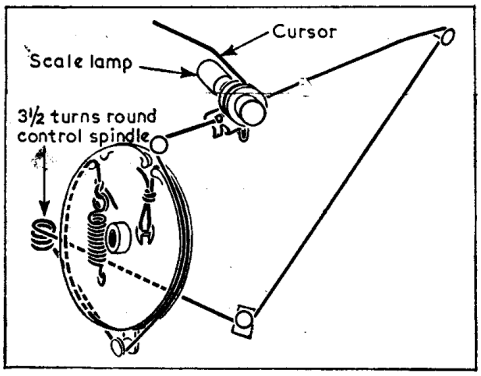
KOLSTER-BRANDES - KB10FM



Sketch of tuning drive system, seen from rear with gang at maximum capacitance.

Valve	Anode V	Anode mA	Screen V	Screen mA	Cath. V
V1 12AT7 a	170	7.5	—	—	1·2
V1 12AT7 b	170	10·0	—	—	—
V2 6BJ6	225	7·5	86	2·6	0·7
V3 EABC80 a, b	—	—	—	—	—
V3 EABC80 c	60	0·4	—	—	—
V4* EL84	210	46·0	205	5·5	5·4
MR1† 18RA2N1151	230‡	—	—	—	240·0§

*May be 6AM6. † Westinghouse (may be Brimar EZ80—see "Modifications" in "General Notes"). ‡ A.C. reading. § Cathode current 75 mA.

CIRCUIT ALIGNMENT

Equipment Required.—An F.M. signal generator covering 10.7 Mc/s and 85-100 Mc/s, with a deviation of at least ±150 kc/s; an 0-10V high-resistance D.C. voltmeter; an 0-250μA microammeter; a power output meter; an oscilloscope; two accurately matched 47kΩ resistors.

I.F. Stages

1.—Set the normal/adaptor switch for "normal" operation, and connect D.C. voltmeter across **C21** (location reference D3) taking the positive meter connection to chassis.
2.—Connect output of signal generator to control grid (pin 1) of **V2** and chassis. Screw out the cores of **L9** (C3), **L7** (A1) and **L6** (D3) until they are half-way out of their coil formers.
3.—Feed in an unmodulated 10.7 Mc/s signal and adjust the core of **L8** (B1) for maximum reading **on meter.**
4.—Transfer live signal generator lead via an 0.001μF capacitor, to junction of **R5, L6** (point X in D3).
5.—Feeding is an unmodulated 10.7 Mc/s signal, adjust the cores of **L6** (D3) and **L7** (A1) in that order for maximum reading on meter.
6.—Transfer live signal generator lead, with 0.001μF capacitor, to pin 3 of **V1,** and re-adjust the cores of **L8, L6** and **L7** in that order for maximum reading on meter.
7.—Re-connect live signal generator lead, via 0.001μF capacitor, to point X. Connect the two accurately matched 47kΩ resistors in series across **C21** in place of D.C. voltmeter. Connect microammeter between junction of these resistors and point Y (D3).

Resistors

R1	470kΩ	C3
R2	470kΩ	C3
R3	150Ω	D2
R4	22kΩ	A1
R5	2·2kΩ	D2
R6	47kΩ	D2
R7	68Ω	D3
R8	500kΩ	B1
R9	39kΩ	C3
R10	10MΩ	C3
R11	470kΩ	C2
R12	1MΩ	C3
R13	1kΩ	C2
R14	100Ω	C3
R15	1kΩ	C3
R16	220Ω	D2
R17	470Ω	C2

Capacitors

C1	0·001μF	C3
C2	0·001μF	C3
C3	0·001μF	D3
C4	35pF	D2
C5	0·001μF	D2
C6	120pF	D3
C7	50pF	A1
C8	—	A1
C9	20pF	A1
C10	10pF	A1
C11	5pF	A1
C12	10pF	D3
C13	19pF	D3
C14	—	A1
C15	0·003μF	D3
C16	0·003μF	D3
C17	7pF	B1
C18	40pF	C3
C19	300pF	C3
C20	0·01μF	B1
C21	2μF	D3
C22	32μF	B1
C23	0·02μF	C3
C24	0·01μF	C2
C25	50μF	C2
C26	32μF	B1
C27	32μF	B1
C28	0·01μF	C2

Coils†

L1	—	D2
L2	—	D2
L3	—	D2
L4	—	A1
L5	—	A1
L6	1·0	A1
L7	1·0	A1
L8	1·0	B1
L9	1·0	B1
L10	—	B1
L11	—	C2
L12	2·5	A1

Transformers†

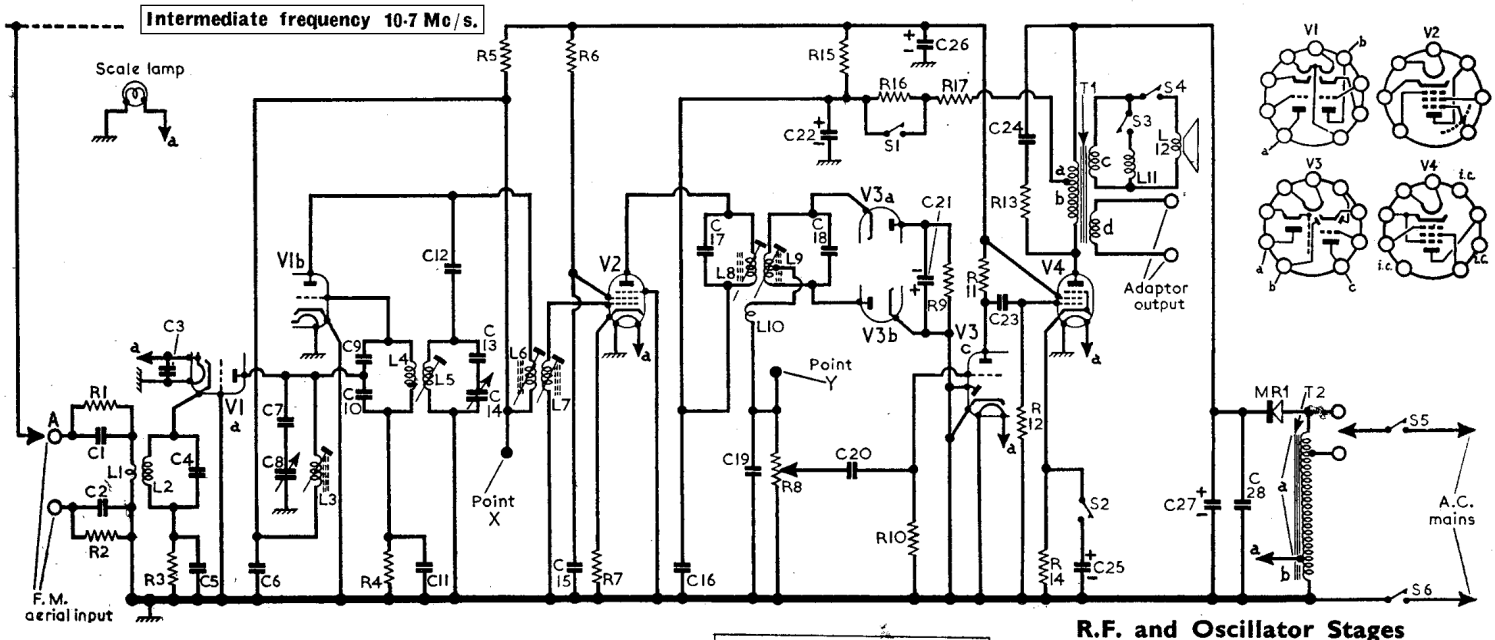
T1 a	8·0	A1
T1 b	630·0	A1
T1 c	—	A1
T1 d	300·0	A1
T2 a	150·0	B1
T2 b	0·5	B1

Miscellaneous

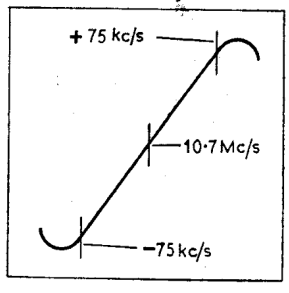
MR1*	18RA2N1151	A1
S1-S4	—	D2
S5, S6	—	B1

* Westinghouse

† Approximate D.C. resistance in ohms.



8.—Feeding in an unmodulated 10.7 Mc/s signal, adjust the core of **L9** (C3) for zero reading on microammeter. This will occur mid-way between a negative-going and a positive-going deflection. Disconnect meter and resistors.
9.—Connect Y amplifier terminals on oscilloscope between point Y (D3) and chassis. Connect sweep output from signal generator to X plates on oscilloscope. Feed in a 10.7 Mc/s signal, deviated by ±150 kc/s, to point X and check that the response curve is similar to that shown in the diagram below. A slight adjustment to the core of **L9** may be necessary to obtain optimum linearity.



I.F. response curve obtained in operation 9 of circuit alignment instructions.

R.F. and Oscillator Stages

10.—Connect signal generator output to aerial sockets (C3). Connect D.C. voltmeter across **C21** (D3) taking positive meter connection to chassis. Check that with gang at maximum capacitance, the cursor coincides with the calibration mark at the right-hand lower edge (viewed from front of chassis) of the scale backing plate.
11.—Tune receiver to 93 Mc/s calibration mark at centre of scale backing plate. Feed in an unmodulated 93 Mc/s signal and adjust the cores of **L5** (D3) and **L3** (D2) in that order for maximum reading on voltmeter. Repeat **L5** core adjustment.