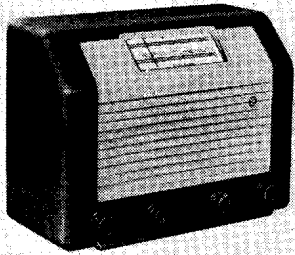


# EKCO A44

## 3-BAND SUPERHET



The diagram illustrates the internal wiring of the Ekco A44 radio receiver. The main chassis layout includes the following components and connections:

- Power Section:** AC mains input (A) through a scale lamp and switch, connected to a transformer (T1) with primary L5 and secondary L8. The secondary is connected to a 500V AC plug unit (PU) and a 500V AC switch (S14).
- Valve Section:** Four vacuum tubes (V1, V2, V3, V4) are shown with their base connections. V1 is a pentode, V2 is a pentode, V3 is a pentode, and V4 is a diode.
- Control Section:** A tone control switch (S12) and a waveband switch unit (S13) are shown. The waveband switch unit includes a 500V AC switch (S14) and a 500V AC plug unit (PU).
- Resistors (R1-R21):** Various resistors are distributed throughout the circuit, including R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, and R22.
- Capacitors (C1-C39):** Numerous capacitors are used for tuning and coupling, including C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, and C40.
- Inductors (L1-L9):** Various inductors are used for tuning and coupling, including L1, L2, L3, L4, L5, L6, L7, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18, L19, L20, L21, L22, L23, L24, L25, L26, L27, L28, L29, L30, L31, L32, L33, L34, L35, L36, L37, L38, L39, and L40.
- Switches (S1-S14):** Various switches are used for control and selection, including S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19, S20, S21, S22, S23, S24, S25, S26, S27, S28, S29, S30, S31, S32, S33, S34, S35, S36, S37, S38, S39, and S40.

The inset diagrams provide detailed views of the tone control switch unit (top left corner) and the waveband switch unit (below circuit, with valve base diagrams). Both switch diagrams are viewed from the rear of an inverted chassis.

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OTHER COMPONENTS (continued)		Approx. Values (ohms)	Loca- tion
L5	Aerial tuning coils	Very low	J4
L6		4-0	A1
L7		28-0	A1
L8	Osc. reaction coils	0-2	L5
L9		1-0	H5
L10		1-5	G5
L11	Osc. tuning coils	Very low	L5
L12		3-0	H5
L13		5-5	G5
L14	1st I.F. trans.	Pri. 17-0	A2
L15		Sec. 17-0	A2
L16	2nd I.F. trans.	Pri. 9-0	B2
L17		Sec. 9-0	B2
L18	Speech coil	2-5	—
L19	H.T. choke	580-0	F4
T1	Output trans.	Pri. 380-0	B1
		Sec. 0-25	B1
T2	Mains	Pri. total 40-0	D2
		Heat sec. 0-2	D2
		Rect. heat sec. 0-1	D2
		H.T. sec. total 580-0	D2
S1-S9	Waveband switches	—	H4
S10-S12	Tone control switches	—	F3
S13	Int. speaker switch	—	H6
S14	Mains sw, g'd R13	—	E3

### GENERAL NOTES

**Switches.**—S1-S9 are the waveband switches, ganged in a single rotary unit beneath the chassis, as indicated in our under-chassis view. The unit is shown in detail in the diagram inset beneath the circuit diagram overlaid as seen from the rear of an inverted chassis. The table below gives the switch positions for the three control settings, starting from the fully anti-clockwise position of the control knob. A dash indicates open, and C, closed.

Switch	S.W.	M.W.	L.W.
S1	C	—	—
S2	—	C	—
S3	—	C	C
S4	—	C	C
S5	C	—	—
S6	C	C	—
S7	C	C	—
S8	—	C	—
S9	—	—	C

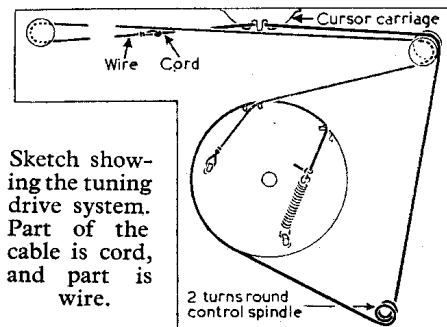
**S10-S12** are the tone control switches, ganged in a 3-position unit beneath the chassis. In the fully anti-clockwise position of the control, S10 closes, giving deepest tone; in the next position, S10 opens and S11 closes; in the fully clockwise position, S11 opens and S12 closes, modifying the feed-back characteristic. The diagram is inset with the circuit overlaid.

**Scale Lamp.**—This is an Osram M.E.S. type, rated at 6.5 V, 0.3 A. It has a small clear bulb, and is mounted at the centre of the chassis deck, giving a flood-lit effect to the scale.

Plan view of the chassis. L5 core adjustment is in square A1 on the deck, but is covered here by the label "C3"

**External Speaker.**—Two sockets and a switch are provided at the rear of the chassis for the connection of a low impedance (about 8 Ω) external speaker. The switch (S13) permits the internal speaker to be muted.

**Drive Cord Replacement.**—The drive cord consists of 33 ins. of wire and 31 ins. of cord, joined at the point indicated in the sketch below, where the whole system is clearly shown as seen from the front of the set when the gang is at maximum. The requisite materials may be obtained from the manufacturers.

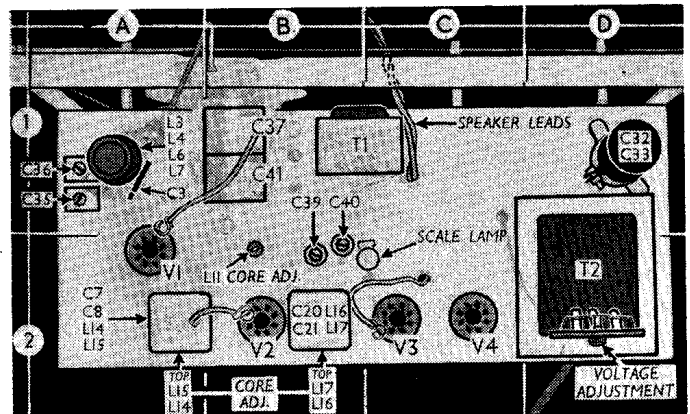


### VALVE ANALYSIS

Valve voltages and currents given in the table below are those quoted by the manufacturers. The meter resistance was 1,000 Ω per V.

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 ECH35	263	1-65	80	2-6
	127	3-25		
V2 EF39	241	7-6	102	2-25
V3 EBL31	250	36-5	263	4-0
V4 AZ31	287†	—	—	—

†Each anode, A.C.



### CIRCUIT ALIGNMENT

These operations should be carried out with the chassis in the cabinet, holes being provided in the bottom to give access to under-chassis adjustments.

**I.F. Stages.**—Switch set to M.W., turn gang and volume control to maximum, connect signal generator (via an 0.1 μF capacitor) to control grid (top cap) of V1 and the E socket, feed in a 460 Kc/s (652.1 m) signal, and adjust the cores of L17, L16, L15 and L14 (location references B2, A2) in that order for maximum output.

**I.F. Filter.**—Transfer "live" signal generator lead (via an 0.0002 μF capacitor) to A socket, feed in a 460 Kc/s signal, and adjust the core of L1 (J5) for minimum output.

**R.F. and Oscillator Stages.**—With the gang at maximum capacitance the cursor should coincide with the vertical lines at the high wavelength ends of the three scales. It may be adjusted in position by sliding the carriage along the drive cord.

**S.W.**—Switch set to S.W., tune to 20 m on scale, feed in a 20 m (15 Mc/s) signal, and adjust C38 (I3) and C34 (I4) for maximum output. Tune to 50 m on scale, feed in a 50 m (6 Mc/s) signal and adjust the cores of L11 (B2) and L5 (A1) for maximum output. Repeat these adjustments.

**M.W.**—Switch set to M.W., tune to 200 m on scale, feed in a 200 m (1,500 Kc/s) signal, and adjust C39 (B2) for maximum output. Tune to 231 m on scale, feed in a 231 m (1,300 Kc/s) signal, and adjust C35 (A1) for maximum output.

**L.W.**—Switch set to L.W., tune to 1,200 m on scale, feed in a 1,200 m (250 Kc/s) signal, and adjust C40 (B2) and C36 (A1) for maximum output.

### DISMANTLING THE SET

**Removing Chassis.**—Remove the four control knobs (recessed grub screws) and the light diffusing screen (two spring hooks); remove the long 4BA cheese head screws (with washers) at either end of the cursor guide rail; withdraw the four 2BA cheese head screws (with large washers) securing the chassis to the base of the cabinet, and slide out chassis to the extent of the speaker leads.

Under-chassis view. Diagrams of the two switch units S1-S9 and S10-S12 are inset with the circuit diagram over leaf.

