

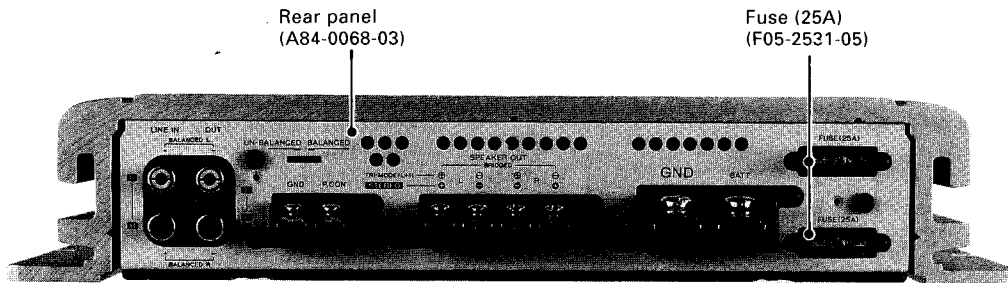
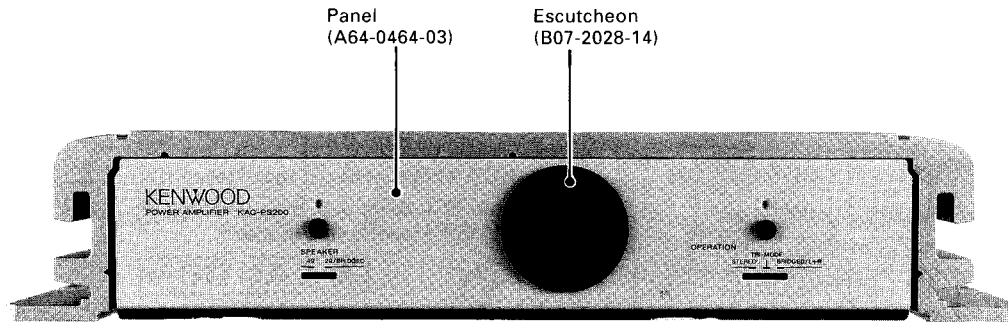
POWER AMPLIFIER

# KAC-PS200

## SERVICE MANUAL

# KENWOOD

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B51-6825-00(MC)3705



# KAC-PS200

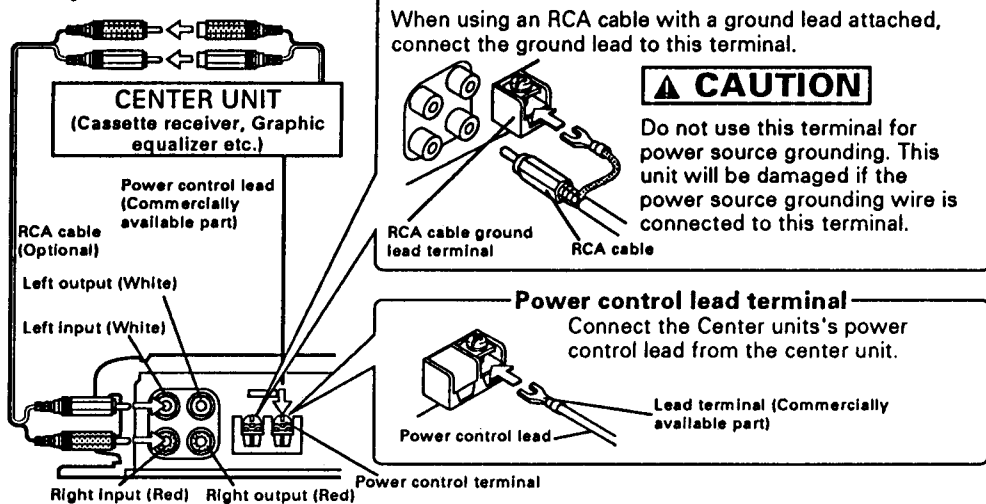
## CONTENTS/CONNECTIONS

### CONTENTS

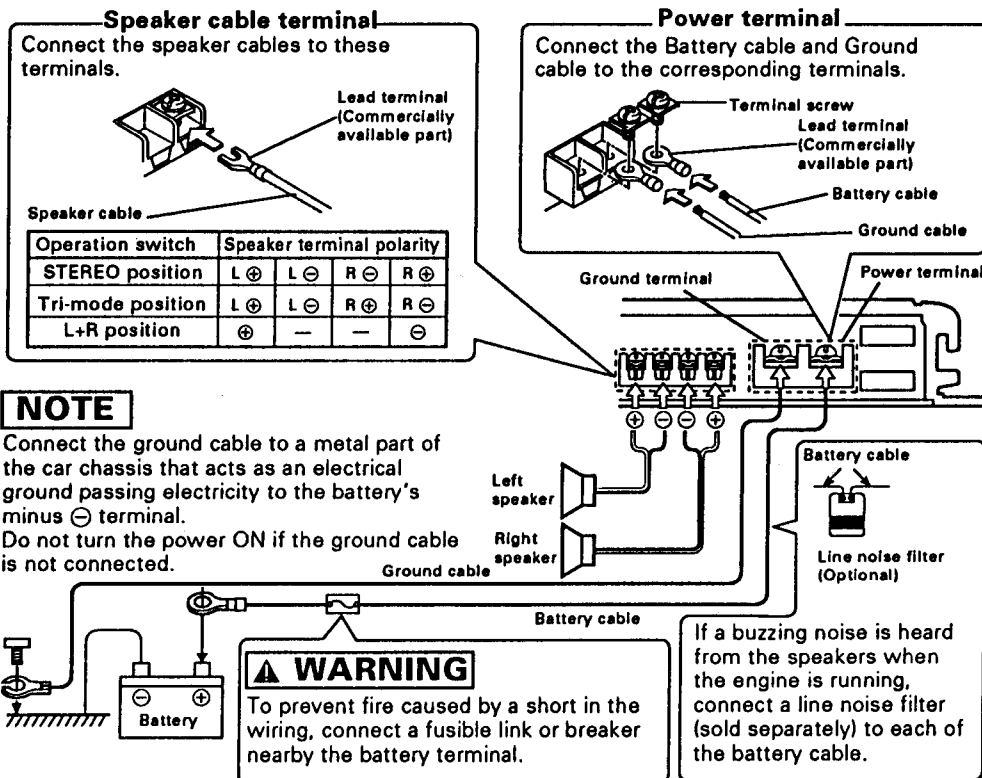
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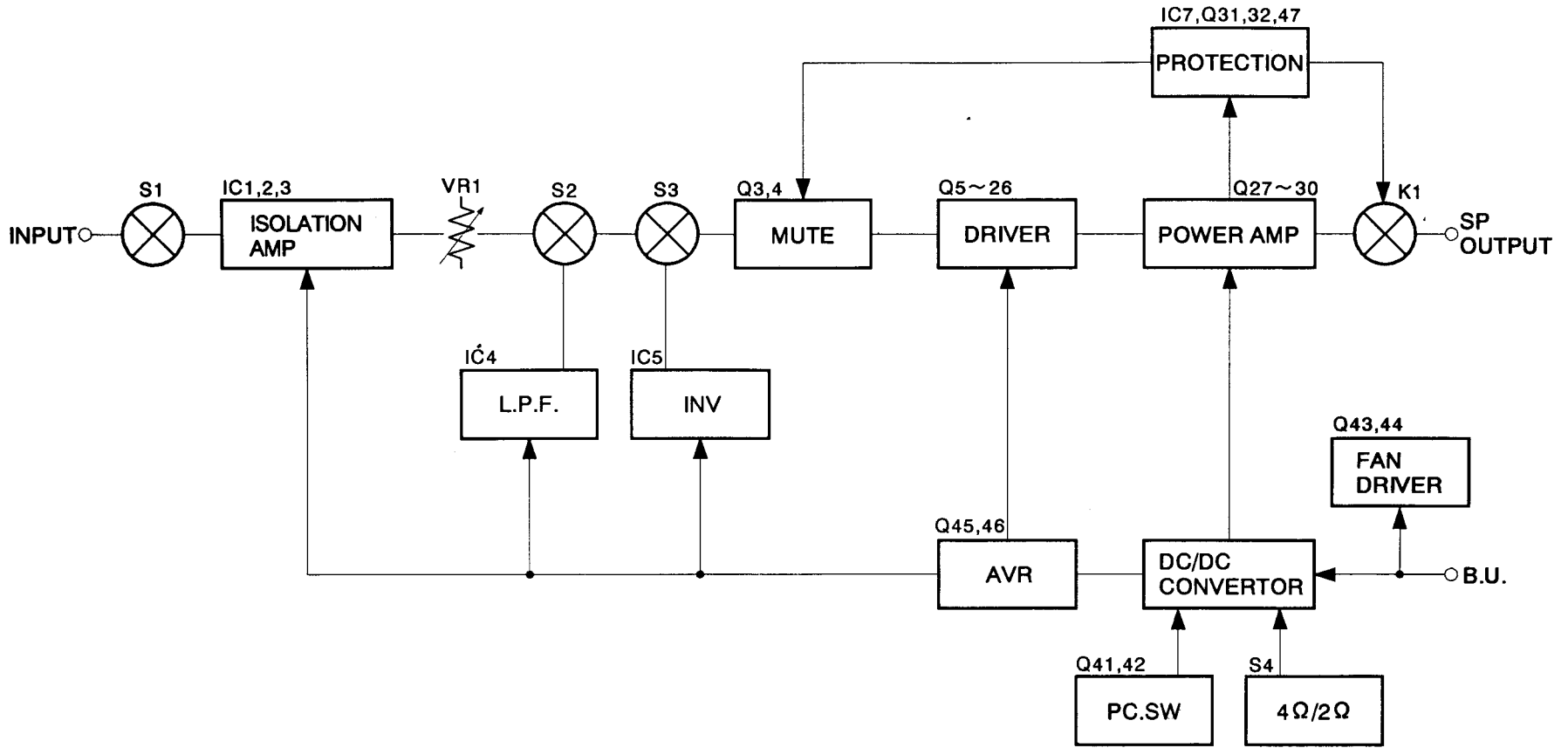
### CONNECTIONS

#### ■ System connection



#### ■ Power and Speakers cable connection





**BLOCK DIAGRAM**

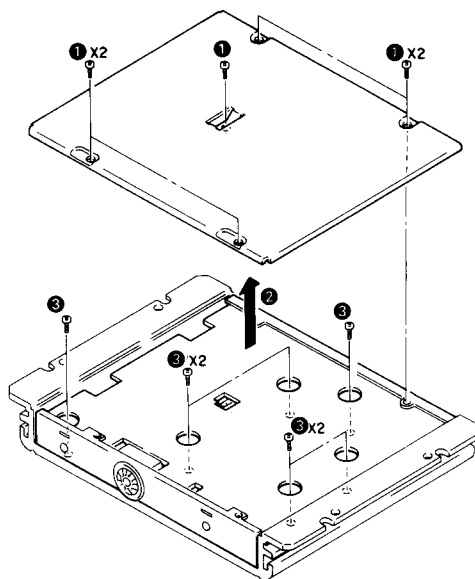
**KAC-PS200**

# KAC-PS200

## DISASSEMBLY FOR REPAIR

### NO. 1: Removing the bottom plate circuit board unit (X09-5090-10)

1. Place the main unit upside down.
2. Remove the 5 screws (1) and remove the bottom plate (2).
3. Remove the 6 screws (3) and remove the circuit board unit (X09-5090-10).

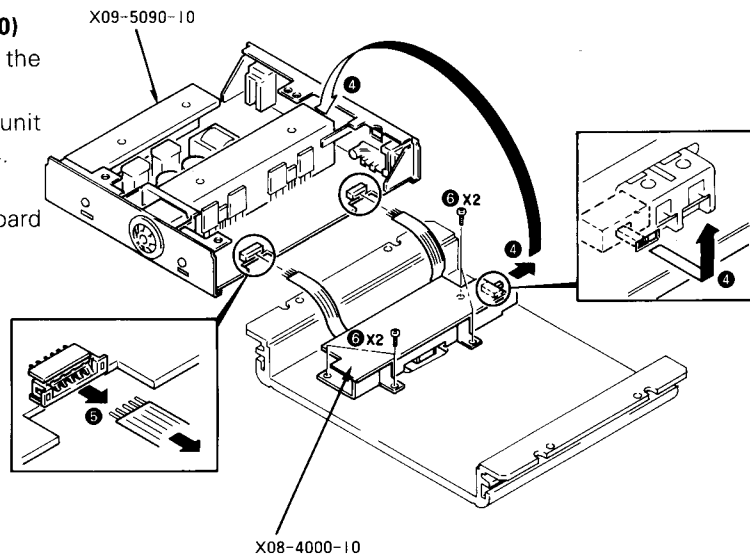


### NO. 2: Removing the circuit board unit (X08-4000-10)

4. Flap open the circuit board unit (X09-5090-10) toward the left side (4).

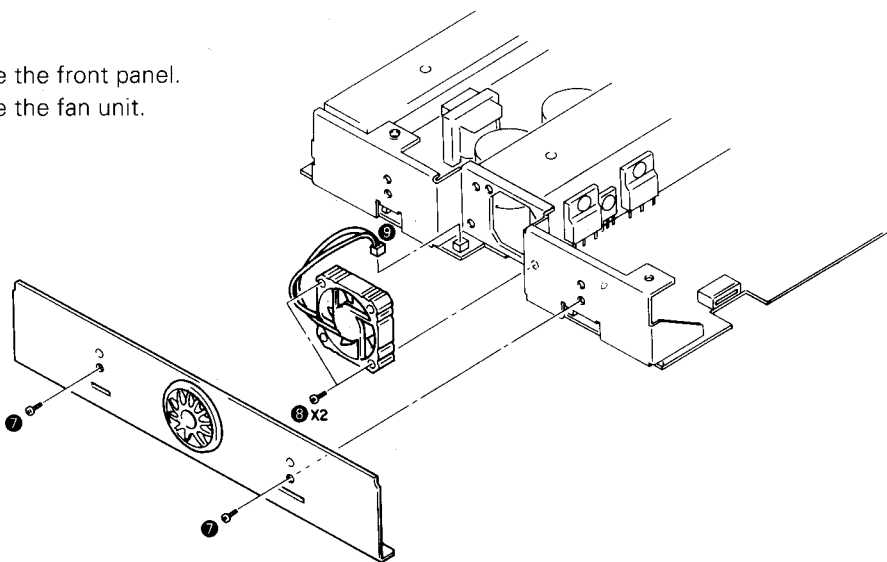
\* When removing or attaching the circuit board unit (X09-5090-10), be careful not to catch the switches.

5. Remove the 2 flexible connectors (5).
6. Remove the 4 screws (6) then remove the circuit board unit (X08-4000-10).



### NO. 3: Removing the fan unit

7. Remove the 2 screws (7) and remove the front panel.
8. Remove the 2 screws (8) and remove the fan unit.
9. Unplug the connector (9).



## CIRCUIT DESCRIPTION

### PREAMPLIFIER UNIT (X08-4000-10)

Device	Device Name	Purpose/Function	Operation/Condition/Compatibility
IC1, 2	μPC4750C	Isolation amps	Eliminates car noise entering the amplifier inputs.
IC3	NJM2114D		
IC4	NJM4565D		Low-pass filter for subwoofer.
Q1	2SA1561	LED drive	Drives illumination LEDs.

### AUDIO UNIT (X09-5090-10)

Device	Device Name	Purpose/Function	Operation/Condition/Compatibility
IC5	NJM4565D	Inverter	Bridge inverter.
IC6	μPC494C	Switching regulator	Oscillator for DC/DC converter.
IC7	μPC1237HA	Protection	Protection against overload, DC offset, PCON detection.
Q3, 4	2SC945 (A) (Q, P)	Input muting	Operate in advance of amplifier ON/OFF to protect the relay contacts.
Q5~8	2SC945 (A) (Q, P)	Input differential amp	
Q9~12	2SA992 (F, E)	Differential amp 2nd stage	
Q13~16	2SC2631 (Q, R)	Differential amp 3rd stage	
Q17, 18	2SC2631 (Q, R)	Cascode stage	
Q19, 20	2SA1123 (Q, R)	Current mirror	
Q21, 22	2SC3419	Temperature compensation	
Q23, 24	2SK213-02	Power amp driver	
Q25, 26	2SJ76-02	Power amp driver	
Q27, 28	2SC4388	Power stage	
Q29, 30	2SA1673	Power stage	
Q31, 32	2SC1845 (F, E)	Current detection	Activates IC7 based on detection of excessive current.
Q1, 2, Q33~36	MTAJ30N06E	Switching power stage	
Q37, 38	2SC945 (A) (Q, P)	Switching driver	
Q39, 40	2SA733 (A) (Q, P)	Switching driver	
Q41	2SA1534A (R, S)	Power switching	Supplies power to IC8.
Q42	2SC945 (A) (Q, P)	PCON "ON" detection	
Q43	2SA733 (A) (Q, P)	Fan driver	Activates the fan rotation upon detection of temperature WQOU by means of TH2.
Q44	2SC3940A (R, S)	Fan driver	
Q45	2SD1266BD (Q, P)	AVR	±20 V constant voltage.
Q46	2SB941BD (Q, P)	AVR	±20 V constant voltage.
Q47	2SA992 (F, E)	Current detection	

# ADJUSTMENT/ABGLEICH

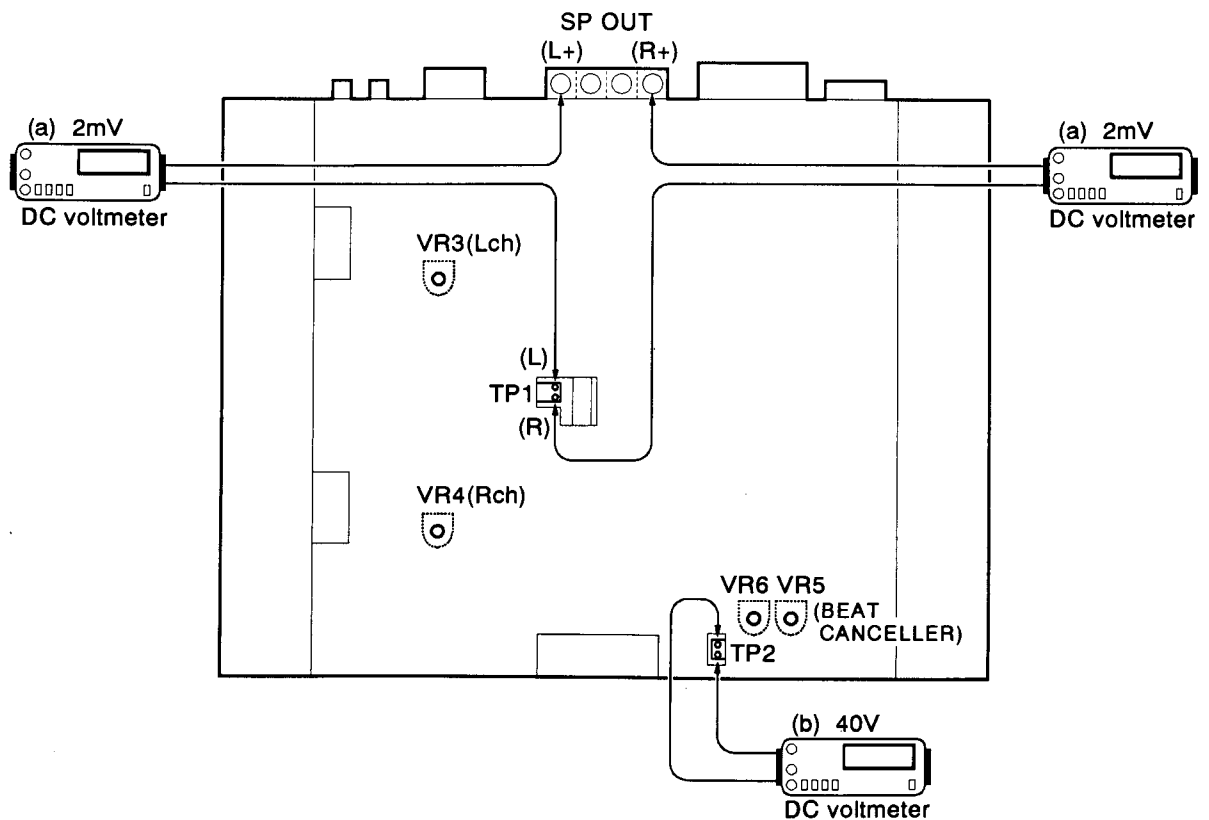
## ADJUSTMENT

No	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	CASSETTE RECEIVER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	BEAT CANCELLER	-	-	Receive AM BROADCAST STATION	VR5 (X09-5090)	Only when there is BEAT NOISY SOUND. Adjust to minimal position.	
2	SUPPLY VOLTAGE	-	Connect a DC voltmeter to TP2 (X09-5090)	VOLUME : 0	VR6 (X09-5090)	Adjust to 40V	(b)
3	IDLE CURRENT	-	Connect a DC voltmeter to TP1 (X09-5090)	VOLUME : 0	VR3 (Lch) VR4 (Rch) (X09-5090)	2mV	(a)

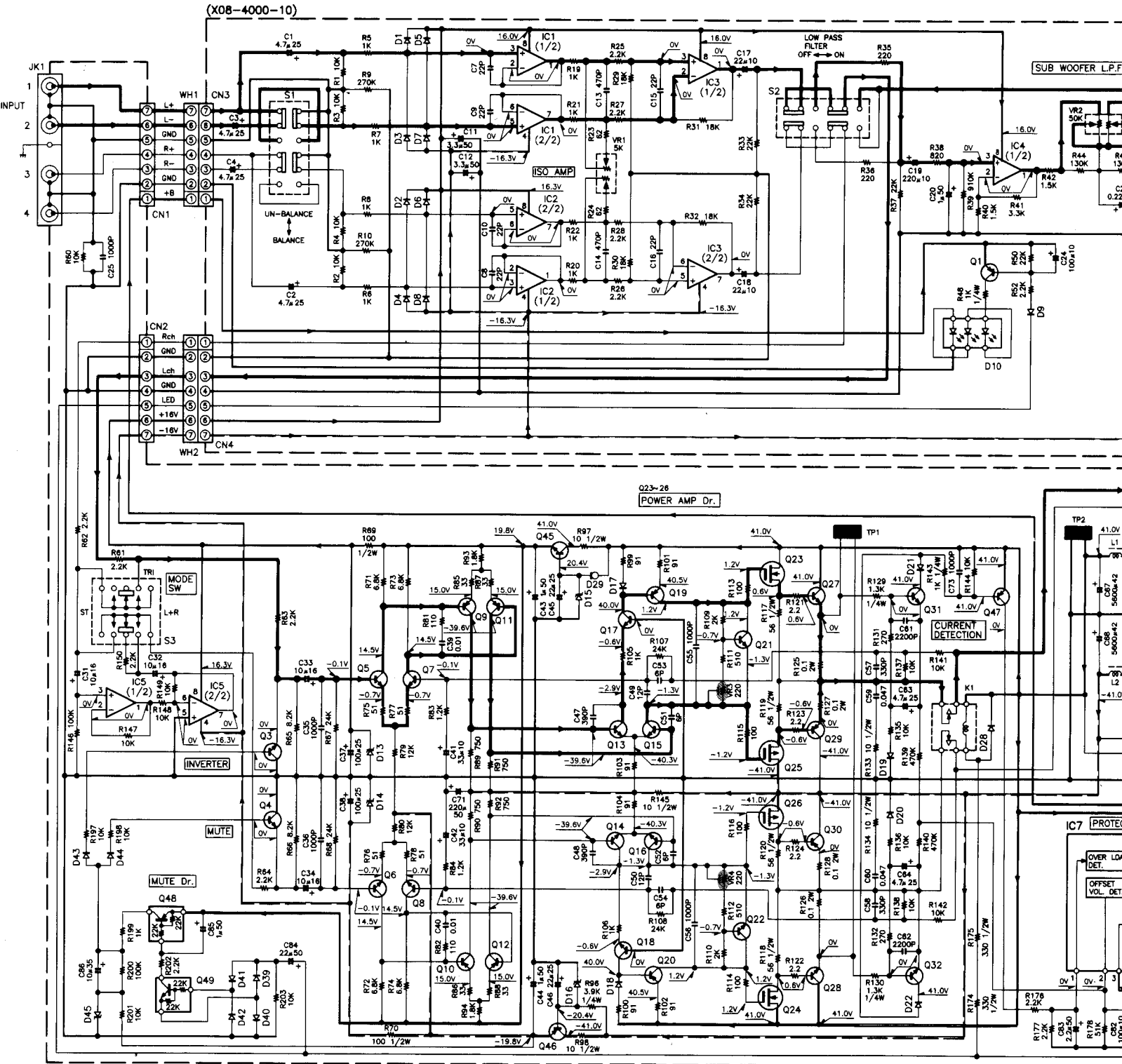
## ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VORSTÄRKER-EINSTELLUNG	ABGLEICHE-PUNKTE	ABGLEICHEN FÜR	ABB
1	INTERFERENZEN-UNTERDRÜCKER	-	-	MW-RADIOSENDER empfangen	VR5 (X09-5090)	Nur wenn INTERFERENZEN oder STÖRGERÄUSCHE vorhanden sind. Auf die	
2	SPANNUNG OHNE LAST	-	Gleichstrom-Voltmeter an TP2 anschließen.	VOLUME : 0	VR6 (X09-5090)	40V ohne Last	(b)
3	LEERLAUF-STROM	-	Gleichstrom-Voltmeter an TP1 anschließen.	VOLUME : 0	VR3 (Lch) VR4 (Rch) (X09-5090)	2mV	(a)

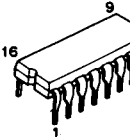
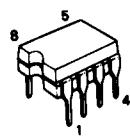
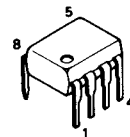
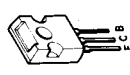
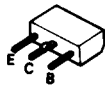
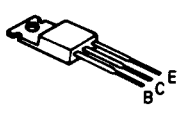
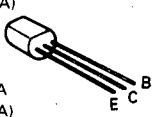
## ADJUSTMENT POINTS



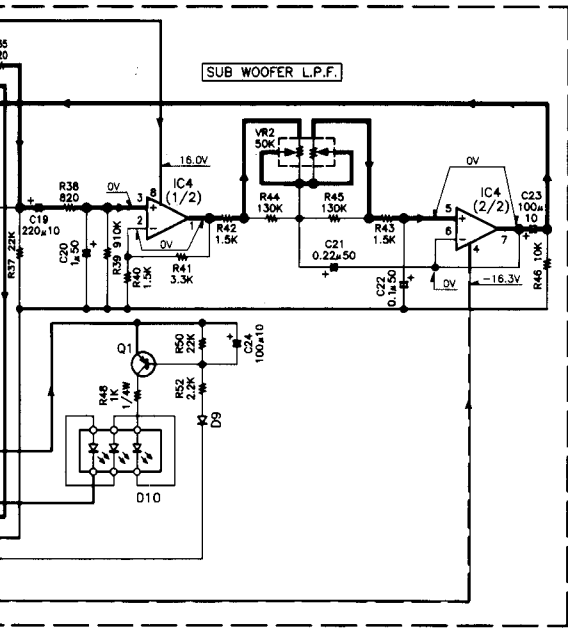
**PREAMPLIFIER UNIT (X08-4000-10) AUDIO UNIT (X09-5090-10)**



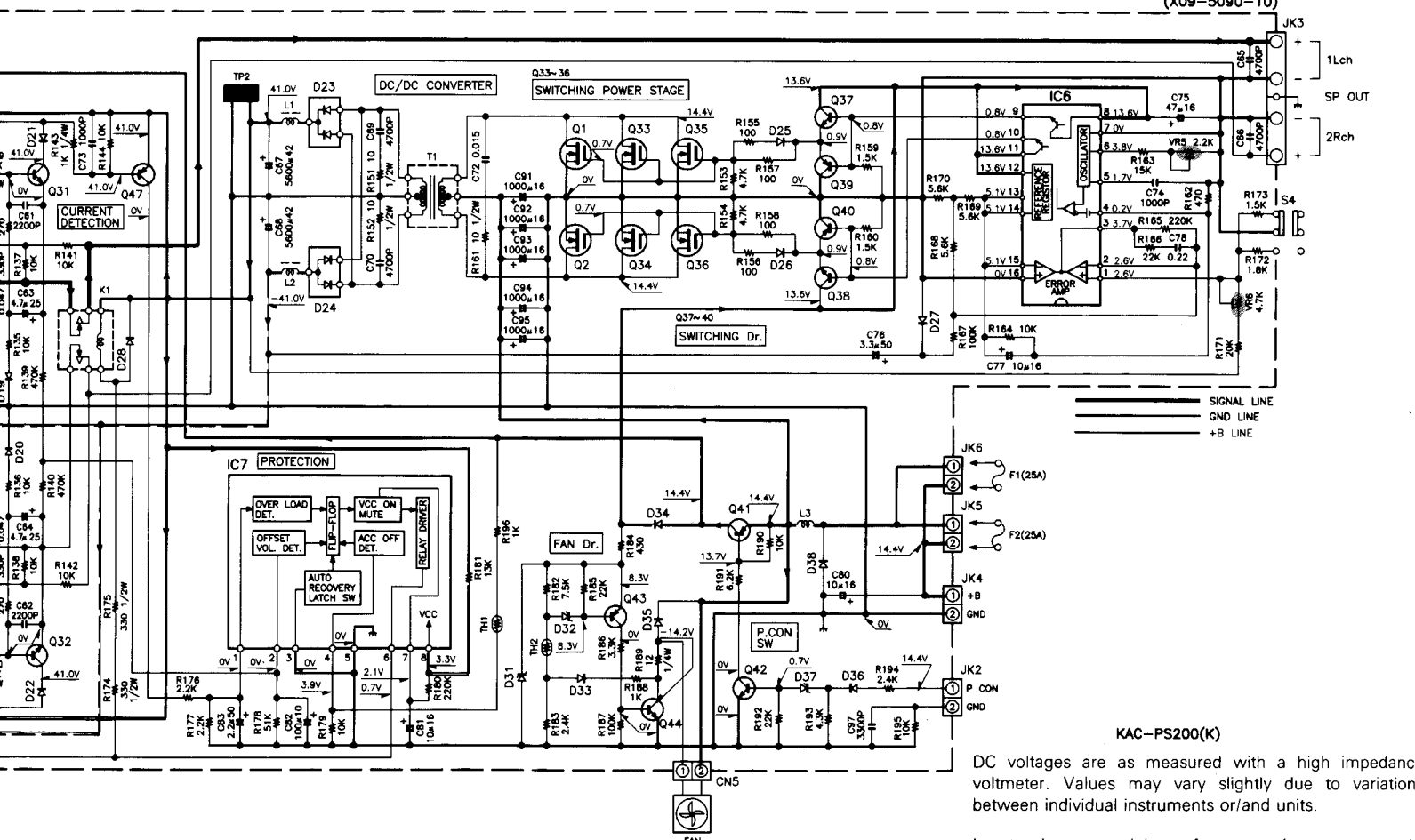
- 2SA1123
- 2SA1534A
- 2SA733 (A)
- 2SA992
- 2SC1845
- 2SC2631
- 2SC3940A
- 2SC945 (A)
- 2SB941BD
- 2SA1561
- 2SC3419
- 2SD1266BD
- NJM2114D
- NJM4565D
- UPC494C



**CAUTION:** For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).  $\triangle$  indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.



- |                       |  |  |
|-----------------------|--|--|
| (X08-4000-10)         | (X09-5090-10)                              |  |
| IC1,2 : $\mu$ PC4570C | IC5 : NJM4565D                             |  |
| IC3 : NJM2114D        | IC6 : $\mu$ PC494C                         |  |
| IC4 : NJM4565D        | IC7 : $\mu$ PC1237HA                       |  |
| Q1 : 2SA1561          | Q1,2,33-36 : MTAJ30N06E                    |  |
| D1~9 : 1SS176         | Q3~8,37,38,42 : 2SC945(A)(Q,P)             |  |
| D10 : B30-1450-05     | Q9~12,47 : 2SA992(F,E)                     |  |
|                       | Q13~18 : 2SC2631(Q,R)                      |  |
|                       | Q19,20 : SA1123(Q,R)                       |  |
|                       | Q21,22 : 2SC3419                           |  |
|                       | Q23,24 : 2SK213-02                         |  |
|                       | Q25,26 : 2SJ76-02                          |  |
|                       | Q27,28 : 2SC4388                           |  |
|                       | Q29,30 : 2SA1673                           |  |
|                       | Q31,32 : 2SC1845(F,E)                      |  |
|                       | Q39,40,43 : 2SA733(A)(Q,P)                 |  |
|                       | Q41 : 2SA1534A(R,S)                        |  |
|                       | Q44 : 2SC3940A(R,S)                        |  |
|                       | Q45 : 2SD1266BD(Q,P)                       |  |
|                       | Q46 : 2SB941BD(Q,P)                        |  |
|                       | Q48 : DTA124EL                             |  |
|                       | Q49 : DTC124EL                             |  |
|                       | D13,14 : RD16JS(B)                         |  |
|                       | D15,16 : RD20JS(B)                         |  |
|                       | D17,18,21,22,25,26,28,33~36,39~44 : 1SS176 |  |
|                       | D19,20 : 1S2076A                           |  |
|                       | D23 : D10LC20U                             |  |
|                       | D24 : D10LC20UR                            |  |
|                       | D27 : AM01Z                                |  |
|                       | D29 : E-152                                |  |
|                       | D31 : RD8.2JS(B2)                          |  |
|                       | D32,37,45 : RD5.1JS(B2)                    |  |
|                       | D38 : RM4AMLJ-J1                           |  |
|                       | TH1 : PTH59F04BD222T                       |  |
|                       | TH2 : ERT-D2ZHL103S                        |  |

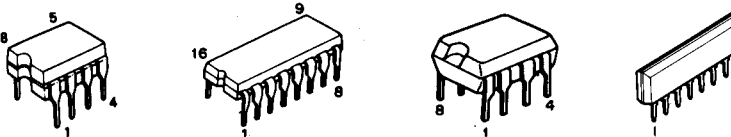


KAC-PS200(K)

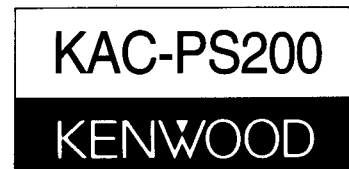
DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

- NJM4565D      UPC494C      UPC4570C      UPC1237HA



Y08-6050-10





# KAC-PS200

## PARTS LIST

× New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnes dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
<b>KAC-PS200</b>						
2	2A	*	A64-0464-03	PANEL		
3	1B	*	A84-0068-03	REAR PANEL		
4	2A		B07-2028-14	ESCUTCHEON		
5	3B	*	B19-1010-04	LIGHTING BOARD		
-			B46-0100-30	WARRANTY CARD		
-		*	B64-0561-00	INST.MANUAL (ENG,FRE,SPA)	K	
-		*	B64-0562-00	INST.MANUAL (ALL)	E	
-		*	B64-0564-00	INST.MANUAL (ENG,FRE,SPA)	M	
AD1	1A		E30-4067-05	AUDIO CORD	M	
△ DC1	1A		E30-3804-05	DC CORD ASSY	EM	
8	3B	*	F01-1470-01	HEAT SINK		
10	2A	*	F09-1217-05	FAN		
F1 , 2	2B		F05-2531-05	FUSE (25A)		
-		*	H12-2584-03	PACKING FIXTURE		
-		*	H12-2586-04	PACKING FIXTURE		
-			H25-0321-04	PROTECTION BAG (600X315X0.03)		
-			H25-0336-04	PROTECTION BAG (170X250X0.03)		
-		*	H54-0407-03	ITEM CARTON CASE		
-		*	H64-0446-04	OUTER CARTON CASE		
15	1A		N99-1577-15	SCREW SET		
A	1B		N83-3006-45	PAN HEAD TAPTITE SCREW		
B	2A		N83-3016-46	PAN HEAD TAPTITE SCREW		
C	3A		N89-3006-46	BINDING HEAD TAPTITE SCREW		
H	1A		N90-3008-46	TP HEAD MACHINE SCREW		
J	2A		N89-3006-45	BINDING HEAD TAPTITE SCREW		
△ 16	1A		W01-0720-05	ACCESSORY	EM	
<b>PREAMPLIFIER UNIT (X08-4000-10)</b>						
D10		*	B30-1450-05	LED(RED)		
C1 -4			CE04DW1E4R7M	ELECTRO 4.7UF 25WV		
C7 -10			CC45FSL1H220J	CERAMIC 22PF J		
C11 ,12			CE04DW1H3R3M	ELECTRO 3.3UF 50WV		
C13 ,14			CK45FB1H471K	CERAMIC 470PF K		
C15 ,16			CC45FCH1H220J	CERAMIC 22PF J		
C17 ,18			CE04DW1A220M	ELECTRO 22UF 10WV		
C19			CE04DW1A221M	ELECTRO 220UF 10WV		
C20			CE04DW1H010M	ELECTRO 1.0UF 50WV		
C21			CE04DW1HR22M	ELECTRO 0.22UF 50WV		
C22			CE04DW1HOR1M	ELECTRO 0.1UF 50WV		
C23 ,24			CE04DW1A101M	ELECTRO 100UF 10WV		
WH1 , 2			E31-8331-05	LEAD WIRE		
31	2B	*	J19-4601-03	HOLDER		
VR1			R10-2622-05	POTENTIOMETER(5K)		
VR2			R10-4645-05	POTENTIOMETER(50K)		
S1		*	S62-0841-05	SLIDE SWITCH		
S2		*	S62-0840-05	SLIDE SWITCH		

K: North America

E: Europe

M: Other Areas

△ indicates safety critical components.

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D1 -9 IC1 ,2 IC3 IC4 Q1			1SS176 UPC4570C NJM2114D NJM4565D 2SA1561	DIODE IC(OP AMP X2) IC(OP AMP X2) IC(OP AMP X2) TRANSISTOR		
<b>AUDIO UNIT (X09-5090-10)</b>						
C25 C31 -34 C35 ,36 C37 ,38 C39 ,40			CF92FV1H102J CE04DW1C100M CK45FB1H102K CE04DW1E101M CF92FV1H103J	MF-C 1000PF J ELECTRO 10UF 16WV CERAMIC 1000PF K ELECTRO 100UF 25WV MF-C 0.010UF J		
C41 ,42 C43 ,44 C45 ,46 C47 ,48 C49 ,50			CE04DW1A330M CE04DW1H010M CE04DW1E220M CC45FSL1H391J CC45FSL1H120J	ELECTRO 33UF 10WV ELECTRO 1.0UF 50WV ELECTRO 22UF 25WV CERAMIC 390PF J CERAMIC 12PF J		
C51 ,52 C53 ,54 C55 ,56 C57 ,58 C59 ,60			CC45FSL1H060D CC45FSL1H100D CF92FV1H102J CC45FSL1H331J CF92FV1H473J	CERAMIC 6.0PF D CERAMIC 10PF D MF-C 1000PF J CERAMIC 330PF J MF-C 0.047UF J		
C61 ,62 C63 ,64 C65 ,66 C67 ,68 C69 ,70			CF92FV1H222J CE04DW1E4R7M CF92FV1H472J * C90-2846-05 CF92FV1H472J	MF-C 2200PF J ELECTRO 4.7UF 25WV MF-C 4700PF J ELECTRO 5600UF 42WV MF-C 4700PF J		
C71 C72 C73 C74 C75			* C90-2726-05 CF92FV1H153J CK45FB1H102K CF92FV1H102J CE04DW1C470M	ELECTRO 220UF 50WV MF-C 0.015UF J CERAMIC 1000PF K MF-C 1000PF J ELECTRO 47UF 16WV		
C76 C77 C78 C80 ,81 C82			CE04DW1H3R3M CE04DW1C100M CF92FV1H224J CE04DW1C100M CE04DW1A101M	ELECTRO 3.3UF 50WV ELECTRO 10UF 16WV MF-C 0.22UF J ELECTRO 10UF 16WV ELECTRO 100UF 10WV		
C83 C84 C85 C86 C91 -95			CE04DW1H2R2M CE04DW1H220M CE04DW1H010M CE04DW1V100M C90-2660-05	ELECTRO 2.2UF 50WV ELECTRO 22UF 50WV ELECTRO 1.0UF 50WV ELECTRO 10UF 35WV ELECTRO 1000UF 16WV		
C97			CF92FV1H332J	MF-C 3300PF J		
CN1 ,2 CN5 JK1 JK2 JK3 JK4			E40-9130-05 E40-3246-05 E13-1401-05 E20-0239-05 E20-0479-05 E70-0804-05	FLAT CABLE CONNECTOR PIN ASSY PHONE JACK SCREW TERMINAL BOARD(2P) SCREW TERMINAL BOARD(4P) SCREW TERMINAL BOARD		
△ JK5 JK6			* J13-0601-05 * J13-0603-05	FUSE HOLDER FUSE HOLDER		
L1 ,2 L3 T1			* L33-0990-05 * L33-1015-05 * L19-0543-05	CHOKE COIL CHOKE COIL TRANSFORMER FOR CONVERTER		

K: North America

E: Europe

M: Other Areas

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
C	1A		N87-3012-46	BRAZIER HEAD TAPTITE SCREW		
D	2B		N83-3008-45	PAN HEAD TAPTITE SCREW		
E	2B		N80-2608-45	PAN HEAD TAPTITE SCREW		
F	1B		N80-3010-45	PAN HEAD TAPTITE SCREW		
K	1B		N89-3006-41	BINDING HEAD TAPTITE SCREW		
R69 ,70			RD14DB2H101J	SMALL-RD 100 J 1/2W		
R97 ,98			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R117-120			RD14DB2H560J	SMALL-RD 56 J 1/2W		
R125-128			R92-0205-05	METAL-PLATE 0.1 K 2W		
R133,134			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R145			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R151,152			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R161			RD14DB2H100J	SMALL-RD 10 J 1/2W		
R174,175			RD14DB2H331J	SMALL-RD 330 J 1/2W		
VR3 ,4			R12-0092-05	TRIMMING POT.(220)		
VR5			R12-1067-05	TRIMMING POT.(2.2K)		
VR6			R12-1069-05	TRIMMING POT.(4.7K)		
K1			S76-0804-05	MAGNETIC RELAY		
S3			S62-0814-05	SLIDE SWITCH		
S4			S31-2130-05	SLIDE SWITCH		
D13 ,14			RD16JS(B)	ZENER DIODE		
D15 ,16			RD20JS(B)	ZENER DIODE		
D17 ,18			1SS176	DIODE		
D19 ,20			1S2076A	DIODE		
D21 ,22			1SS176	DIODE		
D23			D10LC20U	DIODE		
D24			D10LC20UR	DIODE		
D25 ,26			1SS176	DIODE		
D27			AM01Z	DIODE		
D28			1SS176	DIODE		
D29			E-152	CONSTANT CURRENT DIODE		
D31			RD8.2JS(B2)	ZENER DIODE		
D32			RD5.1JS(B2)	ZENER DIODE		
D33 -36			1SS176	DIODE		
D37			RD5.1JS(B2)	ZENER DIODE		
D38			RM4AMLF-J1	DIODE		
D39 -44			1SS176	DIODE		
D45			RD5.1JS(B2)	ZENER DIODE		
IC5			NJM4565D	IC(OP AMP X2)		
IC6			UPC494C	IC(SWITCHING REGULATOR)		
IC7			UPC1237HA	IC(POWER AMP)		
Q1 ,2		*	MTAJ30N06E	FET		
Q3 -8			2SC945(A)(Q,P)	TRANSISTOR		
Q9 -12			2SA992(F,E)	TRANSISTOR		
Q13 -18			2SC2631(Q,R)	TRANSISTOR		
Q19 ,20			2SA1123(Q,R)	TRANSISTOR		
Q21 ,22			2SC3419	TRANSISTOR		
Q23 ,24		*	2SK213-02	FET		
Q25 ,26		*	2SJ76-02	FET		
Q27 ,28		*	2SC4388	TRANSISTOR		
Q29 ,30		*	2SA1673	TRANSISTOR		
Q31 ,32			2SC1845(F,E)	TRANSISTOR		
Q33 -36		*	MTAJ30N06E	FET		
Q37 ,38			2SC945(A)(Q,P)	TRANSISTOR		

K: North America

E: Europe

M: Other Areas

⚠ indicates safety critical components.

## PARTS LIST

× New Parts

Parts without Parts No. are not supplied.

Les articles non mentionnés dans le Parts No. ne sont pas fournis.

Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格	Desti- nation 仕向	Re- marks 備考
Q39 , 40			2SA733(A)(Q,P)	TRANSISTOR		
Q41			2SA1534A(R,S)	TRANSISTOR		
Q42			2SC945(A)(Q,P)	TRANSISTOR		
Q43			2SA733(A)(Q,P)	TRANSISTOR		
Q44			2SC3940A(R,S)	TRANSISTOR		
Q45			2SD1266BD(Q,P)	TRANSISTOR		
Q46			2SB941BD(Q,P)	TRANSISTOR		
Q47			2SA992(F,E)	TRANSISTOR		
Q48			DTA124EL	DIGITAL TRANSISTOR		
Q49		*	DTC124EL	DIGITAL TRANSISTOR		
TH1		*	PTH59F04BD222T	POSITIVE RESISTOR		
TH2			ERT-D2ZHL103S	THERMISTOR		

K: North America

E: Europe

M: Other Areas

# SPECIFICATIONS

**Specifications subject to change without notice.**

## Audio Section

Max Power Output (4  $\Omega$ )  
Normal ..... 200 W  $\times$  2  
Bridged ..... 600 W  $\times$  1  
Rated Power Output (4  $\Omega$ )  
Normal (20 Hz ~ 20 kHz less than 0.05 % THD) .. 100 W  $\times$  2  
Bridged (1 kHz less than 0.3 % THD) ..... 300 W  $\times$  1  
Rated Power Output (2  $\Omega$ )  
Normal (1 kHz, less than 0.3 % THD) ..... 150 W  $\times$  2  
Frequency Response (-3 dB) ..... 5 Hz ~ 50 kHz  
Sensitivity (rated output) (MAX.) ..... 0.3 V  
(MIN.) ..... 5.0 V  
Signal to Noise Ratio ..... 105 dB  
Input Impedance ..... 10 k $\Omega$   
Damping Factor (100 Hz) ..... More than 200  
Low Pass Filter Frequency ..... 30 ~ 200 Hz (variable)

## General

Operating Voltage ..... 12.0 V (11 ~ 16 V allowable)  
Current Consumption ..... 50 A  
Dimensions (W  $\times$  H  $\times$  D) ..... 297  $\times$  56  $\times$  270 mm  
(11-11/16  $\times$  2-3/16  $\times$  10-5/8 in.)  
Weight ..... 4.4 kg (9.7 lb)

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