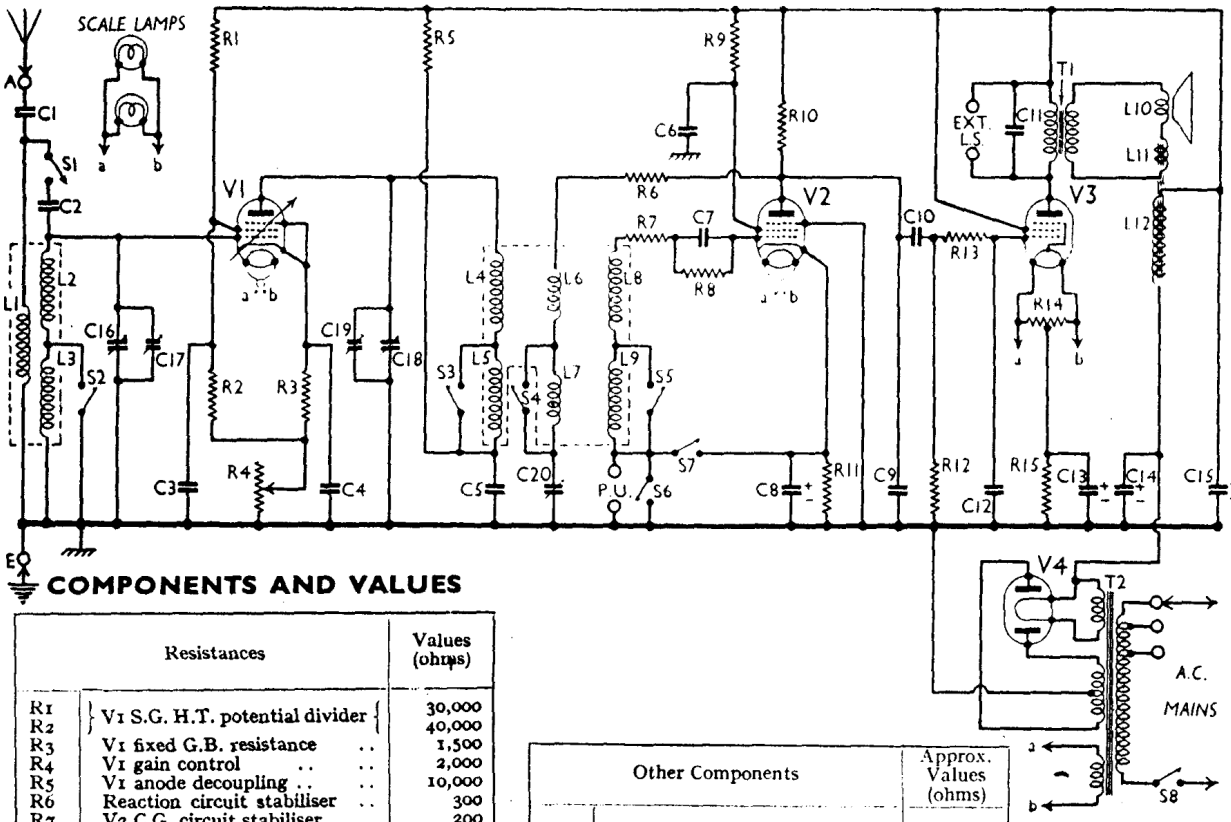
COSSOR - 378



Circuit diagram of the Cossor 378 3-valve A.C. receiver. Note that S1 closes on M.W., and thus gives extra aerial coupling by C2. S6 and S7 are provided for pick-up switching and bias for V2 on Gram. Since V3 is directly heated, the centre-tapped potentiometer R14 is fitted across its filament.

COMPONENTS AND VALUES

	Resistances	Values (ohms)
R1	V1 S.G. H.T. potential divider	30,000
R2	V1 S.G. H.T. potential divider	40,000
R3	V1 fixed G.B. resistance	1,500
R4	V1 gain control	2,000
R5	V1 anode decoupling	10,000
R6	Reaction circuit stabiliser	300
R7	V2 C.G. circuit stabiliser	200
R8	V2 grid leak	1,000,000
R9	V2 S.G. H.T. feed	500,000
R10	V2 anode load	100,000
R11	V2 G.B. resistance (gram.)	1,000
R12	V3 C.G. resistance	500,000
R13	V3 C.G. H.F. stopper	100,000
R14	V3 filament potentiometer	25
R15	V3 G.B. resistance	300

	Condensers	Values (μF)
C1	Aerial series condenser	0·0005
C2	Aerial coupling	0·000015
C3	V1 S.G. by-pass	0·1
C4	V1 cathode by-pass	0·1
C5	V1 anode decoupling	0·1
C6	V2 S.G. by-pass	0·1
C7	V2 C.G. condenser	0·0001
C8*	V2 cathode by-pass	50·0
C9	V2 anode H.F. by-pass	0·0002
C10	V2 to V3 L.F. coupling	0·01
C11	Tone corrector	0·005
C12	V3 C.G. H.F. by-pass	0·0002
C13*	V3 cathode by-pass	50·0
C14*	H.T. smoothing	6·0
C15*	H.T. smoothing	4·0
C16†	Aerial circuit tuning	0·0005
C17†	Aerial circuit trimmer	—
C18†	H.F. transformer tuning	0·0005
C19‡	H.F. transformer trimmer	—
C20†	Reaction control	0·0003

* Electrolytic. † Variable. ‡ Pre-set.

	Other Components	Approx. Values (ohms)
L1	Aerial coupling coil	9·0
L2	Aerial tuning coils	1·5
L3	Aerial tuning coils	13·5
L4	H.F. transformer primary	2·0
L5	H.F. transformer primary	14·0
L6	Reaction coils	0·6
L7	Reaction coils	3·5
L8	H.F. transformer secondary	1·2
L9	H.F. transformer secondary	13·5
L10	Speaker speech coil	2·0
L11	Hum neutralising coil	0·1
L12	Speaker field coil	2,500·0
T1	Speaker input trans. Pri.	825·0
	Speaker input trans. Sec.	0·3
T2	Mains trans. Pri. total	70·0
	Mains trans. Heater sec.	0·2
	Mains trans. Rect. fil. sec.	0·2
	Mains trans. H.T. sec. total	1,500·0
S1-S5	Waveband switches	—
S6, S7	Gram. pick-up switches	—
S8	Mains switch	—

VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on mains of 230 V, using the 220 V tapping on the mains transformer. The volume control was at maximum and the reaction control was at minimum but there was no signal input.

Voltages were measured on the 1,200 V scale of an Avometer, with chassis as negative.

Valve	Anode Volts	Anode Current (mA)	Screen Volts	Screen Current (mA)
V1 MVS/Pen	175	2·1	100	0·6
V2 MS/Pen	50	1·4	30	0·3
V3 PT41	180	30·0	205	7·0
V4 442BU	315†	—	—	—

† Each anode, A.C.

GENERAL NOTES

Switches.—**S1-S5** are the waveband switches, **S6** and **S7** the pick-up switches and **S8** the mains switch. They are all ganged together in a single unit beneath the chassis. The table (col. 3) gives the switch positions for the various control settings, O indicating open, and C closed.

Switch	Off	M.W.	L.W.	Gram.
S1	C	C	O	O
S2	C	C	O	C
S3	O	C	O	C
S4	O	C	O	C
S5	O	C	O	C
S6	O	C	C	O
S7	O	C	C	O
S8	O	C	C	C

The rotor of the switch unit can easily be removed, enabling the contacts to be properly cleaned.

Coils.—The tuning coils **L1-L3** and **L4-L9** are in two screened units on the chassis deck. The **L1-L3** unit also contains the coupling condenser **C2.**

Scale Lamps.—These are two Osram M.E.S. types, rated at 6.5 V, 0.3 A, and wired in parallel.