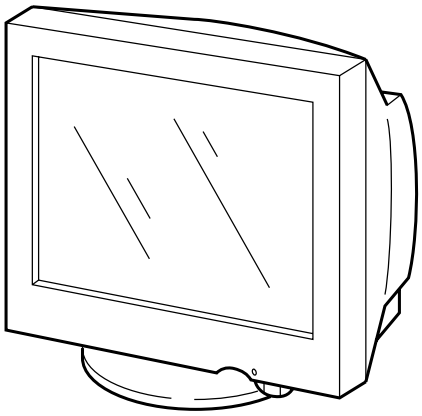
CPD-E200E

SERVICE MANUAL

AEP Model

Chassis No. SCC-L31C-A



D99C CHASSIS

SPECIFICATIONS

CRT	0.24 mm aperture grille pitch (center) 17 inches measured diagonally 90-degree deflection FD Trinitron
Viewable image size	Approx. 327 × 243 mm (w/h) (12 7/8 × 9 5/8 inches) 16.0" viewing image
Resolution	
Maximum	Horizontal: 1600 dots Vertical: 1200 lines
Recommended	Horizontal: 1024 dots Vertical: 768 lines
Standard image area	Approx. 312 × 234 mm (w/h) (12 3/8 × 9 1/4 inches)
Deflection frequency*	Horizontal: 30 to 85 kHz Vertical: 48 to 120 Hz
AC input voltage/current	100 to 240 V, 50 - 60 Hz, Max. 1.7 A
Power consumption	120 W
Dimensions	Approx. 404 × 413.5 × 419.5 mm (w/h/d) (16 × 16 3/8 × 16 5/8 inches)
Mass	Approx. 20 kg (44 lb 1 oz)
Plug and Play	DDC1/DDC2B/DDC2Bi
Supplied accessories	Power cord (1) Windows Monitor Information Disk (1) Warranty card (1) Notes on cleaning the screen's surface (1) This instruction manual (1)

* Recommended horizontal and vertical timing condition
- Horizontal sync width should be more than 1.0 µsec.
- Horizontal blanking width should be more than 3.0 µsec.
- Vertical blanking width should be more than 500 µsec.

Design and specifications are subject to change without notice.

MICROFILM

TRINITRON® COLOR COMPUTER DISPLAY

SONY®

DIAGNOSIS

Failure	Power LED
HV/+B Failure	Blink Amber (On 0.5 sec, Off 0.5 sec)
H Stop or V Stop Failure	Blink Amber (On 1.5 sec, Off 0.5 sec)
ABL Failure	Blink Amber (On 0.5 sec, Off 1.5 sec)
Aging/Self-Test	Blink Amber (On 0.5 sec, Off 0.5 sec) .... Blink Green (On 0.5 sec, Off 0.5 sec)

TIMING SPECIFICATION

PRIMARY MODE MODE AT PRODUCTION	MODE 1	MODE 2	MODE 3	MODE 4	MODE 5	MODE 6	MODE 7	MODE 8
RESOLUTION (HXV)	640 X 480	800 X 600	832 X 624	1024 X 768	1024 X 768	720 X 400	640 X 480	1280 X 1024
CLOCK	25.175 MHz	56.250 MHz	57.283 MHz	78.750 MHz	94.500 MHz	28.322 MHz	36.000 MHz	135.000 MHz
— HORIZONTAL —								
H-FREQ	31.469 kHz	53.674 kHz	49.725 kHz	60.023 kHz	68.677 kHz	31.469 kHz	43.269 kHz	79.976 kHz
	usec	usec	usec	usec	usec	usec	usec	usec
H. TOTAL	31.778	18.631	20.111	16.660	14.561	31.777	23.111	12.504
H. BLK	6.356	4.409	5.586	3.657	3.725	6.355	5.333	3.022
H. FP	0.636	0.569	0.559	0.203	0.508	0.636	1.556	0.119
H. SYNC	3.813	1.138	1.117	1.219	1.016	3.813	1.556	1.067
H. BP	1.907	2.702	3.910	2.235	2.201	1.907	2.222	1.837
H. ACTIV	25.422	14.222	14.524	13.003	10.836	25.422	17.778	9.481
— VERTICAL —								
V. FREQ(HZ)	59.940 Hz	85.061 Hz	74.550 Hz	75.029 Hz	84.997 Hz	70.087 Hz	85.008 Hz	75.025 Hz
	lines	lines	lines	lines	lines	lines	lines	lines
V. TOTAL	525	631	667	800	808	449	509	1066
V. BLK	45	31	43	32	40	49	29	42
V. FP	10	1	1	1	1	12	1	1
V. SYNC	2	3	3	3	3	2	3	3
V. BP	33	27	39	28	36	35	25	38
V. ACTIV	480	600	624	768	768	400	480	1024
— SYNC —								
INT(G)	NO	NO	NO	NO	NO	NO	NO	NO
EXT(H/V)/POLARITY	YES -/-	NO +/+	YES -/-	YES +/+	YES +/+	YES -/+	YES -/-	YES +/+
EXT(CS)/POLARITY	NO	NO	NO	NO	NO	NO	NO	NO
INT/NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT	NON INT

Power saving function

This monitor meets the power-saving guidelines set by VESA, ENERGY STAR, and NUTEK. If the monitor is connected to a computer or video graphics board that is DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown right.

* "Sleep" and "deep sleep" are power saving modes defined by the Environmental Protection Agency.

** When your computer is in a power saving mode, MONITOR IS IN POWER SAVE MODE appears on the screen if you press any button on the monitor. After a few seconds, the monitor enters the power saving mode again.

Power mode	Power consumption	⏻ (power) indicator
normal operation	≤ 120 W	green
1 standby	≤ 15 W	green and orange alternate
2 suspend (sleep)*	≤ 15 W	green and orange alternate
3 active off** (deep sleep)*	≤ 3 W	orange
power off	0 W	off

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC Leakage. Check leakage as described below.

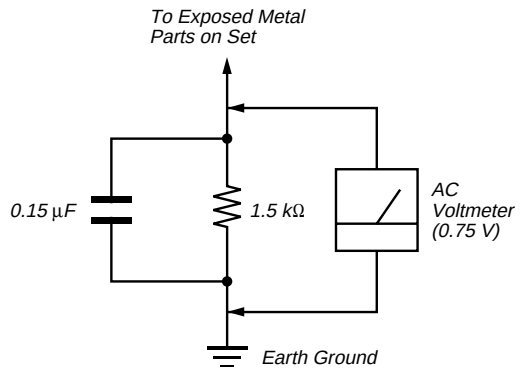


Fig. A. Using an AC voltmeter to check AC leakage.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers).

Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOMs that are suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

WARNING!!

NEVER TURN ON THE POWER IN A CONDITION IN WHICH THE DEGAUSS COIL HAS BEEN REMOVED.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

TABLE OF CONTENTS

SECTION 1
GENERAL

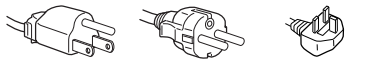
The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

Precautions

Warning on power connections

- Use the supplied power cord. If you use a different power cord, be sure that it is compatible with your local power supply.
  For the customers in the UK
  If you use the monitor in the UK, be sure to use the supplied UK power cable.

Example of plug types



for 100 to 120 V AC for 200 to 240 V AC for 240 V AC only

- Before disconnecting the power cord, wait at least 30 seconds after turning off the power to allow the static electricity on the screen's surface to discharge.
- After the power is turned on, the screen is demagnetized (degaussed) for about 5 seconds. This generates a strong magnetic field around the screen which may affect data stored on magnetic tapes and disks placed near the monitor. Be sure to keep magnetic recording equipment, tapes, and disks away from the monitor.

The equipment should be installed near an easily accessible outlet.

Installation

Do not install the monitor in the following places:
- on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies, etc.) that may block the ventilation holes
- near heat sources such as radiators or air ducts, or in a place subject to direct sunlight
- in a place subject to severe temperature changes
- in a place subject to mechanical vibration or shock
- on an unstable surface
- near equipment which generates magnetism, such as a transformer or high voltage power lines
- near or on an electrically charged metal surface

Maintenance

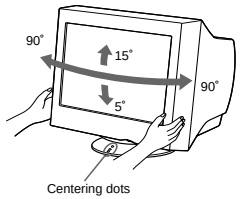
- Clean the screen with a soft cloth. If you use a glass cleaning liquid, do not use any type of cleaner containing an anti-static solution or similar additive as this may scratch the screen's coating.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasive items such as a ballpoint pen or screwdriver. This type of contact may result in a scratched picture tube.
- Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent, such as alcohol or benzene.

Transportation

When you transport this monitor for repair or shipment, use the original carton and packing materials.

Use of the tilt-swivel

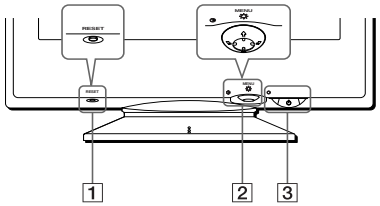
This monitor can be adjusted within the angles shown below. To find the center of the monitor's turning radius, align the center of the monitor's screen with the centering dots on the stand.
Hold the monitor at the bottom with both hands when you turn it horizontally or vertically. Be careful not to pinch your fingers at the back of the monitor when you tilt the monitor up vertically.



Identifying parts and controls

See the pages in parentheses for further details.

Front

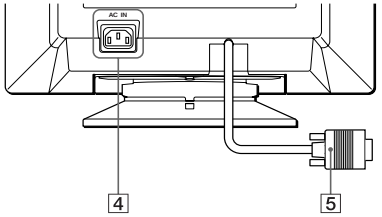


1 RESET button (page 12)
This button resets the adjustments to the factory settings.

2 Control button (page 9)
The control button is used to display the menu and make adjustments to the monitor, including brightness and contrast adjustments.

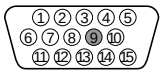
3 ⏻ (power) switch and indicator (pages 7, 13, 16)
This button turns the monitor on and off. The power indicator lights up in green when the monitor is turned on, and either flashes in green and orange, or lights up in orange when the monitor is in power saving mode.

Rear



4 AC IN connector (page 6)
This connector provides AC power to the monitor.

5 Video input connector (HD15) (page 6)
This connector inputs RGB video signals (0.700 Vp-p, positive) and sync signals.



Pin No.	Signal
1	Red
2	Green (Sync on Green)
3	Blue
4	ID (Ground)
5	DDC Ground*
6	Red Ground
7	Green Ground
8	Blue Ground
9	–
10	Ground
11	ID (Ground)
12	Bi-Directional Data (SDA)*
13	H. Sync
14	V. Sync
15	Data Clock (SCL)*

* DDC (Display Data Channel) is a standard of VESA.

Setup

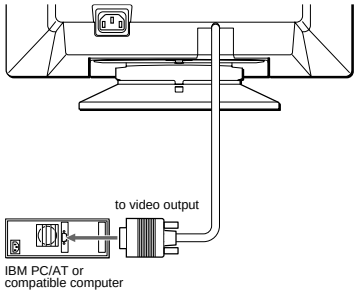
Before using your monitor, check that the following accessories are included in your carton:
- Power cord (1)
- Windows Monitor Information Disk (1)
- Warranty card (1)
- Notes on cleaning the screen's surface (1)
- This instruction manual (1)

Step 1: Connect your monitor to your computer

Turn off the monitor and computer before connecting.

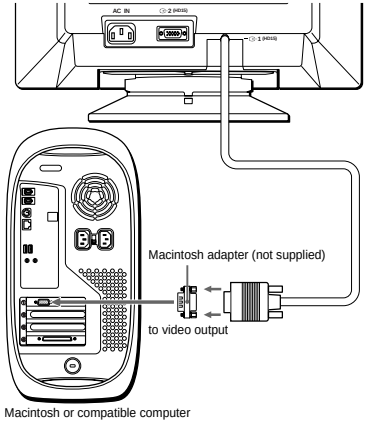
Note
Do not touch the pins of the video cable connector as this might bend the pins.

■ Connecting to an IBM PC/AT or compatible computer



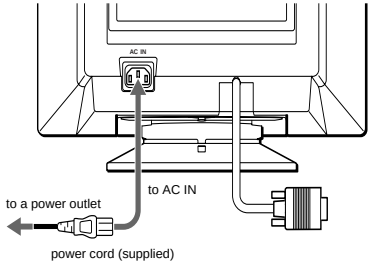
■ Connecting to a Macintosh or compatible computer

You will need a Macintosh adapter (not supplied).



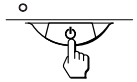
Step 2: Connect the power cord

With the monitor and computer switched off, first connect the power cord to the monitor, then connect it to a power outlet.



Step 3: Turn on the monitor and computer

First turn on the monitor, then turn on the computer.



The installation of your monitor is complete.
If necessary, use the monitor's controls to adjust the picture.

If no picture appears on your screen

- Check that the monitor is correctly connected to the computer.
- If NO INPUT SIGNAL appears on the screen, confirm that the video signal cable is properly connected and all plugs are firmly seated in their sockets.
- If MONITOR IS IN POWER SAVE MODE appeared on the screen, try pressing any key on the computer keyboard.
- If you are replacing an old monitor with this model and OUT OF SCAN RANGE appears on the screen, reconnect the old monitor. Then adjust the computer's graphic board so that the horizontal frequency is between 30 – 85 kHz, and the vertical frequency is between 48 – 120 Hz.

For more information about the on-screen messages, see "Trouble symptoms and remedies" on page 14.

For customers using Windows 95/98
To maximize the potential of your monitor, install the new model information file from the supplied Windows Monitor Information Disk onto your PC.
This monitor complies with the "VESA DDC" Plug & Play standard. If your PC/graphics board complies with DDC, select "Plug & Play Monitor (VESA DDC)" or this monitor's model name as the monitor type in the "Control Panel" of Windows 95/98. If your PC/graphics board has difficulty communicating with this monitor, load the Windows Monitor Information Disk and select this monitor's model name as the monitor type.

For customers using Windows NT4.0
Monitor setup in Windows NT4.0 is different from Windows 95/98 and does not involve the selection of monitor type. Refer to the Windows NT4.0 instruction manual for further details on adjusting the resolution, refresh rate, and number of colors.

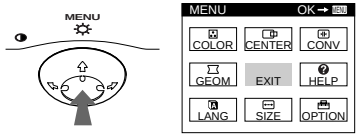
Adjusting the monitor's resolution and color number
Adjust the monitor's resolution and color number by referring to your computer's instruction manual. The color number may vary according to your computer or video board. The color palette setting and the actual number of colors are as follows:
- High Color (16 bit) → 65,536 colors
- True Color (24 bit) → about 16.77 million colors

In true color mode (24 bit), speed may be slower.

Selecting the on-screen menu language (LANG)

English, French, German, Spanish, Italian, Dutch, Swedish, Russian and Japanese versions of the on-screen menus are available. The default setting is English.

1 Press the center of the control button.
See page 9 for more information on using the control button.



2 Move the control button to highlight LANG and press the center of the control button again.

3 Move the control button ↓/↑ to select a language.
- ENGLISH
- FRANÇAIS: French
- DEUTSCH: German
- ESPAÑOL: Spanish
- ITALIANO: Italian
- NEDERLANDS: Dutch
- SVENSKA: Swedish
- РУССКИЙ: Russian
- 日本語: Japanese

To close the menu
Press the center of the control button once to return to the main MENU, and twice to return to normal viewing. If no buttons are pressed, the menu closes automatically after about 30 seconds.

To reset to English
Press the RESET button while the LANGUAGE menu is displayed on the screen.

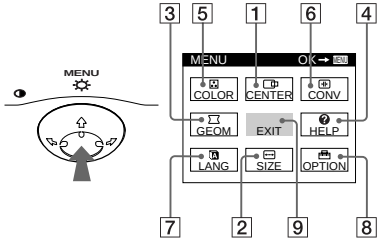
GB

Customizing Your Monitor

You can make numerous adjustments to your monitor using the on-screen menu.

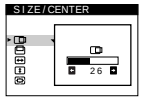
Navigating the menu

Press the center of the control button to display the main MENU on your screen. See page 9 for more information on using the control button.

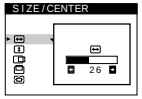


Use the control button to select one of the following menus.

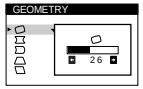
1 CENTER (page 9)
Selects the CENTER menu to adjust the picture's centering, size or zoom.



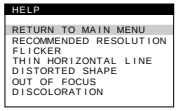
2 SIZE (page 9)
Selects the SIZE menu to adjust the picture's size, centering or zoom.



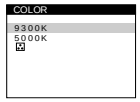
3 GEOM (page 10)
Select the GEOM menu to adjust the picture's rotation and shape.



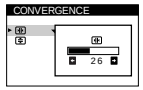
4 HELP (page 12)
Select the HELP menu to display helpful hints and information about this monitor.



5 COLOR (page 10)
Select the COLOR menu to adjust the picture's color temperature. You can use this to match the monitor's colors to a printed picture's colors.

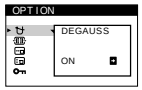


6 CONV (page 10)
Select the CONV menu to adjust the picture's horizontal and vertical convergence.



7 LANG (page 7)
Select LANG to choose the on-screen menu's language.

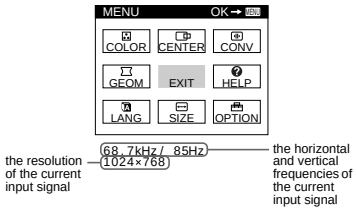
8 OPTION (page 11)
Select OPTION to adjust the monitor's options. The options include:
- degaussing the screen
- adjusting the moire cancellation level
- changing the on-screen menu position
- locking the controls



9 EXIT
Select EXIT to close the menu.

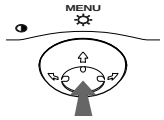
■ Displaying the current input signal

The horizontal and vertical frequencies of the current input signal are displayed in the main MENU. If the signal matches one of this monitor's factory preset modes, the resolution is also displayed.

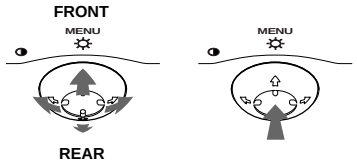


■ Using the control button

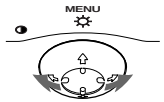
1 Display the main MENU.
Press the center of the control button to display the main MENU on your screen.



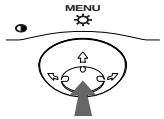
2 Select the menu you want to adjust.
Highlight the desired menu by moving the control button towards the rear to go up (↑), towards the front to go down (↓), and left (←) or right (→) to move sideways.



3 Adjust the menu.
Move the control button left (←) or right (→) to make the adjustment.



4 Close the menu.
Press the center of the control button once to return to the main MENU, and twice to return to normal viewing. If no buttons are pressed, the menu closes automatically after about 30 seconds.



■ Resetting the adjustments

Press the RESET button. See page 12 for more information on resetting the adjustments.

Adjusting the brightness and contrast

Brightness and contrast adjustments are made using a separate BRIGHTNESS/CONTRAST menu.
These settings are stored in memory for all input signals.

1 Move the control button in any direction.
The BRIGHTNESS/CONTRAST menu appears on the screen.

2 Move the control button ↓/↑ to adjust the brightness (☼), and ←/→ to adjust the contrast (◑).
The menu automatically disappears after about 3 seconds.

Adjusting the centering of the picture (CENTER)

This setting is stored in memory for the current input signal.

1 Press the center of the control button.
The main MENU appears on the screen.

2 Move the control button to highlight CENTER and press the center of the control button again.
The SIZE/CENTER menu appears on the screen.

3 First move the control button ↓/↑ to select for horizontal adjustment, or for vertical adjustment. Then move the control button ←/→ to adjust the centering.

Adjusting the size of the picture (SIZE)

This setting is stored in memory for the current input signal.

1 Press the center of the control button.
The main MENU appears on the screen.

2 Move the control button to highlight SIZE and press the center of the control button again.
The SIZE/CENTER menu appears on the screen.

3 First move the control button ↓/↑ to select for horizontal adjustment, or for vertical adjustment. Then move the control button ←/→ to adjust the size.

GB

Enlarging or reducing the picture (ZOOM)

This setting is stored in memory for the current input signal.

1 Press the center of the control button.
The main MENU appears on the screen.

2 Move the control button to highlight SIZE or CENTER and press the center of the control button again.
The SIZE/CENTER menu appears on the screen.

3 Move the control button ↓/↑ to select (zoom), and move ←/→ to enlarge or reduce the picture.

Notes
- Adjustment stops when either the horizontal or vertical size reaches its maximum or minimum value.
- The horizontal adjustment value is not displayed in the menu.

Adjusting the shape of the picture (GEOM)

The GEOM settings allow you to adjust the rotation and shape of the picture.
The (rotation) setting is stored in memory for all input signals. All other settings are stored in memory for the current input signal.

1 Press the center of the control button.
The main MENU appears on the screen.

2 Move the control button to highlight GEOM and press the center of the control button again.
The GEOMETRY menu appears on the screen.

3 First move the control button ↓/↑ to select the desired adjustment item. Then move the control button ←/→ to make the adjustment.

Select	To
	rotate the picture
	expand or contract the picture sides
	shift the picture sides to the left or right
	adjust the picture width at the top of the screen
	shift the picture to the left or right at the top of the screen

Adjusting the color of the picture (COLOR)

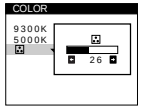
The COLOR settings allow you to adjust the picture's color temperature by changing the color level of the white color field. Colors appear reddish if the temperature is low, and bluish if the temperature is high. This adjustment is useful for matching the monitor's colors to a printed picture's colors.
This setting is stored in memory for all input signals.

1 Press the center of the control button.
The main MENU appears on the screen.

2 Move the control button to highlight COLOR and press the center of the control button again.
The COLOR menu appears on the screen.

3 Move the control button ↓/↑ to select a color temperature.
The preset color temperatures are 5000K and 9300K. Since the default setting is 9300K, the whites will change from a bluish hue to a reddish hue as the temperature is lowered to 5000K.

4 If necessary, fine tune the color temperature.
You can select your own color temperature between 9300K and 5000K.
First move the control button ↓/↑ to select . Then move the control button ←/→ to adjust the color temperature.



Adjusting the convergence (CONV)

The CONV settings allow you to adjust the quality of the picture by controlling the convergence. The convergence refers to the alignment of the red, green, and blue color signals.
If you see red or blue shadows around letters or lines, adjust the convergence.
These settings are stored in memory for all input signals.

1 Press the center of the control button.
The main MENU appears on the screen.

2 Move the control button to highlight CONV and press the center of the control button again.
The CONVERGENCE menu appears on the screen.

3 First move the control button ↓/↑ to select for horizontal adjustment, or for vertical adjustment. Then move the control button ←/→ to adjust the convergence.

Additional settings (OPTION)

You can manually degauss (demagnetize) the monitor, adjust the moire cancellation level, change the menu position, and lock the controls.

1 Press the center of the control button.
The main MENU appears on the screen.

2 Move the control button to highlight OPTION and press the center of the control button again.
The OPTION menu appears on the screen.

3 Move the control button ↓/↑ to select the desired adjustment item.
Adjust the selected item according to the following instructions.

Degaussing the screen

The monitor is automatically demagnetized (degaussed) when the power is turned on.
To manually degauss the monitor, first move the control button ↓/↑ to select (DEGAUSS). Then move the control button →.
The screen is degaussed for about 5 seconds. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result.

Adjusting the moire*

If elliptical or wavy patterns appear on the screen, adjust the moire cancellation level.
To adjust the amount of moire cancellation, first move the control button ↓/↑ to select (MOIRE ADJUST). Then move the control button ←/→ until the moire effect is at a minimum.

* Moire is a type of natural interference which produces soft, wavy lines on your screen. It may appear due to interference between the pattern of the picture on the screen and the phosphor pitch pattern of the monitor.

Example of moire

Changing the menu's position

Change the menu's position if it is blocking an image on the screen.
To change the menu's on-screen position, first move the control button ↓/↑ to select (OSD H POSITION) for horizontal adjustment, or (OSD V POSITION) for vertical adjustment. Then move the control button ←/→ to shift the on-screen menu.

Locking the controls

To protect adjustment data by locking the controls, first move the control button ↓/↑ to select (CONTROL LOCK). Then move the control button →, to select ON.
Only the (power) switch, EXIT, and (CONTROL LOCK) of the OPTION menu will operate. If any other items are selected, the mark appears on the screen.

To cancel the control lock
Repeat the procedure above and set (CONTROL LOCK) to OFF.

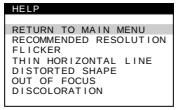
GB

Helpful hints and information (HELP)

The HELP menu contains helpful hints and information about this monitor. If your monitor is displaying symptoms that match those listed in the HELP menu, follow the on-screen instructions to resolve the problem. If the symptoms do not match those listed in the HELP menu or if the problem persists, see "Trouble symptoms and remedies" on page 14.

1 Press the center of the control button.
The main MENU appears on the screen.

2 Move the control button to highlight ? HELP and press the center of the control button again.
The following HELP menu appears on the screen.



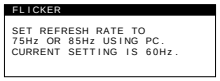
3 Move the control button ↓/↑ to select a HELP menu item and press the center of the control button again.
Instructions or information to resolve the problem appears on the screen. An explanation of each menu item is given below.

RECOMMENDED RESOLUTION

If the picture does not fill the screen to the edges or if the picture appears too large for the screen, adjust the resolution to the figures shown in the menu using your computer. If the input signal matches one of this monitor's factory preset modes, the resolution and refresh rate of the current input signal are displayed.

FLICKER

If the picture is flickering, adjust the refresh rate to figures shown in the menu. If the input signal matches one of this monitor's factory preset modes, the refresh rate of the current input signal is displayed.



THIN HORIZONTAL LINE

The lines that appear on your screen are damper wires. See page 13 for more information about the damper wires.

DISTORTED SHAPE

If the shape of the picture on the screen seems distorted, try adjusting the picture's geometry. Move the control button ➡ to jump directly to the GEOMETRY menu.

OUT OF FOCUS

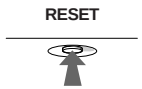
The picture may seem to be out of focus when the red and blue color signals are not aligned properly, causing red or blue shadows to appear around letters and lines. Try adjusting the picture's convergence to make the shadows disappear. Move the control button ➡ to jump directly to the CONVERGENCE menu. When the CONVERGNECE menu is displayed, the contrast, brightness and moire adjustment settings are automatically reset for all input signals.

DISCOLORATION

If the picture's color appears abnormal in certain areas of the screen, first check for any loose signal cables. After you have checked the cables, try degaussing (demagnetizing) the screen manually. Move the control button ➡ to jump directly to the OPTION menu, then select (DEGAUSS).

Resetting the adjustments

This monitor has the following three reset methods. Use the RESET button to reset the adjustments.



Resetting a single adjustment item

Use the control button to select the adjustment item you want to reset, and press the RESET button.

Resetting all of the adjustment data for the current input signal

Press the RESET button when no menu is displayed on the screen. Note that the following items are not reset by this method:

- on-screen menu language (page 7)
- on-screen menu position (page 11)
- control lock (page 11)

Resetting all of the adjustment data for all input signals

Press and hold the RESET button for more than two seconds.

Note
The RESET button does not function when (CONTROL LOCK) is set to ON.

Technical Features

Preset and user modes

When the monitor receives an input signal, it automatically matches the signal to one of the factory preset modes stored in the monitor's memory to provide a high quality picture at the center of the screen. (See Appendix for a list of the factory preset modes.) For input signals that do not match one of the factory preset modes, the digital Multiscan technology of this monitor ensures that a clear picture appears on the screen for any timing in the monitor's frequency range (horizontal: 30 – 85 kHz, vertical: 48 – 120 Hz). If the picture is adjusted, the adjustment data is stored as a user mode and automatically recalled whenever the same input signal is received.

Note for Windows users

For Windows users, check your video board manual or the utility program which comes with your graphic board and select the highest available refresh rate to maximize monitor performance.

Power saving function

This monitor meets the power-saving guidelines set by VESA, ENERGY STAR, and NUTEK. If the monitor is connected to a computer or video graphics board that is DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown below.

Power mode	Power consumption	(power) indicator
normal operation	≤ 120 W	green
1 standby	≤ 15 W	green and orange alternate
2 suspend (sleep)*	≤ 15 W	green and orange alternate
3 active off** (deep sleep)*	≤ 3 W	orange
power off	0 W	off

* "Sleep" and "deep sleep" are power saving modes defined by the Environmental Protection Agency.

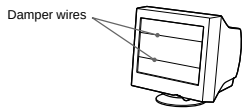
** When your computer is in a power saving mode, MONITOR IS IN POWER SAVE MODE appears on the screen if you press any button on the monitor. After a few seconds, the monitor enters the power saving mode again.

Troubleshooting

Before contacting technical support, refer to this section.

If thin lines appear on your screen (damper wires)

The lines you are experiencing on your screen are normal for the Trinitron monitor and are not a malfunction. These are shadows from the damper wires used to stabilize the aperture grille and are most noticeable when the screen's background is light (usually white). The aperture grille is the essential element that makes a Trinitron picture tube unique by allowing more light to reach the screen, resulting in a brighter, more detailed picture.



On-screen messages

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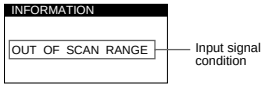
If no picture appears on the screen, one of the following messages appears on the screen. To solve the problem, see "Trouble symptoms and remedies" on page 14.



The input signal condition
OUT OF SCAN RANGE
indicates that the input signal is not supported by the monitor's specifications.
NO INPUT SIGNAL
indicates that no signal is input.
MONITOR IS IN POWER SAVE MODE
indicates that the computer is in power saving mode. This message is displayed only when your computer is in a power saving mode and you press any one of the buttons on the monitor.

Trouble symptoms and remedies

If the problem is caused by the connected computer or other equipment, please refer to the connected equipment's instruction manual. Use the self-diagnosis function (page 16) if the following recommendations do not resolve the problem.

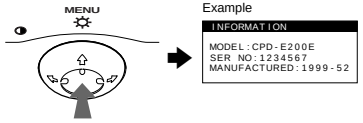
Symptom	Check these items
No picture	
If the ⏻ (power) indicator is not lit	• Check that the power cord is properly connected. • Check that the ⏻ (power) switch is in the "on" position.
If the NO INPUT SIGNAL message appears on the screen, or if the ⏻ (power) indicator is either orange or alternating between green and orange	• Check that the video signal cable is properly connected and all plugs are firmly seated in their sockets (page 6). • Check that the HD15 video input connector's pins are not bent or pushed in. **■Problems caused by the connected computer or other equipment** • Check that the computer's power is "on." • Check that the graphic board is completely seated in the proper bus slot.
If the MONITOR IS IN POWER SAVE MODE message appeared on the screen, or if the ⏻ (power) indicator is either orange or alternating between green and orange	**■Problems caused by the connected computer or other equipment** • The computer is in power saving mode. Try pressing any key on the computer keyboard. • Check that the computer's power is "on." • Check that the graphic board is completely seated in the proper bus slot.
If the OUT OF SCAN RANGE message appears on the screen	**■Problems caused by the connected computer or other equipment** • Check that the video frequency range is within that specified for the monitor. If you replaced an old monitor with this monitor, reconnect the old monitor and adjust the frequency range to the following. Horizontal: 30 – 85 kHz Vertical: 48 – 120 Hz
If no message is displayed and the ⏻ (power) indicator is green or flashing orange	• Use the Self-diagnosis function (page 16).
If using Windows 95/98	• If you replaced an old monitor with this monitor, reconnect the old monitor and do the following. Install the Windows Monitor Information Disk (page 7) and select this monitor ("CPD-E200E") from among the Sony monitors in the Windows 95/98 monitor selection screen.
If using a Macintosh system	• Check that the Macintosh adapter (not supplied) and the video signal cable are properly connected (page 6).
Picture flickers, bounces, oscillates, or is scrambled	• Isolate and eliminate any potential sources of electric or magnetic fields such as other monitors, laser printers, electric fans, fluorescent lighting, or televisions. • Move the monitor away from power lines or place a magnetic shield near the monitor. • Try plugging the monitor into a different AC outlet, preferably on a different circuit. • Try turning the monitor 90° to the left or right. **■Problems caused by the connected computer or other equipment** • Check your graphics board manual for the proper monitor setting. • Confirm that the graphics mode (VESA, Macintosh 16" Color, etc.) and the frequency of the input signal are supported by this monitor (Appendix). Even if the frequency is within the proper range, some video boards may have a sync pulse that is too narrow for the monitor to sync correctly. • Adjust the computer's refresh rate (vertical frequency) to obtain the best possible picture.
Picture is fuzzy	• Adjust the brightness and contrast (page 9). • Degauss the monitor* (page 11). • Select MOIRE ADJUST and adjust the moire cancellation effect (page 11).

Symptom	Check these items
Picture is ghosting	• Eliminate the use of video cable extensions and/or video switch boxes. • Check that all plugs are firmly seated in their sockets.
Picture is not centered or sized properly	• Adjust the size (page 9) or centering (page 9). Note that some video modes do not fill the screen to the edges.
Edges of the image are curved	• Adjust the geometry (page 10).
Wavy or elliptical pattern (moire) is visible	• Select MOIRE ADJUST and adjust the moire cancellation effect (page 11). **■Problems caused by the connected computer or other equipment** • Change your desktop pattern.
Color is not uniform	• Degauss the monitor* (page 11). If you place equipment that generates a magnetic field, such as a speaker, near the monitor, or if you change the direction the monitor faces, color may lose uniformity.
White does not look white	• Adjust the color temperature (page 10).
Letters and lines show red or blue shadows at the edges	• Adjust the convergence (page 10).
Monitor buttons do not operate	• If the control lock is set to ON, set it to OFF (page 11).
A hum is heard right after the power is turned on	• This is the sound of the auto-degauss cycle. When the power is turned on, the monitor is automatically degaussed for five seconds.

* If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result. A humming noise may be heard, but this is not a malfunction.

Displaying this monitor's name, serial number, and date of manufacture.

While the monitor is receiving a video signal, press and hold the center of the control button for more than five seconds to display this monitor's information box.



If the problem persists, call your authorized Sony dealer and give the following information.

- Model name: CPD-E200E
- Serial number
- Name and specifications of your computer and graphics board.

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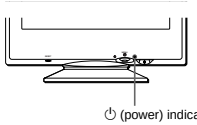
Self-diagnosis function

This monitor is equipped with a self-diagnosis function. If there is a problem with your monitor or computer, the screen will go blank and the ⏻ (power) indicator will either light up green or flash orange. If the ⏻ (power) indicator is lit in orange, the computer is in power saving mode. Try pressing any key on the keyboard.

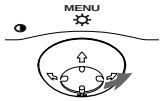


If the ⏻ (power) indicator is green

1 Disconnect the video input cable or turn off the connected computer.

2 Press the ⏻ (power) button twice to turn the monitor off and then on.

3 Move the control button ➡ for 2 seconds before the monitor enters power saving mode.



If all four color bars appear (white, red, green, blue), the monitor is working properly. Reconnect the video input cable and check the condition of your computer.

If the color bars do not appear, there is a potential monitor failure. Inform your authorized Sony dealer of the monitor's condition.

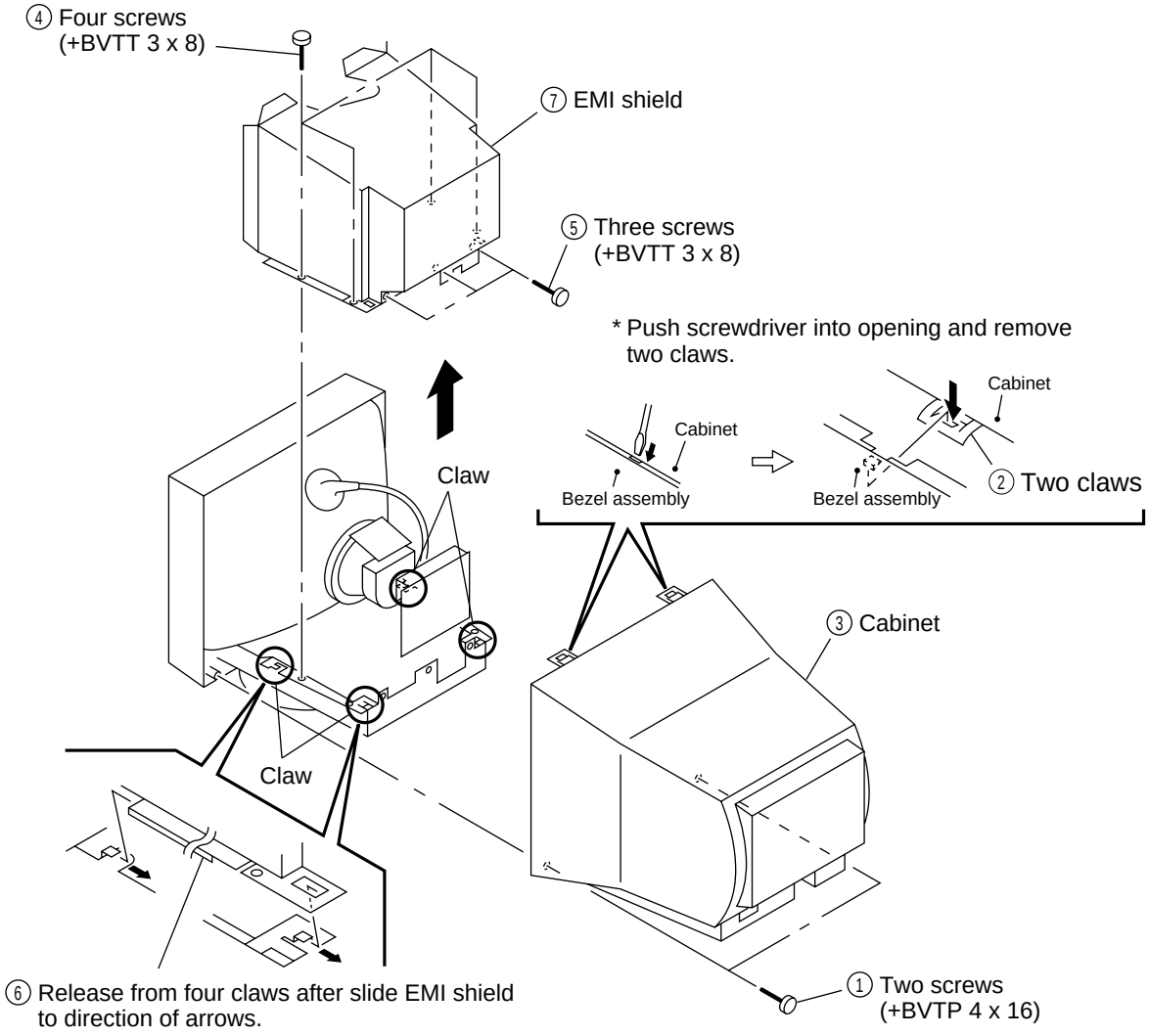
If the ⏻ (power) indicator is flashing orange

Press the ⏻ (power) button twice to turn the monitor off and then on.
If the ⏻ (power) indicator lights up green, the monitor is working properly.

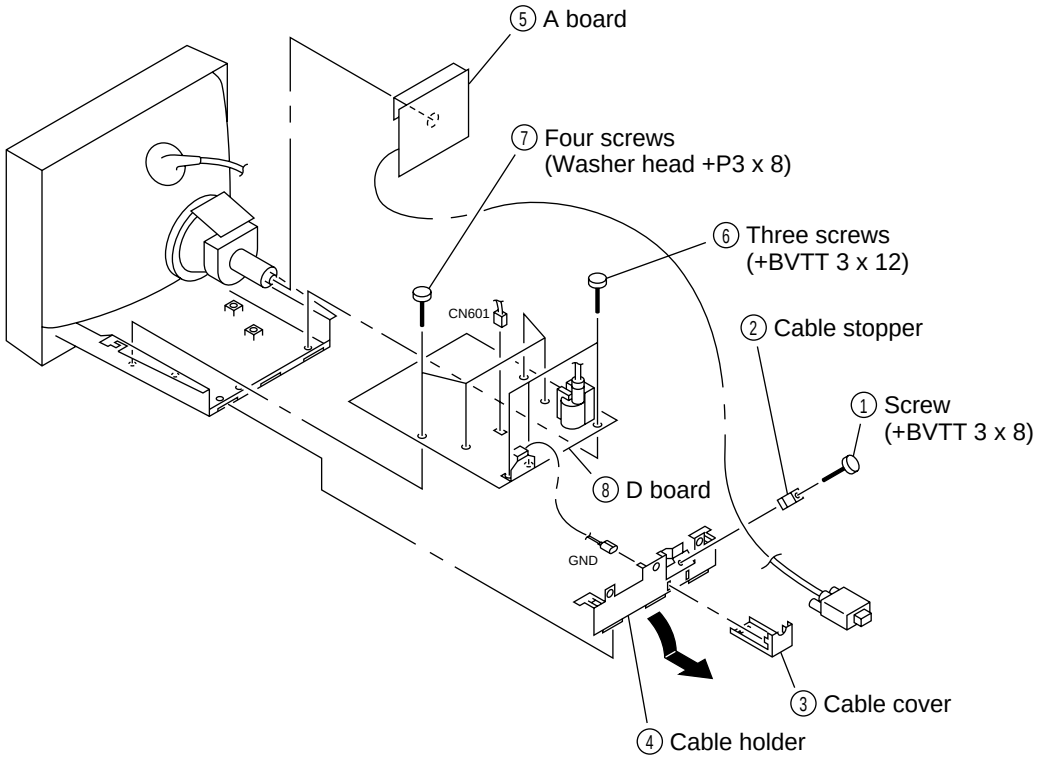
If the ⏻ (power) indicator is still flashing, there is a potential monitor failure. Count the number of seconds between orange flashes of the ⏻ (power) indicator and inform your authorized Sony dealer of the monitor's condition. Be sure to note the model name and serial number of your monitor. Also note the make and model of your computer and video board.

SECTION 2
DISASSEMBLY

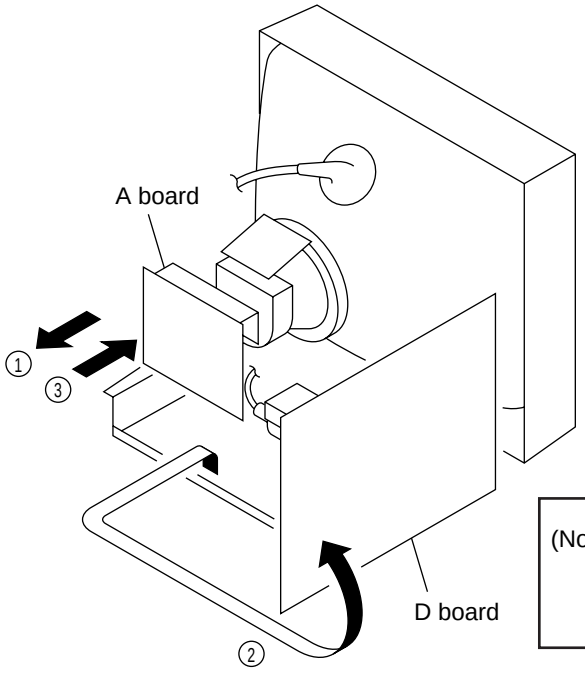
2-1. CABINET, EMI SHIELD REMOVAL



2-2. A AND D BOARDS REMOVAL

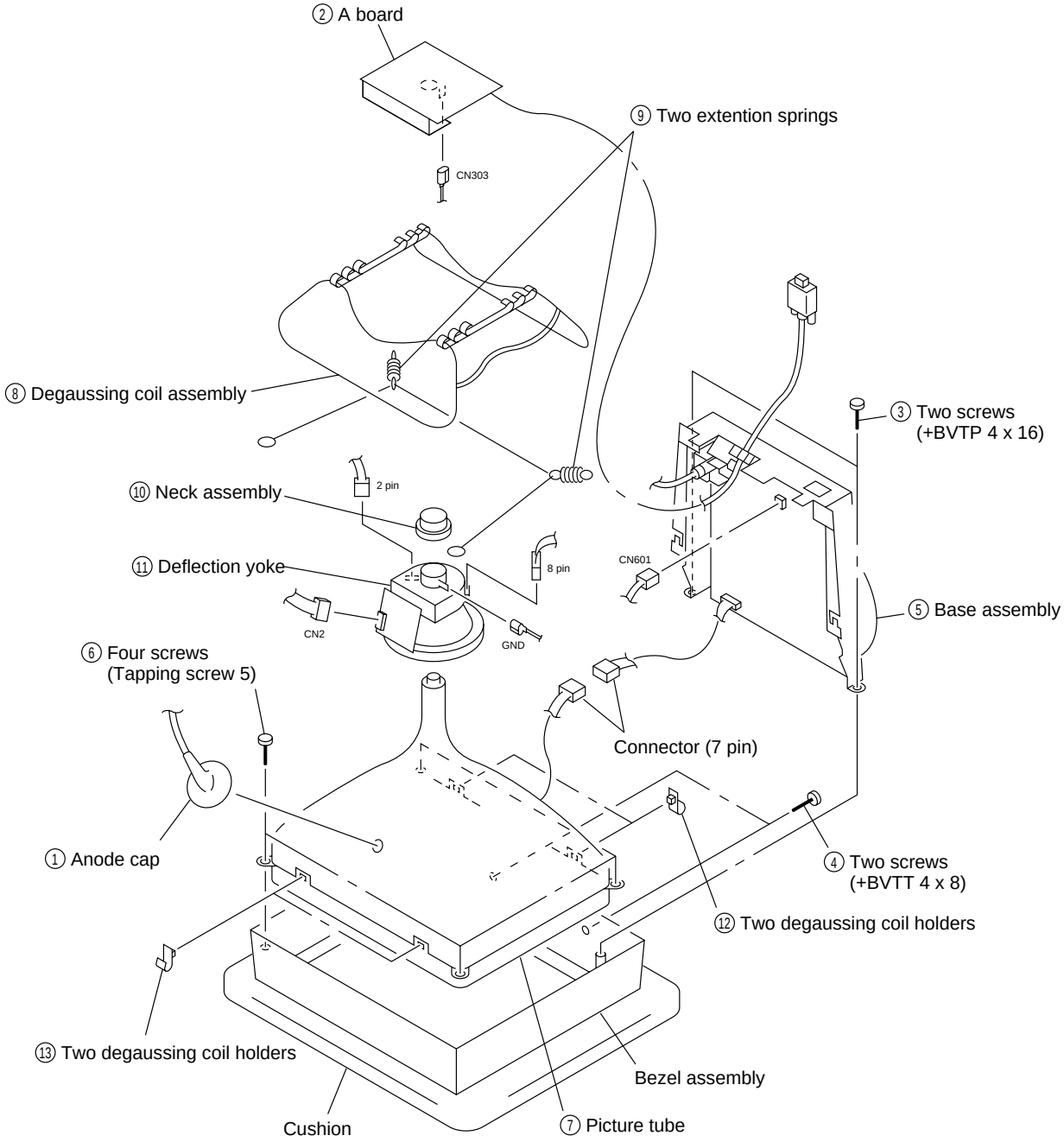


2-3. SERVICE POSITION



(Note) The electric potential of heat sink of IC401 is not GND. So please do not touch it absolutely to the base chassis and etc., which make an ultimate cause of the bad movement or break.

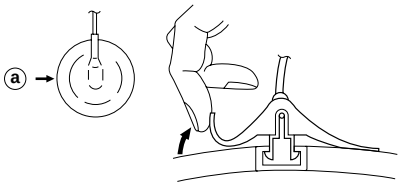
2-4. PICTURE TUBE REMOVAL



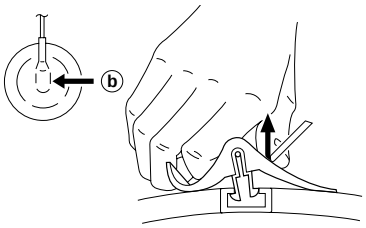
• REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon painted on the CRT, after removing the anode.

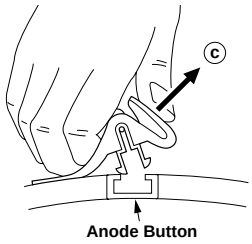
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



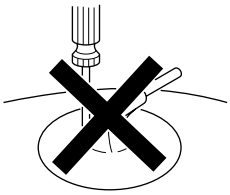
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.

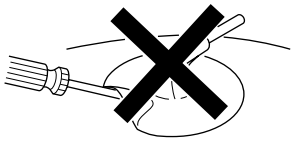


③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

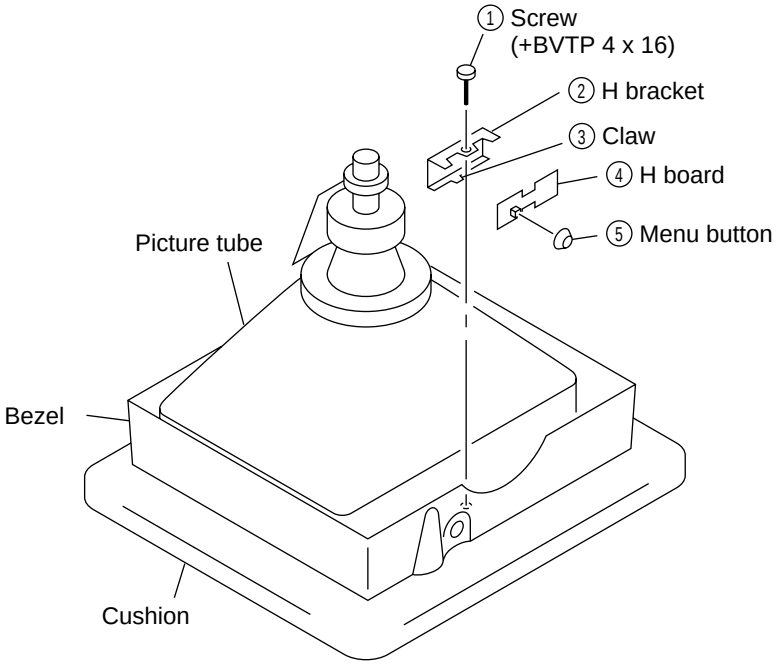
• HOW TO HANDLE AN ANODE-CAP

① Don't scratch the surface of anode-caps with shartp shaped material!
② Don't press the rubber hardly not to damege inside of anode-caps! A material fitting called as shatter-hook terminal is built in the rubber.
③ Don't turn the foot of rubber over hardly! The shatter-hook terminal will stick out or damage the rubber.





2-5. H BOARD REMOVAL



SECTION 3
SAFETY RELATED ADJUSTMENT

When replacing or repairing the shown below table, the following operational checks must be performed as a safety precaution against X-rays emissions from the unit.

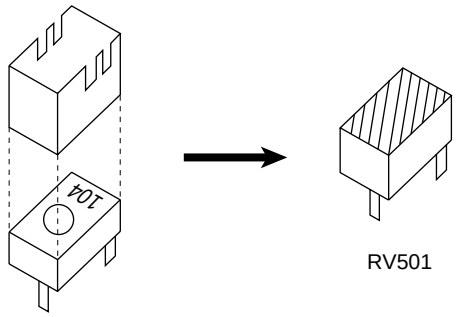
	Part Replaced (⧓)
HV ADJ	RV501

	Part Replaced (◪)
HV Regulator Circuit Check	D board IC501, C532, C534, C539, C553, C554, C555, C556, C558, C561, R541, R542, R544, R564, R567, R568, RV501, T501 (FBT)
HV Protector Circuit Check	D board IC607, IC901, D515, D517, C540, C542, C544, R510, R543 R547, R549, R552, R595, T501 (FBT)
Beam Current Protector Circuit Check	D board IC605, IC607, IC901, C535, C541, R545, R546, R548, R550, R596, R934, T501 (FBT)

* Confirm one minute later turning on the power.

- **HV Regulator Check**

1) Input cross hatch signal (white lines on black).
   : fH = 69.0kHz
2) CONT maximum and BRT center.
3) Cut off Screen VR (G2).
4) Input voltage : 120 ± 2 VAC
5) Confirm that the voltage is within the voltage range shown below.
   Standard voltage : 27.0kV ± 0.2kV DC
6) When replacing components identified by ◪ , make sure to recheck the High Voltage.
7) Verify the High Voltage as shown above (27.0 kV ± 0.2kV) is within specification. If not, set H. SIZE data at minimum (-127) and then adjust RV501 on "D" Board.
8) After adjusting the High Voltage within specification, put the RV cover on RV501 as shown below and apply sufficient amount of RTV around RV501.



- **HV Protector Circuit Check**

Using an external DC Power Supply, apply the voltage shown below between cathode of D517 on D board and GND, and confirm that the HV HOLD DOWN circuite works. (TV Raster disappears)
Standard voltage : 35.80 ±0.01 V DC

Check Condition
- Input voltage : 120 ± 2 V AC
- Input signal : White cross hatch at 69.0kHz
- Beam control : CONT : min, BRT : min

- **Beam Current Protector Check**

An ammeter in series between FBT pin ⑪ on D board and GND, then, decrease gradually the resistance of the variable resistor from maximum to minimum, and confirm that the Beam Current Protector Circuite works (TV Raster disappears). The current must be within the range shown below.
- Standard current : 1.55 $^{+0.00}_{-0.10}$ mA

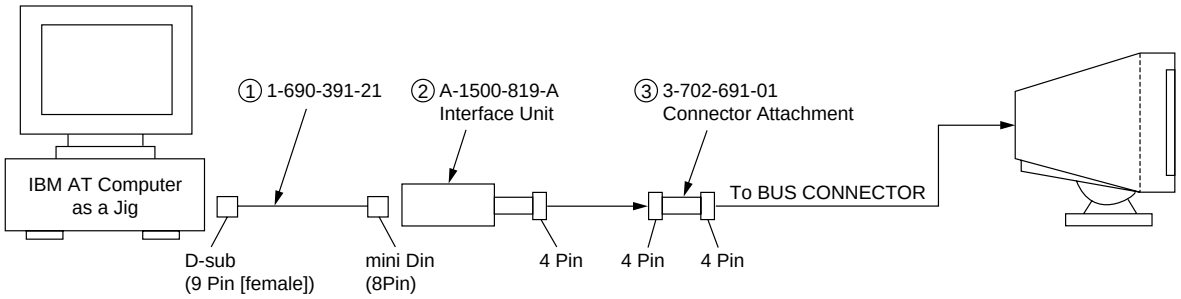
Check Condition
- Input voltage : 120 ± 2 V AC
- Input signal : White cross hatch at 31.0kHz
- Beam control : CONT : min, BRT : min

- **B+ Voltage Check**

Standard voltage : 179.0 ± 3.0 V DC
Check Condition
- Input voltage : 120 ± 2V AC
  Note : Use NF power supply or make sure that distortion factor is 3% or less.
- Input signal : White cross hatch at 69.0 kHz
- Beam control : CONT : max, BRT : center

SECTION 4
ADJUSTMENTS

Connect the communication cable of the computer to the connector located on the D board on the monitor. Run the service software and then follow the instruction.



*The parts above (①~③) are necessary for DAS adjustment.

- **Landing Rough Adjustment**

1. Enter the full white signal. (or the full black dots signal)
2. Set the contrast to "CONT"=MAX.
3. Make the screen monogreen.

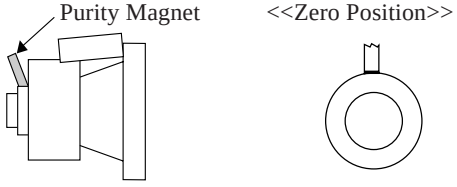
Note: Off the outputs from R ch and B ch of SG.

4. Reverse the DY, and adjust coarsely the purity magnet so that a green raster positions in the center of screen.
5. Moving the DY forward, adjust so that an entire screen becomes monogreen.
6. Adjust the tilt of DY, and fix lightly with a clamp.

Note: "TILT" shall be set at 0

- **Landing Fine Adjustment**

1. Put the set inside the Helmholtz coil.
2. Input the single green signal.
3. Demagnetize the CRT surface with the hand degausser , and perform auto degaussing.
4. Attach the wobbling coil to the designated part of the CRT neck.
5. Attach the sensor of the landing adjustment unit on the CRT surface.



Purity magnet position

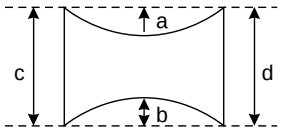
L/D control specification

± 5	± 7	± 5
± 5	± 7	± 5
± 5	± 7	± 5

6. Adjust the DY position and purity, and the DY tilt.
7. Fasten DY with screw.

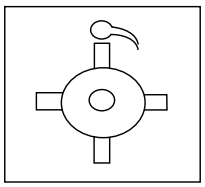
Note: Torque 22 ±2kgcm (2.2 ± 0.2 Nm)

8. Adjust each top and bottom pins by two wedges and then not swing DY neck right and left. Adjust H. Trap to become horizontal trapezoid(c = d).
   (When fixing DY with wedges, insert wedges completely so that the DY does not shake.)



"a" and "b" must be equal, and "c" and "d" must be equal.

<How to drive in wedges>



9. If the L/D is not within the standards adjust purity magnet and in front and behind of DY to satisfy L/D adjustment standards. If the corner is not within the standards, adjust disc magnet to satisfy L/D adjustment standards.

Note:

(1) When necessary to paste magnets more than 2 pieces, be careful that the convergence and the distortion would be alterable.
(2) Paste within 80 to 120 mm from the DY on the diagonal line of the magnet.

10. If using the magnet, be sure to demagnetize with the degausser and check.
11. Remove the sensor and wobbling coil.
12. Check that the DY is not tilting.

- **Convergence Rough Adjustment**

1. Enter the white crosshatch signal (white lines on black).
2. Adjust roughly the horizontal and vertical convergence at four-pole magnet.
3. Adjust roughly HMC and VMC at six-pole magnet.

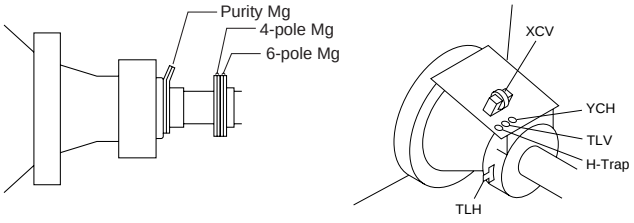
- **Convergence Adjustment**

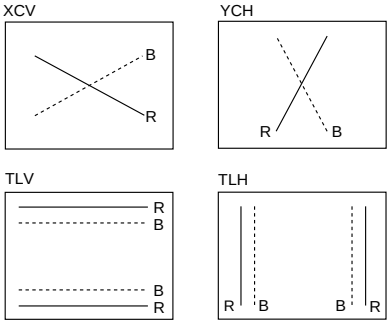
(1) Static convergence

1. Receive the crosshatch of R and B.
2. Adjust H. STAT and V. STAT by 4 pole magnet.
3. Recieve the white crosshatch signal.
4. Adjust HMC and VMC by 6 pole magnet.
5. Recieve the crosshatch of R and B.

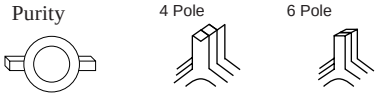
Note: Adjust H. STAT and V. STAT in the beggining by 4 pole magnet not adjuust them by register immediately.

6. Insert to TLH correction board and correct H. TILT.
7. Correct XCV by XCV core.
8. Correct V. TILT by TLV-VR.
9. Adjust Y cross by YCH-VR.
10. Correct to get the most suitable convergence pattern. When necessary, adjust above mentioned from step 1 to step 9 reiterate.
11. Paint lock TLH corection board, neck assy 4 and 6 pole magnet.





<<Neck Assy's Zero Position>>

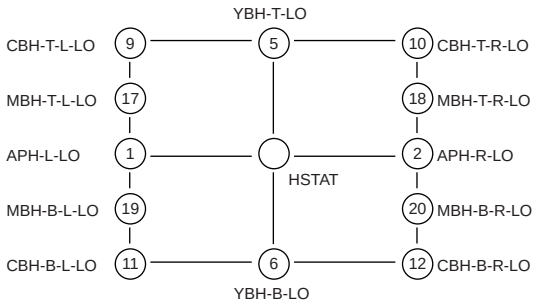


(2) Digital Convergence

Convergence (Low) Mode

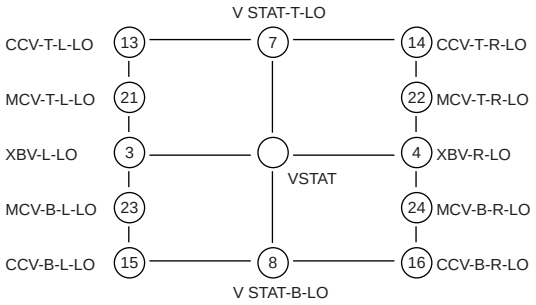
1. Adjust the H. STAT and V. STAT with "HSTAT" and "VSTAT".

A. Horizontal Convergence



Adjust each misconvergence point in sequence.

B. Vertical Convergence



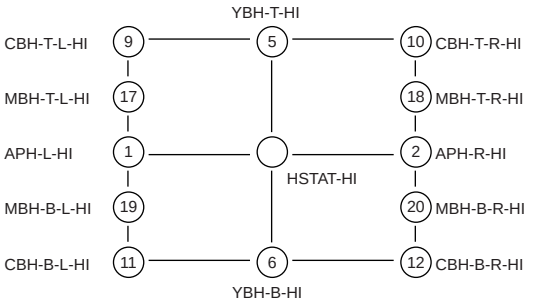
Adjust each misconvergence point in sequence.

2. Repeat the procedure of A and B so that the convergence of the entire screen is within the specification.

Convergence (Hight) Mode

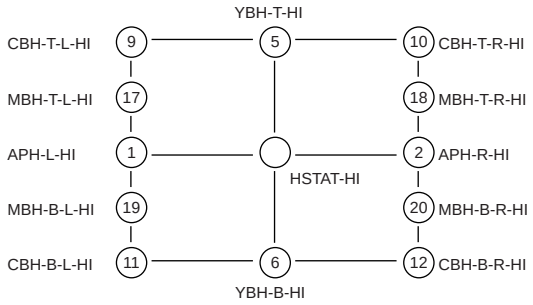
1. Adjust the H. STAT and V. STAT with "HSTAT-HI" and "VSTAT-HI".

A. Horizontal Convergence



Adjust each misconvergence point in sequence.

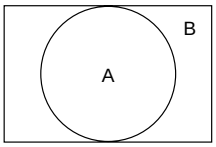
B. Vertical Convergence



Adjust each misconvergence point in sequence.

2. Repeat the procedure of A and B so that the convergence of the entire screen is within the specification.

- **Convergence Specification**

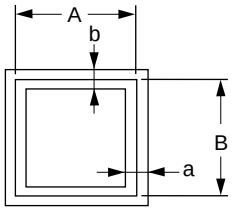


MODE	All mode
A	0.20 mm
B	0.24 mm

- **White Balance Adjustment Specification**

(1) 9300K
x = 0.283 ± 0.005
y = 0.298 ± 0.005
(2) 5000K
x = 0.346 ± 0.005
y = 0.359 ± 0.005

- **Vertical and Horizontal Position and Size Specification**

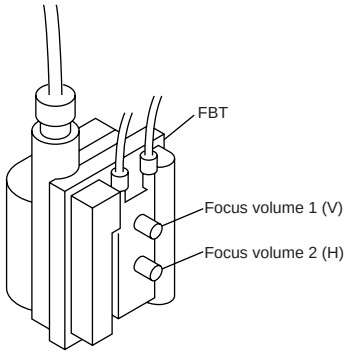


MODE	All mode
A	312 mm
B	234 mm

a ≦ 1.8 mm
b ≦ 1.8 mm

- **Focus adjustment**

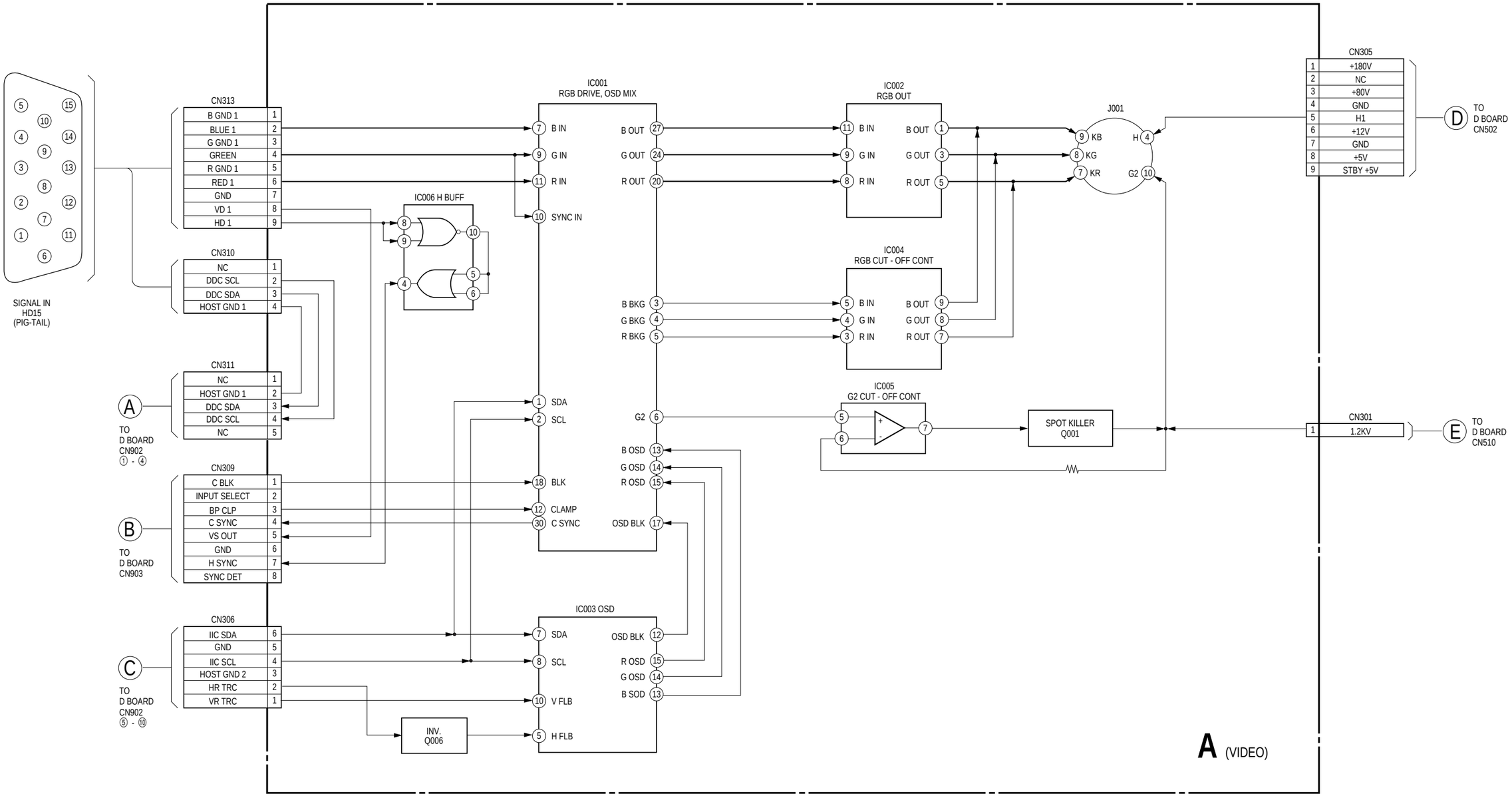
Adjust the focus volume 1 and 2 for the optimum focus.
Standard: HMC, VMC ± 0.1 mm (In the center of screen)

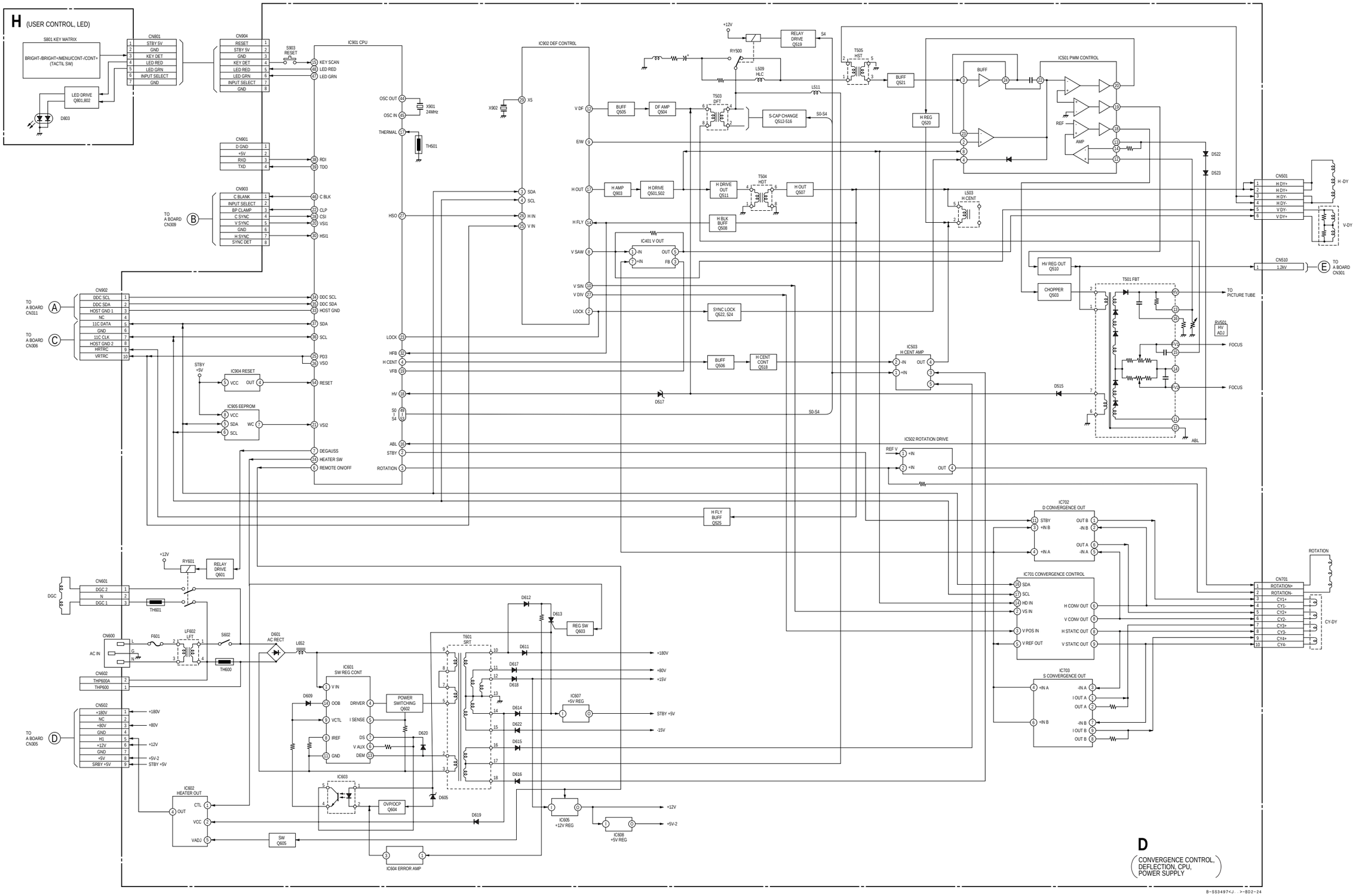


MEMO

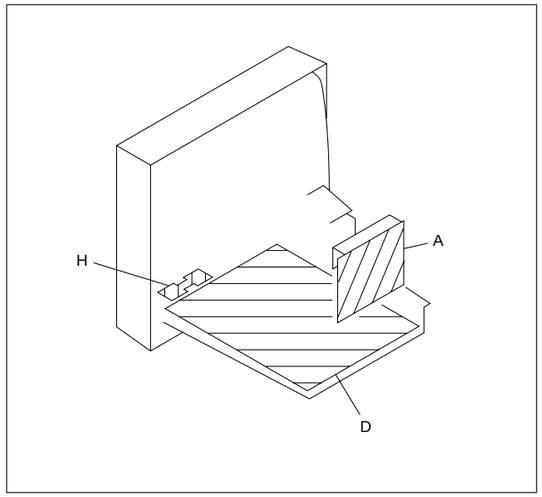
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAMS




H (USER CONTROL, LED)
S801 KEY MATRIX
BRIGHT-/BRIGHT+/MENU/CONT-/CONT+ (TACTIL SW)
LED DRIVE Q801,802
D803
CN801
STBY 5V
GND
KEY DET
LED RED
LED GRN
INPUT SELECT
GND
CN904
RESET
S903 RESET
KEY SCAN
LED RED
LED GRN
IC901 CPU
OSC OUT
OSC IN
X901 24MHz
THERMAL
TH501
CN901
D GND
+5V
RXD
TDO
RDI
CN903
C.BLANK
INPUT SELECT
BP CLAMP
C.SYNC
V SYNC
GND
H.SYNC
SYNC DET
C BLK
CLP
CSI
VSI1
HSI1
TO A BOARD CN309
HSO
CN902
DDC SCL
DDC SDA
HOST GND 1
NC
11C DATA
GND
11C CLK
HOST GND 2
HRTRC
VRTRC
TO A BOARD CN311
TO A BOARD CN306
DDC SCL
DDC SDA
HOST GND
SDA
SCL
PD3
YSO
STBY +5V
IC904 RESET
RESET
IC905 EEPROM
VCC
SDA
SCL
WC
VSI2
DEGAUSS
HEATER SW
REMOTE ON/OFF
IC902 DEF CONTROL
X902
XS
SDA
SCL
H IN
V IN
LOCK
HFB
H CENT
VFB
HV
S0 S4
ABL
STBY
ROTATION
V DF
E/W
H OUT
H FLY
V SAW
V SIN
V DIV
LOCK
BUFF Q505
DF AMP Q504
H AMP Q903
H DRIVE Q501,502
IC401 V OUT
SYNC LOCK Q522, 524
BUFF Q506
H CENT CONT Q518
D517
RELAY DRIVE Q519
RY500
L509 HLC
L511
T503 DFT
S-CAP CHANGE Q512-516
S0-S4
T504 HDT
H DRIVE OUT Q511
H OUT Q507
H BLK BUFF Q508
T505 HST
BUFF Q521
H REG Q520
IC501 PWM CONTROL
BUFF
REF
AMP
D522
D523
L503 H CENT
CN501
H DY+
H DY-
V DY-
V DY+
H -DY
V-DY
HV REG OUT Q510
CHOPPER Q503
CN510
1.2kV
TO A BOARD CN301
T501 FBT
TO PICTURE TUBE
RV501 HV ADJ
FOCUS
FOCUS
D515
ABL
IC503 H CENT AMP
IC502 ROTATION DRIVE
REF V
H FLY BUFF Q525
IC702 D CONVERGENCE OUT
STBY
OUT B
-IN B
+IN B
OUT A
-IN A
+IN A
IC701 CONVERGENCE CONTROL
SDA
SCL
H D IN
V S IN
V POS IN
V REF OUT
H CONV OUT
V CONV OUT
H STATIC OUT
V STATIC OUT
IC703 S CONVERGENCE OUT
+IN A
I OUT A
OUT A
+IN B
-IN B
I OUT B
OUT B
CN701
ROTATION+
ROTATION-
CY1+
CY1-
CY2+
CY2-
CY3+
CY3-
CY4+
CY4-
ROTATION
CY-DY
DGC
CN601
DGC 2
N
DGC 1
TH601
RY601
RELAY DRIVE Q601
+12V
CN600
AC IN
F601
LF602 LFT
S602
TH600
CN602
THP600A
THP600
D601 AC RECT
L652
CN502
+180V
NC
+80V
GND
H1
+12V
GND
+5V
SRBY +5V
TO A BOARD CN305
+180V
+80V
+12V
+5V-2
STBY +5V
IC602 HEATER OUT
CTL
VCC
VADJ
OUT
IC601 SW REG CONT
V IN
OOB
VCTL
IREF
GND
DRIVER
I SENSE
DS
V AUX
DEM
POWER SWITCHING Q602
D609
D620
IC603
OVP/OCP Q604
D605
SW Q605
IC604 ERROR AMP
T601 SRT
D612
D613
REG SW Q603
D611
D617
D618
D614
D622
D615
D616
D619
IC607 +5V REG
IC606 +12V REG
IC608 +5V REG
+180V
+80V
+15V
STBY +5V
-15V
+12V
+5V-2
D
CONVERGENCE CONTROL, DEFLECTION, CPU, POWER SUPPLY
B-SS3497<J . >-BD2-24

5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in µF unless otherwise noted. (pF: µµF) Capacitors without voltage indication are all 50 V.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4 W (CHIP : 1/10 W)

- All resistors are in ohms.
- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-ground.
- : earth-chassis.
- All voltages are in V.
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- ∗ : Can not be measured.
- Circled numbers are waveform references.
- : B + bus.
- : B – bus.
- The components identified by ⋈ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. (See page 3-1)
- When replacing the part in below table, be sure to perform the related adjustment.

	Part Replaced (⋈)
HV ADJ	RV501

	Part Replaced (◪)
HV Regulator Circuit Check	D board IC501, C532, C534, C539, C553, C554, C555, C556, C558, C561, R541, R542, R544, R564, R567, R568, RV501, T501 (FBT)
HV Protector Circuit Check	D board IC607, IC901, D515, D517, C540, C542, C544, R510, R543 R547, R549, R552, R595, T501 (FBT)
Beam Current Protector Circuit Check	D board IC605, IC607, IC901, C535, C541, R545, R546, R548, R550, R596, R934, T501 (FBT)

- Divided circuit diagram
  One sheet of D board circuit diagram is divided into four sheets, each having the code D-ⓐ to D-ⓓ . For example, the destination (ab1) on the D-ⓐ sheet is connected to (ab1) on the D-ⓑ sheet.

  a b 1 → Ref. No.
  → Circuit diagram division code

Terminal name of semiconductors in silk screen printed circuit (∗)

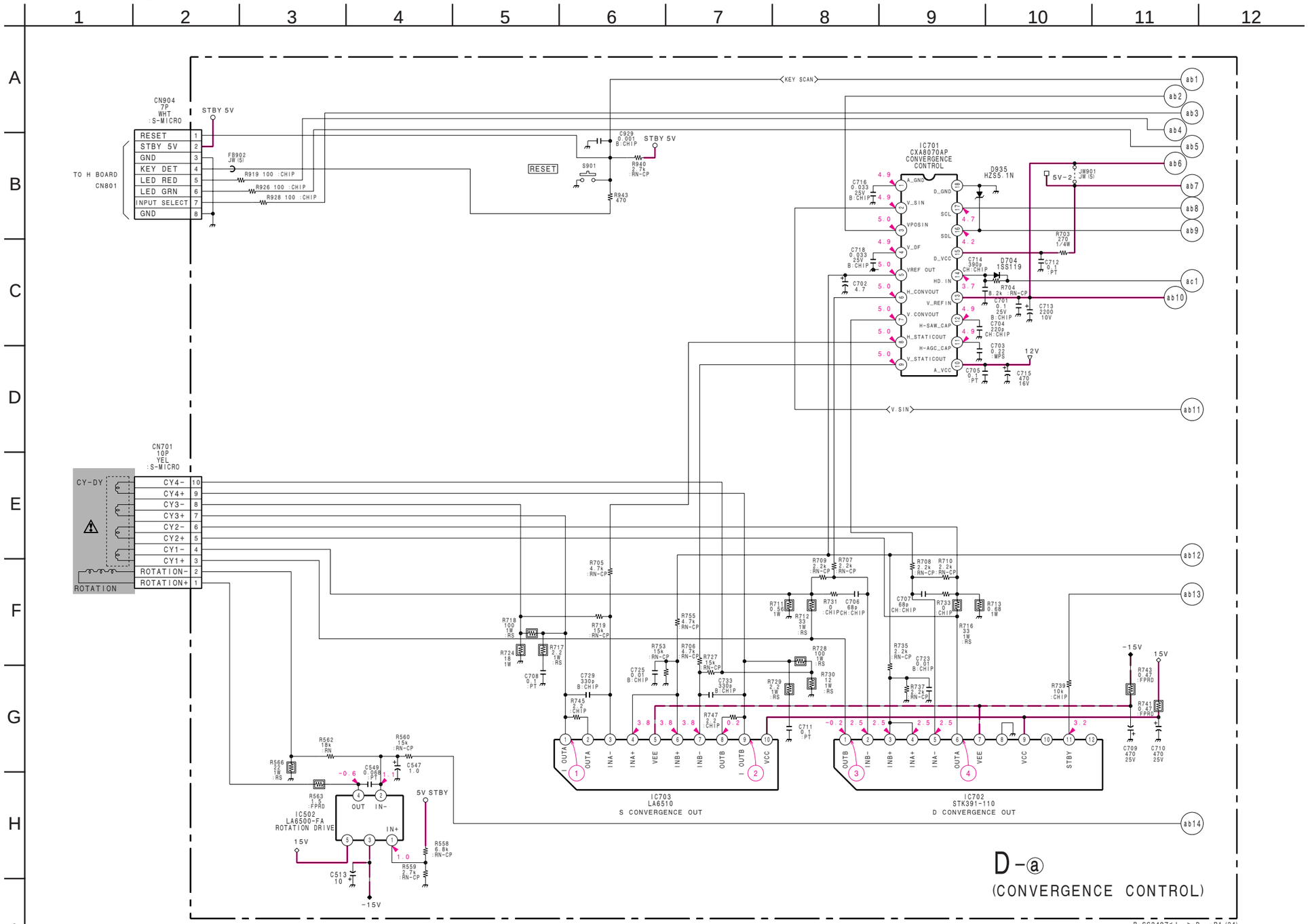
	Device	Printed symbol	Terminal name	Circuit
①	Transistor	T	Collector / Base Emitter	
②	Transistor	—	Collector / Base Emitter	
③	Diode		Cathode — Anode	
④	Diode	T	Cathode / Anode (NC)	
⑤	Diode	—	Cathode / Anode (NC)	
⑥	Diode	T	Common / Anode Cathode	
⑦	Diode	—	Common / Anode Cathode	
⑧	Diode	T	Common / Anode Anode	
⑨	Diode	—	Common / Anode Anode	
⑩	Diode	T	Common / Cathode Cathode	
⑪	Diode	—	Common / Cathode Cathode	
⑫	Diode	|	Anode Anode Cathode / Cathode Anode Anode	
⑬	Transistor (FET)	|	Drain / Source Gate	
⑭	Transistor (FET)	⊢	Drain / Source Gate	
⑮	Transistor (FET)	|	□ Source □ Drain □ Gate	
⑯	Transistor	|	□ Emitter □ Collector □ Base	
–	Discrete semiconductot			

(Chip semiconductors that are not actually used are included.)

Ver.1.6

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

(1) Schematic Diagram of D (ⓐ-ⓓ) Boards



- Divided circuit diagram
  One sheet of D board circuit diagram is divided into four sheets, each having the code D-ⓐ to D-ⓓ. For example, the destination (ab1) on the D-ⓐ sheet is connected to (ab1) on the D-ⓑ sheet.

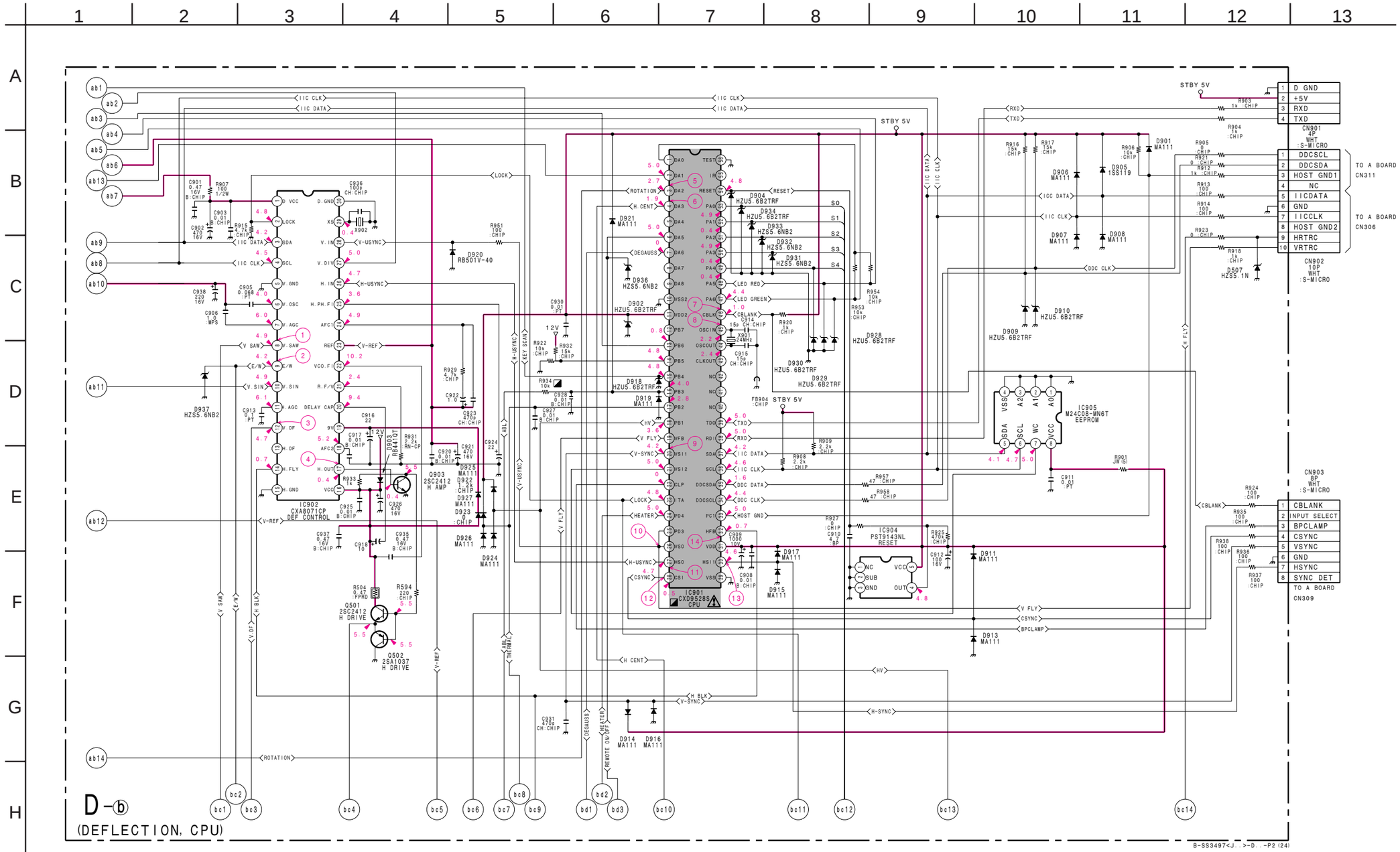
a b 1
- 1 — Ref. No.
- a b — Circuit diagram division code

Schematic diagram

D -ⓐ board ➡

- **D - ⓐ BOARD WAVEFORMS**

①	②	③	④
0.1 Vp-p (V)	0.16 Vp-p (V)	2.4Vp-p (V)	2.0 Vp-p (V)

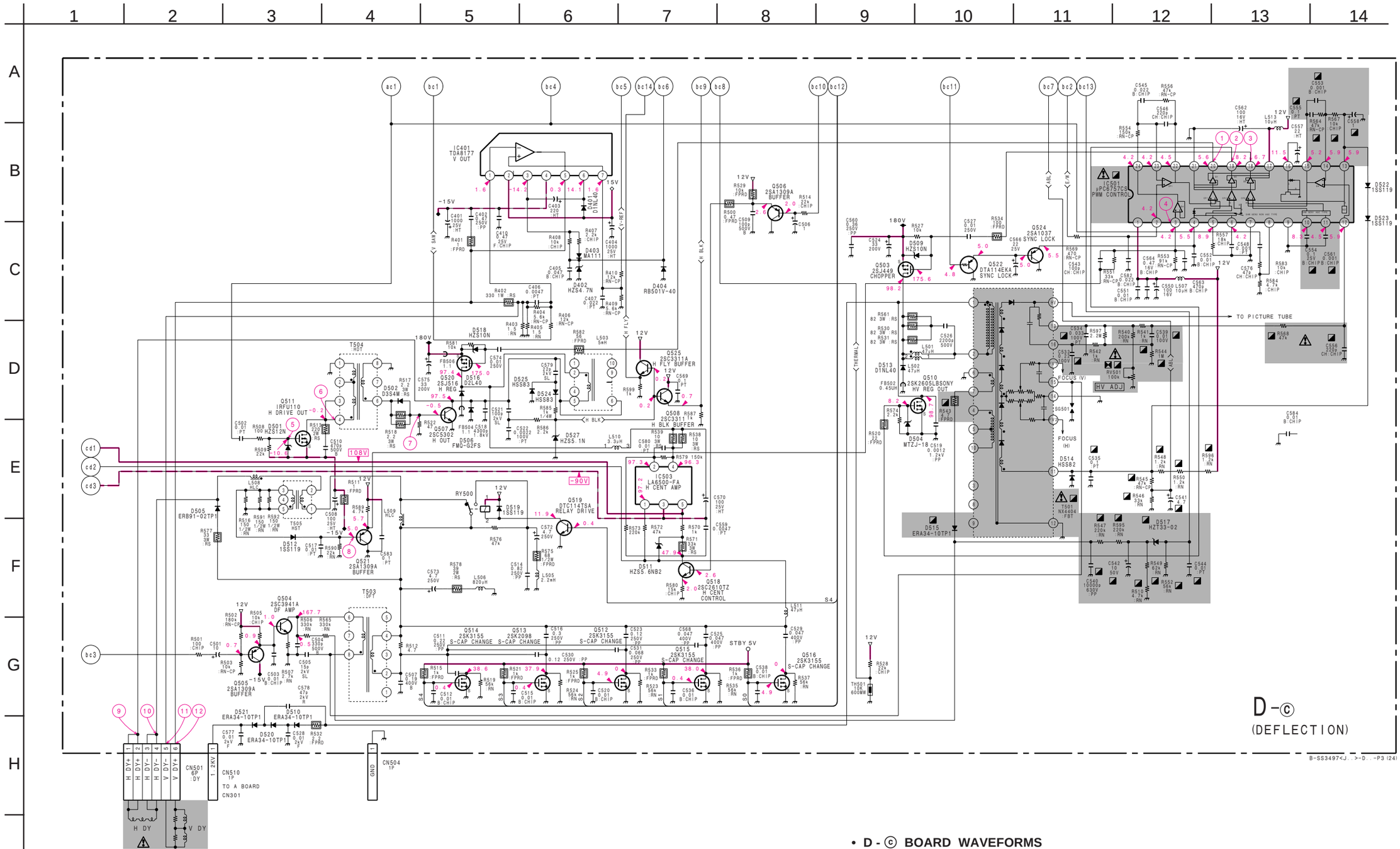


- Divided circuit diagram
  One sheet of D board circuit diagram is divided into four sheets, each having the code D-ⓐ to D-ⓓ . For example, the destination ab1 on the D-ⓐ sheet is connected to ab1 on the D-ⓑ sheet.

  a b 1
  - 1 → Ref. No.
  - a b → Circuit diagram division code

- **D - ⓑ BOARD WAVEFORMS**

① 2.6 Vp-p (V)	② 0.3 Vp-p (V)	③ 1.0 Vp-p (V)	④ 0.7 Vp-p (H)	⑤ 5.0 Vp-p (H)	⑥ 5.0 Vp-p (H)	⑦ 4.0 Vp-p (H)
⑧ 3.2 Vp-p (24MHz)	⑨ 4.0 Vp-p (V)	⑩ 5.0 Vp-p (V)	⑪ 5.0 Vp-p (H)	⑫ 4.0 Vp-p (H)	⑬ 5.0 Vp-p (H)	⑭ 4.6 Vp-p (H)



- Divided circuit diagram
  One sheet of D board circuit diagram is divided into four sheets, each having the code D-ⓐ to D-ⓓ . For example, the destination (ab1) on the D-ⓐ sheet is connected to (ab1) on the D-ⓑ sheet.

  a b 1
  - 1 — Ref. No.
  - a b — Circuit diagram division code

Schematic diagram

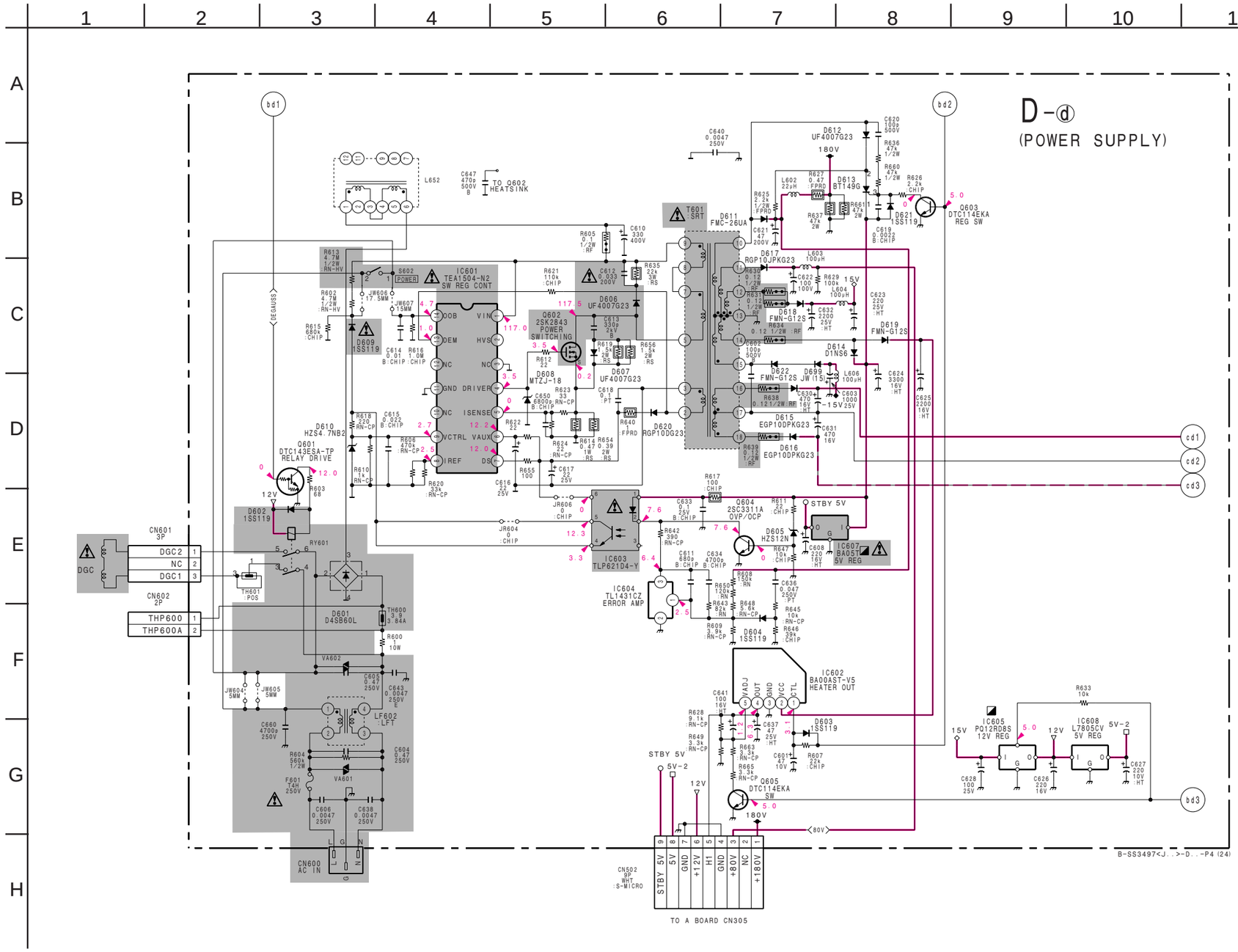
⬅ **D -ⓑ board**

Schematic diagram

D -ⓒ board ➡

- **D - ⓒ BOARD WAVEFORMS**

① 10.0 Vp-p (H)	② 14.0 Vp-p (H)	③ 12.0 Vp-p (H)	④ 0.3 Vp-p (V)	⑤ 10.0 Vp-p (H)	⑥ 28.0 Vp-p (H)
⑦ 13.0 Vp-p (H)	⑧ 0.7 Vp-p (V)	⑨ 1000 Vp-p (H)	⑩ 60.0 Vp-p (H)	⑪ 1.4 Vp-p (V)	⑫ 60.0 Vp-p (V)

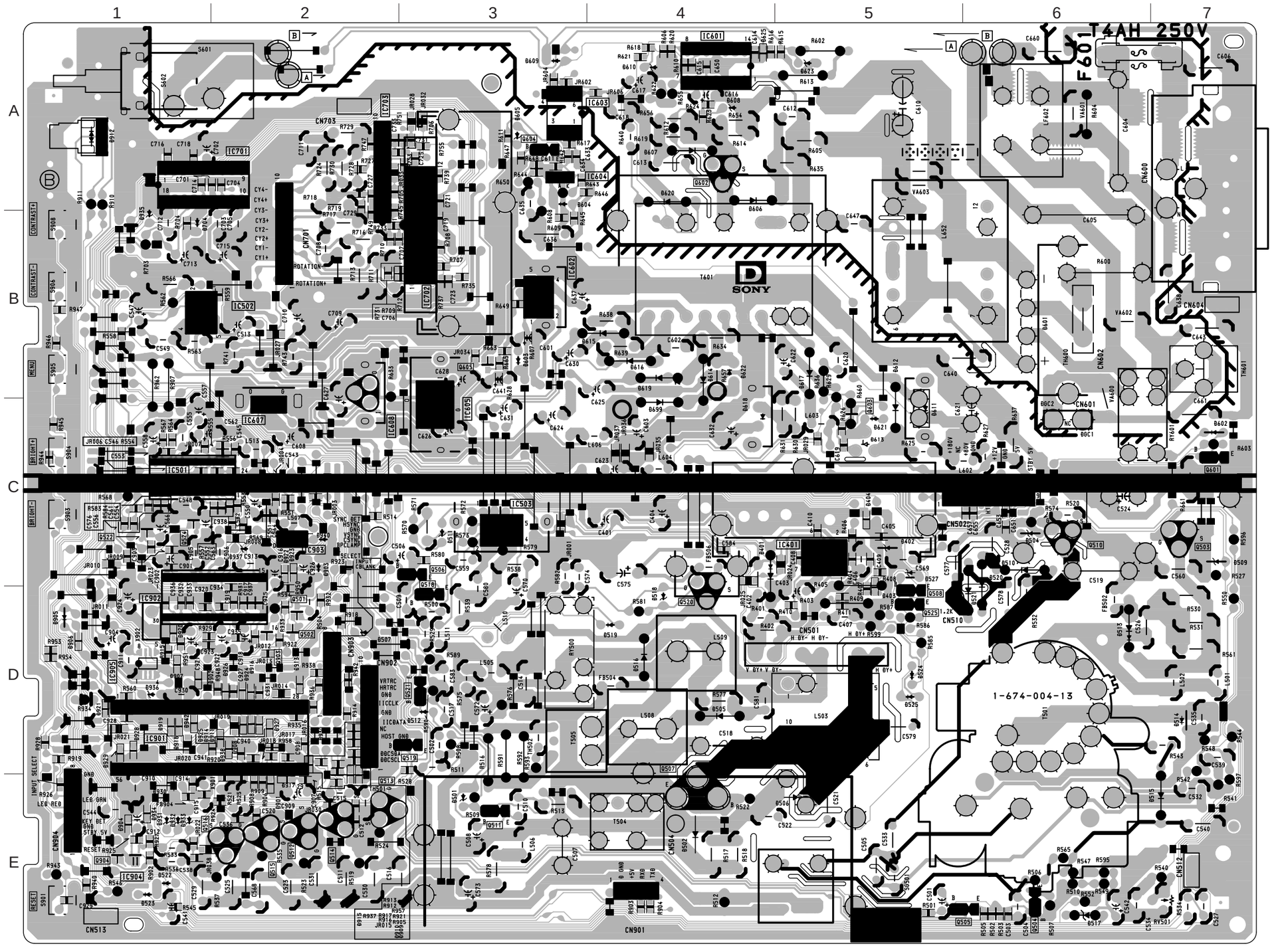


- Divided circuit diagram
  One sheet of D board circuit diagram is divided into four sheets, each having the code D-ⓐ to D-ⓓ . For example, the destination ab1 on the D-ⓐ sheet is connected to ab1 on the D-ⓑ sheet.

a b 1
- 1 — Ref. No.
- a b — Circuit diagram division code

D ［CONVERGENCE CONTROL, DEDFLECTION, CPU, POWER SUPPLY］

— D BOARD —



Schematic diagram

⬅ D -ⓓ board

- **D BOARD**

SEMICONDUCTOR LOCATION

IC

IC401	C-5	
IC501	C-1	
IC502	B-1	
IC503	C-3	
IC601	A-4	
IC602	B-3	
IC603	A-3	
IC604	A-3	
IC605	C-3	
IC607	C-2	
IC608	C-2	
IC701	A-2	
IC702	B-3	
IC703	A-2	
IC901	D-1	
IC902	D-1	
IC904	E-1	
IC905	D-1	

TRANSISTOR

		*
Q501	D-2	①
Q502	D-2	①
Q503	C-7	–
Q504	E-6	–
Q505	E-6	–
Q506	C-3	–
Q507	D-4	–
Q508	D-5	–
Q510	C-6	–
Q511	E-3	–
Q512	E-2	–
Q513	E-2	–
Q514	E-2	–
Q515	E-2	–
Q516	E-2	–
Q518	D-3	–
Q519	D-3	–
Q520	D-4	–
Q521	D-3	–
Q522	C-1	①
Q524	C-1	①
Q525	D-5	–
Q601	C-7	–
Q602	A-4	–
Q603	C-5	①
Q604	A-3	–
Q605	B-3	①
Q903	D-2	①

DIODE

		*
D401	C-4	–
D402	C-5	–
D403	D-5	③
D404	C-5	③
D501	E-3	–
D502	E-4	–
D504	C-6	–
D505	D-4	–
D506	E-5	–
D507	D-2	–
D509	C-7	–
D510	C-6	–
D511	C-3	–
D512	D-3	–
D513	D-6	–
D514	D-7	–
D515	E-7	–
D516	D-4	–
D517	E-6	–
D518	D-4	–
D519	D-4	–
D520	C-6	–
D521	C-6	–
D522	E-1	–
D523	E-1	–
D524	D-5	–
D525	D-5	–
D527	C-5	–
D601	B-6	–
D602	C-7	–
D603	B-3	–
D604	A-3	–
D605	A-3	–
D606	A-4	–
D607	A-4	–
D608	A-4	–
D609	A-3	–
D610	A-4	–
D611	C-5	–
D612	B-5	–
D613	C-5	–
D614	B-4	–
D615	B-4	–
D616	B-4	–
D617	B-5	–
D618	C-4	–
D619	B-4	–
D620	A-4	–
D621	C-5	–
D622	B-4	–
D704	B-1	–
D901	E-2	③
D902	D-1	③
D903	C-2	–
D904	E-1	③
D905	D-1	–
D906	D-1	③
D907	D-1	③
D908	D-2	③
D909	D-2	③
D910	D-2	③
D911	D-2	③
D913	D-2	③
D914	D-2	③
D915	D-2	③
D916	D-2	③
D917	E-2	③
D918	D-1	③
D919	D-1	③
D920	D-1	③
D921	D-1	③
D924	D-2	③
D925	D-2	③
D926	D-2	③
D927	D-2	③
D928	D-1	③
D929	D-1	③
D930	E-1	③
D931	E-1	–
D932	E-1	–
D933	E-1	–
D934	E-1	③
D935	B-1	–
D936	D-1	–
D937	C-2	–

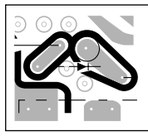
VARIABLE RESISTOR

RV501	E-7

CRYSTAL

X901	E-1
X902	D-1

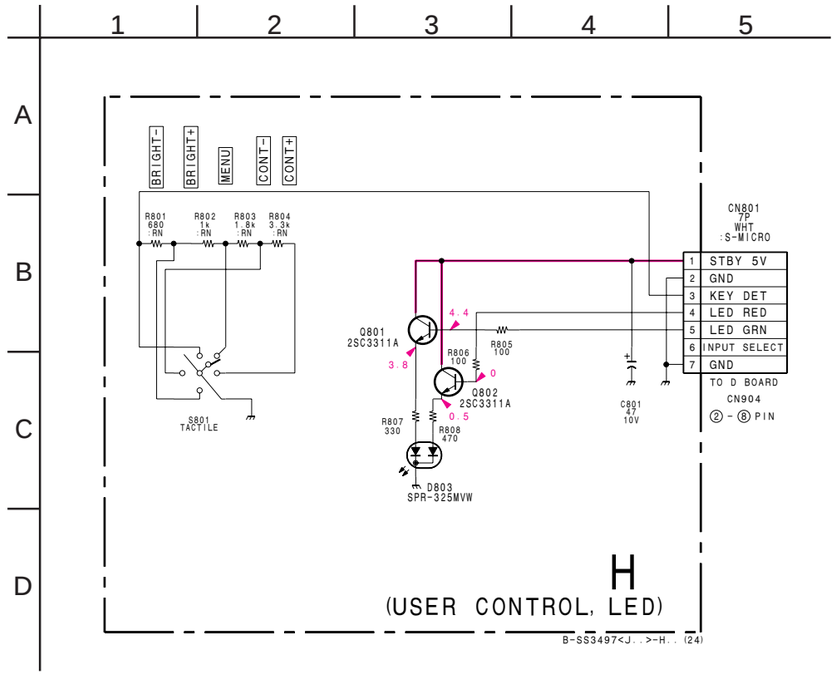
∗: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 5-6)



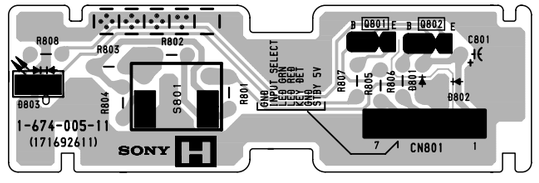
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

H [USER CONTROL, LED]

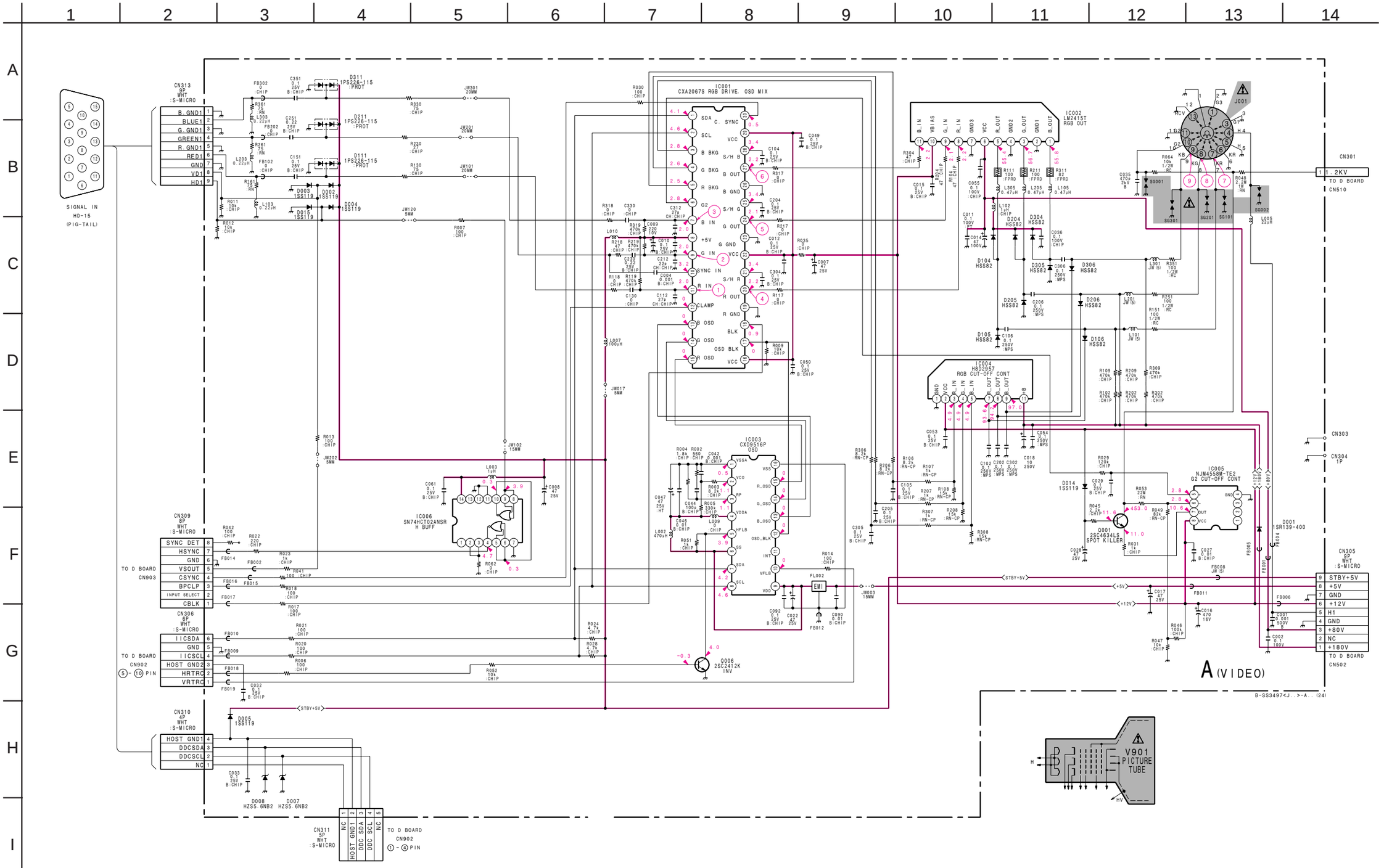
(2) Schematic Diagram of H Board



— H BOARD —



(3) Schematic Diagram of A Board

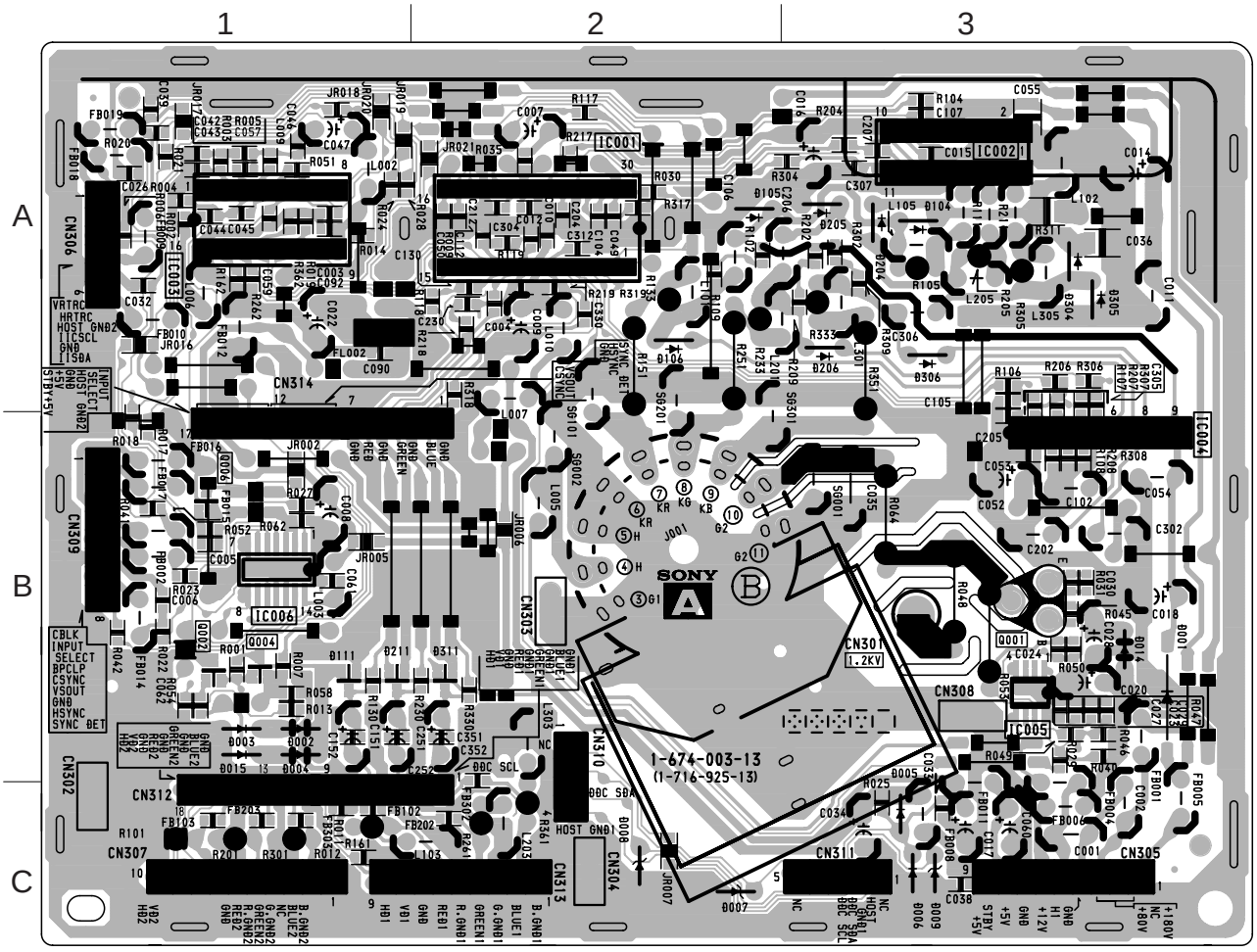


• A BOARD WAVEFORMS

①	②	③	④	⑤	⑥	⑦	⑧	⑨
0.7 Vp-p (H)	1.1 Vp-p (H)	0.7 Vp-p (H)	4.0 Vp-p (H)	4.0 Vp-p (H)	4.0 Vp-p (H)	50.0 Vp-p (H)	50.0 Vp-p (H)	50.0 Vp-p (H)

A [VIDEO]

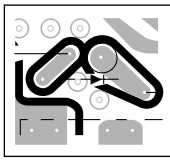
— A BOARD —



- **A BOARD**
  SEMICONDUCTOR LOCATION

IC		
IC001	A–2	
IC002	A–3	
IC003	A–1	
IC004	B–3	
IC005	B–3	
IC006	B–1	
TRANSISTOR		
Q001	B-3	* –
Q006	B-1	* ①
DIODE		
D001	B-3	* –
D002	B-1	–
D003	B-1	–
D004	B-1	–
D005	C-3	–
D007	C-2	–
D008	C-2	–
D014	B-3	–
D015	B-1	–
D104	A-3	–
D105	A-2	–
D106	A-2	–
D111	B-1	⑥
D204	A-3	–
D205	A-3	–
D206	A-3	–
D211	B-1	⑥
D304	A-3	–
D305	A-3	–
D306	A-3	–
D311	B-2	⑥

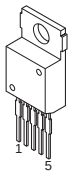
∗: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 5-6)



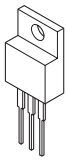
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

5-4. SEMICONDUCTORS

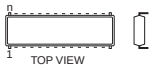
BA00AST
LA6500FA



BA05T
L7805CV
TA7805S

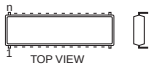


CXA2067S
CXA8071CP



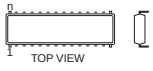
30 pin DIP

CXA8070AP



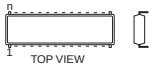
18 pin DIP

CXD9516P



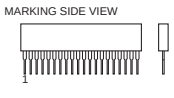
16 pin DIP

CXD9528S



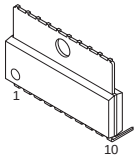
56 pin DIP

H8D2957

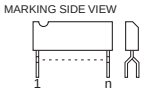


11 pin SIP

LA6510

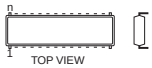


LM2415T



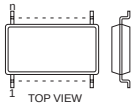
11 pin ZIP

M24C08-MN6T



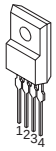
8 pin DIP

NJM4558M
UPC4558G2

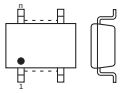


8 pin SOP

PQ12RD8S

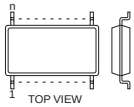


PST9143NL



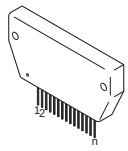
5 pin CHIP

SN74HC02ANSR

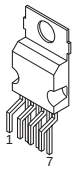


14 pin SOP

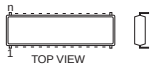
STK391-110



TDA8177

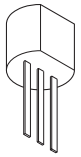


TEA1504-N2

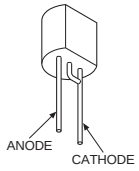


14 pin DIP

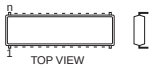
TL1431CZ



UPC574J

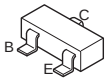


UPC6757CS

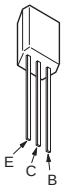


24 pin DIP

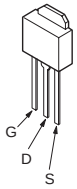
DTA114EKA-T146
DTC114EK
DTC114EKA-T146
2SA1037AK-T146-QR
2SA1037AK-T146-R
2SC1623-L5L6
2SC2412K-T-146-QR



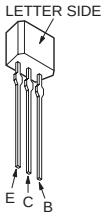
DTC143ESA
DTC143TSA



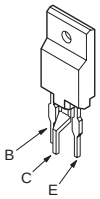
IRFU110
IRFU110A
2SK2843LBS2SONY
2SK3155-01



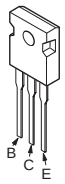
2SA1175-HFE
2SA1309A-QRSTA
2SC2785-HFE
2SC3311A-QRSTA



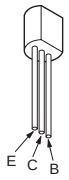
2SC4634LS-CB11



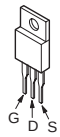
2SC5302-SONY-CC



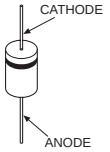
2SC2610
2SC3941A-Q



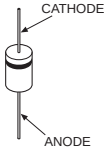
2SK2098-01MR-F119
2SK2605LBSONY
2SJ449



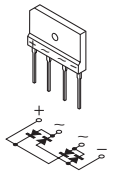
D1NL40-TA
D1NS6
D2L40-TA
ERA34-10
ERB91-02
HSS82
HSS83TD
HZS5.1NB2
HZT33-02
RGP02-20EL-6394
RGP10DG23



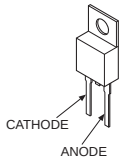
D3S4M
EGP10D
ERC81-004
RH-1A
RGP10JPKG23



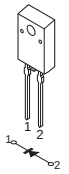
D4SB60L



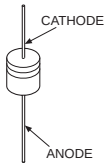
FMC-26UA
FMN-G12S



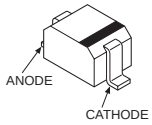
FMQ-G2FS



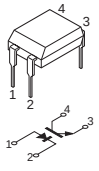
HZS10NB2
HZS12NB2
HZS4.7NB2
HZS5.6NB2
MTZJ-T-77-18
RB4410QT-77
RD10ES-B2
RD12ES-B2
RD18ES-B2
RD5.1ES-B2
RD5.6ES-B2
1SR139-400
1SS119-25



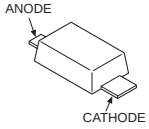
HZU5.6B2TRF
MA111



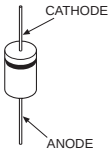
TLP621D4



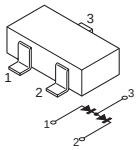
RBV501F-40



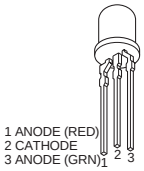
UF4007G23



1PS226-115



SPR-325MVW



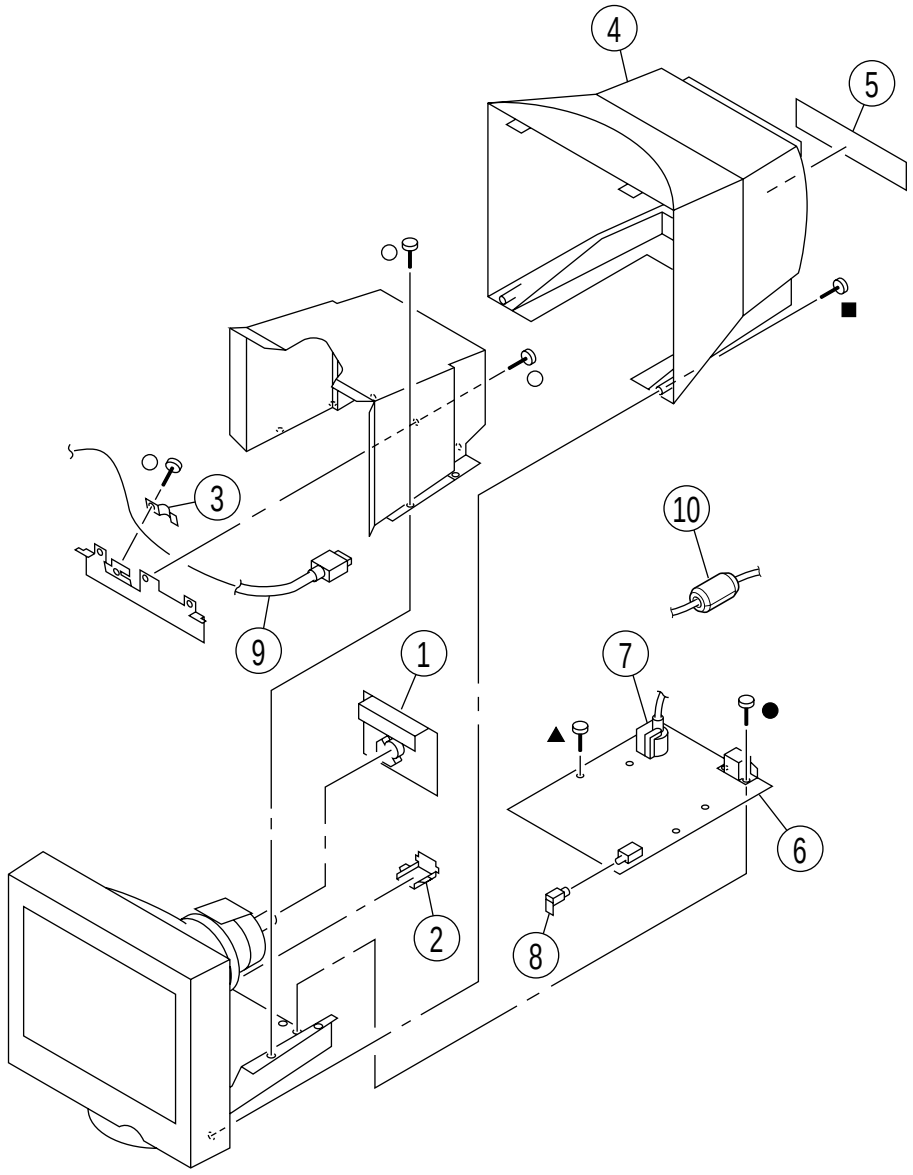
SECTION 6
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

6-1. CHASSIS

● 7-685-874-09 +BVTT 3X12
○ 7-685-872-09 +BVTT 3X8
▲ 7-685-646-79 Screw (washer head) +P3X8
■ 7-685-663-71 +BVTP 4X16

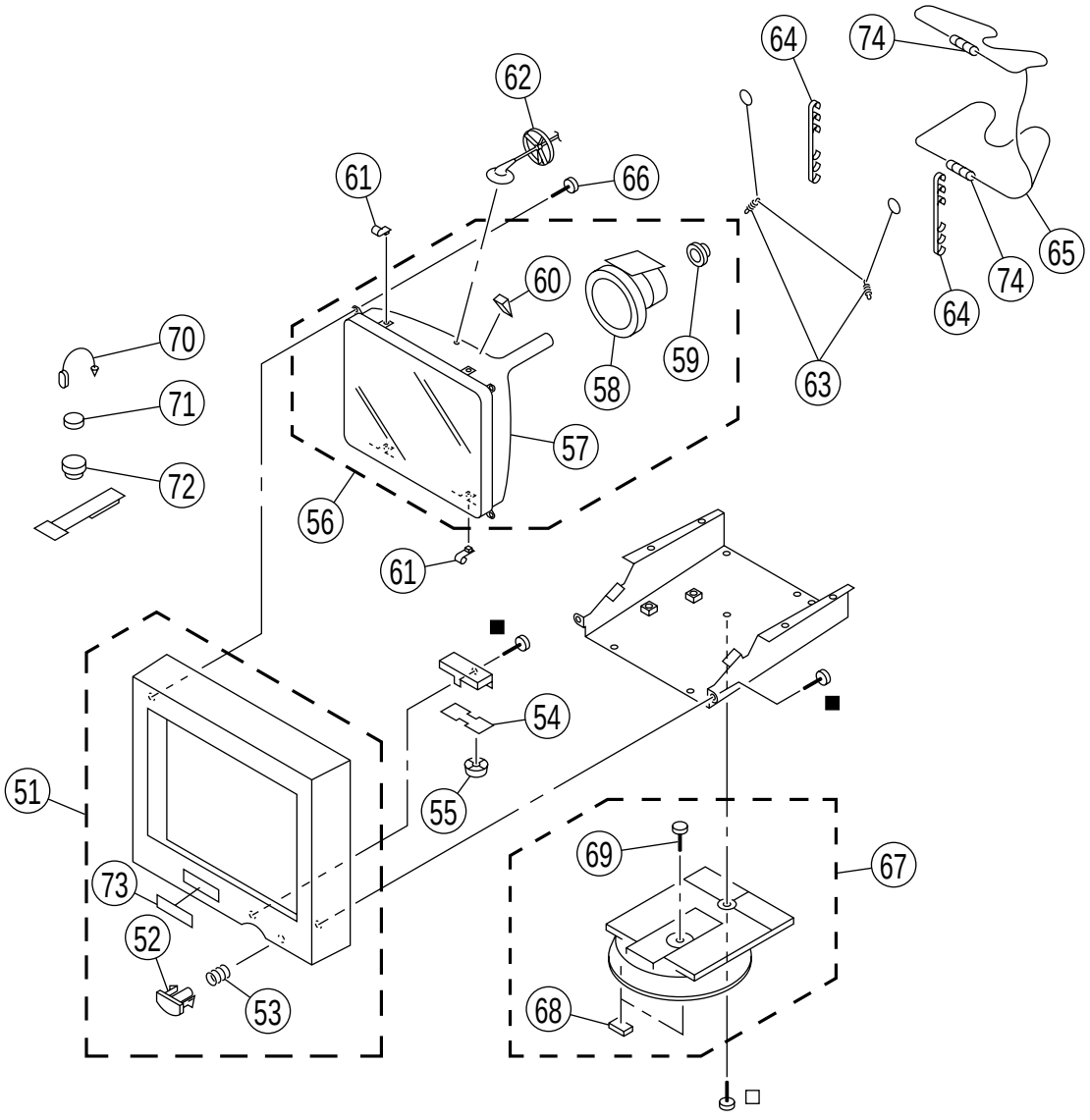


REF.NO.	PART NO.	DESCRIPTION	REMARK
1	* A-1294-806-A	A BOARD, COMPLETE	
2	4-070-679-02	COVER, CABLE	
3	* 4-045-131-01	STOPPER, CABLE	
4	4-072-384-01	CABINET	
5	4-072-313-11	LABEL, INFORMATION	
6	* A-1346-877-A	D BOARD, COMPLETE	7
7	⚠ X-4560-154-1	TRANSFORMER ASSY, FLYBACK (NX-4404//J1L4)	
8	4-070-680-02	CAP, POWER	
9	1-791-490-11	CABLE ASSY(15PD-SUB CONNECTOR)	
10	1-543-798-11	FILTER, CLAMP (FERRITE CORE)	

6-2. PICTURE TUBE

■ 7-685-663-71 +BVTP 4X16
□ 7-685-881-09 +BVTT 4X8

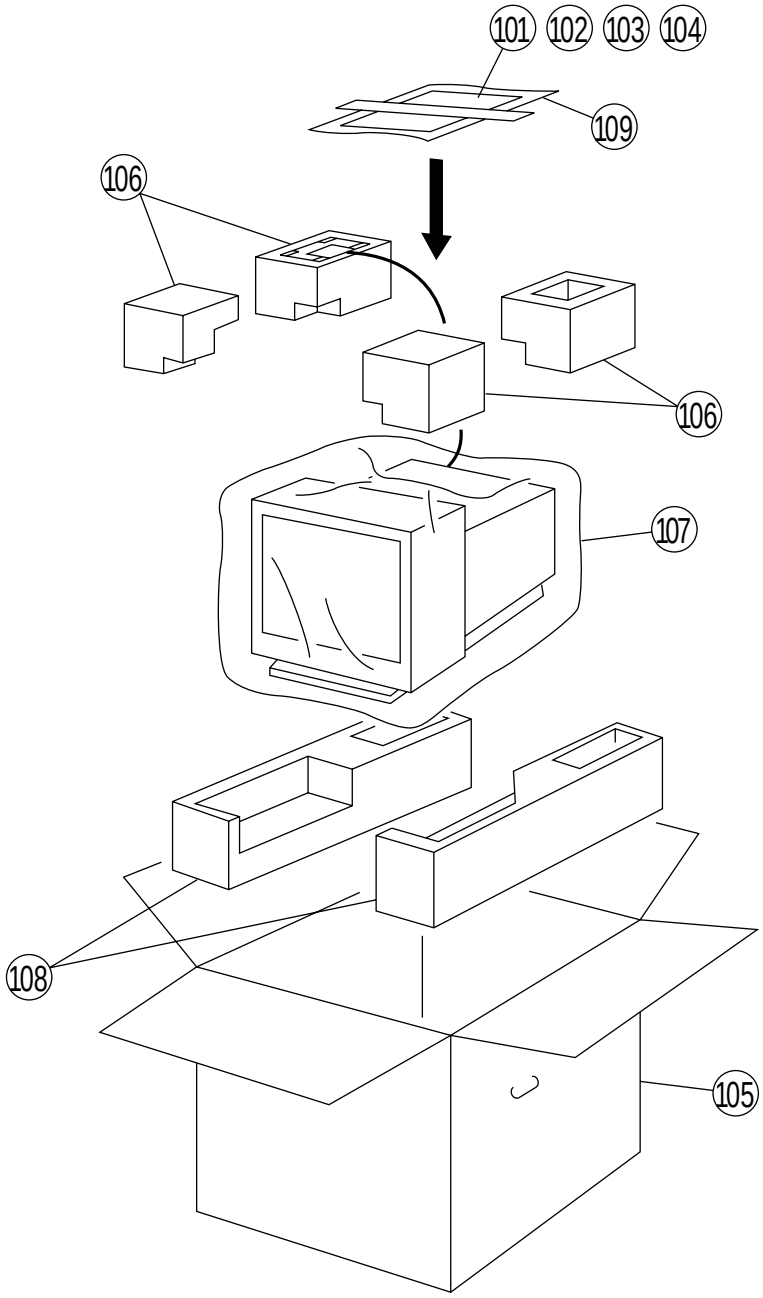
The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.



REF.NO.	PART NO.	DESCRIPTION	REMARK
51	X-4037-102-1	BEZEL ASSY	52,53,73
52	4-070-660-01	BUTTON, POWER	
53	3-653-339-01	SPRING, COMPRESSION	
54	*A-1372-712-A	H BOARD, COMPLETE	
55	4-070-665-02	BUTTON, MENU	
56	⚠8-738-550-61	ITC ASSY (17TKB-R1)	57-60
57	⚠8-738-550-00	PICTURE TUBE (17TKB) (NORTH)	
58	⚠8-451-435-12	DEFLECTION YOKE (Y17TKJ-M)	
59	⚠1-452-923-41	NECK ASSEMBLY (NA-2915)	
60	2-162-100-21	SPACER, DY	
61	4-045-123-01	HOLDER, DEGAUSSING COIL	
62	3-704-372-01	HOLDER, HV CABLE	
63	*4-047-316-01	SPRING, EXTENSION	
64	*4-369-319-00	BAND, COIL	
65	⚠1-419-255-12	COIL, DEGAUSSING	
66	4-365-808-01	SCREW (5), TAPPING	
67	X-4037-104-1	STAND ASSY	68,69
68	*4-061-996-01	CUSHION	
69	4-384-096-01	SCREW (4X16), TAPPING, +P	
70	4-308-870-00	CLIP, LEAD WIRE	
71	1-452-032-00	MAGNET, DISC ; 10mmø	
72	1-452-094-00	MAGNET, ROTATABLE DISK; 15mmø	
73	4-042-353-11	EMBLEM (NO. 7), SONY	
74	4-069-264-01	CUSHION (95X50)	

6-3. PACKING MATERIALS

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.



REF.NO.	PART NO.	DESCRIPTION	REMARK
101	1-772-398-11	DISK, INFORMATION (FOR WINDOWS)	
102	⚠1-765-719-31	CORD SET, POWER	
103	1-785-512-31	D-SUB CONNECTOR (15P CHANGER)	
104	3-867-657-11	MANUAL, INSTRUCTION	
105	*4-071-985-01	INDIVIDUAL CARTON	
106	*4-070-062-01	CUSHION (UPPER) (ASSY)	
107	*4-041-927-31	BAG, POLYETHYLENE	
108	*4-070-063-02	CUSHION (LOWER) (ASSY)	
109	3-701-625-00	BAG, POLYETHYLENE (ACCESSORY)	

SECTION 7
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

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

The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- CAPACITORS
  MF : µF
- COILS
  UH : µH

REF.NO.	PART NO.	DESCRIPTION			REMARK
*	A-1294-806-A	A BOARD, COMPLETE			
		**********			
	4-382-854-11	SCREW (M3X10), P, SW (+) (IC002)			
		<CAPACITOR>			
C001	1-162-318-11	CERAMIC	0.001MF	10%	500V
C002	1-106-220-00	MYLAR	0.1MF	10%	100V
C004	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C007	1-104-664-11	ELECT	47MF	20%	25V
C008	1-104-664-11	ELECT	47MF	20%	25V
C009	1-126-934-11	ELECT	220MF	20%	10V
C010	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C011	1-106-220-00	MYLAR	0.1MF	10%	100V
C012	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C014	1-107-932-11	ELECT	47MF	20%	100V
C015	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C016	1-128-528-11	ELECT	470MF	20%	16V
C017	1-104-664-11	ELECT	47MF	20%	25V
C018	1-107-961-91	ELECT	10MF	20%	250V
C022	1-104-664-11	ELECT	47MF	20%	25V
C027	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C028	1-104-664-11	ELECT	47MF	20%	25V
C029	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C032	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C033	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C035	1-162-134-11	CERAMIC	470PF	10%	2KV
C036	1-104-503-12	CERAMIC CHIP	0.1MF	10%	100V
C042	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C044	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C046	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C047	1-104-664-11	ELECT	47MF	20%	25V
C049	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C050	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C053	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C054	1-137-528-11	MYLAR	0.1MF	10%	250V
C055	1-104-503-12	CERAMIC CHIP	0.1MF	10%	100V
C061	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C090	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C092	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C102	1-137-528-11	MYLAR	0.1MF	10%	250V
C104	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C105	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C106	1-137-528-11	MYLAR	0.1MF	10%	250V
C112	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C130	1-216-295-91	SHORT	0		
C151	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C202	1-137-528-11	MYLAR	0.1MF	10%	250V
C204	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C205	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C206	1-137-528-11	MYLAR	0.1MF	10%	250V
C212	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C230	1-115-340-11	CERAMIC CHIP	0.22MF	10%	25V
C251	1-115-340-11	CERAMIC CHIP	0.22MF	10%	25V
C302	1-137-528-11	MYLAR	0.1MF	10%	250V
C304	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C305	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C306	1-137-528-11	MYLAR	0.1MF	10%	250V
C312	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C330	1-216-295-91	SHORT	0		
C351	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
		<CONNECTOR>			
CN301	1-506-108-41	PIN, CONNECTOR (TERMINAL PIN)			
CN303	1-695-915-11	TAB (CONTACT)			
CN304	1-695-915-11	TAB (CONTACT)			
CN305*	1-564-512-11	PLUG, CONNECTOR 9P			
CN306*	1-564-509-11	PLUG, CONNECTOR 6P			
CN309*	1-564-511-11	PLUG, CONNECTOR 8P			
CN310*	1-564-507-11	PLUG, CONNECTOR 4P			
CN311*	1-564-508-11	PLUG, CONNECTOR 5P			
CN313*	1-564-512-11	PLUG, CONNECTOR 9P			
		<DIODE>			
D001	8-719-970-02	DIODE 1SR139-400T31			
D002	8-719-911-19	DIODE 1SS119-25			
D003	8-719-911-19	DIODE 1SS119-25			
D004	8-719-911-19	DIODE 1SS119-25			
D005	8-719-911-19	DIODE 1SS119-25			
D007	8-719-109-89	ZENER DIODE RD5.6ESB2			
D008	8-719-109-89	ZENER DIODE RD5.6ESB2			
D014	8-719-911-19	DIODE 1SS119-25			
D015	8-719-911-19	DIODE 1SS119-25			
D104	8-719-970-83	DIODE HSS82			

A

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
D105	8-719-970-83	DIODE HSS82	
D106	8-719-970-83	DIODE HSS82	
D111	8-719-062-51	DIODE 1PS226-115	
D204	8-719-970-83	DIODE HSS82	
D205	8-719-970-83	DIODE HSS82	
D206	8-719-970-83	DIODE HSS82	
D211	8-719-062-51	DIODE 1PS226-115	
D304	8-719-970-83	DIODE HSS82	
D305	8-719-970-83	DIODE HSS82	
D306	8-719-970-83	DIODE HSS82	
D311	8-719-062-51	DIODE 1PS226-115	
		<FERRITE BEAD>	
FB001	1-412-911-11	FERRITE	
FB002	1-412-911-11	FERRITE	
FB004	1-412-911-11	FERRITE	
FB005	1-412-911-11	FERRITE	
FB006	1-412-911-11	FERRITE	
FB009	1-412-911-11	FERRITE	
FB010	1-412-911-11	FERRITE	
FB011	1-412-911-11	FERRITE	
FB012	1-412-911-11	FERRITE	
FB014	1-412-911-11	FERRITE	
FB015	1-412-911-11	FERRITE	
FB016	1-412-911-11	FERRITE	
FB017	1-412-911-11	FERRITE	
FB018	1-412-911-11	FERRITE	
FB019	1-412-911-11	FERRITE	
FB102	1-216-295-91	SHORT 0	
FB202	1-216-295-91	SHORT 0	
FB302	1-216-295-91	SHORT 0	
		<FILTER>	
FL002	1-412-911-11	FERRITE	
		<IC>	
IC001	8-752-090-63	IC CXA2067S	
IC002	8-759-593-11	IC LM2415	
IC003	8-759-589-35	IC CXD9516P	
IC004	8-749-016-27	IC H8D2957	
IC005	8-759-100-96	IC uPC4558G2	
IC006	8-759-269-07	IC SN74HCT02ANSR	
		<JACK>	
J001	⚠1-251-598-11	SOCKET, PICTURE TUBE	
		<CHIP CONDUCTOR>	
JR002	1-216-296-91	SHORT 0	
JR005	1-216-296-91	SHORT 0	
JR006	1-216-296-91	SHORT 0	
JR007	1-216-296-91	SHORT 0	
JR016	1-216-296-91	SHORT 0	
JR017	1-216-296-91	SHORT 0	
JR018	1-216-295-91	SHORT 0	
JR019	1-216-296-91	SHORT 0	
JR020	1-216-296-91	SHORT 0	
JR021	1-216-296-91	SHORT 0	
		<COIL>	
L002	1-412-911-11	FERRITE	
L003	1-408-397-00	INDUCTOR 1UH	
L005	1-412-529-11	INDUCTOR 22UH	
L007	1-410-482-31	INDUCTOR 100UH	
L009	1-216-295-91	SHORT 0	
L010	1-412-911-11	FERRITE	
L102	1-412-052-21	INDUCTOR CHIP 1UH	
L103	1-414-137-31	INDUCTOR 0.22UH	
L105	1-410-750-41	INDUCTOR 0.47UH	
L203	1-414-137-31	INDUCTOR 0.22UH	
L205	1-410-750-41	INDUCTOR 0.47UH	
L303	1-414-137-31	INDUCTOR 0.22UH	
L305	1-410-750-41	INDUCTOR 0.47UH	
		<TRANSISTOR>	
Q001	8-729-046-80	TRANSISTOR 2SC4634LS-CB11	
Q006	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		<RESISTOR>	
R002	1-216-043-91	RES,CHIP 560 5% 1/10W	
R003	1-216-071-00	RES,CHIP 8.2K 5% 1/10W	
R004	1-216-055-00	RES,CHIP 1.8K 5% 1/10W	
R005	1-216-109-00	RES,CHIP 330K 5% 1/10W	
R006	1-216-025-91	RES,CHIP 100 5% 1/10W	
R007	1-216-025-91	RES,CHIP 100 5% 1/10W	
R009	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R011	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R012	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R013	1-216-025-91	RES,CHIP 100 5% 1/10W	
R014	1-216-025-91	RES,CHIP 100 5% 1/10W	
R017	1-216-025-91	RES,CHIP 100 5% 1/10W	
R018	1-216-025-91	RES,CHIP 100 5% 1/10W	
R020	1-216-025-91	RES,CHIP 100 5% 1/10W	
R021	1-216-025-91	RES,CHIP 100 5% 1/10W	
R022	1-216-033-00	RES,CHIP 220 5% 1/10W	
R023	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R024	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R028	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R029	1-216-099-00	RES,CHIP 120K 5% 1/10W	
R030	1-216-025-91	RES,CHIP 100 5% 1/10W	
R031	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R035	1-216-295-91	SHORT 0	
R041	1-216-025-91	RES,CHIP 100 5% 1/10W	
R042	1-216-025-91	RES,CHIP 100 5% 1/10W	
R045	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
R046	1-216-097-91	RES,CHIP	100K	5% 1/10W	
R047	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R048	1-219-398-51	METAL	2.2M	5% 1W	
R049	1-216-697-91	METAL CHIP	82K	0.50% 1/10W	
R051	1-216-049-91	RES,CHIP	1K	5% 1/10W	
R052	1-216-073-00	RES,CHIP	10K	5% 1/10W	
R053	1-219-621-91	METAL	22M	10% 1/4W	
R062	1-216-295-91	SHORT	0		
R064	1-202-830-00	SOLID	10K	20% 1/2W	
R102	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R104	1-216-017-91	RES,CHIP	47	5% 1/10W	
R106	1-216-673-11	METAL CHIP	8.2K	0.50% 1/10W	
R107	1-216-651-11	METAL CHIP	1K	0.50% 1/10W	
R108	1-216-679-11	METAL CHIP	15K	0.50% 1/10W	
R109	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R111	1-249-405-11	CARBON	100	5% 1/4W F	
R117	1-216-295-91	SHORT	0		
R118	1-216-295-91	SHORT	0		
R119	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R130	1-216-022-00	RES,CHIP	75	5% 1/10W	
R151	1-202-549-00	SOLID	100	20% 1/2W	
R161	1-215-394-00	METAL	75	1% 1/4W	
R202	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R204	1-216-017-91	RES,CHIP	47	5% 1/10W	
R206	1-216-673-11	METAL CHIP	8.2K	0.50% 1/10W	
R207	1-216-651-11	METAL CHIP	1K	0.50% 1/10W	
R208	1-216-679-11	METAL CHIP	15K	0.50% 1/10W	
R209	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R211	1-249-405-11	CARBON	100	5% 1/4W F	
R217	1-216-295-91	SHORT	0		
R218	1-216-017-91	RES,CHIP	47	5% 1/10W	
R219	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R230	1-216-011-00	RES,CHIP	27	5% 1/10W	
R251	1-202-549-00	SOLID	100	20% 1/2W	
R261	1-215-394-00	METAL	75	1% 1/4W	
R302	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R304	1-216-017-91	RES,CHIP	47	5% 1/10W	
R306	1-216-673-11	METAL CHIP	8.2K	0.50% 1/10W	
R307	1-216-651-11	METAL CHIP	1K	0.50% 1/10W	
R308	1-216-679-11	METAL CHIP	15K	0.50% 1/10W	
R309	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R311	1-249-404-11	CARBON	82	5% 1/4W F	
R317	1-216-295-91	SHORT	0		
R318	1-216-295-91	SHORT	0		
R319	1-216-113-00	RES,CHIP	470K	5% 1/10W	
R330	1-216-022-00	RES,CHIP	75	5% 1/10W	
R351	1-202-549-00	SOLID	100	20% 1/2W	
R361	1-215-394-00	METAL	75	1% 1/4W	

<SPARK GAP>

SG001⚠1-519-422-11GAP, SPARK
SG002⚠1-517-499-21GAP, SPARK
SG101⚠1-517-499-21GAP, SPARK
SG201⚠1-517-499-21GAP, SPARK
SG301⚠1-517-499-21GAP, SPARK

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* A-1346-877-A D BOARD, COMPLETE
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4-382-854-01 SCREW (M3X8), P, SW (+)
(IC401, IC503, IC602, IC605, IC607, IC608, Q503, Q510, Q520, Q602, D601)
4-382-854-11 SCREW (M3X10), P, SW (+) (Q507, D506)
4-382-854-21 SCREW (M3X14), P, SW (+) (IC702)

<CAPACITOR>

C401	1-107-914-11	ELECT	1000MF	20%	25V
C402	1-117-667-31	MYLAR	0.47MF	5%	250V
C403	1-107-911-11	ELECT	220MF	20%	50V
C404	1-107-914-11	ELECT	1000MF	20%	25V
C405	1-104-760-11	CERAMIC CHIP	0.047MF	10%	50V
C406	1-137-368-11	MYLAR	0.0047MF	5%	50V
C407	1-137-372-11	MYLAR	0.022MF	5%	50V
C410	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C501	1-126-964-11	ELECT	10MF	20%	50V
C502	1-137-370-11	MYLAR	0.01MF	5%	50V
C503	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C504	1-102-030-00	CERAMIC	330PF	10%	500V
C505	1-109-878-11	CERAMIC	15PF	5%	2KV
C506	1-126-960-11	ELECT	1MF	20%	50V
C507	1-131-653-11	FILM	0.19MF	5%	400V
C508	1-128-526-91	ELECT	100MF	20%	25V
C509	1-162-117-00	CERAMIC	100PF	10%	500V
C510	1-102-228-00	CERAMIC	470PF	10%	500V
C511	1-117-663-31	FILM	0.22MF	5%	250V
C512	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C513	1-128-744-91	ELECT	10MF	20%	50V
C514	1-117-670-31	FILM	0.82MF	5%	250V
C515	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C516	1-119-862-11	FILM	0.3MF	5%	250V
C517	1-137-370-11	MYLAR	0.01MF	5%	50V
C518	1-117-954-21	FILM	4300PF	3%	1.8KV
C519	1-117-621-11	FILM	1200PF	3%	1.2KV
C520	1-163-021-91	CERAMIC CHIP	0.01MF	10%	50V
C521	1-107-444-11	CERAMIC	100PF	5%	2KV
C522	1-136-684-51	MYLAR	0.0022MF	10%	100V
C523	1-117-660-31	FILM	0.12MF	5%	250V
C524	1-110-641-51	ELECT	33MF	20%	200V
C525	1-136-060-91	FILM	0.047MF	5%	400V
C526	1-164-646-11	CERAMIC	2200PF	10%	500V
C527	1-117-879-91	MYLAR	0.01MF	10%	250V
C528	1-115-349-51	CERAMIC	0.01MF		2KV
C529	1-136-060-91	FILM	0.047MF	5%	400V
C530	1-117-660-31	FILM	0.12MF	5%	250V
C531	1-119-858-31	FILM	0.068MF	5%	250V
C532 ⚠	1-137-401-11	MYLAR	0.22MF	10%	100V

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The components identified by mark ⚠ are critical for safety.
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REF.NO.	PART NO.	DESCRIPTION				REMARK
C534	⚠ 1-137-419-11	MYLAR	0.033MF	10%		100V
C535	1-130-495-00	MYLAR	0.1MF	5%		50V
C536	1-163-021-91	CERAMIC CHIP	0.01MF	10%		50V
C538	1-163-021-91	CERAMIC CHIP	0.01MF	10%		50V
C539	⚠ 1-137-150-11	MYLAR	0.01MF	10%		100V
C540	⚠ 1-136-203-11	FILM	10000PF	5%		630V
C541	1-126-963-11	ELECT	4.7MF	20%		50V
C542	⚠ 1-126-964-11	ELECT	10MF	20%		50V
C543	1-163-251-11	CERAMIC CHIP	100PF	5%		50V
C544	⚠ 1-137-370-11	MYLAR	0.01MF	5%		50V
C545	1-163-037-11	CERAMIC CHIP	0.022MF	10%		50V
C546	1-163-259-91	CERAMIC CHIP	220PF	5%		50V
C547	1-128-740-91	ELECT	1MF	20%		50V
C548	1-130-471-00	MYLAR	0.001MF	5%		50V
C549	1-137-375-11	MYLAR	0.068MF	5%		50V
C550	1-126-933-11	ELECT	100MF	20%		16V
C551	1-163-021-91	CERAMIC CHIP	0.01MF	10%		50V
C552	1-163-021-91	CERAMIC CHIP	0.01MF	10%		50V
C553	⚠ 1-163-009-11	CERAMIC CHIP	0.001MF	10%		50V
C554	⚠ 1-164-004-11	CERAMIC CHIP	0.1MF	10%		25V
C555	⚠ 1-130-495-00	MYLAR	0.1MF	5%		50V
C556	⚠ 1-163-259-91	CERAMIC CHIP	220PF	5%		50V
C557	1-128-745-91	ELECT	22MF	20%		50V
C558	⚠ 1-126-960-11	ELECT	1MF	20%		50V
C559	1-137-368-11	MYLAR	0.0047MF	5%		50V
C560	1-119-859-71	FILM	0.36MF	5%		250V
C561	⚠ 1-163-009-11	CERAMIC CHIP	0.001MF	10%		50V
C562	1-128-526-11	ELECT	100MF	20%		16V
C563	1-163-005-11	CERAMIC CHIP	470PF	10%		50V
C564	1-107-823-11	CERAMIC CHIP	0.47MF	10%		16V
C566	1-128-551-11	ELECT	22MF	20%		25V
C568	1-136-060-91	FILM	0.047MF	5%		400V
C569	1-130-495-00	MYLAR	0.1MF	5%		50V
C570	1-128-526-91	ELECT	100MF	20%		25V
C572	1-107-651-11	ELECT	4.7MF	20%		250V
C573	1-107-651-11	ELECT	4.7MF	20%		250V
C574	1-117-879-91	MYLAR	0.01MF	10%		250V
C575	1-110-641-51	ELECT	33MF	20%		200V
C576	1-163-243-11	CERAMIC CHIP	47PF	5%		50V
C577	1-115-349-51	CERAMIC	0.01MF			2KV
C578	1-107-974-11	CERAMIC	47PF	5%		2KV
C579	1-109-879-11	CERAMIC	22PF	5%		2KV
C580	1-137-370-11	MYLAR	0.01MF	5%		50V
C582	1-163-037-11	CERAMIC CHIP	0.022MF	10%		50V
C583	1-130-495-00	MYLAR	0.1MF	5%		50V
C584	1-163-021-91	CERAMIC CHIP	0.01MF	10%		50V
C601	1-104-664-11	ELECT	47MF	20%		10V
C602	1-162-117-00	CERAMIC	100PF	10%		500V
C603	1-126-942-61	ELECT	1000MF	20%		25V
C604	⚠ 1-104-708-51	MYLAR	0.47MF	20%		250V
C605	⚠ 1-104-708-51	MYLAR	0.47MF	20%		250V
C606	⚠ 1-117-703-51	CERAMIC	0.0047MF	20%		250V
C608	1-104-653-91	ELECT	220MF	20%		16V
C610	1-107-852-11	ELECT (BLOCK)	330MF	20%		400V
C611	1-163-007-11	CERAMIC CHIP	680PF	10%		50V
C612	⚠ 1-106-379-12	MYLAR	0.033MF	10%		200V
C613	⚠ 1-162-115-00	CERAMIC	330PF	10%		2KV
C614	1-163-021-91	CERAMIC CHIP	0.01MF	10%		50V
C615	1-163-037-11	CERAMIC CHIP	0.022MF	10%		50V
C616	1-107-907-11	ELECT	22MF	20%		25V
C617	1-107-907-11	ELECT	22MF	20%		25V
C618	1-130-495-00	MYLAR	0.1MF	5%		50V
C619	1-164-161-11	CERAMIC CHIP	0.0022MF	10%		50V
C620	1-162-117-00	CERAMIC	100PF	10%		500V
C621	1-104-712-11	ELECT	47MF	0		200V
C622	1-128-763-91	ELECT	100MF	20%		100V
C623	1-107-889-11	ELECT	220MF	20%		25V
C624	1-126-936-11	ELECT	3300MF	20%		16V
C625	1-128-339-11	ELECT	2200MF	20%		16V
C626	1-104-653-91	ELECT	220MF	20%		16V
C627	1-107-889-11	ELECT	220MF	20%		10V
C628	1-128-526-91	ELECT	100MF	20%		25V
C630	1-126-935-11	ELECT	470MF	20%		16V
C631	1-126-935-11	ELECT	470MF	20%		16V
C632	1-115-792-11	ELECT	0.0022F	20%		25V
C633	1-164-004-11	CERAMIC CHIP	0.1MF	10%		25V
C634	1-163-017-00	CERAMIC CHIP	0.0047MF	10%		50V
C636	1-113-979-51	MYLAR	0.047MF	5%		1.5KV
C637	1-128-726-91	ELECT	47MF	20%		25V
C638	⚠ 1-117-703-51	CERAMIC	0.0047MF	20%		250V
C640	1-117-703-11	CERAMIC	0.0047MF	20%		250V
C641	1-107-882-91	ELECT	100MF	20%		16V
C643	⚠ 1-117-703-51	CERAMIC	0.0047MF	20%		250V
C647	1-102-228-00	CERAMIC	470PF	10%		500V
C650	1-163-019-00	CERAMIC CHIP	0.0068MF	10%		50V
C660	⚠ 1-117-703-51	CERAMIC	0.0047MF	20%		250V
C701	1-164-004-11	CERAMIC CHIP	0.1MF	10%		25V
C702	1-126-963-11	ELECT	4.7MF	20%		50V
C703	1-136-169-00	MYLAR	0.22MF	5%		50V
C704	1-163-259-91	CERAMIC CHIP	220PF	5%		50V
C705	1-130-495-00	MYLAR	0.1MF	5%		50V
C706	1-163-113-00	CERAMIC CHIP	68PF	5%		50V
C707	1-163-113-00	CERAMIC CHIP	68PF	5%		50V
C708	1-130-495-00	MYLAR	0.1MF	5%		50V
C709	1-126-941-11	ELECT	470MF	20%		25V
C710	1-126-941-11	ELECT	470MF	20%		25V
C711	1-130-495-00	MYLAR	0.1MF	5%		50V
C712	1-130-495-00	MYLAR	0.1MF	5%		50V
C713	1-126-927-11	ELECT	2200MF	20%		10V
C714	1-163-131-00	CERAMIC CHIP	390PF	5%		50V
C715	1-126-935-11	ELECT	470MF	20%		16V
C716	1-163-989-11	CERAMIC CHIP	0.033MF	10%		25V
C718	1-163-989-11	CERAMIC CHIP	0.033MF	10%		25V
C723	1-163-021-91	CERAMIC CHIP	0.01MF	10%		50V
C725	1-163-021-91	CERAMIC CHIP	0.01MF	10%		50V
C729	1-163-003-11	CERAMIC CHIP	330PF	10%		50V
C733	1-163-003-11	CERAMIC CHIP	330PF	10%		50V
C901	1-107-823-11	CERAMIC CHIP	0.47MF	10%		16V
C902	1-126-935-11	ELECT	470MF	20%		16V
C903	1-163-021-91	CERAMIC CHIP	0.01MF	10%		50V
C905	1-137-375-11	MYLAR	0.068MF	5%		50V
C906	1-136-177-00	MYLAR	1MF	5%		50V

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REF.NO.	PART NO.	DESCRIPTION	REMARK
C908	1-163-021-91	CERAMIC CHIP 0.01MF 10% 50V	
C909	1-126-926-11	ELECT 1000MF 20% 10V	
C910	1-107-713-11	ELECT 4.7MF 20% 50V	
C911	1-137-370-11	MYLAR 0.01MF 5% 50V	
C912	1-126-933-11	ELECT 100MF 20% 16V	
C913	1-130-495-00	MYLAR 0.1MF 5% 50V	
C914	1-163-231-11	CERAMIC CHIP 15PF 5% 50V	
C915	1-163-231-11	CERAMIC CHIP 15PF 5% 50V	
C916	1-126-965-11	ELECT 22MF 20% 50V	
C917	1-163-021-91	CERAMIC CHIP 0.01MF 10% 50V	
C918	1-126-964-11	ELECT 10MF 20% 50V	
C920	1-163-021-91	CERAMIC CHIP 0.01MF 10% 50V	
C921	1-126-935-11	ELECT 470MF 20% 16V	
C922	1-107-712-11	ELECT 3.3MF 20% 50V	
C923	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C924	1-126-965-11	ELECT 22MF 20% 50V	
C925	1-163-021-91	CERAMIC CHIP 0.01MF 10% 50V	
C926	1-126-935-11	ELECT 470MF 20% 16V	
C927	1-163-021-91	CERAMIC CHIP 0.01MF 10% 50V	
C928	1-163-021-91	CERAMIC CHIP 0.01MF 10% 50V	
C929	1-163-009-11	CERAMIC CHIP 0.001MF 10% 50V	
C930	1-137-370-11	MYLAR 0.01MF 5% 50V	
C931	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C935	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C936	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	
C937	1-107-823-11	CERAMIC CHIP 0.47MF 10% 16V	
C938	1-126-934-11	ELECT 220MF 20% 16V	
		<CONNECTOR>	
CN501*	1-580-798-11	CONNECTOR PIN (DY) 6P	
CN502*	1-564-512-11	PLUG, CONNECTOR 9P	
CN600⚠	1-251-644-11	INLET,AC 3P(WITH NOISE FILTER)	
CN601*	1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P	
CN602*	1-506-371-00	PIN, CONNECTOR 2P	
CN701*	1-564-513-11	PLUG, CONNECTOR 10P	
CN901*	1-508-879-11	BASE POST	
CN902*	1-564-513-11	PLUG, CONNECTOR 10P	
CN903*	1-564-511-11	PLUG, CONNECTOR 8P	
CN904*	1-564-510-11	PLUG, CONNECTOR 7P	
		<DIODE>	
D401	8-719-052-90	DIODE D1NL40-TA2	
D402	8-719-928-85	ZENER DIODE HZS4.7NB2	
D403	8-719-073-01	DIODE MA111-(K8).S0	
D404	8-719-058-24	DIODE RB501V-40TE-17	
D501	8-719-110-31	ZENER DIODE RD12ESB2	
D502	8-719-981-00	DIODE ERC81-004	
D504	8-719-110-49	ZENER DIODE RD18ESB2	
D505	8-719-941-74	DIODE ERB91-02	
D506	8-719-075-18	DIODE FMQ-G2FS	
D507	8-719-109-85	ZENER DIODE RD5.1ESB2	
D509	8-719-110-17	ZENER DIODE RD10ESB2	
D510	8-719-018-82	DIODE RGP02-20EL-6394	
D511	8-719-109-89	ZENER DIODE RD5.6ESB2	
D512	8-719-911-19	DIODE 1SS119-25	
D513	8-719-052-90	DIODE D1NL40-TA2	
D514	8-719-970-83	DIODE HSS82	
D515 ⚠	8-719-018-82	DIODE RGP02-20EL-6394	
D516	8-719-052-86	DIODE D2L40-TA	
D517 ⚠	8-759-157-40	IC uPC574J	
D518	8-719-110-17	ZENER DIODE RD10ESB2	
D519	8-719-911-19	DIODE 1SS119-25	
D520	8-719-018-82	DIODE RGP02-20EL-6394	
D521	8-719-018-82	DIODE RGP02-20EL-6394	
D522	8-719-911-19	DIODE 1SS119-25	
D523	8-719-911-19	DIODE 1SS119-25	
D524	8-719-051-85	DIODE HSS83TD	
D525	8-719-051-85	DIODE HSS83TD	
D527	8-719-109-85	ZENER DIODE RD5.1ESB2	
D601 ⚠	8-719-510-63	DIODE D4SB60L-F	
D602	8-719-911-19	DIODE 1SS119-25	
D603	8-719-911-19	DIODE 1SS119-25	
D604	8-719-911-19	DIODE 1SS119-25	
D605	8-719-110-31	ZENER DIODE RD12ESB2	
D606 ⚠	8-719-053-19	DIODE UF4007G23	
D607	8-719-053-19	DIODE UF4007G23	
D608	8-719-110-49	ZENER DIODE RD18ESB2	
D609 ⚠	8-719-911-19	DIODE 1SS119-25	
D610	8-719-928-85	ZENER DIODE HZS4.7NB2	
D611	8-719-067-68	DIODE FMC-26UA	
D612	8-719-053-19	DIODE UF4007G23	
D613	8-719-076-20	DIODE BT149G-412-OT359	
D614	8-719-032-12	DIODE D1NS6	
D615	8-719-979-58	DIODE EGP10D	
D616	8-719-979-58	DIODE EGP10D	
D617	8-719-947-06	DIODE RGP10JPKG23	
D618	8-719-058-38	DIODE FMN-G12S	
D619	8-719-058-38	DIODE FMN-G12S	
D620	8-719-300-76	DIODE RH-1A	
D621	8-719-911-19	DIODE 1SS119-25	
D622	8-719-058-38	DIODE FMN-G12S	
D704	8-719-911-19	DIODE 1SS119-25	
D901	8-719-073-01	DIODE MA111-(K8).S0	
D902	8-719-047-98	ZENER DIODE HZU5.6B2TRF	
D903	8-719-050-84	DIODE RB441Q-40T-77	
D904	8-719-047-98	ZENER DIODE HZU5.6B2TRF	
D905	8-719-911-19	DIODE 1SS119-25	
D906	8-719-073-01	DIODE MA111-(K8).S0	
D907	8-719-073-01	DIODE MA111-(K8).S0	
D908	8-719-073-01	DIODE MA111-(K8).S0	
D909	8-719-047-98	ZENER DIODE HZU5.6B2TRF	
D910	8-719-047-98	ZENER DIODE HZU5.6B2TRF	
D911	8-719-073-01	DIODE MA111-(K8).S0	
D913	8-719-073-01	DIODE MA111-(K8).S0	
D914	8-719-073-01	DIODE MA111-(K8).S0	
D915	8-719-073-01	DIODE MA111-(K8).S0	
D916	8-719-073-01	DIODE MA111-(K8).S0	
D917	8-719-073-01	DIODE MA111-(K8).S0	
D918	8-719-047-98	ZENER DIODE HZU5.6B2TRF	
D919	8-719-073-01	DIODE MA111-(K8).S0	
D920	8-719-058-24	DIODE RB501V-40TE-17	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
D921	8-719-073-01	DIODE MA111-(K8).S0	
D922	1-216-051-00	RES,CHIP 1.2K 5% 1/10W	
D923	1-216-295-91	SHORT 0	
D924	8-719-073-01	DIODE MA111-(K8).S0	
D925	8-719-073-01	DIODE MA111-(K8).S0	
D926	8-719-073-01	DIODE MA111-(K8).S0	
D927	8-719-073-01	DIODE MA111-(K8).S0	
D928	8-719-047-98	ZENER DIODE HZU5.6B2TRF	
D929	8-719-047-98	ZENER DIODE HZU5.6B2TRF	
D930	8-719-047-98	ZENER DIODE HZU5.6B2TRF	
D931	8-719-109-89	ZENER DIODE RD5.6ESB2	
D932	8-719-109-89	ZENER DIODE RD5.6ESB2	
D933	8-719-109-89	ZENER DIODE RD5.6ESB2	
D934	8-719-047-98	ZENER DIODE HZU5.6B2TRF	
D935	8-719-109-85	ZENER DIODE RD5.1ESB2	
D936	8-719-109-89	ZENER DIODE RD5.6ESB2	
D937	8-719-109-89	ZENER DIODE RD5.6ESB2	
		<FUSE>	
F601 ⚠	1-576-231-11	FUSE (H.B.C.) (4A/250V)	
	1-533-223-11	CLIP, FUSE ; F601	
		<FERRITE BEAD>	
FB502	1-412-473-51	FERRITE 0.45UH	
FB504	1-412-911-11	FERRITE	
FB506	1-412-911-11	FERRITE	
FB904	1-543-961-22	FERRITE	
		<IC>	
IC401	8-759-339-59	IC TDA8177	
IC501⚠	8-759-570-29	IC uPC6757CS	
IC502	8-759-803-42	IC LA6500-FA	
IC503	8-759-803-42	IC LA6500-FA	
IC601⚠	8-759-594-75	IC TEA1504/N2	
IC602	8-759-592-79	IC BA00AST-V5	
IC603⚠	8-749-016-35	IC TLP621D4-Y-LF2T	
IC604	8-759-586-17	IC TL1431CZ-AP	
IC605	8-759-637-83	IC PQ12RD8S	
IC607⚠	8-759-450-47	IC BA05T	
IC608	8-759-231-53	IC TA7805S	
IC701	8-759-595-52	IC CXA8070AP	
IC702	8-749-015-00	IC STK391-110	
IC703	8-759-822-38	IC LA6510	
IC901⚠	8-759-596-69	IC CXD9528S	
IC902	8-759-594-40	IC CXA8071CP	
IC904	8-759-352-91	IC PST9143NL	
IC905	8-759-527-76	IC M24C08-MN6T	
		<CHIP CONDUCTOR>	
JR001	1-216-296-91	SHORT 0	
JR003	1-216-295-91	SHORT 0	
JR004	1-216-295-91	SHORT 0	
JR006	1-216-295-91	SHORT 0	
JR007	1-216-295-91	SHORT 0	
JR008	1-216-296-91	SHORT 0	
JR009	1-216-295-91	SHORT 0	
JR010	1-216-296-91	SHORT 0	
JR011	1-216-296-91	SHORT 0	
JR012	1-216-295-91	SHORT 0	
JR013	1-216-295-91	SHORT 0	
JR014	1-216-296-91	SHORT 0	
JR015	1-216-295-91	SHORT 0	
JR016	1-216-295-91	SHORT 0	
JR017	1-216-295-91	SHORT 0	
JR018	1-216-295-91	SHORT 0	
JR019	1-216-296-91	SHORT 0	
JR020	1-216-296-91	SHORT 0	
JR021	1-216-296-91	SHORT 0	
JR022	1-216-295-91	SHORT 0	
JR023	1-216-295-91	SHORT 0	
JR024	1-216-296-91	SHORT 0	
JR025	1-216-296-91	SHORT 0	
JR027	1-216-296-91	SHORT 0	
JR028	1-216-296-91	SHORT 0	
JR029	1-216-295-91	SHORT 0	
JR030	1-216-295-91	SHORT 0	
JR032	1-216-296-91	SHORT 0	
JR033	1-216-296-91	SHORT 0	
JR034	1-216-295-91	SHORT 0	
JR038	1-216-296-91	SHORT 0	
JR604	1-216-295-91	SHORT 0	
JR606	1-216-295-91	SHORT 0	
		<COIL>	
L501	1-406-663-21	INDUCTOR 47UH	
L502	1-406-663-21	INDUCTOR 47UH	
L503	1-411-594-41	INDUCTOR 5mH	
L505	1-412-552-11	INDUCTOR 2.2mH	
L506	1-412-548-31	INDUCTOR 820UH	
L507	1-414-856-11	INDUCTOR 10UH	
L508	1-419-198-21	COIL, HORIZONTAL LINEARITY	
L509	1-419-198-21	COIL, HORIZONTAL LINEARITY	
L510	1-416-367-11	COIL, HORIZONTAL CENTER	
L511	1-414-187-11	INDUCTOR 47UH	
L513	1-414-856-11	INDUCTOR 10UH	
L602	1-412-529-11	INDUCTOR 22UH	
L603	1-412-537-31	INDUCTOR 100UH	
L604	1-406-665-11	INDUCTOR 100UH	
L606	1-406-665-11	INDUCTOR 100UH	
L652	1-419-177-11	INDUCTOR	
		<FILTER>	
LF602⚠	1-429-180-11	TRANSFORMER, LINE FILTER	

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<TRANSISTOR>	
Q501	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q502	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q503	8-729-035-54	TRANSISTOR 2SJ449	
Q504	8-729-031-89	TRANSISTOR 2SC3941A-Q(TA)	
Q505	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q506	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q507	8-729-049-17	TRANSISTOR 2SC5302-SONY-CC	
Q508	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q510	8-729-046-60	TRANSISTOR 2SK2605LBSONY	
Q511	8-729-042-34	TRANSISTOR IRFU110A	
Q512	8-729-047-72	TRANSISTOR 2SK3155-01	
Q513	8-729-043-41	TRANSISTOR 2SK2098-01MR-F119	
Q514	8-729-047-72	TRANSISTOR 2SK3155-01	
Q515	8-729-047-72	TRANSISTOR 2SK3155-01	
Q516	8-729-047-72	TRANSISTOR 2SK3155-01	
Q518	8-729-301-46	TRANSISTOR 2SC2610	
Q519	8-729-029-68	TRANSISTOR DTC114TSA	
Q520	8-729-048-51	TRANSISTOR 2SJ516LBS2SONY	
Q521	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q522	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q524	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q525	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q601	8-729-029-92	TRANSISTOR DTC143ESA	
Q602 ⚠	8-729-048-61	TRANSISTOR 2SK2843LBS2SONY	
Q603	8-729-900-53	TRANSISTOR DTC114EK	
Q604	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q605	8-729-900-53	TRANSISTOR DTC114EK	
Q903	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		<RESISTOR>	
R401	1-249-381-11	CARBON 1 5% 1/4W F	
R402	1-215-866-11	METAL OXIDE 330 5% 1W F	
R403	1-214-661-21	METAL 1.5 1% 1/4W	
R404	1-216-669-11	METAL CHIP 5.6K 0.50% 1/10W	
R405	1-214-661-21	METAL 1.5 1% 1/4W	
R406	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R407	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R408	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R409	1-216-669-11	METAL CHIP 5.6K 0.50% 1/10W	
R410	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R500	1-249-377-11	CARBON 0.47 5% 1/4W F	
R501	1-216-025-91	RES,CHIP 100 5% 1/10W	
R502	1-218-758-11	METAL CHIP 180K 0.50% 1/10W	
R503	1-216-675-91	METAL CHIP 10K 0.50% 1/10W	
R504	1-249-377-11	CARBON 0.47 5% 1/4W F	
R505	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R506	1-215-481-00	METAL 330K 1% 1/4W	
R507	1-215-431-00	METAL 2.7K 1% 1/4W	
R508	1-247-807-31	CARBON 100 5% 1/4W	
R509	1-247-863-91	CARBON 22K 5% 1/4W	
R510 ⚠	1-215-437-00	METAL 4.7K 1% 1/4W	
R511	1-249-381-11	CARBON 1 5% 1/4W F	
R512	1-249-389-11	CARBON 4.7 5% 1/4W	
R513	1-215-888-00	METAL OXIDE 220 5% 2W F	
R514	1-216-081-00	RES,CHIP 22K 5% 1/10W	
R515	1-249-417-11	CARBON 1K 5% 1/4W F	
R516	1-214-844-81	METAL 150 1% 1/2W	
R517	1-216-393-00	METAL OXIDE 2.2 5% 3W F	
R518	1-216-393-00	METAL OXIDE 2.2 5% 3W F	
R519	1-215-463-00	METAL 56K 1% 1/4W	
R520	1-249-397-11	CARBON 22 5% 1/4W F	
R521	1-249-417-11	CARBON 1K 5% 1/4W F	
R522	1-249-401-11	CARBON 47 5% 1/4W	
R523	1-215-463-00	METAL 56K 1% 1/4W	
R524	1-215-463-00	METAL 56K 1% 1/4W	
R525	1-249-417-11	CARBON 1K 5% 1/4W F	
R527	1-249-429-11	CARBON 10K 5% 1/4W	
R528	1-216-081-00	RES,CHIP 22K 5% 1/10W	
R529	1-249-429-11	CARBON 10K 5% 1/4W F	
R530	1-216-474-11	METAL OXIDE 82 5% 3W F	
R531	1-216-474-11	METAL OXIDE 82 5% 3W F	
R532	1-249-385-11	CARBON 2.2 5% 1/4W F	
R533	1-249-417-11	CARBON 1K 5% 1/4W F	
R534	1-249-405-11	CARBON 100 5% 1/4W F	
R535	1-215-463-00	METAL 56K 1% 1/4W	
R536	1-249-417-11	CARBON 1K 5% 1/4W F	
R537	1-215-463-00	METAL 56K 1% 1/4W	
R538	1-215-905-11	METAL OXIDE 10 5% 3W F	
R539	1-215-905-11	METAL OXIDE 10 5% 3W F	
R540 ⚠	1-215-476-91	METAL 200K 1% 1/4W	
R541 ⚠	1-215-421-00	METAL 1K 1% 1/4W	
R542 ⚠	1-215-421-00	METAL 1K 1% 1/4W	
R543 ⚠	1-249-389-11	CARBON 4.7 5% 1/4W F	
R544 ⚠	1-247-903-00	CARBON 1M 5% 1/4W	
R545	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R546	1-215-457-00	METAL 33K 1% 1/4W	
R547 ⚠	1-215-477-00	METAL 220K 1% 1/4W	
R548	1-215-423-00	METAL 1.2K 1% 1/4W	
R549 ⚠	1-215-464-00	METAL 62K 1% 1/4W	
R550	1-215-423-00	METAL 1.2K 1% 1/4W	
R551	1-216-687-11	METAL CHIP 33K 0.50% 1/10W	
R552 ⚠	1-215-463-00	METAL 56K 1% 1/4W	
R553	1-216-698-11	METAL CHIP 91K 0.50% 1/10W	
R554	1-218-756-11	METAL CHIP 150K 0.50% 1/10W	
R556	1-216-691-11	METAL CHIP 47K 0.50% 1/10W	
R557	1-216-079-00	RES,CHIP 18K 5% 1/10W	
R558	1-216-671-11	METAL CHIP 6.8K 0.50% 1/10W	
R559	1-216-661-11	METAL CHIP 2.7K 0.50% 1/10W	
R560	1-216-679-11	METAL CHIP 15K 0.50% 1/10W	
R561	1-216-474-11	METAL OXIDE 82 5% 3W F	
R562	1-215-451-00	METAL 18K 1% 1/4W	
R563	1-249-383-11	CARBON 1.5 5% 1/4W F	
R564 ⚠	1-216-089-91	RES,CHIP 47K 5% 1/10W	
R565	1-215-481-00	METAL 330K 1% 1/4W	
R566	1-215-859-00	METAL OXIDE 22 5% 1W F	
R567 ⚠	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R568 ⚠	1-249-437-11	CARBON 47K 5% 1/4W	
R569	1-216-643-11	METAL CHIP 470 0.50% 1/10W	
R570	1-249-417-11	CARBON 1K 5% 1/4W	
R571	1-215-926-00	METAL OXIDE 33K 5% 3W F	

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The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R572	1-249-437-11	CARBON	47K	5%	1/4W	
R573	1-247-887-00	CARBON	220K	5%	1/4W	
R574	1-249-421-11	CARBON	2.2K	5%	1/4W	
R575	1-260-314-11	CARBON	68	5%	1/2W	
R576	1-249-437-11	CARBON	47K	5%	1/4W	
R577	1-215-908-00	METAL OXIDE	33	5%	3W	F
R578	1-216-448-11	METAL OXIDE	39	5%	2W	F
R579	1-247-883-00	CARBON	150K	5%	1/4W	
R580	1-216-077-91	RES,CHIP	15K	5%	1/10W	
R581	1-249-429-11	CARBON	10K	5%	1/4W	
R582	1-249-402-11	CARBON	56	5%	1/4W	F
R583	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R584	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R585	1-249-417-11	CARBON	1K	5%	1/4W	
R586	1-249-421-11	CARBON	2.2K	5%	1/4W	
R587	1-249-417-11	CARBON	1K	5%	1/4W	
R589	1-249-425-11	CARBON	4.7K	5%	1/4W	
R590	1-215-453-00	METAL	22K	1%	1/4W	
R591	1-214-844-81	METAL	150	1%	1/2W	
R592	1-214-844-81	METAL	150	1%	1/2W	
R594	1-216-033-00	RES,CHIP	220	5%	1/10W	
R595 ⚠	1-215-477-00	METAL	220K	1%	1/4W	
R596	1-215-423-00	METAL	1.2K	1%	1/4W	
R597	1-259-880-11	CARBON	2.2M	5%	1/4W	
R599	1-249-417-11	CARBON	1K	5%	1/4W	
R600	1-205-998-11	CEMENTED	1	5%	10W	
R602	1-219-513-11	CARBON	4.7M	5%	1/2W	
R603	1-249-403-11	CARBON	68	5%	1/4W	
R604 ⚠	1-220-827-91	REGISTER	560K	5%	1/2W	
R605	1-202-933-61	FUSIBLE	0.1	10%	1/2W	
R606	1-218-768-11	METAL CHIP	470K	0.50%	1/10W	
R607	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R608	1-215-473-00	METAL	150K	1%	1/4W	
R609	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R610	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R611	1-216-009-91	RES,CHIP	22	5%	1/10W	
R612	1-247-791-91	CARBON	22	5%	1/4W	
R613 ⚠	1-219-513-11	CARBON	4.7M	5%	1/2W	
R614	1-216-345-11	METAL OXIDE	0.47	5%	1W	F
R615	1-216-117-00	RES,CHIP	680K	5%	1/10W	
R616	1-216-121-91	RES,CHIP	1M	5%	1/10W	
R617	1-216-025-91	RES,CHIP	100	5%	1/10W	
R618	1-216-635-11	METAL CHIP	220	0.50%	1/10W	
R619	1-215-893-11	METAL OXIDE	1.5K	5%	2W	F
R620	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R621	1-216-098-00	RES,CHIP	110K	5%	1/10W	
R622	1-247-791-91	CARBON	22	5%	1/4W	
R623	1-216-615-91	METAL CHIP	33	0.50%	1/10W	
R624	1-216-611-11	METAL CHIP	22	0.50%	1/10W	
R625	1-260-332-51	CARBON	2.2K	5%	1/2W	
R626	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R627	1-249-377-11	CARBON	0.47	5%	1/4W	F
R628	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W	
R629	1-249-441-11	CARBON	100K	5%	1/4W	
R630 ⚠	1-211-874-71	FUSIBLE MELF	0.12	10%	1/2W	
R631 ⚠	1-211-874-71	FUSIBLE MELF	0.12	10%	1/2W	
R633	1-249-429-11	CARBON	10K	5%	1/4W	
R634 ⚠	1-211-874-71	FUSIBLE MELF	0.12	10%	1/2W	
R635	1-215-925-11	METAL OXIDE	22K	5%	3W	F
R636	1-260-119-11	CARBON	47K	5%	1/2W	
R637	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R638 ⚠	1-211-874-71	FUSIBLE MELF	0.12	10%	1/2W	
R639 ⚠	1-211-874-71	FUSIBLE MELF	0.12	10%	1/2W	
R640	1-249-381-11	CARBON	1	5%	1/4W	F
R642	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R643	1-215-467-00	METAL	82K	1%	1/4W	
R645	1-216-675-91	METAL CHIP	10K	0.50%	1/10W	
R646	1-216-689-11	RES,CHIP	39K	5%	1/10W	
R647	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R648	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R649	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R650	1-215-471-00	METAL	120K	1%	1/4W	
R654	1-216-364-11	METAL OXIDE	0.39	5%	2W	F
R655	1-247-807-31	CARBON	100	5%	1/4W	
R656	1-215-893-11	METAL OXIDE	1.5K	5%	2W	F
R660	1-260-119-11	CARBON	47K	5%	1/2W	
R661	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R663	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R665	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R703	1-249-410-11	CARBON	270	5%	1/4W	
R704	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W	
R705	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R706	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R707	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R708	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R709	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R710	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R711	1-216-346-00	METAL OXIDE	0.56	5%	1W	F
R712	1-215-860-11	METAL OXIDE	33	5%	1W	F
R713	1-216-347-11	METAL OXIDE	0.68	5%	1W	F
R716	1-215-860-11	METAL OXIDE	33	5%	1W	F
R717	1-216-353-00	METAL OXIDE	2.2	5%	1W	F
R718	1-215-863-11	METAL OXIDE	100	5%	1W	F
R719	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R724	1-216-422-11	METAL OXIDE	18	5%	1W	F
R727	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R728	1-215-863-11	METAL OXIDE	100	5%	1W	F
R729	1-216-353-00	METAL OXIDE	2.2	5%	1W	F
R730	1-216-421-11	METAL OXIDE	12	5%	1W	F
R731	1-216-295-91	SHORT	0			
R733	1-216-295-91	SHORT	0			
R735	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R737	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R739	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R741	1-249-377-11	CARBON	0.47	5%	1/4W	F
R743	1-249-377-11	CARBON	0.47	5%	1/4W	F
R745	1-216-298-00	RES,CHIP	2.2	5%	1/10W	
R747	1-216-298-00	RES,CHIP	2.2	5%	1/10W	
R753	1-216-679-11	METAL CHIP	15K	0.50%	1/10W	
R755	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
R903	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R904	1-216-049-91	RES,CHIP	1K	5%	1/10W	

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

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REF.NO.	PART NO.	DESCRIPTION			REMARK
R905	1-216-295-91	SHORT	0		
R906	1-216-073-00	RES,CHIP	10K	5%	1/10W
R907	1-260-087-81	CARBON	100	5%	1/2W
R908	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R909	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R912	1-216-049-91	RES,CHIP	1K	5%	1/10W
R913	1-216-025-91	RES,CHIP	100	5%	1/10W
R914	1-216-025-91	RES,CHIP	100	5%	1/10W
R915	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R916	1-216-077-91	RES,CHIP	15K	5%	1/10W
R917	1-216-077-91	RES,CHIP	15K	5%	1/10W
R918	1-216-049-91	RES,CHIP	1K	5%	1/10W
R919	1-216-025-91	RES,CHIP	100	5%	1/10W
R920	1-216-049-91	RES,CHIP	1K	5%	1/10W
R921	1-216-295-91	SHORT	0		
R922	1-216-073-00	RES,CHIP	10K	5%	1/10W
R923	1-216-295-91	SHORT	0		
R924	1-216-025-91	RES,CHIP	100	5%	1/10W
R925	1-216-113-00	RES,CHIP	470K	5%	1/10W
R926	1-216-025-91	RES,CHIP	100	5%	1/10W
R927	1-216-295-91	SHORT	0		
R928	1-216-025-91	RES,CHIP	100	5%	1/10W
R929	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R931	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R932	1-216-077-91	RES,CHIP	15K	5%	1/10W
R933	1-249-417-11	CARBON	1K	5%	1/4W
R934	1-249-429-11	CARBON	10K	5%	1/4W
R935	1-216-025-91	RES,CHIP	100	5%	1/10W
R936	1-216-025-91	RES,CHIP	100	5%	1/10W
R937	1-216-025-91	RES,CHIP	100	5%	1/10W
R938	1-216-025-91	RES,CHIP	100	5%	1/10W
R940	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R943	1-249-413-11	CARBON	470	5%	1/4W
R951	1-216-025-91	RES,CHIP	100	5%	1/10W
R953	1-216-073-00	RES,CHIP	10K	5%	1/10W
R954	1-216-073-00	RES,CHIP	10K	5%	1/10W
R957	1-216-017-91	RES,CHIP	47	5%	1/10W
R958	1-216-017-91	RES,CHIP	47	5%	1/10W

<VARIABLE RESISTOR>

⧓ RV501⚠ 1-241-767-21 RES, ADJ, CERMET 100K (HV ADJ)
3-710-578-01 COVER, VOLUME, 6 MOLD ; RV501

<RELAY>

RY500 1-515-669-21 RELAY
RY601⚠ 1-755-279-11 RELAY

<SWITCH>

S602 ⚠ 1-771-757-11 SWITCH, AC POWER PUSH
S901 1-692-431-21 SWITCH, TACTILE (RESET)

<SPARK GAP>

SG501 1-519-422-11 GAP, SPARK

<TRANSFORMER>

T501 ⚠ X-4560-154-1 TRANSFORMER ASSY, FLYBACK (NX-4404//J1L4)
T503 1-433-979-11 TRANSFORMER, FERRITE (DFT)
T504 1-433-978-11 TRANSFORMER, HORIZONTAL DRIVE
T505 1-431-413-11 TRANSFORMER, FERRITE (HST)
T601 ⚠ 1-433-847-14 TRANSFORMER, CONVERTER (SRT)

<THERMISTOR>

TH501 1-807-796-11 THERMISTOR
TH600⚠ 1-803-339-11 THERMISTOR, NTC
TH601 1-803-540-11 THERMISTOR

<VARISTOR>

VA601⚠ 1-801-268-51 VARISTOR TNR14V471K660
VA602⚠ 1-801-268-51 VARISTOR TNR14V471K660

<CRYSTAL>

X901 1-767-826-21 VIBRATOR, CRYSTAL
X902 1-767-933-11 OSCILLATOR, CERAMIC

****

* A-1372-712-A H BOARD, COMPLETE
****

<CAPACITOR>

C801 1-104-664-11 ELECT 47MF 20% 10V

<CONNECTOR>

CN801* 1-564-510-11 PLUG, CONNECTOR 7P

<DIODE>

D803 8-719-064-11 DIODE SPR-325MVW

<TRANSISTOR>

Q801 8-729-119-78 TRANSISTOR 2SC2785-HFE
Q802 8-729-119-78 TRANSISTOR 2SC2785-HFE

<RESISTOR>

R801 1-215-417-00 METAL 680 1% 1/4W
R802 1-215-421-00 METAL 1K 1% 1/4W
R803 1-215-427-00 METAL 1.8K 1% 1/4W

H

REF.NO.	PART NO.	DESCRIPTION			REMARK
R804	1-215-433-00	METAL	3.3K	1%	1/4W
R805	1-247-807-31	CARBON	100	5%	1/4W
R806	1-247-807-31	CARBON	100	5%	1/4W
R807	1-249-411-11	CARBON	330	5%	1/4W
R808	1-249-413-11	CARBON	470	5%	1/4W

REF.NO.	PART NO.	DESCRIPTION	REMARK
	<SWITCH>		
S801	1-771-734-11	SWITCH, TACTILE (BRIGHT/MENU/CONT)	

CPD-E200E

9-978-669-01 2000AL24126-1