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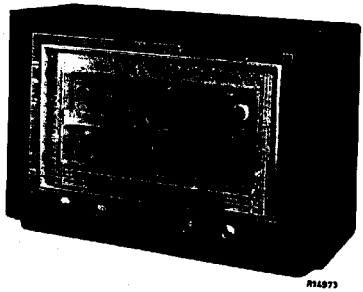
PHILIPS

SERVICE NOTES

for the receiver

BX735A



1953 For A.C. mains supply.

GENERAL

WAVERANGES

1. M.W.	:	185	- 580	m	(1622	- 517	kc/s)
2. S.W.3	:	60	- 187	m	(5	- 1.604	Mc/s)
3. S.W.2d	:	32.25	- 60	m	(9.3	- 5	Mc/s)
4. S.W.2c	:	23.07	- 32.96	m	(13.0	- 9.1	Mc/s)
5. S.W.2b	:	17.00	- 25.87	m	(17.6	- 11.6	Mc/s)
6. S.W.2a	:	10.98	- 17.00	m	(27.3	- 17.6	Mc/s)

I.F.: 452 kc/s

CONTROLS

From left to right:

1. Knob : volume control + mains switch
   Lever: radio - P.U. switch
2. Knob : tone control
   Lever: bass switch
3. Knob : vernier tuning
4. Knob : waverange switch
5. Knob : main tuning
6. Knob (above right) for frame-aerial (ferroceptor)

VALVES

B1:EF41
B2:ECH81
B3:EBF80
B4:EBC41
B5:ECC40
B6:EL84
B7:EL84
B8:EZ80
B9:EZ80
B10:EM34

DIMENSIONS

Length : 60 cm)
Depth : 25 cm) knobs included
Height : 49 cm)

WEIGHT

16.0 kg.

DIAL LAMPS

L1 : 8045D-00; L2 : 8045D-00; L3 : 8073D-00

MAINS VOLTAGE

90, 110, 125, 180, 200, 220V (50 c/s).

CONSUMPTION

80 W approx.

LOUDSPEAKER

type 9758-05 Z=5Ω

BANDWIDTH

The I.F. bandwidth (1:10) measured from g1 of B2 is approx. 11 kc/s. The "overall" bandwidth (1:10) measured from the aerial socket is about 9.5 kc/s at 1622 kc/s and 9 kc/s at 1000 kc/s.

93 979 09.1.05
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List of illustrations:

CIRCUIT DESCRIPTION

A. R.F. Part

Fig.1 shows for every position of the waverange switch a simplified diagram of the R.F. part.
Bandspread in the ranges S.W.2a, S.W.2b and S.W.2c is obtained by connecting condensers in series and in parallel with the variable condenser.

The vernier control is obtained by self-induction changes of the coil S28 for the ranges S.W.2a, S.W.2b and S.W.2c and of the coil S35 for the range S.W.2d.

B. The A.F. Part

The A.F. amplifier comprises 3 stages:
1. The pre-amplifier, B4, with tone control circuit.
2. The phase invertor valve, B5.
3. The push-pull output stage.

The A.F. signal obtained after detection is applied via R31-R32, C53, R39 and C54 to gB4. The volume controls R31-R32 and R54-R55 are mounted on one spindle in connection with the physiological tone correction.

1. TONE CONTROL

a. Bass-switch (SK6, fig.4)

Connected between the anode and the grid of B4 is an inverse feedback circuit some elements of which can be switched in and out of circuit.
The working is as follows:
The impedance of the parallel connection R45-C59 is greater for low frequencies than for high ones, as a result of which the inverse feedback for the bass notes is reduced. The resistor R46 which can be connected in parallel to R45 reduces the influence of the filter R45-C59.
In the grid circuit of B4 there is also C54, a small capacitor which attenuates the bass notes reaching gB4. This capacitor can be short circuited with the bass-switch.

Summary of the 3 positions of SK6:
1. Minimum bass notes: C54 in series with C53-R39
R46 parallel to R45-C59

2. Normal : C54 shortcircuited
   R46 parallel to R45-C59
3. Maximum bass notes: C54 shortcircuited
   R46 switched out of circuit

b. Whistle filter (9000 c/s) (fig.4)

The 9000 c/s whistle filter consists of the series circuit: C55-S48. Moreover a signal coming from S51 is applied to C55. At the resonance frequency a maximum voltage is produced across S48 which is applied to gB5 via R58 as inverse feedback voltage. The purpose of C64 is to prevent another rise of the frequency characteristic above 9000 c/s. The whistle filter is only switched on in the "radio"position of SK7.

c. Treble control (fig.4)

The treble response is adjusted with R49-R50.
In the position "maximum treble" (slider of R49-R50 at the top of R49) the treble response is boosted because of the fact that C61 is connected in parallel to R47-R51.
In the position "minimum treble" (slider of R49-R50 to the earth side of R50) R47-R49-C60-R48 and R51-C61 form two low-pass filters as a result of which the treble response is attenuated.

d. Pick-up correction

In the position "gramophone" of SK7, R38 in the inverse feedback circuit of B4 is replaced by the network R29-R30-C50. The impedance of this network is lower for the treble notes than for the bass so that the inverse feedback for the treble notes is reduced.

2. PHASE INVERTOR CIRCUIT (fig.5)

The A.F. signal which appears across R54-R55 is fed via R56 to gB5. B5 operates as normal A.F. amplifier. B5' which receives part of this amplified signal, is fed back via R67 in such a way that the signal voltage across R71 is equal but opposite in phase to the signal voltage across R69.

3. PUSH PULL OUTPUT STAGE

B6 derives its excitation voltage from B5, and B7 from B5'. These voltages are opposite in phase (see C2).

TRIMMING THE RECEIVER

A. The I.F. Part

1. Set the waverange switch to M.W.
2. Turn the variable condenser to minimum.
3. Set the volume control to maximum.
4. Set the P.U. radio switch to radio.
5. Unscrew the iron cores of the I.F. coils.
6. Connect a voltmeter via a trimming transformer to the extension loudspeaker socket.

7. Apply to g1 of B2 a modulated signal of 452 kc/s via a capacitor of 33000 pF.
8. Trim the I.F. circuits in the following order:

   4th I.F. circuit S46-S47-C41 (coil U).
   3rd I.F. circuit S44-S45-C40 (coil U).
   1st I.F. circuit S40-S41-C38 (coil T).
   2nd I.F. circuit S42-S43-C39 (coil T).
   3rd I.F. circuit S44-S45-C40 (coil U).

   After the last circuit has been trimmed the cores of the I.F. coils must be left as they are.
9. Seal the cores.

Note

The iron cores of the I.F. bandfilters have been sealed with "Vaseline Compound" (see list of parts and tools). This compound can easily be removed in the cold state with the aid of a screwdriver. Heating of the core damages the core holder and makes trimming impossible.

B. R.F. and oscillator circuits

Trimming is done with the aid of trimming points on the dial (see fig.2).
There is no need to take the chassis out of the cabinet. Before starting to trim, be sure that the pointers are in the right positions at minimum capacitance of the variable capacitor.

The positions of the pointers are (at minimum position of the variable capacitor).

For range M.W. on trimming point (1)
For range S.W.3 on trimming point (4)
For range S.W.2b on trimming point (5)
For range S.W.2a on trimming point (5)
For range S.W.2c on trimming point (3)
For range S.W.2d on trimming point (3).

For all waveranges the following applies:

1. Set the volume control to maximum.
2. Turn the tone control to the "quality" position.
3. Connect a voltmeter via a trimming transformer to the extension loudspeaker socket.

Trim as indicated in the following tabel strictly observing the order given:

1	Waverange switch in position	M.W.	S.W.3	S.W.2b	S.W.2a	S.W.2c	S.W.2d
2	Unsolder connection to SK8	-	-	-	-	-	-
3	Pointer on trimming point... by means of tuning knob	2	2	6*	2*	2*	2*
4	Apply modulated signal of... to aerial socket via a capacitor of 33000 pF	553 kc/s	-	-	-	-	-
5	Apply modulated signal of.... to aerial socket via a normal dummy aerial	-	1.72 Mc/s	11.6 Mc/s	17.8 Mc/s	9.1 Mc/s	5.18 Mc/s
6	Trim for maximum output voltage	S39 S27 S17a S18a	S37 S24 S16	S30 S21 S10	S29 S20 S8	S31 S22 S12	S34 S23 S14
7	Pointer on trimming point... by means of tuning knob	1	4	5*	-	-	-
8	Apply modulated signal of... to aerial socket via a capacitor of 33000 pF	1630 kc/s	-	-	-	-	-
9	Apply modulated signal of.... via a normal dummy aerial	-	5.1 Mc/s	18 Mc/s	-	-	-
10	Trim for maximum output voltage	C37 C21 C7	C35 C20 C6	C32 C18 C8	-	-	-
11	Repeat the points	2-10	2-10	2-10	-	-	-
12	Seal the trimmers and cores	S39 S27 S17a S18a C37 C21 C7	S37 S24 S16 C35 C20 C6	S30 S21 S10 C32 C18 C8	S29 S20 S8	S31 S22 S12	S34 S23 S14
13	Solder the connection to SK8	-	-	-	-	-	-

* Place vernier-tuning in the middle position on the dial.

REPAIRS AND REPLACEMENTS

Uncasing

1. Remove rear panel and bottom plate.
2. Remove knobs (they pull off except the knob of the vernier-tuning which has to be unscrewed).
3. Unscrew loudspeaker baffle (6 screws) and 1 screw above frame aerial.
4. Unscrew the four bottom screws.
5. Carefully draw the chassis out of the cabinet.

Variable capacitor and pointer drive

The path and the lengths of the cables are indicated in fig.3, the variable capacitor being set to maximum.

A. Variable capacitor drive

1. Remove the chassis from the cabinet.
2. Remove the broken cables.
3. Assemble the new cables "A" and "B".
4. Push the nipple a of the cable A into the slit A1 of the small drum and pass the cable $\pm$ 2 x in a clockwise direction around the drum.
5. Place the cable guide into position.
6. Pass the cable $\pm \frac{1}{2}$ x in an anti-clockwise direction around the drum of the variable capacitor.
7. Fix the cable temporarily with a crocodile clip.
8. Push the nipple b of the cable B into the slit B1.
9. Pass the cable B $\pm \frac{1}{2}$ x in an anti-clockwise direction around the small drum.
10. Place the cable guide into position.
11. Pass the cable around the pulley and $\pm 1\frac{1}{2}$ x in a clockwise direction around the variable capacitor drum.
12. Hook the spring into the cableloops, pass the ends through the drum opening and lay one end in the right direction around the pin of the drum.
13. Fix the spring on its bracket and remove the crocodile clip.

Pointerdrive.

1. Remove the chassis from the cabinet.
2. Remove the dialscale and if desired also the baffle.
3. Put cable D with nipple d in slit D1 on the cable drum and turn $\pm 1\frac{1}{2}$ turns to the left and clip temporarily with a crocodile clip on the friction wheel.
4. Put cable C with nipple c in slit C1 on the cabledrum and turn $\pm 2\frac{1}{2}$ turns to the right and clip temporarily with a crocodile clip on the friction wheel.
5. Put the baffle back in place.
6. Remove the crocodile clip from cable D and put the cable on its pullies (see fig.3).
7. Remove the crocodile clip from cable C and put the cable on its pullies (see fig.3).
8. Hook the two cable ends together with hook H as indicated in figure 3.
9. Fix the pointer carriers and pointers to the cable.
10. Check the tension in the cables, it must be taken up entirely by the spring on the side of the chassis.

Frame aerial drive.

1. Remove rear panel.
2. Remove dial lampholder.
3. Remove broken cord.
4. Take the aerial unit out of the cabinet (3 wood-screws and 1 cylindrical screw)...
5. Make up the cord according to fig.3.
6. Turn the knob entirely to the left.
7. Insert nipple p of cable E-F in the slit P1 of drum under frame aerial, the drum should be turned so that the slit is above the bracket.
8. Put the cord E11/4 turns to the left around the drum under frame aerial and cord F1/4 turn to the right around this drum.
9. Fix both cords on the drum with some vaseline compound.
10. Mount the frame aerial unit on its place.
11. Place the outer cables in their supports.
12. Put the cord F $\pm$ 1 turn to the right around the drum on the baffle and cord E $\pm$ 1/4 turn to the left around this drum.
13. Hook the cable loops in the spring and hook the other end of the spring to screw in the drum.

Repair of the vernier control

For the repair of this part unscrew the bracket from the chassis after which it will be easy to remove both the driving spindle and the cores.
Keep always free of grease the rubber driving rolls and core rods.

After repair the cores must be moved to and fro once or twice against their stop points, after which they come automatically in the right position.

Mainstransformer

If the original mainstransformer of this apparatus becomes defective, it must be replaced by the standard transformer mentioned in the electrical parts list.

If a mains tension of 180 Volts must be applied to the set, equipped with the standard transformer, it must be applied to the points 1A and 5 of this transformer. In case, the standard transformer has been replaced, the voltage adaptor, mentioned in the list of parts and tools, should also be replaced.

For connections see fig. 10.

CURRENTS AND VOLTAGES

			Va	Vg2(+4)	Vk	Ia	Ig2(+4)
B1	EF41	Pentode	184	90	2	5.0	1.5
B2	ECH81	Hexode	235	98	1.9	2.7	5.7
		Triode	90	-	1.9	4.2	-
B3	EBF80	Pentode	235	70	-	5.0	1.7
B4	EBC41	Triode	85	-	1.0	0.55	-
B5	ECC40	Triode	72	-	1.9	0.9	-
		Triode	72	-	1.9	0.9	-
B6	EL84	Pentode	255	235	7.2	38	4.3
B7	EL84	Pentode	260	235	7.2	32	4.1
B10	EM34	Tuning indicator	235	d1=25 d2=50	-	-	d1=0,21 d2=0,18
			Volts	Volts	Volts	mA	mA

VC1 = 280 Volts
VC2 = 275 Volts

Sprim. 370 mA (220V 50 c/s)

These measurements have been taken with the Universal Measuring Instrument GM 4257 with the receiver connected to 220V a.c. no signal on the aerial socket. Radio-P.U. switch to radio, and bass-switch on "N".
In the later versions of this apparatus there is a plastic disc behind the knob for the ferroceptor, in order to prevent the loud-speaker cloth from becoming dirty.
At a large output of the loudspeaker this plate may give rise to rattling or vibration.
If necessary this plate may be removed.

LIST OF PARTS AND TOOLS

When ordering always quote:

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

		Description	Code number
		Cabinet	A3 003 29.0
		Spring in drum frame aerial drive.	A3 646 80.0
		Rear panel	A3 255 40.0
		Knobs (4 x)	A3 368 89.0
		Knob verniercontrol (1 x)	23 610 54.1
		Levers (bass-switch and Radio-P.U. switch)	23 643 94.0
		Connection calle for frame aerial	R210 KN/03AA
		Large cable drum under frame aerial	P4 095 06/01
		Emblem on EM34	A3 357 13.0
		Dial (overseas)	A3 741 04.0
		Dial (Mediterranean)	A3 741 05.0
		Chassis	
		Connecting plate (aerial-earth)	A1 340 92.0
		Valve holder	B1 505 22.0
		Valve holder ECH81	B1 506 59.0
		Spring for fixing two coilcans	A3 652 58.3
		Spring for fixing one coilcan	A3 652 75.1
		Indicationdisc waverangeswitch	A3 404 08.0
		Indication disc verniercontrol	A3 404 09.2
		Painter carrier	A3 372 35.0
		Valve holder EM34	B1 505 26.1
		Ornamental window for frame aerial	A3 360 63.0
		Dial for frame aerial	A3 724 54.0
		Knob for frame aerial	A3 737 22.0
		Dial lampholder	A3 359 16.1
		Spring in drum variable capacitor	A3 646 09.3
		Voltage adaptor	A3 228 85.0
		Tools:	
		Service oscillator	GM 2882 or GM 2883 or GM 2884
		Universal Measuring Instrument	GM 4256 or GM 4257
		Vaseline Compound	X 009 47.0

JvE/MZ

S1	–	A3 141 39.3
S2	–	
S3	–	
S7	1.5 Ω	A3 125 79.0
S8	< 1 Ω	
S9	1.5 Ω	A3 125 26.0
S10	< 1 Ω	
S11	1.6 Ω	A3 125 28.0
S12	< 1 Ω	
S13	1.6 Ω	A3 125 28.0
S14	< 1 Ω	
S15	13 Ω	A3 125 33.0
S16	1.7 Ω	
S17	< 1 Ω	A3 117 56.0
S17a	< 1 Ω	
S18	< 1 Ω	A3 117 56.0
S18a	< 1 Ω	
S19	26 Ω	A3 110 66.0
S20	< 1 Ω	A3 125 80.0
S21	< 1 Ω	A3 125 39.0
S22	< 1 Ω	A3 125 41.0
S23	< 1 Ω	A3 125 41.0
S24	1.7 Ω	A3 125 46.0
S25		
S26	45 Ω	A3 125 35.0
S27	3 Ω	
S28	< 1 Ω	A3 117 43.0
S29	< 1 Ω	A3 113 10.0
S30	< 1 Ω	A3 125 42.0
S31	< 1 Ω	A3 125 44.0
S32	< 1 Ω	A3 125 60.0
S33	< 1 Ω	
S34	< 1 Ω	
S35	< 1 Ω	A3 117 43.0
S36	< 1 Ω	A3 125 68.0
S37	4 Ω	
S38	< 1 Ω	A3 125 72.0
S39	< 1 Ω	
S40	2.5 Ω	A3 121 94.0
S41	5.0 Ω	
S42	2 Ω	
S43	3 Ω	
C38	115 pF	
C39	115 pF	

S44	2.5 Ω	A3 121 94.0
S45	5.0 Ω	
S46	2 Ω	
S47	3 Ω	
C40	115 pF	
C41	115 pF	
S48	100 Ω	A1 000 68.0
S49	300 Ω	A3 169 60.0
S50	300 Ω	
S51	< 1 Ω	
S52	4 Ω	
C1	50 µF	48 317 59/50+50
C2	50 µF	
C3	2200 pF	48 751 10/2K2
C4	50 µF	48 312 09/50
C5 par.	100 pF	48 223 02/100E
	39 pF	48 222 05/39E
C6	30 pF	28 212 36.4
C7	5 pF	49 627 50.0
C8	60 pF	49 005 58.0
C9	11-498 pF	
C10	11-498 pF	49 001 66.2
C11	11-498 pF	
C12	150 pF	48 203 10/150E
C13	150 pF	48 203 02/150E
C14	150 pF	48 203 10/150E
C15	15000 pF	48 750 10/15K
C16	0.1 µF	48 751 10/100K
C17	150 pF	48 203 10/150E
C18	60 pF	49 005 58.0
C19 par.	100 pF	48 223 02/100E
	39 pF	48 222 05/39E
C20	30 pF	28 212 36.4
C21	30 pF	28 212 36.4
C22	0,22µF	48 751 10/220K
C23	150 pF	48 203 02/150E
C24	150 pF	48 203 10/150E
C25	15000 pF	48 750 10/15K
C26	220 pF	48 203 10/220E
C27	500 pF	48 336 01/500E
C28	180 pF	48 336 01/180E
C29	100 pF	48 203 10/100E
C30	100 pF	48 203 10/100E
C31	100 pF	48 203 02/100E
C32	60 pF	49 005 58.0
C33	150 pF	48 336 01/150E
C34	1575 pF	48 429 01/1K575
C35	30 pF	28 212 36.4
C36	390 pF	48 429 01/390E
par.	22 pF	48 336 99/22E
C37	30 pF	28 212 36.4
C38	voir bobines	≠
C39	see coils	
C40	véanse bobinas	
C41		

C42	47000 pF	48 750	10/47K
C43	330 pF	48 203	10/330E
C44	47000 pF	48 750	10/47K
C45	12 pF	48 201	10/12E
C46	1500 pF	48 206	50/1K5
C47	0,1 µF	48 751	10/100K
C48	47 pF	48 203	10/47E
C49	47000 pF	48 750	10/47K
C50	680 pF	48 203	10/680E
C51	18000 pF	48 750	10/18K
C52	8200 pF	48 750	10/8K2
C53	3900 pF	48 751	10/3K9
C54	470 pF	48 203	10/470E
C55	18000 pF	48 750	10/18K
C56	10000 pF	48 751	10/10K
C57	50 µF	48 313	22/50
C58	22 pF	48 201	10/22E
C59	270 pF	48 203	10/270E
C60	680 pF	48 203	10/680E
C61	680 pF	48 203	10/680E
C62	560 pF	48 203	10/560E
C63	6800 pF	48 751	10/6K8
C64	5.6 pF	48 201	20/5E6
C65	10 µF	48 313	09/10
C66	50 µF	48 313	22/50
C67	33000 pF	48 751	10/33K
C68	33000 pF	48 751	10/33K
C69	1000 pF	48 758	20/1K
C70	1000 pF	48 758	20/1K
C71	4300 pF	48 429	01/4K3
C72	5600 pF	48 429	01/5K6
C73	0.1 µF	48 757	20/100K
R1	1200 Ω	49 379	79.0
R2	47 Ω	B1 636	16.0
R3	10000 Ω	A9 999	00/10K
R4	0.1 MΩ	A9 999	00/100K
R5	330 Ω	A9 999	00/330E
R6	0.1 MΩ	A9 999	00/100K
R7	10000 Ω	A9 999	00/10K
R8	1000 Ω	A9 999	00/1K
R9	12000 Ω	A9 999	00/12K
R10	1000 Ω	A9 999	00/1K
R11	par.2x47000 Ω	A9 999	00/47K
R12	150 Ω	A9 999	00/150E
R13	1 MΩ	A9 999	00/1M
R14	47000 Ω	A9 999	00/47K
R15	33000 Ω	A9 999	00/33K
R16	560 Ω	A9 999	00/560E
R17	1 MΩ	A9 999	00/1M
R18	2.2 MΩ	A9 999	00/2M2
R19	1.8 MΩ	A9 999	00/1M8
R22	1.2 MΩ	A9 999	00/1M2
R23	0.1 MΩ	A9 999	00/100K
R24	47000 Ω	A9 999	00/47K
R25	2.2 MΩ	A9 999	00/2M2
R26	0.68MΩ	A9 999	00/680K

R27	22000 Ω	A9 999	00/22K
R28	47000 Ω	A9 999	00/47K
R29	82000 Ω	A9 999	00/82K
R30	0.68 MΩ	A9 999	00/680K
R31	0.65 MΩ	49 500	64.0
R32	0.2 MΩ		
R33	0.47 MΩ	A9 999	00/470K
R34	1 MΩ	A9 999	00/1M
R35	1 MΩ	A9 999	00/1M
R38	0.47 MΩ	A9 999	00/470K
R39	1 MΩ	A9 999	00/1M
R40	1 MΩ	A9 999	00/1M
R41	1800 Ω	A9 999	00/1K8
R42	0.22 MΩ	A9 999	00/220K
R43	1 MΩ	A9 999	00/1M
R44	1 MΩ	A9 999	00/1M
R45	6.8 MΩ	A9 999	00/6M8
R46	0.56 MΩ	A9 999	00/560K
R47	0.22 MΩ	A9 999	00/220K
R48	0.15 MΩ	A9 999	00/150K
R49	0.65 MΩ	49 475	20.0
R50	2 MΩ		
R51	0.22 MΩ	A9 999	00/220K
R53	68000 Ω	A9 999	00/68K
R54	0.65 MΩ	49 501	11.0
R55	0.2 MΩ		
R56	0.1 MΩ	A9 999	00/100K
R57	390 Ω	A9 999	00/390E
R58	2.2 MΩ	A9 999	00/2M2
R59	0.15 MΩ	A9 999	00/150K
R60	0.15 MΩ	A9 999	00/150K
R61	10000 Ω	A9 999	00/10K
R62	56 Ω	A9 999	00/56E
R63	2200 Ω	A9 999	00/2K2
R64	2200 Ω	A9 999	00/2K2
R65	3900 Ω	A9 999	00/3K9
R66	1 MΩ	A9 999	00/1M
R67	1 MΩ	A9 999	00/1M
R68	1000 Ω	A9 999	00/1K
R69	0.68 MΩ	A9 999	00/680K
R70	100 Ω	A9 999	00/100E
R71	0.68 MΩ	A9 999	00/680K
R72	1000 Ω	A9 999	00/1K

BX735A

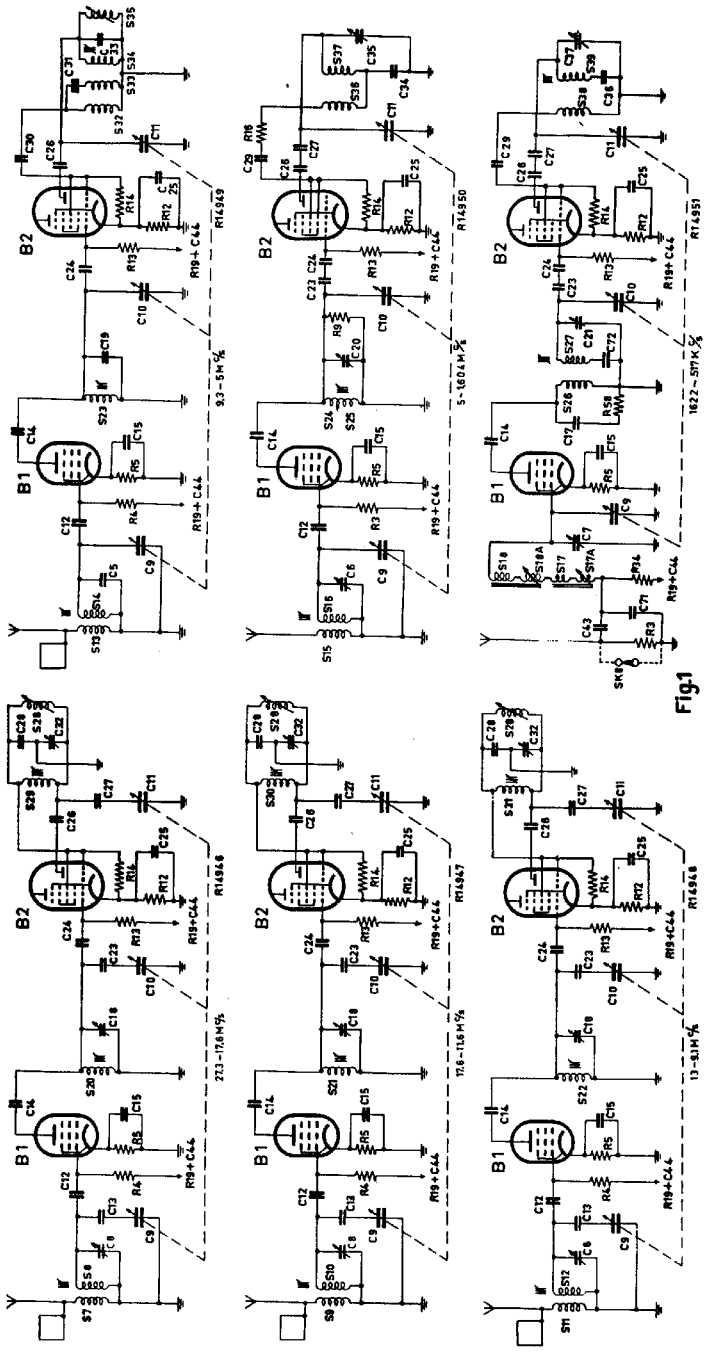


Fig1

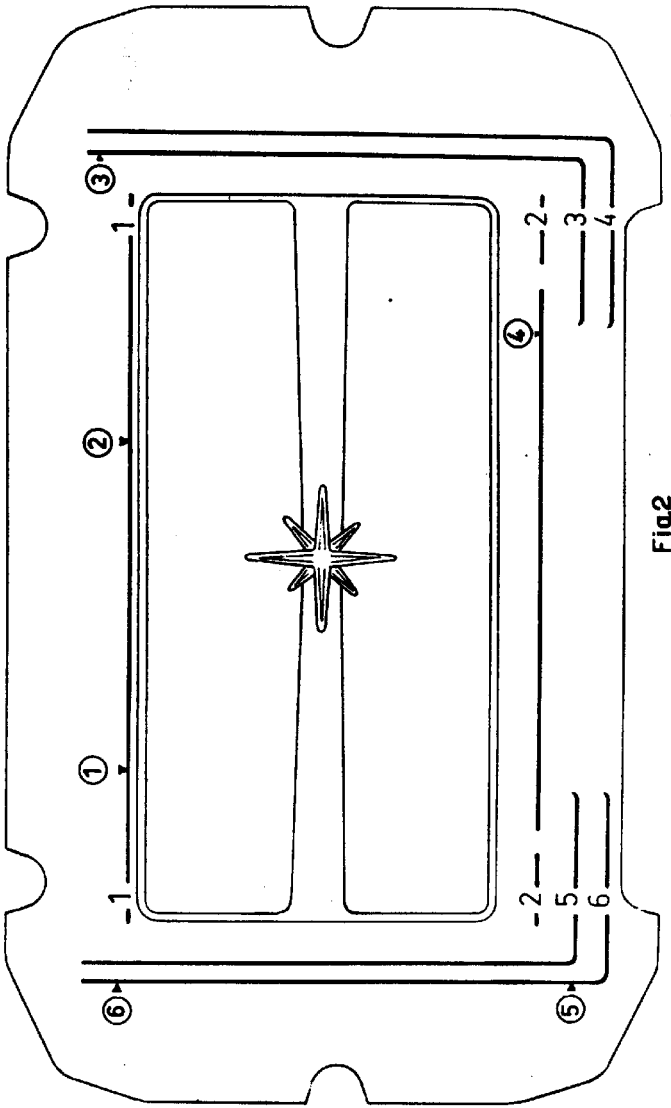


Fig.2

BX735A

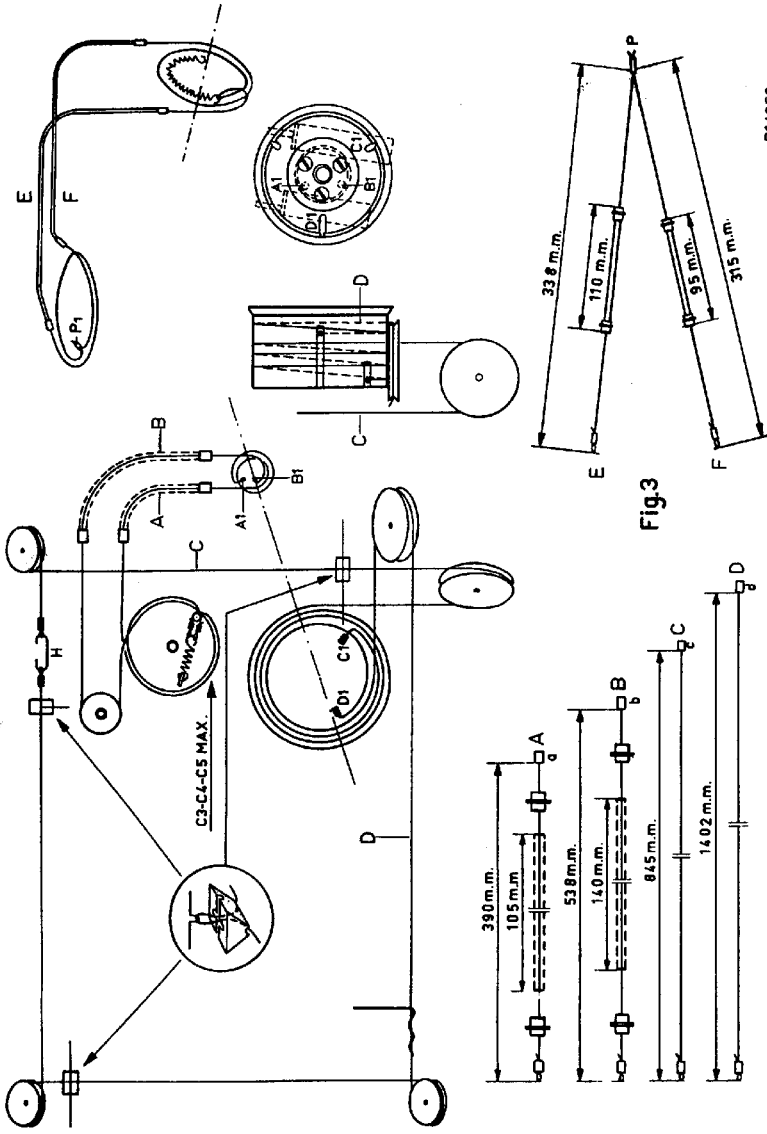

E
F
P1
A1
B1
C1
D1
A
B
C
D
H
C3-C4-C5 MAX.
P
338 m.m.
110 m.m.
95 m.m.
315 m.m.
R14952
390 m.m.
105 m.m
538 m.m.
140 m.m.
845 m.m.
1402 m.m.

Fig.3

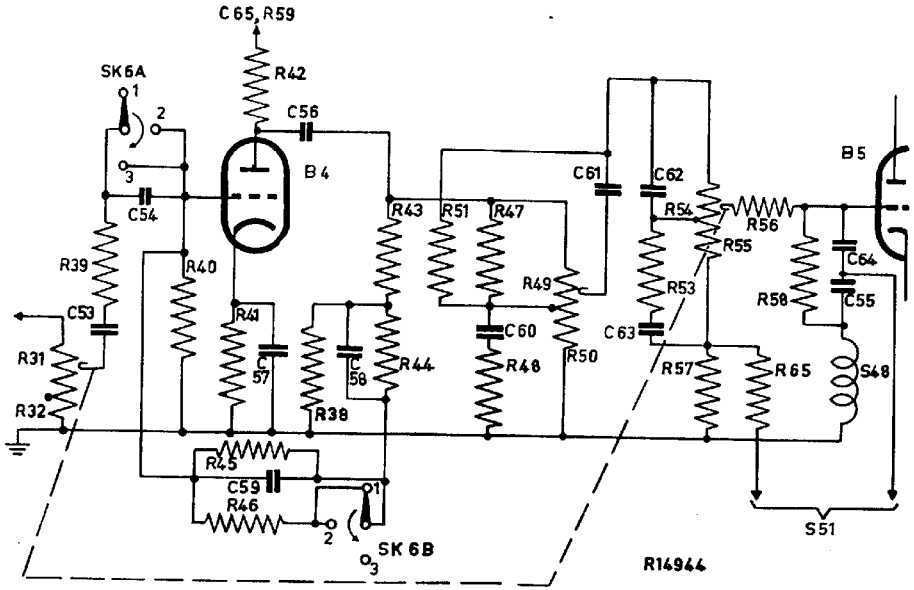

C65, R59
SK6A
R42
C56
B4
C54
R43
R51
R47
C61
C62
R54
R56
B5
R39
R40
R49
R53
R55
C64
C53
R41
C60
C63
R58
C55
R31
C57
C58
R44
R48
R50
R57
R65
S48
R32
R38
R45
C59
R46
SK 6B
S51
R14944

Fig 4

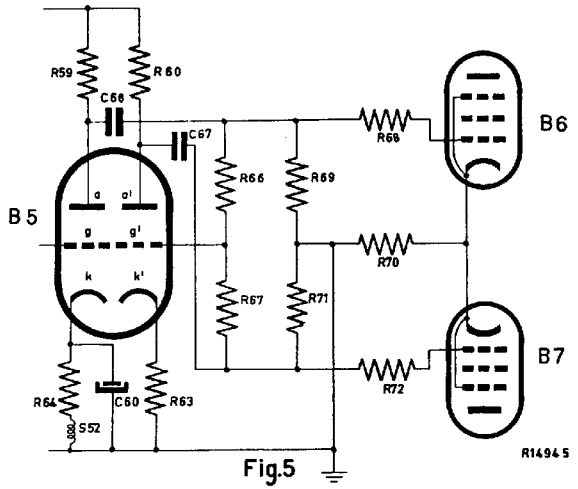
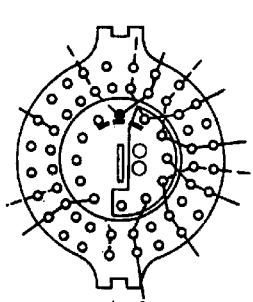
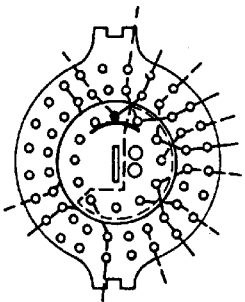
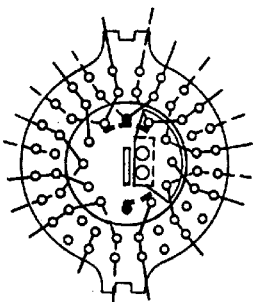
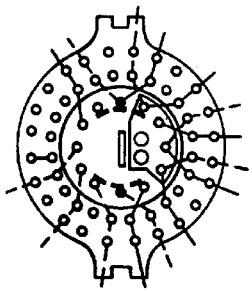

R59
R60
C66
C67
B6
R68
B5
R66
R69
R70
R67
R71
B7
R72
R64
C60
R63
S52
R14945

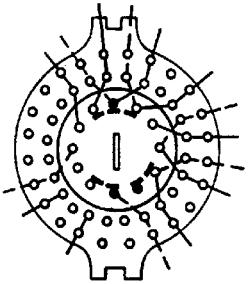
Fig.5

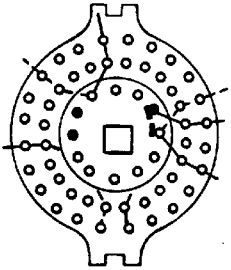

sk1

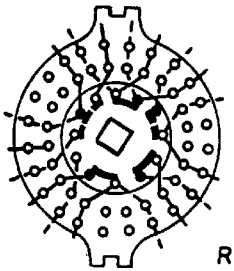

sk2


sk3


sk4


sk5


sk6


R14943

sk7

Fig.6

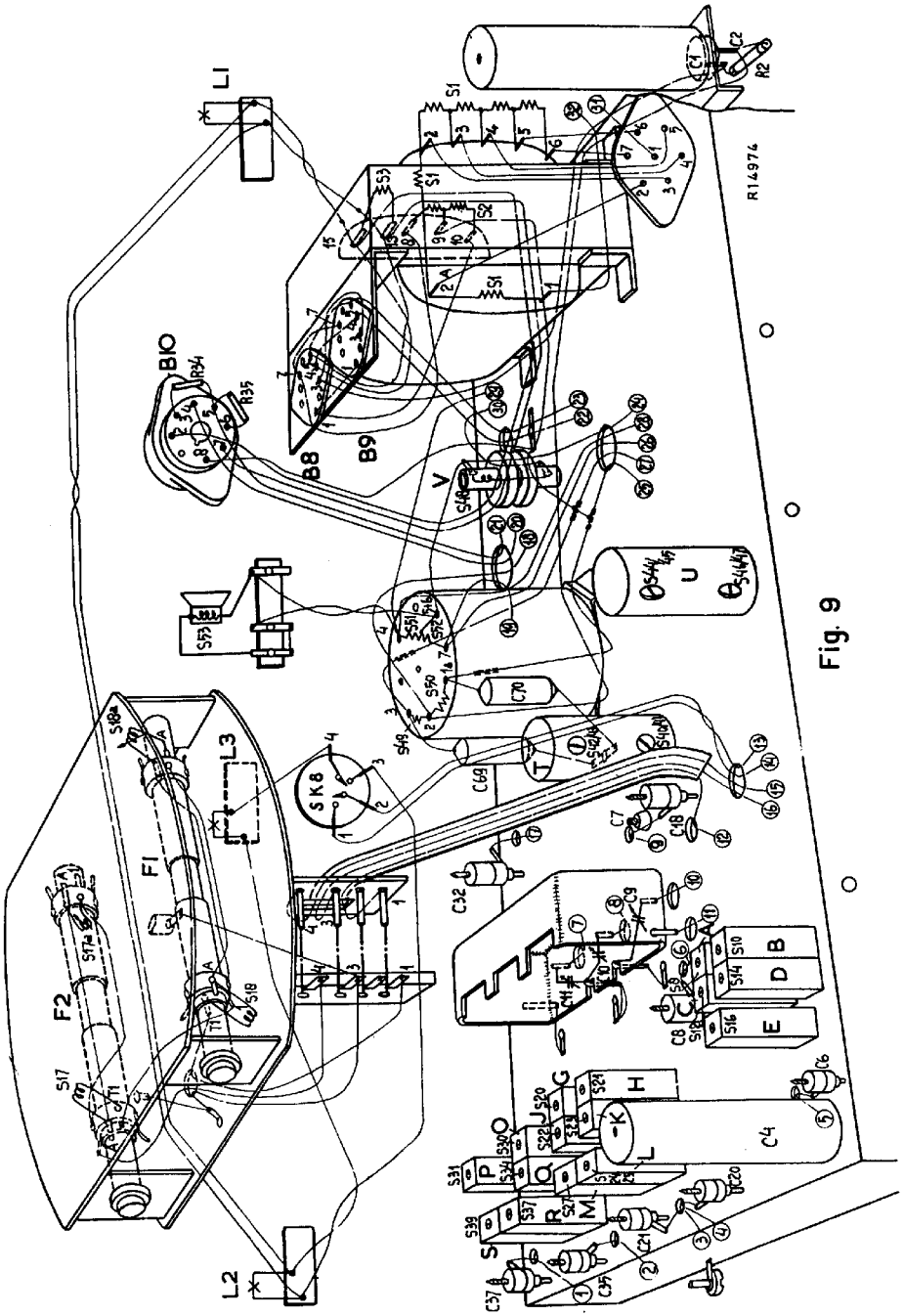


Fig. 9

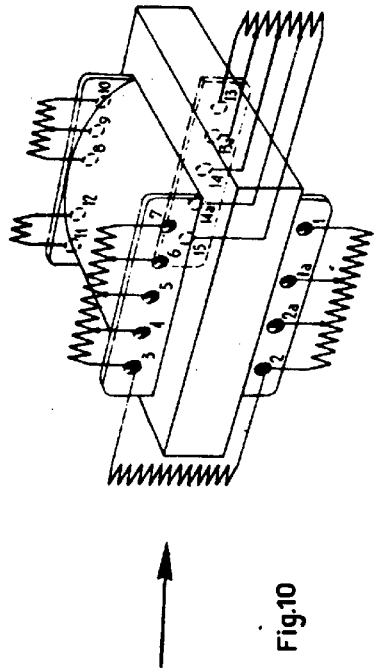


Fig.10

S	U. 35.28.T. A.B. C.D. N.G.H.P.O.J.K.E.Q. M.L.S.R. 19.
C	73.52. 64.55.51.63. 57.65. 53. 62. 50. 61. 54.58. 68. 59. 60.56.67. 66.49. 3.47. 44. 48.45. 25.42. 22. 46. 26. 7. 24. 27. 71. 43. 29.17.23.13.28.30.14. 12.5.31.18. 33. 15. 4. 36.34.72.16.
R	33.28. 58.27.53. 38.34.32.54.55.39.57.65. 29.30.51.68.44.56.43.69.50.49.59.66.47.60.46.45.61.70.63.67.42.72.71.40.64.48.41.62.25.1.26.24.11a.11.23.12.19.18.17.22.14.15. 13.4. 16. 3. 8. 5. 9. 6. 7.

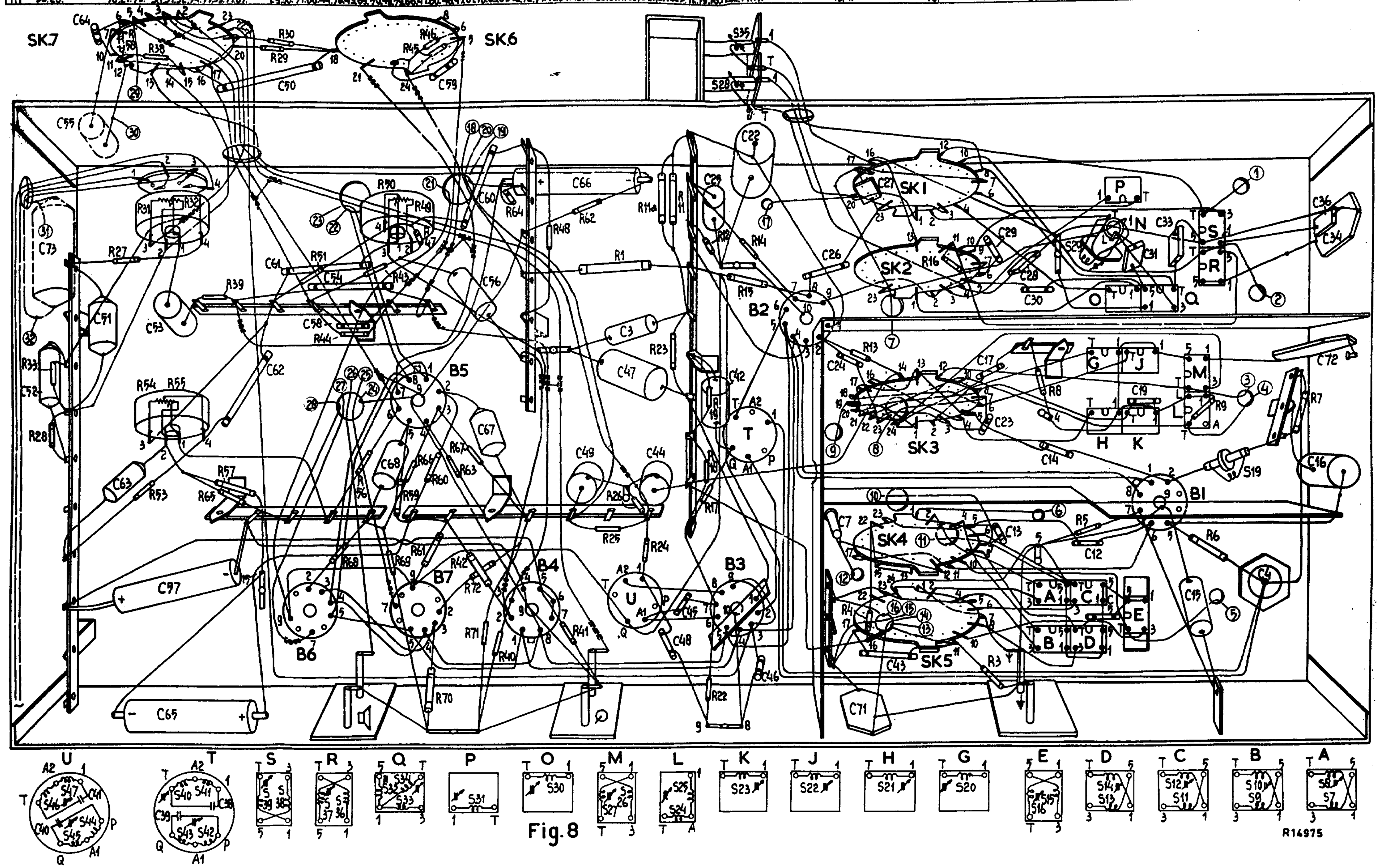


Fig.8

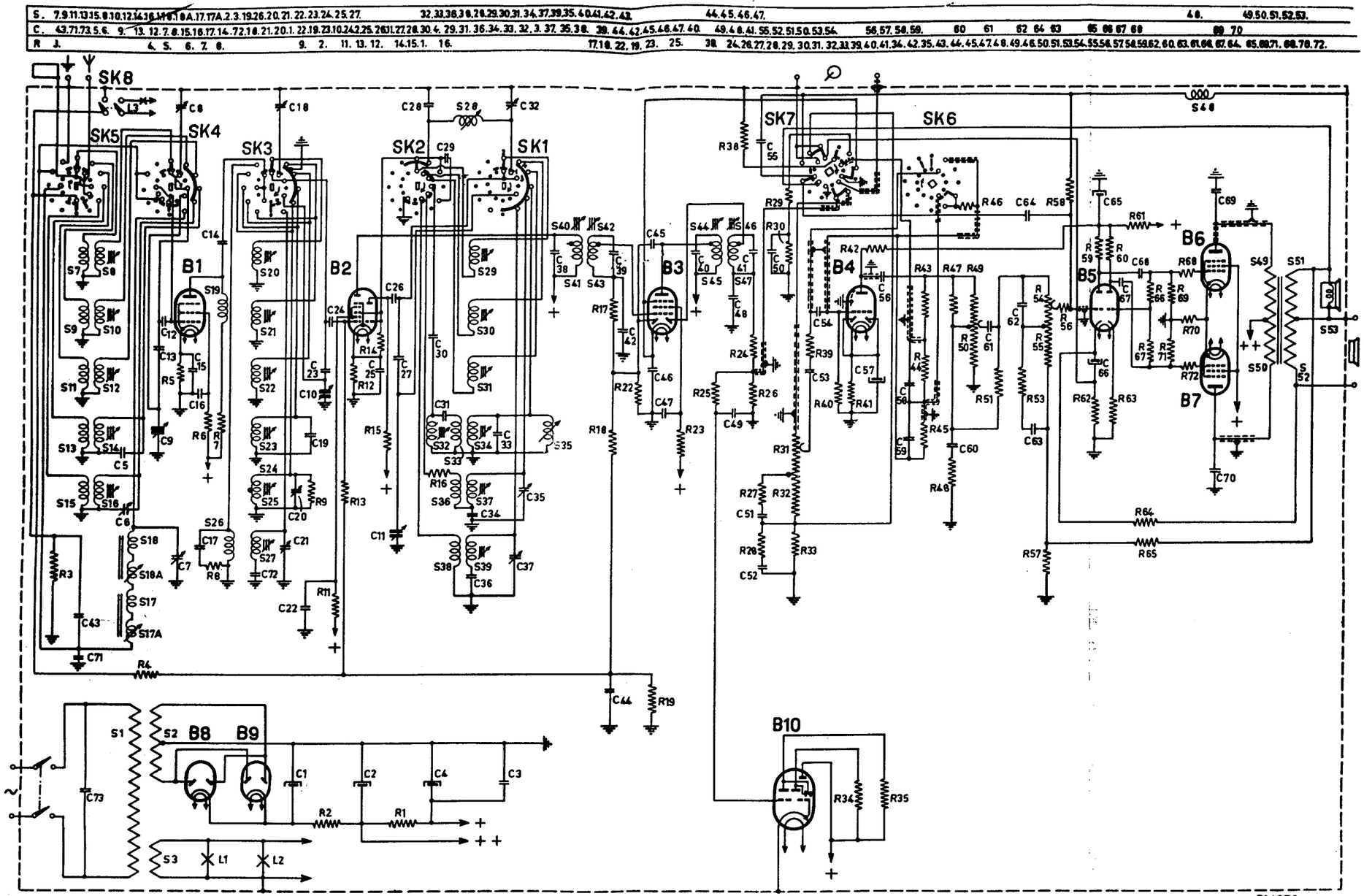
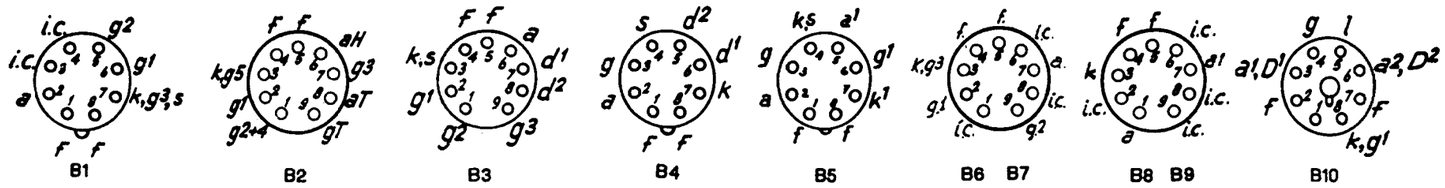

SK8
SK5
SK4
SK3
SK2
SK1
SK7
SK6
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
S1
S2
S3
L1
L2
C73
C71
R4
R19
C44
R14976

Fig.7


B1
B2
B3
B4
B5
B6 B7
B8 B9
B10