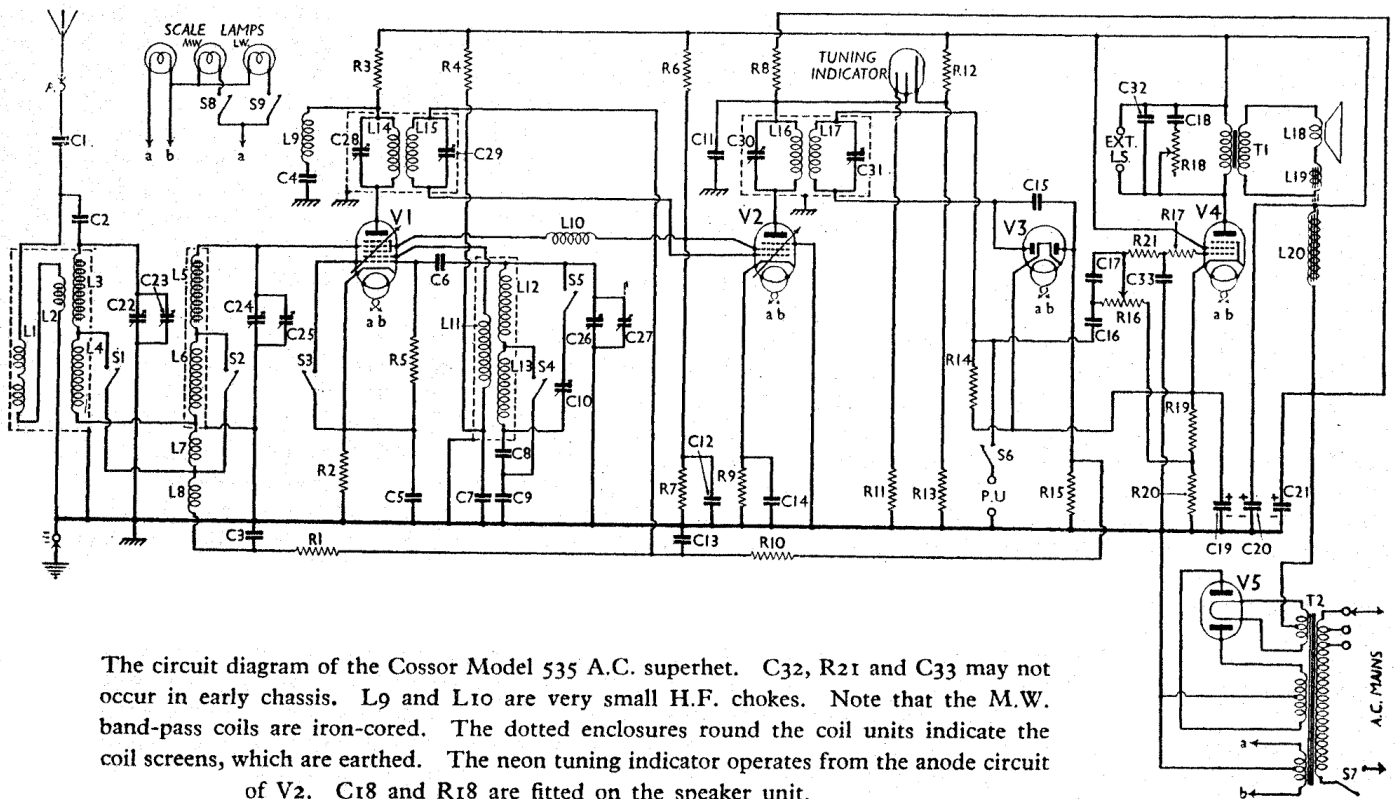


COSSOR - 535



The circuit diagram of the Cossor Model 535 A.C. superhet. C32, R21 and C33 may not occur in early chassis. L9 and L10 are very small H.F. chokes. Note that the M.W. band-pass coils are iron-cored. The dotted enclosures round the coil units indicate the coil screens, which are earthed. The neon tuning indicator operates from the anode circuit of V2. C18 and R18 are fitted on the speaker unit.

COMPONENTS AND VALUES

Resistances	Values (ohms)
R1	V1 cont. grid decoupling .. 100,000
R2	V1 fixed G.B. resistance .. 150
R3	V1 tetraode anode decoupling .. 5,000
R4	V1 osc. anode decoupling .. 100,000
R5	V1 osc. grid resistance .. 50,000
R6	V1 and V2 S.G.'s pot. divider { 15,000
R7	V2 anode decoupling .. 20,000
R8	V2 fixed G.B. resistance .. 250
R9	V2 cont. grid decoupling .. 100,000
R10	V2 cont. grid decoupling .. 100,000
R11	Tuning ind. primer resistance .. 250,000
R12	Tuning ind. cathode pot. divider { 40,000
R13	V3 rectifier diode load .. 30,000
R14	V3 A.V.C. diode load .. 250,000
R15	V3 A.V.C. diode load .. 1,000,000
R16	Manual volume control .. 1,000,000
R17	Part of V4 grid H.F. filter .. 50,000
R18	Tone control resistance, variable .. 50,000
R19	V4 G.B. and A.V.C. delay .. 130
R20	voltage resistances .. 100
R21*	Part of V4 grid H.F. filter .. 50,000

* In our chassis.

VALVE ANALYSIS

The voltage and current listed in the table below are those given by Cossor for a representative chassis working with no aerial or earth connected, and with the master switch set for M.W. reception. Slightly different figures will be obtained with the switch set at "Gram."

All voltages were measured with a high-resistance voltmeter (400 V, 1,000 O per volt) and the current readings were taken, where necessary, with a milli-ammeter inserted in the low H.F. potential ends of the circuits. Alternatively V1 and V2 may be stabilised by means of condensers (0.1 μ F or larger) connected between their respective anodes and cathodes.

Condensers	Values (μ F)
C1	Aerial series condenser .. 0.0005
C2	M.W. coupling .. 0.000025
C3	V1 cont. grid decoupling .. 0.1
C4	V1 tetraode anode decoupling .. 0.1
C5	V1 cathode by-pass .. 0.1
C6	V1 osc. grid condenser .. 0.0002
C7	V1 osc. anode decoupling .. 0.1
C8*	Osc. L.W. padding .. —
C9*	Osc. M.W. padding .. —
C10	Osc. L.W. trimmer, pre-set .. —
C11	V2 anode decoupling .. 0.1
C12	V1 and V2 S.G.'s by-pass .. 0.1
C13	V2 cont. grid decoupling .. 0.01
C14	V2 cathode by-pass .. 0.1
C15	V3 A.V.C. diode coupling .. 0.0001
C16	L.F. coupling to V4 .. 0.006
C17	Volume control by-pass .. 0.0001
C18	Tone control condenser .. 0.05
C19	V4 cathode by-pass, electrolytic .. 25.0
C20	H.T. smoothing, electrolytics { 8.0
C21	Band-pass primary tuning .. 0.0005
C22	Band-pass pri. trimmer, pre-set .. —
C23	Band-pass secondary tuning .. 0.0005
C24	Band-pass sec. trimmer, pre-set .. —
C25	Oscillator tuning .. 0.0005
C26	Oscillator main trimmer, pre-set .. —
C27	1st I.F. trans. pri. tuning .. —
C28	1st I.F. trans. sec. tuning .. —
C29	2nd I.F. trans. pri. tuning .. —
C30	2nd I.F. trans. sec. tuning .. —
C31	Fixed tone compensator .. 0.002
C32†	Part of V4 grid H.F. filter .. 0.0001

* Values non-standard. † In our chassis.

Other Components	Values (ohms)
L1	Aerial L.W. coupling coil .. 13.0
L2	Aerial M.W. coupling coil .. 0.6
L3	Band-pass primary coils { 1.5
L4	Band-pass secondary coils { 13.0
L5	Band-pass primary coils { 1.75
L6	Band-pass secondary coils { 13.0

Valve	Anode Volts	Anode Current (mA)	Screen Volts	Screen Current (mA)
V1 41MPG*	205	3.9	90	2.9
V2 MVS/Pen	230	4.6	90	1.2
V3 DD4	—	—	—	—
V4 42MP/Pen	215	28.0	230	6.0
V5 442BU	315†	—	—	—

* Osc. anode (G2) 80 V 1.25 mA.

† A.C., each anode.

Other Components (contd.)	Values (ohms)
L7	Band-pass coupling coils { 0.7
L8	Band-pass coupling coils { 0.3
L9	Short-wave H.F. chokes .. Very low
L10	Short-wave H.F. chokes .. Very low
L11	Osc. anode reaction coil .. 3.2
L12	Osc. grid tuning coils { 4.0
L13	Osc. grid tuning coils { 8.7
L14	1st I.F. transformer { Pri. .. 42.0
L15	1st I.F. transformer { Sec. .. 42.0
L16	2nd I.F. transformer { Pri. .. 48.0
L17	2nd I.F. transformer { Sec. .. 48.0
L18	Speaker speech coil .. 2.0
L19	Speaker hum neutralising coil .. 0.2
L20	Speaker field winding .. 1,800*
T1	Speaker input trans. { Pri. .. 700
	Speaker input trans. { Sec. .. 0.35
T2	Mains trans. { Pri. total .. 42.5
	Mains trans. { Heater sec. .. 0.15
	Mains trans. { Rect. fil. sec. .. 0.15
	Mains trans. { H.T. sec. .. 1,100
S1, S2	Waveband switches, ganged .. —
S3, S4	Radio-gramophone switches .. —
S5, S6	Radio-gramophone switches .. —
S7	Mains switch .. —
S8, S9	Scale lamp switches .. —

* In our receiver. May be 2,500 O in early chassis.

GENERAL NOTES

Switches.—All the switches, S1-S9, are in a single assembly seen at the right-hand side of our under-chassis view. The contacts of each switch are clearly indicated.

S1, S2, S4, S5 are the waveband switches, S3 and S6 are for gramophone switching, S7 is the mains switch and S8, S9 are for scale lamp switching.

Switch	M.W.	L.W.	Gram.
S1	C	O	O
S2	C	O	O
S3	O	O	O
S4	C	O	O
S5	O	C	O
S6	O	C	O
S7	C	O	C
S8	C	O	C
S9	O	C	C