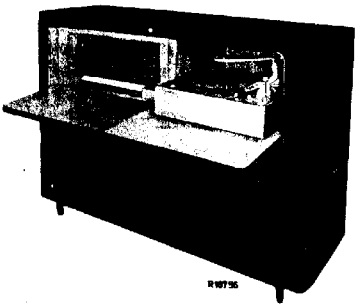
published by
THE CENTRAL SERVICE DIVISION
of the Gloeilampenfabrieken
Eindhoven

PHILIPS

SERVICE NOTES

for the radio-grammophone

F7X65A–01



1956. For A.C. mains supply.

Push Buttons

From left to right :

Mains switch
P.U.
M.W. : 185 - 580 m(1622 - 517 kc/s)
S.W.3 : 59 - 187 m(5,1 - 1,6 Mc/s)
S.W.2c : 25 - 60 m(12 - 5 Mc/s)
S.W.2b : 16,75 - 25,6 m(17,9 - 11,7 Mc/s)
S.W.2a : 11,4 - 16,94m(26,2 - 17,7 Mc/s)

Controls

From left to right :

Small knob - low tone control.
Large knob - } volume control.
Small knob - }
Small knob - tuning
Large knob - aerial tuning + S.W. vernier tuning
Small knob - high tone control

Valves

B1	EF89	B5	EL84
B2	ECH81	B6	EM80
B3	EBF80	B7	EZ80
B4	ECC83	B8	EL84
B20	EF86	B9	EZ80

I.F. : 452 kc/s

Mains voltages

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

Consumption

95 Watt approx.

Loudspeakers

2x AD3700M (Z = 5 Ω)
1x 9710M (Z = 7 Ω)

Record changer

AG 1006-88

Dimensions

Length : 1150 mm
Width : 420 mm
Height : 857 mm.

Lamps

2x 8024N-91
1x 8006N
1x 8045D-00

Printed in Holland

93 987 58.1.05

General

The apparatus has a vernier tuning on S.W.2a and S.W.2b. This vernier tuning is mechanically coupled with the ferroceptor control.
In extreme left position of this control the core of S40 is completely drawn in.

Cord drive

The length and the path of the cables are indicated in fig. 1. Here the variable condenser is drawn in maximum position.

Transformers

If the original transformers become defective, they should be replaced by the service standard transformers, the code numbers of which are given in the electrical parts'list. For connections see fig. 2.

Trimming of the receiver

For trimming the general rule is :
Volume control to maximum.
Tone control to "quality".
Connect a voltmeter via a trimming transformer to the additional loudspeaker sockets. Unless otherwise stated all signals are applied to the aerial sockets via a dummy aerial.
Trimming point 1 refers to the left, trimming point 2 to the right side of the dial.
Previously the cores of the I.F. bandfilters has to be turned outward as far as possible and the core of S40 in medium position.

	Wave-range	Pointer at trimming point	Apply a signal of	Trim at max.output	Directions
I.F. band-filters	M.W.	1	452 kc/s to g1B2 via 33000 pF	S28,S27, S25,S26,S28	
R.F. and oscilla-tor circuits	S.W.2a	2	17,8 Mc/s	S17,S11,S6	Repeat
		1	16,4 Mc/s	C39,C20,C8	
	S.W.2b	2	11,75Mc/s	S19,S12,S5	Repeat
		1	18 Mc/s	C40,C21, C66,C10	
	S.W.2c	2	5,26Mc/s	S20b,S13, S7	Repeat
		1	12,1 Mc/s	C62	
	S.W.3	2	1,72Mc/s	S22,S14-14a S9	Repeat
		1	5,15Mc/s	C35,C23,C12	
	M.W.	2	550 kc/s	S24,S15, S10-10a	Repeat
		1	1630 kc/s	C26mC24,C14	

LIST OF PARTS

When ordering always quote :

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

		Description	Code number
		Push button	A3 417 70.0
		Knob (tuning and volume control)	A3 739 12.0
		Knob (volume control)	A3 752 37.0
		Knob (ferroceptor)	A3 739 26.0
		Knob (tone control)	A3 752 69.0
		Spring in knob ferroceptor	A3 650 18.0
		Spring in other knobs	A3 522 08.0
		Strip for wave-range switched	A3 664 27.0
		Jack for powersupply	A3 764 53.0
		Plug for powersupply	A3 764 54.0
		Plug for loudspeakers	A3 393 69.0
		Jack for loudspeakers	A3 406 21.0
		Variable capacitor	49 001 97.0
		Ferroceptor drum	P4 380 53.0
		Strip for P.U. switch	A3 663 99.0
		Mains switch	A3 182 78.0
		Voltage adaptor	A3 229 76.0
		Cover for mains switch	P5 280 25/08
		Grommet for fixing dial	P5 420 03/08
		Ring for 45 r.p.m. records	P4 380 39/17
		Box	P5 190 03/01
		Cover	P5 190 02/01
		Spring in mains switch	A3 646 26.0
		Spring in driving cord	89 312 10.3
		Spring in ferroceptor drum	A3 646 80.0
		Spring in S.W. vernier tuning	A3 646 34.0
		Dial (south)	A3 807 57.0
		Dial (oversea)	A3 807 58.0

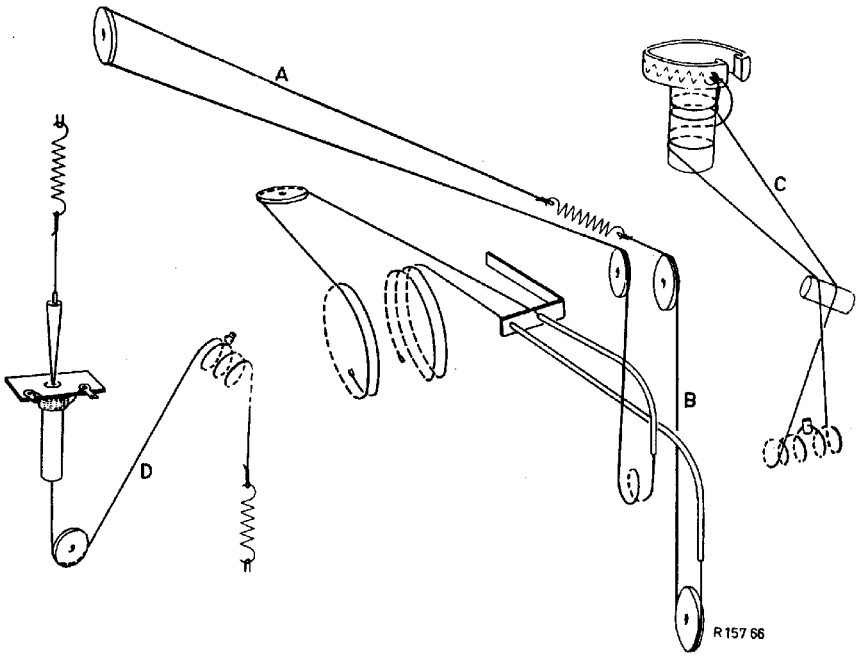
vG/JH

S1)		
S2)		A3 141 39.1
S3)		
S5		A3 119 41.0
S6		A3 119 42.0
S7		A3 119 43.0
S9		A3 119 50.0
S10)		A3 118 86.0
S10a)		
S11		A3 119 53.0
S12		A3 119 49.0
S13		A3 119 44.0
S14)		A3 119 45.0
S14a)		
S15		A3 125 48.0
S16)		
S17)		A3 119 77.0
S18)		
S19)		A3 119 51.0
S20		A3 118 45.0
S10a)		A3 119 51.0
S10b)		
S21)		A3 119 48.0
S22)		
S23)		A3 125 93.0
S24)		
S25)		
S26)		
C37)	110 pF	A9 999 25/452
C38)	195 pF	
S27)		
S28)		
C43)	110 pF	A9 999 25/452
C44)	195 pF	
S30)		
S31)		A9 999 18/03
S33)		
S34)		
S36)		
S37)		A9 999 18/03
S37a)		
S40)		
C1	50 µF	A9 999 13/M50+50+50
C1a	50 µF	
C2	50 µF	
C3)		
C4)		49 001 97.0
C5)		

C6	330 pF	A9 999 04/330E
C8	30 pF	A9 999 08/30E
C9	33 pF	A9 999 04/33E
C11	100 pF	A9 999 07/20E-100E
C12	22 pF	A9 999 08/22E
C13	3000 pF	A9 999 05/3K
C14	22 pF	A9 999 08/22E
C15	100 pF	A9 999 04/100E
C16	10000 pF	A9 999 04/10K
C17	106 pF (	A9 999 04/100E+
	par(	A9 999 04/5E6
C18	150 pF	A9 999 04/150E
C19	10000 pF	A9 999 04/10K
C20	22 pF	A9 999 08/22E
C21	30 pF	A9 999 08/30E
C22	3000 pF	A9 999 05/3K
C23	22 pF	A9 999 08/22E
C24	22 pF	A9 999 08/22E
C25	65 pF (	A9 999 04/47E+
	par(	A9 999 04/18E
C26	120 pF	A9 999 04/120E
C27	100 pF	A9 999 04/100E
C28	390 pF	A9 999 04/390E
C29	68 pF	A9 999 04/68E
C30	120 pF	A9 999 05/120E
C31	10000 pF	A9 999 04/10K
C32	82 pF	A9 999 04/82E
C33	455 pF	A9 999 05/910E (2xpar)
C34	56 pF	A9 999 05/56E
C35	22 pF	A9 999 08/22E
C36	30 pF	A9 999 08/30E
C37	110 pF	zie spoelen
C38	195 pF	voir bobinas
		see coils
		veanse bobinas
C39	30 pF	A9 999 08/30E
C40	30 pF	A9 999 08/30E
C41	33000 pF	A9 999 06/33K
C42	10 pF	A9 999 04/10E
C43	110 pF	zie spoelen
C44	195 pF	voir bobines
		see coils
		veanse bobinas
C45	47 pF	A9 999 04/47E
C46	2200 pF	A9 999 05/2K2
C47	120 pF	A9 999 04/120E
C48	12000 pF	A9 999 06/12K
C49	22000 pF	A9 999 06/22K
C50	10000 pF	A9 999 04/10K
C51	4700 pF	A9 999 06/4K7
C52	2200 pF	A9 999 06/2K2
C53	1800 pF	A9 999 06/1K8
C54	3900 pF	A9 999 06/3K9
C55	100 µF	A9 999 10/C100
C56	220 µF	A9 999 04/220E

C57	22000 pF	A9 999 06/22K
C58	4700 pF	A9 999 06/4K7
C59	1500 pF	A9 999 06/1K5
C60	12 pF	A9 999 04/12E
C61	10 pF	A9 999 04/10E
C62	30 pF	28 212 36.4
C63	2100 pF par	A9 999 05/1K+ A9 999 05/1K1
C65	10 pF	A9 999 04/10E
C66	30 pF	28 212 36.4
C67	10 pF	A9 999 04/10E
C68	680 pF	A9 999 04/680E
C69	0,47 µF	A9 999 06/470K
C70	4700 pF	A9 999 06/4K7
C71	22000 pF	A9 999 06/22K
C72	10000 pF	A9 999 04/10K
C73	8 µF	A9 999 11/L8
C74	0,1 µF	A9 999 06/100K
C75	56000 pF	A9 999 06/56K
C150	100 pF	A9 999 04/100E
C151	100 µF	A9 999 09/B100
C152	8 µF	A9 999 11/L8
C153	22 pF	A9 999 04/22E
C154	10000 pF	A9 999 06/10K
C155	8 µF	A9 999 11/L8
R1	1000 Ω	A9 999 00/470E+ 560E
R1a	1000 Ω	A9 999 00/470E+ 560E
R2	10000 Ω	A9 999 00/10K
R3	1 MΩ	A9 999 00/1M
R4	0,1 MΩ	A9 999 00/100K
R5	22000 Ω	A9 999 00/22K
R6	150 Ω	A9 999 00/150E
R7	1 MΩ	A9 999 00/1M
R8	39000 Ω	A9 999 00/39K
R9	39000 Ω	A9 999 00/39K
R10	47000 Ω	A9 999 00/47K
R11	1 MΩ	A9 999 00/1M
R12	1,2 MΩ	A9 999 00/1M2
R13	0,18 MΩ	A9 999 00/180K
R14	2,7 MΩ	A9 999 00/2M7
R15	33000 Ω	A9 999 00/33K
R16)	0,8 MΩ	
R17)	0,1 MΩ	B1 638 19
R17a)	0,12 MΩ	
R18	0,12 MΩ	A9 999 00/120K
R19	6800 Ω	A9 999 00/6K8
R20	0,47 MΩ	A9 999 00/470K
R21	0,33 MΩ	A9 999 00/330K
R22	0,4 MΩ	A9 999 16/ GL400K+1M6

R23	1,6 MΩ	A9 999 00/27K
R24	27000 Ω	A9 999 00/270K
R25	0,27 MΩ	A9 999 00/270K
R26	0,68 MΩ	A9 999 00/680K
R27	0,47 MΩ	A9 999 00/470K
R28	0,1 MΩ	A9 999 00/100K
R29	0,47 MΩ	A9 999 00/470K
R30	470 Ω	A9 999 00/470E
R31	0,1 MΩ	A9 999 00/100K
R32	0,1 MΩ	A9 999 00/100K
R33	0,47 MΩ	A9 999 00/470K
R34	18 Ω	A9 999 00/18E
R35	47000 Ω	A9 999 00/47K
R36	0,5 MΩ	A9 999 16/GL50K +450K
R37	0,39 MΩ	A9 999 00/390K
R38	0,82 MΩ	A9 999 00/820K
R39	1000 Ω	A9 999 00/1K
R40	1000 Ω	A9 999 00/1K
R41	0,33 MΩ	A9 999 00/330K
R42	220 Ω	A9 999 00/220E
R43	150 Ω	A9 999 00/150E
R44	820 Ω	A9 999 00/820E
R45	68000 Ω	A9 999 00/68K
R47	100 Ω	A9 999 00/100E
R48	100 Ω	A9 999 00/100E
R49	0,12 MΩ	A9 999 00/120K
R50	2200 Ω	A9 999 00/2K2
R51	100 Ω	A9 999 00/100E
R52	1500 Ω	A9 999 00/1K5
R53	1500 Ω	A9 999 00/1K5
R54	10000 Ω	A9 999 00/10K
R55	1 MΩ	A9 999 00/1M
R56	0,27 MΩ	A9 999 00/270K
R57	10 Ω	A9 999 00/10E
R58	0,15 MΩ	A9 999 00/150K
R70	0,33 MΩ	A9 999 00/330K
R150	68000 Ω	A9 999 00/68K
R151	0,47 MΩ	A9 999 00/470K
R152	2200 Ω	A9 999 00/2K2
R153	0,33 MΩ	A9 999 00/330K
R154	2,2 MΩ	A9 999 00/2M2
R155	1,5 MΩ	A9 999 00/1M5
R156	0,22 MΩ	A9 999 00/200K
R157	0,68 MΩ	A9 999 00/680K
R158	0,33 MΩ	A9 999 00/300K
R159	0,1 MΩ	A9 999 00/100K



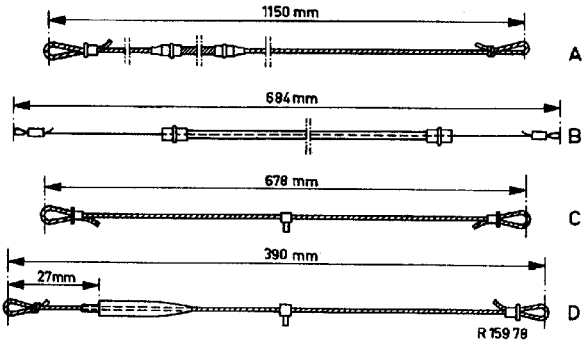
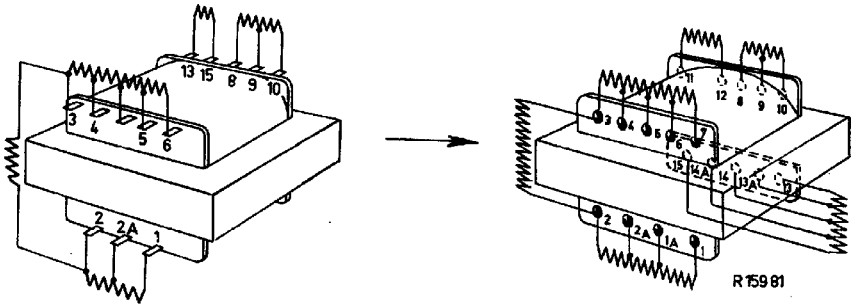


Fig.1

II

F7X65A–01



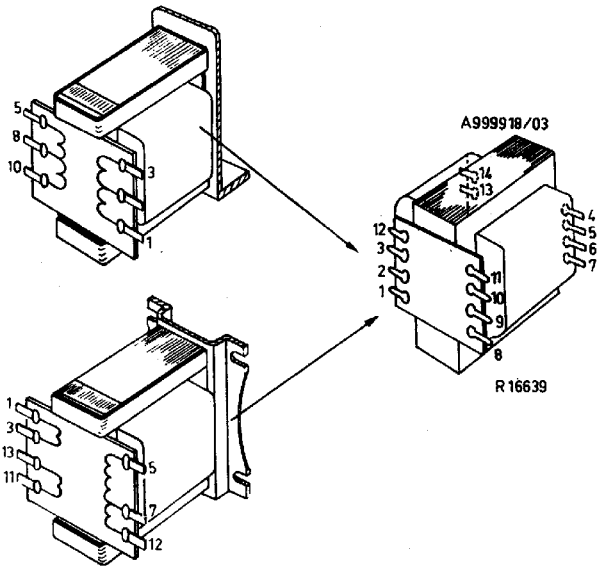
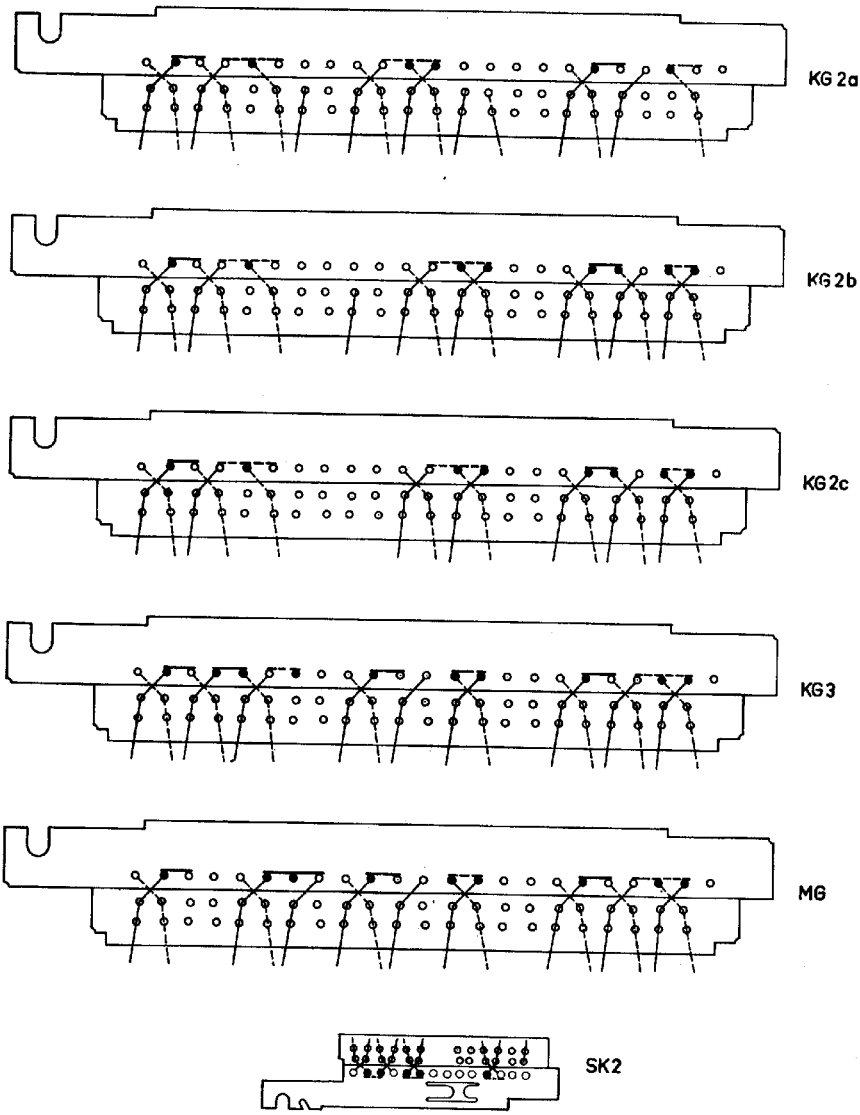
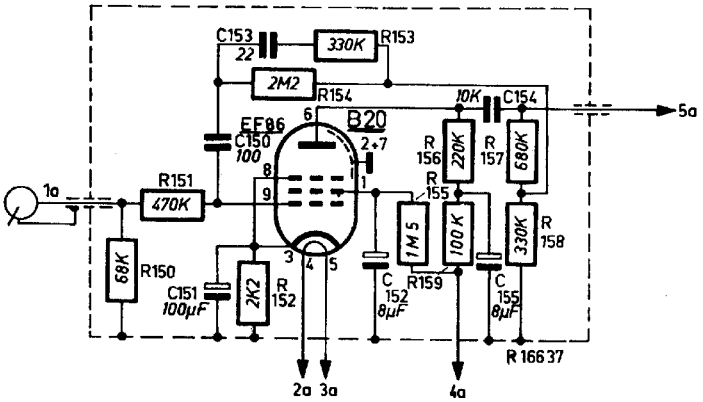


Fig.2



R 166 56

Fig.3


C153
22
330K
R153
2M2
R154
10K
C154
5a
EF86
B20
C150
100
2+7
R
156
220K
R
157
680K
1a
R151
470K
R
155
1M5
100K
330K
R
158
68K
R150
C151
100µF
2K2
R
152
C
152
8µF
R159
C
155
8µF
R 166 37
2a 3a
4a

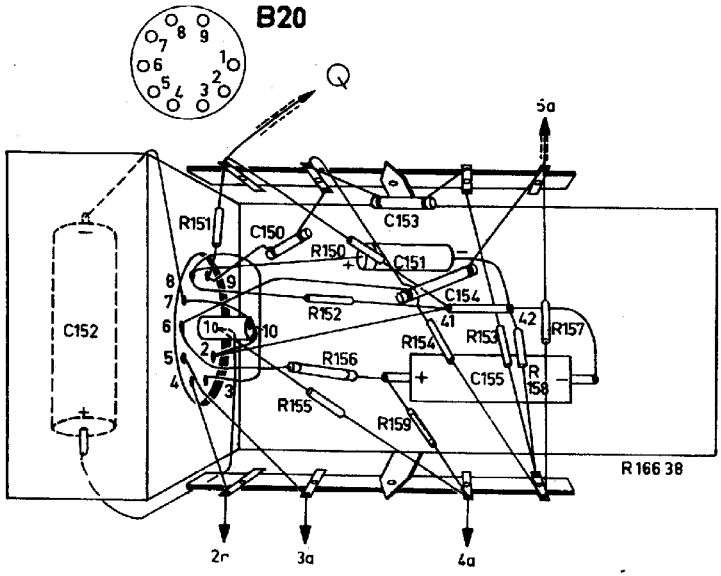
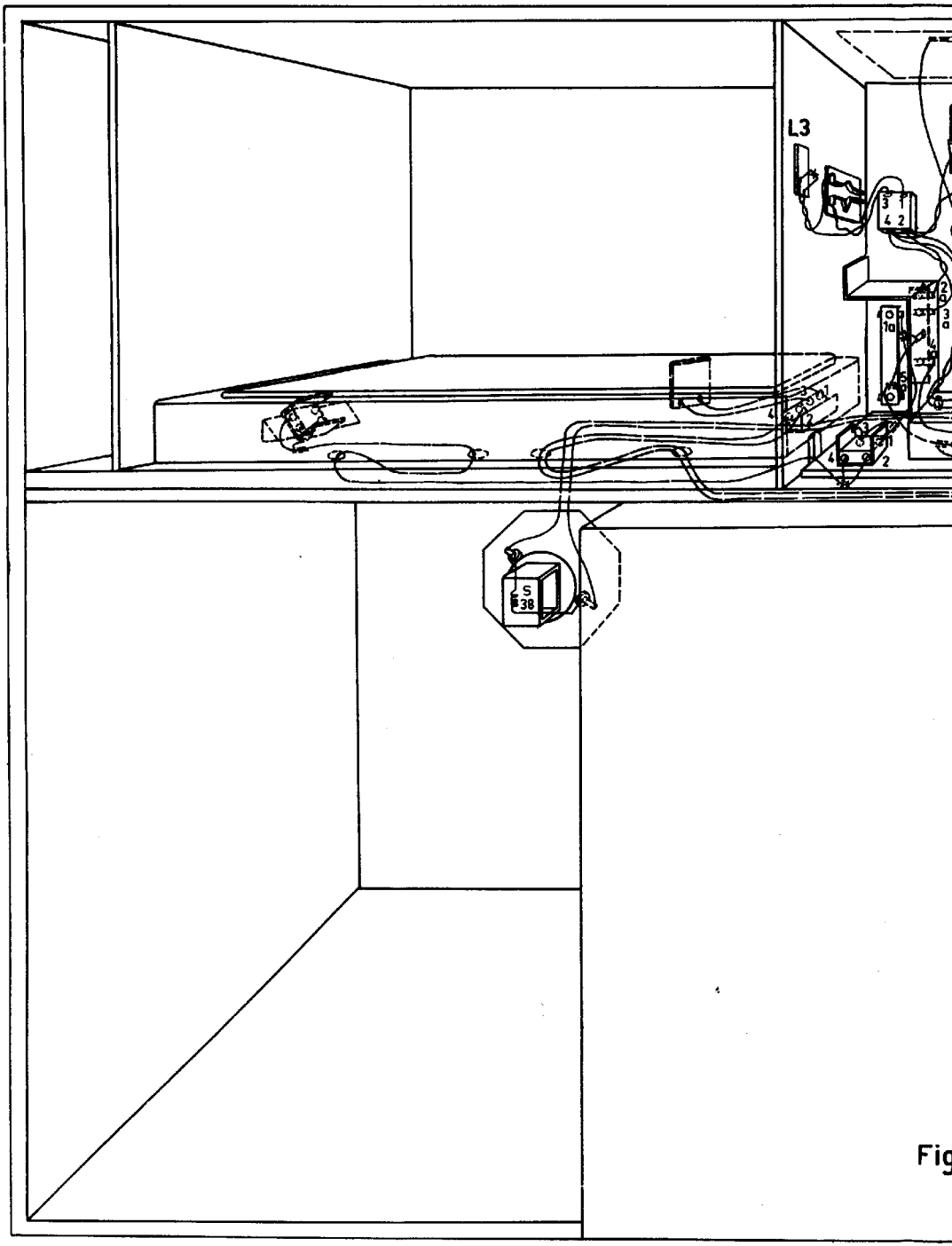

B20
Q
5a
R151
C150
R150
C151
C153
C154
C152
R152
R153
R157
R154
R156
C155
R
158
R155
R159
R 166 38
2a
3a
4a

Fig.4



Fig

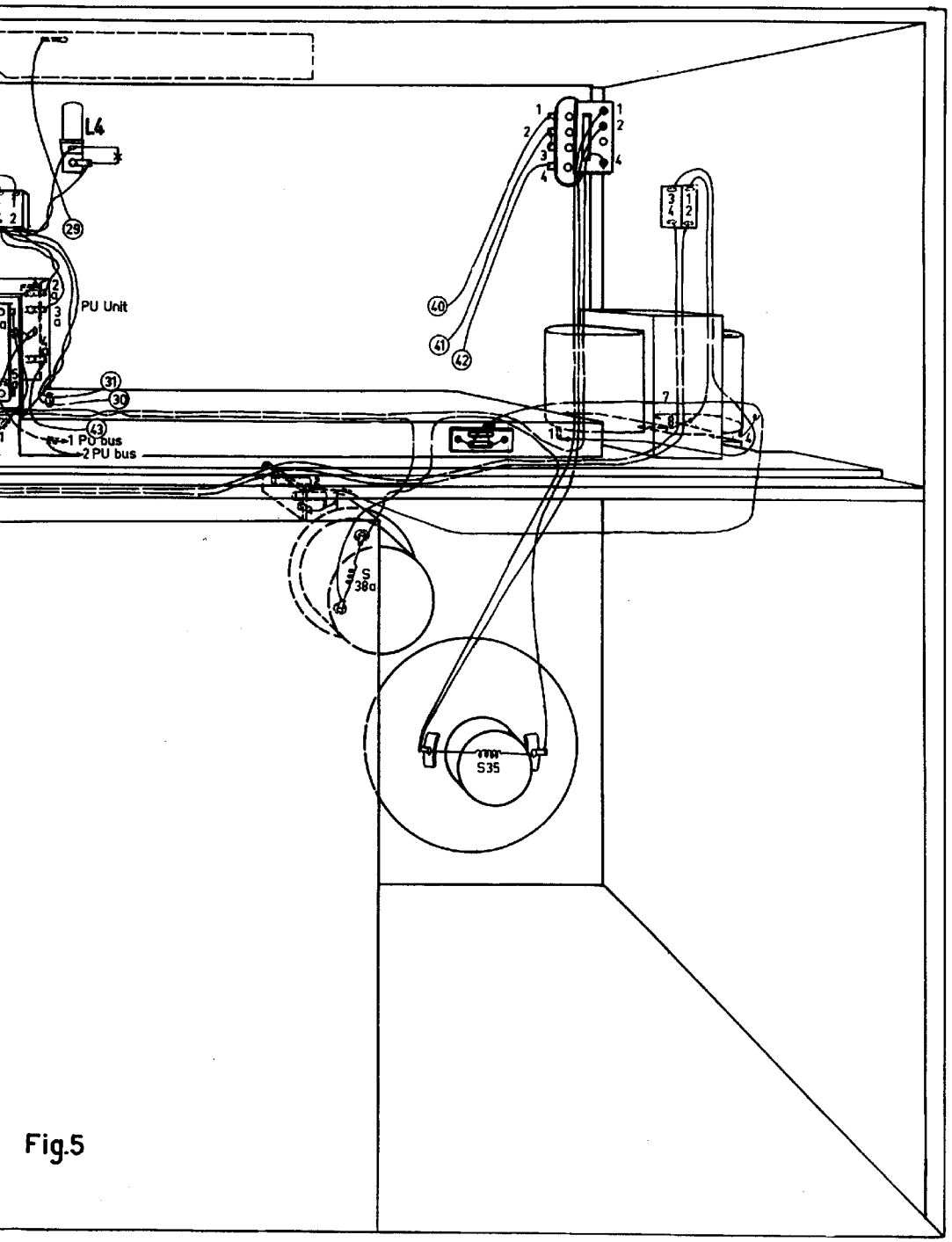


Fig.5

R16635

S	J. O. R. D.H.N C.G
C	73. 74.69. 48. 58. 68. 59. 49.57. 56. 55. 51. 53. 54. 52.63.46.47. 33. 12.14.24.22.45.10.60.23.35.65.42.67
R	22.23. 15.51.42.54.50. 43. 41. 17a.17.16.37.40.35. 38. 31.39.26.33. 28. 25. 21. 56.27.49.29.30.70.13.14.44.18. 58.45.34. 24. 12.

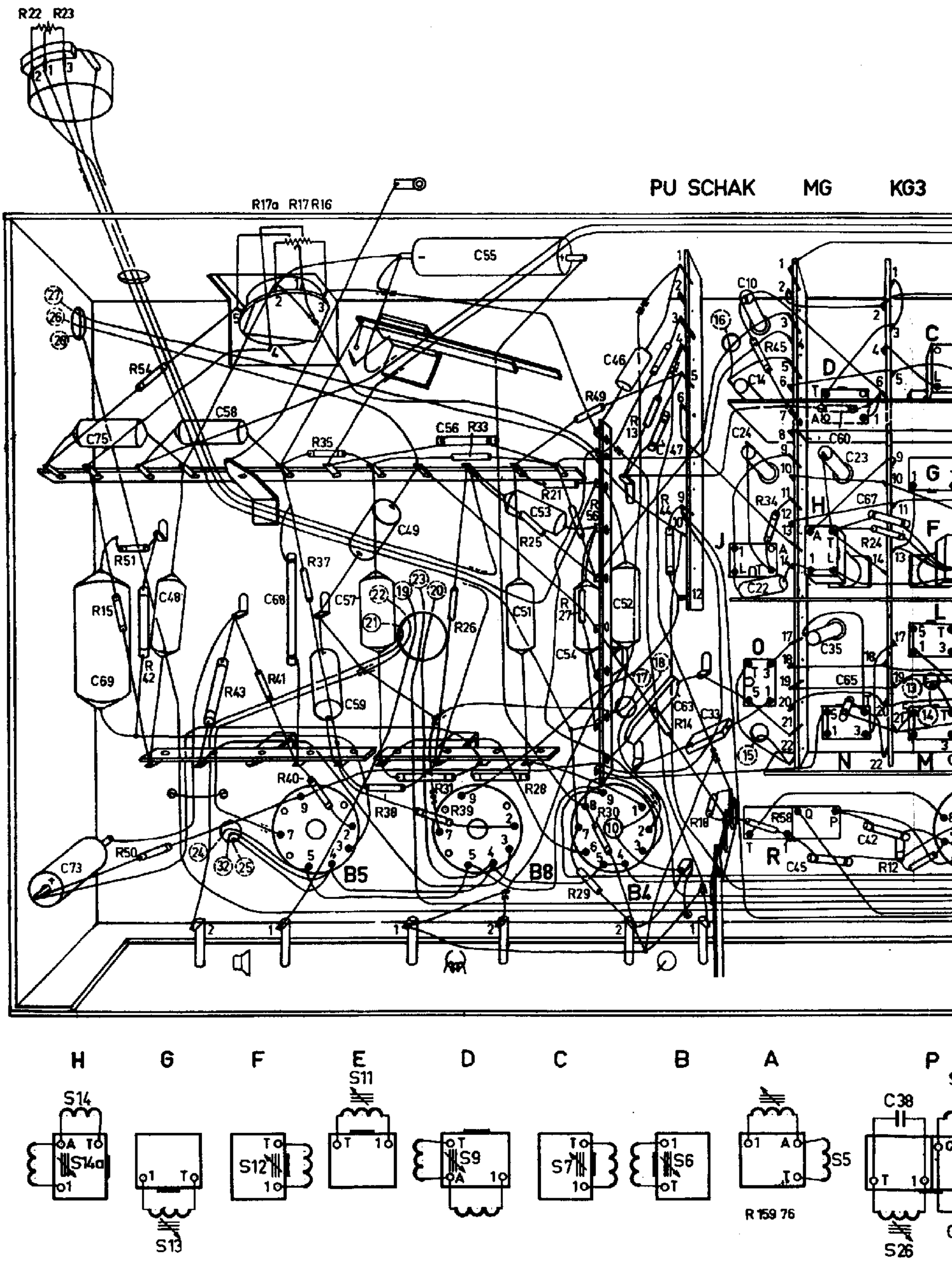
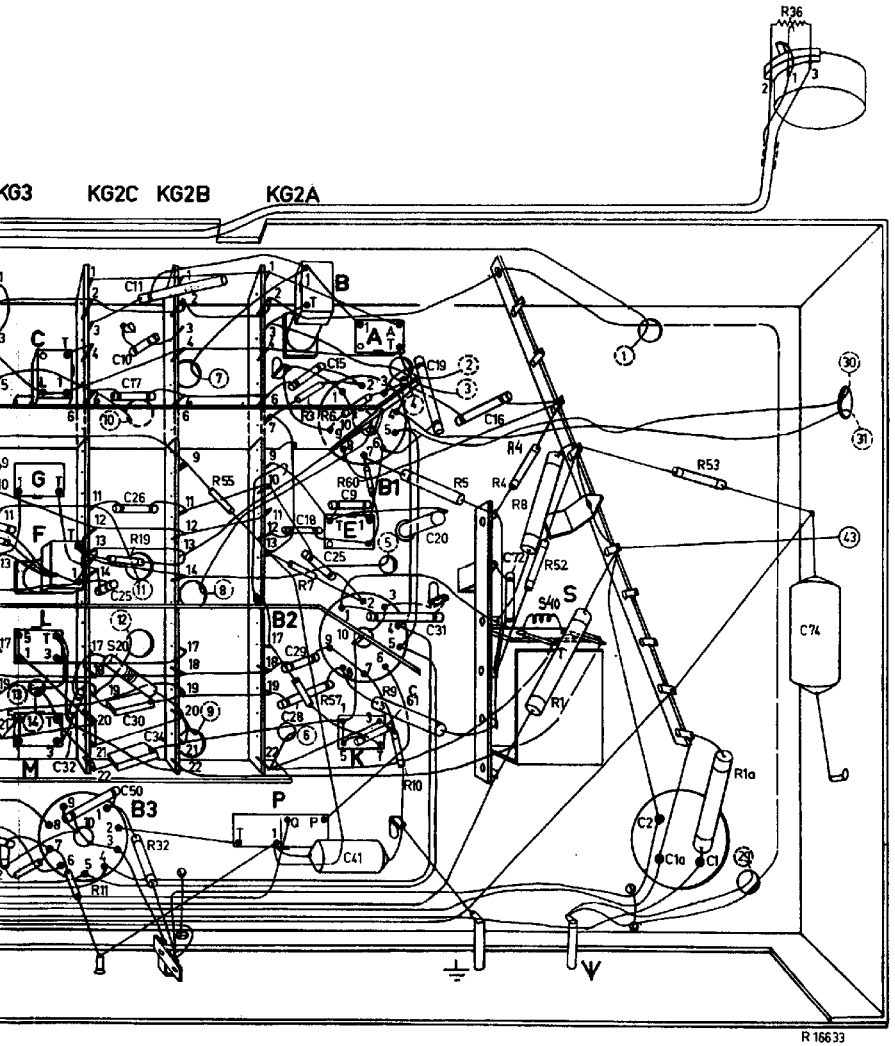
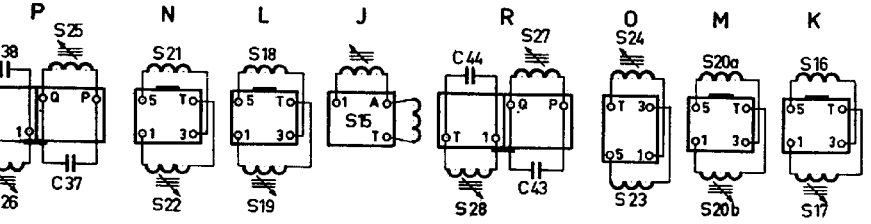


Fig.6

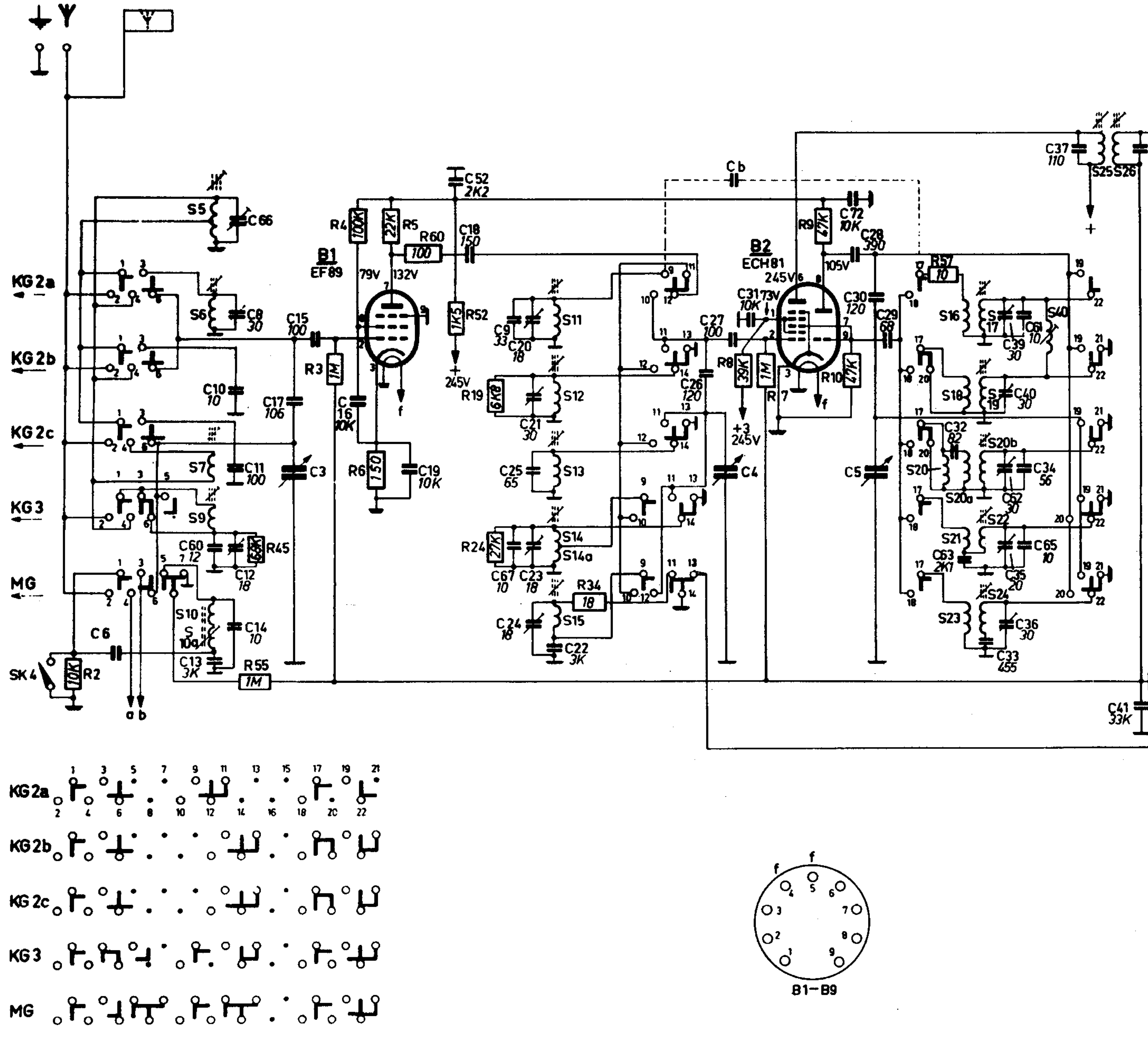
CGFLM. 20.	P B E K A	S.
4267 32.50.25 17.26 30.34 11.	15.29.28 18.27 9.4 16 12 0.31 19. 16. 72.	2.1a. 1. 74.
12. 11. 19. 32. 55.	3.7.5 7.6. 60 9. 10. 5. 4.8.5 2.1.	53.1a 36.





F7X6

S:	5.6.7.9 10.10a 11-15 16-24 40. 25 26.
C:	6. 60.13.66.10.12 8.11.14.3.17.4.15 16 19. 52.18 9.67.25.24.20.21.22.23 26.4.27.5.27.31. 72.28.30.5.29. 32.63.33.39.40.62.35.36.61.34.65.37.38.
R:	2 45. 3. 4.6. 5. 60. 52. 19.24 34 8.7. 9. 10. 57.



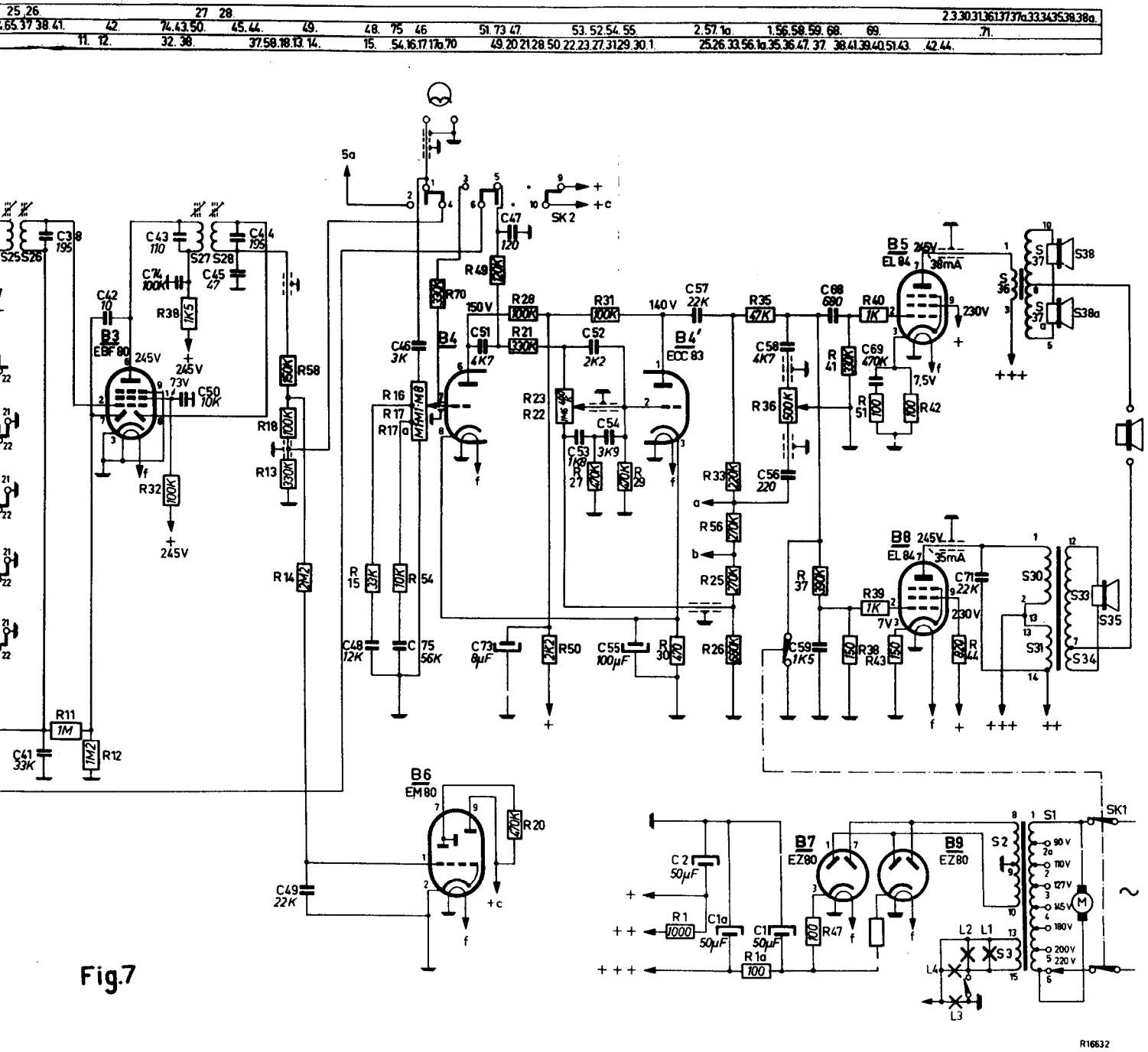

B3 EBF 80
B4 ECC 83
B4' ECC 83
B5 EL 84
B6 EM80
B7 EZ80
B8 EL 84
B9 EZ80
SK1
SK2
S1
S2
S3
S30
S31
S33
S34
S35
S37
S38
S38a
R16632

Fig.7

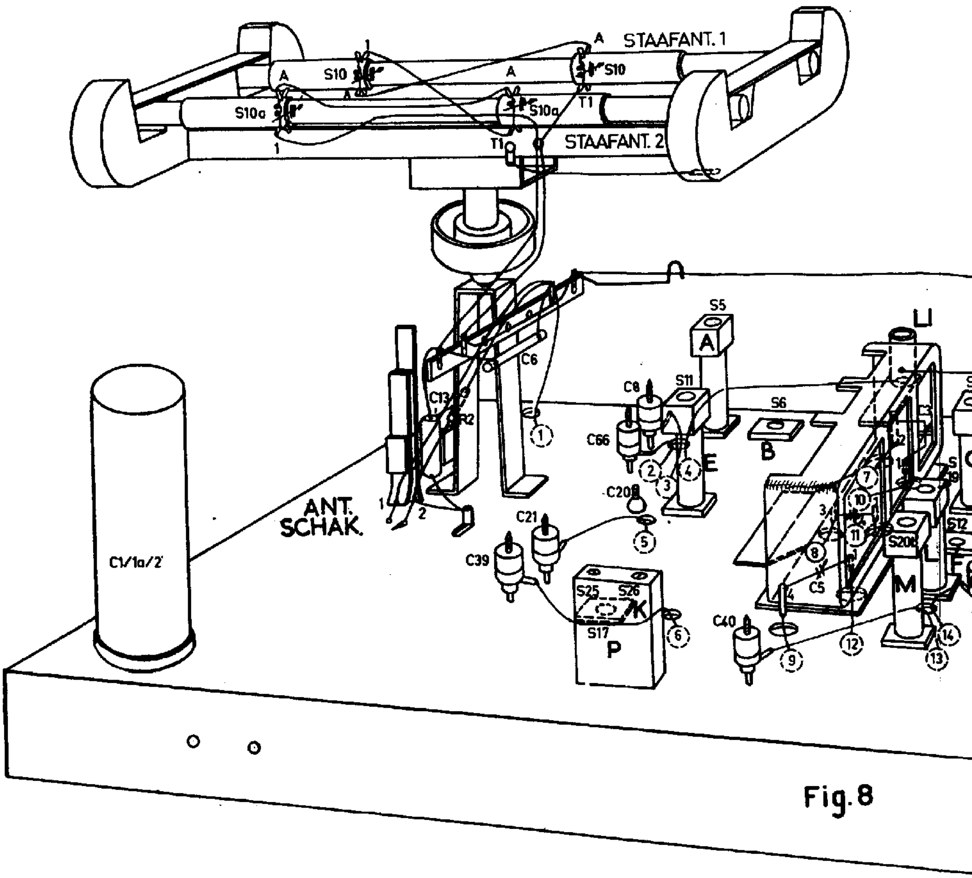
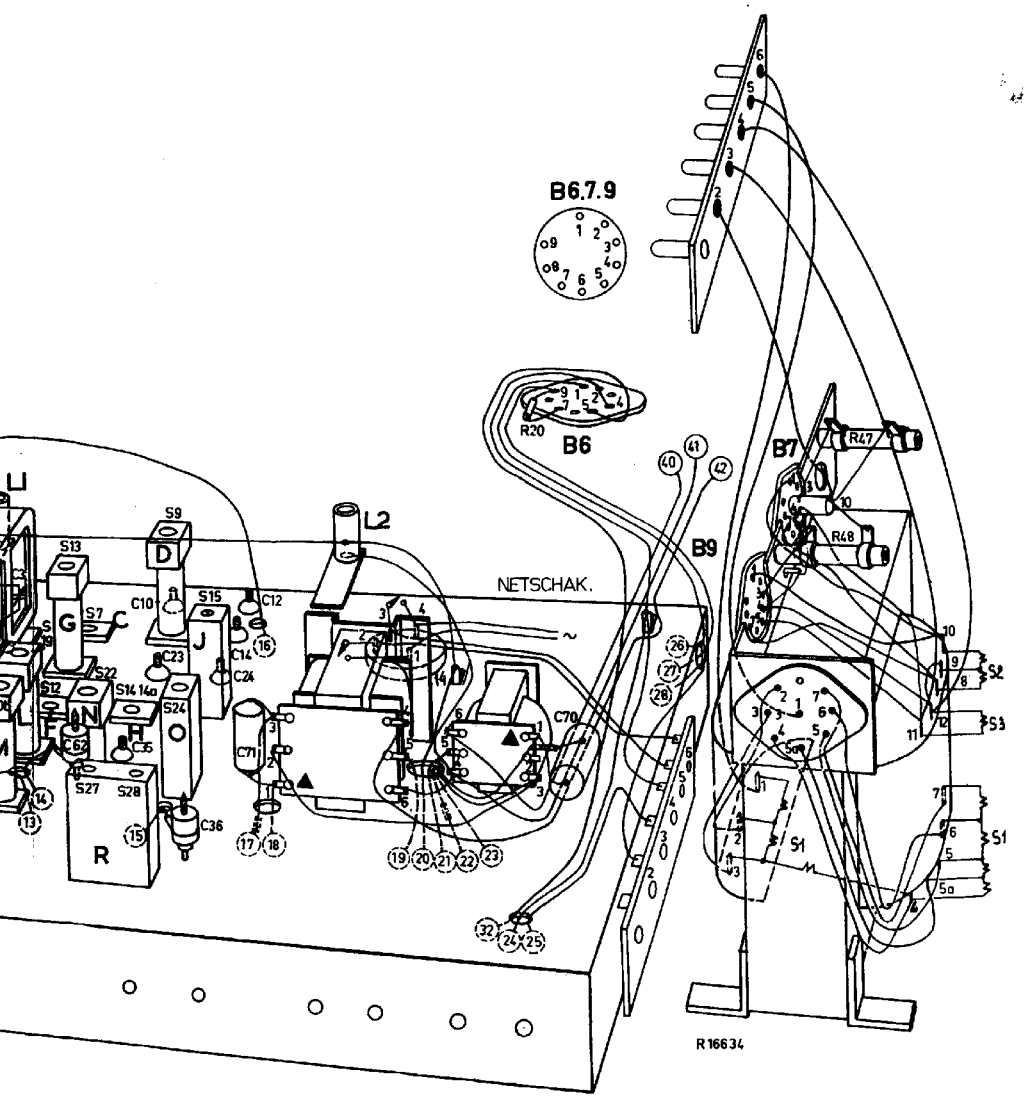

STAAFANT. 1
STAAFANT. 2
S10
S10a
T1
A
1
ANT. SCHAK.
C1/1a/2'
C6
C13
R2
C8
C66
S5
A
S11
S6
B
E
C208
C21
C39
S25
S26
K
S17
P
C40
C5
S206
M
S12
LI

Fig. 8


B6.7.9
B6
R20
B7
R47
R48
B9
L1
L2
NETSCHAK.
S9
S13
S7
S15
C10
C12
C14
C23
C24
S12
S14
S24
C64
C35
S27
S28
C36
C71
C70
S1
S2
S3
R
R16634