

PYE TP/AC

Four-valve, plus rectifier, two waveband superhet portable. Sockets are provided for an external aerial and earth if required. Provision is made for a pickup and an external loudspeaker may be operated when the internal loudspeaker is unplugged from the chassis. Four models were made suitable for operation from AC mains supplies in the following ranges: 200-250 or 100-250v, 40-100 cycles; 200-250v 25-40 cycles; 100-110v, 25-40 cycles. Marketed by Pye Radio Ltd., Cambridge.

THE frame windings L2, L3, comprise the radio signal tuning coils and are tuned by VC1 section of the triple ganged condenser. L1 is a coupling coil for use with external aerial and earth.

The signals are fed to the grid of the HF pentode, V1, whose cathode is taken to chassis via a resistance network R5, R6 and R7. R6 is variable and is a sensitivity control.

From the anode circuit of V1 signals are choke-capacity fed via L4 and C5 to the tuning circuits L5, L6, tuned by VC2 section of the ganged condenser. From these circuits the signal is fed to the control grid of the frequency changer V2, which is biased by R11 and R12.

A coupling coil L9 in the cathode circuit feeds back on to the oscillator anode tuning coils L7, L8, tuned by VC3 section of the ganged condenser.

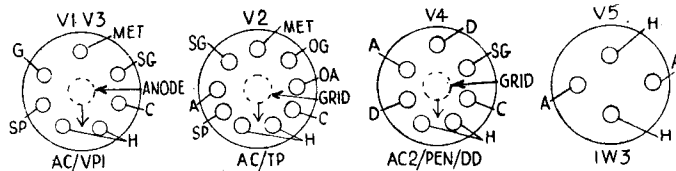
The anode circuit of V2 includes the usual intermediate frequency transformer, L12, L13, and in

series with the primary there is the tuning indicator. This comprises a special 12mm. bulb with a coiled filament taking .1 amp at 2 volts. This is fed from the heater circuit with a double winding L10 in series-parallel with it.

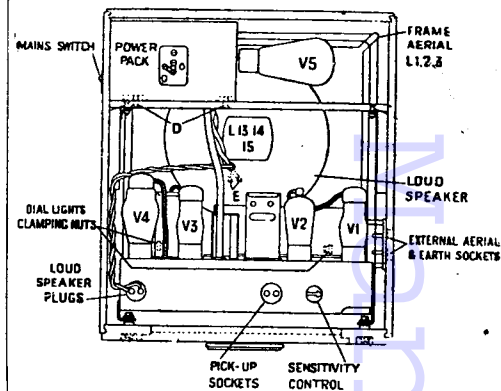
Another winding, L11, carries the direct anode current and when the anode current varies due to the action of automatic volume control on the control grid of V2, the inductance of the tuning indicator transformer alters and varies the voltage applied to, and therefore the glow of, the tuning indicator lamp.

From the first IF transformer the signals are fed to the grid of the IF amplifier pentode V3, and a second IF transformer, L14, L15, transfers the

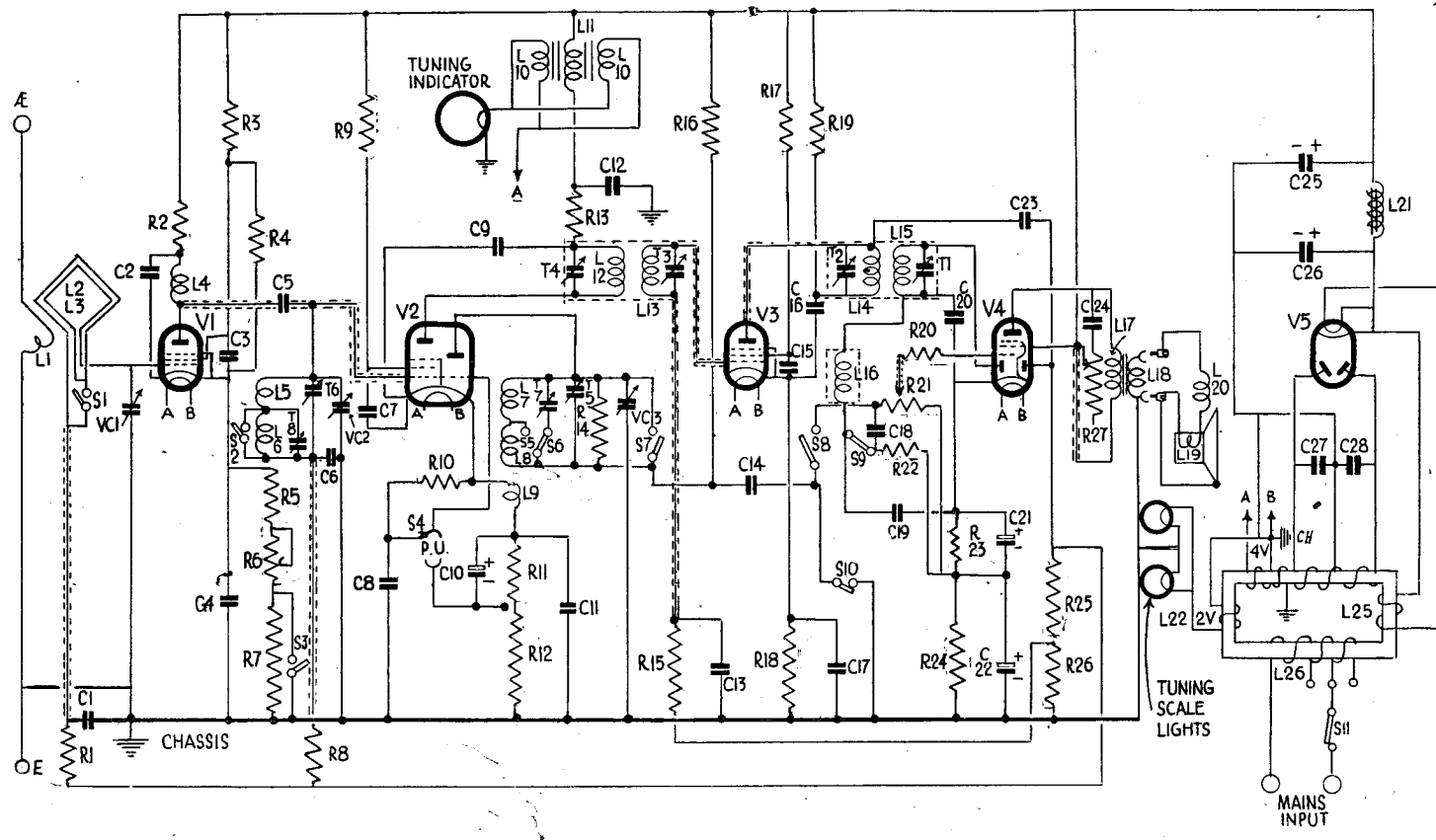
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Left, the valve bases coded for electrode connections. They are drawn as seen when looking at the inverted chassis. The receiver is a superhet with a pre-amplifier.



This general view of the back will help identification of the Pye TP/AC. It is a portable marketed in 1934, suitable for AC operation, and fitted with frame aerial and turntable.



RESISTORS

R	Ohms	R	Ohms
1	510,000	15	510,000
2	10,000	16	100,000
3	15,000	17	25,000
4	30,000	18	500
5	300	19	5,000
6	2,000	20	26,000
7	800	21	250,000
8	510,000	22	260,000
9	25,000	23	140
10	110,000	24	750
11	250	25	510,000
12	750	26	260,000
13	2,000	27	25,000
14	40,000		

CONDENSERS

C	Mfads	C	Mfads
1	.5	15	.1
2	.1	16	.1
3	.1	17	.1
4	.1	18	.1
5	.1	19	.1
6	.1	20	.0002
7	.1	21	.0001
8	.0002	22	.50
9	.1	23	.20
10	.25	24	.0002
11	.1	25	.16
12	.2	26	.08
13	.1	27	.001
14	.1	28	.001

WINDINGS

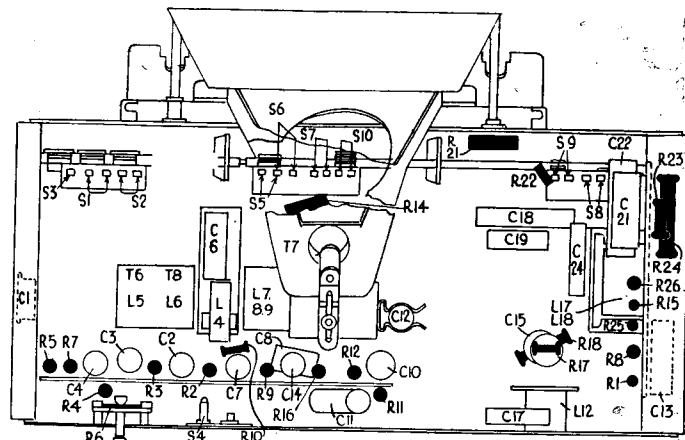
L	Ohms	L	Ohms
1	.14	14	.42
2	1.9	15	.42
3	19.8	16	.700
4	530	17	.740
5	1.5	18	.3
6	4.5	19	1.4
7	1.3	20	1.4
8	4.7	21	1,650
9	.7	22	very low
10	10	23	.04
11	2,850	24	190 + 160
12	42	25	.2
13	42	26	36 + 4 + 4

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PYE TP/AC

Continued

Right, a diagram identifying small parts below the Pye TP/AC chassis. Below it are given a top-deck view of the chassis and a detail diagram of the power pack.



signal to the signal diode of the double diode pentode output valve, V4.

The load resistance is R22 with filtering effected by L16, C20 and C19. From R22 the audio frequency signals are coupled by C18 to the volume control R21 and thence via a grid stopper R20 to the grid of the pentode section of V4.

The AVC diode of V4 is fed from the anode of V3 via C23, the load resistances being R25, R26. Full AVC bias is applied to the grid circuits of V1 and V2 while less bias is applied to V3.

A variable tone control circuit, R27, C24, is connected across the primary, L17, of the output transformer. The secondary, L18, is terminated with sockets into which the internal loudspeaker leads are plugged. L19 is the speech coil and L20 the humbucking coil.

The LT and HT supply circuits are conventional with HT derived from a full-wave rectifier, V5, with smoothing effected by L21 (field winding), C25 and C26. HF filtering by C27 and C28.

Pickup Circuit.—The pickup sockets are in the grid circuit of the triode section of V2 which is employed as a low frequency stage on gram.

Radio signals are prevented by the grid leak R10 being open circuited by S4.

The LF load resistance is R16 and the coupling condenser is C14, which feeds the gram signals to the volume control, R21, when the receiver is switched to gram.

GANGING

IF Circuits.—Connect a .25 mfd condenser between oscillator anode and chassis and inject a signal of 127 kc into the control grid of V2, via a .002 mfd condenser. The lead to the control grid should be removed and a .5 megohm resistance connected between the valve cap and chassis.

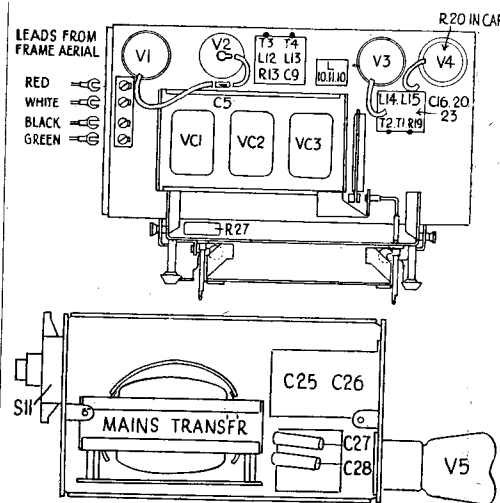
Adjust T1, T2, T3 and T4 for maximum output.

A loading resistance of 25,000 ohms should be connected across the winding opposite to that being trimmed, i.e. across the secondary when the primary is being trimmed and vice versa.

MW Band.—Switch receiver to MW and turn ganged condenser to minimum capacity. The frame aerial should be taken from the cabinet and connected to the chassis.

A signal of 196 metres should then be applied by means of a coupling coil to the frame aerial and

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trimmers T5 and T6 adjusted for maximum output.

LW Band.—Switch receiver to LW. Inject a signal of 846 metres and adjust T7 for maximum output.

Re-check medium wave adjustments.

VALVE READINGS

Volume control at maximum on MW.				
V	Type	Electrode	Volts	Ma
1	AC/VPI (met)	Anode	233	4.4
		Screen	177	1.4
2	AC/TP (met)	Anode	251	7.1
		Osc. Znode	114	1.5
3	AC/VPI (met)	Anode	249	1.4
		Screen	249	6.6
4	AC2/PEN/DD	Anode	234	2.1
		Screen	271	38
5	IW3 Mullard	Anode	300	9
		Delay volts	37	—
Pilot lamps, 3.5 v, .3 amp; tuning indicator, Philips, 12 mm, 2 v .1 amp.		Between anodes	680 R.M.S.	—

2,592 went out and 10 came back

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