EDDYSTONE Models 504, 556, 556/B

General Description : Model 504, ten-valve (including rectifier), five-waveband communications receiver with crystal filter. Models 556 and 556/B are basically similar to Model 504, but are principally intended for broadcast reception, a magic-eye tuning indicator being fitted in place of the B.F.O. and twin loudspeakers used. Model 556/B is for operation from an internal vibrator power pack. Released 1946.

Valves : (V1) EF39; (V2) EF39; (V3) ECH35; (V4) EF39; (V5) EF39; (V6) EBC33; (V7) 6V6G (*Note* metal type 6V6 must not be used); (V8) 5Z4G; (V9) EB34; (V10) EF39 (Model 504), EM34 (Model 556); Rectifier in Model 556/B, 6X5G.

Intermediate Frequency : 450 kc/s. nominal.

Model 504 : I.F. circuits should be aligned to mid-point of 300 c/s band-pass crystal unit.

Model 556 : I.F. circuits should be stagger-tuned 2·5-kc/s. each side of nominal I.F.

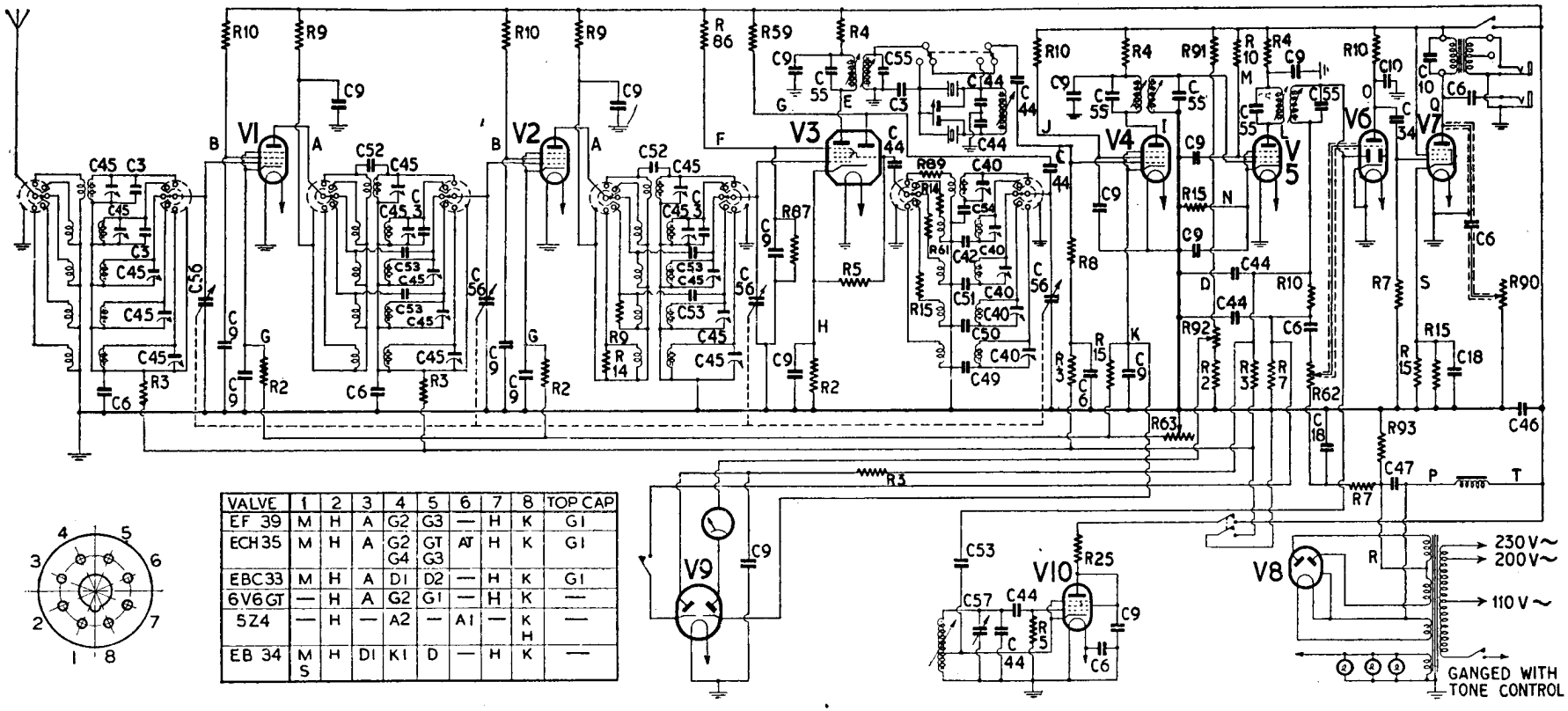
Note : Current consumption of the 556/B is approximately 6·5 amp. from 6-volt accumulator.

Alignment Procedure : Trimmer lay-out and alignment frequencies for these models are given on pages 196–7.

Vibrator Unit : The vibrator power unit for Model 556/B fits into the chassis in the position otherwise occupied by the mains power unit. The voltage on each anode of the rectifier valve is 205 volts, the smoothed output from the unit being 190 volts, 50 mA. Voltage values will therefore differ slightly from those given for Model 504.

Voltage Values : Voltages given below are between the points indicated on the circuit diagram and chassis. Receiver set at 14 Mc/s. on range 1, aerial terminals short-circuited, R.F. and A.F. gain controls at maximum, crystal and noise limiter switched out, phone/C.W. switch at " phone ", Send/Receive switch at " receive " and tone control fully clockwise. The two sets of values indicate that the voltage registered depends on the internal resistance of the meter employed. A tolerance of plus or minus 5 per cent should be allowed.

Circuit Reference	1000 *ohms/volt Testmeter*	333 *ohms/volt Testmeter*	*Circuit Reference*	1000 *ohms/volt Testmeter*	333 *ohms/volt Testmeter*
A	180 v.	180 v.	K	2·25 v.	2·25 v.
B	65 v.	25 v.	L	160 v.	152 v.
C	1·3 v.	0·6 v.	M	60 v.	48 v.
D	3·2 v.	0·6 v.	N	2·2 v.	2·0 v.
E	170 v.	160 v.	O	50 v.	40 v.
F	80 v.	70 v.	P	220 v.	220 v.
G	65 v.	60 v.	Q	185 v.	185 v.
H	2·5 v.	2·5 v.	R	1·65 v.	1·7 v.
I	165 v.	160 v.	S	9·5 v.	8·7 v.
J	65 v.	60 v.	T	185 v.	185 v.



VALVE	1	2	3	4	5	6	7	8	TOP CAP
EF 39	M	H	A	G2	G3	—	H	K	G1
ECH35	M	H	A	G2 G4	GT G3	AT	H	K	G1
EBC33	M	H	A	D1	D2	—	H	K	G1
6V6GT	—	H	A	G2	G1	—	H	K	—
5Z4	—	H	—	A2	—	A1	—	K H	—
EB 34	M S	H	D1	K1	D	—	H	K	—

CIRCUIT DIAGRAM—EDDYSTONE MODEL 504

Capacitors.

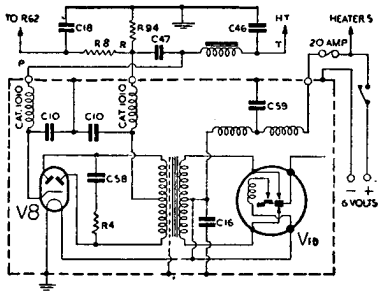
C3	10 pF.	C47	8
C6	0·01	C49	315 pF.
C9	0·1	C50	6–40 pF.
C10	0·0005	C51	1425 pF.
C18	25 (25 v.)	C52	20 pF.
C34	0·1	C53	3 pF.
C40	3·5–20 pF.	C54	3000 pF.
C42	2000 pF.	C55	510 pF.
C44	100 pF.	C56	12·5–212·5 pF.
C45	3–20 pF.	C57	5·2 pF.
C46	16		

Resistors.

R2	330 or 300	R59	27k or 30k
R3	0·47M or 0·5M	R61	200
R4	4·7 kor 5k	R62	0·5M pot
R5	47k or 50k	R63	10k pot
R7	0·27M or 0·25M	R86	22k or 20k (1W.)
R8	1M	R87	27k or 30k (1W.)
R9	1000	R89	12
R10	0·1M	R90	50k pot
R14	47 or 50	R91	50k (2W.)
R15	560 or 500	R92	600 pot
R25	22k or 20k	R93	25 (W.W.)

Vibrator Power Unit.

V8	6X5G
V1B	NS/6 (Wright Weaire)
C16	0·5
C58	0·012(1000 v.)
C59	0·005
R94	28 ohms 1½ W.



VIBRATOR POWER UNIT—MODEL 556/B

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.

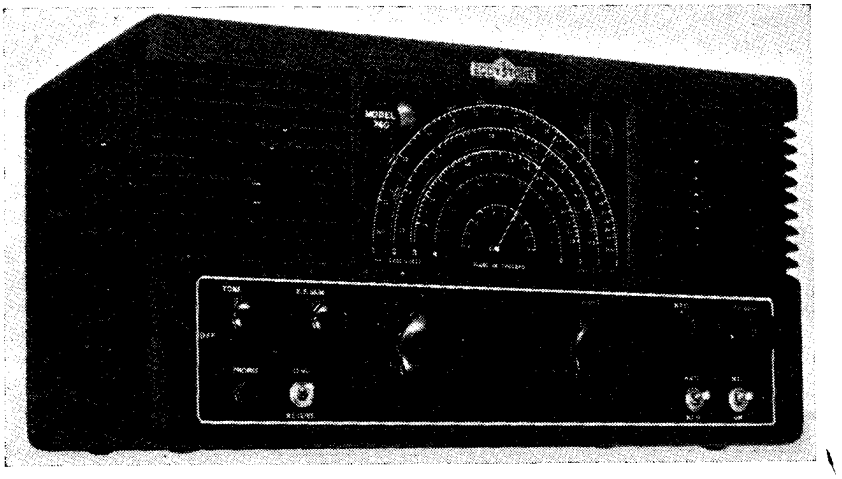
All coils (R.F. and I.F.) are permeability tuned, trimmers also being provided in the R.F. and oscillator sections. Alignment is carried out following the normal procedure, variations being indicated where necessary. When changing a valve, it is usually only necessary to re-adjust the appropriate trimmer 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)

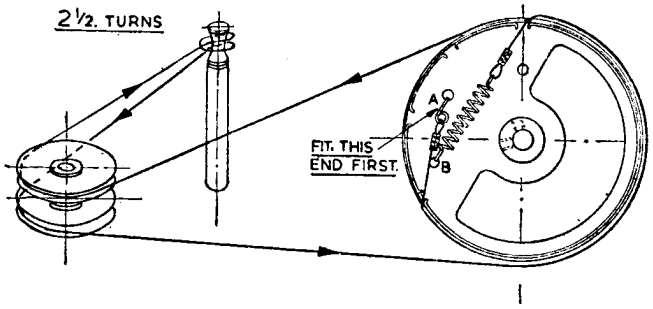
to reach all parts of the glass. The dial lights are standard in all receivers, bulbs with miniature bayonet caps, rated at 6·3 volts, 0·3 amp., being used. To change a lamp, it is only necessary to press the holder, which is sprung into place, and pull out.

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

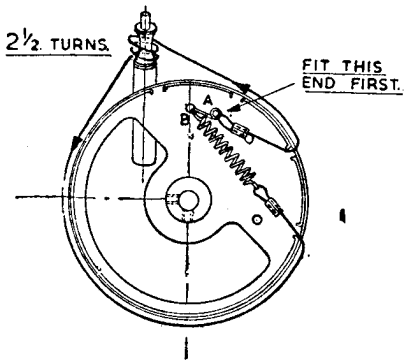
ALIGNMENT FREQUENCIES

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



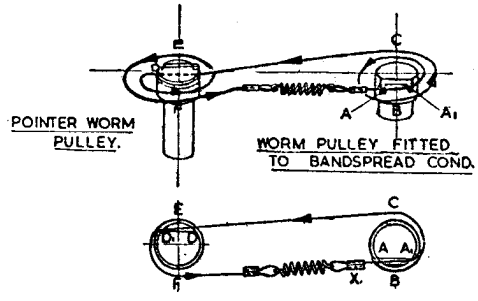
BANDSET.

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'.

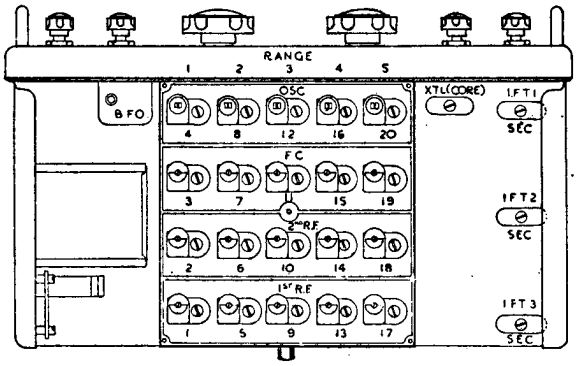


BANDSPREAD POINTER DRIVE.

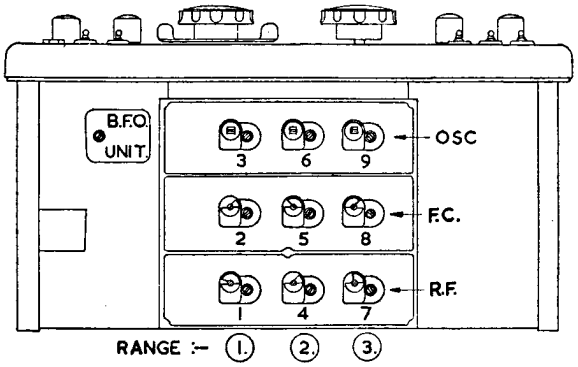
SET BANDSPREAD CONDENSER AT MAX. CAPACITY. WITH WORM PULLEYS IN POSITIONS SHOWN. FIT CORD D.1071. IN SLOT. A.A1. SO THAT THE CORD CLIP 'X' JUST CLEARS THE PULLEY. NOW COMPLETE ASSEMBLY BY FOLLOWING. A1-B-C-D-D-E-F.

CORD DRIVE REPLACEMENT—EDDYSTONE MODEL 640

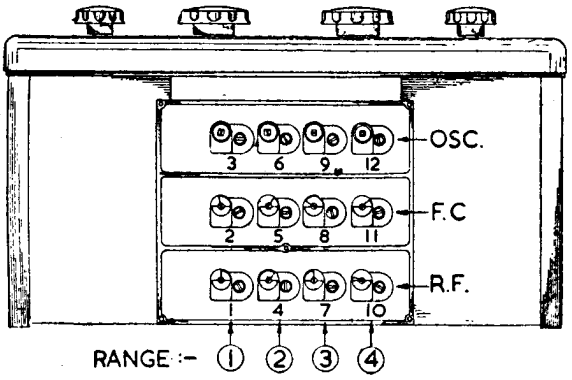
Turn receiver panel downwards top towards you; then with cover removed and looking down on the receiver, the cord drives would appear similar to the inverted rear views shown. To fit cords, remove dial bulbs and reflector plate and proceed as indicated in the diagrams.



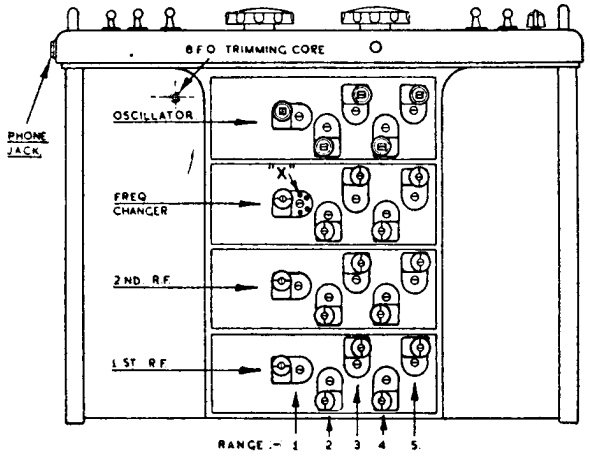
CORE AND TRIMMER LAY-OUT—
EDDYSTONE MODELS 504, 556



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