

Some chassis may include a Droitwich rejector, in addition to the IF rejector **L1, C24**, in series with the aerial input circuit. The numbers in circles and arrows refer to the inter-connections between the power and output chassis and the main chassis and speaker.

COMPONENTS AND VALUES

CONDENSERS		Values (μ F)
C1	Aerial series condenser	0.0003
C2	Aerial MW coupling	0.000007
C3	V1 hexode CG decoupling	0.25
C4	V1 SG decoupling	0.1
C5	V1 osc. CG condenser	0.0001
C6	Osc. circuit SW tracker	0.0035
C7	Osc. circuit MW tracker	0.0004823
C8	Osc. circuit LW tracker	0.000174
C9	V1 osc. anode coupling	0.0001
C10	V2 CG decoupling	0.1
C11	HT circuit RF by-pass	0.01
C12	Coupling to V3 AVC diode	0.0001
C13	IF by-pass condensers	0.0001
C14	AF coupling to V4	0.0001
C15	V4 CG RF decoupling	0.005
C16	V4 osc. CG resistance	0.0003
C17	Part of fixed tone corrector	0.005
C18*	V4 cathode by-pass	25.0
C19	Part of fixed tone corrector	0.002
C20	Part of variable tone control	0.03
C21*	HT smoothing	8.0
C22*	HT smoothing	8.0
C23	Mains RF by-pass	0.001
C24†	Aerial IF rejector tuning	—
C25†	Aerial circuit MW trimmer	—
C26†	Aerial circuit LW trimmer	—
C27†	Aerial circuit tuning	—
C28†	Aerial circuit SW trimmer	—
C29†	Osc. circuit MW trimmer	—
C30†	Osc. circuit LW trimmer	—
C31†	Oscillator circuit tuning	—
C32†	1st IF trans. pri. tuning	—
C33†	1st IF trans. sec. tuning	—
C34†	2nd IF trans. pri. tuning	—

* Electrolytic. † Variable. ‡ Pre-set.

RESISTANCES		Values (ohms)
R1	V1 hexode CG decoupling	500,000
R2	V1 SG HT feed	40,000
R3	V1 SG RF stopper	40
R4	V1 osc. CG resistance	50,000
R5	Osc. SW reaction stabiliser	50
R6	Osc. MW reaction stabiliser	2,500
R7	Osc. LW reaction stabiliser	5,000
R8	V1 osc. anode HT feed	40,000
R9	V2 CG decoupling	500,000
R10	IF stopper	50,000
R11	V3 signal diode load	250,000
R12	V3 AVC diode load resistances	500,000
R13	Manual volume control	500,000
R14	V4 grid stopper	100,000
R15	V4 GB potential divider	150
R16	V4 GB potential divider	350
R17	V4 anode stabiliser	50
R18	Variable tone control	50,000
R19	V1, V2 fixed GB resistance	40

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial IF filter coil	6.75
L2	Aerial LW loading coil	40.0
L3	Aerial SW coupling coil	0.2
L4	Aerial MW and LW coupling	15.0
L5	Aerial MW tuning coil	Very low
L6	Aerial MW tuning coil	2.0
L7	Aerial LW tuning coil	20.0
L8	Oscillator SW reaction	5.5
L9	Oscillator MW reaction	3.6
L10	Oscillator LW reaction	4.5
L11	Osc. circuit SW tuning coil	0.1
L12	Osc. circuit MW tuning coil	2.5
L13	Osc. circuit LW tuning coil	9.0
L14	1st IF trans. { Pri. ...	12.5
L15	1st IF trans. { Sec. ...	12.5
L16	2nd IF trans. { Pri. ...	3.5
L17	2nd IF trans. { Sec. ...	7.5
L18	Whistle filter coil	95.0
L19	Speaker speech coil	3.0
L20	Hum neutralising coil	0.15
L21	Speaker field coil	1,200.0
T1	Speaker input trans. { Pri. ...	650.0
	Speaker input trans. { Sec. ...	0.3
T2	Mains { Pri., total ...	32.0
	Mains { Heater sec. ...	0.1
	Mains { Rect. heat. sec. ...	0.1
	Mains { HT sec., total ...	380.0
St-St6	Waveband switches	—
S17	Mains switch, ganged R14	—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 225 V, using the 220 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.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 AC/TH1	262	1.5	72	4.4
	62	4.6	—	—
V2 AC/VP2	262	13.0	262	3.5
V3 V014	242	29.0	262	6.4
V4 AC/2Pen	242	29.0	262	6.4
V5 UU4	305†	—	—	—

† Each anode, AC.

GENERAL NOTES

Switches.—S1-S16 are the wavechange switches, in a single rotary unit behind the control panel. The unit is indicated in our view showing the rear of the panel, and the switches are shown in detail in the diagram (col. 3) which is drawn looking at the rear of the panel.

The table (col. 2) gives the switch positions for the three control settings, starting from fully anti-clockwise. A dash indicates *open*, and **C**, *closed*.

In addition to the switches shown, there are two extra "accidental" ones, which on MW cross-connect **S7, S14**, and **S8, S16**. These are not shown, as they serve no useful purpose, and would add complications to the diagram.

S17 is the QMB mains switch, ganged with the volume control **R14**.

Coils.—**L1** is in a separate screened unit (with **C24**) attached by a bracket to the inside of the cabinet, on the right. It is shown to the right of our view looking at the underside of the valveholders. **L2** is on a wooden former, seen in the same view, as are also **L3** and **L5** (on a tubular former), **L5** being the thick wire winding.

L4, L6, L7 are in a screened unit with two associated trimmers and a fixed condenser, while **L9, L10, L12, L13** are in an unscreened unit, with two trimmers mounted above it. **L8, L11** are in another unscreened tubular unit, seen in the rear panel view, **L11** being the thick wire winding.

The IF transformers **L14, L15** and **L16, L17** are located in two screened units, with their associated trimmers. Note that the second only has one trimmer (for the primary winding), but it also contains two resistors and two fixed condensers.

L18, the whistle filter coil, is beneath the power and output chassis, and is iron-cored.

Components not on Chassis.—Apart from **L1** and **C24**, already mentioned, the components **C1, C20** and **R19** are external to the two chassis.

Scale Lamp.—This is an Ever Ready MES type, rated at 6.2 V, 0.3 A.

External Speaker.—Two sockets are provided on a panel at the rear of the cabinet for a low impedance (2-4 Ω) external speaker.

TABLE AND DIAGRAM OF THE SWITCH UNIT

Switches	SW	MW	LW
S1	C	---	---
S2	---	C	---
S3	---	---	C
S4	C	---	---
S5	C	---	---
S6	---	C	---
S7	---	---	C
S8	C	---	---
S9	---	C	---
S10	---	---	C
S11	---	---	C
S12	---	---	C
S13	C	---	---
S14	C	---	---
S15	---	C	---
S16	---	---	C

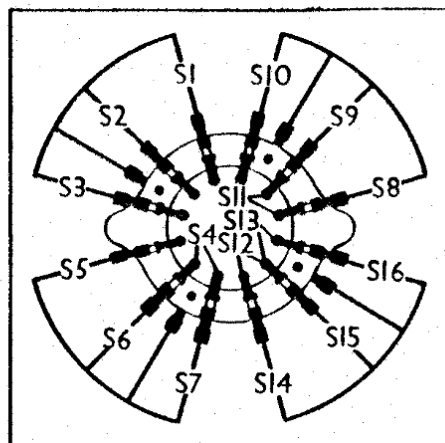


Diagram of the switch unit, as seen looking at the rear of the control panel.

Droitwich Filter.—In certain models a 200 KC/S (1,500 m) rejector for reducing interference from Droitwich is incorporated, in addition to the 460 KC/S IF rejector (**L1**, **C24**) shown in our diagram. This extra filter is inserted between **C1** and **C24**, **L1**, and consists of an extra coil and pre-set condenser in parallel.

Power and Output Unit.—This is connected to the main receiver chassis, and to the speaker, tone control, and Ext. LS sockets by twenty leads and tags, held under fifteen terminals on strips on the power and output chassis, certain terminals carrying two leads and tags. The inter-connections are fully explained under "Dismantling the Set," while the terminals are numbered in our view of the power and output chassis, and also on the circuit diagram, where the connections are shown by arrows and numbers in circles.

Condensers C21, C22.—These are two 8 μ F dry electrolytics in a single carton beneath the power and output chassis. The black lead is the common negative, the red lead to terminal 9 is the positive of **C21**, and the red lead to terminal 10 the positive of **C22**.

CIRCUIT ALIGNMENT

IF Stages.—Switch set to MW, and turn gang condenser to minimum. Connect signal generator to control grid (top cap) of **V1** and chassis, feed in a 460 KC/S signal, and adjust **C32**, **C33** and **C34** for maximum output.

IF Filter.—Connect signal generator to **A** and **E** sockets, turn gang to maximum, and feed in the 460 KC/S signal. Adjust **C24** (in **L1** unit inside cabinet) for minimum output.

IF Filter.—Connect signal generator to **A** and **E** sockets, turn gang to maximum, and feed in the 460 KC/S signal. Adjust **C24** (in **L1** unit inside cabinet) for minimum output.

RF and Oscillator Stages.—With gang at maximum, the left-hand edge of the pointer of the wavelength scale should be in line with the white adjustment mark at the extreme right-hand end of the scale. The top edge of the LW station pointer should then be in line with the adjustment mark at the bottom of the LW station scale. The MW station pointer should indicate London Regional when the wavelength pointer has its left-hand edge in line with the 340 m calibration mark.

Connect signal generator to **A** and **E** sockets.

SW.—Switch set to SW, feed in an 18.5 m (16.22 MC/S) signal, tune it in on the set, and adjust **C28** for maximum output, rocking the gang very slightly, if necessary, for optimum results.

MW.—Switch set to MW, tune to 214 m on scale, feed in a 214 m (1,400 KC/S) signal, and adjust **C29**, then **C25**, for maximum output.

LW.—Switch set to LW, tune to 1,100 m on scale, feed in a 1,100 m (272.7 KC/S) signal, and adjust **C30** for maximum output. Feed in a 1,800 m (166.7 KC/S) signal, tune it in, and adjust **C26** for maximum output.