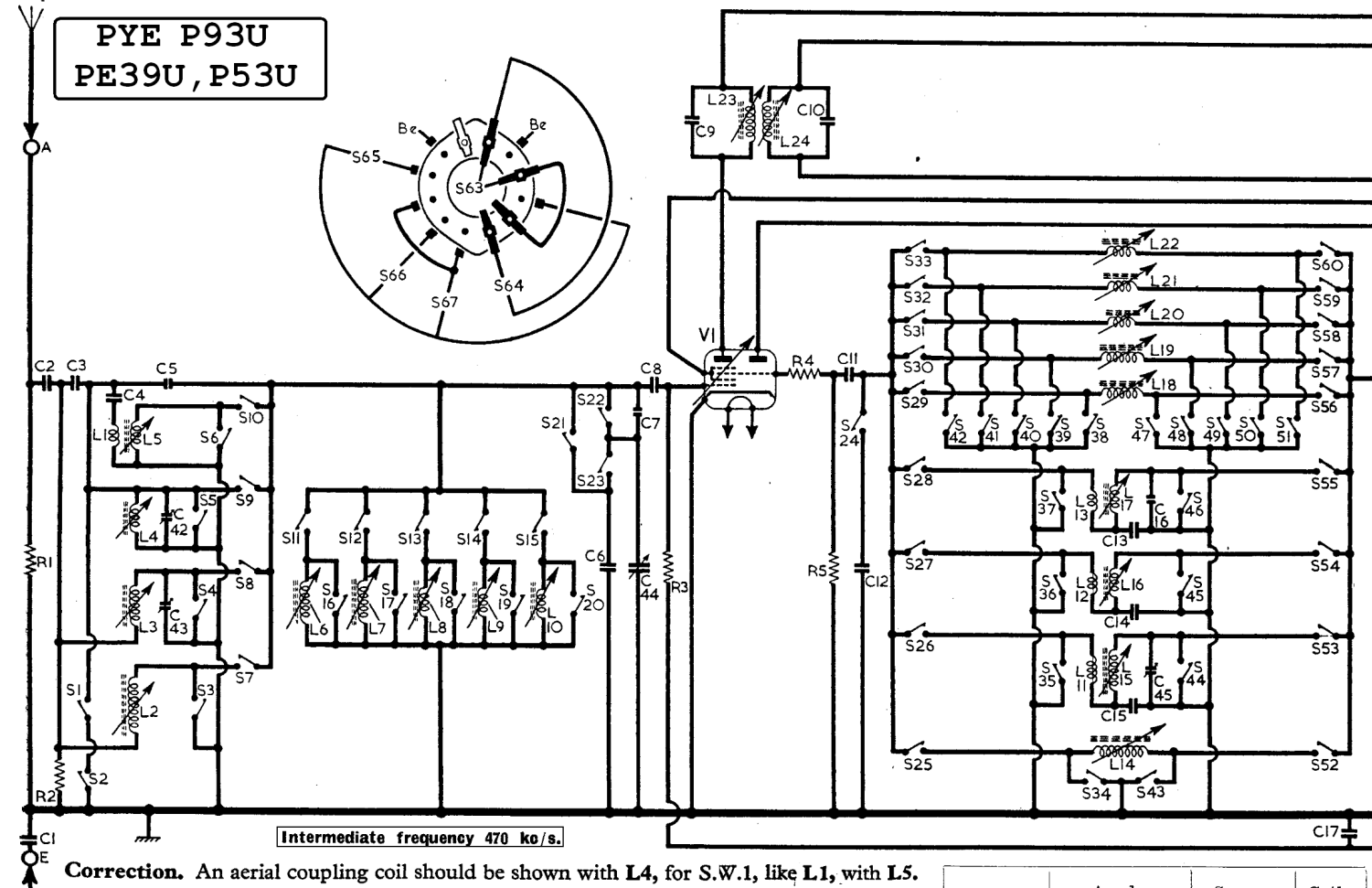
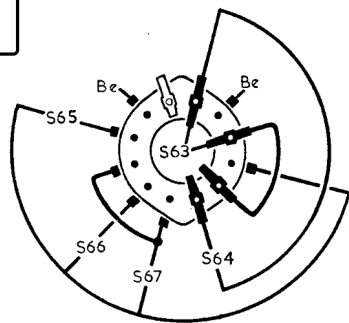
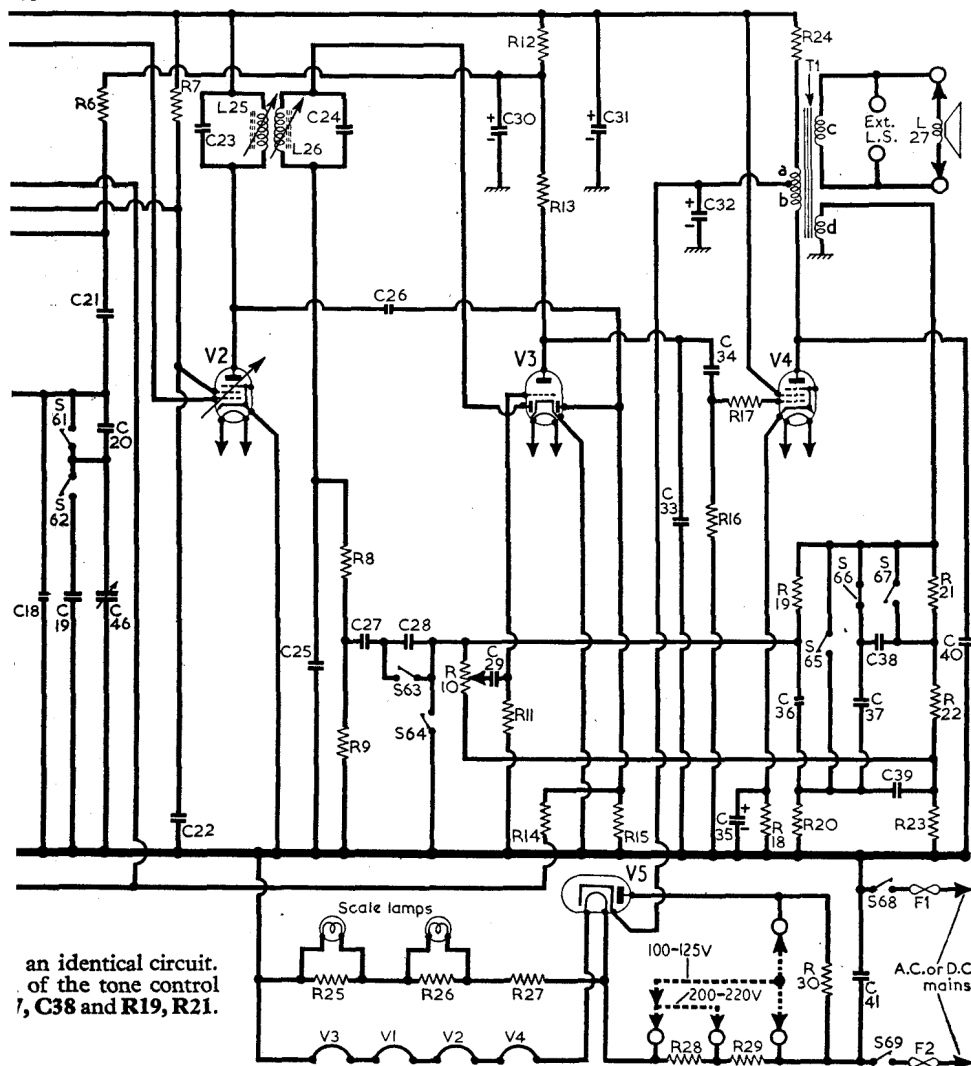


PYE P93U  
PE39U, P53U



Correction. An aerial coupling coil should be shown with L4, for S.W.1, like L1, with L5.



# PYE P93U PE39U, P53U

RESISTORS		Values	Locations
R1	} Aerial shunts ... {	470kΩ	G5
R2		22kΩ	G5
R3		1MΩ	G4
R4		470Ω	G4
R5		100kΩ	G4
R6	Osc. anode feed ...	6.8kΩ	G4
R7	S.G. feed ...	15kΩ	F4
R8	} Diode load resistors {	220kΩ	F4
R9		220kΩ	F4
R10	Volume control ...	1MΩ	F3
R11	V3 C.G. ...	10MΩ	F4
R12	H.T. feed ...	2.2kΩ	F4
R13	V3 anode load ...	220kΩ	F4
R14	A.G.C. decoupling ...	1MΩ	F4
R15	A.G.C. diode load ...	1MΩ	F5
R16	V4 C.G. ...	470kΩ	F4
R17	V4 C.G. stopper ...	10kΩ	F4
R18	V4 G.B. ...	180Ω	F3
R19	} Parts tone control {	2.2MΩ	E4
R20		390Ω	E3
R21		4.7kΩ	E3
R22	} H.T. smoothing ... {	2.2kΩ	E3
R23		220Ω	F3
R24	} Scale lamp shunts {	1kΩ	F4
R25		100Ω	D2
R26		100Ω	D2
R27	Scale lamp ballast	1kΩ	D2
R28	} Heater ballast ... {	130Ω	D2
R29		450Ω	D2
R30	V5 surge limiter ...	300Ω	D2

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	S.W.2 aerial coup.	5.0	G5
L2		23.0	H5
L3	Aerial tuning coils	3.0	H5
L4		—	G5
L5	Band-spread tuning coils ...	—	G5
L6		—	H5
L7	Oscillator reaction coils ...	—	H5
L8		—	H4
L9	Oscillator tuning coils ...	5.0	H3
L10		3.0	H4
L11	Band-spread tuning coils ...	—	H4
L12		—	G3
L13	1st I.F. trans. { Pri. Sec.	10.0	C1
L14		10.0	C1
L15	2nd I.F. trans. { Pri. Sec.	10.0	C2
L16		10.0	C2
L17	Speech coil	2.5	—
L18	O.P. trans. { a b c d	17.0	C2
L19		450.0	C2
L20	Waveband switches	11.5	H4
L21		—	H4
L22	Tone switches ...	—	E3
L23		—	E3
L24	Mains switches ...	—	E4
L25		—	E4
L26	2 amp. fuses ...	—	D2
L27		—	D2

## CIRCUIT ALIGNMENT

**I.F. Stages.**—Remove the chassis from the cabinet, switch receiver to M.W., turn gang and volume control to maximum. Connect output of signal generator, via an 0.1 μF capacitor in the "live" lead, to control grid (pin 6) of V1 and chassis. Feed in a 470 kc/s (638.3 m) signal and adjust the cores of L26 (location reference C2), L25 (F5), L24 (C1) and L23 (F4) for maximum output.

**R.F. and Oscillator Stages.**—As the tuning scale is mounted in the cabinet, and the following adjustments have to be carried out with the chassis on the bench, reference is made during alignment to a substitute tuning scale printed on the left-hand side (viewed from front of chassis) edge of the scale backing plate. This scale has 100 divisions and it is read off against the lower edge of the cursor carriage.

With the gang at maximum capacitance the reading on the substitute scale should be 100, and if any error is found, the cursor carriage can be slid up or down the drive cord to correct it. When the chassis is inserted in the cabinet, the cursor should coincide with the extreme top edges of the clear tuning sections of the scale, with the gang at maximum capacitance. The signal generator output should be connected via a standard dummy aerial to the A and E sockets.

CAPACITORS		Values	Locations
C1	Earth isolator ...	0.01 μF	G5
C2		560pF	G5
C3	Aerial couplers ...	2,400pF	H4
C4		330pF	G4
C5	S.W. band-spread capacitors ...	5.6pF	G5
C6		100pF	H5
C7	V1 C.G. ...	47pF	H5
C8		100pF	G4
C9	1st I.F. trans. tuning ...	100pF	C1
C10		100pF	C1
C11	V1 osc. C.G. ...	100pF	H4
C12	S.W. osc. trimmer	150pF	H4
C13	S.W.2 osc. tracker	6,200pF	H3
C14	S.W.1 osc. tracker	1,700pF	H4
C15	M.W. osc. tracker	360pF	H4
C16	S.W.2 trimmer	62pF	H4
C17	A.G.C. decoupling	0.04 μF	G4
C18	Osc. trimmer	15pF	G3
C19	S.W. band-spread capacitors ...	150pF	H4
C20		150pF	H3
C21	Osc. anode coup...	560pF	H3
C22	S.G. decoupling	0.05 μF	G4
C23	2nd I.F. trans. tuning ...	100pF	C2
C24		100pF	C2
C25	I.F. by-pass	100pF	F5
C26	A.G.C. coupling	47pF	F5
C27	A.F. coupling	0.02 μF	F3
C28	Part tone control...	0.005 μF	E3
C29	A.F. coupling	0.04 μF	F3
C30*	H.T. smoothing ...	16 μF	C1
C31*		60 μF	D1
C32*	I.F. by-pass ...	60 μF	D1
C33		100pF	F5
C34	A.F. coupling	0.005 μF	F4
C35*	V4 cath. by-pass...	50 μF	F5
C36	Parts tone control {	82pF	E3
C37		0.02 μF	E3
C38	Tone correction ...	0.25 μF	E6
C39		0.04 μF	E3
C40	Mains R.F. by-pass	0.005 μF	C2
C41	S.W.1 aerial trim.	0.01 μF	E4
C42†	M.W. aerial trim....	50pF	G4
C43†	Aerial tuning	528pF	H4
C44†	M.W. osc. trim. ...	50pF	H3
C45†	Osc. tuning	528pF	A1
C46†			

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

**L.W.**—Switch receiver to L.W., tune to 1,400 m (55 on substitute scale), feed in a 1,400 m (214 kc/s) signal and adjust the cores of L14 (H3) and L2 (H5) for maximum output.

**M.W.**—Switch receiver to M.W., tune to 500 m (82 on scale), feed in a 500 m (600 kc/s) signal and adjust the cores of L15 (H4) and L3 (H5) for maximum output. Tune receiver to 200 m (10 on scale), feed in a 200 m (1,500 kc/s) signal and adjust C45 (H3) and C43 (H4) for maximum output. Repeat these adjustments until calibration is correct.

**S.W.1.**—Switch receiver to S.W.1, tune to 200 m (100 on scale), feed in a 200 m (1,500 kc/s) signal and adjust the cores of L16 (H4) and L4 (G5) for maximum output. Tune receiver to 90.9 m (28 on scale), feed in a 90.9 m (3.3 Mc/s) signal and adjust C42 (G4) for maximum output. Repeat these adjustments until calibration is correct.

**S.W.2.**—Switch receiver to S.W.2, tune to 41.67 m (46 on scale), feed in a 41.67 m (7.2 Mc/s) signal and adjust the cores of L17 (H4) and L5 (G5) for maximum output.

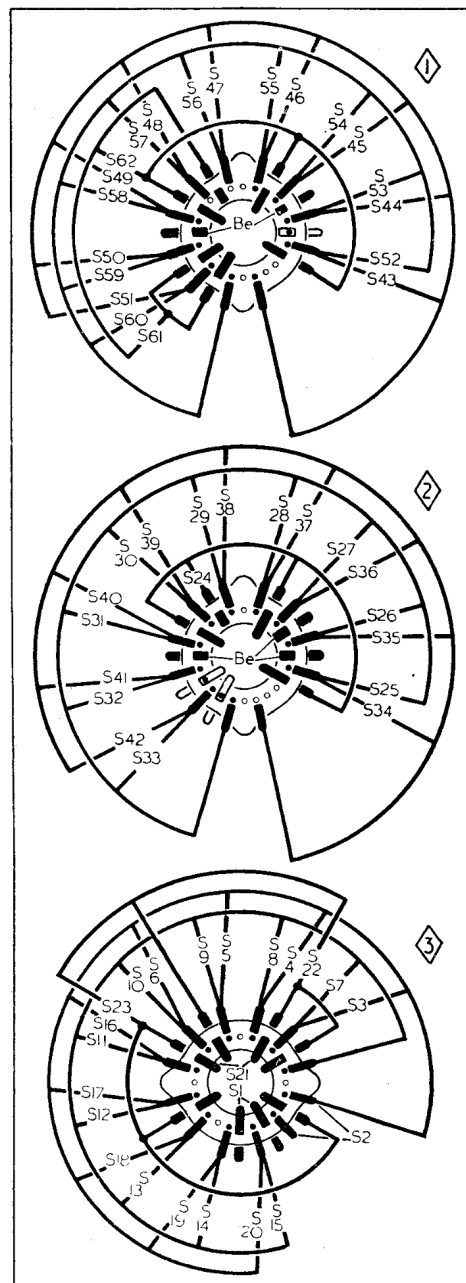
**31 m band.**—Switch receiver to 31 m, tune to 9.6 Mc/s (50 on scale), feed in a 9.6 Mc/s (31.25 m) signal and adjust the cores of L18 (G3) and L6 (G5) for maximum output.

**25 m band.**—Switch receiver to 25 m, tune to 11.8 Mc/s (50 on scale), feed in a 11.8 Mc/s (25.42 m) signal and adjust the cores of L19 (G3) and L7 (H5) for maximum output.

**19 m band.**—Switch receiver to 19 m, tune to 15.3 Mc/s (50 on the scale), feed in a 15.3 Mc/s (19.61 m) signal and adjust the cores of L20 (G4) and L8 (H5) for maximum output.

**16 m band.**—Switch receiver to 16 m, tune to 17.8 Mc/s (50 on scale), feed in a 17.8 Mc/s (16.85 m) signal and adjust the cores of L21 (G4) and L9 (H5) for maximum output.

**13 m band.**—Switch receiver to 13 m, tune to 21.6 Mc/s (50 on scale), feed in a 21.6 Mc/s (13.89 m) signal and adjust the cores of L22 (G4) and L10 (H5) for maximum output.



Diagrams of the waveband switch units, drawn as seen from the rear of an inverted chassis. These units are identified in our under-chassis illustration.

## DRIVE CORD REPLACEMENT

About four and a half feet of nylon-braided glass yarn is required for a new drive cord. It should be run as shown in the upper sketch seen in the drawings at the head of the next column, where the system is drawn as seen from the rear of an upright chassis with the gang at minimum capacitance. The manufacturers quote the exact cord length, measured between the centres of the end loops, as 51 inches.