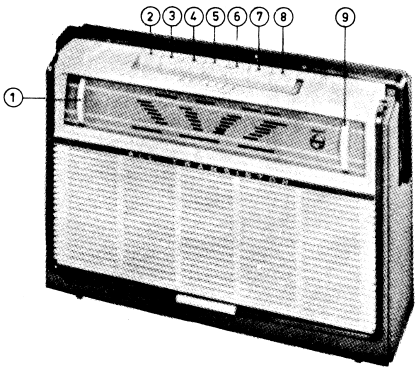
21 DEC 1960

PHILIPS Service

notes

L4X95T



SPECIFICATIONS

Tuning Range:	1622 - 517 Kc/s (185-590 M) 3.9 - 1.6 Mc/s (77-187 M) 9.9 - 4.65 Mc/s (30.5-64.5 M) 22 - 11 Mc/s (13.7-26 M)
Intermediate Frequency:	452 Kc/s
Power Supply:	Battery 9V (6xtype 950)
Battery Consumption:	13-16 mA (without signal)
Dimensions:	12¼" x 8¾" x 4"
Output:	500 mW

CONTROL FUNCTIONS

1 = Volume Control
2 = Dial Illumination
3 = Tone Switch
4 = Tuning range Switch 185 - 580 M
5 = Tuning range Switch 77 - 187 M
6 = Tuning range Switch 30.5 - 64.5M
7 = Tuning range Switch 13.7 - 26 M
8 = Battery Off-switch
9 = Tuning Control

SEMI-CONDUCTORS AND FUNCTIONS

Function	No.	Type	
Frequency Converter	TS1	OC170	Transistor
1st I.F. Amplifier	TS2	OC45	Transistor
2nd I.F. Amplifier	TS3	OC45	Transistor
1st Audio Amplifier	TS4	OC75	Transistor
2nd Audio Amplifier	TS5	OC75	Transistor
Power Output Stage	TS6) TS7)	2OC72	Transistor
Demodulator and AVC.	GR1	OA79	Germanium diode
Limiting diode	GR2	OA85	Germanium diode

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THE CENTRAL SERVICE DEPARTMENT - PHILIPS ELECTRICAL INDUSTRIES PTY. LTD.

Sydney Melbourne Brisbane Adelaide Perth Hobart

To Remove the Radio from the Cabinet:

1. Loosen the two knurled screws at the bottom of the cabinet and open the rear cover.
2. Unsolder the loop aerial connections in the top-right hand and top-left hand corners.
3. Unsolder the two loudspeaker connecting wires.
4. Remove the two screws in the battery holder and lift out the battery holder.
5. Unscrew the following screws:

   One on each side of the tuning assembly, fixing the mounting bracket to the cabinet, and one in the centre of the bottom edge of the range-switch mounting board.

6. The tuning assembly together with the circuit panels may now be lifted from the cabinet.

Refitting of the Radio into the Cabinet:

Reverse the removal procedure.

ALIGNMENT PROCEDURE

I.F. Circuits: Unscrew all cores, with the exception of S27, as far as possible.

Tuning Capacitor	Signal 452 Kc/s	Adjust to Maximum
Maximum	Via 33000 pF to the base of TS3	S27, S28, S29, S30, S31
	Via 33000 pF to the base of TS2	S22, S23, S24, S25, S26
	Via 100K ohm. to the collector of TS1	S19, S20, S21
Minimum	Via 100K ohm to the collector of TS1	C22

R.F. Circuits: Adjust pointer to minimum position of the tuning capacitor.
Turn Short Wave aerial upwards.
Trimming point 1 refers to the left hand side of the dial.
Trimming point 2 refers to the right hand side of the dial.

Tuning Range	Trimming Point	Signal	Adjust to Maximum
MW	1	1500 Kc/s	C20, C10
	2	550 Kc/s	S16, S17, S18, S7, S8
SW 3	1	3.72 Mc/s	C18, C8
	2	1.68 Mc/s	S13, S14, S15, S5, S6
SW 2	1	9.33 Mc/s	C14, C7
	2	4.75 Mc/s	S10, S11, S12, S3
SW 1	1	20.6 Mc/s	C16, C6
	Tune Receiver	11.8 Mc/s	S1

N.B. After R.F. Alignment the whole sequence should be repeated for optimum results.

PARTS LISTS

INDUCTORS

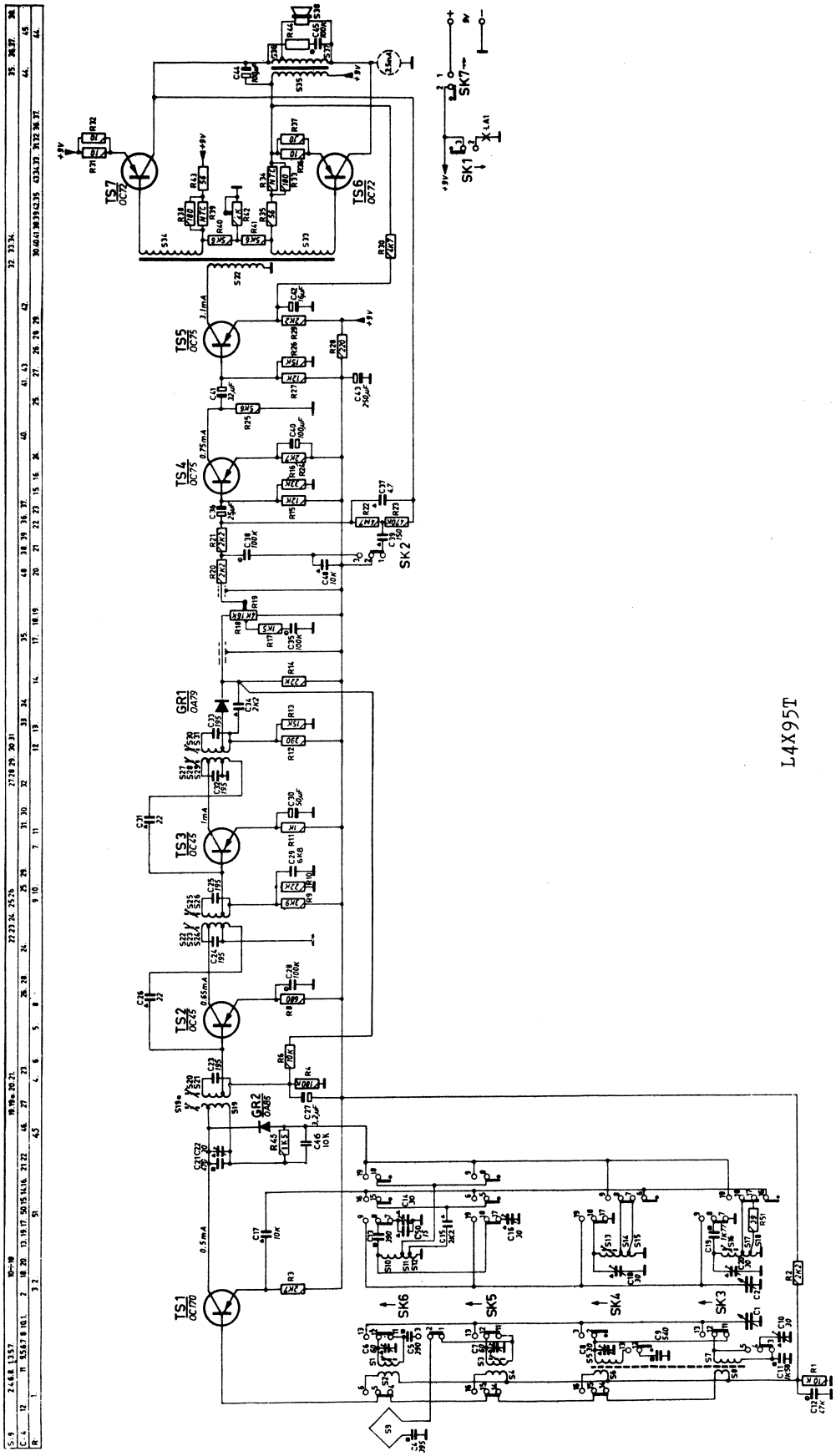
Position	Function	Code No.
S1) S2)	Aerial Coil 13.7 - 26 M	A3 804 89
S3) S4)	Aerial Coil 30.5 - 64.5M	A3 804 90
S5) S6) S7) S8)	Aerial Coils 77 - 187 M 185 - 580 M	A3 804 86
S10) S11) S12)	Oscillator Coil 13.7 - 26 M 30.5 - 64.5 M	A3 804 91
S13) S14) S15)	Oscillator Coil 77 - 187 M	A3 804 92
S16) S17) S18)	Oscillator Coil 185 - 580 M	A3 129 32
S19) S20)) S21)	1st I.F. Transformer	A3 129 35
S22) S23) S24) S25) S26)	2nd I.F. Transformer	A3 129 34
S27) S28) S29) S30) S31)	3rd Transformer	A3 129 33
S32) S33) S34)	Driver Transformer	A3 162 11
S35) S36) S37)	Loudspeaker Transformer	A3 154 11
S38	Loudspeaker (70Ω)	AD 3500 KWZ

RESITORS

Circuit No.	Description	Code No.
R1	10K ohm ± 1% ½ W	901/10K
R2	2.2K ohm ± 1% ½ W	901/2K2
R3	2.7K ohm ± 1% ½ W	901/2K7
R4	180K ohm ± 1% ½ W	901/180K
R6	10K ohm ± 1% ½ W	901/10K
R8	680 ohm ± 1% ½ W	901/680E
R9	3.9K ohm ± 1% ½ W	901/3K9
R10	22K ohm ± 1% ½ W	901/22K
R11	1K ohm ± 1% ½ W	901/1K
R12	390 ohm ± 1% ½ W	901/390E
R13	15K ohm ± 1% ½ W	901/15K
R14	22K ohm ± 1% ½ W	901/22K
R15	12K ohm ± 1% ½ W	901/12K
R16	33K ohm ± 1% ½ W	901/33K
R17	1.5K ohm ± 1% ½ W	901/1K5
R18) R19)	16K ohm) tapped 4K ohm) Potentiometer	E 098 AG/00B25
R20	2.2K ohm ± 1% ½ W	901/2K2
R21	2.2K ohm ± 1% ½ W	901/2K2
R22	4.7M ohm ± 1% ½ W	901/4M7
R23	470K ohm ± 1% ½ W	901/470K
R24	2.7K ohm ± 1% ½ W	901/2K7
R25	5.6 ohm ± 1% ½ W	901/5K6
R26	15K ohm ± 1% ½ W	901/15K
R27	12K ohm ± 1% ½ W	901/12K
R28	220 ohm ± 1% ½ W	901/220E
R29	2.2K ohm ± 1% ½ W	901/2K2
R30	4.7K ohm ± 1% ½ W	901/4K7
R31	10 ohm ± 1% ½ W	901/10E
R32	10 ohm ± 1% ½ W	901/10E
R33	180 ohm ± 1% ½ W	901/180E
R34	N.T.C.	B8 320 01A/130E
R35	56 ohm ± 1% ½ W	901/56E
R36	10 ohm ± 1% ½ W	901/10E
R37	10 ohm ± 1% ½ W	901/10E
R38	180 ohm ± 1% ½ W	901/180E
R39	N.T.C.	B8 320 01A/130E
R40	5.6 ohm ± 1% ½ W	901/5K6
R41	5.6 ohm ± 1% ½ W	901/5K6
R42	2K ohm Bias Potentiometer	B1 514 54
R43	56 ohm ± 1% ½ W	901/56E
R44	820 ohm ± 1% ½ W	901/820E
R45	1.5K ohm ± 1% ½ W	901/1K5
R51	39 ohm 1% ½ W	901/39E

Circuit No.	Description	Code No.
	CONDENSORS	
C1)	Variable	49 002 37
C2)	Condensor	
C4	395 pF ± 2½% 500V Styrene	B1 514 55
C5	390 pF ± 2½% 500V Styrene	B1 514 44
C6	60 pF Concentric air trimmer	908/60E
C7	60 pF Concentric air trimmer	908/60E
C8	30 pF Concentric air trimmer	908/30E
C9	540 pF ± 2½% 500V Styrene	B1 514 56
C10	30 pF Concentric air trimmer	908/30E
C11	1580 pF ± 2½% 500V Styrene	B1 514 57
C12	47000 pF ± 10% 125V Polystyrene	906/L47K
C13	390 pF ± 2½% 500V Styrene	B1 514 44
C14	30 pF Concentric air trimmer	908/30E
C15	2200 pF 500V tubular ceramic	904/2K2
C16	30 pF Concentric air trimmer	908/30E
C17	10000 pF 500V tubular ceramic	904/10K
C18	30 pF Concentric air trimmer	908/30E
C19	1770 pF ± 2½% 500V Styrene	B1 514 58
C20	30 pF Concentric air trimmer	908/30E
C21	470 pF ± 2½% 500V Styrene	B1 514 23
C22	30 pF Concentric air trimmer	908/30E
C26	22 pF 500V 5% tubular ceramic	904/22E
C27	3.2 mF 70V Electrolytic	909/E3.2
C28	0.1 mF ± 10% 125V Polystyrene	906/L100K
C29	6800 pF 500V Ceramic Tubular	904/6K8
C30	50 mF 12½V Electrolytic	909/B50
C31	22 pF ± 5% 500V Ceramic tubular	904/22E
C34	2200 pF 500V Ceramic tubular	904/2K2
C35	0.1 mF ± 10% 125V Polystyrene	906/L100K
C36	25 mF 25V Electrolytic	AC 5705/25
C37	4.7 pF ± 0.5pF tubular ceramic	904/4E7
C38	0.1 mF ± 10% 125V Polystyrene	906/L100K
C39	150 pF ± 2% 700V tubular ceramic	904/150E
C40	100 mF 4V Electrolytic	AC 5710/100
C41	32 mF 40V Electrolytic	AC 5714/32
C42	16 mF 12½V Electrolytic	AC 5703/16
C43	250 mF 12½V Electrolytic	910/B250
C44	100 mF 12½V Electrolytic	909/B100
C45	0.1 mF ± 10% 125V Polystyrene	906/L100K
C46	10000 pF ± 2% 500V tubular ceramic	904/10K
C48	10000 pF ± 500V tubular ceramic	904/10K

Description	Code No.
MISCELLANEOUS PARTS	
Cabinet	A3 007 28
Front	A3 756 34
Aerial	A3 749 31
Handle	A3 358 76
Knob for Handle	A3 510 53
Push Button (2-7)	P5 420 22/139
Push Button (8)	A3 666 58
Knob(1 and 9)	P4 007 40/417
Battery Holder (complete)	A3 788 15 + A3 788 16
Dial Scale (Aust.)	A3 938 85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OC70
TS2
OC45
TS3
OC45
TS4
OC75
TS5
OC75
TS6
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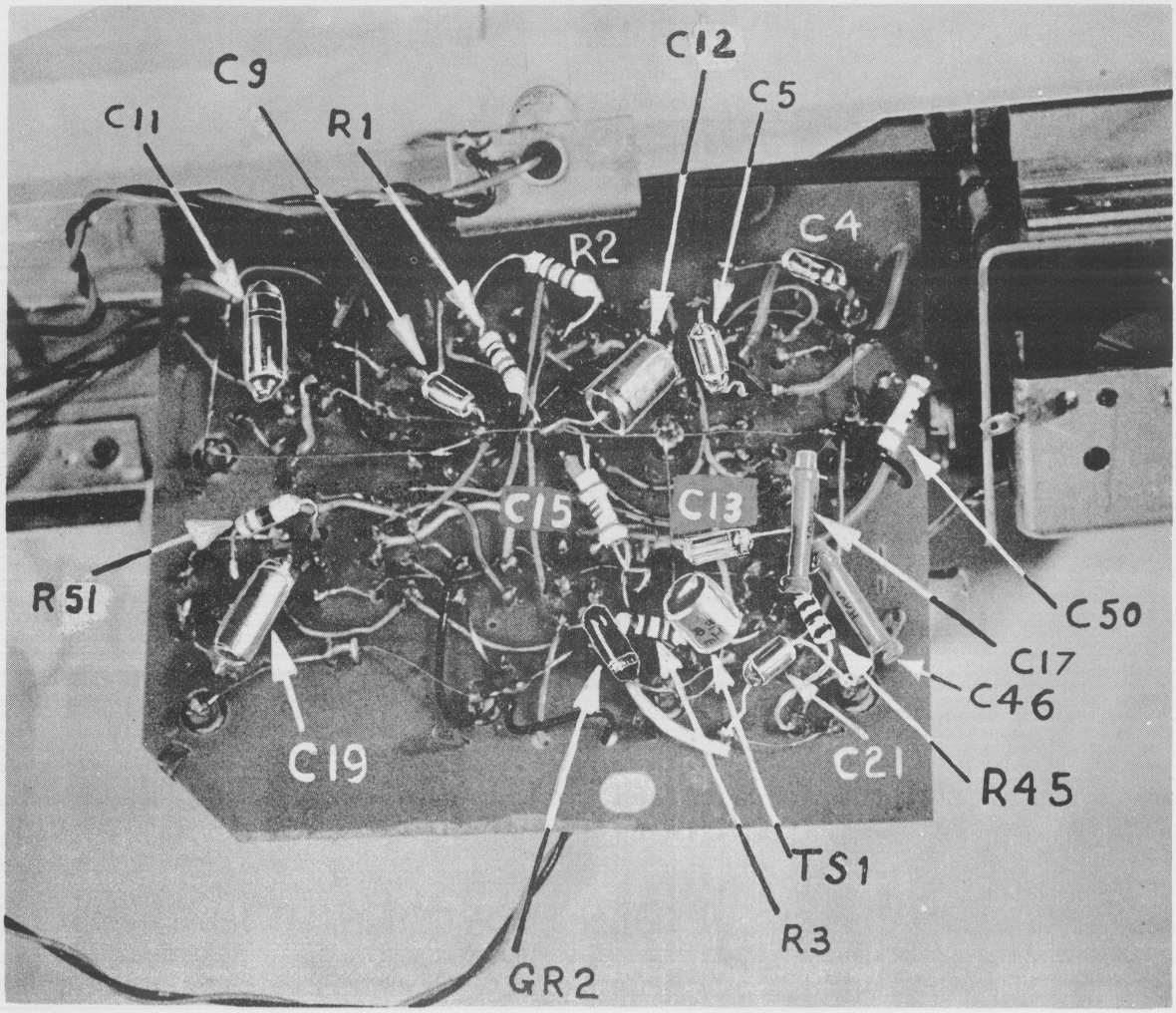
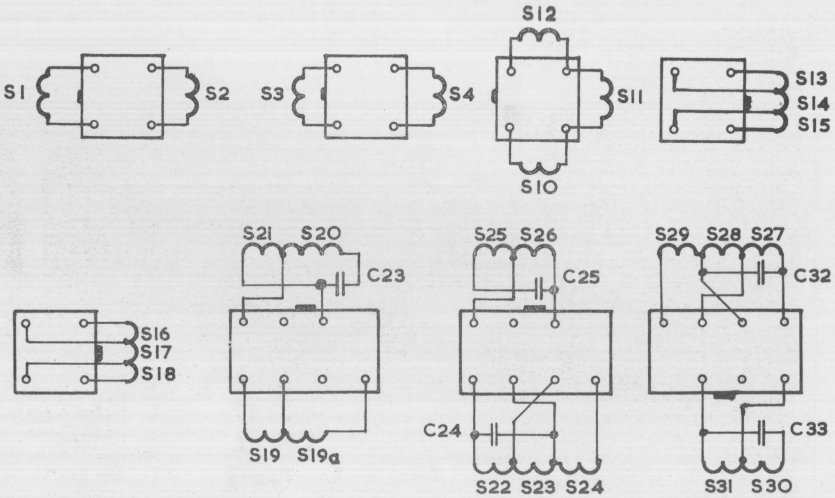
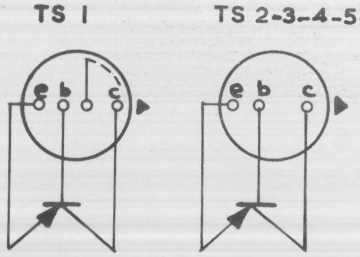
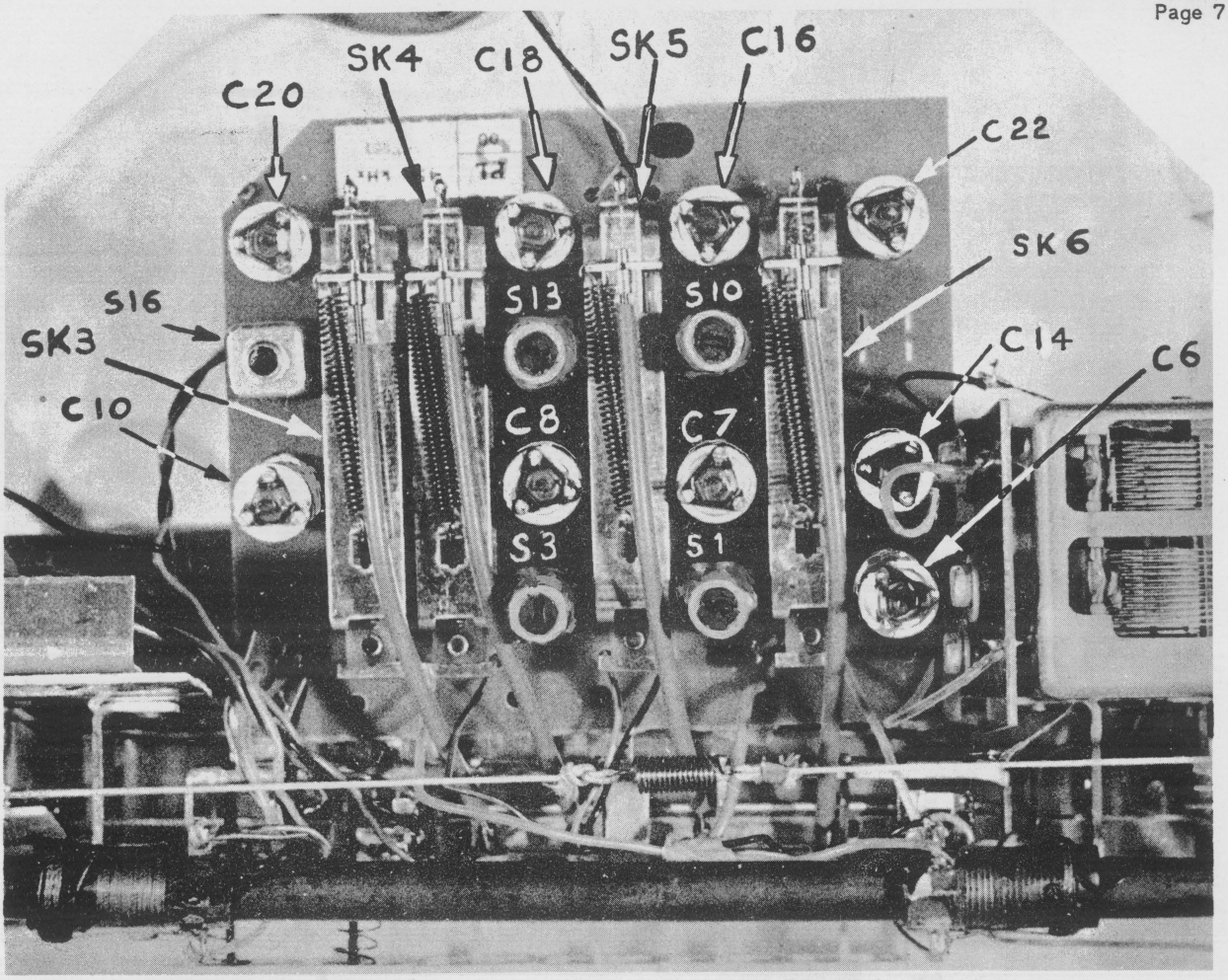






COIL CONNECTIONS
(BOTTOM VIEW)


C20
SK4
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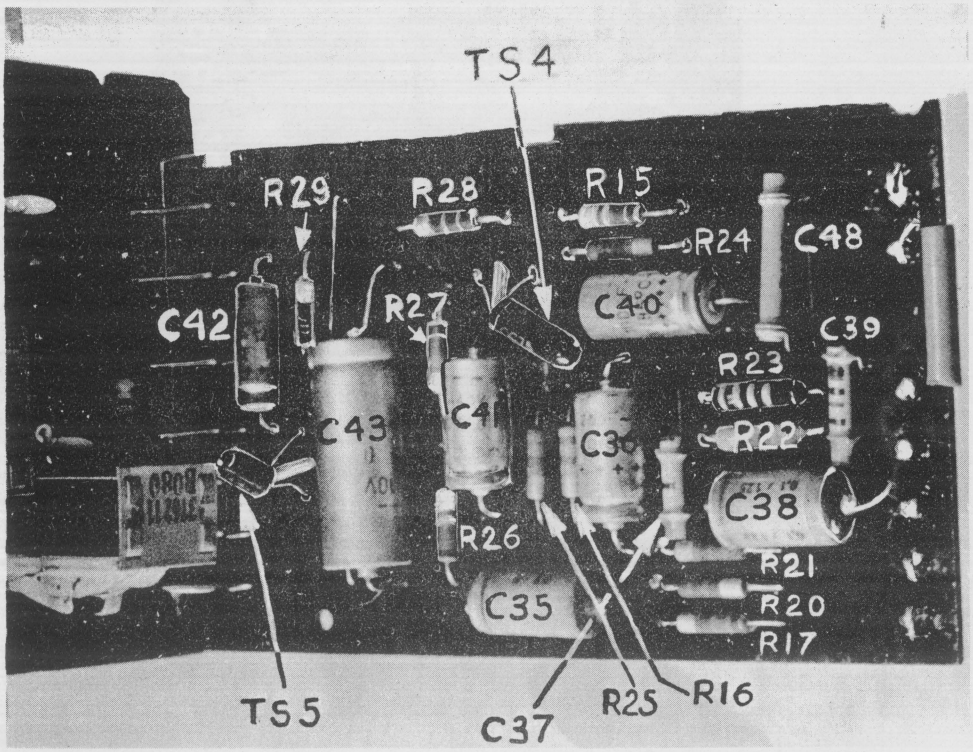
S3
S1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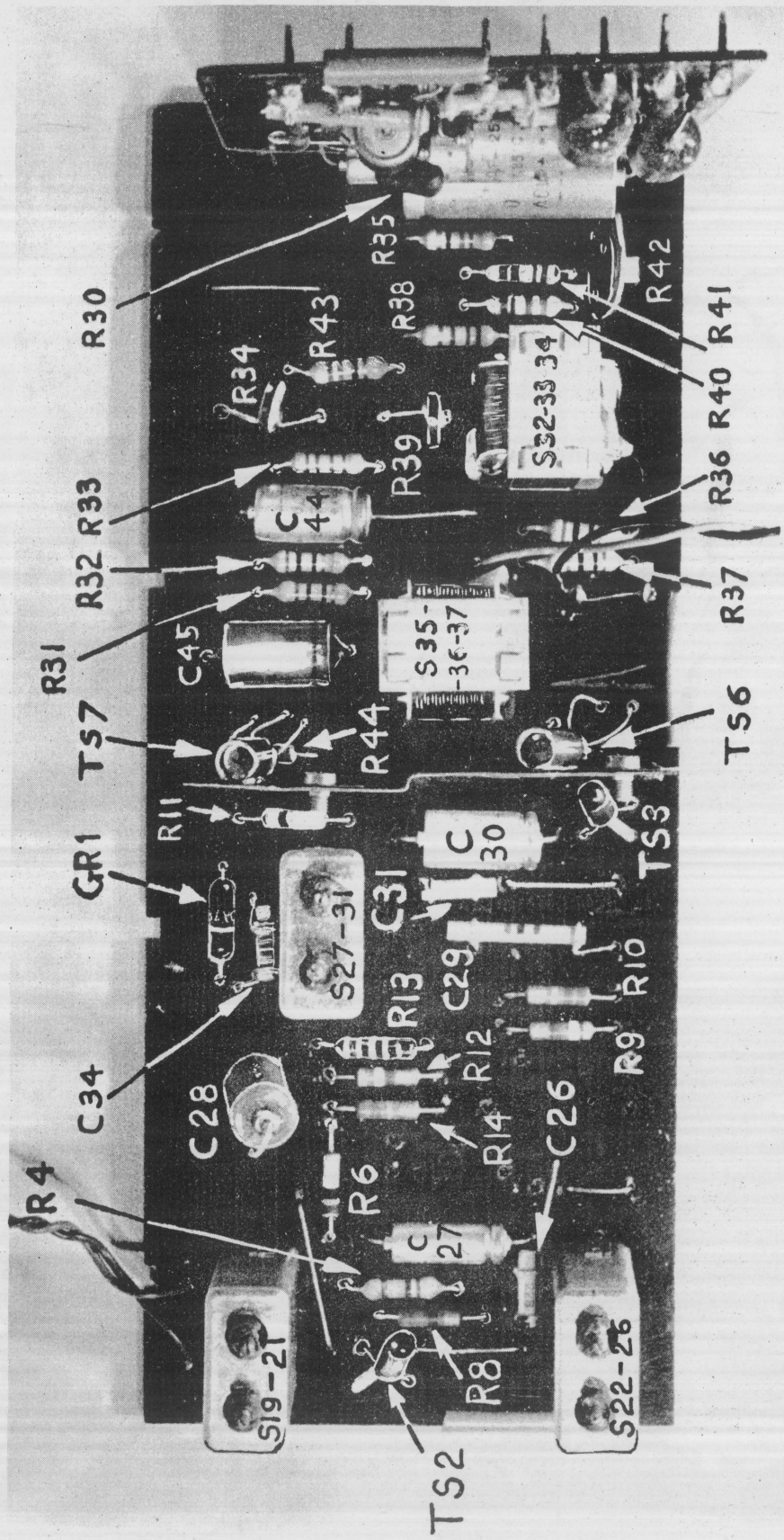
R20
R17
TS5
C37
R25
R16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R44
TS6
R11
C 30
TS3
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S27-31
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R10
R13
R12
R9
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C28
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C26
R6
R4
C 27
R8
S19-21
S22-26
TS2