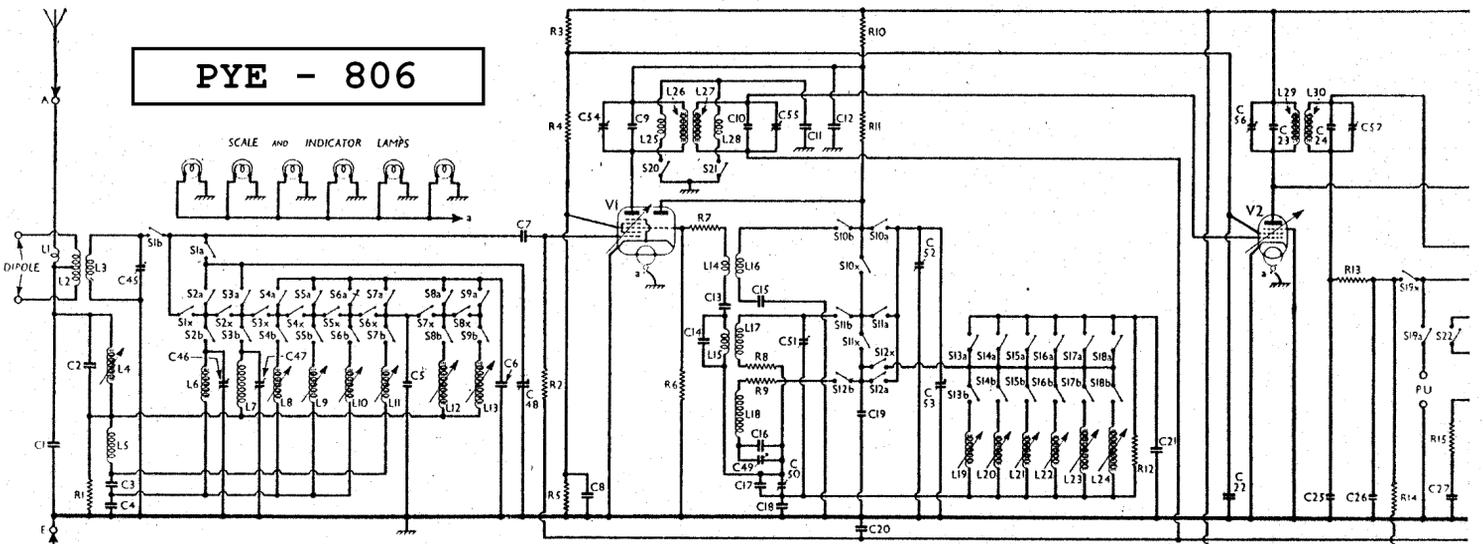


PYE - 806

SCALE AND INDICATOR LAMPS



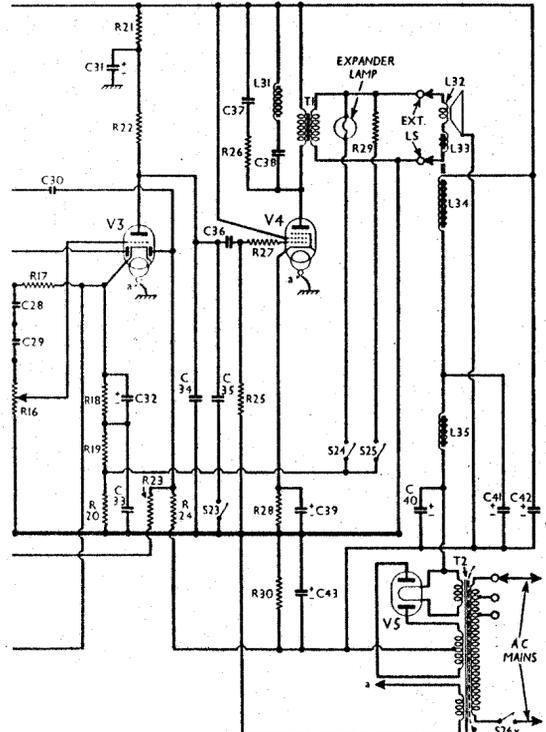
COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	Part of aerial LW coupling ..	10,000
R2	V1 hexode CG resistance ..	1,100,000
R3	V1 and V2 SG HT potential divider	10,000
R4		30,000
R5	80,000	
R6	V1 osc. CG resistance ..	50,000
R7	V1 osc. CG stabiliser ..	100
R8	Osc. circuit MW damping ..	25
R9	Osc. circuit LW damping ..	100
R10	V1 hex. and osc. anode HT feed resistances ..	1,000
R11	10,000	
R12	Auto. osc. circuit damping ..	40,000
R13	IP stopper ..	110,000
R14	T.I. CG decoupling ..	2,100,000
R15	Part of tone compensator ..	80,000
R16	Manual volume control ..	1,000,000
R17	V3 signal diode load ..	510,000
R18	V3 triode GB and AVC delay resistances ..	1,500
R19		150
R20	Neg. feed-back coupling ..	5
R21	V3 triode anode decoupling ..	30,000
R22	V3 triode anode load ..	110,000
R23	AVC line decoupling ..	1,100,000
R24	V3 AVC diode load ..	1,100,000
R25	V4 CG resistance ..	510,000
R26	Part of fixed tone corrector ..	5,000
R27	V4 grid stopper ..	25,000
R28	V4 GB resistance ..	150
R29	Negative feed-back coupling ..	20
R30	V1 hexode and V2 fixed GB ..	15
R31	T.I. anode HT feed ..	2,100,000

CONDENSERS (Continued)		Values (μF)
C45†	Aerial circuit SW trimmer ..	—
C46†	Aerial circuit MW trimmer ..	—
C47†	Aerial circuit LW trimmer ..	—
C48†	Aerial circuit manual tuning ..	—
C49†	Osc. circuit LW tracker ..	—
C50†	Osc. circuit MW tracker ..	—
C51†	Osc. circuit MW trimmer ..	—
C52†	Osc. circuit SW trimmer ..	—
C53†	Osc. circuit manual tuning ..	—
C54†	1st IF trans. pri. tuning ..	—
C55†	1st IF trans. sec. tuning ..	—
C56†	2nd IF trans. pri. tuning ..	—
C57†	2nd IF trans. sec. tuning ..	—

* Electrolytic. † Variable. ‡ Pre-set. § Two in parallel.

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial SW coupling coil ..	1.35
L2	Dipole coupling coil ..	1.2
L3	Aerial SW tuning coil ..	0.05
L4	Aerial IF rejector coil ..	1.4
L5	Second channel filter coil ..	0.2
L6	Aerial MW tuning coil ..	2.1
L7	Aerial LW tuning coil ..	12.0
L8	Aerial circuit MW automatic tuning coils ..	1.15
L9		1.4
L10	1.9	
L11	3.0	
L12	Aerial circuit LW automatic tuning coils ..	23.5
L13		28.0
L14	Oscillator SW reaction ..	9.0
L15	Oscillator MW reaction ..	0.3
L16	Osc. circuit SW tuning coil ..	0.05
L17	Osc. circ. manual MW tuning ..	2.25
L18	Osc. circ. manual LW tuning ..	4.5
L19	0.4	
L20	Oscillator circuit MW automatic tuning coils ..	0.8
L21	1.5	
L22	2.6	
L23	Oscillator circuit LW automatic tuning coils ..	3.0
L24	3.0	
L25	Variable selectivity coil ..	0.9
L26	1st IF trans. { Pri. ..	5.0
L27		Sec. ..
L28	Variable selectivity coil ..	0.9
L29	2nd IF trans. { Pri. ..	5.0
L30		Sec. ..
L31	9 KC/S filter coil ..	112.0
L32	Speaker speech coil ..	1.7
L33	Hum neutralising coil ..	0.2
L34	Speaker field coil ..	800.0
L35	HT smoothing choke ..	270.0
T1	Output trans. { Pri. ..	290.0
	Sec. ..	0.15
	Heater sec. ..	15.0
T2	Mains trans. { Rect. heat. sec. ..	0.05
	HT sec., total ..	0.1
		330.0
S1a, b, x to S3a	Aerial circuit waveband switches ..	—
S3b, x		—
S4a, b, x to S9a, b	Aerial circuit automatic selector switches ..	—
S10a, b, x to S12a, b, x		—
S13a, b to S18a, b	Oscillator circuit waveband switches ..	—
S19a, x	Oscillator circuit automatic selector switches ..	—
S20-21	Radio/gram. change switches ..	—
S22	Variable selectivity switches ..	—
S23	Bass attenuator switch ..	—
S24-25	High-note attenuator switch ..	—
S26x	Expander circuit switches ..	—
	Mains switch ..	—



VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 TH4A	240	1.3	60	3.4
	Oscillator	7.8		
V2 VP4B	250	7.2	182	2.3
V3 TDD4	76	1.1	—	—
V4 PenB4	228	69.0	250	8.2
V5 DW4/350	370†	—	—	—
T.I. TV4A	40	0.1	—	—
	Target	—	—	—
	250	0.4	—	—

† Each anode, AC.

Valve voltages and currents given in the table above are those measured in our receiver when it was operating on mains of 230 V, using the 216-235 V tapping on the mains transformer. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 400 V scale of a model 7 Universal Avometer, chassis being negative.

CONDENSERS		Values (μF)
C1	Part aerial coupling ..	0.0002
C2	Aerial IF rejector tuning ..	0.002
C3	Parts of aerial MW and LW coupling ..	0.005
C4		0.005
C5	L11, L12, L13 fixed tuning ..	0.00003
C6	Aerial auto fixed tuning ..	0.0004
C7	V1 hexode CG condenser ..	0.0001
C8	V1 SG decoupling ..	0.1
C9	1st IF transformer fixed trimmers ..	0.00009
C10		0.00009
C11	Part variable selectivity circuit ..	0.0005
C12	V1 anode decoupling ..	0.1
C13	V1 osc. CG condenser ..	0.0001
C14	Osc. MW reaction shunt ..	0.0005
C15	Osc. circuit SW tracker ..	0.005
C16	Osc. circuit LW fixed tracker ..	0.00022
C17	Osc. circuit MW fixed tracker ..	0.00055
C18	Part osc. auto circuit coupling ..	0.002
C19	Osc. circuit LW and auto trimmer ..	0.00009
C20	AVC line decoupling ..	0.005
C21	Osc. auto circuit fixed tuning ..	0.00041
C22	V2 SG decoupling ..	0.1
C23	2nd IF transformer fixed trimmers ..	0.00009
C24		0.00009
C25	0.00005	
C26	IF by-pass condensers ..	0.00005
C27	Part of tone compensator ..	0.001
C28	AF coupling to V3 triode ..	0.01
C29	Bass attenuator ..	0.001
C30	Coupling to V3 AVC diode ..	0.00002
C31*	V3 triode anode decoupling ..	2.0
C32*	Part V3 cathode by-pass ..	20.0
C33	Part neg. feed-back coupling ..	0.25
C34	Fixed tone corrector ..	0.003
C35	High-note attenuator ..	0.01
C36	V3 triode to V4 AF coupling ..	0.01
C37	Part of fixed tone corrector ..	0.01
C38	9 KC/S filter tuning ..	0.005
C39*	V4 cathode by-pass ..	50.0
C40*	8.0	
C41*	8.0	
C42*	8.0	
C43*	HT smoothing condensers ..	—
C44	Auto GB by-pass ..	50.0
	T.I. CG decoupling ..	0.01

Continued in next column

PYE 806 AND 8J6RG

GENERAL NOTES

Switches.—S1a, b, x to S18a, b are the press-button wavechange switches which, together with S19a, x (the radiogram change switches) and S26x (the mains switch) are contained in a single press-button unit having eleven buttons. From left to right, looking at the front of the chassis, these are for gram, two LW pre-set stations, four MW pre-set stations, LW manual, MW manual, SW manual, and off.

The switch groups are numbered with suffixes a, b or x, and when a button is pressed, all its a and b switches close, and its x switches open, and vice-versa. The mains switch is numbered S26x because it opens when its button is pressed, thus switching the set off. See also the beginning of Circuit Description.

All the switches in this unit are shown in the diagrams in cols. 5 and 6, the upper diagram showing the unit as seen from the underside of the chassis, and the lower diagram showing the reverse side of the unit, as it would be seen if it were possible to look through the chassis deck.

S20, S21 are the variable selectivity switches, S22 the bass attenuator switch, S23 the treble attenuator switch and S24, S25 the volume expander switches. These are all mounted in another 4-button unit, and are indicated in our under-chassis view. The buttons are marked "Less Top," "Less Bass," "Fidelity" and "Expansion." When the first of these buttons is pressed, S23 closes; when the second is pressed, S22 opens; when the third is pressed S20 closes and S21 opens, and vice-versa; when the fourth is pressed, S24 closes and S25 opens, and vice-versa. The buttons of these switches are not released by a latch gate, so that different groups may be depressed at the same time. To release, the button must be pressed towards the base of the cabinet.

Coils.—L1-L3; L4; L5; L6; and L7 are in five unscreened units on the chassis deck. Four of these are on tubular formers, but L5 is wound on C3. L4 has a screw adjustment for the iron core.

L14, L16; L15, L17; and L18 are in three unscreened tubular units beneath the chassis, towards the top right-hand corner in our under-chassis view.

L8-L13 and L19-L24 are the aerial and oscillator automatic tuning coils, mounted in two rows above and below the main press-button unit. They are indicated in our under-chassis view in pairs, the top coil being the oscillator one in each case. Each coil is provided with a screw core adjustment, and these are all at the front of the chassis, and can be reached by removing the escutcheon plate from the front of the cabinet. The coils are held in position by a brass one-hole mounting collar, and released by removing one counter-sunk head screw in each case. The resistances given in our coil table are for the standard coil arrangement, but other combinations may be employed. See also "Auto-Tuning Adjustments."

L25-L28 and L29, L30 are in two screened units on the chassis deck, which also incorporate a number of additional components as indicated in our plan chassis view.

L31 is a filter coil beneath the chassis, near T1. L32-L34 are in the speaker unit, while the smoothing choke, L35, being mounted on the speaker sub-baffle, is not shown in our chassis pictures.

Scale and Indicator Lamps.—Four lamps are used behind the press-button panel, and two others for general illumination of the tuning scale. They are all Ever Ready MES types, rated at 6.0 V, 0.5 A.

Expander Lamp.—This is also used as an indicator, as by flickering it shows up overload. The lamp is an Ever Ready MES type rated at 4.0 V, 0.06 A, and no other rating should be used.

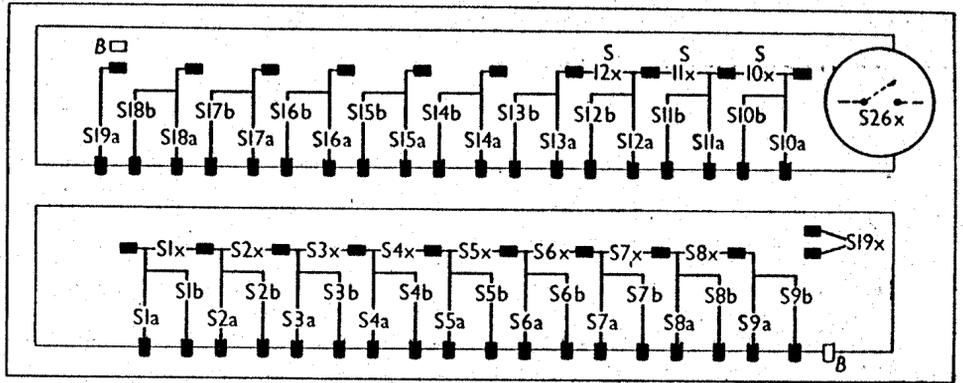
External Speaker.—A low impedance (2.4 O) external speaker can be plugged into the socketed plugs of the internal speaker, or can be used alone by first unplugging the internal speaker leads from the chassis.

Condensers C40, C41, C42.—These are three 8 μF dry electrolytics in a single carton mounted on the speaker sub-baffle, and therefore not shown in our chassis pictures. The unit has a common negative (black) lead, and three positive (red) leads. That to the upper terminal is the positive of C40; that to the middle terminal on the speaker the positive of C41 and that to the top terminal on the speaker the positive of C42.

MODEL 806RG MODIFICATIONS

The modifications in the radiogram model are of a minor nature, and are as follows: C33 becomes 0.1 μF (not 0.25 μF). The switches associated with the gram button are modified so that on radio C33 is in circuit as in our table model diagram, whereas when the gram button is pressed, C33 is disconnected and an iron-cored bass boost choke (60 O) is substituted in its place.

The output transformer is different, having a 500 O



The main press-button switch unit. Above, as seen from beneath the chassis; below, as would be seen looking through the chassis deck.

primary and a tapped secondary. The speaker is a 12-in. type, with speech and hum coils totalling 15 O, and connected across the whole of T1 secondary. (The external speaker impedance must therefore be about 15-20 O also).

The volume expansion circuit switching is modified, one side of the lamp being connected to the top on T1 secondary, and to one side of S25. The other side of the lamp connects to one side of R29 and the common connection of S24, S25. The other side of R29 goes to the other side of S24 and to the junction of R19, R20. R20 becomes 2.5 O (not 5 O). Thus when the button is out, only R29 is in circuit (the lamp being shorted), and when the button is in, the lamp is in circuit (R29 being shorted).

There may also be a certain number of minor circuit and component modifications. Thus L5 may be omitted, and C3 may be 0.00044 μF, and its position altered in the circuit.

GENERAL MODIFICATIONS

Since the early models were issued, some of the pre-set coils have been altered, and may have different resistances. Thus L12 may be 12 O (not 23.5 O) and L13 may be 13.7 O (not 28 O).

CIRCUIT ALIGNMENT

IF Stages.—Connect signal generator between control grid (top cap) of V1, via a 0.002 μF condenser, and chassis. Remove existing top cap connector, and connect a 500,000 O resistance between top cap and chassis. Connect a 0.25 μF condenser between V1 oscillator anode and chassis.

Feed in a 465 KC/S signal, and adjust C55, C54, C57, C56, in that order, for maximum output. Remove the 0.25 μF condenser and the 500,000 O resistance, and replace V1 top cap connector.

RF and Oscillator Stages.—Connect signal generator, via a suitable dummy aerial, to A and E sockets.

SW.—Press SW manual button, and tune to 15 m on scale. Feed in a 15 m (20 MC/S) signal, and adjust C52 for maximum output. Two peaks will be found; use that involving the lesser trimmer capacity (higher frequency). Then adjust C45 for maximum output. Check at 30 and 50 m.

MW.—Press MW manual button, and tune to 210 m on scale. Feed in a 210 m (1,427 KC/S) signal, and adjust C51, then C46, for maximum output. Feed in a 520 m (576 KC/S) signal, tune it in, and adjust C50 for maximum output, while rocking the gang for optimum results.

LW.—Press LW manual button, and tune to 1,800 m on scale. Feed in a 1,800 m (166.7 KC/S) signal, and adjust C49 for maximum output. Tune to 1,000 m on scale, feed in a 1,000 m (300 KC/S) signal, and adjust C47 for maximum output. Return to 1,800 m, and re-adjust C49 for maximum output, while rocking the gang for optimum results.

AUTO-TUNING ADJUSTMENT

Although the inductance trimmers can be adjusted with a screwdriver, a calibrated tool is available from the Service Department, Pye, Ltd., Cambridge, free of charge to Pye dealers. This tool has a scale calibrated from 0 to 10, and this permits approximate settings to be obtained by reference to table 1 in col. 6.

The procedure for re-checking existing settings is first to adjust the aerial coil (one of the upper row of adjusters at front of chassis) to correct setting for the named station (Table 1). Then adjust oscillator coil (one of the lower row of adjusters) also by reference to Table 1. Then tune oscillator and aerial coils to resonance with the actual station and the tuning indicator.

To change a station, reference should be made to table 2 (col. 6) to see whether the existing coils associated with the required button are capable of covering the wavelength of the new station. If they are, adjust for the new station by reference to table 1, but if not, it may be necessary to substitute different coils, obtainable from Pye, Ltd. Table 2 gives the lettering of the correct aerial and oscillator coils for

various wavebands. The coil letter is marked on the conical portion of the brass fixing bush.

It should be noted, where the calibrated adjusting tool is not available, that one division on its scale represents three complete turns on the adjusting screw. Unscrewing lowers the wavelength, and vice-versa.

TABLE 1
* Coil Adjustor Readings

Station	Wave-length	But-ton number	Reading	
			Aerial coil	Osc. coil
Hilversum 1	1875	1	7½	5
Moscow 1	1744	1	5½	4½
Radio Paris	1648	1	4½	4½
		2	7½	4
Droitwich	1500	1	2½	4
		2	5½	4½
Luxembourg	1293	2	2½	3½
Budapest 1	549.5	3	8	6
Beromünster	539.6	3	7½	6
Radio Eireann	531	3	7½	6
Stuttgart	522.6	3	6½	5½
Vienna	506.8	3	6	5½
Brussels 1	483.9	3	5½	5
Lyons (P.T.T.)	463	3	4½	4½
		4	7½	6½
North Regional	449.1	3	4	4½
		4	6½	6
Paris (P.T.T.)	431.7	3	3	4
		4	6	5½
Rome 1	420.8	3	2½	3½
Munich	405.4	3	5½	5½
		4	1	3½
Burghead	391.1	4	4½	4½
Scottish Regional	391.1	4	4	4½
Leipzig	382.2	4	4	4½
Penmon	373.1	4	3½	4
Welsh Regional	373.1	4	3½	4
Berlin	356.7	4	2½	3½
Strasbourg	349.2	4	5	7½
		5	8	7½
London Regional	342.1	4	1½	3½
		5	7½	7
Hamburg	331.9	4	0	2½
		5	7	6½
Poste Parisien	312.8	5	6	6
N. Ireland Reg.	307.1	5	5½	5½
Hilversum 2	301.5	5	5½	5½
Midland Regional	296.2	5	5	5½
Königsberg	291	5	4½	5
W. of England Reg.	285.7	5	4½	5
Radio Normandie	274	5	3½	4½
		6	7½	6½
Stagshaw	267.4	5	3	4½
		6	7½	6½
Nationals	261.1	6	7	6½
Cork	242.9	6	5½	5½
Aberdeen	233.5	6	5	5
Dublin	222.6	6	4½	4½
Radio Lyons	215.4	6	3½	3½
Bournemouth	203.5	6	2½	3
		6	2½	3

TABLE 2
Tuning range of coils used for pre-tuned stations.

Button number	Aerial coil	Oscillator coil	Wavelengths covered
1	G	E	1420—1935
2	F	E	1245—1680
3	E	M	400—555
4	D	K	334—464
5	C	J	253—352
6	B	H	195—275