

EDDYSTONE

Model 750

General Description : Eleven-valve (including rectifier and voltage stabiliser), four-waveband, double-conversion superheterodyne communications receiver. Released 1950.

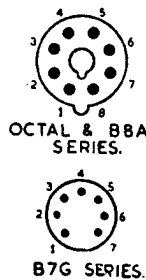
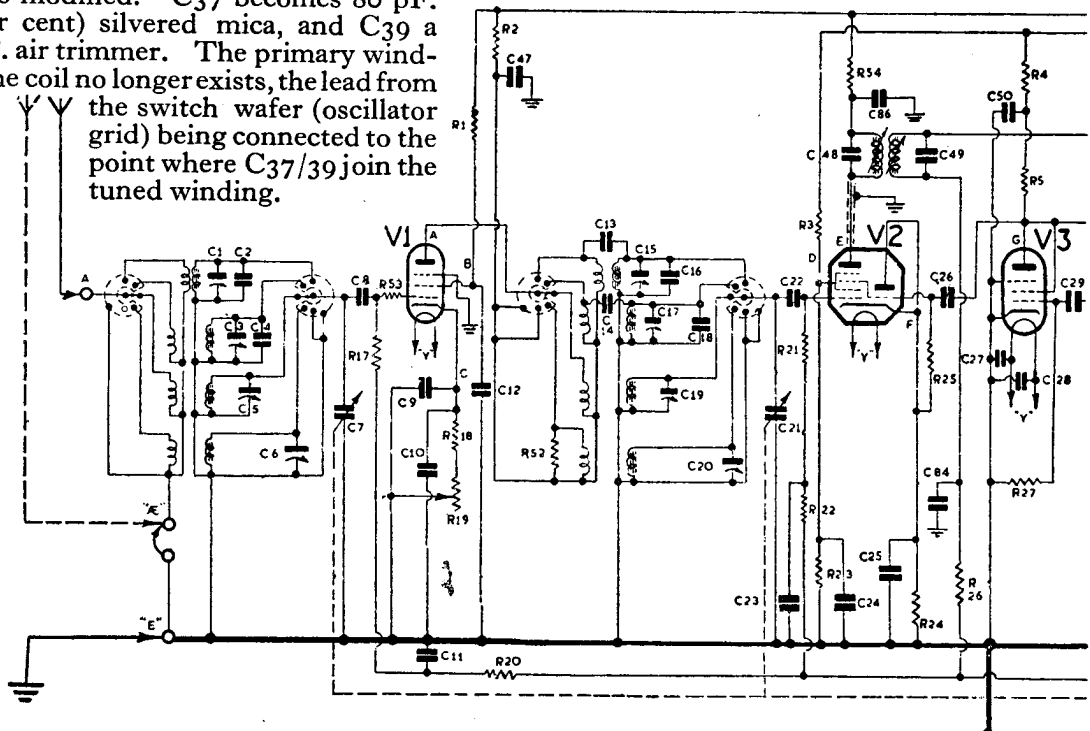
Power Supplies : A.C. mains, 110 and 200-250 volts.

Intermediate Frequencies : First I.F. 1620 kc/s. Second I.F. 85 kc/s. First oscillator frequency is higher than signal frequency on all ranges; second oscillator frequency is fixed (1535 kc/s.).

Valves : (V₁) 6BA6; (V₂) ECH42; (V₃) 6AM6 (8D3) or Z77; (V₄) ECH42; (V₅) 6BA6; (V₆) DH77 or 6AT6; (V₇) D77 or 6AL5; (V₈) N78; (V₉) 6BA6 (B.F.O.); (V₁₀) 5Z4G; (V₁₁) VR150/30. All heater circuits are balanced to earth with a separate winding to supply V₇.

Notes : Input impedance 400 ohms (average). Output impedances, 2.5 ohms (rear terminals) and 4000 ohms (telephone jack). Separate R.F., I.F. and A.F. gain controls are fitted. Delayed A.V.C.

On later models, the range 4 oscillator circuit is modified. C₃₇ becomes 80 pF. (± 5 per cent) silvered mica, and C₃₉ a 3-23 pF. air trimmer. The primary winding on the coil no longer exists, the lead from the switch wafer (oscillator grid) being connected to the point where C₃₇/39 join the tuned winding.



VALVE	V. No.	PIN CONNECTIONS								SERIES.
		1	2	3	4	5	6	7	8	
6BA6	v1.59.	G1	G3	H	H	A	G2	K	-	B7G.
8D3	v3.	G1	K	H	H	A	G3	G2	-	B7G.
ECH42	v2.4.	H	A	H	A	G3	G2	G1	K	H
5Z4G	v10.	-	H	-	A2	-	A1	-	K	OCTAL.
VR150/30	v11	-	K	-	A	-	-	-	-	OCTAL.
D77	v7.	K1	D2	H	H	K2	S	D1	-	B7G.
DH77	v6.	G1	K	H	H	D1	D2	A	-	B7G.
N78	v8.	G1	K	H	H	A	-	G2	-	B7G.

CIRCUIT DIAGRAM—

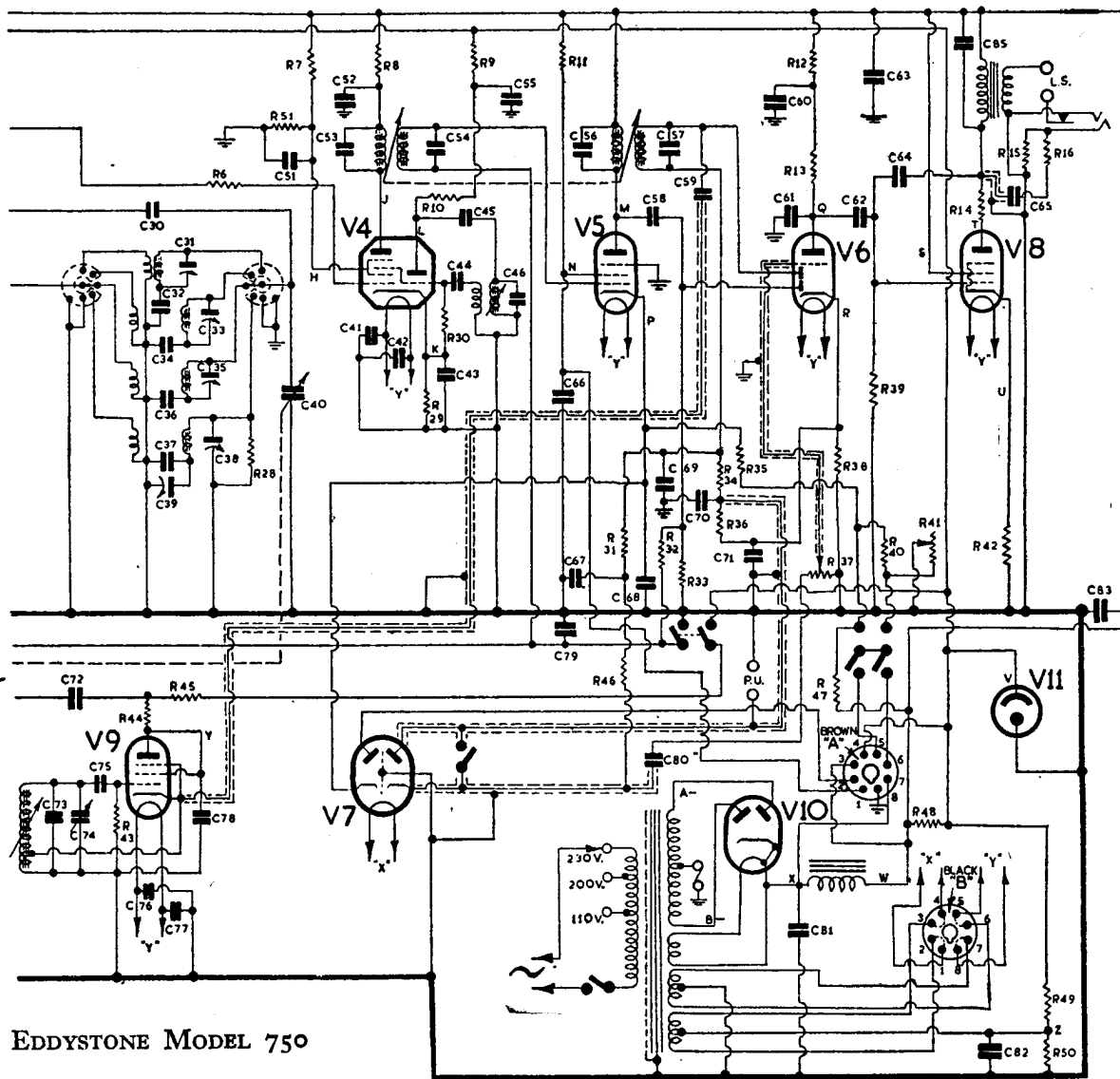
Component Values :

Capacitors.

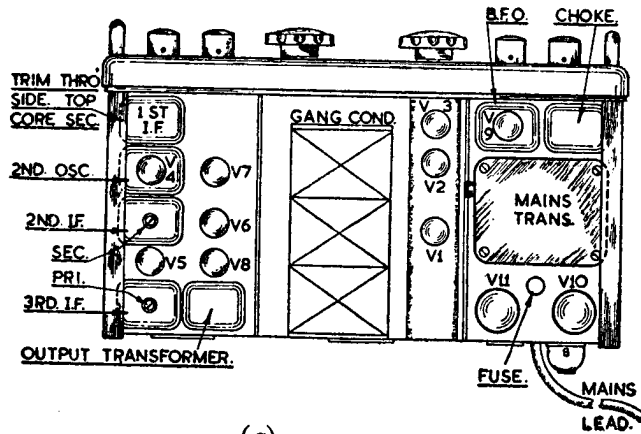
3/23 pF. (air) C1, C3, C5, C6, C15, C17, C19, C20, C33, C35, C38
 3/20 pF. (ceramic) C31
 6 pF. C4, C14, C18, C64
 10 pF. C26
 20 pF. C2, C13, C16, C58, C59
 15/45 pF. C39
 50 pF. C29
 100 pF. C8, C22, C37, C44, C45, C69, C70, C75
 200 pF. (2%) C30, C46, C48, C49
 2100 pF. C32 (1%)
 900 pF. C34 (1%)
 385 pF. C36 (1%)
 400 pF. C73 (2%)
 0.0005 C27, C28, C61
 0.01 (mica) C62, C63, C65, C80
 0.01 (paper) C10, C11, C23, C41, C42, C43, C72, C76, C77, C78, C84, C86
 0.1 C9, C12, C24, C25, C47, C50, C51, C52, C55, C66, C67, C68, C79
 800 pF. (2%) C53, C54, C56, C57
 8 (350 v.) C60
 30 (15 v.) C71, C82
 50 (450 v.) C81, C83
 C7, C21, C40 10-386-pF. gang capacitor.
 C74 B.F.O. Pitch capacitor. C85 omitted.

Resistors.

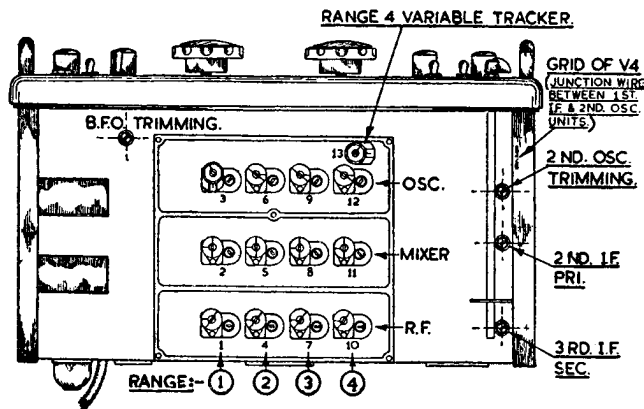
12 R6, R53
 47 R14
 68 R18, R35
 150 R42
 220 R29
 330 R24
 1k R2, R4, R8, R9, R15, R45
 1.4k R54
 2.7k R48
 3k R38
 3.9k R52
 6.8k R50
 100k R3, R5, R10, R28
 15k R23
 22k R72
 27k R7, R12, R51
 33k R1, R11, R16
 47k R30, R43, R44
 51k R40
 0.1M R25, R34, R36, R47, R49
 0.27M R13
 0.47M R17, R20, R21, R22, R26, R32, R33, R39
 1M R31
 2M R46
 1/2-watt except R1, R7, R11, R23, R51 (1-watt) and R48 (3-watt 5% w.w.).
 Potentiometers: R19, R41 10k; R37 0.5M.



EDDYSTONE MODEL 750



(a)



(b)

CHASSIS LAY-OUT—EDDYSTONE MODEL 750

(a) Above chassis view. (b) Under chassis view.

Later models include a 100,000-ohm resistor from the H.T. line to the junction of R₁₈ and R₁₉ in order to provide improved control of R.F. gain.

Alignment Notes : *Double conversion I.F.:* An 85-kc/s. modulated signal is applied between grid of V₄ and chassis while second and third I.F. transformers are adjusted to maximum response. The signal frequency is then changed to 1620 kc/s. and the second oscillator adjusted for maximum output by means of the variable core located in the V₄ screening can; two responses may be found, that with core further in (lower frequency) is correct. The signal generator leads are then transferred to the stator of centre section of the gang tuning capacitor and chassis and the first I.F. transformer cores peaked for maximum response. R.F. circuits are adjusted as for single-conversion receivers. Dial cali-

brations should be checked with the aid of a crystal oscillator. Alignment frequencies are given on page 194.

Voltage Values : Voltages given below are between the points indicated and chassis. Receiver at 28 Mc/s., Range 1, aerial terminals short-circuited, I.F. and R.F. controls at maximum. A.F. gain control at minimum, B.F.O. on. The voltage indicated depends on the internal resistance of the meter employed. A tolerance of plus or minus 5 per cent should be allowed. Total H.T. current 96 mA.

Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter	Circuit Reference	1000 ohms/volt Testmeter	333 ohms/volt Testmeter
A	225 v.	225 v.	P	0.9 v.	0.9 v.
B	98 v.	90 v.	Q	65 v.	13 v.
C	1.0 v.	0.95 v.	R	1.0 v.	0.7 v.
D	82 v.	80 v.	S	235 v.	235 v.
E	235 v.	236 v.	T	227 v.	225 v.
F	1.6 v.	1.5 v.	U	4.2 v.	4.1 v.
G	98 v.	73 v.	V	150 v.	150 v.
H	78 v.	75 v.	W	235 v.	235 v.
J	232 v.	230 v.	X	275 v.	272 v.
K	1.4 v.	1.2 v.	Y	75 v.	70 v.
L	85 v.	80 v.	Z	2.0 v.	0.9 v.
M	235 v.	235 v.	A-	250 v. (A.C.)	250 v. (A.C.)
N	85 v.	80 v.	B-	250 v. (A.C.)	250 v. (A.C.)

EDDYSTONE RECEIVERS

INTRODUCTORY NOTES

Manufacturers : Messrs. Stratton and Co. Ltd., Eddystone Works, Alvechurch Road, West Heath, Birmingham 31.

The front panel and the coil-box of all models are stout diecastings, while separate chassis are used for the power unit, I.F. section and output stage.

In each model, the cabinet is easily removable by withdrawing four large screws at the rear. Most parts of the receiver are then readily accessible.

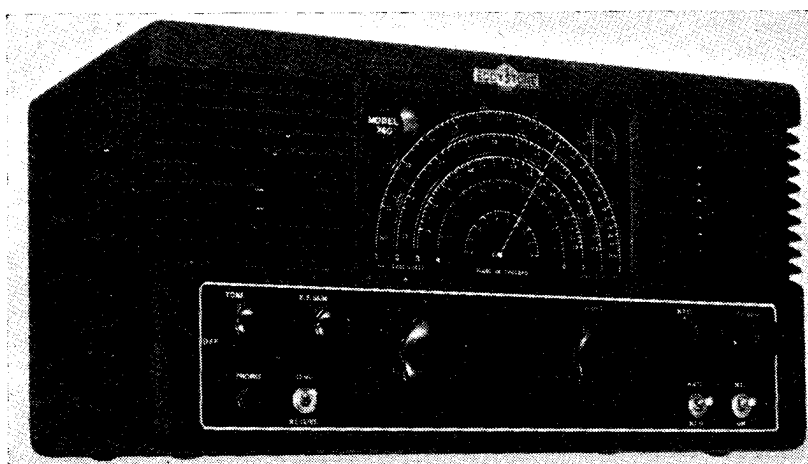
All coils (R.F. and I.F.) are permeability tuned, trimmers also being provided in the R.F. and oscillator sections. Alignment is carried out following the normal procedure, variations being indicated where necessary. When changing a valve, it is usually only necessary to re-adjust the appropriate trimmer capacitors to correct any differences in stray capacitance, and there is then no need to remove the lid of the coil-box. For full alignment, however, this lid must be taken off. Always remember to adjust the trimmers at the high-frequency end of a range and the cores at the low-frequency end. The correct alignment points are given in the table below. Where variable selectivity is fitted (Models 750, 680), alignment should be carried out with the control set at *maximum* selectivity.

Models 640, 740 and 750 are adapted for operation from a 6-volt accumulator and auxiliary H.T. supply. The octal plug which completes the L.T. connections must be inserted in the socket at the rear. This plug and its internal connections should be examined if any failure of or variation in the heater supply occurs.

During manufacture, all receivers are subjected to an ageing process and are then calibrated to an accuracy of plus or minus 0.5 per cent.

The transformers fitted to mains models are for 40-60 c/s. operation and are not suitable for 25 c/s. supplies.

The glass and dial can be cleaned by using a thin artist's brush, long enough



GENERAL APPEARANCE OF POST-WAR EDDYSTONE RECEIVERS
(MODEL 740)

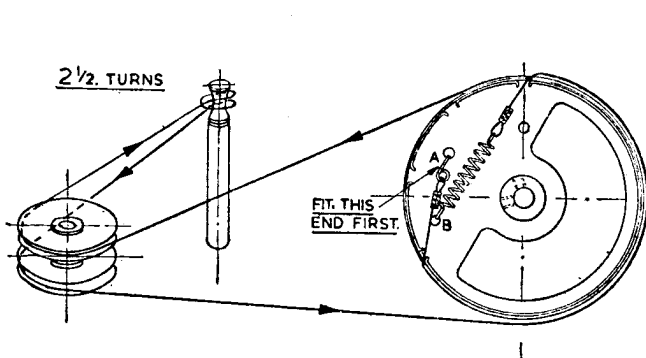
to reach all parts of the glass. The dial lights are standard in all receivers, bulbs with miniature bayonet caps, rated at 6.3 volts, 0.3 amp., being used. To change a lamp, it is only necessary to press the holder, which is sprung into place, and pull out.

A standard wiring code is used as follows :

A.C. mains	Grey	Heaters	Yellow
H.T.	Red	Negative to chassis	Brown
Anodes	Light blue	Chassis potential	Black
Grids	Green	Other leads	White

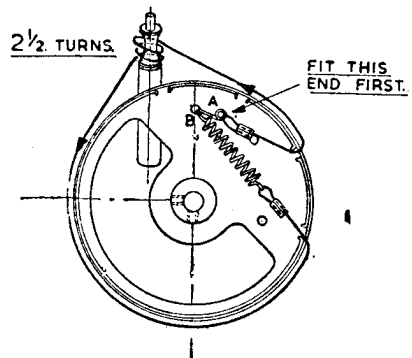
ALIGNMENT FREQUENCIES

Model	Range 1		Range 2		Range 3		Range 4		Range 5	
	High (Mc/s.)	Low (Mc/s.)	High (Mc/s.)	Low (Mc/s.)	High (Mc/s.)	Low (Mc/s.)	High (kc/s.)	Low (kc/s.)	High (kc/s.)	Low (kc/s.)
556, 504	30	14	13	6.5	6.5	3	2800	1400	1300	600
659, 670	28	13	12	6	2.6	1.3	1200	600	—	—
640	30	13	12	5	4	2	—	—	—	—
710, 740	28	12	9	4	3.2	1.5	1200	550	—	—
750	30	13	11	4.7	4.2	2	1350	550	—	—
680	28	14	13	6	5.8	2.5	2500	1200	1100	500



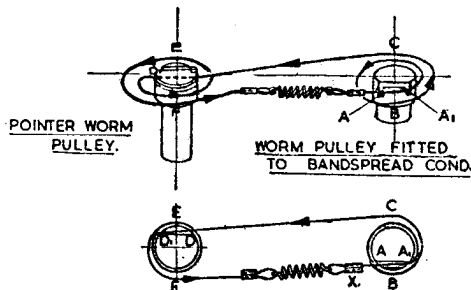
BANDSET.

TURN BANDSET CONDENSER TO MAXIMUM CAPACITY; THE DRIVE DRUM FITTED TO THE CONDENSER SPINDLE SHOULD THEN BE ORIENTATED AS SHOWN. USE CORD. D.1069. COMMENCE AT 'A.' & FINISH AT 'B.'



BANDSPREAD.

WITH THE BANDSPREAD CONDENSER SET AT MAX. CAPACITY; THE DRIVE DRUM IS FITTED IN THE POSITION SHOWN. USE CORD. D.1070. COMMENCE AT 'A.' & FINISH AT 'B.'



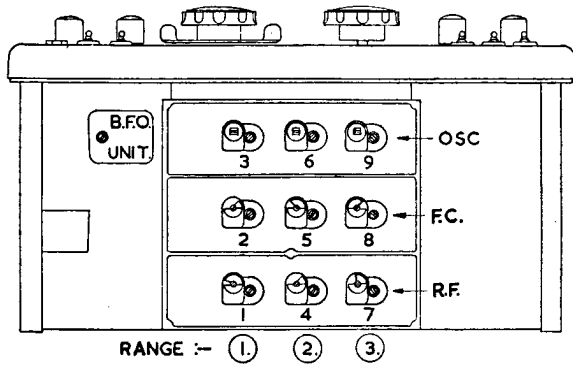
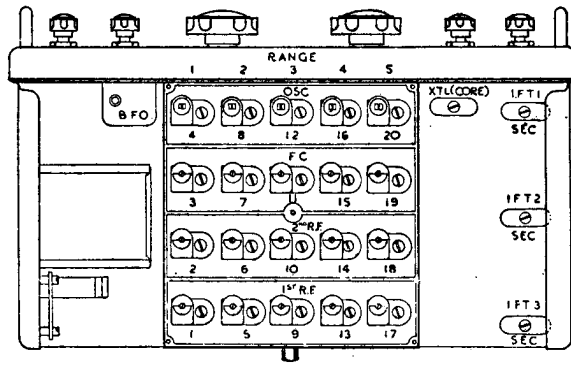
BANDSPREAD POINTER DRIVE.

SET BANDSPREAD CONDENSER AT MAX. CAPACITY. WITH WORM PULLEYS IN POSITIONS SHOWN. FIT CORD D.1071. IN SLOT. A.A1. SO THAT THE CORD CLIP 'X' JUST CLEARS THE PULLEY. NOW COMPLETE ASSEMBLY BY FOLLOWING. A1.B.C.D.E.F.

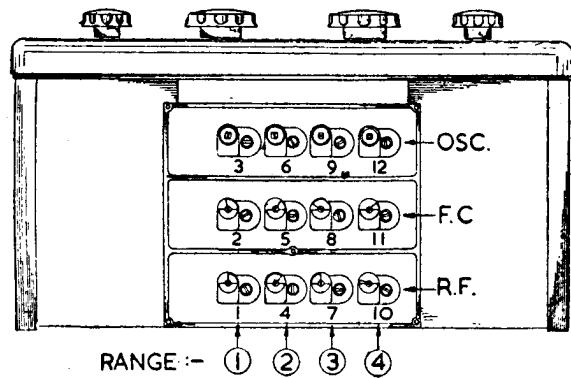
CORD DRIVE REPLACEMENT—EDDYSTONE MODEL 640

Turn receiver panel downwards top towards you ; then with cover removed and looking down on the receiver, the cord drives would appear similar to the inverted rear views shown. To fit cords, remove dial bulbs and reflector plate and proceed as indicated in the diagrams.

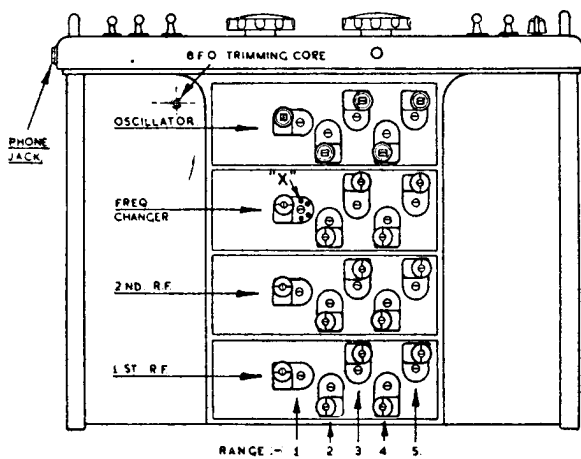
CORE AND TRIMMER LAY-OUT—
EDDYSTONE MODELS 504, 556



CORE AND TRIMMER LAY-OUT—
EDDYSTONE MODEL 640



CORE AND TRIMMER LAY-OUT—
EDDYSTONE MODELS 659, 670, 740, 710



CORE AND TRIMMER LAY-OUT—
EDDYSTONE MODEL 680