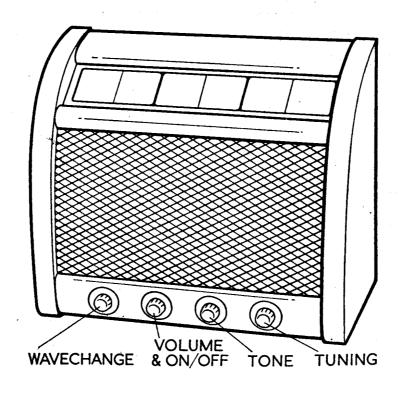
96.C. RADIO WWW. MADE IN CENERADD. CO. UK

SERVICE BULLETIN BC5639 AND BC5639L



SPECIFICATION

GENERAL

Five valve A.C. mains superheterodyne table model receiver. Long, medium and short wave-bands. Internal aerial. Gramophone pick-up terminals.

POWER SUPPLIES

BC5639 190/250 volts, 40/100 c/s.

POWER CONSUMPTION

BC5639L 110/130 and 210/230 volts, 40/100 c/s.

70 watts.

WAVE-BANDS

LONG, 300—150 kc/s., 1000—2000 metres. MEDIUM, 1·6—0·522 Mc/s., 187·5—575 metres. LONG, 300—150 kc/s.,

SHORT, 22·2—6·0 Mc/s.,

13.5-50 metres.

INTERMEDIATE FREQUENCY

470 kc/s.

OSRAM VALVES

VI Frequency changer V2 I.F. amplifier

X6IM W6I or KTW6I

Signal detector

V3 ₹ A.G.C. rectifier (A.F. amplifier

Output tetrode V5 H.T. rectifier

KT61 U50

DH63

LOUDSPEAKER

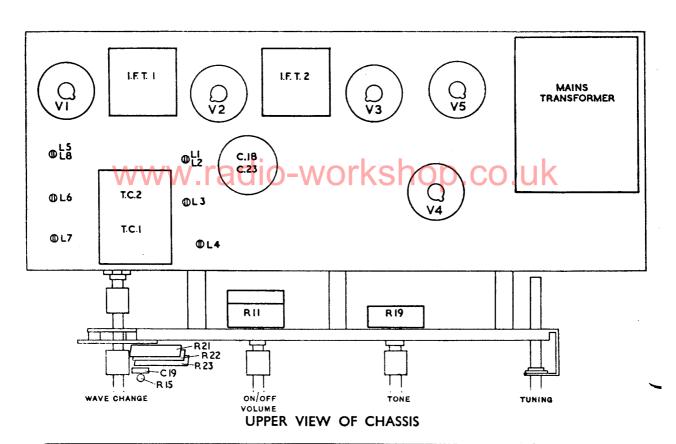
6½ inch diameter cone, permanent magnet. Speech coil impedance—3 ohms at 400 c/s.

Extension loudspeaker terminals.

DIMENSIONS

 $15\frac{1}{8}$ in. $\times 17\frac{3}{8}$ in. $\times 9\frac{1}{2}$ in.

WEIGHT



	7	TUNED CI	RCUIT ALI	GNMENT	
	Alignment Frequency	Scale Setting	Adjust	Notes	Average Sensitivity (Microvolts
Intermediate Frequency	470 kc/s.	90	T8 or L12 T7 or L11	Switch to L.W. Input to V2 grid	
			T6 or L10 T5 or L9	Input to V1 grid Re-adjust T8 (L12) and T7 (L11)	55
SHORT	6 Mc/s.	3.5	L5, L2		
13·5—50 metres	18 Mc/s.	80.0	T3, T1	Use lower capacitance peak of T3	
	6 Mc/s.	3.5	L5, L2	Check	20
	18 Mc/s.	80-0	T3, T1	Check. Rock gang whilst adjusting	9
MEDIUM	600 kc/s.	19.0	L6, L3		
187·5—575 metres	1-4 Mc/s.	80-0	T4, T2		
	600 kc/s.	19-0	L6, L3	Check	45
	1-4 Mc/s.	80-0	T4, T2	Check	75
LONG 10002000 metres	230 kc/s.	52⋅5	L7, L4		105

ALIGNMENT NOTES

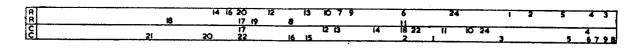
Disconnect internal aerial.

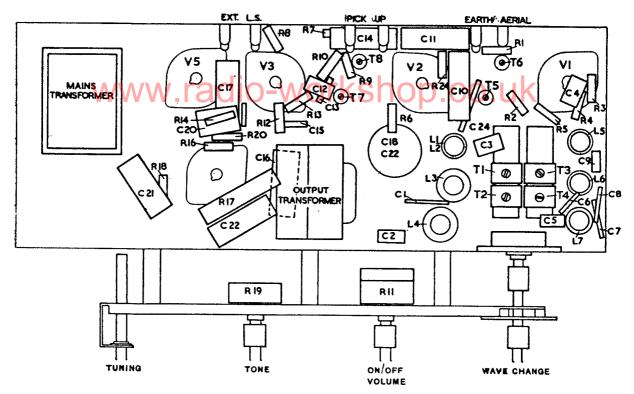
Before alignment, check that "O" on scale coincides with line on front of reflector assembly when tuning capacitor is at maximum.

In cabinet, pointer should coincide with calibration dots at 1300m, 500m, 214·3m, 50m, and 16·7m, when receiver is tuned to 230 kc/s, 600 kc/s, 1·4 Mc/s, 6 Mc/s, and 18 Mc/s, respectively. Line on front of reflector assembly should coincide with graduation readings on scale, as shown in tables, for these points.

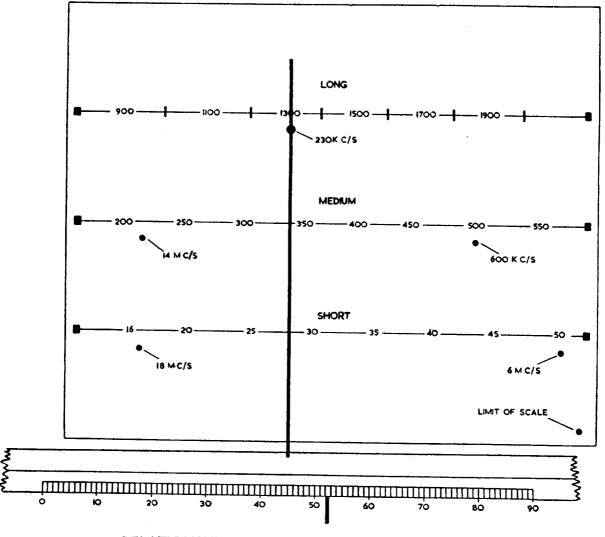
For I.F. alignment, signal generator should be connected via an $0.1~\mu F$ capacitor and the receiver switched to L.W. For R.F. alignment, via an all-wave dummy aerial.

Sensitivity figures indicate the required signal strength in microvolts under the given alignment conditions, to produce 50 mW output (19.5 volts r.m.s. measured between anode and tap connections of output transformer primary). Sensitivity variations up to +100% and -50% may be tolerated



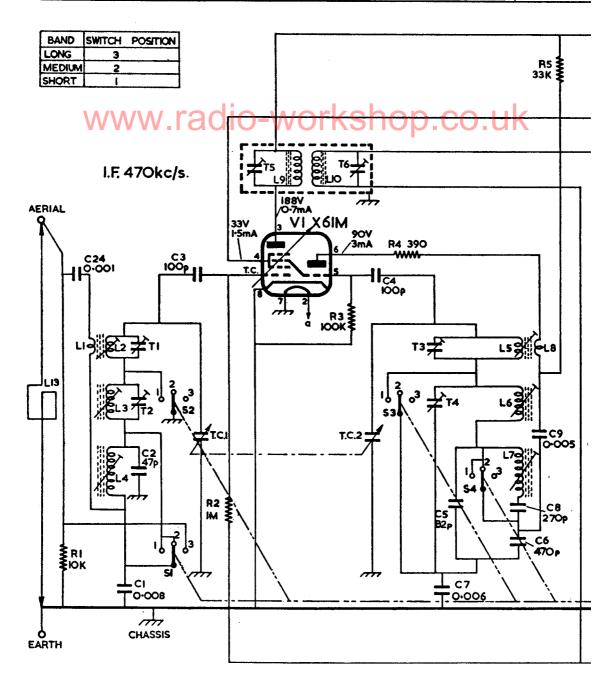


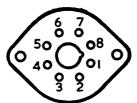
UNDER VIEW OF CHASSIS



RELATIONSHIP BETWEEN REGISTER AND SCALE (Pointer is attached to scale)

R	1		2	3	4	5
C	24	1 2	3	4	7 5	6,8 9

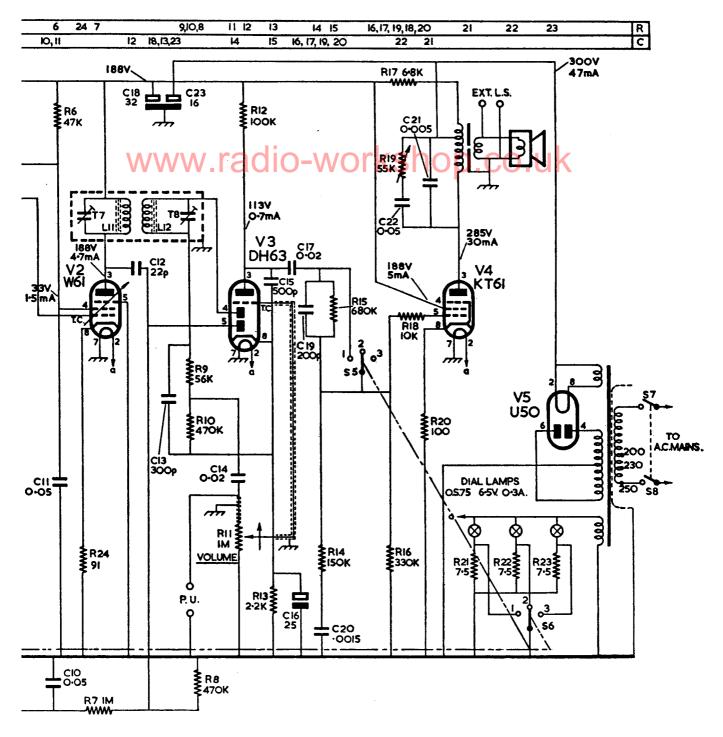




VALVE BASE CONNECTIONS

PIN No.	ı	2	3	4	5	6	7	8	Top Cap.
X6IM	М	Н	Α	Gs	Go	Ao	Н	С	Gc
W61 or KTW61	_	Н	Α	Gs	Ge		Н	С	Gc
DH63		Н	Α	DI	D2		Н	С	Gc
KT61		H	Α	Gs	Gc		Н	C	
U50	_	F	 —	AL	 	A2	! 	F	l — 1

H—Heater: F—Filament: C—Cathode: Gc—Control grid: Gs—Screen grid: Ge—Suppressor: Go—Oscillator grid: Ao—Oscillator Anode: A—Anode: DI, D2—Diode anodes: M—Metallising.



CIRCUIT NOTES

Switches S7 and S8 are incorporated in the volume control R11.

The internal aerial L13 can be disconnected at the aerial and earth sockets, by means of plugs, and an external aerial used as an alternative.

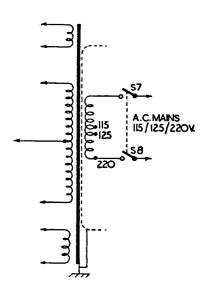
All fixed resistors are ½W except R17, 2W and R21, R22, R23, 1W.

Capacitors C1 and C7 are 5% tolerances, C2, C5, C6 and C8 are 2%. All other fixed capacitors are 20% tolerance.

As alternatives to capacitance tuned I.F. transformers, inductance tuned types may be found. T5, T6, T7 and T8 then become fixed capacitors to 120 pF \pm 5%.

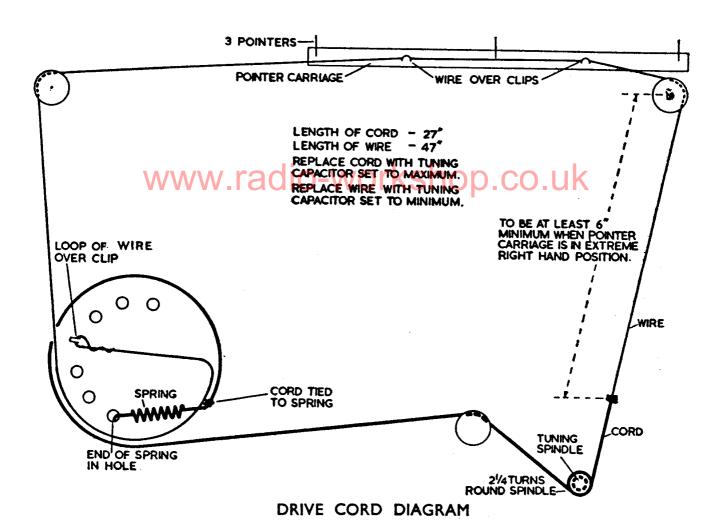
Potentials are measured on the 750V range of a 1000 ohms per volt G.E.C. "Selectest" meter. Receiver tuned to 1 Mc/s, no signal input.

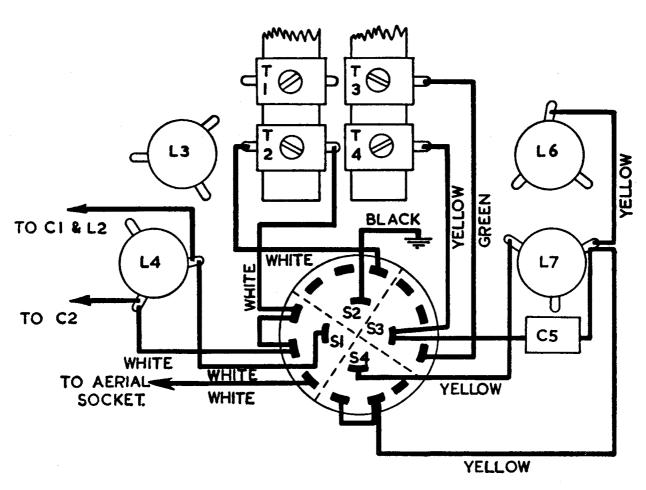
BC5639L Transformer Connections



	COIL AND TRAN	SFORMER	DATA	
Circuit Reference	Component	Resistance in Ohms	Inductance	Part Number for ordering
	Mains transformer (BC5639) Primary 0—200V 0—230V V//V 0—250V Secondary total	27 K31 31 310	.co.uk	R.802339
	Mains transformer (BC5639L) Primary 0—115V , 0—125V , 0—220V Secondary total	12·5 13·6 24·5 470		R.802343
L1 L2 L3 L4 L5 L8 L6 L7	S.W. aerial primary coil S.W. aerial secondary coil M.W. aerial coil L.W. aerial coil S.W. oscillator grid coil S.W. oscillator anode coil M.W. Oscillator grid coil L.W. oscillator grid coil	0·23 0·05 2·4 17·0 0·06 0·28 3·0 7·0	3 ² / ₈ turns 0·940 μH 163·2 μH 1864 μH 0·882 μH 4 ² / ₈ turns 78·8 μH 369·8 μH	RP.117681 RP.117762 RP.117680 RP.117679 RP.117763 RP.112383
	Aerial pick-up loop	0-2	5 turns	
L9, L10 L9, L10	Ist I.F.T. Inductance-tuned Each winding. Ist I.F.T. Capacitance-tuned	8·0 7·0		RK.203686 RK.201299
L11, L12	Each winding. 2nd I.F.T. Inductance-tuned	8-0		RK.203685
L11, L12	Each winding. 2nd I.F.T. Capacitance-tuned Each winding.	4.0		RK.201308
	Output transformer primary Secondary	560 0·48		R.202705
	Loudspeaker	2.8		RK.203902

REP	LACEMENT I	PART NUMBERS	
Cabinet Knobs Tuning capacitor Volume control Tone control Wavechange switch Tuning Drum Spring, Drive Spindle, Tuning Pulleys, Drive Reflector assembly Reflector assembly Pointer and carriage Extension spindles Lamp holders Iron dust cores, aerial & osc. Trimmer unit Speaker Register	R.806144 RP.118882 RK.203185 RK.203605 RK.203137 RK.202527 RP.118057 RP.110921 RP.118704 RP.111654 R.806335 R.806336 RP.118705 RK.200461 RK.202529 RP.117756 RK.203896	CAPACITORS CI—0.008 μF±5% C2— 47 pF±2% C5— 82 pF±2% C6— 470 pF±2% C7—0.006 μF±5% C8— 270 pF±2%	RK.203606 RK.203774 RK.203775 RK.203776 RK.203589 RK.202892





WAVECHANGE SWITCH CONNECTIONS

Switch viewed from rear

WIRING COLOUR CODE

A colour code is employed for wiring to distinguish between circuit functions. The chart gives details of wire covering colours and the circuits in which they are used.

WV Colour (a	dio-workehop.co.uk
ORANGE	Unsmoothed H.T. positive
RED	Smoothed H.T. positive
BLUE	Screen grids and mains
GREEN	Grids and oscillator coils
WHITE	Aerial and loudspeaker voice coils
BROWN	Heaters and dial lamps
BLACK	Points at chassis potential
YELLOW	General purposes
	Sleeving is yellow throughout

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BC 1581 52/1