ETRONIC Model RA 640

General Description : Six-valve (including rectifier and tuning indicator), three-waveband superheterodyne receiver. Price £21 13*s.* 9*d.* including tax. Released 1948. Price £17 17*s.* 0*d.* plus tax.

Power Supply : A.C. mains, 200–250 volts, 40–100 c/s. Consumption 75 watts (approx.).

Wavebands : S.W. 15–51 m.; M.W. 190–550 m.; L.W. 900–2200 m.

Intermediate Frequency : 465 kc/s.

Valves : (V1) 6K8G; (V2) 6K7G; (V3) 6Q7G; (V4) 6V6G; (V5) 5Z4G; (V6) Y63 or EM34 (see below).

Circuit Variations : In some models the tone control is connected between chassis and anode of V3. In this case C13 becomes 0·02 μF., and an additional 0·002-μF. capacitor is connected across the primary of the output transformer. When the KT61 valve is fitted in place of the 6V6G the bias resistor R13 becomes 100 ohms, and an additional 2·5 megohms resistor is connected between the anodes of V3 and V4. In some models an EM34 tuning indicator is used; this can be distinguished by its red envelope and double angle of shadow. It should be noted that the base connections of an EM34 differ from those of other tuning indicators.

Alignment Procedure : Inject a 465-kc/s. signal to grid of V2 via a 0·1-μF. capacitor. Adjust trimmers of second I.F. transformer for maximum output. Inject 465-kc/s. signal to grid of V1 and adjust trimmers of first I.F. transformer. Reduce signal-generator output to low level and re-adjust both transformers. Inject 465-kc/s. signal to A and E terminals via dummy aerial, and adjust I.F. filter (core of L1) for minimum signal.

R.F. : Check that tuning cursor is set to coincide with bottom line on scale.

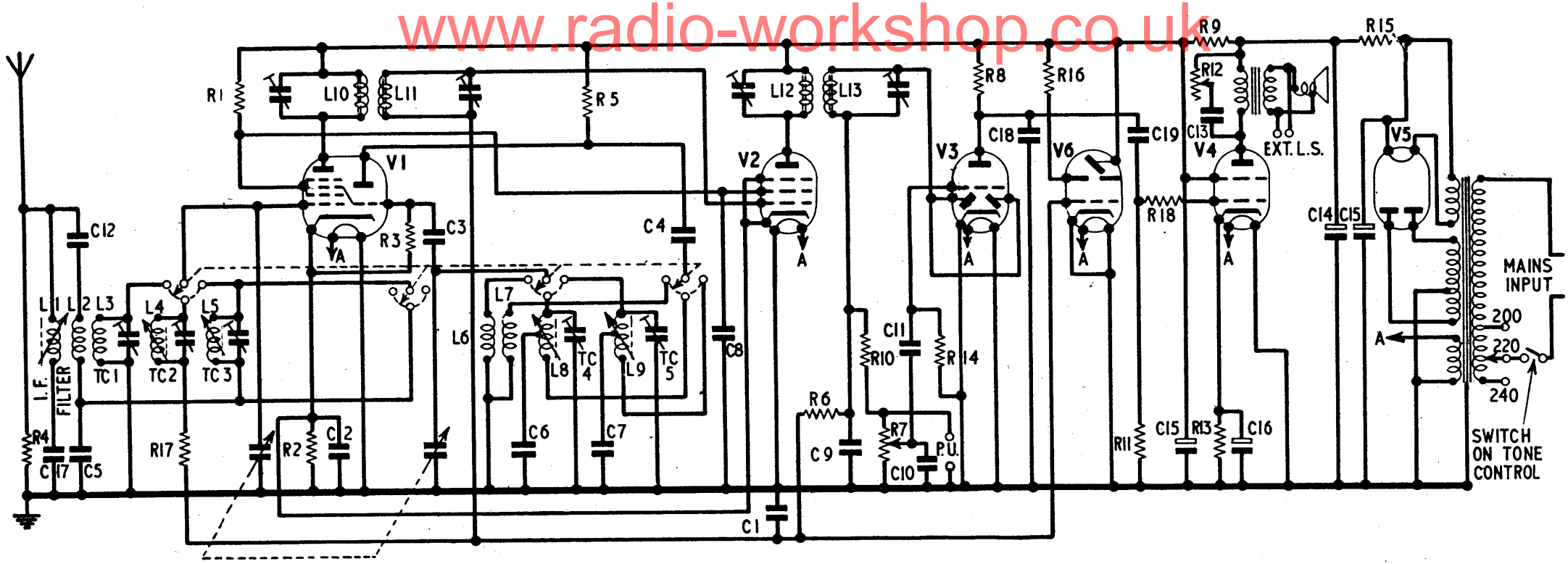
M.W. : Set cursor to 500 m.; S.G. to 600 kc/s. Adjust M.W. osc. core (L8). Set cursor to 200 m.; S.G. to 1500 kc/s. Adjust M.W. osc. trimmer and M.W. aerial trimmer to maximum output. Repeat these operations until maximum sensitivity is obtained.

L.W. : Set cursor to 2000 m.; S.G. to 150 kc/s. Adjust L.W. osc. core (L9). Set cursor to 1000 m.; S.G. to 300 kc/s. Adjust L.W. osc. trimmer and L.W. aerial trimmer for maximum output. Repeat these operations until maximum sensitivity is obtained.

S.W. : Replace dummy aerial with a 400-ohm resistance. Set cursor to 20 m. and inject 15-Mc/s. signal. Adjust S.W. aerial trimmer to maximum output.

Voltage Check Points :

V1	Pin 3 225 v.	Pin 4 80 v.	Pin 6 90 v.	—
V2	Pin 3 225 v.	Pin 4 80 v.	Pin 6 2·2 v.	—
V3	Pin 3 70 v.	—	—	—
V4	Pin 3 290 v.	Pin 4 225 v.	Pin 8 9·6 v.	—
V5	Pin 2 390 v.	Pin 3 Mains A.C.	Pin 4 320 A.C.	Pin 5 Mains A.C.
	Pin 6 320 A.C.	Pin 7 Mains A.C.	Pin 8 390 v.	—



CIRCUIT DIAGRAM—ETRONIC MODEL RA640

Capacitors.

C1	0·05	C12	0·002	TC4	4–40 pF.
C2	0·1	C13	0·05	TC5	30–80 pF.
C3	50 pF.	C14	24		
C4	0·01	C15	8 + 16		
C5	2000 pF.	C16	25 (25 v.)		
C6	300 pF.	C17	150 pF.		
C7	150 pF.	C18	0·0004		
C8	0·1	C19	0·01		
C9	100 pF.	TC1	4–40 pF.		
C10	100 pF.	TC2	4–40 pF.		
C11	0·01	TC3	4–40 pF.		

Resistors.

R1	33k	1 W.	R8	220k	½ W.
R2	150		R9	4700	2 W.
R3	56k	¼ W.	R10	100k	¼ W.
R4	4·7k	½ W.	R11	220k	¼ W.
R5	47k	½ W.	R12	50k	Pot.
R6	2·2M		R13	240	1 W.
R7	0·5M	Pot.	R14	10M	
			R15	1500	W. W.
			R16	1M	
			R17	150k	¼ W.
			R18	56k	¼ W.

Lay-out of Trimmers.
The lay-out of trimmers and variable inductor-cores is similar to that shown for Model QGA532.

D.C. Resistance of Coils: See Model QGA532.