

PHILIPS

SERVICE NOTES

For the
receiver
BX 459 A



1956. For A.C. mains supply.

General

Controls:

From left to right:

Small knob: Mains switch + volume control

Large knob: Tone control + bass switch

Small knob: Tuning

Large knob: Ferroceptor

Push buttons

From left to right:

Pick-up

L.W.	: 748 - 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 - 59,5 m	{ 15 - 5,05 Mc/s }
S.W.2a	: 11,4 - 20 m	{ 26,3 - 15 Mc/s }

Bandwidth

The I.F. bandwidth (1:10) measured from g1 - B1 is approx. 10 kc/s.

The overall bandwidth (1:10) measured from the aerial socket is about 9,5 kc/s at 1000 kc/s

I.F. 425 kc/s

Mains voltages

90,110,125,145,200,220 V

Consumption

Approx. (53 Watt)

Loudspeaker

Type : AD 3700 M (Z=5 Ω)

Dial Lamp

8024 N - 91

Dimensions

Length : 510 mm

Depth : 219 mm

Height : 343 mm

Valves

B1 : ECH 81

B2 : EBF 80

B3 : EBC 81

B4 : EL 84

B5 : EZ 80

B6 : EM 80

93 984 79 1.05

EX 459 A
Trimming the receiver

General:

Tone control to maximum high.
 Volume control to maximum.
 Connect a voltmeter via a trimming transformer to the external loud-speaker sockets.
 If no other instructions are given, all signals are applied to the aerial socket via a dummy aerial.
 Trimming is done with the aid of trimming points on the dial.
 Trimming point 1 is on the left, trimming point 2 is on the right on the dial.
 Before trimming be sure that the pointer is on the trimming point 1, with the variable capacitor at minimum capacitance.
 Unscrew the cores of S22, S21, S19, S20 as far as possible.

I.F. bandfilters

Wave-range	Trimming point	Signal	Trim for max. output voltage
M.W.	1	452 kc/s via 33000 pF to g1 - B1	S22, S21, S19 S20, S21

Series tuned I.F. filter and wavetrap (unscrew the cores of S17 and S17a)

Wave-range	Trimming point	Signal	Trim for min. output voltage
M.W.	2	452 kc/s	S17, S17a, S17

Wave-range	Trimming point	Signal	Trim for max. output voltage	
L.W.	2	172 kc/s	S33, S29, S29a	Repeat
	1	405 kc/s	C44, C38	
M.W.	2	600 kc/s	S31, S28, S28a	Repeat
	1	1630 kc/s	C14, C10	
S.W. 3	2	1,9 Mc/s	S16, S9	Repeat
	1	5,15 Mc/s	C13, C9	
S.W. 2b	2	6 Mc/s	S14, S7	Repeat
	1	15,1 Mc/s	C12, C8	
S.W. 2a	2	15,66 Mc/s	S12, S5	Repeat
	1	26,4 Mc/s	C11, C7	

Repairs and replacements of parts

Uncasing the chassis

1. Remove the rear panel and bottom plate.
2. Unsolder the loudspeaker connections.
3. Remove the spring by which the EM80 is fixed.
4. Remove the two screws on both sides of the chassis.
5. The chassis can be taken carefully out of the cabinet.

Driving cord

The length and path of the driving cords are given in fig. 1. The variable capacitor is drawn in its maximum position and the knob of the ferroceptor in the middle position.

Supply transformer

If the supply transformer becomes defective, it should be replaced by the service transformer mentioned in the electrical parts list. For the connections, see fig. 2.

List of parts.

When ordering, always quote:

1. Codenumber and colour
2. Description.
3. Typenumber of the set.

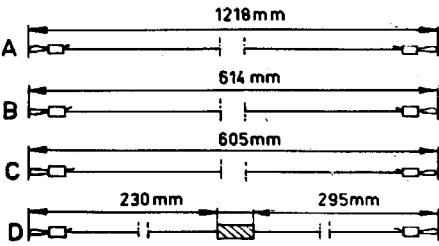
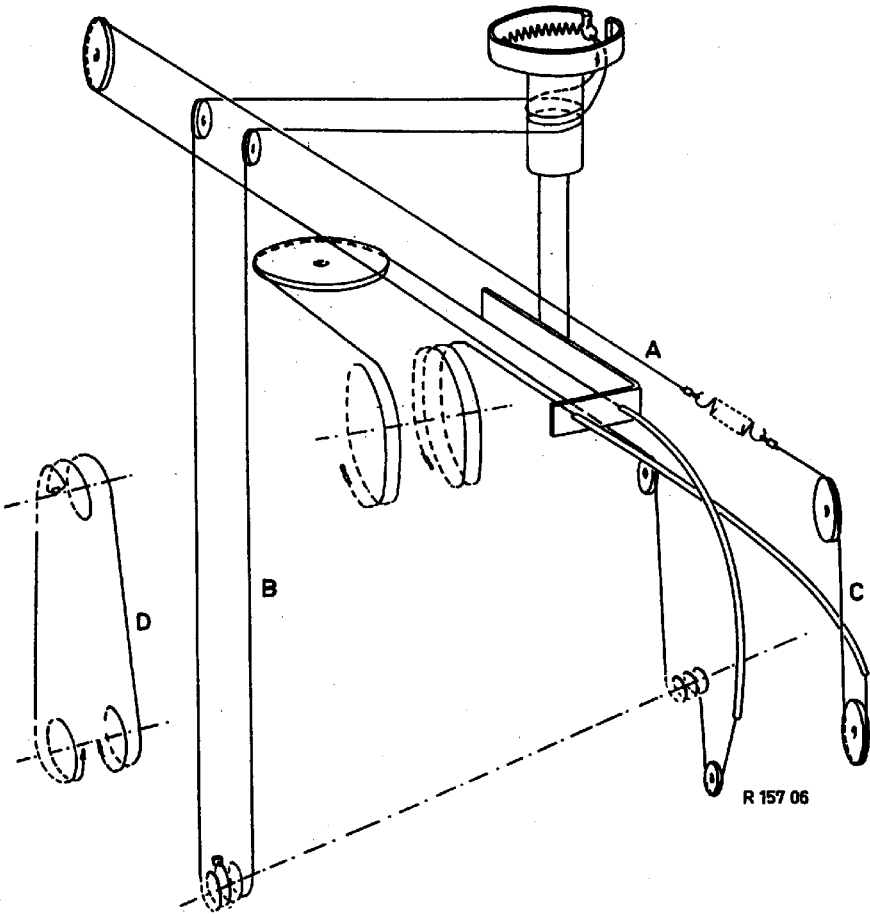
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	Description	Codenumber
	Cabinet	A3 750 87.0
	Push button	A3 417 61.0
	Knob (small)	A3 751 59.0
	Knob (large)	A3 751 61.0
	Leaf spring (small knob)	A3 522 08.2
	Leaf spring (large knob)	A3 650 18.0
	Variable capacitor	49 001 94.0
	Spring (in drum variable capacitor)	89 312 10.3
	Spring (on nylon cord for pointer)	A3 646 14.0
	Spring (push button unit)	A3 646 34.2
	Pression spring (for waverange switch wafers)	A3 644 85.0
	Drum (AA) (ferroceptor)	P4 380 53.0

S1)		A3 141 37.5	C19	68 pF	A9 999 04/68E
S2)			C20	56 pF	A9 999 04/56E
S3			C21	39000 pF	A9 999 06/39K
S4)			C22	470 pF	A9 999 04/470E
S5)		A3 118 40.0	C23	110 pF	} A3 126 84.0
S6)			C24	195 pF	
S7)		A3 118 41.0	C25	10000 pF	A9 999 06/10K
S8)			C26	110 pF	} A3 126 84.0
S9)		A3 125 33.0	C27	195 pF	
S10)			C28	82 pF	A9 999 04/82E
S11)		A3 127 28.0	C29	10000 pF	A9 999 04/10K
S13)			C30	8200 pF	A9 999 06/8K2
S13a)		A3 125 28.0	C31	10000 pF	A9 999 04/10K
S15)			C32	22000 pF	A9 999 06/22K
S16)		A3 125 68.0	C33	10000 pF	A9 999 06/10K
S17)			C34	0,1 pF	A9 999 06/100K
S17a)		A3 118 80.0	C35	1500 pF	A9 999 06/1K5
S19)			C36	100 pF	A9 999 10/6 100
S20)		A3 126 84.0	C37	3300 pF	A9 999 06/V3K3
S21)			C38	18 pF	49 005 64.2
S22)		A3 126 84.0	C39	68 pF	A9 999 04/68E
S23)			C40	120 pF	A9 999 04/120E
S24)			C41	2200 pF	A9 999 05/2K2
S25)			C42	455 pF	A9 999 05/910E
S26)					(2x)
S28a)		A3 118 35.0	C43	180 pF	A9 999 05/180E
S29a)		A3 118 57.0	C44	20 pF	49 005 59.4
S30)			C45	56 pF	A9 999 04/56E
S31)		A3 125 93.0	C46	12000 pF	A9 999 06/12K
S32)			C47	10000 pF	A9 999 06/10K
S33)		A3 125 76.0	C48	170 pF	A9 999 05/150E+
C1	50 pF		C49	15 pF	A9 999 05/20E
C2	50 pF		C50	18 pF	A9 999 04/15E
C3	12,5-489 pF		C51	10 pF	A9 999 04/18E
C4	12,5-511 pF		C52	180 pF	A9 999 04/10E
C5	3000 pF	A9 999 05/3K	R1	1000 Ω	A9 999 00/1K
C6	12 pF	A9 999 04/12E	R2	33000 Ω	A9 999 00/33K
C7	20 pF	49 005 59.4	R3	10 M Ω	A9 999 00/10M
C8	20 pF	49 005 59.4	R4	39000 Ω	A9 999 00/39K
C9	20 pF	49 005 59.4	R5	33000 Ω	A9 999 00/33K
C10	10 pF	49 005 64.2	R6	0,1 M Ω	A9 999 00/100K
C11	30 pF	28 212 36.4	R7	2,7 M Ω	A9 999 00/2M7
C12	30 pF	28 212 36.4	R8	0,18 M Ω	A9 999 00/180K
C13	20 pF	49 005 59.4	R9	0,39 M Ω	A9 999 00/390K
C14	20 pF	49 005 59.4	R10	68000 Ω	A9 999 00/68K
C16	270 pF	A9 999 04/270E	R11	1,6 M Ω) A9 999 16/
C17	150 pF	A9 999 04/150E	R12	0,4 M Ω) DL 400K+1M6
C18	10 pF	A9 999 04/10E	R13	10 M Ω	A9 999 00/10M
			R14	56000 Ω	A9 999 00/56K
			R15	56000 Ω	A9 999 00/56K
			R16	0,1 M Ω	A9 999 00/100K
			R17	47000 Ω	A9 999 00/47K
			R18	1 M Ω) B1 639 19.0
			R19	1 M Ω	

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R20	0,82 M.Ω	A9 999 00/820K	R26	1500 Ω	A9 999 00/1K5
R21	1000 Ω	A9 999 00/1K	R27	12000 Ω	A9 999 00/12K
R22	150 Ω	A9 999 00/150E	R28	0,47 MΩ	A9 999 00/470K
R23	2700 Ω	A9 999 00/2K7	R29	22000 Ω	A9 999 00/22K
R24	39000 Ω	A9 999 00/39K	R30	820 Ω	A9 999 00/820E
R25	3,9. M Ω	A9 999 00/3M9			



R 161 47

Fig.1

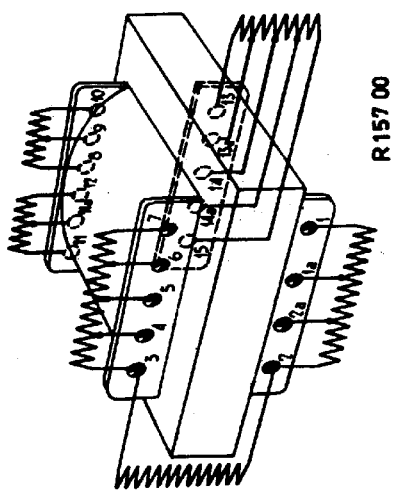
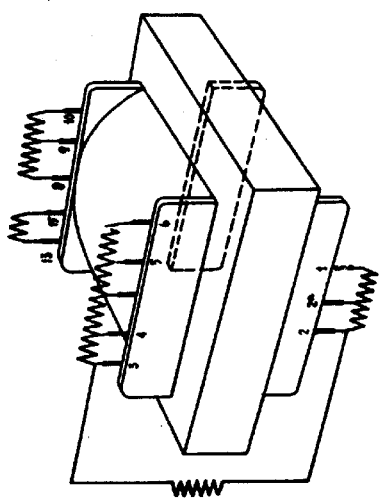


Fig. 2



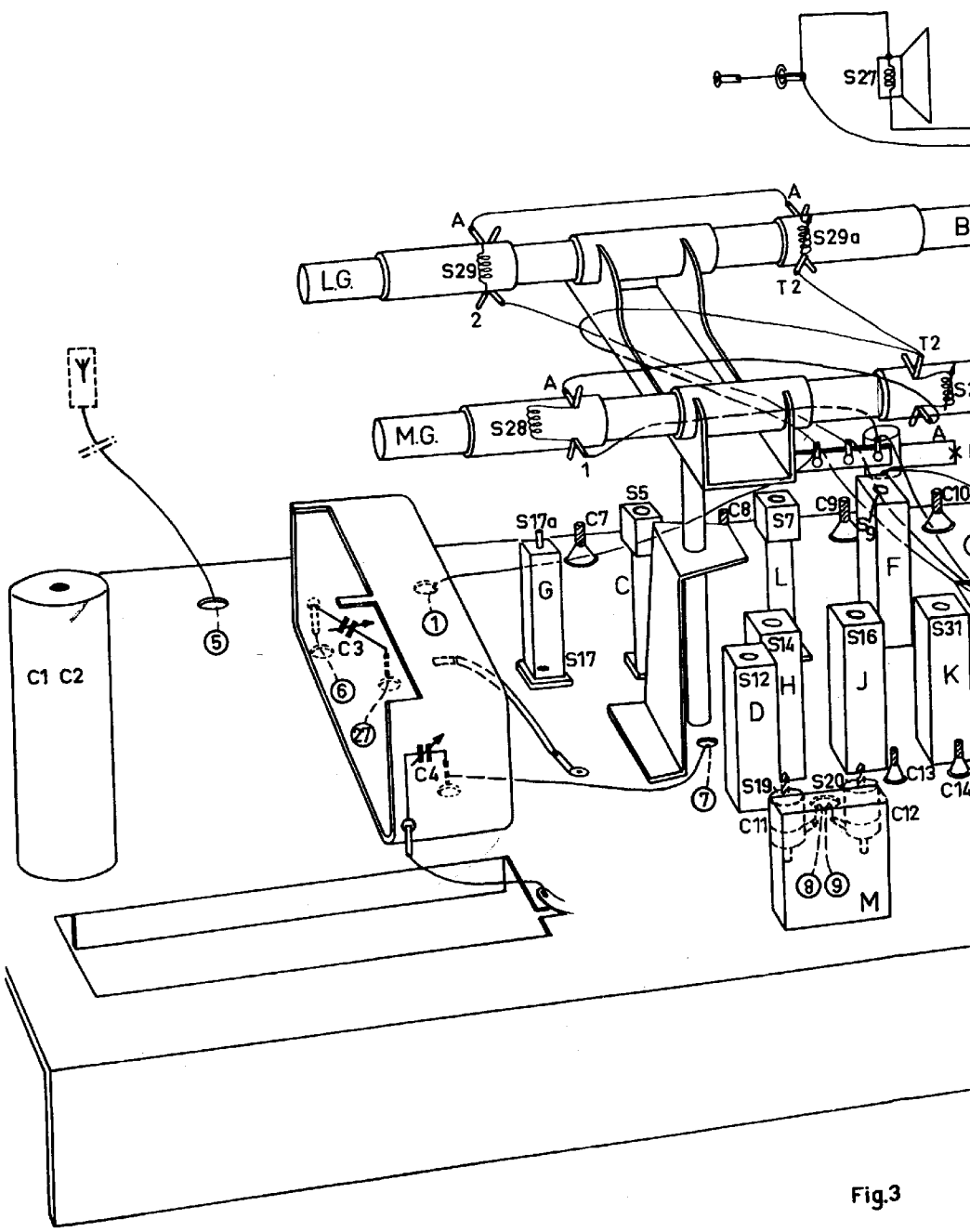


Fig.3

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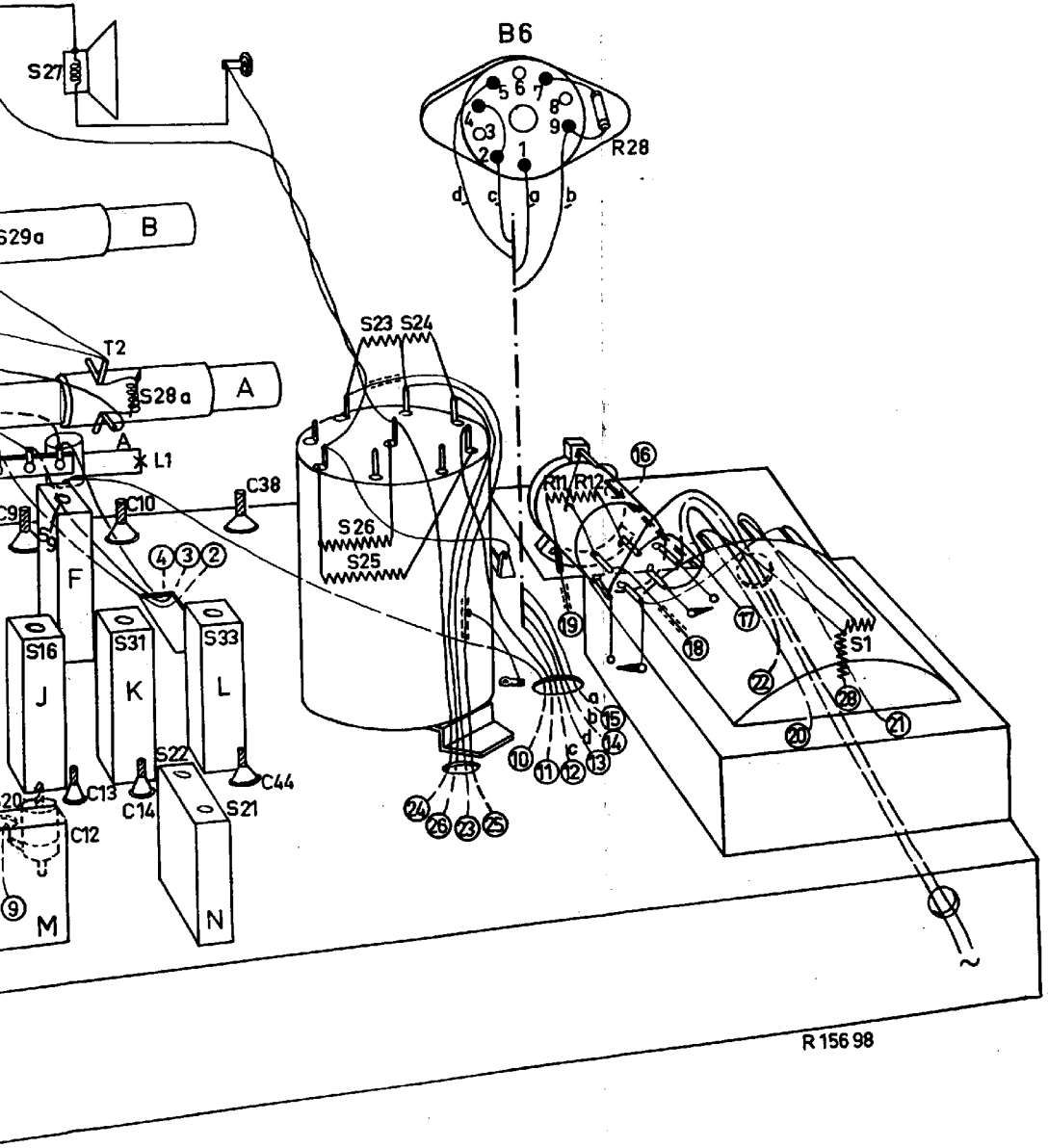


Fig.3

R 156 98

S:	2	1	3							L.	N.	K.	F.										
C:				30.	35.	37.	52.	47.	33.36.	32.	34.	29.	38.31.	44.	45.	10.	43.	28.14.	42.				
R:	19.	18.	10.				29.	20.	20.	17.	30.	21.	22.	15.	14.	16.			9.	13.	8.		7.

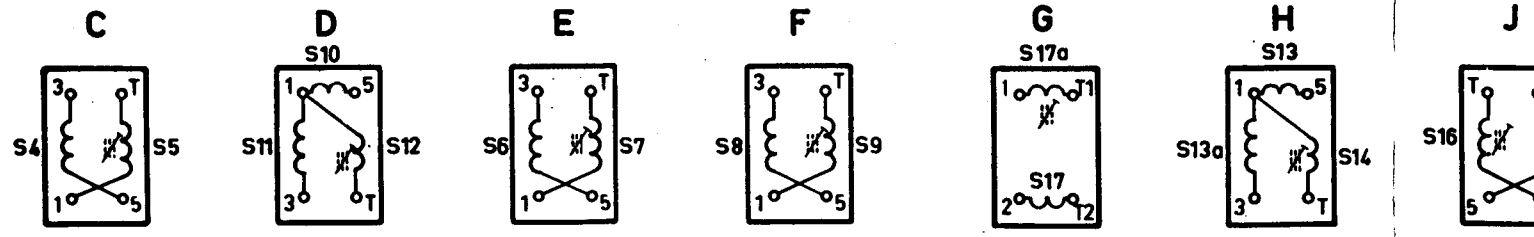
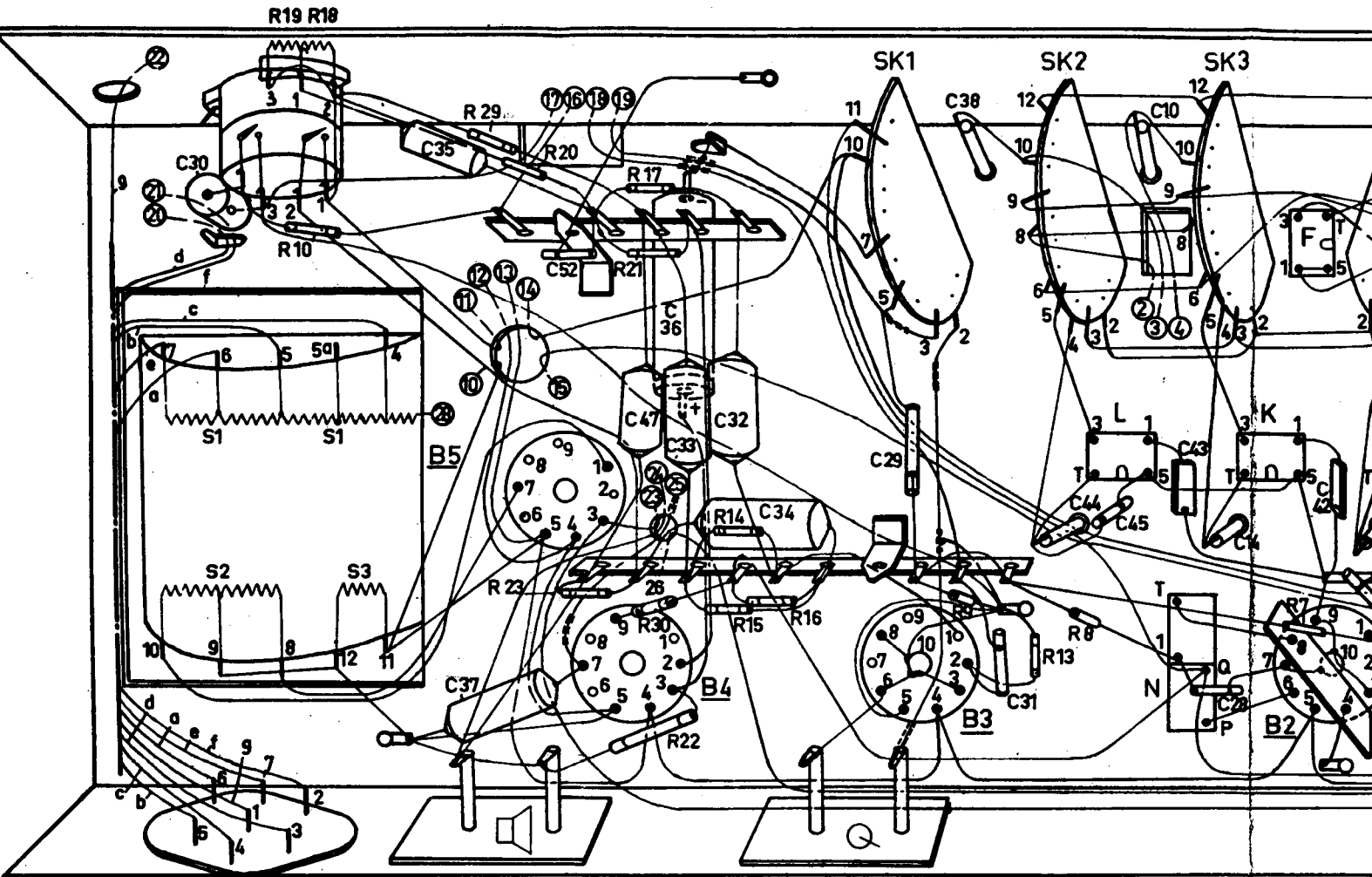
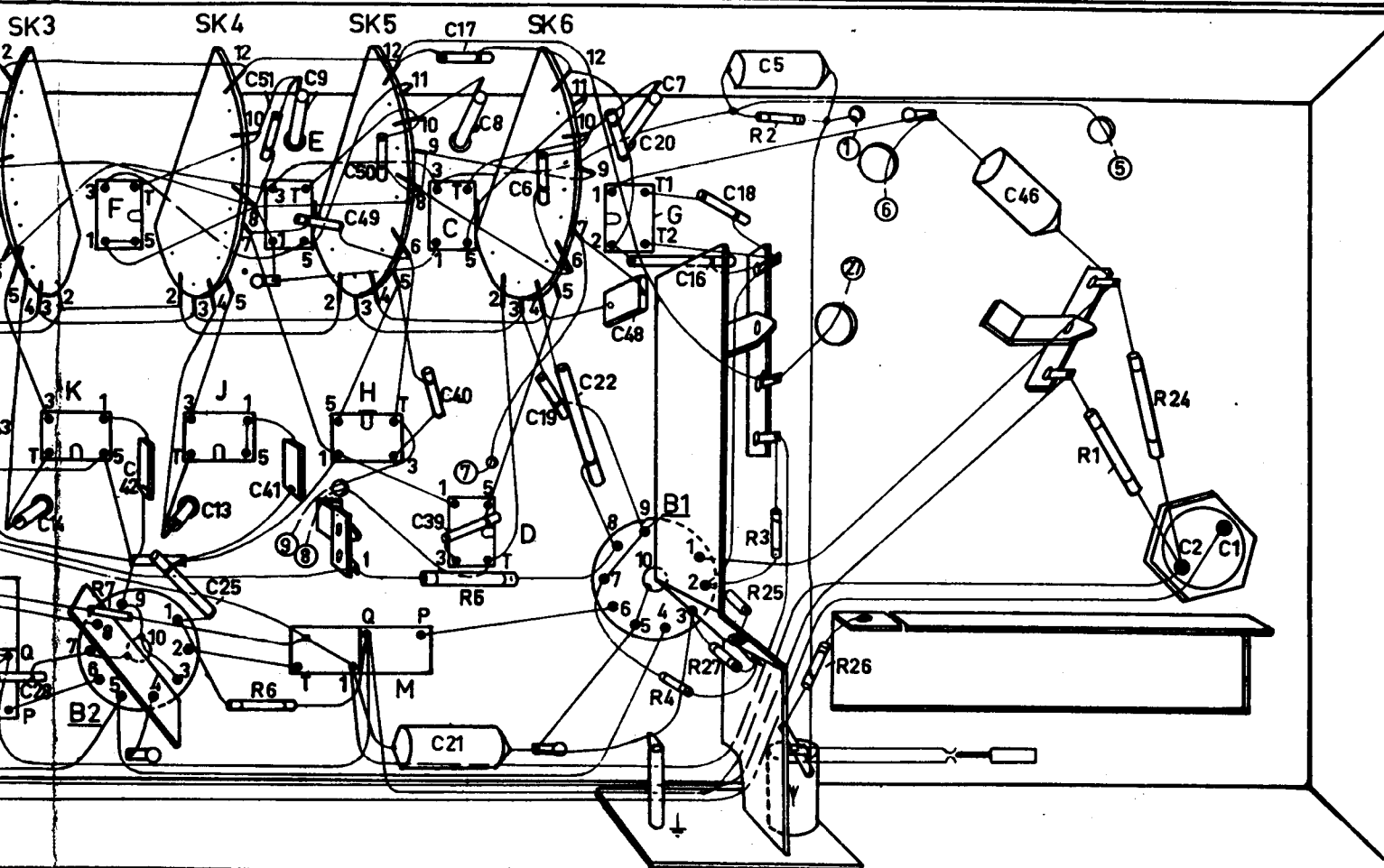
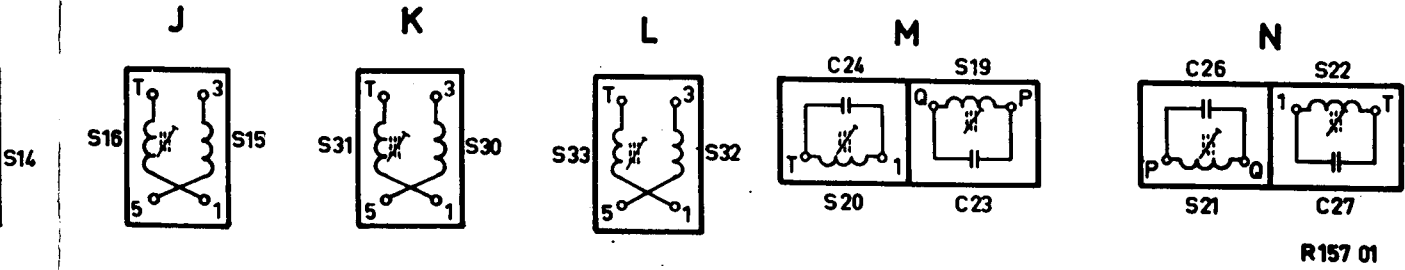


Fig.4

N.	K.	F.	J.	E.	M.H.	C.D.	G.		
28.14.	42.	13.25.	51.41.9.49	50	40.21.17.8.39	6.19.22.20.48.	16. 18. 5.	46.	2. 1.
7.	6.		5.		4. 27.25.3.2. 26.			1. 24.	



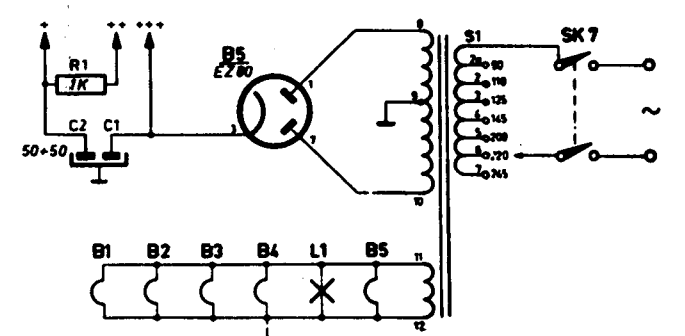
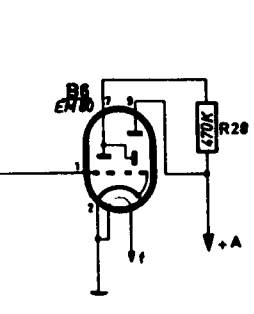
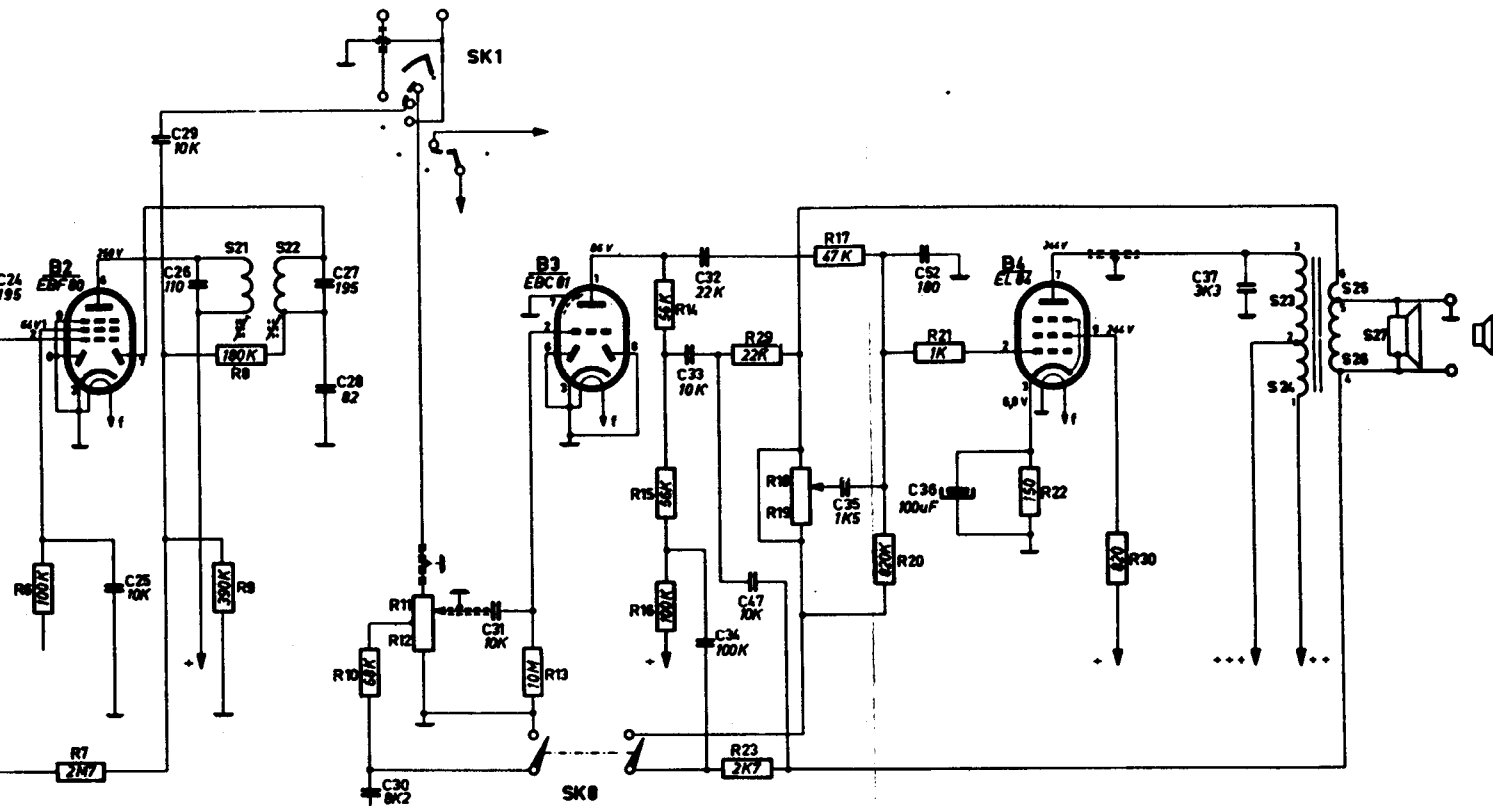
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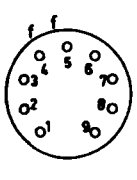
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Fig.4

25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	23	24	25	26	27
6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	30



R 155 97



B1-6

Fig.5