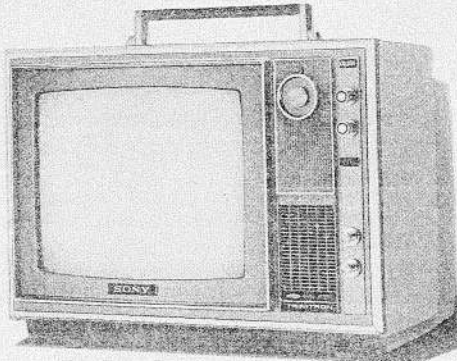


KV-1310UB KV-1330UB

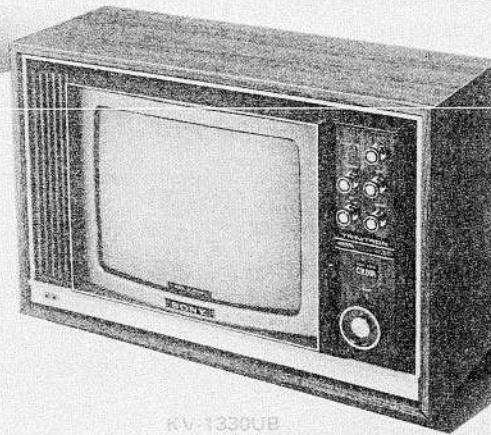
UK Model

Chassis No. SCC-55B-A . . . KV-1310UB

Chassis No. SCC-55A-A . . . KV-1330UB



KV-1310UB



KV-1330UB

TRINITRON[®]
COLOUR TV

SPECIFICATIONS

TV-signal standards:	British colour TV standards (CCIR system I)	Automatic controls:	AFT (automatic fine tuning) AGC (automatic gain control) AFC (automatic frequency control) ANC (automatic noise canceller) ABL (automatic brightness limiter) ACC (automatic colour control) ACK (automatic colour killer) ADC (automatic degaussing) AZC (automatic zooming control)
Picture tube:	90° deflection TRINITRON system	Power requirements:	240 V ac, 50 Hz
Semiconductors:	69 transistors, 52 diodes and 2 IC's	Power consumption:	78 W
Aerial:	UHF: 75 Ω aerial socket type	Dimensions:	437 (w) x 335 (h) x 394 (d) mm . . . KV-1310UB 17 ³ / ₁₆ (w) x 13 ³ / ₁₆ (h) x 15 ¹ / ₂ (d) inches
Channel coverage:	UHF: ch. 21 ~ 68		506 (w) x 339 (h) x 390 (d) mm . . . KV-1330UB 19 ¹⁵ / ₁₆ (w) x 13 ⁵ / ₁₆ (h) x 15 ¹¹ / ₃₂ (d) inches
Intermediate frequencies:	Picture i-f carrier: 39.5 MHz Colour subcarrier: 35.07 MHz Sound i-f carrier: 33.5 MHz	Net weight:	13.9 kg (30 lb, 10 oz) . . . KV-1310UB 14.6 kg (32 lb, 3 oz) . . . KV-1330UB
Sound system:	6.0 MHz intercarrier Output power: 1.2 W (at 10 % harmonic distortion) Speaker: 8 x 12 (cm) elliptical, 8 Ω 3 ¹ / ₈ x 4 ³ / ₄ (inches) . . . KV-1310UB 8 x 16 (cm) elliptical, 8 Ω 3 ¹ / ₈ x 6 ⁵ / ₁₆ (inches) . . . KV-1330UB	Accessories:	Instruction manual Earpiece (ME-20B) . . . KV-1330UB
Video system:	RGB cathode drive		

SONY
SERVICE MANUAL

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WARNING!!

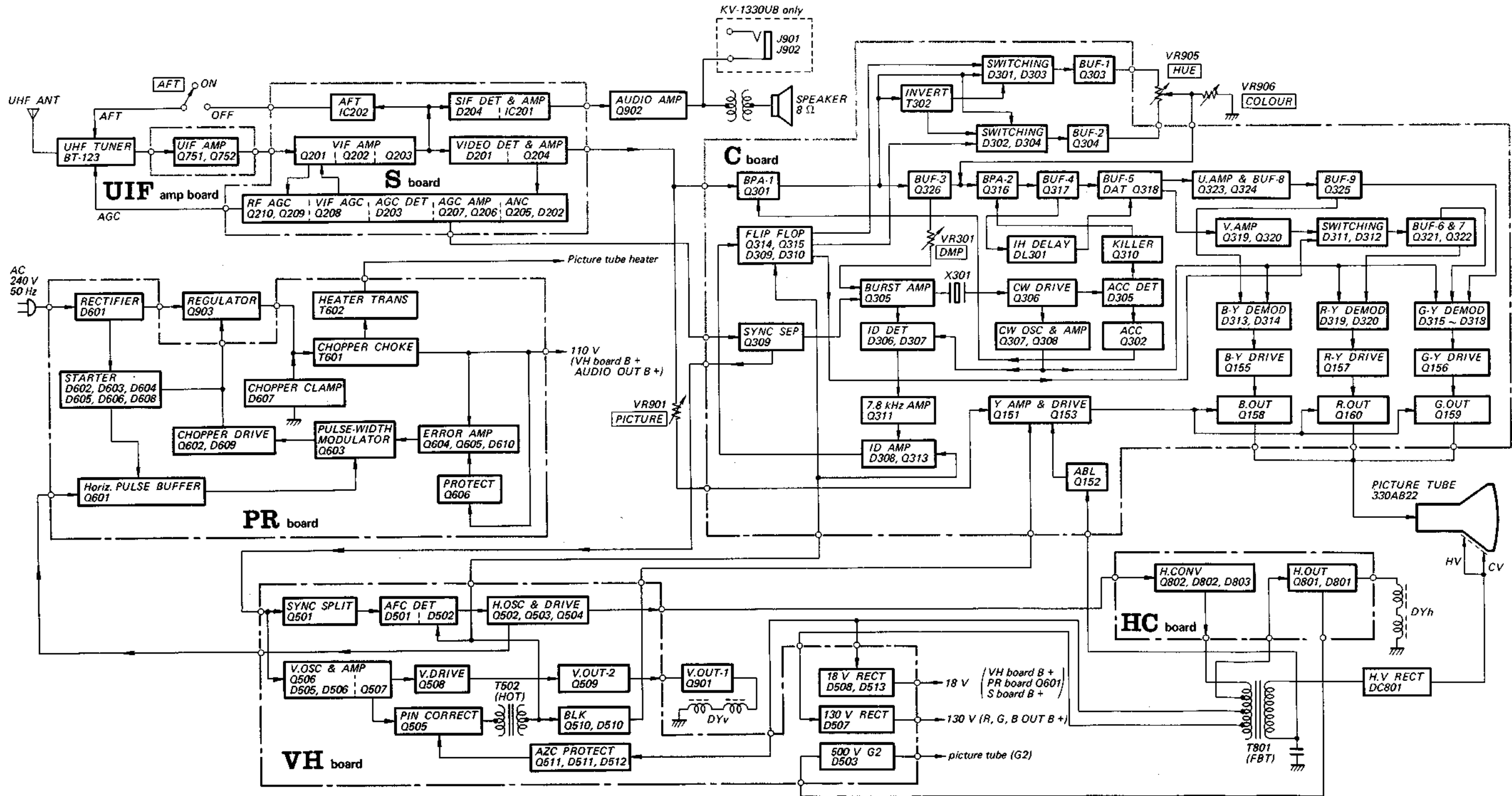
THIS CHASSIS OPERATES WITH ONE SIDE OF THE POWER LINE CONNECTED TO THE CHASSIS. TO ELIMINATE SHOCK HAZARD AND PROTECT EQUIPMENT WHEN SERVICING THE SET WITH THE COVERS REMOVED, MAKE SURE THAT THE SET IS PLUGGED INTO A SUITABLY-RATED ISOLATION TRANSFORMER.

X-RAY RADIATION WARNING!!

BE SURE THAT PARTS REPLACEMENT IN THE HIGH VOLTAGE BLOCK AND ADJUSTMENTS MADE TO THE HIGH VOLTAGE CIRCUITS ARE CARRIED OUT PRECISELY IN ACCORDANCE WITH THE PROCEDURES GIVEN IN THIS MANUAL.

SECTION 1
TECHNICAL DESCRIPTION

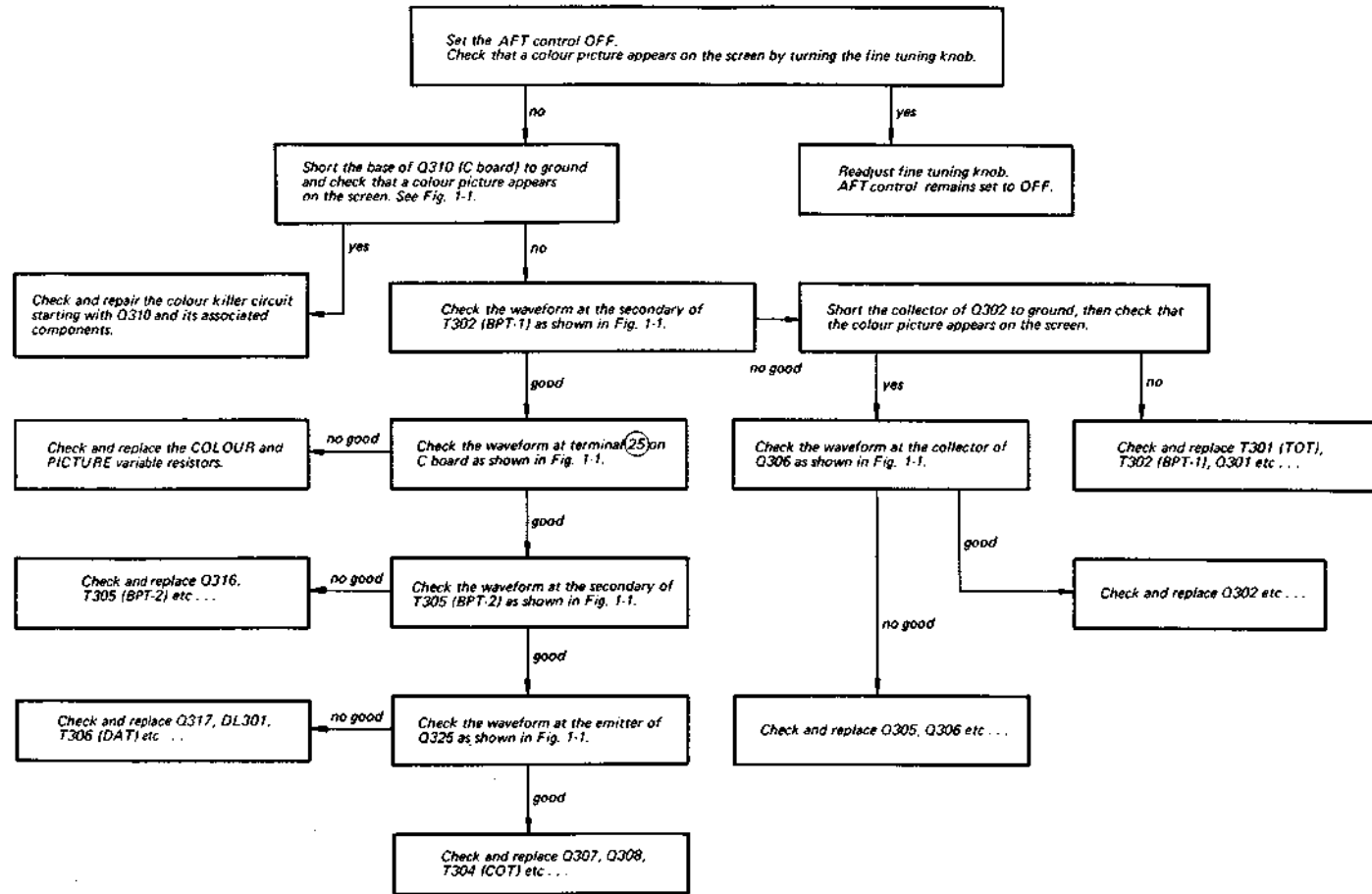
1-1. BLOCK DIAGRAM



1-2. TROUBLESHOOTING CHART

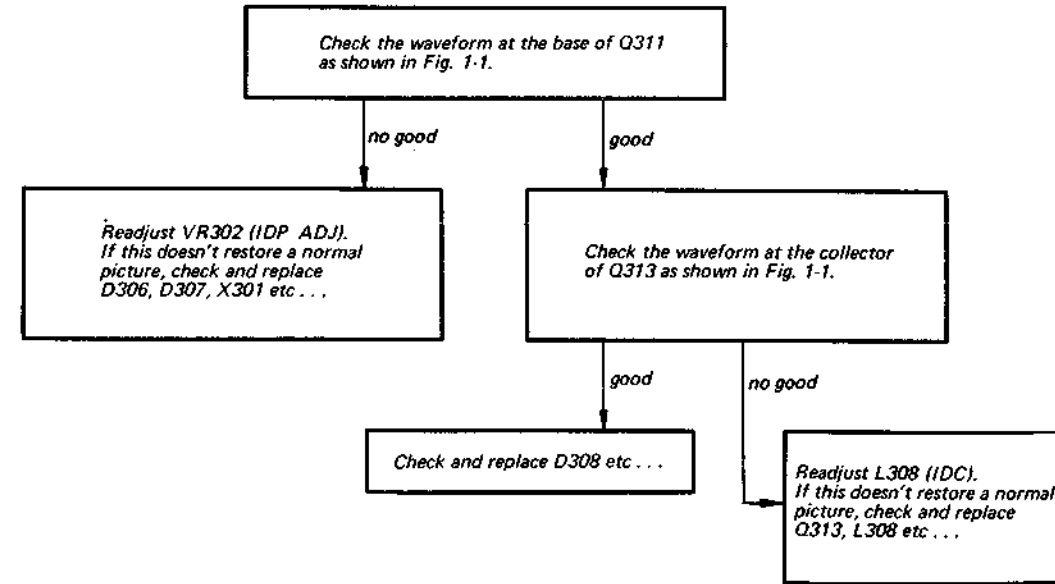
[No Colour]

Note: Before checking the colour circuit, make sure that the COLOUR control is not set to minimum.



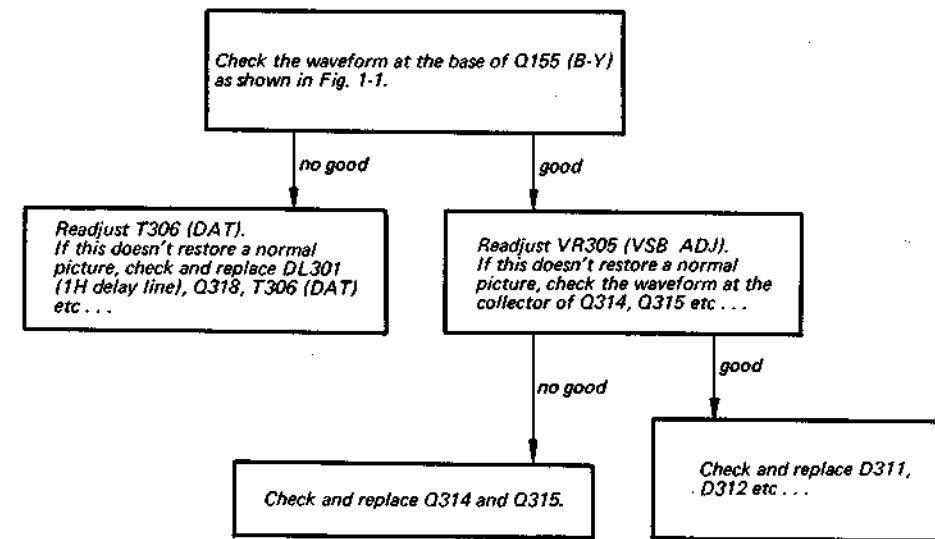
[Hue Variation]

This symptom is defined as a deviation from normal hue.



[Line Crawling or Hanover Bars]

This symptom is the effect of phase error which is observed as a line to line luminance difference.



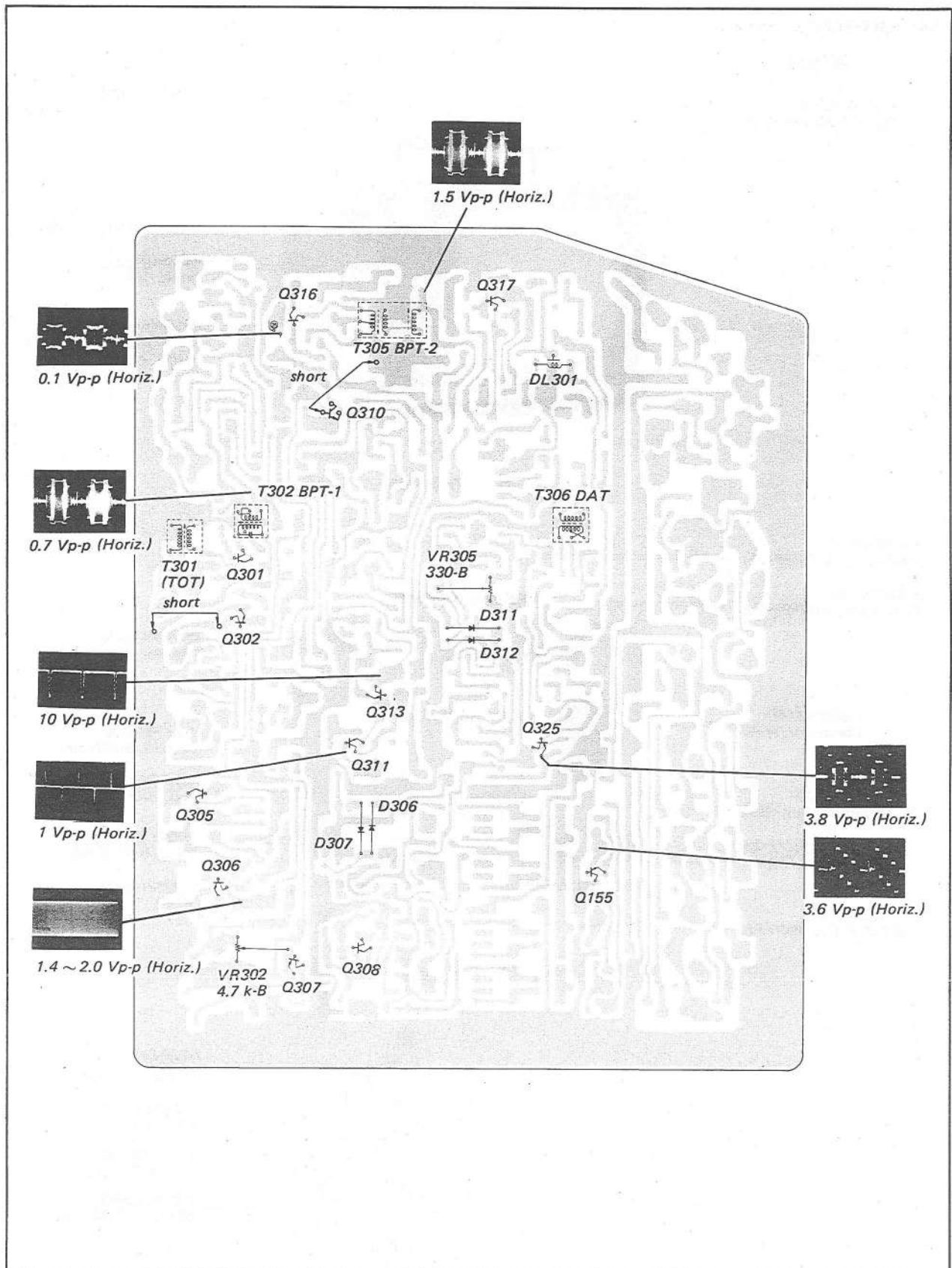


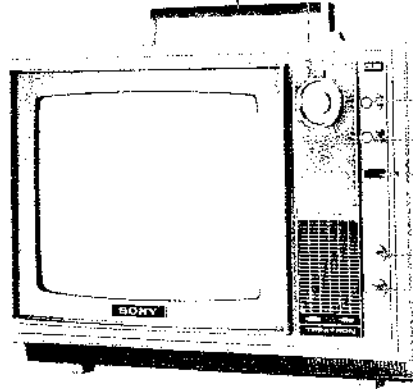
Fig. 1-1. Check points on C board

1.3. EXTERNAL VIEWS

(KV-1310UB)

X-4302-904-0
 Carrying Handle Ass'y

X-4304-407-0
 Knob Ass'y, UHF tuning



X-4304-409-5
 Knob Ass'y, controls
 (PULL ON/VOL, PICTURE)

4-305-035-00
 Knob, AFT

X-4307-309-0
 Knob Ass'y, controls
 (HUE, COLOUR)

Fig. 1-2. Front view

X-4302-811-0
 Knob Ass'y, VFR control

X-4302-810-0
 Knob Ass'y, BRT control

2-076-703-04
 Bracket, aerial

1-508-457-00
 Connector, aerial

1-222-809-00
 500 k-B, SCR N adj.

1-515-119-00
 Circuit Breaker, S902

1-223-017-00
 50-B, H.CENT adj.

1-534-777-00
 Mains Cable

1-222-344-00
 5 k-B, H.SIZE adj.

1-222-344-00
 5 k-B, R,G,B BKG adj.

1-222-512-00
 10 k-B, V.SIZE adj.

Fig. 1-3. Rear view



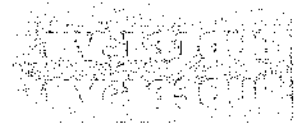
1-222-512-00
 10 k-B, V.LIN adj.

1-223-017-00
 50-B, TILT adj.

1-222-725-00
 20 k-B, PIN adj.

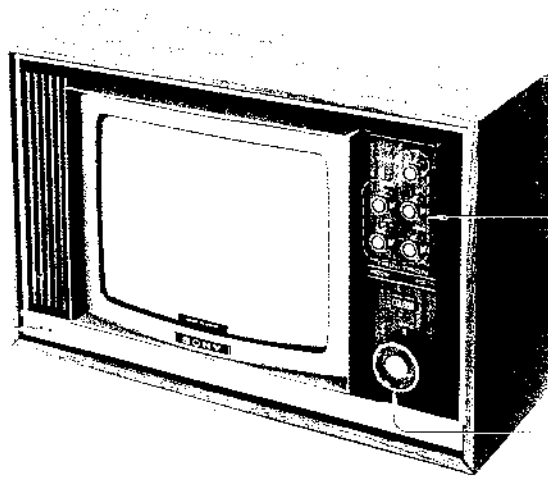
1-222-725-00
 20 k-B, H.FREQ adj.

Fig. 1-4. Bottom view



(KV-1330UB)

1-507-169-13
Jack, earpiece
1-507-901-12
Nut, jack



X-4302-808-7
Knob Ass'y, controls (PULL ON/
VOL, HUE, PICTURE, COLOUR,
AFT)

X-4304-407-0
Knob Ass'y, UHF tuning

Fig. 1-5. Front view

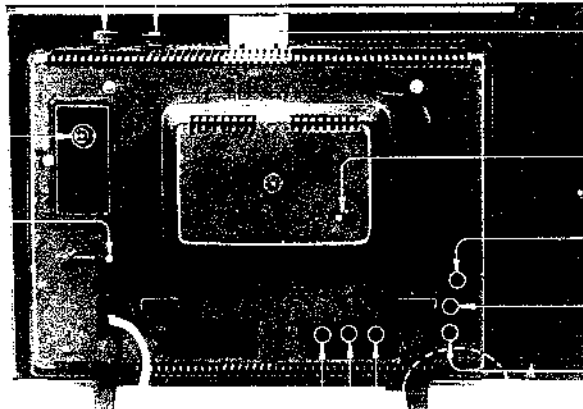
X-4302-811-0
Knob Ass'y, VER control

X-4302-810-0
Knob Ass'y, BRT control

1-508-457-00
Connector, aerial

1-515-119-00
Circuit Breaker, S902

1-222-344-00
5 k-B; P,G,B BKG adj.



4 303-302-00
Bracket, aerial

1-222-809-00
500 k-B, SCRN adj.

1-223-017-00
50-B, H.CENT adj.

1-222-344-00
5 k-B, H.SIZE adj.

1-222-512-00
10 k-B, V.SIZE adj.

Fig. 1-6. Rear view



1-222-512-00
10 k-B, V.LIN adj.

1-223-017-00
50-B, TILT adj.

1-222-725-00
20 k-B, PIN adj.

1-222-725-00
20 k-B, H.FREQ adj.

Fig. 1-7. Bottom view

1-4. INTERNAL VIEWS

(KV-1310UB)

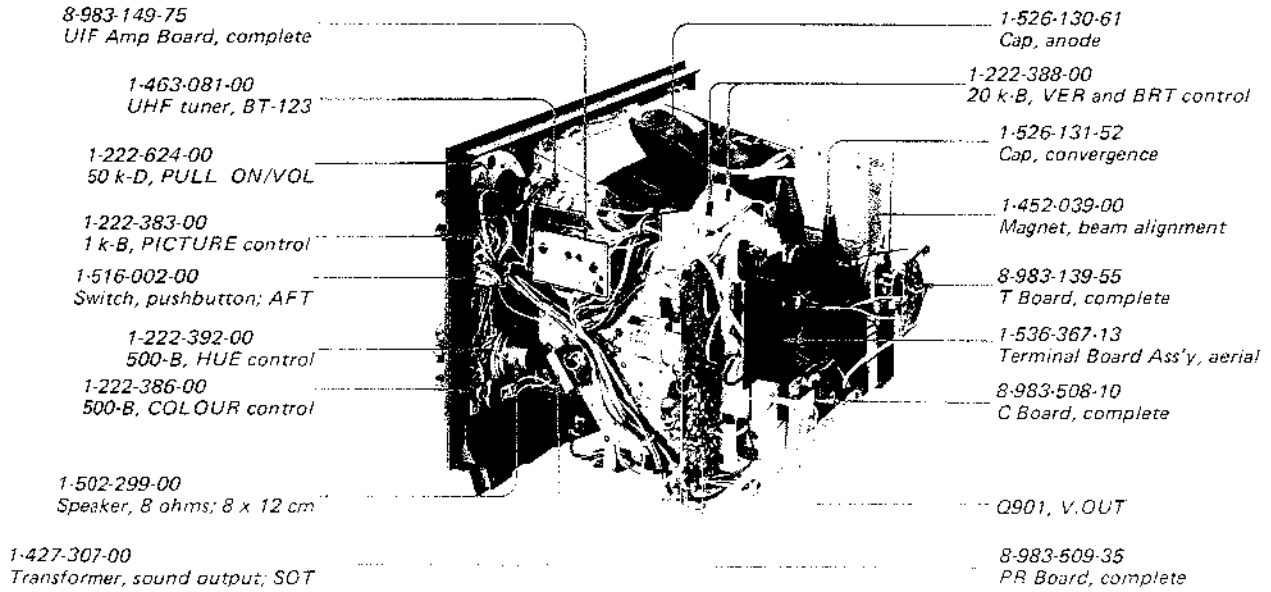


Fig. 1-8. Major parts location

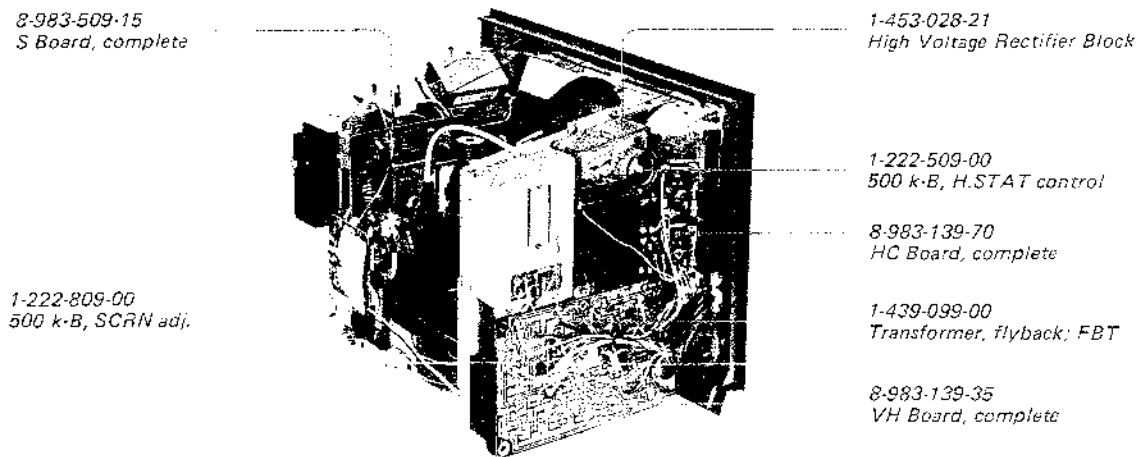
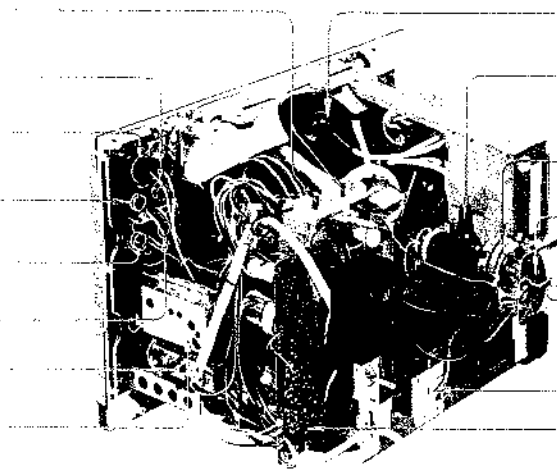


Fig. 1-9. Major parts location

(KV-1330UB)

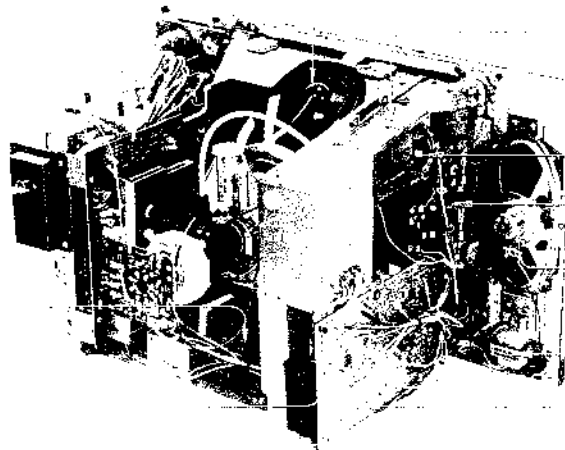
- 1-222-388-00
20 k-B; VER and BRT controls
- 1-222-383-00
1 k-B, PICTURE
- 1-222-624-00
50 k-D, PULL ON/VOL control
- 1-224-392-00
500-B, HUE control
- 1-222-386-00
500-B, COLOUR control
- 1-514-892-00
Switch, rotary; AFT
- 1-463-081-00
UHF Tuner, BT-123
- 8-983-149-75
UIF Amp Board, complete



- 1-526-130-61
Cap, anode
- 1-526-131-52
Cap, convergence
- 1-452-039-00
Magnet, beam alignment
- 8-983-139-55
T Board, complete
- 1-222-809-00
500 k-B, SCRN adj.
- Q901, V. OUT
- 8-983-509-35
PR Board, complete

Fig. 1-10. Major part location

- 1-526-130-61
Cap, anode
- 8-983-509-15
S Board, complete
- 1-536-367-00
Terminal Ass'y, aerial
- 8-983-508-10
C Board, complete
- 1-439-099-00
Transformer, flyback; FBT



- 1-453-028-21
High Voltage Rectifier Block
- 1-222-509-00
500 k-B, H.STAT
- 8-983-139-70
HC Board, complete
- 1-502-309-00
Speaker, 8 ohms; 8 x 16 cm
- 1-427-326-00
Transformer, sound output; SOT
- 8-983-139-35
VH Board, complete

Fig. 1-11. Major parts location

SECTION 2

DISASSEMBLY AND REPLACEMENT

Note: All screws in this set are Phillips (cross recess) type.

2-1. CABINET REMOVAL

Circled numbers indicate sequence.

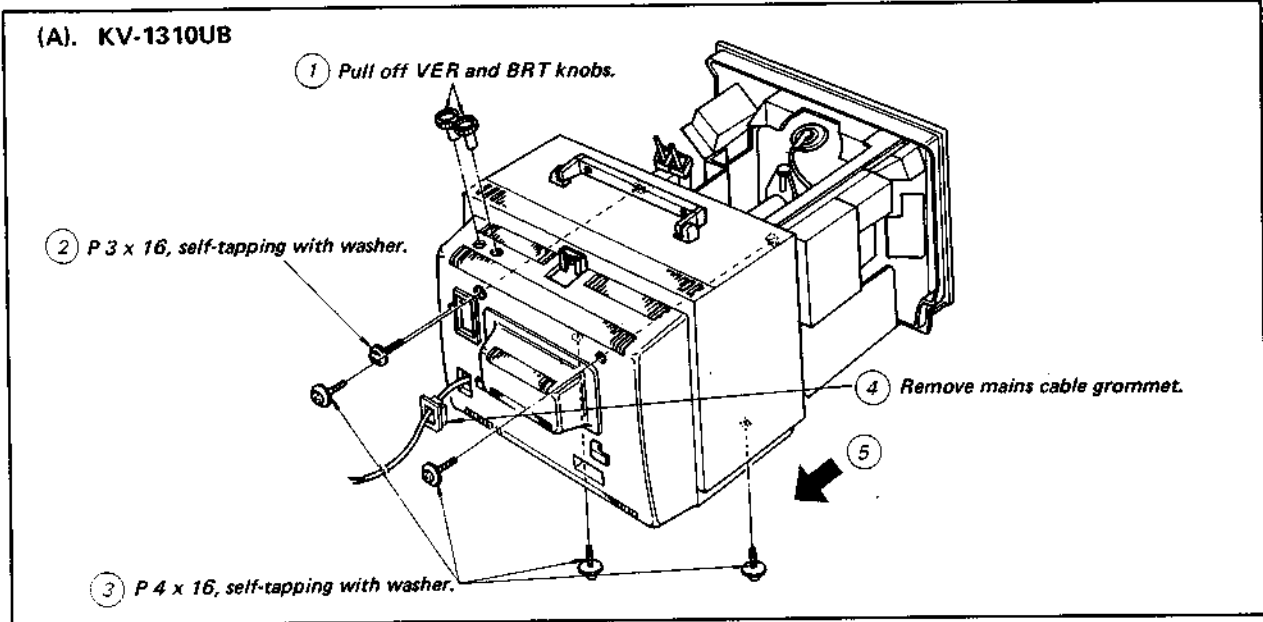


Fig. 2-1 (a) Cabinet removal

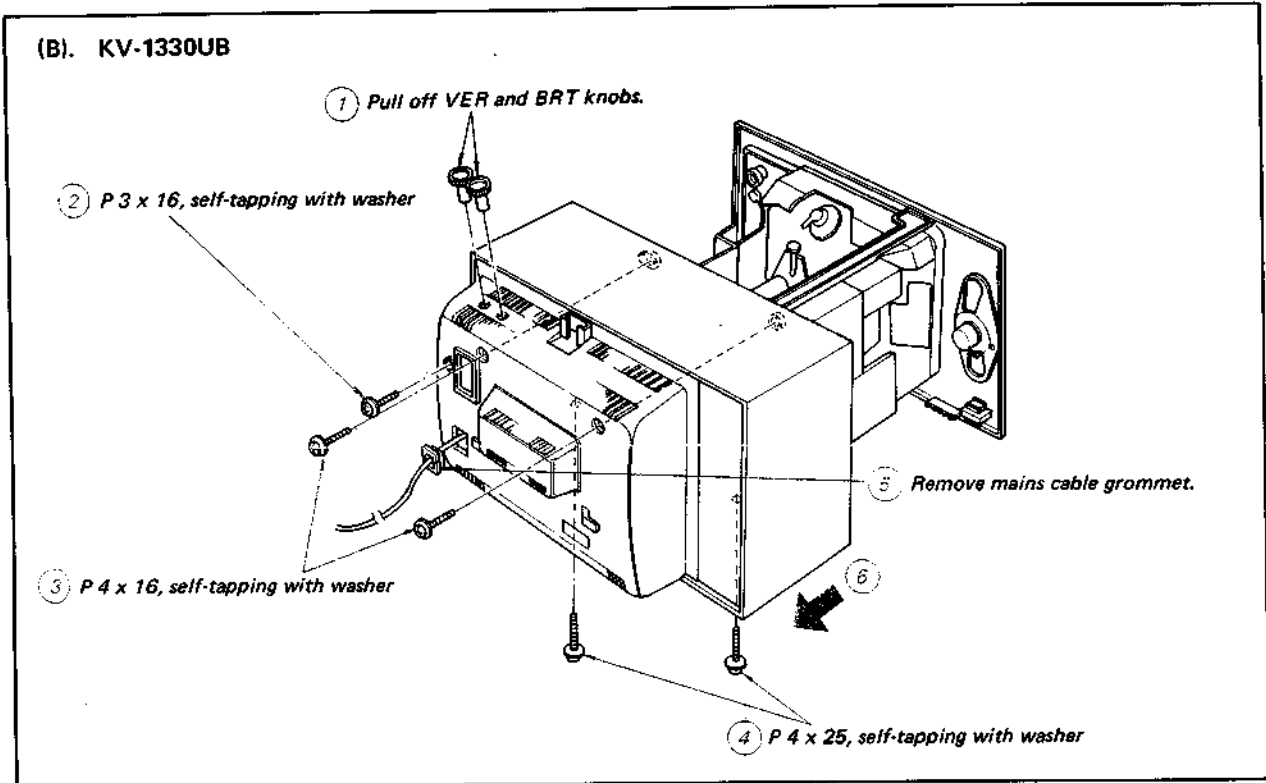


Fig. 2-1 (b) Cabinet removal

2.2. UHF TUNER REMOVAL AND DIAL CALIBRATION

Remove the cabinet as described in 2-1, and then proceed to following steps. Circled numbers indicate sequence.

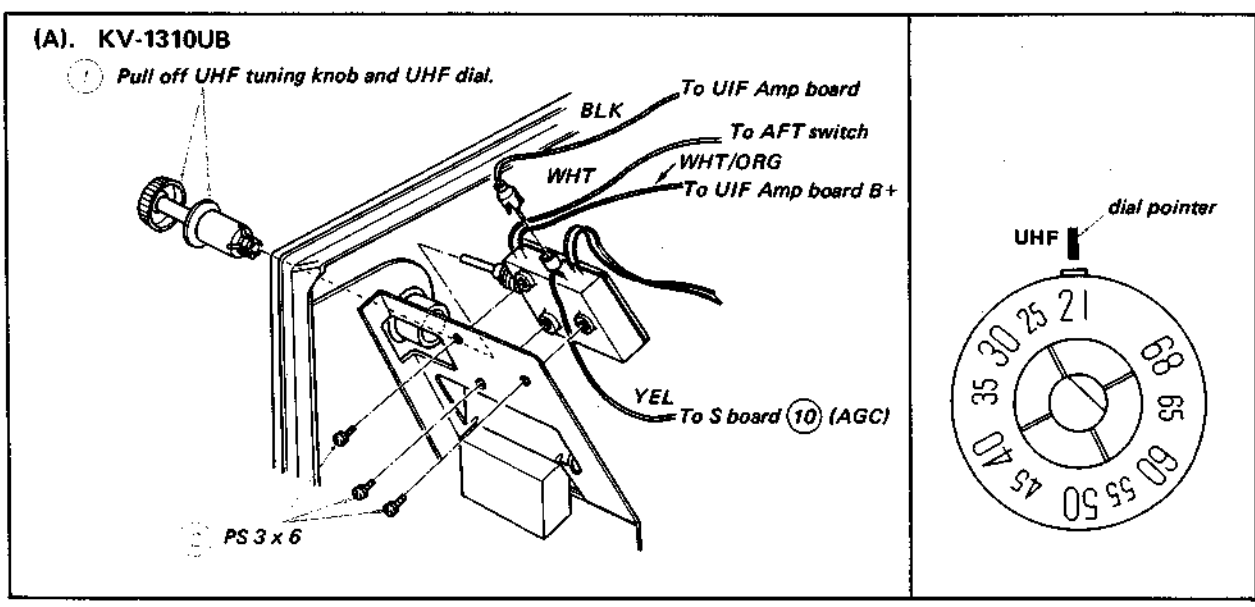


Fig. 2-2 (a) Tuner removal and dial calibration

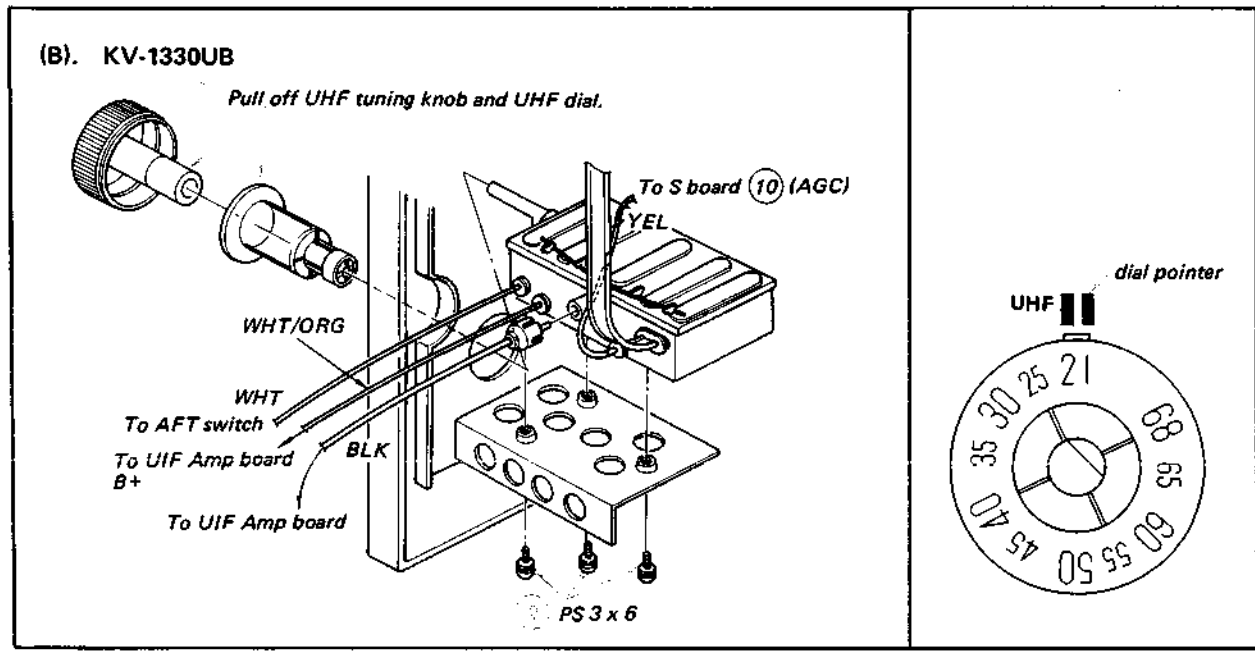


Fig. 2-2 (b) Tuner removal and dial calibration

[UHF Dial Calibration]

Turn the UHF tuner shaft anticlockwise as far as UHF dial will not turn any more, and then set the dial to the position where channel digit "21" meets the pointer as shown.

2-3. SWITCHES, CONTROLS AND PILOT LAMP REPLACEMENT

Remove the cabinet as described in 2-1 first, and then take out the tuner chassis where controls, switches and pilot lamp are mounted. Circled numbers indicate sequence.

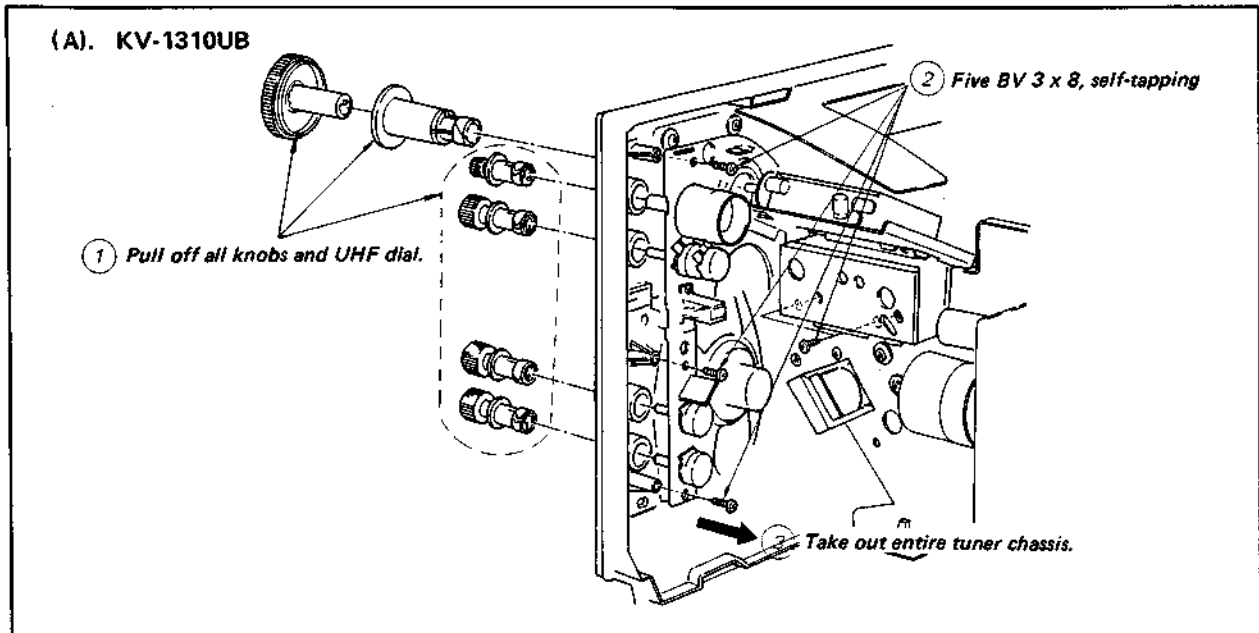


Fig. 2-3 (a) Tuner chassis removal

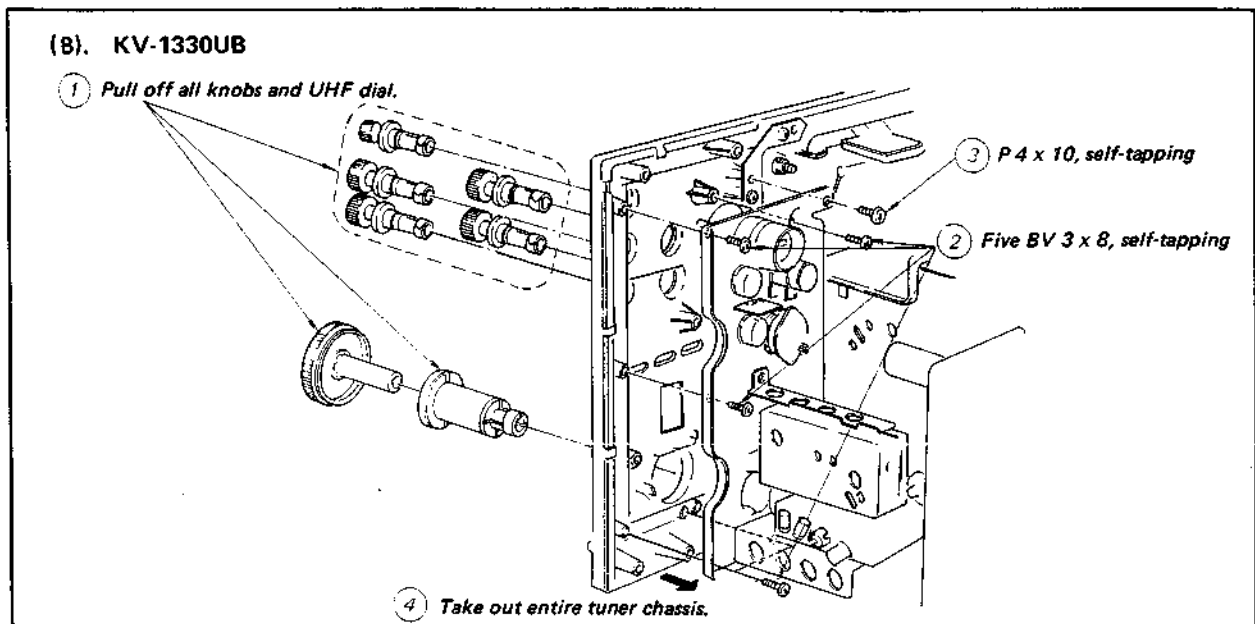


Fig. 2-3 (b) Tuner chassis removal

**2-4. SPEAKER REMOVAL
(KV-1310UB)**

1. Remove the clamp band securing the electrolytic capacitor (mounted on PR board) to the chassis by loosening a BV 3 x 8 self-tapping screw.
2. Move PR board aside to permit the speaker removal.

(KV-1330UB)

1. Simply remove the screws securing the speaker bracket to the front mask.

2-5. PICTURE TUBE REPLACEMENT

Remove the cabinet as described in 2-1, and then proceed to the following steps.
Circled numbers indicate sequence.

Note: Place the set on the protective sheet with the tube face down. After completing the replacement, proceed to "Setup Adjustment" as described in Section 3.

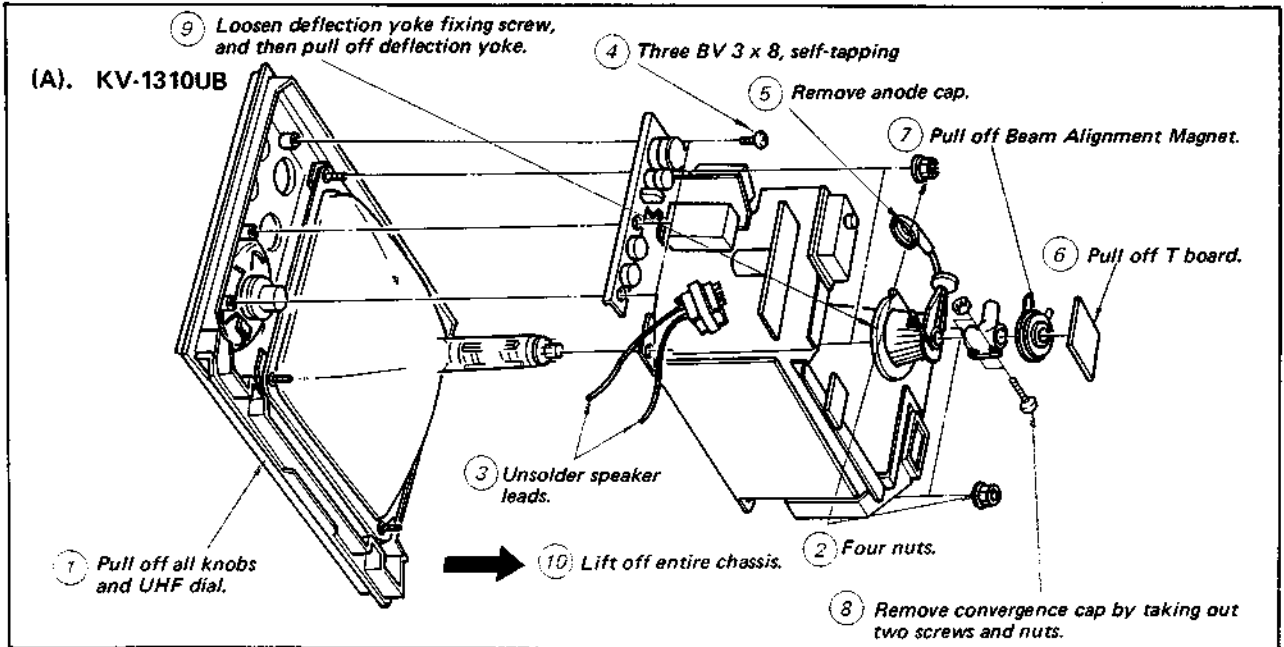


Fig. 2-4 (a) Picture tube removal

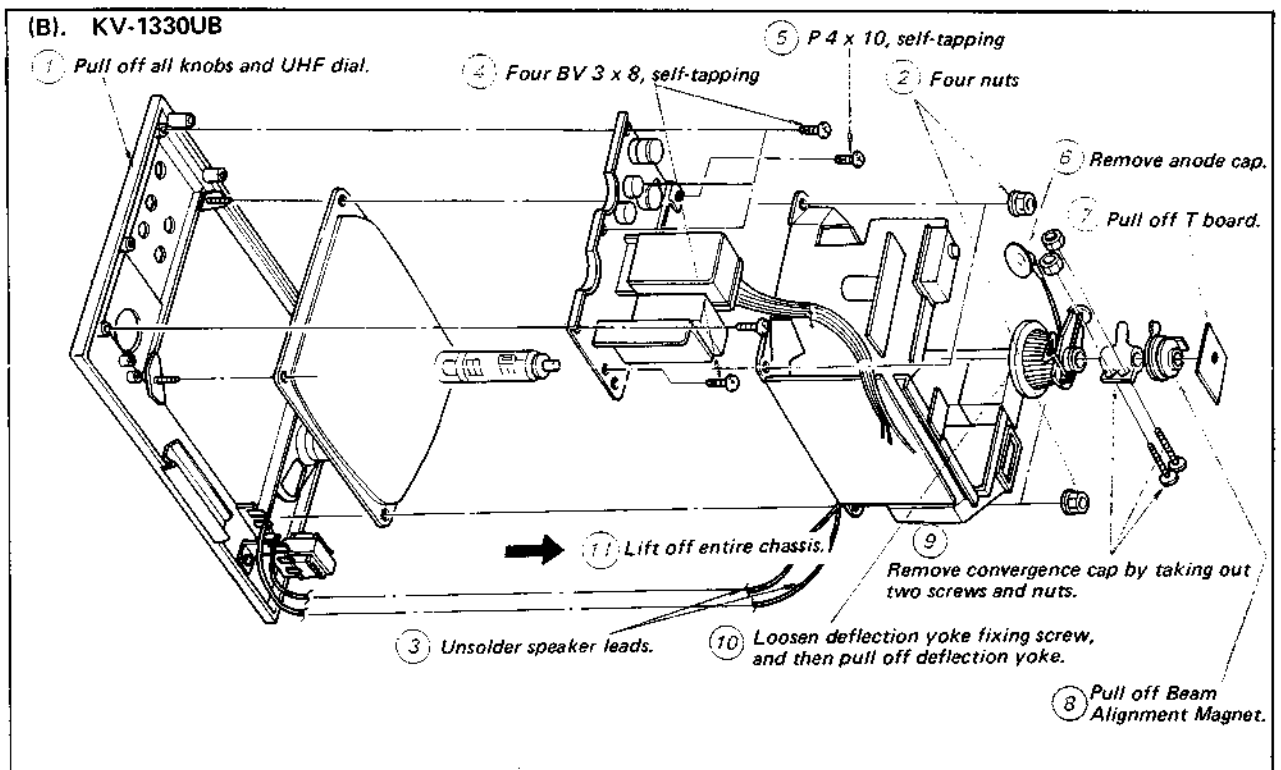


Fig. 2-4 (b) Picture tube removal

SECTION 3 SETUP ADJUSTMENTS

CAUTION

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

Perform the adjustments in following order:

1. Beam Landing Adjustments
2. Convergence Adjustments
3. White Balance Adjustments

Note: Test Equipment Required

1. Colour-bar/pattern generator
2. Degausser

3-1. BEAM LANDING ADJUSTMENTS

Beam landing adjustments ensure correct landing of the three beams on their designated phosphor stripes. Incorrect beam landing results in colour contamination (a predominant hue) in those particular areas of the screen.

Preparation:

Referring to Fig. 3-1, perform the procedures in order.

1. Loosen the deflection yoke fixing screw.
2. Slide the deflection yoke, and then remove the three wedge-shaped rubber spacer.
3. Have the purity magnet at the mid position (minimum magnetic field) by turning the purity control knob as shown.

4. Slide the deflection yoke forward as far as it will go against the funnel of the picture tube.

Procedure: (Refer to Fig. 3-1.)

1. Disconnect the GRN and BLU leads on the T board.
2. Turn on the power switch, and then set the controls as follows:

- input signal cross-hatch pattern from a colour-bar/pattern generator
- BRT control fully clockwise
- PICTURE control fully clockwise
- AFT switch ON

The pattern on the screen will be as shown in Fig. 3-2. (a).

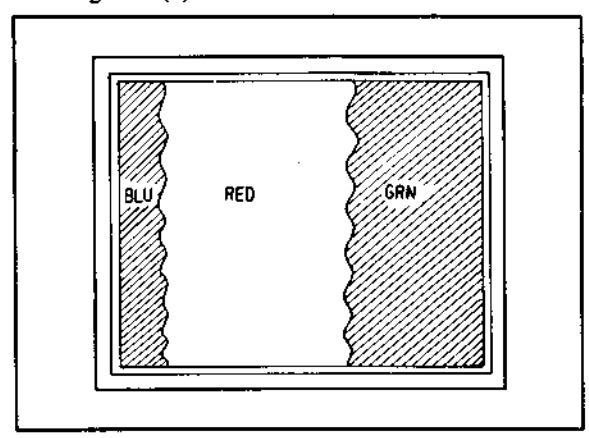


Fig. 3-2 (a). *Incorrect purity control*

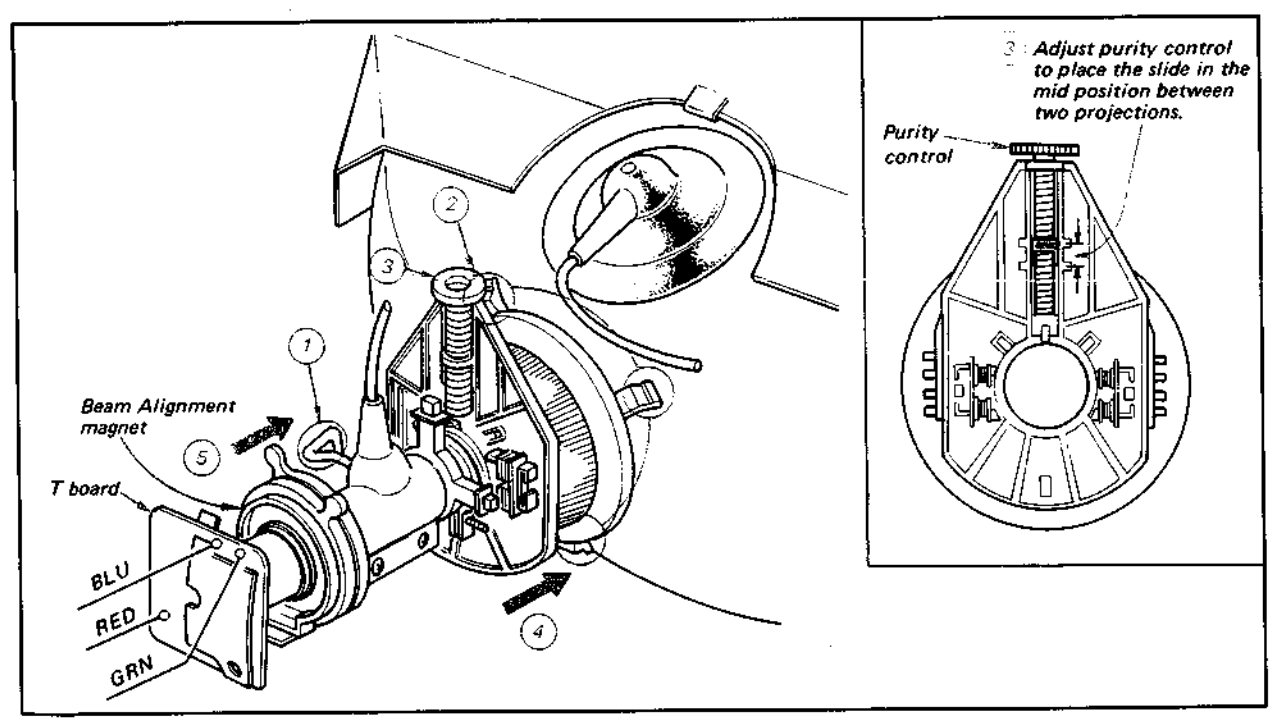


Fig. 3-1. *Beam landing adjustment*

3. Degauss the entire screen with a degausser, and then turn the purity control knob to centre the RED band on the screen as shown in Fig. 3-2 (b).
4. Slide the deflection yoke slightly backward to obtain a uniform red over the entire screen, and then temporarily fix the deflection yoke and insert a rubber spacer at the top as shown in Fig. 3-3.

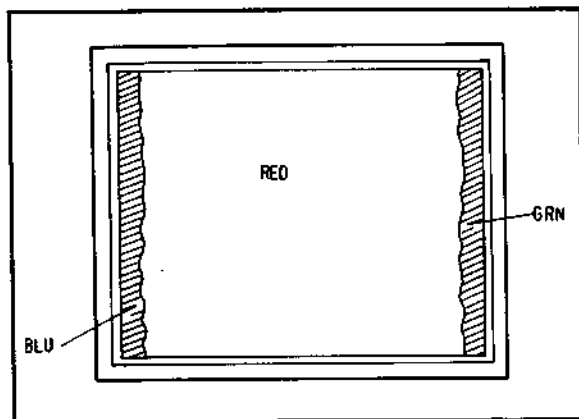


Fig. 3-2 (b). Correct purity control

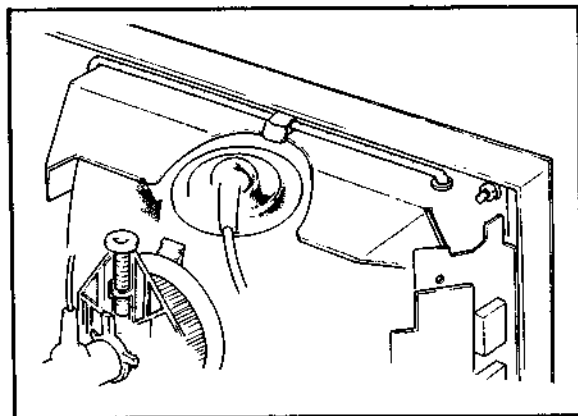


Fig. 3-3. Fixing the deflection yoke temporarily

5. Check Green and Blue raster for uniformity. Repeat the Steps 3 and 4, if necessary.
 - Green stripes check Disconnect red and blue leads on the T board.
 - Blue stripes check Disconnect green and red leads on the T board.
6. Tighten the deflection yoke fixing screw, and remove the top rubber spacer inserted in step 4, then reinsert the three rubber spacer temporarily. Care should be taken not to lean the deflection yoke any direction.

7. Check and adjust the beam landing at both sides and each corner as shown in Fig. 3-4 and 3-5.

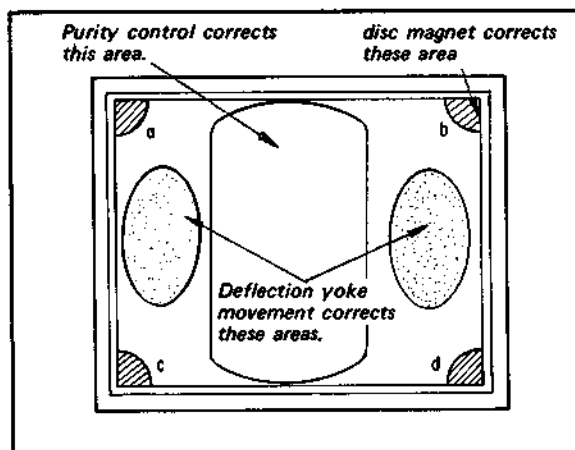


Fig. 3-4. Overall check and adjustment of purity

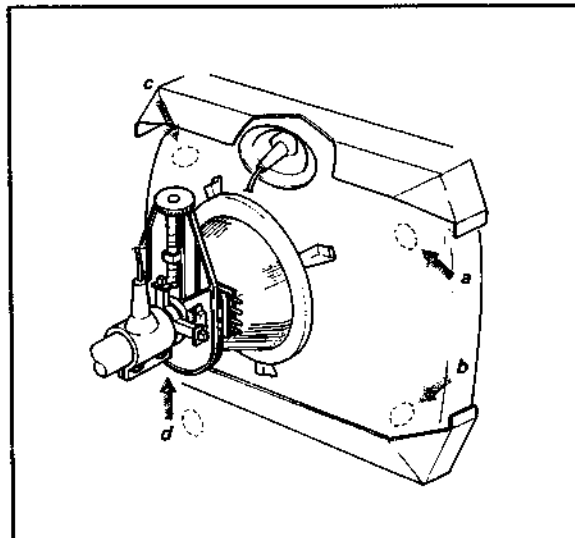


Fig. 3-5. Adjustment of corner mislanding by affixing a small disk magnet

3-2. CONVERGENCE ADJUSTMENTS

These adjustments comprise horizontal and vertical static convergence and dynamic convergence.

Preparation:

1. Beam landing adjustments should be completed before starting the convergence adjustments.
2. The following adjustments should also be completed:
 - a. Focus adjustment.
 - b. Horizontal size adjustment.
 - c. Vertical size and linearity adjustments.
3. Receive the dot pattern from a colour-bar/pattern generator.
4. Set the controls as follows:
 - BRT control fully clockwise
 - PICTURE control fully clockwise
 - AFT switch: ON

Horizontal Static Convergence

This adjustment is made to converge the red, green and blue dots horizontally at centre of the screen as shown in Fig. 3-7.

Procedure:

1. Adjust VR801 (H. STAT, See Fig. 3-6) to converge the dots horizontally at centre of the screen, as shown in Fig. 3-7.

Note: Almost all sets do not require adjustment by using HMC (for horizontal static convergence) or VMC (for vertical static convergence) therefore they do not have HMC or VMC magnets. Perform the following procedures only for the sets having them or when correct centre convergence cannot be obtained in above step. For HMC or VMC installation, refer to Fig. 3-6.

2. If only the blue dots do not converge and are shifted in one direction, move the HMC magnet horizontally as necessary, as shown in Fig. 3-6. Note that after moving the HMC magnet, Beam Landing Adjustments and Focus Adjustment should be performed.

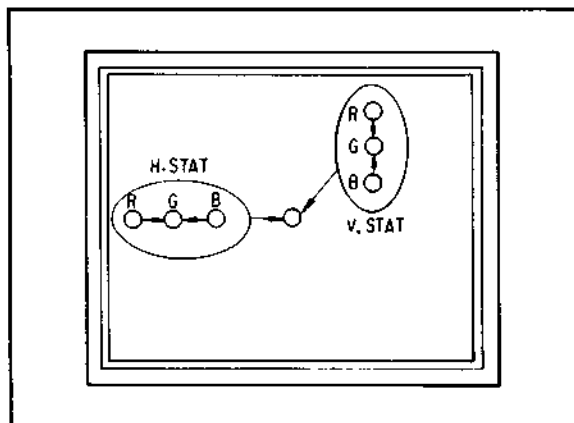


Fig. 3-7. Horizontal and vertical static convergence adjustment

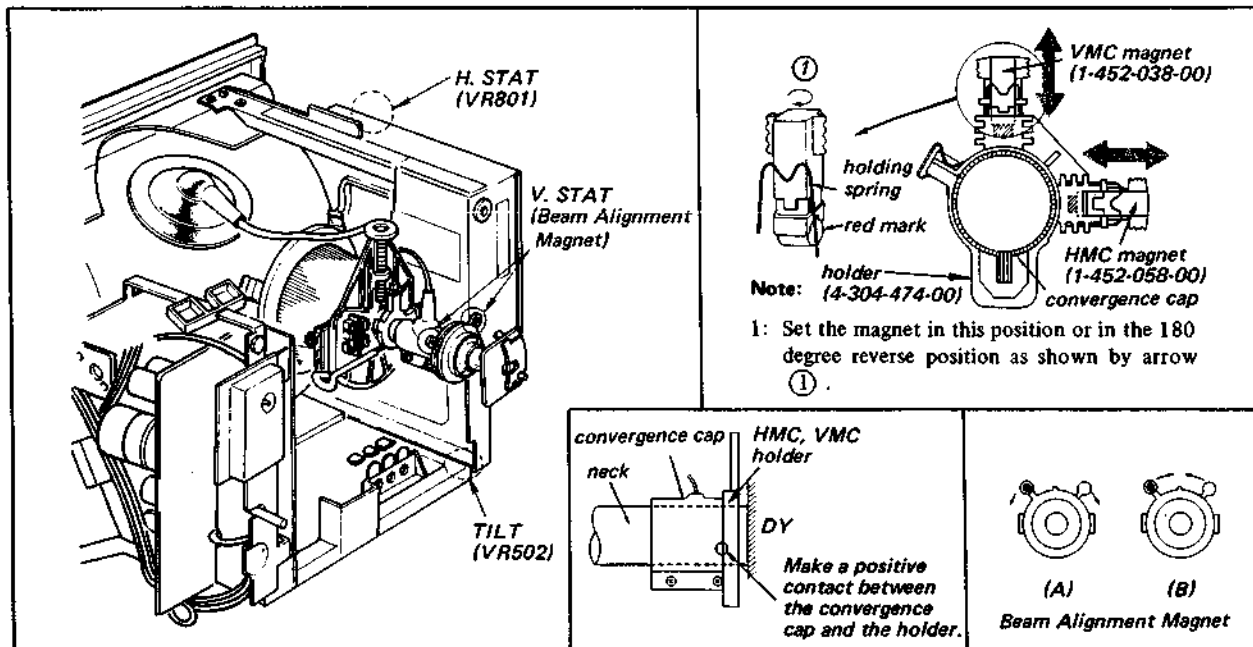


Fig. 3-6. Adjustment parts location of static convergence

Vertical Static Convergence

This adjustment is made to converge the red, green and blue dots vertically at centre of the screen.

Procedure:

1. Move the two tabs of beam alignment magnet (attached at the end of picture tube neck) equal amounts in opposite directions (See Fig. 3-6) so that the red and blue dots converge with green dots as shown in Fig. 3-7.
2. If only the blue dots do not converge and shifted in one direction, move the VMC magnet vertically as necessary, as shown in Fig. 3-6. Note that after moving the BMC magnet, Beam Landing Adjustments and Focus Adjustment should be performed.

Dynamic Convergence Adjustment

[Misconvergence at Both Sides of Screen.]

Procedure:

1. Adjust VR502 (TILT, See Fig. 3-8) for best convergence at both sides as shown in Fig. 3-9. If side misconvergence persists, proceed to Step 2.
2. Try connecting (A) to (A1) , (A2) or (A3) on the printed pattern (one by one) of VH board (TILT

AMP) as shown in Fig. 3-8. Make connection which gives best result permanent.

[Top and Bottom Misconvergence]

1. To correct misconvergence of the type shown in Fig. 3-10 and Fig. 3-11, raise or lower the front edge of the deflection yoke after loosening the deflection yoke fixing screw as shown in Fig. 3-12. Take care not to move the deflection yoke forward or backward.
2. Secure the yoke in place by inserting three wedge-shaped rubber spacers, and then tighten the deflection yoke fixing screw.

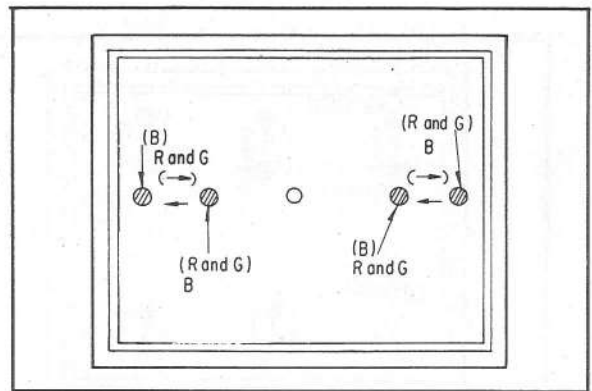


Fig. 3-9. Left and right convergence adjustment

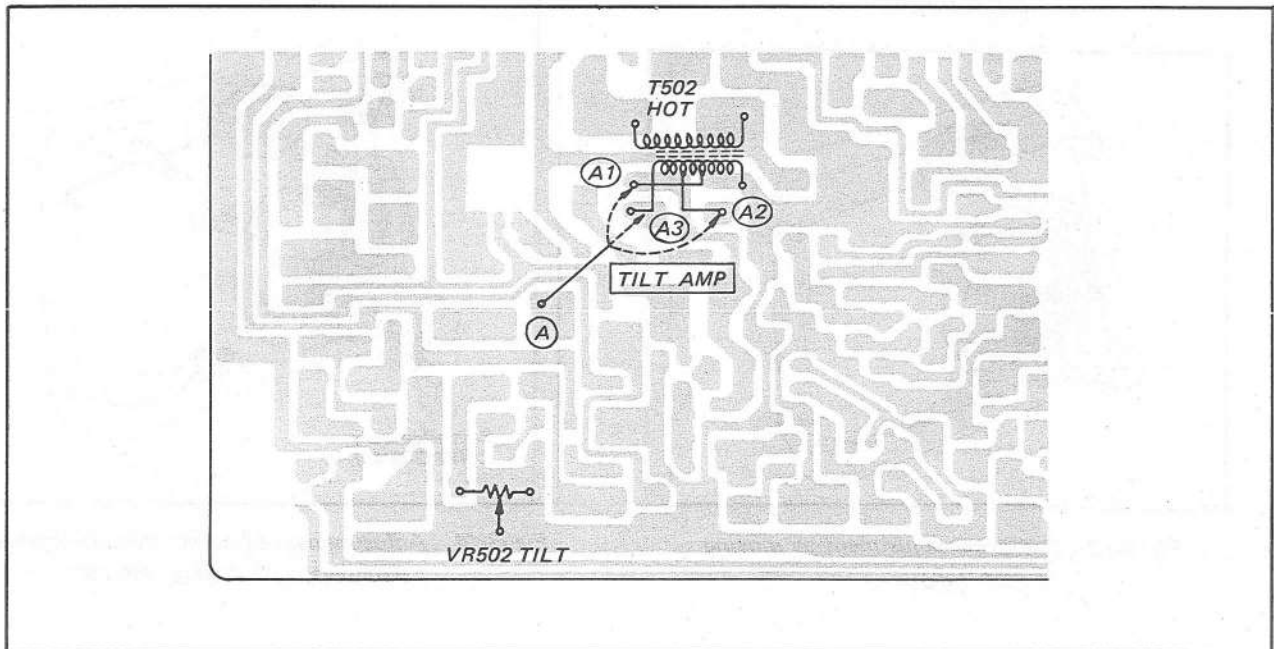


Fig. 3-8. Parts location and adjustment portion on VH board

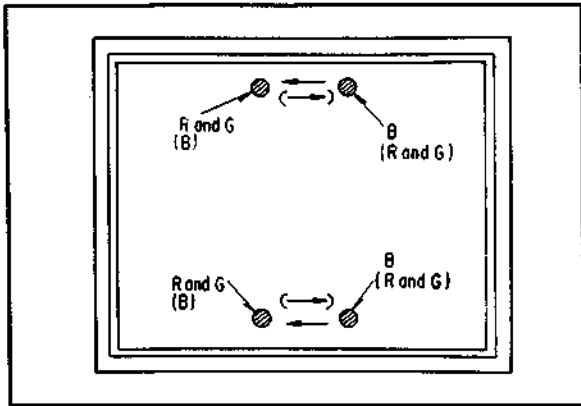


Fig. 3-10. Top and bottom convergence adjustment (1)

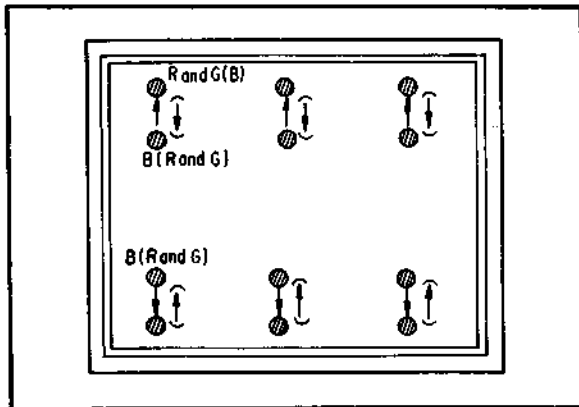


Fig. 3-11. Top and bottom convergence adjustment (2)

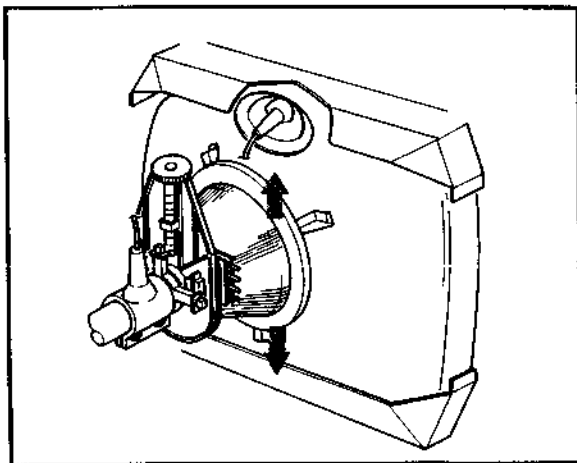


Fig. 3-12. Convergence adjustment by moving deflection yoke

Screen-corner Convergence Adjustment

This adjustment is made to correct corner misconvergence as shown in Fig. 3-13.

Procedure:

Note: Do not attempt to move the front edge of the deflection yoke to correct the misconvergence.

1. Attach a permalloy assembly (Part No. X-4302-401-0) for best results at the affected area. See Figures 3-13 and 3-14.

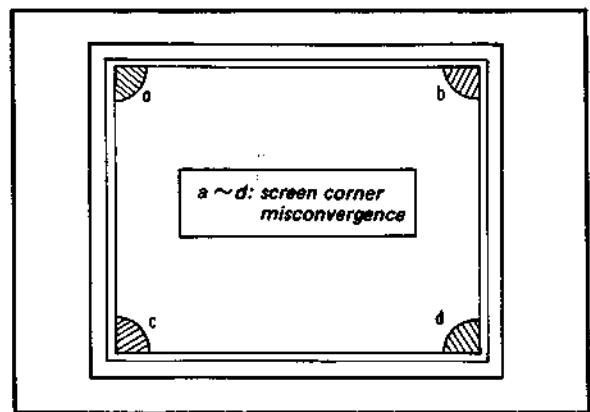


Fig. 3-13. Screen-corner convergence adjustment

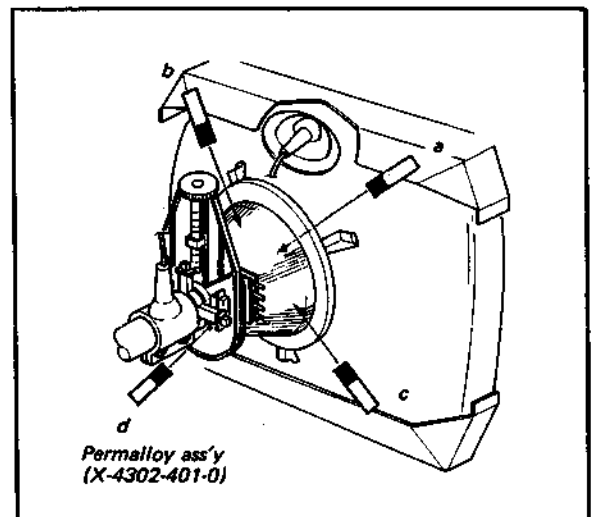


Fig. 3-14. Adjustment of corner misconvergence by affixing a permalloy assembly

3-3. WHITE BALANCE ADJUSTMENTS

These adjustments are made only when the white balance is incorrect or a new picture tube is installed.

Preparation:

1. Beam landing and convergence adjustments should be completed before starting the white balance adjustments.
2. Receive the crosshatch pattern from the colour-bar/pattern generator.
3. Referring to Fig. 3-15, set the adjustment controls as follows:

VR156, VR154 and VR152 fully	
(Red, Green and Blue Background Adj. controls)	anticlockwise (minimum)
VR155, VR153 and VR151 fully clockwise	
(Red, Green and Blue Drive Adj. controls)	(maximum)

Procedure: (Refer to Fig. 3-15.)

1. Turn the BRT and PICTURE controls fully anticlockwise.
2. Turn VR701 (SCRN) slowly to obtain a crosshatch that is faintly visible. Note the colour which becomes visible first when increasing brightness of picture by turning VR701. The Background Adj. control of that colour should be kept minimum.

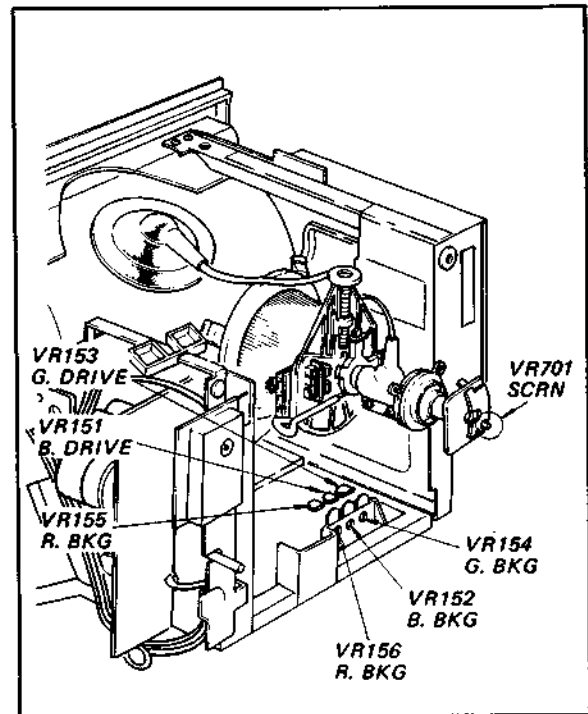


Fig. 3-15. Adjustment parts location

3. Adjust the other two Background Adj. controls for best white balance (neutral gray at faintly visible screenlight).
4. Turn the BRT and PICTURE controls fully clockwise. Observe the screen and adjust the Drive Adj. controls for best white balance if necessary.
5. Repeat the above steps several times. This time, do not touch up VR701.

SECTION 4 CIRCUIT ADJUSTMENTS

4-1. TEST EQUIPMENT REQUIRED

1. Oscilloscope
2. DC Voltmeter or VOM
3. Colour-bar/pattern generator

4-2. CONTROL SETTINGS FOR CHECKS AND ADJUSTMENTS

Controls and switches should be set as follows when performing checks and adjustments unless otherwise noted.

PICTURE, BRT.

HUE,

COLOUR controls set for best picture

VER control set for stable picture

AFT switch ON

4-3. POWER REGULATOR ADJUSTMENT

Note: Check 110 V B+ before making any other adjustment and perform this adjustment if necessary.

ITEM	PREPARATION	ADJUST	PROCEDURE
Power Regulator Adjustment	<ol style="list-style-type: none"> 1. Receive an off-the-air signal. 2. Verify ac power to be 240 V. 	VR601 (on PR board, See Fig. 4-1)	Referring to Fig. 4-1, 1. Adjust VR601 to obtain 110 V at the terminal ③.

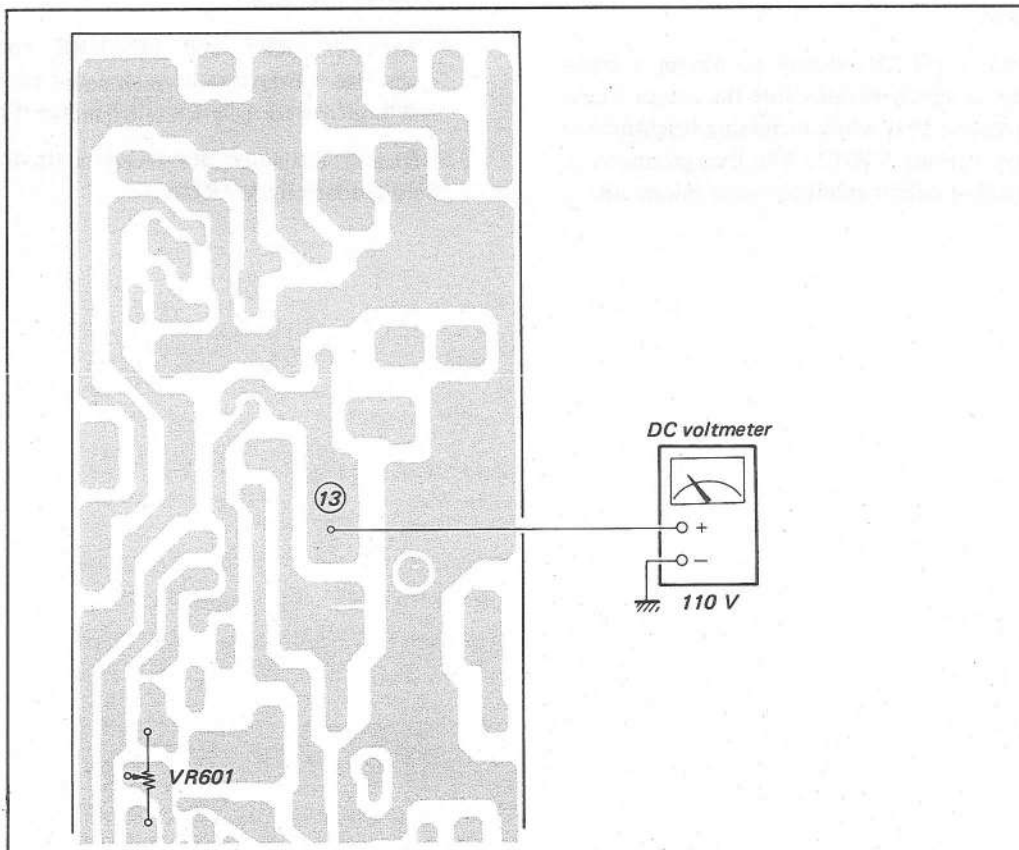


Fig. 4-1. Adjustment setup and parts location on PR board

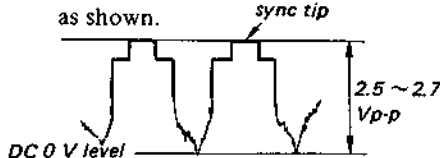
4.4. TUNER AGC ADJUSTMENT

Note: This adjustment should be made when noise (snow) is observed on all channels. If noise (snow) is persisting, check and replace the tuner.

ITEM	PREPARATION	ADJUST	PROCEDURE
UHF Tuner AGC Adjustment	1. Receive an off-the-air signal on a high numbered channel.	VR201 (on S board, See Fig. 4-2)	1. Adjust VR201 so that noise (snow) just disappears. 2. Check all UHF channels for noise-free reception.

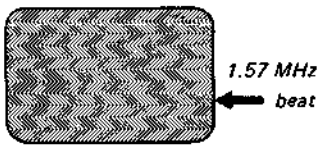
4.5. DETECTOR OUTPUT ADJUSTMENT

Note: This adjustment should be made when the picture becomes scrambled or when only noise (snow) is observed and no picture.

ITEM	PREPARATION	ADJUST	PROCEDURE
Detector Output Adjustment	1. Receive an off-the-air signal. 2. Connect an oscilloscope to terminal ① on S board as shown in Fig. 4-2.	VR203 (on S board, See Fig. 4-2)	1. Adjust VR203 for 2.5 ~ 2.7 V _{p-p} from sync tip to DC 0 V level as shown. 

4.6. TUNER AFT ADJUSTMENT

Note: This adjustment should be made if the AFT circuit does not operate properly. This is recognized by observing an off-the-air signal.

ITEM	PREPARATION	ADJUST	PROCEDURE
AFT Adjustment	1. Receive an off-the-air signal. 2. Set AFT switch to "OFF". 3. Turn the tuning knob clockwise to produce 1.57 MHz beat on the screen as shown. 	T212 (AFT-T4) (on S board, See Fig. 4-2)	1. Set the tuning knob to the point where 1.57 MHz beat just disappears by turning it counter-clockwise slowly. 2. Set AFT switch to "ON". 3. Set T212 to the position where 1.57 MHz beat just disappears.

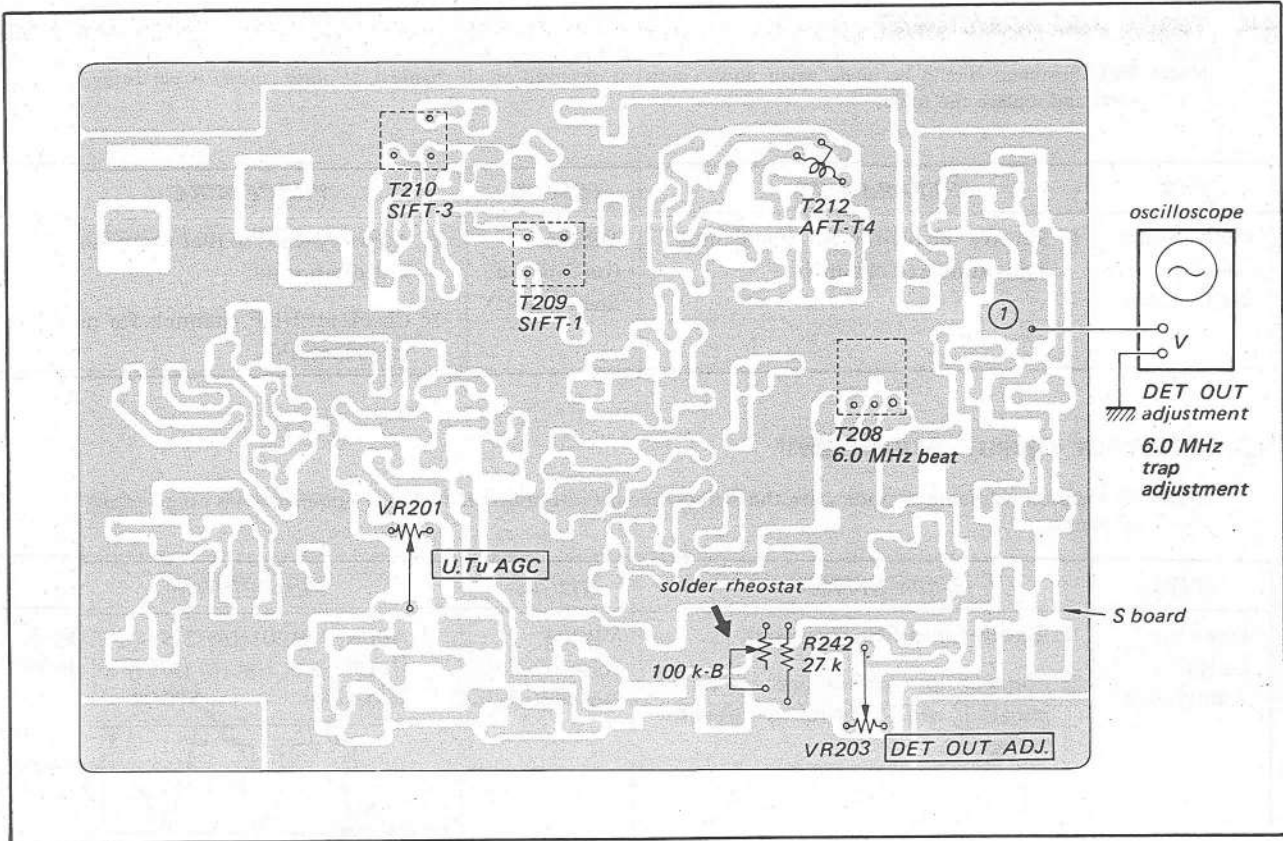


Fig. 4-2. Adjustment setup and parts location on S board

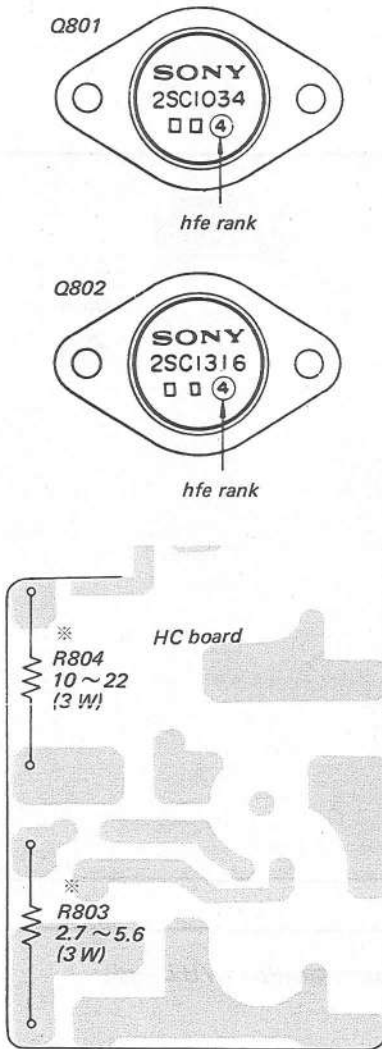
4-7. SOUND I-F ADJUSTMENT

Note: This adjustment should be made if SIF (SOUND I-F) transformer is replaced or when buzzing is heard.

ITEM	PREPARATION	ADJUST	PROCEDURE
Sound I-F Adjustment	<ol style="list-style-type: none"> 1. Receive an off-the-air signal. 2. Adjust VR903 (VOL control) to hear a faint sound. 	T210 (SIFT-3) T209 (SIFT-1) (on S board, See Fig. 4-2)	<ol style="list-style-type: none"> 1. Adjust T210 to obtain maximum and clear sound. 2. Connect a 100 k ohm-B rheostat in parallel with resistor R242 (27 k ohm) as shown in Fig. 4-2. 3. Set the 100 k ohm-B rheostat so that the picture just disappears. 4. Adjust T209 to obtain maximum and clear sound. 5. Check that no buzzing is heard from the speaker.
6.0 MHz Trap Adjustment	<ol style="list-style-type: none"> 1. Receive an off-the-air signal. 2. Connect an oscilloscope to terminal ① on S board as shown in Fig. 4-2. 	T208 (6.0 MHz trap) (on S board, See Fig. 4-2)	<ol style="list-style-type: none"> 1. Turn the tuning knob slowly to obtain 6.0 MHz beat on the scope as shown. 2. Adjust T208 to minimize the beat on the scope.

4-8. DEFLECTION CIRCUIT ADJUSTMENTS

Note: This adjustment should be made if display on the screen appears to be defective due to deflection or focus circuit trouble.

ITEM	PREPARATION	ADJUST	PROCEDURE																		
Horizontal Frequency Adjustment	<ol style="list-style-type: none"> 1. Receive an off-the-air signal. 2. Unsolder WHT lead at the base of Q309 (terminal ③) on C board. 	VR501 (H. FREQ.) (on VH board, See Fig. 4-3)	<ol style="list-style-type: none"> 1. Adjust VR501 to obtain a single upright picture that "floats" from side to side. If a single upright picture cannot be obtained, proceed to next step. 2. Note the settings that produce equal numbers of slanting bars and set VR501 in the centre between these settings. 3. Resolder the WHT lead. 																		
Horizontal Output and Horizontal Converter Drive Adjustment	 <p>Q801</p> <p>SONY 2SC1034</p> <p>hfe rank</p> <p>Q802</p> <p>SONY 2SC1316</p> <p>hfe rank</p> <p>HC board</p> <p>R804 10~22 (3W)</p> <p>R803 2.7~5.6 (3W)</p>	R803 R804 (on HC board, as shown)	<ol style="list-style-type: none"> 1. If a horizontal output transistor has been replaced, change R803 according to the hfe rank of transistor as shown in the table below. <table border="1" data-bbox="1053 929 1412 1086"> <thead> <tr> <th>Q801 hfe rank</th> <th>R803</th> </tr> </thead> <tbody> <tr> <td>2SC1034-3</td> <td>2.7 Ω</td> </tr> <tr> <td>2SC1034-4</td> <td>4.7 Ω</td> </tr> <tr> <td>2SC1034-5</td> <td>5.6 Ω</td> </tr> </tbody> </table> 2. If a horizontal converter transistor has been replaced, change R804 according to the hfe rank of transistor as shown in the table below. <table border="1" data-bbox="1053 1254 1412 1444"> <thead> <tr> <th>Q802 hfe rank</th> <th>R804</th> </tr> </thead> <tbody> <tr> <td>2SC1316-2</td> <td>10 Ω</td> </tr> <tr> <td>2SC1316-3</td> <td>15 Ω</td> </tr> <tr> <td>2SC1316-4</td> <td>18 Ω</td> </tr> <tr> <td>2SC1316-5</td> <td>22 Ω</td> </tr> </tbody> </table> 	Q801 hfe rank	R803	2SC1034-3	2.7 Ω	2SC1034-4	4.7 Ω	2SC1034-5	5.6 Ω	Q802 hfe rank	R804	2SC1316-2	10 Ω	2SC1316-3	15 Ω	2SC1316-4	18 Ω	2SC1316-5	22 Ω
Q801 hfe rank	R803																				
2SC1034-3	2.7 Ω																				
2SC1034-4	4.7 Ω																				
2SC1034-5	5.6 Ω																				
Q802 hfe rank	R804																				
2SC1316-2	10 Ω																				
2SC1316-3	15 Ω																				
2SC1316-4	18 Ω																				
2SC1316-5	22 Ω																				

ITEM	PREPARATION	ADJUST	PROCEDURE
Vertical Output Bias (Q509) Adjustment	1. Connect a DC voltmeter between the emitter of Q509 and ground as shown in Fig. 4-3.	VR508 (V. BIAS) (on VH board, See Fig. 4-3)	1. Adjust VR508 for 0.6 V reading. 2. Check that V. SIZE and V. LIN are correctly adjusted.
Vertical Size and Linearity Adjustments	1. Receive an off-the-air signal.	VR506 (V. SIZE) VR507 (V. LIN) (on VH board, See Fig. 4-3)	1. Adjust VR506 and VR507 for best size and linearity.

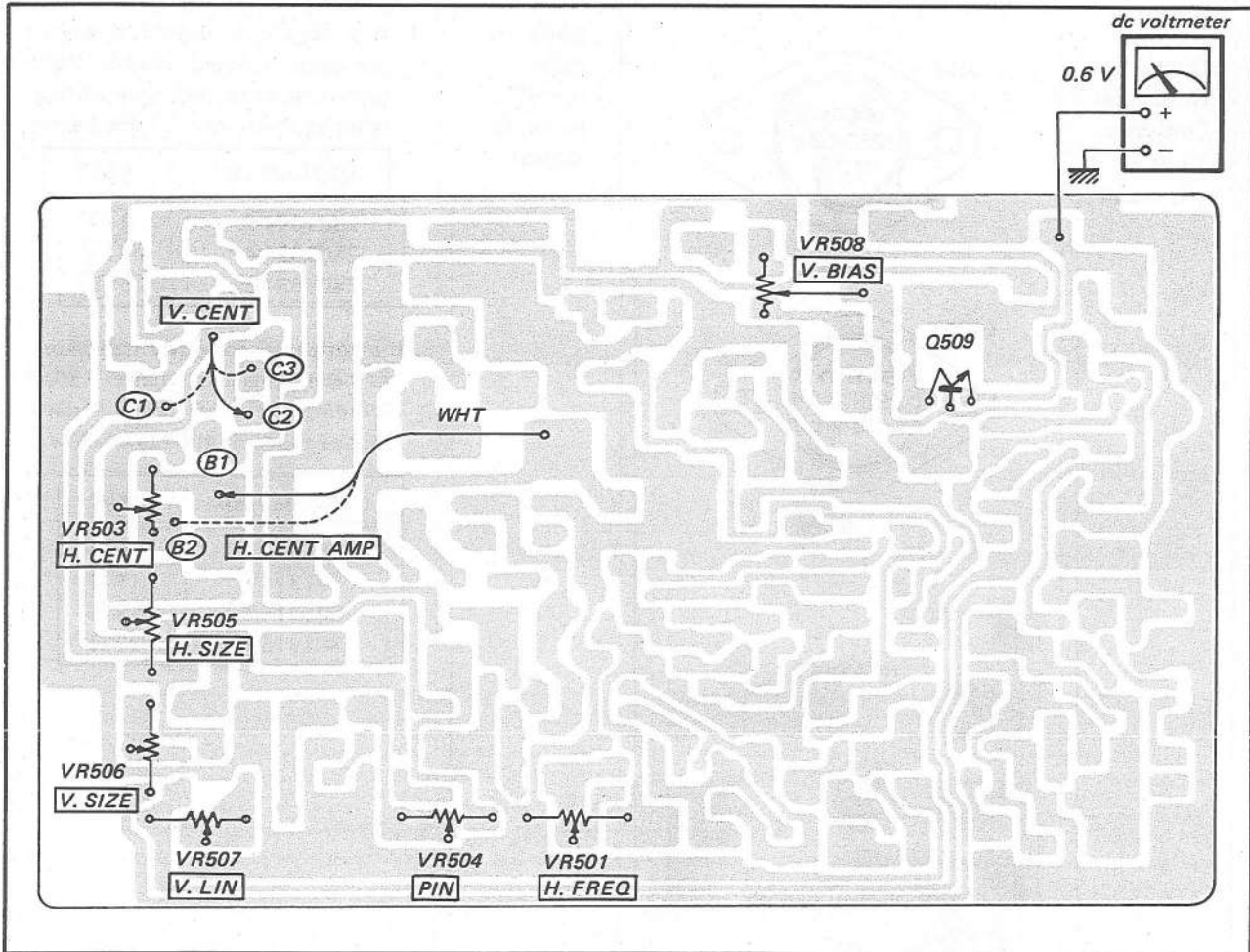


Fig. 4-3. Adjustment setup and parts location on VH board

ITEM	PREPARATION	ADJUST	PROCEDURE
Vertical Centring Adjustment	1. Receive a test pattern signal.	V. CENT (on VH board, See Fig. 4-3)	1. Try connecting the vertical centring lead (WHT) to each of the connection points (C1, C2, C3) one by one to find out which connection yields best V. centring and make that connection permanent.
Horizontal Centring Adjustment	1. Receive a test pattern signal.	VR503 (H. CENT) (H. CENT AMP) (on VH board, See Fig. 4-3)	1. Adjust VR503 to obtain best H. centring. If correct centring is not obtained, proceed to the next step. 2. Change the connection of jumper lead (WHT) on VH board from B1 to B2, and then readjust VR503.
Horizontal Size Adjustment	1. Receive a test pattern signal.	VR505 (H. SIZE) (on VH board, See Fig. 4-3)	1. Adjust VR505 to make the Horiz. diameter of the outer circle on the test pattern equal to the width of the screen.
Focus Adjustment	1. Receive an off-the-air signal.	FOCUS (on T board, See Fig. 4-4)	1. Try connecting the jumper lead (WHT) to each of the connection points (F1, F2, F3) one by one, to find the one that yields best focus and make it permanent.
Pincushion Correction Adjustment	1. Receive the crosshatch signal from a colour-bar/pattern generator.	VR504 (PIN) (on VH board, See Fig. 4-3)	1. Adjust VR504 for minimum pincushion distortion as shown in Fig. 4-5. 2. Readjust VR505 (H. SIZE) after completing this adjustment.

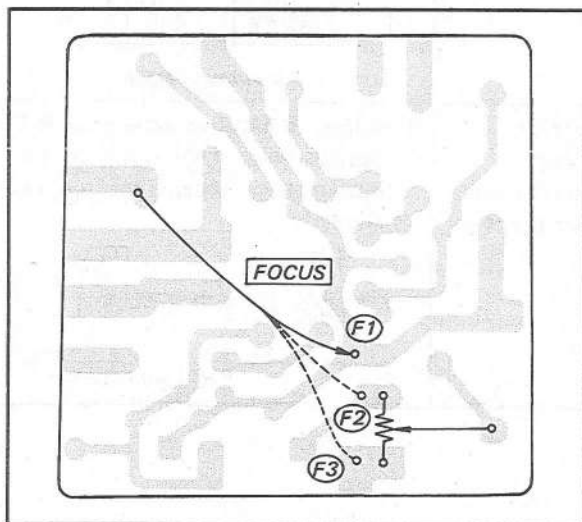


Fig. 4-4. Focus adjustment

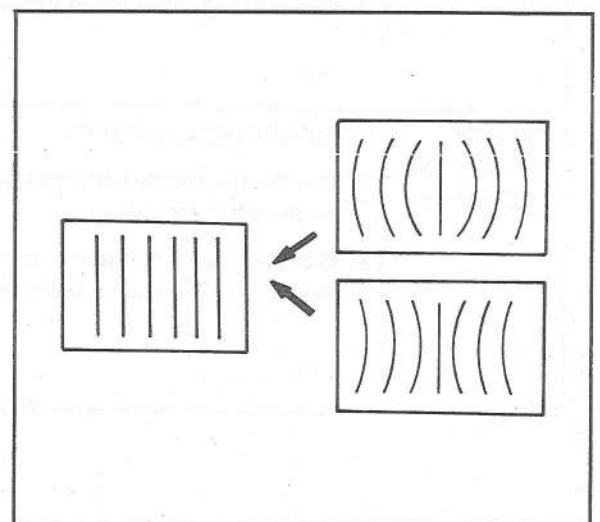






Fig. 4-5. Pincushion correction

4.9. COLOUR CIRCUIT ADJUSTMENTS

Note: These adjustments should be made in order if malfunctions related to colour circuits occur.
 Major malfunctions are as follows:

1. No colour.
2. COLOUR control cannot produce sufficient saturation.
3. HUE control cannot produce correct flesh tones.

ITEM	PREPARATION	ADJUST	PROCEDURE
ACC Adjustment	<ol style="list-style-type: none"> 1. Set AFT switch to "ON". 2. Receive the colour-bar signal from a colour-bar generator. 3. Connect an oscilloscope to the emitter of Q326 as shown in Fig. 4-6. 	VR303 (ACC) (on C board, See Fig. 4-6)	<ol style="list-style-type: none"> 1. Adjust VR303 for 0.8 V_{p-p} at the emitter of Q326.  <p style="text-align: center;">0.8 V_{p-p}</p>
BAT and Band-pass Amp Adjustment	<ol style="list-style-type: none"> 1. Set AFT switch to "ON". 2. Receive the colour-bar signal from a colour-bar generator. 3. Set the COLOUR and PICTURE controls to midrange and the HUE control to optimum position. 4. Connect an oscilloscope to the emitter of Q326 as shown in Fig. 4-6. 	T303 (BAT) VR303 (ACC) (on C board, See Fig. 4-6)	<ol style="list-style-type: none"> 1. Check for 0.8 V_{p-p} at the emitter of Q326. Adjust VR303 if necessary. 2. Adjust T303 (BAT) to make the ripples in the waveform minimum as shown. 
Demodulator Phase Adjustment	<ol style="list-style-type: none"> 1. Set AFT switch to "ON". 2. Receive the colour-bar signal from a colour-bar generator. 3. Connect an oscilloscope to the base of Q155 as shown in Fig. 4-6. 	VR301 (DMP) (on C board, See Fig. 4-6)	<ol style="list-style-type: none"> 1. Adjust VR301 to obtain the maximum B-Y output marked (a) as shown.  <p style="text-align: center;">B-Y output signal</p>
V-AXIS SWITCHING Adjustment	<ol style="list-style-type: none"> 1. Set AFT switch to "ON". 2. Receive the colour-bar signal from a colour-bar generator. 3. Connect an oscilloscope to the base of Q157 as shown in Fig. 4-6. 	VR305 (VSB) (on C board, See Fig. 4-6)	<ol style="list-style-type: none"> 1. Adjust VR305 to obtain an R-Y output level (b) equal to the output level obtained in (a) as shown.  <p style="text-align: center;">R-Y output signal</p>

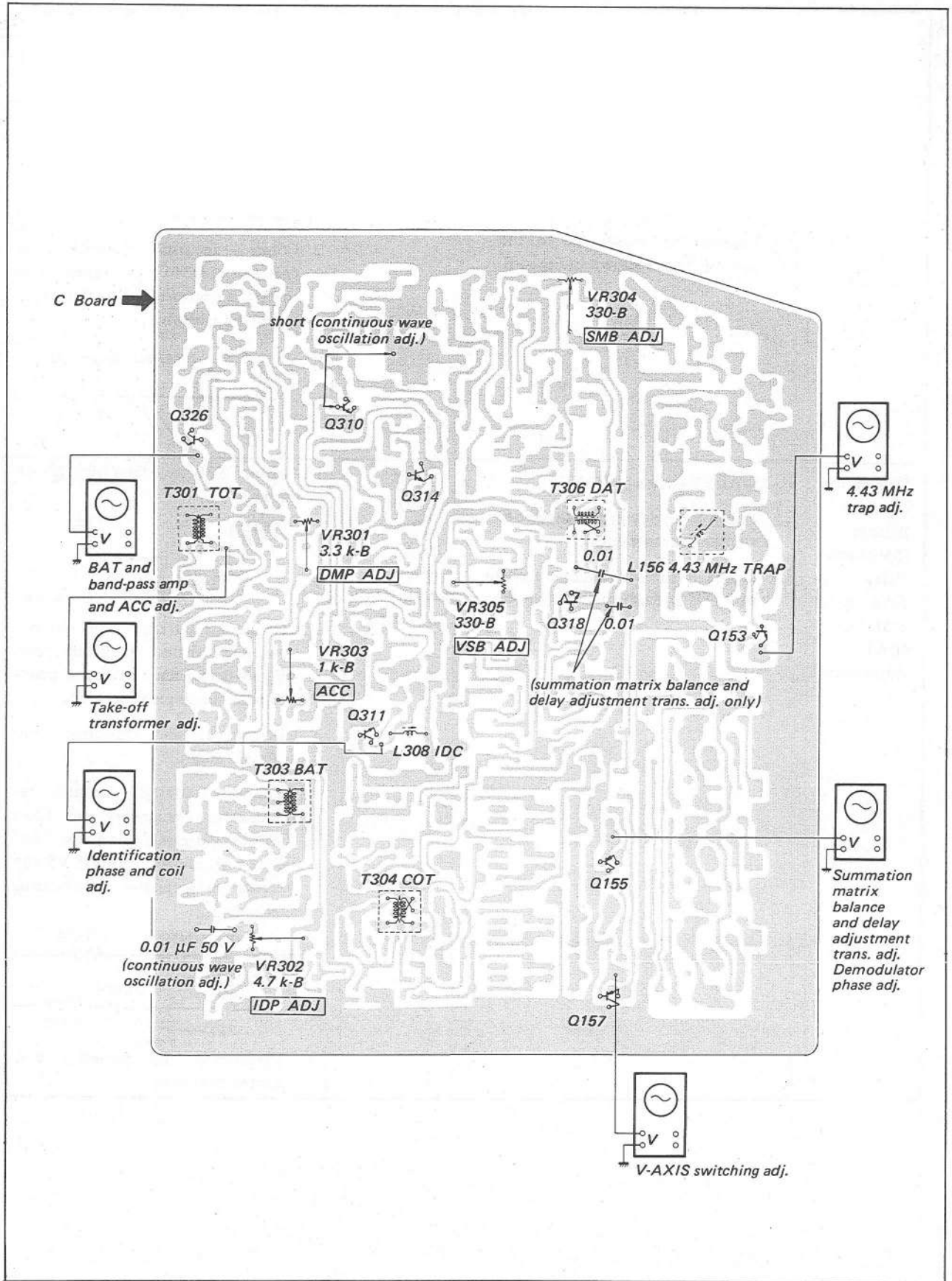
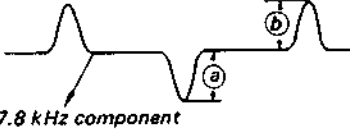
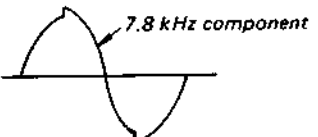
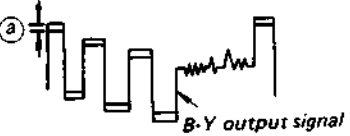
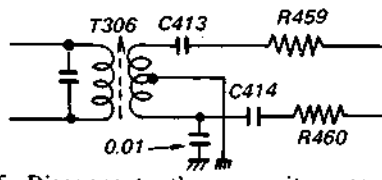


Fig. 4-6. Adjustment setup and parts location

ITEM	PREPARATION	ADJUST	PROCEDURE
<p>Identification Phase and Coil Adjustments</p>	<ol style="list-style-type: none"> 1. Set AFT switch to "ON". 2. Check for Demodulator Phase adjustment VR301 (DMP) is already completed. 3. Receive the colour-bar signal from a colour-bar generator. 4. Connect an oscilloscope to the base of Q311 as shown in Fig. 4-6. 	<p>VR302 (IDP) L308 (IDC) (on C board, See Fig. 4-6)</p>	<ol style="list-style-type: none"> 1. Adjust VR302 to obtain equal 7.8 kHz component levels in (a) and (b) as shown.  <p>7.8 kHz component</p> <ol style="list-style-type: none"> 2. Connect an oscilloscope to the collector of Q311 and adjust L308 to obtain maximum 7.8 kHz components as shown.  <p>7.8 kHz component</p>
<p>Summation Matrix Balance (SMB) and Delay Adjustment Transformer (DAT) Adjustments</p>	<ol style="list-style-type: none"> 1. Set AFT switch to "ON". 2. Receive the colour-bar signal from a colour-bar generator. 3. Connect an oscilloscope to the base of Q155 as shown in Fig. 4-6. 	<p>VR304 (SMB) T306 (DAT) (on C board, See Fig. 4-6)</p>	<ol style="list-style-type: none"> 1. Adjust T306 to minimize (a) as shown.  <p>B-Y output signal</p> <ol style="list-style-type: none"> 2. Connect a 0.01 μF capacitor between Q318 base and ground, See Fig. 4-6 and then record a peak-to-peak reading on the scope. 3. Disconnect the capacitor connected in step 2. 4. Connect a 0.01 μF capacitor between the secondary of T306 (DAT) and ground as shown (See Fig. 4-6), and then adjust VR304 for the same peak-to-peak reading as in step 2.  <ol style="list-style-type: none"> 5. Disconnect the capacitor connected in step 4.

SECTION 5
REPACKING

The original shipping carton and packing materials are the ideal container for shipping the unit. However to secure the maximum protection, the set

must be repacked in these materials precisely as before. The proper repacking procedures are shown in Figures 5-1 and 5-2.

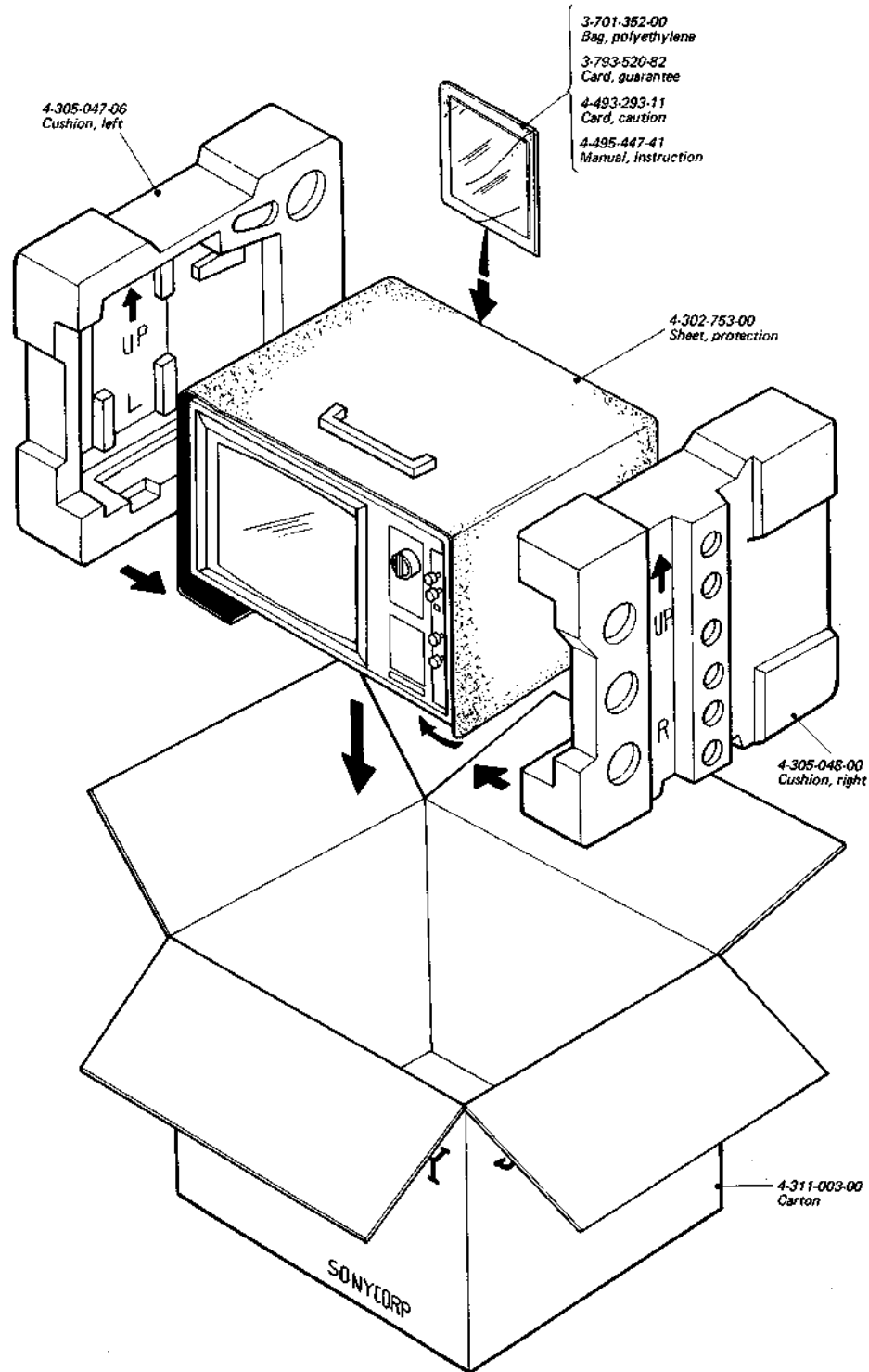


Fig. 5-1. Repacking (KV-1310UB only)

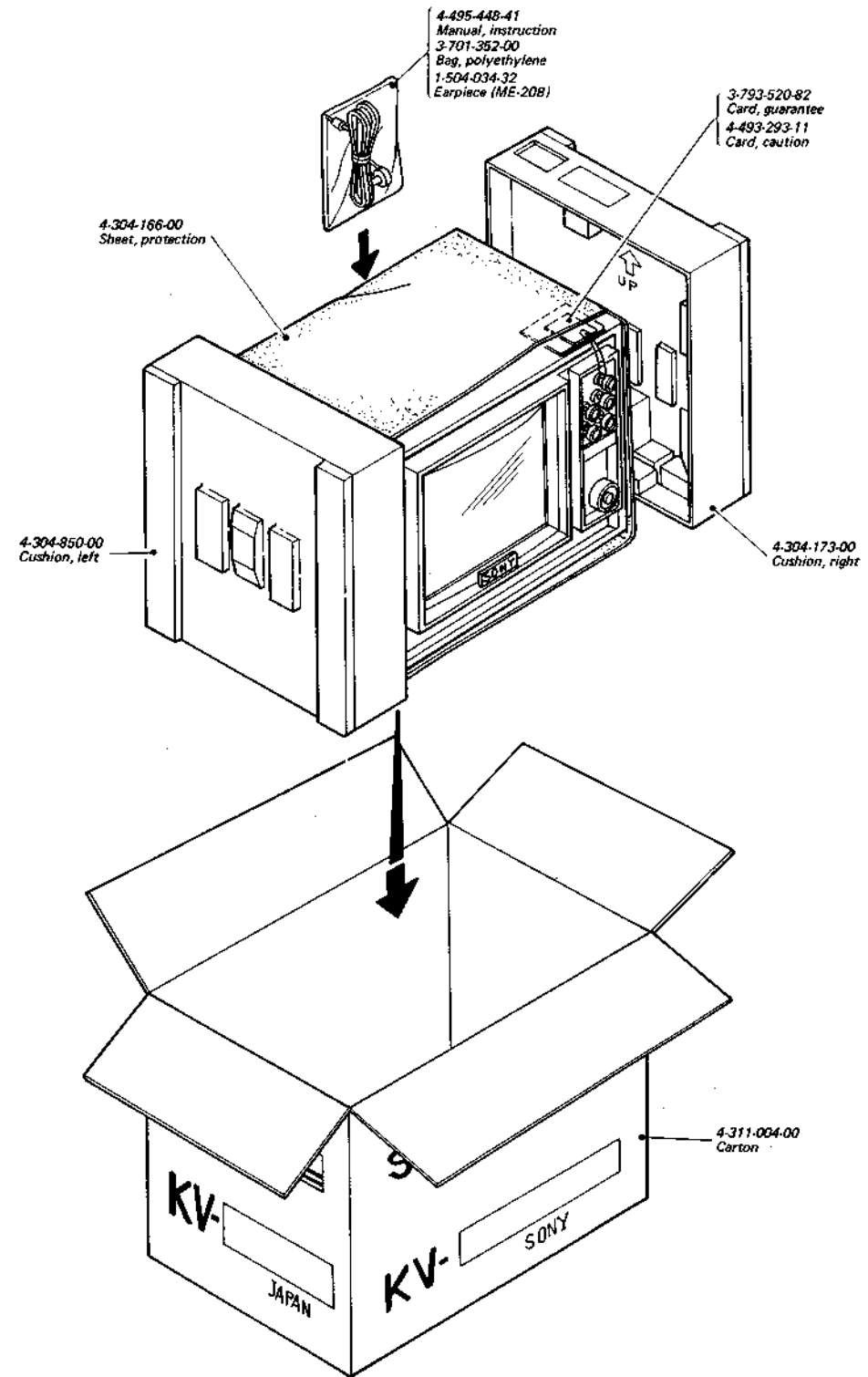
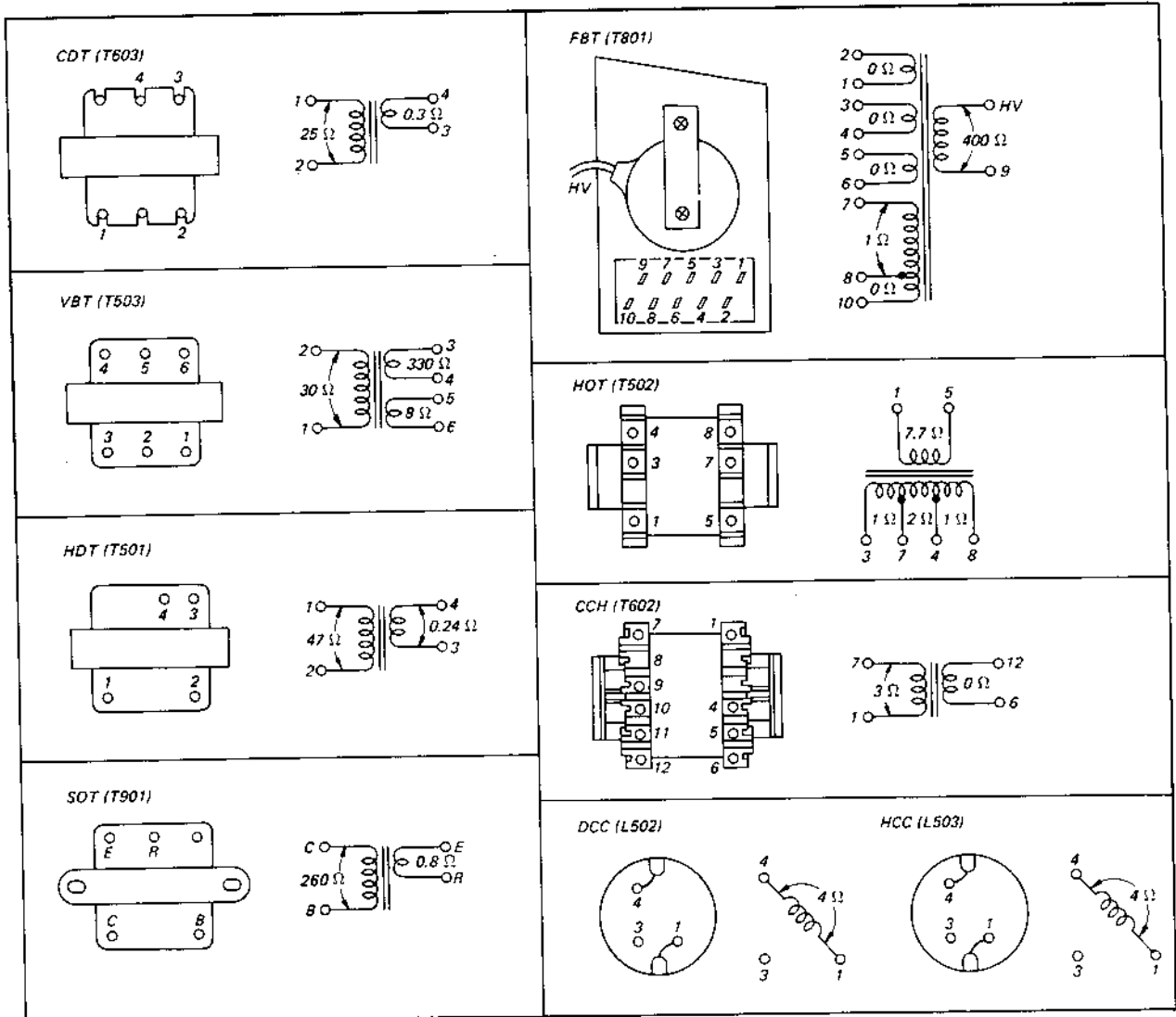


Fig. 5-2. Repacking (KV-1330UB only)

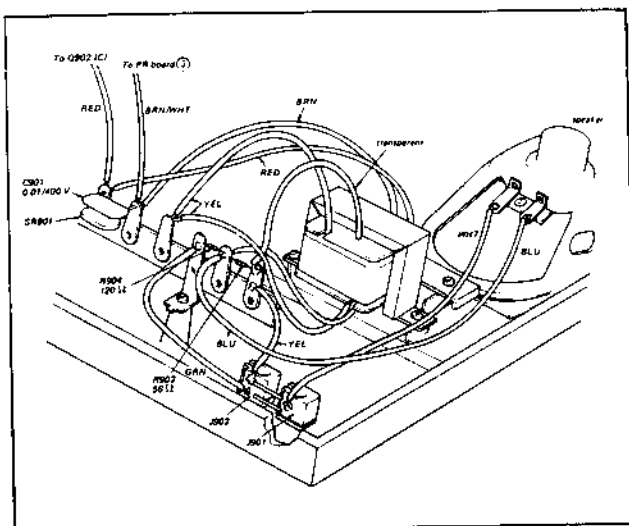
SECTION 6

DIAGRAMS

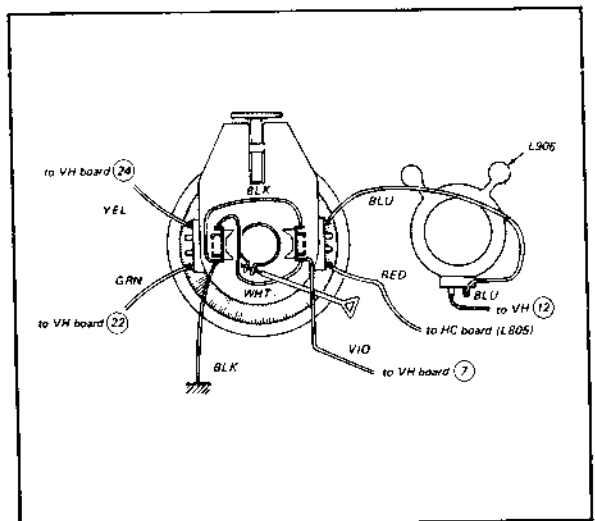
6-1. DC RESISTANCE AND WINDING DIAGRAMS OF COILS AND TRANSFORMERS



6-2. WIRING DIAGRAMS OF SOT AND DEFLECTION YOKE



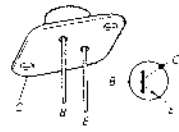
SOT Wiring (KV-1330UB only)



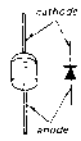
DY wiring

KV-130UB KV-130UB
 KV-130UB KV-130UB

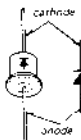
6-5. MOUNTING DIAGRAMS — HC and T Boards —
— HC Board —



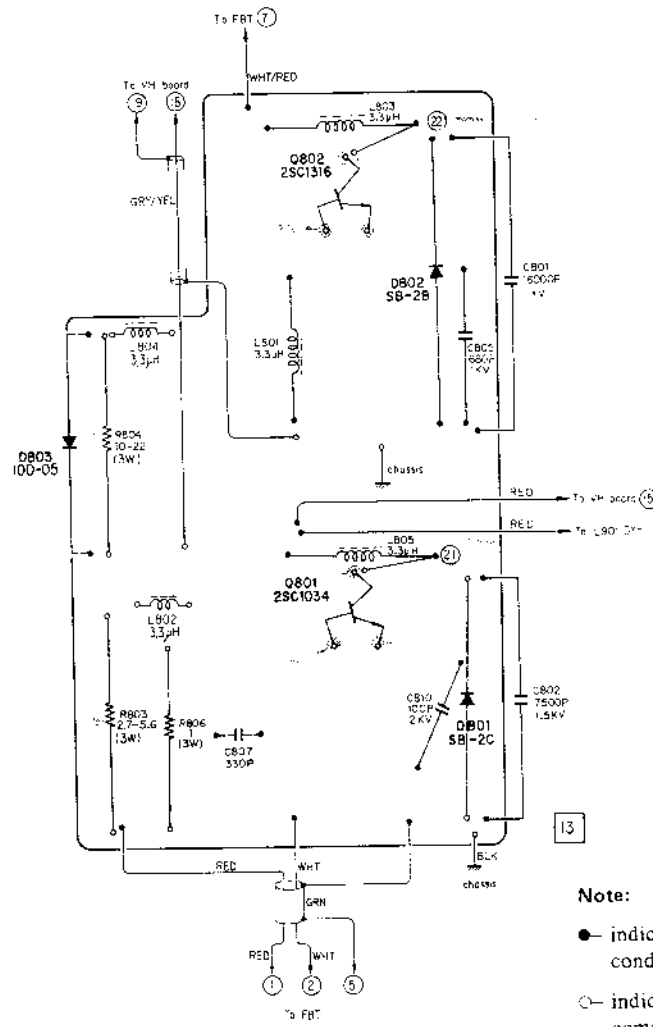
2SC1310
2SC1034



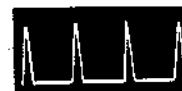
SB-2C,
SB-2B



10D-05



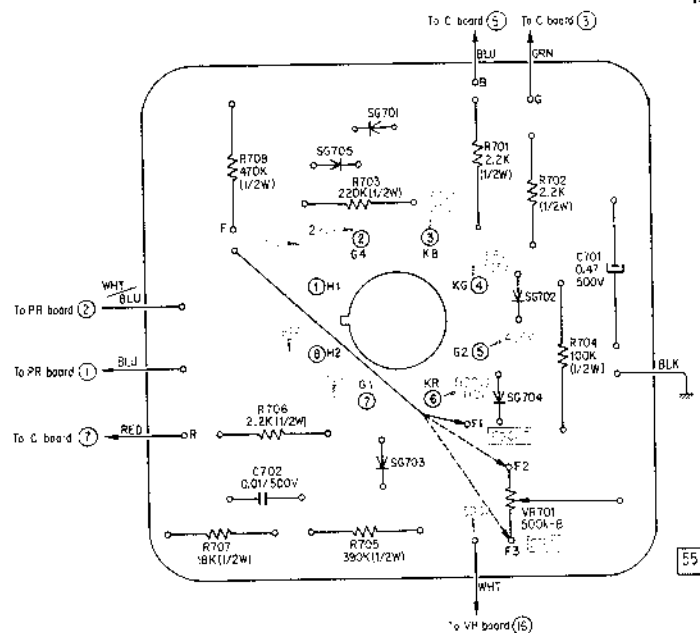
500 Vp-p (Horiz.)



820 Vp-p (Horiz.)

Note:
 ● indicates parts or wire connection point on the conductor side.
 ○ indicates parts or wire connection point on the component side.
 * indicates values to be selected.

— T Board —



No signal in.

6-6. MOUNTING DIAGRAM
— PR Board —



7.0 Vp-p (Horiz.)



150 Vp-p (Horiz.)



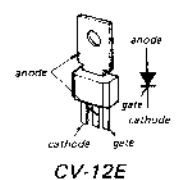
300 Vp-p (Horiz.)



10 Vp-p (Horiz.)

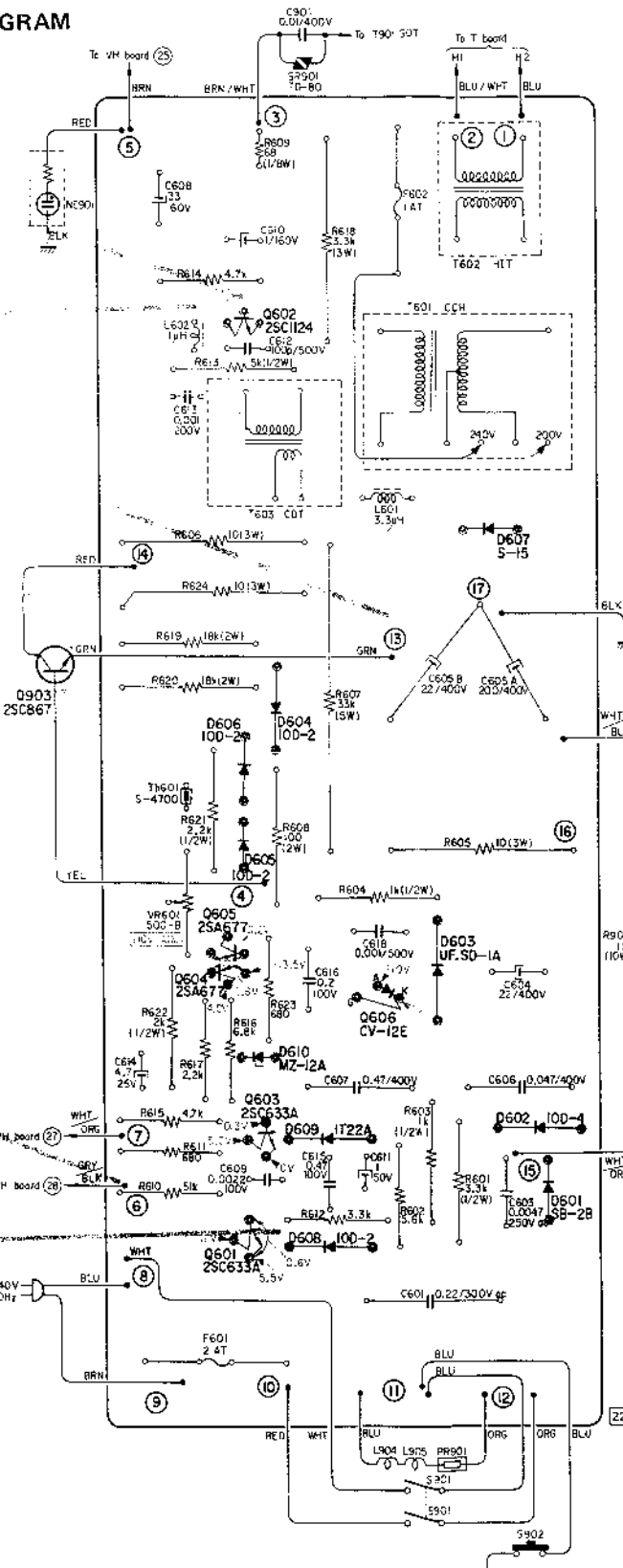


1.0 Vp-p (Horiz.)

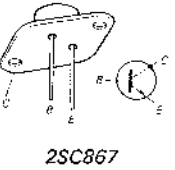


CV-12E

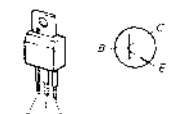
Note:
 ● indicates parts or wire connection point on the conductor side.
 ○ indicates parts or wire connection point on the component side.



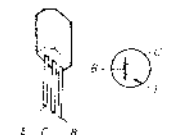
Q	D	VR
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	D607	
	Q903	
	D604	
	D606	
	D605	
	VR601	
Q605	D603	
Q604	D603	
Q606	D603	
	D610	
	D602	
	D609	
Q603	D601	
Q601	D608	



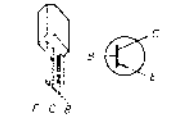
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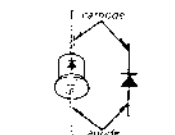
2SC1124



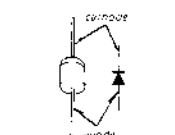
2SC633A
2SC926A



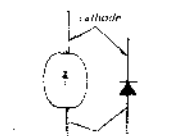
2SA677



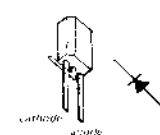
SB-2B,
S-15



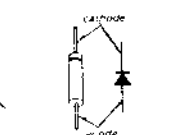
10D-2
10D-4



UF.SD-1A

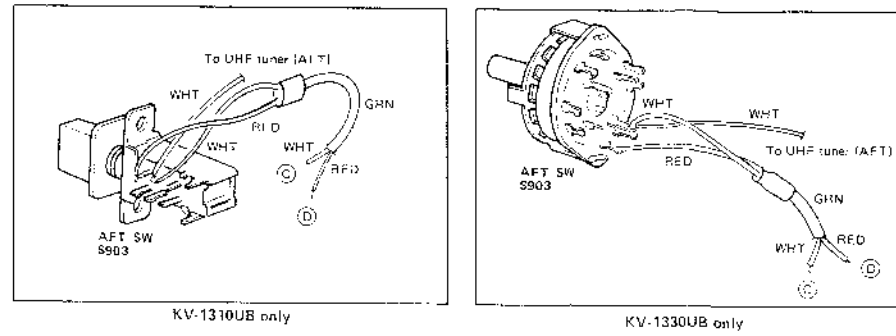


MZ12A



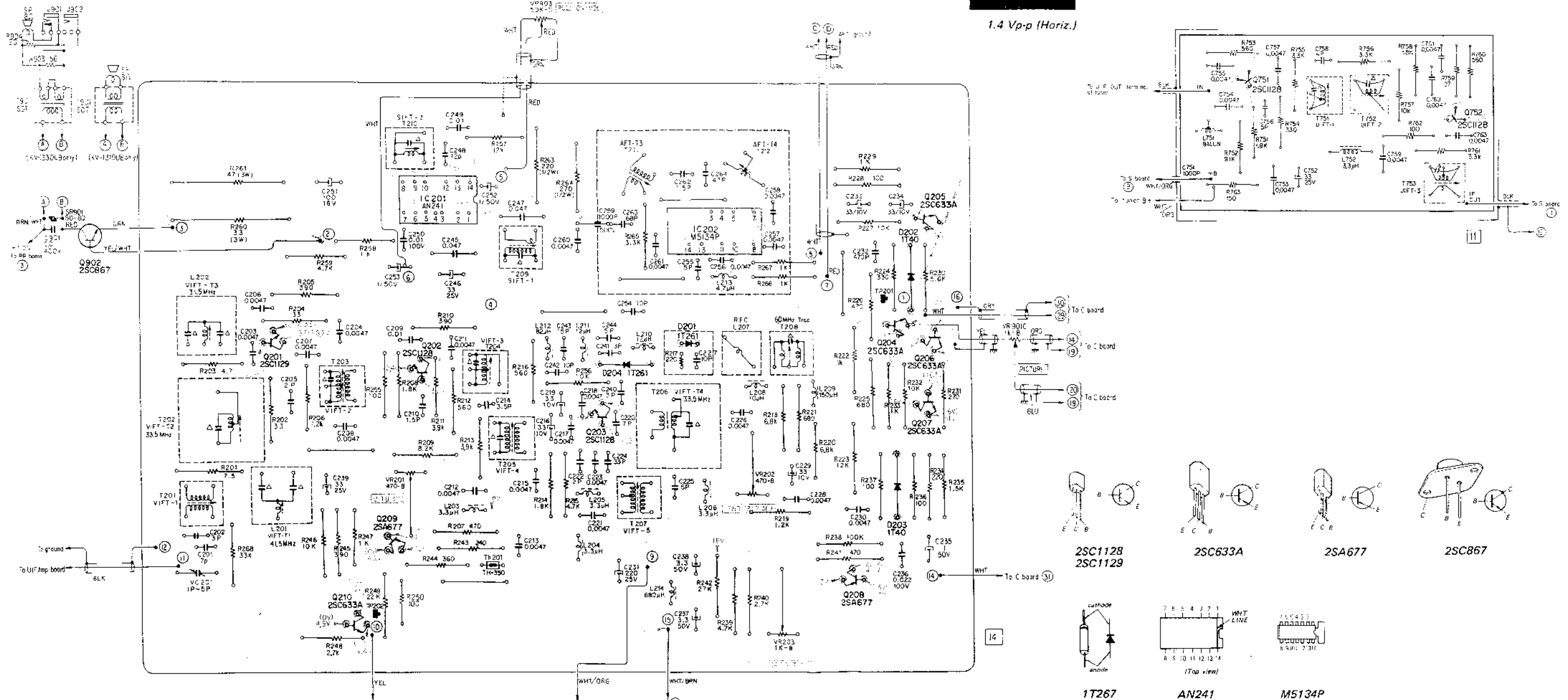
1T22A

6-7. MOUNTING DIAGRAMS — S and UIF Amp Boards —
— S Board —



1.4 Vp-p (Horiz.)

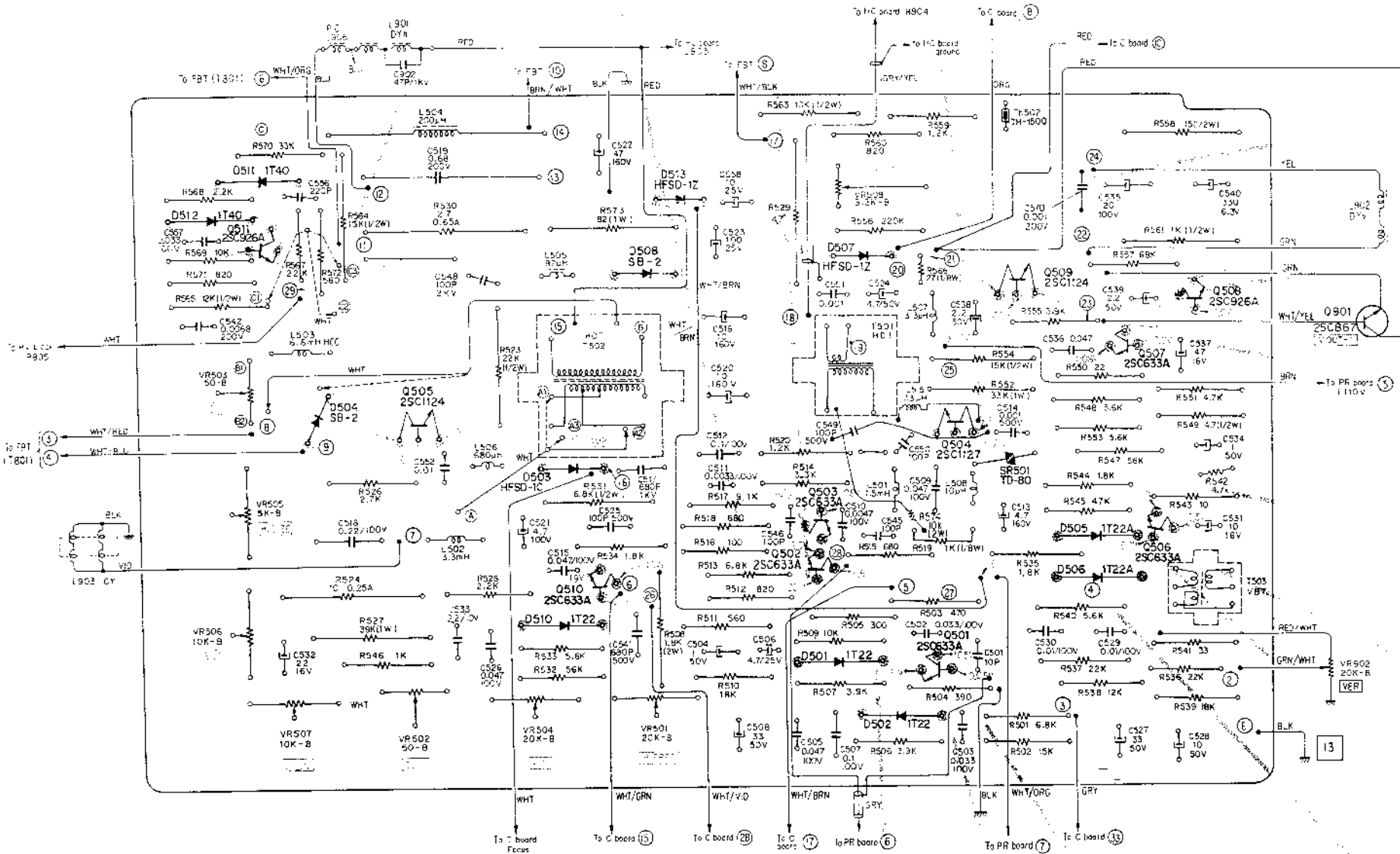
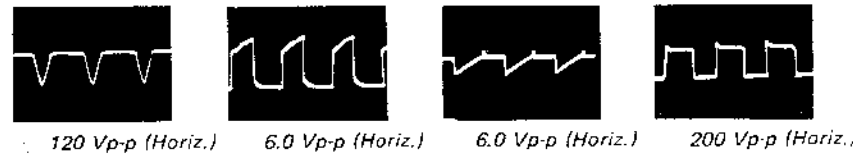
— UIF Amp Board —



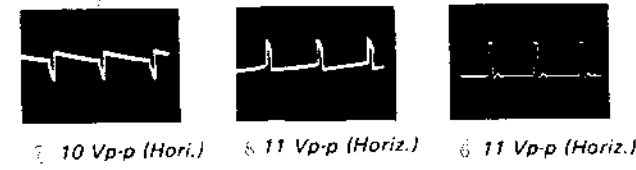
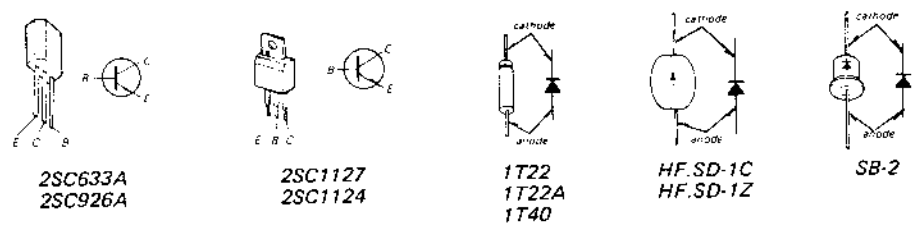
Q	Q201	Q202	Q203	Q204	Q205
IC	IC201	IC202			
D	D201	D202	D203	D204	D205
ADJ	VR201	VR202	VR203		

Note: ● indicates parts or wire connection point on the conductor side.
○ indicates parts or wire connection point on the component side.
No signal in.

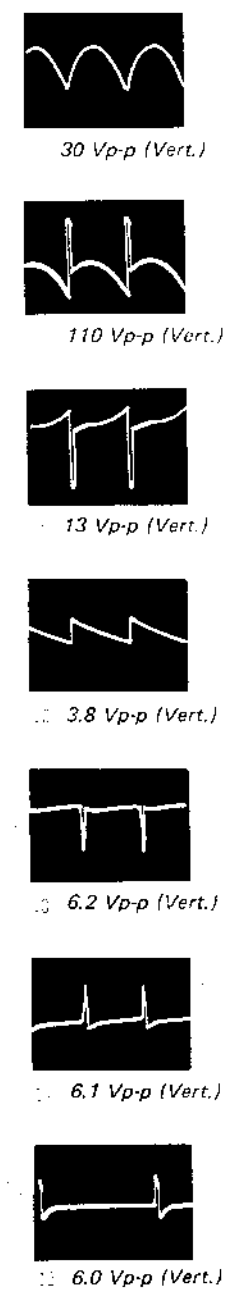
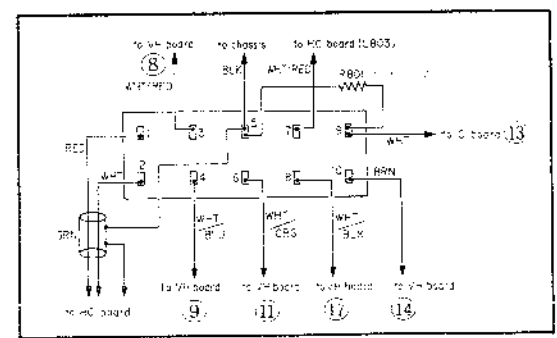
6-8. MOUNTING DIAGRAM
- VH Board -



Q	Q511	Q505	Q503	Q504	Q509	Q507	Q508
D	D512	D504	D503	D508	D513	D501	D502
ADJ	VR503 VR505 VR506	VR507	VR502	VR504	VR501	VR508	



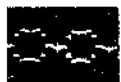
FBT WIRING



Note: ● indicates parts or wire connection point on the conductor side.
○ indicates parts or wire connection point on the component side.
- indicates no signal in.

KV-1310UB KV-1310UB
KV-1330UB KV-1330UB

6-9. MOUNTING DIAGRAM
— C Board —



0.1 Vp-p (Horiz.)



0.8 Vp-p (Horiz.)



0.7 Vp-p (Horiz.)



10 Vp-p (Horiz.)

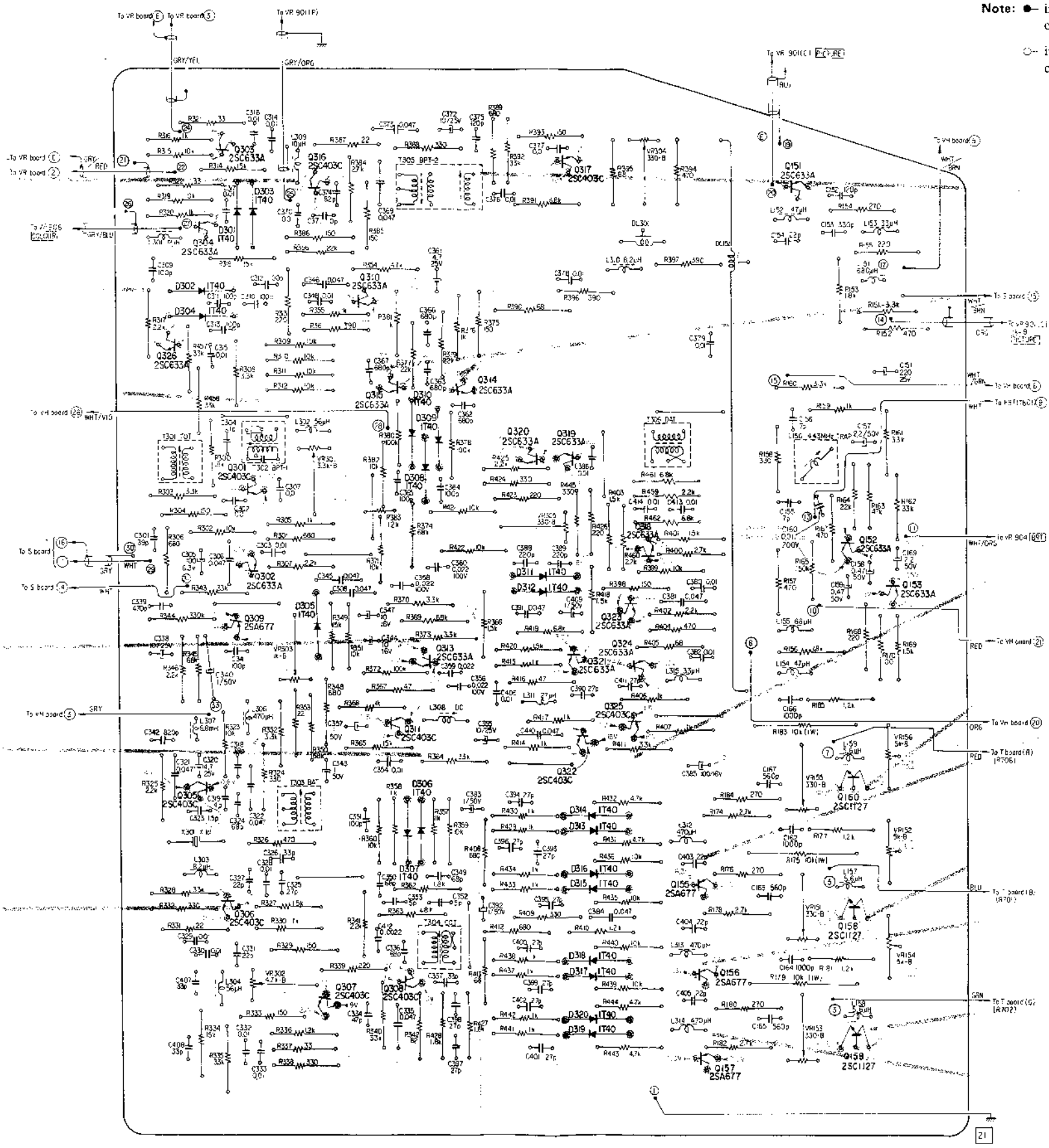


1.0 Vp-p (Horiz.)



1.4 ~ 2.0 Vp-p (Horiz.)

ADJ	D	Q
VR304 T305	0303 0304	Q305 Q317 Q316 Q151
	U304	
	0302 0304	Q310
		Q326
T302 T306 T301 J56	0309 0310	Q315 Q314
		Q320 Q319
VR301	0308	Q301
VR305		Q316 Q312
	0305	Q309 Q323
VR303		Q324 Q313 Q321
L308		Q325 Q311 Q322
VR155		
VR155		
T303	0306 0307 0314 0313	Q305 Q160
VR152		Q316 Q315
T304		Q306 Q158
VR154		Q318 Q317
VR302		Q307 Q308
VR153		Q159 Q157



Note: ● indicates parts or wire connection point on the conductor side.

○ indicates parts or wire connection point on the component side.

No signal in.



1.5 Vp-p (Horiz.)



13 Vp-p (Horiz.)



3.8 Vp-p (Horiz.)



80 Vp-p (Horiz.)



3.6 Vp-p (Horiz.)



85 Vp-p (Horiz.)



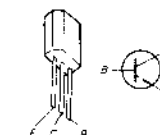
1.8 Vp-p (Horiz.)



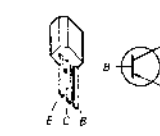
95 Vp-p (Horiz.)



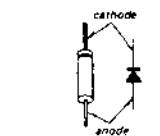
3.0 Vp-p (Horiz.)



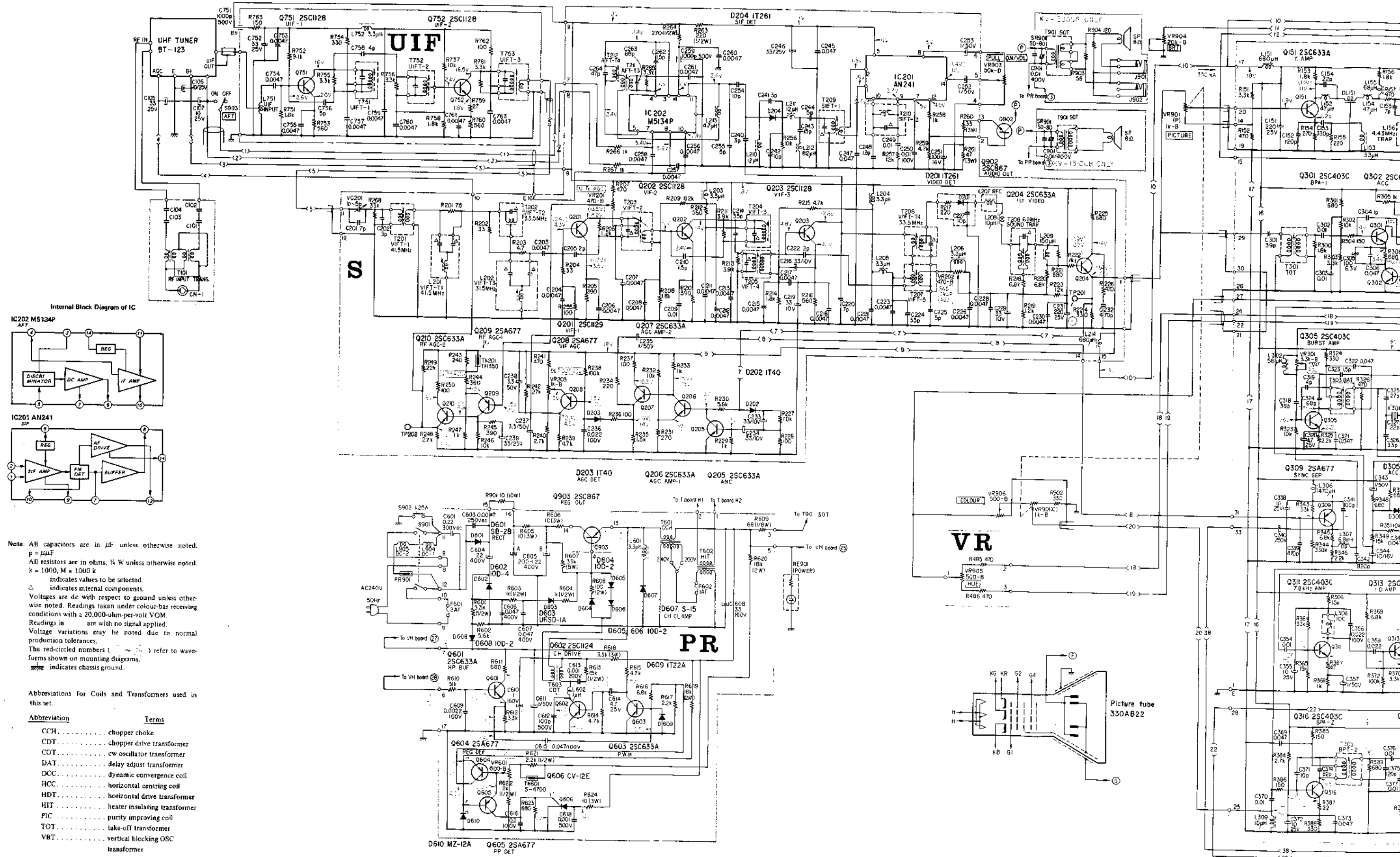
2SC403C
2SC633A



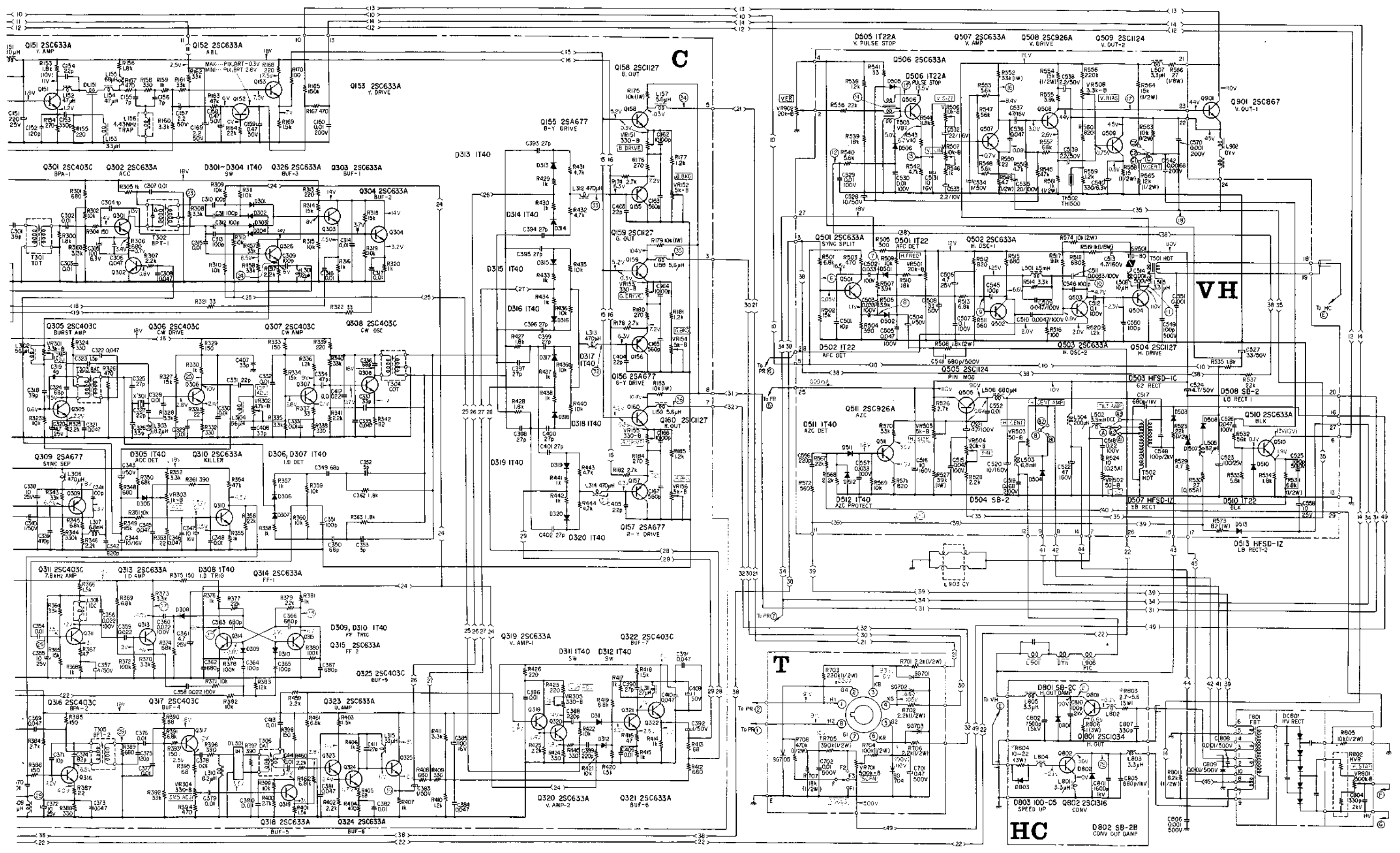
2SA677



IT40

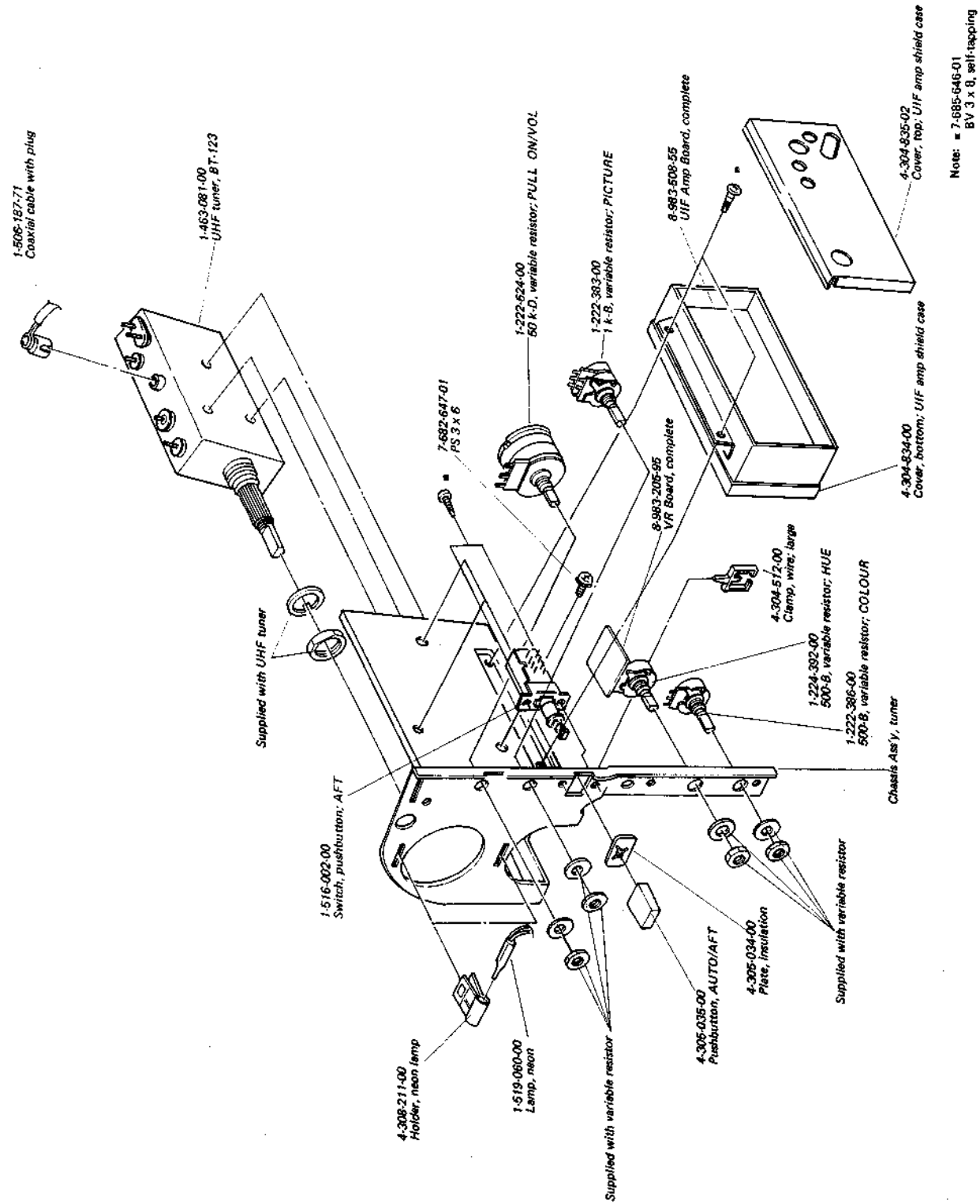


KV-1310UB KV-1310UB
KV-1330UB KV-1330UB



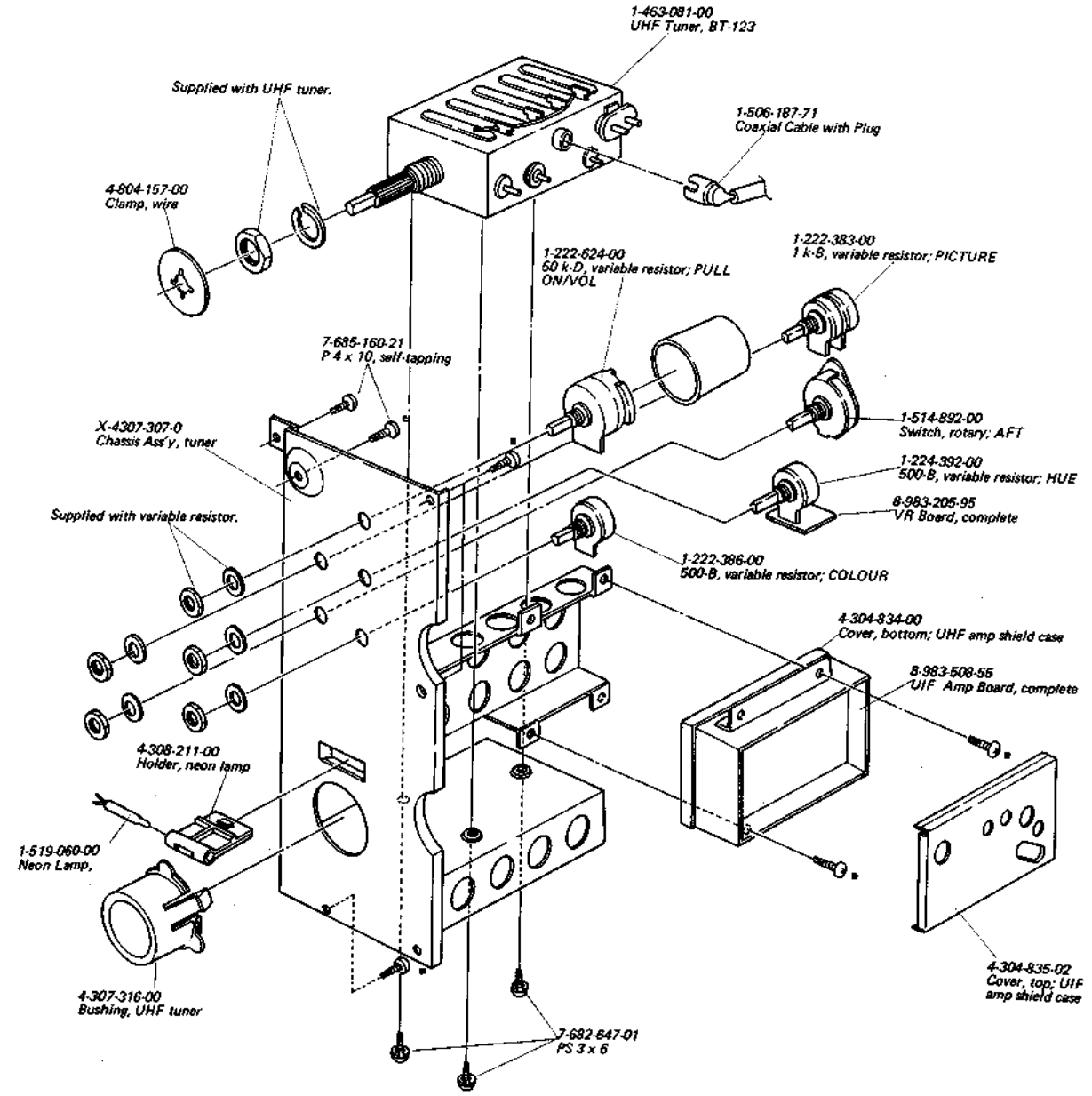
KV-1310UB KV-1310UB
KV-1330UB KV-1330UB

7.4. EXPLODED VIEW (4) – KV-1310UB only –



Note: = 7-685-646-01
BV 3 x 8, self-tapping

7.5. EXPLODED VIEW (5) – KV-1330UB only –



Note: = 7-685-646-01 BV 3 x 8, self-tapping

SECTION 8

ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
TUNERS AND CIRCUIT BOARDS			Q306		Transistor 2SC403C
			Q307		Transistor 2SC403C
	1-463-081-00	UHF Tuner, BT-123	Q308		Transistor 2SC403C
	8-983-509-15	S Board, complete	Q309		Transistor 2SA677
	8-983-139-35	VH Board, complete	Q310		Transistor 2SC633A
	8-983-509-35	PR Board, complete	Q311		Transistor 2SC403C
	8-983-139-55	T Board, complete	Q312		-----
	8-983-139-70	HC Board, complete	Q313		Transistor 2SC633A
	8-983-205-95	VR Board, complete	Q314		Transistor 2SC633A
	8-983-508-10	C Board, complete	Q315		Transistor 2SC633A
	8-983-508-55	UIF Amp Board, complete	Q316		Transistor 2SC403C
SEMICONDUCTORS			Q317		Transistor 2SC403C
Q151		Transistor 2SC633A	Q318		Transistor 2SC633A
Q152		Transistor 2SC633A	Q319		Transistor 2SC633A
Q153		Transistor 2SC633A	Q320		Transistor 2SC633A
Q154		-----	Q321		Transistor 2SC633A
Q155		Transistor 2SA677	Q322		Transistor 2SC403C
			Q323		Transistor 2SC633A
Q156		Transistor 2SA677	Q324		Transistor 2SC633A
Q157		Transistor 2SA677	Q325		Transistor 2SC403C
Q158		Transistor 2SC1127	Q326		Transistor 2SC633A
Q159		Transistor 2SC1127	Q501		Transistor 2SC633A
Q160		Transistor 2SC1127	Q502		Transistor 2SC633A
Q201		Transistor 2SC1129	Q503		Transistor 2SC633A
Q202		Transistor 2SC1128	Q504		Transistor 2SC1127
Q203		Transistor 2SC1128	Q505		Transistor 2SC1124
Q204		Transistor 2SC633A	Q506		Transistor 2SC633A
Q205		Transistor 2SC633A	Q507		Transistor 2SC633A
Q206		Transistor 2SC633A	Q508		Transistor 2SC926A
Q207		Transistor 2SC633A	Q509		Transistor 2SC1124
Q208		Transistor 2SA677	Q510		Transistor 2SC633A
Q209		Transistor 2SA677	Q511		Transistor 2SC926A
Q210		Transistor 2SC633A	Q601		Transistor 2SC633A
Q211		Transistor 2SA677	Q602		Transistor 2SC1124
Q301		Transistor 2SC403C	Q603		Transistor 2SC633A
Q302		Transistor 2SC633A	Q604		Transistor 2SA677
Q303		Transistor 2SC633A	Q605		Transistor 2SA677
Q304		Transistor 2SC633A	Q606		Thyristor CV-12E
Q305		Transistor 2SC403C	Q751		Transistor 2SC1128

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
L154	1-407-701-00	47 μ H, micro inductor
L155	1-407-703-00	68 μ H, micro inductor
L156	1-409-193-00	Trap, 4.43 MHz
L157	1-407-690-00	5.6 μ H, micro inductor
L158	1-407-690-00	5.6 μ H, micro inductor
L159	1-407-690-00	5.6 μ H, micro inductor
L201	1-409-214-00	Video i-f, VIFT-T1; 40.4 MHz
L202	1-409-215-00	Video i-f, VIFT-T3; 31.9 MHz
L203	1-407-184-00	3.3 μ H, micro inductor
L204	1-407-184-00	3.3 μ H, micro inductor
L205	1-407-184-00	3.3 μ H, micro inductor
L206	1-407-184-00	3.3 μ H, micro inductor
L207	1-425-504-00	Rf
L208	1-407-190-00	10 μ H, micro inductor
L209	1-407-171-00	150 μ H, micro inductor
L210	1-407-158-00	12 μ H, micro inductor
L211	1-407-158-00	12 μ H, micro inductor
L212	1-407-168-00	82 μ H, micro inductor
L213	1-407-186-00	4.7 μ H, micro inductor
L214	1-407-557-00	680 μ H, micro inductor
L301	1-407-694-00	12 μ H, micro inductor
L302	1-407-702-00	56 μ H, micro inductor
L303	1-407-692-00	8.2 μ H, micro inductor
L304	1-407-702-00	56 μ H, micro inductor
L305		-----
L306	1-407-713-00	470 μ H, micro inductor
L307	1-407-204-00	6.8 mH, micro inductor
L308	1-407-240-00	Identification, IDC
L309	1-407-190-00	10 μ H, micro inductor
L310	1-407-692-00	8.2 μ H, micro inductor
L311	1-407-698-00	27 μ H, micro inductor
L312	1-407-713-00	470 μ H, micro inductor
L313	1-407-713-00	470 μ H, micro inductor
L314	1-407-713-00	470 μ H, micro inductor
L315	1-407-699-00	33 μ H, micro inductor
L501	1-407-646-00	1.5 mH, micro inductor
L502	1-459-075-00	3.3 mH, dynamic convergence; DCC
L503	1-459-074-00	6.8 mH, horizontal centering; HCC

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
L504	1-407-346-00	200 μ H, spook choke
L505	1-407-553-00	82 μ H, line choke
L506	1-407-193-00	680 μ H, micro inductor
L507	1-407-364-00	3.3 μ H, spook choke
L508	1-407-190-00	10 μ H, micro inductor
L515	1-407-364-00	3.3 μ H, spook choke
L601	1-407-364-00	3.3 μ H, spook choke
L602	1-407-178-00	1 μ H, micro inductor
L751	1-417-008-00	Transformer, UIF input
L752	1-407-184-00	3.3 μ H, micro inductor
L801	1-407-364-00	3.3 μ H, spook choke
L802	1-407-364-00	Spook choke
L803	1-407-364-00	3.3 μ H, spook choke
L804	1-407-364-00	Spook choke
L805	1-407-364-00	3.3 μ H, spook choke
L901	1-451-105-00	Deflection Yoke
L902		
L903		
L904	1-425-829-00	Degaussing, DC-1
L905	1-425-829-00	Degaussing, DC-2
L906	1-452-039-00	Magnet, beam alignment; PIC
DL151	1-415-047-00	Delay Line; luminance
DL301	1-415-075-00	Delay Line, 1 H

TRANSFORMERS

T101	1-417-033-00	RF Input (included in antenna terminal board ass'y)
T102	1-417-040-00	RF Input (included in antenna terminal board ass'y)
T201	1-403-728-00	Video I-F, VIFT-1
T202	1-409-217-00	Video I-F, VIFT-T2
T203	1-403-729-00	Video I-F, VIFT-2
T204	1-403-841-00	Video I-F, VIFT-3
T205	1-403-729-00	Video I-F, VIFT-4
T206	1-409-218-00	Video I-F, VIFT-T4; 33.4 MHz
T207	1-403-730-00	Video I-F, VIFT-5
T208	1-409-216-00	Coil, sound trap; 6.0 MHz

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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
T209	1-403-864-00	Sound I-F, SIFT-1
T210	1-403-843-00	Sound I-F, SIFT-3
T211	1-403-810-00	Automatic Fine Tuning, AFT-T3
T212	1-403-811-00	Automatic Fine Tuning, AFT-T4
T301	1-425-678-00	Take-OFF, TOT
T302	1-425-831-00	Band Pass, BPT-1
T303	1-405-372-00	Burst Amplifier, BAT
T304	1-425-618-00	CW Oscillator, COT
T305	1-425-506-00	Band Pass, BPT-2
T306	1-425-832-00	Delay Adjust, DAT
T501	1-437-030-00	Horizontal Drive, HDT
T502	1-439-097-00	Horizontal Output, HOT
T503	1-435-008-00	Vertical Blocking Oscillator, VBT
T601	1-437-036-00	Chopper Choke, CCH
T602	1-441-855-00	Heater Insulating, HIT
T603	1-437-033-00	Chopper Drive, CDT
T751	1-403-807-00	UIFT-1
T752	1-403-808-00	UIFT-2
T753	1-403-809-00	UIFT-3
T801	1-439-099-00	Flyback, FBT
T901	{ 1-427-307-00	Sound Output, SOT (KV-1310UB)
	{ 1-427-326-00	Sound Output, SOT (KV-1330UB)

CAPACITORS

All capacitors are in μF , 50 V and ceramic unless otherwise noted. p = $\mu\mu\text{F}$. elect = electrolytic.

C101	1-102-238-11	47 p	250 V ac	} included in antenna terminal board ass'y
C102	1-102-238-11	47 p	250 V ac	
C103	1-102-238-11	47 p	250 V ac	
C104	1-102-238-11	47 p	250 V ac	
C105	1-121-404-11	33	25 V elect	
C106	1-121-398-11	10	25 V elect	
C107	1-121-398-11	10	25 V elect	
C108	1-102-239-11	470 p	250 V ac	
C109	1-121-404-11	33	25 V elect	
C110	1-121-404-11	33	25 V elect	
C111	1-121-257-11	5	15 V nonpolar	

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
C112	1-121-398-11	10 25 V elect
C113	1-121-398-11	10 25 V elect
C151	1-121-422-11	220 25 V elect
C152	1-102-816-11	120 p
C153	1-102-820-11	330 p
C154	1-102-959-11	22 p
C155	1-102-662-11	7 p
C156	1-102-662-11	7 p
C157	1-121-450-11	2.2 50 V elect
C158	1-121-726-11	0.47 50 V elect
C159	1-121-726-11	0.47 50 V elect
C160	1-108-692-31	0.01 200 V mylar
C161		-----
C162	1-102-074-11	1000 p
C163	1-102-115-11	560 p
C164	1-102-074-11	1000 p
C165	1-102-115-11	560 p
C166	1-102-074-11	1000 p
C167	1-102-115-11	560 p
C168		-----
C169	1-121-450-11	2.2 50 V elect
C201	1-102-662-11	7 p
C202	1-102-862-11	3 p
C203	1-101-003-11	0.0047
C204	1-101-003-11	0.0047
C205	1-102-935-11	2 p
C206	1-101-003-11	0.0047
C207	1-101-003-11	0.0047
C208	1-101-003-11	0.0047
C209	1-101-004-11	0.01
C210	1-101-576-11	1.5 p
C211	1-101-003-11	0.0047
C212	1-101-003-11	0.0047
C213	1-101-003-11	0.0047
C214	1-101-552-11	3.5 p
C215	1-101-003-11	0.0047
C216	1-121-402-11	33 10 V elect
C217	1-101-003-11	0.0047

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
C218	1-101-003-11	0.0047		
C219	1-121-402-11	33	10 V	elect
C220	1-102-662-11	7 p		
C221	1-101-003-11	0.0047		
C222	1-102-935-11	2 p		
C223	1-101-003-11	0.0047		
C224	1-102-963-11	33 p		
C225	1-102-856-11	5 p		
C226	1-101-003-11	0.0047		
C227	1-102-947-11	10 p		
C228	1-101-003-11	0.0047		
C229	1-121-402-11	33	10 V	elect
C230	1-101-003-11	0.0047		
C231	1-121-422-11	220	25 V	elect
C232	1-102-098-11	470 p		
C233	1-121-402-11	33	10 V	elect
C234	1-121-402-11	33	10 V	elect
C235	1-121-391-11	1	50 V	elect
C236	1-108-630-31	0.022	100 V	mylar
C237	1-121-393-11	3.3	50 V	elect
C238	1-121-393-11	3.3	50 V	elect
C239	1-121-404-11	33	25 V	elect
C240	1-102-940-11	3 p		
C241	1-102-940-11	3 p		
C242	1-102-947-11	10 p		
C243	1-102-951-11	15 p		
C244	1-102-942-11	5 p		
C245	1-101-006-11	0.047		
C246	1-121-404-11	33	25 V	elect
C247	1-101-006-11	0.047		
C248	1-102-666-11	12 p		
C249	1-101-004-11	0.01		
C250	1-108-626-31	0.01	100 V	mylar
C251	1-121-415-11	100	16 V	elect
C252	1-121-391-11	1	50 V	elect
C253	1-121-391-11	1	50 V	elect
C254	1-102-947-11	10 p		
C255	1-102-942-11	5 p		

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
C256	1-101-003-11	0.0047		
C257	1-101-003-11	0.0047		
C258	1-101-003-11	0.0047		
C259	1-102-043-11	1000 p	500 V	feed through
C260	1-101-003-11	0.0047		
C261	1-101-003-11	0.0047		
C262	1-101-576-11	1.5 p		
C263	1-102-525-11	68 p		
C264	1-102-774-11	47 p		
C301	1-102-889-11	39 p		
C302	1-101-004-11	0.01		
C303	1-101-004-11	0.01		
C304	1-102-934-11	1 p		
C305	1-121-413-11	100	6.3 V	elect
C306	1-101-006-11	0.047		
C307	1-101-004-11	0.01		
C308	1-101-006-11	0.047		
C309	1-102-973-11	100 p		
C310	1-102-973-11	100 p		
C311	1-102-973-11	100 p		
C312	1-102-973-11	100 p		
C313	1-102-973-11	100 p		
C314	1-101-004-11	0.01		
C315	1-101-004-11	0.01		
C316	1-101-004-11	0.01		
C317	1-101-004-11	0.01		
C318	1-102-965-11	39 p		
C319	1-102-941-11	4 p		
C320	1-121-395-11	4.7	25 V	elect
C321	1-101-006-11	0.047		
C322	1-101-006-11	0.047		
C323	1-101-576-11	1.5 p		
C324	1-102-675-11	68 p		
C325	1-102-961-11	27 p		
C326	1-102-963-11	33 p		
C327	1-102-959-11	22 p		
C328	1-101-004-11	0.01		
C329	1-101-004-11	0.01		
C330	1-101-004-11	0.01		

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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
C331	1-102-959-11	22 p		
C332	1-101-004-11	0.01		
C333	1-101-004-11	0.01		
C334	1-101-880-11	47 p		
C335	1-101-006-11	0.047		
C336	1-102-676-11	68 p		
C337	1-102-963-11	33 p		
C338	1-121-398-11	10	25 V	elect
C339	1-102-114-11	470 p		
C340	1-121-391-11	1	50 V	elect
C341	1-102-973-11	100 p		
C342	1-102-117-11	820 p		
C343	1-121-391-11	1	50 V	elect
C344	1-121-651-11	10	16 V	elect
C345	1-101-006-11	0.047		
C346	1-101-006-11	0.047		
C347	1-121-651-11	10	16 V	elect
C348	1-101-004-11	0.01		
C349	1-101-888-11	68 p		
C350	1-101-888-11	68 p		
C351	1-102-973-11	100 p		
C352	1-102-942-11	5 p		
C353	1-102-942-11	5 p		
C354	1-101-004-11	0.01		
C355	1-121-398-11	10	25 V	elect
C356	1-108-630-31	0.022	100 V	mylar
C357	1-121-391-11	1	50 V	elect
C358	1-108-630-31	0.022	100 V	mylar
C359	1-108-630-31	0.022	100 V	mylar
C360	1-108-630-31	0.022	100 V	mylar
C361	1-121-395-11	4.7	25 V	elect
C362	1-102-116-11	680 p		
C363	1-102-116-11	680 p		
C364	1-102-973-11	100 p		
C365	1-102-973-11	100 p		
C366	1-102-116-11	680 p		
C367	1-102-116-11	680 p		
C368		-----		
C369	1-101-006-11	0.047		

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
C370	1-101-004-11	0.01		
C371	1-102-947-11	10 p		
C372	1-121-398-11	10	25 V	elect
C373	1-101-006-11	0.047		
C374	1-102-863-11	82 p		
C375	1-102-679-11	120 p		
C376	1-101-004-11	0.01		
C377	1-101-004-11	0.01		
C378	1-101-004-11	0.01		
C379	1-101-004-11	0.01		
C380	1-101-004-11	0.01		
C381	1-101-006-11	0.047		
C382	1-101-004-11	0.01		
C383	1-121-391-11	1	50 V	elect
C384	1-101-006-11	0.047		
C385	1-121-415-11	100	16 V	elect
C386	1-101-004-11	0.01		
C387		-----		
C388	1-102-978-11	220 p		
C389	1-102-978-11	220 p		
C390	1-102-961-11	27 p		
C391	1-101-006-11	0.047		
C392	1-121-391-11	1	50 V	elect
C393	1-102-961-11	27 p		
C394	1-102-961-11	27 p		
C395	1-102-961-11	27 p		
C396	1-102-961-11	27 p		
C397	1-102-961-11	27 p		
C398	1-102-961-11	27 p		
C399	1-102-961-11	27 p		
C400	1-102-961-11	27 p		
C401	1-102-961-11	27 p		
C402	1-102-961-11	27 p		
C403	1-102-959-11	22 p		
C404	1-102-959-11	22 p		
C405	1-102-959-11	22 p		
C406	1-101-004-11	0.01		
C407	1-102-963-11	33 p		

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			
C408	1-102-963-11	33 p			
C409	1-121-391-11	1	50 V	elect	
C410	1-101-006-11	0.047			
C411	1-102-961-11	27 p			
C412	1-102-100-11	0.0022			
C413	1-101-004-11	0.01			
C414	1-101-004-11	0.01			
C501	1-102-947-11	10 p			
C502	1-108-632-31	0.033	100 V	mylar	
C503	1-108-632-31	0.033	100 V	mylar	
C504	1-121-391-11	1	50 V	elect	
C505	1-108-634-31	0.047	100 V	mylar	
C506	1-121-395-11	4.7	25 V	elect	
C507	1-108-638-31	0.1	100 V	mylar	
C508	1-121-405-11	33	50 V	elect	
C509	1-106-212-12	0.047	100 V	mylar	
C510	1-106-188-12	0.0047	100 V	mylar	
C511	1-106-184-12	0.0033	100 V	mylar	
C512	1-108-638-31	0.1	100 V	mylar	
C513	1-121-246-11	4.7	160 V	elect	
C514	1-102-038-11	0.001	500 V		
C515	1-108-634-31	0.047	100 V	mylar	
C516	1-121-708-11	10	160 V	elect	
C517	1-102-219-11	680 p	1 kV		
C518	1-108-642-31	0.22	100 V	mylar	
C519	1-108-549-11	0.68	200 V	mylar	
C520	1-121-921-11	10	160 V	elect	
C521	1-121-918-11	4.7	100 V	elect	
C522	1-123-024-11	33	160 V	elect	
C523	1-121-416-11	100	25 V	elect	
C524	1-121-396-11	4.7	50 V	elect	
C525	1-101-810-11	100 p	500 V		
C526	1-108-634-31	0.047	100 V	mylar	
C527	1-121-405-11	33	50 V	elect	
C528	1-121-738-11	10	50 V	elect	
C529	1-108-626-31	0.01	100 V	mylar	
C530	1-108-626-31	0.01	100 V	mylar	

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			
C531	1-131-158-11	10	16 V	solid aluminum	
C532	1-121-479-11	22	16 V	elect	
C533	1-127-024-11	2.2	10 V	solid aluminum	
C534	1-121-391-11	1	50 V	elect	
C535	1-121-917-11	20	100 V	elect	
C536	1-101-006-11	0.047			
C537	1-121-409-11	47	16 V	elect	
C538	1-121-450-11	2.2	50 V	elect	
C539	1-121-450-11	2.2	50 V	elect	
C540	1-121-751-11	330	6.3 V	elect	
C541	1-102-002-11	680 p	500 V		
C542	1-108-690-31	0.0068	200 V	mylar	
C543		-----			
C544		-----			
C545	1-102-973-11	100 p			
C546	1-102-973-11	100 p			
C547		-----			
C548	1-102-153-11	100 p	2 kV		
C549	1-101-810-11	100 p	500 V		
C550	1-102-973-11	100 p			
C551	1-102-074-11	0.001			
C552	1-101-004-11	0.01			
C553		-----			
C554		-----			
C555		-----			
C556	1-102-978-11	220 p			
C557	1-108-632-31	0.033	100 V	mylar	
C558	1-121-398-11	10	25 V	elect	
C559		-----			
C570	1-108-680-31	0.001	200 V	mylar	
C601	1-108-745-31	0.22	300 V ac	mylar	
C602		-----			
C603	1-102-240-11	0.0047	250 V ac		
C604	1-123-032-11	22	400 V	elect	
C605	1-125-084-11	200 + 22	400 V	elect	

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
C606	1-105-963-13	0.047	400 V	mylar
C607	1-105-963-13	0.047	400 V	mylar
C608	1-123-024-11	33	160 V	elect
C609	1-106-180-12	0.0022	100 V	mylar
C610	1-121-189-11	1	160 V	elect
C611	1-121-391-11	1	50 V	elect
C612	1-101-810-11	100 p	500 V	
C613	1-105-741-12	0.001	200 V	mylar
C614	1-121-395-11	4.7	25 V	elect
C615	1-106-212-12	0.047	100 V	mylar
C616	1-106-341-12	0.2	100 V	mylar
C617		-----		
C618	1-102-038-11	0.001	500 V	
C619		-----		
C620		-----		
C621	1-129-739-11	0.1	630 V ac	film
C622	1-108-745-11	0.22	300 V ac	mylar
C623		-----		
C624		-----		
C625		-----		
C630	1-102-085-11	0.0047	500 V	
C701	1-119-327-11	0.47	500 V	elect
C702	1-102-050-11	0.01	500 V	
C751	1-102-043-11	1000 p	500 V	feed through
C752	1-121-404-11	33	25 V	elect
C753	1-102-102-11	0.0047		
C754	1-102-102-11	0.0047		
C755	1-102-102-11	0.0047		
C756	1-102-942-11	5 p		
C757	1-102-102-11	0.0047		
C758	1-102-937-11	4 p		
C759	1-102-102-11	0.0047		
C760	1-102-102-11	0.0047		
C761	1-102-102-11	0.0047		
C762		-----		
C763	1-102-102-11	0.0047		
C801	1-129-885-11	16000 p	1 kV	film
C802	1-129-936-11	7500 p	1.5 kV	film

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
C803		-----		
C804	1-102-155-11	330 p	2 kV	
C805	1-102-219-11	680 p	1 kV	
C806	1-102-038-11	0.001	500 V	
C807	1-102-820-11	330 p		
C808	1-102-038-11	0.001	500 V	
C809	1-102-038-11	0.001	500 V	
C810	1-102-153-11	100 p	2 kV	
C901	1-105-793-13	0.01	400 V	mylar
VC201	1-141-138-11	1 p ~ 5 p		trimmer
SG701	1-519-063-11	Spark Gap, 1.5 kV		
SG702	1-519-063-11	Spark Gap, 1.5 kV		
SG703	1-519-063-11	Spark Gap, 1.5 kV		
SG704	1-519-063-11	Spark Gap, 1.5 kV		
SG705	1-519-063-11	Spark Gap, 1.5 kV		

RESISTORS

All resistors are in ohms, $\pm 5\%$, $\frac{1}{4}$ W and carbon unless otherwise noted. k = 1000, M = 1000 k.

R151	1-244-685-11	3.3 k
R152	1-244-665-11	470
R153	1-244-679-11	1.8 k
R154	1-244-659-11	270
R155	1-244-657-11	220
R156	1-244-679-11	1.8 k
R157	1-244-665-11	470
R158	1-244-661-11	330
R159	1-244-673-11	1 k
R160	1-244-685-11	3.3 k
R161	1-244-709-11	33 k
R162	1-244-709-11	33 k
R163	1-244-713-11	47 k
R164	1-244-705-11	22 k
R165	1-244-725-11	150 k
R166		-----
R167	1-244-665-11	470
R168	1-244-657-11	220

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>				<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			
R169	1-244-677-11	1.5 k				R222	1-244-673-11	1 k			
R170	1-244-649-11	100				R223	1-244-699-11	12 k			
R171		-----				R224	1-244-661-11	330			
R172		-----				R225	1-244-669-11	680			
R173		-----				R226	1-244-665-11	470			
R174	1-244-683-11	2.7 k				R227	1-244-697-11	10 k			
R175	1-206-104-11	10 k	1 W	metal oxide		R228	1-244-649-11	100			
R176	1-244-659-11	270				R229	1-244-673-11	1 k			
R177	1-244-675-11	1.2 k				R230	1-244-691-11	5.6 k			
R178	1-244-683-11	2.7 k				R231	1-244-659-11	270			
R179	1-206-104-11	10 k	1 W	metal oxide		R232	1-244-697-11	10 k			
R180	1-244-659-11	270				R233	1-244-673-11	1 k			
R181	1-244-675-11	1.2 k				R234	1-244-657-11	220			
R182	1-244-683-11	2.7 k				R235	1-244-677-11	1.5 k			
R183	1-206-104-11	10 k	1 W	metal oxide		R236	1-244-649-11	100			
R184	1-244-659-11	270				R237	1-244-649-11	100			
R185	1-244-675-11	1.2 k				R238	1-244-721-11	100 k			
R201	1-244-622-11	7.5				R239	1-244-689-11	4.7 k			
R202	1-244-637-11	33				R240	1-244-683-11	2.7 k			
R203	1-244-617-11	4.7				R241	1-244-665-11	470			
R204	1-244-637-11	33				R242	1-244-707-11	27 k			
R205	1-244-663-11	390				R243	1-244-658-11	240			
R206	1-244-675-11	1.2 k				R244	1-244-662-11	360			
R207	1-244-665-11	470				R245	1-244-663-11	390			
R208	1-244-679-11	1.8 k				R246	1-244-697-11	10 k			
R209	1-244-695-11	8.2 k				R247	1-244-673-11	1 k			
R210	1-244-663-11	390				R248	1-244-683-11	2.7 k			
R211	1-244-687-11	3.9 k				R249	1-244-705-11	22 k			
R212	1-244-667-11	560				R250	1-244-649-11	100			
R213	1-244-687-11	3.9 k				R251	1-244-649-11	100			
R214	1-244-679-11	1.8 k				R252	1-244-679-11	1.8 k			
R215	1-244-689-11	4.7 k				R253	1-244-705-11	22 k			
R216	1-244-667-11	560				R254	1-244-684-11	3 k			
R217	1-242-657-11	220				R255	1-244-649-11	100			
R218	1-244-693-11	6.8 k				R256	1-244-697-11	10 k			
R219	1-244-675-11	1.2 k				R257	1-244-699-11	12 k			
R220	1-244-693-11	6.8 k				R258	1-244-673-11	1 k			
R221	1-244-669-11	680				R259	1-244-689-11	4.7 k			
						R260	1-217-025-11	33	3 W	cement coated	

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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R261	1-217-027-11	47 3 W cement coated
R262		-----
R263	1-244-857-11	220 1/2 W
R264	1-244-859-11	270 1/2 W
R265	1-244-685-11	3.3 k
R266	1-244-673-11	1 k
R267	1-244-673-11	1 k
R268	1-244-709-11	33 k
R300	1-244-679-11	1.8 k
R301	1-244-669-11	680
R302	1-244-697-11	10 k
R303	1-244-685-11	3.3 k
R304	1-244-653-11	150
R305	1-244-673-11	1 k
R306	1-244-669-11	680
R307	1-244-681-11	2.2 k
R308	1-244-685-11	3.3 k
R309	1-244-697-11	10 k
R310	1-244-697-11	10 k
R311	1-244-697-11	10 k
R312	1-244-697-11	10 k
R313	1-244-657-11	220
R314	1-244-701-11	15 k
R315	1-244-697-11	10 k
R316	1-244-673-11	1 k
R317	1-244-681-11	2.2 k
R318	1-244-701-11	15 k
R319	1-244-697-11	10 k
R320	1-244-673-11	1 k
R321	1-244-637-11	33
R322	1-244-637-11	33
R323	1-244-697-11	10 k
R324	1-244-661-11	330
R325	1-244-681-11	2.2 k
R326	1-244-665-11	470
R327	1-244-701-11	15 k
R328	1-244-685-11	3.3 k
R329	1-244-653-11	150
R330	1-244-673-11	1 k

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R331	1-244-633-11	22
R332	1-244-661-11	330
R333	1-244-653-11	150
R334	1-244-701-11	15 k
R335	1-244-685-11	3.3 k
R336	1-244-675-11	1.2 k
R337	1-244-637-11	33
R338	1-244-661-11	330
R339	1-244-657-11	220
R340	1-244-709-11	33 k
R341	1-244-681-11	2.2 k
R342	1-244-647-11	82
R343	1-244-709-11	33 k
R344	1-244-733-11	330 k
R345	1-244-693-11	6.8 k
R346	1-244-681-11	2.2 k
R347		-----
R348	1-244-669-11	680
R349	1-244-701-11	15 k
R350	1-244-717-11	68 k
R351	1-244-697-11	10 k
R352	1-244-685-11	3.3 k
R353	1-244-633-11	22
R354	1-244-713-11	47 k
R355	1-244-673-11	1 k
R356	1-244-705-11	22 k
R357	1-244-673-11	1 k
R358	1-244-673-11	1 k
R359	1-244-697-11	10 k
R360	1-244-697-11	10 k
R361	1-244-663-11	390
R362	1-244-679-11	1.8 k
R363	1-244-679-11	1.8 k
R364	1-244-709-11	33 k
R365	1-244-701-11	15 k
R366	1-244-677-11	1.5 k
R367	1-244-641-11	47
R368	1-244-673-11	1 k
R369	1-244-693-11	6.8 k

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R370	1-244-685-11	3.3 k
R371	1-244-697-11	10 k
R372	1-244-721-11	100 k
R373	1-244-685-11	3.3 k
R374	1-244-717-11	68 k
R375	1-244-653-11	150
R376	1-244-673-11	1 k
R377	1-244-705-11	22 k
R378	1-244-721-11	100 k
R379	1-244-705-11	22 k
R380	1-244-721-11	100 k
R381	1-244-673-11	1 k
R382	1-244-697-11	10 k
R383	1-244-699-11	12 k
R384	1-244-683-11	2.7 k
R385	1-244-653-11	150
R386	1-244-653-11	150
R387	1-244-633-11	22
R388	1-244-661-11	330
R389	1-244-669-11	680
R390	1-244-645-11	68
R391	1-244-693-11	6.8 k
R392	1-244-709-11	33 k
R393	1-244-653-11	150
R394	1-244-665-11	470
R395	1-244-645-11	68
R396	1-244-663-11	390
R397	1-244-663-11	390
R398	1-244-653-11	150
R399	1-244-697-11	10 k
R400	1-244-683-11	2.7 k
R401	1-244-677-11	1.5 k
R402	1-244-681-11	2.2 k
R403	1-244-677-11	1.5 k
R404	1-244-665-11	470
R405	1-244-645-11	68
R406	1-244-673-11	1 k
R407	1-244-673-11	1 k

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R408	1-244-669-11	680
R409	1-244-661-11	330
R410	1-244-675-11	1.2 k
R411	1-244-685-11	3.3 k
R412	1-244-669-11	680
R413	1-244-645-11	68
R414	1-244-673-11	1 k
R415	1-244-673-11	1 k
R416	1-244-641-11	47
R417	1-244-673-11	1 k
R418	1-244-677-11	1.5 k
R419	1-244-693-11	6.8 k
R420	1-244-677-11	1.5 k
R421	1-244-697-11	10 k
R422	1-244-697-11	10 k
R423	1-244-657-11	220
R424	1-244-661-11	330
R425	1-244-681-11	2.2 k
R426	1-244-657-11	220
R427	1-244-679-11	1.8 k
R428	1-244-679-11	1.8 k
R429	1-244-673-11	1 k
R430	1-244-673-11	1 k
R431	1-244-689-11	4.7 k
R432	1-244-689-11	4.7 k
R433	1-244-673-11	1 k
R434	1-244-673-11	1 k
R435	1-244-697-11	10 k
R436	1-244-697-11	10 k
R437	1-244-673-11	1 k
R438	1-244-673-11	1 k
R439	1-244-697-11	10 k
R440	1-244-697-11	10 k
R441	1-244-673-11	1 k
R442	1-244-673-11	1 k
R443	1-244-689-11	4.7 k
R444	1-244-689-11	4.7 k
R445	1-244-661-11	330

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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R455		-----
R456		-----
R457	1-244-709-11	33 k
R458	1-244-709-11	33 k
R459	1-244-681-11	2.2 k
R460	1-244-681-11	2.2 k
R461	1-244-693-11	6.8 k
R462	1-244-693-11	6.8 k
R463		-----
R464		-----
R481	1-244-661-11	330
R482	1-244-657-11	220
R483	1-244-657-11	220
R484	1-244-649-11	100
R485	1-244-665-11	470
R486	1-244-665-11	470
R501	1-244-693-11	6.8 k
R502	1-244-701-11	15 k
R503	1-244-665-11	470
R504	1-244-663-11	390
R505	1-244-660-11	300
R506	1-244-687-11	3.9 k
R507	1-244-687-11	3.9 k
R508	1-206-017-11	1.8 k 2 W metal oxide
R509	1-244-697-11	10 k
R510	1-244-703-11	18 k
R511	1-244-667-11	560
R512	1-244-671-11	820
R513	1-244-693-11	6.8 k
R514	1-244-685-11	3.3 k
R515	1-244-669-11	680
R516	1-244-649-11	100
R517	1-244-696-11	9.1 k
R518	1-244-669-11	680
R519	1-211-451-11	1 k 1/8 W
R520	1-244-675-11	1.2 k

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R521		-----
R522		-----
R523	1-202-605-11	22 k 1/2 W composition
R524	1-207-903-11	10 0.25 A fuse
R525		-----
R526	1-244-683-11	2.7 k
R527	1-206-111-11	39 k 1 W metal oxide
R528	1-244-681-11	2.2 k
R529	1-211-490-11	4.7
R530	1-207-982-11	2.7 0.65 A fuse
R531	1-244-893-11	6.8 k 1/2 W
R532	1-244-715-11	56 k
R533	1-244-691-11	5.6 k
R534	1-244-679-11	1.8 k
R535	1-244-679-11	1.8 k
R536	1-244-705-11	22 k
R537	1-244-705-11	22 k
R538	1-244-699-11	12 k
R539	1-244-703-11	18 k
R540	1-244-691-11	5.6 k
R541	1-244-637-11	33
R542	1-244-689-11	4.7 k
R543	1-244-625-11	10
R544	1-244-679-11	1.8 k
R545	1-244-713-11	47 k
R546	1-244-673-11	1 k
R547	1-244-715-11	56 k
R548	1-244-691-11	5.6 k
R549	1-207-471-11	4.7 1/2 W wirewound
R550	1-244-633-11	22
R551	1-244-689-11	4.7 k
R552	1-206-110-11	33 k 1 W metal oxide
R553	1-244-691-11	5.6 k
R554	1-244-901-11	15 k 1/2 W
R555	1-244-687-11	3.9 k

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>		
R556	1-244-729-11	220 k		
R557	1-244-717-11	68 k		
R558	1-244-829-11	15	1/2 W	
R559	1-244-675-11	1.2 k		
R560	1-244-671-11	820		
R561	1-244-873-11	1 k	1/2 W	
R562		-----		
R563	1-244-897-11	10 k	1/2 W	
R564	1-244-901-11	15 k	1/2 W	
R565	1-244-899-11	12 k	1/2 W	
R566	1-211-932-11	27	1/8 W	
R567	1-244-705-11	22 k		
R568	1-244-681-11	2.2 k		
R569	1-244-697-11	10 k		
R570	1-244-709-11	33 k		
R571	1-244-671-11	820		
R572	1-244-667-11	560		
R573	1-206-080-11	82	1 W	metal oxide
R574	1-206-688-11	10 k	2 W	metal oxide
R601	1-244-885-11	3.3 k	1/2 W	
R602	1-244-691-11	5.6 k		
R603	1-244-873-11	1 k	1/2 W	
R604	1-244-873-11	1 k	1/2 W	
R605	1-207-657-11	10	3 W	wirewound
R606	1-207-657-11	10	3 W	wirewound
R607	1-206-823-11	33 k	5 W	metal oxide
R608	1-206-640-11	100	2 W	metal oxide
R609	1-211-931-11	68	1/8 W	
R610	1-244-714-11	51 k		
R611	1-244-669-11	680		
R612	1-244-685-11	3.3 k		
R613	1-244-901-11	15 k	1/2 W	
R614	1-244-689-11	4.7 k		
R615	1-244-689-11	4.7 k		
R616	1-244-693-11	6.8 k		
R617	1-244-681-11	2.2 k		
R618	1-206-737-11	3.3 k	3 W	metal oxide
R619	1-206-697-11	18 k	2 W	metal oxide
R620	1-206-697-11	18 k	2 W	metal oxide

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>			
R621	1-244-881-11	2.2 k	1/2 W		
R622	1-244-880-11	2 k	1/2 W		
R623	1-244-669-11	680			
R624	1-207-657-11	10	3 W	wirewound	
R625	1-244-699-11	12 k			
R626	1-244-891-11	5.6 k	1/2 W		
R627	1-244-661-11	330			
R628	1-207-942-11	39	7 W	wirewound	
R701	1-202-581-11	2.2 k	1/2 W	composition	
R702	1-202-581-11	2.2 k	1/2 W	composition	
R703	1-202-629-11	220 k	1/2 W	composition	
R704	1-202-621-11	100 k	1/2 W	composition	
R705	1-202-635-11	390 k	1/2 W	composition	
R706	1-202-581-11	2.2 k	1/2 W	composition	
R707	1-202-603-11	18 k	1/2 W	composition	
R708	1-202-637-11	470 k	1/2 W	composition	
R751	1-244-679-11	1.8 k			
R752	1-244-696-11	9.1 k			
R753	1-244-667-11	560			
R754	1-244-661-11	330			
R755	1-244-685-11	3.3 k			
R756	1-244-685-11	3.3 k			
R757	1-244-697-11	10 k			
R758	1-244-679-11	1.8 k			
R759	1-244-635-11	27			
R760	1-244-667-11	560			
R761	1-244-685-11	3.3 k			
R762	1-244-649-11	100			
R763	1-244-653-11	150			
R801	1-244-895-11	8.2 k	1/2 W		
R802	1-206-915-21	19 M + 31.7 M,		high voltage	
* R803	{	1-206-918-11	2.7	3 W	metal oxide
		1-206-921-11	4.7	3 W	metal oxide
		1-206-922-11	5.6	3 W	metal oxide
		1-206-925-11	10	3 W	metal oxide
* R804	{	1-206-927-11	15	3 W	metal oxide
		1-206-928-11	18	3 W	metal oxide
		1-206-929-11	22	3 W	metal oxide

* to be selected.

KV-1310UB
KV-1330UB

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R805	1-202-597-11	10 k $\frac{1}{2}$ W composition	VR903 } S901 }	1-222-624-00	50 k-D, variable; PULL ON/VOL
R806	1-217-007-11	1 3 W cement coated	VR904	1-222-388-00	20 k-B, variable; BRT
R901	1-205-483-11	10 10 W cement coated	VR905	1-224-392-00	500-B, variable; HUE
R902	1-244-661-11	330	VR906	1-222-386-00	500-B, variable; COLOUR
R903	1-244-643-11	56 } (KV-1330UB only)			
R904	1-244-651-11	120 }			
VR151	1-222-515-00	330-B, adjustable; B. DRIVE	MISCELLANEOUS		
VR152	1-222-344-00	5 k-B, adjustable; B. BKG	X-4302-401-0		Permalloy Ass'y
VR153	1-222-515-00	330-B, adjustable; G. DRIVE	CN101	1-508-457-00	Aerial Connector
VR154	1-222-344-00	5 k-B, adjustable; G. BKG	F601	1-532-203-00	Fuse, 2 AT
VR155	1-222-515-00	330-B, adjustable; R. DRIVE	F602	1-532-078-00	Fuse, 1 AT
VR156	1-222-344-00	5 k-B, adjustable; R. BKG	J901 } J902 }	1-507-169-13	Jack, earpiece (KV-1330UB only)
VR201	1-222-516-00	470-B, adjustable; U.TU AGC	NE901	1-519-060-00	Neon Lamp, 110 V dc (UHF)
VR202	1-222-516-00	470-B, adjustable; SND TRAP ADJ	S902	1-515-119-00	Circuit Breaker, 1.25 A
VR203	1-222-517-00	1 k-B, adjustable; DET OUT ADJ	S903	1-516-002-00	Switch, pushbutton; AFT (KV-1310UB only)
VR204	1-222-518-00	4.7 k-B, adjustable; U. RF AGC		1-514-892-00	Switch, rotary; AFT (KV-1330UB only)
VR301	1-222-784-00	3.3 k-B, adjustable; DMP ADJ	SP	1-502-299-00	Speaker, 8 ohms; 8 x 12 cm (KV-1310UB only)
VR302	1-222-518-00	4.7 k-B, adjustable; IDP ADJ		1-502-309-00	Speaker, 8 ohms; 8 x 16 cm (KV-1330UB only)
VR303	1-222-517-00	1 k-B, adjustable; ACC	X301	1-527-183-00	Crystal, 4.43 MHz
VR304	1-222-515-00	330-B, adjustable; SMB ADJ		1-452-014-00	Magnet, disk; 15 mm dia
VR305	1-222-515-00	330-B, adjustable; VSB ADJ		1-452-032-00	Magnet, disk; 10 mm dia
VR501	1-222-725-00	20 k-B, adjustable; H. FREQ		1-452-038-00	Magnet, vertical convergence
VR502	1-223-017-00	50-B, adjustable; TILT		1-452-058-00	Magnet, horizontal convergence
VR503	1-223-017-00	50-B, adjustable; H. CENT		1-506-187-71	Coaxial Cable with Plug
VR504	1-222-725-00	20 k-B, adjustable; PIN ADJ		1-507-901-12	Nut, jack (KV-1330UB only)
VR505	1-222-344-00	5 k-B, adjustable; H. SIZE		1-526-086-00	Socket, picture tube
VR506	1-222-512-00	10 k-B, adjustable; V. SIZE		1-526-130-61	Cap, anode
VR507	1-222-512-00	10 k-B, adjustable; V. LIN		1-526-131-52	Cap, convergence
VR508	1-222-784-00	3.3 k-B, adjustable; V. BIAS		1-534-777-00	Mains Cable
VR601	1-221-699-00	500-B, adjustable; 110 V ADJ		1-536-270-00	Lug, terminal; 1L3L1
VR701	1-222-809-00	500 k-B, adjustable; SCRN		1-536-367-13	Terminal Board Ass'y, aerial
VR801	1-222-509-00	500 k-B, adjustable; H. STAT		1-536-386-00	Lug, terminal; 1L1
VR901	1-222-383-00	1 k-B, variable; PICTURE		1-536-391-00	Lug, terminal; 3L2 (KV-1330UB only)
VR902	1-222-388-00	20 k-B, variable; VER		8-735-301-05	Picture Tube, 330AB22