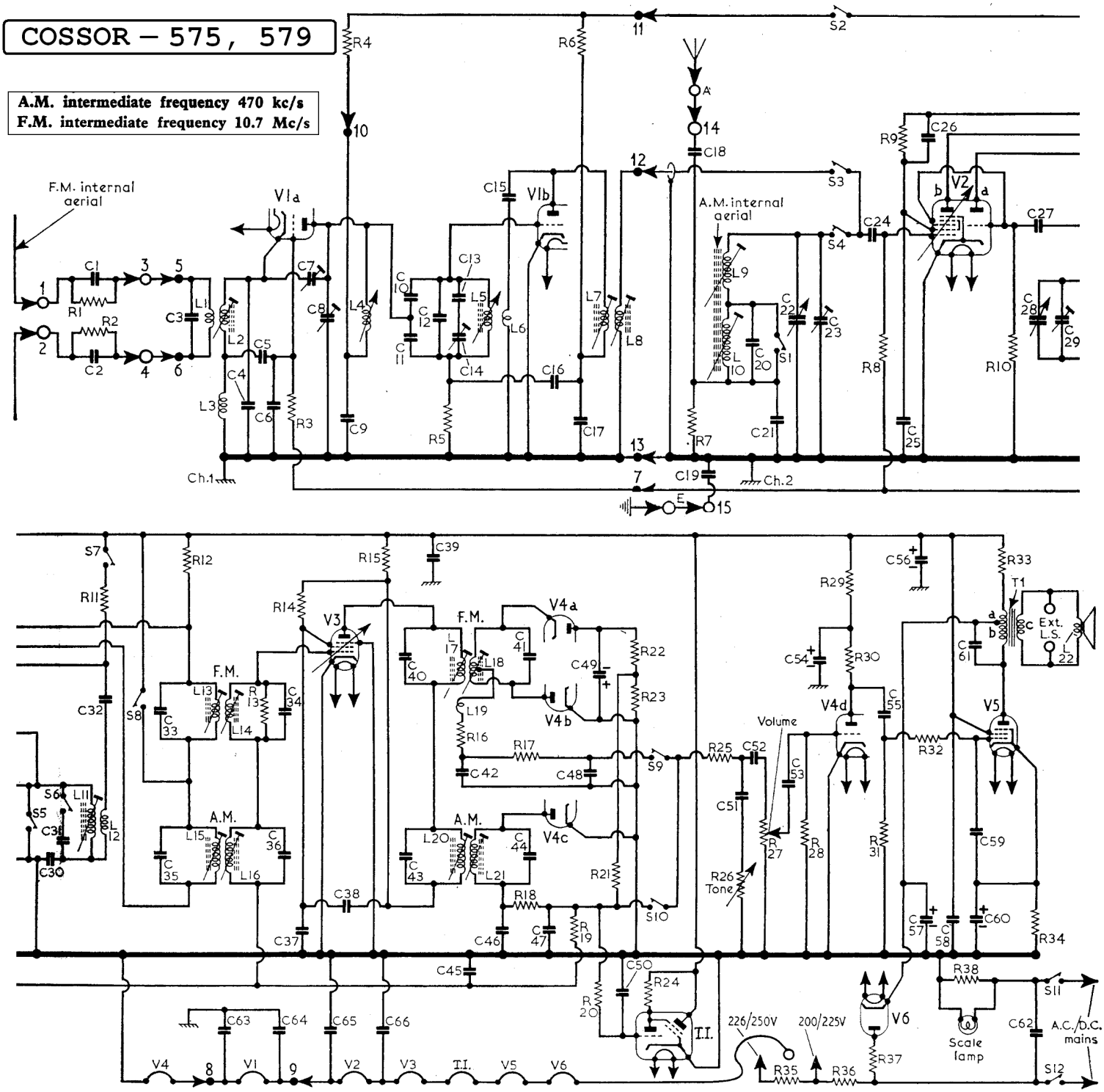
COSSOR – 575, 579

A.M. intermediate frequency 470 kc/s
F.M. intermediate frequency 10.7 Mc/s



Circuit Alignment

Equipment Required.—An accurately calibrated signal generator; a wobbulator; an oscilloscope; an output meter; a non-metallic screwdriver type trimming tool and a double-ended hexagonal trimming tool.

If the wobbulator is not provided with a self-contained marker-pip generator, the unmodulated output of the signal generator is used to provide marker-pips, and it should be connected to the signal generator terminals on the wobbulator, or, on wobbulators where these are not provided, to the wobbulator output via a 470kΩ resistor. The shape of the marker-pips may be improved by connecting a 0.005μF capacitor or less across the oscilloscope input terminals, but to avoid distorting the response curve the lowest possible capacitance should be employed.

In order to facilitate accurate tuning of the receiver on the M.W. and L.W. bands, R.F. alignment points are indicated by black dots on the appropriate tuning scales.

A.M. Alignment

1.—Switch receiver to M.W., turn gang to its mid-position and volume control to maximum. Connect output meter across **T1** secondary winding. Connect signal generator output between **V2b** control grid (pin 2) and chassis.

2.—Feed in a modulated 470kc/s signal and adjust the cores of **L21** (C1), **L20** (C1), **L16** (B1) and **L15** (B1) in that order for maximum output, reducing the signal generator output to maintain a 50mW reading on the output meter.

3.—Repeat operation 2 until no further improvement can be obtained.

4.—Turn tuning control fully clockwise and check that the cursor coincides with the black dot at the right-hand end of the M.W. scale. Transfer signal generator to the A.M. aerial and earth sockets.

5.—Switch to M.W. and tune the receiver to 522m. Feed in a 575kc/s signal and adjust core of **L11** (B2) and slide former of **L9** (B2) along the ferrite rod for maximum output.

6.—Tune receiver to 207m. Feed in a 1,450kc/s signal and adjust **C29** (B2), **C23** (A2) for maximum output.

7.—Repeat operations 5 and 6 until neither affects the other.

Resistors

R1	1MΩ	A2
R2	1MΩ	A2
R3	270kΩ	E3
R4	6·8kΩ	E3
R5	1MΩ	E4
R6	22kΩ	E3
R7	10kΩ	A2
R8	680kΩ	B2
R9	27kΩ	B2
R10	47kΩ	B1
R11	27kΩ	A2
R12	2·2kΩ	B2
R13	82kΩ	B2
R14	27kΩ	C1
R15	2·2kΩ	B1
R16	47Ω	C1
R17	47kΩ	C1
R18	100kΩ	C1
R19	1·2MΩ	C1
R20	2·2MΩ	C1
R21	220kΩ	C1
R22	15kΩ	C1
R23	15kΩ	C1
R24	470kΩ	D1
R25	100kΩ	C2
R26	500kΩ	D2
R27	500kΩ	D2
R28	5·6MΩ	C2
R29	22kΩ	C2
R30	220kΩ	C2
R31	470kΩ	C1
R32	47kΩ	C1
R33	3·3kΩ	D1
R34	270Ω	D1
R35	250Ω	D1
R36	200Ω	D1
R37	100Ω	D1
R38	27Ω	D2

Capacitors

C1	1,800pF	A2
C2	1,800pF	A2
C3	40pF	E4
C4	20pF	E4
C5	0·001μF	E3
C6	10pF	E4
C7	9pF	E3
C8	3pF	E3
C9	0·001μF	E4
C10	8·2pF	E4
C11	8·2pF	E4
C12	14pF	E4
C13	8·2pF	E4
C14	5pF	E3
C15	21pF	E4
C16	8pF	E4
C17	75pF	E4
C18	1,800pF	A2
C19	1,800pF	A2
C20	160pF	B2
C21	0·005μF	A2
C22	528pF	A2
C23	40pF	A2
C24	100pF	B2
C25	0·005μF	B2
C26	0·005μF	B2
C27	100pF	B1
C28	528pF	A2
C29	40pF	B2
C30	440pF	A2
C31	440pF	A2
C32	100pF	B2
C33	18pF	B2
C34	27pF	B2
C35	100pF	B1
C36	100pF	B1
C37	0·005μF	B1
C38	0·005μF	C1
C39	0·005μF	B1
C40	10pF	C1
C41	60pF	C1
C42	100pF	C1
C43	200pF	C1
C44	200pF	C1
C45	0·1μF	B1
C46	100pF	C1
C47	100pF	C1
C48	0·001μF	C1
C49	5μF	C2
C50	0·02μF	C1
C51	0·005μF	D2
C52	0·01μF	D2
C53	0·01μF	C2
C54	8μF	D2
C55	0·01μF	C2
C56	50μF	D2
C57	50μF	D2
C58	0·01μF	D1
C59	100pF	D1
C60	25μF	D1
C61	0·005μF	D1
C62	0·05μF	D1
C63	0·001μF	E4
C64	0·001μF	E4
C65	0·005μF	B2
C66	0·005μF	C2

Coils*

L1	—	E4
L2	—	E4
L3	—	E3
L4	—	E4
L5	—	E4
L6	—	E4
L7	1·3	E4
L8	1·3	E4
L9	1·2	B2
L10	4·25	C2
L11	1·3	B2
L12	0·3	B2
L13	—	B2
L14	—	B2
L15	8·0	B1
L16	8·0	B1
L17	—	C1
L18	1·25	C1
L19	—	C1
L20	5·0	C1
L21	5·0	C1
L22	3·0	—

Miscellaneous*

T1 a	19·0	D1
T1 b	173·0	D1
T1 c	—	D1
S1—S10	—	A2
S11, S12	—	D2

**Approximate D.C. resistance in ohms.*

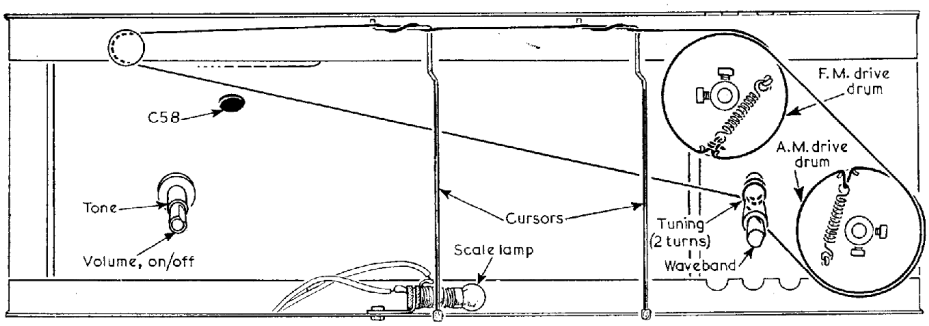


Diagram of the tuning drive system, drawn as seen from the front of the chassis with the gang at maximum capacitance.

8.—Switch receiver to L.W. Feed in a 214kc/s signal, tune it in on the receiver and then slide the former of **L10** (C2) along the ferrite rod for maximum output.

9.—Secure the formers of **L9** and **L10** to the ferrite rod with an adhesive.

F.M. Alignment

1.—Switch receiver to F.M. Connect oscilloscope between the junction of **R22, C49** (C2) and chassis. Connect wobbulator, via a 0.005μF capacitor in its live lead, to **V3** control grid (pin 2) and chassis. Disconnect the positive end of **C49.** Turn oscilloscope gain towards maximum and volume control to minimum.

2.—Feed in a 10.7 Mc/s signal, deviated by +300kc/s, and adjust the cores of **L17** (C1) and **L18** (C1) for a response similar to curve 1 in the alignment curves (col. 4), using the hexagonal trimming tool. The ±100kc/s points should be 1dB down.

3.—Transfer wobbulator to **V2b** control grid (pin 2) and chassis. Adjust the cores of **L13** (B2) and **L14** (B2) for a response similar to curve 2. The ±100kc/s points should be 4.5dB down.

4.—Transfer wobbulator, via a 0.005μF capacitor, to tag 10 on the F.M. tuner unit. Adjust the cores of **L7** (E3) and **L8** (E4) to obtain a response similar to curve 3. The ±100kc/s points should be 6dB down.

5.—Reconnect **C49.** Transfer oscilloscope to the junction of **S9, R25** (C2) and chassis. With wobbulator connected as for operation 4, a response similar to curve 4 should be obtained. Slight readjustment of **L18** (C1) may be necessary to obtain a symmetrical curve. Remove wobbulator and oscilloscope.

6.—Check that with the tuning control turned fully clockwise the F.M. cursor coincides with the black dot at the right-hand edge of the F.M. scale aperture. Connect

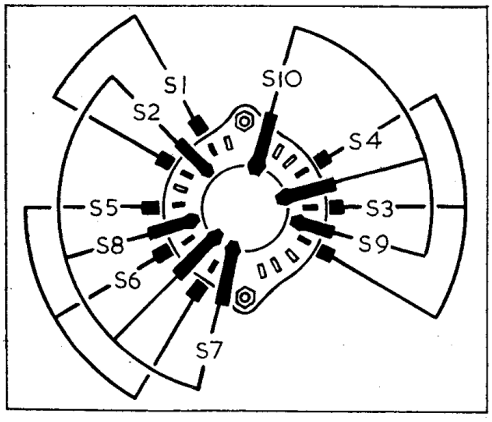


Diagram of the switch unit.

Switches.—S1-S10 are the waveband and A.M./F.M. change-over switches, ganged in a single rotary unit and indicated on the component side of the chassis in location reference A2. A detailed switch diagram is shown in column 4, where it is drawn as seen from the rear. The table below shows the switch

Switches	F.M.	L.W.	M.W.
S1	—	—	C
S2	C	—	—
S3	C	—	—
S4	—	C	C
S5	C	—	—
S6	—	C	—
S7	—	C	C
S8	—	C	C
S9	C	—	—
S10	—	C	C

Valve			Anode V	Anode mA	Screen V	Screen mA	Cath. V
			Model 579				
V1	UCC85	a	107	5·8	—	—	—
		b	85	3·1	—	—	—
V2	UCH81	a	70	3·4	—	—	—
		b	163	2·2	67	3·5	—
V3	UF89 ..		144	7·6	77	2·1	—
V4d	UABC80		60	0·5	—	—	—
V5	UL84 ..		230	47·0	163	1·9	12·4
V6	UY85 ..		223[1]	—	—	—	242·0[4]
T.I.	UM80 ..		34	—	—	—	—
			Model 575				
V1	UCC85	a	114	6·0	—	—	—
		b	81	3·4	—	—	—
V2	UCH81	a	78	3·4	—	—	—
		b	168	1·4	57	4·0	—
V3	UF89 ..		147	7·5	75	2·5	—
V4d	UABC80 ..		60	0·5	—	—	—
V5	UL84 ..		230	47·0	168	1·7	13·0
V6	UY85 ..		223[1]	—	—	—	242·0[5]

[1]A.C. reading. [4]Cathode current 71mA.
[5]Cathode current 68mA.