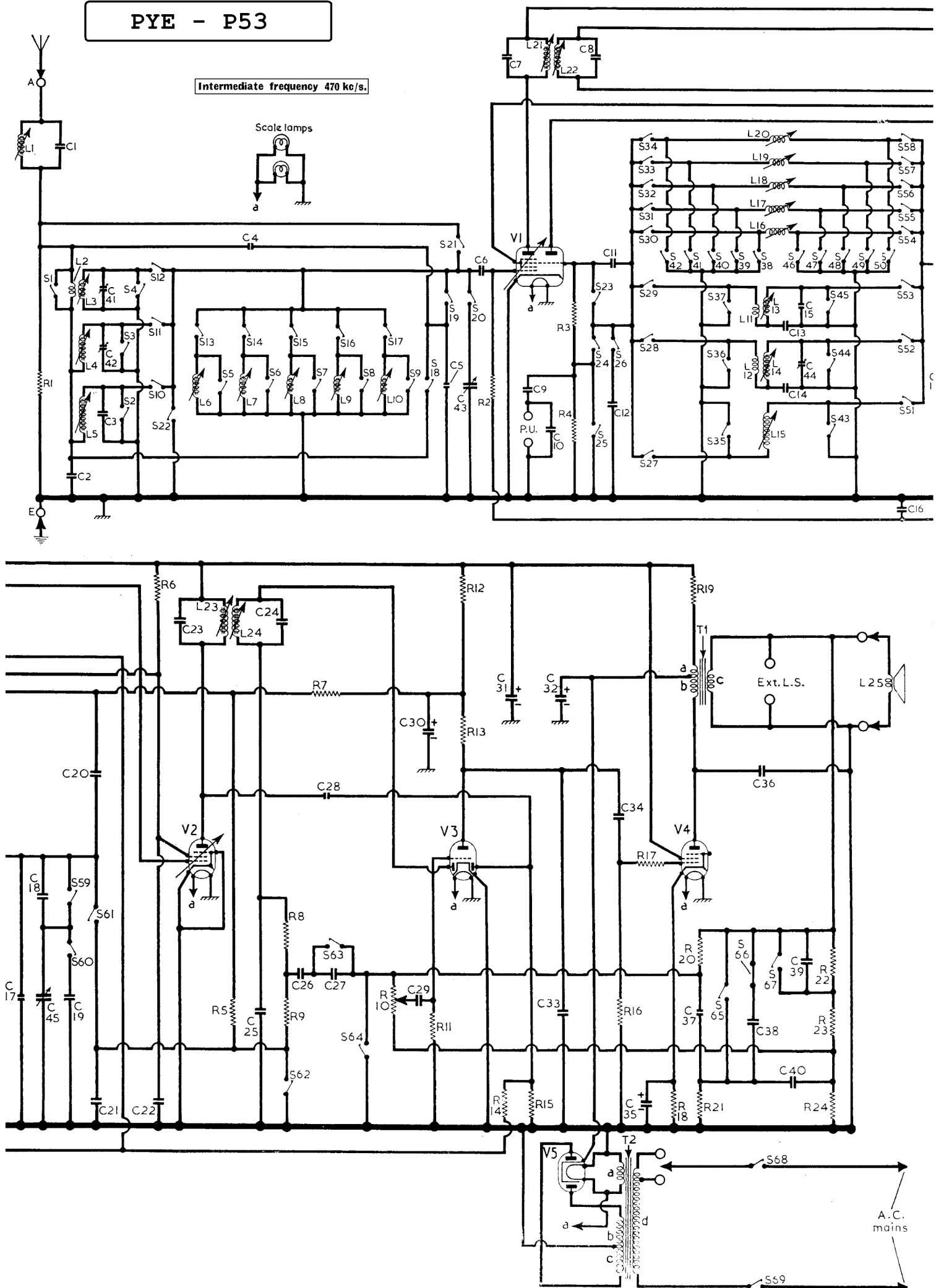
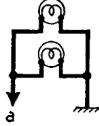


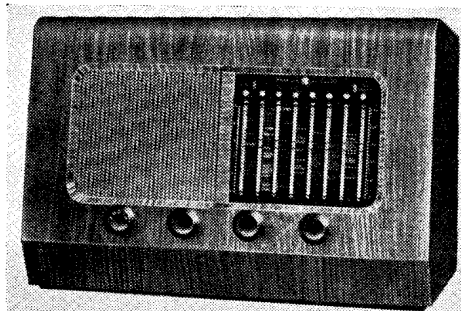
PYE - P53

Intermediate frequency 470 kc/s.

Scale lamps



PYE - P53



The Pye P53 band-spread superhet.

CAPACITORS		Values	Locations
C1	I.F. filter tune ...	0-001μF	B2
C2	Aerial coupling ...	0-0024μF	H4
C3	L.W. aerial trim. ...	120pF	H4
C4	Aerial coupling ...	5-6pF	H4
C5	Band-spread tune...	62pF	H4
C6	V1 C.G. ...	100pF	G4
C7	1st I.F. trans. tuning ...	100pF	C1
C8		100pF	C1
C9	P.U. coupling ...	0-01μF	G4
C10	P.U. shunt ...	0-01μF	G4

* Electrolytic. † Variable. ‡ Pre-set. § "Swing" value, min. to max.

Valve	Anode		Screen		Cath.
	V	mA	V	mA	
V1 ECH42	232 150	2-2 4-6	72	4-2	—
V2 EF41	232	6-1	72	1-7	—
V3 EBC41	62	0-6	—	—	—
V4 EL41	254	30-0	232	4-0	6-1
V5 EZ40	500†	—	—	—	268-0*

† Anode to anode, A.C.
* Cathode current 53-4 mA.

CAPACITORS (continued)		Values	Locations
C11	V1 osc. C.G. ...	100pF	H3
C12	Oscillator trimmer ...	150pF	H3
C13	S.W. osc. tracker...	0-0017μF	H3
C14	M.W. osc. tracker...	360pF	H3
C15	S.W. osc. trimmer...	27pF	H3
C16	A.G.C. decoupling ...	0-04μF	G3
C17	Oscillator trimmer ...	15pF	H3
C18	S.W. osc. band-spread capacitors {	150pF	H3
C19		150pF	H3
C20	Osc. anode coupling ...	100pF	H3
C21	P.U. pre-amp. shunt ...	0-01μF	G3
C22	S.G. decoupling ...	0-05μF	G4
C23	2nd I.F. trans. tuning ...	100pF	C2
C24		100pF	C2
C25	I.F. by-pass ...	100pF	F4
C26	A.F. coupling ...	0-02μF	F3
C27	Part tone control ...	0-005μF	E3
C28	A.G.C. coupling ...	47pF	F4
C29	A.F. coupling ...	0-04μF	F3
C30*	H.T. decoupling ...	16μF	C1
C31*	H.T. smoothing ...	32μF	D1
C32*		32μF	D1
C33	I.F. by-pass ...	100pF	F4
C34	A.F. coupling ...	0-005μF	F3
C35*	V4 cath. by-pass ...	50μF	E4
C36	Tone corrector ...	0-005μF	F4
C37	Parts of negative feed-back tone control circuit {	82pF	E3
C38		0-02μF	E3
C39		0-25μF	E4
C40	S.W. aerial trim. ...	50pF	H4
C41†		50pF	H4
C42†	M.W. aerial trim. ...	50pF	H4
C43†	Aerial tuning ...	\$528pF	A1
C44†	M.W. osc. trim. ...	50pF	H3
C45†	Oscillator tuning ...	\$528pF	A1

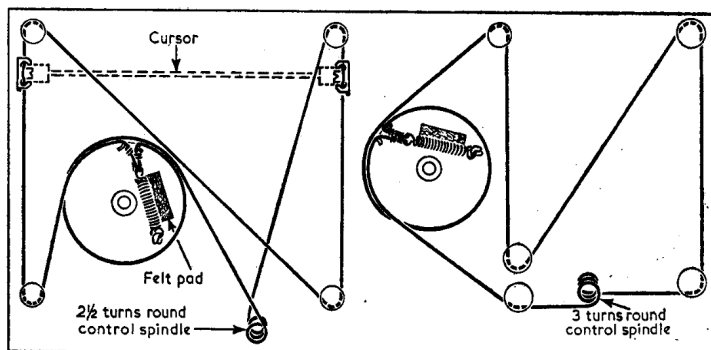
Switch	Off	F	B	M	S
S63 ...	—	C	—	C	—
S64 ...	C	—	—	C	—
S65 ...	—	C	—	C	—
S66 ...	C	—	C	C	C
S67 ...	C	—	C	—	C

Tone control switch table for the unit

RESISTORS		Values	Locations
R1	Aerial shunt ...	22kΩ	B2
R2	V1 C.G. ...	1MΩ	G4
R3	V1 osc. C.G. ...	47kΩ	H3
R4	P.U. shunt ...	10MΩ	G4
R5	Diode mute ...	220kΩ	G3
R6	S.G. H.T. feed ...	27kΩ	F3
R7	Osc. anode feed ...	10kΩ	G3
R8	Diode load resistors {	220kΩ	F4
R9		220kΩ	F3
R10	Volume control ...	1MΩ	F3
R11	V3 C.G. ...	10MΩ	F4
R12	H.T. decoupling ...	4-7kΩ	F4
R13	V3 anode load ...	220kΩ	F4
R14	A.G.C. decoupling ...	1MΩ	F4
R15	A.G.C. diode load ...	1MΩ	F4
R16	V4 C.G. ...	470kΩ	F4
R17	V4 C.G. stopper ...	10kΩ	F4
R18	V4 G.B. ...	180Ω	F4
R19	H.T. smoothing ...	1-6kΩ	E4
R20	Parts of negative feed-back tone control circuit {	2-2MΩ	E3
R21		390Ω	E3
R22		4-7Ω	E3
R23		2-2kΩ	F3
R24		220Ω	F3

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	I.F. filter	2-0	B2
L2	S.W. aerial coup. . .	12-0	H4
L3-L20	Aerial and oscillator tuning coils {	—	—
L21		1st I.F. trans. {Pri. Sec.	12-2
L22	12-2		C1
L23	2nd I.F. trans. {Pri. Sec.	12-2	C2
L24		12-2	C2
L25	Speech coil	2-5	—
T1	O.P. trans. {a b c d, total	15-0	C1
		485-0	
		—	
		—	
T2	Mains trans. {a b c d, total	285-0	D2
		305-0	
		38-0	
		—	
S1-S62	Waveband switches	—	H3
S63-S67	Tone switches	—	E3
S68, S69	Mains sw., g'd tone control	—	E3

Tuning drive cord systems for the two models. On the left, that of the P53, and on the right that of the P53RG. In both cases they are drawn as seen from the rear with the gang at maximum.



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 0.1μF 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 L24 (location reference C2), L23 (G4), L22 (C1) and L21 (G3) for maximum output.

I.F. Filter.—With the receiver tuned to the highest wavelength end of M.W., connect the signal generator output, via a standard dummy aerial, to A and E sockets. Feed in a 470 kc/s signal and adjust the core of L1 (B2) for minimum 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 rear left-hand side (viewed from rear 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 black dots at the highest wavelength ends of the scales with the gang at maximum capacitance. The signal generator output should be connected via a standard dummy aerial to the A and E sockets.

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 L15 (H4) and L5 (H4) 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 L14 (H3) and L4 (H4) for maximum output. Tune receiver to 200 m (10 on scale), feed in a 200 m (1,500 kc/s) signal and adjust C44 (H3) and C42 (H4) for maximum output. Repeat these adjustments until calibration is correct.

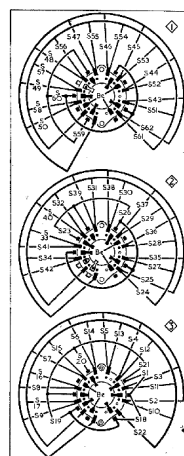
S.W.—Switch receiver to M.S.W., tune to 200 m (10 on scale), feed in a 200 m (1,500 kc/s) signal and adjust the cores of L13 (H3) and L3 (H4) for maximum output. Tune receiver to 3.3 Mc/s (28 on scale), feed in a 90.9 m (3.3 Mc/s) signal and adjust C41 (H4) for maximum output. Repeat these adjustments until calibration is correct.

49 m band.—Switch receiver to 49 m, tune to 6.1 Mc/s (50.5 on scale), feed in a 6.1 Mc/s (49.18 m) signal and adjust the cores of L16 (G3) and L6 (H4) 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 L17 (H3) and L7 (H4) 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 L18 (G3) and L8 (H4) for maximum output.

19 m band.—Switch receiver to 19 m, tune to 15.3 Mc/s (50 on scale), feed in a 15.3 Mc/s (19.61 m) signal and adjust the cores of L19 (G3) and L9 (H4) for maximum output.



DRIVE CORD REPLACEMENT

About five feet of nylon braided glass yarn is required for a new drive cord in either model, and it should be run as shown in the sketches seen at the head of cols. 2 and 3, where the systems are shown separately for the table model (on the left) and the radiogram (on the right). The makers quote the exact cord lengths as 51 inches and 50 1/2 inches respectively for the two models, measured between the centres of the end loops when made up in advance. Both ends are looped on to the tension spring, and it is possible to fit the made-up loop of cord with the ends already attached to it.