PHILIPS-SERVICE

361 U

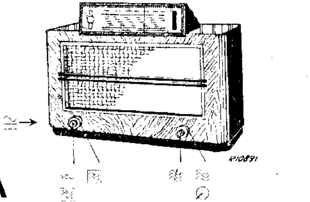
9,5—16,5 m
16,5—48 m
48—170 m
170—570 m

475 kc/s

9644 Z = 2,5 Ω

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

70 W



I	
	170—570 m
	C3, C4, C5 max
VOL.	max
---	g2B2—0,1 μF—
	475 kc/s-33000 pF-g4B2
	C19, C18, C17, C16 max
	g2B2—0,1 μF—

II	
	170—570 m
	C3, C4, C5 max
VOL.	max
	475 kc/s—
	S40 min

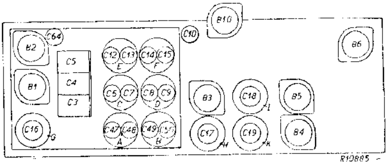
III	
	170—570 m
	C3, C4, C5 + 15°
VOL.	max
	1650 kc/s—
	C15, C9, C50 max
---	g2B2—0,1 μF—
	25 pF—aB2
	600 kc/s—
	C3, C4, C5 max
	g2B2—0,1 μF—
	C10 max

III	
	48—170 m
	C3, C4, C5 + 15°
VOL.	max
	5,75 Mc/s—
	C14, C8, C49

III	
	16,5—48 m
	C3, C4, C5 + 15°
---	g2B2—0,1 μF—
	25 pF—aB2
	17,4 Mc/s—
	C48, C7 max
	g2B2—0,1 μF—
VOL.	max
	C13 max

III	
	9,5—16,5 m
	C3, C4, C5 + 15°
---	g2B2—0,1 μF—
	25 pF—aB2
	32 Mc/s—
	C47, C6 max
---	g2B2—0,1 μF—
VOL.	max
	C12 max
---	g2B2—0,1 μF—
	25 pF—aB2
	23 Mc/s—
	C3, C4, C5 max
	g2B2—0,1 μF—
VOL.	max
	C64 max
	C3, C4, C5 + 15°
	32 Mc/s—
	C12 max

15° = 09.992 44.0



	B1	B2	B3	B4	B5	B6	B10	
	EF 8	EK 2	EF 5	EBC 3	EL 3	AZ 1	EM 1	
Va	247	212	267	102	246		265	V
Vg2	—	147	88	—	260		—	V
Vg3(5)	250	50	—	—	—		—	V
Ia	4,1	0,72	3,95	0,78	34		0,11	mA
Ig2	—	3,1	1,04	—	4,8		—	mA
Ig3(5)	0,12	1,11	—	—	—		—	mA

VC1 = 295 V VC2 = 266 V

A

R1	0,22 MΩ	48 425 10/220K	C1	25 μF	48 312 09/25
R2	220 Ω	48 468 10/220E	C2	25 μF	48 312 09/25
R3	0,82 MΩ	48 425 10/820K	C3	11-490 pF	
R4	470 Ω	48 425 10/470E	C4	11-490 pF	28 212 11.0*
R5	82000 Ω	48 426 10/82K	C5	11-490 pF	
R6	15 Ω	48 425 10/15E	C6	2,5-30 pF	—
R7	22000 Ω	48 425 10/22K	C7	2,5-30 pF	—
R8	27000 Ω	48 427 10/27K	C8	2,5-30 pF	—
R9	47000 Ω	48 425 10/47K	C9	2,5-30 pF	—
R10	27 Ω	48 425 10/27E	C10	12-170 pF	28 211 31.0
R11	15000 Ω	48 427 10/15K	C11	15000 pF	48 751 10/15K
R12	27000 Ω	48 469 10/27K	C12	2,5-30 pF	—
R13	9,5 Ω	28 775 29.0	C13	2,5-30 pF	—
R14	3,3 MΩ	48 427 10/3M3	C14	2,5-30 pF	—
R15	3,3 MΩ	48 427 10/3M3	C15	2,5-30 pF	—
R16	33 Ω	48 425 10/33E	C16	12-170 pF	—
R17	47000 Ω	48 425 10/47K	C17	12-170 pF	—
R18	4,7 MΩ	48 427 10/4M7	C18	12-170 pF	—
R19	0,5 MΩ	28 812 53.1	C19	12-170 pF	—
R20	1,5 MΩ	48 426 10/1M5	C20	100 pF	48 406 10/100E
R21	0,1 MΩ	48 425 10/100K	C21	0,32 μF	28 199 14.0*
R22	0,1 MΩ	48 425 10/100K	C22	47000 pF	48 751 10/47K
R24	27 Ω	48 425 10/27E	C23	10000 pF	48 751 10/10K
R25	0,68 MΩ	48 425 10/680K	C24	47000 pF	48 751 10/47K
R26	47 Ω	48 426 10/47E	C25	100 pF	48 406 10/100E
R27	56 Ω	48 426 10/56E	C27	1575 pF	4842901/1K575
R28	3300 Ω	48 426 10/3K3	C29	147 pF	48 429 02 147E
R29	0,68 MΩ	48 425 10/680K	C30	25 μF	48 312 09/25
R30	0,27 MΩ	48 425 10/270K	C31	47000 pF	48 751 10/47K
R31	1,5 MΩ	48 426 10/1M5	C32	47000 pF	48 751 10/47K
R32	2,2 MΩ	48 427 10/2M2	C33	100 pF	48 406 10/100E
R33	150 Ω	48 425 10/150E	C34	47000 pF	48 751 10/47K
R34	120 Ω	48 426 10/120E	C35	47000 pF	48 751 10/47K
R35	1000 Ω	48 425 10/1K	C36	10000 pF	48 751 10/10K
R36	22 Ω	48 425 10/22E	C37	0,1 μF	48 751 10/100K
R37	47 Ω	48 425 10/47E	C38	22000 pF	48 751 10/22K
R38	0,68 MΩ	48 425 10/680K	C39	0,1 μF	48 751 10/100K
R39	120 Ω	48 425 10/120E	C42	320 pF	48 429 10/320E
R40	0,82 MΩ	48 425 10/820K	C43	400 pF	48 429 10/400E
R41	50000 Ω	28 815 54.1	C45	2200 pF	48 751 10/2K2
R42	0,39 MΩ	48 426 10/390K	C47	2,5-30 pF	—
R50	1 MΩ	48 426 10/1M	C48	2,5-30 pF	—
			C49	2,5-30 pF	—
C65	2 pF	28 205 88.0	C50	2,5-30 pF	—
C66	2 × 2 pF	28 205 88.0	C51	0,1 μF	48 751 10/100K
C67	3300 pF	48 751 10/3K3	C53	47 pF	48 406 10/47E
C68	47000 pF	48 757 20/47K	C57	1 μF	28 160 95.0*
C69	22000 pF	48 751 10/22K	C58	1 μF	28 160 95.0*
C75	10000 pF	48 752 10/10K	C59	6400 pF	48 429 02/6K4
C76	10000 pF	48 752 10/10K	C60	214 pF	48 429 01/214E
C77	2000 pF	48 429 10/2K	C61	6400 pF	48 429 02/6K4
C78	0,1 μF	48 752 10/100K	C62	214 pF	48 429 01/214E
C79	2000 pF	48 429 10/2K	C63	214 pF	48 429 01/214E
C80	2000 pF	48 429 10/2K	C64	2,5-30 pF	28 211 83.1

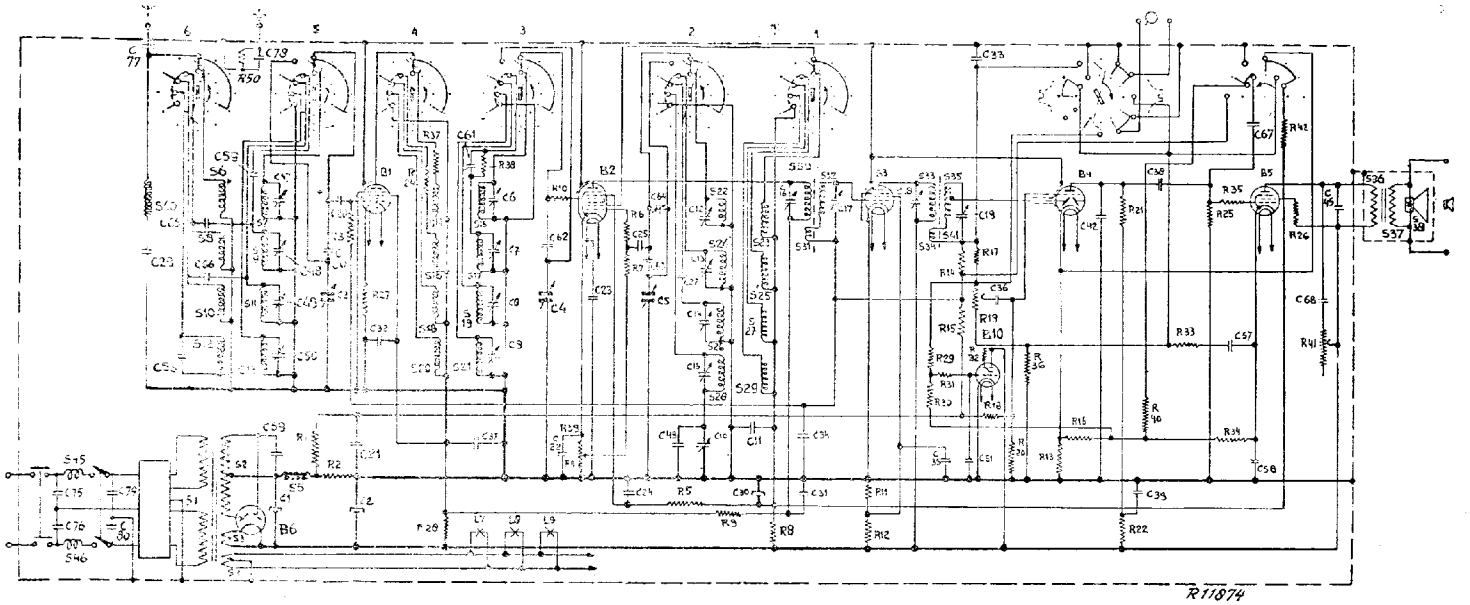
S1, S2, S3, S4	28 535 52.0	S22, S23, S24, S25, C12, C13	28 572 11.0*
S5	28 546 54.0	S26, S27, S28, S29, C14, C15	28 572 09.1*
S6, S7, S8, S9, C47, C48	28 572 08.0*	S30, S31, C16	28 570 99.0*
C49, C50, S10, S11, S12, S13	28 572 12.0*	S32, C17	28 571 01.0*
S14, S15, S16, S17, C6, C7	28 572 07.0*	S33, S34, C18	28 570 99.0*
S18, S19, S20, S21, C8, C9	28 573 10.1	S35, C19	28 572 19.0*
		S36, S37	28 534 64.0
		S38	28 220 45.1
		S40	28 567 95.0*
		S45, S46	28 587 47.0*

B

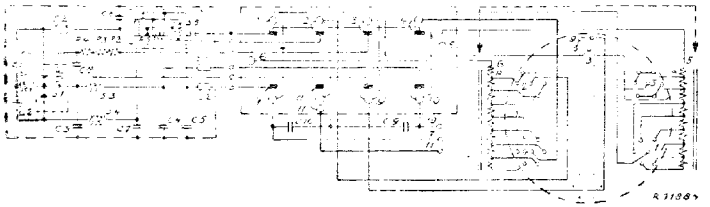
R1	150 Ω 3	48 427 10/150E	C1	0,1 μF	28 196 95.0*
R2	5000 Ω	28 802 48.0*	C2	0,1 μF	
R3	1000 Ω	28 801 78.1*	C3	0,1 μF	
R4	4000 Ω		C8	0,2 μF	
R5	100 Ω	48 427 10/100E	C4	0,5 μF	28 196 07.0*
Z1	1A	08 140 39.1	C5	0,25 μF	
Z2	1A	08 140 39.1	C6	0,1 μF	
S1		28 890 29.0*	C7	0,1 μF	
S2, S3, S4		28 571 11.0*	C9	0,1 μF	48 752 10/100K
S5, S6,		28 882 54.0*	C10	0,47 μF	48 752 10/470K

A

361 U


R11874

B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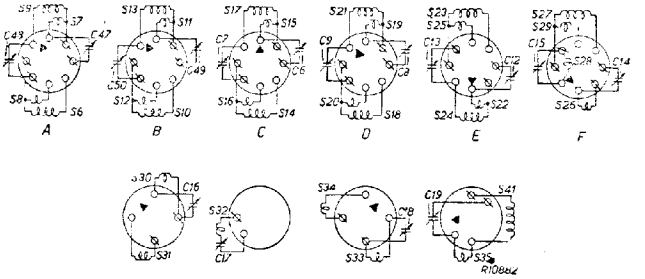
A
B
C
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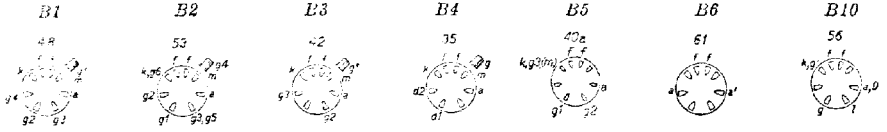
R10864


B1
B2
B3
B4
B5
B6
B10
EF8
EK2
EF5
EBC3
EL3
AZ1
EM1

CONFIDENCIAL

SÓ PARA COMMERCIANTES ENCARREGADOS DO SERVIÇO PHILIPS.

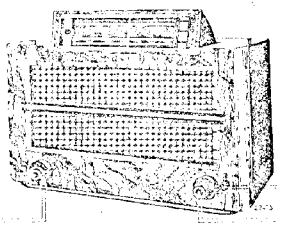
PHILIPS

DOCUMENTAÇÃO DE SERVIÇO

RECEPTOR TYPO

361 U

(771 U - 772 U)



Controle de volume

Controle de tom

Commutador de ondas

Controle de synthonia

The receiver 361 U being suitable for D.C. or A.C. is in principle of the same construction as the type 361 A, with exception of the following modifications: (fig. 1 u).

1. The power supply unit is equipped with:
   a. a special mains transformer (fig. 4 u).
   b. a filter unit S45, S46, C75, C76, C79, C80 to prevent mains interference.
   c. a converter unit.
2. The aerial and ground socket. (fig. 2 u).
   a. the condenser C77 is incorporated between the aerial socket and the receiver.
   b. the condenser C78, shunted by the resistance R50, is placed between the ground socket and the chassis.
3. The net weight of the receiver is 19,9 kgs.

For "Tracing faults", "Trimming" etc. please see "Service Documentation" for the receiver 361A.

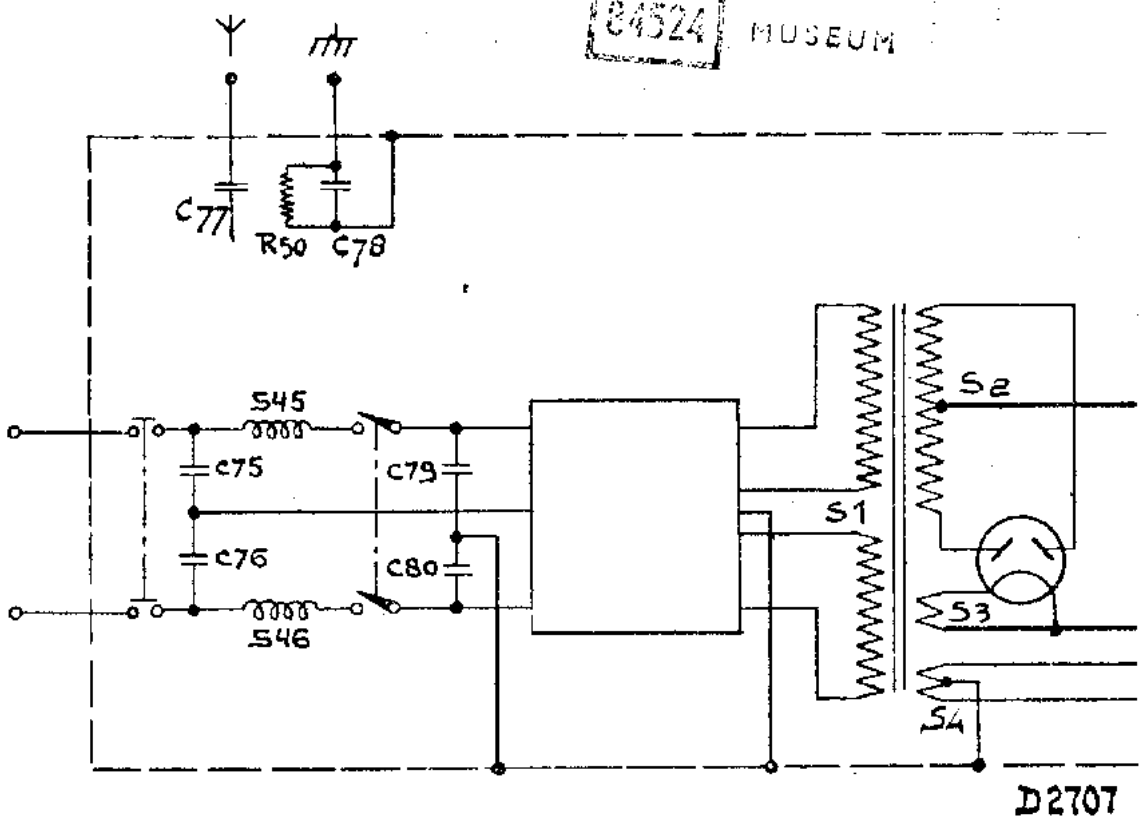


Fig. 1 u

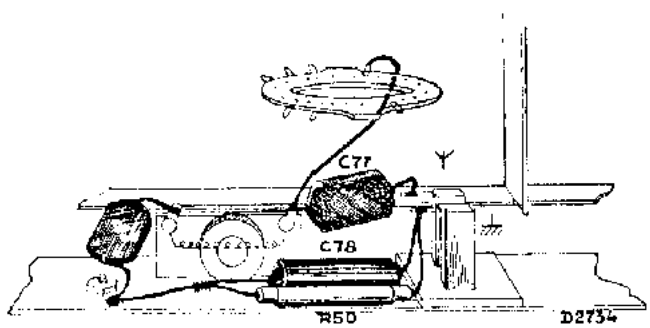


Fig. 2 u

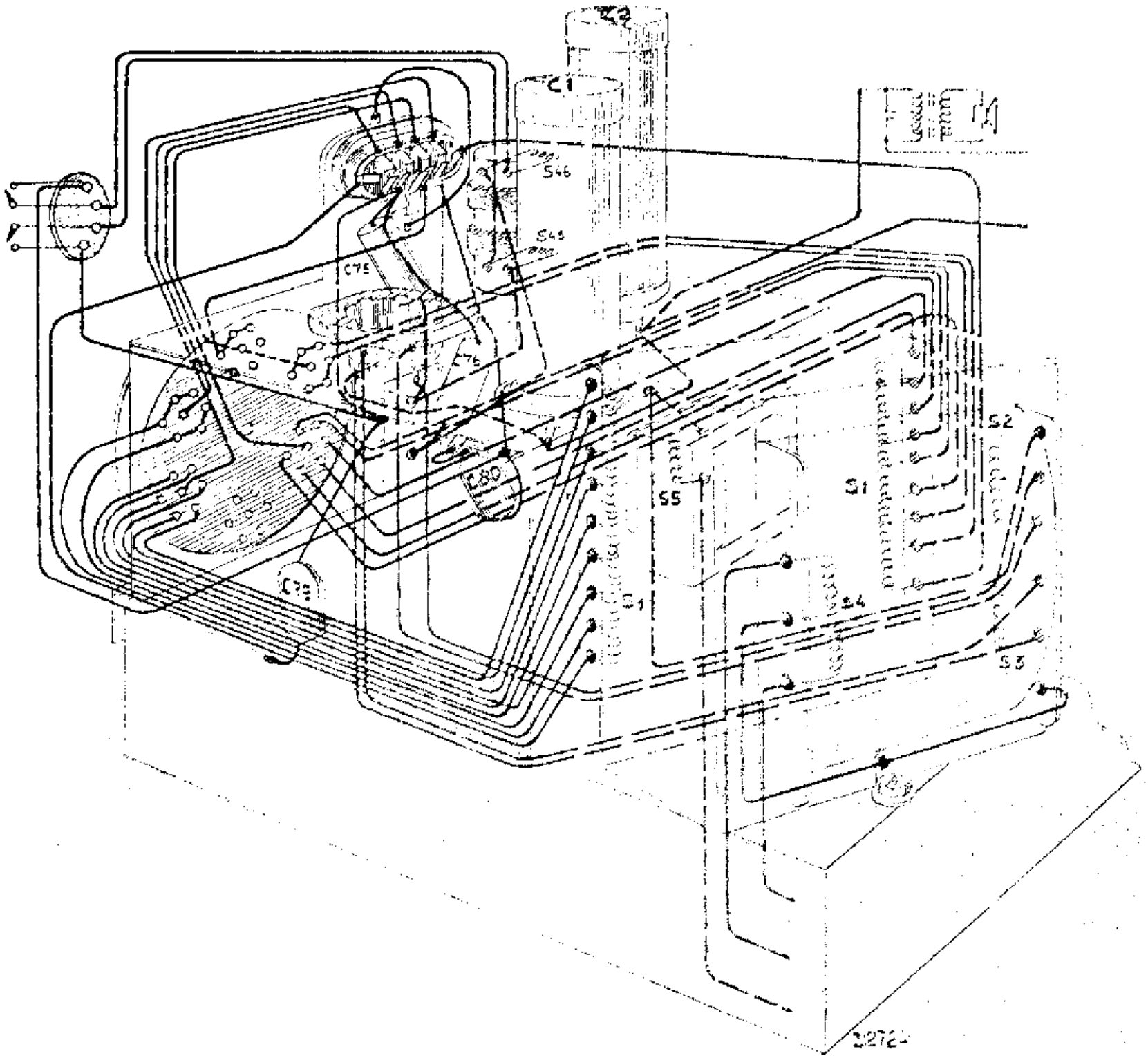


Fig. 4 u

CONVERTER UNIT FOR D.C. MAINS.

The converter-unit is used for converting D.C. voltage into A.C.

Receivers fitted with a vibrator-converter can be rendered suitable for D.C. or A.C. by inserting or withdrawing an adaptor plug. Of course when using A.C. mains one will not use the converter.

The action of the vibrator is to be considered as that of a change-over switch that sends the direct current through the primary of the power transformer in such a manner that it passes first through one and then through the other winding. In the first case the current passes through Sa (fig. 5 u) and in the second one through Sb, which are connected opposite to each other the result being that an alternating current is obtained in the secondary.

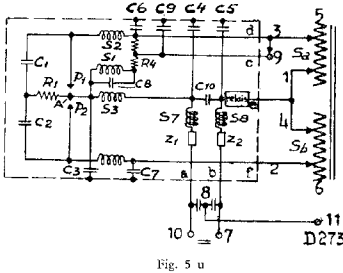


Fig. 5 u

With the aid of the simplified circuit diagram (fig. 5 u) we will examine the action of the vibrator at a voltage of for instance 110 volts. The current passes via Z1 through S7, S3, S1, R4, Sa, the relay S8, and Z2.

As a result of the current through S1 the armature A is attracted and will make contact with P1. The current then passes through Z1, S7, S3, P1, S2, Sa, the relay, S8 and Z2; coil S1 is then short-circuited, causing the armature to move back and make contact with P2. The current now passes through Z1, S7, S3, P2, S4, Sb, the relay, S8 and Z2 i.e. through the other primary winding. The armature is then again attracted by S1 and the whole operation is repeated.

The relay, (fig. 6 u) which acts both as a thermo-relay and as a magnetic one, serves to prevent too great a current-surge occurring when switching on. As a matter of fact the resistance R5 (the heating element of the thermo-switch) is incorporated in the mains lead when switching-on (contacts a and b are short-circuited then, whilst contact c is opened). After a while R5 becomes hot, as a result of which the contact-spring bends, the relay contacts a and b are opened and the armature c is attracted; then R5 is short-circuited, becomes cool, the contact spring bends back and short-circuits coil S6. When interrupting the current the relay armature (contact-spring) drops back. In the operating condition the circuit of the relay is as indicated in figure 6 u.

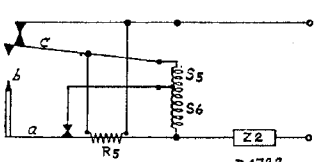


Fig. 6 u

For eliminating interference two filters are incorporated:

a. R1, R2, R3, S4, C1-C3, C6-C9 for suppressing the interference caused by sparks at the contacts P1 and P2.

b. C4, C5, C10, S7, S8 for suppressing mains-interference.

When the set is changed over for A.C. voltage the circuit is as indicated in fig. 7u. The transformer windings are then connected in parallel. The complete circuit is shown in fig. 9 u, in which we see the converter unit A along with the circuit of the adapter plug B, the voltage change-over C and transformer.

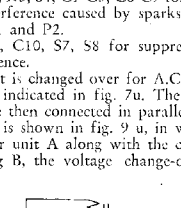


Fig. 7 u

In this figure the sign ⁀ indicates the connections made when the plug is inserted, and sign —.— the interconnections when the adapter plug is pulled out. The plug socket with plug and the voltage-change-over are seen from the connection side. The 5 groups of contacts on the mains-voltage change-over are interconnected for the various mains voltages as illustrated in fig. 8u.

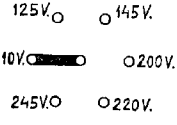


Fig. 8 u

In this way resistances R2 and R3 in the converter unit are short-circuited at voltages of 110—125 and 145 volts.

On no account may other fuses than that of Code No. 08.140.391 (1 ampere) be used, since the use of a larger fuse would result in burning-out of the transformer, etc. in case of a defect.

Important remarks.
The vibrator (S1) can not be repared, when it is defective. In this case it must be replaced.

It is necessary that there is no resistance between the mains-plug and mains-contact, for this resistance will cause vibrator-interference. Using a gramophone pick-up the leads have to be screened, the screening connected to the earth terminal of the set.
Do not place the gramophone pick-up in the vicinity (magnetic field) of the power transformer, otherwise hum will occur.
For good working of the set it is necessary to place it in a true horiontal position.

LIST OF SPARE PARTS FOR THE TRILLER-UNIT

Fig.	Pos.	Description	Code nr.	Price
10u	1	Rubber Tulle	25.655.460	
10u	2	Fuseholder	25.870.690	
10u	3	Cable	33.981.090	
10u	4	Plug with 8 contacts	08.280.460	
		Rubber block under the vibrator	28.095.550	
		Rubber tulle for fixing C1, C2, C3, C8	25.655.440	

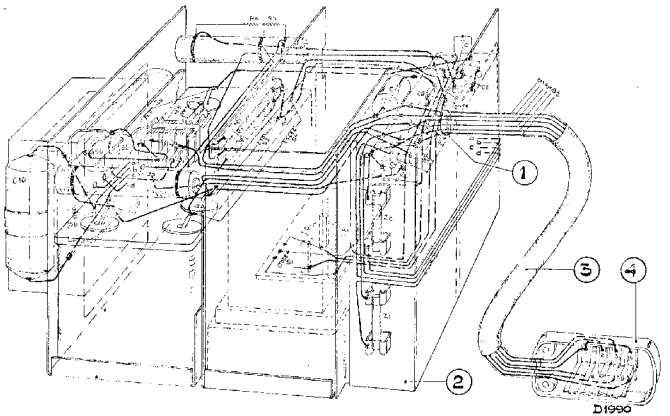


Fig. 10u

Nr.	Value—Description	Code nr.	Price
S1	Vibrator	28.890.290	
S2	3 ohm		
S3	2,5 ohm Chokes	28.571.110	
S4	3 ohm		
S5	< 1 ohm		
S6	80 ohm Relay	28.882.340	
R5	100 ohm		
S7	1 ohm Chokes	28.532.741	
S8	1 ohm		
R1	160/3 ohm	28.770.820	
R2	5000 ohm	28.802.480	
R3	1000 ohm		
R4	4000 ohm	28.801.781	
C1	0,1 μF		
C2	0,1 μF	28.196.080	
C3	0,1 μF		
C8	0,2 μF		
C4	0,5 μF		
C5	0,25 μF	28.196.070	
C6	0,1 μF		
C7	0,1 μF		
C9	0,1 μF	28.201.550	
C10	0,5 μF	28.199.160	
Z1	1 amp.	08.140.391	
Z2	1 amp.	08.140.391	

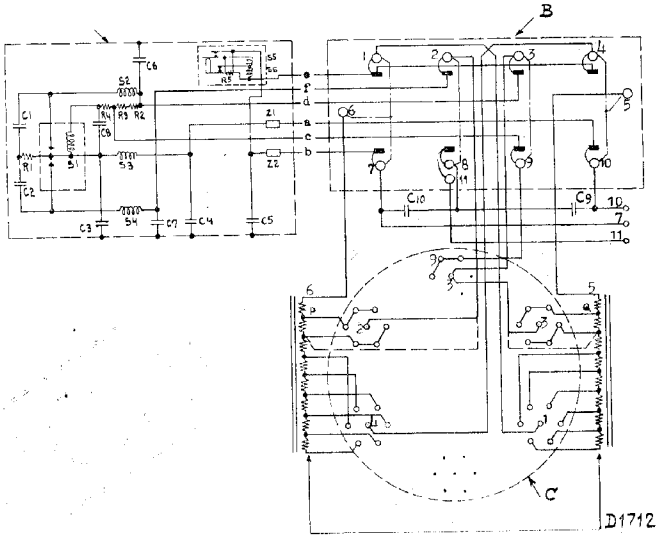


Fig. 9 a

List of spare parts for the receiver 361 U (see also 361A)

a. Electrical parts.

Nr.	Value		Codenumber	Price
S1	57,5 ohms			
S2	285 ohms	Transformer	28.535.520	
S3	< 1 ohm			
S4	< 1 ohm			
S45	< 1 ohm	Chokes	28.587.470	
S46	< 1 ohm			
R50	1 M.ohm		28.770.550	
C75	10000 $\mu\mu$F		28.199.940	
C76	10000 $\mu\mu$F		28.199.940	
C77	2000 $\mu\mu$F		28.192.560	
C78	0·1 μF		28.199.090	
C79	2000 $\mu\mu$F		28.192.560	
C80	2000 $\mu\mu$F		28.192.560	

b. Mechanical parts.

Fig.	Pos.	Description	Codenumber	Price
3u	1	Rear panel	28.402.640	
3u	2	Mains switch (Plug pin plate)	28.867.481	
3u	3	Mains switch (cap, colour 111)	23.610.280	
3u	4	Contact box (colour 111)	28.838.560	
3u	5	Plug pin plate (colour 111)	28.869.190	
3u	6	Safety contact	25.742.000	
3u	7	Rubber washer	25.655.950	
3u	8	Cap for coil can	28.245.310	
		Seal	28.283.331	
		Pair of pliers for sealing	71.590.670	

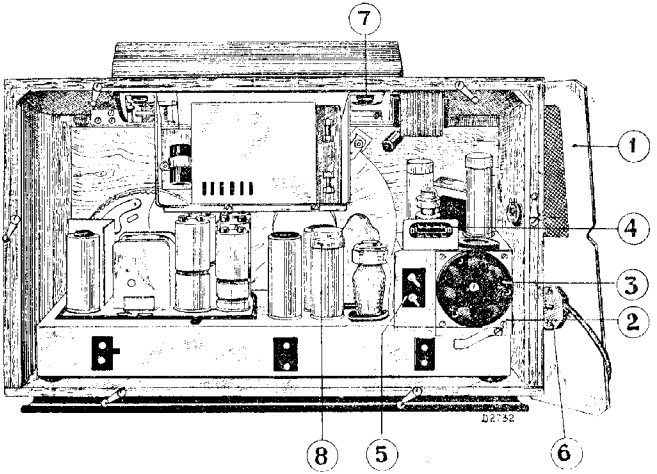


Fig. 3 u