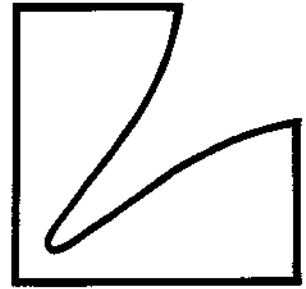
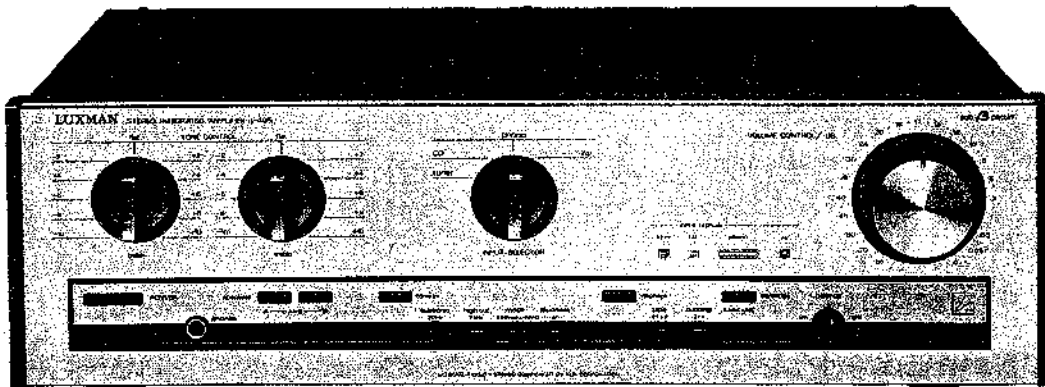


SERVICE MANUAL



Stereo Integrated Amplifier

L-405



Contents

Specifications	3
Parts Locations and Disassembly Instructions	4 to 7
Adjustment Procedures	8
Adjustment Locations	8
Block Diagram	9
Parts Layout on P.C. Board	9 to 12
Wiring Diagram	13 to 14
Electrical Parts List	15 to 18
Schematic Diagram	19 to 20
Cabinet Exploded View	21 to 22
Cabinet Assembly Parts List	23 to 24
Packing Method View	25
Packing Assembly Parts List	25
Semi-Conductor Lead Identifications	26

Specifications

Power Output (8 ohms, 1 kHz)	70W x 2
Total Harmonic Distortion	0.03% (20 Hz ~ 20 kHz, at 55W into 8 Ω)
Input Sensitivity (1 kHz):	
Phono (MM)	2mV \pm 0.2mV
Phono (MC)	0.4mV \pm 0.04mV
CD	180mV \pm 15mV
Tuner	180mV \pm 15mV
AV	180mV \pm 15mV
Tape-1/2	180mV \pm 15mV
Input Impedance (1 kHz):	
Phono (MM)	55K Ω \pm 20%
Phono (MC)	120 Ω \pm 20%
CD	40K Ω \pm 20%
Tuner	40K Ω \pm 20%
AV	40K Ω \pm 20%
Tape-1/2	40K Ω \pm 20%
Frequency Response (at 1mW Output):	
Phono	+ 13.09 dB \pm 1.0 dB at 100 Hz -13.73 dB \pm 1.0 dB at 10 kHz
CD (1W)	\pm 2 dB at 10 kHz \pm 3 dB at 8 kHz
Subsonic Filter (Vol: max., CD)	-3 dB \pm 1 dB at 20 Hz
High Cut Filter (Vol: max.)	-4 dB \pm 2 dB at 10 kHz
Tone Control:	
Bass	\pm 8.0 dB \pm 1 dB at 100 Hz
Treble	\pm 8.0 dB \pm 1 dB at 10 kHz
Loudness Control (Volume at -30 dB position)	+ 8.0 dB \pm 1.0 dB at 100 Hz
S/N (Input Shorted):	
Phono MM (IHF-A Weighted)	80 dB
Phono MC (IHF-A Weighted)	65 dB
DC (IHF-A Weighted)	107 dB
AV (IHF-A Weighted)	107 dB
Tuner (IHF-A Weighted)	107 dB
Tape-1/2 (IHF-A Weighted)	107 dB
Dimensions	453(W) x 317(D) x 130(H) mm
Weight:	
Net	7.6 kgs
Gross	9.0 kgs
Power Consumption	220V/50 Hz (SK, EK Model) 240V/50 Hz (SG Model)
Semi-Conductors	1 IC, 28 Transistors, 2 FET's, 5 Zener Diodes, 19 Diodes

Parts Locations and Disassembly Instructions

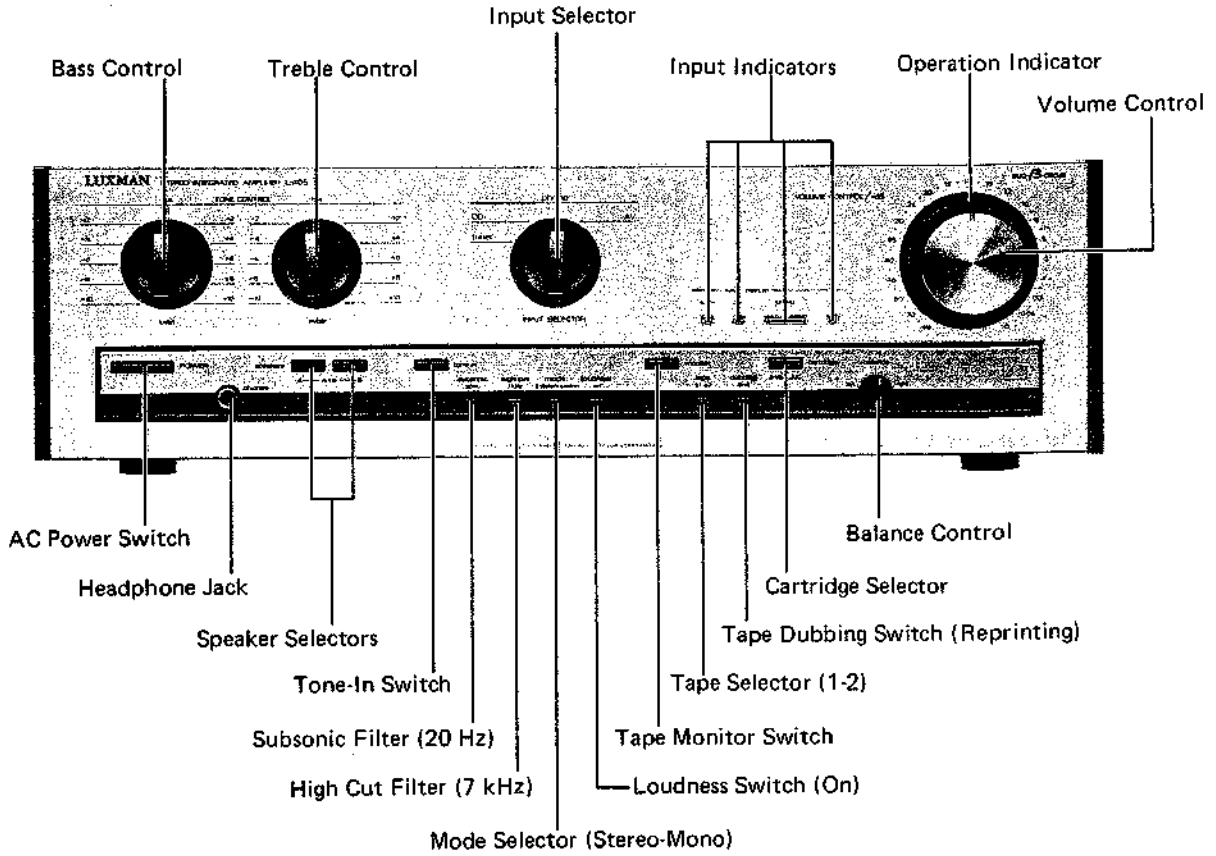


Figure 1

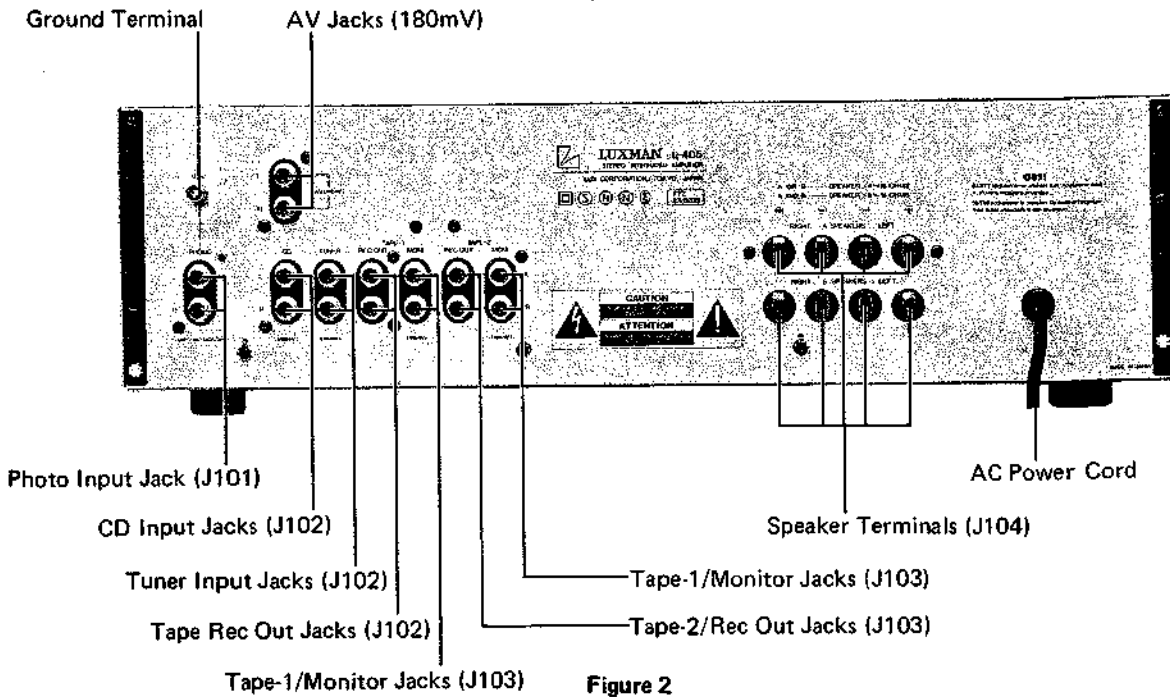


Figure 2

1. Top Cover Removal

- (1) Remove five screws marked "○" shown in Figure 3 and two screws marked "○" shown in Figure 4.
- (2) Remove top cover by lifting it up to the direction indicated by the arrow shown in Figure 3.

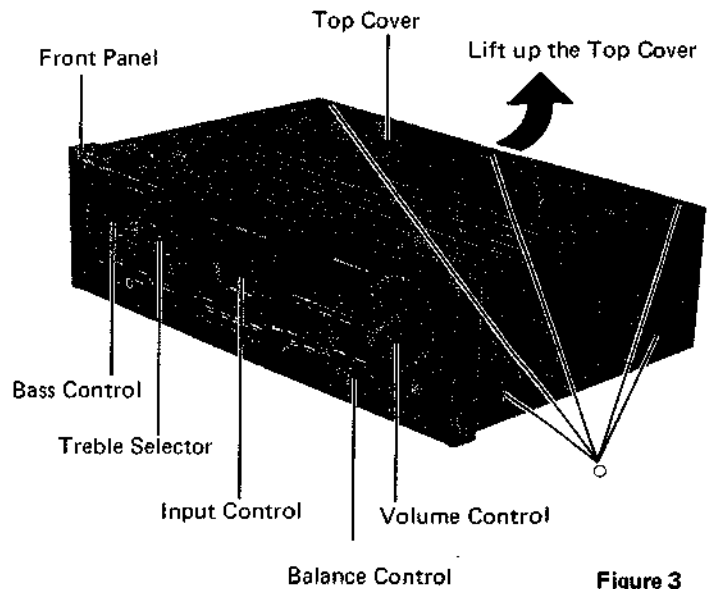


Figure 3

2. Front Panel Removal

- (1) Remove five knobs (Bass Control, Treble Control, Input Selector, Balance Control, and Volume Control) shown in Figure 3.
- (2) Remove three screws marked "※" shown in Figure 4 and three screws marked "※" shown in Figure 5, and the front panel will be removed.

3. Bottom Cover Removal

- (1) Remove five screws marked "☆" as shown in Figure 4, and the bottom cover will be removed.

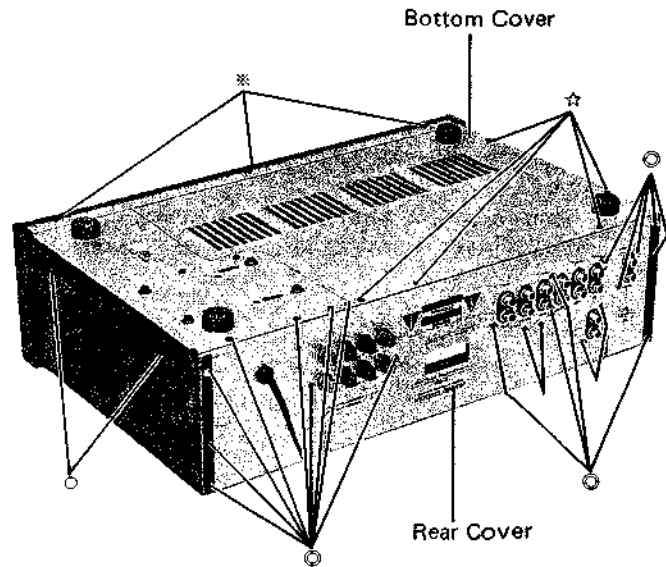


Figure 4

4. Front Chassis Removal

- (1) Remove twelve push buttons (A) shown in Figure 6, one screw marked "□" shown in Figure 5, and eight screws marked "●" shown in Figure 6.
- (2) Proceed the removal works from 4-1 to 4-6 on page 6 and the front chassis will be removed.

4-1. Tone Control P.C. Board Removal

(1) Remove washer (A) and nut (A) shown in Figure 6.

Disconnect all connectors from the P.C. Board, and the Tone Control P.C. Board will be removed.

4-2. Function Switch P.C. Board Removal

(1) Remove washer (B) and nut (B) shown in Figure 6.

Remove all lead wires from the P.C. Board, and the Function Switch P.C. Board will be removed.

4-3. Volume Control P.C. Board Removal

(1) Remove washer (C) and nut (C) shown in Figure 6.

Remove all lead wires from the P.C. Board, and the Volume Control P.C. Board will be removed.

4-4. Power Switch Removal

(1) Remove two screws marked "o" shown in Figure 6.

Remove all lead wires from the switch, the power switch will be removed.

4-5. Head Phone Jack P.C. Board Removal

(1) Remove jack stopper shown in Figure 6.

Disconnect all connectors from the P.C. Board, and the Head Phone Jack P.C. Board will be removed.

4-6. Balance Control P.C. Board Removal

(1) Remove washer (D) and nut (D) shown in Figure 6.

Remove all lead wires from the P.C. Board, and the Balance Control P.C. Board will be removed.

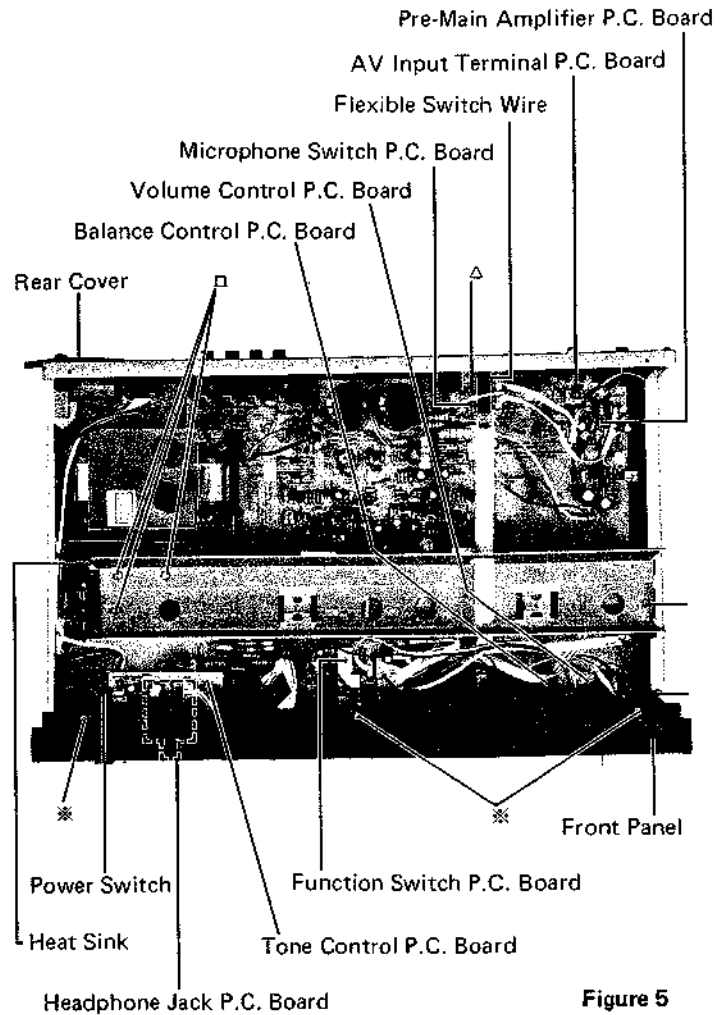


Figure 5

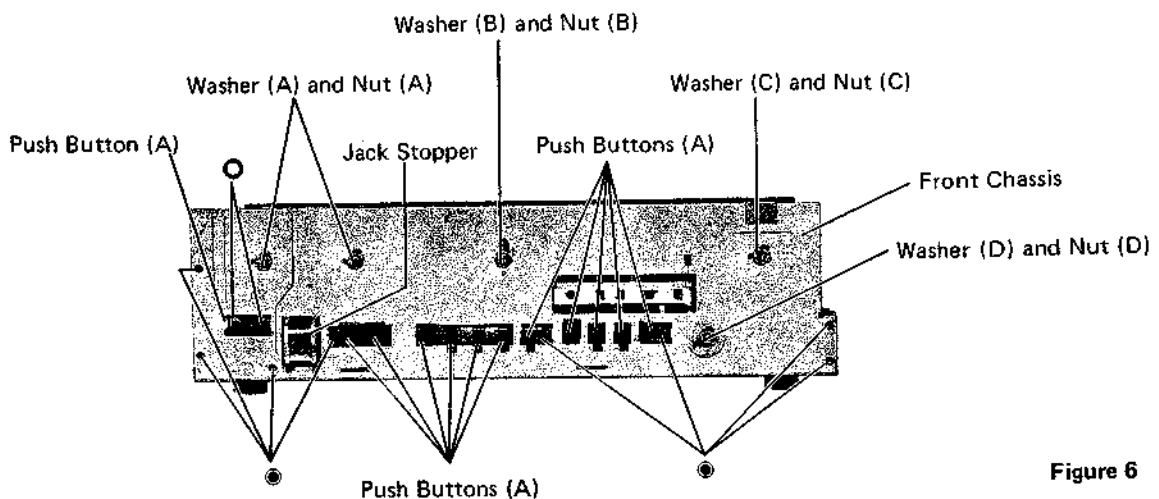


Figure 6

5. Microphone Switch P.C. Board Removal

- (1) Remove one screw marked "△" shown in Figure 5 and two screws marked "▲" shown in Figure 4.
- (2) Disconnect all connectors and remove flexible switch wire from the P.C. Board, and the Microphone Switch P.C. Board will be removed.

6. AV Input Terminal P.C. Board Removal

- (1) Remove two screws marked "●" shown in Figure 4.
- Disconnect all connectors from the P.C. Board, and the AV Input Terminal P.C. Board will be removed.

7. Rear Cover Removal

- (1) Remove eighteen screws marked "◎" shown in Figure 4.
- (2) Unsolder (A) shown in Figure 7, and the rear cover will be removed.

8. Pre-Main Amplifier P.C. Board Removal

- (1) After removal of Microphone Switch P.C. Board and rear cover, remove four screws marked "□" shown in Figure 5 and two screws marked "凸" shown in Figure 7.
- (2) Unsolder (B) shown in Figure 7 and remove all lead wires from the P.C. Board, and the Pre Main Amplifier P.C. Board will be removed.

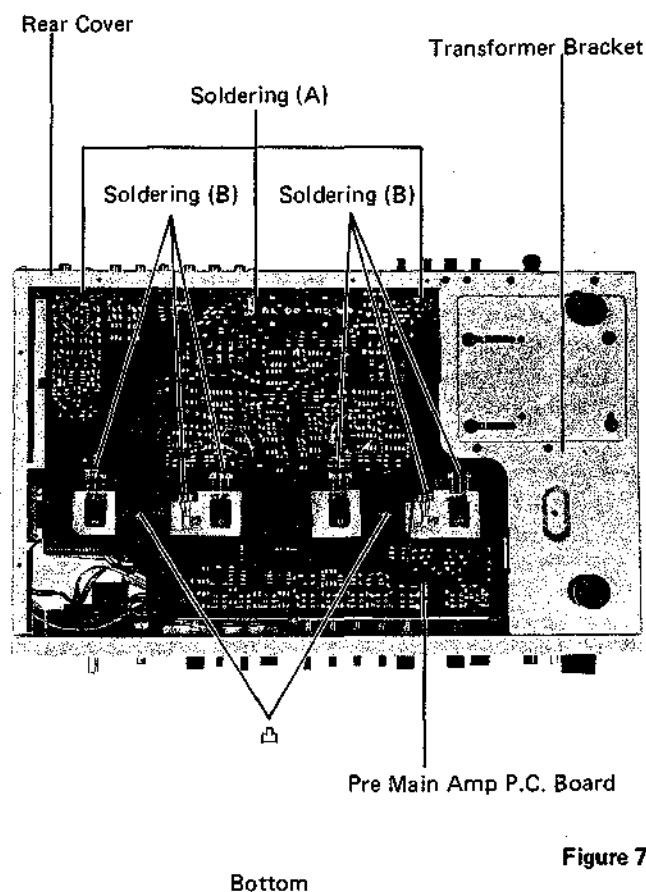


Figure 7

Adjustment Procedures

1. Connection

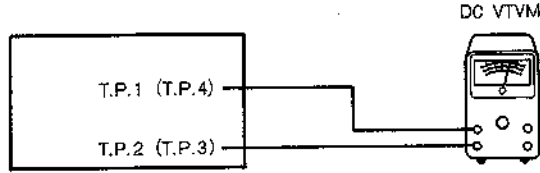


Figure 8

2. Control Setting

Power Switch	ON	Bass Control	Center
Volume Control	MIN	Balance Control	Center
Treble Control	Center	Others	OFF

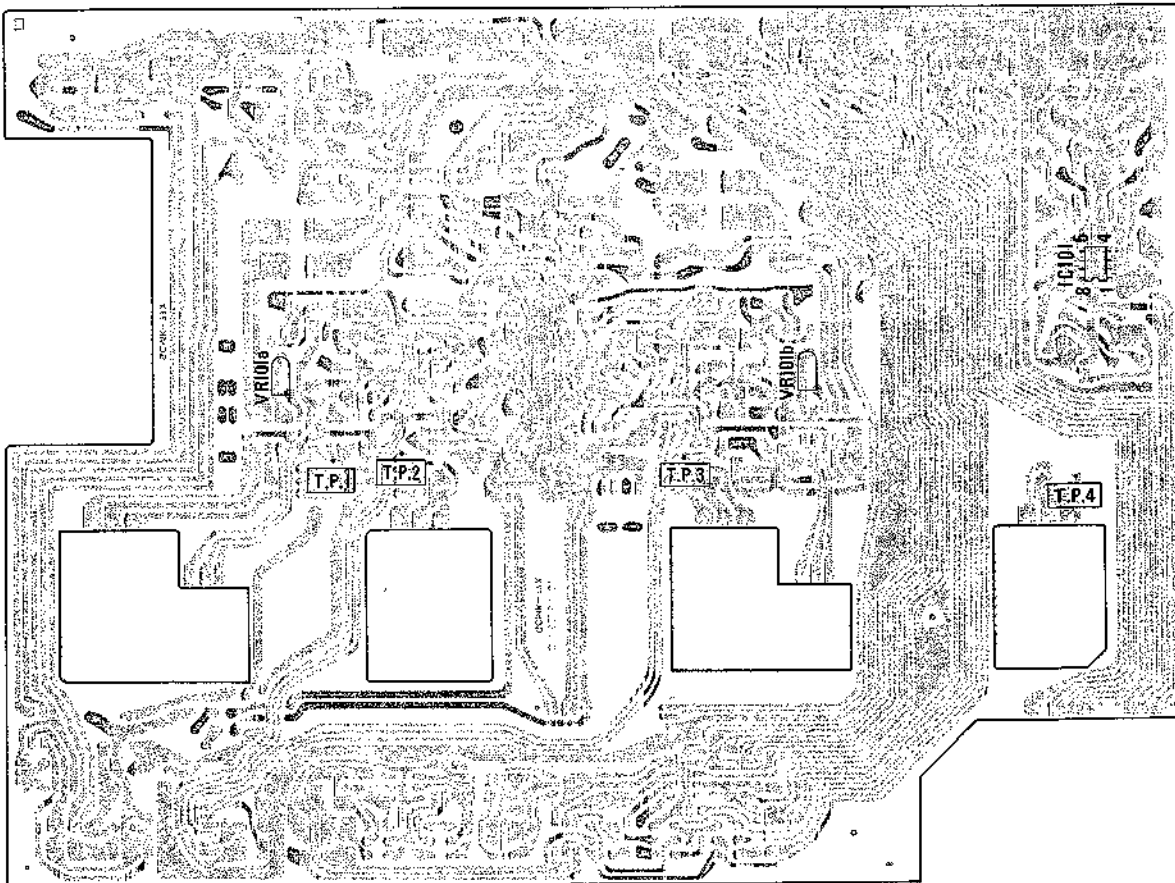
3. Adjustments

(1) Idling Adjustment

Adjust VR101A (VR101B) so that voltage between T.P.1 (T.P.3) and T.P.2 (T.P.4) reaches $15 \pm 5mV$.

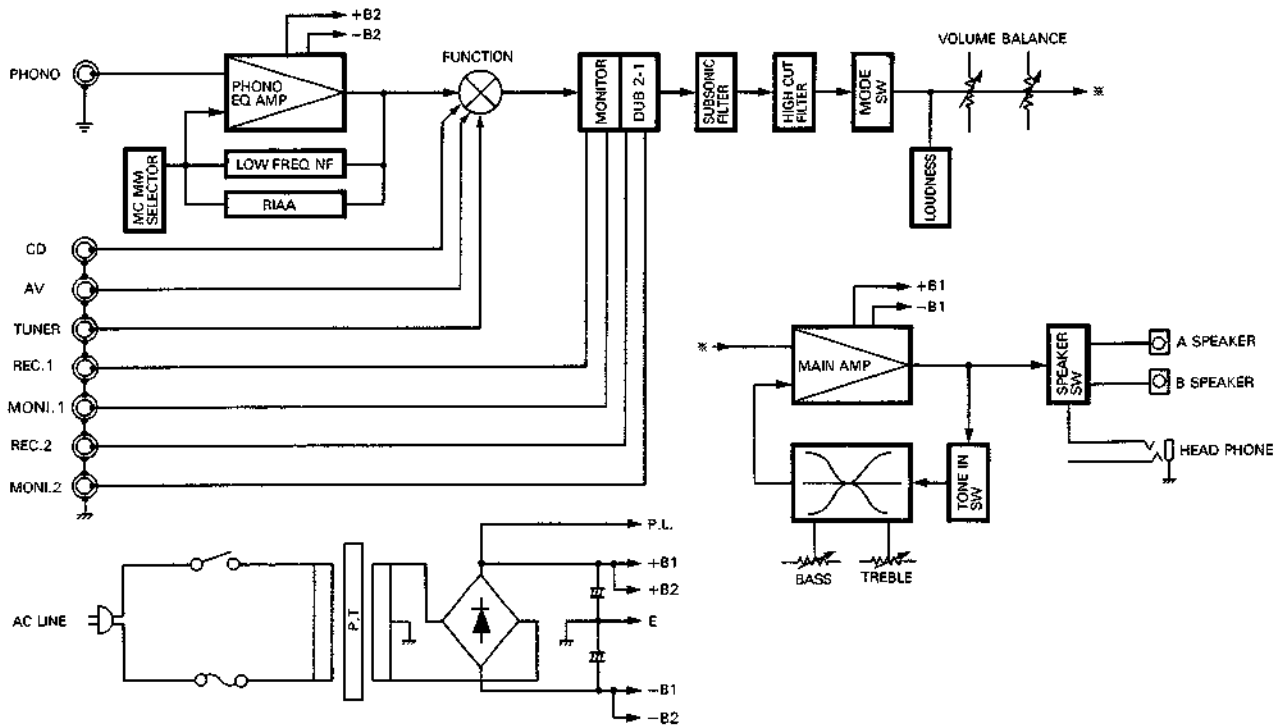
Note: Make the above adjustment about three minutes after power is ON.

Adjustment Locations



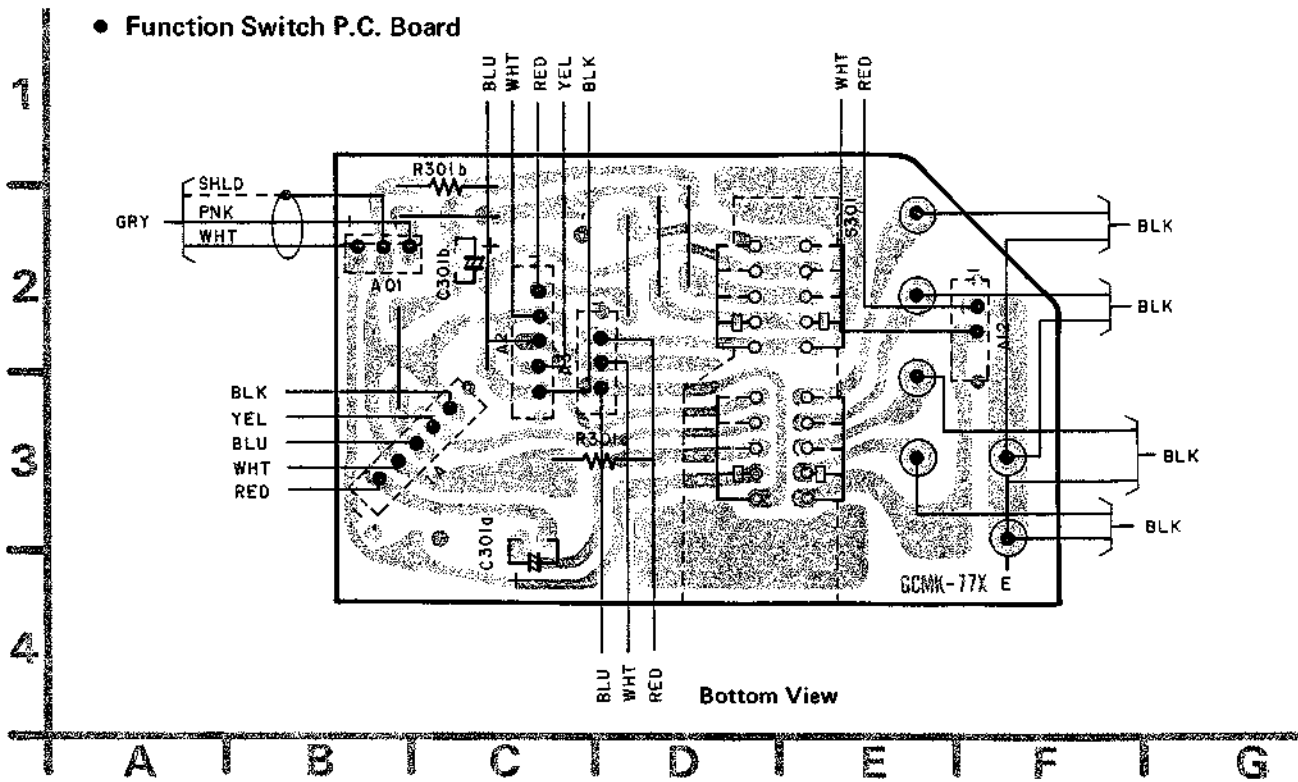
● Pre Main Amplifier P.C. Board

Block Diagram

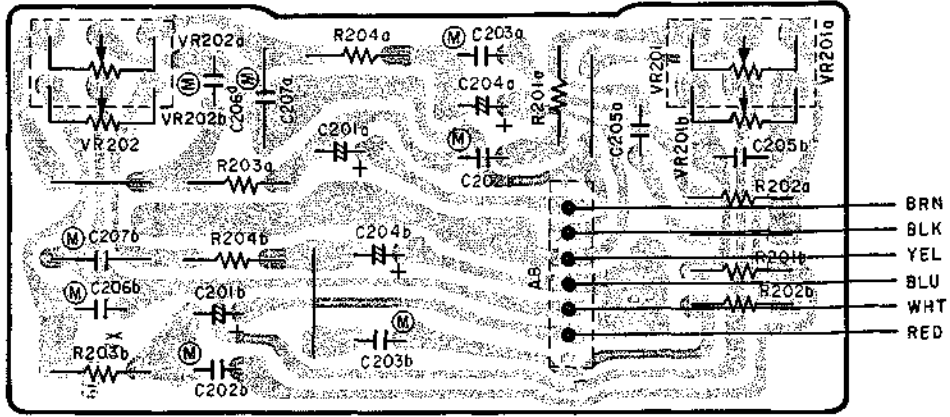


Parts Layout on P.C. Boards

• Function Switch P.C. Board

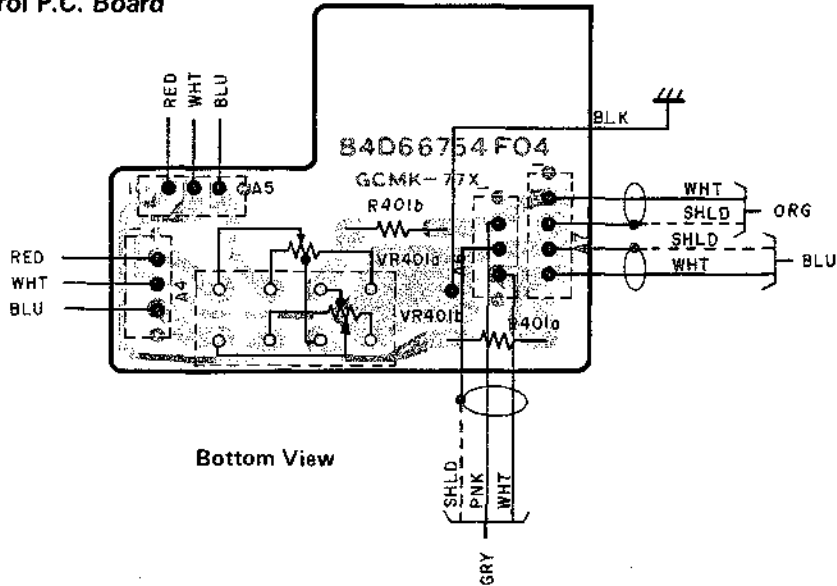


● Tone Control P.C. Board



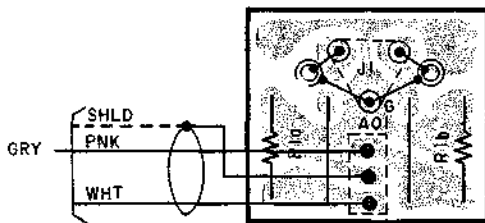
Bottom View

● Volume Control P.C. Board

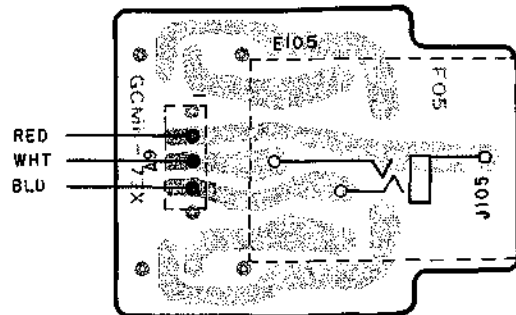


Bottom View

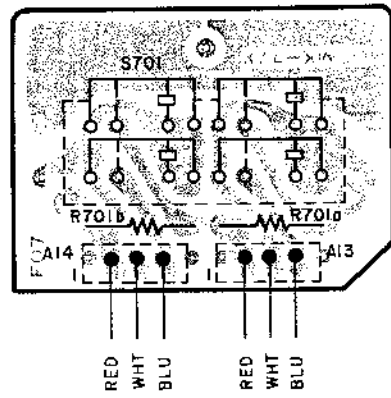
● AV Input Terminal P.C. Board



● Headphone Jack P.C. Board

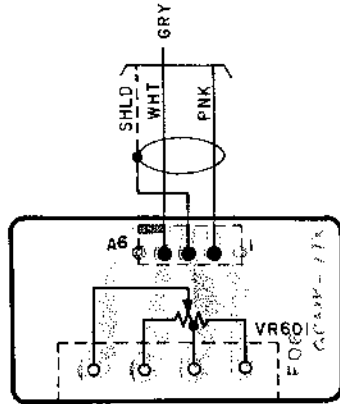


● Microphone Switch P.C. Board



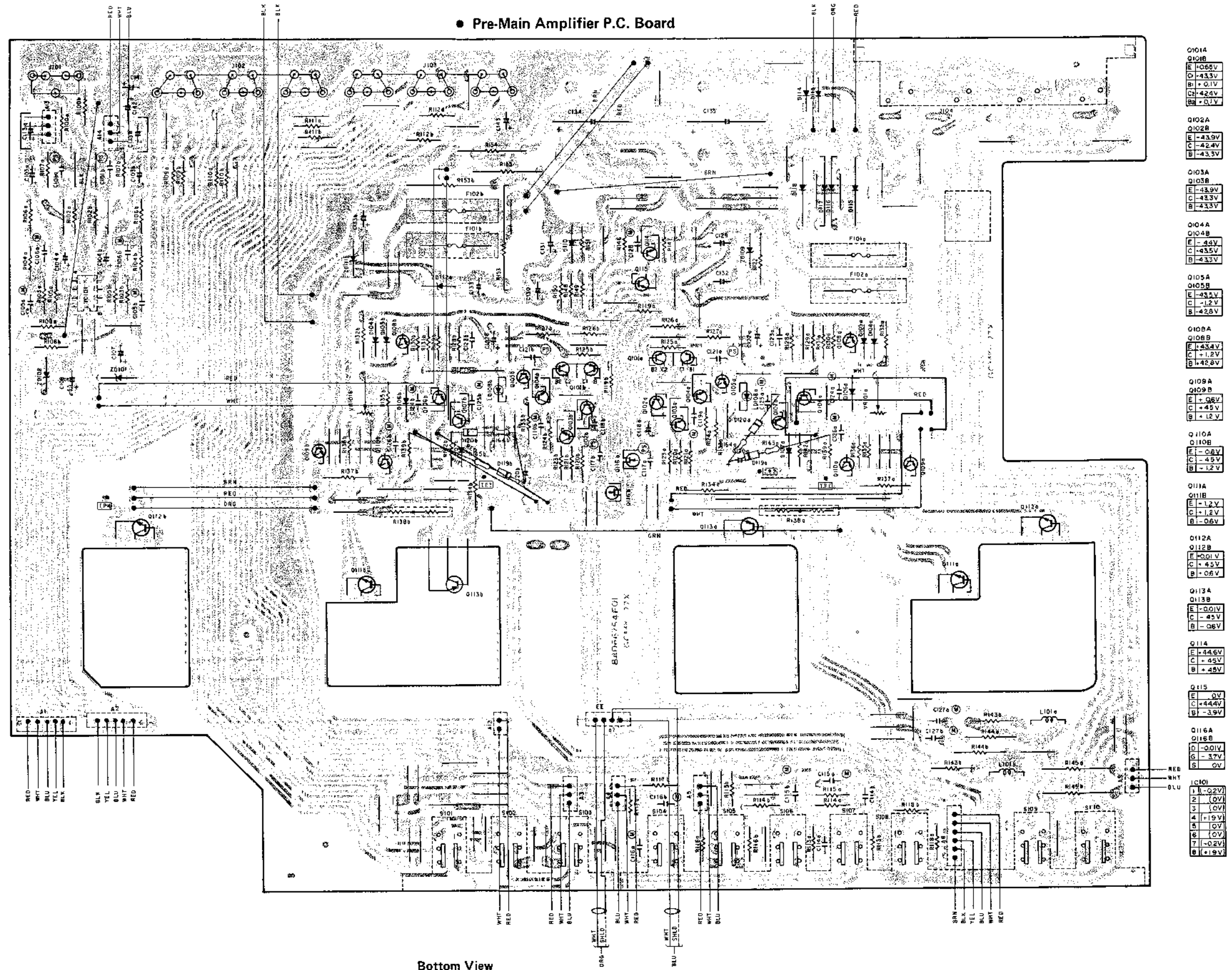
Bottom View

● Balance Control P.C. Board



Bottom View

● Pre-Main Amplifier P.C. Board

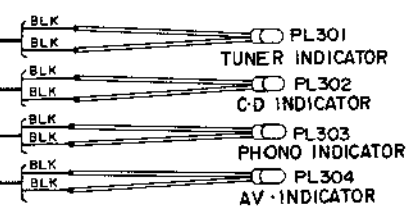
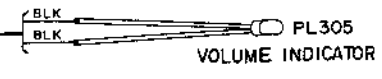
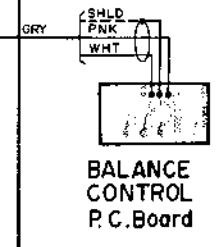
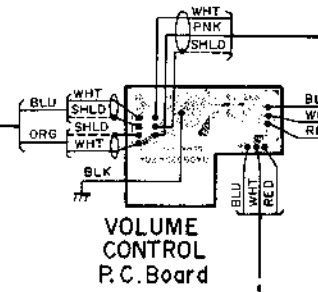
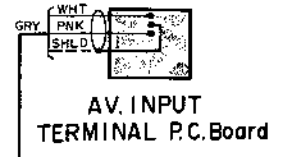
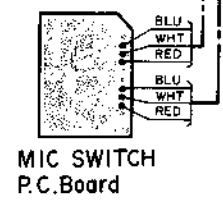
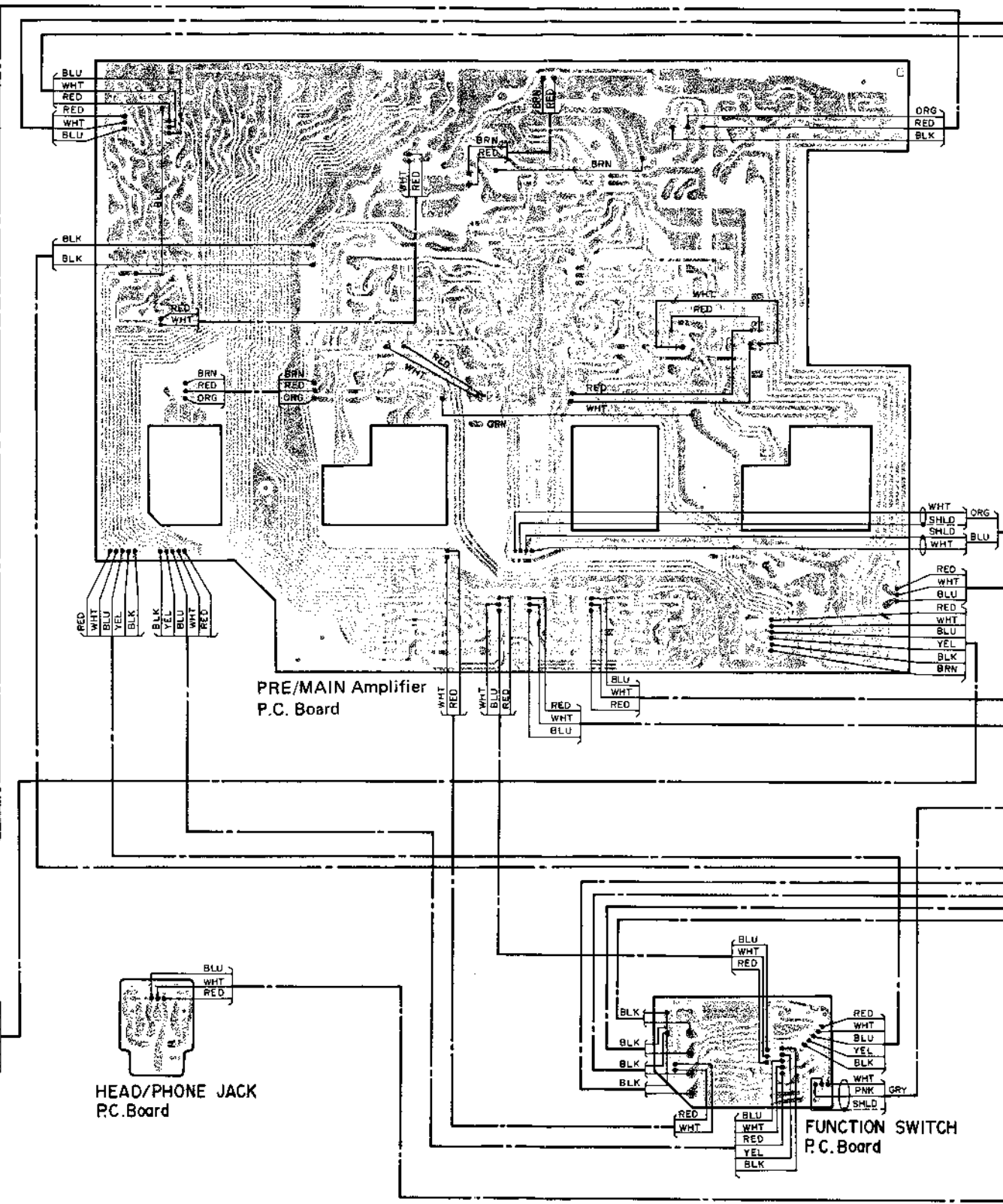
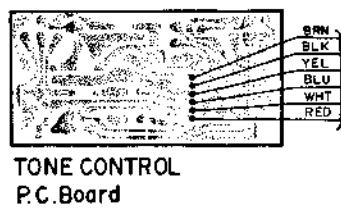
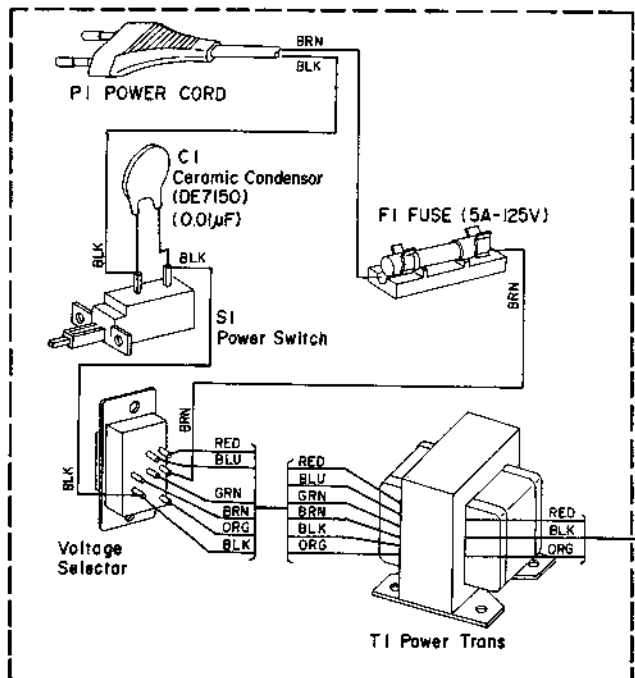
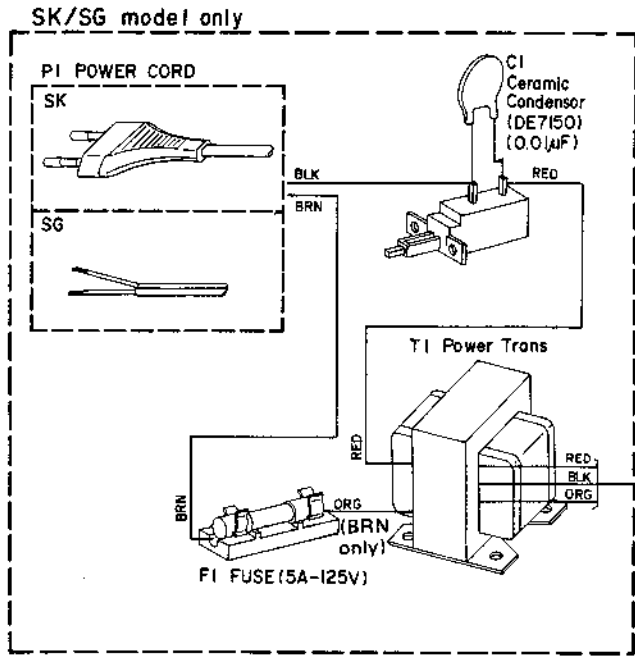


Bottom View

Q101A	Q101B	E - +0.66V
		G - +4.33V
		H - +0.1V
		C - +4.24V
		B - +4.33V
Q102A	Q102B	E - +3.9V
		C - +4.24V
		B - +4.33V
Q103A	Q103B	E - +3.9V
		C - +4.33V
		B - +4.33V
Q104A	Q104B	E - +4.4V
		C - +4.35V
		B - +4.33V
Q105A	Q105B	E - +4.1V
		C - +1.2V
		B - +4.28V
Q108A	Q108B	E - +4.54V
		C - +1.2V
		B - +4.28V
Q109A	Q109B	E - +0.6V
		C - +4.5V
		B - +1.2V
Q110A	Q110B	E - +0.6V
		C - +4.5V
		B - +1.2V
Q111A	Q111B	E - +1.2V
		C - +1.2V
		B - +0.6V
Q112A	Q112B	E - +0.01V
		C - +4.5V
		B - +0.6V
Q113A	Q113B	E - +0.01V
		C - +4.5V
		B - +0.6V
Q114		E - +4.46V
		C - +4.5V
		B - +4.5V
Q115		E - 0V
		C - +4.44V
		B - +3.9V
Q116A	Q116B	D - -0.01V
		S - +3.7V
		B - 0V
L101		1 -0.2V
		2 0V
		3 0V
		4 +1.9V
		5 0V
		6 0V
		7 -0.2V
		8 +1.9V

Wiring Diagram

- BLU Blue
- GRN Green
- BLK Black
- GRY Gray
- WHT White
- RED Red
- BRN Brown
- ORG Orange
- YEL Yellow
- VIO Violet
- GRN/WHT Green/White
- GRY/WHT Gray/White
- GRY/YEL Gray/Yellow
- GRN/YEL Green/Yellow



Electrical Parts List

Resistors (All resistors are carbon film, 1/4W, ±5% unless otherwise noted.)
 uF = microfarads, pF = picofarads

Symbol No.	Part No.	Description
Pre- Main Amp P.C. Board		
IC		
IC101	51T52153F01	NJM2043D-D
Transistors		
Q101a	48T53430F01	2SA979
Q101b	48T53430F01	2SA979
Q102a	48S43525F02	2SC1815
Q102b	48S43525F02	2SC1815
Q103a	48S43525F02	2SC1815
Q103b	48S43525F02	2SC1815
Q104a	48S43525F02	2SC1815
Q104b	48S43525F02	2SC1815
Q105a	48T56658F01	2SC1904
Q105b	48T56658F01	2SC1904
Q106a	48S43525F02	2SC1815
Q106b	48S43525F02	2SC1815
Q107a	48T51118F01	2SA1015
Q107b	48T51118F01	2SA1015
Q108a	48T56657F01	2SA899
Q108b	48T56657F01	2SA899
Q109a	48T56660F03	2SC2824
Q109b	48T56660F03	2SC2824
Q110a	48T56659F03	2SA1184
Q110b	48T56659F03	2SA1184
Q114	48T47682F02	2SC1845-FA
or	48S47682F03	2SC1845-EA
Q115	48S43525F02	2SC1815
Q116a	48S47729F03	FET, 2SK117-Y
or	48S47729F01	FET, 2SK117-GR
or	48T52122F01	FET, 2SK301-R
or	48T52122F02	FET, 2SK301-Q
or	48S47729F02	FET, 2SK117-BL
Q116b	48S47729F03	FET, 2SK117-Y
or	48S47729F01	FET, 2SK117-GR
or	48T52122F01	FET, 2SK301-R
or	48T52122F02	FET, 2SK301-Q
or	48S47729F02	FET, 2SK117-BL

Symbol No.	Part No.	Description
Diodes		
D104a	48T51117F01	1S1553
D104b	48T51117F01	1S1553
D105a	48T51117F01	1S1553
D105b	48T51117F01	1S1553
D106a	48T51117F01	1S1553
D106b	48T51117F01	1S1553
D107a	48T51117F01	1S1553
D107b	48T51117F01	1S1553
D110	48T51117F01	1S1553
D113	48T44992F01	DS135D
D114	48T44992F01	DS135D
D115	48T51115F02	S3V20 (4004)
D116	48T51115F02	S3V20 (4004)
D117	48T51115F02	S3V20 (4004)
D118	48T51115F02	S3V20 (4004)
D119a	48T51117F01	1S1553
D119b	48T51117F01	1S1553
D120a	48T51117F01	1S1553
D120b	48T51117F01	1S1553
ZD101	48T52741F54	Zener, HZ18-3L
ZD102	48T52741F54	Zener, HZ18-3L
ZD109	48T52741F62	Zener, HZ24-2L
ZD112a	48T52739F87	Zener, HZ20-3
ZD112b	48T52739F87	Zener, HZ20-3
LD108a	48T40955T01	LED, TLR124 (Red)
LD108b	48T40955T01	LED, TLR124 (Red)
Coils/Fuses		
L101a	24T67516F01	Choke, 1.1μH
L101b	24T67516F01	Choke, 1.1μH
F101a	65T42077U19	Fuse, SEMKO T2.0A
F101b	65T42077U19	Fuse, SEMKO T2.0A
F102a	65T42077U19	Fuse, SEMKO T2.0A
F102b	65T42077U19	Fuse, SEMKO T2.0A
Jacks		
J101	09T57203F01	2P (Phono)
J102	09T57203F02	6P (CD, Tuner, REC1)
J103	09T57203F02	6P (REC2, Monitor 1, 2)
J104	09T51101F01	Speaker Terminal (A, B)

Symbol No.	Part No.	Description
Switches		
S101 S102 S103 S104 S105	40T67110F01	Push, SUF R43 (Dubbing)
		Push, SUF R43 (Tape)
		Push, SUF R43 (Monitor)
		Push, SUN73 (Loudness)
		Push, SUN73 (Mode)
S106 S107 S108 S109 S110	40T56667F01	Push, SUN73 (High Cut)
		Push, SUN73 (Subsonic)
		Push, SUN73 (Tone In)
		Push, SUN73 (B Speaker)
		Push, SUN73 (A Speaker)
Capacitors		
C101a	08C42195G20	Polystyrol 47 pF
C101b	08C42195G20	Polystyrol 47 pF
C103a	23S40657F13	Electrolytic 47 uF/16V
C103b	23S40657F13	Electrolytic 47 uF/16V
C104a	23T44501P27	Electrolytic 4.7 uF/25V
C104b	23T44501P27	Electrolytic 4.7 uF/25V
C105a	08S40656F22	Mylar 0.056 uF
C105b	08S40656F22	Mylar 0.056 uF
C106a	08S40656F15	Mylar 0.015 uF
C106b	08S40656F15	Mylar 0.015 uF
C107	23S41198U42	Electrolytic 220 uF/25V
C108	23S41198U42	Electrolytic 220 uF/25V
C113a	23T43197F17	Electrolytic 4.7 uF/50V
C113b	23T43197F17	Electrolytic 4.7 uF/50V
C114a	23T57007F02	Electrolytic 0.22 uF/50V
C114b	23T57007F02	Electrolytic 0.22 uF/50V
C115a	08S41442F10	Mylar 5600 pF
C115b	08S41442F10	Mylar 5600 pF
C116a	08S41442F21	Mylar 0.047 uF
C116b	08S41442F21	Mylar 0.047 uF
C117a	08C42195G20	Polystyrol 47 pF
C117b	08C42195G20	Polystyrol 47 pF
C118a	23T44501P08	Electrolytic 3.3 uF/25V
C118b	23T44501P08	Electrolytic 3.3 uF/25V
C119a	08S41442F06	Mylar 2700 pF
C119b	08S41442F06	Mylar 2700 pF
C120a	23S41198U44	Electrolytic 220 uF/50V
C120b	23S41198U44	Electrolytic 220 uF/50V

Symbol No.	Part No.	Description
C121a	08C42195G15	Polystyrol 33 pF/125V
C121b	08C42195G15	Polystyrol 22 pF/125V
C122a	23S40657F08	Electrolytic 100 uF/10V
C122b	23S40657F08	Electrolytic 100 uF/10V
C123a	08T55119F03	Mica 3 pF
C123b	08T55119F03	Mica 3 pF
C124a	08S41442F05	Mylar 2200 pF
C124b	08S41442F05	Mylar 2200 pF
C125a	08S41442F05	Mylar 2200 pF
C125b	08S41442F05	Mylar 2200 pF
C126a	08S40656F01	Mylar 1000 pF
C126b	08S40656F01	Mylar 1000 pF
C127a	08S41442F21	Mylar 0.047 uF
C127b	08S41442F21	Mylar 0.047 uF
C128	08S40656F01	Mylar 1000 pF
C129	23S41198U38	Electrolytic 100 uF/63V
C130	23S40657F35	Electrolytic 47 uF/50V
C131	23S40657F43	Electrolytic 33 uF/63V
C132	23S40657F20	Electrolytic 47 uF/25V
C133a	23S40657F26	Electrolytic 47 uF/35V
C133b	23S40657F26	Electrolytic 47 uF/35V
C134	23T56654F01	Electrolytic 10000 uF/50V
C135	23T56654F01	Electrolytic 10000 uF/50V
C141	23S40657F10	Electrolytic 10 uF/16V
C142	23S40657F10	Electrolytic 10 uF/16V
C143	23S40657F10	Electrolytic 10 uF/16V
Resistors		
R122	06T55177F75	Metal Film 2.7K ohm 1W
R132a	06T55175F47	Metal Film 180 ohm 1/2W
R132b	06T55175F47	Metal Film 180 ohm 1/2W
R133a	06T55175F17	Metal Film 10 ohm 1/2W
R133b	06T55175F17	Metal Film 10 ohm 1/2W
R134a	06T55175F41	Metal Film 100 ohm 1/2W
R134b	06T55175F41	Metal Film 100 ohm 1/2W
R137a	06T55177F55	Metal Film 390 ohm 1W
R137b	06T55177F55	Metal Film 390 ohm 1W
R138a	06T68480F01	Cement 0.33 ohm 5W x 2
R138b	06T68480F01	Cement 0.33 ohm 5W x 2

Symbol No.	Part No.	Description	
R143a	06T55175F17	Metal Film	10 ohm 1/2W
R143b	06T55175F17	Metal Film	10 ohm 1/2W
R144a	06T55177F17	Metal Film	10 ohm 1W
R144b	06T55177F17	Metal Film	10 ohm 1W
R145a	06T55179F57	Metal Film	470 ohm 2W
R145b	06T55179F57	Metal Film	470 ohm 2W
R153a	06T56661F54	Metal Film	360 ohm 3W
R153b	06T56661F54	Metal Film	360 ohm 3W
R154	06T55179F75	Metal Film	2.7K ohm 2W
R155	06T55179F75	Metal Film	2.7K ohm 2W
VR101a	18C42061J28	Variable	470 ohm
VR101b	18C42061J28	Variable	470 ohm
Tone Control P.C. Board			
Capacitors			
C201a	23S40657F16	Electrolytic	4.7 uF/25V
C201b	23S40657F16	Electrolytic	4.7 uF/25V
C202a	08S40656F11	Mylar	6800 pF
C202b	08S40656F11	Mylar	6800 pF
C203a	08S40656F20	Mylar	0.039 uF
C203b	08S40656F20	Mylar	0.039 uF
C204a	23S40657F11	Electrolytic	22 uF/16V
C204b	23S40657F11	Electrolytic	22 uF/16V
C205a	21S40655F31	Ceramic	560 pF
C205b	21S40655F31	Ceramic	560 pF
C206a	08S40656F22	Mylar	0.056 uF
C206b	08S40656F22	Mylar	0.056 uF
C207a	08S44503P30	Mylar	0.27 uF
C207b	08S44503P30	Mylar	0.27 uF
Volumes			
VR201	18T56663F01	Rotary	50K ohm x 2
VR202	18T56663F01	Rotary	50K ohm x 2
Function Switch P.C. Board			
Switch			
S301	40T56664F01	Rotary, SRZ	

Symbol No.	Part No.	Description	
Capacitors			
C301a	23T44501P06	Electrolytic	2.2 uF/35V
C301b	23T44501P06	Electrolytic	2.2 uF/35V
Volume Control P.C. Board			
Volume			
VR401	18T68333F01	Rotary	100K ohm x 2
Micro Switch P.C. Board			
Switch			
S701	40T57372F01	Slide, SSR2435 (MC/MM)	
AV Input Terminal P.C. Board			
Jack			
J1	09T57203F01	Phone, 2P	
Miscellaneous			
C1	08T57437F09	Capacitor, Ceramic 0.01uF	
F1	65T42077U18	Fuse, SEMKO T1.6A	
J105	09T56010F01	Headphone Jack, M1669	
P1	▲ 28T68132F01	AC Cord (SAA)	
	■ 28T43812P02	Plug, AC Cord	
	● 28T43812P02	Plug, AC Cord	
PL301	65T66752F02	Pilot Lamp, 24V-50mA (ORG)	
PL302	65T66752F02	Pilot Lamp, 24V-50mA (ORG)	
PL303	65T66752F03	Pilot Lamp, 24V-50mA (GRN)	
PL304	65T66752F02	Pilot Lamp, 24V-50mA (ORG)	
PL305	65T66752F01	Pilot Lamp, 24V-50mA	
Q111a	48T47682F02	Transistor, 2SC1845-FA	
or	48T47682F03	Transistor, 2SC1845-EA	
Q111b	48T47682F02	Transistor, 2SC1845-FA	
or	48T47682F03	Transistor, 2SC1845-EA	
Q112a	48T57132F03	Transistor, 2SC3181-O, R	
Q112b	48T57132F03	Transistor, 2SC3181-O, R	

▲ : For SG model only, ■ : For SK model only, ● : For EK model only, Others: Common

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
Q113a	48T57131F03	2SA1264-O, R			
Q113b	48T57131F03	2SA1264-O, R			
S1	40T45561F02	Switch, Power (SDLIP)			
T1	▲ 25T72409F01	Power Transformer			
	■ 25T69175F01	Power Transformer			
	● 25T71160F01	Power Transformer			
VR601	18T56666F01	Rotary Volume (Balance)			
J2	● 09T51831F01	Socket Switch (M-1615)			
P2	● 09T51830F01	Plug Switch (P-2120)			

▲ : For SG model only, ■ : For SK model only, ● : For EK model only, Others: Common

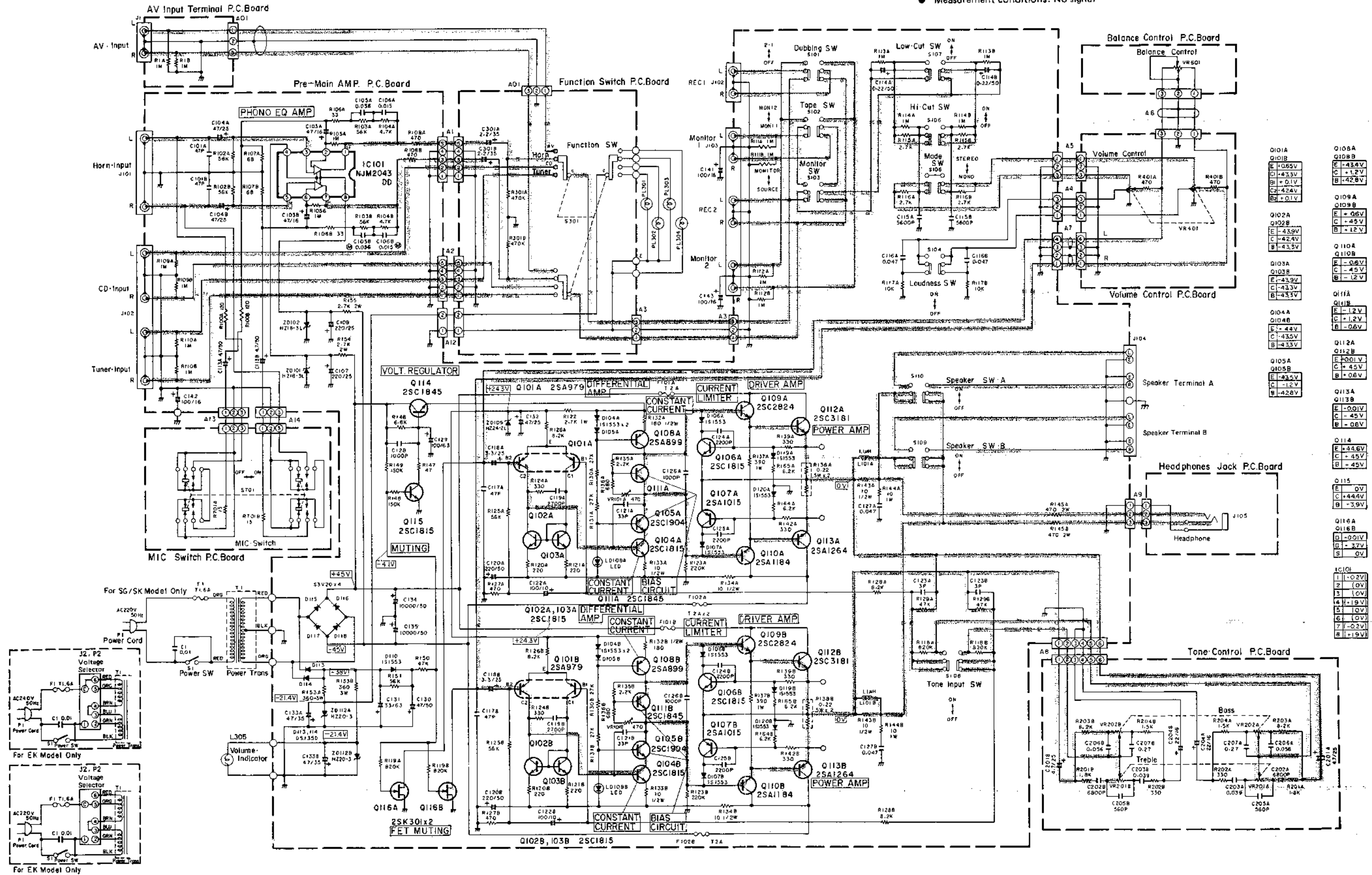
Schematic Diagram

NOTES:

- All resistance values are in ohms. $K = 1,000$
- All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

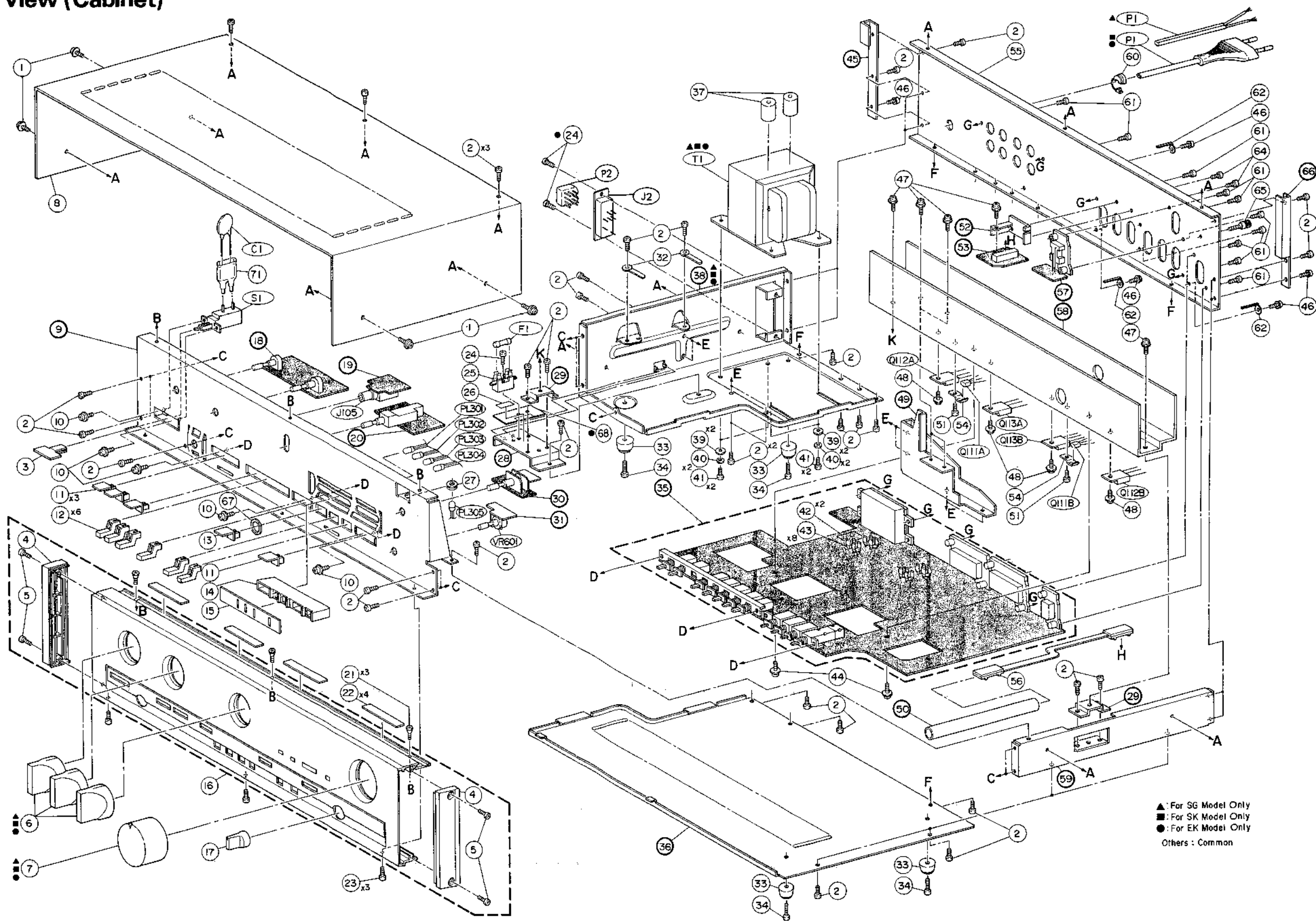
- Power supply voltage: AC 220V (SK, SG Model)
AC 220V ~ 240V (EK Model)

- Measurement meter: Digital multi voltmeter
- Measurement reference: To ground
- Measurement conditions: No signal



Q101A	Q108A
Q101B	Q108B
E = +0.65V	E = +4.5V
C = +1.2V	C = +1.2V
B = +2.8V	B = +2.8V
Q102A	Q109A
Q102B	Q109B
E = +3.9V	E = +0.6V
C = +4.5V	C = +4.5V
B = +1.2V	B = +1.2V
Q103A	Q110A
Q103B	Q110B
E = +3.9V	E = +0.6V
C = +4.5V	C = +4.5V
B = +1.2V	B = +1.2V
Q104A	Q111A
Q104B	Q111B
E = +4.2V	E = +1.2V
C = +4.5V	C = +1.2V
B = +3.3V	B = +0.6V
Q105A	Q112A
Q105B	Q112B
E = +3.3V	E = +0.0V
C = +4.5V	C = +4.5V
B = +2.8V	B = +0.6V
Q113A	Q113B
E = +0.0V	E = +0.0V
C = +4.5V	C = +4.5V
B = +0.6V	B = +0.6V
Q114	Q114
E = +4.6V	E = +4.6V
C = +4.5V	C = +4.5V
B = +4.5V	B = +4.5V
Q115	Q115
E = 0V	E = 0V
C = +4.4V	C = +4.4V
B = -3.9V	B = -3.9V
Q116A	Q116B
E = +0.0V	E = +0.0V
C = +3.7V	C = +3.7V
B = 0V	B = 0V
IC101	IC101
1 = -0.2V	1 = -0.2V
2 = 0V	2 = 0V
3 = 0V	3 = 0V
4 = +1.9V	4 = +1.9V
5 = 0V	5 = 0V
6 = 0V	6 = 0V
7 = -0.2V	7 = -0.2V
8 = +1.9V	8 = +1.9V

Exploded View (Cabinet)



Cabinet Assembly Parts List

		Part No.	Description			Part No.	Description
	1	03S40036U01	Screw, W/Washer (M4 x 8)		33	75A52969F01	Pad, Trann-leg
	2	03S44205G02	Screw, Pan (M3 x 6)		34	03S44205G52	Screw, Pan (M4 x 14)
	3	3-A 36A67060F01	Knob, Push (Power)		35	3-E *	Ass'y, Pre-Main Amplifier
	4	07B67066F01	Frame, Side Panel				P.C. Board
	5	03S40012G93	Screw, Tapping (M3 x 8)		36	5-E *	Cover, Bottom
▲	6	5-A 36B66511F04	Knob, Rotary VR (Tone Input Select)	▲	37	1-E 43A61729F02	Spacer, Rubber
■		36B66511F03	Knob, Rotary VR (Tone Input Select)	■			Bracket, Transformer
●		36B66511F03	Knob, Rotary VR (Tone Input Select)	●			Bracket, Transformer
▲	7	6-A 36B66512F04	Knob, Rotary VR (Volume)		39	04S40070G40	Washer, Flat (M4)
■		36B66512F03	Knob, Rotary VR (Volume)		40	04S40071G15	Washer, Spring Lock (M4)
●		36B66513F03	Knob, Rotary VR (Volume)		41	03S44205G51	Screw, Pan (M4 x 8)
	8	2-A 15C67065F01	Cover, Top		42	3-F 54B67276F03	Label, Fuse
	9	2-A *	Chassis, Front		43	4-F 09T51410F01	Holder Fuse
	10	03D40014G04	Screw, W/Washer (M3 x 6)		44	4-F 03S40018G02	Screw, Tapping (M3 x 8)
	11	36A67061F02	Knob, Push (A)		45	1-F *	Bracket, Rear (L)
	12	4-A 36A67062F02	Knob, Push (B)		46	03S40036U18	Screw, W/Washer (M3 x 8)
	13	4-B 36A67061F01	Knob, Push (Monitor)		47	2-F 03C42723U02	Screw, Cap (M3 x 8)
	14	4-B 43A62016F02	Bushing, Lamp		48	03C40121T15	Screw, W/Washer (M3 x 12)
	15	4-B 61A66858F01	Filter, Lamp		49	3-F *	Bracket, Transformer
	16	5-B 01V69400F22	Assembly, Front Panel		50	5-F *	Tube, Vynil (170)
	17	5-B 36B67059F01	Knob, Rotary VR (Balance)		51	03S40012G28	Screw, Tapping (M3 x 8)
	18	3-C *	Assy., Tone Control P.C. Board		52	2-G *	Bracket, P.C. Board
	19	3-C *	P.C., Headphone Jack		53	2-G *	Assy., Microphone Switch P.C. Board
	20	3-C *	Assy., Function Switch P.C. Board		54	07R51146F01	Support, Transistor
	21	4-C 03S44205G16	Screw, Countersink (M3 x 6)		55	1-G 15C67058F02	Cover, Rear
	22	5-C 14S53018F42	Fiber, Insulator		56	4-G 45T57373F01	Wire, Flexible (SWR1198)
	23	6-C 03S40012G03	Screw, Tapping (M3 x 6)		57	2-G *	Assy., AV Input Terminal P.C. Board
	24	03S44205G03	Screw, Pan (M3 x 8)		58	2-G *	Heat Sink
	25	3-D 09T51074F01	Holder, Fuse		59	5-G *	Bracket Side (R)
	26	3-D 54B62266F19	Label, Fuse (T1.6A)		60	1-H 43B41625J02	Support, Cord
	27	3-D 43A66824F01	Bush, Lamp		61	03S40012G41	Screw, Tapping (M3 x 8)
	28	3-D *	Bracket, Fuse		62	29A737272	Lug, Wrap Around
	29	*	Bracket, Heat Sink		64	1-H 03D40014G49	Screw, W/Washer (M3 x 8)
	30	3-D *	Assy., Volume Control P.C. Board		65	2-H 29T66964F01	Terminal, Ground
	31	4-D *	Panel, Balance Control		66	2-I *	Bracket, Rear (R)
	32	2-E 29C41045P01	Lug, Wrap Around		67	3-B 04S40075G25	Washer Polystider (M5.2)
				●	68	3-E 43A51453F01	Spacer, Fuse
					71	2-C 43T53136F01	Bush, Capacitor (TP150-301)

▲ : For SG model only, ■ : For SK model only, ● : For EK model only, Others: Common

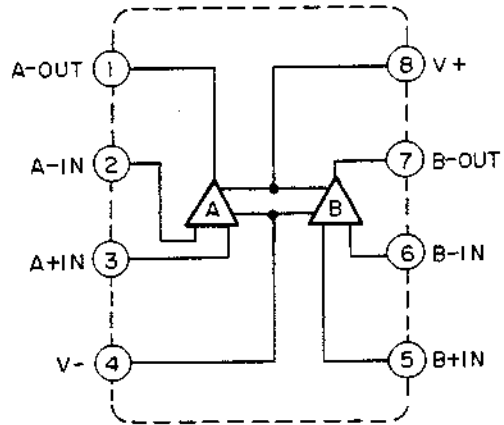
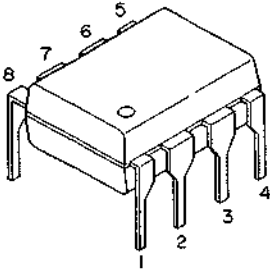
Note: * The parts without part numbers are not supplied.

Parts List by Specific Countries

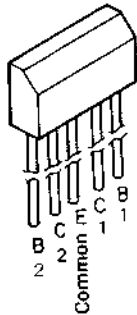
Symbol No.	Description	POWER SOURCE		
		SG▲ 240V	SK■ 220V	EK● 220V
		North America	West Germany	Australia
6	Knob, Rotary VR (B)	36B66511F04	36B66511F03	36B66511F03
7	Knob, Rotary VR (C)	36B66512F04	36B66512F03	36B66512F03
38	Assembly, Trans Chassis	01V73300F78	01V69400F19	01V71400F85
68	Spacer, Fuse	Not Used	Not Used	43A51453F01
J2	Socket, Switch	Not Used	Not Used	09T51831F01
P1	Plug, AC Cord	28T68132F01	28T43812P02	28T43812P02
P2	Plug, Switch	Not Used	Not Used	09T51830F01
T1	Trans, Power	25T72409F01	25T69175F01	25T71160F01
	Label, Serial No.	54B57610F10	54B57610F11	54B57610F11
	Label, Volt	54B44257U02	54B44257U01	54B44257U03

Semi-Conductor Lead Identifications

NJM2043D-D: IC101



2SA979: Q101A, 101B



2SC1815: Q102A, 102B, 103A, 103B,
Q104A, 104B, 106A, 106B,
Q115
2SA1015: Q107A, 107B
2SC1845: Q111A, 111B, 114



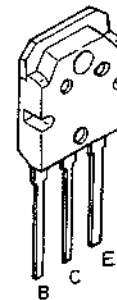
2SC1904: Q105A, 105B
2SA899: Q108A, 108B



2SC2824: Q109A, 109B
2SA1184: Q110A, 110B



2SC3181: Q112A, 112B
2SA1264: Q113A, 113B



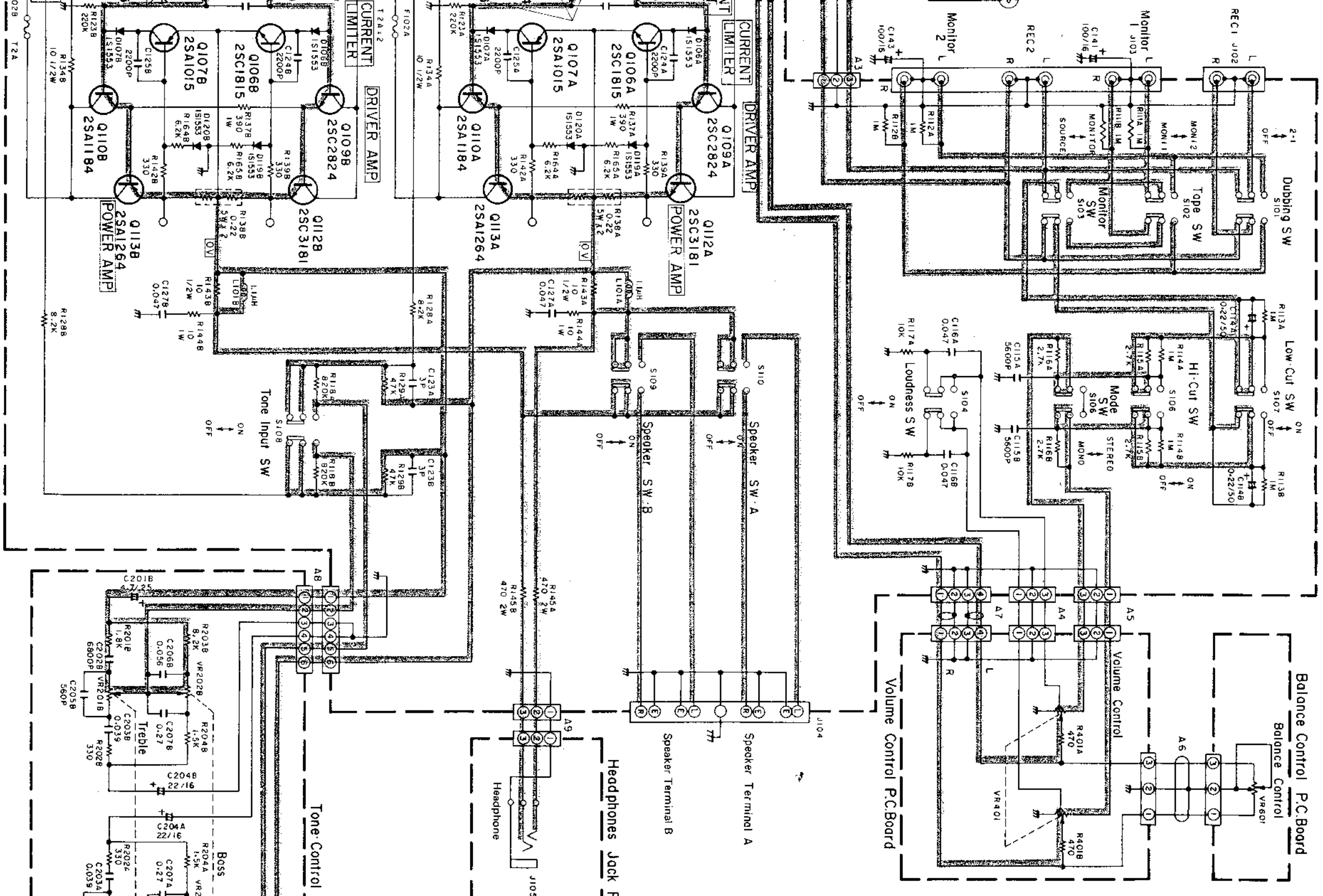
2SK117: Q116A, 116B



2SK301: Q116A, 116B



Q106A Q106B Q1068 Q107A Q107B
 Q109A Q109B Q110A Q110B
 Q112A Q112B Q113A Q113B
 D119A D120A
 D119B D120B



- NOTES:**
- All resistance values are in ohms. K = 1,000
 - All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$
 - Power supply voltage: AC 220V (SK, SG Model)
AC 220V ~ 240V (EK Model)
- Measurement meter: Digital multi voltmeter
 - Measurement reference: To ground
 - Measurement conditions: No signal

Q101A	E +106.5V
Q101B	C -43.3V
	B +0.1V
	C ₂ -42.4V
	B ₂ +0.1V

Q108A	E +43.4V
Q108B	C +1.2V
	B +42.8V

Q102A	E +0.6V
Q102B	C +4.5V
	B +1.2V

Q109A	E +0.6V
Q109B	C +4.5V
	B +1.2V

Q103A	E -0.6V
Q103B	C -4.5V
	B -1.2V

Q110A	E -1.2V
Q110B	C +1.2V
	B -0.6V

Q104A	E -4.5V
Q104B	C -4.5V
	B -4.33V

Q111A	E +0.01V
Q111B	C +4.5V
	B +0.6V

Q113A	E -0.01V
Q113B	C -4.5V
	B -0.6V

Q114	E +44.6V
	C +4.5V
	B +4.5V

Q115	E -0.0V
	C +4.4V
	B -3.9V

Q116A	D -0.01V
Q116B	G -3.7V
	S 0V

IC101	T -0.2V
	2 (0V)
	3 (0V)
	4 +1.9V
	5 (0V)
	6 (0V)
	7 -0.2V
	8 (+1.9V)