ORDER NO. SD8103-1842

Service Manual

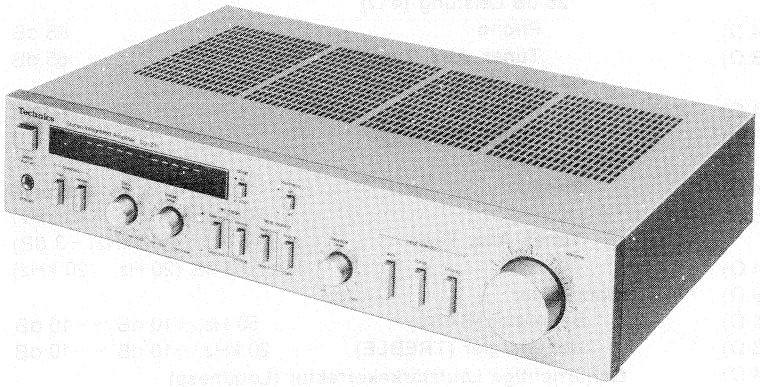
Stereo Integrated Amplifier

SU-Z11

(E),(EG),(EK),(EF),
(EH),(EB),(XA),(XL)

SU-Z11(K)

(E),(EG),(EH)



*The cabinet and front panel are available in black color and silver types.
* The black type model is provided with (K) in the Service Manual.

Areas

* [E] is available in Switzerland and Scandinavia.
* [EG] 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.
* [XA] is available in East South Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

English

Specifications (DIN 45 500)

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

■ AMPLIFIER SECTION

20 Hz~20 kHz continuous power output	
both channels driven	2 × 25W (4Ω)
	2 × 25W (8Ω)
40 Hz~16 kHz continuous power output	
both channels driven	2 × 25W (4Ω)
	2 × 25W (8Ω)
1 kHz continuous power output	
both channels driven	2 × 30W (4Ω)
	2 × 30W (8Ω)
Total harmonic distortion	
rated power at 20 Hz~20 kHz	0.08% (4Ω)
	0.04% (8Ω)
rated power at 40 Hz~16 kHz	0.08% (4Ω)
	0.04% (8Ω)
rated power at 1 kHz	0.08% (4Ω)
	0.04% (8Ω)
half power at 20 Hz~20 kHz	0.03% (8Ω)
half power at 1 kHz	0.005% (8Ω)
−26 dB power at 1 kHz	0.15% (4Ω)
50 mW power at 1 kHz	0.15% (4Ω)
Intermodulation distortion	
rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.08%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.04%
Power bandwidth	
both channels driven, −3 dB	10 Hz~25 kHz (4Ω)
	10 Hz~30 kHz (8Ω)
Residual hum and noise	0.6 mV
Damping factor	20 (4Ω), 40 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47kΩ
TUNER, AUX	150 mV/22kΩ
TAPE 2	150 mV/22kΩ
TAPE 1 REC/PLAY	180 mV/27kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV
S/N	
rated power (4Ω)	
PHONO	72 dB (IHF, A: 80 dB)
TUNER, AUX, TAPE	86 dB (IHF, A: 97 dB)
−26 dB power (4Ω)	
PHONO	65 dB
TUNER, AUX, TAPE	65 dB
50 mW power (4Ω)	
PHONO	62 dB
TUNER, AUX, TAPE	62 dB
Frequency response	
PHONO	RIAA standard curve
	±0.8 dB (30 Hz~15 kHz)
TUNER, AUX, TAPE	5 Hz~100 kHz (−3 dB)
	+0, −0.3 dB (20 Hz~20 kHz)
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
TAPE 1 REC/PLAY	30 mV/82kΩ
Channel balance, AUX 250 Hz~6,300 Hz	±1.0 dB
Channel separation, AUX 1 kHz	50 dB
Headphones output level and impedance	340 mV/330Ω
Load impedance	
MAIN or REMOTE	4Ω~16Ω
MAIN and REMOTE	8Ω~16Ω

■ GENERAL

Power consumption	260W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 86 × 288 mm
	(16-15/16" × 3-3/8" × 11-11/32")
Weight	5.1 kg
	(11.2 lb.)

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

Technics

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

Deutsch

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

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 20 Hz ~ 20 kHz
beide Kanäle ausgesteuert 2 × 25W (4 Ω)
2 × 25W (8 Ω)
Dauerton-Ausgangsleistung bei 40 Hz ~ 16 kHz
beide Kanäle ausgesteuert 2 × 25W (4 Ω)
2 × 25W (8 Ω)
Dauerton-Ausgangsleistung bei 1 kHz
beide Kanäle ausgesteuert 2 × 30W (4 Ω)
2 × 30W (8 Ω)
Gesamtklirrfaktor
Nennleistung bei 20 Hz ~ 20 kHz 0,08% (4 Ω)
0,04% (8 Ω)
Nennleistung bei 40 Hz ~ 16 kHz 0,08% (4 Ω)
0,04% (8 Ω)
Nennleistung bei 1 kHz 0,08% (4 Ω)
0,04% (8 Ω)
halbe Nennleistung bei 20 Hz ~ 20 kHz 0,03% (8 Ω)
halbe Nennleistung bei 1 kHz 0,005% (8 Ω)
−26 dB Leistung bei 1 kHz 0,15% (4 Ω)
50 mW Leistung bei 1 kHz 0,15% (4 Ω)
Intermodulationsfaktor
Nennleistung bei 250 Hz: 8 kHz = 4:1, 4 Ω 0,08%
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω 0,04%
Leistungsbandbreite
beide Kanäle ausgesteuert bei −3 dB
10 Hz ~ 25 kHz (4 Ω)
10 Hz ~ 30 kHz (8 Ω)
Restbrumm und Geräusch 0,6 mV
Dämpfungsfaktor 20 (4 Ω), 40 (8 Ω)
Eingangsempfindlichkeit und -impedanz
Phono 2,5 mV/47 kΩ
Tuner, Aux 150 mV/22 kΩ
Tape 2 150 mV/22 kΩ
Tape 1 Aufnahme/Wiedergabe (TAPE 1 REC/PLAY) 180 mV/27 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.) 150 mV

Geräuschabstand
Nennleistung (4 Ω)
Phono 72 dB (nach IHF, A: 80 dB)
Tuner, Aux, Tape 86 dB (nach IHF, A: 97 dB)
−26 dB Leistung (4 Ω)
Phono 65 dB
Tuner, Aux, Tape 65 dB
50 mW Leistung (4 Ω)
Phono 62 dB
Tuner, Aux, Tape 62 dB
Frequenzgang
Phono RIAA-Standardkurve
±0,8 dB (30 Hz ~ 15 kHz)
Tuner, Aux, Tape 5 Hz ~ 100 kHz(−3 dB)
+0, −0,3 dB (20 Hz ~ 20 kHz)
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
Tape 1 Aufnahme/Wiedergabe (TAPE 1 REC/PLAY) 30 mV/82 kΩ
Kanalabweichung (Aux, 250 Hz ~ 6300 Hz) ±1,0 dB
Übersprechdämpfung (Aux, 1 kHz) 50 dB
Kopfhörerpegel und -impedanz 340 mV/330 Ω
Lautsprecherimpedanz
MAIN oder REMOTE 4 Ω ~ 16 Ω
MAIN und REMOTE 8 Ω ~ 16 Ω

■ ALLGEMEINE DATEN

Leistungsaufnahme 260 W
Netzspannung
Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Abmessungen (B×H×T) 430 × 86 × 288 mm
Gewicht 5,1 kg

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

Français

CARACTERSTIQUES (Sujet á changement sans préaris.)

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sortie continue de 20 Hz~20 kHz,
les deux canaux en circuit 2 × 25W (4Ω)
2 × 25W (8Ω)
Puissance de sortie continue de 40 Hz~16 kHz,
les deux canaux en circuit 2 × 25W (4Ω)
2 × 25W (8Ω)
Puissance de sortie continue à 1 kHz
les deux canaux en circuit 2 × 30W (4Ω)
2 × 30W (8Ω)
Distorsion harmonique totale
à puissance nominale (20 Hz~20 kHz) 0,08% (4Ω)
0,04% (8Ω)
à puissance nominale (40 Hz~16 kHz) 0,08% (4Ω)
0,04% (8Ω)
à puissance nominale (1 kHz) 0,08% (4Ω)
0,04% (8Ω)
à demi-puissance (20 Hz~20 kHz) 0,03% (8Ω)
à demi-puissance (1 kHz) 0,005% (8Ω)
puissance de −26 dB à 1 kHz 0,15% (4Ω)
puissance de 50 mW à 1 kHz 0,15% (4Ω)

Distorsion d'intermodulation
à puissance nominale à 250 Hz: 8 kHz=4:1, 4Ω 0,08%
à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0,04%
Réponse de fréquences
les deux canaux en circuit, −3 dB 10 Hz~25 kHz (4Ω)
10 Hz~30 kHz (8Ω)
Bruit et ronflement résiduels 0,6 mV
Coefficient d'amortissement 20 (4Ω), 40 (8Ω)
Sensibilité et impédance d'entrée
PHONO 2,5 mV/47kΩ
SYNTONISATEUR, AUX (TUNER, AUX) 150 mV/22kΩ
BANDE 2 (TAPE 2) 150 mV/22kΩ
BANDE 1, ENREGISTREMENT/LECTURE (TAPE 1 REC/PLAY) 180 mV/27kΩ
PHONO (tension d'entrée maximum, 1 kHz RMS) 150 mV
Signal/Bruit
à puissance nominale (4Ω)
PHONO 72 dB (IHF, A: 80 dB)
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE) 86 dB (IHF, A: 97 dB)

puissance de −26 dB (4Ω)
PHONO 65 dB
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE) 65 dB
puissance de 50 mW (4Ω)
PHONO 62 dB
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE) 62 dB
Réponse de fréquence
PHONO Courbe nominale RIAA ±0,8 dB (30 Hz~15 kHz)
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE) 5 Hz~100 kHz (−3 dB) +0, −0,3 dB (20 Hz~20 kHz)
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
ENREGISTREMENT/LECTURE BANDE 1 (TAPE 1 REC/PLAY) 30 mV/82kΩ
Equilibrage des canaux, AUX 250 Hz~6 300 Hz ±1,0 dB
Séparation des canaux, AUX 1 kHz 50 dB
Niveau de sortie des casques et impédance 340 mV/330Ω
Impédance de charge
PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE) 4Ω~16Ω
PRINCIPALE et AUXILIAIRE (MAIN and REMOTE) 8Ω~16Ω

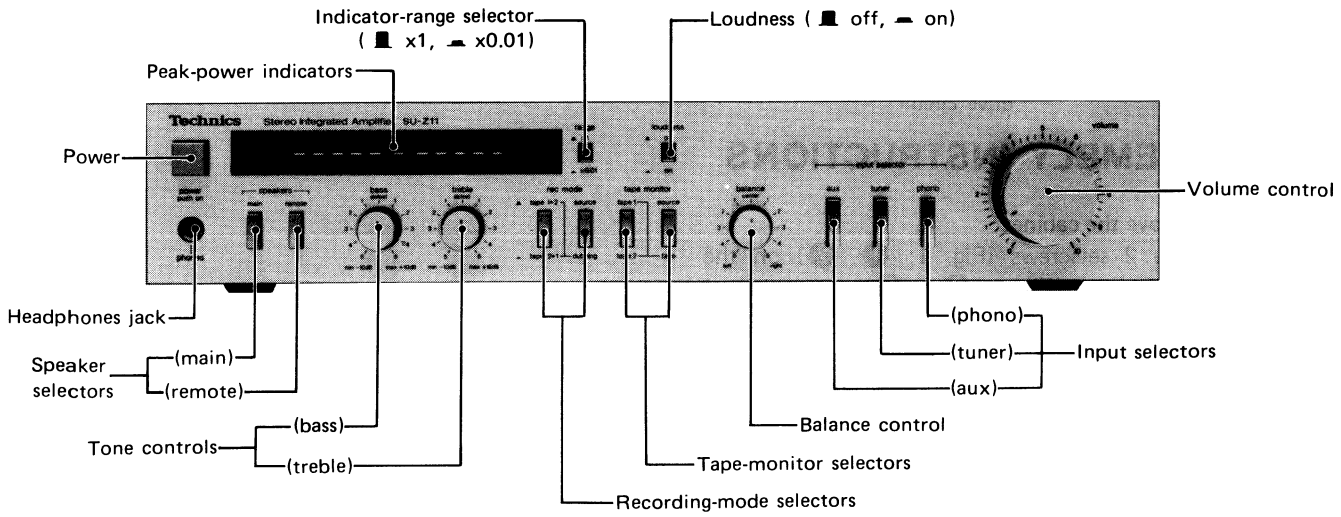
■ DIVERS

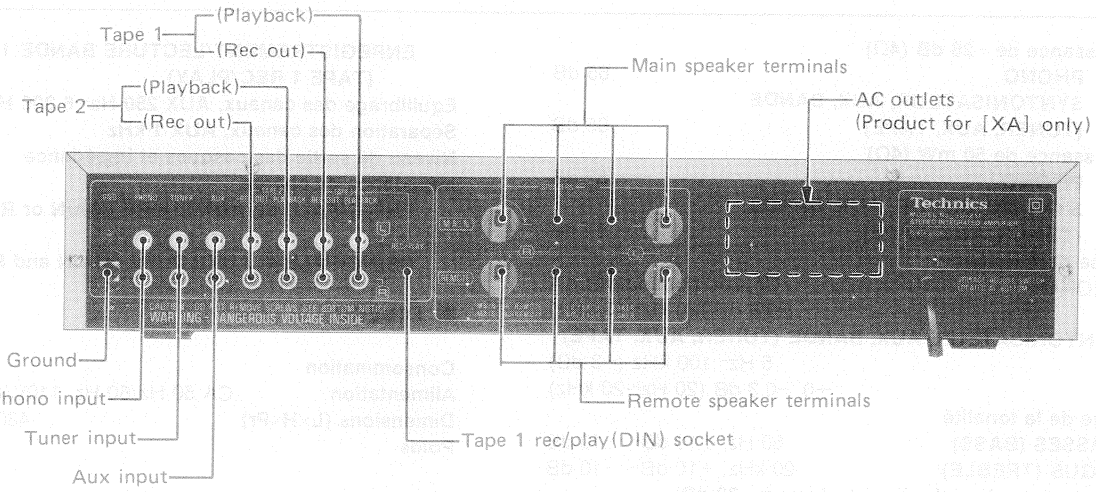
Consommation 260W
Alimentation CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr) 430 × 86 × 288 mm
Poids 5,1 kg

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

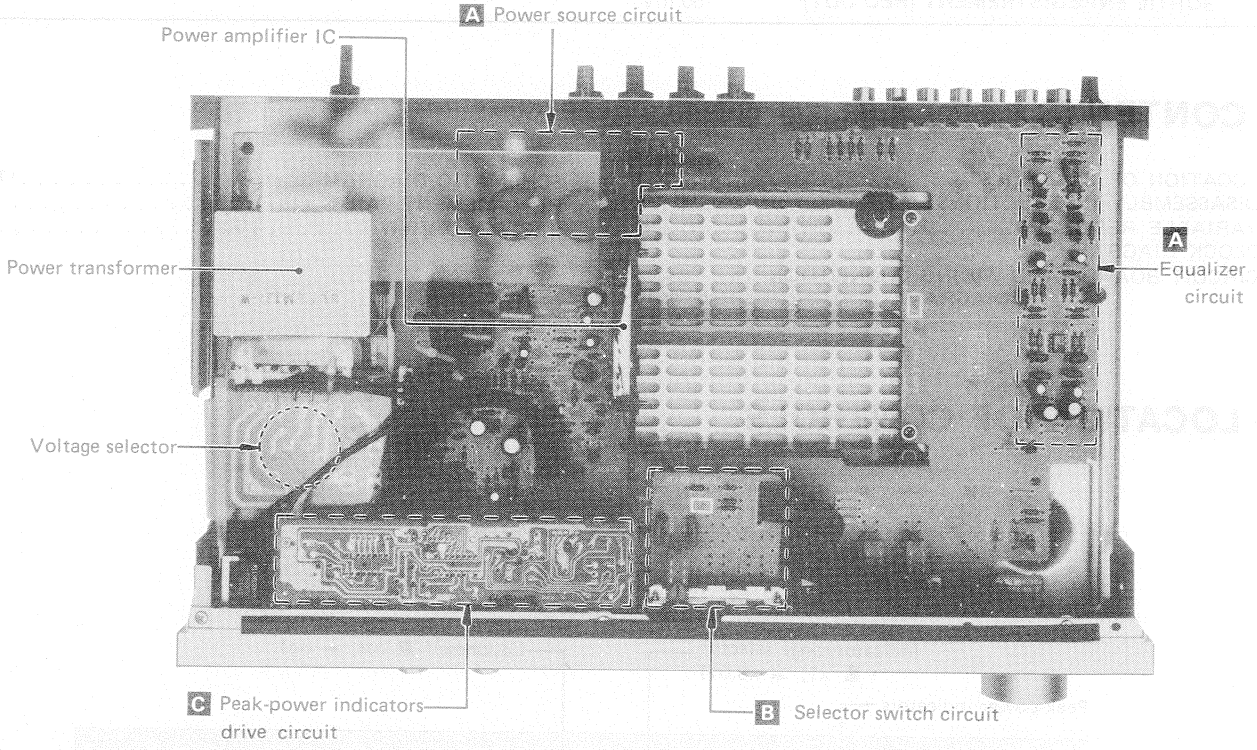
■ CONTENTS

■ LOCATION OF CONTROLS





- **The products for destination [XA] is equipped with AC outlets.**



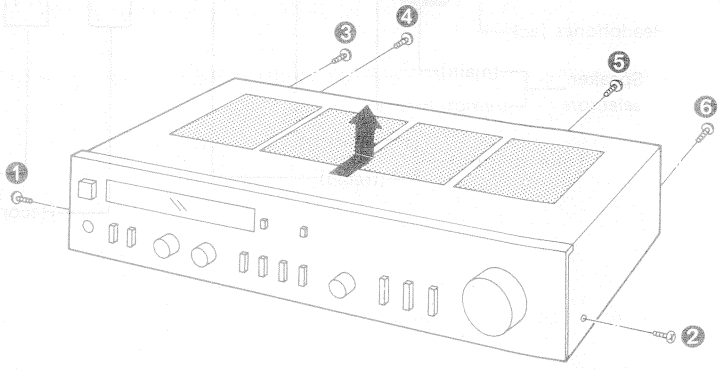
DISASSEMBLY INSTRUCTIONS

- **How to remove the cabinet**

1. Remove the 2 setscrews (Fig. 1: ❶, ❷) on the side and 4 setscrews (Fig. 1: ❸ ~ ❻) on the back of the cabinet.
2. Remove the cabinet.

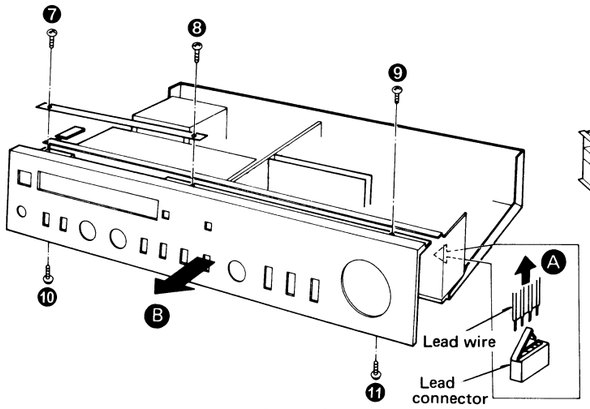
- **How to remove the main printed circuit board**

1. Remove the cabinet.
2. Remove the 5 setscrews (Fig. 2: ❼ ~ ⓫) of the front panel.
3. Open the "lead holder" of the lead connector and pull out the lead wire of the arrow Ⓐ in Fig. 2.
4. Move the front panel in the direction of the arrow Ⓑ in Fig. 2.
5. Remove the 4 setscrews (Fig. 3: ⓬ ~ ⓯) on the back of the set.

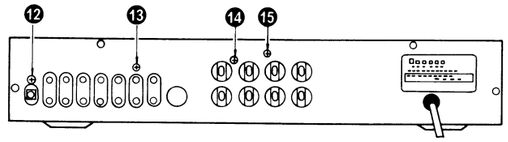


[Fig. 1]

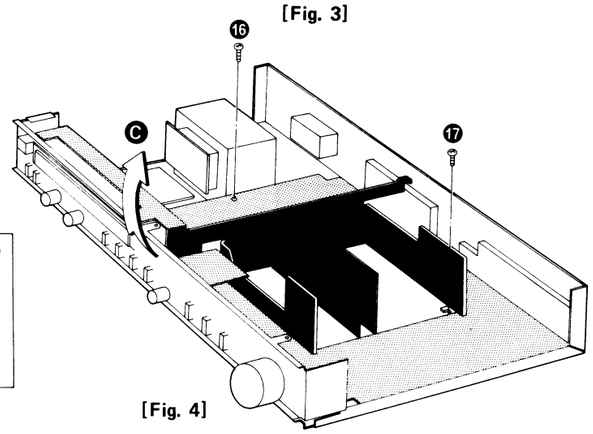
6. Remove the 2 setscrews (Fig. 4: ⑯ , ⑰) witch fastens the printed circuit board in the set.
7. Hold the radiator of the main printed circuit board, and lift it in the direction of the arrow Ⓒ to remove the main printed circuit board from the chassis. (Refer to Fig. 4)



[Fig. 2]



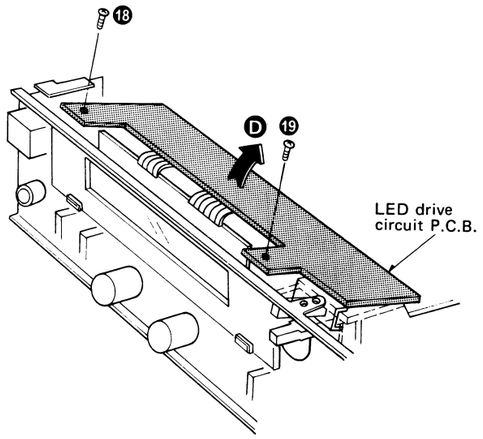
[Fig. 3]



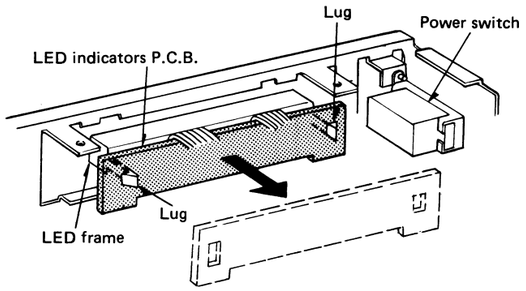
[Fig. 4]

- **How to remove the LED drive printed circuit board**

1. Remove the cabinet.
2. Remove the 2 setscrews (Fig. 5: ⑱ , ⑲) to detach the LED drive printed circuit board.
3. Move the LED drive printed circuit board in the direction of the arrow Ⓓ in Fig. 5.
4. Remove the 2 lugs (Fig. 6) to detach the LED indicators printed circuit board from the LED frame.



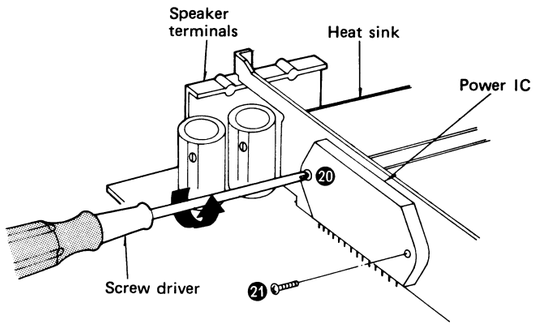
[Fig. 5]



[Fig. 6]

- **How to remove the power IC**

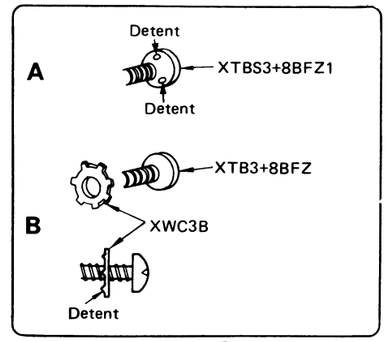
1. Remove the cabinet and chassis. (Refer to "How to remove the cabinet", and "How to remove the main printed circuit board".)
2. Unsolder of power IC.
3. Remove the 2 setscrews (Fig. 7: ⑳ , ㉑) used to secure the power IC on the heat sink, and then pull to the power IC.
4. When mounting the power IC, apply silicone compound (or equivalent heat diffuser) to the rear side of power IC, and then follow the steps 1 ~ 3 reversely.



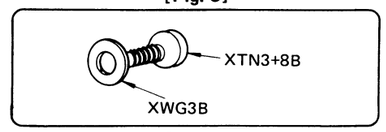
[Fig. 7]

Note 1: Setscrews ⑫ to ⑮ are screws with detents (Part No. : XTBS3+8BFZ1) as shown in Fig. 8-A in order to make the contact of electric circuit perfect.
Take care not to max up these screws with other screws. When substituting, use a 3 x 8mm tapping screw (Part No. : XTB3+8BFZ) and toothed lock washer (Part No. : XWC3B) as shown in Fig. 8-B. The teeth of the lock washer should be positioned on the chassis side.

Note 2: Setscrews ⑱ and ⑲ are plain washer-attached screws (Part No. : XTW3+8H). When substituting, use a 3 x 8mm tapping screw (Part No. : XTN3+8B) and plain washer (Part No. : XWG3B) as shown in Fig. 9.



[Fig. 8]

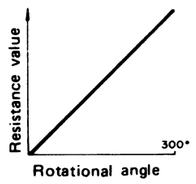


[Fig. 9]

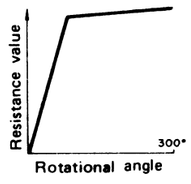
■ VARIABLE RESISTORS

- **Alteration of resistance values according to the rotational angles of variable resistors**

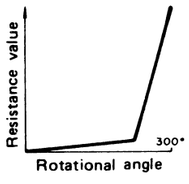
Alteration characteristics as shown below are often used for sets. All are intended to keep the frequency response of the set at optimum levels, and are used according to the types of circuits. For example, characteristic (B) is used for sound volume adjustment; (A) and (C) are for bass and treble sound quality adjustment; and (BH) or (G) is for the adjustment of sound balance between the right and left.



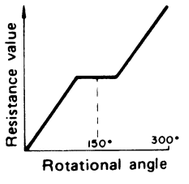
Characteristic (B)



Characteristic (C)

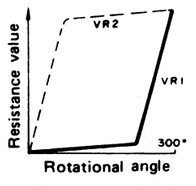


Characteristic (A)

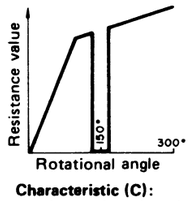


Characteristic (G)

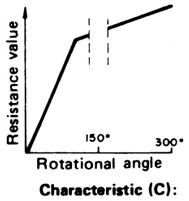
VR1 is inter locked with VR2



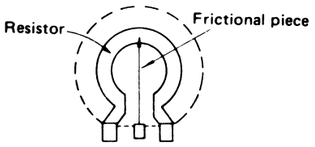
Characteristic (BH)

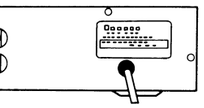


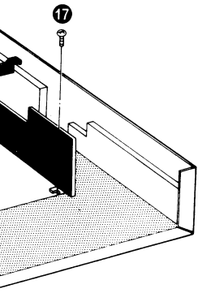
Characteristic (C): short-circuited at center



Characteristic (C): opened at center







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5.
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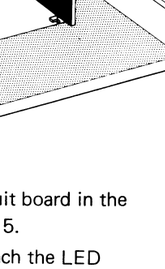
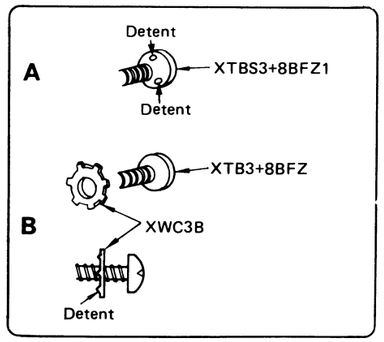
om the LED frame.

nk

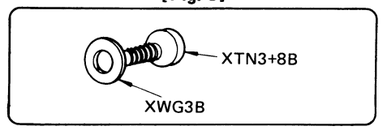


Note 1: Setscrews ⑫ to ⑮ are screws with detents (Part No. : XTBS3+8BFZ1) as shown in Fig. 8-A in order to make the contact of electric circuit perfect.
Take care not to max up these screws with other screws. When substituting, use a 3 x 8mm tapping screw (Part No. : XTB3+8BFZ) and toothed lock washer (Part No. : XWC3B) as shown in Fig. 8-B. The teeth of the lock washer should be positioned on the chassis side.

Note 2: Setscrews ⑱ and ⑲ are plain washer-attached screws (Part No. : XTW3+8H). When substituting, use a 3 x 8mm tapping screw (Part No. : XTN3+8B) and plain washer (Part No. : XWG3B) as shown in Fig. 9.



[Fig. 8]

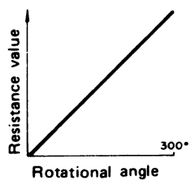


[Fig. 9]

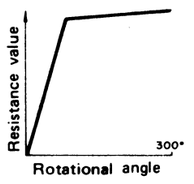
■ VARIABLE RESISTORS

• Alteration of resistance values according to the rotational angles of variable resistors

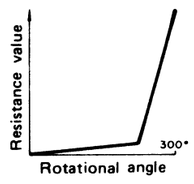
Alteration characteristics as shown below are often used for sets. All are intended to keep the frequency response of the set at optimum levels, and are used according to the types of circuits. For example, characteristic (B) is used for sound volume adjustment; (A) and (C) are for bass and treble sound quality adjustment; and (BH) or (G) is for the adjustment of sound balance between the right and left.



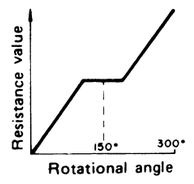
Characteristic (B)



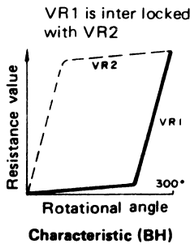
Characteristic (C)



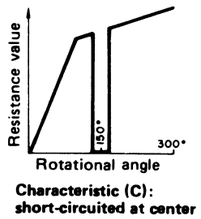
Characteristic (A)



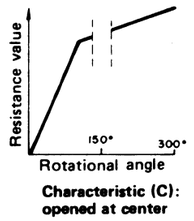
Characteristic (G)



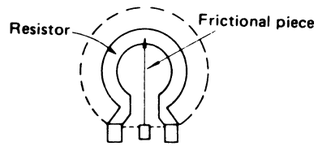
Characteristic (BH)



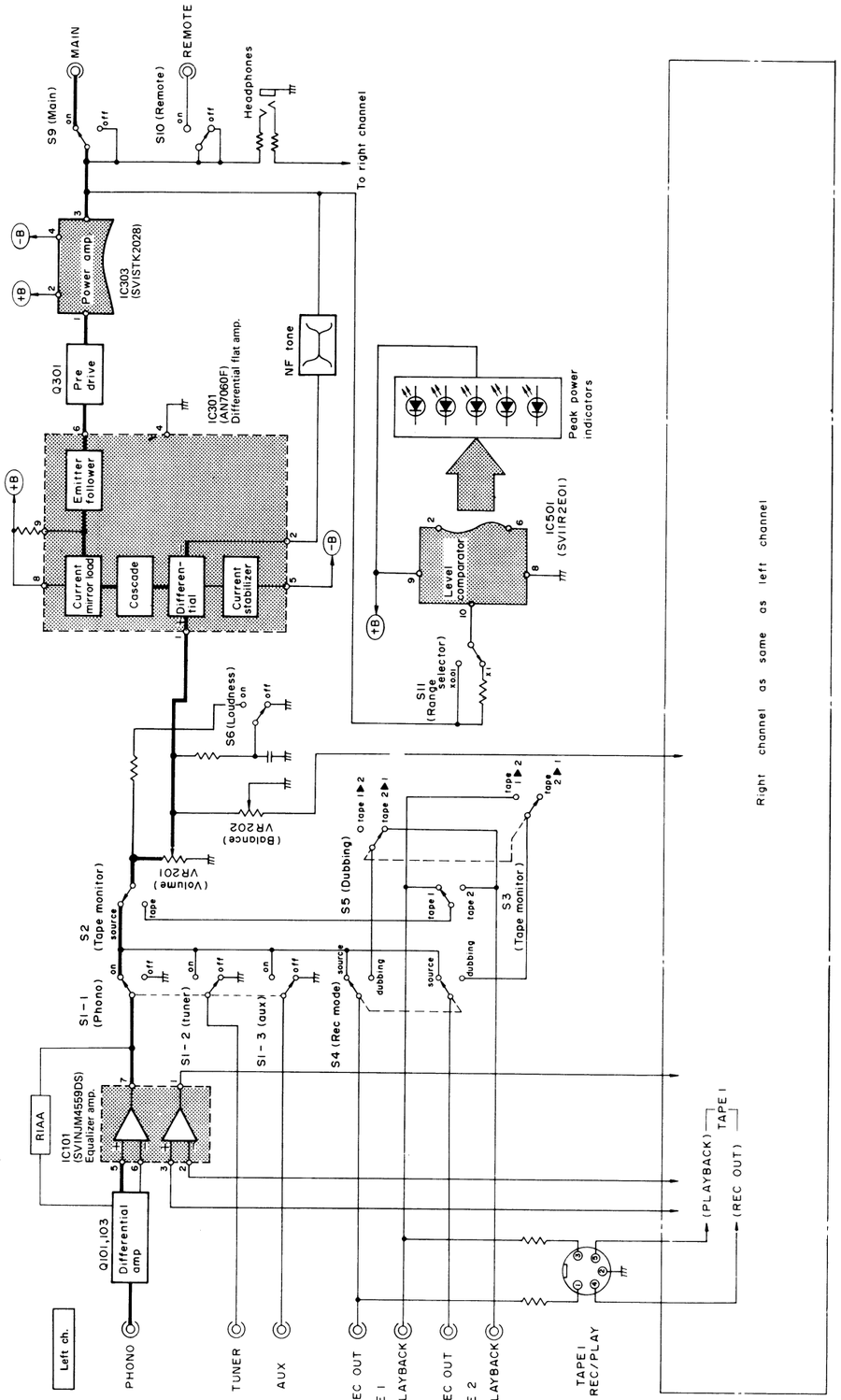
Characteristic (C): short-circuited at center



Characteristic (C): opened at center



■ BLOCK DIAGRAM



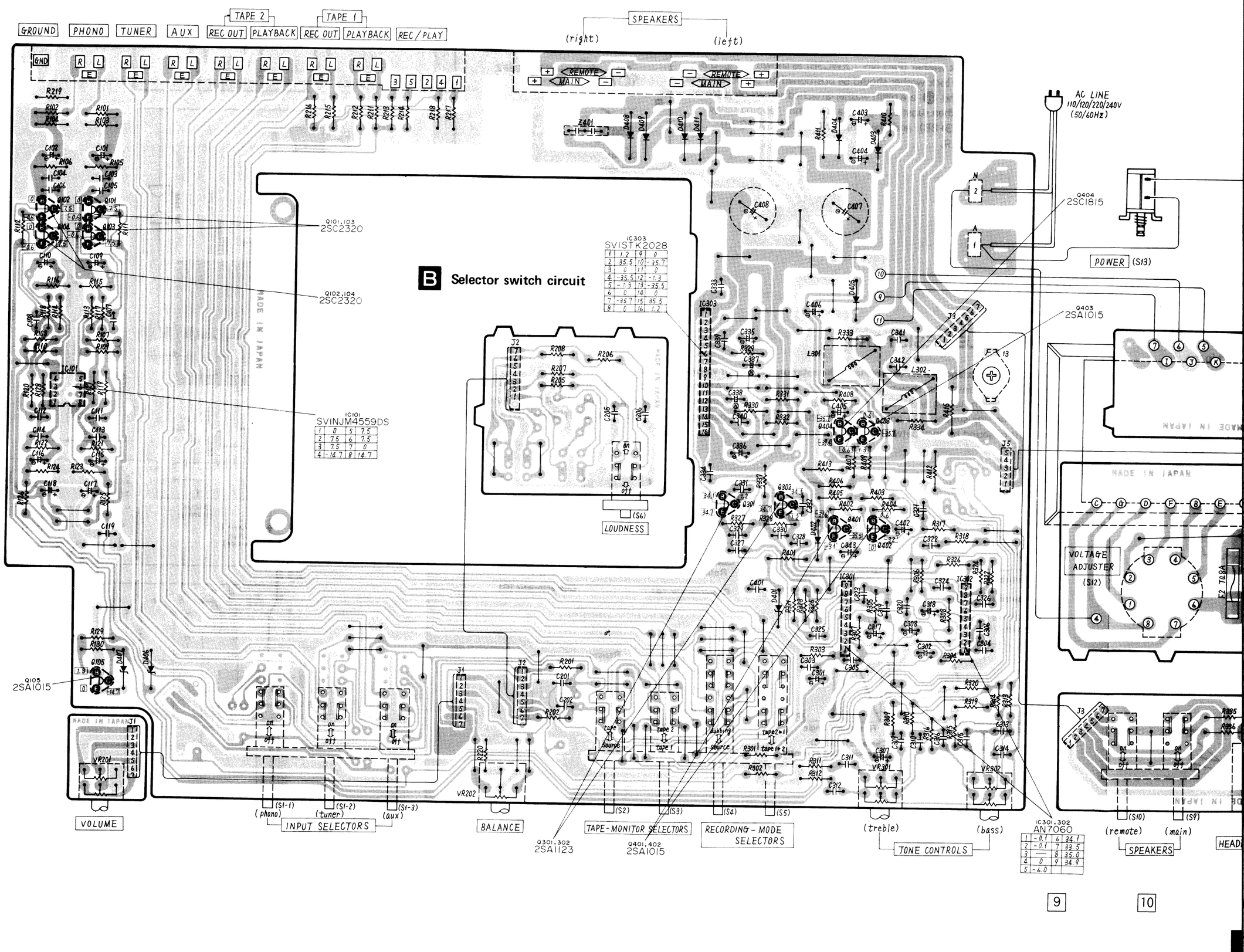
SU-Z11 SU-Z11

■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

A Main printed circuit

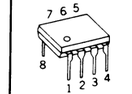
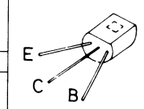
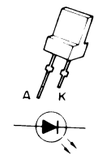
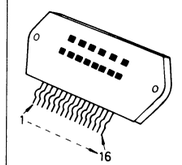
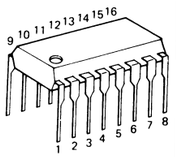
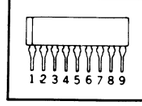
B Selector switch circuit

Ground (Earth) lines



Ground (Earth) lines

• Terminal guide of transistors, diodes and IC's

SVINJM4559DS	2SC2320L, 2SA1015, 2SA1123, 2SC1815, 2SC1384	LN417YP, LN217RP	SVISTK2028	SVIIR2E01
				
AN7060F				
				

B Selector switch circuit

C Peak-power indicators drive circuit

■ SCHEMATIC DIAGRAM

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

1 2 3 4 5 6 7 8 9 10

A B C D E F

A Main printed circuit

Q101 ~ 104
2SC2320
DIFFERENTIAL

GND

PHONO (Lch)

PHONO (Rch)

R219 10

R101 390
C101 50V3.3M
R103 100K
R105 82K
C103 120P
R104 100K
R106 82K
C104 120P
R102
C102
Q101
Q103
Q102
Q104
R107 8.2K
R109 8.2K
R113 270
C107 0.01
R111 8.2K
C108
R114
C106
R112
C119 0.01
C105 68P
C109 6V33
R115 560
C110
C116
C117 16V100
C118 16V100
R116
R117 68
R119 330K
R121 27K
C111 J0.01
C113 J0.0027
R127 150K
R128
R118
R120
R122
C112
C114
C115 50V1
R125 330
R123 100K
R124
R126

IC 101
SVINJM4559DS
EQUALIZER AMP
7.5 7.5 0 14.7
-14.7 7.5 7.5 0

R201 3.9K
C201 330P
C202
J1
VR201-1 100KB (VOLUME)
VR201-2 (VOLUME)

R202

SOURCE ⟷ TAPE
SOURCE ⟷ DUBBING

(Lch)
TUNER
AUX
REC OUT
TAPE 1
PLAYBACK
REC OUT
TAPE 2
PLAYBACK
(Rch)
TUNER
AUX
REC OUT
TAPE 1
PLAYBACK
REC OUT
TAPE 2
PLAYBACK

S1-1 (PHONO) OFF ⟷ ON
S1-2 (TUNER) OFF ⟷ ON
S1-3 (AUX) OFF ⟷ ON
S2 (TAPE MONITOR)
S3 (TAPE SELECTOR)
S4 (REC MODE)
S5 (DUBBING)

TAPE 1 ⟷ TAPE 2
TAPE 1 ▶2 ⟷ TAPE 2 ▶1

R211 22K
R212
R215 330K
R216
R217 120K
R218
R213 2.2K
R214
DIN
REC/PLAY

B Selector switch circuit

R220 10
R207
R205 18K
S6 (LOUDNESS)
off ⟷ on
C205 0.056
C206
R208
R206
J2
(BALANCE) VR202 100KG
C301 50V3.3M
R301 1K

IC 301 AN7060F
DIFFERENTIAL AMP
C305 82P
R303 120K
C303 39P
C307 6V33
VR301-1 100KC (TREBLE)
C311 0.022
R311 1K
C317 16V10
R307 39K
R305 39K
C309 0.0027
R309 4.7K
C313 0.018
VR302-1 100KC (BASS)
C315 0.1
C319 2P
C321 15P
R313 22K
C323 33P
R317 12K
R319 820
C343 50V100
Q301, 302
2SA1123
PRE DRIVE

IC 302 AN7060F
DIFFERENTIAL AMP
-0.1 -0.1 0 0 -6.0 34.1 33.5 35.0 34.9
C306
C304
R304
C308
R308
R306
C310
R310
C312
VR301-2 (TREBLE)
C314
R314
C316
R316 (BASS) VR302-2
C318
C320
C322
C324
R318
R320
C326
R322
R326
C328
R328
C330
Q302
R324
C332
D401
MA1062
D402
D404, 405
SVDSRIK2
C401 0.01
R401 1/2 3.3K
Q401
Q105
2SA1015
REGULATOR
Q401 ~ 403
2SA1015
MUTING
D406, 407
MA1150
Q404
2SC1815
MUTING
Q402
Q403
D406
D407
R129 15K
R130 18K
C402 50V47
R402 2.2K
R403 470
R405 33K
R404 10K
R406 220K
R407 47K
R408 5.6K

R325 2.2K
R327 4.47
C329
Q303
C331 3P
R323 560
C333 100P
C325 470P
R321 1.8K
C334

●Power source circuit of [XL] and [XA] areas.

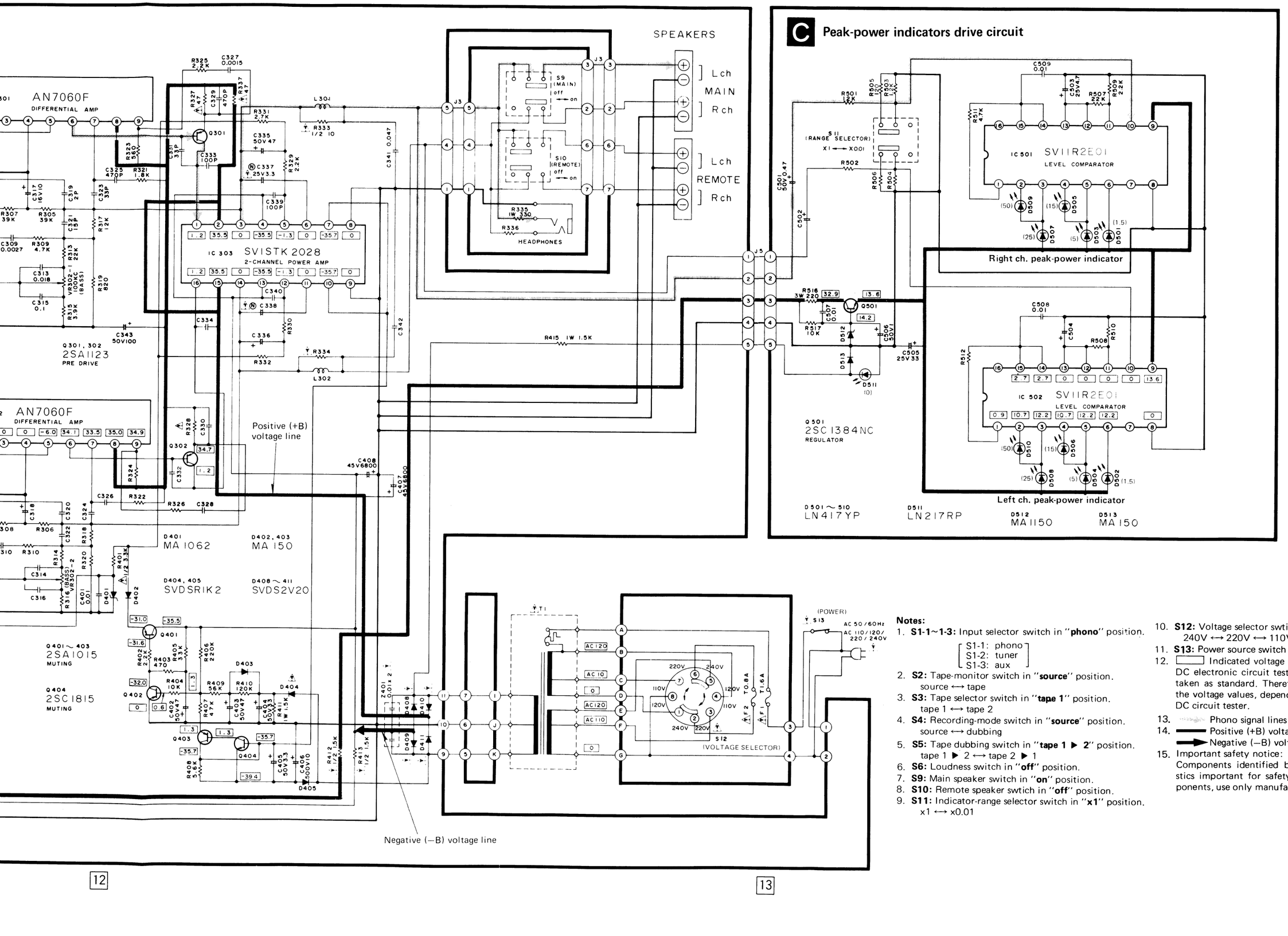
Product for Australia [XL] only

S13
BRN
YEL/GRN
BLU
AC 50/60Hz

Product for East South Asia, Oceania, Africa, Middle Near East and Central South America [XA].

S13
SWITCHED
UNSWITCHED
AC 50/60Hz

10 11 12 13 14 15 16 17 18 19



Notes:

1. **S1-1~1-3:** Input selector switch in "**phono**" position.
   [S1-1: phono
   S1-2: tuner
   S1-3: aux]
2. **S2:** Tape-monitor switch in "**source**" position.
   source ⟷ tape
3. **S3:** Tape selector switch in "**tape 1**" position.
   tape 1 ⟷ tape 2
4. **S4:** Recording-mode switch in "**source**" position.
   source ⟷ dubbing
5. **S5:** Tape dubbing switch in "**tape 1 ▶ 2**" position.
   tape 1 ▶ 2 ⟷ tape 2 ▶ 1
6. **S6:** Loudness switch in "**off**" position.
7. **S9:** Main speaker switch in "**on**" position.
8. **S10:** Remote speaker swtich in "**off**" position.
9. **S11:** Indicator-range selector switch in "**x1**" position.
   x1 ⟷ x0.01
10. **S12:** Voltage selector swtich in "**240V**" position.
    240V ⟷ 220V ⟷ 110V ⟷ 120V
11. **S13:** Power source switch in "**on**" position.
12. ▭ Indicated voltage values are the standard values for 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.
13. ⋯⋯ Phono signal lines of left channel
14. ▬▬ Positive (+B) voltage lines.
    ▬▶ Negative (—B) voltage.
15. 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.

■ REPLACEMENT PARTS LIST ·····Electric Parts

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.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUIT			
IC101		SVINJM4559DD	IC, Equalizer Amplifier
IC301, 302		AN7060F	IC, Differential Amplifier
IC303		SVISTK2028	IC, Power Amplifier
IC501, 502		SVIIR2E01	IC, LED Level Comparator
TRANSISTORS			
Q101~104		2SC2320L–F	Transistor, Differential
Q105		2SA1015–Y	Transistor, Regulator (use in ranks O or Y)
Q301, 302		2SA1123–R	Transistor, Pre Drive (use in ranks Q, R or S)
Q401~403		2SA1015–Y	Transistor, Regulator (use in ranks O or Y)
Q404		2SC1815–Y	Transistor, Regulator (use in ranks O or Y)
Q501		**2SC1384AR**	Transistor, Regulator
DIODES			
D401		**RVDRD6R2EB**	Diode, 6.2V Zener
D402, 403		**MA162A**	Diode, Switching (Product Part No. MA150)
D404, 405	⚠	**SVDSR1K2**	Diode, Rectifier
D406, 407		MA1150A	Diode, 5V Zener
D408~411	⚠	SVDS2V20	Diode, Rectifier
D501~510		LN417YP	Light Emitting Diode, Yellow
D511		LN217RP	Light Emitting Diode, Red
D512		MA1150A	Diode, 5V Zener
COILS and TRANSFORMERS			
L301, 302		SLQY15G–30	Coil, Choke
T1	⚠	SLT5M137–W	Power Transformer
VARIABLE RESISTORS			
VR201		EWJGFA066B15	Volume Control 100kΩ (B)
VR202		EWHHMA531G15	Balance Control 100kΩ (G)
VR301		EWJFCO066C15	Treble Control 100kΩ (C)
VR302		EWJFCY066530	Bass Control 100kΩ (C)
FUSES			
F1	⚠	XBA2C16TRO	Fuse, T1.6A 250V
F2	⚠	XBA2C08TRO	Fuse, T0.8A 250V
COMPONENT COMBINATIONS			
Z401		SXRFS203ZSM	Component Combination 0.01μF x 2
SWITCHES			
S1		SSH389	Switch, Input Selector
S2~5		SSH439	Switch, Tape Selector
S6		SSH193	Switch, Loudness
S9, 10		SSH277	Switch, Speaker Selector
S11	⚠	ESE37219	Switch, Voltage Selector
S12		SSH167	Switch, Indicator-range Selector
S13	⚠	ESB90619A	Switch, Power Source
RESISTORS			
R101, 102		**ERD25FJ391**	Carbon, 390Ω, 1/4W, ±5%
R103, 104		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%
R105, 106		**ERD25TJ823**	Carbon, 82kΩ, 1/4W, ±5%
R107, 108		**ERD25FJ822**	Carbon, 8.2kΩ, 1/4W, ±5%
R109, 110		**ERD25FJ822**	Carbon, 8.2kΩ, 1/4W, ±5%
R111, 112		**ERD25FJ822**	Carbon, 8.2kΩ, 1/4W, ±5%
R113, 114		**ERD25FJ271**	Carbon, 270Ω, 1/4W, ±5%
R115, 116		**ERD25FJ561**	Carbon, 560Ω, 1/4W, ±5%
R117, 118		**ERD25FJ680**	Carbon, 68Ω, 1/4W, ±5%
R119, 120		**ERD25TJ334**	Carbon, 330kΩ, 1/4W, ±5%
R121, 122		**ERD25TJ273**	Carbon, 27kΩ, 1/4W, ±5%
R123, 124		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%
R125, 126		**ERD25FJ331**	Carbon, 330Ω, 1/4W, ±5%
R127, 128		**ERD25TJ154**	Carbon, 150kΩ, 1/4W, ±5%
R129		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ±5%
R130		**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ±5%
R201, 202		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W, ±5%
R203, 204		**ERD25TJ824**	Carbon, 820kΩ, 1/4W, ±5%
R205, 206		**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ±5%
R207, 208		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ±5%
R211, 212		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R213, 214		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R215, 216		**ERD25TJ394**	Carbon, 390kΩ, 1/4W, ±5%
R217, 218		**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ±5%
R219, 220		**ERD25FJ100**	Carbon, 10Ω, 1/4W, ±5%

Ref. No.		Part No.	Part Name & Description
R301, 302		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ±5%
R303, 304		**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ±5%
R305, 306		**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%
R307, 308		**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%
R309, 310		**ERD25FJ472**	Carbon, 4.7kΩ, 1/4W, ±5%
R311, 312		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ±5%
R313, 314		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ±5%
R315, 316		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W, ±5%
R317, 318		**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ±5%
R319, 320		**ERD25FJ681**	Carbon, 680Ω, 1/4W, ±5%
R321, 322		**ERD25FJ182**	Carbon, 1.8kΩ, 1/4W, ±5%
R323, 324		**ERD25FJ561**	Carbon, 560Ω, 1/4W, ±5%
R325, 326		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R327, 328	⚠	**ERD25FJ470**	Carbon, 47Ω, 1/4W, ±5%
R329, 330		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R331, 332		**ERD25FJ272**	Carbon, 2.7kΩ, 1/4W, ±5%
R333, 334	⚠	**ERD50FJ100**	Carbon, 10Ω, 1/2W, ±5%
R335, 336		ERG1ANJ331	Metal Oxide, 330Ω, 1W, ±5%
R337	⚠	**ERD25FJ470**	Carbon, 47Ω, 1/4W, ±5%
R401	⚠	**ERD50FJ332**	Carbon, 3.3kΩ, 1/2W, ±5%
R402		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R403		**ERD25FJ471**	Carbon, 470Ω, 1/4W, ±5%
R404		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ±5%
R405		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%
R406		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ±5%
R407		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ±5%
R408		**ERD25FJ562**	Carbon, 5.6kΩ, 1/4W, ±5%
R409		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ±5%
R410		**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ±5%
R411		ERG1ANJ152	Metal Oxide, 1.5kΩ, 1W, ±5%
R412, 413	⚠	**ERD50FJ152**	Carbon, 1.5kΩ, 1/2W, ±5%
R415		ERG1ANJ152	Metal Oxide, 1.5kΩ, 1W, ±5%
R501, 502		**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ±5%
R503, 504		**ERD25FJ122**	Carbon, 1.2kΩ, 1/4W, ±5%
R505, 506		**ERD25FJ121**	Carbon, 120Ω, 1/4W, ±5%
R507, 508		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ±5%
R509, 510		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R511, 512		**ERD25FJ472**	Carbon, 4.7kΩ, 1/4W, ±5%
R516		ERG3ANJ221	Metal Oxide, 220Ω, 3W, ±5%
R517		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ±5%
CAPACITORS			
C101, 102		**ECEA50M3R3R**	Electrolytic, 3.3μF, 50V,
C103, 104		ECCD1H121K	Ceramic, 120pF, 50V, ±10%
C105, 106		ECCD1H680K	Ceramic, 68pF, 50V, ±10%
C107, 108		ECKD1H103MD	Ceramic, 0.01μF, 50V, ±20%
C109, 110		**ECEA1CS330**	Electrolytic, 33μF, 16V
C111, 112		ECQM1H103JZ	Polyester, 0.01μF, 50V, ±5%
C113, 114		ECQM1H272JZ	Polyester, 0.0027μF, 50V, ±5%
C115, 116		**ECEA50Z1**	Electrolytic, 1μF, 50V
C117, 118		**ECEA1ES101**	Electrolytic, 100μF, 25V
C119		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80 −20 %
C201, 202		ECKD1H331KB	Ceramic, 330pF, 50V, ±10%
C205, 206		ECQM1H563KZ	Polyester, 0.056μF, 50V, ±10%
C301, 302		**ECEA50M3R3R**	Electrolytic, 3.3μF, 50V
C303, 304		ECCD1H390K	Ceramic, 39pF, 50V, ±10%
C305, 306		ECCD1H820K	Ceramic, 82pF, 50V, ±10%
C307, 308		**ECEA1CS330**	Electrolytic, 33μF, 16V
C309, 310		ECQM1H272KZ	Polyester, 0.0027μF, 50V, ±10%
C311, 312		ECQM1H223KZ	Polyester, 0.022μF, 50V, ±10%
C313, 314		ECQM1H183KZ	Polyester, 0.018μF, 50V, ±10%
C315, 316		ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C317, 318		**ECEA1HS100**	Electrolytic, 10μF, 50V
C319, 320		ECCD1H020C	Ceramic, 2pF, 50V ±0.25pF
C321, 322		ECCD1H150K	Ceramic, 15pF, 50V, ±10%
C323, 324		ECCD1H330K	Ceramic, 33pF, 50V, ±10%
C325, 326		ECKD1H471KB	Ceramic, 470pF, 50V, ±10%
C327, 328		ECKD1H152KB	Ceramic, 0.015μF, 50V, ±10%
C329, 330		ECKD1H471KB	Ceramic, 470pF, 50V, ±10%
C331, 332		ECCD1H330K	Ceramic, 33pF, 50V, ±10%
C333, 334		ECCD1H101K	Ceramic, 100pF, 50V, ±10%
C335, 336		**ECEA1HS470**	Electrolytic, 47μF, 50V
C337, 338	⚠	ECEA1EN3R3S	Non-polar Electrolytic, 3.3μF, 25V
C339, 340		ECCD1H101K	Ceramic, 100pF, 50V, ±10%
C341, 342		ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C343		**ECEA1HS101**	Electrolytic, 100μF, 50V
C401		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80 −20 %
C402, 403		**ECEA1HS470**	Electrolytic, 47μF, 50V
C404		**ECEA1JS330**	Electrolytic, 33μF, 63V
C405		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C406		**ECEA2AS100**	Electrolytic, 10μF, 100V
C407, 408		ECETS45V682U	Electrolytic, 6800μF, 45V
C501, 502		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C503, 504		**ECEA50Z4R7**	Electrolytic, 4.7μF, 50V
C505		**ECEA1VS330**	Electrolytic, 33μF, 35V
C506		**ECEA50Z1**	Electrolytic, 1μF, 50V
C507		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80 −20 %
C508, 509		ECKD1H103ZF	Ceramic, 0.01μF, 50V, +80 −20 %

■ REPLACEMENT PARTS LIST ·····Cabinet and Chassis Parts

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. ⓚ -marked parts are used for black only, while ○-marked parts are for silver type only.
4. Parts other than ⓚ - and ○-marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No.: SU-Z11(K)

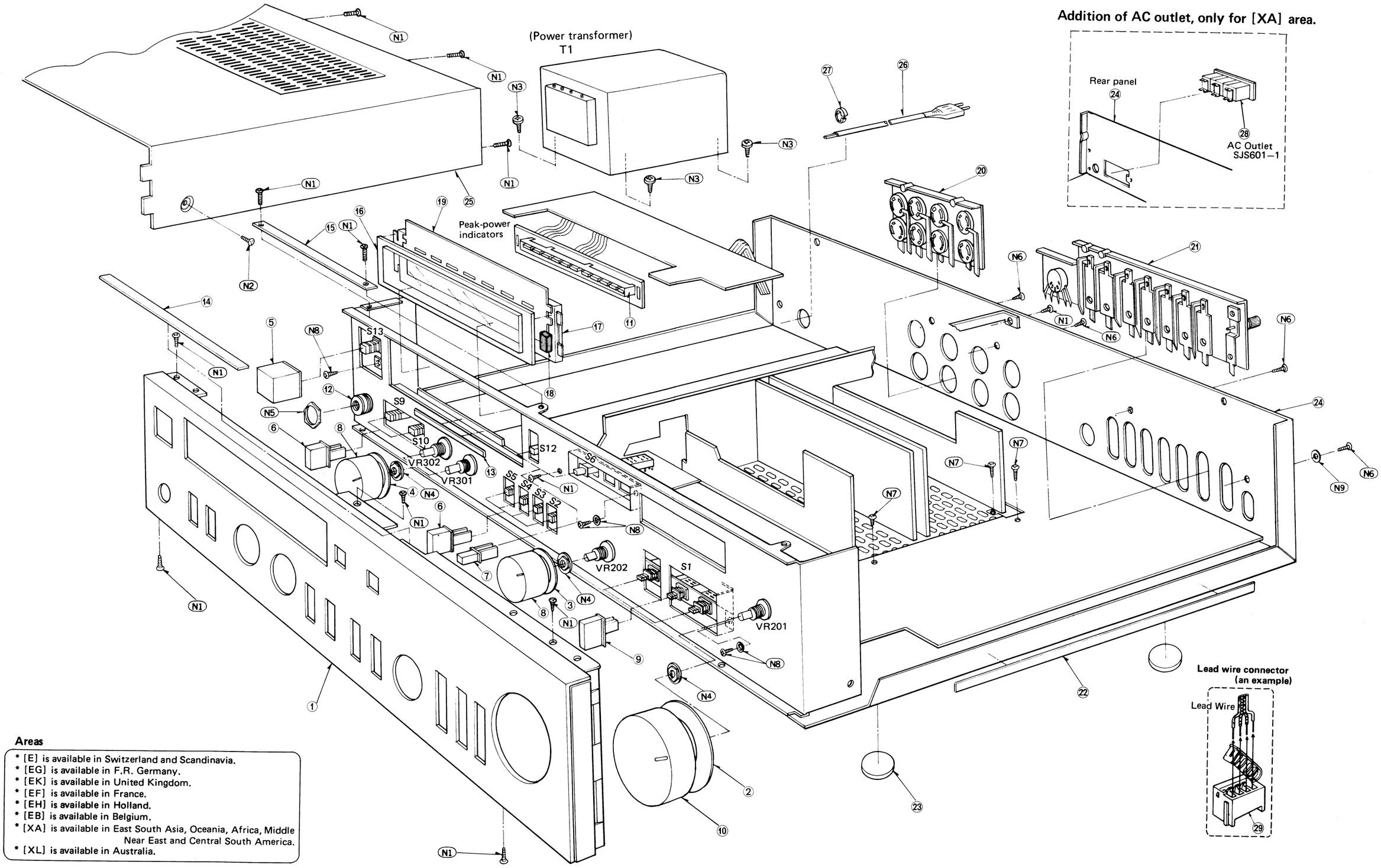
Ref. No.		Part No.	Part Name & Description
CABINET & CHASSIS PARTS			
1	○	SYW379	Panel, Front Ass'y
1	ⓚ	SYW379–1	Panel, Front Ass'y (Black)
2		SHP9341	Ornament, Volume Control
3		SHP9327	Ornament, Balance Control
4		SHP9343	Ornament, Bass, Treble Control
5		SBC307–1	Button, Power
6		SBC339	Button, Speaker/Rec mode/Tape monitor Selector
7		SBC367	Button, Range/Loudness
8		SBN1019	Knob, Bass/Treble/Balance
9		SBC365	Button, Input Selector
10		SBN1021	Knob, Volume Control
11		SMP303	Holder, LED (D501~511)
12		XCJ6P21B–A1	Jack, Headphones
13		SHG619	Cushion, Display Window
14		SHS1009	Sheet, Front Panel
15		SUW1807	Spacer, Front Frame
16		SGU213	Transparent Cover
17		SGX7035	Ornament, Display
18		SHG1509	Cushion, Rubber
19	○	SDU65	Filter, Display Window
19	ⓚ	SDU65–1	Filter, Display Window
20		SJF4813–1	Terminal, Speakers
21		SJF3045–9N	Terminal, Input
22		SHS2437	Fiber, Right Side Chassis
23		SKL245	Foot
24 [E]		SGP2650A	Rear Panel
24 [EK,EG,EH, EF,EB]		SGP2650C	Rear Panel
24 [XA]		SGP2650–2A	Rear Panel
24 [XL]		SGPUZ11XL	Rear Panel SGP2650–3A with Name Plate (SGT23850)
25	○	SKC750S1	Cabinet
25	ⓚ	SKC750B1	Cabinet (Black)
26 [E,EG,EH EB,EF]	⚠	**SJA88**	AC Cord
26 [EK]	⚠	**QFC1205M**	AC Cord
26 [XA]	⚠	SJA111	AC Cord
26 [XL]	⚠	**QFC1207MA**	AC Cord
27		SHR127	Bushing, AC Cord
27 [EK]		SHR129	Bushing, AC Cord
27 [XL]		SHR131	Bushing, AC Cord
28 [XA] only	⚠	SJS601–1	Socket, AC Outlet
29		SJS5707	Connector 7 Pin
29		SJS5519	Connector 5 Pin
29		SJS5711	Connector 7 Pin
SCREWS, WASHERS and NUTS			
N1		**XTB3+8BFN**	Screw, Tapping ⊕ 3x8
N2	○	**XTB4+8BFN**	Screw, Tapping ⊕ 4x8
N2	ⓚ	**XTB4+8BFZ**	Screw, Tapping ⊕ 4x8
N3		**XTB4+10BFZ**	Screw, Tapping ⊕ 4x10
N4		SNE4021	Nut
N5		**XNS12**	Nut
N6		**XTB3+8BFZ**	Screw, Tapping ⊕ 3x8
N7		**XTV3+8BFN**	Screw, Tapping ⊕ 3x8
N8		XTNS3+C6–1S	Screw, Tapping ⊕ 3x6
N9		**XWC3B**	Washer
PACKING PARTS			
P1 [E,EG, EH, EB]	○	SPG2959	Carton Box
P1 [E,EG,EH]	ⓚ	SPG2967	Carton Box (Black)
P1 [EF]		SPG2989	Carton Box
P1 [EK]		SPG2961	Carton Box
P1 [XA]		SPG2963	Carton Box
P1 [XL]		SPG2965	Carton Box
P2		SPS3073	Pad, Left Side
P2 [XL] only		SPS3073–1	Pad, Left Side
P3		SPS3075	Pad, Right Side
P3 [XL] only		SPS3075–1	Pad, Right Side
P4		SPP649	Polyethylene Bag
ACCESSORIES			
A1 [XA] only		SJP5213–1	Plug Adapter, AC Power
A2 [XA] only		SJP5215	Plug Adapter, AC Power
A3 [E,EG,EH, EB,EF]		SQF20333	Instructions Book, Printed Matter
A3 [XL]		SQF20335	Instructions Book, Printed Matter
A3 [EK,XA]		SQF20337	Instructions Book, Printed Matter

■ EXPLODED

Areas

* [E] is available in Switzerla
* [EG] is available in F.R. G
* [EK] is available in United
* [EF] is available in France
* [EH] is available in Hollan
* [EB] is available in Belgiu
* [XA] is available in East S Nea
* [XL] is available in Austra

■ EXPLODED VIEW



Areas

* [E] is available in Switzerland and Scandinavia.
* [EG] 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.
* [XA] is available in East South Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

Printed in Japan
81038500 ⊗ YK/YW