

# SERVICE MANUAL

# BE-4A CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-21M1A	RM-836	Italian	SCC-J05E-A	KV-21M1K	RM-836	OIRT	SCC-J03J-A
KV-21T1A	RM-836	Italian	SCC-J05D-A	KV-21T1K	RM-836	OIRT	SCC-J03G-A
KV-21M1B	RM-836	French	SCC-J06G-A	KV-21M1L	RM-836	Irish	SCC-J02D-A
KV-21T1B	RM-836	French	SCC-J06F-A	KV-21T1L	RM-836	Irish	SCC-J02C-A
KV-21M1D	RM-836	AEP	SCC-J08F-A	KV-21T1R	RM-836	OIRT	SCC-J03H-A
KV-21T1D	RM-836	AEP	SCC-J08E-A	KV-21M1U	RM-836	UK	SCC-J01E-A
KV-21M1E	RM-836	Spanish	SCC-J04F-A	KV-21T1U	RM-836	UK	SCC-J01D-A
KV-21T1E	RM-836	Spanish	SCC-J04E-A				

## SUPPLEMENT - 1

SUBJECT : CHANGE OF PART NUMBER

File this supplement with the service manual

### INTRODUCTION : Change of Part Number due to Beznet Assy

**NOTE:** This Supplement applies to the following models:-  
KV-21M1K, KV-21T1K, KV-21T1R

- SECTION 5 DIAGRAMS**

(A board, Page 31) ..... See page 2

(C board, Page 35) ..... See page 5

- SECTION 6 EXPLODED VIEWS**

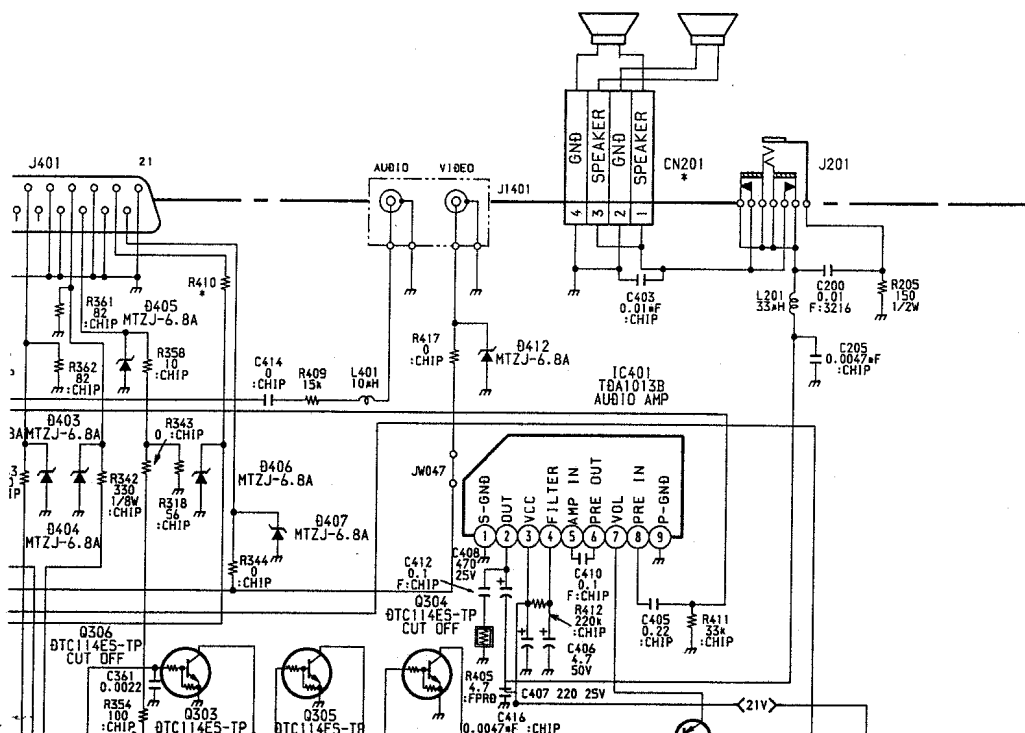
6-1. CHASSIS (Page 38) ..... See page 6

- SECTION 7 ELECTRICAL PARTS LIST (Page 40) ..... See page 7**



TRINITRON® COLOR TV  
**SONY®**



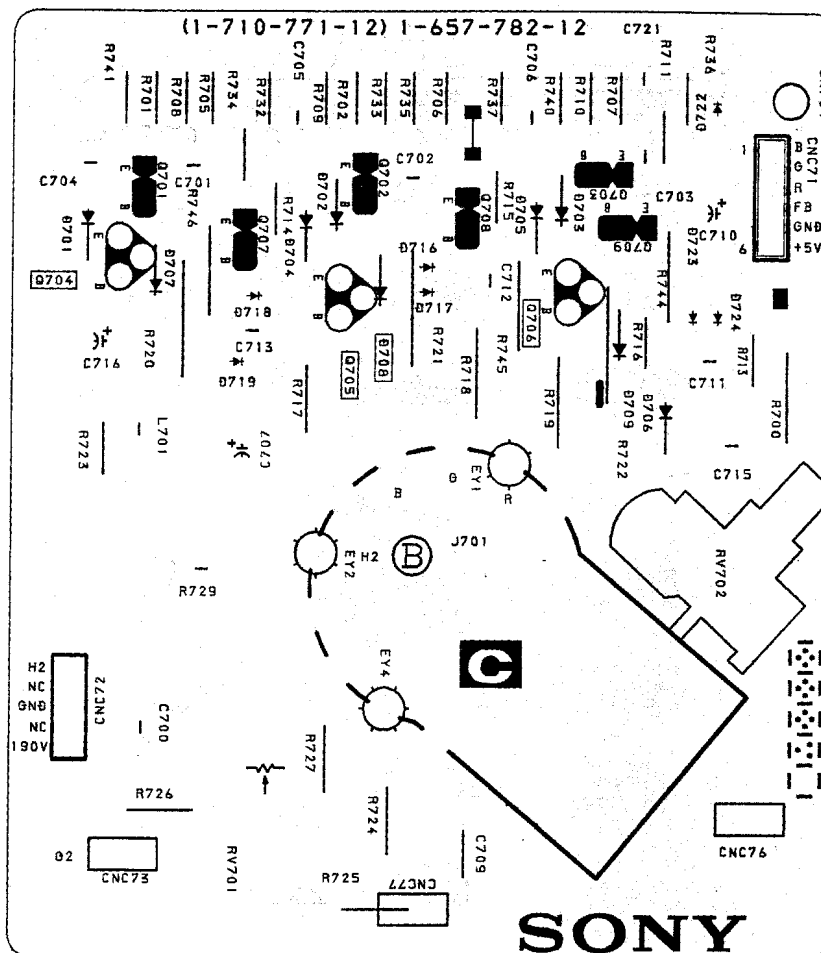




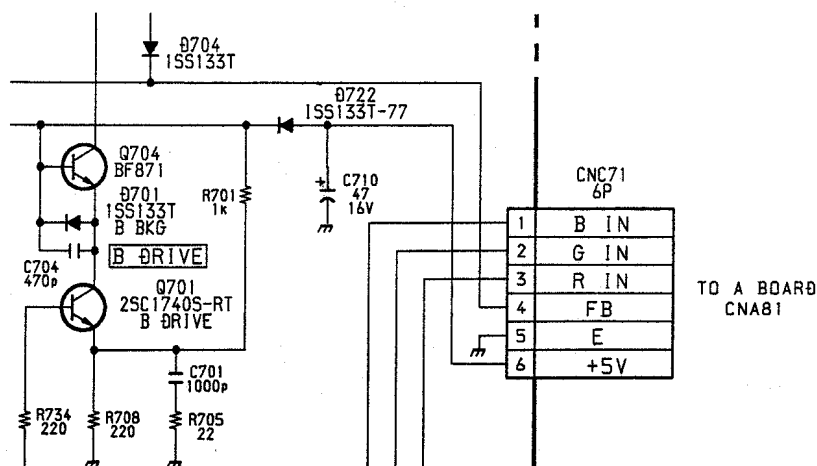
**C**

[R,G,B OUT]

- C Board -




- C Board -





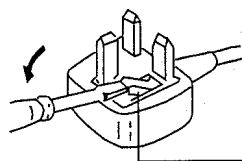
Model name Item	KV-21M1A KV-21T1A	KV-21M1B KV-21T1B	KV-21M1D KV-21T1D	KV-21M1E KV-21T1E	KV-21M1K KV-21T1K KV-21T1R	KV-21M1L KV-21T1L KV-21M1U KV-21T1U
PIP	OFF	OFF	OFF	OFF	OFF	OFF
MPIP	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	OFF	OFF	OFF	OFF	OFF	OFF
Front in (3)	ON	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	OFF	OFF	OFF	OFF	OFF	OFF
Norm B/G/H	ON	ON	ON	ON	ON	OFF
Norm I	OFF	OFF	OFF	OFF	OFF	ON
Norm D/K	OFF	OFF	OFF	OFF	ON	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF
Language Preset	Italian	French	German	Spanish	OIRT	English

### WARNING ( KV-21M1L/21T1L/21M1U/21T1U only )

The flexible mains lead is supplied connected to a B.S. 1363 fused plug having a fuse of 5 AMP capacity. Should the fuse need to be replaced, use a 5 AMP FUSE approved by ASTA to BS 1362, ie one that carries the  mark.

IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

When an alternative type of plug is used it should be fitted with a 5 AMP FUSE, otherwise the circuit should be protected by a 5 AMP FUSE at the distribution board.



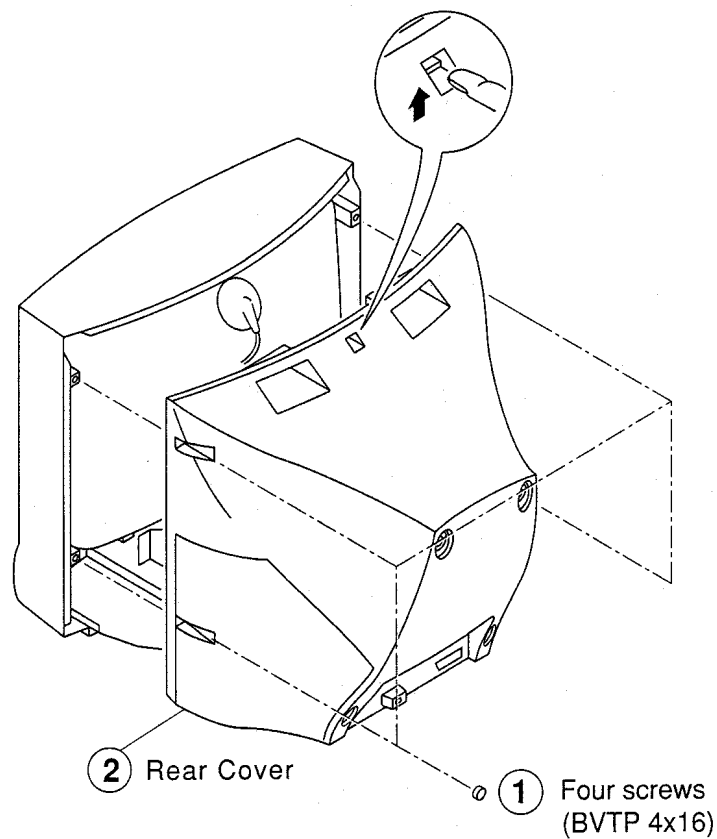
FUSE

How to replace the fuse.  
Open the fuse compartment with the screwdriver blade and replace the fuse.

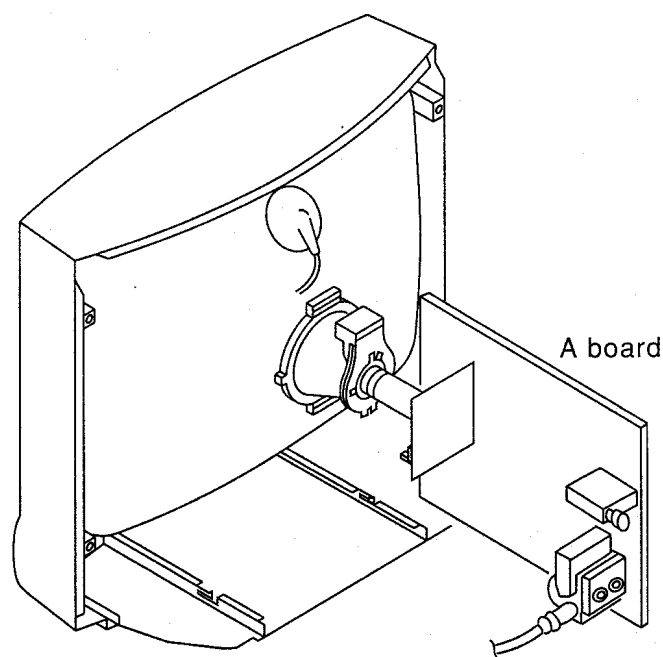


## SECTION 2 DISASSEMBLY

### 2-1. REAR COVER REMOVAL



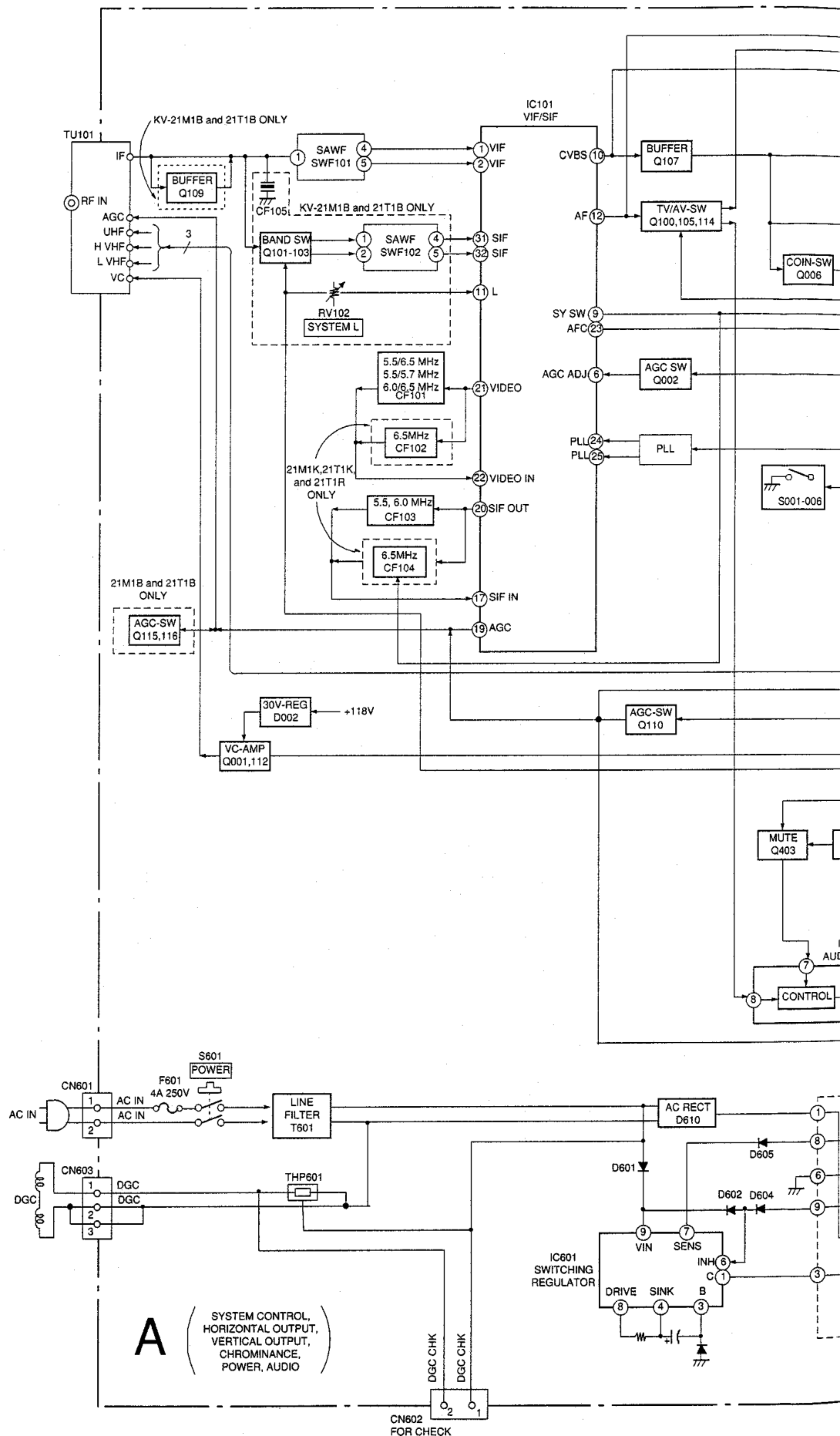
### 2-2. SERVICE POSITION



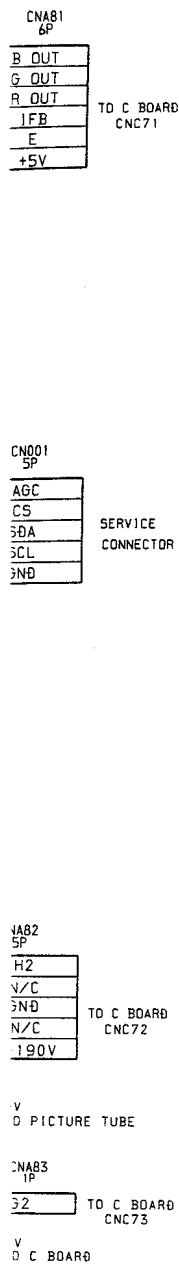


SECTION 5  
DIAGRAMS

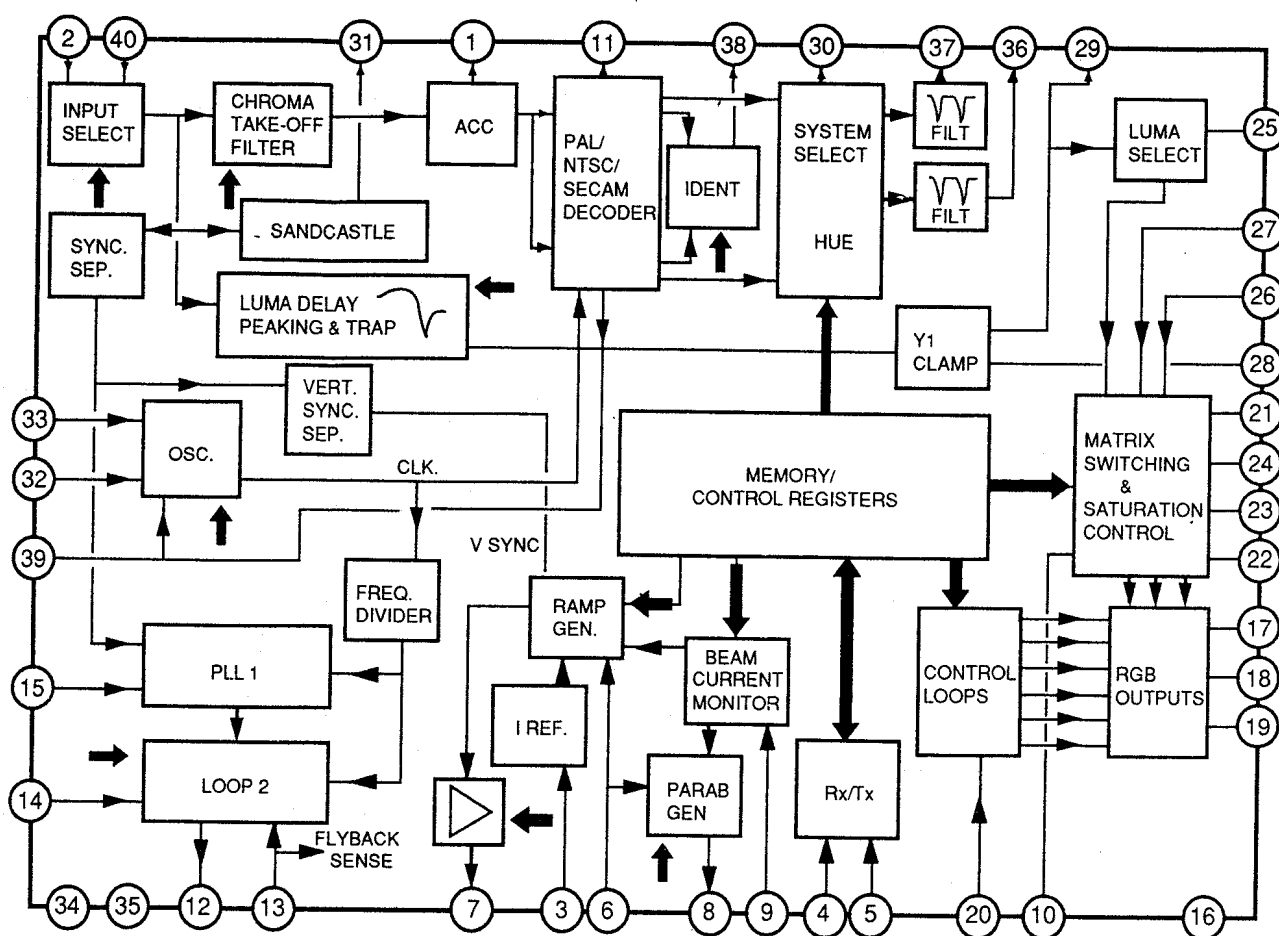
KV-21M1/T1



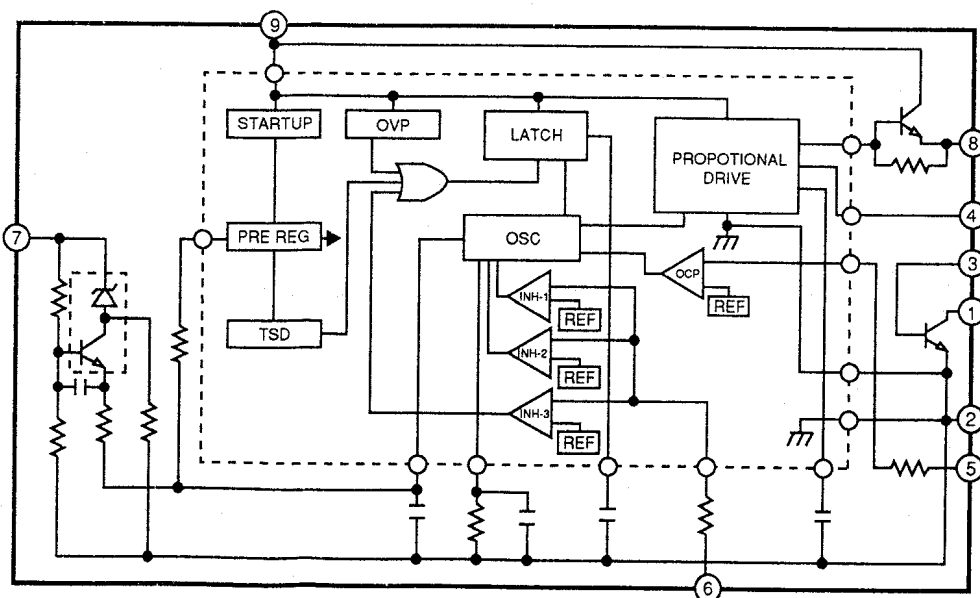
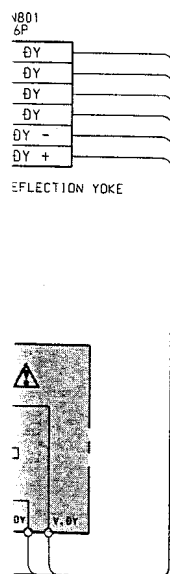




# A BOARD IC301 MC44002P/MC44007P



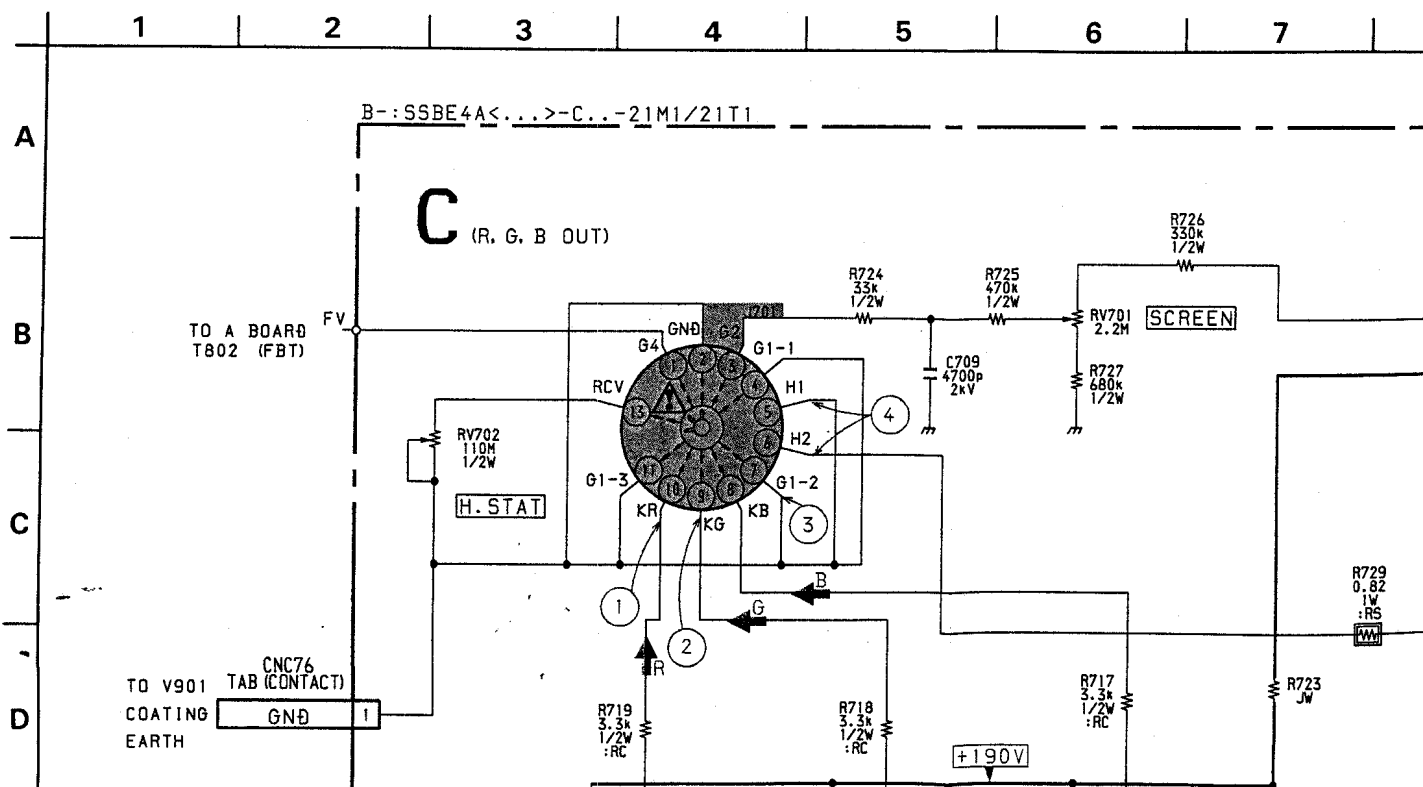
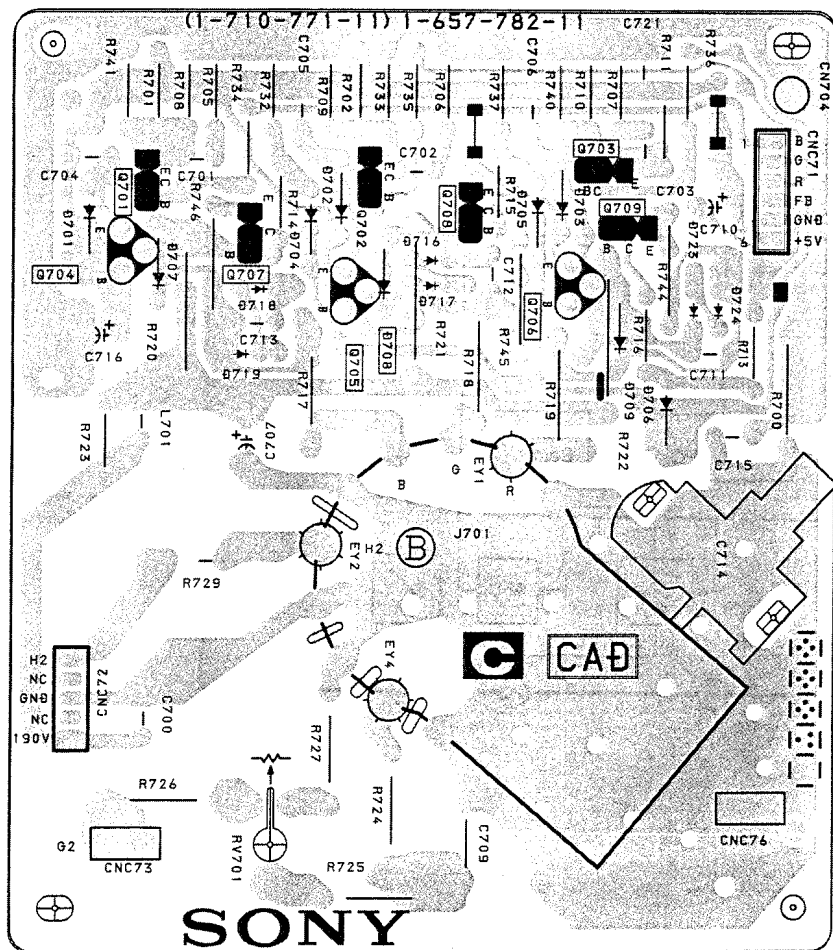
# A BOARD IC601 STRS5706



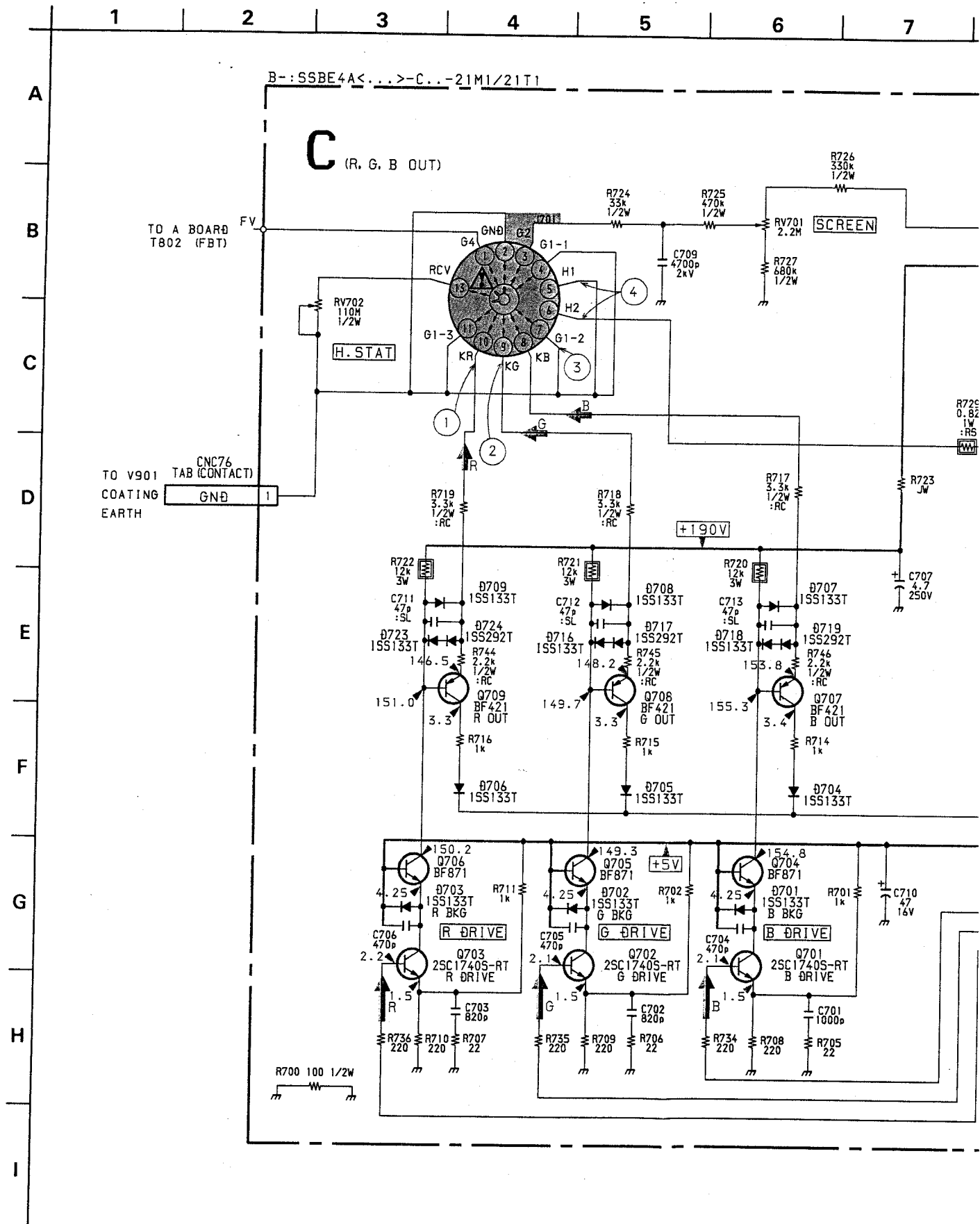


[ R.G.B OUT]

— C BOARD —



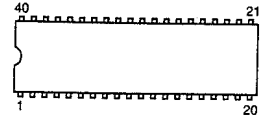






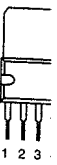
## 5-4. SEMICONDUCTORS

MC44002P  
MC44007P

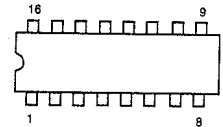


(TOP VIEW)

TDA81:

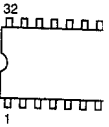


MC44140P



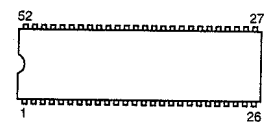
(TOP VIEW)

TDA98  
TDA98



(TO

SAA5288ZP/014  
SAA5290ZP/014



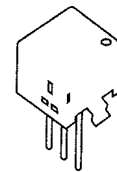
(TOP VIEW)

BF421  
2SA109



E

SBX1790-51

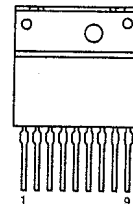


BF871-1



E

STR-S5706

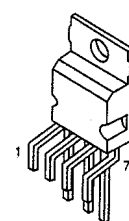


DTA144I  
DTC114I  
DTC144I

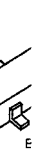


E

STV9379

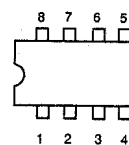


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2SA1037  
2SC241Z



E

ST24C02CB1



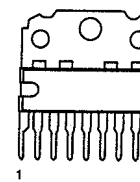
(TOP VIEW)

S2000N-1



C

TDA1013B



B

8 9 10 11 12

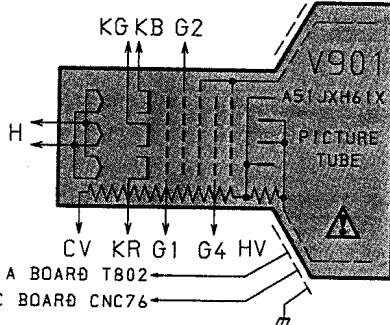
CNC73  
TAB-CONTACT

1 G2

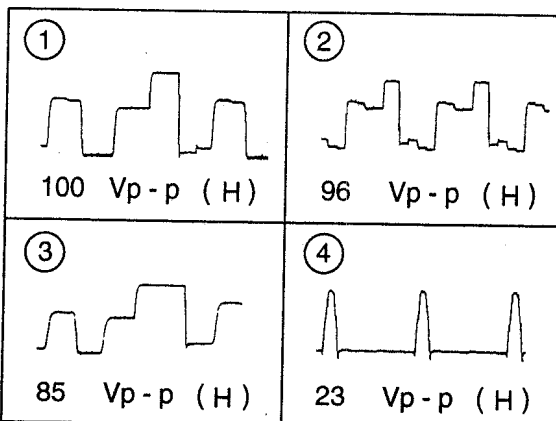
1 +190V  
2 N/C  
3 E  
4 N/C  
5 H2

TO A BOARD  
CNA82

CNC72  
5P



### WAVEFORMS C BOARD



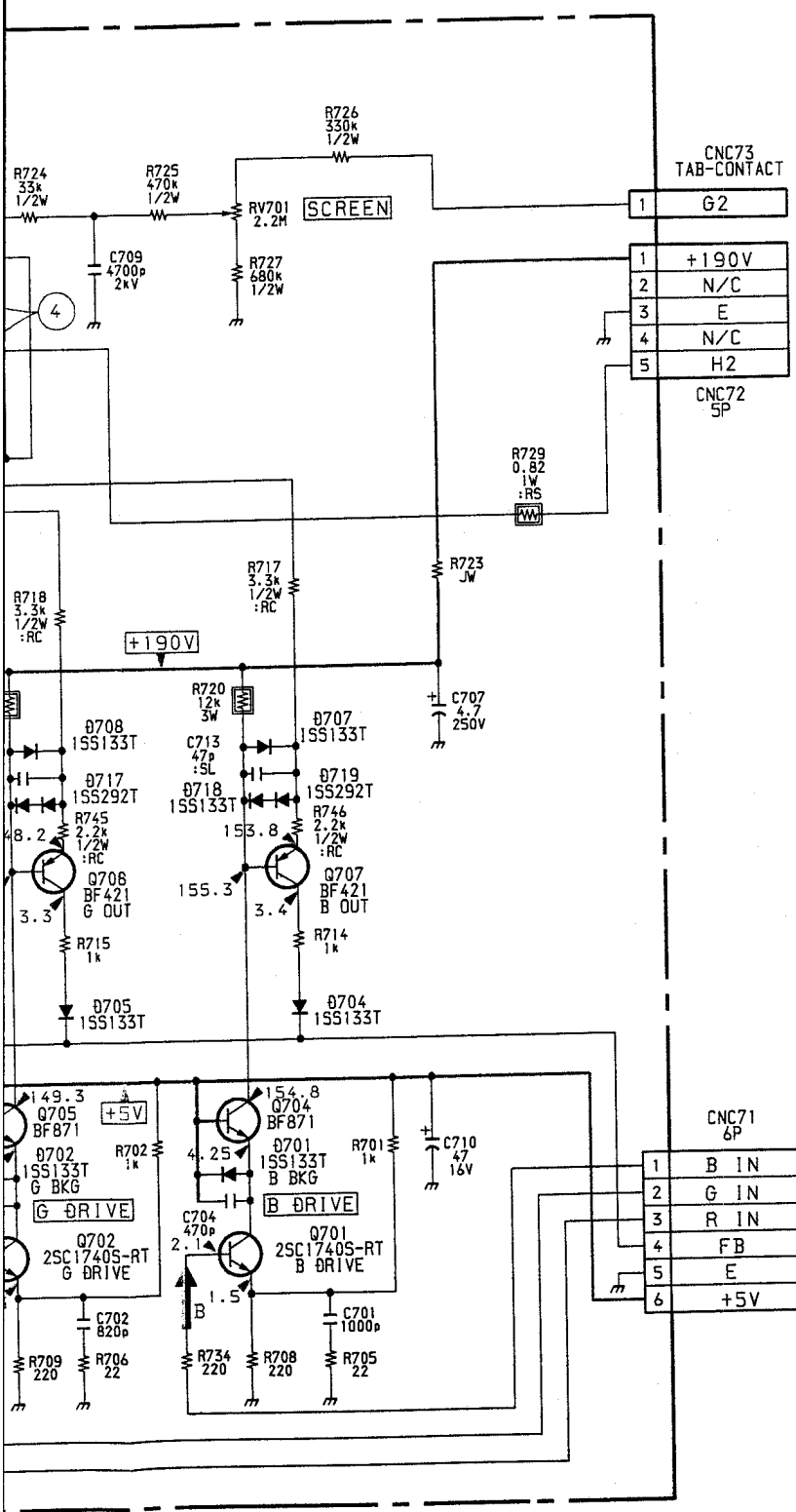
CNC71  
6P

1 B IN  
2 G IN  
3 R IN  
4 FB  
5 E  
6 +5V

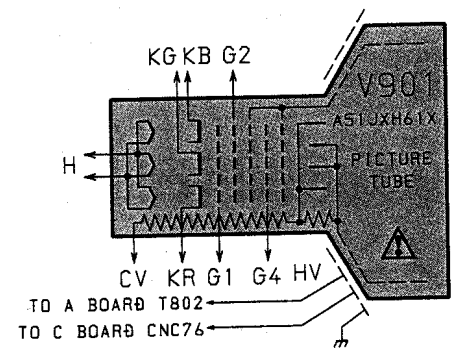
TO A BOARD  
CNAB1



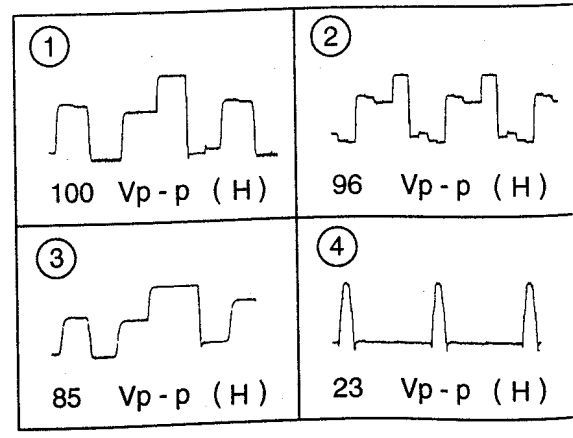
5      6      7      8      9      10      11      12



TO A BOARD CNA82

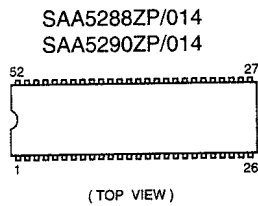
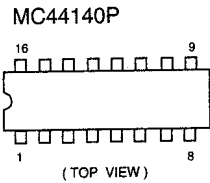
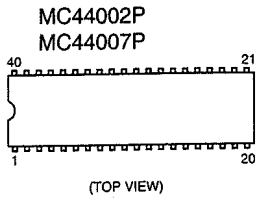


### WAVEFORMS C BOARD

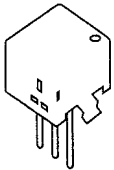




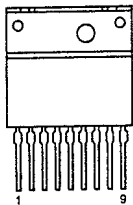
## 5-4. SEMICONDUCTORS



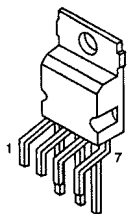
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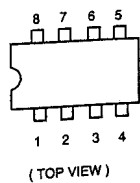
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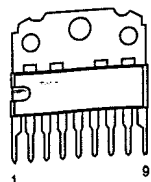
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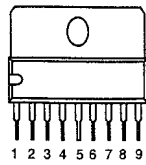
ST24C02CB1



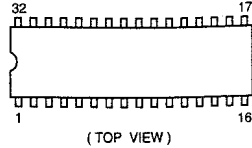
TDA1013B



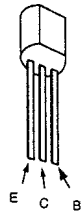
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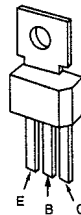
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TDA9812



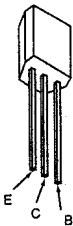
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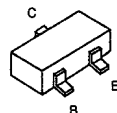
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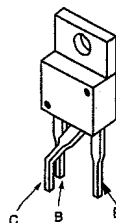
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DTC114ES  
DTC144ES



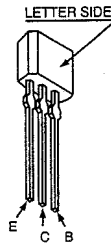
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2SA1037K  
2SC2412K-QR



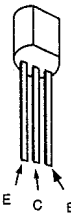
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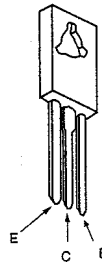
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2SA1175-HFE  
2SC2410SN



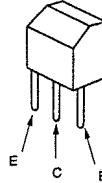
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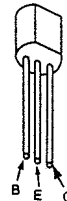
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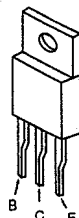
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2SD774-34



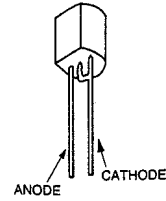
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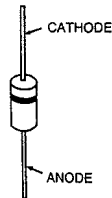
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2SD1761-E  
2SD2394-EF



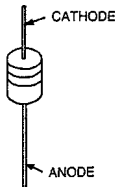
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UPC574J



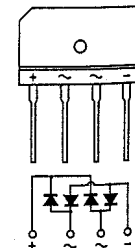
BYD33G EU-1Z  
EG-1Z-V1 RGP02-17EL-6433  
EGP20G RGP02-17PKG23  
EL1Z RGP10GPKG23  
EM1-V1 RGP15J-6040FG23  
ERC06-15S RU3AM  
ERD28-06S 1SS168  
ERD28-08S 1SS238



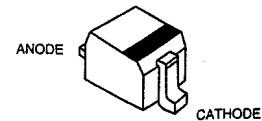
ERA81-004 RD5.1ESB2  
ERA83-006 RD5.6ESB2  
MTZJ-5.1B RD6.8ESB2  
MTZJ-5.6B 1SS133T-77  
MTZJ-6.8A



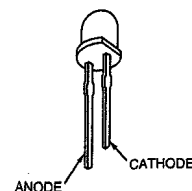
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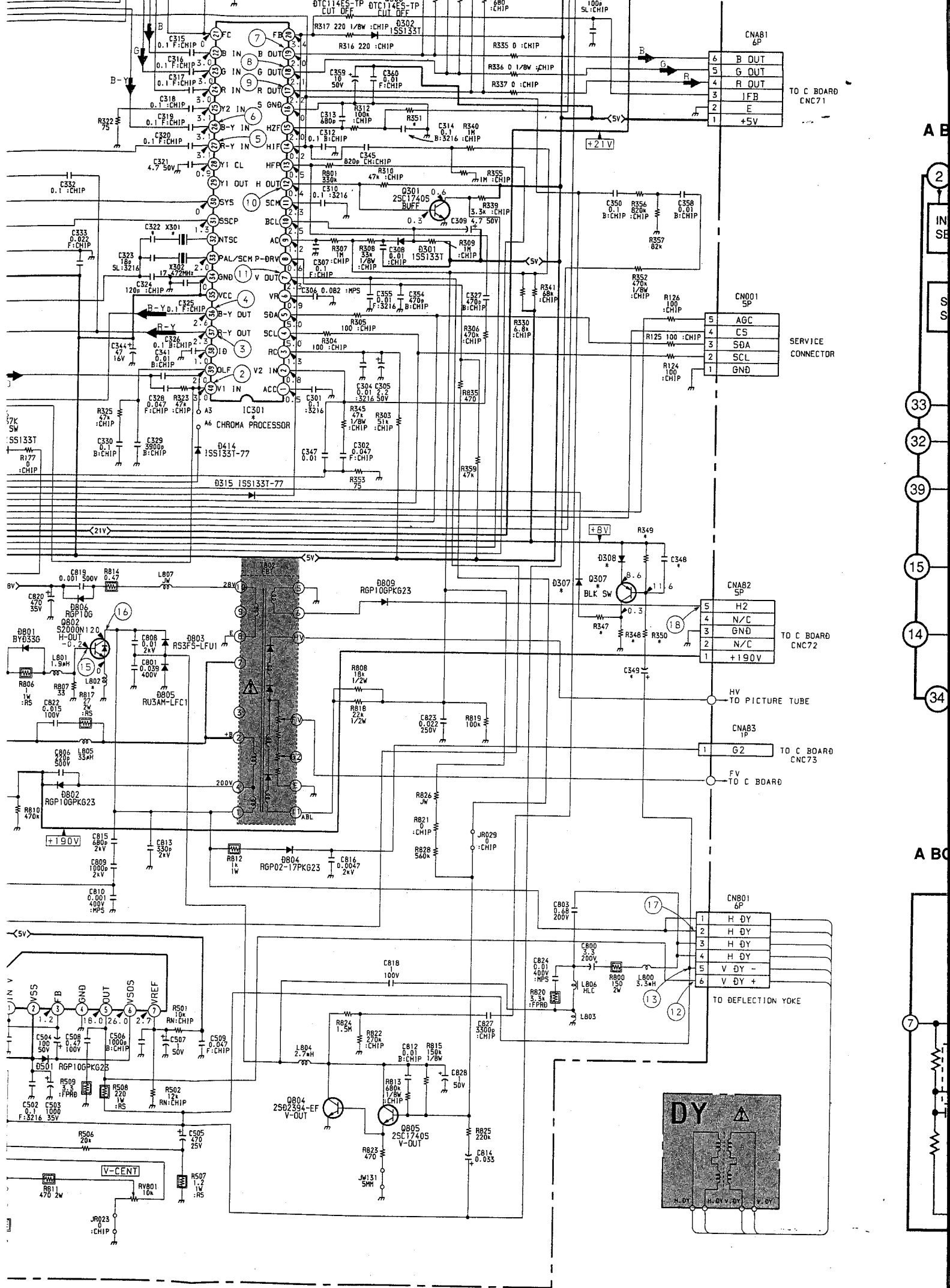
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LR5360-HL



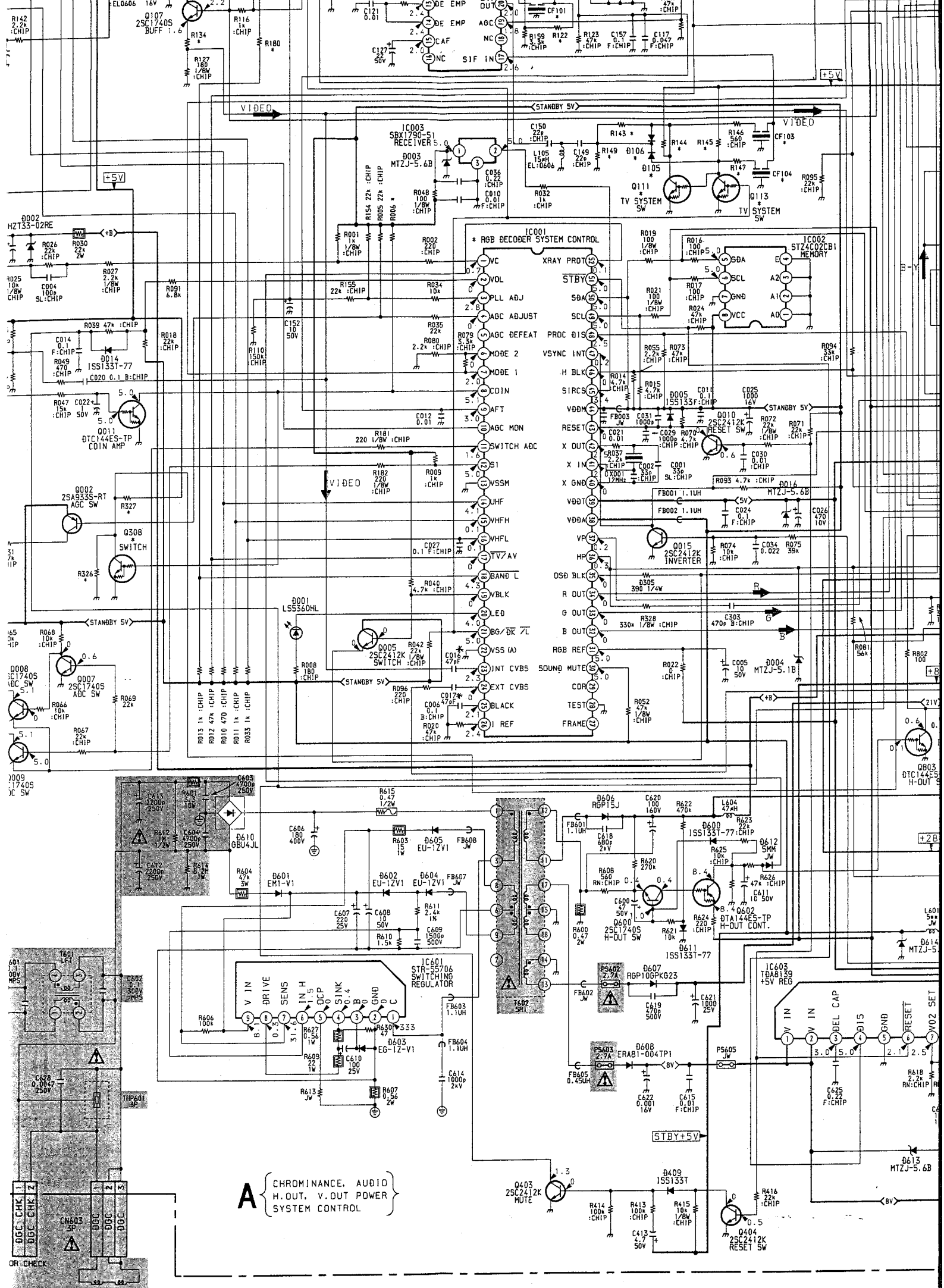








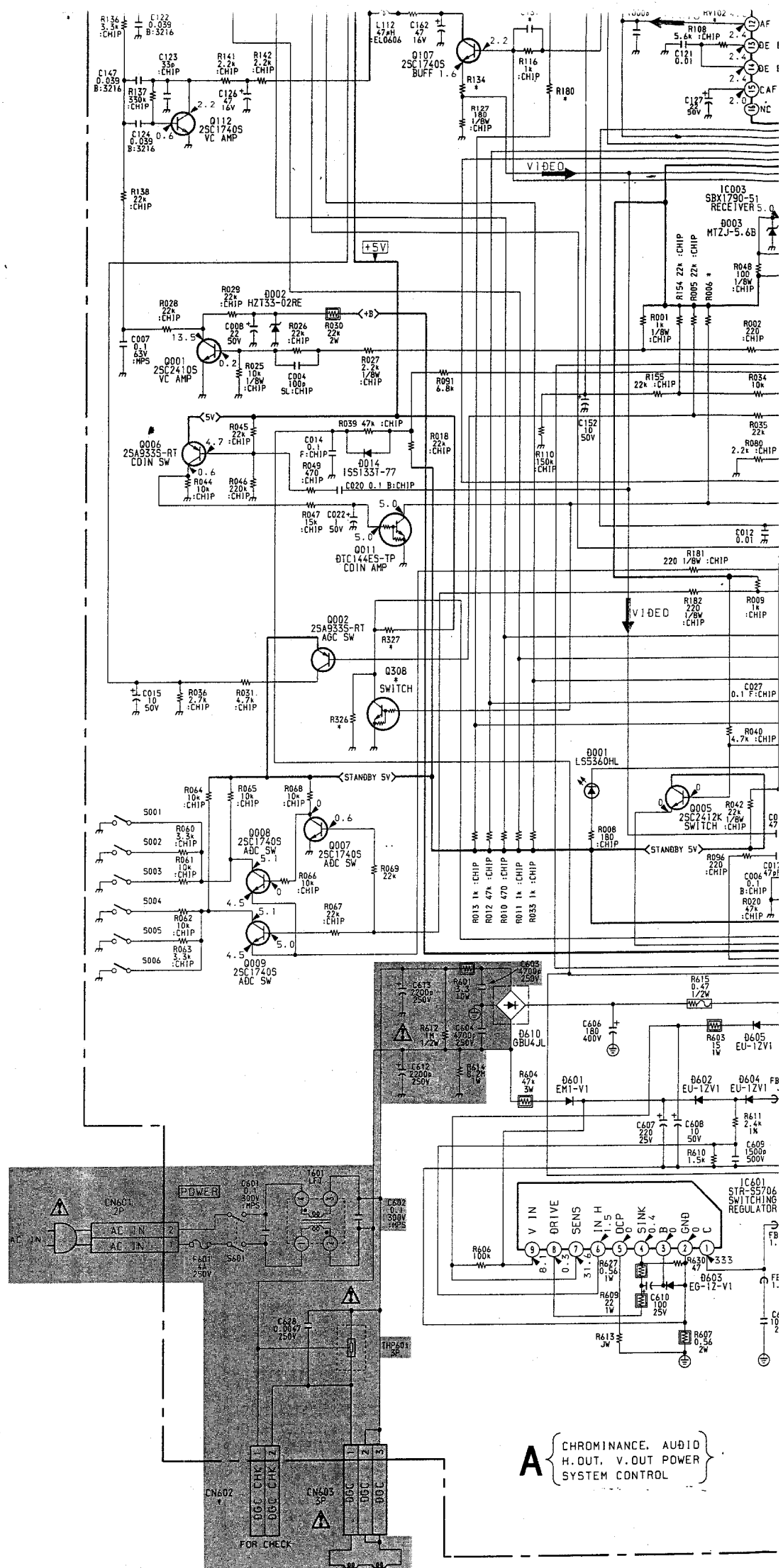




**A** { CHROMINANCE, AUDIO  
H. OUT, V. OUT POWER  
SYSTEM CONTROL

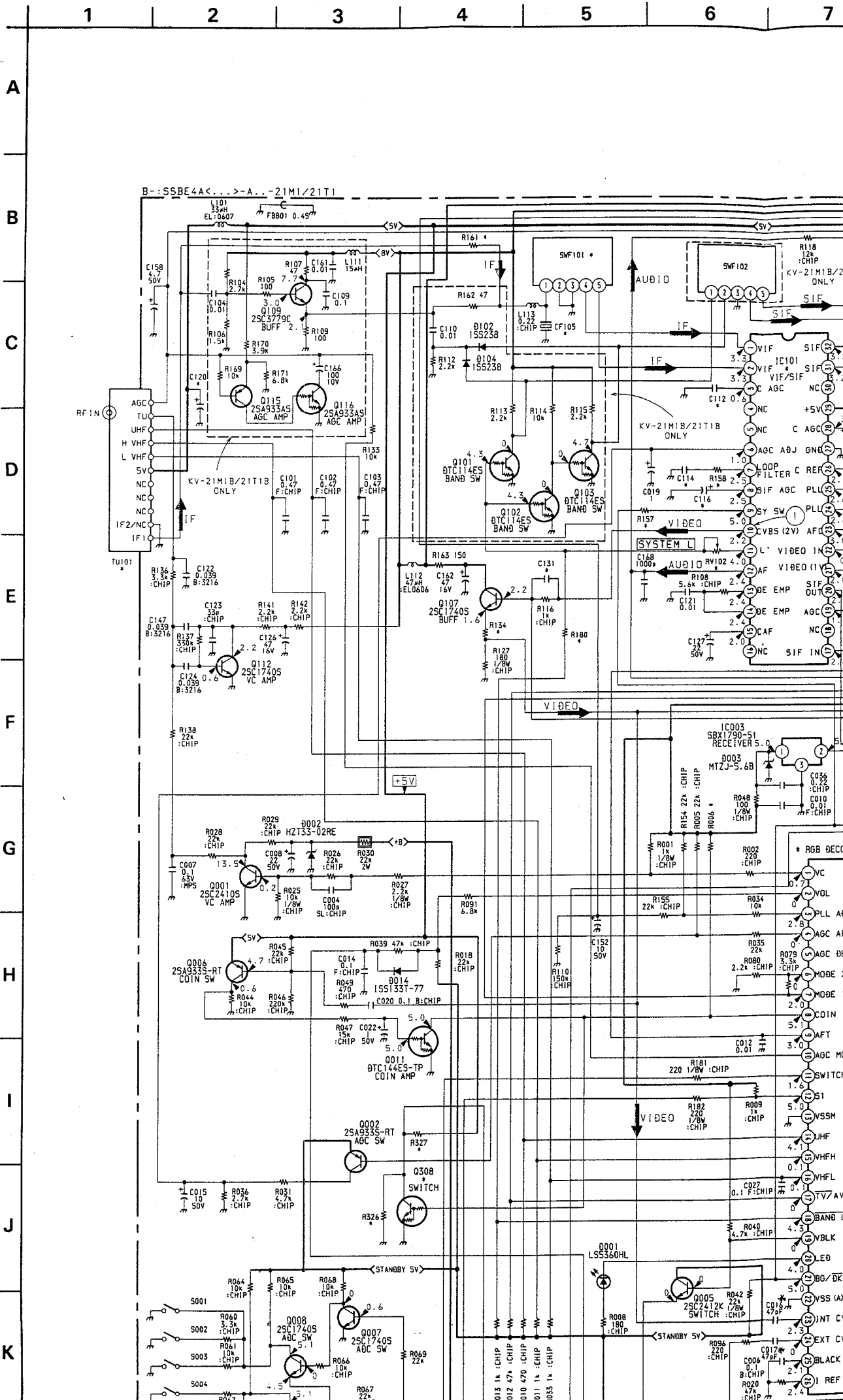


E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O

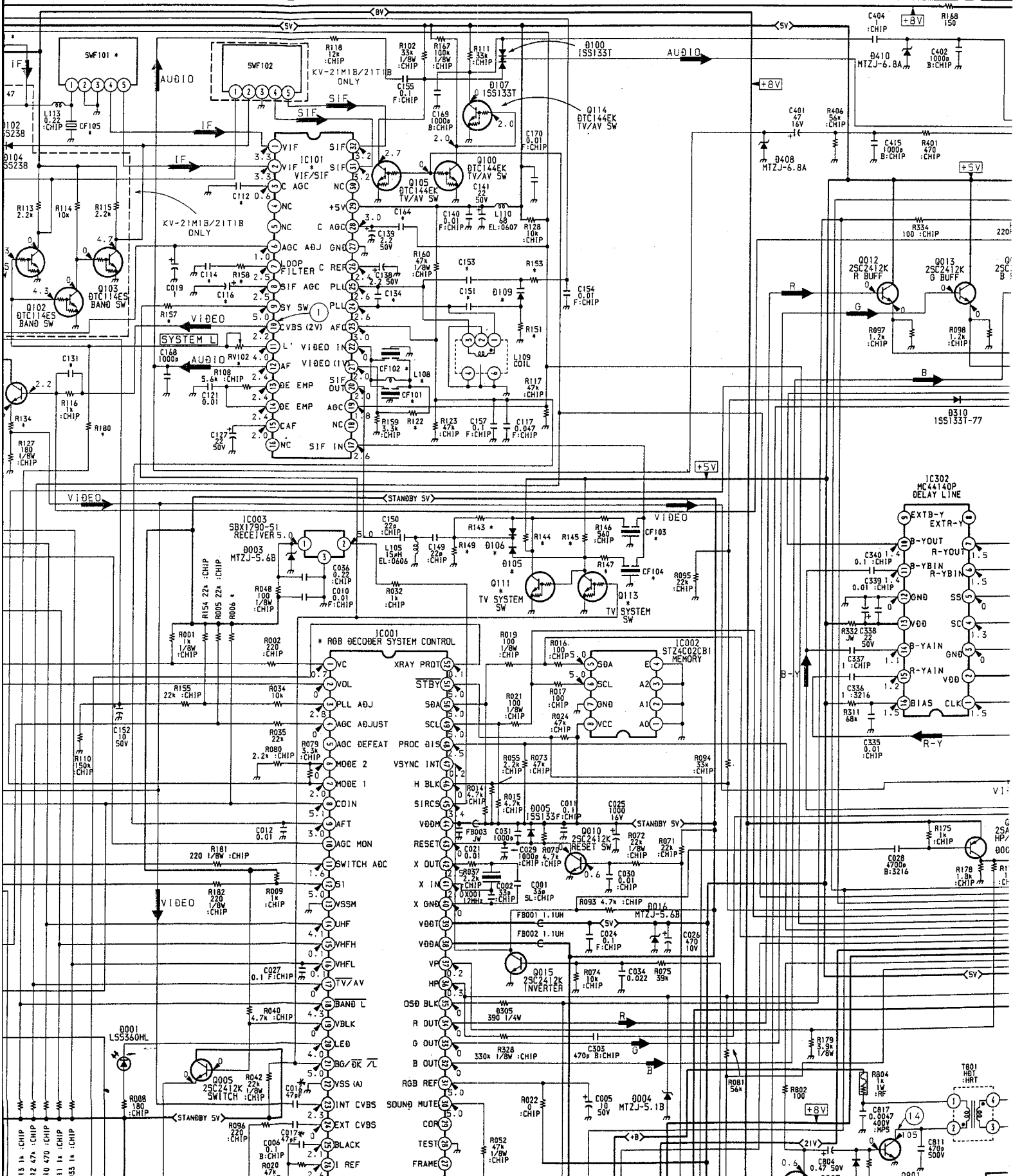


**A** { CHROMINANCE, AUDIO  
H.OUT, V.OUT POWER  
SYSTEM CONTROL }

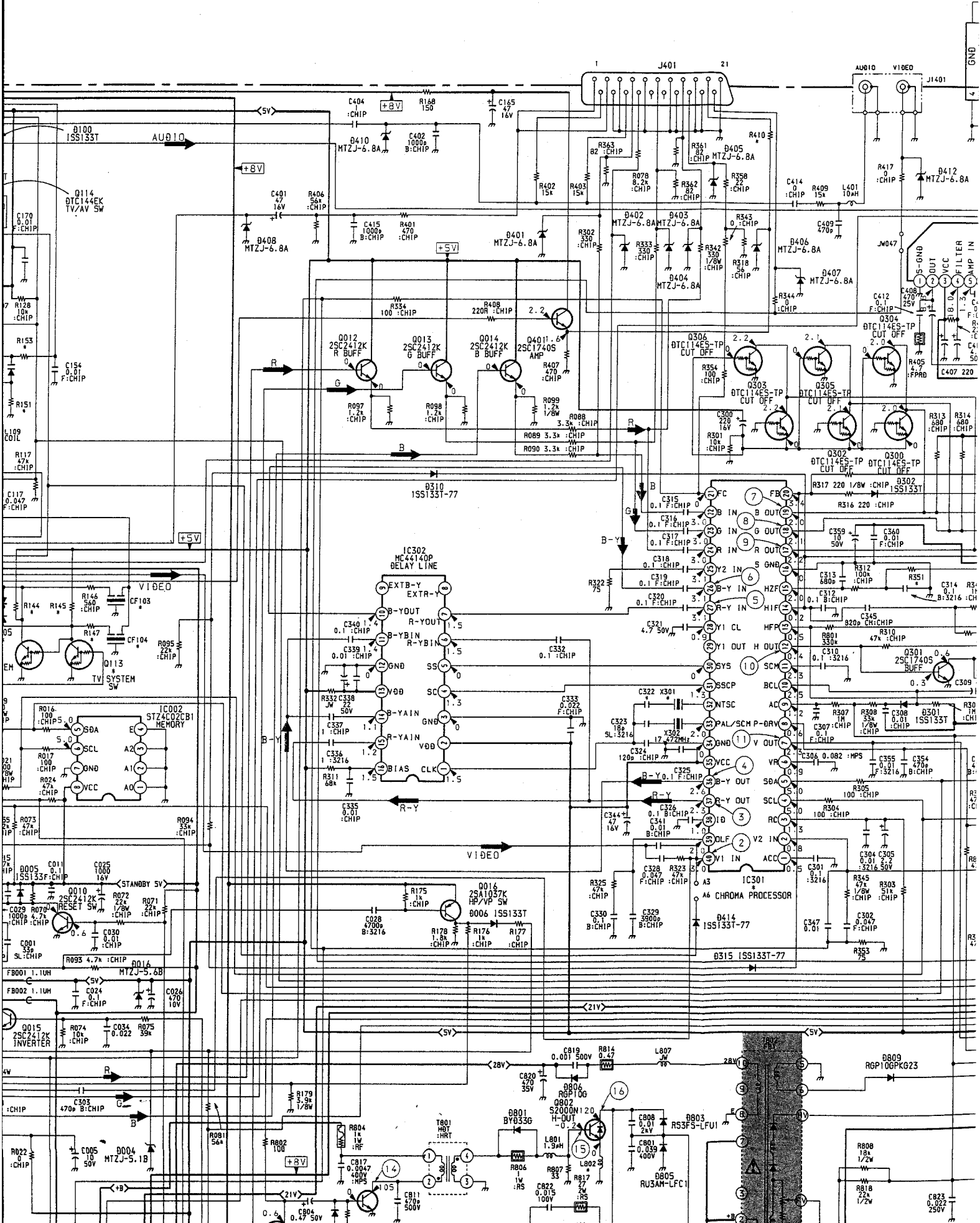




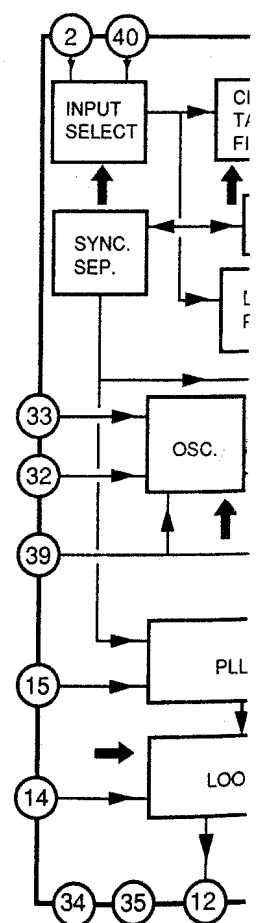






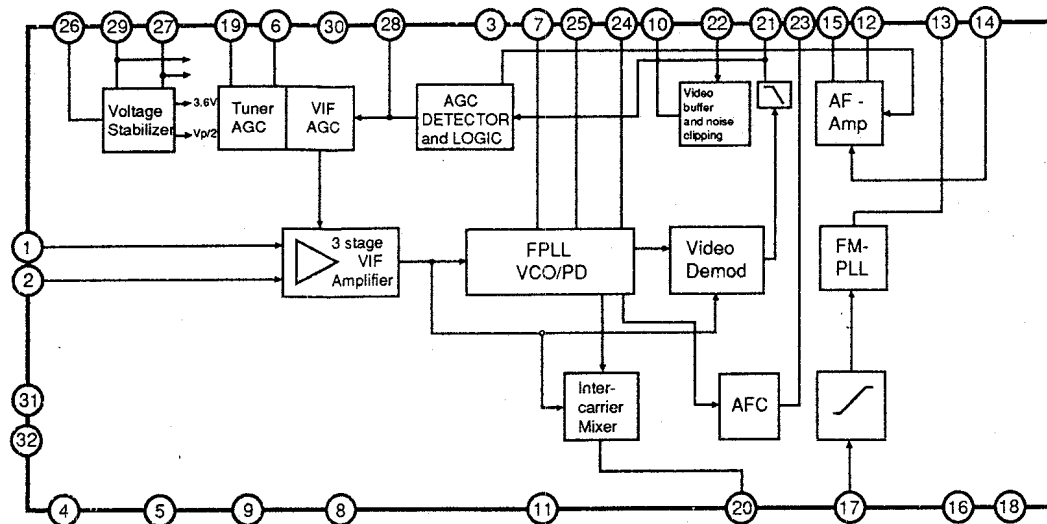




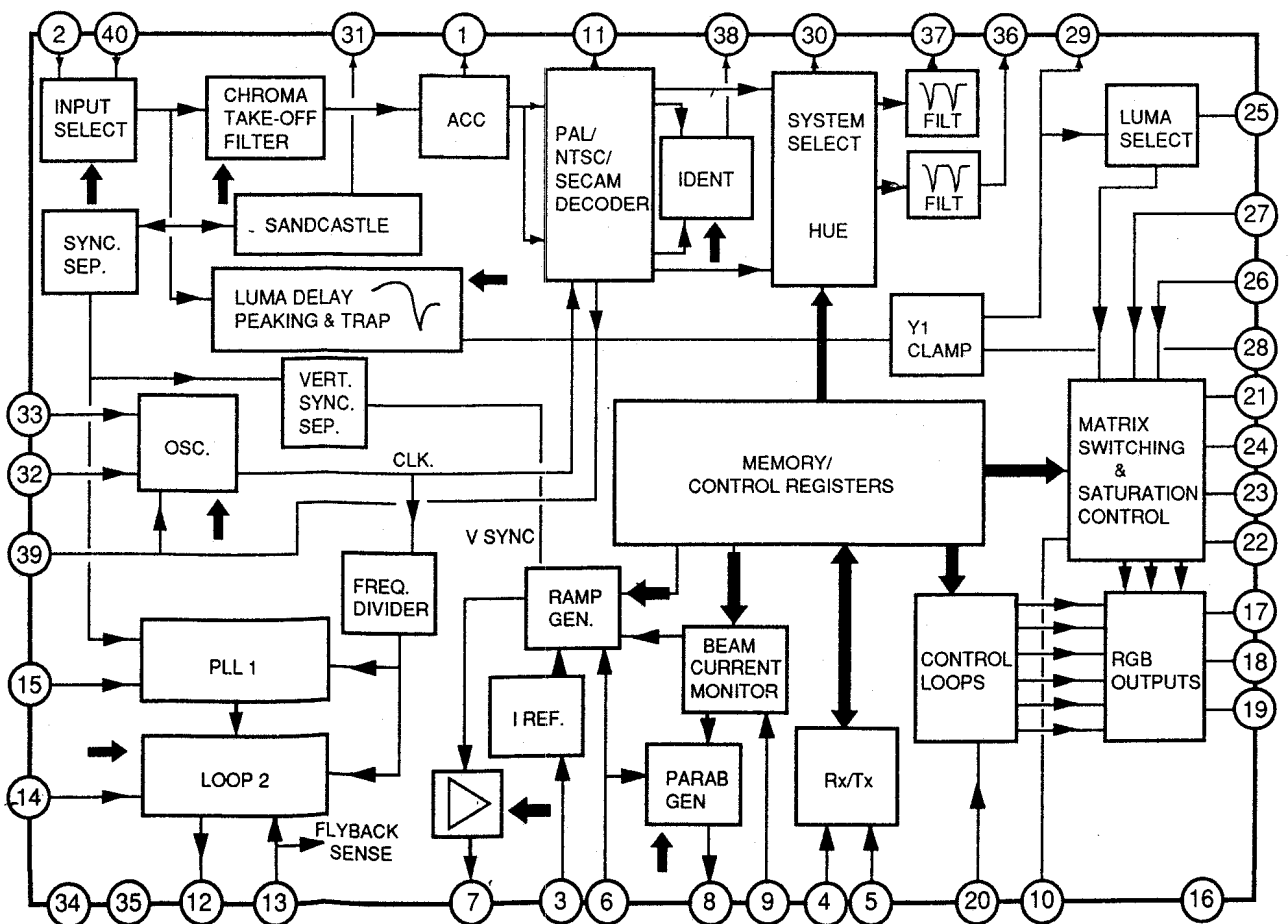




## A BOARD IC101 TDA9806/TDA9812

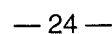


## A BOARD IC301 MC44002P/MC44007P

TO C BOARD  
CNC71SERVICE  
CONNECTORTO C BOARD  
CNC72

TUBE



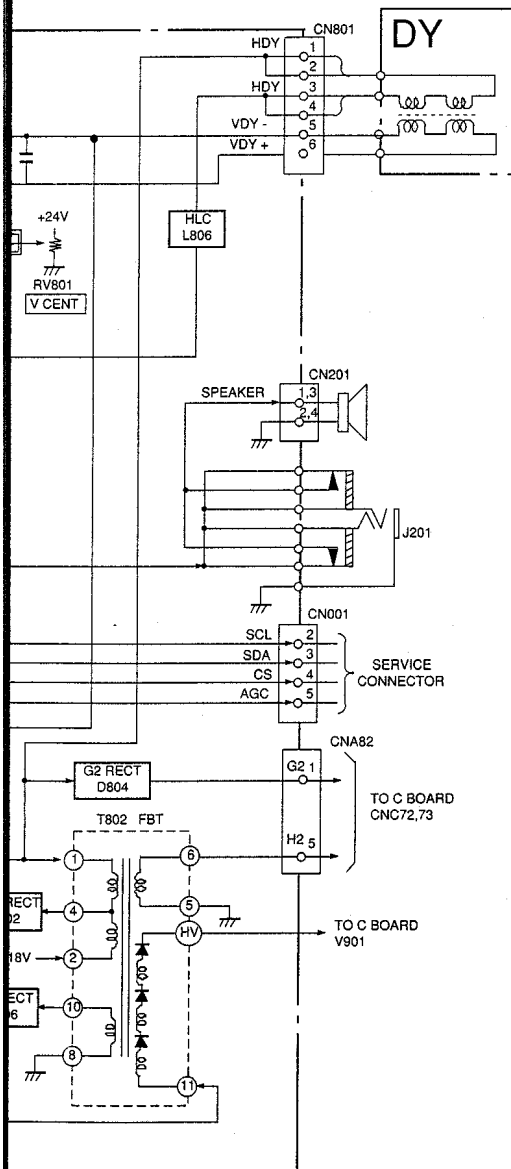
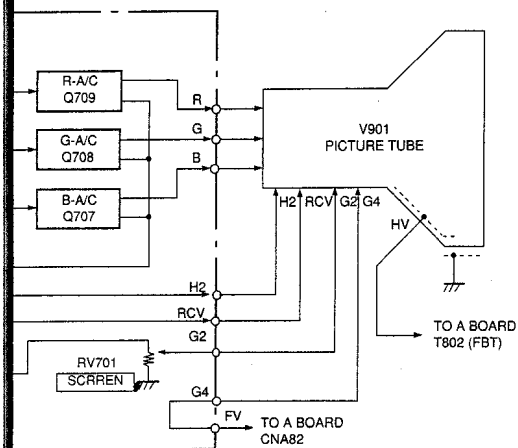








## 5-2. CIRCUIT



## 5-3. SCHEMA

## Note :

- All capacitor 50WV or less tantalums.
- All resistors : k = 1000 , M
- Indication of electrical pow

Pitch : 5 mm  
Rating electr

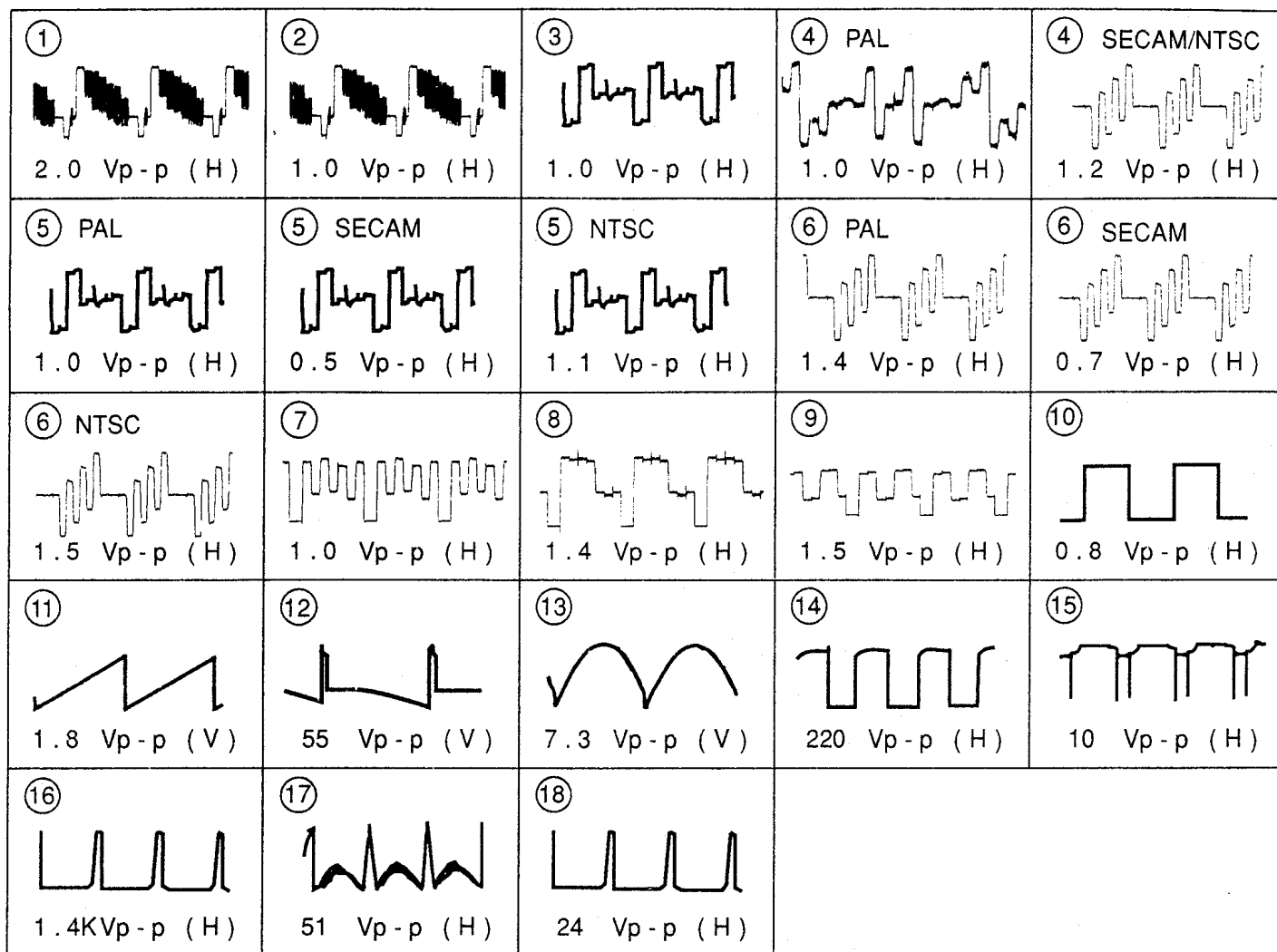
- : no
- : int
- : pa
- All variable B, unless oth
- : ea
- : ea
- : no

Note : The comp  
△ are c  
part numl

Note : Les comp  
marque  
Ne les re  
numero s



## WAVEFORMS A BOARD





## 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 the rated power supply voltage, unless otherwise noted.

The Contrast and Brightness controls should be set as follows unless otherwise noted:

- CONTRAST control ..... 80%  
(or Normal by commander)
- ☼ BRIGHTNESS control ..... 50%

Perform the adjustments in the following order:

1. Beam Landing
2. Convergence
3. Screen (G2), Drive, White Balance, Sub Colour and Sub Brightness.
4. Focus

**Note:** Test Equipment Required.

1. Colour bar/Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital multimeter
5. Oscilloscope

### Preparation:

- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

### 3-1. BEAM LANDING

Demagnetize with a degausser.

1. Input an all white raster signal from the pattern generator.  
CONTRAST } normal  
BRIGHTNESS }
2. Switch the raster signal of the pattern generator to Red.
3. Move the deflection yoke backward, and adjust with the purity control so that Red is at the centre and the Blue and Green are evenly spaced at the sides. see (Fig. 3-1 - 3-3)
4. Move the deflection yoke forward, and adjust so that the entire screen becomes Red. (Fig. 3-1)
5. Switch the raster signal to Blue and then Green to confirm the condition.
6. When the position of the deflection yoke has been determined, tighten it with the deflection yoke mounting screw.
7. When the landing at the corners is not correct, adjust by using disk magnets. (Fig. 3-4)

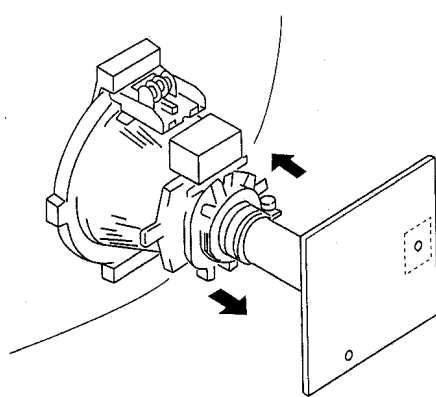


Fig. 3-1

Fig. 3-2

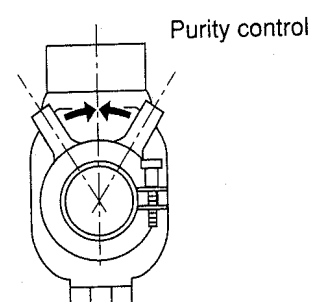


Fig. 3-3

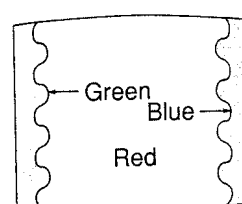
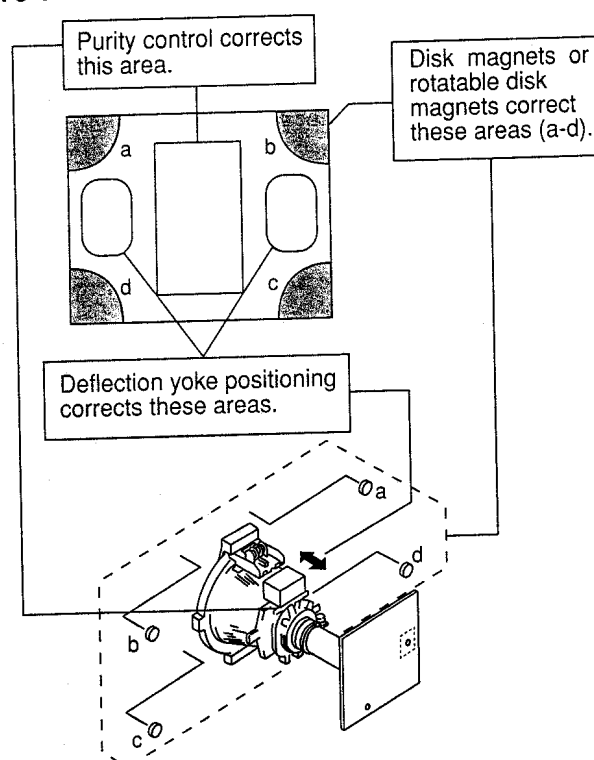


Fig. 3-4



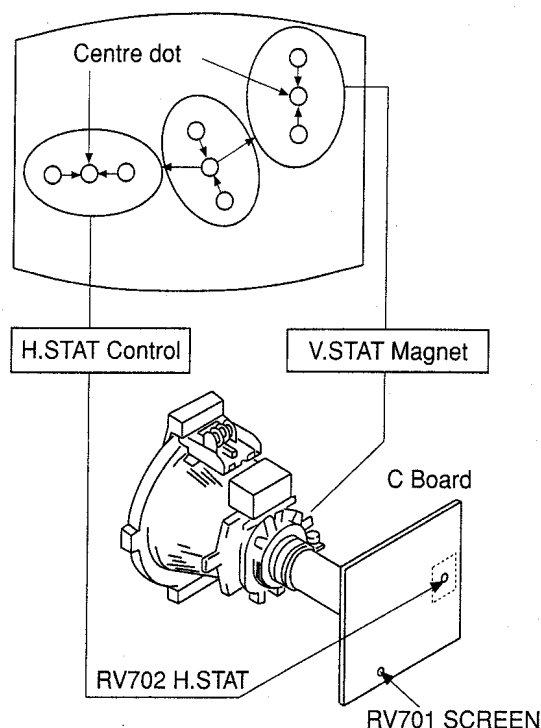


### 3-2. CONVERGENCE

#### Preparation:

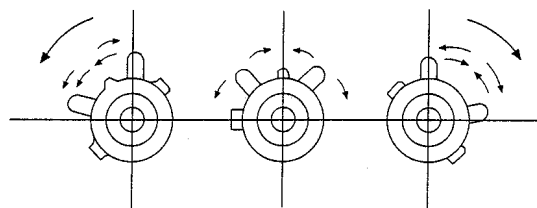
- Before starting, perform FOCUS, H.SIZE, and V.SIZE adjustments.
- Set the BRIGHTNESS control to minimum.
- Input a dot pattern from the pattern generator.

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

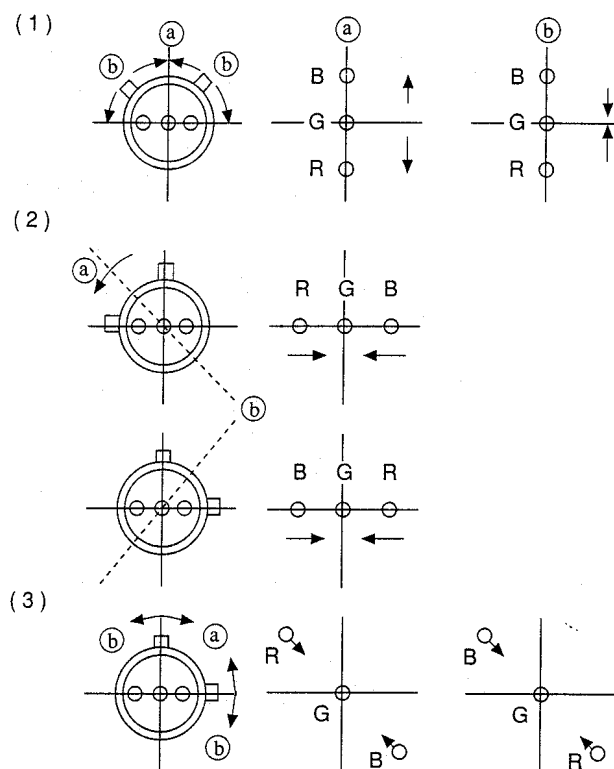


1. Adjust the H.STAT control to converge the Red, Green and Blue dots at the centre of the screen. (Horizontal movement)
2. Adjust the V.STAT magnet to converge the Red, Green and Blue dots at the centre of the screen. (Vertical movement)

- If the horizontal dots cannot coincide with variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking.  
(Adjust the convergence by tilting the V.STAT convergence or by opening or closing the V.STAT convergence.)



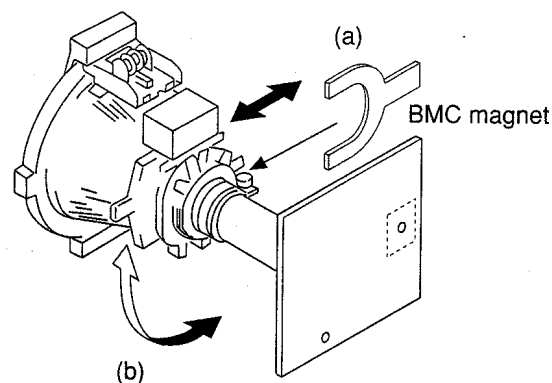
3. When the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the Red, Green and Blue dots move as shown below.



If the Red and Blue dots do not converge with the Green dots, perform the following steps.

1. Move the BMC magnet (a) to correct for insufficient H.static convergence.
2. Rotate the BMC magnet (b) to correct for insufficient V.static convergence.

In either case, repeat the Beam Landing Adjustment.

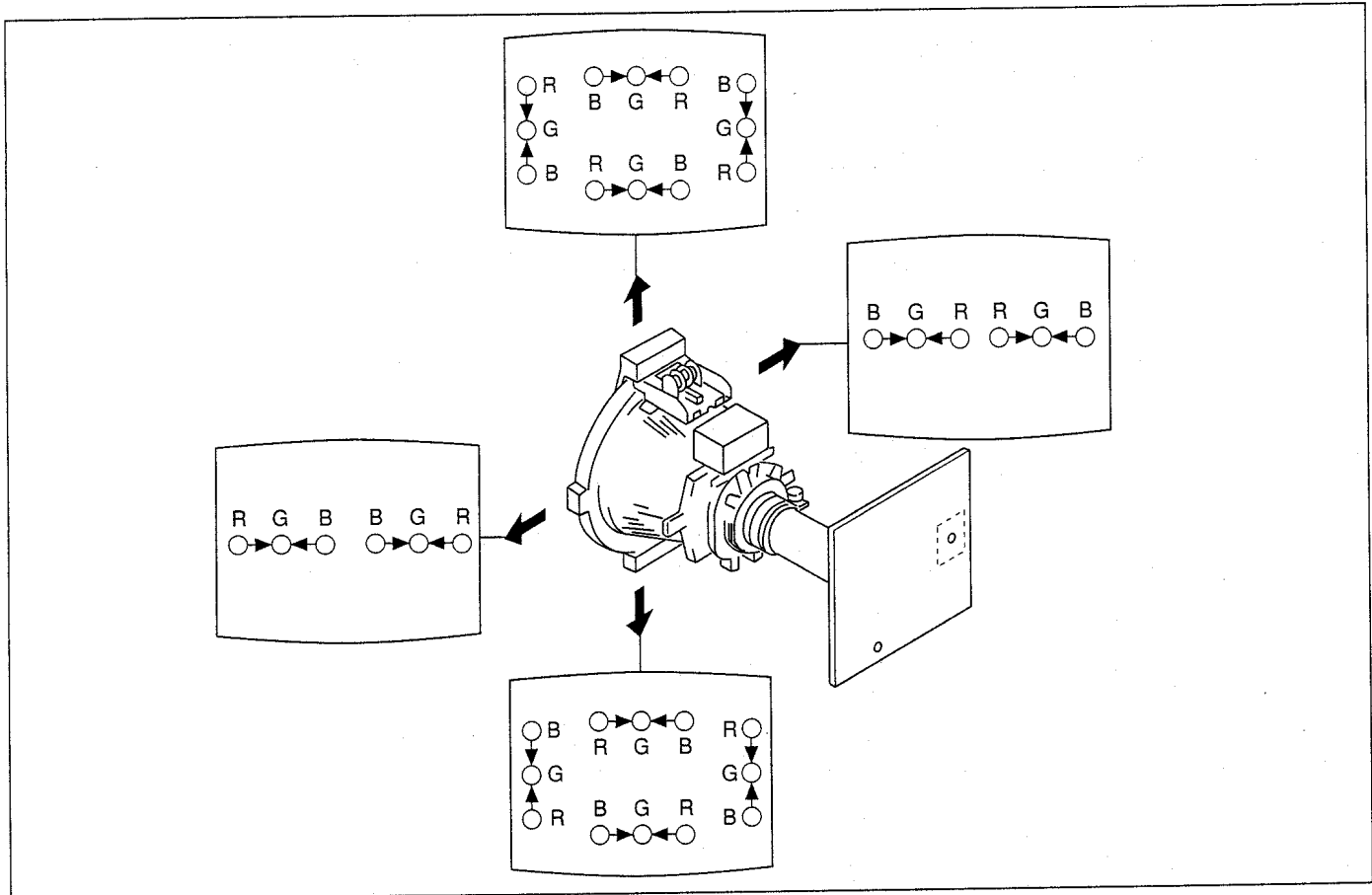




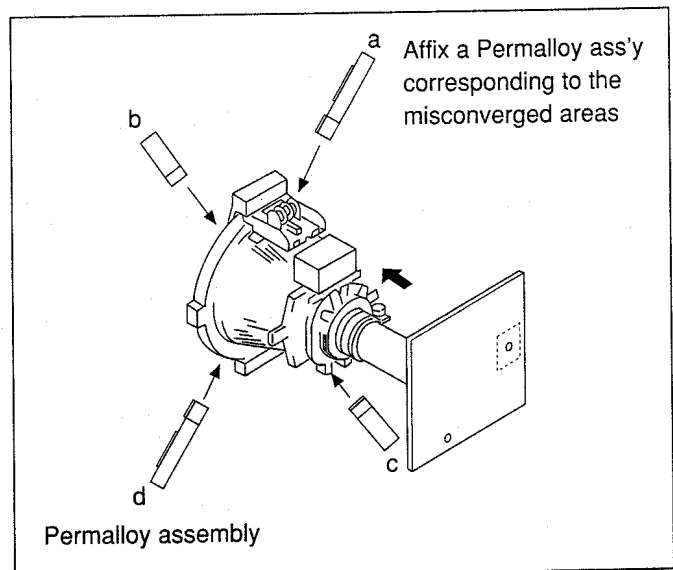
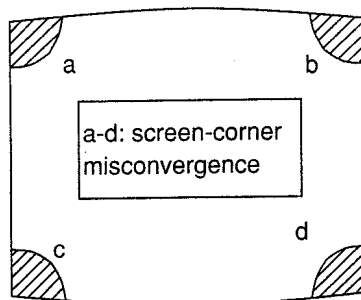
## (2) Dynamic Convergence Adjustment

### Preparation:

- Before starting, perform the Horizontal and Vertical static convergence adjustment.
1. Slightly loosen the deflection yoke screw.
  2. Remove the deflection yoke spacers.
  3. Move the deflection yoke for best convergence as shown below.
  4. Tighten the deflection yoke screw.
  5. Install the deflection yoke spacers.

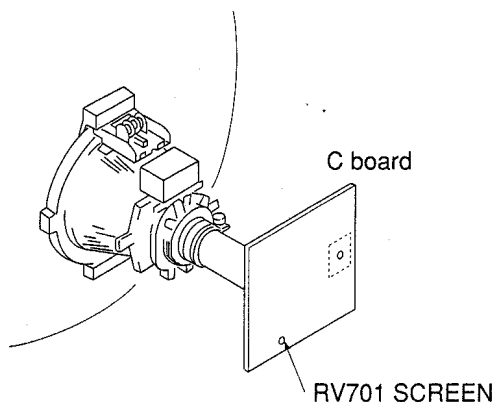


## (3) Screen-corner Convergence.





### 3-3. SCREEN(G2), DRIVE, WHITE BALANCE, SUB COLOUR and SUB BRIGHTNESS.

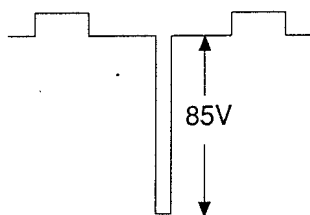


#### Screen (G2) setting

1. Input a 0 IRE (Black Level) signal from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 38.
3. Adjust RV701 until the Down arrow is displayed.
4. Adjust RV701 until the Down arrow just disappears.
5. Press the TV Button on the Remote Commander to store the data.

#### Drive Level

1. Input a Video signal containing a small area of 100% white on a black background.
2. Connect an oscilloscope to Pin (10) of J701 (R OUT) on the C Board.
3. Set the Picture to maximum using "Test""Test" and 01.
4. Enter into the Service mode (Adjust Menu).
5. Using the Blue and Green buttons select "RED HWB".
6. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform has an amplitude of 85V.

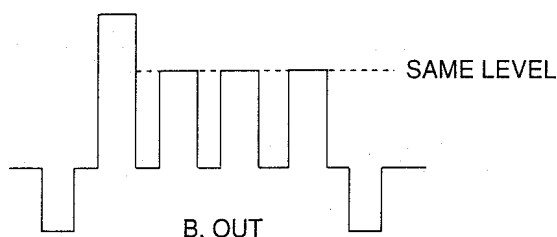


#### White Balance Adjustment

1. Input an all white pattern from the pattern generator.
2. Adjust the Colour and Brightness controls to the standard level.
3. Enter into the Service Mode.
4. Adjust the Green HWB and Blue HWB so that the White Balance becomes optimum.

#### Sub Colour Adjustment

1. Input a PAL colour bar pattern from the pattern generator.
2. Connect an oscilloscope to Pin (8) of J701 (B OUT) on the C Board.
3. Enter into the Service Mode "Test""Test" and 22.
4. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform becomes as follows :



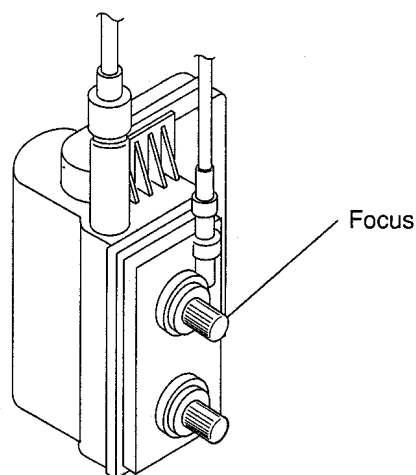
**Note :** If the TV is able to receive PAL and SECAM transmissions, repeat the above procedure using a Secam colour bar signal.

#### Sub Brightness Adjustment

1. Input a Philips pattern from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 23.
3. Using the Red and Yellow buttons on the Remote Commander adjust until the 0 IRE of the grey scale and the cut off are only slightly visible on the screen.

### 3-4. FOCUS

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control on the flyback transformer for the best focus at the centre of the screen.  
Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.





## SECTION 4

### CIRCUIT ADJUSTMENTS

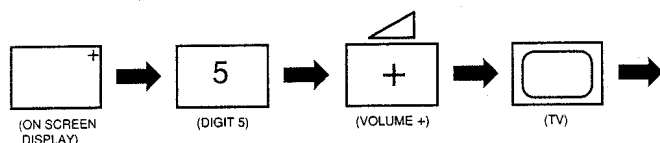
#### 4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied Remote Control Commander RM-836.

Range of adjustments available from the on screen menu system.

##### HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power of the set and enter into stand-by mode.
2. Press the following sequence of buttons on the Remote Control Commander.



"TT--" will appear in the top right corner of the screen. Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.

Adjust.			
▶ 16:9	ON		
System			
Text			
AGC	33	00-63	
PLL	32	00-63	
V1	.00-01	SONY	BE-4A

Software version

Adjustment	Set	Range
16:9 Off	Select	ON/OFF
System	Select	BG-L, BG-DK UK, Eire, BG
Text	Select	EAST/WEST
AGC	Adj.	00 - 63
PLL	Adj.	00 - 63
B&W Delay	Adj.	00 - 63
Ver Size	Adj.	00 - 63
Ver, Breath	00	00 - 63
Par, Ampl	00	00 - 63
Par, Tilt	32	00 - 63
V, Linear	Adj.	00 - 63
Corn, corr	00	00 - 63
V, Cen or EW	Adj.	00 - 63
V, Position	42	00 - 63
H, Centre	Adj.	00 - 63
Blue HWB	Adj.	00 - 63
Green HWB	Adj.	00 - 63
Red HWB	Adj.	00 - 63

4. Press the Blue (Next) or Green (previous) buttons to select the adjustment item from the table.
5. Press the Yellow (+) or Red (-) buttons to change the data as required.
6. Turn off the power to quit the service mode when adjustments are completed.



## 4-2. TEST MODE 2:

TT -- Mode is available by pressing the Test button twice, O.S.D 'TT --' appears. The functions described below are available by pressing two digits. To release the 'TT --' mode, press 0 twice, press 'TEST', press 'TV' or switch the TV into Stand-by mode.

00	Switch 'TT--' Mode off.
01	Set picture level to maximum.
02	Set picture level to minimum.
03	Set volume to 35%.
04	Set volume to 50%.
05	Set volume to 65%.
06	Set volume to 80%.
07	Ageing condition (picture max., brightness max.).
08	Shipping condition (Analog values are RESET to factory setting, Prog 1 is selected, TT--mode switched off, Vol = 35%).
09	Dummy.
10	No function.
11	Dummy
12	Text Picture Level Offset (Enable/Disable)
13	Select Odd / Even field for Non-interlaced teletext.
14	Select Interlaced / Non-interlaced teletext display.
15	Read factory setting from ROM to NVM - Reads Volume, Brightness, Picture, Hue, Sharpness and Colour values from ROM to the actual used values (Last Power Memory).
16	No function
17	Enable / Disable Sharpness Operation.
18	Enable / Disable Teletext Operation.
19	Enable / Disable NTSC Operation.
20	No function.
21	Sub Picture.
22	Sub Colour (Pal / Secam Different Stores)
23	Sub Brightness.
24	Destination System BG/L.

25	Destination Systems BG/L.
26	Destination Systems I.
27	Destination System I/I'.
28	Destination BG only.
29	Dummy.
30	No function.
31-32	Dummy.
33	Auto AGC Adjust.
34	Auto PLL Adjust.
35-37	Dummy.
38	Enter G2 adjustment mode.
39	Dummy.
40	No function.
41	Re-initialise NVM.
42	Dummy.
43	Re-initialise Geometry settings.
44-47	Dummy
48	Set NVM testbyte to 44h in NVM.
49	Erase NVM testbyte
50	No function.

**Note :** For Test Modes 41 - 50, it is necessary to ensure that the TV is set to Prog 59.

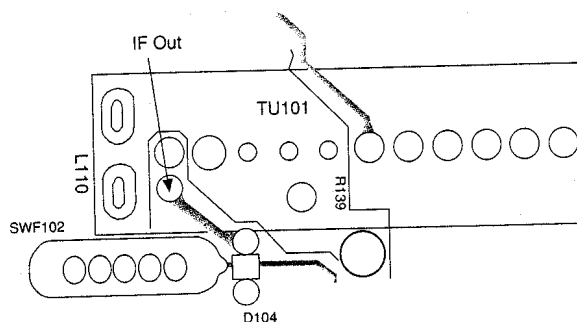


**IF ADJUSTMENT (AUTOMATIC)**

1. Input a 38.9 MHz 100dBμ CW signal at the IF Out injection point.
2. Enter into service mode and press 34.
3. Connect a digital voltmeter to IC101 pin (23).
4. Check AFT 2.5V  $\pm$ 0.3V dc.
5. Press '00' on the Remote Commander.

**SYSTEM L ADJUSTMENT ( French Models)**

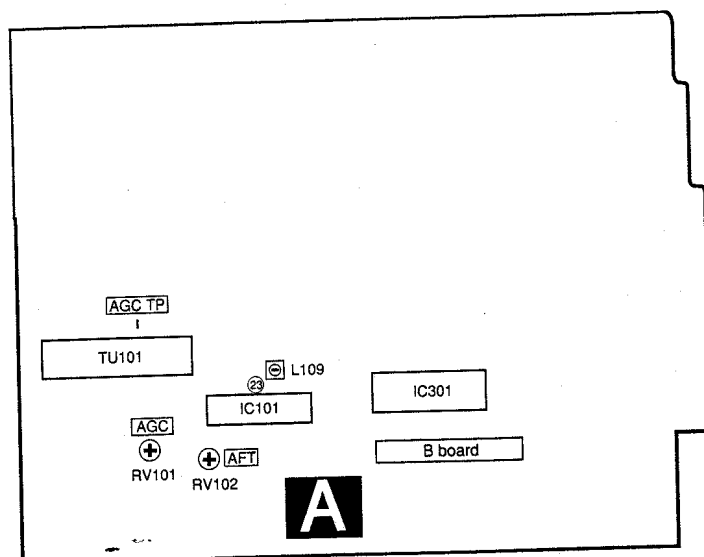
1. Input a 33.9MHz 100dBμ CW signal at the IF Out injection point.
2. From the On Screen Menu set System to L band 1.
3. Connect a digital voltmeter to IC101 pin (23).
4. Adjust RV102 AFT for 2.5V  $\pm$ 0.3V dc.



- A Board Print Side -

**AGC ADJUSTMENT**

1. Receive an off-air signal.
2. Enter into the Service adjust menu and select AGC.
3. Adjust the data using the Red and Yellow buttons on the Remote Commander so that there is no snow or cross - modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.



- A Board Component Side -

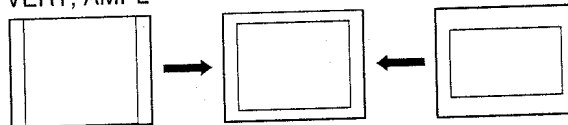
**DEFLECTION SYSTEM ADJUSTMENT**

1. Enter into the service mode.
2. Using the Blue or Green buttons select the Adjust item.
3. Press the Yellow button to enter the adjustment submenu.
4. Select and adjust each item in order to obtain the optimum image.

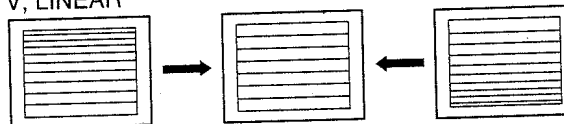
See Note on page 22

Adjustment	Set	Range
VERT, AMPL	Adj.	00 - 63
VER, BREATH	00	00 - 63
PAR, AMPL	00	00 - 63
PAR, TILT	32	00 - 63
V, LINEAR	Adj.	00 - 63
CORN, CORR	Adj.	00 - 63
V, CENTRE	Adj.	00 - 63
V, POSITION	42	00 - 63
H, CENTRE	Adj.	00 - 63

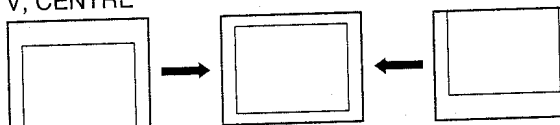
VERT, AMPL



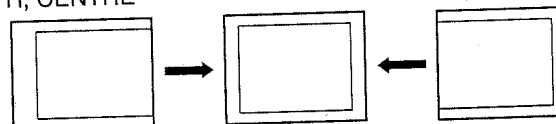
V, LINEAR



V, CENTRE



H, CENTRE



Fit the link as required to obtain the correct horizontal picture size.



### 4-3. BE-4A SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-4A chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to I<sup>2</sup>C. In the event of one of these situations arising the software will first try to release the Bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each relevant device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED by a Series of flashes which must be counted (See Table 1), Non fatal errors are reported with this method.

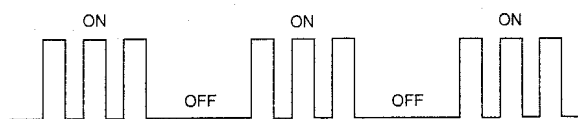
If a fatal error is found, the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue to operate.

Table 1

No of Flashes	Meaning
2	IC301 not acknowledging I <sup>2</sup> C transmission, NVM OK.
3	IC301 FAULT (Not OK) - flags
4	IC301 - No H Flyback
5	IC301 - Stack Overflow.
6	Overvoltage / Overcurrent Protection (Pin 52) high.
7	IC002 not acknowledging I <sup>2</sup> C transmission, IC301 OK.
8	IC002 and IC301 - No I <sup>2</sup> C acknowledgment.
9	General I <sup>2</sup> C Error (SDA or SCL being held low) (IC301, IC001, IC002, CN001)

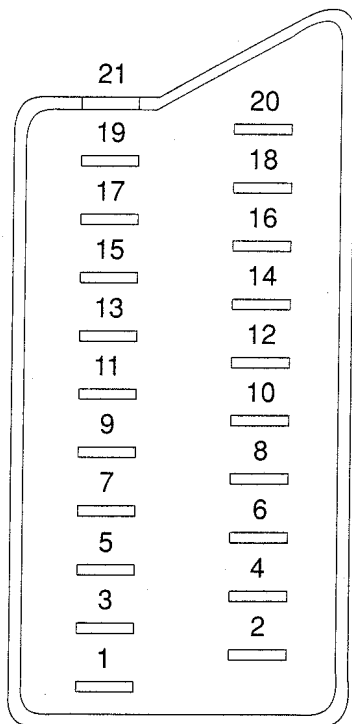
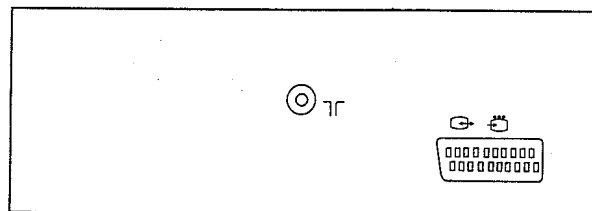
Flash Timing Example : e.g. error number 3

Stby LED



**Note :** Deflection System Adjustments should not be carried out whilst using an NTSC (60Hz) signal, or if the signal is unlocked.





Pin No.	1	2	4	Signal	Signal Level
1	○	○	○	Audio output B (Right)	Standard level : 0.5V rms Output impedance : Less than 1k ohms*
2	○	○	○	Audio input B (Right)	Standard level : 0.5V rms Output impedance : More than 10k ohms*
3	○	○	○	Audio output A (Left)	Standard level : 0.5V rms Output impedance : Less than 1k ohm*
4	○	○	○	Ground (Audio)	
5	○	○	○	Ground (Blue)	
6	○	○	○	Audio input A (Left)	Standard level : 0.5V rms Output impedance : Less than 10k ohm*
7	○	●	●	Blue input	0.7 ± 3dB, 75 ohms, positive
8	○	○	○	Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More than 10k ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (Green)	
10	○	○	○	Open	
11	○	●	●	Green	
12	○	○	○	Open	
13	○	○	○	Ground (Red)	
14	○	○	○	Ground (Blanking)	
15	○	—	—	Red input	0.7 ± 3dB, 75 ohms, positive
	—	○	○	(S signal) croma input	0.7 ± 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (Video output)	
18	○	○	○	Ground (Video input)	
19	○	○	○	Video output	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
20	○	—	—	Video input	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
	—	○	○	Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected      ● Not Connected (Open)      \* at 20Hz - 20kHz

