

Service Manual

Stereo Integrated Amplifier

SU-Z35

[E], [EGA], [EK], [EF], [EH],
[EB], [Ei], [XA], [XL], [PC]

SU-Z35(K)

[E], [EGA], [EH], [XA], [PC]



- * The colors of this model included silver and black.
- * The black type model is provided with (K) in the Service Manual.

Areas

- * [E] is available in Scandinavia and Switzerland.
- * [EGA] is available in F.R. Germany.
- * [EK] is available in United Kingdom.
- * [EF] is available in France.
- * [EH] is available in Holland.
- * [EB] is available in Belgium.
- * [Ei] is available in Italy.
- * [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
- * [XL] is available in Australia.
- * [PC] is available in European Audio Club.

Specifications

(Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

■ AMPLIFIER SECTION

1 kHz continuous power output both channels driven	2 × 32W (8Ω) 2 × 40W (4Ω)
40 Hz~20 kHz continuous power output both channels driven	2 × 30W (8Ω) 2 × 32W (4Ω)
Total harmonic distortion rated power at 1 kHz	0.03% (8Ω) 0.05% (4Ω)
rated power at 40 Hz~20 kHz	0.03% (8Ω) 0.05% (4Ω)
half power at 1 kHz	0.005% (8Ω) 0.007% (4Ω)
half power at 40 Hz~20 kHz	0.03% (8Ω) 0.05% (4Ω)
-26 dB power at 1 kHz	0.01% (4Ω)
50 mW power at 1 kHz	0.01% (4Ω)
Intermodulation distortion	
rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.05%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.03%
Power bandwidth	
both channels driven, -3 dB	10 Hz~25 kHz (4Ω) 10 Hz~25 kHz (8Ω)
Residual hum and noise	0.8 mV
Damping factor	20 (4Ω), 40 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47kΩ
TUNER, AUX/CD/VIDEO, TAPE	150 mV/22kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV
Frequency response	
PHONO	RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
TUNER, AUX/CD/VIDEO, TAPE	10 Hz~80 kHz (-3 dB)

S/N

rated power (4Ω)	
PHONO	72 dB (IHF, A: 72 dB)
TUNER, AUX/CD/VIDEO, TAPE	86 dB (IHF, A: 97 dB)
-26 dB power (4Ω)	
PHONO	65 dB
TUNER, AUX/CD/VIDEO, TAPE	65 dB
50 mW power (4Ω)	
PHONO	62 dB
TUNER, AUX/CD/VIDEO, TAPE	62 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, AUX/CD/VIDEO 250 Hz~6,300 Hz	±1 dB
Channel separation, AUX/CD/VIDEO, 1 kHz	50 dB
Headphones output level and impedance	360 mV/330Ω
Load impedance	4Ω~16Ω

■ GENERAL

Power consumption	260W
Power supply	
For United Kingdom and Australia	AC 50Hz/60Hz, 240V
For continental Europe	AC 50Hz/60Hz, 220V
For others	AC 50Hz/60Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 86 × 240 mm (16-15/16" × 3-3/8" × 9-7/16")
Weight	4.6 kg (10.2 lb.)

Note:

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

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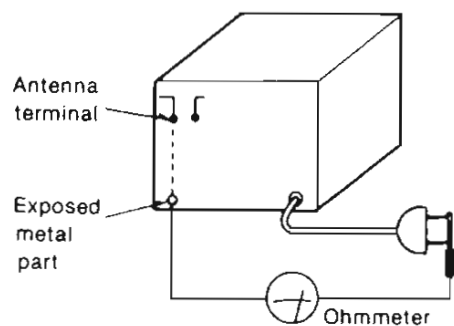
SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

INSULATION RESISTANCE TEST

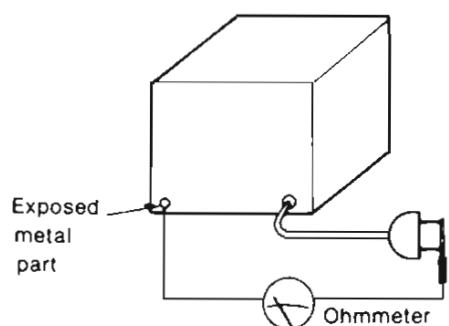
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ



(Fig. B)

Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

PROTECTION CIRCUITRY

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

- No sound is heard when the power is turned on.
- Sound stops during performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlined below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again

Note:

When the protection circuitry functions the unit will not operate unless the power is first turned off and then on again.

Stereo Integrated Amplifier **SU-Z35 / SU-Z35(K)**

DEUTSCH

- This booklet contains the specifications for SU-Z35, written in Germany, French and Spanish, and the circuits to be changed according to areas.
- File this manual together with the SU-Z35 service manual (Order No. SD83062527C8).
- Diese Broschüre enthält die technischen Daten und die Beschreibungen der Justiermethoden für SU-Z35 in deutscher, französischer und spanischer Sprache, sowie die entsprechend dem Gebiet zu ändernden Schaltungen.
- Bewahren Sie das Büchlein zusammen mit der Bedienungsanleitung für SU-Z35 (Bestell-Nr. SD83062527C8) auf.
- Cette brochure contient les spécifications et les procédures de réglage pour le SU-Z35, écrites en allemand, en français et en espagnol et explique les circuits devant être modifiés selon les régions.
- Classer ce manuel en même temps qu'avec le manuel de service du SU-Z35 (N° d'ordre : SD83062527C8).
- Este librito contiene las especificaciones y procedimientos de ajuste para SU-Z35, escritas en alemán, francés y español, y los circuitos a cambiarse según las áreas.
- Guardar este manual juntamente con el manual de servicio de SU-Z35 (Pedido N°. SD83062527C8).

DEUTSCH

TECHNISCHE DATEN (Spezifikationen Können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 1 kHz beide Kanäle ausgesteuert	2 × 32W (8 Ω) 2 × 40W (4 Ω)
Dauerton-Ausgangsleistung bei 40 Hz ~ 20 kHz beide Kanäle ausgesteuert	2 × 30W (8 Ω) 2 × 32W (4 Ω)
Gesamtklirrfaktor	
Nennleistung bei 1 kHz	0,03% (8 Ω) 0,05% (4 Ω)
Nennleistung bei 40 Hz ~ 20 kHz	0,03% (8 Ω) 0,05% (4 Ω)
halbe Nennleistung bei 1 kHz	0,005% (8 Ω) 0,007% (4 Ω)
halbe Nennleistung bei 40 Hz ~ 20 kHz	0,03% (8 Ω) 0,05% (4 Ω)
-26 dB Leistung bei 1 kHz	0,01% (4 Ω)
50 mW Leistung bei 1 kHz	0,01% (4 Ω)
Intermodulationsfaktor	
Nennleistung bei 250 Hz: 8 kHz = 4:1, 4 Ω	0,05%
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω	0,03%
Leistungsbandbreite beide Kanäle ausgesteuert bei -3 dB	10 Hz ~ 25 kHz (4 Ω) 10 Hz ~ 25 kHz (8 Ω)
Restbrumm und Geräusch	0,8 mV
Dämpfungsfaktor	20 (4 Ω), 40 (8 Ω)
Eingangsempfindlichkeit und -impedanz	
Phono	2,5 mV/47 kΩ
TUNER, AUX/CD/VIDEO, TAPE	150 mV/22 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.)	150 mV
Geräuschabstand	
Nennleistung (4 Ω)	
Phono	72 dB (nach IHF, A: 72 dB)
TUNER, AUX/CD/VIDEO, TAPE	86 dB (nach IHF, A: 97 dB)

-26 dB Leistung (4 Ω)	
Phono	65 dB
TUNER, AUX/CD/VIDEO, TAPE	65 dB
50 mW Leistung (4 Ω)	
Phono	62 dB
TUNER, AUX/CD/VIDEO, TAPE	62 dB
Frequenzgang	
Phono	RIAA-Standardkurve ±0,8 dB (30 Hz ~ 15 kHz)
TUNER, AUX/CD/VIDEO, TAPE	10 Hz ~ 80 kHz (-3 dB)
Klangregler	
Baßregler (BASS)	50 Hz, +10 dB ~ -10 dB
Höhenregler (TREBLE)	20 kHz, +10 dB ~ -10 dB
Gehörliche Lautstärkekorrektur (Loudness) (bei -30 dB Ausgangsleistung)	50 Hz, +9 dB
Ausgangsspannung und -impedanz	
Aufnahmeausgang (REC OUT)	150 mV
Kanalabweichung (AUX/CD/VIDEO, 250 Hz ~ 6300 Hz)	±1 dB
Übersprechdämpfung (AUX/CD/VIDEO 1 kHz)	50 dB
Kopfhörerpegel und -impedanz	360 mV/330 Ω
Lautsprecherimpedanz	4 Ω ~ 16 Ω

■ ALLGEMEINE DATEN

Leistungsaufnahme	260 W
Netzspannung	
Für Kontinentaleuropa	Wechselstrom 50 Hz/60 Hz, 220V
Für andere Länder	Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Abmessungen (B×H×T)	430 × 86 × 240 mm
Gewicht	4,6 kg

Bemerkung:
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

FRANÇAIS

■ CARACTERISTIQUES

(Sujet à changement sans préavis.)

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sortie continue à 1 kHz
les deux canaux en circuit

	2 × 32W (8Ω)
	2 × 40W (4Ω)

Puissance de sortie continue de 40 Hz~20 kHz,
les deux canaux en circuit

	2 × 30W (8Ω)
	2 × 32W (4Ω)

Distorsion harmonique totale
à puissance nominale (1 kHz)

	0,03% (8Ω)
	0,05% (4Ω)

à puissance nominale (40 Hz~20 kHz)

	0,03% (8Ω)
	0,05% (4Ω)

à demi-puissance (1 kHz)

	0,005% (8Ω)
	0,007% (4Ω)

à demi-puissance (40 Hz~20 kHz)

	0,03% (8Ω)
	0,05% (4Ω)

puissance de -26 dB à 1 kHz

	0,01% (4Ω)
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puissance de 50 mW à 1 kHz

	0,01% (4Ω)
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Distorsion d'intermodulation
à puissance nominale à 250 Hz: 8 kHz=4:1, 4Ω

	0,05%
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à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω

	0,03%
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Réponse de fréquences
les deux canaux en circuit, -3 dB

	10 Hz~25 kHz (4Ω)
	10 Hz~25 kHz (8Ω)

Bruit et ronflement résiduels

	0,8 mV
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Coefficient d'amortissement

	20 (4Ω), 40 (8Ω)
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Sensibilité et impédance d'entrée

	2,5 mV/47kΩ
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PHONO

	2,5 mV/47kΩ
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SYNTONISATEUR, AUX/CD/VIDEO, BANDE

	150 mV/22kΩ
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(TUNER, AUX/CD/VIDEO, TAPE)

	150 mV
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PHONO (tension d'entrée maximum, 1 kHz RMS)

	150 mV
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Signal/Bruit

à puissance nominale (4Ω)

	72 dB (IHF, A: 72 dB)
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PHONO

	72 dB (IHF, A: 72 dB)
--	-----------------------

SYNTONISATEUR, AUX/CD/VIDEO, BANDE

	86 dB (IHF, A: 97 dB)
--	-----------------------

(TUNER, AUX/CD/VIDEO, TAPE)

	86 dB (IHF, A: 97 dB)
--	-----------------------

puissance de -26 dB (4Ω)

	65 dB
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PHONO

	65 dB
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SYNTONISATEUR, AUX/CD/VIDEO, BANDE

	65 dB
--	-------

(TUNER, AUX/CD/VIDEO, TAPE)

	65 dB
--	-------

puissance de 50 mW (4Ω)
PHONO

	62 dB
--	-------

SYNTONISATEUR, AUX/CD/VIDEO, BANDE

	62 dB
--	-------

(TUNER, AUX/CD/VIDEO, TAPE)

	62 dB
--	-------

Réponse de fréquence
PHONO

	Courbe nominale RIAA
	±0,8 dB (30 Hz~15 kHz)

SYNTONISATEUR, AUX/CD/VIDEO, BANDE
(TUNER, AUX/CD/VIDEO, TAPE)

	10 Hz~80 kHz (-3 dB)
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Réglage de la tonalité
BASSES (BASS)

	50 Hz, +10 dB~-10 dB
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AIGUS (TREBLE)

	20 kHz, +10 dB~-10 dB
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Compensateur physiologique (volume à -30 dB)

	50 Hz, +9 dB
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Tension de sortie et impédance
SORTIE ENREGISTREMENT (REC OUT)

	150 mV
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Equilibrage des canaux, AUX/CD/VIDEO 250 Hz~6 300 Hz

	±1 dB
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Séparation des canaux, AUX/CD/VIDEO 1 kHz

	50 dB
--	-------

Niveau de sortie des casques et impédance

	360 mV/330Ω
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Impédance de charge

	4Ω~16Ω
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■ DIVERS

Consommation

	260W
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Alimentation

Pour l'Europe

	CA 50 Hz/60 Hz, 220V
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Autres

	CA 50 Hz/60 Hz, 110V/120V/220V/240V
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Dimensions (L×H×Pr)

	430 × 86 × 240 mm
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Poids

	4,6 kg
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Nota:

La Société NATIONAL-PANASONIC-FRANCE, importateur du matériel MATSUSHITA-ELECTRIC déclare que cet appareil est conforme aux prescriptions de la directive 76/889/C.E.E. (arrêté 14 Janvier 1980).

Remarque:

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

ESPAÑOL

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

(DIN 45 500)

■ SECCION AMPLIFICADOR

Potencia continua de 1 kHz en ambos canales	2 × 32W (8Ω) 2 × 40W (4Ω)
Potencia continua de 40 Hz~20 kHz en ambos canales	2 × 30W (8Ω) 2 × 32W (4Ω)
Distorsión armónica total potencia de régimen a 1 kHz	0,03% (8Ω) 0,05% (4Ω)
potencia de régimen a 40 Hz~20 kHz	0,03% (8Ω) 0,05% (4Ω)
mitad de potencia a 1 kHz	0,005% (8Ω) 0,007% (4Ω)
mitad de potencia a 40 Hz~20 kHz	0,03% (8Ω) 0,05% (4Ω)
-26 dB de potencia a 1 kHz	0,01% (4Ω)
50 mW de potencia a 1 kHz	0,01% (4Ω)
Distorsión por intermodulación potencia de régimen a 250 Hz: 8 kHz=4:1, 4Ω	0,05%
potencia de régimen a 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0,03%
Ancho de banda de potencia con ambos canales, -3 dB	10 Hz~25 kHz (4Ω) 10 Hz~25 kHz (8Ω)
Zumbido residual y ruido	0,8 mV
Factor de amortiguamiento	20 (4Ω), 40 (8Ω)
Sensibilidad e impedancia de entrada TOCADISC. (PHONO)	2,5 mV/47kΩ
SINTON., AUX./CD/VIDEO, GRAB. (TUNER, AUX/CD/VIDEO, TAPE)	150 mV/22kΩ
Voltaje máximo de entrada de PHONO (1 kHz, RMS)	150 mV
Relación de señal a ruido potencia de régimen (4Ω)	72 dB (IHF, A: 72 dB)
TOCADISC. (PHONO)	72 dB (IHF, A: 72 dB)
SINTON., AUX./CD/VIDEO, GRAB. (TUNER, AUX/CD/VIDEO, TAPE)	86 dB (IHF, A: 97 dB)

-26 dB de potencia (4Ω) TOCADISC. (PHONO)	65 dB
SINTON., AUX./CD/VIDEO, GRAB. (TUNER, AUX/CD/VIDEO, TAPE)	65 dB
50 mW de potencia (4Ω) TOCADISC. (PHONO)	62 dB
SINTON., AUX./CD/VIDEO, GRAB. (TUNER, AUX/CD/VIDEO, TAPE)	62 dB
Respuesta de frecuencia TOCADISC. (PHONO)	curva RIAA estándar ±0,8 dB (30 Hz~15 kHz)
SINTON., AUX./CD/VIDEO, GRAB. (TUNER, AUX/CD/VIDEO, TAPE)	10 Hz~80 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, AUX/CD/VIDEO 250 Hz~6 300 Hz	±1 dB
Separación de canales, AUX/CD/VIDEO 1 kHz	50 dB
Impedancia y nivel de salida de los auriculares	360 mV/330Ω
Impedancia de carga	4Ω~16Ω

■ GENERAL

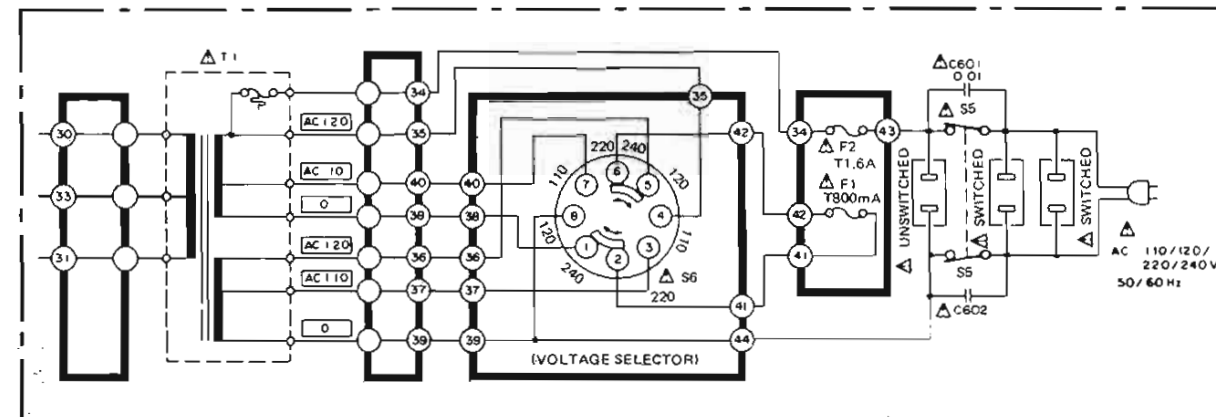
Consumo de energía	260W
Alimentación de energía Para Europa continental	CA 50 Hz/60 Hz, 220V
Para otros países	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensiones (An.×Al.×Prof.)	430 × 86 × 240 mm
Peso	4,6 kg

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

■ CIRCUITS TO BE CHANGED AND THE AREAS

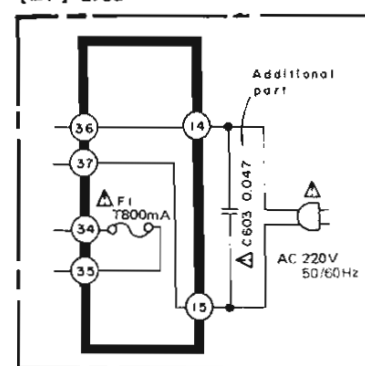
• Power source circuit

[XA] area

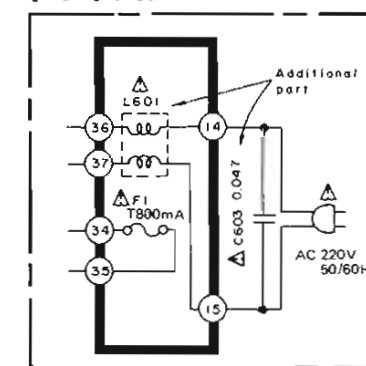


[XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.

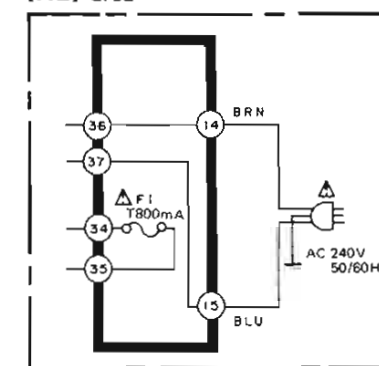
[EF] area



[EGA] area

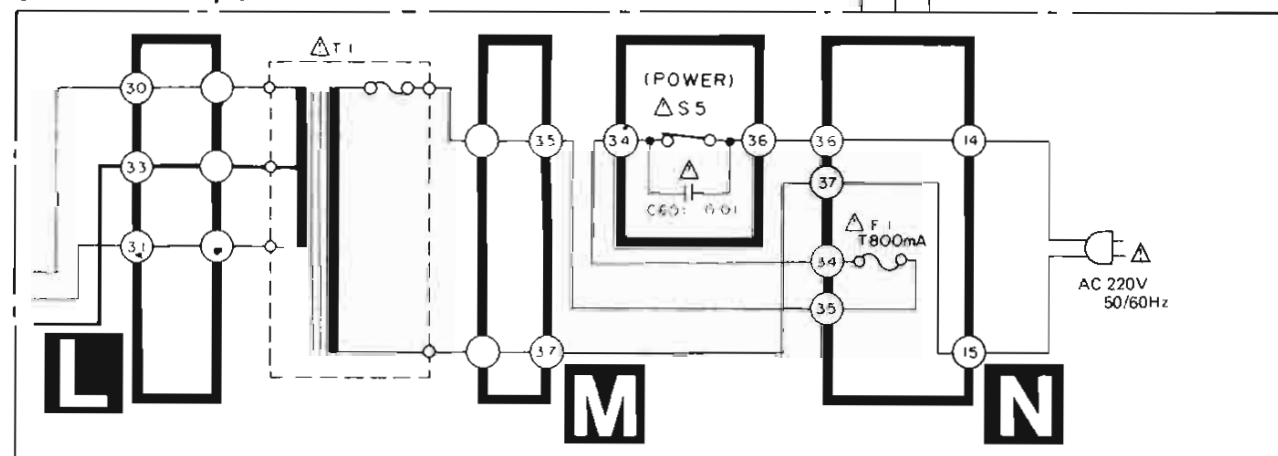


[XL] area



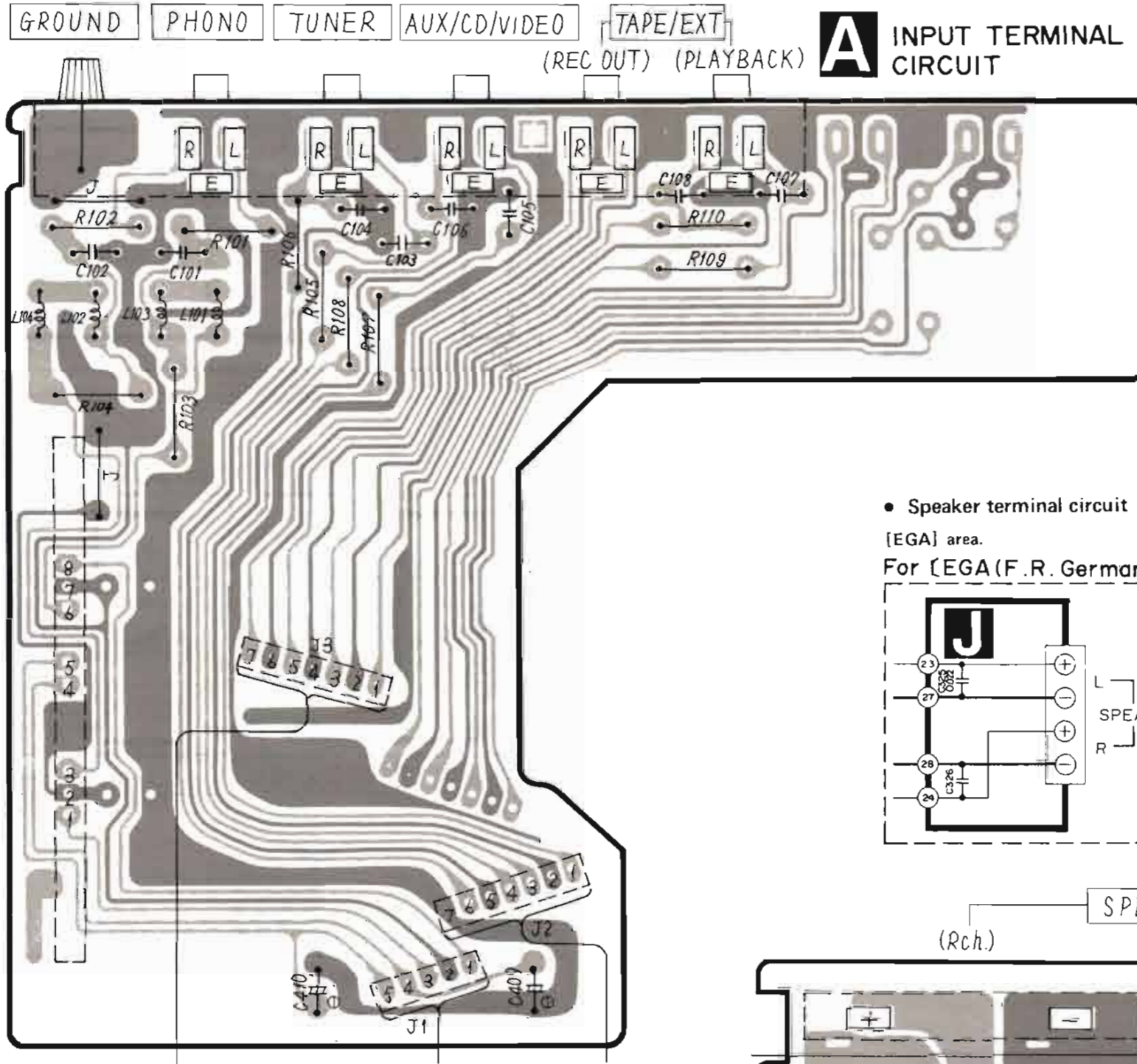
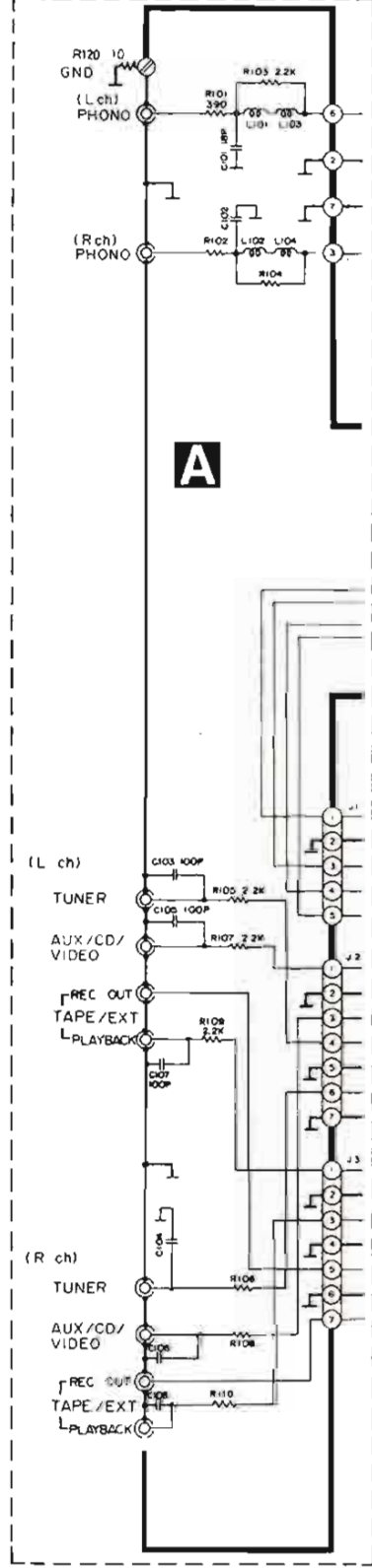
[EF] is available in France.
[EGA] is available in F. R. Germany.
[XL] is available in Australia.

[Continental Europe]



• Input/output terminal circuit
[EGA] area

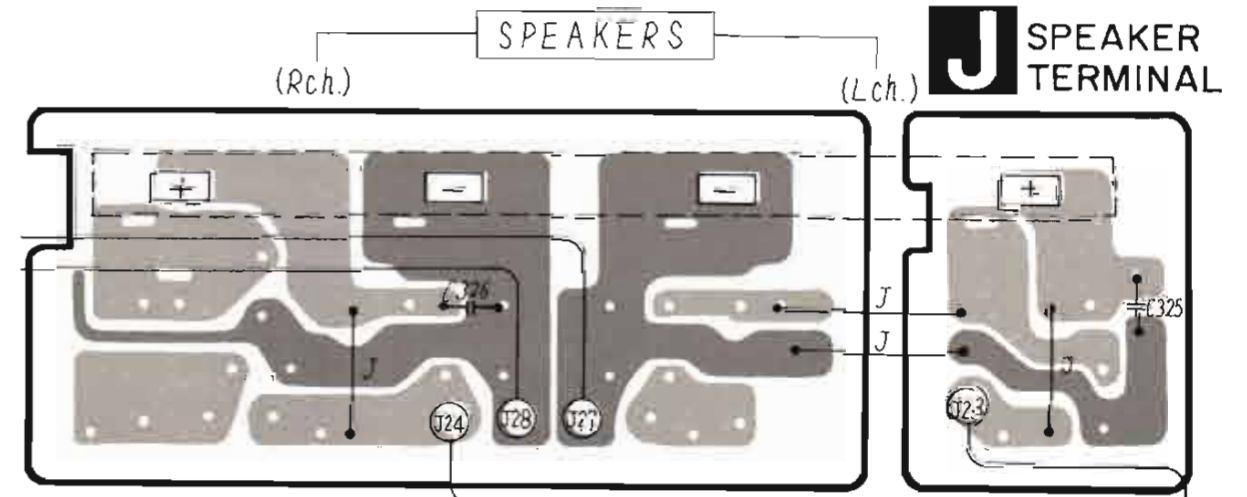
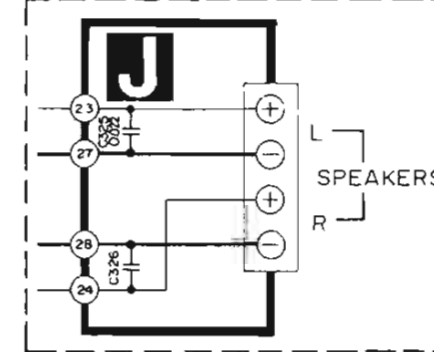
For [EGA (F.R. Germany)] area



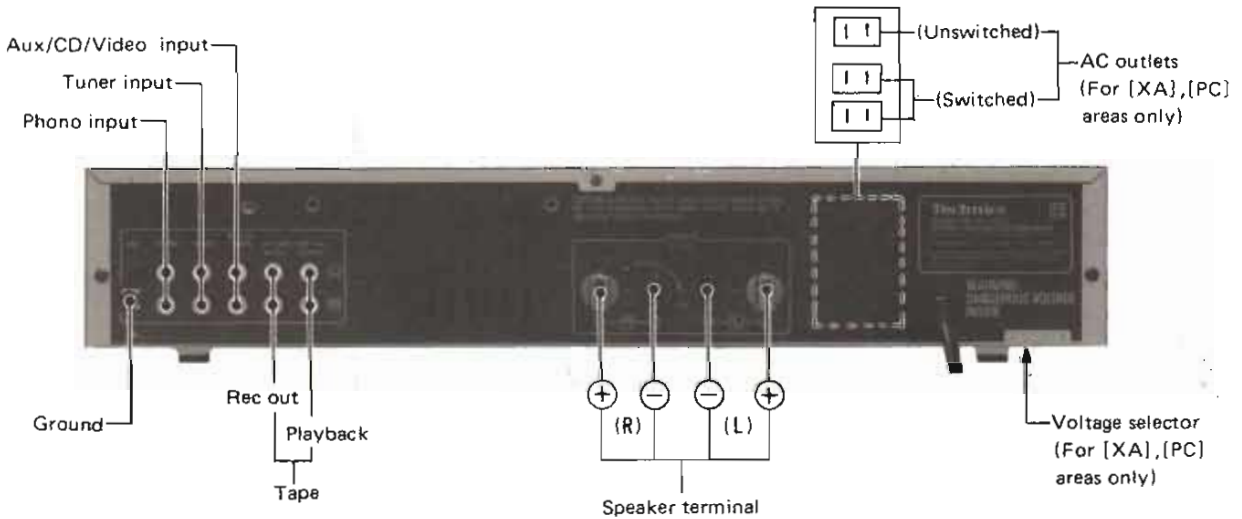
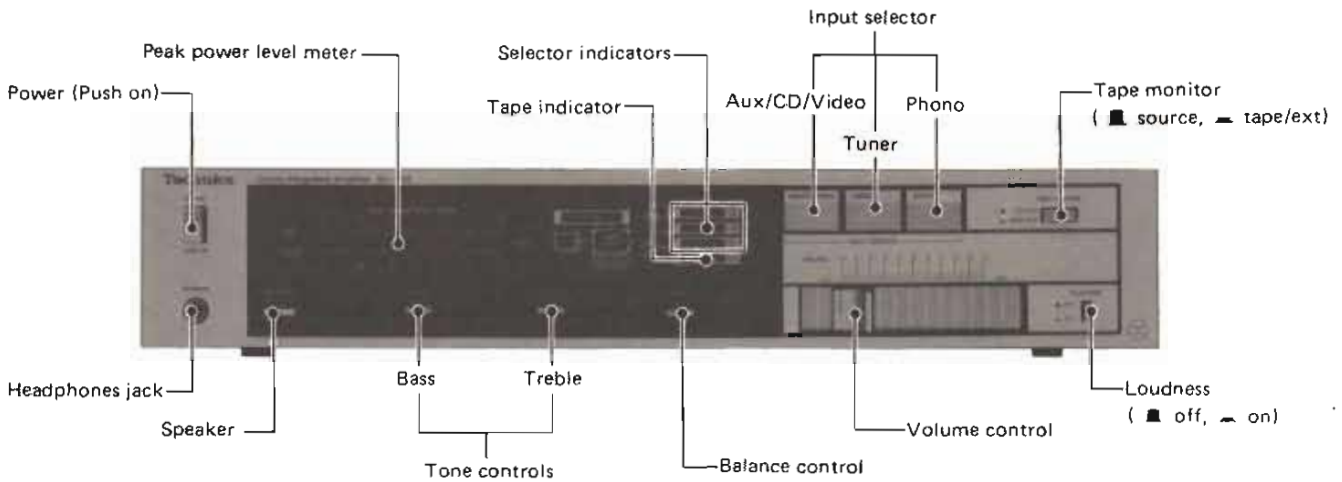
• Speaker terminal circuit

[EGA] area.

For [EGA (F.R. Germany)] area



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 the replacement parts list.
- * [XA, PC] areas is provided with voltage selector and AC outlets.
- * 240V (50/60Hz) for Australia and United Kingdom.
- * 220V (50/60Hz) for Continental Europe.
- * 110V/120V/220V/240V (50/60Hz) for other [XA, PC] areas.
- * Phono input capacitance is about 150pF.

BEFORE REPAIR AND ADJUSTMENT

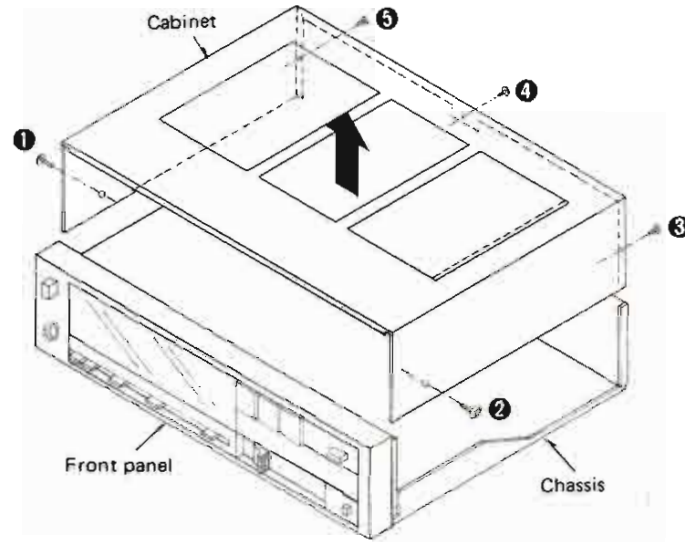
1. Turn off the power supply and short-circuit of power supply capacitors (C406, C407, 4700 μ F) at resistance (about 10 Ω , 5W) in order to discharge the charged voltage. Do not short between C406/C407 by screwdriver. It may damage the component.
2. Before turning on the power supply after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current is free of abnormality. The consumed current at 60Hz/50Hz in no signal mode is shown below with respect to supply voltage 110V/120V/220V/240V.

Power supply voltage		AC110V	AC120V	AC220V	AC240V
Consumed current	50 Hz	130 ~ 270 mA	120 ~ 240 mA	65 ~ 135 mA	60 ~ 120 mA
	60 Hz	130 ~ 270 mA	120 ~ 240 mA	65 ~ 135 mA	60 ~ 120 mA

DISASSEMBLY INSTRUCTIONS

How to remove the cabinet [Fig. 1]

1. Remove the 2 setscrews [Fig. 1: ①, ②] on the side and 3 setscrews [Fig. 1: ③ ~ ⑤] on the back of the cabinet.
2. Remove the cabinet upward.

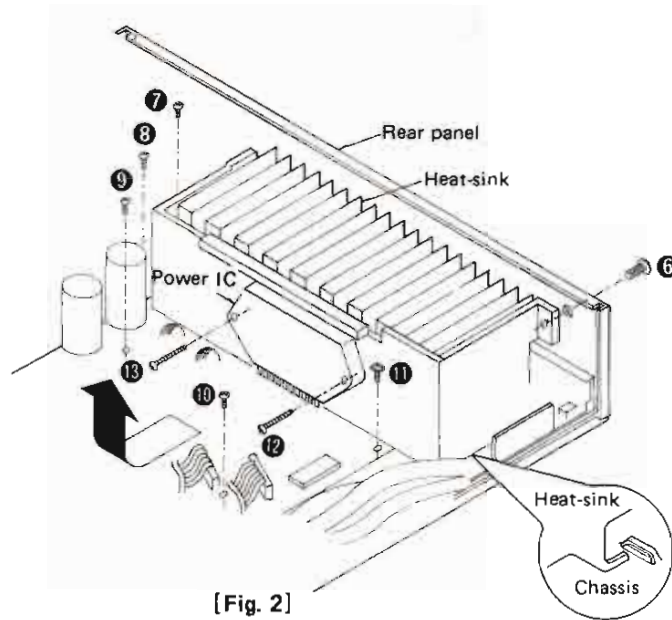


[Fig. 1]

How to remove the power amplifier IC [Fig. 2]

1. Remove the cabinet. [See Fig. 1]
2. Remove the 7 setscrews [Fig. 2: ⑥ ~ ⑪] on the chassis and then remove the main P.C.B. with heat-sink from the chassis.
3. Unsolder of power IC.
4. Remove the 2 setscrews [Fig. 2: ⑫, ⑬] used to secure the power IC on the heat-sink, and then pull the power IC.

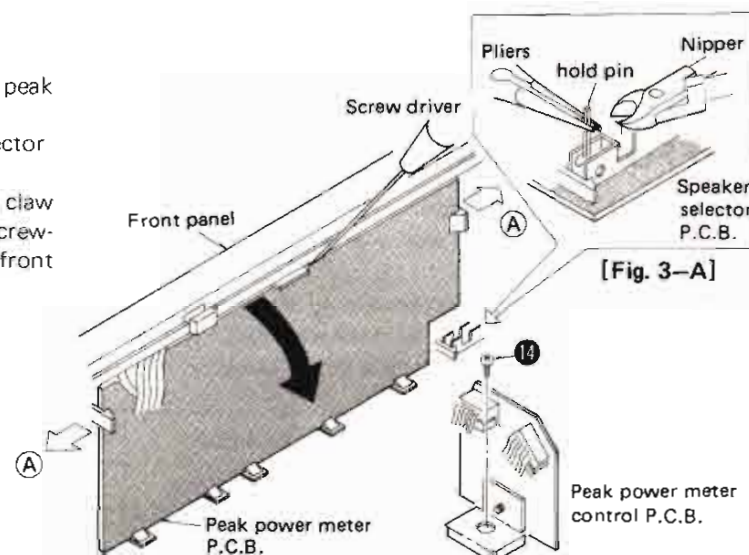
Note: When mounting the power IC, apply silicone compound or equivalent heat diffuser to the rear side of power IC, and then follow the set 1 ~ 4 reversely.



[Fig. 2]

How to remove the peak power meter [Fig. 3]

1. Remove the cabinet. [See Fig. 1]
2. To remove the setscrew [Fig. 3: ⑭] of the peak power meter control P.C.B.
3. Set the pliers etc. on hold pin fixed the speaker selector P.C.B. and cut it of the nipper. (Refer to Fig. 3-A)
4. Remove the peak power meter P.C.B., release the claw in the direction of arrow (A), and insert a blade screw-driver wapped with cloth into the gap between front panel and peak power meter P.C.B.

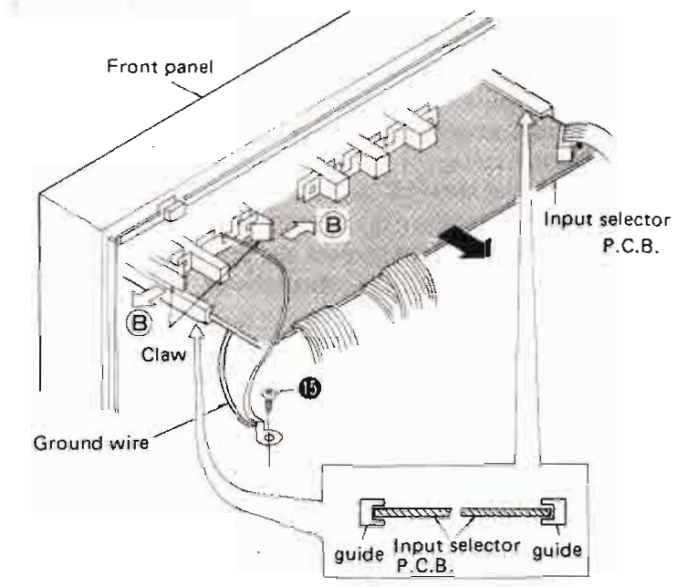


[Fig. 3]

How to remove the input selector P.C.B. [Fig. 4]

1. Remove the cabinet. [See Fig. 1]
2. Remove the setscrew [Fig. 4: ⑮] of the ground wires.
3. Remove the input selector P.C.B., release the claws in the direction of arrow (B), and pull out the P.C.B. toward the back of front panel.

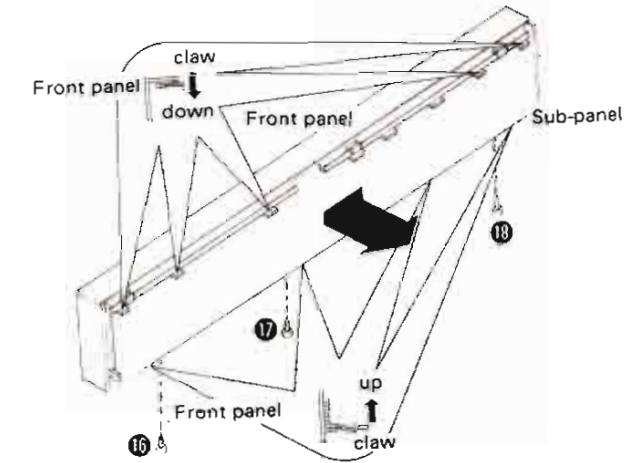
Note: Insert a input selector P.C.B. into the guide.



[Fig. 4]

How to remove the front panel and sub-panel [Fig. 5]

1. Remove the 3 set screws [Fig. 5: ⑯ ~ ⑰] on the chassis next, pull out the front panel from the chassis.
2. Release the 5 claws at the top and the 4 claws at the down of the sub-panel, and then remove the front panel aslant as in Fig. 5.



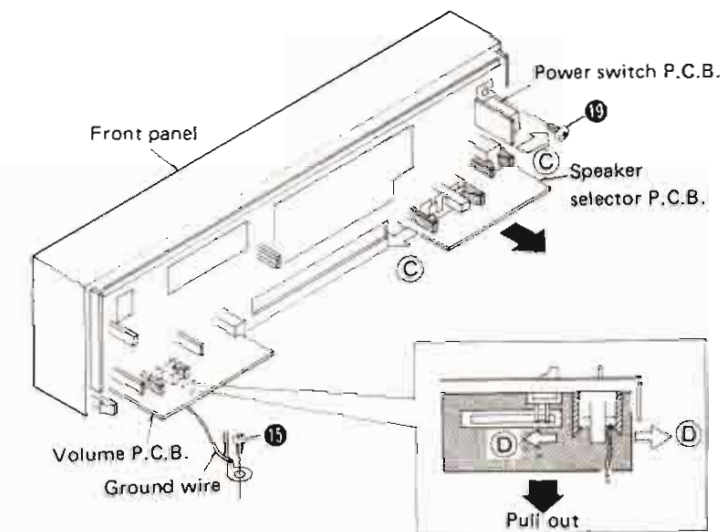
[Fig. 5]

How to remove the each switch P.C.B. attached to front panel [Fig. 6]

1. Remove the cabinet. [See Fig. 1]
2. Remove the setscrew [Fig. 6: ⑱] of the ground wires and then remove the front panel.
3. To remove the setscrew [Fig. 6: ⑲] and remove the power switch P.C.B.
4. To remove the speaker selector P.C.B., release the claw in the direction of arrow (C), and pull out the P.C.B. toward the back of front panel.
5. To remove the volume P.C.B., release the claw in the direction of arrow (D), and pull out the P.C.B. toward the back of front panel.

Note:

[XA, PC] areas only
How to remove the power switch P.C.B.
To remove the front panel and remove the 2 setscrews on the front of sub-panel.



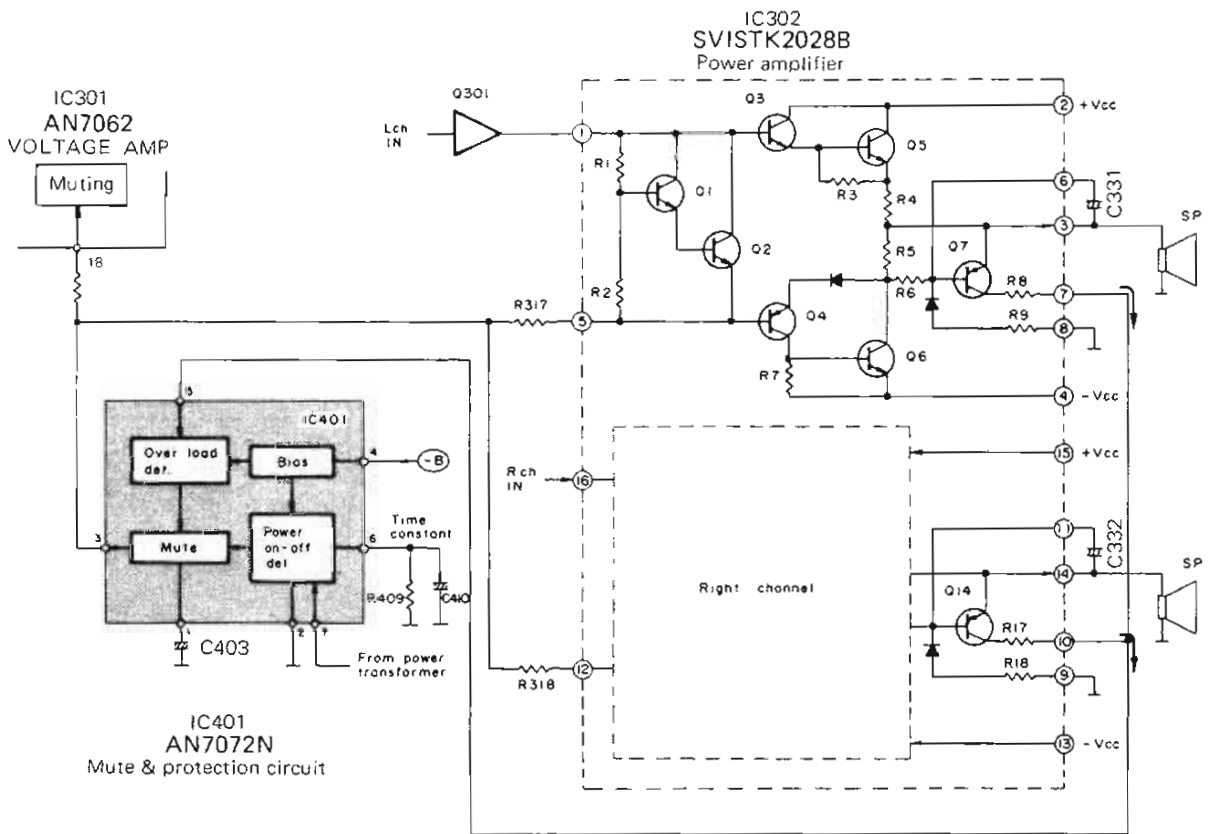
[Fig. 6]

POWER AMPLIFIER PROTECTION

• Short-circuit of speaker terminals

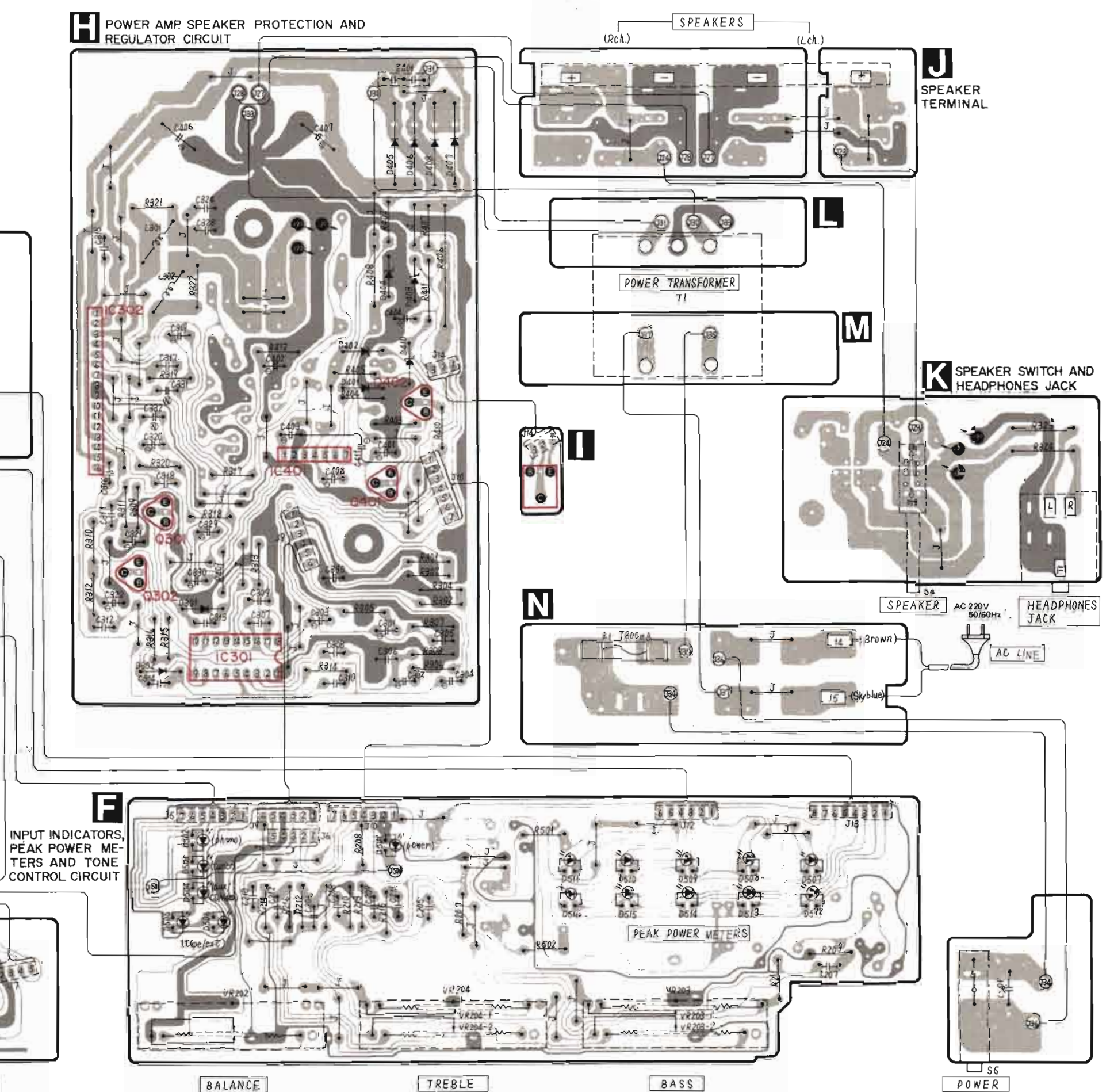
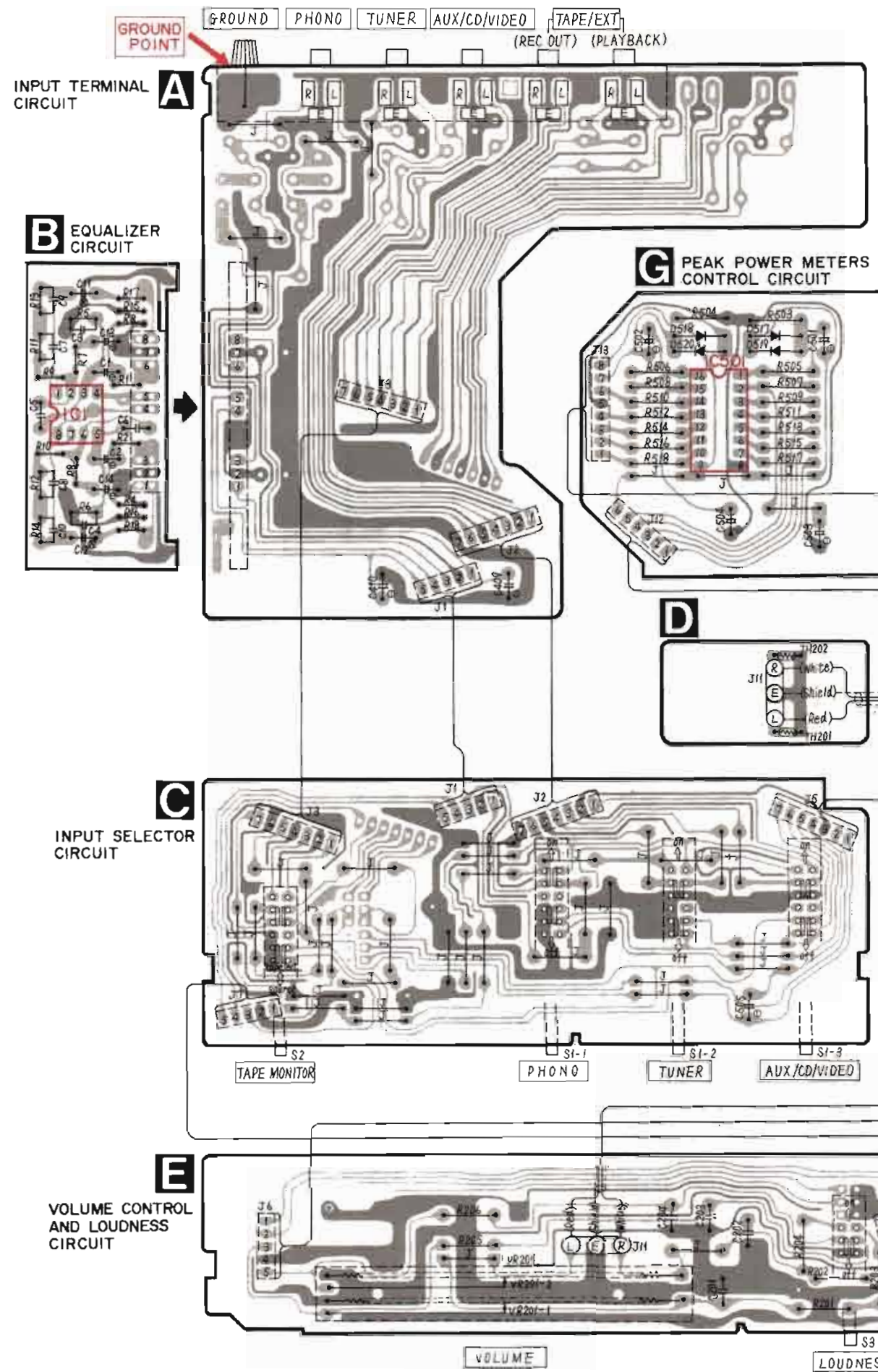
1. If speaker terminals are short-circuited, a high level current will flow to power amplifiers Q5 and Q6, causing the voltage across emitter resistor R5 to increase.
2. Voltage across R5 causes overload detecting transistor Q7 to turn ON.
3. Emitter voltage of Q7 (ground potential) goes to terminal ⑦ of IC302 through R8.
4. Voltage at terminal ⑦ is transmitted to terminal ⑤ of muting IC (IC401).
5. When the terminal ⑤ of IC401 reaches 0V, the muting circuit of IC401 operate.
The muting circuit operate, the voltage of terminal ③ become 0V, and then power supply to the initial stage amplifier and driver stage of IC302 is discontinued.

- Note:**
1. Terminal ③ of IC401 supplies power to drive circuit of power amplifier IC302, and supplies control voltage to muting circuit of voltage amplifier IC301.
 2. IC401 is provided with muting function to prevent shock noise during power ON/OFF in addition to power amplifier protection.



(Fig. 7)

PRINTED CIRCUIT BOARDS/WIRING CONNECTION DIAGRAM



Terminal Guide of Transistors, Diodes and IC's

	AN7062 18pin SVITA7666P 16pin SVINJ4559DDM 8pin
SVDS2V20	AN7072N
MA162A	SVISTK2028B
SVDMZ308B SVDMZ312C SVDMZ316	2SA992, 2SA1015, 2SD592A
SVDSL566VC3 SVDSL566YC3	2SD1265

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.
 - The "S" mark is service standard parts and may differ from production parts.
 - The unit of resistance is Ω (ohm), K = 1000 Ω , M = 1000k Ω .
 - The unit of capacitance is μ F (microfarad), P = 10⁻⁶ μ F.
 - Bracketed indications in Ref. No. Columns specify the area. Parts without these indications can be used for all areas.

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W	J : \pm 5%
ERG : Metal oxide	25 : 1/4W	K : \pm 10%
ERO : Metal film	S1 : 1/4W	

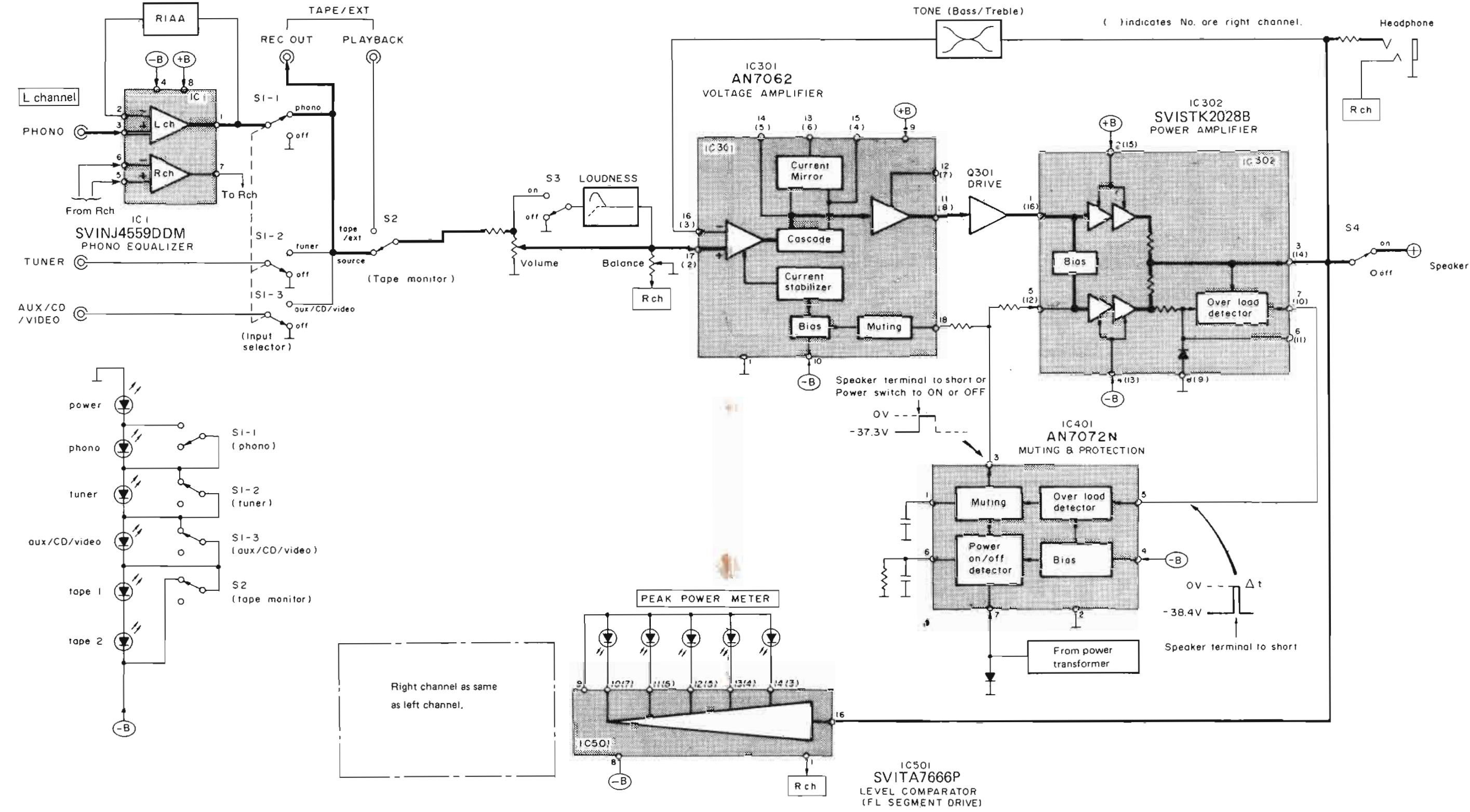
Numbering System of Capacitor

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	1A : 10V	ECQP1 : 100V	J : \pm 5%
ECCD : Ceramic	1E : 25V		K : \pm 10%
ECKD : Ceramic	1H : 50V		Z : +80%, -20%
ECQM : Polyester	50 : 50V		P : +100%, -0%
	25 : 25V		

BLOCK DIAGRAM

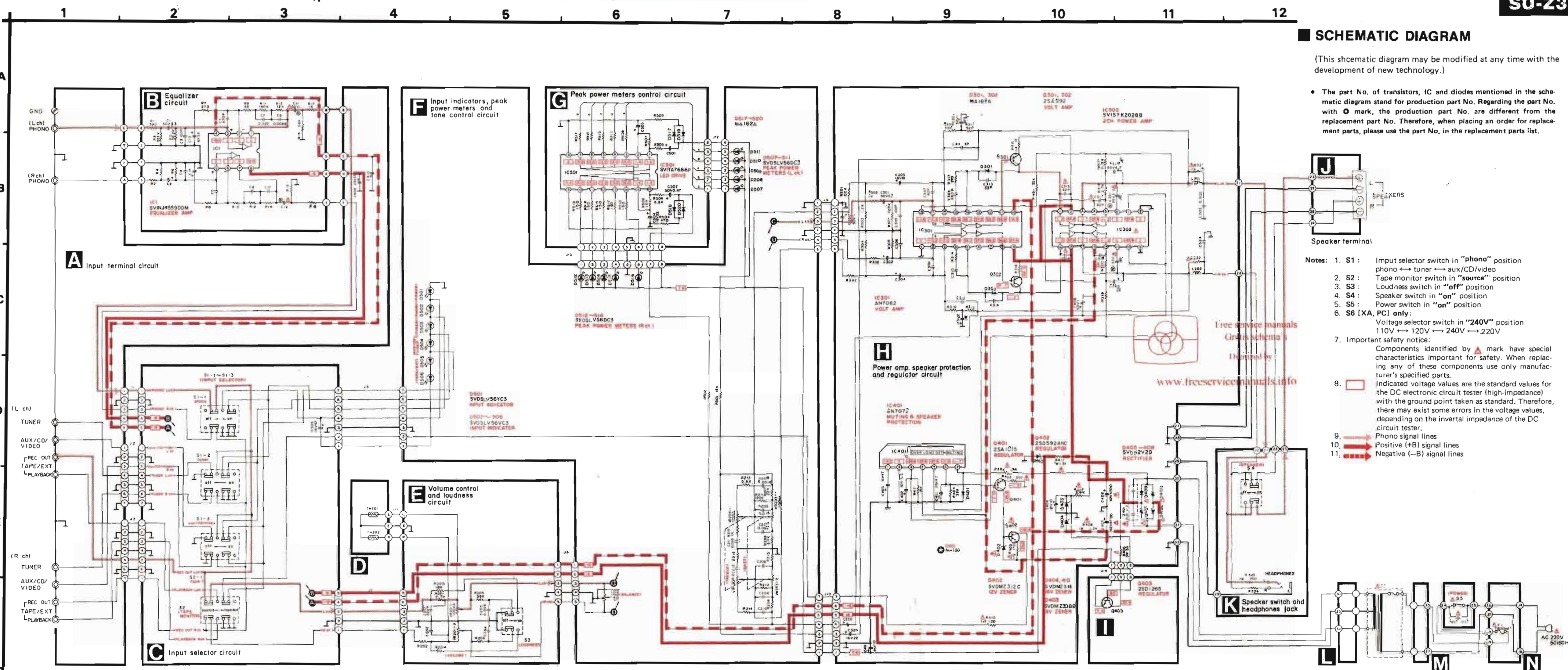


Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
RESISTORS			CAPACITORS								
R1,2	ERD10TLJ391U	390	R303,304	ERD25FJ122	1.2K	C1,2	ECEA5023R3	3.3	C317,318	ECCD1H820K	82P
R3,4	ER010MKG2213	221K	R305,306	ERD25FJ102	1K	C3,4	ECCD1H101K	100P	C319,320	ECEA5024R7	4.7
R5,6	ER010MKG5622	56.2K	R307,308	ERD25J124	120K	C5,6	ECKD1H471KB	470P	C321,322	ECEA5021	1
R7,8	ERD10TLJ271U	270	R309,310	ERD25J393	39K	C7,8	ECQM1H223KV	0.022	C323,324	ECKD1H223ZF	0.022
R9,10	ERD10TLJ680U	68	R311,312	ERD25J823	82K	C9,10	ECQM1H682JZ	0.0068	C325,326	ECKD1H103ZF	0.01
R11,12	ERD10TLJ184U	180K	R313,314	ERD25J271	270	C11,12	ECEA1HN010S	1	(EGA)only		
R13,14	ERD10TLJ123U	12K	R315,316	ERD25FJ150	15	C13,14	ECEA1CS330	33	C329,330	ECEA1ES220	22
R15,16	ERD10TLJ563U	56K	R317,318	ERD25J332	3.3K	C101,102	ECCD1H180KC	18P	C331	ECEA1EN3R3S	3.3
R17,18	ERD10TLJ102U	1K	R319,320	ERD25J272	2.7K	(EGA)only			C332	ECEA1EN3R3S	3.3
R101,102	ERD25FJ391	390	R321,322	ERD25FJ100	10	C103,104	ECCD1H101K	100P	C350	ECEA5021	1
(EGA)only			R323,324	ERGIANJ331	330	(EGA)only			C401	ECEA25Z4R7	4.7
R103,104	ERD25FJ222	2.2K	R401	ERD25J333	33K	C105,106	ECCD1H101K	100P	C402	ECEA5023R3	3.3
(EGA)only			R402	ERD25J153	15K	(EGA)only			C403	ECEA1AS470	47
R105,106	ERD25FJ222	2.2K	R403	ERD25J331	330	C107,108	ECCD1H101K	100P	C404	ECEA1HS100	10
(EGA)only			R404	ERD25J393	39K	(EGA)only			C406,407	ECETS42V472U	4700
R107,108	ERD25FJ222	2.2K	R405	ERDS1FJ471	470	C201,202	ECCD1H471KB	470P	C408	ECEA5021	1
(EGA)only			R406	ERG3ANJ330	33	(EGA)only			C409,410	ECEA1VS330	33
R109,110	ERD25FJ222	2.2K	R407	ERD25FJ682	6.8K	C201,202	ECCD1H221KB	220P	C411	ECEA1HS100	10
(EGA)only			R408	ERGIANJ122	1.2K	(other)			C501,502	ECEA502R47	0.47
R201,202	ERD25FJ472	4.7K	R410	ERD25FJ121	120	C203,204	ECQM1H563KV	0.056	C503,504	ECEA1ES220	22
(EGA)			R411	ERGIANJ152	1.5K	C205,206	ECQM1H153KV	0.015	C505	ECEA1ES470	47
R201,202	ERD25FJ272	2.7K	R412	ERD25J153	15K	C207,208	ECQM1H823JZ	0.082	C601	ECKDKC103PF2	0.01
(other)			R501,502	ERD25J183	18K	C209,210	ECQM1H182JZ	0.0018	C602	{XA,PC} only	
R203,204	ERD25J183	18K	R503,504	ERD25FJ471	470	C211,212	ECQM1H183KV	0.018	C603	{EGA} only	
R205,206	ERD25J393	39K	R505,506	ERD25FJ682	6.8K	C301,302	ECEA5023R3	3.3	EF	ECQE2A473MW	0.047
R207,208	ERD25J223	22K	R507,508	ERD25FJ103	10K	C303,304	ECEA1HS100	10			
R209,210	ERD25FJ332	3.3K				C305,306	ECCD1H101K	100P			
						C307,308	ECCD1H820K	82P			
R211,212	ERD25J184	180K				C309,310	ECKD1H681KB	680P			
R213,214	ERD25FJ562	5.6K				C311,312	ECCD1H050CC	5P			
R215,216	ERD25FJ102	1K				C313,314	ECCD1H220KC	22P			
R301,302	ERD25J223	22K				C315,316	ECCD1H820K	82P			

SCHEMATIC DIAGRAM

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

The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with a circle mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement parts, please use the part No. in the replacement parts list.



- Notes:
- S1: Input selector switch in "phono" position
phono ↔ tuner ↔ aux/CD/video
 - S2: Tape monitor switch in "source" position
 - S3: Loudness switch in "off" position
 - S4: Speaker switch in "on" position
 - S5: Power switch in "on" position
 - S6 [XA, PC] only:
Voltage selector switch in "240V" position
110V ↔ 120V ↔ 240V ↔ 220V
- Important safety notice:
Components identified by a triangle mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
- Indicated voltage values are the standard values for the DC electronic circuit tester (high-impedance) with the ground point taken as standard. Therefore, there may exist some errors in the voltage values, depending on the inverter impedance of the DC circuit tester.
 - Phono signal lines
 - Positive (+B) signal lines
 - Negative (-B) signal lines

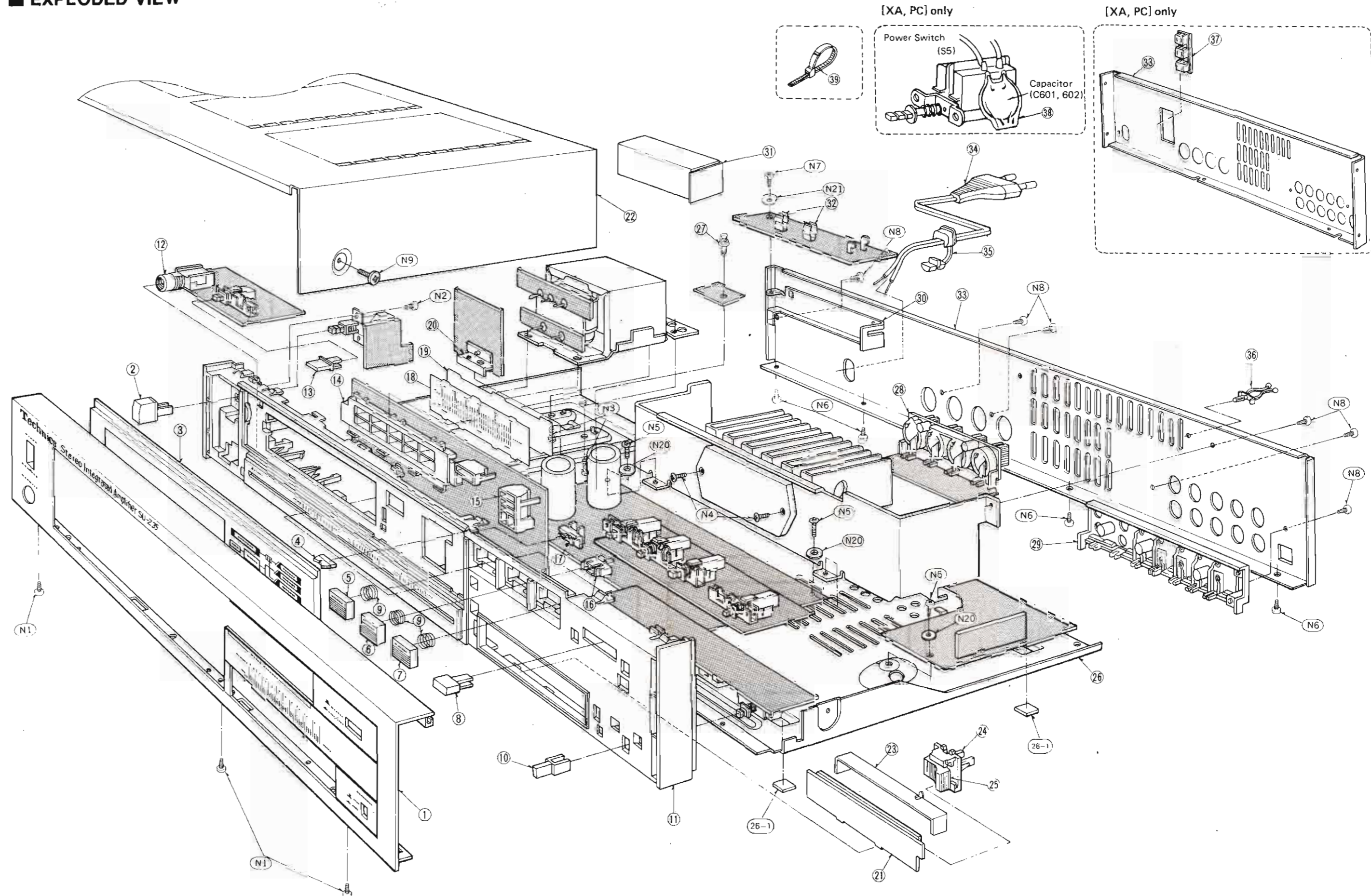
Free service manuals
Circuit's schema's
Download by
www.freeservicemanuals.info

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 $\text{\textcircled{S}}$ mark is service standard parts and may differ from production parts.
 7. The parenthesized numbers in the column of description stand for the quantity per set.

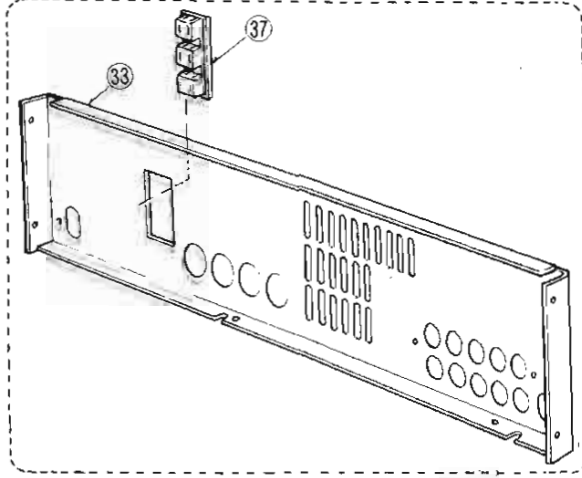
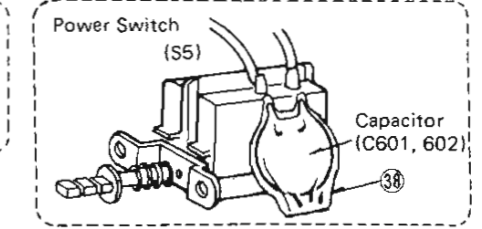
Black type model No. SU-Z35(K)

EXPLODED VIEW



[XA, PC] only

[XA, PC] only



Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC1	SVINJ4559DDM	Equalizer
IC301	AN7062	Voltage Amp
IC302	SVISTK2028B	Power Amp
IC401	AN7072N	Muting
IC501	SVITA7665P	Comparator
TRANSISTORS		
Q301, 302	2SA992	Driver
Q401	2SA1015-Y	Switching
Q402	2SD592ANC-Q	Regulator
Q403	2SD1265-P	Regulator
DIODES		
D301, 302, 401, 517~520	MA162A	Bias
D402	SVDMZ312C	12V Zener
D403	SVDMZ308B	8V Zener
D404, 410	SVDMZ316A	16V Zener
D405~408	SVDS2V20	Rectifier
D501	SVDSL556VC3	LED(Red), Power
D502~506	SVDSL556VC3	LED(Yellow), Selector
D507~516	SVDSL556DC3	LED(Amber), Peak Power Level Meter
COILS		
L101~104	ELQ5181KB	Choke, Input
L301, 302	SLQY07G-30	Choke, Output
L601(EGA)only	SLQZ650MH49	Choke, AC Line
TRANSFORMERS		
T1(EK, XL)	SLT5M319-W	Power Source
T1(XA,PC)	SLT5M321-W	Power Source
T1(other)	SLT5M317-W	Power Source
VARIABLE RESISTORS		
VR201	EFW00105A15S	Volume Control, 100k Ω (A)
VR202	EWANF5X05G15	Balance Control, 100k Ω (G)
VR203, 204	EWANA6X05A15	Bass and Treble Control, 100k Ω (A)
THERMISTERS		
TH201, 202	RRT104	10k Ω
COMPONENT COMBINATIONS		
Z401	SXRF5203Z5M	0.01 μ F x 2
SWITCHES		
S1	SSH3059	Input Select
S2	SSH1115	Tape Monitor
S3	SSH1117	Loudness
S4	SSH1121	Speaker
S5 [XA,PC]	ESB90227S	Power Source
S5(other)	SSH1071	Power Source
S6	ESE37219	Voltage Select
FUSES		
F1	XBA2C08TR0	T800mA, 250V
F2 [XA,PC] only	XBA2C16TR0	T1.6A, 250V

Ref. No.	Part No.	Description
CABINET and CHASSIS PARTS		
1	SGWUZ35E	Front Panel Ass'y (Silver) (1)
1	SGWUZ35KE	Front Panel Ass'y (Black) (1)
2	SBC337-1	Button, Power (1)
3	SGUUZ55-SE	Transparent Plate Ass'y (1)
4	SBD69-1	Button, Bass, Treble, Balance (4)
5	SBW423-2	Button, Aux (1)
6	SBW423-1	Button, Tuner (1)
7	SBW423	Button, Phono (1)
8	SBC369-2	Button, Tape Monitor (1)
9	SUS191-2	Spring (3)
10	SBC51-1	Button (1)
11	SGX7531	Sub Front Panel (1)
11	SGX7531-2	Sub Front Panel (1)
12	SJJ63B	Jack (1)
13	SBC315-3	Button, Speaker (1)
14	SMP351	Holder, LED (1)
15	SMP349	Holder, LED (1)
16	SHR9629	Holder, Aux, Tuner, Phono (3)
17	SHR9673	Holder, Bass, Treble, Balance (3)
18	SDU217	Dial Scale (1)
19	SDU219	Filter (1)
20	SUW2125	Bracket (1)
21	SGXUZ55-SE1	Ornament Plate (Silver) (1)
21	SGXUZ55-KE1	Ornament Plate (Black) (1)
22	SKC1550S1	Cabinet (Silver) (1)
22	SKC1550BB1	Cabinet (Black) (1)
23	SMC1127	Shield Cover (1)
24	SHR9675	Holder (1)
25	SBD83	Button (1)
26 [XA,PC]	SKUUZ35X	Bottom Board Ass'y (W/Fee) (1)
26 (other)	SKUUZ35E	Bottom Board Ass'y (W/Fee) (1)
26-1	SHS2481	Foot (4)
27	SHR401-1	Crip, PCB (1)
28	SJF4433	Terminal Board, Speaker (1)
29	SJF3059-1N	Terminal Board, Input (1)
30	SMK59	Bracket (1)
31 [XA,PC]	SMX799	Shield Cover (1)
31 (other)	SMX779	Shield Cover (1)
32	SJT347	Crip, Fuse (2)
33(EGA, 33(EK), 33 [XA,PC], 33(XL), 33(other)	SGP3790B SGP3790C SGP3790-1A SGP3790-2A SGPUZ35E	Rear Panel (1) Rear Panel (1) Rear Panel (1) Rear Panel (1) Rear Panel Ass'y (1)

Ref. No.	Part No.	Description
34(EK)	QFC1205M	Cord, Power Source (1)
34 [XA,PC]	SJA111	Cord, Power Source (1)
34(XL)	QFC1207MA	Cord, Power Source (1)
34 (other)	SJA165	Cord, Power Source (1)
35(EK)	SHR129	Bushing (1)
35(XL)	SHR131	Bushing (1)
35 (other)	SHR127	Bushing (1)
36	SHR317	Clamper, AC Cord (1)
37 [XA,PC] only	SJS601-2	Socket (1)
38 [XA,PC] only	SMX685	Cover, Capacitor (1)
39	SHR301	Clamper, Lead Wire (2)
SCREWS		
N1	XTB3+8BFN	Tapping, $\phi 3 \times 8$ (3)
N2	XTB3+8BFN	Tapping, $\phi 3 \times 8$ (1)
N3	XTB4+10BFN	Tapping, $\phi 4 \times 10/4$ (1)
N4	XTB3+16BFN	Tapping, $\phi 3 \times 16/2$ (1)
N5	XTB3+8BFN	Tapping, $\phi 3 \times 8$ (2)
N6	XTB3+8BFN	Tapping, $\phi 3 \times 8$ (4)
N7	XTB3+8BFN	Tapping, $\phi 3 \times 8$ (1)
N8	XTB3+8BFZ	Tapping, $\phi 3 \times 8$ (6)
N9	SNE2095-2	Cabinet (Silver) (2)
N9	SNE2095-3	Cabinet (Black) (2)
WASHERS		
N20	XWG3	Thin, $\phi 3$ (3)
N21	XWG3	Thin, $\phi 3$ (1)
ACCESSORIES		
A1 [XA,PC] only	SJP5213-1	Plug (1)
A2 [XA,PC] only	SJP5215	Plug (1)
A3 [XA,PC] only	SPB1065-1	Polyethylene Sheet (1)
A4(EK)	SQF11795	Instruction Book (1)
A4(EF)	SQF11797	Instruction Book (1)
A4(EI)	SQF11799	Instruction Book (1)
A4 [XA,PC] only	SQF11803	Instruction Book (1)
A4(XL)	SQF11801	Instruction Book (1)
A4(EGA)	SQF11793	Instruction Book (1)
A4 (other)	SQF11791	Instruction Book (1)
PACKING PARTS		
P1(EF)	SPG4503	Carton Box (1)
P1 (other)	SPG4501	Carton Box (1)
P2	SPS4089-1	Pad, Left (1)
P3	SPS4091-1	Pad, Right (1)
P4	SPS4141	Pad, Upper (1)
P5	SPP719	Polyethylene Sheet (1)