

SPECIFICATIONS

Audio Section  
Rated Power Output

50 watts per channel minimum RMS, both channels driven, at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.09% total harmonic distortion.

Maximum Continuous power output (IEC/NF) from 63 Hz to 12,500 Hz, 0.7% T.H.D.

Both Channels Driven  
8 ohms 55 W - 55 W  
6 ohms 60 W - 60 W  
4 ohms 75 W - 75 W  
2 ohms 100 W - 100 W

Music Power Output at 8 ohms

Total Harmonic Distortion  
LINE input to SPEAKER output  
(20 Hz to 20,000 Hz) 0.09% at rated power into 8 ohms  
(20 Hz to 20,000 Hz) 0.03% at 1/2 rated power into 8 ohms  
(1 kHz) 0.004% at 1/2 rated power into 8 ohms

Intermodulation Distortion  
(60 Hz; 7 kHz = 4:1) 0.03% at rated power into 8 ohms  
Damping Factor 40 (50 Hz at 8 ohms)  
Power Bandwidth 10 Hz to 100 kHz at 0.2% T.H.D. 8 ohms

Frequency Response 10 Hz to 70 kHz, +0 dB, -3 dB  
Input Sensitivity/Impedance  
Phono 2.5 mV/47 k ohms  
Tuner, Tape play, CD/AUX 150 mV/27 k ohms

Note:

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

Signal-to-Noise Ratio (IHF-A) (IHF-66)  
Phono 75 dB for 2.5 mV input  
81 dB for 5.0 mV input  
Tuner, Tape play, CD/AUX 100 dB  
Signal to Noise Ratio Unweighted at 50 mW (DIN)  
Phono 57 dB  
Tuner, Tape play, CD/AUX 59 dB  
Channel Separation at 1 kHz (DIN)  
Phono (Terminated with 2.2 kohms) 55 dB  
Tuner, Tape play, CD/AUX (Terminated with 47 kohms + 250 pF) 44 dB  
Phono Input Capacity (DIN) 220 pF  
Phono Maximum Input Level 170 mV, T.H.D. 0.05% at 1 kHz

Output Level/Impedance  
Tape REC (Pin) 150 mV/330 ohms  
Phono Frequency Response RIAA standard curve ±0.5 dB  
120 Hz to 20 kHz

Tone Control  
Bass ±9 dB at 100 Hz  
Treble ±8 dB at 10 kHz  
Loudness Control +8 dB at 100 Hz  
(at -30 dB VOLUME Level)

General  
Power Consumption 3 A (U.S.A. & Canada models)  
200 W (Other countries)  
Dimensions W: 420 mm (16-9/16")  
H: 110 mm (4-5/16")  
D: 277 mm (10-7/8")

Weight (Net) 6.1 kg (13.4 lb)

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 et ce qui concerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

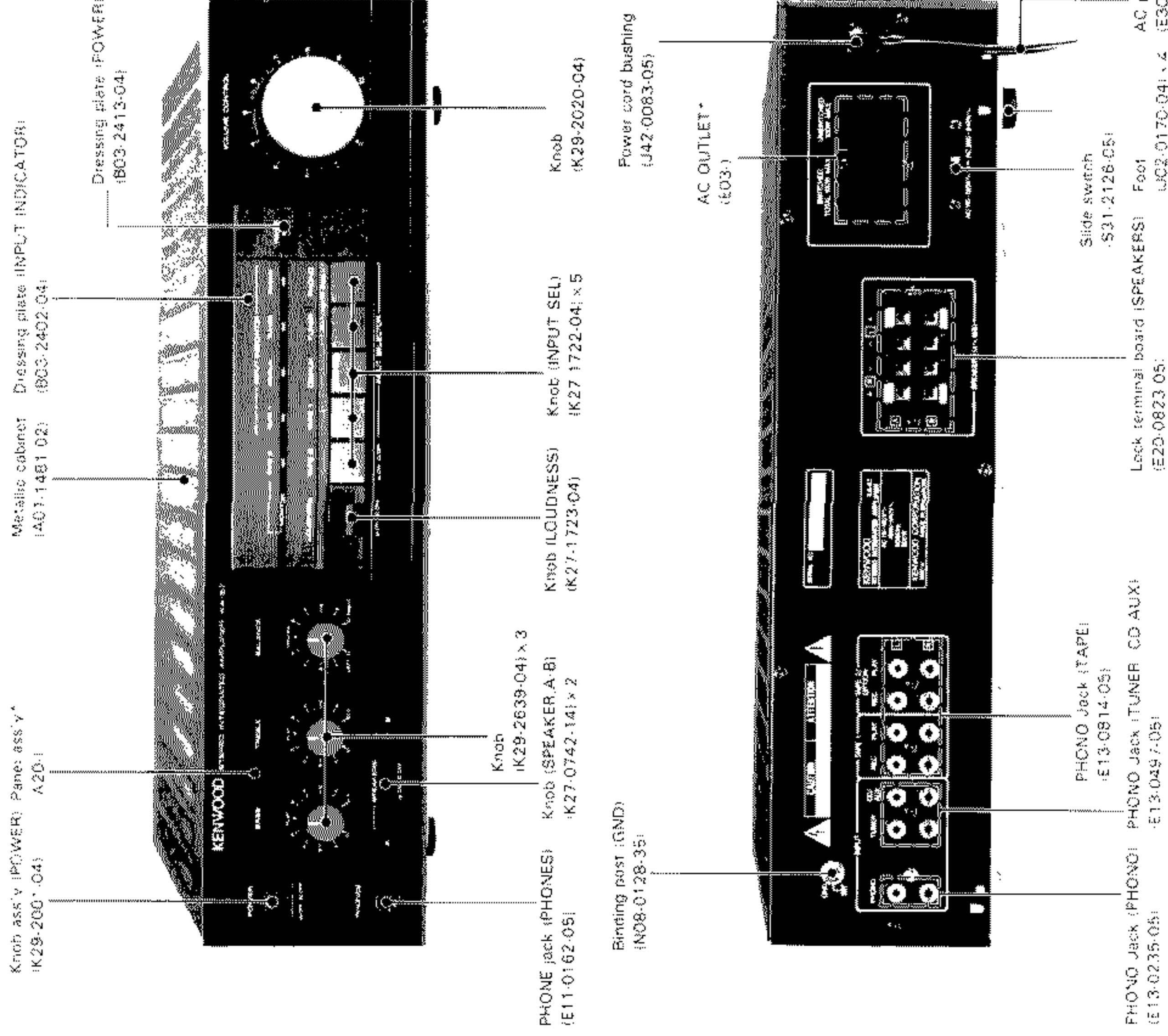
Kenwood strebt ständige, Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

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STEREO INTEGRATED AMPLIFIER  
KA-57  
SERVICE MANUAL

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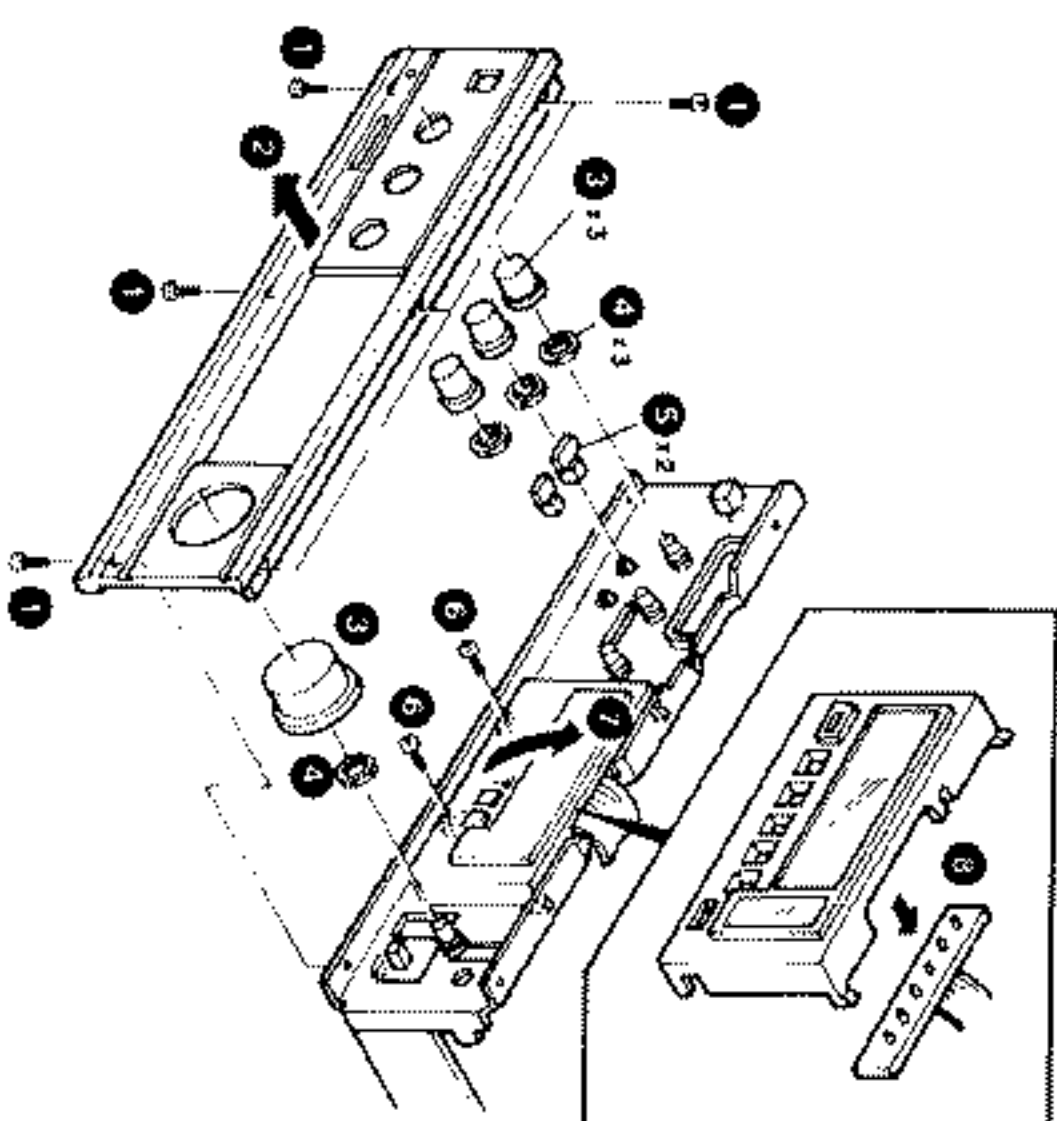


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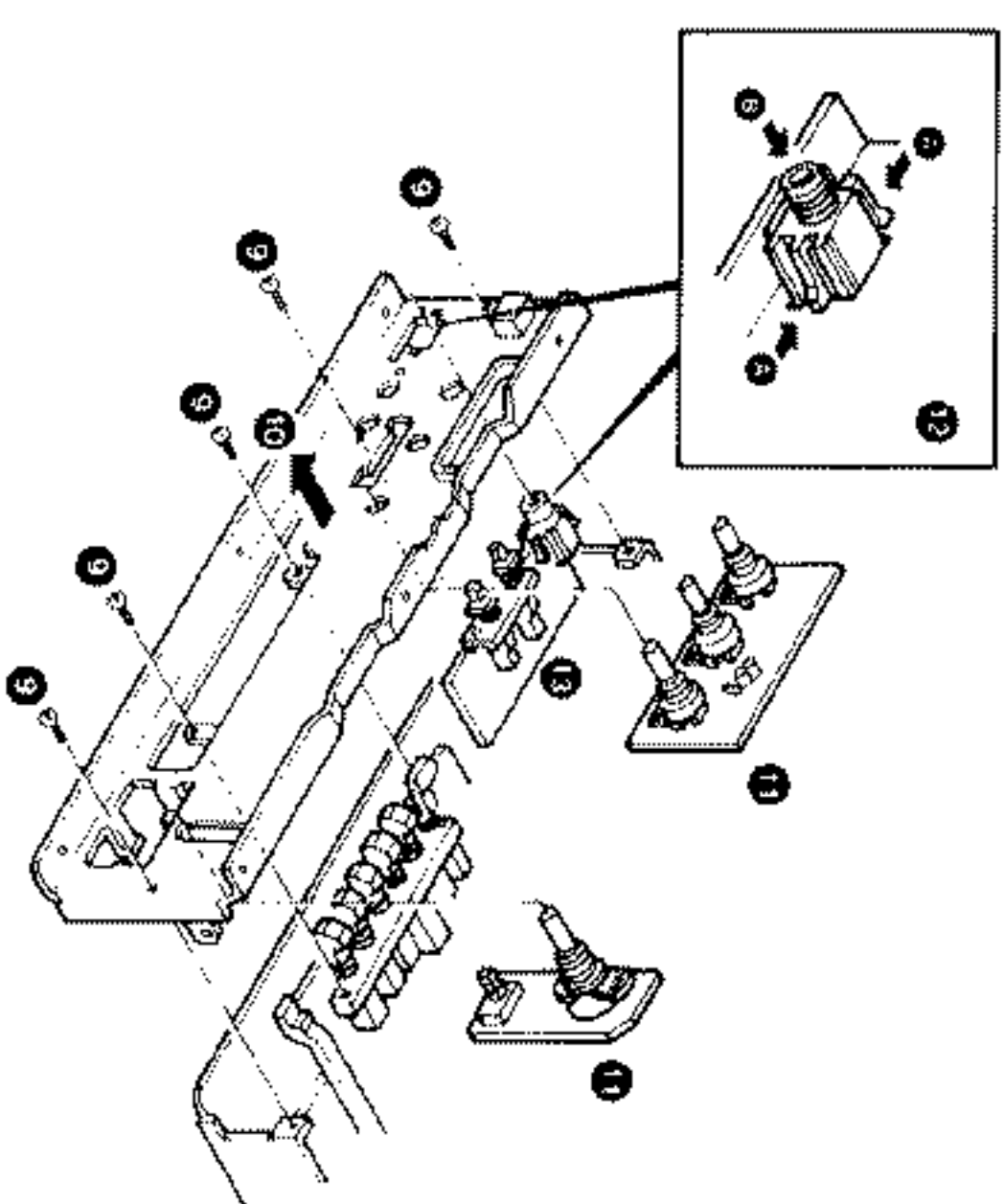
DISASSEMBLY FOR REPAIR.....	2	PC BOARD (foil side view).....	10
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DISASSEMBLY FOR REPAIR

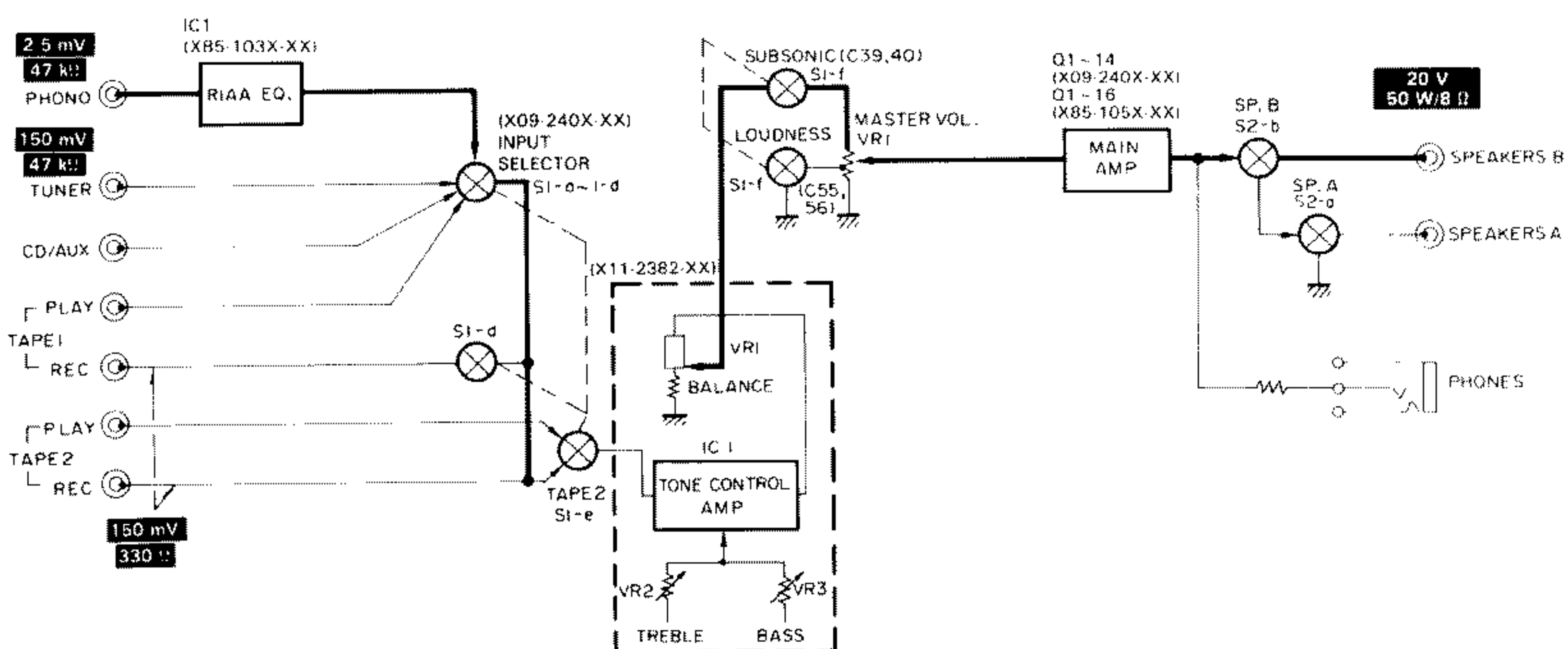
1. Remove the metallic cabinet before this operation.
2. Remove the 6 screws fixing the front panel to the sub panel (1).
3. Remove the front panel in the direction of the arrow (2).
4. Remove the 4 knobs from the BASS, TREBLE, BALANCE and VOLUME CONTROL (3).
5. Remove the 4 hex. nuts from the BASS, TREBLE, BALANCE and VOLUME CONTROL shafts (4).
6. Pull out the 2 buttons from the SPEAKERS shafts (5).
7. Remove the 2 screws fixing the escutcheon to the sub panel (6).
8. Remove the escutcheon in the direction of the arrow (7).
9. Remove the Audio Unit (X09-) (E/5) in the direction of the arrow (8).



10. Remove the 5 screws on the sub panel (9).
11. Remove the sub panel in the direction of the arrow (10).
12. Remove the Audio Unit (X09-) (C/5) and Tone Unit (X11-) (11).
13. Disengage the claws of the PHONES jack (12).
14. Remove the Audio Unit (X09-) (B/5) (13).



BLOCK & LEVEL DIAGRAM



CIRCUIT DESCRIPTION

UNIT-DESTINATION

	E	X T	M	P
POWER SUPPLY X00-239X-XX	0-51 0-52	0-51 0-52	0-81 0-83	1-01 1-02
tone unit	X11-2382-70 X11-2382-71			
audio unit	X09-2402-72 X09-2630-22		X09-2400-22 X09-2630-22	
PRE AMP UNIT	X85-1030-72 X85-1112-71		X85-1030-11 X85-1110-10	
MAIN AMP UNIT	X85-1050-12 X85-1052-72		X85-1050-12 X85-1050-1A	

1 SINGAPORE MADE

DESCRIPTION OF COMPONENTS

Audio unit (X09-240X-XX or X09-263X-XX)

Component	Application/function	Operation/condition/compatibility
Q1	+ voltage regulation	
Q2	- voltage regulation	
Q3, 4	Thermal compensation	C4137: High $\beta$ transistor (Ite 560 or more)
Q5-8	Driver	
Q9-12	Final stage power amp	
Q13, 14	Over current protection	
Q15, 16	Meter drive	
IC1 (UPC1237HA)	Protection IC	

Tone unit (X11-2382-XX)

Component	Application/function	Operation/condition/compatibility
IC1 (UPC4570C)	Tone amp	Output configuration tone amp.

Preamplifier unit (X85-103X-XX or X85-111X-XX)

Component	Application/function	Operation/condition/compatibility
IC1 (AN6556)	EQ amplifier	For phono.

Power amplifier unit (X85-105X-XX)

Component	Application/function	Operation/condition/compatibility
Q1-4	Class A 1st stage differential amp	
Q5-8	2nd stage differential amp	
Q9, 10	Class A amp	
Q11-14	3rd stage differential amp	25C1904
Q15, 16	Current mirror circuit	25A899.

ADJUSTMENT/REGLAGES/ABGLEICH

ADJUSTMENT

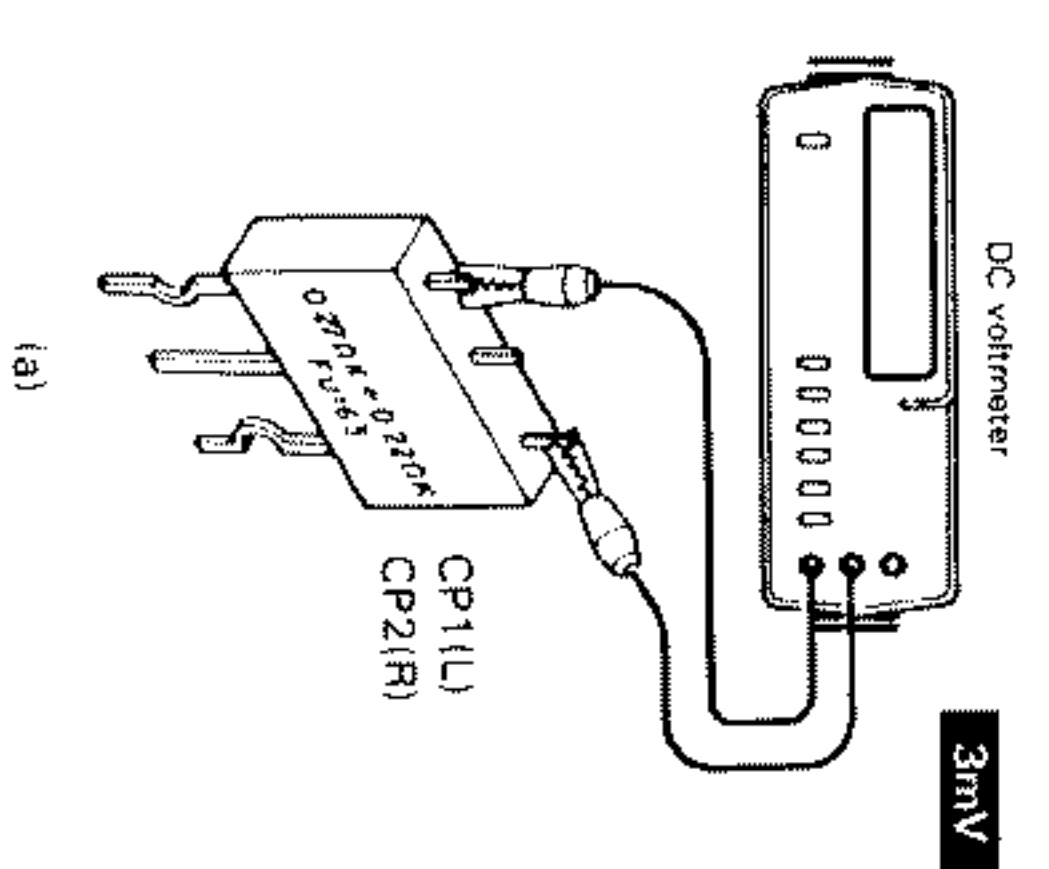
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	IDLE CURRENT	-	Connect a DC voltmeter across CP1 (L) CP2 (R)	VOLUME: 0	VR1 (L) VR2 (R)	3mV	(a)

REGLAGES

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINTS D'ALIGNEMENT	ALIGNER POUR	FIG.
1	COURANT DE POLARISATION	-	Connecter un voltmètre de CC sur CP1 (G) CP2 (D)	VOLUME: 0	VR1 (G) VR2 (D)	3mV	(a)

ABGLEICH

KR	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VERSTÄRKER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
1	LEERLAUFSTROM	-	Einen Gleichspannungsmesser über CP1 (L) CP2 (R) anschließen.	VOLUME: 0	VR1 (L) VR2 (R)	3mV	(a)



**VOLTAGE TABLES**

**X85-103X-XX**  
**X85-111X-XX**

IC1

4	-18.8V
8	18.3V

**X09-240X-XX**  
**X09-263X-XX**

Q3,4

E	-1.2V
C	1.2V
B	-

Q5,6

E	-
C	47V
B	-

Q7,8

E	-
C	-47V
B	-

Q9,10

E	-
C	47V
B	-

Q11,12

E	-
C	-47V
B	-

IC1

4	1.8V
6	0.75V
7	2.2V
8	3.3V

**X85-105X-XX**

Q1-4

E	0V
C	17V
B	-

Q5, 6

E	17.6V
C	-11.3V
B	17V

Q7, 8

E	17.6V
C	-
B	17V

Q9,10

E	-0.6V
C	45.2V
B	-

Q11,12

E	-49.1V
C	-0.6V
B	-48.5V

Q13,14

E	-49.1V
C	-1.2V
B	-

**X11-2382-70**  
**X11-2382-71**

IC1

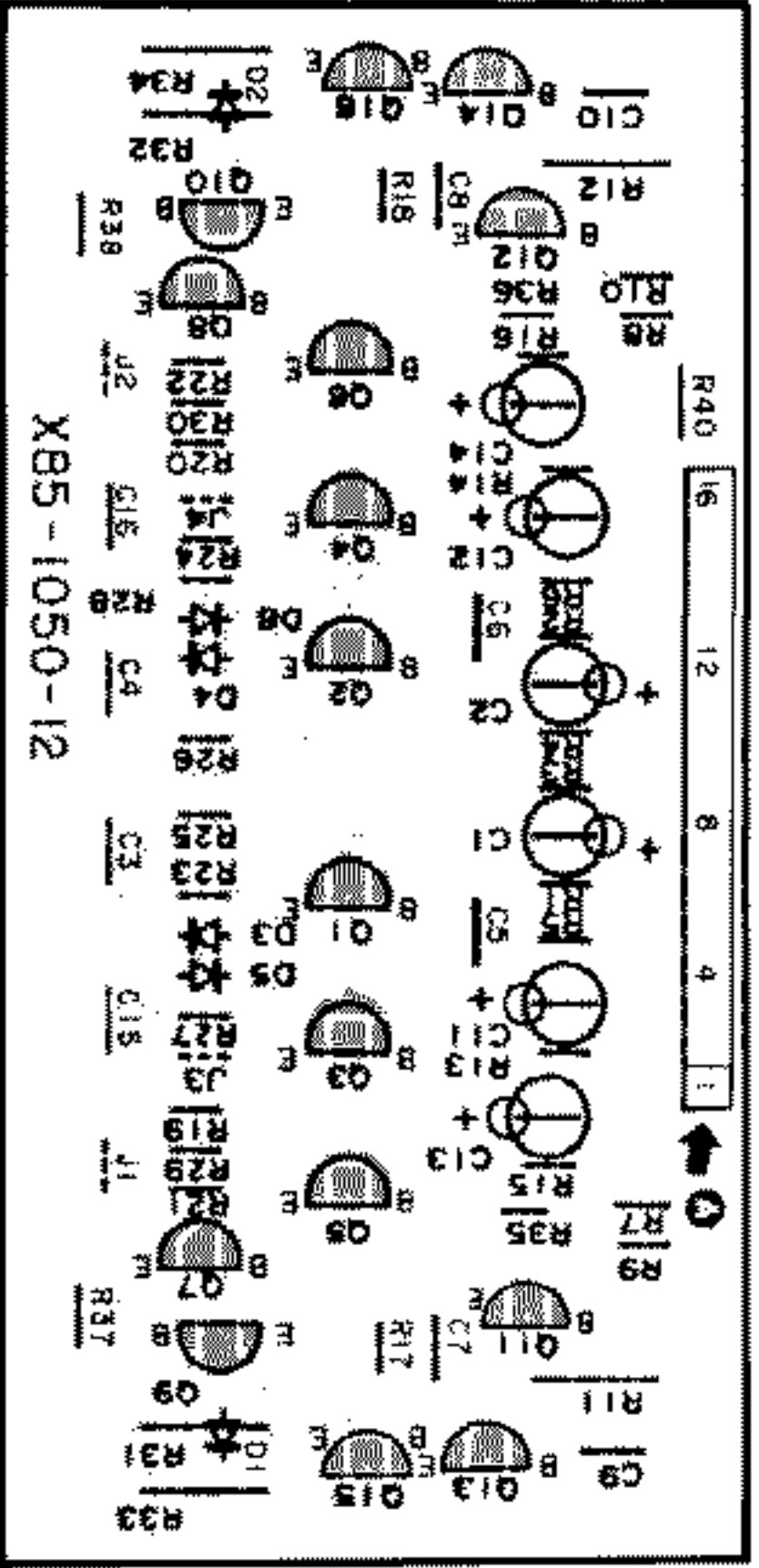
4	-16V
8	16V



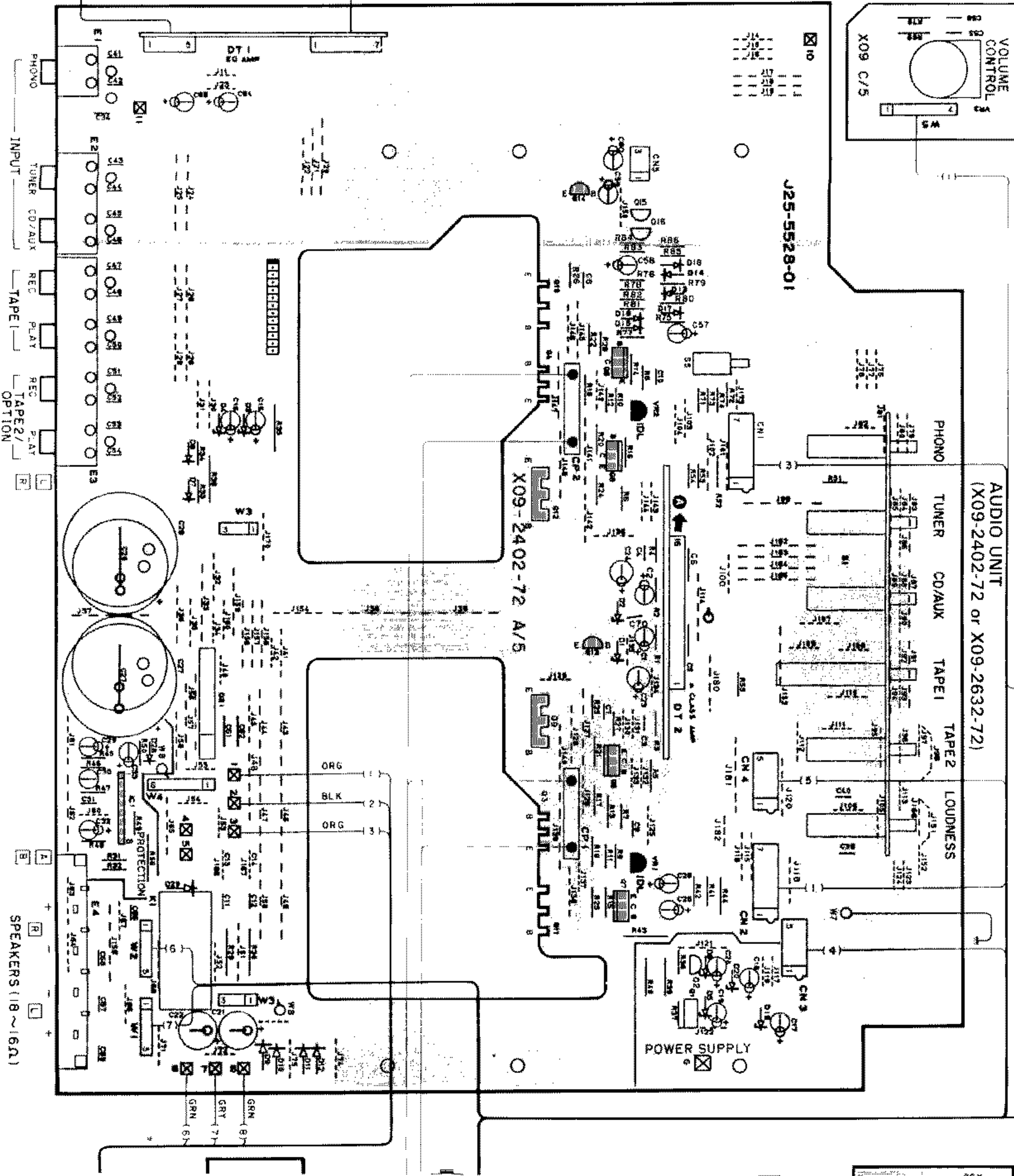
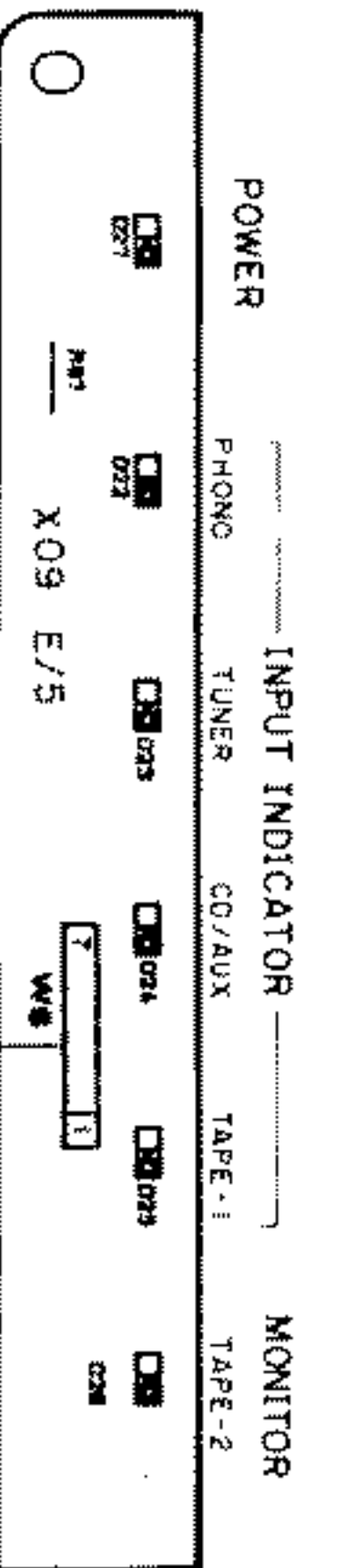
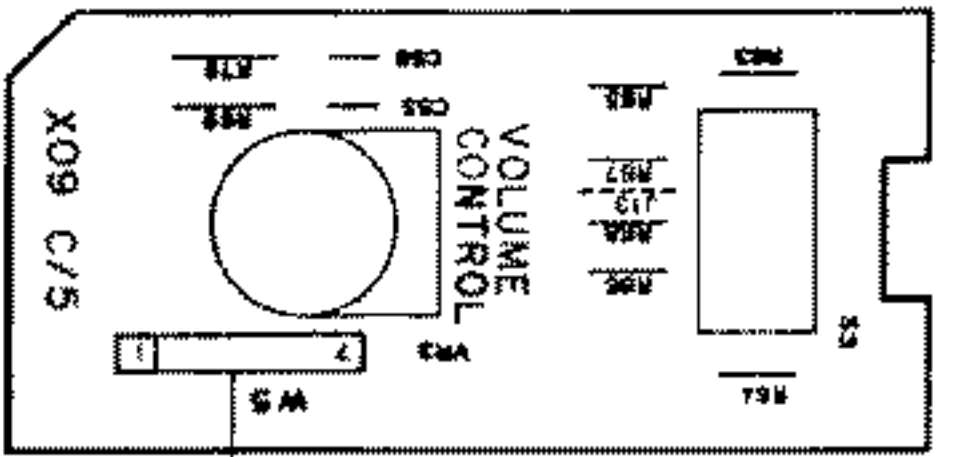
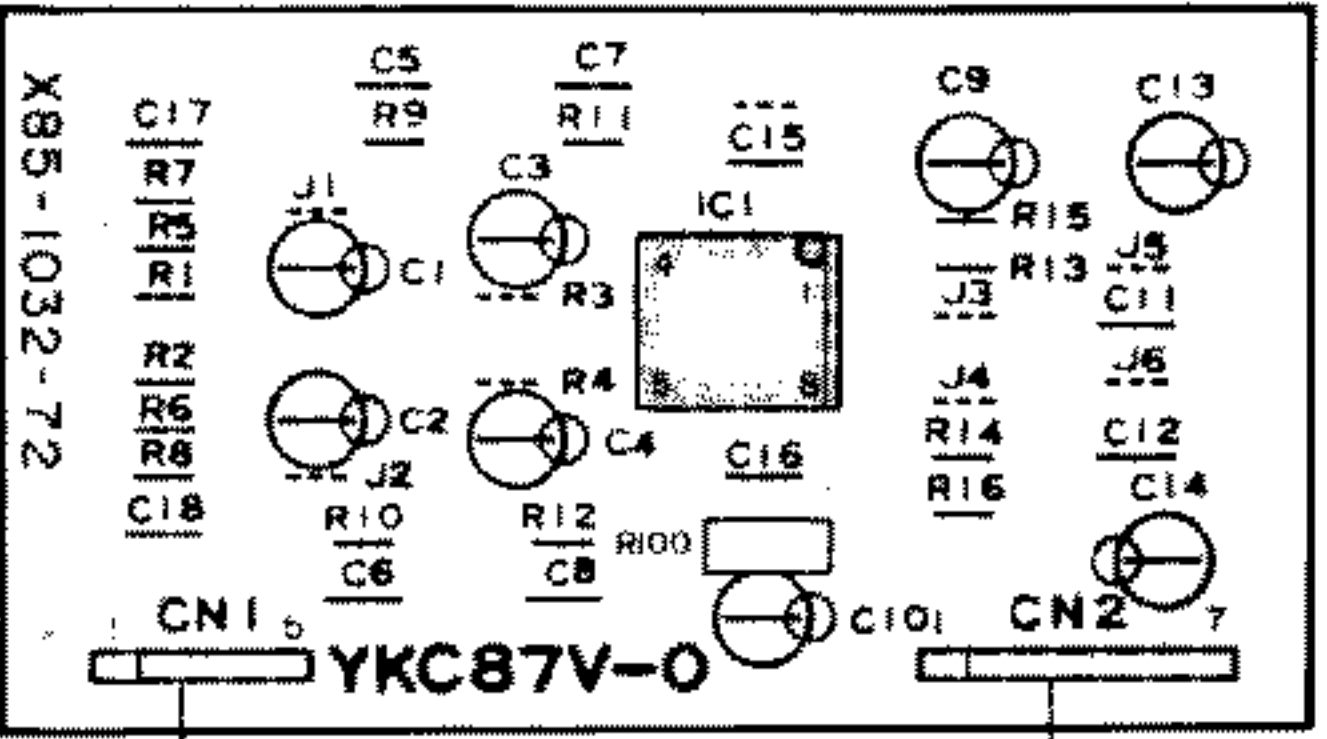
PC BOARD (Component side view)

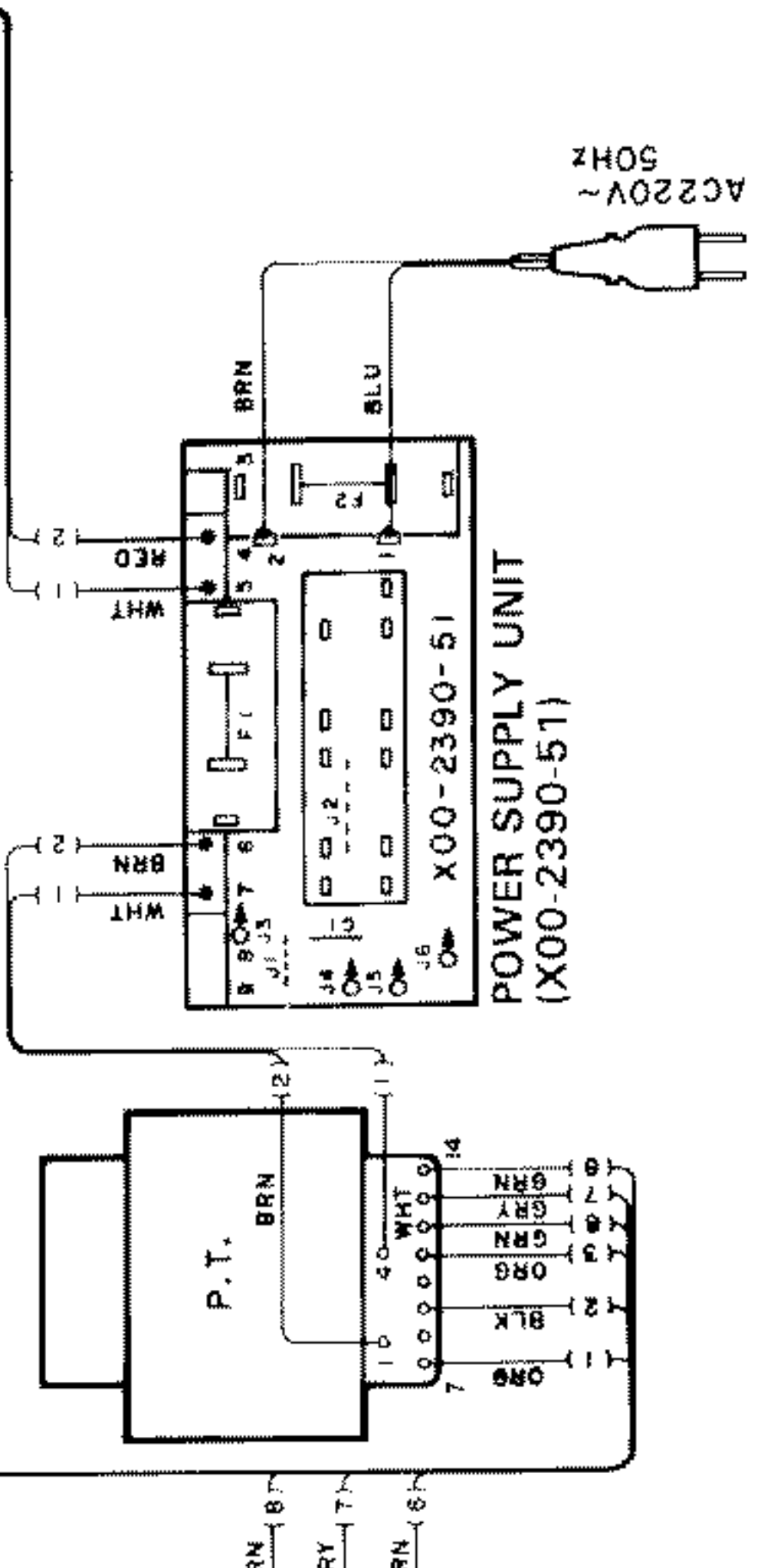
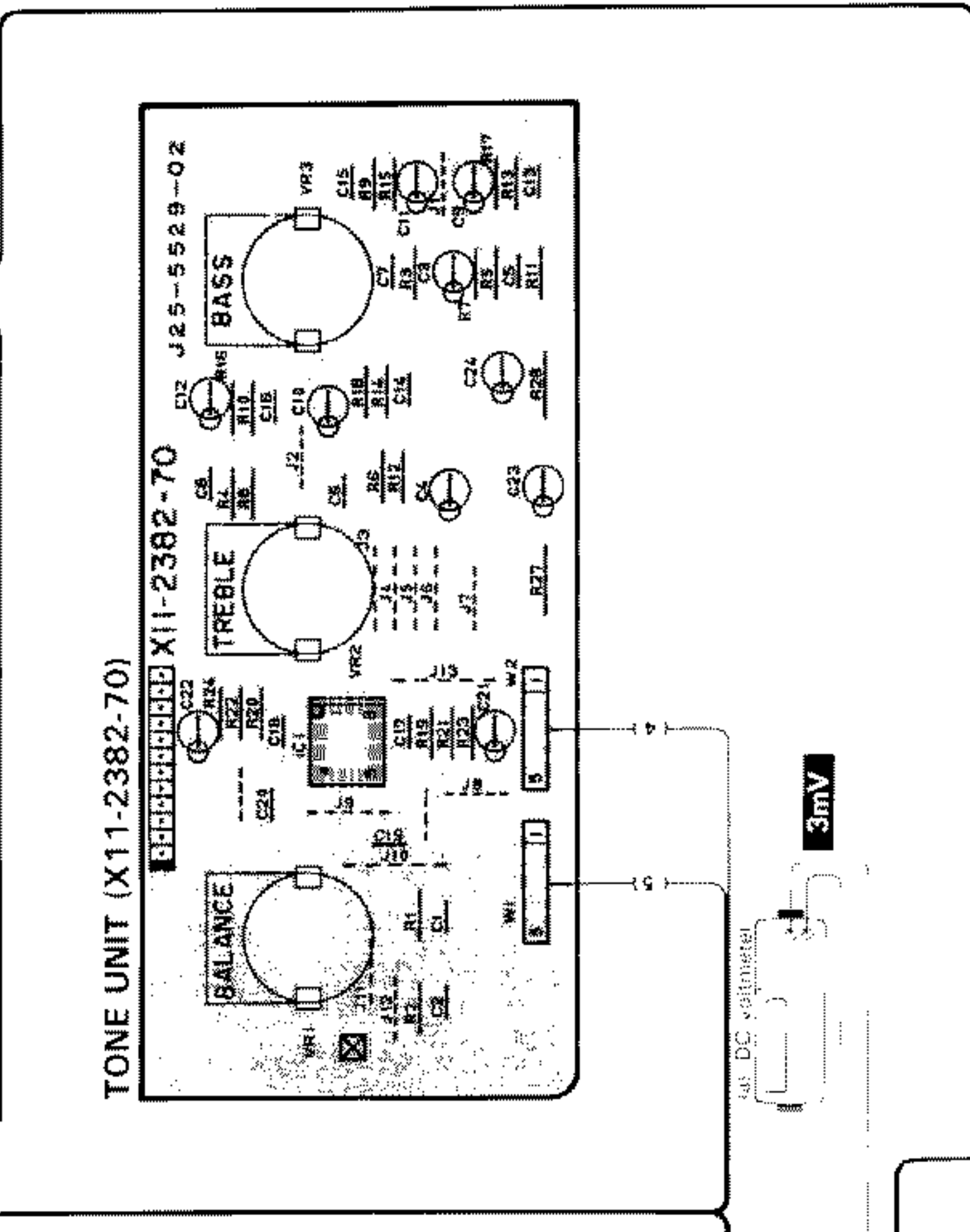
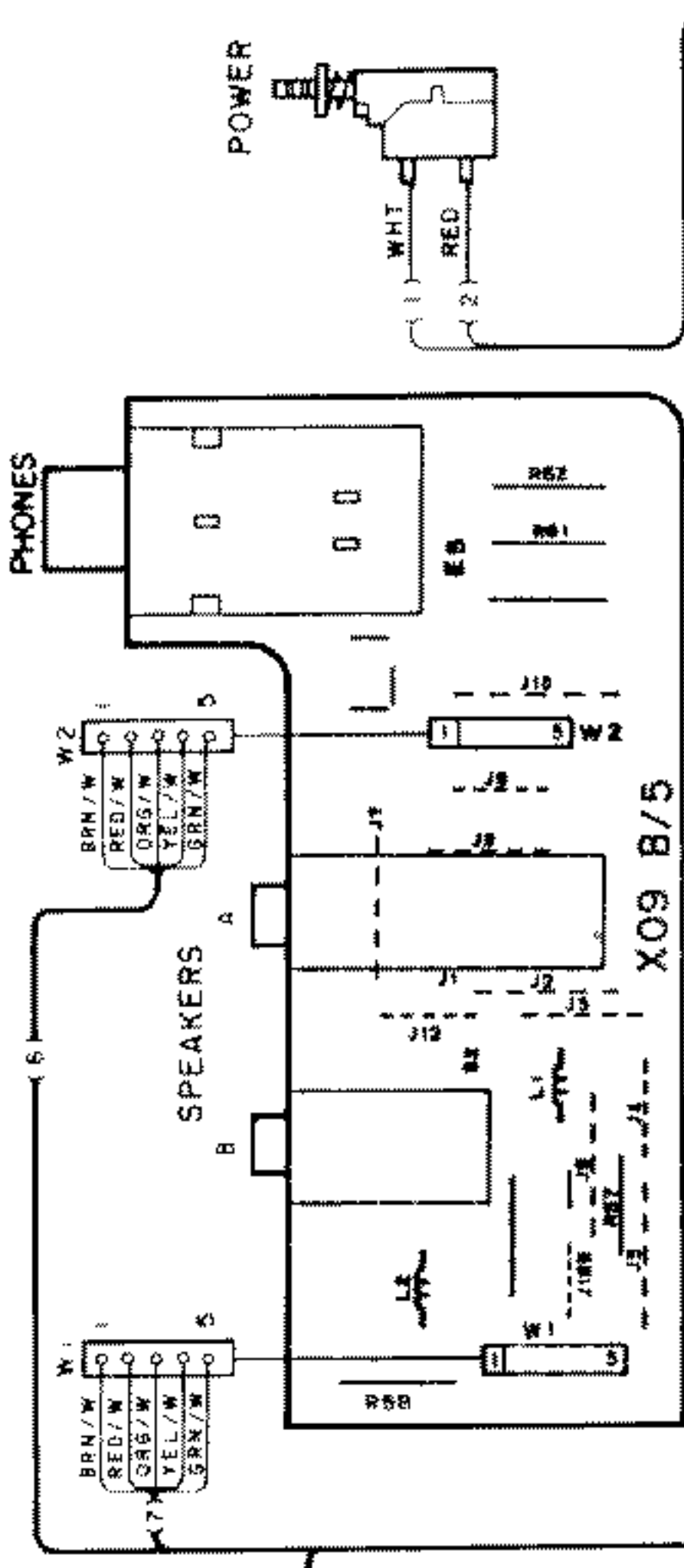
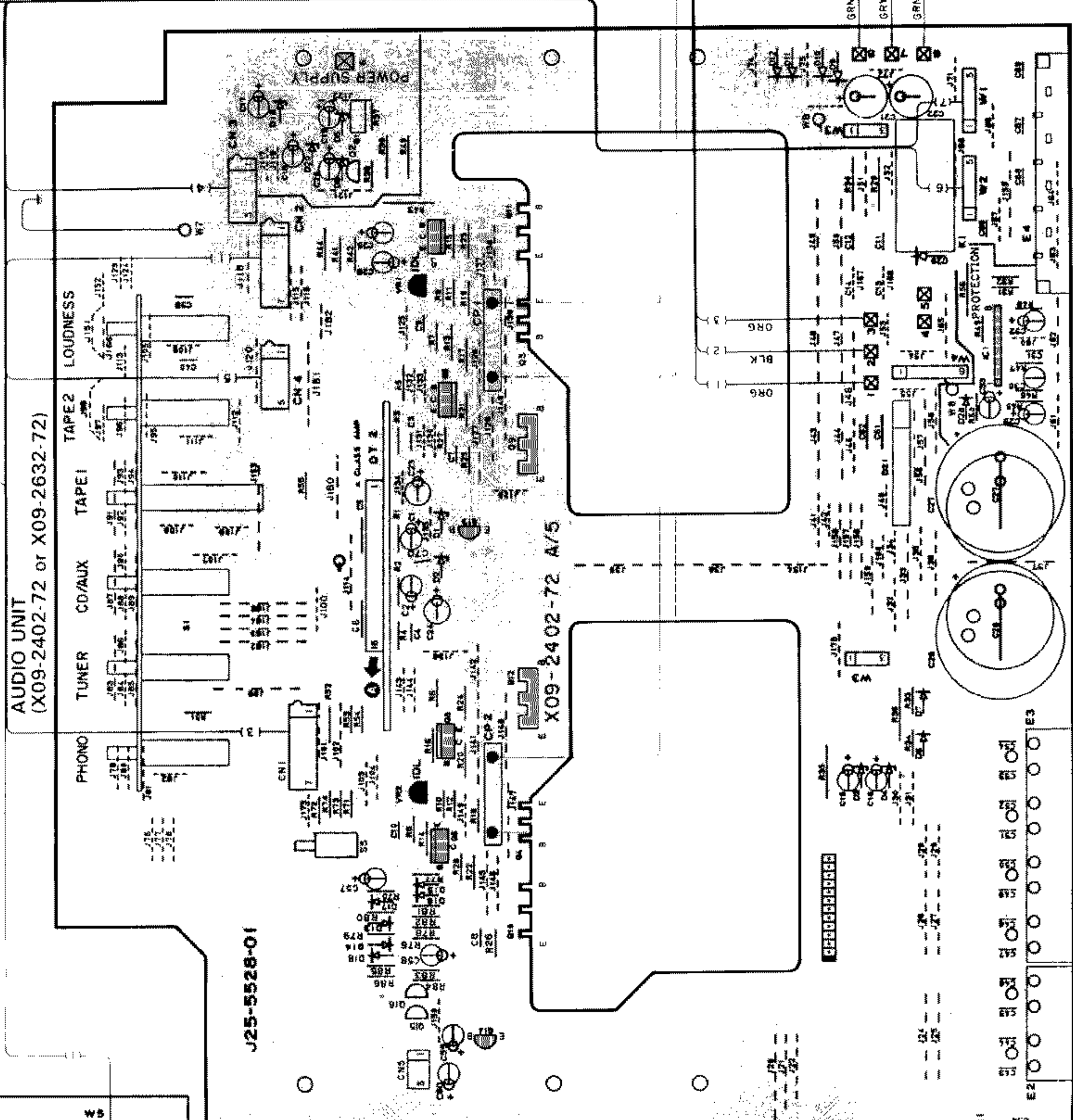
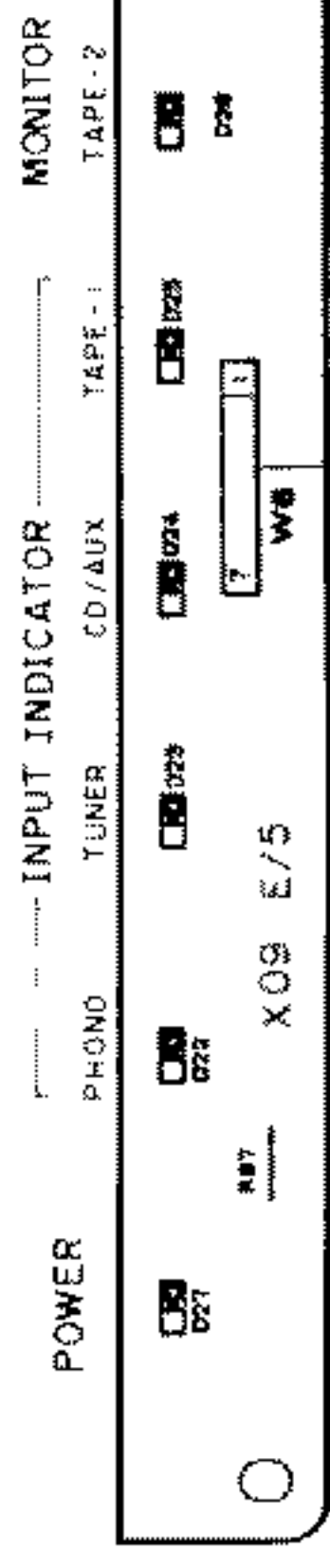


POWER AMPLIFIER UNIT (X85-1050-12)

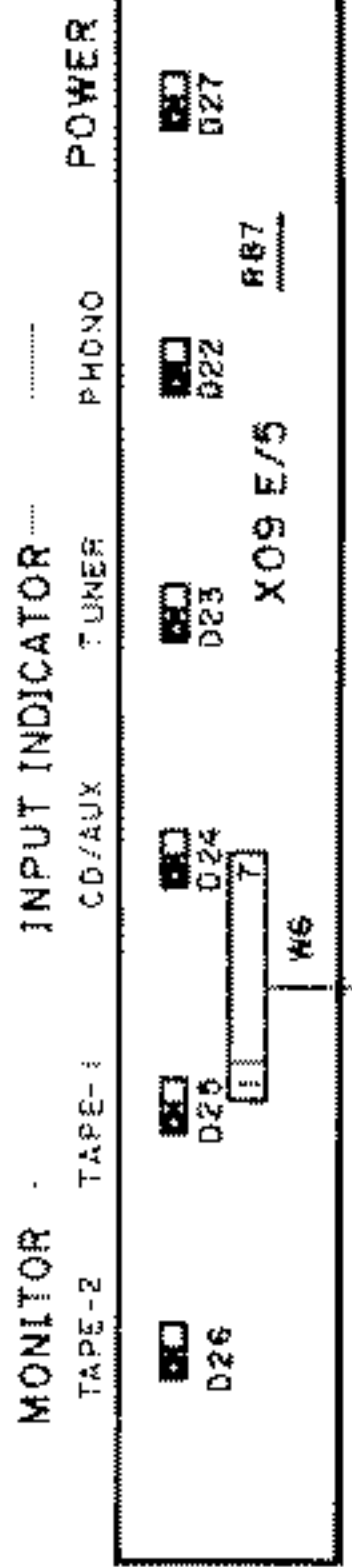


PREAMPLIFIER UNIT  
(X85-1032-72)  
(X85-1112-71)

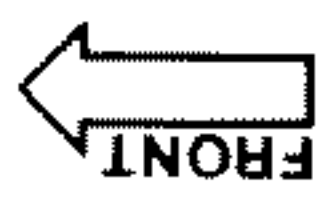
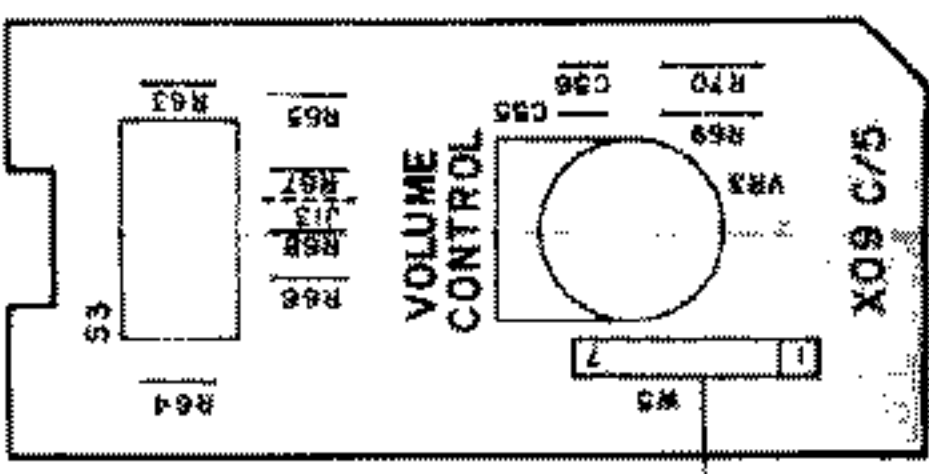
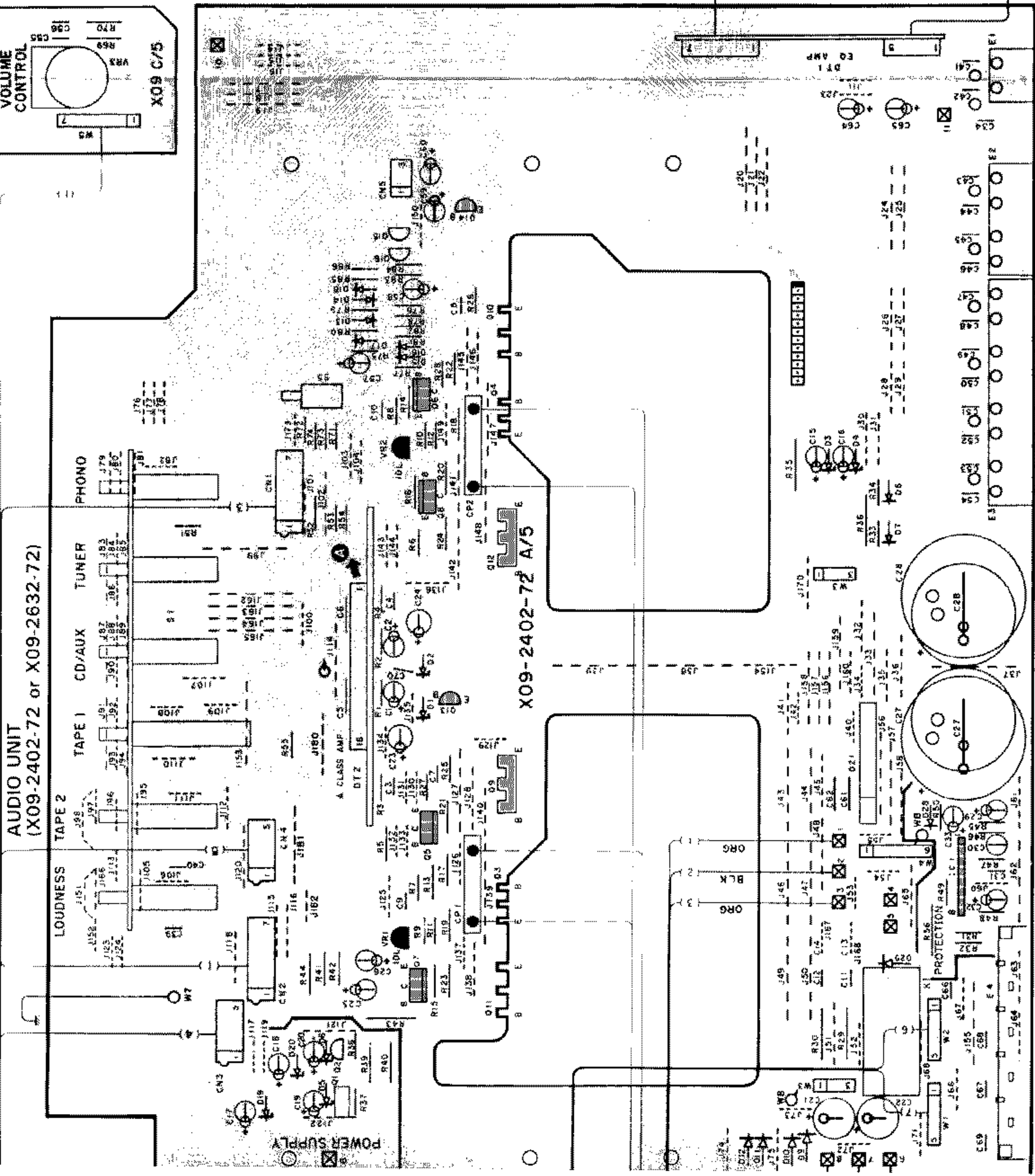




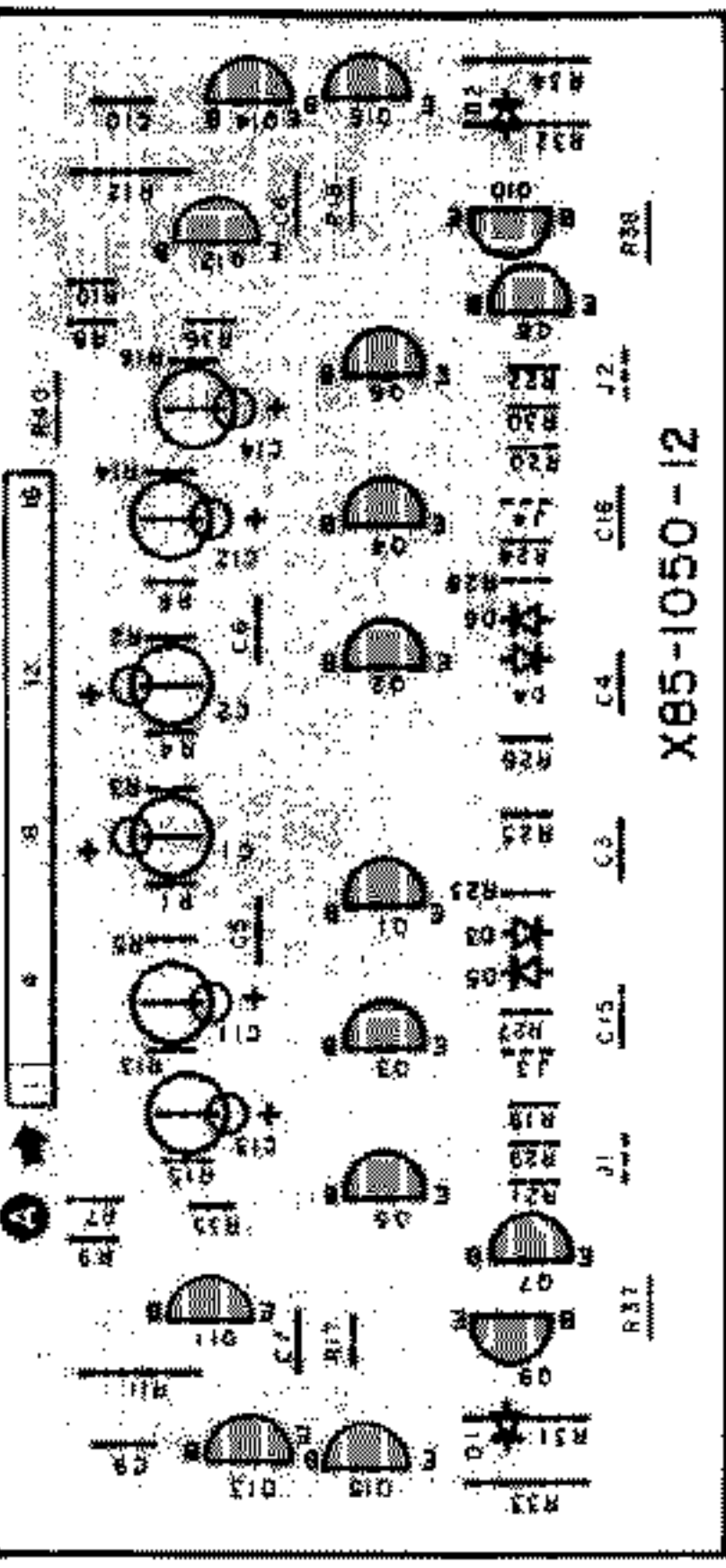




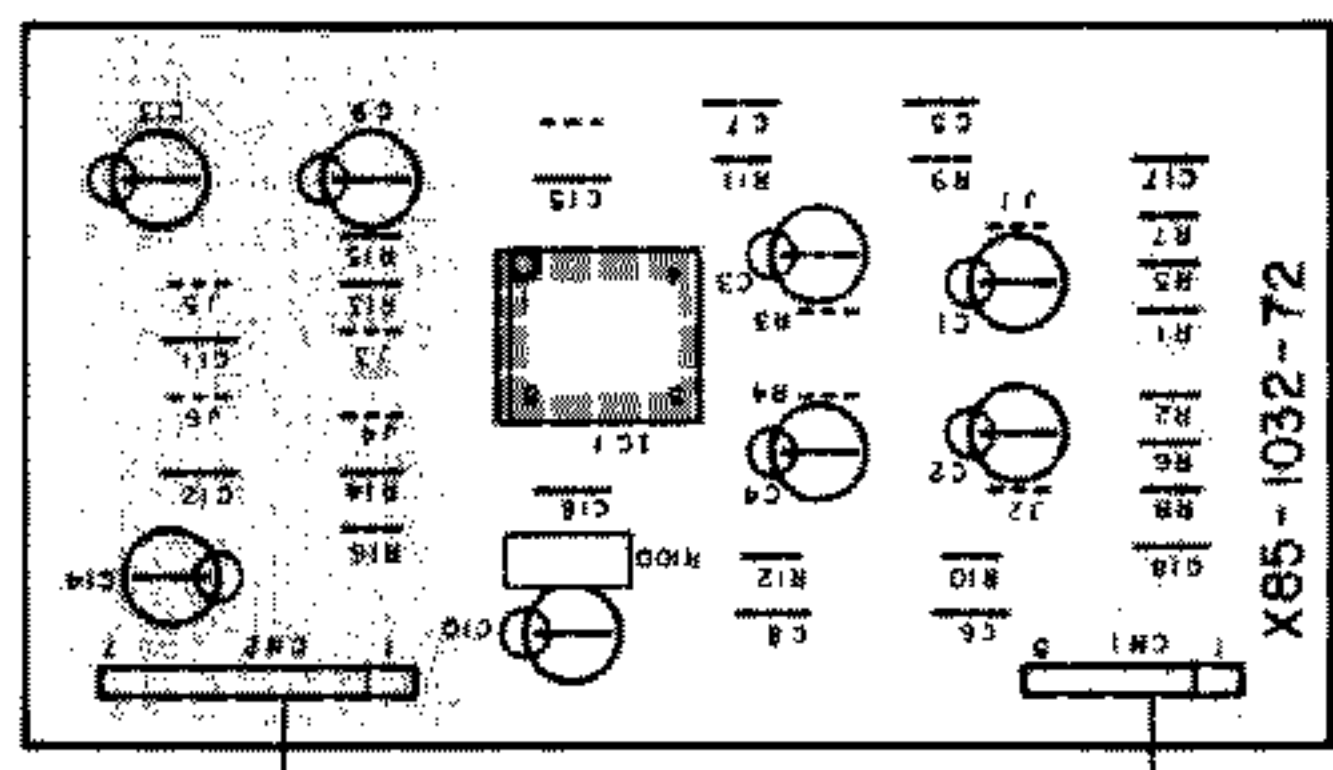
**AUDIO UNIT (X09-2402-72 or X09-2632-72)**



**POWER AMPLIFIER UNIT (X85-1050-12)**



**PREAMPLIFIER UNIT (X85-1032-72) (X85-1112-71)**

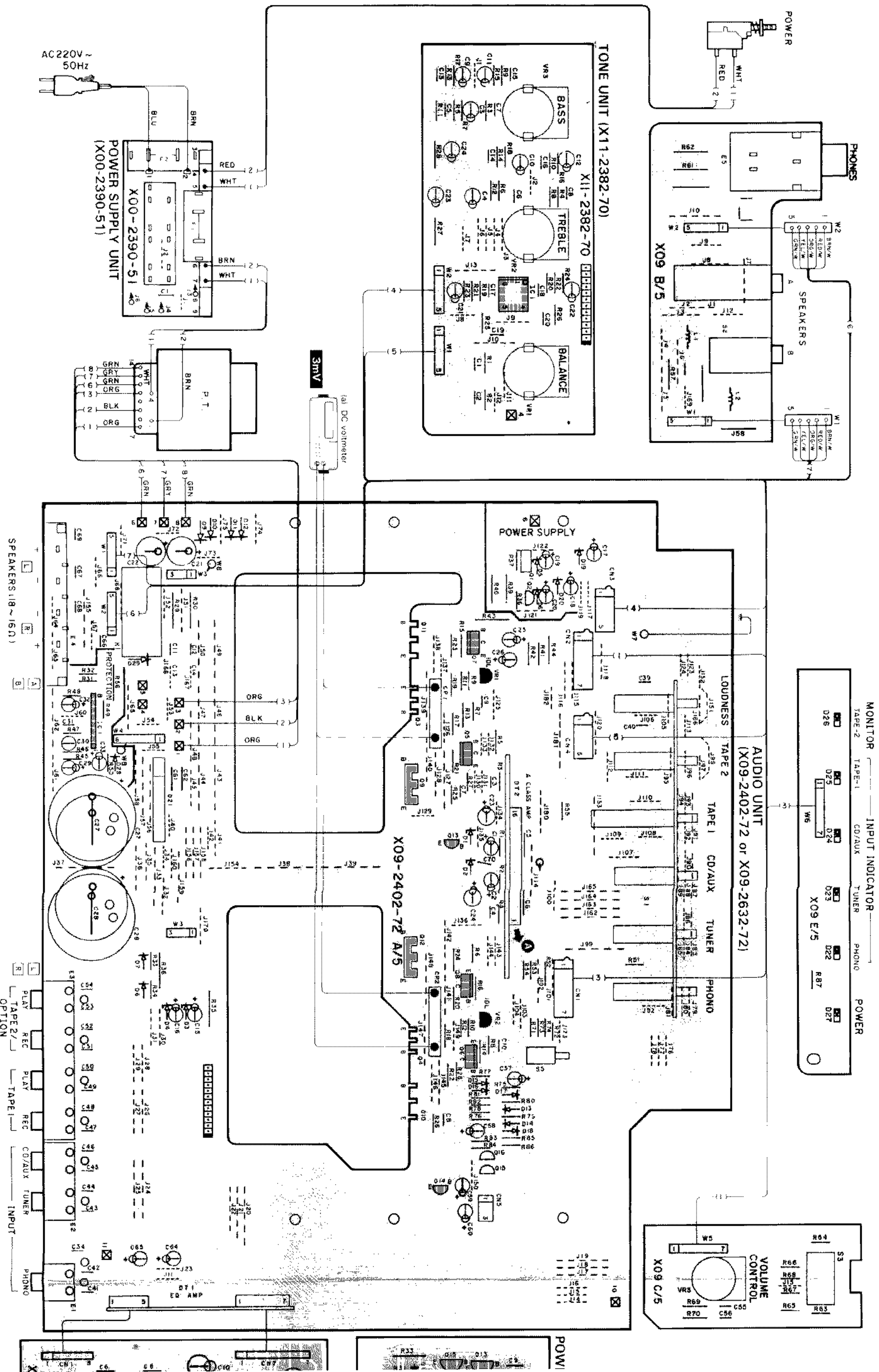


KA-57 (E) Refer to the schematic diagram for the values of resistors and capacitors.

SPEAKERS (18 ~ 16Ω)

PLAY REC TAPE2/ OPTION  
 PLAY REC TAPE  
 CD/AUX TUNER INPUT  
 PHONO

# PC BOARD (Foil side view)





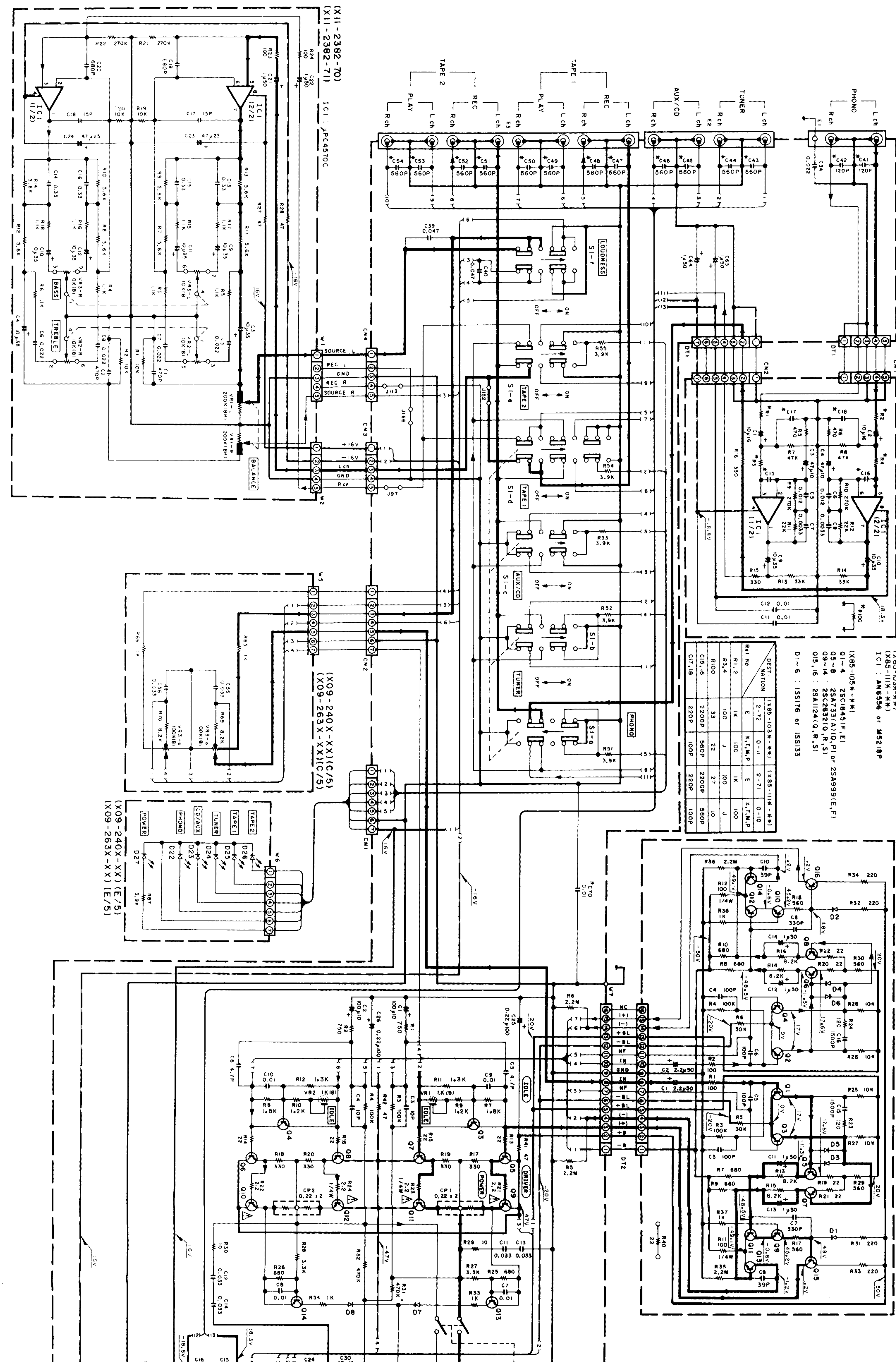
(X09-240X-XX) (A/5)  
(X09-263X-XX) (A/5)

(X85-103X-XX)  
(X85-111X-XX)

(X85-103K-KK)  
(X85-111K-KK)

(X85-105X-XX)

(X09-240X-XX) (E/5)  
(X09-263X-XX) (E/5)





(X09-240K-\*\*) (X09-263K-\*\*) I.C. 1

Q3, 4  
Q5, 6  
Q7, 8  
Q9, 10  
Q11, 12  
Q13, 14

D1, 2  
D3, 4, 19, 20  
D7, 8, 26, 29  
D9-12  
D21  
D22-27

μPC1237HA

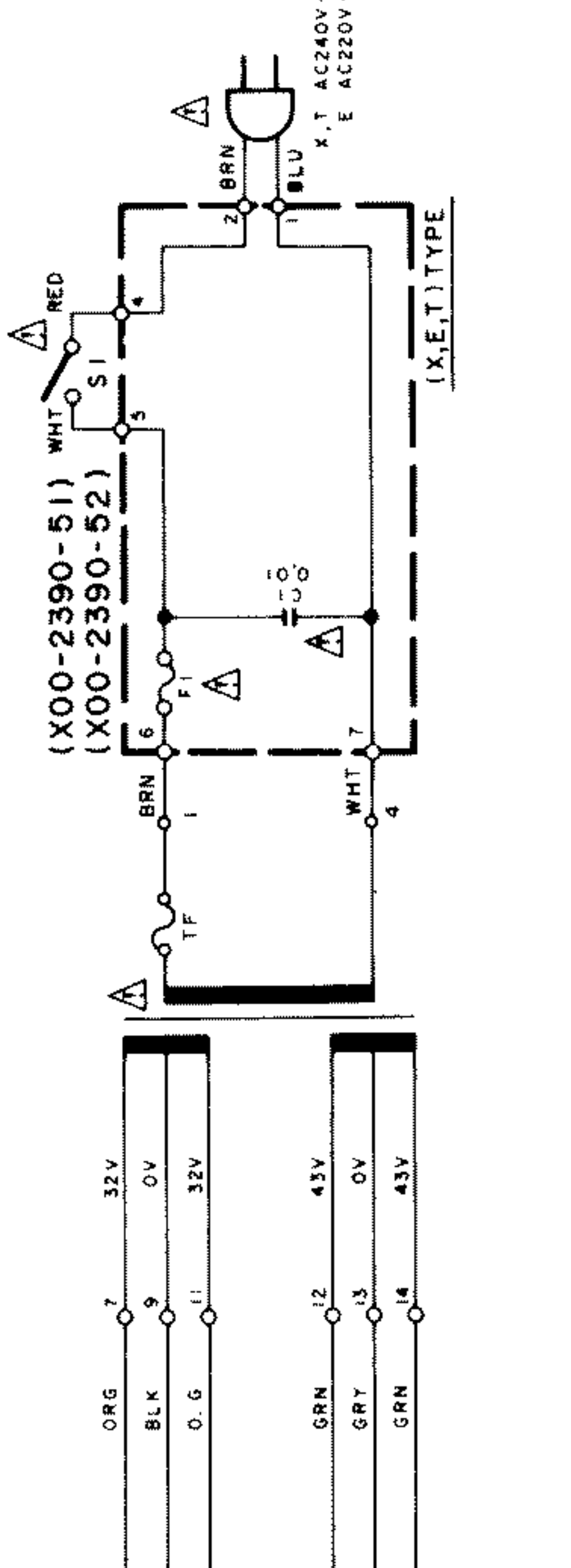
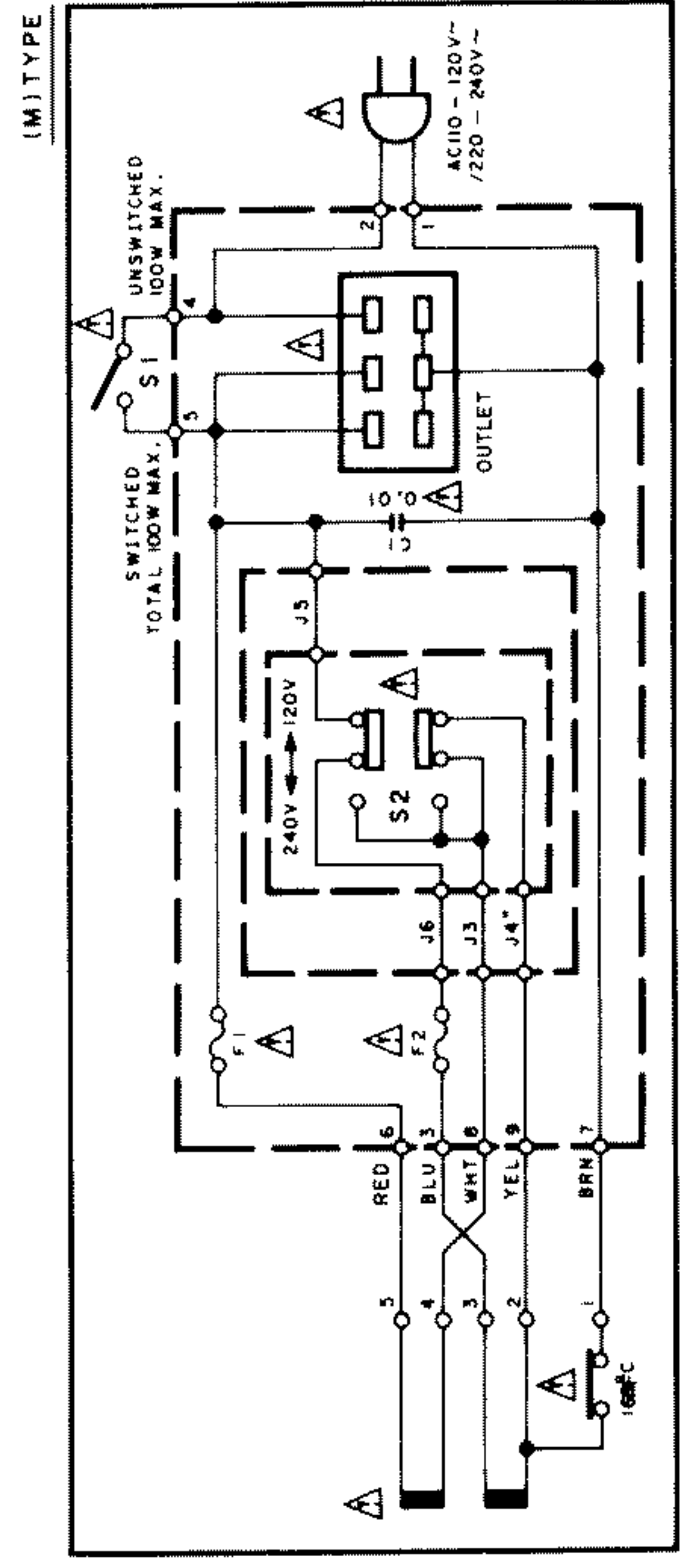
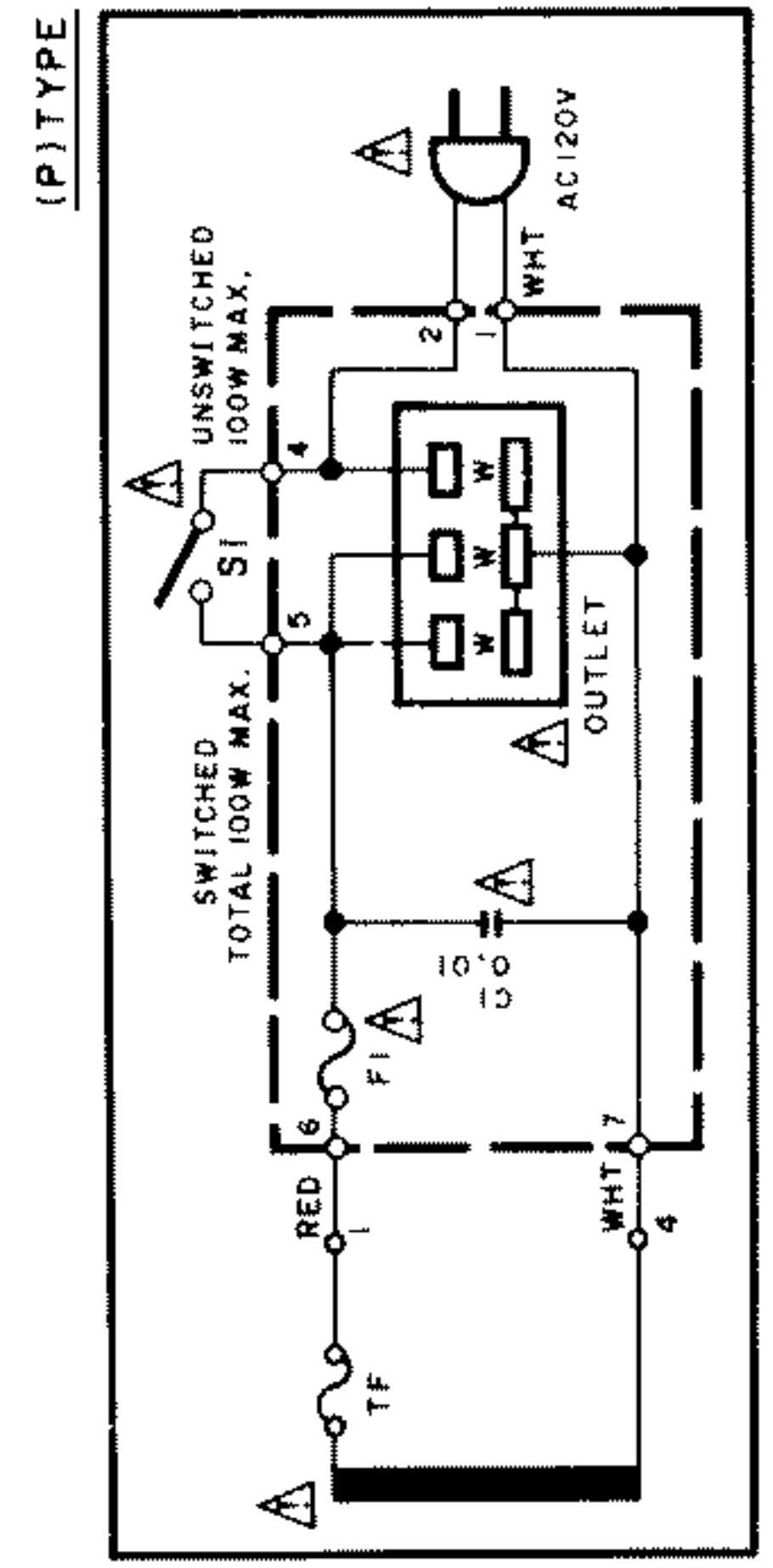
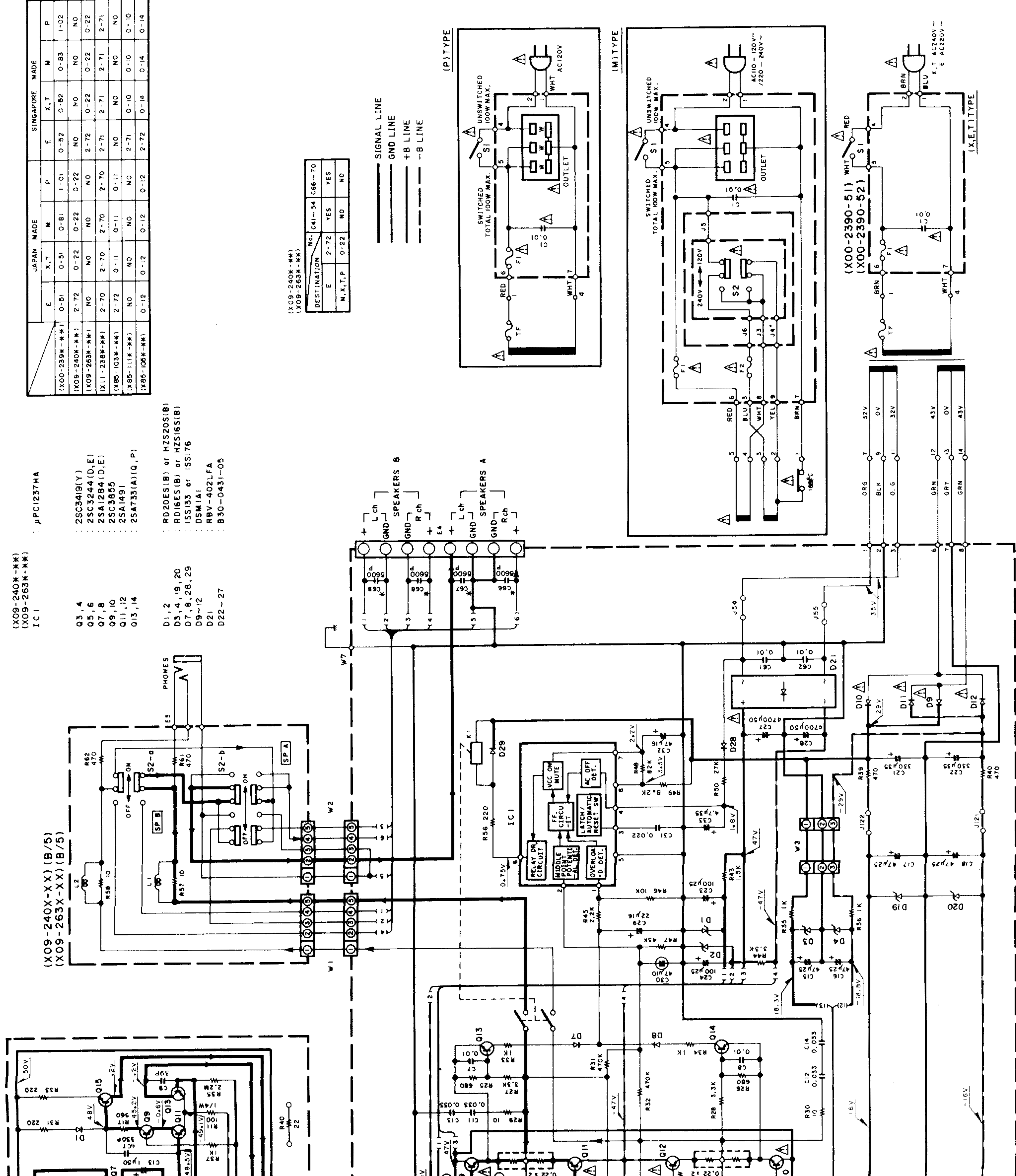
2SC3419(Y)  
2SC3244(D,E)  
2SA1284(D,E)  
2SC3855  
2SA1491  
2SA1733(A)(Q,P)

RD20ES(B) or MZS20S(B)  
RD16ES(B) or HZS16S(B)  
ISS133 or ISS176  
DSM1A1  
RBV-402LFA  
B30-0431-05

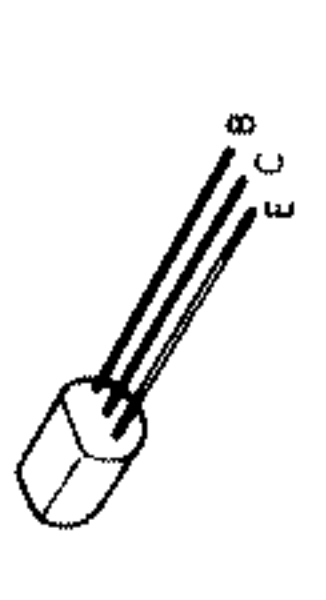
	JAPAN MADE			SINGAPORE MADE			
	E	X, T	M	P	E	X, T	M
(X00-239K-**) (X09-263K-**)	0-51	0-51	0-81	1-01	0-52	0-83	1-02
(X09-240K-**) (X09-263K-**)	2-72	0-22	0-22	0-22	NO	NO	NO
(X09-240K-**) (X09-263K-**)	NO	NO	NO	NO	2-72	0-22	0-22
(X11-238K-**) (X09-263K-**)	2-70	2-70	2-70	2-70	2-71	2-71	2-71
(X85-103K-**) (X09-263K-**)	2-72	0-11	0-11	NO	NO	NO	NO
(X85-111K-**) (X09-263K-**)	NO	NO	NO	NO	2-71	0-10	0-10
(X85-106K-**) (X09-263K-**)	0-12	0-12	0-12	0-12	2-72	0-14	0-14

DESTINATION		No. C41-54 C66-70	
E	2-72	YES	YES
M, X, T, P	0-22	NO	NO

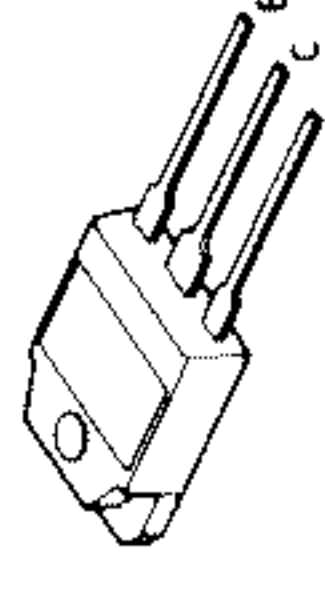
— SIGNAL LINE  
— GND LINE  
— +B LINE  
— -B LINE



2SA1124  
2SA1284  
2SA1733(A)  
2SA1999  
2SC1845  
2SC2632  
2SC3244



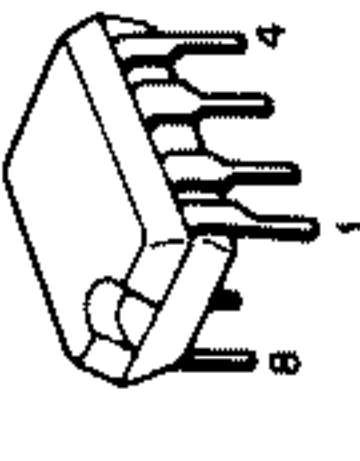
2SA1491  
2SC3855



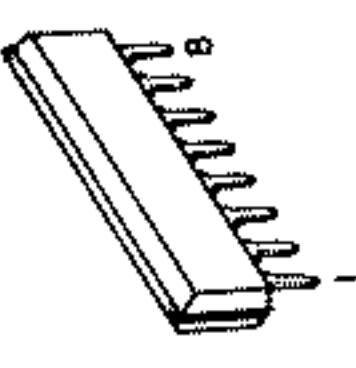
2SC3419



AN6556  
M5218P  
μPC4570C



μPC1237HA



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 einem hochohmigen Spannungsmesser ohne Eingangssignal gemessen. Dabei schwanden die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

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





# KA-57 KA-57

## PARTS LIST

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	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考
8	2B	B03-2413-04	DRESSING PLATE (POWER)	X
9	2A	B07-1721-02	ESLUTCHHEM	Z
		B46-0076-13	WARRANTY CARD	F
		B46-0121-03	WARRANTY CARD	F
		B46-0122-13	WARRANTY CARD	F
		B46-0143-03	WARRANTY CARD	T
		B50-8872-00	INSTRUCTION MANUAL (ENGLISH)	FMXP
		B50-8873-00	INSTRUCTION MANUAL (FRENCH)	E
		B50-8874-00	INSTRUCTION MANUAL (G.D.)	M
		B50-8875-00	INSTRUCTION MANUAL (SPANISH)	M
		B50-8876-00	INSTRUCTION MANUAL (ARABIC)	M
		B58-0803-13	CAUTION CARD	E
12	1C	E30-0459-05	AC POWER CORD	F
12	1C	E30-0812-05	AC POWER CORD	M
12	1C	E30-0974-05	AC POWER CORD	P
12	1C	E30-1341-05	AC POWER CORD	X
12	1C	E30-1416-05	AC POWER CORD	T
F1	1C	F06-2021-05	FUSE (5EMKA) (250V 12A)	EXT
F1	1C	F06-4024-05	FUSE (UL) (250V 4A)	P
F1	1C	F05-2023-05	FUSE	M
		H01-7841-04	ITEM CARTON CASE	
		H10-3317-02	POLYSTYRENE FRAMED FIXTURE	
		H11-0002-04	POLYSTYRENE FRAMED BOARD	
		H25-0223-04	PROTECTION BAG (750X350X0.13)	
		H25-0232-04	PROTECTION BAG (235X350X0.03)	
16	2B-2C	J02-0170-04	FRONT	
17	1C	J42-0083-05	POWER CORD BUSHING	
		J61-0307-05	WIRE BAND	
21	2B	K27-0742-14	KNR (BUTTON) SPEAKER A-B	
22	1B	K27-1722-04	KNR (BUTTON) INPUT SET	
23	1B	K27-1723-04	KNR (BUTTON) ADDRESS	
24	1A	K29-2001-04	KNR Assy (BUTTON) POWER	
25	2A	K29-2020-04	KNR MAIN VSL	
26	2A	K29-2639-04	KNR TONE	
29	1B	L01-7631-05	POWER TRANSFORMER	F
29	1B	L01-7632-05	POWER TRANSFORMER	XT
29	1B	L01-7635-05	POWER TRANSFORMER	M
29	1B	L01-7637-05	POWER TRANSFORMER	E
33	1C	N08-0128-35	RINDING POST (GND)	
A	2B-2C	N09-1515-05	TAPPING SCREW (Ø3X8)	
F	1C	N09-1280-05	TAPTITE SCREW (Ø3X8)	
51	1B	S40-1073-05	PUSH SWITCH (POWER)	

E: Scandinavia & Europe K: USA P: Canada  
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Ref. No. 参照番号	Address 位置	Parts No. 部品番号	Description 部品名 / 規格	Re- marks 備考
51	1F	S31-2126-05	SLIP SWITCH (POWER TYPE)	M
<b>AUDIO UNIT (X09-2402-72) (X09-2632-72: S)</b>				
D22	2B	R30-0431-05	LED (UNTYPE) MOUNT. INSET IND	
C1	2	CE04YJ1A101M	ELECTRO 100UF 10MV	
C3	4	CE45F31H100D	10PF CERAMIC	
C5	6	C91-0717-05	4.7PF K	
C7	10	CF92FV1H103J	0.010UF J	
C11	14	CF92FV1H333J	0.033UF J	
C15	18	CE04KW1E470M	ELECTRO 47UF 25MV	
C21	22	CE04KW1V333M	ELECTRO 330UF 35MV	
C23	24	CE04KW1E101M	ELECTRO 100UF 25MV	
C25	26	CE04KW2R22M	ELECTRO 0.22UF 100MV	
C27	28	C90-0580-05	ELECTRO 4700UF 50MV	
C29		CE04KW1C220M	ELECTRO 22UF 16MV	
C30		C90-1334-05	MP-ELEC 47UF 10MV	
C31		CF92FV1H223J	MF 0.022UF J	
C32		CE04KW1C470M	ELECTRO 47UF 16MV	
C33		CE04KW1V4R7M	ELECTRO 4.7UF 35MV	
C34		CF92FV1H223J	MF 0.022UF J	
C39	40	CF92FV1H473J	MF 0.047UF J	
C41	42	CE45FSLH121J	CERAMIC 120PF J	
C43	54	CE45FB1H561K	CERAMIC 560PF K	
C55	56	CF92FV1H333J	MF 0.033UF J	
C61	62	CE45FE2H103P	CERAMIC 0.010UF F	
C64	65	CE04KW1H010M	ELECTRO 1.0UF 50MV	
C66	69	CF92FV1H562J	MF 560PF J	
C70		CE45FF1H103Z	CERAMIC 0.010UF Z	
E1	1F	E13-0235-05	PHONE JACK (2P) PHONE	
E2	1C	E13-0497-05	PHONE JACK (4P) TUNER FID/AUX	
E3	1C	E13-0814-05	PHONE JACK (8P) TAPE	
E4	1C	E20-0823-05	LOCK TERMINAL BOARD (8P) SPEAKERS	
E5	1A	E11-0162-05	PHONE JACK (3P) PHONES	
L1	2	L39-0085-05	PHASE COMPENSATION CTRL.	
G	1B	N09-0333-05	TAPPING SCREW (Ø3X12)	
CP1	2	R90-0187-05	MULTI-COMP 0.22X2 K 5M	
R13	14	RD14AB2E220J	FL-PROOF RD 22 J 1/4W	
R15		RD14GB2E220J	FL-PROOF RD 22 J 1/4W	
R16		RD14AB2E220J	FL-PROOF RD 22 J 1/4W	
R17	20	RD14AB2E331J	FL-PROOF RD 330 J 1/4W	
R21		RD14AB2E2R2J	FL-PROOF RD 2.2 J 1/4W	
R23	24	RD14AB2E2R2J	FL-PROOF RD 2.2 J 1/4W	
R29	30	RS14DB3D100J	FL-PROOF RS 10 J 2W	
R35	36	RS14KB3A102J	FL-PROOF RS 1.0K J 1W	
R39	40	RS14DB3A471J	FL-PROOF RS 470 J 1W	
R41	42	RD14GB2E470J	FL-PROOF RD 47 J 1/4W	
R43		RS14KB3D152J	FL-PROOF RS 1.5K J 2W	
R44		RS14KB3A332J	FL-PROOF RS 3.3K J 1W	
R56		RS14DB3D221J	FL-PROOF RS 220 J 2W	
R57		RS14KB3A100J	FL-PROOF RS 10 J 1W	
R58		RS14DB3A100J	FL-PROOF RS 10 J 1W	
R61	67	RS14DB3D471J	FL-PROOF RS 470 J 2W	
VR1	2	R12-1066-05	TRIMMING PRT. (1K) 10UF	

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C17 .18		DE45FSL1H221J	CERAMIC 220PF J	E	
IC1		AN6556	IC (OP AMP X2)		
IC1		ME21BP	IC (OP AMP X2)		
<b>POWER AMPLIFIER UNIT (X85-1050-12)</b>					
C1 .2		CE04FW1H2R2MEL	ELECTRN 2.2UF 50MV		
C3 .6		CC45FSL1H1D1J	CERAMIC 100PF J		
C7 .8		CC45FSL1H331J	CERAMIC 330PF J	F	
C9 .10		CC45FSL1H220J	CERAMIC 22PF J		
C9 .10		CC45FSL1H390J	CERAMIC 39PF J		
C9 .10		CC45FSL1H390J	CERAMIC 39PF J	MXTP	
C11 .14		CE04FW1H010MFL	ELECTRN 1.0UF 50MV		
C15 .16		CK45FR1H152K	CERAMIC 1500PF K		
C15 .16		CK45FR1H152K	CERAMIC 1500PF K	MXTP	
C15 .16		CK45FR1H222K	CERAMIC 2200PF K	F	
R11 .12		RD14AB2E100JTS	FL-PROBE RD 100 J 1/4W		
R31 .34		RD14AB2E221JTS	FL-PROBE RD 220 J 1/4W		
B1 .6		1S5133	DIODE		
B1 .6		1S5176	DIODE		
Q1 .4		25F1B45(F+E)	TRANSISTOR		
Q5 .8		2SA733(A)(D+P)	TRANSISTOR		
Q5 .8		2SA799(E+F)	TRANSISTOR		
Q9 .14		2SC2632(O+R+S)	TRANSISTOR		
O15 .16		2SA1124(O+R+S)	TRANSISTOR		

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VR3	2B	RD6-5151-05	POTENTIOMETER(100K RV)SL (SNT)		
*1	1K	Q51-2078-05	MAGNETIC RELAY		
Q1	2A	Q42-6071-05	MULTIPLE PUSH SWITCH(OUTPUT SEL)		
Q2	3A+3B	Q42-7153-05	MULTIPLE PUSH SWITCH(SPEAKERS)		
B1 .2		HZ5405(B)	ZENER DIODE		
B1 .2		RD7065(B)	ZENER DIODE		
B3 .4		HZ5165(F)	DIODE		
B3 .4		RD1465(B)	ZENER DIODE		
B7 .8		1S5133	DIODE		
B7 .8		1S5176	DIODE		
B9 .12		DSM141	DIODE		
B9 .20		HZ5165(B)	DIODE		
B9 .20		RD1465(B)	ZENER DIODE		
B21		RB0-402LFA	DIODE		
D28 .29		1S5133	DIODE		
D28 .29		1S5176	DIODE		
IC1		UPC1237HA	IC (POWER AMP)		
Q3 .4		2SC3419(Y)	TRANSISTOR		
Q5 .6		2SC3244(D+E)	TRANSISTOR		
Q7 .8		2SA1284(D+F)	TRANSISTOR		
Q9 .10		2SC3655	TRANSISTOR		
Q11 .12		2SA1491	TRANSISTOR		
Q13 .14		2SA733(A)(D+P)	TRANSISTOR		
<b>tone UNIT (X11-2382-71)</b>					
C1 .2		CF45FR1H421K	CERAMIC 470PF K		
C3 .4		CE04FW1U100M	ELECTRN 10UF J		
C5 .6		CF92FV1H223J	MF 0.022UF J		
C9		CE04FW1U100M	ELECTRN 10UF J		
C10		CF04W1U100M	ELECTRN 10UF J		
C11 .12		CE04FW1U100M	ELECTRN 10UF J		
C13 .14		CF92FV1H334J	MF 0.33UF J		
C17 .18		CF45FR1H181J	CERAMIC 15PF J		
C19 .20		CF45FR1H681K	CERAMIC 680PF K		
C21		CF04FW1H010M	ELECTRN 1.0UF J		
C22 .24		CE04FW1H010M	ELECTRN 1.0UF J		
C23 .24		CF04FW1F470M	ELECTRN 471F J		
Q27 .28	1B	RD1462E470J	FL-PROBE RD 47 J 1/4W		
VR2 .3	1B	RD6-5134-05	POTENTIOMETER(200K RV)BALANCE		
VR2 .3		RD6-3048-05	POTENTIOMETER(10K RV)BASS-TREB		
IC1		HP14570C	IC (OP AMP X2)		
<b>PREAMPLIFIER UNIT (X85-1032-72)</b>					
C1 .2		FE04FW1C100M	ELECTRN 10UF J		
C3 .4		CE04FW1A470M	ELECTRN 47UF J		
C5		CF92FV1H123J	MF 0.012UF J		
C6		CF92FV1H123J	MF 0.012UF J		
C7		CF92FV1H332J	MF 3300PF J		
C8		CF92FV1H332J	MF 3300PF J		
C9 .10		CE04FW1U100M	ELECTRN 10UF J		
C11 .12		CK45FR1H032	CERAMIC 0.010UF Z		
C15 .16		CK45FR1H222K	CERAMIC 2200PF K	E	
C15 .16		FK45FR1H561K	CERAMIC 560PF K	MXTP	
C17 .18		CL45FSL1H101J	CERAMIC 100PF J	MXTP	

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