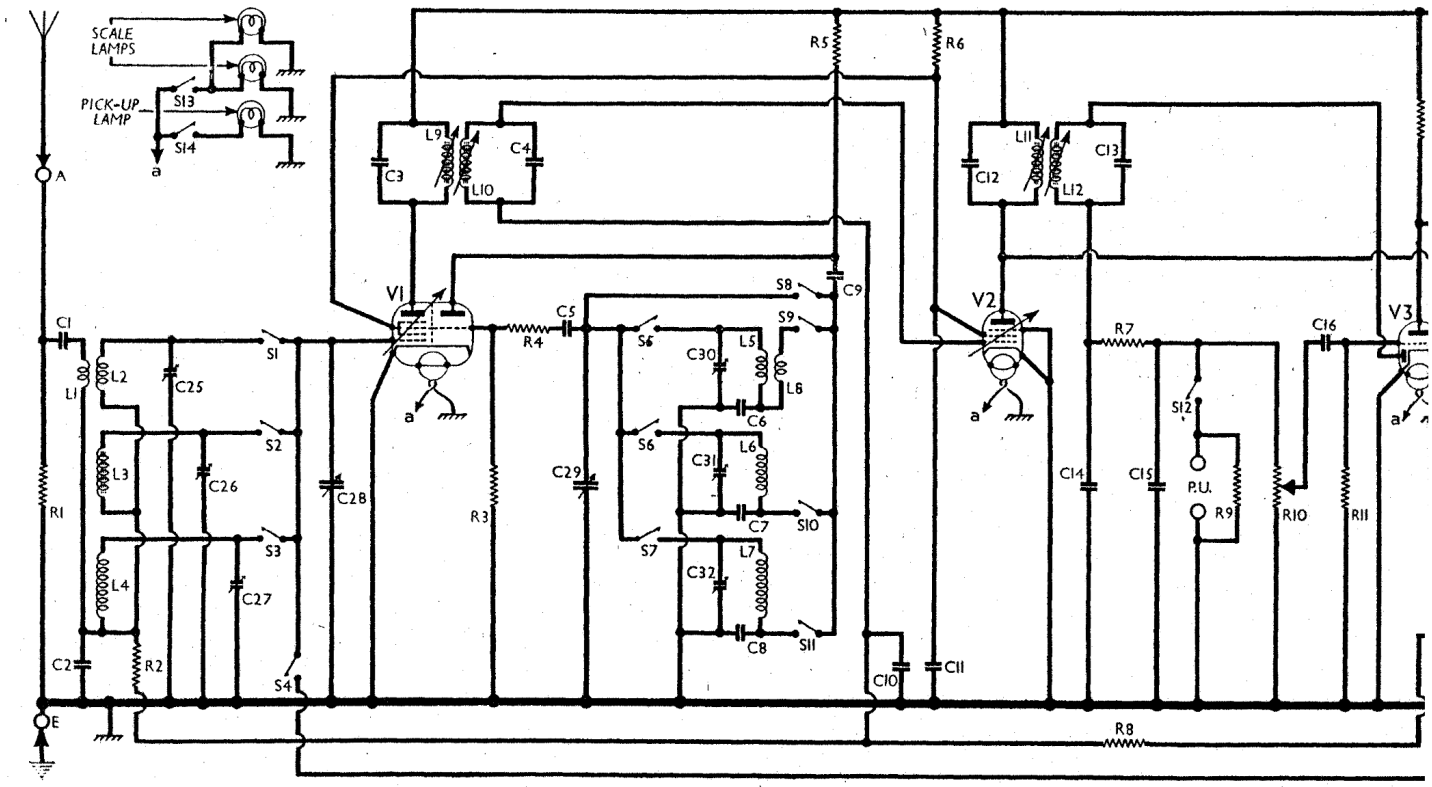
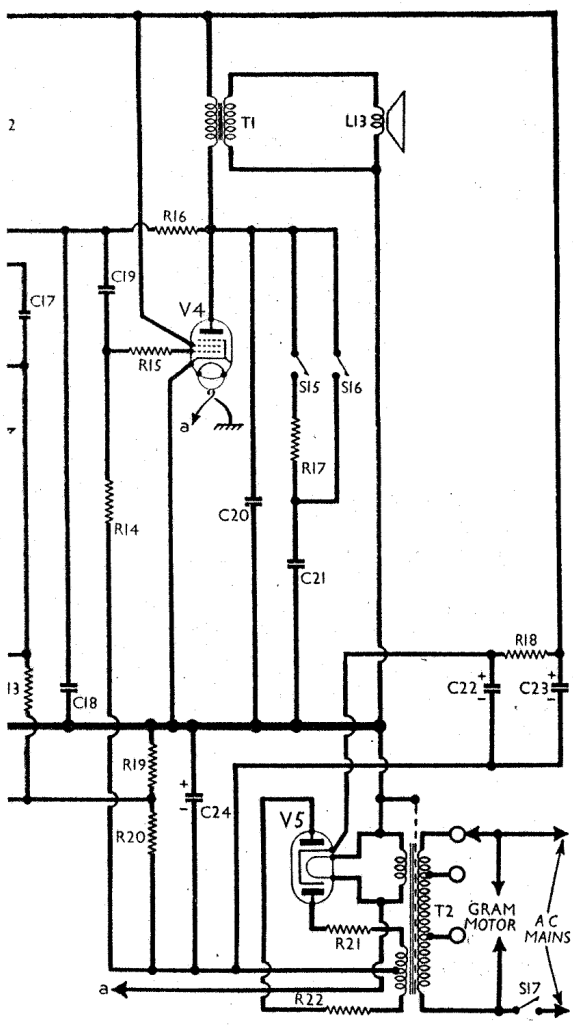




Intermediate frequency 465 Kc/s.

REGENTONE - 99

CAPACITORS		Values (μF)	Locations
C1	Aerial coupling ...	0·01	K5
C2		0·00375	K5
C3	1st I.F. transformer tuning	0·0001	A2
C4		0·0001	A2
C5	V1 osc. C.G. ...	0·0001	J5
C6	Osc. S.W. tracker...	0·0035	H5
C7	Osc. M.W. tracker	0·00042	G4
C8	Osc. L.W. tracker	0·00013	H4
C9	Osc. anode coup.	0·0001	K4
C10	A.G.C. decoup. ...	0·1	G3
C11	S.G.'s decoupling...	0·1	H6
C12	2nd I.F. transformer tuning	0·0001	A1
C13		0·0001	A1
C14	I.F. by-passes ...	0·0001	G4
C15		0·0001	F4
C16	A.F. coupling ...	0·01	F3
C17	A.G.C. coupling ...	0·00005	G4
C18	I.F. by-pass ...	0·0001	F4
C19	A.F. coupling ...	0·01	F5
C20	Tone corrector ...	0·01	F6
C21	Tone control ...	0·05	C3
C22*	H.T. smoothing	30·0	B1
C23*		30·0	B1
C24*	G.B. by-pass ...	50·0	D4
C25‡	Aerial S.W. trim....	0·00005	J5
C26‡	Aerial M.W. trim.	0·00005	J4
C27‡	Aerial L.W. trim....	0·00005	J4
C28†	Aerial tuning ...	0·00049§	A2
C29†	Oscillator tuning ...	0·00049§	A1
C30‡	Osc. S.W. trim. ...	0·00005	H5
C31‡	Osc. M.W. trim. ...	0·00005	H4
C32‡	Osc. L.W. trim. ...	0·00005	H4

* Electrolytic. † Variable. ‡ Pre-set. § Swing value, min. to max.

RESISTORS		Values (ohms)
R1	Aerial shunt ...	4,700
R2	V1 Hex. C.G. decoup.	500,000
R3	V1 osc. C.G. ...	47,000
R4	Osc. stabilizer ...	100
R5	Osc. anode load ...	47,000
R6	V1, V2 S.G.'s feed	22,000
R7	I.F. stopper ...	47,000
R8	A.G.C. decoupling	1,200,000
R9	P.U. shunt ...	10,000
R10	Volume control ...	250,000
R11	V3 C.G. resistor ...	4,700,000
R12	V3 triode load ...	250,000
R13	A.G.C. diode load...	1,200,000
R14	V4 C.G. resistor ...	100,000
R15	V4 grid stopper ...	10,000
R16	Feed-back coup. ...	470,000
R17	Tone control ...	5,000
R18	H.T. smoothing ...	1,000
R19	V1-V4 G.B. potential divider ...	47
R20		75
R21	V5 surge limiters ...	100
R22		100

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 ECH35	200	4·7	103	1·5
	Oscillator			
	66	2·7		
V2 6K7G	200	10·5	103	2·5
V3 EBC33	46	1·1	—	—
V4 EL33	195	17·0	200	2·0
V5 6X5GT	236†	—	—	—

† Each anode, A.C.

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Aerial S.W. coup....	0·1	K5
L2	Aerial tuning coils	Very low	K5
L3		2·2	K4
L4		34·0	K4
L5	Oscillator tuning coils	Very low	H5
L6		5·0	H4
L7		13·0	H4
L8	Osc. S.W. reaction	0·1	H5
L9	1st I.F. trans. Pri. ...	7·5	A2
L10	trans. Sec. ...	7·5	A2
L11	2nd I.F. trans. Pri. ...	7·5	A1
L12	trans. Sec. ...	7·5	A1
L13	Speech coil ...	2·5	—

T1	Output trans.	Pri. ...	290·0	B1
		Sec. ...	0·1	
T2	Mains trans.	Pri., total	41·0	B2
		Heat, sec.	Very low	
		H.T. sec., total ...	500·0	
S1-S14	W/band switches ...		—	K3
S15, S16	Tone switches ...		—	D3
S17	Mains s.w., g'd R10		—	E3

Waveband Switch Diagram and Table

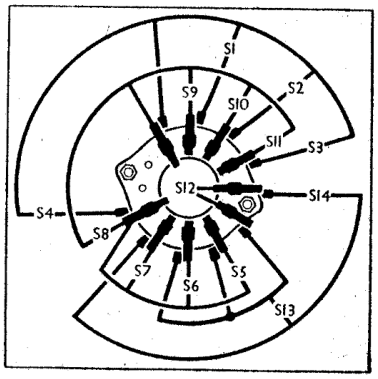


Diagram of the waveband switch unit, drawn as seen when viewed from the rear of an inverted chassis. The associated table is on the right of the diagram.

Switch	Gram	S.W.	M.W.	L.W.
S1	—	C	—	—
S2	—	—	C	—
S3	—	—	—	C
S4	C	—	—	—
S5	—	C	—	—
S6	—	—	C	—
S7	—	—	—	C
S8	C	—	—	—
S9	—	C	—	—
S10	—	—	C	—
S11	—	—	—	C
S12	C	—	—	—
S13	—	C	C	C
S14	C	—	—	—

CIRCUIT ALIGNMENT

For these operations the chassis must be removed from the cabinet.

I.F. Stages.—Switch set to M.W., turn gang and volume control to maximum, connect signal generator, via an 0.1 μF capacitor in the "live" lead, to control grid (top cap) of **V1** and the **E** socket, feed in a 465 kc/s (645.16 m) signal, and adjust the cores of **L12, L11, L10** and **L9** (location references A1, A2) for maximum output.

R.F. and Oscillator Stages.—With the gang at maximum capacitance the cursor should coincide with the dots at the high wavelength ends of the M.W. scales. It may be adjusted in position by rotating the drive drum on its spindle after slackening the two grub screws. Transfer "live" signal generator lead to **A** socket, via a suitable dummy aerial.

M.W.—Switch set to M.W., tune to 214.3 m on scale, feed in a 214.3 m (1,400 kc/s) signal, and adjust **C31** (H4) and **C26** (J4) for maximum output. Tune to 500 m on scale, feed in a 500 m (600 kc/s) signal, and check calibration.

L.W.—Switch set to L.W., tune to 1,000 m on scale, feed in a 1,000 m (300 kc/s) signal, and adjust **C32** (H4) and **C27** (J4) for maximum output.

S.W.—Switch set to S.W., tune to 18 Mc/s on scale, feed in an 18 Mc/s (16.67 m) signal, and adjust **C30** (H5) and **C25** (J5) for maximum output.

DRIVE CORD REPLACEMENT

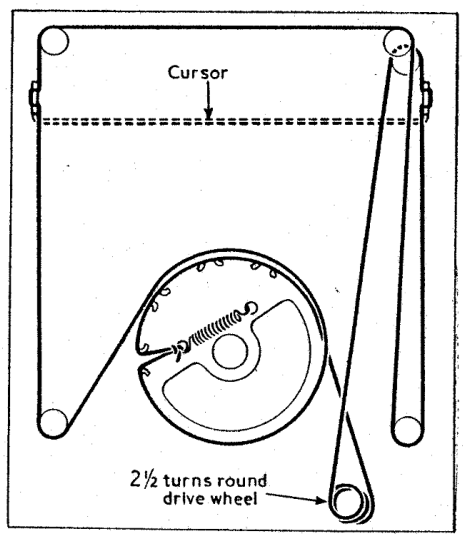
The whole of the cord drive system is run on the rear of the scale assembly, and it is unnecessary to remove the glass scale panel when fitting a new cord. For this reason our sketch (tol. 6) shows the drive system as seen from the rear. In the position shown, the gang is at maximum.

It may be considered expedient to remove the scale panel, however, in order to dispose of the cursor during the operation, as it tends to get in the way. Alternatively, the cursor may be tied to the brackets at the top of the assembly.

Sixty inches of cord is required for the drive, including a few inches for tying off. A convenient method of running the cord is to tie one end to the tension spring and start by making an anti-clockwise turn round the gang drum, pulling the gang round to maximum capacitance as shown in the sketch, then continuing the run until the tension spring is again reached, when the end is tied off.

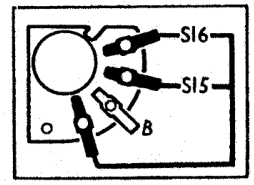
The horizontal run at the top of the assembly may go over or under the scale lamp brackets, where it will rub them lightly in either case. In our sample the cord ran under the brackets.

The cursor can be slipped on to the cord afterwards and eased up or down the vertical cord runs until the correct position is reached, when the cursor should be level with the calibration spots at the tops of the two M.W. scales.



Sketch of the cord driven tuning system, drawn as seen from the rear when the gang is at maximum capacitance.

Diagram of the tone control switch unit, drawn as seen from the rear of an inverted chassis.



MODEL 99/1

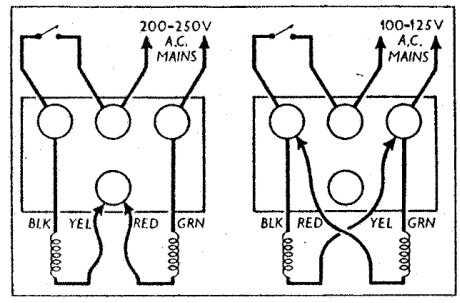
There are two versions of the Regentone 99, distinguished from each other by the suffixes 1 and 2. Our sample was a 99/2, and our *Service Sheet* is based on that version, but the differences in the 99/1 are summarized in the following paragraphs.

The principal difference in the 99/1 lies in the use of a different mains transformer **T2,** which has no H.T. secondary winding, and only a single low-voltage secondary from which all the valve heaters and the scale lamps are run. The rectifier anodes are strapped together and fed via a 100 Ω current limiting resistor from the 230/250 V tapping on the primary winding, and the valve becomes a halfwave rectifier, and is shunted by an 0.01 μF R.F. by-pass capacitor (between anode and cathode).

As a result of this method of H.T. supply, the chassis is "live" to the mains, and a double-pole mains switch replaces our single-pole type. The aerial socket as seen in our circuit diagram is isolated from **R1, C1** by a 0.01 μF capacitor, and the earth socket is isolated from the position in which we show it by a 0.1 μF capacitor. A 1,000,000 Ω resistor is then connected between the aerial and earth sockets.

An 0.1 μF capacitor isolates the earthy pick-up socket from chassis, and an 0.01 μF capacitor isolates the "live" socket from **S12. R9** remains connected directly between the two sockets. All metal work in the pick-up compartment is connected to the earth socket.

Additional decoupling is introduced in the H.T. feed to **V1, V2, V3** and the screen of **V4** in the form of an 820 Ω resistor and a 32 μF capacitor, but the values of **C22** and **C23** drop down to 16 μF each.



Diagrams showing (left) the gram motor connections for 200-250 V. mains and (right) for 100-125 V. mains, as seen from beneath the cabinet.