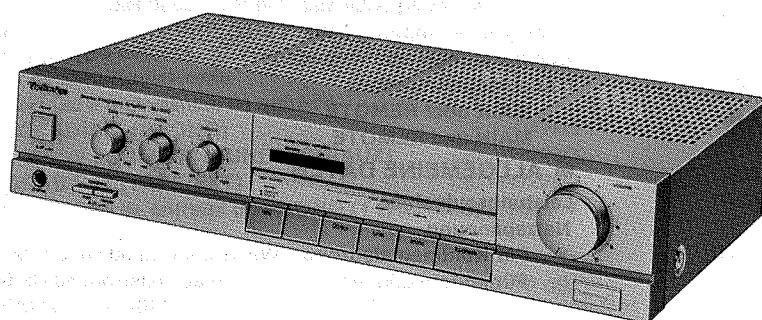


Service Manual

Stereo Integrated Amplifier

96019 AVE Amplifier

SU-500



Color

(K) Black Type
(S) Silver Type

SU-500

Color	Area
(K)(S)	[E] Continental Europe
(K)(S)	[EH] Holland
(K)(S)	[EB] Belgium
(K)(S)	[EF] France
(K)(S)	[EK] United Kingdom
(K)(S)	[EG] . . . F.R. Germany
(K)(S)	[Ei] Italy
(K)(S)	[XL] Australia
(K)(S)	[XA] Asia, Latin America, Middle Near East, Africa & Oceania

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

40 Hz~20 kHz continuous power output	
both channels driven	2 × 40W (8Ω)
1 kHz continuous power output	
both channels driven	2 × 50W (8Ω)
Total harmonic distortion	
rated power at 40 Hz~20 kHz	0.05% (8Ω)
half power at 1 kHz	0.03% (8Ω)
Intermodulation distortion	
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.05%
Power bandwidth	
both channels driven, -3 dB	10 Hz~25 kHz (8Ω, 0.05%)
Damping factor	50 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47kΩ
TUNER, CD/AUX	150 mV/22kΩ
TAPE/EXT	150 mV/22kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV
S/N	
rated power (8Ω)	
PHONO	71 dB (IHF, A: 72 dB)
TUNER, CD/AUX, TAPE/EXT	90 dB (IHF, A: 98 dB)
Frequency response	
PHONO	RIAA standard curve
	±0.8 dB (30 Hz~15 kHz)
TUNER, CD/AUX, TAPE/EXT	5 Hz~70 kHz (-3 dB)

Tone controls

BASS 50 Hz, +10 dB~-10 dB

TREBLE 20 kHz, +10 dB~-10 dB

Loudness control (volume at -30 dB) 50 Hz, +9 dB

Output voltage and impedance

REC OUT 150 mV

Channel balance, CD/AUX 250 Hz~6,300 Hz ±1 dB

Channel separation, AUX 1 kHz 45 dB

Headphones output level and impedance 470 mV/330Ω

Load impedance

MAIN or REMOTE 4Ω~16Ω

MAIN and REMOTE 8Ω~16Ω

■ GENERAL

Power consumption 250W

Power supply

For Australia and United Kingdom AC 50 Hz/60 Hz, 240V

For continental Europe AC 50 Hz/60 Hz, 220V

For others AC 50 Hz/60 Hz, 110V/127V/220V/240V

Dimensions (W×H×D) 430×86×240 mm

(16-15/16" × 3-3/8" × 9-7/16")

Weight 4.7 kg (10.4 lb.)

Note:

Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Specifications are subject to change without notice for further improvement.

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

■ TECHNISCHE DATEN

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 40 Hz ~ 20 kHz	
beide Kanäle ausgesteuert	2 × 40W (8 Ω)
Dauerton-Ausgangsleistung bei 1 kHz	
beide Kanäle ausgesteuert	2 × 50W (8 Ω)
Gesamtklirrfaktor	
Nennleistung bei 40 Hz ~ 20 kHz	0,05% (8 Ω)
halbe Nennleistung bei 1 kHz	0,03% (8 Ω)
Intermodulationsfaktor	
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω	0,05%
Leistungsbandbreite	
beide Kanäle ausgesteuert bei -3 dB	10 Hz ~ 25 kHz (8 Ω, 0,05%)
Dämpfungsfaktor	50 (8 Ω)
Eingangsempfindlichkeit und -impedanz	
Phono	2,5 mV/47 kΩ
Tuner, CD/Aux	150 mV/22 kΩ
TAPE/EXT	150 mV/22 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.)	150 mV
Geräuschspannungsabstand	
Nennleistung (8 Ω)	
Phono	71 dB (nach IHF, A: 72 dB)
Tuner, CD/Aux, TAPE/EXT	90 dB (nach IHF, A: 98 dB)

Frequenzgang	
Phono	RIAA-Standardkurve, ±0,8 dB (30 Hz ~ 15 kHz)
Tuner, CD/Aux, Tape/EXT	5 Hz ~ 70 kHz (-3 dB)
Klangregler	
Baßregler (BASS)	50 Hz, +10 dB ~ -10 dB
Höhenregler (TREBLE)	20 kHz, +10 dB ~ -10 dB
Gehörrichtige Lautstärkekorrektur (Loudness)	
(bei -30 dB Ausgangsleistung)	50 Hz, +9 dB
Ausgangsspannung und -impedanz	
Aufnahmeausgang (REC OUT)	150 mV
Kanalabweichung (CD/Aux, 250 Hz ~ 6300 Hz)	±1 dB
Übersprechdämpfung (Aux, 1 kHz)	45 dB
Kopfhörerpegel und -impedanz	470 mV/330 Ω
Lautsprecherimpedanz	
MAIN oder REMOTE	4 Ω ~ 16 Ω
MAIN und REMOTE	8 Ω ~ 16 Ω

■ ALLGEMEINE DATEN

Leistungsaufnahme	250W
Netzspannung	
Für Kontinentaleuropa	Wechselstrom 50 Hz/60 Hz, 220V
Für andere Länder	Wechselstrom 50 Hz/60 Hz, 110V/127V/220V/240V
Abmessungen (B×H×T)	430 × 86 × 240 mm
Gewicht	4,7 kg
Bemerkung:	
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.	
(Die technischen Daten können infolge von Verbesserungen ohne Ankündigung geändert werden.)	

■ CARACTERISTIQUES

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sortie continue de 40 Hz~20 kHz,	
les deux canaux en circuit	2 × 40W (8Ω)
Puissance de sortie continue à 1 kHz	
les deux canaux en circuit	2 × 50W (8Ω)
Distorsion harmonique totale	
à puissance nominale (40 Hz~20 kHz)	0,05% (8Ω)
à demi-puissance (1 kHz)	0,03% (8Ω)
Distorsion d'intermodulation	
à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8 Ω	0,05%
Réponse de fréquences	
les deux canaux en circuit, -3 dB	10 Hz~25 kHz (8Ω, 0,05%)
Coefficient d'amortissement	50 (8Ω)
Sensibilité et impédance d'entrée	
PHONO	2,5 mV/47kΩ
SYNTHONISATEUR, CD/AUX (TUNER, CD/AUX)	150 mV/22kΩ
BANDE/EXT (TAPE/EXT)	150 mV/22kΩ
PHONO (tension d'entrée maximum, 1 kHz RMS)	150 mV
Signal/Bruit	
à puissance nominale (8Ω)	
PHONO	71 dB (IHF, A: 72 dB)
SYNTHONISATEUR, CD/AUX, BANDE/EXT	
(TUNER, CD/AUX, TAPE/EXT)	90dB (IHF, A: 98 dB)
Réponse de fréquence	
PHONO	Courbe nominale RIAA ±0,8 dB (30 Hz~15 kHz)

SYNTHONISATEUR, CD/AUX, BANDE/EXT	
(TUNER, CD/AUX, TAPE/EXT)	5 Hz~70 kHz (-3 dB)
Réglage de la tonalité	
BASSES (BASS)	50 Hz, +10 dB ~ -10 dB
AIGUS (TREBLE)	20 kHz, +10 dB ~ -10 dB
Compensateur physiologique (volume à -30 dB)	50 Hz, +9 dB
Tension de sortie et impédance	
SORTIE ENREGISTREMENT (REC OUT)	150 mV
Equilibrage des canaux, CD/AUX 250 Hz~6 300 Hz	±1 dB
Séparation des canaux, AUX 1 kHz	45 dB
Niveau de sortie des casques et impédance	470 mV/330Ω
Impédance de charge	
PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE)	4Ω~16Ω
PRINCIPALE et AUXILIAIRE (MAIN and REMOTE)	8Ω~16Ω

■ DIVERS

Consommation	250W
Alimentation	
Pour l'Europe	CA 50 Hz/60 Hz, 220V
Autres	CA 50-Hz/60 Hz, 110V/127V/220V/240V
Dimensions (L×H×Pr)	430 × 86 × 240 mm
Poids	4,7 kg

Remarque:

On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).

(Sujet à changement sans préavis)

■ ESPECIFICACIONES (DIN 45 500)

■ SECCION AMPLIFICADOR

Potencia continua de 40 Hz~20 kHz	
en ambos canales	2 × 40W (8Ω)
Potencia continua de 1 kHz	
en ambos canales	2 × 50W (8Ω)
Distorsión armónica total	
potencia de régimen a 40 Hz~20 kHz	0,05% (8Ω)
mitad de potencia a 1 kHz	0,03% (8Ω)
Distorsión por intermodulación	
potencia de régimen a 60 Hz: 7 kHz=4:1, SMPTE, 8 Ω	0,05%
Ancho de banda de potencia	
con ambos canales, -3 dB	10 Hz~25 kHz (8Ω, 0,05%)
Factor de amortiguamiento	50 (8Ω)
Sensibilidad e impedancia de entrada	
TOCADISC. (PHONO)	2,5 mV/47kΩ
SINTON., CD/AUX. (TUNER, CD/AUX)	150 mV/22kΩ
GRAB/EXT (TAPE/EXT)	150 mV/22kΩ
Voltaje máximo de entrada de PHONO (1 kHz, RMS)	150 mV
Relación de señal a ruido	
potencia de régimen (8Ω)	
TOCADISC. (PHONO)	71 dB (IHF, A: 72 dB)
SINTON., CD/AUX., GRAB/EXT	
(TUNER, CD/AUX, TAPE/EXT)	90 dB (IHF, A: 98 dB)
Respuesta de frecuencia	
TOCADISC. (PHONO)	curva RIAA estándar ±0,8 dB (30 Hz~15 kHz)

SINTON., CD/AUX., GRAB/EXT
(TUNER, CD/AUX, TAPE/EXT)

5 Hz~70 kHz (-3 dB)

Controles de tono	
BAJOS (BASS)	50 Hz, +10 dB ~ -10 dB
AGUDOS (TREBLE)	20 kHz, +10 dB ~ -10 dB
Control de sonoridad (volumen a -30 dB)	50 Hz, +9 dB
Voltaje e impedancia de salida	
SAL. GRAB. (REC OUT)	150 mV
Equilibrio de canales, CD/AUX 250 Hz~6 300 Hz	±1 dB
Separación de canales, AUX 1 kHz	45 dB
Impedancia y nivel de salida de los auriculares	470 mV/330Ω
Impedancia de carga	
MAIN o REMOTE	4Ω~16Ω
MAIN y REMOTE	8Ω~16Ω

■ GENERAL

Consumo de energía	250W
Alimentación de energía	
Para Europa continental	CA 50 Hz/60 Hz, 220V
Para otros países	CA 50 Hz/60 Hz, 110V/127V/220V/240V
Dimensiones (An.×Al.×Prof.)	430 × 86 × 240 mm
Peso	4,7 kg

Nota:

La distorsión armónica total se mide con el analizador de espectro digital (sistema H.P. 3045).

(Estas especificaciones están sujetas a cualquier cambio sin previo aviso.)

■ CONTENTS

	Page		Page
PROTECTION CIRCUITRY	3	BLOCK DIAGRAM	8
BEFORE REPAIR AND ADJUSTMENT	3	PRINTED CIRCUIT BOARDS	9, 10
LOCATION OF CONTROLS	4	SCHEMATIC DIAGRAM	11 ~ 13
DISASSEMBLY INSTRUCTIONS	5, 6	REPLACEMENT PARTS LIST	14
RESISTORS & CAPACITORS	7	EXPLODED VIEW	15, 16

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is switched ON.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

■ BEFORE REPAIR AND ADJUSTMENT

- (1) Turn off the power supply. Using a 10Ω, 5W resistor, shortcircuit both ends of power supply capacitors (C901, C902, 4700μF) in order to discharge the voltage.
- (2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50/60 Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/127V/220V/240V.

Power supply voltage		AC110V	AC127V	AC220V	AC240V
Consumed current	50Hz	130 ~ 290mA	120 ~ 260mA	65 ~ 145mA	60 ~ 140mA
	60Hz	120 ~ 260mA	110 ~ 250mA	60 ~ 140mA	50 ~ 130mA

■ ESPECIFICACIONES (DIN 45 500)

■ SECCION AMPLIFICADOR

Potencia continua de 40 Hz~20 kHz en ambos canales	2 × 40W (8Ω)
Potencia continua de 1 kHz en ambos canales	2 × 50W (8Ω)
Distorsión armónica total potencia de régimen a 40 Hz~20 kHz	0,05% (8Ω)
mitad de potencia a 1 kHz	0,03% (8Ω)
Distorsión por intermodulación potencia de régimen a 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0,05%
Ancho de banda de potencia con ambos canales, -3 dB	10 Hz~25 kHz (8Ω, 0,05%)
Factor de amortiguamiento	50 (8Ω)
Sensibilidad e impedancia de entrada	
TOCADISC. (PHONO)	2,5 mV/47kΩ
SINTON., CD/AUX. (TUNER, CD/AUX)	150 mV/22kΩ
GRAB/EXT (TAPE/EXT)	150 mV/22kΩ
Voltaje máximo de entrada de PHONO (1 kHz, RMS)	150 mV
Relación de señal a ruido potencia de régimen (8Ω)	
TOCADISC. (PHONO)	71 dB (IHF, A: 72 dB)
SINTON., CD/AUX., GRAB/EXT (TUNER, CD/AUX, TAPE/EXT)	90 dB (IHF, A: 98 dB)
Respuesta de frecuencia	
TOCADISC. (PHONO)	curva RIAA estándar ±0,8 dB (30 Hz~15 kHz)

SINTON., CD/AUX., GRAB/EXT (TUNER, CD/AUX, TAPE/EXT)

Controles de tono	5 Hz~70 kHz (-3 dB)
BAJOS (BASS)	50 Hz, +10 dB~-10 dB
AGUDOS (TREBLE)	20 kHz, +10 dB~-10 dB
Control de sonoridad (volumen a -30 dB)	50 Hz, +9 dB
Voltaje e impedancia de salida SAL. GRAB. (REC OUT)	150 mV
Equilibrio de canales, CD/AUX 250 Hz~6 300 Hz	±1 dB
Separación de canales, AUX 1 kHz	45 dB
Impedancia y nivel de salida de los auriculares	470 mV/330Ω
Impedancia de carga	
MAIN o REMOTE	4Ω~16Ω
MAIN y REMOTE	8Ω~16Ω

■ GENERAL

Consumo de energía	250W
Alimentación de energía	
Para Europa continental	CA 50 Hz/60 Hz, 220V
Para otros países	CA 50 Hz/60 Hz, 110V/127V/220V/240V
Dimensiones (An.×Al.×Prof.)	430 × 86 × 240 mm
Peso	4,7 kg

Nota:

La distorsión armónica total se mide con el analizador de espectro digital (sistema H.P. 3045).

(Estas especificaciones están sujetas a cualquier cambio sin previo aviso.)

■ CONTENTS

	Page
PROTECTION CIRCUITRY	3
BEFORE REPAIR AND ADJUSTMENT	3
LOCATION OF CONTROLS	4
DISASSEMBLY INSTRUCTIONS	5, 6
RESISTORS & CAPACITORS	7

	Page
BLOCK DIAGRAM	8
PRINTED CIRCUIT BOARDS	9, 10
SCHEMATIC DIAGRAM	11 ~ 13
REPLACEMENT PARTS LIST	14
EXPLODED VIEW	15, 16

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is switched ON.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

Note:

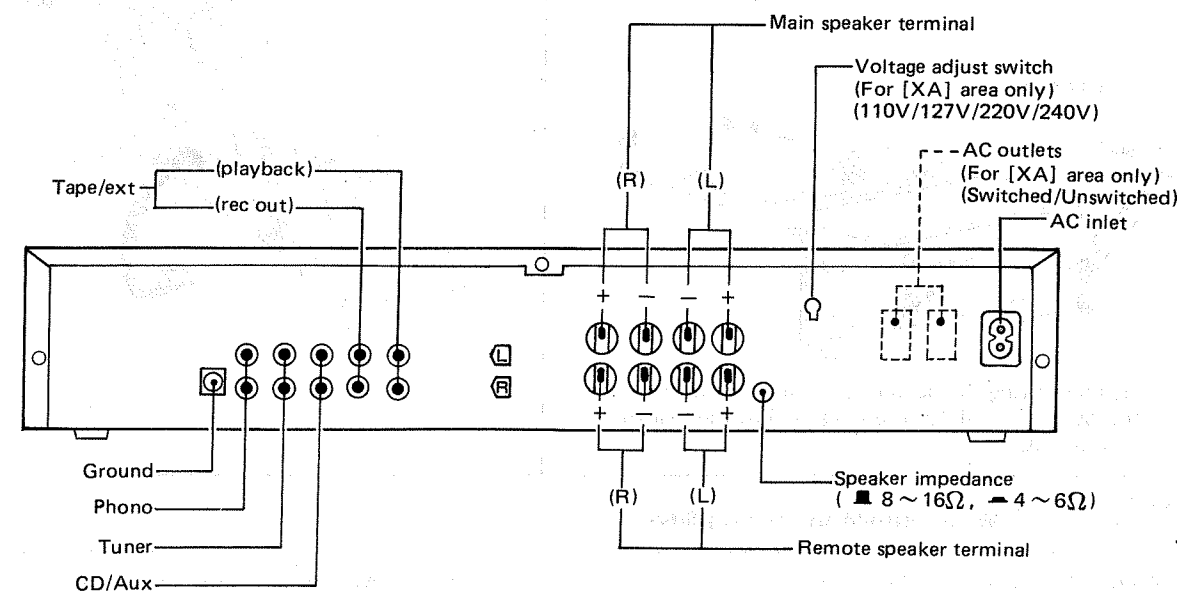
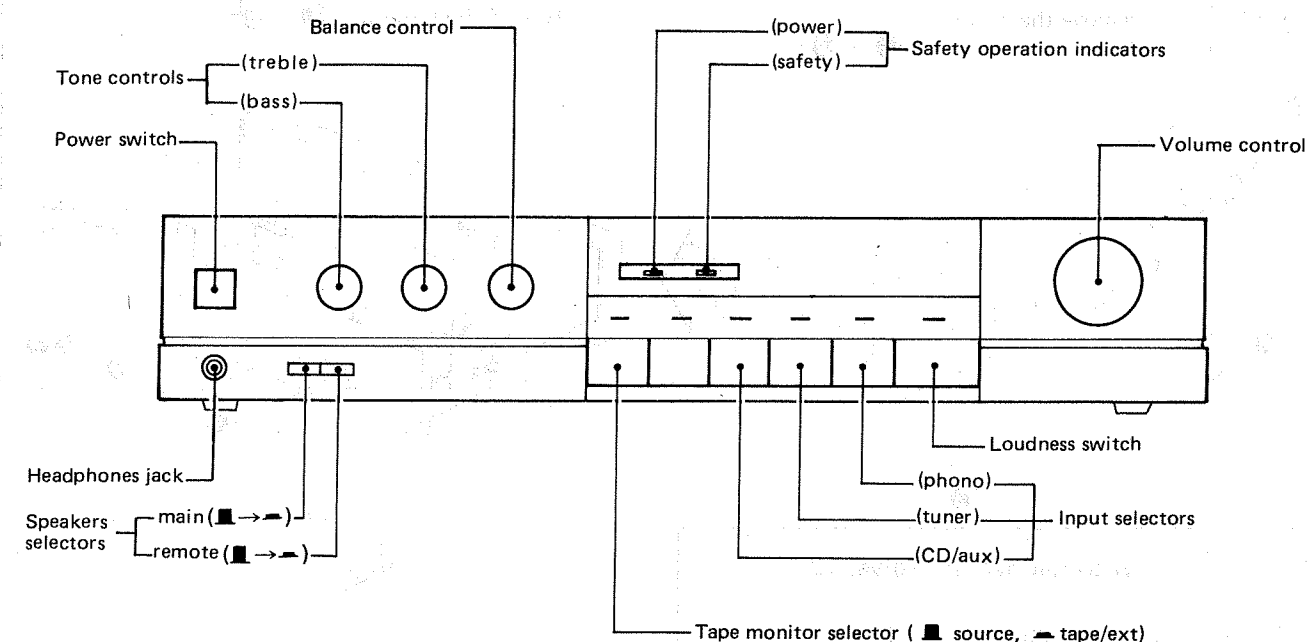
When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

■ BEFORE REPAIR AND ADJUSTMENT

- (1) Turn off the power supply. Using a 10Ω, 5W resistor, shortcircuit both ends of power supply capacitors (C901, C902, 4700μF) in order to discharge the voltage.
- (2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50/60 Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/127V/220V/240V.

Power supply voltage		AC110V	AC127V	AC220V	AC240V
Consumed current	50Hz	130 ~ 290mA	120 ~ 260mA	65 ~ 145mA	60 ~ 140mA
	60Hz	120 ~ 260mA	110 ~ 250mA	60 ~ 140mA	50 ~ 130mA

■ LOCATION OF CONTROLS



- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram and replacement parts list.
- * [XA] area is provided with voltage selector and AC outlets.
- * 240V (50/60Hz) for Australia and United Kingdom.
- * 220V (50/60Hz) for Continental Europe.
- * 110V/127V/220V/240V (50/60Hz) for other [XA] area.
- * Phono input capacitance is about 150pF.

■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the main P.C.B.	
Procedure 1	1. Remove the cabinet. 2. Remove the 3 screws (① ~ ③).	3. Remove the 5 screws (④ ~ ⑧).

Ref. No. 2	How to remove the Power IC	
Procedure 1 → 2	1. Remove the 2 screws (①, ②). 2. Remove the sub heat-sink. 3. Unsolder the power IC. 4. Remove the 4 screws (③, ④).	

● When mounting the power IC, apply silicon thermal compound (SZZ0L15 or equivalent) to the rear of the power IC.

Ref. No. 3	How to remove the front panel	
Procedure 3	1. Remove the cabinet. 2. Remove the 3 screws (① ~ ③). 3. Remove the 4 nuts (④ ~ ⑦).	4. Remove the connector (J401, J801). 5. Remove the front panel in the direction of the arrow.

Ref. No. 4	How to remove the P.C.B.	
Procedure 3 → 4	1. Remove the 3 screws (① ~ ③). 2. Remove the muting switch, selector LED P.C.B. and operation LED P.C.B. 3. Remove the 4 tabs (④ ~ ⑦). 4. Remove the volume P.C.B. and headphones P.C.B.	

● Terminal guide of transistors, diodes and IC's

AN6552F 8pin AN6558F 8pin 	SVI3102 14pin 	M5218L M5220L 	2SK381
2SC3311 	MA165 1SR35200 SVD52V20 	MA4068M MA4075M 	LN846RP LN446YP
			LN863RC LN463YC

RESISTORS & CAPACITORS

- Notes:**
- Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
 - Important safety notice:
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
 - Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
 - The "S" mark is service standard parts and may differ from production parts.
 - The unit of resistance is OHM (Ω).
K = 1000 Ω , M = 1000k Ω
 - The unit of capacitance is MICROFARAD (μ F).
P = 10⁻⁶ μ F

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

Numbering System of Capacitor

Example

ECKD	1H	103	Z	F
Type	Voltage	Value	Tolerance	Peculiarity

ECEA	50	M	R47	R
Type	Voltage	Peculiarity use	Value	Special use

Resistor Type	Wattage	Tolerance
ERD : Carbon	25 : 1/4W	J : $\pm 5\%$
ERX : Metal film	S1 : 1/2W	K : $\pm 10\%$
	S2 : 1/4W	

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA : Electrolytic	0J : 6.3V	1H : 50V DC	J : $\pm 5\%$
ECCD : Ceramic	1C : 16V		K : $\pm 10\%$
ECKD : Ceramic	1E : 25V		Z : +80%, -20%
ECQM : Polyester	1H : 50V		P : +100%, -0%
ECFT : Semiconductor	42 : 42V		
ECET : Electrolytic			

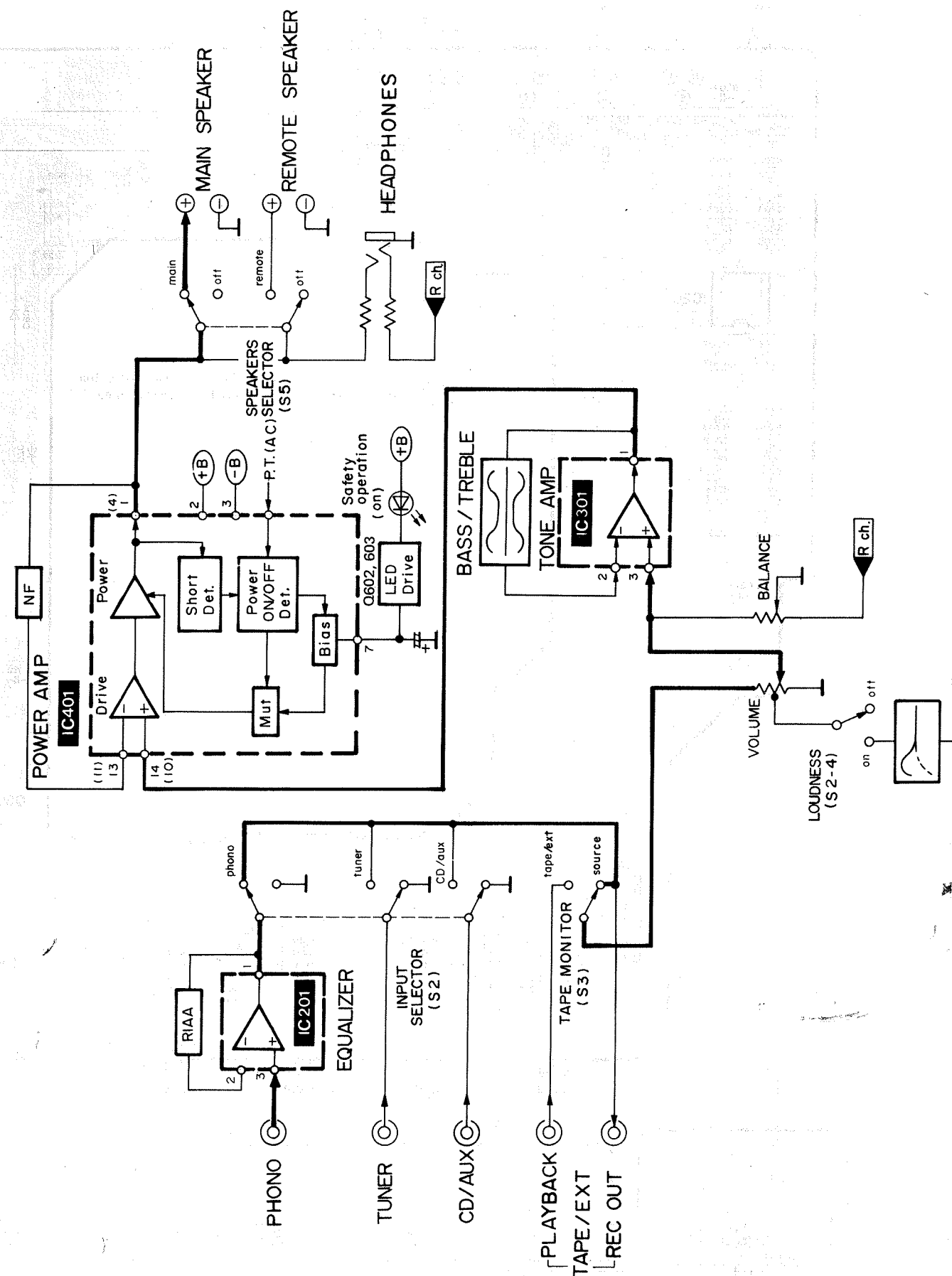
Resistor

Ref.No.	Part No.	Value	Ref.No.	Part No.	Value	Ref.No.	Part No.	Value	Ref.No.	Part No.	Value
R101,102 [EG only]	ERDS2TJ471	470	R213,214	ERDS2TJ563	56K	R325,326	ERDS2TJ392	3.9K	R602	ERDS2TJ221	220
R103,104 [EG only]	ERDS2TJ471	470	R215,216	ERDS2TJ561	560	R401,402	ERDS2TJ222	2.2K	R603	ERDS2TJ680	68
R105,106 [EG only]	ERDS2TJ471	470	R301,302	ERDS2TJ222	2.2K	R403,404	ERDS2TJ393	39K	R611	ERDS2TJ824	820K
R107,108 [EG only]	ERDS2TJ471	470	R303,304	ERDS2TJ123	12K	R405,406	ERDS2TJ272	2.7K	R612	ERDS2TJ564	560K
R201,202	ERDS2TJ391	390	R307,308	ERDS2TJ563	56K	R407,408	ERDS2TJ393	39K	R613	ERDS2TJ563	56K
R203,204	ERDS2TJ224	220K	R309,310	ERDS2TJ474	470K	R409,410	ERD25FJ4R7	4.7			
R205,206	ERDS2TJ563	56K	R311,312	ERDS2TJ474	470K	R411,412	ERDS2TJ470	47			
R207,208	ERDS2TJ271	270	R313,314	ERDS2TJ183	18K						
R209,210	ERDS2TJ184	180K	R315,316	ERDS2TJ332	3.3K	R413,414	ERG1ANJ331	330			
R211,212	ERDS2TJ123	12K	R317,318	ERDS2TJ821	820	R415,416	ERDS2TJ561	560			
						[EG only]					
			R319,320	ERDS2TJ821	820	R504	ERDS2TJ564	560K	R801	ERDS2TJ561	560
			R321,322	ERDS2TJ333	33K	R505	ERDS2TJ154	150K	R802	ERDS2TJ471	470
			R323,324	ERDS2TJ822	8.2K	R601	ERDS2TJ561	560	R901	ERG2ANJ391	390
									R902	ERG2ANJ331	330
									R903	ERG2ANJ391	390
									R904	ERG2ANJ331	330

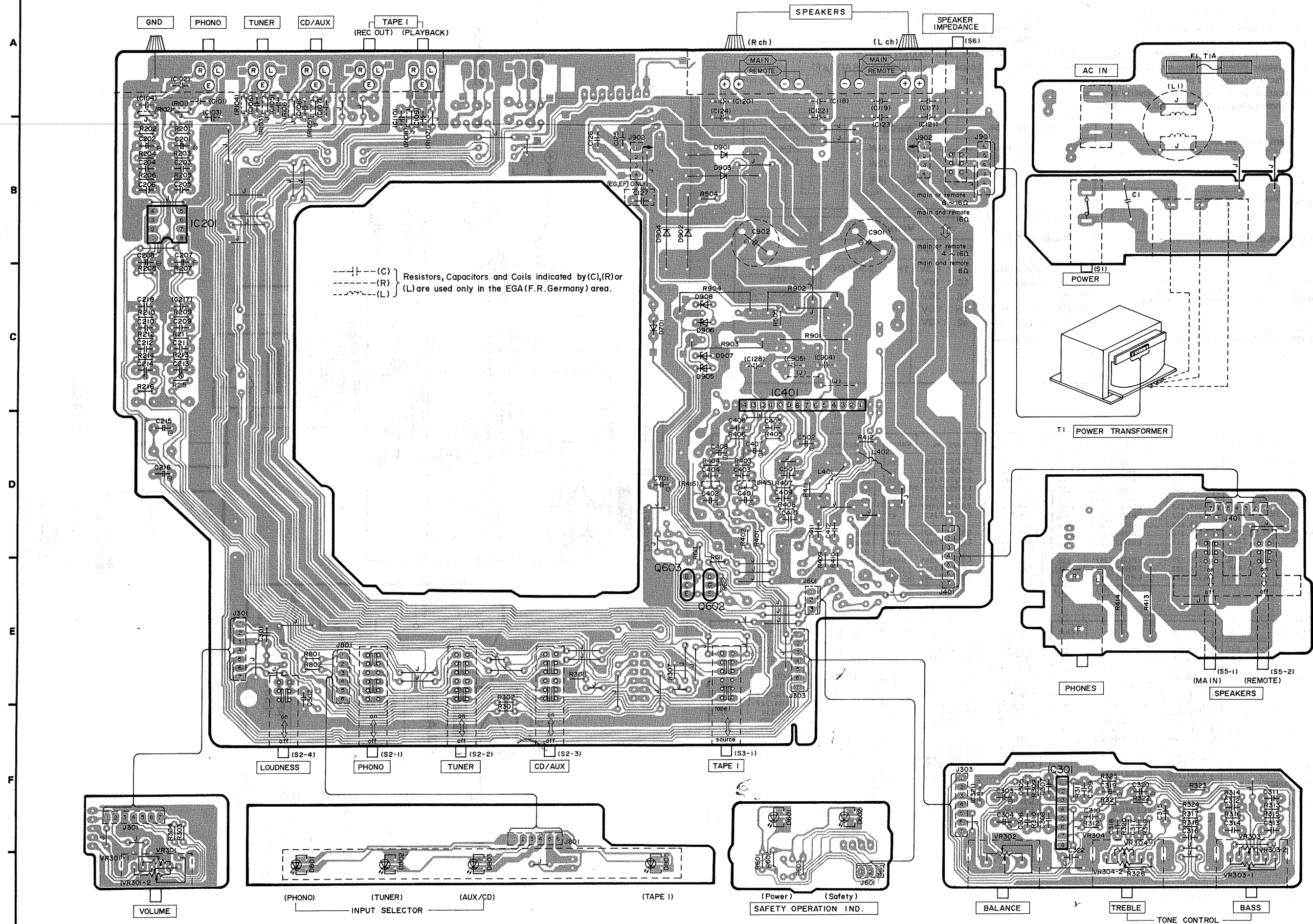
Capacitor

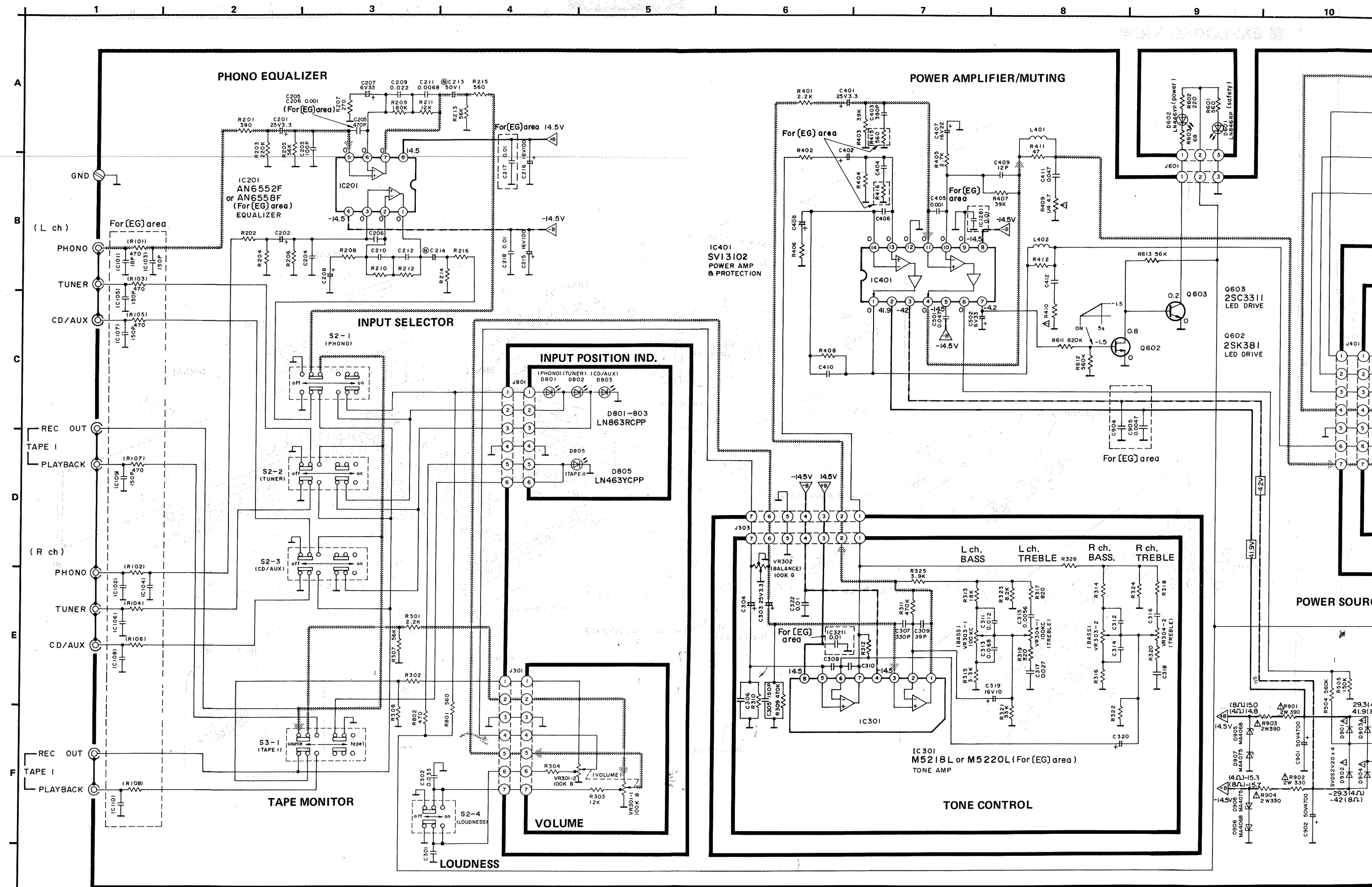
Ref.No.	Part No.	Value	Ref.No.	Part No.	Value	Ref.No.	Part No.	Value	Ref.No.	Part No.	Value
C1	Δ ECKDKC103PF2	0.01	C125,126	ECQM1H823JZ	0.082	C215,216	ECEA1CU101	100	C403,404	ECKD1H391KB	390P
C101,102 [EG only]	ECCD1H180K	18P	[EG,EF only]			C217	ECKD1H103ZF	0.01	C405,406	ECKD1H102KB	0.001
C103,104 [EG only]	ECCD1H151K	150P	[other]			[EG only]					
C105,106 [EG only]	ECCD1H151K	150P	C127	ECKD1H103ZF	0.01	C218	ECKD1H103ZF	0.01	C407,408	ECEA1CU220	22
C107,108 [EG only]	ECCD1H151K	150P	[EG,EF only]			C301,302	ECFTD333KXL	0.033	C409,410	ECCD1H120K	12P
C109,110 [EG only]	ECCD1H151K	150P	C128	ECKD1H103ZF	0.01	C303,304	ECEA1EU3R3	3.3	C411,412	ECKD1H473ZF	0.047
C117,118 [EG only]	ECKD1H271KB	270P	[EG only]			C305,306	ECCD1H151K	150P	C501	ECKD1H473ZF	0.047
C119,120 [EG only]	ECKD1H271KB	270P	C201,202	ECEA1EU3R3	3.3	C307,308	ECKD1H331KB	330P	C502	ECEA0JU330	33
C121,122 [EG only]	ECKD1H223ZF	0.022	C203,204	ECCD1H101K	100P	C309,310	ECCD1H390K	39P	C606	ECEA1EU4R7	4.7
C123,124 [EG only]	ECKD1H223ZF	0.022	C205,206	ECCD1H102KB	0.001				C701	ECEA1CU471	470
			[EG only]			C311,312	ECFTD123KXL	0.012	C901,902	ECES1HU472M	4700
			C207,208	ECEA0JU330	33	C313,314	ECFTD683KXL	0.068			
			C209,210	ECFTD223KXL	0.022	C315,316	ECFTD562KXL	0.0056			
						C317,318	ECFTD273KXL	0.027			
			C211,212	ECFTD682KXL	0.0068	C319,320	ECEA1CU100	10			
			C213,214	ECEA1HN010S	1	C321	ECKD1H103ZF	0.01			
						[EG only]					
						C322	ECKD1H103ZF	0.01			
						C401,402	ECEA1EU3R3	3.3			

BLOCK DIAGRAM



■ PRINTED CIRCUIT BOARDS

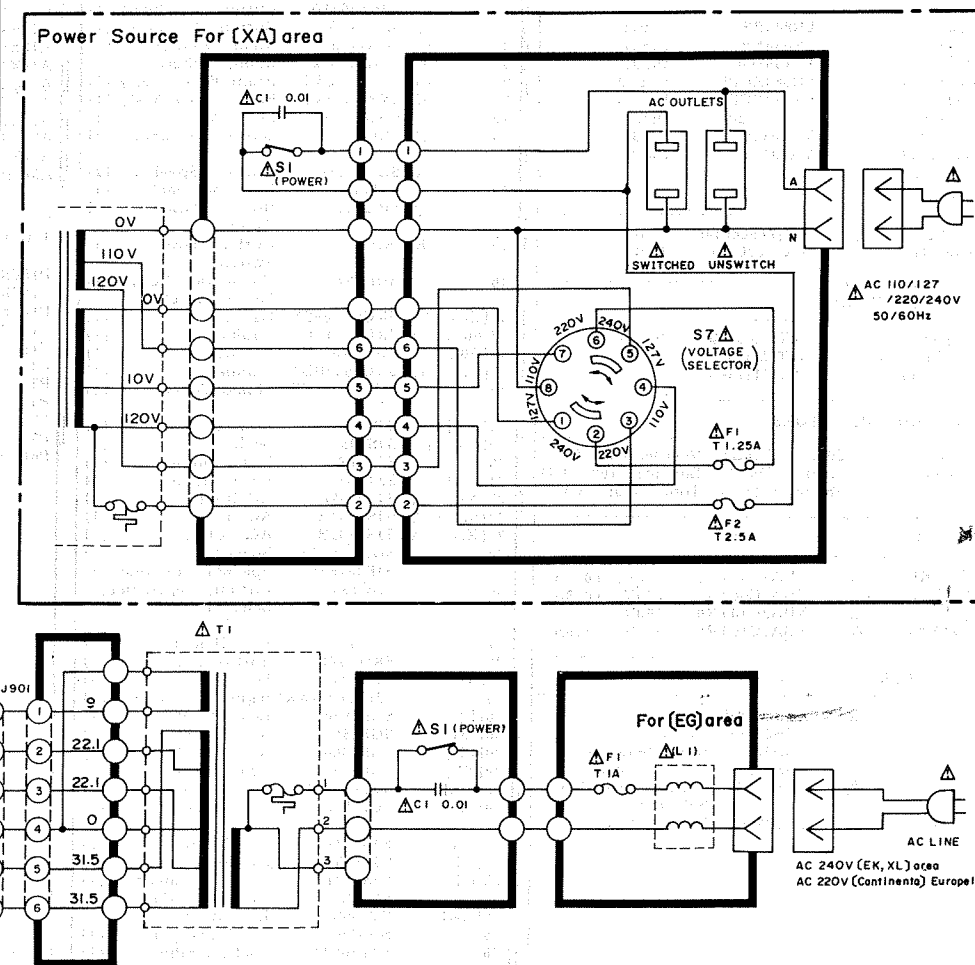
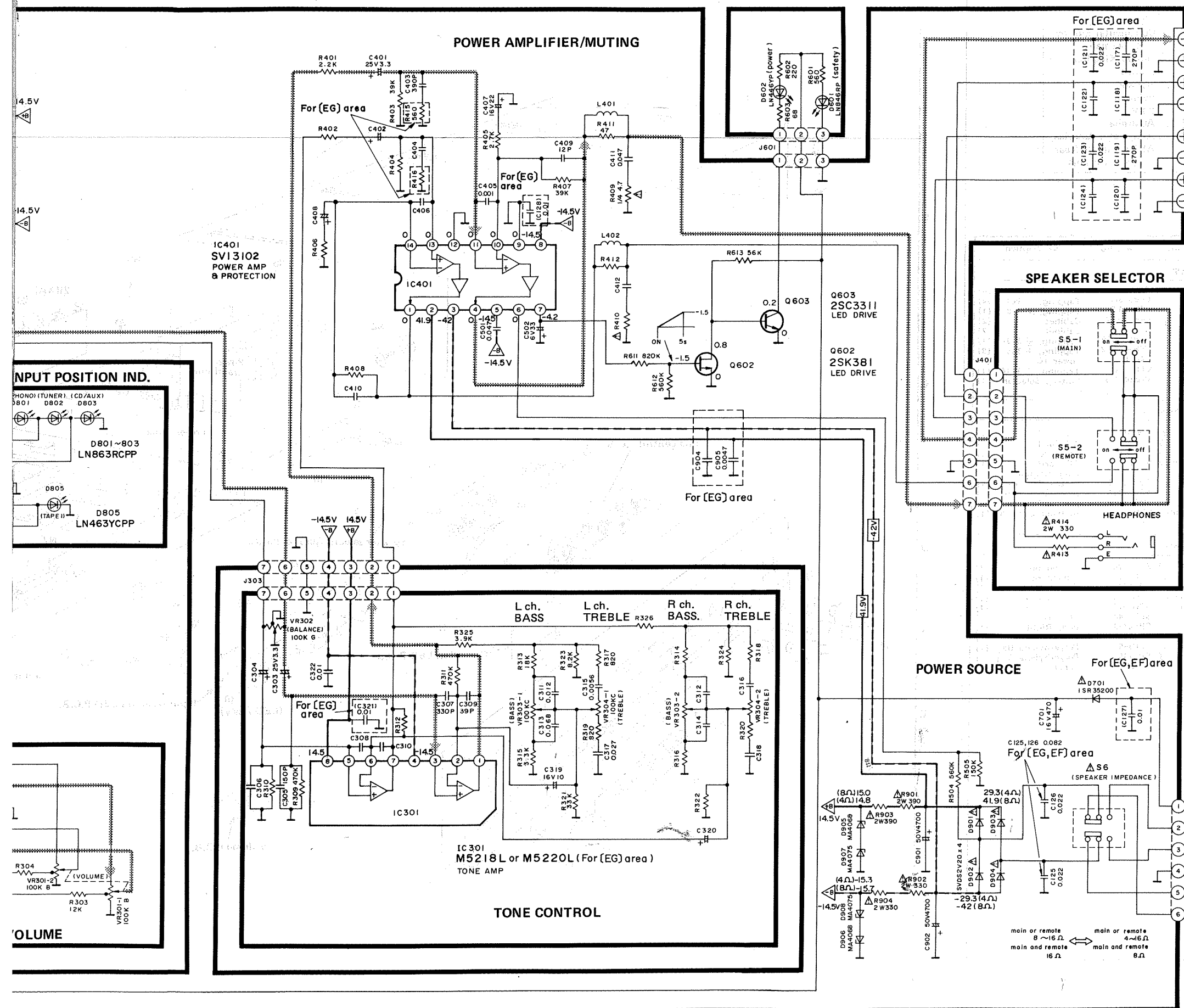




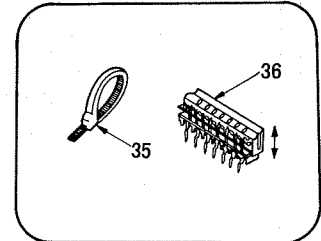
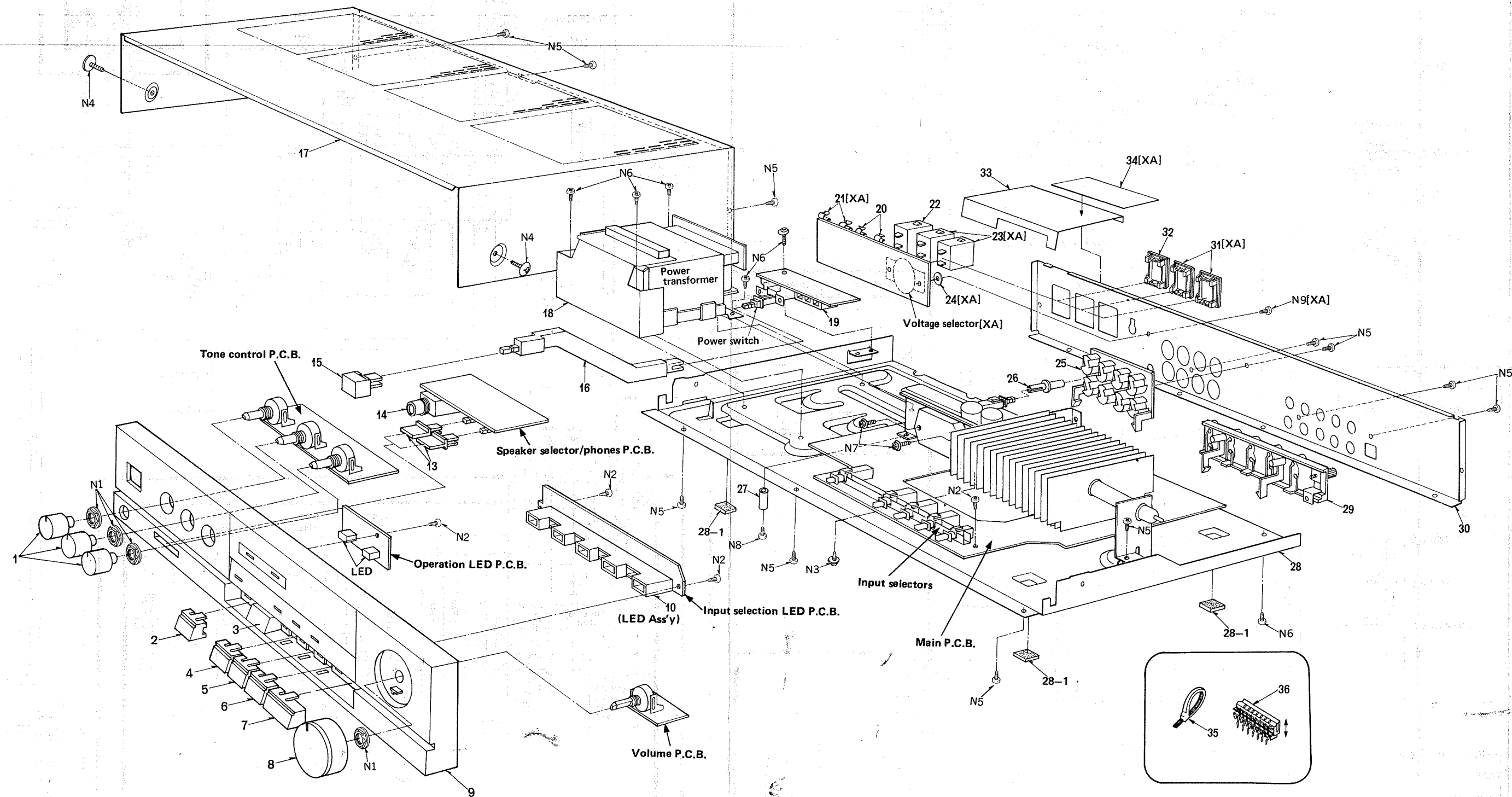
(This schematic diagram may be modified at any time with the development of new technology.)

Notes:

1. **S1** : Power switch in **"on"** position. ( off,  on)
2. **S2-1 ~ S2-3** : Input selector in **"phono"** position.
(S2-1: phono S2-2: tuner S2-3: CD/AUX)
3. **S2-4** : Loudness switch in **"off"** position. ( off,  on)
4. **S3** : Tape monitor switch in **"source"** position.
( source,  tape/ext)
5. **S5-1** : Main speaker switch in **"on"** position. ( off,  on)
6. **S5-2** : Remote speaker switch **"off"** position. ( off,  on)
7. **S6** : Impedance selector in **"8 ~ 16 Ω"** position.
( 8 ~ 16Ω,  4 ~ 6Ω)
8. **S7 (For [XA] area only)** : Voltage selector in **"220V"** position.
(127V ↔ 110V ↔ 220V ↔ 240V)
9. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
10.  Phono signal (Lch)
 Positive voltage lines
 Negative voltage lines
11. Important safety notice:
Components identified by  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.



EXPLODED VIEW



REPLACEMENT PARTS LIST

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
2. Important safety notice: Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. $\otimes$ —marked parts are used for black only, while $\circ$ —marked parts are for silver type only.
4. Part other than $\otimes$ — and $\circ$ —marked are used for both black and silver type.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
6. The parenthesized numbers in the column of description stand for the quantity per set.

Area	
[E] . . .	Continental Europe
[EG] . . .	F.R. Germany
[EK] . . .	United Kingdom
[EF] . . .	France
[EH] . . .	Holland
[EB] . . .	Belgium
[Ei] . . .	Italy
[XL] . . .	Australia
[XA] . . .	Asia, Latin America, Africa, Middle Near East and Oceania

Ref.No.	Part No.	Description
INTEGRATED CIRCUITS		
IC201[EG]	AN6558F	IC, Equalizer
IC201[other]	AN6552F	IC, Equalizer
IC301[EG]	M5220L	IC, Tone Amp.
IC301[other]	M5218L	IC, Tone Amp.
IC401	SV13102	IC, Power
TRANSISTORS		
Q602	2SK381D	LED Drive
Q603	2SC3311-Q	LED Drive
DIODES		
D601	LN846RP	L.E.D.
D602	LN446YP	L.E.D.
D701	1SR35200	Diode
D801-803	LN863RCPP	L.E.D.
D805	LN463YCPP	L.E.D.
D901-904	Δ SVDS2V20	Diode
D905, 906	MA4068M	Diode
D907, 908	MA4075M	Diode
COILS		
L1[EG]	Δ SLQZ650MH49	Coil
L401, 402	SLQY07G-40	Coil
TRANSFORMERS		
T1[XA]	Δ SLT5M480-W	Power
T1[EK, XL]	Δ SLT5M479-W	Power
T1[other]	Δ SLT5M478-W	Power
VARIABLE RESISTORS		
VR301	EWCXUAF20B15	Volume, 100k Ω (B)
VR302	EWHF5AF20G15	Balance, 100k Ω (C)
VR303, 304	FWCS6A020C15	Tone, 100k Ω (C)
FUSES		
F1[EK]	Δ XBA2C08TB0	250V, T0.8A
F1[XL, XA]	Δ XBA2C08TR0	250V, T0.8A
F1[other]	Δ XBA2C10TR0	250V, T1A
F2[XA]	Δ XBA2C16TR0	250V, T1.6A
SWITCHES		
S1[XA]	Δ ESB8248V	Power
S1[other]	Δ ESB8249V	Power
S2, 3	SSH578	Input Selector
S5	SSH2122	Speaker Selector
S6	Δ SSH1193-1	Speaker Impedance Selector
S7[XA]	Δ ESE37263	Voltage Selector

Ref.No.	Part No.	Description
CABINET AND CHASSIS		
1	$\circ$ SBN1032-2	Knob, Tone (3)
1	$\otimes$ SBN1032-4	Knob, Tone (3)
2	$\otimes$ SBC839-1E	Button, Tape (1)
2	$\otimes$ SBC839E	Button, Tape (1)
3	$\otimes$ SCX9025-1	Ornament (1)
3	$\otimes$ SCX9025	Ornament (1)
4	$\otimes$ SBC839-1C	Button, CD/AUX (1)
4	$\otimes$ SBC839C	Button, CD/AUX (1)
5	$\otimes$ SBC839-1B	Button, Tuner (1)
5	$\otimes$ SBC839B	Button, Tuner (1)
6	$\circ$ SBC839-1A	Button, Phono (1)
6	$\otimes$ SBC839A	Button, Phono (1)
7	$\otimes$ SBC840-1A	Button, Loudness (1)
7	$\otimes$ SBC840A	Button, Loudness (1)
8	$\otimes$ SBN1125	Knob, Volume (1)
8	$\otimes$ SBN1125-2	Knob, Volume (1)
9	$\circ$ SYU500SE	Front Panel Ass'y (1)
9	$\otimes$ SYU500KE	Front Panel Ass'y (1)
10	LN041330P	LED Ass'y (1)
13	$\circ$ SBC315-4T	Button, Speaker (2)
13	$\otimes$ SBC315-7	Button, Speaker (2)
14	SJJ134B	Headphoe Jack (1)
15	$\circ$ SBC666	Button, Power Switch (1)
15	$\otimes$ SBC666-4	Button, Power Switch (1)
16	SUB257	Connection Rod, Power Switch (1)
17[EK]	$\circ$ SKCU700-SK	Cabinet (1)
17[other]	$\circ$ SKC1550S1	Cabinet (1)
17[EK]	$\otimes$ SKCU700-KK	Cabinet (1)
17[other]	$\otimes$ SKC1550BB1	Cabinet (1)
18	SMCU500-KE	Shield Cover (1)
19[XA]	SJS702	Socket, 7Pin (1)
19[other]	SJS305	Socket, 3Pin (1)
20	SJT388	Fuse, Holder (2)
21[XA]	SJT388	Fuse, Holder (2)
22[XL]	Δ SJS9234B	AC Inlet (1)
22[other]	Δ SJS9231B	AC Inlet (1)
23[XA]	Δ SJS9232B	AC Outlet (2)
24	SHW35K150-1	Spacer (1)
25	SJF4818-1	Speaker Terminal (1)
26	SBC165	Button, Impedance Selector (1)
27	SUD472	PCB Holder (1)
28	SKUU700-KE	Bottom Board (1)
28-1	SKL293	Foot (4)
29	SJF3062-1NK1	Input Terminal (1)
30[E]	SGP6840A	Rear Panel (1)
30[EG]	SGP6840B	Rear Panel (1)
30[EK]	SGP6840C	Rear Panel (1)
30[XL]	SGP6840D	Rear Panel (1)
30[XA]	SGP6840-1A	Rear Panel (1)
30[other]	SGPU500-KF	Rear Panel (1)
31[XA]	SJS9232A	AC Outlet Cover (2)
32[XL]	SJS9234A	AC Inlet Cover (1)
32[other]	SJS9231A	AC Inlet Cover (1)
33	SMX879	Insulation Cover (1)
34[XA]	SMX884	Insulation Cover (1)
35	SHR301	Cord Clamper (1)
36	SJT30643-V	Socket, 6Pin (2)
36	SJT30743-V	Socket, 7Pin (1)

Ref.No.	Part No.	Description
SCREWS		
N1	SNE4021	Nut (4)
N2	XTB3+8G	Tapping, $\oplus$ 3x8 (4)
N3	XTW3+8T	Tapping, $\oplus$ 3x8 (1)
N4	$\circ$ SNE2095-4	Cabinet (2)
N4	$\otimes$ SNE2095-5	Cabinet (2)
N5	XTB3+8JFZ1	Tapping, $\oplus$ 3x8 (11)
N6	XTB3+6FFZ	Tapping, $\oplus$ 3x6 (9)
N7	SNE2126	Power IC (2)
N8	XTB3+16J	Tapping, $\oplus$ 3x16 (1)
N9[XA]	SNE2095-5	Voltage Selector (1)
ACCESSORIES		
A1[EK]	Δ SFDAC05G02	AC Cord (1)
A1[XL]	Δ SJA173	AC Cord (1)
A1[XA]	Δ SJA168-1	AC Cord (1)
A1[other]	Δ SJA171	AC Cord (1)
A2[XA]	Δ SJP9215	Plug Adaptor (1)
A3[EG]	SQF12746	Instruction Book (1)
A3[EK]	SQF12747	Instruction Book (1)
A3[XA]	SQF12748	Instruction Book (1)
A3[other]	SQF12745	Instruction Book (1)
PACKING		
P1[EK]	$\circ$ SPG5674	Carton Box (1)
P1[EK]	$\otimes$ SPG5673	Carton Box (1)
P1[EF]	SPG5675	Carton Box (1)
P1[other]	$\circ$ SPG5672	Carton Box (1)
P1[other]	$\otimes$ SPG5671	Carton Box (1)
P2	SPS4748	Pad, Left (1)
P3	SPS4749	Pad, Right (1)
P4	SPS4141	Pad, Upper (1)
P5	$\circ$ SPP699	Polyethylene Bag (1)
P5	$\otimes$ SPP735	Polyethylene Bag (1)
P6[EF]	SGK1413	Label (2)