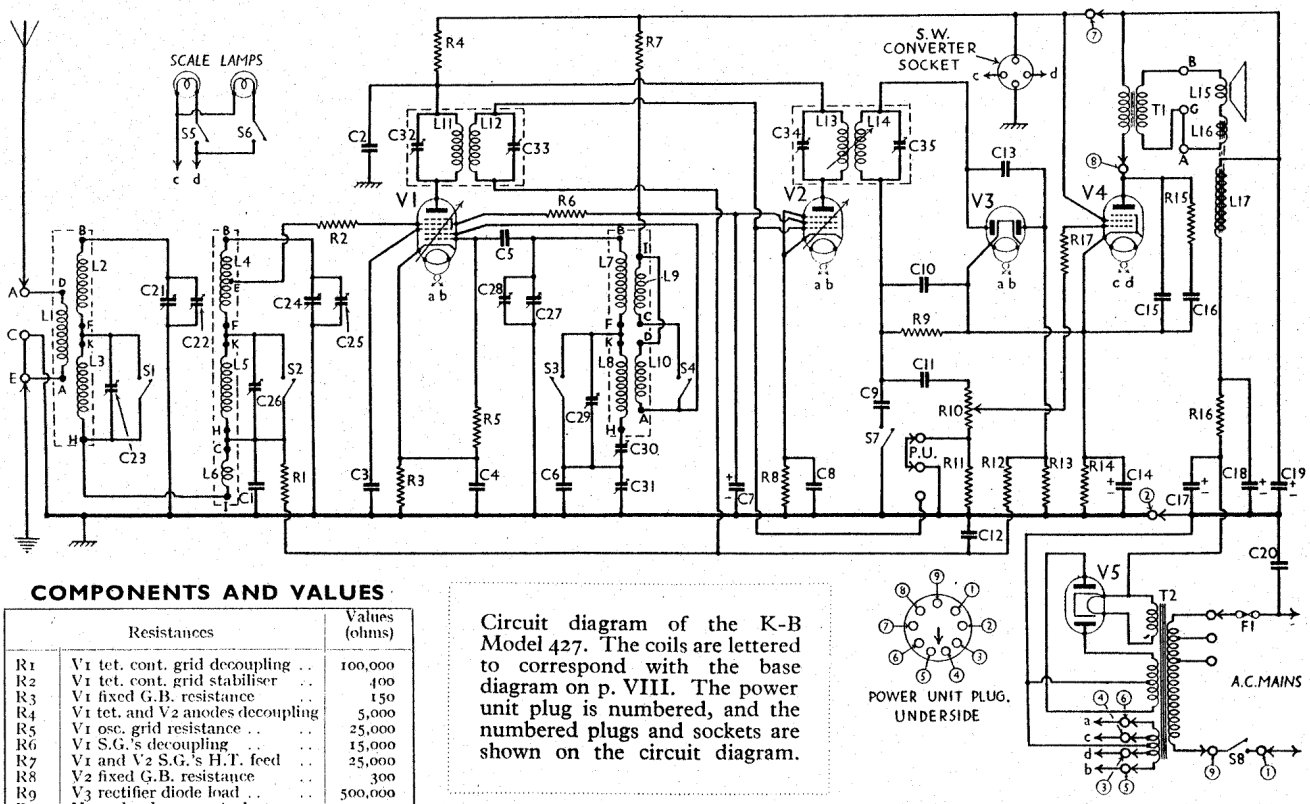
Kolster & Branders 427



Circuit diagram of the K-B Model 427. The coils are lettered to correspond with the base diagram on p. VIII. The power unit plug is numbered, and the numbered plugs and sockets are shown on the circuit diagram.

COMPONENTS AND VALUES

	Resistances	Values (ohms)
R1	V1 tet. cont. grid decoupling	100,000
R2	V1 tet. cont. grid stabiliser	400
R3	V1 fixed G.B. resistance	150
R4	V1 tet. and V2 anodes decoupling	5,000
R5	V1 osc. grid resistance	25,000
R6	V1 S.G.'s decoupling	15,000
R7	V1 and V2 S.G.'s H.T. feed	25,000
R8	V2 fixed G.B. resistance	300
R9	V3 rectifier diode load	500,000
R10	Manual volume control	500,000
R11	Part of pick-up circuit	250,000
R12	A.V.C. circuit decoupling	100,000
R13	V3 A.V.C. diode load	500,000
R14	V4 G.B. resistance	140
R15	Part of tone comp. circuit	20,000
R16	H.T. smoothing	600
R17*	V4 grid I.F. stopper	7,000

* May not appear in some chassis.

	Condensers	Values (μF)
C1	Band-pass capacity coupling	0·02
C2	V1 tet. and V2 anodes decoupling	0·1
C3	V1 S.G.'s by-pass	0·1
C4	V1 cathode by-pass	0·1
C5	V1 osc. grid condenser	0·0001
C6	Oscillator M.W. tracker, fixed	0·001
C7*	V2 S.G. by-pass	10·0

	Condensers (contd.)	Values (μF)
C8	V2 cathode by-pass	0·1
C9	High-note attenuator	0·001
C10	I.F. by-pass	0·0005
C11	L.F. coupling to V4	0·02
C12	A.V.C. circuit decoupling	0·1
C13†	Coupling to V3 A.V.C. diode	0·000012
C14*	V4 cathode by-pass	25·0
C15	Parts of tone compensation circuit	0·0005
C16		0·01
C17*	H.T. smoothing	8·0
C18*		8·0
C19*		8·0
C20	Mains disturbance by-pass	0·01
C21	Band-pass primary tuning	0·0005
C22‡	Band-pass primary trimmer	—
C23‡	Band-pass primary L.W. trimmer	—
C24	Band-pass secondary tuning	0·0005
C25‡	Band-pass secondary trimmer	—
C26‡	Band-pass secondary L.W. trimmer	—
C27	Oscillator tuning	0·0005
C28‡	Oscillator main trimmer	—
C29‡	Oscillator L.W. trimmer	—
C30‡	Oscillator L.W. tracker	—
C31‡	Oscillator M.W. tracker	—
C32‡	1st I.F. trans. pri. tuning	—
C33‡	1st I.F. trans. sec. tuning	—
C34‡	2nd I.F. trans. pri. tuning	—
C35‡	2nd I.F. trans. sec. tuning	—

* Dry electrolytic.
‡ Pre-set condenser.
† Formed by twisted wires.

	Other Components		Values (ohms)
L1	Aerial coupling coil		11·0
L2	Band-pass primary coils		5·0
L3			20·0
L4	Band-pass secondary coils		5·0
L5			20·0
L6	Band-pass coupling coil		0·25
L7	Oscillator grid coils		4·0
L8			13·0
L9	Oscillator anode coils		2·0
L10			9·0
L11	1st I.F. trans.	Pri.	70·0
L12		Sec.	70·0
L13	2nd I.F. trans.	Pri.	70·0
L14		Sec.	70·0
L15	Speaker speech coil		2·0
L16	Hum neutralising coil		0·1

	Other Components (contd.)		Values (ohms)
L17	Speaker field winding		1,300
T1	Output trans.	Pri.	430·0
		Sec.	0·4
T2	Mains trans.	Pri. total	25·0
		Heater sec. total	0·4
		Rect. heat. sec.	0·05
		H.T. sec.	150·0
S1-S4	Waveband switches		—
S5	Scale lamp switch (M.W.)		—
S6	Scale lamp switch (L.W.)		—
S7	High-note attenuator switch		—
S8	Mains switch, ganged R10		—
F1	Mains circuit fuse (1·5A)		—

Valve	Anode Volts	Anode Current (mA)	Screen Volts	Screen Current (mA)
V1 15D1*	175	5·2	70	2·3
V2 9D2	175	8·2	100	1·8
V3 1OD1	—	—	—	—
V4 Pen4VB	240	31·0	255	4·0
V5 R3	310†	—	—	—

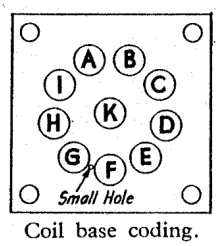
* Osc. anode (G2) 100 V 2·0 mA.
† Each anode, A.C.

VALVE ANALYSIS

The voltages and currents listed in the table were obtained from an average production chassis working under "no signal" conditions (aerial and earth sockets S.C.), with a 235 V 50 c.p.s. A.C. mains supply. Following the instructions given by the makers, the voltage adjustment plug was inserted in the 225 position.

All voltages were measured on the 1,200 V scale of a Universal Avometer with chassis as negative. In some instances when measuring currents it may be necessary to stabilise **V1** and **V2** in the usual way with 0.1 μF condensers connected between anodes and chassis. The readings given for **V1** were taken under normal working conditions with the oscillator section operating.

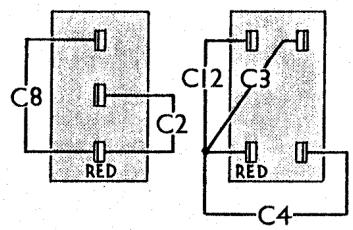
Coils.—The signal frequency and oscillator coils are in three screened units on the chassis deck, containing **L1-L3, L4-L6** and **L7-L10** respectively. The connections to these coils are taken to tags on the special bases underneath the chassis, and the tags are coded according to the lettered diagram on this page, with corresponding letters on the circuit diagram. Note the small hole in the paxolin bases which indicate the F and G tags.



Coil base coding.

The I.F. transformers **L11, L12** and **L13, L14** are in two more screened cans, holes in the tops permitting the trimmers to be reached. These are shown in the plan chassis view. The primary winding is the lower one in each case. The second I.F. transformer has variable coupling between primary and secondary.

Condenser C13.—This is a very small condenser, seen in the under-chassis view,



Condenser block diagrams.

formed by a wire winding over a central thick insulated wire.