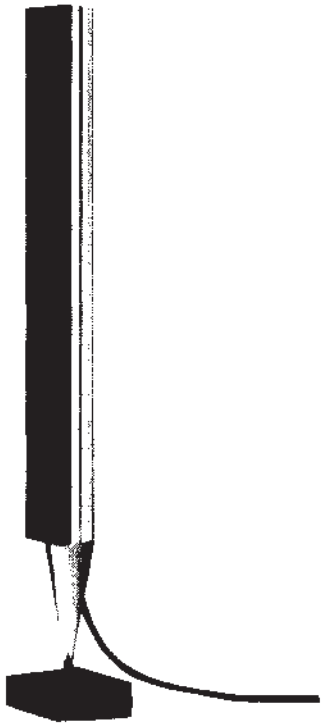
Bang & Olufsen



Beolab 8000

**Type 6801, 6802, 6803,
6804, 6805**

SERVICE MANUAL

Bang & Olufsen

INDHOLD

CONTENTS

TECHNICAL SPECIFICATIONS

Beolab 8000 — Type 6801 (EU), 6802 (GB), 6803 (USA-CDN), 6804 (JAP), 6805 (AUS)

System data:

Frequency response	40-22,000 Hz +4-8 dB
	50-20,000 Hz ±2 dB
Sound Pressure Level	100 dB/IEC noise
	3 m/stereo/room
Input impedance	47 kΩ
Harmonic distortion	1%/94 dB SPL, 1 m. 250-5,000 Hz

Electronics:

Active crossover network	24 dB/octave, Linkwitz/Riley
High pass filter	30 dB/octave, 40 Hz
Low frequency equalization	30-250 Hz/+8 dB

Acoustics and cabinet

Cabinet principle	Bass Reflex
Woofer	2 units 4"-10 cm
Tweeter	1"-2.5 cm
Crossover frequency	4200 Hz
Net volume	5.3 litres

Power amplifier:

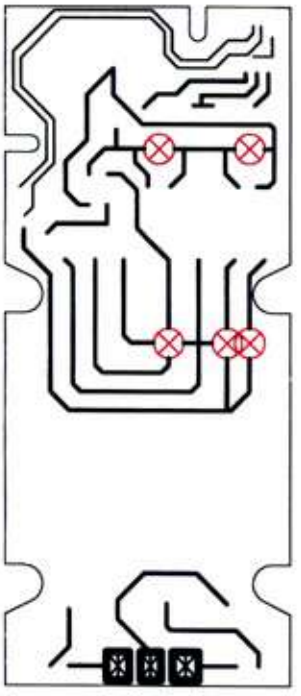
Frequency range	40-20,000 Hz +0-1 dB
Signal-to-noise ratio	>96 dB A-weighted, max. power
Input sensitivity/impedance:	
Power Link sockets	1 V/47 kΩ
Power Link channel separation	>55 dB/10,000 Hz
Stand by function	Automatic ON-OFF

Connections:

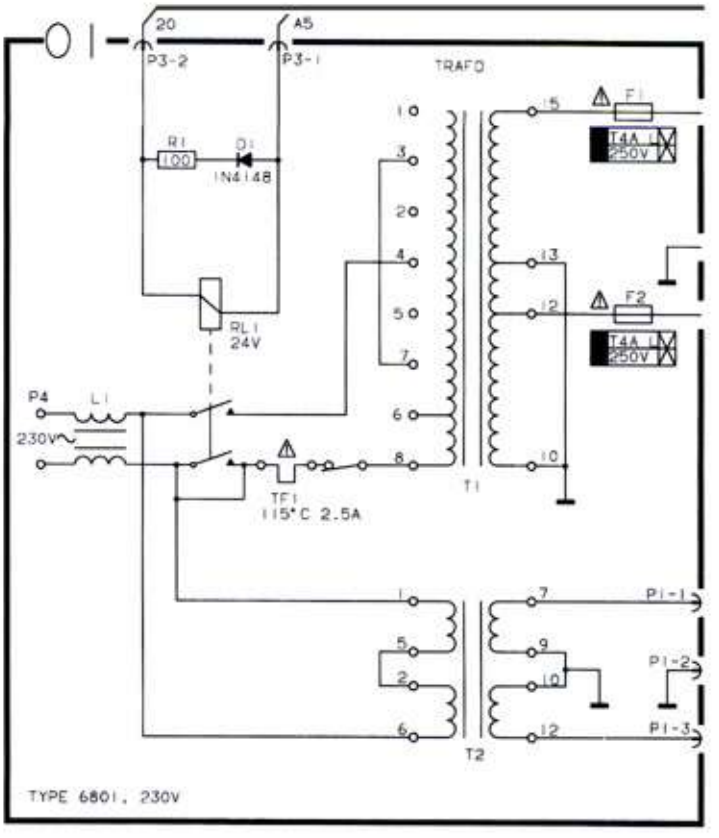
Power Link	8-pin socket
Line	Phono socket
Power supply	230 Volts (6801), 240 Volts (6802)
	120 Volts (6803), 100 Volts (6804), 240 Volts (6805)
Power consumption	<210 Watts
Stand by	<2 watts
Finish	Polished aluminium, black front cloth
Total dimensions W x H x D	15 x 132 x 15 cm
Weight	20 kg

Subject to change without notice

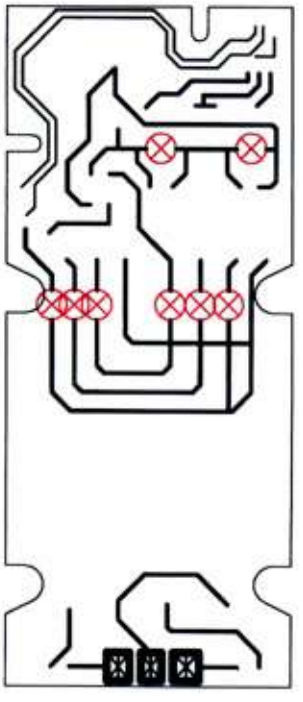
WIRING OF TRANSFORMER
Type 6801
EU 230 V~



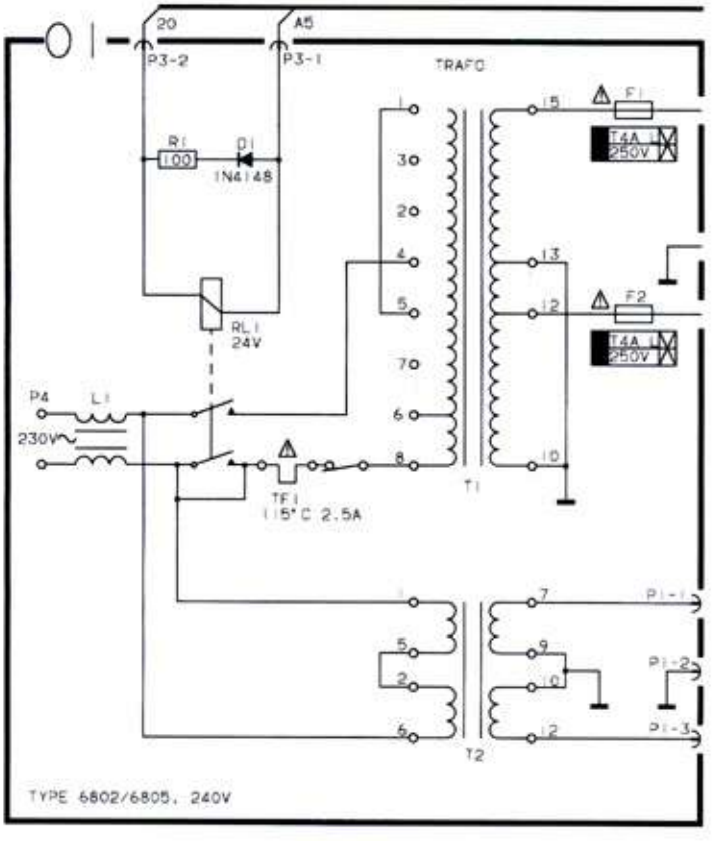
230V - TYPE 6801



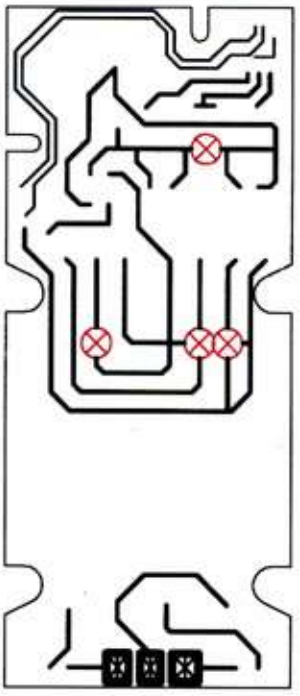
Type 6802, 6805
GB, AUS 240 V~



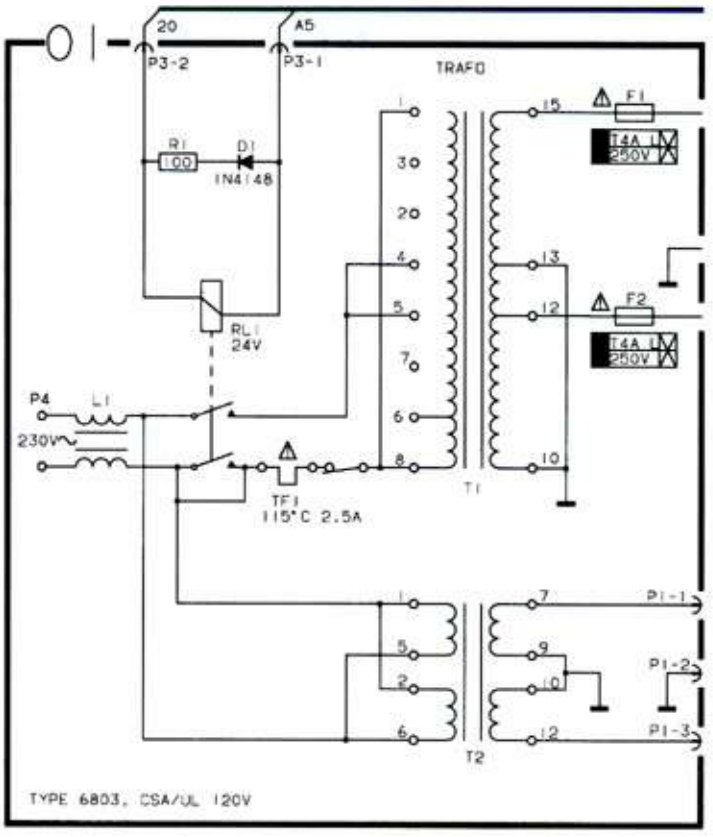
240V - TYPE 6802/6805



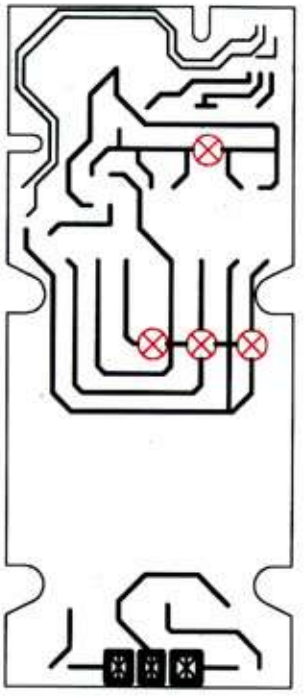
Type 6803
USA 120 V~



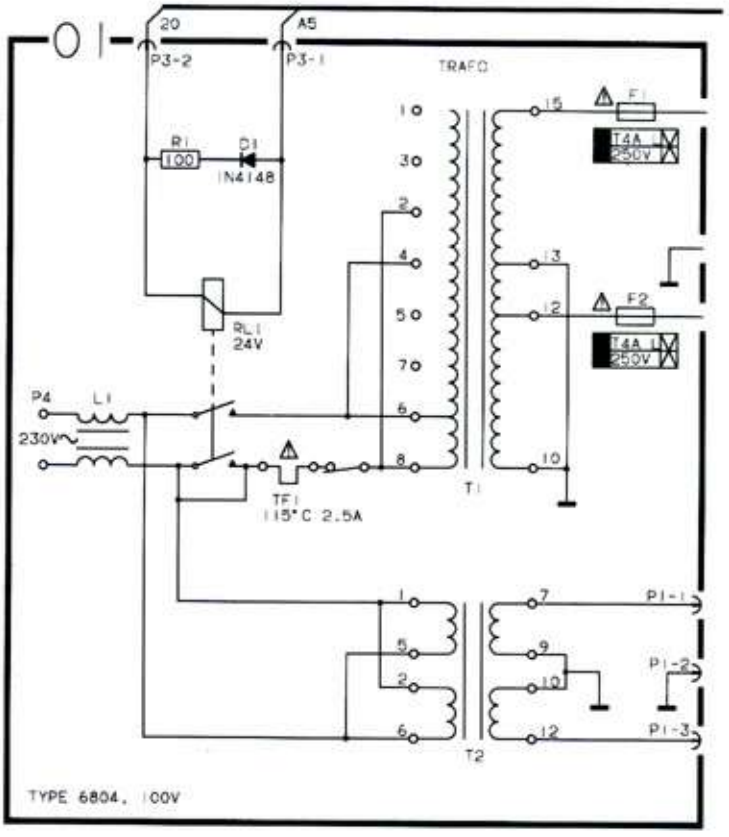
120V - TYPE 6803



Type 6804
JPN 100 V~



100V - TYPE 6804



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DIAGRAMFORKLARING

På diagrammerne er der angivet typenumre på transistorer og IC'er. Hvis positionsnummeret er efterfulgt af en stjerne, skal reservedelsnummeret altid benyttes, da denne komponent er specielt udvalgt, f.eks. TR102*.

Styrekredsløb

I visse styrekredsløb er den aktive tilstand angivet med en funktions- eller bogstavsangivelse. Denne kan eksempelvis være $\overline{\text{ST.BY.}}$ = »low« i stand-by-stilling eller ST.BY. = »high« i stand-by-stilling.

Forsyningsspændinger

Alle forsyningsspændinger i diagrammerne er angivet med en pil og en spændingsangivelse.

Eksempel:
Ved siden af spændingsangivelsen står der f.eks. 7 CON. Dette betyder, at den pågældende forsyningsspænding går til 7 steder på den pågældende diagramside (7 CON. = 7 connections).

EXPLANATION OF DIAGRAM

Type numbers of transistors and ICs are indicated on the diagrams.
If the position number is followed by an asterisk the spare part number must always be used because the component in question has been specially selected, e.g. TR102*.

Control Circuit

In certain control circuits the active mode is indicated by a function term or by an abbreviation. This may be e.g. $\overline{\text{ST.BY.}}$ = low in the stand-by mode or ST.BY. = high in the stand-by mode.

Supply Voltages

All supply voltages in the diagrams are indicated by an arrow and a voltage indication.

Example:
"7 CON.". This means that the supply voltage in question goes to 7 different places on the diagram page in question (7 CON = 7 connections).

SYMBOL FOR SIKKERHEDSKOMPONENTER

Ved udskiftning af komponenter med dette symbol skal der anvendes komponenter med samme reservedelsnummer. Den nye komponent skal monteres på samme måde som den udskiftede.

MÅLEBETINGELSER

Alle DC-spændinger er målt i forhold til stel med et voltmeter med en indgangsmodstand på 10 Mohm.

DC-spændingerne er opgivet i volt (V), f.eks. 0,7 V.

SYMBOL OF SAFETY COMPONENTS

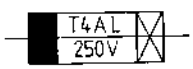
When replacing components with this symbol, components with identical part numbers must be used. The new component must be mounted in the same way as the one replaced.

MEASURING CONDITIONS

All DC voltages have been measured in relation to ground with a voltmeter with an input resistance of 10 Mohms.

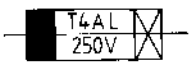
The DC voltages are stated in volts (V), e.g. 0.7 V.

EXPLANATION DE SYMBOLES DU FUSIBLE UTILISES DANS L'APPAREIL



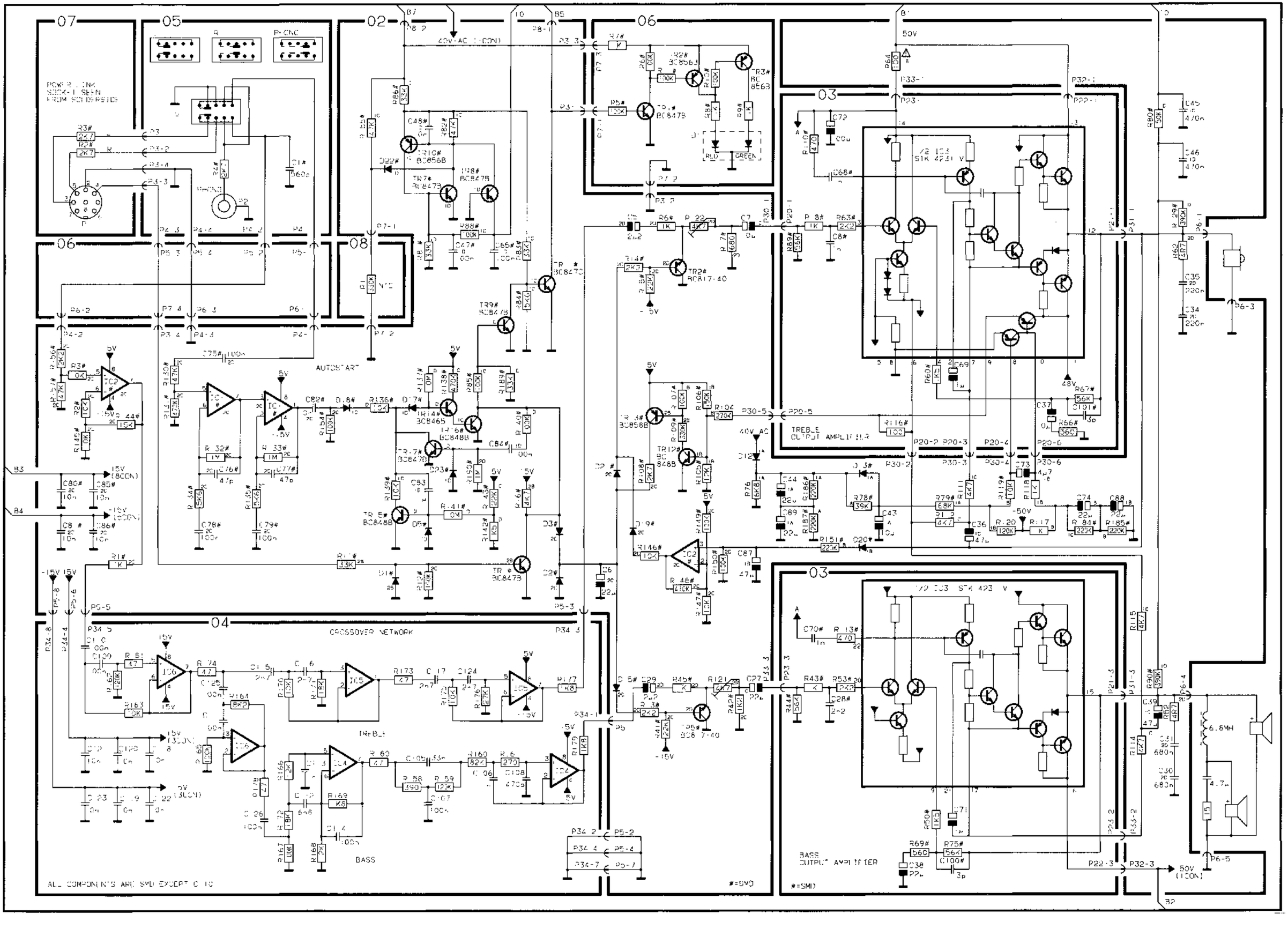
Remplacer par un fusible retardé de la même type et de 4 ampères 250 volts.

EXPLANATION OF THE FUSE SYMBOLS USED IN THE SET

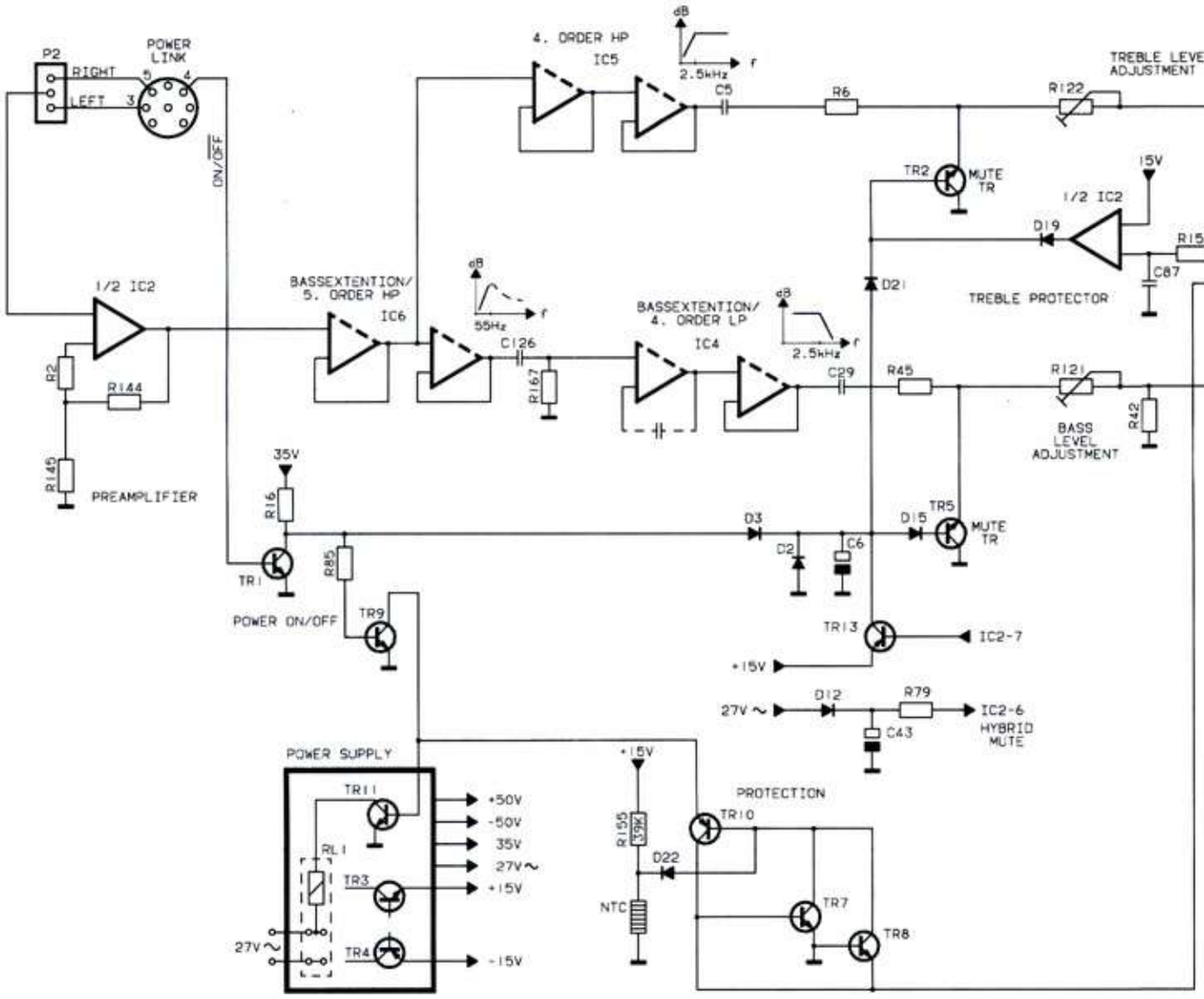


Replace with the same type of 4 amperes 250 volts slow acting fuse.

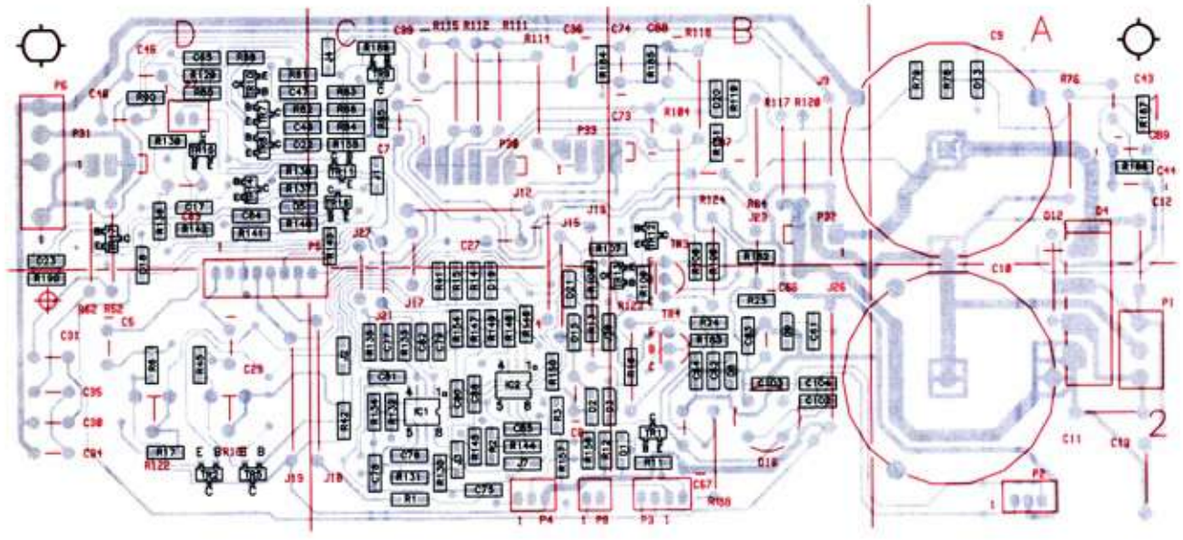
DIAGRAM A



BLOCK DIAGRAM



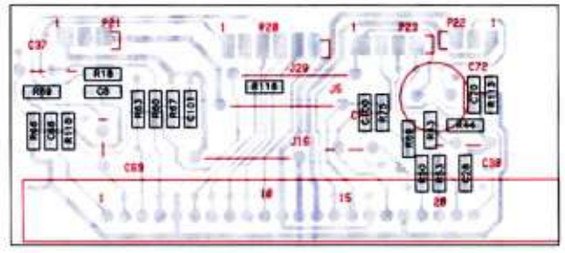
PCB2, Power Supply



SMD Survey

:rear side

PCB3, Output Amplf.



PCB4, Crossover network

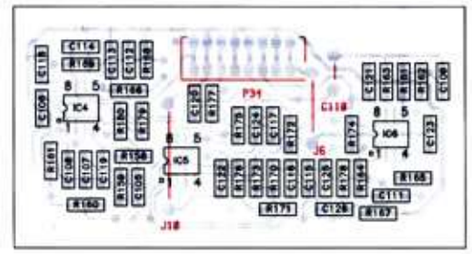
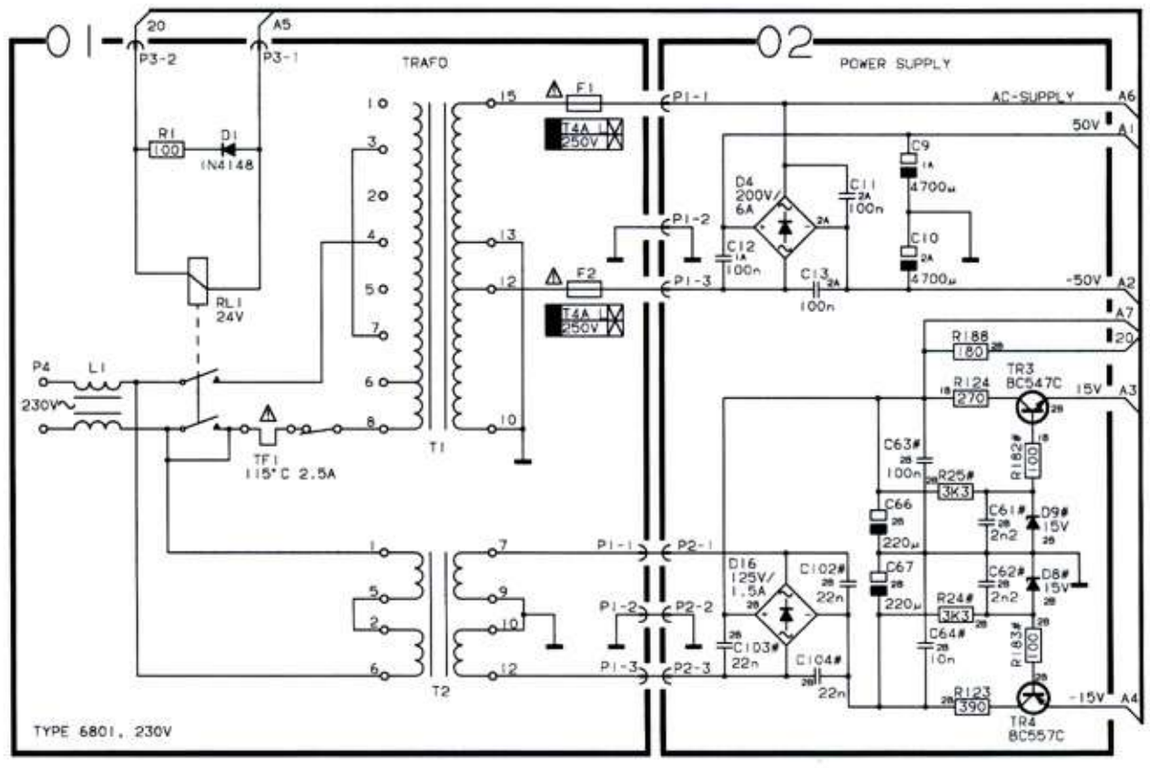
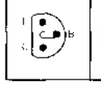
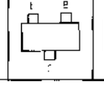
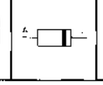


DIAGRAM B



LIST OF ELECTRICAL PARTS

20	51	138	141	209	250		
							

Resistors not referred to are standard, see page 3-12
△ indicates that static electricity may destroy the component.

PCB01, 8100098
Transformer

D1	8300798	**209**	1N 4148		
L1	8022295	Coil 2x0.4 mH			
RL1	7600106	Relay 24V			
T2	8013000	Transformer			
F1-F2	6600068	Fuse T4A 250V	TF1	6609044	Termo 2.5A
	7200085	Fuse holder			

PCB02, 8006047
Power Supply

IC1-IC2△	8341022	**138**	4558				
TR1	8320755	**051**	BC847B	TR11	8320936	**051**	BC847B
TR2	8320752	**051**	BC817-40	TR12	8320615	**051**	BC848B
TR3	8320498	**020**	BC547C	TR13	8320616	**051**	BC858B
TR4	8320540	**020**	BC557C	TR14	8320816	**051**	BC846B
TR5	8320752	**051**	BC817-40	TR15-TR16	8320615	**051**	BC848B
TR7-TR9	8320755	**051**	BC847B	TR17	8320755	**051**	BC847B
TR10	8320753	**051**	BC856B				
D1-D3	8300482	**250**	LL4148	D12	8300428	**209**	1N4007
D4	8300497		KBU 6D	D13	8300482	**250**	LL4148
D5	8300482	**250**	LL4148	D15	8300482	**250**	LL4148
D8-D9	8300584	**250**	Z15V 5%	D16	8300466		125V 1.5A
				D17-D23	8300482	**250**	LL 4148
R64	5020159	100Ω 10% 0.3W		R121-R122	5370370	4.7kΩ 30% 0.3W	
C5	4200517	2.2µF 20% 50V		C61-C62	4010170	2.2nF 10% 50V	
C6	4200672	22µF 20% 16V		C63	4010166	100nF -20+80% 50V	
C7	4200510	10µF 20% 16V		C64	4010176	10nF -20+80% 50V	
C9-C10	4201093	4700µF -20+50% 63V		C65	4010166	100nF -20+80% 50V	
C11-C13	4130103	100nF 20% 250V		C66-C67	4200858	220µF 20% 50V	
C27	4200525	22µF 20% 10V		C73	4200875	4.7µF 20% 100V	
C29	4200517	2.2µF 20% 50V		C74	4200824	22µF 20% 50V	
C30-C31	4130311	680nF 10% 63V		C75	4010220	100nF 10% 50V	
C34-C35	4130233	220nF 20% 63V		C76-C77	4000234	47pF 5% 50V	
C36	4200688	47µF 20% 50V		C78-C79	4010220	100nF 10% 50V	
C39	4200688	47µF 20% 50V		C80-C81	4010176	10nF -20+80% 50V	
C43	4200561	10µF 20% 50V		C82	4010157	10nF 10% 50V	
C44	4200824	22µF 20% 50V		C83	4130070	1µF 10% 50V	
C45-C46	4130234	470nF 10% 63V		C84	4010220	100nF 10% 50V	
C47	4010166	100nF -20+80% 50V		C85-C86	4010176	10nF -20+80% 50V	
C48	4010176	10nF -20+80% 50V					

19-1

PCB03, 8006046
Output Amplf.

IC3△	8350082	**141**	Hybrid STK4231-V				
C8	4010132	1nF 10% 50V		C70	4010132	1nF 10% 50V	
C28	4010170	2.2nF 10% 50V		C71	4200512	1µF 20% 50V	
C37	4200510	10µF 20% 16V		C72	4200368	100µF -20+50% 63V	
C38	4200525	22µF 20% 10V		C100-C101	4000267	3pF ±0.25pF 50V	
C68	4010132	1nF 10% 50V					
C69	4200512	1µF 20% 50V					

PCB04, 8006048
Crossover network

IC4-IC6△	8341022	**138**	4558				
C105	4010175	33nF 10% 50V		C114	4010220	100nF 10% 50V	
C106	4000345	1nF 5% 50V		C115-C117	4010195	2.7nF 5% 50V	
C107	4010220	100nF 10% 50V					
C108	4000286	470nF 5% 50V		C118-C123	4010176	10nF -20+80% 50V	
C109	4010220	100nF 10% 50V					
C110	4130230	100nF 20% 63V		C124	4010195	2.7nF 5% 50V	
C111	4010220	100nF 10% 50V		C125-C126	4010220	100nF 10% 50V	
C112	4010174	6.8nF 10% 50V					
C113	4000345	1nF 5% 50V					
P34	7210768	Plug 8 pole					

PCB05, 8006052
Line/Shift

C1	4000344	560pF 5% 50V			
S1	7400371	Switch			
P2	7210384	Socket, Phono	P4	7220712	Plug 5 pole
P3	7220711	Plug 4 pole			

PCB06, 8006050
Stand by

TR1	8320755	**051**	BC847B	TR2-TR3	8320753	**051**	BC856B
D1	8330289		LED				
R7-R9	5011631	1kΩ 1% 1/4W					
P5	7220712	Plug 5 pole	P7	7220711	Plug 4 pole		
P6	7220710	Plug 3 pole					

PCB07, 8006051
Power Link

P1	7210518	DIN-Socket 8 pole

PCB08, 8006049
NTC

R1	5220036	330kΩ 10% 1/2W

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JUSTERING

Når R121 og R122 skal justeres er det ikke nødvendigt at have højttalere tilsluttet.

Udskiftning af diskanthøjttaleren.

1. Tilfør et signal fra en tonegenerator, 10 kHz - 100 mV til enten:

   - ben 5 (omskifter i stilling RIGHT) på POWER LINK stikket.
   - ben 3 (omskifter i stilling LEFT) på POWER LINK stikket.
   - phonostikket (omskifter i stilling PHONO).

2. Slut et AC-voltmeter til diskanthøjttalerstikket P6-1/P6-3.

3. Juster R122-PCB02 til der måles 2,95 V.

Udskiftning af bashøjttaler.

Ved udskiftning af en enkelt bashøjttaler må der ikke justeres i R121-PCB02.

Ved udskiftning af *begge* bashøjttalere skal R121-PCB02 justeres:

1. Tilfør et signal fra en tonegenerator, 1 kHz – 100 mV til enten:

   - ben 5 (omskifter i stilling RIGHT) på POWER LINK stikket.
   - ben 3 (omskifter i stilling LEFT) på POWER LINK stikket.
   - phonostikket (omskifter i stilling PHONO).

2. Slut et AC-voltmeter til bashøjttalerstikket P6-4/P6-5.

3. Juster R121-PCB02 til der måles 4,8 V.

Udskiftning af PCB02

Ved udskiftning af PCB02 skal potentiometer R121 og R122 justeres:

Justering af R122

1. Tilfør et signal fra en tonegenerator, 10 kHz – 100 mV til enten:

   - ben 5 (omskifter i stilling RIGHT) på POWER LINK stikket.
   - ben 3 (omskifter i stilling LEFT) på POWER LINK stikket.
   - phonostikket (omskifter i stilling PHONO).

2. Slut et AC-voltmeter til diskanthøjttalerstikket P6-1/P6-3.

3. Juster R122-PCB02 til der måles 2,95 V.

ADJUSTMENT

When adjusting R121 and R122 it is not necessary to have speakers connected.

Replacement of the treble speaker

1. Feed a signal from a tone generator, 10 kHz – 100 mV to either:

   - pin 5 (switch in position RIGHT) on the POWER LINK socket
   - pin 3 (switch in position LEFT) on the POWER LINK socket
   - the phono socket (switch in position PHONO)

2. Connect an AC voltmeter to the treble speaker socket P6-1/P6-3.

3. Adjust R122-PCB02 until 2.95 V are measured.

Replacement of the bass speaker

When replacing a single bass speaker, do not adjust R121-PCB02.

When replacing *both* bass speakers, adjust R121-PCB02.

1. Feed a signal from a tone generator, 1 kHz – 100 mV to either:

   - pin 5 (switch in position RIGHT) on the POWER LINK socket
   - pin 3 (switch in position LEFT) on the POWER LINK socket
   - the phono socket (switch in position PHONO)

2. Connect an AC voltmeter to the bass speaker socket P6-4/P6-5.

3. Adjust R121-PCB02 until 4.8 V are measured.

Replacement of PCB02

When replacing PCB02 adjust potentiometers R121 and R122:

Adjustment of R122

1. Feed a signal from a tone generator, 10 kHz - 100 mV to either:

   - pin 5 (switch in position RIGHT) on the POWER LINK socket
   - pin 3 (switch in position LEFT) on the POWER LINK socket
   - the phono socket (switch in position PHONO)

2. Connect an AC voltmeter to the treble speaker socket P6-1/P6-3.

3. Adjust R122-PCB02 until 2.95 V are measured.

Justering af R121

1. Tilfør et signal fra en tonegenerator, 1 kHz - 100 mV til enten:

   - ben 5 (omskifter i stilling RIGHT) på POWER LINK stikket.
   - ben 3 (omskifter i stilling LEFT) på POWER LINK stikket.
   - phonostikket (omskifter i stilling PHONO).

2. Slut et AC-voltmeter til bashøjttalerstikket P6-4/P6-5.

3. Juster R121-PCB02 til der måles 4,8 V.

Adjustment of R121

1. Feed a signal from a tone generator, 1 kHz – 100 mV to either:
   - pin 5 (switch in position RIGHT) on the POWER LINK socket
   - pin 3 (switch in position LEFT) on the POWER LINK socket
   the phono socket (switch in position PHONO)

2. Connect an AC voltmeter to the bass speaker socket P6-4/P6-5.

3. Adjust R121-PCB02 until 4.8 V are measured.

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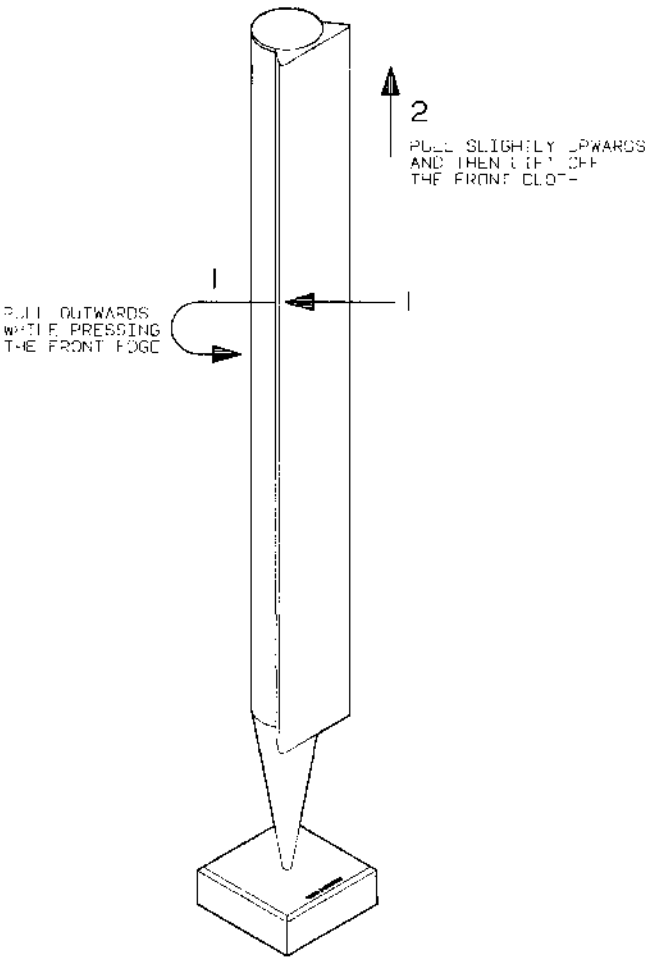
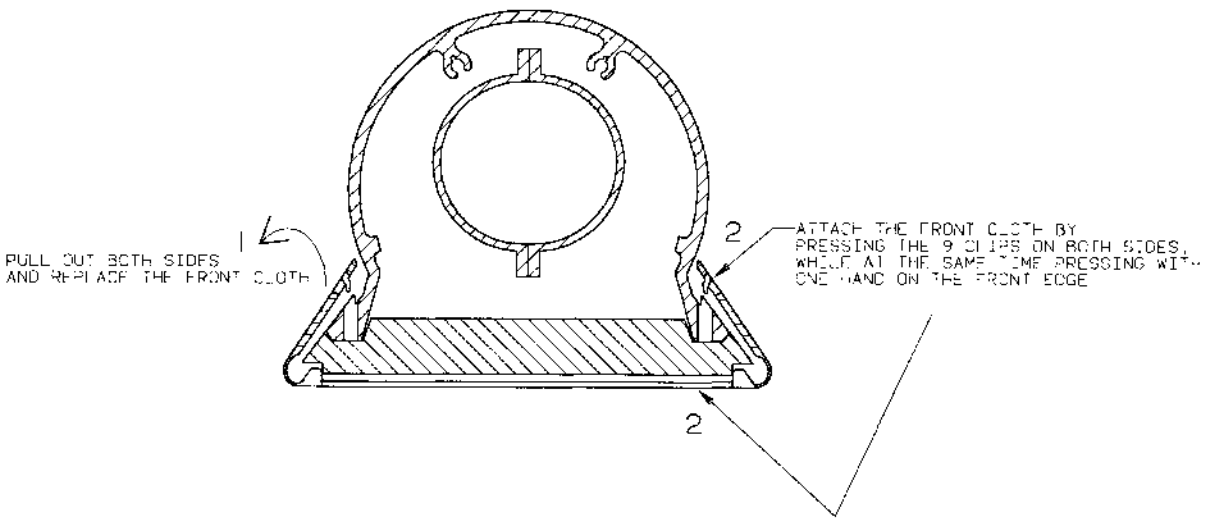
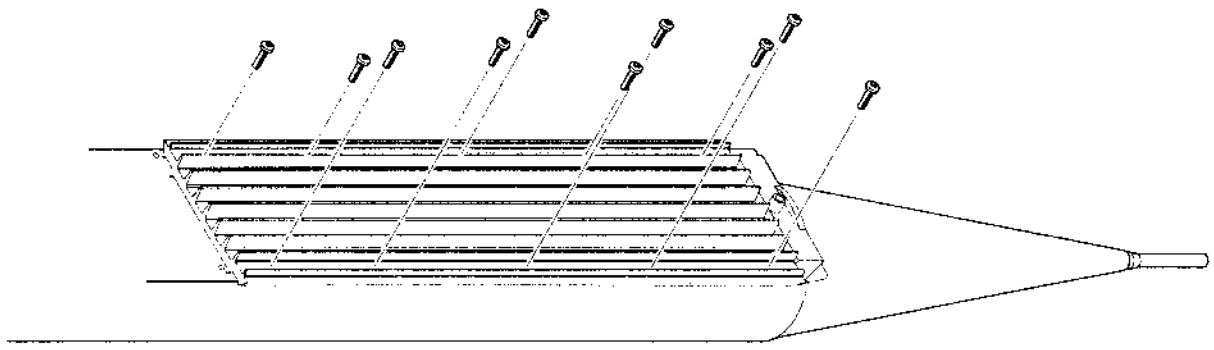
ADSKILLELSE

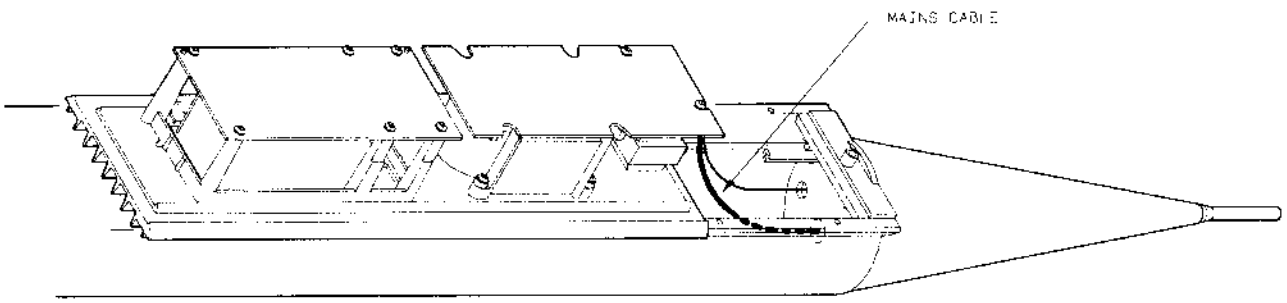
DISASSEMBLY





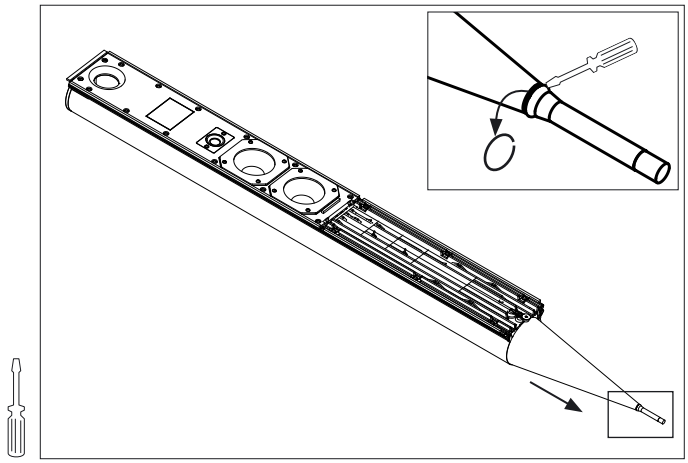
Adskillelse **Disassembly**



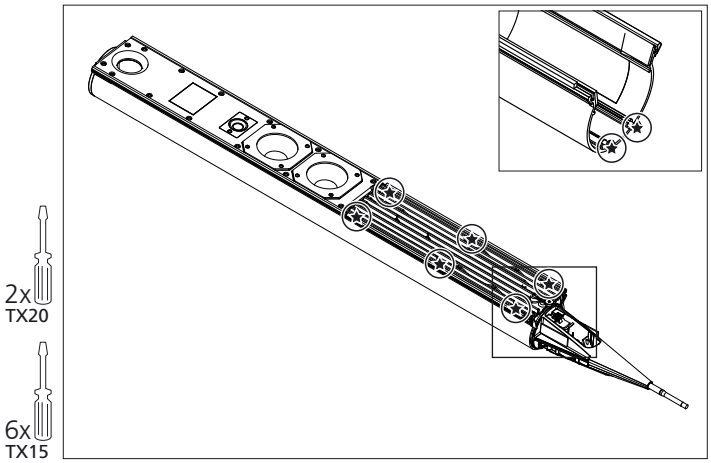


☞ 22.1 Remove front clothes / floor stand

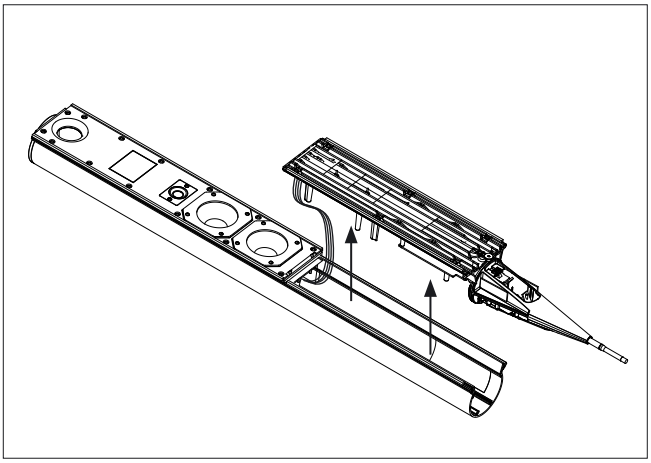
- Remove the locking ring and pull off the conus



- Remove screws holding the chassis

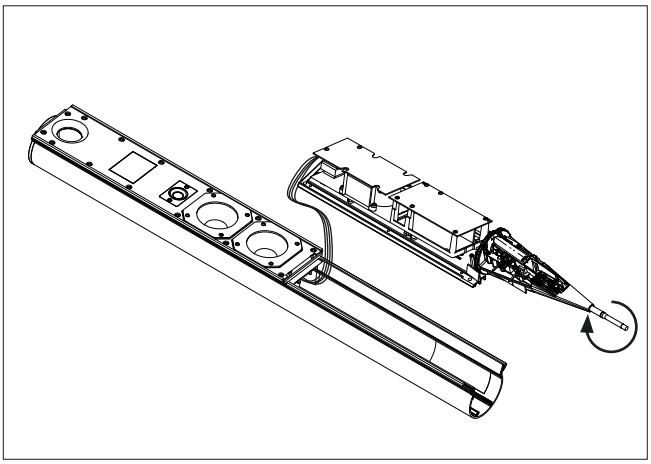


- Gently pull out the chassis



- Turn the chassis around and place it in service position on an ESD mat

- The product is now ready for service



REPARATIONSTIPS

Ved reparation af Beolab 8000 kan det være en fordel at benytte en original emballage til at lægge højttaleren i.

Vigtigt!

Ladeelektrolytterne C9-PCB02 og C10-PCB02 skal aflades med en 500 ohms effektmodstand, 5W inden der skiftes komponenter. Disse ladeelektrolytter aflades nemlig ikke, hverken i stand-by eller ved fjernelse af net-spændingen. (Spændingen kan holde sig i op til en uge).

REPAIR TIPS

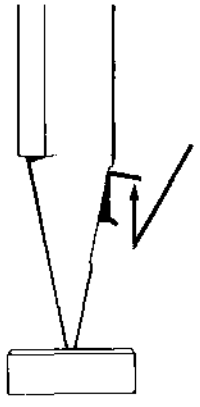
When repairing a Beolab 8000 it may be a good idea to place the speaker in an original speaker packaging.

Important!

The charging electrolytes C9-PCB02 and C10-PCB02 must be discharged with a 500 ohm effect resistor, 5W, before replacering components. These charging electrolytes will not be discharged, eighter in stand-by or when disconnecting the mains voltage. (The voltage can remain for up to a week).

Placering af type og serienr.

Positioning of type and serial numbers



Autostart-kredsløb

Hvis man under en reparation ønsker at slukke for autostart-kredsløbet, kan det gøres ved at kortslutte C83-PCB02.

Autostart circuit

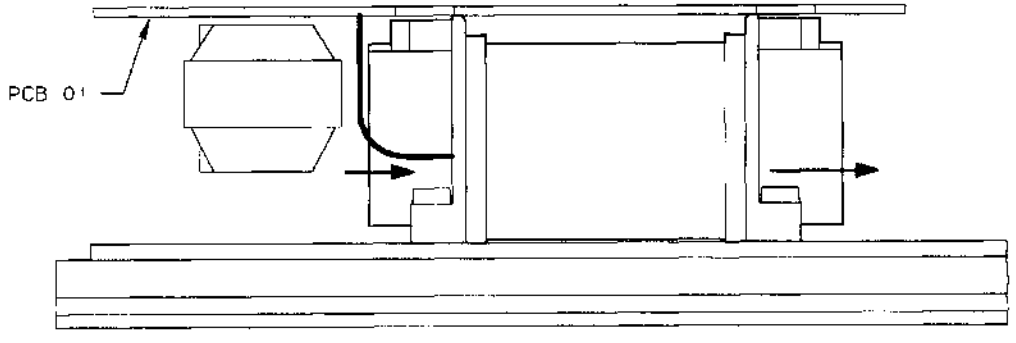
If it is desirable to switch off the autostart circuit during a repair, this can be achieved by short-circuiting C83-PCB02.

Udskiftning af termosikring

Termosikringen TF1 skal placeres på samme måde som den defekte. Ved afmontering skal termosikringen loddes fra i printet og trækkes ud i den modsatte side af transformatoren. Den nye sikring skal monteres på samme måde, altså ved at føre tilledningerne gennem transformatoren og lodde dem i printet.

Replacement of thermal fuse

The thermal fuse, TF1, must be positioned in the same way as the defective fuse. When dismounting the defective fuse, it must be unsoldered from the PCB and pulled out on the opposite side of the transformer. The new fuse must be positioned in the same way, i.e. by running the supply leads through the transformer and soldering them to the PCB.



ABL (adaptive bass linearization)

The ABL function is most easily checked by connecting an audio oscillator (80 Hz) to the input socket.

Connect a DC voltmeter across R238-PCB04.

Adjust the level of the audio oscillator until the voltage across R238-PCB04 just begins to rise from 0V. The voltage must be between 0 and 30mV. This is just sufficient for making ABL active. (The output is approx. 11W).

Now increase the level at the input by 10 dB.

The voltage across R238-PCB04 should now rise to approx. 2.2V immediately. (The output is approx. 24W).

Reduce the level at the input by 10 dB.

After 5-10 seconds, the voltage across R238-PCB04 should drop to approx. 0V. ABL is out of operation.

Forslag til fremgangmåde ved reparation

Højttaleren er tavs, rødt lys i lysdioden.

Kontroller følgende:

- Står omskifteren rigtigt?.
- Forsyningsspændingen +/-15V DC.
- Mål spændingen mellem R83 og R86 på PCB02, den skal være ca. 11.3V.
- Spændingen på kollektoren af TR11-PCB02, den skal være under 0,5V DC.

Højttaleren er tavs, grønt lys i lysdioden.

Kontroller følgende:

- Står omskifteren rigtigt?.
- Sikringerne F1 og F2.
- Sikringsmodstand R64 på PCB02.
- Forsyningsspændingen +/-50V DC.
- Forsyningsspændingen +/-15V DC.
- Er delefilteret monteret?.
- Er relæ RL1 trukket?.
- AC-forsyningsspændingen (D12-PCB02) ca. 40V AC.
- Spændingen på C43-PCB02, der skal være ca. 30V DC.
- Spændingen på IC3-PCB03, ben 9, den skal være under -45V DC.
- Spændingen på basis af mutetransistorerne TR2-PCB02 og TR5-PCB02 skal være ca. -2V DC.

Suggested repair procedure

The speaker is silent, the LED emits red light.

Check the following:

- Is the switch in the right position?
- The supply voltage +/-15V DC.
- Measure the voltage between R83 and R86 on PCB02. It should be approx. 11.3V.
- The voltage at the collector of TR11-PCB02. It should be less than 0.5V DC.

The speaker is silent, the LED emits green light.

Check the following:

- Is the switch in the right position?
- The fuses F1 and F2.
- Fuse resistor R64 on PCB02.
- The supply voltage –/-50V DC.
- The supply voltage –/-15V DC.
- Is the crossover network installed?
- Is relay RL1 driven?
- The AC supply voltage (D12-PCB02) approx. 40V AC.
- The voltage at C43-PCB02, which should be approx. 30V DC.
- The voltage at IC3-PCB03, pin 9; it should be less than -45V DC.
- The voltage at the base of the mute transistors TR2-PCB02 and TR5-PCB02 should be approx. -2V DC.

Bang&Olufsen

ISOLATIONSTEST

Ethvert apparat skal isolationstestes, efter at det har været adskilt. Testen udføres, når apparatet er samlet igen og er klar til udlevering til kunden.

Der må ikke forekomme overslag under testen!

Isolationstesten udføres på følgende måde:

De to stikben på netstikket kortsluttes og tilsluttes den ene af terminalerne på isolationstesteren. Den anden terminal tilsluttes stel på phono bøsningen (LINE IN).

OBS!
For at undgå beskadigelser af apparatet er det vigtigt, at begge terminaler på isolationstesteren har virkelig god kontakt.

Spændingsreguleringen på isolationstesteren drejes langsomt op, indtil en spænding på 1,5-2 kV er opnået. Her skal den holdes i ét sekund, hvorefter der langsomt drejes ned for spændingen igen.

INSULATION TEST

Each set must be insulation tested after having been dismantled. Make the test when the set has been reassembled and is ready to be returned to the customer.

Flashovers must not occur during the testing procedure!

Make the insulation test as follows:

Short-circuit the two pins of the mains plug and connect them to one of the terminals of the insulation tester. Connect the other terminal to ground in phono socket (LINE IN).

NOTE!
To avoid damaging the set it is essential that both terminals of the insulation tester have good contact.

Slowly turn the voltage control of the insulation tester until a voltage of 1.5-2 kV is obtained. Maintain that voltage for one second, then slowly turn it down again.

Bang & Olufsen

Beolab 8000

ABL and Corrections

3538826 03-93 Paste into service manual Beovox 5 (3538717)

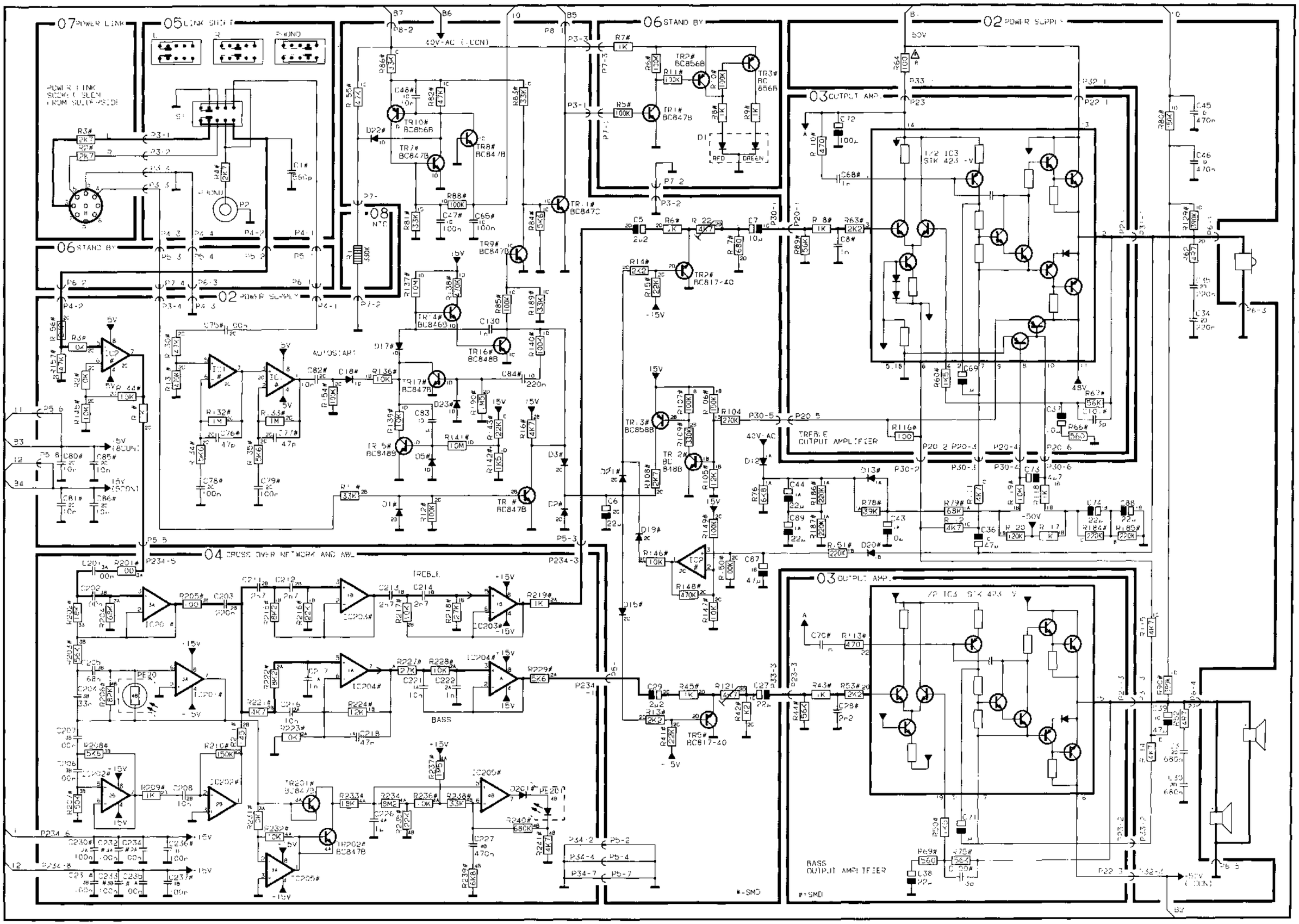
Main differences from previous model

As from serial no. 10145230, ABL (in module 04) and a new woofer have been implemented.

The coil (pos. no. 9011 in expl. view, page 20-1) has been removed.

All other Electrical and Mechanical parts are identical with the parts mentioned in the Service Manual 3538801.

DIAGRAM A

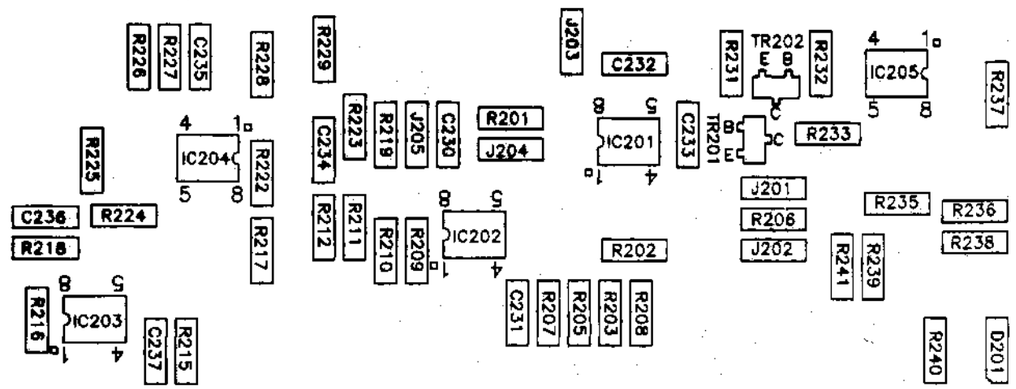


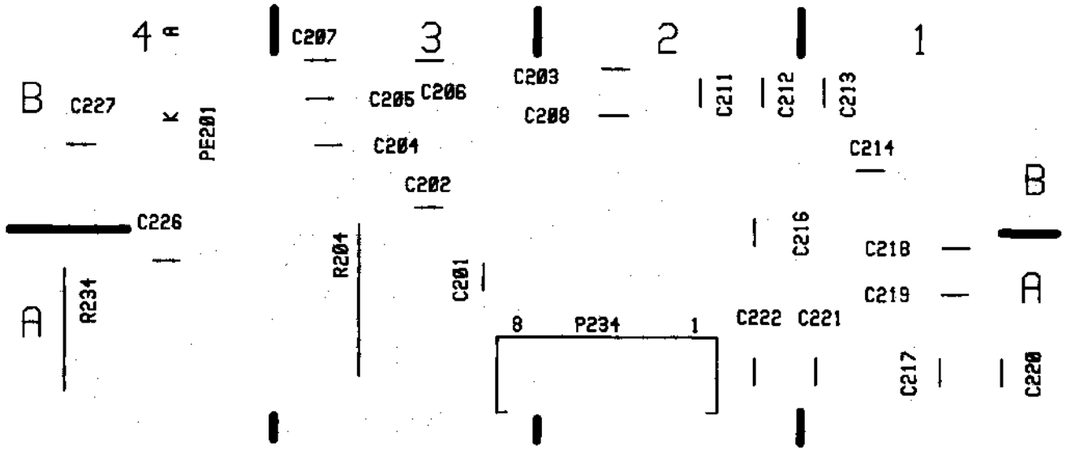
25-2

25-2

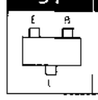
SMD SURVEY

PCB 4, Crossover network and ABL





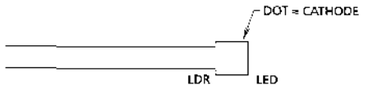
LIST OF ELECTRICAL PARTS PAGE 19-1

51	136	138	250				
							

Resistors not referres to are standard, see page 3-12.
Δ indicates that static electricity may destroy the component.

PCB01, 8100098
Transformer

F1-F2	7200085	Fuse holder, 2 pole			
	7200064	Fuse holder, 1 pole			
C9-C10	3340115	Gasket f. capacitor	C84	4000287	220nF -20+80% 25V
			C130	4010105	1nF 10% 63V
IC201-IC204Δ	8341022	**138** 4558	IC205Δ	8341033	**136** LF353
TR201-TR202	8320755	**051** BC847B			
D201	8300482	**250** LL4148			
PE201	5210017	LDR/LED coupler			



R204	5010062	68kΩ 5% 1/4W			
C201-C202	4130306	100nF 10% 63V	C216	4130265	10nF 10% 63V
			C217	4010105	1nF 10% 63V
C203	4130308	220nF 10% 63V	C218	4130240	47nF 10% 63V
C204	4130305	33nF 10% 63V	C221	4130265	10nF 10% 63V
C205	4130264	68nF 10% 63V	C222	4010105	1nF 10% 50V
C206-C207	4130306	100nF 10% 63V	C226	4130399	1uF 10% 63V
			C227	4130234	470nF 10% 63V
C208	4130265	10nF 10% 63V	C230-C237	4010166	100nF -20+80% 50V
C211-C214	4010167	2.7nF 10% 100V			

PCB 02, 8006047
Power Supply

C9-C10	3340115	Gasket f. capacitor	C84	4000287	220nF -20+80% 25V
			C130	4010105	1nF 10% 63V
IC201-IC204Δ	8341022	**138** 4558	IC205Δ	8341033	**136** LF353
TR201-TR202	8320755	**051** BC847B			
D201	8300482	**250** LL4148			
PE201	5210017	LDR/LED coupler			

PCB 04, 8006088*
Crossover network and ABL

R204	5010062	68kΩ 5% 1/4W			
C201-C202	4130306	100nF 10% 63V	C216	4130265	10nF 10% 63V
			C217	4010105	1nF 10% 63V
C203	4130308	220nF 10% 63V	C218	4130240	47nF 10% 63V
C204	4130305	33nF 10% 63V	C221	4130265	10nF 10% 63V
C205	4130264	68nF 10% 63V	C222	4010105	1nF 10% 50V
C206-C207	4130306	100nF 10% 63V	C226	4130399	1uF 10% 63V
			C227	4130234	470nF 10% 63V
C208	4130265	10nF 10% 63V	C230-C237	4010166	100nF -20+80% 50V
C211-C214	4010167	2.7nF 10% 100V			
P234	7210768	Socket, 8pole			

* IMPORTENT!
Check if the coil (pos. 9011 in expl. view, page 20-1) is mounted in the set.
If the coil is mounted, use part no. 8006048.

PCB 05, 8006052
Line/Shift

S1	7400421	Switch
P2	7210959	Socket, phono
	2625028	Washer

All other electrical parts are identical with the list of Electrical parts page 19-1.