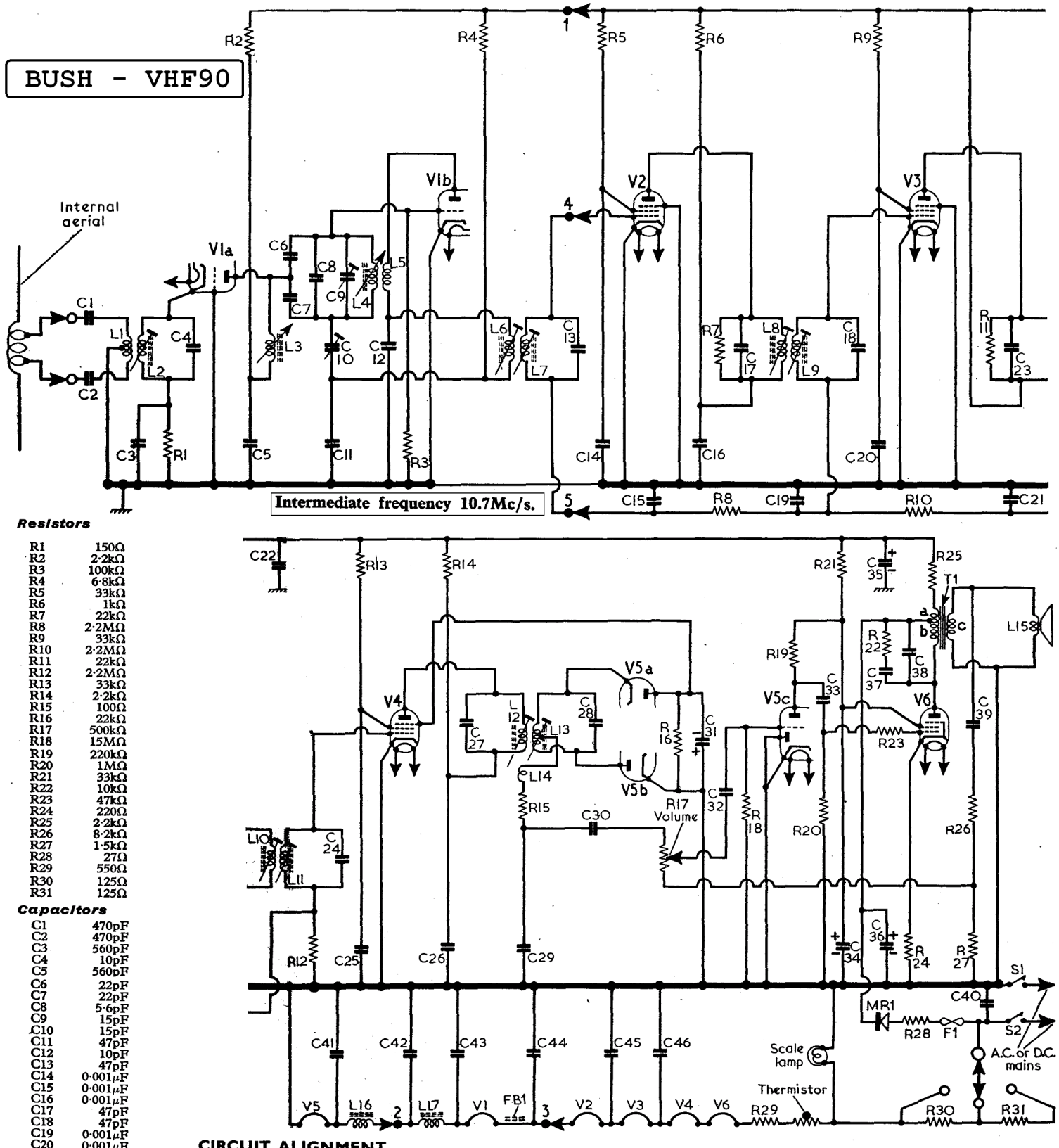
BUSH - VHF90



Resistors

R1	150Ω
R2	2·2kΩ
R3	100kΩ
R4	6·8kΩ
R5	33kΩ
R6	1kΩ
R7	22kΩ
R8	2·2MΩ
R9	33kΩ
R10	2·2MΩ
R11	22kΩ
R12	2·2MΩ
R13	33kΩ
R14	2·2kΩ
R15	100Ω
R16	22kΩ
R17	500kΩ
R18	15MΩ
R19	220kΩ
R20	1MΩ
R21	33kΩ
R22	10kΩ
R23	47kΩ
R24	220Ω
R25	2·2kΩ
R26	8·2kΩ
R27	1·5kΩ
R28	27Ω
R29	550Ω
R30	125Ω
R31	125Ω

Capacitors

C1	470pF
C2	470pF
C3	560pF
C4	10pF
C5	560pF
C6	22pF
C7	22pF
C8	5·6pF
C9	15pF
C10	15pF
C11	47pF
C12	10pF
C13	47pF
C14	0·001μF
C15	0·001μF
C16	0·001μF
C17	47pF
C18	47pF
C19	0·001μF
C20	0·001μF
C21	0·001μF
C22	0·01μF
C23	47pF
C24	47pF
C25	0·001μF
C26	0·001μF
C27	10pF
C28	47pF
C29	560pF
C30	0·01μF
C31	5μF
C32	0·01μF
C33	0·01μF
C34	20μF
C35	40μF
C36	40μF
C37	0·01μF
C38	0·02μF
C39	0·04μF
C40	0·002μF
C41	0·002μF
C42	560pF
C43	560pF
C44	560pF
C45	0·001μF
C46	0·001μF

CIRCUIT ALIGNMENT

Equipment Required.—An accurately calibrated signal generator covering the frequency range 10Mc/s-100Mc/s; a model 8 Avometer; a 50μA meter; two matched 47kΩ resistors; a 1kΩ damping resistor.

The receiver and signal generator should be switched on for 15 minutes before commencing alignment.

Remove the chassis from the cabinet. As the tuning scale remains fixed to the cabinet when the chassis is removed, it is necessary to use the indentation marks punched in the scale backing plate and shown in the sketch in col. 4 overleaf. A piece of wire may be fixed to the tuning spindle and used as a pointer. With the tuning spindle fully anti-clockwise the pointer should be lined up with the Datum mark on the tuning scale backing plate.

With the exception of **L12** the correct peak associated with the iron-dust tuning cores is the first one reached from the adjusting end of the coil former.

During the alignment procedure adjust the signal generator output to maintain a 4V reading on the output meter.

The iron-dust cores of **L3** and **L4** are adjusted simultaneously by adjusting the special nut shown in location reference G3.

C9 and **C10** (location reference F4) are pre-set by the manufacturers, and should not be disturbed.

I.F. Alignment

1.—Connect the two matched 47kΩ resistors in series across **C31** (E4). Connect the model 8 Avometer across **C31** (E4), with the positive meter lead connected to chassis. Connect the signal generator output between the control grid (pin 2) of **V2** and chassis.

2.—Feed in a 10.7Mc/s unmodulated signal and adjust the core of **L12** (C2) for maximum reading on the meter.

3.—Connect the 50μA meter between the junction of the two 47kΩ resistors and the junction of **R15, C29** (location

reference E4). Feed in a 10.7Mc/s unmodulated signal and carefully adjust the core of **L13** (E4) for a zero reading on the 50μA meter. This will occur midway between a positive-going and negative-going peak. Remove the 50μA meter.

4.—Connect the 1kΩ damping resistor across the secondary winding **L11** and adjust the core of **L10** (E4, where it is indicated in error as C46) for maximum output on the Avometer.

5.—Transfer the damping resistor to the primary winding **L10** and adjust the core of **L11** (B2) for maximum output.

6.—Transfer the damping resistor across the secondary winding **L9** and adjust the core of **L8** (F4) for maximum output.

7.—Transfer the damping resistor to the primary winding **L8** and adjust **L9** (B2) for maximum output. Remove the damping resistor.

8.—Repeat operations 2 and 3.

9.—Connect the signal generator output to the aerial sockets. Feed in a 10.7 Mc/s signal and adjust the cores of **L6** (F4) and L7 (A2) for maximum output.

R.F. Alignment

1.—Connect the signal generator output to the aerial sockets. Tune the receiver to the 87.5Mc/s calibration point on the scale backing plate. Feed in a 87.5Mc/s signal and adjust the cores of **L3** and **L4** (adjustment location reference G3) for maximum output.

2.—Tune the receiver to the 94Mc/s calibration point. Feed in a 94Mc/s signal and adjust the core of **L2** (G4) for maximum output.

3.—Check calibration.

Valve Table

Valve		Anode (V)	Screen (V)	Cath. (V)
V1 UCC85	a ..	145	—	1·2
	b ..	130	—	—
V2 UF89		150	75	—
V3 UF89		158	75	—
V4 UF89		138	70	—
V5c UABC80		60	—	—
V6 UL84		230	115	9·2

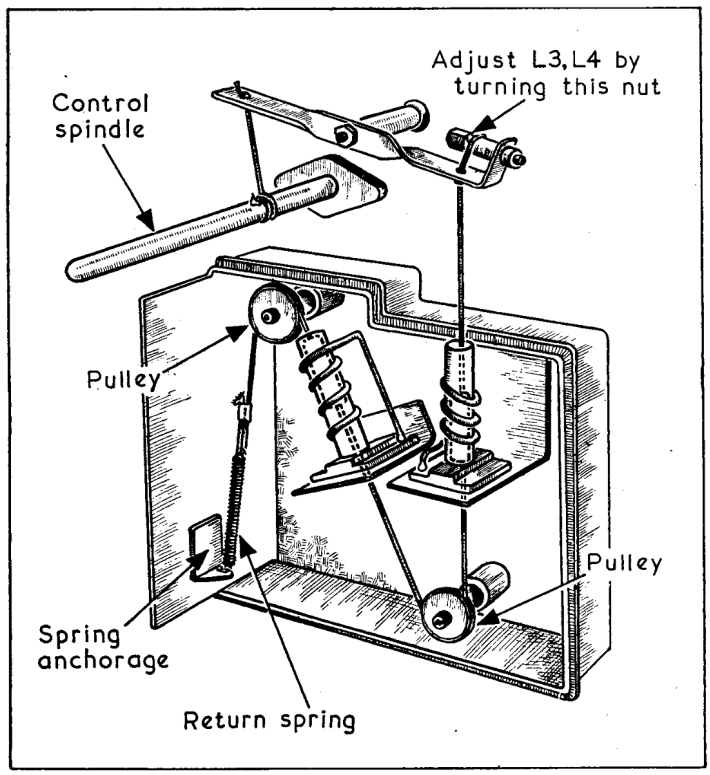


Diagram of the tuning drive cord. For the sake of clarity no components are shown except the coils directly affected by the drive. The turning of the control spindle operates the lever located above it and moves the cores up or down inside the coils.

Drive Cord Replacement.—Should a breakage occur in the tuning drive cord or should one of the tuning cores break, the manufacturers recommend that the complete drive cord assembly (Part Number AP24888) should be replaced.

Access to the drive cord and tuning cores can be obtained by removing the tuning scale backing plate (two 4BA screws) and the cover of the tuning unit (seven 6BA 1$\frac{5}{8}$in screws and nuts).

Thread the new cord assembly through the formers of **L3** and **L4**, and with the tuning control spindle turned to its maximum clockwise position, attach the cord to the return spring. The spring should then be hooked to its anchorage and the free end of the cord run as indicated in the sketch at the foot of cols. 1 and 2.

Attach the cord to the adjusting screw and carry out operation 1 in the R.F. alignment instructions.

The short primary tuning drive cord which links the tuning control spindle with the lever is a separate piece of cord. To replace this cord, take a length of about six inches and fix it as shown in the sketch. Adjust it so that the lever swings equally above and below the horizontal for the full tuning range. A final adjustment can be made by means of the