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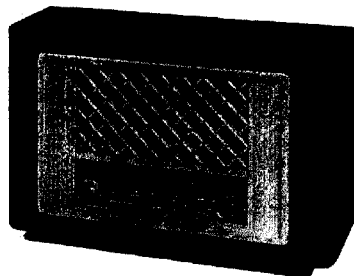
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# PHILIPS

## SERVICE NOTES

for the receiver

### BX328B



1952

For battery supply

#### GENERAL

##### WAVE RANGES

S.W.2 : 13.7- 45.5 m (21.89-6.59 Mc/s)  
S.W.3 : 44 -136.4 m ( 6.81-2.2 Mc/s)  
M.W. : 185 -580.2 m ( 1622- 517 kc/s)

##### CONTROLS

From left to right:

1st knob : battery switch + volume control  
lever : Tone control switch  
2nd knob : Tuning  
lever : Waverange switch

##### VALVE COMBINATION

B1 : DK 92  
B2 : DF 91  
B3 : DAF91  
B4 : DL 94

##### DIMENSIONS

Length : 42 cm.)knobs  
Width : 20 cm.)in-  
Height : 27.5 cm.)cluded

WEIGHT : 3.5 kg.

I.F.: 452 kc/s

##### BATTERY VOLTAGES

Va = 90 V  
Vf = 1.5 V

##### CONSUMPTION

Ia tot. = 12 mA.  
If tot. = 250 mA.

##### LOUDSPEAKER

9768 Z  
Z = 5 ohms

##### BANDWIDTH

The I.F.bandwidth (1:10) measured from g3 of B1 is about 10.5 kc/s.

The overall bandwidth (1:10) measured from the aerial socket is about 10 kc/s at 1000 kc/s and about 9 kc/s at 550 kc/s.

93 977 26.1.05

ILLUSTRATIONS:

- Fig.1 : Position of the coils and trimmers
- Fig.2 : Cable drive
- Fig.3 : Trimming points on the dial
- Fig.4 : Switch segments
- Fig.5 : Circuit diagram
- Fig.6 : Wiring diagram (under) and coil connections
- Fig.7 : Wiring diagram (above).

TRIMMING THE RECEIVER

A. I.F. BANDFILTERS

1. Remove the sealing compound from the cores of the I.F.bandfilters. The compound can be removed in the cold state by means of a small screwdriver.
2. Connect a voltmeter via a trimming transformer to the loudspeaker terminals.
3. Turn volume control to maximum, tuning capacitor to minimum capacity and waverange switch to M.W.
4. Unscrew the cores of the I.F.filters nearly full out.
5. Apply a modulated signal of 452 ko/s via a 33000 pF capacitor to the control grid (g3) of B1.
6. Trim the I.F.circuits for maximum meter deflection in the following order:

- 4th I.F.circuit S19-C19
- 3rd I.F.circuit S18-C18
- 1st I.F.circuit S14-S15-C16
- 2nd I.F.circuit S16-S17-C17

7. Seal the cores.

NOTE:

When re-sealing heat the vaseline compound by means of a warm soldering iron and let it drip onto the cores. Do not apply heat directly to the cores as this will damage the coreholders and make trimming impossible.

B. R.F. AND OSCILLATOR CIRCUITS

Trimming is done with the aid of trimming points on the dial (see fig.3). Before starting to trim, check the adjustment of the pointer. With the variable capacitor at minimum, the pointer must be on the extreme left trimming mark on the dial (point 1 of fig.3).

If not adjust it to the correct position  
For all waveranges the following applies:

1. Volume control at maximum
2. Connect a voltmeter via a trimming transformer to the loudspeaker terminals.
3. Apply the modulated signals via a dummy aerial to the aerial socket Y1.

Trim the receiver in accordance with the following table, strictly observing the order given.

1	Waverange switch in position	M.W.	S.W.3	S.W.2
2	Unscrew nearly full out	-	-	C13
3	Turn the pointer to trimming point	2	2	2
4	Apply a modulated signal of	550kc/s	2.34Mc/s	7.02Mc/s
5	Trim for maximum output voltage	S13,S6	S11,S4	S9,S2
6	Turn the pointer to trimming point	1	-	1
7	Apply a modulated signal of	1630kc/s	-	22Mc/s
8	Trim for maximum outputvoltage	C12,C4	-	C13
9	Repeat the points	3-8	-	3-8
10	Seal the trimmers	S13 C12 C4	S11 S4	S9 S2 C13

REPAIRS AND REPLACEMENT OF PARTS

A. REMOVING THE CHASSIS FROM THE CABINET

1. Remove the rearpanel
2. Set the variable capacitor to maximum
3. Unsolder the loudspeaker connections
4. Remove the knobs
5. Remove the dial
6. Release the pointer from its driving cable.
7. Unscrew the chassis screws and take the chassis carefully out of the cabinet.

B. REPLACING THE DRIVING CORD

The path and the length of the driving cord are indicated in fig.2 for the position where the variable capacitor is set to maximum.

VOLTAGES AND CURRENTS

Valves		Va	Vg2	Vg4	Ia	Ig2	Ig4
B1	DK 92 Heptode	85	29	67	0.45	1.7	0.1
B2	DF 91 Pentode	85	44	-	1.5	0.5	-
B3	DAF91 Diode Pentode	20	19	-	0.065	0.014	-
B4	DL 94 Pentode	79.5	85	-	6	1	-
		Volts	Volts	Volts	mA	mA	mA

C1 = 85 V.

These valves have been measured with the Universal Measuring Instrument CM 4257; the waverange switch set for M.W., no signal applied to the aerial socket.

All voltages have been measured with respect to the chassis.

## BX 328 B

LIST OF PARTS AND TOOLS

(see also General Spare Parts List)

When ordering always quote:

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

	Description	Code-number
	Wooden cabinet	A3 002 99.0
	Knob (volume control; tuning) 2x	A3 370 75.0
	Lever (waverange switch) colour MG	P4 380 00.0
	Lever (toneswitch) colour MG	P4 075 19.0
	Dial (mediterranean)	A3 225 88.0
	Dial (oversea)	A3 225 87.0
	Ornamental screw for fixing dial (2x)	A3 712 79.0
	Rear panel	A3 254 45.0
	Ornamental plate	A3 357 98.0
	Valve holder (4x)	B1 505 15.0
	Rubber grommet for valve holder (2x)	A3 642 19.0
	Socket plate, aerial -earth	A3 389 07.0
	Wire spring for fixing coil cans (4x)	A3 652 58.3
	Variable capacitor	see capacitors
	Spring in drum of variable capacitor	A3 646 26.0
	Switch (tone control)	A3 401 79.0
	Spindle for volume control	A3 432 94.0
	Plug for batteries connections	A3 381 05.0
	Nut 1/8" for volume control	49 758 21.0
	<u>Tools</u>	
	Service oscillator	GM 2882 or GM 2883 or GM 2884
	Universal Measuring Instrument	GM 4256 or GM 4257
	Vaseline compound	X 009 47.0

S1 )	2 Ohm		C29	20 pF	48 201 05/20E
S2 )	1 Ohm	A3 124 76.0	C30	1.8 pF	48 200 20/1E3
S3 )	6 Ohm				
S4 )	15 Ohm				
S5 )	45 Ohm		R1	0.1 MOhm	48 555 10/100K
S6 )	3.5 Ohm	A3 124 81.0	R2	0.82 MOhm	48 555 10/820K
S10)	1 Ohm		R3	27000 Ohm	48 555 10/27K
S11)	1 Ohm		R4	33000 Ohm	48 555 10/33K
S7 )	1 Ohm		R5	0.18 MOhm	48 555 10/180K
S8 )	1 Ohm		R6	470 Ohm	48 555 10/470E
S9 )	1 Ohm	A3 124 80.0	R7	1.5 MOhm	48 555 10/1M5
S12)	5 Ohm		R8	82000 Ohm	48 556 10/82K
S13)	12 Ohm		R9	0.1 MOhm	48 555 10/100K
S14)	3 Ohm		R10	0.05 MOhm)	48 900 00/DL
S15)	5 Ohm			0.45 MOhm)	50K + 450 K
S16)	3 Ohm		R11	4.7 MOhm	48 555 10/4M7
S17)	5 Ohm	A3 121 94.2	R12	4.7 MOhm	48 555 10/4M7
C16)	115 pF		R13	1 MOhm	48 555 10/1M
C17)	115 pF		R14	1 MOhm	48 555 10/1M
S18)	14 Ohm		R18	12000 Ohm	48 555 10/12K
S19)	14 Ohm				
C18)	110 pF	A3 124 25.4			
C19)	110 pF				
S20)	1400 Ohm				
S21)	1 Ohm	A3 169 42.0			
C1 )	50 uF	48 317 58/50+50			
C2 )	50 uF				
C4 )	30 pF	28 212 36.4			
C5 )	12-492 pF	49 001 56.1			
C6 )	12-492 pF				
C7 )	0.47 uF	48 750 10/470K			
C8 )	100 pF	48 203 20/100E			
C9 )	470 pF	48 203 20/470E			
C10)	100 pF	48 203 10/100E			
C11)	56 pF	48 203 02/56E			
C12)	30 pF	28 212 36.4			
C13)	30 pF	28 212 36.4			
C14)	2100 pF	48 336 02/2K1			
C15)	487 pF	48 203 01/487E			
C16)	115 pF)				
C17)	115 pF)				
C18)	110 pF)	see coils			
C19)	110 pF)	voir bobines			
C20)	47000 pF	48 750 10/47K			
C21)	100 uF	48 313 22/100			
C22)	47000 pF	48 750 10/47K			
C23)	100 pF	48 203 20/100E			
C24)	47 pF	48 203 10/47E			
C25)	2200 pF	48 751 10/2K2			
C26)	47000 pF	48 750 10/47K			
C27)	1500 pF	48 751 20/1K5			
C28)	4700 pF	48 751 10/4K7			

BX328B

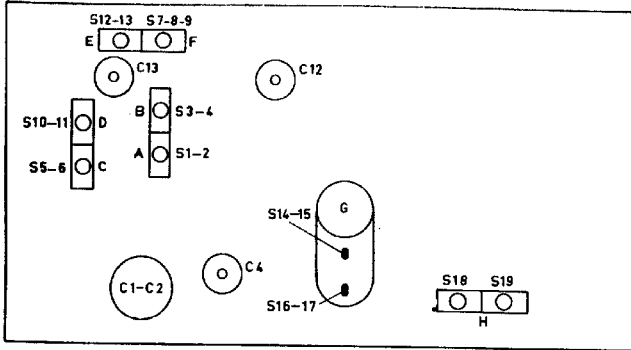
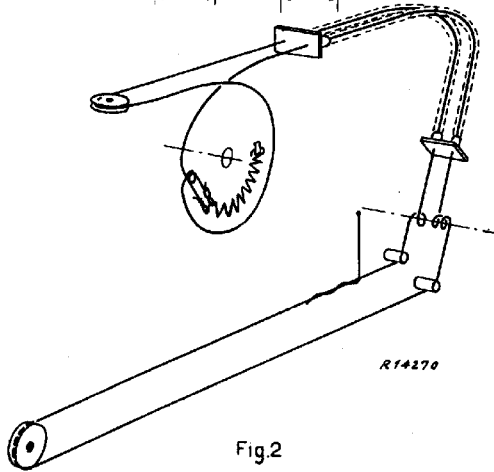
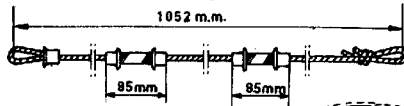


Fig.1

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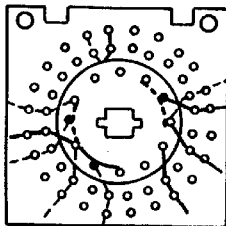
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Fig.2

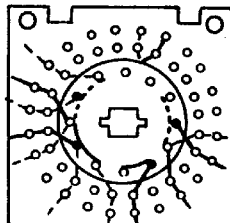


Fig.3

R14264



SK1



SK2

R14261

Fig.4

S.	1. 2. 3. 4. 5. 6.	7. 8. 9. 10. 11. 12. 13.	14. 15. 16. 17.	18. 19.	20. 21.	22
C.	1. 2. 3. 4. 5. 6.	7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19.	20. 21. 22. 23. 24.	25. 26.	27. 28.	29
R. 10. 1.	6. 8. 5.	3. 4.	8. 7.	10. 11.	9. 12. 13. 14.	

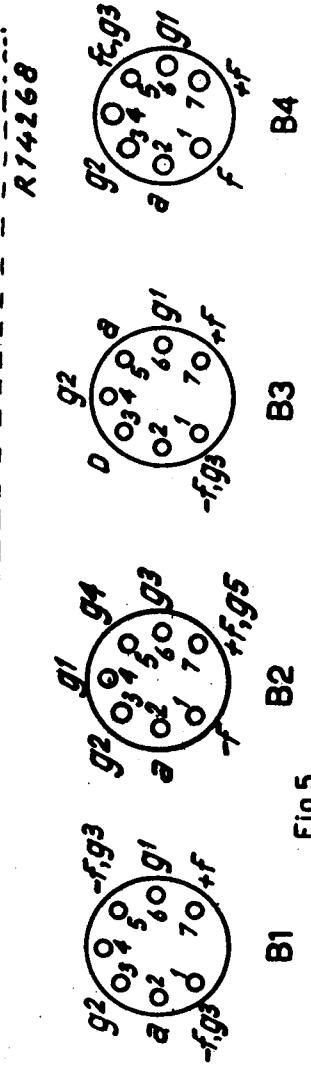
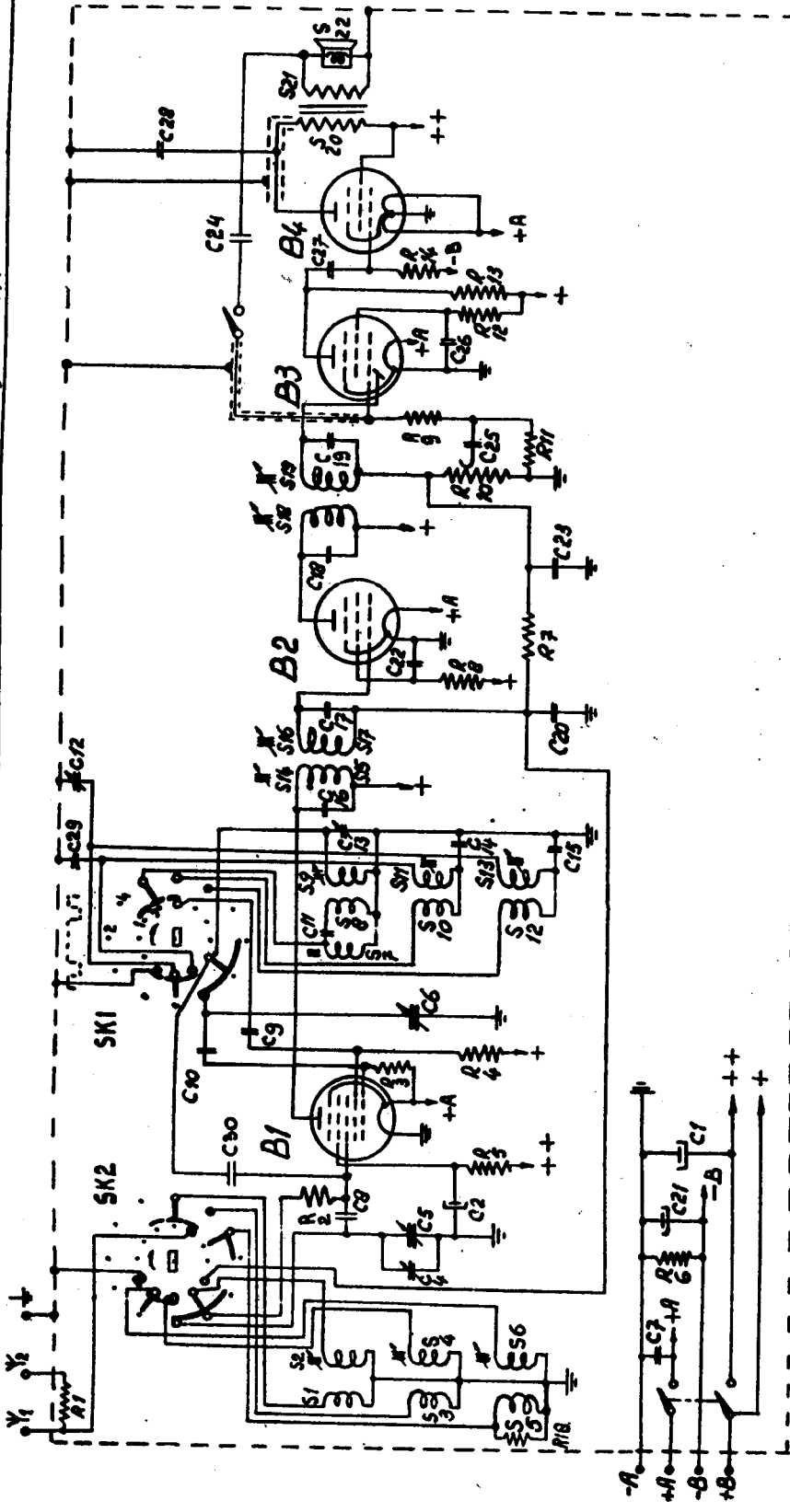
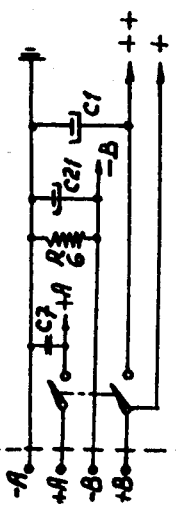
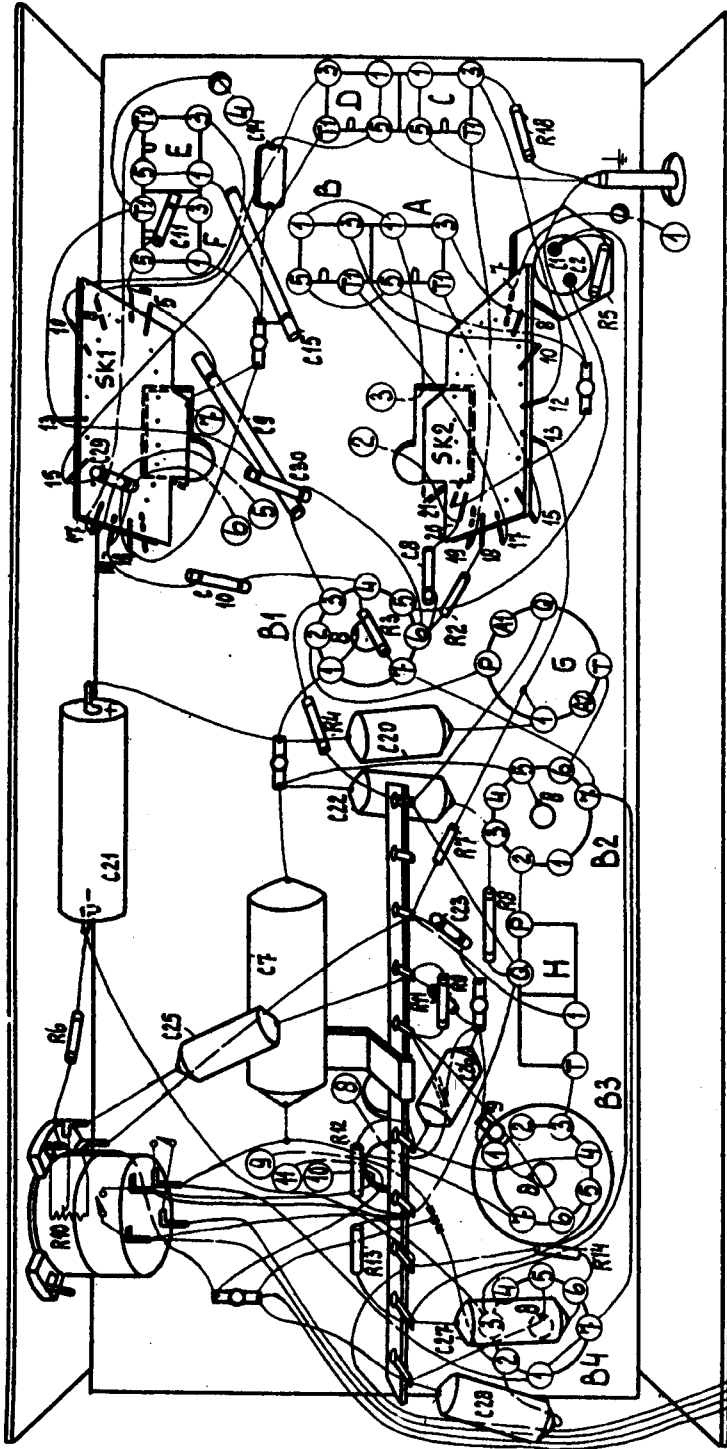


Fig. 5

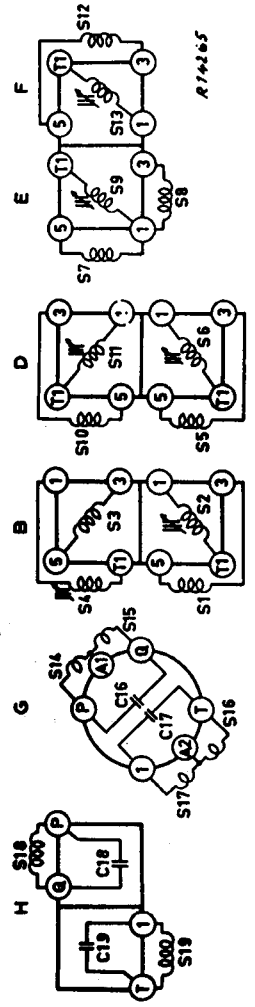


# BX328B

S:	27.	13, 14, 10, 12	6, 11, 9	6, 7	21, 22, 20	6	6, A, F, E, D, C,
C:	28.	26, 25	7, 23	14, 10, 8, 30, 29, 9	15, 2, 1, 11	5	
R:				3, 15, 2			



R14-267



R14-265



