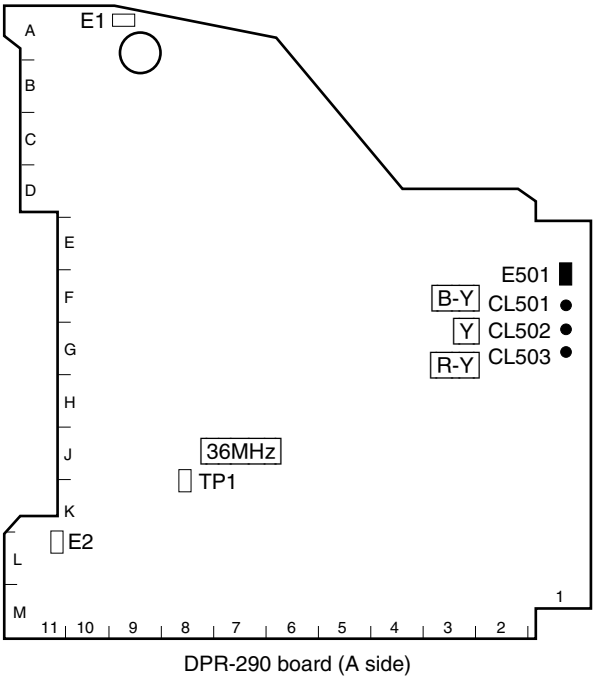


7. B Level Adjustment
   Test Point : CL501 (GND : E501) /DPR-290
   Adjustment Point :
   ITEM : B LEVEL
   Specifications : A = 1.4 ±0.1 V



Setting after Adjustment

ITEM : ADJUST MODE → OFF



DPR-290 board (A side)

5-4-2. VIDEO OUT Level Adjustment

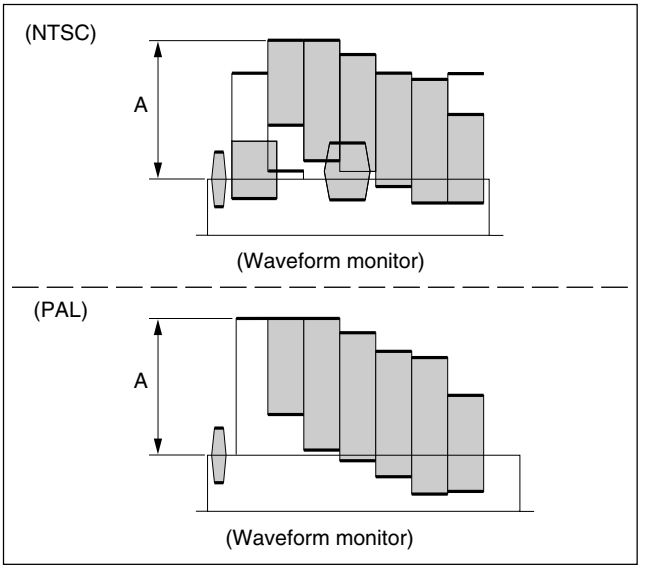
Equipment : Waveform monitor
Vectorscope
Test Point : VIDEO OUT connector

Preparations

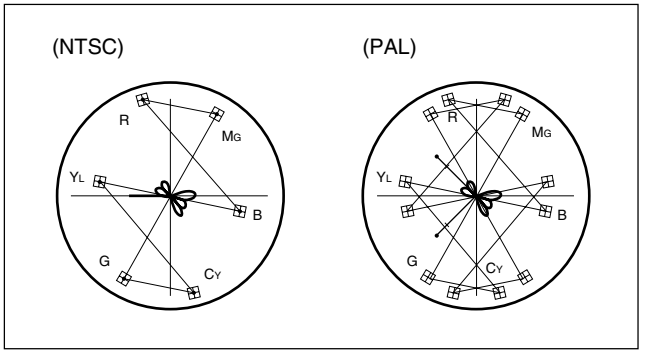
- OUTPUT/DCC switch (on the side panel) → BARS/OFF
- Menu setting :
  MENU : SERVICE
  PAGE : DPR TRIMMING 1
  ITEM : MONITOR OUT → ENC

Adjustment Procedures

1. VIDEO OUT Level Adjustment (Y)
   Adjustment Point :
   PAGE : DPR TRIMMING 1
   ITEM : Y (ENC) LEVEL
   Specifications : NTSC : A = 100 ±0.5 IRE
   PAL : A = 700 ±2 mV p-p



2. VIDEO OUT Level Adjustment (C)
   Adjustment Point :
   ITEM : CROMA LEVEL
   Specifications : Each beam spot of vectorscope stays inside the frame "⊞".



5-4-3. MONITOR OUT Level Adjustment

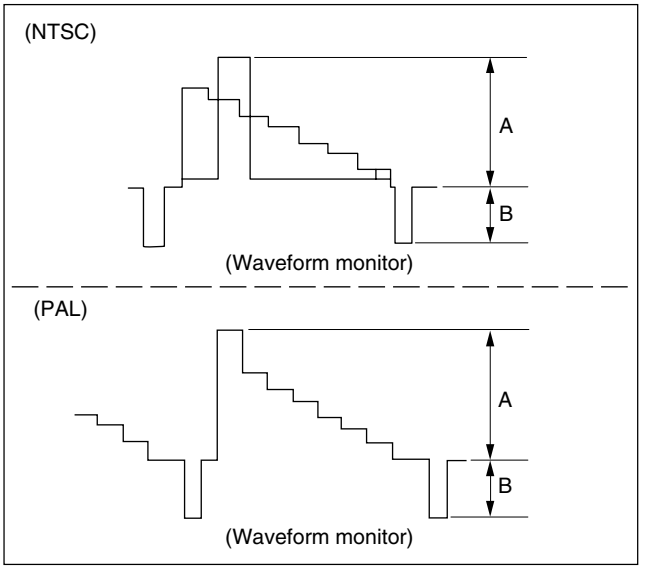
Equipment : Waveform monitor
Test Point : MONITOR OUT connector

Preparations

- OUTPUT/DCC switch (on the side panel) → BARS/OFF
- Menu setting :
  MENU : SERVICE
  PAGE : DPR TRIMMING 1
  ITEM : MONITOR OUT → Y

Adjustment Procedures

1. MONITOR OUT Level Adjustment
   Adjustment Point :
   PAGE : DPR TRIMMING 1
   ITEM : TEST LEVEL
   TEST SYNC
   Specifications : NTSC : A = 100 ±0.5 IRE
   B = 40 ±0.5 IRE
   PAL : A = 700 ±2 mV p-p
   B = 300 ±2 mV p-p



Setting after Adjustment

ITEM : MONITOR OUT → ENC

5-4-4. SC Frequency Adjustment

Equipment : Frequency counter
Test Point : TP1 (GND : E2) /DPR-290

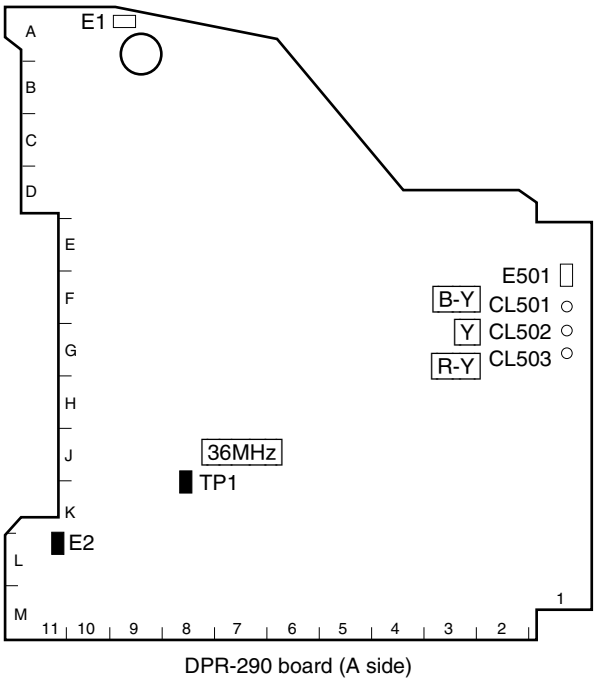
Preparations

Note
Warm up the camera for about 15 minutes or more before performing this adjustment.

- Remove the outside panel assembly.
  (Refer to Section 1-4-1.)
- When the CCU is connected to the unit, disconnect the CCU and connect the AC adaptor.
  (Change the synchronizing signal from external signal to internal signal.)
- When the cable is connected to GENLOCK IN connector of CA/VTR, disconnect the cable.

Adjustment Procedures

Adjustment Point:
MENU : SERVICE
PAGE : DPR TRIMMING 2
ITEM : SC FREQ (COARSE)
SC FREQ (FINE)
Specifications : 36,000,000 ±10 Hz



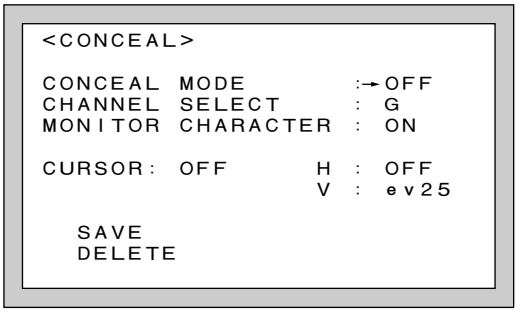
DPR-290 board (A side)

5-5. RPN Pixel Concealment

RPN (Residual Point Noise) on CCD is automatically corrected during ABB (Auto Black Balance adjustment) operation. However some RPN, low level white dots on dark background, black dots and bright dots may remain. Perform this adjustment to correct those black dots and bright dots.

Note

Perform Section 5-6. "RPN Compensation Adjustment" to correct low level white dots on dark background.



Preparations

- Adjust the black balance automatically. (Refer to Section 5-2-1.)
- Menu setting
  MENU : SERVICE
  PAGE : CONCEAL
  ITEM : CONCEAL MODE → ON
- When the RPN recognition is difficult since the RPN hides behind the character on a screen or is very close to the character :
  ITEM : TEST CHARACTER → OFF

Adjustment Procedures

Notes

- Be sure not to move the cross cursor until the SAVE or CANCEL operation is completely finished.
- You cannot make a compensation for the surrounding pixels adjacent to the already-compensated RPN.

1. Select the channel to be compensated.
   PAGE : OHB TRIMMING
   ITEM : MONITOR OUT → R, G, B
   PAGE : CONCEAL
   ITEM : CHANNEL SELECT → R, G, B
2. Adjust the values of H and V so that the center of the cross cursor is aligned just over the RPN.
   ITEM : CURSOR → ON
   ITEM : H, V
3. Move the cursor → to "SAVE", and press the MENU dial. "EXEC OK" will be displayed.
   Press MENU dial again, the compensation is started, and compensation data is registered.
4. If the RPN cannot be compensated or an incorrect registration was executed by mistake, move the cursor → to "DELETE". Then, press MENU dial.
5. If perform this adjustment again or any other RPNs remain, repeat steps 2 and 3.

Setting after Adjustment

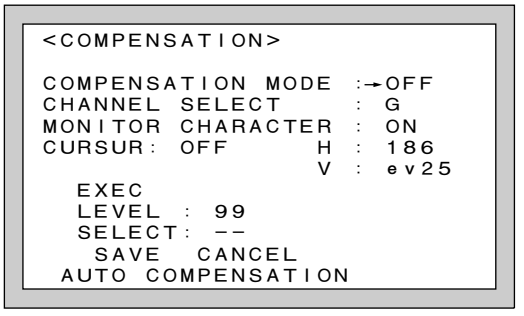
- ITEM : CONCEAL MODE → OFF
- PAGE : OHB TRIMMING
  ITEM : MONITOR OUT → ENC

5-6. RPN Compensation Adjustment

RPN (Residual Point Noise) on CCD is automatically corrected during ABB (Auto Black Balance adjustment) operation. However some RPN, low level white dots on dark background, black dots and bright dots may remain. Perform this adjustment to correct those low level white dots on dark background.

Note

Perform Section 5-5. "RPN Pixel Concealment" to correct black dots and bright dots.



Notes

- The temperature inside of the unit is not stable just after turning on the power, and the compensation may not be carried out correctly.
  Wait for about 20 minutes after turning the power on, and then start this adjustment.
- When the low level white dots cannot be compensated even if the auto compensation is finished, perform the manual compensation.

Preparations

- Adjust the black balance automatically.
  (Refer to Section 5-2-1.)
- Menu setting :
  MENU : SERVICE
  PAGE : COMPENSATION
  ITEM : COMPENSATION MODE → ON
- When the RPN recognition is difficult since the RPN hides behind the character on a screen on is very close to the character :
  ITEM : TEST CHARACTER → OFF

Adjustment Procedures

Auto Compensation

1. Move the cursor → to "AUTO COMPENSATION", and press the MENU dial.
   "APR EXECUTING" will be displayed, and the compensation will be performed.
2. When the compensation is finished, "APR OK" will be displayed.
3. Repeat steps 1 and 2 two times.

Note

The number of the RPNs compensated at once is limited. When all RPNs do not disappear even if "APR OK" is displayed, carry out the automatic compensation again or the manual compensation.

Manual Compensation

Note

Be sure not to move the cross cursor until the SAVE or CANCEL operation is completely finished.

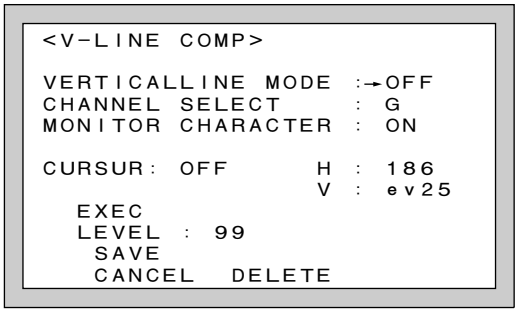
1. Select the channel to be compensated.
   ITEM : CHANNEL SELECT → R, G, B
2. Adjust the values of H and V so that the center of the cross cursor is aligned just over the RPN.
   ITEM : CURSOR → ON
   ITEM : H, V
3. Move the cursor → to "EXEC", and press the MENU dial. "EXEC OK" will be displayed.
   Press MENU dial again, the compensation of the maximum level will be performed.
   Note
   You cannot make a compensation for the pixels in the upper/lower one line and right/left 13 horizontal pixels toward the already-compensated pixels.
   When you try to compensate those pixels, the following two selections at "SELECT" item on the screen will be displayed.
   Select either and perform adjustment.
   ADJASENT PIXEL : the existing data takes effect
   SETTING PIXEL : the existing data is deleted
4. If the RPN remains as a black dot (overcompensated) or a white dot (incompletely-compensated), make a fine adjustment.
   ITEM : LEVEL → 99 to 0
5. When the RPN is compensated, move the cursor → to "SAVE". Then, press MENU dial.
6. If the RPN cannot be compensated or an incorrect operation was executed by mistake, move the cursor → to "CANCEL". Then, press MENU dial.
7. If perform this adjustment again or any other RPNs remain, repeat steps 2 to 5.

Setting after Adjustment

- ITEM : COMPENSATION MODE → OFF
- PAGE : OHB TRIMMING
  ITEM : MONITOR OUT → ENC

5-7. White Vertical Line Compensation

Fixed on screen white and vertical-in-line noise on CCD is automatically corrected during ABB (Auto Black Balance adjustment) operation. However some white vertical lines may remain.
Perform this adjustment to correct those white vertical lines.



Preparations

- Adjust the black balance automatically.
  (Refer to Section 5-2-1.)
- Menu setting :
  MENU : SERVICE
  PAGE : V-LINE COMP
  ITEM : COMPENSATION MODE → ON
- When the white vertical line recognition is difficult since the noise hides behind the character on a screen on is very close to the character :
  ITEM : TEST CHARACTER → OFF

Adjustment Procedures

Notes

- Be sure not to move the cross cursor until the SAVE or CANCEL operation is completely finished.
- You cannot make a compensation for the lines in the right/left one line toward the already-compensated lines. In this case, “ADJASENT PIXEL” will be displayed.

1. Select the channel to be compensated.
   ITEM : CHANNEL SELECT → R, G, B
2. Adjust the values of H and V so that the center of the cross cursor is aligned just over the white vertical line.
   ITEM : CURSOR → ON
   ITEM : H, V
3. Move the cursor → to “EXEC”, and press the MENU dial. “EXEC OK” will be displayed.
   Press MENU dial again, the compensation of the maximum level will be performed.
4. If the white vertical line remains as a black line (overcompensated) or a white line (incompletely-compensated), make a fine adjustment.
   ITEM : LEVEL → 99 to 0
5. When the white vertical line is compensated, move the cursor → to “SAVE”. Then, press MENU dial.
6. If the white vertical line cannot be compensated or an incorrect operation was executed by mistake, move the cursor → to “CANCEL”. Then, press MENU dial.
7. If perform this adjustment again or any other vertical line noises remain, repeat steps 2 to 5.

Setting after Adjustment

- ITEM : COMPENSATION MODE → OFF
- PAGE : OHB TRIMMING
  ITEM : MONITOR OUT → ENC

5-8. V-SUB Voltage Adjustment

Note

The V-SUB voltage specific to the CCD has been adjusted for the optimum value at factory.
Therefore, never change this voltage from the factory setting value.
Only when the improper data was saved by OHB TRIMMING page of the Service menu by mistake, perform this adjustment.

Equipment : Oscilloscope

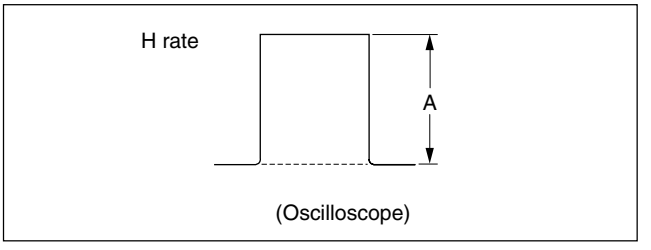
Preparations

- Extend the CCD block. (Refer to Section 1-13-3.)
- Shoot the fully occupied white area of the pattern box in the full underscanned monitor frame adjusting the zoom control.

Adjustment Procedures

1. V-SUB [R] adjustment
   (1) Test Point : IC1- pin14/PA-289G board
   (GND : E501/DPR-290)
   Lens iris : A = 500 ±50 mV
   (2) Select a large lens aperture (3 stops and a half) to obtain the 10 times amount of light.
   (3) Adjustment Point :
   MENU : SERVICE
   PAGE : OHB TRIMMING
   ITEM : V-SUB [R]

   Specifications : NTSC : A = 1400 $^{+100}_{-0}$ mV
   PAL : A = 1100 $^{+100}_{-0}$ mV

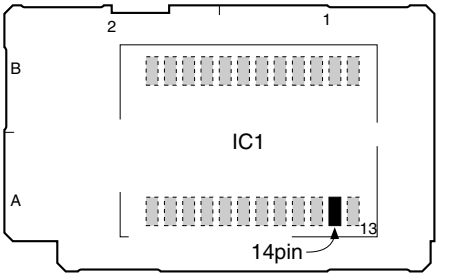


2. Perform V-SUB [G] adjustment in the same manner as step 1.
   Test Point : IC1- pin14/PA-288G board
   (GND : E501/DPR-290)
   Adjustment Point :
   ITEM : V-SUB [G]

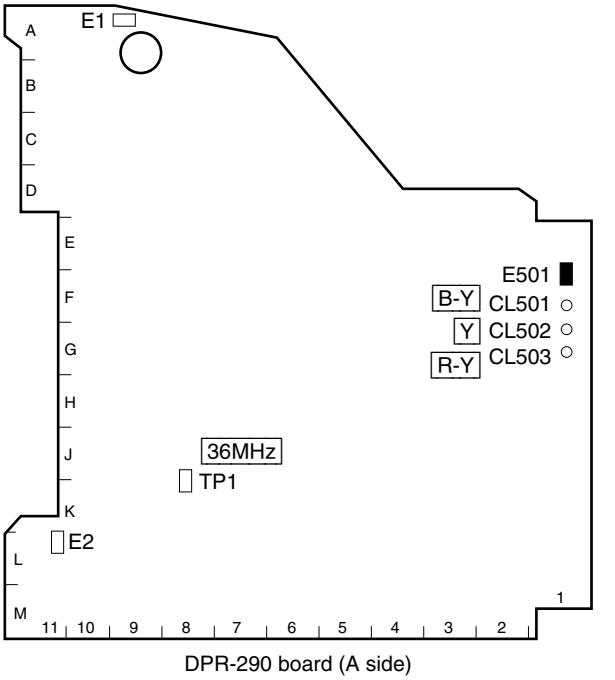
3. Perform V-SUB [B] adjustment in the same manner as step 1.
   Test Point : IC1- pin14/PA-287G board
   (GND : E501/DPR-290)
   Adjustment Point :
   ITEM : V-SUB [B]

Setting after Adjustment

Restore the CCD block to the original position.



PA-287G/288G/289G board (A side)



DPR-290 board (A side)

5-9. V-REG Voltage Adjustment

Note

The V-REG voltage specific to the CCD has been adjusted for the optimum value at factory.
Therefore, never change this voltage from the factory setting value.
Only when the improper data was saved by OHB TRIMMING page of the Service menu by mistake, perform this adjustment.

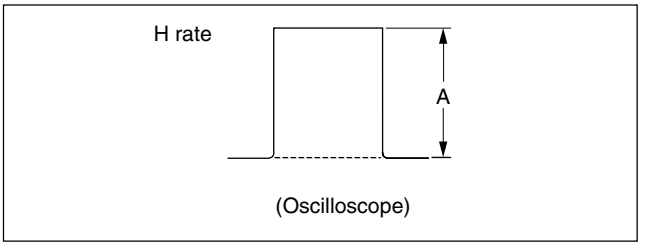
Equipment : Oscilloscope

Preparations

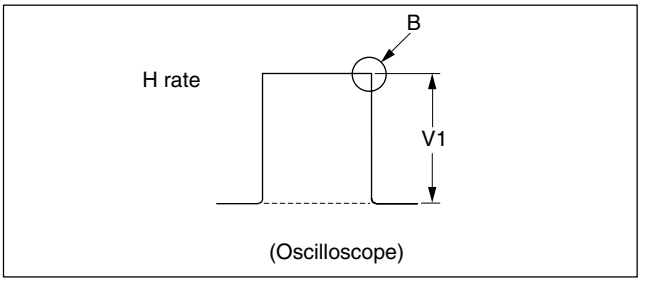
- Extend the CCD block. (Refer to Section 1-13-3.)
- Shoot the fully occupied white area of the pattern box in the full underscanned monitor frame adjusting the zoom control.

Adjustment Procedures

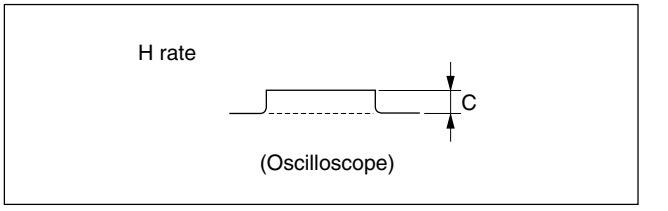
1. V-REG [R] adjustment
   (1) Test Point : IC1- pin14/PA-289G board
   (GND : E501/DPR-290)
   Lens iris : A = 500 ±50 mV



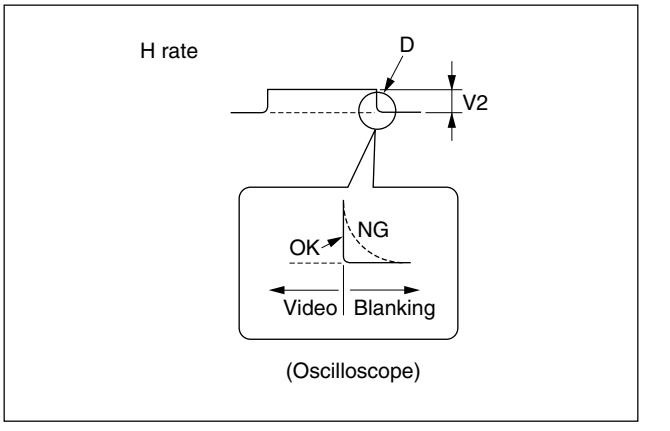
   (2) Select a large lens apertare (3 stops and a half) to obtain the 10 times amount of light.
   (3) Adjustment Point :
   MENU : SERVICE
   PAGE : OHB TRIMMING
   ITEM : V-REG [R]
   Write down the voltage V1 at which the B section of the waveform just begins to change.



   (4) Test Point : CN2- pin7/TG-238G board
   (GND : E501/DPR-290)
   Lens iris : C = 10 mV



   (5) Adjustment Point :
   MENU : SERVICE
   PAGE : OHB TRIMMING
   ITEM : V-REG [R]
   Write down the voltage V2 at which the D section of the waveform just begins to change from OK to NG.
   Specifications : V-REG [R] = $\frac{V1 + V2}{2}$
   (Calculate with hexadecimal)

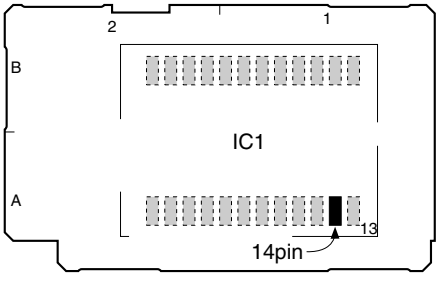


2. Perform V-REG [G] adjustment in the same manner as step 1.
   Test Point :
   V1 CN1- pin14/PA-288G board (GND : E501/DPR-290)
   V2 CN2- pin10/TG-238G board (GND : E501/DPR-290)
   Specifications : V-REG [G] = $\frac{V1 + V2}{2}$
   (Calculate with hexadecimal)

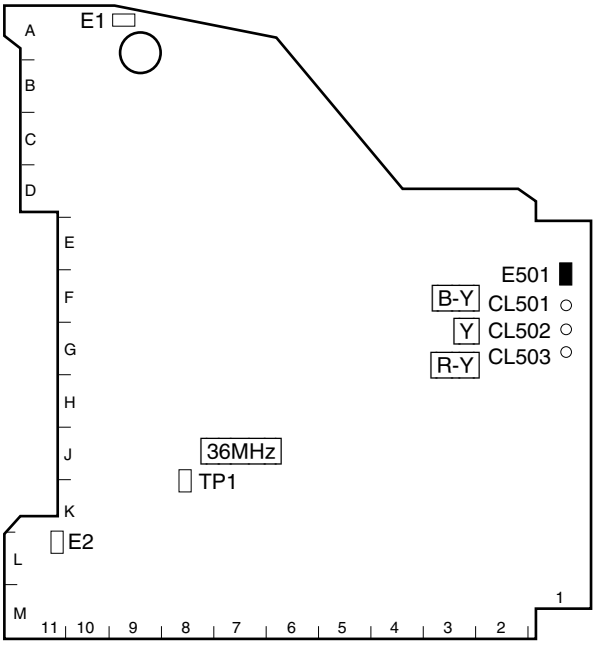
3. Perform V-REG [B] adjustment in the same manner as step 1.
   Test Point :
   V1 CN1- pin14/PA-287G board (GND : E501/DPR-290)
   V2 CN2- pin9/TG-238G board (GND : E501/DPR-290)
   Specifications : $\text{V-REG [B]} = \frac{V1 + V2}{2}$
   (Calculate with hexadecimal)

Setting after Adjustment

Restore the CCD block to the original position.



PA-287G/288G/289G board (A side)



DPR-290 board (A side)

5-10. Changing the Standard Setting Values (Video Level)

When changing the setting of black level, flare, gamma, manual knee and white clip by the user's desire, perform the procedures below.

Note

When performing ALL PRESET in REFERENCE FILE page of SERVICE menu, the reference file items are initialized to the values before factory setting.
The changed standard setting values are also initialized. In this case, perform changing the standard setting values again.

5-10-1. Setting Status before Changing the Setting

- **Side panel**

GAIN switch	→ L (0 dB)
OUT PUT/DCC switch	→ CAM/DCC ON
W.BAL switch	→ A
ZEBRA switch	→ OFF
EZ MODE button	→ OFF
IRIS MODE	→ STD
ATW button	→ OFF
5600K button	→ OFF

- **Front panel**

FILTER knob	→ 1 (CLEAR)
SHUTTER switch	→ OFF

- **Lens**

IRIS	→ M (Manual)
ZOOM	→ M (Manual)

- **Menu setting :**
  MENU : SERVICE
  PAGE : OHB TRIMMING
  ITEM : MONITOR OUT → ENC

5-10-2. Changing the Setting Value of Black Level

Equipment : Waveform monitor
Test Point : VIDEO OUT connector

Preparations

- Iris of the lens → CLOSE
- Adjust the black balance automatically.
  WHT/BLK switch (on the front panel) → BLK

Procedure for changing the setting

1. Menu settings :
   MENU : SERVICE
   PAGE : REFERENCE FILE
   ITEM : STANDARD
2. Move the cursor → to “STANDARD”, and press the MENU dial. “RECALL OK ?” will be displayed. Press MENU dial again, “STANDARD RECALLED” will be displayed.
3. Menu settings :
   PAGE : BLACK SHADING
   ITEM : BLACK [M]
4. Set the black level A.

   Note

   Factory setting : NTSC : A = 10 IRE
   PAL : A = 20 mV

(Waveform monitor)

5. Adjust the black balance automatically.
   WHT/BLK switch (on the front panel) → BLK
6. Menu settings :
   PAGE : REFERENCE FILE
   ITEM : STORE FILE
7. Move the cursor → to “STORE FILE”, and press the MENU dial. “STORE OK ?” will be displayed. Press MENU dial again, “REF STORE OK” will be displayed.

5-10-3. Changing the Flare Compensation Setting Value

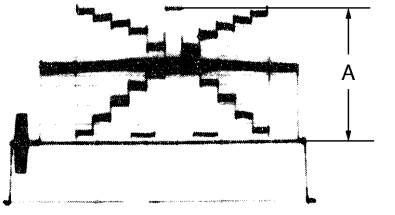
Object : Grayscale chart
Equipment : Waveform monitor
Test Point : VIDEO OUT connector

Preparations

- Select a large iris of the lens and shoot the grayscale chart covering fully the underscanned frame.
- Menu settings :
  MENU : PAINT
  PAGE : BLACK/FLARE
  ITEM : FLARE LEVEL → ON

Procedure for changing the setting

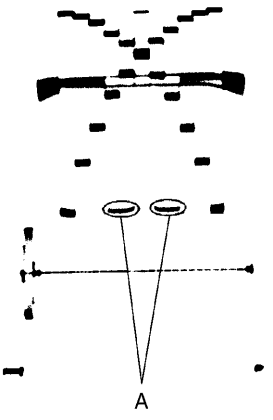
1. Menu settings :
   MENU : SERVICE
   PAGE : REFERENCE FILE
   ITEM : STANDARD
2. Move the cursor → to “STANDARD”, and press the MENU dial. “RECALL OK ?” will be displayed. Press MENU dial again, “STANDARD RECALLED” will be displayed.
3. Adjust the lens iris to bring the white level A to A = 100 IRE.



(Waveform monitor)

4. Make the lens iris large by more two steps.

5. Menu settings :
   MENU : PAINT
   PAGE : BLACK/FLARE
   ITEM : FLARE LEVEL → R
   Specifications : Minimize the carrier leakage level A.



(Waveform monitor)

6. Menu settings :
   MENU : PAINT
   PAGE : BLACK/FLARE
   ITEM : FLARE LEVEL → B
   Specifications : Minimize the carrier leakage level A.
7. Repeat steps 5 and 6 several times.

Note

To make the flare compensation more effectively, set a big value to "FLARE LEVEL [G]". In this case, set the MONITOR OUT output to "G" and check the flare compensation value by shooting the grayscale chart.

8. Menu settings :
   MENU : SERVICE
   PAGE : REFERENCE FILE
   ITEM : STORE FILE
9. Move the cursor → to "STORE FILE", and press the MENU dial. "STORE OK ?" will be displayed. Press MENU dial again, "REF STORE OK" will be displayed.

5-10-4. Changing the Gamma Correction Setting Value

Note

It is advisable to use a reflection type grayscale chart for this adjustment. Further more, before adjustment, setting of the luminance (or brightness) on the chart surface and the color temperature setting are required. For details, refer to Section 5-1-7, "Maintaining the Grayscale Chart".

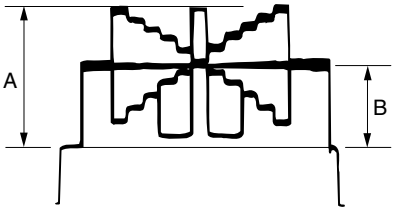
Object : Grayscale chart
Equipment : Waveform monitor
Test Point : VIDEO OUT connector

Preparations

Select a large lens iris and shoot the grayscale chart covering fully the underscanned frame.

Procedure for changing the setting

1. Menu settings :
   MENU : SERVICE
   PAGE : REFERENCE FILE
   ITEM : STANDARD
2. Move the cursor → to "STANDARD", and press the MENU dial. "RECALL OK ?" will be displayed. Press MENU dial again, "STANDARD RECALLED" will be displayed.
3. Adjust the white balance automatically.
   WHT/BLK switch (on the front panel) → WHT
4. Adjust the lens iris to bring the white level A to A = 100 IRE.
5. Menu settings :
   MENU : PAINT
   PAGE : GAMMA/BLK GAMMA
   ITEM : GAMMA LEVEL
   Adjustment Point :
   ITEM : GAMMA LEVEL [M]
   Set the cross point B of the grayscale.



(Waveform monitor)

6. Menu settings :
   MENU : SERVICE
   PAGE : REFERENCE FILE
   ITEM : STORE FILE
7. Move the cursor → to “STORE FILE”, and press the MENU dial. “STORE OK ?” will be displayed. Press MENU dial again, “REF STORE OK” will be displayed.

5-10-5. Changing the Manual Knee/White Clip Setting Value

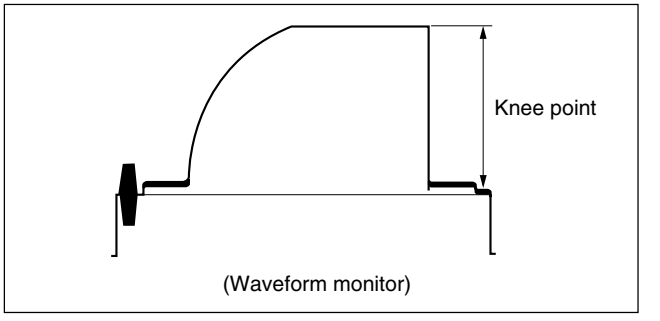
Equipment : Waveform monitor
Test Point : VIDEO OUT connector

Preparations

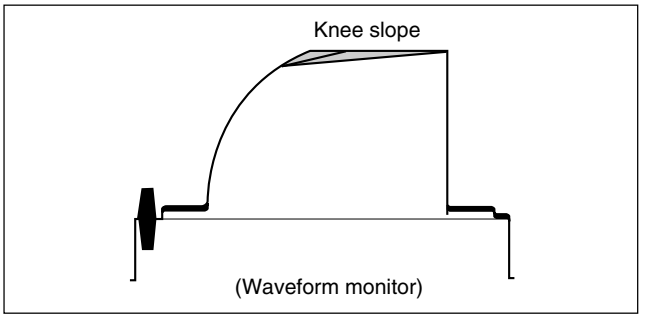
- OUTPUT/DCC switch → CAM/DCC OFF
- W.BAL switch (on the side panel) → PRE
- GAIN switch (on the side panel) → 9 dB (M)

Procedure for changing the setting

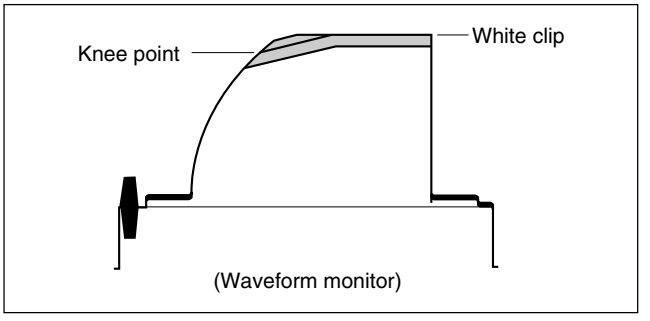
1. Menu settings :
   MENU : SERVICE
   PAGE : REFERENCE FILE
   ITEM : STANDARD
2. Move the cursor → to “STANDARD”, and press the MENU dial. “RECALL OK ?” will be displayed. Press MENU dial again, “STANDARD RECALLED” will be displayed.
3. **Changing of the knee point setting value.**
   Menu settings :
   MENU : SERVICE
   PAGE : VA TRIMMING
   ITEM : TEST SIGNAL → 1
   PAGE : KNEE
   ITEM : KNEE MAX → ON
   Adjustment Point :
   ITEM : POINT [M]



4. **Changing of the knee slope setting value.**
   Menu settings :
   ITEM : KNEE MAX → OFF
   Adjustment Point :
   ITEM : SLOPE [M]



5. **Changing of the white clip level setting value.**
   Menu settings :
   PAGE : WHITE CLIP
   ITEM : WHITE CLIP → ON
   Adjustment Point :
   ITEM : LEVEL [M]



Notes

- Increase the value to decrease the white clip level.
- The values at the factory setting are as follows.
  NTSC Model = 107 IRE
  PAL Model = 109 %
- When reducing the white clip setting value, it is recommendable to change the former mentioned manual knee setting in order to keep the reproduction of the grayscale in the high luminance level part.

6. Menu settings :
   MENU : SERVICE
   PAGE : REFERENCE FILE
   ITEM : STORE FILE
7. Move the cursor → to "STORE FILE", and press the MENU dial. "STORE OK ?" will be displayed. Press MENU dial again, "REF STORE OK" will be displayed.

Settings after Changing

GAIN switch (on the side panel) → 0 dB (L)

DXC-D55 (UC)
DXC-D55P (CE)
DXC-D55P (CN)
DXC-D55WS (UC)
DXC-D55WSP (CE) E
9-968-328-01

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