MANUFACTURERS AWA SUPERVISED SERVICE

A.W.A. RADIOLA
Television Receiver Chassis
34 Series

ISSUED BY AMALGAMATED WIRELESS (AUSTRALASIA) LTD.

CHASSIS DESIGNATION

Chassis No.	Model	Kinescope	Tuner
34-01	D51Z	23CP4	43442
34-02	D56	23CP4	43981
34-03	D52Y	23CP4	43981
34-04	D50Z	23CP4	43442
34-05	244R	19AKP4	43442
34-06	D54Y	23CP4	43981
34-08	D55Y	23CP4	43981
34-11	1X	23MP4	43446
34-12	2Y	23CP4	43446
34-13	4Z	23CP4	43446
34-14	5Z	23CP4	43446
34-15	D12T	23CP4	43442

GENERAL DESCRIPTION

These chassis are fitted in 19 valve, A.C. operated Television Receivers.

Features of design include: Three stage i.f. amplifier; gated a.g.c.; constant black level contrast control; phase discriminator a.f.c. horizontal system; horizontal and vertical sweep stabilization; 114° deflection; electrostatic dynamic focus; aluminised kinescope; intercarrier f.m. sound system; ratio detector.

ELECTRICAL AND MECHANICAL SPECIFICATIONS

INTERMEDIATE FREQUENCIES

Video I.F. Carrier Frequency ..... 36.875 Mc/s

Sound I.F. Carrier Frequency ..... 31.375 Mc/s

POWER CONSUMPTION: 170 watts maximum.

UNDISTORTED AUDIO POWER OUTPUT: 2.5 watts max.

VIDEO RESPONSE ..... To 4.25 Mc/s

FOCUS ..... Electrostatic (Low Voltage)

DEFLECTION ..... 114° Magnetic

TUNER ..... See table above

VALVE COMPLEMENT:

1 (V1) Radiotron 6ES8 ..... R.F. Amplifier
2 (V2) Radiotron 6EA8 .. R.F. Oscillator and Converter (Valves 1 and 2 in Tuner)
3 (V101) Radiotron 6AU6 ..... Sound I.F.
4 (V102) Radiotron 6AL5 ..... Ratio Detector
5 (V103) Radiotron 6AV6 Audio Amp. & A.G.C. Clamp
6 (V104) Radiotron 6AQ5 ..... Audio Output
7 (V201) Radiotron 6BZ6 ..... 1st Video I.F.
8 (V202) Radiotron 6EW6 ..... 2nd Video I.F.
9 (V203) Radiotron 6CB6 ..... 3rd Video I.F.
10 (V204) Radiotron 6EB8 .. Video Amp. & Sync. Amp.
11 (V205) Radiotron 6CG7 Video Control and Vert. Osc.
12 (V206) Radiotron 23CP4, 23MP4 or 19AKP4 Kinescope
13 (V301) Radiotron 6HS8 Noise Gated A.G.C. & Sync. Sep.
14 (V302) Radiotron 6EM5 ..... Vertical Output
15 (V401) Radiotron 6AL5 ..... Phase Discriminator
16 (V402) Radiotron 6CG7 Buffer and Horizontal Oscillator
17 (V403) Radiotron 6CM5 ..... Horizontal Output
18 (V404) Radiotron 6AU4-GTA ..... Damper
19 (V405) Radiotron 1B3-GT ..... High Voltage Rectifier
MR201 GD3, OA80, etc. ..... Video Detector
MR202 GD8, OA81, etc. ..... Beam Limiter
MR401 1N1763 ..... Rectifier
MR402 1N1763 ..... Rectifier

HIGH VOLTAGE WARNING

Operation of this receiver outside the cabinet involves a shock hazard from the receiver power supplies. Work on the receiver should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Do not operate the receiver with the high voltage compartment shield removed. Make sure that the earth strap between the chassis and the kinescope assembly is securely fastened before turning the receiver on.

KINESCOPE HANDLING PRECAUTIONS

Do not install, remove or handle the kinescope in any manner unless shatter-proof goggles are worn. People not so equipped should be kept away while handling kinescopes. Keep the kinescope away from the body while handling.
When the receiver has been switched off after operating for a time, the kinescope will retain a certain charge. Therefore it is advisable to discharge it before handling.

OPERATING TESTS

DEFLECTION YOKE ADJUSTMENT (Fig. 1)

If the lines of the raster are not horizontal or squared with the kinescope, rotate the deflection yoke until this condition is obtained. Tighten the yoke clamp.

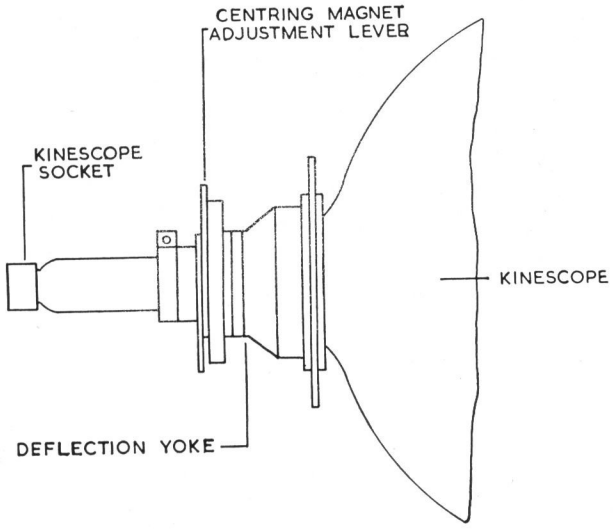


FIG. 1

NOTE: Rotational directions specified are viewed from the spindle end or, when no spindle is visible, from the rear cabinet end.

FOCUS ADJUSTMENT

This adjustment has been made at the factory and it should only be necessary to re-adjust if the kinescope is replaced. In this case adjust the focus control (RV402) on the rear of the chassis until maximum definition of the line structure of the raster is obtained.

CHECK OF HORIZONTAL OSCILLATOR ADJUSTMENT

Rotating the horizontal hold control, RV401A, from one extreme to the other should produce a synchronised picture for at least 180° of rotation.

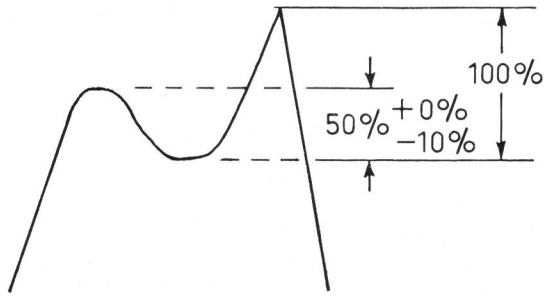
HORIZONTAL OSCILLATOR ADJUSTMENT

The adjustment of the horizontal oscillator is not considered to be part of the alignment procedure. The adjustment is made at the factory and should not require readjustment in the field. However, the adjustment should be carried out whenever components in the horizontal oscillator circuit are changed. The width should be correctly set before adjustments are carried out.

The horizontal oscillator may be adjusted by the following method:—

NOTE: Under normal circumstances, unless C408, C409 or L401 are replaced, no sine wave coil adjustment will be required, and the correct horizontal oscillator conditions will be obtained by following steps 1, 6 and 7 below.

1. Set the horizontal hold control, RV401A, at its mid position.
2. Short circuit the sine wave coil, L401, and short circuit the phase discriminator test point to ground.
3. Adjust the horizontal oscillator transformer, TR401, until the picture is synchronised with the signal, i.e., picture sides are straight.
4. Remove short circuits from sine wave coil and phase discriminator test point.
5. With a c.r.o. at the sine wave test point, adjust sine wave, L401, for a waveform as shown.



6. Readjust the horizontal oscillator transformer, TR401, to give +2 volts d.c. at the phase discriminator test point.
7. Set the horizontal hold control, RV401A, for 0 volts d.c. at the phase discriminator test point.

OPERATING TESTS

CENTRING ADJUSTMENT

Centring of the electron beam is important for good linearity, horizontally and vertically. When the linearity has been adjusted as per following instructions, if the horizontal linearity is poor this indicates that the centring magnets require adjustment for horizontal centring. Similarly, if the vertical linearity is poor after adjusting the height and vertical linearity controls, this indicates the need for vertical centring.

Note: The centre of test patterns as transmitted on various channels may vary and should not be relied upon for centring purposes.

The centring magnets are in the form of two discs mounted on the rear of the deflection yoke cap. When the magnets are rotated around the tube neck so that the levers are opposite, minimum centring effect with either lever is produced. To obtain correct centring of the picture the magnets are alternatively rotated with respect to each other.

CAUTION

Under no circumstances should the receiver be switched on with the deflection yoke removed from the picture tube. This may produce an undeflected spot which may damage the screen.

WIDTH AND HORIZONTAL LINEARITY ADJUSTMENTS

The width control, RV401B, is a pre-set potentiometer attached to the rear of the horizontal hold control and is adjusted by removing the horizontal hold knob and inserting a small screwdriver down the hollow spindle thus exposed.

The width and horizontal linearity controls, RV401B and L403, are adjusted to produce best linearity with a picture of the correct width, i.e., with the picture extending approximately ½" on either side of the kinescope mask with normal picture brightness.

HEIGHT AND VERTICAL LINEARITY ADJUSTMENTS

Adjust the height control, RV307, for a picture of approximately ¾ of the normal size.

Adjust the vertical linearity control, RV305, to give a small amount of cramp at the top of the picture.

Adjust the height and top linearity controls, RV307 and RV306, to obtain a picture of normal height (approximately ½" of picture extending beyond the top and bottom of the kinescope mask).

Finally adjust the height, top linearity and vertical linearity controls for best linearity and correct height.

VERTICAL HOLD ADJUSTMENT

Set the vertical hold control, RV304B, to the centre of its range.

Adjust the vertical hold pre-set, RV304A, to synchronise the picture.

Check that the vertical hold control allows loss of synchronisation at each extreme and if not re-adjust the vertical hold pre-set until this is achieved,

Finally set the vertical hold control at the centre of its hold—in range.

A.G.C. ADJUSTMENT

N.B. Three different procedures are provided to cover the three following circuit arrangements that have been used in this chassis series.

A. Partial d.c. coupled kinescope with no black level adjustment. (Identified by no black level control on the pre-set control panel at rear.)

B. Partial d.c. coupled kinescope with black level adjustment. (Identified by black level control on the pre-set control panel but no diode in kinescope cathode circuit.)

C. D.C. coupled kinescope. (Identified by black level control and diode in kinescope cathode circuit.)

Procedure for case A above:

1. Set the min. contrast and I.F. A.G.C. controls, RV302 and RV301, at their mid-positions.
2. Tune the receiver to a channel of medium strength (1mV) or suitable attenuated strong signal.
3. Set the contrast control, RV201, to minimum (fully anti-clockwise).
4. Adjust the min. contrast control to give 15 volts p-p at the kinescope cathode.
5. Adjust contrast control to increase this to 20 volts p-p.
6. Adjust the I.F. A.G.C. for snow threshold. A clockwise rotation increases snow.

Procedure for case B is identical with that above with black level control, RV303, set fully clockwise.

Procedure for case C.

1. Set min. contrast, black level and I.F. A.G.C. controls to their mid-positions.
2. Adjust the contrast control to obtain 20 volts p-p at the kinescope cathode and if necessary adjust the min. contrast control to obtain this figure.
3. Adjust brightness control for normal brightness and adjust the I.F. A.G.C. control for snow threshold. A clockwise rotation of the I.F. A.G.C. control increases snow.
4. Carry out steps 5 and 6 with brightness control fully anti-clockwise (minimum brightness).
5. (a) Check that the blanking level remains fairly constant, as viewed on a d.c. coupled c.r.o. connected to the kinescope cathode, as the contrast control is rotated. If blanking level is constant, proceed to step 6, if not, rotate the black level control by small increments, say 30°, and check results. N.B. A more clockwise setting of the black level control results in a shift towards white as the contrast control is rotated from minimum to maximum.

   (b) If a d.c. coupled c.r.o. is unavailable the constancy of the blanking level can be judged by observing that the black area of the picture on the kinescope remains constant as the contrast control is varied.
6. Having obtained constant blanking level, adjust the min. contrast control to obtain 15 volts p-p at the kinescope cathode with the contrast control at minimum. A clockwise rotation of the min. contrast control increases the output.
7. Check step 5 and repeat if necessary.

REPLACEMENT OF FUSES

Three fuses are provided, 1.5 amp. fuses for mains and high tension protection and a 3 amp. fuse in the 6.3 volts circuit feeding the tuner and pilot lamp(s). The location and function of these fuses are indicated on the layout diagram.

ALIGNMENT PROCEDURE

TESTING INSTRUMENTS

To properly service the television receiver, it is recommended that the following testing equipment be available—

(1) Television Sweep Generator.

(2) A.W.A. Cathode Ray Oscilloscope (C.R.O.), type 1A56069.

(3) A.W.A. Television Calibrator, type A56057.

(4) A.W.A. Voltohmyst, type 1A56074.

(5) A.W.A. Universal Measuring Bridge, type A56048.

TESTING PADS AND CIRCUITS

(Referred to in Alignment Procedure.)

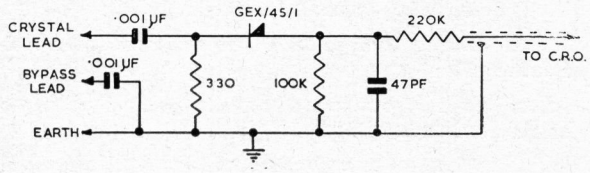


FIG. 2—CRYSTAL DETECTOR PROBE

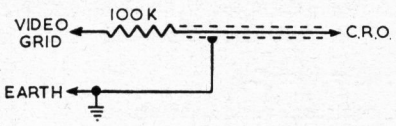


FIG. 3

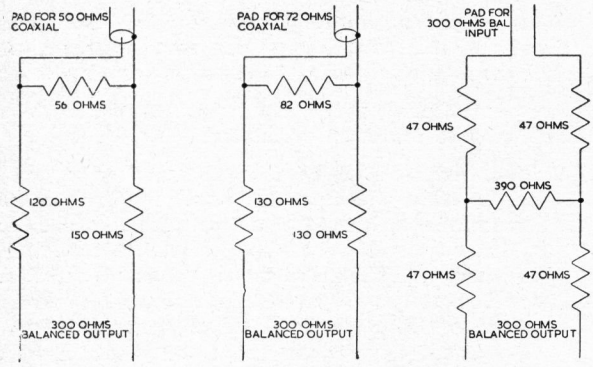


FIG. 4—SWEEP ATTENUATOR PADS

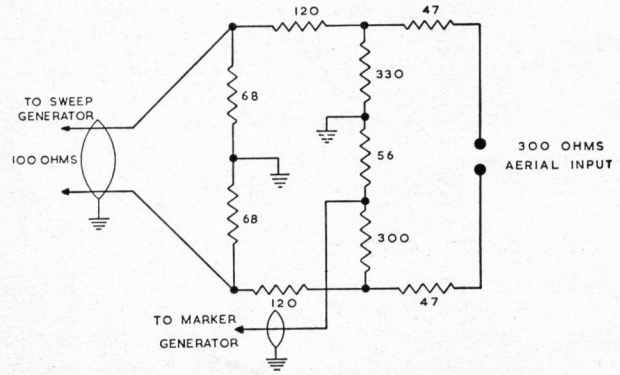


FIG. 5—INPUT PAD

RESPONSE CURVES

The response curves referred to throughout the alignment procedure were taken from a production set, but some variations can be expected.

CRITICAL LEAD DRESS

All leads in the i.f. section, particularly those on by-pass capacitors, must be kept as short as possible.

Wire wound resistors should be dressed away from neighbouring components.

NOTE: When two positions of the core appear to give the correct adjustments, the following apply:—

* Coil tuned with core close to chassis.

† Coil tuned with core close to can top, i.e., remote from chassis.

Make sure that bias voltages are correct, as incorrect voltages will lead to wrong adjustment.

When applying markers use smallest marker visible, otherwise response could be incorrectly displayed, i.e., removal of the marker generator should not change viewed shape of response.

Make sure that responses are viewed at correct output level as incorrect level will result in wrong adjustment. At lower levels detector non-linearity affects the shape, and at higher levels overload will alter the shape of the response.

SOUND I.F. ALIGNMENT

Connect the output of the television calibrator to the video detector test point and set the frequency to 5.5 Mc/s.

Connect the Voltohmyst d.c. probe to the sound peak test point and set the range switch to + 5 volts d.c.

Short circuit pin 1 of V203 (3rd video i.f. grid) to ground.

Adjust the following cores for peak output varying the input to maintain a reading of about 2 volts.

TR101 secondary (ratio detector bottom core)*.

TR101 primary (top core)†.

L101 (sound take off coil)*.

L206 (sound trap)*.

Repeat this sequence once.

Transfer the Voltohmyst probe to the sound zero test point.

Re-adjust TR101 secondary (bottom core) for zero reading on the Voltohmyst.

Set the calibrator modulation switch to 600 c/s.

Connect the c.r.o. to the video out test point through a crystal probe (Voltohmyst probe 2R56075 is suitable).

Re-adjust L206 (sound trap)* for minimum 600 c/s on the c.r.o.

Remove television calibrator, Voltohmyst and short circuit on V203 grid.

VIDEO I.F. ALIGNMENT DX-Q CHASSIS

Turn RV301 to its extreme clockwise position when viewed from the wiring side and connect the junction of R301 and R303 to earth.

Connect a source of —3 volts bias to the video i.f. at the i.f. a.g.c. test point and a source of —2.5 volts bias to the tuner a.g.c. terminal.

Connect the sweep generator to the aerial input terminals on the tuner and set both sweep generator and tuner to Channel 6.

Connect the c.r.o. vertical input to TP1 on the tuner through a shielded lead.

Check that the r.f. response viewed on the c.r.o. conforms with that shown in figure 6.

Note: In figure 5 is shown a suggested input pad and a way the marker generator can be connected for checking the tuner response.

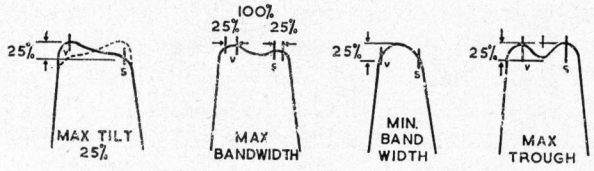


FIG. 6

Disconnect the c.r.o. from TP1 on the tuner and connect the crystal detector probe (figure 2) to pin 5 of V201 (1st video i.f. plate) and also by-pass pin 5 of V202 using by-pass lead provided.

Set tuner oscillator frequency to 212.125 Mc/s ± 0.5 Mc/s using the fine tuning control. Set the sweep generator output to give maximum deflection on the c.r.o. of 0.3 volts p-p. It is suggested that the marker generator be connected to the centre spigot on the socket of V201 and the earth lead connected to the chassis.

Set the marker generator to 38.375 Mc/s and adjust L201* so that the marker appears in the dip of the response produced by the trap, i.e., tune the trap to 38.375 Mc/s.

Adjust TR2,* L202* and trimmer C204 to produce the response on the c.r.o. shown in figure 7.

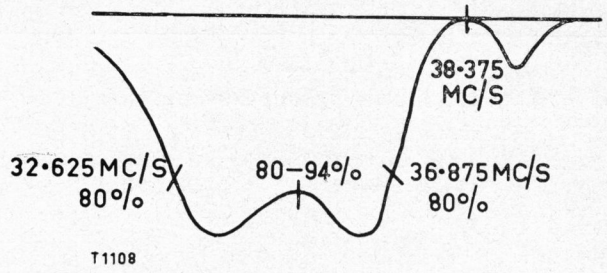


FIG. 7

TR2* mainly affects 36.875 Mc/s marker position.

L202* mainly affects tilt.

C204 mainly affects the band width.

OVERALL ALIGNMENT

Remove the crystal probe and connect the c.r.o. to the video detector test point using the network shown in figure 3. It is suggested that the marker generator remain connected to the centre spigot of V201 socket.

View overall response with approximately 3 volts p-p output and adjust the accompanying sound trap TR202 (top core)† for minimum response at 30.875 Mc/s increasing the c.r.o. gain if necessary for easier adjustment of the trap.

Reset the c.r.o. gain to give 3 volts p-p and adjust for a response as shown in figure 8.

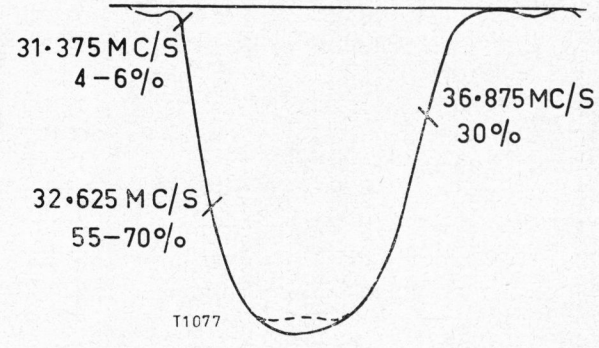


FIG. 8

Marker 36.875 Mc/s at 30% TR202*.

Marker 31.375 Mc/s at 4%-6% TR201*.

No tilt TR203*.

Check that 32.625 Mc/s marker is at 55%-70%, otherwise re-adjust TR201* and correct tilt with TR203* if necessary.

CIRCUIT CODE

Code No.	DESCRIPTION			Part No.
	RESISTORS			
	All Resistors carbon unless otherwise stated.			
R101	56K ohms	±10%	½ watt	615161
R102	100 ohms	±10%	½ watt	604031
R103	56K ohms	±10%	1 watt	615165
R104	39K ohms	±10%	2 watts	614602
R105	47 ohms	±10%	½ watt	603091
R106	47K ohms	±10%	½ watt	614961
R107	4.7K ohms	±5%	½ watt	610964
R108	4.7K ohms	±5%	½ watt	610964
R109	10 Megohms	±10%	½ watt	619406
R110	56K ohms	±10%	½ watt	615161
R111	Not Used			
R112	100K ohms	±10%	½ watt	616017
R113	47K ohms	±20%	½ watt	614968
R114	1.5 Megohms	±10%	1 watt	618263
R115	270 ohms	±10%	1 watt	605645
R116	680 ohms	±10%	2 watts	607289
R201	1K ohms	±20%	½ watt	608030
R202	2.2K ohms	±5%	½ watt	609444
R203	47 ohms	±10%	½ watt	603091
R204	12K ohms	±5%	½ watt	612512
R205	470 ohms	±10%	½ watt	606588
R206	120K ohms	±10%	½ watt	616261
R207	15K ohms	±10%	½ watt	612922
R208	27 ohms	±10%	½ watt	602593
R209	150K ohms	±10%	½ watt	616426
R210	8.2K ohms	±5%	½ watt	611847
R211	Not Used			
R212	470 ohms	±10%	½ watt	606588
R213	150 ohms	±10%	½ watt	604677
R214	39K ohms	±10%	1 watt	614691
R215	3.3K ohms	±10%	1 watt	610309
R216	33K ohms	±10%	½ watt	614460
R217	3.9K ohms	±5%	½ watt	610560
R218	68 ohms	±10%	½ watt	603560
R219	22K ohms	±10%	½ watt	613653
R220	47K ohms	±10%	1 watt	614969
R221	Not Used			
R222	470 ohms	±10%	½ watt	606588
R223	5.6K ohms	±5%	7 watts W.W.	611300
R224	4.7K ohms	±10%	½ watt	610932
R225	390K ohms	±10%	½ watt	617204
R226	180K ohms	±5%	1 watt	616561
R227	150K ohms	±5%	1 watt	616434
R228	100K ohms	±5%	1 watt	616024
R229	3.3 Megohms	±10%	½ watt	618712
R230	Not Used			
R231	120K ohms	±10%	½ watt	616261
R301	470K ohms	±10%	½ watt	617356
R302	4.7 Megohms	±10%	1 watt	618941
R303	680K ohms	±10%	½ watt	617666
R304	33K ohms	±10%	½ watt	614460
R305	150K ohms	±10%	1 watt	616430
R306	Not Used			
R307	10K ohms	±10%	1 watt	612033
R308	22K ohms	±10%	2 watts	613649
R309	8.2K ohms	±10%	1 watt	611849
R310	470K ohms	±10%	1 watt	617359

Code No.	DESCRIPTION			Part No.
	RESISTORS (Continued)			
R311	Not Used			
R312	1 Megohm	±10%	½ watt	618016
R313	3.3 Megohms	±10%	½ watt	618712
R314	1.8 Megohms	±10%	½ watt	618362
R315	1 Megohm	±10%	1 watt	618021
R316	33K ohms	±10%	½ watt	614460
R317	470K ohms	±10%	½ watt	617356
R318	120K ohms	±10%	½ watt	616261
R319	270K ohms	±10%	½ watt	616054
R320	10K ohms	±10%	2 watts	612022
R321	Not Used			
R322	10K ohms	±10%	2 watts	612022
R323	27K ohms	±10%	1 watt	614142
R324	2.7K ohms	±10%	½ watt	609862
R325	680K ohms	±10%	1 watt	617669
R326	100K ohms	±10%	1 watt	616020
R327	3.3 Megohms	±20%	1 watt	618716
R328	220K ohms	±20%	½ watt	616725
R329	1 Megohm	±10%	1 watt	618021
R330	4.7K ohms	±10%	1 watt	610966
R331	Not Used			
R332	1 Megohm	±10%	½ watt	618016
R333	330K ohms	±10%	½ watt	617108
R334	47K ohms	±10%	1 watt (BTAV)	614974
R335	820K ohms	±10%	1 watt (BTAV)	617848
R336	820K ohms	±10%	1 watt (BTAV)	617848
R337	1.5 Megohms	±10%	1 watt	618263
R338	1.2 Megohms	±10%	½ watt	618141
R339	47K ohms	±10%	½ watt	614961
R340	1.2 Megohms	±10%	1 watt	618146
R341	Not Used			
R342	680 ohms	±10%	5 watt W.W.	607290
R343	10K ohms	±10%	2 watts	612022
R344	12K ohms	±10%	½ watt	612507
R345	220K ohms	±10%	1 watt	616726
R346	100K ohms	±10%	½ watt	616017
R347	1.2 Megohms	±10%	1 watt	618146
R348	1 Megohm	±10%	1 watt (BTAV)	618026
R349	100K ohms	±10%	1 watt	616020
R350	470K ohms	±20%	½ watt	617358
R401	1 Megohm	±10%	½ watt	618016
R402	33K ohms	±10%	2 watts	614465
R403	1 Megohm	±10%	½ watt	618016
R404	82K ohms	±10%	½ watt	615795
R405	68K ohms	±10%	½ watt	615494
R406	2.2K ohms	±10%	½ watt	609442
R407	180K ohms	±10%	1 watt	616569
R408	39K ohms	±10%	½ watt	614684
R409	100K ohms	±10%	1 watt	616020
R410	47 ohms	±10%	½ watt	603091
R411				
R412	680K ohms	±10%	1 watt	617669
R413	27K ohms	±10%	1 watt	614142
R414	820K ohms	±10%	1 watt (BTAV)	617848
R415	3.9K ohms	±10%	5 watts W.W.	610567
R416	1 Megohm	±10%	1 watt (BTAV)	618026
R417	22K ohms	±10%	1 watt	613658
R418	1.5 ohms	±10%	½ watt W.W.	600416

CIRCUIT CODE

Code No.	DESCRIPTION	Part No.
	RESISTORS (Continued)	
R419	470K ohms ±10% 1 watt	617359
R420	330K ohms ±10% 1 watt	617111
R421	Not Used	
R422	68K ohms ±20% ½ watt	615499
R423	1K ohms ±20% ½ watt	608030
R424	47K ohms ±10% 1 watt (BTAV)	614974
R425	150 ohms ±10% ½ watt } In yoke	
R426	150 ohms ±10% ½ watt } In yoke	
R427	150 ohms ±10% 1 watt	604681
R428	4.7K ohms ±10% 5 watts W.W.	610958
R429	3 ohms ±10% 10 watts W.W.	600474
RV101	500K ohms Curve "F" Carbon, Tone W/S	*
RV102	500K ohms Curve "C" Carbon, Volume	*
RV201	500K ohms Linear Carbon, Contrast	*
RV301	200K ohms Linear Carbon I.F.A.G.C.	620487
RV302	20K ohms Linear Carbon Min. Contrast	620262
RV303	Not Used	
RV304A	1.5 Megohms Linear Carbon Vert. Hold Set }	620774
RV304B	500K ohms Linear Carbon Vert. Hold }	620774
RV305	100K ohms Linear Carbon Vert. Linearity	620322
RV306	1 Megohm Linear Carbon Top Linearity	620769
RV307	1 Megohm Linear Carbon Height	620769
RV308	500K ohms Linear Carbon Brightness	*
RV401A	50K ohms Linear Carbon Hor. Hold }	620861
RV401B	1 Megohm Linear Carbon Width }	620861
RV402	2.5 Megohms Linear Carbon Focus	620781
	* These controls vary on different models.	
	CAPACITORS	
C101	6.8pf ±5% NPO tubular (in L101)	220378
C102	39pf ±5% N220 disc (in L101)	221292
C103	33pf ±5% NPO tubular	221161
C104	0.0033μf ±10% 600VW paper	225781
C105	100pf ±5% 600VW plastic film (in TR101)	222222
C106	470pf ±5% 600VW plastic film	224212
C107	470pf ±5% 600VW plastic film	224212
C108	0.001μf ±10% 600VW paper	225013
C109	10μf 25VW Electrolytic	228771
C110	0.0047μf ±20% 600VW paper	226005
C111	Not Used	
C112	0.039μf ±20% 200VW Hunts W48	228750
C113	0.01μf ±20% 200VW paper	226310
C114	0.047μf ±20% 600VW paper	226830
C115	40μf 16VW Electrolytic	229552
C116A	10μf 450VW } Electrolytic	229612
C116B	50μf 350VW } Electrolytic	229612
C117	0.0022μf ±20% 600VW paper	225624
C201	5.6pf ±5% NPO disc	220269
C202	12pf ±5% NPO tubular	220556
C203	0.0047μf +100% —0% K5000 disc	225980
C204	4—10pf trimmer	231123
C205	0.0047μf +100% —0% K5000 disc	225980
C206	270pf ±5% 600VW plastic film	223561
C207	0.0047μf +100% —0% K5000 disc	225980

Code No.	DESCRIPTION	Part No.
	CAPACITORS (Continued)	
C208	0.0047μf +100% —0% K5000 disc	225980
C209	470pf ±5% 600VW plastic film	224212
C210	0.0047μf +100% —0% K5000 disc	225980
C211	Not Used	
C212	0.0047μf +100% —0% K5000 disc	225980
C213	18pf ±5% NPO tubular (in TR202)	220775
C214	0.0047μf +100% —0% K5000 disc	225980
C215	0.001μf +100% —0% K5000 feed thru	225011
C216	0.0047μf +100% —0% K5000 disc	225980
C217	470pf ±5% 600VW plastic film	224212
C218	2.2pf ±.5pf NPO disc (in TR203)	221494
C219	4.7pf ±10% N750 bead (in TR203)	220215
C220	2.2pf ±.5pf NPO disc	221494
C221	Not Used	
C222	0.1μf ±10% 400VW paper	227046
C223	0.0039μf ±5% 400VW paper	225857
C224	39pf ±10% N220 disc	221292
C225	0.01μf +100% —0% K5000 disc	226307
C226	0.1μf ±20% 400VW paper	227017
C227	0.5μf ±20% 200VW Hunts W48	229116
C301	0.1μf ±20% 200VW paper	227022
C302	0.1μf ±20% 200VW paper	227022
C303	0.022μf ±20% 400VW paper	226642
C304	0.0039μf ±10% 400VW paper	225856
C305	0.1μf ±20% 600VW paper	227011
C306	24μf 80VW Electrolytic	229319
C307	330pf ±10% 600VW plastic film	223716
C308	0.033μf ±20% 400VW paper	226730
C309	0.001μf ±10% 600VW paper	225013
C310	330pf ±10% 600VW plastic film	223716
C311	Not Used	
C312	0.01μf ±20% 600VW paper	226329
C313	0.027μf ±10% 400VW paper	226685
C314	0.0068μf ±10% 500VW silvered mica	226229
C315	220pf ±10% 500VW silvered mica	226818
C316	2μf 500VW Electrolytic	227922
C317	4μf 500VW Electrolytic	228188
C318	0.012μf ±10% 600VW plastic film	226522
C319	0.1μf ±10% 600VW paper	227075
C320	0.0068μf ±10% 400VW paper	226228
C321	Not Used	
C322	0.1μf ±10% 400VW paper	227046
C323	0.1μf ±20% 200VW paper	227022
C324	0.0068μf ±10% 400VW paper	226228
C325	0.047μf ±10% 400VW paper	226800
C326A	10μf 450VW } Electrolytic	229612
C326B	50μf 350VW } Electrolytic	229612
C327	0.01μf ±10% 400VW paper	226364
C328	0.0068μf ±5% 600VW plastic film	226231
C329	0.1μf ±20% 400VW paper	227017
C330	Not Used	
C331	0.1μf ±20% 600VW paper	227011
C401	150pf ±10% 600VW plastic film	222698
C402	150pf ±10% 600VW plastic film	222698

CIRCUIT CODE

Code No.	DESCRIPTION	Part No.
	CAPACITORS (Continued)	
C403	0.0015μf ±5% 500VW silvered mica	224490
C404	390pf ±5% 600VW plastic film	223885
C405	0.047μf ±10% 200VW paper	226828
C406	470pf ±10% 600VW plastic film	224207
C407	270pf ±5% 1000VW mica	223553
C408	0.0068μf ±5% 600VW plastic film	226231
C409	0.0033μf ±10% 400VW paper	225793
C410	0.0012μf ±5% 1000VW mica	225307
R411	Not Used	
C412	2.2pf ±.5pf NPO disc	221494
C413	0.0012μf ±10% 600VW plastic film	225303
C414	0.01μf +100% —0% K5000 disc	226307
C415	2μf 300VW Electrolytic	227923
C416	0.047μf ±10% 1000VW paper	226831
C417	0.047μf ±10% 1000VW paper	226831
C418	120pf ±10% 4000VW N750 disc	222557
C419	560pf ±10% 2500VW N1500 tubular	224484
C420	270pf ±10% 2500VW N750 disc	223554
C421	0.15μf ±10% 400VW paper	227291
C422	0.5μf ±20% 200VW Hunts W48	229116
C423	0.001μf +100% —0% K5000 tubular	225010
C424	0.0047μf ±20% 600VW paper	225985
C425	270pf ±10% 2500VW N750 disc	223554
C426	200μf 200VW Electrolytic	229751
C427	200μf 200VW Electrolytic	229751
C428	150μf 400VW Electrolytic	229739
C429	0.1μf ±10% 400VW paper	227046
	INDUCTORS	
L101	Sound I.F.	43336
L201	38.375 Mc/s Trap	43580
L202	I.F. Input	
L203	Detector Filter	40323
L204	Detector Filter	49671
L205	Detector Peaking Coil (250μH)	40117
L206	5.5 Mc/s Trap	43593
L207	Video Amp. Series Peaking Coil	41423
L401	Sine Wave	40050
L402	H.F. Choke (1.5μH)	214516
L403	Horizontal Linearity	43264
L404-L407	Yoke (when chassis behind kine.)	43660
	Yoke (when chassis under kine.)	43661
L408	H.T. Filter Choke	40113F
	TRANSFORMERS	
TR101	Ratio Detector	40077
TR102	Speaker Transformer	*
TR201	1st Video I.F.	40902
TR202	2nd Video I.F.	41407
TR203	3rd Video I.F.	41933
TR301	Vertical Blocking Oscillator	43643A
TR302	Vertical Output	43340A
TR401	Horizontal Blocking Oscillator	41579
TR402	Horizontal Output	43646
TR403	Horizontal Feed Back	43344A
TR404	Power Transformer (19" TV receivers)	43261D
	(remote controlled receivers)	43504B
	(all other)	43261C
	* Varies with models.	

Code No.	DESCRIPTION	Part No.
	VALVES AND DIODES	
V101	Radiotron 6AU6	
V102	Radiotron 6AL5	
V103	Radiotron 6AV6	
V104	Radiotron 6AQ5	
V201	Radiotron 6BZ6	
V202	Radiotron 6EW6	
V203	Radiotron 6CB6	
V204	Radiotron 6EB8	
V205	Radiotron 6CG7	
V206	Radiotron 23CP4	
	23MP4	
	19AKP4	
V301	Radiotron 6HS8	
V302	Radiotron 6EM5	
V401	Radiotron 6AL5	
V402	Radiotron 6CG7	
V403	Radiotron 6CM5	
V404	Radiotron 6AU4-GTA	
V405	Radiotron IB3-GT	
MR201	GD3, OA80 or equivalent	
MR202	GD8, OA81, OA91 or equivalent	
MR401	AWV IN1763	
MR402	AWV IN1763	
	MISCELLANEOUS	
SG401	Spark Gap (BTS Blank)	600000
VDR301	Voltage Dependent Resistor Philips E298GD/A260	619514
VDR302	Voltage Dependent Resistor Philips E298GD/A260	619514
VDR401	Voltage Dependent Resistor Philips E298ZZ/01	619513
	MECHANICAL	
	Anode Cap and Lead, Hor. Output	40044
	Cap Ass'y, Yoke	41185
	Clamp Body, Power Cable	208056
	Clamp Lock, Power Cable	208057
	Clamp, Yoke Cap	41186
	E.H.T. Box Lid	41310
	E.H.T. Box Side	41309
	Fuse Holder, Pilot Lamp	43566
	Fuse Holder, H.T. and Mains	40845
	Insulator, Power Switch	38469
	Insulator, Pre-set Panel	42741
	Leads Ass'y, Mains	49793
	Leads Ass'y, Ultor	49545
	Lid, I.F. Shield	42426
	Panel Ass'y, Mains	551503
	Plug Ass'y, Mains	581235
	Screen, Valve	653013
	Shield Ass'y, Corona	41062
	Shield Ass'y, Video Det.	42378
	Shield, Power Transformer	42090
	Shield, Tunnel	42429
	Socket, Kinescope	794566
	Socket, 4 Pin	793287
	Socket, 7 Pin with Saddle	794623
	Socket, 7 Pin with Skirt	794569
	Socket, 7 Pin Moulded Push-in	794579
	Socket, 8 Pin Wafer	793033
	Socket, 8 Pin Mica Filled	794582
	Socket, 9 Pin Moulded	794599
	Socket, 9 Pin Mica Filled	794640
	Socket, 9 Pin Floating	43805
	Test Point Assembly	41085

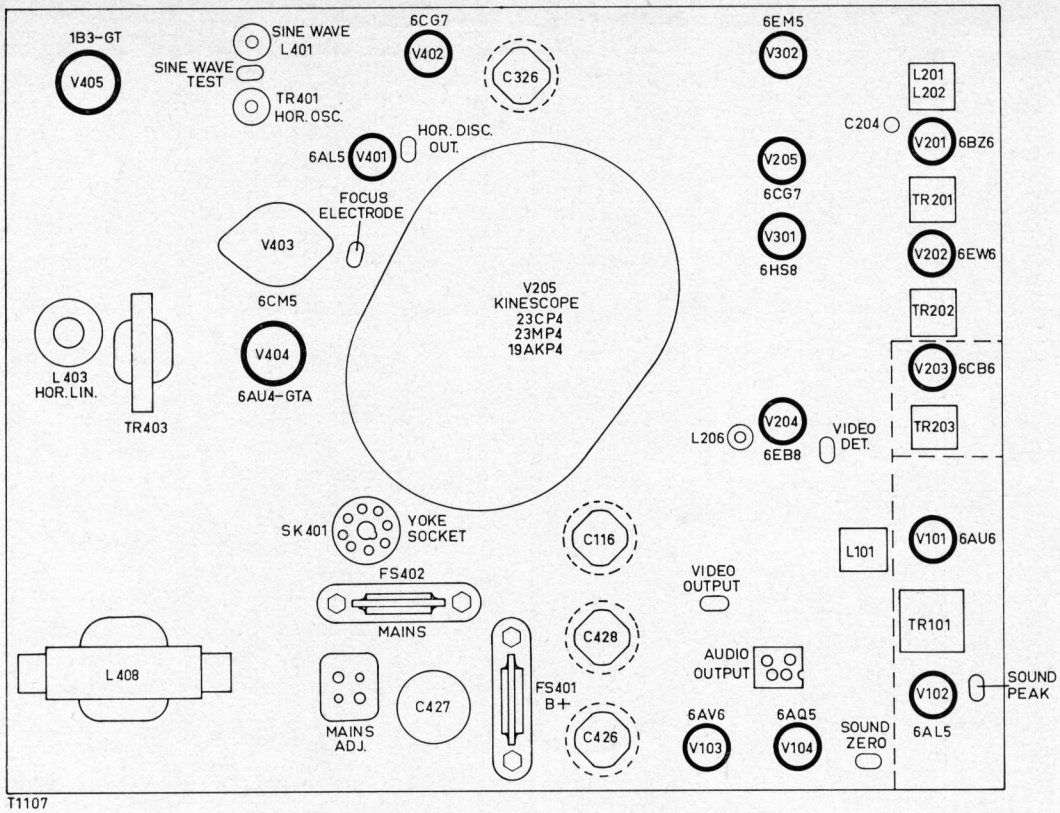
D.C. RESISTANCE OF WINDINGS

WINDING	D.C. RESISTANCE IN OHMS
Tuner Windings	*
L101 Sound I.F.	1.3
L201 38.375 Mc/s Trap	*
L202 Video I.F.	*
L203 Detector Filter Choke	4
L204 Detector Filter Choke	*
L205 Detector Peaking Coil	6
L206 5.5 Mc/s Trap	1.5
L207 Video Amp. Series Peaking	5
L401 Sine Wave Coil	55
L402 H.F. Choke	*
L403 Horizontal Linearity Coil	7
L404 Deflection Yoke	2.5
L405 Deflection Yoke	2.5
L406 Deflection Yoke	17
L407 Deflection Yoke	17
L408 H.T. Filter Choke	40
TR101 Ratio Detector	
Primary	9.5
Secondary	1
TR102 Speaker Transformer	
Primary	500
Secondary	2

WINDING	D.C. RESISTANCE IN OHMS
TR201 1st Video I.F.	
Primary 1-2	*
Secondary 3-4	*
TR202 2nd Video I.F.	
Primary 1-4	*
Secondary	*
TR203 3rd Video I.F.	
Primary	*
Secondary	*
TR301 Vertical Oscillator Transformer	
Primary Bu-Gn	525
Secondary Ye-Bk	140
TR302 Vertical Output Transformer	
Primary Bu-Rd	350
Secondary Rd-Ye	1
TR401 Horizontal Oscillator Transformer	
Primary Ye-Anode	24
Secondary Ye-C405	88
TR402 Horizontal Output Transformer	
Primary 3-5	23
Secondary 4-7	7
Tertiary 5-Top Cap	415
Tertiary 1-2	1.5
TR403 Horizontal Feedback Transformer	
Primary Ye-Rd	1.8
Secondary Wh-Bk	450
TR404 Power Transformer	
Primary Gn-Wh	10
Secondary Rd-Rd	4
Motor Winding	2

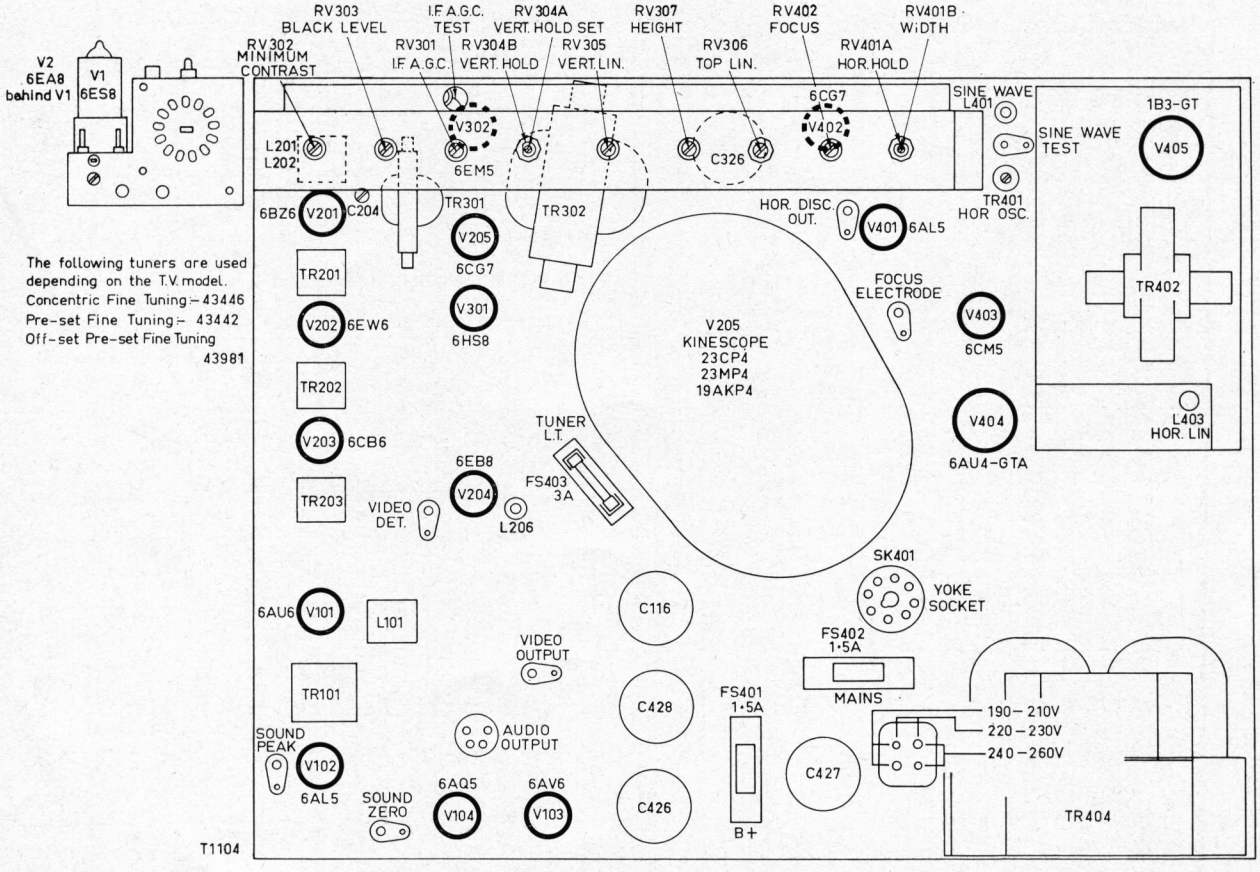
* Less than 1 ohm.

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.



T1107

UNDER CHASSIS LOCATION CHART



The following tuners are used depending on the T.V. model.
Concentric Fine Tuning :- 43446
Pre-set Fine Tuning :- 43442
Off-set Pre-set Fine Tuning
43981

T1104

TOP CHASSIS LOCATION CHART

ERRATA

R204 at junction of C207 and C208 should read R205.

R420 connected to Focus control should read R422.

CIRCUIT VARIATIONS

On some early chassis:—

C110 was 0.0068μf 600VW paper capacitor 226223.

C115 was 25μf 25VW electrolytic capacitor 222914.

C306 was 0.5μf ± 20% 200VW Hunts W48 capacitor 229116.

C330 was 0.001μf +100% —0% Ki-K tubular capacitor 225010 from wiper of brightness control to earth.

C331 was 0.047μf ±10% 1000VW paper capacitor 226831 and connected to terminal 3 of TR402.

R230 was 680K ohms ±10% 1 watt resistor 617669 from kinescope cathode to ground.

R345 was 330K ohms ±10% 1 watt resistor 617111 in which case R349 was missing.

R348 was 470K ohms ±10% ½ watt resistor 617356.

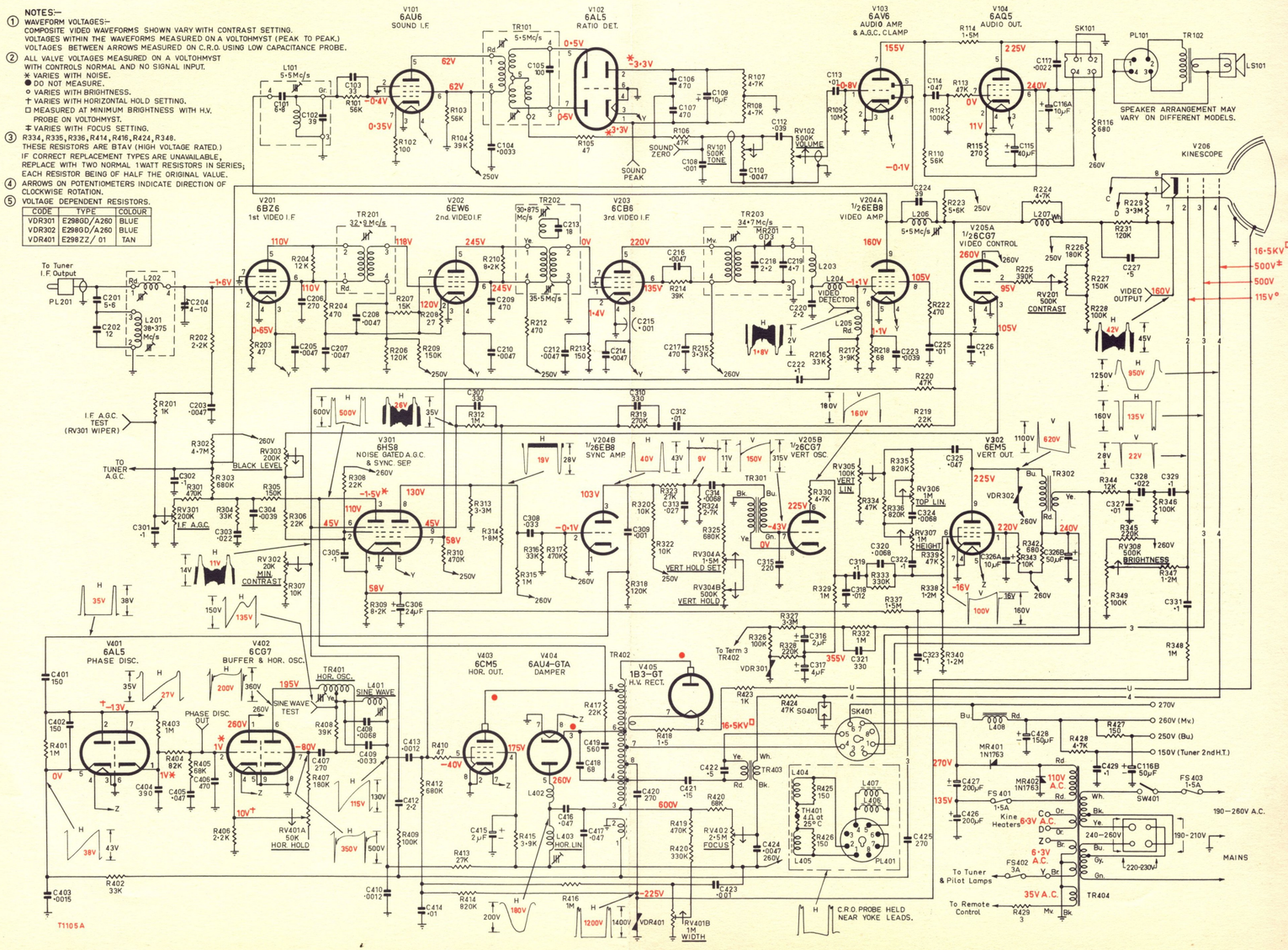
MR202 was a GD8 diode now replaced by R231.

Changes since circuit was drawn:—

R306 and RV303 have now been deleted.

R340 is now a 1 megohm ± 10% 1 watt 618146 resistor.

CIRCUIT TELEVISION RECEIVER CHASSIS — 34 SERIES



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CIRCUIT TELEVISION RECEIVER CHASSIS — 34 SERIES