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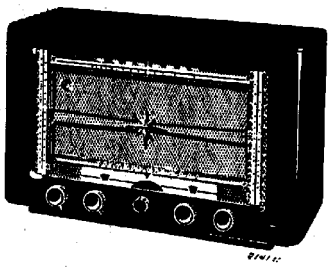
SERVICE NOTES

for the receiver

BX626A



1952 — 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 : fine tuning
4. Knob : waverange switch
5. Knob : main tuning

MAINS VOLTAGE

90, 110, 125, 145, 200, 220 V~ (50c/s)

CONSUMPTION

50 W approx.

LOUDSPEAKER

type 9770 Z=5 Ω

VALVES

B1 : EF41
B2 : ECH42
B3 : EBF80
B4 : EBC41
B5 : EL41
B6 : AZ41
B7 : EM34

DIMENSIONS

Length : 55 cm
Depth : 26 cm
Height : 34.5 cm
(knobs included)

WEIGHT

11.0 kg

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 kc/s at 1000kc/s and at 547 kc/s.

DIAL LAMPS

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

Printed in Holland

93 976 28.1.05

FIGURES

Fig. 1 R.F. and oscillator circuit for each position of the waverange switch.
Fig. 2 Trimming points on the dial.
Fig. 3 Pointer and gang capacitor drive.
Fig. 4 Switch segments.
Fig. 5 Circuit diagram.
Fig. 6 Wiring diagram (under).
Fig. 7 Wiring diagram (above).

CIRCUIT DESCRIPTION

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 tha variable condenser.

A.F. Part

The detected A.F. signal is applied to the grid of B4 via the volume control R14-R15 and C52.
The cathode resistors R17 and R25 of B4 and B5 repectively are not decoupled, so that negative current feedback takes place for these valves.
The resulting loss of gain is compensated by a positive feedback circuit, obtained by connecting R23 and R24 between the cathodes of B4 and B5.

Physiological tone correction, accentuating the bass notes compared with the treble, at low signal strength, is obtained by connecting R16 in series with C51 in parallel across the part R15 of the volume control.

Tone control

A negative feedback voltage, taken from the slider of the potentiometer R26 shunted across the secondary S48 and S49 of the outputtransformer, is applied via C53 to the cathode of B4.
Together with R17, C53 forms a hgih pass-filter. When the slider of the tone control R26 is in the lowest position the negative feedback voltage is strongest, with the result that the treble notes are suppressed.
This is the "mellow" position.
As the slider of R26 is moved upwards the negative feedback voltage is reduced to zero, the phase of the voltage is inverted and thus a positive feedback is applied to the cathode of B4.
This positive feedback voltage accentuates the reproduction of the treble notes. This is the "quality" position.

TRIMMING THE RECEIVER

The figs. 5, 6 and 7 show the position of the trimmers and cores.

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 S45-S46-C48 (coil U)
   3rd I.F. circuit S43-S44-C47 (coil U)
   1st I.F. circuit S39-S40-C44 (coil T)
   2nd I.F. circuit S41-S42-C45 (coil T)
   3rd I.F. circuit S43-S44-C47 (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 uncase the apparatus. Before starting to trim, be sure that the pointers are in the right positions at minimum capacitance of the variable condenser.

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

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 table, 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	Pointer on trimming point by means of tuning knob	2	2	6 *	6 *	6 *	6 *
3	Apply modulated signal of... to aerial socket via dummy aerial	547 kc/s	1.72 Mc/s	11.6 Mc/s	17.6 Mc/s	9 Mc/s	4.91 Mc/s
4	Trim for maximum output voltage	S38 S24 S16	S36 S21 S14	S27 S18 S 8	S26 S17 S 6	S28 S19 S10	S34 S20 S12
5	Pointer on trimming point... by means of tuning knob	1	4	3 *	-	-	-
6	Apply modulated signal of... to aerial socket via dummy aerial	1630 kc/s	5.1 Mc/s	18 Mc/s	-	-	-
7	Trim for maximum output voltage	C43 C24 C13	C39 C23 C12	C33 C19 C 8	-	-	-
8	Repeat the points.....	2-7	2-7	2-7	-	-	-
9	Seal the trimmers and cores	S38,C43 S24,C24 S16,C13	S36,C39 S21,C23 S14,C12	S27,C33 S18,C19 S8,C8	S26 S17 S 6	S28 S19 S10	S34 S20 S12

* Place fine 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 fine tuning which has to be unscrewed).
3. Unscrew loudspeaker baffle (4 screws).
4. Unscrew the four bottom screws.
5. Carefully [illegible] the chassis out of the cabinet.

Pointersdrive

The paths and lengths of the cables are indicated in fig. 3 for the position where the variable capacitor is set to maximum. To replace the driving cables, proceed as follows: (see fig. 3)

1. Uncase the receiver.
2. Remove the dial sclae and if desired also the baffle.
3. Put cable D with nipple d in slit D1 on the cabledrum 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 ± 2½ 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 cables 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.

CURRENTS AND VOLTAGES

			Va	Vg2(+4)	Vk	Ia	Ig2(+4)
B1	EF41	Pentode	197	67	-	3.4	1,14
B2	ECH42	Hexode	230	67	-	2.25	3,4
		Triode	130	-	-	3.65	-
B3	EBF80	Pentode	230	67	-	5.2	1,8
B4	EBC41	Triode	108	-	1,19	0.53	-
B5	EL41	Pentode	225	230	5.7	32.5	4.7
B7	EM34	Tuning indicator	230	d1=35 d2=18	-	1.3	d1=0.11 d2=0.12
			Volt	Volt	Volt	mA	mA

VC1 = 260 V
VC2 = 230 V

Iprim 225 mA (200 V ∿ 50 c/s)

These measurements have been taken with the Universal Measuring instrument GM 4257 with the receiver connected to 220 V a.c. and no signal on the aerial socket.

LIST OF PARTS AND TOOLS

When ordering always quote:
1. Codenumber.
2. Description.
3. Typenumber of the set.

		Description	Codenumber
		Cabinet (colour M.C.)	A3 369 44.0
		Rubber grommet (fixing chassis) 4x	A3 327 14.0
		Rear panel	A3 253 97.0
		Knob (colour M.D.) for volume control + tone control + tuning + waverange switch	23 609 10.0
		Lever (colour M.D.) for bass switch + radio-P.U. switch	23 952 95.5
		Knob (colour M.D.) for bandspread tuning	23 952 88.2
		Dial (overseas)	A3 225 17.0
		Dial (Mediterranean)	A3 225 18.0
		Supply switch	A3 228 80.0
		Valve holder	R1 662 11.0
		Spring for fixing coils (8x)	A3 652 58.2
		Spring for fixing coil (1x)	A3 652 75.1
		Switch (bass switch and radio-P.U.switch)	A3 402 44.0
		Rubber grommet for fixing baffle	A3 327 14.0
		Disque for waverange indication	A3 404 08.0
		Dial for bandspread tuning	A3 404 09.0
		Plate for tone control indication	A3 390 04.0
		Tension spring for driving cable at side of chassis	A3 646 17.0
		Pointer carrier	A3 372 35.0
		Ornamental star on front of receiver	P5 410 03/03
		Tension spring for fixing tuning indicator	A3 646 50.0
		Dial lampholder	A3 359 16.1
		Variable capacitor	see capacitors
		Tension spring in drum variable capacitor	A3 646 09.3
		Rubber grommet for bandspread tuning	A3 563 32.0
		Ornamental ring tuning indicator (colour UC)	P4 380 09/17
		Large vertical pully for cable drive	P4 095 04/01
		Large horizontal pully for cable drive	P4 095 05/01
		Cable drum	23 735 42.0
		Gear wheel	A3 330 43.0
		Tension spring for waverange switch	A3 208 03.0
		Spring for bandspread tuning	A3 649 81.0
		LOUDSPEAKER	type 9770
		Service oscillator	GM 2882 or GM 2883 or GM 2884
		Universal measuring instrument	GM 4256 or GM 4257
		Vaseline compound	X 009 47.0

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S1	–	A3 141 37.4
S2	–	
S3	–	
S4	–	
S5	1,5 Ω	A3 125 79.0
S6	< 1 Ω	
S9	1,5 Ω	A3 125 28.0
S10	< 1 Ω	
S7	1,5 Ω	A3 125 26.0
S8	< 1 Ω	
S11	1,5 Ω	A3 125 28.0
S12	< 1 Ω	
S13	15 Ω	A3 125 33.0
S14	1,7 Ω	
S15	40 Ω	A3 125 35.0
S16	3 Ω	
S17	< 1 Ω	A3 125 80.0
S19	< 1 Ω	A3 125 41.0
S18	< 1 Ω	A3 125 39.0
S20	< 1 Ω	A3 125 41.0
S21	1,5 Ω	A3 125 46.0
S23	40 Ω	A3 125 35.0
S24	3 Ω	
S25	30 Ω	A3 110 66.0
S26	< 1 Ω	A3 113 10.0
S28	< 1 Ω	A3 125 44.0
S27	< 1 Ω	A3 125 42.0
S32	< 1 Ω	A3 125 60.0
S33	< 1 Ω	
S34	< 1 Ω	
S29	1 Ω	A3 111 65.0 *
S30	< 1 Ω	A3 111 65.0 –
S35	1 Ω	A3 125 68.0
S36	3 Ω	
S37	4 Ω	A3 125 72.0
S38	10 Ω	
S39	3 Ω	
S40	4 Ω	
S41	3 Ω	

S42	4 Ω	A3 121 94.2
C44	115 pF	
C45	115 pF	
S43	3 Ω	A3 121 94.2
S44	4 Ω	
S45	3 Ω	
S46	4 Ω	
C47	115 pF	
C48	115 pF	
S47	–	A3 169 43.0
S48	–	
S49	–	
S51	–	
C1)	50 µF	48 317 59/50+50
C2)	50 µF	
C3	11-490 pF	49 001 66.2
C4	11-490 pF	
C5	11-490 pF	
C8	60 pF	49 005 58.0
C10	140 pF	48 203 01/140E
C12	30 pF	28 212 36.4
C13	30 pF	28 212 36.4
C14	150 pF	48 203 01/150E
C15	150 pF	48 203 20/150E
C16	150 pF	48 203 20/150E
C17	150 pF	48 203 10/150E
C19	60 pF	49 005 58.0
C21	140 pF	48 203 01/140E
C23	30 pF	28 212 36.4
C24	30 pF	28 212 36.4
C25	150 pF	48 203 01/150E
C26	150 pF	48 203 20/150E
C27	0,22 µF	48 751 20/220K
C29	220 pF	48 203 20/220E
C30	500 pF	48 336 01/500E
C31	180 pF	48 336 01/180E
C33	60 pF	49 005 58.0
C34	100 pF	48 203 20/100E
C35	100 pF	48 203 20/100E
C36	100 pF	48 203 02/100E
C37	150 pF	48 336 01/150E
C39	30 pF	28 212 36.4