

# TEAC®

# CT-M201

## Color Television

### SERVICE MANUAL

Thanks for buying a TEAC. Read this manual carefully to get the best performance from this color television.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.  
Model number \_\_\_\_\_  
Serial number \_\_\_\_\_

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

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# SPECIFICATIONS

Power Consumption.....	80W
Receiving TV System.....	CCIR Standard
Tuning.....	Voltage Synthesizer
Audio Output .....	MAX. 4W
Antenna Input Impedance .....	75 ohm IEC Type (300 ohm using balun supplied)
Picture Tube .....	A48KCS12XX 03S7BE
Speaker.....	C112PX-716K14
Dimension .....	492(W) x 462(D) x 458(H) mm
Weight .....	18.4 Kg

COLOUR RECEIVING SYSTEM		PAL-B/G
Intermediate Frequency	Picture	38.9 MHz
	Sound	33.4 MHz
	Colour	34.47MHz
Receiving Channel	VHF Low	2-4 CH, S <sub>1</sub>
	VHF High	5-12 CH, S <sub>2</sub> -S <sub>25</sub>
	UHF	21-69 CH
Power Source		240V/50Hz

## SAFETY PRECAUTIONS

**WARNING:** BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTIONS", "SAFETY INSTRUCTIONS" AND "PRODUCT SAFETY NOTICE" DESCRIBED BELOW.

### X-RAY RADIATION PRECAUTIONS

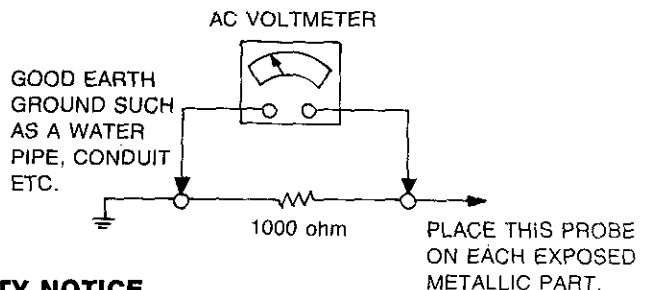
1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is  $24 \pm 1.5$  kV at High beam current (maximum brightness) under specified power source. The high voltage must not, under any circumstances, exceed 27.5 KV. Each time a receiver requires servicing, the high voltage should be checked. It is recommended the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
3. Some parts in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

### SAFETY INSTRUCTIONS

1. Potentials as high as 25,000—27,000 volts is present when this receiver is operating. Operation of the receiver outside the cabinet or with the back cover removed involves a shock hazard from the receiver.
  - (1) Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment.
  - (2) Always discharge the picture tube anode to the CHASSIS GROUND to reduce the shock hazard before removing the anode cap.
  - (3) Perfectly discharge the high potential of the picture tube before handling.  
(WARNING: Risk of implosion. Handle with care.)
2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the chassis parts list only.
3. When replacing parts or circuit boards, wind the lead wires around terminals before soldering.
4. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor 10 mm. away from circuit board.
5. Keep wires away from high voltage or high temperature components.
6. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts

of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts, etc., to be sure the set is safe to operate without danger of electrical shock. Since this TV has AVC (Automatic Voltage Control) circuit, it may be operated nonadjustably within the voltage-area indicated in the label attached at back cover. (Do not use a line isolation transformer during this check.) Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner.

Connect a 1000 ohm resistor between a known good earth ground, (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1000 ohm resistor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 1 volt RMS. This corresponds to 1 mA. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



### PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed without being noticed by a visual inspection and the X-RAY RADIATION protection afforded by some of them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified by  $\Delta$  marks on the schematic diagram and the replacement parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create X-RAY RADIATION.

# SERVICING PRECAUTIONS

**CAUTION:** Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the **SAFETY PRECAUTIONS** on page 3 of this publication. **NOTE:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. *Remember: Safety First.*

## General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
  - a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
  - b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
  - c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.  
**CAUTION:** A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
  - d. Discharging the picture tube anode.
2. Test high voltage *only* by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc.) equipped with a suitable high voltage probe. *Do not test high voltage by "drawing an arc".*
3. Discharge the picture tube anode *only* by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do *not* spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts *only* by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator: 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength).  
**CAUTION:** *This is a flammable mixture.*  
Unless specified otherwise in this service manual, lubrication of contacts is not required.
6. Do *not* defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do *not* apply AC power to this receiver and/or any of its electrical assemblies unless *all* solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground *before* connecting the test receiver positive lead  
Always remove the test receiver ground lead *last*.
9. Use *with this receiver only* the test fixtures specified in this service manual.  
**CAUTION:** Do *not* connect the test fixture ground strap to any heatsink in this receiver.

## Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices*. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a *grounded-tip* soldering iron to solder or unsolder ES devices.
4. Use only an *anti-static* type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do *not* use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do *not* remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.  
**CAUTION:** Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

## General Soldering Guidelines

1. Use a *grounded-tip*, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range of 500°F to 600°F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a small wire-bristle (0.5 inch, or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
  - a. Allow the soldering iron tip to reach normal temperature (500°F to 600°F).
  - b. Heat the component lead until the solder melts.
  - c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.**CAUTION:** Work quickly to avoid overheating the circuit board printed foil.
6. Use the following soldering technique.
  - a. Allow the soldering iron tip to reach a normal temperature (500°F to 600°F).
  - b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.

- c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.

**CAUTION:** Work quickly to avoid overheating the circuit board printed foil.

- d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

### IC Removal/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

#### Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

#### Replacement

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

### "Small-Signal" Discrete Transistor Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

### Power Output Transistor Devices Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heatsink mounting screw (if so equipped).
3. Carefully remove the transistor and heat sink from the circuit board.
4. Insert new transistor in circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heatsink.

### Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicularly to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and, if necessary, apply additional solder.

### Fuse and Conventional Resistor Removal/Replacement

1. Clip each fuse or resistor lead at top of circuit board hollow stake.
2. Securely crimp leads of replacement component around notch at stake top.
3. Solder the connections.

**CAUTION:** Maintain original spacing between the replaced component and adjacent components and the circuit board, to prevent excessive component temperatures.

### Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board, causing the foil to separate from, or "lift-off", the board. The following guidelines and procedures should be followed whenever this condition is encountered.

#### At IC Connections

To repair defective copper pattern at IC connections, use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary.)
2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the cut-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area, and clip off any excess jumper wire.

#### At Other Connections

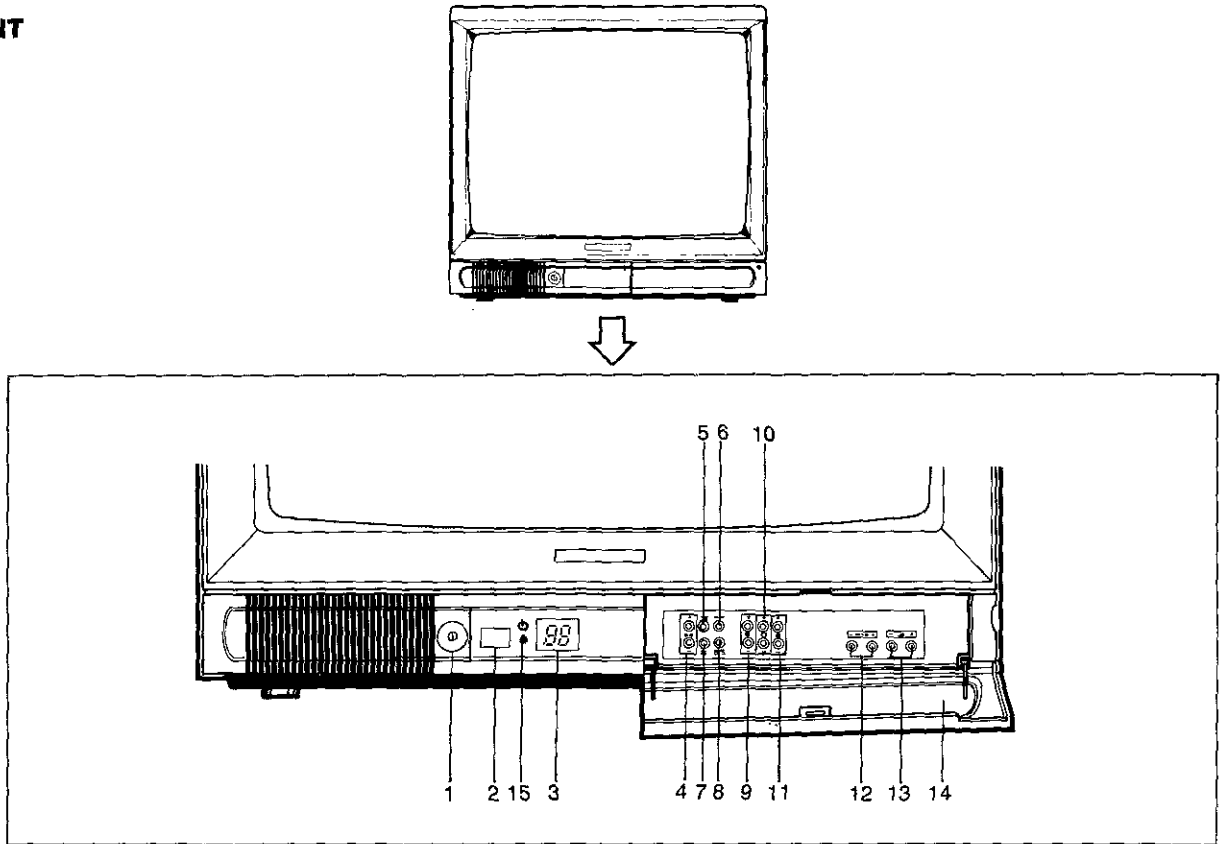
Use the following technique to repair defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.

**CAUTION:** Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

# CONTROLS LOCATION

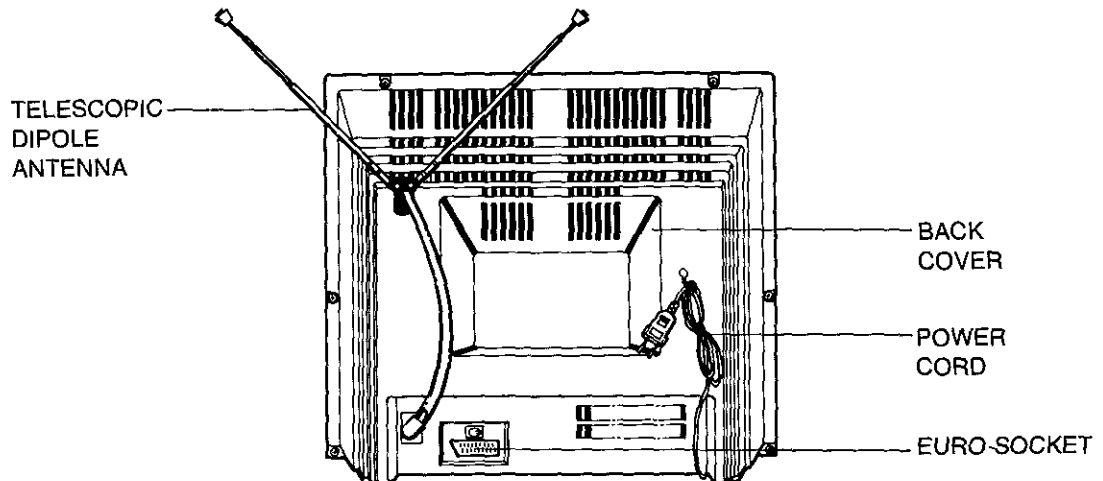
**FRONT**



1. POWER ON/OFF BUTTON
2. REMOTE CONTROL SENSOR
3. PROGRAM NUMBER INDICATOR
4. SEARCH UP/DOWN BUTTONS (MANUAL)
5. MUTE BUTTON
6. MEMORY BUTTON
7. NORMAL BUTTON
8. BAND SELECTION (only PAL-B/G, SECAM-D/K)

9. CONTRAST UP/DOWN BUTTONS
10. BRIGHTNESS UP/DOWN BUTTONS
11. COLOUR UP/DOWN BUTTONS
12. PROGRAM UP/DOWN BUTTONS
13. VOLUME UP/DOWN BUTTONS
14. CONTROL DOOR
15. STAND-BY LED

**BACK**



# DISASSEMBLY INSTRUCTIONS

## BACK CABINET REMOVAL

Remove 6 screws holding on back cabinet and carefully separate the back cabinet from the front cabinet.

## MAIN CHASSIS REMOVAL

1. Remove a screw holding the main chassis.
2. Grasp both sides of main chassis, pull it backward.

## SPEAKER ASSY REMOVAL

1. Remove PS01 connector between the speaker and the main chassis.
2. Pull out the speaker assy from the front cabinet.

## CPT REMOVAL

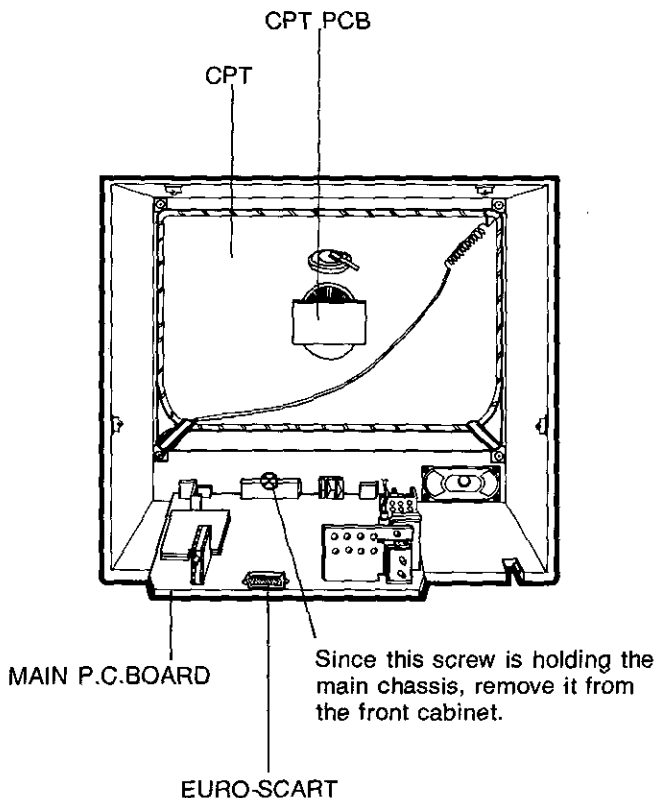
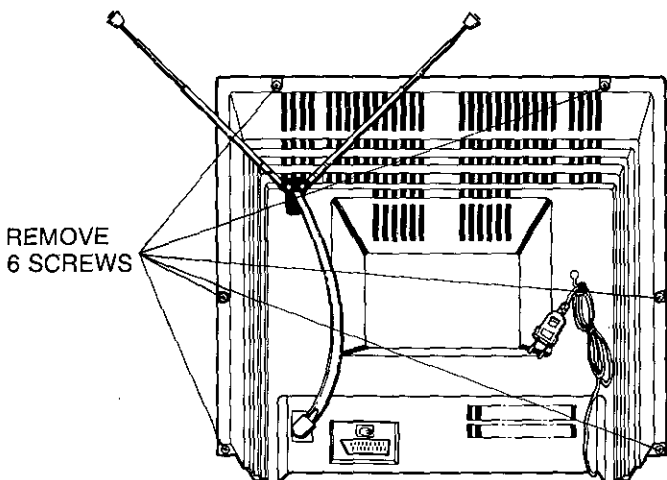
1. Pull out the CPT board from CPT neck.
2. Place the front cabinet on soft material so as not to mar the front surface or damage the control knobs.
3. Remove 4 nuts securing the picture tube mounting brackets to the front cabinet.
4. Carefully separate the CPT from the cabinet front.

## PICTURE TUBE HANDLING CAUTION

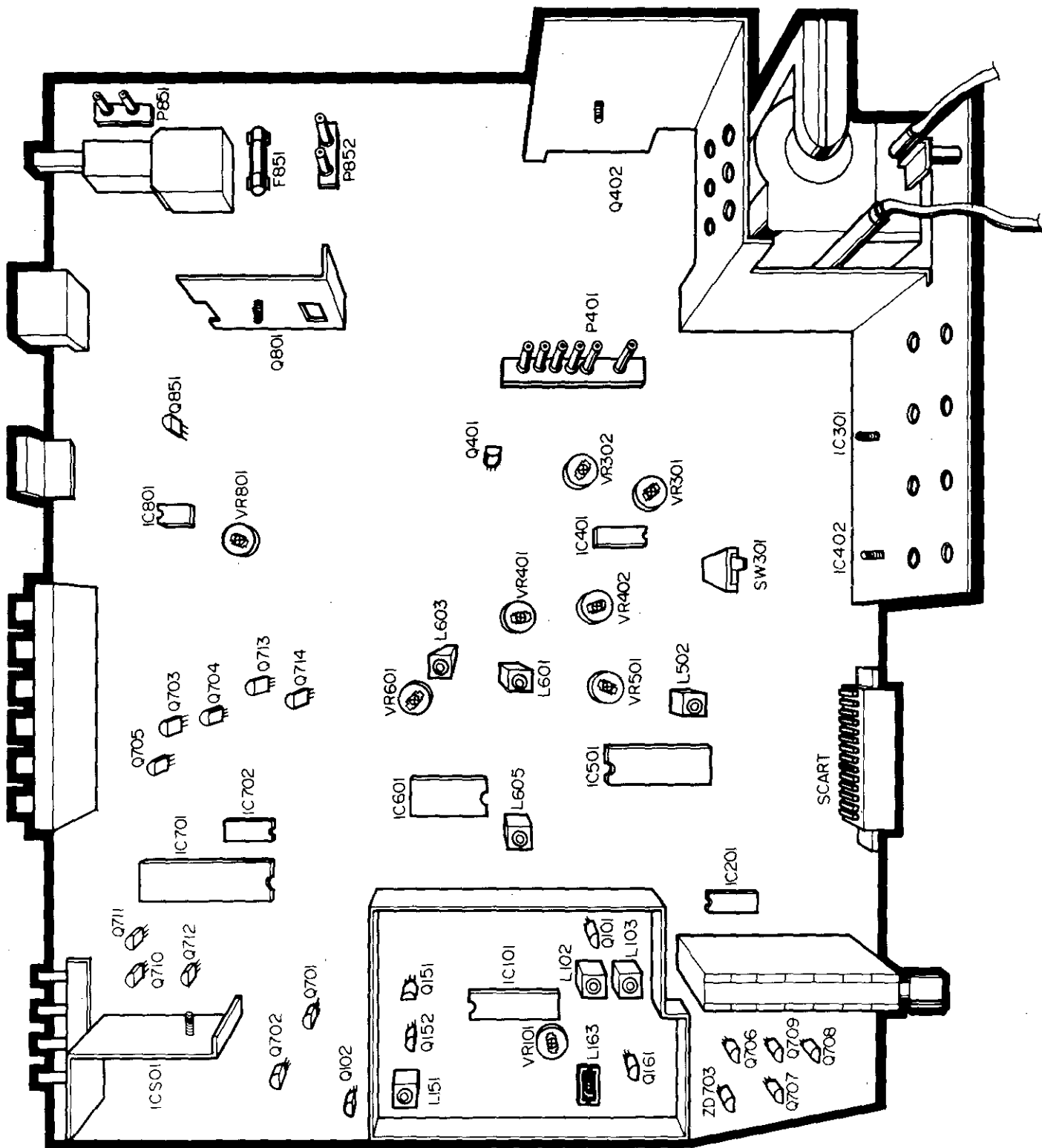
Due to the high vacuum and large surface area of the picture tube, great care must be exercised when handling the picture tube.

Always lift the picture tube by grasping it firmly around faceplate.

**NEVER LIFT TUBE BY ITS NECK.** The picture tube must not be scratched or subjected to excessive pressure as the fracture of glass may result in an implosion of considerable violence which can cause personal injury or property damage.



# PARTS LOCATION DIAGRAM OF MAIN CHASSIS





# ADJUSTMENT INSTRUCTIONS

## 1. APPLICATION SPHERE

This instruction applies to all the kinds of the colour television with PC91A chassis.

## 2. SPECIFICATION

### 1) Circumference Condition

If there is no particular guidance, adjust PC91A chassis as follows.

- Appropriate Temperature:  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$
- Relative Humidity:  $65\% \pm 5\%$

### 2) Necessary Instruments

- DC Power Supplier 0-20V/1A: 2EA

- Sweep Generator and Marker Unit of Each System
- Alignment Scope
- DC Voltmeter (High Impedance)
- PM5518 (PHILIPS PATTERN GENERATOR)
- Frequency Counter

### 3) Signal

- In this case, standard colour signal means GoldStar standard digital signal (PM5544 DIGITAL)

### 4) Power Source (Receiver Operation)

AC 180V-270V., 60/50Hz.

## 3. VIF ALIGNMENT PROCEDURE

### 1) Connecting Block Diagram of Equipment

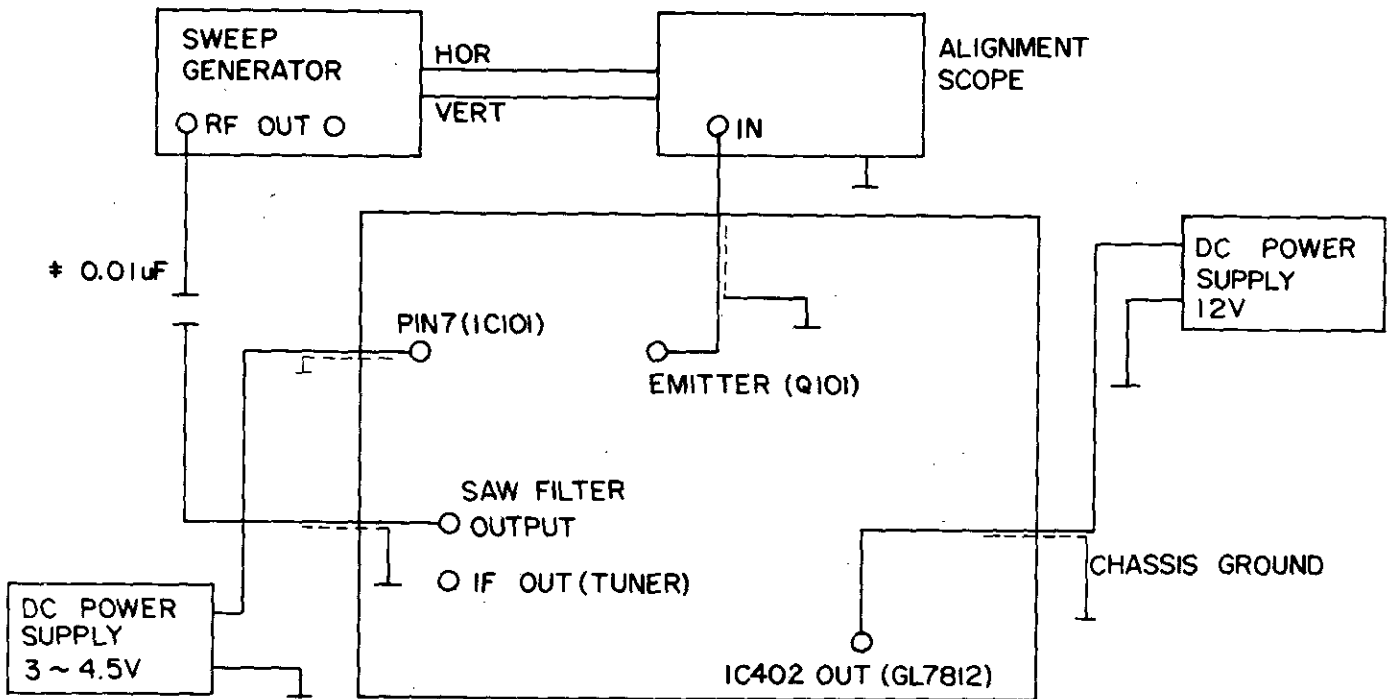


Figure 1

\* Connect Ceramic Capacitor (0.01µF) between RF-OUT terminal of the Sweep Generator and Out terminal of Saw Filter as shown in figure 1.

### 2) VIF Detection Coil Alignment

- Connect the equipment to the main board as shown in figure 1, and then turn the DC power supplier on.

- Adjust L102 ((Detection Special Quality Adjustment Coil) on the main board in order to minimize the Picture Carrier Mark as shown in figure 2 (For Mark Frequency of Each System, refer to the below note (\*)).

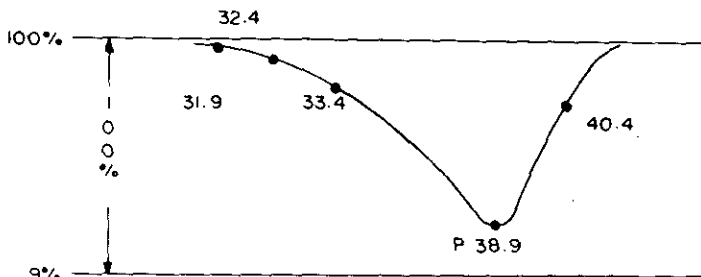


Figure 2

\* Each frequency carrier of system

PAL B/G:	38.9 MHz
PAL I:	39.5 MHz
PAL II:	39.5 MHz
PAL/SECAM B/G:	38.9 MHz
PAL B/G + SECAM D/K:	38.0 MHz

#### 4. ASC (40.4 MHz) ALIGNMENT PROCEDURE (L162)

- 1) This alignment is only applicable to the model with ASC TRAP for FTZ.
- 2) Do connecting Block Diagram of Equipments as shown in figure 1, but connect RF-OUT terminal of the sweep Generator to IF-OUTPUT terminal of the TUNER on the Main PCB.
- 3) Turn L162 counterclockwise so that it may appear to maximum, and then adjust it clockwise slowly.  
**NOTE:** You have to use this adjustment after C168 and AFT terminal of the tuner open (SLIT1, SLIT3).
- 4) After setting output of sweep GENERATOR to maximum, apply about 5V to IF AGC voltage of pin7 (IC101) so that waveform may be distinguished L162 in the saturated state.
- 5) Adjust L162 so that 40.4 MHz Point may be minimum.

#### 5. AFT ALIGNMENT PROCEDURE

NOTE) AFT alignment must be acted with C168 and AFT Terminal of TUNER open (SLIT1, SLIT3)

- 1) Connecting Block Diagram of Equipments for AFT is the same procedure as that for VIF, but change Connection Position of Alignment scope from Emitter of Q101 to AFT Terminal of TUNER.
- 2) Set Vertical Gain of the Scope to 1Vp-p/div and set the Sweep Generator Output to a low state possibly.
- 3) Adjust L103 so that AFT adjustment waveform may be as shown in figure 3.
- 4) After finishing adjustment, connect C168 and AFT terminal of the TUNER to SLIT 1 and SLIT 3.

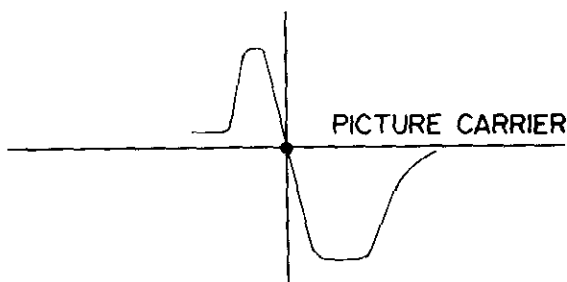


Figure 3 (AFT Alignment Waveform)

#### 6. MAIN B + (112V DC) ALIGNMENT

- 1) Put the set in motion normally.
- 2) Receive the standard colour signal.
- 3) Set the position of the colour, bright, contrast to maximum.
- 4) Adjust the VR801 so that the voltage of TP1(J1) may be 112V.

#### 7. HORIZONTAL SYNCHRONIZATION (HOR. OSC ALIGNMENT)

- 1) Let the FUBK TEST PATTERN send to the TUNER ANTENNA.
- 2) Connect the SYNC. SEPARATION INPUT SIGNAL to the GROUND. (Connect pin 5 of IC401 to GROUND)
- 3) Adjust VR402 so that a screen may be maintained in a horizontal and vertical direction.
- 4) Remove the pin 5 connection of IC401 to GROUND

#### 8. HORIZONTAL CENTER ALIGNMENT (HOR. SHIFT ALIGNMENT)

- 1) Receive the FUBK TEST PATTERN.
- 2) Adjust the VR401 so that the center of a screen may be adjusted.

#### 9. VERTICAL AMPLITUDE AND LINEARITY ALIGNMENT (VERT. HEIGHT AND LINEARITY ALIGNMENT)

- 1) When brightness of a screen is maximum by receiving the FUBK test pattern, adjust VR302 so that the outline signal of upper and lower parts of great circle on screen may coincide with the edge of an effective CPT screen.
- 2) Again, change the signal into DIGITAL PATTERN, and adjust VR301 so that the length of upper and lower of the great circle may be equal.

#### 10. VERTICAL CENTER ALIGNMENT

- 1) Adjust the SW301 (VERT. CENTER SVC. SW) so that the center of the pattern coincide with the center of an effective CPT screen vertically.

#### 11. COLOUR SYNCHRONIZATION ALIGNMENT

- 1) Receive the standard COLOUR BAR signal.
- 2) Set the contrast, brightness and colour VR to maximum.
- 3) Connect the colour saturation terminal (PIN 6 of IC501) to 12V.
- 4) Short the pin 21 (B-Y) and the pin 22 (R-Y) of IC501. (Short between TP7 and TP8.)
- 5) Adjust the TC501 so that the colour bars may not appear.
- 6) After finishing adjustment, remove the connection of item 3) and 4).

#### 12. PAL MATRIX ALIGNMENT

- 1) Set the contrast, brightness and colour VR to maximum
- 2) Receive DEM. PATTERN
- 3) Connect SCOPE to B-OUT (The pin 16 of IC501).
- 4) Adjust VR502 to obtain a minimum fluctuation (A straight line) as shown in figure 4-1.

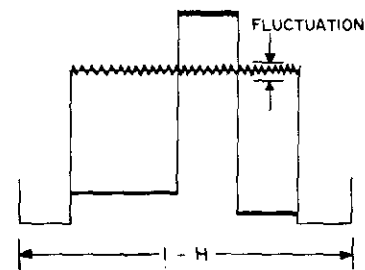


Figure 4-1 VR502 Alignment

- 5) Adjust L502 to obtain a minimum fluctuation as shown in figure 4-2 after changing PATTERN into the COLOUR BAR signal.

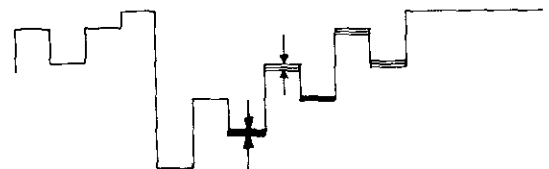


Figure 4-2 L502 Alignment

- 6) Repeat above item 4), 5) again.

### 13. RF AGC ALIGNMENT

- 1) Receive the standard colour signal ( $60\text{dB} \pm 1\text{dB}$ ).
- 2) Connect DIGITAL MULTIMETER to AGC Terminal of TUNER.
- 3) Refer to a below diagram, and then adjust VR101.

TUNER SYSTEM	B/G-D/K	I	I-I	H
SHARP	$5.5 \pm 0.1\text{dc}$	X	X	
APLS	$4.5 \pm 0.1\text{dc}$	$4.5 \pm 0.1\text{dc}$	$4.0 \pm 0.1\text{dc}$	$6.0 \pm 0.1\text{dc}$

### 14. SCREEN AND WHITE BALANCE ALIGNMENT

- 1) Set the colour, brightness and contrast control to minimum.
- 2) Set the BIAS ALIGNMENT VR on the CPT board to minimum and the DRIVE ALIGNMENT VR(904-905) to the mechanical center position.
- 3) Receive the standard pattern.
- 4) SHORT between TP2 and TP3 to remove the vertical deflection and adjust SCREEN VR to obtain horizontal line on screen. And then, control BIAS VR so that WHITE BAR appears.
- 5) Adjust the screen so that the value of SCREEN VR may be lower and WHITE BAR almost disappear.
- 6) Remove the short between TP2 and TP3, adjust the drive control VR(VR904, 905) in the high light state to get white balance.
- 7) After adjusting the contrast, brightness control VR, continue to control the low light and high light until white remains.
- 8) Adjust  $8000\text{K} \pm 800\text{K}$  ( $X = 296 \pm 8$ ,  $Y = 306 \pm 8$ ) to control colour analyzer.

### 15. FOCUS ALIGNMENT

- 1) Receive the standard DIGITAL PATTERN, and then set the colour, brightness and control to maximum.
- 2) Adjust slowly the FOCUS control on the FBT so that the HALO phenomenon may not appear around center and letter.

### 16. SECAM BOARD ALIGNMENT (ONLY SECAM)

- 1) SECAM BELL FILTER ALIGNMENT
  - (1) Receive SECAM COLOUR BAR PATTERN.
  - (2) Connect LOW CAPACITANCE PROBE to pin 3 of IC601.
  - (3) Adjust L601 to maximize and flatten the waveform.
  - (4) In case of not using FET PROBE, perform above adjustment (number 1 to 3) by the GS standard SECAM SIGNAL so that the COLOUR of 3.8 MHz portion may be red and minimize the colour of the COLOUR BAR MAGENTA on the shadow of LEVEL BAR boundary.
- 2) SECAM REFERENCE COIL ALIGNMENT.
  - (1) Connect OSCILLOSCOPE PROBE to pin 9 (J63) of IC601.
  - (2) Adjust L605 to minimize ① portion of waveform A and then change it into DIGITAL PATTERN to adjust the colour by naked eyes.

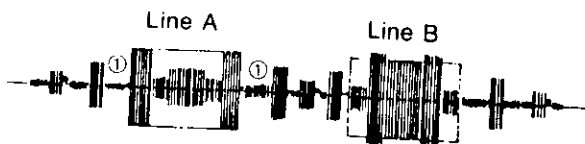


Figure 5

### 2) SECAM COLOUR SYNC ALIGNMENT (4.43 MHz OSC ALIGNMENT)

- (1) After finishing the PAL DECODER COLOUR SYNC alignment, adjust it.
- (2) Receive the Standard SECAM COLOUR BAR when item 2) and 4) of Colour Synchronization Alignment is acted.
- (3) Adjust TC601 so that the colour bar doesn't flow down.
- (4) Remove the connection item 2) and 4).

### 3) 1H-DELAY LINE ALIGNMENT

- (1) Send the SECAM COLOUR BAR SIGNAL to the antenna and adjust colour +/- so that colour level may be the mechanical center set.
- (2) Connect oscilloscope probe to pin 6 of the IC501.
- (3) Adjust VR601 to waveform A in figure 6.
- (4) Adjust L603 to minimum fluctuation as shown in figure 6.



Figure 6

### 17. SOUND CONVERTER (5.5 MHz/6.5 MHz) ALIGNMENT (only SECAM-D/K)

- 1) Open SLIT2.
- 2) Connect Frequency Counter to Cathode of D151. (In this case, be sure to use OSCILLOSCOPE PROBE (10:1) in connection)
- 3) Adjust Coil (L151) so that the Value of Frequency Counter may be  $500 \pm 0.1\text{ KHz}$ .
- 4) After finishing alignment, short SLIT2.

## PURITY AND CONVERGENCE ADJUSTMENT

**CAUTION:** Convergence and Purity have been factory aligned. Do not attempt to tamper with these alignments. However, the effects of adjacent receiver components, or replacement of picture tube or deflection yoke may require the need to readjust purity and convergence. Convergence magnet assembly and rubber wedges need mechanical positioning following the figure 7. Before attempting any convergence adjustments this receiver should be operated for at least fifteen minutes. If adjustment is required the adjustments should be made in the following sequence.

### COLOUR PURITY ADJUSTMENT

1. Demagnetize the picture tube and cabinet using a degaussing coil.
2. Turn the CONTRAST and BRIGHTNESS controls to maximum.
3. Select the purity pattern consisted of green only on the pattern generator.
4. Loosen the clamp screw holding the yoke, and slide the yoke backward to provide vertical green belt (zone) in the picture screen.
5. Remove the Rubber Wedges.
6. Rotate and spread the tabs of the purity magnet (See figure 8) around the neck of the picture tube until the green belt is in the center of the screen. At the same time, center the raster vertically.
7. Move the yoke slowly forward or backward until a uniform green screen is obtained. Tighten the clamp screw of the yoke temporarily.
8. Check purity of the red and blue rasters by selecting the purity pattern of pattern generator.
9. Obtain a white raster, referring to "WHITE BALANCE ADJUSTMENT".
10. Proceed with convergence adjustment.

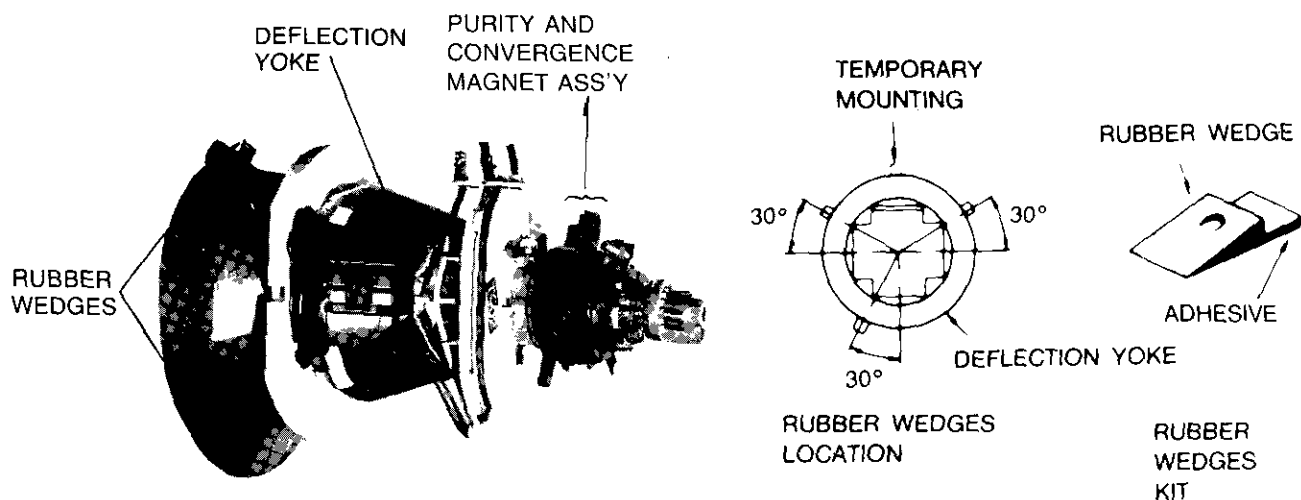


Figure 7

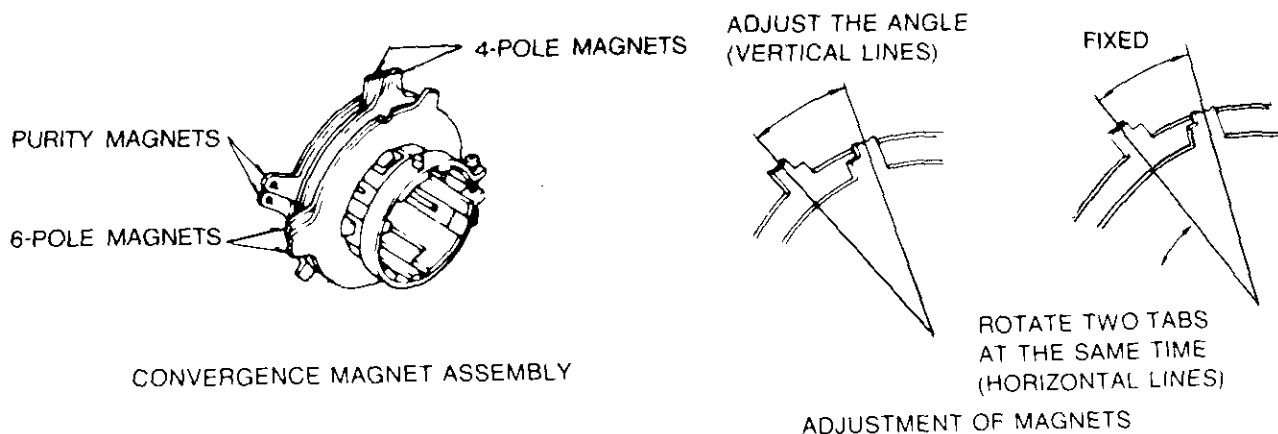


Figure 8

## CENTER CONVERGENCE ADJUSTMENT

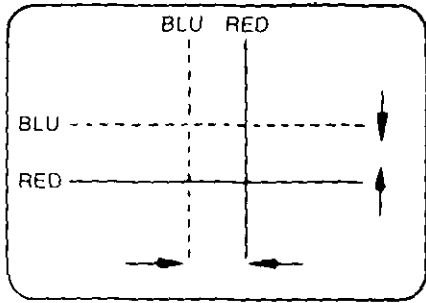
1. Receive crosshatch pattern with a colour bar signal generator.
2. Adjust the BRIGHTNESS and CONTRAST controls for well defined pattern.
3. Adjust two tabs of the 4-pole magnets to change the angle between them (See figure 8) and superimpose the red and blue vertical lines in the center area of the picture screen. (See figure 9.)
4. Turn both tabs at the same time keeping their angles constant to superimpose red and blue horizontal lines at the center of the screen. (See figure 9)
5. Adjust two tabs of 6-pole magnets to superimpose red/blue line with green one. Adjusting the angle affects the vertical

lines and rotating both magnets affects the horizontal lines.

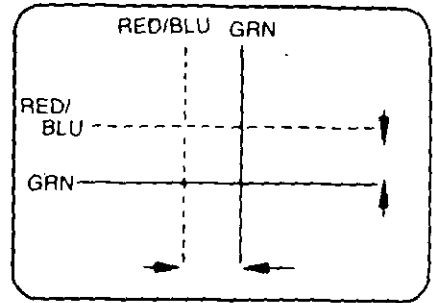
6. Repeat adjustments 1,2,3, keeping in mind red, green and blue movements, because 4-Pole magnets and 6-Pole magnets interact and make dot movement complex.

## CIRCUMFERENCE CONVERGENCE ADJUSTMENT

1. Loosen the clamping screw of DY to allow the yoke to tilt.
2. Adjust DY to obtain a better convergence in the circumference by orbital movement of the front of the yoke, then secure the DY in appropriate position by placing the wedges as illustrates in figure 7. Tighten screw holding the DY. Stick 3 adhesive tapes on wedges as shown in figure 7.

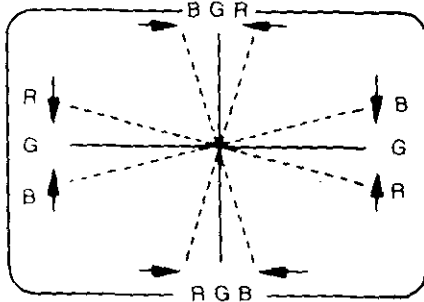


4-Pole Magnets Movement

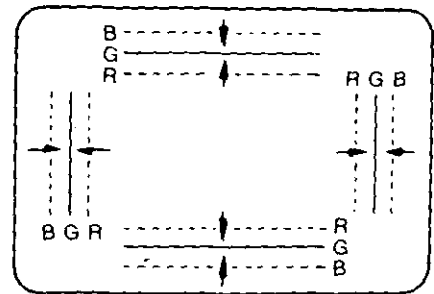


6-Pole Magnets Movement

Center Convergence by Convergence Magnets



Incline the Yoke up (or down)



Incline the Yoke right (or left)

Circumference Convergence by Deflection Yoke

Figure 9 DOT MOVEMENT PATTERN

# CIRCUIT DESCRIPTIONS

## VIDEO SIGNAL SYSTEM CIRCUIT

Video Signal System contains Tuner, Video IF AMP., Video DET., Video AMP., AGC Circuit and AFT Circuit. In this chassis, all functions except Tuner are performed within IC101 (GL3120A/LA7520).

## Video DET., Video IF AMP, Circuit and Video AMP, Circuit

All functions are performed in IC101. The schematic diagram is below.

GL3120A/LA7520 used in this Chassis is a large-scale integrator which contains the VIF stage, SIF stage and Sound stage, and reduces 5.5(PAL 4: 6.0, SECAM D/K: 6.5)MHz Beat.

At the same time, GL3120A/LA7520(IC101) improves the sound quality and the picture quality compared with a conventional chassis as a result of detecting the sound in Quadrature DET. Circuit.

## Video/Sound (5.5MHz, D/K: 6.5 MHz, PAL-I: 6.0MHz) DET. Circuit

The IF signal which is fed to IC101 is amplified in the IF AMP circuit, and detected in the SIF DET. circuit, so it creates the 5.5(PAL-I: 6.0, SECAM D/K: 6.5) MHz SIF signal.

Also, after the amplified signal passes the Buffer Circuit, and creates the Video signal, detected in the DET. circuit.

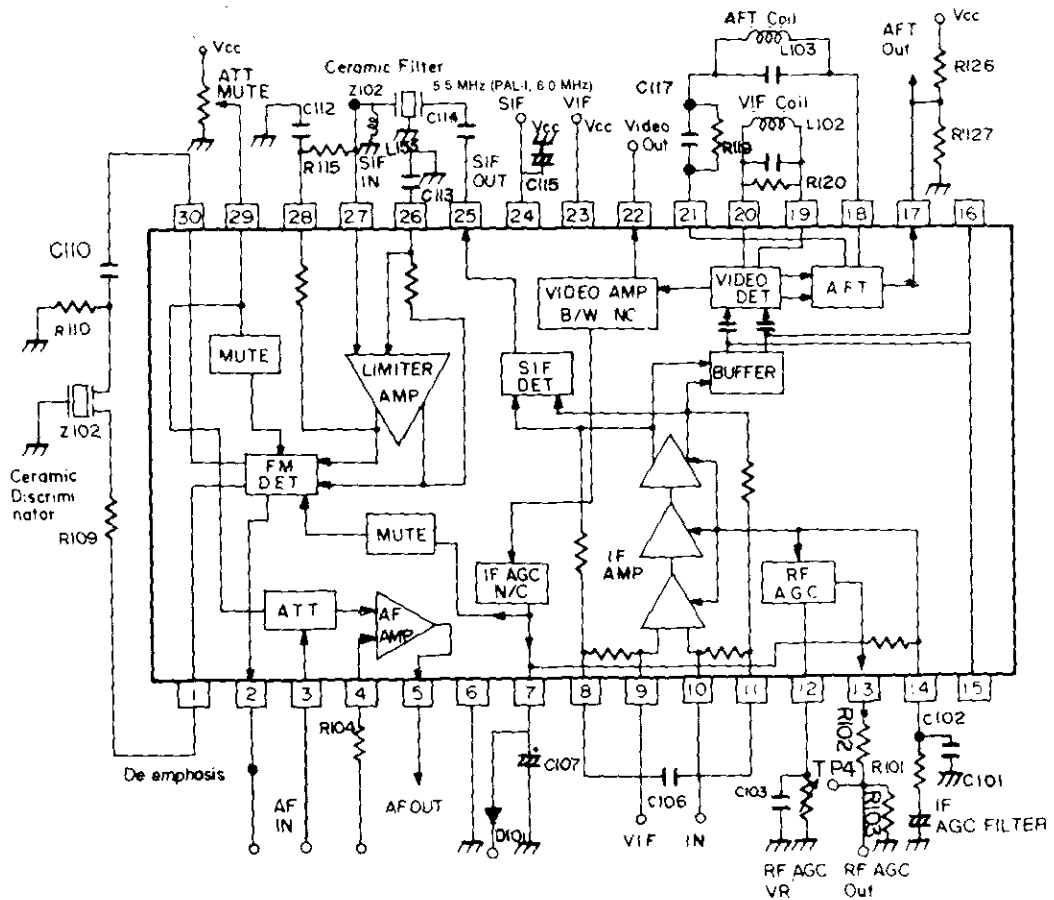
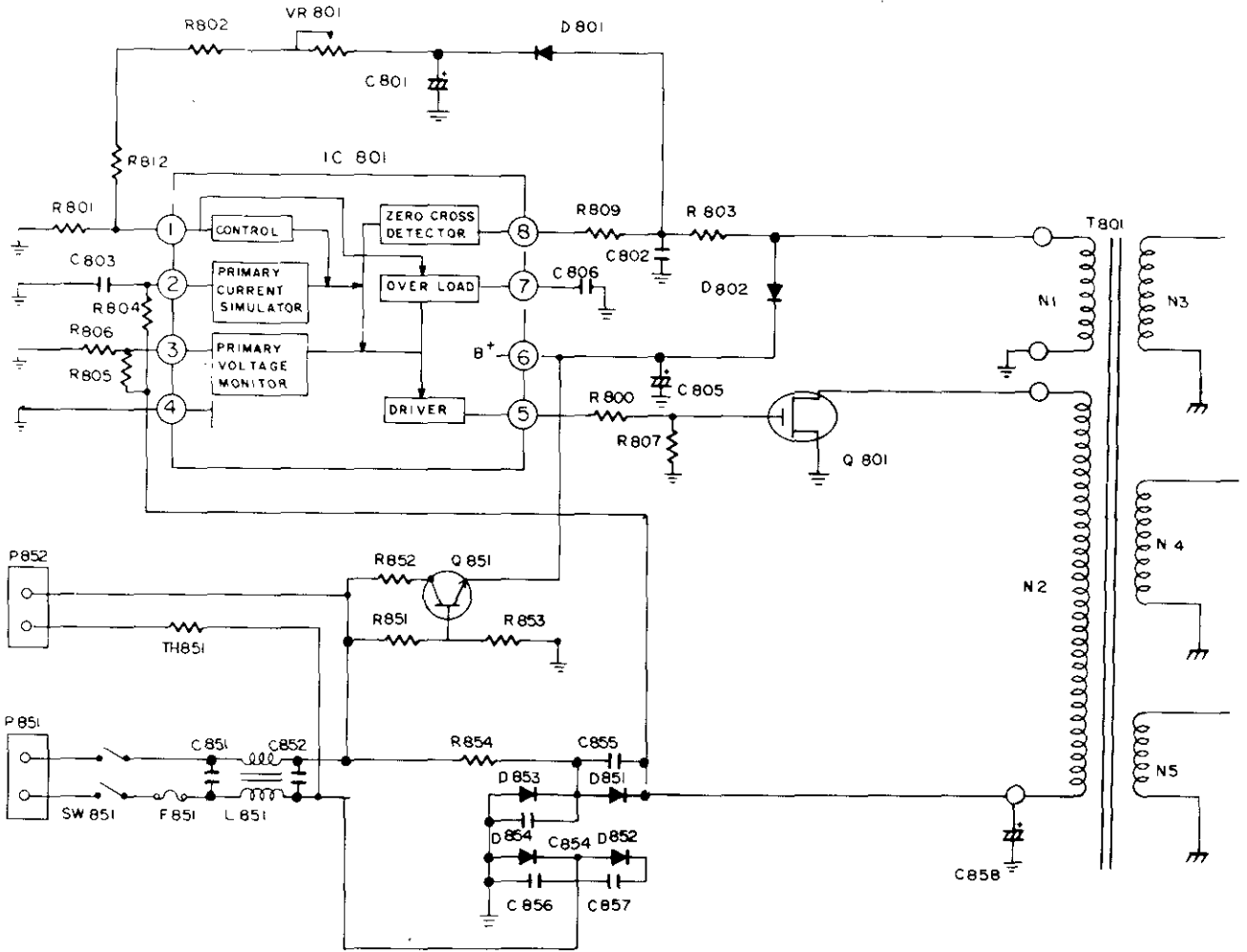


Figure 10 Schematic Diagram of IC101 (GL3120A/LA7520)

## Pin Function Chart of IC101 (GL3120A/LA7520)

Pin No.	Description
1, 30	FM detector, pin 1 and 30, uses the quadrature detection circuit. After the signal, with its amplitude limited by the limit Amp, is output from pin 1 and 90° shifted by the phase shifter, it is input at pin 30.
2	Quadrature detected signal is output at pin 2 through emitter follower.
3	DC VR input terminal pin 3 attenuates the audio signal.
4	The sound Amp. NFB (Negative Feed-back) terminal.
5	The sound output terminal.
6	The ground terminal, and is connected to the ground of the SAW filter.
7, 14	IF AGC Filter terminals (PIN 7), RF AGC Filter terminal (PIN 14). Pin 7 is also used as the video and audio mute terminal.
8, 11	By-pass AC signal contained in VIF Amp signal.
9, 10	VIF input terminals.
12	The RF AGC VR (Variable Resistor) terminal. VR101 is connected as the RF AGC VR.
13	The output of RF AGC. When the RF AGC voltage is below 9 V, R102 and R103 divide the Resistance and C104 is necessary to stop the oscillator.
15, 16	
17	The AFT DC voltage from pin 17 is varied by R126 and R127.
18, 21	AFT circuit is the quadrature detection circuit and is connected between the pin 18 and pin 21.
19, 20	The carrier element is taken out from the LC tank circuit through pins 19 and 20.
22	The video output terminal.
23, 24	These are the supply voltage input terminals. Pin 23 = VIF block Pin 24 = SIF block
25	The SIF primary detection output terminal.
26, 27, 28	Pins 26 and 28 are by-pass ground terminals. Pin 27 is the unbalanced input terminal.
29	The mute & sound volume control terminal.

## POWER SUPPLY



### Start Up

If you turn the switch on, the voltage generated by R851 and R853 inputs the BASE of the Q851 for a half period of the upper side frequency wave which corresponds with 50Hz. If that happens, about 8 volts is generated in the emitter of Q851. After all, this voltage input the pin 6 of the IC801 to turn it on. And then, the DC 12—18 volts rectified by the D802 and C805 input the pin 6 continuously. At last the IC801 operates normally.

### Normal Operation

The square wave output power which make the Q801 on and off flows out of the pin 5. Also, the sources generated by the load variation are detected from the wire wound (N1). The detected variation sources which is commuted with the D801 and the C801 input the voltage to the pin 1.

The pin 1, 2 and the pin 3 have the function assisting the control operation. And adjusting VR801 makes the secondary output voltage controlled.

### Over Load Operation

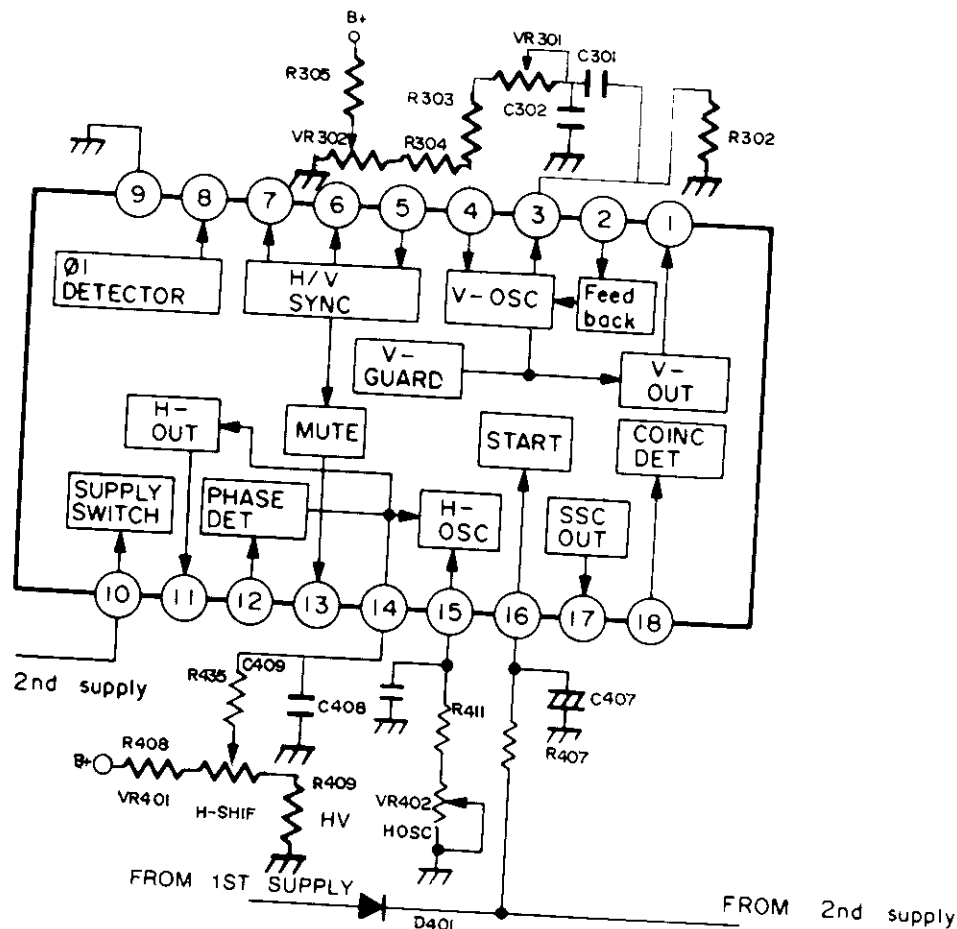
The maximum COLLECTOR current is decided by the pin 1 and the pin 6 of the IC801. If the secondary load is too exceeded, the decrease of voltage generated from N1 makes voltage of the pin 6 and the pin 1 of IC801 decrease and output pulse width of pin 5 extremely.

### High Voltage Protection

This is decided by voltage of the pin 1 and the pin 6. If the secondary voltage increase above the fixed voltage, the voltage of N1 increase. When this voltage is above 15V, the motion of pin 5 output will stop.



# H/V DEFLECTION



## Start Up

If you turn the switch on, the output power of the 17 volts in the part of electric power source flow into the pin 16 of the IC401 through the D807. Therefore, the IC401 begins oscillating and its output-power flows from the pin 11. In the result, the horizontal output-power of TR. Q401 is driven, and the second voltages from the FBT to the D403 and D404 are commutated. The 12 volts through the constant voltages, are input to the pin 10 of the IC401 and perform the IC401 in normal motion. On the other hand, when the 2nd supply are input to the pin 16 of the IC401. By cutting off an end of the D807, separate the part of electric power from the first voltage.

## Vertical Section

The pin 3 and the pin 4 perform their duties of oscillating SAW-TOOTH WAVE. That is to say, the pin 4 makes the NFB (negative feed back) information which the pin 2 generates though the vertical output-power circuit overlap C301 and C302 of the pin 3 and corrects a verticality. The pin 1 is a vertical output-power terminal. The sources of the vertical saw-tooth-wave is finished to the vertical output circuit through this terminal.

## Horizontal OSC and Phase Shift

The Oscillation signal, which is generated by C408, R411 and VR402 connecting to the pin 15, makes the horizontal syn-

chronizing signal which is detected by the pin 6, pin 7 and pin 8 among the image signals from the pin 5 compared with a part of vertical output-power signal from the pin 12. And than the last signal output-power generated. In that case, the phase is shifted by C408 and VR401 connecting to the pin 14.

## A/V MODE

If you make the pin 18 low through R414, the movement of 2 DETECTOR flows FAST mode so that it is LOCKING and VCR mode.

Therefore, when Audio/Video is selected by R414, D402 and the HIGH LEVEL is applied to the pin 8 connecting to Peri Plug, VCR mode is selected.

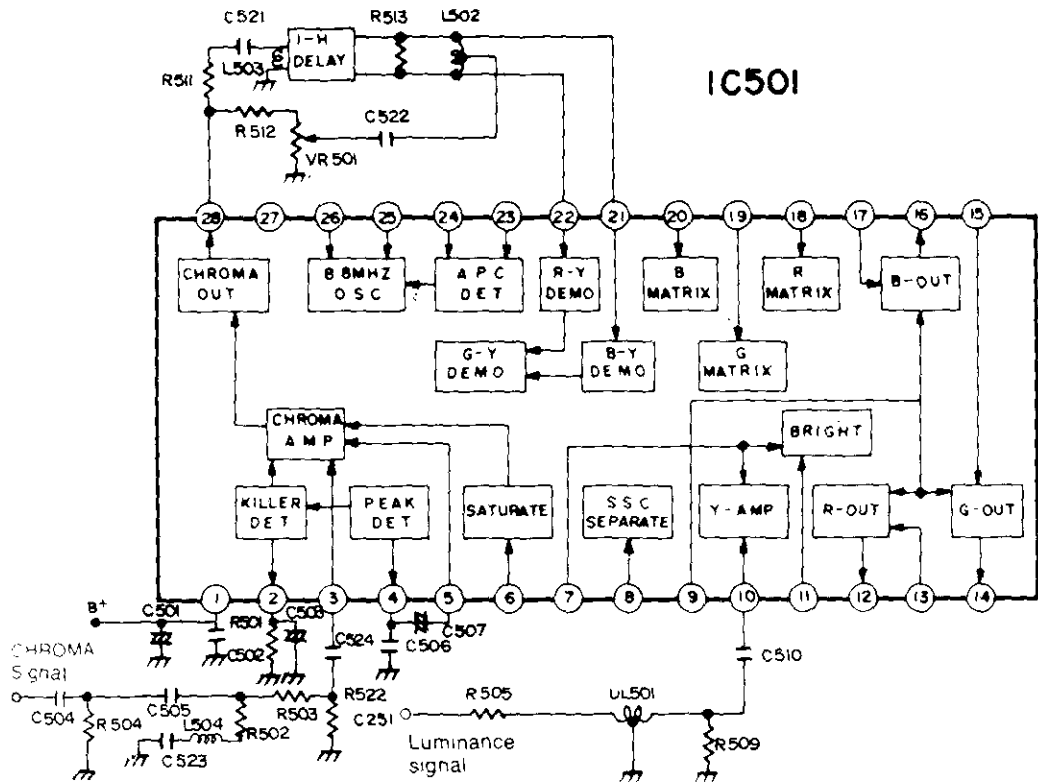
## Sand Castle

The Output of three level sand castle from the pin 17 of IC401 flows into the pin 8 of IC501 (PAL Chroma IC), and pin 4, 19 of IC601 (SECAM chroma IC).

## Synchronization Separation and Slice Level

R405 and R406 connecting to the pin 5 determine the value of direct voltage and fix slice level and select the horizontal synchronization signal among the image signals or negative going synchronization pulse inputting the pin 5.

## CHROMA & LUMINANCE



### Chroma Path

First, the CHROMA signal flows from B.P.F. Circuit into the pin 3 to be amplified, and then it flows into the second amplifier to do about 4 Vp-p. The amplifier signal which is in output from the pin 28 is divided into two groups. One flows from R511, C521 into 1H-Delay Line, the other from R512, VR501 and C522 into mid-tap of L502.

At L502, two kinds of signal, which flows from 1-H delay and not, is vectored and adjusted, so that R-Y (u) signal is divided into B-Y (u) and B-Y (V).

Each of the signals is demodulated inside the pins 21, 22. G-Y is generated by R-Y and B-Y.

In course of demodulation, colour system is a Carrier Wave Suppression, therefore the pins 25, 26 oscillate to 8.86 MHz to reconstitute a carrier wave.

The DC voltage which the Colour Burst of the pins 23, 24 generates flow into oscillator for 8.86 MHz and adjust the oscillating frequency and the false image so that they may coincide with original signal.

After the 8.86 MHz which is generated in this way decrease by half, R-Y and B-Y flow into G-Y demodulator in order to generate a complete demodulation. On the other hand, the pin 2 discharges its duty of controlling the first amplifier of an outcome so that colour killer does not generate colour noise during receiving black and white signal or in electric field less than 35 dBm.

That is to say, the pin 4 detects the colour Burst and makes it generate DC voltage, which is supplied and controlled on the pin 2, and kills the DC voltage of the pin 2 less than 3 V. The pin 6 is a saturation control circuit.

### Luminance Path

As much as chroma path needs to perform chroma signal, DL501 delays Luminance signal about 380 ns., and then this flows into the pin 10 through C510 and control contrast, brightness with the pin 7 and the pin 11 to be supplied for each of R, G, B matrix circuit.

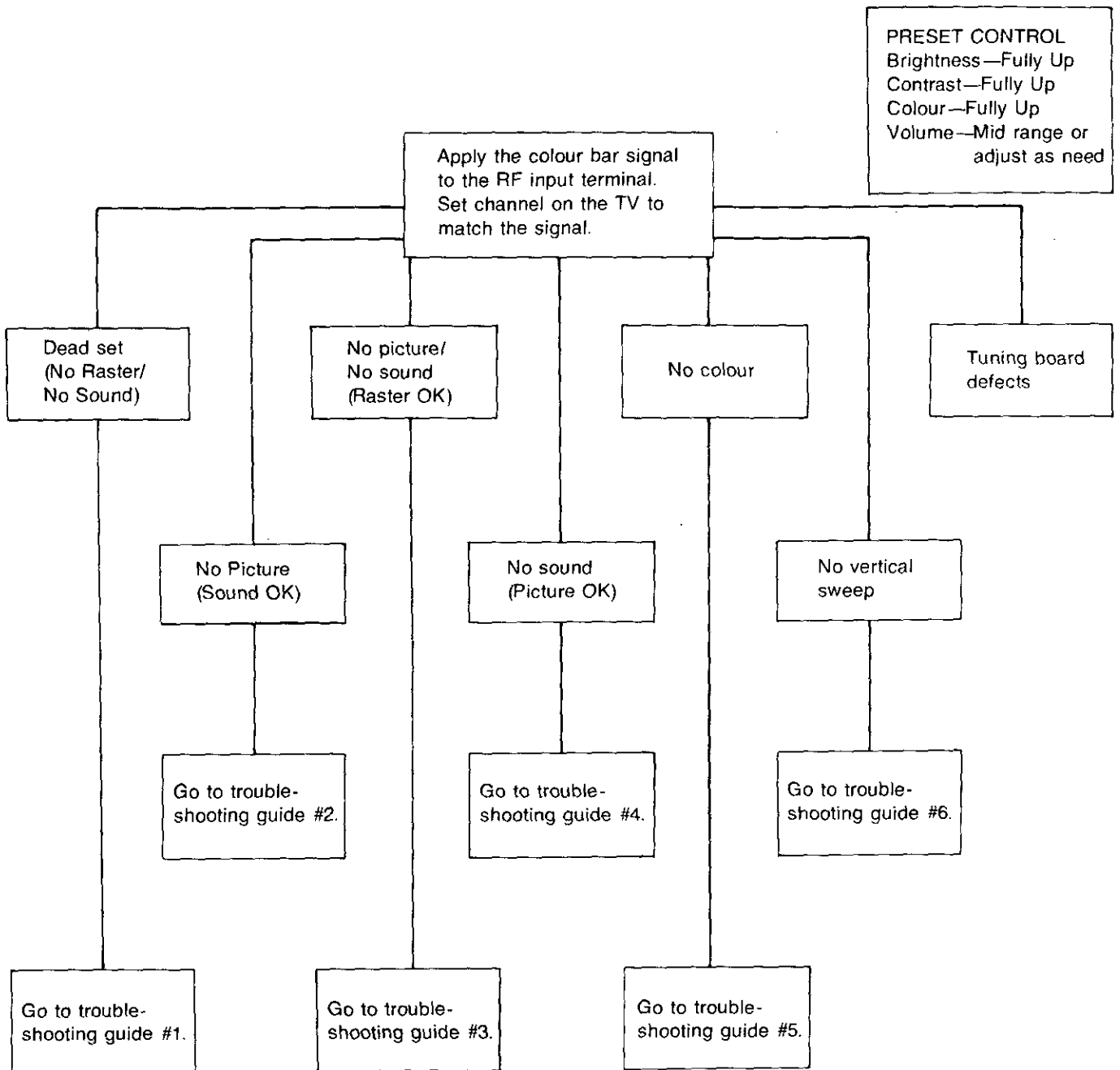
luminance signal supplied on the pin 10 is commonly only 0.5 Vp-p.

### R.G.B. Data Input

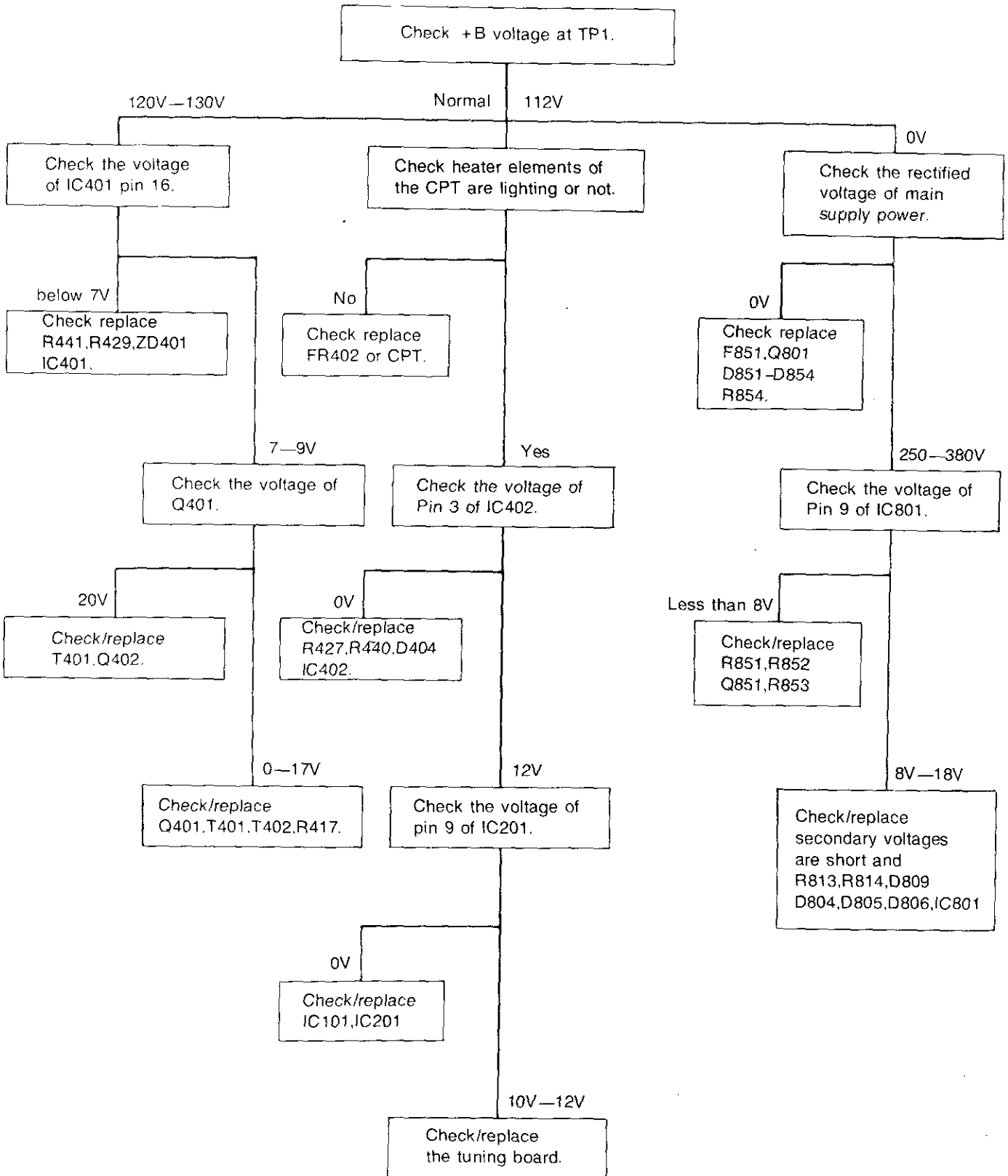
When the DC voltage of the pin 9 remains 1-3 V, IC501 is converted into it in data input and when each of R.G.B. signals flows into the pins 13, 15, 17, each signal is in output at the pins 12, 14, 16.

In case that DC voltage of the pin 9 remains less than 0.4 V, normal state remains.

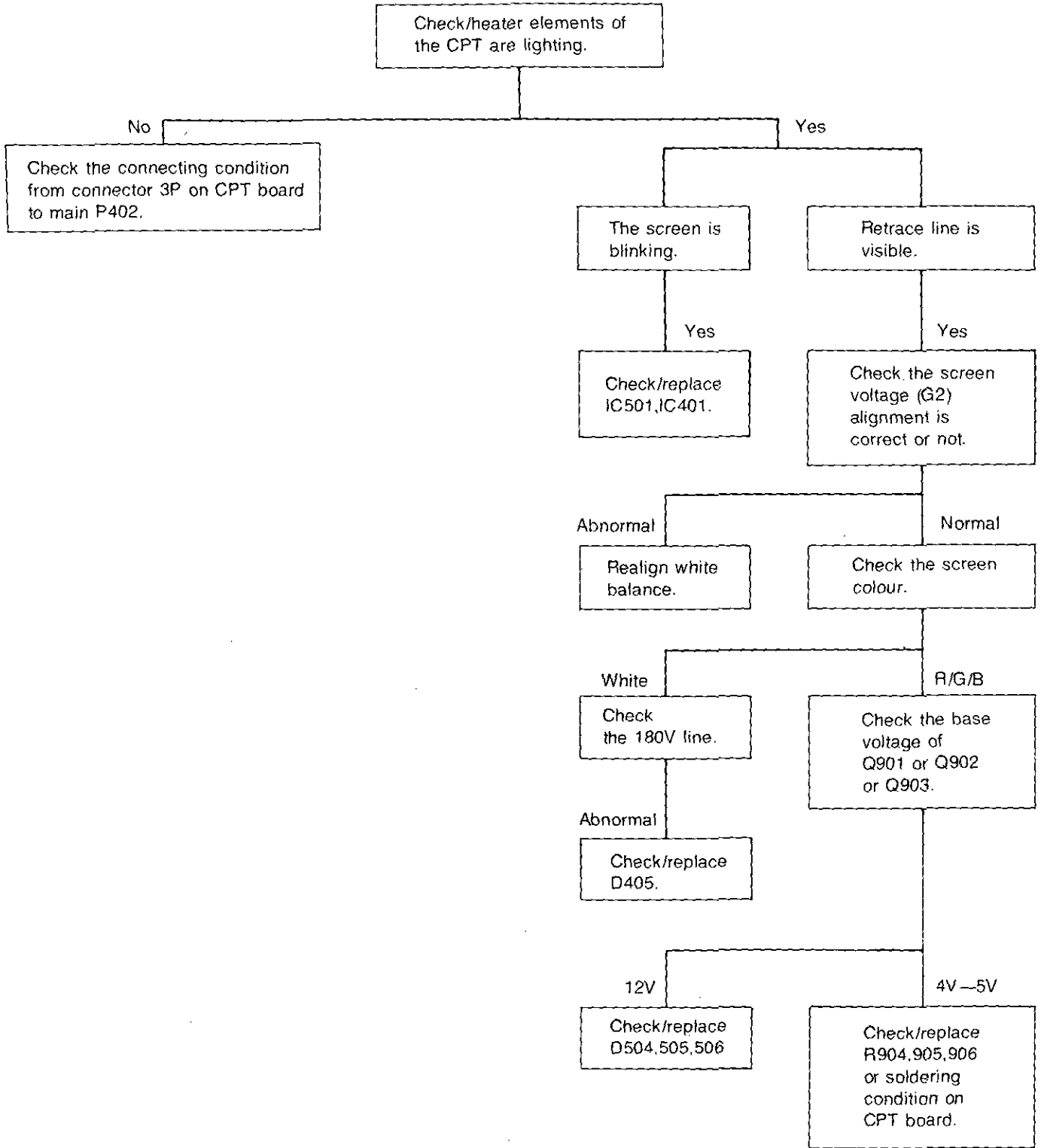
# TROUBLESHOOTING GUIDE



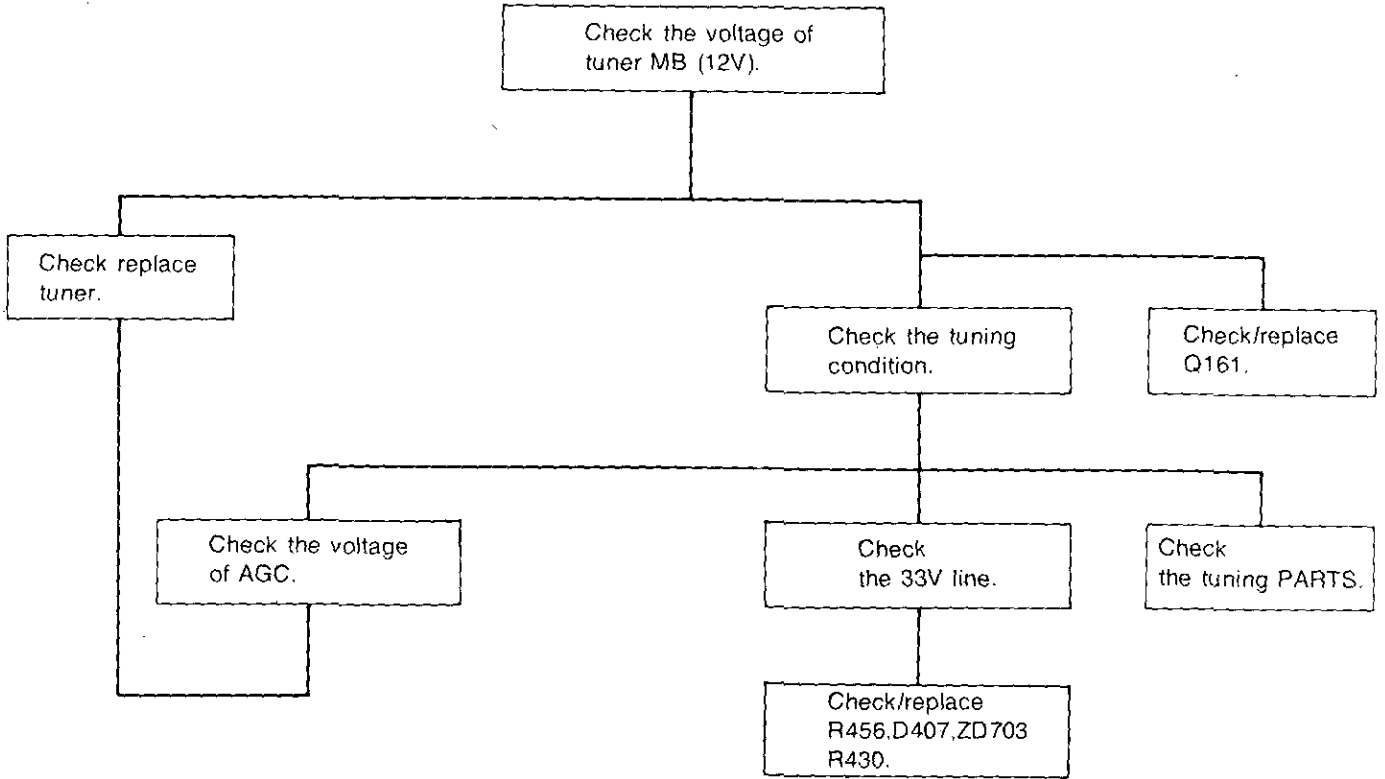
**1. DEAD SET  
(NO RASTER/NO SOUND)**



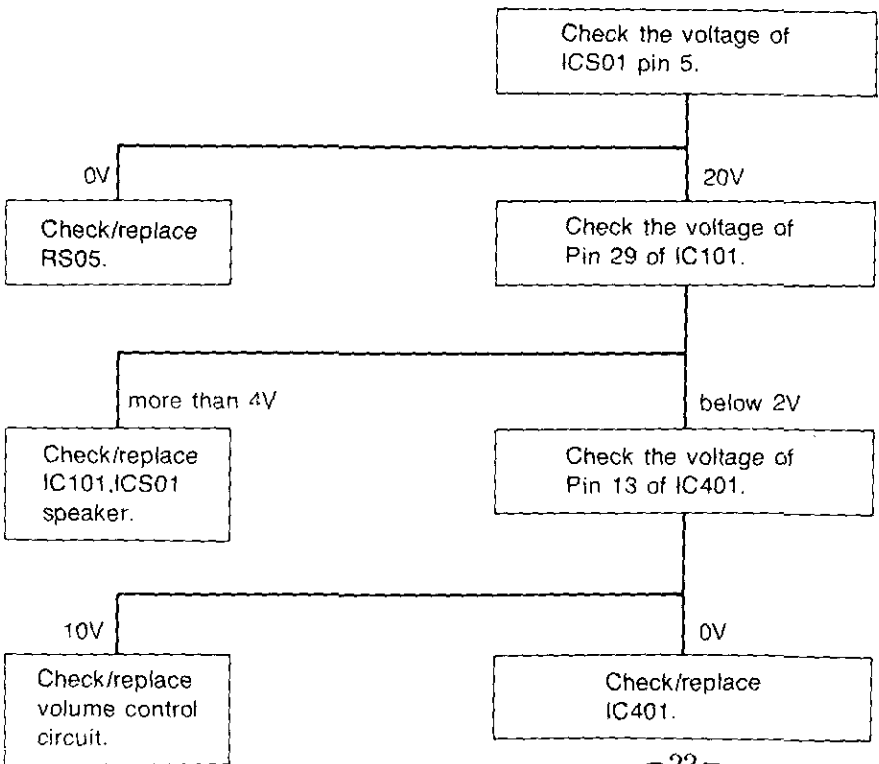
**2. NO PICTURE  
(SOUND OK)**



**3. NO PICTURE/NO SOUND  
(RASTER OK WHITE NOISE ONLY)**

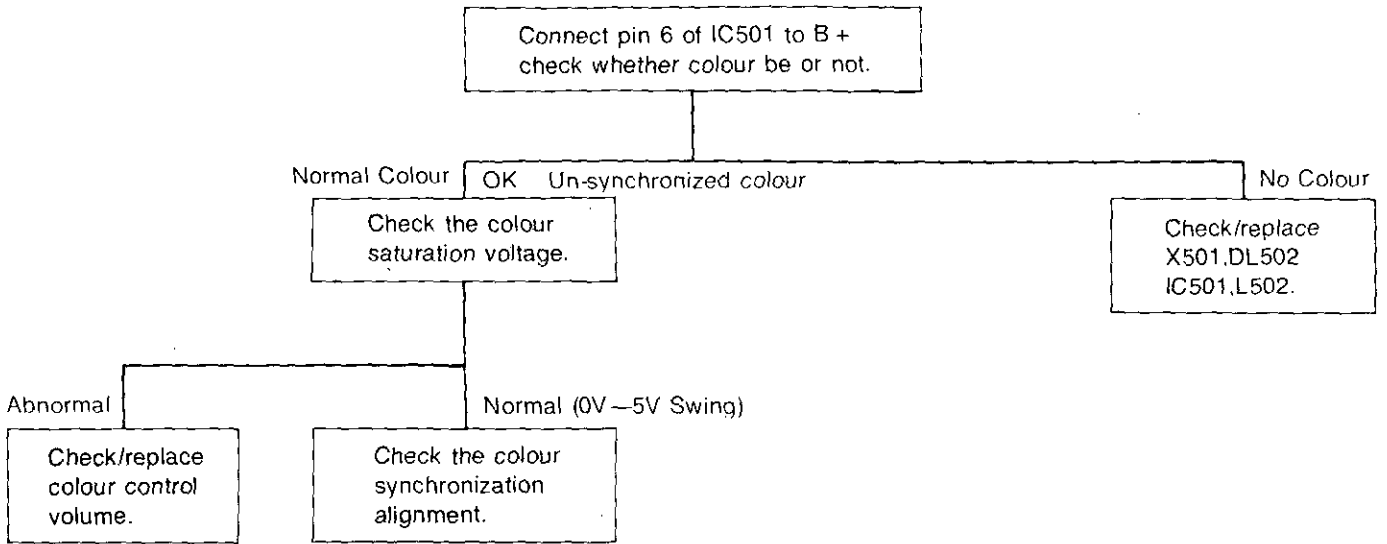


**4. NO SOUND  
(PICTURE OK)**



**Note:**  
Sound is muted whenever the screen is noise condition. that is, broadcasting signal is not found.

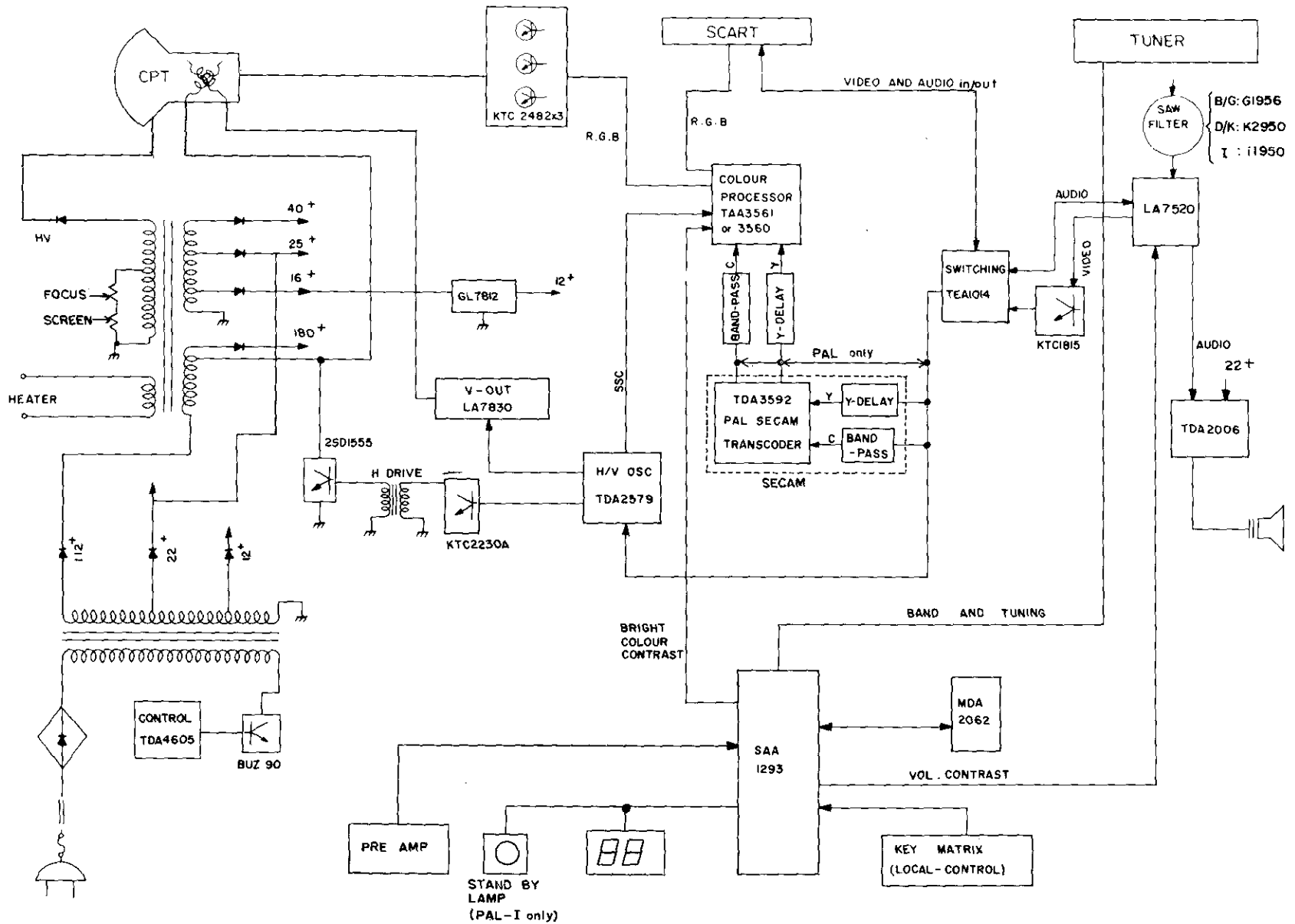
## 5. NO COLOUR



## 6. NO VERTICAL SWEEP

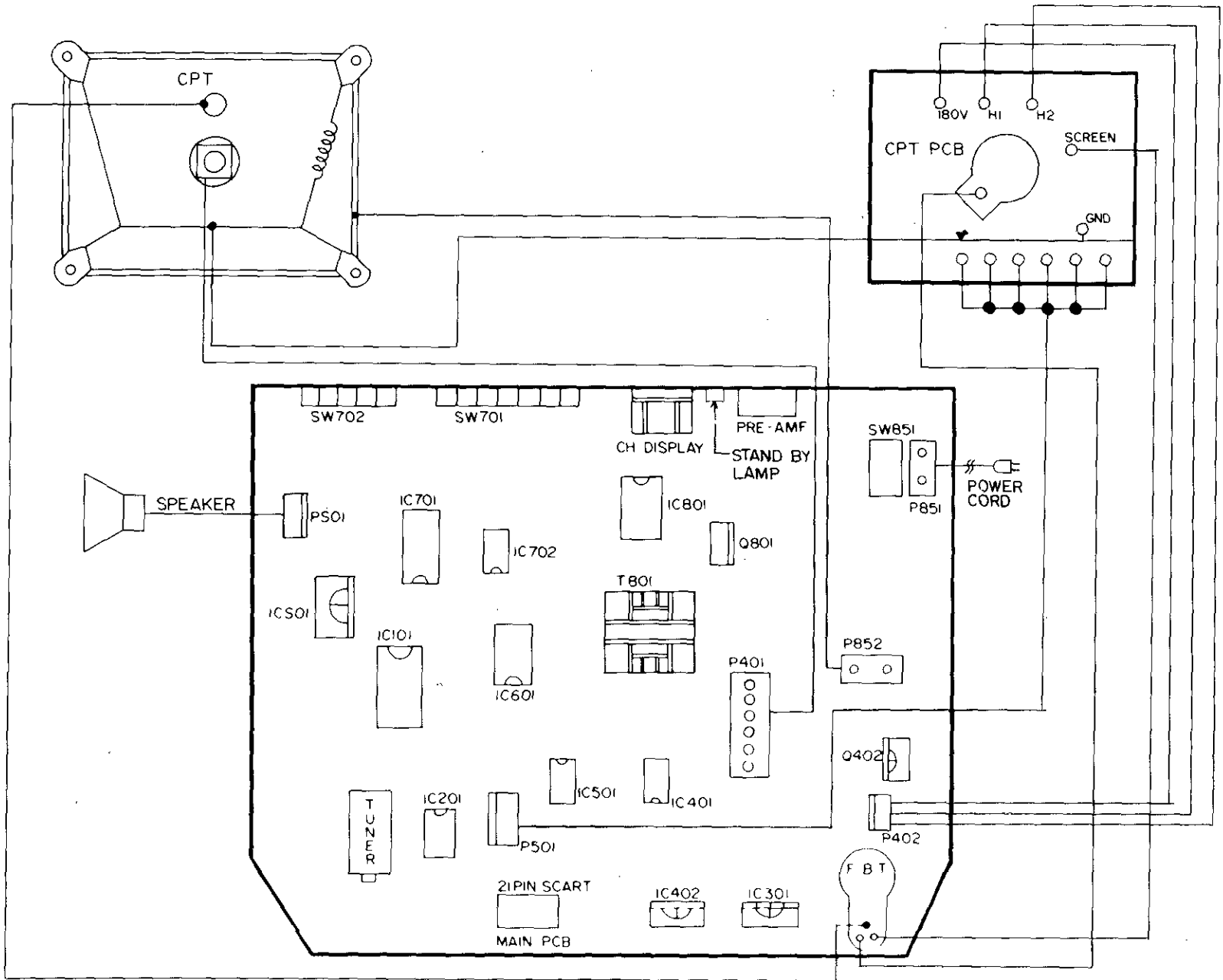
Check/replace the vertical output of IC301. and vertical osc of IC401.

# BLOCK DIAGRAM




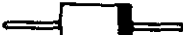




# WIRING DIAGRAM

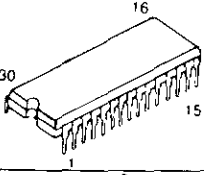
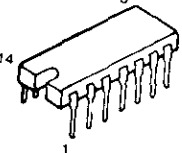

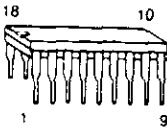
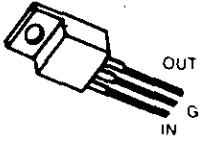
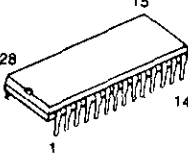
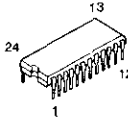

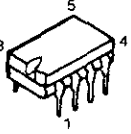
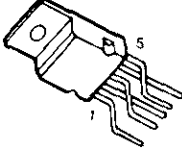


# TERMINAL VIEW OF SEMICONDUCTOR


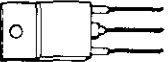

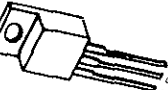
## DIODE

FIGURE	DESCRIPTION	REFERENCE NO.
	1N4148TA	D101-D104 D201-D203,D204 D402,D406,D601 D703-D708,D801 D802,D901-D903
	1K34A TP-A	D701,D702,DS01
	1N4005 GP	D851,D852,D853 D854
	1N4003TA	D301,D401,D807
	TVR-06J	D403,D404,D405 D407,D803,D805 D806
	RGB15J	D804
	KA33V	ZD703
	ZENER Z9.1BMTA	ZD701
	ZENER Z20BMTA	ZD702
	ZENER Z5.6BMTA	ZD704,ZD705
	EQA02-17VB	ZD401

## IC

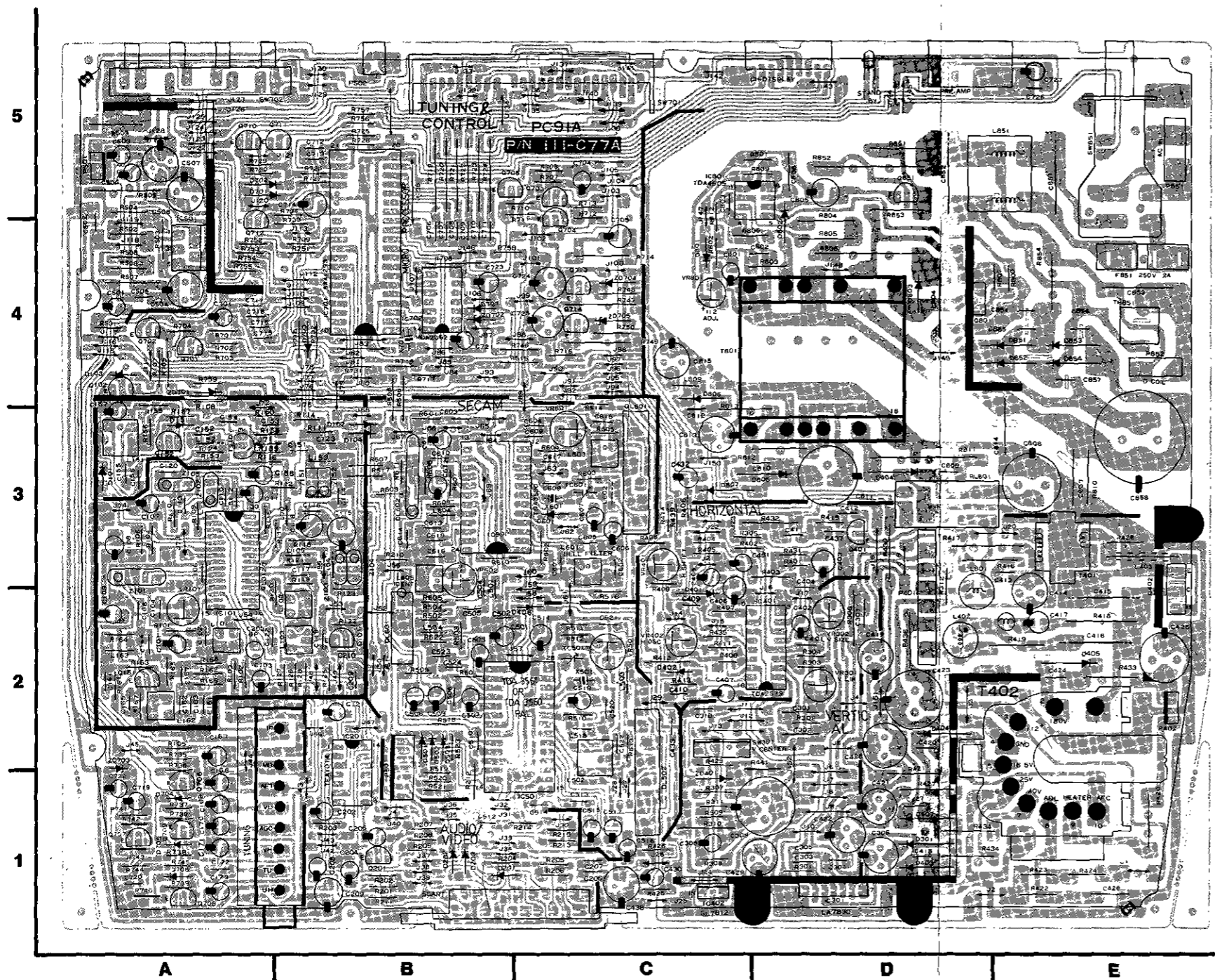
FIGURE	DESCRIPTION	REFERENCE NO.
	LA7520 or GL3120	IC101
	TEA1014 MDA2062	IC201 IC702
	LA7830	IC301
	TDA2579	IC401
	GL7812	IC402
	TDA3561A	IC501
	TDA3592A	IC601
	SAA1293	IC701
	TDA4605	IC801
	TDA2006	ICS01

## TRANSISTOR

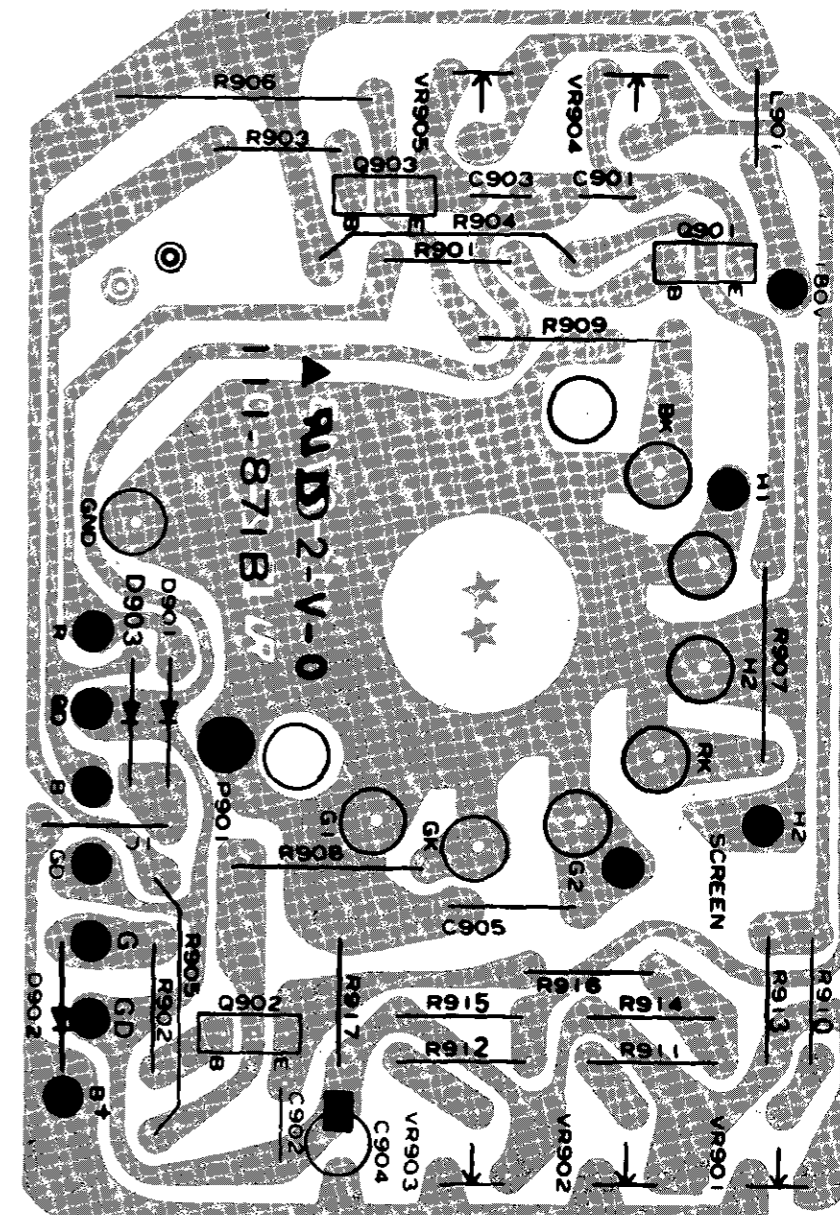
	KTC1815-GR	Q705
	KTC2120-O	Q713
	KTC1815-O	Q101,Q102,Q201 Q151,Q152,Q701 Q707
	KTC388A	Q161
	KTA1015-O/Y	Q704,Q706 Q708-Q712
	2SD1555	Q402
	KTC2230A(Y)	Q401
	KTC2236A-O	Q714
	KTC2482	Q851,Q901-Q903
	KTC1959-Y	Q703
	SIP MOS BUZ-90	Q801

PRINTED CIRCUIT BOARD

MAIN P.C. Board (Component Side)

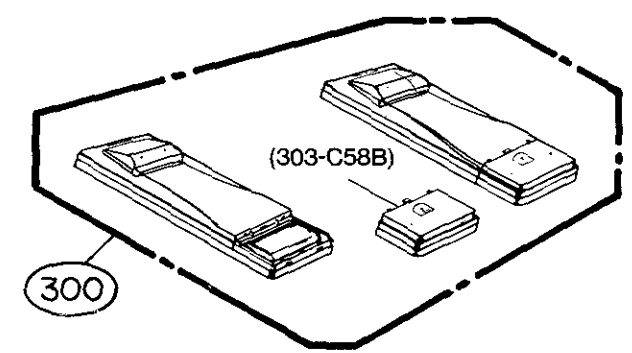
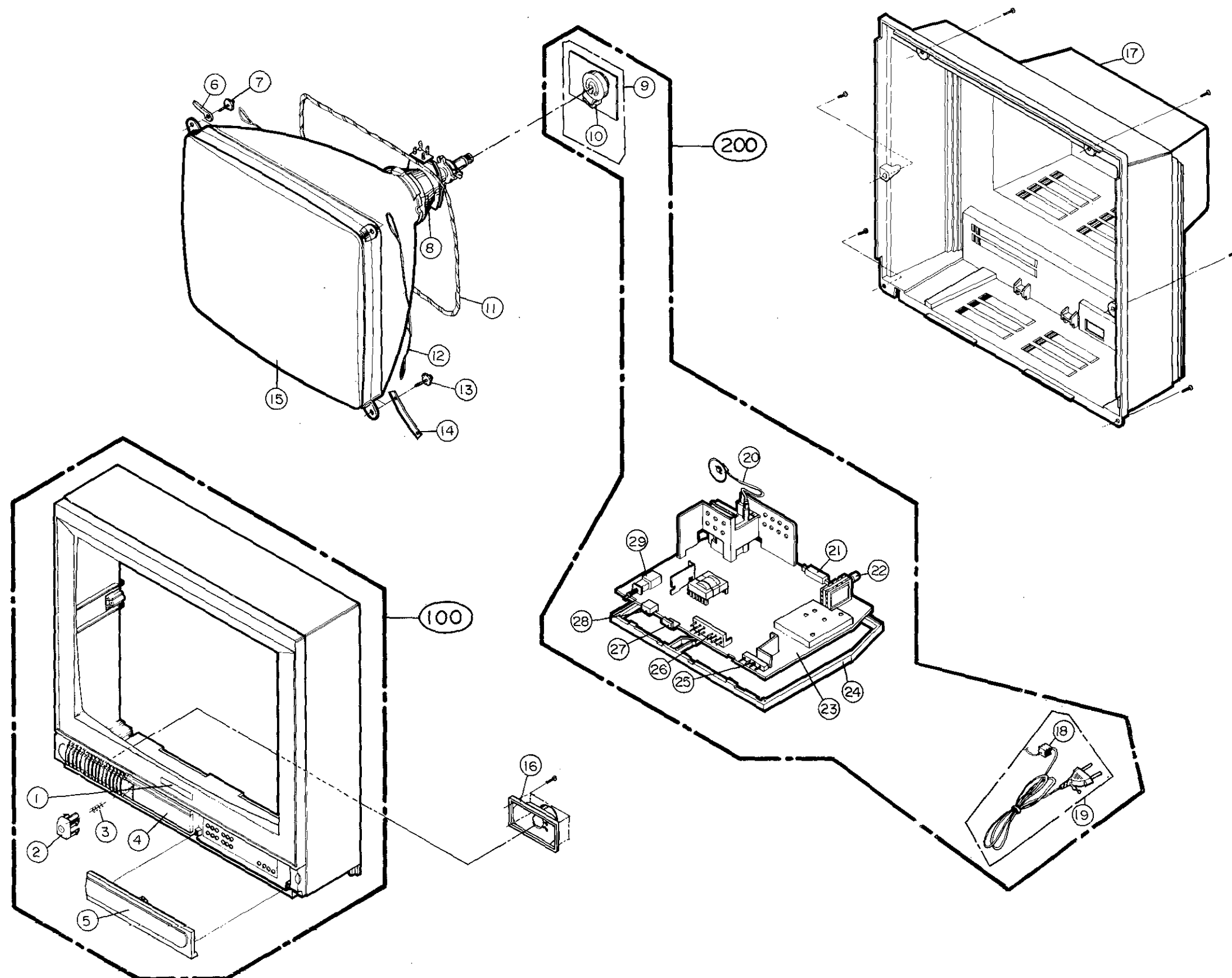


CPT P.C. Board (Component Side)



# EXPLODED VIEW

If you want to order the PCB assembly of the main board, please do not forget to order a FBT together.



**NOTICE:**  
 In this exploded view, some figures may differ from your actual TV a little. But each parts on the exploded view and the replacement parts list has the correct part number. Therefore, when ordering the service parts, put this service manual number, page and your requesting parts number on your document correctly, please. Then, we'll send the parts to you faster.

SP: Serviceable Parts  
 NSP: Not Serviceable Parts

NO.	DESCRIPTION	PART NO.	REMARKS
1	MARK, BRAND	410-560R	SP
2	BUTTON, POWER	441-158B	SP
3	SPRING, BUTTON	320-062G	SP
4	WINDOW, LED DISPLAY	316-256E	SP
5	DOOR, FRONT CONTROL	315-433H	SP
6	HOLDER, D-COIL	341-721A	NSP
7	SCREW, HEXAGON HEAD(TOP)	332-235A	SP
△ 8	DEFLECTION YOKE	153-051C	SP
9	PRINTED CIRCUIT BOARD ASSEMBLY, CPT	110-N03F	SP
10	SOCKET, CPT	381-094C	SP
△ 11	COIL, DEGAUSSING	150-276M	SP
12	LEAD SET, EARTH	170-799C	SP
13	SCREW, HEXAGON HEAD(BOTT)	332-235C	SP
14	HOLDER, LEAD WIRE	NOT IN USE	NSP
△ 15	COLOUR PICTURE TUBE(WITH DY)	2055-V0081H	SP
16	SPEAKER	120-480A	SP
17	COVER, BACK	303-F14A	SP
18	HOLDER, POWER CORD	341-242F	SP
19	CORD, ASSY POWER	174-222A	SP
△ 20	FLY BACK TRANSFORMER	154-177B	SP
21	21 PIN PERI- SOCKET	381-090A	SP
22	TUNER	113-105K	SP
23	PRINTED CIRCUIT BOARD ASSEMBLY, MAIN	110-N581G	SP
24	FRAME, MAIN CHASSIS ASSEMBLY	312-258A	SP
25	SWITCH, 4 KEYS	140-219A	SP
26	SWITCH, 12 KEYS	140-227A	SP
27	LED DISPLAY ASSEMBLY	262-006A	SP
28	PRE-AMP	106-042A	SP
29	SWITCH, MAIN POWER	140-278C	SP

**SUB ASSY**

100	CABINET ASSEMBLY	300-A09L	SP
200	CHASSIS ASSEMBLY, PC91A MAIN	309-844L	SP
300	REMOTE CONTROL ASSEMBLY	105-057L	SP

# COMPONENT LOCATION GUIDE

(Refer to page 29)

R101 ..... 2A	R207 ..... 1B	R428 ..... 3E	R704 ..... 4A	R751 ..... 4A	C103 ..... 2A	C208 ..... 1B	C501 ..... 2B	C708 ..... 4B	CS05 ..... 4A	D402 ..... 2C	Q707 ..... 1A
R102 ..... 2A	R208 ..... 1B	R429 ..... 1C	R705 ..... 4A	R752 ..... 4A	C104 ..... 2A	C209 ..... 1B	C502 ..... 2B	C709 ..... 4B	CS06 ..... 5A	D403 ..... 1D	Q708 ..... 1A
R103 ..... 2A	R209 ..... 1B	R430 ..... 3D	R706 ..... 4B	R753 ..... 4A	C106 ..... 2A	C210 ..... 2B	C503 ..... 2B	C710 ..... 4B	CS07 ..... 5A	D404 ..... 2D	Q709 ..... 1A
R104 ..... 3A	R210 ..... 3B	R431 ..... 3D	R707 ..... 5C	R754 ..... 4A	C107 ..... 3A	C301 ..... 2D	C504 ..... 2B	C711 ..... 4B	CS08 ..... 5A	D405 ..... 2E	Q710 ..... 5A
R105 ..... 1A	R211 ..... 1B	R432 ..... 3D	R708 ..... 5C	R755 ..... 4A	C108 ..... 3A	C302 ..... 2D	C505 ..... 2B	C712 ..... 5B	TS501 ..... 2C	D406 ..... 2B	Q711 ..... 5A
R106 ..... 3A	R212 ..... 1B	R433 ..... 2E	R709 ..... 4A	R756 ..... 4B	C109 ..... 2A	C303 ..... 1D	C506 ..... 2B	C713 ..... 5B	TS601 ..... 3C	D407 ..... 1D	Q712 ..... 4A
R107 ..... 4A	R213 ..... 1C	R434 ..... 1D	R710 ..... 5B	R757 ..... 5B	C110 ..... 3A	C304 ..... 1D	C507 ..... 2B	C714 ..... 5B	L101 ..... 2A	D501 ..... 1B	Q713 ..... 4C
R108 ..... 3A	R214 ..... 1B	R435 ..... 2C	R711 ..... 5B	R758 ..... 5B	C111 ..... 3A	C305 ..... 1D	C508 ..... 2B	C715 ..... 4A	L102 ..... 2A	D502 ..... 1B	Q714 ..... 4C
R109 ..... 3A	R215 ..... 1C	R436 ..... 2D	R712 ..... 5C	R759 ..... 4A	C112 ..... 3A	C306 ..... 1D	C509 ..... 2B	C716 ..... 4A	L103 ..... 2A	D503 ..... 1B	Q801 ..... 4D
R110 ..... 3A	R301 ..... 1D	R439 ..... 3C	R713 ..... 5C	R800 ..... 4E	C113 ..... 3A	C307 ..... 2D	C510 ..... 1B	C717 ..... 4A	L104 ..... 2B	D701 ..... 5A	Q851 ..... 5D
R111 ..... 3B	R302 ..... 2D	R441 ..... 1D	R714 ..... 4C	R801 ..... 5C	C114 ..... 3B	C308 ..... 1C	C511 ..... 2C	C718 ..... 4A	L105 ..... 3A	D702 ..... 5A	IC101 ..... 2A
R112 ..... 3A	R303 ..... 2D	R501 ..... 2B	R715 ..... 4B	R802 ..... 4C	C115 ..... 3B	C309 ..... 1C	C512 ..... 1B	C719 ..... 1A	L151 ..... 3A	D703 ..... 4A	IC201 ..... 1B
R114 ..... 3A	R304 ..... 2D	R502 ..... 2B	R716 ..... 4C	R803 ..... 4D	C116 ..... 3B	C310 ..... 2C	C513 ..... 1C	C720 ..... 1A	L152 ..... 3A	D704 ..... 1A	IC301 ..... 1D
R115 ..... 3A	R305 ..... 3C	R503 ..... 2B	R717 ..... 4B	R804 ..... 5D	C117 ..... 2A	C401 ..... 2D	C514 ..... 1C	C721 ..... 4B	L153 ..... 3B	D705 ..... 1A	IC401 ..... 2D
R116 ..... 3A	R306 ..... 2D	R504 ..... 2B	R718 ..... 4A	R805 ..... 4D	C118 ..... 3A	C402 ..... 2D	C515 ..... 1C	C722 ..... 1A	L161 ..... 2A	D706 ..... 1A	IC402 ..... 1C
R117 ..... 3A	R307 ..... 1C	R505 ..... 2B	R719 ..... 5B	R806 ..... 4C	C119 ..... 2B	C403 ..... 3D	C516 ..... 1C	C723 ..... 4B	L162 ..... 2A	D707 ..... 4B	IC501 ..... 1B
R118 ..... 3A	R308 ..... 1C	R506 ..... 3B	R720 ..... 5B	R807 ..... 4E	C120 ..... 3A	C404 ..... 2D	C517 ..... 1C	C724 ..... 4B	L163 ..... 2A	D801 ..... 4C	IC601 ..... 3B
R119 ..... 2A	R309 ..... 1C	R507 ..... 3B	R721 ..... 5B	R808 ..... 4D	C121 ..... 2B	C405 ..... 2C	C518 ..... 2C	C725 ..... 4B	L402 ..... 2D	D802 ..... 4D	IC701 ..... 4B
R120 ..... 2A	R310 ..... 1C	R508 ..... 3B	R722 ..... 5B	R809 ..... 5C	C122 ..... 2A	C406 ..... 2C	C519 ..... 2C	C726 ..... 5E	L403 ..... 3E	D803 ..... 4D	IC702 ..... 4B
R121 ..... 3A	R311 ..... 1C	R509 ..... 2B	R723 ..... 5B	R810 ..... 3E	C123 ..... 3B	C407 ..... 2C	C520 ..... 2C	C727 ..... 5E	L501 ..... 2B	D804 ..... 3D	IC801 ..... 5C
R122 ..... 2B	R312 ..... 2D	R510 ..... 2C	R724 ..... 5B	R811 ..... 3D	C151 ..... 3A	C408 ..... 2C	C521 ..... 2C	C801 ..... 4C	L502 ..... 1C	D805 ..... 3C	ICS01 ..... 4A
R123 ..... 2B	R401 ..... 3D	R511 ..... 2C	R725 ..... 5B	R812 ..... 3C	C152 ..... 3A	C409 ..... 2C	C522 ..... 1C	C802 ..... 4C	L503 ..... 2C	D806 ..... 4C	SW301 ..... 1C
R125 ..... 2B	R402 ..... 3C	R513 ..... 1C	R726 ..... 5B	R813 ..... 3C	C153 ..... 3A	C410 ..... 2C	C523 ..... 2B	C803 ..... 5C	L504 ..... 2B	D807 ..... 3C	SW701 ..... 5C
R126 ..... 2A	R403 ..... 2D	R514 ..... 3C	R727 ..... 5B	R851 ..... 5D	C154 ..... 3A	C411 ..... 3D	C524 ..... 2B	C804 ..... 4D	L601 ..... 3C	D851 ..... 4E	SW702 ..... 5A
R127 ..... 2A	R404 ..... 3C	R515 ..... 4B	R728 ..... 5B	R852 ..... 5D	C155 ..... 3A	C412 ..... 3D	C601 ..... 3C	C805 ..... 5D	L602 ..... 3C	D852 ..... 4E	SW851 ..... 5E
R128 ..... 2A	R405 ..... 3C	R516 ..... 2C	R729 ..... 5A	R853 ..... 5D	C156 ..... 3A	C413 ..... 2E	C602 ..... 3C	C806 ..... 5D	L603 ..... 3C	D853 ..... 4E	X501 ..... 2C
R153 ..... 3A	R406 ..... 3C	R517 ..... 3B	R730 ..... 5A	R854 ..... 4E	C157 ..... 3A	C414 ..... 2E	C603 ..... 3B	C807 ..... 3E	L604 ..... 3B	D854 ..... 4E	X601 ..... 3C
R154 ..... 3A	R407 ..... 2C	R518 ..... 2B	R731 ..... 4B	RS01 ..... 4A	C158 ..... 3A	C415 ..... 2E	C604 ..... 3C	C808 ..... 3E	L605 ..... 2B	ZD401 ..... 1C	X701 ..... 4B
R155 ..... 3A	R408 ..... 3C	R519 ..... 1B	R732 ..... 4B	RS02 ..... 4A	C161 ..... 2A	C416 ..... 2E	C605 ..... 3C	C809 ..... 3D	L801 ..... 2D	ZD701 ..... 4A	TH851 ..... 4E
R156 ..... 3A	R409 ..... 2C	R520 ..... 1B	R733 ..... 5A	RS03 ..... 4A	C162 ..... 2A	C417 ..... 3E	C606 ..... 3C	C810 ..... 3C	L851 ..... 5E	ZD702 ..... 4B	Z101 ..... 2A
R157 ..... 3A	R411 ..... 2C	R521 ..... 1B	R734 ..... 5A	RS04 ..... 5A	C163 ..... 2A	C418 ..... 1D	C607 ..... 3C	C811 ..... 3D	L809 ..... 4C	ZD703 ..... 1A	Z102 ..... 3A
R158 ..... 3A	R412 ..... 2C	R522 ..... 2B	R735 ..... 1A	RS05 ..... 5A	C164 ..... 2A	C420 ..... 1D	C608 ..... 3C	C812 ..... 3C	DL501 ..... 2B	ZD705 ..... 4C	Z103 ..... 2B
R159 ..... 3A	R413 ..... 2C	R523 ..... 1B	R736 ..... 1A	RS06 ..... 4A	C165 ..... 2A	C421 ..... 1D	C609 ..... 3C	C813 ..... 3C	DL502 ..... 1C	Q101 ..... 2B	Z104 ..... 2B
R160 ..... 3A	R414 ..... 3C	R601 ..... 3B	R737 ..... 1A	RS07 ..... 4A	C166 ..... 2A	C422 ..... 1D	C610 ..... 3B	C814 ..... 3E	DL601 ..... 3C	Q102 ..... 4A	Z105 ..... 3A
R161 ..... 2A	R415 ..... 3D	R602 ..... 3C	R738 ..... 1A	RS08 ..... 4A	C167 ..... 1A	C423 ..... 2D	C611 ..... 3B	C815 ..... 4C	T401 ..... 3E	Q151 ..... 3A	Z151 ..... 3B
R163 ..... 2A	R416 ..... 3E	R603 ..... 3C	R739 ..... 1A	RS09 ..... 5A	C168 ..... 1A	C424 ..... 2E	C612 ..... 3B	C851 ..... 5E	T402 ..... 1E	Q152 ..... 3A	Z152 ..... 3B
R164 ..... 2A	R417 ..... 3D	R604 ..... 3C	R740 ..... 1A	VR101 ..... 2A	C169 ..... 1A	C425 ..... 2E	C613 ..... 3B	C852 ..... 5D	T801 ..... 4D	Q151 ..... 3A	P401 ..... 2D
R165 ..... 2A	R418 ..... 2E	R605 ..... 3C	R741 ..... 1A	VR301 ..... 2A	C170 ..... 1A	C426 ..... 1E	C614 ..... 3B	C853 ..... 4E	D101 ..... 3A	Q161 ..... 2A	P402 ..... 2E
R166 ..... 2A	R419 ..... 2E	R606 ..... 3B	R742 ..... 1A	VR302 ..... 2D	C171 ..... 1A	C427 ..... 1D	C615 ..... 3B	C854 ..... 4E	D102 ..... 3B	Q201 ..... 1B	P501 ..... 1B
R167 ..... 2A	R420 ..... 1E	R607 ..... 3B	R743 ..... 1A	VR401 ..... 3C	C172 ..... 1A	C428 ..... 1D	C616 ..... 3B	C855 ..... 4E	D103 ..... 4A	Q401 ..... 3D	P851 ..... 5E
R169 ..... 2A	R421 ..... 1D	R608 ..... 3B	R744 ..... 1A	VR402 ..... 2C	C173 ..... 1A	C429 ..... 1C	C617 ..... 3C	C856 ..... 4E	D104 ..... 3B	Q402 ..... 2E	P852 ..... 4E
R201 ..... 1B	R422 ..... 1E	R609 ..... 3B	R745 ..... 1A	VR501 ..... 2C	C202 ..... 1B	C430 ..... 1C	C618 ..... 3C	C857 ..... 4E	D151 ..... 3A	Q701 ..... 4A	PS01 ..... 5A
R202 ..... 1B	R423 ..... 1E	R610 ..... 3B	R746 ..... 4B	VR601 ..... 3C	C203 ..... 2A	C431 ..... 3C	C701 ..... 4A	C858 ..... 3E	D201 ..... 1B	Q702 ..... 4A	PS02 ..... 5B
R203 ..... 1B	R424 ..... 1E	R611 ..... 3B	R747 ..... 4C	VR602 ..... 2B	C204 ..... 1B	C432 ..... 3C	C704 ..... 5C	CS01 ..... 4A	D202 ..... 1B	Q703 ..... 5C	RL801 ..... 3D
R204 ..... 1B	R425 ..... 1C	R701 ..... 4A	R748 ..... 4C	VR801 ..... 4C	C205 ..... 1B	C433 ..... 2D	C705 ..... 4C	CS02 ..... 4A	D203 ..... 1B	Q704 ..... 5C	SCART ..... 1B
R205 ..... 1C	R426 ..... 1C	R702 ..... 4A	R749 ..... 4C	C101 ..... 2A	C206 ..... 1C	C437 ..... 3D	C706 ..... 4B	CS03 ..... 5A	D301 ..... 1D	Q705 ..... 5B	SOCKET ..... 1B
R206 ..... 1C	R427 ..... 1D	R703 ..... 4A	R750 ..... 4C	C102 ..... 2A	C207 ..... 1C	C438 ..... 1C	C707 ..... 4B	CS04 ..... 4A	D401 ..... 2C	Q706 ..... 1A	F851 ..... 4F



**SAFETY PARTS LIST OF PC-91A CHASSIS**



Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often provided without being noticed by a visual inspection and the X-RAY RADIATION protection afforded by some of them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified by **Δ** marks on the circuit diagram. Before replacing any these components, read the specification of the part carefully. The use of substitute replacement parts which do not have the same characteristics as specified in this parts list may create X-RAY RADIATION.

LOCA NO	DESCRIPTION
C416	C, METAL POLYPROPYLENE
C423	CAPACITOR, ELECTRONIC
C807	CAPACITOR
C808	CAPACITOR, ELECTRONIC
C911	C, ELECTRONIC
C813	CAPACITOR, ELECTRONIC
C816	CAPACITOR, ELECTRONIC
C851	CAPACITOR
C852	CAPACITOR
C858	C, METAL POLYPROPYLENE
D804	DIODE
D805	DIODE
D806	DIODE
D851	DIODE
D852	DIODE
D853	DIODE
D854	DIODE
F851	FUSE
FR801	RESISTOR, FUSIBLE
IC801	IC, SIEMENS
Q402	TRANSISTOR
Q801	TRANSISTOR
R434	RESISTOR, FUSIBLE
R456	RESISTOR, FUSIBLE
R810	RESISTOR
R814	RESISTOR, FUSIBLE
R852	RESISTOR, FIX METAL FILM OXIDE
R854	C, CEMENT RWR
SW851	SWITCH
T401	TRANSFORMER
T402	FBT
T801	TRANSFORMER
	POWER SWITCH
	COLOR PICTURE TUBE (CPT)
	COIL, DEGAUSSING
	DEFLECTION YOKE (DY)

All of the parts which are marked with "B" in the "AL" column of this replacement parts list are on the back side of the main chassis. And two parts which are marked with "R" are in the remote control unit.

REPLACEMENT PARTS LIST PAGE : 2

AL	LOCA NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
	C505	0C01041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C506	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C507	0CE4776F618	CAPACITOR, ELECTROLYTIC	470MF SMS 16V M FMS TFS	
	C508	0CE2276F618	CAPACITOR, ELECTROLYTIC	220M SMS 35V M FL TP(S)	
	C509	0CE3366F618	CAPACITOR, ELECTROLYTIC	33MF SMS 16V M FMS TFS	
	C101	0CE4766F618	CAPACITOR, ELECTROLYTIC	0.47MF SMS 50V M FMS TFS	
	C102	0CC1000K105	CAPACITOR, CERAMIC(TEMP COMP)	10P 50V D SL TS	
	C104	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C106	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C107	0CE6831N509	CAPACITOR, POLYESTER(MYLAR)	0.068U 100V K POLY TP	
	C108	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C109	0CE4756K618	CAPACITOR, ELECTROLYTIC	4.7MF SMS 50V M FMS TFS	
	C110	0CC3300K415	CAPACITOR, CERAMIC(TEMP COMP)	33P 50V J NPO TS	
	C111	0CE4756K618	CAPACITOR, ELECTROLYTIC	4.7MF SMS 50V M FMS TFS	
	C112	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C113	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C114	0CC1010K415	CAPACITOR, CERAMIC(TEMP COMP)	100P 50V J NPO TS	
	C115	0CE1076F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C116	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C117	0CC1500K405	CAPACITOR, CERAMIC(TEMP COMP)	15P 50V J SL TS	
	C119	0CE1056K618	CAPACITOR, ELECTROLYTIC	1.0MF SMS 50V M FMS TFS	
	C120	0CC4700K415	CAPACITOR, CERAMIC(TEMP COMP)	47P 50V J NPO TP	
	C121	0CE3366F618	CAPACITOR, ELECTROLYTIC	33MF SMS 16V M FMS TFS	
	C122	0CC1500K405	CAPACITOR, CERAMIC(TEMP COMP)	15P 50V J SL TS	
	C123	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C151	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C153	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C158	0CE1056K618	CAPACITOR, ELECTROLYTIC	1.0MF SMS 50V M FMS TFS	
	C161	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C162	0CC0800K115	CAPACITOR, CERAMIC(TEMP COMP)	8P 50V D NPO TS	
	C163	0CC2710K405	CAPACITOR, CERAMIC(TEMP COMP)	270P 50V J SL TP	
	C164	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C167	0CE1076F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C168	0CE4766K618	CAPACITOR, ELECTROLYTIC	0.47MF SMS 50V M FMS TFS	
	C169	0CE4756K618	CAPACITOR, ELECTROLYTIC	4.7MF SMS 50V M FMS TFS	
	C170	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C171	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C172	0CE3351N409	CAPACITOR, POLYESTER(MYLAR)	0.035U 100V J POLY TP	
	C173	0CE4756K618	CAPACITOR, ELECTROLYTIC	4.7MF SMS 50V M FMS TFS	
	C174	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C202	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C204	0CE4756K618	CAPACITOR, ELECTROLYTIC	4.7MF SMS 50V M FMS TFS	
	C205	0CE4756K618	CAPACITOR, ELECTROLYTIC	4.7MF SMS 50V M FMS TFS	
	C206	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C207	181-444J	C, METAL POLYESTER	0.72MF 50V J	
	C208	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C211	0CK4730K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.047U 50V Z F TS	
	C301	181-444J	C, METAL POLYESTER	0.22MF 50V J	

REPLACEMENT PARTS LIST PAGE : 3

AL	LOCA NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
	C302	181-444L	CAPACITOR	MPE, E08-UH334JZ3(TR)	
	C303	0CE5610K405	CAPACITOR, CERAMIC(TEMP COMP)	560P 50V J SL TS	
	C304	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C305	0CC5600K405	CAPACITOR, CERAMIC(TEMP COMP)	56P 50V J NPO TP	
	C306	0CE1076F618	CAPACITOR, ELECTROLYTIC	10MF SMS 25V M FMS TP(S)	
	C307	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C308	181-022N	CAPACITOR, CHEMI	1MF 50V TR	
	C309	0CE22646A18	CAPACITOR, ELECTROLYTIC	220M SMS 25V M TP7.5	
	C310	0CQ1031N509	CAPACITOR, POLYESTER(MYLAR)	0.011U 100V K POLY TP	
	C315	0CQ1031N509	CAPACITOR, POLYESTER(MYLAR)	0.011U 100V K POLY TP	
	C401	0CC2210K405	CAPACITOR, CERAMIC(TEMP COMP)	220P 50V J SL TP	
	C402	0CE2256F618	CAPACITOR, ELECTROLYTIC	2.2MF SMS 50V M FMS TFS	
	C403	0CE2266F618	CAPACITOR, ELECTROLYTIC	2.2MF SMS 16V M FMS TAS	
	C404	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C405	0CE4756K618	CAPACITOR, ELECTROLYTIC	4.7MF SMS 50V M FMS TFS	
	C406	0CE4766F618	CAPACITOR, ELECTROLYTIC	47MF SMS 16V M FMS TFS	
	C407	0CE3366F618	CAPACITOR, ELECTROLYTIC	33MF SMS 16V M FMS TFS	
	C408	181-074N	CAPACITOR	PSR 1.4KV 862H	
	C409	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C410	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C411	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C412	0CK330K515	CAPACITOR, CERAMIC(HIGH DIELE)	330P 50V K B TS	
	C413	0CQ6831N509	CAPACITOR, POLYESTER(MYLAR)	0.068U 100V K POLY TP	
	C414	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C415	181-452G	CAPACITOR	MPP 1.4KV 862H	
	C416	181-128B	CAPACITOR, METAL POLYPROPYLENE	0.47MF 200V J	
	C417	0CE1051P618	CAPACITOR, ELECTROLYTIC	1MF SMS 160V M FMS TFS	
	C418	0CK2710W515	CAPACITOR, CERAMIC(HIGH DIELE)	270P 500V K B S TS	
	C419	0CE2276J618	CAPACITOR, ELECTROLYTIC	220M SMS 35V M FL TP(S)	
	C420	0CK2710W515	CAPACITOR, CERAMIC(HIGH DIELE)	270P 500V K B S TS	
	C421	0CE3376H618	CAPACITOR, ELECTROLYTIC	330M SMS 25V M FL TP(S)	
	C422	0CE2276J618	CAPACITOR, ELECTROLYTIC	220M SMS 35V M FL TP(S)	
	C423	0CE1071P650	CAPACITOR, ELECTROLYTIC	100M SM 160V M FMS TFS	
	C424	0CK2710W515	CAPACITOR, CERAMIC(HIGH DIELE)	270P 500V K B S TS	
	C425	0CE4751R618	CAPACITOR, ELECTROLYTIC	4.7M SH 250V M TFS	
	C426	181-059G	C, POLYPROPYLENE	0.047MF 200V K	
	C427	0CK2710W515	CAPACITOR, CERAMIC(HIGH DIELE)	270P 500V K B S TS	
	C428	0CE4766K618	CAPACITOR, ELECTROLYTIC	47M SMS 50V M FMS TP(S)	
	C429	0CE2276F618	CAPACITOR, ELECTROLYTIC	220MF SMS 16V M FMS TFS	
	C431	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C432	0CE4756K618	CAPACITOR, ELECTROLYTIC	4.7MF SMS 50V M FMS TFS	
	C433	0CC2710K405	CAPACITOR, CERAMIC(TEMP COMP)	270P 50V J SL TP	
	C437	0CK330K515	CAPACITOR, CERAMIC(HIGH DIELE)	330P 50V K B TS	
	C438	0CE2276F618	CAPACITOR, ELECTROLYTIC	220MF SMS 16V M FMS TFS	
	C501	0CE4766F618	CAPACITOR, ELECTROLYTIC	47MF SMS 16V M FMS TFS	
	C502	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C503	0CE2266K618	CAPACITOR, ELECTROLYTIC	0.22M SMS 50V M FMS TFS	
	C505	0CC5600K415	CAPACITOR, CERAMIC(TEMP COMP)	56P 50V J NPO TP	
	C506	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	

REPLACEMENT PARTS LIST PAGE : 4

AL	LOCA NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
	C507	0CE2256K618	CAPACITOR, ELECTROLYTIC	2.2MF SMS 50V M FMS TFS	
	C508	0CE2266F618	CAPACITOR, ELECTROLYTIC	22MF SMS 16V M FMS TAS	
	C509	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C510	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C511	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C515	0CE1056K618	CAPACITOR, ELECTROLYTIC	1.0MF SMS 50V M FMS TFS	
	C516	0CE1056K618	CAPACITOR, ELECTROLYTIC	1.0MF SMS 50V M FMS TFS	
	C517	0CE1056K618	CAPACITOR, ELECTROLYTIC	1.0MF SMS 50V M FMS TFS	
	C518	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C519	0CE2256K618	CAPACITOR, ELECTROLYTIC	2.2MF SMS 50V M FMS TFS	
	C520	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C521	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C522	0CQ1031N509	CAPACITOR, POLYESTER(MYLAR)	0.011U 100V K POLY TP	
	C523	0CC1210K405	CAPACITOR, CERAMIC(TEMP COMP)	120P 50V J SL TS	
	C524	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C701	0CE1046K618	CAPACITOR, ELECTROLYTIC	0.1U SMS 50V M FMS TFS	
	C704	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C706	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C707	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C708	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C709	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C710	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C711	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C712	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C713	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C714	0CE4766F618	CAPACITOR, ELECTROLYTIC	47MF SMS 16V M FMS TFS	
	C715	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C716	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C717	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C718	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C719	0CC2710K405	CAPACITOR, CERAMIC(TEMP COMP)	270P 50V J SL TP	
	C720	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C721	0CE1056K618	CAPACITOR, ELECTROLYTIC	1.0MF SMS 50V M FMS TFS	
	C722	0CE1056K618	CAPACITOR, ELECTROLYTIC	1.0MF SMS 50V M FMS TFS	
	C723	0CE2266F618	CAPACITOR, ELECTROLYTIC	22MF SMS 16V M FMS TAS	
	C725	0CE1076F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C726	0CK1030K945	CAPACITOR, CERAMIC(HIGH DIELE)	0.01MF 50V Z F TS	
	C727	0CE4766F618	CAPACITOR, ELECTROLYTIC	47MF SMS 16V M FMS TFS	
	C738	0CE1076F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C739	0CC330K405	CAPACITOR, CERAMIC(TEMP COMP)	330P 50V J SL TS	
	C740	0CE1066F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C801	0CE1056K618	CAPACITOR, ELECTROLYTIC	1.0MF SMS 50V M FMS TFS	
	C802	0CK1020K515	CAPACITOR, CERAMIC(HIGH DIELE)	1000PF 500V K B S	
	C803	0CC8221N519	CAPACITOR, POLYESTER(MYLAR)	0.0082U 100V K POLY NI TP	
	C804	181-415H	CAPACITOR	ROX HPF 630V 0.033MF	
	C805	0CE4766F618	CAPACITOR, ELECTROLYTIC	47MF SMS 16V M FMS TFS	
	C806	0CQ1041N509	CAPACITOR, POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
	C807	181-157B	CAPACITOR	DE 1410E222H ACT4K-KD	
	C808	0CE1071P650	CAPACITOR, ELECTROLYTIC	100M SM 160V M FMS TFS	

REPLACEMENT PARTS LIST PAGE : 5

AL	LOCA NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
	C809	0CK2710W515	CAPACITOR, CERAMIC(HIGH DIELE)	270P 500V K B S TS	
	C810	0CK2710W515	CAPACITOR, CERAMIC(HIGH DIELE)	270P 500V K B S TS	
	C811	0CE1086J618	CAPACITOR, ELECTROLYTIC	1000M SMS 35V M FL TP(S)	
	C812	0CK2710W515	CAPACITOR, CERAMIC(HIGH DIELE)	270P 500V K B S TS	
	C813	0CE4776F618	CAPACITOR, ELECTROLYTIC	470MF SMS 16V M FMS TFS	
	C814	181-410B	CAPACITOR	DF1910E 472M	
	C815	0CE1076F618	CAPACITOR, ELECTROLYTIC	10MF SMS 16V M FMS TFS	
	C821	181-433X	CAPACITOR	OK5B30R221KY LEAD4.5 CERAMIC	

DIVI : GV MODEL : CBT-9825 HPTRT BUYER NAME : TEAC-ATL RUN-DATE : 92.11.24

Table with columns: S, AL, LOCA, NO, PART NO(ESS), DESCRIPTION, SPECIFICATION, REMARKS. Contains 48 rows of resistor and carbon film part data.

DIVI : GV MODEL : CBT-9825 HPTRT BUYER NAME : TEAC-ATL RUN-DATE : 92.11.24

Table with columns: S, AL, LOCA, NO, PART NO(ESS), DESCRIPTION, SPECIFICATION, REMARKS. Contains 48 rows of resistor and carbon film part data.

DIVI : GV MODEL : CBT-9825 HPTRT BUYER NAME : TEAC-ATL RUN-DATE : 92.11.24

Table with columns: S, AL, LOCA, NO, PART NO(ESS), DESCRIPTION, SPECIFICATION, REMARKS. Contains 48 rows of resistor, carbon film, and metal film oxide part data.

DIVI : GV MODEL : CBT-9825 HPTRT BUYER NAME : TEAC-ATL RUN-DATE : 92.11.24

Table with columns: S, AL, LOCA, NO, PART NO(ESS), DESCRIPTION, SPECIFICATION, REMARKS. Contains 48 rows of resistor, carbon film, and metal film oxide part data.

DIV : GV MODEL : CBT-9825 HPRT BUYER NAME : TEAC-ATL

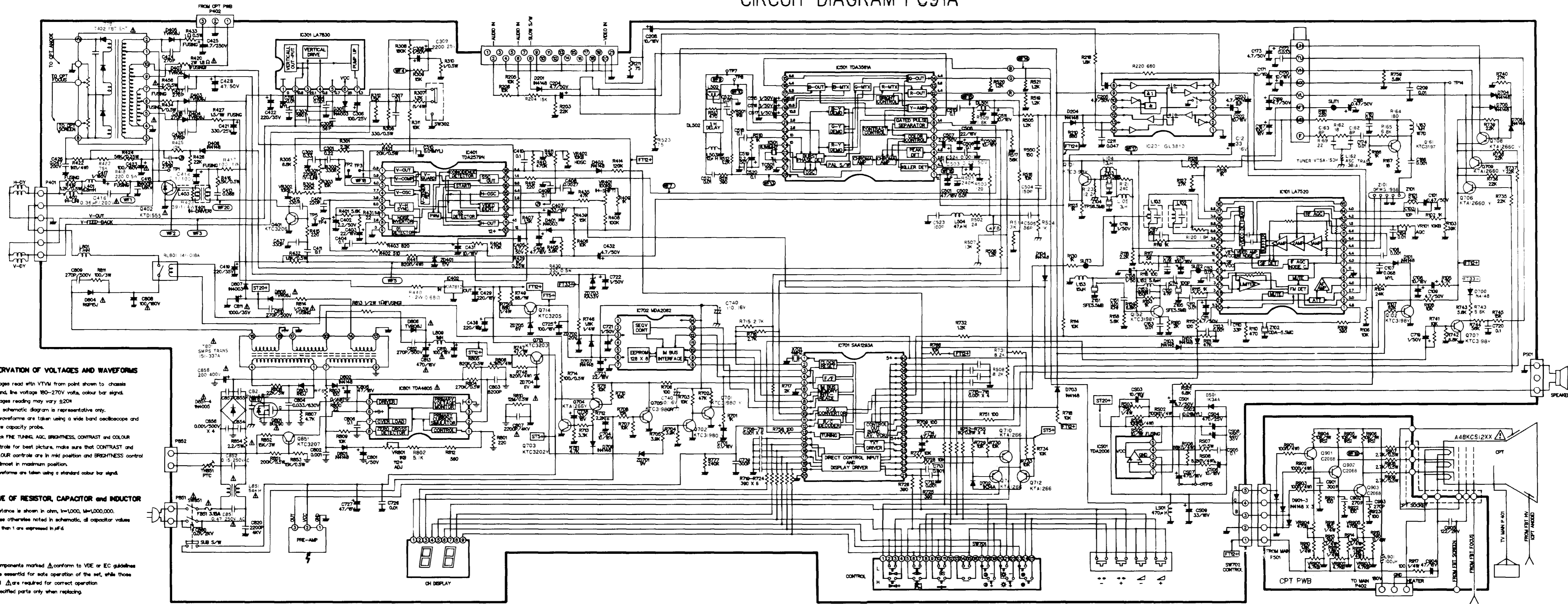
RUN-DATE : 92.11.24

Q	AL	LOCA. NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
			SW701	140-277A	SWITCH	12KEY (HOP/IRIKU)
			SW702	140-219A	SWITCH	TACT S/W UNIT 4P
			SW851	140-278C	SWITCH	MAIN.MESC(TV-5)
			TC501	181-169A	CAPACITOR	CAPACITOR TRIMMER 4.5P-20P
			TH851	163-012A	THERMISTOR	PTC.PTH451A10ZBG180M290
			T401	151-387A	TRANSFORMER	H.DRIVE
			T402	154-177B	FBT	FOC(2)*177B-19SP3
			T801	151-337A	TRANSFORMER	SMS TRANS(CTDA 4605)
			VR101	ORV1103D330	VARIABLE RESISTOR,CARBON FILM	10K 6 ST P3 L2.5 5
			VR301	180-451M	RESISTOR	EVN-DJAA03 B224 HORIZONTAL<TA
			VR302	180-451M	RESISTOR	EVN-DJAA03 B103 HORIZONTAL<TA
			VR401	180-451L	RESISTOR	EVN-DJAA03 B104 HORIZONTAL<TA
			VR402	ORV1103D330	VARIABLE RESISTOR,CARBON FILM	10K 6 ST P3 L2.5 5
			VR501	180-451D	RESISTOR	EVN-DJAA03 B102 HORIZONTAL<TA
			VR801	180-451D	RESISTOR	EVN-DJAA03 B102 HORIZONTAL<TA
			VR901	ORV1472D330	VARIABLE RESISTOR,CARBON FILM	4.7K 6 ST P3 L2.5 5
			VR902	ORV1472D330	VARIABLE RESISTOR,CARBON FILM	4.7K 6 ST P3 L2.5 5
			VR903	ORV1472D330	VARIABLE RESISTOR,CARBON FILM	4.7K 6 ST P3 L2.5 5
			VR904	ORV1471D330	VARIABLE RESISTOR,CARBON FILM	470 6 ST P3 L2.5 5
			VR905	ORV1471D330	VARIABLE RESISTOR,CARBON FILM	470 6 ST P3 L2.5 5
			X501	156-007A	OSCILLATOR	X-TAL 8.86 MHZ
			X701	156-005B	OSCILLATOR	4MHZ
			ZD401	0DZ021709AA	DIODE ZENER	E9A02-17BV
			ZD701	0DZ910009BA	DIODE ZENER	HTZ9.18.TP(52MM).ROHM
			ZD702	0DZ200009AB	DIODE ZENER	HTZ208.TP(52MM).ROHM
			ZD703	0INE574000A	IC. NEC	IPC574J 33V ZENER IC
			ZD704	0DZ560009AA	DIODE ZENER	HT75.68.TP(52MM).ROHM
			ZD705	0DZ560009AA	DIODE ZENER	HT75.68.TP(52MM).ROHM
			Z101	166-191A	FILTER	SAW OFWB1956(PAL B/G)
			Z102	166-126F	FILTER	ODA 5.SMC24B-TF21 (TA)
			Z103	166-031L	FILTER	TPS 5.5MB-TF21(TA)
			Z104	166-031N	FILTER	TPS 6.5MB-TF21(TA)
			Z105	166-002H	FILTER	SFES.5MB-TF21 (TA)
			Z151	166-002H	FILTER	SFES.5MB-TF21 (TA)

\*\*\* END OF DATA \*\*\*



# CIRCUIT DIAGRAM PC91A



### OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltages read with VTVM from point shown to chassis ground, line voltage 180-270V volts, colour bar signal.
2. Voltages reading may vary  $\pm 20\%$ .
3. This schematic diagram is representative only.
4. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
5. Check FINE TUNING, AGC, BRIGHTNESS, CONTRAST and COLOUR controls for best picture, make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS control is almost in maximum position.
6. Waveforms are taken using a standard colour bar signal.

### VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm, k=1,000, M=1,000,000.
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in pF.

The components marked  $\Delta$  conform to VDE or EC guidelines and are essential for safe operation of the set, while those marked  $\nabla$  are required for correct operation. Use specified parts only when replacing.

**NOTICE**  
Since this is basic circuit diagram, the value of components and some partial connection are subject to be changed for improvement.

WF1 100Vp-p	WF11
WF2 12Vp-p	WF12
WF3 50Vp-p	WF13 2.5Vp-p
WF4 1Vp-p	WF14 7Vp-p
WF5 13Vp-p	WF15 500mVp-p
WF6 400Vp-p	WF16 350mVp-p
WF7 9Vp-p	WF17 1.7Vp-p
WF8 550mVp-p	WF18 4Vp-p
WF9 350mVp-p	WF19 95Vp-p
WF10 350mVp-p	WF20 100Vp-p