

# SERVICE MANUAL

BG-2S CHASSIS

MODEL

COMMANDER DEST. CHASSIS NO.

MODEL

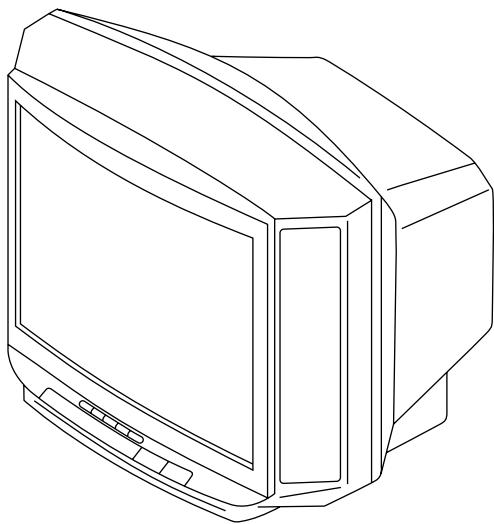
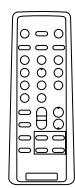
COMMANDER DEST. CHASSIS NO.

*KV-J14M1J*

*RM-869*

*ME*

*SCC-U07P-A*



TRINITRON® COLOR TV  
**SONY®**

## SPECIFICATIONS

	KV-J14M1J	Note
Power requirements	110-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58	
Channel coverage		
B/G	VHF: E2 to E12/UHF: E21 to E69/CATV: S01 to S03, S1 to S41	
I	UHF: B21 to B68/CATV: S01 to S03, S1 to S41	
D/K	VHF: C1 to C12, R1 to R12/ UHF: C13 to C57, R21 to R60/ CATV: Z1 to Z39, S01 to S03, S1 to S41	
M	VHF: A2 to A13/ UHF: A14 to A79/ CATV: A-8 to A-2, A to W+4, W+6 to W+84	
Audio output (speaker)	3W+3W	
Inputs	Gamma (antenna): 75 ohms external terminal (video input) jacks: phono jacks (video): 1 Vp-p, 75 ohms (audio): 500 mVrms, high impedance	
Outputs	(earphone) jack: mini jack (monitor output) jacks: phono jacks (video): 1 Vp-p, 75 ohms (audio): 500 mVrms	
Picture tube	14 in.	
Tube size (cm)	37	Measured diagonally
Screen size (cm)	34	Measured diagonally
Dimensions (w/h/d, mm)	456 × 343 × 416	
Mass (kg)	12	

Design and specifications are subject to change without notice.

### 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.

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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## SECTION 1

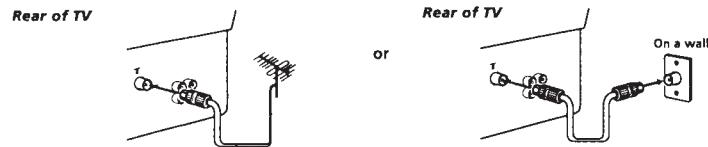
### GENERAL

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

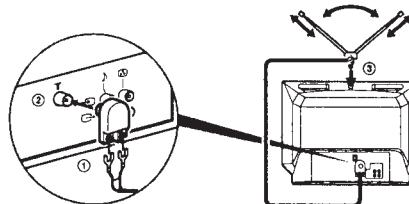
## Connections

### Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable. Plug the connector into the  $\text{TF}$  (antenna) socket at the rear of the TV.



### Connecting an indoor antenna



#### Notes

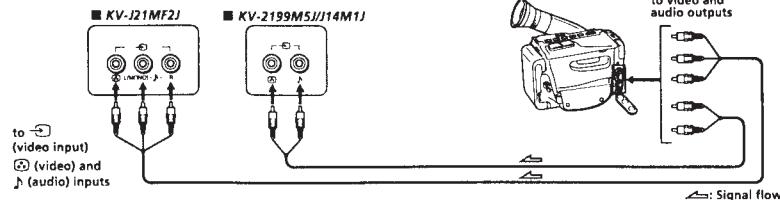
- You are advised to use an outdoor antenna for better reception.
- Model KV-J14M1J is used for illustration purposes, however, the connection procedure is the same for KV-2199M5J and KV-J21MF2J.

### Connecting optional equipment

You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder, video game or stereo system.

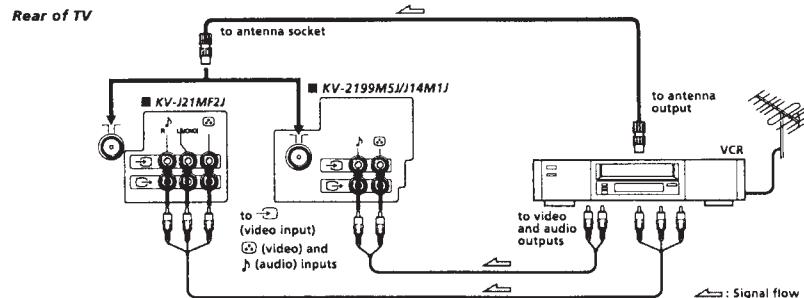
#### Connecting video equipment using the $\square$ (video input) jacks

##### Front of TV



#### When connecting monaural audio/video equipment to model KV-J21MF2J

Connect the yellow plug to ② and the black plug to  $\Delta$ -L (MONO).

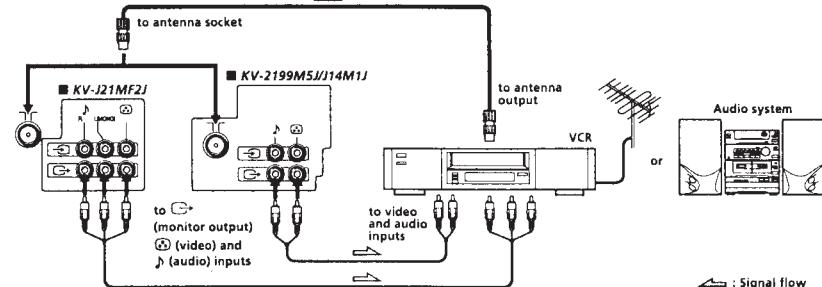


#### When connecting video equipment to the $\square$ (video input) jack

Do not connect video equipment to the  $\square$  (video input) jacks at the front and the rear of your TV simultaneously; otherwise the picture will not be displayed properly on the screen.

#### Connecting audio/video equipment using the $\square$ (monitor output) jack

##### Rear of TV



#### When recording through the $\square$ (monitor output) jack

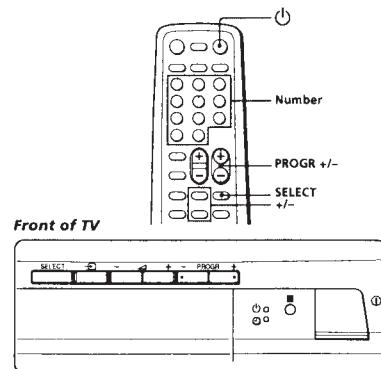
Do not change the channel or video input while recording with a VCR, otherwise the channel or video input you are recording also will be changed.

# Presetting channels

You can preset up to 100 TV channels in numerical sequence from program position 1 using the buttons on the remote commander or the TV.

You can preset TV channels quickly, automatically or manually.

## Remote commander



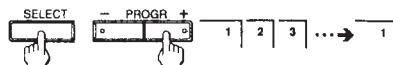
## Quick channel presetting

1 Press ① to turn on the TV.



When the TV is turned on in standby mode, press ① on the remote commander.

2 Press SELECT and PROGR + on the TV simultaneously for one to two seconds.



If the picture color is poor and/or the sound is noisy (for KV-J21MF2JJ/J14M1J)

Select the appropriate TV system as follows:

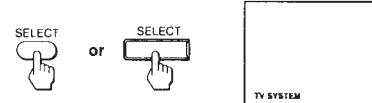
- 1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears.
- 2 Press +/- on the remote commander or □ +/- on the TV until the picture and sound become normal.

## Notes

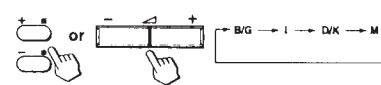
- If you do not know your local TV system, consult your nearest authorized service center or dealer.
- The setting of the "TV SYSTEM" is memorized for each program position.

## Presetting channels automatically

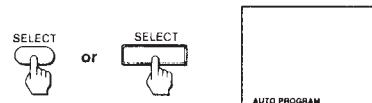
1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears on the screen (for KV-J21MF2JJ/J14M1J).



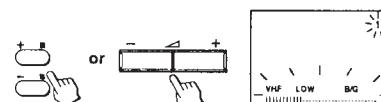
2 Press +/- on the remote commander or □ +/- on the TV to select the TV system (for KV-J21MF2JJ/J14M1J).



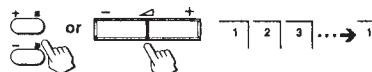
3 Press SELECT on the remote commander or the TV until "AUTO PROGRAM" appears on the screen.



4 Press +/- on the remote commander or □ +/- on the TV.

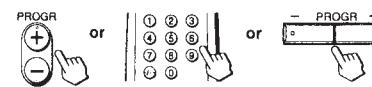


5 Press +/- on the remote commander or □ +/- on the TV again.



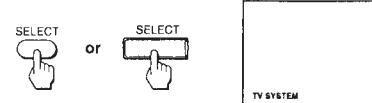
To start presetting channels automatically from the specified program position

Press PROGR +/- or number buttons on the remote commander or PROGR +/- on the TV until the required program position appears on the screen after step 4 of "Presetting channels automatically".

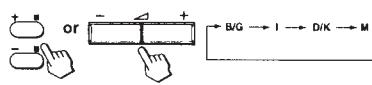


## Presetting channels manually

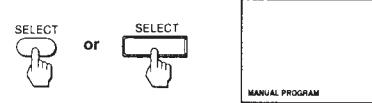
1 Press SELECT on the remote commander or the TV until "TV SYSTEM" appears on the screen (for KV-J21MF2JJ/J14M1J).



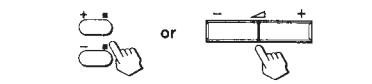
2 Press +/- on the remote commander or □ +/- on the TV to select the TV system (for KV-J21MF2JJ/J14M1J).



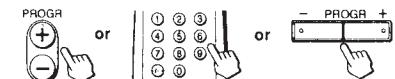
3 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.



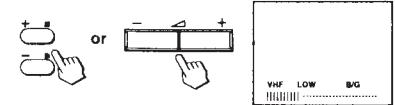
4 Press +/- on the remote commander or □ +/- on the TV.



5 Press PROGR +/- or number buttons on the remote commander or PROGR +/- on the TV until the required program position appears on the screen.



6 Press +/- on the remote commander or □ +/- on the TV until the required channel picture appears on the screen.



7 Press SELECT on the remote commander or the TV.

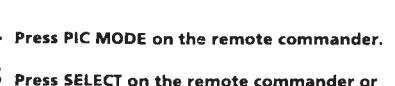


## Disabling program positions

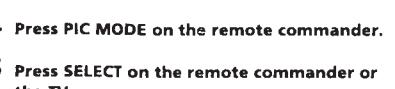
1 Press PROGR +/- or number buttons on the remote commander or PROGR +/- on the TV until the unused or unwanted program position appears on the screen.



2 Press SELECT on the remote commander or the TV until "MANUAL PROGRAM" appears on the screen.



3 Press +/- on the remote commander or □ +/- on the TV.



4 Press PIC MODE on the remote commander.

5 Press SELECT on the remote commander or the TV.

To preset the disabled program position again  
Preset the channel quickly, automatically or manually.

## Operations

### Watching the TV

#### 1 Press ① to turn on the TV.

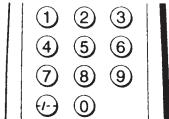


When the TV is turned on in standby mode, press ① on the remote commander.

#### 2 Select the TV program you want to watch.

##### To select a program position directly

Press the number button.



To select a two-digit program position, press “-/-” before the number buttons.

For example: to select program position 25, press “-/-,” and then “2” and “5.”



##### To scan through program positions

Press PROGR +/- until the program position you want appears.



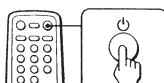
#### 3 Press ▲/▼ +/- to adjust the volume.



### Turning off the TV

#### To turn off the TV temporarily

Press ① on the remote commander. The ① indicator on the TV lights up.



#### To turn off the TV completely

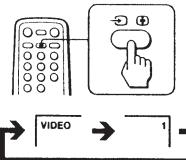
Press ① on the TV.

If the power on the TV is turned off in standby mode, the ① indicator on the TV may remain alight for a while.



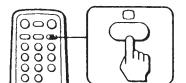
### Watching the video input

#### Press □ □.



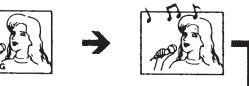
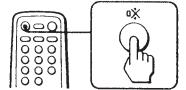
#### To watch TV

Press □.



### Muting the sound

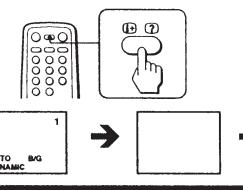
#### Press ⑩.



### Displaying on-screen information

#### Press ④ ⑦.

The program position, local system, and TV settings are displayed on the screen.

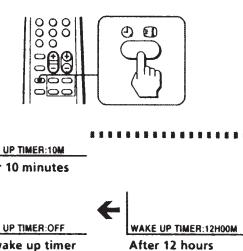


### Setting the Wake Up Timer

You can set the TV automatically turned on as you program.

#### 1 Press ① ⑩ repeatedly to set the timer.

The on-screen display appears and the ① indicator on the TV lights up.



#### 2 If you want a particular TV program or video input to be displayed using the Wake Up Timer, select the TV program or video input.

#### 3 Press ① on the remote commander or set the Sleep Timer to turn off the TV in standby mode.

To cancel the Wake Up Timer, press ① ⑩ repeatedly until “WAKE UP TIMER: OFF” appears, or turn off the main power of the TV.

#### Notes

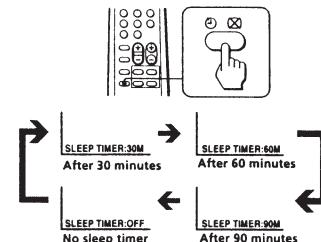
- The Wake Up Timer starts immediately after the on-screen display disappears.
- The last TV program position or video input just before the TV turns into standby mode will appear when the TV is turned on using the Wake Up Timer.

- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up Timer, the TV automatically turns into standby mode. If you want to continue watching the TV, press any button or control on the TV or remote commander.

### Setting the Sleep Timer

You can set the TV automatically turned off as you program.

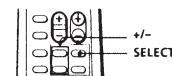
#### Press ① ⑩.



To cancel the Sleep Timer, press ① ⑩ repeatedly until “SLEEP TIMER: OFF” appears, or turn off the TV.

### Changing the on-screen display language

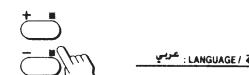
You can use buttons on the remote commander or the TV to change the on-screen display language.



#### 1 Press SELECT until the screen appears as follows:



#### 2 Press +/- to select “العربية”.



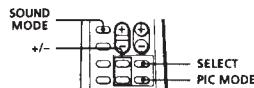
#### Note

- You can also use SELECT and ▲/▼ +/- on the TV to select the on-screen display language.

## Adjusting the picture

### Note on the SOUND MODE button

- The sound mode feature is unavailable for your TV. Thus, the SOUND MODE button on the remote commander is not used for your TV.

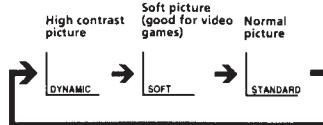


### Selecting the picture mode

Press PIC MODE until the mode you want appears.



Each time you press PIC MODE, the screen changes as follows:



### Note

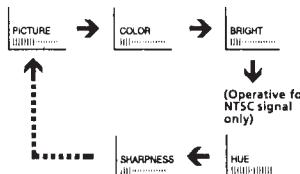
- If you change the picture mode after the following adjustments, the adjustment changes in accordance with the picture mode.

### Adjusting the picture setting

- 1 Press SELECT until the item you want to adjust appears.



Each time you press SELECT, the screen changes as follows:



- 2 Press +/- to adjust the item.



- 3 To adjust other items, repeat steps 1 and 2.

### Note

- You can also use SELECT and < / > on the TV to adjust the picture setting.

### Front of TV



**If the picture color is abnormal when receiving programs through the (antenna) terminal**  
Change the "TV SYSTEM" (for KV-J21MF2J/J14M1) or "COLOR SYSTEM" setting or adjust the "COLOR" level in the on-screen display until the color becomes normal.

**If the picture is abnormal when receiving programs through the (video input) jack**

Change the "COLOR SYSTEM" setting or adjust the "COLOR" level in the on-screen display until the color becomes normal.

### Note

- Normally set "COLOR SYSTEM" to "AUTO".

**If the sound is distorted or noisy when receiving programs through the (antenna) terminal**

Change the "TV SYSTEM" setting (for KV-J21MF2J/J14M1) in the on-screen display until the sound becomes clear.

## Additional Information

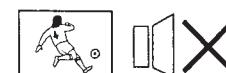
## Troubleshooting

### No picture No sound



- Press or .
- Check the antenna connection.
- Check the VCR connections.
- Check the power cord connection.
- Check the standby mode.

### Good picture No sound



- Press +.
- Press -.

### No color



- Adjust the COLOR level in the on-screen display.
- Check the COLOR SYSTEM setting.

### TV cabinet creaks

- Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

### Note on the remote commander

- The supplied remote commander is used on several models of the TV. If you do not find instructions for some controls that are on the remote commander, that means your TV does not employ the features of those controls, e.g. and SOUND MODE.

### Notes

- When you turn on the TV, you may hear the "boon" sound that is caused by the demagnetization of the TV. This does not indicate a malfunction.
- The picture color may become abnormal if you change the direction of your TV. To obtain the normal picture color, press on the TV to turn off the TV for five minutes and then turn it on again.
- Design and specifications are subject to change without notice.
- All contents in the instruction manual are subject to change without notice.

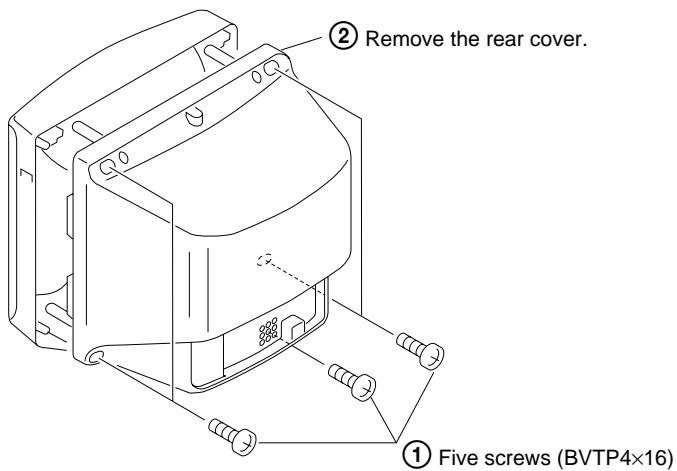
### WARNING

Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

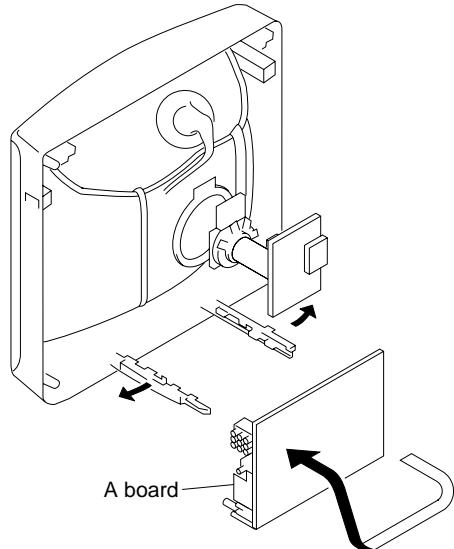
## SECTION 2

### DISASSEMBLY

#### 2-1. REAR COVER REMOVAL



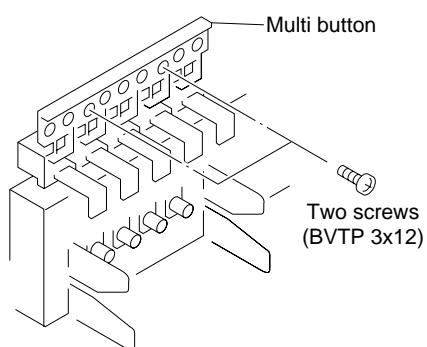
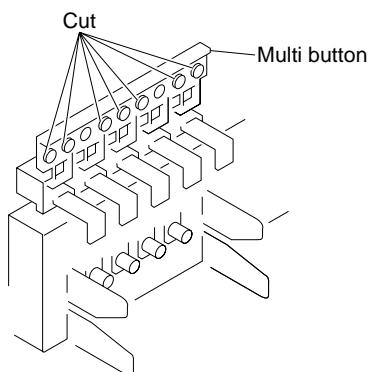
#### 2-3. SERVICE POSITION



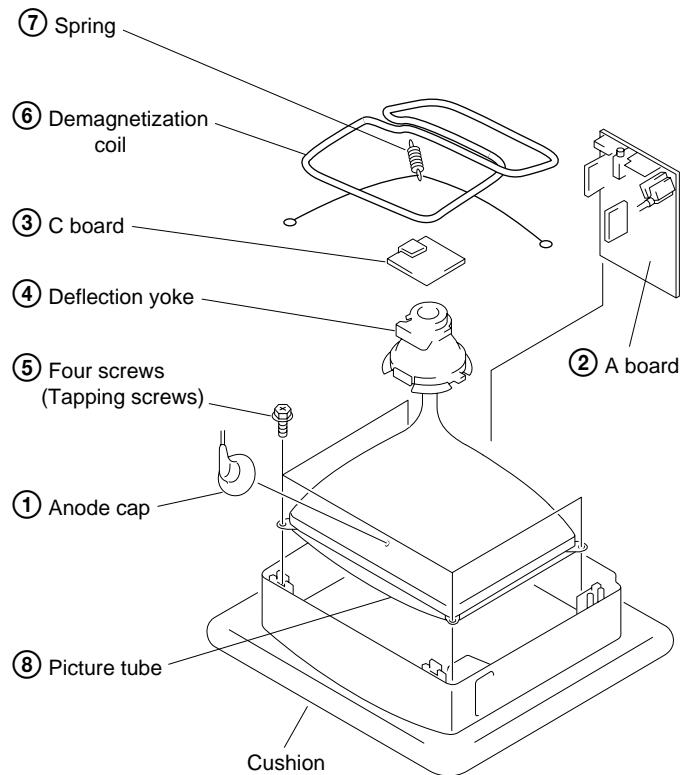
#### 2-4. REPLACEMENT OF PARTS

For replacement of the Control Button, cut the welded portions from them, exchange with the new parts, and fix them with screws (+BVTP) respectively.

##### 2-4-1. REPLACEMENT OF CONTROL BUTTON



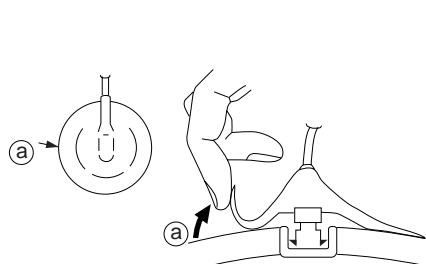
## 2-5. DEMAGNETIZATION COIL AND PICTURE TUBE REMOVAL



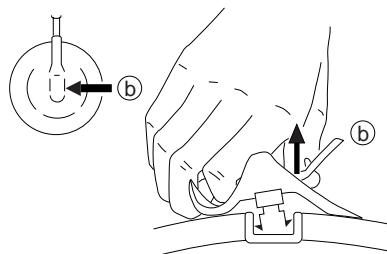
### • REMOVAL OF ANODE-CAP

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

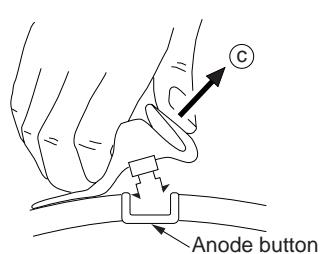
### • REMOVING PROCEDURES



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



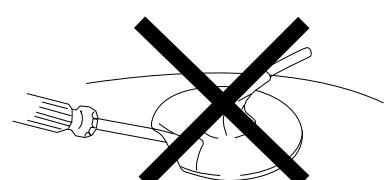
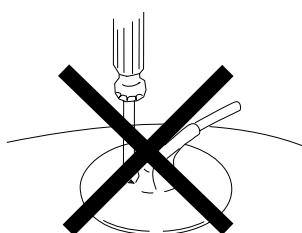
- ② Using a thumb, pull up the rubber cap firmly in the direction indicated by the arrow (b).



- 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 it up in the direction of the arrow (c).

### • HOW TO HANDLE AN ANODE-CAP

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



## SECTION 3

### SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control ..... normal  
BRIGHTNESS control ..... normal

Perform the adjustments in order as follows :

- Beam Landing
- Convergence
- Focus
- White Balance

**Note :** Test Equipment Required.

- Color-bar/Pattern Generator
- Degausser
- Oscilloscope

#### Preparations :

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

#### 3-1. BEAM LANDING

- Input the white raster signal with the pattern generator.  
Contrast      } normal  
Brightness    }
- Set the pattern generator raster signal to green.
- Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.  
(See Figures 3-1 through 3-3.)
- Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 3-1.)
- Switch the raster signal to blue, then to red and verify the condition.
- When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
- If the beam does not land correctly in all the corners, use a magnet to adjust it.  
(See Figure 3-4.)

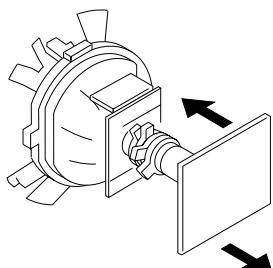


Fig. 3-1

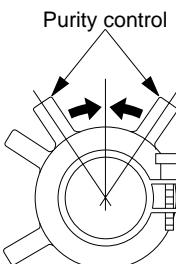


Fig. 3-2

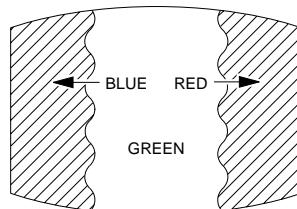


Fig. 3-3

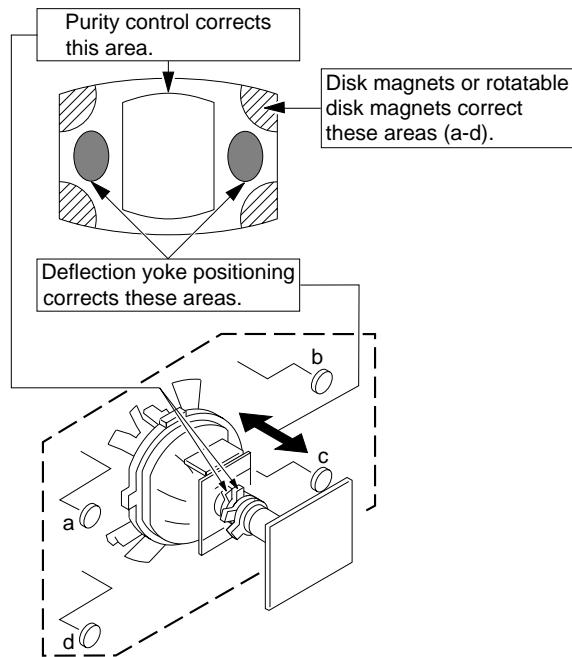


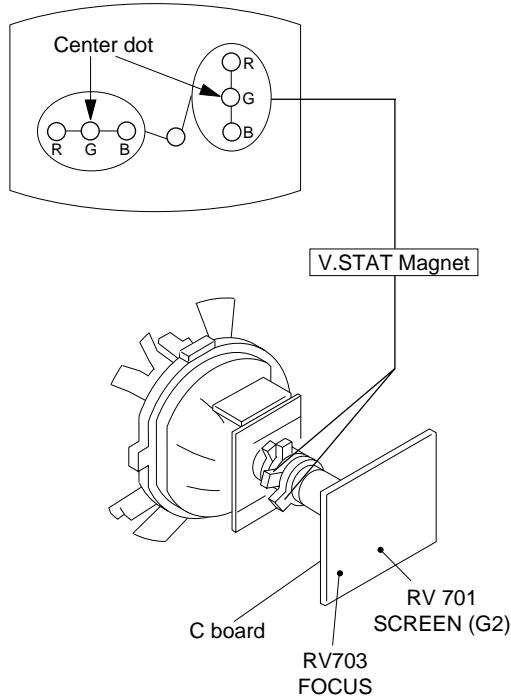
Fig. 3-4

### 3-2. CONVERGENCE

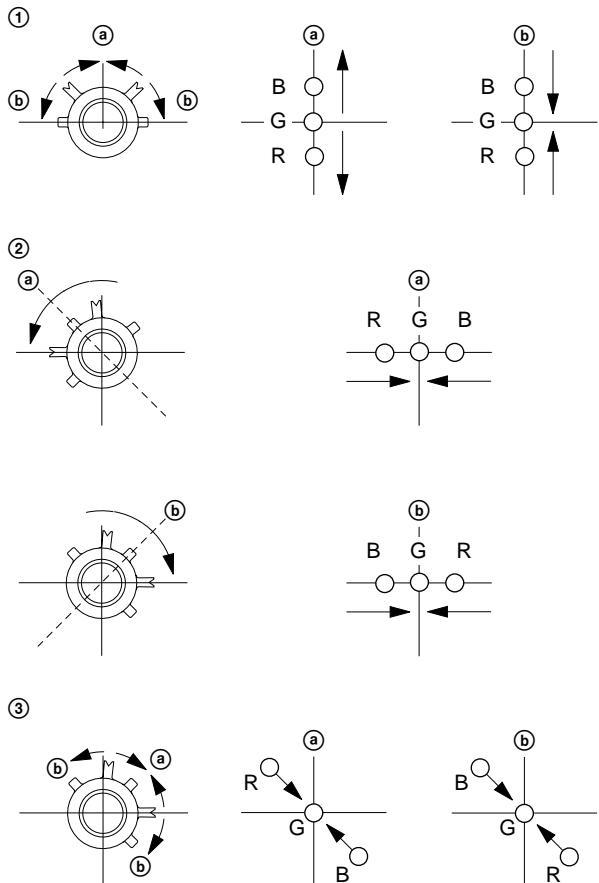
#### Preparation :

- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

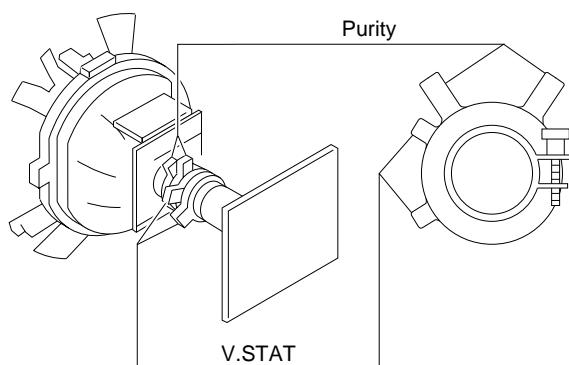
#### (1) Horizontal and Vertical Static Convergence



If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, green, and blue points move as shown below.



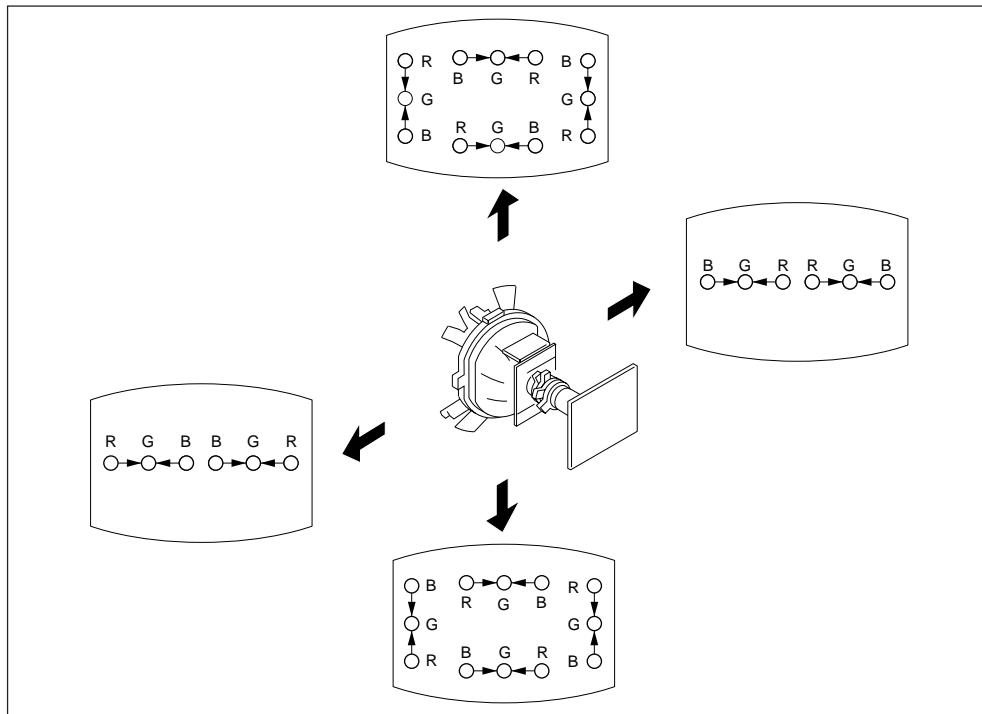
1. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving horizontally), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



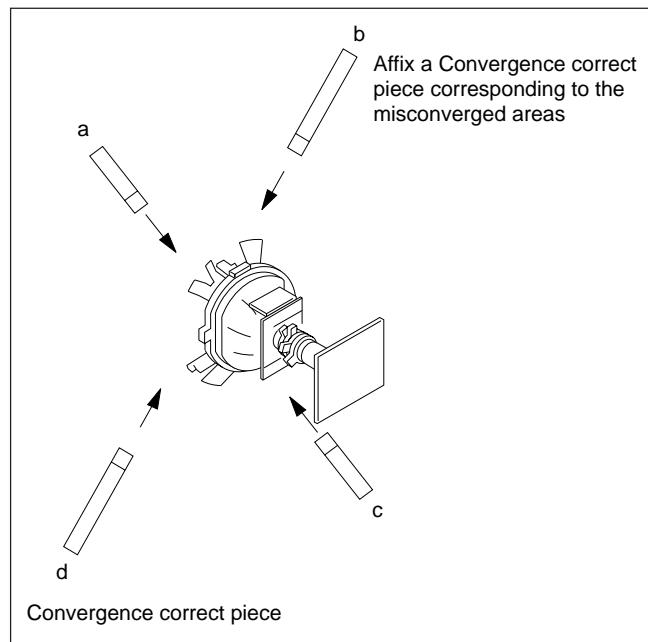
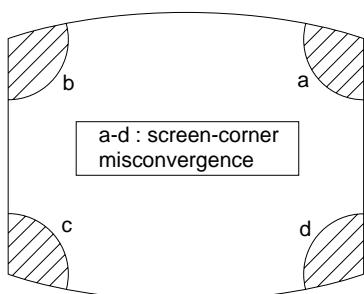
## (2) Dynamic Convergence Adjustment

### Preparation :

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.
1. Slightly loosen the deflection yoke screws.
  2. Remove the deflection yoke spacer.
  3. Move the deflection yoke as shown in the figure below and optimize the convergence.
  4. Tighten the deflection yoke screws.
  5. Install the deflection yoke spacer.

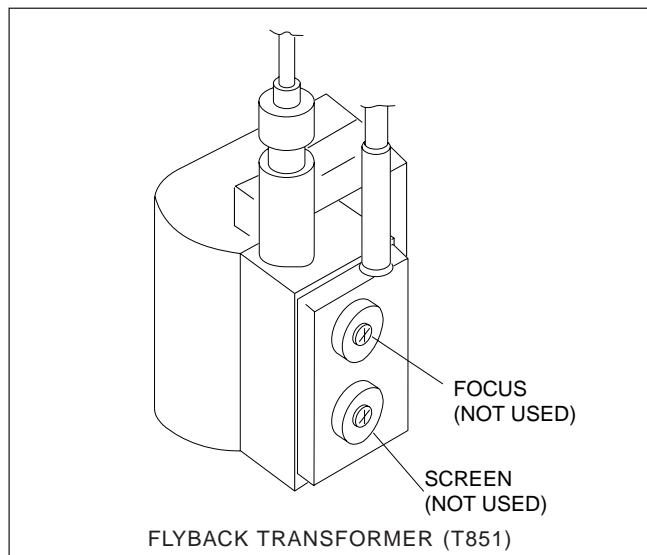


## (3) Screen-corner Convergence



### 3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the C board (RV703) for the best focus.



**Note:** Screen VR is not used.

#### a. AN ITEM OF ADJUSTMENT

Item number	Adjustment item	Initial DATA	Note
09	RDR	25	WHITE POINT R
0A	GDR	20	WHITE POINT G
0B	BDR	20	WHITE POINT B

#### b. METHOD OF CANCELLATION FROM SERVICE MODE

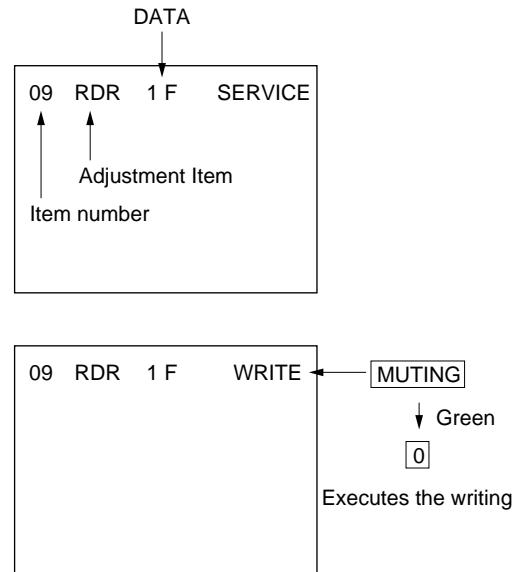
Set the standby condition (Press [POWER] button on the commander) and then press [POWER] button again, hereupon it becomes TV mode.

#### c. METHOD OF WRITE FOR MEMORY

- 1) Set to Service Mode.
- 2) Press [1] (UP) and [4] (DOWN), select the item for adjustment.
- 3) Press [MUTING] button indicate WRITE (Green) on screen.
- 4) Press [0] button to write into memory.

#### d. MEMORY WRITE CONFIRMATION METHOD

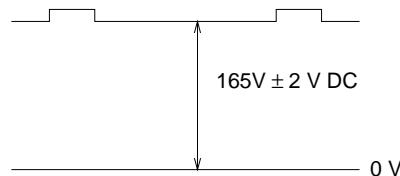
- 1) After adjustment, pull out the plug from the AC outlet, and then plug into the AC outlet again.
- 2) Turn the power switch ON and set to Service Mode.
- 3) Call the adjusted items again to confirm adjustments were made.



### 3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

#### 1. G2 (SCREEN) ADJUSTMENT (RV701)

- 1) Set the PICTURE and BRIGHTNESS to normal.
- 2) Put to VIDEO input mode without signals.
- 3) Connect R, G, and B of the C board cathode to the oscilloscope.
- 4) Adjust G2 (RV701) volume to the value below.



#### 2. WHITE BALANCE ADJUSTMENTS

- 1) Set to Service Mode.
- 2) Input an entire white signal.
- 3) Set the PICTURE to maximum.
- 4) Select RDR(09) with [1] and [4], and then set the level to 25 with [3] and [6].
- 5) Select GDR(0A) and BDR(0B) with [1] and [4] and adjust the level with [3] and [6] for the best white balance.
- 6) Write into the memory by pressing [MUTING] then [0].

## SECTION 4

### SELF DIAGNOSIS FUNCTION

If no acknowledgement is returned from a device which is turned "ON", the device has a problem.  
In this case, one of the LED's responding to the problem device will flicker a defined number of times.

Flickering is operated by lighting the LED's for 60ms each time.

The flickering frequency responding to each failed device is shown below.

Board name	A Board	A Board
Ref. No.	IC003	IC300
Device	NONVOLATILE MEMORY (ST24C04FB6)	Y/C JUNGLE (TDA8374A)
Flickering Frequency	1	3

All the devices are checked one after another from the left of the table.

If an error is found, the responding LED will start flickering.

So, if more than 1 device have failed, only the one on the left side will flicker.

## SECTION 5

### CIRCUIT ADJUSTMENTS

#### 5-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-869 that comes with this unit.

##### Entering service mode

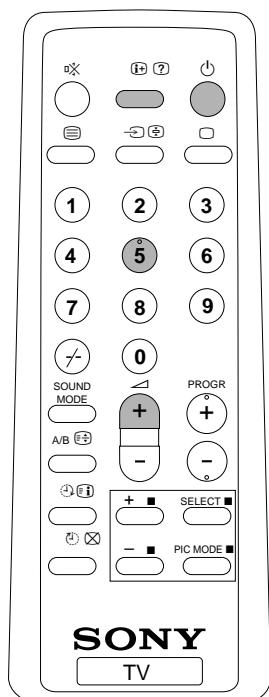
With the unit on standby

```

↓
[DISPLAY]
↓
[5]
↓
[VOL (+)]
↓
[POWER]

```

The operation sequence puts the unit into service mode.

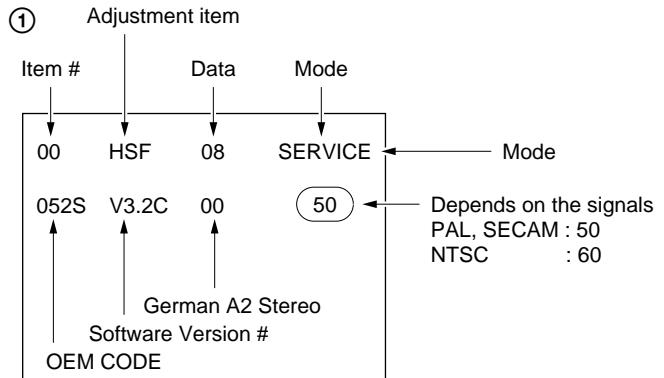


RM-869

[1], [4]	Raise/lower the service item number
[3], [6]	Raise/lower the data
[MUTING]	Writes
[0]	Executes the writing

[7], [0]	All data becomes the values in memory
[8], [0]	All user control goes to the standard state
[5], [0]	Service data initialization (Be sure not to use usually.)
[2], [0]	Write 50Hz adjustment data to 60Hz, or viceversa.

The screen display is :



(Bit options adjustable)

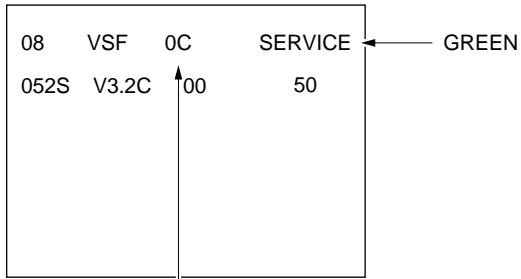
[1], [4]	Select the adjustment item.
[3], [6]	Raise/lower the data.
[MUTING]	Writes
[0]	Executes the writing.

## 5-2. ADJUSTMENT METHOD

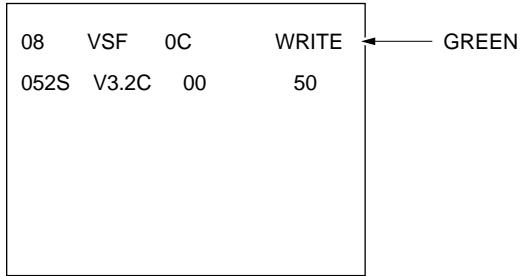
Item Number 08

This explanation uses V-SHIFT as an example.

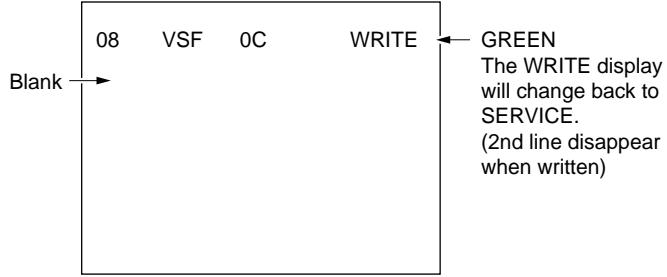
1. Select 08 V-SHIFT with the **[1]** and **[4]** buttons.
2. Raise/lower the data with the **[3]** and **[6]** buttons.
3. Select the optimum state. (The standard is 0F for PAL reception.)
4. Write with the **MUTING** button.
5. Execute the writing with the **[0]** button. (The WRITE display returns to green SERVICE.)



Adjusted with 3 and 6 buttons



Written with **MUTING**



Write executed with **[0]**

Use the same method for Items Number 00-40. Use **[1]** and **[4]** to select the adjustment item, use **[3]** and **[6]** to adjust, write with **MUTING**, then execute the write with **[0]**.

**Adjustment Item Table**

Item No.	Adj Item	Initial Data	Note for Different Data	Standard Data	Function	Device
00	HSF	24	50/60Hz/RGB 50/RGB 60	1F/28/1F/28	H Shift	F
01	HSZ	23	50/60Hz/RGB 50/RGB 60	20/20/20/20	H Size	
02	PAP	21	50/60Hz	20/20	Pin Amplitude	
03	CNP	29	50/60Hz	20/20	Corner Pin	
04	TLT	20	50/60Hz	20/20	Tilt	
05	VSL	20	50/60Hz	1F/1F	V Slope	
06	VAP	ID	50/60Hz	2A/2A	V Amplitude	
07	SCR	20	50/60Hz	15/15	S Correction	
08	VSF	20	50/60Hz	23/23	V Shift	
09	RDR	25			R Drive	
0A	GDR	20			G Drive	
0B	BDR	20			B Drive	
0C	FO	00	TV/Video/Teletext	00/00/00	ø1 Time Constant	
0D	AGC	06	TV/Video/Teletext	28/28/28	AGC Take Over	
0E	VSW	0	TV/Video/Teletext	0/1/0	Video Mute Switch	
0F	FOR	00		03	Forced Field Frequency	
10	DL	0			De-interlace	
11	POC	0			Fixed ø1 Synchro. mode	
12	COR	0	TV/Video/Teletext	01/00/00	Noise Coring	
13	VPX	00			Extra Bits (see below)	
14	PMX	27	TV/Video/Teletext	20/20/20	Picture Maximum Data	
15	PMI	05		04	Picture Minimum Data	
16	SBR	4B			Sub Brightness	
17	SHU	07			Sub Hue	
18	SSH	01	TV/Video	01/03	Sub Sharpness	
19	SC1	1F	50/60Hz	26/29	Sub Color Lower	
1A	SC2	0B	50/60Hz	0C/0D	Sub Color Higher	
1B	AIP	40		3F	Adjustment IF-PLL	
1C	VZM	20		19	Vertical Zoom	
1D	WST	15			W/G Stereo Threshold	
1E	WBT	EA			W/G Bilingual Threshold	
1F	WLL	05			W/G Monaural Threshold	
20	ACG	1			AGC Switch auto/constant	
21	CDB	28			AGC Gain at Constant Mode	
22	FGP	1B			FM Prescale for B/G.I.D/K	
23	FMP	32			FM Prescale for M	
24	FMH	36			FM Prescale for HDEV Mode	
25	FMM	65			FM Prescale for HDEV Mode	
26	WGP	2A			W/G Prescale	
27	NIP	6D			NICAM Prescale	
28	SCP	3B			SCART Input Prescale	
29	SCV	2A			SCART Output Prescale	
2A	CRM	0			Carrier Muting on/off	
2B	ACO	1			Audio Clock-out on/off	
2C	WAC	00			W/G Agreement Count	
2D	NFT	50			Auto FM Switch Threshold	
2E	DLG	30			W/G Search Delay	
2F	DLN	20			NICAM Search Delay	
30	DLS	10			Stereo Status Read Delay	
31	SMX	73			DFP Volume Maximum	
32	ING	00	M System/non-M/Video		Input Gain	
33	VOM	01	M System only		Volume Output Gain	
34	TXH	01			Teletext Horizontal Position	
35	BKP	00			Picture Data at Blanking OFF	
36	ODL	10			Power ON Delay	
37	OFR	00			RGB Output Time (STBY OFF)	
38	OFM	00			RGB Output Time (AC OFF)	

Item No.	Adj Item	Initial Data	Note for Different Data	Standard Data	Function	Device
39	OSH	0A			OSD H Position	
3A	DKS	1		0	D/K Stereo enable/disable	
3B	MUT	0			Muting on/off at No Sync	
3C	ABL	0			Bright ABL Switch	
3D	SCM	0			SECAM Trap active/inactive	
3E	FBT	1			FBT L/S C/M strict/plain	
3F	OP0	2F			Optional Flags 0 (see below)	
40	OP1	0F		20	Optional Flags 1 (see below)	
41	OP2	00			Optional Flags 2 (see below)	

#### NOTE

- Note for Different Data Those are the standard data values written on the microprocessor. Therefore, the data values of the modes are stored respectively in the memory.  
In case of a device replacement, adjustment by rewriting the data value is necessary for some items.
  - 50 ..... 50 Hz data
  - 60 ..... 60 Hz data
- Note for Different Data listed on the adjustment item table are reference values, therefore it is different for every model.

### Option Note

13. VPX	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Item	HCO	EVG	SBL	PRD	-	-	-	VID
Initial data	0	0	0	0	0	0	0	0

HCO EHT Tracking Mode 1 = on V and E-W, 0 = only on V 0A (7)  
 EVG Enable Vertical Guard 1 = enable, 0 = disable 0A (6)  
 SBL Service Blanking 1 = active, 0 = inactive 0B (7)  
 PRD Over-voltage Protection Detection 1 = enable, 0 = disable 0B (6)  
 VID Video Ident Mode 1 = not for ø1-loop, 0 = for ø1-loop 09 (7)

3A. OP0	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Item	No TOP	AV input		AVMUT	B/G	I	D/K	M
Initial data	0	1	0	0	1	1	1	1

AV Input 0 0 no AV input model 0 1 1 AV input model  
 1 0 2 AV input model 1 1 2 AV input and RGB input model  
 No TOP (for teletext model) 1 = only FLOF available, 0 = both FLOF and TOP available  
 AVMUT 1 = AV multi is always muted if no signal input, 0 = not muted always  
 Other optional bits are effective if set to 1.

3B. OP1	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Item	-	-	HDEV	1 V-Curve	XTAL SEL		SECAM	2nd Lang.
Initial data	0	0	0	0	1	1	1	1

XTAL SEL 0 0 only 4.43 XTAL 0 1 only 3.58 XTAL  
 1 0 (not used) 1 1 both 4.43 and 3.58 XTAL  
 1 V-Curve (for monaural model)  
 1 = using common volume curve for every mode and every TV system  
 0 = another volume curve available for video mode and M system  
 HDEV 1 = High Deviation Mode switch available, 0 = not available  
 Other optional bits are effective if set to 1.

3C. OP2	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Item	-	-	No Bal.	TV Out	Hotel	VM	D.B.F.B.	Thai Bil.
Initial data	0	0	0	0	0	0	0	0

No Bal. (for AV stereo model) 1 = no balance in analog select items, 0 = balance included  
 Other optional bits are effective if set to 1.  
 Hotel TV mode should be switched with remote commander from STBY condition as below.  
 Hotel TV on : push "display", "8", "vol +" and "power" sequentially  
 Hotel TV off : push "display", "8", "vol -" and "power" sequentially

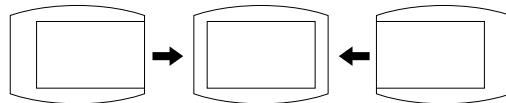
### 5-3. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons **[5]** and **[0]** (Data Initialize), and **[2]** and **[0]** (Data Copy) to initialize the data.
3. Call each item number, and check if the respective screen shows the normal picture.  
In case some items are not well-adjusted, give them fine adjustment.  
Write the data per each item number (**MUTING** + **[0]** ).
4. Select item numbers “3E” (OP0), “3F” (OP1) and “40” (OP2) and respectively set the bit per model with command buttons **[3]** and **[6]**.
5. Press commander buttons **[8]** and **[0]** (Test Normal) to return to the data that was set on the shipment from the factory.  
(= Cancel Service Mode.)

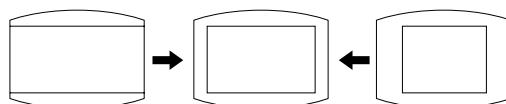
### 5-4. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 08

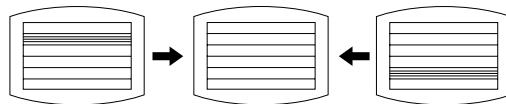
00 HSF (H SHIFT)



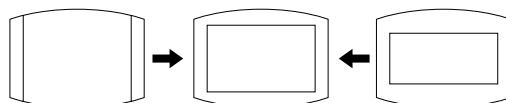
01 HSZ (H SIZE) A BOARD (L807)



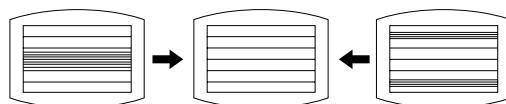
05 VSL (V SLOPE)



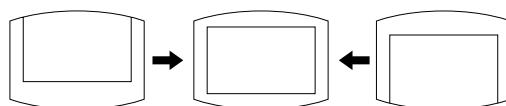
06 VAP (V AMPLITUDE)



07 SCR (S CORRECTION)

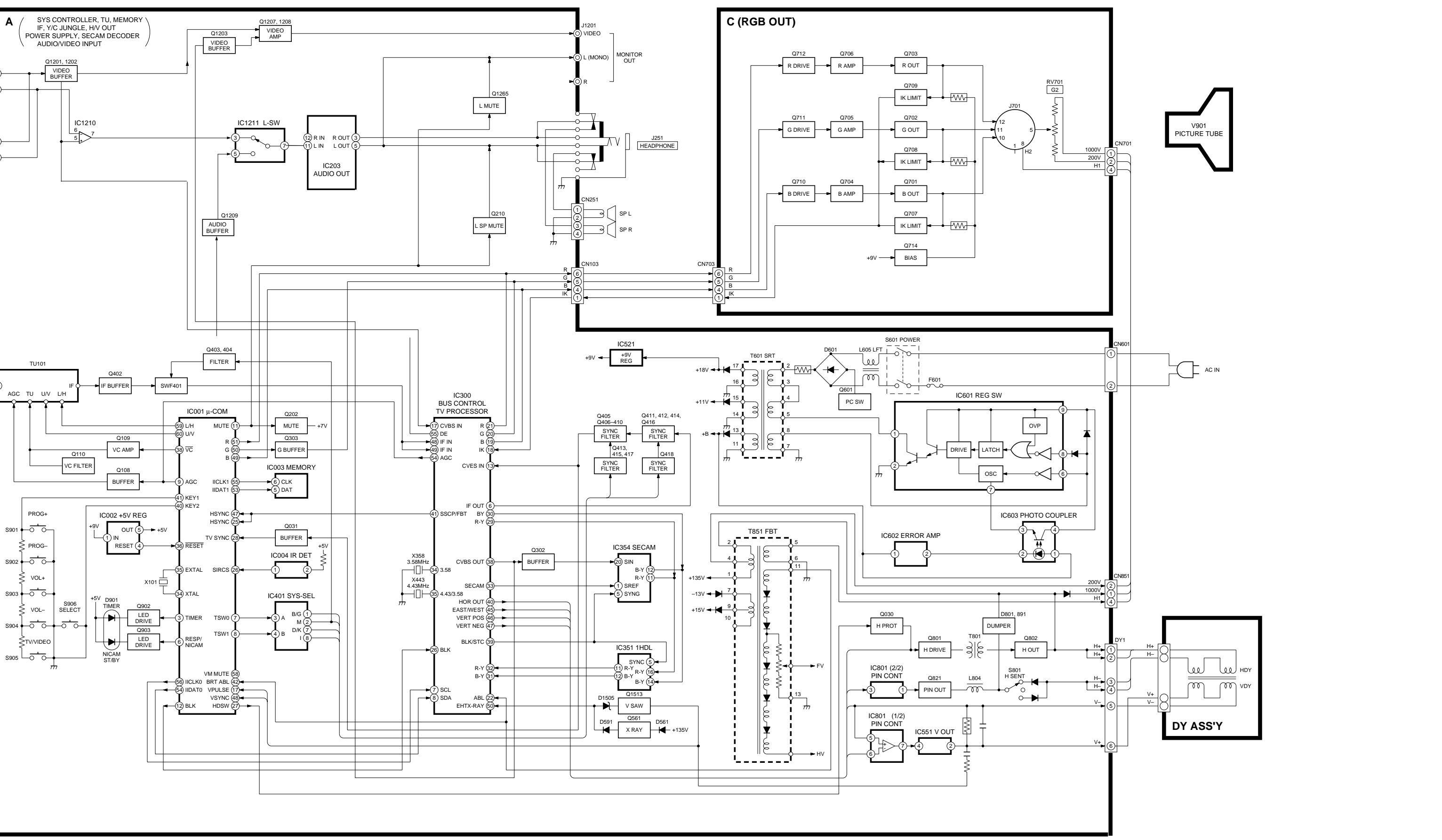


08 VSF (V SHIFT)

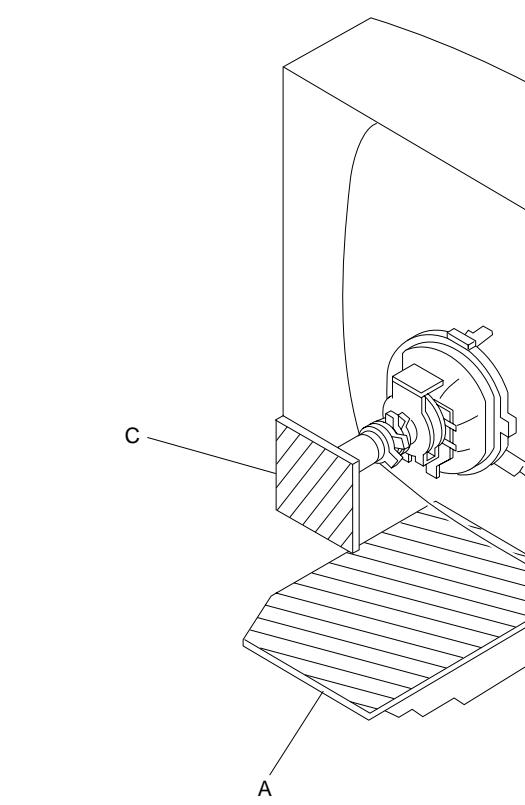


## SECTION 6 DIAGRAMS

### 6-1. BLOCK DIAGRAM



### 6-2. CIRCUIT BOARDS LOCATION



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

- Note:**
- All capacitors are in  $\mu$ F unless otherwise noted.
  - All electrolytic capacitors are rated at 50V unless otherwise noted.
  - All resistors are in ohms.
  - $K\Omega = 1000\Omega$ ,  $M\Omega = 1000k\Omega$
  - Indication of resistance, which does not have one for rating electrical power, is as follows.
- |             |  |
|-------------|--|
| Pitch: 5 mm | Rating electrical power 1/4W (CHIP: 1/10W) |
|-------------|--|
- : nonflammable resistor.
  - : internal component.
  - : panel designation, or adjustment for repair.
  - All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  - Readings are taken with a color-bar signal input.
  - no mark : PAL
  - ( ) : SECAM
  - [ ] : NTSC 3.58
  - « » : NTSC 4.43
  - Readings are taken with a 10 M $\Omega$  digital multimeter.
  - Voltage are dc with respect to ground unless otherwise noted.
  - Voltage variations may be noted due to normal production tolerances.
  - All voltages are in V.
  - : Can not be measured.
  - Circled numbers are waveform reference.
  - : B + bus.
  - : B - bus.
  - : signal path.

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

Terminal name of semiconductors in silk screen printed circuit (\* )

Device	Printed symbol	Terminal name	Circuit
① Transistor	T	Collector	
		Base	I Emitter
② Transistor	-	Collector	
		Base	E Emitter
③ Diode	□	Cathode	
		Anode	
④ Diode	T	Cathode	
		Anode (NC)	
⑤ Diode	-	Cathode	
		Anode (NC)	
⑥ Diode	T	Common	
		Anode	Cathode
⑦ Diode	-	Common	
		Anode	Cathode
⑧ Diode	T	Common	
		Anode	Anode
⑨ Diode	-	Common	
		Anode	Anode
⑩ Diode	T	Common	
		Cathode	Cathode
⑪ Diode	-	Common	
		Cathode	Cathode
⑫ Diode	-	Anode	Anode
		Anode	Anode
⑬ Transistor (FET)	-	Drain	
		Source	Gate
⑭ Transistor (FET)	T	Drain	
		Source	Gate
⑮ Transistor (FET)	-	Source	Drain
		Drain	Gate
⑯ Transistor	-	Emitter	Collector
		Collector	Base
⑰ Transistor	-	Q1B1E1	E2B2C1
		E1B1C2	E1O E2
⑱ Transistor	-	C1B2E2	E1B1C2
		B1O C1C2	E1O E2
⑲ Transistor	-	C1B2E2	E1B1C2
		B1O C1C2	E1O E2
⑳ Transistor	-	C1B2E2	E1B1C2
		B1O C1C2	E1B1C2
㉑ Transistor	-	E2B1E1	C1B2C2
		C2 C1B2	E2O E2
㉒ Transistor	-	E2B1E1	C1B2C2
		B1O C1C2	E1B1C2
㉓ Transistor	-	E2B1E1	C1B2C2
		B1O C1C2	E1B1C2

(Chip semiconductors that are not actually used are included.) Ver.1.5

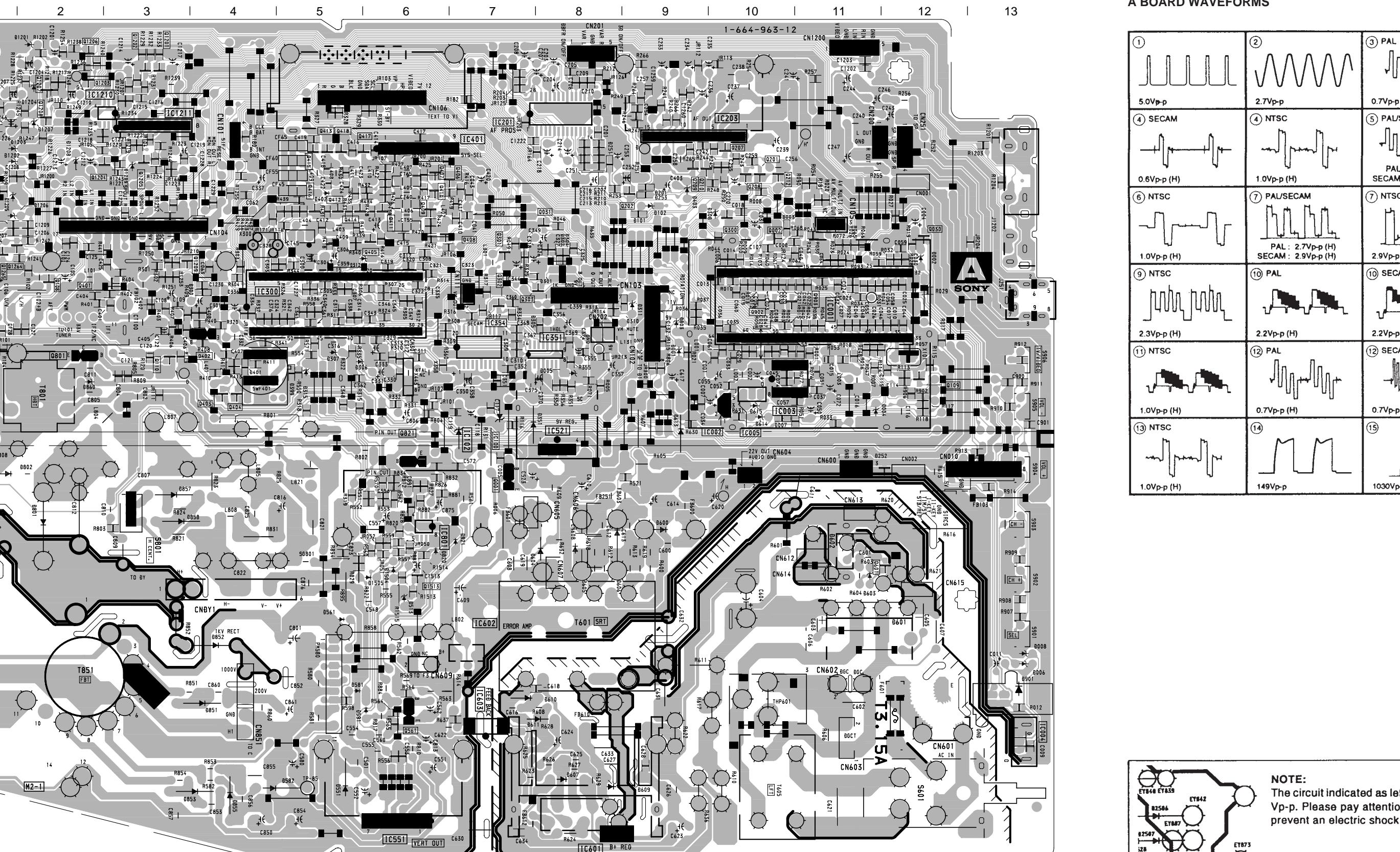
## PRINTED WIRING BOARD

**A** [TUNER, IF, Y/C JUNGLE, SECAM DECODER, H/V OUT, MEMORY,  
SYSTEM CONTROLLER, AUDIO/VIDEO IN/OUT, POWER SUPPLY]

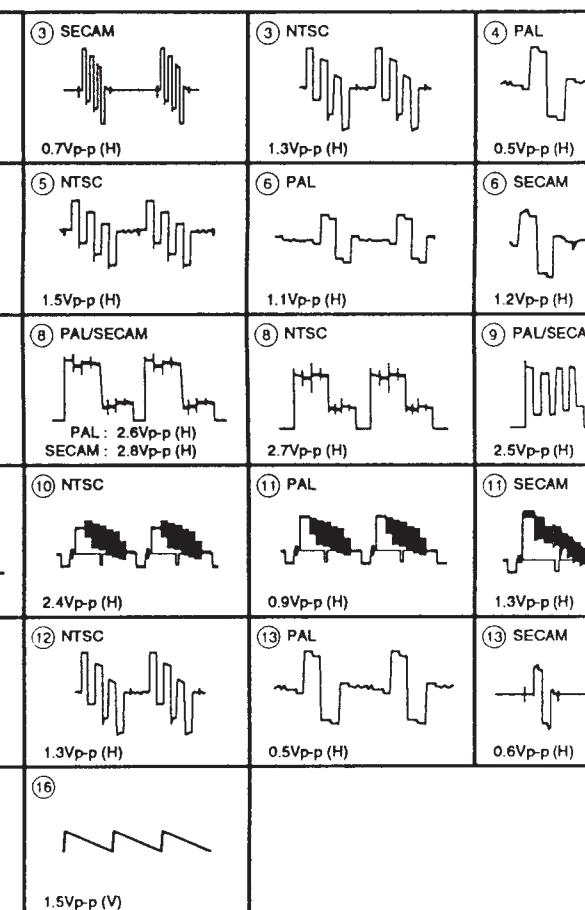
## - A BOARD -

## A BOARD

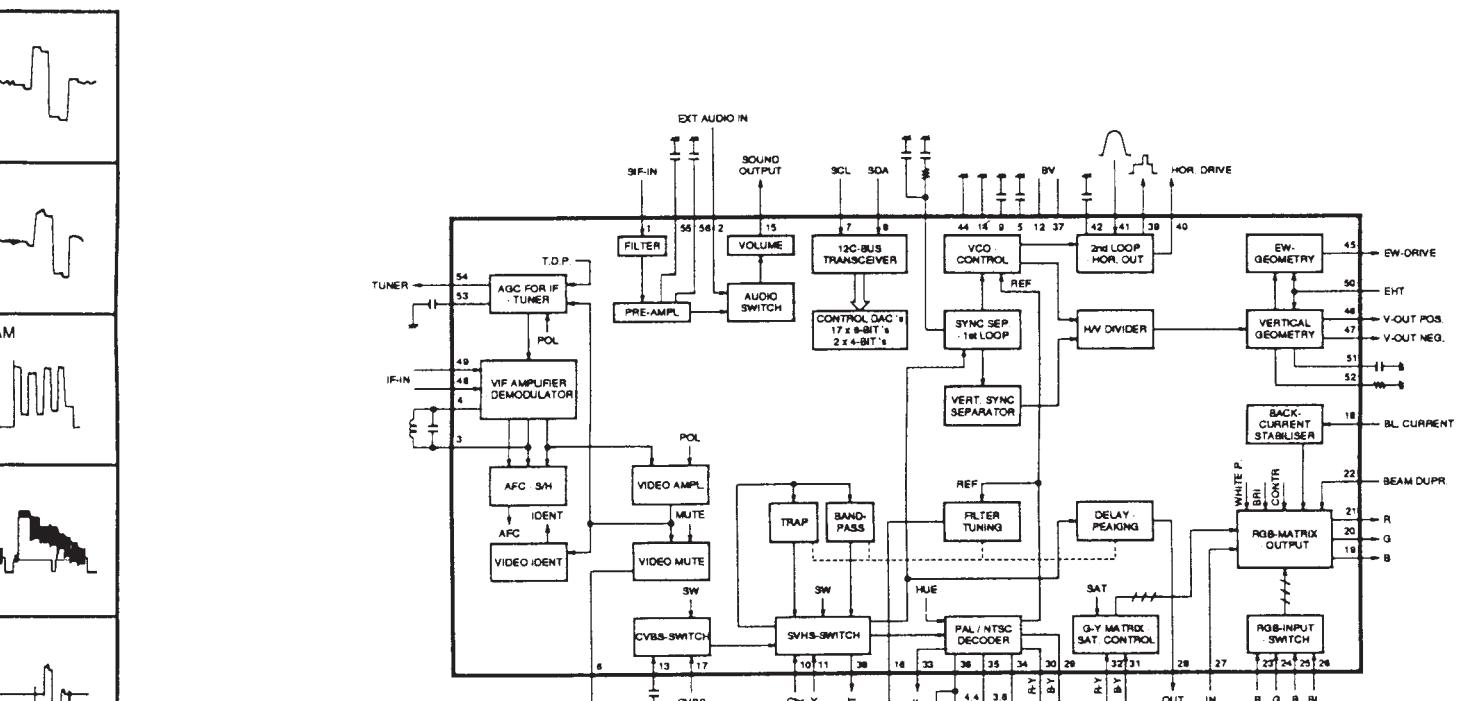
IC	DIODE
IC001	D-11
IC002	E-10
IC003	E-10
IC004	I-13
IC100	E-7
IC203	B-10
IC300	D-4
IC351	D-8
IC354	D-7
IC401	B-7
IC521	E-8
IC551	J-6
IC601	J-8
IC602	H-7
IC603	H-7
IC801	F-6
IC1210	A-2
IC1211	B-3
<b>TRANSISTOR</b>	
Q030	C-12 ①
Q108	D-2 ①
Q109	E-12 ①
Q110	E-3 ①
Q202	C-9 ①
Q207	B-10 ①
Q208	B-10 ①
Q210	B-10 ①
Q301	C-7 ①
Q303	D-8 ①
Q402	D-4 ①
Q403	E-4 ①
Q404	E-4 ①
Q405	C-6 ①
Q407	B-6 ①
Q408	C-7 ①
Q409	C-6 ①
Q410	C-6 ①
Q411	C-6 ①
Q412	C-5 ①
Q413	B-5 ①
Q414	C-5 ①
Q415	B-5 ①
Q416	C-5 ①
Q417	B-6 ①
Q418	B-5 ①
Q561	I-6 ①
Q801	D-2 ①
Q802	F-1 ①
Q821	E-6 ①
Q902	D-10 ①
Q903	D-11 ①
Q1201	A-3 ①
Q1202	A-3 ①
Q1203	A-2 ①
Q1204	B-2 ①
Q1207	A-2 ①
Q1208	B-2 ①
Q1209	C-4 ①
Q1265	C-1 ①
Q1513	G-6 ①



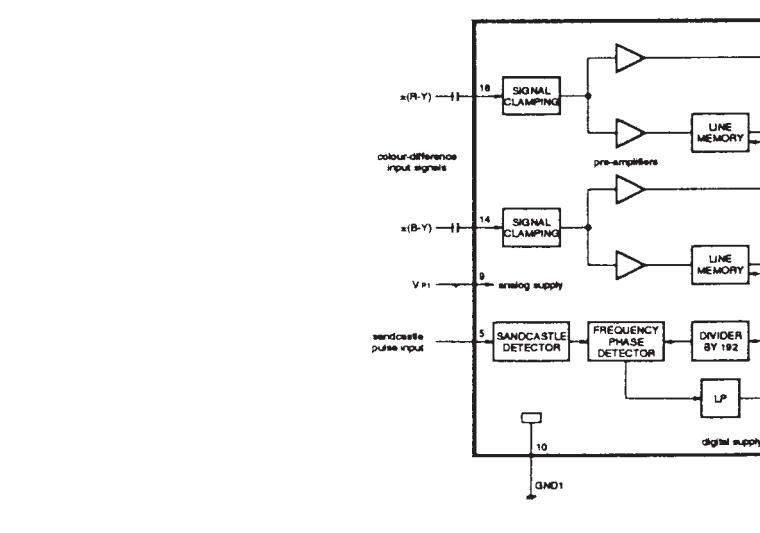
## A BOARD WAVEFORMS



## A BOARD IC300 TDA8375A

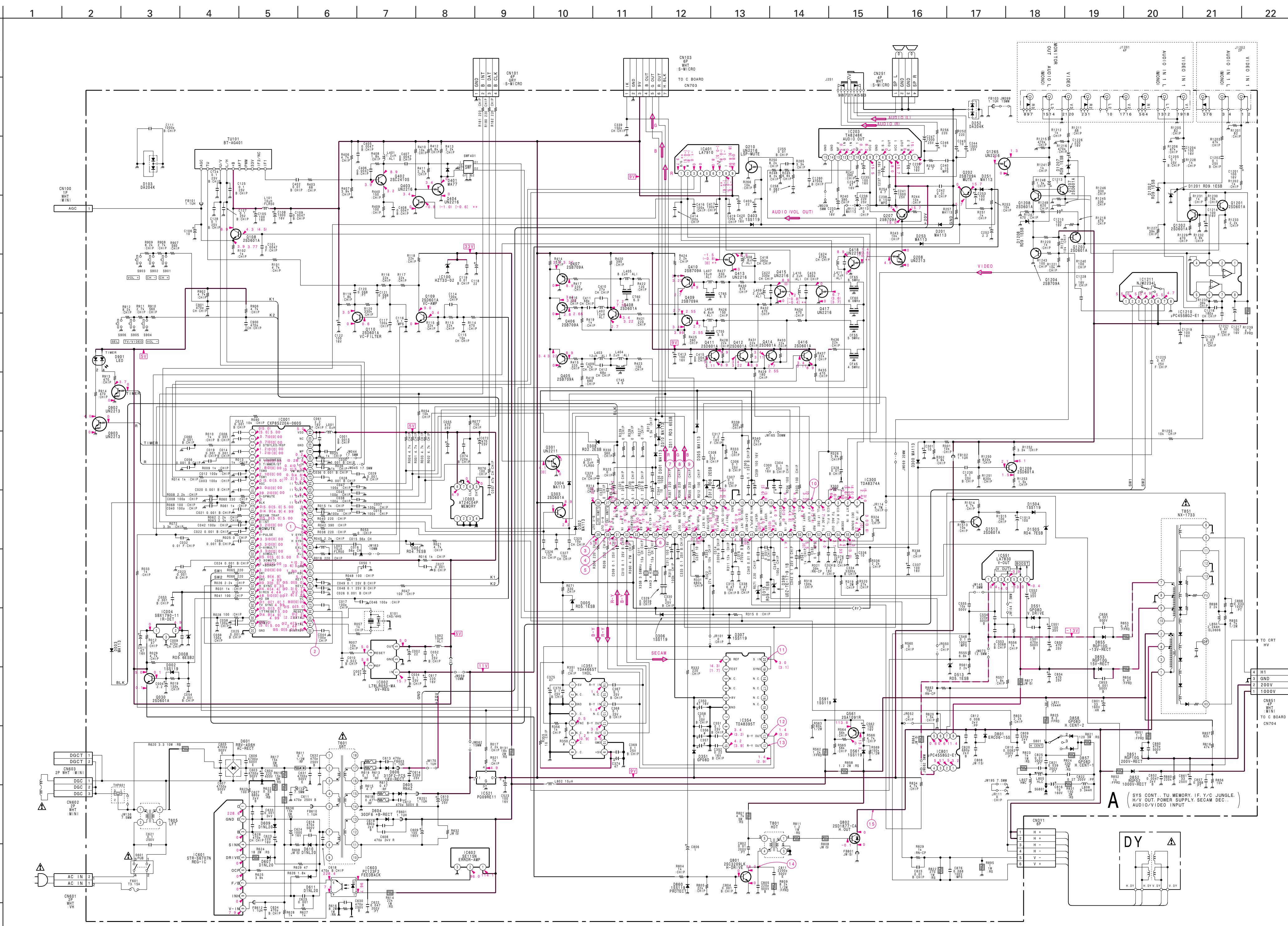


## A BOARD IC351 TDA4665T-T



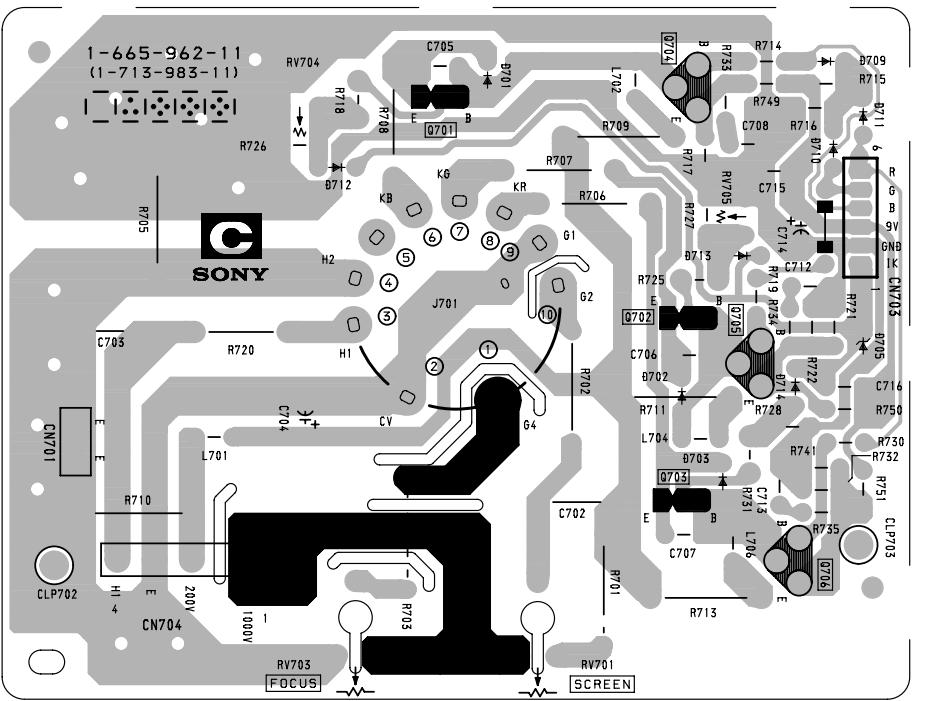
**NOTE:**  
The circuit indicated as left contains high voltage of over 600 Vp-p. Please pay attention while inspecting or repairing it to prevent an electric shock.

(1) Schematic Diagram of A Board

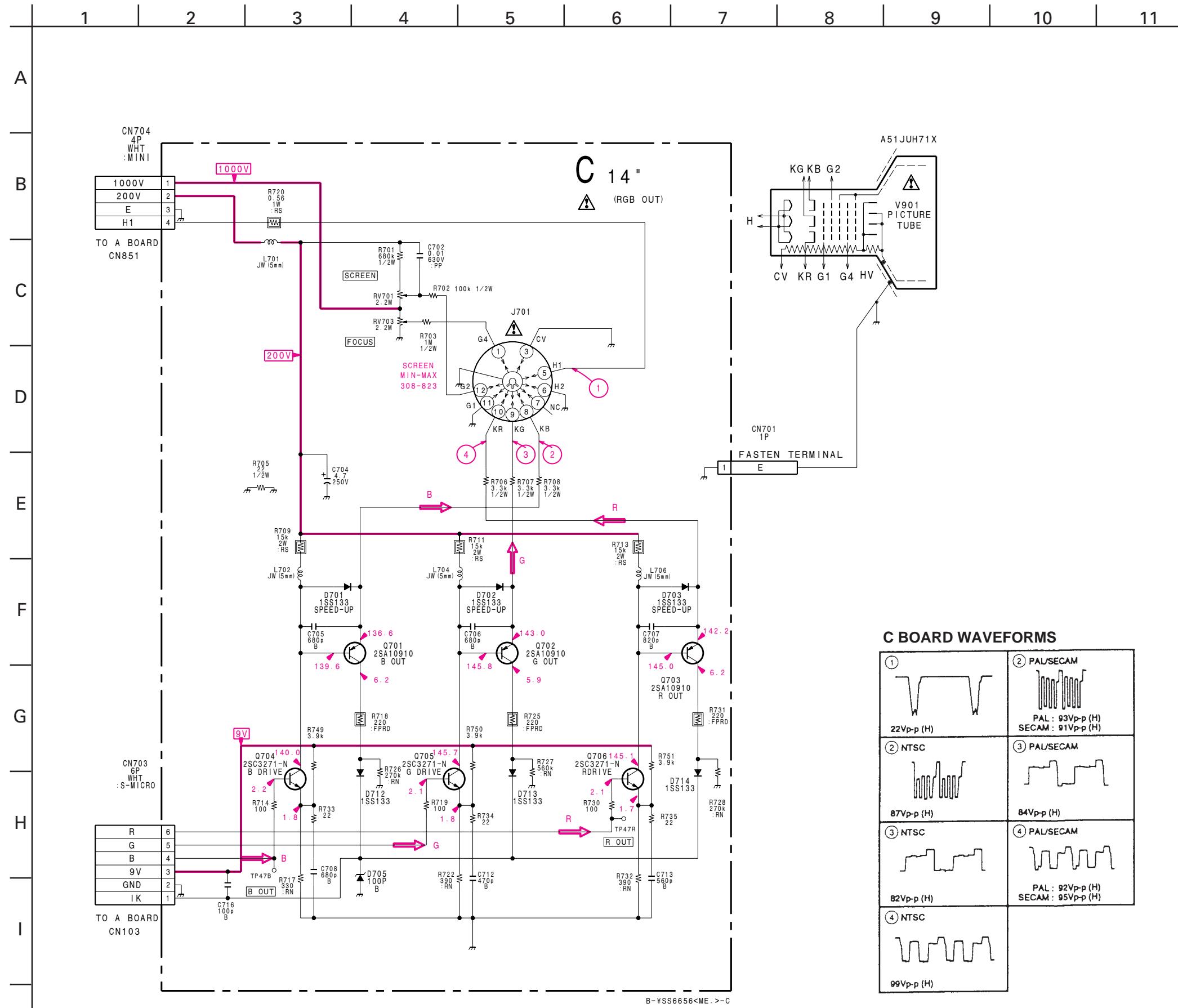


**C** [RGB OUT]

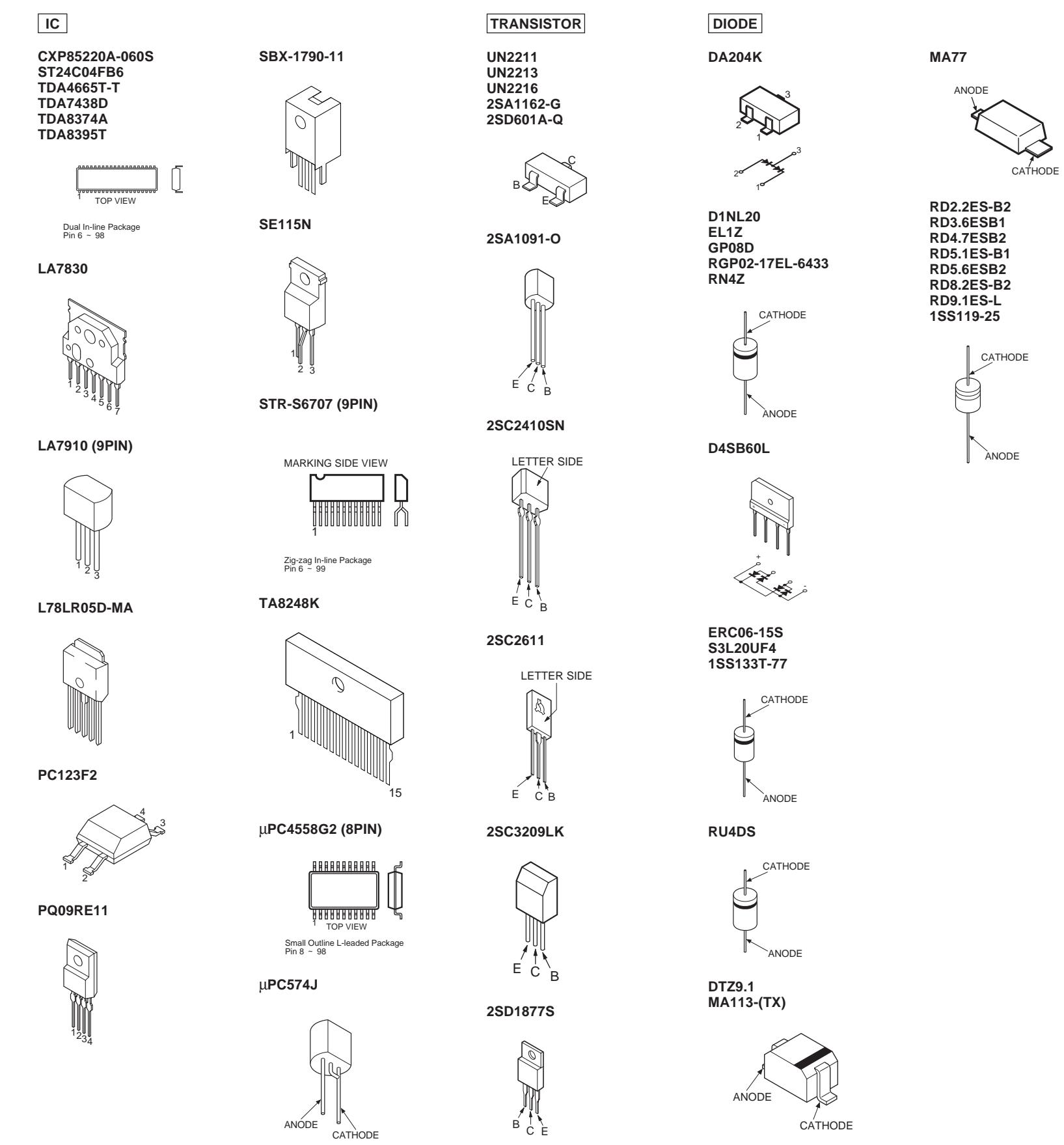
- C BOARD -



(2) Schematic Diagram of C Board



6-4. SEMICONDUCTORS



## SECTION 7

### EXPLODED VIEWS

**NOTE:**

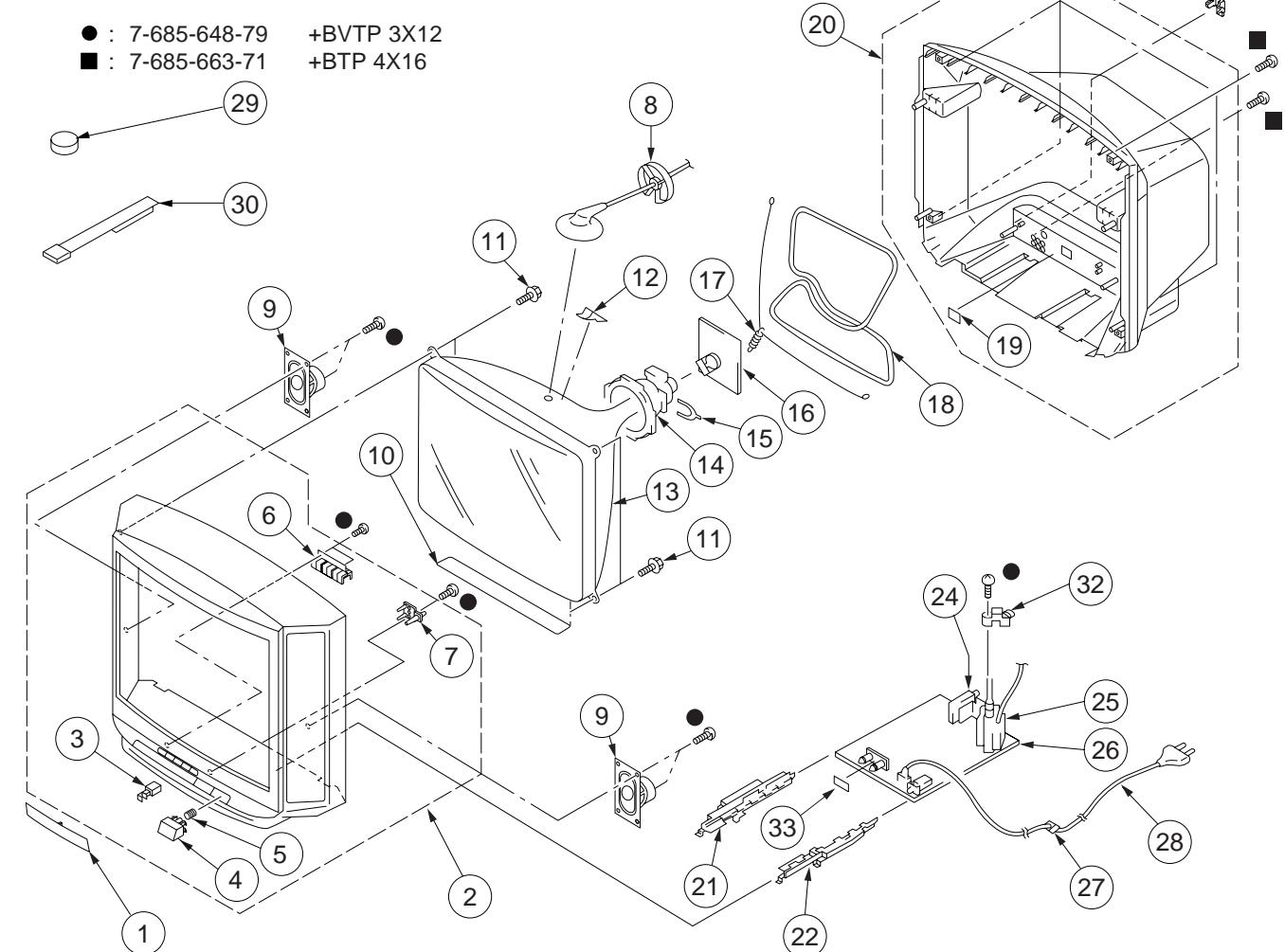
- Items with no part number and no description are not stocked because they are seldom required for routine service.

- The construction parts of an assembled part are indicated with a collation number in the remark column.

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

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

#### 7-1. CHASSIS



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	4-061-401-51	DOOR, CONTROL	
2	X-4035-417-1	BEZNET ASSY	
3	4-047-464-01	CATCHER, PUSH	
4	4-061-398-01	BUTTON, POWER	
5	4-036-405-11	SPRING, COMPRESSION	
6	4-061-400-01	BUTTON, MULTI	
7	* 4-061-399-01	GUIDE, LIGHT	
8	3-704-372-01	HOLDER, HV CABLE	
9	1-504-305-11	SPEAKER (5X12CM)	
10	4-372-556-11	SHEET, BLOTTING	
11	4-365-808-01	SCREW (5), TAPPING	
12	4-046-600-01	SPACER, DY	
13	$\triangle$ 8-735-562-05	PICTURE TUBE (A34JBU70X)	
14	$\triangle$ 8-451-418-21	DEFLECTION YOKE (Y14NDA2)	
15	1-452-277-00	MAGNET, BMC	
16	* A-1331-749-A	C BOARD, COMPLETE	
17	4-369-318-00	SPRING, TENSION	

REF. NO.	PART NO.	DESCRIPTION	REMARK
18	$\triangle$ 1-426-145-13	COIL, DEGAUSSING	
19	4-049-416-01	SHEET, BLIND	
20	$\triangle$ X-4035-263-1	COVER ASSY, REAR	
21	* 4-055-841-01	RAIL (L), GUIDE	
22	* 4-055-840-01	RAIL (R), GUIDE	
24	$\triangle$ 8-598-323-10	TUNER, VSS BT-AG401	
25	$\triangle$ 1-453-249-11	TRANSFORMER ASSY, FLYBACK (NX-1733//M3A)	
26	* A-1298-495-A	A BOARD, COMPLETE	
27	$\triangle$ 4-022-115-00	HOLDER, AC CORD	
28	$\triangle$ 1-574-062-61	CORD, POWER (WITH CONNECTOR) 2.5A/250V	
29	1-452-032-00	MAGNET,DISK ; 10mm $\phi$	
30	4-051-736-21	PIECE A(90), CONV. CORRECT	
31	4-049-130-01	CLAMPER, CORD	
32	* 4-059-711-01	HOLDER, FBT	
33	4-063-543-01	SPACER	

# SECTION 8

## ELECTRICAL PARTS LIST

A

**NOTE:**

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

- 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.

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

**RESISTORS**

- All resistors are in ohms
- F : nonflammable

**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-1298-495-A	A BOARD, COMPLETE			C056	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
	*****			C057	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
4-382-854-11	SCREW (M3X10), P, SW (+)			C058	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
				C059	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
	<CAPACITOR>			C060	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C001	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V	C061	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C002	1-126-965-11	ELECT 22MF	20% 50V	C064	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C003	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C072	1-124-480-11	ELECT 470MF	20% 25V
C004	1-126-961-11	ELECT 2.2MF	20% 50V	C074	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C006	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C101	1-163-029-11	CERAMIC CHIP 0.0047MF	50V
C007	1-126-959-11	ELECT 0.47MF	20% 50V	C105	1-104-665-11	ELECT 100MF	20% 16V
C008	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C106	1-126-964-11	ELECT 10MF	20% 50V
C009	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	C108	1-126-942-61	ELECT 1000MF	20% 16V
C010	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V	C109	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C011	1-126-967-11	ELECT 47MF	20% 16V	C111	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C012	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C114	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C013	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C115	1-163-227-11	CERAMIC CHIP 10PF	0.5PF 50V
C014	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C116	1-136-165-00	FILM 0.1MF	5% 50V
C015	1-101-884-00	CERAMIC 56PF	5% 50V	C117	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C016	1-101-884-00	CERAMIC 56PF	5% 50V	C118	1-126-965-11	ELECT 22MF	20% 50V
C017	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C119	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C018	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C120	1-130-493-00	MYLAR 0.068MF	5% 50V
C019	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C121	1-130-493-00	MYLAR 0.068MF	5% 50V
C020	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C122	1-104-665-11	ELECT 100MF	20% 16V
C021	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C124	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C022	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C125	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C023	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C127	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C024	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C128	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C025	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C233	1-126-967-11	ELECT 47MF	20% 16V
C026	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C234	1-126-967-11	ELECT 47MF	20% 16V
C027	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C235	1-104-665-11	ELECT 100MF	20% 16V
C028	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C236	1-104-666-11	ELECT 220MF	20% 25V
C029	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C237	1-104-665-11	ELECT 100MF	20% 16V
C032	1-163-031-11	CERAMIC CHIP 0.01MF	50V	C238	1-136-167-00	FILM 0.15MF	5% 50V
C034	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C239	1-104-665-11	ELECT 100MF	20% 16V
C035	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C240	1-136-167-00	FILM 0.15MF	5% 50V
C036	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C241	1-126-942-61	ELECT 1000MF	20% 25V
C037	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C242	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C038	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C243	1-126-964-11	ELECT 10MF	20% 50V
C040	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C244	1-126-942-61	ELECT 1000MF	20% 25V
C042	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C246	1-126-964-11	ELECT 10MF	20% 50V
C044	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C247	1-126-942-61	ELECT 1000MF	20% 25V
C045	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C252	1-126-961-11	ELECT 2.2MF	20% 50V
C046	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C253	1-104-665-11	ELECT 100MF	20% 16V
C047	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C255	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C048	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C258	1-130-494-11	MYLAR 0.082MF	5% 50V
C049	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C300	1-126-967-11	ELECT 47MF	20% 16V
C050	1-126-960-11	ELECT 1MF	20% 50V	C301	1-126-964-11	ELECT 10MF	20% 50V
C051	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C304	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C052	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C305	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C053	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C306	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C054	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C307	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C055	1-124-480-11	ELECT 470MF	20% 25V	C308	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
				C309	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V



**A**

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
C1213	1-126-960-11	ELECT	1MF	20%	50V	D551 8-719-908-03 DIODE GP08D	
C1214	1-104-665-11	ELECT	100MF	20%	16V	D561 8-719-911-19 DIODE 1SS119-25	
C1217	1-104-665-11	ELECT	100MF	20%	16V	D591 8-719-911-19 DIODE 1SS119-25	
C1218	1-163-257-11	CERAMIC CHIP	180PF	5%	50V	D601 8-719-510-53 DIODE D4SB60L	
C1219	1-104-665-11	ELECT	100MF	20%	16V	D604 8-719-301-64 DIODE RU4DS	
C1221	1-164-005-11	CERAMIC CHIP	0.47MF		25V	D605 8-719-067-18 DIODE RN4Z	
C1225	1-164-005-11	CERAMIC CHIP	0.47MF		25V	D606 8-719-510-73 DIODE S3L20UF4	
C1226	1-126-934-11	ELECT	220MF	20%	16V	D607 8-719-510-26 DIODE D1NL20-TA2	
C1228	1-164-346-11	CERAMIC CHIP	1MF		16V	D609 8-719-510-26 DIODE D1NL20-TA2	
C1229	1-164-005-11	CERAMIC CHIP	0.47MF		25V	D610 8-719-510-26 DIODE D1NL20-TA2	
C1230	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	D611 8-719-510-26 DIODE D1NL20-TA2	
C1260	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V	D801 8-719-945-80 DIODE ERC06-15S	
C1513	1-124-122-11	ELECT	100MF	20%	50V		
<b>&lt;FILTER&gt;</b>							
CF45	1-527-943-00	FILTER, CERAMIC					
CF55	1-567-099-00	FILTER, CERAMIC					
CF60	1-567-100-00	FILTER, CERAMIC					
CF65	1-567-101-11	FILTER, CERAMIC					
<b>&lt;CONNECTOR&gt;</b>							
CN100	* 1-508-784-00	PIN, CONNECTOR (5mm PITCH) 1P					
CN101	* 1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P					
CN103	* 1-564-509-11	PLUG, CONNECTOR 6P					
CN251	* 1-564-507-11	PLUG, CONNECTOR 4P					
CN601	* 1-580-843-11	PIN, CONNECTOR (POWER)					
CN602	* 1-508-786-00	PIN, CONNECTOR (5mm PITCH) 2P					
CN603	* 1-508-786-00	PIN, CONNECTOR (5mm PITCH) 2P					
CN851	1-508-766-00	PIN, CONNECTOR (5mm PITCH) 4P					
<b>&lt;TRIMMER&gt;</b>							
CT45	1-579-690-11	TRAP, CERAMIC					
CT55	1-404-801-11	TRAP, CERAMIC					
CT60	1-409-429-11	TRAP, CERAMIC					
CT65	1-409-327-00	TRAP, CERAMIC (6.5MHZ)					
<b>&lt;DIODE&gt;</b>							
D001	8-719-109-81	DIODE RD4.7ESB2					
D002	8-719-911-19	DIODE 1SS119-25					
D003	8-719-041-97	DIODE MA113-(TX)					
D005	8-719-109-84	DIODE RD5.1ESB1					
D008	8-719-109-89	DIODE RD5.6ESB2					
D103	8-719-914-42	DIODE DA204K					
D201	8-719-041-97	DIODE MA113-(TX)					
D251	8-719-041-97	DIODE MA113-(TX)					
D252	8-719-914-42	DIODE DA204K					
D253	8-719-041-97	DIODE MA113-(TX)					
D300	8-719-041-97	DIODE MA113-(TX)					
D301	8-719-041-97	DIODE MA113-(TX)					
D302	8-719-041-97	DIODE MA113-(TX)					
D304	8-719-041-97	DIODE MA113-(TX)					
D305	8-719-041-97	DIODE MA113-(TX)					
D306	8-719-911-19	DIODE 1SS119-25					
D307	8-719-911-19	DIODE 1SS119-25					
D308	8-719-109-54	DIODE RD2.2ESB2					
D310	8-719-041-97	DIODE MA113-(TX)					
D311	8-719-109-68	DIODE RD3.6ESB1					
D312	8-719-110-08	DIODE RD8.2ESB2					
D315	8-719-121-24	DIODE RD9.1ESL					
D351	8-719-908-03	DIODE GP08D					
D399	8-719-977-22	DIODE DTZ9.1					
D401	8-719-421-40	DIODE MA77					
D402	8-719-911-19	DIODE 1SS119-25					
D403	8-719-911-19	DIODE 1SS119-25					
D513	8-719-109-84	DIODE RD5.1ESB1					
<b>&lt;FUSE&gt;</b>							
F601	$\Delta$ 1-532-237-11	FUSE, TIME-LAG (BET) 3.15A/250V					
	1-533-223-11	CLIP, FUSE ; F601					
<b>&lt;FERRITE BEAD&gt;</b>							
FB101	1-410-397-21	FERRITE	1.1UH				
FB102	1-410-397-21	FERRITE	1.1UH				
FB103	1-410-397-21	FERRITE	1.1UH				
FB251	1-410-397-21	FERRITE	1.1UH				
FB601	1-410-397-21	FERRITE	1.1UH				
FB603	1-410-397-21	FERRITE	1.1UH				
FB610	$\Delta$ 1-410-397-21	FERRITE	1.1UH				
FB612	1-410-397-21	FERRITE	1.1UH				
<b>&lt;IC&gt;</b>							
IC001	8-752-891-61	IC CXP85220A-060S					
IC002	8-759-805-37	IC L78LR05D-MA					
IC003	8-759-370-33	IC ST24C04FB6					
IC004	8-741-790-11	HYB IC SBX1790-11					
IC100	8-759-157-40	IC uPC574J					
IC203	8-759-339-60	IC TA8248K					
IC300	8-759-365-25	IC TDA8374A					
IC351	8-759-288-85	IC TDA4665T-T					
IC354	8-759-251-56	IC TDA8395T					
IC401	8-759-800-65	IC LA7910					
IC521	8-759-195-63	IC PQ09RE11					
IC551	8-759-801-98	IC LA7830					
IC601	8-749-014-00	IC STR-S6707N					
IC602	8-749-921-89	IC SE115N					
IC603	$\Delta$ 8-749-010-64	PHOTO COUPLER PC123F2					
IC801	8-759-100-96	IC uPC4558G2					
IC1210	8-759-100-96	IC uPC4558G2					
IC1211	8-759-711-23	IC NJM2234L					
<b>&lt;JACK&gt;</b>							
J251	1-770-786-21	JACK					
J1201	1-779-849-11	JACK BLOCK, PIN 4P					
J1202	1-779-205-11	JACK, PIN 2P					

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

**A**

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
<b>&lt;CHIP CONDUCTOR&gt;</b>							
JR050	1-216-295-91	SHORT 0		Q418	8-729-424-67	TRANSISTOR UN2216	
JR052	1-216-295-91	SHORT 0		Q561	8-729-200-17	TRANSISTOR 2SA1091-O	
JR101	1-216-295-91	SHORT 0		Q801	8-729-140-50	TRANSISTOR 2SC3209LK	
JR111	1-216-295-91	SHORT 0		Q802	8-729-810-49	TRANSISTOR 2SD1877S-SONY-CA	
JR112	8-719-041-97	DIODE MA113-(TX)		Q902	8-729-421-19	TRANSISTOR UN2213	
JR113	1-216-295-91	SHORT 0		Q903	8-729-421-19	TRANSISTOR UN2213	
JR114	1-208-291-11	RES,CHIP 4.7M	5%	Q1201	8-729-422-27	TRANSISTOR 2SD601A-Q	
JR118	1-216-295-91	SHORT 0		Q1202	8-729-422-27	TRANSISTOR 2SD601A-Q	
JR126	1-216-295-91	SHORT 0		Q1203	8-729-422-27	TRANSISTOR 2SD601A-Q	
JR179	1-216-295-91	SHORT 0		Q1204	8-729-216-22	TRANSISTOR 2SA1162-G	
JR203	1-216-295-91	SHORT 0		Q1207	8-729-422-27	TRANSISTOR 2SD601A-Q	
JR204	1-216-295-91	SHORT 0		Q1208	8-729-422-27	TRANSISTOR 2SD601A-Q	
JR266	1-216-295-91	SHORT 0		Q1209	8-729-422-27	TRANSISTOR 2SD601A-Q	
				Q1265	8-729-424-67	TRANSISTOR UN2216	
				Q1513	8-729-422-27	TRANSISTOR 2SD601A-Q	
<b>&lt;COIL&gt;</b>							
<b>&lt;RESISTOR&gt;</b>							
L001	1-408-397-00	INDUCTOR 1UH		R001	1-216-065-00	RES,CHIP 4.7K	5% 1/10W
L002	1-410-509-11	INDUCTOR 10UH		R002	1-216-065-00	RES,CHIP 4.7K	5% 1/10W
L003	1-408-605-31	INDUCTOR 15UH		R003	1-216-065-00	RES,CHIP 4.7K	5% 1/10W
L101	1-410-470-11	INDUCTOR 10UH		R004	1-216-065-00	RES,CHIP 4.7K	5% 1/10W
L301	1-408-408-00	INDUCTOR 8.2UH		R007	1-216-073-00	RES,CHIP 10K	5% 1/10W
L401	1-410-498-11	INDUCTOR 1.2UH		R008	1-216-057-00	RES,CHIP 2.2K	5% 1/10W
L402	1-410-510-11	INDUCTOR 12UH		R009	1-216-049-91	RES,CHIP 1K	5% 1/10W
L403	1-410-510-11	INDUCTOR 12UH		R010	1-216-049-91	RES,CHIP 1K	5% 1/10W
L404	1-410-508-11	INDUCTOR 8.2UH		R012	1-216-017-91	RES,CHIP 47	5% 1/10W
L405	1-410-508-11	INDUCTOR 8.2UH		R013	1-216-049-91	RES,CHIP 1K	5% 1/10W
L406	1-410-507-11	INDUCTOR 6.8UH		R014	1-216-049-91	RES,CHIP 1K	5% 1/10W
L407	1-410-511-11	INDUCTOR 15UH		R015	1-216-049-91	RES,CHIP 1K	5% 1/10W
L408	1-410-500-11	INDUCTOR 1.8UH		R016	1-216-049-91	RES,CHIP 1K	5% 1/10W
L409	1-410-501-11	INDUCTOR 2.2UH		R017	1-216-057-00	RES,CHIP 2.2K	5% 1/10W
L410	1-410-501-11	INDUCTOR 2.2UH		R018	1-216-033-00	RES,CHIP 220	5% 1/10W
L411	1-410-502-11	INDUCTOR 2.7UH		R019	1-216-101-00	RES,CHIP 150K	5% 1/10W
L802	1-412-527-11	INDUCTOR 15UH		R021	1-216-065-00	RES,CHIP 4.7K	5% 1/10W
<b>△ 1-460-046-11 COIL, HORIZONTAL LINEARITY</b>				R025	1-216-295-91	SHORT 0	
L807	1-459-348-51	COIL, VAR, FERRITE (HWC)		R026	1-216-057-00	RES,CHIP 2.2K	5% 1/10W
L808	1-412-553-11	INDUCTOR 3.3mH		R028	1-216-025-91	RES,CHIP 100	5% 1/10W
L821	1-406-677-11	COIL, CHOKE 10mH		R029	1-216-065-00	RES,CHIP 4.7K	5% 1/10W
L850	1-408-947-00	INDUCTOR 2.2mH		R031	1-216-049-91	RES,CHIP 1K	5% 1/10W
<b>&lt;TRANSISTOR&gt;</b>							
Q030	8-729-422-27	TRANSISTOR 2SD601A-Q		R033	1-216-049-91	RES,CHIP 1K	5% 1/10W
Q108	8-729-422-27	TRANSISTOR 2SD601A-Q		R035	1-216-049-91	RES,CHIP 1K	5% 1/10W
Q109	8-729-422-27	TRANSISTOR 2SD601A-Q		R036	1-216-049-91	RES,CHIP 1K	5% 1/10W
Q110	8-729-422-27	TRANSISTOR 2SD601A-Q		R038	1-216-033-00	RES,CHIP 220	5% 1/10W
Q202	8-729-216-22	TRANSISTOR 2SA1162-G		R040	1-216-033-00	RES,CHIP 220	5% 1/10W
Q207	8-729-216-22	TRANSISTOR 2SA1162-G		R041	1-216-025-91	RES,CHIP 100	5% 1/10W
Q208	8-729-421-19	TRANSISTOR UN2213		R042	1-216-039-00	RES,CHIP 390	5% 1/10W
Q210	8-729-424-67	TRANSISTOR UN2216		R045	1-216-057-00	RES,CHIP 2.2K	5% 1/10W
Q301	8-729-421-22	TRANSISTOR UN2211		R047	1-216-025-91	RES,CHIP 100	5% 1/10W
Q303	8-729-422-27	TRANSISTOR 2SD601A-Q		R048	1-216-025-91	RES,CHIP 100	5% 1/10W
Q402	8-729-922-66	TRANSISTOR 2SC2410SN		R053	1-216-295-91	SHORT 0	
Q403	8-729-424-67	TRANSISTOR UN2216		R054	1-216-073-00	RES,CHIP 10K	5% 1/10W
Q404	8-729-424-67	TRANSISTOR UN2216		R057	1-216-049-91	RES,CHIP 1K	5% 1/10W
Q405	8-729-216-22	TRANSISTOR 2SA1162-G		R060	1-216-037-00	RES,CHIP 330	5% 1/10W
Q406	8-729-216-22	TRANSISTOR 2SA1162-G		R061	1-216-049-91	RES,CHIP 1K	5% 1/10W
Q407	8-729-216-22	TRANSISTOR 2SA1162-G		R062	1-216-057-00	RES,CHIP 2.2K	5% 1/10W
Q408	8-729-422-27	TRANSISTOR 2SD601A-Q		R063	1-216-057-00	RES,CHIP 2.2K	5% 1/10W
Q409	8-729-216-22	TRANSISTOR 2SA1162-G		R065	1-216-033-00	RES,CHIP 390	5% 1/10W
Q410	8-729-216-22	TRANSISTOR 2SA1162-G		R066	1-216-033-00	RES,CHIP 390	5% 1/10W
Q411	8-729-422-27	TRANSISTOR 2SD601A-Q		R068	1-216-025-91	RES,CHIP 100	5% 1/10W
Q412	8-729-422-27	TRANSISTOR 2SD601A-Q		R071	1-216-037-00	RES,CHIP 330	5% 1/10W
Q413	8-729-424-67	TRANSISTOR UN2216		R072	1-216-061-00	RES,CHIP 3.3K	5% 1/10W
Q414	8-729-422-27	TRANSISTOR 2SD601A-Q		R076	1-216-025-91	RES,CHIP 100	5% 1/10W
Q415	8-729-424-67	TRANSISTOR UN2216		R077	1-216-025-91	RES,CHIP 100	5% 1/10W
Q416	8-729-422-27	TRANSISTOR 2SD601A-Q		R090	1-216-073-00	RES,CHIP 10K	5% 1/10W
Q417	8-729-424-67	TRANSISTOR UN2216		R101	1-216-065-00	RES,CHIP 4.7K	5% 1/10W
				R102	1-216-049-91	RES,CHIP 1K	5% 1/10W
				R113	1-216-081-00	RES,CHIP 22K	5% 1/10W





**C**

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
CN704	* 1-508-766-00	PIN, CONNECTOR (5mm PITCH) 4P		R733	1-247-791-91	CARBON	22 5% 1/4W
		<DIODE>		R734	1-247-791-91	CARBON	22 5% 1/4W
D701	8-719-991-33	DIODE 1SS133T-77		R735	1-247-791-91	CARBON	22 5% 1/4W
D702	8-719-991-33	DIODE 1SS133T-77		R749	1-249-424-11	CARBON	3.9K 5% 1/4W
D703	8-719-991-33	DIODE 1SS133T-77		R750	1-249-424-11	CARBON	3.9K 5% 1/4W
D705	1-102-106-00	CERAMIC 100PF	10%	R751	1-249-424-11	CARBON	3.9K 5% 1/4W
D712	8-719-991-33	DIODE 1SS133T-77	50V				<VARIABLE RESISTOR>
D713	8-719-991-33	DIODE 1SS133T-77		RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M	
D714	8-719-991-33	DIODE 1SS133T-77		RV703	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M	
		<JACK>					
J701	$\Delta$ 1-251-192-11	SOCKET, PICTURE TUBE					
		<TRANSISTOR>					
Q701	8-729-200-17	TRANSISTOR 2SA1091-O		$\Delta$ 1-426-145-13	COIL, DEGAUSSING		
Q702	8-729-200-17	TRANSISTOR 2SA1091-O		1-452-032-00	MAGNET, DISK ; 10mmØ		
Q703	8-729-200-17	TRANSISTOR 2SA1091-O		1-452-277-00	MAGNET, BMC		
Q704	8-729-326-11	TRANSISTOR 2SC2611		1-504-305-11	SPEAKER (5X12CM)		
Q705	8-729-326-11	TRANSISTOR 2SC2611		$\Delta$ 1-574-062-61	CORD, POWER (WITH CONNECTOR)		2.5A/250V
Q706	8-729-326-11	TRANSISTOR 2SC2611					
		<RESISTOR>		$\Delta$ 8-451-418-21	DEFLECTION YOKE (Y14NDA2)		
R701	1-260-133-11	CARBON	680K	5%	1/2W		
R702	1-260-123-11	CARBON	100K	5%	1/2W		
R703	1-260-135-11	CARBON	1M	5%	1/2W		
R705	1-260-079-11	CARBON	22	5%	1/2W		
R706	1-260-105-11	CARBON	3.3K	5%	1/2W		
R707	1-260-105-11	CARBON	3.3K	5%	1/2W		
R708	1-260-105-11	CARBON	3.3K	5%	1/2W		
R709	1-215-899-11	METAL OXIDE	15K	5%	2W	F	
R711	1-215-899-11	METAL OXIDE	15K	5%	2W	F	
R713	1-215-899-11	METAL OXIDE	15K	5%	2W	F	
R714	1-247-807-31	CARBON	100	5%	1/4W		
R717	1-215-409-00	METAL	330	1%	1/4W		
R718	1-249-409-11	CARBON	220	5%	1/4W	F	
R719	1-247-807-31	CARBON	100	5%	1/4W		
R720	1-216-346-00	METAL OXIDE	0.56	5%	1W	F	
R722	1-215-411-00	METAL	390	1%	1/4W		
R725	1-249-409-11	CARBON	220	5%	1/4W	F	
R726	1-215-479-00	METAL	270K	1%	1/4W		
R727	1-215-487-00	METAL	560K	1%	1/4W		
R728	1-215-479-00	METAL	270K	1%	1/4W		
R730	1-247-807-31	CARBON	100	5%	1/4W		
R731	1-249-409-11	CARBON	220	5%	1/4W	F	
R732	1-215-411-00	METAL	390	1%	1/4W		