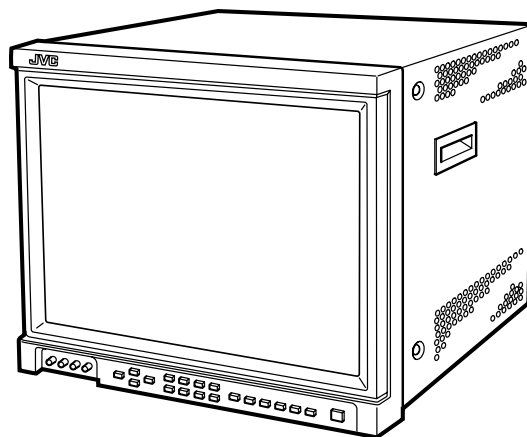# JVC

SERVICE MANUAL

MULTI-FORMAT MONITOR

BASIC CHASSIS
R1

DT-V1710CG /U
DT-V1710CG /E

For the specifications, adjustments or part lists of optional board IF-C01PNG (NTSC/PAL video input card) and IF-C01COMG (Component/RGB input card), refer to service manual DT-V1700CG/E (No.51899).

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No. 52152
2003/9

SPECIFICATIONS

Items	Contents
Type	Multi-format monitor
Picture Tube	17" Flat
Effective Screen Size	33cm(13") $\times$ 25cm(9-7/8") / 41cm(16-1/4") [measured diagonally]
Input Signal Frequency	Horizontal : 15kHz/27kHz – 45kHz Vertical : 50Hz – 80Hz
Video Band	Component : 25MHz (-3dB) Video (Y/C) : 8MHz (-3dB)
Horizontal Resolution	1080/60i : 800 TV lines Video (Y/C) : 600 TV lines
Compliant Video Signal	NTSC (3.58 MHz)/PAL (4.43 MHz) (using the IF-C01PNG) 480i/576i/480p/576p/1080i (50 Hz/60 Hz/24psF)/720p (50 Hz/60 Hz) (using the IF-C01COMG) D1 serial digital (using the IF-C01SDG) HD serial digital (using the IF-C12HSDG)
Input Terminals	Installing an optional input card in SLOT1, 2, or 3 is required. INPUT A/INPUT B : Terminals on the input card in SLOT1. INPUT C/INPUT D : Terminals on the input card in SLOT2. INPUT E/INPUT F : Terminals on the input card in SLOT3.
Remote Inputs	Point-of-contact connection, 1 line, D-sub connector (15-pin 3-line) Serial connection, 1 line, D-sub connector (9-pin), compliant to RS-485
Audio Output	1W (monaural) 3-1/8" (8cm) round speaker $\times$1
Environmental Conditions	Operating Temperature : 5°C – 35°C (41°F – 95°F) Operating humidity : 20% – 80% (non-condensing)
Power Requirements	120V/230V, 50Hz/60Hz
Power Consumption	1.56A/0.9A (including input card)
Dimensions (W $\times$ H $\times$ D)	39.5cm(15-5/8") $\times$ 33.4cm(13-1/4") $\times$ 46.7cm(18-3/8") (not including wide mask and input card)
Mass	23.7 kg (not including wide mask and input card)
Accessory	AC power cord (2.5 m) x1 Power cord holder x 1 (case and cover) Screws x 2 (Power cord holder) Wide Mask x 1 Screws x 4 (Wide Mask)

NOTE : Design and specifications subject to change without notice.

SECTION 1
PRECAUTION

1.1 SAFETY PRECAUTIONS

(1) The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

(2) Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

(3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

(4) **Use isolation transformer when hot chassis.**
The chassis and any sub-chassis contained in some products are connected to one side of the AC power line. An isolation transformer of adequate capacity should be inserted between the product and the AC power supply point while performing any service on some products when the HOT chassis is exposed.

(5) **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time with a measuring apparatus (oscilloscope etc.). If above note will not be kept, a fuse or any parts will be broken.

(6) If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).

(7) The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

(8) Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

(9) When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

(10) **Isolation Check**
(Safety for Electrical Shock Hazard)
After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

a) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 1100V AC (r.m.s.) for a period of one second. (. . . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.) This method of test requires a test equipment not generally found in the service trade.

b) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.). However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

• **Alternate Check Method**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.). However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).
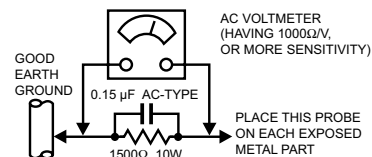
(11) **High voltage hold down circuit check.**
After repair of the high voltage hold down circuit, this circuit shall be checked to operate correctly.
See **"X-RAY PROTECTOR ADJUSTMENT/CHECK"** on page 1-44.
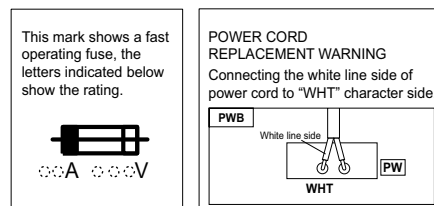
SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 HOW TO IDENTIFT MODEL

Please check the destination and the version of your model by RATING LABEL.

■ **DT-V1710CG/U [FOR NORTH AMERICA MODEL]**

INDICATED "DT-V1710CGU"

■ **DT-V1710CG/E [FOR EUROPE AND ASIA MODELS]**

INDICATED "DT-V1710CGE"

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SECTION 3
DISASSEMBLY

3.1 DISASSEMBLY PROCEDURE

CAUTION :
- Some parts are active even after the main power switch is set to OFF.
- Be sure to unplug the power cord from the power outlet before proceeding with disassembly or assembly of the unit.

3.1.1 REMOVING THE SLOT PANEL, TOP COVER AND REAR PANEL

(1) Unplug the power cord, remove the six screws **[1]** and remove the SLOT PANEL.
(2) Remove the fourteen screws **[2]** and then the two screws **[3]**.
(3) Open up the lower part of the TOP COVER slightly. Then pull the TOP COVER toward the rear and lift to remove it.
(4) Also remove the REAR PANEL.

3.1.2 REMOVING THE BOTTOM COVER

- Remove the SLOT PANEL, TOP COVER and REAR PANEL.
(1) Place the unit so that the side with the SLOT CHASSIS comes at the bottom.
(2) Remove the six screws **[4]** and pull the BOTTOM COVER toward the rear to remove it.

3.1.3 REMOVING THE SIGNAL PW BOARD, MOTHER PW BOARD AND REMOTE PW BOARD

- Remove the SLOT PANEL, TOP COVER and REAR PANEL.
(1) Disconnect the wire clamps and connectors as required.
(2) Remove the four screws **[5]** and unplug the SIGNAL PWB from the connector on the MOTHER PWB.
(3) Remove the two screws **[6]** and then remove the Joint Bracket.
(4) Remove the two screws **[7]** and then remove the SLOT CHASSIS by lifting it while pushing the claw **[C]** on the CHASSIS BASE.
(5) Remove the nine screws **[8]** and remove the MOTHER PWB.
(6) Remove the screw **[9]**, the four screwnuts **[10]** and the two screwnuts **[11]**, then remove the REMOTE PWB.

3.1.4 REMOVING THE CHASSIS BASE, SPEAKER AND S. CORRECTION PW BOARD

- Remove the SLOT PANEL, TOP COVER, REAR PANEL and SLOT CHASSIS.
(1) Disconnect the wire clamps and connectors as required.
(2) Remove the two screws **[12]** and pull the CHASSIS BASE toward the front to remove it.
(3) While disengaging the claw **[D]** on the CHASSIS BASE that is engaged with the rear of the SPEAKER, lift the SPEAKER to remove it (see Fig. 2).
(4) Remove the three screws **[13]** and then remove the PB BRACKET.
(5) Unplug the S. CORRECTION PWB from the connector on the MAIN PWB.

3.1.5 REMOVING THE CRT AND LED PW BOARD

- Remove the SLOT PANEL, TOP COVER, REAR PANEL, BOTTOM COVER, SLOT CHASSIS and CHASSIS BASE.
(1) Remove the four screws **[14]** and remove the SIDE BRACKETS.
(2) Also remove the CRT.
(3) Remove the two screws **[15]** and remove the LED PWB.

3.1.6 REMOVING THE FRONT CONTROL PW BOARD AND FRONT VR PW BOARD

(1) Remove the five screws **[16]** and remove the CONTROL BASE.
(2) Disconnect the connectors as required.
(3) Remove the three screws **[17]** and remove the FRONT CONTROL PWB.
(4) While slightly lifting the two claws **[E]** on the CONTROL BASE, remove the FRONT VR PWB.

3.1.7 DIAGNOSING THE MAIN PW BOARD

- Remove the SLOT PANEL, TOP COVER and REAR PANEL.
(1) Place the unit so that the side with the SLOT CHASSIS comes at the bottom, and remove the BOTTOM COVER.
(2) Now the diagnosis of the MAIN PWB is possible.

CAUTION :
- **The unit is unstable when it is placed on its side so please be careful that it does not topple over during work.**
- **Before turning the power on, ensure that the connectors in cluding the CRT grounding are connected properly.**

CAUTION

Before turning the power on, ensure that the spiral wires (Yellow/Green) and the CRT grounding wires are connected properly.

View from the rear of the AC inlet
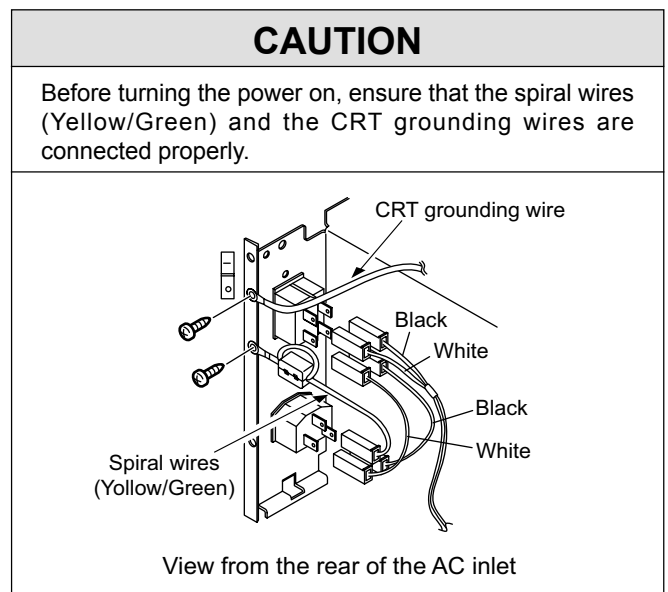
3.1.8 NOTE CONCERNING WIRE CLAMPING

- Be sure to reconnect the wire clamps that have been disconnected during the above work.

TOP COVER

MOTHER PWB

SIGNAL PWB

REMOTE PWB

JOINT BRACKET

SLOT CHASSIS

LED PWB

CRT

SIDE BRACKET

PB BRACKET

S. CORRECTION PWB

HV CONTROL MODULE PWB

SIDE BRACKET

CRT SOCKET PWB

CHASSIS BASE

SUB DEF MODULE PWB

CONTROL BASE

SPEAKER

MAIN PWB

FRONT VR PWB

REAR PANEL

BOTTOM COVER

FRONT CONTROL PWB

REMOVING THE SPEAKER
Speaker back side

Fig. 2

SLOT PANEL

Fig. 1

1-6 (No. 52152)
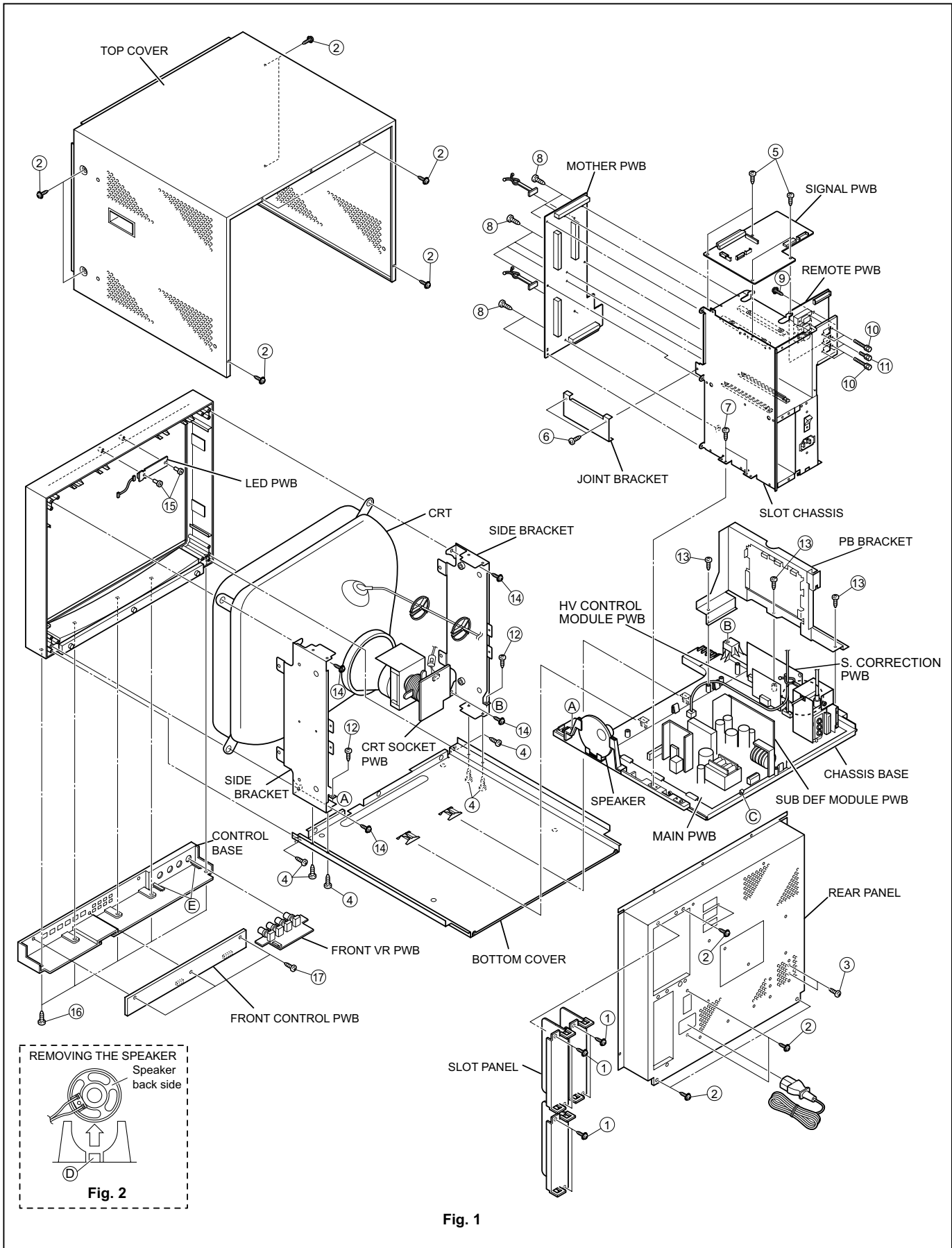
3.2 DEMAGNETIZATION PROCEDURE

3.2.1 CAUTION

(1) Use a rod-type demagnetization coil.

NOTE:

Never use a ring-shaped demagnetization coil.
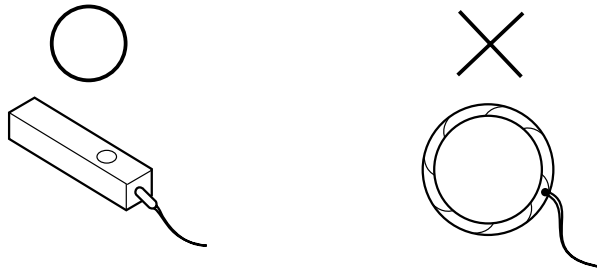
(2) Keep the demagnetization coil at a distance of more than 1.5 cm from the CRT screen and the main unit during use.
(3) When demagnetizing the CRT screen, hold the demagnetization coil perpendicularly to the CRT screen.
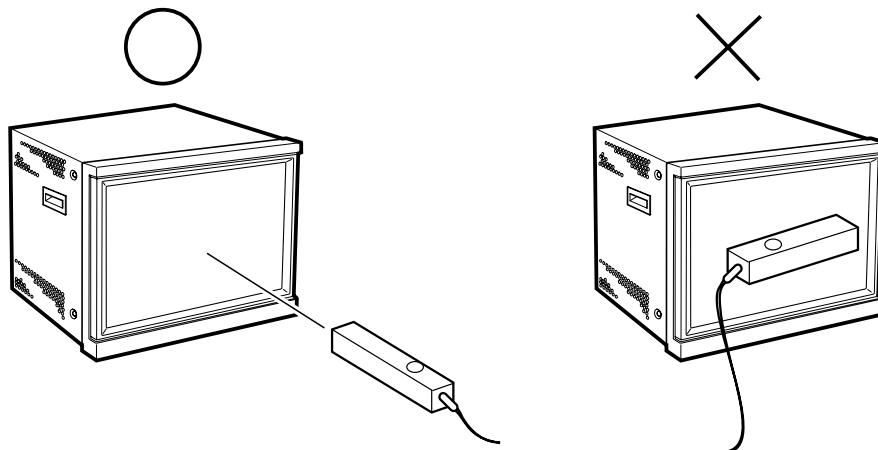
(4) When demagnetizing the outer cabinet of the unit, use the demagnetization coil in the orientation as shown below.
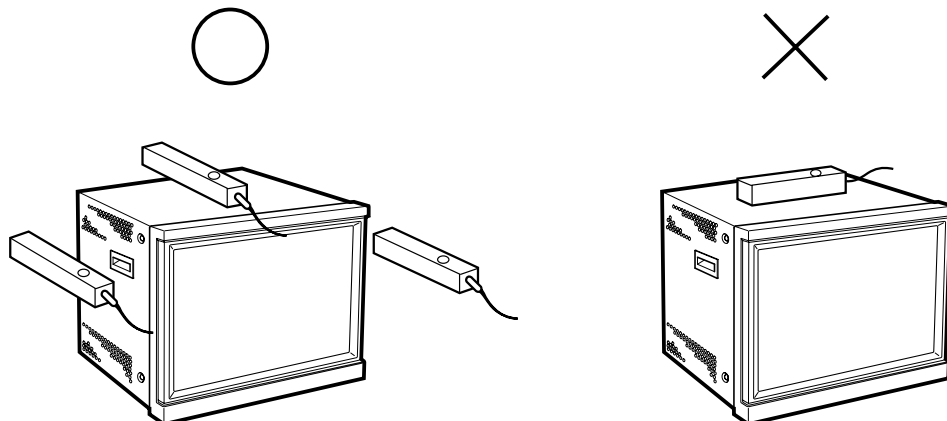
3.2.2 DEMAGNETIZING THE CRT SCREEN

(1) While holding the power button of the demagnetization coil, move it to approach the CRT screen area that has color irregularities. (Keep the demagnetization coil at a distance of more than 1.5 cm from the screen.)

(2) From the area with the colour irregularities, move the demagnetization coil as if drawing a spiral toward the center of the CRT screen.

(3) Move the demagnetization coil slowly away from the center of the CRT screen.

(4) When the demagnetization coil comes to about 1 meter from the CRT screen, release the demagnetization coil power button.

(5) If the color irregularities are still observed, repeat the above steps once more.
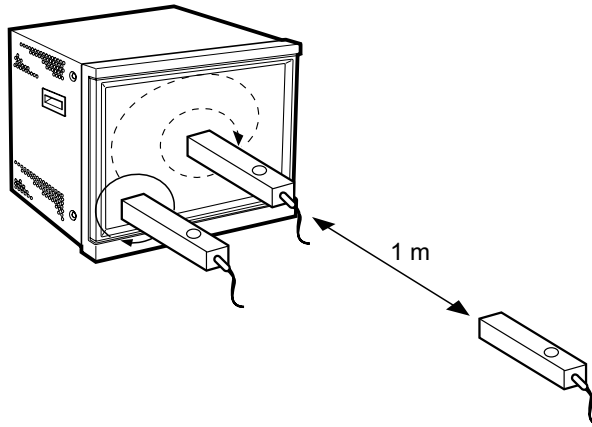
3.2.3 DEMAGNETIZING THE OUTER CABINET OF THE UNIT

(1) While holding the power button of the demagnetization coil, move it to approach the outer cabinet of the unit. (Keep the demagnetization coil at a distance of more than 1.5 cm from the cabinet.)

(2) Keep the demagnetization coil in the same orientation, and move it around the cabinet as if drawing a circle around the side and top panels of the unit.

(3) Move the demagnetization coil slowly away from the outer cabinet of the unit.

(4) When the demagnetization coil comes to about 1 meter from the unit, release the power button of the demagnetization coil.

1-8 (No. 52152)
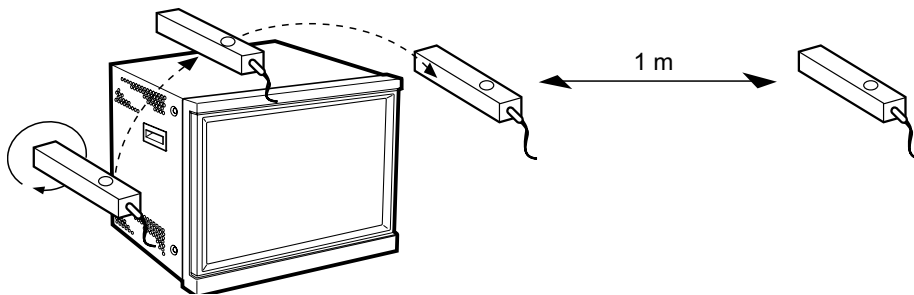
3.3 MEMORY IC REPLACEMENT

3.3.1 MEMORY IC

The unit incorporates a nonvolatile Memory IC, which stores data on the video and deflection systems, etc.
When it is replaced with an IC without the data stored in it, the set may malfunction or the video may become abnormal when the unit is turned on.
When replacing the Memory IC, be sure to use an IC in which the data (initial values) has already been written.

3.3.2 MEMORY IC REPLACEMENT PRECDURE

1. Turn the unit off and unplug the power cord from the power outlet.

2. Replace the Memory IC with a new Memory IC storing the initial setting value data.

3. Plug the power cord into the power outlet and turn the unit on.

4. Check the SETUP MENU and set its items as required.
   (1) While holding down the ▼ key, press the **VOL - (** ◄ **)** key.
   (2) The SETUP MENU appears (Fig. 1).
   (3) Check the items in the SETUP MENU by comparing them with the data in the table on page 1-10.
   If any item is set differently, set it as required.

5. Check the MAIN MENU and set its items as required. Press the **[MENU]** key to display the MAIN MENU (Fig. 2). Check the items in the MAIN MENU by comparing them with the data in the table on page 1-11. If any item is set differently, set it as required.

6. Adjust the items that can be adjusted on the front panel. (Some items cannot be adjusted unless the required signal is input.)

7. Check that the initial values of the items in the SERVICE MENU (Fig. 3). If any item is set differently, set it as required.
   For the setting method and the initial values, see the corresponding pages for "**SERVICE ADJUSTMENTS**" in this manual.

```
        < SETUP MENU >
  ►FUNCTION SETTING
    PICTURE SUB ADJ.
    COLOR TEMP./BAL.
    SIZE/POSI. ADJ.
    DISTORTION ADJ.
    STATUS DISPLAY
    CONTROL LOCK        : OFF
      all reset

  EXIT: MENU    ENTER: +    SELECT: ⬍
```

Fig. 1

```
        < MAIN MENU >
  APERTURE CONTROL
  SLOT CONDITION
  sub menu POSITION      : LOWER
  AREA MARKER
  COLOR  MATRIX




  EXIT: MENU    ENTER: +    SELECT: ⬍
```

Fig. 2

```
  ►SIGNAL BLOCK
    WHITE BALANCE BLOCK
    DEFLECTION BLOCK
    CPU BLOCK
    DIAGNOSIS
    UPC1884 ADJ.
    TA1276 ADJ.
    HOUR METER

  EXIT: MENU    ENTER: +    SELECT: ⬍
```

Fig. 3

3.3.3 FACTORY SETTING VALUE

■ INITIAL SETTING VALUE TABLE [SET-UP MENU]

Setting Item	Data / Variable range	Initial setting value	Remarks
FUNCTION SETTING			
COLOR SYSTEM	AUTO / NTSC / PAL	AUTO	Apply the NTSC/PAL signal
AUTO INPUT	ON/OFF	OFF	Apply the HD SDI/SDI signal
SYNC SELECT	INT. / EXT.	INT.	
RUSH DELAY TIME	STD. / SLOW	STD.	
TALLY SELECT	GREEN / RED	GREEN	
REMOTE SYSTEM	MAKE / TRIGGER	MAKE	
E.AUDIO GROUP	1G / 2G / 1-2G	1G	
HOUR METER X 100h	000 – 655	000	
PICTURE SUB ADJ.			
CONTRAST	-20 – +20	00	
BRIGHT	-20 – +20	00	
CHROMA	-20 – +20	00	
PHASE	-20 – +20	00	
NTSC SETUP	00 / 75	00	
COMPO. LEVEL	SMPTE / B00 / B75	SMPTE	Apply the Component signal
COLOR TEMP. / BAL.			
COLOR TEMP.	LOW / HIGH	LOW	
BLUE DRIVE	MIN – MAX (127 steps)	000	
RED DRIVE	MIN – MAX (127 steps)	000	
GREEN CUTOFF	MIN – MAX (205 steps)	000	
BLUE CUTOFF	MIN – MAX (205 steps)	000	
RED CUTOFF	MIN – MAX (205 steps)	000	
SIZE / POSI. ADJ.			
H.SIZE	-20 – +20	00	Reduced to 00 – +20 during the under-scan mode.
H.POSITION	-20 – +20	00	
V.SIZE	-20 – +20	00	
V.POSITION	-20 – +20	00	
ZOOM H. SIZE	-20 – 00	00	
ZOOM V. SIZE	-20 – +20	00	
DISTORTION ADJ.			
PINCUSHION	-20 – +20	00	
PIN.BALANCE	-20 – +20	00	
PARALLELOGRAM	-20 – +20	00	
TRAPEZOID	-20 – +20	00	
ROTATION	-31 – +31	00	
STATUS DISPLAY			
STATUS DISPLAY	ON / OFF	ON	
LEVEL METER ch	OFF/1:2/12:34/31:24/123:456/1-8	OFF	
BAR TYPE	3 COLORS / WHITE-1 / WHITE-2	3 COLORS	
REFERENCE LEVEL	-20dB / -18dB	-20dB	
OVER LEVEL	-8dB / -6dB / -4dB / -2dB	-8dB	
BAR BRIGHTNESS	HIGH / LOW	HIGH	
CONTROL LOCK	ON / OFF	OFF	

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■ INITIAL SETTING VALUE TABLE [MAIN MENU]

Setting Item	Data / Variable range	Initial setting value
APERTURE CONTROL		
LEVEL	00 – 10	00
CONTROL FREQ.	HIGH / LOW / OFF	HIGH
SLOT CONDITION	Type of boards installed in the rear panel slots.	
INPUT A – F	SLOT1 : INPUT A, B	
	SLOT2 : INPUT C, D	
	SLOT3 : INPUT E, F	
sub menu POSITION	LOWER / UPPER	LOWER
AREA MARKER		
MARKER SELECT	OFF / LINE /S. HALF / HALF+L / S. BLK / BLK. +L	OFF
ZOOM	OFF / ON	OFF
ASPECT SELECT	4 : 3 / 13 : 9 / 14 : 9	4 : 3
SAFEY AREA	OFF / 80% / 88% / 90%	OFF
R-MARKER SELECT	OFF / LINE / S. HALF / HALF+L / S. BLK / BLK. +L	OFF
R-ZOOM	OFF / ON	OFF
R-ASPECT SELECT	4 : 3 / 13 : 9 / 14 : 9	4 : 3
R-SAFETY AREA	OFF / 80% / 88% / 90%	0FF
COLOR MATRIX	SELECT : MANUAL / ITU601 or ITU709	NORMAL
	[Example when MANUAL is set]	
	R-Y PHASE : 90/92/94/112	90
	R/B GAIN : 0.56/0.68/0.79/0.86	0.86
	G-Y PHASE : 236/240/244/253	244
	G/B GAIN : 0.30/0.34/0.40/0.45	0.30

■ INITIAL SETTING VALUE TABLE [FRONT PANEL CONTROL]

Setting Item	Data / Variable range	Initial setting value
POWER	ON / OFF	OFF
INPUT SELECT	INPUT A – F	INPUT A
COLOR OFF **AREA MARKER** **PULSE CROSS** **ASPECT** **UNDER SCAN** **SCREENS CHECK** **DEGAUSS**	ON / OFF	OFF
VOLUME	00 – 50	10
CONTRAST **BRIGHT** **CHROMA** **PHASE**	POTENTIOMETER	Center click position

3.4   REPLACEMENT OF CHIP COMPONENT

3.4.1 CAUTIONS

(1) Avoid heating for more than 3 seconds.
(2) Do not rub the electrodes and the resist parts of the pattern.
(3) When removing a chip part, melt the solder adequately.
(4) Do not reuse a chip part after removing it.

3.4.2 SOLDERING IRON

(1) Use a high insulation soldering iron with a thin pointed end of it.
(2) A 30w soldering iron is recommended for easily removing parts.

3.4.3 REPLACEMENT STEPS

1. How to remove Chip parts
   [Resistors, capacitors, etc.]
(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.
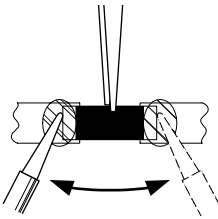
(2) Shift with tweezers and remove the chip part.
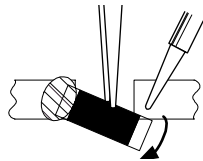
[Transistors, diodes, variable resistors, etc.]
(1) Apply extra solder to each lead.
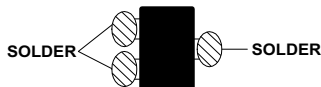
SOLDER   SOLDER

(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.
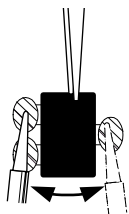
Note :
   After removing the part, remove remaining solder from the pattern.

2. How to install Chip parts
   [Resistors, capacitors, etc.]
(1) Apply solder to the pattern as indicated in the figure.
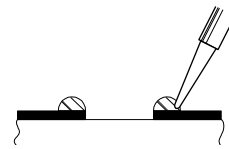
(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.
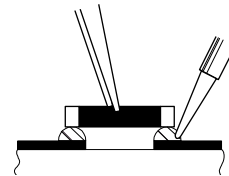
[Transistors, diodes, variable resistors, etc.]
(1) Apply solder to the pattern as indicated in the figure.
(2) Grasp the chip part with tweezers and place it on the solder.
(3) First solder lead A as indicated in the figure.

A
B
C
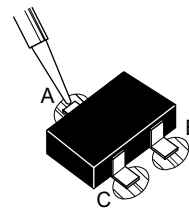
(4) Then solder leads **B** and **C**.

A
B
C

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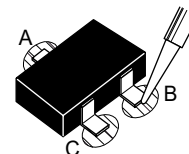
SECTION 4
ADJUSTMENT

4.1 ADJUSTMENT PRECUTION

(1) Make sure that connection is correctly mode AC to AC power souce.
(2) Warm run the unit and measuring tools sufficiently (at least 30 minutes).
(3) Perform all adjustments based on the initial values. There is no problem if the result of an adjustment performed by observing the screen is different from the initial value.
(4) Never attempt to turn on potentiometers or other controls that are not explicitly mentioned in the adjustment procedures.

NOTE:
When using the IF-C01PNG (NTSC/PAL Video Input Card) in an adjustment, be sure to check the output waveforms from the video input card in advance.

4.2 SETTINGS REQUIRED FOR ADJUSTMENTS

For the functions other than those that should be set before each adjustment, reset them to the initial values according to the table on page 1-10 before proceeding to the adjustment.
Correct adjustments will not be possible unless the values of the functions are reset to the initial values.

4.3 SETTING ITEMS

Begin adjustments with the primary items and then proceed to the secondary items, (1) to (3).

■ PRIMARY ADJUSTMENT ITEMS
- Screen voltage coarse adjustment
- High-voltage coarse adjustment
- X-ray protector adjustment/check
- High-voltage adjustment
- Focus adjustment
- Image rotation adjustment
- Convergence adjustment

■ SECONDARY ADJUSTMENT ITEMS (1)
- Contrast adjustments
- Chroma/Phase adjustments

■ SECONDARY ADJUSTMENT ITEMS (2)
- Deflection system adjustments
  (Overscan, underscan, aspect mode)

■ SECONDARY ADJUSTMENT ITEMS (3)
- White balance adjustments
- Brightness adjustments
  (Overscan, underscan, aspect mode)

4.4 MEASURING INSTRUMENTS AND FIXTURES

(1) DC voltmeter (or digital voltmeter)
(2) Oscilloscope
(3) Color analyzer (colour temperature meter)
(4) High-voltage voltmeter
(5) Signal generator (Should be compatible with the following signal specifications.)
(6) Scale (made of non-metallic material)
(7) IF-C01PNG (NTSC/PAL Video Input Card)
(8) IF-C01COMG (Component/RGB Input Card)

Fromats of Signal Used in Adjustments	Types of Signals Used in Adjustments

• DTV format component signals
   (480/60i, 480/60p, 576/50i, 576/50p, 720/50p, 720/60p,
   1080/24psF, 1080/50i, 1080/60i)
• NTSC signals
   (Composite, Y/C)
• PAL signals
   (Composite, Y/C)
	• Color bar signal
	• Size adjustment signal
	• All white signal
	• All black signal
	• Mono-scope signal
	• Gray scale signal
	• 10-step gray scale signal
	• Crosshatch signal
	• Crosshatch signal with circle pattern

4.5 FOCUS AND SCREEN ADJUSTMENT HOLES

The rear panel has the adjustment holes for use in adjusting the focusing and screen.

CAUTION :
• Be sure to use screwdrivers made of non-metallic materials for the following adjustments. If a metallic screwdriver is used, short-circuiting may damage parts of the unit, including the high-voltage parts.

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4.6 TIMING CHART OF SIGNALS REQUIRED FOR ADJUSTMENTS

Generate the signals required for adjustments with a programmable signal generator by referring to the following figure.
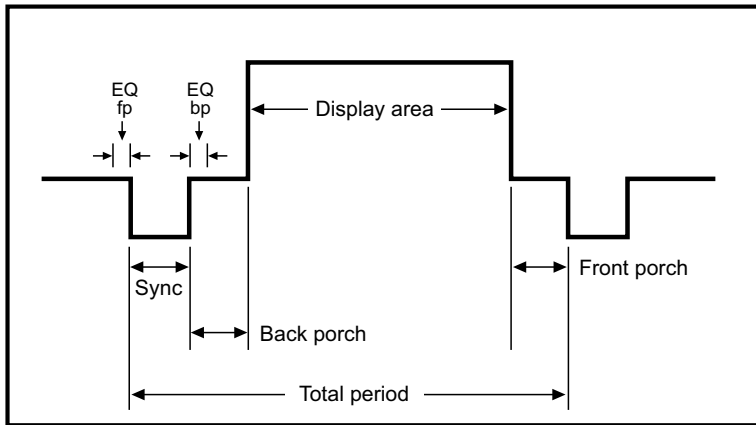
Signal	NTSC(14.3)	PAL	480/60i	576/50i	480/60p	576/50p	720/50p	720/60p	1080/24psF	1080/50i	1080/60i
Resolution(Horizontal)	768	624	720	720	720	720	1280	1280	1920	1920	1920
Resolution(Vertical)	243	287	244	287	483	576	720	720	540	540	540
Horizontal frequency(kHz)	15.73	15.625	15.73	15.625	31.469	31.25	37.50	44.955	27	28.125	33.75
Vertical frequency(Hz)	29.97i	25i	30i	25i	60p	50p	50p	60p	24psF(48i)	50i	30i
CS & V		RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB	RGB
CS	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
HS	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
VS	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Dot clock(MHz)	14.318	12	13.5	13.5	27	12	74.25	74.25	74.25	74.25	74.25
H period	910	768	858	864	858	864	1980	1650	2750	2640	2200
H sync	68	56	63	63	63	63	40	40	44/44	44/44	44/44
H back p.	58	70	59	68	59	69	260	260	144/188	144/188	144/188
H disp	768	624	720	720	720	720	1280	1280	1920	1920	1920
V period	263	312	263	312	525	625	750	750	562	562	562
V sync	3	3	3	3	6	5	5	5	5	5	5
V back p.	14	19	13	19	30	39	25	20	15	15	15
V disp	243	287	243	287	483	576	750	720	540	540	540
Equivalent pulse(fp/bp)	3H/3H	3H/3H	3H/3H	3H/3H	0H/0H	0H/0H	0H/0H	0H/0H	0H/0H	0H/0H	0H/0H

4.7 ADJUSTMENT LOCATIONS

S. CORRECTION PWB (SOLDER SIDE)

CN0RD CN00R

VR505 COVN_V
VR504 CONV_H
VR502 H.VOLTAGE
VR501 X-RAY
TP-XR
TP-G

TOP

FRONT

CN010 CN011
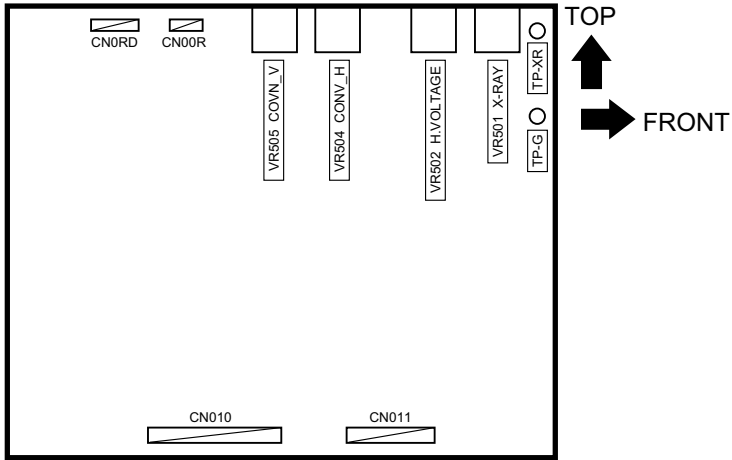
CRT SOCKET PWB (SOLDER SIDE)

TOP

U

TP-47R TP-47B

TP-47G

TP-GND

T E1

MAIN PWB

FRONT

S. CORRECTION PWB

S

V R

CN011

HV CONTROL MODULE PWB

CN005

CN010

CN001

CN004

SUB DEF MODULE PWB

T

CN002

H

CN003

P

D F901

UPPER　：FOCUS-1
MIDDLE：FOCUS-2
LOWER　：SCREEN
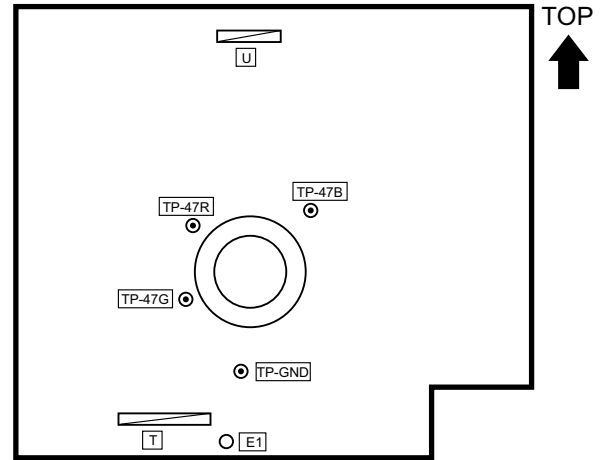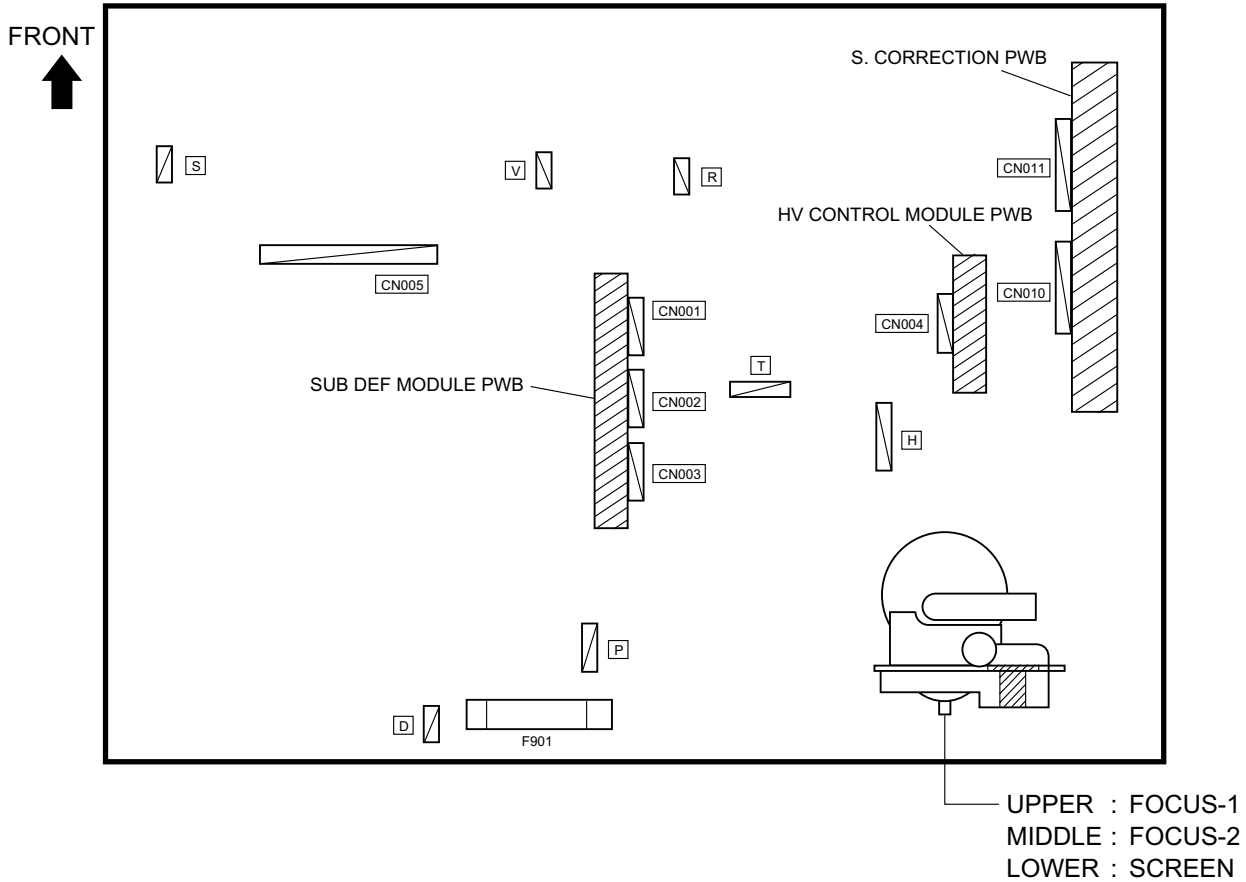
4.8 BASIC OPERATIONS OF SERVICE MENU

4.8.1 SERVICE MENU ITEMS

The service menu is roughly classified according to setup and adjustments, and is divided into the following items. Do not alter the values of unnecessary items.

SIGNAL BLOCK	Adjustments of the contrast, brightness, chroma and phase.
WHITE BALANCE BLOCK	Adjustments of the white balance.
DEFLECTION BLOCK	Adjustments of the deflection circuitry.
CPU BLOCK	Setting of the entire system by means of the control values of the microcomputer. (This block is usually not adjusted in servicing. Do not touch it except for adjustment items CC41 and CE05 to CE24.)
DIAGNOSIS	Display of the results of self diagnosis.
UPC1884 ADJ.	Display of the status of UPC1884 which is the DEF processor IC. (Do not adjust this item because it is not required for servicing.)
TA1276 ADJ.	Display of the status of TA1276 which is the RGB processor IC. (Do not adjust this item because it is not required for servicing.)
HOUR METER	Display of the hour meter count.
UPDATE CPU PROGRAM	Display of the software version.
E2PROM VERSION	Display of the E2PROM version. (Do not adjust this item because it is not required for servicing.)
FPGA VERSION	Display of the HDSDI FPGA version. (Do not adjust this item because it is not required for servicing.)
INITIALIZE EEPROM	Initialization of the user-setting menu. (Do not adjust this item because it is not required for servicing.)

4.8.2 BASIC OPERATIONS IN THE SERVICE MENU

1. Entering the Service Menu

Use the front panel keys to display the Service Menu (Fig. 1).
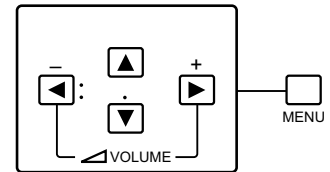
Fig. 1   FRONT PANEL KEYS

(1) While holding the ▼ key, press the **[MENU]** key.
The "⚠" mark appears at the center of the screen (Fig. 2).
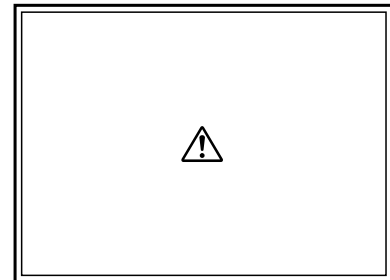
Fig. 2   WRNING MARK

(2) Before the "⚠" mark disappears (within 5 seconds after it appears), hold the ▼ key and press the **VOL-** (◄) key.

Warning message "**Please don't touch!**" appears on the screen (Fig. 3).

Please don't touch!

Fig. 3   WARNING MESSAGE DISPLAY

(3) Before the warning message disappears (within 5 seconds after it appears), press the **VOL+** (►) key.

The service menu items appears on the display (Fig. 4).

►SIGNAL BLOCK
WHITE BALANCE BLOCK
DEFLECTION BLOCK
CPU BLOCK
DIAGNOSIS
UPC1884 ADJ.
TA1276 ADJ.
HOUR METER

EXIT: MENU   ENTER: +   SELECT: ▲▼

Fig. 4   SERVICE MENU

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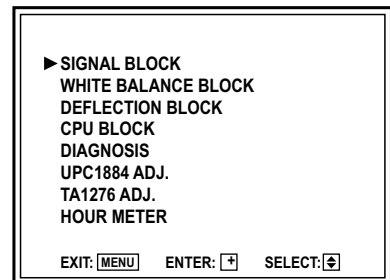
2. Setting the Service Menu items

(1) With the Service Menu displayed, press the ▼ key to select the item to be adjusted, then press the **VOL+** (▶) key to enter the submenu for the item.
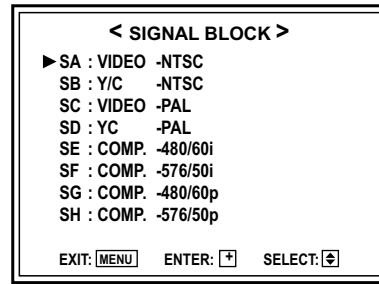
```
┌─────────────────────────────────┐
│      < SIGNAL BLOCK >           │
│ ▶SA : VIDEO  -NTSC              │
│  SB : Y/C    -NTSC              │
│  SC : VIDEO  -PAL               │
│  SD : YC     -PAL               │
│  SE : COMP.  -480/60i           │
│  SF : COMP.  -576/50i           │
│  SG : COMP.  -480/60p           │
│  SH : COMP.  -576/50p           │
│                                 │
│  EXIT: MENU   ENTER: +  SELECT: ⬍│
└─────────────────────────────────┘
```
SUBMENU

(2) Press the ▼ key to select the item to be adjusted, then press the **VOL+** (▶) key to enter the item.
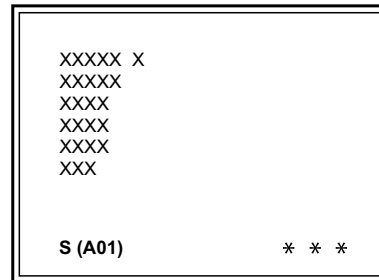
```
┌─────────────────────────────────┐
│                                 │
│   XXXXX  X                      │
│   XXXXX                         │
│   XXXX                          │
│   XXXX                          │
│   XXXX                          │
│   XXX                           │
│                                 │
│   S (A01)            *  *  *     │
└─────────────────────────────────┘
```
ADJUSTMENT ITEM DISPLAY

(3) Set the adjustment item by varying it with the **VOL-** (◀) and **VOL+** (▶) keys.

```
┌─────────────────────────────────┐
│                                 │
│   XXXXX  X                      │
│   XXXXX                         │
│   XXXX                          │
│   XXXX                          │
│   XXXX                          │
│   XXX                           │
│                                 │
│   S (A01)            *  *  *     │
└─────────────────────────────────┘
```
ADJUSTMENT ITEM   ADJUSTMENT VALUE

3. Exiting from the Service Menu

(1) After completing the adjustment of an item, press the **[MENU]** key to return to the submenu.

(2) Press the **[MENU]** key again to return to the Service Menu.

(3) Press the **[MENU]** key again to return to the normal screen.

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4.8.3 SERVICE MENU FLOW CHART

[SERVICE MENU]

```
►SIGNAL BLOCK
 WHITE BALANCE BLOCK
 DEFLECTION BLOCK
 CPU BLOCK
 DIAGNOSIS
 UPC1884 ADJ.
 TA1276 ADJ.
 HOUR METER

EXIT: MENU   ENTER: +   SELECT: ⬍
```

```
 UPDATE CPU PROGRAM
 E2PROM VERSION
 INITIALIZE EEPROM




EXIT: MENU   ENTER: +   SELECT: ⬍
```

[SIGNAL BLOCK 1/3]

```
< SIGNAL BLOCK >
►SA : VIDEO -NTSC
 SB : Y/C   -NTSC
 SC : VIDEO -PAL
 SD : YC    -PAL
 SE : COMP. -480/60i
 SF : COMP. -576/50i
 SG : COMP. -480/60p
 SH : COMP. -576/50p

EXIT: MENU   ENTER: +   SELECT: ⬍
```

(SA : VIDEO -NTSC)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


S [A01]            * * *
```

[SIGNAL BLOCK 2/3]

```
< SIGNAL BLOCK >
►SI : COMP.  -1080/60i
 SJ : COMP.  -1035/60i
 SK : COMP.  -1080/50i
 SL : COMP.  -1080/24psF
 SM : COMP.  -720/60p
 SN : COMP.  -720/50p
 SO : RGB
 SP : SCAN   -UNDER

EXIT: MENU   ENTER: +   SELECT: ⬍
```

(SI : COMP. -1080/60i)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


S [I01]            * * *
```

[SIGNAL BLOCK 3/3]

```
< SIGNAL BLOCK >
►SQ : ASPECT
 SR : COMMEN
 SS : SCAN   -ZOOM
 ST : SUB DATA (HD/SD)




EXIT: MENU   ENTER: +   SELECT: ⬍
```

(SQ : ASPECT)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


S [Q01]            * * *
```

[WHITE BALANCE BLOCK 1/3]

```
< WHITE BALANCE BLOCK >
►WA : NTSC  HIGH
 WB : NTSC  LOW
 WC : PAL  HIGH
 WD : PAL  LOW
 WE : COMP.-480(576)i  HIGH
 WF : COMP.-480(576)i  LOW
 WG : COMP.-480(576)p HIGH
 WH : COMP.-480(576)p LOW

EXIT: MENU   ENTER: +   SELECT: ⬍
```

(WA : NTSC HIGH)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


W [A01]            * * *
```

[WHITE BALANCE BLOCK 2/3]

```
< WHITE BALANCE BLOCK >
►WI : COMP.-1080i  HIGH
 WJ : COMP.-1080i  LOW
 WK : COMP.-1035/60i  HIGH
 WL : COMP.-1035/60i  LOW
 WM : COMP.-1080/50i  HIGH
 WN : COMP.-1080/50i  LOW
 WO : COMP.-1080/24psF  HIGH
 WP : COMP.-1080/24psF  LOW

EXIT: MENU   ENTER: +   SELECT: ⬍
```

(WI : COMP.-1080i HIGH)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


W [I01]            * * *
```

[WHITE BALANCE BLOCK 3/3]

```
< WHITE BALANCE BLOCK >
►WQ : COMP.-720/60p  HIGH
 WR : COMP.-720/60p  LOW
 WS : COMP.-720/50p  HIGH
 WT : COMP.-720/50p  LOW
 WU : RGB  HIGH
 WV : RGB  LOW
 WW : COMMON  HIGH
 WX : COMMON  LOW

EXIT: MENU   ENTER: +   SELECT: ⬍
```

(WI : COMP.-720/60p HIGH)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


W [Q01]            * * *
```

[DEFLECTION BLOCK 1/4]

```
< DEFLECTION BLOCK >
►DA : NTSC
 DB : NTSC-UNDER
 DC : PAL
 DD : PAL-UNDER
 DE : 480/60i
 DF : 480/60i-UNDER
 DG : 576/50i
 DH : 576/50i-UNDER

EXIT: MENU   ENTER: +   SELECT: ⬍
```

(DA : NTSC)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


D [A01]            * * *
```

[DEFLECTION BLOCK 2/4]

```
< DEFLECTION BLOCK >
►DI : 480/60p
 DJ : 480/60p -UNDER
 DK : 576/50p
 DL : 576/50p -UNDER
 DM : 1080/60i
 DN : 1080/60i-UNDER
 DO : 1035/60i
 DP : 1035/60i-UNDER

EXIT: MENU   ENTER: +   SELECT: ⬍
```

(DI : 480/60p)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


D [I01]            * * *
```

[DEFLECTION BLOCK 3/4]

```
< DEFLECTION BLOCK >
►DQ : 1080/50i
 DR : 1080/50i-UNDER
 DS : 1080/24p
 DT : 1080/24p-UNDER
 DU : 720/60p
 DV : 720/60p-UNDER
 DW : 720/50p
 DX : 720/50p-UNDER

EXIT: MENU   ENTER: +   SELECT: ⬍
```

(DQ : 1080/50i)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


D [Q01]            * * *
```

[DEFLECTION BLOCK 4/4]

```
< DEFLECTION BLOCK >
►DY : ASPECT
 DZ : V.LIN/FOCUS
 D1 : ROTATION/PURITY
 D2 : COMMON
 D3 : ZOOM




EXIT: MENU   ENTER: +   SELECT: ⬍
```

(DY : ASPECT)

```
XXXXX X
XXXXX
XXXX
XXXX
XXXX
XXX


D [Y01]            * * *
```

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[SERVICE MENU]

```
        SIGNAL BLOCK
        WHITE BALANCE BLOCK
        DEFLECTION BLOCK
     ► CPU BLOCK
        DIAGNOSIS
        UPC1884 ADJ.
        TA1276 ADJ.
        HOUR METER

   EXIT: MENU   ENTER: +   SELECT: ⬍
```

[CPU BLOCK]

```
          < CPU BLOCK >
     CA : MENU
     CB : SIGNAL
     CC : SETTING
     CD : DEFLECTION
     CE : OSD etc

   EXIT: MENU   ENTER: +   SELECT: ⬍
```

[CA : MENU]

```
     XXXXX  X
     XXXXX
     XXXX
     XXXX
     XXXX
     XXX



     C [A01]                * * *
```

```
        UPDATE CPU PROGRAM
        E2PROM VERSION
        FPGA VERSION
        INITIALIZE EEPROM



   EXIT: MENU   ENTER: +   SELECT: ⬍
```

[DIAGNOSIS]

```
          < DIAGNOSIS MENU >
     ► CLEAR
        I2C-0 SIGNAL BUS  ○
        I2C-1 SIGNAL BUS  ○
        I2C ROM BUS       ○
        X-RAY             ○
        OCP               ○
        VOFF              ○

   EXIT: MENU   ENTER: +
```

[E2PROM VERSION]

```
        < EEPROM VERSION >

        EEPROM* * *
```

[UPC1884 ADJ.]

```
     XXXXX  X
     XXXXX
     XXXX
     XXXX
     XXXX
     XXX

     U [P01]                * * *
```

[FPGA VERSION]

```
        < FPGA VERSION >

        SET FPGA: * * *
        SLOT1    : * * *
        SLOT2    : * * *
        SLOT3    : * * *
```

[TA1276 ADJ.]

```
     XXXXX  X
     XXXXX
     XXXX
     XXXX
     XXXX
     XXX

     T [A01]                * * *
```

[INITIALIZE EEPROM]

```
        < EEPROM INITIALIZE >
     ⚠ Are you sure?
        "YES"  then  + key.
        "NO"   then  MENU key.
```

[HOUR METER]

```
          < HOUR METER >
     RESET
     HOUR METER    : * * * * *




   EXIT: MENU   ENTER: +
```

[UPDATE CPU PROGRAM]

```
        < UPDATE CPU PROGRAM >
     ⚠ Are you sure?
        "Yes"  then  + key.
        "No"   then  MENU key.
     Necessity! : PC, cable
     & terminal software
     CURRENT Ver.   * * * *


   EXIT: MENU   ENTER: +
```

Do not adjust these items because they are not rquired for servicing.

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4.9 INITIAL SETTING VALUE OF SERVICE MENU

Note that the following values other than the fixed values should simply be used as references during adjustments. Their correct values may be variable depending on individual units.

[SIGNAL BLOCK]

No.	Setting item	Variable range	Initial setting value
SA [VIDEO NTSC]			
S[A01]	CONTRAST	-064 ~ +063	+018
S[A02]	BRIGHT HIGH	-128 ~ +127	000
S[A03]	CHROMA	-064 ~ +063	000
S[A04]	PHASE	-064 ~ +063	000
S[A05]	APERTURE	-064 ~ +063	000
S[A06]	BRIGHT LOW	-128 ~ +127	000
S[A07]	Y DL	000/001	000 (Fixed value)
S[A08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[A09]	R/B GAIN	000 ~ 003	002 (Fixed value)
S[A10]	G-Y PHASE	000 ~ 003	001 (Fixed value)
S[A11]	G/B GAIN	000 ~ 003	003 (Fixed value)
SB [Y/C NTSC]			
S[B01]	CONTRAST	-064 ~ +063	+018
S[B02]	BRIGHT HIGH	-128 ~ +127	000
S[B03]	CHROMA	-064 ~ +063	000
S[B04]	PHASE	-064 ~ +063	000
S[B05]	APERTURE	-064 ~ +063	000
S[B06]	BRIGHT LOW	-128 ~ +127	000
S[B07]	Y DL	000/001	000 (Fixed value)
S[B08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[B09]	R/B GAIN	000 ~ 003	002 (Fixed value)
S[B10]	G-Y PHASE	000 ~ 003	001 (Fixed value)
S[B11]	G/B GAIN	000 ~ 003	003 (Fixed value)
SC [VIDEO PAL]			
S[C01]	CONTRAST	-064 ~ +063	+018
S[C02]	BRIGHT HIGH	-128 ~ +127	000
S[C03]	CHROMA	-064 ~ +063	000
S[C04]	PHASE	-064 ~ +063	000
S[C05]	APERTURE	-064 ~ +063	000
S[C06]	BRIGHT LOW	-128 ~ +127	000
S[C07]	Y DL	000/001	000 (Fixed value)
S[C08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[C09]	R/B GAIN	000 ~ 003	002 (Fixed value)
S[C10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[C11]	G/B GAIN	000 ~ 003	003 (Fixed value)
SD [YC PAL]			
S[D01]	CONTRAST	-064 ~ +063	+018
S[D02]	BRIGHT HIGH	-128 ~ +127	000
S[D03]	CHROMA	-064 ~ +063	000

No.	Setting item	Variable range	Initial setting value
S[D04]	PHASE	-064 ~ +063	000
S[D05]	APERTURE	-064 ~ +063	000
S[D06]	BRIGHT LOW	-128 ~ +127	000
S[D07]	Y DL	000/001	000 (Fixed value)
S[D08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[D09]	R/B GAIN	000 ~ 003	002 (Fixed value)
S[D10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[D11]	G/B GAIN	000 ~ 003	003 (Fixed value)
SE [COMP. 480/60i]			
S[E01]	CONTRAST	-064 ~ +063	+018
S[E02]	BRIGHT HIGH	-128 ~ +127	000
S[E03]	CHROMA	-064 ~ +063	000
S[E04]	PHASE	-064 ~ +063	000
S[E05]	APERTURE	-064 ~ +063	000
S[E06]	BRIGHT LOW	-128 ~ +127	000
S[E07]	Y DL	000/001	000 (Fixed value)
S[E08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[E09]	R/B GAIN	000 ~ 003	002 (Fixed value)
S[E10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[E11]	G/B GAIN	000 ~ 003	003 (Fixed value)
SF [COMP. 576/50i]			
S[F01]	CONTRAST	-064 ~ +063	+018
S[F02]	BRIGHT HIGH	-128 ~ +127	000
S[F03]	CHROMA	-064 ~ +063	000
S[F04]	PHASE	-064 ~ +063	000
S[F05]	APERTURE	-064 ~ +063	000
S[F06]	BRIGHT LOW	-128 ~ +127	000
S[F07]	Y DL	000/001	000 (Fixed value)
S[F08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[F09]	R/B GAIN	000 ~ 003	002 (Fixed value)
S[F10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[F11]	G/B GAIN	000 ~ 003	003 (Fixed value)
SG [COMP. 480/60p]			
S[G01]	CONTRAST	-064 ~ +063	+018
S[G02]	BRIGHT HIGH	-128 ~ +127	000
S[G03]	CHROMA	-064 ~ +063	000
S[G04]	PHASE	-064 ~ +063	000
S[G05]	APERTURE	-064 ~ +063	000
S[G06]	BRIGHT LOW	-128 ~ +127	000
S[G07]	Y DL	000/001	000 (Fixed value)
S[G08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[G09]	R/B GAIN	000 ~ 003	002 (Fixed value)
S[G10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[G11]	G/B GAIN	000 ~ 003	003 (Fixed value)

No.	Setting item	Variable range	Initial setting value
SH [COMP. 576/50p]			
S[H01]	CONTRAST	-064 ~ +063	+018
S[H02]	BRIGHT HIGH	-128 ~ +127	000
S[H03]	CHROMA	-064 ~ +063	000
S[H04]	PHASE	-064 ~ +063	000
S[H05]	APERTURE	-064 ~ +063	000
S[H06]	BRIGHT LOW	-128 ~ +127	000
S[H07]	Y DL	000/001	000 (Fixed value)
S[H08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[H09]	R/B GAIN	000 ~ 003	002 (Fixed value)
S[H10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[H11]	G/B GAIN	000 ~ 003	003 (Fixed value)
SI [COMP. 1080/60i]			
S[I01]	CONTRAST	-064 ~ +063	000
S[I02]	BRIGHT HIGH	-128 ~ +127	000
S[I03]	CHROMA	-064 ~ +063	000
S[I04]	PHASE	-064 ~ +063	000
S[I05]	APERTURE	-064 ~ +063	000
S[I06]	BRIGHT LOW	-128 ~ +127	000
S[I07]	Y DL	000/001	000 (Fixed value)
S[I08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[I09]	R/B GAIN	000 ~ 003	003 (Fixed value)
S[I10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[I11]	G/B GAIN	000 ~ 003	000 (Fixed value)
SJ [COMP. 1035/60i]			
S[J01]	CONTRAST	-064 ~ +063	000
S[J02]	BRIGHT HIGH	-128 ~ +127	000
S[J03]	CHROMA	-064 ~ +063	000
S[J04]	PHASE	-064 ~ +063	000
S[J05]	APERTURE	-064 ~ +063	000
S[J06]	BRIGHT LOW	-128 ~ +127	000
S[J07]	Y DL	000/001	000 (Fixed value)
S[J08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[J09]	R/B GAIN	000 ~ 003	003 (Fixed value)
S[J10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[J11]	G/B GAIN	000 ~ 003	000 (Fixed value)
SK [COMP. 1080/50i]			
S[K01]	CONTRAST	-064 ~ +063	+006
S[K02]	BRIGHT HIGH	-128 ~ +127	000
S[K03]	CHROMA	-064 ~ +063	000
S[K04]	PHASE	-064 ~ +063	000
S[K05]	APERTURE	-064 ~ +063	000
S[K06]	BRIGHT LOW	-128 ~ +127	000

No.	Setting item	Variable range	Initial setting value
S[K07]	Y DL	000/001	000 (Fixed value)
S[K08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[K09]	R/B GAIN	000 ~ 003	003 (Fixed value)
S[K10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[K11]	G/B GAIN	000 ~ 003	000 (Fixed value)
SL [COMP. 1080/24psF]			
S[L01]	CONTRAST	-064 ~ +063	+009
S[L02]	BRIGHT HIGH	-128 ~ +127	000
S[L03]	CHROMA	-064 ~ +063	000
S[L04]	PHASE	-064 ~ +063	000
S[L05]	APERTURE	-064 ~ +063	000
S[L06]	BRIGHT LOW	-128 ~ +127	000
S[L07]	Y DL	000/001	000 (Fixed value)
S[L08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[L09]	R/B GAIN	000 ~ 003	003 (Fixed value)
S[L10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[L11]	G/B GAIN	000 ~ 003	000 (Fixed value)
SM [COMP. 720/60p]			
S[M01]	CONTRAST	-064 ~ +063	+002
S[M02]	BRIGHT HIGH	-128 ~ +127	000
S[M03]	CHROMA	-064 ~ +063	000
S[M04]	PHASE	-064 ~ +063	000
S[M05]	APERTURE	-064 ~ +063	000
S[M06]	BRIGHT LOW	-128 ~ +127	000
S[M07]	Y DL	000/001	000 (Fixed value)
S[M08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[M09]	R/B GAIN	000 ~ 003	003 (Fixed value)
S[M10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[M11]	G/B GAIN	000 ~ 003	000 (Fixed value)
SN [COMP. 720/50p]			
S[N01]	CONTRAST	-064 ~ +063	000
S[N02]	BRIGHT HIGH	-128 ~ +127	000
S[N03]	CHROMA	-064 ~ +063	000
S[N04]	PHASE	-064 ~ +063	000
S[N05]	APERTURE	-064 ~ +063	000
S[N06]	BRIGHT LOW	-128 ~ +127	000
S[N07]	Y DL	000/001	000 (Fixed value)
S[N08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[N09]	R/B GAIN	000 ~ 003	003 (Fixed value)
S[N10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[N11]	G/B GAIN	000 ~ 003	000 (Fixed value)
SO [RGB]			
S[O01]	CONTRAST	-064 ~ +063	+002

No.	Setting item	Variable range	Initial setting value
S[O02]	BRIGHT HIGH	-128 ~ +127	-070
S[O03]	BRIGHT LOW	-128 ~ +127	-070
SP [SCAN UNDER]			
S[P01]	NTSC-COMPOS. CONTRAST	-064 ~ +063	-007
S[P02]	NTSC-COMPOS. BRIGHT HIGH	-128 ~ +127	000
S[P03]	NTSC-COMPOS. BRIGHT LOW	-128 ~ +127	000
S[P04]	NTSC-Y/C CONTRAST	-064 ~ +063	-007
S[P05]	NTSC-Y/C BRIGHT HIGH	-128 ~ +127	000
S[P06]	NTSC-Y/C BRIGHT LOW	-128 ~ +127	000
S[P07]	PAL-COMPOS. CONTRAST	-064 ~ +063	-007
S[P08]	PAL-COMPOS. BRIGHT HIGH	-128 ~ +127	000
S[P09]	PAL-COMPOS. BRIGHT LOW	-128 ~ +127	000
S[P10]	PAL-Y/C CONTRAST	-064 ~ +063	-007
S[P11]	PAL-Y/C BRIGHT HIGH	-128 ~ +127	000
S[P12]	PAL-Y/C BRIGHT LOW	-128 ~ +127	000
S[P13]	480i CONTRAST	-064 ~ +063	-007
S[P14]	480i BRIGHT HIGH	-128 ~ +127	000
S[P15]	480i BRIGHT LOW	-128 ~ +127	000
S[P16]	576i CONTRAST	-064 ~ +063	-007
S[P17]	576i BRIGHT HIGH	-128 ~ +127	000
S[P18]	576i BRIGHT LOW	-128 ~ +127	000
S[P19]	480p CONTRAST	-064 ~ +063	-007
S[P20]	480p BRIGHT HIGH	-128 ~ +127	000
S[P21]	480p BRIGHT LOW	-128 ~ +127	000
S[P22]	576p CONTRAST	-064 ~ +063	-007
S[P23]	576p BRIGHT HIGH	-128 ~ +127	000
S[P24]	576p BRIGHT LOW	-128 ~ +127	000
S[P25]	1080/60i CONTRAST	-064 ~ +063	-007
S[P26]	1080/60i BRIGHT HIGH	-128 ~ +127	000
S[P27]	1080/60i BRIGHT LOW	-128 ~ +127	000
S[P28]	1035/60i CONTRAST	-064 ~ +063	-007
S[P29]	1035/60i BRIGHT HIGH	-128 ~ +127	000
S[P30]	1035/60i BRIGHT LOW	-128 ~ +127	000
S[P31]	1080/50i CONTRAST	-064 ~ +063	-007
S[P32]	1080/50i BRIGHT HIGH	-128 ~ +127	000
S[P33]	1080/50i BRIGHT LOW	-128 ~ +127	000
S[P34]	1080/24psF CONTRAST	-064 ~ +063	-007
S[P35]	1080/24psF BRIGHT HIGH	-128 ~ +127	000
S[P36]	1080/24psF BRIGHT LOW	-128 ~ +127	000
S[P37]	720/60p CONTRAST	-064 ~ +063	-007
S[P38]	720/60p BRIGHT HIGH	-128 ~ +127	000
S[P39]	720/60p BRIGHT LOW	-128 ~ +127	000
S[P40]	720/50p CONTRAST	-064 ~ +063	-007

No.	Setting item	Variable range	Initial setting value
S[P41]	720/50p BRIGHT HIGH	-128 ~ +127	000
S[P42]	720/50p BRIGHT LOW	-128 ~ +127	000
SQ [ASPECT]			
S[Q01]	NTSC-COMPOS. OVERSCAN CONTRAST	-064 ~ +063	-011
S[Q02]	NTSC-COMPOS. OVERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q03]	NTSC-COMPOS. OVERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q04]	NTSC-COMPOS. UNDERSCAN CONTRAST	-064 ~ +063	-011
S[Q05]	NTSC-COMPOS. UNDERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q06]	NTSC-COMPOS. UNDERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q07]	NTSC-Y/C OVERSCAN CONTRAST	-064 ~ +063	-011
S[Q08]	NTSC-Y/C OVERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q09]	NTSC-Y/C OVERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q10]	NTSC-Y/C UNDERSCAN CONTRAST	-064 ~ +063	-011
S[Q11]	NTSC-Y/C UNDERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q12]	NTSC-Y/C UNDERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q13]	PAL-COMPOS. OVERSCAN CONTRAST	-064 ~ +063	-011
S[Q14]	PAL-COMPOS. OVERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q15]	PAL-COMPOS. OVERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q16]	PAL-COMPOS. UNDERSCAN CONTRAST	-064 ~ +063	-011
S[Q17]	PAL-COMPOS. UNDERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q18]	PAL-COMPOS. UNDERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q19]	PAL-Y/C OVERSCAN CONTRAST	-064 ~ +063	-011
S[Q20]	PAL-Y/C OVERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q21]	PAL-Y/C OVERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q22]	PAL-Y/C UNDERSCAN CONTRAST	-064 ~ +063	-011
S[Q23]	PAL-Y/C UNDERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q24]	PAL-Y/C UNDERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q25]	480i OVERSCAN CONTRAST	-064 ~ +063	-011
S[Q26]	480i OVERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q27]	480i OVERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q28]	480i UNDERSCAN CONTRAST	-064 ~ +063	-011
S[Q29]	480i UNDERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q30]	480i UNDERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q31]	576i OVERSCAN CONTRAST	-064 ~ +063	-011
S[Q32]	576i OVERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q33]	576i OVERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q34]	576i UNDERSCAN CONTRAST	-064 ~ +063	-011
S[Q35]	576i UNDERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q36]	576i UNDERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q37]	480p OVERSCAN CONTRAST	-064 ~ +063	-011
S[Q38]	480p OVERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q39]	480p OVERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q40]	480p UNDERSCAN CONTRAST	-064 ~ +063	-011

No.	Setting item	Variable range	Initial setting value
S[Q41]	480p UNDERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q42]	480p UNDERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q43]	576p OVERSCAN CONTRAST	-064 ~ +063	-011
S[Q44]	576p OVERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q45]	576p OVERSCAN BRIGHT LOW	-128 ~ +127	000
S[Q46]	576p UNDERSCAN CONTRAST	-064 ~ +063	-011
S[Q47]	576p UNDERSCAN BRIGHT HIGH	-128 ~ +127	000
S[Q48]	576p UNDERSCAN BRIGHT LOW	-128 ~ +127	000
SR [COMMON] NOTE : When the value of item SR is changed, items SA to ST should be re-adjusted.			
S[R01]	CONTRAST	000 ~ 127	066
S[R02]	BRIGHT HIGH	000 ~ 255	140
S[R03]	CHROMA	000 ~ 127	064
S[R04]	PHASE	000 ~ 127	064
S[R05]	APERTURE	000 ~ 127	025
S[R06]	BRIGHT LOW	-128 ~ +127	000
S[R07]	Y DL	000/001	000 (Fixed value)
S[R08]	R-Y PHASE	000 ~ 003	000 (Fixed value)
S[R09]	R/B GAIN	000 ~ 003	003 (Fixed value)
S[R10]	G-Y PHASE	000 ~ 003	002 (Fixed value)
S[R11]	G/B GAIN	000 ~ 003	000 (Fixed value)
SS [SCAN ZOOM]			
S[S01]	NTSC-COMPOS. ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S02]	NTSC-COMPOS. ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S03]	NTSC-COMPOS. ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S04]	NTSC-Y/C ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S05]	NTSC-Y/C ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S06]	NTSC-Y/C ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S07]	PAL-COMPOS. ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S08]	PAL-COMPOS. ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S09]	PAL-COMPOS. ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S10]	PAL-Y/C ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S11]	PAL-Y/C ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S12]	PAL-Y/C ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S13]	480i ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S14]	480i ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S15]	480i ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S16]	576i ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S17]	576i ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S18]	576i ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S19]	480p ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S20]	480p ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S21]	480p ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S22]	576p ZOOMSCAN CONTRAST	-064 ~ +063	+009

No.	Setting item	Variable range	Initial setting value
S[S23]	576p ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S24]	576p ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S25]	1080/60i ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S26]	1080/60i ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S27]	1080/60i ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S28]	1035/60i ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S29]	1035/60i ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S30]	1035/60i ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S31]	1080/50i ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S32]	1080/50i ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S33]	1080/50i ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S34]	1080/24psF ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S35]	1080/24psF ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S36]	1080/24psF ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S37]	720/60p ZOOMSCAN CONTRAST	-064 ~ +063	+007
S[S38]	720/60p ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S39]	720/60p ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
S[S40]	720/50p ZOOMSCAN CONTRAST	-064 ~ +063	+009
S[S41]	720/50p ZOOMSCAN BRIGHT HIGH	-128 ~ +127	000
S[S42]	720/50p ZOOMSCAN BRIGHT LOW	-128 ~ +127	000
ST [HD/SD MODE]			
S[T01]	NTSC-COMPOS. HD/SD CONTRAST	-064 ~ +063	000
S[T02]	NTSC-COMPOS. HD/SD BRIGHT HIGH	-128 ~ +127	000
S[T03]	NTSC-COMPOS. HD/SD BRIGHT LOW	-128 ~ +127	000
S[T04]	NTSC-Y/C HD/SD CONTRAST	-064 ~ +063	000
S[T05]	NTSC-Y/C HD/SD BRIGHT HIGH	-128 ~ +127	000
S[T06]	NTSC-Y/C HD/SD BRIGHT LOW	-128 ~ +127	000
S[T07]	PAL-COMPOS. HD/SD CONTRAST	-064 ~ +063	000
S[T08]	PAL-COMPOS. HD/SD BRIGHT HIGH	-128 ~ +127	000
S[T09]	PAL-COMPOS. HD/SD BRIGHT LOW	-128 ~ +127	000
S[T10]	PAL-Y/C HD/SD CONTRAST	-064 ~ +063	000
S[T11]	PAL-Y/C HD/SD BRIGHT HIGH	-128 ~ +127	000
S[T12]	PAL-Y/C HD/SD BRIGHT LOW	-128 ~ +127	000
S[T13]	480i HD/SD CONTRAST	-064 ~ +063	000
S[T14]	480i HD/SD BRIGHT HIGH	-128 ~ +127	000
S[T15]	480i HD/SD BRIGHT LOW	-128 ~ +127	000
S[T16]	576i HD/SD CONTRAST	-064 ~ +063	000
S[T17]	576i HD/SD BRIGHT HIGH	-128 ~ +127	000
S[T18]	576i HD/SD BRIGHT LOW	-128 ~ +127	000

[WHITE BALANCE BLOCK]

No.	Setting item	Variable range	Initial setting value
WA [NTSC(COMPOS.,Y/C) HIGH]			
W[A01]	DRIVE (R)	-128 ~ +127	000
W[A02]	DRIVE (G)	–	000
W[A03]	DRIVE (B)	-128 ~ +127	000
W[A04]	CUTOFF (R)	-128 ~ +127	000
W[A05]	CUTOFF (G)	-128 ~ +127	000
W[A06]	CUTOFF (B)	-128 ~ +127	000
WB [NTSC(COMPOS.,Y/C) LOW]			
W[B01]	DRIVE (R)	-128 ~ +127	000
W[B02]	DRIVE (G)	–	000
W[B03]	DRIVE (B)	-128 ~ +127	000
W[B04]	CUTOFF (R)	-128 ~ +127	000
W[B05]	CUTOFF (G)	-128 ~ +127	000
W[B06]	CUTOFF (B)	-128 ~ +127	000
WC [PAL(COMPOS.,Y/C) HIGH]			
W[C01]	DRIVE (R)	-128 ~ +127	000
W[C02]	DRIVE (G)	–	000
W[C03]	DRIVE (B)	-128 ~ +127	000
W[C04]	CUTOFF (R)	-128 ~ +127	000
W[C05]	CUTOFF (G)	-128 ~ +127	000
W[C06]	CUTOFF (B)	-128 ~ +127	000
WD [PAL(COMPOS.,Y/C) LOW]			
W[D01]	DRIVE (R)	-128 ~ +127	000
W[D02]	DRIVE (G)	–	000
W[D03]	DRIVE (B)	-128 ~ +127	000
W[D04]	CUTOFF (R)	-128 ~ +127	000
W[D05]	CUTOFF (G)	-128 ~ +127	000
W[D06]	CUTOFF (B)	-128 ~ +127	000
WE [COMP. 480(576)i HIGH]			
W[E01]	DRIVE (R)	-128 ~ +127	000
W[E02]	DRIVE (G)	–	000
W[E03]	DRIVE (B)	-128 ~ +127	000
W[E04]	CUTOFF (R)	-128 ~ +127	000
W[E05]	CUTOFF (G)	-128 ~ +127	000
W[E06]	CUTOFF (B)	-128 ~ +127	000
WF [COMP. 480(576)i LOW]			
W[F01]	DRIVE (R)	-128 ~ +127	000
W[F02]	DRIVE (G)	–	000
W[F03]	DRIVE (B)	-128 ~ +127	000
W[F04]	CUTOFF (R)	-128 ~ +127	000
W[F05]	CUTOFF (G)	-128 ~ +127	000
W[F06]	CUTOFF (B)	-128 ~ +127	000

No.	Setting item	Variable range	Initial setting value
WG [COMP. 480(576)p HIGH]			
W[G01]	DRIVE (R)	-128 ~ +127	000
W[G02]	DRIVE (G)	–	000
W[G03]	DRIVE (B)	-128 ~ +127	000
W[G04]	CUTOFF (R)	-128 ~ +127	000
W[G05]	CUTOFF (G)	-128 ~ +127	000
W[G06]	CUTOFF (B)	-128 ~ +127	000
WH [COMP. 480(576)p LOW]			
W[H01]	DRIVE (R)	-128 ~ +127	000
W[H02]	DRIVE (G)	–	000
W[H03]	DRIVE (B)	-128 ~ +127	000
W[H04]	CUTOFF (R)	-128 ~ +127	000
W[H05]	CUTOFF (G)	-128 ~ +127	000
W[H06]	CUTOFF (B)	-128 ~ +127	000
WI [COMP. 1080/60i HIGH]			
W[I01]	DRIVE (R)	-128 ~ +127	000
W[I02]	DRIVE (G)	–	000
W[I03]	DRIVE (B)	-128 ~ +127	000
W[I04]	CUTOFF (R)	-128 ~ +127	000
W[I05]	CUTOFF (G)	-128 ~ +127	000
W[I06]	CUTOFF (B)	-128 ~ +127	000
WJ [COMP. 1080/60i LOW]			
W[J01]	DRIVE (R)	-128 ~ +127	000
W[J02]	DRIVE (G)	–	000
W[J03]	DRIVE (B)	-128 ~ +127	000
W[J04]	CUTOFF (R)	-128 ~ +127	000
W[J05]	CUTOFF (G)	-128 ~ +127	000
W[J06]	CUTOFF (B)	-128 ~ +127	000
WK [COMP. 1035/60i HIGH]			
W[K01]	DRIVE (R)	-128 ~ +127	000
W[K02]	DRIVE (G)	–	000
W[K03]	DRIVE (B)	-128 ~ +127	000
W[K04]	CUTOFF (R)	-128 ~ +127	000
W[K05]	CUTOFF (G)	-128 ~ +127	000
W[K06]	CUTOFF (B)	-128 ~ +127	000
WL [COMP. 1035/60i LOW]			
W[L01]	DRIVE (R)	-128 ~ +127	000
W[L02]	DRIVE (G)	–	000
W[L03]	DRIVE (B)	-128 ~ +127	000
W[L04]	CUTOFF (R)	-128 ~ +127	000
W[L05]	CUTOFF (G)	-128 ~ +127	000
W[L06]	CUTOFF (B)	-128 ~ +127	000

No.	Setting item	Variable range	Initial setting value
WM [COMP. 1080/50i HIGH]			
W[M01]	DRIVE (R)	-128 ~ +127	000
W[M02]	DRIVE (G)	–	000
W[M03]	DRIVE (B)	-128 ~ +127	000
W[M04]	CUTOFF (R)	-128 ~ +127	000
W[M05]	CUTOFF (G)	-128 ~ +127	000
W[M06]	CUTOFF (B)	-128 ~ +127	000
WN [COMP. 1080/50i LOW]			
W[N01]	DRIVE (R)	-128 ~ +127	000
W[N02]	DRIVE (G)	–	000
W[N03]	DRIVE (B)	-128 ~ +127	000
W[N04]	CUTOFF (R)	-128 ~ +127	000
W[N05]	CUTOFF (G)	-128 ~ +127	000
W[N06]	CUTOFF (B)	-128 ~ +127	000
WO [COMP. 1080/24psF HIGH]			
W[O01]	DRIVE (R)	-128 ~ +127	000
W[O02]	DRIVE (G)	–	000
W[O03]	DRIVE (B)	-128 ~ +127	000
W[O04]	CUTOFF (R)	-128 ~ +127	000
W[O05]	CUTOFF (G)	-128 ~ +127	000
W[O06]	CUTOFF (B)	-128 ~ +127	000
WP [COMP. 1080/24psF LOW]			
W[P01]	DRIVE (R)	-128 ~ +127	000
W[P02]	DRIVE (G)	–	000
W[P03]	DRIVE (B)	-128 ~ +127	000
W[P04]	CUTOFF (R)	-128 ~ +127	000
W[P05]	CUTOFF (G)	-128 ~ +127	000
W[P06]	CUTOFF (B)	-128 ~ +127	000
WQ [COMP. 720/60p HIGH]			
W[Q01]	DRIVE (R)	-128 ~ +127	000
W[Q02]	DRIVE (G)	–	000
W[Q03]	DRIVE (B)	-128 ~ +127	000
W[Q04]	CUTOFF (R)	-128 ~ +127	000
W[Q05]	CUTOFF (G)	-128 ~ +127	000
W[Q06]	CUTOFF (B)	-128 ~ +127	000
WR [COMP. 720/60p LOW]			
W[R01]	DRIVE (R)	-128 ~ +127	000
W[R02]	DRIVE (G)	–	000
W[R03]	DRIVE (B)	-128 ~ +127	000
W[R04]	CUTOFF (R)	-128 ~ +127	000
W[R05]	CUTOFF (G)	-128 ~ +127	000
W[R06]	CUTOFF (B)	-128 ~ +127	000

No.	Setting item		Variable range	Initial setting value
WS [COMP. 720/50p HIGH]				
W[S01]	DRIVE (R)		-128 ~ +127	000
W[S02]	DRIVE (G)		–	000
W[S03]	DRIVE (B)		-128 ~ +127	000
W[S04]	CUTOFF (R)		-128 ~ +127	000
W[S05]	CUTOFF (G)		-128 ~ +127	000
W[S06]	CUTOFF (B)		-128 ~ +127	000
WT [COMP. 720/50p LOW]				
W[T01]	DRIVE (R)		-128 ~ +127	000
W[T02]	DRIVE (G)		–	000
W[T03]	DRIVE (B)		-128 ~ +127	000
W[T04]	CUTOFF (R)		-128 ~ +127	000
W[T05]	CUTOFF (G)		-128 ~ +127	000
W[T06]	CUTOFF (B)		-128 ~ +127	000
WU [RGB HIGH]				
W[U01]	DRIVE (R)		-128 ~ +127	000
W[U02]	DRIVE (G)		–	000
W[U03]	DRIVE (B)		-128 ~ +127	000
W[U04]	CUTOFF (R)		-128 ~ +127	000
W[U05]	CUTOFF (G)		-128 ~ +127	000
W[U06]	CUTOFF (B)		-128 ~ +127	000
WV [RGB LOW]				
W[V01]	DRIVE (R)		-128 ~ +127	000
W[V02]	DRIVE (G)		–	000
W[V03]	DRIVE (B)		-128 ~ +127	000
W[V04]	CUTOFF (R)		-128 ~ +127	000
W[V05]	CUTOFF (G)		-128 ~ +127	000
W[V06]	CUTOFF (B)		-128 ~ +127	000
WW [COMMON HIGH] NOTE : When the value of item WW is changed, it is necessary to readjust white balance HIGH of all signals.				
W[W01]	DRIVE (R)		000 ~ 127	070
W[W02]	DRIVE (G)		–	064
W[W03]	DRIVE (B)		000 ~ 127	060
W[W04]	CUTOFF (R)		000 ~ 255	050
W[W05]	CUTOFF (G)		000 ~ 255	050
W[W06]	CUTOFF (B)		000 ~ 255	050
WX [COMMON LOW] NOTE : When the value of item WX is changed, it is necessary to readjust white balance LOW of all signals.				
W[X01]	DRIVE (R)		000 ~ 127	080
W[X02]	DRIVE (G)		–	064
W[X03]	DRIVE (B)		000 ~ 127	044
W[X04]	CUTOFF (R)		000 ~ 255	050
W[X05]	CUTOFF (G)		000 ~ 255	050
W[X06]	CUTOFF (B)		000 ~ 255	050

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[DEFLECTION BLOCK]

No.	Setting item	Variable range	Initial setting value
DA [NTSC(COMPOS.,Y/C) OVER]			
D[A01]	HORIZONTAL SIZE	-064 ~ +064	-016
D[A02]	VERTICAL SIZE	-064 ~ +064	010
D[A03]	HORIZONTAL POSITION	-064 ~ +064	+015
D[A04]	VERTICAL POSITION	-064 ~ +064	000
D[A05]	SIDE PIN DISTORTION	-032 ~ +032	+005
D[A06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[A07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[A08]	PARALLELOGRAM DISTORTION	-032 ~ +032	-002
D[A09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	-003
D[A10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[A11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-005
D[A12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	-004
DB [NTSC(COMPOS.,Y/C) UNDER]			
D[B01]	HORIZONTAL SIZE	-064 ~ +064	-010
D[B02]	VERTICAL SIZE	-064 ~ +064	-025
D[B03]	HORIZONTAL POSITION	-064 ~ +064	000
D[B04]	VERTICAL POSITION	-064 ~ +064	000
D[B05]	SIDE PIN DISTORTION	-032 ~ +032	+001
D[B06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[B07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[B08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[B09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[B10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[B11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[B12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DC [PAL(COMPOS.,Y/C) OVER]			
D[C01]	HORIZONTAL SIZE	-064 ~ +064	-016
D[C02]	VERTICAL SIZE	-064 ~ +064	+010
D[C03]	HORIZONTAL POSITION	-064 ~ +064	+010
D[C04]	VERTICAL POSITION	-064 ~ +064	+005
D[C05]	SIDE PIN DISTORTION	-032 ~ +032	+007
D[C06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[C07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[C08]	PARALLELOGRAM DISTORTION	-032 ~ +032	-001
D[C09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	-005
D[C10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[C11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-005
D[C12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	-003
DD [PAL(COMPOS.,Y/C) UNDER]			
D[D01]	HORIZONTAL SIZE	-064 ~ +064	-010
D[D02]	VERTICAL SIZE	-064 ~ +064	-025

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No.	Setting item	Variable range	Initial setting value
D[D03]	HORIZONTAL POSITION	-064 ~ +064	000
D[D04]	VERTICAL POSITION	-064 ~ +064	000
D[D05]	SIDE PIN DISTORTION	-032 ~ +032	+001
D[D06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[D07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[D08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[D09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[D10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[D11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[D12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	+001
DE [480/60i OVER]			
D[E01]	HORIZONTAL SIZE	-064 ~ +064	-019
D[E02]	VERTICAL SIZE	-064 ~ +064	+010
D[E03]	HORIZONTAL POSITION	-064 ~ +064	+013
D[E04]	VERTICAL POSITION	-064 ~ +064	000
D[E05]	SIDE PIN DISTORTION	-032 ~ +032	+007
D[E06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[E07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[E08]	PARALLELOGRAM DISTORTION	-032 ~ +032	-002
D[E09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	-003
D[E10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[E11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-005
D[E12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	-003
DF [480/60i UNDER]			
D[F01]	HORIZONTAL SIZE	-064 ~ +064	-009
D[F02]	VERTICAL SIZE	-064 ~ +064	-024
D[F03]	HORIZONTAL POSITION	-064 ~ +064	000
D[F04]	VERTICAL POSITION	-064 ~ +064	000
D[F05]	SIDE PIN DISTORTION	-032 ~ +032	000
D[F06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[F07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[F08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[F09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[F10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[F11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[F12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DG [576/50i OVER]			
D[G01]	HORIZONTAL SIZE	-064 ~ +064	-016
D[G02]	VERTICAL SIZE	-064 ~ +064	+010
D[G03]	HORIZONTAL POSITION	-064 ~ +064	+013
D[G04]	VERTICAL POSITION	-064 ~ +064	+005
D[G05]	SIDE PIN DISTORTION	-032 ~ +032	+005

No.	Setting item	Variable range	Initial setting value
D[G06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[G07]	CORNER DISTORTION (S)	-032 ~ +032	-002
D[G08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[G09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	-005
D[G10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[G11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-005
D[G12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DH [576/50i UNDER]			
D[H01]	HORIZONTAL SIZE	-064 ~ +064	-010
D[H02]	VERTICAL SIZE	-064 ~ +064	-025
D[H03]	HORIZONTAL POSITION	-064 ~ +064	000
D[H04]	VERTICAL POSITION	-064 ~ +064	000
D[H05]	SIDE PIN DISTORTION	-032 ~ +032	000
D[H06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[H07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[H08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[H09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[H10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[H11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[H12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DI [480/60p OVER]			
D[I01]	HORIZONTAL SIZE	-064 ~ +064	-028
D[I02]	VERTICAL SIZE	-064 ~ +064	+015
D[I03]	HORIZONTAL POSITION	-064 ~ +064	+012
D[I04]	VERTICAL POSITION	-064 ~ +064	+005
D[I05]	SIDE PIN DISTORTION	-032 ~ +032	+002
D[I06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[I07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[I08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[I09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	-005
D[I10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[I11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-005
D[I12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	-005
DJ [480/60p UNDER]			
D[J01]	HORIZONTAL SIZE	-064 ~ +064	-011
D[J02]	VERTICAL SIZE	-064 ~ +064	-024
D[J03]	HORIZONTAL POSITION	-064 ~ +064	000
D[J04]	VERTICAL POSITION	-064 ~ +064	-002
D[J05]	SIDE PIN DISTORTION	-032 ~ +032	+001
D[J06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[J07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[J08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000

No.	Setting item	Variable range	Initial setting value
D[J09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[J10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[J11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[J12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	+002
DK [576/50p OVER]			
D[K01]	HORIZONTAL SIZE	-064 ~ +064	-030
D[K02]	VERTICAL SIZE	-064 ~ +064	+015
D[K03]	HORIZONTAL POSITION	-064 ~ +064	+010
D[K04]	VERTICAL POSITION	-064 ~ +064	+005
D[K05]	SIDE PIN DISTORTION	-032 ~ +032	000
D[K06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[K07]	CORNER DISTORTION (S)	-032 ~ +032	-005
D[K08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[K09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	-005
D[K10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[K11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-004
D[K12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DL [576/50p UNDER]			
D[L01]	HORIZONTAL SIZE	-064 ~ +064	-010
D[L02]	VERTICAL SIZE	-064 ~ +064	-025
D[L03]	HORIZONTAL POSITION	-064 ~ +064	000
D[L04]	VERTICAL POSITION	-064 ~ +064	000
D[L05]	SIDE PIN DISTORTION	-032 ~ +032	000
D[L06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[L07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[L08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[L09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[L10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[L11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[L12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DM [1080/60i OVER]			
D[M01]	HORIZONTAL SIZE	-064 ~ +064	-032
D[M02]	VERTICAL SIZE	-064 ~ +064	010
D[M03]	HORIZONTAL POSITION	-064 ~ +064	+025
D[M04]	VERTICAL POSITION	-064 ~ +064	000
D[M05]	SIDE PIN DISTORTION	-032 ~ +032	+015
D[M06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[M07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[M08]	PARALLELOGRAM DISTORTION	-032 ~ +032	-001
D[M09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	+002
D[M10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[M11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-002
D[M12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000

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No.	Setting item	Variable range	Initial setting value
DN [1080/60i UNDER]			
D[N01]	HORIZONTAL SIZE	-064 ~ +064	-011
D[N02]	VERTICAL SIZE	-064 ~ +064	-025
D[N03]	HORIZONTAL POSITION	-064 ~ +064	000
D[N04]	VERTICAL POSITION	-064 ~ +064	+001
D[N05]	SIDE PIN DISTORTION	-032 ~ +032	+001
D[N06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[N07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[N08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[N09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[N10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[N11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[N12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DO [1035/60i OVER]			
D[O01]	HORIZONTAL SIZE	-064 ~ +064	-032
D[O02]	VERTICAL SIZE	-064 ~ +064	+025
D[O03]	HORIZONTAL POSITION	-064 ~ +064	+025
D[O04]	VERTICAL POSITION	-064 ~ +064	+005
D[O05]	SIDE PIN DISTORTION	-032 ~ +032	+015
D[O06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[O07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[O08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[O09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	-001
D[O10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[O11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	+002
D[O12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DP [1035/60i UNDER]			
D[P01]	HORIZONTAL SIZE	-064 ~ +064	-012
D[P02]	VERTICAL SIZE	-064 ~ +064	-030
D[P03]	HORIZONTAL POSITION	-064 ~ +064	000
D[P04]	VERTICAL POSITION	-064 ~ +064	000
D[P05]	SIDE PIN DISTORTION	-032 ~ +032	+001
D[P06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[P07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[P08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[P09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[P10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[P11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[P12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DQ [1080/50i OVER]			
D[Q01]	HORIZONTAL SIZE	-064 ~ +064	-025
D[Q02]	VERTICAL SIZE	-064 ~ +064	000
D[Q03]	HORIZONTAL POSITION	-064 ~ +064	+030

No.	Setting item	Variable range	Initial setting value
D[Q04]	VERTICAL POSITION	-064 ~ +064	000
D[Q05]	SIDE PIN DISTORTION	-032 ~ +032	+015
D[Q06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[Q07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[Q08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[Q09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	-005
D[Q10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[Q11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-002
D[Q12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	-002
DR [1080/50i UNDER]			
D[R01]	HORIZONTAL SIZE	-064 ~ +064	-015
D[R02]	VERTICAL SIZE	-064 ~ +064	-025
D[R03]	HORIZONTAL POSITION	-064 ~ +064	000
D[R04]	VERTICAL POSITION	-064 ~ +064	000
D[R05]	SIDE PIN DISTORTION	-032 ~ +032	000
D[R06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[R07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[R08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[R09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[R10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[R11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[R12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DS [1080/24pF OVER]			
D[S01]	HORIZONTAL SIZE	-064 ~ +064	-030
D[S02]	VERTICAL SIZE	-064 ~ +064	+010
D[S03]	HORIZONTAL POSITION	-064 ~ +064	+037
D[S04]	VERTICAL POSITION	-064 ~ +064	000
D[S05]	SIDE PIN DISTORTION	-032 ~ +032	+017
D[S06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[S07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[S08]	PARALLELOGRAM DISTORTION	-032 ~ +032	-001
D[S09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	-001
D[S10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[S11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	+002
D[S12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DT [1080/24pF UNDER]			
D[T01]	HORIZONTAL SIZE	-064 ~ +064	-011
D[T02]	VERTICAL SIZE	-064 ~ +064	-028
D[T03]	HORIZONTAL POSITION	-064 ~ +064	000
D[T04]	VERTICAL POSITION	-064 ~ +064	+001
D[T05]	SIDE PIN DISTORTION	-032 ~ +032	+001
D[T06]	CORNER DISTORTION (W)	-032 ~ +032	000

No.	Setting item	Variable range	Initial setting value
D[T07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[T08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[T09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[T10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[T11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[T12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DU [720/60p OVER]			
D[U01]	HORIZONTAL SIZE	-064 ~ +064	+014
D[U02]	VERTICAL SIZE	-064 ~ +064	+012
D[U03]	HORIZONTAL POSITION	-064 ~ +064	+013
D[U04]	VERTICAL POSITION	-064 ~ +064	000
D[U05]	SIDE PIN DISTORTION	-032 ~ +032	+012
D[U06]	CORNER DISTORTION (W)	-032 ~ +032	-002
D[U07]	CORNER DISTORTION (S)	-032 ~ +032	-002
D[U08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[U09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	+001
D[U10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[U11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-002
D[U12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DV [720/60p UNDER]			
D[V01]	HORIZONTAL SIZE	-064 ~ +064	-017
D[V02]	VERTICAL SIZE	-064 ~ +064	-028
D[V03]	HORIZONTAL POSITION	-064 ~ +064	000
D[V04]	VERTICAL POSITION	-064 ~ +064	+001
D[V05]	SIDE PIN DISTORTION	-032 ~ +032	+001
D[V06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[V07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[V08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[V09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[V10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[V11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[V12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DW [720/50p OVER]			
D[W01]	HORIZONTAL SIZE	-064 ~ +064	+020
D[W02]	VERTICAL SIZE	-064 ~ +064	-010
D[W03]	HORIZONTAL POSITION	-064 ~ +064	000
D[W04]	VERTICAL POSITION	-064 ~ +064	+003
D[W05]	SIDE PIN DISTORTION	-032 ~ +032	+010
D[W06]	CORNER DISTORTION (W)	-032 ~ +032	-002
D[W07]	CORNER DISTORTION (S)	-032 ~ +032	-002
D[W08]	PARALLELOGRAM DISTORTION	-032 ~ +032	+003
D[W09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000

No.	Setting item	Variable range	Initial setting value
D[W10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[W11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	-002
D[W12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	-003
DX [720/50p UNDER]			
D[X01]	HORIZONTAL SIZE	-064 ~ +064	-015
D[X02]	VERTICAL SIZE	-064 ~ +064	-027
D[X03]	HORIZONTAL POSITION	-064 ~ +064	000
D[X04]	VERTICAL POSITION	-064 ~ +064	000
D[X05]	SIDE PIN DISTORTION	-032 ~ +032	000
D[X06]	CORNER DISTORTION (W)	-032 ~ +032	000
D[X07]	CORNER DISTORTION (S)	-032 ~ +032	000
D[X08]	PARALLELOGRAM DISTORTION	-032 ~ +032	000
D[X09]	TRAPEZOIDAL DISTORTION	-032 ~ +032	000
D[X10]	HORIZONTAL ARC DISTORTION	-032 ~ +032	000
D[X11]	VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[X12]	VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
DY [ASPECT]			
D[Y01]	NTSC OVERSCAN VERTICAL SIZE	-064 ~ +064	+008
D[Y02]	NTSC OVERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y03]	NTSC OVERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y04]	NTSC UNDERSCAN VERTICAL SIZE	-064 ~ +064	+006
D[Y05]	NTSC UNDERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y06]	NTSC UNDERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y07]	PAL OVERSCAN VERTICAL SIZE	-064 ~ +064	+005
D[Y08]	PAL OVERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y09]	PAL OVERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y10]	PAL UNDERSCAN VERTICAL SIZE	-064 ~ +064	+005
D[Y11]	PAL UNDERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y12]	PAL UNDERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y13]	480i OVERSCAN VERTICAL SIZE	-064 ~ +064	+010
D[Y14]	480i OVERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y15]	480i OVERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y16]	480i UNDERSCAN VERTICAL SIZE	-064 ~ +064	+006
D[Y17]	480i UNDERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y18]	480i UNDERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y19]	576i OVERSCAN VERTICAL SIZE	-064 ~ +064	+010
D[Y20]	576i OVERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y21]	576i OVERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y22]	576i UNDERSCAN VERTICAL SIZE	-064 ~ +064	+006
D[Y23]	576i UNDERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y24]	576i UNDERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y25]	480p OVERSCAN VERTICAL SIZE	-064 ~ +064	+010

1-40 (No. 52152)

No.	Setting item	Variable range	Initial setting value
D[Y26]	480p OVERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y27]	480p OVERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y28]	480p UNDERSCAN VERTICAL SIZE	-064 ~ +064	+006
D[Y29]	480p UNDERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y30]	480p UNDERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y31]	576p OVERSCAN VERTICAL SIZE	-064 ~ +064	+010
D[Y32]	576p OVERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y33]	576p OVERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
D[Y34]	576p UNDERSCAN VERTICAL SIZE	-064 ~ +064	+006
D[Y35]	576p UNDERSCAN VERTICAL POSITION	-064 ~ +064	+001
D[Y36]	576p UNDERSCAN SIDE PIN DISTORTION	-032 ~ +032	+012
DZ [V.LIN/FOCUS]			
D[Z01]	45 ~ 55Hz VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	+011
D[Z02]	45 ~ 55Hz VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	+003
D[Z03]	45 ~ 55Hz FOCUS (PARABOLA)	-032 ~ +032	000
D[Z04]	55 ~ 65Hz VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	+011
D[Z05]	55 ~ 65Hz VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	+003
D[Z06]	55 ~ 65Hz FOCUS (PARABOLA)	-032 ~ +032	000
D[Z07]	720/60p VERTICAL LINEARITY (S CORRECTION)	-016 ~ +016	000
D[Z08]	720/60p VERTICAL LINEARITY (C CORRECTION)	-016 ~ +016	000
D[Z09]	720/60p FOCUS (PARABOLA)	-032 ~ +032	-030
D1 [ROTATION/PURITY]			
D[101]	ROTATION	-032 ~ +031	+017
D[102]	PURITY	-128 ~ +127	000
D2 [COMMON]			
D[201]	HORIZONTAL SIZE	000 ~ 127	063
D[202]	VERTICAL SIZE	000 ~ 127	063
D[203]	HORIZONTAL POSITION	000 ~ 127	063
D[204]	VERTICAL POSITION	000 ~ 127	063
D[205]	SIDE PIN DISTORTION	000 ~ 063	031
D[206]	CORNER DISTORTION (W)	000 ~ 063	031
D[207]	CORNER DISTORTION (S)	000 ~ 063	031
D[208]	PARALLELOGRAM DISTORTION	000 ~ 063	031
D[209]	TRAPEZOIDAL DISTORTION	000 ~ 063	031
D[210]	HORIZONTAL ARC DISTORTION	000 ~ 063	031
D[211]	VERTICAL LINEARITY (S CORRECTION)	000 ~ 031	016
D[212]	VERTICAL LINEARITY (C CORRECTION)	000 ~ 031	016
D[213]	VERTICAL MAX SIZE CONTROL	000 ~ 031	016
D[214]	FOCUS (PHASE)	000 ~ 063	022
D[215]	FOCUS (PARABOLA)	000 ~ 063	044
D3 [ZOOM SIZE]			
D[301]	HORIZONTAL SIZE	-064 ~ +064	+020

No.	Setting item	Variable range	Initial setting value
D[302]	VERTICAL SIZE	-064 ~ +064	+040
D[303]	HORIZONTAL POSITION	-064 ~ +064	000
D[304]	VERTICAL POSITION	-064 ~ +064	000
D[305]	SIDE PIN DISTORTION	-032 ~ +032	-003

[CPU BLOCK]

No.	Setting item	Variable range	Initial setting value
CC [SETTING]			
C[C41]	AKB SETTING	000 ~ 003	000
CE [OSD etc]			
C[E05]	NTSC, 480/60i CORNER DISTORTION (W)	-032 ~ +032	000
C[E06]	NTSC, 480/60i CORNER DISTORTION (S)	-032 ~ +032	000
C[E07]	NTSC, 480/60i PARALLELOGRAM DISTORTION	-032 ~ +032	000
C[E08]	NTSC, 480/60i TRAPEZOIDAL DISTORTION	-032 ~ +032	-002
C[E09]	NTSC, 480/60i HORIZONTAL ARC DISTORTION	-032 ~ +032	000
C[E10]	PAL, 576/50i CORNER DISTORTION (W)	-032 ~ +032	000
C[E11]	PAL, 576/50i CORNER DISTORTION (S)	-032 ~ +032	000
C[E12]	PAL, 576/50i PARALLELOGRAM DISTORTION	-032 ~ +032	000
C[E13]	PAL, 576/50i TRAPEZOIDAL DISTORTION	-032 ~ +032	-002
C[E14]	PAL, 576/50i HORIZONTAL ARC DISTORTION	-032 ~ +032	000
C[E15]	480/60p CORNER DISTORTION (W)	-032 ~ +032	000
C[E16]	480/60p CORNER DISTORTION (S)	-032 ~ +032	000
C[E17]	480/60p PARALLELOGRAM DISTORTION	-032 ~ +032	000
C[E18]	480/60p TRAPEZOIDAL DISTORTION	-032 ~ +032	-002
C[E19]	480/60p HORIZONTAL ARC DISTORTION	-032 ~ +032	000
C[E20]	576/50p CORNER DISTORTION (W)	-032 ~ +032	000
C[E21]	576/50p CORNER DISTORTION (S)	-032 ~ +032	000
C[E22]	576/50p PARALLELOGRAM DISTORTION	-032 ~ +032	000
C[E23]	576/50p TRAPEZOIDAL DISTORTION	-032 ~ +032	-002
C[E24]	576/50p HORIZONTAL ARC DISTORTION	-032 ~ +032	000

NOTE : Do not alter the adjustment values of CPU BLOCK (excluding the CC41 and CE05 to CE24), UPC1884 ADJ. and
TA1276 ADJ.
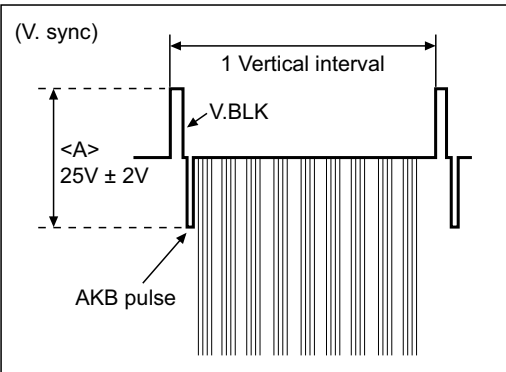
4.10 ADJUSTMENT PROCEDURES

4.10.1 SCREEN VOLTAGE COARSE ADJUSTMENT

SCREEN VOLTAGE COARSE ADJUSTMENT	
Measuring Instruments	**Signal generator (All-black signal, Crosshatch signal)** **Oscilloscope**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	**Anode of CRT** **TP-47B, TP-47R, TP-47G [CRT SOCKET PWB]** **TP-GND [CRT SOCKET PWB]**
Adjustment Points	**SCREEN VR [Bottom potentiometer on high-voltage transformer]** **VR502 (High-voltage VR) [S.CORRECTION PWB]** **FOCUS VR1 [Top potentiometer on high-voltage transformer]** **FOCUS VR2 [Middle potentiometer on high-voltage transformer]** **CC41 (AKB Setting) [Service Menu]**

Note: Ensure that the value of CC41 (CPU BLOCK) in the Service Menu is "000".

(1) Turn the SCREEN VR fully counterclockwise.
(2) Connect the oscilloscope across TP-47B and TP-GND.
(3) Connect the GND of high-voltage voltmeter to the braided wire.
(4) Connect the high-voltage voltmeter to the anode of the CRT and turn the unit ON.
(5) Apply the 1080/60i component all-black signal to INPUT A.
(6) Check that the high-voltage value is **24** to **25 kV**. If it is higher than **25 kV**, adjustment the **VR502** so that the high-voltage value becomes to specified value.
(7) Turn the **SCREEN VR** slowly clockwise until the raster lights up slightly.
(8) Set the value of **CC41 (CPU BLOCK)** in the Service Menu from "000" to "002".
(9) Turn the **SCREEN VR** slowly clockwise until the voltage amplitude <A> of the AKB pulse at TP-47G is about **25 V ± 2 V**.
(10) Observe the waveforms of TP-47R and TP-47B, adjust the SCREEN VR so that the amplitude voltage <A> of the AKB pulse become to **25V ± 2V**.
(11) Apply the 1080/60i crosshatch signal to INPUT A.
(12) Adjust the **FOCUS VR1** and **VR2** so that the entire image is in focus.
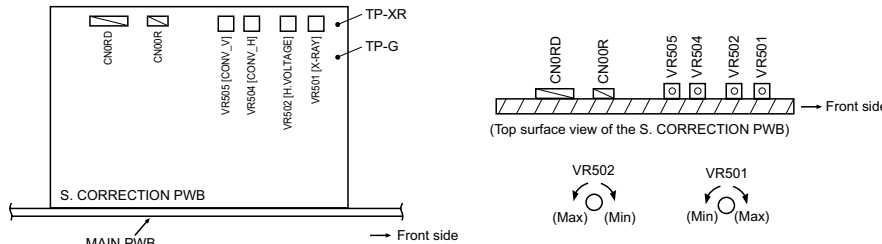
4.10.2 HIGH-VOLTAGE COARSE ADJUSTMENT

HIGH-VOLTAGE COARSE ADJUSTMENT	
Measuring Instruments	**Signal generator (Crosshatch signal with circle pattern)** **High-voltage voltmeter**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	**Anode of CRT**
Adjustment Points	**VR502 (High-Voltage VR) [S. CORRECTION PWB]** **FOCUS VR1 [Top potentiometer on high-voltage transformer]** **FOCUS VR2 [Middle potentiometer on high-voltage transformer]**

Note: Perform the following adjustments after completing the Screen Voltage Coarse adjustment.

(1) Turn **VR502** fully clockwise (the minimum position).
(2) Turn **VR501** fully counterclockwise (the minimum position).
(3) Connect the high-voltage voltmeter to the anode of the CRT and turn the unit ON.
(4) Apply the 1080/60i crosshatch signal with circle pattern to INPUT A (Terminal Y on the Component/RGB Input Card).
(5) Turn **VR502** slowly counterclockwise until the value of the high voltage is about **25 kV**.
(6) Adjust the **FOCUS VR1** and **VR2** so that the entire image is in focus.

4.10.3 X-RAY PROTECTOR ADJUSTMENT/CHECK

X-RAY PROTECTOR ADJUSTMENT/CHECK	
Measuring Instruments	**Signal generator (All-white signal)** **High-voltage voltmeter** **DC voltmeter**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	**Anode of CRT** **TP-XR, TP-GND [S. CORRECTION PWB]**
Adjustment Points	**VR501 (X-Ray Protector Adjustment VR) [S. CORRECTION PWB]** **VR502 (High-Voltage VR) [S. CORRECTION PWB]**

Note: Perform the following adjustment after completing the Screen Voltage Coarse adjustment.

(1) Turn the **VR502** fully clockwise (the minimum position).
(2) Turn the **VR501** fully counterclockwise (the minimum position).
(3) Set the CONTRAST and BRIGHT potentiometers on the front panel to the fully clockwise positions.
(4) Connect the high-voltage voltmeter to the anode of the CRT and turn the unit ON.
(5) Apply the 1080/60i all-white signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(6) Turn the **VR502** slowly counterclockwise until the value of the high-voltage voltmeter is **27.0 kV ± 0.2 kV**.
(7) Connect the DC voltmeter across TP-XR and TP-GND.
(8) Turn the **VR501** clockwise until the voltmeter reading is **5.5 V**.
(9) Turn the **VR501** slowly clockwise until the point at which the X-ray protector starts operation.
(The power turns off at the first operation and then turns on again 5 seconds later. At the second operation, the power turns off and the LED of the INPUT SELECT D of the front panel blinks. When two operations are done consecutively, it stops at the stand-by position.)
(10) Turn the **VR502** slightly clockwise and turn the unit ON again.
(11) Turn the **VR502** slowly counterclockwise and check the point at which the X-ray protector starts to operate.
Check that the high-voltage voltmeter value at which the X-ray protector starts to operate, is **27.0 kV ± 0.2 kV**.
(12) Apply adhesive for fixing the **VR501** in the adjusted position.
(13) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.
(14) Turn the **VR502** fully clockwise (the minimum position).
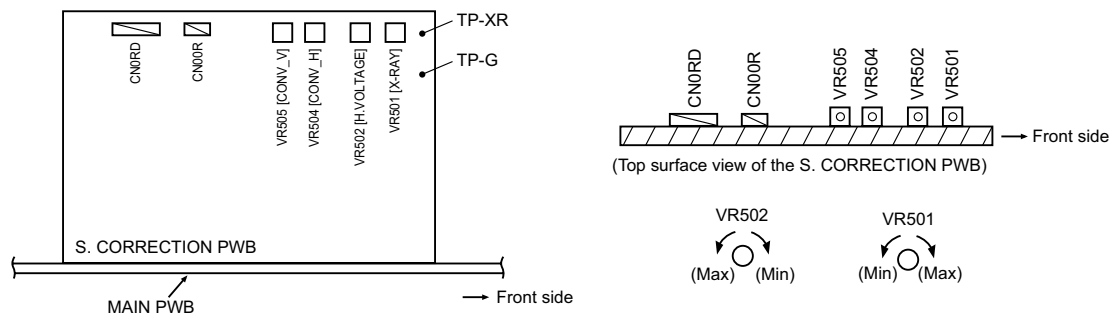
4.10.4 HIGH-VOLTAGE ADJUSTMENT

HIGH-VOLTAGE ADJUSTMENT	
Measuring Instruments	**Signal generator (All-black signal)** **High-voltage voltmeter**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	**Anode of CRT**
Adjustment Points	**VR502 (High-Voltage VR) [S. CORRECTION PWB]**

Note: Perform the following adjustments after completing the Screen Voltage Coarse adjustment and X-Ray Protector adjustment.

(1) Turn the **VR502** fully clockwise.
(2) Set the CONTRAST and BRIGHT potentiometers on the front panel to the fully clockwise positions.
(3) Connect the high-voltage voltmeter to the anode of the CRT and turn the unit ON.
(4) Apply the 1080/60i all-black signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(5) If the raster is visible, adjust the BRIGHT potentiometer on the front panel to turn the screen all black.
(6) Turn the **VR502** slowly counterclockwise until the value of the high voltage is **25 kV ± 0.2 kV**.
(7) Apply adhesive for fixing the **VR502** in the adjusted position.
(8) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.

4.10.5 FOCUS ADJUSTMENT

FOCUS ADJUSTMENT	
Measur Instruments	**Signal generator (Crosshatch signal)**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	
Adjustment Points	**FOCUS VR1 [Top potentiometer on high-voltage transformer]** **FOCUS VR2 [Middle potentiometer on high-voltage transformer]**

Note: Perform the following adjustments after completing the Screen Voltage Coarse adjustment , X-Ray Protector and High-Voltage adjustments.

(1) Apply the 1080/60i crosshatch signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(2) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.
(3) Adjust the **FOCUS VR1** and **VR2** so that the horizontal and vertical lines in the image are clearly visible.

4.10.6 IMAGE ROTATION ADJUSTMENT

IMAGE ROTATION ADJUSTMENT	
Measuring Instruments	**Signal generator (Size adjustment signal)**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	
Adjustment Points	**D101 (Rotation), DM04 (Vertical Position) [Service Menu]**

Notes:
- **Perform the following adjustments after completing the Screen Voltage Coarse adjustment, High-Voltage, Focus and X-Ray Protector adjustments.**
- **Ensure that CN0RD and CN00R on the S. Correction PWB are connected to the Deflection Yoke and Main PWB.**

(1) Apply the 1080/60i size adjustment signal to INPUT A (Terminal Y on the Component/RGB Input Card).

(2) Adjust **D101** of the Service Menu to decrease the image tilting to no more than **1.5 mm** (**1.5 mm** or less above or below the middle line). If the reference point which is the vertical center position on the left of the image (reference points) is deviated, adjust **DM04** to correct it.
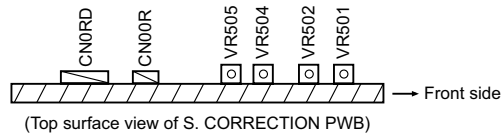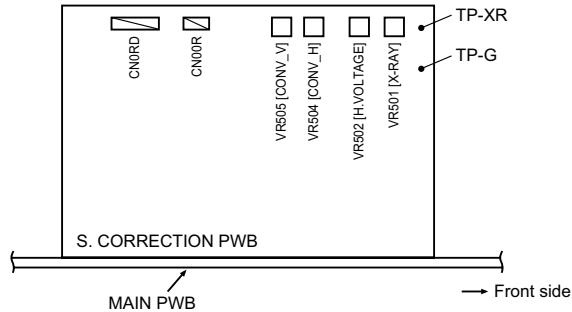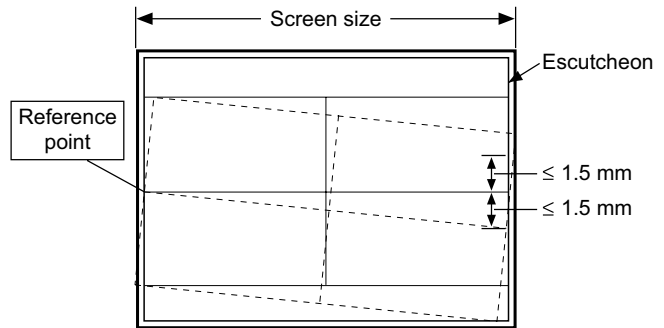
4.10.7 CONVERGENCE ADJUSTMENT

CONVERGENCE ADJUSTMENT	
Measuring Instruments	**Signal generator (Crosshatch signal with circle pattern)**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	
Adjustment Points	**VR504 (CONV_H) [S. CORRECTION PWB]** **VR505 (CONV_V) [S. CORRECTION PWB]**

Notes:
- **Perform the following adjustments after completing the Screen Voltage Coarse adjustment, X-Ray Protector, High Voltage and Focus adjustments.**
- **Ensure that CN0RD and CN00R on the S. Correction PWB are connected to the Deflection yoke and Main PWB.**

(1) Set the **VR504** and **VR505** on S. CORRECTION PWB into the position of a center.
(2) Apply the 1080/60i crosshatch signal with circle pattern to INPUT A (Terminal Y on the Component/RGB Input Card).
(3) Turn the **VR504** to optimize the horizontal convergence value at the center of the screen (turning the potentiometer counterclockwise shifts BLUE toward the right with respect to RED).
(4) Turn the **VR505** to optimize the vertical convergence value at the center of the screen (turning the potentiometer counterclockwise shifts BLUE downward with respect to RED).

Escutcheon
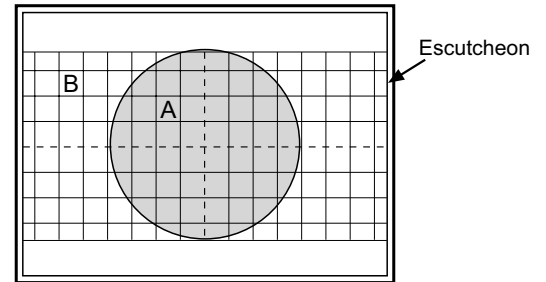
	Area A	Area B
Aberration of color	≤ 0.25mm	≤ 0.35mm

S. CORRECTION PWB

MAIN PWB

Front side

(Top surface view of S. CORRECTION PWB)

VR505 (Lower) (Upper)

VR504 (Left) (Right)
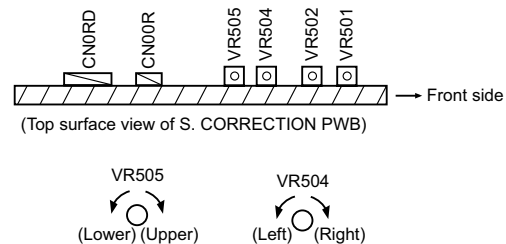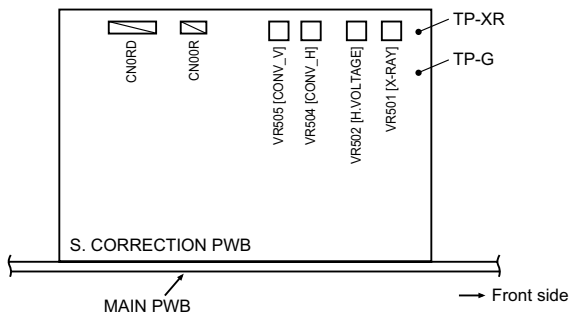
4.10.8 CONTRAST ADJUSTMENTS

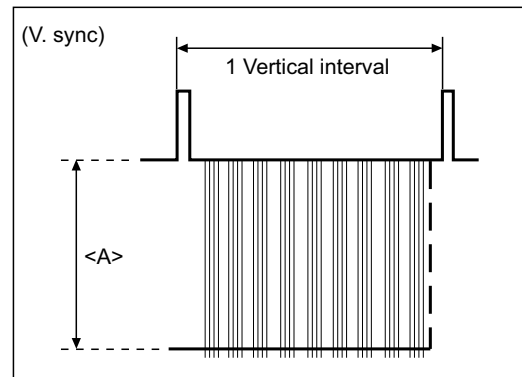| CONTRAST ADJUSTMENT (HDTV)	
Measuring Instruments	Signal generator (Crosshatch signal) Oscilloscope
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	TP-47G [CRT SOCKET PWB] TP-GND [CRT SOCKET PWB]
Adjustment Points	S*01 (Contrast) [Service Menu]

Notes:
- **Perform the following adjustments after completing the Screen Voltage Coarse adjustment.**
- **Set the CONTRAST data in the Setup Menu to "00".**
- **The value adjusted at the SR adjustment becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (HDTV, SDTV and NTSC/PAL). When re-adjusting the 1080/60i signal, use the SI.**

– Standard value (SR) adjustment –
(1) Apply the 1080/60i crosshatch signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(2) Set the CONTRAST potentiometer on the front panel to the center click position.
(3) Connect the oscilloscope across TP-47G and TP-GND.
(4) Adjust **SR01** in the Service Menu to set the voltage amplitude <A> in the figure on the right to the voltage shown in the Table 1.

– Other signals adjustments –
(5) Apply the 1080/60i crosshatch signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(6) Set the CONTRAST potentiometer on the front panel to the center click position.
(7) Connect the oscilloscope across TP-47G and TP-GND.
(8) Adjust **SI01** in the Service Menu to set the voltage amplitude <A> in the figure on the right to the voltage shown in the Table 1.
(9) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 5 to 8 above (see Table 1).
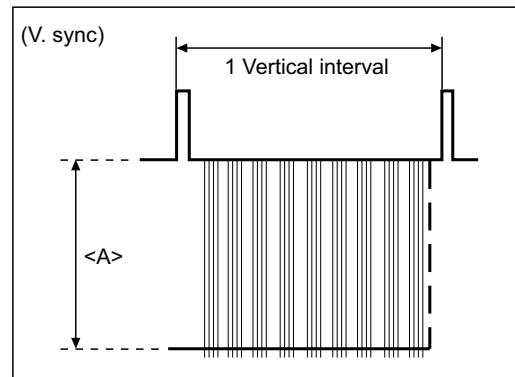
Adjustment Signal	Adjustment Data	Adjustment Voltage <A>
COMMON(1080/60i)	SR1	30 V ± 2 V
1080/60i	SI01	30 V ± 2 V
1080/50i	SK01	32 V ± 2 V
1080/24spF	SL01	33 V ± 2 V
720/60p	SM01	32 V ± 2 V
720/50p	SN01	32 V ± 2 V

Table 1

CONTRAST ADJUSTMENT (SDTV)	
Measuring Instruments	**Signal generator (Crosshatch signal)** **Oscilloscope**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	**TP-47G [CRT SOCKET PWB]** **TP-GND [CRT SOCKET PWB]**
Adjustment Points	**S*01 (Contrast) [Service Menu]**

Notes:

- **Perform the following adjustments after completing the 1080/60i signal Contrast adjustment.**
- **Set the CONTRAST data in the Setup Menu to "00".**
- **The SR value (see the description of the HDTV Contrast Adjustment) becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (HDTV, SDTV and NTSC/PAL). When re-adjusting the 1080/60i signal, use the SI.**

(1) Apply the 480/60i crosshatch signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(2) Set the CONTRAST potentiometer on the front panel to the center click position.
(3) Connect the oscilloscope across TP-47G and TP-GND.
(4) Adjust **SE01** in the Service Menu to set the voltage amplitude <A> in the figure on the right to the voltage shown in the Table2.
(5) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 4 above (see Table 2).
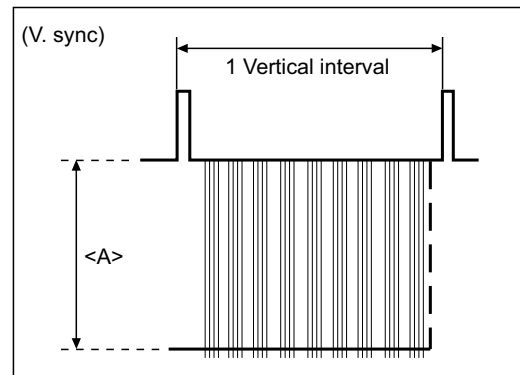
Adjustment Signal	Adjustment Data	Adjustment Voltage <A>
480/60i	SE01	36 V ± 2 V
576/50i	SF01	36 V ± 2 V
480/60p	SG01	35 V ± 2 V
576/50p	SH01	35 V ± 2 V

Table 2

CONTRAST ADJUSTMENT (NTSC/PAL VIDEO)	
Measuring Instruments	**Signal generator (Crosshatch signal)** **Oscilloscope**
Card (Slot)	**NTSC/PAL Video Input Card (Slot 2)**
Test Points	**TP-47G [CRT SOCKET PWB]** **TP-GND [CRT SOCKET PWB]**
Adjustment Points	**S*01 (Contrast) [Service Menu]**

Notes:
- **Ensure that the output waveforms from the NTSC/ PAL Video Input Cards are normal before proceeding to the following adjustments.**
- **Perform the following adjustments after completing the 1080/60i signal Contrast Adjustment.**
- **Set the CONTRAST data in the Setup Menu to "00".**
- **The SO value (see the description of the HDTV Contrast Adjustment) becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (HDTV, SDTV and NTSC/PAL). When re-adjusting the 1080/60i signal, use the SI. (For the adjustment of the 1080/60i signal, use the Component/RGB Input Card.)**

(1) Apply the NTSC crosshatch signal to INPUT C (Terminal VIDEO1 on the NTSC/PAL Video Input Card).

(2) Set the CONTRAST potentiometer on the front panel to the center click position.

(3) Connect the oscilloscope across TP-47G and TP-GND.

(4) Adjust **SA01** in the Service Menu to set the voltage amplitude <A> in the figure on the right to the voltage shown in the Table 3.

(5) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 4 above (see Table 3).

Adjustment Signal	Adjustment Data	Adjustment Voltage <A>
NTSC (VIDEO)	SA01	36 V ± 2 V
PAL (VIDEO)	SC01	36 V ± 2 V

Table 3

CONTRAST ADJUSTMENT (NTSC/PAL Y/C)	
Measuring Instruments	**Signal generator (Crosshatch signal)** **Oscilloscope**
Card (Slot)	**NTSC/PAL Video Input Card (Slot 2)**
Test Points	**TP-47G [CRT SOCKET PWB]** **TP-GND [CRT SOCKET PWB]**
Adjustment Points	**S*01 (Contrast) [Service Menu]**

Notes:

- **Ensure that the output waveforms from the NTSC/ PAL Video Input Cards are normal before proceeding to the following adjustments.**
- **Perform the following adjustments after completing the 1080/60i signal Contrast Adjustment.**
- **Set the CONTRAST data in the Setup Menu to "00".**
- **The SO value (see the description of the HDTV Contrast Adjustment) becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (HDTV, SDTV and NTSC/PAL). When re-adjusting the 1080/60i signal, use the SI. (For the adjustment of the 1080/60i signal, use the Component/RGB Input Card.)**

(1) Apply the NTSC crosshatch signal to INPUT D (Terminal Y/C on the NTSC/PAL Video Input Card).
(2) Set the CONTRAST potentiometer on the front panel to the center click position.
(3) Connect the oscilloscope across TP-47G and TP-GND.
(4) Adjust **SB01** in the Service Menu to set the voltage amplitude <A> in the figure on the right to the voltage shown in the Table 4.
(5) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 4 above (see Table 4).

Adjustment Signal	Adjustment Data	Adjustment Voltage <A>
NTSC (Y/C)	SB01	36 V ± 2 V
PAL (Y/C)	SD01	36 V ± 2 V

Table 4

4.10.9 CHROMA/PHASE ADJUSTMENTS

CHROMA/PHASE ADJUSTMENTS (COMPONENT)	
Measuring Instruments	**Signal generator (Color bar signal)** **Oscilloscope**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	**TP-47B [CRT SOCKET PWB]** **TP-GND [CRT SOCKET PWB]**
Adjustment Points	**S*03 (Chroma), S*04 (Phase) [Service Menu]**

Notes:
- **Perform the following adjustments after completing the Contrast adjustment.**
- **Set the CHROMA and PHASE data in the Setup Menu to "00".**
- **The value adjusted at the SR adjustment becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (Component, NTSC and PAL). When re-adjusting the 1080/60i signal, use the SI.**

(1) Apply the 1080/60i component color bar signal to INPUT A.
(2) Set the CHROMA and PHASE potentiometers on the front panel to the center click positions.
(3) Connect the oscilloscope across TP-47B and TP-GND.
(4) Adjust **SR03** in the Service Menu to set the level difference between waveforms 1 and 4 in the figure on the right to **0 V ± 2 V**.
(5) Adjust **SR04** to set the level difference between 1 and 3 to 0 **V ± 2 V**.
(6) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 5 above (see Table 5).
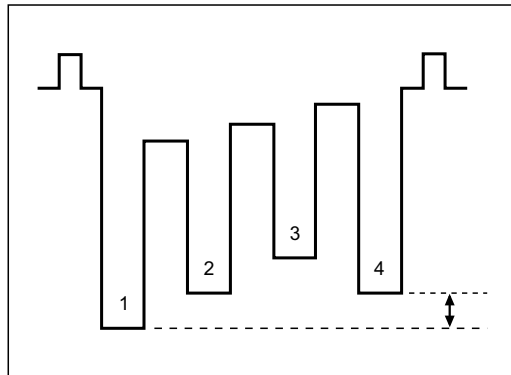
Adjustment Signal	Adjustment Data	
	Chroma	**Phase**
COMMON	SR03	SR04
1080/60i	SI03	SI04
1080/50i	SK03	SK04
1080/24psF	SL03	SL04
720/60p	SM03	SM04
720/50p	SN03	SN04
480/60i	SE03	SE04
576/50i	SF03	SF04
480/60p	SG03	SG04
576/50p	SH03	SH04

Table 5

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CHROMA/PHASE ADJUSTMENTS (NTSC)	
Measuring Instruments	Signal generator (Color bar signal) Oscilloscope
Card (Slot)	NTSC/PAL Video Input Card (Slot 2)
Test Points	TP-47B [CRT SOCKET PWB] TP-GND [CRT SOCKET PWB]
Adjustment Points	S*03 (Chroma), S*04 (Phase) [Service Menu]

Notes:
- **Ensure that the output waveforms from the NTSC/PAL Video Input Cards are normal before proceeding to the following adjustments.**
- **Perform the following adjustments after completing the 1080/60i signal Chroma/Phase Adjustments.**
- **Set the CHROMA and PHASE data in the Setup Menu to "00".**
- **The SR value (see the description of the Component Signal Chroma/Phase Adjustments) becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (Component, NTSC and PAL).**
  When re-adjusting the 1080/60i signal, use the SI. (For the adjustment of the 1080/60i signal, use the Component/RGB Input Card.)

(1) Apply the NTSC 75% color bar signal to INPUT C (Terminal VIDEO1 on the NTSC/PAL Video Input Card).

(2) Set the CHROMA and PHASE potentiometers on the front panel to the center click positions.

(3) Connect the oscilloscope across TP-47B and TP-GND.

(4) Adjust **SA03** in the Service Menu to set the level difference between waveforms 1 and 4 in the figure on the right to **0 V ± 2 V**.

(5) Adjust **SA04** to set the level difference between 1 and 3 to **0 V ± 2 V**.

(6) Apply the NTSC 75% color bar signal to INPUT D (Terminal Y/C on the NTSC/PAL Video Input Card) and perform the adjustments in steps 2 to 5 above. See Table 6 for the adjustment data.

Adjustment	Adjustment Data	
Signal	Chroma	Phase
NTSC (VIDEO)	SA03	SA04
NTSC (Y/C)	SB03	SB04

Table 6

CHROMA ADJUSTMENTS (PAL)	
Measuring Instruments	**Signal generator (Color bar signal)** **Oscilloscope**
Card (Slot)	**NTSC/PAL Video Input Card (Slot 2)**
Test Points	**TP-47B [CRT SOCKET PWB]** **TP-GND [CRT SOCKET PWB]**
Adjustment Points	**S*03 (Chroma) [Service Menu]**

Notes:
- **Ensure that the output waveforms from the NTSC/PAL Video Input Cards are normal before proceeding to the following adjustments.**
- **Perform the following adjustments after completing the 1080/60i signal Chroma/Phase Adjustments.**
- **Set the CHROMA and PHASE data in the Setup Menu to "00".**
- **The SR value (see the description of the Component Signal Chroma/Phase Adjustments) becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (Component, NTSC and PAL).**
 When re-adjusting the 1080/60i signal, use the SI. (For the adjustment of the 1080/60i signal, use the Component/RGB Input Card.)

(1) Apply the PAL 75% color bar signal to INPUT C (Terminal VIDEO1 on the NTSC/PAL Video Input Card).

(2) Set the CHROMA and PHASE potentiometers on the front panel to the center click positions.

(3) Connect the oscilloscope across TP-47B and TP-GND.

(4) Adjust **SC03** in the Service Menu to set the level difference between waveforms 1 and 4 in the figure on the right to **0 V ± 2 V**.

(5) Apply the PAL 75% color bar signal to INPUT D (Terminal Y/C on the NTSC/PAL Video Input Card) and perform the adjustments in steps 2 to 4 above. See Table 7 for the adjustment data.

Adjustment Signal	Adjustment Data
	Chroma
PAL (VIDEO)	SC03
PAL (Y/C)	SD03

Table 7

4.10.10 DEFLECTION SYSTEM ADJUSTMENTS

HORIZONTAL/VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (HDTV OVERSCAN MODE)	
Measuring Instruments	Signal generator (Size adjustment signal, Crosshatch signal)
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	
Adjustment Points	D*01 (Horizontal Size), D*02 (Vertical Size), D*03 (Horizontal Position), D*04 (Vertical Position), D*05 (Side Pin Distortion), D*06 (Corner Distortion (W)), D*07 (Corner Distortion (S)), D*08 (Parallelogram Distortion), D*09 (Trapezoidal Distortion), D*10 (Horizontal Arc Distortion), D*11 (Vertical Linearity (S Correction)), D*12 (Vertical Linearity (C Correction)) [Service Menu]

(1) Apply the 1080/60i size adjustment signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(2) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.
(3) Adjust **DM04** in the Service Menu to set the vertical position of the image at the center of the CRT screen.
(4) Adjust **DM02** to set the vertical amplitude of the image to **193mm**.
(5) Apply the 1080/60i crosshatch signal to INPUT A.
(6) Adjust **DM11** to set the sizes of the rectangles at the center of the image and those at the left and right ends to be identical.
(7) Adjust **DM12** to set the sizes of the rectangles at the center of the image and those at the top and bottom to be identical.
(8) Ensure that the center position is not deviated. If it is, adjust DM04 again.
(9) Adjust **DM11**, **DM12** and **DM04** repeatedly until the center position and vertical linearity are optimized.
(10) Adjust **DM09** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).
(11) Adjust **DM08** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).
(12) Adjust **DM10** to optimize the horizontal arc distortion.
(13) Adjust **DM05** so that the second vertical lines from the left and right edges are linear.
(14) If there is an extreme corner S-shape distortion, adjust **DM07** to optimize it (this adjustment is usually unnecessary).
(15) If there is an extreme corner W-shape distortion, adjust **DM06** to optimize it (this adjustment is usually unnecessary).
(16) Apply the 1080/60i size adjustment signal to INPUT A.
(17) Ensure that the vertical amplitude of the image is **193mm**. If it is not, adjust **DM02** again.
(18) Adjust **DM03** so that the horizontal position of the image comes at the center of the CRT screen.
(19) Adjust the horizontal image amplitude with **DM01** to match the 95% line of the size adjustment signal onto the edge of the escutcheon.
(20) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 19 above (see Table 8).

Make these lines linear.
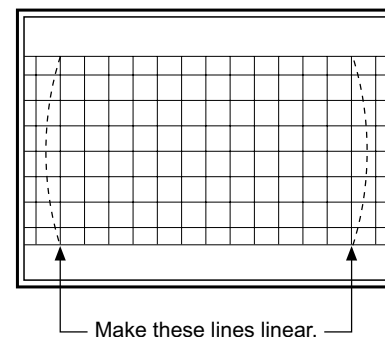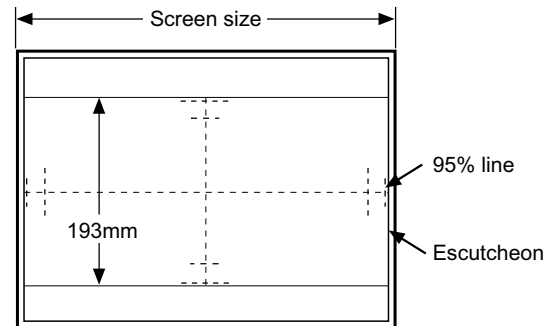
Adjustment Step No.	Adjustment signal	Adjustment Data
1	1080/60i	DM
2	1080/50i	DQ
3	1080/24psF	DS
4	720/60p	DU
5	720/50p	DW

Table 8

(No. 52152) 1-55

HORIZONTAL/VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (HDTV UNDERSCAN MODE)	
Measuring Instruments	Signal generator (Size adjustment signal, Crosshatch signal)
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	
Adjustment Points	D*01 (Horizontal Size), D*02 (Vertical Size), D*03 (Horizontal Position), D*04 (Vertical Position), D*05 (Side Pin Distortion), D*06 (Corner Distortion (W)), D*07 (Corner Distortion (S)), D*08 (Parallelogram Distortion), D*09 (Trapezoidal Distortion), D*10 (Horizontal Arc Distortion), D*11 (Vertical Linearity (S Correction)), D*12 (Vertical Linearity (C Correction)) [Service Menu]

Note:
- **Perform the following adjustments after completing the Reference Mode (HDTV overscan mode) adjustments.**

(1) Apply the 1080/60i size adjustment signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(2) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.
(3) Press the UNDER SCAN button on the front panel to set the scanning size to underscanning.
(4) Adjust **DN04** in the Service Menu to set the vertical position of the image at the center of the CRT screen.
(5) Adjust **DN02** to set the vertical amplitude of the image to **175mm**.
(6) Apply the 1080/60i crosshatch signal to INPUT A.
(7) Adjust **DN11** to set the sizes of the rectangles at the center of the image and those at the left and right ends to be identical.
(8) Adjust **DN12** to set the sizes of the rectangles at the center of the image and those at the top and bottom to be identical.
(9) Ensure that the center position is not deviated. If it is, adjust **DN04** again.
(10) Adjust **DN11**, **DN12** and **DN04** repeatedly until the center position and vertical linearity are optimized.
(11) Adjust **DN09** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).
(12) Adjust **DN08** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).
(13) Adjust **DN10** to optimize the horizontal arc distortion.
(14) Adjust **DN05** so that the second vertical lines from the left and right edges are linear.
(15) If there is an extreme corner S-shape distortion, adjust **DN07** to optimize it (this adjustment is usually unnecessary).
(16) If there is an extreme corner W-shape distortion, adjust **DN06** to optimize it (this adjustment is usually unnecessary).
(17) Apply the 1080/60i size adjustment signal to INPUT A.
(18) Ensure that the vertical amplitude of the image is **175mm**. If it is not, adjust **DN02** again.
(19) Adjust **DN03** so that the horizontal position of the image comes at the center of the CRT screen.
(20) Adjust **DN01** to set the horizontal amplitude of the image to **311mm**.
(21) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 20 above (see Table 9).

Scanning size (100%)
311mm
175mm
Escutcheon
Screen size

Make these lines linear.
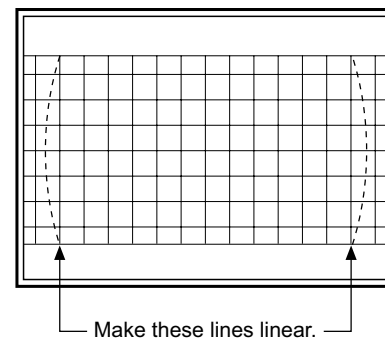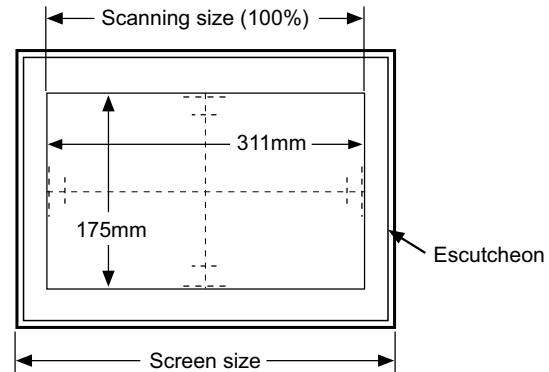
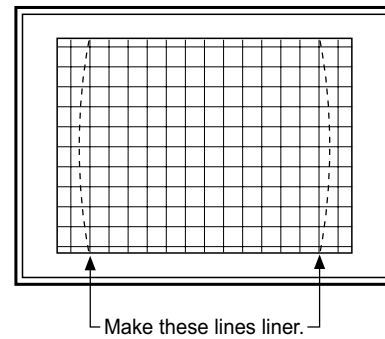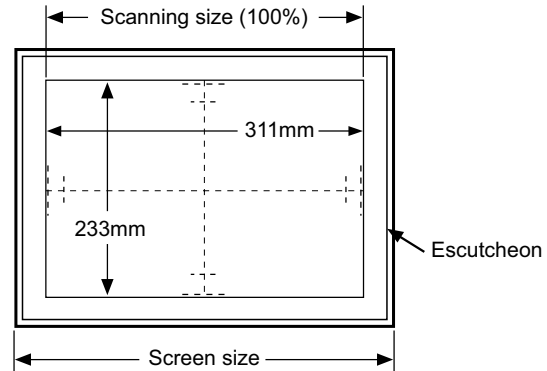| Adjustment Step No.	Adjustment signal	Adjustment Data
1	1080/60i	DN
2	1080/50i	DR
3	1080/24psF	DT
4	720/60p	DV
5	720/50p	DX

Table 9

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HORIZONTAL/VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (SDTV OVERSCAN 4:3 MODE)	
Measuring Instruments	Signal generator (Size adjustment signal, Crosshatch signal)
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	
Adjustment Points	D*01 (Horizontal Size), D*02 (Vertical Size), D*03 (Horizontal Position), D*04 (Vertical Position), D*05 (Side Pin Distortion), D*06 (Corner Distortion (W)), D*07 (Corner Distortion (S)), D*08 (Parallelogram Distortion), D*09 (Trapezoidal Distortion), D*10 (Horizontal Arc Distortion), D*11 (Vertical Linearity (S Correction)), D*12 (Vertical Linearity (C Correction)) [Service Menu]

(1) Apply the 480/60i size adjustment signal to INPUT A (Terminal Y on the Component/RGB Input Card).

(2) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.

(3) Adjust **DE04** in the Service Menu to set the vertical position of the image at the center of the CRT screen.

(4) Adjust the vertical image amplitude with **DE02** to match the 95% line of the size adjustment signal onto the edge of the escutcheon.

(5) Apply the 480/60i crosshatch signal to INPUT A.

(6) Adjust **DE11** to set the sizes of the rectangles at the center of the image and those at the left and right ends to be identical.

(7) Adjust **DE12** to set the sizes of the rectangles at the center of the image and those at the top and bottom to be identical.

(8) Ensure that the center position is not deviated. If it is, adjust **DE04** again.

(9) Adjust **DE11**, **DE12** and **DE04** repeatedly until the center position and vertical linearity are optimized.

(10) Adjust **DE09** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).

(11) Adjust **DE08** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).

(12) Adjust **DE10** to optimize the horizontal arc distortion.

(13) Adjust **DE05** so that the second vertical lines from the left and right edges are linear.

(14) If there is an extreme corner S-shape distortion, adjust **DE07** to optimize it (this adjustment is usually unnecessary).

(15) If there is an extreme corner W-shape distortion, adjust **DE06** to optimize it (this adjustment is usually unnecessary).

(16) Apply the 480/60i size adjustment signal to INPUT A.

(17) Observe the vertical amplitude of the image. If it is dislocated, adjust **DE02** again.

(18) Adjust **DE03** so that the horizontal position of the image comes at the center of the CRT screen.

(19) Adjust the horizontal image amplitude with **DE01** to match the 95% line of the size adjustment signal onto the edge of the escutcheon.

(20) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 19 above (see Table 10).

Escutcheon   95% line

95% line

Escutcheon

Screen size

Make these lines linear.
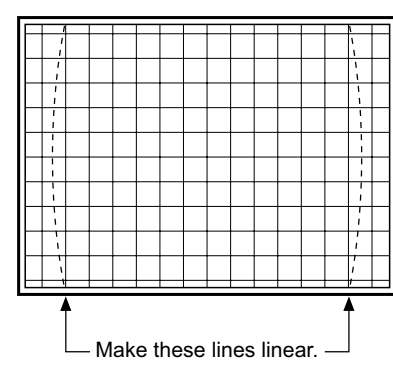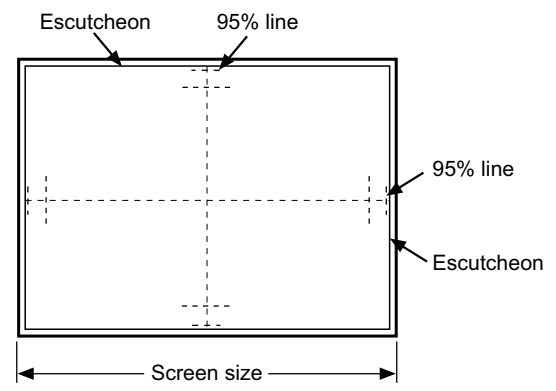
Adjustment Step No.	Adjustment signal	Adjustment Data
1	480/60i	DE
2	480/60p	DI
3	576/50i	DG
4	576/50p	DK

Table 10

HORIZONTAL/VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (SDTV UNDERSCAN 4:3 MODE)	
Measuring Instruments	Signal generator (Size adjustment signal, Crosshatch signal)
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	
Adjustment Points	D*01 (Horizontal Size), D*02 (Vertical Size), D*03 (Horizontal Position), D*04 (Vertical Position), D*05 (Side Pin Distortion), D*06 (Corner Distortion (W)), D*07 (Corner Distortion (S)), D*08 (Parallelogram Distortion), D*09 (Trapezoidal Distortion), D*10 (Horizontal Arc Distortion), D*11 (Vertical Linearity (S Correction)), D*12 (Vertical Linearity (C Correction)) [Service Menu]

Note:
- **Perform the following adjustments after completing the Reference Mode (SDTV overscan 4:3 mode) adjustments.**

(1) Apply the 480/60i size adjustment signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(2) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.
(3) Press the UNDER SCAN button on the front panel to set the scanning size to underscanning.
(4) Adjust **DF04** in the Service Menu to set the vertical position of the image at the center of the CRT screen.
(5) Adjust **DF02** to set the vertical amplitude of the image to **233mm**.
(6) Apply the 480/60i crosshatch signal to INPUT A.
(7) Adjust **DF11** to set the sizes of the rectangles at the center of the image and those at the left and right ends to be identical.
(8) Adjust **DF12** to set the sizes of the rectangles at the center of the image and those at the top and bottom to be identical.
(9) Ensure that the center position is not deviated. If it is, adjust **DF04** again.
(10) Adjust **DF11**, **DF12** and **DF04** repeatedly until the center position and vertical linearity are optimized.
(11) Adjust **DF09** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).
(12) Adjust **DF08** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).
(13) Adjust **DF10** to optimize the horizontal arc distortion.
(14) Adjust **DF05** so that the second vertical lines from the left and right edges are linear.
(15) If there is an extreme corner S-shape distortion, adjust **DF07** to optimize it (this adjustment is usually unnecessary).
(16) If there is an extreme corner W-shape distortion, adjust **DF06** to optimize it (this adjustment is usually unnecessary).
(17) Apply the 480/60i size adjustment signal to INPUT A.
(18) Ensure that the vertical amplitude of the image is **233mm**. If it is not, adjust **DF02** again.
(19) Adjust **DF03** so that the horizontal position of the image comes at the center of the CRT screen.
(20) Adjust **DF01** to set the horizontal amplitude of the image to **311mm**.
(21) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 20 above (see Table 11).

Adjustment Step No.	Adjustment signal	Adjustment Data
1	480/60i	DF
2	480/60p	DJ
3	576/50i	DH
4	576/50p	DL

Table 11

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VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (SDTV OVERSCAN 16:9 MODE)	
Measuring Instruments	Signal generator (Size adjustment signal, Crosshatch signal)
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	
Adjustment Points	DY** (Vertical Size), DY** (Vertical Position), DY** (Side Pin Distortion), CE** (Corner Distortion (W)), CE** (Corner Distortion (S)), CE** (Parallelogram Distortion), CE** (Trapezoidal Distortion), CE** (Horizontal Arc Distortion) [Service Menu]

Notes:
- **Perform the following adjustments after completing the Reference Mode (SDTV overscan 4:3 mode) adjustments.**
- **The corner distortions (W) & (S), parallelogram distortion, trapezoidal distortion and horizontal arc distortion adjustment data for this adjustment are common to those in the SDTV overscan 16:9 mode and the SDTV underscan 16:9 mode adjustments. This adjustment data needs to be adjusted in either mode.**
- **The corner distortions (W) & (S), parallelogram distortion, trapezoidal distortion and horizontal arc distortion adjustment data for this adjustment are common to those in the 480/60i and NTSC signal or 576/50i and PAL signal adjustments. This adjustment data needs to be adjusted with either signal.**

(1) Apply the 480/60i size adjustment signal to INPUT A (Terminal Y on the Component/RGB Input Card).
(2) Press the ASPECT button on the front panel to set the scanning size to 16:9 mode.
(3) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.
(4) Adjust **DY14** in the Service Menu to set the vertical position of the image at the center of the CRT screen.
(5) Adjust **DY13** to set the vertical amplitude of the image to **193mm**.
(6) Apply the 480/60i crosshatch signal to INPUT A.
(7) Adjust **CE08** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).
(8) Adjust **CE07** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).
(9) Adjust **CE09** to optimize the horizontal arc distortion.
(10) Adjust **DY15** so that the second vertical lines from the left and right edges are linear.
(11) If there is an extreme corner S-shape distortion, adjust **CE06** to optimize it (this adjustment is usually unnecessary).
(12) If there is an extreme corner W-shape distortion, adjust **CE05** to optimize it (this adjustment is usually unnecessary).
(13) Apply the 480/60i size adjustment signal to INPUT A.
(14) Ensure that the vertical amplitude of the image is **193mm**. If it is not, adjust **DY13** again.
(15) Adjust **DY14** so that the vertical position of the image comes at the center of the CRT screen.
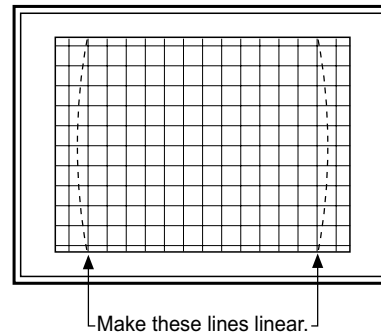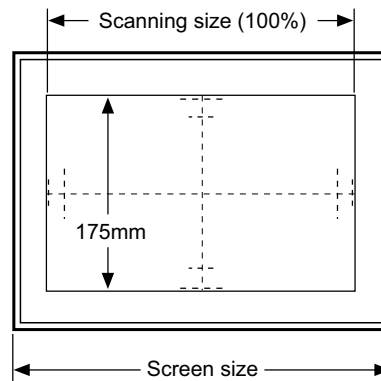(16) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 15 above (see Table 12).

Screen size

193mm

Make these lines linear.

Adjustment Step No.	Adjustment Signal	Adjustment Data							
		Vertical Position	Vertical size	Side Pin Distortion	Corner Distortion (W)	Corner Distortion (S)	Parallelogram Distortion	Trapezoidal Distortion	Horizontal Arc Distortion
1	480/60i	DY14	DY13	DY15	CE05	CE06	CE07	CE08	CE09
2	480/60p	DY26	DY25	DY27	CE15	CE16	CE17	CE18	CE19
3	576/50i	DY20	DY19	DY21	CE10	CE11	CE12	CE13	CE14
4	576/50p	DY32	DY31	DY33	CE20	CE21	CE22	CE23	CE24

Table 12

(No. 52152) 1-59

VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (SDTV UNDERSCAN 16:9 MODE)	
Measuring Instruments	Signal generator (Size adjustment signal, Crosshatch signal)
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	
Adjustment Points	DY** (Vertical Size), DY** (Vertical Position), DY** (Side Pin Distortion), CE** (Corner Distortion (W)), CE** (Corner Distortion (S)), CE** (Parallelogram Distortion), CE** (Trapezoidal Distortion), CE** (Horizontal Arc Distortion) [Service Menu]

Notes:
- Perform the following adjustments after completing the Reference Mode (SDTV overscan 4:3 mode) and SDTV underscan 4:3 mode adjustments.
- The corner distortions (W) & (S), parallelogram distortion, trapezoidal distortion and horizontal arc distortion adjustment data for this adjustment are common to those in the SDTV overscan 16:9 mode and the SDTV underscan 16:9 mode adjustments. This adjustment data needs to be adjusted in either mode.
- The corner distortions (W) & (S), parallelogram distortion, trapezoidal distortion and horizontal arc distortion adjustment data for this adjustment are common to those in the 480/60i and NTSC signal or 576/50i and PAL signal adjustments. This adjustment data needs to be adjusted with either signal.

(1) Apply the 480/60i size adjustment signal to INPUT A (Terminal Y on the Component/RGB Input Card).

(2) Press the ASPECT and UNDER SCAN buttons on the front panel to set the scanning size to underscanning for the 16:9 ratio.

(3) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.

(4) Adjust **DY17** in the Service Menu to set the vertical position of the image at the center of the CRT screen.

(5) Adjust **DY16** to set the vertical amplitude of the image to **175mm**.

(6) Apply the 480/60i crosshatch signal to INPUT A.

(7) Adjust **CE08** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).

(8) Adjust **CE07** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).

(9) Adjust **CE09** to optimize the horizontal arc distortion.

(10) Adjust **DY18** so that the second vertical lines from the left and right edges are linear.

(11) If there is an extreme corner S-shape distortion, adjust **CE06** to optimize it (this adjustment is usually unnecessary).

(12) If there is an extreme corner W-shape distortion, adjust **CE05** to optimize it (this adjustment is usually unnecessary).

(13) Apply the 480/60i size adjustment signal to INPUT A.

(14) Ensure that the vertical amplitude of the image is **175mm**. If it is not, adjust **DY16** again.

(15) Adjust **DY17** so that the vertical position of the image comes at the center of the CRT screen.

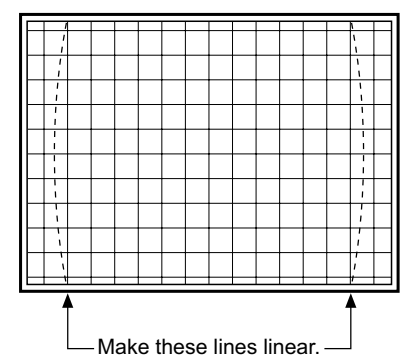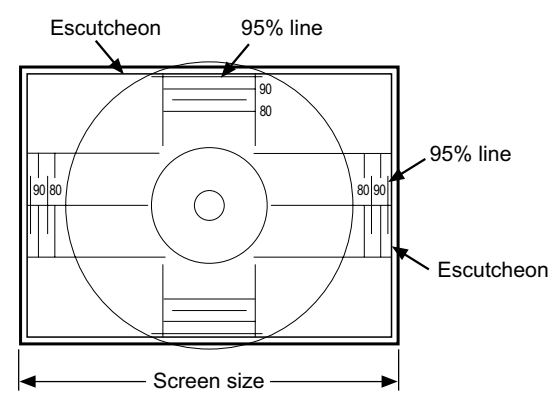(16) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 15 above (see Table 13).

Scanning size (100%)
175mm
Screen size

Make these lines linear.

Adjustment Step No.	Adjustment Signal	Adjustment Data							
		Vertical Position	Vertical size	Side Pin Distortion	Corner Distortion (W)	Corner Distortion (S)	Parallelogram Distortion	Trapezoidal Distortion	Horizontal Arc Distortion
1	480/60i	DY17	DY16	DY18	CE05	CE06	CE07	CE08	CE09
2	480/60p	DY29	DY28	DY30	CE15	CE16	CE17	CE18	CE19
3	576/50i	DY23	DY22	DY24	CE10	CE11	CE12	CE13	CE14
4	576/50p	DY35	DY34	DY36	CE20	CE21	CE22	CE23	CE24

Table 13

1-60 (No. 52152)

HORIZONTAL/VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (NTSC/PAL OVERSCAN 4:3 MODE)

Measuring Instruments	**Signal generator (Mono-scope signal, Crosshatch signal)**
Card (Slot)	**NTSC/PAL Video Input Card (Slot 2)**
Test Points	
Adjustment Points	**D*01 (Horizontal Size), D*02 (Vertical Size), D*03 (Horizontal Position), D*04 (Vertical Position), D*05 (Side Pin Distortion), D*06 (Corner Distortion (W)), D*07 (Corner Distortion (S)), D*08 (Parallelogram Distortion), D*09 (Trapezoidal Distortion), D*10 (Horizontal Arc Distortion), D*11 (Vertical Linearity (S Correction)), D*12 (Vertical Linearity (C Correction)) [Service Menu]**

(1) Apply the NTSC mono-scope signal to INPUT C (Terminal VIDEO1 on the NTSC/PAL Video Input Card).

(2) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.

(3) Adjust **DA04** in the Service Menu to set the vertical position of the image at the center of the CRT screen.

(4) Adjust the vertical image amplitude with **DA02** to match the 95% line of the mono-scope signal onto the edge of the escutcheon.

(5) Apply the NTSC crosshatch signal to INPUT C.

(6) Adjust **DA11** to set the sizes of the rectangles at the center of the image and those at the left and right ends to be identical.

(7) Adjust **DA12** to set the sizes of the rectangles at the center of the image and those at the top and bottom to be identical.

(8) Ensure that the center position is not deviated. If it is, adjust **DA04** again.

(9) Adjust **DA11**, **DA12** and **DA04** repeatedly until the center position and vertical linearity are optimized.

(10) Adjust **DA09** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).

(11) Adjust **DA08** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).

(12) Adjust **DA10** to optimize the horizontal arc distortion.

(13) Adjust **DA05** so that the second vertical lines from the left and right edges are linear.

(14) If there is an extreme corner S-shape distortion, adjust **DA07** to optimize it (this adjustment is usually unnecessary).

(15) If there is an extreme corner W-shape distortion, adjust **DA06** to optimize it (this adjustment is usually unnecessary).

(16) Apply the NTSC mono-scope signal to INPUT C.

(17) Observe the vertical amplitude of the image. If it is dislocated, adjust **DA02** again.

(18) Adjust **DA03** so that the horizontal position of the image comes at the center of the CRT screen.

(19) Adjust the horizontal image amplitude with **DA01** to match the 95% line of the mono-scope signal onto the edge of the escutcheon.

(20) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 19 above (see Table 14).

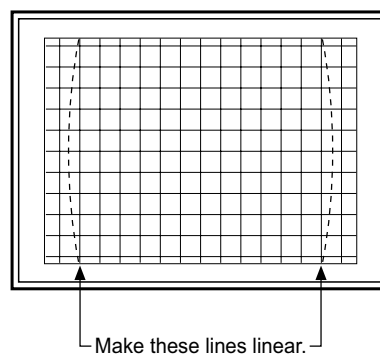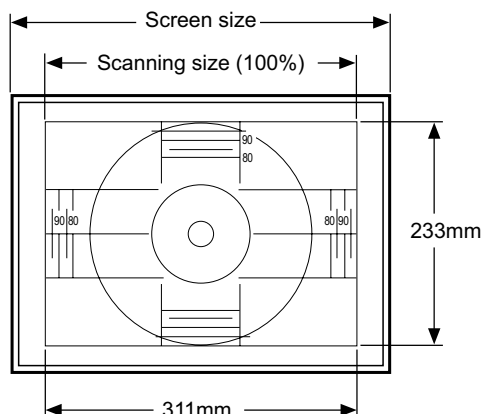| Adjustment Step No.	Adjustment signal	Adjustment Data
1	NTSC	DA
2	PAL	DC

Table 14

HORIZONTAL/VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (NTSC/PAL UNDERSCAN 4:3 MODE)	
Measuring Instruments	Signal generator (Mono-scope signal, Crosshatch signal)
Card (Slot)	NTSC/PAL Video Input Card (Slot 2)
Test Points	
Adjustment Points	D*01 (Horizontal Size), D*02 (Vertical Size), D*03 (Horizontal Position), D*04 (Vertical Position), D*05 (Side Pin Distortion), D*06 (Corner Distortion (W)), D*07 (Corner Distortion (S)), D*08 (Parallelogram Distortion), D*09 (Trapezoidal Distortion), D*10 (Horizontal Arc Distortion), D*11 (Vertical Linearity (S Correction)), D*12 (Vertical Linearity (C Correction)) [Service Menu]

Note:
- **Perform the following adjustments after completing the Reference Mode (NTSL/PAL overscan 4:3 mode) adjustments.**

(1) Apply the NTSC mono-scope signal to INPUT C (Terminal VIDEO1 on the NTSC/PAL Video Input Card).
(2) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.
(3) Press the UNDER SCAN button on the front panel to set the scanning size to underscanning.
(4) Adjust **DB04** in the Service Menu to set the vertical position of the image at the center of the CRT screen.
(5) Adjust **DB02** to set the vertical amplitude of the image to **233mm**.
(6) Apply the NTSC crosshatch signal to INPUT C.
(7) Adjust **DB11** to set the sizes of the rectangles at the center of the image and those at the left and right ends to be identical.
(8) Adjust **DB12** to set the sizes of the rectangles at the center of the image and those at the top and bottom to be identical.
(9) Ensure that the center position is not deviated. If it is, adjust **DB04** again.
(10) Adjust **DB11**, **DB12** and **DB04** repeatedly until the center position and vertical linearity are optimized.
(11) Adjust **DB09** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).
(12) Adjust **DB08** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).
(13) Adjust **DB10** to optimize the horizontal arc distortion.
(14) Adjust **DB05** so that the second vertical lines from the left and right edges are linear.
(15) If there is an extreme corner S-shape distortion, adjust **DB07** to optimize it (this adjustment is usually unnecessary).
(16) If there is an extreme corner W-shape distortion, adjust **DB06** to optimize it (this adjustment is usually unnecessary).
(17) Apply the NTSC mono-scope signal to INPUT C.
(18) Ensure that the vertical amplitude of the image is **233mm**. If it is not, adjust **DB02** again.
(19) Adjust **DB03** so that the horizontal position of the image comes at the center of the CRT screen.
(20) Adjust **DB01** to set the horizontal amplitude of the image to **311mm**.
(21) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 20 above (see Table 15).

Make these lines linear.

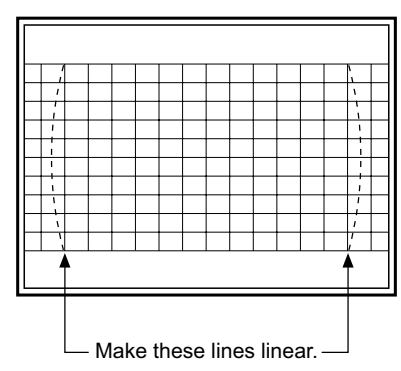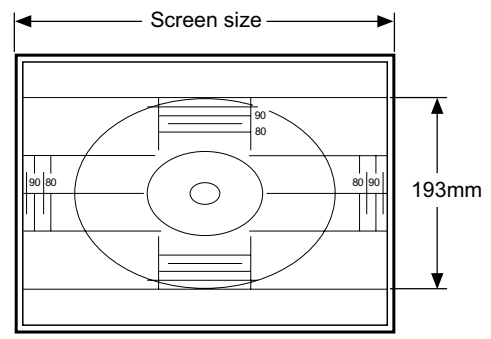| Adjustment Step No.	Adjustment signal	Adjustment Data
1	NTSC	DB
2	PAL	DD

Table 15

VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (NTSC/PAL OVERSCAN 16:9 MODE)	
Measuring Instruments	Signal generator (Mono-scope signal, Crosshatch signal)
Card (Slot)	NTSC/PAL Video Input Card (Slot 2)
Test Points	
Adjustment Points	DY** (Vertical Size), DY** (Vertical Position), DY** (Side Pin Distortion), CE** (Corner Distortion (W)), CE** (Corner Distortion (S)), CE** (Parallelogram Distortion), CE** (Trapezoidal Distortion), CE** (Horizontal Arc Distortion) [Service Menu]

Notes:
- **Perform the following adjustments after completing the Reference Mode (NTSL/PAL overscan 4:3 mode) adjustment.**
- **The corner distortions (W) & (S), parallelogram distortion, trapezoidal distortion and horizontal arc distortion adjustment data for this adjustment are common to those in the NTSC/PAL overscan 16:9 mode and the NTSC/PAL underscan 16:9 mode adjustments. This adjustment data needs to be adjusted in either mode.**
- **The corner distortions (W) & (S), parallelogram distortion, trapezoidal distortion and horizontal arc distortion adjustment data for this adjustment are common to those in the 480/60i and NTSC signal or 576/50i and PAL signal adjustments. This adjustment data needs to be adjusted with either signal.**

(1) Apply the NTSC mono-scope signal to INPUT C (Terminal VIDEO1 on the NTSC/PAL Video Input Card).
(2) Press the ASPECT button on the front panel to set the scanning size to 16:9 mode.
(3) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.
(4) Adjust **DY02** in the Service Menu to set the vertical position of the image at the center of the CRT screen.
(5) Adjust **DY01** to set the vertical amplitude of the image to **193mm**.
(6) Apply the NTSC crosshatch signal to INPUT C.
(7) Adjust **CE08** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).
(8) Adjust **CE07** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).
(9) Adjust **CE09** to optimize the horizontal arc distortion.
(10) Adjust **DY03** so that the second vertical lines from the left and right edges are linear.
(11) If there is an extreme corner S-shape distortion, adjust **CE06** to optimize it (this adjustment is usually unnecessary).
(12) If there is an extreme corner W-shape distortion, adjust **CE05** to optimize it (this adjustment is usually unnecessary).
(13) Apply the NTSC mono-scope signal to INPUT C.
(14) Ensure that the vertical amplitude of the image is **193mm**. If it is not, adjust **DY01** again.
(15) Adjust **DY02** so that the vertical position of the image comes at the center of the CRT screen.
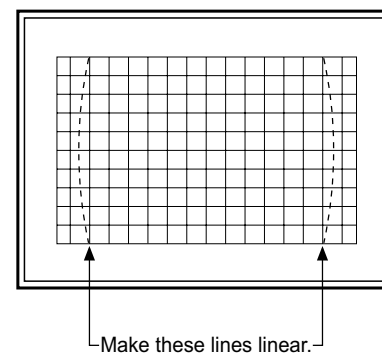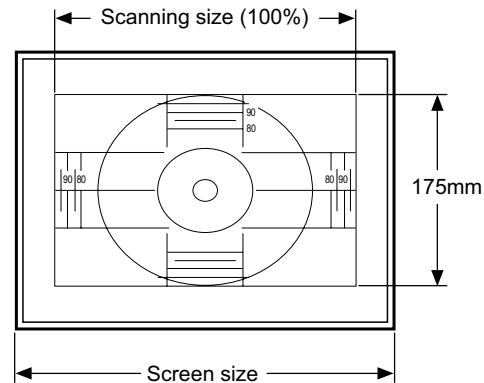(16) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 15 above (see Table 16).

Adjustment Step No.	Adjustment Signal	Adjustment Data							
		Vertical Position	Vertical size	Side Pin Distortion	Corner Distortion (W)	Corner Distortion (S)	Parallelogram Distortion	Trapezoidal Distortion	Horizontal Arc Distortion
1	NTSC	DY02	DY01	DY03	CE05	CE06	CE07	CE08	CE09
2	PAL	DY08	DY07	DY09	CE10	CE11	CE12	CE13	CE14

Table 16

(No. 52152) 1-63

VERTICAL IMAGE POSITION, IMAGE AMPLITUDE AND IMAGE DISTORTION ADJUSTMENTS (NTSC/PAL UNDERSCAN 16:9 MODE)

Measuring Instruments	Signal generator (Mono-scope signal, Crosshatch signal)
Card (Slot)	NTSC/PAL Video Input Card (Slot 2)
Test Points	
Adjustment Points	DY** (Vertical Size), DY** (Vertical Position), DY** (Side Pin Distortion), CE** (Corner Distortion (W)), CE** (Corner Distortion (S)), CE** (Parallelogram Distortion), CE** (Trapezoidal Distortion), CE** (Horizontal Arc Distortion) [Service Menu]

Notes:
- Perform the following adjustments after completing the Reference Mode (NTSL/PAL overscan 4:3 mode) and NTSC/PAL underscan 4:3 mode adjustments.
- The corner distortions (W) & (S), parallelogram distortion, trapezoidal distortion and horizontal arc distortion adjustment data for this adjustment are common to those in the NTSC/PAL overscan 16:9 mode and the NTSC/PAL underscan 16:9 mode adjustments. This adjustment data needs to be adjusted in either mode.
- The corner distortions (W) & (S), parallelogram distortion, trapezoidal distortion and horizontal arc distortion adjustment data for this adjustment are common to those in the 480/60i and NTSC signal or 576/50i and PAL signal adjustments. This adjustment data needs to be adjusted with either signal.

(1) Apply the NTSC mono-scope signal to INPUT C (Terminal VIDEO1 on the NTSC/PAL Video Input Card).
(2) Press the ASPECT and UNDER SCAN buttons on the front panel to set the scanning size to underscanning for the 16:9 ratio.
(3) Set the CONTRAST and BRIGHT potentiometers on the front panel to the center click positions.
(4) Adjust **DY05** in the Service Menu to set the vertical position of the image at the center of the CRT screen.
(5) Adjust **DY04** to set the vertical amplitude of the image to **175mm**.
(6) Apply the NTSC crosshatch signal to INPUT C.
(7) Adjust **CE08** to optimize the trapezoidal distortion (observe the second vertical lines from the left and right edges as the reference).
(8) Adjust **CE07** to optimize the parallelogram distortion (observe the second vertical lines from the left and right edges as the reference).
(9) Adjust **CE09** to optimize the horizontal arc distortion.
(10) Adjust **DY06** so that the second vertical lines from the left and right edges are linear.
(11) If there is an extreme corner S-shape distortion, adjust **CE06** to optimize it (this adjustment is usually unnecessary).
(12) If there is an extreme corner W-shape distortion, adjust **CE05** to optimize it (this adjustment is usually unnecessary).
(13) Apply the NTSC mono-scope signal to INPUT C.
(14) Ensure that the vertical amplitude of the image is **175mm**. If it is not, adjust **DY04** again.
(15) Adjust **DY05** so that the vertical position of the image comes at the center of the CRT screen.
(16) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 15 above (see Table 17).

Scanning size (100%)

175mm

Screen size

Make these lines linear.

Adjustment Step No.	Adjustment Signal	Adjustment Data							
		Vertical Position	Vertical size	Side Pin Distortion	Corner Distortion (W)	Corner Distortion (S)	Parallelogram Distortion	Trapezoidal Distortion	Horizontal Arc Distortion
1	NTSC	DY05	DY04	DY06	CE05	CE06	CE07	CE08	CE09
2	PAL	DY11	DY10	DY12	CE10	CE11	CE12	CE13	CE14

Table 17

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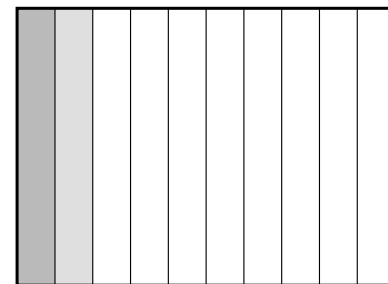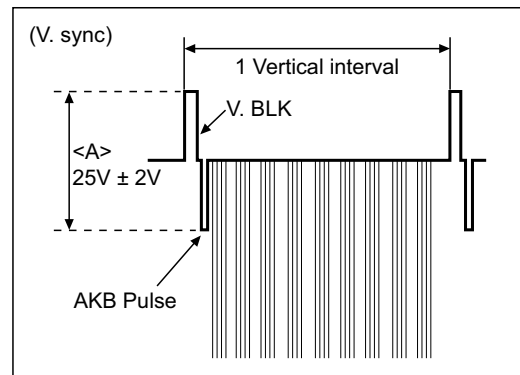
4.10.11 WHITE BALANCE ADJUSTMENTS

LOW-LIGHT WHITE BALANCE (REFERENCE VALUE) ADJUSTMENT	
Measuring Instruments	Signal generator (Crosshatch signal, 10-step gray scale signal) Oscilloscope
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	TP-47R, TP-47G, TP-47B [CRT SOCKET PWB] TP-GND [CRT SOCKET PWB]
Adjustment Points	SCREEN VR [Bottom potentiometer on high-voltage transformer] W*04 (Cut Off (R)), W*05 (Cut Off (G)), W*06 (Cut Off (B)) [Service Menu]

Notes:
- **Perform the following adjustments after completing the screen size adjustment.**
- **Set the COLOR TEMP./BAL. data in the Setup Menu to "00".**

(1) Apply the 1080/60i component crosshatch signals to INPUT A.
(2) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to HIGH.
(3) Set the PHASE, CHROMA, BRIGHT and CONTRAST potentiometers on the front panel to the center click positions.
(4) Observe the AKB pulse waveforms of TP-47R, TP-47G, TP-47B and ensure that the voltage <A> of the smallest AKB Pulse color is **25V ± 2V**. If it is not, readjust it, using the **SCREEN VR**.
(5) Apply the 1080/60i component 10-step gray scale signal to INPUT A.
(6) Turn the BRIGHT potentiometer on the front panel gradually until the second gray step in the gray scale lights slightly. (Do not touch the SCREEN VR potentiometer.)
(7) Adjust **WW04**, **WW05** and **WW06** in the Service Menu so that the gray bars are not tinted. (Do not set the values of **WW04** to **WW06** no more than "**50**".)
(8) Write the data of **WW04** to **WW06** in **WX04** to **WX06** without any alteration. (Do not adjust the **WX** items.)

Let this bar light up slightly

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COMPONENT SIGNAL WHITE BALANCE (HIGH: D9300) ADJUSTMENTS	
Measuring Instruments	**Signal generator (10-step gray scale signal)** **Color temperature meter**
Card (Slot)	**Component/RGB Input Card (Slot 1)**
Test Points	
Adjustment Points	**W*01 (Drive (R)), W*03 (Drive (B)), W*04 (Cut Off (R)),** **W*05 (Cut Off (G)), W*06 (Cut Off (B)) [Service Menu]**

Notes:
- **Perform the following adjustments after completing the Low-Light White Balance (Reference Value) Adjustment.**
- **Set the COLOR TEMP./BAL. data in the Setup Menu to "00".**
- **The values adjusted with WW become the reference values for the following adjustment. When this data is changed, it is required to re-adjust the white balance data of all of the adjustment signals (Component, NTSC and PAL). When re-adjusting the 1080/60i signal, use the WI.**

(1) Apply the 1080/60i component 10-step gray scale signal to INPUT A.
(2) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to HIGH.
(3) Set the PHASE, CHROMA, BRIGHT and CONTRAST potentiometers on the front panel to the center click positions.
(4) Adjust **WW01** and **WW03** in the Service Menu using the color temperature meter so that the color temperature is set as shown below.
(Do not touch **WW02**.)
   Color temperature : HIGH (D9300).   x = 0.283, y = 0.297 (Reference value)
(5) Ensure that the white balance tracking is correct from the gray scale steps with lower color temperatures to those with higher color temperatures. If the white balance tracking is deviated in darker steps, adjust **WW04** to **WW06** to correct it.
   (Do not set the values of **WW04** to **WW06** no more than "**50**".)
(6) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 5 above (see Table 18).

Adjustment Signal	Function	Adjustment Data		
		R	G	B
COMMON	Drive	WW01	–	WW03
	Cut off	WW04	WW05	WW06
1080/60i	Drive	WI01	–	WI03
	Cut off	WI04	WI05	WI06
1080/50i	Drive	WM01	–	WM03
	Cut off	WM04	WM05	WM06
1080/24psF	Drive	WO01	–	WO03
	Cut off	WO04	WO05	WO06
720/60p	Drive	WQ01	–	WQ03
	Cut off	WQ04	WQ05	WQ06
720/50p	Drive	WS01	–	WS03
	Cut off	WS04	WS05	WS06
480/60i (Common to 576/50i)	Drive	WE01	–	WE03
	Cut off	WE04	WE05	WE06
480/60p (Common to 576/50p)	Drive	WG01	–	WG03
	Cut off	WG04	WG05	WG06

Table 18

1-66 (No. 52152)

COMPONENT SIGNAL WHITE BALANCE (LOW: D65) ADJUSTMENTS	
Measuring Instruments	Signal generator (10-step gray scale signal) Color temperature meter
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	
Adjustment Points	W*01 (Drive (R)), W*03 (Drive (B)), W*04 (Cut Off (R)), W*05 (Cut Off (G)), W*06 (Cut Off (B)) [Service Menu]

Notes:
- **Perform the following adjustments after completing the Low-Light White Balance (Reference Value) Adjustment.**
- **Set the COLOR TEMP./BAL. data in the Setup Menu to "00".**
- **The values adjusted with WX become the reference values for the following adjustment. When this data is changed, it is required to re-adjust the white balance data of all of the adjustment signals (Component, NTSC and PAL). When re-adjusting the 1080/60i signal, use the WJ.**

(1) Apply the 1080/60i component 10-step gray scale signal to INPUT A.
(2) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to LOW.
(3) Set the PHASE, CHROMA, BRIGHT and CONTRAST potentiometers on the front panel to the center click positions.
(4) Adjust **WX01** and **WX03** in the Service Menu using the color temperature meter so that the color temperature is set as shown below.
   (Do not touch **WX02**.)
   Color temperature: LOW (D65).   x = 0.313, y = 0.329 (Reference value)
(5) Ensure that the white balance tracking is correct from the gray scale steps with lower color temperatures to those with higher color temperatures. If the white balance tracking is deviated in darker steps, adjust **WX04** to **WX06** to correct it.
   (Do not set the values of **WX04** to **WX06** no more than "**50**".)
(6) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 5 above (see Table 19).

Adjustment Signal	Function	Adjustment Data		
		R	G	B
COMMON	Drive	WX01	–	WX03
	Cut off	WX04	WX05	WX06
1080/60i	Drive	WJ01	–	WJ03
	Cut off	WJ04	WJ05	WJ06
1080/50i	Drive	WN01	–	WN03
	Cut off	WN04	WN05	WN06
1080/24psF	Drive	WP01	–	WP03
	Cut off	WP04	WP05	WP06
720/60p	Drive	WR01	–	WR03
	Cut off	WR04	WR05	WR06
720/50p	Drive	WT01	–	WT03
	Cut off	WT04	WT05	WT06
480/60i (Common to 576/50i)	Drive	WF01	–	WF03
	Cut off	WF04	WF05	WF06
480/60p (Common to 576/50p)	Drive	WH01	–	WH03
	Cut off	WH04	WH05	WH06

Table 19

NTSC/PAL SIGNAL WHITE BALANCE (HIGH: D9300, LOW: D65) ADJUSTMENTS	
Measuring Instruments	**Signal generator (10-step gray scale signal)** **Color temperature meter**
Card (Slot)	**NTSC/PAL Video Input Card (Slot 2)**
Test Points	
Adjustment Points	**W*01 (Drive (R)), W*03 (Drive (B)), W*04 (Cut Off (R)),** **W*05 (Cut Off (G)), W*06 (Cut Off (B)) [Service Menu]**

Notes:
- **Perform the following adjustments after completing the 1080/60i White Balance (High: D9300, Low: D65) Adjustments.**
- **Set the COLOR TEMP./BAL. data in the Setup Menu to "00".**
- **The values adjusted with WW (see the description of the Component Signal White Balance (High: D9300) adjustment) become the reference values for the white balance (high: D9300) adjustment. When this data is changed, it is required to re-adjust the white balance (high: D9300) data of all of the adjustment signals (Component, NTSC and PAL).**
- **The values adjusted with WX (see the description of the Component Signal White Balance (Low: D65) adjustment) become the reference values for the white balance (low: D65) adjustment. When this data is changed, it is required to re-adjust the white balance (low: D65) data of all of the adjustment signals (Component, NTSC and PAL).**

\<HIGH: D9300\>
(1) Apply the NTSC 10-step gray scale signal to INPUT C (Terminal VIDEO1 of the NTSC/PAL Video Input Card).
(2) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to HIGH.
(3) Set the PHASE, CHROMA, BRIGHT and CONTRAST potentiometers on the front panel to the center click positions.
(4) Adjust **WA01** and **WA03** in the Service Menu using the color temperature meter so that the color temperature is set as shown below.
   (Do not touch **WA02**.)
   Color temperature : HIGH (D9300).   x = 0.283, y = 0.297 (Reference value)
(5) Ensure that the white balance tracking is correct from the gray scale steps with lower color temperatures to those with higher color temperatures. If the white balance tracking is deviated in darker steps, adjust **WA04** to **WA06** to correct it.
   (Do not set the values of **WA04** to **WA06** no more than "**50**".)

\<LOW: D65\>
(6) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to LOW.
(7) Adjust **WB01** and **WB03** in the Service Menu using the color temperature meter so that the color temperature is set as shown below.
   (Do not touch WB02.)
   Color temperature : LOW (D65).   x = 0.313, y = 0.329 (Reference value)
(8) Ensure that the white balance tracking is correct from the gray scale steps with lower color temperatures to those with higher color temperatures. If the white balance tracking is deviated in darker steps, adjust **WB04** to **WB06** to correct it.
   (Do not set the values of **WB04** to **WB06** no more than "**50**".)
(9) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 8 above (see Table 20).

Adjustment Signal	Function	Adjustment Data		
		R	**G**	**B**
NTSC (Common to VIDEO and Y/C) [HIGH : D9300]	Drive	WA01	–	WA03
	Cut off	WA04	WA05	WA06
NTSC (Common to VIDEO and Y/C) [LOW : D65]	Drive	WB01	–	WB03
	Cut off	WB04	WB05	WB06
PAL (Common to VIDEO and Y/C) [HIGH : D9300]	Drive	WC01	–	WC03
	Cut off	WC04	WC05	WC06
PAL (Common to VIDEO and Y/C) [LOW : D65]	Drive	WD01	–	WD03
	Cut off	WD04	WD05	WD06

Table 20

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4.10.12 BRIGHTNESS ADJUSTMENTS

| BRIGHTNESS ADJUSTMENTS (HDTV)	
Measuring Instruments	Signal generator (Gray scale signal)
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	
Adjustment Points	S*02 (Overscan Bright High), S*06 (Overscan Bright Low), SP** (Underscan Bright High/Low) [Service Menu]

Notes:
- Perform the following adjustments after completing the Contrast and White Balance adjustments.
- Set the PICTURE SUB ADJ. data in the Setup Menu to "**00**".
- The value adjusted at the SR adjustment becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (HDTV, SDTV and NTSC/PAL). When re-adjusting the 1080/60i signal, use the SI.
- When overscan data of a signal is changed, it is required to re-adjust the underscan data of the same adjustment signal.
- After completing the brightness adjustments, make sure that the Low-Light is not deviated. If it is, it is required to perform the Low-Light adjustment again.

– Standard value (SO) adjustment –
<White Balance HIGH: D9300>
(1) Apply the 1080/60i component gray scale signal to INPUT A.
(2) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to HIGH.
(3) Set the PHASE, CHROMA, BRIGHT and CONTRAST potentiometers on the front panel to the center click positions.
(4) Adjust **SR02** in the Service Menu so that the 0% black area in the gray scale signal lights up slightly. (Be sure to avoid degradation of the black color.)
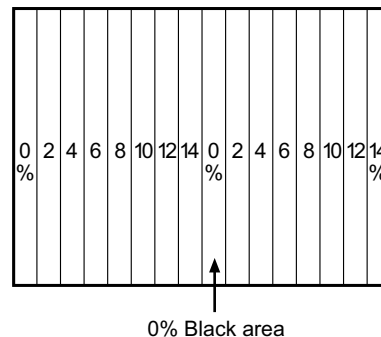
<White Balance LOW: D65>
(5) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to LOW.
(6) Adjust **SR06** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)

0% Black area

– Other signals adjustments –
<White Balance HIGH: D9300>
(7) Apply the 1080/60i component gray scale signal to INPUT A.
(8) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to HIGH.
(9) Set the PHASE, CHROMA, BRIGHT and CONTRAST potentiometers on the front panel to the center click positions.
(10) Adjust **SI02** in the Service Menu so that the 0% black area in the gray scale signal lights up slightly. (Be sure to avoid degradation of the black color.)
(11) Set the UNDER SCAN button on the front panel to ON so that the scanning size is underscanning.
(12) Adjust **SP26** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(13) Set the UNDER SCAN button on the front panel to OFF.

<White Balance LOW: D65>
(14) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to LOW.
(15) Adjust **SI06** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(16) Set the UNDER SCAN button on the front panel to ON so that the scanning size is underscanning.
(17) Adjust **SP27** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(18) Set the UNDER SCAN button on the front panel to OFF.
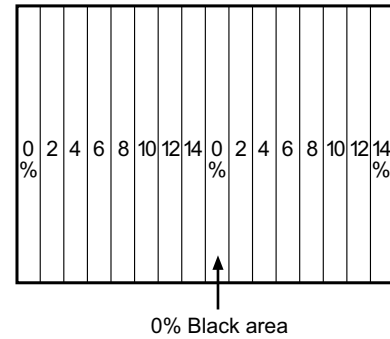(19) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 7 to 18 above (see Table 21).

Adjustment Signal	White Balance HIGH		White Balance LOW	
	Overscan	Underscan	Overscan	Underscan
COMMON	SR02	–	SR06	–
1080/60i	SI02	SP26	SI06	SP27
1080/50i	SK02	SP32	SK06	SP33
1080/24psF	SL02	SP35	SL06	SP36
720/60p	SM02	SP38	SM06	SP39
720/50p	SN02	SP41	SN06	SP42

Table 21

BRIGHTNESS ADJUSTMENTS (SDTV)	
Measuring Instruments	Signal generator (Gray scale signal)
Card (Slot)	Component/RGB Input Card (Slot 1)
Test Points	
Adjustment Points	S*02 (4:3 Overscan Bright High), S*06 (4:3 Overscan Bright Low), SP** (4:3 Underscan Bright High/Low), SQ** (16:9 Overscan/Underscan Bright High/Low) [Service Menu]

Notes:
- Perform the following adjustment after completing the 1080/60i Brightness Adjustment.
- Set the PICTURE SUB ADJ. data in the Setup Menu to "00".
- The SR value (see the description for the HDTV Brightness adjustment) becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (HDTV, SDTV and NTSC/PAL). When re-adjusting the 1080/60i signal, use the SI.
- When overscan data of a signal is changed, it is required to re-adjust the underscan data of the same adjustment signal.
- When the 4:3 data of a signal is changed, it is required to re-adjust the 16:9 data of the same adjustment signal.
- After completing the brightness adjustments, make sure that the Low-Light is not deviated. If it is, it is required to perform the Low-Light adjustment again.

0% Black area

\<White Balance HIGH: D9300\>

(1) Apply the 480/60i component gray scale signal to INPUT A.
(2) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to HIGH.
(3) Set the PHASE, CHROMA, BRIGHT and CONTRAST potentiometers on the front panel to the center click positions.
(4) Adjust **SE02** in the Service Menu so that the 0% black area in the gray scale signal lights up slightly. (Be sure to avoid degradation of the black color.)
(5) Set the ASPECT button on the front panel to ON so that the scanning size is 16:9.
(6) Adjust **SQ26** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(7) Set the ASPECT button on the front panel to OFF and the UNDER SCAN button to ON to set the scanning size to underscanning for the 4:3 ratio.
(8) Adjust **SP14** so that the 0% black area in the gray scale signal lights up slightly. (Be sure to avoid degradation of the black color.)
(9) Set the ASPECT button on the front panel to ON to set the scanning size to underscanning for the 16:9 ratio.
(10) Adjust **SQ29** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(11) Set the ASPECT and UNDER SCAN buttons on the front panel to OFF.

\<White Balance LOW: D65\>

(12) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to LOW.
(13) Adjust **SE06** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(14) Set the ASPECT button on the front panel to ON so that the scanning size is 16:9.
(15) Adjust **SQ27** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(16) Set the ASPECT button on the front panel to OFF and the UNDER SCAN button to ON to set the scanning size to underscanning for the 4:3 ratio.
(17) Adjust **SP15** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(18) Set the ASPECT button on the front panel to ON to set the scanning size to underscanning for the 16:9 ratio.
(19) Adjust **SQ30** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(20) Set the ASPECT and UNDER SCAN buttons on the front panel to OFF.
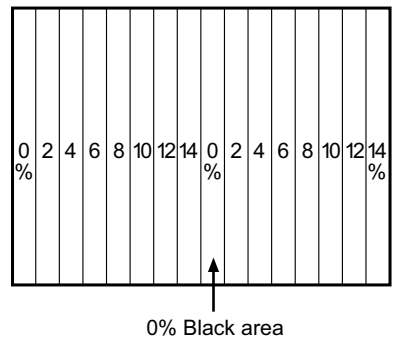(21) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 20 above (see Table 22).

Adjustment Signal	White Balance HIGH				White Balance LOW			
	Overscan		Underscan		Overscan		Underscan	
	4 : 3	16 : 9	4 : 3	16 : 9	4 : 3	16 : 9	4 : 3	16 : 9
480/60i	SE02	SQ26	SP14	SQ29	SE06	SQ27	SP15	SQ30
576/50i	SF02	SQ32	SP17	SQ35	SF06	SQ33	SP18	SQ36
480/60p	SG02	SQ38	SP20	SQ41	SG06	SQ39	SP21	SQ42
576/50p	SH02	SQ44	SP23	SQ47	SH06	SQ45	SP24	SQ48

Table 22

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BRIGHTNESS ADJUSTMENTS (NTSC/PAL VIDEO)	
Measuring Instruments	Signal generator (Gray scale signal)
Card (Slot)	NTSC/PAL Video Input Card (Slot 2)
Test Points	
Adjustment Points	S*02 (4:3 Overscan Bright High), S*06 (4:3 Overscan Bright Low), SP** (4:3 Underscan Bright High/Low), SQ** (16:9 Overscan/Underscan Bright High/Low) [Service Menu]

Notes:
- Ensure that the output waveforms from the NTSC/PAL Video Input Cards are normal before proceeding to the following adjustments.
- Perform the following adjustments after completing the 1080/60i Brightness Adjustment.
- Set the PICTURE SUB ADJ. data in the Setup Menu to "00".
- The SR value (see the description for the HDTV Brightness adjustment) becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (HDTV, SDTV and NTSC/PAL).
  When re-adjusting the 1080/60i signal, use the SI. (For the adjustment of the 1080/60i signal, use the Component/RGB Input Card.)
- When overscan data of a signal is changed, it is required to re-adjust the underscan data of the same adjustment signal.
- When the 4:3 data of a signal is changed, it is required to re-adjust the 16:9 data of the same adjustment signal.
- After completing the brightness adjustments, make sure that the Low-Light is not deviated. If it is, it is required to perform the Low-Light adjustment again.

0% Black area

\<White Balance HIGH: D9300\>

(1) Apply the NTSC gray scale signal to INPUT C (Terminal VIDEO1 of the NTSC/PAL Video Input Card).
(2) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to HIGH.
(3) Set the PHASE, CHROMA, BRIGHT and CONTRAST potentiometers on the front panel to the center click positions.
(4) Adjust **SA02** in the Service Menu so that the 0% black area in the gray scale signal lights up slightly. (Be sure to avoid degradation of the black color.)
(5) Set the ASPECT button on the front panel to ON so that the scanning size is 16:9.
(6) Adjust **SQ02** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(7) Set the ASPECT button on the front panel to OFF and the UNDER SCAN button to ON to set the scanning size to underscanning for the 4:3 ratio.
(8) Adjust **SP02** so that the 0% black area in the gray scale signal lights up slightly. (Be sure to avoid degradation of the black color.)
(9) Set the ASPECT button on the front panel to ON to set the scanning size to underscanning for the 16:9 ratio.
(10) Adjust **SQ05** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(11) Set the ASPECT and UNDER SCAN buttons on the front panel to OFF.

\<White Balance LOW: D65\>

(12) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to LOW.
(13) Adjust **SA06** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(14) Set the ASPECT button on the front panel to ON so that the scanning size is 16:9.
(15) Adjust **SQ03** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(16) Set the ASPECT button on the front panel to OFF and the UNDER SCAN button to ON to set the scanning size to underscanning for the 4:3 ratio.
(17) Adjust **SP03** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(18) Set the ASPECT button on the front panel to ON to set the scanning size to underscanning for the 16:9 ratio.
(19) Adjust **SQ06** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(20) Set the ASPECT and UNDER SCAN buttons on the front panel to OFF.
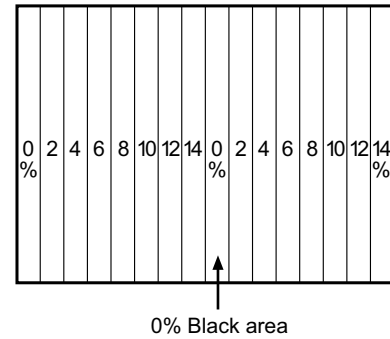(21) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 20 above (see Table 23).

Adjustment Signal	White Balance HIGH				White Balance LOW			
	Overscan		Underscan		Overscan		Underscan	
	4 : 3	16 : 9	4 : 3	16 : 9	4 : 3	16 : 9	4 : 3	16 : 9
NTSC(VIDEO)	SA02	SQ02	SP02	SQ05	SA06	SQ03	SP03	SQ06
PAL(VIDEO)	SC02	SQ14	SP08	SQ17	SC06	SQ15	SP09	SQ18

Table 23

BRIGHTNESS ADJUSTMENTS (NTSC/PAL Y/C)	
Measuring Instruments	Signal generator (Gray scale signal)
Card (Slot)	NTSC/PAL Video Input Card (Slot 2)
Test Points	
Adjustment Points	S*02 (4:3 Overscan Bright High), S*06 (4:3 Overscan Bright Low), SP** (4:3 Underscan Bright High/Low), SQ** (16:9 Overscan/Underscan Bright High/Low) [Service Menu]

Notes:
- Ensure that the output waveforms from the NTSC/PAL Video Input Cards are normal before proceeding to the following adjustments.
- Perform the following adjustments after completing the 1080/60i Brightness Adjustment.
- Set the PICTURE SUB ADJ. data in the Setup Menu to "00".
- The SR value (see the description for the HDTV Brightness adjustment) becomes the reference value for the following adjustments. When this data is changed, it is required to re-adjust the data of all of the adjustment signals (HDTV, SDTV and NTSC/PAL).
  When re-adjusting the 1080/60i signal, use the SI. (For the adjustment of the 1080/60i signal, use the Component/RGB Input Card.)
- When overscan data of a signal is changed, it is required to re-adjust the underscan data of the same adjustment signal.
- When the 4:3 data of a signal is changed, it is required to re-adjust the 16:9 data of the same adjustment signal.
- After completing the brightness adjustments, make sure that the Low-Light is not deviated. If it is, it is required to perform the Low-Light adjustment again.

0% Black area

<White Balance HIGH: D9300>

(1) Apply the NTSC gray scale signal to INPUT D (Terminal Y/C of the NTSC/PAL Video Input Card).
(2) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to HIGH.
(3) Set the PHASE, CHROMA, BRIGHT and CONTRAST potentiometers on the front panel to the center click positions.
(4) Adjust **SB02** in the Service Menu so that the 0% black area in the gray scale signal lights up slightly. (Be sure to avoid degradation of the black color.)
(5) Set the ASPECT button on the front panel to ON so that the scanning size is 16:9.
(6) Adjust **SQ08** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(7) Set the ASPECT button on the front panel to OFF and the UNDER SCAN button to ON to set the scanning size to underscanning for the 4:3 ratio.
(8) Adjust **SP05** so that the 0% black area in the gray scale signal lights up slightly. (Be sure to avoid degradation of the black color.)
(9) Set the ASPECT button on the front panel to ON to set the scanning size to underscanning for the 16:9 ratio.
(10) Adjust **SQ11** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(11) Set the ASPECT and UNDER SCAN buttons on the front panel to OFF.

<White Balance LOW: D65>

(12) Set "COLOR TEMP." of COLOR TEMP./BAL. in the Setup Menu to LOW.
(13) Adjust **SB06** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(14) Set the ASPECT button on the front panel to ON so that the scanning size is 16:9.
(15) Adjust **SQ09** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(16) Set the ASPECT button on the front panel to OFF and the UNDER SCAN button to ON to set the scanning size to underscanning for the 4:3 ratio.
(17) Adjust **SP06** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(18) Set the ASPECT button on the front panel to ON to set the scanning size to underscanning for the 16:9 ratio.
(19) Adjust **SQ12** so that the 0% black area in the gray scale signal lights slightly. (Be sure to avoid degradation of the black color.)
(20) Set the ASPECT and UNDER SCAN buttons on the front panel to OFF.
(21) Vary the adjustment signal and adjustment data, and re-perform adjustments in steps 1 to 20 above (see Table 24).

Adjustment Signal	White Balance HIGH				White Balance LOW			
	Overscan		Underscan		Overscan		Underscan	
	4 : 3	16 : 9	4 : 3	16 : 9	4 : 3	16 : 9	4 : 3	16 : 9
NTSC(Y/C)	SB02	SQ08	SP05	SQ11	SB06	SQ09	SP06	SQ12
PAL(Y/C)	SD02	SQ20	SP11	SQ23	SD06	SQ21	SP12	SQ24

Table 24

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SECTION 5
TROUBLE SHOOTING

5.1 SELF DIAGNOSIS

The unit incorporates a self-diagnosis function and is capable of indicating the absence of raster by blinking on the front panel LEDs and the on-screen display.

5.1.1 DISPLAYING THE SELF DIAGNOSIS INDICATIONS

(1) LED indication: When raster is absent, the six LEDs of INPUT SELECT A to F on the front panel blink to indicate this condition.
(2) On-screen display: The self diagnosis results can be displayed when the unit is on.

5.1.2 LED INDICATION

(1) Operation during an LED indication:
The main microcomputer detects any abnormalities in communication on the I^2C and causes the LEDs to blink.
At the same time, the unit is turned off to protect it but the LEDs keep on blinking.
At this time, the main microcomputer does not accept commands except for the POWER switch on the front panel.

(2) How to cancel the LED blinking:
Press the POWER switch on the front panel to turn the unit ON again.

(3) Types of LED indications

LED INDICATION TYPE	ON-SCREEN DISPLAY	DIAGNOSIS RESULT	MALFUNCTIONING CIRCUIT
INPUT A blinking at 0.5-second intervals	I^2C-0 DEFLECTION BUS	Communication error in the signal buses (SCL0, SDA0) of I^2C	• SIGNAL PWB ASS'Y IC801 • MAIN PWB ASS'Y IC510 • MOTHER PWB ASS'Y IC103 • REMOTE PWB ASS'Y IC102, IC103
INPUT B blinking at 0.5-second intervals	I^2C-1 SIGNAL BUS	Communication error in the signal buses (SCL1, SDA1) of I^2C	• SIGNAL PWB ASS'Y IC104, IC601, IC801 • FRONT CONTROL PWB ASS'Y IC101
INPUT C blinking at 0.5-second intervals	I^2C ROM BUS	Communication error in the ROM buses (SCL2, SDA2) of I^2C	• SIGNAL PWB ASS'Y IC801, IC805 • SUB DEF MODULE PWB ASS'Y IC001
INPUT D blinking at 0.5-second intervals	X-RAY	X-rays detected	• SIGNAL PWB ASS'Y IC801 • HV CONTROL MODULE PWB ASS'Y IC503
INPUT E blinking at 0.5-second intervals	OCP	Overcurrent detected	• SIGNAL PWB ASS'Y IC801 • MAIN PWB ASS'Y
INPUT F blinking at 0.5-second intervals	VOFF	Neck-break prevention detected	• SIGNAL PWB ASS'Y IC801 • SUB DEF MODULE PWB ASS'Y IC005

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5.1.3 ON-SCREEN DISPLAY (SELF DIAGNOSIS DISPLAY MODE)

(1) How to enter the self diagnosis display mode:
Press a key on the front panel to display the service menu and select "**DIAGNOSIS**".
(See "Basic Operations of Service Menu" on page 1-17.)

(2) How to clear the trouble history in the self diagnosis mode:
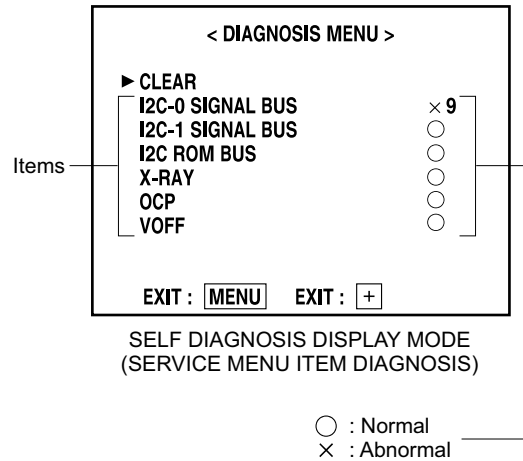In the DIAGNOSIS MENU as shown on the high, select "**CLEAR**".
A new screen appears. Press the VOL + (▶) on the front panel to select "**YES**".
This clears the trouble history in the self diagnosis mode and the symbols displayed to the right of all of the items become "○".

(3) Trouble history
The trouble history of each item is counted up to 9. The figure is held in the memory until the trouble history is cleared.
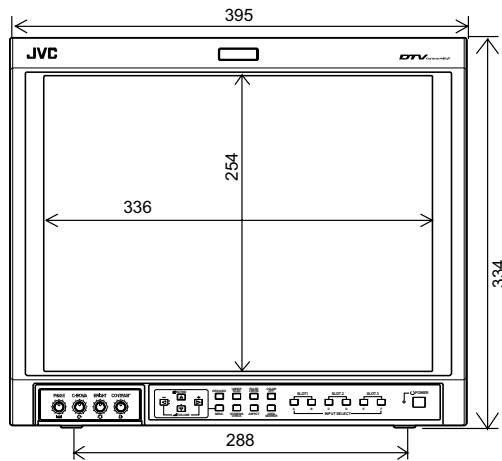As a result, the displayed trouble history count remains 9 even if it actually exceeds 9.
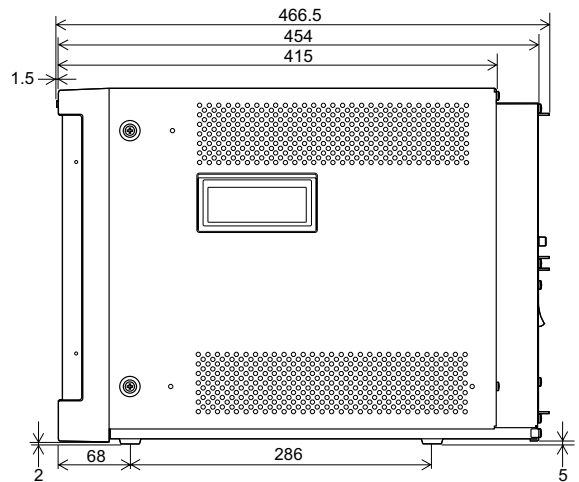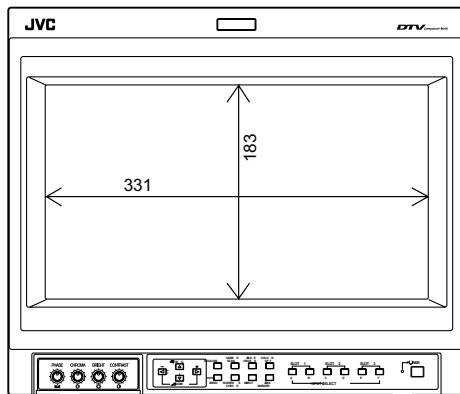
```
        < DIAGNOSIS MENU >

      ► CLEAR
        I2C-0 SIGNAL BUS          × 9
        I2C-1 SIGNAL BUS           ○
        I2C ROM BUS                ○
        X-RAY                      ○
        OCP                        ○
        VOFF                       ○


      EXIT :  MENU    EXIT :  +
```

Items

SELF DIAGNOSIS DISPLAY MODE
(SERVICE MENU ITEM DIAGNOSIS)

○ : Normal
× : Abnormal

DIMENSIONS

Unit : mm

< Front View >

395

JVC   DTV

254

336

334

288

< Side View >

466.5

454

415

1.5

2   68   286   5

<Front View with the wide mask attached>

JVC   DTV

183

331