

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.		Part Name & Description
	SU-8022	SU-8022K	
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]		
	SGPU8022W [XSW]		
	SGP1790-1A [X, XA]		
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			
⑤	XTB4+8FFN	XTB4+8FFZ	Screw, Cabinet M'tg
⑥	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.

Service Manual

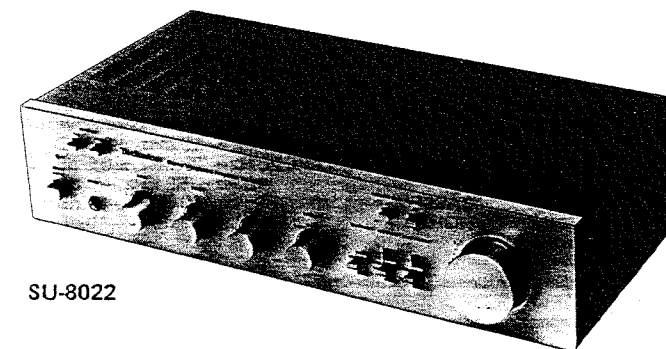
ORDER NO. SD7902-1514

Stereo Integrated Amplifier

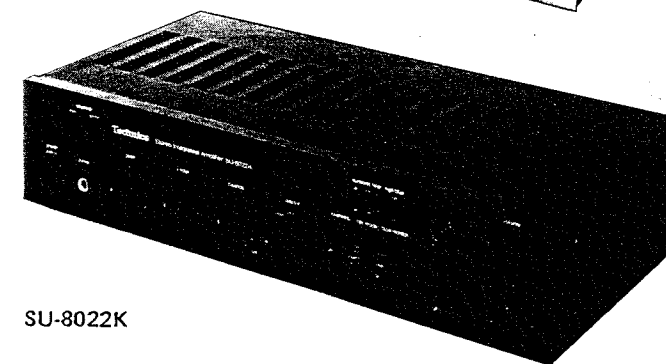
SU-8022

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

SU-8022K

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

SU-8022



SU-8022K

19 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, 4 Ω	0.05%
rated power at 60 Hz: 7 kHz = 4:1, SMPTE, 8 Ω	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 4 Ω PHONO	72 dB (IHF, A: 80 dB)
TUNER, AUX	86 dB (IHF, A: 97 dB)
-26 dB power at 4 Ω PHONO	62 dB
TUNER, AUX	63 dB
50 mW power at 4 Ω PHONO	62 dB
TUNER, AUX	62 dB
Frequency response PHONO	R1AA standard curve
TUNER, AUX, TAPE	30 Hz ~ 15 kHz, ±0.8 dB
	20 Hz ~ 20 kHz, ±0.5 dB
	10 Hz ~ 50 kHz, -1 dB
	50 Hz, +10 dB ~ -10 dB
	20 kHz, +10 dB ~ -10 dB
Tone controls BASS	7 kHz, -6 dB/oct.
TREBLE	30 Hz, -6 dB/oct.
High filter	50 Hz, +9 dB
Subsonic filter	150 mV
Loudness switch (volume at -30 dB)	30 mV/82 kΩ
Output voltage and impedance REC OUT	±1.0 dB
REC/PLAY	55 dB
Channel balance (250 Hz ~ 6300 Hz), AUX	330 mV/330Ω
Channel separation at 1 kHz, AUX	4 ~ 16Ω
Headphones output level and impedance	8 ~ 16Ω
Load impedance MAIN or REMOTE	
MAIN + REMOTE	

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 angesteuert	2 x 35 W (8Ω)
Dauertonleistung bei 40 Hz ~ 16 kHz beide Kanäle zusammen angesteuert	2 x 40 W (4Ω) 2 x 35 W (8Ω)
Dauertonleistung bei 1 kHz beide Kanäle zusammen angesteuert	2 x 45 W (4Ω), 2 x 38 W (8Ω)
Leistungsbandbreite beide Kanäle zusammen angesteuert, -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 [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 20 Hz ~ 20 kHz, ±0,5 dB 10 Hz ~ 50 kHz, -1 dB
TUNER, AUX	
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

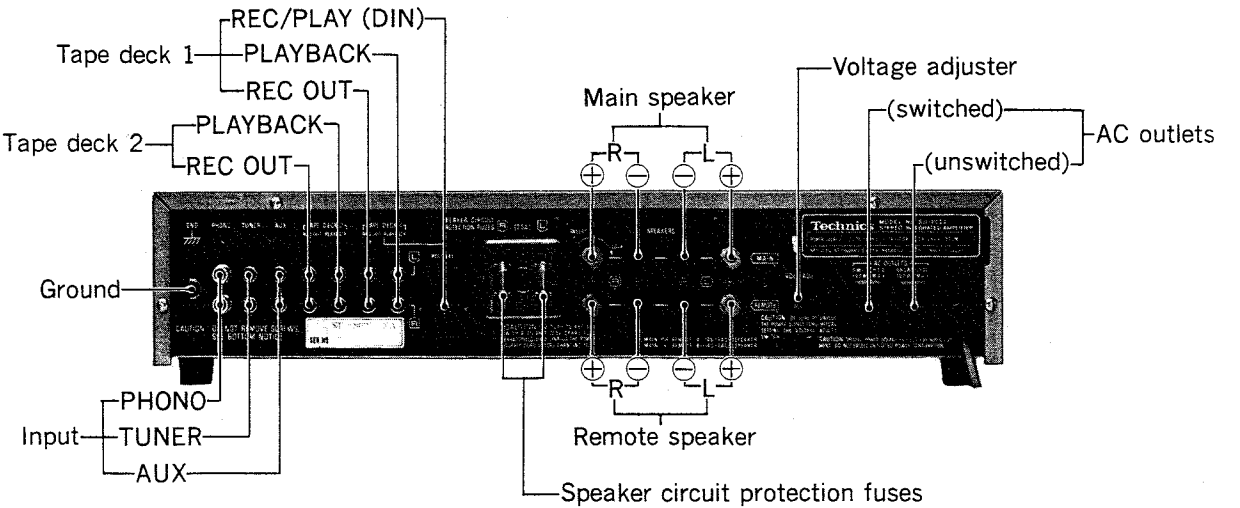
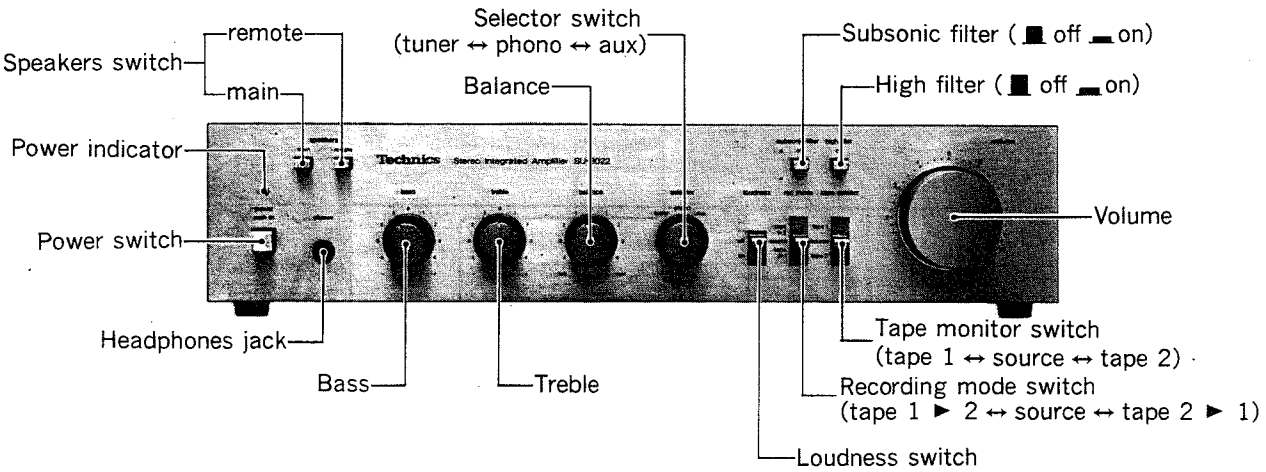
GENERALITES

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

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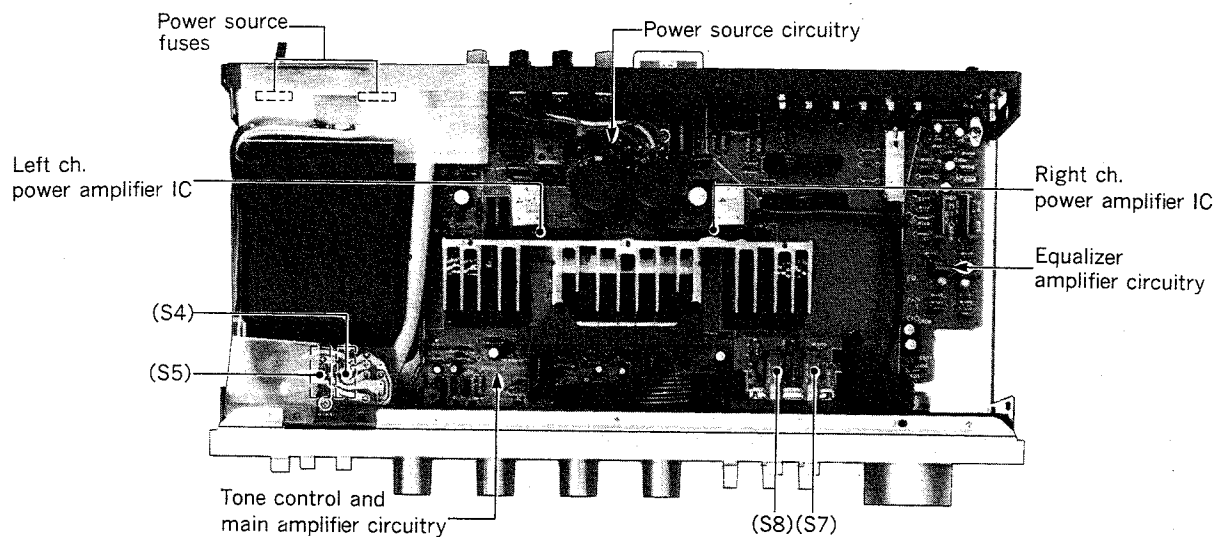
LOCATION OF CONTROLS



* 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.

..... 12
..... 13
..... 14
..... 14
..... 15 ~ 16

..... 17
..... 17
..... 17
..... 18



■ 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 A in Fig. 1)

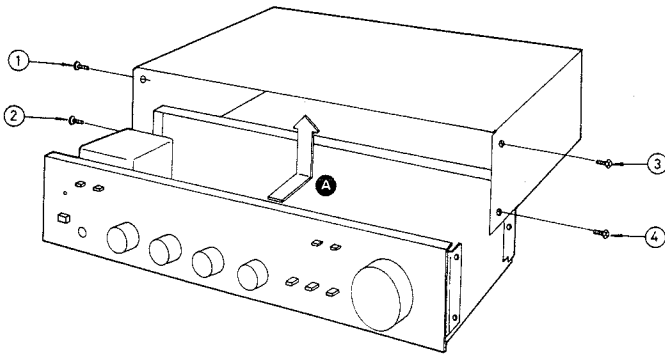


Fig. 1

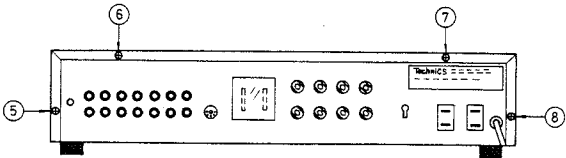


Fig. 2

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 ~ ⑳ in Fig. 4) and then carefully pull the front panel toward you.

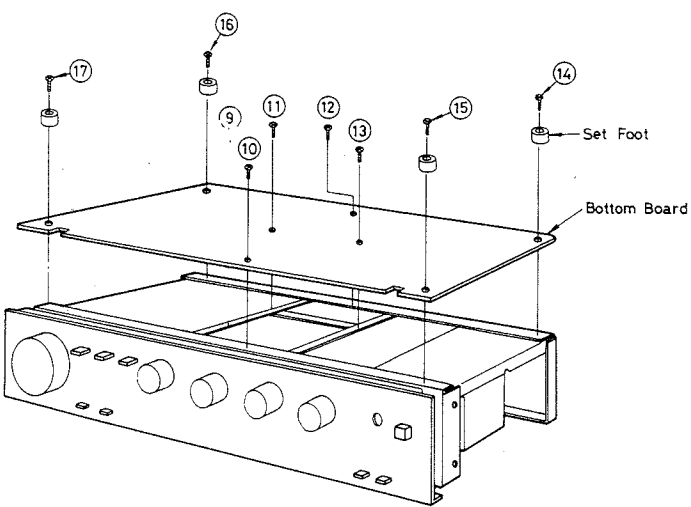


Fig. 3

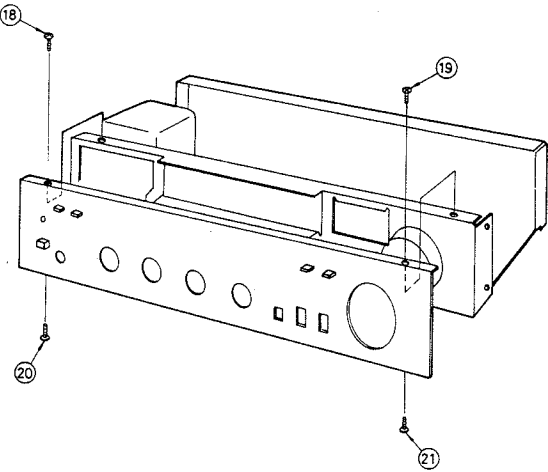
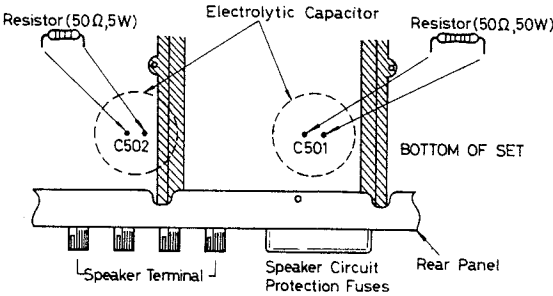


Fig. 4

■ BEFORE STARTING THE REPAIRING

Before adjusting or repairing, be sure to short-circuit opposite poles of the 8200 μ F capacitors (C501, 502) with a resistor approximately of "50 Ω , 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 A (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 B.
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.

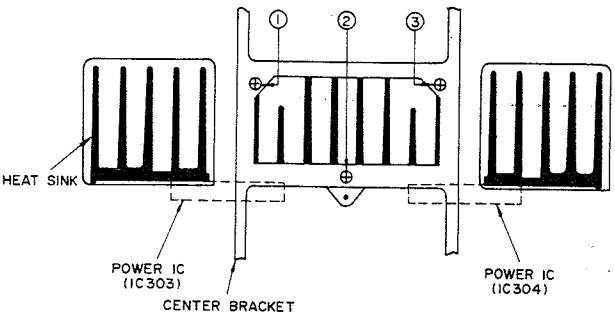


Fig. 5

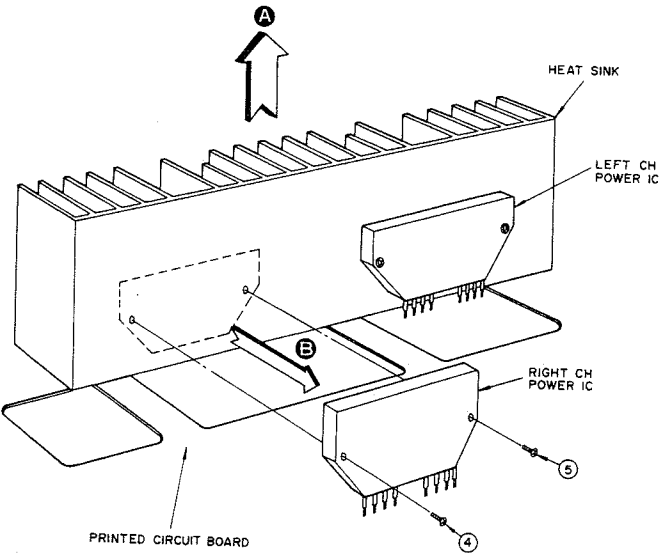
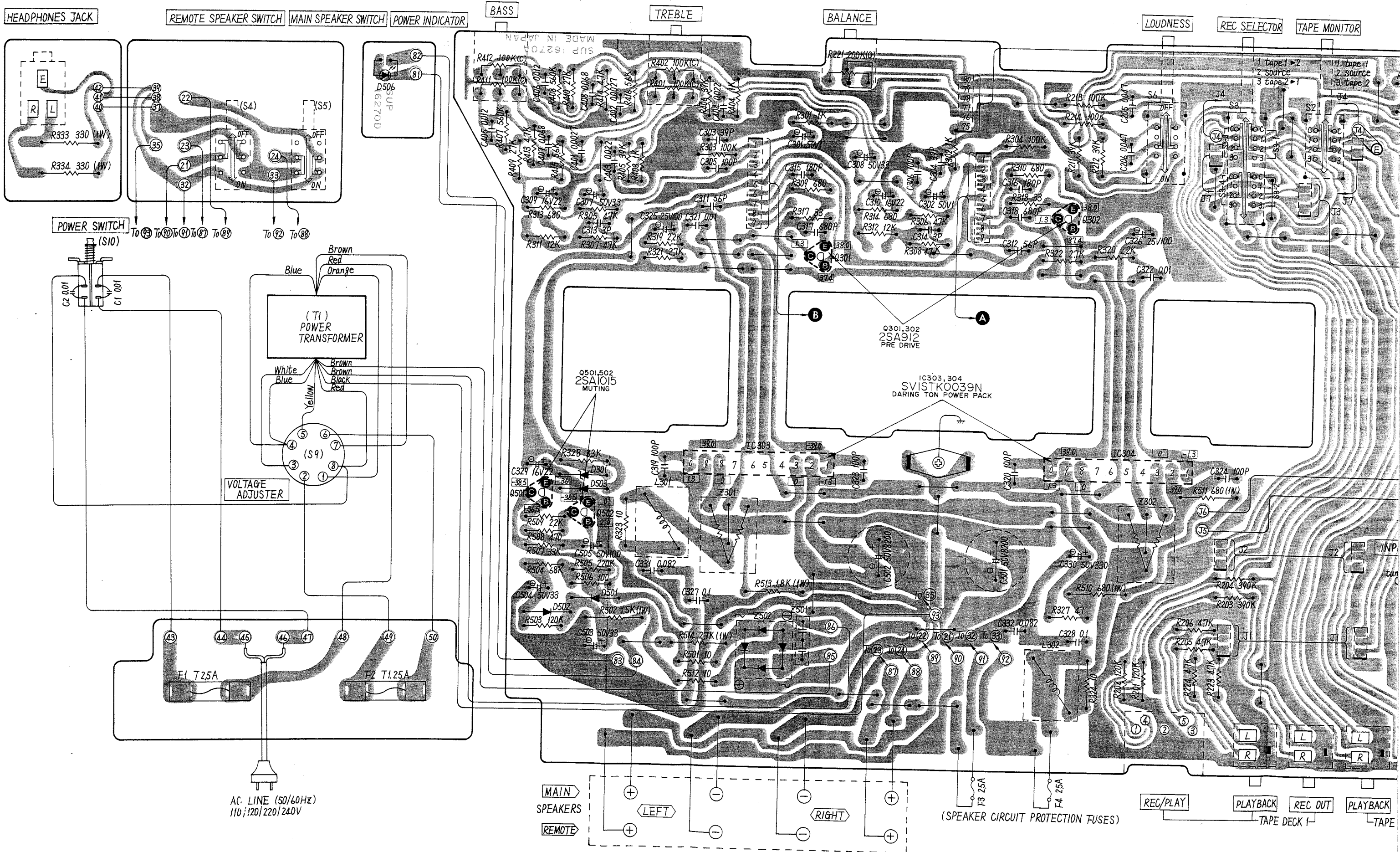


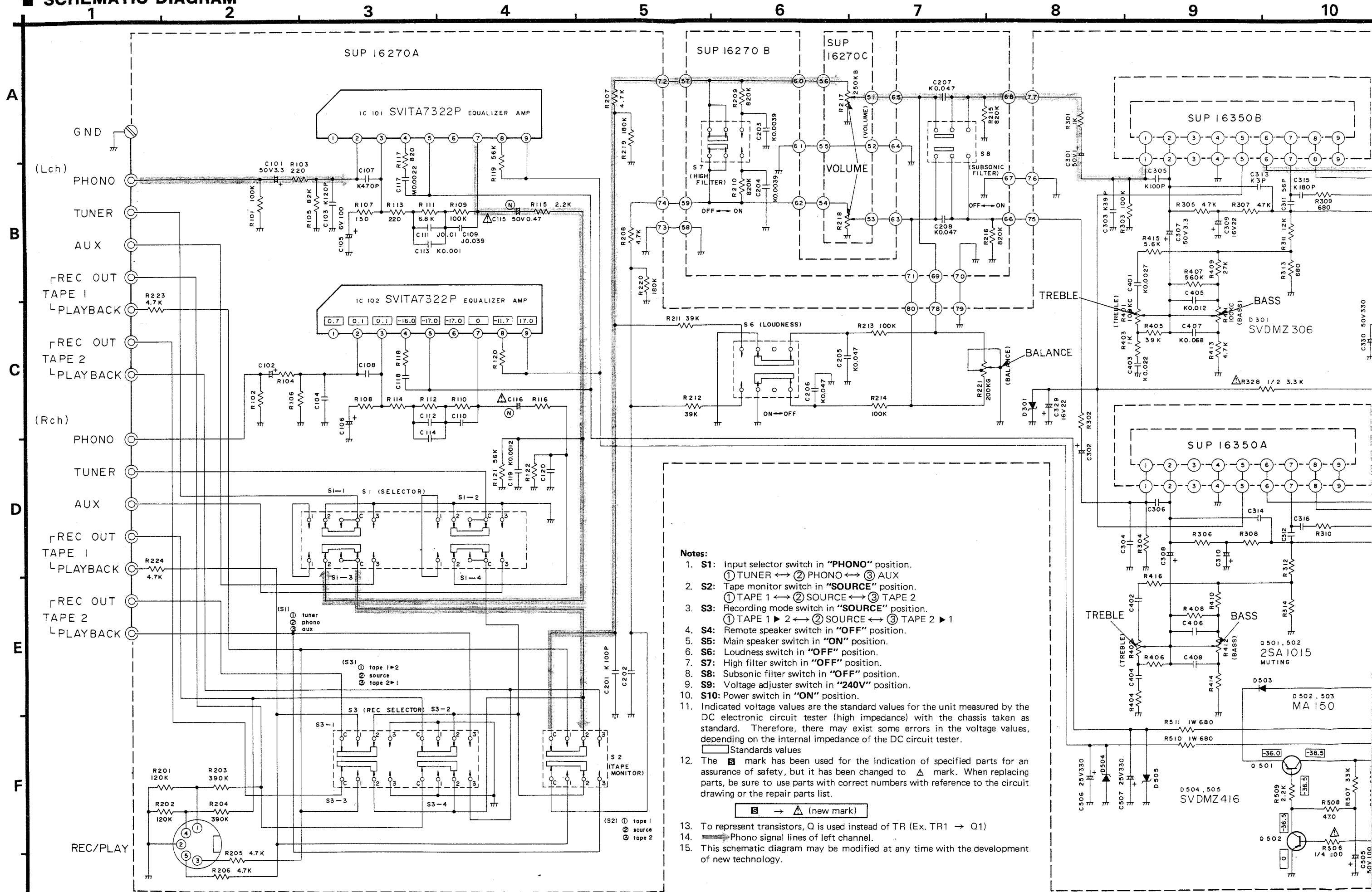
Fig. 6

PRINTED CIRCUIT BOARD WIRING VIEW

Earth (Ground) Lines

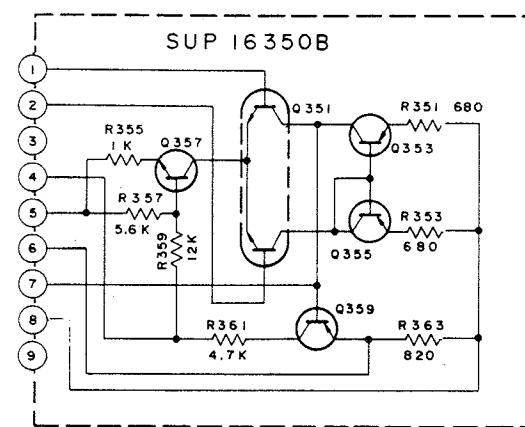
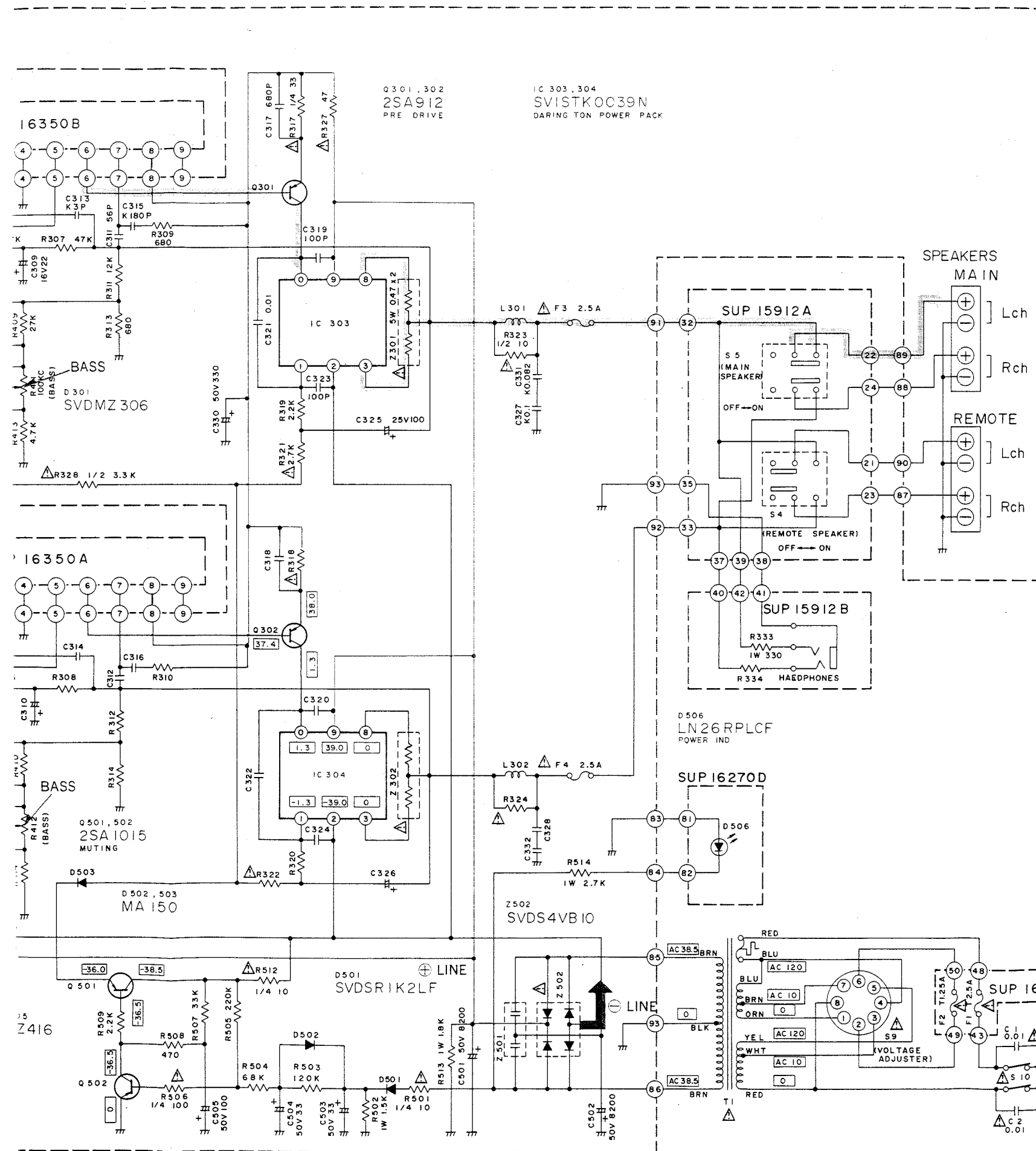


SCHEMATIC DIAGRAM



Notes:

- S1: Input selector switch in "PHONO" position.
① TUNER ↔ ② PHONO ↔ ③ AUX
- S2: Tape monitor switch in "SOURCE" position.
① TAPE 1 ↔ ② SOURCE ↔ ③ TAPE 2
- S3: Recording mode switch in "SOURCE" position.
① TAPE 1 ▶ ② SOURCE ↔ ③ TAPE 2 ▶ ①
- S4: Remote speaker switch in "OFF" position.
- S5: Main speaker switch in "ON" position.
- S6: Loudness switch in "OFF" position.
- S7: High filter switch in "OFF" position.
- S8: Subsonic filter switch in "OFF" position.
- S9: Voltage adjuster switch in "240V" position.
- S10: Power switch in "ON" position.
- 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.
[S] Standards values
- The [S] mark has been used for the indication of specified parts for an assurance of safety, but it has been changed to Δ mark. When replacing parts, be sure to use parts with correct numbers with reference to the circuit drawing or the repair parts list.
[S] → Δ (new mark)
- To represent transistors, Q is used instead of TR (Ex. TR1 → Q1)
- Phono signal lines of left channel.
- This schematic diagram may be modified at any time with the development of new technology.

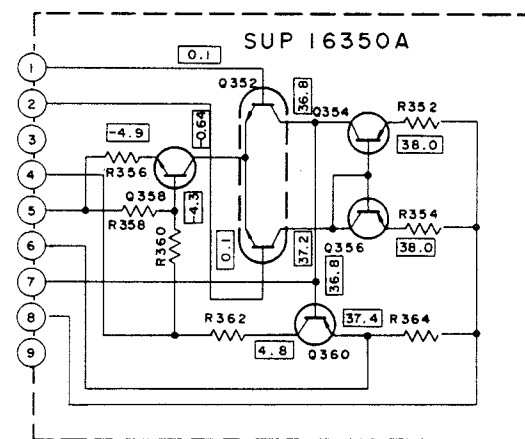


Q351, 352
2SC1583
DIFFERENTIAL

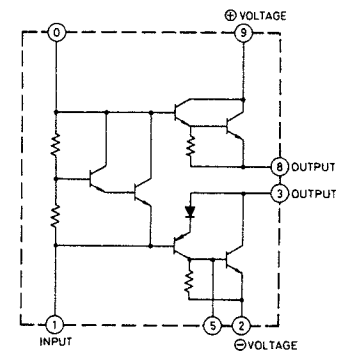
Q353~356
2SA564
CURRENT MIRROR

Q357, 358
2SC828
CONSTANT CURRENT

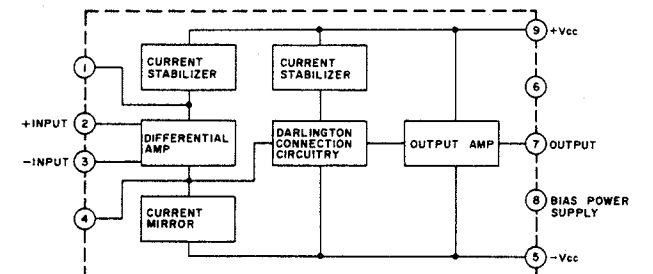
Q359, 360
2SA1015
EMITTER FOLLOWER



BLOCK DIAGRAM OF INTEGRATED CIRCUITS

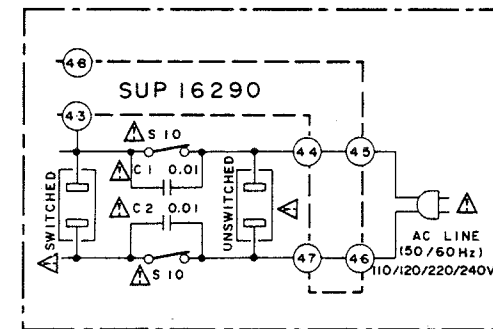


IC303, 304 (SVISTK0039N)
Power Amplifier

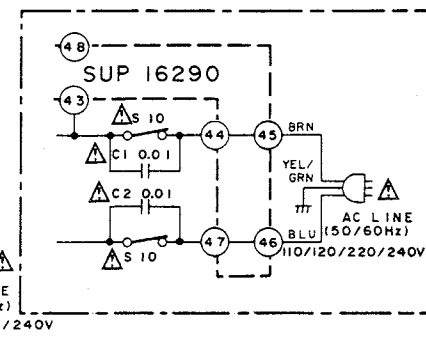


IC101, 102 (SVITA7322P)
Equalizer Amplifier

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



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



TERMINAL GUIDE OF TRANSISTOR & IC

2SC1583	2SA912, 2SA564, 2SA1015, 2SC828
SVITA7322P	SVISTK0039N

■ REPLACEMENT PARTS LIST Electric Parts

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

Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC101, 102 IC303, 304	SVITA7322P SVISTK0039N	IC, Equalizer Amplifier IC, Darlington 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 T1	SLQY15G-3P Δ SLT5N329	Coil, Choke Transformer, Power
COMPONENT COMBINATIONS		
Z301, 302 Z501	Δ ERF5GEKR47N EXRFS203ZS	Component Combination, 0.47 Ω (X2) Component Combination, 0.01 μ F (X2)
Z502	Δ SVDS4VB10	Component Combination, Rectifier
FUSES		
F1	Δ XBA2C25TR0	Fuse, T2.5A (250V) P.T. Primary
F2	Δ XBA2C12TR0	Fuse, T1.2A (250V) P.T. Primary
F3, 4	Δ 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	Δ ESE37200	Switch, Voltage Adjuster
S10	Δ ESB70133	Switch, Power
VARIABLE RESISTORS		
R217, 218	EWV6LA031BF5	Volume Control, 250k Ω (B)
R221	EVHFDA505G25	Balance Control, 200k Ω (G)
R401, 402, 411, 412	EWKGA091C15	Bass & Treble Control, 100k Ω (C)
RESISTORS		
R101, 102	ERD25TJ104	Carbon, 100k Ω , 1/4W, $\pm$ 5%
R103, 104	ERD25TJ221	Carbon, 220 Ω , 1/4W, $\pm$ 5%
R105, 106	ERD25TJ823	Carbon, 82k Ω , 1/4W, $\pm$ 5%
R107, 108	ERD25TJ151	Carbon, 150 Ω , 1/4W, $\pm$ 5%
R109, 110	ERD25TJ104	Carbon, 100k Ω , 1/4W, $\pm$ 5%
R111, 112	ERD25TJ682	Carbon, 6.8k Ω , 1/4W, $\pm$ 5%
R113, 114	ERD25TJ221	Carbon, 220 Ω , 1/4W, $\pm$ 5%
R115, 116	ERD25TJ222	Carbon, 2.2k Ω , 1/4W, $\pm$ 5%
R117, 118	ERD25TJ821	Carbon, 820 Ω , 1/4W, $\pm$ 5%
R119, 120	ERD25TJ563	Carbon, 56k Ω , 1/4W, $\pm$ 5%
R121, 122	ERD25TJ563	Carbon, 56k Ω , 1/4W, $\pm$ 5%
R201, 202	ERD25TJ124	Carbon, 120k Ω , 1/4W, $\pm$ 5%
R203, 204	ERD25TJ394	Carbon, 390k Ω , 1/4W, $\pm$ 5%
R205, 206	ERD25TJ472	Carbon, 4.7k Ω , 1/4W, $\pm$ 5%
R207, 208	ERD25TJ472	Carbon, 4.7k Ω , 1/4W, $\pm$ 5%
R209, 210	ERD25TJ824	Carbon, 820k Ω , 1/4W, $\pm$ 5%
R211, 212	ERD25TJ393	Carbon, 39k Ω , 1/4W, $\pm$ 5%
R213, 214	ERD25TJ104	Carbon, 100k Ω , 1/4W, $\pm$ 5%
R215, 216	ERD25TJ824	Carbon, 820k Ω , 1/4W, $\pm$ 5%
R219, 220	ERD25TJ184	Carbon, 180k Ω , 1/4W, $\pm$ 5%
R223, 224	ERD25TJ472	Carbon, 4.7k Ω , 1/4W, $\pm$ 5%
R301, 302	ERD25TJ102	Carbon, 1k Ω , 1/4W, $\pm$ 5%
R303, 304	ERD25TJ104	Carbon, 100k Ω , 1/4W, $\pm$ 5%
R305, 306	ERD25TJ473	Carbon, 47k Ω , 1/4W, $\pm$ 5%
R307, 308	ERD25TJ473	Carbon, 47k Ω , 1/4W, $\pm$ 5%

Ref. No.	Part No.	Part Name & Description
R309, 310	ERD25TJ681	Carbon, 680 Ω , 1/4W, $\pm$ 5%
R311, 312	ERD25TJ123	Carbon, 12k Ω , 1/4W, $\pm$ 5%
R313, 314	ERD25TJ681	Carbon, 680 Ω , 1/4W, $\pm$ 5%
R317, 318	Δ ERD25FJ330	Carbon, 33 Ω , 1/4W, $\pm$ 5%
R319, 320	ERD25TJ222	Carbon, 2.2k Ω , 1/4W, $\pm$ 5%
R321, 322	Δ ERD25FJ272	Carbon, 2.7k Ω , 1/4W, $\pm$ 5%
R323, 324	Δ ERD50FJ100	Carbon, 10 Ω , 1/2W, $\pm$ 5%
R327	Δ ERD25FJ470	Carbon, 47 Ω , 1/4W, $\pm$ 5%
R328	Δ ERD50FJ332	Carbon, 3.3k Ω , 1/2W, $\pm$ 5%
R333, 334	ERG1ANJ331	Metal Oxide, 330 Ω , 1W, $\pm$ 5%
R351, 352	ERD25TJ681	Carbon, 680 Ω , 1/4W, $\pm$ 5%
R353, 354	ERD25TJ681	Carbon, 680 Ω , 1/4W, $\pm$ 5%
R355, 356	ERD25TJ102	Carbon, 1k Ω , 1/4W, $\pm$ 5%
R357, 358	ERD25TJ562	Carbon, 5.6k Ω , 1/4W, $\pm$ 5%
R359, 360	ERD25TJ123	Carbon, 12k Ω , 1/4W, $\pm$ 5%
R361, 362	ERD25TJ472	Carbon, 4.7k Ω , 1/4W, $\pm$ 5%
R363, 364	ERD25TJ821	Carbon, 820 Ω , 1/4W, $\pm$ 5%
R403, 404	ERD25TJ102	Carbon, 1k Ω , 1/4W, $\pm$ 5%
R405, 406	ERD25TJ393	Carbon, 39k Ω , 1/4W, $\pm$ 5%
R407, 408	ERD25TJ564	Carbon, 560k Ω , 1/4W, $\pm$ 5%
R409, 410	ERD25TJ273	Carbon, 27k Ω , 1/4W, $\pm$ 5%
R413, 414	ERD25TJ472	Carbon, 4.7k Ω , 1/4W, $\pm$ 5%
R415, 416	ERD25TJ562	Carbon, 5.6k Ω , 1/4W, $\pm$ 5%
R501	Δ ERD25FJ100	Carbon, 10 Ω , 1/4W, $\pm$ 5%
R502	ERG1ANJ152	Metal Oxide, 1.5k Ω , 1W, $\pm$ 5%
R503	ERD25TJ124	Carbon, 120k Ω , 1/4W, $\pm$ 5%
R504	ERD25TJ683	Carbon, 68k Ω , 1/4W, $\pm$ 5%
R505	ERD25TJ224	Carbon, 220k Ω , 1/4W, $\pm$ 5%
R506	Δ ERD25FJ101	Carbon, 100 Ω , 1/4W, $\pm$ 5%
R507	ERD25TJ333	Carbon, 33k Ω , 1/4W, $\pm$ 5%
R508	ERD25TJ471	Carbon, 470 Ω , 1/4W, $\pm$ 5%
R509	ERD25TJ222	Carbon, 2.2k Ω , 1/4W, $\pm$ 5%
R510, 511	ERG1ANJ681	Metal Oxide, 680 Ω , 1W, $\pm$ 5%
R512	Δ ERD25FJ100	Carbon, 10 Ω , 1/4W, $\pm$ 5%
R513	ERG1ANJ182	Metal Oxide, 1.8k Ω , 1W, $\pm$ 5%
R514	ERG1ANJ272	Metal Oxide, 2.7k Ω , 1W, $\pm$ 5%
CAPACITORS		
C1, 2	Δ ECKDHS103SE2	Ceramic, 0.01 μ F, 400VAC, $\pm$ 50%
C101, 102	ECEA50M3R3R	Electrolytic, 3.3 μ F, 50V
C103, 104	ECCD1H121K	Ceramic, 120pF, 50V, $\pm$ 10%
C105, 106	ECEA1AS101	Electrolytic, 100 μ F, 10V
C107, 108	ECKD1H471KB	Ceramic, 470pF, 50V, $\pm$ 10%
C109, 110	ECQM1H393JZ	Polyester, 0.039 μ F, 50V, $\pm$ 5%
C111, 112	ECQM1H103JZ	Polyester, 0.01 μ F, 50V, $\pm$ 5%
C113, 114	ECQM1H102KZ	Polyester, 0.001 μ F, 50V, $\pm$ 5%
C115, 116	Δ ECEA50NR47	Non-Polar Electrolytic, 0.47 μ F, 50V
C117, 118	ECKD1H222MD	Ceramic, 0.0022 μ F, 50V, $\pm$ 20%
C119, 120	ECQM1H122KZ	Polyester, 0.0012 μ F, 50V, $\pm$ 10%
C201, 202	ECCD1H101K	Ceramic, 100pF, 50V, $\pm$ 10%
C203, 204	ECQM1H392KZ	Polyester, 0.0039 μ F, 50V, $\pm$ 10%
C205, 206	ECQM1H473KZ	Polyester, 0.047 μ F, 50V, $\pm$ 10%
C207, 208	ECQM1H473KZ	Polyester, 0.047 μ F, 50V, $\pm$ 10%
C301, 302	ECEA50Z1	Electrolytic, 1 μ F, 50V
C303, 304	ECCD1H390K	Ceramic, 39pF, 50V, $\pm$ 10%
C305, 306	ECCD1H101K	Ceramic, 100pF, 50V, $\pm$ 10%
C307, 308	ECEA50Z3R3	Electrolytic, 3.3 μ F, 50V
C309, 310	ECEA1ES220	Electrolytic, 22 μ F, 25V
C311, 312	ECCD2H560K	Ceramic, 56pF, 500V, $\pm$ 10%
C313, 314	ECCD1H030C	Ceramic, 3pF, 50V, $\pm$ 0.25pF
C315, 316	ECCD1H181K	Ceramic, 180pF, 50V, $\pm$ 10%
C317, 318	ECKD1H681KB	Ceramic, 680pF, 50V, $\pm$ 10%
C319, 320	ECCD2H101K	Ceramic, 100pF, 500V, $\pm$ 10%
C321, 322	ECKD1H103MD	Ceramic, 0.01 μ F, 50V, $\pm$ 20%
C323, 324	ECCD2H101K	Ceramic, 100pF, 500V, $\pm$ 10%
C325, 326	ECEA1ES101	Electrolytic, 100 μ F, 25V
C327, 328	ECQM1H104KZ	Polyester, 0.1 μ F, 50V, $\pm$ 10%
C329	ECEA1ES220	Electrolytic, 22 μ F, 25V
C330	ECEA1HS101	Electrolytic, 100 μ F, 50V
C331, 332	ECQM1H823KZ	Polyester, 0.082 μ F, 50V, $\pm$ 10%
C401, 402	ECQM1H272KZ	Polyester, 0.0027 μ F, 50V, $\pm$ 10%
C403, 404	ECQM1H223KZ	Polyester, 0.022 μ F, 50V, $\pm$ 10%
C405, 406	ECQM1H123KZ	Polyester, 0.012 μ F, 50V, $\pm$ 10%
C407, 408	ECQM1H683KZ	Polyester, 0.068 μ F, 50V, $\pm$ 10%
C501, 502	ECEA1ES330	Electrolytic, 33 μ F, 50V
C503, 504	ECEA1HS330	Electrolytic, 33 μ F, 63V
C505	ECEA1HS101	Electrolytic, 100 μ F, 50V
C506, 507	ECEA1ES331	Electrolytic, 330 μ F, 25V

Ref. No.

1
23
45
67
89
1011
1213
1415
1617
1819
20 [D]20 [XE,XGH,
DG,EB]

20 [XAL]

20 [XSW]

20 [X, XA]

21
2223 [D,XGH,X
EB,DG,XSW]

23 [XE]

23 [X, XA]

23 [XAL]

- Notes:** (D) Δ
(XG)
(XG)
(EB)

■ BLO

LEFT

TUNER

PHONO

AUX

REC OUT

TAPE 1

PLAYBACK

REC OUT

TAPE 2

PLAYBACK

RIGHT

TUNER

PHONO

AUX

REC OUT

TAPE 1

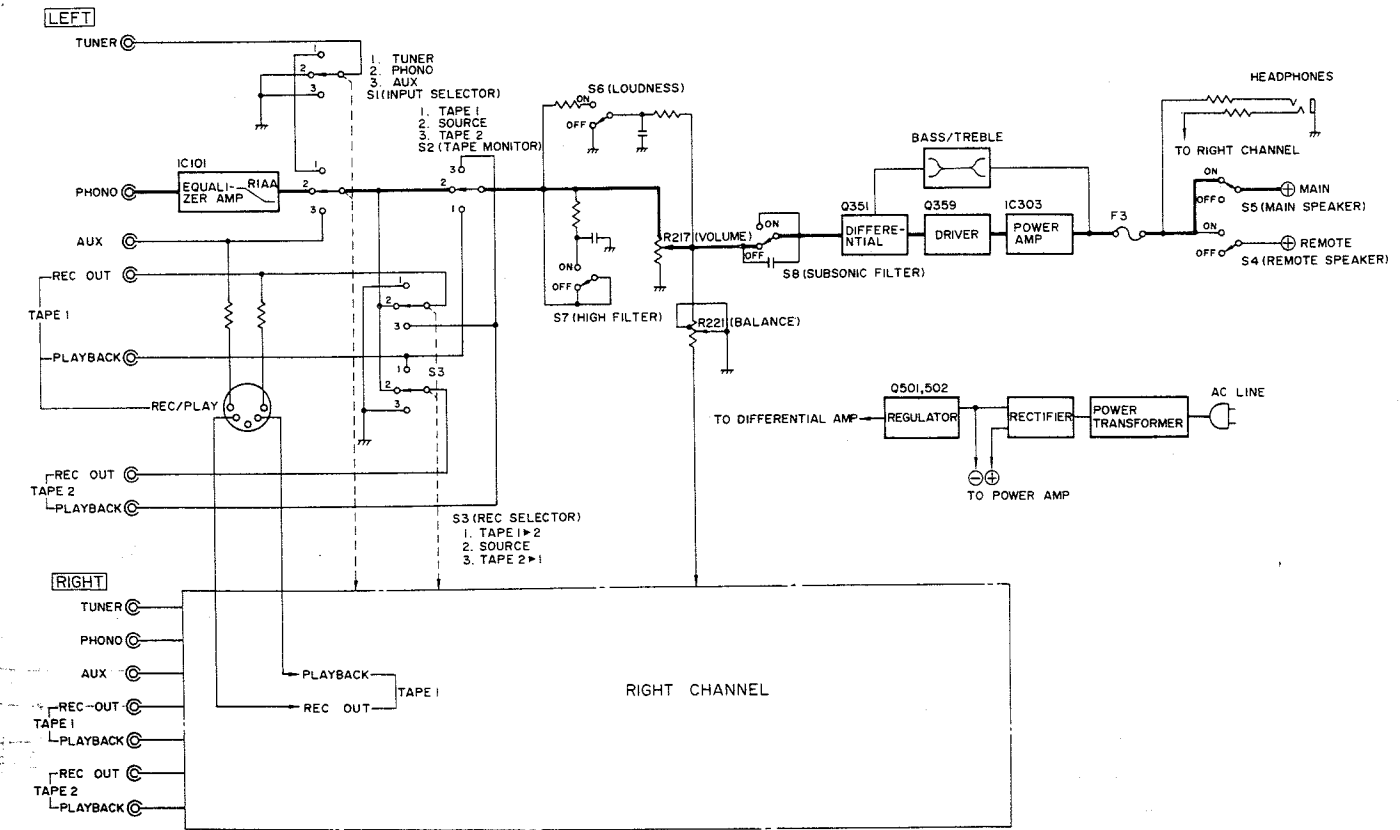
PLAYBACK

REPLACEMENT PARTS LIST Cabinet and Chassis Parts

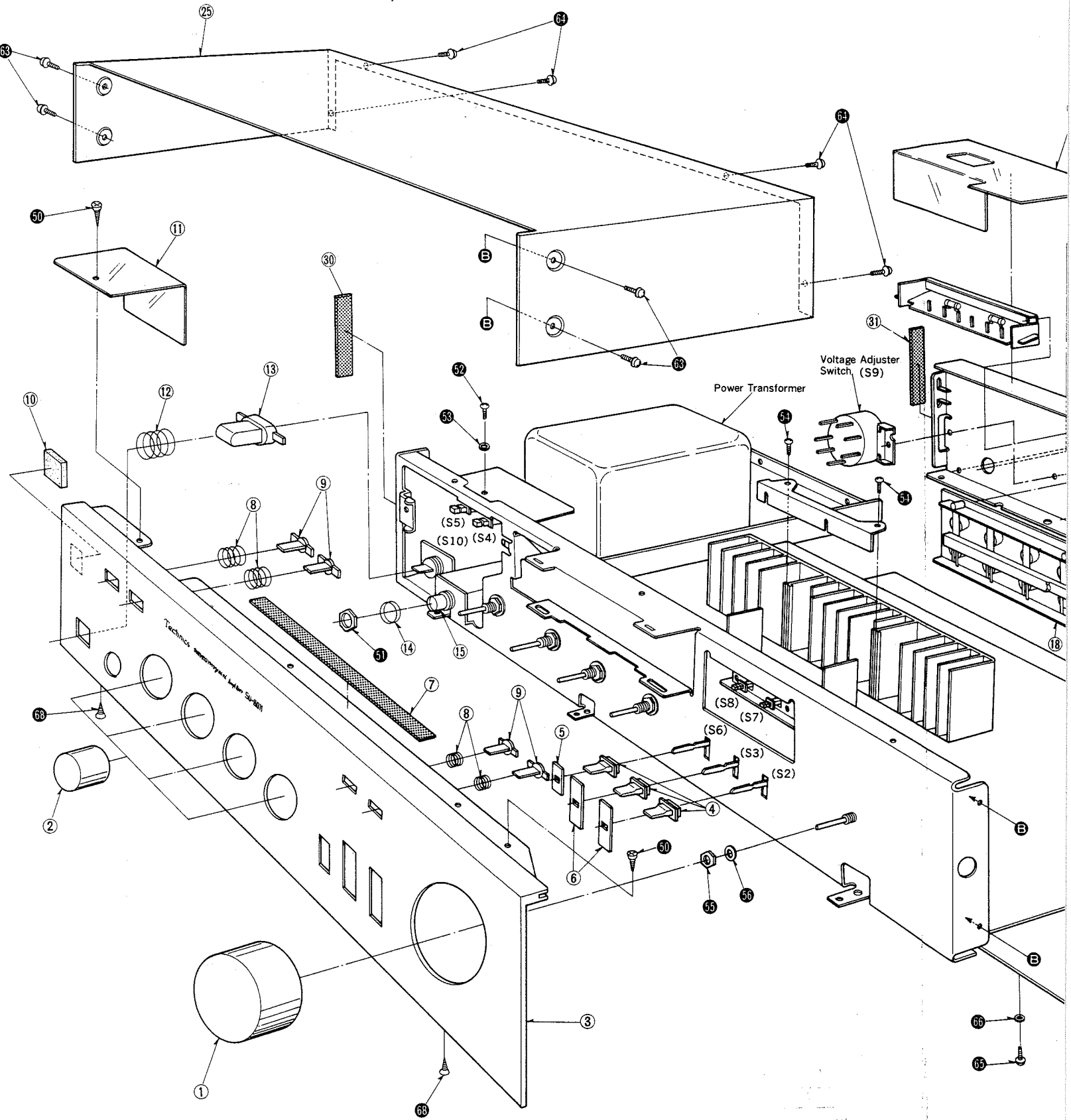
Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS					
1	SBN813	Knob, Volume Control	24	SHR127	Bushing, AC Cord
2	SBN815	Knob, Bass, Treble, Balance & Input Selector Switch	24 [XE] only	SHR129	Bushing, AC Cord
3	SGWU8022D	Panel, Front Ass'y (Silver)	24 [XAL] only	SHR131	Bushing, AC Cord
4	SBD21	Knob, Loudness, Rec Mode, Tape Monitor Switch	25	SKA10676	Cabinet
5	SHR5037	Spacer, Loudness Switch	25 [XE,XSW] only	SKAU8022E	Cabinet
6	SHR5043	Spacer, Rec Mode, Tape Monitor Switch	26	SYU199	Bottom Board
7	SHS6101-1	Fiber, Front Panel	27	SKL225	Foot, Set
8	SUS123-1	Spring, Push Switch	28 [X,XA] only	Δ SJS466-1	Socket, AC Outlet
9	SBC211	Button, High Filter, Subsonic Filter and Speakers Switch	29	SUW1101S	Bracket, DIN Terminal
10	SHR9491	Rubber Cushion, Indicator	30	SHP9283	Spacer, Side Chassis
11	SMX267	Cover, Power Switch	31	SHP9281	Spacer, Side Chassis
12	SUS145	Spring, Power Switch	SCREWS and WASHERS		
13	SBC209	Button, Power Switch	40	XTS3+8B	Screw, Front Panel M'tg
14	SNE59-1	Washer, Headphones Jack M'tg	41	XNS12	Nut, Headphones Jack M'tg
15	XCJ6P21B-A	Headphones Jack	42	XTN3+8B	Screw, Speaker Selector Switch Printed Circuit Board M'tg
16	ESA338	Remote Switch, Input Selector	43	XWG3	Washer, Speaker Selector Switch Printed Circuit Board Screw
17	SJF3029	Terminal, Input	44	XTB3+8BFZ	Screw, Heat Sink Bracket M'tg
18	SJF8013-1	Terminal, Speakers	45	XNS8	Nut, Volume, Selector, Balance, Treble & Bass M'tg
19	SJS6803	Terminal, DIN	46	XWV8	Washer, Volume, Selector, Balance, Treble & Bass Nut
20 [D]	SGP1790A	Rear Panel	47	XTB3+8BFZ	Screw, Terminals, Fuse Cover and Power Fuses Printed Circuit Board M'tg
20 [XE,XGH,XGF,DG,EB]	SGPU8022D	Rear Panel, SGP1790A with Name Plate (SGT20010)	48	XTB3+8BFZ	Screw, Rear Panel M'tg
20 [XAL]	SGPU8022L	Rear Panel, SGP1790-2A with Name Plate (SGT20030)	49	XWC3B	Washer, Rear Panel Screw
20 [XSW]	SGPU8022W	Rear Panel, SGP1790A with Name Plate (SGT20050)	50	XSN3+6BVS	Screw, Voltage Adjuster Switch DIN Terminal Bracket M'tg
20 [X,XA]	SGP1790-1A	Rear Panel	51	XWA3BFZ	Washer, Voltage Adjuster Switch DIN Terminal Bracket Screw
21	SUV337	Cover, Speaker Terminal	52	XTB4+8FFN	Screw, Cabinet M'tg
22	SMX269	Cover, Power Fuses	53	XTB3+8BFN	Screw, Cabinet M'tg
23 [D,XGH,XGF,EB,DG,XSW]	Δ RJA23ZC	AC Cord, with Plug	54	XTN3+10B	Screw, Bottom Board M'tg
23 [XE]	Δ RJA45ZC	AC Cord	55	XWG3	Washer, Bottom Board Screw
23 [X,XA]	Δ SJA111	AC Cord, with Plug	56	XTB3+12BFZ	Screw, Set Feet M'tg
23 [XAL]	Δ QFC1207M	AC Cord, with Plug	57	XTB3+8B	Screw, Front Panel M'tg

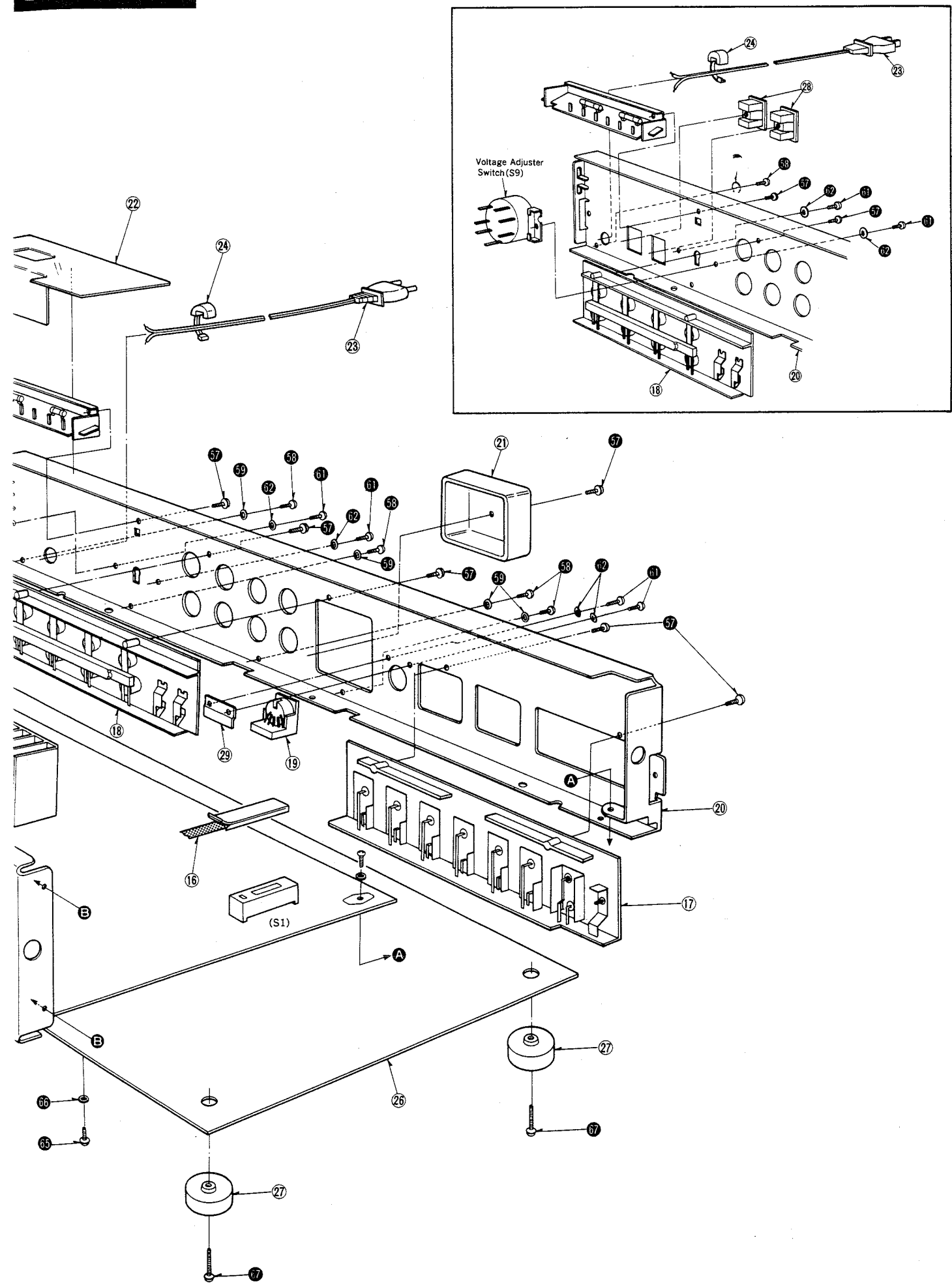
Notes: (D) and (DG) are available in Scandinavia and European only. (XE) is available in United Kingdom only. (XGH) is available in Holland only. (XSW) is available in Switzerland only. (XGF) is available in France only. (X) and (XA) are available in Asia, Latin America, Middle East and Africa only.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

BLOCK DIAGRAM



EXPLODED VIEW



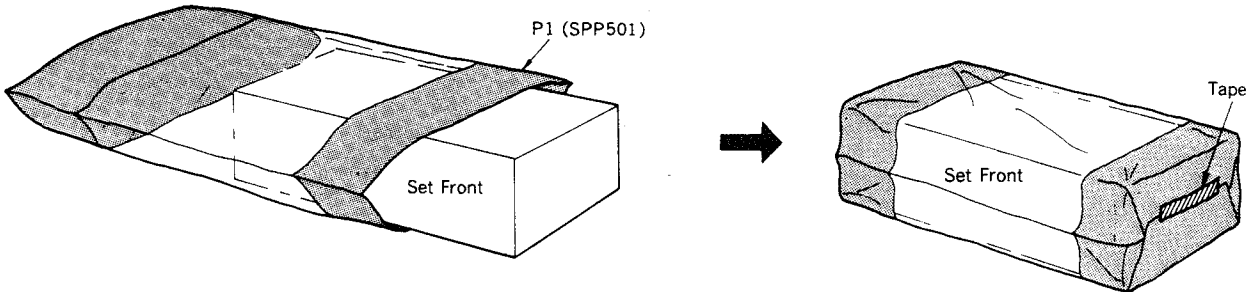


■ REPLACEMENT PARTS LIST Accessories and Packing Parts

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
ACCESSORIES					
A1	XBA2C25SS0	Fuse, 2.5A (250V) Speaker Circuit	P4	SPS2181	Pad, Top Side
A2 [X, XA] only	SJP5213-1	Plug Adapter, AC Power	P5 [D]	SPG2077	Carton Box
A3 [X, XA] only	SJP5215	Plug Adapter, AC Power	P5 [XE, XGH, EB, DG, XSW]	SPG2079	Carton Box
PACKING PARTS					
P1	SPP501	Polyethylene Bag	P5 [X, XA]	SPG2081	Carton Box
P2	SPS2177	Pad, Left Side	P5 [XAL]	SPG2083	Carton Box
P2 [XAL] only	SPS2177-1	Pad, Left Side	P5 [XGF]	SPG2087	Carton Box
P3	SPS2179	Pad, Right Side	P6 [D, XGH, XGF, EB, DG, XSW]	SQF 10199	Instructions Book, Printed Matter
P3 [XAL] only	SPS2179-1	Pad, Right Side	P6 [XE, X, XA, XAL]	SQF 10201	Instructions Book, Printed Matter

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■ PACKINGS



■ ACCESSORIES

