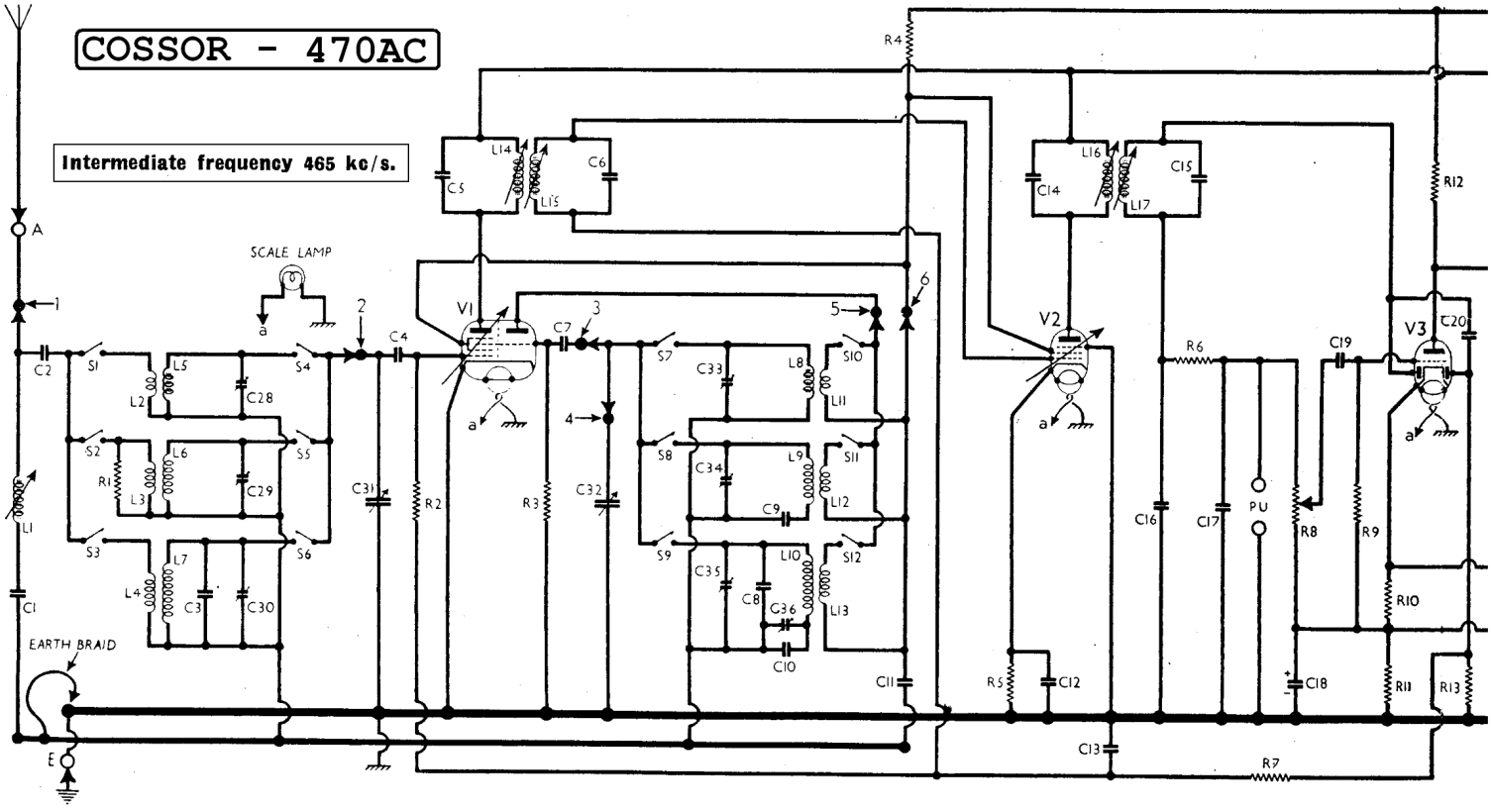
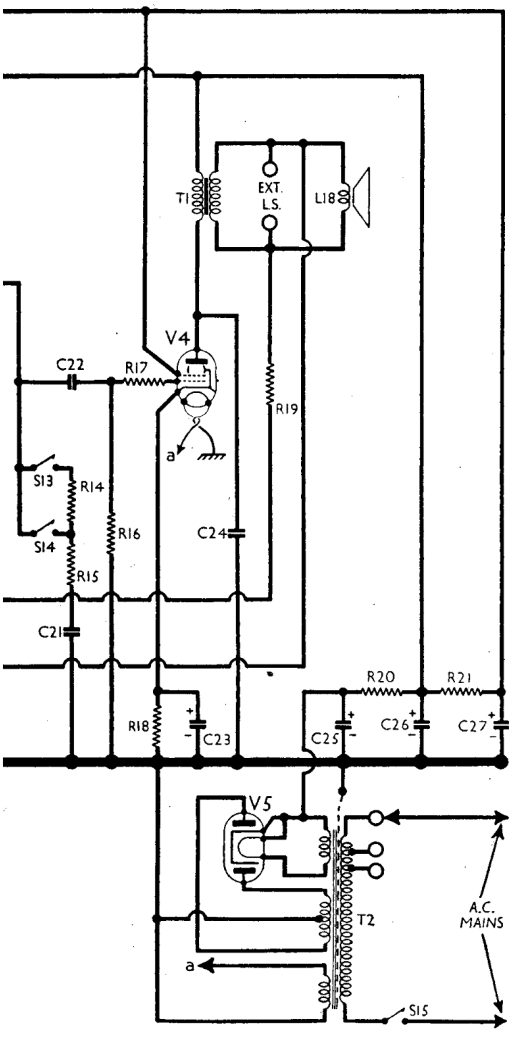
COSSOR - 470AC

Intermediate frequency 465 kc/s.





CAPACITORS		Values (μF)
C1	I.F. filter tuning ...	0·000225
C2	Aerial series ...	0·0005
C3	L.W. trimmer ...	0·000025
C4	V1 hex. C.G. ...	0·0003
C5, C6	1st I.F. trans. tuning ...	0·0001
C7	V1 osc. C.G. ...	0·0001
C8	Osc. L.W. trim. ...	0·000075
C9	Osc. M.W. tracker	0·00057
C10	Osc. L.W. tracker...	0·00014
C11	H.T. decoupling ...	0·1
C12	Cathode by-pass ...	0·01
C13	A.V.C. decoupling	0·1
C14, C15	2nd I.F. trans. tuning ...	0·0001
C16, C17	I.F. by-pass capacitors ...	0·0001
C18*	Cathode by-pass ...	25·0
C19	A.F. coupling ...	0·005
C20	A.V.C. coupling ...	0·0001
C21	Tone control ...	0·05
C22	A.F. coupling ...	0·01
C23*	Cathode by-pass ...	25·0
C24	Tone corrector ...	0·01
C25*, C26*, C27*	H.T. smoothing capacitors ...	8·0
C28‡	Aerial S.W. trim....	—
C29‡	Aerial M.W. trim....	—
C30‡	Aerial L.W. trim....	—
C31†	Aerial tuning ...	—
C32†	Osc. tuning ...	—
C33‡	Osc. S.W. trim. ...	—
C34‡	Osc. M.W. trim. ...	—
C35‡	Osc. L.W. trim. ...	—
C36‡	L.W. tracker ...	—

* Electrolytic. † Variable. ‡ Pre-set.

RESISTORS		Values (ohms)
R1	M.W. shunt ...	3,300
R2	V1 hex. C.G. ...	330,000
R3	V1 osc. C.G. ...	12,000
R4	H.T. feed	10,000
R5	V2 fixed G.B. ...	270
R6	I.F. stopper ...	47,000
R7	A.V.C. decoupling	2,200,000
R8	Volume control ...	500,000
R9	V3 C.G. resistor ...	4,700,000
R10, R11	V3 G.B. and A.V.C. delay	100 2,200
R12	Anode load ...	100,000
R13	A.V.C. diode load...	1,000,000
R14, R15	Tone control resistors	6,800 6,800
R16	V4 C.G. resistor ...	470,000
R17	Grid stopper ...	100,000
R18	V4 G.B. resistor ...	270
R19	F.-B. coupling ...	220
R20, R21	H.T. smoothing resistors	1,500 3,900

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 OM10	264	7·6	87	4·2
	Oscillator			
	87	5·7		
V2 OM6	264	5·4	87	2·0
V3 OM4	51	1.75	—	—
V4 6V6G	247	36·0	197	2·7
V5 6X5G	366†	—	—	—

† Each anode, A.C.

OTHER COMPONENTS			Approx. Values (ohms)
L1	I.F. filter coil ...		4·0
L2	Aerial coupling coils		0·7
L3			20·0
L4			48·0
L5	Aerial tuning coils ...		Very low
L6			3·25
L7			34·0
L8	Oscillator tuning coils		Very low
L9			2·25
L10	Oscillator reaction coils		14·0
L11			26·0
L12			1·2
L13			7·7
L14	1st I.F. trans.	Pri.	9·0
L15		Sec.	9·0
L16	2nd I.F. trans.	Pri.	9·0
L17		Sec.	9·0
L18	Speech coil		1·5
T1	Output trans....	Pri.	370·0
		Sec.	0·4
T2	Mains trans.	Pri., total	48·0 E4
		Heater sec.	Very low E4
		Rect.heat.sec.	0·4 E4
		H.T.sec.total	1,400·0 E4
S1-S12	W/band switches ...		— L6
S13, S14	Tone switches ...		— E2
S15	Mains switch, ganged R8		— H5

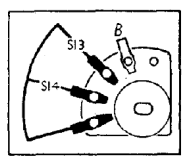


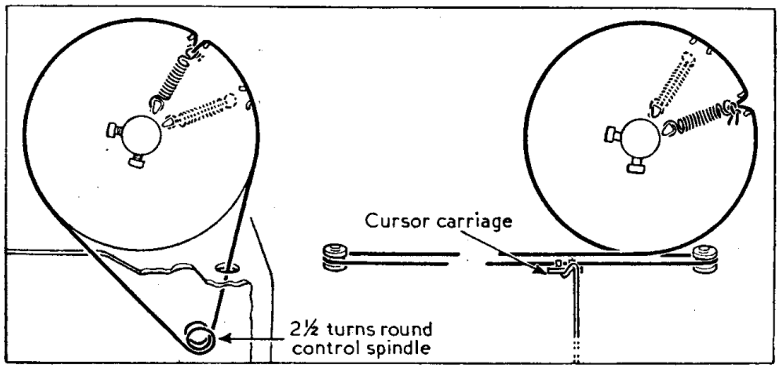
Diagram of the tone control switch unit, drawn as seen from the rear of the chassis deck.

DRIVE CORD REPLACEMENT

COSSOR - 470AC

There are two separate cords, one for the gang drive from the tuning control spindle, and the other for the scale cursor. Both are quite simple, and their courses can be seen from the sketches below, where they are shown separately.

Cursor Drive.—This should be fitted



Sketches showing the main gang (left) and scale cursor (right) drive cord systems as seen from the front when the gang is at maximum. Each has its own tension spring.

first as it runs in the rear groove on the drive drum. A yard of twine is just about sufficient for the job, and the two ends are tied together, after threading one of them through the loop at the outer end of the tension spring, inside the drum. The cursor can be slipped on afterwards and its two claws clamped on to the cord so that it registers with the vertical dots at the high-wavelength extremity. The cursor carriage rides on a guide rail formed by an inclined edge at the front of the chassis deck.

Gang Drive.—This requires a couple of feet of cord, and is even more straightforward than the former one except that it passes through two openings in the chassis deck. It occupies the front groove on the drum, and has its own tension spring.

CIRCUIT ALIGNMENT

I.F. Stages.—For this operation the chassis must be removed from the cabinet. Connect signal generator leads to control grid (top cap) of **V1,** via a 0.01 μF capacitor, and chassis. Switch set to M.W., tune to 500 m on scale, and turn volume control to maximum. Feed in a 465 kc/s (645.16 m) signal, and adjust the cores **L17, L16, L15** and **L14,** in that order, for maximum output, keeping the input low to avoid A.V.C. action.

R.F. and Oscillator Stages.—A slot is provided in the underside of the cabinet to give access to all R.F. alignment trimmer capacitors. With the gang at maximum capacitance the pointer should coincide with the vertical dotted lines close to the right-hand top and bottom edges of the scale. Transfer signal generator leads to **A** and **E** sockets, via a suitable dummy aerial.

Waveband Switch Diagram and Table

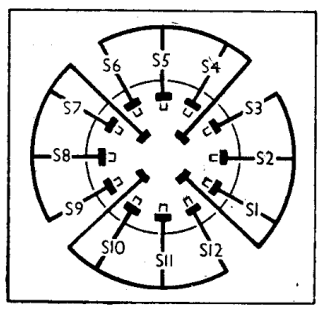


Diagram of the waveband switch unit, as seen from the rear of an inverted chassis. The associated table is on the right.

Switch	S.W.	M.W.	L.W.
S1	C	—	—
S2	—	C	—
S3	—	—	C
S4	C	—	—
S5	—	C	—
S6	—	—	C
S7	C	—	—
S8	—	C	—
S9	—	—	C
S10	C	—	—
S11	—	C	—
S12	—	—	C

S.W.—Switch set to S.W., tune to 16.6 m on scale, feed in a 16.6 m (18 Mc/s) signal, and adjust **C33,** then **C28,** for maximum output.

M.W.—Switch set to M.W., tune to 214 m (vertical line on scale), feed in a 214 m (1,400 kc/s) signal, and adjust **C34,** then **C29,** for maximum output.

L.W.—Switch set to L.W., tune to 1,153 m on scale, feed in a 1,153 m (260 kc/s) signal, and adjust **C35,** then **C30,** for maximum output. Tune to 1,875 m on scale, feed in a 1,875 m (160 kc/s) signal, and adjust **C36** for maximum output. Finally, repeat 1,153 m and 1,875 m adjustments.

I.F. Filter.—Switch set to M.W., tune to 500 m on scale, feed in a 465 kc/s signal, and adjust the core of **L1** for minimum output.