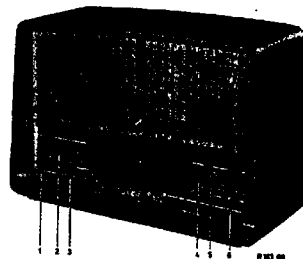


PHILIPS

SERVICE NOTES

for the receiver

B4 X 69 A



1956.

For use on A.C. mains.

Knobs

From left to right:

1. Bass-control.
- 2) Volume control and
- 3) mains switch
4. Tuning
5. Aerial tuning.
6. Treble control.

Push buttons

From left to right:

Pick-up

L.W.	: 746.3 - 2000 m	(402 - 150	kc/s)
M.W.	: 185 - 580 m	(1622 - 517	kc/s)
S.W.3	: 59 - 187 m	(5.1 - 1.6	Mc/s)
S.W.2b	: 20 - 59 m	(15 - 5.05	Mc/s)
S.W.2a	: 11.4 - 20 m	(26.3 - 15	Mc/s)

Valves

- B1 - ECH81
- B2 - EBF80
- B3 - ECC83
- B4 - EL86
- B5 - EL84
- B6 - EZ80
- B7 - EM80

Bandwidth.

The I.F. bandwidth (1:10) measured from g1B1 is approx. 10 kc/s.
The "overall" bandwidth (1:10) measured with the signal on the aerial socket is about $9\frac{1}{2}$ kc/s at 1000 kc/s.

I.F. : 452 kc/s.

Mains voltages

90-110-127-145-180-200-220V.

Power consumption

Approx. 57 Watt (220 V).

Loudspeaker

AD 3700 AM (Z = 800 Ω).

Dial lamps

- L1 - 8024 N - 778
- L2 - 8024 N - 778

Dimensions

Width : 517 mm
Height : 346 mm
Depth : 223 mm

Trimming the receiver.

General

Volume control to maximum.

Tone controls to maximum high and maximum low.

Connect a voltmeter across the external loudspeaker connections.

Unless otherwise stated, all signals are applied to the aerial socket via a dummy aerial.

When adjusting one makes use of trimming points on the dial.

Trimming point 1 is situated entirely at the left on the dial.

Trimming point 2 is situated entirely at the right on the dial.

Before trimming, adjust the pointer at minimum position of the variable capacitor to trimming point 1.

Before trimming the I.F. bandfilters, unscrew the cores of S22, S21, S19, S20, S17, S17a as far as possible.

	Wave-range	Trimming point	Signal	Trim	Indication
I.F. bandfilters	M.W.	1	452 kc/s via 33000 pF to g1-B1	S22 S21 S19 S20 S21	Max. output voltage
Series tuned I.F. filter and wavetrap	M.W.	2	452 kc/s	S17 S17a	Min. output voltage
R.F. and oscillator circuits	L.W.	2	172 kc/s	S33 S29-S29a	Repeat Max. output voltage
		1	405 kc/s	C44 C38	
	M.W.	2	600 kc/s	S31 S28-S28a	Repeat Max. output voltage
		1	1630 kc/s	C14 C10	
	S.W.3	2	1.9 Mc/s	S16 S9	Repeat Max. output voltage
		1	5.15 Mc/s	C13 C9	
	S.W.2b	2	6 Mc/s	S14 S7	Repeat Max. output voltage
		1	15.1 Mc/s	C12 C8	
	S.W.2a	2	15.66 Mc/s	S12 S5	Repeat Max. output voltage
		1	26.4 Mc/s	C11 C7	

Driving cables.

The path and the length of the driving cables are given in fig.1. The variable capacitor has been drawn here in maximum position, the ferroceptor in middle position.

<u>Waverange switch wafer</u>	<u>Function</u>
SK1	Pick-up
SK2	L.W.
SK3	M.W.
SK4	S.W.3
SK5	S.W.2b
SK6	S.W.2a

All waverange switch wafers are drawn in position "off".

Power transformer

If the original supply transformer becomes defective, it should be replaced by the respective service transformer mentioned in the electrical parts list.

For the connections see fig.2.

LIST OF PARTS

When ordering, always quote:

1. Code number.
2. Description and colour.
3. Type number of the receiver.

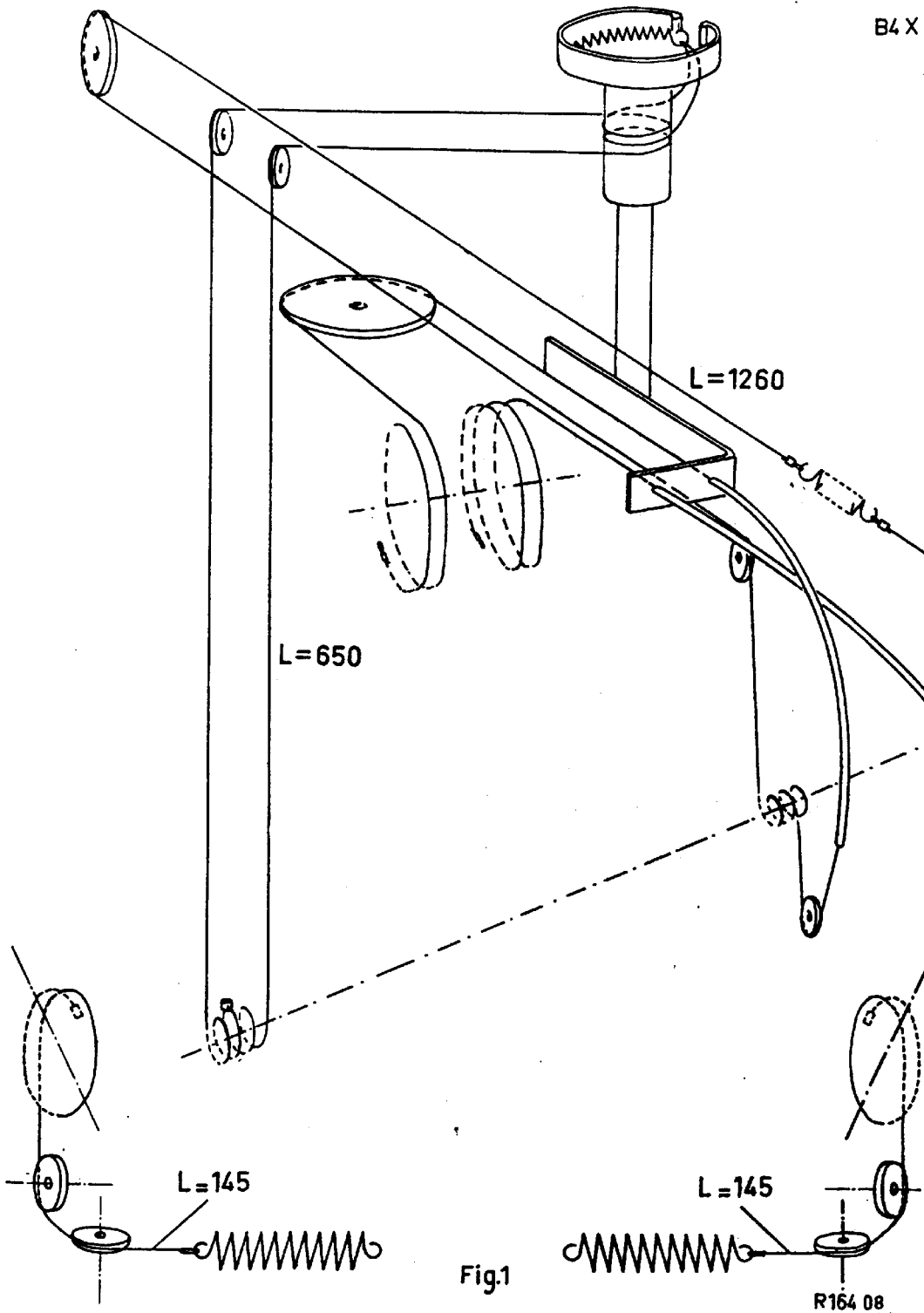
<u>Description</u>	<u>Code number</u>
Cabinet	A3 770 12.0
Push button	A3 417 61.0
Knob (tuning)	A3 751 59.0
Knob (volume control, small)	A3 751 59.0
Knob (volume control, large)	A3 752 27.0
Knob (aerial tuning)	A3 751 61.0
Leaf spring (in large knob, right)	A3 650 18.0
Leaf spring (in small knob)	A3 522 08.0
Knob (tone control)	A3 752 69.0
Leaf spring (for fixing coil)	A3 651 89.0
Voltage adaptor	A3 229 76.0
Tension spring (in driving cord aerial tuning)	89 312 10.3
Tension spring (push button unit)	A3 646 14.0
Preession spring (push button unit)	A3 644 85.0
Tension spring (in driving cord var.capacitor)	A3 646 47.0
Driving drum (ferroceptor)	P4 380 53.0
Spring (tone control indication)	A3 759 25.0
Connection for external loudspeaker (800 Ω)	A3 410 65.0
Dial (oversea)	A3 807 21.0
Dial (south)	A3 807 19.0

B4X69A

S1			A3 141 35.3	C13	22	pF	A9 999 08/22E
S2				C14	22	pF	A9 999 08/22E
S3				C16	270	pF	A9 999 04/270E
S4				C17	150	pF	A9 999 04/150E
S5			A3 118 40.0	C18	10	pF	A9 999 04/10E
S6				C19	68	pF	A9 999 04/68E
S7			A3 118 41.0	C20	56	pF	A9 999 04/56E
S8			A9 999 21/	C21	39000	pF	A9 999 06/39K
S9			60-187m	C22	470	pF	A9 999 04/470E
S10				C23)	See coils		
S11			A3 127 58.0	C24)	Voir bobines		
S12					Veanse bobinas		
S13				C25	10000	pF	A9 999 04/10K
S13a			A3 125 58.0	C26)	See coils		
S14				C27)	Voir bobines		
					Veanse bobinas		
S15				C28	82	pF	A9 999 04/82E
S16			A9 999 23/60- 187m	C30	12000	pF	A9 999 06/12K
S17				C31	10000	pF	A9 999 04/10K
S17a			A3 118 80.0	C32	22000	pF	A9 999 06/22K
S19				C33	2700	pF	A9 999 06/2K7
S20				C34	2200	pF	A9 999 06/2K2
S23	110	pF	A9 999 25/452	C35	4700	pF	A9 999 06/4K7
S24	195	pF		C36	2200	pF	A9 999 06/2K2
S21				C37	680	pF	A9 999 04/680E
S22				C38	22	pF	A9 999 08/22E
S26	110	pF	A9 999 25/452	C39	68	pF	A9 999 04/68E
S27	195	pF		C40	120	pF	A9 999 04/120E
S28				C41	2200	pF	A9 999 05/2K2
S28a			A3 118 35.0	C42	455	pF	A9 999 05/430E
S29						par	A9 999 05/24E
S29a			A3 118 54.0	C43	180	pF	A9 999 05/180E
S30				C44	22	pF	A9 999 08/22E
S31			A3 125 93.0	C45	56	pF	A9 999 04/56E
S32				C46	12000	pF	A9 999 06/12K
S33			A9 999 23/	C47	22000	pF	A9 999 04/22K
			780-2000m	C48	200	pF	A9 999 05/200E
C1	50	μF		C49	15	pF	A9 999 04/15E
C1a	50	μF	A9 999 13/	C50	18	pF	A9 999 04/18E
C2	50	μF	50+50+50	C51	10	pF	A9 999 04/10E
C3				C52	1000	pF	A9 999 06/1K
C4			49 001 94.0	C53	4700	pF	A9 999 06/4K7
C5	3000	pF	A9 999 05/3K	C54	10	μF	A9 999 09/E10
C6	12	pF	A9 999 04/12E	C55	8	μF	A9 999 11/L8
C7	22	pF	A9 999 08/22E	C56	10000	pF	A9 999 04/10K
C8	22	pF	A9 999 08/22E	C57	5.6	pF	A9 999 04/5E6
C9	22	pF	A9 999 08/22E	R1	400	Ω 3x	49 379 78 par.
C10	12	pF	XU 052 16	R2	33000	Ω	A9 999 00/33K
C11	30	pF	A9 999 08/30E	R3	10	MΩ	A9 999 00/10M
C12	30	pF	A9 999 08/30E	R4	39000	Ω	A9 999 00/39K
				R5	33000	Ω	A9 999 00/33K
				R6	0.1	MΩ	A9 999 00/100K
				R7	2.7	MΩ	A9 999 00/2M7

B4X69A

R8	0.18 MΩ	A9 999 00/180K	R35	0.47 MΩ	A9 999 00/470K
R9	0.27 MΩ	A9 999 00/270K	R36	3.9 MΩ	A9 999 00/3M9
R10	22000 Ω	A9 999 00/22K	R37	1000 Ω	A9 999 00/1K
R11	6800 Ω	A9 999 00/6K8	R38	1000 Ω	A9 999 00/1K
R12	0.8 MΩ	B1 513 57 Schuk Potmeter	R39	390 Ω	A9 999 00/390E
R13	0.1 MΩ		R40	180 Ω	A9 999 00/180E
R14	0.1 MΩ	A9 999 00/1M	R41	1800 Ω	49 380 26
R15	1 MΩ	A9 999 00/1K	R42	100 Ω	B1 636 25
R16	1000 Ω	A9 999 00/1K	R43	820 Ω	49 380 13
R17	1000 Ω	A9 999 00/100K	R44	0.47 MΩ	A9 999 00/470K
R18	0.1 MΩ	A9 999 00/100K	R45	47000 Ω	A9 999 00/47K
R19	0.1 MΩ	A9 999 00/100K			47
R20	0.33 MΩ	A9 999 00/330K			
R21	0.47 MΩ	A9 999 00/470K			
R22	1.6 MΩ	B1 639 48.0 Potmeter			HD/MZ
R23	0.4 MΩ		A9 999 00/220K+		
R24	39000 Ω	A9 999 00/47K			
R25	3.9 MΩ	A9 999 00/3M9			
R26	1500 Ω	A9 999 00/1K5			
R27	12000 Ω	A9 999 00/12K			
R28	0.68 MΩ	A9 999 00/680K			
R29	0.22 MΩ	A9 999 00/220K			
R30	0.27 MΩ	A9 999 00/270K			
R31	47000 Ω	A9 999 00/47K			
R32	0.45 MΩ	B1 639 49.0 Potmeter			
R33	0.05 MΩ		Potmeter		



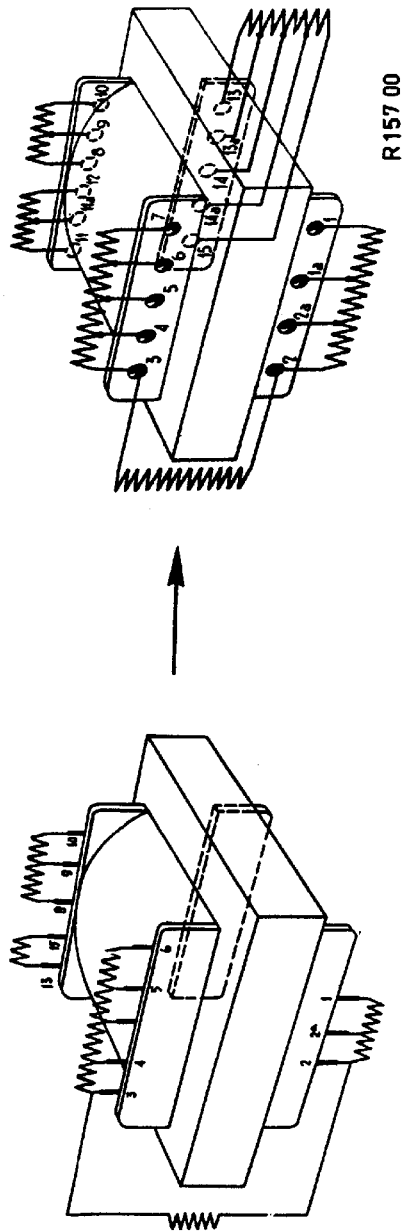
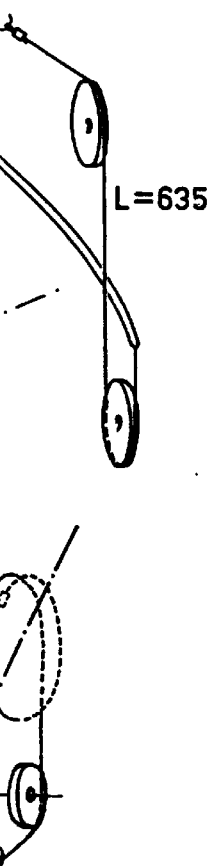
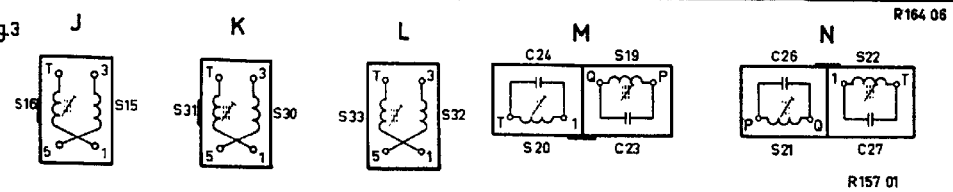
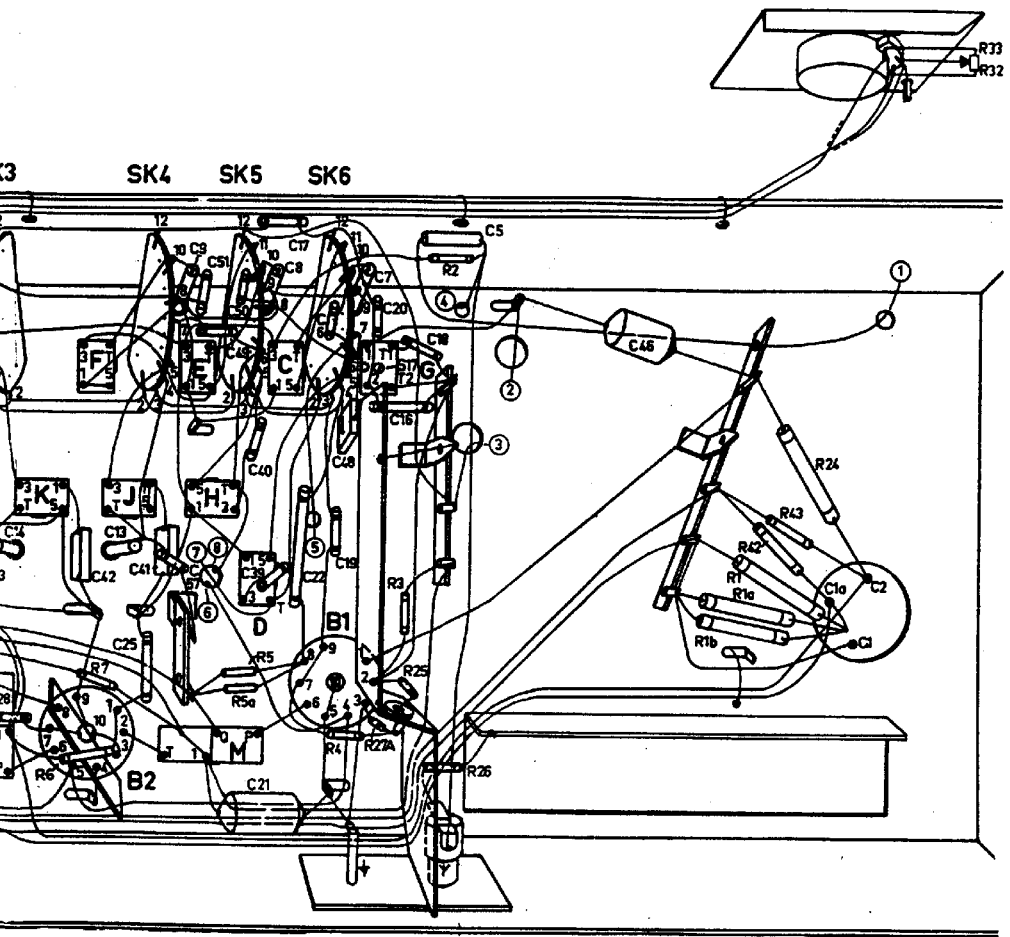


Fig.2

K.	F.	J.	E. A. M.	D. C.	G.		
14.28.	42. 13. 25.	41. 57.9. 51. 49. 50. 40. 21. 17. 8. 39. 22. 6. 19. 4. 8. 7. 20. 36. 18. 5.				46.	1a. 1. 2.
6. 7.		5. 5a.		4. 27. 3. 25. 2. 26.			1b. 1a. 1. 42. 43. 24. 33. 32.



R157 01

R164 06

S	4	5	6	7	8	9	20	28a	29	29a		10	11	13	15	30	32	12	14	16	31	33		17	17a		19	20														
C		6	5d	5f	6	7	8	9	10	30		39	40	42	43	11	12	13	14	44	45	17	20	19	3	16	18	21	46	22		48	1	23		24		6	7			
R			2						26																		3	24		25	4	27	5									

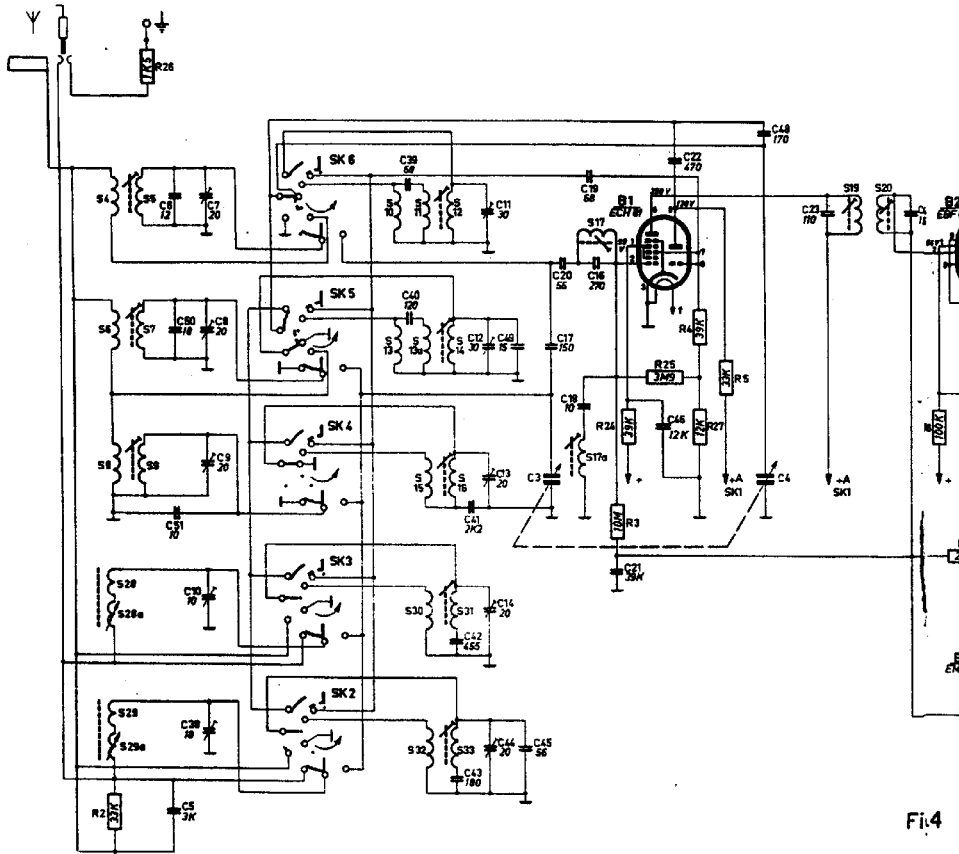


Fig. 4

24	25	29	28	21	22	27	28	30	32	31	32	34	36	35	47	53	52	57	54	55										
6	7	29	8	10	11	12	13	14	15	16	18	19	20	22	23	45	21	29	30	28	31	32	33	35	36	37	38	40	39	41

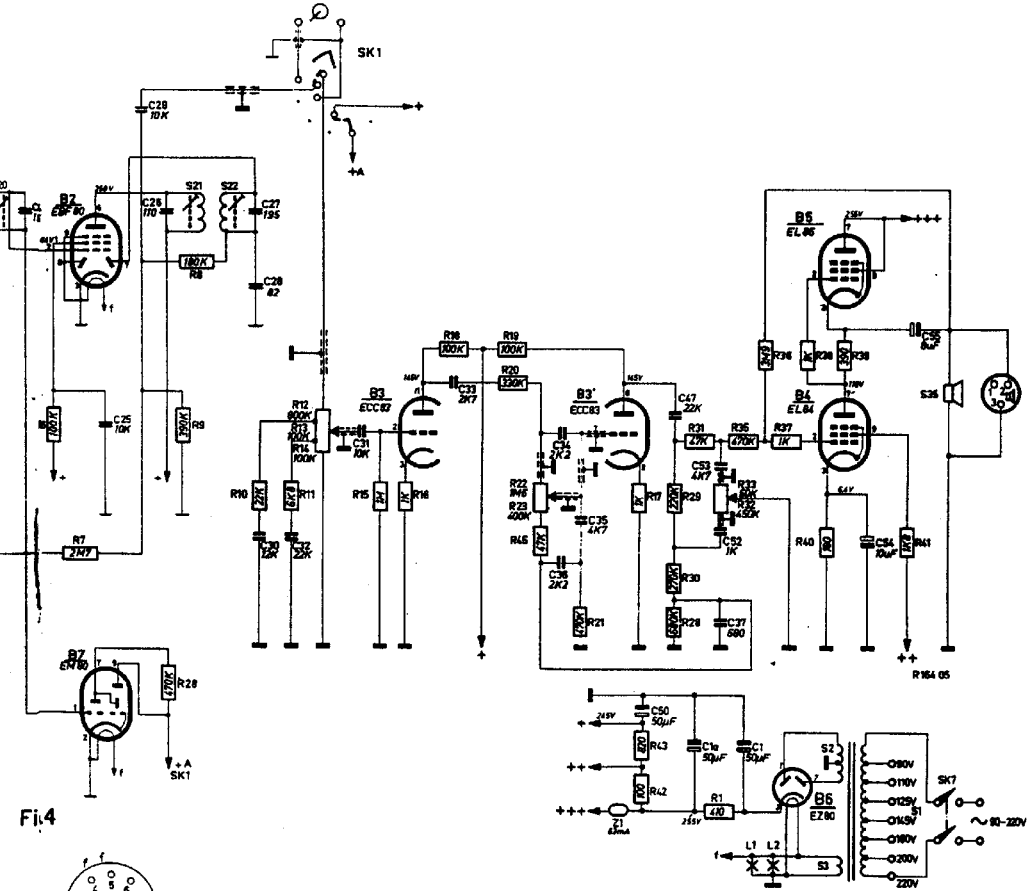
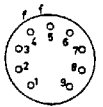
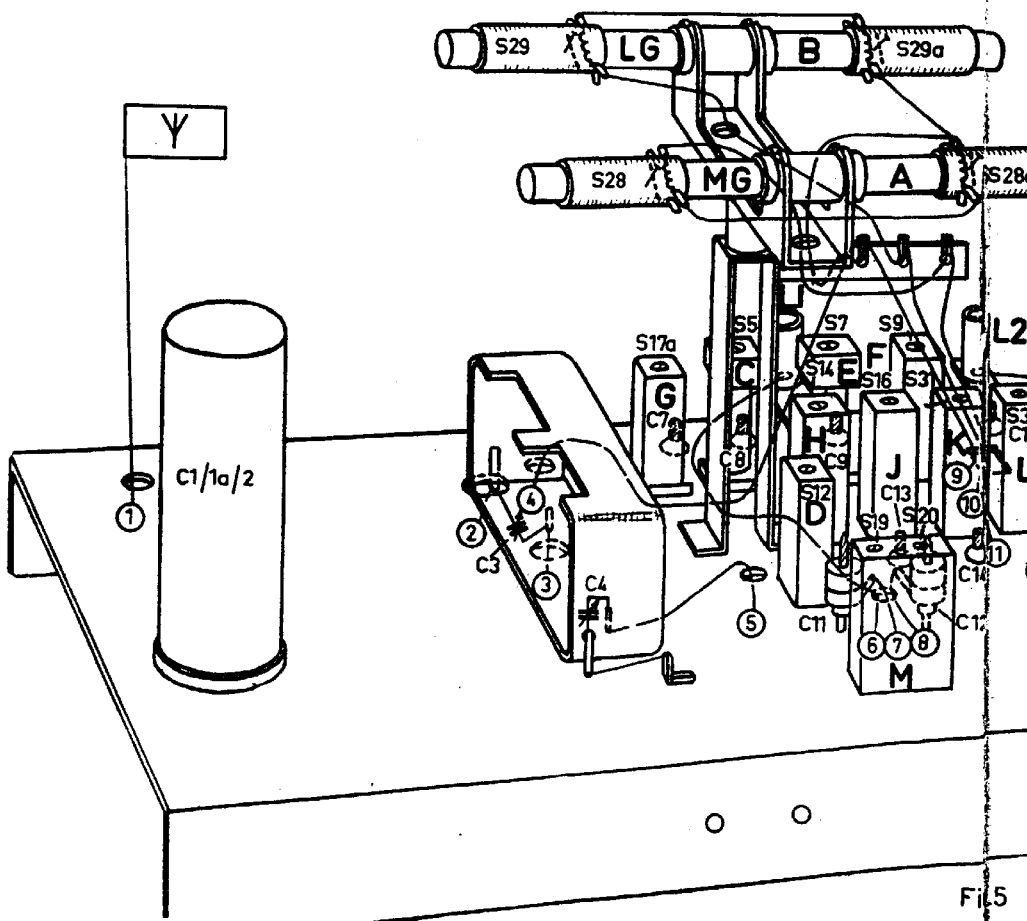
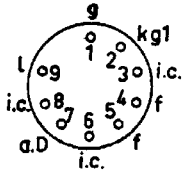


Fig. 4



B1-7





B7

