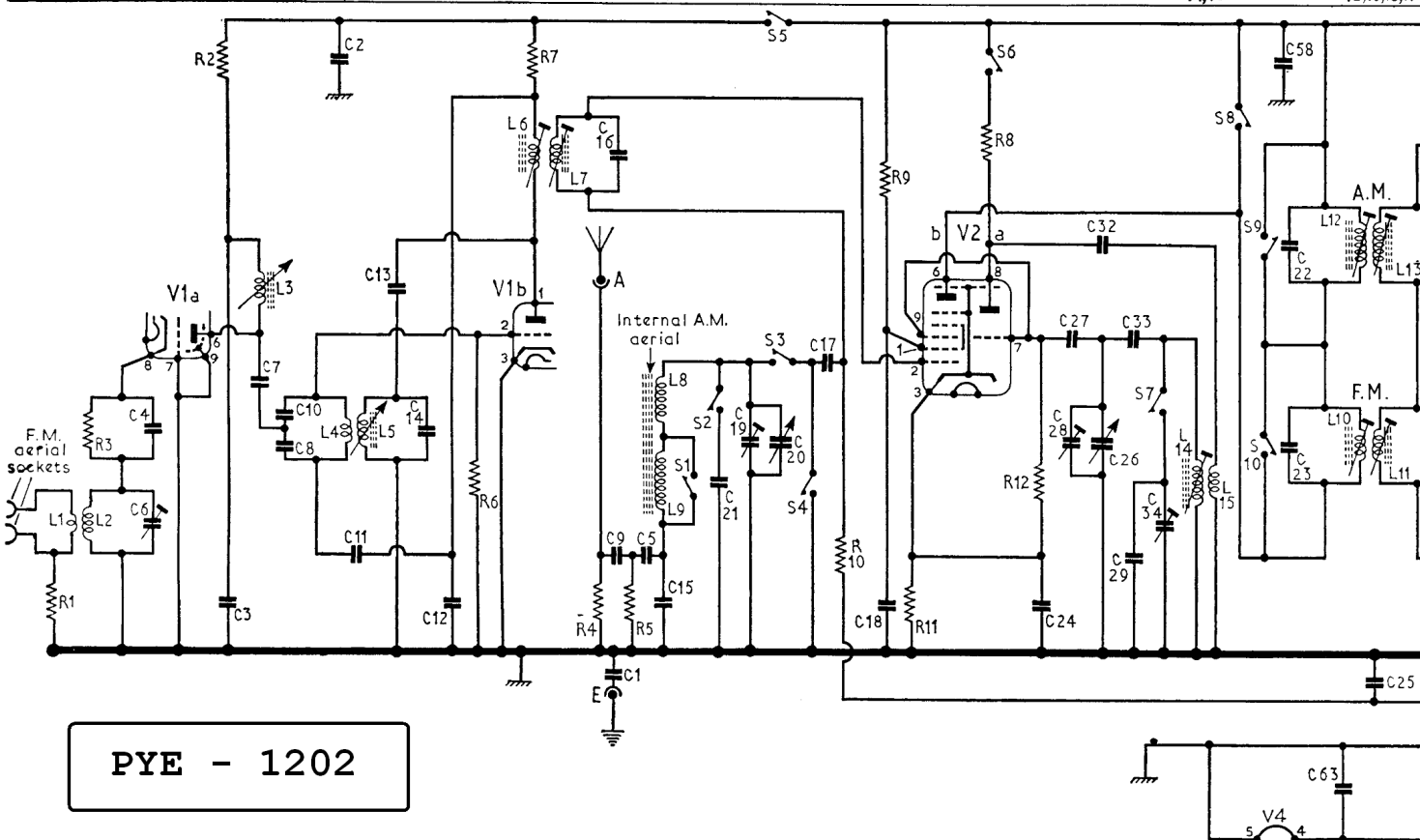
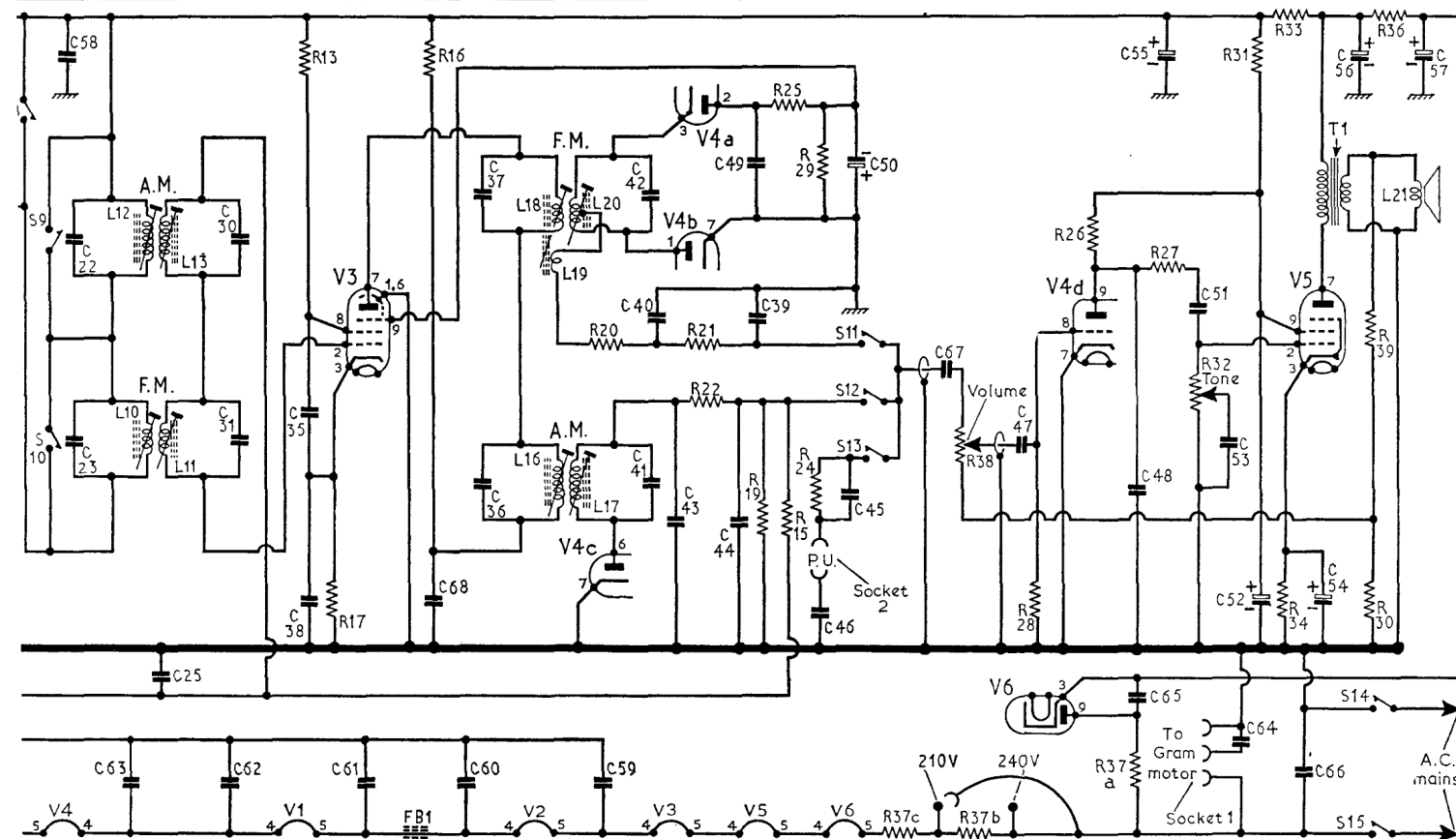


C	4,6	3	7	10,8	2	11	13,14,12	1,9,16,5,15	21	19	20	17	18	24	27,28,26,32,33,29,34	58,22,23	63	25
R	1	3	2		6	7		4	5		10	9	11	8	12			
L	1,2		3		4,5		6,7		8,9							14,15		12,10,13,11



58,22,23	63	25	62,30,31	35,38	61	68,60,37,36	59	42,41,40,43	44,49,39	46,45,50	67	47	48,65,55	51,53,64,52	66,54	56	57
			13	17		16	20	21,22	19,15,25,24,29	37c	38,37b	28	26	37a,27	32	31	34,33
12,10,13,11							18,16,20,19,17										39,36,30
																	21



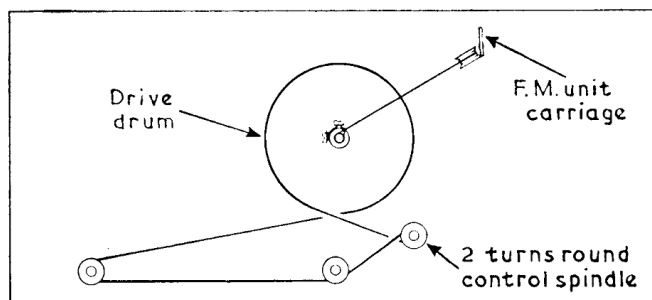
Valve Table

Valve	Anode (V)	Screen (V)	Cathode (V)
V1a UCC85	155 ¹	—	—
V1b UCC85	168 ²	—	—
V2a UCH81	—	—	2.2
V2b UCH81	70	—	2.4
V3 UF89..	168	134	2.2
V4d UABC80	182	130	2.4
V5 UL84	145	125	2.5
V6 UY85	157	137	2.8
	62	—	—
	65	—	—
	184	144	9.5
	192	156	10.5
	235 ³	—	235.0
	240 ³	—	243.0

* Receiver switched to f.m.
† Receiver switched to a.m.
¹ Measured at the junction R2, C3
² Measured at the junction R2, C2
³ A.c. reading.

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The drive cord assembly viewed from the front of the chassis with the tuning gang fully meshed



Resistors			Capacitors			Coils			Miscellaneous		
R1	1.5MΩ	A2	R36	330Ω	E3	C29	435pF	G3	C65	470pF	E4
R2	1.5kΩ	A2	R37a	100Ω	D2	C30	100pF	A2	C66	0.01μF	F3
R3	150Ω	J6	R37b	300Ω	D2	C31	15pF	A2	C67	0.01μF	G4
R4	1.5MΩ	B1	R37c	414Ω	D2	C32	200pF	G4	C68	0.01μF	—
R5	3.3kΩ	B1	R38	820kΩ	E3	C33	495pF	G4	Coils		
R6	1MΩ	J6	R39	1kΩ	E3	C34	30pF	B1			
R7	4.7kΩ	A2	Capacitors			C35	5,000pF	G4			
R8	33kΩ	H4				C36	350pF	B2			
R9	5.6kΩ	H4				C37	15pF	B2			
R10	470kΩ	H4				C38	0.03μF	G4			
R11	150Ω	H4				C39	500pF	G3			
R12	47kΩ	H4				C40	220pF	G3			
R13	12kΩ	G4				C41	350pF	B2			
R14	—	†				C42	22pF	B2			
R15	2.2MΩ	H4				C43	220pF	G4			
R16	2.2kΩ	F4				C44	220pF	G4			
R17	180Ω	G4				C45	470pF	H3			
R18	—	†				C46	0.02μF	H3			
R19	120kΩ	F3				C47	0.01μF	F3			
R20	82Ω	G4				C48	220pF	G4			
R21	47kΩ	G3				C49	220pF	F4			
R22	47kΩ	F4				C50	2μF	G4			
R23	—	†				C51	0.01μF	F4			
R24	680kΩ	G4				C52	2μF	F4			
R25	1.8kΩ	F4				C53	5,000pF	E3			
R26	220kΩ	F4				C54	25μF	F4			
R27	47kΩ	F4				C55	32μF	F4			
R28	10MΩ	F4				C56	40μF	F4			
R29	47kΩ	F4				C57	40μF	F4			
R30	100Ω	E3				C58	0.01μF	G4			
R31	10kΩ	F4				C59	0.01μF	G4			
R32	820kΩ	E3				C60	0.01μF	J6			
R33	820Ω	E4				C61	1,000pF	J6			
R34	150Ω	E4				C62	0.01μF	A1			
R35	—	†				C63	0.03μF	F4			
						C64	0.01μF	E4			

† No component.

CIRCUIT ALIGNMENT

F.M. CIRCUITS

Two methods of i.f. alignment are given, a visual method and a meter method.

Visual Method

Equipment Required.—A sweep frequency generator and an oscilloscope.

- 1.—Switch receiver to f.m. and tune to the i.f. end of the scale. Turn the volume control to minimum. Disconnect C50 at the chassis end.
- 2.—Connect the oscilloscope across R29 and connect the sweep generator to V3 control grid (pin 2). Feed in a 10.7 Mc/s signal and adjust L18 for peak response.
- 3.—Reconnect C50 and transfer the oscilloscope lead to the junction R20, R21. Adjust L20 for a symmetrical "S" curve and maximum a.m. rejection. Re-adjust L18 for the best "S" curve.
- 4.—Disconnect the chassis end of C50 and re-connect the oscilloscope across R29. Transfer the sweep generator to V2 control grid (pin 2). Feed in a 10.7 Mc/s signal and adjust L11 and L10 ensuring that the symmetry of the curve is maintained.
- 5.—Transfer the signal generator to the junction R2, C3 and adjust L7 and L6 for the best response shape. Re-connect C50.

Meter Method

Equipment Required.—An f.m. signal generator; a 0.50μA meter; two matched 220kΩ resistors; a 4.7kΩ resistor and 1,000pF capacitor wired in series, and a further 1,000pF capacitor.

- 1.—Switch receiver to f.m. and tune to i.f. end of scale. Turn volume and tone controls to maximum. Wire the two 220kΩ resistors in series across R29 to form an artificial centre-tap, and connect the 0.50μA meter between their junction and chassis. Connect the f.m. signal generator to V3 control grid (pin 2). Connect the 4.7kΩ resistor and 1,000pF capacitor damping unit across L20. Feed in a 10.7 Mc/s ± 75 kc/s deviated signal and adjust L18 for maximum reading on the meter.
- 2.—Transfer the damping unit from L20 to L18. Connect the meter between the junction of the 220kΩ resistors and the junction R20, R21 and adjust L20 for zero meter reading. Observe that the reading swings from one polarity to the other through zero. Remove the damping unit.
- 3.—Re-connect the meter between the junction of the 220kΩ resistors and chassis, and transfer the signal generator to V2 control grid (pin 2). Adjust L11 and L10 for maximum meter reading.
- 4.—Connect the signal generator via a 1,000pF capacitor to the junction R2, C3 and adjust L7 and L6 for maximum meter reading.
- 5.—Repeat operations 3 and 4 then remove the meter and 220kΩ resistors.

R.F. Alignment

Equipment Required.—An f.m. signal generator and an audio output wattmeter.

During alignment the input signal should be adjusted to give an output of approximately 50mW.

- 1.—Connect the output meter in place of the loudspeaker. Switch receiver to f.m. and check that with the tuning gang fully closed, the f.m. tuner carriage is $\frac{1}{8}$ in from the fully open position. Adjust if necessary by rotating the drive collar on the tuning gang shaft. Turn the volume and tone controls to maximum.
- 2.—Connect the signal generator to the f.m. aerial sockets and feed in a 92 Mc/s ± 15 kc/s deviated signal. Tune the receiver to 92 Mc/s and adjust L5, L3 and C6 for maximum output.

A.M. CIRCUITS

Equipment Required.—An a.m. signal generator modulated 30 per cent; an audio output meter and a 0.1μF capacitor.

- 1.—Switch receiver to m.w. and check that with the tuning gang fully closed, the cursor is aligned with the i.f. ends of the tuning scale tracks. Turn volume and tone controls to maximum. Connect the audio output meter in place of the loudspeaker and connect the signal generator via the 0.1μF capacitor to V2 control grid (pin 2).
- 2.—Feed in a 470kc/s signal 30 per cent modulated and adjust L17, L16, L13 and L12 in that order for maximum output.

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- 3.—Transfer the signal generator to the a.m. aerial socket. Tune receiver to 500m. Feed in a 600kc/s signal and adjust **L14** for maximum output.
- 4.—Tune receiver to 200m. Feed in a 1,500kc/s signal and adjust **C28** for maximum output.
- 5.—Re-tune receiver to 500m. Feed in a 600kc/s signal and adjust **L8** (on ferrite rod) for maximum output.
- 6.—Tune receiver to 214m. Feed in a 1,400kc/s signal and adjust **C19** for maximum output.
- 7.—Repeat operations 3, 4, 5 and 6 as necessary for correct calibration and tracking.
- 8.—Switch receiver to l.w. and tune to 1,400m. Feed in a 214kc/s signal and adjust **C34** and **L9** (on ferrite rod) for maximum output. Check calibration and tracking.

GENERAL NOTES

Dismantling.—To remove the chassis from the cabinet, disconnect the receiver from the mains supply and remove the back cover.

Unplug the earth and pick-up leads, and disconnect the gram motor supply leads noting the colour code.

Unsolder the loudspeaker leads.

Slacken the inner control knob grub screws and pull off all four knobs.

Remove the four chassis securing screws from the underside of the cabinet and withdraw the chassis.

Drive Cord Replacement.—To replace the main drive cord, approximately 36 inches of nylon braided glass yarn is required. Make up the new cord and wind it as shown in the sketch in col. 3. The f.m. drive cord is approximately 8½ inches in length and is secured to the drive collar on the tuning gang shaft.

Switch Table

Switch	F.M.	M.W.	L.W.	GRAM
S1	—	C	—	—
S2	—	—	C	—
S3	—	C	C	—
S4	C	—	—	—
S5	C	—	—	—
S6	—	C	C	—
S7	—	—	C	—
S8	—	—	—	C
S9	C	—	—	—
S10	—	C	C	—
S11	C	—	—	—
S12	—	C	C	—
S13	—	—	—	C

Switches.—**S1-S13** are the waveband/gram switches which are combined in a rotary unit shown in location reference H3. The function of each switch is indicated in the table above where, under the respective waveband or gram heading, "C" means closed and a dash open.