PHILIPS-SERVICE

206 A

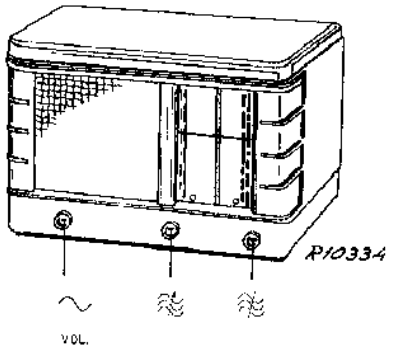
16,7—51 m
186—585 m
708—2000 m

473 kc/s
A-13 464 kc/s
A-19 468 kc/s

9648 Z = 2,5 Ω
A-12 9678 Z = 5 Ω

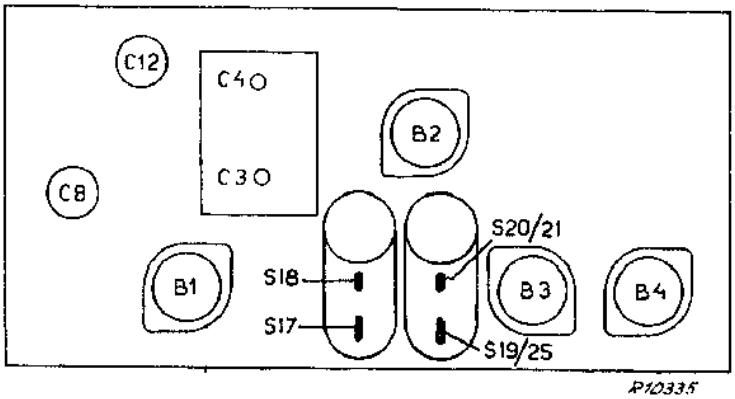
110 V, 125 V, 145 V
200 V, 220 V, 245 V

45 W



	186—585 m I		186—585 m III		186—585 m V
	C3, C4 min	VOL.	max.		857 kc/s—
VOL.	max.		C3, C4 + 15°		C3, C4 857 kc/s
	473 kc/s-33000 pF-gliR1		1550 kc/s—		350 m
	464 kc/s (A-13)		C12, C18 max.		
	468 kc/s (A-19)				
	S19/S25—82 pF		708—2000 m III		
	S20/S21 max.	VOL.	max.		
	S19/S25		C3, C4 + 15°		
	S20/S21—82 pF		400 kc/s—		
	S19/S25 max.		C6 max.		
	S20/S21				
	S17—82 pF				
	S18 max.				
	S17				
	S18—82 pF				
	S17 max.				
	S18				

15) 09 992 44.0



	B1	B2	B 3	B 4	
	ECH3	EF 9	EBL 1	AZ 1	
Va	aT 110 aH 236	230	265		V
Vg2(4)	97	120	240		V
Vk	2,4	25	22		V
Ia	aT 2,8 aH 3,3	5,5	24		mA
Ig2(4)	1,9	1,6	3,4		mA

Ve1 = 276 V
Ve2 = 238 V

R1	0,47 MΩ	48 425 10/470K	C1	50 µF
R2	270 Ω	48 425 10/270E	C2	15 µF
R3	47000 Ω	48 425 10/47K	C3	11-490 pF
R4	1800 Ω	48 467 10/1K8	C4	11-490 pF
R5	82 Ω	48 425 10/82E	C5	39 pF
R6	1000 Ω	49 375 77.0	C6	32 pF
R7	27000 Ω	48 425 10/27K	C7	100 pF
R8	1200 Ω	48 425 10/1K2	C8	2,5-20 pF
R9	68000 Ω	48 425 10/68K	C9	47000 pF
R10	47000 Ω	48 425 10/47K	C10	56 pF
R11	0,5 MΩ	49 500 11.0	C11	470 pF
R12	1 MΩ	49 375 69.0	C12	2,5-20 pF
R13	1,5 MΩ	49 375 62.0	C13	200 pF
R14	220 Ω	48 426 10/220E	C14	418 pF
R15	470 Ω	48 427 10/470E	C15	39 pF
R17	1,8 MΩ	49 375 63.0	C17	103 pF
R18	1 MΩ	49 375 60.0	C18	97 pF
R19	39000 Ω	48 427 10/39K	C19	47000 pF
R20	33000 Ω	48 427 10/33K	C20	47000 pF
R21	2,7 MΩ	49 376 65.0	C21	47000 pF
R22	2,7 MΩ	49 376 65.0	C22	103 pF
			C23	103 pF
			C24	25 µF
			C25	3,9 pF
			C26	22000 pF
			C27	100 pF
			C28	56 pF
			C29	4700 pF
			C30	22 pF
			C31	10 pF
			C32	47000 pF
			C33	0,1 µF
			C34	47000 pF

			49 029 01.0
			28 212 52.0
			48 406 10/39E
			28 212 06.2
			48 406 10/100E
			48 005 05.2
			48 750 20/47K
			48 406 10/56E
			48 406 20/470E
			49 005 05.2
			28 212 08.2
			48 429 01/418E
			48 406 10/39E
			—
			—
			28 182 24.1
			48 406 99/3E9
			48 750 20/22K
			48 406 10/100E
			48 406 10/56E
			48 758 20/4K7
			48 406 10/22E
			48 406 99/10E
			48 750 20/47K
			48 750 20/100K
			48 750 10/47K

S1, S2, S3, S4	A1 055 52.1	S17, S18, C17, C18	A1 035 83.2
S5, S6	A1 000 59.0	S19, S25, S20, S21	
S7, S8, S9, S10	A1 000 56.1	C22, C23	28 573 90.1
S11, S12	A1 000 55.0	S22, S23	A1 080 73.0
S13, S14	A1 000 58.0	S24	28 220 69.0
S15, S16	A1 000 57.0		

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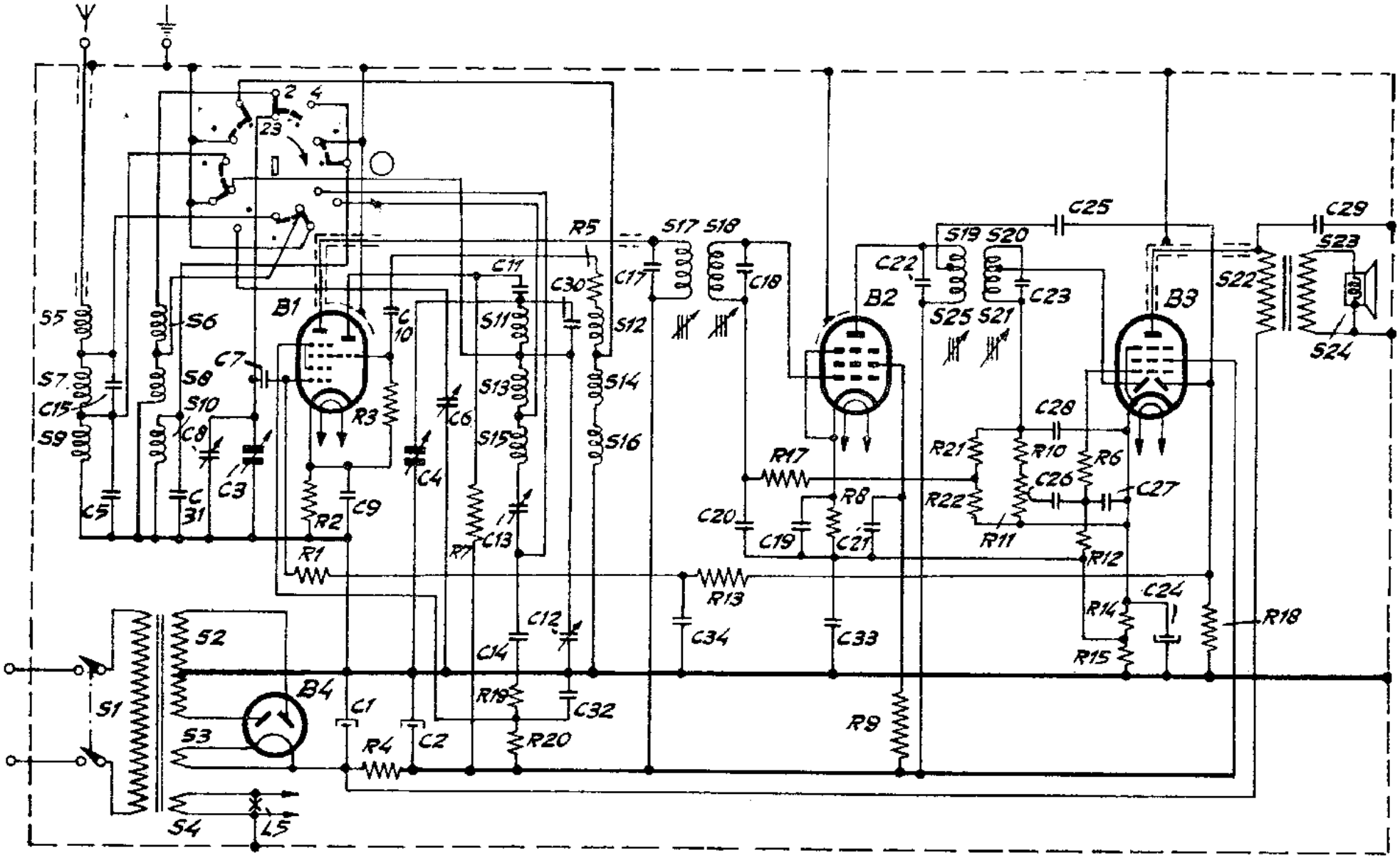
B1
B2
B3
B4
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R17
R18
R19
R20
R21
R22
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C17
C18
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S18
S19
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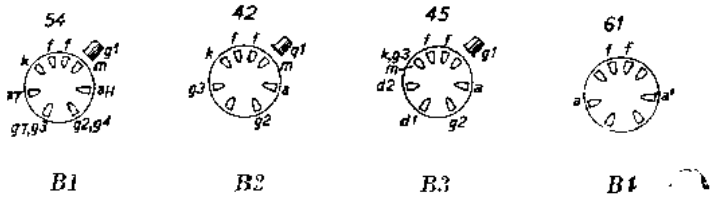
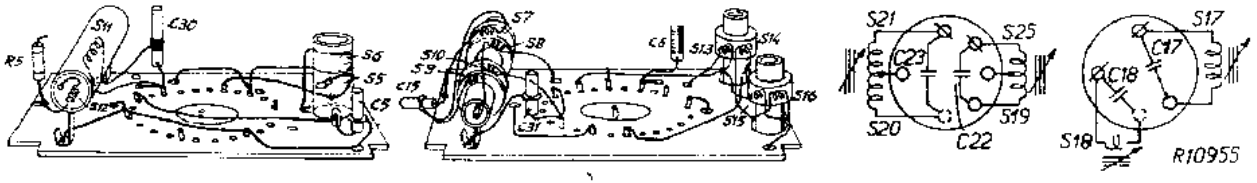
S21
S22
S23
S24
S25
L5
R10953


54
42
45
61
B1
B2
B3
B4


R10955

PHILIPS

SERVICE DOCUMENTATION

for Receiver

206 A

FOR FEEDING FROM A.C. MAINS

WAVERANGES.

Short wave range :	16.7— 51 m	18.0— 5.88	Mc/s)
Medium wave range:	186 — 585 m	(1610 —513	kc/s)
Long wave range :	708 —2000 m	(424 —150	kc/s).

CONTROL KNOBS.

(from left to right).
Volume control and mains switch.
Tuning knob.
Waverange switch.

LOUD SPEAKER: type 9648.

WEIGHT: 6.35 kg.

DIMENSIONS:

Height: 25 cm
Width: 40 cm } Knobs included.
Depth: 21 cm

BANDWIDTH:

I.F.: Fromt the control grid (top) of L1 the 1 : 10 bandwidth lies at about 10 kc/s.
Overall: Medium wave band:From the aerial socket the 1 : 10 bandwith lies at about 9 kc/s.
Long wave band: From the aerial socket the 1 : 10 bandwidth lies at about 8 kc/s.

ADJUSTING THE RECEIVER.

For adjusting the receiver it is necessary to take the chassis out of the cabinet; a number of trimmers are under the chassis. The position of the trimmers is indicated in figs. 3 and 4. In all the waveranges the oscillator frequency is higher than the frequency of the H.F. circuits.
The I.F. is 475 kc/s.

I.F. CIRCUITS.

1. Set the waverange switch at medium waves, the variable condenser at minimum and the volume control at maximum.
2. Connect the output indicator via a trimming transformer to the loudspeaker.
3. Apply a modulated signal of 473 kc/s to the control grid.
4. Detune S19-S25 with a condenser of 80 pF.
   Trim S20-S21 to maximum output.
   Then take away the detuning condenser.
5. Detune S21, trim S19-S25.
6. Detune S17, trim S18.
7. Detune S18, trim S17.
8. Seal the iron cores.

H.F. AND OSCILLATOR CIRCUITS.

MEDIUM WAVE BAND.

Set the wavechange switch at medium waves and the volume control at maximum.

2. Connect the output indicator via a trimming transformer to the loudspeaker.
3. Adjust the variable condenser with the 15° gauge.
4. Apply a modulated signal of 1550 kc/s to the aerial socket via a standard dummy aerial.
5. Tune C12 and C8 to maximum output (fig. 3).
6. Seal the trimmers. Remove the 15° gauge.

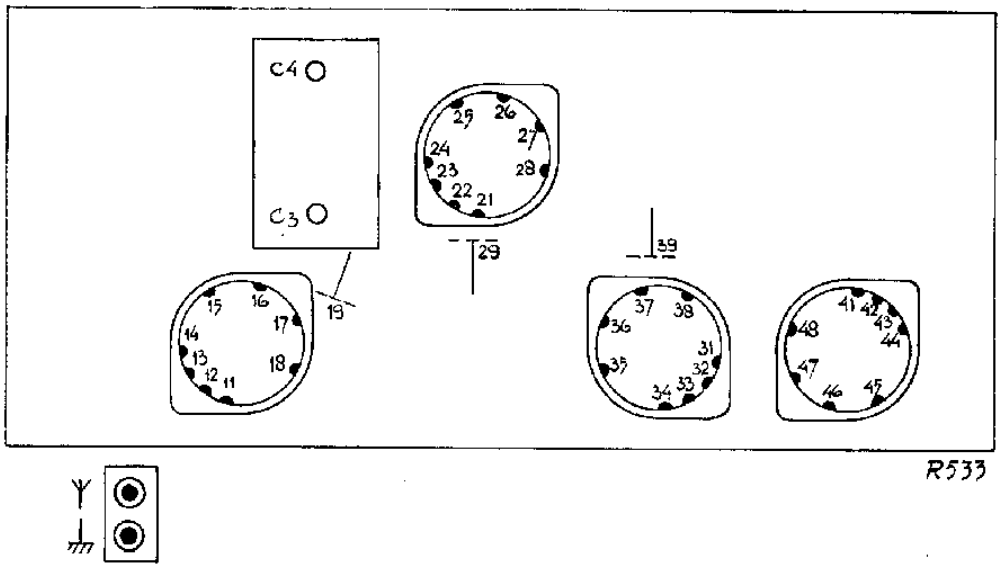
LONG WAVE BAND.

Trimming of this band is effected in entirely the same way as the trimming of the medium wave band. However, the trimming frequency is 400 kc/s, whilst only C6 is trimmed.

ADJUSTING THE DIAL.

1. Apply a modulated signal of 857 kc/s via the standard artificial to the aerial socket of the receiver.
2. Carefully tune the receiver to that frequency.
3. Readjust the pointer at the driving cord to 350 m by means of the little 3 m.m. screw.

MEASURING TABLE



RESISTANCE

12	11	12/ /13	21	22/ /23	32/ /33	42/ /43	2 x Y		3 x C3			C4						
							S.W.	M.W.	S.W.	M.W.	L.W.	S.W.						
	10	10	10	10	10	10	90	360	15	155	400	10						
11	14	18	24	25	28	34	38	45	48	Y	2 x C4							
										LW	MW	LW						
	285	450	460	450	450	385	400	275	270	245	500	500						
10	15	16	17	27														
	200	150	260	110														
9	19	29	35	36	39													
	55	50	220	135	130													

CAPACITY

12									**10**									
11	27	29							**9**	34	37	42						
	185	115								475	440	480						

The numering at the contacts agrees with the numbering in the lay-out and wiring diagrams. 9 = top connection.

LIST OF PARTS AND TOOLS.

When ordering parts always mention:

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

Fig.	Pos.	Description	Code No.	Price
5	1	Cabinet (colour 041)	23 661 06.0	
5	2	Loudspeaker cloth	06 601 29.0	
5	3	Tuning knob (colour 041)	23 612 54.0	
5	4	Knop for waverange switch and volume control (colour 041)	23 610 90.0	
5	5	Station name dial	A1 893 18.0	
5	6	Pointer	A1 349 28.0	
		Shaft of tuning knob	A1 436 84.2	
		Trade mark disc	28 713 27.1	
		Rear panel	A1 341 81.0	
		Plate with pins for mains connection	A1 355 01.0	
		Bolt for fixing the speaker	07 558 17.0	
		Dial lamp holder	08 515 27.1	
		Rubber duct for resilient fixing of the variable condenser	28 725 52.0	
		Draw spring on driving drum	A1 975 10.1	
		Ring (14 mm)	07 027 13.0	
		Ring (10 mm)	28 453 96.0	
		Element of waverange switch	49 543 63.1	
		LOUDSPEAKER (TYPE 9648).	49 238 01.0	
		Milled flange ring	25 873 41.0	
		Paper ring	28 452 69.0	
		IMPLEMENTS.		
		Service oscillator	GM 2880 F	
		Universal measuring apparatus	GM 4256	
		Universal and tube measuring apparatus	GM 7629	
		Insulated trimming key 6 mm	23 685 66.0	
		Insulated trimming screwdriver	M 646 38.2	
		15° gauge	09 992 44.0	

COILS

	Value	Code number	Price
S1			
S2	480 ohm	A1 055 52.1	
S3	< 1 ohm		
S4	< 1 ohm		
S5	2 ohm	A1 000 59.0	
S6	< 1 ohm		
S7	23 ohm	A1 000 56.0	
S8	4 ohm		
S9	170 ohm		
S10	45 ohm		
S11	< 1 ohm	A1 000 55.0	
S12	1 ohm		
S13	7 ohm	A1 000 58.0	
S14	2 ohm		
S15	16 ohm	A1 000 57.0	
S16	250 ohm		
S17	7 ohm	A1 035 83.0	
S18	7 ohm		
C17	103 pF		
C18	97 pF		
S19	3 ohm	28 573 90.1	
S25	—		
S20	—		
S21	3.5 ohm		
C22	103 pF		
C23	103 pF		
S22	700 ohm	A1 080 73.0	
S23	< 1 ohm		
S24	20 ohm	28 220 69.0	

RESISTANCES

	Value	Code number	Price
R1	0,47 M.ohm	49 375 56.0	
R2	270 ohm	49 375 17.0	
R3	47.000 ohm	49 375 44.0	
R4	1.800 ohm	49 356 30.0	
R5	82 ohm	49 375 11.0	
R6	1.000 ohm	49 375 77.0	
R7	27.000 ohm	49 377 41.0	
R8	1.200 ohm	49 375 25.0	
R9	68.000 ohm	49 376 46.0	
R10	47.000 ohm	49 375 44.0	
R11	0,5 M.ohm	49 500 11.0	
R12	1 M.ohm	49 375 60.0	
R13	1,5 M.ohm	49 375 62.0	
R14	220 ohm	49 376 16.0	
R15	470 ohm	49 377 20.0	
R17	1,8 M.ohm	49 375 63.0	
R18	1 M.ohm	49 375 60.0	
R19	39.000 ohm	49 377 43.0	
R20	33.000 ohm	49 377 42.0	
R21	2,7 M.ohm	49 376 65.0	
R22	2,7 M.ohm	49 376 65.0	

TUBES

L1	L2	L3	L4
ECH3	EF9	EBL1	AZ1

Dial light lamp: 8045D-00.

CONDENSERS

	Value	Code number	Price
C1	50 μF	49 029 01.0	
C2	15 μF		
C3	11-490 pF	28 212 52.0	
C4	11-490 pF		
C5	39 pF	49 055 23.0	
C6	32 pF	28 212 06.1	
C7	100 pF	49 055 28.0	
C8	2.5-20 pF	49 005 03.0	
C9	47.000 pF	49 127 61.0	
C10	56 pF	49 055 25.0	
C11	470 pF	49 055 53.0	
C12	2,5-20 pF	49 005 03.0	
C13	120 pF	49 081 46.0	
C14	418 pF	49 081 54.0	
C15	39 pF	49 055 23.0	
C17	103 pF	See "Coils"	
C18	97 pF		
C19	47.000 pF	49 127 61.0	
C20	47.000 pF	49 127 61.0	
C21	47.000 pF	49 128 61.0	
C22	103 pF	See "Coils"	
C23	103 pF		
C24	25 μF	28 182 24.1	
C25	3.9 pF	49 055 11.0	
C26	22.000 pF	49 127 59.0	
C27	100 pF	49 055 28.0	
C28	56 pF	49 055 25.0	
C29	4.700 pF	49 126 54.0	
C30	22 pF	49 055 20.0	
C31	10 pF	49 055 16.0	
C32	47.000 pF	49 128 61.0	
C33	0,1 μF	49 127 63.0	
C34	47.000 pF	49 127 22.0	

CURRENTS AND TENSIONS

	Va	Vg2(4)	Vk	Ia	Ig2(4)
L1	triode 110	—	—	2.8	1.9
	hexode 236	97	2.4	3.3	—
L2	230	120	25	5.5	1.6
L3	265	240	22	24	3.4
	Volt	Volt	Volt	mA	mA

Vc1 = 276 V Ia totale = 46 mA.
Vc2 = 238 V Primary consumption 43 Watt.
The wiring of the coil-assembly is indicated in Fig. 6.

206A

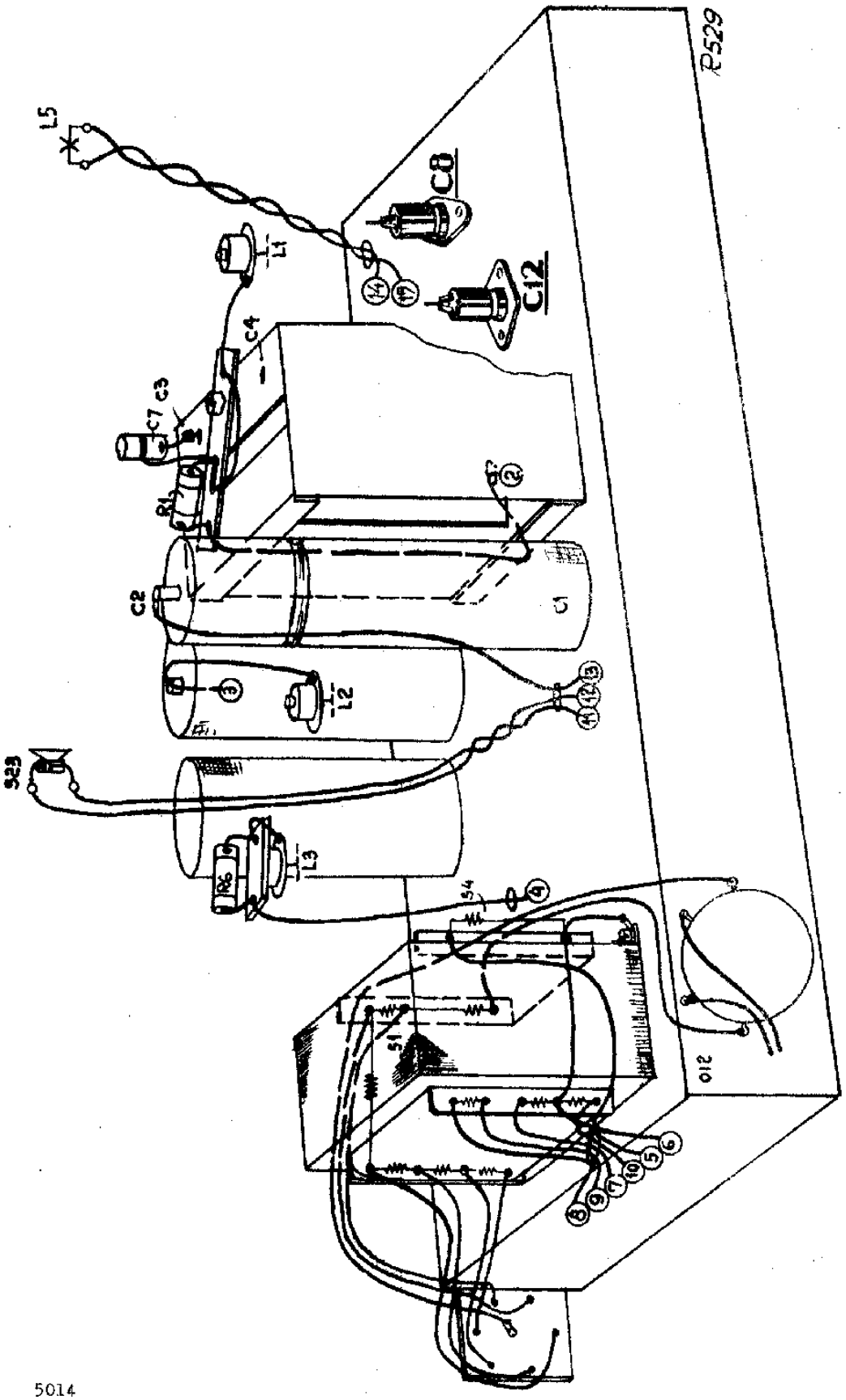
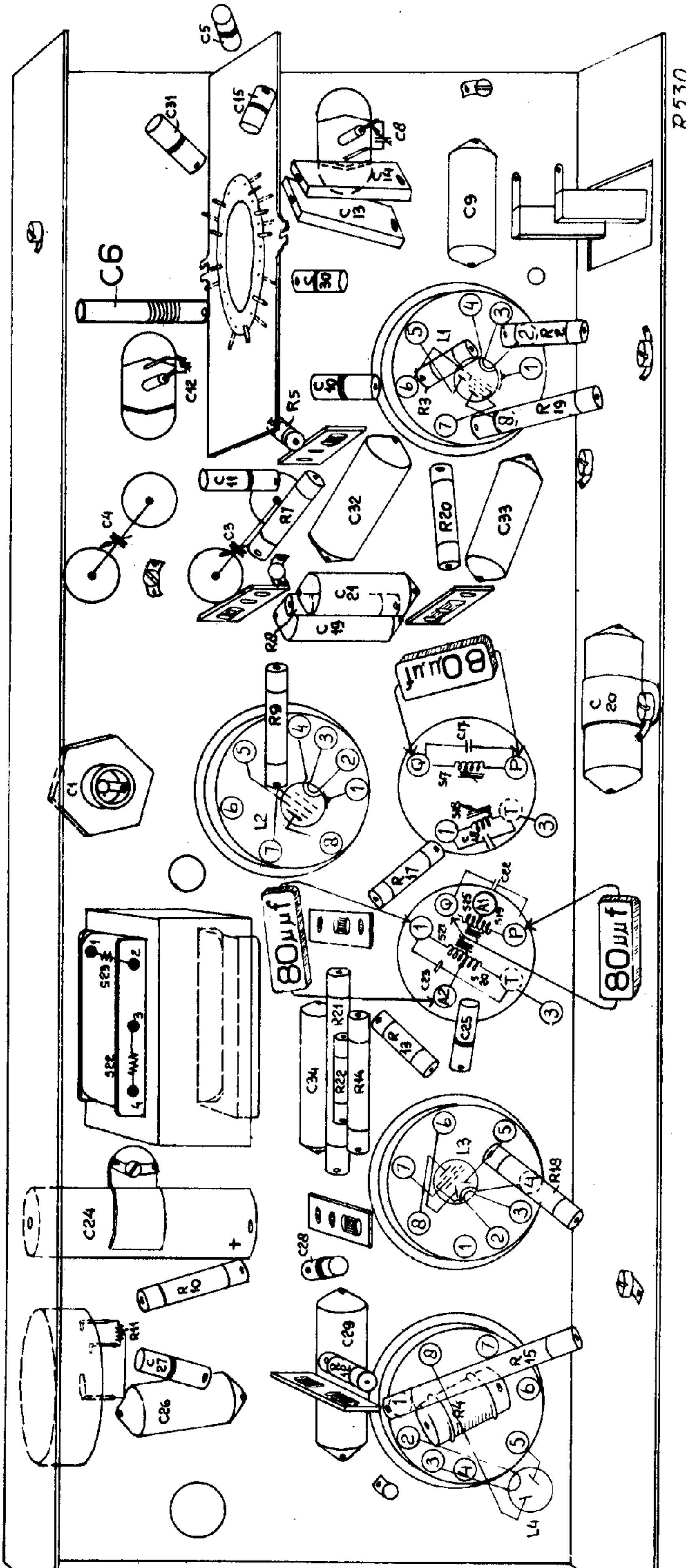


fig.3

5014

206A

S	22, 23, 20, 21, 19, 25, 18, 17,
C	26, 27, 29, 28, 24, 34, 25, 23, 22, 18, 1, 17, 20, 19, 21, 33, 3, 4, 32, 11, 10, 12, 6, 30, 9, 13, 14, 8, 31, 15, 5
R	4, 12, 15, 11, 10, 18, 22, 14, 13, 21, 17, 9, 8, 20, 7, 19, 35, 2,



206 A

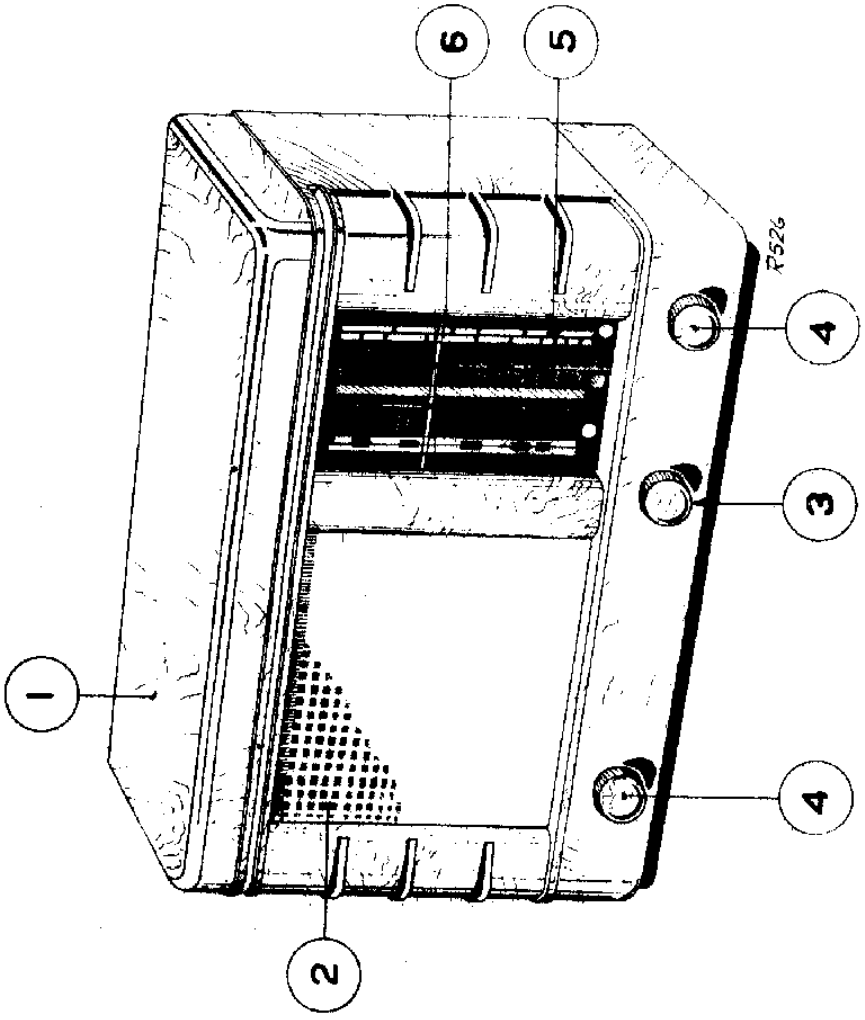


fig.5

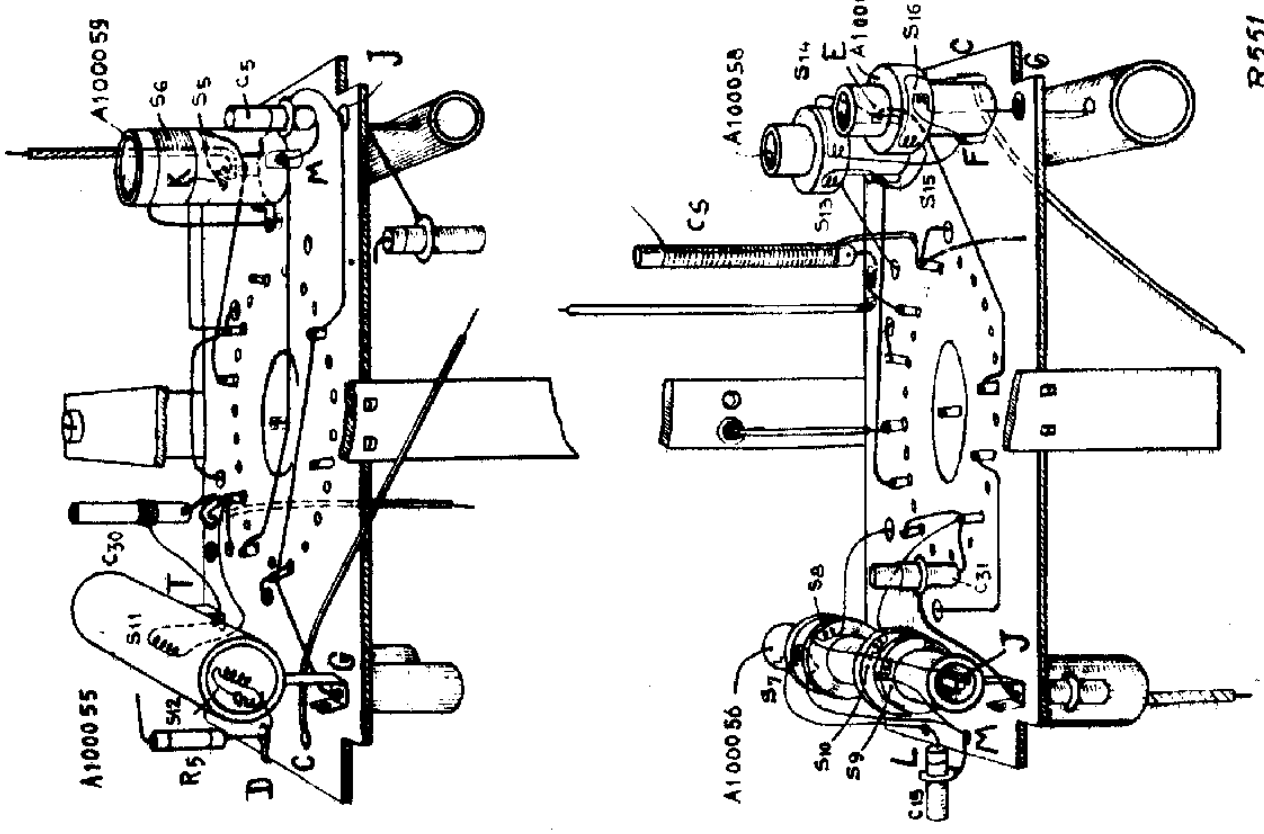


fig.6

206A

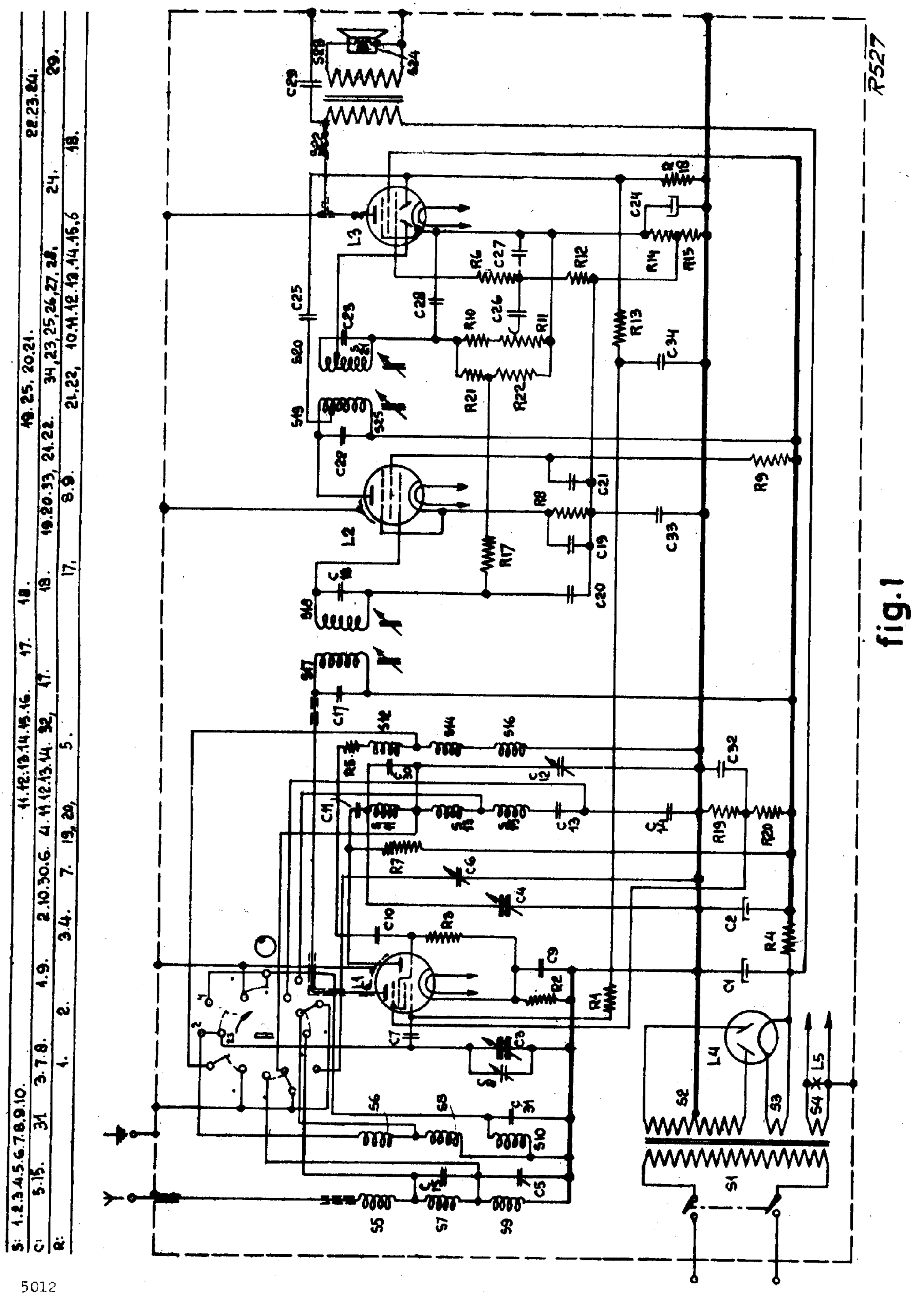


fig.1

5012

206A

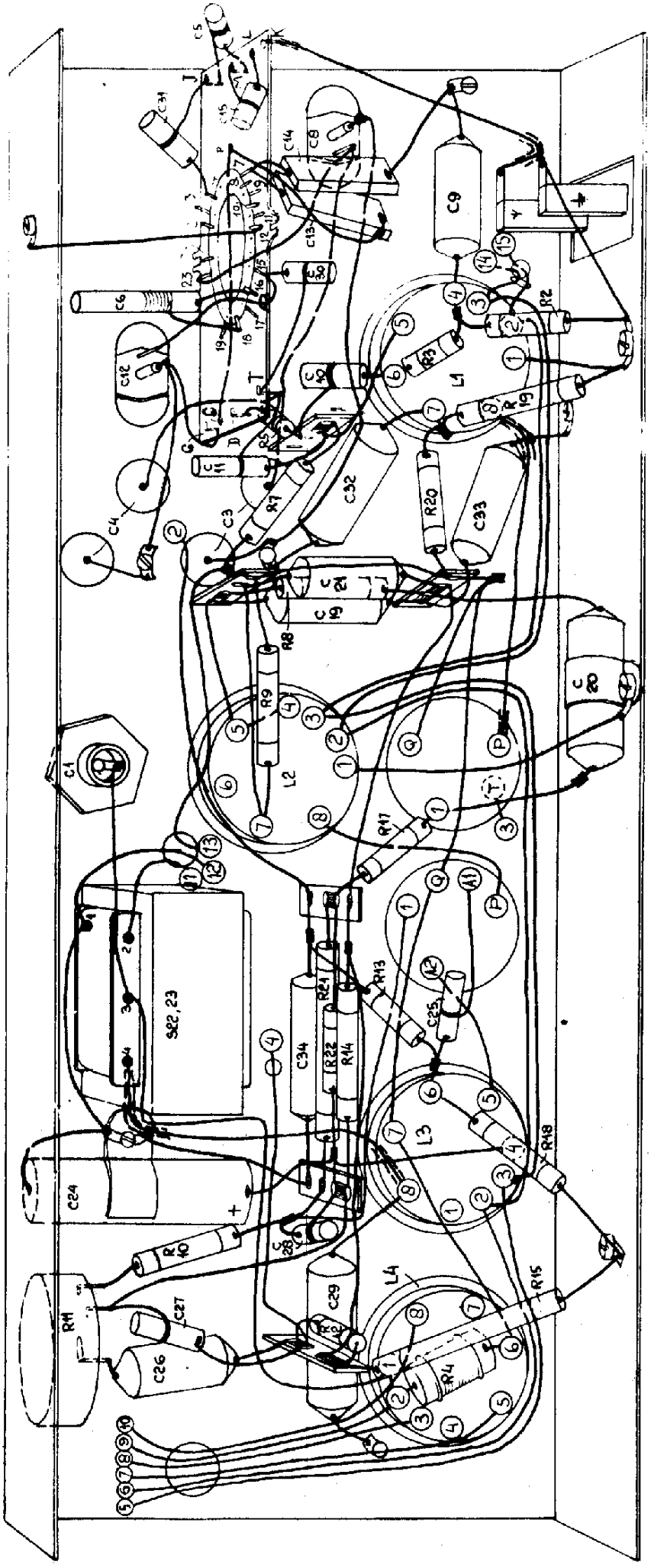

R528
C1
C2
C3
C4
C5
C6
C8
C9
C11
C12
C13
C14
C15
C18
C19
C20
C21
C24
C25
C26
C27
C28
C29
C31
C32
C33
C34
R1
R2
R3
R4
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
L1
L2
L3
L4
S22, 23

fig.2