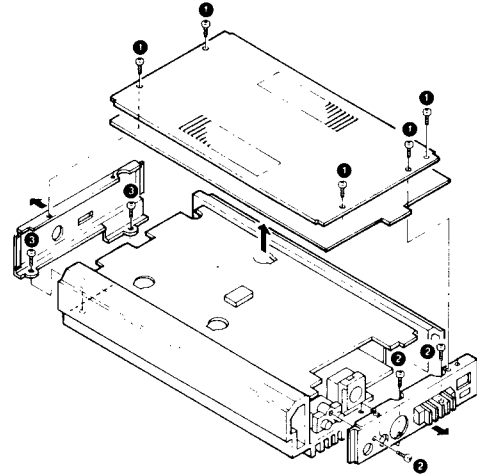


CONTENTS

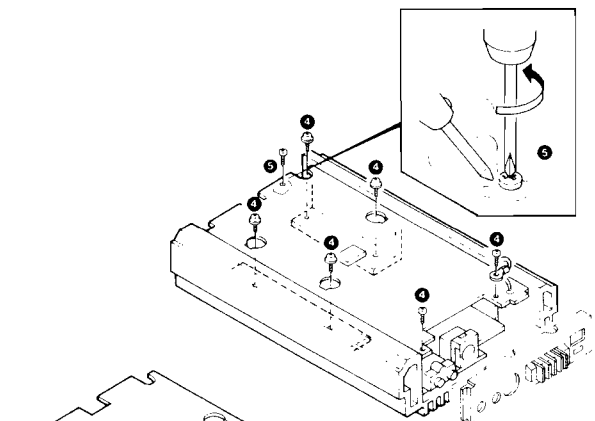
DISASSEMBLY FOR REPAIR	2	PC BOARD.....	7
BLOCK LEVEL DIAGRAM.....	3	SCHEMATIC DIAGRAM.....	15
CIRCUIT DESCRIPTION	4	EXPLODED VIEW.....	19
ADJUSTMENT.....	6	PARTS LIST	20
REGLAGE.....	6	PACKING	24
ABGLEICH	6	SPECIFICATIONS	Back cover

DISASSEMBLY FOR REPAIR

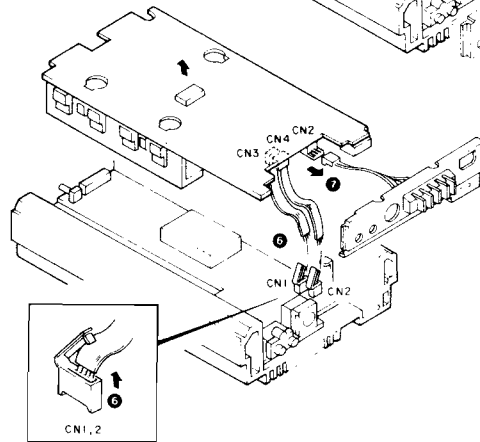
1. Remove the 5 screws (❶) from the bottom cover.
2. Remove the 3 screws (❷) from the rear panel.
3. Remove the 2 screws (❸) from the front panel.



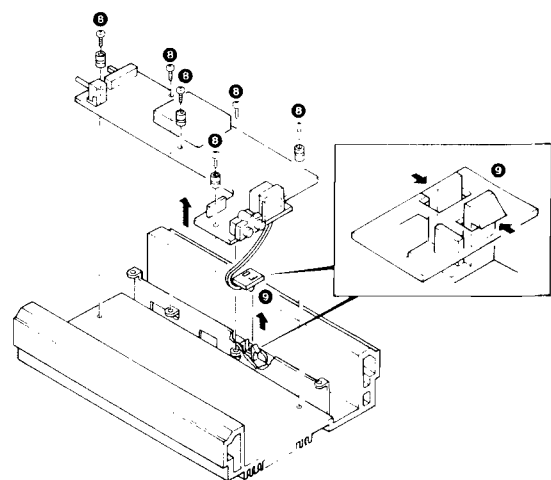
4. Remove the 6 screws (❹) from the PC Board.
5. Melt the solder fixing the screw (❺), and remove the screw using a screwdriver.

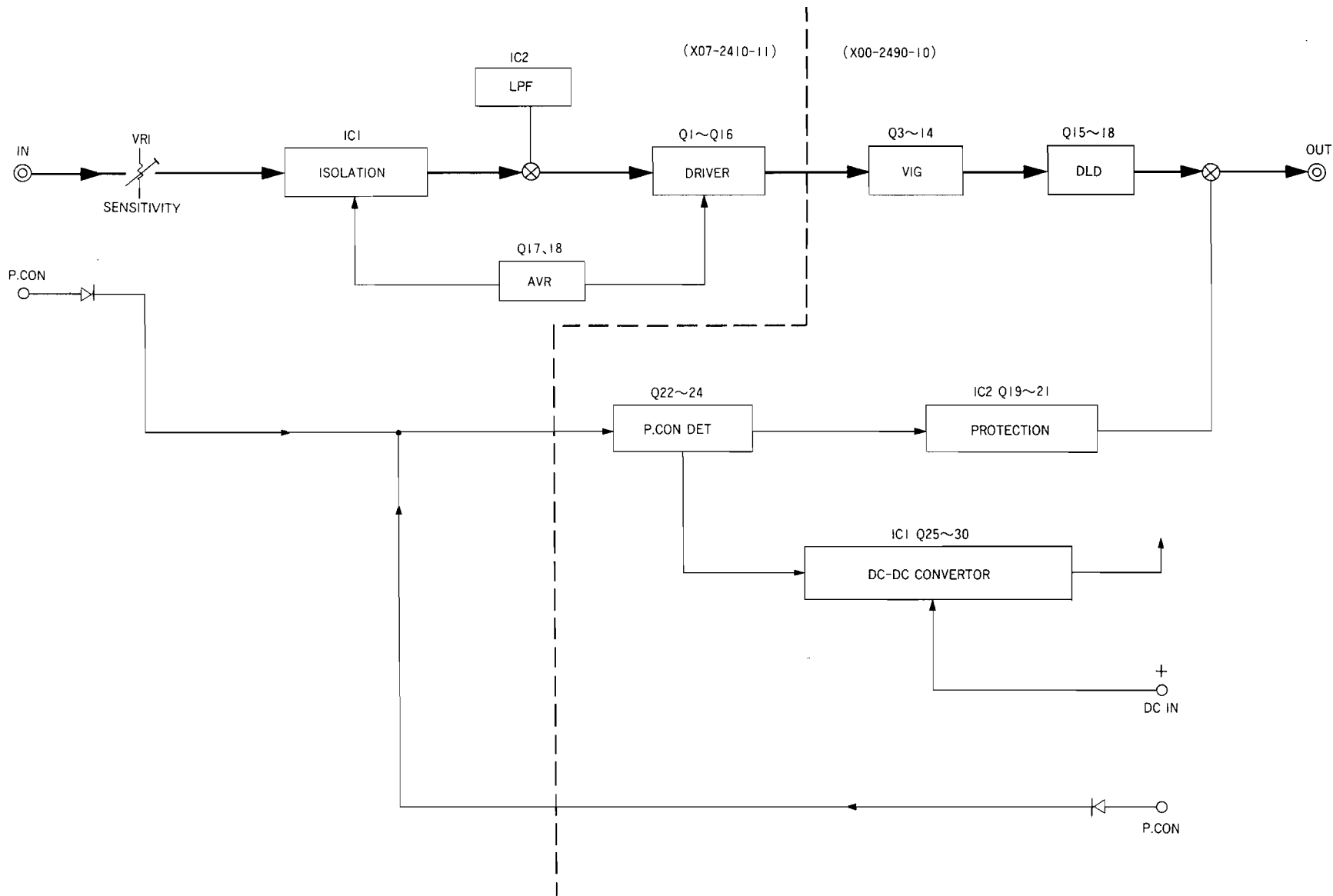


6. Disconnect connectors CN1 and CN2 (❻).
7. Disconnect connector CN4, and remove the PC Board in the direction of the arrow (❼).



8. Remove the 6 screws (❸) from the PC Board.
9. Remove the PC Board on which the diode is mounted, by pushing the lug on the PC Board in the direction of the arrow (❹).





BLOCK LEVEL DIAGRAM

KAC-820

CIRCUIT DESCRIPTION

Function of components

Power Amplifier Unit (X07-2410-11)

Components	Use/Function	Operation/Condition/Interchangeability
Q1, 2	Input mute	Operates the input muting function with quick timing than relay when amplifier is OFF, to cut the relay in dead line (non-signal) for protection of contacts.
Q3, 4	Mute driver	When the base of Q3 is active high, Q3 and Q4 are turned ON to activate muting function.
Q5, 6	Input differential amp	Applies input to one end and negative feedback to the other end to determine the amplifying gain, while setting the output of speaker ends to DC zero.
Q7 ~ 10	2nd differential amp	
Q11 ~ 14	3rd differential amp	
Q15, 16	Current mirror	Load of Q13, Q14 of third stage differential circuit.
Q17	+20 V AVR	
Q18	-20 V AVR	
Q19	LED SW	
IC1	Isolation amp	Eliminates automobile noise introduced to the amplifier input.
IC2	Operation amp	Consists the active LPF (low pass filter) for Sub Woofer.

CIRCUIT DESCRIPTION

Power Supply Unit (X00-2490-10)

Components	Use/Function	Operation/Condition/Interchangeability
Q1	Temp compensation (Lch)	
Q2	Temp compensation (Rch)	
Q3 ~ 10	VIG cascade	For stabilization of the collector voltage at the driver of amplifier section.
Q11 ~ 14	Power amp driver	
Q15 ~ 18	Power	
Q19 ~ 21	Current detector	Detects overcurrent and controls the protection IC.
Q22	P. CON voltage detector	
Q23	Detects the P. CON "ON"	When Q22 is turned ON by receiving P. CON signal, Q23 turns ON to pull out the base voltage of Q24.
Q24	Power switch	When Q23 is turned ON and the base voltage is pulled out, Q24 is turned ON and the power voltage is supplied to IC1.
Q25, 26	Switching driver	
Q27 ~ 30	Switching power	
IC1	Switching regulator (control IC)	Provides the dead time on switching waveform.
IC2	Protection	Detects overload, DC offset and P. CON.

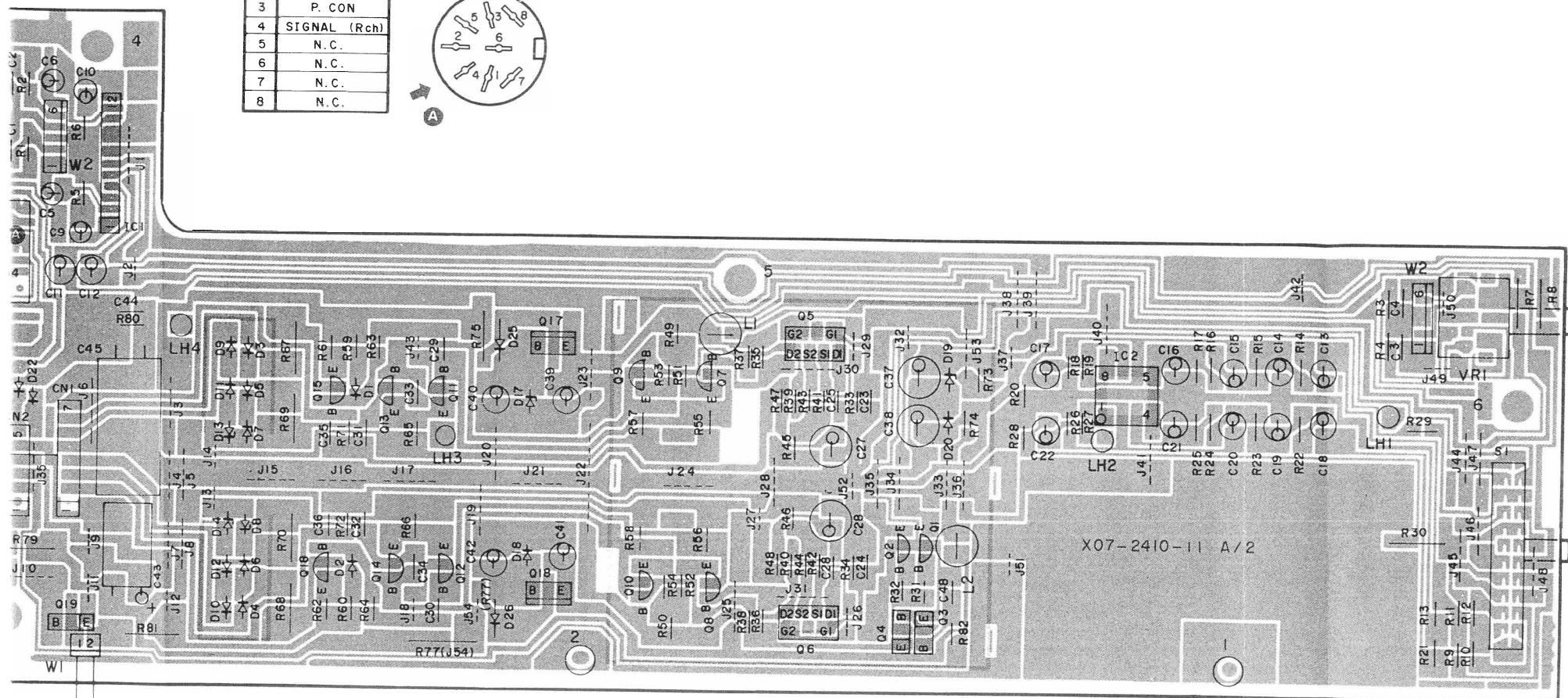
ADJUSTMENT / REGLAGE / ABGLEICH

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Connect a cassette deck.							
1	IDLE CURRENT	-	Connect a DC voltmeter to: CN7 (L, R)	VOLUME: 0	VR1 (L) VR2 (R)	2mV	(a)

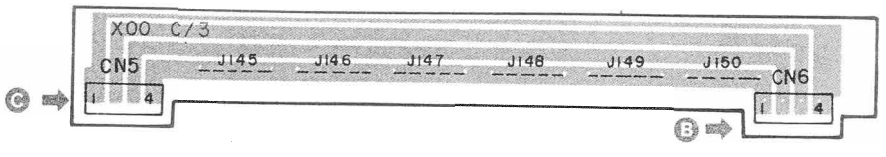
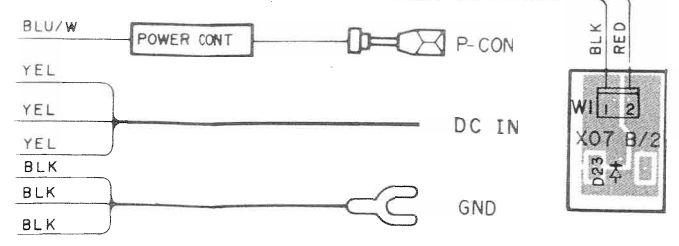
N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINT L'ALIGNEMENT	ALIGNER POUR	FIG.
Raccorder une platine à cassette.							
1	COURANT DE POLARISATION	-	Raccorder un voltmètre CC à: CN7 (G, D)	VOLUME: 0	VR1 (G) VR2 (D)	2mV	(a)

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VERSTÄRKER EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
Ein Kassettendeck anschließen.							
1	LEERLAUFSTROM	-	Einen Gleichstrom-Voltmeter anschließen an: CN7 (L, R)	VOLUME: 0	VR1 (L) VR2 (R)	2mV	(a)

1	SIGNAL (Lch)
2	GND
3	P. CON
4	SIGNAL (Rch)
5	N. C.
6	N. C.
7	N. C.
8	N. C.

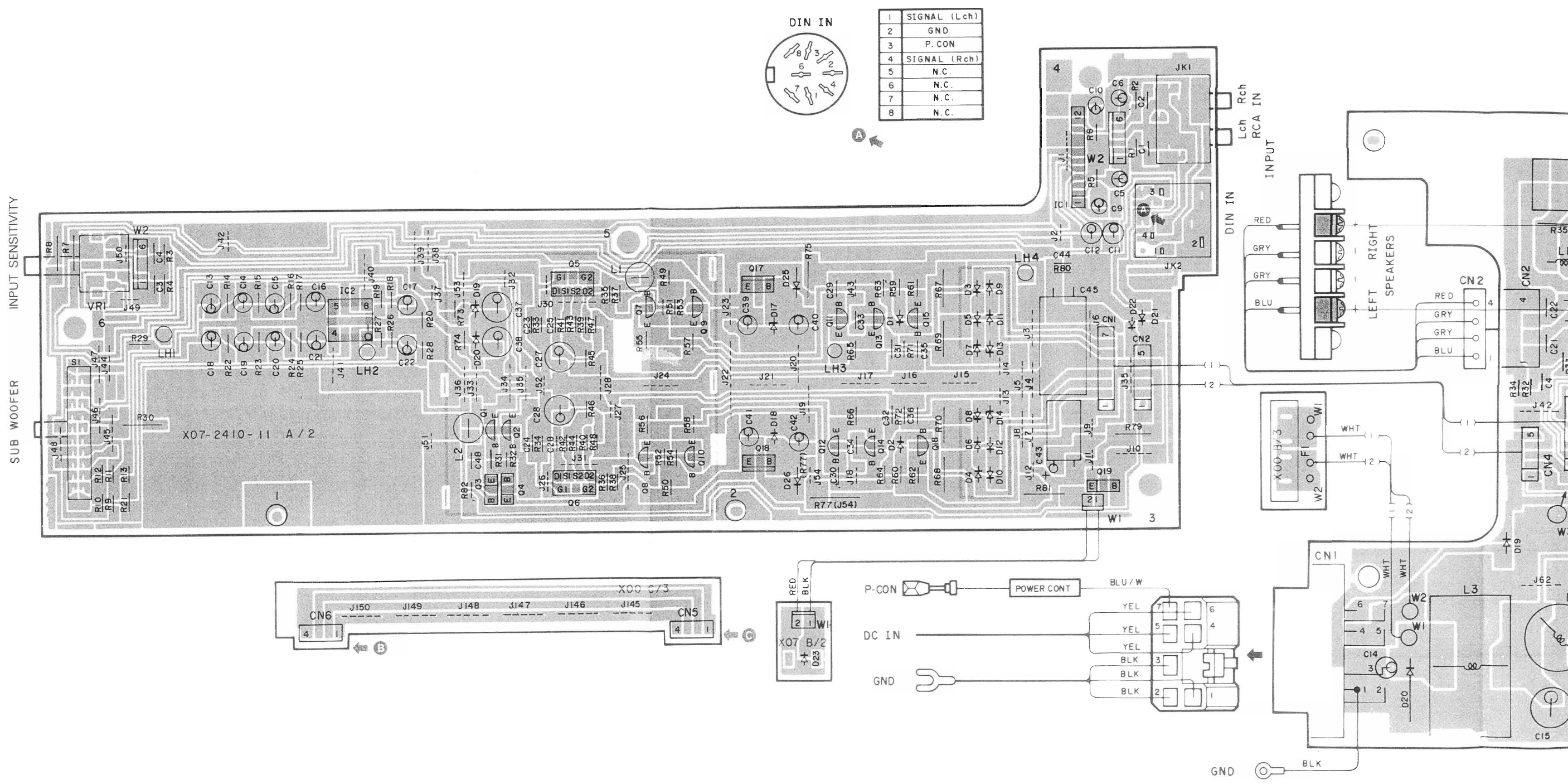


SUB WOOFER INPUT SENSITIVITY

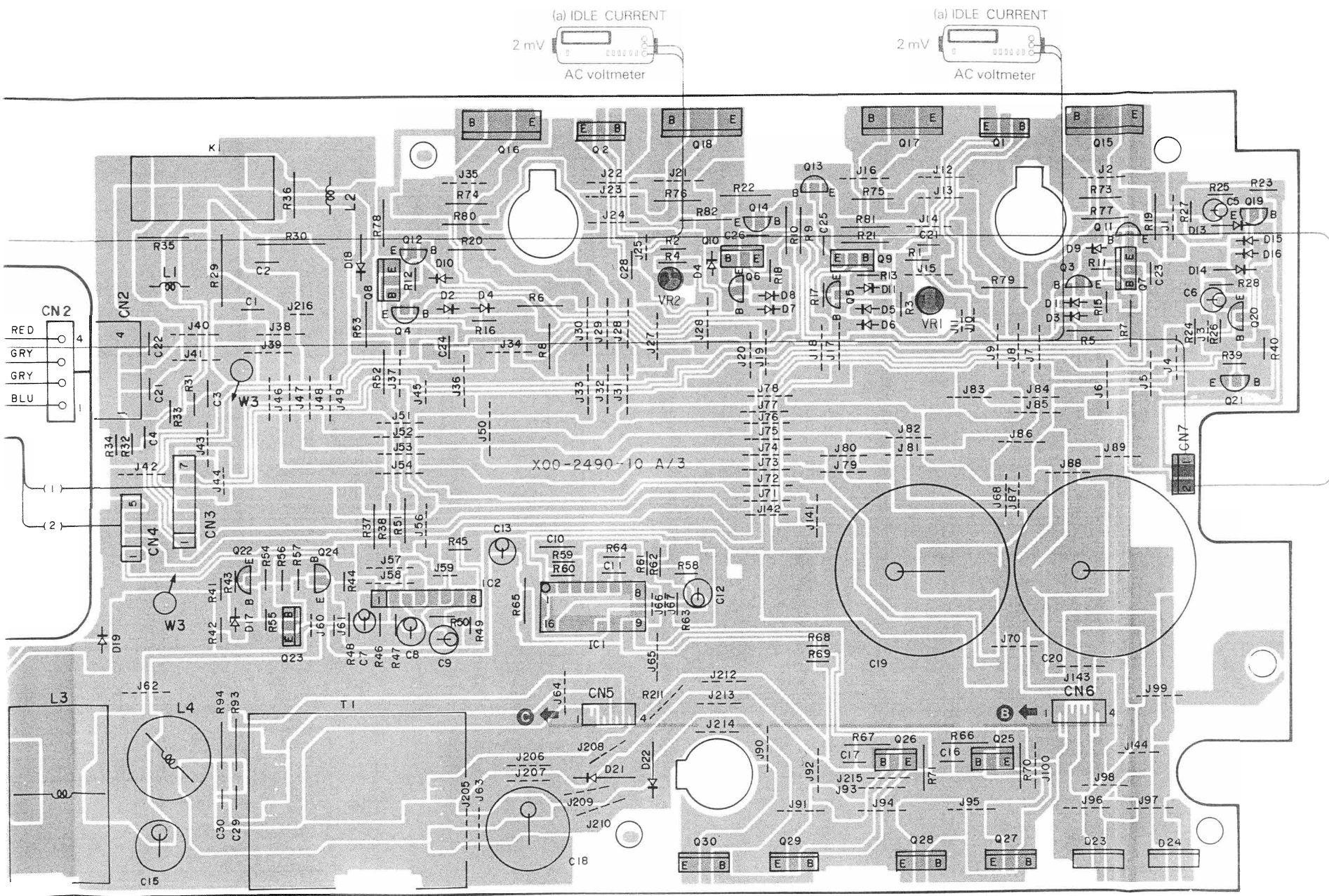


Refer to the schematic diagram for the values of resistors and capacitors. KAC-820

PC BOARD (Foil Side View)



Refer to the schematic diagram for the values of resistors and capacitors.



KAC-820

(X07-2410-11)(A/2)

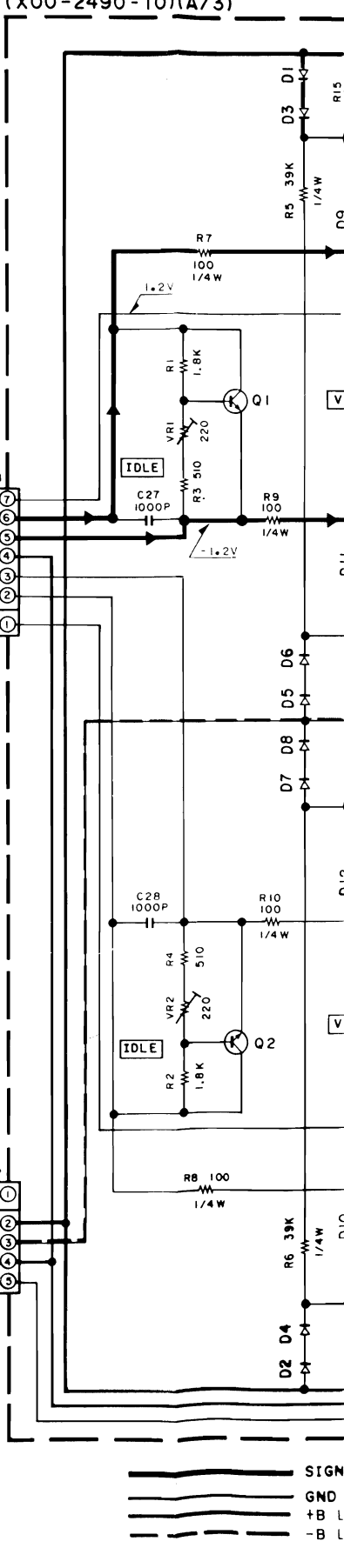
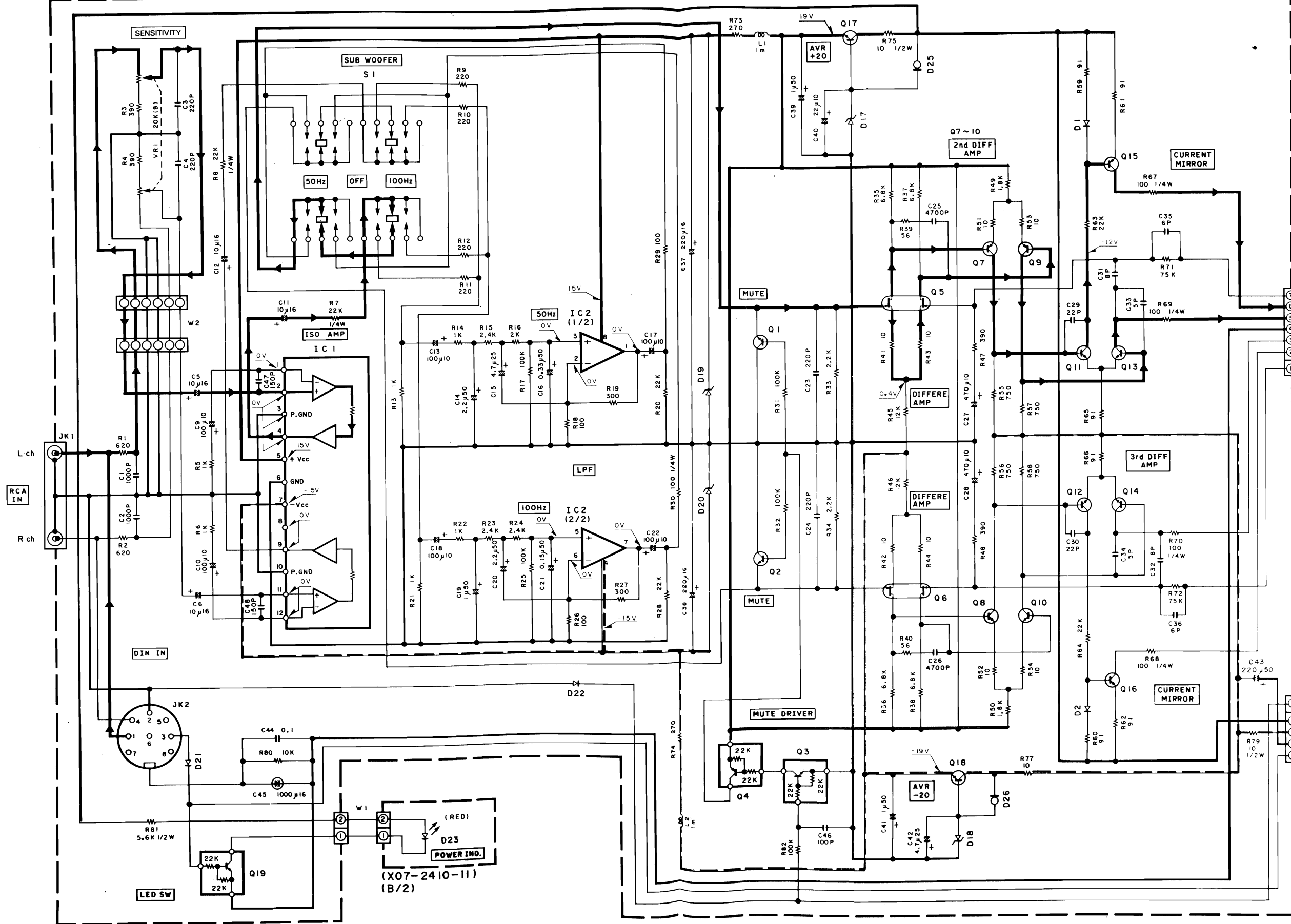
(X00-2490-10)(A/3)

IC1 : KKM61
 IC2 : μ PC4570C
 Q1,2 : 2SD1302
 Q3,19 : DTC124EFF
 Q4 : DTA124EFF

Q5,6 : 2SK389
 Q7~10 : 2SA992(F,E)
 Q11~14 : 2SC2631(Q,R)
 Q15,16 : 2SA1123(Q,R)
 Q17 : 2SD1266(Q,P)
 Q18 : 2SB772(Q,P)

D1,2,21,22 : ISS176
 D17,18 : RD20JS(B)
 D19,20 : RD16JS(B)
 D23 : B30-1130-05
 D25,26 : E-152

D1~8,15,16,19 : ISS176
 D9~12 : MTZ4.7J
 D13,14,18 : IS2076A
 D17 : RD5.1JS(B2)
 D20 : RM4ZLF-JI
 D21,22 : EH1Z
 D23 : FMU21S
 D24 : FMU21R



(X07-2410-11)(B/2)

SIGN
 GND
 +B L
 -B L

D1~8,15,16,19 : ISS176
 D9~12 : MTZ4.7J
 D13,14,18 : 1S2076A
 D17 : RD5.1JS(B2)
 D20 : RM4ZLF-J1
 D21,22 : EHIZ
 D23 : FMU21S
 D24 : FMU21R

Q1,2 : 2SC3419
 Q3,4 : 2SA992(F,E)
 Q5,6,19,20 : 2SC1845(F,E)
 Q7,8 : 2SC2590(Q,R)
 Q9,10 : 2SA1110(Q,R)
 Q11,12 : 2SC2003(L,K)
 Q13,14 : 2SA954(L,K)
 Q15,16 : 2SA4386*5

Q17,18 : 2SA1671*5
 Q21,22,24 : 2SA733(A)(Q,P)
 Q23 : 2SC2785(H,F,E)
 Q25,26 : 2SD809
 Q27~30 : 2SD1062(Q,R)

IC1 : μ PC494C
 IC2 : μ PC1237HA
 THI : PTH487A01BC222T

(X00-2490-10)(C/3)

2SA1123
 2SA733(A)
 2SA954
 2SA992
 2SC1845
 2SC2003
 2SC2631
 2SD1302

2SA1110
 2SB772
 2SC2590

2SD1266

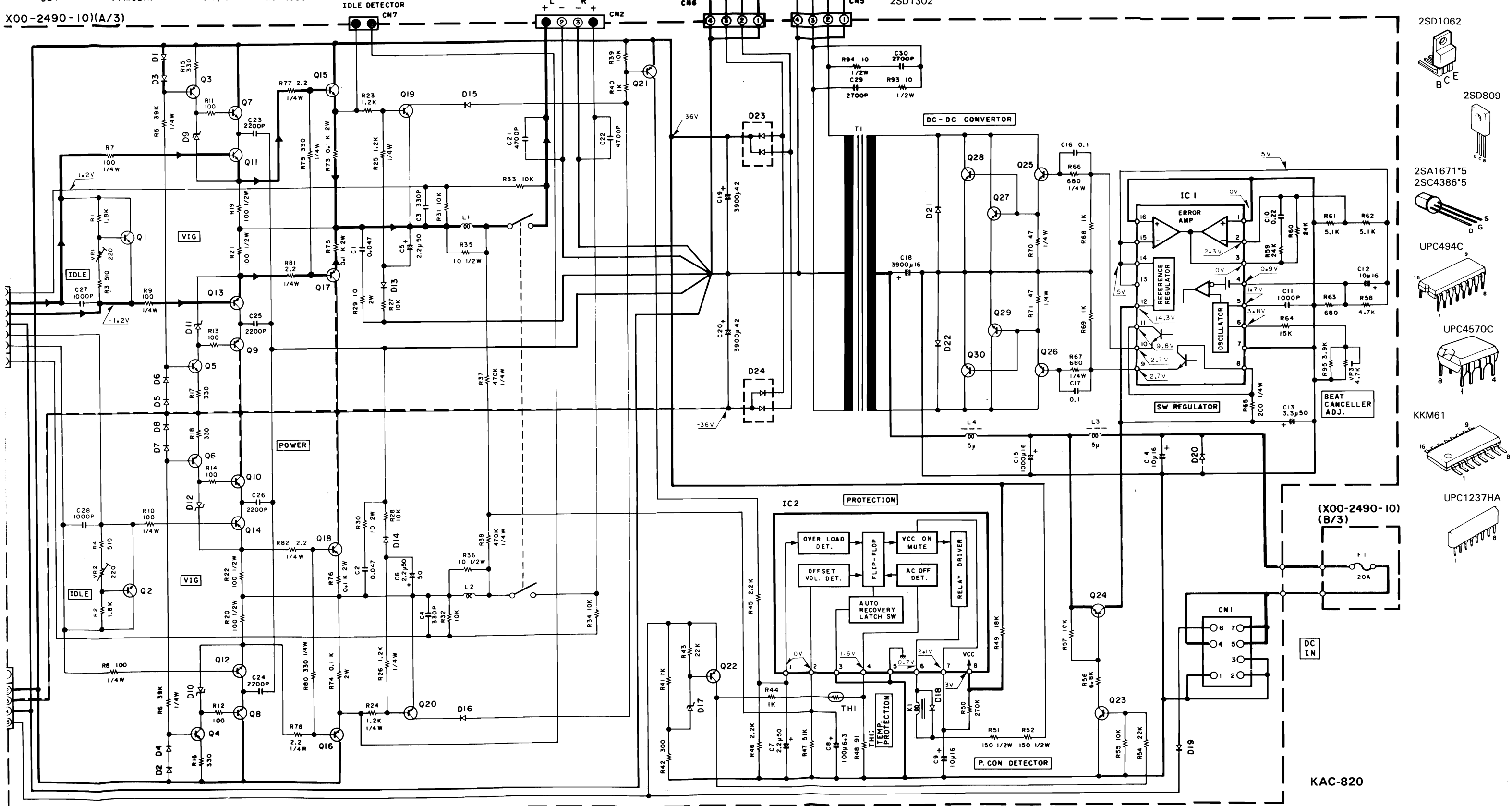
DTA124EFF
 DTC124EFF

2SC2785

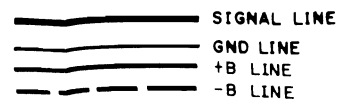
2SC3419

2SK389

X00-2490-10(A/3)



- 2SD1062
- 2SD809
- 2SA1671*5
- 2SC4386*5
- UPC494C
- UPC4570C
- UPC1237HA
- KKM61



DC voltages are as measured with a high impedance voltmeter with no signal input. 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 sans signal d'entrée. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

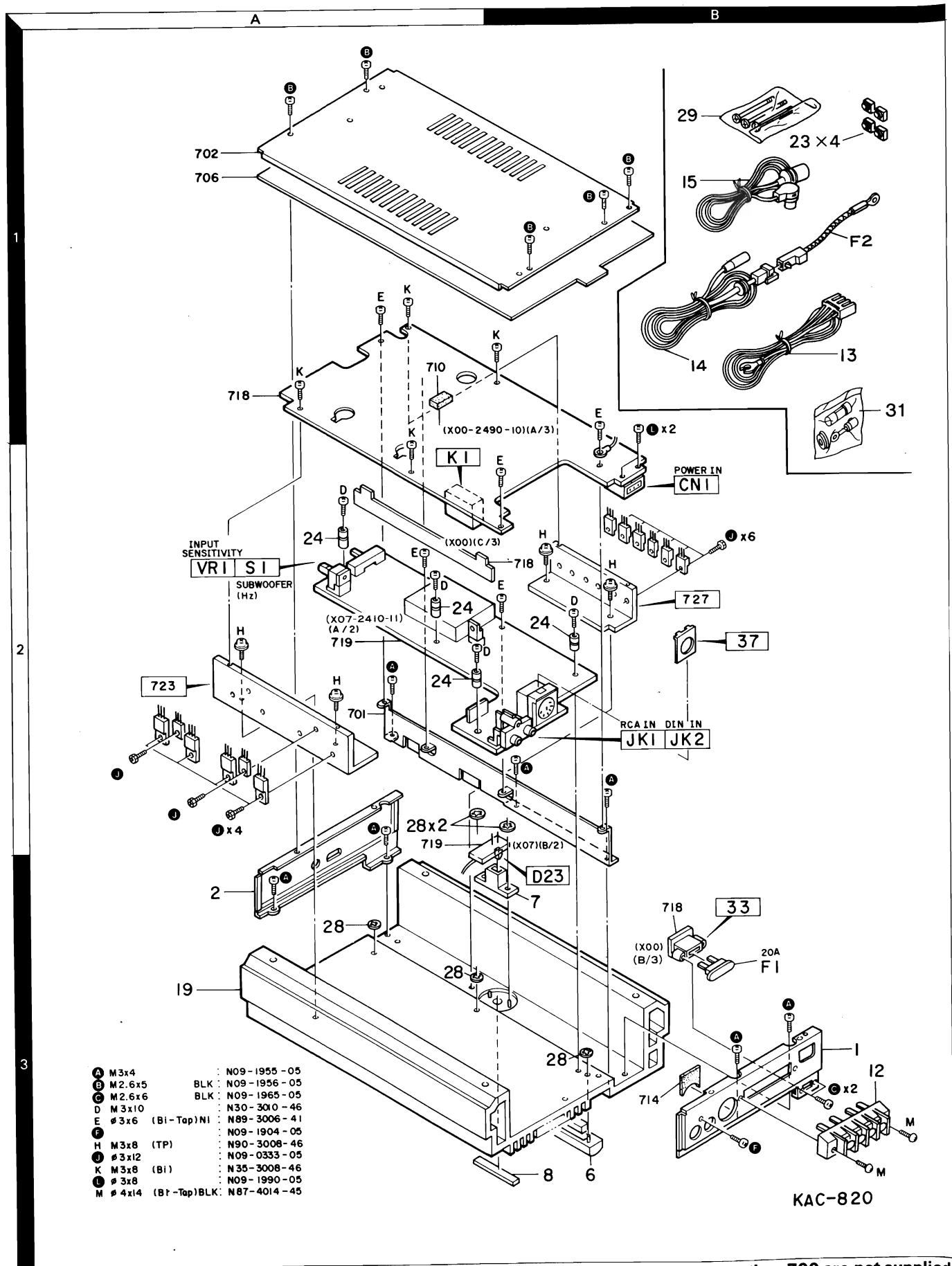
Die angegebenen Gleichspannungswerte wurden mit einer hochohmigen Spannungsmesser ohne Eingangssign gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten U. geringfügig.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ 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.

KAC-820
KENWOOD

KAC-820 KAC-820

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

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.

× 新規部品
(注) 部品番号がないものは修理用部品として扱いません。

Ref. No.	Address	New Parts	Parts No.	Description	Destination	Remarks
参照番号	位置	新	部品番号	部品名 / 規格	仕向	備考
KAC-820						
1	3B	*	A20-5413-03	PANEL		
2	3A	*	A23-3721-03	REAR PANEL		
6	3B	*	B07-1783-03	ESCUTCHEON		
7	3B	*	B19-0541-04	LIGHTING BOARD		
8	3B	*	B43-0283-04	KENWOOD BADGE		
-	-	*	B46-0100-10	WARRANTY CARD		
-	-	*	B50-8634-00	INSTRUCTION MANUAL (ENG, FRE)		
-	-	*	B50-8897-00	INSTRUCTION MANUAL (GER, ITA)	ET	
-	-	*	B58-0803-13	CAUTION CARD	E	
-	-	*	B58-0870-04	CAUTION CARD		
-	-	*	B58-0872-04	CAUTION CARD		
12	3B	*	E20-0471-05	SCREW TERMINAL BOARD (SPEAKERS)		
13	1B	*	E30-2302-05	DC CORD		
14	1B	*	E30-2443-05	DC CORD		
15	1B	*	E30-2306-05	CORD WITH DIN CONNECTOR	ET	
15	1B	*	E30-2384-05	CORD WITH DIN CONNECTOR	K	
19	3A	*	F01-1197-01	HEAT SINK		
F1	3B	*	F05-2038-05	FUSE (20A)		
F2	1B	*	F05-2131-05	FUSE (FUSIBLE RING WIRE)		
-	-	*	H01-7727-04	ITEM CARTON CASE		
-	-	*	H03-0985-04	OUTER CARTON CASE		
-	-	*	H10-3523-13	POLYSTYRENE FOAMED FIXTURE		
-	-	*	H25-0112-04	PROTECTION BAG (180X250X0.05)		
-	-	*	H25-0192-04	PROTECTION BAG (125X160X0.05)		
-	-	*	H25-0321-04	PROTECTION BAG		
23	1B	*	J02-0372-14	FOOT		
24	2A, 2B	*	J19-2932-04	UNIT HOLDER		
28	3A, 3B	*	N29-0252-05	RETAINING RING (Ø2)		
29	1B	*	N99-0267-05	SCREW SET		
A	2A, 3B	*	N09-1955-05	MACHINE SCREW (M3X4)		
B	1A, 1B	*	N09-1956-05	TAPTITE SCREW (M2.6X5)		
C	3B	*	N09-1965-05	TAPTITE SCREW		
F	3B	*	N09-1904-05	TAPTITE SCREW		
31	2B	*	W01-0188-08	ACCESSORY		
POWER SUPPLY UNIT (X00-2490-10)						
C1	.2		CF92V1H473J	MF	0.047UF	J
C3	.4		CC45FSL1H331J	CERAMIC	330PF	J
C5	-7		C90-0508-05	ELECTRN	2.2UF	50WV
C8		*	CE04DW0J101M	ELECTRN	100UF	6.3WV
C9		*	CE04DW1C100M	ELECTRN	10UF	16WV
C10			CF92V1H224J	MF	0.22UF	J
C11			CF92V1H102J	MF	1000PF	J
C12			CE04DW1C100M	ELECTRN	10UF	16WV
C13			CE04DW1H3R3M	ELECTRN	3.3UF	50WV
C14			CE04DW1C100M	ELECTRN	10UF	16WV
C15			C90-1403-05	ELECTRN	1000UF	16WV
C16	.17		CF92V1H104J	MF	0.10UF	J
C18		*	C90-1634-05	ELECTRN	3900UF	16WV
C19	.20	*	C90-1617-05	ELECTRN	3900UF	42WV
C21	.22		CF92V1H472J	MF	4700PF	J

E: Scandinavia & Europe K: USA P: Canada W: Europe
 U: PX (Far East, Hawaii) T: England M: Other Areas
 UE: AAFES (Europe) X: Australia

⚠ 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.

Telle 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
C23 -26 C27 ,28 C29 ,30			CF92V1H222J CF92V1H102J CF92V1H272J	MF 2200PF J MF 1000PF J MF 2700PF J		
DN1	2B	*	E08-0701-05	RECTANGULAR RECEPTACLE(PWR IN)		
33	3B		J13-0071-05	FUSE HOLDER		
L1 ,2 L3 L4 T1		*	L39-0085-05 L33-0341-05 L33-0331-05 L19-0053-05	PHASE-COMPENSATION COIL LINE FILTER COIL CHOKER COIL TRANSFORMER FOR CONVERTER		
J L	2A,2B 1B	*	N09-0333-05 N09-1990-05	TAPPING SCREW (Ø3X12) EVATITE SCREW (Ø3X8)		
R19 -22 R29 ,30 R35 ,36 R51 ,52 R73 -76		*	RD14DB2H101J RS14DB3D100J RD14DB2H100J RD14DB2H151J R92-0205-05	SMALL-RD 100 J 1/2W FL-PROOF RS 10 J 2W SMALL-RD 10 J 1/2W SMALL-RD 150 J 1/2W METAL-PLATE 0.1 K 2W		
R77 ,78 R81 ,82 R93 ,94 VR1 ,2 VR3		*	RD14GB2E2R2J RD14GB2E2R2J RD14DB2H100J R12-0092-05 R12-1069-05	FL-PROOF RD 2.2 J 1/4W FL-PROOF RD 2.2 J 1/4W SMALL-RD 10 J 1/2W TRIMMING PNT. (220) IDLE TRIMMING PNT. (4.7K) BEAT CANC		
K1	2A	*	S51-2078-05	MAGNETIC RELAY		
D1 -8 D9 -12 D13 ,14 D15 ,16 D17			1S5176 MTZ4.7J 1S2076A 1S5176 RD5.1JS(B2)	DIODE ZENER DIODE DIODE DIODE ZENER DIODE		
D18 D19 D20 D21 ,22 D23		*	1S2076A 1S5176 RM4ZLF-J1 EH1Z FMU21S	DIODE DIODE DIODE DIODE DIODE		
D24 IC1 IC2 Q1 ,2 Q3 ,4		*	FMU21R UPC494C UPC1237HA 2SC3419 2SA992(F,E)	DIODE IC(SWITCHING REGULATOR) IC(POWER AMP) TRANSISTOR TRANSISTOR		
Q5 ,6 Q7 ,8 Q9 ,10 Q11 ,12 Q13 ,14			2SC1845(F,E) 2SC2590(Q,R) 2SA1110(Q,R) 2SC2003(L,K) 2SA954(L,K)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q15 ,16 Q17 ,18 Q19 ,20 Q21 ,22 Q23		*	2SC4386*5 2SA1671*5 2SC1845(F,E) 2SA733(A)(Q,P) 2SC2785(H,F,E)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q24 Q25 ,26 Q27 -30 TH1		*	2SA733(A)(Q,P) 2SD809 2SD1062(Q,R) PTH487A01BC222T	TRANSISTOR TRANSISTOR TRANSISTOR THERMISTOR		

E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

PARTS LIST

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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
POWER AMPLIFIER UNIT (X07-2410-11)						
D23	3B		B30-1130-05	LED(SLH-38VC3) RED,P8 IND		
C1 ,2 C3 ,4 C5 ,6 C9 ,10 C11 ,12		*	CK45FB1H102K CC45FSL1H221J CE04DW1C100M C90-1640-05 CE04DW1C100M	CERAMIC 1000PF K CERAMIC 220PF J ELECTRO 10UF 16WV ELECTRO 100UF 10WV ELECTRO 10UF 16WV		
C13 C14 C15 C16 C17 ,18			CE04DW1A101M CE04DW1H2R2M CE04DW1E4R7M CE04CW1HR33M CE04DW1A101M	ELECTRO 100UF 10WV ELECTRO 2.2UF 50WV ELECTRO 4.7UF 25WV ELECTRO 0.33UF 50WV ELECTRO 100UF 10WV		
C19 C20 C21 C22 C23 ,24			CE04DW1H010M CE04DW1H2R2M CE04CW1HR15M CE04DW1A101M CC45FSL1H221J	ELECTRO 1.0UF 50WV ELECTRO 2.2UF 50WV ELECTRO 0.15UF 50WV ELECTRO 100UF 10WV CERAMIC 220PF J		
C25 ,26 C27 ,28 C29 ,30 C31 ,32 C33 ,34		*	CF92FV1H472J C90-1642-05 CC45FSL1H220J CC45FSL1H080D CC45FSL1H050C	MF 4700PF J ELECTRO 470UF 10WV CERAMIC 22PF J CERAMIC 8.0PF D CERAMIC 5.0PF C		
C35 ,36 C37 ,38 C39 C40 C41			CC45FSL1H060D CE04DW1C221M CE04DW1H010M CE04DW1A220M CE04DW1H010M	CERAMIC 6.0PF D ELECTRO 220UF 16WV ELECTRO 1.0UF 50WV ELECTRO 22UF 10WV ELECTRO 1.0UF 50WV		
C42 C43 C44 C45 C46 C47 ,48		*	CE04DW1E4R7M CE04DW1H221M CF92FV1H104J C90-1630-05 CC45FSL1H101J CC45SL1H1S1J	ELECTRO 4.7UF 25WV ELECTRO 220UF 50WV MF 0.10UF J NP-ELEC 1000UF 16WV CERAMIC 100PF J CERAMIC 150PF J		
JK1 JK2	2B 2B	*	E13-0241-05 E06-0816-05	PHONE JACK (RCA IN) REC/PLAY JACK (DIN IN)		
37	2B	*	J21-5142-04	JACK MOUNTING HARDWARE		
L1 ,2		*	L33-0344-05	CHOKER COIL		
R75 R79 R81 VR1		*	RD14DB2H100J RD14DB2H100J RD14DB2H562J R10-3030-05	SMALL-RD 10 J 1/2W SMALL-RD 10 J 1/2W SMALL-RD 5.6K J 1/2W POTENTIOMETER(INPUT SENSITIVITY)		
S1	2A	*	S31-4024-05	SLIDE SWITCH (SUB WOOFER)		
D1 ,2 D17 ,18 D19 ,20 D21 ,22 D25 ,26		*	1S5176 RD20JS(B) RD16JS(B) 1S5176 E-152	DIODE ZENER DIODE ZENER DIODE DIODE CONSTANT CURRENT DIODE		
IC1 IC2 Q1 ,2 Q3 Q4			KKM61 UPC4570C 2SD1302 DTC124EFF DTA124EFF	IC(ISOLATION AMP) IC(OP AMP X2) TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR		

E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

PARTS LIST

× New Parts

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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
05 .6 07 -10 011 -14 015 .16 017		*	2SK389 2SA992(F,E) 2SC2631(Q,R) 2SA1123(Q,R) 2SD1266(Q,P)	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
018 019			2SB772(Q,P) DTC124EFF	TRANSISTOR DIGITAL TRANSISTOR		
SCREW SET (N99-0267-05)						
			N46-5063-45	TAPPING SCREW		

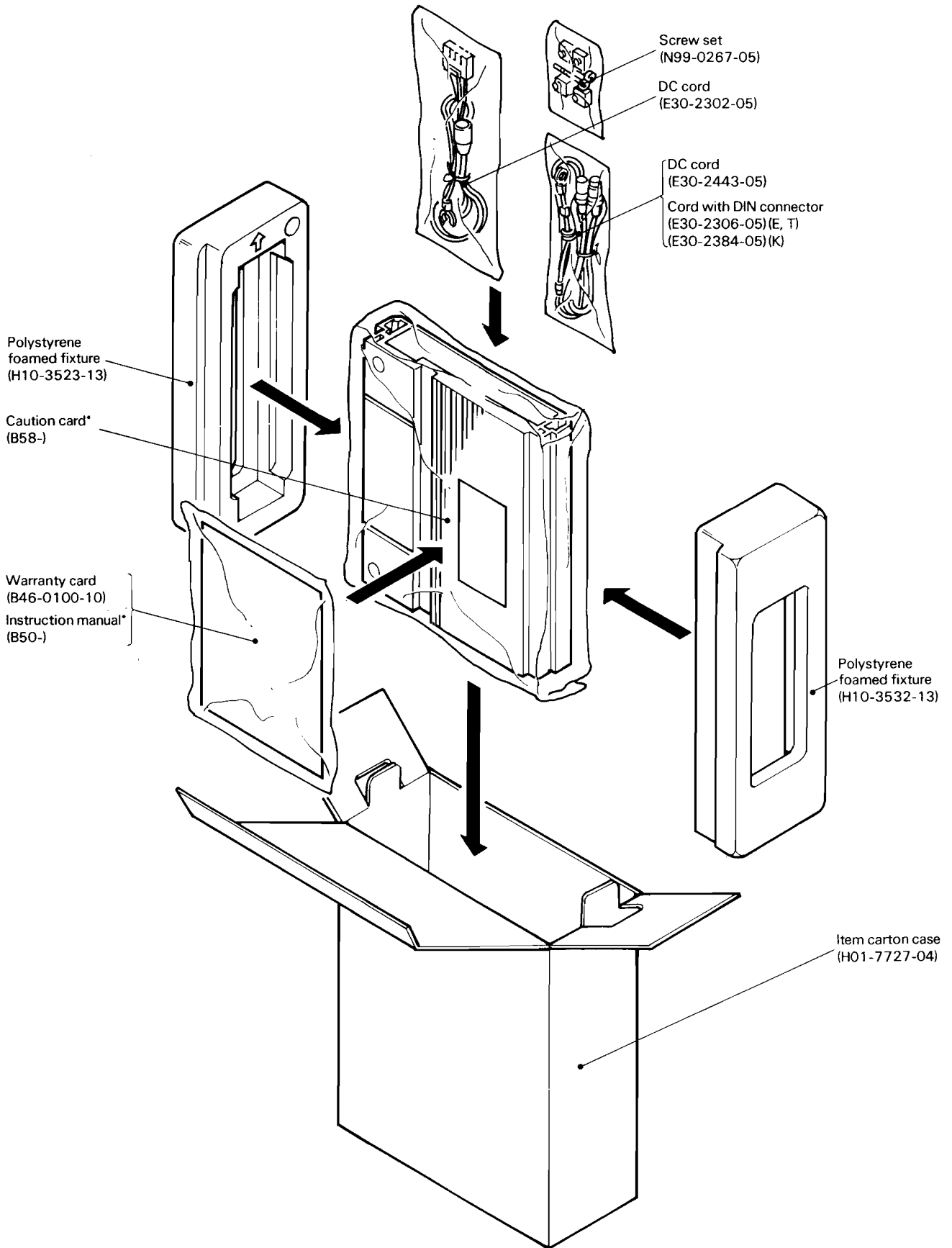
E: Scandinavia & Europe K: USA P: Canada W: Europe

U: PX(Far East, Hawaii) T: England M: Other Areas

UE: AAFES(Europe) X: Australia

 indicates safety critical components.

PACKING



* Refer to parts list on page 20.

SPECIFICATIONS

Specifications subject to change without notice

Main amp section

Maximum output power (1 kHz, 4 Ω)	140 W+140 W
Rated output power (10% THD, 1 kHz, 4 Ω)	95 W+95 W
(less than 0.5% THD, 20 Hz—20 kHz, 4 Ω)	75 W+75 W
Frequency response (—3 dB)	2 Hz—100 kHz
Input sensitivity (at rated output) Max	0.1 V
Min.	5.0 V
Signal-to-noise ratio	100 dB
Input impedance	10 k Ω
Damping factor (100 Hz)	More than 200
Sub woofer frequency	50 Hz, 100 Hz

General

Operating voltage (GND)	14.4 V (11—16 V)
Current consumption	20 A
Dimensions (W \times H \times D)	200 \times 60 \times 300 mm (7-7/8 \times 2-3/8 \times 11-13/16 in.)
Weight	4.0 kg (8.8 lb)

Note:

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

KENWOOD CORPORATION

Shionogi Shibuya Building, 17-5, 2-chome Shibuya, Shibuya-ku, Tokyo 150, Japan

KENWOOD U.S.A. CORPORATION

2201 East Dominguez Street, Long Beach, CA 90810;
550 Clark Drive, Mount Olive, NJ 07828, U.S.A.

KENWOOD ELECTRONICS CANADA INC.

P.O. Box 1075 959 Gana Court, Mississauga, Ontario, Canada L4T 4C2

KENWOOD ELECTRONICS BENELUX N.V.

Mechelsesteenweg 418 B-1930 Zaventem, Belgium

KENWOOD ELECTRONICS DEUTSCHLAND GMBH

Rembrücker-Str. 15, 6056 Heusenstamm, West Germany

TRIO-KENWOOD FRANCE S.A.

Hi-Fi-VIDEO-CAR Hi-Fi
13, Boulevard Ney, 75018 Paris, France

TRIO-KENWOOD U.K. LTD.

17 Bristol Road, The Metropolitan Centre, Greenford, Middx. UB6 8UP England

KENWOOD ELECTRONICS AUSTRALIA PTY. LTD.

4E Woodcock Place, Lane Cove, N.S.W. 2066, Australia

KENWOOD & LEE ELECTRONICS, LTD.

Wang Kee Building, 4th Floor, 34-37, Connaught Road, Central, Hong Kong