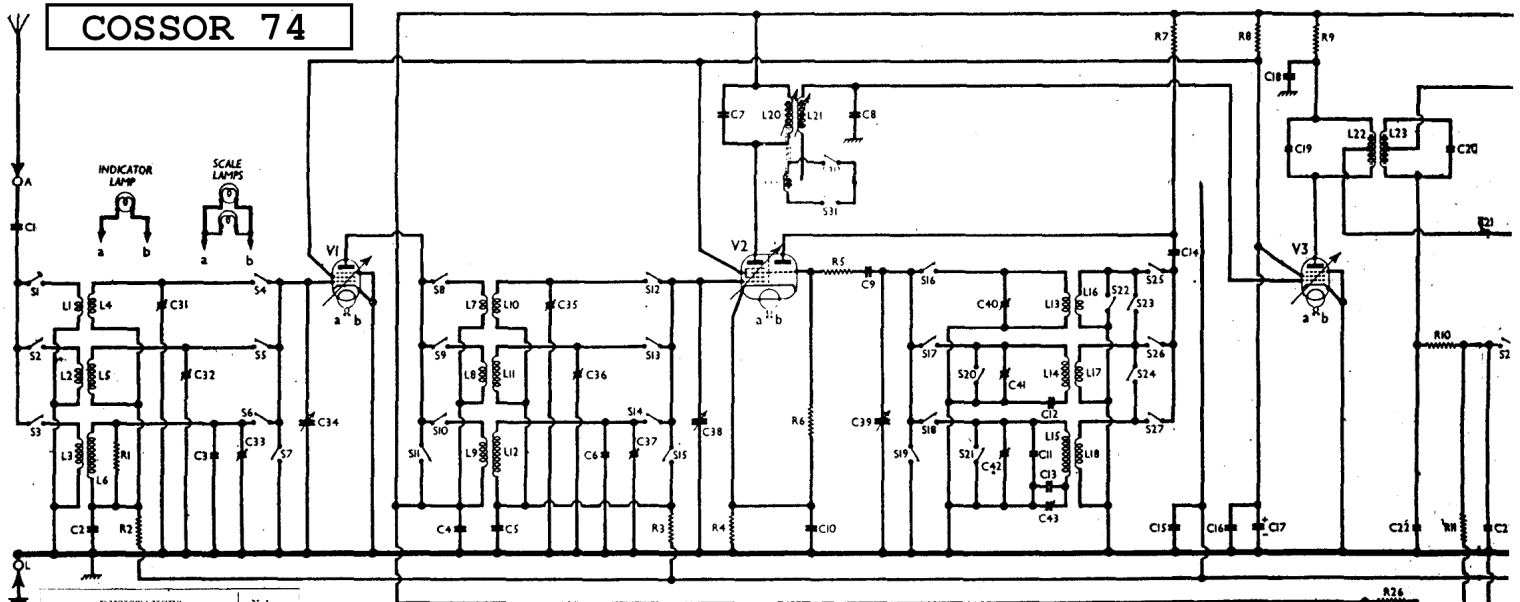


COSSOR 74



RESISTANCES	Values (ohms)
R1 Aerial circ. LW damping	30,000
R2 V1 CG decoupling	500,000
R3 V2 hexode CG decoupling	500,000
R4 V2 fixed GB resistance	300
R5 V2 osc. CG stabilizer	15
R6 V2 osc. CG resistance	25,000
R7 V2 osc. anode HT feed	16,000
R8 V1, V2, V3, V4, V5 HT feed	5,000
R9 V3 anode HT feed	5,000
R10 RF stopper	50,000
R11 T.I. CG decoupling	2,000,000
R12 Manual volume control	500,000
R13 V4 signal diode load	2,000,000
R14 V4 triode CG resistance	100,000
R15 V4 triode grid stopper	50,000
R16 V4 triode anode load	2,000,000
R17 V4 AVC line decoupling	1,000,000
R18 V4 AVC diode load	100,000
R19 V5 CG resistance	500,000
R20 V5 grid stopper	100,000
R21 V1, V2, V3 fixed GB; V4, V5 V5 GB; and AVC delay	60,000
R22 potential divider	200,000
R23 V1-V4 heater pot. total	25*
R24 V5 heater pot. total	25*
R25 T.I. anode HT feed	2,000,000

* Centre-tapped.

CONDENSERS	Values (pF)
C1 Aerial series condenser	0.0005
C2 V1 CG decoupling	0.05
C3 Aerial LW fixed trimmer	0.000015
C4 HT circuit RF by-pass	0.1
C5 V2 hexode CG decoupling	0.05
C6 RF trans. LW fixed trimmer	0.000015
C7 1st IF transformer tuning	0.000225
C8 condenser	0.0001
C9 V2 osc. CG condenser	0.0001
C10 V2 cathode by-pass	0.1
C11 Osc. circ. LW fixed trimmer	0.00004
C12 Osc. circuit MW tracker	0.00057
C13 Osc. circ. LW fixed tracker	0.00012
C14 V1 osc. anode coupling	0.00002
C15 V3 CG decoupling	0.05
C16 V1, V2, V3, V4 decoupling	0.1
C17 V3 anode decoupling	0.1
C18 2nd IF transformer tuning	0.000075
C19 Coupling to V4 AVC diode	0.00005
C20 RF by-pass condenser	0.00005
C21 AF coupling to V4 triode	0.01
C22 Part variable tone control	0.03
C23 V4 triode to V5 coupling	0.01
C24 V5 CG decoupling	10
C25 HT smoothing condensers	160
C26 T.I. CG decoupling	0.01
C27 Aerial circuit SW trimmer	—
C28 Aerial circuit MW trimmer	—
C29 Aerial circuit LW trimmer	—
C30 Aerial circuit tuning	—
C31 RF trans. sec. SW trimmer	—
C32 RF trans. sec. LW trimmer	—
C33 RF trans. sec. tuning	—
C34 Oscillator circuit tuning	—
C35 Osc. circuit SW trimmer	—
C36 Osc. circuit MW trimmer	—
C37 Osc. circuit LW trimmer	—

* Electrolytic. † Variable. ‡ Preset.

OTHER COMPONENTS	Approx. Values (ohms)
L1 Aerial SW coupling coil	0.6
L2 Aerial MW coupling coil	100-0
L3 Aerial LW coupling coil	100-0
L4 Aerial SW tuning coil	Very low
L5 Aerial MW tuning coil	36-0
L6 Aerial LW tuning coil	36-0
L7 RF trans. SW pri.	5.0
L8 RF trans. MW pri.	5.0
L9 RF trans. LW pri.	15-0
L10 RF trans. SW sec.	Very low
L11 RF trans. MW sec.	2.7
L12 RF trans. LW sec.	2.7
L13 Osc. circuit SW tuning	Very low
L14 Osc. circuit MW tuning	3-6
L15 Osc. circuit LW tuning	3-6
L16 Oscillator SW reaction	0.3
L17 Oscillator MW reaction	1.4
L18 Oscillator LW reaction	1.4
L19 Variable selectivity coil, total	0.2
L20 1st IF trans. (Pri.)	3-5
L21 1st IF trans. (Sec.)	3-5
L22 2nd IF trans. (Pri., total)	18-0
L23 Speaker spec. coil	18-0
L24 Hum neutralising coil	0.1
L25 Speaker field coil	1,250-0
T1 Speaker input trans. (Pri.)	240-0
T2 Speaker input trans. (Sec.)	0.3
T3 V1-V4 heat sec.	27-0
T4 V5 heater sec.	0.05
T5 Rect. heat. sec.	0.1
T6 HT sec. total	210-0
S1-S27 Waveband switches	—
S28-S29 Radio gram change switches	—
S30-S31 Variable selectivity switches, ganged R16	—
S32 Internal speaker switch	—
S33 Mains switch	—

CIRCUIT ALIGNMENT

IF Stages.—A Cossor ganging oscillator and double-beam oscilloscope are recommended. Switch set to MW, turn tune control anti-clockwise until selectivity switch operates and set volume control to minimum (maximum if alignment is carried out with an ordinary signal generator and output meter). To connect up the oscilloscope, connect amplifier terminal for one Y plate to the junction of R16, R17 and the terminal for the other Y plate to the junction of R10, R11, S28. A 2MΩ resistance can be connected in series with either lead to act as an RF stopper.

Feed in a 465 KC/S (645.2 m) signal via a 0.01 μF condenser to control grid (top cap) of V3, and chassis leaving existing connection in place. Detune L22, and align L23 for maximum output. Then adjust L22 until the middle points of the two curves coincide and the peaks of the primary are symmetrical.

Transfer ganging oscillator to control grid (top cap) of V2, and adjust L20 and L21 so that the curves coincide with the position on the screen of the L22, L23 curves.

When the tune control is turned fully clockwise so that the selectivity switches operate, the secondary curve should have a reasonably flat top, and the primary a wide peaked curve whose trough should coincide with the middle of the secondary curve, and should have symmetrical peaks.

If no oscilloscope is available, the usual method of alignment should be followed, attempting to secure a flat-topped response curve.

RF and Oscillator Stages.—An ordinary signal generator can be used for this, connecting it to the A and E sockets, via a suitable dummy aerial. With gang at maximum, pointer should cover sloping lines at right hand ends of scales. Tone control should be turned anti-clockwise.

MW.—Switch set to MW, and tune to 214 m on scale. Feed in a 214 m (1,400 KC/S) signal, and adjust C41, C36 and C32 for maximum output.

LW.—Switch set to LW, tune to 1,200 m on scale, feed in a 1,200 m (250 KC/S) signal and adjust C42, C37 and C33 for maximum output. Feed in a 1,875 m (160 KC/S) signal, tune it in, and adjust C43 for maximum output, while rocking the gang for optimum results.

SW.—Switch set to SW, tune to 18 MC/S on scale, feed in an 18 MC/S (16.67 m) signal and adjust C40 for maximum output, using the peak involving the lesser trimmer capacity. Then adjust C35 and C31 for maximum output. Re-check all these settings.

VALVE ANALYSIS

Valve voltages and currents given in the table (col. 6) are those measured in our receiver when it was operating on mains

Switch Table

Switch	SW	MW	LW	Gram
S1	—	—	—	—
S2	—	—	—	—
S3	—	—	—	—
S4	—	—	—	—
S5	—	—	—	—
S6	—	—	—	—
S7	—	—	—	—
S8	—	—	—	—
S9	—	—	—	—
S10	—	—	—	—
S11	—	—	—	—
S12	—	—	—	—
S13	—	—	—	—
S14	—	—	—	—
S15	—	—	—	—
S16	—	—	—	—
S17	—	—	—	—
S18	—	—	—	—
S19	—	—	—	—
S20	—	—	—	—
S21	—	—	—	—
S22	—	—	—	—
S23	—	—	—	—
S24	—	—	—	—
S25	—	—	—	—
S26	—	—	—	—
S27	—	—	—	—
S28	—	—	—	—
S29	—	—	—	—

Diagrams of the three switch units, drawn as seen when viewed from the rear of the underside of the chassis, as indicated by the arrows in the underside view of the main chassis.

