

E·M·I SERVICE LTD.

“HIS MASTER’S VOICE” 907

MARCONIPHONE 709

SERVICE MANUAL

TELEVISION

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SPECIFICATION

PHYSICAL.

	Model 907	Model 709
Height... ..	39½ inches	39 inches
Width	17¾ inches	18 inches
Depth	22¾ inches	23 inches

Net weight—both models—136 lb.
Gross weight—both models—145 lb.

VOLTAGE RANGE.

200 to 250 volts, 50 cycles.

At 224 volts—	98 volt amps	} Radio.
	85 watts	
	248 volt amps	} Television
	230 watts	

FUSES.

This model is fitted with a Heat Coil.
Part No. I6705B. Yellow. 1.6 amp.
Nevertheless, it is recommended that it should not be connected to a supply point fused to carry more than 5 amperes.

SPEECH OUTPUT.

Approximately 3 watts maximum.

WAVELENGTH RANGE.

Television, fixed tuned	} 6.67 metres, Vision. 7.23 metres, Sound.
Broadcast	
} 13.5—	50 metres, Short Waves.
	195 — 580 metres, Medium Waves.
	950 — 2,000 metres, Long Waves.

VALVES.

Marconi	MSP4	H.F. Amplifier, television (V1).
"	X41C	Frequency Changer, television (V2).
"	X65	Frequency Changer, broadcast (V11).
"	KTZ41	I.F. Amplifier, television and broadcast (V12).
"	MHD4	(Met.) Sound Detector and A.V.C. (V13).
"	KT41	Sound output (V14).
"	KTZ41	I.F. Amplifier, television only (V3).
"	KTZ41	I.F. Amplifier, vision only (V4).
"	D42	Vision Detector (V5).
"	KTZ41	Vision Frequency Amplifier (V6)
"	D42	Pulse Diode (V7).
"	MSP4	Limiter (V8).
"	MS4B	Frame Oscillator (V9).
"	MKT4	Frame Output (V10).
"	MS4B	Line Oscillator (V15).
"	KT41	Line Output (V16).
"	U16	Extra H.T. Rectifier (V18).
"	U52	H.T. Rectifier (V17).

Emiscope Tube type 3/3.

Pilot Lamps 3—6.3v 0.3 A

Part No. 22704 H

LOUDSPEAKER.

No. 20277D.

An electro-magnet loudspeaker is employed on these Models.

D.C. resistance of speech coil, 4 ohms.

Impedance at 800 cycles, 5 ohms.

D.C. resistance of field, 1,600 ohms.

An extra loudspeaker may be connected to the sockets provided.

The extra loudspeakers should be adjusted to a total impedance of approximately 5 ohms.

The internal loudspeaker may be silenced by removing the yellow plug from the third socket on the E.L.S. panel.

CONNECTING A PICK-UP.

A high resistance pick-up may be permanently connected to the sockets provided. The leads should be connected to the top sockets and the lead screening to the bottom socket.

CIRCUIT DESCRIPTION

Owing to the multiple functions of certain of the stages in this receiver a transparent sheet showing the general paths of the various signals is fitted over the circuit. From this it will be seen that there is an H.F. stage for television only (V1), two frequency changers, one for television and one for broadcast (V2 and, V11) and three I.F. stages. The first I.F. stage handles television and broadcast; the second, television (sound and vision); and the third, vision only. After the diode vision detector is a V.F. amplifier.

BROADCAST RECEIVER.

A single pre-selection tuned circuit using efficient inductances is employed for each waveband between the aerial and the grid of the frequency changer. The coupling circuit is designed to maintain efficient coupling on all wavebands and to give image rejection. The triode-hexode frequency changer has tapped circuits L9 and L10 employing mixed capacitive and inductive coupling for the production of oscillations on M.W. and L.W. On S.W. coupled coils L8, L11 are

employed. An I.F. transformer (L12, L13) couples the frequency changer to V12.

The tetrode V12 (KTZ41) is an I.F. amplifier, which has A.V.C. bias on S.W., M.W. and L.W., and is coupled by a second I.F. transformer to the second detector.

The double diode triode second detector for sound (V13) has a load resistance R22 and also supplies A.V.C. voltage (diode fed from anode V12 via C44). It is resistance capacity coupled to the sound output valve V14.

TELEVISION RECEIVER.

The H.F. amplifier V1 (MSP4) is preceded by a single broadly tuned coil, and coupled by a broadly tuned transformer (L20, L21) both accepting the vision and sound signals, to the frequency changer.

A high stability triode-hexode (X41C) with a Hartley type oscillator circuit (L22) is chosen and this is coupled by a bi-resonant circuit (L61 and L34, TC12) to the I.F. amplifier.

The couplings between the I.F. stages have sound circuits (L34, L17) and vision circuits (L16, L25, L27). The voltage from the last sound circuit is taken from a coupling coil L18 and applied to the diode of V13 for sound detection, L26 is a sound rejector circuit, whilst L28 is a series choke feeding the V.F. amplifier grid. On television, there is no A.V.C. but gain is controlled by VR1 which varies the bias of the first three stages ; this is the "contrast" control.

VISION DETECTOR AND SEPARATION.

A diode (V5) is used as vision detector ; the load resistance is R38. The rectified signal is passed via L28 to the V.F. amplifier (V6), which is negatively biased from the potentiometer VR4. The anode of V6 feeds the modulating electrode of the C.R. tube (the cathode) via R43, C53 and L29.

Separation of the sync. pulses from the modulation is done by V7 and V8. The anode load for V6 is in two parts, R42 and R41, and the action of the pulse diode is virtually to short circuit R41 during the picture portion of the signal. During the sync. pulses, however, a voltage is applied through C55 to the grid of the limiter V8, which keeps the pulses within certain limits and passes them on to "trigger" the line and frame oscillators via C84 and C60 respectively.

TIME BASES.

Hard valves operating on the "blocking" oscillator principle are used for both frame and line time bases.

These circuits have the usual reaction transformers (T3 and T2) and grid leak and condenser (R53, VR9, C62 and R52, VR8, C61).

Negative feed-back is employed in both frame and line output stages, and the usual wave-form circuit is connected across the secondary of the line frequency output transformer, whilst the frame coils are resistance capacity coupled. The amplitude of the frame and line oscillations are controlled by varying the anode voltage by means of VR6 ("height") and VR5 ("width").

THE C.R. TUBE.

The modulator (cathode) has already been described, and the other two electrodes (the tube is a triode) are the "grid" and the anode. A D.C. voltage derived from a potentiometer, including VR5, VR6, etc., and VR7 across the H.T. feed is applied to the grid as bias ; variation of this voltage (by VR7) consequently varies brightness. The anode operates at approximately 3,500 volts, fed from a half-wave rectifier (V18) with the usual resistance capacity smoothing (R70, R86, C71, C72) and voltage stabilizing drain resistances R65—R69. The focusing of the beam is done magnetically by means of a coil (L35) round the neck of the tube. This coil is enclosed in an iron yoke, and adjustment of the current through the coil is done by VR11 (Focus control) and the pre-set adjustment VR13.

H.F. TESTS AND ADJUSTMENTS

INSTALLATION ADJUSTMENTS.

Further to the information on the service sheet an abridged instruction for installation is given below.

Aerial and Cable.

A properly designed aerial with a lead-in of correct impedance (such as those obtainable from E.M.I. Service, Ltd.) must be used to ensure good reception.

The Tuning of Receiver and Adjustment of Aerial Input.

1. Loosen securing nut TC5 and adjust for maximum sound, keeping volume control at maximum and "contrast" control to give low volume. Re-secure clamping nut.
2. If when "contrast" is turned almost to maximum hardly sufficient signal is received, the tuning should be checked (see (1) above), or aerial height and position checked or a different lead-in used. If when "contrast" is set to minimum a steady picture is obtained there is too much signal and either a different lead-in of lower loss must be employed or an aerial attenuator fitted.

Sound/Vision Ratio.

If the sound signal is too high when the picture is

normal the trimmer TC13 should be screwed in until modulation bars across the picture caused by high sound signal are no longer apparent.

Synchronisation Adjustment.

When it is difficult to make the picture hold such as when the field strength is rather weak, it may be necessary to turn the sync. control (located just behind the aerial panel) in a clockwise direction. The sync. control must not be turned so far that an intensification of the picture contrast is noticed.

If the sync. control will not give proper synchronisation, check the setting of VR4 which should be set to exactly -2.5 volts between the moving arm and chassis.

GANGING.

The broadcast side of this receiver may be treated as an ordinary sound radio insofar as alignment of circuits is concerned. In the event of it being necessary to re-align the I.F. circuits complete R.F. alignment must follow, but if only an R.F. circuit has been disturbed the R.F. alignment for that waveband only should be all that is required.

On television, if possible, even greater care must be exercised than on broadcast, otherwise picture quality will suffer. Generally speaking, low sensitivity or unsatisfactory picture/sound ratio is the result of mistuning of the R.F. circuits, whilst lack of definition in the picture is due to faulty I.F. alignment. As in broadcast, if the I.F. circuits are touched, the R.F. circuits must be done.

Apparatus required for broadcast ganging.

- (a) A modulated oscillator or signal generator with attenuator tuning from 16 to 1,900 metres (18.75 Mc. to 157 kc.).
- (b) An output meter or 0-2 A.C. voltmeter.
- (c) A trimming screwdriver with minimum of metal in the blade, a tool for adjusting coil loops, a special trimming tool (Stock No. Q2527) and a tuning wand. In addition to the above for television ganging the oscillator must tune down to 6.67 metres (45 Mc.), and an 0-10 or 12 D.C. milliammeter will be required.

Broadcast Receiver.

The A.C. voltmeter should be connected across the extra loudspeaker sockets or the anode of the sound output valve VI4 (KT41) and chassis if the E.M.I. Service output meter is used. During *all* ganging operations the input to the receiver from the oscillator should be kept low and progressively reduced as the circuits are brought into line, in order that the reading on the output meter does not exceed 500 M.W. or 1.3 volts.

I.F. Alignment.

Set the receiver to L.W., tone control to maximum top, gang condenser to maximum and volume control to maximum. The oscillator must be connected via a 0.1 mfd. condenser to the top cap of VII (X65), leaving grid connection made.

1. Tune oscillator exactly 465 kc. (645.2 metres).
2. Adjust TC3, TC4, TC8 and TC9 in that order for maximum output.
3. Re-check operation 2 in the same order.

Short Waves.

IMPORTANT.—It is essential that, before ganging, the position of the pointer in relation to the wave-scale is checked. A small mark will be found at the bottom right-hand corner of the scale, just below the L.W. calibration. With the gang condenser fully in, the pointer should coincide exactly with this mark. All ganging is now done to settings on the scale itself, and the gang condenser must not be rocked, or the positioning of the pointer altered in any way. The use of this method will produce accurate calibration. Switch the receiver to S.W., set volume control to maximum, tone control to maximum top and connect

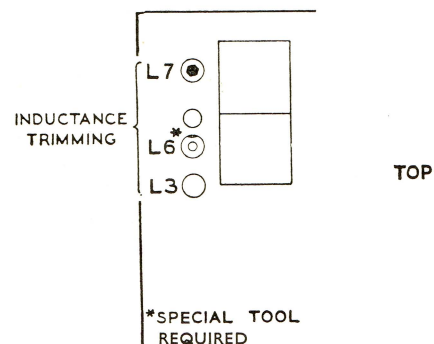
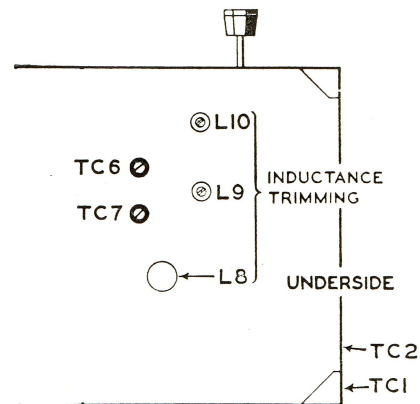
oscillator to aerial and earth sockets via a suitable dummy aerial.

1. Set oscillator and receiver (by the tuning scale) to 30 metres (10 Mc.) and adjust the loops L8 and L3 for maximum output. These loops will be found inside the coil formers and may be adjusted with a strip of insulating material with a nick in it by bending the loop either towards or away from the chassis. The coil L3 can be adjusted through a hole in the top of the chassis. Check results with a tuning wand.

Medium and Long Waves.

Set the receiver to M.W. and other controls as for S.W. ganging.

1. Set receiver to 225 metres (1,333.3 kc.) by scale and tune oscillator to this frequency. Adjust TC7 for maximum output.
2. Set receiver to 530 metres (566 kc.) by the scale and tune oscillator to the same frequency. Now adjust the plunger of L9 for maximum output.
3. Repeat operations 1 and 2.
4. Repeat operation 1.
5. Set receiver (by scale) to 225 metres, tune oscillator to this frequency and adjust TC2 for maximum output.



6. Tune receiver and oscillator to 530 metres and adjust core of L6 for maximum output by means of the special tool (Stock No. Q2527). It should be inserted through the hole in the chassis, the point located in the hold in the paxolin coil mounting strip and the rubber bush bearing on the core. The core may now be rotated by turning the tool.
7. Repeat operation 5.
8. Set receiver to L.W.
9. Set receiver to 1,100 metres (272.7 kc.) by the tuning scale and adjust the oscillator to the same frequency. Now adjust TC6 for maximum output.
10. Set receiver to 1,900 metres (158 kc.) by the scale and tune oscillator to the same frequency. Now adjust the plunger of L10 for maximum output.
11. Repeat operation 8.

12. Return to 1,100 metres and adjust TCI for maximum output.

13. Tune oscillator and receiver to 1,900 metres and adjust core of L7 for maximum output.

14. Tune oscillator to 1,400 metres and set receiver to this wavelength. Re-adjust TCI for maximum output.

NOTE.—Check circuits with tuning wand as follows :—

(a) Insert ferrocart end of the wand into the coil of the circuit being aligned. If output reading falls, leave trimmer set and if reading increases, increase capacity of trimmer until peak reading is obtained.

(b) Insert brass end of wand and if reading falls leave trimmer set, but if output increases, decrease trimmer capacity until peak reading is obtained.

TELEVISION

For measurement of output a D.C. milliammeter reading 0–12 should be connected in the anode circuit of V6 across R41. This is effectively a short circuit for R41, but at the same time gives measurement of anode current of V6 (KTZ41). The sound signal is measured on the output meter as for broadcast sound. It is advisable to switch on the receiver and oscillator, if mains driven, at least fifteen minutes before commencing the aligning operations, to allow a condition of stability to be reached.

TELEVISION SOUND I.F. ALIGNMENT.

1. Disconnect grid lead from V2 and connect the oscillator output leads between grid (top cap) of the valve and chassis. Connection to the grid should be via a 0.1 mfd. condenser and a 1,000 ohm resistance should be connected between the grid and chassis. Short out the television oscillator coil L22, which is reached through a hole in the screen.
2. Set volume control to maximum, tone control to maximum top, and contrast control to maximum, and inject modulated signal of 4.5 Mc. (66.67 metres).
3. Adjust TC11, TC12 and TC13 for maximum output on sound output meter.
4. Repeat operation 3 in the same order.

SOUND REJECTOR CIRCUIT.

1. Connect oscillator between grid V3 and chassis and inject a strong signal of 4.5 Mc. (66.67 metres).
2. Adjust TC10 for minimum output on V6 anode milliammeter.

TELEVISION VISION I.F. ALIGNMENT.

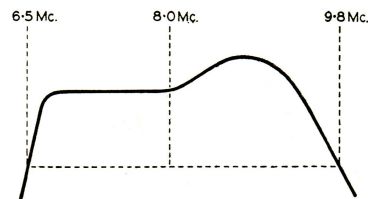
1. Connect oscillator and output metres as detailed above.
2. Set oscillator to 7 Mc. (42.86 metres), the signal need not be modulated, and tune the plunger of L27 for maximum output on vision output meter.
3. Set oscillator to 9.25 Mc. (32.43 metres) and tune the plunger of L25 for maximum output on vision meter.
4. Set oscillator to 7 Mc. (42.86 metres) and tune the plunger of L16 for maximum output on the vision meter.
5. Set oscillator to 8.7 Mc. (34.48 metres) and tune

the plunger of L24 for maximum output on the vision output meter.

Do final trimming to Television sound and vision circuits in the order TC13, L24, TC12, L16, TC11 and L25, as detailed below.

TELEVISION I.F. BANDWIDTH.

1. With oscillator and output meters connected as for I.F. vision alignment, contrast at maximum, inject a signal at 8 Mc. and adjust oscillator attenuator to give approximately 5 mA on vision output meter.
2. Increase input from oscillator by 10 times, and reduce "Contrast" control to regain original output reading obtained in (1).
3. Double input voltage by again turning up attenuator, and re-tune oscillator to 6.5 Mc. and 9.8 Mc.
4. The reading on the output milliammeter at these frequencies should not be less than that obtained in operation 1.
5. Sweep the oscillator over the band 6.5 to 9.8 Mc. and note vision output meter. The readings should express a response curve of the form shown below.



TELEVISION R.F. GANGING.

Connect oscillator to aerial and earth sockets. Turn contrast to maximum. Connect up output meters as detailed under "I.F. Alignment."

1. Tune oscillator to 45 Mc. (6.667 metres) and tune plungers of L19, L20/L21 for maximum output.
2. Note reading on vision output meter, and increase input from oscillator by ten times.
3. Now reduce contrast control to regain original output reading and re-adjust L20/L21 for maximum output.

4. Re-adjust oscillator trimmer (TC5) on transmission and sound/vision ratio if necessary, see page 3.

GANGING ON TELEVISION SIGNALS.

Apart from the adjustments of the oscillator circuit TC5 which should always be done on Television transmission, it is very easy and even desirable to do the entire R.F. ganging by this means. It must be clearly understood, however, that it is not possible to use this method for I.F. ganging and it should on no account be attempted.

Observation of output in the case of vision cannot be made with the milliammeter detailed above, but in any case, it is preferable to use the actual picture on

the tube for this purpose. In the case of sound output it is not possible to use the A.C. voltmeter or output meter but there is no objection to judging this aurally if care is taken.

Follow the procedure given for "oscillator" ganging, treating the signal as an oscillator input of 41.5 Mc. and 45 Mc. and using "Contrast" control as an attenuator.

The best way to "measure output" by the picture is to reduce the "Contrast" controls until the sync. just breaks. (Be sure "Frame" and "Line" hold controls are correctly set) and make the trimming adjustments with the object of re-establishing "hold."

Values \pm 15 per cent.

CONTINUITY CHECKS

Component.	Measured.	Switch.	Resistance.
L1, L2, L4, L5	Aerial and earth sockets	SW MW	(L1, L2, L5) 44 ohms. (L1, L2, L4, L5) 10 ,, (L1) 9.5 ,, (L2) 33 ,, (L4) 0.45,, (L5) 1.8 ,,
L3, L6, L7	Fixed vanes of VCI and C3	SW MW LW	0.1 ohm. 1.75 ,, 9.0 ,,
L8	Between contacts 10 and 7 on S1	—	0.1 ohm.
L9	Between contacts 11 and 8 on S1	—	2.7 ohms.
L10	Between contacts 12 and 9 on S1	—	3.6 ohms.
L11	Across ends	—	1.1 ohms.
L12	Anode of V11 and end of R8	—	2.0 ohms.
L13	Contacts 21, 22, 23 of S2 and C29	—	2.0 ohms.
L14	Pin 7 power pack plug anode V12	MW	4.0 ohms.
L15, L18	Between contacts 39, 40, 41 and contact 42 on S4	—	5.4 ohms. (L15) 4.0 ohms (across outer tags of IFT).2
L16, L34	Between R83 and chassis	—	1.2 ohms (L34) 0.3 ohm.
L17, L25	Anode of V3 and C75	—	0.8 ohm (L17) 0.3 ohm.
L19	Grid of V1 and chassis	—	Negligible.
L20	Across ends	—	Negligible.
L21	Between grid V2 and chassis	—	Negligible.
L22	Across ends	—	Negligible.
L23, L24	Between chassis and contacts 24 on S2	—	1.0 ohm (L23, L24). L24 0.75 ohm.
L26	Across ends	—	0.4 ohm.
L27	Across ends	—	1.6 ohms.
L28	Cathode V5 and anode V6	—	15.0 ohms.
L29	Across ends	—	15.0 ohms.
For transformers, chokes, scanning and focus coils and grid circuit resistances	See circuit diagram and Valve Table	—	—

VALVE TABLE

Values \pm 15 per cent.

Voltages measured on meter having a resistance of approx. 1,000 ohms per volt.

The following values were taken on a model operating on 220 volt mains (211-230 volt tapping).

All resistance readings taken with the wave-change switch in the TEL position, values approximate.

Absence of a voltage reading does not necessarily mean that no voltage will be found but merely that the value is regarded as of little interest.

	Anode.			Screen.			Cathode.			Grid.
	Volts.		Resistance to Chassis.	Volts.		Resistance to Chassis.	Volts.		Resistance to Chassis.	Resistance to Chassis.
	Television.	Broadcast.		Television.	Broadcast.		Television.	Broadcast.		
V1 (MSP4) ...	290*	—	7,000	95†	—	·106M	1·2†	—	150-270	Negligible.
V2 (X41C) ...	Mix. 275 Osc. 70*	—	Mix. ·106M Osc. 11,000	70†	—	·106M	1·3†	—	230-450	Negligible.
V3 (KTZ41)	225*	—	16,000	160	—	14,000	1·8	—	230	36
V4 (KTZ41)	230*	—	16,000	160	—	14,000	1·6	—	230	·1M
V5 (D42) ...	—	—	·236M	—	—	—	—	—	·236M	—
V6 (KTZ41)	200†	—	19,500	160	—	21,800	nil	—	nil	·235M
V7 (D42) ...	235	—	7,000	—	—	—	230	—	16,000	—
V8 (MSP4) ...	60†	—	95,000	40	—	3,600	nil	—	nil	0·23M
V9 (MS4B) ...	25*	—	1·0M	110	—	10,000	nil	—	nil	7,500 to 0·3M (VR9)
V10 (MKT4)	150	—	15,000	150	—	15,000	10	—	750	1M
V11 (X65) ...	—	Mix. 275 Osc. *	Mix. 58,000 Osc. 86,000	—	70	23,000	—	1·9	230	∞
V12 (KTZ41)	210†	305*	55,000	110	120	44,000	0·9†	1·0	230-450	36
V13 (MHD4)	140	130	56,000	—	—	—	1·65	1·5	1,000	20 ohms to 2M (VR2)
V14 (KT41)	240	230	8,000	255	240	7,600	4·5	3·9	100	0·23M
V15 (MS4B)	10*	—	1·1M	110	—	10,000	nil	—	nil	50,000 to 100,000 (VR8)
V16 (KT41) ...	280	—	6,700	255	—	9,500	4·5	—	100	0·5M
V17 (U52) ...	315 (AC)	—	60	—	—	—	345	325	6,400	—
V18 (U16) ...	2,900 (AC)	—	9,500	—	—	—	—	—	5M	—

* In these cases the connection of a meter to the test point, either entirely upset the operation of the receiver (where no value is given) or affected it in some way. For instance the osc. anode voltage V2 had to be taken on the H.T. side of the anode impedance, whilst in the case of V9 and V15 the amplitude of the frame and line oscillations were affected.

† Varies with position of Contrast control or amount of signal. The above values were taken with "contrast" at maximum.

H.T. Voltages—

Tag No. 4 L.S. Panel... 330 Television.
320 Broadcast.

Tag No. 3 L.S. Panel... 250 Television.
240 Broadcast.

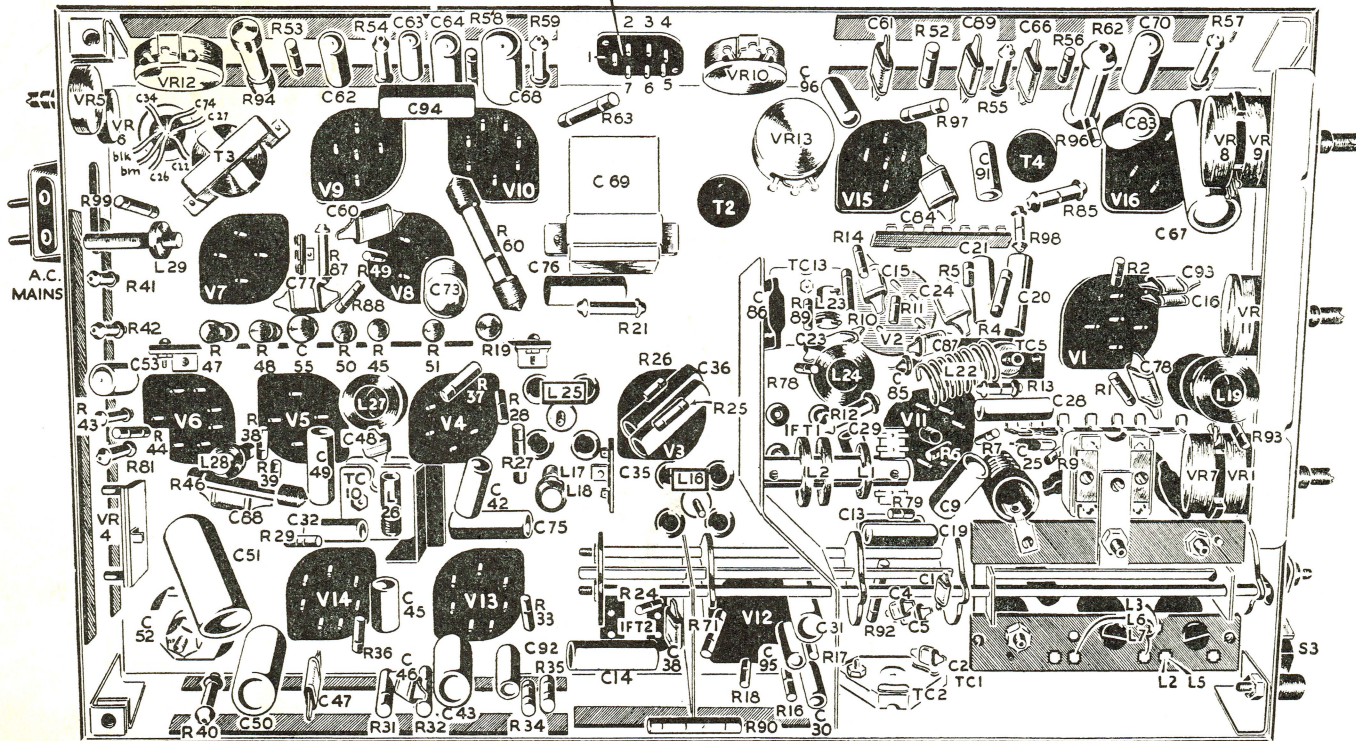
Across C56 ... 290 Television.
300 Broadcast.

C.R. Tube Voltages ... Anode, 3,500 V.
Grid, 0-40 V. (depending on VR7).
Cathode, approximately 50 volts.
Heater, 4·0 V. 1·3 A.

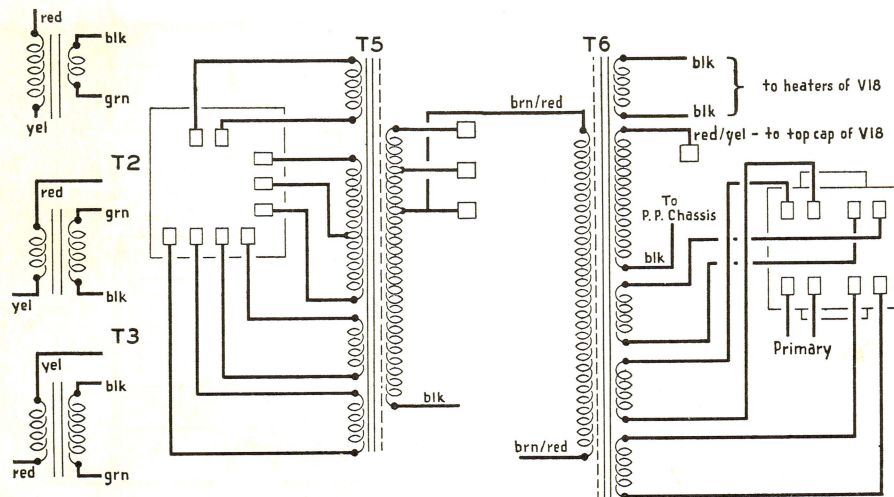
H.T. feed to focus coil (L35) ... 20 mA approx.

Feed in L.S. Field ... 45 mA Television.
42 mA Broadcast.
Total H.T. feed ... 200 mA Television.
66 mA Broadcast.

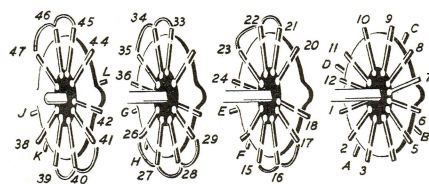
SOCKETS FOR C.R. TUBE PLUG



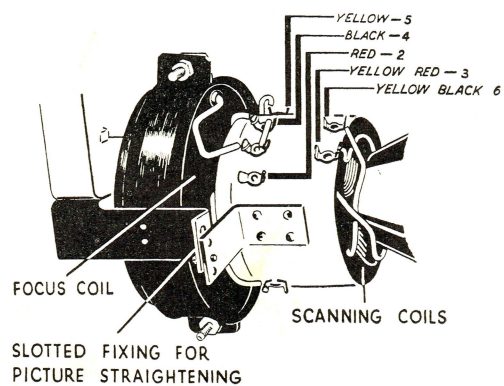
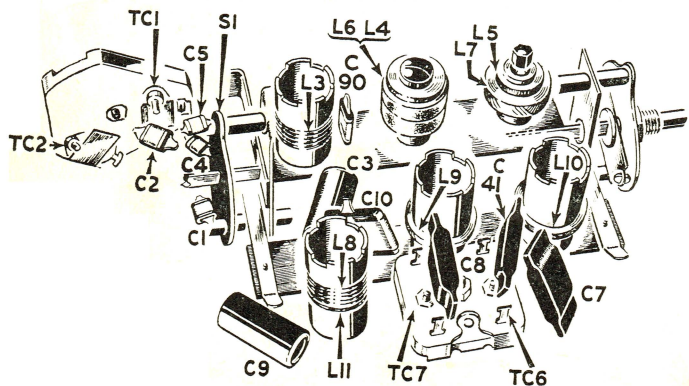
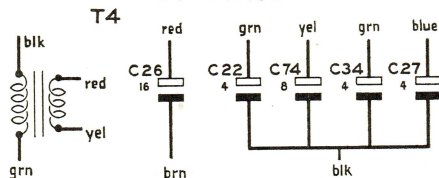
T1

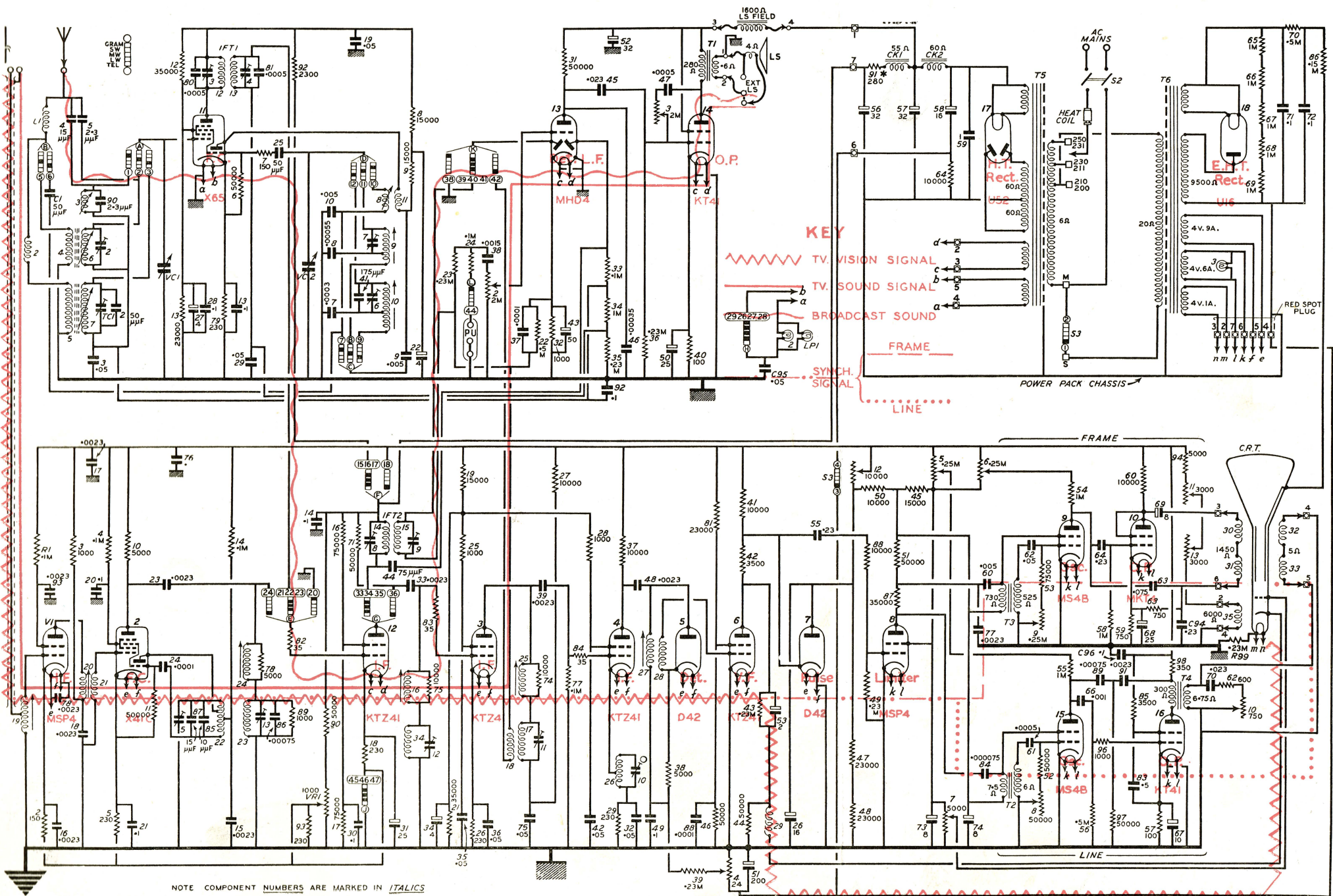


SWITCH DETAILS

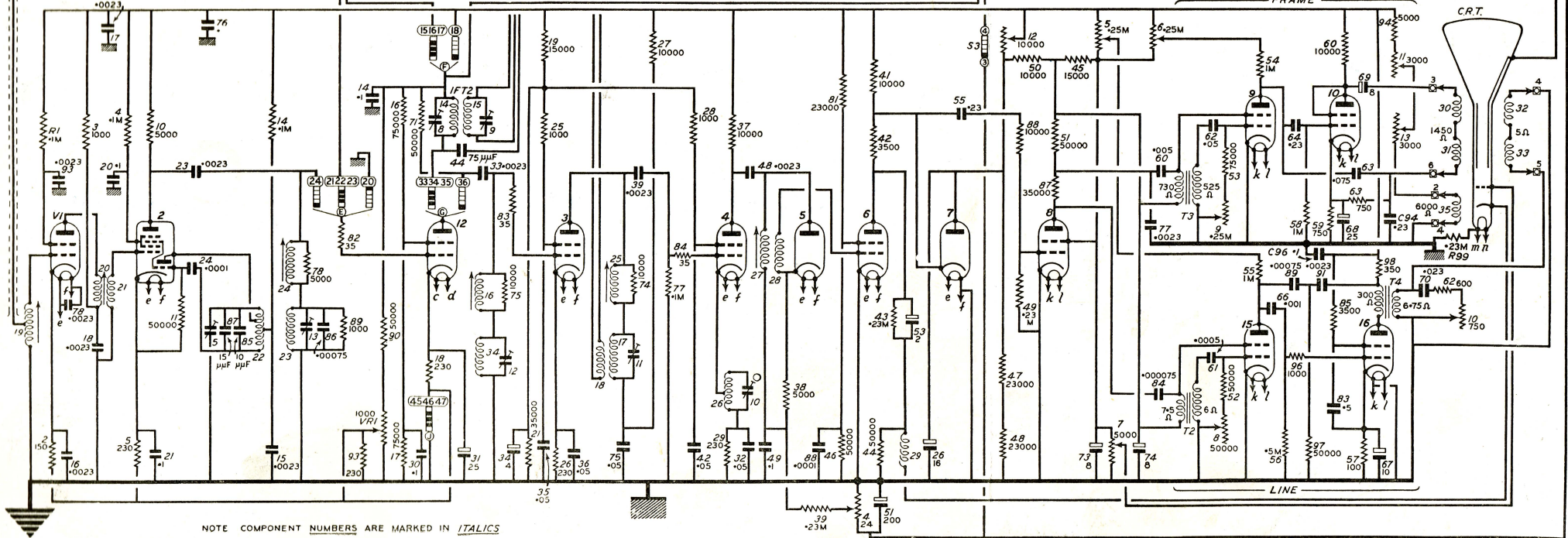
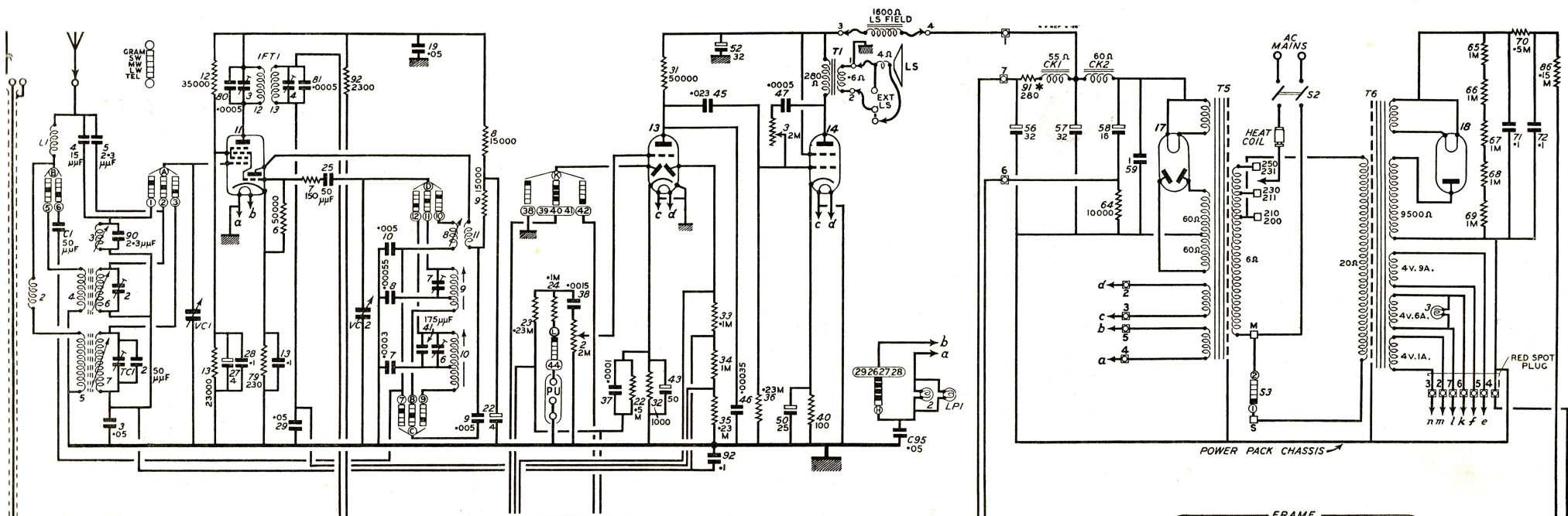


BLOCK CONDENSER

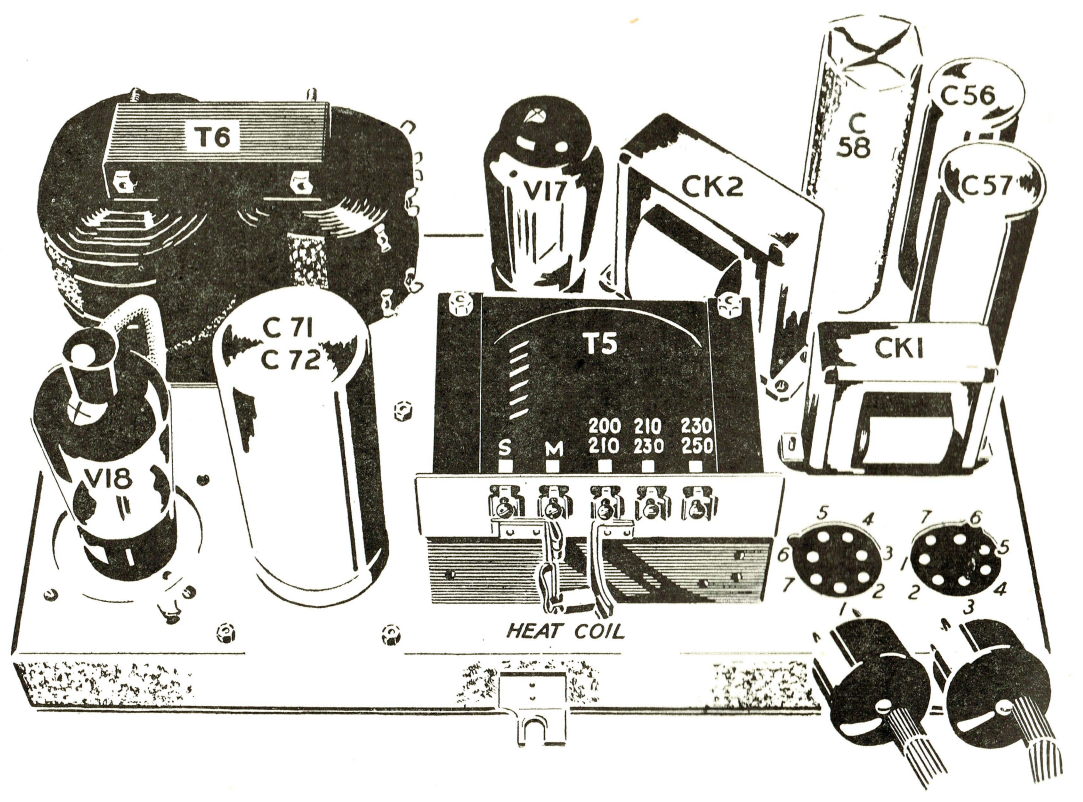
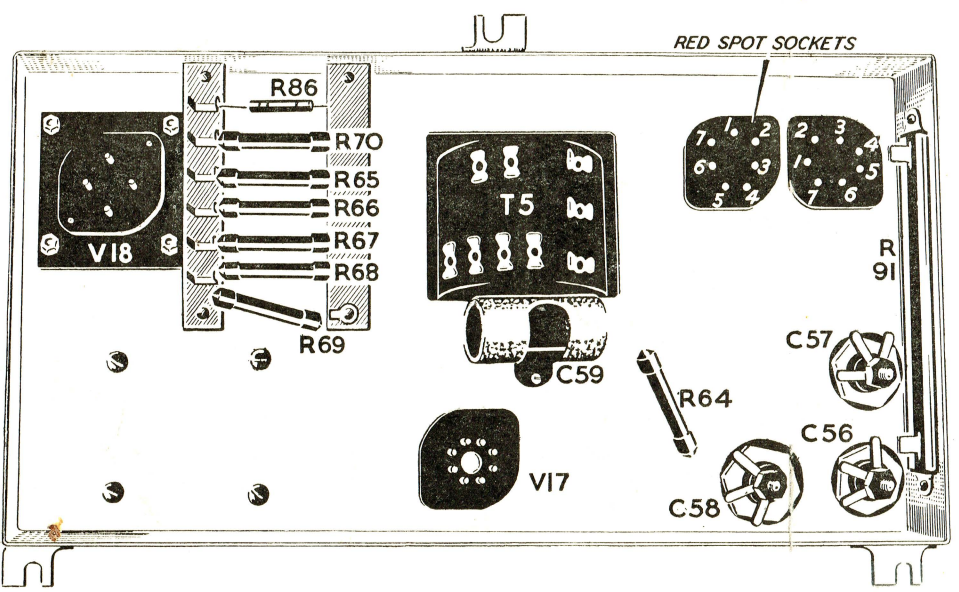
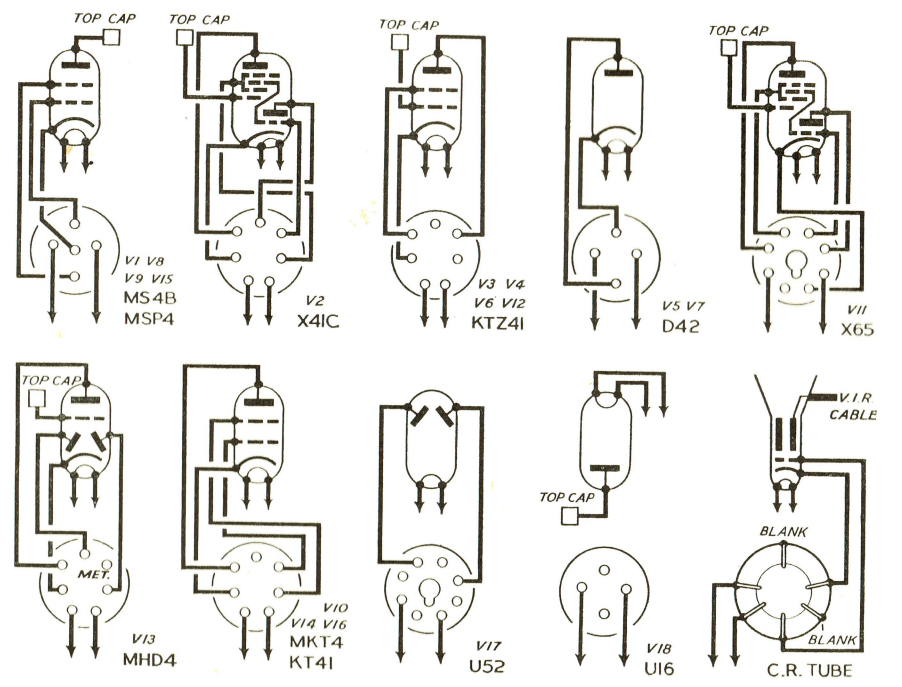
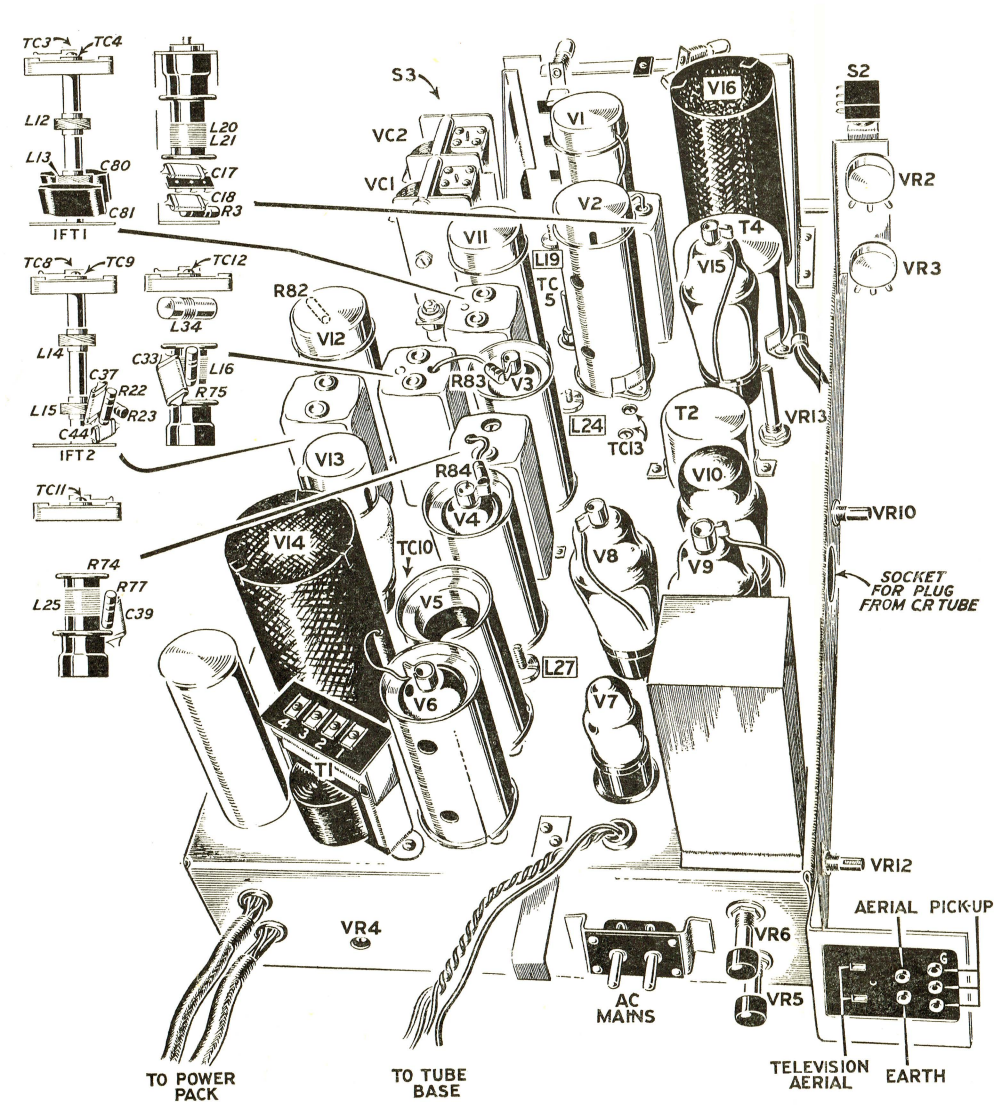




NOTE COMPONENT NUMBERS ARE MARKED IN *ITALICS*



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FAULT TABLE

Symptom.	Probable Cause.	Analysis.
Picture unsteady	Synch. pulses not reaching time bases ...	Check V7, V8, and setting VR4 (synch. control).
Picture lacking contrast... ..	Insufficient input, or gain	Check aerial, V1, V2, V12, V3, V4, V5, V6. Contact aerial between top cap V1 (via a small condenser) and chassis and then V2 and chassis. If results do not progressively deteriorate suspect V1.
Picture low brightness	Low E.H.T. volts or incorrect bias. Low H.T. volts	Check V18, check voltage at C.R. tube grid (see valve table). Check H.T. voltage and V17 or change C.R. tube.
Picture too bright	Cathode D.C. voltage low	Check C53.
Picture with pattern on	Diathermy interference, or spurious oscillation	For latter, examine all screening or re-gang, or check decoupling condensers for open circuit.
Poor definition	Focus out of adjustment or I.Fs. out of alignment. Mains voltage adjustment incorrectly set.	If it is possible to get sharp clear lines on a plain raster (aerial disconnected), I.F. ganging must be done.
Horizontal line	No frame deflection	Check V9, V10, L30, L31.
Vertical line	No line deflection	Check V15, V16, L32, L33.
Small light spot in centre of tube ...	No frame or line deflection	Check all items in two lines above.
Large diffuse spot in centre of tube ...	No focus, faulty H.T. rectifier	Check L35, V17.
Large dark spot in centre of tube ...	Ionic bombardment	Change C.R. tube.
Insufficient width or height	Faulty line or frame output valves	Check V10 and V16 cathode voltages or change valves.
Interference crackles and splashes on half of picture, similar to car interference	Faulty insulation in pinch of V10 or V16 ...	Turn down volume, and the arcing in the base should be audible and/or visible if present. Change valve.
Car Interference causing synchronising to break	D.C. level not correctly maintained	Fit 50 mfd. 12v. condenser (Part No. 17250 F) across C49. Connect the positive side of the condenser to chassis.
Poor line definition	Incorrect focussing field, or soft C.R. tube ...	Examination of the tube "gun" will reveal faint blue glow if the tube is soft.
Sound on picture	Incorrect adjustment of TC13 or sound rejector circuit (TC10)	Check these adjustments referring to H.F. Tests and Adjustments.
Sync. on sound	Faulty decoupling of H.T. feed, faulty V5, 6, 7 or 8	Check CK1 and condensers; if "contrast" has to be turned right up, try changing V5, 6, or 7.
" Ringing " or images	Incorrect aerial feeder impedance, faulty I.F. alignment (I.F. stages verging on instability), or " reflections " reaching aerial	The difference between " ringing " and an image may be established by turning up the " Contrast " control. Rings increase in number as the control is turned up, whereas a true image is unaffected; it is usually more distant from the true picture than " rings." See E.M.I. Service " Aerial Brochure."
No television or radio	X41c or X65 not oscillating	Connect voltmeter across R14, and short L22. If valve is oscillating a marked increase in voltage should be noted. Repeat with R8 and short VC2 for broadcast check.

Attenuators comprising a network of resistances, so designed that the impedance and frequency characteristics of the cable are unaffected are obtainable from E.M.I. Service Ltd.

Part No.	Description.	Parts per Inst.	Finish.	Retail List Price.	Per
RADIOVISION UNIT PARTS					
(For complete radiovision unit, see pages 23 and 24.)					
H.F. UNIT					
28562B	H.F. Unit	1	—	£ 2 6 0.	Each.
20670A	L1 and L2—Aerial coil	1	—	0 1 9	"
20671A	Panel with three tags	1	—	0 0 1½	"
10400	Tag	3	—	0 0 1	Doz.
10710	Screw	2	WN	0 0 2	"
3166	Washer, S.P. } securing tag panel and aerial coil to switch	2	—	0 0 2	"
11628	Nut }	2	WN	0 0 4	"
20660B	Grid coils panel assembly	1	—	0 8 6	Each.
20657H	L3—S.W. grid coil	1	—	0 1 0	"
20652	Clip } securing L3 to panel	1	—	0 0 6	Doz.
20653	Bush }	1	—	0 0 6	"
20654	Nut }	1	—	0 0 3	"
20666B	L4 and L6—M.W. coupling and grid coils	1	—	0 1 0	Each.
20662	Coil stem	1	—	0 0 6	"
20664	Screw, securing coil stem to panel	1	—	0 0 6	Doz.
20672	Core	2	—	0 1 3	Each.
20667	Insulating washer (between the two cores)	1	—	0 0 2	Doz.
20659	Felt washer } securing coils and cores to stem	1	—	0 0 4½	"
20668	Insulating washer }	1	—	0 0 1	"
20669	Screw }	1	—	0 0 1	Each.
20661A	L5 and L7—L.W. coupling and grid coils	1	—	0 1 6	"
20729	Coil stem } securing L5 and L7	1	—	0 0 2	"
20727	Spacer }	1	—	0 0 1	"
20728	Screw }	1	—	0 0 2	"
20542	Core screw for L5 and L7	1	—	0 0 6	"
20660a	Panel (for grid coils) with six tags	1	—	0 0 3	"
10400	Tag	6	—	0 0 1	Doz.
20650Q	Oscillator coils panel assembly	1	—	0 5 0	Each.
20657AB	L8 and L11—S.W. oscillator and reaction coil with mounting bracket	1	—	0 1 6	"
11228	Screw } securing L8 and L11 to panel	1	—	0 0 4	Doz.
3165	Washer, S.P. }	1	—	0 0 2	"
20657C	L9—M.W. oscillator coil	1	—	0 1 0	Each.
20673	Bracket for TC6 and TC7	1	—	0 0 1	"
20652	Clip } securing L9 and bracket to panel	1	—	0 0 6	Doz.
20653	Bush }	1	—	0 0 6	"
20654	Nut }	1	—	0 0 3	"
20655A	Adjusting screw and disc for L9... ..	1	—	0 0 1	Each.
20657Z	L10—L.W. oscillator coil	1	—	0 1 0	"
20652	Clip } securing L10 to panel	1	—	0 0 6	Doz.
20653	Bush }	1	—	0 0 6	"
20654	Nut }	1	—	0 0 3	"
20655A	Adjusting screw and disc for L10	1	—	0 0 1	Each.
20650A	Panel, for oscillator coils	1	—	0 0 4½	"
8777	Screw, P.K., securing panels to switch	4	—	0 0 6	Doz.
28562A	S1—Change over switch, with nut	1	—	0 15 6	Each.
22164J	C1—50 mmf. condenser	1	—	0 0 9	"
22164I	C2—50 mmf.	1	—	0 0 9	"
24900W	C3—0.05 mfd.	1	—	0 1 3	"
22164D	C4—15 mmf.	1	—	0 0 9	"
22164H	C5—2.3 mmf.	1	—	0 0 9	"
22330BY	C7—300 mmf.	1	—	0 2 6	"
22330CS	C8—550 mmf.	1	—	0 2 6	"
24900J	C9—0.005 mf.	1	—	0 1 0	"
22005A	C10—0.005 mf.	1	—	0 1 6	"
22330CU	C41—175 mmf.	1	—	0 1 6	"
26350A	TC6 and TC7—Twin pre-set condenser	1	—	0 1 6	"
25067	Adjusting screw	2	AcD	0 0 6	Doz.
1485	Washer	2	AcD	0 0 2	"
10710	Screw } securing TC6 and TC7 to bracket	1	WN	0 0 2	"
3166	Washer, S.P. }	1	—	0 0 2	"
11628	Nut }	1	WN	0 0 6	"
1061	Washer } securing H.F. unit	1	WN	0 0 3	"
5673	Washer, S.P. }	1	—	0 0 4	"
8777	Screw, P.K. }	2	—	0 0 6	"

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish	Retail List Price			Per
				£	s.	d.	
28563	Screen, for H.F. unit	1	CdP	0	2	4	Each.
8777	Screw, P.K., securing screen	6	—	0	0	6	Doz.
26330BB	IFT1—1st I.F. transformer complete with L12, L13, C80, C81, TC3 and TC4	1	—	0	11	6	Each.
26330BC	IFT2—2nd I.F. transformer, complete with L14, L15, R22, R23, C37, C44, TC8 and TC9	1	—	0	10	9	„
12619	Screw, P.K., securing I.F. transformers	4	—	0	0	6	Doz.
—	CK1 and CK2—On Power Unit.						
—	L12 and L13—In IFT1.						
—	L14 and L15—In IFT2.						
26746A	L16—Vision 2nd I.F.	1	—	0	2	9	Each.
26748G	L17—Sound 3rd I.F.	1	—	0	2	0	„
23675M	L18—Sound 3rd I.F. coupling coil	1	—	0	1	6	„
23675N	L19—Tel. aerial coil	1	—	0	1	6	„
28574A	L20 and L21—Tel. anode and grid coils	1	CdP	0	3	3	„
26804D	L22—Tel. oscillator coil	1	—	0	1	5	„
26746A	L23—Sound 1st I.F.	1	—	0	2	9	„
26746E	L24—Vision 1st I.F.	1	—	0	2	9	„
28411B	L25—Vision 3rd I.F.	1	—	0	2	9	„
26746J	L26—Sound suck	1	—	0	1	8	„
26748F	L27—Vision 4th I.F.	1	—	0	2	6	„
26748F	L28—H.F. choke	1	—	0	1	6	„
26748F	L29—H.F. choke	1	—	0	1	6	„
28577D	L30 and L31—Frame coils	1	—	1	8	9	„
26804B	L32 and L33—Line coils	1	—	0	1	9	„
29432A	L34—Sound 2nd I.F.	1	—	0	13	6	„
28642	L35—Focus coil assembly	1	—	0	0	1½	„
	Insulator, between frame and focus coil	1	—	0	0	1½	„
	Note.—L30, L31, L32, L33 and L35 are not part of radio unit.						
23674A	Adjusting plunger and screw, for L16, L19, L20, L21, L24, L25 and L27	6	—	0	0	6	Each.
23671	Locking nut	6	—	0	0	2	„
22624X	T1—Output transformer	1	—	0	7	6	„
16328A	Terminal panel, with four tags and screws	1	—	0	0	7	„
14512	Tag	4	—	0	0	5	Doz.
14511	Nut	4	WN	0	0	4	„
11228	Terminal screw	4	WN	0	0	4	„
211	Screw, P.K., securing terminal panel	2	—	0	0	6	„
10606	Screw, P.K., securing T1	2	—	0	0	7	„
18964G	T2—Line osc. transformer	1	—	0	8	0	Each.
10606	Screw, P.K., securing T2	2	—	0	0	7	Doz.
19255H	T3—Frame osc. transformer	1	—	0	3	3	Each.
8777	Screw, P.K., securing T3	2	—	0	0	6	Doz.
28418C	T4—Line sync. output transformer	1	—	0	8	6	Each.
10606	Screw, P.K., securing T3	2	—	0	0	7	Doz.
	T5 and T6—On Power Unit.						

RESISTANCES

17541Q	R1—100,000 ohms	1	—	0	0	6	Each.
19202AV	R2—150 ohms ± 5 per cent.	1	—	0	0	9	„
17541K	R3—1,000 ohms	1	—	0	0	6	„
17541Q	R4—100,000 ohms	1	—	0	0	6	„
19202AW	R5—230 ohms ± 5 per cent.	1	—	0	0	9	„
19202J	R6—50,000 ohms	1	—	0	0	6	„
19202AB	R7—150 ohms	1	—	0	0	6	„
19202AH	R8—15,000 ohms	1	—	0	0	6	„
19202AH	R9—15,000 ohms	1	—	0	0	6	„
17541AS	R10—5,000 ohms ± 5 per cent.	1	—	0	0	9	„
19202J	R11—50,000 ohms	1	—	0	0	6	„
19104G	R12—35,000 ohms	1	—	0	1	0	„
19104P	R13—23,000 ohms	1	—	0	1	0	„
19202L	R14—100,000 ohms	1	—	0	0	6	„
17541U	R16—75,000 ohms	1	—	0	0	6	„
17541U	R17—75,000 ohms	1	—	0	0	6	„
19202AV	R18—230 ohms ± 5 per cent.	1	—	0	0	9	„
19105AX	R19—15,000 ohms	1	—	0	2	0	„
19104G	R21—35,000 ohms	1	—	0	1	0	„

SPARE PARTS LIST—continued

Part No.	Description.	Parts		Retail		Per
		per Inst.	Finish.	List Price.	Per	
19202N	R22—500,000 ohms (in IFT2)	1	—	£ 0 0 6	Each.	
19202BQ	R23—230,000 ohms (in IFT2) ± 5 per cent.	1	—	0 0 9	"	
19202L	R24—100,000 ohms	1	—	0 0 6	"	
19202B	R25—1,000 ohms	1	—	0 0 6	"	
19202AW	R26—230 ohms ± 5 per cent.	1	—	0 0 9	"	
17541AX	R27—10,000 ohms ± 5 per cent.	1	—	0 0 9	"	
19202B	R28—1,000 ohms	1	—	0 0 6	"	
19202AV	R29—230 ohms ± 5 per cent.	1	—	0 0 9	"	
17541CE	R31—50,000 ohms ± 5 per cent.	1	—	0 0 9	"	
17541BB	R32—1,000 ohms ± 5 per cent.	1	—	0 0 9	"	
19202L	R33—100,000 ohms	1	—	0 0 6	"	
19202P	R34—1 megohm	1	—	0 0 6	"	
19202M	R35—230,000 ohms	1	—	0 0 6	"	
19202M	R36—230,000 ohms	1	—	0 0 6	"	
17541AX	R37—10,000 ohms ± 5 per cent.	1	—	0 0 9	"	
19202BE	R38—5,000 ohms ± 5 per cent.	1	—	0 0 9	"	
19202M	R39—230,000 ohms	1	—	0 0 6	"	
19104BB	R40—100 ohms ± 5 per cent.	1	—	0 1 6	"	
19104BP	R41—10,000 ohms ± 5 per cent.	1	—	0 1 6	"	
19104BL	R42—3,500 ohms ± 5 per cent.	1	—	0 1 6	"	
19104AN	R43—230,000 ohms	1	—	0 1 0	"	
17541P	R44—50,000 ohms	1	—	0 0 9	"	
19104Q	R45—15,000 ohms	1	—	0 1 0	"	
19104U	R46—50,000 ohms ± 5 per cent.	1	—	0 1 6	"	
5786P	R47—23,000 ohms	1	—	0 1 0	"	
5786P	R48—23,000 ohms	1	—	0 1 0	"	
19202M	R49—230,000 ohms	1	—	0 0 6	"	
19104B	R50—10,000 ohms	1	—	0 1 0	"	
19104A	R51—50,000 ohms	1	—	0 1 0	"	
17541P	R52—50,000 ohms	1	—	0 0 6	"	
19202K	R53—75,000 ohms	1	—	0 0 6	"	
19104AS	R54—1 megohm	1	—	0 1 0	"	
19104AS	R55—1 megohm	1	—	0 1 0	"	
19202N	R56—500,000 ohms	1	—	0 0 6	"	
19104BB	R57—100 ohms ± 5 per cent.	1	—	0 1 6	"	
17541G	R58—1 megohm	1	—	0 0 6	"	
19104BG	R59—750 ohms ± 5 per cent.	1	—	0 1 6	"	
21405F	R60—10,000 ohms ± 5 per cent.	1	—	0 1 6	"	
19105BN	R62—600 ohms ± 5 per cent.	1	—	0 3 0	"	
17541BZ	R63—750 ohms ± 5 per cent.	1	—	0 0 9	"	
5786B	R64—10,000 ohms on Power Unit	1	—	0 1 0	"	
5786AS	R65—1 megohm on Power Unit	1	—	0 1 0	"	
5786AS	R66—1 megohm on Power Unit	1	—	0 1 0	"	
5786AS	R67—1 megohm on Power Unit	1	—	0 1 0	"	
5786AS	R68—1 megohm on Power Unit	1	—	0 1 0	"	
5786AS	R69—1 megohm on Power Unit	1	—	0 1 0	"	
5786AQ	R70—500,000 ohms on Power Unit	1	—	0 1 0	"	
17541P	R71—50,000 ohms on Power Unit	1	—	0 0 6	"	
19202BG	R74—10,000 ohms ± 5 per cent.	1	—	0 0 9	"	
19202BG	R75—10,000 ohms ± 5 per cent.	1	—	0 0 9	"	
19202L	R77—100,000 ohms	1	—	0 0 6	"	
19202BE	R78—5,000 ohms ± 5 per cent.	1	—	0 0 9	"	
19202AV	R79—230 ohms ± 5 per cent.	1	—	0 0 9	"	
19104P	R81—23,000 ohms	1	—	0 1 0	"	
19202W	R82—35 ohms	1	—	0 0 6	"	
19202W	R83—35 ohms	1	—	0 0 6	"	
19202W	R84—35 ohms	1	—	0 0 6	"	
19104AK	R85—3,500 ohms	1	—	0 1 0	"	
17541AN	R86—150,000 ohms on Power Unit	1	—	0 0 6	"	
19104BS	R87—35,000 ohms ± 5 per cent.	1	—	0 1 6	"	
19202F	R88—10,000 ohms	1	—	0 0 6	"	
19202B	R89—1,000 ohms	1	—	0 0 6	"	
29300A	R90—50,000 ohms	1	—	0 1 0	"	
24097N	R91—180 ohms on Power Unit	1	—	0 2 0	"	
12619	Screw, P.K., securing R91	2	—	0 0 6	"	
17541AY	R92—2,300 ohms	1	—	0 0 6	"	

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish	Retail		Per
				List Price	£ s. d.	
19202AW	R93—230 ohms \pm 5 per cent. ...	1	—	0	0	9 Each.
21405G	R94—5,000 ohms \pm 5 per cent. ...	1	—	0	3	6 "
17541K	R96—1,000 ohms ...	1	—	0	0	6 "
17541P	R97—50,000 ohms. ...	1	—	0	0	6 "
29300BE	R98—350 ohms. \pm 5 per cent. ...	1	—	0	1	6 "
19202M	R99—230,000 ohms ...	1	—	0	0	6 "
28403A	{ VRI—1,000 ohms—Contrast ...	1	—	0	7	6 "
	{ VR7—5,000 ohms—Brightness ...					
18300DV	VR2—2 megohm—Volume Control ...	1	—	0	3	6 "
18300DP	VR3—2 megohm—Tone Control ...	1	—	0	3	6 "
14567H	VR4—24 ohms—Hum Control ...	1	—	0	0	9 "
24759	Spacer	2	WN	0	0	9 Doz.
11233	Screw		WN	0	0	6 "
3165	Washer, S.P. } securing VR4		WN	0	0	2 "
11629	Nut		WN	0	0	6 "
23651EC	VR5—250,000 ohms ...	1	—	0	3	6 "
23651EC	VR6—250,000 ohms ...	1	—	0	3	6 "
	VR7—with VRI	1	—	0	3	6 "
28403B	{ VR8—50,000 ohms—linehold ...	1	—	0	7	6 Each.
	{ VR9—250,000 ohms—framehold ...					
23690A	VR10—750 ohms ...	1	—	0	3	6 "
23690AJ	VR11—3,000 ohms—Focus ...	1	—	0	3	6 "
23690AH	VR12—10,000 ohms ...	1	—	0	3	6 "
23690AJ	VR13—3,000 ohms—Focus ...	1	—	0	3	6 "
1021	Washer	10	WN	0	0	3 Doz.
5673	Washer, S.P. } securing variable resistances—nut is supplied with each					
28407	Extension sleeve for VRI and VR9 ...	2	CdP	0	0	3 Each.
20938	Screw, securing extension sleeves ...	4	WN	0	0	3 Doz.
22164J	C1—50 mmf. ...	1	—	0	0	9 Each.
22164J	C2—50 mmf. ...	1	—	0	0	9 "
24900W	C3—0.05 mf. ...	1	—	0	1	3 "
22164D	C4—15 mmf. ...	1	—	0	0	9 "
22164H	C5—2.3 mmf. ...	1	—	0	0	9 "
22330BY	C7—0.0003 mf. \pm 2 per cent. ...	1	—	0	1	6 "
22330CS	C8—0.00055 mf. \pm 2 per cent. ...	1	—	0	1	6 "
24900J	C9—0.005 mf. ...	1	—	0	1	0 "
22005A	C10—0.005 mf. ...	1	—	0	1	6 "
24900AA	C13—0.1 mf. ...	1	—	0	1	4 "
24900AA	C14—0.1 mf. ...	1	—	0	1	4 "
22001AG	C15—0.0023 mf. ...	1	—	0	0	9 "
22001AG	C16—0.0023 mf. ...	1	—	0	0	9 "
22001AG	C17—0.0023 mf. ...	1	—	0	0	9 "
22001AG	C18—0.0023 mf. ...	1	—	0	0	9 "
24900W	C19—0.05 mf. ...	1	—	0	1	3 "
24900AA	C20—0.1 mf. ...	1	—	0	1	4 "
24900AA	C21—0.1 mf. ...	1	—	0	1	4 "
20276A	C22—4 mf. electrolytic with C26, C27, C34 and C74	1	—	0	12	6 "
8777	Screw, P.K., securing electrolytic cond. block ...	4	—	0	0	6 Doz.
22001AG	C23—0.0023 mf. ...	1	—	0	0	9 "
22001B	C24—0.0001 mf. ...	1	—	0	0	9 "
22164J	C25—50 mmf. ...	1	—	0	0	9 "
	C26—16 mf. electrolytic with C22	1	—	0	1	6 "
	C27—4 mf. electrolytic with C22 ...	1	—	0	1	6 "
24900AA	C28—0.1 mf. ...	1	—	0	1	4 Each.
24900W	C29—0.05 mf. ...	1	—	0	1	3 "
24900AA	C30—0.1 mf. ...	1	—	0	1	4 "
17250D	C31—25 mf. electrolytic ...	1	—	0	2	6 "
24900W	C32—0.05 mf. ...	1	—	0	1	3 "
22001AG	C33—0.0023 mf. ...	1	—	0	0	9 "
	C34—4 mf. electrolytic, with C22	1	—	0	0	9 "
24900W	C35—0.05 mf. ...	1	—	0	1	3 Each.
24900W	C36—0.05 mf. ...	1	—	0	1	3 "
22170B	C37—0.0001 mf. ...	1	—	0	0	9 "
22001U	C38—0.0015 mf. ...	1	—	0	0	9 "
22001AG	C39—0.0023 mf. ...	1	—	0	0	9 "
22330CU	C41—175 mmf. \pm 2 per cent. ...	1	—	0	1	6 "

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish	Retail List Price	Per
Condensers.					
24900W	C42—0.05 mf.	1	—	£ 0 1 3	Each.
17250F	C43—50 mf. electrolytic	1	—	0 2 6	"
22170AB	C44—75 mmf.	1	—	0 0 9	"
24900S	C45—0.023 mf.	1	—	0 1 0	"
2200IAE	C46—0.00035 mf.	1	—	0 0 9	"
2200IE	C47—0.0005 mf.	1	—	0 0 9	"
2200IAG	C48—0.0023 mf.	1	—	0 0 9	"
24900AA	C49—0.1 mf.	1	—	0 1 4	"
17250D	C50—25 mf. electrolytic	1	—	0 2 6	"
17250M	C51—200 mf.	1	—	0 2 0	"
22675E	C52—32 mf. electrolytic	1	—	0 7 6	"
17250L	C53—2 mf. electrolytic	1	—	0 2 0	"
24900AE	C55—0.23 mf.	1	—	0 1 9	"
22675E	C56—32 mf. electrolytic, on Power Unit...	1	—	0 7 6	"
28160E	C57—32 mf. electrolytic, on Power Unit...	1	—	0 7 6	"
22675F	C58—16 mf. electrolytic, on Power Unit...	1	—	0 7 0	"
28495	Insulation for C58	1	—	0 0 4	"
24900AN	C59—1 mf. (on Power Unit)	1	—	0 2 0	"
28498	Clip } securing C59	1	—	0 0 6	"
12619	Screw } securing C59	1	—	0 0 6	Doz.
22005A	C60—0.005 mf.	1	—	0 1 6	Each.
2200IE	C61—0.0005 mf.	1	—	0 0 9	"
24900W	C62—0.05 mf.	1	—	0 1 3	"
24900Y	C63—0.075 mf.	1	—	0 1 3	"
24900AE	C64—0.23 mf.	1	—	0 1 9	"
22005Q	C66—0.001 mf.	1	—	0 1 6	"
17250C	C67—10 mf.	1	—	0 2 6	"
17250D	C68—25 mf. electrolytic	1	—	0 2 6	"
28409A	C69—8 mf. electrolytic	1	—	0 3 0	"
28437	Bracket } securing C69	1	CdP	0 0 4	"
8777	Screw, P.K. } securing C69	2	—	0 0 6	Doz.
24900S	C70—0.023 mf.	1	—	0 1 0	Each.
28613A	{ C71—0.1 mf., 3,500 V. } on Power Unit	1	—	0 15 6	"
	{ C72—0.1 mf., 3,500 V. }				
17250K	C73—8 mf. electrolytic	1	—	0 2 0	Each.
	C74—8 mf. electrolytic, with C22				
24900W	C75—0.05 mf.	1	—	0 1 3	Each.
24900AA	C76—0.1 mf.	1	—	0 1 4	"
22005K	C77—0.0023 mf.	1	—	0 1 6	"
2200IAG	C78—0.0023 mf.	1	—	0 0 9	"
22330BN	C80—0.0005 mf. \pm 2 per cent.	1	—	0 1 6	"
22330BN	C81—0.0005 mf. \pm 2 per cent.	1	—	0 1 6	"
24900AJ	C83—0.5 mf.	1	—	0 1 6	"
2200IAB	C84—75 mmfd.	1	—	0 0 9	"
28629A	C85—10 mmf.	1	—	0 1 0	"
22330AM	C86—750 mmf. \pm 5 per cent.	1	—	0 1 6	"
29199A	C87—15 mmf. \pm 2 per cent.	1	—	0 1 6	"
2200IB	C88—0.0001 mmf.	1	—	0 0 9	"
2200IAF	C89—0.00075 mf.	1	—	0 0 9	"
22164H	C90—2.3 mmf.	1	—	0 0 9	"
2200IAG	C91—0.0023 mf.	1	—	0 0 9	"
24900AA	C92—0.1 mf.	1	—	0 1 4	"
2200IAG	C93—0.0023 mf.	1	—	0 0 9	"
24900AE	C94—0.23 mf.	1	—	0 1 9	"
24900W	C95—0.05 mf.	1	—	0 1 3	"
24900AA	C96—0.1 mf.	1	—	0 1 4	"
20280B	VCI and VC2—Two gang condenser	1	—	0 11 9	"
20327	Rear support bracket	1	AlSp	0 0 1	"
10606	Screw, P.K., securing bracket	2	—	0 0 7	Doz.
20329	Front bracket	1	AlSp	0 0 3	Each.
11219	Screw	2	WN	0 0 3	Doz.
3166	Washer	2	—	0 0 2	"
28347	Spacer	1	CdP	0 0 1	Each.
11222	Screw, securing spacer	1	WN	0 0 2	Doz.
20801A	Spring gear assembly	1	—	0 1 0	Each.
24045	Spring	2	—	0 0 1	"

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish	Retail List Price			Per
				£	s.	d.	
13387	Set screw, securing spring gear assembly to condenser spindle	2	WN	0	0	3	Doz.
20325A	Drive mechanism	1	—	0	2	6	Each.
20325	Spindle	1	—	0	0	9	"
20326A	Sleeve and pinion	1	CPBzSp local	0	1	0	"
24053B	Flange and barrel	1	—	0	0	3	"
5183	Circlip (holding sleeve in barrel)	1	WN	0	0	2	Doz.
3522	Ball	3	—	0	0	1	"
3540	Ball (small)	7	—	0	0	1	"
24057	Washer	1	CP	0	0	1	"
24055	Spring	1	—	0	0	1	Each.
11228	Screw	2	WN	0	0	4	Doz.
3165	Washer, S.P. } securing drive mechanism to front bracket	2	—	0	0	2	"
20803	Gear	1	WN	0	0	6	Each.
20804	Grub screw, securing gear to spindle (20325)	2	WN	0	0	6	Doz.
20802A	Bracket with pulley and spring gear assembly	1	—	0	2	0	Each.
11228	Screw	2	WN	0	0	4	Doz.
3165	Washer, S.P. } securing bracket assembly to front plate	2	—	0	0	2	"
20820B	Angle strip, with brackets and pulleys	1	—	0	2	9	Each.
8777	Screw, P.K., securing angle strip to front bracket	2	—	0	0	6	Doz.
21236A	Rubber bush	3	—	0	0	1	Each.
6305	Washer	3	WN	0	0	1	Doz.
3167	Washer, S.P. } securing two gang condenser	3	—	0	0	2	"
11627	Nut	3	WN	0	0	6	"
23922Q	TC1 and TC2—Twin pre-set condenser	1	—	0	1	6	Each.
24027	Adjusting screw	2	—	0	0	3	Doz.
19050	Screw	1	WN	0	0	3	"
11221	" (longer)	1	WN	0	0	1	"
3166	Washer, S.P. } securing TC1 and TC2	2	—	0	0	2	"
11628	Nut	2	WN	0	0	4	"
20250B	TC3 and TC4—in 1st I.F. transformer	1	—	0	2	0	Each.
20257	TC5—Tubular condenser	1	WN	0	0	1	"
20258	Nut } securing TC5	1	WN	0	0	1	"
26350A	TC6 and TC7—Twin pre-set condensers	1	—	0	1	6	"
25067	Adjusting screw	2	AcD	0	0	6	Doz.
1485	Washer	2	AcD	0	0	2	"
10710	Screw	1	WN	0	0	2	"
3166	Washer, S.P. } securing TC6 and TC7	1	—	0	0	2	"
11628	Nut	1	WN	0	0	4	"
26350AC	TC8 and TC9—in 2nd I.F. transformer	1	—	0	1	6	Each.
26350AC	TC10—Twin pre-set condenser	1	—	0	1	6	"
26350AC	TC11—Twin pre-set condenser	1	—	0	1	6	"
26350AC	TC12—Twin pre-set condenser	1	—	0	1	6	"
26350AC	TC13—Twin pre-set condenser	1	—	0	1	6	"
25067	Adjusting screw	8	AcD	0	0	6	Doz.
1485	Washer	8	AcD	0	0	2	"
10710	Screw, 4 B.A.	2	WN	0	0	2	"
11231	Screw, 6 B.A.	2	WN	0	0	2	"
3165	Washer, S.P. } securing TC10 and TC13 to chassis	2	—	0	0	2	"
11628	Nut	2	WN	0	0	4	"
11281	Screw	2	WN	0	0	4	"
3165	Washer, S.P. } securing TC11 and TC12 to screens	2	—	0	0	2	"
20824A	Vernier indicator disc	1	SynBEn	0	0	6	Each.
11434	Screw	2	WN	0	0	1	"
SWITCHES							
28562A	S1—Change over switch with nut (on H.F. unit)	1	—	0	15	6	Each.
22056A	S2—Mains on/off switch, with nuts	1	—	0	4	0	"
26352B	Bush with arm, operating S2	1	CdP	0	0	2	"
13387	Screw, P.K., securing bush to spindle of VR2	2	WN	0	0	3	Doz.
22056A	S3—Television on/off switch with nuts	1	—	0	4	0	Each.
26668	Bracket for S3	1	—	0	1	0	"
28524	Insulation	1	—	0	0	9	Doz.
11805	Screw, P.K., securing bracket and insulation	1	—	0	0	6	"
26352C	Bush with arm, operating S3	1	CdP	0	0	3	Each.
20938	Screw, securing bush to spindle of S1	2	WN	0	0	3	Doz.

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish.	Retail			Per
				List	Price.	Per	
TUNING DETAILS							
20830M	Scale frame	1	CdP	0	1	7	Each.
12619	Screw, P.K., securing scale frame	4	—	0	0	6	Doz.
—	Tuning scale—see pages						
28708	Scale backing	1	—	0	0	2	Each.
27869	Scale clamp	3	CdP	0	0	1	Doz.
25157	Rubber } securing tuning scale to frame	3	—	0	0	4½	Doz.
8777	Screw, P.K. }	3	—	0	0	6	Doz.
24813D	Cursor guide	1	CdP	0	1	0	Each.
14791	Screw } securing cursor guide to brackets on angle strip (20820B) }	2	WN	0	0	4	Doz.
3166	Washer, S.P. }	2	—	0	0	2	Doz.
20835A	Pointer	1	WMCeEn	0	0	3	Each.
20805A	Bracket with guide pulleys and spring	1	—	0	0	9	Doz.
24842	Plate } securing bracket and pointer to cursor	1	WN	0	0	9	Doz.
14791	Screw }	2	WN	0	0	4	Doz.
3166	Washer, S.P. }	2	—	0	0	2	Doz.
20844A	Chain	1	—	0	1	3	Each.
21233C	Split pin, securing chain	1	WN	0	0	1	Doz.
28591A	Wave band pointer	1	WMCeEn	0	0	3	Each.
28706A	Bracket and pin, supporting pointer	1	—	0	0	1	Doz.
12619	Screw, P.K., securing bracket to support bracket of scale frame	2	—	0	0	6	Doz.
28592A	Bush with arm and pin	1	CdP	0	2	3	Each.
20938	Screw, securing bush to spindle of S1	2	WN	0	0	3	Doz.
28594	Link	1	CdP	0	0	1½	Each.
23108	Washer } securing pointer to bracket and link to pointer and arm }	3	WN	0	0	1	Doz.
20936	Felt washer }	3	—	0	0	1	Doz.
21233B	Split pin }	3	WN	0	0	1	Doz.
27730A	Lamp holder	2	—	0	0	3	Each.
27730C	Lamp holder for warning light	1	—	0	0	3	Doz.
27734	Spring	3	—	0	0	1	Doz.
27735A	Insulating washer and eyelet	3	—	0	0	1	Doz.
22704H	Lamp	3	—	0	0	6	Doz.
VALVE HOLDERS, SCREENS, PANELS, BRACKETS, ETC.							
26005A	Valve holder, octal	1	—	0	0	6	Each.
26003A	Valve holder, 7-pin	9	—	0	0	4½	Doz.
26000B	Valve holder, 5-pin	6	—	0	0	4	Doz.
24981	Valve screen base	7	—	0	0	1½	Doz.
16358	Rivet, securing valve holders with valve screen base	14	—	0	0	1	Doz.
16353	Rivet, securing valve holders only... ..	16	—	0	0	1	Doz.
26651	Valve holder, 7-pin, steatite, for V2	1	—	0	1	0	Each.
26719	Valve screen base	1	—	0	0	6	Doz.
11230	Screw } securing steatite valve holder and valve screen base }	2	WN	0	0	3	Doz.
26720	Spacer }	2	WN	0	0	3	Doz.
3165	Washer, S.P. }	2	—	0	0	2	Doz.
11629	Nut }	2	WN	0	0	6	Doz.
24982B	Valve screen	6	—	0	0	6	Each.
26672B	Valve screen (tall)	2	—	0	1	3	Doz.
26112	Valve screen cap	4	—	0	0	2	Doz.
26562A	Perforated valve screen, for V14 and V16	2	SynBEEn	0	4	10	Doz.
10606	Screw, P.K., securing perforated valve screens	4	—	0	0	7	Doz.
19835B	Valve top screen, for V13	1	—	0	0	6	Doz.
19897	Valve top clip	11	—	0	0	1	Each.
23694	Insulating tube, for grid lead to V12	1	—	0	0	4½	Doz.
26339C	Coil screen, with two rubber bushes	2	—	0	1	2	Doz.
28622B	Coil screen (larger top central hole) with two rubber bushes	1	—	0	1	2	Doz.
25593	Rubber bush	6	—	0	0	7	Doz.
12619	Screw, P.K., securing coil screens	6	—	0	0	6	Doz.
28612C	Bracket and panel with A.E. and P.U. sockets	1	—	0	2	6	Each.
11219	Screw } securing bracket to chassis	2	WN	0	0	3	Doz.
3166	Washer, S.P. }	2	—	0	0	2	Doz.
28465A	Panel with 10 tags	8	—	0	0	9	Each.
10439	Tag	10	—	0	0	2	Doz.
28572	Insulating strip	8	—	0	0	9	Doz.
11220	Screw } securing panels and insulating strips	16	WN	0	0	2	Doz.
3166	Washer, S.P. }	16	—	0	0	2	Doz.
11628	Nut }	16	WN	0	0	4	Doz.

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish.	Retail List Price	Per
				£ s. d.	
26712A	Panel with 6 tags	1	—	0 1 0	Each.
10439	Tag	6	—	0 0 2	Doz.
28571	Insulating strip	1	—	0 0 9	"
11220	Screw	2	WN	0 0 2	"
3166	Washer, S.P.	2	—	0 0 3	"
11628	Nut	2	WN	0 0 4	"
28465C	Two brackets with two panels, each with 10 tags	1	—	0 1 9	Each.
28465A	Panel with 10 tags	2	—	0 0 9	"
26666	Bracket	2	CdP	0 0 1	"
10606	Screw, P.K., securing panels to brackets	4	—	0 0 7	Doz.
10606	Screw, P.K., securing brackets to chassis	2	—	0 0 7	"
24020A	Tag panel, with three tags	5	—	0 0 2	Each.
12619	Screw, P.K., securing tag panel	5	—	0 0 6	Doz.
25174B	Tag panel, with 7 tags	2	—	0 0 3	Each.
12619	Screw, P.K., securing tag panel	4	—	0 0 6	Doz.
20334A	Insulating tag and bracket	1	—	0 0 2	Each.
28621	Bracket, for L20 and L21	1	CdP	0 0 6	"
8777	Screw, P.K., securing bracket	2	—	0 0 6	Doz.
28569	Screen around TC10	1	SynBEen	0 0 6	Each.
12619	Screw, P.K., securing screen	2	—	0 0 6	Doz.
28597A	Bracket with panel and two plugs for mains connection	1	—	0 2 0	Each.
8777	Screw, P.K., securing bracket	2	—	0 0 6	Doz.
24581	Bracket	1	CdP	0 0 4½	Each.
11187	Screw, P.K., securing bracket	2	—	0 0 8	Doz.
24625	Earth cable socket	1	—	0 0 1½	Each.
11201	Screw	1	WN	0 0 2	Doz.
3168	Washer, S.P.	1	—	0 0 2	"
26807	Chassis support stud	2	CdP	0 0 6	Each.
3168	Washer, S.P.	2	WN	0 0 2	Doz.
11626	Nut	2	—	0 0 6	"
28590A	Bracket for VR2 and VR3 and S2	1	CdP	0 2 0	Each.
8777	Screw, P.K., securing bracket	2	—	0 0 6	Doz.
28589	Plate, for VR1, VR7, VR8, VR9 and VR11	1	CdP	0 7 6	Each.
8777	Screw, P.K., securing plate	4	—	0 0 6	Doz.
12613	Cleat	6	WN	0 0 6	"
7155	Cleat	2	WN	0 0 1	Each.
4681	Cleat	5	WN	0 0 1	"
16576	Long earthing tag	3	—	0 0 3	Doz.
16755	Rubber bush, small	9	—	0 0 1	Each.
16756	Rubber bush	1	—	0 0 1	"
16757	Rubber bush, large	5	—	0 0 1	"
28601B	Seven-pin plug and lead (to T6)	1	—	0 6 6	"
27815D	Seven-pin plug	—	—	0 1 3	"
28601A	Lead	—	—	0 4 6	"
28602B	Seven-pin plug and lead (to T5)	1	—	0 6 3	"
27815D	Seven-pin plug	1	—	0 1 3	"
28602A	Lead	1	—	0 4 3	"
28156B	Television aerial lead	1	—	0 2 2	"
28609A	Mains switch lead, with three tags	1	—	0 2 0	"
19829	Tag	2	—	0 0 2	Doz.
11802	Tag, slotted	1	—	0 0 3	"
28600A	Cable form No. 1	1	—	0 3 6	Each
28599A	Cable form No. 2	1	—	0 12 0	"
28603A	Tube lead	1	—	0 0 9	"
RADIOVISION UNIT FIXING					
21053	Bolt	2	WN	0 0 3	Each.
10173	Spring washer	2	—	0 0 2	Doz.
24778	Plate	2	WN	0 0 6	"
POWER UNIT					
28550B	Power Unit	1	—	9 2 6	Each.
28024E	CK1	1	—	0 5 9	"
11219	Screw	2	WN	0 0 3	Doz.
3166	Washer, S.P.	2	—	0 0 2	"
25103C	CK2	1	—	0 8 3	Each

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish.	Retail List Price.	Per
				£ s. d.	
10606	Screw, P.K., securing CK2	4	—	0 0 7	Doz.
28551A	T5—Mains transformer	1	—	1 18 6	Each.
28552B	Mains connection panel with 6 tags and 4 terminal screws	1	—	0 0 9	Doz.
14512	Tag	6	—	0 0 5	Doz.
14511	Nut	6	WN	0 0 4	Doz.
11228	Terminal screw	4	WN	0 0 4	Doz.
10606	Screw, P.K., securing panel	4	—	0 0 7	Doz.
11626	Nut	4	WN	0 0 9	Doz.
3168	Washer, S.P. } securing T5	4	—	0 0 2	Doz.
7229	Tag	1	—	0 0 4	Doz.
16745	Heat coil clip	1	WN	0 0 1½	Each.
16746	Heat coil clip, small	1	WN	0 0 1½	Doz.
16747	Spring holder for clip	1	—	0 0 1½	Doz.
16748	Plate	2	WN	0 0 1	Doz.
11366	Screw } securing clip and holder	4	WN	0 0 3	Doz.
10648	Tag	2	WN	0 0 1	Each.
28555A	T6—H.T. transformer	1	—	1 17 6	Doz.
11211	Screw } securing T6	4	WN	0 0 8	Doz.
3167	Washer, S.P.	4	—	0 0 2	Doz.
5786B	R64—10,000 ohms	1	—	0 1 0	Each.
5786AS	R65—1 megohm	1	—	0 1 0	Doz.
5786AS	R66—1 megohm	1	—	0 1 0	Doz.
5786AS	R67—1 megohm	1	—	0 1 0	Doz.
5786AS	R68—1 megohm	1	—	0 1 0	Doz.
5786AS	R69—1 megohm	1	—	0 1 0	Doz.
5786AQ	R70—0.5 megohm	1	—	0 1 0	Doz.
17541AN	R86—150,000 ohms	1	—	0 0 9	Doz.
24097N	R91—180 ohms	1	—	0 2 0	Doz.
12619	Screw, P.K., securing R91	2	—	0 0 6	Doz.
22675E	C56—32 mfd. electrolytic	1	—	0 7 6	Each.
28160E	C57—32 mfd. electrolytic	1	—	0 7 6	Doz.
22675F	C58—16 mfd. electrolytic	1	—	0 7 3	Doz.
28495	Insulation for C58	1	—	0 0 4	Doz.
24900AN	C59—1 mfd.	1	—	0 2 0	Doz.
28498	Clip } securing C59	1	—	0 0 6	Doz.
12619	Screw, P.K.	1	—	0 0 6	Doz.
28613A	C71—0.1 mfd., 3,500 V.	1	—	0 15 6	Each.
	C72—0.1 mfd., 3,500 V.	1	—	0 0 6	Doz.
26005A	Valve holder, octal	1	—	0 0 6	Doz.
26003A	Valve holder, 7-pin	2	—	0 0 4½	Doz.
16358	Rivet, securing valve holder	6	—	0 0 1	Doz.
24501B	Valve holder, 4-pin	1	—	0 0 6	Each.
11220	Screw	4	WN	0 0 2	Doz.
3166	Washer, S.P. } securing 4-pin valve holder...	4	—	0 0 2	Doz.
11628	Nut	4	WN	0 0 4	Doz.
26712A	Panel with six tags	2	—	0 1 0	Each.
10439	Tag	12	—	0 0 2	Doz.
10996	Screw	4	WN	0 0 6	Doz.
10089	Spacer	4	WN	0 0 4	Doz.
3166	Washer, S.P.	4	—	0 0 2	Doz.
11636	Nut	4	WN	0 0 4	Doz.
16757	Insulation bush	3	—	0 0 1	Each.
15140	Tag	1	—	0 0 3	Doz.
28608A	H.T. lead to anode of tube	1	—	0 0 10	Each.
21404A	Insulated clip for lead	1	—	0 0 4	Doz.
23915	Bolt	3	WN	0 0 1	Doz.
3167	Washer, S.P. } securing power unit to insert nuts in cabinet...	3	—	0 0 2	Doz.
LOUDSPEAKER.					
24460N	Loudspeaker	1	—	1 0 0	Each.
11543Q	Field coil	1	—	0 5 9	Doz.
12947	Washer, felt	1	—	0 0 2	Doz.
21456	Washer, presspahn	3	—	0 0 4	Doz.
26308	Hum coil	1	—	0 0 7½	Each.
21966B	Terminal panel with eight tags	1	—	0 1 0	Doz.
21968	Top plate	1	CdP	0 1 0	Doz.

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish	Retail List Price	Per
28055	Stud, securing top plate	4	WN	£ 0 0 1	Each.
24460M	Cone chassis, with four bracket and 4 studs	1	CdP	0 2 6	"
19687	Nut securing cone chassis to studs	4	AcD	0 0 2	Doz.
25224A	Connecting panel, with two tags	1	—	0 0 1	Each.
7237	Tag	2	—	0 0 4	Doz.
13810	Rivet, securing panel to cone chassis	2	—	0 0 3	"
24461B	Speech coil and cone	1	—	0 3 0	"
19585	Card washer	2	—	0 0 1	"
25205	Washer plate } securing spider of cone to studs on cone chassis	1	WN	0 0 1½	Each.
19687	Nut	2	AcD	0 0 2	Doz.
25204	Felt strip	1	—	0 0 1½	Each.
26515	Stop	1	BME n	0 0 6	Doz.
25022	Sleeve	1	WN	0 0 6	"
25023	Screw	1	WNCB	0 0 6	"
11213	Screw	4	ParB	0 0 2	"
1021	Washer	4	WN	0 0 3	"

TUBE FITTINGS

28633A	Strap, with rubber, supporting tube	1	—	0 3 0	Each
28586A	Strap, with felt, supporting rear end of tube, with focus, frame and line coils	1	—	0 2 6	"
21854	Screw	4	WN	0 0 6	Doz.
3168	Washer, S.P. } securing straps to insert nuts in cabinet	4	—	0 0 2	"
1022	Washer	4	WN	0 0 2	"
28587A	Clamp, with felt securing tube to strap	1	—	0 0 10	Each
28500	Bolt	2	SynBEn	0 0 6	Doz.
1021	Washer	2	SynBEn	0 0 2	"
3167	Washer, S.P. } securing clamp to strap	2	—	0 0 2	"
11627	Nut	2	SynBEn	0 0 6	"
28452C	Clamp and bracket assembly	1	SynBEn	0 2 10	Each.
28452D	Clamp and bracket assembly	1	SynBEn	0 2 10	"
28500	Bolt	2	SynBEn	0 0 6	Doz.
1021	Washer	2	SynBEn	0 0 2	"
3167	Washer, S.P. } securing clamp and bracket assemblies to strap	2	—	0 0 2	"
11627	Nut	2	SynBEn	0 0 6	"
11220	Screw	2	SynBEn	0 0 2	"
1088	Washer	2	SynBEn	0 0 2	"
3166	Washer, S.P. } securing clamp and bracket assemblies to brackets on line	2	—	0 0 2	"
or 1016	Washer	4	WN	0 0 2	"
11628	Nut	2	SynBEn	0 0 2	"
17423	Screw	2	SynBEn	0 0 1	Each.
24055	Spring	2	—	0 0 1	"
1021	Washer	4	SynBEn	0 0 2	Doz.
11627	Nut	2	SynBEn	0 0 6	"

CABINET, BACK, FITTINGS, ETC.

28588B	Cabinet back, with hinges	1	—	0 6 8	Each.
8651	Screw, securing hinges to cabinet	6	BzP	0 0 3	Doz.
19896	Screw	2	ParB	0 0 1	Each.
19895	Spring washer } securing cabinet back to brackets	2	ParB	0 0 4	Doz.
26777D	Mains socket assembly	1	—	0 2 9	Each.
26777	Mains socket base	1	—	0 0 9	"
26776	Spring socket	2	AcD	0 0 6	Doz.
26778B	Mains socket cap with ring	1	—	0 1 9	Each.
11222	Screw	2	BzP	0 0 2	Doz.
3166	Washer, S.P. } securing socket cap to socket base	2	—	0 0 2	"
11628	Nut	2	WN	0 0 2	"
12599B	Mains lead	1	—	0 2 0	Each.
8227A	Mains plug	1	—	0 0 6	"
20494	Window	1	—	0 0 2	"
20536	Rubber strip	2	—	0 0 6	Doz.
20493	Rubber strip	2	—	0 0 4	"
26107	Clamp	4	ParB	0 0 6	"
14791	Screw	4	ParB	0 0 4	"

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish	Retail List Price			Per
				£	s.	d.	
9545	Screw, securing tuning escutcheon to cabinet ...	4	BzP	0	0	3	Doz.
24671	Window for tube ...	1	—	0	1	3	Each.
24610A	Rubber cap for tube...	1	—	0	12	6	"
26765	Clamp	3	CdP	0	1	0	"
9545	Screw } securing window and cap ...	9	WN	0	0	3	Doz.
2855			Washer	WN	0	0	1
28630A	Lens holder and lens ...	1	—	0	1	6	Each.
28630	Lens holder ...	1	BzP	0	0	6	"
18311A	Lens (red) ...	1	—	0	1	0	"
18214	Sleeve, securing lens holder ...	1	WN	0	0	3	Each.
18313	Cowl, for lamp ...	1	CdP	0	0	3	"
16787B	Bracket, with panel and three sockets for Ex. L.S.	1	—	0	0	6	"
11531G	Panel, with three sockets ...	1	—	0	0	3	"
16352	Rivet, securing panel ...	2	—	0	0	1	Doz.
8651	Screw, securing bracket ...	2	WN	0	0	2	"
19104AA	Resistance—50 ohms ...	1	—	0	1	0	Each.
28605A	Loudspeaker lead, with five tags ...	1	—	0	2	2	"
11802	Tag ...	5	—	0	0	3	Doz.
28604B	Tube coil lead with 7-pin plug ...	1	—	0	3	6	Each.
28604A	Lead ...	1	—	0	1	6	"
27815K	Seven-pin plug ...	1	—	0	1	3	"
27815A	Plug body, with 7 pins ...	1	—	0	0	8	"
28509	Plug cap ...	1	—	0	0	5	"
27817	Screw } securing cap to body ...	1	WN	0	0	1	"
27818			Nut	WN	0	0	1
28575A	Tube socket ...	1	—	0	2	6	"
28575	Socket base ...	1	—	0	0	10	"
28576	Socket base cover ...	1	—	0	0	8	"
28474	Spring contact ...	7	SP	0	0	1	"
11478	Screw } securing cover to base ...	4	WN	0	0	2	Doz.
13880			Nut	—	0	0	4
21404A	Insulated anode cap, for tube ...	1	—	0	0	4	Each.
29262A	Television A and E plug ...	1	—	0	1	9	"
29262	Plug top ...	1	—	0	0	8	"
29263A	Plug bottom, with locating pin ...	1	—	0	0	9	"
29236	Contact, L.H. ...	1	AcD	0	0	9	Doz.
29237	Contact, R.H. ...	1	AcD	0	0	9	"
29238	Clamp ...	2	AcD	0	0	1	Each.
11475	Screw, securing lead to plug ...	2	WN	0	0	2	Doz.
11319	Screw } securing plug top to bottom ...	2	WN	0	0	2	"
15938			Nut	WN	0	0	6
16578	Cleat, for leads ...	2	WN	0	0	6	"
9545	Screw, securing cleats ...	2	WN	0	0	3	"
28641	Cleat, for large cables ...	2	—	0	0	1	Each.
9922	Screw, securing cleats ...	2	WN	0	0	4	Doz.
28631	Screen, for underneath rear of radiovision unit ...	1	CdP	0	3	3	Each.
11882G	Heat coil, yellow ...	1	—	0	0	10	"
or							
16705B	Heat coil, yellow ...	1	—	0	0	10	"
4893	Envelope for heat coil ...	1	—	0	0	1½	"
16289B	Plug, black ...	3	—	0	0	2	"
16289J	Plug, yellow ...	4	—	0	0	2	"
3475G	Plug, yellow (short) ...	1	—	0	0	1½	"
18888A	Carton, for mains lead and plugs ...	1	—	0	0	1	"

MODEL 709

Instructions

28616	Instruction card ...	1	—	0	1	0	Each.
28618	Warning and valve position label ...	1	—	0	0	6	"
25836	Warning transfer ...	1	—	0	0	1½	"
21710	Heat coil label ...	1	—	0	0	6	Doz.

CABINET PARTS AND FITTINGS

86163B	Cabinet ...	1	Pol.	16	0	0	Each.
18883A	Castor ...	4	—	0	5	0	"

SPARE PARTS LIST—continued

Part No.	Description.	Parts per Inst.	Finish.	Retail List Price.	Per
CONTROLS					
				£ s. d.	
20967G	Knob—" Volume "	1	ChF	0 0 9	Each.
19157	Grub screw, securing volume knob	1	WN	0 0 3	Doz.
20967B	Knob—" Tuner "	1	ChF	0 0 9	Each.
27804Q	Knob—" Tone "	1	ChF	0 0 6	"
27804B	Knob—" Wave Band "	1	ChF	0 0 6	"
27804V	Knob—" Focus "	1	ChF	0 0 6	"
11805	Screw, P.K., securing tone, wave band and focus knobs	3	—	0 0 6	Doz.
26633A	Knob—" Framehold "	1	ChF	0 0 9	Each.
26634A	Knob—" Linehold "	1	ChF	0 0 9	"
26633B	Knob—" Contrast "	1	ChF	0 0 9	"
26634B	Knob—" Brightness "	1	ChF	0 0 9	"
11773	Grub screw, securing tuner, linehold and brightness knobs	3	WN	0 0 5	Doz.
24577A	Knob, for pre-set controls	2	—	0 0 6	Each.
RADIOVISION UNIT					
28570B	Radiovision unit	1	—	27 10 0	Each.
20815M	Scale	—	—	0 2 6	"

" FINISH " CODE.

AcD	Acid Dip.	ParB	Parkerised Black.
AlSp	Aluminium Spray.	Pol	Polished.
AnBz	Antique Bronze.	Std	Standard.
BEn	Black Enamel.	SynBEn	Synthetic Black Enamel.
AnBr	Antique Brass.	SynCrEn	Synthetic Cream Enamel.
BMEn	Black Matt Enamel.	WEn	White Enamel.
BzP	Bronze Polished.	WMCeEn	White Matt Cellulose Enamel.
CB	Camera Black.	SP	Silver Plate.
CdP	Cadmium Plated.	WN	White Nickel.
ChF	Chrome Filled.	WSp	White Spray.
CPBzSpLoc	Copper Plate—Bronze Spray Local.		

In order to expedite delivery of spare part orders, please quote :—

1. Model number and serial number.
2. Spare part number, description, and " finish " as given in the above list.
3. Quantity required.

Unless full particulars are quoted, delay in the execution of orders must inevitably result.

Order spare parts from :—

E.M.I SERVICE, LTD.,
SHERATON WORKS,
HAYES, MIDDLESEX.

Telephone : Southall 2468.

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