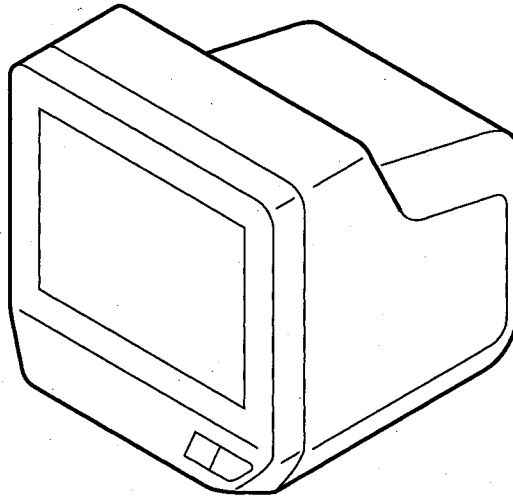
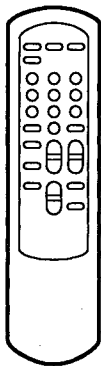


# SERVICE MANUAL

# BN-1 CHASSIS

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>	<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
<i>KV-9PT50</i>	<i>RM-Y116</i>	<i>US</i>	<i>SCC-J58A-A</i>				
<i>KV-9PT50</i>	<i>RM-Y116</i>	<i>CND</i>	<i>SCC-J59A-A</i>				
<i>KV-9PT60</i>	<i>RM-Y116</i>	<i>US</i>	<i>SCC-J58B-A</i>				
<i>KV-9PT60</i>	<i>RM-Y116</i>	<i>CND</i>	<i>SCC-J59B-A</i>				



\* Please file according to model size. ....

TRINITRON® COLOR TV  
**SONY®**

## SPECIFICATIONS

**Television system**

American TV standard, NTSC color

**Channel coverage**

VHF: 2-13/UHF: 14-69/CATV: 1-125

**Screen size**

9-inch picture measured diagonally

**Antenna**

VHF/UHF telescopic antenna

**Speaker**

77 mm round (3 1/8 inches), 1 W

**Inputs**

VIDEO: RCA phono-type 1 Vp-p,

75 ohms

AUDIO: RCA phono-type monaural

VHF/UHF (Combined CATV/VHF/

UHF 75-ohm, F-type)

**Output**

Headphone jack (monaural)

**Dimensions**

**Power requirements**

KV-9PT50: 120 V AC, 60 Hz

KV-9PT60: 120 V AC, 60 Hz, 12 V DC

**Power consumption**

KV-9PT50: AC IN 53 W max.

KV-9PT60: AC IN 53 W max.

DC IN 53 W max.

**Mass**

KV-9PT50: 5.5 kg (12 lb 2 oz)

KV-9PT60: 5.7 kg (12 lb 9 oz)

**Supplied accessories**

Remote commander RM-Y116

Size AA batteries (2)

Telescopic antenna (1)

*KV-9PT50 only:* Dual mode swivel

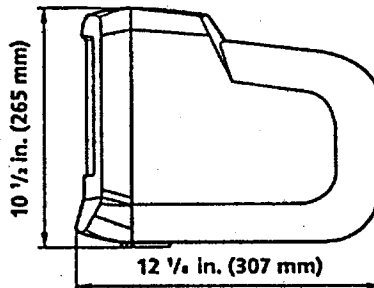
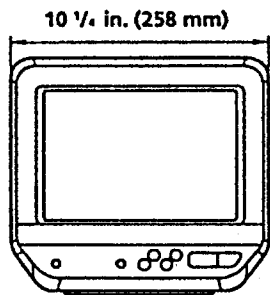
bracket (1), Attachment parts (1), Paper

pattern (1)

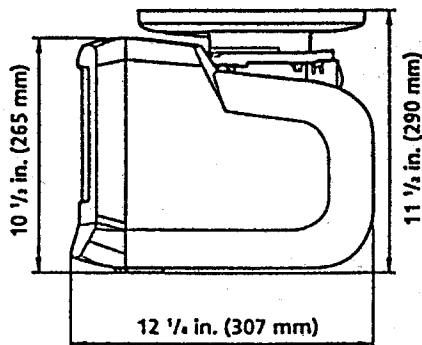
*KV-9PT60 only:* AC power cord (1), Car

battery cord DCC-22AW (1)

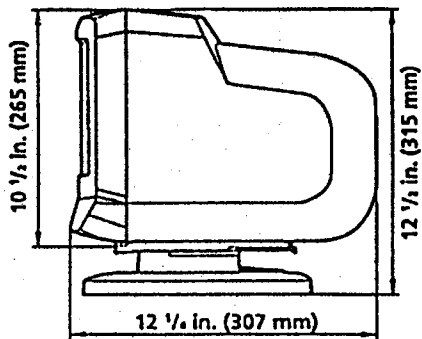
Design and specifications are subject to change without notice.



When the bracket is attached to the upper part of the TV



When the bracket is attached to the lower part of the TV



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**(CAUTION)**

**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.**

**WARNING!!**

**AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.**

**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.**

**(ATTENTION)**

**APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.**

**ATTENTION!!**

**AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHASSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISE LORS DE TOUT DEPANNAGE. LE CHASSIS DE CE RECEPTEUR EST DIRECTEMENT RACCORDE A L'ALIMENTATION SECTEUR.**

**ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!**

**LES COMPOSANTS IDENTIFIES PAR UNE TRAME ET PAR UNE MARQUE ! SUR LES SCHEMAS DE PRINCIPE, LES VUES EXPLOSEES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMERO DE PIECE EST INDIQUE DANS LE PRESENT MANUEL OU DANS DES SUPPLEMENTS PUBLIES PAR SONY. LES REGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRESENT MANUEL. SUIVRE CES PROCEDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTE.**

## 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 cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).  
Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

## 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 0.5mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT540A. 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 0.75V, so analog meters must have an accurate low voltage scale. The Simpson 250 and Sanwa SH63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

## HOW TO FIND A GOOD EARTH GROUND

A cold water pipe is guaranteed earth ground; the cover plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold water pipe with an ohmmeter. The reading should be zero ohms. If a cold water pipe is not accessible, connect a 60 watt trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

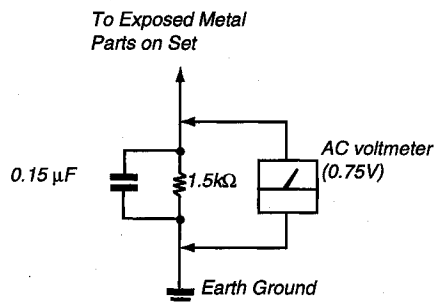


Fig. A. Using an AC voltmeter to check AC leakage.

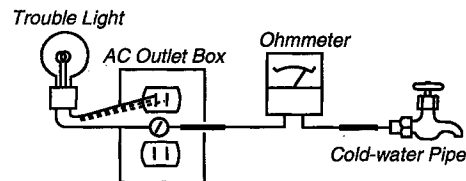


Fig. B. Checking for earth ground.

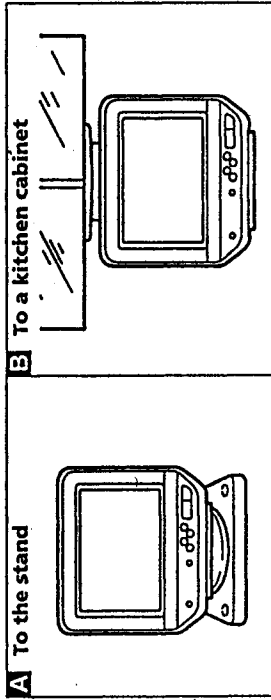
# SECTION 1 GENERAL

## Setting Up

### Setting up the KV-9PT50

#### Attaching the TV

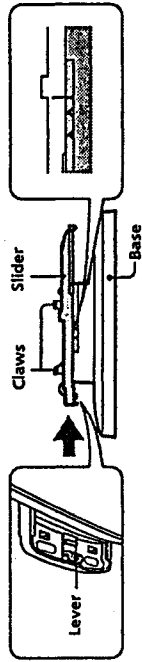
You can install the TV to the stand (bracket) in two ways with the supplied dual mode swivel bracket.



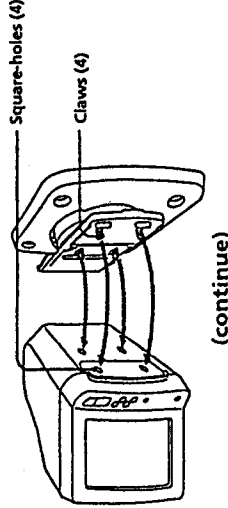
**Caution**  
Do not install the TV with wet hands, or touch the TV and bracket with wet hands.

#### A To attach the TV to the stand

**1** While holding up the lever, push the slider in the direction of the arrow.



**2** Turn the TV sideways, attach the stand to the TV so that the four claws of the slider fit in the square-holes on the bottom of the TV.

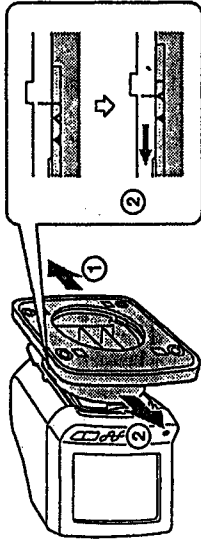


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Setting up

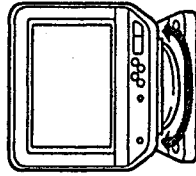
The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

**3** Push the base in the direction of the arrow ① until the two rear claws on the slider touch the back of the square-holes on the bottom of the TV.



**②** To lock the bracket and the TV, pull the slider in the direction of the arrow ② while holding up the lever without moving the base.

**4** You can rotate the TV about 60° in either direction.



#### B To attach the TV to a kitchen cabinet

To install the TV to a kitchen cabinet, attach the supplied shelf installation bracket using the attachment parts shown below. The bracket attachment instructions differ depending on the cabinet type (flush or overhanging). Follow the instructions that match your cabinet type.

#### Attachment parts (supplied)

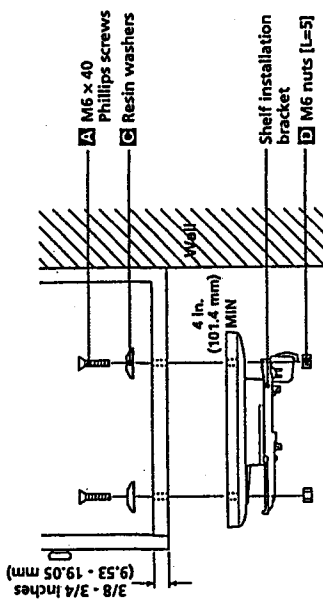
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
M6 x 40 Phillips screws (4)	M6 x 70 Phillips screws (4)	Resin washers (4)	M6 nuts [L=5] (4)	Spacers [L=30] (4)
				Stopper (1)

Lay the supplied paper pattern on the base of the cabinet (inside or outside), to ensure the proper 4 inches (101.4 mm) distance between the wall and the bracket. Drill 4 holes (diameter: 9/32 inches, 7 mm) where indicated on the pattern. Attach the shelf installation bracket as shown on the following pages.

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Setting up

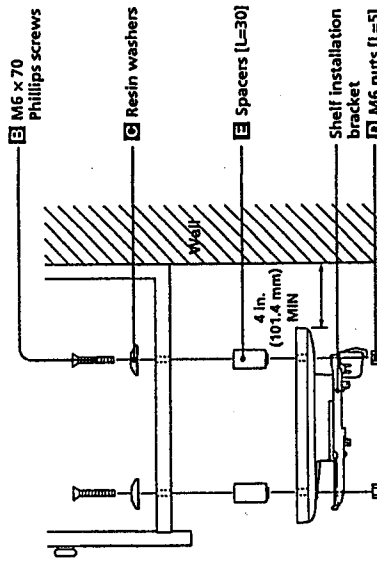
### Attaching to a flush type cabinet



#### Notes

- You cannot attach the shelf installation bracket to a cabinet with a base thickness of less than 3/8 inches (9.53 mm).
- If the cabinet base thickness is over 3/4 inches (19.05 mm), purchase longer screws (#10-32) and nuts at a hardware supply store.

### Attaching to an overhanging type cabinet



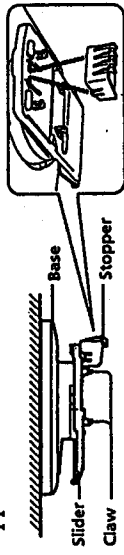
#### Notes

- The spacer is not needed for the cabinet with an overhang of 0 - 1 inch (0 - 25.4 mm).
- The spacer is needed for the cabinet with an overhang of 1 - 2 inches (25.4 - 51 mm).
- You cannot attach the shelf installation bracket to cabinet with an overhang of over 2 1/8 inches (51 mm).

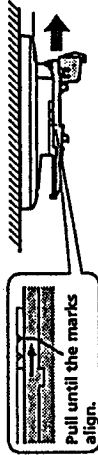
#### Cautions

- When using the shelf installation bracket to attach the TV to a kitchen shelf or cabinet, be sure that the bracket is attached level to the shelf or cabinet base. If the TV is installed to a bracket that is not level, it may fall from the bracket.
- To reduce the risk of fire, do not place any heating or cooking appliance beneath TV.

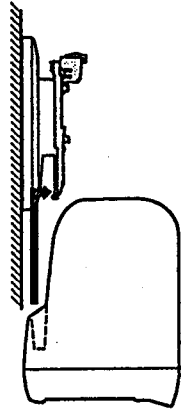
**1** Attach the stopper to the slider.



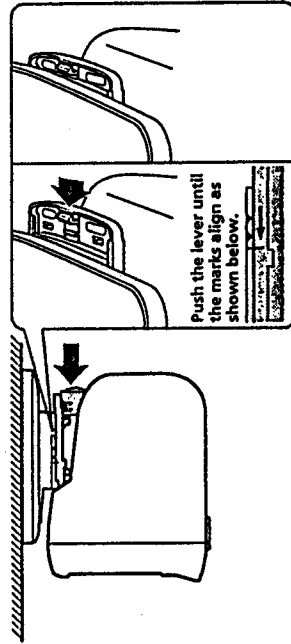
**2** While holding down the lever, pull the slider in the direction of the arrow.



**3** Attach the TV temporarily to the slider so that two claws of the bracket base fit in the square-holes located inside of the TV's knob.

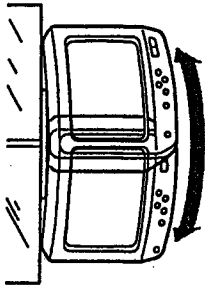


**4** While holding down the lever, push the slider in the direction of the arrow so that the claws of the stopper fit in the ventilation hole of the TV' cabinet.



Make sure that the bracket and the TV are locked completely.

- 5** You can rotate the TV about 60° in either direction. Be sure to rotate the TV slowly and gently.

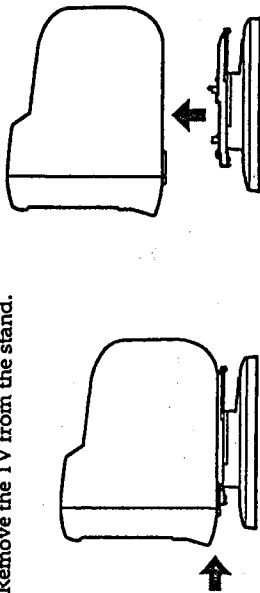


**Caution**  
• Take care that a child does not hang on the TV or pull it forcibly.

**Removing the TV**

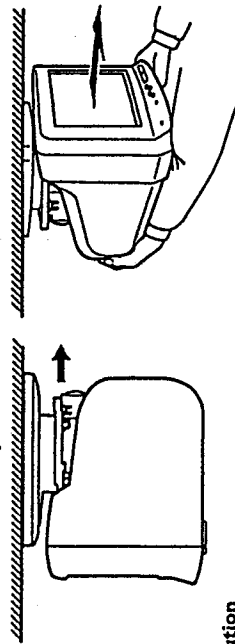
**A To remove the TV from the stand**

- 1** While holding up the lever, push the slider in the direction of the arrow to unlock the bracket and the TV.
- 2** Remove the TV from the stand.



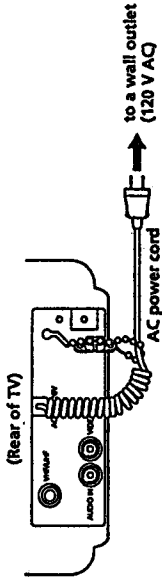
**B To remove the TV from the bracket**

- 1** While holding down the lever, pull the slider in the direction of the arrow to unlock the bracket and the TV.
- 2** Pull the TV toward you to remove the TV from the bracket.



**Caution**  
• If you do not support the TV as illustrated, the TV may fall when it separates from the bracket.

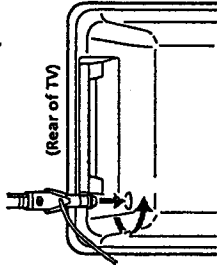
**Using house current**



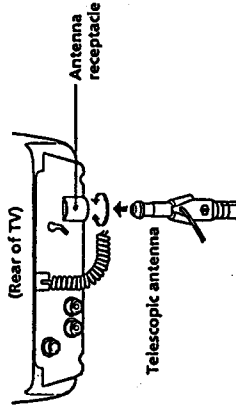
**Connecting the supplied telescopic antenna**

- 1** Insert the antenna into the receptacle on the TV, and twist to ensure a secure fit.

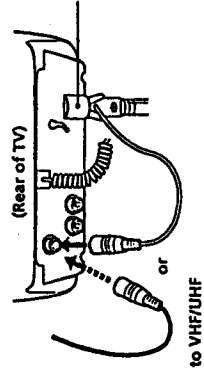
When attaching the TV to the stand (table use)



When attaching the TV to the kitchen cabinet

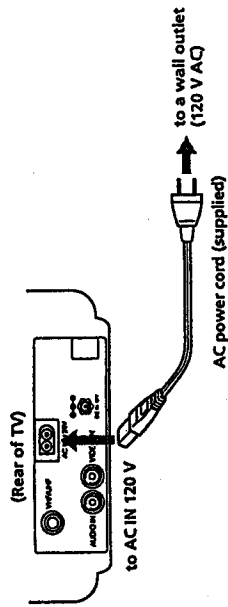


- 2** Attach the antenna connector to the VHF/UHF terminal.

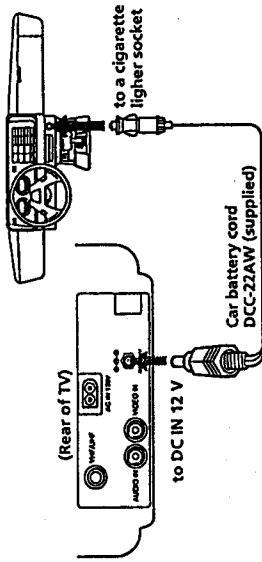


## Setting up the KV-9PT60

### Using house current

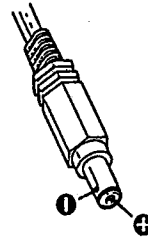


### Using a car battery



#### Notes

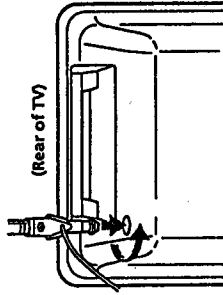
- For car use, the TV is designed for negative ground 12 V DC operation only.
- Use only the supplied car battery cord manufactured by Sony. Polarity of the plugs of other manufactures may be different.



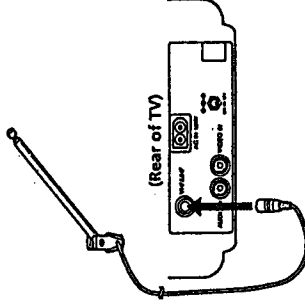
- When you aren't using the TV, remove the car battery cord from the cigarette lighter socket.

### Connecting the supplied telescopic antenna

- 1 Insert the antenna into the receptacle on the TV, and twist to ensure a secure fit.



- 2 Attach the antenna connector to the VHF/UHF terminal.





## Connections

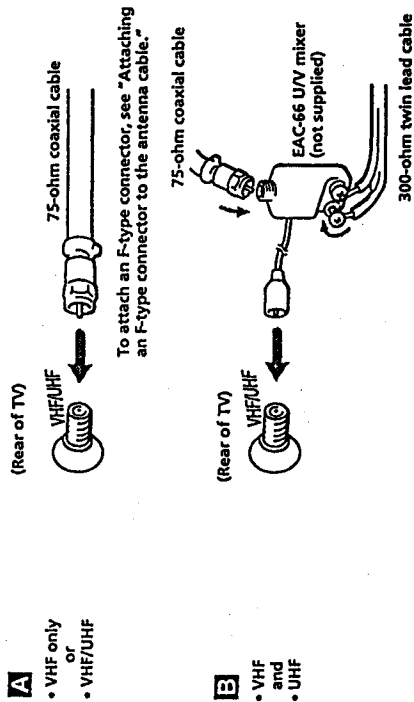
Select one of the two ways to connect the TV to the antenna and/or cable system. It is recommended to connect an outdoor antenna or a cable TV system for better picture quality.

### Connecting to outdoor antenna

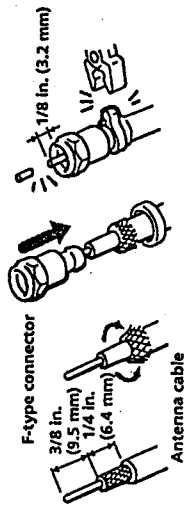
Connect the antenna cable to the VHF-UHF antenna terminal. If the antenna cable cannot be connected directly to the jack, follow one of the diagrams below, depending on the type of cable you have.

#### Notes

- Do not use tools to attach the cable to the VHF/UHF terminal. Doing so may damage the terminal.
- Most VHF/UHF combination antennas have a signal splitter. Remove the splitter before attaching the appropriate connector.
- If the U/V mixer is used, snow and noise may appear in the picture when viewing cable TV channels over 37.



### Attaching an F-type connector to the antenna cable

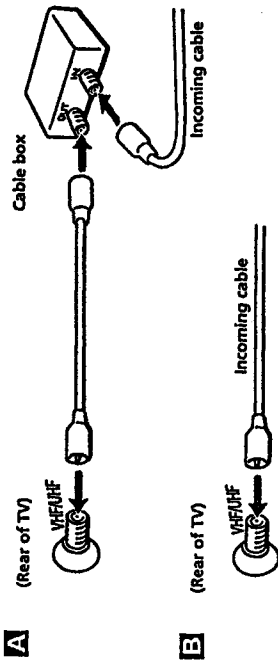


Setting up

13EN

### Connecting to cable TV system

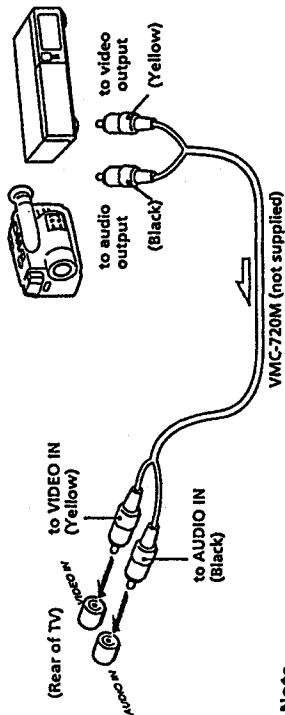
If your cable company requires you to connect a cable box, follow example **A**. If not, follow example **B**.



### Connecting video equipment

Before connecting, turn off the power on all equipment.

#### Connecting a VCR or 8mm video camera



#### Note

When connecting stereo equipment, use the VMC-920MS (not supplied) connecting cable (stereo → monaural).

### Watching a VCR picture

- 1 Turn on the TV.
- 2 Press TV/VIDEO so that "VIDEO" appears on the screen.

To return to TV mode

Press TV/VIDEO so that a channel number appears on the screen.

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Setting up

## Setting up the remote commander

Install two size AA batteries (supplied) as shown.



### Notes

- Match the + and - on the batteries to the diagram inside the battery compartment.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not handle the remote commander roughly. Do not drop it, step on it or let it get wet.
- Do not place the remote commander in direct sunlight, near a heater, or where the humidity is high.

Instructions in this manual are based on the remote commander. You can also use the controls on the TV if they have the same name as those on the remote commander.

## Setting cable TV on or off

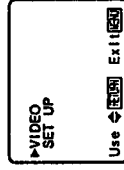
If the TV is connected to a cable TV system, then the factory setting CABLE ON is correct. If the TV is not connected, set CABLE to OFF.

### Note

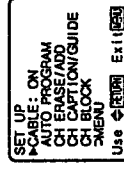
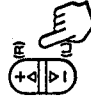
If more than 90 seconds elapse after you press a button, the menu disappears automatically.

### 1 Press MENU.

The main menu appears.



### 2 Press Δ+ or ∇- on the remote commander to move the cursor (▶) on the screen to SET UP. To select that function, press RETURN. The SET UP menu appears.



### Note

If CABLE appears in black, the TV is set to video input and CABLE cannot be selected. Press TV/VIDEO so that a channel number appears.

### 3 Set CABLE to ON or OFF.

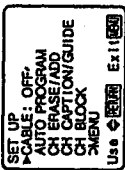
(1) If the cursor is not beside CABLE, press Δ+ or ∇- to move the cursor and press RETURN.



(2) Press  $\Delta$ + or  $\nabla$ - to select ON or OFF.



(3) Press RETURN.



4 Press MENU to return to the original screen.

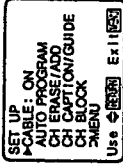


## Presetting channels

TV channels can be preset easily; first, store all the receivable channels automatically by following the procedure below. Next, erase unwanted channels or add additional channels. Preset channels during the day rather than late at night, when some channels may not be broadcasting.

1 Press MENU.

2 Press  $\Delta$ + or  $\nabla$ - on the remote commander to move the cursor ( $\blacktriangleright$ ) on the screen to SET UP and press RETURN.  
The SET UP menu appears.

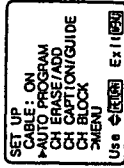


### Note

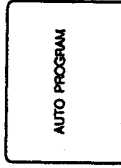
If AUTO PROGRAM appears in black, the TV is set to video input and AUTO PROGRAM cannot be selected. Press TV/VIDEO so that a channel number appears.

3 Select AUTO PROGRAM.

(1) Press  $\Delta$ + or  $\nabla$ - to move the cursor ( $\blacktriangleright$ ) to AUTO PROGRAM.



(2) Press RETURN.



"AUTO PROGRAM" appears on the screen and the TV starts scanning and presetting channels automatically. When all the receivable channels are stored, "AUTO PROGRAM" disappears and the lowest numbered channel is displayed.

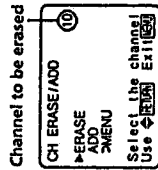
## Functions

### Erasing or adding channels

- 1 Press MENU.
- 2 Press  $\Delta$  or  $\nabla$  to select SET UP and press RETURN.
- 3 Press  $\Delta$  or  $\nabla$  to select CH ERASE/ADD and press RETURN.

#### 4 To erase an unwanted channel:

- (1) Press CH +/- to select the channel you want to erase.
- (2) Make sure the cursor ( $\blacktriangleright$ ) is beside ERASE.



- (3) Press RETURN.

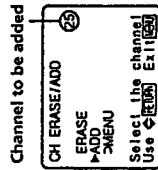
The indication "-" appears beside the channel number, showing that the channel is erased from the preset memory.

#### Note

You can select the erased channel using the 0-9 buttons.

To add a channel that you want:

- (1) Press 0-9 buttons to select the channel you want to add and press ENTER.
- (2) Press  $\Delta$  or  $\nabla$  to select ADD.



- (3) Press RETURN.

The indication "+" appears beside the channel number, showing that the channel is added to the preset memory.

- 5 To erase and/or add other channels, repeat step 4.
- 6 When finished, press MENU.

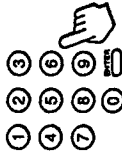
#### Note

If you erase or add a VHF or UHF channel, the cable TV channel with the same number is also erased or added, and vice versa.

**Note**  
If "VIDEO" appears on the screen, press TV/VIDEO so that a channel number appears.

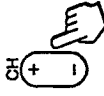
### Selecting a channel directly

Press the 0-9 buttons to select a channel. Or press ENTER after entering the channel for immediate selection.



### To scan through channels

Press CH +/- until the channel you want appears.



### Switching quickly between two channels

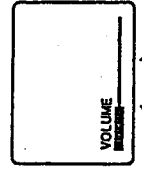
Press JUMP.

The channel you watched previously appears. Pressing JUMP again switches back to the original channel.



### Adjusting the volume

Press VOL +/- to adjust the volume.



### Muting the sound

Press **MUTING**.

"**MUTING**" appears on the screen.



To restore the sound, press **MUTING** again, or press **VOL +**.

### Displaying on-screen information

Use this feature to check your channels.  
Press **DISPLAY**.



To cancel the display, press **DISPLAY** again.

### Setting the Sleep Timer

The TV stays on for the length of time specified and then shuts off automatically.  
Press **SLEEP** repeatedly until the time (minutes) wanted appears. Each time you press **SLEEP**, the time changes as follows: 30 → 60 → 90 → OFF. "**SLEEP**" appears on the screen one minute before the TV power is shut off.



To cancel the Sleep Timer, press **SLEEP** repeatedly until "**SLEEP OFF**" appears, or turn the TV off.

### Listening with headphones

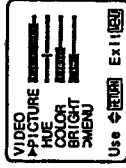
Plug the headphones into the headphone jack.  
The sound from the speaker is shut off and the monaural sound will be heard from the headphones. To adjust the headphones volume, press **VOL +/-**.



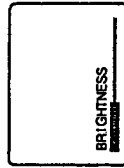
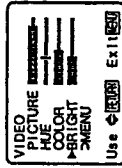
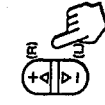
## Adjusting the picture

When watching TV programs, the quality of the picture can be adjusted to suit your taste.

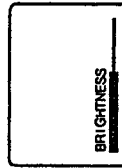
- 1 Press **MENU**.
- 2 Make sure the cursor (▶) is beside **VIDEO** and press **RETURN**.



- 3 Select the item to adjust. See chart on following page for details on results of adjustments. For example:  
To adjust brightness, press **Δ+** or **∇-** to select **BRIGHT** and press **RETURN**.



- 4 Adjust the level:  
(1) Press **Δ+** or **∇-** to adjust the level.



- (2) Press **RETURN**.  
The new setting appears in the **VIDEO** menu.
- 5 To adjust other items, repeat steps 3 and 4 above.

### Description of adjustable items

Item	Adjustment
	Press $\Delta$ + to
PICTURE	Increase picture contrast for vivid color
	Press $\nabla$ - to
	Decrease picture contrast for soft color
HUE	Make skin tones become greenish
	Make skin tones become purplish
COLOR	Increase color intensity
	Decrease color intensity
BRIGHT	Brighten the picture
	Darken the picture

### To restore the factory settings

Press **RESET** while the **VIDEO** menu is displayed. All the settings except **PICTURE** are restored to factory settings.

### Adjusting the picture when watching video tapes

You can adjust the picture of the video input as well. These settings are stored separately from those for the TV picture.

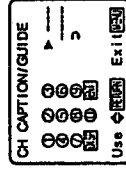
To adjust the video picture, first press **TV/VIDEO** to set to video input, then follow the procedure on the previous page.

## Customizing the channel number buttons

Up to 12 channels can be captioned and assigned to a specific channel number button for each channel. This feature allows the easy selection of your favorite channels by name. For example, select channel 17 "ESPN," and assign the channel number 2 button to it.

### Setting captions to a favorite channel

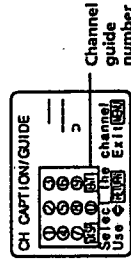
- 1 Press **MENU**.
- 2 Press  $\Delta$ + or  $\nabla$ - to select **SET UP** and press **RETURN**.
- 3 Press  $\Delta$ + or  $\nabla$ - to select **CH CAPTION/GUIDE** and press **RETURN**.



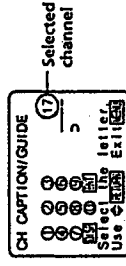
- 4 Press **RETURN** again.



- 5 Press  $\Delta$ + or  $\nabla$ - to select a channel guide number (chosen number will appear in red) and press **RETURN**.  
For example, select 2 as the channel guide number. Numbers 0-9, **DISPLAY** and **ENTER** buttons are available for use as a channel guide number. The channel number button you select will be the one you press to call up your favorite channel.



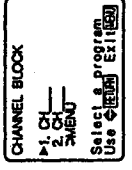
- 6 Press  $\Delta$ + or  $\nabla$ - to select the channel that you want to caption and press **RETURN**. For example, select channel 17.



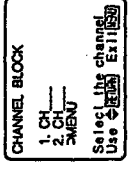
# Blocking out a channel (CHANNEL BLOCK)

This feature allows you to prevent children from watching unsuitable programs.

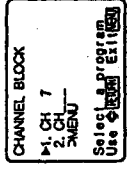
- 1 Press MENU.
- 2 Press Δ+ or ∇- to select SET UP and press RETURN.
- 3 Press Δ+ or ∇- to select CH BLOCK and press RETURN.



- 4 Select the channel you want to block.
  - (1) Press Δ+ or ∇- to select program 1 or 2 and press RETURN. The selected channel indication turns red.



- (2) Press Δ+ or ∇- to select the channel you want to block and press RETURN.



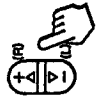
- 5 Repeat step 4 to 5 to block other channels.

If you select the blocked channel when watching the TV, "BLOCKED" appears and the picture is blocked and the sound is muted.

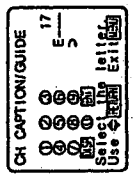
To cancel a channel block Press RESET in step 3.

- 7 Enter the letters (up to four) to caption the channel:
  - (1) Press Δ+ or ∇- to select the first letter. Each time you press Δ+ or ∇-, the letter changes as shown below.

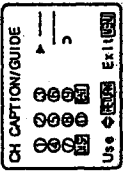
0 → 1 → ... → 9 → A → B → ... → Z → & → \* → / → ← → → → \_ (blank space)



- (2) Press RETURN.



- (3) Repeat steps (1) and (2) to select the remaining letters and press RETURN.



- 8 Repeat step 4 to 7 to caption other channels.

To cancel a setting Select the channel you want to cancel in step 5, then press RESET.

## Selecting a captioned channel

- 1 Press CH GUIDE. The CHANNEL GUIDE menu appears showing channel captions and the corresponding channel number buttons.
  - 2 Press a channel number button, the DISPLAY or ENTER button to select the channel you want.
- To cancel the CHANNEL GUIDE menu Press CH GUIDE again.

## Troubleshooting

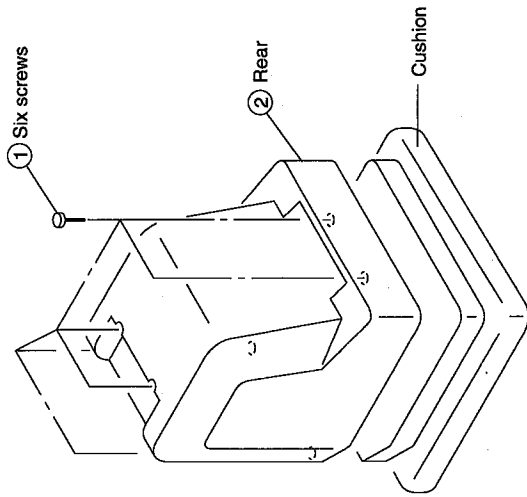
If trying the remedies below, the problem is not corrected, contact your nearest Sony dealer.

Problem	Adjustment
Poor or no picture (screen lit), good sound	<ul style="list-style-type: none"> <li>• Adjust PICTURE in the VIDEO menu.</li> <li>• Adjust BRIGHT in the VIDEO menu.</li> <li>• Check antenna/cable connections.</li> </ul>
No picture (screen not lit), no sound	<ul style="list-style-type: none"> <li>• Make sure the power cord is connected securely.</li> <li>• Check to see if the TV/VIDEO setting is correct. When watching TV, set to TV, and when watching video tapes, set to VIDEO or the channel you use for watching video.</li> <li>• Try another channel. It could be station trouble.</li> </ul>
No color.	<ul style="list-style-type: none"> <li>• Adjust COLOR in the VIDEO menu.</li> <li>• Black and white programs cannot be seen in color.</li> </ul>
Only snow and noise appear on the screen	<ul style="list-style-type: none"> <li>• Check the CABLE setting in the SET UP menu.</li> <li>• Check the antenna/cable connection.</li> <li>• Make sure the channel is broadcasting programs.</li> </ul>
Dotted lines or stripes	<ul style="list-style-type: none"> <li>• Adjust the antenna.</li> <li>• Move the TV away from noise sources such as cars, neon signs, and hair-dryers.</li> </ul>
Double images or ghosts	<ul style="list-style-type: none"> <li>• Use a highly directional outdoor antenna or a cable TV cable (when the problem is caused by reflections from nearby mountains or tall buildings).</li> </ul>
The picture is distorted (DC operation)	<ul style="list-style-type: none"> <li>• When the car battery voltage drops too low, the picture may be distorted. Use the TV with the engine running.</li> </ul>
Cannot operate menu	<ul style="list-style-type: none"> <li>• The menu disappears automatically when 90 seconds elapse after you press a button.</li> <li>• If the menu items appear in black, the TV is set to video input and you cannot operate the menu. Press TV/VIDEO until a channel number appears.</li> </ul>
The remote commander does not operate	<ul style="list-style-type: none"> <li>• Insert the batteries in the remote commander with the correct polarity.</li> <li>• Replace the batteries with new ones if they are weak.</li> <li>• If there is a fluorescent light close to the TV, move it at least 3-4 feet away from the TV.</li> </ul>
The TV needs to be cleaned.	<ul style="list-style-type: none"> <li>• Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzine, which might damage the finish of the cabinet.</li> </ul>

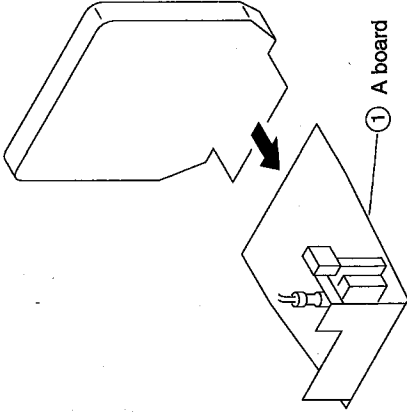


## SECTION 2 DISASSEMBLY

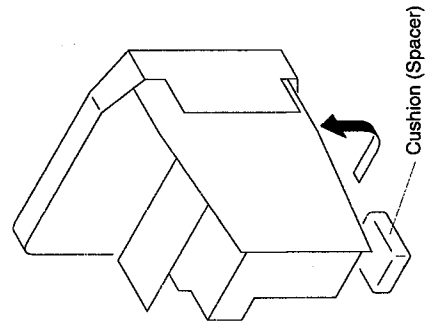
### 2-1. CHASSIS ASSY REMOVAL



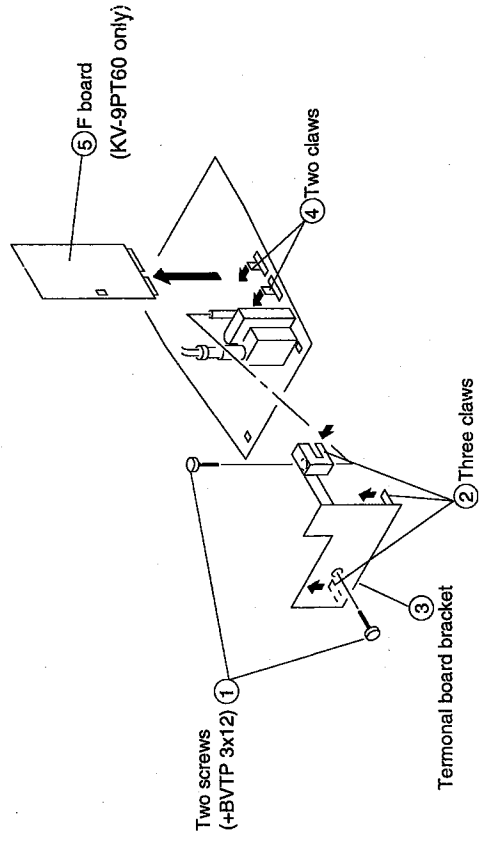
### 2-3. A BOARD REMOVAL



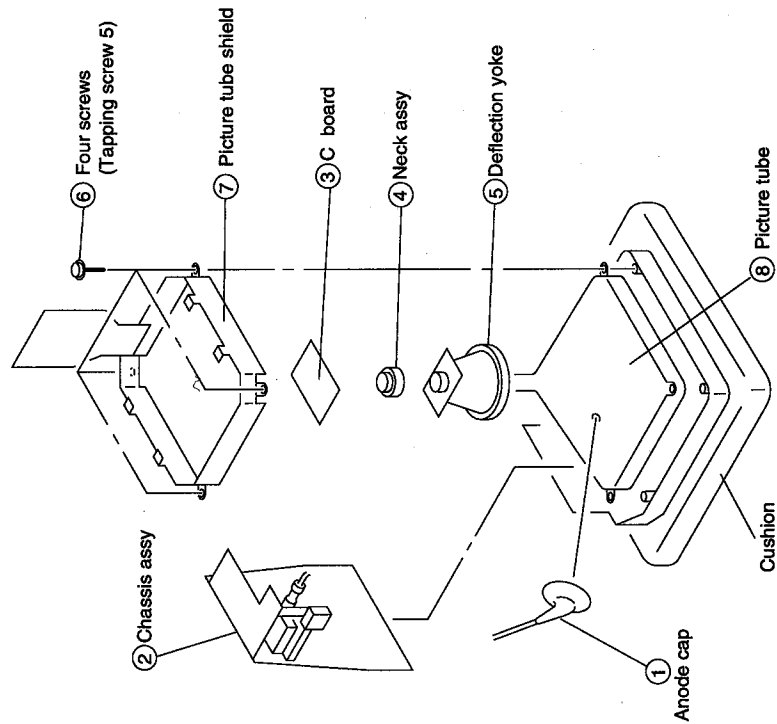
### 2-2. SERVICE POSITION



### 2-4. F BOARD REMOVAL



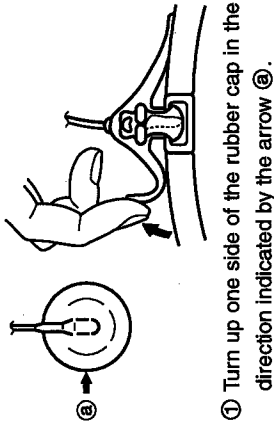
## 2-5. PICTURE TUBE REMOVAL



## • REMOVAL OF ANODE-CAP

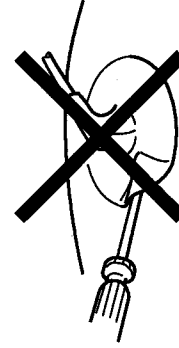
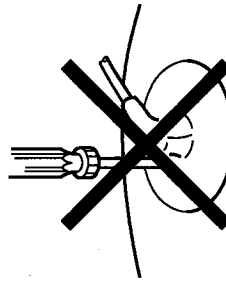
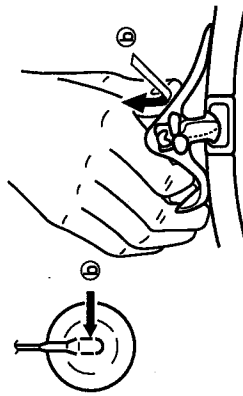
**NOTE:** Short circuit the anode of the picture tube and the anode cap to the metal chassis. CRT chield or carbon painted on the CRT, after removing the anode.

## • REMOVING PROCEDURES

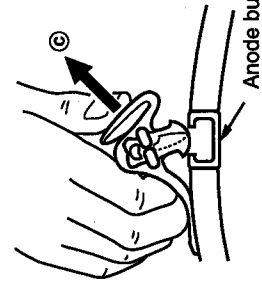


## • HOW TO HANDLE AN ANODE-CAP

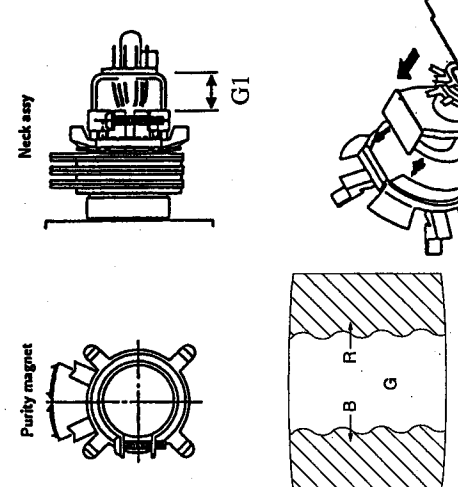
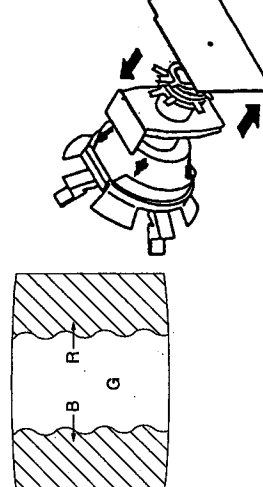
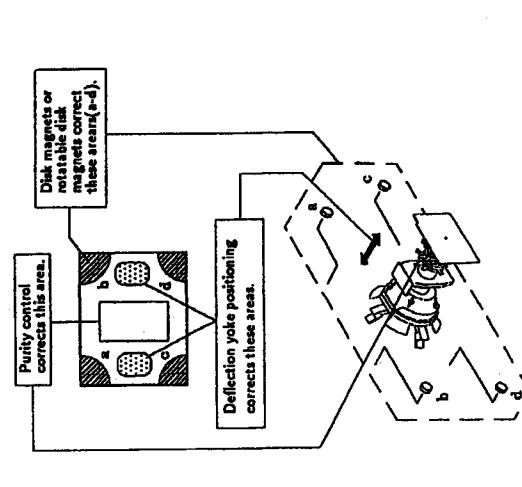
- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps! A material fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly! The shatter-hook terminal will stick out or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



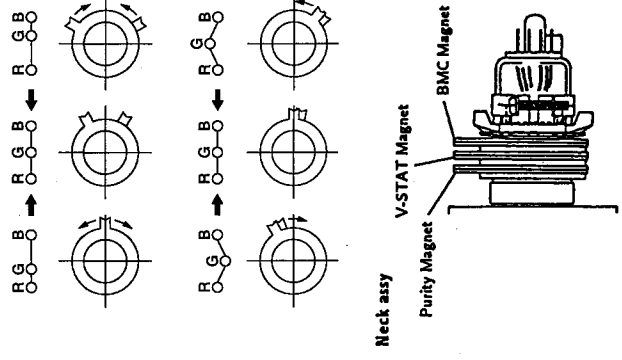
- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow (c).

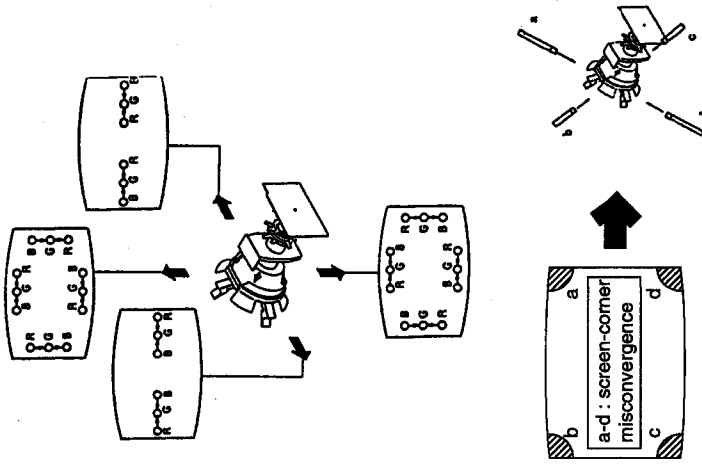
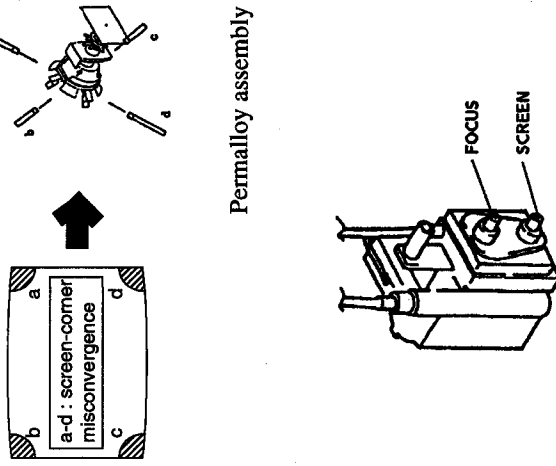


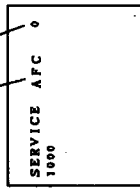
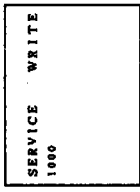

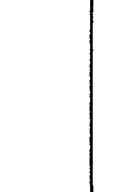
## SECTION 3 SET-UP ADJUSTMENTS

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<ul style="list-style-type: none"> <li>● The following adjustments should be made when a complete realignment is required or a new picture tube is installed.</li> <li>● These adjustments should be performed with rated power supply voltage unless otherwise noted.</li> </ul> <p>The controls and switch should be set as follows unless otherwise noted :</p> <p>PICTURE control ..... normal            BRIGHTNESS control ..... normal</p> <p><b>Preparation:</b></p> <ul style="list-style-type: none"> <li>● In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.</li> <li>● Switch on the set's power and degauss with the degausser.</li> </ul>				
<p><b>BEAM LANDING</b></p> <ol style="list-style-type: none"> <li>1. Input a white pattern signal with the pattern generator.</li> <li>2. Position neck ass'y as shown in Fig.</li> <li>3. Loosen the deflection yoke mounting screw, and set the purity control to the center.</li> </ol>	White Pattern		Purity Control	
<ol style="list-style-type: none"> <li>4. Turn the green pattern signal of the pattern generator to green.</li> <li>5. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and red and blue are at the sides evenly.</li> <li>6. Move the deflection yoke forward, and adjust so that the entire screen becomes green.</li> <li>7. Switch over the raster signal to red and blue and confirm the condition.</li> </ol>	Green Pattern		Deflection Yoke	
<ol style="list-style-type: none"> <li>8. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.</li> <li>9. When landing at the corner is not right, adjust by using the disk magnets.</li> </ol>			Disk Magnets	

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<p><b>CONVERGENCE</b></p> <p><b>Preparation:</b></p> <ul style="list-style-type: none"> <li>● Before starting, perform FOCUS, V. LIN and V. SIZE adjustments.</li> <li>● Set BRIGHTNESS control to minimum.</li> <li>● Feed in dot pattern signal.</li> </ul> <p><b>(1) Horizontal and Vertical Static Convergence</b></p> <p><b>Adjustment</b></p> <ol style="list-style-type: none"> <li>1. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.</li> <li>2. (Moving horizontally), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.</li> </ol> <ul style="list-style-type: none"> <li>• Tilt the V.STAT magnet and adjust static convergence by opening or closing the V.STAT magnet.</li> </ul> <ol style="list-style-type: none"> <li>3. When the V-static magnet is moved in the direction of arrow ③ and ④, red, green and blue dots move as shown below.</li> </ol>	<p>Dot Pattern</p>		<p>V. STAT Magnet</p>	

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<ul style="list-style-type: none"> <li>● Operation of BMC Magnet</li> <li>● The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking. Use the V-static tabs to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).</li> <li>● Y separation axis correction magnet adjustment</li> </ul> <ol style="list-style-type: none"> <li>1. Receive a cross hatch signal, and adjust PICTURE and BRIGHTNESS.</li> <li>2. Adjust the deflection yoke to the upright condition when it hits the CRT.</li> <li>3. Adjust so that the Y separation Axis correction magnet on the neck assembly is symmetrical at the top and bottom (open state).</li> <li>4. Return the deflection yoke to its original position.</li> </ol>			BMC Magnet	 <p>The illustration section contains several diagrams. On the left, there are two rows of three circular diagrams each. Each diagram shows a circle with a central dot and a small tab on the right side. Above each diagram are labels 'R', 'G', and 'B' with arrows pointing to the dots. The top row shows the dots at different horizontal positions, and the bottom row shows them aligned at the center. To the right of these is a larger diagram of a neck assembly. It is a cylindrical component with several layers. Labels point to 'Neck assy', 'V-STAT Magnet', 'Purity Magnet', and 'BMC Magnet'.</p>

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<p><b>(2) Dynamic Convergence Adjustment</b></p> <p><b>Preparation:</b></p> <ul style="list-style-type: none"> <li>● Before starting perform Horizontal and Vertical static convergence Adjustment.</li> </ul> <ol style="list-style-type: none"> <li>1. Slightly loosen deflection yoke screw.</li> <li>2. Remove deflection yoke spacers.</li> <li>3. Move the deflection yoke for best convergence as shown below.</li> <li>4. Tighten the deflection yoke screw.</li> <li>5. Install the deflection yoke spacers.</li> </ol>			<p>Deflection Yoke</p>	 <p>Permalloy Ass'y</p>
<p><b>(3) Screen-corner Convergence Adjustment</b></p> <p>a-b : screen-corner misconvergence</p> <p>Affix a Permalloy ass'y corresponding to the misconverged areas</p> <p><b>FOCUS</b></p> <ol style="list-style-type: none"> <li>1. Receive the broadcasting picture and adjust the picture quality with the menu.</li> <li>2. Adjust FOCUS control(FBT) for best picture.</li> </ol>			<p>Permalloy assembly</p> <p>FOCUS control</p>	

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<p><b>METHOD OF SETTING THE SERVICE ADJUSTMENT SERVICE MODE PROCEDURE</b></p> <ol style="list-style-type: none"> <li>Standby mode. (Power off)</li> <li><b>DISPLAY</b> → <b>5</b> → <b>VOL (+)</b> → <b>POWER</b> on the *Remote Commander. Press each button within a second.</li> <li>The CRT display the item Being adjusted.</li> <li>Press <b>1</b> or <b>4</b> on the Remote Commander to select the item.</li> <li>Press <b>3</b> or <b>6</b> on the Remote Commander to change the data.</li> <li>Press <b>MUTING</b> then <b>ENTER</b> to write into memory.</li> <li>Press <b>8</b> then <b>ENTER</b> on the Remote Commander to initialize.</li> <li>Turn set off and on to exit.</li> </ol>				<p>SERVICE ADJUSTMENT MODE IN</p>  <p>SERVICE ADJUSTMENT MODE MEMORY</p> 
<p><b>SCREEN (G2)</b></p> <ol style="list-style-type: none"> <li>Input a dot pattern signal.</li> <li>Adjust <b>PICTURE</b>, <b>BRIGHTNESS</b> controls.</li> <li>Connect R, G and B of the C board cathode to the oscilloscope.</li> <li>Adjust <b>G2 (FBT)</b> volume to the value below.</li> <li>Press <b>MUTING</b> and <b>ENTER</b> to write the data in the memory.</li> </ol>	<p>Dot pattern</p> <p>Oscilloscope</p>	<p>cathodes</p>	<p><b>PICTURE</b> ..... normal <b>BRIGHTNESS</b> ..... normal <b>S BRT</b> <b>G CUT</b> <b>B CUT</b> <b>RV702</b> <b>SCREEN (G2)</b></p>	<p>SERVICE ADJUSTMENT MODE MEMORY</p>  
<p><b>WHITE BALANCE ADJUSTMENTS</b></p> <ol style="list-style-type: none"> <li>Input a entire white signal.</li> <li>Set to service adjustment mode.</li> <li>Set the <b>PICTURE</b>, <b>BRIGHTNESS</b> controls.</li> <li>Adjust with <b>S BRT</b> if necessary.</li> <li>Select <b>G CUT</b> and <b>B CUT</b> with <b>1</b> and <b>4</b>.</li> <li>Adjust with <b>3</b> and <b>6</b> for the best white balance.</li> <li>Set the <b>PICTURE</b> and <b>BRIGHTNESS</b> to maximum.</li> <li>Select <b>G AMP</b> and <b>B AMP</b> with <b>1</b> and <b>4</b>.</li> <li>Adjust with <b>3</b> and <b>6</b> for the best white balance.</li> <li>Write into the memory by pressing <b>MUTING</b> then <b>ENTER</b>.</li> </ol>	<p>Entire White Pattern</p>	<p>cathodes</p>	<p><b>PICTURE</b> ..... minimum <b>BRIGHTNESS</b> ..... normal <b>S BRT</b> <b>G CUT</b> <b>B CUT</b> <b>PICTURE</b> ..... maximum <b>BRIGHTNESS</b> ..... maximum <b>G AMP</b> <b>B AMP</b></p>	

## SECTION 3 CIRCUIT ADJUSTMENTS

### ELECTRICAL ADJUSTMENTS BY REMOTE COMMANDER

Use of Remote Commander (RM-Y116) can be performed circuit adjustments about this model.

**NOTE : Test Equipment Required.**

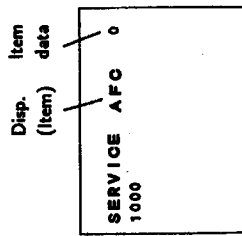
1. Pattern Generator
2. Frequency counter
3. Digital multimeter
4. Audio OSC

### 1. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

#### SERVICE MODE PROCEDURE

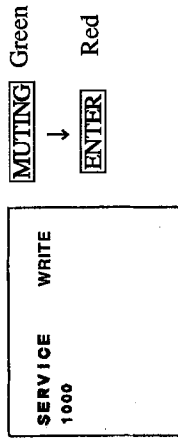
1. Standby mode. (Power off)
2. **DISPLAY** → **5** → **VOL(+)** → **POWER** on the Remote Commander. (Press each button within a second.)

#### SERVICE ADJUSTMENT MODE IN



3. The CRT displays the item being adjusted.
4. Press **1** or **4** on the Remote Commander to select the item.
5. Press **3** or **6** on the Remote Commander to change the data.
6. If you want to recover the latest values press **0** then **ENTER** to lead the memory.
7. Press **MUTING** then **ENTER** to write into memory.

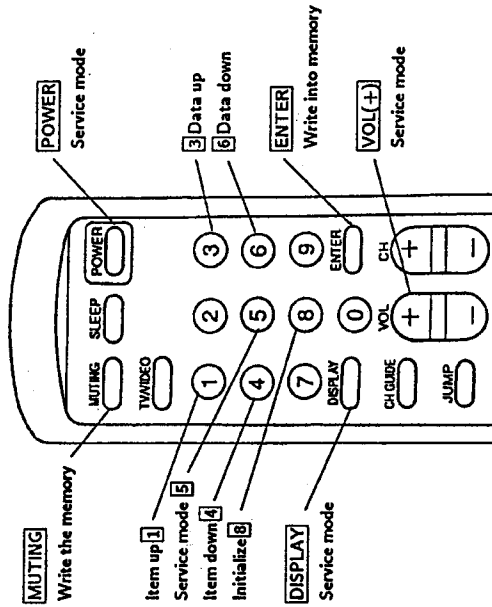
### SERVICE ADJUSTMENT MODE MEMORY



### 2. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2. Turn the power switch ON and set to Service Mode.
3. Call the adjusted items again, confirm they were adjusted.

### 3. ADJUST BUTTONS AND INDICATOR



RM-Y116



#### 4. AN ITEM OF ADJUSTMENTS

VP

No.	Disp.	Item	Data range	Ave. data
00	AFC	AFC Loop Gain 0 : M 1 : S 2 : L 3 : OFF	0 ~ 3	0
01	HFRE	H. Frequency	0 ~ 7F	57
02	VFRE	V. Frequency	0 ~ 1F	15
03	VPOS	V. Shift	0 ~ 1F	20
04	VSIZ	V. Size	0 ~ 3F	38
05	VLIN	V. Linearity	0 ~ 0F	7
06	VSCO	V. Correction	0 ~ 0F	4
07	HPOS	H. PHASE	0 ~ 0F	9
08	HSIZ	H. Size	0 ~ 1F	15
09	PAMP	Pin Amp	0 ~ 1F	15
10	CPIN	Corner Pin	0 ~ 7	4
11	PPHA	Pin Phase	0 ~ 0F	7
12	VCOM	V. Compensation	0 ~ 7	2
13	GAMP	Green Amp	0 ~ 1F	15
14	BAMP	Blue Amp	0 ~ 1F	15
15	GCUT	Green Cut Off	0 ~ 0F	7
16	BCUT	Blue Cut Off	0 ~ 0F	7
17	CROM	Chroma Trap	0 ~ 3F	32
18	SPIX	Picture	0 ~ 3F	20
19	SHUE	Sub Hue	0 ~ 3F	25
20	SCOL	Sub Color	0 ~ 3F	28
21	SBRT	Sub Bright	0 ~ 3F	29
22	RGBP	RGB Picture	0 ~ 3F	31
23	SHAP	Sharpness	0 ~ 0F	7
24	VSMO	V Pull in Range 0 : normal, 1 : wide	0, 1	0
25	REF	Reference line	0 ~ 3	1
26	ROFF	Red Out 0 : OFF, 1 : ON	0, 1	1
27	GOFF	Green Out 0 : OFF, 1 : ON	0, 1	1
28	BOFF	Blue Out 0 : OFF, 1 : ON	0, 1	1
29	ABLM	ABL Mode 0 : pic+brt, 1 : pic	0, 1	0
30	NOTC	Notch filter	0, 1	0
31	DRGB	OSD intensity 0 : 0db, 1 : -3db	0, 1	0

Note

\* Mark : Don't adjust the Service Manu.

OP

No.	Disp.	Item	Data range	Ave. data
1	DISP	PWN output	0 ~ 3F	4
2	SPOT	Spot killer	0 ~ 0F	8
3	PBLK	Pic blanking	0 ~ 1F	13

#### 5. +B ADJUSTMENTS

##### ADJUSTMENT ITEM AND PROCEDURE

###### A BOARD

###### +B ADJUSTMENT (40V ADJ)

1. Set the power source at  $130^{+2.0}_{-0}$  VAC.
2. Input a color-bar signal.
3. Connect a digital voltmeter to the pin ⑨ of CN606.
4. Adjust RV601 for  $40 \pm 0.1$ VDC on the digital voltmeter.

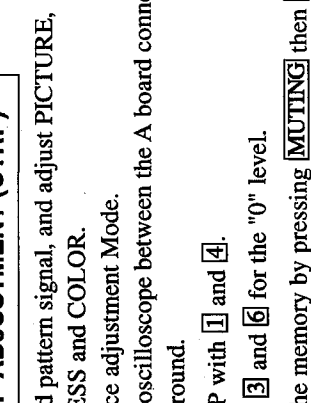
###### F BOARD (KV9PT60 only)

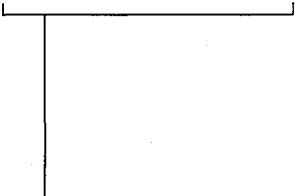
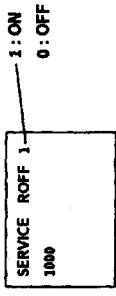
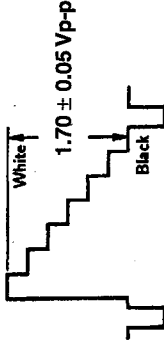
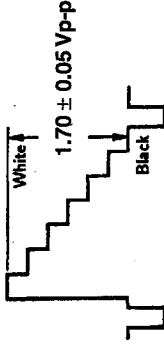

###### +B ADJUSTMENT (40V ADJ)


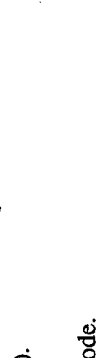
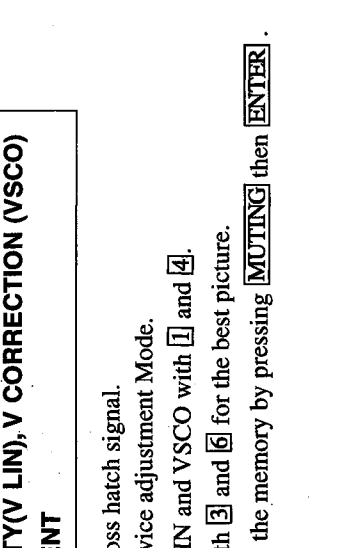
1. Set the power source at  $12 \pm 0.5$  VDC.
2. Input a color-bar signal.
3. Connect a digital voltmeter to the pin ⑨ of CN606.
4. Adjust RV652 for  $40 \pm 0.1$ VDC on the digital voltmeter.

###### +B ADJUSTMENT (9.8V ADJ)

1. Set the power source at  $12 \pm 0.5$ VDC.
2. Input a color-bar signal.
3. Connect a digital voltmeter to the pin ⑤ of CN 606.
4. Adjust RV 651 for  $9.8 \pm 0.1$ VDC on the digital voltmeter.

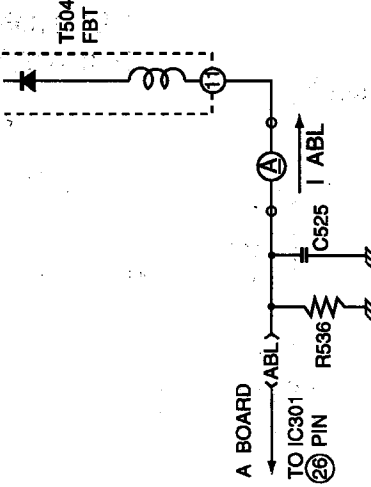
ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<p><b>H. FREQUENCY ADJUSTMENT (HFRE)</b></p> <ol style="list-style-type: none"> <li>1. Input a monoscope signal.</li> <li>2. Set to Service adjustment Mode.</li> <li>3. Connect a frequency counter to JL24.</li> <li>4. Call the item of AFC, set to 3 level (free run).</li> <li>5. Select HFRE with <b>[1]</b> and <b>[4]</b>.</li> <li>6. Adjust with <b>[3]</b> and <b>[6]</b> so that the frequency counter is 15734±60Hz.</li> <li>7. Call to item of AFC again, adjust the level "0".</li> <li>8. Write into the memory by pressing <b>[MUTING]</b> then <b>[ENTER]</b>.</li> </ol>	<p>Monoscope Pattern</p> <p>Frequency counter</p>	<p>JL24 (Base of Q550)</p>	<p>AFC HFRE</p>	<p>15734±60Hz</p>
<p><b>V. FREQUENCY ADJUSTMENT (VFRE)</b></p> <ol style="list-style-type: none"> <li>1. Select video 1 with no connecting the signal.</li> <li>2. Set to Service adjustment Mode.</li> <li>3. Connect a frequency counter across CN501 (4) pin connector and ground.</li> <li>4. Select VFRE with <b>[1]</b> and <b>[4]</b>.</li> <li>5. Adjust with <b>[3]</b> and <b>[6]</b> so that the frequency counter is 56±0.5 Hz.</li> <li>6. Write into the memory by pressing <b>[MUTING]</b> then <b>[ENTER]</b>.</li> </ol>	<p>Frequency counter</p>	<p>CN501 (4) pin (VDY +)</p>	<p>VFRE</p>	<p>56±0.5 Hz</p>
<p><b>CROMA TRAP ADJUSTMENT (CTRP)</b></p> <ol style="list-style-type: none"> <li>1. Input the red pattern signal, and adjust PICTURE, BRIGHTNESS and COLOR.</li> <li>2. Set to Service adjustment Mode.</li> <li>3. Connect an oscilloscope between the A board connector CN301 (1) pin and ground.</li> <li>4. Select CTRP with <b>[1]</b> and <b>[4]</b>.</li> <li>5. Adjust with <b>[3]</b> and <b>[6]</b> for the "0" level.</li> <li>6. Write into the memory by pressing <b>[MUTING]</b> then <b>[ENTER]</b>.</li> </ol>	<p>Red pattern</p> <p>Oscilloscope</p>	<p>CN301 (1) pin R-OUT (A board)</p>	<p>PICTURE ..... maximum BRIGHTNESS ..... center COLOR ..... minimum CTRP</p>	

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<p><b>SUB PICTURE ADJUSTMENT (SPIX)</b></p> <ol style="list-style-type: none"> <li>1. Input the color bar signal, and adjust PICTURE, BRIGHTNESS and COLOR.</li> <li>2. Set to Service adjustment Mode.</li> <li>3. Connect an oscilloscope between the A board connector CN301 ① pin and ground.</li> <li>4. Call to item of G OFF and B OFF, set to 0 evel.</li> <li>5. Select SPIX with ① and ④.</li> <li>6. Adjust with ③ and ⑥, so that the wave form level is <math>1.70 \pm 0.05V_{p-p}</math>.</li> <li>7. Call to item of G OFF and B OFF, set to 1 evel.</li> <li>8. Write the memory by pressing <b>MUTING</b> then <b>ENTER</b>.</li> </ol>	<p>Color-Bar Pattern</p> <p>Oscilloscope</p>	 <p>CN301 ① pin R-OUT (A board)</p>	<p>PICTURE ..... maximum COLOR ..... minimum BRIGHTNESS ..... center</p> <p>R OFF : ON (1) G OFF : OFF (0) B OFF : OFF (0)</p>	 
<p><b>SUB HUE, SUB COLOR ADJUSTMENT (SHUE, SCOL)</b></p> <ol style="list-style-type: none"> <li>1. Input a color bar signal, and adjust PICTURE, BRIGHTNESS and COLOR.</li> <li>2. Connect an oscilloscope between the A board connector CN301 ③ pin and ground.</li> <li>3. Set to service adjustment mode.</li> <li>4. Select SCOL with ① and ④.</li> <li>5. Adjust with ③ and ⑥ for the <math>V1=V4 \pm 0.1V</math>.</li> <li>6. Select SHUE with ① and ④.</li> <li>7. Adjust with ③ and ⑥ for the <math>V2=V3 \pm 0.1V</math>.</li> <li>8. Write into the memory by pressing <b>MUTING</b> then <b>ENTER</b>.</li> </ol>	<p>Color-Bar Pattern</p> <p>Oscilloscope</p>	<p>CN301 ③ pin B-OUT (A board)</p>	<p>PICTURE ..... maximum COLOR ..... center BRIGHTNESS ..... center</p> <p>SCOL SHUE</p>	 

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<p><b>V. CENTER ADJUSTMENT (VPOS)</b></p> <ol style="list-style-type: none"> <li>1. Input a cross hatch signal.</li> <li>2. Set to Service adjustment Mode.</li> <li>3. Select VPOS with <b>[1]</b> and <b>[4]</b>.</li> <li>4. Adjust with <b>[3]</b> and <b>[6]</b> for the best vertical center.</li> <li>5. Write into the memory by pressing <b>[MUTING]</b> then <b>[ENTER]</b>.</li> </ol>	Cross-hatch pattern		VPOS	 <p>V. SHIFT(VPOS)</p>
<p><b>H. CENTER ADJUSTMENT (HPOS)</b></p> <p>NOTE : Perform this adjustment after H. FREQUENCY ADJUSTMENT (HFRE).</p> <ol style="list-style-type: none"> <li>1. Input a cross hatch signal.</li> <li>2. Set to Service adjustment Mode.</li> <li>3. Select HPOS with <b>[1]</b> and <b>[4]</b>.</li> <li>4. Adjust with <b>[3]</b> and <b>[6]</b> for the best horizontal center.</li> <li>5. Write into the memory by pressing <b>[MUTING]</b> then <b>[ENTER]</b>.</li> </ol>	Cross-hatch pattern		HPOS	 <p>H. CENTER(HPOS)</p>
<p><b>V. LINEARITY(V LIN), V CORRECTION (VSCO) ADJUSTMENT</b></p> <ol style="list-style-type: none"> <li>1. Input a cross hatch signal.</li> <li>2. Set to Service adjustment Mode.</li> <li>3. Select VLIN and VSCO with <b>[1]</b> and <b>[4]</b>.</li> <li>4. Adjust with <b>[3]</b> and <b>[6]</b> for the best picture.</li> <li>5. Write into the memory by pressing <b>[MUTING]</b> then <b>[ENTER]</b>.</li> </ol>	Cross-hatch pattern		VLIN  VSCO	 <p>V. LINEARITY(VLIN)</p> <p>V. CORRECTION(VSCO)</p>

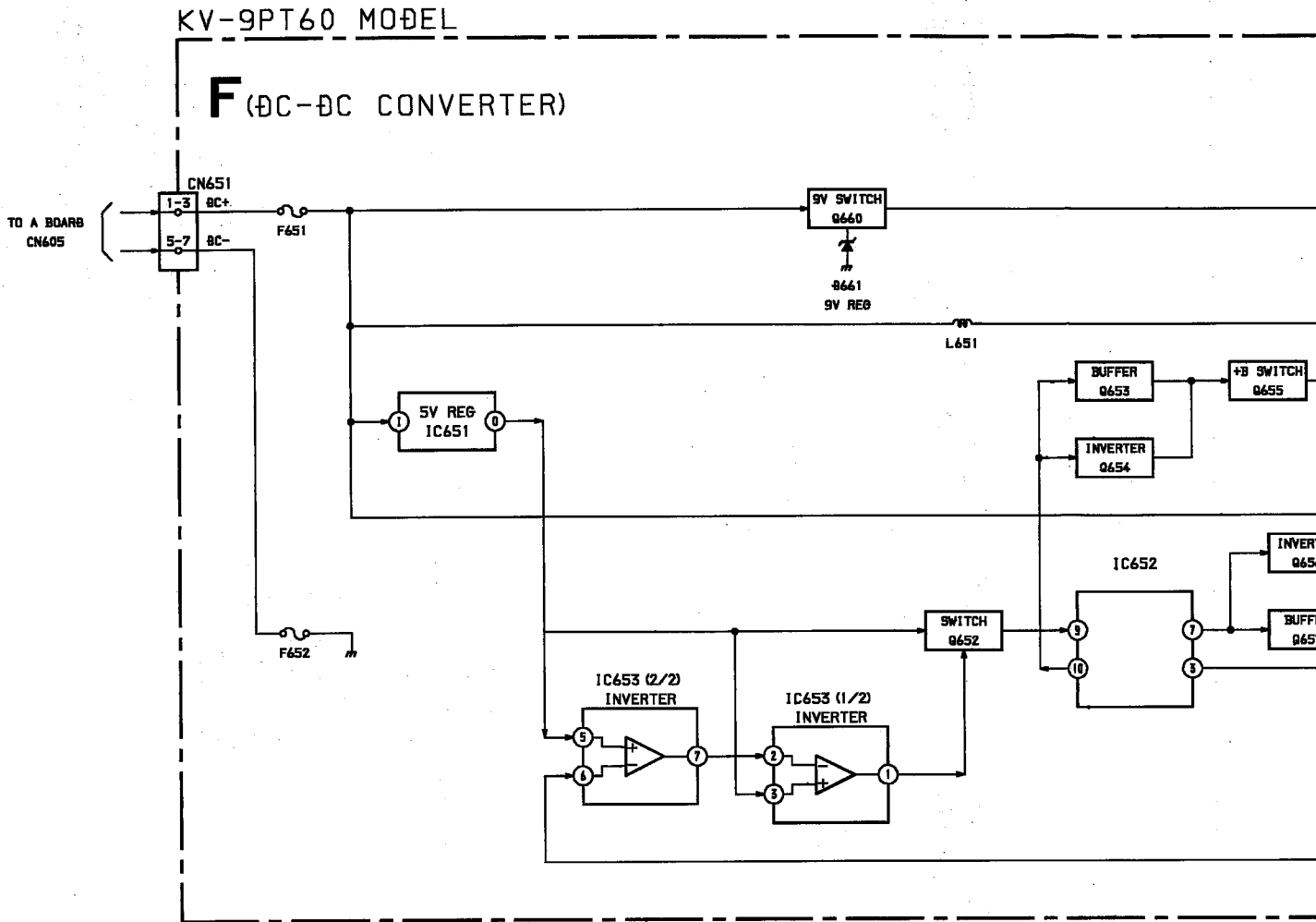
**SECTION 5  
SAFETY RELATED ADJUSTMENTS**

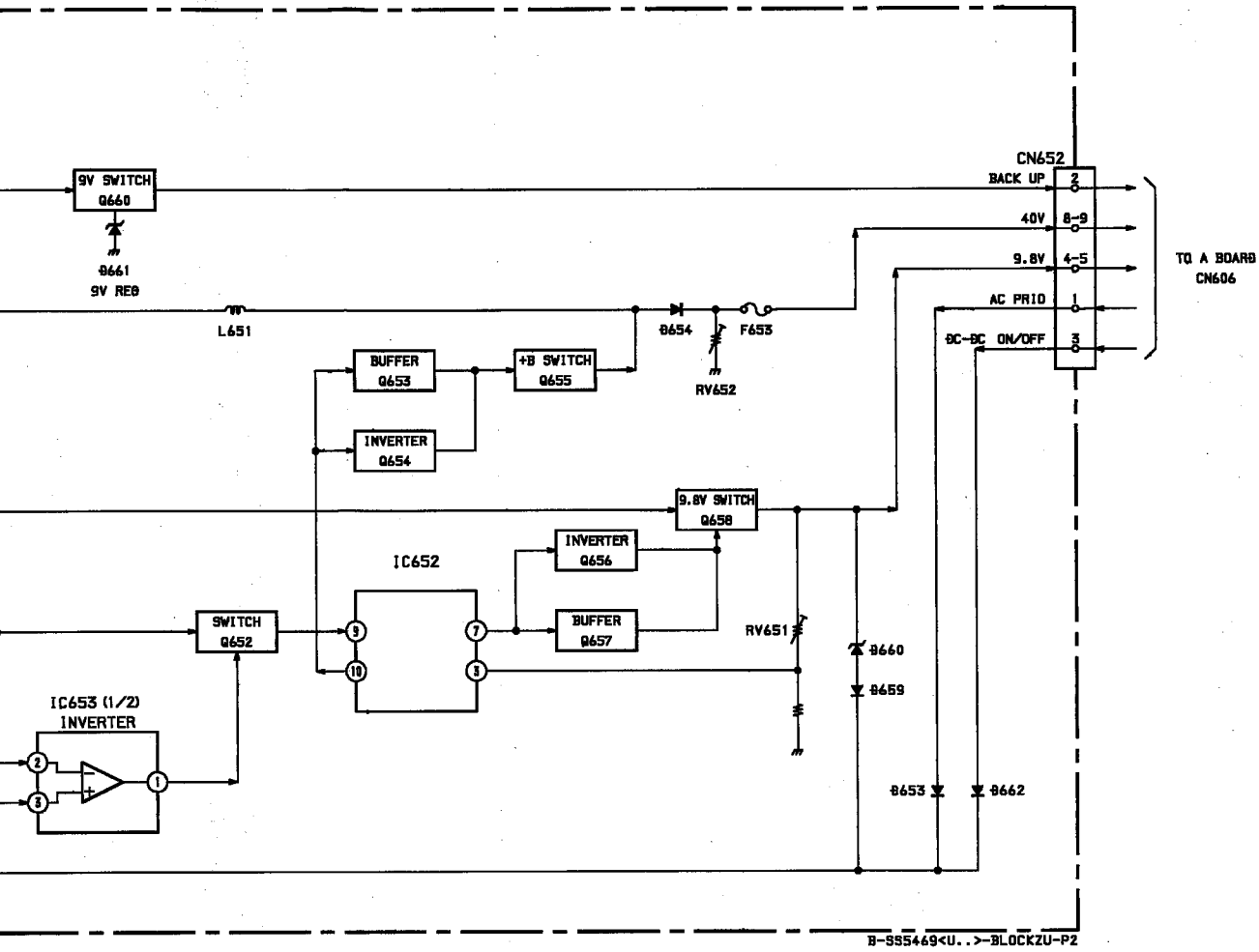
ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<p><b>[ A BOARD ]</b></p> <p><b>RV601,R069 B+ MAXIMUM VOLTAGE CONFIRMATION AND ADJUSTMENT.</b></p> <p>The following adjustments should always be performed when replacing the following components ( marked with <input checked="" type="checkbox"/> on the schematic diagram ).</p> <ol style="list-style-type: none"> <li>1. Set the power source at 130 <sup>+20</sup>/<sub>-00</sub> VAC.</li> <li>2. Receive Monoscope signal.</li> <li>3. Set the PICTURE and BRIGHTNESS at the initial reset.</li> <li>4. Adjust RV601 (40VADJ) to maximum.</li> <li>5. Confirm is the voltage of the checked terminal of pin ⑥ (JL7) of CN606 connector is less than 43.0VDC.</li> </ol>	<p>Monoscope signal</p>	<p><input checked="" type="checkbox"/> marked parts IC601, R627, R629, R069, L601</p> <p>CN 606 pin ⑥</p>	<p><input checked="" type="checkbox"/> RV601,R069</p> <p>PICTURE ..... maximum BRIGHTNESS ..... center</p>	<p>Connector CN 606 pin ⑥ less than 43.0 VDC.</p>
<p><b>[ F BOARD ] (KV-9PT60)</b></p> <p><b>RV652,R670 B+ MAXIMUM VOLTAGE CONFIRMATION AND ADJUSTMENT.</b></p> <p>The following adjustments should always be performed when replacing the following components ( marked with <input checked="" type="checkbox"/> on the schematic diagram ).</p> <ol style="list-style-type: none"> <li>1. Set the power source at 15.0 <sup>+1.0</sup>/<sub>-00</sub> VDC.</li> <li>2. Receive Monoscope signal.</li> <li>3. Set the PICTURE and BRIGHTNESS at the initial reset.</li> <li>4. Adjust RV652 (40VADJ) to maximum.</li> <li>5. Confirm is the voltage of the checked terminal of pin ⑥ (JL7) of CN606 connector is less than 43.0VDC.</li> <li>6. After confirmation, Readjust RV 652 to obtain 40±0.1VDC.</li> </ol>	<p>Monoscope signal</p>	<p><input checked="" type="checkbox"/> marked parts F653, IC652, L654, R667, R668, R670</p> <p>CN 606 pin ⑥</p>	<p><input checked="" type="checkbox"/> RV652,R670</p> <p>PICTURE ..... maximum BRIGHTNESS ..... center</p>	<p>Connector CN 606 pin ⑥ less than 43.0 VDC.</p>

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
<p>• <b>Preparation fore confirmation.</b></p> <ol style="list-style-type: none"> <li>1. Set the power source to <math>120 \pm 1.0</math> VAC.</li> <li>2. Receive Monoscope signal.</li> <li>3. Set the PICTURE and BRIGHTNESS at the reset position.</li> <li>4. Confirm if the voltage between JL46 (H.PROT) and ground is more than DC 85V.</li> <li>5. When inputting <math>12 \pm 1.0</math> VDC at the DC power supply input terminal do the same adjust process 3. and 4. above. (KV-9PT60 ONLY)</li> </ol>	<p>Monoscope signal</p>		<p>PICTURE ..... maximum BRIGHTNESS ..... center</p>	
<p><b>HOLD DOWN OPERATION CONFIRMATION .</b></p> <ol style="list-style-type: none"> <li>1. Set the power source to <math>120 \pm 1.0</math> VAC.</li> <li>2. Receive all white signal.</li> <li>3. Using an external DC power supply, apply voltage to JL46 (H.PROT) and ground.</li> <li>4. Gradually increase the voltage and confirm if the hold-down circuit works (Raster disappears) at less than 113.0VDC.</li> <li>5. Confirm if ABL current is within <math>660 \pm 50\mu\text{A}</math>.</li> </ol>	<p>All white signal</p>	<p>☑ marked parts C511, C513, C528, C531, D505, D506, D507, D510, L505, IC502, IC602, Q554, Q555, R511, R519, R520, R523, R525, R527, R557, R558, R559, R560, R639, R640, T504, DY.</p>	<p>☑ RV601, R069</p>	 <p>Connector a Ammeter to the location of R504 space. After the current measurement, put back the 2 resistors.</p> <p>ABL current KV-9PT50/9PT60 : <math>660 \pm 50\mu\text{A}</math> KV-9PT60 : <math>70 \pm 50\mu\text{A}</math></p>
<p><b>(KV-9PT60)</b></p> <p><b>HOLD DOWN OPERATION CONFIRMATION .</b></p> <ol style="list-style-type: none"> <li>1. Set the power source to <math>12 \pm 1.0</math> VDC.</li> <li>2. Receive a dot signal.</li> <li>3. Using an external DC power supply, apply voltage to JL46 (H.PROT) and ground.</li> <li>4. Gradually increase the voltage and confirm if the hold-down circuit works (Raster disappears) at less than 113.0VDC.</li> <li>5. Confirm if ABL current is within <math>70 \pm 50\mu\text{A}</math>.</li> </ol>	<p>Dot signal</p>			

# SECTION 6 DIAGRAMS

## 6-1. BLOCK DIAGRAMS (1)

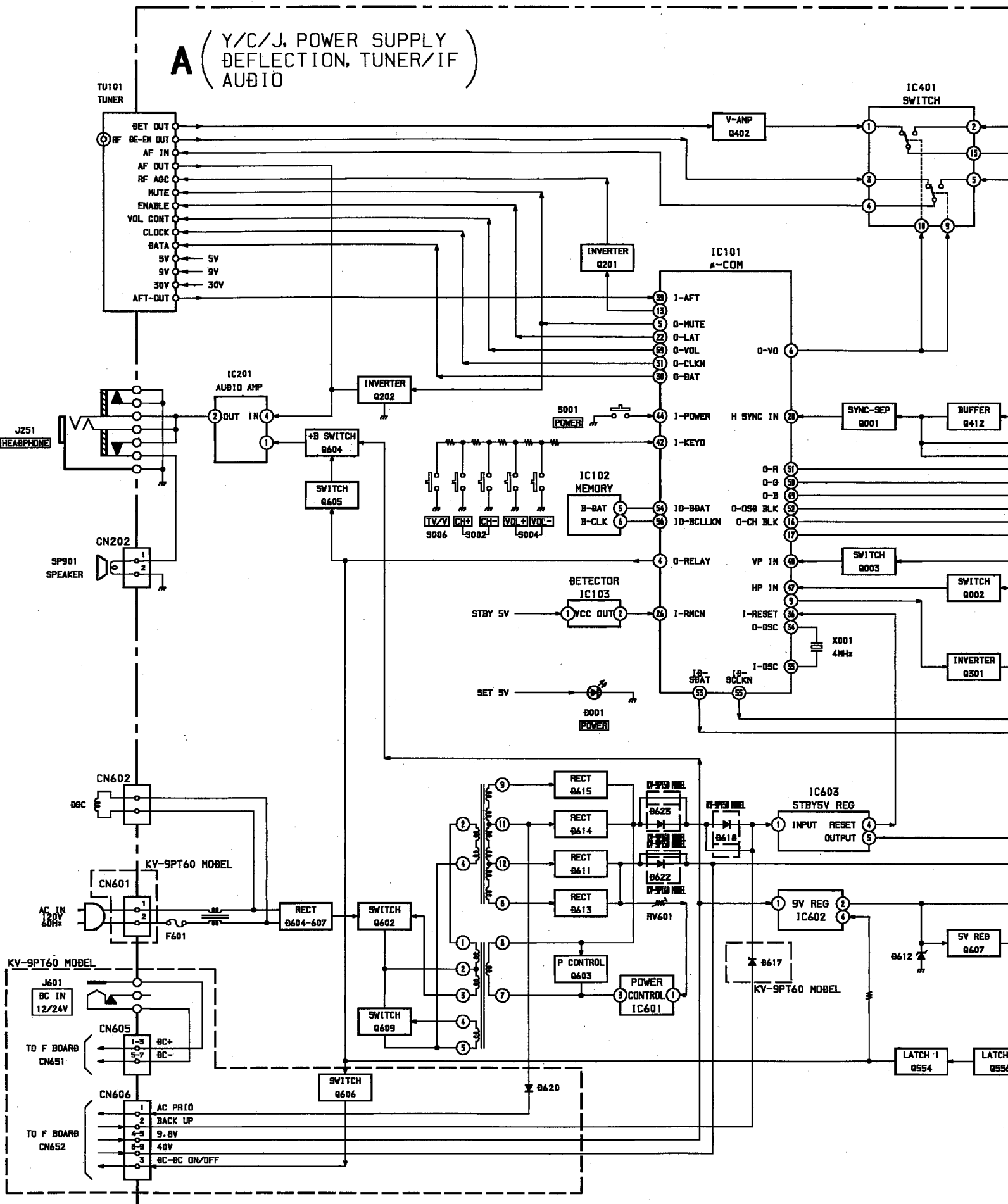


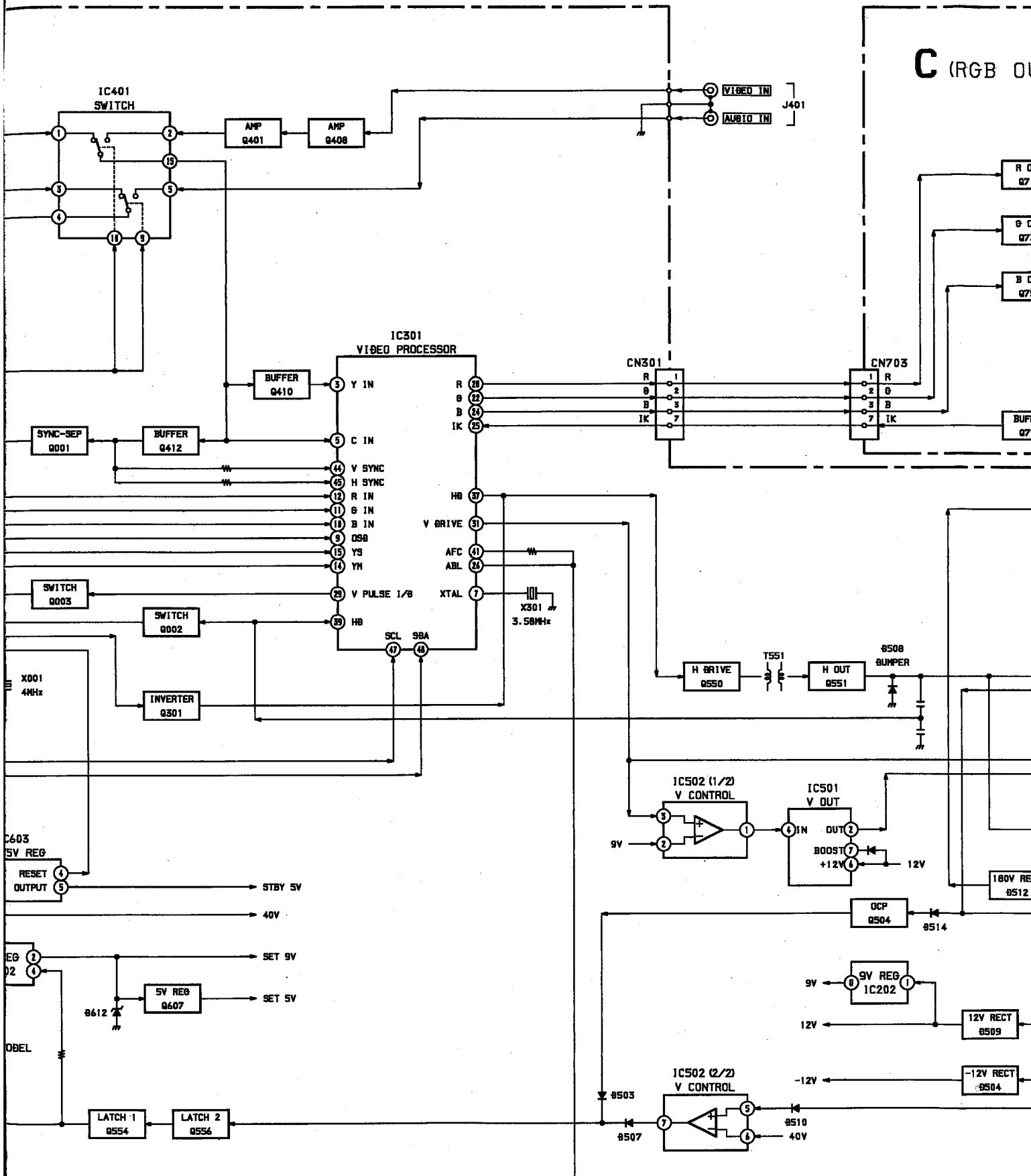




**BLOCK DIAGRAMS (2)**

**A** (Y/C/J, POWER SUPPLY  
DEFLECTION, TUNER/IF  
AUDIO)

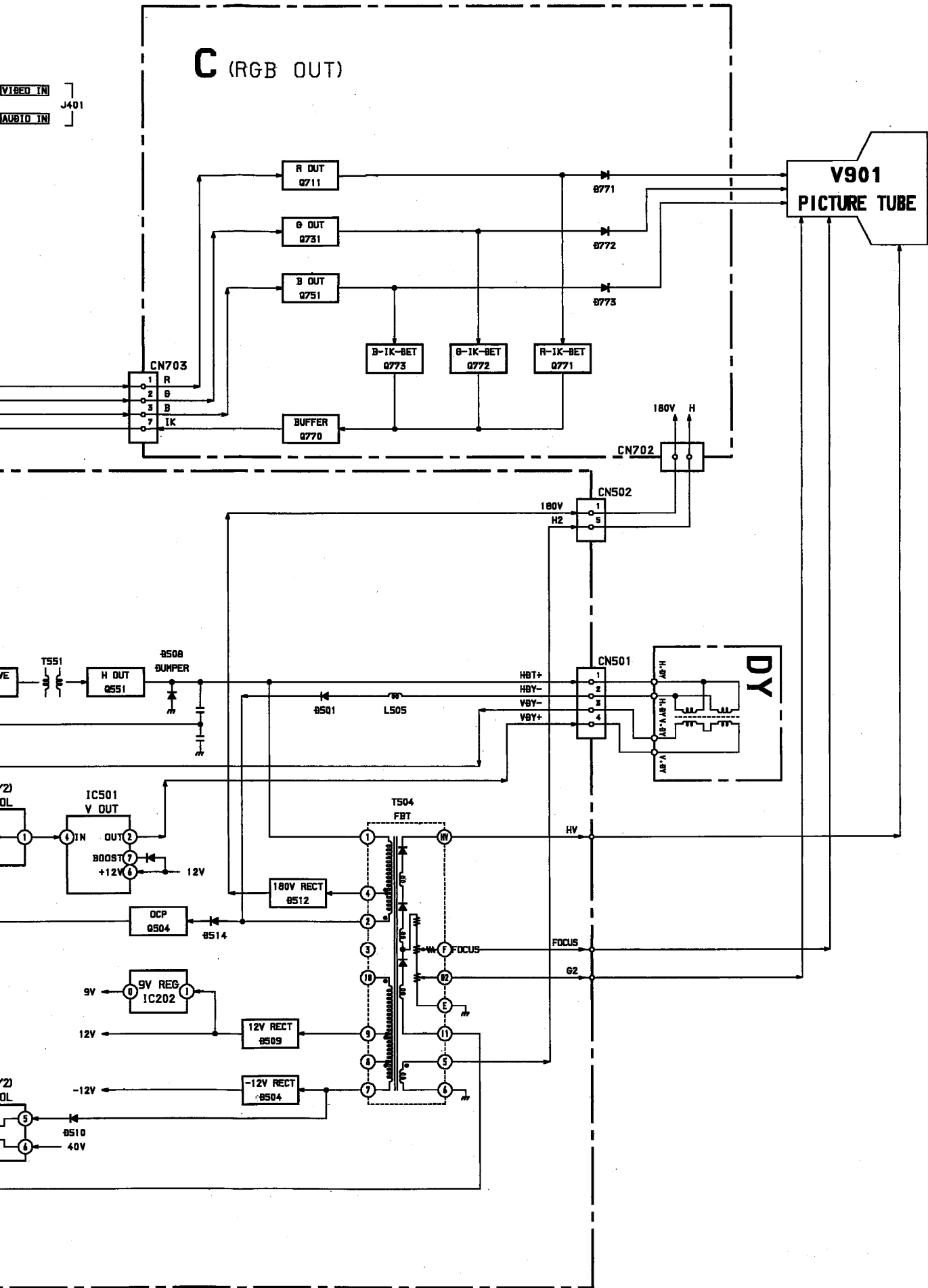




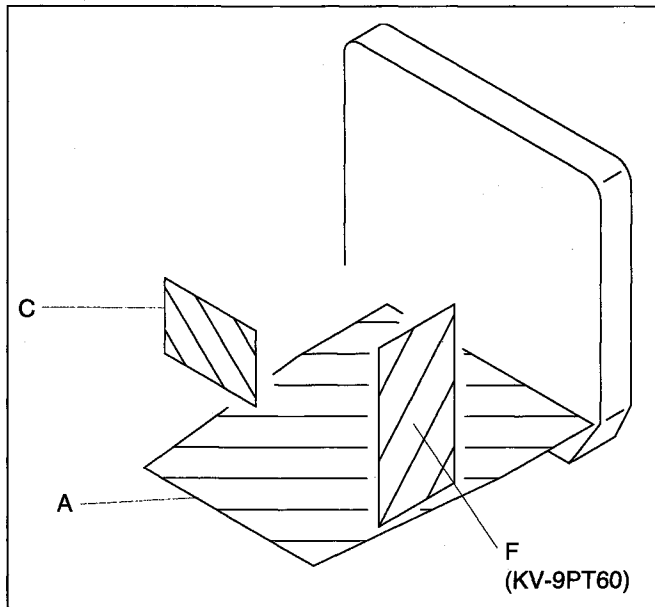
C (RGB OUT)

VIDEO IN  
AUDIO IN  
J401

# C (RGB OUT)



## 6-2. CIRCUIT BOARDS LOCATION



## 6-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

### Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$  :  $\mu\text{F}$  50VV or less are not indicated except for electrolytics and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- All resistors are in ohms.  
 $\text{k}\Omega=1000\Omega$ ,  $\text{M}\Omega=1000\text{k}\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.
 

Pitch : 5mm
Rating electrical power : $1/4\text{W}$
- $1/4\text{W}$  in resistance,  $1/10\text{W}$  and  $1/8\text{W}$  in chip resistance.
- : nonflammable resistor.
- : fusible resistor.
- $\Delta$  : internal component.
- : panel designation and adjustment for repair.
- # : not mounted.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- $\perp$  : earth-ground.
- : earth-chassis.
- 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. If results do not meet the specified value, change the component identified by and repeat the adjustment until the specified value is achieved. (Refer to R069, R670, RV601, RV652 adjustment on Page 29-30.)
- When replacing the part in below table, be sure to perform the related adjustment.
- Readings are taken with a color-bar signal input.
- Readings are taken with a 10M $\Omega$  digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- S : Measurement impossibility.

Part replaced (  )	Adjustment (  )
C511, C513, C528, C531, D505, D506, D507, D510, IC502, IC602, L505, Q554, Q555, R511, R519, R520, R523, R525, R527, R557, R558, R559, R560, R639, R640, T504, DY ..... A BOARD	HOLD-DOWN
IC601, L601, R069, R627, RV601 ..... A BOARD	RV601, R069 (B+ MAX)
F653, IC652, L654, R667, R670, RV652 ..... F BOARD	RV652, R670 (B+ MAX)

- : B+line.
- : B-line.
- (Actual measured value may be different).
- : signal path. (RF)
- Circled numbers are waveform references.

### Reference information

RESISTOR	: RN METAL FILM
	: RC SOLID
	: FPRD NONFLAMMABLE CARBON
	: FUSE NONFLAMMABLE FUSIBLE
	: RW NONFLAMMABLE WIREWOUND
	: RS NONFLAMMABLE METAL OXIDE
	: RB NONFLAMMABLE CEMENT
	: $\times$ ADJUSTMENT RESISTOR
COIL	: LF-8L MICRO INDUCTOR
CAPACITOR	: TA TANTALUM
	: PS STYROL
	: PP POLYPROPYLENE
	: PT MYLAR
	: MPS METALIZED POLYESTER
	: MPP METALIZED POLYPROPYLENE
	: ALB BIPOLAR
	: ALT HIGH TEMPERATURE
	: ALR HIGH RIPPLE

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

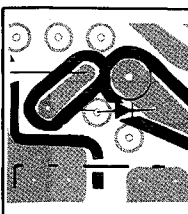
**Note:** The symbol display is on the component side.

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

The symbol indicate fast operating fuse. Replace only with fuse of same rating as made.

**Note:** Les composants identifiés par un trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Le symbole indique une fusible a action rapide. Doit être remplacée par une fusible de même valeur, comme maque.



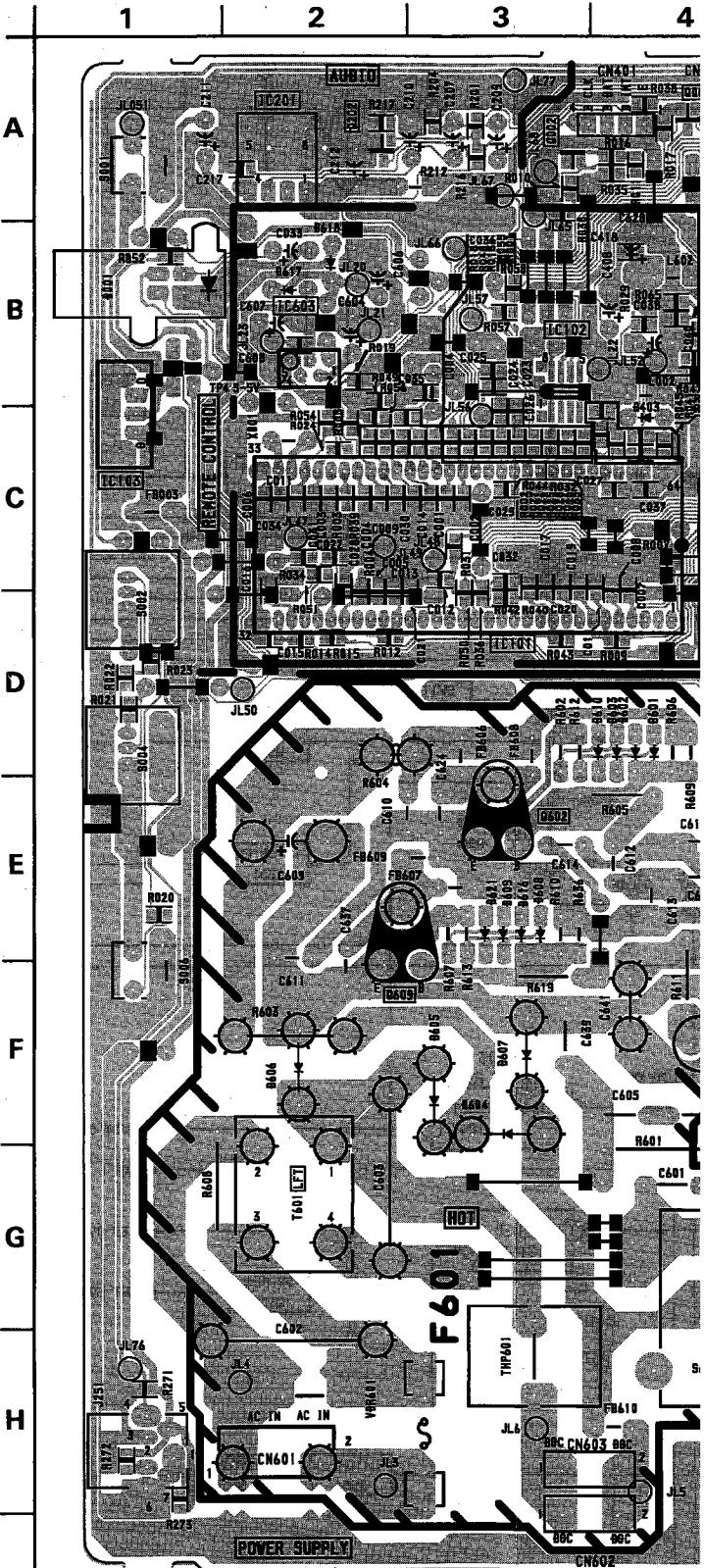
**A**

Y/C/I, POWER SUPPLY,  
DEFLECTION, TUNER/IF, AUDIO

- A BOARD -

A BOARD LOCATION

	IC	D402	D-10
IC101	C-3	D403	C-4
IC102	B-3	D410	D-10
IC103	C-1	D501	D-6
IC201	A-2	D502	D-8
IC202	C-9	D503	D-7
IC301	B-6	D504	E-9
IC401	C-10	D505	D-8
IC501	C-8	D506	D-8
IC502	D-8	D507	D-7
IC601	E-5	D508	G-7
IC602	D-5	D509	E-10
IC603	B-2	D510	E-9
	TRANSISTOR	D512	F-8
Q001	C-4	D514	E-8
Q002	A-3	D601	D-4
Q003	A-4	D602	D-4
Q201	C-8	D603	D-3
Q202	A-2	D604	F-3
Q301	C-6	D605	F-2
Q401	C-9	D606	F-2
Q402	C-9	D607	F-3
Q408	D-9	D608	E-3
Q410	A-9	D609	E-3
Q412	B-10	D610	D-3
Q504	E-7	D611	H-5
Q550	E-7	D612	D-4
Q551	F-7	D613	G-6
Q554	D-7	D614	H-5
Q555	D-6	D615	H-5
Q602	E-3	D616	E-3
Q603	F-5	D617	B-2
Q604	E-5	D618	B-2
Q605	E-6	D619	G-5
Q606	D-5	D620	H-5
Q607	D-4	D621	E-3
Q609	E-2	D622	H-4
	DIODE	D623	G-6
D001	B-1	VARIABLE	
D003	B-4	RESISTOR	
D201	D-9	RV601	F-5
D302	B-6		

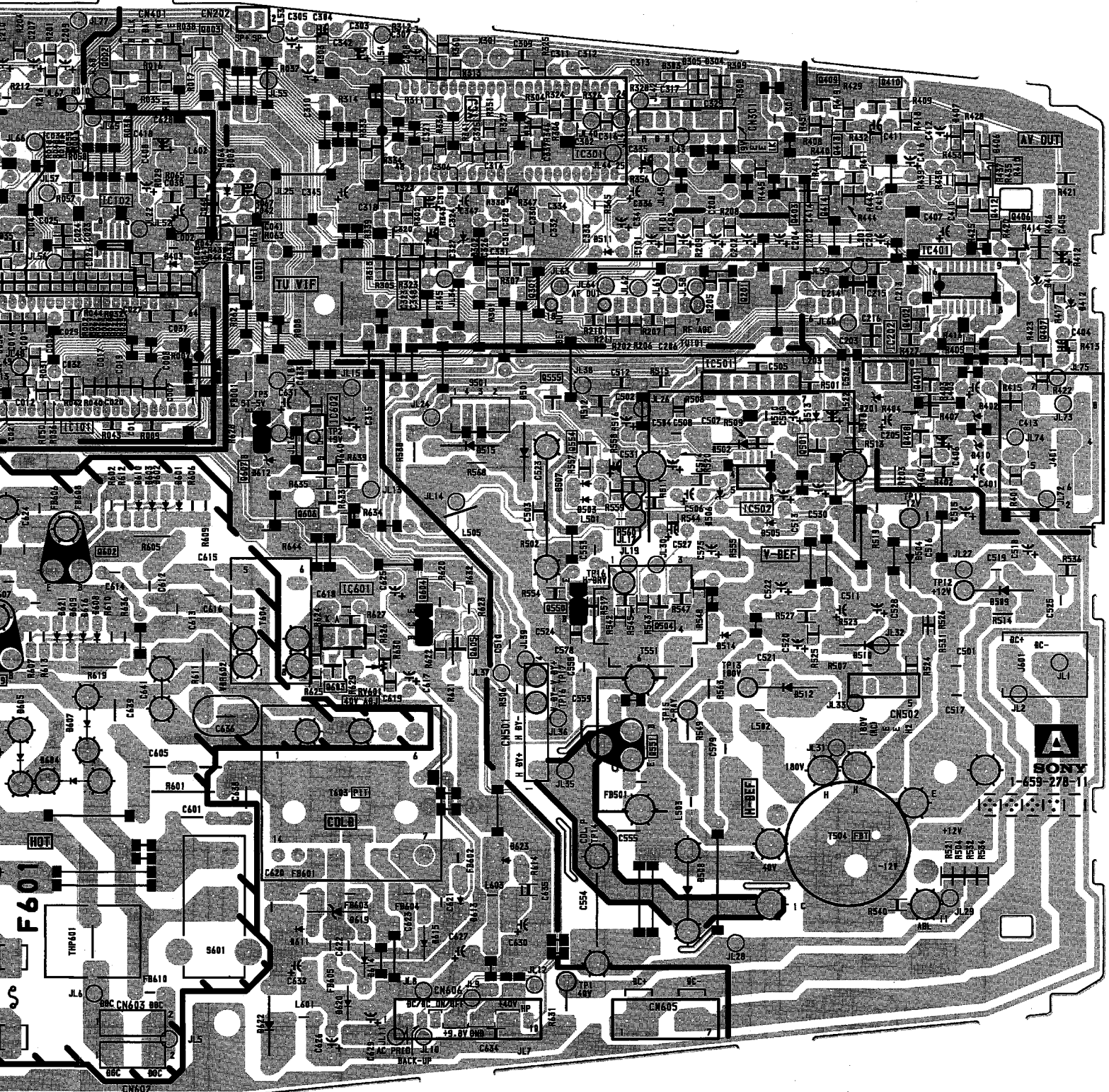


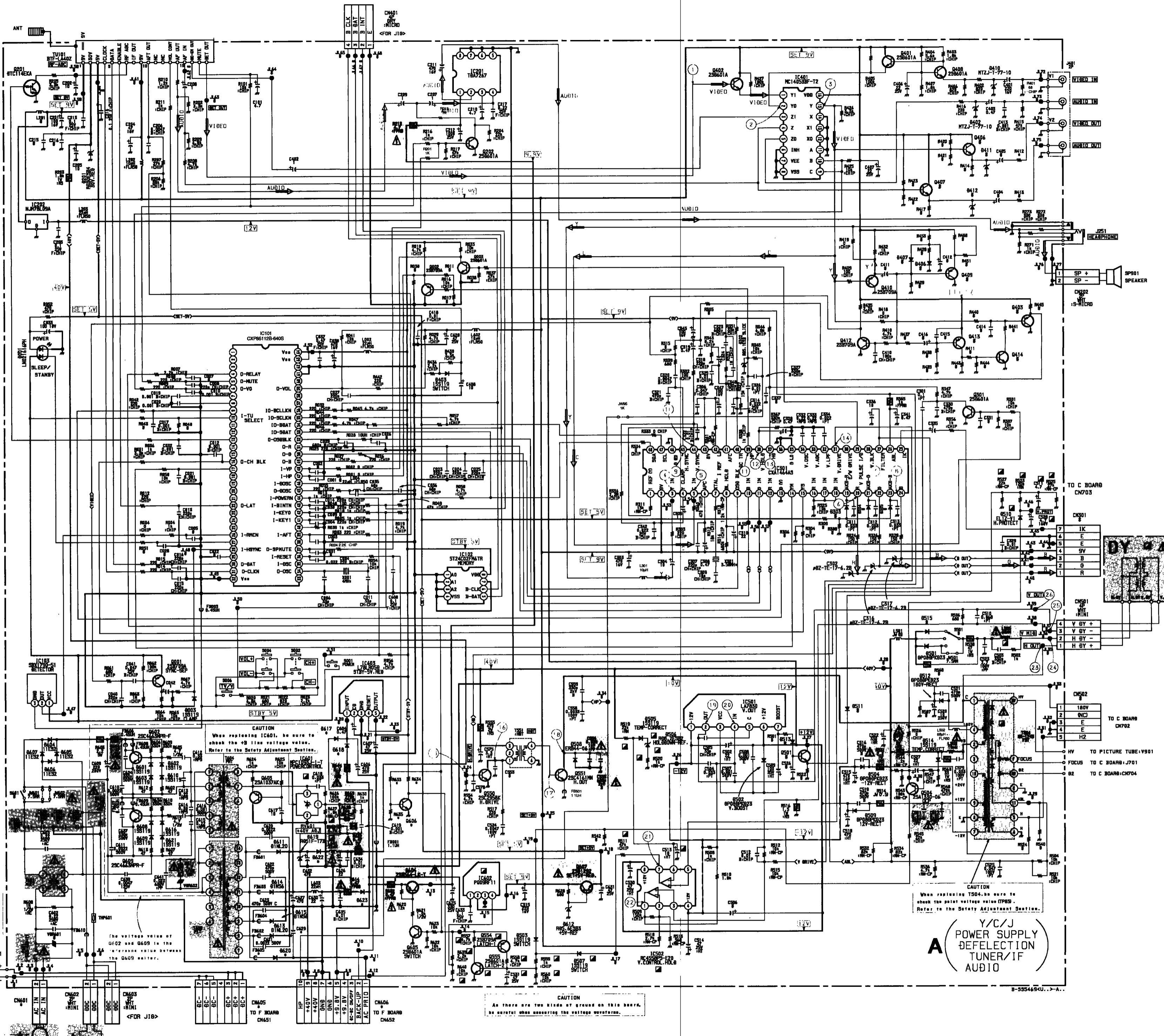
**NOTE:**

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.

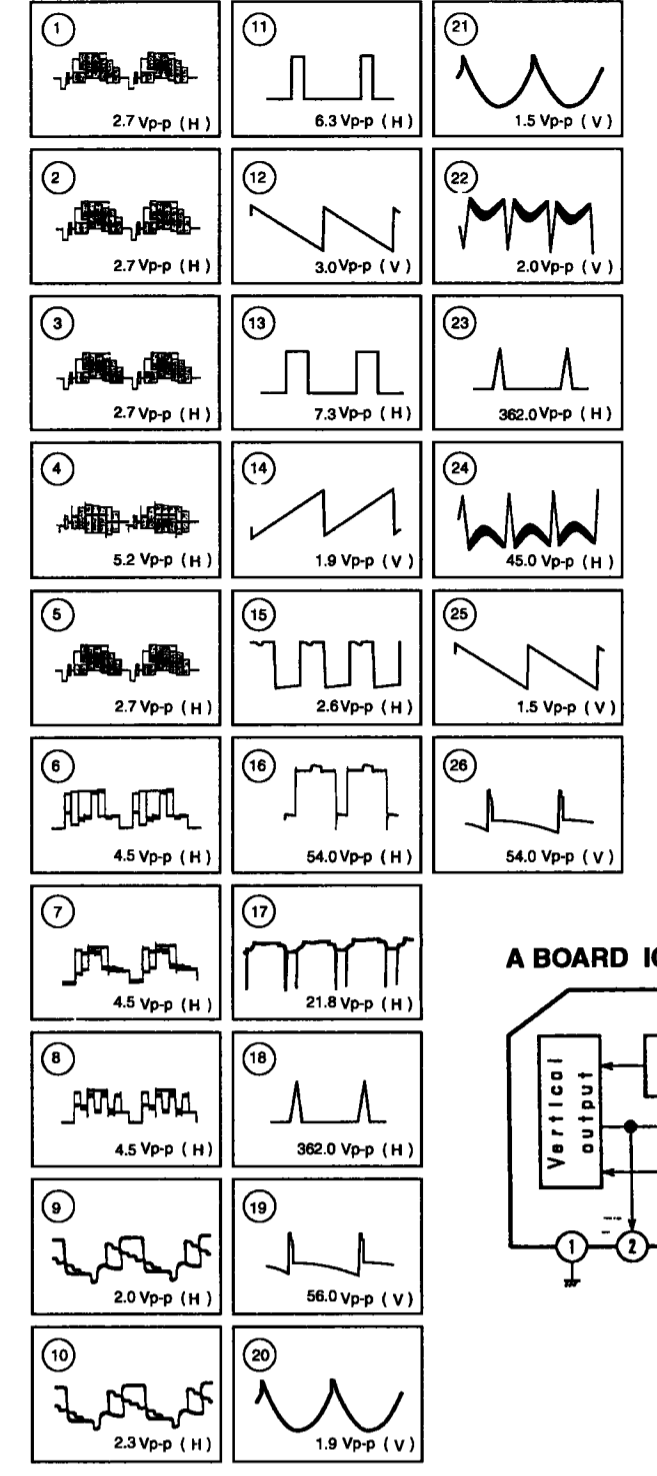
AUDIO

3 4 5 6 7 8 9 10

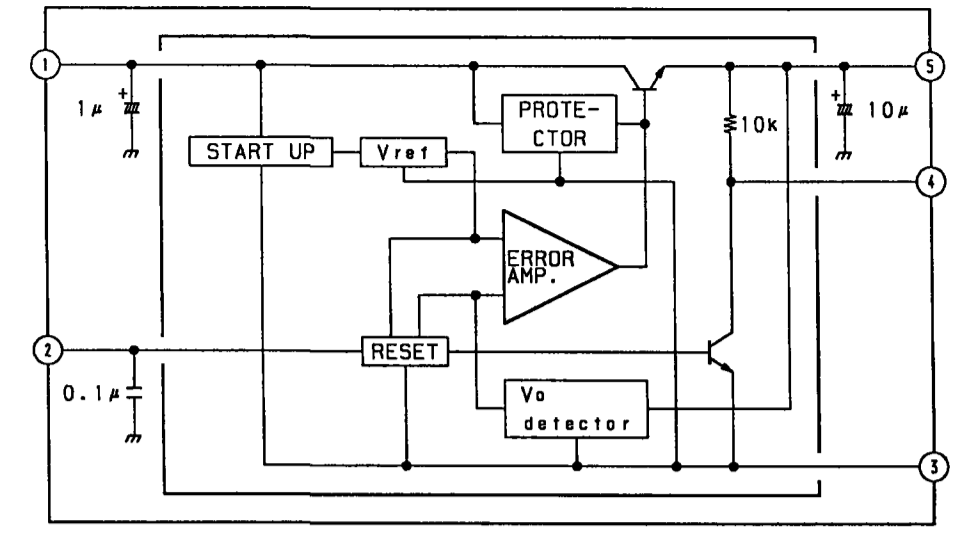




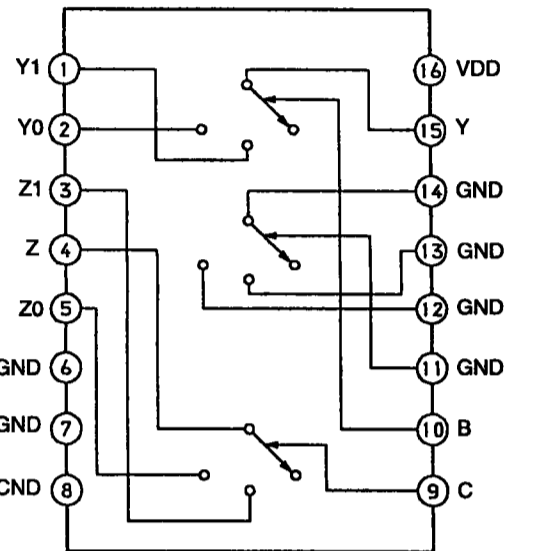
**A BOARD WAVEFORMS**



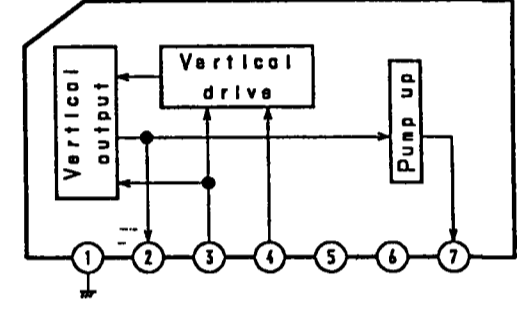
**A BOARD IC603 L78LR05D**



**A BOARD IC401 MC14053BF-T2**



**A BOARD IC501 LA7830**



**A BOARD VOLTAGE LIST**

IC101	4	4.8	IC103	1	5.0	42	3.9	
	5	0		2	5.0	43	7.8	
	6	5.1		3	E	44	2.0	
	7	0	IC201	1	0	45	2.0	
	8	0		2	4.9	46	E	
	9	0		3	5.3	47	5.0	
	10	0		4	0.9	48	5.0	
	13	0		5	E	IC401	1	3.9
	17	0		6	E		2	9.0
	22	0.2		7	E		3	2.6
	26	5.0	IC202	1	13.0		4	2.6
	27	5.0		2	0		5	0.3
	28	0		3	0.3		6	3.7
	29	0	IC301	1	6.5		7	E
	30	0		2	9.0		8	E
	31	0		3	4.9		9	5.2
	32	0		4	5.8		10	5.2
	34	2.5		5	3.7		11	E
	35	2.2		6	5.0		12	E
	36	5.0		7	2.4		13	E
	37	0		8	4.0		14	E
	38	2.3		9	0		15	3.7
	40	0		10	0	IC501	1	-12.5
	41	5.0		11	0		2	0.2
	42	5.0		12	0		3	12.5
	43	5.0		13	E		4	-11.6
	44	5.0		14	0.3		5	-11.8
	45	2.9		15	0		6	13.0
	46	2.9		16	2.0	IC601	1	8.9
	47	0.2		17	2.0	IC502	1	-10.0
	48	0.2		18	2.0		2	1.6
	49	0		19	6.2		3	1.6
	50	0		20	2.0		4	12.5
	51	0		21	6.0		5	8.9
	52	0		22	2.1		6	10.6
	53	5.0		23	6.2		7	-11.3
	54	5.0		24	2.0		8	13.0
	55	5.0		25	3.3	IC601	1	8.9
	56	5.0		26	1.7		2	E
	59	0.3		27	7.5		3	2.6
	61	E		29	3.0	IC602	1	10.0
	62	E		31	3.0		2	9.1
	63	5.0		32	4.2		3	E
	64	5.0		33	4.5		4	2.6
	65	5.0		34	4.2	IC603	1	9.3
	67	E		35	E		2	7.4
	68	E		36	E		3	E
	69	E		37	3.8		4	5.0
	70	E		38	2.8		5	5.0
	71	E		39	3.0		6	3.0
	72	E		40	3.0		7	E
	73	E		41	2.9		8	5.0

**A BOARD VOLTAGE LIST**

Q001	5.0	0.7	5.0
Q002	0.3	E	0.9
Q003	0.7	0.1	7.0
Q201	0	3.4	E
Q202	0	0	E
Q301	0	3.8	E
Q401	5.7	9.0	9.9
Q402	4.5	9.0	3.8
Q406	3.7	9.0	3.1
Q407	2.6	9.0	2.0
Q408	2.2	5.7	1.6
Q410	3.7	E	4.4
Q412	3.7	E	4.4
Q504	39.5	-2.2	39.7
Q550	-0.6	26.5	E
Q551	-0.1	39.9	E
Q554	3.2	0	3.2
Q555	0	3.2	E
Q602	64.5	130.0	66.6
Q603	10.9	E	8.9
Q604	9.2	9.9	9.9
Q605	0.6	0	E
Q606	0.7	0	E
Q607	5.9	9.0	5.3
Q609	-2.1	66.5	0

All voltages are in V.

**A BOARD \* MARK**

C829	-	1
CN601	-	2P
CN605	-	7P
CN606	-	10P
D617	-	1SS119
D618	JW (5.0)	1SS119
D620	-	D1NS4
D622	JW (15.0)	2SE2H
D623	JW (5.0)	11ES2
FB605	-	○
J601	-	○
Q606	-	2SD601A
R633	-	10K
R634	-	10K
R635	-	10K

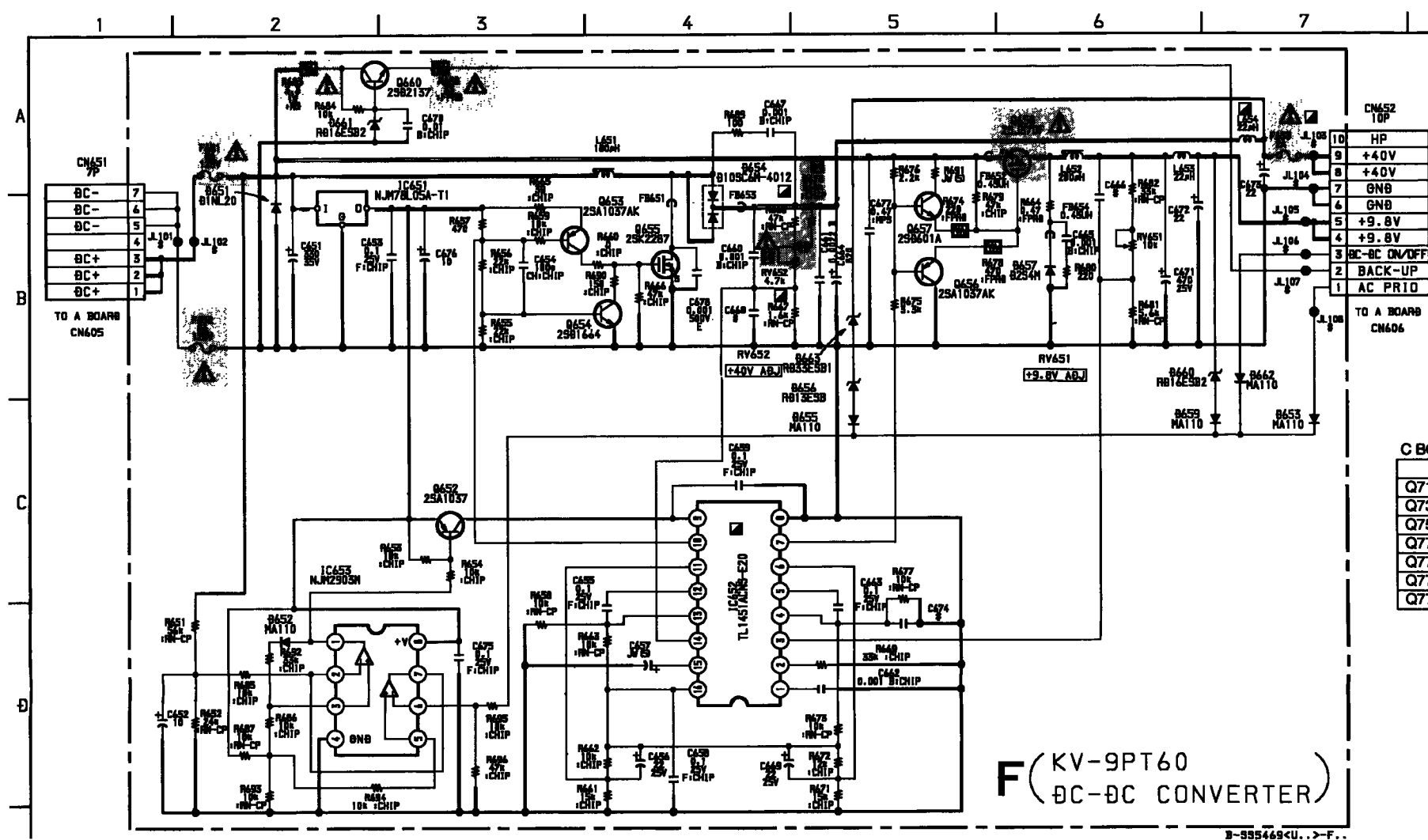
NOT MOUNT

Pin numbers which are not described are not used.

**CAUTION: NO MODEL ONLY!**  
This set is equipped with a picture tube which has a leaded glass envelope. When repairing this set, be sure to observe the following instructions:  
1. Do not touch the glass of the picture tube with your bare hands.  
2. Do not touch the glass of the picture tube with any metal object.  
3. Do not touch the glass of the picture tube with any liquid.  
4. Do not touch the glass of the picture tube with any oil.  
5. Do not touch the glass of the picture tube with any grease.  
6. Do not touch the glass of the picture tube with any dirt.  
7. Do not touch the glass of the picture tube with any dust.  
8. Do not touch the glass of the picture tube with any lint.  
9. Do not touch the glass of the picture tube with any fibers.  
10. Do not touch the glass of the picture tube with any other foreign matter.  
11. Do not touch the glass of the picture tube with any sharp object.  
12. Do not touch the glass of the picture tube with any pointed object.  
13. Do not touch the glass of the picture tube with any rough object.  
14. Do not touch the glass of the picture tube with any abrasive object.  
15. Do not touch the glass of the picture tube with any corrosive object.  
16. Do not touch the glass of the picture tube with any flammable object.  
17. Do not touch the glass of the picture tube with any explosive object.  
18. Do not touch the glass of the picture tube with any radioactive object.  
19. Do not touch the glass of the picture tube with any toxic object.  
20. Do not touch the glass of the picture tube with any other dangerous object.

**CAUTION:**  
When repairing this set, be sure to observe the following instructions:  
1. Do not touch the glass of the picture tube with your bare hands.  
2. Do not touch the glass of the picture tube with any metal object.  
3. Do not touch the glass of the picture tube with any liquid.  
4. Do not touch the glass of the picture tube with any oil.  
5. Do not touch the glass of the picture tube with any grease.  
6. Do not touch the glass of the picture tube with any dirt.  
7. Do not touch the glass of the picture tube with any dust.  
8. Do not touch the glass of the picture tube with any lint.  
9. Do not touch the glass of the picture tube with any fibers.  
10. Do not touch the glass of the picture tube with any other foreign matter.  
11. Do not touch the glass of the picture tube with any sharp object.  
12. Do not touch the glass of the picture tube with any pointed object.  
13. Do not touch the glass of the picture tube with any rough object.  
14. Do not touch the glass of the picture tube with any abrasive object.  
15. Do not touch the glass of the picture tube with any corrosive object.  
16. Do not touch the glass of the picture tube with any flammable object.  
17. Do not touch the glass of the picture tube with any explosive object.  
18. Do not touch the glass of the picture tube with any radioactive object.  
19. Do not touch the glass of the picture tube with any toxic object.  
20. Do not touch the glass of the picture tube with any other dangerous object.

**A**  
POWER SUPPLY  
DEFLECTION  
TUNER/IF  
AUDIO



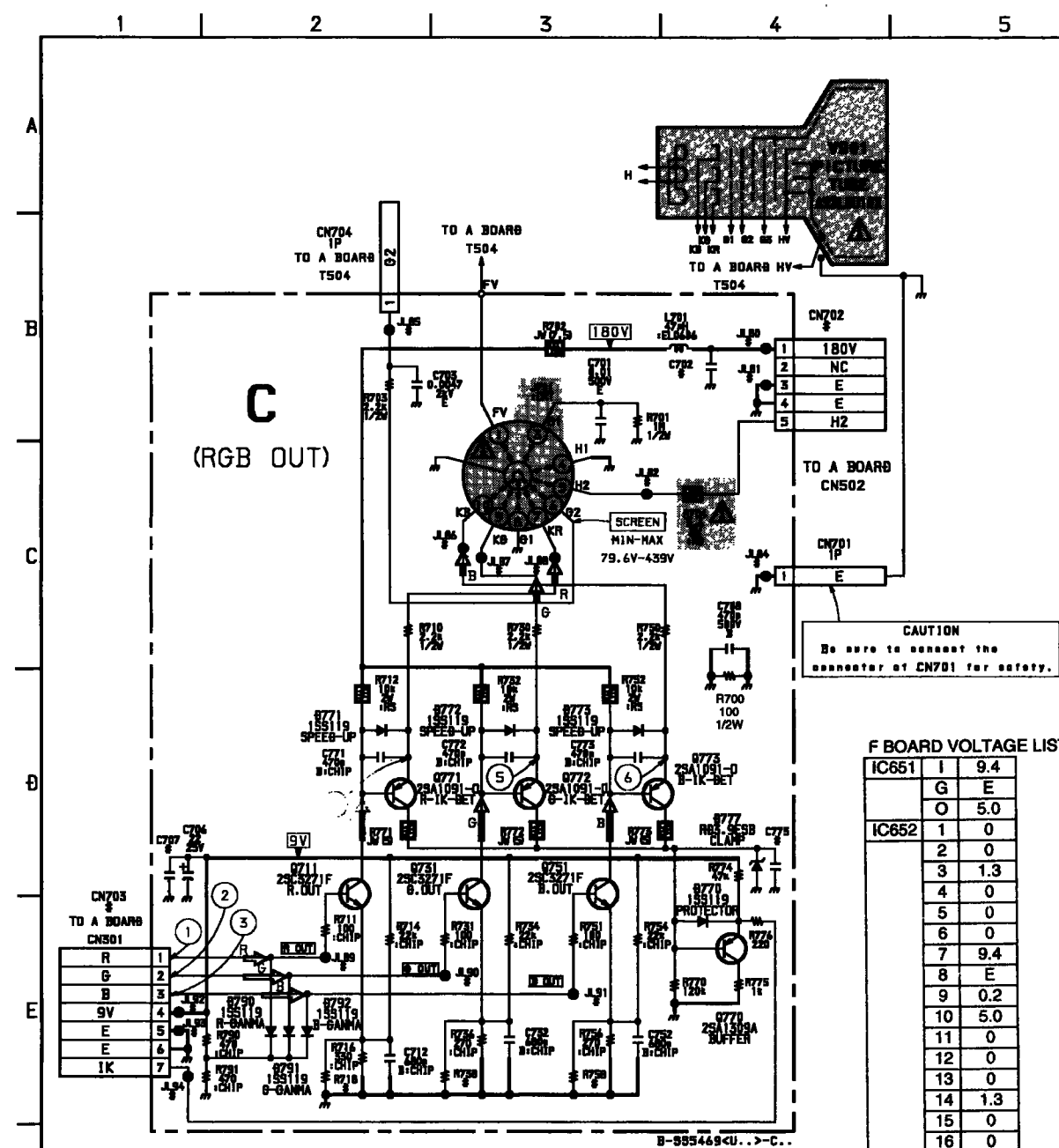
**C BOARD VOLTAGE LIST**

	B	C	E
Q711	2.0	137.0	1.6
Q731	2.1	124.8	1.6
Q751	2.0	127.8	1.6
Q770	2.1	0.2	2.6
Q771	137.0	2.1	133.5
Q772	124.8	2.1	121.0
Q773	127.8	2.1	124.1

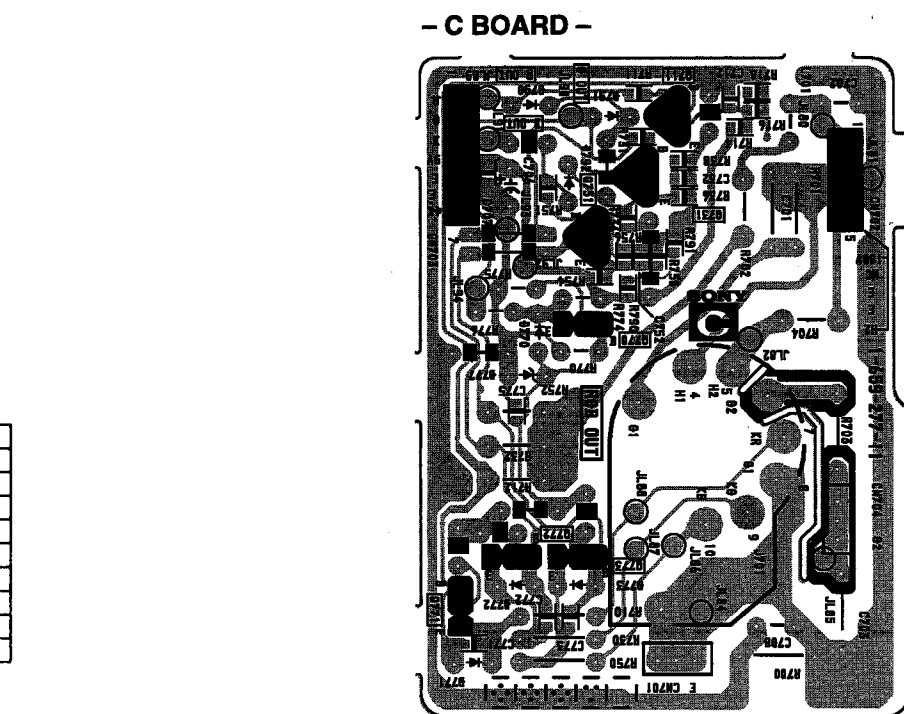
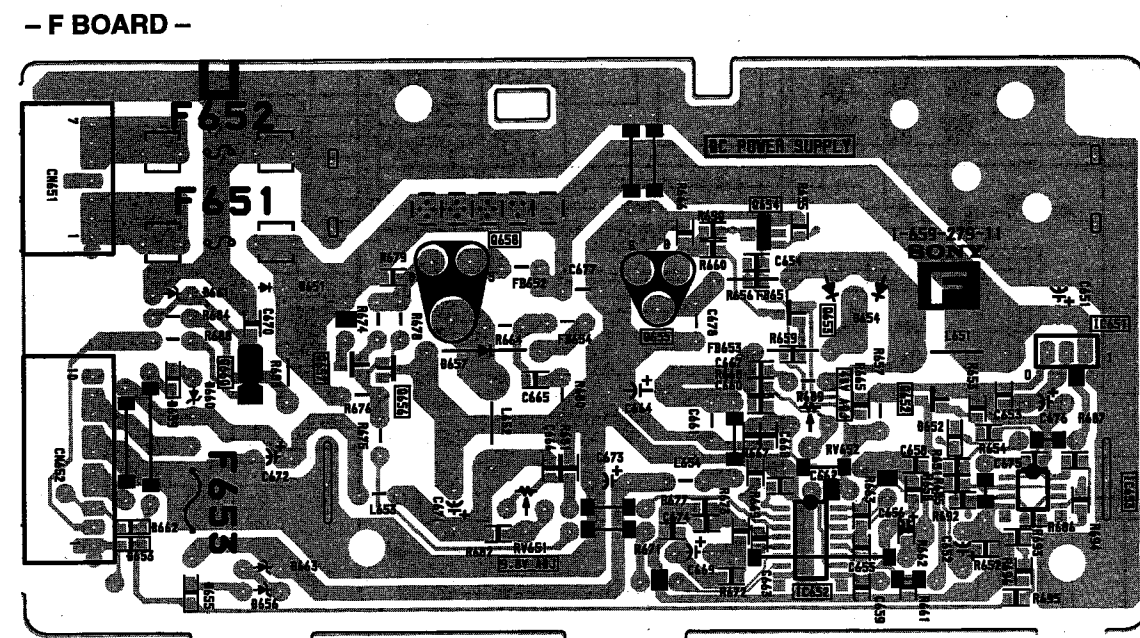
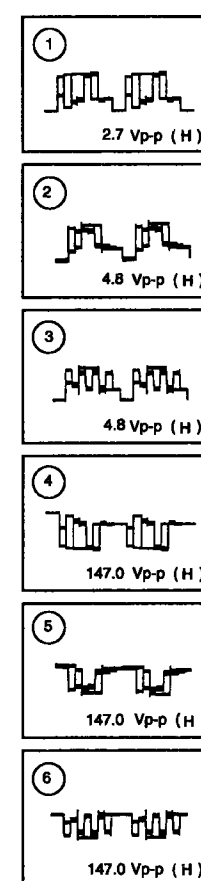
All voltages are in V.

F (KV-9PT60)  
DC-DC CONVERTER

F [DC-DC CONVERTER] C [R. G. B. OUT]



**C BOARD WAVEFORMS**



**F BOARD VOLTAGE LIST**

	B	C	E
IC651	1	9.4	
	G	E	
	O	5.0	
	1	0	
	2	0	
	3	1.3	
	4	0	
	5	0	
	6	0	
	7	9.4	
	8	E	
	9	0.2	
	10	5.0	
	11	0	
	12	0	
	13	0	
	14	1.3	
	15	0	
	16	0	
	17	0	
	18	0	

**F BOARD VOLTAGE LIST**

	B	C	E
Q652	4.8	0.2	5.0
Q653	5.0	0	5.0
Q654	0.6	0	E
Q655	9.4	E	9.4
Q657	9.4	9.4	9.4
Q660	9.4	9.4	9.1
	0	S	G
Q655	0	E	9.4
Q658	9.3	9.3	10.0

All voltages are in V.

Schematic diagrams

Schematic diagrams

← A board

C F board →

**6-4. SEMICONDUCTORS**

<p>CXA1464AS TOP VIEW 48 pin</p> <p>CXP85112B-638S TOP VIEW 84 pin</p> <p>HD14053BFP MC14053BF TOP VIEW 16 pin</p> <p>LA78LR05D-MA TOP VIEW</p> <p>LA7830 TOP VIEW</p> <p>LM2903M RC4558PS ST24C02FM6TR TOP VIEW 8 pin</p> <p>NJM78L05A NJM78L09A T78L09S TOP VIEW 8 pin</p>	<p>PQ09RA1 TOP VIEW 8 pin</p> <p>TDA7267 TOP VIEW 8 pin</p> <p>TL1451ACNS TOP VIEW 16 pin</p> <p>μPC1093J-T TOP VIEW</p> <p>2SA1091-O TOP VIEW</p> <p>2SA1175-HFE 2SA1309A-QRS LETTER SIDE</p>	<p>2SB733-34 2SC2998 2SD2137-OP E B</p> <p>2SC2611 2SC3271F-N LETTER SIDE E B</p> <p>2SC4161MN-RA11 TOP VIEW</p> <p>2SC4663NPR-F MARKING SIDE VIEW E B</p> <p>2SD1292-R-T103 TOP VIEW</p> <p>2SA1037AK-T-146-R 2SA1037AK-T-146-QR 2SA1182G 2SA1330-O6 2SB554-LK-T 2SB709A-QRS-TX 2SD601A-Q E B</p> <p>2SD1664-QR TOP VIEW</p> <p>2SJ370-F LETTER SIDE E B</p>	<p>2SK2237-F09 TOP VIEW G B</p> <p>D1NL20 EL1Z ERB44-06 GP08D RGP10GPKG3 RD51E-B 20E2H G B</p> <p>2SC4161MN-RA11 TOP VIEW E B</p> <p>D1NS4 MTZ1-T-77-10 RD10ES-B2 RD13ES-B2 RD16ES-B2 RD30ES-B2 RD33ES-B1 RD3.9ES-B2 RD5.1ES-B1 RD5.8ES-B3 RD5.2ES-B2 1S5119-25 11ES2 CATHODE ANODE</p> <p>D2S4M D2S4MF CATHODE ANODE</p> <p>MA110 TOP VIEW ANODE CATHODE</p>	<p>RU-3AM CATHODE ANODE</p> <p>LN021616PH ANODE CATHODE</p>
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**NOTE:**

- Items with an asterisk (\*) 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.

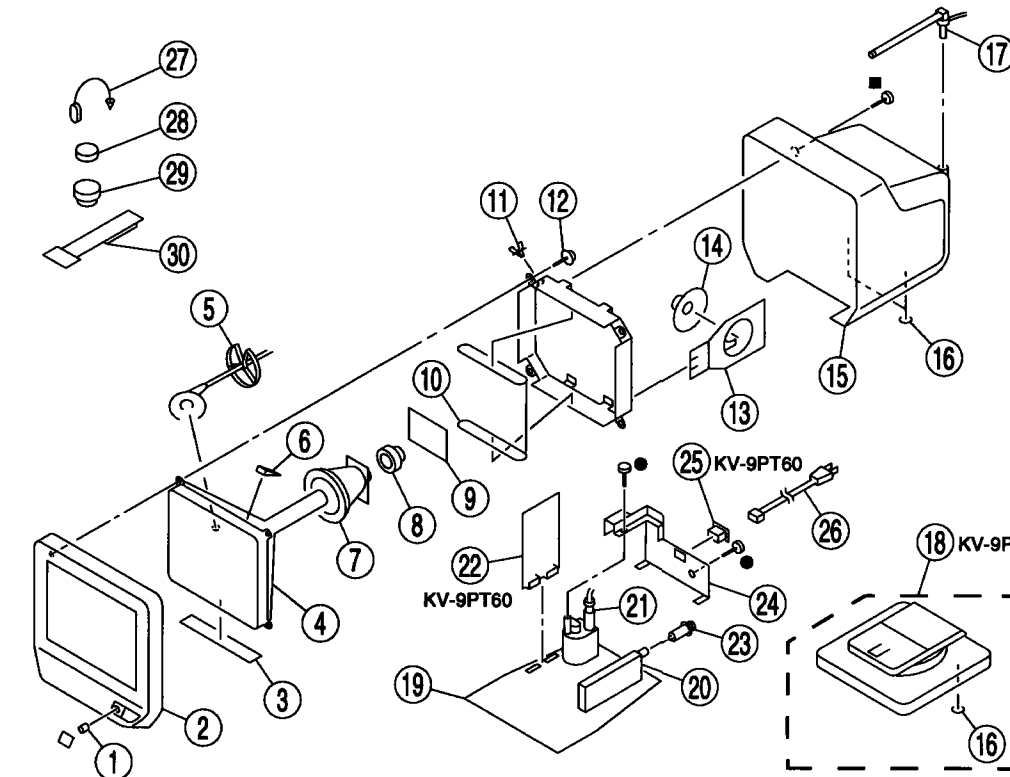
**SECTION 7  
EXPLODED VIEWS**

**7-1. CHASSIS**

- \* 7-685-648-79 +BVTp 3x12
- \* 7-685-663-79 +BVTp 4x16

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
1	4-374-987-01	GUIDE, LIGHT		18	X-4033-201-1	BRACKET ASSY (KV-9PT50)	16
2	X-4033-318-1	BEZNET ASSY (KV-9PT50)		19	A-1297-679-A	A BOARD COMPLETE (KV-9PT60)	
3	X-4033-321-1	BEZNET ASSY (KV-9PT50)		20	A-1297-689-A	A BOARD COMPLETE (KV-9PT50)	
4	4-052-215-01	SHEET, BLOTTING		21	8-598-339-00	TUNER BTFLA02	
5	8-735-822-05	CRT 1 OSL (SD-270) (A23LDU10X)		22	1-453-206-11	TRANSFORMER ASSY, FLYBACK NX-1745 / XAF4	
6	4-034-856-01	HOLDER, HIGH-VOLTAGE CABLE		23	3-704-495-02	SPACER, DY	
7	3-704-495-02	SPACER, DY		24	A-1245-582-A	F BOARD COMPLETE (KV-9PT60)	
8	8-451-450-11	DY Y1 OSLA		25	1-776-374-11	PLUG, F-PIN	
9	1-452-760-11	NECK ASSEMBLY (NA221)		26	4-052-006-31	BRACKET, TERMINAL BOARD (KV-9PT60(US))	
10	A-1331-511-A	C BOARD COMPLETE		27	4-052-006-01	BRACKET, TERMINAL BOARD (KV-9PT50(CND) / 9PT60(CND))	
11	1-411-754-11	COIL, DEMAGNETIC		28	4-052-006-21	BRACKET, TERMINAL BOARD (KV9PT50(US))	
12	4-395-824-02	HOLDER, DEGAUSSING COIL		29	1-540-032-11	INLET 2P (KV-9PT60)	
13	4-356-808-01	SCREW(S), TAPPING		30	1-574-085-21	CORD, POWER (KV-9PT60)	
14	4-052-076-01	HOLDER, SPEAKER			1-776-846-11	CORD, POWER (KV-9PT50)	
15	1-505-226-11	SPEAKER (BCM)			1-776-846-11	SPEAKER (BCM)	
16	4-052-045-31	COVER, REAR (KV-9PT60)			4-052-045-31	COVER, REAR (KV-9PT60)	
17	4-052-045-21	COVER, REAR (KV-9PT50)			1-452-032-00	MAGNET, DISK, 10MMØ	
					1-452-094-00	MAGNET, ROTATABLE DISK, 15MMØ	
					4-052-214-01	FOOT	
					1-501-813-11	ANTENNA, TELESCOPIC (KV-9PT60)	
					1-501-813-21	ANTENNA, TELESCOPIC (KV-9PT50)	



## SECTION 8 ELECTRICAL PARTS LIST

F

**NOTE:**

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

• The components identified by  $\boxtimes$  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.

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

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

**RESISTORS**

- All resistors are in ohms
- F : nonflammable

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

- CAPACITORS  
PF :  $\mu\mu$  F

• There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
* A-1245-582-A F BOARD, COMPLETE (KV-9PT60) *****							
	4-382-854-11	SCREW (M3X10), P, SW (+)		<FUSE>			
		<CAPACITOR>		F651	$\Delta$ 1-533-311-11	FUSE GLASS CYLINDRICAL (DIA. 5/8A) 125V	
C651	1-111-087-11	ELECT 330MF	20% 35V		1-533-223-11	HOLDER, FUSE; F651	
C652	1-126-964-11	ELECT 10MF	20% 50V	F652	$\Delta$ 1-533-311-11	FUSE GLASS CYLINDRICAL (DIA. 5/8A) 125V	
C653	1-163-038-91	CERAMIC CHIP 0.1MF	25V		1-533-223-11	HOLDER, FUSE; F652	
C654	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	F653	$\Delta$ 1-532-779-21	FUSE, MICRO (SECONDARY) 2A/125V	
C655	1-163-038-91	CERAMIC CHIP 0.1MF	25V	<FERRITE BEAD>			
C656	1-128-551-11	ELECT 22MF	20% 25V	FB651	1-414-411-21	INDUCTOR, BEAD	
C658	1-163-038-91	CERAMIC CHIP 0.1MF	25V	FB652	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
C659	1-163-038-91	CERAMIC CHIP 0.1MF	25V	FB653	1-414-411-21	INDUCTOR, BEAD	
C660	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	FB654	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
C661	1-102-121-00	CERAMIC 0.0022MF	10% 50V	<IC>			
C662	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	IC651	8-759-708-05	IC NJM78L05A	
C663	1-163-038-91	CERAMIC CHIP 0.1MF	25V	IC652	8-759-937-36	IC TL1451ACNS	
C664	1-111-125-51	ELECT 820MF	20% 50V	IC653	8-759-981-65	IC LM2903M	
C665	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	<COIL>			
C667	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	L651	1-411-763-11	COIL, CHOKE 200UH	
C669	1-128-551-11	ELECT 22MF	20% 25V	L652	1-412-049-11	COIL, CHOKE 200UH	
C670	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	L653	1-412-529-11	INDUCTOR 22UH	
C671	1-111-063-11	ELECT 470MF	20% 25V	L654	1-412-529-11	INDUCTOR 22UH	
C672	1-126-965-11	ELECT 22MF	20% 50V	<TRANSISTOR>			
C673	1-126-965-11	ELECT 22MF	20% 50V	Q652	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
C675	1-163-038-91	CERAMIC CHIP 0.1MF	25V	Q653	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
C676	1-107-929-11	ELECT 10MF	20% 50V	Q654	8-729-920-85	TRANSISTOR 2SD1664-QR	
C677	1-136-173-00	FILM 0.47MF	5% 50V	Q655	8-729-034-86	TRANSISTOR 2SK2287-F09	
C678	1-102-038-00	CERAMIC 0.001MF	500V	Q656	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
<CONNECTOR>				Q657	8-729-422-27	TRANSISTOR 2SD601A-Q	
CN651	* 1-774-812-11	CONNECTOR, BOARD TO BOARD 7P		Q658	$\Delta$ 8-729-035-38	TRANSISTOR 2S1370-F	
CN652	1-766-924-11	CONNECTOR, BOARD TO BOARD 10P		Q660	8-729-423-XX	TRANSISTOR 2SD2137-OP	
<DIODE>				<RESISTOR>			
D651	8-719-510-26	DIODE D1NL20		R651	1-208-824-11	METAL CHIP 56K	0.50% 1/10W
D652	8-719-404-46	DIODE MA110		R652	1-216-684-91	METAL CHIP 24K	0.50% 1/10W
D653	8-719-404-46	DIODE MA110		R653	1-216-073-00	METAL GLAZE 10K	5% 1/10W
D654	8-719-057-96	DIODE D10SC6M-4012		R654	1-216-073-00	METAL GLAZE 10K	5% 1/10W
D655	8-719-404-46	DIODE MA110		R655	1-216-081-00	METAL GLAZE 22K	5% 1/10W
D656	8-719-110-36	DIODE RD13ESB2		R656	1-216-081-00	METAL GLAZE 22K	5% 1/10W
D657	8-719-022-97	DIODE D2S4MF		R657	1-249-413-11	CARBON 470	5% 1/4W
D659	8-719-404-46	DIODE MA110		R658	1-208-806-11	METAL CHIP 10K	0.50% 1/10W
D660	8-719-110-46	DIODE RD16ESB3		R659	1-216-073-00	METAL GLAZE 10K	5% 1/10W
D661	8-719-110-46	DIODE RD16ESB3		R660	1-216-295-91	CONDUCTOR, CHIP	
D662	8-719-404-46	DIODE MA110		R661	1-216-077-00	METAL GLAZE 15K	5% 1/10W
D663	8-719-110-76	DIODE RD33ESB1		R662	1-216-073-00	METAL GLAZE 10K	5% 1/10W
				R663	1-208-806-11	METAL CHIP 10K	0.50% 1/10W
				R664	1-249-377-11	CARBON 0.47	5% 1/4W F
				R665	1-216-015-00	METAL GLAZE 39	5% 1/10W



• The components identified by **F** 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.

Les composants identifiés par une trame et une marque **F** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifique.

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
R666	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R667	1-216-656-11	METAL CHIP 1.6K	0.50% 1/10W
R668	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R669	1-216-085-00	METAL GLAZE 33K	5% 1/10W
<b>F</b> R670	<b>A</b> 1-216-156-00	METAL GLAZE 560K	5% 1/10W
R671	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R672	1-216-075-00	METAL GLAZE 12K	5% 1/10W
R673	1-208-806-11	METAL CHIP 10K	0.50% 1/10W
R674	1-249-409-11	CARBON 220	5% 1/4W <b>F</b>
R675	1-249-423-11	CARBON 3.3K	5% 1/4W <b>F</b>
R676	1-249-421-11	CARBON 2.2K	5% 1/4W
R677	1-208-806-11	METAL CHIP 10K	0.50% 1/10W
R678	1-249-413-11	CARBON 470	5% 1/4W <b>F</b>
R679	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R680	1-247-815-91	CARBON 220	5% 1/4W
R681	1-208-800-11	METAL CHIP 5.6K	0.50% 1/10W
R682	1-216-687-11	METAL CHIP 33K	0.50% 1/10W
<b>F</b> R683	<b>A</b> 1-216-355-71	METAL OXIDE 3.3	5% 1W <b>F</b>
R684	1-249-429-11	CARBON 10K	5% 1/4W
R685	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R686	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R687	1-208-806-11	METAL CHIP 10K	0.50% 1/10W
<b>F</b> R688	<b>A</b> 1-249-399-91	CARBON 33	5% 1/4W <b>F</b>
R689	1-247-807-31	CARBON 100	5% 1/4W
R690	1-216-029-00	METAL GLAZE 150	5% 1/10W
R692	1-216-085-00	METAL GLAZE 33K	5% 1/10W
R693	1-208-806-11	METAL CHIP 10K	0.50% 1/10W
R694	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R695	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R696	1-216-089-91	METAL GLAZE 47K	5% 1/10W
<VARIABLE RESISTOR>			
RV651	1-241-764-11	RES. ADJ. CERMET 10K	
<b>F</b> RV652	<b>A</b> 1-241-773-21	RES. ADJ. CERMET 4.7K	
*****			
* A-1297-679-A A BOARD, COMPLETE (KV-9PT60) *****			
* A-1297-680-A A BOARD, COMPLETE (KV-9PT50) *****			
1-923-507-59 WIRE UL1007 AWG24 30MM BLK			
1-923-507-60 WIRE UL1007 AWG24 60MM BLK			
4-053-413-01 CASE (LOWER), A SHIELD			
4-053-414-01 CASE (UPPER), A SHIELD			
4-382-854-11 SCREW (M3X10), P, SW (+)			
<CAPACITOR>			
C004	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C006	1-163-239-11	CERAMIC CHIP 33PF	5% 50V
C008	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C010	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C011	1-163-239-11	CERAMIC CHIP 33PF	5% 50V
C012	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C013	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C014	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C015	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C016	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C017	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C019	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C020	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C021	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C023	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C024	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C025	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C027	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C029	1-163-007-11	CERAMIC CHIP 680PF	10% 50V
C030	1-163-125-00	CERAMIC CHIP 220PF	5% 50V

REF. NO.	PART NO.	DESCRIPTION	REMARK
C032	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C033	1-126-933-11	ELECT 100MF	20% 10V
C034	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V
C035	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C036	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C037	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C038	1-126-935-11	ELECT 470MF	20% 16V
C040	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C041	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C042	1-124-903-11	ELECT 1MF	20% 50V
C043	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C047	1-102-110-00	CERAMIC 220PF	10% 50V
C048	1-102-110-00	CERAMIC 220PF	10% 50V
C101	1-126-963-11	ELECT 4.7MF	20% 50V
C201	1-126-933-11	ELECT 100MF	20% 16V
C202	1-126-964-11	ELECT 10MF	20% 50V
C203	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C204	1-126-967-11	ELECT 47MF	20% 16V
C205	1-126-964-11	ELECT 10MF	20% 50V
C206	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C207	1-124-903-11	ELECT 1MF	20% 50V
C208	1-124-903-11	ELECT 1MF	20% 50V
C209	1-124-903-11	ELECT 1MF	20% 50V
C210	1-126-963-11	ELECT 4.7MF	20% 50V
C211	1-126-935-11	ELECT 470MF	20% 16V
C212	1-126-942-61	ELECT 1000MF	20% 25V
C213	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C214	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C217	1-163-038-91	CERAMIC CHIP 0.1MF	25V
C301	1-137-399-11	FILM 0.1MF	5% 50V
C303	1-126-935-11	ELECT 470MF	20% 16V
C304	1-126-964-11	ELECT 10MF	20% 50V
C305	1-124-903-11	ELECT 1MF	20% 50V
C306	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C307	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C308	1-124-902-00	ELECT 0.47MF	20% 50V
C309	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
C310	1-126-965-11	ELECT 22MF	20% 50V
C311	1-130-489-00	FILM 0.033MF	5% 50V
C312	1-130-489-00	FILM 0.033MF	5% 50V
C313	1-130-489-00	FILM 0.033MF	5% 50V
C314	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V
C315	1-126-934-11	ELECT 220MF	20% 16V
C318	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C319	1-124-902-00	ELECT 0.47MF	20% 50V
C320	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C321	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C322	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C323	1-163-007-11	CERAMIC CHIP 680PF	10% 50V
C324	1-124-903-11	ELECT 1MF	20% 50V
C325	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C326	1-137-370-11	FILM 0.01MF	5% 50V
C327	1-163-003-11	CERAMIC CHIP 330PF	10% 50V
C328	1-124-902-00	ELECT 0.47MF	20% 50V
C329	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C330	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C332	1-136-169-00	FILM 0.22MF	5% 50V
C333	1-136-169-00	FILM 0.22MF	5% 50V
C334	1-137-372-11	FILM 0.022MF	5% 50V
C335	1-124-903-11	ELECT 1MF	20% 50V
C336	1-126-964-11	ELECT 10MF	20% 50V
C341	1-124-902-00	ELECT 0.47MF	20% 50V
C342	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V
C345	1-126-933-11	ELECT 100MF	20% 16V
C347	1-126-933-11	ELECT 100MF	20% 16V
C348	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C401	1-126-934-11	ELECT 220MF	20% 16V
C402	1-124-903-11	ELECT 1MF	20% 50V
C403	1-124-902-00	ELECT 0.47MF	20% 50V
C406	1-128-551-11	ELECT 22MF	20% 25V

The components identified by shading and mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C407	1-128-551-11	ELECT	22MF 20% 25V	C631	1-104-664-11	ELECT	47MF 20% 25V
C408	1-126-964-11	ELECT	10MF 20% 50V	C632	1-126-971-11	ELECT	470MF 20% 50V
C410	1-163-251-11	CERAMIC CHIP	100PF 5% 50V	C633	1-163-038-91	CERAMIC CHIP	0.1MF 25V
C413	1-163-009-11	CERAMIC CHIP	0.001MF 10% 50V	C634	1-164-232-11	CERAMIC CHIP	0.01MF 10% 50V
C418	1-163-031-11	CERAMIC CHIP	0.01MF 50V	C635	1-164-232-11	CERAMIC CHIP	0.01MF 10% 50V
C501	$\Delta$ 1-108-421-91	MYLAR	0.01MF 10% 200V	C636	$\Delta$ 1-113-937-91	ELECT	0.0022MF 125V
C502	1-104-799-11	ELECT	22MF 20% 50V	C637	1-164-644-11	CERAMIC	330PF 10% 500V
C503	1-163-003-11	CERAMIC CHIP	330PF 10% 50V	C638	$\Delta$ 1-113-937-91	ELECT	0.0022MF 125V
C504	1-130-489-00	FILM	0.033MF 5% 50V	C639	1-113-941-11	ELECT	0.0047MF 125V
C505	1-163-239-11	CERAMIC CHIP	33PF 5% 50V	C641	1-129-718-00	FILM	0.022MF 5% 630V
C507	1-102-038-00	CERAMIC	0.001MF 500V	<CONNECTOR>			
C508	1-102-038-00	CERAMIC	0.001MF 500V	CN202	1-564-505-11	PLUG, CONNECTOR	2P
C509	1-126-804-11	ELECT	100MF 20% 35V	CN401	* 1-560-124-00	PLUG, CONNECTOR	(2.5MM) 4P
C510	1-137-375-11	FILM	0.068MF 5% 50V	CN501	* 1-508-766-00	PIN, CONNECTOR	(5mm PITCH) 4P
C511	1-126-963-11	ELECT	4.7MF 20% 50V	CN601	* 1-580-843-11	PIN, CONNECTOR	(POWER) (KV-9PT60)
C512	1-164-232-11	CERAMIC CHIP	0.01MF 10% 50V	CN602	1-508-786-00	PIN, CONNECTOR	(5mm PITCH) 2P
C513	1-107-929-11	ELECT	10MF 20% 50V	CN603	1-508-786-00	PIN, CONNECTOR	(5mm PITCH) 2P
C514	1-104-664-11	ELECT	47MF 20% 25V	CN605	* 1-774-813-11	CONNECTOR, BOARD TO BOARD	7P (KV-9PT60)
C515	1-128-528-11	ELECT	470MF 20% 16V	CN606	1-766-921-11	CONNECTOR, BOARD TO BOARD	10P (KV-9PT60)
C516	1-102-228-00	CERAMIC	470PF 10% 500V	<DIODE>			
C517	$\Delta$ 1-108-421-91	MYLAR	0.01MF 10% 200V	D001	8-719-045-18	DIODE LN021616PH	
C518	1-107-913-11	ELECT	470MF 20% 50V	D003	8-719-911-19	DIODE ISS119-25	
C519	1-102-228-00	CERAMIC	470PF 10% 500V	D201	8-719-110-72	DIODE RD30ESB2	
C520	1-107-652-11	ELECT	10MF 20% 250V	D302	8-719-109-84	DIODE RD5.1ESB1	
C521	1-102-228-00	CERAMIC	470PF 10% 500V	D303	8-719-105-99	DIODE RD6.2M-B1	
C522	1-111-119-11	ELECT	330MF 20% 50V	D304	8-719-105-99	DIODE RD6.2M-B1	
C523	1-104-493-11	FILM	2.7MF 3% 100V	D305	8-719-105-99	DIODE RD6.2M-B1	
C524	1-106-359-00	MYLAR	0.0047MF 10% 100V	D402	8-719-110-17	DIODE RD10ESB2	
C525	1-106-383-00	MYLAR	0.047MF 10% 100V	D403	8-719-911-19	DIODE ISS119-25	
C527	1-104-799-11	ELECT	22MF 20% 50V	D410	8-719-110-17	DIODE RD10ESB2	
C528	1-107-635-11	ELECT	4.7MF 20% 160V	D501	8-719-908-03	DIODE GP08D	
C530	1-104-664-11	ELECT	47MF 20% 25V	D502	8-719-908-03	DIODE GP08D	
C531	1-104-664-11	ELECT	47MF 20% 25V	D503	8-719-911-19	DIODE ISS119-25	
C534	$\Delta$ 1-115-405-11	FILM	0.039MF 3% 1KV	D504	8-719-302-43	DIODE ELIZ	
C535	$\Delta$ 1-162-116-91	CERAMIC	680PF 10% 2KV	D505	8-719-911-19	DIODE ISS119-25	
C558	1-106-355-12	MYLAR	0.0033MF 10% 100V	D506	8-719-110-08	DIODE RD8.2ESB2	
C559	1-162-115-00	CERAMIC	330PF 10% 2KV	D507	8-719-911-19	DIODE ISS119-25	
C575	1-107-904-11	ELECT	3.3MF 20% 50V	D508	8-719-300-33	DIODE RU-3AM	
C579	1-106-379-12	MYLAR	0.033MF 10% 100V	D509	8-719-302-43	DIODE ELIZ	
C601	$\Delta$ 1-113-937-91	ELECT	0.0022MF 125V	D510	8-719-302-43	DIODE ELIZ	
C602	1-104-706-11	FILM	0.22MF 20% 250V	D512	8-719-302-43	DIODE ELIZ	
C603	1-104-706-11	FILM	0.22MF 20% 250V	D514	8-719-911-19	DIODE ISS119-25	
C604	1-124-902-00	ELECT	0.47MF 20% 50V	D601	8-719-911-19	DIODE ISS119-25	
C605	$\Delta$ 1-113-937-91	ELECT	0.0022MF 125V	D602	8-719-911-19	DIODE ISS119-25	
C606	1-126-941-11	ELECT	470MF 20% 25V	D603	8-719-911-19	DIODE ISS119-25	
C607	1-104-664-11	ELECT	47MF 20% 25V	D604	8-719-200-82	DIODE 11ES2	
C608	1-163-038-91	CERAMIC CHIP	0.1MF 25V	D605	8-719-200-82	DIODE 11ES2	
C609	1-115-434-11	ELECT	220MF 20% 200V	D606	8-719-200-82	DIODE 11ES2	
C610	1-164-646-11	CERAMIC	2200PF 10% 500V	D607	8-719-200-82	DIODE 11ES2	
C611	1-164-646-11	CERAMIC	2200PF 10% 500V	D608	8-719-911-19	DIODE ISS119-25	
C612	1-136-171-00	FILM	0.33MF 5% 50V	D609	8-719-911-19	DIODE ISS119-25	
C613	1-136-169-00	FILM	0.22MF 5% 50V	D610	8-719-911-19	DIODE ISS119-25	
C614	1-136-171-00	FILM	0.33MF 5% 50V	D611	8-719-058-90	DIODE DINL20-TR2	
C615	1-136-169-00	FILM	0.22MF 5% 50V	D612	8-719-109-90	DIODE RD5.6ESB3	
C616	1-164-645-11	CERAMIC	1000PF 10% 500V	D613	8-719-058-90	DIODE DINL20-TR2	
C617	1-126-964-11	ELECT	10MF 20% 50V	D614	8-719-032-12	DIODE DINS6	
C618	1-130-489-00	FILM	0.033MF 5% 50V	D615	8-719-032-12	DIODE DINS6	
C619	1-163-009-11	CERAMIC CHIP	0.001MF 10% 50V	D616	8-719-911-19	DIODE ISS119-25	
C620	1-164-646-11	CERAMIC	2200PF 10% 500V	D617	8-719-911-19	DIODE ISS119-25 (KV-9PT60)	
C621	1-164-646-11	CERAMIC	2200PF 10% 500V	D618	8-719-911-19	DIODE ISS119-25 (KV-9PT60)	
C622	1-165-127-11	CERAMIC	470PF 10% 500V	D619	8-719-058-08	DIODE RD51F-T7B	
C623	1-165-127-11	CERAMIC	470PF 10% 500V	D620	8-719-510-02	DIODE DINS4 (KV-9PT60)	
C624	1-164-644-11	CERAMIC	330PF 10% 500V	D621	8-719-911-19	DIODE ISS119-25	
C625	1-126-940-11	ELECT	330MF 20% 25V	D622	8-719-200-62	DIODE 20E2H (KV-9PT60)	
C626	1-126-965-11	ELECT	22MF 20% 50V				
C627	1-126-971-11	ELECT	470MF 20% 50V				
C628	1-104-664-11	ELECT	47MF 20% 25V				
C629	1-137-399-11	FILM	0.1MF 5% 50V				
C630	1-126-965-11	ELECT	22MF 20% 50V				



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The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
D623	8-719-058-90	DIODE D1NL20-TR2 (KV-9PT60)		Q410	8-729-216-22	TRANSISTOR 2SA1162-G	
		<FUSE>		Q412	8-729-216-22	TRANSISTOR 2SA1162-G	
F601	$\Delta$ 1-533-420-11	FUSE, GLASS CYLINDRICAL (DIA. 5)5A/125V		Q504	8-729-105-08	TRANSISTOR 2SA1330-06	
	1-533-223-11	HOLDER, FUSE; F601		Q550	8-729-195-82	TRANSISTOR 2SC2958	
		<FERRITE BEAD>		Q551	8-729-034-87	TRANSISTOR 2SC4161MN-RA11	
FB001	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH		Q554	8-729-216-22	TRANSISTOR 2SA1162-G	
FB003	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH		Q555	8-729-422-27	TRANSISTOR 2SD601A-Q	
FB501	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH		Q602	8-729-025-77	TRANSISTOR 2SC4663NPR-F	
FB601	1-412-911-11	INDUCTOR, FERRITE BEAD		Q603	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
FB602	1-412-911-11	INDUCTOR, FERRITE BEAD		Q604	$\Delta$ 8-729-024-65	TRANSISTOR 2SB733-34	
FB603	1-412-911-11	INDUCTOR, FERRITE BEAD		Q605	8-729-422-27	TRANSISTOR 2SD601A-Q	
FB604	1-412-911-11	INDUCTOR, FERRITE BEAD		Q606	8-729-422-27	TRANSISTOR 2SD601A-Q (KV-9PT60)	
FB605	1-412-911-11	INDUCTOR, FERRITE BEAD (KV-9PT60)		Q607	$\Delta$ 8-729-926-17	TRANSISTOR 2SD1292-R-T103	
FB606	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH		Q609	8-729-025-77	TRANSISTOR 2SC4663NPR-F	
FB607	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH				<RESISTOR>	
FB608	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH		R001	1-216-295-91	CONDUCTOR, CHIP	
FB609	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH		R002	1-216-295-91	CONDUCTOR, CHIP	
FB610	1-412-911-11	INDUCTOR, FERRITE BEAD		R003	1-216-033-00	METAL GLAZE 220	5% 1/10W
		<IC>		R004	1-216-049-91	METAL GLAZE 1K	5% 1/10W
IC101	8-752-871-83	IC CXP85112B-638S		R005	1-216-049-91	METAL GLAZE 1K	5% 1/10W
IC102	8-759-354-28	IC ST24C02FM6TR		R007	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
IC103	8-747-905-11	RAY CATCHER ELEMENT SBX1790-51		R008	1-216-033-00	METAL GLAZE 220	5% 1/10W
IC201	8-759-365-39	IC TDA7267		R009	1-216-033-00	METAL GLAZE 220	5% 1/10W
IC202	8-759-168-20	IC TA78L09S		R010	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
IC301	8-752-057-68	IC CXA1464AS		R012	1-216-033-00	METAL GLAZE 220	5% 1/10W
IC401	8-759-300-71	IC HD14053BFP		R013	1-216-049-91	METAL GLAZE 1K	5% 1/10W
IC501	8-759-801-98	IC LA7830		R014	1-216-033-00	METAL GLAZE 220	5% 1/10W
IC502	8-759-252-53	IC RC4558PS-E20		R015	1-216-033-00	METAL GLAZE 220	5% 1/10W
IC601	8-759-198-31	IC $\mu$ PC1093J-1-T		R016	1-216-073-00	METAL GLAZE 10K	5% 1/10W
IC602	8-759-054-12	IC PQ09RA1		R018	1-216-049-91	METAL GLAZE 1K	5% 1/10W
IC603	8-759-805-37	IC L78LR05D-MA		R019	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
		<JACK>		R020	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
J251	1-568-267-21	JACK		R021	1-216-045-00	METAL GLAZE 680	5% 1/10W
J401	1-695-239-11	JACK BLOCK, PIN 2P		R022	1-216-047-91	METAL GLAZE 820	5% 1/10W
J601	1-750-523-11	JACK, DC (KV-9PT60)		R023	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
		<COIL>		R024	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
L002	1-408-413-00	INDUCTOR 22UH		R025	1-216-033-00	METAL GLAZE 220	5% 1/10W
L004	1-408-413-00	INDUCTOR 22UH		R026	1-216-033-00	METAL GLAZE 220	5% 1/10W
L202	1-410-470-11	INDUCTOR 10UH		R027	1-216-033-00	METAL GLAZE 220	5% 1/10W
L203	1-408-413-00	INDUCTOR 22UH		R028	1-412-006-31	INDUCTOR CHIP 10UH	
L301	1-410-478-11	INDUCTOR 47UH		R029	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
L502	1-408-419-00	INDUCTOR 68UH		R031	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
L503	$\Delta$ 1-412-525-61	INDUCTOR 10UH		R032	1-216-033-00	METAL GLAZE 220	5% 1/10W
L505	$\Delta$ 1-411-764-11	COIL, VAR FERRITE (HWC)		R033	1-216-033-00	METAL GLAZE 220	5% 1/10W
L601	$\Delta$ 1-412-529-21	INDUCTOR 22UH		R034	1-216-295-91	CONDUCTOR, CHIP	
L602	1-410-470-11	INDUCTOR 10UH		R035	1-216-073-00	METAL GLAZE 10K	5% 1/10W
L603	1-412-529-11	INDUCTOR 22UH		R036	1-216-049-91	METAL GLAZE 1K	5% 1/10W
		<TRANSISTOR>		R037	1-216-089-91	METAL GLAZE 47K	5% 1/10W
Q001	8-729-216-22	TRANSISTOR 2SA1162-G		R039	1-216-049-91	METAL GLAZE 1K	5% 1/10W
Q002	8-729-216-22	TRANSISTOR 2SA1162-G		R041	1-216-073-00	METAL GLAZE 10K	5% 1/10W
Q003	8-729-422-27	TRANSISTOR 2SD601A-Q		R042	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q201	8-729-900-53	TRANSISTOR DTC114EK		R044	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q202	8-729-422-27	TRANSISTOR 2SD601A-Q		R045	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
Q301	8-729-422-27	TRANSISTOR 2SD601A-Q		R046	1-216-033-00	METAL GLAZE 220	5% 1/10W
Q401	8-729-422-27	TRANSISTOR 2SD601A-Q		R047	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
Q402	8-729-422-27	TRANSISTOR 2SD601A-Q		R048	1-216-025-91	METAL GLAZE 100	5% 1/10W
Q408	8-729-422-27	TRANSISTOR 2SD601A-Q		R049	1-216-089-91	METAL GLAZE 47K	5% 1/10W
				R050	1-216-073-00	METAL GLAZE 10K	5% 1/10W
				R052	1-216-041-00	METAL GLAZE 470	5% 1/10W
				R054	1-216-073-00	METAL GLAZE 10K	5% 1/10W
				R055	1-216-033-00	METAL GLAZE 220	5% 1/10W
				R056	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
				R057	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
				R058	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
				R061	1-216-045-00	METAL GLAZE 680	5% 1/10W
				R062	1-216-097-91	METAL GLAZE 100K	5% 1/10W
				R063	1-216-121-91	METAL GLAZE 1M	5% 1/10W
				R064	1-216-073-00	METAL GLAZE 10K	5% 1/10W

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

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• The components identified by  $\Delta$  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.

A

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
R065	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R427	1-216-097-91	METAL GLAZE 100K	5% 1/10W
R067	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W	R430	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
$\Delta$ R069	$\Delta$ 1-216-107-00	METAL GLAZE 270K	5% 1/10W	R432	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R101	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R435	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R201	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R436	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R202	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W	R442	1-216-033-00	METAL GLAZE 220	5% 1/10W
R203	1-216-434-11	METAL OXIDE 1.8K	5% 1W F	R502	1-249-417-11	CARBON 1K	5% 1/4W
R204	1-216-081-00	METAL GLAZE 22K	5% 1/10W	R504	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R205	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W	R506	1-249-415-11	CARBON 680	5% 1/4W
R206	1-216-689-11	METAL GLAZE 39K	5% 1/10W	R508	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R207	1-216-083-00	METAL GLAZE 27K	5% 1/10W	R509	1-216-101-00	METAL GLAZE 150K	5% 1/10W
R208	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W	R510	1-249-420-11	CARBON 1.8K	5% 1/4W
R209	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W	R511	1-216-089-91	METAL GLAZE 47K	5% 1/10W
R210	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W	R512	1-208-806-11	METAL CHIP 10K	0.50% 1/10W
R211	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R513	1-216-645-11	METAL CHIP 560	0.50% 1/10W
R212	$\Delta$ 1-249-389-91	CARBON 4.7	5% 1/4W F	R515	1-208-806-11	METAL CHIP 10K	0.50% 1/10W
R213	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R516	1-216-351-00	METAL OXIDE 1.5	5% 1W F
R216	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R517	1-216-033-00	METAL GLAZE 220	5% 1/10W
R217	1-216-089-91	METAL GLAZE 47K	5% 1/10W	R518	1-216-661-11	METAL CHIP 2.7K	0.50% 1/10W
R271	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R519	1-215-453-00	METAL 22K	1% 1/4W
R272	1-216-037-00	METAL GLAZE 330	5% 1/10W	R520	1-216-651-11	METAL CHIP 1K	0.50% 1/10W
R273	1-216-037-00	METAL GLAZE 330	5% 1/10W	R521	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R301	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R523	1-215-471-00	METAL 120K	1% 1/4W
R302	1-216-025-91	METAL GLAZE 100	5% 1/10W	R525	1-216-685-11	METAL CHIP 27K	0.50% 1/10W
R303	1-216-033-00	METAL GLAZE 220	5% 1/10W	R526	1-216-295-91	CONDUCTOR, CHIP	
R304	1-216-295-91	CONDUCTOR, CHIP		R527	1-208-814-11	METAL CHIP 22K	0.50% 1/10W
R307	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R531	$\Delta$ 1-216-353-71	METAL OXIDE 2.2	5% 1W F
R311	1-216-678-11	METAL CHIP 13K	0.50% 1/10W	R532	1-216-697-91	METAL CHIP 82K	0.50% 1/10W
R312	1-216-079-00	METAL GLAZE 18K	5% 1/10W	R534	1-216-697-91	METAL CHIP 82K	0.50% 1/10W
R313	1-208-784-11	METAL CHIP 1.2K	0.50% 1/10W	R536	1-216-667-11	METAL CHIP 4.7K	0.50% 1/10W
R314	1-216-117-00	METAL GLAZE 680K	5% 1/10W	R538	1-215-861-00	METAL OXIDE 47	5% 1W F
R315	1-216-295-91	CONDUCTOR, CHIP		R543	1-216-699-11	METAL CHIP 100K	0.50% 1/10W
R323	1-216-121-91	METAL GLAZE 1M	5% 1/10W	R544	1-208-784-11	METAL CHIP 1.2K	0.50% 1/10W
R324	1-216-029-00	METAL GLAZE 150	5% 1/10W	R545	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R325	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R547	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R326	1-216-029-00	METAL GLAZE 150	5% 1/10W	R548	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R327	1-216-077-00	METAL GLAZE 15K	5% 1/10W	R549	$\Delta$ 1-216-365-71	METAL OXIDE 0.47	5% 2W F
R328	1-216-029-00	METAL GLAZE 150	5% 1/10W	R554	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R333	1-216-295-91	CONDUCTOR, CHIP		R555	1-215-890-11	METAL OXIDE 470	5% 2W F
R334	1-216-295-91	CONDUCTOR, CHIP		R557	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R336	1-216-129-00	METAL GLAZE 2.2M	5% 1/10W	R558	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R338	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R559	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R339	1-249-415-11	CARBON 680	5% 1/4W	R560	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R341	1-216-687-11	METAL CHIP 33K	0.50% 1/10W	R563	1-215-860-11	METAL OXIDE 33	5% 1W F
R343	1-216-071-00	METAL GLAZE 8.2K	5% 1/10W	R601	$\Delta$ 1-219-238-91	SOLID 4.7M	20% 1/2W
R345	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R602	1-249-401-11	CARBON 47	5% 1/4W
R346	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W	R603	1-219-785-11	WIREWOUND 2.2	5% 5W
R347	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W	R604	$\Delta$ 1-260-288-71	CARBON 0.47	5% 1/2W
R351	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W	R605	1-260-072-11	CARBON 4.7	5% 1/2W
R356	1-216-049-91	METAL GLAZE 1K	5% 1/10W	R606	1-247-891-00	CARBON 330K	5% 1/4W
R360	1-216-041-00	METAL GLAZE 470	5% 1/10W	R607	1-249-401-11	CARBON 47	5% 1/4W
R365	1-249-417-11	CARBON 1K	5% 1/4W F	R608	1-202-719-00	SOLID 1M	20% 1/2W
R367	1-216-109-00	METAL GLAZE 330K	5% 1/10W	R609	1-247-891-00	CARBON 330K	5% 1/4W
R401	1-216-022-00	METAL GLAZE 75	5% 1/10W	R610	1-247-891-00	CARBON 330K	5% 1/4W
R402	1-216-047-91	METAL GLAZE 820	5% 1/10W	R611	$\Delta$ 1-212-849-61	FUSIBLE 4.7	5% 1/4W F
R403	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W	R612	1-249-401-11	CARBON 47	5% 1/4W
R404	1-216-067-00	METAL GLAZE 5.6K	5% 1/10W	R613	1-249-401-11	CARBON 47	5% 1/4W
R405	1-216-097-91	METAL GLAZE 100K	5% 1/10W	R614	$\Delta$ 1-249-377-91	CARBON 0.47	5% 1/4W F
R406	1-216-047-91	METAL GLAZE 820	5% 1/10W	R619	1-260-072-11	CARBON 4.7	5% 1/2W
R407	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W	R620	1-249-430-11	CARBON 12K	5% 1/4W
R409	1-216-025-91	METAL GLAZE 100	5% 1/10W	R621	1-260-099-11	CARBON 1K	5% 1/2W
R410	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W	R622	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R415	1-216-089-91	METAL GLAZE 47K	5% 1/10W	R623	1-249-429-11	CARBON 10K	5% 1/4W
R416	1-216-033-00	METAL GLAZE 220	5% 1/10W	R624	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R418	1-216-295-91	CONDUCTOR, CHIP		R625	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R419	1-216-295-91	CONDUCTOR, CHIP		R626	1-216-097-91	METAL GLAZE 100K	5% 1/10W
R422	1-216-089-91	METAL GLAZE 47K	5% 1/10W	R627	1-216-657-11	METAL CHIP 1.8K	0.50% 1/10W
R423	1-216-081-00	METAL GLAZE 22K	5% 1/10W	R628	1-249-415-11	CARBON 680	5% 1/4W
R425	1-216-073-00	METAL GLAZE 10K	5% 1/10W	R629		METAL CHIP 24K	5% 1/10W
R426	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W				

# KV-9PT50/KV-9PT60

RM-Y116



• 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.

Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifique.

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

REF. NO.	PART NO.	DESCRIPTION	REMARK
R630	1-216-049-91	METAL GLAZE 1K	5% 1/10W
R631	<input checked="" type="checkbox"/> 1-216-345-71	METAL OXIDE 0.47	5% 1W F
R632	<input checked="" type="checkbox"/> 1-249-377-91	CARBON 0.47	5% 1/4W F
R633	1-216-073-00	METAL GLAZE 10K	5% 1/10W (KV-9PT60)
R634	1-216-073-00	METAL GLAZE 10K	5% 1/10W (KV-9PT60)
R635	1-216-073-00	METAL GLAZE 10K	5% 1/10W (KV-9PT60)
R636	1-247-891-00	CARBON 330K	5% 1/4W
R639	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R640	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R644	<input checked="" type="checkbox"/> 1-216-355-71	METAL OXIDE 3.3	5% 1W F
<VARIABLE RESISTOR>			
<input checked="" type="checkbox"/> RV601	<input checked="" type="checkbox"/> 1-241-773-21	RES. ADJ. CERMET 4.7K	
<SWITCH>			
S001	1-692-431-21	SWITCH, TACTILE	
S002	1-570-577-11	SWITCH, PUSH	
S004	1-570-577-11	SWITCH, PUSH	
S006	1-692-431-21	SWITCH, TACTILE	
<TRANSFORMER>			
T504	<input checked="" type="checkbox"/> 1-453-206-11	FBT ASSY. NX-1749/X464	
T551	1-429-411-11	TRANSFORMER, HORIZONTAL DRIVE	
T601	<input checked="" type="checkbox"/> 1-409-995-11	FILTER LINE	
T603	<input checked="" type="checkbox"/> 1-429-433-11	TRANSFORMER, CONVERTER (PIT)	
T604	<input checked="" type="checkbox"/> 1-427-864-12	TRANSFORMER, CONVERTER (PRT)	
<THERMISTOR>			
THP601	1-800-686-31	THERMISTOR (POSITIVE)	
<TUNER>			
TU101	8-598-339-00	TUNER BTF-LA402	
<VARISTOR>			
VDR602	1-810-053-11	VARISTOR	
<CRYSTAL>			
X001	1-567-192-11	OSCILLATOR, CERAMIC	
X301	1-760-190-41	VIBRATOR, CRYSTAL	
*****			
* A-1331-511-A C BOARD, COMPLETE			
*****			
4-382-854-11 SCREW (M3X10), P, SW (+)			
<CAPACITOR>			
C701	1-102-050-00	CERAMIC 0.01MF	500V
C703	1-162-114-00	CERAMIC 0.0047MF	2KV
C706	1-128-551-11	ELECT 22MF	20% 25V
C708	1-102-228-00	CERAMIC 470PF	10% 500V
C712	1-163-007-11	CERAMIC CHIP 680PF	10% 50V
C732	1-163-007-11	CERAMIC CHIP 680PF	10% 50V
C752	1-163-007-11	CERAMIC CHIP 680PF	10% 50V
C771	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C772	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C773	1-163-005-11	CERAMIC CHIP 470PF	10% 50V

REF. NO.	PART NO.	DESCRIPTION	REMARK
<CONNECTOR>			
CN701	1-695-915-11	TAB (CONTACT)	
CN704	1-695-915-11	TAB (CONTACT)	
<DIODE>			
D770	8-719-911-19	DIODE 1SS119-25	
D771	8-719-911-19	DIODE 1SS119-25	
D772	8-719-911-19	DIODE 1SS119-25	
D773	8-719-911-19	DIODE 1SS119-25	
D777	8-719-109-72	DIODE RD3.9ESB2	
D790	8-719-911-19	DIODE 1SS119-25	
D791	8-719-911-19	DIODE 1SS119-25	
D792	8-719-911-19	DIODE 1SS119-25	
<JACK>			
J701	1-526-958-71	SOCKET, PICTURE TUBE	
<COIL>			
L701	1-410-478-11	INDUCTOR 47UH	
<TRANSISTOR>			
Q711	8-729-326-11	TRANSISTOR 2SC2611	
Q731	8-729-326-11	TRANSISTOR 2SC2611	
Q751	8-729-326-11	TRANSISTOR 2SC2611	
Q770	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q771	8-729-200-17	TRANSISTOR 2SA1091-O	
Q772	8-729-200-17	TRANSISTOR 2SA1091-O	
Q773	8-729-200-17	TRANSISTOR 2SA1091-O	
<RESISTOR>			
R700	1-260-087-11	CARBON 100	5% 1/2W
R701	1-260-135-11	CARBON 1M	5% 1/2W
R703	1-260-103-11	CARBON 2.2K	5% 1/2W
R704	<input checked="" type="checkbox"/> 1-216-398-71	METAL OXIDE 5.6	5% 3W F
R710	1-260-103-11	CARBON 2.2K	5% 1/2W
R711	1-216-025-91	METAL GLAZE 100	5% 1/10W
R712	1-215-898-11	METAL OXIDE 10K	5% 2W F
R714	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R716	1-216-037-00	METAL GLAZE 330	5% 1/10W
R730	1-260-103-11	CARBON 2.2K	5% 1/2W
R731	1-216-025-91	METAL GLAZE 100	5% 1/10W
R732	1-215-898-11	METAL OXIDE 10K	5% 2W F
R734	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R736	1-216-035-00	METAL GLAZE 270	5% 1/10W
R750	1-260-103-11	CARBON 2.2K	5% 1/2W
R751	1-216-025-91	METAL GLAZE 100	5% 1/10W
R752	1-215-898-11	METAL OXIDE 10K	5% 2W F
R754	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R756	1-216-035-00	METAL GLAZE 270	5% 1/10W
R770	1-247-881-00	CARBON 120K	5% 1/4W
R774	1-249-437-11	CARBON 47K	5% 1/4W
R775	1-249-417-11	CARBON 1K	5% 1/4W
R776	1-247-815-91	CARBON 220	5% 1/4W
R790	1-216-041-00	METAL GLAZE 470	5% 1/10W
R791	1-216-041-00	METAL GLAZE 470	5% 1/10W
*****			
MISCELLANEOUS			
*****			
<input checked="" type="checkbox"/> 1-411-754-11 COIL, DEMAGNETIC			
1-452-760-11 NECK ASSEMBLY (NA221)			
1-505-226-11 SPEAKER (8CM)			
<input checked="" type="checkbox"/> 1-526-985-11 INLET 2P (KV-9PT60)			

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK
	1-766-374-11	PLUG, F-PIN	
	1-900-217-43	READ ASSY, FOCUS	
	1-900-217-44	READ ASSY, SCREEN	
$\Delta$	8-451-450-11	DEFLECTION YOKE Y10SLA	
$\Delta$	8-735-822-05	PICTURE TUBE 10SL (A23L DU 10X)	

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ACCESSORIES AND PACKING MATERIALS

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- X-4033-201-1 BRACKET ASSY (KV-9PT50)
- 1-501-813-11 ANTENNA, TELESCOPIC (KV-9PT60)
- 1-501-813-21 ANTENNA, TELESCOPIC (KV-9PT50)
- 1-574-085-11 CORD, POWER (KV-9PT60)
- 1-751-198-21 CORD, CAR BATTERY (KV-9PT60)
- 1-776-846-11 CORD, POWER (KV-9PT50)
- 3-701-627-00 BAG, POLYETHYLENE
- 3-810-578-11 MANUAL, INSTRUCTION
- 3-810-578-21 MANUAL, INSTRUCTION (Canadian Model)
- \* 4-046-206-01 BAG, POLYETHYLENE
- \* 4-052-136-01 INDIVIDUAL CARTON (KV-9PT50)
- \* 4-052-137-01 TRAY (KV-9PT50)
- \* 4-052-138-01 INDIVIDUAL CARTON (KV-9PT60)
- \* 4-052-140-01 CUSHION (UPPER) (ASSY)
- \* 4-052-141-01 CUSHION (LOWER) (ASSY)
- \* 4-052-146-01 BAG, PROTECTION
- 4-052-214-01 FOOT (KV-9PT50)
- 4-052-216-01 SCREW (L) (M6X70) (KV-9PT50)
- 4-052-217-01 SCREW (S) (M6X40) (KV-9PT50)
- 4-052-218-01 NUT, M6 (KV-9PT50)
- 4-052-586-01 SPACER (KV-9PT50)
- 4-052-587-01 WASHER (KV-9PT50)
- \* 4-053-148-01 BAG, POLYETHYLENE (KV-9PT50)
- 4-053-225-01 PALLET (KV-9PT60)
- 4-053-227-01 PALLET (KV-9PT50)
- 7-651-303-43 TAPE, PP (T=90U) (75MMX500M)
- 7-685-648-79 SCREW +BVTP 3X12 TYPE2 IT-3 (KV-9PT50)

REMOTE COMMANDER

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- 1-466-966-11 REMOTE COMMANDER (RM-Y116) (KV-9PT60)
- 9-903-826-01 POCKET, COVER (FOR RM-Y116) (KV-9PT60)
- 1-466-966-41 REMOTE COMMANDER (RM-Y116) (KV-9PT50)
- 9-903-826-01 POCKET, COVER (FOR RM-Y116) (KV-9PT50)

