

SERVICE SHEET FOR

F.T.C. RADIO SERVICE DEPT.

6.4.55



model PZ69

FOR OPERATION OFF 230 VOLT 50 CYCLE A.C. MAINS

		Mains Consumption 40 watts. Unsmoothed H.T. 268 volts.		A.F. Output 2.5 watts. Smoothed H.T. 232 volts.		Osc.				
	Valve	Mullard	Ea	Ia	Es	Is	Ea	Ia	Ek	Ik
V1	Frequency Changer	ECH.42	232	2.2	72	4.2	143	5.6	—	12.0
V2	I.F. Amplifier	EF.41	232	6.1	72	1.7	—	—	—	7.8
V3	Det. and A.F. Amplifier	EBC.41	62	0.6	—	—	—	—	—	0.6
V4	Output	EL.41	254	30.0	232	4.0	—	—	6.1	34.0
V5	Rectifier	EZ.40	Anode to Anode 500 v. A.C.						268	54.4
V6	Tuning Indicator	EM 34							—	1.6

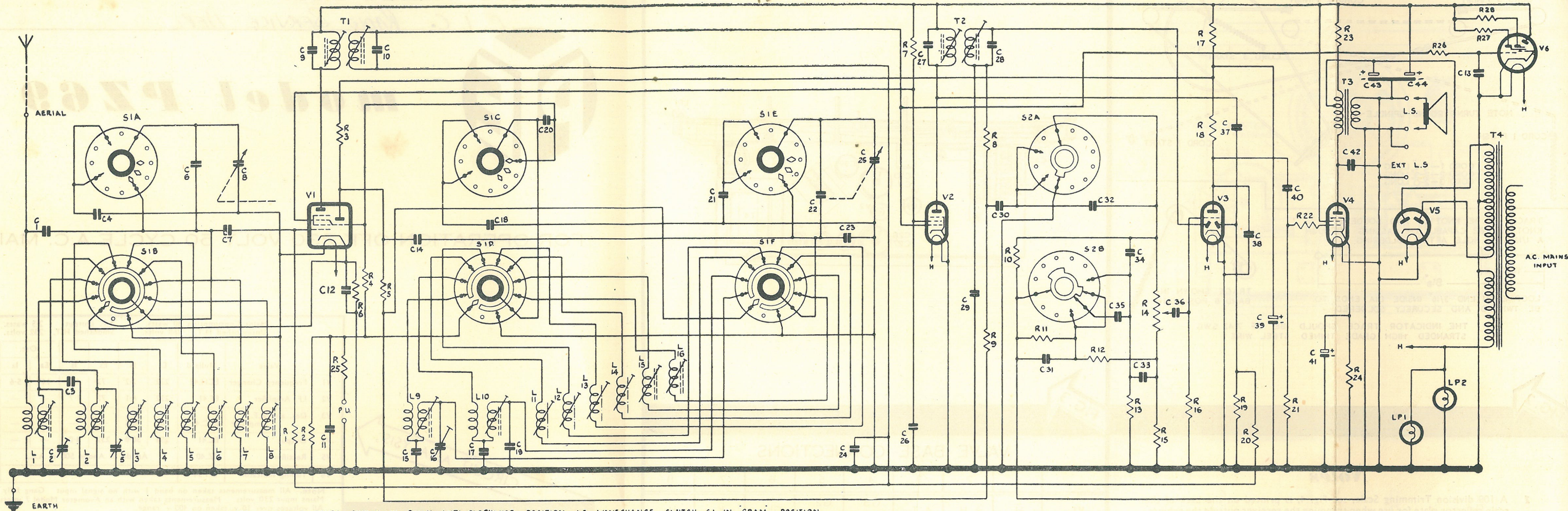
CIRCUIT ANALYSIS

Note. - All measurements taken on band 1 with no signal input. Gang fully meshed. Mains input 230 volts. Measurements taken with an Avometer Model 7 instrument. All voltages over 10 v. taken on 400 v. range. All voltages under 10 v. taken on 10 v. range.

Apply signal as below	Set Receiver Controls to	Adjust in order for Maximum Output
(1) 470 kc/s. between chassis and control grid of V1 via 0.1 μ F condenser	Low frequency end of Band 1.	Iron dust cores of I.F. Transformers T2 and T1
(2) 600 kc/s. between Aerial and Earth Sockets via standard Dummy Aerial	Band 1. 600 kc/s.	Iron dust cores of L9 and L1
(3) As (2) but 1500 kc/s. (200 m.)	Band 1. 1500 kc/s.	Trimmers C16 and C2
(4) Repeat (2) and (3) above until calibration and tracking are correct.		
(5) As (2) but 3.3 Mc/s.	Band 2. 3.3 Mc/s.	Iron dust cores of L10 and L2
(6) As (2) but 7.2 Mc/s.	Band 2. 7.2 Mc/s.	Trimmer C5
(7) Repeat (5) and (6) above until calibration and tracking are correct.		
(8) As (2) but 9.6 Mc/s.	Band 3. 9.6 Mc/s.	Aluminium slugs of L11 and L3
(9) As (2) but 11.8 Mc/s.	Band 4. 11.8 Mc/s.	Aluminium slugs of L12 and L4
(10) As (2) but 15.3 Mc/s.	Band 5. 15.3 Mc/s.	Aluminium slugs of L13 and L5
(11) As (2) but 17.8 Mc/s.	Band 6. 17.8 Mc/s.	Aluminium slugs of L14 and L6
(12) As (2) but 21.6 Mc/s.	Band 7. 21.6 Mc/s.	Iron dust cores of L15 and L7
(13) As (2) but 25.8 Mc/s.	Band 8. 25.8 Mc/s.	Iron dust cores of L16 and L8

TRIMMING PROCEDURE

* Pointer should be lined up with the spots at the top of each band.



NOTE. ALL SWITCHES SHOWN IN FULLY ANTI-CLOCKWISE POSITION. I.E. WAVECHANGE SWITCH S1 IN GRAM POSITION, AND TONE SWITCH S2 IN OFF POSITION. ALL SWITCHES ARE VIEWED FROM THE FRONT, AND THE DIRECTION OF ROTATION IS CLOCKWISE.

circuit diagram
of the
PYE
MODEL
PZ 69

CONDENSERS						CONDENSERS, Contd.						RESISTORS						TRANS	
Fig.	No.	Specification	Volts	±	Fig.	No.	Specification	Volts	±	Fig.	No.	Ohms	Watts	±	Fig.	No.	Specification		
C1	666659	5.6 pF Ceramic		20%	4	666659	C34	82 pF Ceramic		20%	4	R1	1 meg.		4	670410	T1	1st I.F. Trans.	
C2	800076	3-50 pF Trimmer			4	800076	C35	0.02 μF Tubular	500		4	R2	220,000 meg.		4	670406		Sec. 12.2	
C3	666660	47 pF Ceramic		20%	4	666660	C36	0.05 μF Tubular	350		4	R3	10,000		4	670398	T2	2nd I.F. Trans.	
C4	664130	150 pF Mica		2%	4	664130	C37	47 pF Ceramic		20%	4	R4	82,000		4	671047		Sec. 12.2	
C5	800076	3-50 pF Trimmer			4	800076	C38	100 pF Ceramic		20%	4	R5	220,000		4	670406	T3	Output Trans.	
C6	664092	82 pF Mica		2%	4	664092	C39	16 μF Electrolytic	350	1 & 3	667537	R6	220		4	670388		Prim. Start	
C7	666520	100 pF Ceramic		20%	4	666520	C40	0.005 μF Tubular	350		4	R7	27,000		4	671218		Prim. Start	
C8	800032	528 pF Swing Gang Condenser			1 & 3	800032	C41	50 μF Electrolytic	12		4	R8	220,000		4	670406	T4	Mains Trans.	
C9*		100 pF + Mica		2%	1 & 3		C42	0.005 μF Tubular	1000	1 & 3	668870	R9	220,000		4	670406		Sec. 270	
C10*		100 pF + Mica		2%	1 & 3		C43	32 μF Electrolytic	350	1 & 3	667504	R10	2.2 meg.		4	670412			
C11	669082	270 pF Mica	150	5%	4	669082	C44	32 μF + Electrolytic	350	1 & 3	667504	R11	4,700		4	670396			
C12	669096	0.01 μF Tubular	350		4	669096	INDUCTANCES						R12	2,200		4	670394		
C13	666678	0.01 μF Tubular	350		4	666678							L1	M.W. Aerial Coil	M.W.7	4	780246	R13	390
C14	664260	560 pF Ceramic		20%	4	664260	L2	M.S.W. Aerial Coil	M.S.W.4	4	780338	R14	1 meg. Volume Control		4	810241			
C15	800076	510 pF Mica		2%	4	800076	L3	31 m. Aerial Coil	S.W.6	4	780276	R15	220		4	670388			
C16	664938	3-50 pF Trimmer		5%	4	664938	L4	25 m. Aerial Coil	S.W.5	4	780277	R16	10 meg.		4	670416			
C17	664130	2700 pF Mica		2%	4	664130	L5	19 m. Aerial Coil	S.W.4	4	780278	R17	4,700		4	670396			
C18	666517	150 pF Mica		10%	4	666517	L6	16 m. Aerial Coil	S.W.3	4	780272	R18	220,000		4	670406			
C19	666520	27 pF Mica		20%	4	666520	L7	13 m. Aerial Coil	S.W.2	4	780279	R19	1 meg.		4	670410			
C20	664130	100 pF Ceramic		2%	4	664130	L8	11 m. Aerial Coil	S.W.1	4	780280	R20	1 meg.		4	670410			
C21	664130	150 pF Mica		2%	4	664130	L9	M.W. Osc. Coil	M.W.9	4	780254	R21	470,000		4	670408			
C22	666515	150 pF Mica		2%	4	666515	L10	M.S.W. Osc. Coil	M.S.W.12	4	780255	R22	10,000		4	670398			
C23	668966	15 pF Ceramic N750K		10%	4	668966	L11	31 m. Osc. Coil	S.W.7	4	780275	R23	1,600 Wire Wound		4	671836			
C24	800032	0.05 μF Tubular	350		1 & 3	800032	L12	25 m. Osc. Coil	S.W.6	4	780276	R24	180		4	670509			
C25	668966	528 pF Swing Gang Condenser			1 & 3	668966	L13	19 m. Osc. Coil	S.W.5	4	780277	R25	470,000		4	670408			
C26		0.05 μF Tubular	350		4		L14	16 m. Osc. Coil	S.W.4	4	780278	R26	2.2 meg.		4	670412			
C27*		100 pF + Mica		2%	1 & 3		L15	13 m. Osc. Coil	S.W.2	4	780279	R27	1 meg.		4	670410			
C28*		100 pF + Mica		2%	1 & 3		L16	11 m. Osc. Coil	S.W.1	4	780280	R28	1 meg.		4	670410			
C29	666520	100 pF Ceramic		20%	4	666520													
C30	668594	0.02 μF Tubular	500		4	668594													
C31	668609	0.25 μF Tubular	350		4	668609													
C32	669081	0.005 μF Tubular	150		4	669081													
C33	668599	0.05 μF Tubular	350		4	668599													

Note.—* Integral

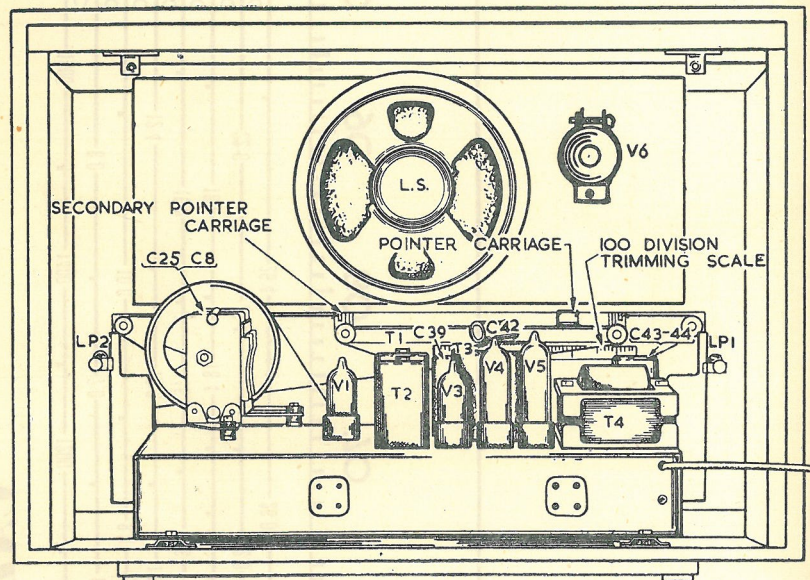


FIG. 1

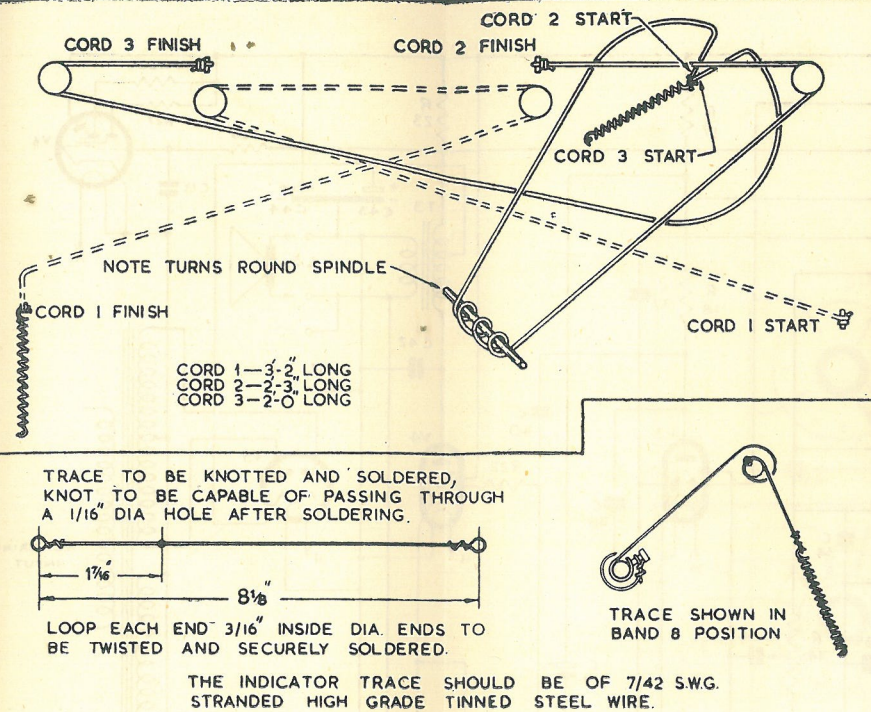


FIG. 2

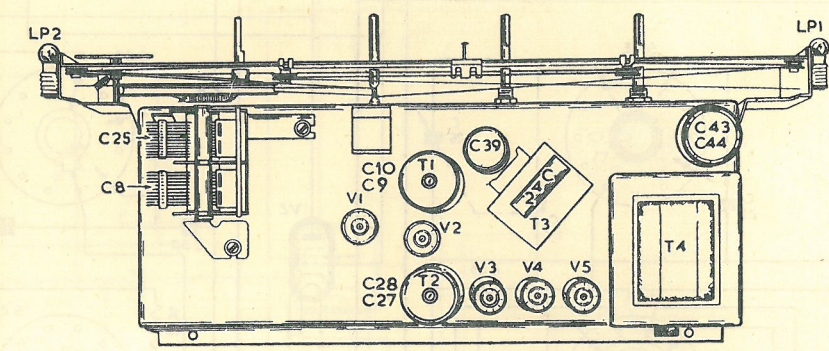


FIG. 3

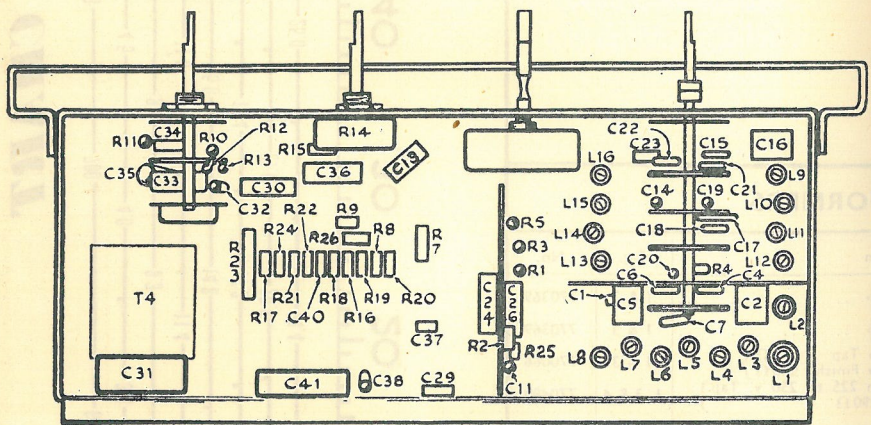


FIG. 4

Notes

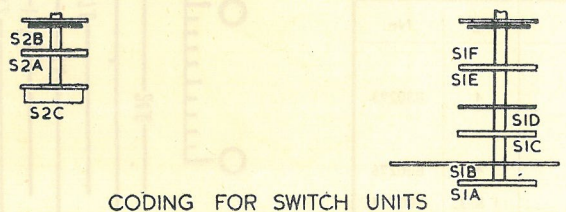
- 1 A 100 division Trimming Scale, see Fig. 4, is printed on the back of the scale reflector plate for use when trimming the receiver outside the cabinet. With the Gang fully closed, a mark should be made on the secondary pointer carriage to line up with O division; this will serve as an index for the scale. A Calibration Chart is printed on page 2. When no accurate frequency standard is available the receiver should be calibrated against a reliable broadcasting station operating on a wavelength close to that specified in the Trimming Procedure. After the alignment has been carried out and the chassis refitted in the cabinet, the pointer should be lined up with the spots to be found at the right-hand end of the top and bottom tracks of the tuning scale.
- 2 External Speaker 2-4 ohms impedance.
- 3 Dial Bulbs 6.5 volt 0.3 amp.

TO REMOVE CHASSIS

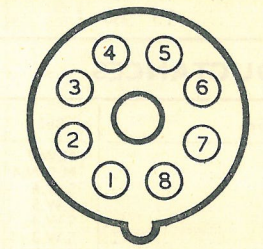
- 1 Remove back of set.
- 2 Pull off knobs.
- 3 Pull out Loudspeaker Plugs.
- 4 Remove Tuning Indicator
- 5 Remove the two Chassis Fixing Screws.
- 6 Withdraw chassis approximately 2 inches, turn sideways and remove from cabinet, taking care not to damage the dial bulbs.

VALVE BASE CONNECTIONS

	1	2	3	4	5	6	7	8
V1	H	A H	A T	G3 GT	G2 G4	G1	K	H
V2	H	A	K G3 S	K G3 S	G2	G1	K G3 S	H
V3	H	A	G	S	D1	D2	K	H
V4	H	A	K G3	—	G2	G1	K G3	H
V5	H	A1	—	—	—	A2	K	H
V6	—	H	A1	G	T	A2	H	K



CODING FOR SWITCH UNITS



VIEW LOOKING AT PINS

FIG. 5