167C8

ORDER NO. HAD8604494C8

Service Manual

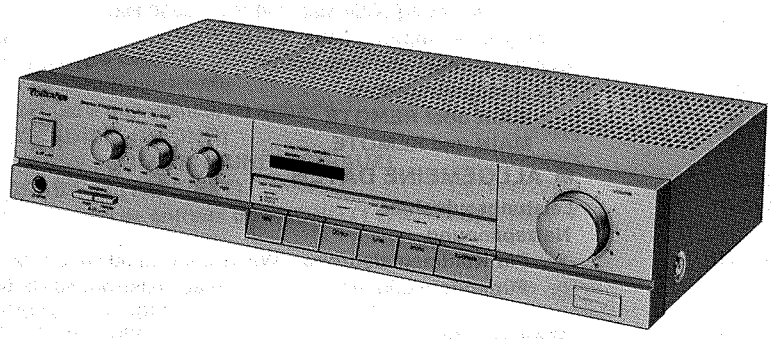
Stereo Integrated Amplifier

9602 09 AVE

Amplifier

SU-500

SU-500



Color

(K) · · · · Black Type
(S) · · · · Silver Type

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 Auatralia 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, 8Ω 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
SYNTONISATEUR, 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)
SYNTONISATEUR, 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)
SYNTONISATEUR, 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 prèaris)

■ 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) 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 dè 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 paises 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 especificationes estàn sujetas a cualquier cambio sin previo eviso.)

■ CONTENTS

■ 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)	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 dè 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 paises	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 especificationes estàn sujetas a cualquier cambio sin previo eviso.)

■ CONTENTS

■ PROTECTION CIRCUITRY

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

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- 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.
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2. Determine the cause of the problem and correct it.
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■ BEFORE REPAIR AND ADJUSTMENT

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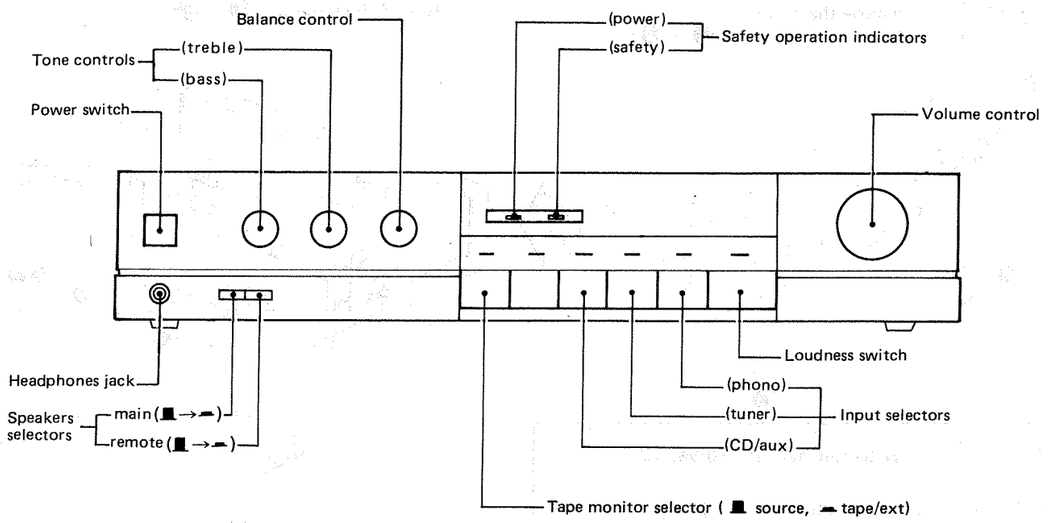
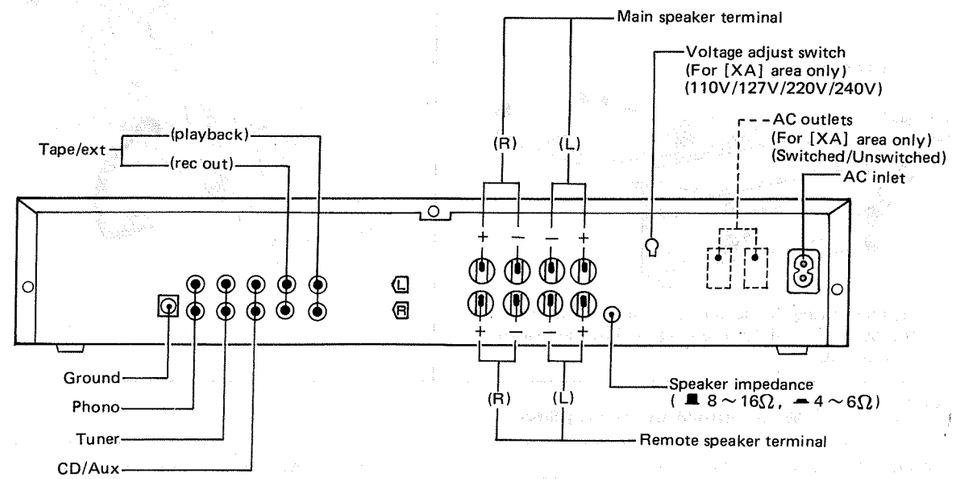
(2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50/60 Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110V/127V/220V/240V.

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



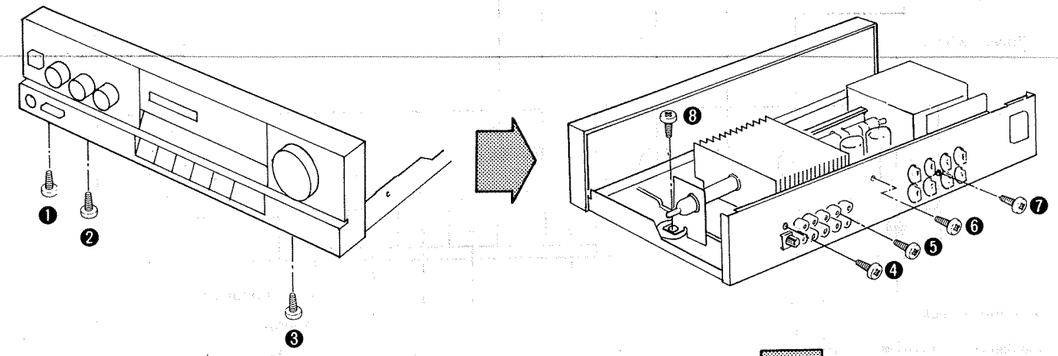


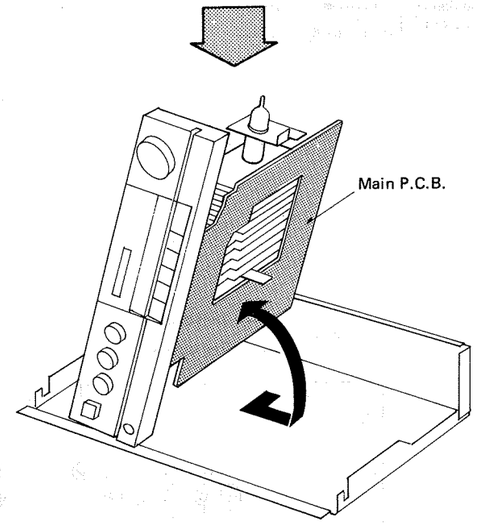
- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram and replacement parts list.

* [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.

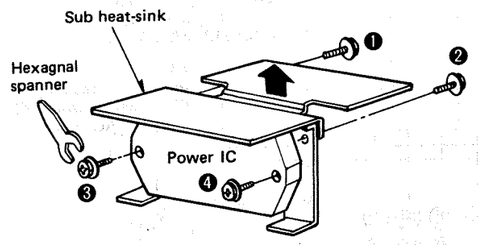
■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the main P.C.B.
Procedure 1	1. Remove the cabinet. 2. Remove the 3 screws (❶ ~ ❸). 3. Remove the 5 screws (❹ ~ ❽).



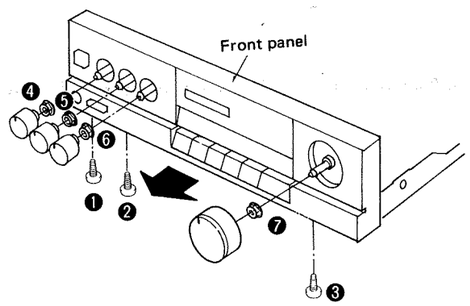


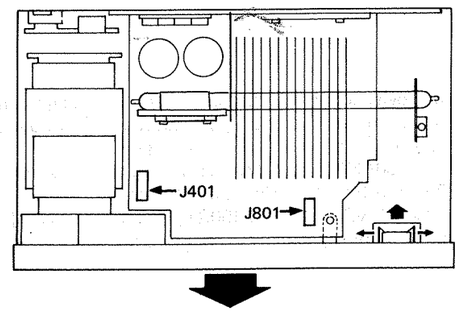
Ref. No. 2	How to remove the Power IC
Procedure 1 →2	1. Remove the 2 screws (❶ , ❷). 2. Remove the sub heat-sink. 3. Unsolder the power IC. 4. Remove the 4 screws (❸ , ❹).



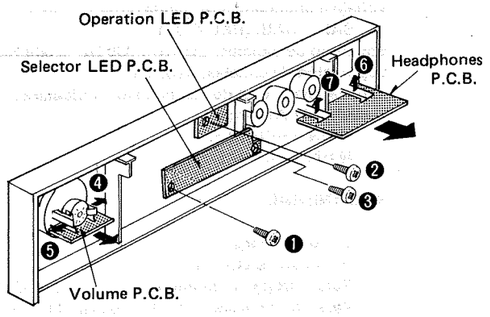
- When mounting the power IC, apply silicon thermal compound (SZZ0L15 or equivalent) to the rear of the power IC.

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

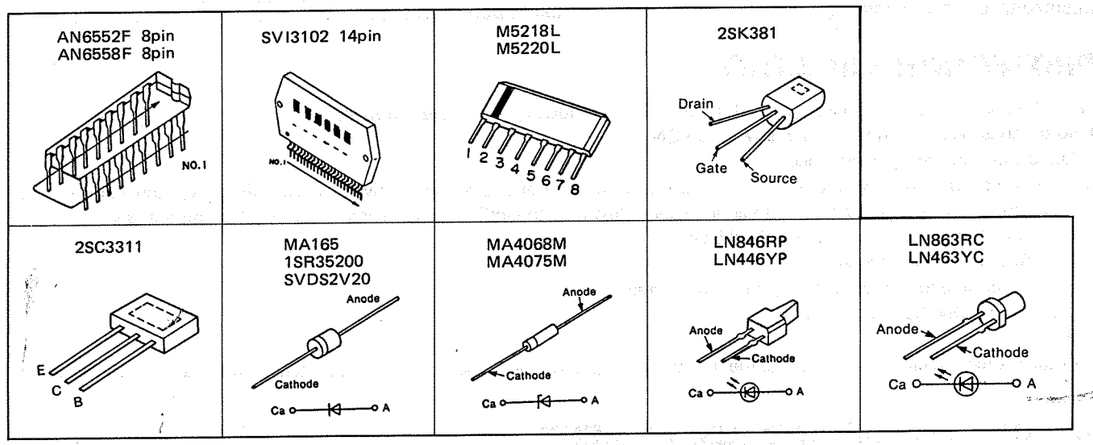




Ref. No. 4	How to remove the P.C.B.
Procedure 3 →4	1. Remove the 3 screws (❶ ~ ❸) 2. Remove the muting switch, selector LED P.C.B. and operation LED P.C.B. 3. Remove the 4 tabs (❹ ~ ❼) 4. Remove the volume P.C.B. and headphones P.C.B.



• Terminal guide of transistors, diodes and IC's



■ RESISTORS & CAPACITORS

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. 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.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "Ⓢ" mark is service standard parts and may differ from production parts.
5. The unit of resistance is OHM (Ω). K = 1000Ω, M = 1000kΩ
6. The unit of capacitance is MICROFARAD (μF). P = 10^{-6}μF

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

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

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

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

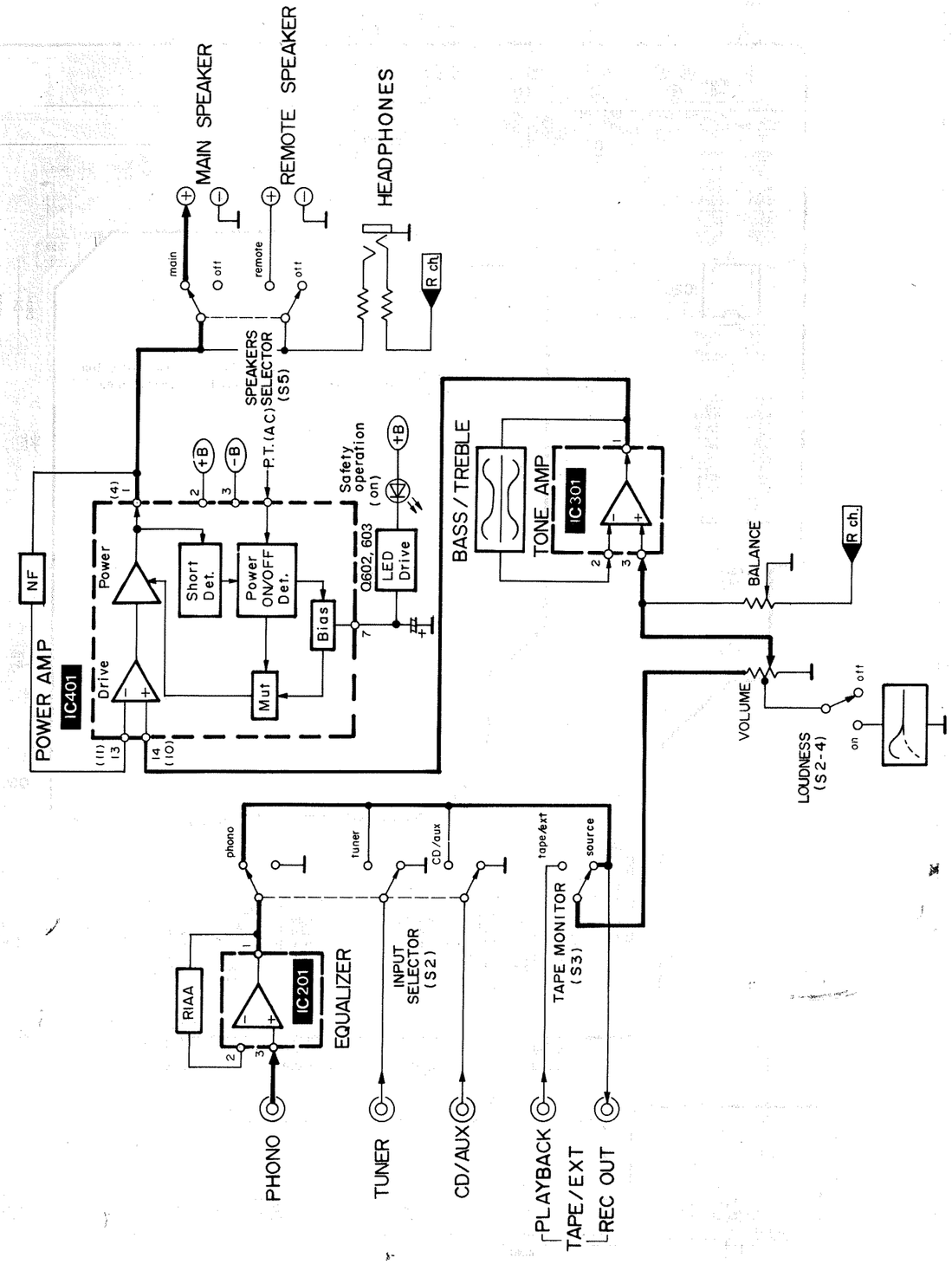
• Resistor

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

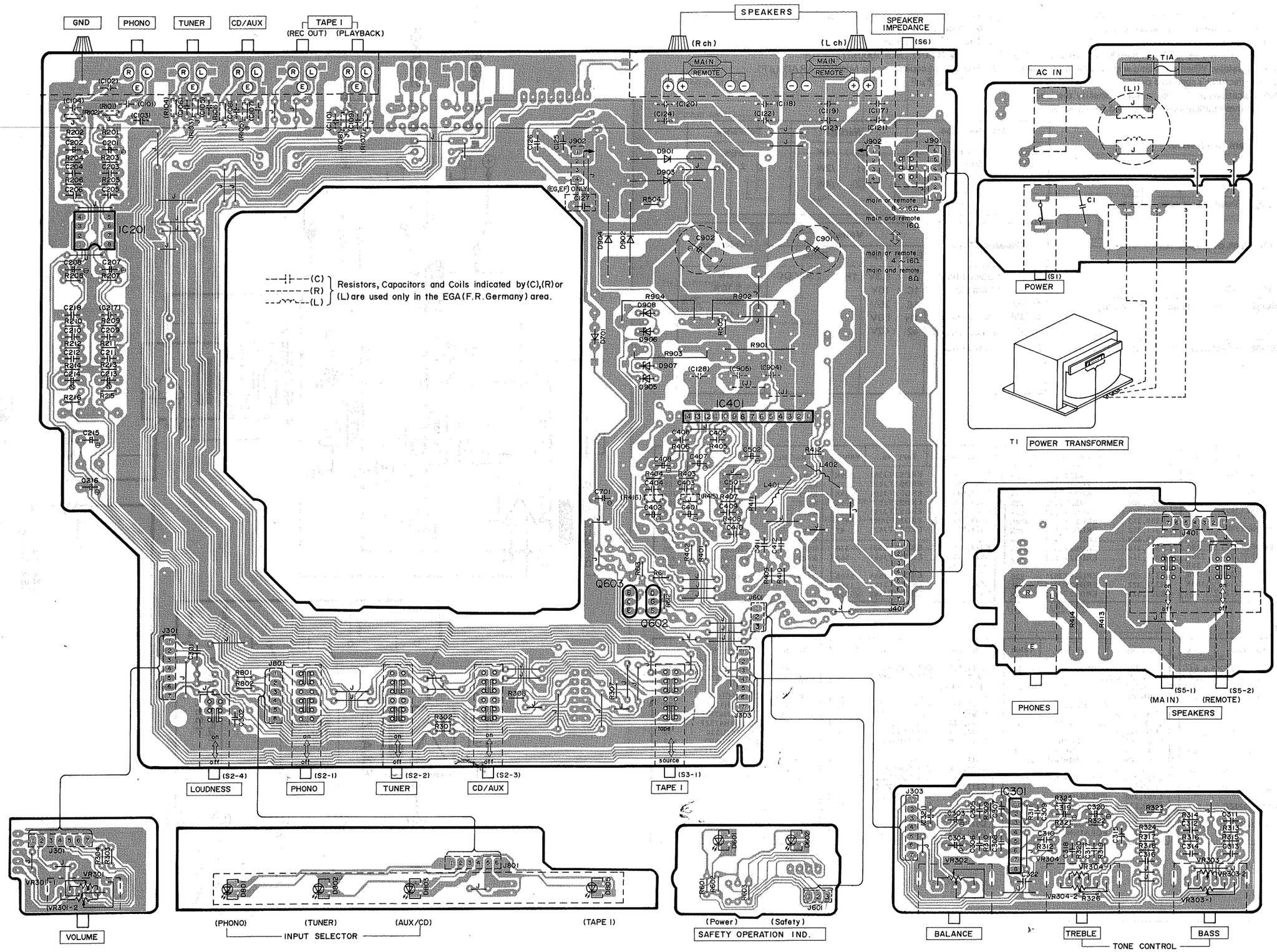
• Capacitor

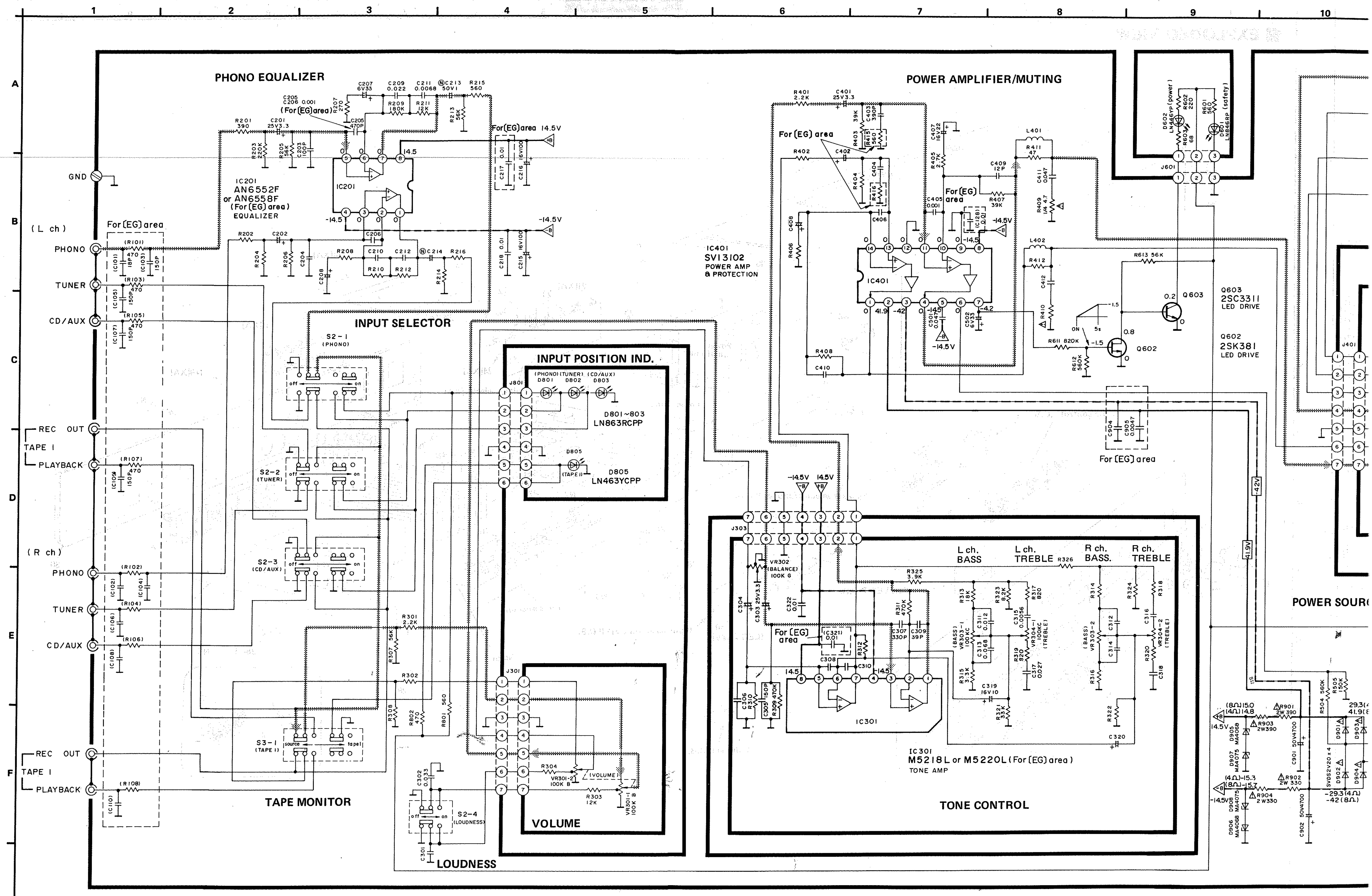
Ref.No.	Part No.	Value
C1 ⚠	ECKDKC103PF2	0.01
C101,102 [EG only]	ECCD1H180K	18P
C103,104 [EG only]	ECCD1H151K	150P
C105,106 [EG only]	ECCD1H151K	150P
C107,108 [EG only]	ECCD1H151K	150P
C109,110 [EG only]	ECCD1H151K	150P
C117,118 [EG only]	ECKD1H271KB	270P
C119,120 [EG only]	ECKD1H271KB	270P
C121,122 [EG only]	ECKD1H223ZF	0.022
C123,124 [EG only]	ECKD1H223ZF	0.022
C125,126 [EG,EF only]	ECQM1H823JZ	0.082
C125,126 [other]	ECKD1H223ZF	0.022
C127 [EG,EF only]	ECKD1H103ZF	0.01
C128 [EG only]	ECKD1H103ZF	0.01
C201,202	ECEA1EU3R3	3.3
C203,204	ECCD1H101K	100P
C205,206 [EG only]	ECKD1H102KB	0.001
C205,206 [other]	ECKD1H471KB	470P
C207,208	ECEA0JU330	33
C209,210	ECFTD223KXL	0.022
C211,212	ECFTD682KXL	0.0068
C213,214	ECEA1HN010S	1
C215,216	ECEA1CU101	100
C217 [EG only]	ECKD1H103ZF	0.01
C218	ECKD1H103ZF	0.01
C301,302	ECFTD333KXL	0.033
C303,304	ECEA1EU3R3	3.3
C305,306	ECCD1H151K	150P
C307,308	ECKD1H331KB	330P
C309,310	ECCD1H390K	39P
C311,312	ECFTD123KXL	0.012
C313,314	ECFTD683KXL	0.068
C315,316	ECFTD562KXL	0.0056
C317,318	ECFTD273KXL	0.027
C319,320	ECEA1CU100	10
C321 [EG only]	ECKD1H103ZF	0.01
C322	ECKD1H103ZF	0.01
C401,402	ECEA1EU3R3	3.3
C403,404	ECKD1H391KB	390P
C405,406	ECKD1H102KB	0.001
C407,408	ECEA1CU220	22
C409,410	ECCD1H120K	12P
C411,412	ECKD1H473ZF	0.047
C501	ECKD1H473ZF	0.047
C502	ECEA0JU330	33
C606	ECEA1EU4R7	4.7
C701	ECEA1CU471	470
C901,902	ECES1HU472M	4700
C904,905 [EG only]	ECKD1H472ZF	0.0047

■ BLOCK DIAGRAM



■ PRINTED CIRCUIT BOARDS





PHONO EQUALIZER
IC201
AN6552F
or AN6558F
(For (EG) area)
EQUALIZER
For (EG) area 14.5V
GND
(L ch)
PHONO
TUNER
CD/AUX
For (EG) area
INPUT SELECTOR
S2-1 (PHONO)
S2-2 (TUNER)
S2-3 (CD/AUX)
INPUT POSITION IND.
D801~803
LN863RCPP
D805
LN463YCPP
REC OUT
TAPE I
PLAYBACK
(R ch)
S3-1 (TAPE I)
TAPE MONITOR
S2-4 (LOUDNESS)
LOUDNESS
VOLUME
POWER AMPLIFIER/MUTING
IC401
SVI3102
POWER AMP
& PROTECTION
Q603
2SC3311
LED DRIVE
Q602
2SK381
LED DRIVE
For (EG) area
L ch. BASS
L ch. TREBLE
R ch. BASS.
R ch. TREBLE
IC301
M5218L or M5220L (For (EG) area)
TONE AMP
TONE CONTROL
POWER SOUR

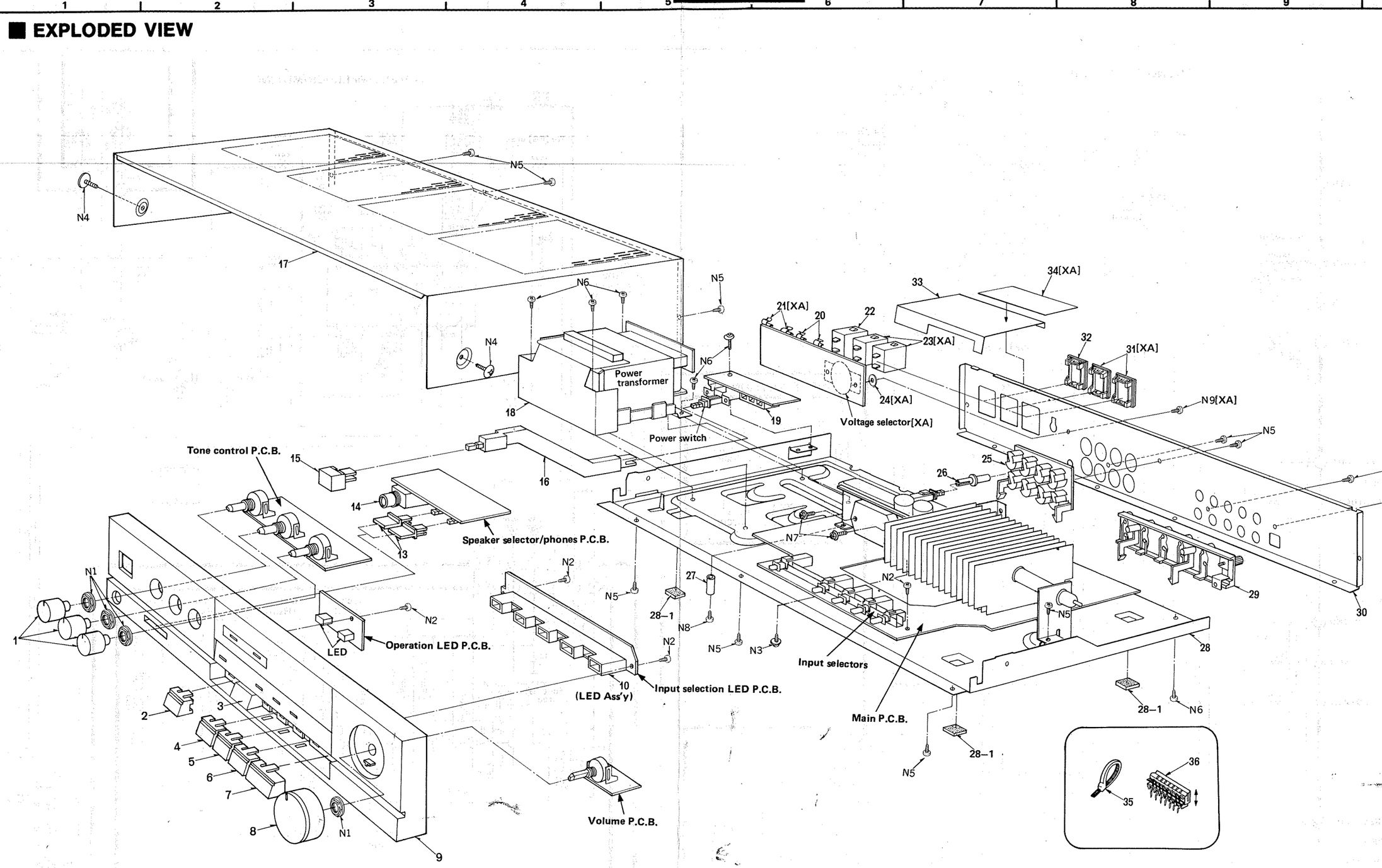
■ SCHEMATIC DIAGRAM

(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



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■ 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 ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ —marked parts are used for black only, while O —marked parts are for silver type only.
4. Part other than Ⓚ — and O —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		SVI3102	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	⚠	SVDS2V20	Diode
D905,906		MA4068M	Diode
D907,908		MA4075M	Diode
COILS			
L1[EG]	⚠	SLQZ650MH49	Coil
L401,402		SLQY07G-40	Coil
TRANSFORMERS			
T1[XA]	⚠	SLT5M480-W	Power
T1[EK,XL]	⚠	SLT5M479-W	Power
T1[other]	⚠	SLT5M478-W	Power
VARIABLE RESISTORS			
VR301		EWCXUAF20B15	Volume, 100kΩ (B)
VR302		EWHF5AF20G15	Balance, 100KΩ(G)
VR303,304		FWCS6A020C15	Tone, 100KΩ(C)
FUSES			
F1[EK]	⚠	XBA2C08TB0	250V, T0.8A
F1[XL,XA]	⚠	XBA2C08TR0	250V, T0.8A
F1[other]	⚠	XBA2C10TR0	250V, T1A
F2[XA]	⚠	XBA2C16TR0	250V, T1.6A
SWITCHES			
S1[XA]	⚠	ESB8248V	Power
S1[other]	⚠	ESB8249V	Power
S2, 3		SSH578	Input Selector
S5		SSH2122	Speaker Selector
S6	⚠	SSH1193-1	Speaker Impedance Selector
S7[XA]	⚠	ESE37263	Voltage Selector

Ref.No.		Part No.	Description	
CABINET AND CHASSIS				
1	O	SBN1032-2	Knob, Tone	(3)
1	Ⓚ	SBN1032-4	Knob, Tone	(3)
2	O	SBC839-1E	Button, Tape	(1)
2	Ⓚ	SBC839E	Button, Tape	(1)
3	O	SGX9025-1	Ornament	(1)
3	Ⓚ	SGX9025	Ornament	(1)
4	O	SBC839-1C	Button, CD/AUX	(1)
4	Ⓚ	SBC839C	Button, CD/AUX	(1)
5	O	SBC839-1B	Button, Tuner	(1)
5	Ⓚ	SBC839B	Button, Tuner	(1)
6	O	SBC839-1A	Button, Phono	(1)
6	Ⓚ	SBC839A	Button, Phono	(1)
7	O	SBC840-1A	Button, Loudness	(1)
7	Ⓚ	SBC840A	Button, Loudness	(1)
8	O	SBN1125	Knob, Volume	(1)
8	Ⓚ	SBN1125-2	Knob, Volume	(1)
9	O	SYYU500SE	Front Panel Ass'y	(1)
9	Ⓚ	SYYU500KE	Front Panel Ass'y	(1)
10		LN041330P	LED Ass'y	(1)
13	O	SBC315-4T	Button, Speaker	(2)
13	Ⓚ	SBC315-7	Button, Speaker	(2)
14		SJJ134B	Headphoe Jack	(1)
15	O	SBC666	Button, Power Switch	(1)
15	Ⓚ	SBC666-4	Button, Power Switch	(1)
16		SUB257	Connection Rod, Power Switch	(1)
17[EK]	O	SKCU700-SK	Cabinet	(1)
17[other]	O	SKC1550S1	Cabinet	(1)
17[EK]	Ⓚ	SKCU700-KK	Cabinet	(1)
17[other]	Ⓚ	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]	⚠	SJS9234B	AC Inlet	(1)
22[other]	⚠	SJS9231B	AC Inlet	(1)
23[XA]	⚠	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	Imput 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, ⊕ 3x8	(4)
N3		XTW3+8T	Tapping, ⊕ 3x8	(1)
N4	O	SNE2095-4	Cabinet	(2)
N4	Ⓚ	SNE2095-5	Cabinet	(2)
N5		XTBS3+8JFZ1	Tapping, ⊕ 3x8	(11)
N6		XTB3+6FFZ	Tapping, ⊕ 3x6	(9)
N7		SNE2126	Power IC	(2)
N8		XTB3+16J	Tapping, ⊕ 3x16	(1)
N9[XA]		SNE2095-5	Voltage Selector	(1)
ACCESSORIES				
A1[EK]	⚠	SFDAC05G02	AC Cord	(1)
A1[XL]	⚠	SJA173	AC Cord	(1)
A1[XA]	⚠	SJA168-1	AC Cord	(1)
A1[other]	⚠	SJA171	AC Cord	(1)
A2[XA]	⚠	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]	O	SPG5674	Carton Box	(1)
P1[EK]	Ⓚ	SPG5673	Carton Box	(1)
P1[EF]		SPG5675	Carton Box	(1)
P1[other]	O	SPG5672	Carton Box	(1)
P1[other]	Ⓚ	SPG5671	Carton Box	(1)
P2		SPS4748	Pad, Left	(1)
P3		SPS4749	Pad, Right	(1)
P4		SPS4141	Pad, Upper	(1)
P5	O	SPP699	Polyethylene Bag	(1)
P5	Ⓚ	SPP735	Polyethylene Bag	(1)
P6[EF]		SGK1413	Label	(2)