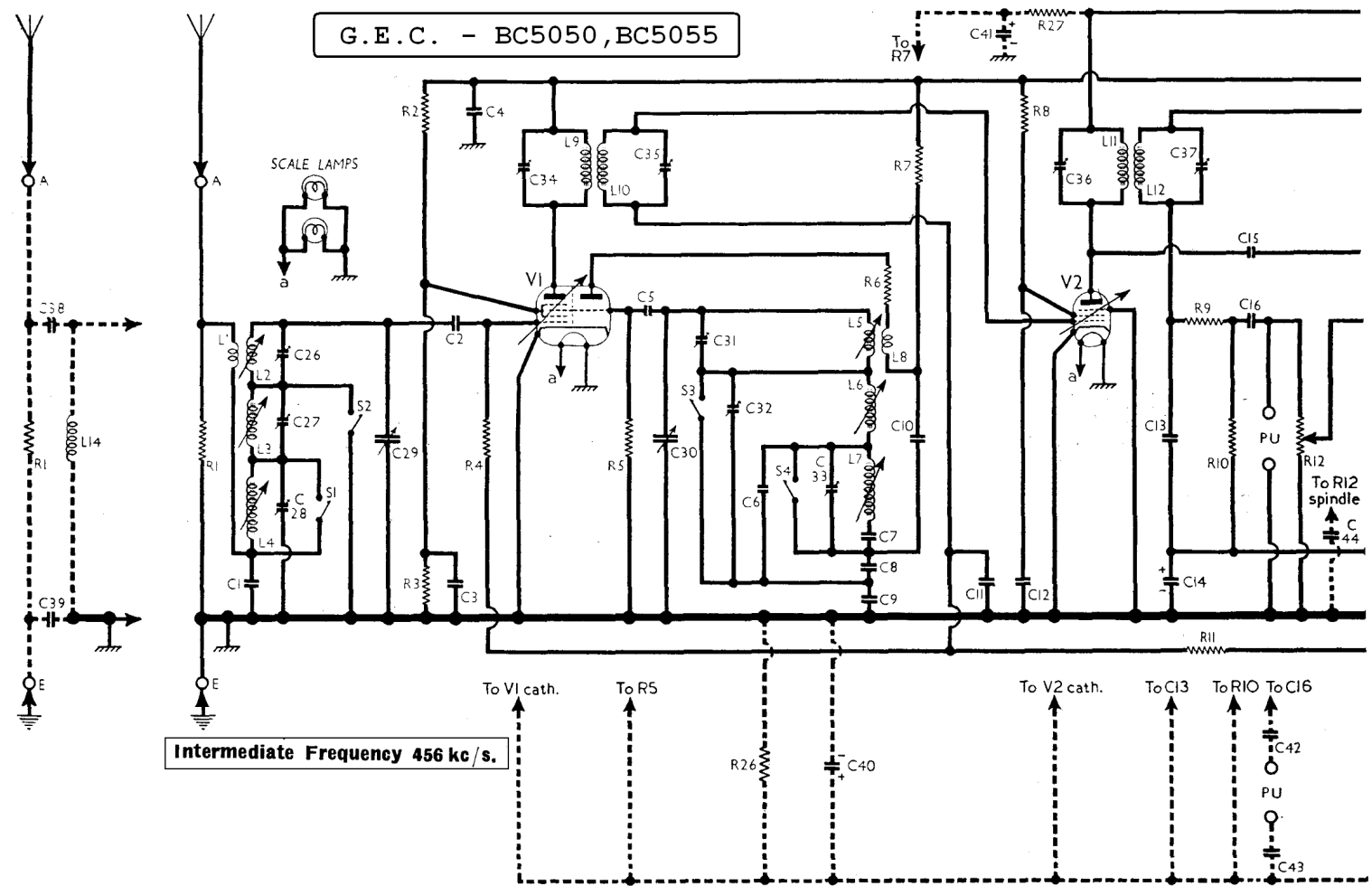


# G.E.C. - BC5050, BC5055



Intermediate Frequency 456 kc/s.

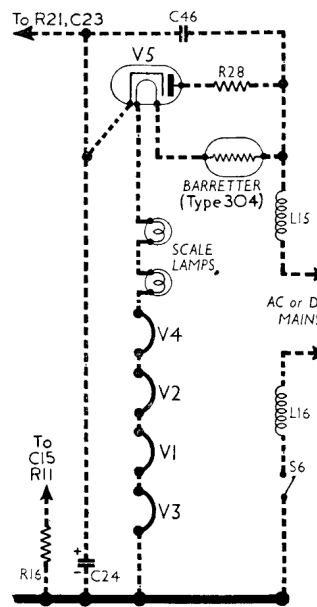
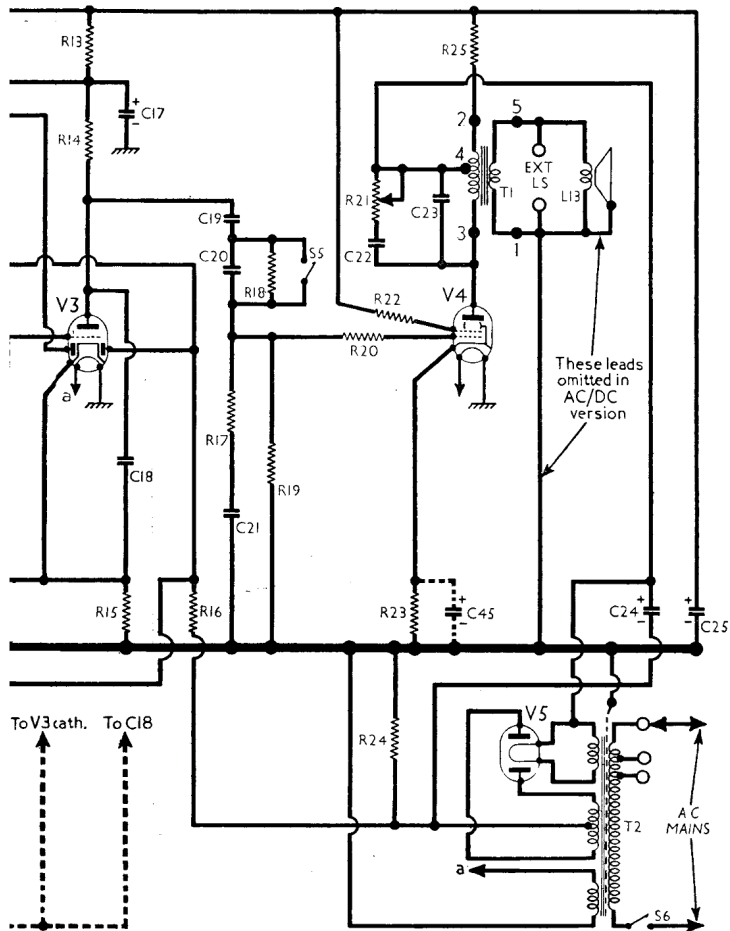
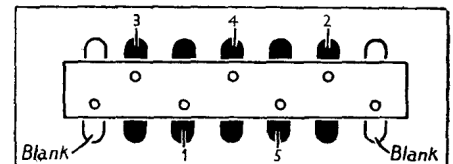


Diagram of the waveband switch unit, as seen when viewed from the rear of an inverted chassis.

Valve	Anode		Screen		Cath.
	(V)	(mA)	V	mA	V
<b>A.C. Model</b>					
V1 X61M	146	2.4	64	2.6	—
	Oscillator				
V2 W61	74	3.0	53	1.7	—
V3 DH63	201	4.7	—	—	1.08
V4 KT61	70	0.6	201	5.7	3.78
V5 U50	253	35.0	—	—	279
	265†	—	—	—	—
<b>A.C./D.C. Model</b>					
V1 X61M	106	1.3	50	1.9	1.38
	Oscillator				
V2 W61	87	3.4	45	1.6	1.38
V3 DH63	144	4.9	—	—	1.38
V4 KT33C	70	0.2	144	8.1	7.48
V5 U31	185	56.0	—	—	196
	214†	—	—	—	—

† A.C. § 10V meter range.



Alternative arrangement of tags on the connecting panel of the output transformer T1 in the A.C./D.C. version.

**Chassis Divergencies.**—C13 in our sample receivers was 0.0005  $\mu$ F, but it may be 0.0003  $\mu$ F in some cases. In the A.C./D.C. versions, the whole of the scale assembly is isolated from chassis. This includes the supports, which carry all the control spindles, so that C44, which is connected between the volume control spindle and chassis, actually ties down the whole of the scale assembly to chassis. The scale lamps are mounted in isolated holders, and the gang drum is a plastic moulding.

Resistors	A.C.		A.C./D.C.	
	Values (ohms)	Locations	Values (ohms)	Locations
R1	10,000	F5	1,000,000	F5
R2	15,000	F5	15,000	F5
R3	22,000	E5	22,000	E5
R4	1,000,000	F5	1,000,000	F5
R5	100,000	E5	100,000	E5
R6	390	E5	390	E5
R7	22,000	F4	6,800	F4
R8	56,000	H5	39,000	H5
R9	56,000	H5	56,000	J5
R10	470,000	J5	470,000	J5
R11	1,000,000	H5	1,000,000	H5
R12	1,000,000	D1	1,000,000	D1
R13	4,700	K4	4,700	K4
R14	100,000	K5	100,000	J5
R15	2,200	J4	—	—
R16	470,000	J5	470,000	J5
R17	150,000	L4	150,000	L4
R18	680,000	L4	680,000	L4
R19	330,000	L4	330,000	L3
R20	10,000	K3	10,000	K3
R21	55,000	M3	55,000	M3
R22	100	K3	100	K3
R23	91	K4	—120	L5
R24	39	M3	—	—
R25	3,300	K4	2,200	K4
R26	—	—	100	F5
R27	—	—	6,800	J3
R28	—	—	180	L5

## DRIVE CORD REPLACEMENT

The drive cord for the tuning drive system consists of two sections, one part being a length of stranded steel wire, and one of stout twine, and it is convenient to make up the two sections and tie them together before fitting them. Suitable materials for the cord may be obtained from the G.E.C. Service Depot, Greycoat Street, Westminster, London, S.W.1.

Make up the wire with a loop of about  $\frac{1}{8}$  inch diameter at each end so that it measures 16 $\frac{1}{2}$  inches overall. Take about four feet of the twine and tie one end of it with a non-slip knot to one end of the wire. The wire joints can easily be sealed by a touch of solder, and it is advisable to apply a dab of cellulose or some sealing compound to the twine knot.

Turn the gang to maximum, when the drum should take up the position shown in our sketch below. Hook the free end of the wire to the anchor tag shown and run the wire down through the right-hand slot and clockwise half-way round the drum, then off to the cursor carriage as shown in the sketch.

Continuing with twine, make two turns clockwise round the control spindle, starting hard up against the boss at the base (so that the turns travel outwards when the spindle is turned) and so on round to the gang drum. There, tie off the twine fairly short to one end of the tension spring, hooking the other end of the spring in the appropriate hole to give the required tension.

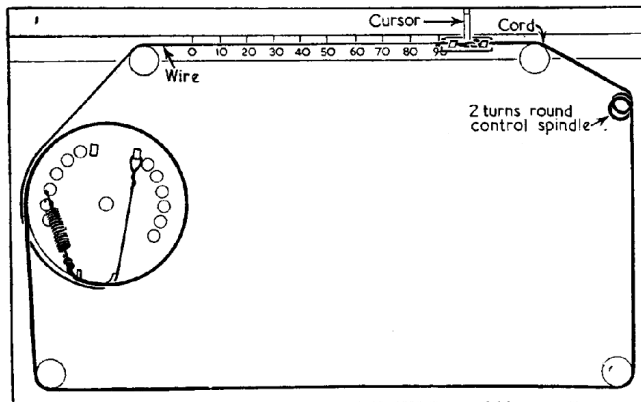
Clamp the cord under the tags on the cursor carriage, the join between the two sections being about central. The left-hand edge of the carriage should now be level with the 90 deg mark on the alignment scale. Adjustment may be made by turning the drum on the gang spindle.

## CIRCUIT ALIGNMENT

These operations may be carried out with the chassis in the cabinet, but since a calibrated scale is printed on the front of the cursor rail they are more conveniently performed with the chassis on the bench. In the following instructions both the wavelength (identified by a spot) on the glass tuning scale to which the cursor should be set, and the corresponding position of the cursor carriage in degrees, measured against the left-hand (red) side of the cursor carriage, are quoted.

Capacitors	A.C.		A.C./D.C.	
	Values ( $\mu$ F)	Locations	Values ( $\mu$ F)	Locations
C1	0-00395	G3	0-00395	G3
C2	0-0001	F4	0-0001	F4
C3	0-05	E5	0-05	E5
C4	0-05	H5	0-05	J4
C5	0-0001	E5	0-000047	E5
C6	0-000039	E3	0-000039	E3
C7	0-00027	E4	0-00027	E4
C8	0-00043	E4	0-00043	E4
C9	0-00395	F3	0-00395	F3
C10	0-005	E4	0-005	E4
C11	0-05	G5	0-05	G5
C12	0-05	H5	0-05	H5
C13	0-0003	J5	0-0003	J5
C14*	25-0	J4	—	—
C15	0-000022	H5	0-000022	H5
C16	0-02	J5	0-02	H5
C17*	4-0	H4	4-0	H4
C18	0-0005	J5	0-0005	J5
C19	0-02	K5	0-02	K5
C20	0-0002	K4	0-0002	K4
C21	0-0015	L4	0-0015	L4
C22	0-05	L3	0-1	L3
C23	0-002	J4	0-01	J3
C24*	16-0	L3	24-0	L3
C25*	20-0	H4	32-0	L5
C26†	0-00003	F4	0-00003	F4
C27†	0-00003	F4	0-00003	F4
C28†	0-00008	F3	0-00008	F3
C29†	0-00045	D1	0-00045	D1
C30†	0-00045	D1	0-00045	D1
C31†	0-00003	F4	0-00003	F4
C32†	0-00003	F4	0-00003	F4
C33†	0-00008	F3	0-00008	F3
C34†	0-00013	D2	0-00013	D2
C35†	0-00013	D2	0-00013	D2
C36†	0-000425	C2	0-000425	C2
C37†	0-000425	C2	0-000425	C2
C38	—	—	0-001	G5
C39	—	—	0-02	F5
C40*	—	—	25-0	J4
C41*	—	—	8-0	H3
C42	—	—	0-01	J5
C43	—	—	0-01	J5
C44	—	—	0-001	D1
C45*	—	—	25-0	J4
C46	—	—	0-01	L5

\* Electrolytic. † Variable. ‡ Pre-set.



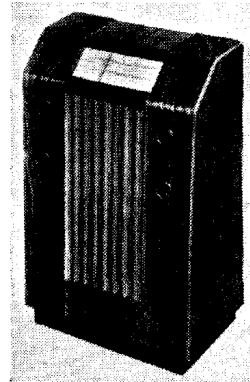
**I.F. Stages.**—Switch set to L.W., turn gang and volume control to maximum, connect signal generator (via an 0.01  $\mu$ F capacitor in the "live" lead) to control grid (top cap) of V2 and the E terminal. Feed in a 456 kc/s (657.8 m) signal, and adjust C37 and C36 (location reference H5) for maximum output.

Transfer "live" signal generator lead and series capacitor to control grid (top cap) of V1 and chassis, feed in a 456 kc/s signal, and adjust C34 and C35 (F5) for maximum output. Do not readjust C36, C37.

**R.F. and Oscillator Stages.**—With the gang at maximum capacitance the cursor should be vertical and coincident with the brown dot (90 deg.) at the high wavelength end of the L.W. scale. It may be adjusted in position by rotating the drive drum on its spindle, after slackening the two fixing screws. Transfer "live" signal generator lead to A terminal, via a suitable dummy aerial.

OTHER COMPONENTS		Approx. Values (ohms)	Locations	
L1	Aerial S.W. coup....	Very low	G4	
L2	Aerial tuning coils	Very low	G4	
L3		2-0	G4	
L4		15-0	G3	
L5		0-1	E4	
L6	Osc. tuning coils ...	2-3	E4	
L7		6-0	E3	
L8	Osc. S.W. react. ...	Very low	E4	
L9	1st I.F. trans. { Pri.	5-0	D2	
L10		5-0	D2	
L11	2nd I.F. trans. { Pri.	3-5	C2	
L12		3-5	C2	
L13	Speech coil ...	2-2	—	
T1	Out-put trans { Pri., 3-4 ...	510-0	J4	
		Pri., 4-2 ...		17-5
		Sec. ...		0-4
		Pri., total		27-0
		Heat. sec.,		0-2
T2	Mains-trans. { Rect. heat. sec.	0-2	A2	
		H.T. sec.,		
		total		295-0
S1-S5	W/band switches...	—	E3	
S6	Mains sw., g'd R21	—	M3	
In A.C./D.C. Model Only		—	—	
L14	Aerial shunt ...	48-0	F4	
L15	Mains R.F. filter { chokes	2-2	M4	
L16		2-2	M4	
T1	Output Trans. { Pri., 3-4	150-0	J4	
		Pri., 4-2		15-2
		Sec.		0-5

**S.W.**—Switch set to S.W., tune to 50 m (86 deg), feed in a 50 m (6 Mc/s) signal, and adjust the cores of L5 (D2) and L2 (C2) for maximum output. Tune to 16.7 m (6.5 deg), feed in a 16.7 m (18 Mc/s) signal, and adjust C31 (F4) and, while rocking the gang, C26



Sketch showing the tuning drive system, which is the same in A.C. and A.C./D.C. models. It is drawn as seen from the front when the gang is at maximum. In the A.C./D.C. version the gang drum is a plastic moulding.

(F4) for maximum output, choosing the peak on C31 involving the lesser capacitance. Repeat these operations until no improvement results.

**M.W.**—Switch set to M.W., tune to 500 m (73.5 deg), feed in a 500 m (600 kc/s) signal, and adjust the cores of L6 (D1) and L3 (C1) for maximum output. Tune to 214 m (8.5 deg), feed in a 214 m (1,402 kc/s) signal, and adjust C32 (F4) and C27 (F4) for maximum output. Repeat these operations until no improvement results.

**L.W.**—Switch set to L.W., tune to 1,875 m (72.5 deg), feed in a 1,875 m (160 kc/s) signal, and adjust the cores of L7 (D1) and L4 (C1) for maximum output. Tune to 1,000 m (11 deg), feed in a 1,000 m (300 kc/s) signal, and adjust C33 (F3) and C28 (F3) for maximum output. Repeat these operations until no improvement results.