

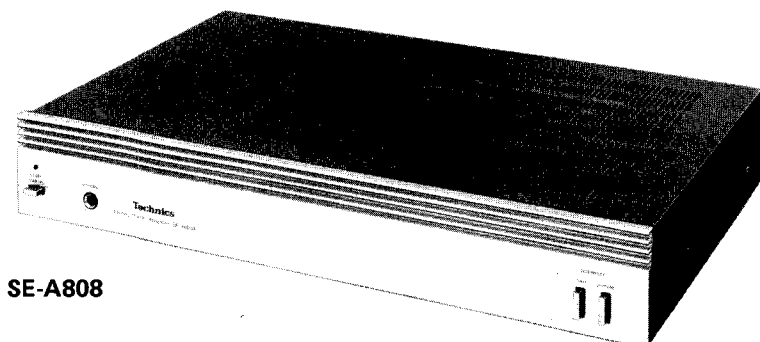
Service Manual

Stereo Power Amplifier

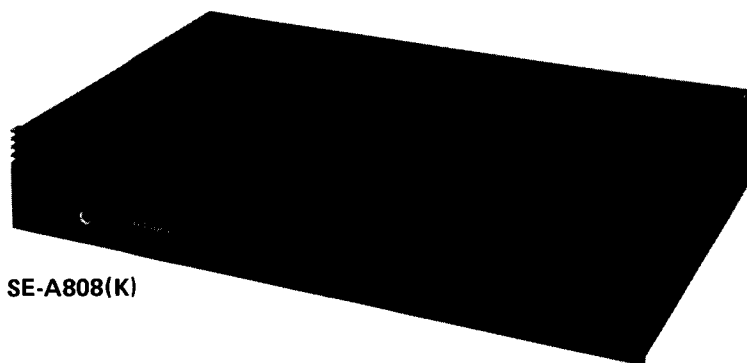
SE-A808

(DX), (DG), (DM), (EB), (XE),
(XSW), (XGH), (XGF), (XA)

SE-A808(K)

(DX), (DG), (DM), (EB),
(XSW), (XGH)

SE-A808



SE-A808(K)

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

Areas

- * (DX) is available in Scandinavia except Denmark and European.
- * (DG) is available in Scandinavia and European except Switzerland.
- * (DM) is available in Denmark.
- * (EB) is available in Belgium.
- * (XE) is available in United Kingdom.
- * (XSW) is available in Switzerland.
- * (XGH) is available in Holland.
- * (XGF) is available in France.
- * (XA) is available in Asia, Latin America, Middle East and Africa.

TECHNICAL 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 × 40 W (4Ω)
	2 × 40 W (8Ω)
	90 W (BTL, 8Ω)
40 Hz~16 kHz continuous power output both channels driven	2 × 40 W (4Ω)
	2 × 40 W (8Ω)
	90 W (BTL, 8Ω)
1 kHz continuous power output both channels driven	2 × 50 W (4Ω)
	2 × 45 W (8Ω)
	100 W (BTL, 8Ω)
Total harmonic distortion rated power at 20 Hz~20 kHz	0.03% (4Ω)
	0.02% (8Ω)
rated power at 40 Hz~16 kHz	0.03% (4Ω)
	0.02% (8Ω)
rated power at 1 kHz	0.03% (4Ω)
	0.02% (8Ω)
half power at 20 Hz~20 kHz	0.02% (4Ω)
	0.01% (8Ω)
half power at 1 kHz	0.009% (4Ω)
	0.006% (8Ω)
-26 dB power at 1 kHz	0.03% (4Ω)
	0.05% (4Ω)

Intermodulation distortion

rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.03%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.02%

Power bandwidth

both channels driven, -3 dB	5 Hz~45 kHz (4Ω)
	5 Hz~45 kHz (8Ω)

Residual hum and noise

0,5 mV

Damping factor

16 (4Ω), 32 (8Ω)

Input sensitivity and impedance

500 mV/47kΩ

S/N

100 dB (108 dB, IHF, A)

Frequency response

(20 Hz~20 kHz) +0 dB, -0.2 dB
(-1 dB) 5 Hz~60 kHz

Channel balance, 250 Hz~6,300 Hz

±0.5 dB

Channel separation, 1 kHz

60 dB

Headphones output level and impedance

400mV/330Ω

Load impedance

MAIN or REMOTE	4Ω~16Ω
MAIN and REMOTE	8Ω~16Ω
BTL, MAIN or REMOTE	8Ω~16Ω

GENERAL

Power consumption	460 W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 75 × 280 mm
Weight	6.8 kg

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

Dauerleistung-Ausgangsleistung bei 20 Hz ~ 20 kHz	
beide Kanäle angesteuert	2 × 40 W (4 Ω) 2 × 40 W (8 Ω) 90 W (BTL, 8 Ω)
Dauerleistung-Ausgangsleistung bei 40 Hz ~ 16 kHz	
beide Kanäle angesteuert	2 × 40 W (4 Ω) 2 × 40 W (8 Ω) 90 W (BTL, 8 Ω)
Dauerleistung-Ausgangsleistung bei 1 kHz	
beide Kanäle angesteuert	2 × 50 W (4 Ω) 2 × 45 W (8 Ω) 100 W (BTL, 8 Ω)
Gesamtklirrfaktor	
Nennleistung bei 20 Hz ~ 20 kHz	0,03% (4 Ω) 0,02% (8 Ω)
Nennleistung bei 40 Hz ~ 16 kHz	0,03% (4 Ω) 0,02% (8 Ω)
Nennleistung bei 1 kHz	0,03% (4 Ω) 0,02% (8 Ω)
halbe Nennleistung bei 20 Hz ~ 20 kHz	0,02% (4 Ω) 0,01% (8 Ω)
halbe Nennleistung bei 1 kHz	0,009% (4 Ω) 0,006% (8 Ω)
-26 dB Leistung bei 1 kHz	0,03% (4 Ω)
50 mW Leistung bei 1 kHz	0,05% (4 Ω)

Intermodulationsfaktor

Nennleistung bei 250 Hz: 8 kHz = 4:1, 4 Ω	0,03%
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω	0,02%

Leistungsbandbreite

beide Kanäle angesteuert bei -3 dB	5 Hz ~ 45 kHz (4 Ω) 5 Hz ~ 45 kHz (8 Ω)
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Restbrumm und Geräusch

Dämpfungsfaktor	16 (4 Ω), 32 (8 Ω)
Eingangsempfindlichkeit und -impedanz	500 mV/47 kΩ
Geräuschabstand	100 dB (108 dB nach IHF, A)
Frequenzgang	(20 Hz ~ 20 kHz) +0 dB, -0,2 dB (-1 dB) 5 Hz ~ 60 kHz

Kanalabweichung (250 Hz ~ 6300 Hz)

Übersprechdämpfung (1 kHz)	±0,5 dB 60 dB
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Kopfhörerpegel und -impedanz

Lautsprecherimpedanz	400 mV/330 Ω
MAIN oder REMOTE	4 Ω ~ 16 Ω
MAIN und REMOTE	8 Ω ~ 16 Ω
BTL, MAIN oder REMOTE	8 Ω ~ 16 Ω

ALLGEMEINE DATEN

Leistungsaufnahme	460 W
Netzspannung	Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Abmessungen (B×H×T)	430 × 75 × 280 mm
Gewicht	6,8 kg

CARACTERISTIQUES TECHIQUES

Sujet à changement sans préavis.

[DIN 45 500]

SECTION AMPLIFICATEUR

Puissance de sortie continue de 20 Hz~20 kHz,	
les deux canaux en circuit	2 × 40W (4Ω) 2 × 40W (8Ω) 90W (BTL, 8Ω)
Puissance de sortie continue de 40 Hz~16 kHz,	
les deux canaux en circuit	2 × 40W (4Ω) 2 × 40W (8Ω) 90W (BTL, 8Ω)
Puissance de sortie continue à 1 kHz	
les deux canaux en circuit	2 × 50W (4Ω) 2 × 45W (8Ω) 100W (BTL, 8Ω)
Distorsion harmonique totale	
à puissance nominale (20 Hz~20 kHz)	0,03% (4Ω) 0,02% (8Ω)
à puissance nominale (40 Hz~16 kHz)	0,03% (4Ω) 0,02% (8Ω)
à puissance nominale (1 kHz)	0,03% (4Ω) 0,02% (8Ω)
à demi-puissance (20 Hz~20 kHz)	0,02% (4Ω) 0,01% (8Ω)
à demi-puissance (1 kHz)	0,009% (4Ω) 0,006% (8Ω)
puissance de -26 dB à 1 kHz	0,03% (4Ω)
puissance de 50 mW à 1 kHz	0,05% (4Ω)

Distorsion d'intermodulation

à puissance nominale à 250 Hz: 8 kHz=4:1, 4Ω	0,03%
à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0,02%

Réponse de fréquences

les deux canaux en circuit, -3 dB	5 Hz~45 kHz (4Ω) 5 Hz~45 kHz (8Ω)
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Bruit et ronflement résiduels

Coefficient d'amortissement	16 (4Ω), 32 (8Ω)
Sensibilité et impédance d'entrée	500 mV/47kΩ
Signal/Bruit	100 dB (108 dB, IHF, A)
Réponse de fréquence	(20 Hz~20 kHz) + 0 dB, -0,2 dB (-1 dB) 5 Hz~60 kHz

Equilibrage des canaux, 250 Hz~6,300 Hz

Séparation des canaux, 1 kHz	±0,5 dB 60 dB
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Niveau de sortie des casques et impédance

Impédance de charge	400 mV/330Ω
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PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE)

	4Ω~16Ω
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PRINCIPALE et AUXILIAIRE (MAIN and REMOTE)

	8Ω~16Ω
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BTL, PRINCIPALE ou AUXILIAIRE

(BTL, MAIN or REMOTE)	8Ω~16Ω
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DIVERS

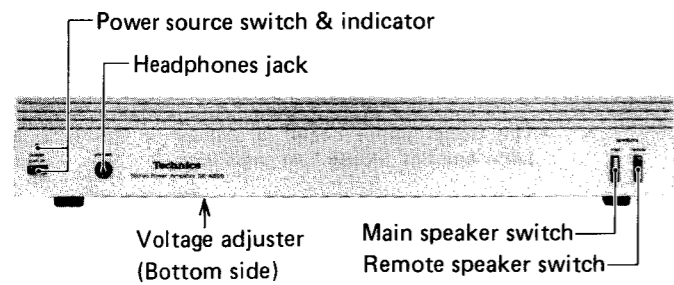
Consommation	460W
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr)	430 × 75 × 280 mm
Poids	6,8 kg

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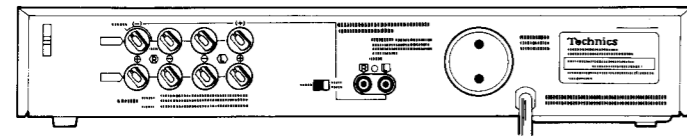
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LOCATION OF CONTROLS

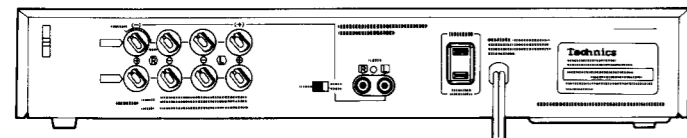
Front panel view



This figure is available in (DM) (for Denmark)

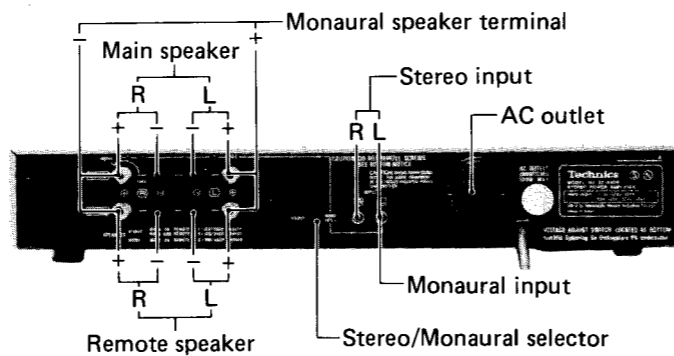


This figure is available in (XA) (for Asia, Latin America, Middle East and Africa)

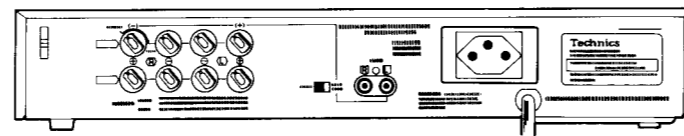


Rear panel view

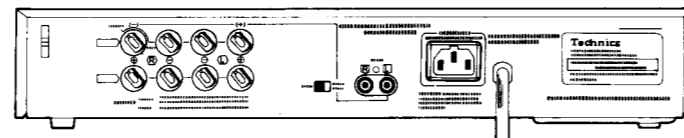
This Photo is available in (DX, DG, EB, XGH) and (XGF)



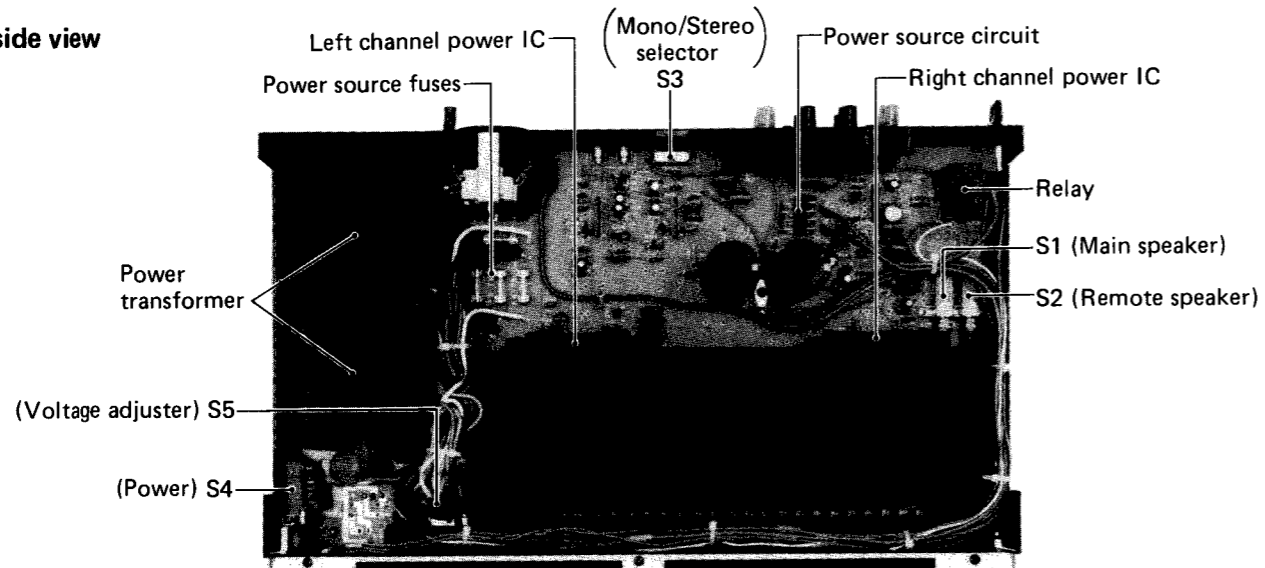
This figure is available in (XSW) (for Switzerland)



This figure is available in (XE) (for United Kingdom)



Inside view



TO REMOVE THE PRINTED CIRCUIT BOARD

1. Remove the 2 setscrews on each side of the set to detach the cabinet.
2. Remove the latch which secures the input terminal on the rear panel, and the 2 setscrews (1, 2 in Fig. 2) which fasten the speaker terminal.
3. Remove the setscrew (3) used to secure the printed circuit board.
4. Remove the setscrews (4 ~ 6) which fasten the heat sink.
5. Cut off the lead clamp (SHR301) shown in Fig. 1.
6. Remove the 6 setscrews to detach the front panel as shown in Fig. 2.
7. Pull out the two connecting rods of the push-switch from the chassis.
8. Raise the printed circuit board up to a right angle to the chassis as shown in Fig. 3.

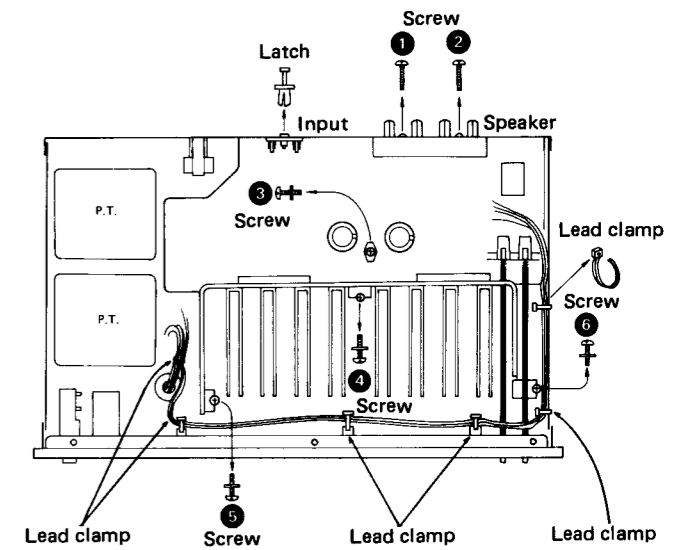


Fig. 1

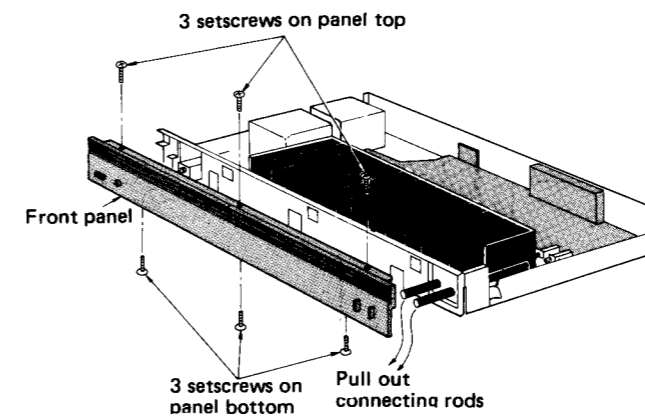


Fig. 2

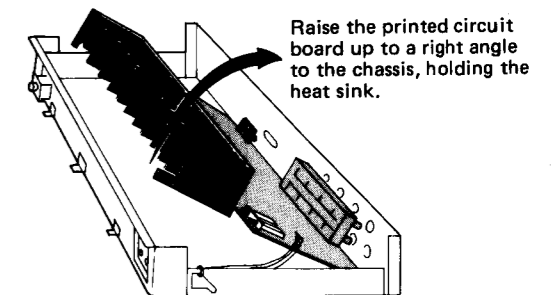
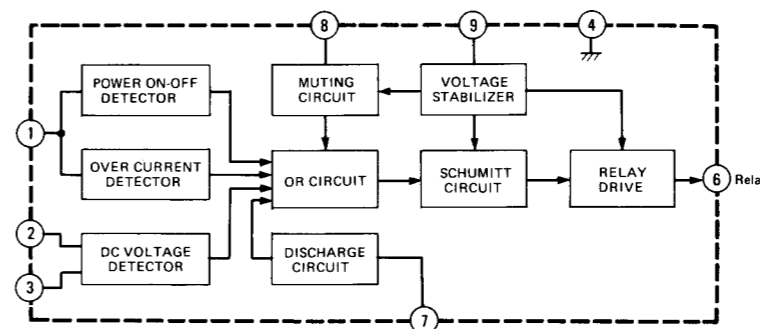


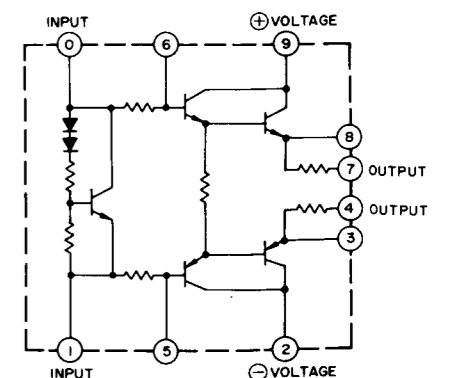
Fig. 3

BLOCK DIAGRAM OF IC'S

IC301 (SVITA7317P) Muting and relay drive circuit

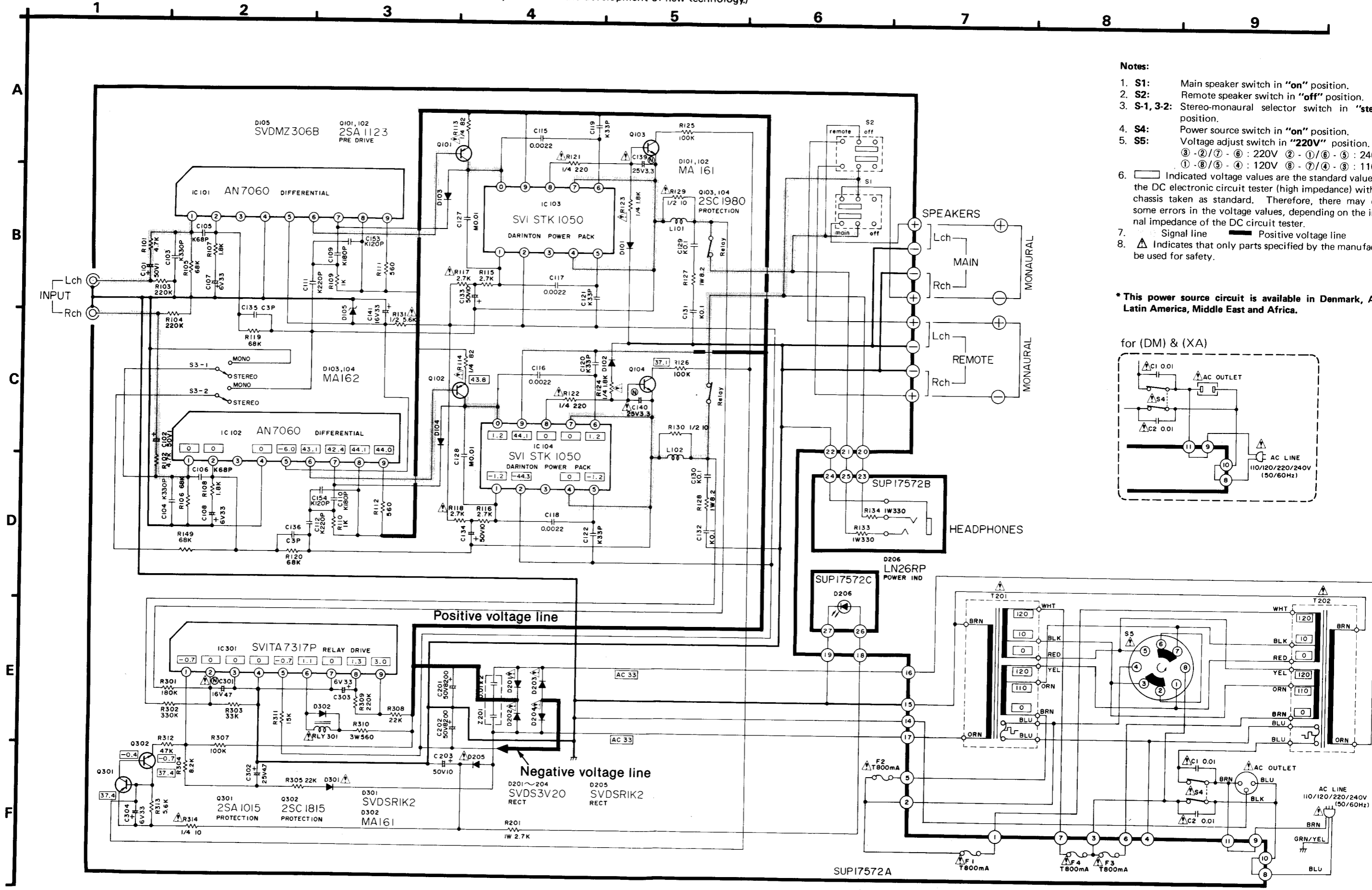


IC103, 104 (SVISTK1050) Darlington power amplifier



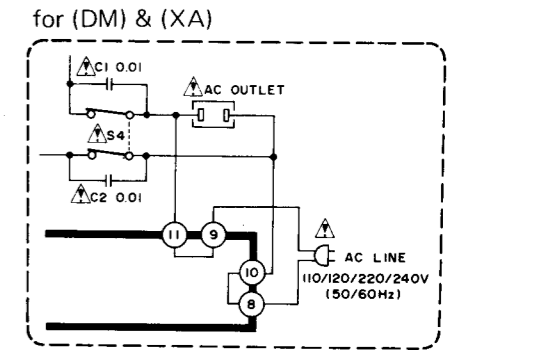
SCHEMATIC DIAGRAM

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



- Notes:**
- S1:** Main speaker switch in "on" position.
 - S2:** Remote speaker switch in "off" position.
 - S-1, 3-2:** Stereo-mono selector switch in "stereo" position.
 - S4:** Power source switch in "on" position.
 - S5:** Voltage adjust switch in "220V" position.
 ③ - ②/⑦ - ⑥ : 220V ② - ①/⑥ - ⑤ : 240V
 ① - ⑧/⑤ - ④ : 120V ⑧ - ⑦/④ - ③ : 110V
 - 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.
 - Signal line Positive voltage line
 - Indicates that only parts specified by the manufacturer be used for safety.

* This power source circuit is available in Denmark, Asia, Latin America, Middle East and Africa.

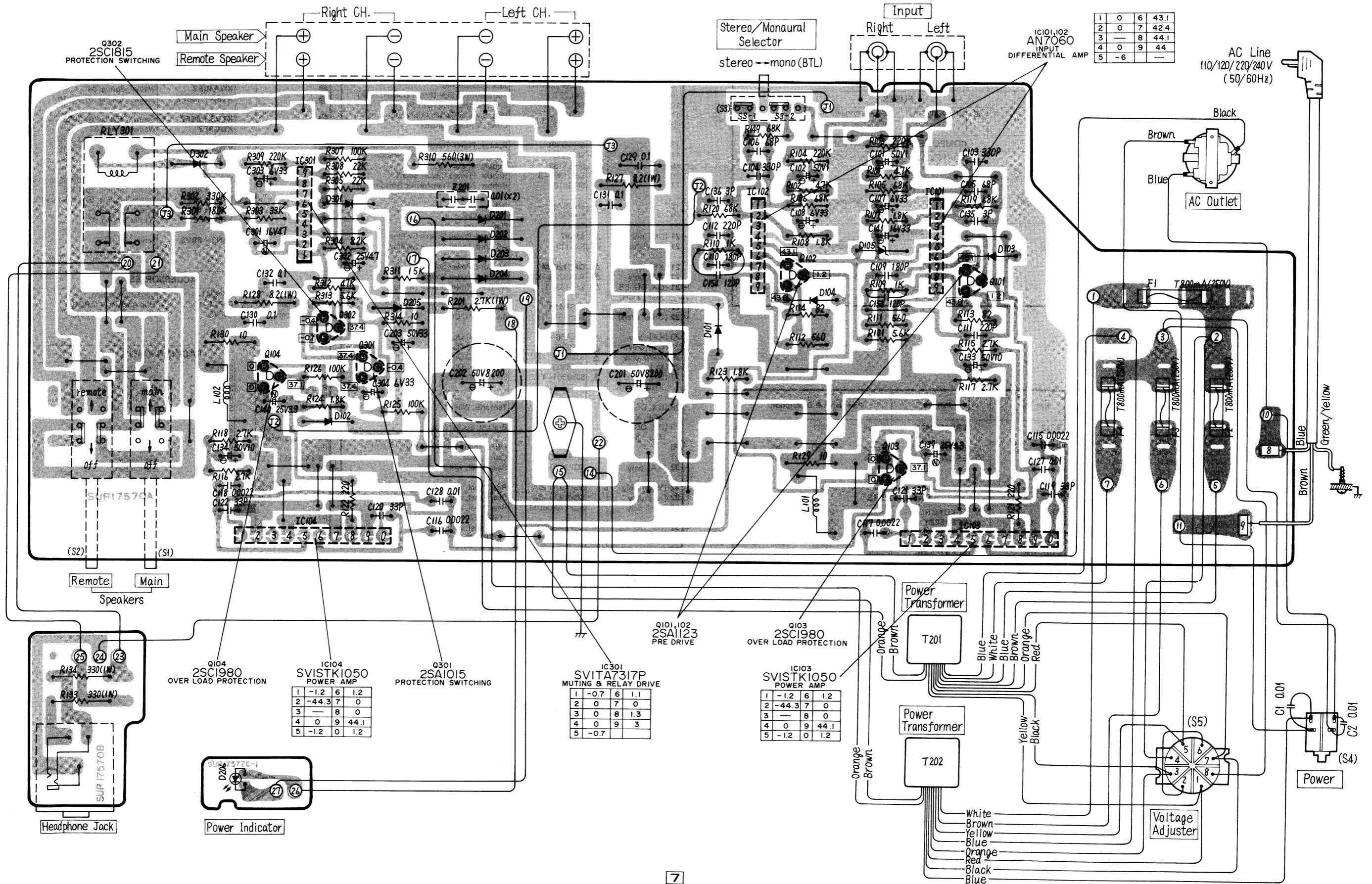


PRINTED CIRCUIT BOARD WIRING VIEW

Earth (Ground) lines

Terminal guide of Transistor and IC

2SA1015 2SC1815	2SA1123 2SC1980	AN7060	SVITA7317P	SVISTK1050	LN26RP



1	0	6	43.1
2	0	7	42.4
3	-	8	44.1
4	0	9	44
5	-6	-	-

1	-1.2	6	1.2	
2	-4.4	3	7	0
3	-	8	0	1.3
4	0	9	44.1	3
5	-1.2	0	1.2	

1	-0.7	6	1.1
2	0	7	0
3	0	8	1.3
4	0	9	3
5	-0.7		

1	-1.2	6	1.2	
2	-4.4	3	7	0
3	-	8	0	1.3
4	0	9	44.1	3
5	-1.2	0	1.2	

REPLACEMENT PARTS LIST

- Notes: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2. Δ indicates that only parts specified by the manufacturer be used for safety.
3. The \square -marked part are used only for the set based on the black type, and the other part are used in both silver and black type.

Black type model No. : SE-A808 (K)

Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC101, 102 IC103, 104 IC301	AN7060F SVISTK1050K SVITA7317P	IC, Input Amplifier IC, Power Amplifier IC, Muting & Relay Drive
TRANSISTORS		
Q101, 102	2SA1123-R	Transistor, Pre-Drive Amplifier (Use in ranks R, S or T)
Q103, 104	2SC1980-T	Transistor, Over load Protection (Use in ranks R, S or T)
Q301	2SA1015-O	Transistor, Over load Protection (Use in ranks Y or O)
Q302	2SC1815-O	Transistor, Over load Protection (Use in ranks Y or O)
DIODES		
D101, 102, 302 D103, 104 D105	MA162A MA162A SVDMZ306B	Diode, Thermal Compensation Diode Diode, 6V Zener
D201 ~ 204 D205, 301	Δ SVDS3V40 Δ SVDSR1K2	Rectifier Rectifier
D206	LN26RP	Light Emitting Diode, Power Indicator

Ref. No.	Part No.	Part Name & Description
COILS and TRANSFORMERS		
L101, 102 T201, 202	SLQY15G-3U Δ SLT5M113	Coil, Output Transformer, Power Source
FUSES		
F1 ~ 4	Δ XBA2C08TRO	Fuse, T800mA(250V)
COMPONENT COMBINATION		
Z201	Δ EXRFS203ZS	Component Combination, 0.01 μ F(x2)
RELAY		
RELAY301	Δ SSY69	Relay, Speaker Protection
SWITCHES		
S1, 2 S3 S4 S5	SSH271 ESD7025 SSH119 Δ ESE37200	Switch, Speaker Switch, Balanced Transformer Less Switch, Power Switch, Voltage Adjuster

Resistors and Capacitors

Ref. No.	Part No.	Part Name & Description
RESISTORS		
R101, 102 R103, 104 R105, 106 R107, 108 R109, 110	ERD25FJ472 ERD25TJ224 ERD25TJ683 ERD25FJ182 ERD25FJ102	Carbon, 4.7k Ω , 1/4W, \pm 5% Carbon, 220k Ω , 1/4W, \pm 5% Carbon, 68k Ω , 1/4W, \pm 5% Carbon, 1.8k Ω , 1/4W, \pm 5% Carbon, 1k Ω , 1/4W, \pm 5%
R111, 112 R113, 114 R115, 116 R117, 118 R119, 120	Δ ERD25FJ561 ERD25FJ820 ERD25FJ272 Δ ERD2FCG272 ERD25TJ683	Carbon, 560 Ω , 1/4W, \pm 5% Carbon, 82 Ω , 1/4W, \pm 5% Carbon, 2.7k Ω , 1/4W, \pm 5% Fuse Type Carbon, 2.7k Ω , 1/4W, \pm 2% Carbon, 68k Ω , 1/4W, \pm 5%
R121, 122 R123, 124 R125, 126 R127, 128 R129, 130	Δ ERD2FCG221 Δ ERD25FJ182 ERD25TJ104 ERX1ANJ8R2 Δ ERD50FJ100	Fuse Type Carbon, 220 Ω , 1/4W, \pm 2% Carbon, 1.8k Ω , 1/4W, \pm 5% Carbon, 100k Ω , 1/4W, \pm 5% Metal Film, 8.2 Ω , 1W, \pm 5% Carbon, 10 Ω , 1/2W, \pm 5%
R131 R133, 134 R149 R201 R301	Δ ERD50FJ562 ERG1ANJ331 ERD25TJ683 ERG1ANJ272 ERD25TJ184	Carbon, 5.6k Ω , 1/2W, \pm 5% Metal Oxide, 330 Ω , 1W, \pm 5% Carbon, 68k Ω , 1/4W, \pm 5% Metal Oxide, 2.7k Ω , 1W, \pm 5% Carbon, 180k Ω , 1/4W, \pm 5%
R302 R303 R304 R305 R307	ERD25TJ334 ERD25TJ333 ERD25FJ822 ERD25TJ223 ERD25TJ104	Carbon, 330k Ω , 1/4W, \pm 5% Carbon, 33k Ω , 1/4W, \pm 5% Carbon, 8.2k Ω , 1/4W, \pm 5% Carbon, 22k Ω , 1/4W, \pm 5% Carbon, 100k Ω , 1/4W, \pm 5%
R308 R309 R310 R311	ERD25TJ223 ERD25TJ224 ERG3ANJ561 ERD25TJ153	Carbon, 22k Ω , 1/4W, \pm 5% Carbon, 220k Ω , 1/4W, \pm 5% Metal Oxide, 560 Ω , 3W, \pm 5% Carbon, 15k Ω , 1/4W, \pm 5%

Ref. No.	Part No.	Part Name & Description
R312 R313 R314	ERD25TJ473 Δ ERD25FJ562 ERD2FCG100	Carbon, 47k Ω , 1/4W, \pm 5% Carbon, 5.6k Ω , 1/4W, \pm 5% Carbon, 10 Ω , 1/4W, \pm 2%
CAPACITORS		
C1, 2 C101, 102 C103, 104 C105, 106 C107, 108	Δ ECKDKC103PF ECEA50Z1 ECKD1H331KB ECCD1H680K ECEA1CS330	Ceramic, 0.01 μ F, 400VAC, \pm 10% Electrolytic, 1 μ F, 50V Ceramic, 330pF, 50V, \pm 10% Ceramic, 68pF, 50V, \pm 10% Electrolytic, 33 μ F, 16V
C109, 110 C111, 112 C115, 116 C117, 118 C119, 120	ECCD1H181K ECCD1H221K ECKD1H222MD ECKD1H222MD ECCD2H330K	Ceramic, 180pF, 50V, \pm 10% Ceramic, 220pF, 50V, \pm 10% Ceramic, 0.0022 μ F, 50V, \pm 20% Ceramic, 0.0022 μ F, 50V, \pm 20% Ceramic, 33pF, 500V, \pm 10%
C121, 122 C127, 128 C129, 130 C131, 132 C133, 134 C135, 136 C139, 140 C141 C153, 154	ECCD2H330K ECKD1H103MD ECQM1H104KZ ECQM1H104KZ ECEA1HS100 ECCD1H030C Δ ECEA25N3R3 ECEA1CS330 ECCD1H121K	Ceramic, 33pF, 500V, \pm 10% Ceramic, 0.01 μ F, 50V, \pm 20% Polyester, 0.1 μ F, 50V, \pm 10% Polyester, 0.1 μ F, 50V, \pm 10% Electrolytic, 10 μ F, 50V Ceramic, 3pF, 50V, \pm 0.25pF Non-Polar Electrolytic, 3.3 μ F, 25V Electrolytic, 33 μ F, 16V Ceramic, 120pF, 50V, \pm 10%
C201, 202 C203 C301 C302 C303, 304	ECETS1HV822U Δ ECEA1JS330 ECEA16N47 ECEA25Z4R7 ECEA1CS330	Electrolytic, 8200 μ F, 50V Electrolytic, 33 μ F, 63V Non-Polar Electrolytic, 47 μ F, 16V Electrolytic, 4.7 μ F, 25V Electrolytic, 33 μ F, 16V

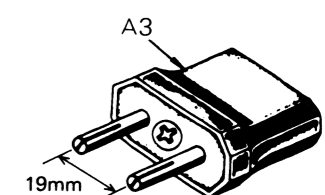
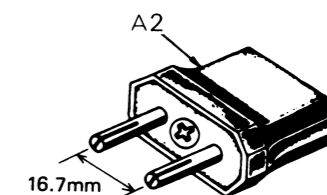
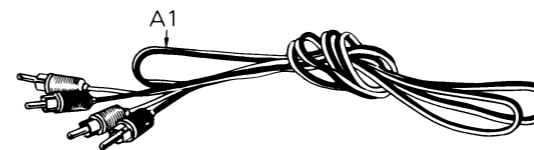
Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
1	SYW241	Panel, Front Assy
2	\square SYW243	Panel, Front Assy (Black)
3	-SHS2437	Fiber, Front Panel
3	TBY13307	Button, Power Switch
4	SBC265	Button, Power Switch (Black)
4	SUS159	Spring, Push Button
5	SBC241	Button, Speaker Switch
5	-SBC241-1	Button, Speaker Switch (Black)
6	XNS12	Nut, Headphones Jack M'tg
6	SNE59-1	Washer, Headphones Jack
8	XCJ6P21B-A1	Jack, Headphones
9	SKL227	Foot, Bottom Side (Front & Right Rear)
10	SKL229-1	Foot, Bottom Side (Left Rear)
11	SUB37	Rod, Speaker Switch Connection
12	SUV453	Cover, Voltage Adjuster
13	SHG6049	Rubber, Power Transformer Top Side
14	SHG6087	Rubber, Power Transformer Bracket
15	SHG1189	Rubber, Chassis
16	SHG1367-3	Rubber, Printed Circuit Board
17	SHG6101	Rubber, Power Transformer Bottom Side
18	SHG679	Rubber, Chassis
19	SHR301	Clamp, Wire
20	SMX319	Plate, Power Switch Cover
21 [DM] only	Δ SJA97	AC Cord, Power Source (w/Plug)
21 [XSW] only	Δ SJA119	AC Cord, Power Source (w/Plug)
21 [XE] only	Δ QFC1206M	AC Cord, Power Source
21 [XA] only	Δ RJA52ZB-K	AC Cord, Power Source (w/Plug)
21 [DX, DG, EB, XGF, XGH]	Δ SJA103-1	AC Cord, Power Source (w/Plug)
22 [DM] only	SFSR4N4	Bushing, AC Cord
22 [Other Arers]	SHR131	Bushing, AC Cord
23 [XA] only	Δ SJA566-2	Socket, AC Outlet
24 [DM] only	Δ SJS9305	Socket, AC Outlet
25 [XSW] only	Δ SJS9307	Socket, AC Outlet
26 [XE] only	Δ SJS9303	Socket, AC Outlet
27 [DX, DG, EB, XGF, XGH]	Δ SJS9301-1	Socket, AC Outlet
28 [DX, DG, EB, XGF, XGH]	SJT221	Terminal, Wire
29 [DX, DG, EB, XGF, XGH]	SUW1635	Bracket, Socket M'tg
30	SHR401-1	Latch, Input Terminal M'tg
31	SHR9505	Clamp, Wire
32 [XA] only	SGP1970-2A	Rear Panel, with Chassis
32 [XSW] only	SGP1970-5A	Rear Panel, with Chassis
32 [XE] only	SGP1970-6A	Rear Panel, with Chassis
32 [DM] only	SGPEA808DM	Rear Panel, with Chassis (SGP1970-4A with Name Plate SGT21230)
32 [DX, DG, EB, XGF, XGH]	SGPEA808DX	Rear Panel, with Chassis (SGP1970-3A with Name Plate SGT21250)

Areas

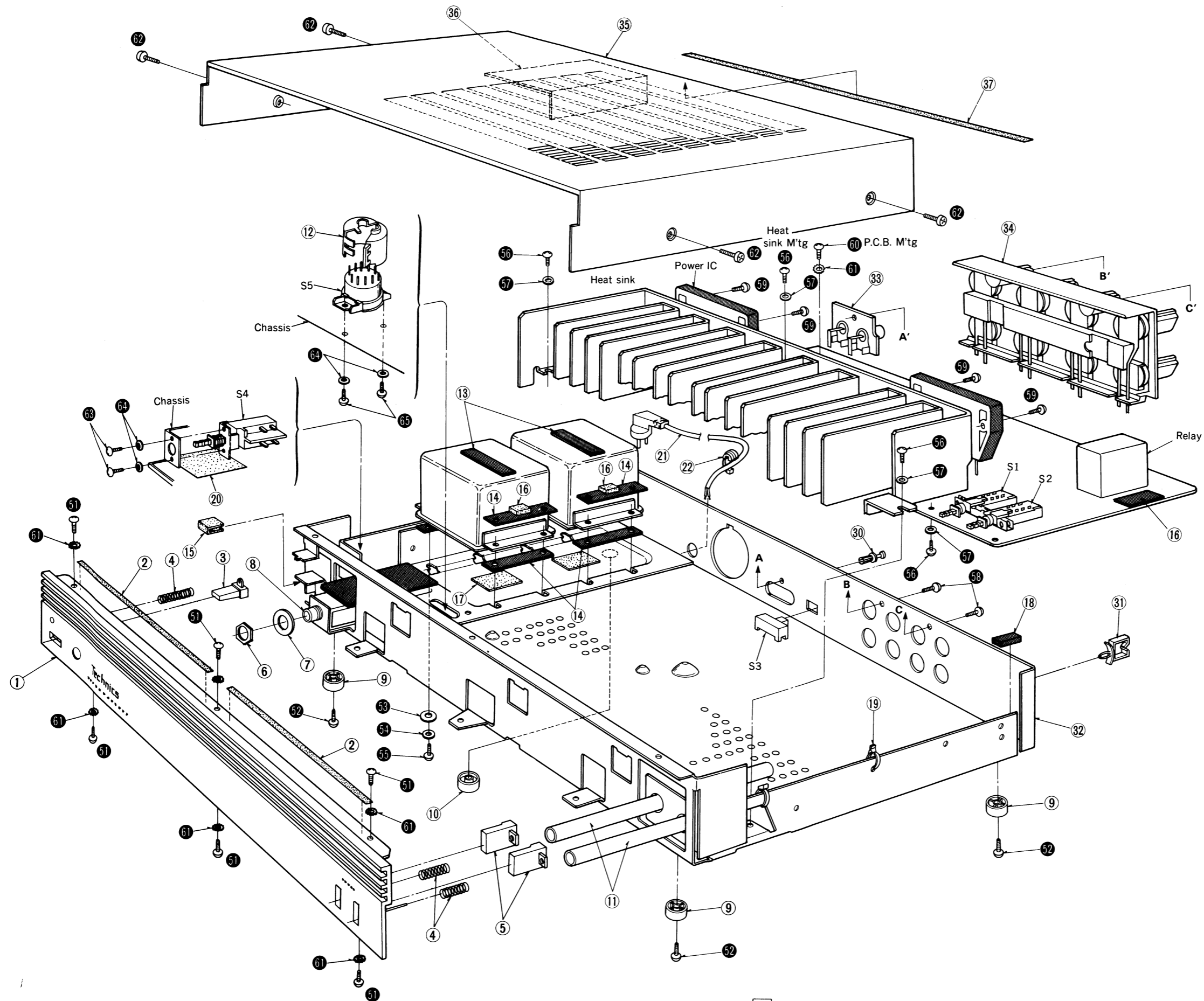
- * (DX) is available in Scandinavia except Denmark and European.
- * (DG) is available in Scandinavia and European except Switzerland.
- * (DM) is available in Denmark.
- * (EB) is available in Belgium.

- * (XE) is available in United Kingdom.
- * (XSW) is available in Switzerland.
- * (XGH) is available in Holland.
- * (XGF) is available in France.
- * (XA) is available in Asia, Latin America, Middle East and Africa.

ACCESSORIES



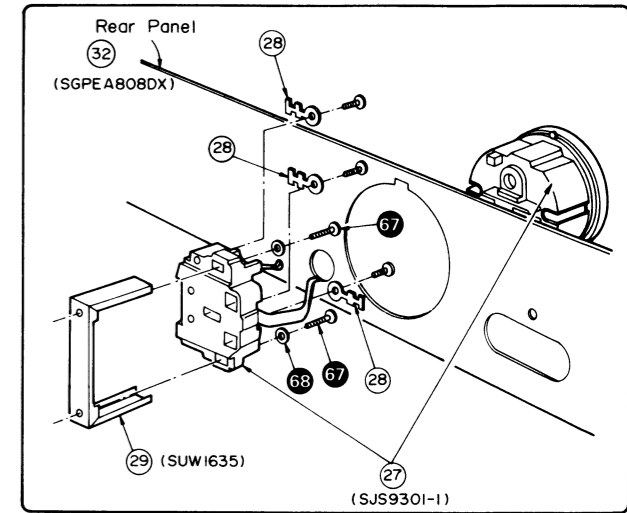
EXPLODED VIEWS



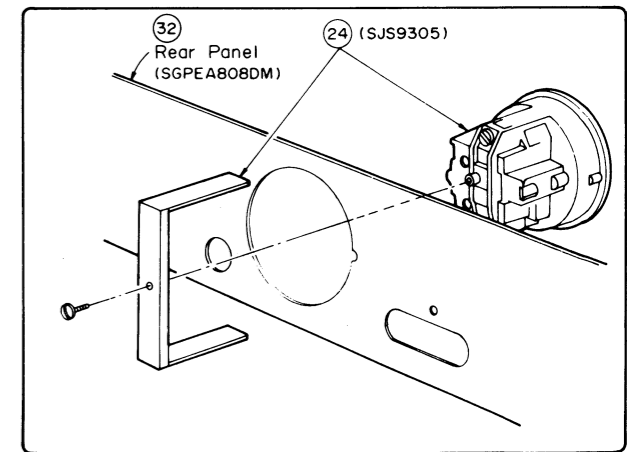
AC outlet and rear panel

(DX, DG, EB, XGH, XGF)

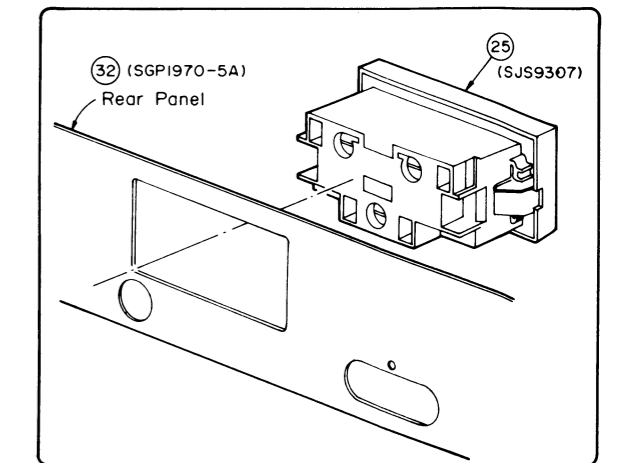
For Scandinavia and European
(Except for Switzerland, United Kingdom and Denmark)



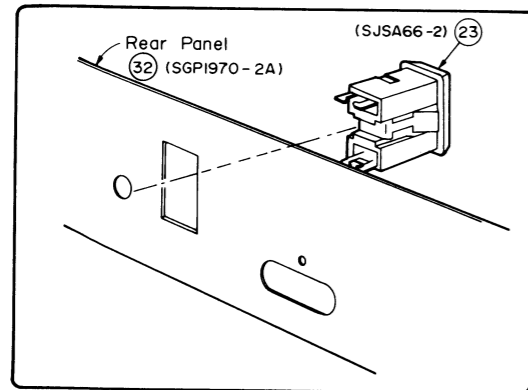
(DM)For Denmark



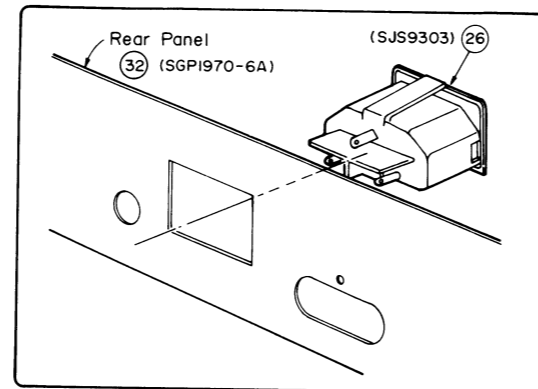
(XSW) . . .For Switzerland



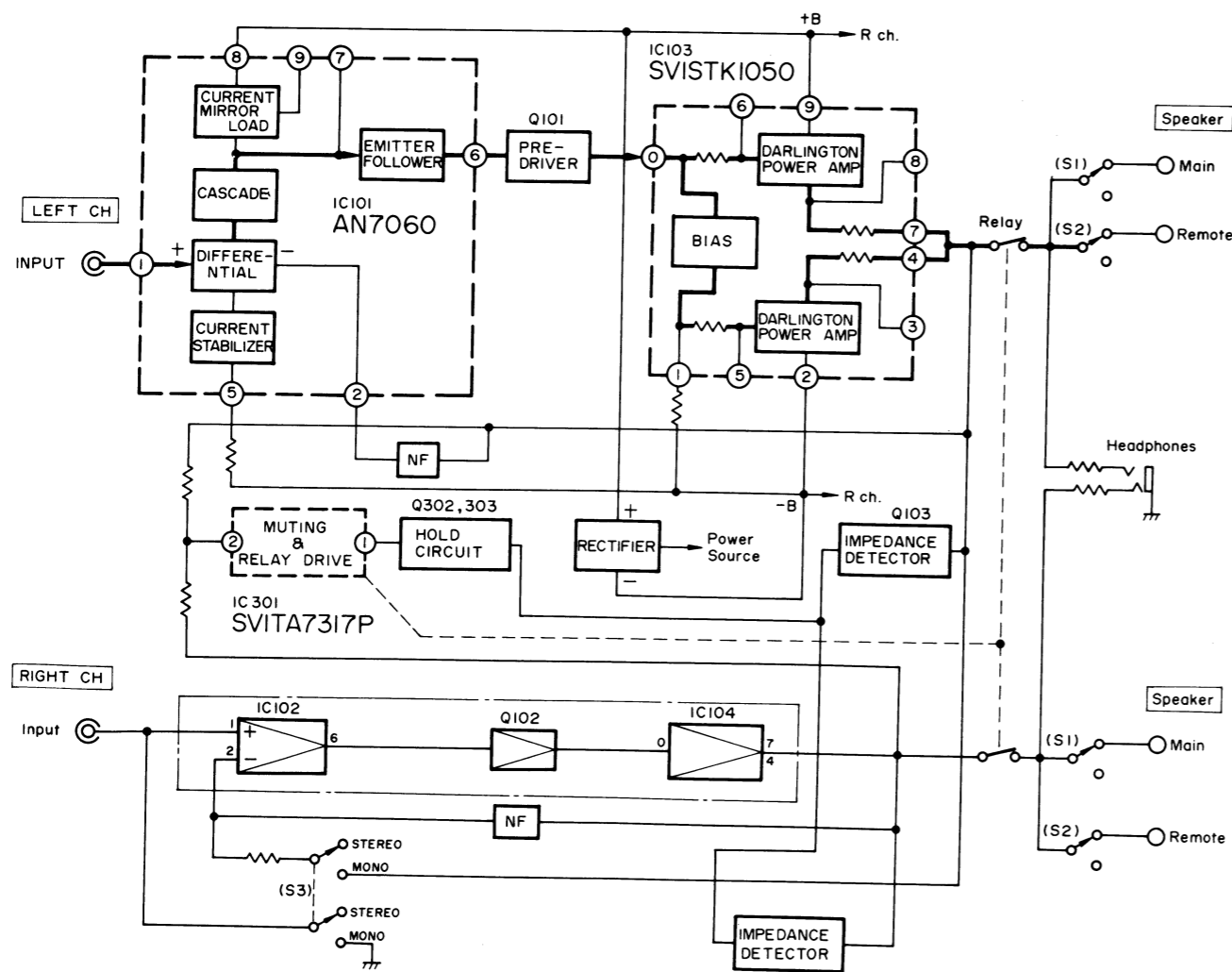
● AC outlet and rear Panel
(XA) . . . For Asia, Latin America Middle East and Africa



(XE) . . . For United Kingdom



■ BLOCK DIAGRAM



■ TECHNICAL GUIDE

● Protection Circuits

This set incorporates a DC protection circuit to protect the speakers from DC voltage applied to the speaker terminals due to circuit troubles, etc. and an overload protection circuit to prevent breakdown of the output stage due to overload.

The overload protection circuit is illustrated in Fig. 4. In this circuit, if the voltage at the emitter (terminal 8) of the output stage is 10V, the base voltage of Q103 will be about 9V. Then, the emitter voltage of Q103 is about 9.8V ($R_L = 8\Omega$), divided by R_E and R_L . Therefore, this transistor will not operate.

When the speaker terminals are short-circuited, the emitter voltage of Q103 is 0V, that is, the transistor turns ON. Then, the collector potential decreases causing Q301 and Q302 of the switching hold circuit to operate, and then the speaker circuit relay is turned OFF by the relay drive circuit.

This circuit is also a kind of impedance detection circuit since it is designed to operate when R_L is less than the specified load impedance as well as when the speaker terminals are short-circuited.

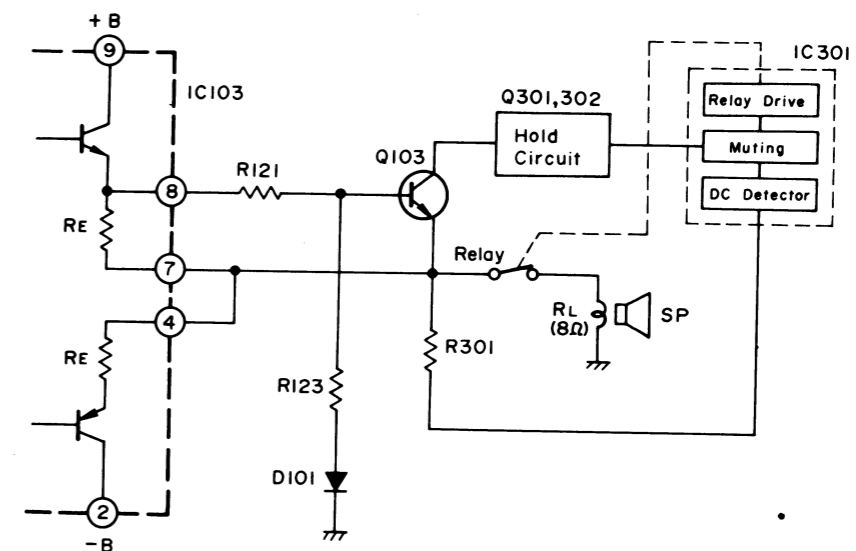


Fig. 4

The overload protection circuit continues operating unless the power supply is cut off. If no output is given with power supply turned ON, turn off the power switch to check the speakers and speaker terminals for abnormality such as shortcircuit.