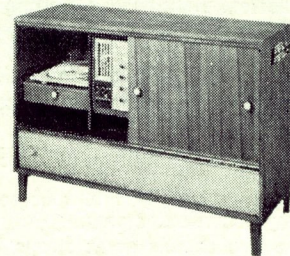




## A.W.A. THEATRE-GRAM MODELS D68 & D68Z

ISSUED BY AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



### GENERAL DESCRIPTION

A.W.A. Theatre-gram Models D68 and D68Z consist of two separate and independent electronic units housed in one cabinet.

The radiogram unit consists of an eight-valve stereophonic radio-phonograph chassis, a four-speed automatic record changer, a microphone, three-speaker stereophonic network, record storage space and controls, press buttons and jacks housed in the left-hand side of the cabinet.

The television unit in Model D68 consists of a standard 34 series TV chassis (34-26) and TA1 (44000) type Turret Tuner with Concentric Fine Tuning housed in the right-hand side of the cabinet.

In Model D68Z the television unit used is a 34-40 series TV chassis (34-43).

This manual will cover completely the radiogram chassis, all mechanical replacement parts associated with the radiogram chassis and the cabinet fittings and those items on the television that are peculiar to these models. For alignment procedure and code list for the TV chassis refer to the 34 Series TV Chassis Service Manual issued September, 1963, or to the 34-40 series TV Chassis Service Manual issued August, 1965, as the case may be, and for all information pertaining to the TV Tuner refer to Service Data for the 13 Channel TV Turret Tuner TA1 series issued in February, 1964.

### ELECTRICAL AND MECHANICAL SPECIFICATIONS

#### RADIOGRAM

Frequency Range ..... 525-1,650 Kc/s  
 Intermediate Frequency ..... 455 Kc/s  
 Power Supply Rating ... 200-260 Volts a.c. 50 c.p.s.

#### POWER CONSUMPTION

Receiver Chassis ..... 50 watts  
 Record Changer ..... 20 Watts

**UNDISTORTED POWER OUTPUT:** 2.5 Watts per channel

#### SPEAKER COMPLEMENT

9" x 6", one per channel ..... 50232  
 4" ..... 50233

**V.C. IMPEDANCE** ..... 15 Ohms at 400 c.p.s.

#### Dimensions

Height ..... 34"  
 Width ..... 49"  
 Depth ..... 17"  
 Weight ..... 180 lbs.

#### VALVE COMPLEMENT

V1 Radiotron 6BE6 ..... Converter  
 V2 Radiotron 6N8 ..... I.F. Ampl., Detector, A.G.C.  
 V3 Radiotron 6AU6 ..... Audio Amplifier  
 V4 Radiotron 6AU6 ..... Audio Amplifier  
 V5 Radiotron 6AQ5 ..... Audio Output  
 V6 Radiotron 6AQ5 ..... Audio Output  
 V7 Radiotron 6AV6 ..... Mic. Amplifier  
 V8 Radiotron 6X4 ..... Rectifier

#### TELEVISION

#### VALVE COMPLEMENT

V1 Radiotron 6ES8 ..... R.F. Amplifier  
 V2 Radiotron 6HG8 .... R.F. Oscillator and Converter  
 V101 Radiotron 6AU6 ..... Sound I.F.  
 V102 Radiotron 6AL5 ..... Ratio Detector  
 V103 Radiotron 6AV6 ... Audio Ampl. and A.G.C. Clamp  
 V104 Radiotron 6AQ5 ..... Audio Output  
 V201 Radiotron 6BZ6 ..... 1st Video I.F.  
 V202 Radiotron 6EW6 ..... 2nd Video I.F.  
 V203 Radiotron 6CB6 ..... 3rd Video I.F.  
 V204 Radiotron 6EB8 .... Video Ampl. and Sync. Ampl.  
 V205 Radiotron 6CG7 .... Video Control and Vert. Osc.  
 V206 Radiotron 23CP4 ..... Picture Tube  
 V207 Radiotron 6BQ7-A . Noise Detector and A.G.C. Compensator (34-43 chassis)  
 V301 Radiotron 6HS8 .. Noise Gated A.G.C. and Sync. Sep.  
 V302 Radiotron 6EM5 ..... Vertical Output  
 V401 Radiotron 6AL5 ..... Phase Discriminator  
 V402 Radiotron 6CG7 .. Buffer and Horizontal Oscillator  
 V403 Radiotron 6CM5 ..... Horizontal Output  
 V404 Radiotron 6AU4-GTA ..... Damper  
 V405 Radiotron 1B3-GT ..... High Voltage Rectifier  
 MR201 GD3, OA80, etc. .... Video Detector  
 MR401 1N1763 or 1N3194 ..... Rectifier  
 MR402 1N1763 or 1N3194 ..... Rectifier

## TELEVISION

### CHASSIS REMOVAL AND INSTALLATION

For convenience and speed in repair work the chassis is so arranged that it may be swung out at right angles to the cabinet, thus providing excellent accessibility.

Disconnect the aerial lead-in, carefully remove cabinet back and lower slightly to enable the aerial on the radiogram to be disconnected.

Remove the bottom right-hand mounting bolt beside the power transformer and loosen the upper right-hand mounting bolt.

Remove all leads from lead guides on the top of the chassis.

Swing the chassis out to its stop screw; complete servicing is then available for the chassis.

If the chassis has to be completely removed, proceed as follows:—

Disconnect the ultor lead, picture tube socket, yoke plug, mains power plug and speaker plug.

Disconnect the two chassis earth straps from the chassis by loosening their retaining screws.

Remove all the television control knobs on the end of the cabinet; all knobs are a push-on fit.

Remove the control escutcheon by removing the two philips head screws.

Remove the two countersunk screws that are now exposed and remove the aerial lead from the tuner.

Securely holding tuner in left hand, remove the rear mounting self-tapping screw at the earth strap point; gently remove the tuner and control bracket assembly and place it on top of the chassis.

Remove the bottom left-hand pivot bolt and the top left-hand pivot screw and bush, gently remove the tuner and chassis assembly, place it on the floor and remove the TV pilot light from the front baffle. The two "L" shaped notches on the control panel will now locate onto the screw and lug next to the second and third i.f. stages on the valve side of the chassis and, when the screw is tightened, the control bracket assembly will be secured to the chassis with the tuner facing the wiring side.

Chassis installation is the reverse of the above procedure, but make sure of the following points:—

A plain washer must be in position under the chassis for the bottom left-hand pivot bolt.

The yoke, kine and ultor leads must be properly dressed in the two insulated lead guides.

The ultor lead must be replaced in its retainer on the right-hand side of the picture tube.

Place the spacing washers (if any were included in the original assembly) in position on the control bracket assembly before re-assembly to the cabinet.

Make sure that the earthing strap is fitted under the rear tuner mounting and connect the side chassis earth strap last

### PICTURE TUBE HANDLING AND PRECAUTIONS

Do not install, remove or handle the picture tube in any manner unless shatterproof goggles are worn.

Keep the picture tube away from the body while handling.

### PICTURE TUBE REMOVAL AND INSTALLATION

Remove the chassis as described above and also remove the upper left-hand pivoting bracket.

Remove the four mounting bolts, noting that the bottom bolts have cut-down washers and the tuner earth strap is clamped underneath the top left-hand mounting point.

Gently remove and place the picture tube face down on a soft, clean surface.

Loosen the two saddle tension screws and the saddle assembly can be removed from the picture tube.

Loosen the screw securing the yoke clamping ring and remove the yoke assembly.

Installation of picture tube is the reverse of the above procedure, taking note of the following points:—

The top moulded corner spacers are located in the recesses of the cradle assembly and the packing pieces are located on the picture tube adjacent to the saddle tension screws before tensioning the cradle assembly.

Make sure that the picture tube earthing spring is secured across the lower cradle strap.

When viewed from the rear of the cabinet the high voltage contact is on the right-hand side of the picture tube.

When installing in the cabinet, start all mounting bolts in their respective holes; tighten the two lower bolts, making sure that the picture tube is centrally located and firmly pressed against the mask.

Pressing the top of the picture tube cradle assembly so that the picture tube is securely pressed against the top of the mask, tighten the top right-hand mounting bolt, place the tuner earthing strap under the top left-hand mounting and tighten the bolt.

### MASK REMOVAL

Remove the chassis and picture tube as above.

The mask is removed by swinging bottom of mask out and removing from cabinet.

Installation is the reverse of the above procedure.

## RADIOGRAM

### CHASSIS REMOVAL

Disconnect the aerial lead-in, carefully remove the cabinet back and lower slightly to enable the aerial on the radiogram to be disconnected.

Unplug the receiver from the power point, disconnect the speaker, pickup and phono motor cables from the chassis and the indicator and record compartment lamps from the cabinet.

On early models remove the speaker leads from the speakers. The black/white leads go to the speaker on the TV end of the baffle, and for both channels the black lead goes to the + speaker terminal.

On later models remove the five-pin plug carrying the speaker and pilot lamp leads from the chassis.

Remove the three mounting bolts and gently remove the radiogram chassis.

The chassis installation is the reverse of the above procedure.

### RECORD CHANGER REMOVAL

Remove the cabinet back as above.

Remove the motor power and pickup input leads from the chassis, remove the screw securing the cable clamp and pass the leads and plugs through the hole into the record changer compartment.

Slide the record changer out until it hits the rubber stops. Remove the rubber stops and then remove the record player and base board assembly.

Turn the unit upside down and two large holes will be observed; through these holes will be seen the clips which secure the record player; compress the springs by hand and swing the clips over so that they are parallel to the screws, align them with the holes in the base board and lift it free.

The record changer installation is the reverse of the above procedure.

### DIAL CORD REPLACEMENT

Fig. 1 shows the route of the cord and the method of attachment.

If the pointer has for any reason been dislodged from the guide rail, it will be necessary to remove the front escutcheon which is attached to the chassis by four screws.

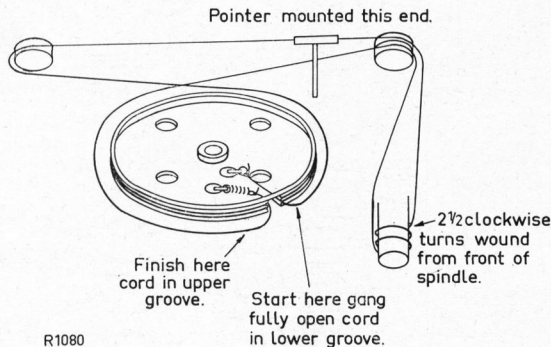


Fig. 1

### FRONT DOOR REMOVAL

The front sliding door may be readily removed from the cabinet by lifting the door up and tilting the base outward to clear the guide rail. Slight downward pressure at the middle of the guide rail may sometimes be necessary if any fouling is noticed.

### LUBRICATION OF RECORD CHANGER DRAWER

The sliding mechanism for this drawer consists of a nylon rail protruding from each side wall of the changer compartment and mating with a female strip set into each side of the drawer. Silicone grease or some similar lubricant applied to the relevant surfaces will always ensure a smooth, gliding action.

### LAMP REPLACEMENT

It should be carefully noted that both 6 and 12 volt pilot lamps are used in this combination unit. Both indicating lights on the front baffle are 12 volt, while all others are 6 volt.

All lights, except the dial scale and channel indicator lights, are readily accessible on removing the cabinet back. The latter are available on removing the radiogram chassis and TV tuner respectively.

### SPEAKER BAFFLE REMOVAL

Remove the cabinet back as before.

Remove the four screws on the upper edge of the baffle (from the rear); the baffle will now tilt forward out of the cabinet.

For all speaker interconnection refer to the speaker wiring diagram on the baffle.

The speaker baffle installation is the reverse of the above procedure.

### SPEAKER PHASING

It is essential that speakers are correctly phased. For this reason all speakers have a + mark against one of the voice coil terminals. (This indicates that when a positive voltage is applied to this terminal the cone will move away from the magnet housing.) These phasing marks are indicated on the circuit diagram and on the following speaker wiring diagram.

### SPEAKER WIRING DIAGRAM

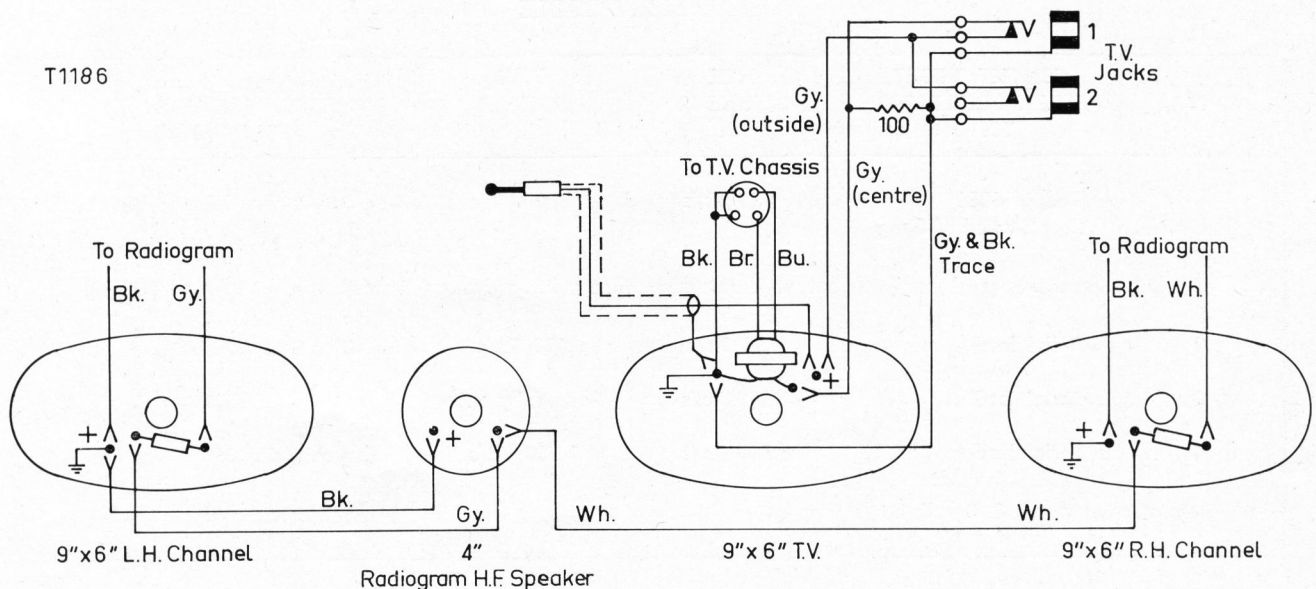


Fig. 2

## ALIGNMENT PROCEDURE

### MANUFACTURER'S SETTING OF ADJUSTMENTS

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced or when it is found that the seals over the adjusting screws have been broken. It is specially important that the adjustments should not be altered unless the correct testing instruments, listed below, are used.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and can only be re-adjusted by skilled operators using special equipment.

For all alignment operations, keep the generator output as low as possible to avoid a.g.c. action. Also keep the volume control in the maximum clockwise position.

### TESTING INSTRUMENTS

- (1) Signal Generator, modulated at 400 c.p.s., or
- (2) Modulated Oscillator. If the modulated oscillator is used, connect an 0.22 megohm non-inductive resistor across the output terminals.
- (3) Output Meter—15 ohms impedance.

In order to avoid damage to output valves and associated circuitry when the chassis is being tested, it is necessary to provide a load on both audio amplifiers. Hence a 15 ohms 3 watt resistor should be connected to the voice coil terminals of the amplifier which is not loaded with the output meter.

Set the balance control to the position which gives maximum audio output on the output meter.

Set the volume and treble controls to the maximum clockwise position.

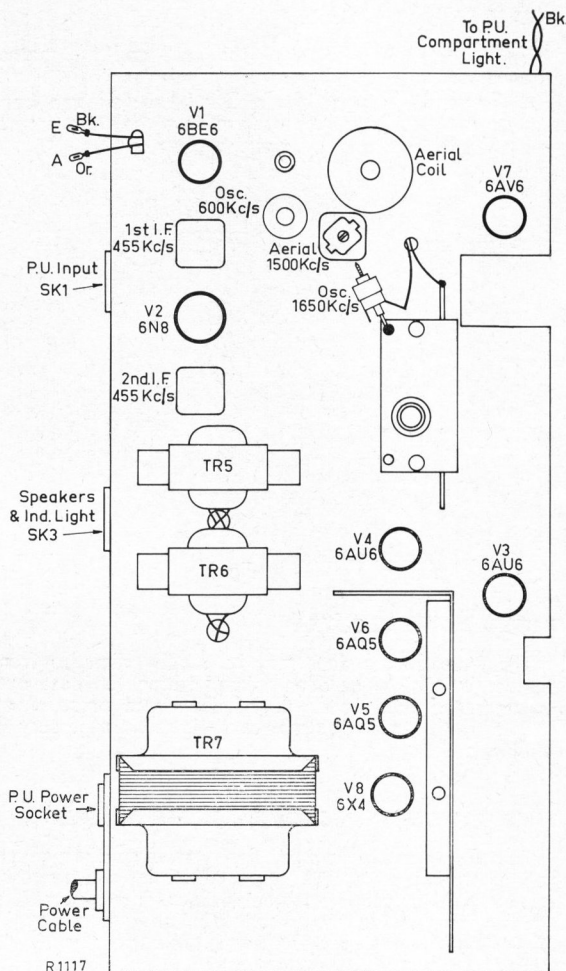


Fig. 3

### ALIGNMENT TABLE

ORDER	CONNECT "HIGH" SIDE OF GENERATOR TO:	TUNE GENERATOR TO:	TUNE RECEIVER TO:	ADJUST FOR MAXIMUM PEAK OUTPUT:
1	Grid of 6BE6 Rear Section of Gang	455 Kc/s	Gang fully closed	Top and Bottom Cores in TR4 and TR3
Repeat adjustments until maximum output is obtained. Then using a dummy aerial:				
2	Aerial lead	600 Kc/s	600 Kc/s	L.F. Osc. Core Adj. (TR2)*
3	Aerial lead	1,650 Kc/s	Gang fully open	H.F. Osc. Adj. (C8)
4	Aerial lead	1,500 Kc/s	1,500 Kc/s	H.F. Aer. (Adj. (C6)
Repeat adjustments 2, 3 and 4.				

\* Rock the tuning control back and forth through the signal.

## SOCKET VOLTAGES

VALVES	CATHODE TO CHASSIS VOLTS	SCREEN GRID TO CHASSIS VOLTS	ANODE TO CHASSIS VOLTS	ANODE CURRENT mA	HEATER VOLTS
6BE6 Converter	0	80	160	2.5	6.3
6N8 I.F. Amp., Det., AGC	0	80	200	6.0	6.3
6AU6 Audio Amp.	0	45	60	0.5	6.3
6AU6 Audio Amp.	0	45	60	0.5	6.3
6AQ5 Audio Output	0	200	245	24	6.3
6AQ5 Audio Output	0	200	245	24	6.3
6AV6 Mic. Amp.	0	—	65	0.5	6.3
6 x 4 Rectifier	270	—	255RMS	—	6.3

Back bias across R33 = — 12V

Back bias across R33 + R32 = — 1V

Total H.T. Current = 70mA

Measured with 240 volts A.C. supply (with selector switch in Radio position). No signal input. Volume Control maximum clockwise. Voltmeter 20,000 ohms per volt. Measurements taken on highest scale giving accurate readable deflection.

## D.C. RESISTANCE OF WINDINGS

WINDING	RESISTANCE IN OHMS	WINDING	RESISTANCE IN OHMS
I.F. Filter L1	23	Output Transformers TR5 and TR6	
Aerial Transformer TR1		Primary	400
Primary	13.5	Secondary	2
Secondary	1.9	Power Transformer TR7	
Oscillator Transformer TR2	3.7	Primary	40
I.F. Transformer Windings TR3 and TR4	18	H.T. Secondary	250
		L.T. Secondary	*

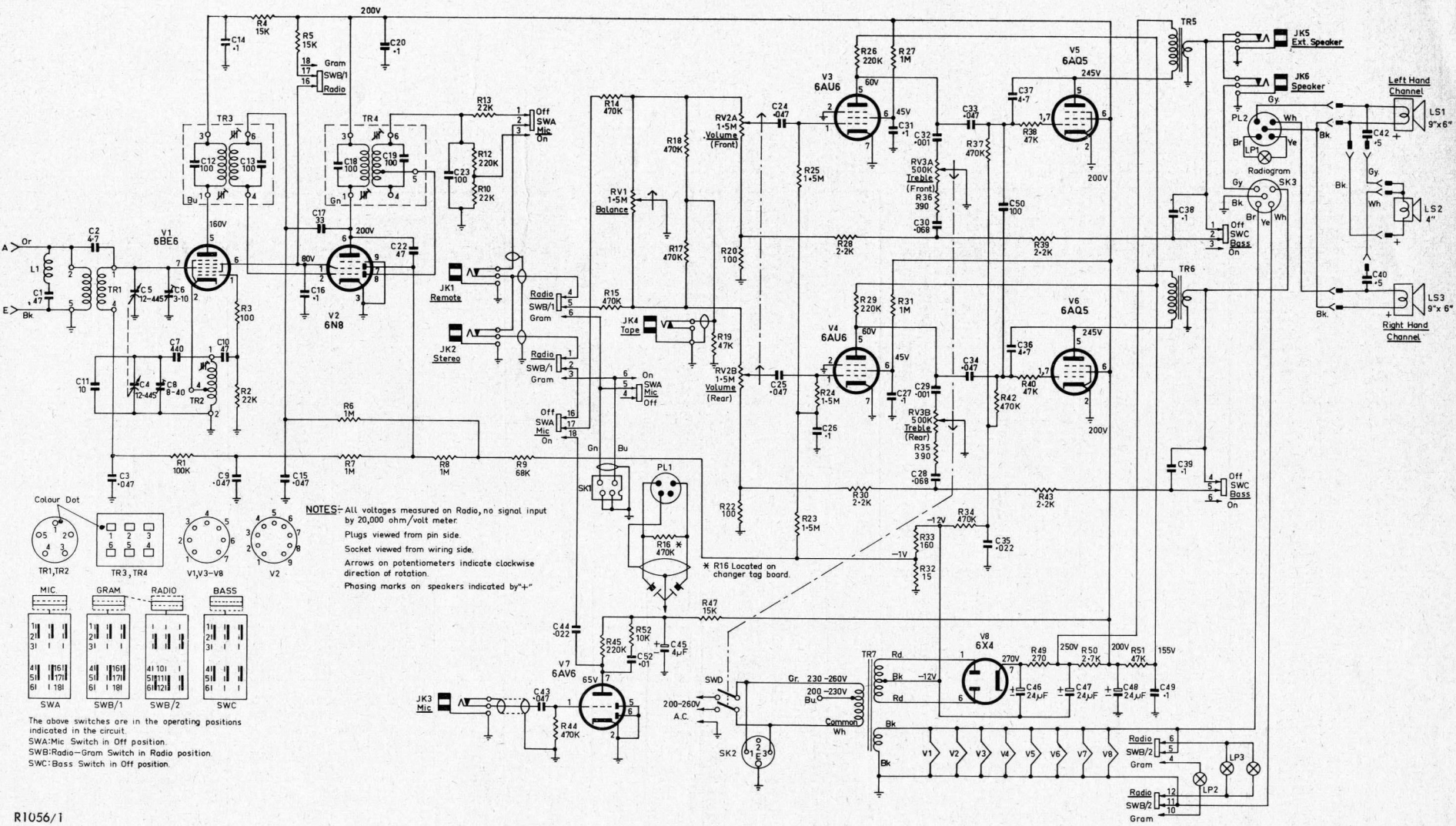
\* Less than 1 ohm.

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.

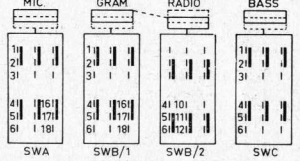
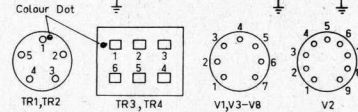
Functions	Power Switch	Speakers			Controls Used		
		TV	Radiogram		TV	Radiogram	
			L.H. Channel	R.H. Channel		Rotary	Push Button
Watch TV	TV on	TV speaker	—	—	All	—	—
Watch TV, sound from TV and extension speaker	TV on	TV speaker Ext. speaker	—	—	All	—	—
Watch TV, sound from extension speaker only	TV on	Ext. speaker	—	—	All	—	—
Listen to radio	Radiogram on	—	On	On	—	All	Radio Bass*
Listen to stereo radio broadcast†	Radiogram on	—	Ext. radio in L.H. channel	Radiogram in R.H. channel	—	All‡	Radio Bass*
Use a portable as a remote radio†	Radiogram on	—	On	On	—	All‡	Radio Bass*
Use a microphone with radio	Radiogram on	—	Microphone in L.H. channel	Radio in R.H. channel	—	All‡	Radio, Mic, Bass*
Play records, mono or stereo	Radiogram on	—	On	On	—	Balance‡ Treble Volume	Gram Bass if req'd
Use a microphone with gram	Radiogram on	—	Microphone in L.H. channel	Gram in R.H. channel	—	Balance‡ Treble Volume	Gram, Mic Bass
Listen to radio or gram with an extension speaker	Radiogram on	—	Radio or gram into Ext. speaker	Radio or gram in R.H. channel	—	All‡	Radio or Gram Bass if req'd
Use radiogram L.H. speakers as extension speaker	Radiogram off	—	On	—	—	—	—
Use TV speaker as extension speaker	TV off	TV speaker	—	—	—	—	—
Tape record TV sound‡	TV on	TV speaker	—	—	All	—	—
Tape record from radio or gram‡	Radiogram on	—	**	**	—	**	Radio or Gram
Tape record from gram with microphone‡	Radiogram on	—	** Microphone in L.H. channel	** Radio or gram in R.H. channel	—	** Balance‡	Radio or Gram Mic
Tape record play back‡	Radiogram on	—	On	On	—	Volume Treble Balance	Radio Bass if req'd
Tape record play back with microphone‡	Radiogram on	—	Microphone in L.H. channel	Recorder in R.H.	—	All‡	Radio, Mic Bass if req'd
Watch TV, sound through all speakers	Radiogram on	On	On	On	All	Volume Treble Balance‡	Radio Bass if req'd

# SUMMARY CHART

Jacks Used		Bezel Lights		Dial Lights			Remarks
TV	Radiogram	Left	Right	TV	Radio	Gram	
—	—		On	On	—	—	
Ext. speaker into Jack 2	—	—	On	On	—	—	Plugs supplied for terminating cable from extension.
Ext. speaker into Jack 1	—	—	On	On	—	—	
—	—	On	—	—	On	—	* Bass button normally never used on radio.
—	Ext. radio into "Stereo"	On	—	—	On	—	† Use 16 feet interconnecting screen cable supplied (this has a built-in 33 ohms resistor in parallel with plug. ‡ Balance control used to adjust channel levels.
—	Ext. radio into "Remote"	On	—	—	On	—	
—	Microphone into "Mic"	On	—	—	On	—	Sound level from radio is reduced 20db when Mic button is depressed to facilitate "balancing."
—	—	On	—	—	—	On	
—	Microphone into "Mic"	On	—	—	—	On	
—	Extension speaker into "Ext. Spkr."	On	—	—	On for Radio	On for Gram	
—	External source into "Speaker"	—	—	—	—	—	
External source into Jack 2	—	—	—	—	—	—	
Gram or radio connection on Recorder into Jack 2	—	—	On	On	—	—	¶ 4 feet cable supplied with connector for Robuk Tape Recorders.
—	Mic connection on Recorder into "Tape"	On	—	—	On for Radio	On for Gram	**Controls and speakers may be used for monitoring, but have no effect on recording.
—	Mic connection on Recorder into "Tape" Microphone into "Mic"	On	—	—	On for Radio	On for Gram	
—	Ext. Ampl. connection on Recorder into "Remote"	On	—	—	On	—	¶ If tape recorder has no ext. ampl. outlet an extension speaker outlet may be used (high level).
—	Recorder as above Microphone into "Mic"	On	—	—	—	—	
—	Retractable cable into "Remote"	On	On	—	—	—	Before connecting cable set TV volume less than required, insert cable and adjust radiogram controls as desired. Slide door over radiogram and use TV controls only.



**NOTES**— All voltages measured on Radio, no signal input by 20,000 ohm/volt meter.  
 Plugs viewed from pin side.  
 Socket viewed from wiring side.  
 Arrows on potentiometers indicate clockwise direction of rotation.  
 Phasing marks on speakers indicated by "+"



The above switches are in the operating positions indicated in the circuit.  
 SWA: Mic Switch in Off position.  
 SWB: Radio—Gram Switch in Radio position.  
 SWC: Bass Switch in Off position.



## CIRCUIT CODE.

Code No.	DESCRIPTION	Part No.	Code No.	DESCRIPTION	Part No.	
<b>RESISTORS</b>			<b>CAPACITORS (Cont.)</b>			
All Resistors composition type unless otherwise stated.						
R1	100K ohms ±10%	1/2 watt	616017	C16	0.1µf ±20% 400VW paper	227017
R2	22K ohms ±10%	1/2 watt	613653	C17	33pf ±5% N750 tubular	221532
R3	100 ohms ±10%	1/2 watt W.W.	602061	C18	100pf ±5% 600VW polystyrene (in TR4)	222222
R4	15K ohms ±10%	1 watt	612928	C19	100pf ±5% 600VW polystyrene (in TR4)	222222
R5	15K ohms ±10%	1 watt	612928	C20	0.1µf ±20% 400VW paper	227017
R6	1 Megohm ±10%	1/2 watt	618016	C21	Not used	
R7	1 Megohm ±10%	1/2 watt	618016	C22	47pf ±5% N750 tubular	220554
R8	1 Megohm ±10%	1/2 watt	618016	C23	100pf ±10% N750 tubular	222224
R9	68K ohms ±10%	1/2 watt	615494	C24	0.047µf ±10% 125VW polyester	226804
R10	22K ohms ±10%	1/2 watt	613653	C25	0.047µf ±10% 125VW polyester	226804
R11	Not Used			C26	0.1µf ±10% 125VW polyester	227086
R12	220K ohms ±10%	1/2 watt	616721	C27	0.1µf ±10% 400VW polyester	227085
R13	22K ohms ±10%	1/2 watt	613653	C28	0.068µf ±10% 125VW polyester	226963
R14	470K ohms ±10%	1/2 watt	617356	C29	0.001µf ±10% 600VW paper	225013
R15	470K ohms ±10%	1/2 watt	617356	C30	0.068µf ±10% 125VW polyester	226963
R16	470K ohms ±10%	1/2 watt	617356	C31	0.1µf ±10% 400VW polyester	227085
R17	470K ohms ±10%	1/2 watt	617356	C32	0.001µf ±10% 600VW paper	225013
R18	470K ohms ±10%	1/2 watt	617356	C33	0.047µf ±10% 400VW polyester	226802
R19	47K ohms ±10%	1/2 watt	614961	C34	0.047µf ±10% 400VW polyester	226802
R20	100 ohms ±10%	1/2 watt W.W.	602061	C35	0.022µf ±10% 125VW polyester	226634
R21	Not Used			C36	4.7pf ±5% NPO tubular	220219
R22	100 ohms ±10%	1/2 watt W.W.	602061	C37	4.7pf ±5% NPO tubular	220219
R23	1.5 Megohms ±10%	1/2 watt	618260	C38	0.1µf ±20% 200VW paper	227022
R24	1.5 Megohms ±10%	1/2 watt	618260	C39	0.1µf ±20% 200VW paper	227022
R25	1.5 Megohms ±10%	1/2 watt	618260	C40	0.5µf ±20% 200VW AEE W48	229116
R26	220K ohms ±10%	1 watt	616726	C41	Not used	
R27	1 Megohm ±10%	1 watt	618021	C42	0.5µf ±20% 200VW AEE W48	229116
R28	2.2K ohms ±10%	1 watt	609442	C43	0.047µf ±10% 125VW polyester	226804
R29	220K ohms ±10%	1 watt	616726	C44	0.022µf ±10% 400VW polyester	226636
R30	2.2K ohms ±10%	1/2 watt	609442	C45	24µf 300VW Electrolytic	222812
R31	1 Megohm ±10%	1 watt	618021	C46	24µf 300VW Electrolytic	222812
R32	15 ohms ±10%	1/2 watt W.W.	602008	C47	24µf 300VW Electrolytic	222812
R33	160 ohms ±5%	2 watts	604762	C48	24µf 300VW Electrolytic	222812
R34	470K ohms ±10%	1/2 watt	617356	C49	0.1µf ±20% 400VW paper	227017
R35	390 ohms ±10%	1/2 watt	606254	C50	100pf ±10% N750 tubular	222224
R36	390 ohms ±10%	1/2 watt	606254	C51	Not Used	
R37	470K ohms ±10%	1/2 watt	617356	C52	0.01µf ±10% 400VW polyester	226365
R38	47K ohms ±10%	1/2 watt	614961	<b>TRANSFORMERS</b>		
R39	2.2K ohms ±10%	1/2 watt	609442	TR1	Aerial Transformer	52754
R40	47K ohms ±10%	1/2 watt	614961	TR2	Oscillator Transformer	64327
R41	Not Used			TR3	1st I.F. Transformer	51052
R42	470K ohms ±10%	1/2 watt	617356	TR4	2nd I.F. Transformer	51054
R43	2.2K ohms ±10%	1/2 watt	609442	TR5	Audio Output Transformer	50545H
R44	470K ohms ±10%	1/2 watt	617356	TR6	Audio Output Transformer	50545H
R45	220K ohms ±10%	1 watt	616726	TR7	Power Transformer	52442A
R46	Not Used			L1	I.F. Filter (incl. C1)	50604
R47	15K ohms ±10%	1 watt	612928	<b>VALVES</b>		
R48	Not Used			V1	Radiotron 6BE6	
R49	270 ohms ±10%	5 watts W.W.	605650	V2	Radiotron 6N8	
R50	2.7K ohms ±10%	2 watts	609871	V3	Radiotron 6AU6	
R51	47K ohms ±10%	1 watt	614969	V4	Radiotron 6AU6	
R52	10K ohms ±10%	1/2 watt	612025	V5	Radiotron 6AQ5	
RV1	1.5 Megohms Curve A Carbon, Balance		620796	V6	Radiotron 6AQ5	
RV2A	1.5 Megohms Curve C Carbon } Volume		620963	V7	Radiotron 6AV6	
RV2B	1.5 Megohms Curve C Carbon }			V8	Radiotron 6X4	
RV3A	500K ohms Curve F Carbon } Treble W/S		620908	<b>MISCELLANEOUS</b>		
RV3B	500K ohms Curve F Carbon }			SWA	Microphone On-Off Switch	} Assy. 64813
C1	47pf ±5% N750 tubular (in I.F. Filter)	220554	SWB	Radiogram Switch		
C2	4.7pf ±10% N100 disc	220220	SWC	Bass On-Off Switch		
C3	0.047µf ±10% 125VW polyester	226804	SWD	Power On-Off (on RV3)		
C4	12—445pf tuning Oscillator	18674	SK1	Pu Input Socket	40180	
C5	12—445pf tuning Aerial	18674	SK2	Phono Motor Power Socket	28313	
C6	3—10pf trimmer Aerial	33155	PL1	Pu Input Plug	49739	
C7	440pf ±2 1/2% padder	224486	JK1-JK6	Jack	417405	
C8	8—40pf trimmer Oscillator	231136	LP1	Radiogram Bezel Light 12V	428147	
C9	0.047µf ±10% 125VW polyester	226804	LP2	Record Compartment Light 6.3V	428105	
C10	47pf ±10% 500VW silver mica	226809	LP3	Dial Scale Light 6.3V	428105	
C11	10pf ±5% N3300 disc	220466	LP4	Dial Scale Light 6.3V	428105	
C12	100pf ±5% 600VW polystyrene (in TR3)	222222	LS1	9" x 6" Speaker	50232	
C13	100pf ±5% 600VW polystyrene (in TR3)	222222	LS2	4" Speaker	50233	
C14	0.1µf ±20% 400VW paper	227017	LS3	9" x 6" Speaker	50232	
C15	0.047µf ±10% 125VW polyester	226804				

## MECHANICAL REPLACEMENT PARTS

### RADIOGRAM

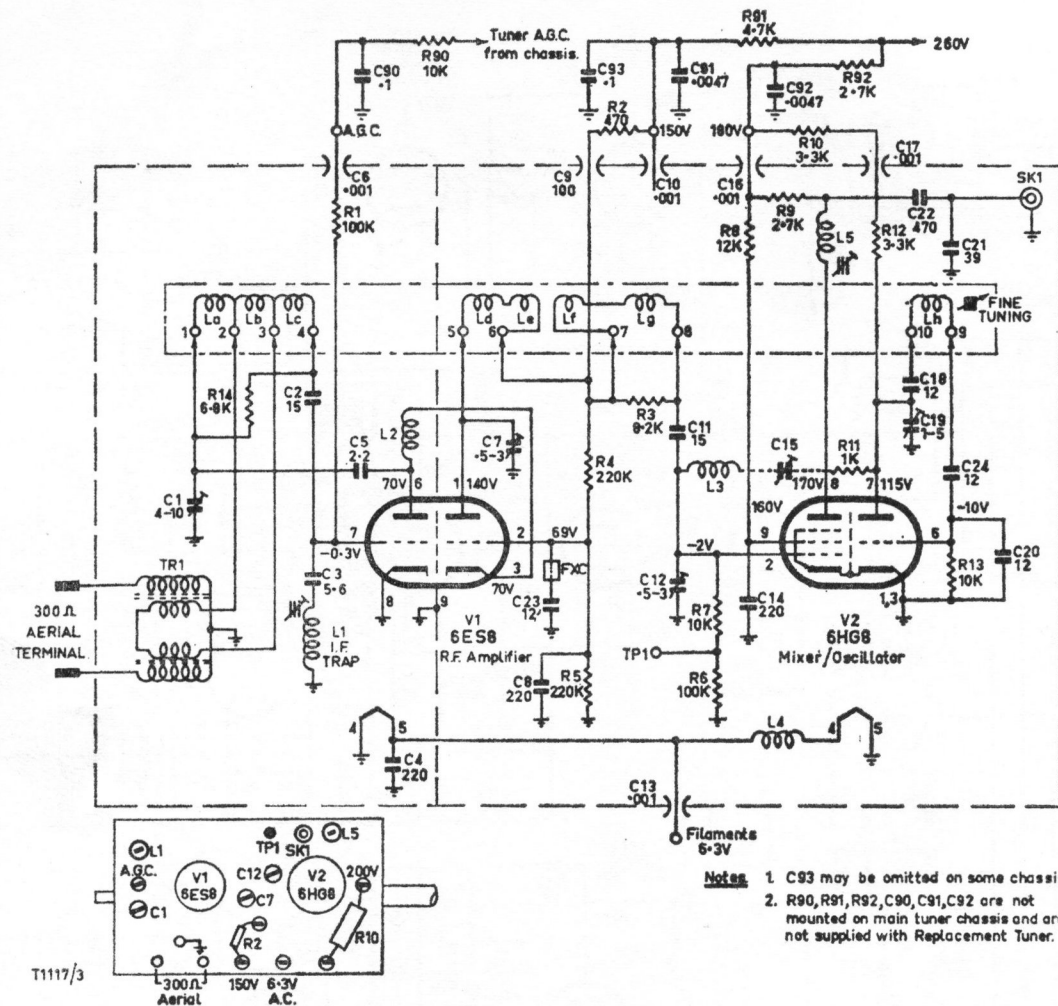
Item	Part No.	Item	Part No.
Clamp Body, Moulded (power cable)	208056	Screw, 4BA x $\frac{3}{8}$ " Ch./Hd. (3 off)	714012
Clamp Cable, Tapped	33353	Spacer (3 off)	60677
Clamp Lock, Moulded (power cable)	208057	Washer, Plain (3 off)	13156
"C" Clip, Large	2537	Washer, 4BA I.T.L. (3 off)	921204
"C" Clip, Small (2 off)	4885	Lampholder Assembly (3 off)	4195
Cover, Insulator, Power Switch	38469	Lampholder Assembly, Record Changer	32805
Dial Backing	64815	Pointer Assembly	64837
Drive Cord	9576/20	Pulley (3 off)	17716
Drive Drum Assembly	62221	Screw, Coil Mounting (2 off)	34147
Drive Spindle Assembly	64836	Socket, 7-pin Valve (7 off)	794579
Gang Mounting		Socket, 9-pin Valve	794640
Grommet (3 off)	389262	Spring Tension, Drive Cord	1741

## MECHANICAL REPLACEMENT PARTS

### CABINET

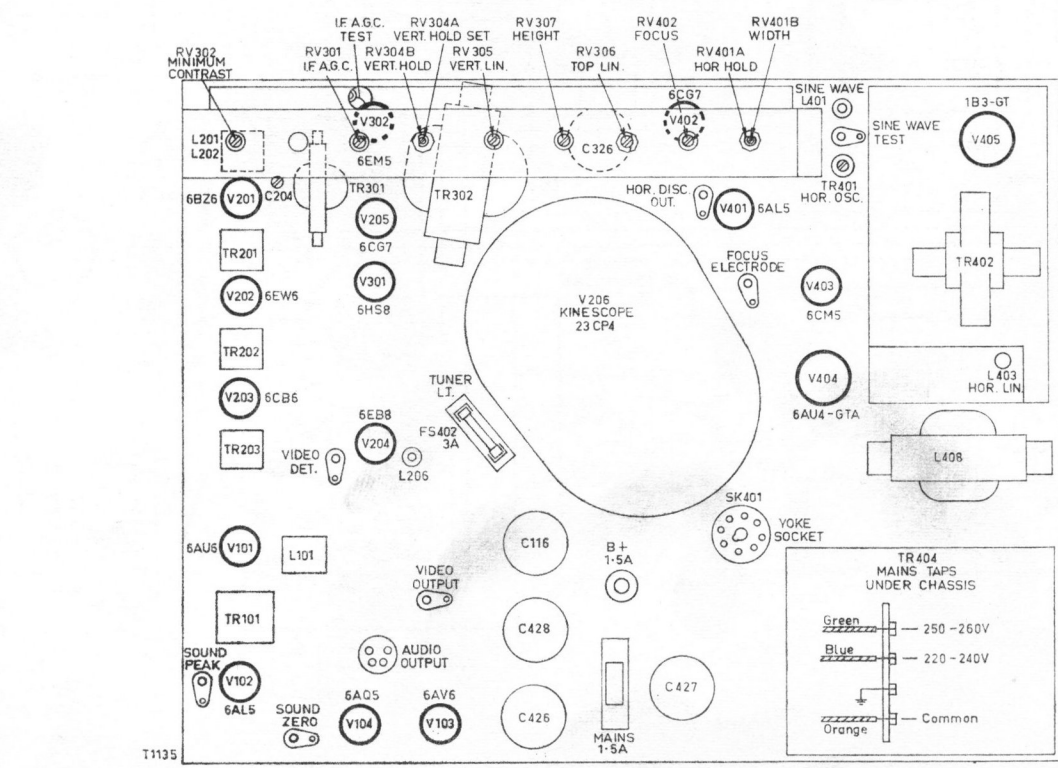
Item	Part No.	Item	Part No.
Badge Assembly	42667/4	Kine Mounting Assembly	43700
Bezel, Light, Clear	64996	Earthing Spring Assembly	44226
Bezel, Light, Red	41530	Kine Mount, R.H. (Bottom)	43708
Bracket, Chassis Support	44546	Kine Mount, L.H. (Bottom)	43709
Bracket, Chassis Swivel	44545	Kine Mount, Top (2 off)	43710
Bracket Lamp (2 off)	4640	Kine Strap Assembly (Bottom)	43701
Bracket Lamp, Record Changer	44766	Kine Strap Assembly (Top)	43704
Bracket, Tuner, Rear Mounting	44577	Knob Assembly, Channel Selector	44542
Bush, Pivot	42626	Knob Assembly, Control, Radiogram (4 off)	64991
Cabinet	60259	Knob Assembly, Control, TV (4 off)	44538
Cabinet Back Assembly	44540	Knob Assembly, Fine Tuning	44543
Ceramic Cartridge, Stereo, Sonotone	8TA	Mask Assembly, Kinescope	44677
Changer, Record, Garrard Autoslim	64580	Pouch, Microphone	64993
Clip, Connecting, Speaker	439091	Replacement Styli Assembly	
Control Panel Assembly (Radiogram)	64820	Long Play Stereo, Diamond } 78 R.P.M., Sapphire }	N8TA D/S
Name Plate, Controls	44548		
Escutcheon Assembly (TV)	44547	Shield, Light (2 off)	42924
Escutcheon, Painted	44549	Spring, Earthing	40527
Escutcheon, Jack Mounting (TV)	44759	Strap, Earthing, Short	40710
Handle, Knob (3 off)	44771	Strap, Earthing, Long (2 off)	43729
Control Panel, Painted	64817	Trim, Assembly, Horizontal	44762
Dial Scale, Printed	37993	Trim, Door Handle, Insert	44773

TAI (44000) TURRET TUNER



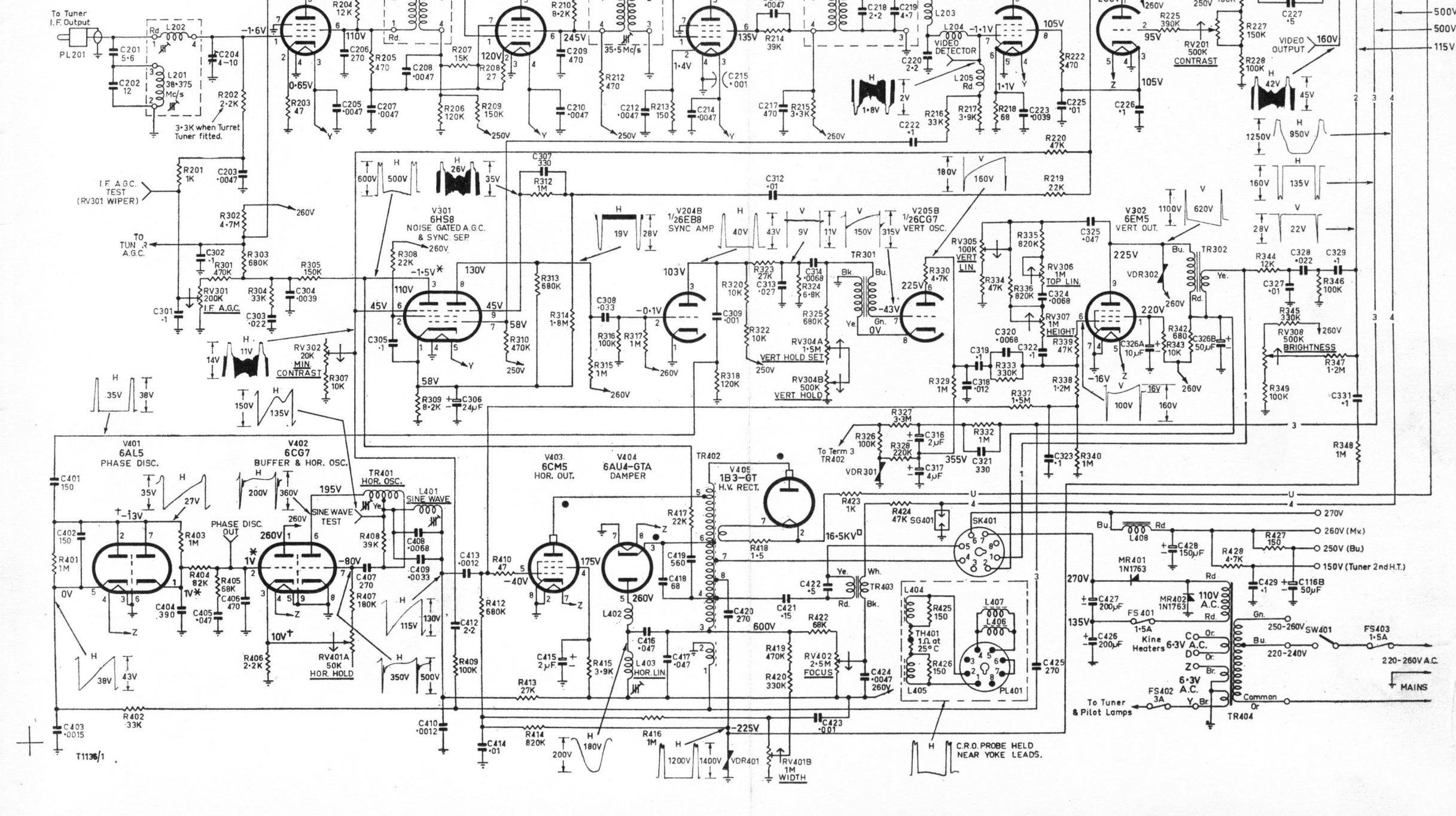
Notes:  
 1. C93 may be omitted on some chassis  
 2. R90, R91, R92, C90, C91, C92 are not mounted on main tuner chassis and are not supplied with Replacement Tuner.

CHASSIS LAYOUT



34 SERIES TV RECEIVER CHASSIS

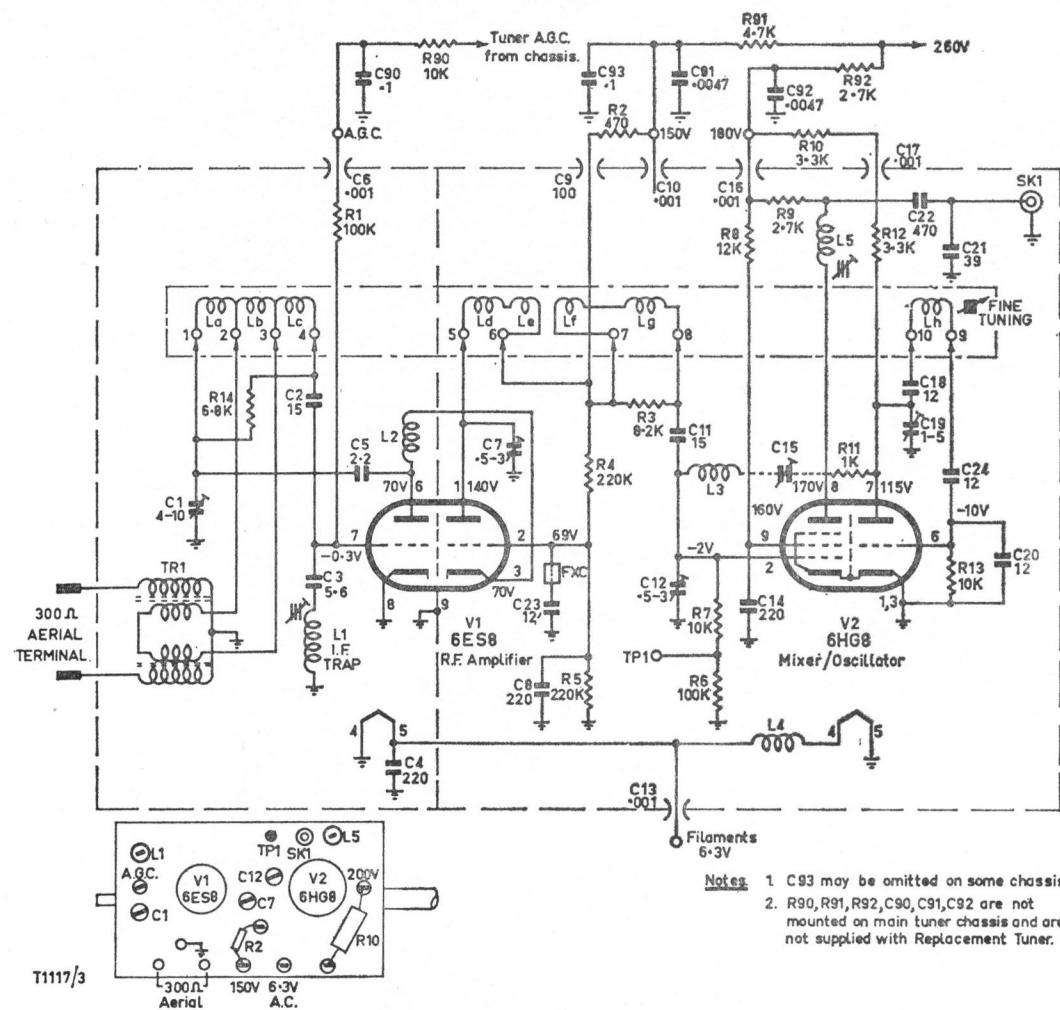
- NOTES:-  
 ① WAVEFORM VOLTAGES:- COMPOSITE VIDEO WAVEFORMS SHOWN VARY WITH CONTRAST SETTING. VOLTAGES WITHIN THE WAVEFORMS MEASURED ON A VOLTOHMYST (PEAK TO PEAK.) VOLTAGES BETWEEN ARROWS MEASURED ON C.R.O. USING LOW CAPACITANCE PROBE.  
 ② ALL VALVE VOLTAGES MEASURED ON A VOLTOHMYST WITH CONTROLS NORMAL AND NO SIGNAL INPUT.  
 \* VARIES WITH NOISE.  
 ● DO NOT MEASURE.  
 ○ VARIES WITH BRIGHTNESS.  
 † VARIES WITH HORIZONTAL HOLD SETTING.  
 ‡ MEASURED AT MINIMUM BRIGHTNESS WITH H.V. PROBE ON VOLTOHMYST.  
 ‡ VARIES WITH FOCUS SETTING.  
 ③ R334, R335, R336, R414, R416, R424, R349. THESE RESISTORS ARE BTAV (HIGH VOLTAGE RATED.) IF CORRECT REPLACEMENT TYPES ARE UNAVAILABLE, REPLACE WITH TWO NORMAL 1WATT RESISTORS IN SERIES; EACH RESISTOR BEING OF HALF THE ORIGINAL VALUE.  
 ④ ARROWS ON POTENTIOMETERS INDICATE DIRECTION OF CLOCKWISE ROTATION.  
 ⑤ VOLTAGE DEPENDENT RESISTORS.
- | CODE   | TYPE       | COLOUR       |
|--------|------------|--------------|
| VDR301 | E298C/A260 | BLUE         |
| VDR302 | E298E/A260 | BLUE         |
| VDR401 | E298Z/06   | BLUE & BLACK |



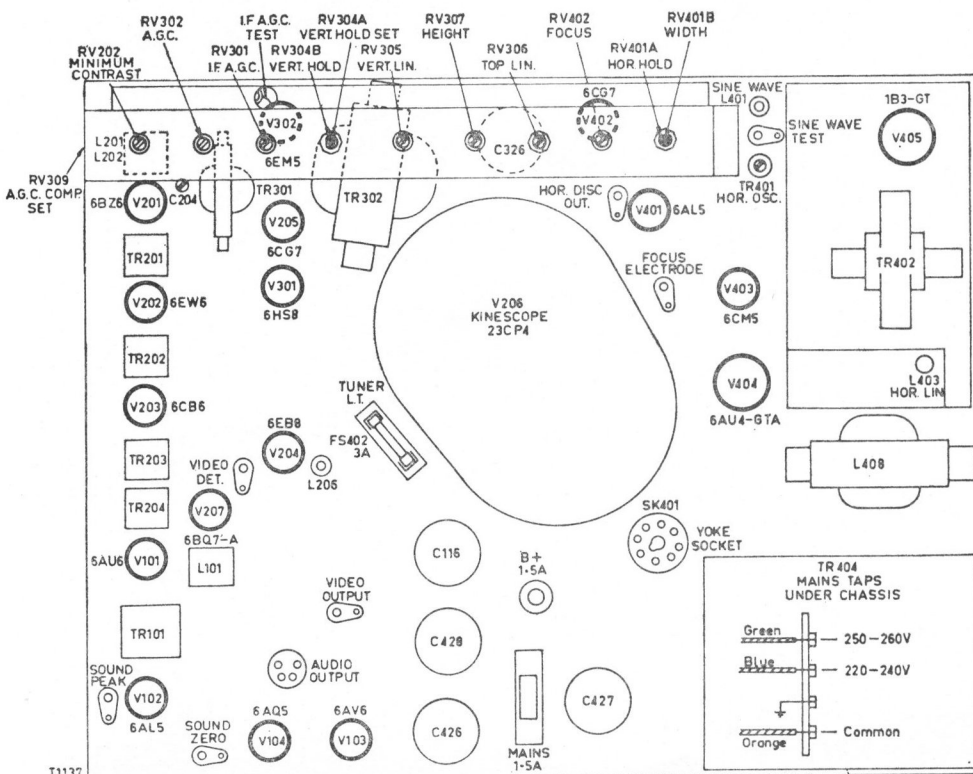
T1136/1

C.R.O. PROBE HELD NEAR YOKE LEADS.

TAI (44000) TURRET TUNER



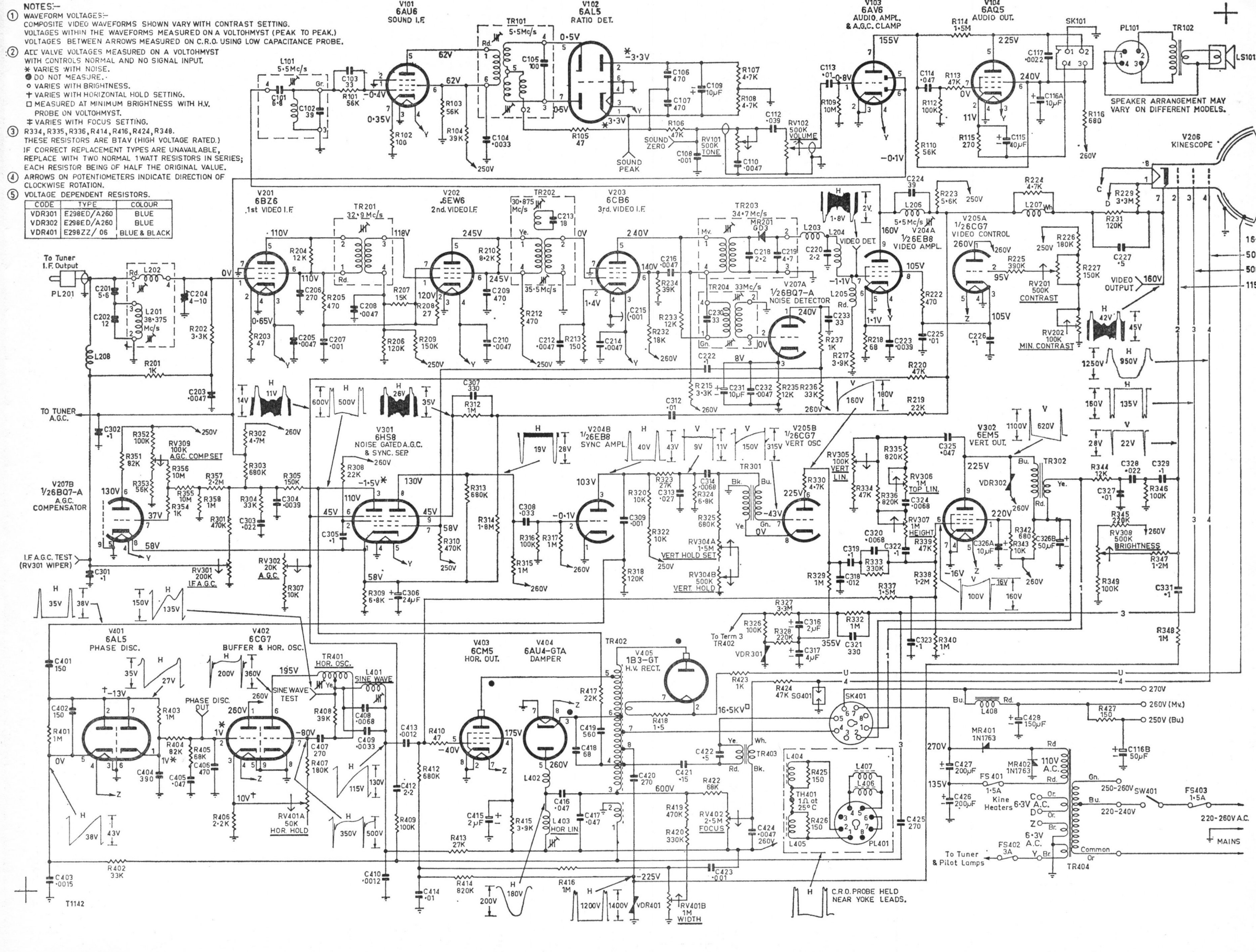
TOP CHASSIS LOCATION CHART



34-40 SERIES TV RECEIVER CHASSIS

- NOTES:-**  
 ① WAVEFORM VOLTAGES:- COMPOSITE VIDEO WAVEFORMS SHOWN VARY WITH CONTRAST SETTING. VOLTAGES WITHIN THE WAVEFORMS MEASURED ON A VOLTOHMIST (PEAK TO PEAK.) VOLTAGES BETWEEN ARROWS MEASURED ON C.R.O. USING LOW CAPACITANCE PROBE.  
 ② AC VALVE VOLTAGES MEASURED ON A VOLTOHMIST WITH CONTROLS NORMAL AND NO SIGNAL INPUT.  
 \* VARIES WITH NOISE.  
 † VARIES WITH BRIGHTNESS.  
 ‡ VARIES WITH HORIZONTAL HOLD SETTING.  
 § MEASURED AT MINIMUM BRIGHTNESS WITH H.V. PROBE ON VOLTOHMIST.  
 † VARIES WITH FOCUS SETTING.  
 ‡ VARIES WITH FOCUS SETTING.  
 ③ R334, R335, R336, R414, R416, R424, R348. THESE RESISTORS ARE BTAV (HIGH VOLTAGE RATED.) IF CORRECT REPLACEMENT TYPES ARE UNAVAILABLE, REPLACE WITH TWO NORMAL 1WATT RESISTORS IN SERIES; EACH RESISTOR BEING OF HALF THE ORIGINAL VALUE.  
 ④ ARROWS ON POTENTIOMETERS INDICATE DIRECTION OF CLOCKWISE ROTATION.  
 ⑤ VOLTAGE DEPENDENT RESISTORS.

CODE	TYPE	COLOR
VDR301	E298D/A260	BLUE
VDR302	E298E/A260	BLUE
VDR401	E298Z/06	BLUE & BLACK



T1117/3

T1137

T1142

