

PYE 835

Four-valve, plus rectifier, table model superhet, covering three wavebands, and with five station push-buttons in addition to manual tuning. Suitable for A.C. supplies. Made by Pye, Ltd., Cambridge.

Circuit.—The aerial is coupled to V1, the frequency-changer, by simple transformer coils on each band. The station push-buttons select three pre-set trimmers tuning the medium-wave coil and two across the long-wave coil.

The oscillator section of V1 is tuned anode with grid coupling coils on S. and M.W. On L.W. and the push-button stations the part of the anode signal developed across the padding capacities is connected back to the grid for reaction.

Fixed tuned I.F. transformers link up V2, the I.F. amplifier, and V3, the double-diode triode.

The A.V.C. diode is energised from V2 anode via C36, the voltage being developed by R16, and fed back to V1 and V2. It is not applied to V1 on S.W.

R9 is the signal diode load, with R8, C34 and C35 as H.F. by-passes. L.F. is passed on by C37 to the volume control R12, which has R11 and C38 tapped across a part of it for tone compensation at reduced volume levels.

Resistance-capacity coupling leads to V4, the output pentode. This has fixed tone shunts in C41 and C43 and a switched shunt in C42.

H.T. is drawn from a straightforward full-wave rectifier, V5, with smoothing choke and two electrolytics.

Provision is made for a 2-4 ohm extension speaker and for a pick-up.

GANGING

I.F. Circuits.—These should not be adjusted unless one has been altered. Inject 465 kc. between V1 signal grid and chassis via .1 mfd. with .5 megohm resistance from valve grid to chassis. The normal grid lead is removed.

With an insulated spacer adjust the outer coils only on each transformer for peak on an output transformer. Seal the coils to the former by coil dope (such as British Celanese Solution No. 202) and leave for two hours before R.F. trimming.

M.W. Band.—Tune to 210 m. Inject 210 m. to aerial and earth via dummy aerial and adjust T1 and T2 for maximum.

Tune to 520 m., inject 520 m., and pad with T3. Recheck both trimming and padding.

L.W. Band.—Tune to 1,800 m., inject 1,800 m., and adjust padder, T4. Tune to and inject 1,300 m., and adjust T5. Repeat both adjustments.

S.W. Band.—Inject 18 m. The signal can be tuned in at two places. Select the one at highest frequency position (lowest gang capacity) and adjust aerial trimmer, T6, for maximum.

PRESS BUTTONS

The wave-ranges are :—

BUTTON	Aerial trim capacity.	Osc. coil	Range (m)
1	620	E	1,350—2,000
2	500	E	1,250—1,800
3	620	K	320—560
4	350	J	255—425
5	150	H	192—305

Wait till the set is thoroughly warm. Push in the button to be changed. Remove card fitted to cabinet base.

Adjust oscillator coil core for the station required, checking by means of reception of the same programme on the manual tuning. The core is turned anti-clockwise to reduce the wavelength.

Then adjust the aerial trimmer for maximum. Check both adjustments, tuning for maximum resonance by ear.

VALVE READINGS

V	Type	Electrode	Volts	Ma.
1	6A8G	Anode	270	5.7
		Screen	60	2.8
		Osc. anode	150	3.6
2	6K7G	Cathode	2.2	12.1
		Anode	270	5.8
		Screen	75	1.4
3	6Q7G	Cathode	2	7.2
		Anode	110	1
4	6F6G	Cathode	1.4	1
		Anode	250	31
5	5Y3G	Screen	270	6
		Cathode	19	37
		Cathode	345	50

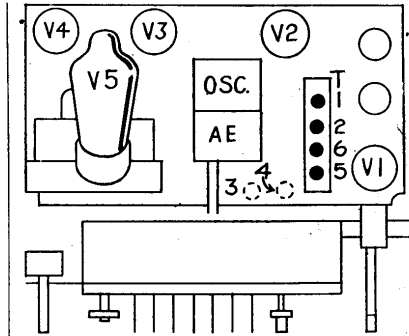
Pilot lamps, 6 v. .5 amp.

RESISTANCES

R	Ohms.	R	Ohms.
1	150	10	1.1 meg.
2	50	11	50,000
3	50,000	12	1 meg.
4	10,000	13	2,000
5	30,000	14	100,000
6	20,000	15	510,000
7	50,000	16	1.1 meg.
8	110,000	17	500
9	510,000		

WINDINGS

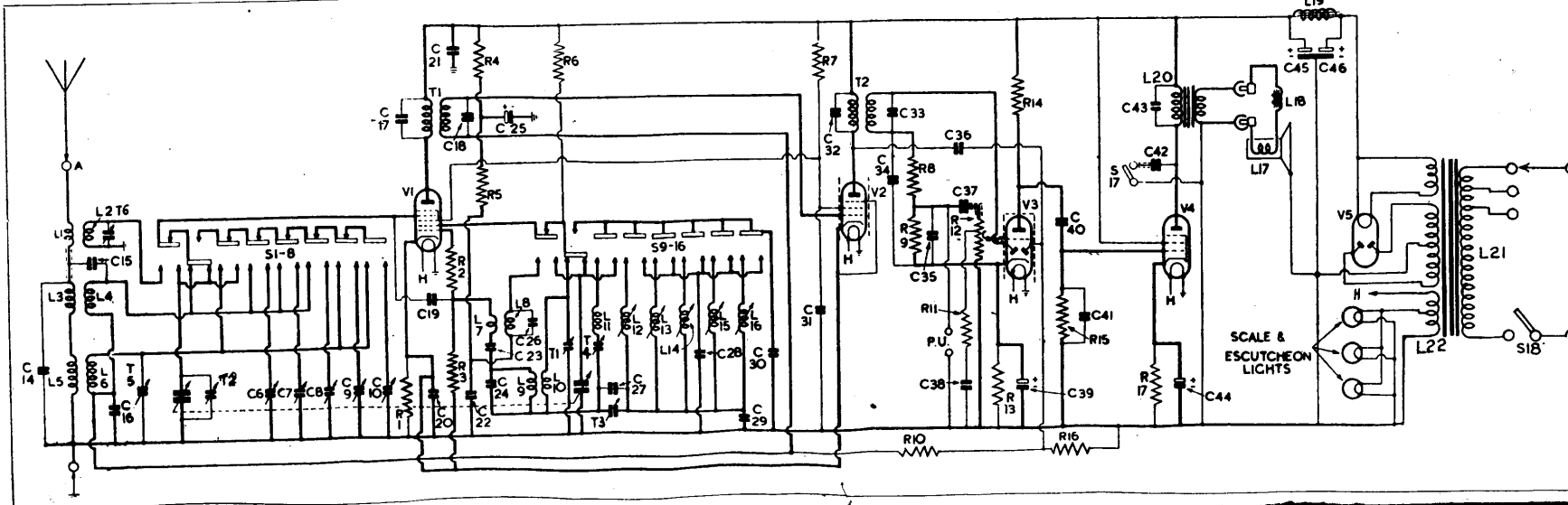
L	Ohms.	L	Ohms.
3	100	15	3
4	3	16	3
5	5	17	2
6	12.4	18	2
7	19	19	2,000
10	2.2	20	23
11	4.5	21	700
13	1.35	22	375 + 375
14	1.5	I.F.'s	7



The trimmers for manually tuned circuits are indicated on this top-of-chassis layout diagram. P.B. trimmers are paired near their buttons.

CONDENSERS

C	Mfds.	C	Mfds.
14	50 mmfds.	31	.1
15	5 mmfds.	34	100 mmfds.
16	.05	35	100 mmfds.
19	2 mmfds.	36	20 mmfds.
20	.25	37	.005
21	.1	38	.01
22	.005	39	.20
23	300 mmfds.	40	.01
24	500 mmfds.	41	500 mmfds.
25	8	42	.01
26	10 mmfds.	43	.001
27	700 mmfds.	44	.20
28	580 mmfds.	45	.16
29	1,000 mmfds.	46	.8
30	95 mmfds.		



Preset capacities in the aerial stage and inductances in the oscillator stage are used for automatic tuning. The arrangement is straightforward on the whole and the identification of the trimmers assists recognition of the associated oscillator coils.