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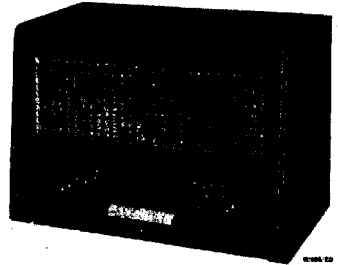
N.V. Philips' Gloeilampenfabrieken  
Eindhoven

# PHILIPS

## SERVICE NOTES

for the receiver

### H5X68A



1956. For A.C. mains.

#### Waveranges

M.W. : 185 - 580 m (1622 - 517 kc/s)  
 O.C.3 : 59 - 187 m (5.1 - 1.6 Mc/s)  
 O.C.2c: 25 - 60 m (12 - 5 Mc/s)  
 O.C.2b: 16.75 - 25.64m (17.9 - 11.7 Mc/s)  
 O.C.2a: 11.4 - 16.94m (26.2 - 17.7 Mc/s)

I.F. : 452 kc/s

#### Mains voltages

90-110-127-145-190-220 V

#### Consumption

ca. 70 W (220 V)

#### Knobs

From left to right:

Bass control

Volume control

Push buttons : mains switch

P.U. - M.W. - O.C.3 - O.C.2c - O.C.2b -  
 O.C. 2a.

Ferroceptor

Tuning

Treble control

#### Loudspeaker

AD 3800 AM ( $Z = 800 \Omega$ )

#### Dimensions

650 x 448 x 404 mm

#### Dial lamps

2x 8024 N-91

#### Valves

B1 : EF 89	B5 : EL 84
B2 : ECH81	B6 : EM 80
B3 : EBF80	B7 : EZ 80
B4 : EBC81	B8 : UL 41

#### Record player

AG 1003 - 75

#### Bandwidth

The I.F. bandwidth (1:10) measured from g1 - B2 is about 10.5 kc/s.  
 The overall bandwidth (1:10) measured from the aerial socket is about  
 9 kc/s at 1622 kc/s and about  $7\frac{1}{2}$  kc/s at 550 kc/s.

93 986 42.10.5

Trimming of the receiverI.F. band filters

1. Set volume control to maximum.
2. Waverange switch to M.W.
3. Variable capacitor at minimum.
4. Unscrew the core of the I.F. band filters as far as possible.
5. Connect a voltmeter via a trimming transformer to the extension loudspeaker socket.
6. Apply a modulated signal of 452 kc/s via a capacitor of 33.000 pF to g<sup>1</sup> of B2.
7. Trim the I.F. filters for maximum output voltage in the order S28, S27, S25, S26, S27.
8. Seal the cores of the I.F. band filters.

R.F. and oscillator circuits

Trimming is done with the aid of the trimming points on the dial. Trimming point 1 at the left, trimming point 2 at the right. Adjust the pointer to trimming point 1 with the variable capacitor at minimum.

1. Volume control at maximum.
2. Connect a voltmeter via a trimming transformer to the extension loudspeaker sockets.
3. If it is indicated in the trimming table, that the signal must be applied to 2 points on the chassis, then the points X and Y are used indicated in fig.3. This because the current flowing in the mounting plate as a result of this, takes care of a weak coupling with the loop aerial.  $X - Y = 10 \text{ cm.}$

Waverange switch in position	Pointer at trimming point	Modulated signal			Trim for maximum output voltage
		from	via	to	
M.W.	2	550kc/s	dummy aerial	Aerial socket	S24, S15, S10-S10a
	1	1630kc/s	dummy aerial	Aerial socket	C36, C24, C14
O.C.3	2	1.72 Mc/s	33000 pF	g <sup>1</sup> B1 x-y	S22, S14-S14a S9
	1	5.15 Mc/s 5.15Mc/s	33000 pF 33000 pF	g <sup>1</sup> B1 X - Y	C35, C23 C12
O.C.2c	2	5.26Mc/s	33000 pF	g <sup>1</sup> B1 X - Y	S20 <del>h</del> , S13 S7
	1	12.1Mc/s	33000 pF	g <sup>1</sup> B1	C62

Waverange switch in position	Pointer at trimming point	Modulated signal			Trim for max. output voltage
		from	via	to	
O.C.2b	2	11.75 Mc/s	33.000 pF	g1B1	S19, S12, S5
		18 Mc/s	33.000 pF	g1E1 X-Y	C40, C21 C66
O.C.2a	2	17.8 Mc/s	33.000 pF	g1B1	S17, S11, S6
	1	26.4 Mc/s	33.000 pF	g1E1 X-Y	C39, C20 C8
Trimming of loop replacement coil					
O.C.2c	2	5.26 Mc/s	Dummy aerial	Aerial socket	S7
O.C.2b	1	18 Mc/s	Dummy aerial	aerial socket	C66

Seal the cores and trimmers.

#### Mains transformer

If the original mains transformer gets defect, it should be replaced by the standard transformer mentioned in the electrical parts list. For the connections, see fig. 2.

#### Cable drive

For the path and the lengths of the cables, see fig. 1.

#### Voltages

The voltages are indicated in the circuit diagram and have been measured with the GM 4257.

H5X68A

LIST OF PARTS

	Description	Code number
	Cabinet	A3 004 23.0
	Knob (small) volume control and tuning	A3 739 12.0
	Knob (large) volume control	A3 752 37.0
	Leaf spring for large knob	A3 650 18.0
	Leaf spring for small knob	A3 522 08.2
	Knob (large) ferroceptor	A3 739 19.0
	Push button	A3 417 70.0
	Knob for tone control	P4 077 00/19
	Mains switch	A3 182 78.0
	Tension spring for mains switch	A3 646 06.0
	Variable capacitor	49 001 97.0
	Voltage adaptor	A3 228 85.0
	Leaf spring for fixing coil	A3 651 89.0
	Spring for fixing double coil can	A3 652 58.3
	Spring for fixing single coil can	A3 652 75.1
	Tension spring in drum variable capacitor	89 312 10.3
	Spring for driving cable	A3 646 23.0
	Grommet (colour HA) dial fixing	P5 420 03/08
	Ferroceptor drum	P4 380 53.0
	Spring in ferroceptor drum	89 312 10.3
	Aerial ferroceptor switch	A3 186 83.0
	Strip waverange switches (5x)	A3 664 27.0
	Tension spring push button unit	A4 601 24.0
	Pressure spring push button unit	A3 644 99.0
	Dial (overseas)	A3 806 91.0
	Dial (Mediterranean)	A3 806 90.0
		WM/RT

S1	}	A3 142 63.0	C12	22 pF	A9 999 08/22E					
S2			C13	3000 pF	A9 999 05/3K					
S3			C14	22 pF	A9 999 08/22E					
S5	}	A3 119 41.0	C15	100 pF	A9 999 04/100E					
S6			C16	10.000 pF	A9 999 04/10K					
S7			C17	106 pF	A9 999 05/100E					
S9	}	A3 119 50.0	C18	150 pF	A9 999 04/150E					
S10						}	A3 118 35.0	C19	10.000 pF	A9 999 04/10K
S10a								C20	22 pF	A9 999 08/22E
S11	}	A3 119 53.0	C21	30 pF	A9 999 08/30E					
S12			C22	3000 pF	A9 999 05/3K					
S13			C23	22 pF	A9 999 08/22E					
S14	}	A3 119 44.0	C24	22 pF	A9 999 08/22E					
S14a			}	A3 119 45.0	C25	65 pF	A9 999 04/47E			
S15					C26	120 pF	A9 999 04/18E			
S16	}	A3 125 48.0	C27	100 pF	A9 999 05/120E					
S17			C28	380 pF	A9 999 04/100E					
S18			C29	68 pF	A9 999 04/390E					
S19	}	A3 119 47.0	C30	120 pF	A9 999 04/68E					
S20			}	A3 118 45.0	C31	10.000 pF	A9 999 05/120E			
S20a					C32	82 pF	A9 999 04/10K			
S20b	}	A3 119 51.0	C33	455 pF <sup>2x</sup>	A9 999 04/82E					
S21			}	A3 119 48.0	C34	56 pF	A9 999 05/910E			
S22					C35	20 pF	A9 999 05/56E			
S23	}	A3 125 93.0	C36	30 pF	A9 999 08.22E					
S24			}	A3 119 48.0	C37	30 pF	A9 999 08/30E			
S25					C38	) zie spoelen véase bobinas				
S26	}	A9 999 25/452	C39	30 pF	see coils					
C37			110 pF	C40	30 pF	A9 999 08/30E				
C38			195 pF	C41	33000 pF	A9 999 08/30E				
S27	}	A9 999 25.452	C42	10 pF	A9 999 06/33K					
S28			}	A9 999 25.452	C43	10 pF	A9 999 04/10E			
C43					110 pF	C44	) zie spoelen véase bobinas			
C44	195 pF	C45	47 pF	) voir bobines see coils						
C1	50 $\mu$ F	A9 999 13/	C46	10.000 pF	A9 999 04/47E					
C1a	50 $\mu$ F	M50+50+50	C47	3300 pF	A9 999 04/10K					
C2	50 $\mu$ F		C48	8200 pF	A9 999 06/3K3					
C4	12,5-489 pF	} 49 001 97.0	C49	22.000 pF	A9 999 06/8K2					
C5	12,5-489 pF		C50	10.000 pF	A9 999 06/22K					
C6	12,5-511 pF		C51	0,1 $\mu$ F	A9 999 04/10K					
C8	30 pF	A9 999 08/30E	C52	47.000 pF	A9 999 06/100K					
C9	33 pF	A9 999 04/33E	C53	6.800 pF	A9 999 06/47K					
C10	10 pF	A9 999 04/10E	C54	8 $\mu$ F	A9 999 06/6K8					
C11	100 pF	A9 999 07/20E	C55	100 $\mu$ F	A9 999 11,2L8					
		100E	C56	390 pF	A9 999 10/C100					
			C57	680 pF	A9 999 04/390E					
			C58		A9 999 04/680E					
			C59	2200 pF	A9 999 06/2K2					
			C60	12 pF	A9 999 06/47K					
			C61	10 pF	A9 999 06/6K8					
			C62	30 pF	A9 999 11,2L8					
			C63	2100 pF	A9 999 10/C100					
					A9 999 04/390E					
					A9 999 04/680E					
					A9 999 06/2K2					
					A9 999 04/12E					
					A9 999 04/10E					
					A9 999 08/30E					
					A9 999 05/1K3+					
					300E					



H5 X 68 A

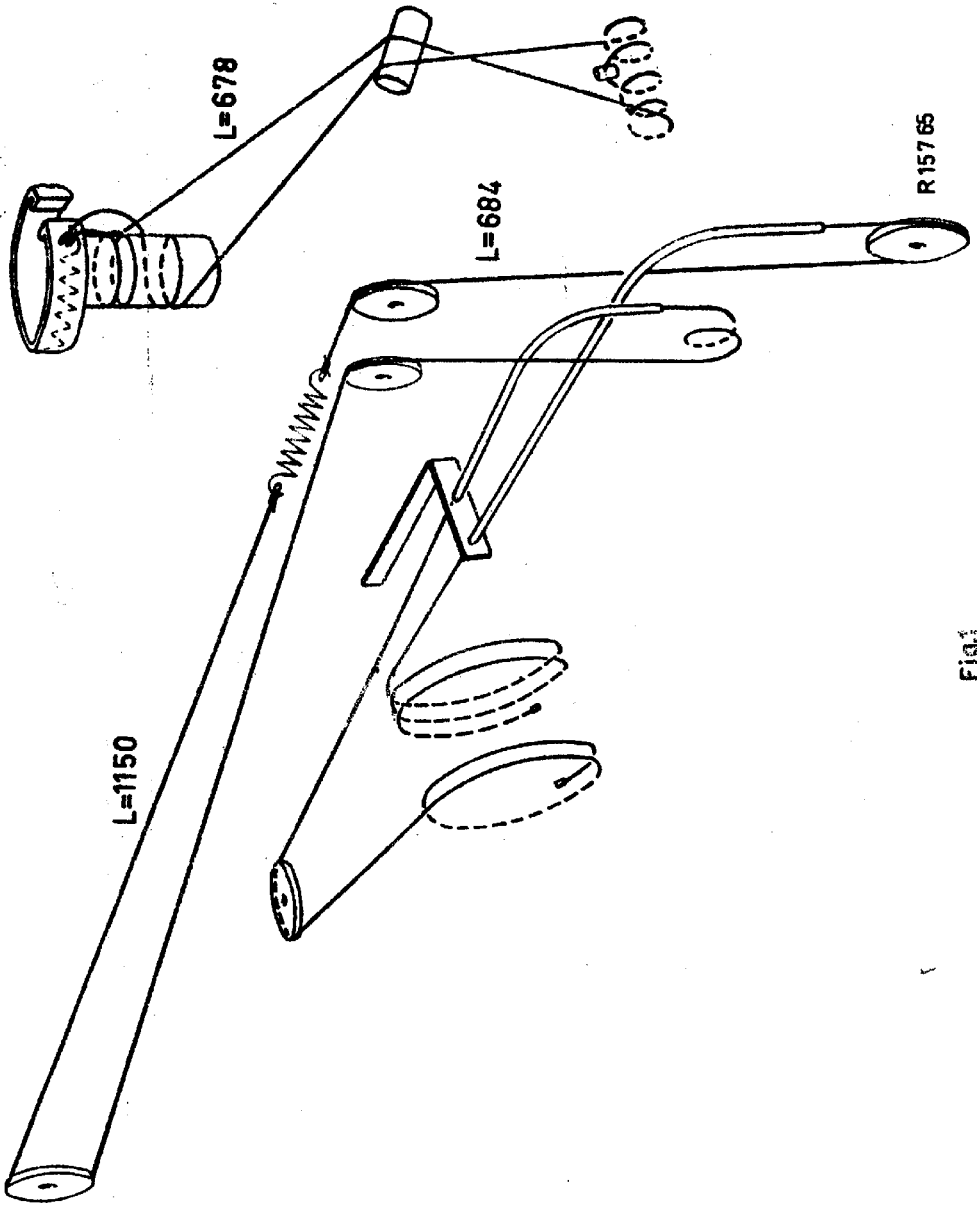
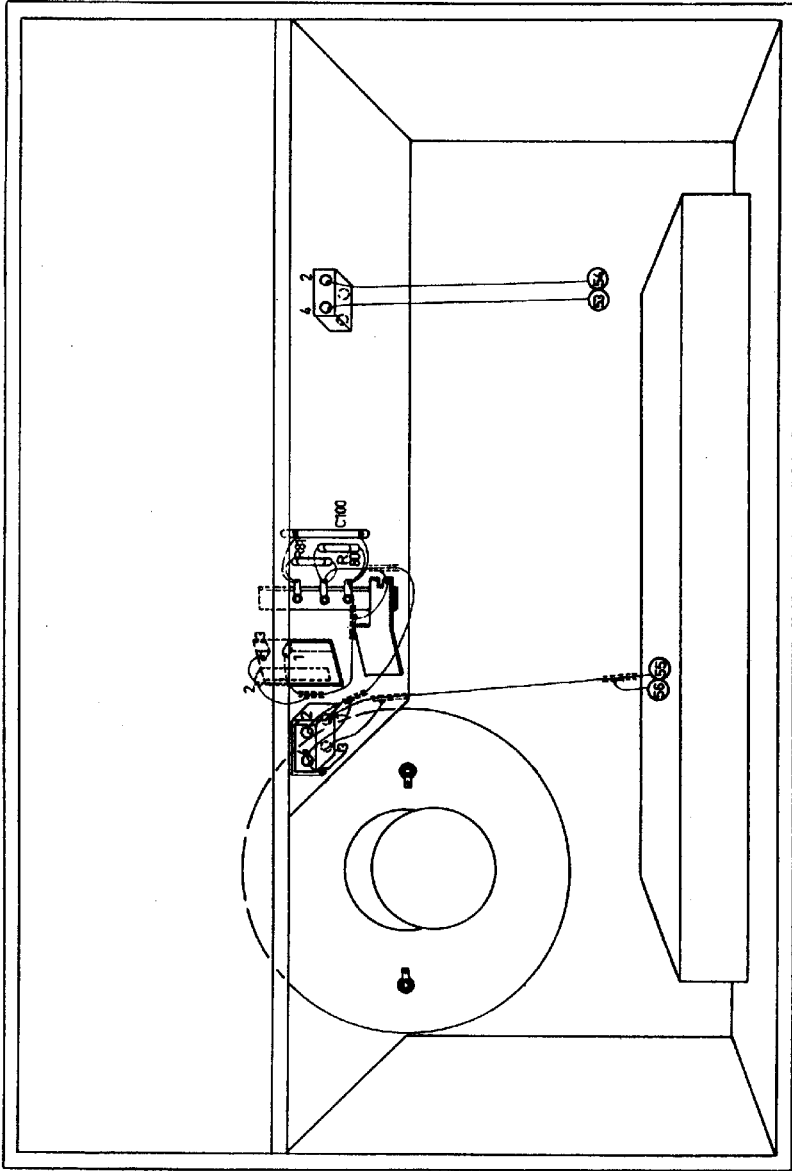


Fig. 1



R 165 09

Fig2



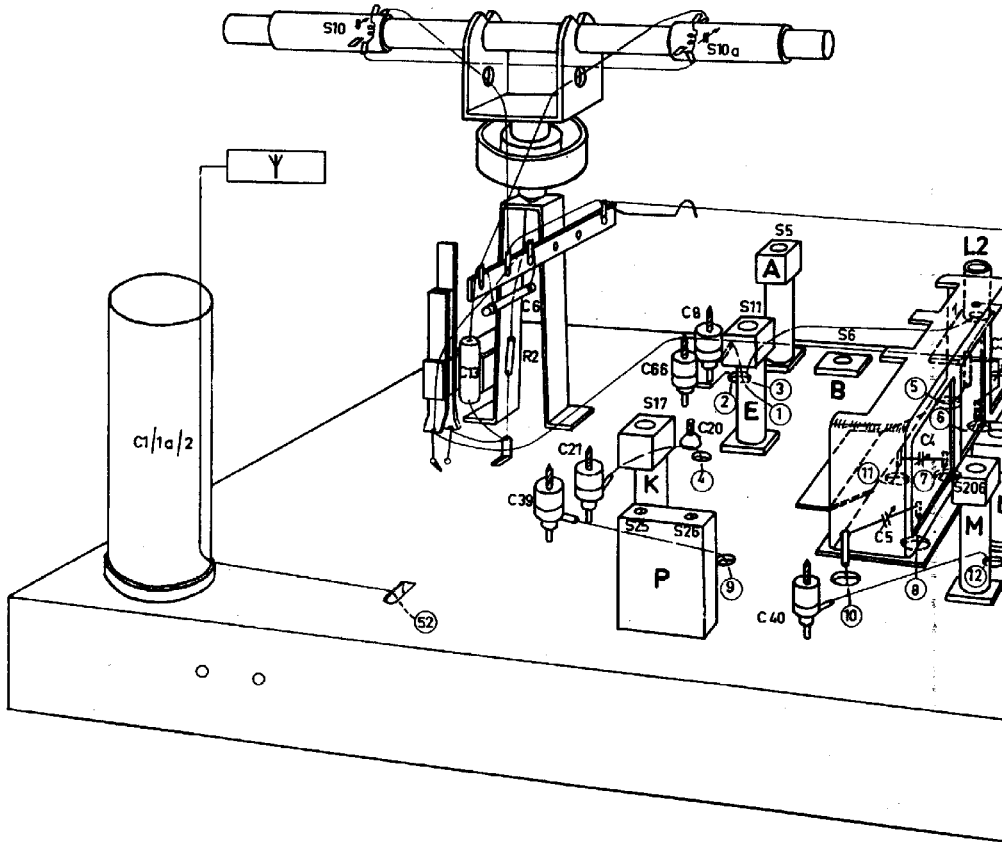


Fig. 3

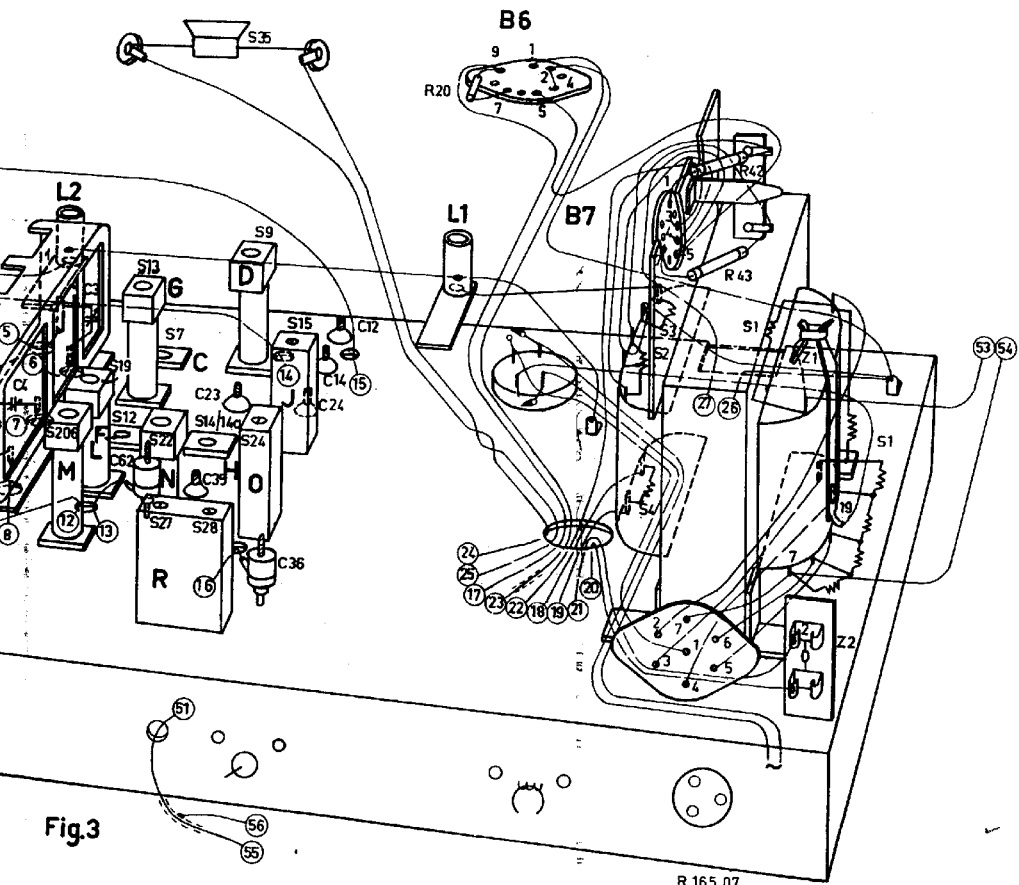


Fig. 3

R 165 07

S	3130										J O R D H N C G F L M										20	
C	55	48	47	49,56,57,54	70	66,58		53	52	51	63	33,12,14,24,22	60,23,35,15,65,67,62	32,50,25,17,2								
R	47	29	31,30a	16		17	16	30	25	14	33	23	41	28		37	21,19,22,13,18,35	36,34	24	12	11	40

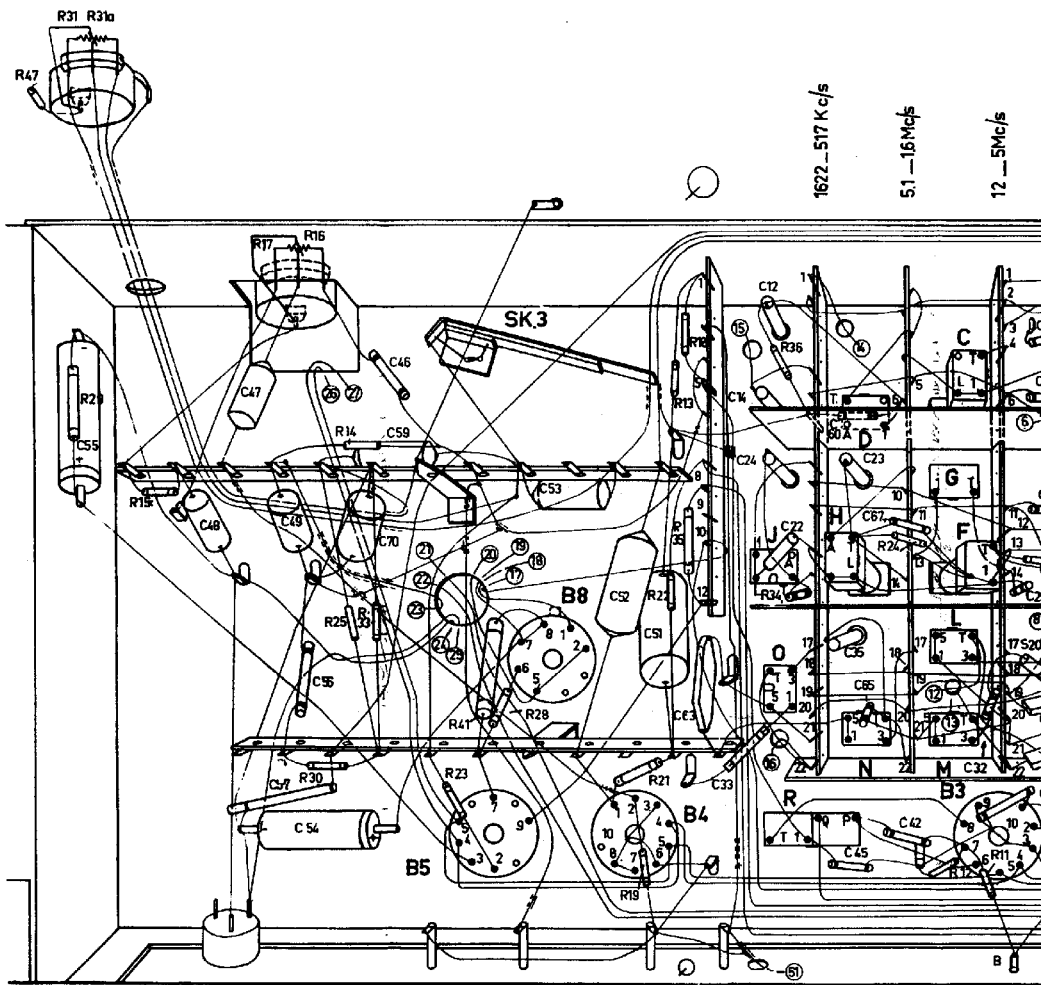
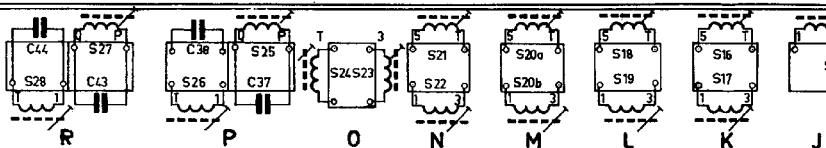


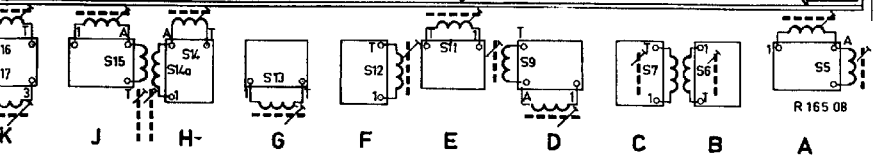
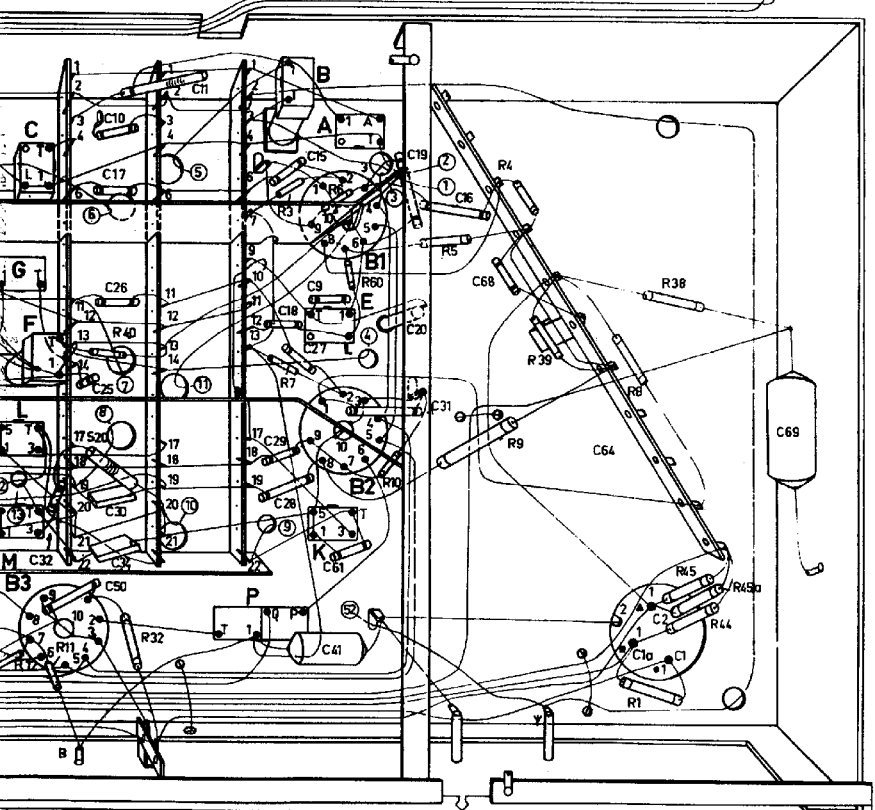
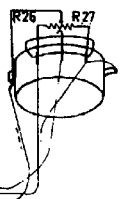
Fig.4



A

G	F	L	M	20	P	B	E	K	A												
12	32	50	25	17	26	15	27	9	41	61	16	68	64	10	2	1	69				
12	11	40	32		3	7	6	60	10	5	9	4	39	8	1	38	45	44	45	26	27

12 — 5Mc/s  
 179 — 117Mc/s  
 262 — 177Mc/s



S	5	6791010a										11-15										16-24																	
C	66	7	60	13	10	12	8	11	14	17	4	15	16	19	68	18	9	67	25	24	20	21	22	23	26	27	5	27	31	28	30	6	29	32	33	33	39	40	62
R		2					36						3	4	6	5			39	40	24		34			8	7		9	10									

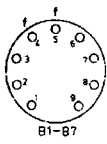
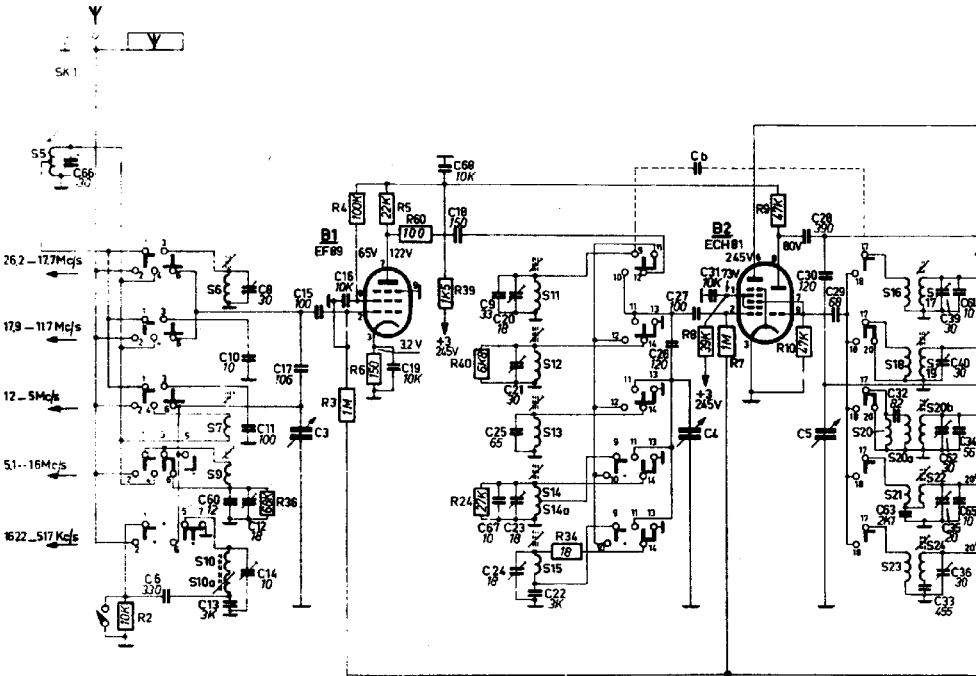


Fig.5



N.V. PHILIPS GLOELAMPEN- FABRIEKEN EINDHOVEN	<i>Service Information</i>	No. Bc. 176
		9.8.56
CENTRAL SERVICE DIVISION	GROUP: Apparatius	WM/RT
	ARTICLE: Radio	
	TYPE: H5X68A	

**ALREADY PUBLISHED:**

**RE:** Rebuilding crystal pick-up - magneto-dynamic pick-up.

If in the above mentioned set the crystal pick-up head is replaced by a magneto-dynamic pick-up head, types AG 3020, AG 3021, a pick-up preamplifier has to be built in. At the side of the R.F. section, some holes have to be drilled into the side of the chassis, so that the preamplifier can be fastened with bolts. For the connection, see the enclosed sketches.

The connection points of the amplifier are on two wiring brackets under a shield.

With a view to the heavier weight of the magnetic-dynamic p.u. head, the record changer has to be provided with a new p.u. arm. See our Service Information Bc 27.

The pick-up heads and the preamplifier have been combined, and are supplied under type number 7963.

**Onderwerp:** Ombouw kristal p.u. - magn. dyn. p.u.

Wanneer men in bovengenoemd apparaat de kristal pick-up kop wil vervangen door een magneto dynamisch type; AG 3020, AG 3021, moet een p.u. voorversterker worden ingebouwd.

Aan de kant van het H.F. gedeelte moeten voor de bevestiging in de zijkant van het chassis enkele gaten worden bijgeboord.

Voor aansluitingen zie bijgaande figuren.

De aansluitpunten van de versterker bevinden zich op twee bedradingssteunen onder een afschermkap.

In verband met het grotere gewicht van de magn. dynamische p.u. kop moet de platenwisselaar van een nieuwe arm worden voorzien. Zie hiervoor de Service Mededeling Bc 27.

De p.u. koppen en de voorversterker zijn samengevoegd en leverbaar onder type nummer 7963.

Concerne: Reconstruction p.u. de cristal - p.u. magneto dynamique.

Lorsqu'on veut remplacer la tête de p.u. de cristal par une du type magneto-dynamique AG 3020, AG 3021 dans l'appareil susmentionné, il faut incorporer un préamplificateur de p.u.

Au côté de la partie H.F. il faut percer quelques trous pour la fixation dans le côté du châssis.

Pour les connexions voir les figures.

Les points de connexion de l'amplificateur se trouvent sur deux supports de câblage sous un capot de protection.

En vue du poids plus grand de la tête de p.u. magn. dynamique, le changeur de disque doit être muni d'un nouveau bras. Voir pour cela l'information Service Bc 27.

Les têtes de p.u. et le préamplificateur sont réunis et livrables sous le numéro de type 7963.

Betr.: Umbau Kristallabnehmer - Magneto-dynamischen Abnehmer.

Falls man im obengenannten Empfänger den Kristall-Tonkopf durch einen magneto-dynamischen Tonkopf, Typ AG 3020, AG 3021, ersetzen will, muss ein Abnehmer-Vorverstärker eingebaut werden.

An der Seite des H.F. Teils müssen zur Befestigung dieses Verstärkers einige Löcher in die Seitenwand des Chassis gebohrt werden. Siehe die beige-schlossenen Skizzen.

Die Anschlusspunkte des Verstärkers findet man auf zwei Bedrahtungsstützen unter einer Schutzkappe.

Im Hinblick auf das grössere Gewicht des magneto-dynamischen Tonkopfes muss der Plattenwechsler mit einem neuen Abnehmerarm versehen werden. Siehe unsere Service-Mitteilung Bc 27.

Die Tonköpfe und der Vorverstärker werden als eine Einheit unter die Typennr. 7963 geliefert.

Acerca de: Modificación - fonocaptor de cristal - fonocaptor magneto-dinámico.

Quando se quiere reemplazar la cabeza fonocaptora de cristal por un tipo magneto dinámico, AG 3020, AG 3021, hay que incorporar un preamplificador de fonocaptor.

Al lado de la parte de R.F. deben taladrarse algunos orificios para la fijación en la lado del chasis.

Para la conexión véanse las figuras adjuntas.

Los puntos de conexión del amplificador se hallan sobre dos soportes de cableado por debajo de una caperuza de blindaje.

En vista del mayor peso de la cabeza fonocaptora magneto dinámica, el cambiadiscos debe ser provisto de un nuevo brazo. Véase para esto el Informe de Servicio Bc 27.

Las cabezas fonocaptoras y el preamplificador se han reunido y se suministrarán bajo el número de tipo 7963.



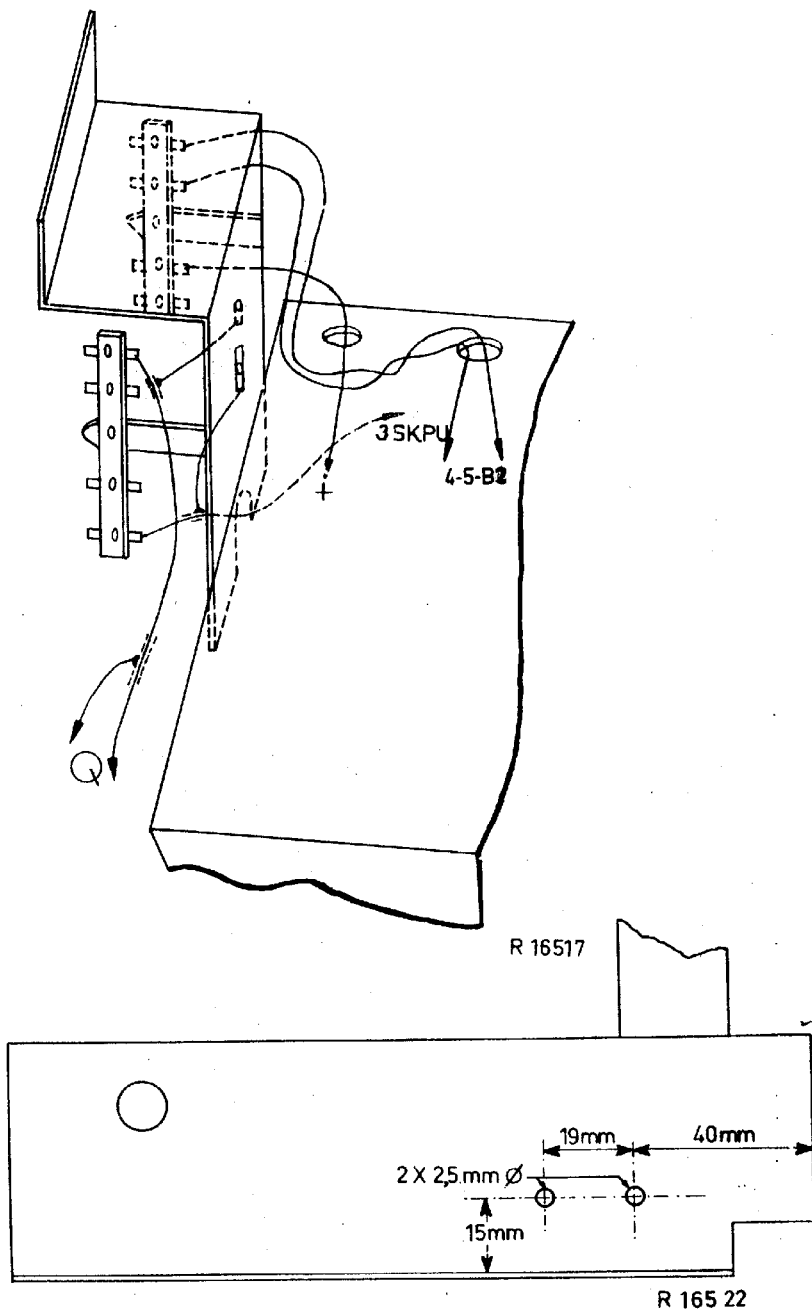
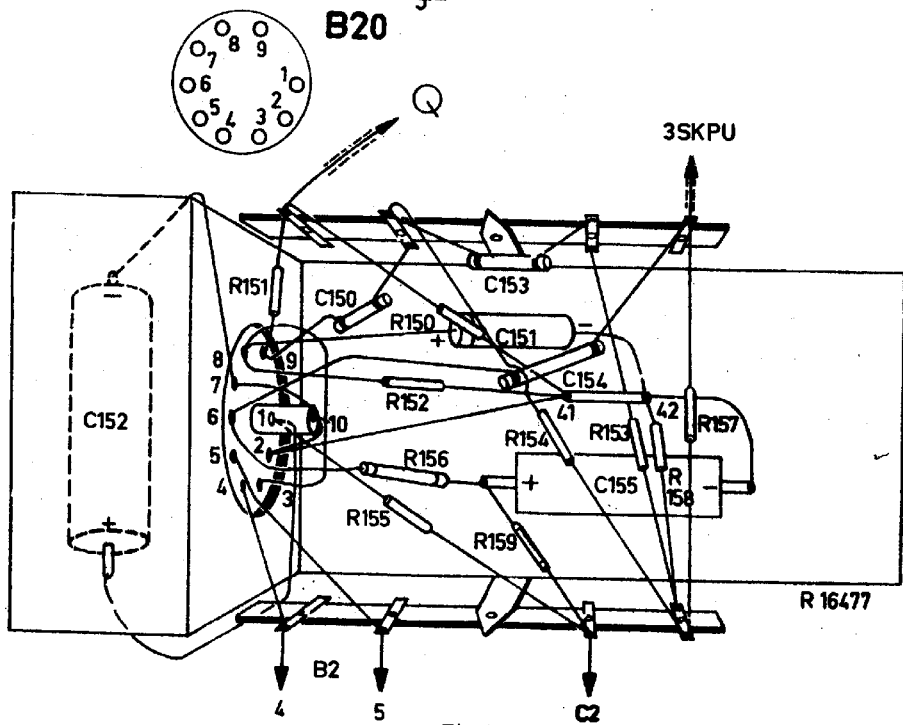
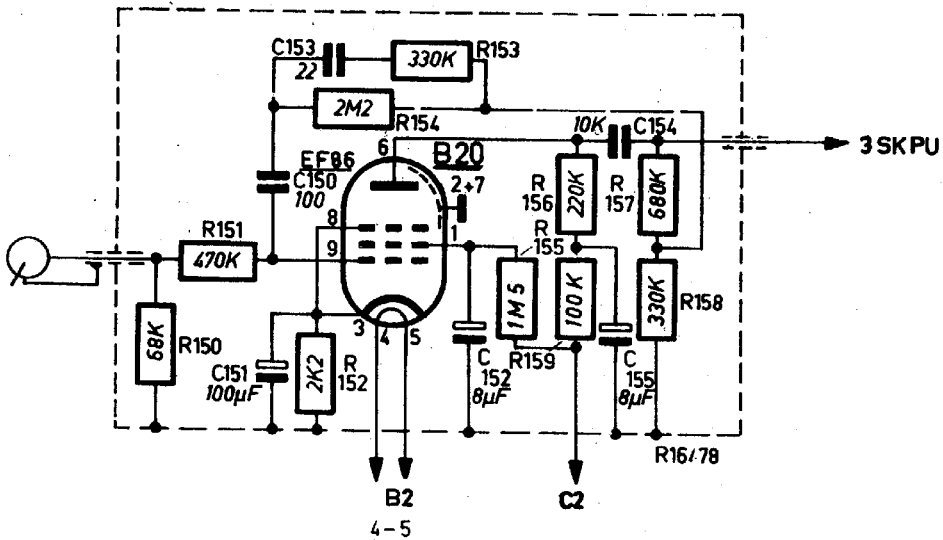


Fig.1



N.V. PHILIPS  
GLOEILAMPEN-  
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EINDHOVEN

# Service Information

No. Ba190

5-10-56

CENTRAL  
SERVICE  
DIVISION

GROUP: Apparatius  
ARTICLE: Radio  
TYPE: H5X68A, B6X66A, B5X65A.

WM/SR

## ALREADY PUBLISHED:

RE: Supply transformer for B5X65A; B6X66A; H5X68A.

The code number of the standard transformer S1,2,3,4 in the electrical parts' list of the above sets, is not correct.  
S1,2,3,4 should be A3 142 75.

-----

Voedingstransformator B5X65A; B6X66A; H5X68A.

In de elektrische stuklijst van bovengenoemde apparaten is het code nummer van de standaard transformator, S1,2,3,4 is niet juist.  
S1,2,3,4 moet zijn A3 142 75.

-----

Transformateur d'alimentation pour le B5X65A; B6X66A; H5X68A.

Dans la liste de pièces électriques des appareils susmentionnés le numéro de code du transformateur standard S1,2,3,4 n'est pas juste.  
S1,2,3,4 doit être A3 142 75.

-----

Transformador de alimentación para el B5X65A; B6X66A; H5X68A.

En la lista de piezas eléctricas de los aparatos mencionados arriba, el número de código del transformador standard S1,2,3,4 no es correcto.  
S1,2,3,4 debe ser A3 142 75.

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CENTRAL SERVICE DEPARTMENT

A.v.Heule