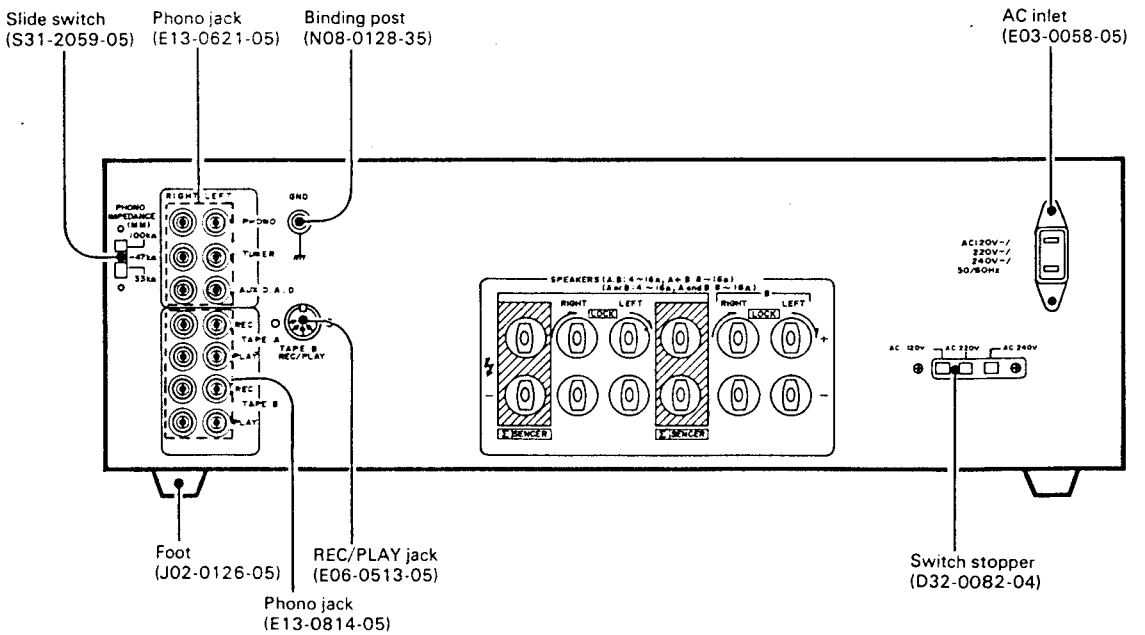
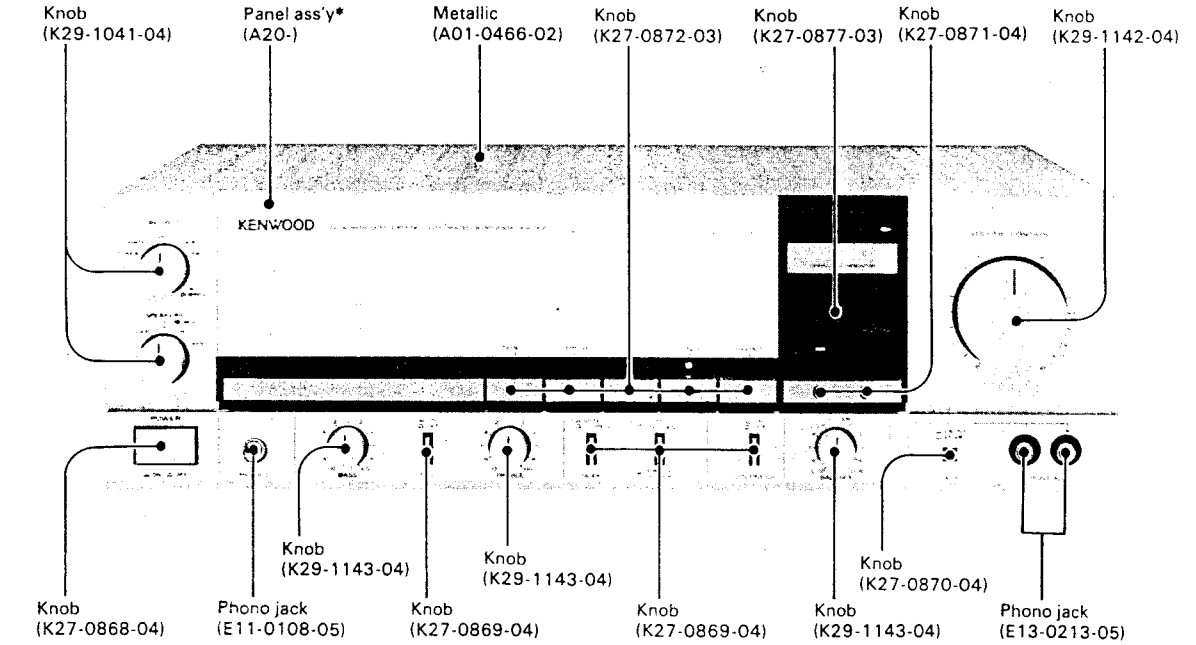


SERVICE MANUAL

KENWOOD

KA-990

NEW HIGH SPEED STEREO INTEGRATED AMPLIFIER



*Refer to Parts List on page 6.
Photo is E type.

ADJUSTMENT/REGLAGES/ABGLEICH

ADJUSTMENT

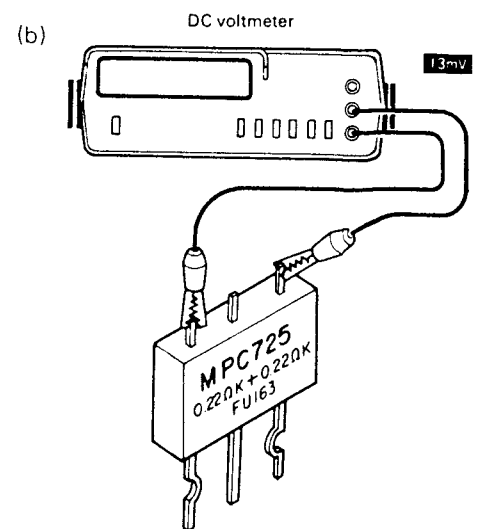
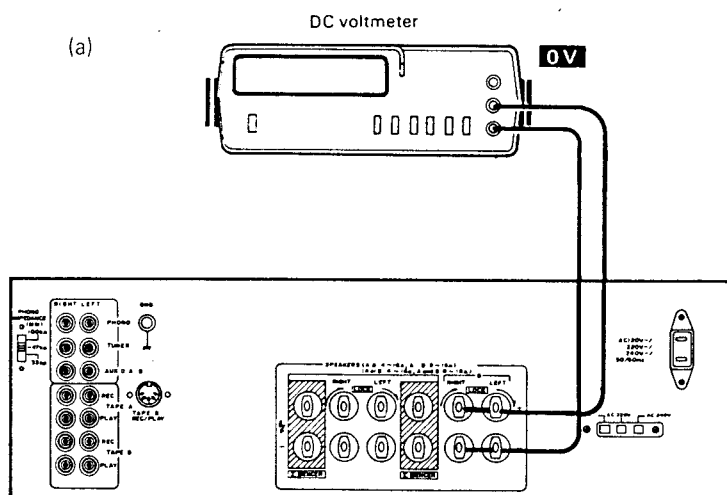
NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	OFFSET	—	Connect a DC voltmeter to SPEAKER B terminals.	SPEAKER B VOLUME 0	VR1 (L) VR2 (R)	0 V	(a)
2	IDLE CURRENT	—	Connect a DC voltmeter across R71 (L) R72 (R)	SPEAKER OFF VOLUME 0	VR3 (L) VR4 (R)	13 mV	(b)

REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINTS L'ALIGNMENT	ALIGNER POUR	FIG.
1	OFFSET	—	Brancher le voltmètre de CC aux bornes de sortie + et — (SPEAKER B)	SPEAKER B VOLUME 0	VR1 (L) VR2 (R)	0 V	(a)
2	REGLAGE DU COURANT DE POLARISATION	—	Conneter un voltmètre CC sur R71 (L) R72 (R)	SPEAKER OFF VOLUME 0	VR3 (L) VR4 (R)	13 mV	(b)

ABGLEICH

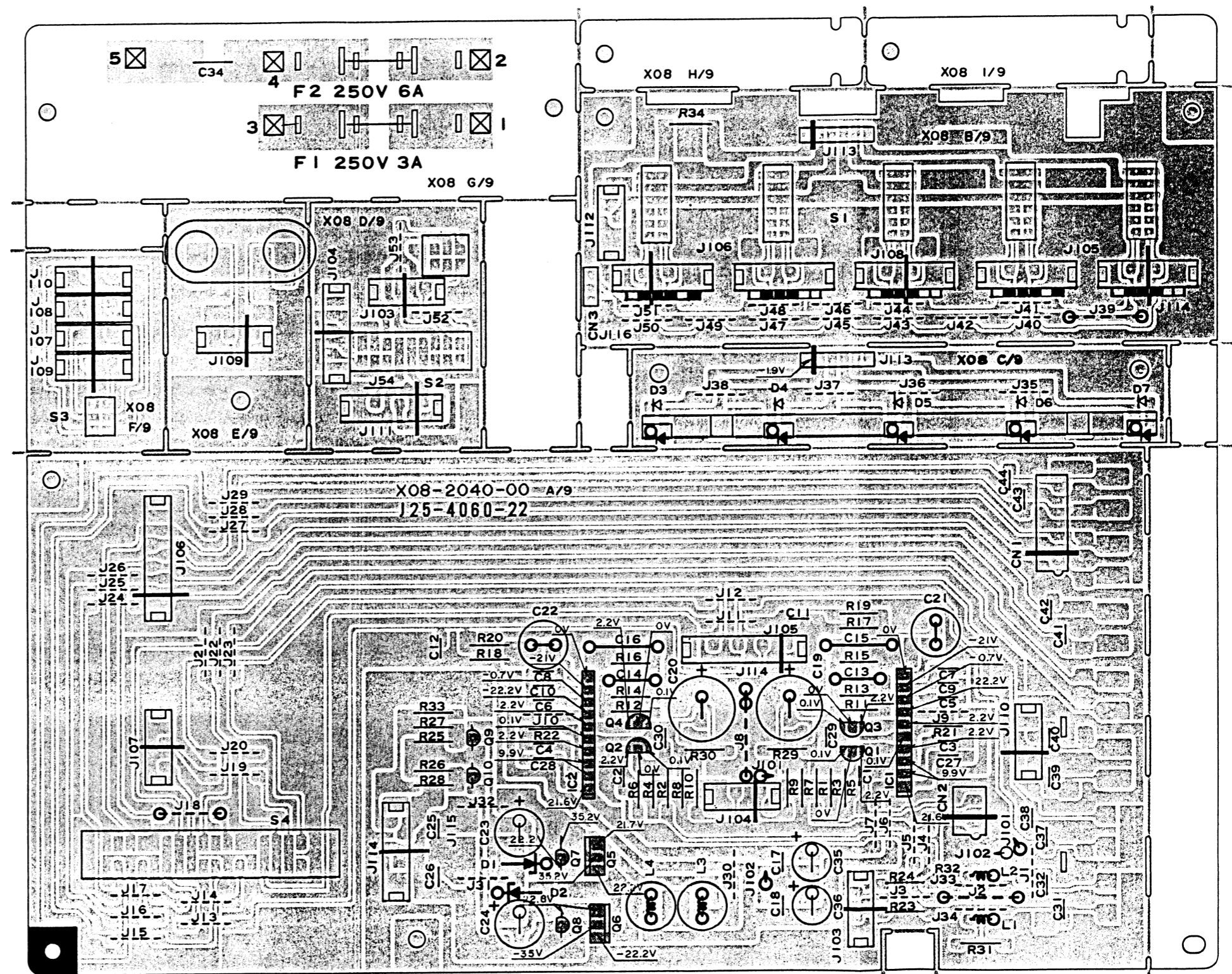
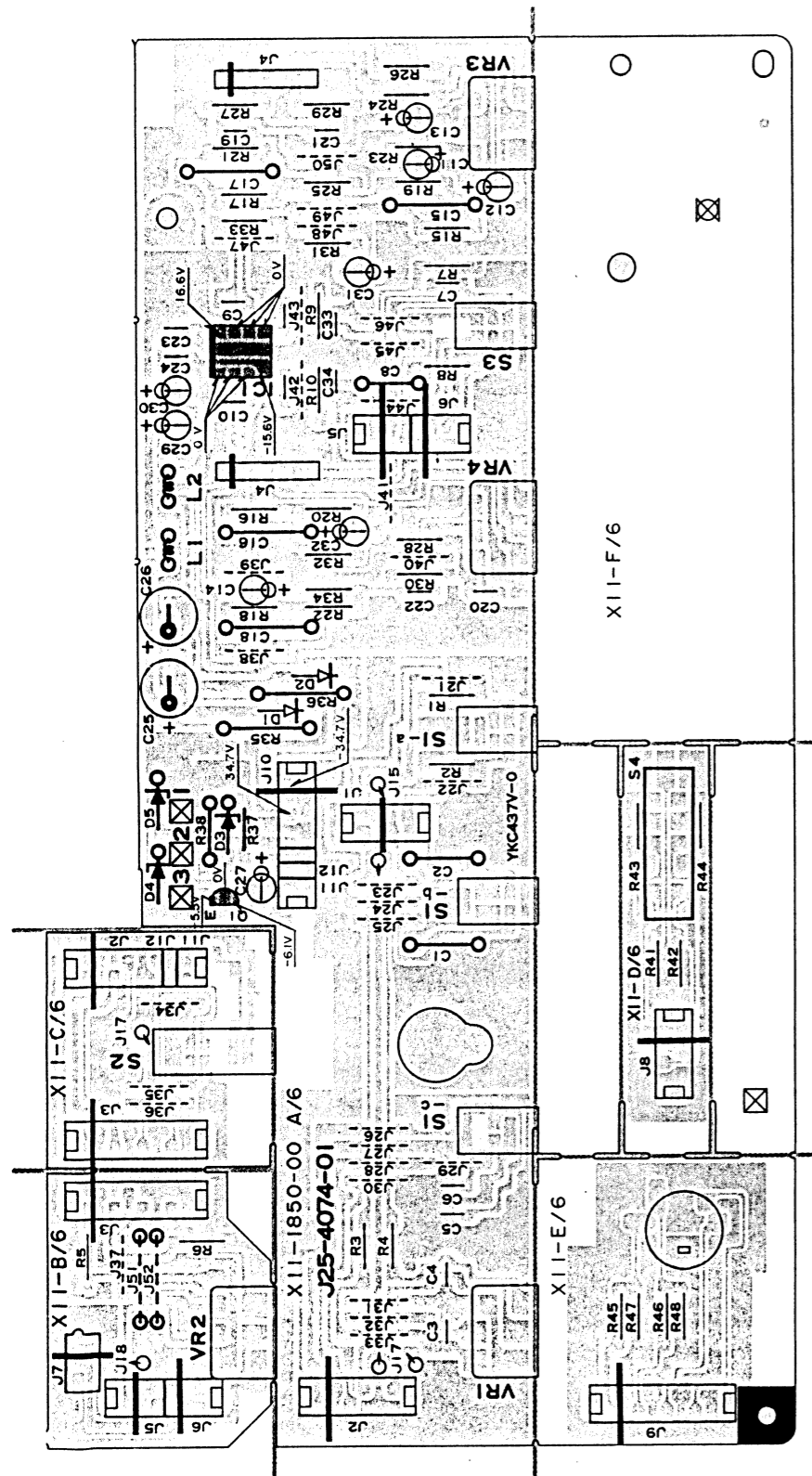
NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VORSTÄRKER EINSTELLUNG	ABGLEICH-PUNKTE	ABGEICHEN FÜR	ABB.
1	OFFSET	—	Einen Gleichspannungsmesser über SPEAKER B anschließen	SPEAKER B VOLUME 0	VR1 (L) VR2 (R)	0 V	(a)
2	LEERLAUF-STROM	—	Einen Gleichspannungsmesser über R71 (L) R72 (R) anschließen	SPEAKER OFF VOLUME 0	VR3 (L) VR4 (R)	13 mV	(b)



PC BOARD

Control (X11-1852-71) Component side view

Preamp (X08-2042-71) Component side view

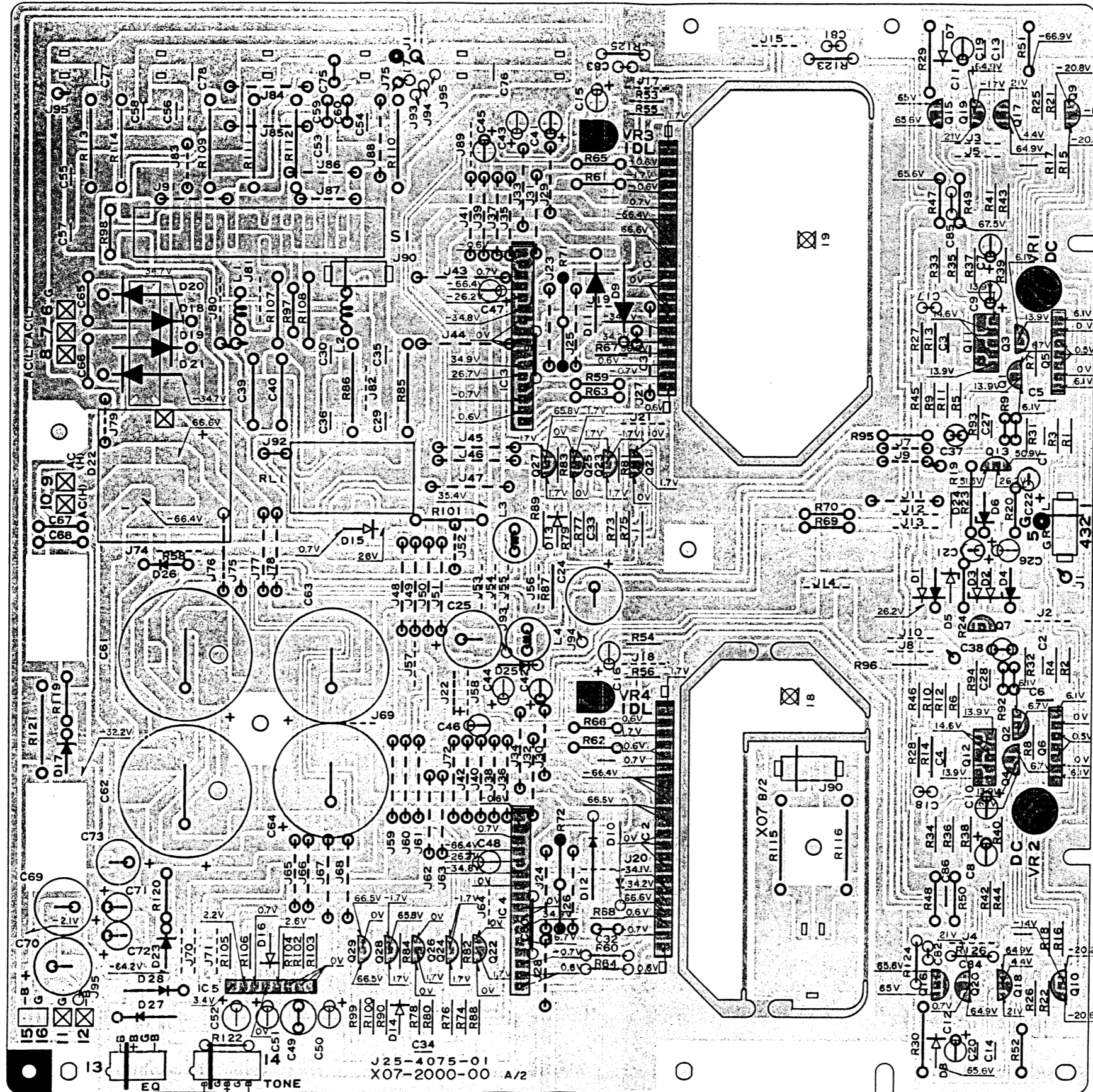


Refer to the schematic diagram for the values of capacitors and resistors.
The PC board drawing is viewed from the side easy to check.

KA-990 KA-990

PC BOARD

Power amplifier (X07-2002-71) Component side view



In this model, there are separated pc boards which was originally one. These separated pc boards can't be supplied independently.

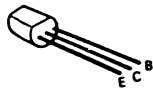
- ex. X09-1230-00 (A/3)
- X09-1230-00 (B/3)
- X09-1230-00 (C/3)

Parts no. of pc board Separated portion no.

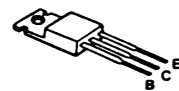
In the example shown above, separated portion can't be ordered independently. In case only A/3 was ordered, pc board ass'y of X09-123-00, which all A/3, B/3, C/3 included, will be shipped.

Refer to the schematic diagram for the values of capacitors and resistors. The PC board drawing is viewed from the side easy to check.

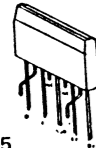
2SA1124
2SA988
2SA999
2SC1845
2SC2320
2SC2631



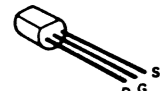
2SA957
2SB724
2SC2167
2SC2632
2SD762



μPA75V



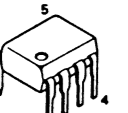
2SK105
2SK105A
2SK163
2SK170
2SK301



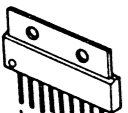
μPA68H



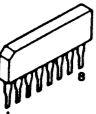
NJM2041D-D



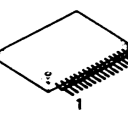
TA2010A



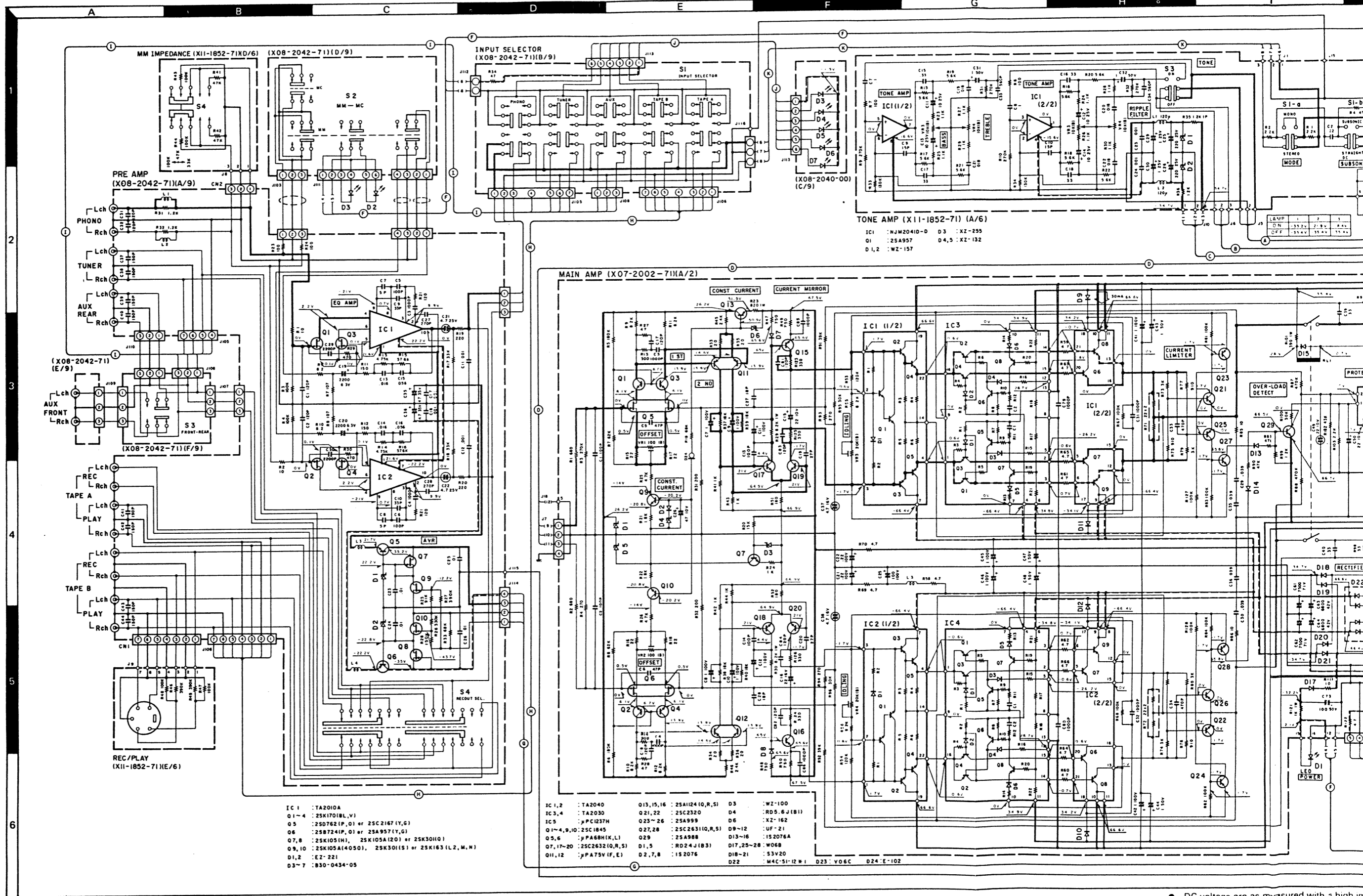
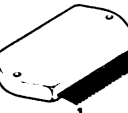
μPC1237H



TA2030



TA2040



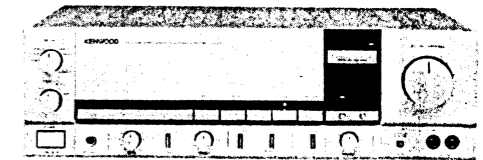
IC 1 : TA2010A
Q1-4 : 2SK170(B,L,V)
Q5 : 2SD762(P,Q) or 2SC2167(Y,G)
Q6 : 2SB724(P,Q) or 2SA957(Y,G)
Q7,8 : 2SK105(H,I), 2SK105A(20) or 2SK301(H,Q)
Q9,10 : 2SK105A(40,50), 2SK301(S) or 2SK163(L2,M,W)
D1,2 : EZ-221
Q3-7 : 830-0434-05

IC1,2 : TA2040
IC3,4 : TA2030
IC5 : μPC1237H
Q1-4,9,10 : 2SC1845
Q5,6 : μPA68H(K,L)
Q7,17-20 : 2SC2632(Q,R,S)
D1,5 : RD24(J,B3)
D12 : M4C-51-12 H1
Q13,15,16 : 2SA1124(I,R,S)
Q21,22 : 2SC2320
Q23-26 : 2SA999
Q27,28 : 2SC2631(Q,R,S)
Q29 : 2SA988
D1,5 : RD24(J,B3)
D2,7,8 : IS2076
D3 : WZ-100
D4 : RD5.6(J,B1)
D6 : XZ-162
D9-12 : UF-21
D13-16 : IS2076A
D17,25-28 : W068
D18-21 : 53V20
D22 : M4C-51-12 H1
D23 : V06C
D24 : E-102

• DC voltage are as measured with a high im
• Les tensions C.C. dov ent être mes.rées av
inhérentes aux appare ils et aux instruments
• Die angegebenen Glei chspannungswerte v
von Unterschieden zw ischen einze len Ins

NEW HIGH SPEED STEREO INTEGRATED AMPLIFIER

KA-990



SPECIFICATIONS

POWER AMPLIFIER SECTION

Power Output
105 watts* per channel minimum RMS, both channels driven at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.005% total harmonic distortion.

Total Harmonic Distortion
(20 Hz to 20 kHz, AUX input → SPEAKER output)
Rated power into 8 ohms 0.005%

Intermodulation Distortion (80 Hz: 7 kHz = 4:1 SMPTE)
Rated power into 8 ohms 0.005%

Transient Response
Rise Time 1.7 μs
Slew Rate ±100 V/μs
Damping Factor 1,000 at 100 Hz

Input Sensitivity/Impedance
PHONO MM 2.5 mV/33k ohms, 47k ohms, 100k ohms
PHONO MC 0.2 mV/100 ohms

TUNER, AUX, TAPE 150 mV/47k ohms
Signal-to-Noise Ratio (A weighted)

PHONO MM 88 dB for 2.5 mV input
94 dB for 5.0 mV input
100 dB for 10 mV input

PHONO MC 69 dB for 0.25 mV input
75 dB for 0.5 mV input

TUNER, AUX, TAPE 107 dB for 150 mV input
Maximum PHONO Input Level at 1,000 Hz
MM 240 mV (RMS), T.H.D. 0.005%
MC 18 mV (RMS), T.H.D. 0.005%

Frequency Response
PHONO, RIAA Standard
Curve 20 Hz to 20,000 Hz
±0.3 dB
DC COUPLED at ON DC to 200 kHz,
+0 dB, -3 dB

DC COUPLED at OFF 18 Hz to 200 kHz,
+0 dB, -3 dB

Tone Control
BASS ±10 dB at 100 Hz
TREBLE ±10 dB at 10 kHz

Loudness Control
(VOL. -30 dB) +10 dB at 100 Hz
Subsonic Filter 18 Hz, 6 dB/oct

Output Level/Impedance
TAPE REC Out (Pin) 150 mV/330 ohms

GENERAL

Power Consumption 700W (Rated output at 8 ohms)

AC Outlets Switched 2, Unswitched 1
Dimensions W: 440 mm (17-5/16")
H: 143 mm (5-5/8")
D: 383 mm (15-3/32")

Weight (Net) 10.7 kg (23.5 lb)

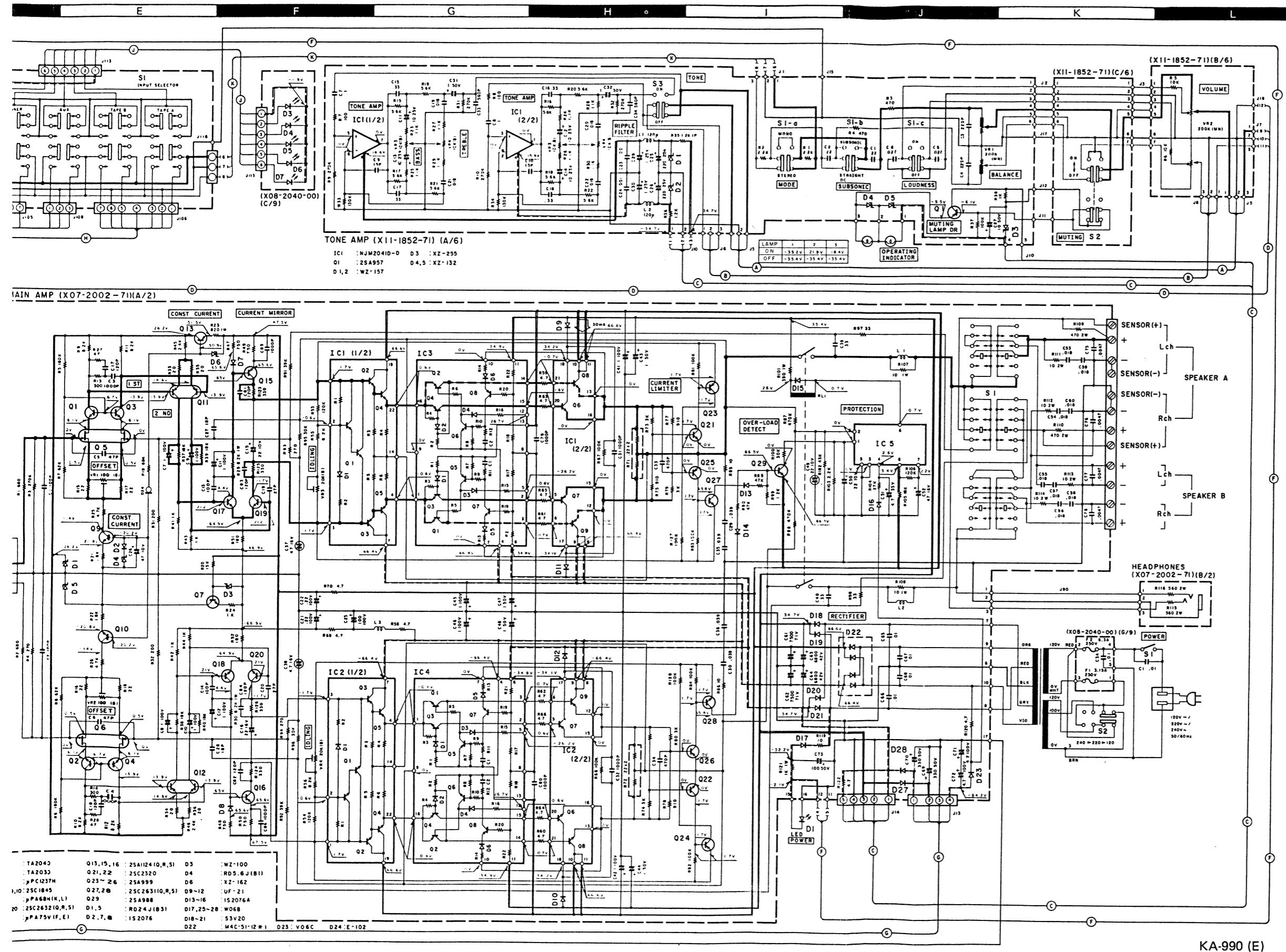
* Measure pursuant to Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier in U.S.A.

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Kenwood poursuit une politique de progrès constants en ce qui concerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

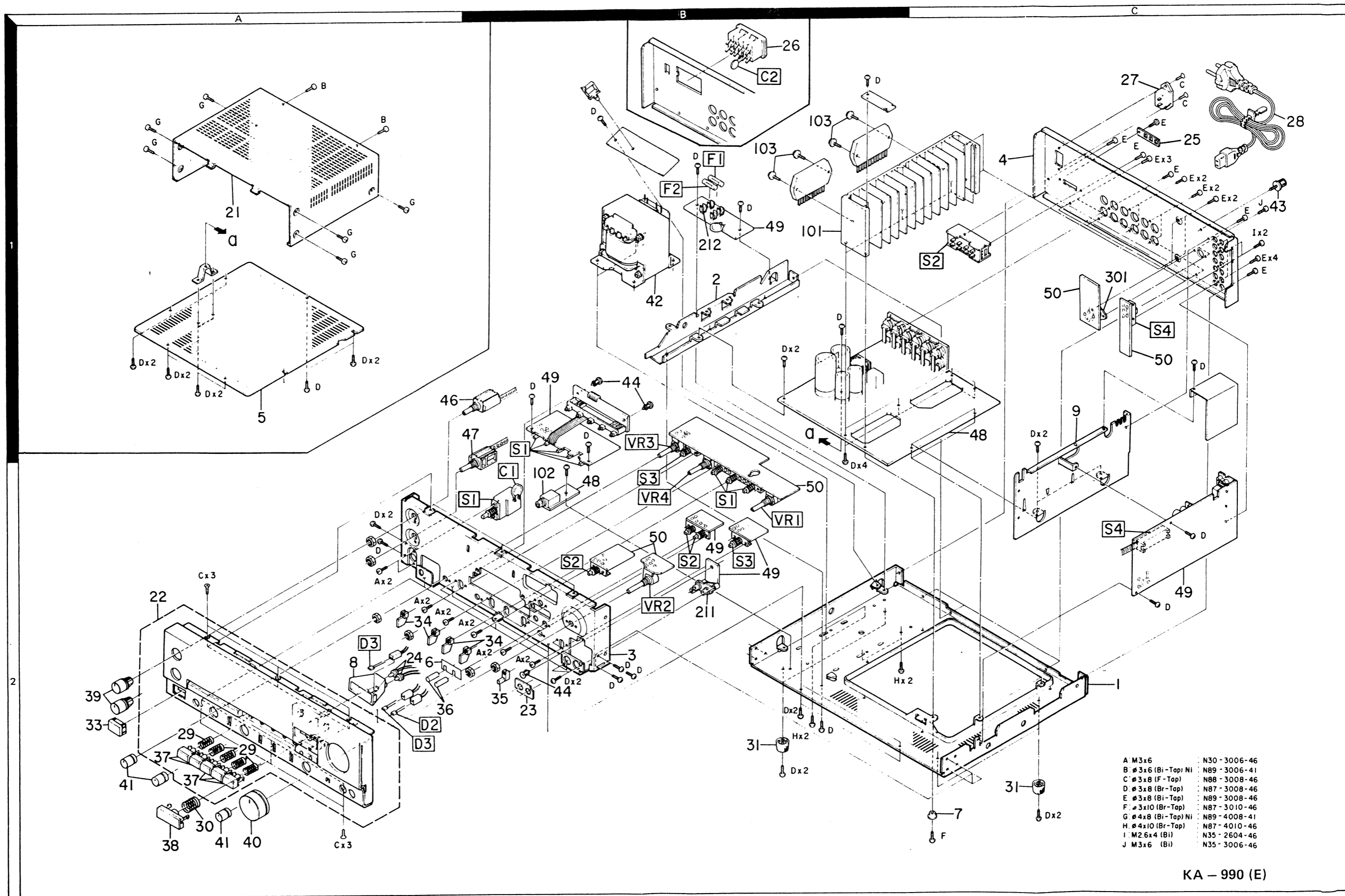
Kenwood strebt ständige Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

KA-990 (E)



- DC voltage 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 einem hochohmigen Voltmeter ohne Eingangssignal gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

EXPLODED VIEW



A	M3x6	N30 - 3006-46
B	#3x6 (Bi-Tap) Ni	N89 - 3006-41
C	#3x8 (F-Tap)	N88 - 3008-46
D	#3x8 (Br-Tap)	N87 - 3008-46
E	#3x8 (Bi-Tap)	N89 - 3008-46
F	#3x10 (Br-Tap)	N87 - 3010-46
G	#4x8 (Bi-Tap) Ni	N89 - 4008-41
H	#4x10 (Br-Tap)	N87 - 4010-46
I	M2.6x4 (Bi)	N35 - 2604-46
J	M3x6 (Bi)	N35 - 3006-46

KA - 990 (E)

KA-990

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.	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
KA-990						
1	2C		NO STOCK	CHASSIS		
2	1R		NO STOCK	FRAME		
3	2B		NO STOCK	SUB PANEL		
4	1C		NO STOCK	REAR PANEL	UMHUE	
5	1A		NO STOCK	BOTTOM PLATE		
6	2A		NO STOCK	SHIELDING SHEET (MM/MC KNOB)		
8	2A		NO STOCK	HOLDER (LAMP)		
9	1C		NO STOCK	MOUNTING HARDWARE (EQ PCB)		
21	1A	*	A01-0466-02	METALLIC CABINET		
22	2A	*	A20-3353-01	PANEL ASSY	UMHUE	
22	2A	*	A20-3353-01	PANEL ASSY	XE	
22	2A	*	A20-3354-01	PANEL ASSY	T	
23	2B	*	B03-0172-04	DRESSING PLATE (FRONT AUX)		
24	2A		B30-0433-15	LAMP (14V 0.08A) (MUTING)		
-			B46-0094-03	WARRANTY CARD	UHUE	
-			B46-0095-03	WARRANTY CARD	UHUE	
-			B46-0096-03	WARRANTY CARD	X	
-			B46-0097-03	WARRANTY CARD	T	
-			B46-0098-03	WARRANTY CARD	E	
-		*	B50-4534-00	INSTRUCTION MANUAL	UMHUE	
-		*	B50-4534-00	INSTRUCTION MANUAL	X	
-		*	B50-4535-00	INSTRUCTION MANUAL	MX	
-		*	B50-4536-00	INSTRUCTION MANUAL	M	
-		*	B50-4537-00	INSTRUCTION MANUAL	T	
-		*	B50-4538-00	INSTRUCTION MANUAL	E	
D1 -3	2A		B30-0321-05	LED (PR 7531K) (MM, MC, POWER)		
C1 .2	2B		C91-0023-05	CERAMIC 0.01UF AC250V	UMHUE	
C1 .2	2B		C91-0023-05	CERAMIC 0.01UF AC250V	X	
C1 .2	2B		C91-0079-05	CERAMIC 0.01UF AC125V	TE	
25	1C		D32-0082-04	SWITCH STOPPER		
26	1B		E03-0007-05	AC OUTLET	UMHUE	
26	1B		E03-0007-05	AC OUTLET	X	
27	1C		E03-0058-05	AC INLET		
28	1C		E30-0726-05	AC POWER CORD (INLET)	E	
28	1C		E30-0728-05	AC POWER CORD (INLET)	T	
28	1C		E30-0729-05	AC POWER CORD (INLET)	X	
28	1C	*	E30-0733-05	AC POWER CORD (INLET)	UMHUE	
29	2A		G01-0488-04	COMPRESSION SPRING (SELECTOR)		
30	2A	*	G01-0489-04	COMPRESSION SPRING (MUTING)		
-		*	H01-4360-04	ITEM CARTON CASE	T	
-		*	H01-4361-04	ITEM CARTON CASE	UMHUE	
-		*	H01-4361-04	ITEM CARTON CASE	XE	
-		*	H10-1631-02	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-1632-02	POLYSTYRENE FOAMED FIXTURE		
-			H20-0394-04	PROTECTION COVER		
-			H25-0078-04	PROTECTION BAG		
-			H25-0204-04	PROTECTION BAG		
31	2B, 2C		J02-0126-05	FONT		
-			J61-0045-15	WIRE BAND	TE	
-			J61-0307-05	WIRE BAND		

E: Scandinavia & Europe H: Audio Club K: USA P: Canada
 S: South Africa T: England U: PX (Far East, Hawaii)
 UE: AAFES (Europe) X: Australia 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
C27 ,28			C91-0168-05	POLYSTY 68PF K	XT	E
C29 ,30			C093FM1H393K	MYLAR 0.039UF K		
C31 ,32		*	CK45B2H102K	CERAMIC 1000PF K		
C33 ,34			CC45FSL1H471J	CERAMIC 470PF J		
C35 ,36			C093FM1H393K	MYLAR 0.039UF K		
C37 ,38		*	CE04BW1C4R7MEL	NP-ELEC 4.7UF 16WV		
C39 ,40			C093M1H334K	MYLAR 0.33UF K		
C41 ,42			CE04W2A010MEL	ELECTRO 01UF 100WV		
C43 ,44			CE04FW1H010MEL	ELECTRO 01UF 50WV		
C45 ,46			CE04W2A010MEL	ELECTRO 01UF 100WV		
C47 ,48			CE04FW1H010MEL	ELECTRO 01UF 50WV		
C49			CE04BW1A220MEL	ELECTRO 22UF 10WV		
C50			CE04FW1A220MEL	ELECTRO 22UF 10WV		
C51			CE04FW1V4R7MEL	ELECTRO 4.7UF 35WV		
C52			CE04GW1C470MEL	LL-ELEC 47UF 16WV		
C53 -56			C093FM1H183K	MYLAR 0.018UF K	UMHUE	XT
C53 -56			C093FM1H183K	MYLAR 0.018UF K		
C53 -58			C093FM1H183K	MYLAR 0.018UF K	E	
C59 ,60			C093FM1H183K	MYLAR 0.018UF K	E	
C61 ,62			C90-0567-05	ELECTRO 7500UF 71WV		
C63 ,64			C90-0468-05	ELECTRO 6800UF 42WV		
C65 -68			CK45E2H103P	CERAMIC 0.01UF P		
C69 ,70			CE04W1H331MEL	ELECTRO 330UF 50WV		
C71 ,72			CE04W2A4R7MEL	ELECTRO 4.7UF 100WV		
C73			CE04W1H101MEL	ELECTRO 100UF 50WV		
C75		*	CK45FB1H472K	CERAMIC 4700PF K	E	E
C76 -78		*	CK45FB1H472K	CERAMIC 4700PF K		
C79 ,80		*	CK45B2H102K	CERAMIC 1000PF K		
C81 -84			CC45SL1H121J	CERAMIC 120PF J		
C85 ,86			CK45B1H102K	CERAMIC 0.001UF K		
102	2B	*	E11-0108-05	PHONE JACK		
-			E40-0456-05	SOCKET FOR PIN ASSY (4PIN)		
-			E40-0556-05	SOCKET FOR PIN ASSY (5PIN)		
-			J61-0045-15	WIRE BAND		
L1 ,2			L39-0085-05	PHASE-COMPENSATION COIL		
L3			L33-0275-05	CHOKO COIL	E	UMHUE
L3 ,4			L33-0275-05	CHOKO COIL		
L3 ,4			L33-0275-05	CHOKO COIL	XT	
103	1B	*	N09-1236-05	TAPPING SCREW(POWER TR.)		
R20		*	RD14GB2E753JTS	FL-PROOF RD 75K J 2E		
R23			RS14GB3A821JMA	FL-PROOF RS 820 J 3A		
R24		*	RD14GB2E102JTS	FL-PROOF RD 1.0K J 2E		
R29 ,30			RS14GB3A822JMA	FL-PROOF RS 8.2K J 3A		
R47 -50		*	RD14GB2E751JTS	FL-PROOF RD 750 J 2E		
R51 ,52			RD14GB2E181JTS	FL-PROOF RD 180 J 2E	E	UMHUE
R58 -66			RD14GB2E4R7JTS	FL-PROOF RD 4.7 J 2E		
R59 -66			RD14GB2E4R7JTS	FL-PROOF RD 4.7 J 2E	XT	
R59 -66			RD14GB2E4R7JTS	FL-PROOF RD 4.7 J 2E	E	
R69 ,70			RD14GB2E4R7JTS	FL-PROOF RD 4.7 J 2E		
R71 ,72			R90-0187-05	MULTI-COMP 0.22X2 K 3H		
R85 ,86			RS14GB3D100JMA	FL-PROOF RS 10 J 3D		
R91 ,92			RN92BC2E393F	RN 39K F 2E		
R97 ,98			RD14GB2E330JTS	FL-PROOF RD 33 J 2E		

E: Scandinavia & Europe H: Audio Club K: USA
 S: South Africa T: England U: PX(Far East, Hawaii)
 UE: AAFES(Europe) X: Australia M: Other Areas

P: Canada

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R101 R107.108 R109.110 R111-114 R115.116			RS14GB3A391JMA RS14GB3A100JMA RS14GB3D471JMA RS14GB3D100JMA RS14GB3D561JMA	FL-PROOF RS 390 J 3A FL-PROOF RS 10 J 3A FL-PROOF RS 470 J 3D FL-PROOF RS 10 J 3D FL-PROOF RS 560 J 3D		
R119 R120 R121 R122 R123-126			RD14GB2E100JTS RD14GB2E4R7JTS RS14GB3D102JMA RD14GB2E4R7JTS RD14GB2E331JTS	FL-PROOF RD 10 J 2E FL-PROOF RD 4.7 J 2E FL-PROOF RS 1.0K J 3D FL-PROOF RD 4.7 J 2E FL-PROOF RD 330 J 2E	E	
VR1 .2 VR3 .4			R12-0502-05 R12-3301-05	TRIMMING PST. 100 TRIMMING PST. 20K		
RL1 S1		*	S51-2045-05 S90-0062-05	MAGNETIC RELAY SLIDE SWITCH (SPEAKERS)		
D1 D2 D3 D4 D5			RD24J(B3) 1S2076 WZ-100 RDS. 6J(B1) RD24J(B3)	ZENER DIODE DIODE ZENER DIODE ZENER DIODE ZENER DIODE		
D6 D7 .8 D9 -12 D13 -16 D17		*	XZ-162 1S2076 UF-21 1S2076A W06B	ZENER DIODE DIODE DIODE DIODE DIODE		
D18 -21 D22 D23 D24 D25 -28		*	S3V20 M4C-51-12*1 V06C E-102 W06B	DIODE DIODE DIODE CONSTANT CURRENT DIODE DIODE	UMHUE	
D25 -26 D27 .28 IC1 .2 IC3 .4 IC5		*	W06B W06B TA2040 TA2030 UPC1237H	DIODE DIODE IC (POWER) IC (SWITCHING) IC (PROTECTION)	XT E	
Q1 -4 Q5 .6 Q7 Q9 .10 Q11 .12		*	2SC1845 UPA68H(K,L) 2SC2632(Q,R,S) 2SC1845 UPA75V(F,E)	TRANSISTOR DUAL FET TRANSISTOR TRANSISTOR DUAL TRANSISTOR		
Q13 Q15 .16 Q17 -20 Q21 .22 Q23 -26			2SA1124(Q,R,S) 2SA1124(Q,R,S) 2SC2632(Q,R,S) 2SC2320 2SA999	TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR TRANSISTOR		
Q27 .28 Q29			2SC2631(Q,R,S) 2SA988	TRANSISTOR TRANSISTOR		
PREAMP (X08-2042-71)						
D3 -7		*	B30-0434-05	LED (SLP-1752-50) (SELECTOR)		
C1 .2 C1 .2 C1 .2 C3 .4 C5 .6		*	CC45FSL1H121J CC45FSL1H121J CC45FSL1H151J CK45FB1H102K CC45FSL1H101J	CERAMIC 120PF J CERAMIC 120PF J CERAMIC 150PF J CERAMIC 0.001UF K CERAMIC 100PF J	UMHUE XT E	

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CONTROL (X11-1852-71)						
C1	.2		CO93M1H224J	MYLAR 0.22UF J		
C3	.4		CC45FSL1H221J	CERAMIC 220PF J		
C5	.6		CO93FM1H273K	MYLAR 0.027UF K		
C7		*	CO93FM1H104J	MYLAR 0.10UF J		
C8			CO93M1H104J	MYLAR 0.1UF J		
C9	.10		CC45FSL1H150J	CERAMIC 15PF J		
C11	-14		CE04FW1E100M	ELECTRO 10UF 25WV		
C15	-18		CO93M1H334J	MYLAR 0.33UF J		
C19	-22		CO93FM1H163J	MYLAR 0.016UF J		
C23	.24		CO93FM1H102K	MYLAR 1000PF K		
C25	.26	*	CE04FW1E221M	ELECTRO 220UF 25WV		
C27			CE04FW1H100M	ELECTRO 10UF 50WV		
C29	.30		CE04FW1H010M	ELECTRO 1UF 50WV		
C31			CE04W1H010M	ELECTRO 1UF 50WV		
C32			CE04FW1H010M	ELECTRO 1UF 50WV		
C33	.34		CK45FB1H561K	CERAMIC 560PF K		
301	1C		E06-0513-05	REC/PLAY JACK	TE	
-			E40-0356-05	SOCKET FOR PIN ASSY		
-			J61-0045-15	WIRE BAND		
L1	.2		L33-0275-05	CHOKE COIL		
R35	.36		RS14GB3A122J	FL-PROOF RS 1.2K J 3A		
R37			RD14BB2E104J	RD 100K J 2E		
R38			RD14GB2E102J	FL-PROOF RD 1K J 2E		
VR1	2B	*	R06-5098-05	VARIABLE RESISTOR (BALANCE)		
VR2	2B	*	R06-5099-05	VARIABLE RESISTOR (VOLUME)		
VR3	.4	1B	R06-3032-05	VARIABLE RESISTOR (BASS, TREBLE)		
S1	2B	*	S42-3063-05	MULT. PUSH SW (MODE, SUB, LOUD)		
S2	2B	*	S40-4045-05	PUSH SWITCH (MUTING)		
S3	2B		S40-2122-05	PUSH SWITCH (TONE)		
S4	1C		S31-2059-05	SLIDE SWITCH (PHONE IMPEDANCE)		
D1	.2		WZ-157	ZENER DIODE		
D3		*	XZ-255	ZENER DIODE		
D4	.5		XZ-132	ZENER DIODE		
IC1			NJM2041D-D	IC (TONE AMP)		
Q1			2SA957	TRANSISTOR (MUTING LAMP DR.)		

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C7 .8			CC45FSL1H050C	CERAMIC 05PF C		
C9 .10			CC45FSL1H330J	CERAMIC 33PF J		
C11 .12			CO93FM1H102K	MYLAR 1000PF K		
C13 .14		*	CO93AP2A163GMA	MYLAR 0.016UF G		
C15 .16			CO93AP2A563GMA	MYLAR 0.056UF G		
C17 .18			CO93FM1H102K	MYLAR 1000PF K		
C19 .20			CE04W0J222MEL	ELECTRS 2200UF 6.3WV		
C21 .22			CE04BW1E4R7MEL	NP-ELEC 4.7UF 25WV		
C23 .26			CO93FM1H103K	MYLAR 0.01UF K		
C27 .28			CC45FSL1H271J	CERAMIC 270PF J		
C29 .30		*	CK45FB1H222K	CERAMIC 2200PF K	E	
C31 .32		*	CC45FSL1H121J	CERAMIC 120PF J	E	
C34			C91-0079-05	CERAMIC 0.01UF AC125V	TE	
C35 .36			CE04FW1V4R7MEL	ELECTRS 4.7UF 35WV		
C37 .44			CC45FSL1H151J	CERAMIC 150PF J	E	
211	2B		E13-0213-05	PHONE JACK (FRONT AUX)		
-	2C	*	E13-0621-05	PHONE JACK (PHONE, TUNER, AUX)		
-	2C	*	E13-0814-05	PHONE JACK (TAPE A, TAPE B)		
-			E40-0327-05	PIN ASSY (3PIN)		
-			E40-0356-05	SOCKET FOR PIN ASSY (3PIN)		
-			E40-0756-05	SOCKET FOR PIN ASSY (7PIN)	E	
F1	1B		F05-3022-05	FUSE 3A 250V	UMHUE	
F1	1B		F05-3022-05	FUSE 3A 250V	X	
F1	1B		F05-3122-05	FUSE (SEMKN) F3.15A 250V	TE	
F2	1B		F05-6021-05	FUSE 6A 250V	UMHUE	
F2	1B		F05-6021-05	FUSE 6A 250V	X	
F2	1B		F05-6322-05	FUSE (SEMKN) F6.3A 250V	TE	
212	1B		J13-0041-05	FUSE CLIP	UMHUE	
212	1B		J13-0041-05	FUSE CLIP	X	
212	1B		J13-0054-05	FUSE CLIP	TE	
L1 .2			L40-1011-43	SMALL FIXED INDUCTOR 100UH, K	E	
L3 .4			L33-0275-05	CHECK COIL		
R7 .8			RN14BK2E1070FHD	RN 107 F 2E		
R13 .14		*	RN14BK2E4751FHD	RN 4.75K F 2E		
R15 .16		*	RN14BK2E5762FHD	RN 57.6K F 2E		
S1	1B	*	S42-5033-05	MULT. PUSH SWITCH (SELECTOR)		
S2	2B	*	S42-2077-05	MULT. PUSH SWITCH (MM/MC)		
S3	2B		S40-2122-05	PUSH SWITCH (FRONT/REAR)		
S4	2C		S90-0038-05	SLIDE SWITCH (REC OUT)		
D1 .2		*	RD22J(B2)	ZENER DIODE		
1C1 .2			TA2010A	IC (EQ AMP)		
Q1 -4			2SK170(BL, V)	FET		
Q5			2SC2167(Y, G)	TRANSISTOR		
Q5			2SD762(P, Ø)	TRANSISTOR		
Q6			2SA957(Y, G)	TRANSISTOR		
Q6			2SB724(P, Ø)	TRANSISTOR		
Q7 .8			2SK105(H)	FET		
Q7 .8			2SK105A(2)	FET		
Q7 .8			2SK301(O)	FET		
Q9 .10		*	2SK105A(4, 5)	FET		
Q9 .10		*	2SK163(L2, M, N)	FET		
Q9 .10		*	2SK301(S)	FET		

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33	2A	*	K27-0868-04	KNØB (BTN) (POWER)		
34	2A, 2B	*	K27-0869-04	KNØB (BTN) (TONE, MODE, SUB, LOUD)		
35	2B	*	K27-0870-04	KNØB (BTN) (FRONT/REAR)		
36	2A	*	K27-0871-04	KNØB (BTN) (MM, MC)		
37	2A	*	K27-0872-03	KNØB (BTN) (SELECTØR)		
38	2A	*	K27-0877-03	KNØB (BTN) (MUTING)		
39	2A	*	K29-1041-04	KNØB (REC ØUT, SPEAKERS)		
40	2A	*	K29-1142-04	KNØB (VOLUME CONTROL)		
41	2A	*	K29-1143-04	KNØB (BASS, TREBLE, BALANCE)		
42	1B	*	L01-2846-05	POWER TRANSFORMER	UMHUE	
42	1B	*	L01-2846-05	POWER TRANSFORMER	X	
42	1B	*	L01-2847-05	POWER TRANSFORMER	TE	
43	1C		N08-0128-35	BINDING ØSST (GND)		
44	1B		N29-0035-05	PUSH RIVET		
46	1A	*	S90-0060-05	REMOTE SWITCH SHAFT (REC ØUT)		
47	1A	*	S90-0061-05	REMOTE SWITCH SHAFT (SPEAKERS)		
51	2B	*	S40-1014-05	PUSH SWITCH (POWER TYPE)	UMHUE	
51	2B	*	S40-1014-05	PUSH SWITCH (POWER TYPE)	X	
51	2B	*	S40-1047-05	PUSH SWITCH (POWER TYPE)	TE	
52	1C		S31-2046-05	SLIDE SWITCH (POWER TYPE)		
48	1C, 2B	*	X07-2000-00	POWER AMPLIFIER UNIT	UMHUE	
48	1C, 2B	*	X07-2000-00	POWER AMPLIFIER UNIT	XT	
48	1C, 2B	*	X07-2002-71	POWER AMPLIFIER UNIT	E	
49	2B, 3C	*	X08-2040-51	PREAMPLIFIER UNIT	T	
49	2B, 3C	*	X08-2040-81	PREAMPLIFIER UNIT	UMHUE	
49	2B, 3C	*	X08-2040-81	PREAMPLIFIER UNIT	X	
49	2B, 3C	*	X08-2042-71	PREAMPLIFIER UNIT	E	
50	2B	*	X11-1850-51	CONTROL UNIT	T	
50	2B	*	X11-1850-81	CONTROL UNIT	UMHUE	
50	2B	*	X11-1850-81	CONTROL UNIT	X	
50	2B	*	X11-1852-71	CONTROL UNIT	E	
POWER AMPLIFIER (X07-2002-71)						
101	1B		NØ STØCK	HEAT SINK		
-	1C		NØ STØCK	LOCK TERMINAL BOARD (SPEAKER B)		
-	1C		NØ STØCK	LOCK TERMINAL BOARD (SPEAKER A)		
C1 ,2			CC45FSL1H101J	CERAMIC 100PF J	E	
C1 ,2			C91-0088-05	PØLYSTY 100PF K	UMHUE	
C1 ,2			C91-0088-05	PØLYSTY 100PF K	XT	
C3 ,4			CK45FB1H102K	CERAMIC 0.001UF K		
C5 ,6			CC45FSL1H470J	CERAMIC 47PF J	E	
C7 -12			CE04W2A010MEL	ELECTRØ 01UF 100WV		
C13 ,14			CC45FSL1H101J	CERAMIC 100PF J		
C15 ,16			CE04FW1A220MEL	ELECTRØ 22UF 10WV		
C17 ,18			CC45SL1H121J	CERAMIC 120PF J		
C19 ,20		*	CC45SL2H270J	CERAMIC 27PF J		
C21 ,22			CE04W2AR22MEL	ELECTRØ 0.22UF 100WV		
C24 ,25			CE04W2A331MEL	ELECTRØ 330UF 100WV	UMHUE	
C24 ,25			CE04W2A331MEL	ELECTRØ 330UF 100WV	XT	
C25		*	CE04W2A101MEL	ELECTRØ 100UF 100WV	E	
C26			CE04FW1A470MEL	ELECTRØ 47UF 10WV		
C27 ,28		*	CC45FSL1H180J	CERAMIC 18PF J	E	
C27 ,28			C91-0168-05	PØLYSTY 68PF K	UMHUE	

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