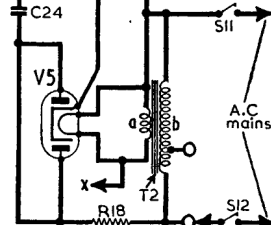


In all versions the chassis is "live."



A.C. Model

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 6BE6 ...	150	2.8	95	7.0	—
V2 6BA6 ...	150	10.0	95	3.4	0.9
V3 6AT6 ...	56	0.2	—	—	—
V4 6AQ5 ...	205	25.0	150	2.0	6.0
V5 6X4 ...	224†	—	—	—	240.0

† A.C. reading.

A.C./D.C. Model

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 12BE6 ...	140	2.8	90	7.0	—
V2 12BA6 ...	140	10.0	90	3.4	0.9
V3 12AT6 ...	46	0.2	—	—	—
V4 35L6GT ...	195	28.0	140	4.0	5.8
V5 35Z4GT ...	224†	—	—	—	240.0

† A.C. reading.

CIRCUIT ALIGNMENT

It is necessary to remove the chassis from its cabinet in order to make all the I.F. and R.F. adjustments accessible. The following instructions apply to all versions.

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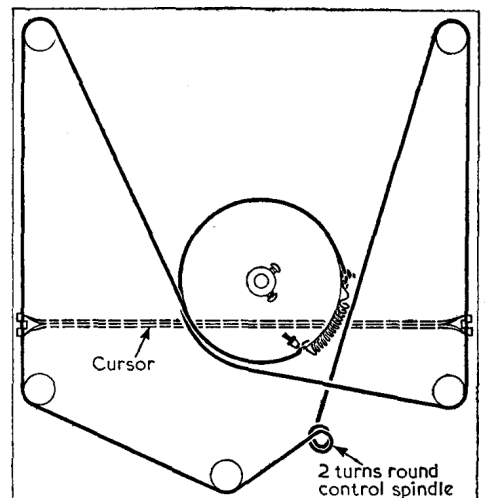
PILOT - MARINER

DRIVE CORD REPLACEMENT

About five feet of nylon-braided glass yarn is required for a new tuning drive cord. The makers' part number for a suitable material is P126-4. The cord should be run as shown in the accompanying sketch, where the complete system is drawn as seen when viewed from the rear of the chassis, neglecting obstructions, when the gang is at minimum capacitance.

A start should be made by threading one end of the cord through an eyelet provided for it in the groove of the drive drum, threading the end through from the outside to the inside. Viewed from the rear, the end can be seen through a circular aperture cut in the drum, and it should be pulled through this aperture also.

A small metal collar should then be threaded on to the cord, and a non-slip knot should then be tied behind it to prevent it from coming off again. If the



Sketch showing the course taken by the tuning drive cord, drawn as seen when viewed from the rear with the gang at minimum capacitance.

Waveband Switch Diagram

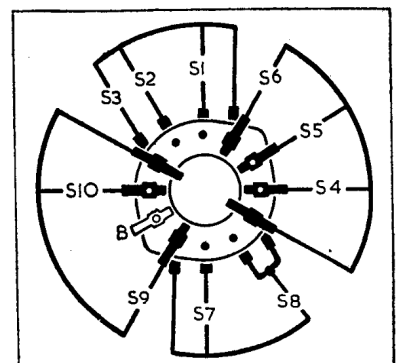


Diagram of the waveband switch unit

CAPACITORS		Values	a-Lo- cations
C1	Chassis isolators ...	0-002 μ F	G4
C2		0-002 μ F	G4
C3	L.W. aerial trim ...	100pF	G3
C4		0-0013 μ F	G3
C5	Aerial coupling ...	0-005 μ F	G3
C6		0-1 μ F	F4
C7	1st I.F. trans. ...	100pF	B2
C8		100pF	B2
C9	V1 osc. C.G. ...	100pF	A2
C10		530pF	F3
C11	R.F. by-pass ...	0-1 μ F	G4
C12		0-1 μ F	F4
C13	2nd I.F. trans. ...	100pF	B2
C14		100pF	B2
C15	I.F. by-passes ...	100pF	E4
C16		100pF	F3
C17	P.U. isolators ...	0-02 μ F	E4
C18		0-02 μ F	E4
C19	A.F. coupling ...	0-001 μ F	E3
C20		100pF	E4
C21	A.F. coupling ...	0-01 μ F	E3
C22		500pF	D3
C23	Tone corrector ...	0-002 μ F	E3
C24		0-01 μ F	D4
C25*	H.T. smoothing ...	16 μ F	C1
C26*		16 μ F	C1
C27*	S.W. aerial trim ...	50pF	A2
C28†		50pF	A1
C29†	M.W. aerial trim ...	50pF	A1
C30†		528pF	B1
C31†	Aerial tuning ...	750pF	A1
C32†		50pF	A1
C33†	L.W. osc. trim. ...	50pF	A2
C34†		50pF	B2
C35*	Oscillator tuning ...	528pF	B2
C36*		25 μ F	—
C37	V4 cath. by-pass	0-05 μ F	—
	Mains R.F. by-pass	0-005 μ F	—
	Tone corrector	0-005 μ F	—

* Electrolytic. † Variable. ‡ Pre-set.

RESISTORS		Values	Loca- tions
R1	Aerial shunts ...	33k Ω	G3
R2		4-7k Ω	G3
R3	A.G.C. decoupling ...	1M Ω	G3
R4		33 Ω	G3
R5	V1 osc. C.G. ...	22k Ω	G3
R6		4-7k Ω	F4
R7	S.G. feed ...	68 Ω	F4
R8		1M Ω	F4
R9	I.F. stopper ...	47k Ω	F4
R10		500k Ω	E3
R11	V3 C.G. ...	10M Ω	E4
R12		470k Ω	E3
R13	Tone control ...	1M Ω	D3
R14		4-7k Ω	E3
R15	V4 G.B. ...	220 Ω	E3
R16		680 Ω	D3
R17	H.T. smoothing ...	2-2k Ω	E4
R18		100 Ω	D4
R19	V5 surge limiter ...	180 Ω	—
R20		100 Ω	—
R21	Scale lamp shunts ...	100 Ω	—
R22*		840 Ω	C2
R23*	Heater ballast ...	830 Ω	C2
R24		3-9k Ω	—

* Tapped at 740 Ω + 100 Ω from V5 heater.

OTHER COMPONENTS		Approx. Values (ohms)	Loca- tions
L1	Aerial coupling coil	—	G3
L2		—	G3
L3	Aerial tuning coils	2-6	G3
L4		11-0	G3
L5	Osc. reaction coil ...	0-3	F3
L6		—	G3
L7	Osc. tuning coils ...	2-6	F3
L8		7-5	B2
L9	1st I.F. trans. { Pri.	7-5	B2
L10		7-5	B2
L11	2nd I.F. trans. { Pri.	7-5	B2
L12		7-5	B2
L13	Speech coil	2-8	—
T1	Smoothing choke	275-0	C1
T2	O.P. trans. { a	450-0	—
	trans. { b	0-5	—
S1-S10	Heater { a	0-3	C2
S11	trans. { b, total	160-0	—
S12	Waveband switches	—	G3
S13	Mains sw., g'd R13	—	D3
S15	Voltage adj. sw. ...	—	—

I.F. Stages.—Switch receiver to M.W. and tune to 550m. Connect output of signal generator, via an 0.1 μ F isolating capacitor in each lead, to the junction of **C30**, **R4** and to chassis. These capacitors are necessary as the receiver chassis is "live" to one side of the mains input. Fed in a 470 kc/s (638.3m) signal and adjust the cores of **L11**, **L10**, **L9** and **L8** (location references E4, B2 and F4) for maximum output. Repeat these adjustments until no further improvement results.

R.F. and Oscillator Stages.—Transfer signal generator output leads via a dummy aerial to **A** and **E** connectors. Check that with the gang at maximum capacitance the cursor is horizontal and coincides with 100 on the log scale at the right hand side of the tuning scale. Any error in the cursor position can be corrected by sliding its ends up and down on the drive cord.

S.W.—Switch receiver to S.W., tune to 20 m, feed in a 20 m (15 Mc/s) signal and adjust **C33** (A2) and **C28** (A2) for maximum output, setting **C33** to the lower capacitance peak if two are found.

M.W.—Switch receiver to M.W., tune to 200 m, feed in a 200 m (1,500 kc/s) signal and adjust **C32** (location ref. A1) for maximum output. Tune receiver to 500 m, fed in a 500 m (600 kc/s) signal and adjust the core of **L7** (F3) for maximum output. Repeat these adjustments until no further improvement results.

L.W.—Switch receiver to L.W., tune to 1,500 m, feed in a 1,500 m (200 kc/s) signal and adjust **C31** (A1) for maximum output. Tune receiver to 1,304 m, feed in a 1,304 m (230 kc/s) signal and adjust the core of **L4** (G3) for maximum output. Repeat these adjustments until no further improvement results.