

The automatic unit circuit is shown below the main circuit, connected up by the seven wires which are numbered to correspond with the same wires in the illustrations of the under-chassis and auto-unit

COMPONENTS AND VALUES

CONDENSERS	Values (μF)
C1	Aerial series condenser .. 0.0004
C2	LW aerial circuit 261 m rejector tuning .. 0.0001
C3	V1 hexode CG condenser .. 0.000012
C4	V1 hexode CG decoupling .. 0.02
C5	V1 SG RF by-pass .. 0.1
C6	V1 heater RF by-pass .. 0.01
C7	V1 cathode by-pass .. 0.1
C8	V1 osc. CG condenser .. 0.0001
C9	Osc. circuit LW fixed trimmer .. 0.00006
C10	Osc. circuit SW tracker .. 0.0038
C11	V1 osc. anode coupling .. 0.0002
C12*	V1 SG and osc. anode decoupling .. 4.0
C13	V2 CG decoupling .. 0.02
C14	V2 cathode by-pass .. 0.1
C15	IF by-pass condensers .. 0.0001
C16	IF by-pass condensers .. 0.0001
C17	AF coupling to V4 .. 0.02
C18	Coupling to V3 AVC diode .. 0.0001
C19	Part of variable tone control .. 0.05
C20*	V4 cathode by-pass .. 50.0
C21	Fixed tone corrector .. 0.006
C22*	HT smoothing .. 8.0
C23*	HT smoothing .. 8.0
C24	Mains RF by-pass .. 0.006
C25†	Aerial circuit SW trimmer ..
C26†	Aerial circuit LW trimmer ..
C27†	Aerial circuit manual tuning ..
C28†	Oscillator circuit manual tuning ..
C29†	Osc. circuit LW tracker ..
C30†	Osc. circuit LW trimmer ..
C31†	1st IF trans. pri. tuning ..
C32†	1st IF trans. sec. tuning ..
C33†	2nd IF trans. pri. tuning ..
C34†	2nd IF trans. sec. tuning ..

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

CONDENSERS (Continued)	Values (μF)
C35†	—
C36†	—
C37	0.00003
C38†	—
C39	0.00019§
C40†	—
C41	0.00003
C42†	—
C43†	—
C44	0.00003
C45†	—
C46†	—
C47†	—
C48	0.00003
C49†	—
C50	0.00019§
C51†	—
C52	0.00003
C53†	—
C54†	—
C55	0.00003
C56†	—
C57†	Osc. circuit MW trimmer ..
C58†	Osc. circuit MW tracker ..

† Pre-set. § Two in parallel.

RESISTANCES	Values (ohms)
R1	V1 hexode CG resistance .. 500,000
R2	V1 hexode CG decoupling .. 500,000
R3	V1 hexode CG stabiliser .. 40
R4	V1 SG HT feed .. 15,000
R5	V1 fixed GB .. 200
R6	V1 osc. CG resistance .. 50,000
R7	Osc. reaction SW stabiliser .. 40
R8	V1 osc. anode HT feed .. 30,000
R9	V1 SG and osc. anode HT feed .. 5,000
R10	V2 CG decoupling .. 500,000
R11	V2 fixed GB .. 200
R12	IF stopper .. 70,000
R13	V3 signal diode load .. 3,000,000
R14	V3 AVC diode load .. 500,000
R15	Manual volume control .. 500,000
R16	V4 GB and AVC delay resistances .. 140
R17	— .. 160
R18	Variable tone control .. 50,000
R19	V4 anode RF stopper .. 150

OTHER COMPONENTS	Approx. Values (ohms)
L1	LW aerial circuit 261m rejector coil .. 5.0
L2	Aerial circuit SW coupling coil .. 0.25
L3	Aerial circuit MW coupling coil .. 14.0
L4	Aerial circuit LW coupling coil .. 75.0
L5	Aerial circuit SW tuning coil .. 0.05
L6	Aerial circuit MW tuning coil .. 3.5
L7	Aerial circuit LW tuning coil .. 17.0
L8	Osc. circuit SW tuning coil .. 0.05
L9	Osc. circuit MW tuning coil .. 2.0
L10	Osc. circuit LW tuning coil .. 4.0
L11	Osc. SW reaction coil .. 0.4
L12	Osc. MW reaction coil .. 1.0
L13	Osc. LW reaction coil .. 6.25
L14	1st IF trans. { Pri. .. 6.0
L15	— { Sec. .. 6.0
L16	2nd IF trans. { Pri. .. 6.0
L17	— { Sec., total .. 6.0
L18	Speaker speech coil .. 1.6
L19	Hum neutralising coil .. 0.1
L20	Speaker field coil .. 1,000.0
T1	Speaker input trans. { Pri. .. 290.0
—	— { Sec. .. 0.15
T2	Mains { Heater sec. .. 29.0
—	— { Rect. heat sec. .. 0.1
—	— { HT sec., total .. 550.0
F1	Mains circuit fuse ..
S1-S18	Waveband switches ..
S19	Mains switch, ganged R15 ..
S20, 21	Aerial circuit auto/manual change switches ..
S22-28	Aerial circuit auto selector switches ..
S29, 30	Osc. circuit auto/manual change switches ..
S31-37	Osc. circuit auto selector switches ..

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 232V, using the 220-240 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 as the aerial and earth leads were shorted.

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

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 AC/TH1	247	3.5	92	6.5
	Oscillator	4.1		
V2 AC/VP2	247	11.0	247	3.1
V3 2D4A	—	—	—	—
V4 AC/5Pen	227	42.0	247	7.3
V5 1W4/350	308†	—	—	—

† Each anode, AC.

GENERAL NOTES

Switches.—S1-S18 are the waveband switches, in two rotary units beneath the chassis, which are indicated in our under-chassis view, and shown in detail in the diagrams in col. 3, where they are seen looking from the underside of the chassis, in the directions of the arrows in the under-chassis view.

The table above gives the switch positions for the three control settings, starting from fully anti-clockwise. A dash indicates open, and C closed.

S19 is the QMB mains switch, ganged with the volume control R15.

S20, S21 are the auto/manual change switches for the aerial circuit, while S29, S30 operate similarly for the oscillator circuit. The four together form a double-pole double-throw switch, and are indicated in our view of the auto-unit. On pushing the manual button, S21 and S29 are closed, and S20 and S30 are open, while with any station button depressed, S21, S29 are open and S20, S30 closed.

S22-S28 and S31-S37 are the aerial and oscillator station selector switches, there being one of each to each button, as indicated in our view of the auto-unit. When a station button is depressed, its two switches (e.g., S22 and S31) are closed, but all the other similar pairs are open.

Coils.—L1 is mounted on the rear chassis member. It has a screw-type iron core for adjustment if necessary.

L2-L13 are in pairs on tubular formers beneath the chassis, and are indicated in our under-chassis view.

The IF transformers L14, L15 and L16, L17 are in two screened units on the chassis deck, with their associated trimmers (see also "Chassis Divergencies").

Scale and Indicator Lamps.—The two scale lamps and the waveband indicator lamp are all MES types, rated at 6 V, 0.3 A. The indicator lamp has a small bulb.

Fuse F1.—This is incorporated in the voltage adjustment plug, and is of the wire type. It should be replaced with 2 A fuse wire if necessary.

External Speaker.—Two sockets are provided at the rear of the cabinet for a high impedance (6,000-10,000 Ω) external speaker.

DECCA PT/AC PG/AC

TABLE AND DIAGRAMS OF THE SWITCH UNITS

Switch	LW	MW	SW
S1	—	—	C
S2	—	C	—
S3	C	—	—
S4	C	C	—
S5	C	—	C
S6	—	C	C
S7	—	—	C
S8	—	C	—
S9	C	—	—
S10	—	—	C
S11	—	C	—
S12	C	—	—
S13	C	C	—
S14	—	—	C
S15	C	C	C
S16	—	—	—
S17	—	C	—
S18	C	—	—

The table above gives the switch positions for the three control settings, starting from fully anti-clockwise. A dash indicates open, and **C** closed.

S19 is the QMB mains switch, ganged with the volume control **R15**.

S20, S21 are the auto/manual change switches for

RADIOGRAM MODIFICATIONS

The radiogram model, PG/AC, has a similar chassis, but with the addition of a radio-gram change-over switch.

CIRCUIT ALIGNMENT

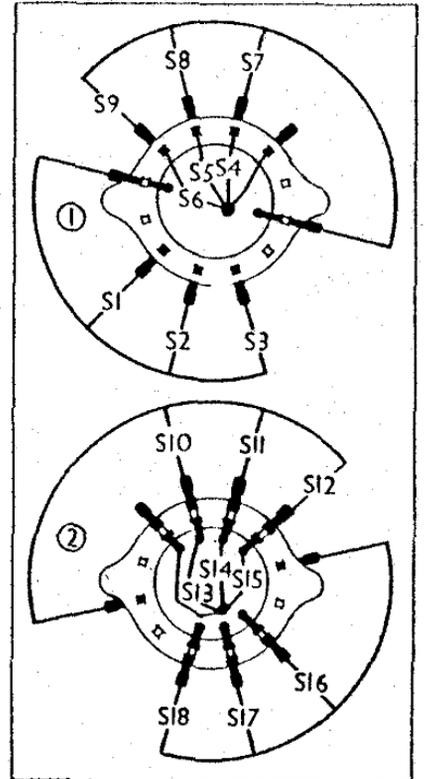
IF Stages.—Connect signal generator to control grid (top cap) of **V1** and chassis, and feed in a 465 KC/S signal. Adjust **C31, C32, C33** and **C34** for maximum output. In early models, adjust **C33** and **C34**, and the iron cores of **L14** and **L15**.

RF and Oscillator Stages.—Connect signal generator to **A** and **E** sockets, switch set to MW, depress manual button, and feed in a 500 m (600 KC/S) signal. Tune it in, and adjust **C58** for maximum output, while rocking the gang.

Tune to 250 m on scale, feed in a 250 m (1,200 KC/S) signal, and adjust **C57** for maximum output. In early models, this will mean carefully scraping the silver deposit from **C57** until it is thought that the peak has been reached. If too much deposit is scraped off, or if the capacity was originally too low, a new condenser will have to be fitted. In this case, a Tempa pre-set (obtainable from Decca) should be substituted for the scrapable silver-mica type.

Switch set to SW, tune to 15 MC/S on scale, feed in a 15 MC/S (20 m) signal, and adjust **C25** for maximum output.

Switch diagrams, looking in the directions of the arrows in the under-chassis view.



Switch set to LW, depress Droitwich button, feed in a 1,500 m (200 KC/S) signal and adjust **C29** (at back of chassis) for maximum output. Now depress manual button, feed in a 1,200 m (250 KC/S) signal, tune to 1,200 m on scale, and adjust **C30**, then **C26**, for maximum output. Re-check **C29** on 1,500 m.

The 261 m rejector **L1, C2** may be re-adjusted if necessary by switching set to LW, feeding in a strong 261 m signal, and adjusting the core of **L1** for *minimum* output.

Pre-Selected Stations.—Any inaccuracy of tuning of the pre-selected stations can best be corrected by adjusting the appropriate pair of Tempa pre-sets on the actual station signal.

Each pair of pre-sets covers a band of anything from 35 to 55 m, and hence can be used to select certain stations other than those originally chosen, if desired.

To adjust the set so that a certain button is to receive a station outside its normal range, it will be necessary to substitute a different set of condensers. The cost of new condensers for any particular wavelength is 3s. per pair. When ordering, quote the number 1035, with a letter following depending on the wavelength required: A, 215-270 m; B*, 270-320 m; C, 315-360 m; D, 350-390 m; E*, 385-420 m; F*, 420-465 m; G*, 465-500 m; H*, 514-550 m. An asterisk (*) indicates that external shunt condensers, in addition to the Tempa pre-sets, are supplied. These can be fitted above the Tempa pre-sets, and wired to their tags, if desired.