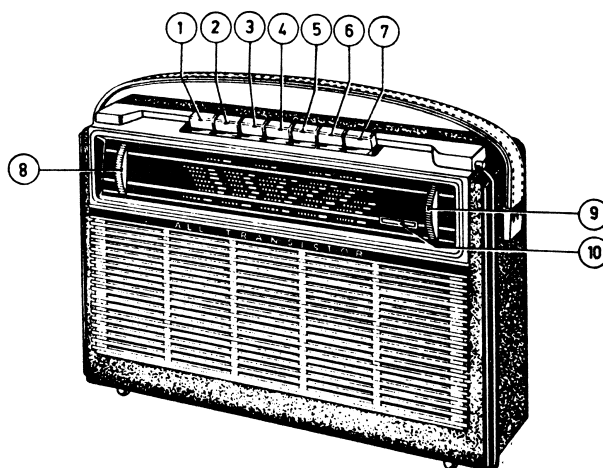


PHILIPS *Service* notes

MODEL L4X25T



SPECIFICATIONS

Battery	.....	.....	.....	.....	.....	9V (6 x 1½V cells)
Tuning ranges	.....	.....	.....	.....	.....	517 - 1622 kc/s (580 - 185M)
						1.6 - 3.9Mc/s (187 - 77M)
						4.65 - 9.9Mc/s (64.5 - 30.5M)
						11.6 - 21.85Mc/s (26 - 13.8M)
Intermediate frequency	.....	.....	.....	.....	.....	452 kc/s
Battery consumption	.....	.....	.....	.....	.....	25 - 30mA (no signal condition)
Output	.....	.....	.....	.....	.....	1W

CONTROL FUNCTIONS

1. Dial illumination.
2. Tone switch.
3. Tuning range switch (580-185M) B/C.
4. Tuning range switch (187-77M) SW3.
5. Tuning range switch (64.5-30.5M) SW2.
6. Tuning range switch (26.0-13.8M) SW1.
7. Battery on/off switch.
8. Volume control.
9. Tuning control.
10. Tuning meter.

CHASSIS REMOVAL

Partial Removal

For a limited amount of component replacement it is possible to partially remove the two main printed boards. Remove the screws which retain the back fastening clips to the case and remove the clips. The boards may now be raised from their locating slots to the limits of wiring.

Complete Removal

Release the printed boards as in "Partial Removal" above. Remove the two chassis retaining screws, one just to right of the P/U and ext. aerial sockets, other to left of tuning capacitor and a third screw and its bracket at the bottom of the switch mounting board. Unsolder the two frame aerial connecting leads, one each near either end of the aerial rod.

Remove the top portion of the battery box and remove batteries. Slide the bottom portion of the battery box up the spacers and lay aside. This will reveal the tuning meter and allow access to its mounting screws which are to be removed. It is now possible to withdraw the chassis from the case. If it is necessary to take the chassis away from the case, the speaker leads will have to be unsoldered.

Replacement of the chassis is a reversal of the above procedure.

KNOB REPLACEMENT

If either control knob (volume and tone) have been replaced make sure that it is positioned such that the retaining grub screw is accessible from the rear as it may be necessary to make a lateral adjustment in order that the knob lines up with its dial scale slot.

OUTPUT TRANSISTOR ADJUSTMENT

With no signal input and volume control at minimum, adjust R42 for an output transistor current of 8mA. To facilitate this operation, a removable link is provided between points 18 and 19 on board 1 for insertion of a suitable meter.

ADJUSTMENT OF TUNING METER

To enable the tuning meter to be used as a battery voltage indicator, with no signal input and using fresh batteries adjust R50 for full meter deflection.

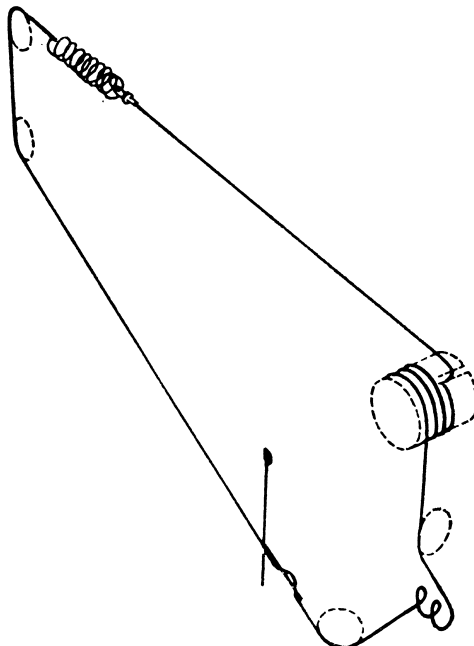
April, 1964

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Branches in all States

L4X25T

MECHANICAL PARTS LIST

DESCRIPTION	CODE No.	DESCRIPTION	CODE No.
Battery holder, lower	A3.788.15	Switches and switch parts	
Battery holder, upper	A3.788.16	Assembly of push buttons with tone, dial lamp and on/off banks only	A3.298.46
Cabinet case with escutcheon, rear grille and sockets only	A3.328.65	Bowden cable, 4x, 5.29/32" each	965/KA07
Cabinet mounting foot, 4x	P5.192.13/409HA	Cable clamp, 8x	964/2.6x4
Cabinet handle	A3.328.86	Cable ferrule, 8x	964/3x8.2
Dial cursor assembly	CR.480.680	Cable casing, 4x, 4.1/8" each	965/RW1.5
Dial cord, 28 $\frac{3}{4}$ ", Bulk	965/JB1	Switch bank parts	
Dial drum	A3.327.81	Contact lip (fixed contact) all switch positions	971/79
Dial scale	A3.943.07	Contact spring (moving contacts) switch positions 1, 2 and 7	971/77
External aerial socket	A3.966.25	Contact spring (moving contacts) switch positions 3, 4, 5 and 6	971/112
External aerial plug	978/3x40	Contact strip (fixed micarta) switch positions 1, 2 and 7	971/101
Front grille — cabinet	A3.328.58	Contact strip (fixed micarta) switch positions 3, 4, 5 and 6	971/134
Grille — cabinet rear	P5.350.70/159/GR	Contact slide (moving micarta) switch pos. 2	971/102
Knob — tuning and volume, 2x	A3.328.64	Contact slide (moving micarta) switch positions 1, 7	971/103
Push button	P5.420.22/139/FY	Contact slide (moving micarta) switch positions 3, 4, 5 and 6	971/133
Pickup socket and switch	979/F5x1	Slide switch assemblies	
Pickup plug	978/M5x1	SW1 (21.85-11.6 Mc/s.)	A3.791.89
Screw — battery holder, 2x	A3.712.66	SW2 (9.9-4.65 Mc/s.)	A3.791.90
Screw, cabinet rear, 2x	A3.497.46	SW3 (3.9-1.6 Mc/s.)	A3.298.43
Spring — dial cord	964/6x17	Broadcast band	A3.298.44
Tuning indicator	AE.504.26		



L4X25T

CAPACITORS

C. No.	DESCRIPTION	V.W.	TOL. ±%	TYPE OR CODE No.
1-2	2 gang tuning	—	—	49.002.37
3	440E Styroflex	500	1	C.285.AB/D440E
4	18E ceramic, N750 ...	—	5	C.304.GH/B18E
5	350E Styroflex	500	1	C.285.AB/D350E
6	60E air trimmer			908/60E
7	60E air trimmer			908/60E
8	30E air trimmer			908/30E
9	540E Styroflex	500	1	C.285.AB/D540E
10	30E air trimmer			908/30E
11	1K8 Styroflex	500	1	C.285.AB/D1K8
12	47K Polyester	125	10	C.296.AA/A47K
13	390E Styroflex	500	1	C.285.AB/D390E
14	30E air trimmer			908/30E
15	2K2 ceramic, hi-K		—20+50	C.301.GA/H2K2
16	30E air trimmer			908/30E
17	10K ceramic, hi-K		—20+50	C.301.GB/H10K
18	30E air trimmer			908/30E
19	1K77 Styroflex	500	1	C.285.AB/D1K77
20	30E air trimmer			908/30E
21	470E Styroflex	500	1	C.285.AB/D470E
22	30E air trimmer			908/30E
23	part of 1st I.F.T.			
24	part of 2nd I.F.T.			
25				
26	3E6 ceramic, N750 ...		0.5pF	C.304.GH/L3E6
27	4uF electrolytic	64		C.425.AL/H4
28	100K Polyester	125	10	C.296.AA/A100K
29	6K8 ceramic, hi-K		—20+50	C.301.GA/H6K8
30	100K Polyester	125	10	C.296.AA/A100K
31	22E ceramic, NPO		5	C.304.GB/B22E
32	part of 3rd I.F.T.			
33				
34	2K2 ceramic, hi-K		—20+50	C.301.GA/H2K2
35	100K Polyester	125	10	C.296.AA/A100K
36	4uF electrolytic	64		C.425.AL/H4
37	2K2 ceramic hi-K		—20+50	C.301.GA/H2K2
38	22K Polyester	125	10	C.296.AA/A22K
39	33K Polyester	125	10	C.296.AA/A33K
40	320uF electrolytic	2.5		C.426.AM/A320
41	25uF electrolytic	25		C.426.AR/F25
42	320uF electrolytic	10		C.426.AM/D320
43	320uF electrolytic	10		C.426.AM/D320
44	320uF electrolytic	10		C.426.AM/D320
45	680K Polyester	125	10	C.296.AA/A680K
46	10K ceramic, hi-K		—20+50	C.301.GB/H10K
47	47K Polyester	125	10	C.296.AA/A47K
48	3K9 Styroflex	500	5	C.285.AB/B3K9
49	200uF electrolytic	6.4		C.426.AR/C200
50	15E ceramic, N750 ...		10	C.304.GH/A15E
51	100E ceramic, NPO ...		1	C.304.GB/D100E
52	10K ceramic, hi-K		—20+50	C.301.GB/H10K
53	2K2 ceramic, hi-K		—20+50	C.301.GB/H2K2
54	10K ceramic, hi-K		—20+50	C.301.GB/H10K
60	100K Polyester	125	10	C.296.AA/A100K
65	100K flat foil	125	10	C.280.AA/A100K

RESISTORS

R. No.	DESCRIPTION	W.	TOL. ±%	TYPE OR CODE No.
1	10K cracked carbon	$\frac{1}{4}$	5	B8.305.05B/10K
2	3K3 carbon	$\frac{1}{2}$	5	I.R.C. B.T.S.
3	2K7 cracked carbon	$\frac{1}{4}$	5	B8.305.05B/2K7
6	10K cracked carbon	$\frac{1}{4}$	5	B8.305.05B/10K
8	680E cracked carbon	$\frac{1}{4}$	5	B8.305.05B/680E
9	3K9 cracked carbon	$\frac{1}{4}$	5	B8.305.05B/3K9
10	22K cracked carbon	$\frac{1}{4}$	5	B8.305.05B/22K
11	1K cracked carbon ...	$\frac{1}{4}$	5	B8.305.05B/1K
12	390E cracked carbon	$\frac{1}{4}$	5	B8.305.05B/390E
13	15K cracked carbon	$\frac{1}{4}$	5	B8.305.05B/15K
14	22K cracked carbon	$\frac{1}{4}$	5	B8.305.05B/22K
15	12K cracked carbon	$\frac{1}{4}$	10	B8.305.05A/12K
16	33K cracked carbon	$\frac{1}{4}$	10	B8.305.05A/33K
17	1K5 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/1K5
18}	20K carbon potentiometer, log. taper, tapped 4K (volume)			E.098.AG/00B25
19}				
20	2K2 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/2K2
21	1K2 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/1K2
22	10E cracked carbon	$\frac{1}{4}$	10	B8.305.05A/10E
23	1K5 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/1K5
25	5K6 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/5K6
26	8K2 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/8K2
27	1K2 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/1K2
28	220E cracked carbon	$\frac{1}{4}$	10	B8.305.05A/220E
29	270E cracked carbon	$\frac{1}{4}$	10	B8.305.05A/270E
31	12E cracked carbon	$\frac{1}{4}$	5	B8.305.05B/12E
32	12E cracked carbon	$\frac{1}{4}$	5	B8.305.05B/12E
34	3K3 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/3K3
35	47E cracked carbon	$\frac{1}{4}$	5	B8.305.05B/47E
36	12E cracked carbon	$\frac{1}{4}$	5	B8.305.05B/12E
37	12E cracked carbon	$\frac{1}{4}$	5	B8.305.05B/12E
39	3K3 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/3K3
40	1K8 cracked carbon	$\frac{1}{4}$	5	B8.305.05B/1K8
41	1K8 cracked carbon	$\frac{1}{4}$	5	B8.305.05B/1K8
42	1K carbon trim pot. (bias adj.)			E.097.AC/1K
43	47E cracked carbon	$\frac{1}{4}$	5	B8.305.05B/47E
44	39E cracked carbon	$\frac{1}{4}$	10	B8.305.05A/39E
45	820E carbon	$\frac{1}{2}$	10	I.R.C. B.T.S.
46	1M cracked carbon ...	$\frac{1}{4}$	10	B8.305.05A/1M
47	330K cracked carbon	$\frac{1}{4}$	10	B8.305.05A/330K
50	500K carbon trim pot. (meter adj.)			E.097.AA/500K
51	39E cracked carbon	$\frac{1}{4}$	10	B8.305.05A/39E
60	2K7 cracked carbon	$\frac{1}{4}$	10	B8.305.05A/2K7
61	22E cracked carbon	$\frac{1}{4}$	5	B8.305.05B/22E
62	33K cracked carbon	$\frac{1}{4}$	10	B8.305.05A/33K
63	470E cracked carbon	$\frac{1}{4}$	10	B8.305.05A/470E

INDUCTORS

S. No.	DESCRIPTION	BAND	CODE No.
1, 2	Aerial coil	21.85-11.6 Mc/s	A3.986.99
3, 4	Aerial coil	9.9-4.65 Mc/s.	A3.804.90
5, 6, } 7, 8 }	Ferroceptor	3.9-1.6 Mc/s. and broadcast	A3.804.86
9	Frame aerial		A3.749.93
10,11,12	Oscillator coil	21.85-11.6 Mc/s. 9.9-4.65 Mc/s.	A3.804.91
13,14,15	Oscillator coil	3.9-1.6 Mc/s.	A3.804.92
16,17,18	Oscillator coil	Broadcast	A3.129.32
19,20,21	1st I.F.T.		A3.129.35
22,23,24, } 25,26 }	2nd I.F.T.		A3.129.34
27,28,29, } 30,31 }	3rd I.F.T.		A3.129.33
32,33,34	Driver transformer ...		A3.162.11
35,36	Output transformer ...		A3.154.32
38	Loudspeaker, 25Ω V/C		AD3500HWZ
45	Choke, 84μH		CZ.324.353
M1	Tuning Indicator		AE.504.26
LA1	Dial lamp, 6.0V, 0.05A, tub. screw		7121D

ALIGNMENT

The locations of the various trimming points used in alignment, are shown in drawings on the opposite page. Before commencing alignment, fully open the tuning capacitor and set the dial cursor to the stop mark (small triangle at 1622 kc/s).

I.F. Alignment

Use a dummy of 0.033μF capacitor in series with the signal generator lead. Adjust signal generator to 455 kc/s, keep tuning capacitor fully open and press broadcast band switch button, No 3.

With generator applied to base TS1 peak cores of S20-21 and S27-28-29.

With generator applied to base TS2 peak cores of S25-26 and S22-23-24.

With generator applied to base TS1 peak cores of S20-21 and S19 and C22.

Repeat the above adjustments.

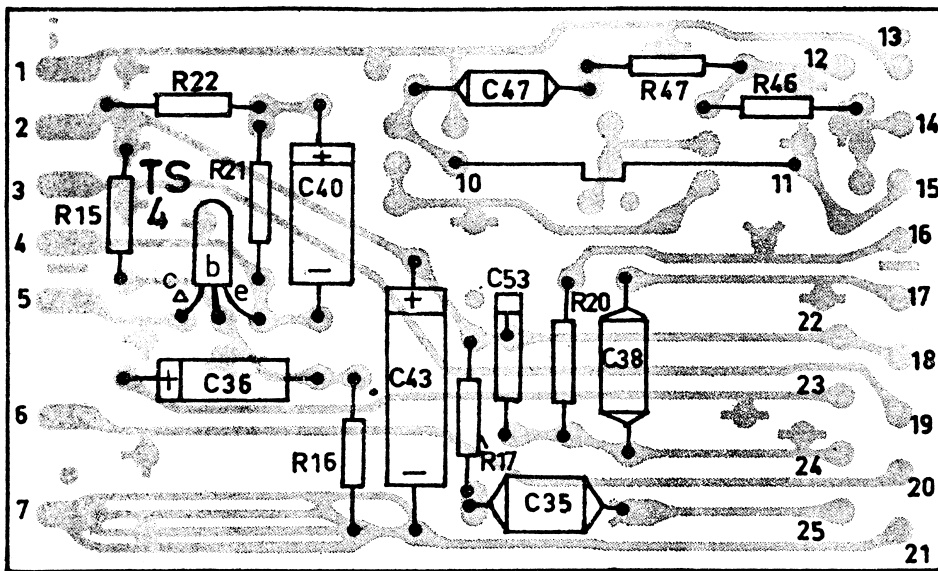
R.F. Alignment

Use standard dummy and apply to external aerial socket. Alignment points marked on the dial scale are at frequencies of 1500 kc/s, 3.72 Mc/s, 9.33 Mc/s, 20.6 Mc/s and 550 kc/s, 1.68 Mc/s, 4.75 Mc/s, 11.8 Mc/s

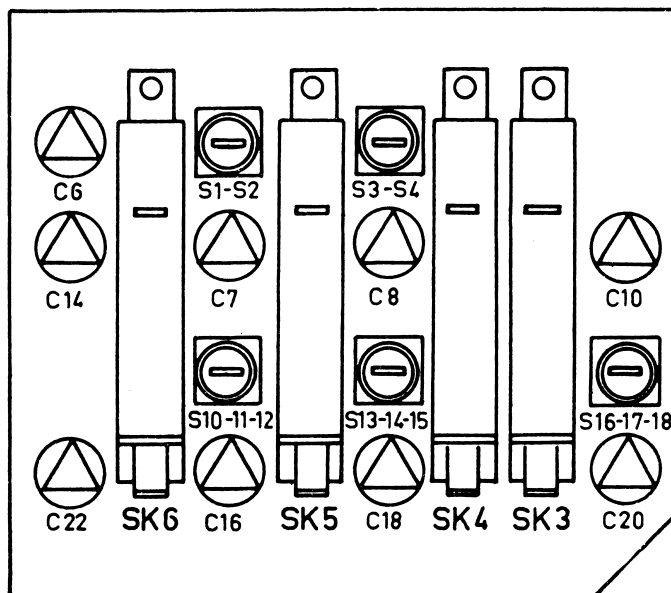
Proceed as set out in the following table.

Band	Frequency	Trim to Peak
B/C	550 kc/s	S16-17-18, S7-8
SW3	1.68 Mc/s	S13-14-15, S5-6
SW2	4.75 Mc/s	S10-11-12, S3
SW1	11.8 Mc/s	S1
B/C	1500 kc/s	C20, C10
SW3	3.72 Mc/s	C18, C8
SW2	9.33 Mc/s	C14, C7
SW1	20.6 Mc/s	C16, C6

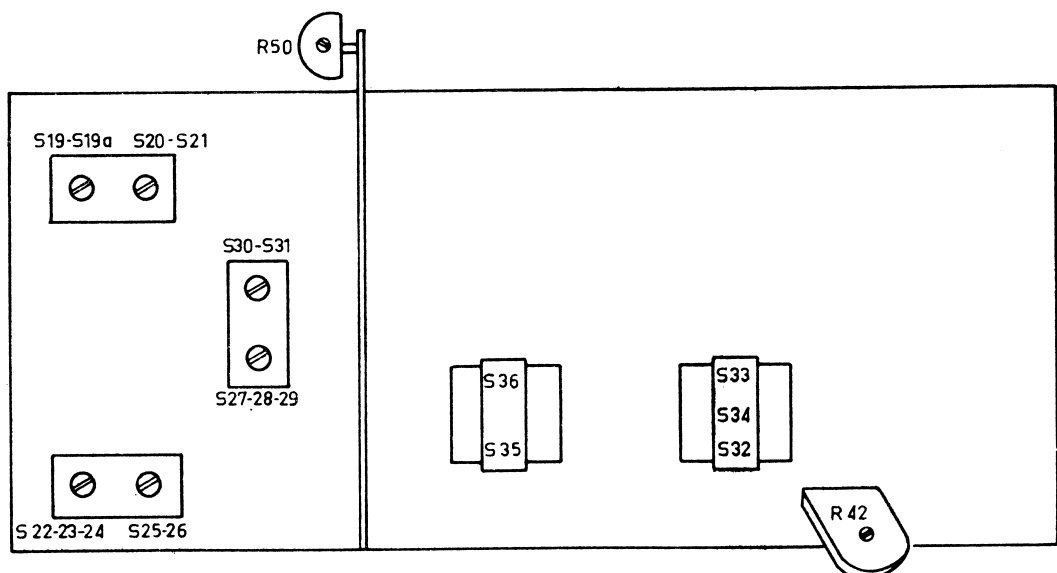
Repeat these adjustments.



BOARD 2.

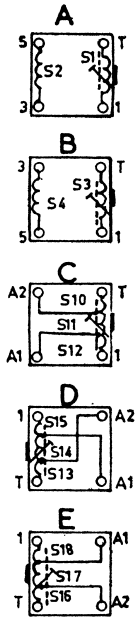
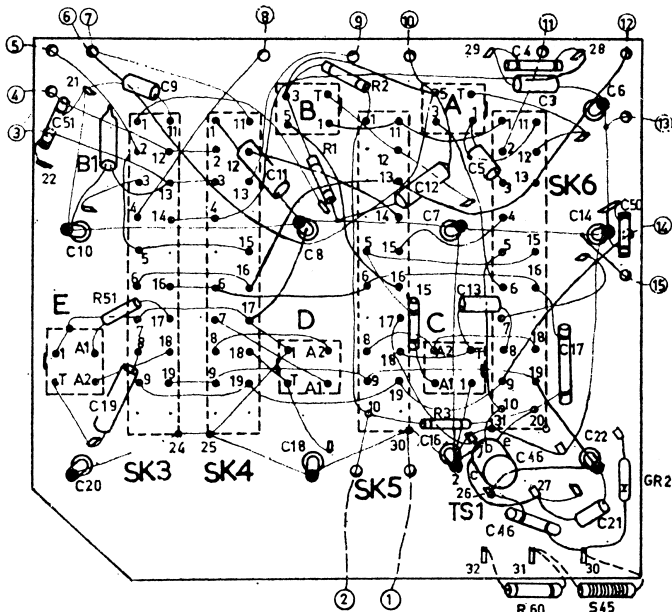
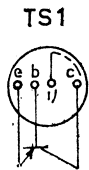


TRIMMER
LOCATION



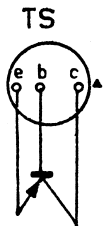
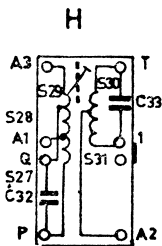
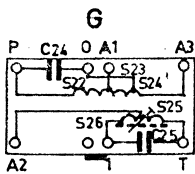
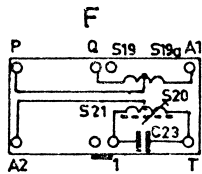
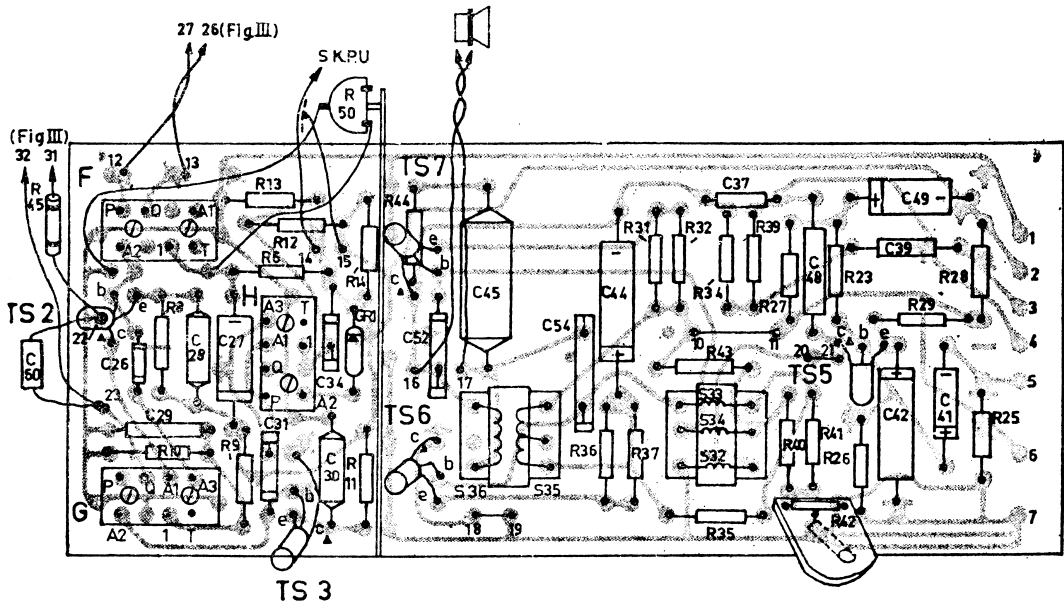
L4X25T

S	E	B. D.		A. C.		45.
C	51.10.20.19.	9.	11.	8.18.	15.12.	7.16.13.5. 4. 3.4.6.17.6.14.22.21.50.
R	51.		1.	2.	3.	60.



BOARD 3.

S	G				F				H				36				35				33				34				35																																																																											
C	60	26				29				28				27				31				34				30				52				54				44				37				48				42				39				49				41																																										
R	45				8				10				9				13				12				6				50				11				14				44				36				31				37				32				34				43				39				27				40				42				41				23				26				28				25			



BOARD 1.

S	9.	2.4.6.8.1.3.5.7	10.÷18.	19.19.a.20.21.	45.	22.23.24.25.26.	27.28.29.30.31.	32.33.34.	35.36.
C	4.	12.51.10.	5.6.7.8.1.11.	9.18.20.16.13.19.17.25.15.14.46.21.22.	27.	23.	26.28.24.60.25.65.29.	31.30.32.47.33.34.	35.53.36.38.39.37.40.41.48.43.49.42.54.52.44.45.
R	1.	3.2.	51.	6.50.	8.	45.60.9.10.	46.11.47.	12.13.20.14.17.18.19.15.16.39.34.22.21.25.26.23.27.28.29.	40.41.42.35.43.31.32.36.37.44.

