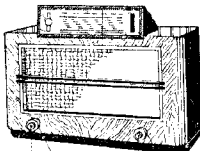


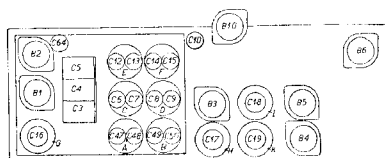
9.5—16.5 m  
16.5—48 m  
48—170 m  
170—570 m  
475 kc/s

9644 Z = 2.5 Ω  
110 V, 125 V, 145 V  
200 V, 220 V, 245 V  
70 W



170—570 m I	48—170 m III	9.5—16.5 m III
C3, C4, C5 max	C3, C4, C5   15'	C3, C4, C5   15'
max	max	μ2B2—0.1 μF—
g2B2—0.1 μF—	5.75 Mc/s—	25 pF—aB2
475 kc/s—33000 pF—g2B2	C14, C8, C49	32 Mc/s—
C19, C18, C17, C16max	16.5—88 m III	C47, C6 max
g2B2—0.1 μF—	C3, C4, C5   15'	μ2B2—0.1 μF—
170—570 m II	max	C12 max
C3, C4, C5 max	25 pF—aB2	μ2B2—0.1 μF—
max	17.4 Mc/s—	25 pF—aB2
475 kc/s—	C48, C7 max	32 Mc/s—
S40 min	g2B2—0.1 μF—	C3, C4, C5 max
170—570 m III	max	μ2B2—0.1 μF—
C3, C4, C5   15'	C13 max	max
max		C64 max
1650 kc/s—		C3, C4, C5   15'
C15, C9, C50 max		32 Mc/s—
g2B2—0.1 μF—		C12 max
25 pF—aB2		
600 kc/s—		
C3, C4, C5 max		
g2B2—0.1 μF—		
C10 max		

15° m—09.992 44.0



R10805

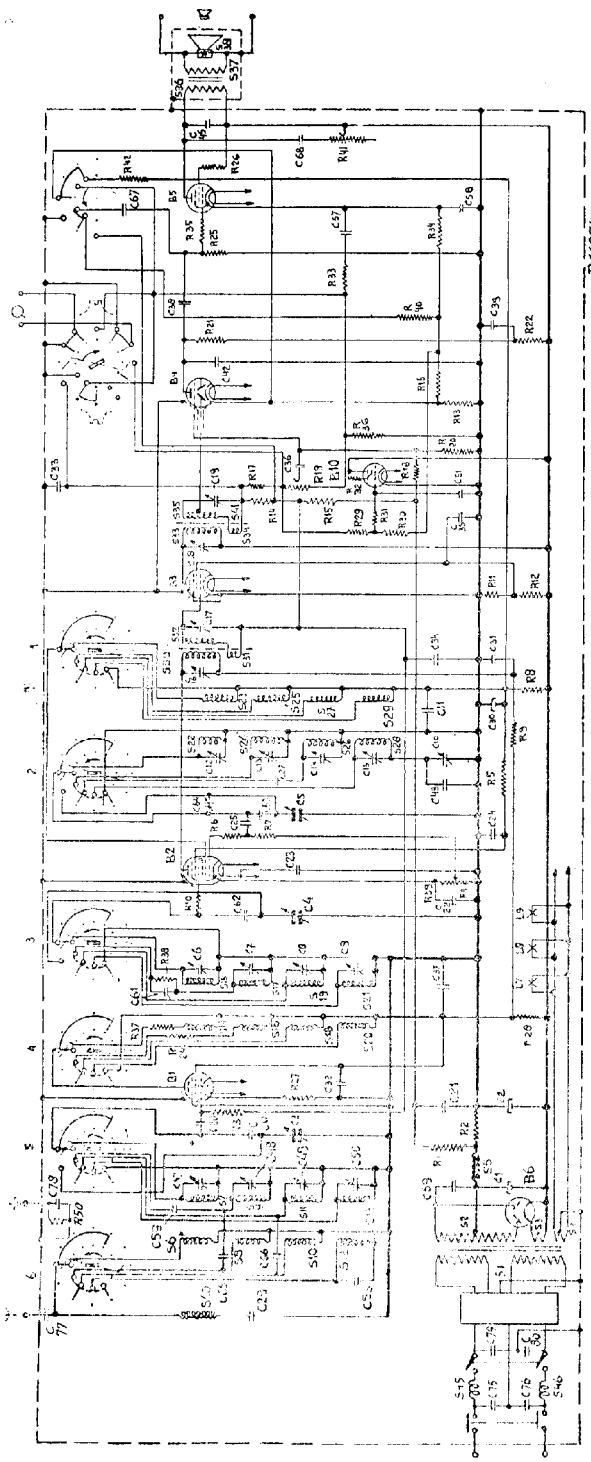
## A

R1	0.22 MΩ	48 425 10 220K	C1	25 pF	48 312 09 25
R2	220 Ω	48 488 10 220E	C2	25 pF	48 312 09 25
R3	0.22 MΩ	48 425 10 220K	C3	11 490 pF	28 212 11 0*
R4	470 Ω	48 425 10 220E	C4	11 490 pF	—
R5	82000 Ω	48 426 10 91K	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	28 213 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 33M	C14	2.5 30 pF	—
R15	3.3 MΩ	48 427 10 33M	C15	2.5 30 pF	—
R16	3 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 47M	C18	12 170 pF	—
R19	0.5 MΩ	48 422 53 1	C19	12 170 pF	48 486 10 100E
R20	1.5 MΩ	48 426 10 15M	C20	130 pF	28 199 14 0*
R21	0.1 MΩ	48 425 10 100K	C21	0.1 pF	48 751 10 47K
R22	0.1 MΩ	48 425 10 100K	C22	47000 pF	48 751 10 100K
R23	3300 Ω	48 426 10 33K	C23	10000 pF	48 751 10 100K
R24	27 Ω	48 425 10 27E	C24	47000 pF	48 751 10 47K
R25	0.68 MΩ	48 425 10 680K	C25	100 pF	48 406 10 100E
R26	47 Ω	48 426 10 47E	C26	100 pF	48 429 01 147E
R27	56 Ω	48 426 10 56E	C27	1875 pF	48 429 01 147E
R28	3300 Ω	48 426 10 33K	C28	25 pF	48 312 09 25
R29	0.68 MΩ	48 425 10 680K	C29	47000 pF	48 751 10 47K
R30	0.27 MΩ	48 425 10 270K	C30	47000 pF	48 751 10 47K
R31	1.5 MΩ	48 426 10 15M	C31	100 pF	48 406 10 100E
R32	3.3 MΩ	48 427 10 33M	C32	100 pF	48 751 10 47K
R33	150 Ω	48 426 10 150E	C33	47000 pF	48 751 10 47K
R34	100 Ω	48 426 10 100E	C34	47000 pF	48 751 10 47K
R35	100 Ω	48 425 10 100E	C35	10000 pF	48 751 10 100K
R36	2 Ω	48 425 10 2E	C36	100 pF	48 751 10 47K
R37	47 Ω	48 425 10 47E	C37	0.1 pF	48 751 10 22K
R38	0.68 MΩ	48 425 10 680K	C38	22000 pF	48 751 10 100K
R39	120 Ω	48 425 10 120E	C39	0.1 pF	48 429 10 330E
R40	0.82 MΩ	48 425 10 820K	C40	320 pF	48 429 10 400E
R41	50000 Ω	28 815 54 1	C41	400 pF	48 429 10 400E
R42	0.99 MΩ	48 426 10 990K	C42	2.5 30 pF	—
R50	1 MΩ	48 426 10 1M	C43	2.5 30 pF	—
C68	2 pF	28 205 88 0	C44	2.5 30 pF	—
C66	2.2 pF	28 205 88 0	C45	0.1 pF	48 751 10 100K
C67	3300 pF	48 751 10 33K	C46	47 pF	48 406 10 47E
C68	47000 pF	48 757 20 43K	C47	1 pF	28 160 95 0*
C69	22000 pF	48 714 10 22K	C48	1 pF	28 160 95 0*
C75	10000 pF	38 752 10 10K	C49	6400 pF	48 429 01 64K
C76	10000 pF	48 732 10 10K	C50	214 pF	48 429 01 214E
C77	2000 pF	48 429 10 2K	C61	6400 pF	48 429 01 64K
C78	0.1 pF	48 425 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	3.5 30 pF	28 211 83 1

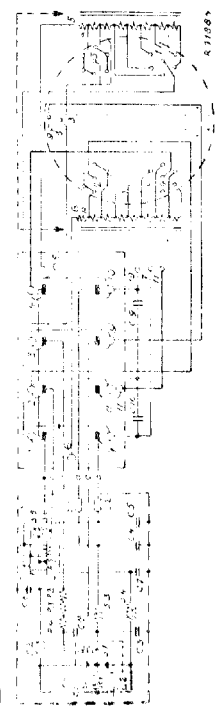
S1, S2, S3, S4	28 515 52 0	S22, S23, S24	—
S5	28 546 54 0	S25	—
S6, S7, S8, S9	28 572 08 0*	S27, C15	—
C47, C48	—	S26, S27, S28	28 572 09 1*
C49, C50, S10	—	S29	—
S11	28 572 12 0*	C14, C15	—
S12, S11	—	S40, S41, C16	28 570 99 0*
S14, S15, S16	—	S12, C17	28 571 03 0*
S17	28 572 07 0*	S13, S34, C18	28 570 99 0*
C16, C17	—	S15, C19	28 572 19 0*
S18, S19, S20	—	S36, S37	28 534 64 0
S21	28 571 10 1	S38	28 230 44 1
C8, C9	—	S40	28 567 95 0*
		S41, S46	28 567 47 0*

## B

R1	180 Ω	48 425 10 180E	C1	0.1 pF	—
R3	5000 Ω	28 802 48 0*	C2	0.1 pF	—
R4	1000 Ω	28 801 28 4 0*	C3	0.1 pF	28 166 98 0*
R5	1000 Ω	48 427 10 100E	C4	0.5 pF	—
Z1	1 Ω	48 140 39 1	C5	0.25 pF	—
Z2	1 Ω	48 140 39 1	C6	0.1 pF	28 199 14 0*
S1	—	28 800 29 0*	C7	0.1 pF	—
S2, S3, S4	—	28 571 11 0*	C8	0.1 pF	48 752 10 100K
S5, S6	—	28 861 34 0*	C9	0.1 pF	48 752 10 470K
			C10	0.1 pF	—



**B**

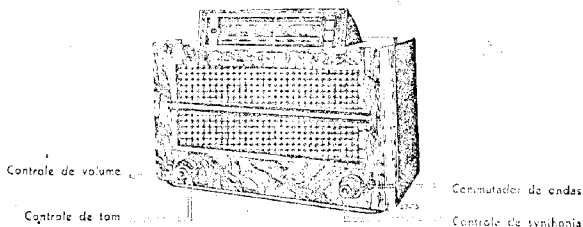


- B1 B1
- B2 B2
- B3 B3
- B4 B4
- B5 B5
- B6 B6
- B10 B10
- EM1 EM1
- EK2 EK2
- EL3 EL3
- EBC3 EBC3
- AZ1 AZ1
- 56 56

- A A
- B B
- C C
- D D
- E E
- F F
- G G
- H H
- I I
- K K

**CONFIDENCIAL**SÓ PARA COMMERCIANTES ENCAR-  
REGADOS DO SERVIÇO PHILIPS.**PHILIPS****DOCUMENTAÇÃO DE SERVIÇO**

RECEPTOR TYPO

**361 U****( 771 U - 772 U )**

Este manual é para técnicos qualificados e contém  
 informações sobre a construção e funcionamento do  
 aparelho com uma finalidade educativa. Não se deve  
 usar para qualquer outra finalidade sem a permissão  
 escrita da Philips.

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.

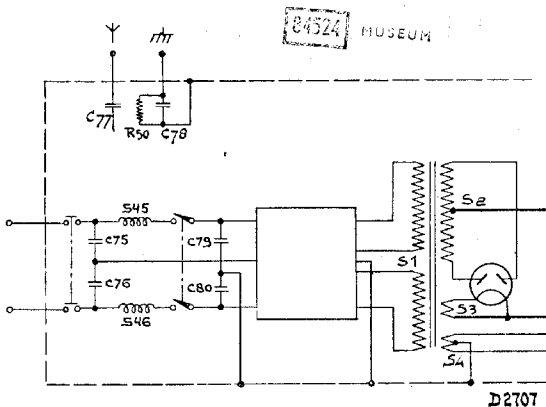


Fig 1 u

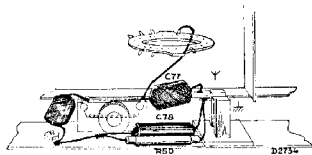


Fig. 2 u

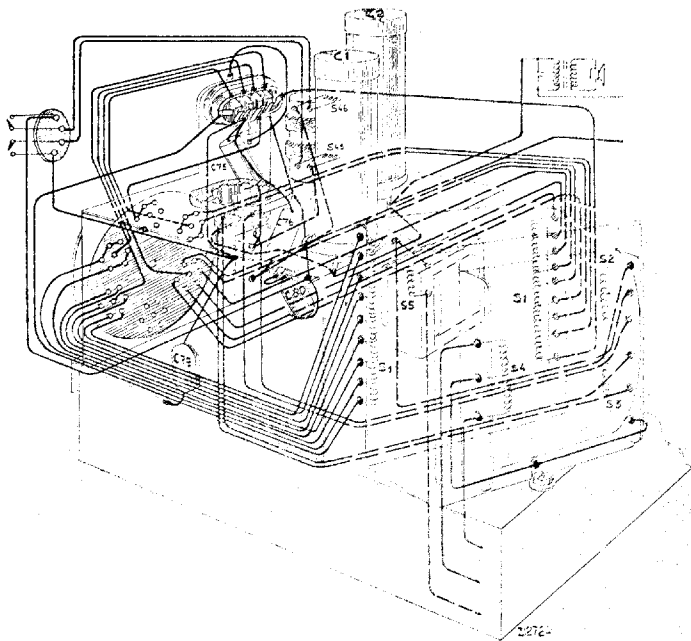


Fig. 4b

## 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.

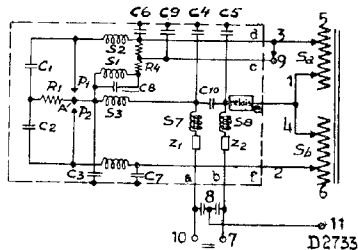


Fig. 5 u

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

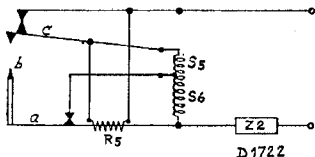


Fig. 6 u

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.

For eliminating interference two filters are incorporated:

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

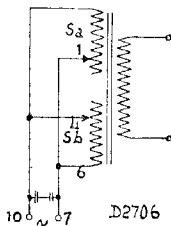


Fig. 7 u

In this figure the sign  $\sim$  indicates the connections made when the plug is inserted, and sign  $\text{---}$  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.

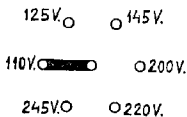


Fig. 8 u

D1721

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 repaired, 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 horizontal 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	

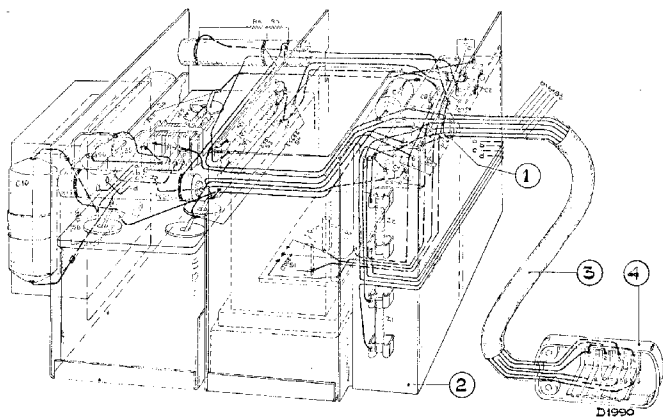


Fig. 10u

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

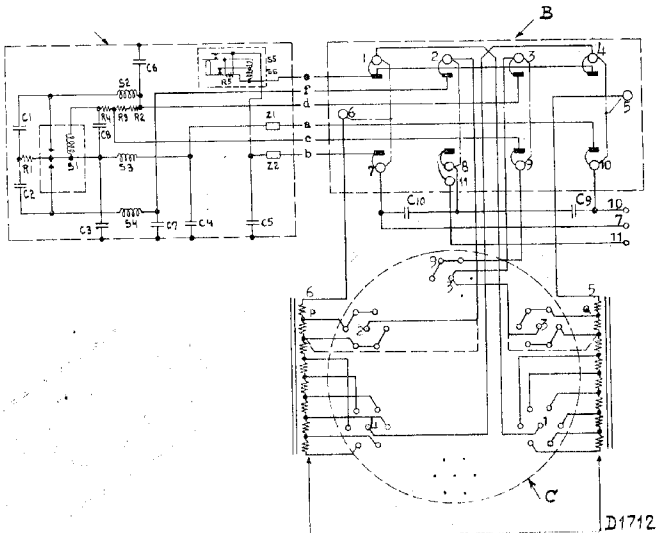


Fig. 9 u

D1712



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

## a. Electrical parts.

Nr.	Value		Codenumber	Price
S1	57,5 ohms	Transformer .....	28.535.520	
S2	285 ohms			
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 $\mu\mu\text{F}$ .		28.199.940	
C76	10000 $\mu\mu\text{F}$ .		28.199.940	
C77	2000 $\mu\mu\text{F}$ .		28.192.560	
C78	0.1 $\mu\mu\text{F}$ .		28.199.090	
C79	2000 $\mu\mu\text{F}$ .		28.192.560	
C80	2000 $\mu\mu\text{F}$ .		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	

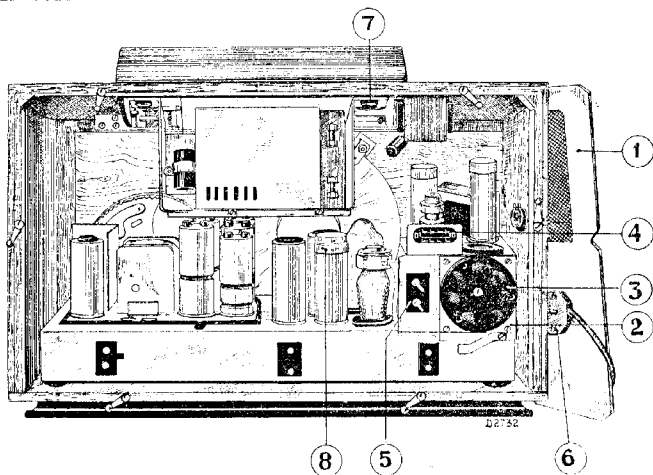


Fig. 3 u