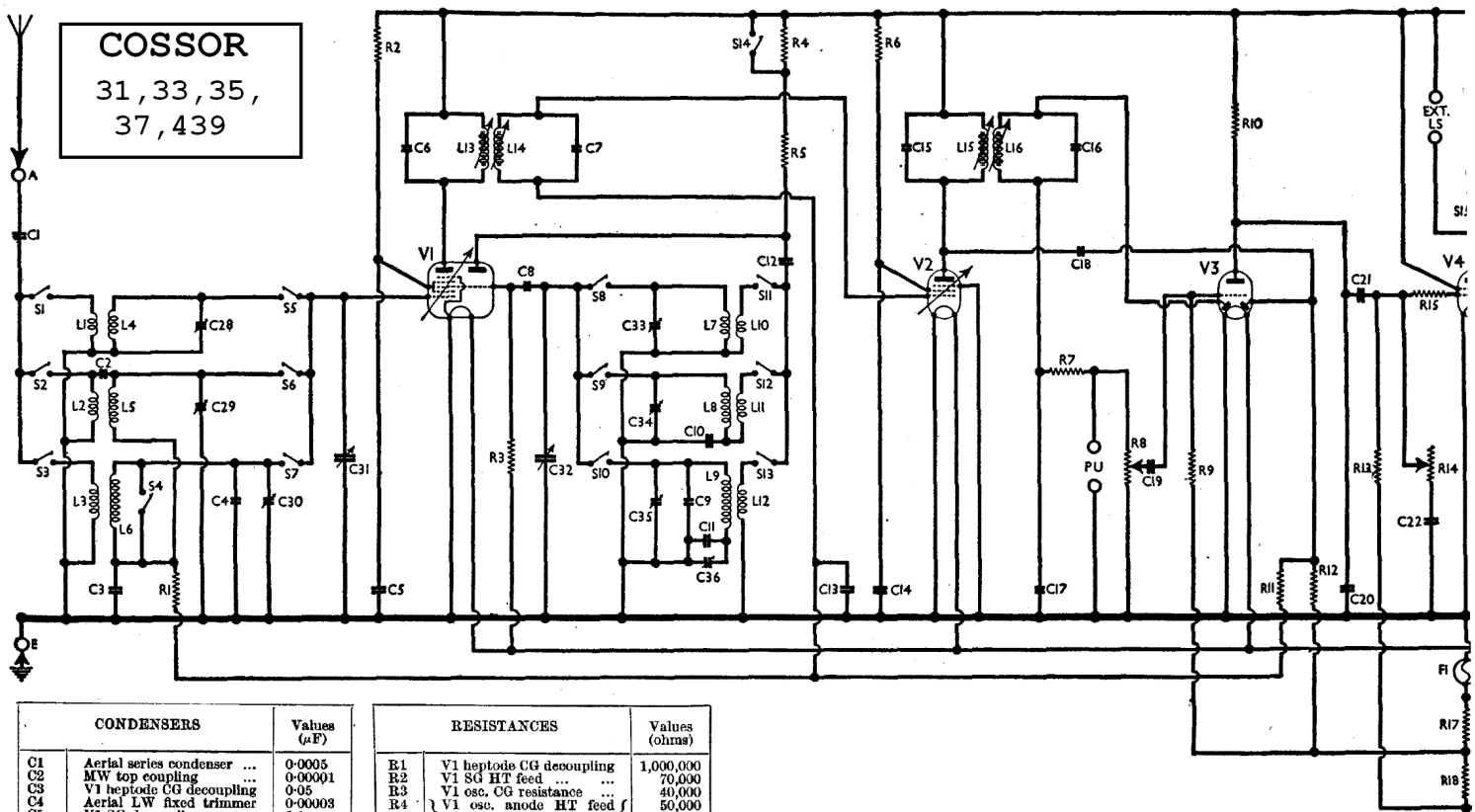


COSSOR

31, 33, 35,
37, 439



CONDENSERS		Values (μF)
C1	Aerial series condenser ...	0.0005
C2	MW top coupling ...	0.00001
C3	V1 heptode CG decoupling	0.05
C4	Aerial LW fixed trimmer	0.00003
C5	V1 SG decoupling ...	0.1
C6	1st IF transformer tuning condensers ...	0.000053
C7	V1 osc. CG condenser ...	0.000053
C8	Osc. circ. LW fixed trimmer	0.00005
C9	Osc. circuit MW tracker...	0.00005
C10	Osc. circ. LW fixed tracker	0.00014
C11	V1 osc. anode coupling ...	0.0005
C12	V2 CG decoupling ...	0.05
C13	V2 SG decoupling ...	0.1
C14	2nd IF transformer tuning condensers ...	0.000038
C15	IF by-pass ...	0.00007
C16	Coupling to V3 AVC diode	0.00005
C17	AF coupling to V3 triode	0.05
C18	IF by-pass ...	0.0002
C19	V3 triode to V4 AF coupling	0.01
C20	Part of variable tone control	0.01
C21	Parts of fixed tone corrector	0.001
C22	rector ...	0.002
C23	HT circuit reservoir	2.0
C24	Auto GB by-pass condensers ...	20.0
C25	Aerial circuit SW trimmer	0.1
C26	Aerial circuit MW trimmer	—
C27	Aerial circuit LW trimmer	—
C28	Aerial circuit tuning ...	—
C29	Oscillator circuit tuning...	—
C30	Osc. circuit SW trimmer...	—
C31	Osc. circuit MW trimmer...	—
C32	Osc. circuit LW trimmer...	—
C33	Osc. circuit LW tracker...	—

RESISTANCES		Values (ohms)
R1	V1 heptode CG decoupling	1,000,000
R2	V1 SG HT feed ...	70,000
R3	V1 osc. CG resistance ...	40,000
R4	V1 osc. anode HT feed	50,000
R5	resistances, ...	20,000
R6	V2 SG HT feed ...	150,000
R7	IF stopper ...	50,000
R8	Manual volume control; V3 signal diode load ...	500,000
R9	V3 triode CG resistance...	2,000,000
R10	V3 triode anode load ...	100,000
R11	AVC line decoupling ...	3,000,000
R12	V3 AVC diode load ...	2,000,000
R13	V4 CG resistance ...	1,000,000
R14	Variable tone control ...	250,000
R15	V4 grid stopper ...	100,000
R16	Part of fixed tone corrector	25,000
R17	Automatic GB resistances {	150
R18		250

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial SW coupling coil	0.5
L2	Aerial MW coupling coil	25.0
L3	Aerial LW coupling coil	140.0
L4	Aerial SW tuning coil...	Very low
L5	Aerial MW tuning coil	2.0
L6	Aerial LW tuning coil...	15.0
L7	Osc. circ. SW tuning ...	Very low
L8	Osc. circ. MW tuning ...	5.5
L9	Osc. circ. LW tuning ...	13.0
L10	Oscillator SW reaction	0.15
L11	Oscillator MW reaction	2.4
L12	Oscillator LW reaction	6.0
L13	1st IF trans. { Pri. ...	7.0
L14		7.0
L15	2nd IF trans. { Pri. ...	18.0
L16		18.0
L17	Speaker speech coil ...	2.0
T1	Speaker input { Pri. ...	1,200.0
		0.1
S1-S14	Waveband switches	—
S15	Speaker switch...	—
S16	LT circuit switch ...	—
S17	HT circuit switch ...	—
F1	HT circuit fuse ...	—

* Electrolytic. † Variable. ‡ Pre-set.
§ Made up of 1.0-0.000025 μF and 1.0-0.000005 μF in parallel.

VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 220TH	116	0.4	55	0.9
V1 210VPA	30	1.2	43	0.4
V3 210DDT	116	1.2	—	—
V4 220OT	74	0.3	116	1.0

Valve voltages and currents given in the table above are those measured in our receiver when it was operating with a new HT battery reading 120 V on load.

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.

Switch Table

Switch	SW	MW	LW
S1	0	—	—
S2	—	0	—
S3	—	—	0
S4	—	—	—
S5	0	—	—
S6	—	0	—
S7	—	—	0
S8	0	—	—
S9	—	0	—
S10	—	—	0
S11	—	—	—
S12	—	0	—
S13	—	—	0
S14	0	—	—

CIRCUIT ALIGNMENT

IF Stages.—Connect signal generator to control grid (top cap) of V1 and chassis. Switch set to MW, and volume control to maximum if an output meter is to be used; the Cossor ganging oscillator and oscilloscope are recommended, and if they are used, volume control should be turned to minimum. The live oscilloscope lead should be connected to the junction of R7 and R8.

Feed in a 465 KC/S (645.2 m) signal, and adjust the cores of L16, L15, L14 then L13, in that order, endeavouring to achieve a flat-topped, steep-sided response.

RF and Oscillator Stages.—With the gang at maximum pointer should coincide with lines at right-hand ends of the three scales. Transfer signal generator leads to A and E sockets, via a suitable dummy aerial.

MW.—Switch set to MW, tune to 214 m on scale, feed in a 214 m (1,400 KC/S) signal, and adjust C34, then C29, for maximum output. Tracking is fixed, but the setting should be checked at various parts of the scale, and the pointer adjusted if necessary.

LW.—Switch set to LW, tune to 1,200 m on scale, feed in a 1,200 m (250 KC/S) signal, and adjust C35, then C30, for maximum output. Feed in a 1,375 m (160 KC/S) signal, tune it in, and adjust C36 while rocking the gang slightly for optimum results. Repeat the whole LW alignment until no improvement results.

SW.—Switch set to SW, tune to 18 MC/S on scale, feed in an 18 MC/S (16.65 m) signal, and adjust C33 for maximum output, using the setting involving the lesser trimmer capacity; then adjust C28 for maximum output. The gang should be rocked slightly for optimum results.

