■ CHANGE OF PARTS LIST

SU-8022K

(D), (DG), (XGH), (XE), (XSW) , (EB)

Notes: This parts list included only the change of the model SU-8022 parts list.

Ref. No.	Change of Part No. SU-8022 ➡ SU-8022K		Part Name & Description
	CABINET and CHASSIS PARTS		
1	SBN813	SBN833	Knob, Volume Control
2	SBN815	SBN835	Knob, Bass, Treble, Balance & Input Selector Switch
3	SGWU8022D	SGWU8022KD	Panel, Front Ass'y (Black)
4	SBD21	SBD21-1	Knob, Loudness, Rec Mode, Tape Monitor Switch
5	SHR5037	SHR5037-1	Spacer, Loudness Switch
6	SHR5043	SHR5043-1	Spacer Rec Mode, Tape Monitor Switch
9	SBC211	SBC211-1	Button, High Filter, Subsonic Filter and Speaker Switch
13	SBC209	SBC209-1	Button, Power Switch
20	SGP1790A [D]	SGP1790B [D]	Rear Panel
	SGPU8022D [XE, XGH, XGF, DG, EB]		
	SGPU8022L [XAL]	SGPU8022KD [DG, XGH, EB, XE]	Rear Panel, SGP1790B with Name Plate (SGT20150)
	SGPU8022W [XSW]		
	SGP1790-1A [X, XA]	SGPU8022KW [XSW]	Rear Panel, SGP1790B with Name Plate (SGT20610)
23	RJA23ZC [D, XGH, XGF, EB, DG, XSW]	RJA23ZC [D, DG, EB, XGH, XSW]	AC Cord, with Plug
	RJA45ZC [XE]	RJA45ZC [XE]	AC Cord
	SJA111 [X, XA]		
	QFC1207M [XAL]		
24	SHR127	SHR127 [D, DG, XGH, EB, XSW]	Bushing, AC Cord
	SHR129 [XE] only	SHR129 [XE]	Bushing, AC Cord
25	SKA10676	SKA10677[D, DG, XGH, EB]	Cabinet (Black)
	SKAU8022E [XE, XSW]	SKAU8022KE [XSW, XE]	Cabinet (Black)
	SCREWS and WASHERS		
ⓚ	XTB4+8FFN	XTB4+8FFZ	Screw, Cabinet M'tg
ⓛ	XTB3+8BFN	XTB3+8FFZ	Screw, Cabinet M'tg
	PACKING PARTS		
P2	SPS2177	SPS2177	Pad, Left Side
	SPS2177-1 [XAL] only		
P3	SPS2179	SPS2179	Pad, Right Side
	SPS2179-1 [XAL] only		
P5	SPG2077 [D]	SPG2085	Carton Box
	SPG2079 [XE, XGH, EB, DG, XSW]		
	SPG2081 [X, XA]		
	SPG2083 [XAL]		
	SPG2087 [XGF]		
P6	SQF10199 [D, XGH, XGF, EB, DG, XSW]	SQF10199 [D, DG, XGH, EB, XSW]	Instructions Book, Printed Matter
	SQF10201 [XE, X, XA, XAL]	SQF10201 [XE]	Instructions Book, Printed Matter

Notes: (D) and (DG) are available in Scandinavia and European only.
(XGH) is available in Holland only.
(XE) is available in United Kingdom only.
(XSW) is available in Switzerland only.
(EB) is available in Belgium only.

Printed in Japan
7902-6800 Ⓐ

ORDER NO. SD7902-1514

Service Manual

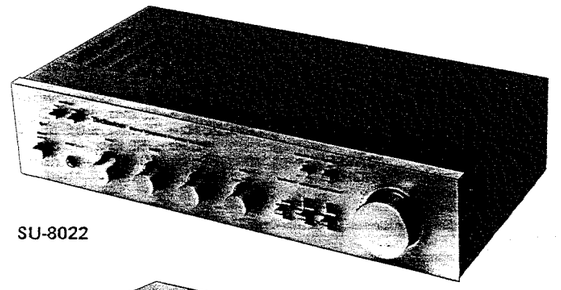
Stereo Integrated Amplifier

SU-8022

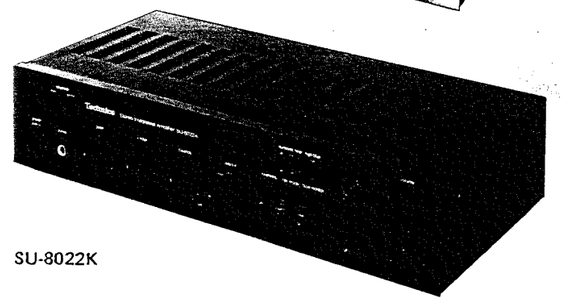
(D), (DG), (XGH), (XGF), (EB), (XE), (XSW), (X), (XA), (XAL)

SU-8022K

(D), (DG), (XGH), (XE), (XSW), (EB)



SU-8022



SU-8022K

- The models SU-8022 (D, DG) and SU-8022K (D, DG) are available in Scandinavia and European only.
- The models SU-8022 (XGH) and SU-8022K (XGH) are available in Holland only.
- * The model SU-8022 (XGF) is available in France only.
- * The model SU-8022 (EB) and SU-8022K (EB) are available in Belgium only.
- * The models SU-8022 (XE) and SU-8022K (XE) are available in United Kingdom only.
- * The models SU-8022 (XSW) and SU-8022K (XSW) are available in Switzerland only.
- * The models SU-8022 (X, XA) are available in Asia, Latin America, Middle East and Africa only.
- * The model SU-8022 (XAL) is available in Australia only.

TECHNICAL SPECIFICATIONS

Specifications are subject to change without notice for further improvement.

[DIN 45 500]

AMPLIFIER SECTION

20 Hz ~ 20 kHz continuous power output	
both channels driven	2 x 35W (8Ω)
40 Hz ~ 16 kHz continuous power output	
both channels driven	2 x 40 W (4Ω), 2 x 35 W (8Ω)
1 kHz continuous power output	
both channels driven	2 x 45 W (4Ω), 2 x 38 W (8Ω)
Power bandwidth	
both channels driven, −3 dB	5 Hz ~ 30 kHz (4Ω) 5 Hz ~ 30 kHz (8Ω)
Total harmonic distortion	
rated power at 20 Hz ~ 20 kHz	0.05% (4Ω), 0.03% (8Ω)
rated power at 40 Hz ~ 16 kHz	0.05% (4Ω), 0.03% (8Ω)
rated power at 1 kHz	0.05% (4Ω), 0.03% (8Ω)
half power at 20 Hz ~ 20 kHz	0.02% (8Ω)
half power at 1 kHz	0.008% (8Ω)
−26 dB power at 1 kHz	0.15% (4Ω)
50mW power at 1 kHz	0.2% (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%
Residual hum & noise	0.6 mV (0.6 mV, IHF)
Damping factor	16 (4Ω), 32 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47 kΩ
TUNER, AUX	150 mV/27 kΩ
TAPE 1, PLAYBACK	180 mV/33 kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV
S/N	
rated power at 4Ω PHONO	72 dB (IHF, A: 80 dB)
TUNER, AUX	86 dB (IHF, A: 97 dB)
−26 dB power at 4Ω PHONO	62 dB
TUNER, AUX	63 dB
50 mW power at 4Ω PHONO	62 dB
TUNER, AUX	62 dB
Frequency response PHONO	RIAA standard curve 30 Hz ~ 15 kHz, ±0.8 dB
TUNER, AUX, TAPE	20 Hz ~ 20 kHz, ±0.5 dB 10 Hz ~ 50 kHz, −1 dB
Tone controls BASS	50 Hz, +10 dB ~ −10 dB
TREBLE	20 kHz, +10 dB ~ −10 dB
High filter	7 kHz, −6 dB/oct.
Subsonic filter	30 Hz, −6 dB/oct.
Loudness switch (volume at −30 dB)	50 Hz, +9 dB
Output voltage and impedance REC OUT	150 mV
REC/PLAY	30 mV/82 kΩ
Channel balance (250 Hz ~ 6300 Hz), AUX	±1.0 dB
Channel separation at 1 kHz, AUX	55 dB
Headphones output level and impedance	330 mV/330Ω
Load impedance MAIN or REMOTE	4 ~ 16Ω
MAIN + REMOTE	8 ~ 16Ω

GENERAL

Power consumption	400 W
Power supply (50 Hz/60 Hz)	110V/120V/220V/240V
Dimensions (W x H x D)	430 x 97 x 240 mm (16-29/32"x3-13/16"x9-7/16")
Weight	5.4 kg (11.9 lb.)

Technics

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

TECHNISCHE DATEN

Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

[DIN 45 500]

VERSTÄRKERTEIL

Dauertonleistung bei 20 Hz ~ 20 kHz
beide Kanäle zusammen ausgesteuert 2 x 35 W (8Ω)

Dauertonleistung bei 40 Hz ~ 16 kHz
beide Kanäle zusammen ausgesteuert 2 x 40 W (4Ω), 2 x 35 W (8Ω)

Dauertonleistung bei 1 kHz
beide Kanäle zusammen ausgesteuert 2 x 45 W (4Ω), 2 x 38 W (8Ω)

Leistungsbandbreite
beide Kanäle zusammen ausgesteuert, –3 dB
5 Hz ~ 30 kHz (4Ω)
5 Hz ~ 30 kHz (8Ω)

Harmonische Verzerrungen
Nennausgangsleistung bei 20 Hz ~ 20 kHz 0,05% (4Ω), 0,03% (8Ω)
Nennausgangsleistung bei 40 Hz ~ 16 kHz 0,05% (4Ω), 0,03% (8Ω)
Nennausgangsleistung bei 1 kHz 0,05% (4Ω), 0,03% (8Ω)
Halber Ausgangsleistung bei 20 Hz ~ 20 kHz 0,02% (8Ω)
Halber Ausgangsleistung bei 1 kHz 0,008% (8Ω)
–26 dB Ausgangsleistung bei 1 kHz 0,15% (4Ω)
50 mW Ausgangsleistung bei 1 kHz 0,2% (4Ω)

Intermodulationsverzerrung
Nennausgangsleistung bei 250 Hz: 8 kHz = 4:1, 4Ω 0,05%
Nennausgangsleistung bei 60 Hz: 7 kHz = 4:1, SMPTE 8Ω 0,03%

Brummen & Rauschen 0,6 mV (0,6 mV, IHF)
Dämpfungsfaktor 16 (4Ω), 32 (8Ω)

Eingangsempfindlichkeit & Impedanz
PHONO 2,5 mV/47 kΩ
TUNER, AUX 150 mV/27 kΩ
TAPE 1, PLAYBACK 180 mV/33 kΩ

PHONO Maximale Eingangsspannungen (1 kHz RMS) 150 mV

Fremdspannungsabstand
Nennausgangsleistung bei 4Ω
PHONO 72 dB (IHF, A: 80 dB)
TUNER, AUX 86 dB (IHF, A: 97 dB)

–26 dB Ausgangsleistung bei 4Ω **PHONO** 62 dB
TUNER, AUX 63 dB

50 mW Ausgangsleistung bei 4Ω **PHONO** 62 dB
TUNER, AUX 62 dB

Frequenzgang **PHONO** RIAA Standardkurve 30 Hz ~ 15 kHz, ±0,8 dB
TUNER, AUX, TAPE 20 Hz ~ 20 kHz, ±0,5 dB 10 Hz ~ 50 kHz, –1 dB

Klangregler **BÄSSE** 50 Hz, +10 dB ~ –10 dB
HÖHEN 20 kHz, +10 dB ~ –10 dB

Unterschallfilter 30 Hz, –6 dB/oct.
Hochton filter 7 kHz, –6 dB/oct.
Gehörgerechte Lautstärkekorrektur (Lautstärke bei –30 dB) 50 Hz, +9 dB

Ausgangsspannungen & Impedanz **REC OUT** 150 mV
REC/PLAY 30 mV/82 kΩ

Kanalabweichung (250 Hz ~ 6300 Hz), AUX ±1,0 dB
Kanaltrennung bei 1 kHz, AUX 55 dB
Kopfhörerpegel und Ausgangsimpedanz 330 mV/330Ω

Lautsprecher-Ausgangsimpedanz
MAIN oder REMOTE 4 ~ 16Ω
MAIN und REMOTE 8 ~ 16Ω

ALLGEMEINE DATEN

Leistungsaufnahme 400 W
Netzspannung umschaltbar (50 Hz/60 Hz) 110V/120V/220V/240V
Abmessungen (B x H x T) 430 x 97 x 240 mm
Gewicht 5,4 kg

CARACTERISTIQUES TECHIQUES

Sujet à changement sans préaris.

[DIN 45 500]

PARTIE AMPLIFICATEUR

Puissance de sortie continue de 20 Hz ~ 20 kHz
les deux canaux en circuit avec distorsion 2 x 35 W (8Ω)

Puissance de sortie continue de 40 Hz ~ 16 kHz
les deux canaux en circuit avec distorsion 2 x 40 W (4Ω), 2 x 35 W (8Ω)

Puissance de sortie continue à 1 kHz
les deux canaux en circuit avec distorsion 2 x 45 W (4Ω), 2 x 38 W (8Ω)

Largeur de bande de puissance
pour l'ensemble des canaux excités, –3 dB
5 Hz ~ 30 kHz (4Ω)
5 Hz ~ 30 kHz (8Ω)

Distorsion harmonique totale
pour la puissance mesurée à 20 Hz ~ 20 kHz 0,05% (4Ω), 0,03% (8Ω)
pour la puissance mesurée à 40 Hz ~ 16 kHz 0,05% (4Ω), 0,03% (8Ω)
pour la puissance mesurée à 1 kHz 0,05% (4Ω), 0,03% (8Ω)
pour la demi-puissance mesurée à 20 Hz ~ 20 kHz 0,02% (8Ω)
pour la demi-puissance mesurée à 1 kHz 0,008% (8Ω)
pour une puissance mesurée de –26 dB, 1 kHz 0,15% (4Ω)
pour une puissance mesurée de 50 mW, 1 kHz 0,2% (4Ω)

Distorsion d'intermodulation
pour la puissance mesurée à 250 Hz: 8 kHz = 4:1, 4Ω 0,05%
pour la puissance mesurée à 60 Hz: 7 kHz = 4:1, 8Ω 0,03%

Tension résiduelle de bruit 0.6 mV (0.6 mV, IHF)
Facteur d'amortissement 16 (4Ω), 32 (8Ω)

Sensibilité & impédance d'entrée
PHONO 2,5 mV/47 kΩ
TUNER, AUX 150 mV/27 kΩ
TAPE 1, PLAYBACK 180 mV/33 kΩ

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

Repport signal/bruit
pour la puissance nominale, 4Ω
PHONO 72 dB (IHF, A: 80 dB)
TUNER, AUX 86 dB (IHF, A: 97 dB)

pour une sortie de –26 dB, 4Ω **PHONO** 62 dB
TUNER, AUX 63 dB

pour une sortie de 50 mW, 4Ω **PHONO** 62 dB
TUNER, AUX, TAPE 62 dB

Réponse de fréquence
PHONO Courbe standard RIAA 30 Hz ~ 15 kHz, ±0,8 dB
TUNER, AUX 20 Hz ~ 20 kHz, ±0,5 dB 10 Hz ~ 50 kHz, –1 dB

Réglage de la tonalité
BASS (graves) 50 Hz, +10 dB ~ –10 dB
TREBLE (aigus) 20 kHz, +10 dB ~ –10 dB

Filtre subsonique 30 Hz, –6 dB/oct.
Filtre haut 7 kHz, –6 dB/oct.
Correction physiologique (volume à 30 dB) 50 Hz, +9 dB

Tension de sortie & impédance **REC OUT** 150 mV
REC/PLAY 30 mV/82 kΩ

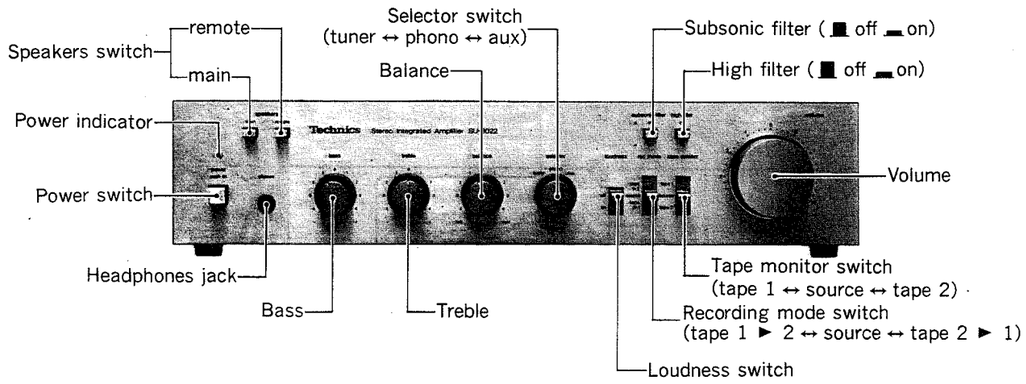
Equilibrage de canaux (250 Hz ~ 6300 Hz), AUX ±1,0 dB
Séparation des canaux AUX 1 kHz 55 dB
Niveau du casque et impédance de sortie 330 mV/330Ω
Impédance de charge **MAIN ou REMOTE** 4 ~ 16Ω
MAIN et REMOTE 8 ~ 16Ω

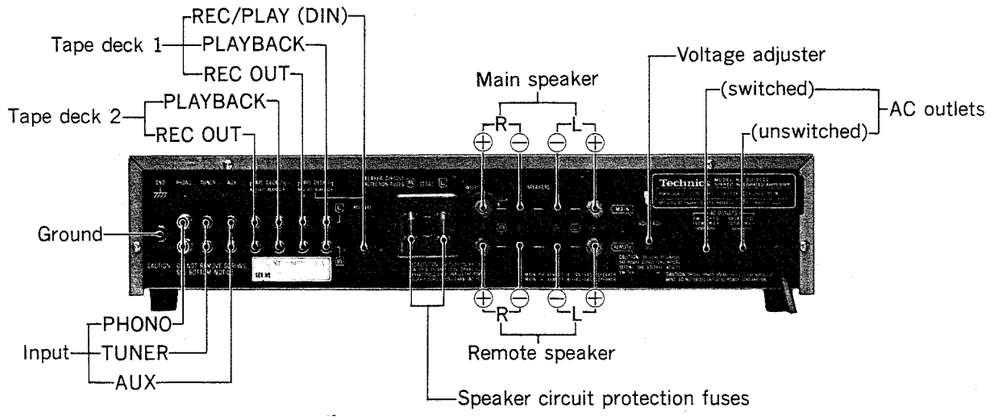
GENERALITES

Consommation 400 W
Alimentation (50 Hz/60 Hz) 110V/120V/220V/240V
Dimensions (L x H x Pr) 430 x 97 x 240 mm
Poids 5.4 kg

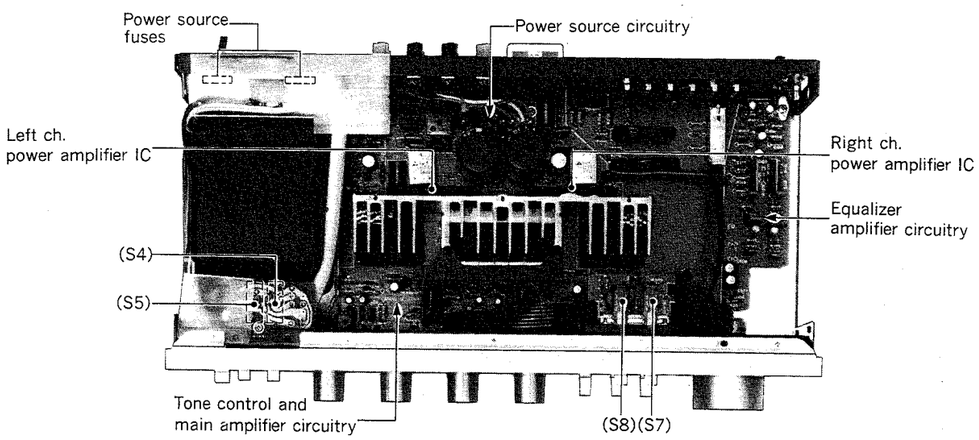
■ CONTENTS

■ LOCATION OF CONTROLS





* This photo shows only the products for (X) and (XA).
* The products for other destinations except (X) and (XA) are not equipped with AC outlets.



■ NOTE

The unit is provided with the speaker circuit protection fuses at the right and left channels respectively. The fuse is to prevent the power IC from destruction, should the speaker terminals be short-circuited. Accordingly, if the unit fails to function upon completion of the speaker connections, check the speaker circuit protection fuses first of all for possible blowing.

2 ► 1)

■ HOW TO REMOVE THE CABINET, BOTTOM BOARD AND FRONT PANEL

How to remove the cabinet

1. Remove the 4 setscrews (① ~ ④ in Fig. 1) on the side and 4 setscrews (⑤ ~ ⑧ in Fig. 2) on the back of the cabinet.
2. Shift the cabinet backward and lift it upward. (Arrow Ⓐ in Fig. 1)

ıtlets

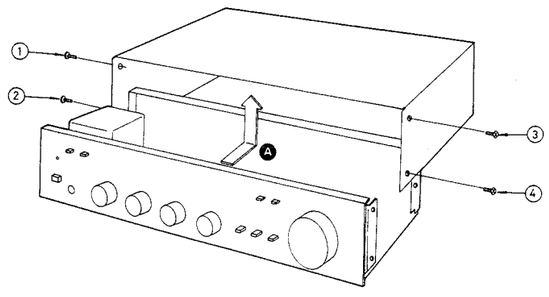


Fig. 1

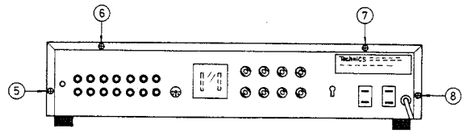


Fig. 2

How to detach the bottom board

1. Remove the 4 setscrews (⑩ ~ ⑬ in Fig. 3) used to secure bottom board and 4 setscrews (⑭ ~ ⑰ in Fig. 3) for the legs. Then the bottom board can be detached.

How to detach the front panel

1. Remove the 4 setscrews (⑱ ~ ㉑ in Fig. 4) and then carefully pull the front panel toward you.

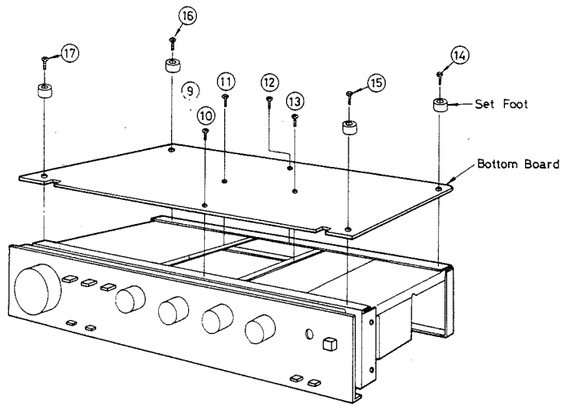


Fig. 3

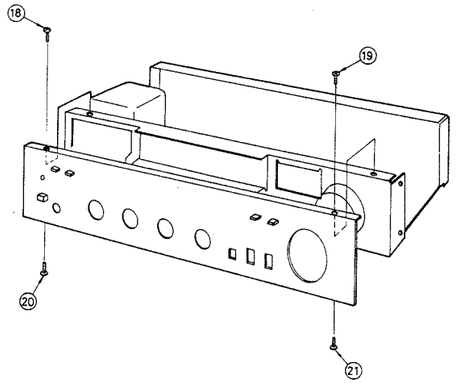
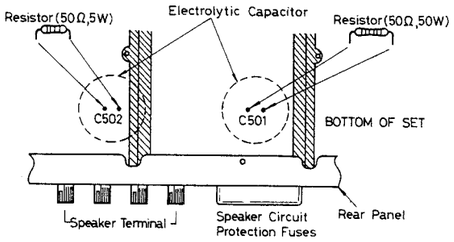


Fig. 4

■ BEFORE STARTING THE REPAIRING

Before adjusting or repairing, be sure to short-circuit opposite poles of the 8200μF capacitors (C501, 502) with a resistor approximately of "50Ω, 5W" for discharging the charged voltage.
Short-circuiting with a screw driver and the like is not only dangerous, but may destroy transistors and diodes, and should therefore be avoided.



■ HOW TO REMOVE THE POWER IC

1. Remove the solder of power IC for both Lch and Rch.
2. Remove the 3 setscrews (① ~ ③ in Fig. 5) use to fasten the heat sink from the center bracket.
3. Remove the heat sink along with power IC in the direction of arrow Ⓐ (Fig. 6)
4. Remove the 2 setscrews (④, ⑤ in Fig. 6) used to secure the power IC on the heat sink, and then pull the power IC in the direction of arrow Ⓑ.
5. When mounting the power IC, apply silicone compound (or equivalent heat diffuser) to the back of power IC, and then follow the steps 1 ~ 4 reversely.

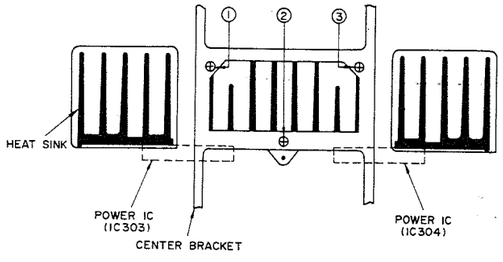


Fig. 5

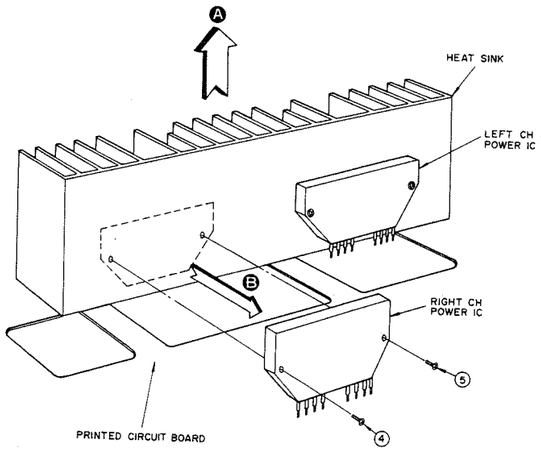
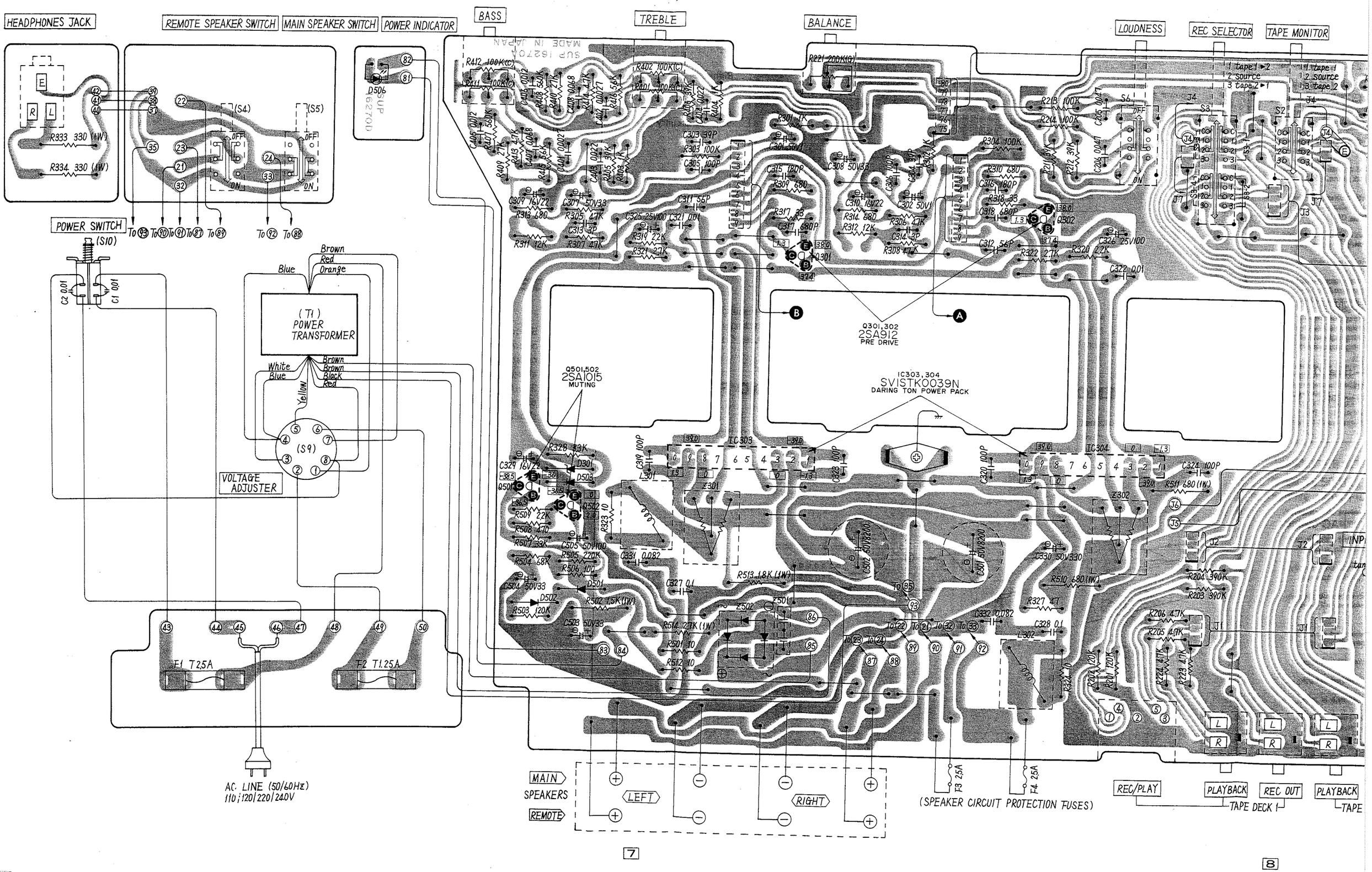
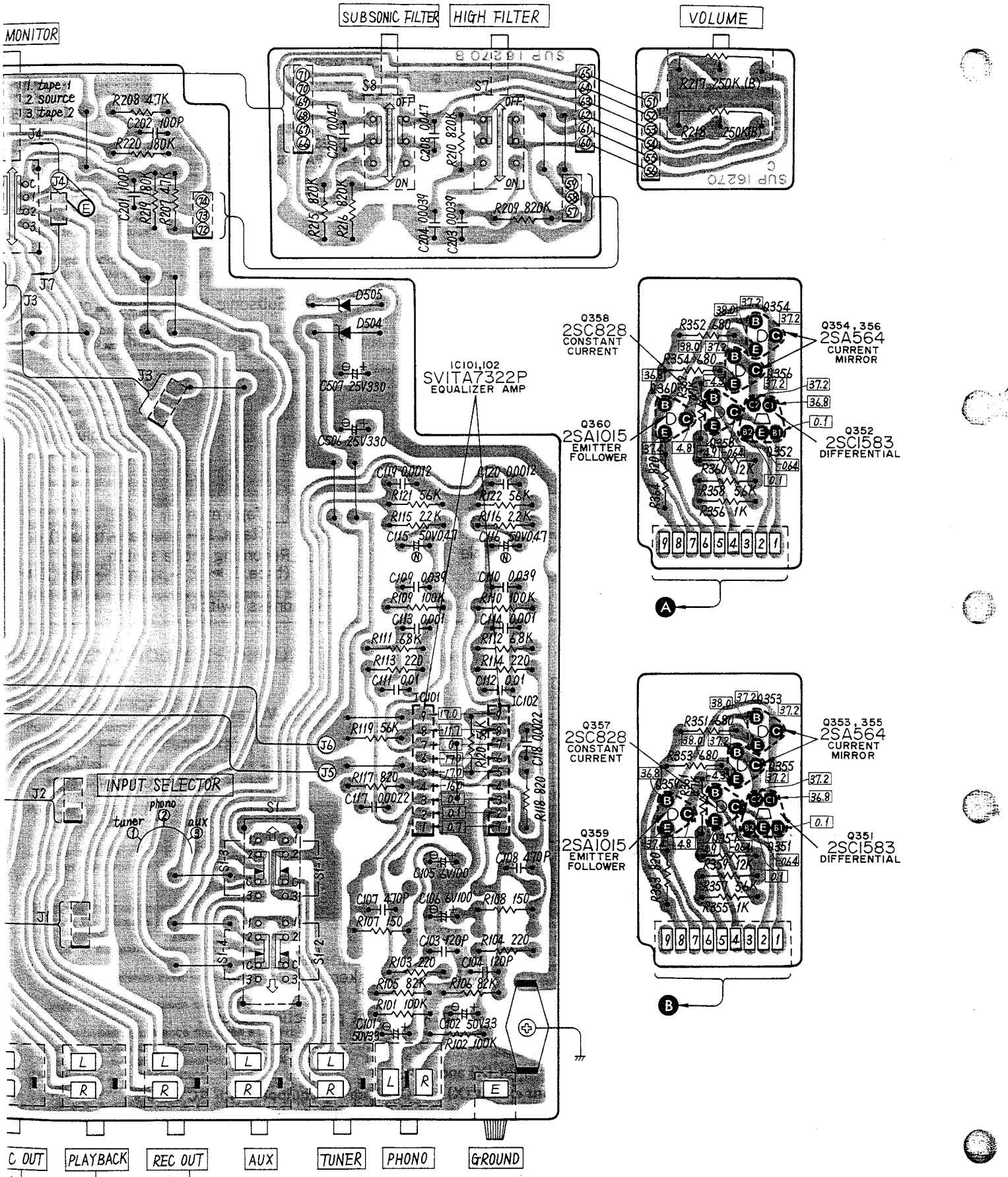


Fig. 6

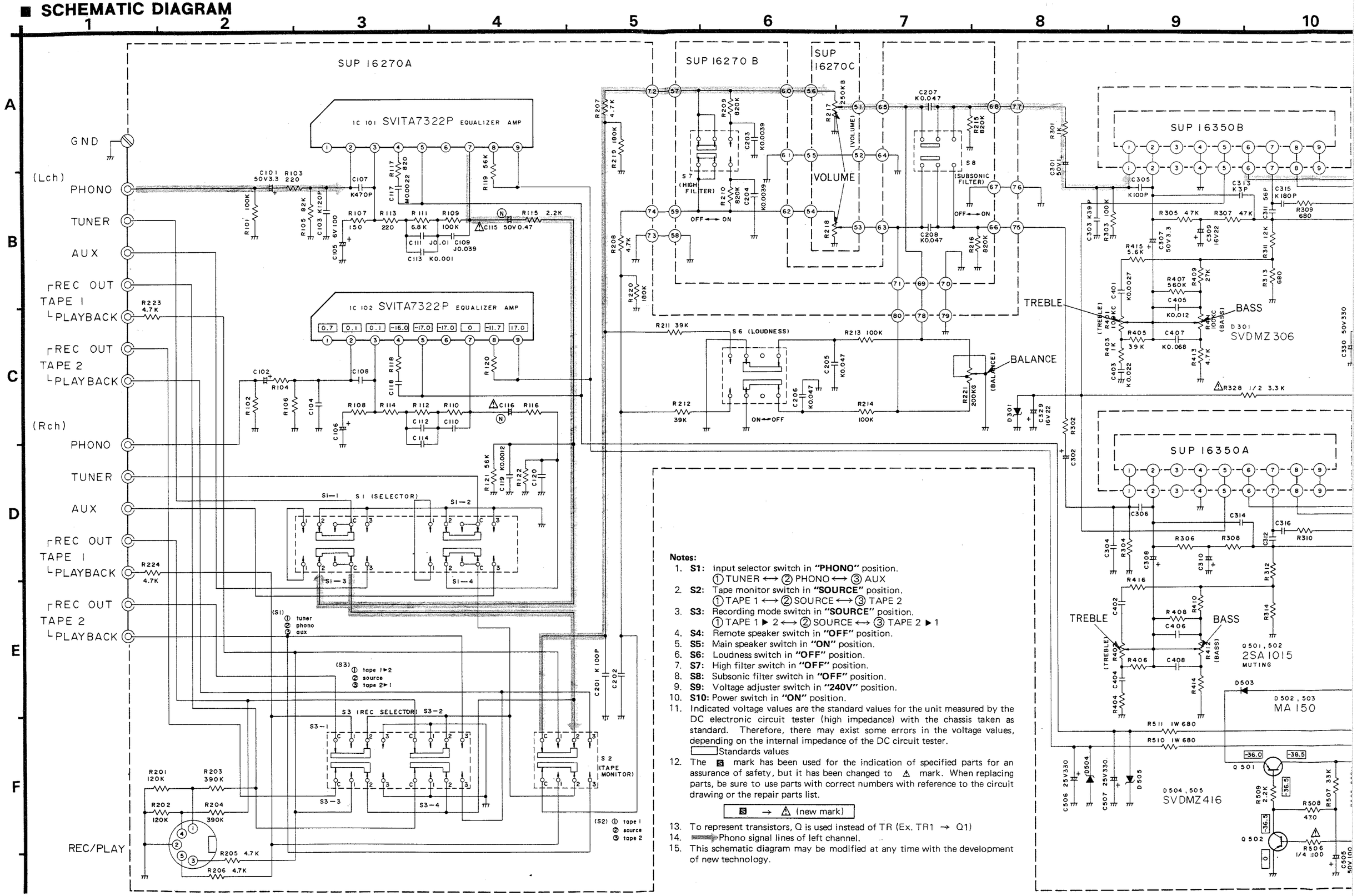
■ PRINTED CIRCUIT BOARD WIRING VIEW

Earth (Ground) Lines




MONITOR
SUBSONIC FILTER
HIGH FILTER
VOLUME
1 Tape 1
2 Source
3 Tape 2
S8
S7
OFF
ON
R208 4.7K
C202 100P
R220 180K
R219 180K
R207 4.7K
C201 100P
R215 820K
R216 820K
C207 0.047
C208 0.047
R210 820K
R209 820K
C204 0.0039
C203 0.0039
R217 250K (B)
R218 250K (B)
D505
D504
C507 25V330
C506 25V330
IC101,102
SVITA7322P
EQUALIZER AMP
C119 0.0012
C120 0.0012
R121 56K
R122 56K
R115 22K
R116 22K
C115 50V0.47
C116 50V0.47
C109 0.039
C110 0.039
R109 100K
R110 100K
C113 0.001
C114 0.001
R111 6.8K
R112 6.8K
R113 220
R114 220
C111 0.01
C112 0.01
C101
IC102
R119 56K
R120 56K
C117 0.0022
C118 0.0022
R117 820
R118 820
C108 470P
C105 6V100
C106 6V100
C107 470P
R107 150
R108 150
C103 120P
C104 120P
R104 220
R103 220
R105 82K
R106 82K
R101 100K
R102 100K
C101 50V33
C102 50V33
Q358
2SC828
CONSTANT
CURRENT
Q354, 356
2SA564
CURRENT
MIRROR
Q360
2SA1015
EMITTER
FOLLOWER
Q352
2SC1583
DIFFERENTIAL
Q357
2SC828
CONSTANT
CURRENT
Q353, 355
2SA564
CURRENT
MIRROR
Q359
2SA1015
EMITTER
FOLLOWER
Q351
2SC1583
DIFFERENTIAL
INPUT SELECTOR
tuner
phono
aux
J1
J2
J3
J4
J5
J6
J7
S1
S1-1
S1-2
S1-3
S1-4
A
B
C OUT
PLAYBACK
REC OUT
AUX
TUNER
PHONO
GROUND
TAPE DECK 2

■ SCHEMATIC DIAGRAM

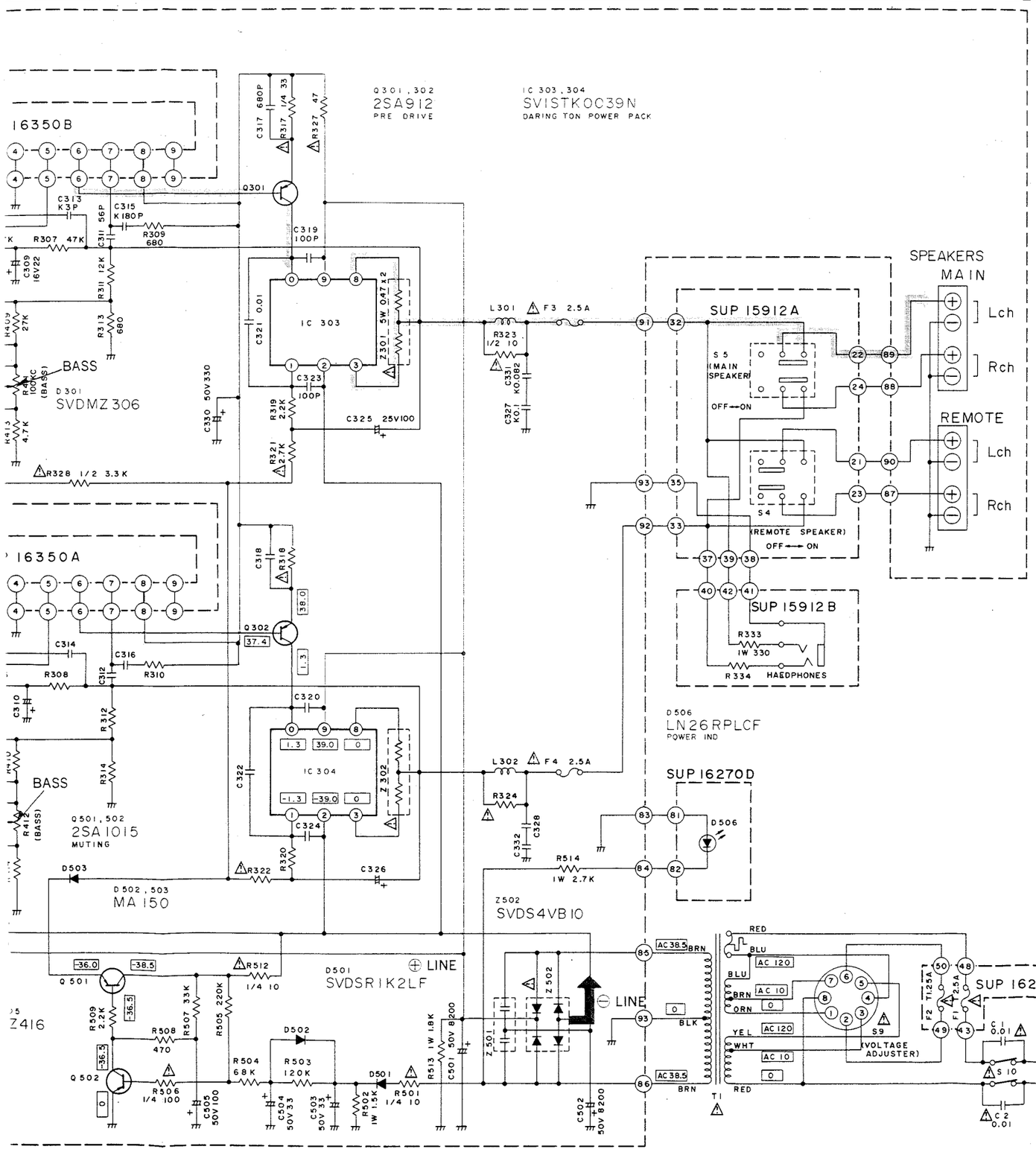


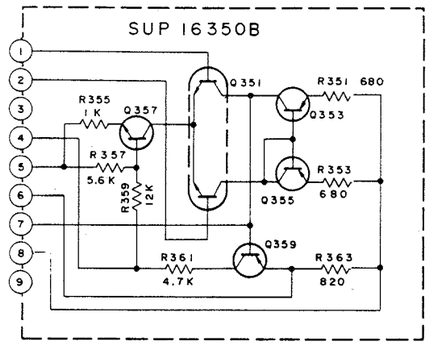
Notes:

1. **S1:** Input selector switch in **"PHONO"** position.
   ① TUNER ⟷ ② PHONO ⟷ ③ AUX
2. **S2:** Tape monitor switch in **"SOURCE"** position.
   ① TAPE 1 ⟷ ② SOURCE ⟷ ③ TAPE 2
3. **S3:** Recording mode switch in **"SOURCE"** position.
   ① TAPE 1 ▶ 2 ⟷ ② SOURCE ⟷ ③ TAPE 2 ▶ 1
4. **S4:** Remote speaker switch in **"OFF"** position.
5. **S5:** Main speaker switch in **"ON"** position.
6. **S6:** Loudness switch in **"OFF"** position.
7. **S7:** High filter switch in **"OFF"** position.
8. **S8:** Subsonic filter switch in **"OFF"** position.
9. **S9:** Voltage adjuster switch in **"240V"** position.
10. **S10:** Power switch in **"ON"** position.
11. 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.
    ▭ Standards values
12. The Ⓢ mark has been used for the indication of specified parts for an assurance of safety, but it has been changed to ⚠ mark. When replacing parts, be sure to use parts with correct numbers with reference to the circuit drawing or the repair parts list.

    Ⓢ → ⚠ (new mark)
13. To represent transistors, Q is used instead of TR (Ex. TR1 → Q1)
14. ⟹ Phono signal lines of left channel.
15. This schematic diagram may be modified at any time with the development of new technology.

10 11 12 13 14 15 16 17 18 19



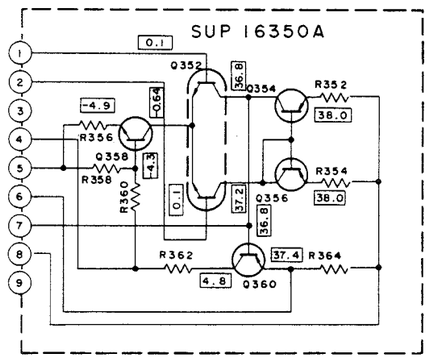


Q351, 352 2SC1583 DIFFERENTIAL

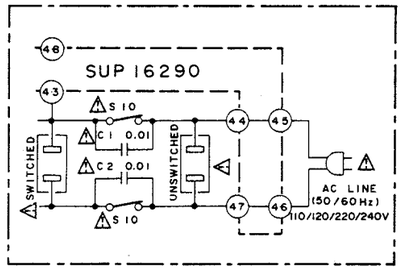
Q353~356 2SA564 CURRENT MIRROR

Q357, 358 2SC828 CONSTANT CURRENT

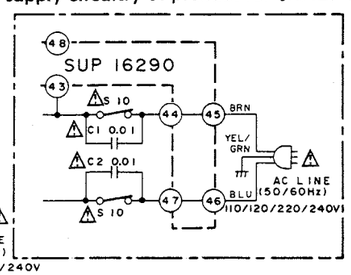
Q359, 360 2SA1015 EMITTER FOLLOWER



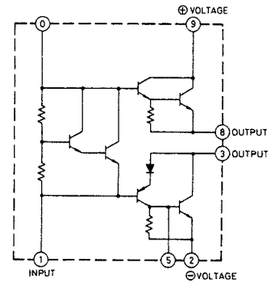
- Power supply circuitry of product for [X] and [XA] only.



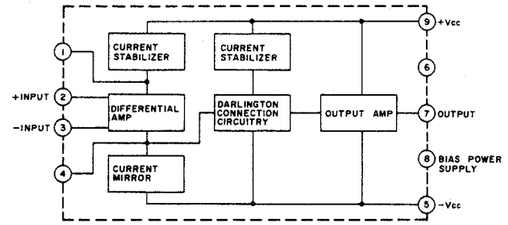
- Power supply circuitry of product for [XAL] only.



■ BLOCK DIAGRAM OF INTEGRATED CIRCUITS

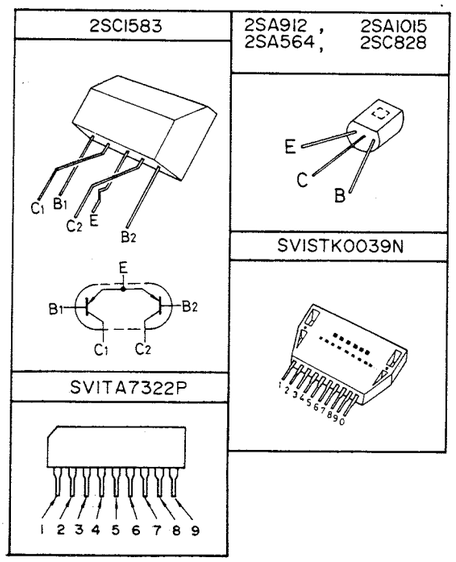


IC303, 304 (SVISTK0039N)
Power Amplifier



IC101, 102 (SVITA7322P)
Equalizer Amplifier

■ TERMINAL GUIDE OF TRANSISTOR & IC



■ REPLACEMENT PARTS LIST ..... Electric Parts

Notes: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts order.
2. ⚠ indicates that only parts specified by the manufacturer be used for sefety.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUITS			
IC101, 102		SVITA7322P	IC, Equalizer Amplifier
IC303, 304		SVISTK0039N	IC, Darington Power Pack
TRANSISTORS			
Q301, 302		2SA912-R	Transistor, Pre Drive (Use ranks Q, R or S)
Q351, 352		2SC1583-F	Transistor, Differential Amplifier (Use ranks F or G)
Q353, 354, 355, 356		**2SA666AI-R**	Transistor, Current Mirror
Q357, 358		**2SC1328-T**	Transistor, Constant Current
Q359, 360, 501, 502		2SA1015-O	Transistor, Emitter Follower & Ripple Filter (Use ranks Y or O)
DIODES			
D301		SVDMZ306	Diode, Zener 6V
D501		SVDSR1K2	Diode
D502, 503		MA150	Diode, Bias
D504, 505		SVDMZ416	Diode, Zener 16V
D506		LN26RPL	Diode, Power Indicator
COILS and TRANSFORMER			
L301, 302		SLQY15G-3P	Coil, Choke
T1	⚠	SLT5N329	Transformer, Power
COMPONENT COMBINATIONS			
Z301, 302	⚠	ERF5GEKR47N	Component Combination, 0.47Ω (X2)
Z501		EXRFS203ZS	Component Combination, 0.01μF (X2)
Z502	⚠	SVDS4VB10	Component Combination, Rectifier
FUSES			
F1	⚠	XBA2C25TR0	Fuse, T2.5A (250V) P.T. Primary
F2	⚠	XBA2C12TR0	Fuse, T1.2A (250V) P.T. Primary
F3, 4	⚠	XBA2C25SS0	Fuse, 2.5A (250V) Speaker Circuit
SWITCHES			
S1		ESA2691	Switch, Input Selector
S2		SSL137	Switch, Tape Monitor
S3		SSL117	Switch, Rec Mode
S4, 5		SSH263	Switch, Speakers Selector
S6		SSL121	Switch, Loudness
S7, 8		SSH239S	Switch, High Filter and Subsonic Filter
S9	⚠	ESE37200	Switch, Voltage Adjuster
S10	⚠	ESB70133	Switch, Power
VARIABLE RESISTORS			
R217, 218		EWF6LA031BF5	Volume Control, 250kΩ (B)
R221		EVHFDA505G25	Balance Control, 200kΩ (G)
R401, 402, 411, 412		EWKGSA091C15	Bass & Treble Control, 100kΩ (C)
RESISTORS			
R101, 102		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R103, 104		**ERD25TJ221**	Carbon, 220Ω, 1/4W, ± 5%
R105, 106		**ERD25TJ823**	Carbon, 82kΩ, 1/4W, ± 5%
R107, 108		**ERD25TJ151**	Carbon, 150Ω, 1/4W, ± 5%
R109, 110		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R111, 112		**ERD25TJ682**	Carbon, 6.8kΩ, 1/4W, ± 5%
R113, 114		**ERD25TJ221**	Carbon, 220Ω, 1/4W, ± 5%
R115, 116		**ERD25TJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
R117, 118		**ERD25TJ821**	Carbon, 820Ω, 1/4W, ± 5%
R119, 120		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ± 5%
R121, 122		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ± 5%
R201, 202		**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ± 5%
R203, 204		**ERD25TJ394**	Carbon, 390kΩ, 1/4W, ± 5%
R205, 206		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R207, 208		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R209, 210		**ERD25TJ824**	Carbon, 820kΩ, 1/4W, ± 5%
R211, 212		**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ± 5%
R213, 214		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R215, 216		**ERD25TJ824**	Carbon, 820kΩ, 1/4W, ± 5%
R219, 220		**ERD25TJ184**	Carbon, 180kΩ, 1/4W, ± 5%
R223, 224		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R301, 302		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R303, 304		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ± 5%
R305, 306		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R307, 308		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ± 5%
R309, 310		**ERD25TJ681**	Carbon, 680Ω, 1/4W, ± 5%
R311, 312		**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ± 5%
R313, 314		**ERD25TJ681**	Carbon, 680Ω, 1/4W, ± 5%
R317, 318	⚠	ERD25FJ330	Carbon, 33Ω, 1/4W, ± 5%
R319, 320		**ERD25TJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
R321, 322	⚠	ERD25FJ272	Carbon, 2.7kΩ, 1/4W, ± 5%
R323, 324	⚠	ERD50FJ100	Carbon, 10Ω, 1/2W, ± 5%
R327	⚠	ERD25FJ470	Carbon, 47Ω, 1/4W, ± 5%
R328	⚠	ERD50FJ332	Carbon, 3.3kΩ, 1/2W, ± 5%
R333, 334		**ERG1ANJ331**	Metal Oxide, 330Ω, 1W, ± 5%
R351, 352		**ERD25TJ681**	Carbon, 680Ω, 1/4W, ± 5%
R353, 354		**ERD25TJ681**	Carbon, 680Ω, 1/4W, ± 5%
R355, 356		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R357, 358		**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R359, 360		**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ± 5%
R361, 362		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R363, 364		**ERD25TJ821**	Carbon, 820Ω, 1/4W, ± 5%
R403, 404		**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ± 5%
R405, 406		**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ± 5%
R407, 408		**ERD25TJ564**	Carbon, 560kΩ, 1/4W, ± 5%
R409, 410		**ERD25TJ273**	Carbon, 27kΩ, 1/4W, ± 5%
R413, 414		**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ± 5%
R415, 416		**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ± 5%
R501	⚠	ERD25FJ100	Carbon, 10Ω, 1/4W, ± 5%
R502		**ERG1ANJ152**	Metal Oxide, 1.5kΩ, 1W, ± 5%
R503		**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ± 5%
R504		**ERD25TJ683**	Carbon, 68kΩ, 1/4W, ± 5%
R505		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ± 5%
R506	⚠	ERD25FJ101	Carbon, 100Ω, 1/4W, ± 5%
R507		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ± 5%
R508		**ERD25TJ471**	Carbon, 470Ω, 1/4W, ± 5%
R509		**ERD25TJ222**	Carbon, 2.2kΩ, 1/4W, ± 5%
R510, 511		**ERG1ANJ681**	Metal Oxide, 680Ω, 1W, ± 5%
R512	⚠	ERD25FJ100	Carbon, 10Ω, 1/4W, ± 5%
R513		**ERG1ANJ182**	Metal Oxide, 1.8kΩ, 1W, ± 5%
R514		**ERG1ANJ272**	Metal Oxide, 2.7kΩ, 1W, ± 5%
CAPACITORS			
C1, 2	⚠	ECKDHS103SE2	Ceramic, 0.01μF, 400VAC, +50 −20 %
C101, 102		**ECEA50M3R3R**	Electrolytic, 3.3μF, 50V
C103, 104		ECCD1H121K	Ceramic, 120pF, 50V, ±10%
C105, 106		**ECEA1AS101**	Electrolytic, 100μF, 10V
C107, 108		ECKD1H471KB	Ceramic, 470pF, 50V, ±10%
C109, 110		ECQM1H393JZ	Polyester, 0.039μF, 50V, ± 5%
C111, 112		ECQM1H103JZ	Polyester, 0.01μF, 50V, ± 5%
C113, 114		ECQM1H102KZ	Polyester, 0.001μF, 50V, ± 5%
C115, 116	⚠	**ECEA50NR47**	Non-Polar Electrolytic, 0.47μF, 50V
C117, 118		ECKD1H222MD	Ceramic, 0.0022μF, 50V, ±20%
C119, 120		ECQM1H122KZ	Polyester, 0.0012μF, 50V, ±10%
C201, 202		ECCD1H101K	Ceramic, 100pF, 50V, ±10%
C203, 204		ECQM1H392KZ	Polyester, 0.0039μF, 50V, ±10%
C205, 206		ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C207, 208		ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C301, 302		**ECEA50Z1**	Electrolytic, 1μF, 50V
C303, 304		ECCD1H390K	Ceramic, 39pF, 50V, ±10%
C305, 306		ECCD1H101K	Ceramic, 100pF, 50V, ±10%
C307, 308		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C309, 310		**ECEA1ES220**	Electrolytic, 22μF, 25V
C311, 312		ECCD2H560K	Ceramic, 56pF, 500V, ±10%
C313, 314		ECCD1H030C	Ceramic, 3pF, 50V, ±0.25pF
C315, 316		ECCD1H181K	Ceramic, 180pF, 50V, ±10%
C317, 318		ECKD1H681KB	Ceramic, 680pF, 50V, ±10%
C319, 320		ECCD2H101K	Ceramic, 100pF, 500V, ±10%
C321, 322		ECKD1H103MD	Ceramic, 0.01μF, 50V, ±20%
C323, 324		ECCD2H101K	Ceramic, 100pF, 500V, ±10%
C325, 326		**ECEA1ES101**	Electrolytic, 100μF, 25V
C327, 328		ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C329		**ECEA1ES220**	Electrolytic, 22μF, 25V
C330		**ECEA1HS101**	Electrolytic, 100μF, 50V
C331, 332		ECQM1H823KZ	Polyester, 0.082μF, 50V, ±10%
C401, 402		ECQM1H272KZ	Polyester, 0.0027μF, 50V, ±10%
C403, 404		ECQM1H223KZ	Polyester, 0.022μF, 50V, ±10%
C405, 406		ECQM1H123KZ	Polyester, 0.012μF, 50V, ±10%
C407, 408		ECQM1H683KZ	Polyester, 0.068μF, 50V, ±10%
C501, 502		ECET50R822SW	Electrolytic, 8200μF, 50V
C503, 504		**ECEA1JS330**	Electrolytic, 33μF, 63V
C505		**ECEA1HS101**	Electrolytic, 100μF, 50V
C506, 507		**ECEA1ES331**	Electrolytic, 330μF, 25V

■ RE

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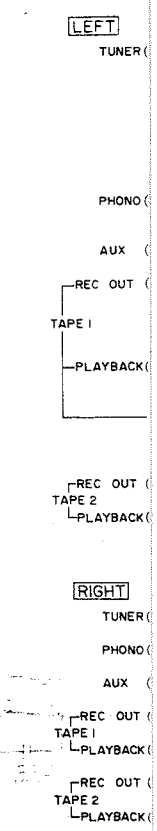
20 [D]
20 [XE,XGH, DG, EB]
20 [XAL]
20 [XSW]
20 [X, XA]
21
22
23 [D,XGH,X EB,DG, XSW]
23 [XE]
23 [X, XA]
23 [XAL]

Notes: (D) a
(XG
(XG
(EB)

■ BLO

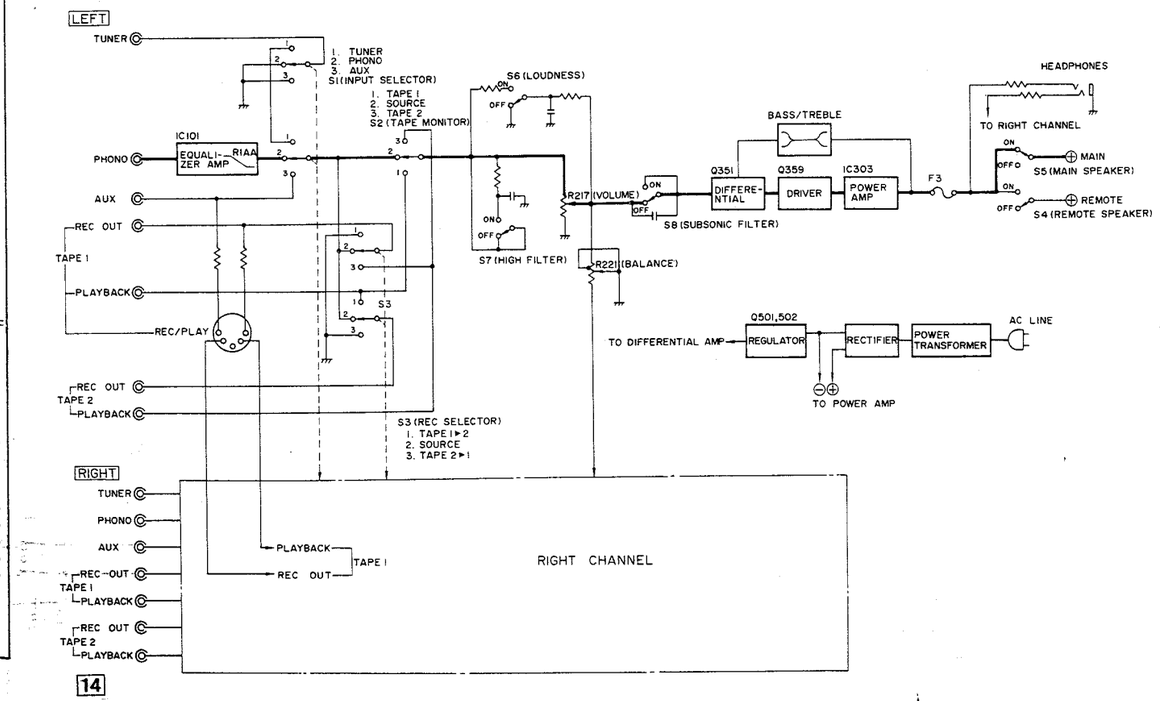


■ REPLACEMENT PARTS LIST ..... Cabinet and Chassis Parts

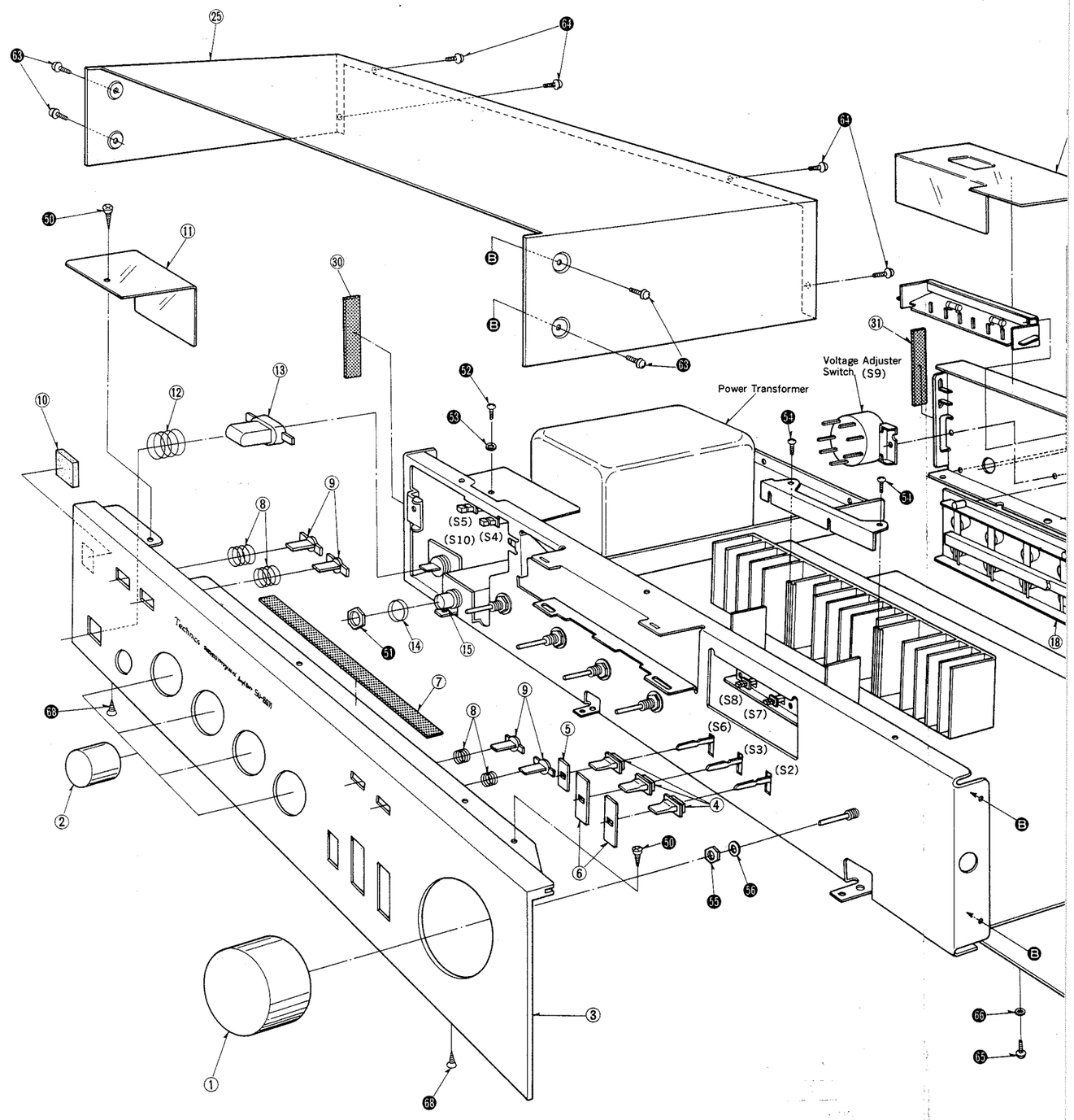
Ref. No.		Part No.	Part Name & Description
		CABINET and CHASSIS PARTS	
1		SBN813	Knob, Volume Control
2		SBN815	Knob, Bass, Treble, Balance & Input Selector Switch
3		SGWU8022D	Panel, Front Ass'y (Silver)
4		SBD21	Knob, Loudness, Rec Mode, Tape Monitor Switch
5		SHR5037	Spacer, Loudness Switch
6		SHR5043	Spacer, Rec Mode, Tape Monitor Switch
7		SHS6101-1	Fiber, Front Panel
8		SUS123-1	Spring, Push Switch
9		SBC211	Button, High Filter, Subsonic Filter and Speakers Switch
10		SHR9491	Rubber Cushion, Indicator
11		SMX267	Cover, Power Switch
12		SUS145	Spring, Power Switch
13		SBC209	Button, Power Switch
14		SNE59-1	Washer, Headphones Jack M'tg
15		XCJ6P21B-A	Headphones Jack
16		ESA338	Remote Switch, Input Selector
17		SJF3029	Terminal, Input
18		SJF8013-1	Terminal, Speakers
19		SJS6803	Terminal, DIN
20 [D]		SGP1790A	Rear Panel
20 [XE,XGH,XGF, DG, EB]		SGPU8022D	Rear Panel, SGP1790A with Name Plate (SGT20010)
20 [XAL]		SGPU8022L	Rear Panel, SGP1790-2A with Name Plate (SGT20030)
20 [XSW]		SGPU8022W	Rear Panel, SGP1790A with Name Plate (SGT20590)
20 [X, XA]		SGP1790-1A	Rear Panel
21		SUV337	Cover, Speaker Terminal
22		SMX269	Cover, Power Fuses
23 [D,XGH,XGF, EB,DG, XSW]	⚠	RJA23ZC	AC Cord, with Plug
23 [XE]	⚠	RJA45ZC	AC Cord
23 [X, XA]	⚠	SJA111	AC Cord, with Plug
23 [XAL]	⚠	QFC1207M	AC Cord, with Plug
24		SHR127	Bushing, AC Cord
24 [XE] only		SHR129	Bushing, AC Cord
24 [XAL] only		SHR131	Bushing, AC Cord
25		SKA10676	Cabinet
25 [XE,XSW] only		SKAU8022E	Cabinet
26		SYU199	Bottom Board
27		SKL225	Foot, Set
28 [X,XA] only	⚠	SJSA66-1	Socket, AC Outlet
29		SUW1101S	Bracket, DIN Terminal
30		SHP9283	Spacer, Side Chassis
31		SHP9281	Spacer, Side Chassis
		SCREWS and WASHERS	
㉚		**XTS3+8B**	Screw, Front Panel M'tg
㉛		XNSS12	Nut, Headphones Jack M'tg
㉜		**XTN3+8B**	Screw, Speaker Selector Switch Printed Circuit Board M'tg
㉝		**XWG3**	Washer, Speaker Selector Switch Printed Circuit Board Screw
㉞		**XTB3+8BFZ**	Screw, Heat Sink Bracket M'tg
㉟		**XNS8**	Nut, Volume, Selector, Balance, Treble & Bass M'tg
㊱		**XWV8**	Washer, Volume, Selector, Balance, Treble & Bass Nut
㊲		**XTB3+8BFZ**	Screw, Terminals, Fuse Cover and Power Fuses Printed Circuit Board M'tg
㊳		**XTB3+8BFZ**	Screw, Rear Panel M'tg
㊴		**XWC3B**	Washer, Rear Panel Screw
㊵		**XSN3+6BVS**	Screw, Voltage Adjuster Switch DIN Terminal Bracket M'tg
㊶		**XWA3BFZ**	Washer, Voltage Adjuster Switch DIN Terminal Bracket Screw
㊷		XTB4+8FFN	Screw, Cabinet M'tg
㊸		**XTB3+8BFN**	Screw, Cabinet M'tg
㊹		**XTN3+10B**	Screw, Bottom Board M'tg
㊺		**XWG3**	Washer, Bottom Board Screw
㊻		**XTB3+12BFZ**	Screw, Set Feet M'tg
㊼		**XTB3+8B**	Screw, Front Panel M'tg

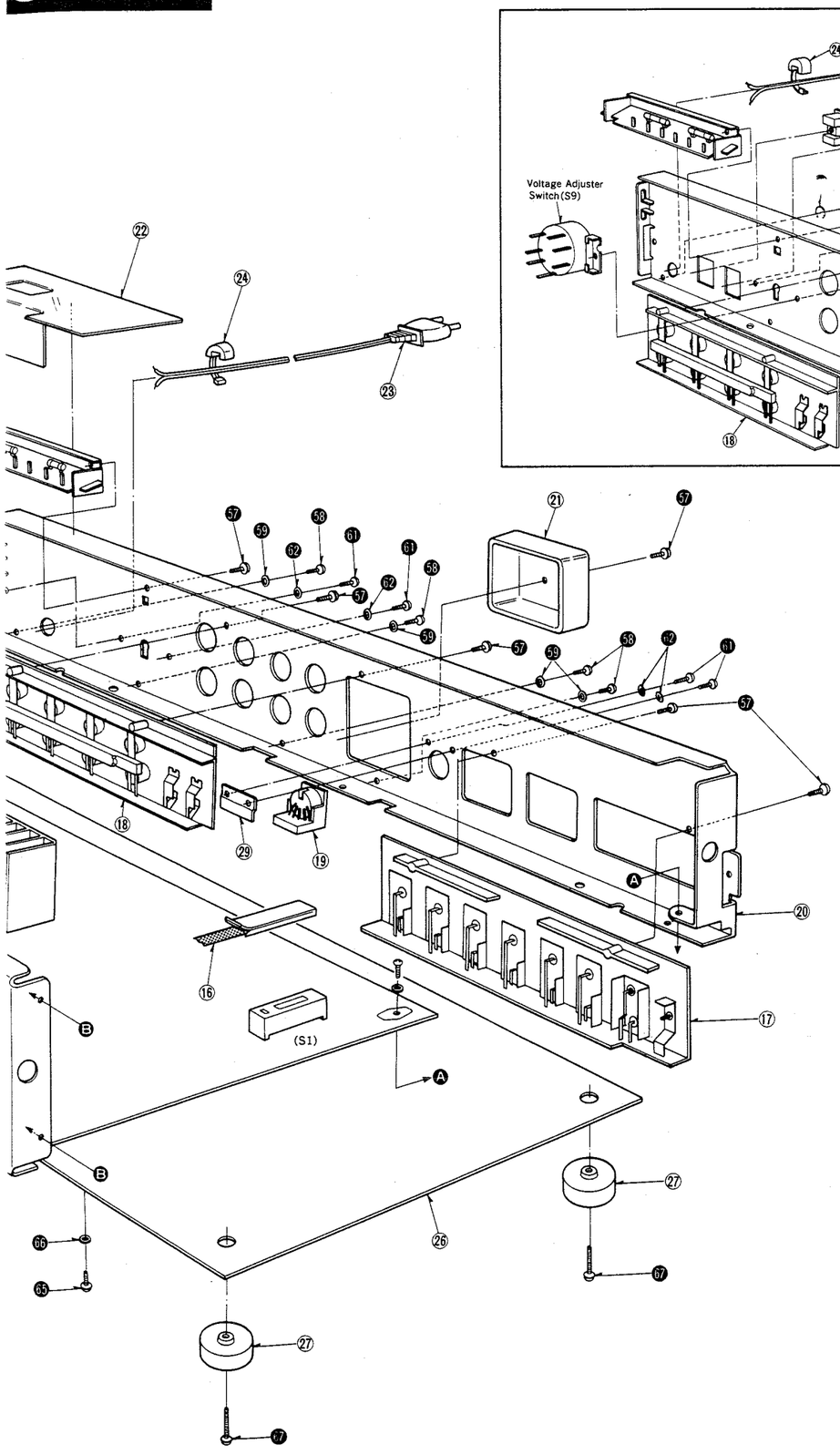
Notes: (D) and (DG) are available in Scandinavia and European only.
(XGH) is available in Holland only.
(XGF) is available in France only.
(EB) is available in Belgium only.
(XE) is available in United Kingdom only.
(XSW) is available in Switzerland only.
(X) and (XA) are available in Asia, Latin America, Middle East and Africa only.
(XAL) is available in Australia only.

■ BLOCK DIAGRAM



■ EXPLODED VIEW





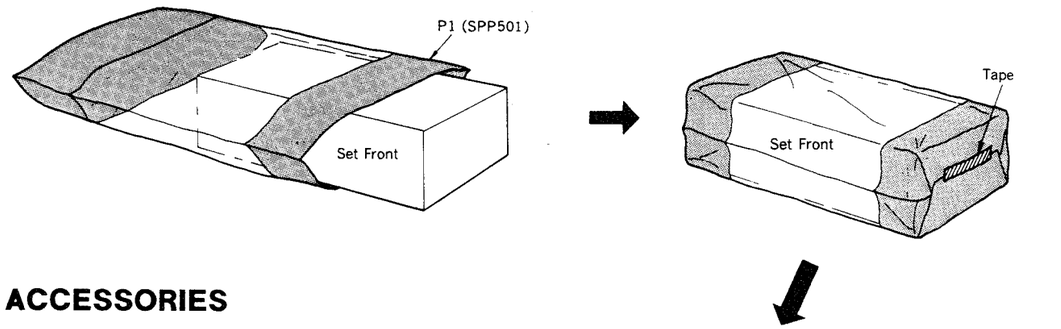
■ REPLACEMENT PARTS LIST ..... Accessories and Packing Parts

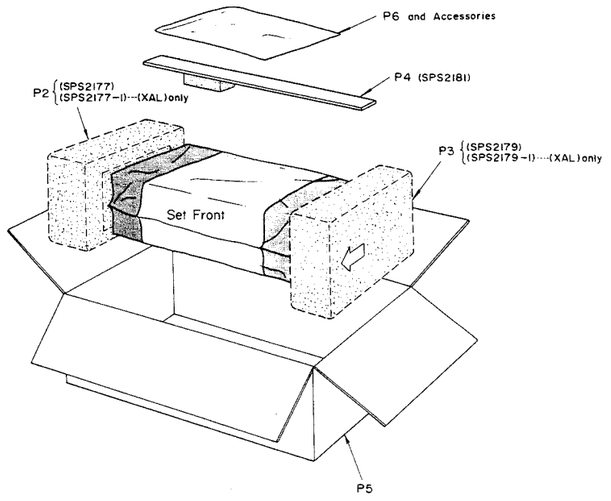
Ref. No.		Part No.	Part Name & Description
ACCESSORIES			
A1	⚠	XBA2C25SS0	Fuse, 2.5A (250V) Speaker Circuit
A2 [X, XA] only	⚠	SJP5213-1	Plug Adapter, AC Power
A3 [X, XA] only	⚠	SJP5215	Plug Adapter, AC Power
PACKING PARTS			
P1		SPP501	Polyethylene Bag
P2		SPS2177	Pad, Left Side
P2 [XAL] only		SPS2177-1	Pad, Left Side
P3		SPS2179	Pad, Right Side
P3 [XAL] only		SPS2179-1	Pad, Right Side

Ref. No.		Part No.	Part Name & Description
P4		SPS2181	Pad, Top Side
P5 [D]		SPG2077	Carton Box
P5 [XE, XGH, EB, DG, XSW]		SPG2079	Carton Box
P5 [X, XA]		SPG2081	Carton Box
P5 [XAL]		SPG2083	Carton Box
P5 [XGF]		SPG2087	Carton Box
P6 [D, XGH, XGF, EB, DG, XSW]		SQF10199	Instructions Book, Printed Matter
P6 [XE, X, XA, XAL]		SQF10201	Instructions Book, Printed Matter

Notes: (D) and (DG) are available in Scandinavia and European only.
(XGH) is available in Holland only.
(XGF) is available in France only.
(EB) is available in Belgium only.
(XE) is available in United Kingdom only.
(XSW) is available in Switzerland only.
(X) and (XA) are available in Asia, Latin America, Middle East and Africa on
(XAL) is available in Australia only.

■ PACKINGS





■ ACCESSORIES