

# TA-F270

## SERVICE MANUAL

*AEP Model  
UK Model*



### SPECIFICATIONS

#### Amplifier

Continuous RMS power output (both channels driven simultaneously)

		AEP Model	Germany Model	UK Model
DIN 1kHz	4 ohms	80W+80W	80W+80W	80W+80W
	6 ohms	80W+80W	—	—
	8 ohms	70W+70W	70W+70W	70W+70W
20Hz-20kHz	4 ohms	70W+70W THD 0.02%	70W+70W THD 0.02%	—
20Hz-20kHz	8 ohms	60W+60W 0.008%	60W+60W 0.008%	60W+60W 0.008%

#### Tone controls

	Response	Turnover frequency
BASS	±10dB (100Hz)	500Hz
TREBLE	±10dB (15kHz)	3kHz

#### Input

Input jack		Jack type	Sensitivity	Impedance	S/N (weighting network, input level)
PHONO	MM	Phono	2.0mV	50 kilohms	Germany : 85dB EXCEPT Germany : 87dB (A, 5mV)
	MC		170 μV	100 ohms	75dB (A, 0.5mV)
TUNER, CD, AUX, TAPE/DAT		Phono	150mV	50 kilohms	100dB (150mV)

#### Output

Output jack	Jack type	Voltage/impedance
REC OUT	Phono	Voltage 150mV Impedance 1 kohms
SPEAKERS	—	Model for Scandinavian countries, Spain and Portugal Accepts speakers of 6-16 ohms. Models for other countries Accepts speakers of 4-16 ohms.
HEADPHONES	Stereo phone	Accepts low and high impedance headphones.

#### Loudness (Attenuation 30dB)

	+6dB (100Hz) / +3dB (10kHz)
Subsonic filter	6dB/octave, attenuation below 15Hz
Intermodulation (IM) distortion (60Hz : 7kHz=4 : 1)	Less than 0.008% at rated output
Frequency response	PHONO : RIAA equalization curve ±0.5dB TUNER, CD, AUX, TAPE 1, TAPE 2 / DAT : 7Hz-100kHz±3dB
Residual noise	Less than 170 μV (network A)
Damping factor	70 (8 ohms, 1kHz)

— Continued on page 2 —

**INTEGRATED STEREO AMPLIFIER**  
**SONY®**

General System	Preamplifier : Low - noise , high - gain equalizer amplifier Power amplifier : Pure-complementary SEPP OCL power amplifier with all stages directly coupled
Power requirements	AEP/Germany model : 220-230V AC, 50Hz UK model : 240V AC, 50Hz
Power consumption	UK Model : 380W AEP/Germany Model : 180W
Dimensions	Approx. 430×135×372mm (w/h/d) (17×5 <sup>3</sup> / <sub>8</sub> ×14 <sup>1</sup> / <sub>4</sub> inches)
Weight	Approx. 8.9kg (19 lb 10 oz)

Design and specifications subject to change without notice.

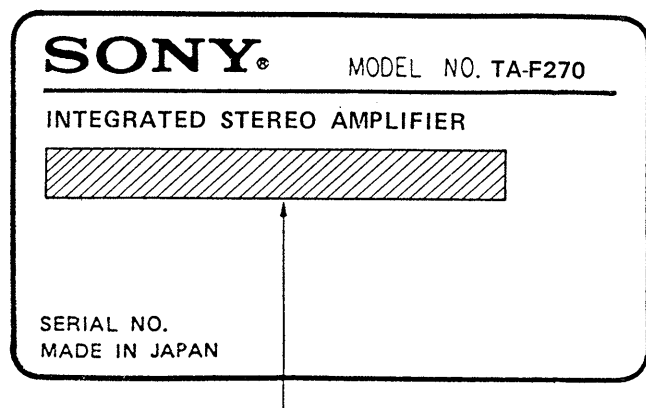
**Note**  
This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.

## TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
	Specifications .....	1
	Model Identification .....	2
<b>1. GENERAL</b>		
1-1.	Connections .....	3
1-2.	Parts Identification .....	3
<b>2. DISSASSEMBLY</b>		4
<b>3. ELECTRICAL ADJUSTMENTS</b>		5
<b>4. DIAGRAMS</b>		
4-1.	Circuit Boards Location .....	6
4-2.	Printed Wiring Boards .....	8
4-3.	Schematic Diagram .....	13
<b>5. EXPLODED VIEWS</b>		
5-1.	Front Panel Assembly .....	17
5-2.	Chassis Assembly .....	18
<b>6. ELECTRICAL PARTS LIST</b>		19



### MODEL IDENTIFICATION

—Specification Label—

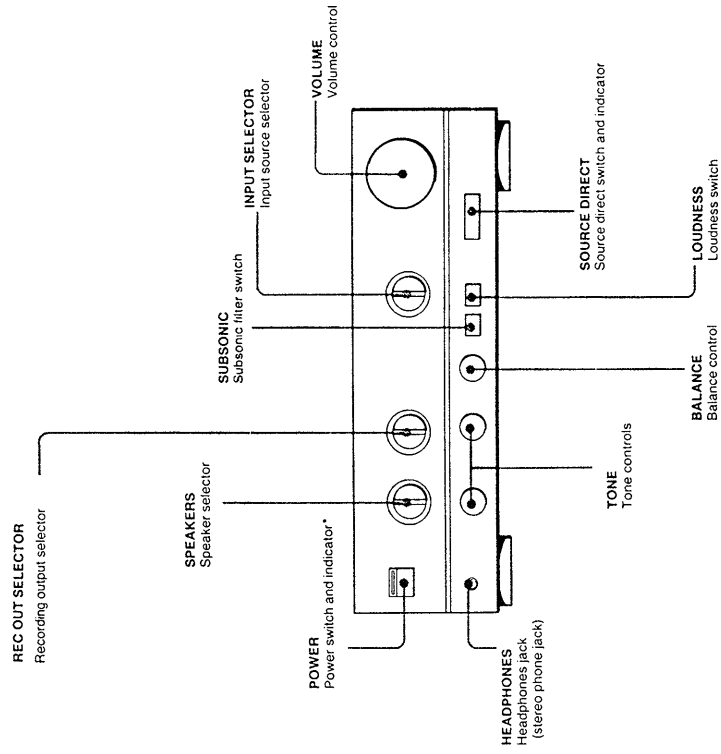


AEP/Germany model : AC 220-230V~50Hz  
UK model : AC 240V~50Hz

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## 1-2. PARTS IDENTIFICATION



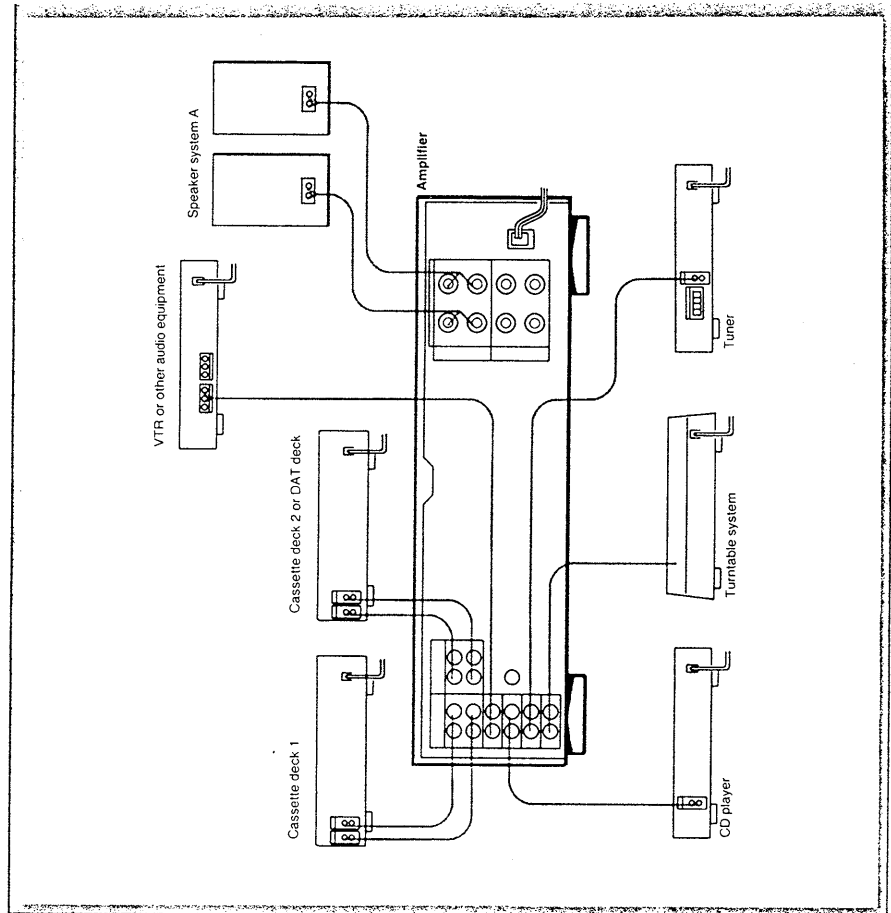
This section is extracted from instruction manual.

\* After the power is turned on, the POWER indicator lights in red and immediately changed to green. If it remains in red, turn off the power, check that speakers and other devices are properly connected, and turn on the power again.

## 1-1. CONNECTIONS

### Notes on Connection

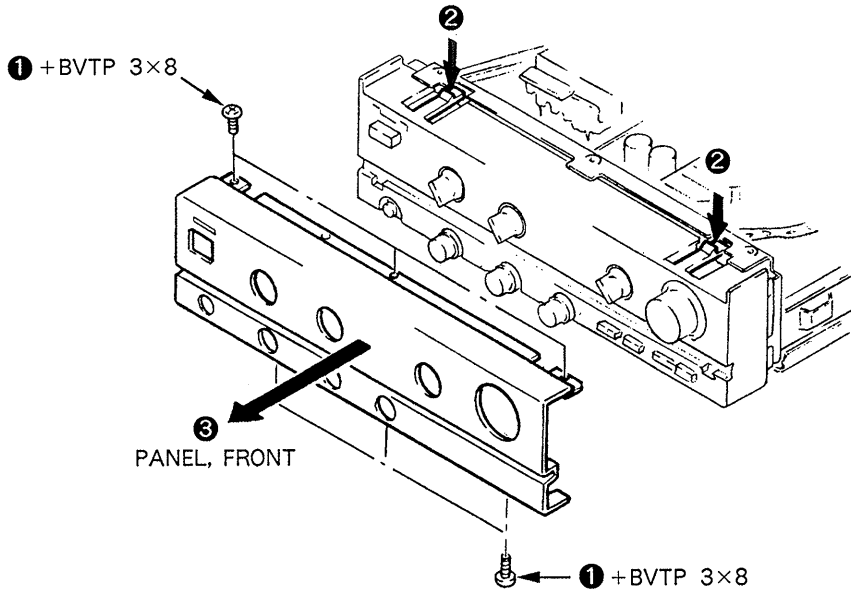
- Connect the AC power cord last. Make sure power is off.
- Cord plugs and jacks are color coded. Red plugs and jacks are for right channel (R) and white ones for left channel (L).
- Fully insert cable connectors into jacks. Loose connections may cause hum or noise.



## SECTION 2 DISASSEMBLY

**Note:** Follow the disassembly procedure in the numerical order given.

1. Remove screws ① ×6.
2. Push leaves ② down to release 2 claws.
3. Pull front panel in the direction of arrow ③.



# SECTION 3 ELECTRICAL ADJUSTMENTS

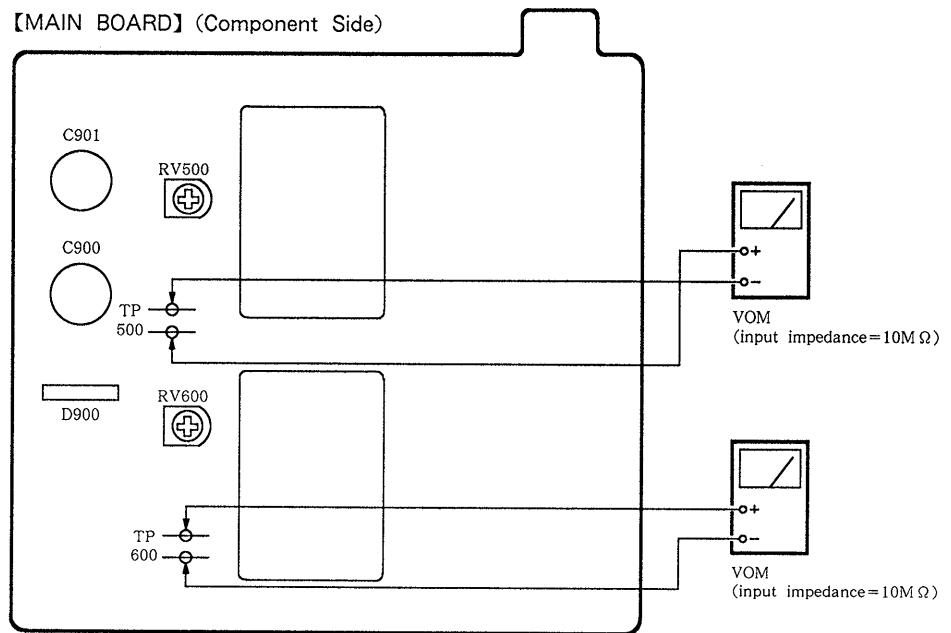
## Bias Current Adjustment

### Procedure :

1. Set main volume to minimum.
2. Turn the power on and confirm that RY800 will turn on at about 6 seconds after power-on.
3. Adjust RV500 (L-ch) and RV600 (R-ch) so that the voltages across TP500 and TP600 become within the adjustment values.

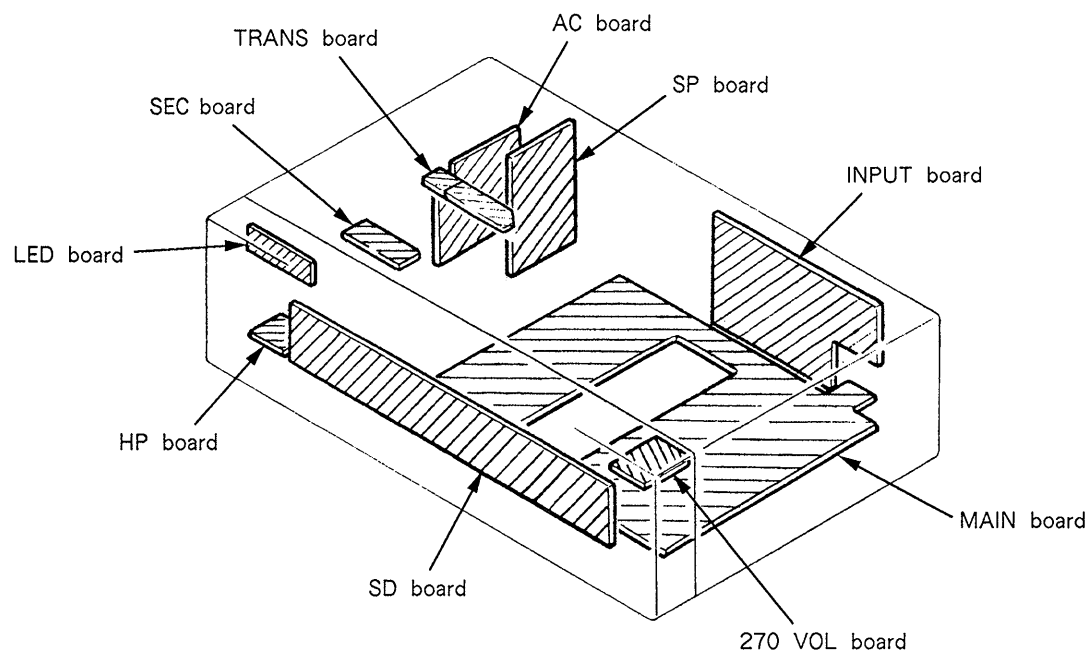
### Adjustment Values :

$5\text{mV} \pm 0.3\text{mV}$



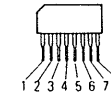
## SECTION 4 DIAGRAMS

### 4.1. CIRCUIT BOARDS LOCATION



### SEMICONDUCTOR LEAD LAYOUTS

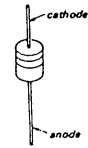
M5218AL  
μ PC1237HA



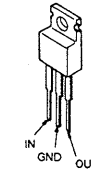
2SA988-FA  
2SA1371-E  
2SC1841-PAFAEA



HZS6B1L  
HZS7C2L  
1SS120  
11ES2



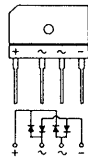
TA71815S



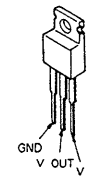
2SC945-P



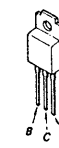
RBV-602-01



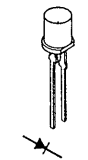
TA7915S



2SA1684-LK  
2SC4431-LK



SEL2213C-C



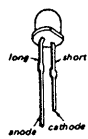
DTA124ES  
2SC2603-EF



2SC1941-LK  
2SD774-34



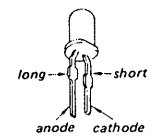
SEL2510C-D



2SC2259-FG



SEL2810A-C



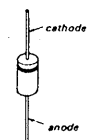
2SA1175-HFE



2SK246GR



1S1585

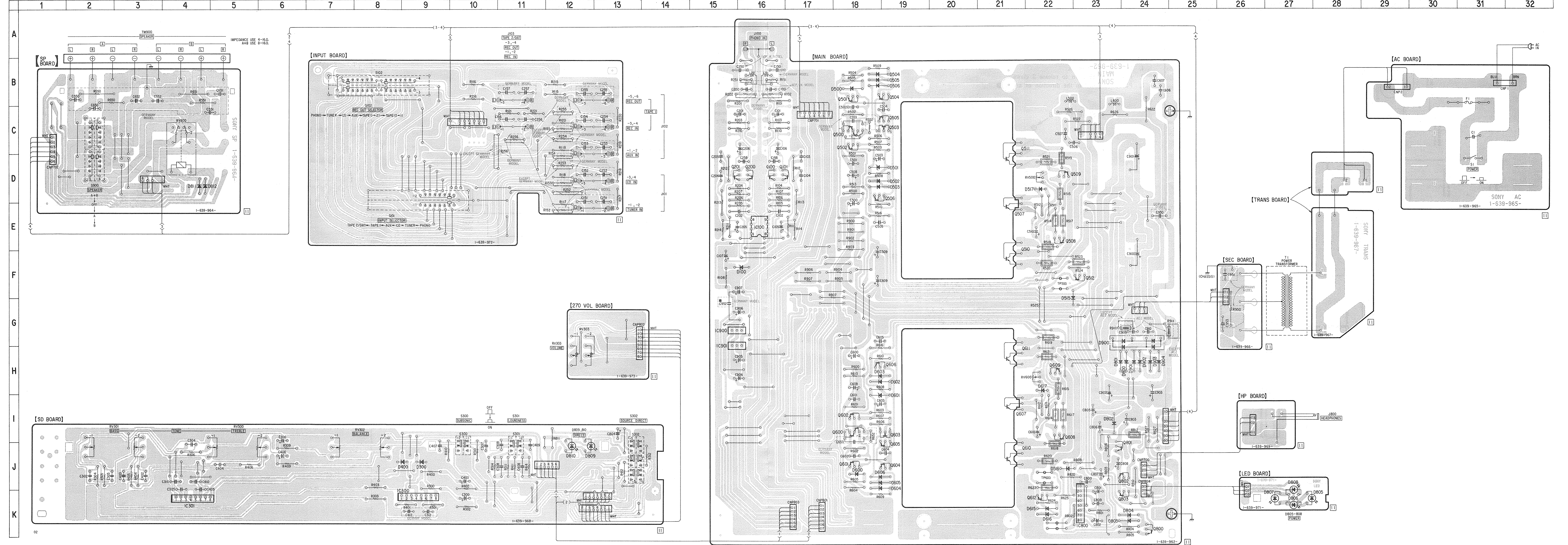


• SEMICONDUCTOR LOCATION

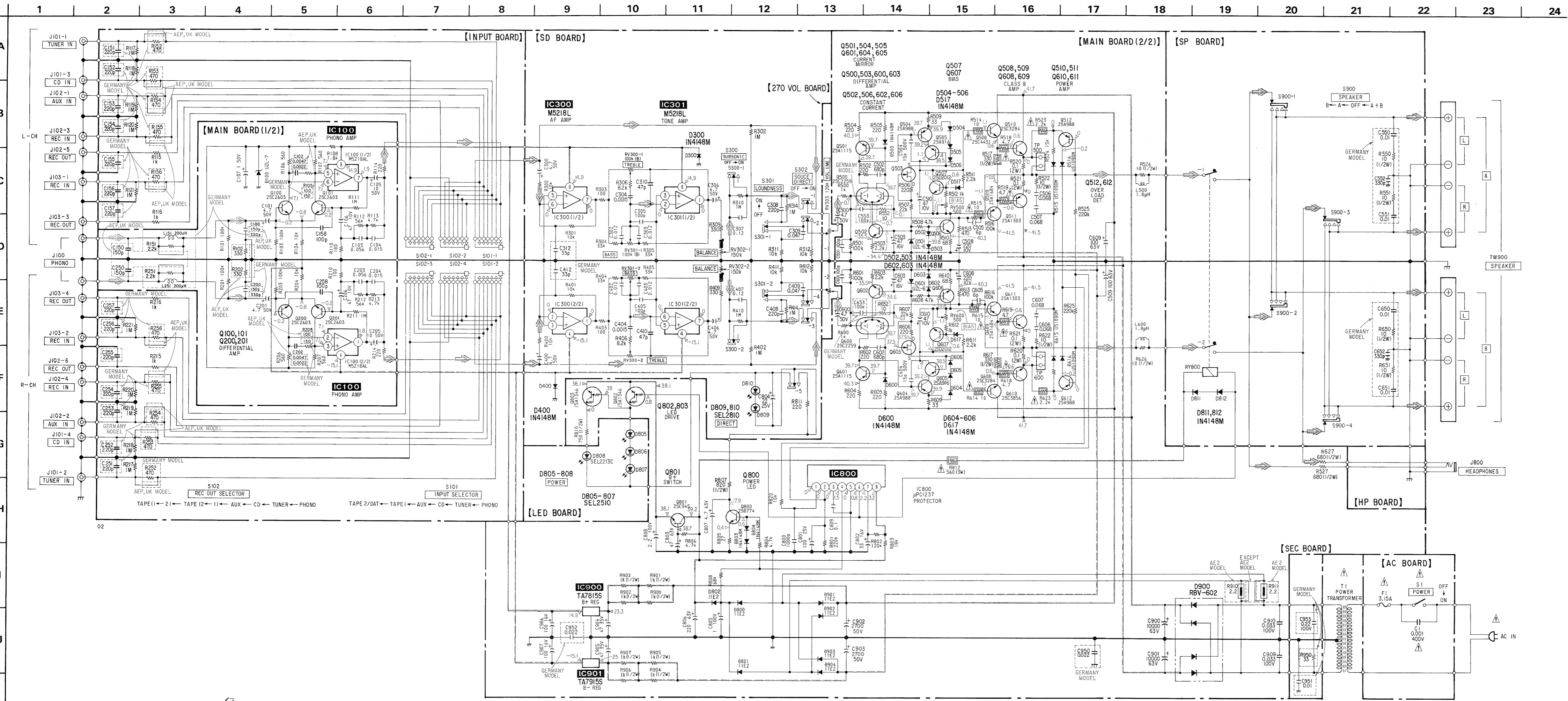
Ref. No.	Location	Ref. No.	Location
D100	F-16	IC100	E-16
D300	J-9	IC300	K-9
D400	J-9	IC301	K-4
D500	B-18	IC800	K-23
D501	D-18	IC900	G-15
		IC901	H-15
D502	D-18		
D503	D-18		
D504	B-18	Q100	D-16
D505	B-18	Q101	D-16
D506	B-18	Q200	D-16
		Q201	D-16
		Q500	C-18
D515	G-22		
D516	J-22		
D517	D-22	Q501	B-18
D600	J-18	Q502	C-18
D601	I-18	Q503	C-19
		Q504	B-19
D602	H-18	Q505	C-19
D603	H-18		
D604	J-18	Q506	D-18
D605	J-18	Q507	E-21
D606	J-18	Q508	E-22
		Q509	D-22
		Q510	F-21
D615	K-22		
D616	K-22		
D617	H-22	Q511	D-21
D800	H-24	Q512	F-23
D801	H-23	Q600	I-18
		Q601	J-18
		Q602	I-18
D802	I-23		
D803	J-24		
D804	J-24	Q603	I-19
D805	K-27	Q604	J-19
D806	K-27	Q605	J-19
		Q606	H-18
		Q607	I-21
D807	K-27		
D808	K-27		
D809	J-12	Q608	I-22
D810	J-12	Q609	H-22
D811	D-4	Q610	J-21
		Q611	H-21
		Q612	K-22
D900	G-24		
D901	H-24	Q800	J-24
D902	H-24	Q801	J-23
D903	H-24	Q802	J-24
D904	H-24	Q803	J-24

Note :  
 ○ — parts extracted from the component side.  
 ○ — Pattern on the side which is seen.

4-2. PRINTED WIRING BOARDS • Refer to page 7 for Semiconductor Lead Layouts.

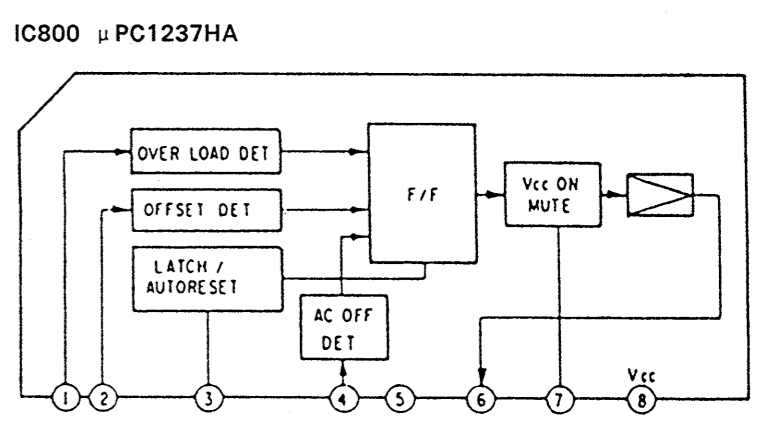


4.3. SCHEMATIC DIAGRAM



- Note:
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$
  - 50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
  - ▭: nonflammable resistor.
- Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.
- : B+ Line
  - - -: B- Line
  - : adjustment for repair.
  - Voltage and waveforms are dc with respect to ground under no-signal conditions.
  - Voltages are taken with a VOM (Input impedance  $10\text{M}\Omega$ ). Voltage variations may be noted due to normal production tolerances.
  - Signal path.
  - ⇒: PHONO

IC BLOCK DIAGRAMS





# SECTION 5 EXPLODED VIEWS

**NOTE:**

- -XX, -X mean standardized parts, so they may have some differences from the original one.

- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Color indication of Appearance Parts  
Example:

KNOB, BALANCE (WHITE)...(RED)

↑                     ↑  
Parts color    Cabinet's color

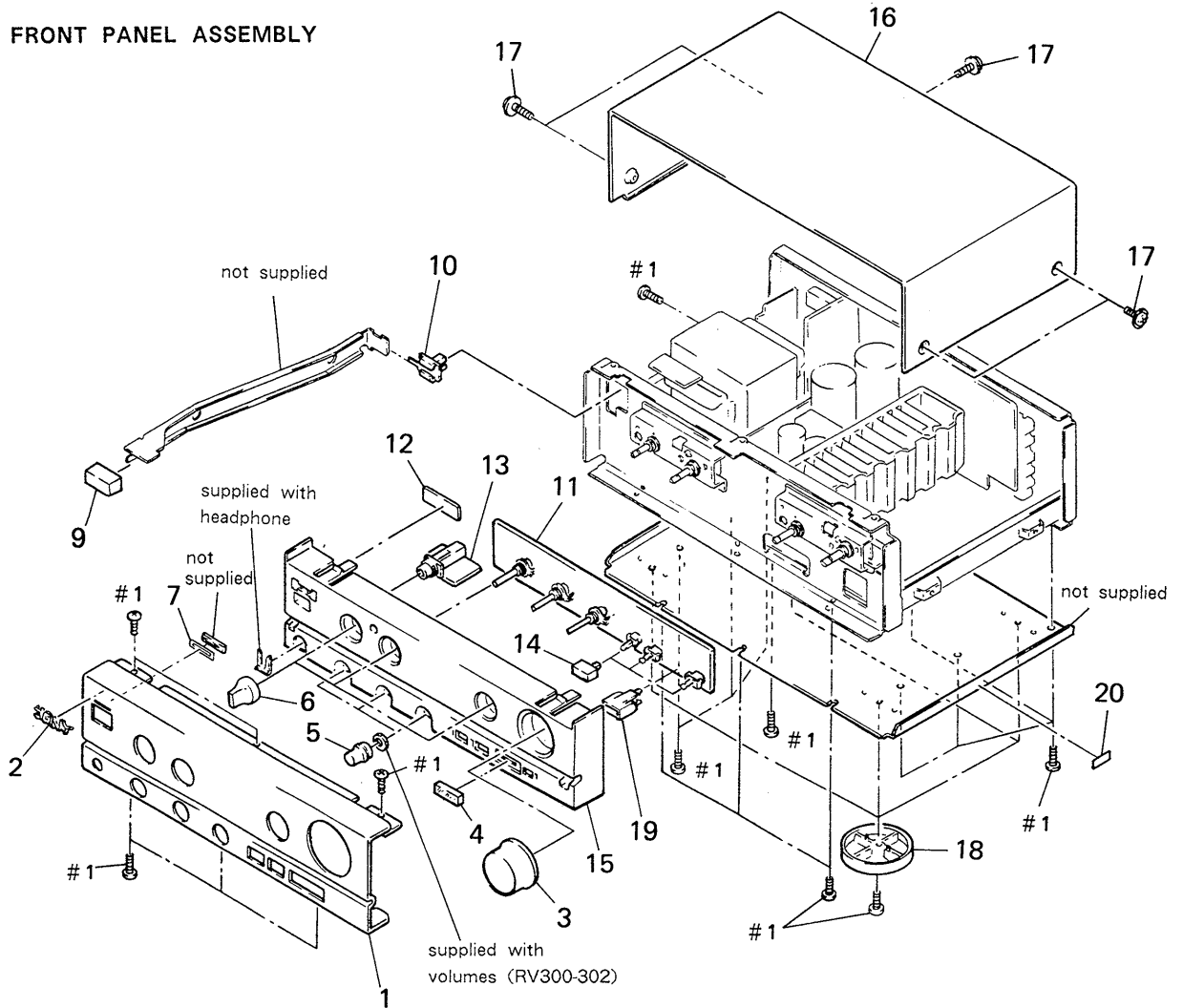
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.

- Hardware (#mark) list is given in the last of this parts list.

The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

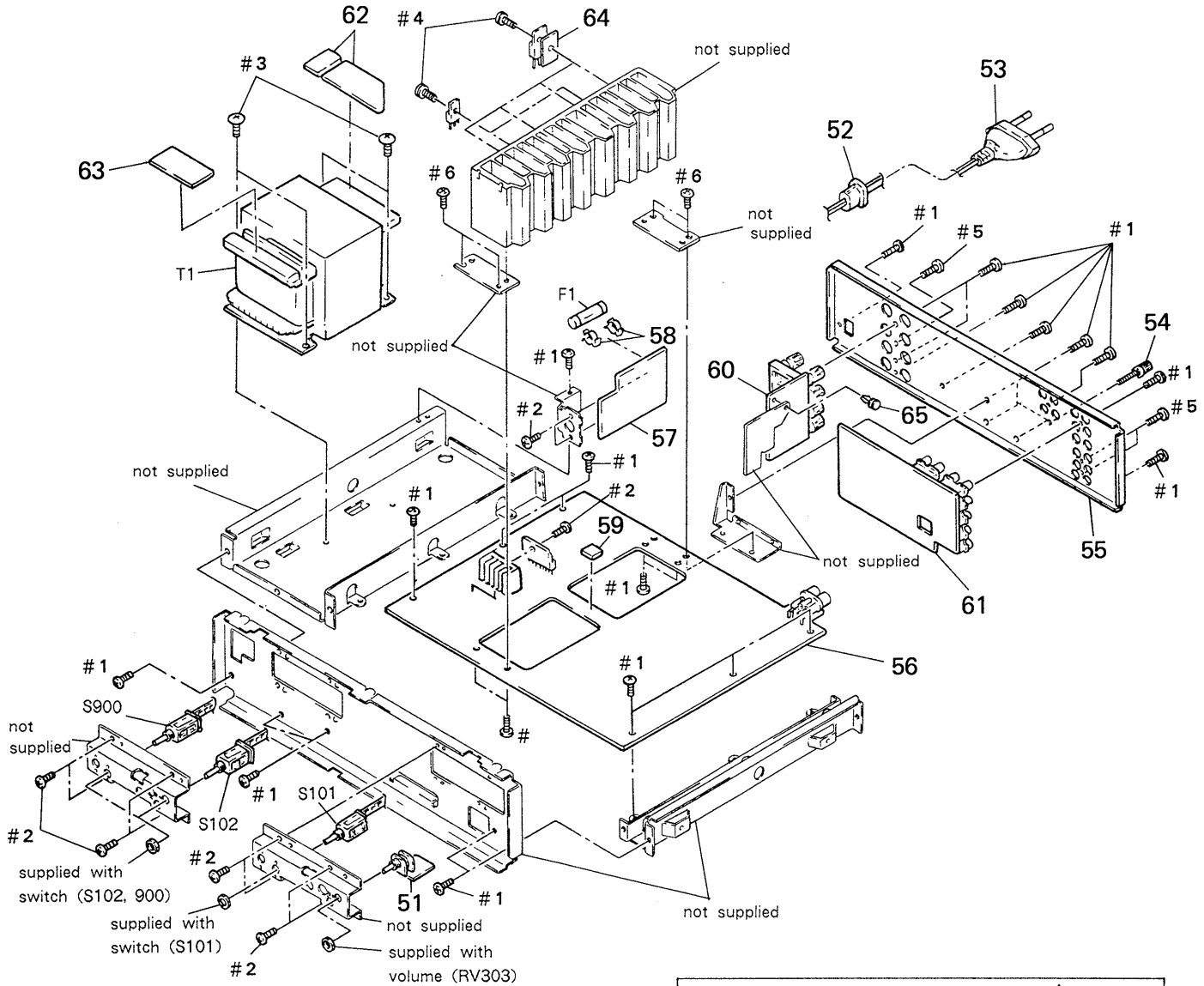
## 5-1. FRONT PANEL ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	4-945-182-21	PANEL, FRONT	
2	4-908-848-01	EMBLEM, SONY	
3	X-4941-616-1	KNOB (R53) ASSY	
4	4-945-622-01	PLATE (S/D), INDICATION	
5	4-945-173-01	KNOB (R21) (UK)	
5	4-945-600-01	KNOB (R21) (AEP, GERMANY)	
6	4-945-174-01	KNOB (F25) (UK)	
6	4-945-601-01	KNOB (F25) (AEP, GERMANY)	
7	4-945-175-01	INDICATOR (PSW)	
9	4-929-289-01	BUTTON	
10	4-875-466-11	JOINT (F2), KNOB	

Ref. No.	Part No.	Description	Remark
11	* A-4345-196-A	SD BOARD, COMPLETE (AEP, UK)	
11	* A-4345-207-A	SD BOARD, COMPLETE (GERMANY)	
12	* 1-639-971-11	LED BOARD	
13	* 1-639-969-11	HP BOARD	
14	4-945-176-01	BUTTON (18X11)	
15	* 4-945-181-01	PANEL (BASE), FRONT	
16	* 4-924-920-71	CASE	
17	3-704-366-01	SCREW (CASE) (M3X8)	
18	X-4941-617-1	FOOT (58175) ASSY	
19	4-945-177-01	HOUSE, LIGHTING	
20	4-926-836-01	SPACER, KNOB	

## 5-2. CHASSIS ASSEMBLY



**Note:** The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
51	* 1-639-973-11	270 VOL BOARD	
52	* 3-703-244-00	BUSHING (2104), CORD	
53	$\triangle$ 1-575-651-11	CORD, POWER (AEP, GERMANY)	
53	$\triangle$ 1-575-652-11	CORD, POWER (UK)	
54	3-706-165-00	SCREW	
55	* 4-944-984-01	PANEL, BACK (AE1)	
55	* 4-944-984-11	PANEL, BACK (AE2)	
55	* 4-944-984-21	PANEL, BACK (GERMANY)	
55	* 4-944-984-31	PANEL, BACK (UK)	
56	* A-4345-193-A	MAIN BOARD, COMPLETE (AE1, UK)	
56	* A-4345-202-A	MAIN BOARD, COMPLETE (AE2)	
56	* A-4345-204-A	MAIN BOARD, COMPLETE (GERMANY)	

Ref. No.	Part No.	Description	Remark
57	* 1-639-965-11	AC BOARD	
58	1-533-225-11	HOLDER, FUSE	
59	4-946-613-11	SPACER	
60	* 1-639-964-11	SP BOARD	
61	* 1-639-972-11	INPUT BOARD	
62	* 1-639-967-11	TRANS BOARD	
63	* 1-639-966-11	SEC BOARD	
64	4-911-232-01	SHEET, INSULATING	
65	4-812-134-11	RIVET NYLON, 3.5	
F1	$\triangle$ 1-532-237-00	FUSE, TIME LAG (3.15A)	
S101	1-572-796-11	SWITCH, ROTARY SLIDE (INPUT SELECTOR)	
S102	1-572-795-11	SWITCH, ROTARY SLIDE (REC OUT SELECTOR)	
S900	1-572-794-12	SWITCH, ROTARY SLIDE (SPEAKER)	
T1	$\triangle$ 1-450-571-11	TRANSFORMER, POWER (AEP, GERMANY)	
T1	$\triangle$ 1-450-572-11	TRANSFORMER, POWER (UK)	

# SECTION 6 ELECTRICAL PARTS LIST

AC
HP
INPUT

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms  
METAL : Metal-film resistor  
METAL OXIDE : Metal Oxide-film resistor  
F : nonflammable

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA.....:  $\mu$ A....., uPA.....:  $\mu$ PA.....  
uPB.....:  $\mu$ PB....., uPC.....:  $\mu$ PC.....  
uPD.....:  $\mu$ PD.....
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark
	* 1-639-965-11	AC BOARD *****	
	1-533-225-11	HOLDER, FUSE  < CAPACITOR >	
C1	$\Delta$ 1-161-741-00	CERAMIC 0.001uF 10% 400V  < CONNECTOR >	
CNP1	* 1-568-226-11	PIN, CONNECTOR 2P	
CNP2	* 1-560-595-00	TERMINAL (WITH BASE)  < SWITCH >	
S1	$\Delta$ 1-554-920-11	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	
*****			
	1-639-969-11	HP BOARD *****  < JACK >	
J800	1-507-796-71	JACK (HEADPHONES)	
*****			
	1-639-972-11	INPUT BOARD *****  < CAPACITOR >	
C151	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C152	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C153	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C154	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C155	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	

Ref. No.	Part No.	Description	Remark
C156	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C157	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C251	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C252	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C253	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C254	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C255	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C256	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
C257	1-162-286-31	CERAMIC 220PF 10% 50V (GERMANY)	
< JACK >			
J101	* 1-573-142-11	JACK, PIN 4P (TUNER IN/CD IN)	
J102	1-568-978-11	JACK 6P (AUX IN/TAPE 1)	
J103	* 1-573-142-21	JACK, PIN 4P (TAPE 2/DAT)	
< RESISTOR >			
R115	1-247-713-11	CARBON 1K 5% 1/4W	
R116	1-247-713-11	CARBON 1K 5% 1/4W	
R117	1-246-545-00	CARBON 1.0M 5% 1/4W	
R118	1-246-545-00	CARBON 1.0M 5% 1/4W	
R119	1-246-545-00	CARBON 1.0M 5% 1/4W	
R120	1-246-545-00	CARBON 1.0M 5% 1/4W	
R121	1-246-545-00	CARBON 1.0M 5% 1/4W	
R152	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
R153	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
R154	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
R155	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
R156	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
R215	1-247-713-11	CARBON 1K 5% 1/4W	
R216	1-247-713-11	CARBON 1K 5% 1/4W	
R217	1-246-545-00	CARBON 1.0M 5% 1/4W	
R218	1-246-545-00	CARBON 1.0M 5% 1/4W	
R219	1-246-545-00	CARBON 1.0M 5% 1/4W	
R220	1-246-545-00	CARBON 1.0M 5% 1/4W	
R221	1-246-545-00	CARBON 1.0M 5% 1/4W	

**INPUT    LED    MAIN**

Ref. No.	Part No.	Description	Remark
R252	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
R253	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
R254	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
R255	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
R256	1-247-708-11	CARBON 470 5% 1/4W (GERMANY)	
< SWITCH >			
S101	1-571-669-11	SWITCH, SLIDE (INPUT SELECTOR)	
S102	1-571-115-11	SWITCH, SLIDE (REC OUT SELECTOR)	
*****			
* 1-639-971-11	LED BOARD	*****	
< DIODE >			
D805	8-719-303-02	LED SEL2510C-D (POWER)	
D806	8-719-303-02	LED SEL2510C-D (POWER)	
D807	8-719-303-02	LED SEL2510C-D (POWER)	
D808	8-719-302-23	LED SEL2213C-C (POWER)	
*****			
* A-4345-193-A	MAIN BOARD, COMPLETE (AE1, UK)		
* A-4345-202-A	MAIN BOARD, COMPLETE (AE2)		
* A-4345-204-A	MAIN BOARD, COMPLETE (GERMANY)		
*****			
4-870-539-00	PLATE, GROUND		
< CAPACITOR >			
C100	1-164-075-11	CERAMIC 150PF 10% 50V (AEP, UK)	
C100	1-164-079-11	CERAMIC 330PF 10% 50V (GERMANY)	
C101	1-123-369-00	ELECT 4.7uF 20% 50V	
C102	1-161-377-00	CERAMIC 0.0047uF 30% 50V (AEP, UK)	
C102	1-161-375-00	CERAMIC 0.0022MF 30% 50V (GERMANY)	
C103	1-130-492-11	MYLAR 0.056uF 5% 50V	
C104	1-130-485-00	MYLAR 0.015uF 5% 50V	
C105	1-126-059-11	ELECT 10uF 20% 50V	
C106	1-123-306-00	ELECT 47uF 20% 10V	
C107	1-123-380-00	ELECT 1uF 20% 50V	
C150	1-162-284-31	CERAMIC 150PF 10% 50V (AEP, UK)	
C158	1-164-073-11	CERAMIC 100PF 10% 50V	
C200	1-164-075-11	CERAMIC 150PF 10% 50V (AEP, UK)	
C200	1-164-079-11	CERAMIC 330PF 10% 50V (GERMANY)	
C201	1-123-369-00	ELECT 4.7uF 20% 50V	
C202	1-161-377-00	CERAMIC 0.0047uF 30% 50V (AEP, UK)	
C202	1-161-375-00	CERAMIC 0.0022MF 30% 50V (GERMANY)	
C203	1-130-492-11	MYLAR 0.056uF 5% 50V	
C204	1-130-485-00	MYLAR 0.015uF 5% 50V	
C205	1-126-059-11	ELECT 10uF 20% 50V	
C206	1-123-306-00	ELECT 47uF 20% 10V	
C250	1-162-284-31	CERAMIC 150PF 10% 50V (AEP, UK)	
C258	1-164-073-11	CERAMIC 100PF 10% 50V	
C500	1-123-369-00	ELECT 4.7uF 20% 50V	

Ref. No.	Part No.	Description	Remark
C501	1-164-073-11	CERAMIC 100PF 10% 50V	
C502	1-164-083-11	CERAMIC 680PF 10% 50V	
C503	1-124-477-11	ELECT 47uF 20% 25V	
C504	1-102-316-00	CERAMIC 15PF 5% 500V	
C505	1-102-943-00	CERAMIC 6.0PF +-0.5PF 50V	
C506	1-136-163-00	FILM 0.068uF 5% 50V	
C507	1-136-163-00	FILM 0.068uF 5% 50V	
C508	1-126-335-11	ELECT 220uF 20% 10V	
C509	1-124-130-00	ELECT 100uF 20% 63V	
C510	1-123-306-00	ELECT 47uF 20% 10V	
C553	1-162-282-31	CERAMIC 100PF 10% 50V (GERMANY)	
C600	1-123-369-00	ELECT 4.7uF 20% 50V	
C601	1-164-073-11	CERAMIC 100PF 10% 50V	
C602	1-164-083-11	CERAMIC 680PF 10% 50V	
C603	1-124-477-11	ELECT 47uF 20% 25V	
C604	1-102-316-00	CERAMIC 15PF 5% 500V	
C605	1-102-943-00	CERAMIC 6.0PF +-0.5PF 50V	
C606	1-136-163-00	FILM 0.068uF 5% 50V	
C607	1-136-163-00	FILM 0.068uF 5% 50V	
C608	1-126-335-11	ELECT 220uF 20% 10V	
C609	1-124-130-00	ELECT 100uF 20% 63V	
C610	1-123-306-00	ELECT 47uF 20% 10V	
C653	1-162-282-31	CERAMIC 100PF 10% 50V (GERMANY)	
C800	1-164-085-11	CERAMIC 0.001uF 10% 50V	
C801	1-124-478-11	ELECT 100uF 20% 25V	
C802	1-124-126-00	ELECT 47uF 20% 10V	
C803	1-124-918-11	ELECT 47uF 20% 63V	
C805	1-124-791-11	ELECT 1.0uF 20% 100V	
C806	1-124-919-11	ELECT 220uF 20% 63V	
C807	1-124-927-11	ELECT 4.7uF 20% 100V	
C808	1-124-925-11	ELECT 2.2uF 20% 100V	
C809	1-136-165-00	FILM 0.1uF 5% 50V	
C900	1-125-683-11	ELECT 10000uF 20% 63V	
C901	1-125-683-11	ELECT 10000uF 20% 63V	
C902	1-128-356-51	ELECT 2700uF 20% 50V	
C903	1-128-356-51	ELECT 2700uF 20% 50V	
C904	1-124-918-11	ELECT 47uF 20% 63V	
C905	1-124-918-11	ELECT 47uF 20% 63V	
C906	1-124-122-11	ELECT 100uF 20% 50V	
C907	1-124-122-11	ELECT 100uF 20% 50V	
C909	1-106-379-12	MYLAR 0.033uF 5% 200V	
C910	1-106-379-12	MYLAR 0.033uF 5% 200V	
C950	1-161-494-00	CERAMIC 0.022uF 10% 50V (GERMANY)	
C952	1-161-494-00	CERAMIC 0.022MF 10% 50V (GERMANY)	

< CONNECTOR >

- CNP700 \* 1-564-506-11 PLUG, CONNECTOR 3P
- CNP701 \* 1-564-510-11 PLUG, CONNECTOR 7P

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
CNP801 *	1-564-341-11	PIN, CONNECTOR 7P				< COIL >	
CNP803 *	1-564-340-00	PIN, CONNECTOR 6P					
CNP804 *	1-564-337-00	PIN, CONNECTOR 3P					
		< DIODE >					
D100	8-719-933-50	DIODE HZS7C2L		L151	1-424-397-11	COIL, CHOKE 200uH(GERMANY)	
D500	8-719-912-20	DIODE 1SS120		L251	1-424-397-11	COIL, CHOKE 200uH(GERMANY)	
D501	8-719-933-36	DIODE HZS6B1L		L500	1-428-133-13	COIL, AIR-CORE	
D502	8-719-912-20	DIODE 1SS120		L600	1-428-133-13	COIL, AIR-CORE	
D503	8-719-912-20	DIODE 1SS120				< TRANSISTOR >	
D504	8-719-912-20	DIODE 1SS120		Q100	8-729-620-05	TRANSISTOR 2SC2603-EF	
D505	8-719-912-20	DIODE 1SS120		Q101	8-729-620-05	TRANSISTOR 2SC2603-EF	
D506	8-719-912-20	DIODE 1SS120		Q200	8-729-620-05	TRANSISTOR 2SC2603-EF	
D515	8-719-815-85	DIODE 1S1585		Q201	8-729-620-05	TRANSISTOR 2SC2603-EF	
D516	8-719-815-85	DIODE 1S1585		Q500	8-729-620-17	TRANSISTOR 2SC2259-FG	
D517	8-719-912-20	DIODE 1SS120		Q501	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D600	8-719-912-20	DIODE 1SS120		Q502	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
D601	8-719-933-36	DIODE HZS6B2L		Q503	8-729-224-62	TRANSISTOR 2SK246GR	
D602	8-719-912-20	DIODE 1SS120		Q504	8-729-108-14	TRANSISTOR 2SA988-FA	
D603	8-719-912-20	DIODE 1SS120		Q505	8-729-803-76	TRANSISTOR 2SA1371-E	
D604	8-719-912-20	DIODE 1SS120		Q506	8-729-142-01	TRANSISTOR 2SC1941-LK	
D605	8-719-912-20	DIODE 1SS120		Q507	8-729-209-15	TRANSISTOR 2SD2012	
D606	8-719-912-20	DIODE 1SS120		Q508	8-729-141-46	TRANSISTOR 2SC4431-LK	
D615	8-719-815-85	DIODE 1S1585		Q509	8-729-141-37	TRANSISTOR 2SA1684-LK	
D616	8-719-815-85	DIODE 1S1585		Q510	8-729-320-84	TRANSISTOR 2SC3855M-OY	
D617	8-719-912-20	DIODE 1SS120		Q511	8-729-320-87	TRANSISTOR 2SA1491M-OY	
D800	8-719-200-82	DIODE 11ES2		Q512	8-729-108-14	TRANSISTOR 2SA988-FA	
D801	8-719-200-82	DIODE 11ES2		Q600	8-729-620-17	TRANSISTOR 2SC2259-FG	
D802	8-719-200-82	DIODE 11ES2		Q601	8-729-119-76	TRANSISTOR 2SA1175-HFE	
D803	8-719-912-20	DIODE 1SS120		Q602	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA	
D804	8-719-912-20	DIODE 1SS120		Q603	8-729-224-62	TRANSISTOR 2SK246GR	
D900	8-719-302-38	DIODE RBV-602-01		Q604	8-729-108-14	TRANSISTOR 2SA988-FA	
D901	8-719-200-82	DIODE 11ES2		Q605	8-729-803-76	TRANSISTOR 2SA1371-E	
D902	8-719-200-82	DIODE 11ES2		Q606	8-729-142-01	TRANSISTOR 2SC1941-LK	
D903	8-719-200-82	DIODE 11ES2		Q607	8-729-209-15	TRANSISTOR 2SD2012	
D904	8-719-200-82	DIODE 11ES2		Q608	8-729-141-46	TRANSISTOR 2SC4431-LK	
		< IC >		Q609	8-729-141-37	TRANSISTOR 2SA1684-LK	
IC100	8-759-634-50	IC M5218AL (AE2)		Q610	8-729-320-84	TRANSISTOR 2SC3855M-OY	
IC100	8-759-634-51	IC M5218AP (AE1, GERMANY, UK)		Q611	8-729-320-87	TRANSISTOR 2SA1491M-OY	
IC800	8-759-111-68	IC uPC1237HA		Q612	8-729-108-14	TRANSISTOR 2SA988-FA	
IC900	8-759-231-59	IC TA7815S		Q800	8-729-140-96	TRANSISTOR 2SD774-34	
IC901	8-759-245-87	IC TA7915S		Q801	8-729-194-57	TRANSISTOR 2SC945-P	
		< JACK >		Q802	8-729-900-63	TRANSISTOR DTA124ES	
J100 *	1-573-140-11	JACK, PIN 2P (PHONO IN)		Q803	8-729-900-63	TRANSISTOR DTA124ES	
						< RESISTOR >	
				R101	1-249-469-11	CARBON 100K 5% 1/4W	
				R102	1-247-706-11	CARBON 330 5% 1/4W (AEP, UK)	
				R103	1-249-469-11	CARBON 100K 5% 1/4W	
				R104	1-247-725-11	CARBON 10K 5% 1/4W	
				R105	1-247-700-11	CARBON 100 5% 1/4W (AEP, UK)	
				R105	1-247-702-11	CARBON 150 5% 1/4W (GERMANY)	

## MAIN

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R106	1-247-710-11	CARBON	560	5%	1/4W	R525	1-247-887-00	CARBON	220K	5%	1/4W
R107	1-247-710-11	CARBON	560	5%	1/4W	R526	1-247-727-11	CARBON	10	5%	1/2W
R108	1-247-716-11	CARBON	1.8K	5%	1/4W	R527	1-247-750-11	CARBON	680	5%	1/2W
R110	1-247-700-11	CARBON	100	5%	1/4W	R552	1-249-393-11	CARBON	10	5%	1/4W (GERMANY)
R111	1-246-545-00	CARBON	1.0M	5%	1/4W	R600	1-247-713-11	CARBON	1K	5%	1/4W
R112	1-249-844-11	CARBON	56K	1%	1/2W	R601	1-249-469-11	CARBON	100K	5%	1/4W
R113	1-249-818-11	CARBON	4.7K	1%	1/2W	R602	1-247-704-11	CARBON	220	5%	1/4W
R114	1-247-704-11	CARBON	220	5%	1/4W	R603	1-247-717-11	CARBON	2.2K	5%	1/4W
R151	1-249-421-11	CARBON	2.2K	5%	1/4W (GERMANY)	R604	1-247-704-11	CARBON	220	5%	1/4W
R201	1-249-469-11	CARBON	100K	5%	1/4W	R605	1-247-704-11	CARBON	220	5%	1/4W
R202	1-247-706-11	CARBON	330	5%	1/4W (AEP, UK)	R606	1-247-704-11	CARBON	220	5%	1/4W
R203	1-249-469-11	CARBON	100K	5%	1/4W	R607	1-249-462-11	CARBON	22K	5%	1/4W
R204	1-247-725-11	CARBON	10K	5%	1/4W	R608	1-247-721-11	CARBON	4.7K	5%	1/4W
R205	1-247-700-11	CARBON	100	5%	1/4W (AEP, UK)	R609	1-247-694-11	CARBON	33	5%	1/4W
R205	1-247-702-11	CARBON	150	5%	1/4W (GERMANY)	R610	1-247-698-11	CARBON	68	5%	1/4W
R206	1-247-710-11	CARBON	560	5%	1/4W	R611	1-247-717-11	CARBON	2.2K	5%	1/4W
R207	1-247-710-11	CARBON	560	5%	1/4W	R612	1-247-713-11	CARBON	1K	5%	1/4W
R210	1-247-700-11	CARBON	100	5%	1/4W	R613	1-249-915-11	CARBON	470	1%	1/4W
R211	1-246-545-00	CARBON	1.0M	5%	1/4W	R614	△ 1-247-688-11	CARBON	10	5%	1/4W F
R212	1-249-844-11	CARBON	56K	1%	1/2W	R615	△ 1-247-688-11	CARBON	10	5%	1/4W F
R213	1-249-818-11	CARBON	4.7K	1%	1/2W	R616	1-249-469-11	CARBON	100K	5%	1/4W
R214	1-247-704-11	CARBON	220	5%	1/4W	R617	△ 1-247-745-11	CARBON	330	5%	1/2W F
R251	1-249-421-11	CARBON	2.2K	5%	1/4W (GERMANY)	R618	△ 1-249-455-11	CARBON	4.7	5%	1/4W F
R500	1-247-713-11	CARBON	1K	5%	1/4W	R619	△ 1-249-455-11	CARBON	4.7	5%	1/4W F
R501	1-249-469-11	CARBON	100K	5%	1/4W	R620	1-217-611-00	RES. METAL PLATE 0.1			
R502	1-247-704-11	CARBON	220	5%	1/4W	R621	1-217-611-00	RES. METAL PLATE 0.1			
R503	1-247-717-11	CARBON	2.2K	5%	1/4W	R622	1-247-727-11	CARBON	10	5%	1/2W
R504	1-247-704-11	CARBON	220	5%	1/4W	R623	△ 1-247-717-11	CARBON	2.2K	5%	1/4W F
R505	1-247-704-11	CARBON	220	5%	1/4W	R624	1-249-460-11	CARBON	15K	5%	1/4W
R506	1-247-704-11	CARBON	220	5%	1/4W	R625	1-247-887-00	CARBON	220K	5%	1/4W
R507	1-249-462-11	CARBON	22K	5%	1/4W	R626	1-247-727-11	CARBON	10	5%	1/2W
R508	1-247-721-11	CARBON	4.7K	5%	1/4W	R627	1-247-750-11	CARBON	680	5%	1/2W
R509	1-247-694-11	CARBON	33	5%	1/4W	R652	1-249-393-11	CARBON	10	5%	1/4W (GERMANY)
R510	1-247-698-11	CARBON	68	5%	1/4W	R801	1-247-887-00	CARBON	220K	5%	1/4W
R511	1-247-717-11	CARBON	2.2K	5%	1/4W	R802	1-247-881-00	CARBON	120K	5%	1/4W
R512	1-247-713-11	CARBON	1K	5%	1/4W	R803	1-249-461-11	CARBON	18K	5%	1/4W
R513	1-249-915-11	CARBON	470	1%	1/4W	R804	1-247-721-11	CARBON	4.7K	5%	1/4W
R514	△ 1-247-688-11	CARBON	10	5%	1/4W F	R805	1-247-693-11	CARBON	27	5%	1/4W
R515	△ 1-247-688-11	CARBON	10	5%	1/4W F	R806	1-247-721-11	CARBON	4.7K	5%	1/4W
R516	1-249-469-11	CARBON	100K	5%	1/4W	R807	1-247-751-11	CARBON	820	5%	1/2W
R517	△ 1-247-745-11	CARBON	330	5%	1/2W F	R808	1-249-467-11	CARBON	68K	5%	1/4W
R518	△ 1-249-455-11	CARBON	4.7	5%	1/4W F	R810	1-247-237-00	CARBON	750	5%	1/2W
R519	△ 1-249-455-11	CARBON	4.7	5%	1/4W F	R812	△ 1-216-479-11	METAL OXIDE	560	5%	3W F
R520	1-217-611-00	RES. METAL PLATE 0.1				R820	1-247-725-11	CARBON	10K	5%	1/4W
R521	1-217-611-00	RES. METAL PLATE 0.1				R900	1-247-752-11	CARBON	1K	5%	1/2W
R522	1-247-727-11	CARBON	10	5%	1/2W	R901	1-247-752-11	CARBON	1K	5%	1/2W
R523	△ 1-247-717-11	CARBON	2.2K	5%	1/4W F	R902	1-247-752-11	CARBON	1K	5%	1/2W
R524	1-249-460-11	CARBON	15K	5%	1/4W	R903	1-247-752-11	CARBON	1K	5%	1/2W
						R904	1-247-752-11	CARBON	1K	5%	1/2W

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

**MAIN** **SD** **SEC**

Ref. No.	Part No.	Description	Remark
R905	1-247-752-11	CARBON 1K 5% 1/2W	
R906	1-247-752-11	CARBON 1K 5% 1/2W	
R907	1-247-752-11	CARBON 1K 5% 1/2W	
R910	1-808-881-91	THERMISTOR (POSITIVE) 2.2 (AE2)	
R911	1-808-881-91	THERMISTOR (POSITIVE) 2.2 (AE2)	

< VARIABLE RESISTOR >

RV500	1-237-455-11	RES. ADJ. CARBON 500 (BIAS CURRENT L)	
RV600	1-237-455-11	RES. ADJ. CARBON 500 (BIAS CURRENT R)	

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A-4345-196-A SD BOARD, COMPLETE (AEP, UK)  
 \* A-4345-207-A SD BOARD, COMPLETE (GERMANY)  
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4-945-177-01 HOUSE, LIGHTING

< CAPACITOR >

C300	1-123-369-00	ELECT 4.7uF 20% 50V	
C302	1-136-154-00	FILM 0.012uF 5% 50V	
C303	1-136-154-00	FILM 0.012uF 5% 50V	
C304	1-130-473-00	MYLAR 0.0015uF 5% 50V	
C305	1-164-073-11	CERAMIC 100PF 10% 50V	
C306	1-123-369-00	ELECT 4.7uF 20% 50V	
C307	1-136-166-00	FILM 0.12uF 5% 50V	
C308	1-162-286-31	CERAMIC 220PF 10% 50V	
C309	1-136-161-00	FILM 0.047uF 5% 50V	
C310	1-164-062-11	CERAMIC 47PF 5% 50V	
C312	1-164-031-11	CERAMIC 33PF 5% 50V(GERMANY)	
C400	1-123-369-00	ELECT 4.7uF 20% 50V	
C402	1-136-154-00	FILM 0.012uF 5% 50V	
C403	1-136-154-00	FILM 0.012uF 5% 50V	
C404	1-130-473-00	MYLAR 0.0015uF 5% 50V	
C405	1-164-073-11	CERAMIC 100PF 10% 50V	
C406	1-123-369-00	ELECT 4.7uF 20% 50V	
C407	1-136-166-00	FILM 0.12uF 5% 50V	
C408	1-162-286-31	CERAMIC 220PF 10% 50V	
C409	1-136-161-00	FILM 0.047uF 5% 50V	
C410	1-164-062-11	CERAMIC 47PF 5% 50V	
C412	1-164-031-11	CERAMIC 33PF 5% 50V(GERMANY)	
C810	1-126-233-11	ELECT 22uF 20% 50V	

< CONNECTOR >

CNP802 \* 1-564-342-11 PIN, CONNECTOR 8P

< DIODE >

D300	8-719-912-20	DIODE 1SS120	
D400	8-719-912-20	DIODE 1SS120	
D809	8-719-301-52	LED SEL2810A-C-TP2 (DIRECT)	
D810	8-719-301-52	LED SEL2810A-C-TP2 (DIRECT)	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC300	8-759-634-50	IC M5218AL	
IC301	8-759-634-50	IC M5218AL	

< RESISTOR >

R300	1-247-725-11	CARBON 10K 5% 1/4W	
R301	1-247-725-11	CARBON 10K 5% 1/4W	
R302	1-246-545-00	CARBON 1.0M 5% 1/4W	
R303	1-247-700-11	CARBON 100 5% 1/4W	
R304	1-247-726-11	CARBON 33K 5% 1/4W	
R305	1-247-726-11	CARBON 33K 5% 1/4W	
R306	1-247-724-11	CARBON 8.2K 5% 1/4W	
R309	1-247-706-11	CARBON 330 5% 1/4W	
R310	1-246-545-00	CARBON 1.0M 5% 1/4W	
R311	1-247-725-11	CARBON 10K 5% 1/4W	
R312	1-247-725-11	CARBON 10K 5% 1/4W	
R314	1-246-545-00	CARBON 1.0M 5% 1/4W	
R400	1-247-725-11	CARBON 10K 5% 1/4W	
R401	1-247-725-11	CARBON 10K 5% 1/4W	
R402	1-246-545-00	CARBON 1.0M 5% 1/4W	
R403	1-247-700-11	CARBON 100 5% 1/4W	
R404	1-247-726-11	CARBON 33K 5% 1/4W	
R405	1-247-726-11	CARBON 33K 5% 1/4W	
R406	1-247-724-11	CARBON 8.2K 5% 1/4W	
R409	1-247-706-11	CARBON 330 5% 1/4W	
R410	1-246-545-00	CARBON 1.0M 5% 1/4W	
R411	1-247-725-11	CARBON 10K 5% 1/4W	
R412	1-247-725-11	CARBON 10K 5% 1/4W	
R414	1-246-545-00	CARBON 1.0M 5% 1/4W	
R811	1-247-704-11	CARBON 220 5% 1/4W	

< VARIABLE RESISTOR >

RV300	1-241-056-11	RES. VAR. CARBON 100K/100K (TREBLE)	
RV301	1-241-056-11	RES. VAR. CARBON 100K/100K (BASS)	
RV302	1-238-513-11	RES. VAR. CARBON 150K/150K (BALANCE)	

< SWITCH >

S300	1-571-112-21	SWITCH, PUSH (1 KEY) (SUBSONIC) (INPUT SELECTOR)	
S301	1-571-112-21	SWITCH, PUSH (1 KEY) (LOUDNESS) (REC OUT SELECTOR)	
S302	1-572-642-11	SWITCH, PUSH (1 KEY) (SOURCE DIRECT) (SPEAKER)	

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\* 1-639-966-11 SEC BOARD  
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< CAPACITOR >

C951	1-136-153-00	FILM 0.001MF 5% 50V(GERMANY)	
C953	1-106-228-00	FILM 0.22MF 5% 100V(GERMANY)	

< RESISTOR >

R950	1-247-694-11	CARBON 33 5% 1/4W(GERMANY)	
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**SP**   **TRANS**   **VOL**

Ref.No.	Part No.	Description	Remark
	* 1-639-964-11	SP BOARD *****	
		< CAPACITOR >	
C550	1-136-153-00	FILM 0.01uF 5% 50V (GERMANY)	
C551	1-136-153-00	FILM 0.01uF 5% 50V (GERMANY)	
C552	1-164-079-11	CERAMIC 330PF 10% 50V (GERMANY)	
C650	1-136-153-00	FILM 0.01uF 5% 50V (GERMANY)	
C651	1-136-153-00	FILM 0.01uF 5% 50V (GERMANY)	
C652	1-164-079-11	CERAMIC 330PF 10% 50V (GERMANY)	
		< CONNECTOR >	
CNP702 *	1-564-509-11	PLUG, CONNECTOR 6P	
		< DIODE >	
D811	8-719-912-20	DIODE 1SS120	
D812	8-719-912-20	DIODE 1SS120	
		< RESISTOR >	
R550	1-247-727-11	CARBON 10 5% 1/2W (GERMANY)	
R551	1-247-727-11	CARBON 10 5% 1/2W (GERMANY)	
R650	1-247-727-11	CARBON 10 5% 1/2W (GERMANY)	
R651	1-247-727-11	CARBON 10 5% 1/2W (GERMANY)	
		< RELAY >	
RY800	1-515-501-00	RELAY	
		< SWITCH >	
S900	1-570-897-11	SWITCH, SLIDE (REMOTE) (SPEAKER)	
		< TERMINAL >	
TM900	1-537-227-11	TERMINAL BOARD (SPEAKER) (AE2)	
TM900	1-537-228-11	TERMINAL BOARD (SPEAKER) (AE1, GERMANY, UK)	
		*****	
	* 1-639-967-11	TRANS BOARD *****	
		*****	
	1-639-973-11	270 VOL BOARD *****	
		< VARIABLE RESISTOR >	
RV303	1-241-557-11	RES, VAR, CARBON 120K/120K (VOLUME)	

Ref.No.	Part No.	Description	Remark
		MISCELLANEOUS *****	
53	△ 1-575-651-11	CORD, POWER (AEP, GERMANY)	
53	△ 1-575-652-11	CORD, POWER (UK)	
F1	△ 1-532-237-00	FUSE, TIME LAG (3.15A)	
S101	1-572-796-11	SWITCH, ROTARY SLIDE (INPUT SELECTOR)	
S102	1-572-795-11	SWITCH, ROTARY SLIDE (REC OUT SELECTOR)	
S900	1-572-794-12	SWITCH, ROTARY SLIDE (SPEAKER)	
T1	△ 1-450-571-11	TRANSFORMER, POWER (AEP, GERMANY)	
T1	△ 1-450-572-11	TRANSFORMER, POWER (UK)	
		*****	
		ACCESSORY & PACKING MATERIAL *****	
	3-753-389-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE (AEP, UK)	
	3-753-389-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP, GERMANY)	
	* 4-931-985-01	CUSHION	
	* 4-944-052-01	INDIVIDUAL CARTON	
		*****	
		<b>HARDWARE LIST</b> *****	
# 1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
# 2	7-682-547-04	SCREW +BVTT 3X6 (S)	
# 3	7-682-560-04	SCREW +BVTT 4X6 (S)	
# 4	7-682-549-04	SCREW +BVTT 3X10 (S)	
# 5	7-621-849-00	SCREW (BV/RING)	
# 6	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	

**Note:** The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.