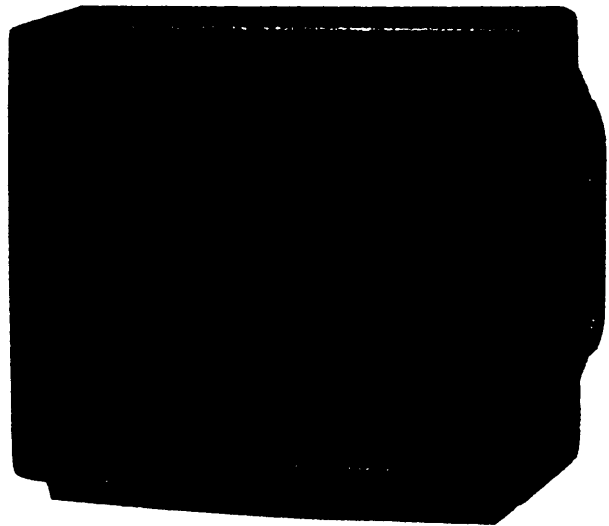


TOSHIBA

COLOUR TELEVISION

219R9E



SPECIFICATIONS

| | | |
|----------------------------|---|-------------------|
| Power Input Rating : | 64 watts (normal), AC 175 ~ 270 volts, 50/60Hz | |
| Aerial Input Impedance : | 75 ohm unbalanced type for VHF and UHF | |
| Receiving Channels : | VHF channels | channels 2 to 12 |
| | UHF channels | channels 21 to 69 |
| Intermediate Frequencies : | Picture I-F carrier frequency | 38.9 MHz |
| | Sound I-F carrier frequency | 33.4 MHz |
| | Colour sub-carrier frequency | 34.47MHz |
| Picture Tube : | A51JAR96X(VMW) (51 cm measured on diagonal of viewable picture area) 90° deflection | |
| Sound Output : | 5 watts (at 10% harmonic distortion) | |
| Speakers : | 6cm x 12cm Oval x 2 | |
| Cabinet : | Plastic portable type | |
| Dimensions : | Height | 47.2 cm |
| | Width | 57.0 cm |
| | Depth | 48.0 cm |
| Weight : | 21 kg | |

Specifications are subject to change without notice.

SAFETY INSTRUCTIONS

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

X-RAY RADIATION PRECAUTION

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 26.5kV at zero beam current (minimum brightness) under 175 ~ 270V AC power source. The high voltage must not, under any circumstances, exceed 27.5kV. Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. 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 PRECAUTION

1. Potentials as high as 26.5kV are present when this receiver is operating. Operation of the receiver outside the cabinet or with back board 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 receiver chassis to keep off the shock hazard before removing the anode cap.
 3. Perfectly discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.
2. If any Fuse in this TV receiver is blown, replace it with the Fuse specified in the chassis part list.
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 10mm away from circuit board.
5. Keep wires away from high voltage or high temperature components.
6. This receiver can be operated under AC 175 ~ 270 volts, 50/60Hz. NEVER connect to DC supply or any other power.

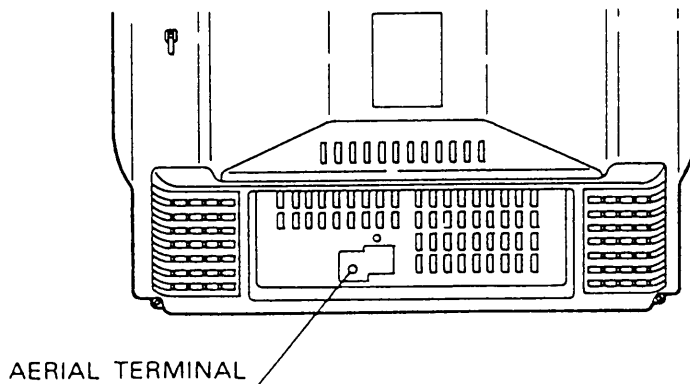
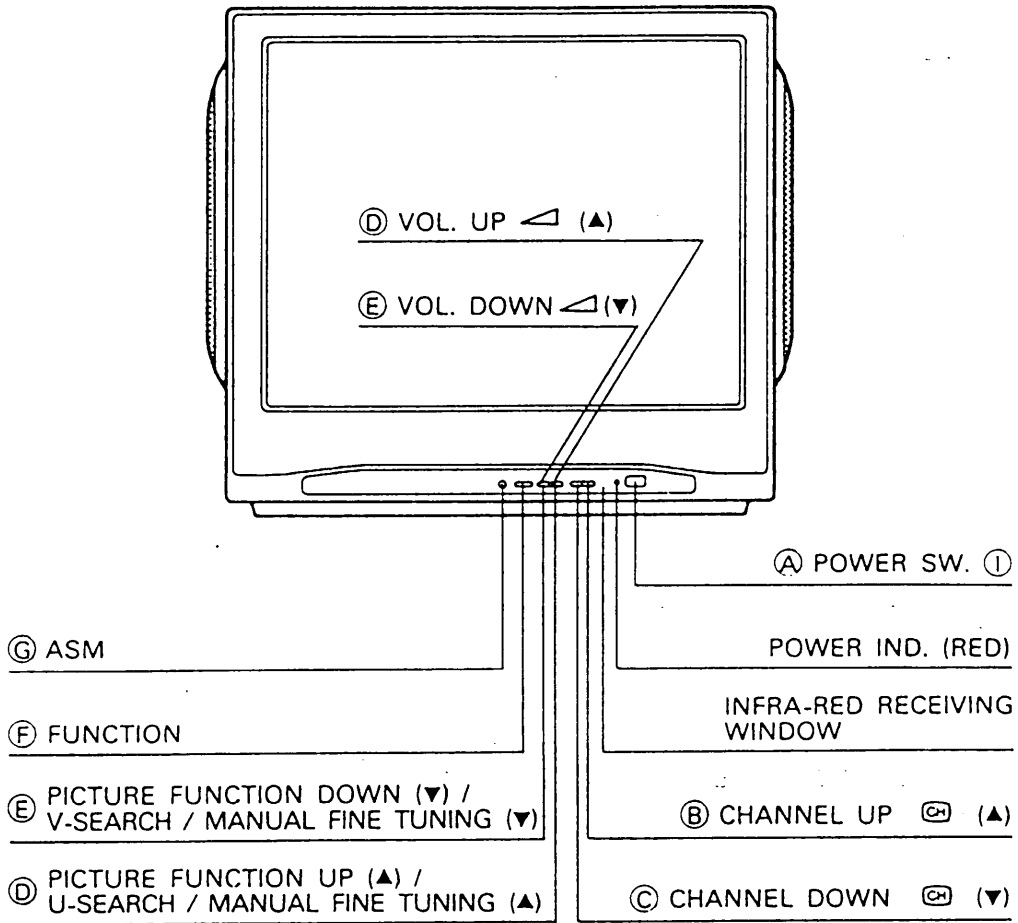
PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by 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 in this manual and its supplements, electrical components having such features are identified by the international hazard symbols on the schematic diagram and the 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.

LOCATION OF CONTROLS

■ 219R9E



OPERATING THE TELEVISION RECEIVER

TO SWITCH ON THE RECEIVER

Push in the POWER switch (A). POWER indicator will be illuminated.

Note: If the receiver stays in standby mode, push the (CH) ▲ ▼ buttons.

TO ADJUST VOLUME (▲ ▼)

Keep on pressing the VOLUME UP button (D) for increase in volume.

Keep on pressing the VOLUME DOWN button (E) for decrease in volume.

Release the button at your desired volume level.

CHANNEL SELECTION AND TUNING

1 CHANNEL PRESET PROCEDURE

Select the position to be preset by the Channel Position Button (▲ or ▼) on the TV set or the remote control hand unit or by the Direct Position Selector on the remote control hand unit. When position No. is in 2 digits (10 to 29), press -/-- button. When -- is displayed on the screen, press a number of the tens digit, and then a number of the units digit.

2 TO MEMORIZE CHANNELS SEQUENCE AUTOMATICALLY

ASM: Free position Auto Search Memory

Note: When ASM button (G) is pressed at any position number among 0 29.

In this case, the position number is different from the channel number.

3 TO MEMORIZE THE DESIRED CHANNEL ON A CERTAIN POSITION

V/U SEARCH

For example: The channel 25 on the position 25.

(1) Select the position 25 with the DIRECT POSITION Button on the remote hand unit or the CHANNEL UP/DOWN Button (B) (C) on the TV.

(2) Press the FUNCTION Button (F) to select the SEARCH mode, and press the V SEARCH Button (E) or the U SEARCH Button (D) to tune in the channel 25.

(3) During the search operation, ">>>" is indicated with flickering in 0.2 seconds interval.

When the search reaches to the lowest frequency of TV VHF/UHF band, the search stops and ">>>" will be indicated continuously (not flickering).

In this case, press the FUNCTION Button (F) to select the search mode, and press the V SEARCH Button (E) or U SEARCH Button (D).

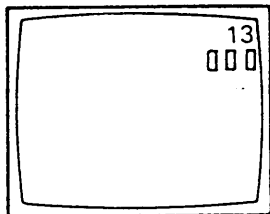
4 MANUAL FINE TUNING

If the receiving condition in your area is poor, the detuning adjustment may be recommended for better viewing with the FINE TUNING Button.

Note: In the fine tuning mode, receiving picture may deviate slightly, because the automatic frequency control is deactivated.

At that time, readjust the fine tuning to correct the deviation.

- (1) Press the FUNCTION Button (F) to select the MFT mode.



- (2) Press the TUNING (+) Button (D) and TUNING (-) Button (E) to adjust the picture for better one.
- (3) The channel is memorized when the TUNING Button is released.

PICTURE CONTROL

(CONTRAST, BRIGHTNESS, COLOUR)

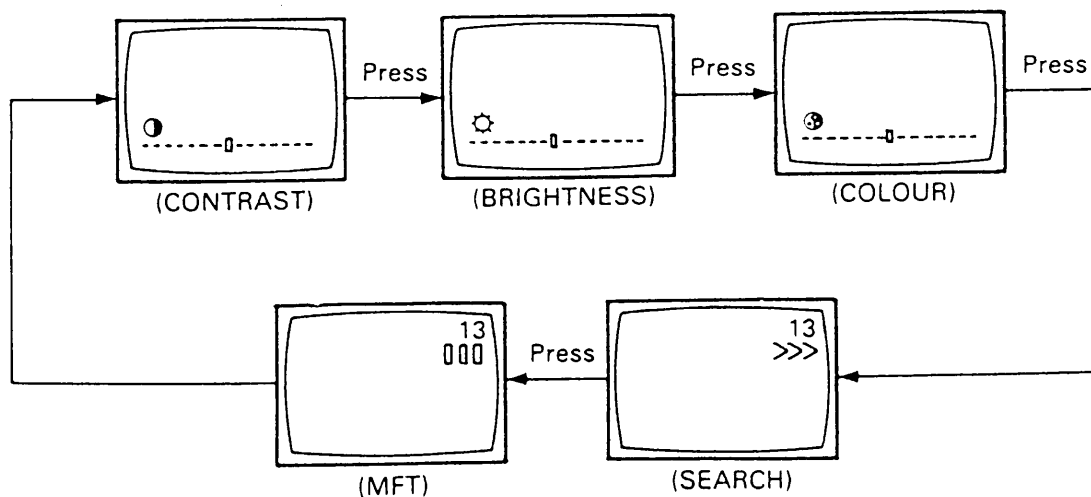
To adjust picture for your preference, first select a function by the FUNCTION Button (F), then adjust the level by the LEVEL Buttons (D) (E).

• FUNCTION SELECT

Press the FUNCTION Button (F) to select a function to be adjusted among CONTRAST, BRIGHTNESS, COLOUR. One pressing shifts the function to the next one as shown right.

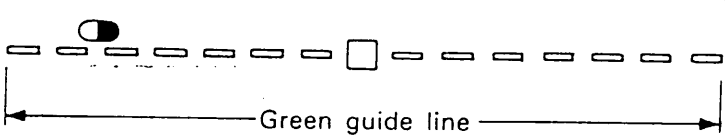
• PICTURE CONTROL INDICATION

1. When pressing the FUNCTION Button at 0 29 the indication will change as shown below.



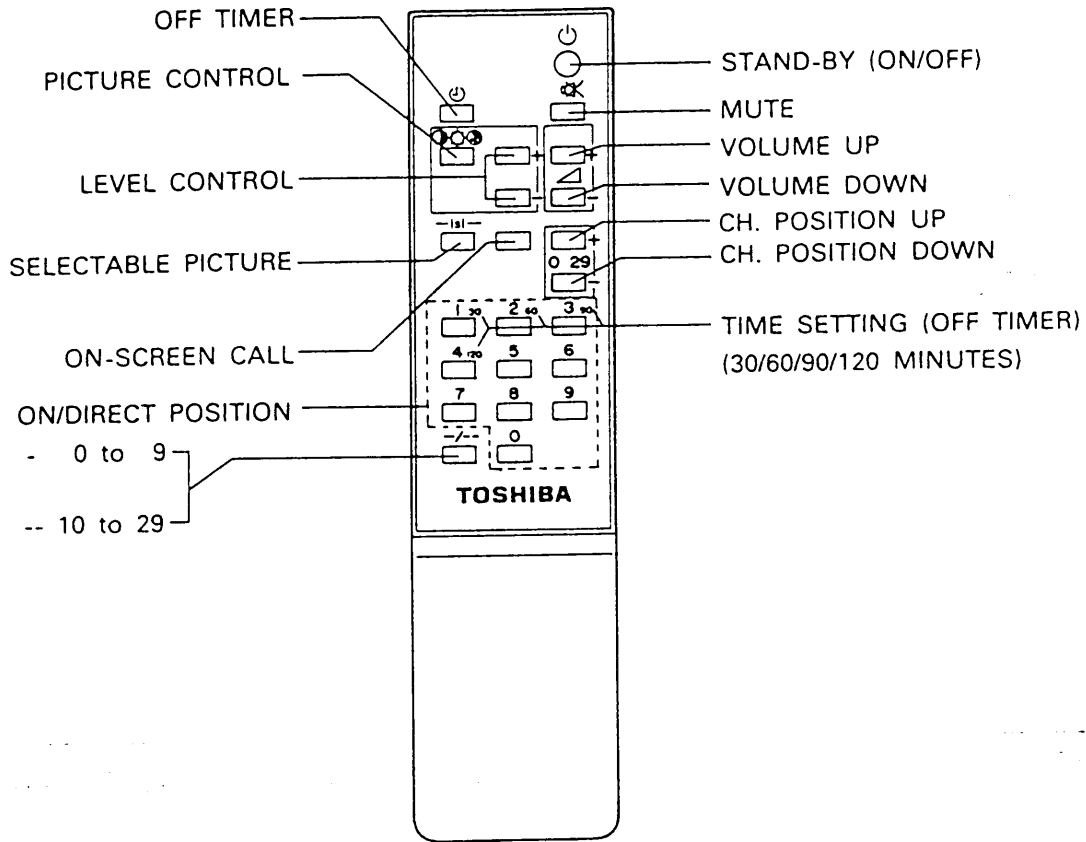
• LEVEL ADJUSTMENT

1. After the function selection above, immediately (within 4 seconds) press the ▲ (+) ▼ (-) Button of LEVEL Buttons ④ ⑤.
Press continuously to shift the level to the next step, and release the button at your preferred picture. The LEVEL Buttons are effective only during the selected function is displayed.
2. Above display will disappear if no additional pressing of CONTROL or LEVEL (▲ / ▼) Button is done within 4 seconds.
3. The last adjusted value will be stored into memory when LEVEL (▲ or ▼) Button is released.
4. Adjustment steps and indication:
Each function can be adjusted with 64 steps and it's approx. adjusted value is displayed with 15 steps.

| FUNCTION | | ON-SCREEN ADJUSTMENT DISPLAY | |
|------------------------|--------------|--|---|
| | |  | |
| | | CONTROL DOWN ▼ Button (The green square moves left) | CONTROL UP ▲ Button (The green square moves right) |
| PICTURE CONTROL Button | CONTRAST ① | Weak | Strong |
| | BRIGHTNESS ② | Dark | Light |
| | COLOUR ③ | Pale | Deep |

REMOTE CONTROL OPERATION

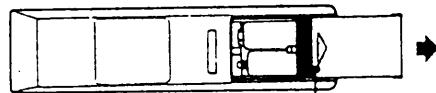
REMOTE CONTROL HAND UNIT



Before operating

INSTALLING THE BATTERIES

1. Remove the battery cover.
2. Insert the two "AA" (pencil size) 1.5V batteries making sure the polarity (+ or -) of the batteries matches the polarity marks inside the unit.
3. Close the battery cover.

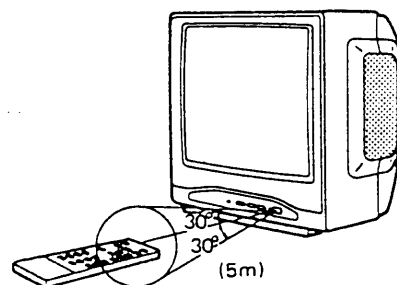


Press and slide to open.

TIPS FOR REMOTE OPERATION












- If intermittent remote control operation occurs, replace the batteries according to "INSTALLING THE BATTERIES."
- The battery life should be about a year under normal use.
- When the Remote Control Hand Unit is not used for a long period of time or when the batteries are worn out, take out the batteries to prevent liquid leak.
- Do not throw the batteries into a fire. Dispose of used batteries in the specified places.
- Take care not to drop, dampen, disassemble the Remote Control Hand Unit.

Effective Range










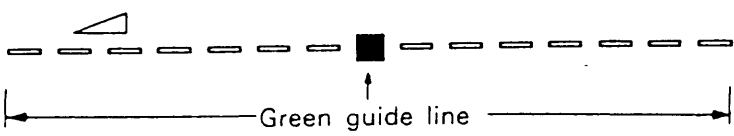






REMOTE OPERATION

Before using the Remote Control Hand Unit, push the power switch on the receiver to turn the TV set on.

1. STAND-BY "ON/OFF" Button ()
To switch on, push the button. To switch off, push the button again.
2. ON/DIRECT POSITION Selector
To switch the TV set "ON", press any of the position buttons, and the program in that position comes out.
3. VOLUME UP or DOWN Button ()
 - Continuous press increases Volume gradually.
 - Continuous press decreases Volume gradually.
 Release the button at your desired volume.
4. Press the FUNCTION Button () to select one among CONTRAST (), BRIGHTNESS () and COLOUR (), and set the level to the optimum by the LEVEL CONTROL Button () ().
 - CONTRAST ()
 - Continuous press increases Contrast gradually.
 - Continuous press decreases Contrast gradually.
 - BRIGHTNESS ()
 - Continuous press increases Brightness gradually.
 - Continuous press decreases Brightness gradually.
 - COLOUR ()
 - Continuous press increases Colour gradually.
 - Continuous press decreases Colour gradually.

VOLUME, CONTRAST, BRIGHTNESS and COLOUR Adjustment

1. The level control keys ( or ) are common to the functions. These keys work only while the selected function is displayed. (for 4 sec.)
2. Above display will disappear if no additional pressing of CONTROL or LEVEL ( / ) key is done within 4 seconds.
3. The last adjusted value will be stored into memory IC when LEVEL ( or ) key is released.
4. The SELECTABLE PICTURE () key resets the value corresponding to picture control functions, such as VOLUME, CONTRAST, BRIGHTNESS and COLOUR, to the value which is returned to the original levels.
5. Adjustment steps and indication:
Each function can be adjusted with 64 steps and it's adjusted approx. value is displayed with 15 steps.

| FUNCTION | ON-SCREEN ADJUSTMENT DISPLAY | |
|--|--|---|
| |  | |
| | CONTROL DOWN  Button (The green square moves left) | CONTROL UP  Button (The green square moves right) |
| VOLUME  | Decrease in volume | Increase in volume |
| CONTRAST  | Weak | Strong |
| BRIGHTNESS  | Dark | Light |
| COLOUR  | Pale | Deep |

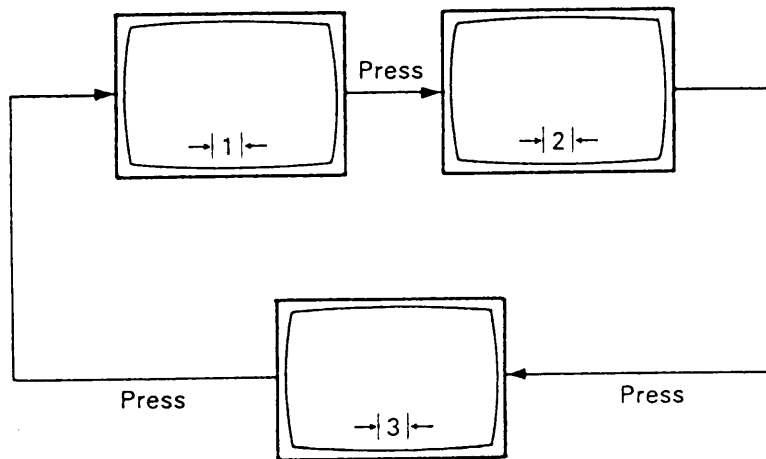
5. CALL Button

The selected CH. No. is indicated on the TV screen when the "CALL" button is pressed. The indication disappears by the second press.

6. SELECTABLE PICTURE Button (→|s|←)

Pressing the SELECTABLE PICTURE Button provides the picture with different contrast in three steps in sequence.

At the time, Brightness and Contrast are returned to the original level.



7. MUTE Button (✕)

Pushing the button stops the sound temporarily.

Pushing the button again returns the sound to the volume at which it was set immediately before the muting.

Use when the telephone rings.

8. OFF-TIMER (⏻)

OFF-TIMER function is incorporated in new control system. Four kinds of setting time, such as 30, 60, 90 and 120 min., are available and its remaining time before turning off a set can be displayed on the screen.

OFF-TIMER is only operated with Remote Control Hand Unit.

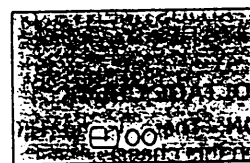
For example, if you wish to switch the TV set off after 30 minutes:

1. Press TIMER ⏻ Button.

The TIMER mode is displayed on the screen.

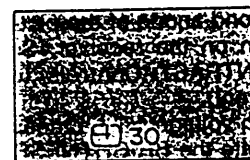
2. Press " ① " Button.

" ⏻ 30" will appear on the screen.

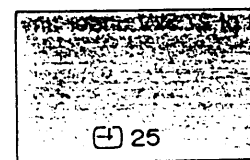


3. Press TIMER Button again.

The display of TIMER mode will disappear.



4. When you want to know the remaining time before turning off a set, press TIMER button. Then the remaining time will show up on the screen.



Note: To cancell the timer operation, ① press TIMER button ② press SELECTABLE PICTURE button.

Timer operation is also cancelled by turning the power off.

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

INSTALLATION AND SERVICE ADJUSTMENTS

GENERAL INFORMATION

All adjustments are thoroughly checked and corrected when the receiver leaves the factory. Therefore the receiver should operate normally and produce proper colour and B/W pictures upon installation. However, several minor adjustments may be required depending on the particular location in which the receiver is operated.

This receiver is shipped completely in cardboard carton. Carefully draw out the receiver from the carton and remove all packing materials. Plug the power cord into a convenient 175 ~ 270 volts 50/60Hz AC two pin power outlet.

Turn the receiver ON and adjust the FINE TUNING for best picture detail with the AFC turned OFF.

Check and adjust all the customer controls such as BRIGHTNESS, CONTRAST and COLOUR Controls to obtain natural colour or B/W picture.

AUTOMATIC DEGAUSSING

A degaussing coil is mounted around the picture tube so that external degaussing after moving the receiver is normally unnecessary, providing the receiver is properly degaussed upon installation. The degaussing coil operates for about 1 second after the power to the receiver is switched ON. If the set is moved or faced in a different direction, the power switch must be switched off at least 10 minutes in order that the automatic degaussing circuit operates properly.

Should the chassis or parts of the cabinet become magnetized to cause poor colour purity, use an external degaussing coil. Slowly move the degaussing coil around the faceplate of the picture tube, the sides and front of the receiver and slowly withdraw the coil to a distance of about 2 m before disconnecting it from AC source. If colour shading still persists, perform the COLOUR PURITY ADJUSTMENT and CONVERGENCE ADJUSTMENTS procedures, as mentioned later.

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis.

1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST Controls to minimum (zero beam current).
3. High voltage will be measured below 27.5kV.
4. Rotate the BRIGHTNESS Control to both extremes to be sure the high voltage does not exceed the limit of 27.5kV under any conditions.

HEIGHT ADJUSTMENT

HEIGHT Control (R351) on MAIN Board changes the size of the picture or pattern, having an equal effect on the top and bottom. Make final adjustment to overscan the mask 2 cm at top and bottom.

FOCUS ADJUSTMENT

Adjust FOCUS Control on FLYBACK TRANS.(T461) for well defined scanning lines in the centre area on the screen.

PAL MATRIX ADJUSTMENT

1. Tune in the colour programme PAL Philips pattern.
2. Set the COLOUR Control VR. to obtain the proper colour.
3. If the PAL MATRIX adjustment is in correct, the Venetian Blind would appear in the colour bars area. This case needs the adjustment.
4. At the first, adjust DL PHASE ADJ. Coil (L551) to minimize the Venetian Blind.
5. Next adjust 1H-DL ADJ. VR (R551) to minimize the Blind.
6. Remove the capacitor, and if the Venetian Blind still remains, adjust 1H-DL PHASE ADJ. Coil (L551) to minimize the Blind again.
7. Repeat the item 5 and 6 procedures, adjust the R551 and L551 until the Blind does not appear when the capacitor is connected.

COLOUR PURITY ADJUSTMENT

Note : Before attempting any purity adjustments, the receiver should be operated for at least fifteen minutes. Purity adjustment requires rubber Wedge kit.

1. Demagnetize the picture tube and cabinet using a degaussing coil.
2. Turn the CONTRAST and BRIGHTNESS Controls to maximum.
3. Adjust RED and BLUE CUT OFF controls (R557 and R559) to provide only a green raster. Advance the GREEN CUT OFF control (R558) if necessary.
4. Loosen the clamp screw holding the yoke, and slide the yoke backward or forward 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 2) around the neck of the picture tube until a green belt is obtained in the centre of the screen. And at the same time, centre the raster vertically by adjusting the magnet.
7. Move the yoke slowly forward or backward until a uniform green screen is obtained. Tighten the clamp screw.
8. Check the purity of the red and blue raster by adjusting the CUT Off Controls.
9. Tighten the clamp screw of the yoke temporarily.
10. Obtain a white raster, referring to "CRT GREY SCALE ADJUSTMENT".
11. Proceed with convergence adjustment.

CRT GREY SCALE ADJUSTMENT

1. Tune in an active channel.
2. Turn the SCREEN Control (on T461) fully counter-clockwise.
3. Set the RED, GREEN and BLUE CUT OFF Controls (R557, R558, R559) to the mid position.
4. Set the SERVICE SW. (S201) in the H. LINE position.
5. Rotate the SCREEN Control gradually clockwise until the first horizontal line of a colour (RED, GREEN or BLUE) appears slightly on the screen.
Set the SCREEN Control to this position.
6. Adjust the CUT OFF Controls to obtain the slightly lighted horizontal lines in the same levels of three colours (RED, GREEN and BLUE).
The lines may look like white if the CUT OFF Controls are adjusted properly.
7. Return the SERVICE SW. (S201) in the Receiving position.
8. Set the BRIGHTNESS and CONTRAST Controls to obtain dark grey raster. Then check the white balance in low brightness. If the white balance is not proper, retouch the CUT OFF Controls to obtain a good white balance in both low and high light areas.

SUB-BRIGHTNESS ADJUSTMENT

1. Tune in a colour programme.
2. Set the CONTRAST Control to the minimum and the BRIGHTNESS Control to the centre.
3. Set the COLOUR Control to the centre.
4. Set the SUB-BRIGHT. Control (R255) to the centre and leave the receiver for five minutes in this state.
5. Watching the picture well, adjust the SUB-BRIGHT. Control in the position where the picture does not show evidence of blooming in high bright area and not appear too dark in low bright portion.
6. Check the proper picture variation by rotating the CONTRAST and BRIGHTNESS Controls to both extremes.
7. If the picture does not appear dark with the CONTRAST and BRIGHTNESS Controls turned to the minimum, or not appear bright with the controls turned to the maximum, adjust the SUB-BRIGHT. Control again for the acceptable picture.

CONVERGENCE ADJUSTMENTS

Note : Before attempting any convergence adjustments, the receiver should be operated for at least fifteen minutes.

■ Centre 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 2.) and superimpose red and blue vertical lines in the centre area of the picture screen. (See figure 3.)
4. Turn the both tabs at the same time keeping the constant angle to superimpose red and blue horizontal lines at the centre of the screen. (See figure 3.)
5. Adjust two tabs of 6-Pole Magnets to superimpose red/blue line and green one. Adjusting the angle affects the vertical lines and rotating both magnets affects the horizontal lines.
6. Repeat adjustments 3, 4, 5 with understanding red, green and blue movement, because 4-Pole Magnets and 6-Pole Magnets have mutual affection and it makes dots movement complex.

■ Circumference Convergence Adjustment

1. Loosen the clamping screw of deflection yoke to allow the yoke to tilt.
2. Put a wedge as shown in figure 1. temporarily. (Do not remove cover paper on adhesive part of the wedge.)
3. Tilt front of the deflection yoke up or down to obtain better convergence in circumference. (See figure 3.) Push the mounted wedge into the space between picture tube and yoke to fix the yoke temporarily.
4. Put other wedge into bottom space and remove the cover paper to stick.
5. Tilt front of the yoke right or left to obtain better convergence in circumference. (See figure 3.)
6. Keep the yoke position and put another wedge in either upper space. Remove cover paper and stick the wedge on picture tube to fix the yoke.
7. Detach the temporarily mounted wedge and put it in another upper space. Stick it on picture tube to fix the yoke.
8. After fixing three wedges, recheck overall convergence. Tighten the screw firmly to fix the yoke and check the yoke is firm.
9. Stick 3 adhesive tapes on wedges.

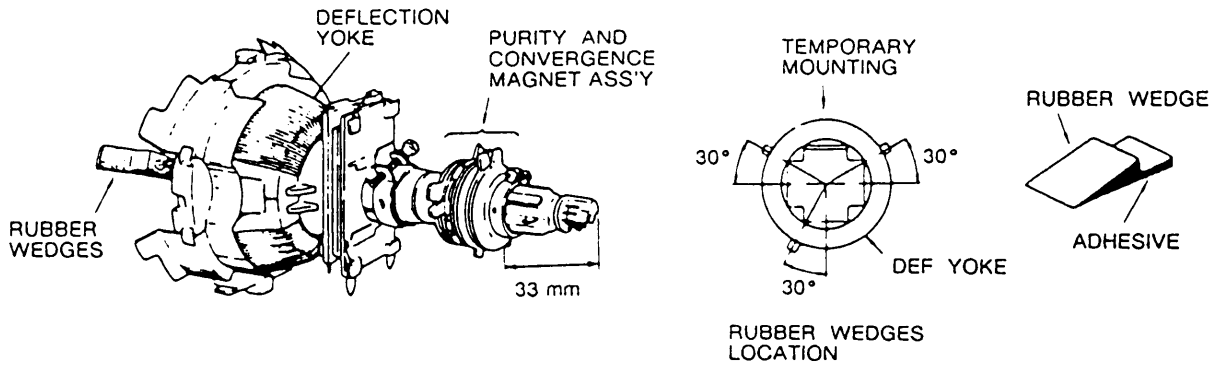


Figure 1.

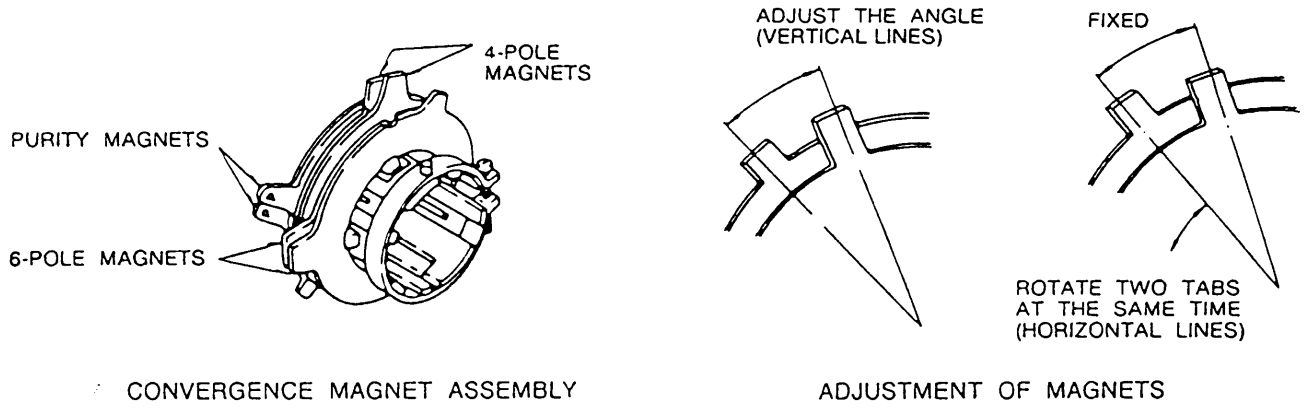
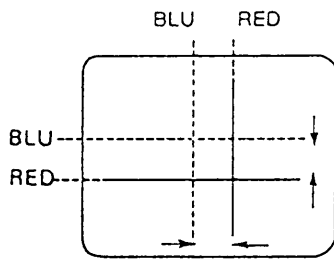
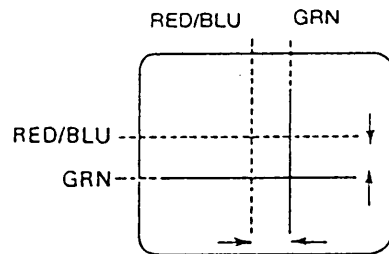


Figure 2.

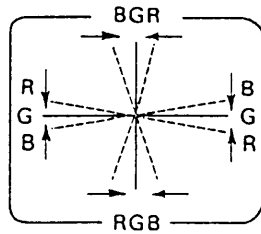


4-POLE MAGNETS MOVEMENT

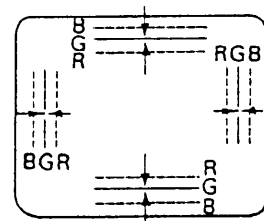


6-POLE MAGNETS MOVEMENT

Center Convergence by Convergence Magnets



INCLINE THE YOKE UP(OR DOWN)



INCLINE THE YOKE RIGHT (OR LEFT)

Circumference Convergence by DEF Yoke

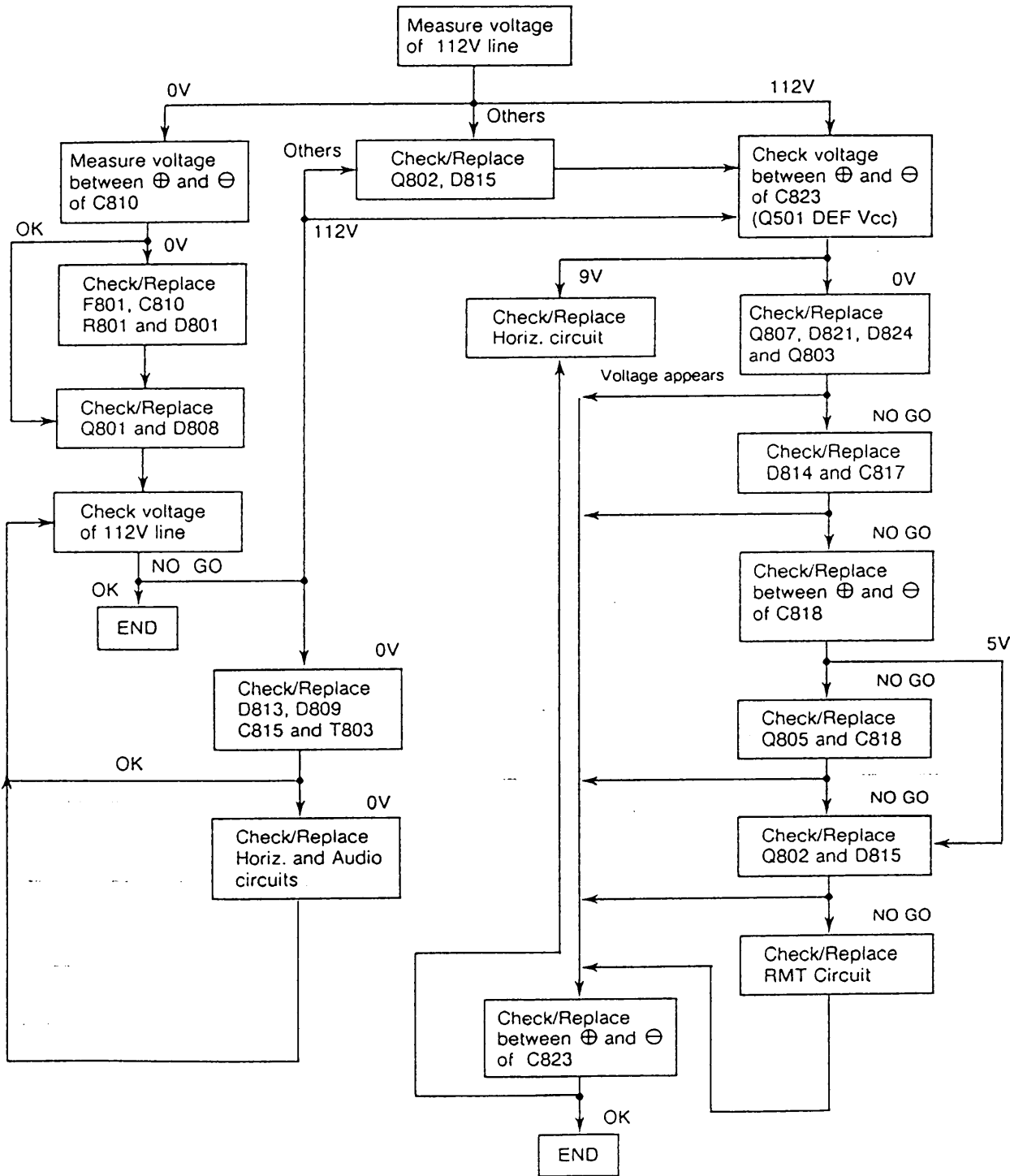
Figure 3. Dot Movement Pattern.

TROUBLESHOOTING CHARTS

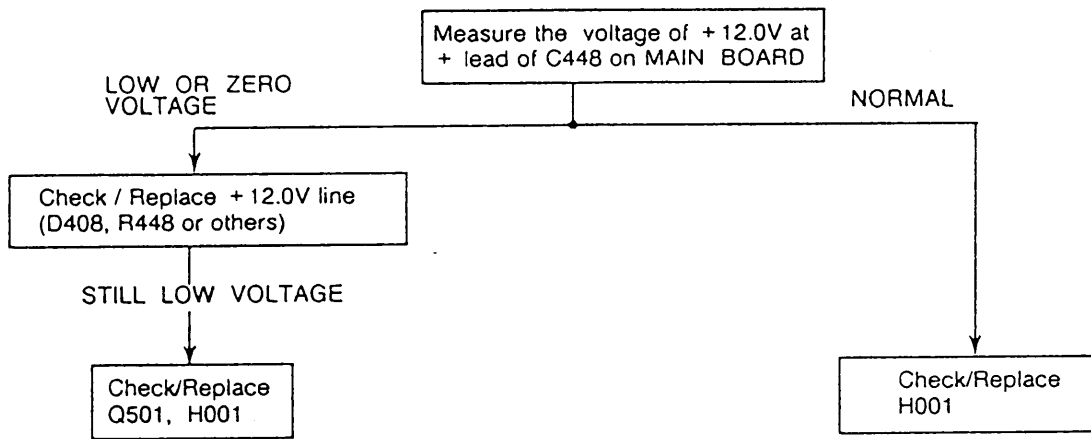
The following charts are devoted to troubleshooting which, if followed carefully, will assist you in tracking down a fault to the correct stage.

In order to utilize the charts (fault trees), firstly establish the complaint, i.e. – No Raster, No Sound. Locate the chart applicable and then progress through the various alternatives until a final block indicates the offending components or stage.

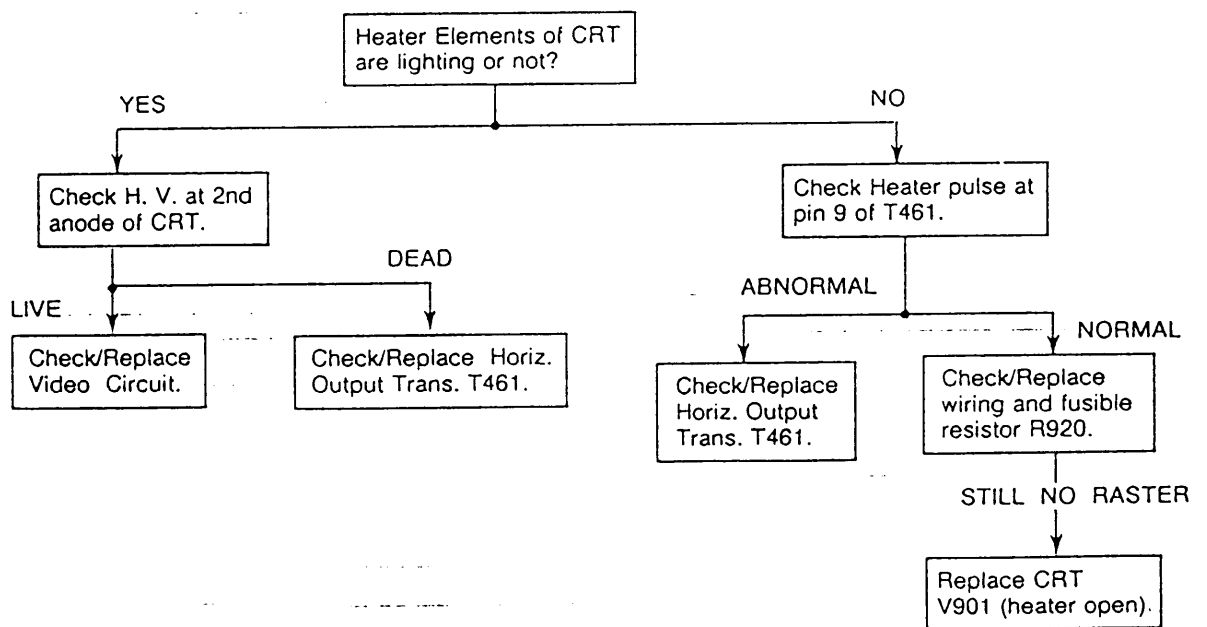
1. NO RASTER AND NO SOUND



2. NO RASTER (SOUND NOISE OR WEAK)

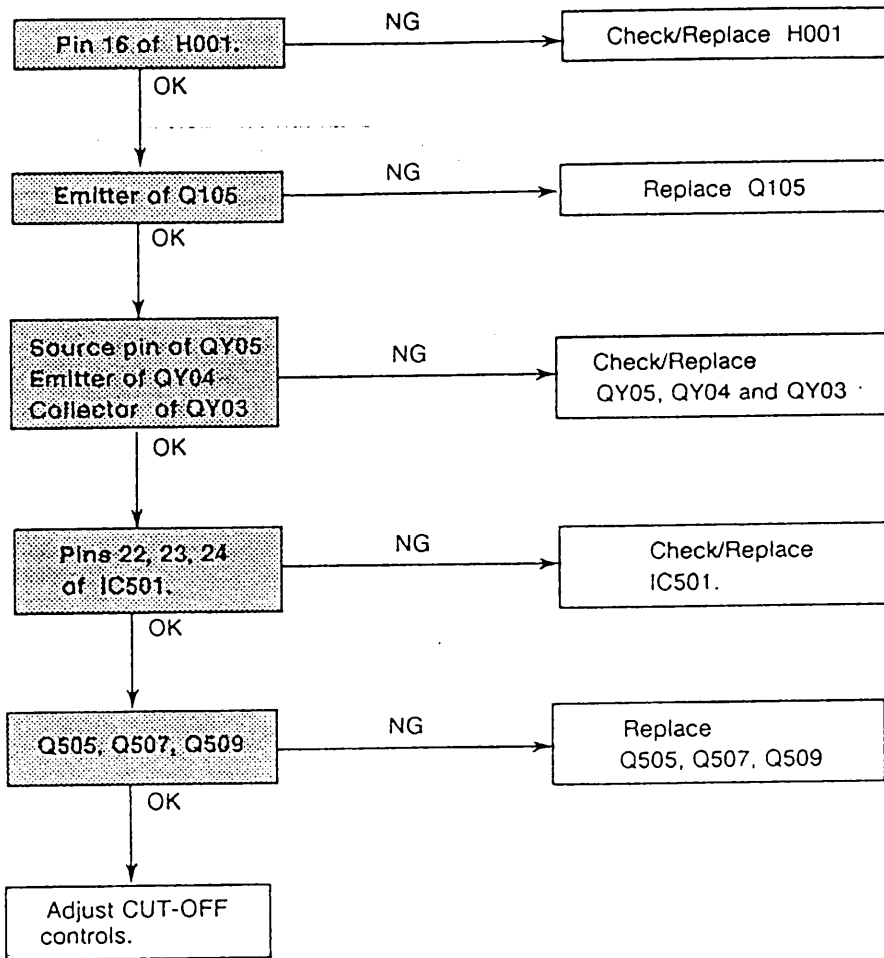


3. NO RASTER (SOUND OK)



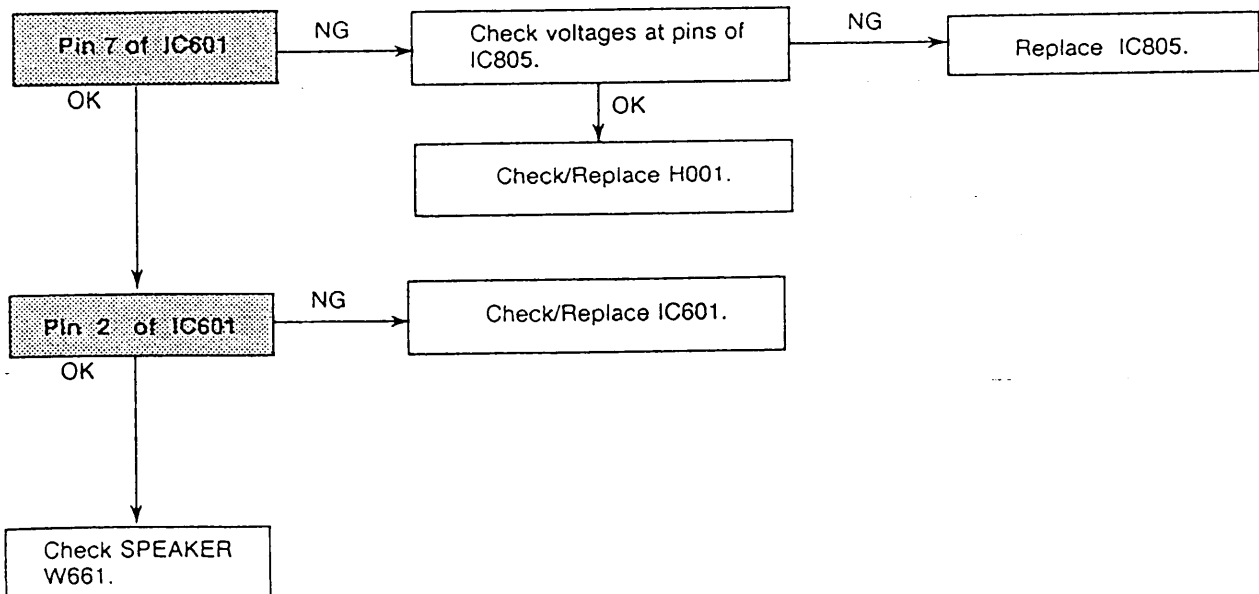
4. NO PICTURE

Check video signal waveform for shaded area below.

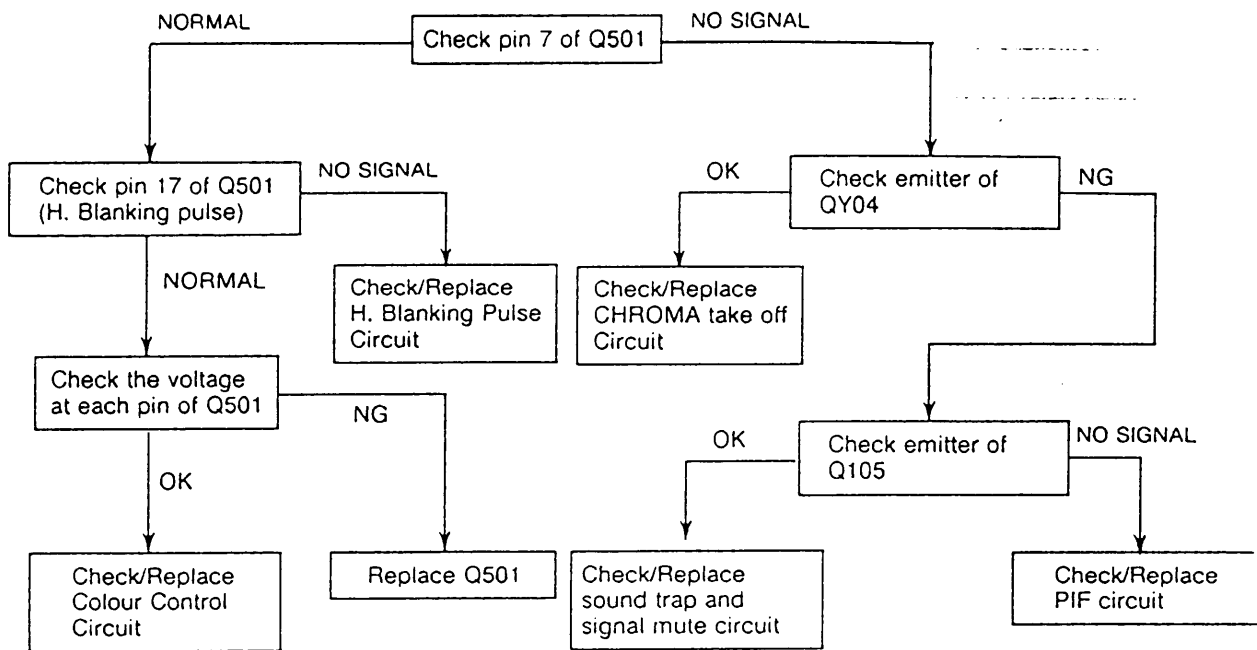


5. NO SOUND

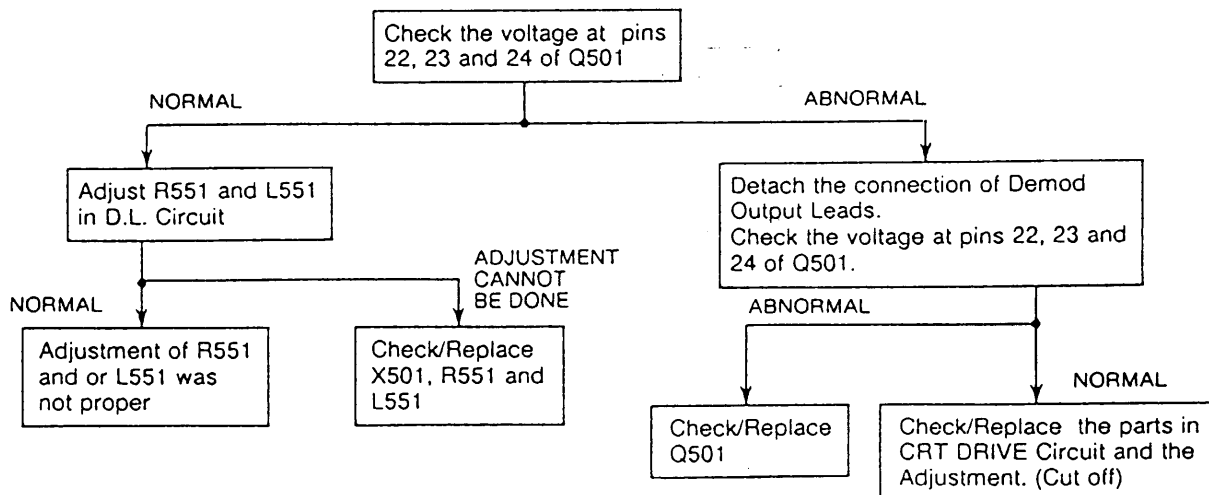
Note: Check the sound signal waveform for shaded area below.



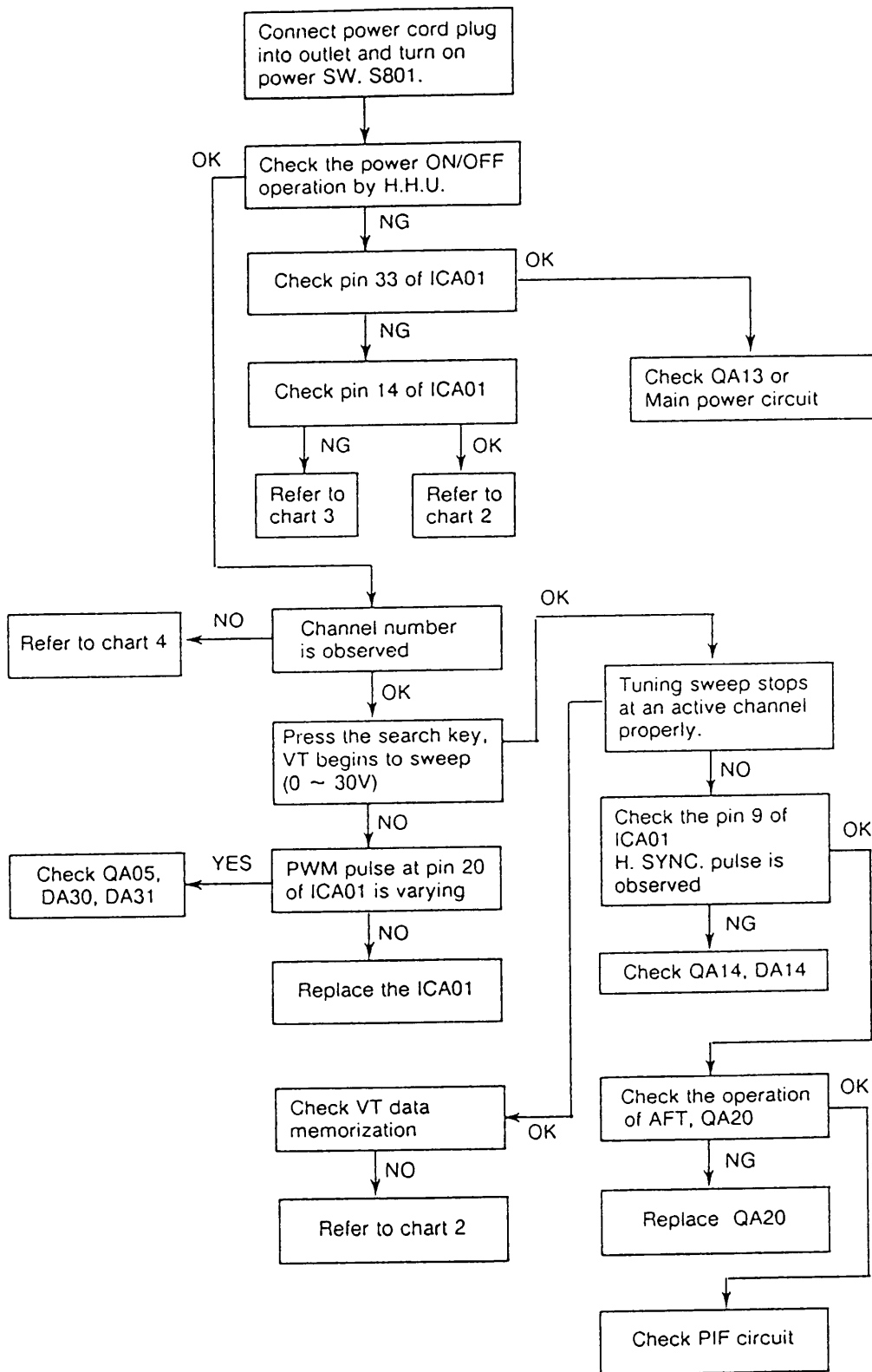
6. NO COLOUR



7. SPECIFIC TINTED COLOUR

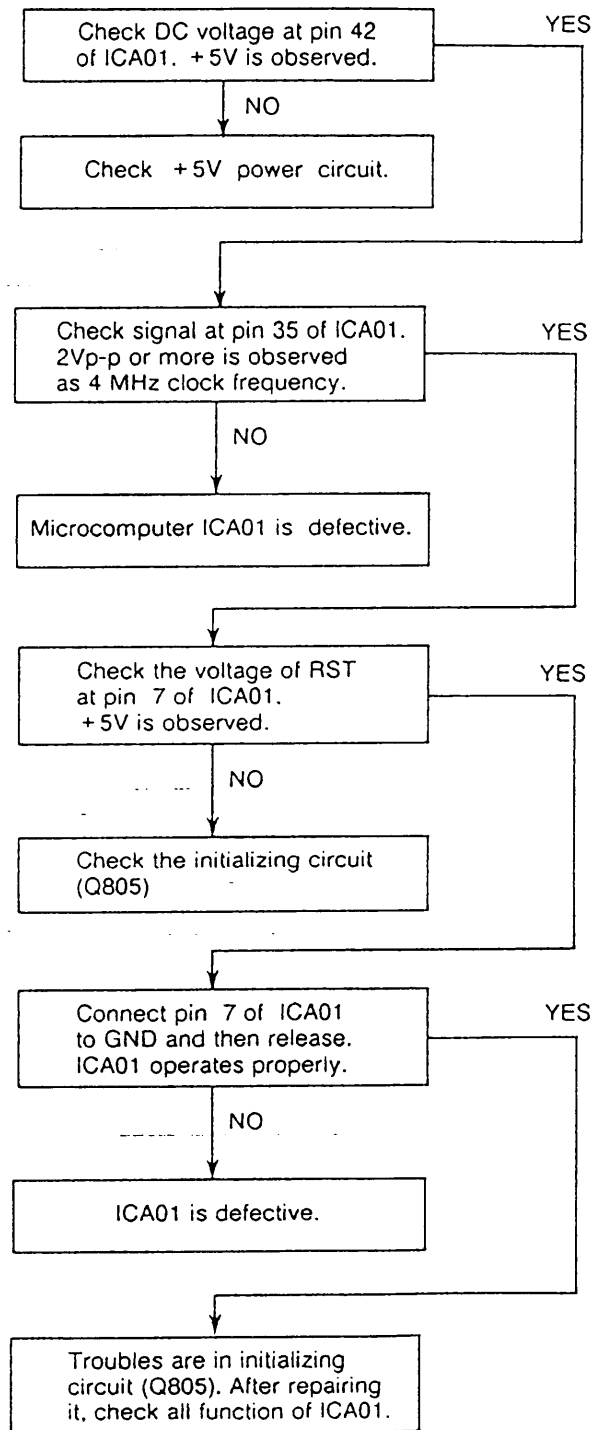


8. CHANNEL SELECTOR TROUBLE
[CHART 1]



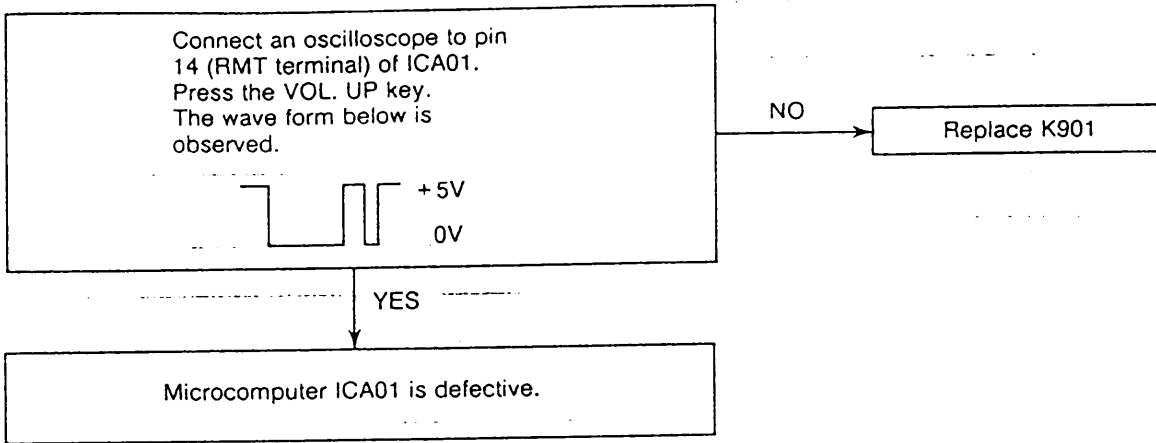
[CHART 2] Microcomputer (ICA01) Operation Check

Note: Before checking Microcomputer, check that control buttons and their connection work properly.

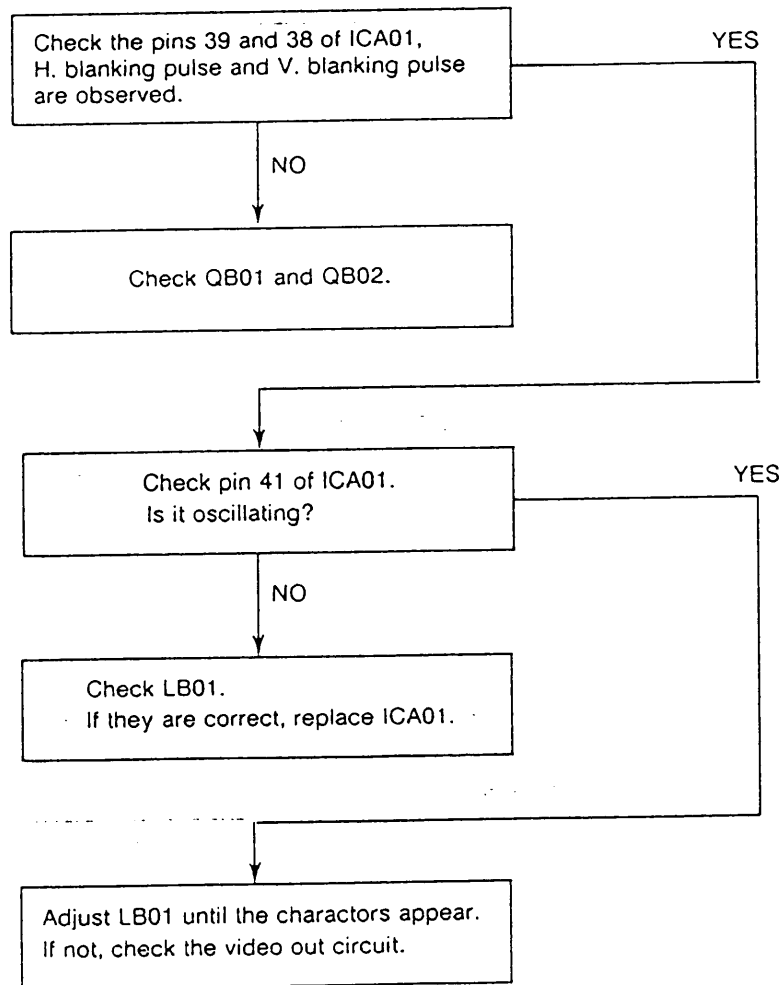


[CHART 3] Remote Control Operation Check

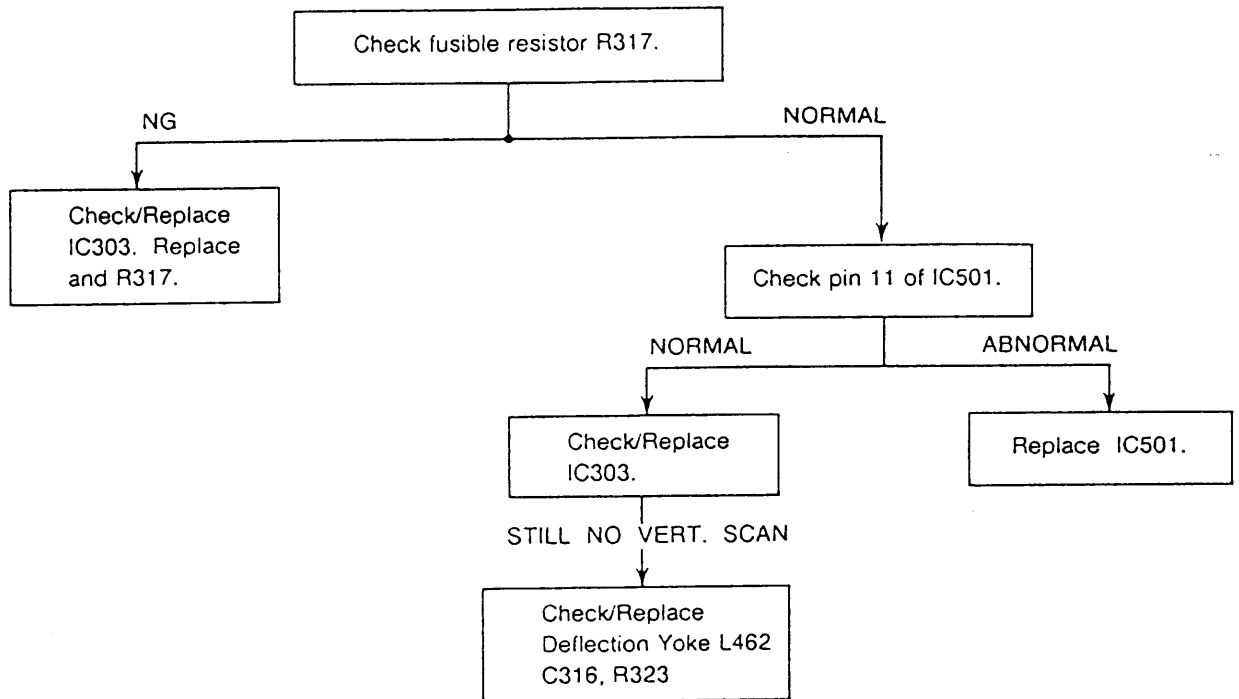
Note : Before checking RMT operation, check that key operation on TV set is proper.



[CHART 4] On Screen Display Operation Check



9. NO VERT. SCAN (ONE HORIZ. LINE RASTER)



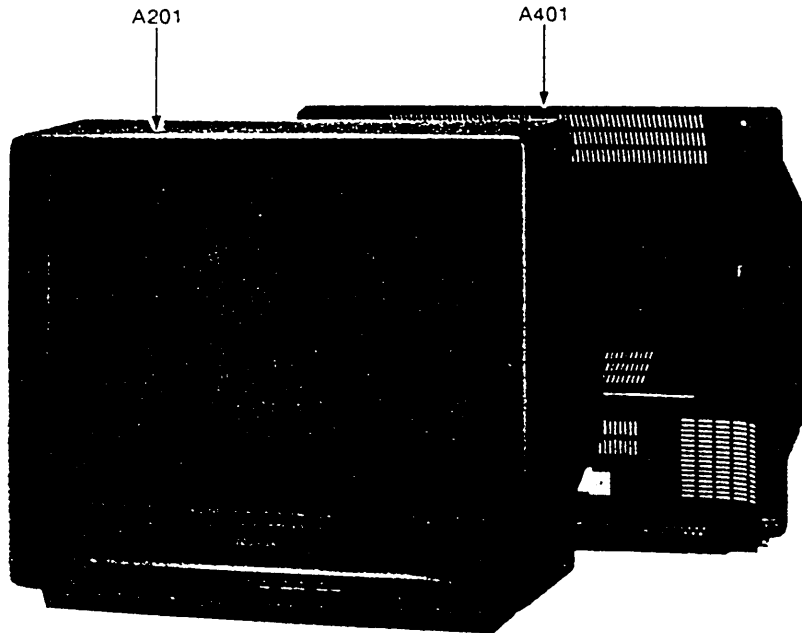
10. OUT OF VERT. SYNC. AND HORIZ. SYNC.

Check/Replace Sync. Circuit pin 16 of IC501.

11. OUT OF HORIZ. SYNC.

Check/Replace Horiz. OSC Circuit and Horiz. AFC Circuit connected to pins 15 thru 21 of IC501. Check/Replace IC501.

CABINET REPLACEMENT PARTS LIST



| Location No. | Part No. | Description |
|--------------|----------|----------------------------------|
| A201 | 23418526 | Front Cover |
| A202 | 23864285 | Speaker Frame, Right |
| A203 | 23864286 | Speaker Frame, Left |
| A401 | 23423529 | Back Cover |
| A501 | 23030975 | Screw, BRBTBS5X20 |
| A701 | 23523647 | Carton Box |
| Y101 | 23994842 | Owner's Guidebook |
| Y108 | 23122780 | AC Adaptor, 2P |
| Y111 | 23164720 | Connector, F type |
| Y125 | 23293977 | Adapter, Aerial Matching, AD809E |

CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTICE: The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.

ABBREVIATIONS:

| | | | |
|-----------------|------------------------|-------------------------|-----------------------|
| Capacitors..... | CD : Ceramic Disk | PF : Plastic Film | EL : Electrolytic |
| Resistors..... | CF : Carbon Film | CC : Carbon Composition | MF : Metal Film |
| | OMF : Oxide Metal Film | VR : Variable Resistor | FR : Fusible Resistor |

(All CD and PF capacitors are $\pm 5\%$, 50V and all resistors, $\pm 5\%$, 1/6W unless otherwise noted.)

| Location No. | Part No. | Description |
|-------------------|----------|--------------------------------------|
| CAPACITORS | | |
| C201 | 24636100 | EL, 10 μ F, 50V |
| C204 | 24636100 | EL, 10 μ F, 50V |
| C210 | 24636100 | EL, 10 μ F, 50V |
| C240 | 24636478 | EL, 0.47 μ F, 50V |
| C301 | 24538224 | PF, 0.22 μ F |
| C302 | 24212222 | CD, 2200pF, $\pm 10\%$ |
| C303 | 24617915 | EL, 1 μ F, $\pm 10\%$, 50V |
| C304 | 24212102 | CD, 1000pF, $\pm 10\%$ |
| C307 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C309 | 24214681 | CD, 680pF, $\pm 10\%$, 500V |
| C311 | 24796102 | EL, 1000 μ F, 35V |
| C312 | 24082049 | PF, 0.047 μ F, 100V |
| C314 | 24435271 | CD, 270pF, 500V |
| C315 | 24082053 | PF, 0.1 μ F, 100V |
| C316 | 24794472 | EL, 4700 μ F, 16V |
| C317 | 24617915 | EL, 1 μ F, $\pm 10\%$, 50V |
| C321 | 24595222 | PF, 2200pF, 100V |
| C323 | 24212472 | CD, 4700pF, $\pm 10\%$ |
| C325 | 24796101 | EL, 100 μ F, 35V |
| C330 | 24434470 | CD, 47pF, 500V |
| C403 | 24636229 | EL, 2.2 μ F, 50V |
| C407 | 24593303 | PF, 0.03 μ F |
| C408 | 24636100 | EL, 10 μ F, 50V |
| C409 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C416 | 24214271 | CD, 270pF, $\pm 10\%$, 500V |
| C417 | 24214102 | CD, 1000pF, $\pm 10\%$, 500V |
| C420 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| △ C440 | 24095635 | PF, 7000pF, $\pm 3\%$, 1.6kV |
| C441 | 24214221 | CD, 220pF, $\pm 10\%$, 500V |
| C442 | 24095947 | PF, 0.39 μ F, 200V |
| C445 | 24833223 | PF, 0.022 μ F, $\pm 10\%$, 200V |
| C446 | 24758101 | EL, 100 μ F, 160V |
| C447 | 24644100 | EL, 10 μ F, 250V |
| C448 | 24794102 | EL, 1000 μ F, 16V |
| C450 | 24794471 | EL, 470 μ F, 16V |
| △ C463 | 24212222 | CD, 2200pF, $\pm 10\%$ |
| C501 | 24797220 | EL, 22 μ F, 50V |
| C504 | 24353220 | CD, 22pF |
| C505 | 24538273 | PF, 0.027 μ F |
| C507 | 24538103 | PF, 0.01 μ F |

| Location No. | Part No. | Description |
|--------------|----------|--|
| C508 | 24085032 | EL, 3.3 μ F, $\pm 20\%$, 16V, Non-Polar |
| C509 | 24353330 | CD, 33pF |
| C510 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C511 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C515 | 24636479 | EL, 4.7 μ F, 50V |
| C520 | 24636478 | EL, 0.47 μ F, 50V |
| C521 | 24538474 | PF, 0.47 μ F |
| C522 | 24538474 | PF, 0.47 μ F |
| C523 | 24538474 | PF, 0.47 μ F |
| C527 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C530 | 24591104 | PF, 0.1 μ F |
| C531 | 24436271 | CD, 270pF |
| C532 | 24436221 | CD, 220pF |
| C533 | 24436241 | CD, 240pF |
| C534 | 24794221 | EL, 220 μ F, 16V |
| C536 | 24636478 | EL, 0.47 μ F, 50V |
| C545 | 24436120 | CD, 12pF |
| C546 | 24436120 | CD, 12pF |
| C547 | 24436120 | CD, 12pF |
| C560 | 24436101 | CD, 100pF |
| C561 | 24436390 | CD, 39pF |
| C562 | 24436180 | CD, 18pF |
| C563 | 24436102 | CD, 1000pF |
| C570 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C602 | 24636229 | EL, 2.2 μ F, 50V |
| C603 | 24636229 | EL, 2.2 μ F, 50V |
| C604 | 24634220 | EL, 22 μ F, 25V |
| C605 | 24634101 | EL, 100 μ F, 25V |
| C606 | 24538104 | PF, 0.1 μ F |
| C608 | 24795102 | EL, 1000 μ F, 25V |
| C609 | 24636478 | EL, 0.47 μ F, 50V |
| C610 | 24591682 | PF, 6800pF |
| C611 | 24591224 | PF, 0.22 μ F |
| △ C801 | 24095951 | PF, 0.1 μ F, $\pm 20\%$, AC250V |
| △ C802 | 24095951 | PF, 0.1 μ F, $\pm 20\%$, AC250V |
| C803 | 24092281 | CD, 4700pF, $\pm 20\%$, AC250V |
| C804 | 24092281 | CD, 4700pF, $\pm 20\%$, AC250V |
| C805 | 24092281 | CD, 4700pF, $\pm 20\%$, AC250V |
| C806 | 24092281 | CD, 4700pF, $\pm 20\%$, AC250V |
| C810 | 24086871 | EL, 120 μ F, $\pm 20\%$, 400V |

| Location No. | Part No. | Description |
|--------------|----------|----------------------------------|
| C812 | 24642339 | EL, 3.3 μ F, 160V |
| C813 | 24092030 | CD, 680pF, \pm 10%, 2kV |
| C814 | 24092029 | CD, 560pF, \pm 10%, 2kV |
| C815 | 24538334 | PF, 0.33 μ F |
| C816 | 24212182 | CD, 1800pF, \pm 10% |
| C817 | 24764102 | EL, 1000 μ F, \pm 20%, 25V |
| C818 | 24794470 | EL, 47 μ F, 16V |
| C819 | 24794101 | EL, 100 μ F, 16V |
| C821 | 24642101 | EL, 100 μ F, 160V |
| C822 | 24634220 | EL, 22 μ F, 25V |
| C823 | 24538474 | PF, 0.47 μ F |
| C824 | 24435181 | CD, 180pF, 500V |
| C825 | 24538474 | PF, 0.47 μ F |
| C830 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C831 | 24442181 | CD, 180pF, \pm 10%, 2kV |
| C842 | 24212222 | CD, 2200pF, \pm 10% |
| C902 | 24095931 | PF, 2200pF, 1600V |
| CA01 | 24794470 | EL, 47 μ F, 16V |
| CA02 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CA03 | 24633100 | EL, 10 μ F, 16V |
| CA06 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CA07 | 24794221 | EL, 220 μ F, 16V |
| CA09 | 24436391 | CD, 390pF |
| CA10 | 24436221 | CD, 220pF |
| CA11 | 24591104 | PF, 0.1 μ F |
| CA12 | 24591104 | PF, 0.1 μ F |
| CA13 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CA14 | 24212472 | CD, 4700pF, \pm 10% |
| CA16 | 24636479 | EL, 4.7 μ F, 50V |
| CA17 | 24591104 | PF, 0.1 μ F |
| CA18 | 24636229 | EL, 2.2 μ F, 50V |
| CA19 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CA20 | 24436101 | CD, 100pF |
| CA21 | 24636010 | EL, 1 μ F, 50V |
| CA22 | 24212102 | CD, 1000pF, \pm 10% |
| CA25 | 24436561 | CD, 560pF |
| CA29 | 24591104 | PF, 0.1 μ F |
| CA30 | 24794470 | EL, 47 μ F, 16V |
| CA32 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CA46 | 24794221 | EL, 220 μ F, 16V |
| CA47 | 24636010 | EL, 1 μ F, 50V |
| CA48 | 24636010 | EL, 1 μ F, 50V |
| CA50 | 24212102 | CD, 1000pF, \pm 10% |
| CY03 | 24591104 | PF, 0.1 μ F |

RESISTORS

| | | |
|------|----------|--------------------|
| R101 | 24366331 | CF, 330 ohm |
| R205 | 24366152 | CF, 1500 ohm |
| R210 | 24366203 | CF, 20k ohm |
| R211 | 24366622 | CF, 6200 ohm |
| R212 | 24366103 | CF, 10k ohm |
| R215 | 24366102 | CF, 1k ohm |
| R216 | 24366333 | CF, 33k ohm |
| R218 | 24366472 | CF, 4700 ohm |
| R219 | 24366103 | CF, 10k ohm |
| R225 | 24366472 | CF, 4700 ohm |
| R226 | 24366162 | CF, 1600 ohm |
| R240 | 24366124 | CF, 120k ohm |
| R241 | 24366154 | CF, 150k ohm |
| R245 | 24366102 | CF, 1k ohm |
| R255 | 24066601 | VR, 20k ohm, 1/10W |
| R302 | 24366514 | CF, 510k ohm |
| R303 | 24366683 | CF, 68k ohm |
| R304 | 24366102 | CF, 1k ohm |

| Location No. | Part No. | Description |
|--------------|----------|-------------------------------|
| R305 | 24366161 | CF, 160 ohm |
| R311 | 24552391 | OMF, 390 ohm, 1/2W |
| R312 | 24366303 | CF, 30k ohm |
| R313 | 24366624 | CF, 620k ohm |
| R317 | 24982689 | MF, 6.8 ohm, 1/2W |
| R320 | 24366102 | CF, 1k ohm |
| R321 | 24376123 | CF, 12k ohm, 1/2W |
| R323 | 24322129 | OMF, 1.2 ohm, 1W |
| R325 | 24366273 | CF, 27k ohm |
| R327 | 24376681 | CF, 680 ohm, 1/2W |
| R351 | 24066602 | VR, 50k ohm, 1/10W |
| R361 | 24383271 | OMF, 270 ohm, 2W |
| R403 | 24366202 | CF, 2k ohm |
| R405 | 24366431 | CF, 430 ohm |
| R411 | 24366391 | CF, 390 ohm |
| R412 | 24381102 | OMF, 1k ohm, 1/2W |
| R413 | 24366103 | CF, 10k ohm |
| R414 | 24366910 | CF, 91 ohm |
| R416 | 24007566 | Cement, 2k ohm, 5W |
| R417 | 24553331 | OMF, 330 ohm, 1W |
| R421 | 24366472 | CF, 4700 ohm |
| R422 | 24366622 | CF, 6200 ohm |
| R440 | 24366103 | CF, 10k ohm |
| R441 | 24366103 | CF, 10k ohm |
| R444 | 24983109 | MF, 1 ohm, 1W |
| R445 | 24376330 | CF, 33 ohm, 1/2W |
| R448 | 24983569 | MF, 5.6 ohm, 1W |
| R502 | 24366334 | CF, 330k ohm |
| R504 | 24366471 | CF, 470 ohm |
| R505 | 24366222 | CF, 2200 ohm |
| R509 | 24366183 | CF, 18k ohm |
| R511 | 24366562 | CF, 5600 ohm |
| R512 | 24366152 | CF, 1500 ohm |
| R513 | 24366152 | CF, 1500 ohm |
| R515 | 24366561 | CF, 560 ohm |
| R516 | 24366561 | CF, 560 ohm |
| R517 | 24366561 | CF, 560 ohm |
| R521 | 24366272 | CF, 2700 ohm |
| R526 | 24945475 | CC, 4.7M ohm, \pm 10%, 1/4W |
| R529 | 24366561 | CF, 560 ohm |
| R534 | 24366102 | CF, 1k ohm |
| R536 | 24366221 | CF, 220 ohm |
| R537 | 24366102 | CF, 1k ohm |
| R538 | 24366331 | CF, 330 ohm |
| R539 | 24366102 | CF, 1k ohm |
| R541 | 24366221 | CF, 220 ohm |
| R542 | 24366221 | CF, 220 ohm |
| R543 | 24366221 | CF, 220 ohm |
| R544 | 24366102 | CF, 1k ohm |
| R545 | 24366102 | CF, 1k ohm |
| R546 | 24366102 | CF, 1k ohm |
| R547 | 24366101 | CF, 100 ohm |
| R551 | 24066955 | VR, 1k ohm, 1/10W |
| R557 | 24066600 | VR, 10k ohm, 1/10W |
| R558 | 24066600 | VR, 10k ohm, 1/10W |
| R559 | 24066600 | VR, 10k ohm, 1/10W |
| R561 | 24366102 | CF, 1k ohm |
| R562 | 24366333 | CF, 33k ohm |
| R563 | 24366333 | CF, 33k ohm |
| R564 | 24366472 | CF, 4700 ohm |
| R565 | 24366471 | CF, 470 ohm |
| R604 | 24366682 | CF, 6800 ohm |
| R605 | 24366339 | CF, 3.3 ohm |
| R607 | 24366132 | CF, 1300 ohm |

| Location No. | Part No. | Description |
|--------------|----------|------------------------------------|
| R608 | 24366822 | CF, 8200 ohm |
| R609 | 24366222 | CF, 2200 ohm |
| R627 | 24366473 | CF, 47k ohm |
| R628 | 24366473 | CF, 47k ohm |
| △ R801 | 24007932 | Cement, 6.2 ohm, 10W |
| R810 | 24377224 | CF, 220k ohm, 1W |
| R812 | 24366333 | CF, 33k ohm |
| R814 | 24366222 | CF, 2200 ohm |
| R817 | 24366222 | CF, 2200 ohm |
| R818 | 24366823 | CF, 82k ohm |
| R820 | 24366331 | CF, 330 ohm |
| R821 | 24366103 | CF, 10k ohm |
| R822 | 24366561 | CF, 560 ohm |
| R823 | 24553122 | OMF, 1200 ohm, 1W |
| R824 | 24383200 | OMF, 20 ohm, 2W |
| R832 | 24007538 | Cement, 1k ohm, 7W |
| R835 | 24383752 | OMF, 7500 ohm, 2W |
| R836 | 24366271 | CF, 270 ohm |
| R837 | 24366823 | CF, 82k ohm |
| R838 | 24366181 | CF, 180 ohm |
| R839 | 24366223 | CF, 22k ohm |
| R842 | 24383103 | OMF, 10k ohm, 2W |
| R890 | 24000875 | PTC Thermistor, 18 ohm, ±20%, 290V |
| R901 | 24946272 | CC, 2700 ohm, ±10%, 1/2W |
| R902 | 24946272 | CC, 2700 ohm, ±10%, 1/2W |
| R903 | 24946272 | CC, 2700 ohm, ±10%, 1/2W |
| R920 | 24000892 | FR, 1.2 ohm, 1W |
| RA01 | 24383510 | OMF, 51 ohm, 2W |
| RA05 | 24366102 | CF, 1k ohm |
| RA09 | 24945565 | CC, 5.6M ohm, ±10%, 1/4W |
| RA10 | 24945565 | CC, 5.6M ohm, ±10%, 1/4W |
| RA11 | 24945565 | CC, 5.6M ohm, ±10%, 1/4W |
| RA12 | 24945565 | CC, 5.6M ohm, ±10%, 1/4W |
| RA13 | 24366392 | CF, 3900 ohm |
| RA14 | 24366103 | CF, 10k ohm |
| RA15 | 24366102 | CF, 1k ohm |
| RA18 | 24366471 | CF, 470 ohm |
| RA19 | 24366471 | CF, 470 ohm |
| RA20 | 24366101 | CF, 100 ohm |
| RA25 | 24366123 | CF, 12k ohm |
| RA26 | 24366223 | CF, 22k ohm |
| RA27 | 24366563 | CF, 56k ohm |
| RA28 | 24366564 | CF, 560k ohm |
| RA29 | 24366561 | CF, 560 ohm |
| RA30 | 24366123 | CF, 12k ohm |
| RA31 | 24366101 | CF, 100 ohm |
| RA32 | 24366102 | CF, 1k ohm |
| RA33 | 24366272 | CF, 2700 ohm |
| RA35 | 24366101 | CF, 100 ohm |
| RA44 | 24366103 | CF, 10k ohm |
| RA46 | 24366223 | CF, 22k ohm |
| RA47 | 24366102 | CF, 1k ohm |
| RA54 | 24366102 | CF, 1k ohm |
| RA55 | 24366223 | CF, 22k ohm |
| RA56 | 24366333 | CF, 33k ohm |
| RA57 | 24366333 | CF, 33k ohm |
| RA58 | 24366333 | CF, 33k ohm |
| RA59 | 24366333 | CF, 33k ohm |
| RA60 | 24366123 | CF, 12k ohm |
| RA61 | 24366153 | CF, 15k ohm |
| RA62 | 24366223 | CF, 22k ohm |
| RA76 | 24366153 | CF, 15k ohm |
| RA80 | 24366243 | CF, 24k ohm |

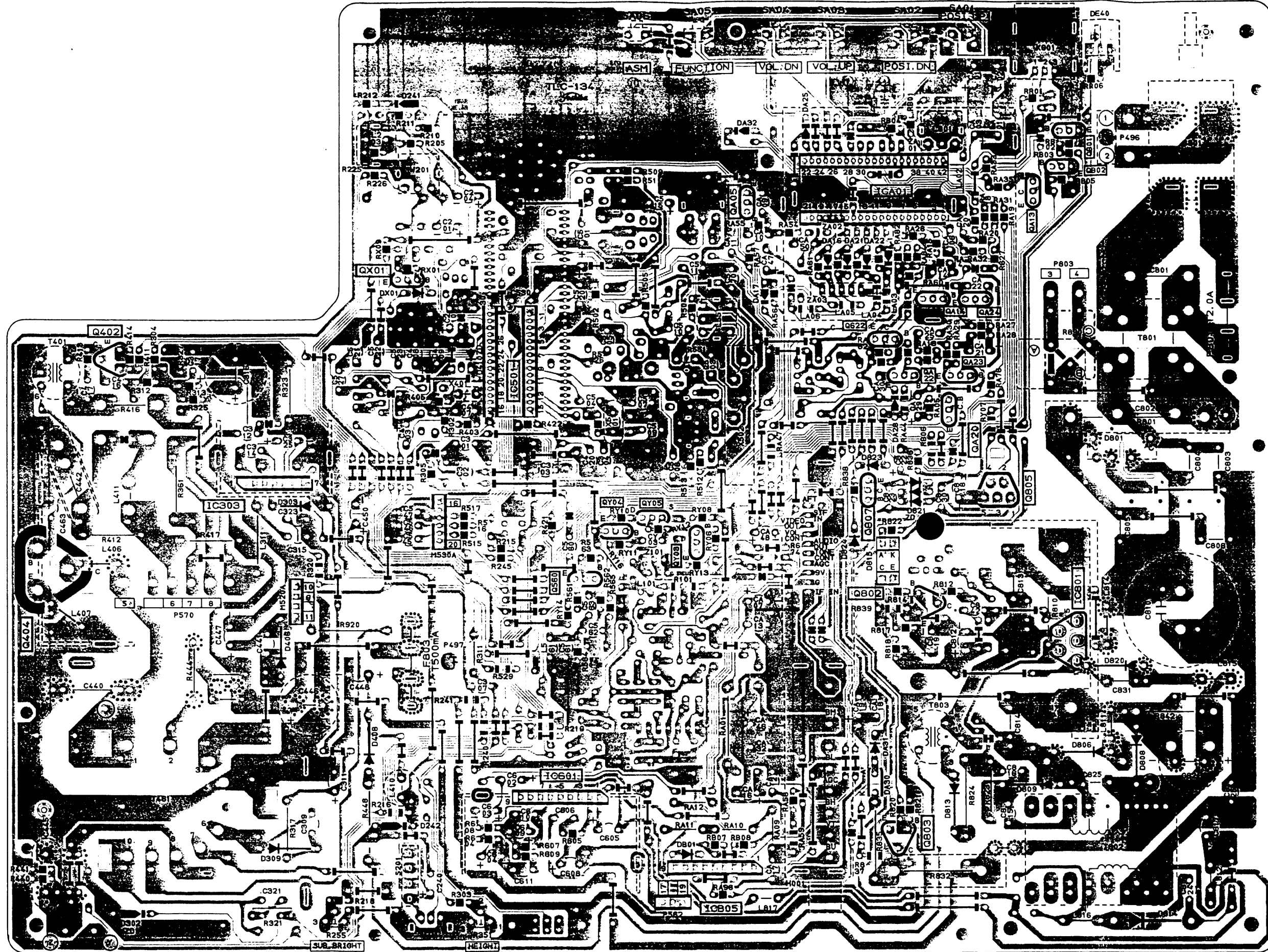
| Location No. | Part No. | Description |
|---------------------------------|----------|------------------------------------|
| RA81 | 24366153 | CF, 15k ohm |
| RA82 | 24366153 | CF, 15k ohm |
| RA84 | 24366473 | CF, 47k ohm |
| RA85 | 24366153 | CF, 15k ohm |
| RA86 | 24366473 | CF, 47k ohm |
| RA89 | 24366153 | CF, 15k ohm |
| RA96 | 24366392 | CF, 3900 ohm |
| RB01 | 24366333 | CF, 33k ohm |
| RB02 | 24366302 | CF, 3k ohm |
| RB03 | 24366103 | CF, 10k ohm |
| RB04 | 24366103 | CF, 10k ohm |
| RB05 | 24366332 | CF, 3300 ohm |
| RB06 | 24366473 | CF, 47k ohm |
| RB07 | 24366103 | CF, 10k ohm |
| RB08 | 24366103 | CF, 10k ohm |
| RR01 | 24366102 | CF, 1k ohm |
| RR06 | 24366471 | CF, 470 ohm |
| RX01 | 24366222 | CF, 2200 ohm |
| RX09 | 24366472 | CF, 4700 ohm |
| RY01 | 24366473 | CF, 47k ohm |
| RY02 | 24366473 | CF, 47k ohm |
| RY06 | 24366333 | CF, 33k ohm |
| RY07 | 24366103 | CF, 10k ohm |
| RY08 | 24366104 | CF, 100k ohm |
| RY10 | 24366104 | CF, 100k ohm |
| RY11 | 24366333 | CF, 33k ohm |
| RY12 | 24366105 | CF, 1M ohm |
| RY13 | 24366102 | CF, 1k ohm |
| RY14 | 24366123 | CF, 12k ohm |
| RY15 | 24366302 | CF, 3k ohm |
| RY16 | 24552151 | OMF, 150 ohm, 1/2W |
| COILS & TRANSFORMERS | | |
| L101 | 23237987 | Coil, Peaking, TRF4100AC |
| L203 | 23237973 | Coil, Peaking, TRF4151AC |
| L311 | 23261974 | Coil, Choke, HCS-035 |
| L406 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L407 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L410 | 23221722 | Coil, Choke, TLN3142D |
| L411 | 23233070 | Coil, Linearity, TLN2111G |
| L412 | 23221739 | Coil, Choke, TRF9252D |
| △ L462 | 23227265 | Deflection Yoke, TDY621NA |
| L503 | 23238922 | Coil, Peaking, TRF4100AC |
| L551 | 23250972 | Coil, 1H-Delay Matching, TRF5418D |
| L561 | 23237984 | Coil, Peaking, TRF4180AC |
| L811 | 23221747 | Coil, Choke, TRF9253D |
| L812 | 23221060 | Coil, Choke, TLN1015E |
| L814 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L815 | 23221747 | Coil, Choke, TRF9253D |
| L816 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L817 | 23221060 | Coil, Choke, TLN1015E |
| △ L901 | 23200788 | Coil, Degaussing, TSB2223 |
| LA01 | 23237999 | Coil, Peaking, TRF4109AC |
| LA02 | 23103940 | Coil (Ferrite Bead), TEM2001 |
| LA03 | 23238562 | Coil, Peaking, TRF4109AJ |
| LA04 | 23238562 | Coil, Peaking, TRF4109AJ |
| LA05 | 23238562 | Coil, Peaking, TRF4109AJ |
| LA06 | 23238562 | Coil, Peaking, TRF4109AJ |
| LB01 | 23262730 | Coil, IF, TRF1120 |
| △ T401 | 23224983 | Transformer, Horiz. Drive, TLN1039 |
| △ T461 | 23236003 | Transformer, Flyback, TFB4039AD |

| Location No. | Part No. | Description |
|-----------------------|----------|---------------------------------|
| △ T801 | 23211929 | Line Filter, TRF3130 |
| T802 | 23213453 | Transformer, Converter, TPW3162 |
| T803 | 23224929 | Transformer, TLN2106 |
| SEMICONDUCTORS | | |
| IC303 | 23119548 | IC, AN5515 |
| IC501 | B0383480 | IC, TA8718N |
| IC601 | 23119668 | IC, TDA2611A |
| IC805 | 23318299 | IC, L78MR05-FA |
| ICA01 | 23318462 | IC, M34300N4-587 |
| ICB05 | 23119441 | IC, LA7910 |
| Q303C | 23035308 | Screw, BTB3X8SZN |
| Q402 | A6330069 | Transistor, 2SC2482 FA-1 |
| △ Q404 | A6868706 | Transistor, 2SD1427 FA-1 |
| Q505 | A6330059 | Transistor, 2SC2482 |
| Q507 | A6330059 | Transistor, 2SC2482 |
| Q509 | A6330059 | Transistor, 2SC2482 |
| Q510 | A6330059 | Transistor, 2SC2482 |
| Q560 | A6317440 | Transistor, 2SC1815-Y |
| Q622 | A6317440 | Transistor, 2SC1815-Y |
| Q801 | 23314510 | Transistor (STR), STRD4412L904 |
| Q802 | A6360200 | Transistor, 2SC3333 |
| Q803 | A6328328 | Transistor, 2SC2383-O |
| Q807 | A6317440 | Transistor, 2SC1815-Y |
| QA05 | A6317440 | Transistor, 2SC1815-Y |
| QA13 | A6317440 | Transistor, 2SC1815-Y |
| QA14 | A6317440 | Transistor, 2SC1815-Y |
| QA20 | A6317440 | Transistor, 2SC1815-Y |
| QA22 | A6534040 | Transistor, 2SA1015-Y |
| QA23 | A6534040 | Transistor, 2SA1015-Y |
| QA24 | A6534040 | Transistor, 2SA1015-Y |
| QB01 | A6317440 | Transistor, 2SC1815-Y |
| QB02 | A6317440 | Transistor, 2SC1815-Y |
| QX01 | A6534040 | Transistor, 2SA1015-Y |
| QY01 | A6317440 | Transistor, 2SC1815-Y |
| QY03 | A6317440 | Transistor, 2SC1815-Y |
| QY04 | A6317440 | Transistor, 2SC1815-Y |
| QY05 | A6041860 | Transistor, 2SK117-GR |
| D241 | A7150041 | Diode, 1SS104 |
| D242 | A7150351 | Diode, 1SS178 |
| D302 | A7117215 | Diode, Zener, 04AZ12Y |
| D303 | A7568460 | Diode, TVR-1B |
| D309 | A7978850 | Diode, S5295G |
| D406 | A7978850 | Diode, S5295G |
| D408 | A7568300 | Diode, 1S1835 |
| D410 | A7116815 | Diode, Zener, 04AZ8.2Y |
| D591 | A7275400 | Diode, 1S2462 |
| D592 | A7275400 | Diode, 1S2462 |
| D593 | A7275400 | Diode, 1S2462 |
| D594 | A7150258 | Diode, 1SS176 |
| D801 | 23118124 | Diode, LB-156 (LF-B) |
| D806 | 23115530 | Diode, RG2 |
| D808 | 23118339 | Diode, Zener, R2M |
| D809 | A7978850 | Diode, S5295G |
| D813 | A7568300 | Diode, 1S1835 |
| D814 | A7580658 | Diode, 3JH41 |
| D815 | 23316242 | Photo Coupler, ON3111-R |
| D820 | A7978855 | Diode, S5295J |
| D821 | A7117015 | Diode, Zener, 04AZ10Y |
| D823 | A7150258 | Diode, 1SS176 |
| D824 | A7150258 | Diode, 1SS176 |
| D828 | A7150258 | Diode, 1SS176 |

| Location No. | Part No. | Description |
|----------------------------|----------|--------------------------------------|
| D829 | A7150258 | Diode, 1SS176 |
| DA15 | A7150258 | Diode, 1SS176 |
| DA16 | A7150258 | Diode, 1SS176 |
| DA17 | A7150258 | Diode, 1SS176 |
| DA21 | A7150258 | Diode, 1SS176 |
| DA22 | A7150258 | Diode, 1SS176 |
| DA25 | A7150258 | Diode, 1SS176 |
| DA28 | A7150258 | Diode, 1SS176 |
| DA30 | 23115878 | Diode, Zener, μ PC574J(L) |
| DA31 | A7150258 | Diode, 1SS176 |
| DA32 | A7150258 | Diode, 1SS176 |
| DB01 | A7150258 | Diode, 1SS176 |
| DE40 | A8636650 | Diode (LED), TLSG116, Green |
| DX01 | A7150258 | Diode, 1SS176 |
| MISCELLANEOUS | | |
| △ F801 | 23144129 | Fuse, 2A |
| F801A | 23165102 | Fuse Holder |
| △ F803 | 23144125 | Fuse, 0.5A |
| F803A | 23165102 | Fuse Holder |
| K901 | 23120370 | Remote Sensor, IR-9107-K |
| L462A | 23199308 | Compensator, DY, TC-C |
| L462B | 23199314 | Compensator, DY, TC-E |
| L462C | 23993623 | Compensator, DY, TC-L |
| L462E | 23192818 | Sticker, Z2013A |
| P001 | 23142531 | Aerial Terminal, AT937 |
| △ P801 | 23176805 | Power Cord |
| S201 | 23145682 | Switch, Lever, 1C3P |
| S801 | 23145434 | Switch, Power, 2C2P |
| △ SA01 | 23145227 | Switch, Push, 1C1P |
| SA02 | 23145227 | Switch, Push, 1C1P |
| SA03 | 23145227 | Switch, Push, 1C1P |
| SA04 | 23145227 | Switch, Push, 1C1P |
| SA05 | 23145227 | Switch, Push, 1C1P |
| SA06 | 23145227 | Switch, Push, 1C1P |
| △ V901A | 23902022 | Socket, CRT, 8P |
| V901M | 23102983 | Magnet, Purity-Convergence, MAG1008 |
| W201 | 23250937 | Coil, Delay Line, TRF2054 |
| W661 | 23151357 | Speaker, SPK1158, 60x120mm, 16 ohm |
| W662 | 23151357 | Speaker, SPK1158, 60x120mm, 16 ohm |
| X401 | 23153721 | Ceramic Resonator, TCR1023 |
| X501 | 23153979 | Crystal, 4.43MHz |
| X502 | 23153653 | PAL, 1H-Delay Line, ED645A |
| Z101 | 23107927 | Ceramic Video Trap, 5.5MHz, TCF1011 |
| ZA01 | 23153741 | Ceramic Resonator, TCR1029 |
| ZA02 | 24094651 | Capacitor Block, 100pFx4, 50V |
| ZA03 | 24094645 | Capacitor Block, 0.01 μ Fx4, 50V |
| PC BOARD ASSEMBLIES | | |
| U902A | 23336510 | Main Board, PB0017-1 |
| U902B | 23336511 | CRT Drive Board, PB0017-2 |
| PICTURE TUBE | | |
| △ V901 | A5509239 | Picture Tube, A51JAR96X(VMW) |

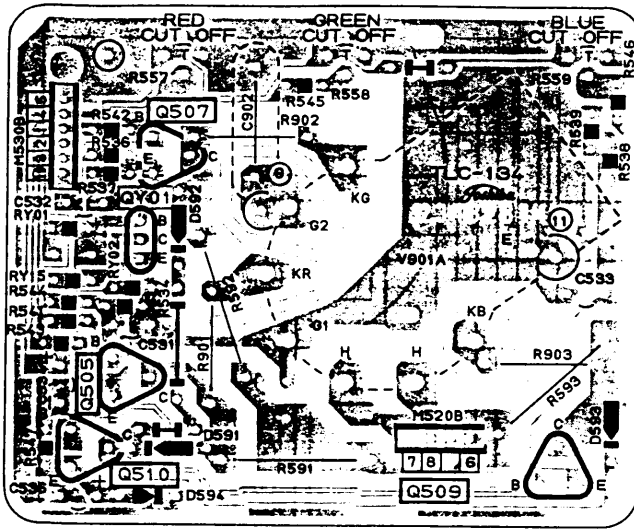
| Location No. | Part No. | Description |
|------------------------------|----------|-------------------------------|
| TUNER | | |
| H001 | 23121642 | Tuner, VHF/UHF, EG811V |
| REMOTE HAND SET PARTS | | |
| K902 | 23120474 | Remote Hand Unit, CT-9369 |
| AT01 | 23300624 | Upper Case |
| AT02 | 23300919 | Lower Case |
| AT03 | 23300920 | Battery Cover |
| AT04 | 23300921 | Filter |
| ST01 | 23300625 | Rubber Sheet |
| UT01 | 23334590 | PC Board, PW6918 |
| ZT01 | 23153736 | Ceramic Resonator, CSB455EB20 |

| Location No. | Part No. | Description |
|--------------|----------|-------------|
|--------------|----------|-------------|

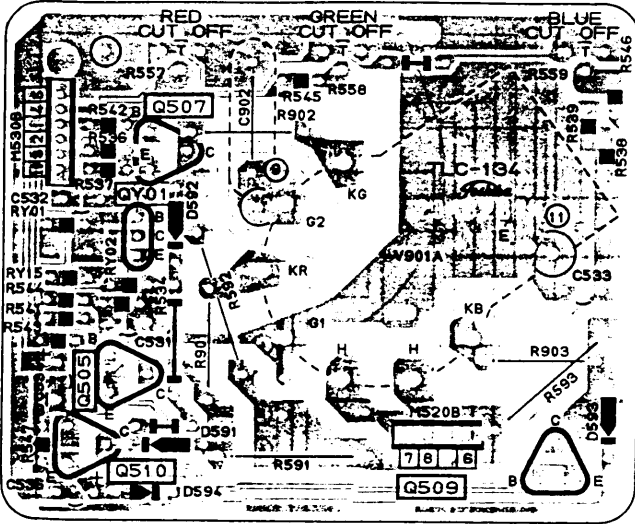


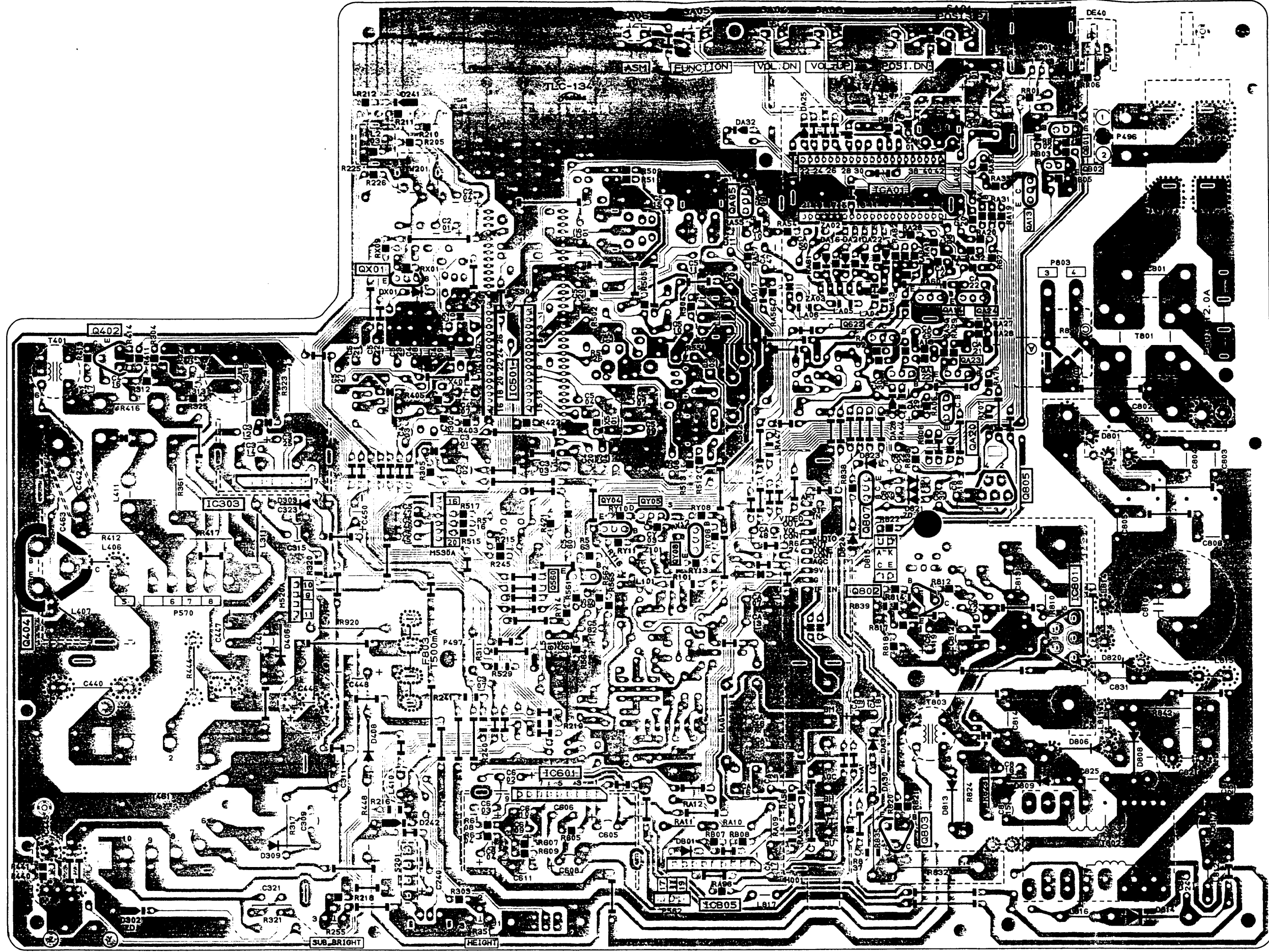
CRT DRIVE BOARD PB0017-2

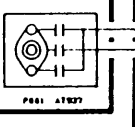
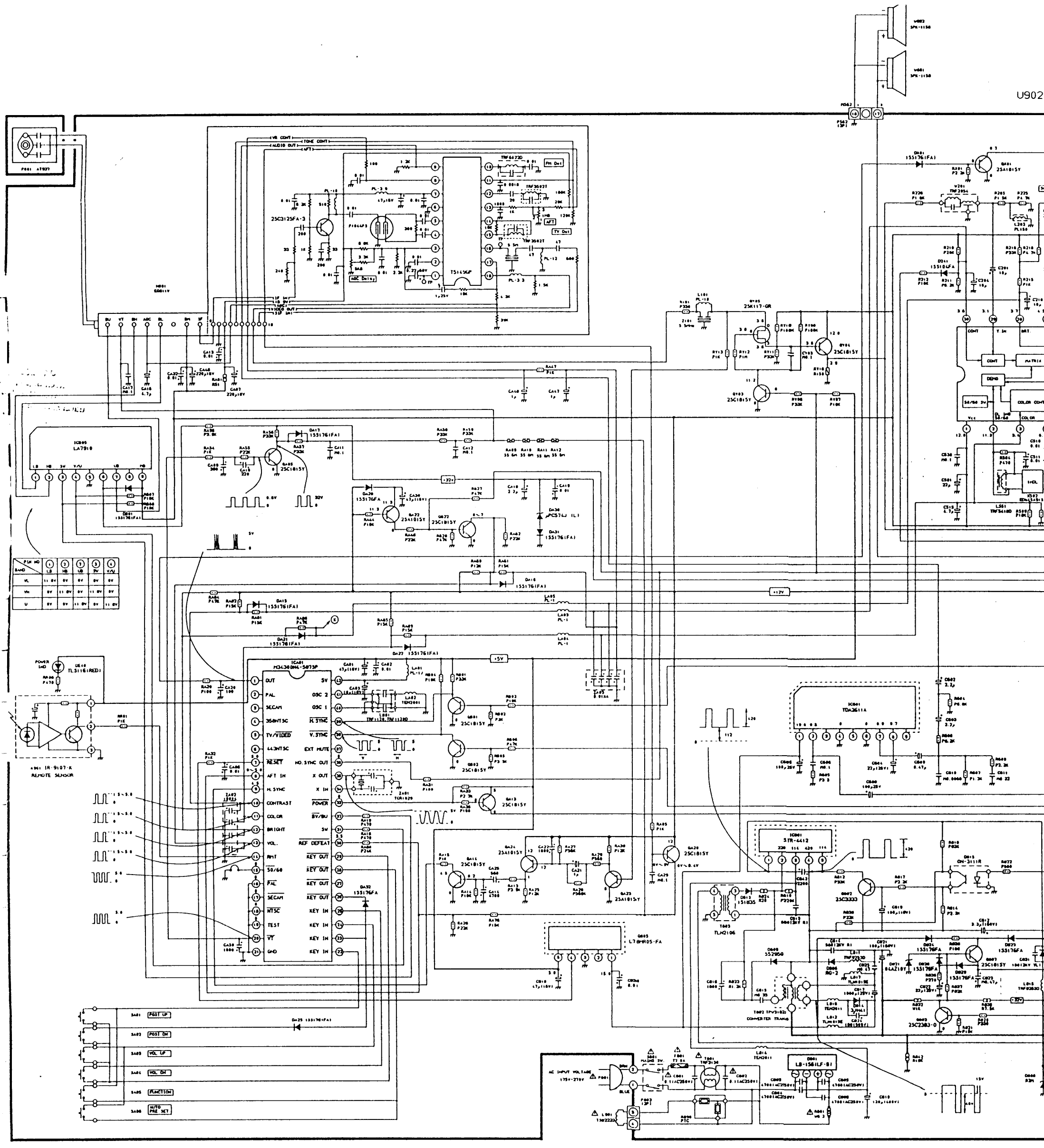
BOTTOM (FOIL) SIDE



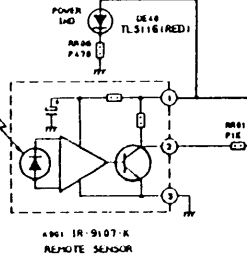
CRT DRIVE BOARD PB0017-2
BOTTOM (FOIL) SIDE



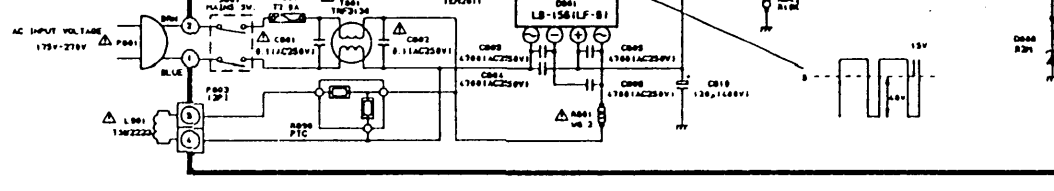




| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------|-------|-------|-------|----|----|----|----|----|----|----|
| VL | 11.0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V |
| VH | 0V | 11.0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V |
| V | 0V | 0V | 11.0V | 0V | 0V | 0V | 0V | 0V | 0V | 0V |



- 3461 [POST UP]
- 3462 [POST DN]
- 3463 [VOL UP]
- 3464 [VOL DN]
- 3465 [FUNCTION]
- 3466 [AUTO PRE SET]



U902A MAIN BOARD PB0017-1

U902B CRT DRIVE BOARD PB0017-2

