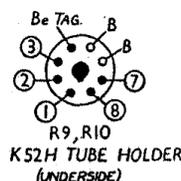


**R11** is the line cord resistor, and can be shorted out by a 2-pin plug when the set is to be used on 100-110 V mains. **R9** and **R10** are in the K52H resistance tube, and a diagram of the underside of the holder of this is below the circuit.



## BELMONT 500 & 505

### COMPONENTS AND VALUES

RESISTANCES		Values (ohms)
R1	Aerial circuit L.W. damping ..	250,000
R2	V1 fixed G.B. ..	500
R3	V1 gain control ..	50,000
R4	V2 grid leak ..	3,000,000
R5	V2 S.G. H.T. feed ..	6,000,000
R6	V2 anode load ..	1,000,000
R7	V3 C.G. resistance ..	750,000
R8	V3 G.B. resistance ..	650
R9	Part heater circuit ballast and scale lamp shunt ..	*28
R10	Part heater circuit ballast ..	*140
R11	Voltage adjustment ..	†310

\* K52H tube. † In mains lead.

CONDENSERS		Values (μF)
C1	Aerial series condenser ..	0.0003
C2	V1 cathode by-pass ..	0.1
C3	V1 to V2 small coupling ..	Very low
C4	V2 C.G. condenser ..	0.005
C5	V2 S.G. decoupling ..	0.1
C6	V2 anode R.F. by-pass ..	0.0001
C7	V2 to V3 A.F. coupling ..	0.01
C8*	V3 cathode by-pass ..	5.0
C9	Fixed tone corrector ..	0.01
C10*	H.T. smoothing ..	8.0
C11*		8.0
C12	Mains R.F. by-pass ..	0.05
C13†	Aerial circuit L.W. trimmer ..	—
C14†	Aerial circuit tuning ..	—
C15†	Aerial circuit M.W. trimmer ..	—
C16†	R.F. trans. sec. L.W. trimmer ..	—
C17†	R.F. trans. sec. tuning ..	—
C18†	R.F. trans. sec. M.W. trimmer ..	—

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial coupling coils ..	25.0
L2		
L3		
L4		
L5	Aerial circuit tuning coils ..	3.0
L6	R.F. transformer primary ..	15.0
L7	R.F. trans. sec. coils ..	73.0
L8	Speaker speech coil ..	2.7
L9	Speaker field coil ..	29.0
L10	H.T. smoothing choke ..	2.1
T1	Speaker input trans. { Pri. ..	260.0
	{ Sec. ..	470.0
S1, S2	Waveband switches ..	0.6
S3	Mains switch, gauged R3 ..	—

### VALVE ANALYSIS

Valve voltages and currents given in the table below are those measured in our receiver when it was operating on A.C. mains of 226 V. The receiver was tuned to the lowest wavelength on the medium band and the volume control was at maximum, but there was no signal input.

Voltages were measured on the 400 V scale of a model 7 Universal Avometer, chassis being negative.

If, as in our case, **V1** should become unstable when its anode and screen currents are being measured, it can be stabilised by connecting a non-inductive condenser of about 0.1 μF from grid (top cap) to chassis.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 6D6	88	4.7	88	1.3
V2 6C6*	6	0.1	3	Very low
V3 43	81	14.0	88	2.9
V4 25Z5†	—	—	—	—

\* With different meters the readings for **V2** may vary considerably. † Cathode to chassis 95 V, D.C.

### GENERAL NOTES

**Note.**—The chassis of this receiver is live, and as no isolated earth socket is fitted, an earth lead must not be attached to the chassis unless a suitable isolating condenser is used in series with it.

**Switches.**—**S1** and **S2** are the waveband switches, in a simple rotary unit at the front of the chassis. The switches are identified in our under-chassis view. Both close on M.W. and open on L.W. **S3** is the Q.M.B. main switch, ganged with the gain control **R3**.

**Coils.**—**L1-L4** are in a tubular un-screened unit on the chassis deck, while **L5-L7** are in a similar unit beneath the chassis. **L5** is inside the tubular former.

**Scale Lamp.**—This is an Osram M.E.S. type, rated at 6.2 V, 0.3 A.

**External Speaker.**—There is no provision for this, and if one is ever fitted, it must be connected across the secondary of **T1**, unless isolating condensers are used.

**Condensers C8, C10, C11.**—These are three dry electrolytics in a single tubular carton beneath the chassis, having a common negative (black) lead. The yellow lead is the positive of **C8** (5 μF 25 V peak), the red lead to bearer tag on **R9, R10** holder is the positive of **C10** and the red lead to **V4** holder is the positive of **C11**. Both **C10** and **C11** are 8 μF, 120 peak volt types.

**Resistances R9, R10.**—These are contained in an American K52H resistance tube, with an octal base. The pins to which they are connected are indicated by numbers in the circuit diagram, and the connections of the holder, looking from beneath the chassis, are in the diagram beneath the circuit. In the tube, there is an extra resistance between pins 1 and 8, but on the holder these pins are shorted.

**Resistance R11.**—This is a ballast resistor, incorporated in the mains lead. Note that the actual resistor connection at the chassis end is the blue lead, and not the black lead covered with asbestos.

**Voltage Adjustment.**—This is for adjustment to 100-110 V, or to 200-250 V only. A 2-pin shorting plug fits into sockets at the rear of the chassis when 100-110 V mains are in use, and shorts out **R11**. The plug must not be inserted when the set is used on 200-250 V mains.

**Condenser C3.**—This is a small coupling formed of insulated wire twisted round another wire. It is not shown in the makers' diagram.

### CIRCUIT ALIGNMENT

The signal generator must be connected to the aerial side of **C1** (preferably with the aerial removed, or coiled up) and to chassis via a 0.1 μF or similar high voltage test condenser. Turn gain control to maximum.

Switch set to M.W., tune to 225 m. on scale, feed in a 225 m. (1,333 KC/S) signal, and adjust **C15** and **C18** for maximum output.

Switch set to L.W., tune to 1,000 m. on scale, feed in a 1,000 m. (300 KC/S) signal, and adjust **C13** and **C16** for maximum output.