

TA-N90ES

SERVICE MANUAL

*US Model
AEP Model*

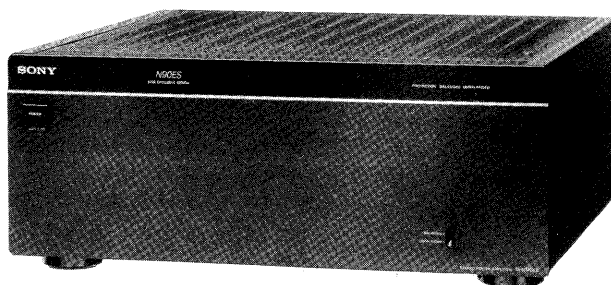


Photo : BLACK

SPECIFICATIONS

System

Super legato linear, pure complementary SEPP power amplifier, powerful power supply

Intermodulation (IM) distortion at rated output 60 Hz : 7 kHz = 4 : 1
0.004%

Residual noise at network A
Less than 35 μ V

Frequency response
1 Hz - 180 kHz ± 3 dB

S/N (network)
120 dB (A)

Dynamic power

1 ohm: 400 W
2 ohms: 640 W
4 ohms: 440 W
6 ohms: 320 W
8 ohms: 240 W

Power bandwidth (IHF)

4 ohms, THD 0.12%: 10 Hz - 30 kHz
8 ohms, THD 0.12%: 10 Hz - 50 kHz

Dynamic headroom (*78 IHF)

4 ohms: 2.8 dB
8 ohms: 1.6 dB

Damping factor

8 ohms, 1 kHz: 100

Input

Input sensitivity/Impedance

UNBALANCED: 1 V, 50 kilohms
BALANCED: 0.5 V, 100 kilohms

Output

Continuous RMS power output (both channels driven simultaneously)

4 ohms 20 Hz - 20 kHz, THD 0.015%: 140 + 140 W
8 ohms 20 Hz - 20 kHz, THD 0.01%: 100 + 100 W

Total harmonic distortion

4 ohms, at 10 watt output: 0.004%
8 ohms, at 10 watt output: 0.0018%

General

Power requirements

European countries model: 220 - 230 V AC, 50/60 Hz
U.S.A. model: 120 V AC, 60 Hz

Power consumption

European countries model: 390 W
U.S.A. model: 330 W

Dimensions (approx.) (w/h/d)

430 x 175 x 440 mm (17 x 7 x 17 ³/₈ inches)
incl. projecting parts and controls

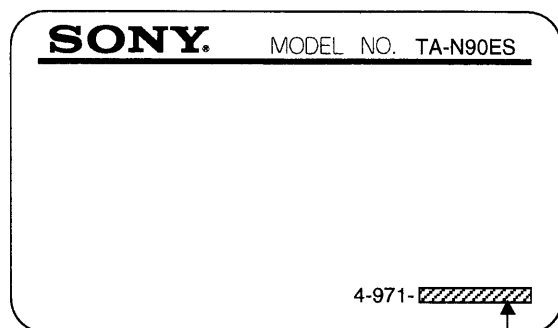
Mass (approx.)

European countries model: 21.0 kg (46 lb 5 oz)
U.S.A. model: 21.8 kg (48 lb 1 oz)

Design and specifications are subject to change without notice.

STEREO POWER AMPLIFIER
SONY®

— **MODEL IDENTIFICATION** —
(Specification Label)



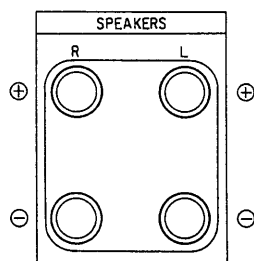
US model : 665-□□
AEP1, CE3 model : 663-□□
German model : 664-□□

TABLE OF CONTENTS

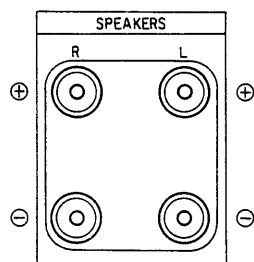
<u>Section</u>	<u>Title</u>	<u>Page</u>
1.	GENERAL	4
2.	ELECTRICAL ADJUSTMENTS	5
3.	DIAGRAMS	
3-1.	Circuit Boards Location	5
3-2.	Block Diagram	6
3-3.	Semiconductor Lead Layouts	8
3-4.	Printed Wiring Board	10
3-5.	Schematic Diagram	15
4.	EXPLODED VIEWS	
4-1.	Cabinet Section	19
4-2.	Front and Back Section	20
4-3.	Chassis Section	21
5.	ELECTRICAL PARTS LIST	22

— **SPEAKERS TERMINAL** —

CE3 model :



Other model :



Note :

When looking over schematic diagrams and printed wiring boards of the set, see the speaker terminal of the back panel to judge which kind of type of it.

SAFETY CHECK-OUT

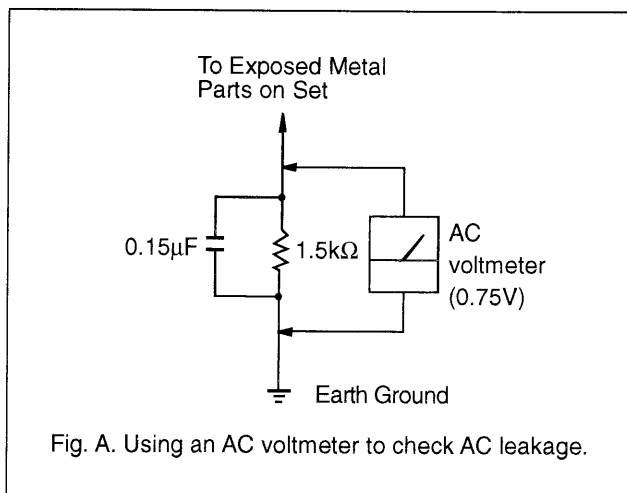
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



SAFETY-RELATED COMPONENT WARNING !!

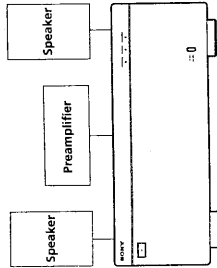
COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1 GENERAL

Hooking Up the System

Overview

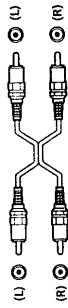
This section describes how to hook up the power amplifier to a preamplifier and speakers. Hook up your preamplifier and speakers according to the connection diagrams that follow.



What cords will I need?

Depending on whether the preamplifier has balanced output jacks or not, use either of the two following ways to connect the power amplifier to a preamplifier:

- (1) Use an audio connecting cord (not supplied) to connect the power amplifier to a preamplifier.



- (2) Use two balanced cables (equivalent to Canon XLR-3; contact your dealer) when connecting a preamplifier with balanced output jacks.

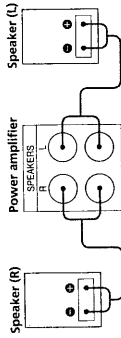
Use one speaker cord (not supplied) for each speaker for speaker connections.



Hookup procedure

- Turn off the power to all components before making any connections.
- Do not connect the AC power cords until all connections are completed.
- Be sure to make connections firmly to prevent hum and noise.
- When connecting an audio cord, be sure to connect the R (right) and L (left) connectors of the power amplifier to the R and L connectors of the other equipment.

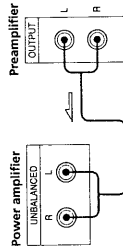
Speakers



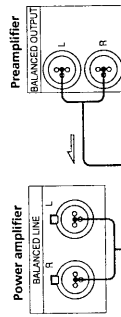
Preamplifier

You can select either an unbalanced or balanced connection.

Unbalanced connection



Balanced connection



Connection assignment of balanced cables for European model



Connection assignment of balanced cables for U.S.A. model



Connecting the AC power cord

Connect the AC power cords from this power amplifier and the preamplifier to a wall outlet.

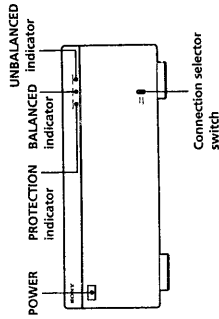
Where do I go next?

Now you're ready to use your power amplifier. First, turn on the preamplifier, then the power amplifier.

Listening to a Program Source

This section describes how to listen to a program source.

Before you begin, make sure you have connected the power amplifier to a preamplifier and speakers correctly and firmly as indicated on page 3.



- 1 Turn on the preamplifier.
- 2 Press POWER to turn on the power amplifier. The PROTECTION indicator flashes for about 9 seconds, then turns off.
- 3 Select either BALANCED or UNBALANCED with the connection selector switch, depending on the connection of the preamplifier. The BALANCED or UNBALANCED indicator will light.
- 4 Select the program source through the preamplifier.
- 5 Start playing the program source.

Note

While the PROTECTION indicator is flashing, the built-in muting circuit is activating. If the indicator lights and you cannot hear the speaker output while a program source is playing, an error has occurred. If this happens, disconnect the AC power cord and check the preamplifier, speakers and connections.

SECTION 2

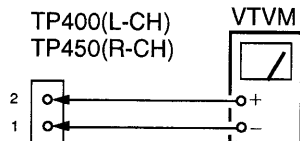
ELECTRICAL ADJUSTMENTS

Note :

1. DC BIAS adjustments should be made one minute after the POWER switch is turned on (POWER ON).
2. After replacing the power transistors, DC BIAS adjustments should be made.

DC Bias Adjustment (with no signal input)

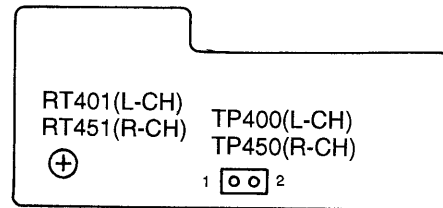
Procedure :



	Adjustment Part	Reading on VTVM
L-CH	RT401	90mV \pm 10mV
R-CH	RT451	90mV \pm 10mV

Adjustment Location

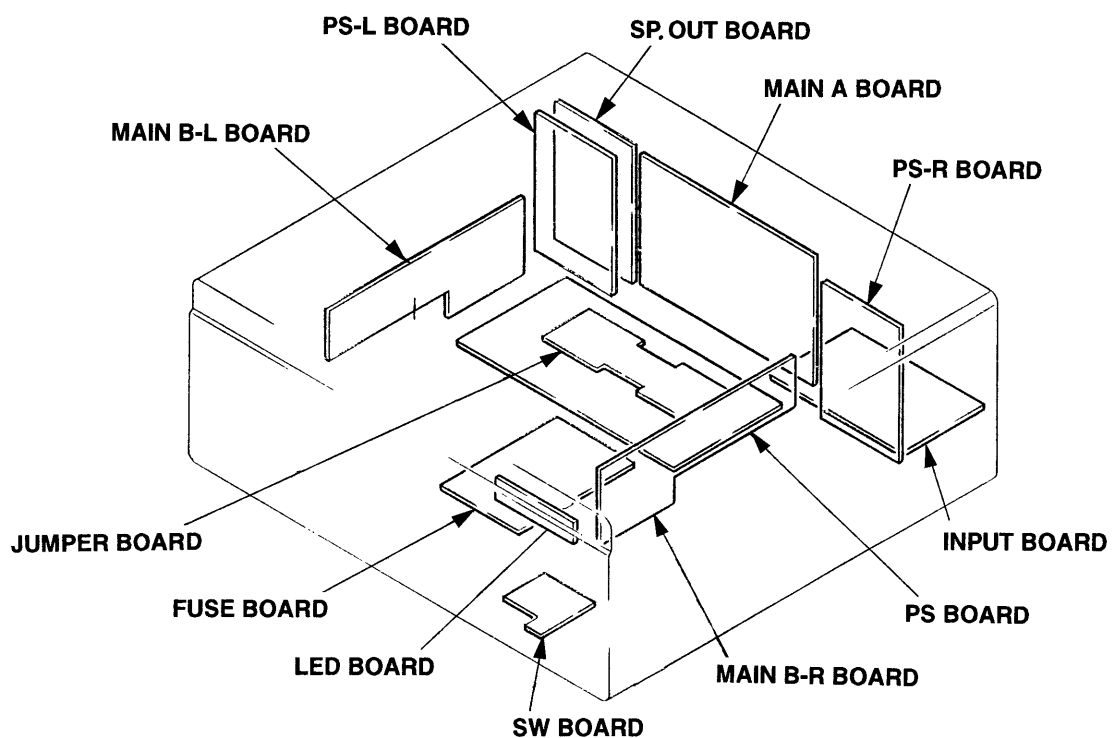
L-CH : MAIN B-L BOARD (COMPONENT SIDE)
R-CH : MAIN B-R BOARD (COMPONENT SIDE)



SECTION 3

DIAGRAMS

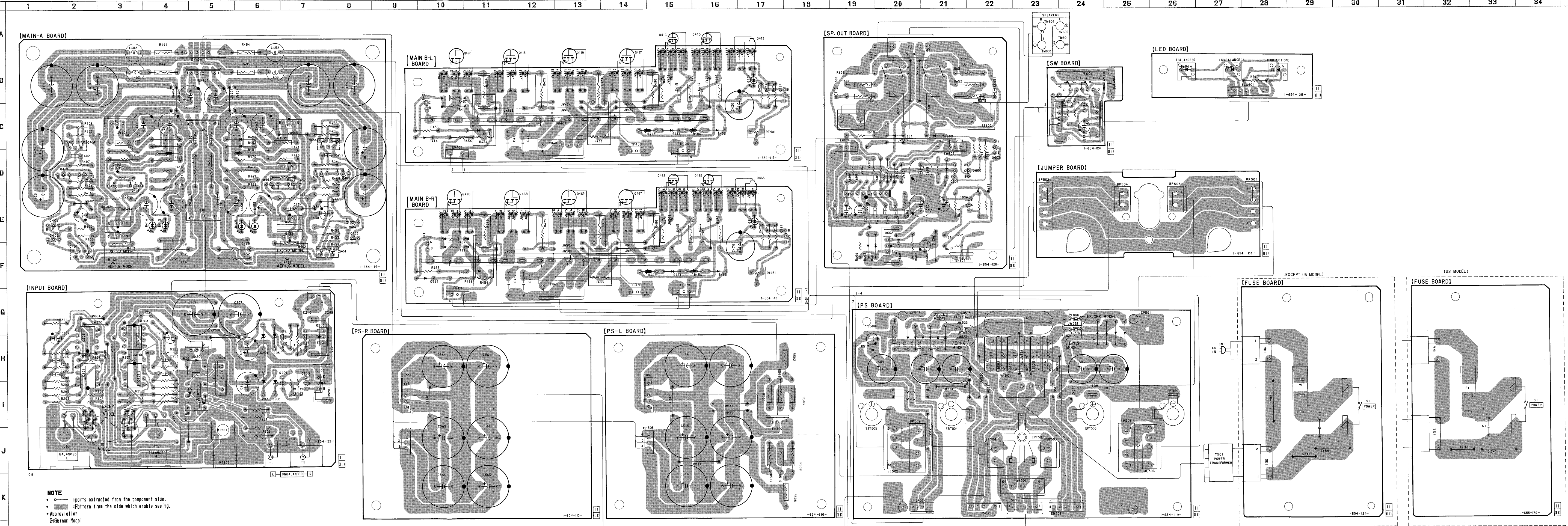
3-1. CIRCUIT BOARDS LOCATION

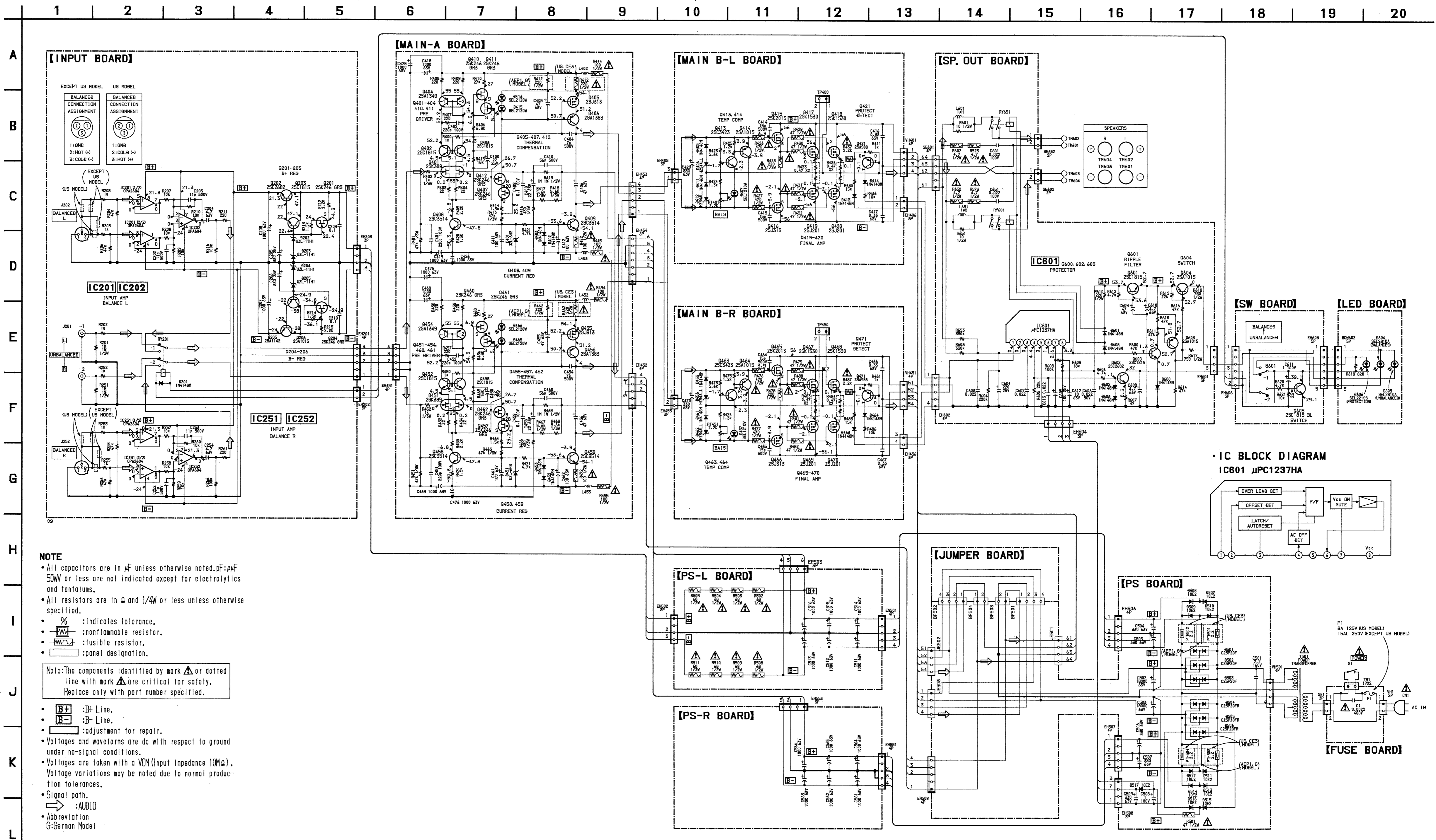


3-4. PRINTED WIRING BOARD
•See page 5 for Circuit Boards Location and see page 8 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D201	H-5	IC252	H-3
D202	I-6	IC601	D-19
D203	I-6		
D204	H-6	Q201	H-7
D205	H-6	Q202	H-7
D401	D-4	Q203	H-7
D402	C-4	Q204	H-7
D403	C-4	Q205	H-7
D405	C-16	Q206	H-7
D406	C-16	Q401	F-2
D407	B-17	Q402	E-1
D411	C-15	Q403	E-1
D412	C-15	Q404	C-2
D413	C-11	Q405	E-3
D414	C-10	Q406	E-3
D415	E-4	Q407	D-3
D416	E-4	Q408	D-3
D451	D-6	Q409	C-3
D452	C-6	Q410	D-2
D453	C-6	Q411	D-2
D455	F-16	Q412	D-3
D456	F-16	Q413	A-17
D457	E-17	Q414	B-18
D461	F-15	Q415	A-16
D462	F-15	Q416	A-15
D463	F-11	Q417	A-14
D464	F-10	Q418	A-12
D465	E-6	Q419	A-13
D466	E-6	Q420	A-10
D501	H-22	Q421	B-10
D502	H-22	Q451	F-7
D503	H-22	Q452	E-8
D504	H-23	Q453	E-8
D505	H-23	Q454	C-8
D506	H-23	Q455	E-7
D507	H-25	Q456	E-7
D508	H-25	Q457	D-7
D509	H-24	Q458	D-7
D510	H-24	Q459	C-7
D511	H-21	Q460	D-8
D512	H-20	Q461	D-7
D513	H-21	Q462	D-6
D514	H-21	Q463	D-17
D515	H-20	Q464	E-18
D516	H-20	Q465	D-16
D517	H-19	Q466	D-15
D600	D-21	Q467	E-14
D601	C-20	Q468	E-12
D602	F-19	Q469	E-13
D603	F-19	Q470	E-10
D604	B-26	Q471	E-10
D605	B-27	Q600	D-22
D606	B-28	Q601	D-21
D608	C-21	Q602	F-20
		Q603	D-22
IC201	H-2	Q604	E-21
IC202	H-2	Q605	C-24
IC251	H-3		





SECTION 4 EXPLODED VIEWS

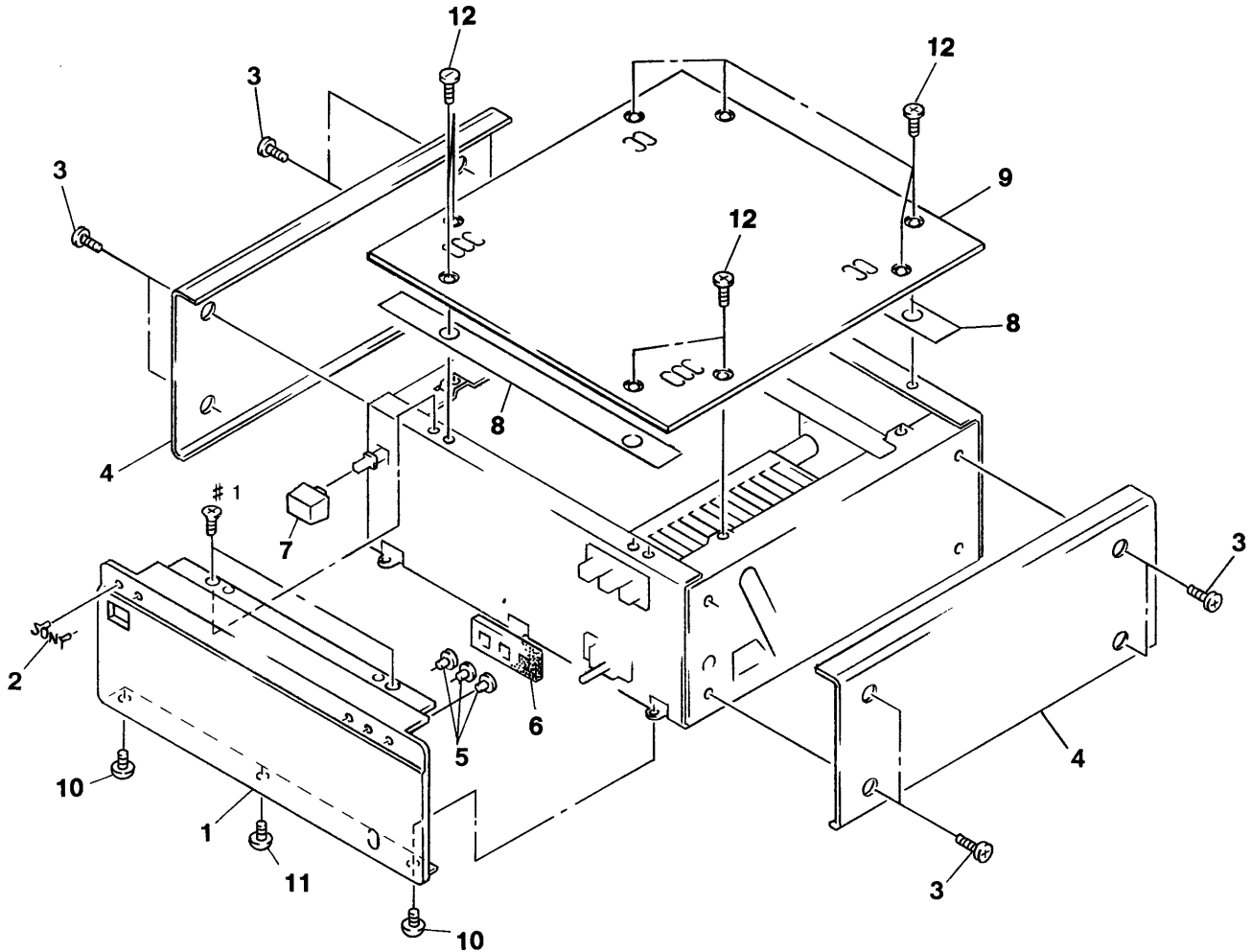
NOTE:

- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
G : German model

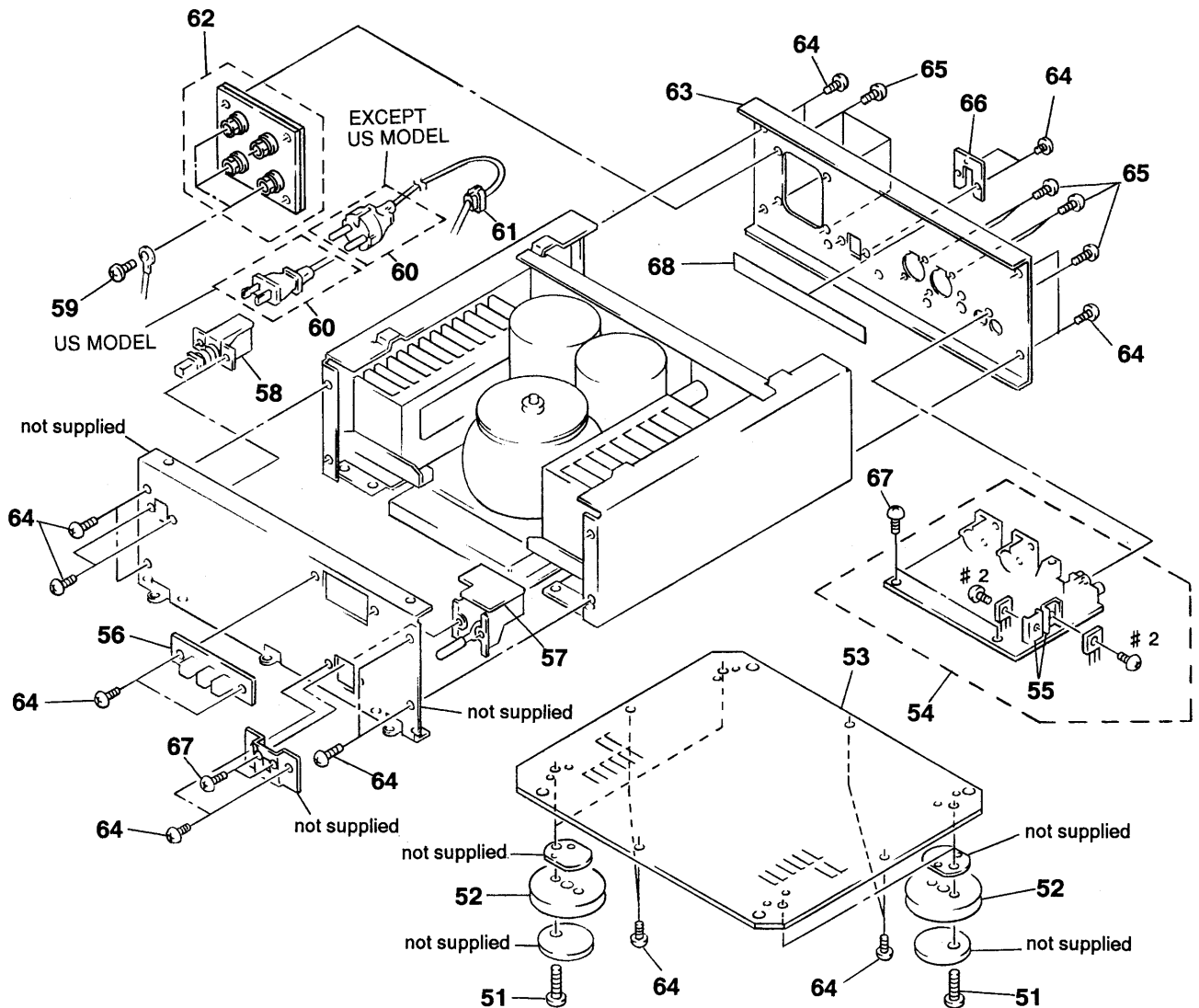
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

4-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-969-331-01	PANEL, FRONT (US, AEP1, CE3, G(BLACK))		7	4-942-032-01	KNOB (POWER) (US, AEP1, CE3, G(BLACK))	
1	4-969-331-11	PANEL, FRONT (G(GOLD))		7	4-942-032-11	KNOB (POWER) (G(GOLD))	
2	4-942-568-01	EMBLEM (NO. 5), SONY (US, AEP1, CE3, G(BLACK))		8	4-969-347-01	CUSHION	
2	4-942-568-21	EMBLEM (NO. 5), SONY (G(GOLD))		* 9	4-969-333-01	BOARD, TOP (US, AEP1, CE3, G(BLACK))	
3	4-924-242-11	SCREW (M3X6), FLAT HEAD (US, AEP1, CE3, G(BLACK))		* 9	4-969-333-11	BOARD, TOP (G(GOLD))	
3	4-924-242-61	SCREW (M3X6), FLAT HEAD (G(GOLD))		10	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 4	4-969-332-01	PANEL, SIDE (US, AEP1, CE3, G(BLACK))		11	3-704-515-41	SCREW (BV/RING)	
* 4	4-969-332-11	PANEL, SIDE (G(GOLD))		12	4-921-439-01	SCREW (M3X8), FLAT HEAD (US, AEP1, CE3, G(BLACK))	
5	4-969-325-01	LENS, LED		12	4-921-439-11	SCREW (M3X8), FLAT HEAD (G(GOLD))	
6	4-971-098-01	PLATE, LIGHT INTERCEPTION (US, AEP1, CE3, G(BLACK))					

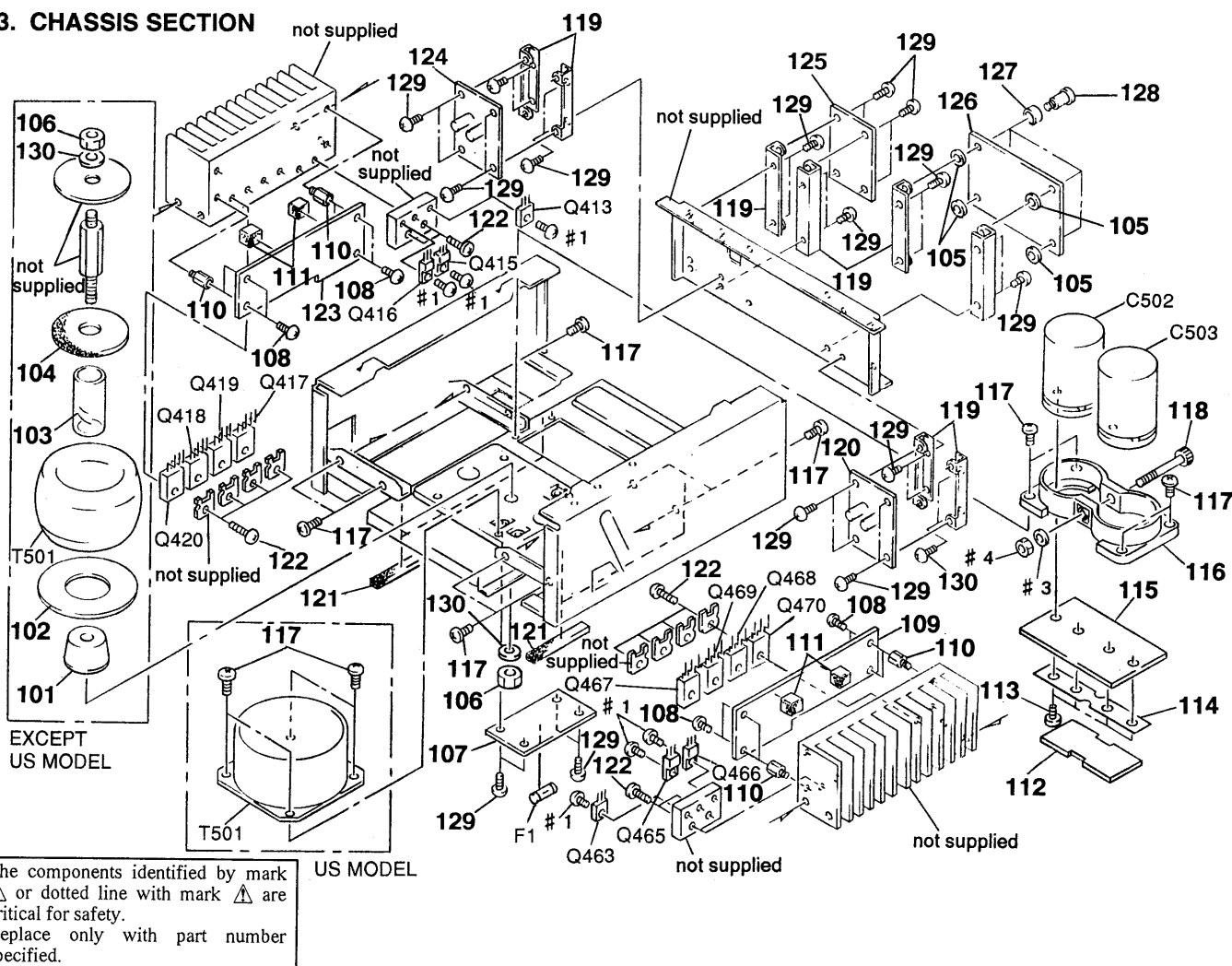
4-2. FRONT AND BACK SECTION



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

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
51	4-968-979-01	SCREW (4X20), +B		61	2-352-626-01	BUSHING, CORD (AEP1, CE3, G)	
52	4-970-487-01	FOOT (F50180S)		61	4-916-783-01	BUSHING, CORD (US)	
* 53	X-4945-489-2	PLATE ASSY, BOTTOM		* 62	1-537-800-11	TERMINAL BOARD (SP) (US, AEP1, G)	
* 54	A-4371-760-A	INPUT BOARD, COMPLETE (AEP1, CE3, G)		62	1-537-800-21	TERMINAL BOARD (SP) (CE3)	
* 54	A-4371-761-A	INPUT BOARD, COMPLETE (US)		* 63	4-969-337-01	PANEL, BACK (AEP1, CE3, G)	
* 55	4-861-002-00	HEAT SINK		* 63	4-969-337-11	PANEL, BACK (US)	
* 56	1-654-125-11	LED BOARD		64	4-967-961-01	SCREW (3X8) (SPECIAL)	
* 57	1-654-124-11	SW BOARD		65	4-968-977-11	SCREW (3X10), +BVT	
A 58	1-554-538-00	SWITCH, PUSH (AC POWER) (1 KEY)		* 66	4-923-873-01	BRACKET, CORD STOPPER	
59	4-967-960-01	SCREW (4X8)		67	4-967-959-01	SCREW (3X6)	
A 60	1-559-479-11	CORD, POWER (US)		68	4-971-316-11	DAMPER	
A 60	1-575-953-11	CORD, POWER (AEP1, CE3, G)					

4-3. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 101	4-971-103-01	HOLDER (DT) (AEP1, CE3, G)		* 126	A-4371-744-A	MAIN-A BOARD, COMPLETE (CE3)	
102	4-971-104-01	CUSHION (DT2) (AEP1, CE3, G)		* 126	A-4371-745-A	MAIN-A BOARD, COMPLETE (G)	
* 103	4-971-105-01	CUSHION (DIA. 22) (AEP1, CE3, G)		* 126	A-4371-746-A	MAIN-A BOARD, COMPLETE (US)	
104	4-971-101-01	CUSHION (DT1) (AEP1, CE3, G)		127	4-969-896-01	SPACER	
105	4-971-099-01	WASHER (P)		128	4-971-720-01	SCREW, (+) STEP	
				129	4-967-961-01	SCREW (3X8) (SPECIAL)	
106	4-960-914-01	NUT (M10) (AEP1, CE3, G)		130	3-376-862-01	WASHER	
* 107	1-654-121-11	FUSE BOARD (AEP1, CE3, G)		C502	1-110-496-11	CAP, ELECT 18000uF	
* 107	1-655-179-11	FUSE BOARD (US)		C503	1-110-496-11	CAP, ELECT 18000uF	
108	4-967-959-01	SCREW (3X6)		\triangle F1	1-532-299-00	FUSE, TIME-LAG (T5A, 250) (AEP1, CE3, G)	
* 109	A-4371-750-A	MAIN B-R BOARD, COMPLETE		\triangle F1	1-532-749-11	FUSE, GLASS TUBE (8A, 125V) (US)	
* 110	4-969-349-01	BOSS (H)		Q413	8-729-203-45	TRANSISTOR 2SC3423-0	
111	4-971-108-01	CUSHION (H)		Q415	8-729-018-19	TRANSISTOR 2SK2013-Y	
* 112	1-654-123-11	JAMPER BOARD		Q416	8-729-018-21	TRANSISTOR 2SJ313-Y	
* 113	4-931-964-01	SCREW (M4X6)		Q417	8-729-018-11	TRANSISTOR 2SK1530A-Y	
* 114	4-969-346-01	PLATE, GROUND		Q418	8-729-018-11	TRANSISTOR 2SK1530A-Y	
* 115	A-4371-751-A	PS BOARD, COMPLETE (AEP1, G)		Q419	8-729-018-13	TRANSISTOR 2SJ201A-Y	
* 115	A-4371-752-A	PS BOARD, COMPLETE (CE3)		Q420	8-729-018-13	TRANSISTOR 2SJ201A-Y	
* 115	A-4371-753-A	PS BOARD, COMPLETE (US)		Q463	8-729-203-45	TRANSISTOR 2SC3423-0	
* 116	4-969-342-01	HOLDER (C)		Q465	8-729-018-19	TRANSISTOR 2SK2013-Y	
117	4-967-960-01	SCREW (4X8)		Q466	8-729-018-21	TRANSISTOR 2SJ313-Y	
118	4-971-106-01	BOLT (M5), HEXAGON HOLE		Q467	8-729-018-11	TRANSISTOR 2SK1530A-Y	
* 119	4-969-344-01	HOLDER (P)		Q468	8-729-018-11	TRANSISTOR 2SK1530A-Y	
* 120	1-654-115-11	PS-R BOARD		Q469	8-729-018-13	TRANSISTOR 2SJ201A-Y	
* 121	4-971-317-01	CUSHION (C)		Q470	8-729-018-13	TRANSISTOR 2SJ201A-Y	
122	4-956-589-01	SCREW (3X14), +B(COPPER PLATING)		\triangle T501	1-427-646-11	TRANSFORMER, POWER (AEP1, CE3, G)	
* 123	A-4371-749-A	MAIN B-L BOARD, COMPLETE		\triangle T501	1-427-647-11	TRANSFORMER, POWER (US)	
* 124	1-654-116-11	PS-L BOARD					
* 125	A-4371-758-A	SP. OUT BOARD, COMPLETE					
* 126	A-4371-743-A	MAIN-A BOARD, COMPLETE (AEP1)					



FUSE

INPUT

SECTION 5

ELECTRICAL PARTS LIST

NOTE:

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

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

- 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.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) . . . (RED)



↑

Parts color

↑

Cabinet's color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
G : German model

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	1-654-121-11	FUSE BOARD (AEP1, CE3, G) *****		< DIODE >			
*	1-655-179-11	FUSE BOARD (US) *****		D201	8-719-987-63	DIODE 1N4148M	
	1-533-183-11	HOLDER, FUSE		D202	8-719-001-51	DIODE UZL-11H1	
		< CAPACITOR >		D203	8-719-001-51	DIODE UZL-11H1	
C1	1-161-742-00	CERAMIC 0.0022uF 20% 400V		D204	8-719-001-51	DIODE UZL-11H1	
		< FUSE >		D205	8-719-001-51	DIODE UZL-11H1	
 F1	1-532-299-00	FUSE, TIME-LAG (T5AL, 250V) (AEP1, CE3, G)		< CONNECTOR >			
 F1	1-532-749-11	FUSE, GLASS TUBE (8A, 125V) (US)		EH201	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
		< CONNECTOR >		* EH202	1-564-506-11	PLUG, CONNECTOR 3P	
SE1	1-580-614-21	PIN, CONNECTOR 2P		* EH203	1-564-506-11	PLUG, CONNECTOR 3P	
* VH1	1-568-226-11	PIN, CONNECTOR 2P		< IC >			
*****				IC201	8-759-259-12	IC OPA2604AP	
*	A-4371-760-A	INPUT BOARD, COMPLETE (AEP1, CE3, G) *****		IC202	8-759-259-11	IC OPA604AP	
*	A-4371-761-A	INPUT BOARD, COMPLETE (US) *****		IC251	8-759-259-12	IC OPA2604AP	
	4-861-002-00	HEAT SINK (HS201, 202)		IC252	8-759-259-11	IC OPA604AP	
*	4-946-336-01	BRACKET (GROUND) (MT202)		< JACK >			
	7-682-548-09	SCREW (3X8)		J201	1-568-250-21	JACK, PIN 2P (UNBALANCED)	
		< CAPACITOR >		J202	1-766-803-11	CONNECTOR (CANON) (BALANCED L)	
C202	1-107-590-11	CERAMIC 11PF 5% 500V		J252	1-766-803-11	CONNECTOR (CANON) (BALANCED R)	
C203	1-107-590-11	CERAMIC 11PF 5% 500V		< TRANSISTOR >			
C204	1-124-927-11	ELECT 4.7uF 20% 100V		Q201	8-729-202-67	TRANSISTOR 2SK246-GR3	
C205	1-126-025-11	ELECT 330uF 20% 25V		Q202	8-729-141-05	TRANSISTOR 2SC2682-QPE	
C206	1-126-025-11	ELECT 330uF 20% 25V		Q203	8-729-119-78	TRANSISTOR 2SC403SP-51	
C207	1-124-922-11	ELECT 1000uF 20% 63V		Q204	8-729-202-67	TRANSISTOR 2SK246-GR3	
C208	1-124-922-11	ELECT 1000uF 20% 63V		Q205	8-729-141-06	TRANSISTOR 2SA1142-QPE	
C209	1-164-159-11	CERAMIC 0.1uF 50V		Q206	8-729-201-53	TRANSISTOR 2SA1015-GR	
C210	1-164-159-11	CERAMIC 0.1uF 50V		< RESISTOR >			
C252	1-107-590-11	CERAMIC 11PF 5% 500V		R201	1-214-937-00	METAL 1M 1% 1/2W	
C253	1-107-590-11	CERAMIC 11PF 5% 500V		R202	1-247-713-11	CARBON 1K 5% 1/4W F	
C254	1-124-927-11	ELECT 4.7uF 20% 100V		R203	1-247-713-11	CARBON 1K 5% 1/4W F	
				R204	1-249-465-11	CARBON 47K 5% 1/4W	
				R205	1-247-713-11	CARBON 1K 5% 1/4W F	
				R206	1-249-465-11	CARBON 47K 5% 1/4W	
				R207	1-247-725-11	CARBON 10K 5% 1/4W F	
				R208	1-247-725-11	CARBON 10K 5% 1/4W F	
				R209	1-247-725-11	CARBON 10K 5% 1/4W F	
				R210	1-247-725-11	CARBON 10K 5% 1/4W F	

INPUT

JUMPER

LED

MAIN-A

Ref.No.	Part No.	Description	Remark
R211	1-247-704-11	CARBON 220 5% 1/4W F	
R212	1-247-717-11	CARBON 2.2K 5% 1/4W F	
R213	1-249-556-11	CARBON 1.5K 5% 1/4W	
R214	1-249-556-11	CARBON 1.5K 5% 1/4W	
R215	1-247-717-11	CARBON 2.2K 5% 1/4W F	
R216	1-249-469-11	CARBON 100K 5% 1/4W	
R251	1-214-937-00	METAL 1M 1% 1/2W	
R252	1-247-713-11	CARBON 1K 5% 1/4W F	
R253	1-247-713-11	CARBON 1K 5% 1/4W F	
R254	1-249-465-11	CARBON 47K 5% 1/4W	
R255	1-247-713-11	CARBON 1K 5% 1/4W F	
R256	1-249-465-11	CARBON 47K 5% 1/4W	
R257	1-247-725-11	CARBON 10K 5% 1/4W F	
R258	1-247-725-11	CARBON 10K 5% 1/4W F	
R259	1-247-725-11	CARBON 10K 5% 1/4W F	
R260	1-247-725-11	CARBON 10K 5% 1/4W F	
R261	1-247-704-11	CARBON 220 5% 1/4W F	
R266	1-249-469-11	CARBON 100K 5% 1/4W	
< RELAY >			
RY201	1-515-803-11	RELAY	

*	1-654-123-11	JUMPER BOARD	

*	1-654-125-11	LED BOARD	

< DIODE >			
D604	8-719-301-49	DIODE SEL2810A (BALANCED)	
D605	8-719-301-49	DIODE SEL2810A (UNBALANCED)	
D606	8-719-313-43	DIODE SEL6210S-TH10 (PROTECTION)	
< RESISTOR >			
R619	1-247-712-11	CARBON 820 5% 1/4W F	

Ref.No.	Part No.	Description	Remark
*	A-4371-743-A	MAIN-A BOARD, COMPLETE (AEP1)	

*	A-4371-744-A	MAIN-A BOARD, COMPLETE (CE3)	

*	A-4371-745-A	MAIN-A BOARD, COMPLETE (G)	

*	A-4371-746-A	MAIN-A BOARD, COMPLETE (US)	

< CAPACITOR >			
C400	1-126-233-11	ELECT 22uF 20% 50V	
C401	1-136-810-11	FILM 220PF 5% 100V	
C402	1-136-810-11	FILM 220PF 5% 100V	
C404	1-107-587-11	CERAMIC 7PF 0.5PF 500V	
C405	1-124-918-11	ELECT 47uF 20% 63V	
C406	1-124-918-11	ELECT 47uF 20% 63V	
C408	1-124-929-11	ELECT 22uF 20% 100V	
C409	1-137-174-11	FILM 0.1uF 10% 100V	
C410	1-107-606-11	CERAMIC 56PF 5% 500V	
C411	1-126-365-51	ELECT 100uF 20% 63V	
C412	1-126-365-51	ELECT 100uF 20% 63V	
C418	1-128-474-11	ELECT 1000uF 20% 63V	
C419	1-128-474-11	ELECT 1000uF 20% 63V	
C425	1-124-922-11	ELECT 1000uF 20% 63V	
C426	1-124-922-11	ELECT 1000uF 20% 63V	
C450	1-126-233-11	ELECT 22uF 20% 50V	
C451	1-136-810-11	FILM 220PF 5% 100V	
C452	1-136-810-11	FILM 220PF 5% 100V	
C454	1-107-587-11	CERAMIC 7PF 0.5PF 500V	
C455	1-124-918-11	ELECT 47uF 20% 63V	
C456	1-124-918-11	ELECT 47uF 20% 63V	
C458	1-124-929-11	ELECT 22uF 20% 100V	
C459	1-137-174-11	FILM 0.1uF 10% 100V	
C460	1-107-606-11	CERAMIC 56PF 5% 500V	
C461	1-126-365-51	ELECT 100uF 20% 63V	
C462	1-126-365-51	ELECT 100uF 20% 63V	
C468	1-128-474-11	ELECT 1000uF 20% 63V	
C469	1-128-474-11	ELECT 1000uF 20% 63V	
C475	1-124-922-11	ELECT 1000uF 20% 63V	
C476	1-124-922-11	ELECT 1000uF 20% 63V	
< DIODE >			
D401	8-719-933-41	DIODE HZS6C3L	
D402	8-719-987-63	DIODE 1N4148M	
D403	8-719-987-63	DIODE 1N4148M	
D415	8-719-303-13	DIODE SEL1210W	
D416	8-719-303-13	DIODE SEL1210W	
D451	8-719-933-41	DIODE HZS6C3L	
D452	8-719-987-63	DIODE 1N4148M	

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

MAIN-A

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D453	8-719-987-63	DIODE 1N4148M		R408	1-247-704-11	CARBON 220 5% 1/4W F	
D465	8-719-303-13	DIODE SEL1210W		R409	1-247-704-11	CARBON 220 5% 1/4W F	
D466	8-719-303-13	DIODE SEL1210W					
< CONNECTOR >				R410	1-249-586-11	CARBON 27K 5% 1/4W	
EH451	1-691-766-11	PLUG (MICRO CONNECTOR) 4P		△R412	1-219-193-11	FUSIBLE 220 5% 1/2W F	(US, CE3)
EH452	1-691-766-31	PLUG (MICRO CONNECTOR) 4P		R412	1-249-657-11	CARBON 220 5% 1/2W	(AEP1, G)
EH453	1-691-766-21	PLUG (MICRO CONNECTOR) 4P		R413	1-249-492-11	CARBON 47K 5% 1/3W	
EH454	1-691-768-11	PLUG (MICRO CONNECTOR) 6P		R414	1-249-556-11	CARBON 1.5K 5% 1/4W	
< COIL >				R415	1-249-461-11	CARBON 18K 5% 1/4W	
* L402	1-428-203-11	COIL, AIR-CORE		R416	1-247-231-00	CARBON 430 5% 1/3W	
* L403	1-428-203-11	COIL, AIR-CORE		R417	1-247-761-11	CARBON 5.6K 5% 1/3W	
* L452	1-428-203-11	COIL, AIR-CORE		R418	1-247-761-11	CARBON 5.6K 5% 1/3W	
* L453	1-428-203-11	COIL, AIR-CORE		R419	1-214-937-00	METAL 1M 1% 1/2W	
< TRANSISTOR >				R420	1-249-556-11	CARBON 1.5K 5% 1/4W	
Q401	8-729-203-21	TRANSISTOR 2SK389-GR		R421	1-247-721-11	CARBON 4.7K 5% 1/4W F	
Q402	8-729-119-78	TRANSISTOR 2SC403SP-51		△R422	1-219-022-11	FUSIBLE 100 5% 1/2W	
Q403	8-729-119-78	TRANSISTOR 2SC403SP-51		△R444	1-219-022-11	FUSIBLE 100 5% 1/2W F	
Q404	8-729-232-00	TRANSISTOR 2SA1349-GRBL		△R445	1-219-022-11	FUSIBLE 100 5% 1/2W F	
Q405	8-729-018-21	TRANSISTOR 2SJ313-Y					
Q406	8-729-104-91	TRANSISTOR 2SA1383		R450	1-247-713-11	CARBON 1K 5% 1/4W F	
Q407	8-729-202-67	TRANSISTOR 2SK246-GR3		R451	1-249-492-11	CARBON 47K 5% 1/3W	
Q408	8-729-104-18	TRANSISTOR 2SC3514		R452	1-249-210-11	CARBON 1K 5% 1/3W	
Q409	8-729-104-18	TRANSISTOR 2SC3514		R453	1-249-883-11	CARBON 22 5% 1/4W	
Q410	8-729-202-67	TRANSISTOR 2SK246-GR3		R454	1-249-883-11	CARBON 22 5% 1/4W	
Q411	8-729-202-67	TRANSISTOR 2SK246-GR3		R455	1-247-717-11	CARBON 2.2K 5% 1/4W F	
Q412	8-729-202-67	TRANSISTOR 2SK246-GR3		R456	1-247-723-11	CARBON 6.8K 5% 1/4W F	
Q451	8-729-203-21	TRANSISTOR 2SK389-GR		R457	1-247-704-11	CARBON 220 5% 1/4W F	
Q452	8-729-119-78	TRANSISTOR 2SC403SP-51		R458	1-247-704-11	CARBON 220 5% 1/4W F	
Q453	8-729-119-78	TRANSISTOR 2SC403SP-51		R459	1-247-704-11	CARBON 220 5% 1/4W F	
Q454	8-729-232-00	TRANSISTOR 2SA1349-GRBL		R460	1-249-586-11	CARBON 27K 5% 1/4W	
Q455	8-729-018-21	TRANSISTOR 2SJ313-Y		△R462	1-219-193-11	FUSIBLE 220 5% 1/2W F	(US, CE3)
Q456	8-729-104-91	TRANSISTOR 2SA1383		R462	1-249-657-11	CARBON 220 5% 1/2W	(AEP1, G)
Q457	8-729-202-67	TRANSISTOR 2SK246-GR3		R463	1-249-492-11	CARBON 47K 5% 1/3W	
Q458	8-729-104-18	TRANSISTOR 2SC3514		R464	1-249-556-11	CARBON 1.5K 5% 1/4W	
Q459	8-729-104-18	TRANSISTOR 2SC3514		R465	1-249-461-11	CARBON 18K 5% 1/4W	
Q460	8-729-202-67	TRANSISTOR 2SK246-GR3		R466	1-247-231-00	CARBON 430 5% 1/3W	
Q461	8-729-202-67	TRANSISTOR 2SK246-GR3		R467	1-247-761-11	CARBON 5.6K 5% 1/3W	
Q462	8-729-202-67	TRANSISTOR 2SK246-GR3		R468	1-247-761-11	CARBON 5.6K 5% 1/3W	
				R469	1-214-937-00	METAL 1M 1% 1/2W	
< RESISTOR >				R470	1-249-556-11	CARBON 1.5K 5% 1/4W	
R400	1-247-713-11	CARBON 1K 5% 1/4W F		R471	1-247-721-11	CARBON 4.7K 5% 1/4W F	
R401	1-249-492-11	CARBON 47K 5% 1/3W		△R472	1-219-022-11	FUSIBLE 100 5% 1/2W F	
R402	1-249-210-11	CARBON 1K 5% 1/3W		△R494	1-219-022-11	FUSIBLE 100 5% 1/2W F	
R403	1-249-883-11	CARBON 22 5% 1/4W		△R495	1-219-022-11	FUSIBLE 100 5% 1/2W F	
R404	1-249-883-11	CARBON 22 5% 1/4W		*****			
R405	1-247-717-11	CARBON 2.2K 5% 1/4W F					
R406	1-247-723-11	CARBON 6.8K 5% 1/4W F					
R407	1-247-704-11	CARBON 220 5% 1/4W F					

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

MAIN B-L

MAIN B-R

Ref.No.	Part No.	Description	Remark
*	A-4371-749-A	MAIN B-L BOARD, COMPLETE *****	
		< BUS BAR >	
BB401	1-564-295-00	BAR, BUS	
		< CAPACITOR >	
C414	1-107-593-11	CERAMIC 15PF 5% 500V	
C415	1-107-593-11	CERAMIC 15PF 5% 500V	
C416	1-137-163-11	FILM 0.33uF 10% 63V	
C417	1-137-163-11	FILM 0.33uF 10% 63V	
C420	1-124-920-11	ELECT 330uF 20% 63V	
		< DIODE >	
D405	8-719-987-63	DIODE 1N4148M	
D406	8-719-985-53	DIODE HZS4ALL	
D407	8-719-303-13	DIODE SEL1210W	
D411	8-719-987-63	DIODE 1N4148M	
D412	8-719-985-53	DIODE HZS4ALL	
D413	8-719-987-63	DIODE 1N4148M	
D414	8-719-987-63	DIODE 1N4148M	
		< CONNECTOR >	
* EH405	1-564-506-11	PLUG, CONNECTOR 3P	
* EH406	1-564-506-11	PLUG, CONNECTOR 3P	
		< TRANSISTOR >	
Q413	8-729-203-45	TRANSISTOR 2SC3423-0	
Q414	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q415	8-729-018-19	TRANSISTOR 2SK2013-Y	
Q416	8-729-018-21	TRANSISTOR 2SJ313-Y	
Q417	8-729-018-11	TRANSISTOR 2SK1530A-Y	
Q418	8-729-018-11	TRANSISTOR 2SK1530A-Y	
Q419	8-729-018-13	TRANSISTOR 2SJ201A-Y	
Q420	8-729-018-13	TRANSISTOR 2SJ201A-Y	
Q421	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
		< RESISTOR >	
R411	1-247-713-11	CARBON 1K 5% 1/4W F	
R423	1-247-722-11	CARBON 5.6K 5% 1/4W F	
R424	1-249-926-11	CARBON 1.3K 5% 1/4W	
R425	1-247-714-11	CARBON 1.2K 5% 1/4W F	
△R426	1-202-954-71	FUSIBLE 470 5% 1/2W F	
△R427	1-202-954-71	FUSIBLE 470 5% 1/2W F	
△R428	1-219-193-11	FUSIBLE 220 5% 1/2W F	
△R429	1-219-185-11	FUSIBLE 47 5% 1/2W F	
△R430	1-219-185-11	FUSIBLE 47 5% 1/2W F	
△R431	1-219-185-11	FUSIBLE 47 5% 1/2W F	
△R432	1-219-185-11	FUSIBLE 47 5% 1/2W F	
R433	1-219-117-11	RES, WIREWOUND (0.47+0.47)	

Ref.No.	Part No.	Description	Remark
R434	1-219-117-11	RES, WIREWOUND (0.47+0.47)	
R435	1-249-460-11	CARBON 15K 5% 1/4W	
R436	1-247-725-11	CARBON 10K 5% 1/4W F	
△R437	1-249-931-11	CARBON 2.2K 5% 1/4W F	
		< VARIABLE RESISTOR >	
RT401	1-224-489-11	RES, ADJ, METAL FILM 2.2K	
		< CONNECTOR >	
* TP400	1-564-518-11	PLUG, CONNECTOR 3P	
VH401	1-766-897-11	PIN, CONNECTOR (PC BOARD) 4P	

*	A-4371-750-A	MAIN B-R BOARD, COMPLETE *****	
		< BUS BAR >	
BB451	1-564-295-00	BAR, BUS	
		< CAPACITOR >	
C464	1-107-593-11	CERAMIC 15PF 5% 500V	
C465	1-107-593-11	CERAMIC 15PF 5% 500V	
C466	1-137-163-11	FILM 0.33uF 10% 63V	
C467	1-137-163-11	FILM 0.33uF 10% 63V	
C470	1-124-920-11	ELECT 330uF 20% 63V	
		< DIODE >	
D455	8-719-987-63	DIODE 1N4148M	
D456	8-719-985-53	DIODE HZS4ALL	
D457	8-719-303-13	DIODE SEL1210W	
D461	8-719-987-63	DIODE 1N4148M	
D462	8-719-985-53	DIODE HZS4ALL	
D463	8-719-987-63	DIODE 1N4148M	
D464	8-719-987-63	DIODE 1N4148M	
		< CONNECTOR >	
* EH455	1-564-506-11	PLUG, CONNECTOR 3P	
* EH456	1-564-506-11	PLUG, CONNECTOR 3P	
		< TRANSISTOR >	
Q463	8-729-203-45	TRANSISTOR 2SC3423-0	
Q464	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q465	8-729-018-19	TRANSISTOR 2SK2013-Y	
Q466	8-729-018-21	TRANSISTOR 2SJ313-Y	
Q467	8-729-018-11	TRANSISTOR 2SK1530A-Y	
Q468	8-729-018-11	TRANSISTOR 2SK1530A-Y	
Q469	8-729-018-13	TRANSISTOR 2SJ201A-Y	
Q470	8-729-018-13	TRANSISTOR 2SJ201A-Y	
Q471	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	

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

Ref.No.	Part No.	Description	Remark
< RESISTOR >			
R461	1-247-713-11	CARBON 1K 5% 1/4W F	
R473	1-247-722-11	CARBON 5.6K 5% 1/4W F	
R474	1-249-926-11	CARBON 1.3K 5% 1/4W F	
R475	1-247-714-11	CARBON 1.2K 5% 1/4W F	
△R476	1-202-954-71	FUSIBLE 470 5% 1/2W F	
△R477	1-202-954-71	FUSIBLE 470 5% 1/2W F	
△R478	1-219-193-11	FUSIBLE 220 5% 1/2W F	
△R479	1-219-185-11	FUSIBLE 47 5% 1/2W F	
△R480	1-219-185-11	FUSIBLE 47 5% 1/2W F	
△R481	1-219-185-11	FUSIBLE 47 5% 1/2W F	
△R482	1-219-185-11	FUSIBLE 47 5% 1/2W F	
R483	1-219-117-11	RES, WIREWOUND (0.47+0.47)	
R484	1-219-117-11	RES, WIREWOUND (0.47+0.47)	
R485	1-249-460-11	CARBON 15K 5% 1/4W F	
R486	1-247-725-11	CARBON 10K 5% 1/4W F	
△R487	1-249-931-11	CARBON 2.2K 5% 1/4W F	
< VARIABLE RESISTOR >			
RT451	1-224-489-11	RES, ADJ, METAL FILM 2.2K	
< CONNECTOR >			
* TP450	1-564-518-11	PLUG, CONNECTOR 3P	
VH451	1-766-897-11	PIN, CONNECTOR (PC BOARD) 4P	

*	A-4371-751-A	PS BOARD, COMPLETE (AEP1, G)	

*	A-4371-752-A	PS BOARD, COMPLETE (CE3)	

*	A-4371-753-A	PS BOARD, COMPLETE (US)	

*	4-916-791-01	PLATE, GROUND, 5P (EPT501)	
*	3-346-266-21	PLATE, GROUND (EPT502-505)	
< TERMINAL >			
* BP501	1-535-117-00	TERMINAL	
* BP502	1-535-117-00	TERMINAL	
* BP503	1-535-115-00	TERMINAL	
* BP504	1-535-115-00	TERMINAL	
< CAPACITOR >			
C501	1-136-880-11	FILM 2.2uF 10% 160V	
C502	1-110-496-11	ELECT 18000uF 63V	
C503	1-110-496-11	ELECT 18000uF 63V	
C504	1-110-395-11	ELECT 330uF 20% 63V (US)	
C504	1-124-920-11	ELECT 330uF 20% 63V	(AEP1, CE3, G)

Ref.No.	Part No.	Description	Remark
C505	1-110-395-11	ELECT 330uF 20% 63V (US)	
C505	1-124-920-11	ELECT 330uF 20% 63V	(AEP1, CE3, G)
C506	1-110-395-11	ELECT 330uF 20% 63V (US)	
C506	1-124-920-11	ELECT 330uF 20% 63V	(AEP1, CE3, G)
C507	1-110-395-11	ELECT 330uF 20% 63V (US)	
C507	1-124-920-11	ELECT 330uF 20% 63V	(AEP1, CE3, G)
C508	1-124-791-11	ELECT 1.0uF 20% 100V	
C509	1-110-395-11	ELECT 330uF 20% 63V (US)	
C509	1-124-920-11	ELECT 330uF 20% 63V	(AEP1, CE3, G)
< DIODE >			
D501	8-719-210-25	DIODE C25P20F	
D502	8-719-210-25	DIODE C25P20F	
D503	8-719-210-25	DIODE C25P20F	
D504	8-719-210-26	DIODE C25P20FR	
D505	8-719-210-26	DIODE C25P20FR	
D506	8-719-210-26	DIODE C25P20FR	
D507	8-719-200-02	DIODE 10E2	
D508	8-719-200-02	DIODE 10E2	
D509	8-719-200-02	DIODE 10E2	
D510	8-719-200-02	DIODE 10E2	
D511	8-719-200-02	DIODE 10E2	
D512	8-719-200-02	DIODE 10E2	
D513	8-719-200-02	DIODE 10E2	
D514	8-719-200-02	DIODE 10E2	
D515	8-719-200-02	DIODE 10E2	
D516	8-719-200-02	DIODE 10E2	
D517	8-719-200-02	DIODE 10E2	
< CONNECTOR >			
EH506	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
EH507	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
* EH508	1-564-506-11	PLUG, CONNECTOR 3P	
EH509	1-691-766-31	PLUG (MICRO CONNECTOR) 4P	
< TRANSFORMER >			
PTH501	1-806-882-11	THERMISTOR, POSITIVE 2.2 (US, CE3)	
PTH502	1-806-882-11	THERMISTOR, POSITIVE 2.2 (US, CE3)	
PTH503	1-806-882-11	THERMISTOR, POSITIVE 2.2 (US, CE3)	
PTH504	1-806-882-11	THERMISTOR, POSITIVE 2.2 (US, CE3)	
< RESISTOR >			
△R501	1-219-185-11	FUSIBLE 47 5% 1/2W F	
< CONNECTOR >			
VH501	1-564-241-00	PIN, CONNECTOR 4P (US)	
VH501	1-766-897-11	PIN, CONNECTOR (PC BOARD) 4P (AEP, G)	

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

PS-L

PS-R

SP.OUT

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*****				< CAPACITOR >			
*	1-654-116-11	PS-L BOARD	*****	C601	1-130-973-00	FILM 0.022uF 2% 100V	
		< CAPACITOR >		C603	1-136-157-00	FILM 0.022uF 5% 50V	
C511	1-124-922-11	ELECT 1000uF 20% 63V		C604	1-124-911-11	ELECT 220uF 20% 50V	
C512	1-128-474-11	ELECT 1000uF 20% 63V		C605	1-124-478-11	ELECT 100uF 20% 25V	
C513	1-124-922-11	ELECT 1000uF 20% 63V		C606	1-136-157-00	FILM 0.022uF 5% 50V	
C514	1-124-922-11	ELECT 1000uF 20% 63V		C607	1-136-157-00	FILM 0.022uF 5% 50V	
C515	1-124-922-11	ELECT 1000uF 20% 63V		C608	1-124-927-11	ELECT 4.7uF 20% 100V	
C516	1-128-474-11	ELECT 1000uF 20% 63V		C609	1-124-918-11	ELECT 47uF 20% 63V	
		< CONNECTOR >		C610	1-124-927-11	ELECT 4.7uF 20% 100V	
EH501	1-691-766-11	PLUG (MICRO CONNECTOR) 4P		C612	1-124-915-11	ELECT 10uF 20% 63V	
* EH502	1-564-506-11	PLUG, CONNECTOR 3P		C613	1-136-157-00	FILM 0.022uF 5% 50V	
* EH503	1-564-506-11	PLUG, CONNECTOR 3P		C651	1-130-973-00	FILM 0.022uF 2% 100V	
		< RESISTOR >		< DIODE >			
△R502	1-202-947-71	FUSIBLE 68 5% 1/2W F		D600	8-719-987-63	DIODE 1N4148M	
△R503	1-202-947-71	FUSIBLE 68 5% 1/2W F		D601	8-719-987-63	DIODE 1N4148M	
△R504	1-202-947-71	FUSIBLE 68 5% 1/2W F		D602	8-719-987-63	DIODE 1N4148M	
△R505	1-202-947-71	FUSIBLE 68 5% 1/2W F		D603	8-719-987-63	DIODE 1N4148M	
△R508	1-202-947-71	FUSIBLE 68 5% 1/2W F		D608	8-719-987-63	DIODE 1N4148M	
△R509	1-202-947-71	FUSIBLE 68 5% 1/2W F		< CONNECTOR >			
△R510	1-202-947-71	FUSIBLE 68 5% 1/2W F		EH600	1-691-767-11	PLUG (MICRO CONNECTOR) 5P	
△R511	1-202-947-71	FUSIBLE 68 5% 1/2W F		* EH601	1-564-506-11	PLUG, CONNECTOR 3P	
*****				EH602	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
*	1-654-115-11	PS-R BOARD	*****	* EH604	1-564-506-11	PLUG, CONNECTOR 3P	
		< CAPACITOR >		< IC >			
C561	1-124-922-11	ELECT 1000uF 20% 63V		IC601	8-759-111-68	IC uPC1237HA	
C562	1-128-474-11	ELECT 1000uF 20% 63V		< COIL >			
C563	1-124-922-11	ELECT 1000uF 20% 63V		* L601	1-422-009-13	COIL, AIR-CORE 1uH	
C564	1-124-922-11	ELECT 1000uF 20% 63V		* L651	1-422-009-13	COIL, AIR-CORE 1uH	
C565	1-128-474-11	ELECT 1000uF 20% 63V		< TRANSISTOR >			
C566	1-124-922-11	ELECT 1000uF 20% 63V		Q600	8-729-119-78	TRANSISTOR 2SC403SP-51	
		< CONNECOTR >		Q601	8-729-119-78	TRANSISTOR 2SC403SP-51	
EH551	1-691-766-21	PLUG (MICRO CONNECTOR) 4P		Q602	8-729-141-05	TRANSISTOR 2SC2682-QPE	
* EH553	1-564-506-11	PLUG, CONNECTOR 3P		Q603	8-729-201-53	TRANSISTOR 2SA1015-GR	
*****				Q604	8-729-201-53	TRANSISTOR 2SA1015-GR	
*	A-4371-758-A	SP.OUT BOARD, COMPLETE	*****	< RESISTOR >			
		4-861-002-00 HEAT SINK (HS601)		△R523	1-202-934-71	FUSIBLE 4.7 5% 1/2W F	
				△R573	1-202-934-71	FUSIBLE 4.7 5% 1/2W F	
				R600	1-249-437-11	CARBON 47K 5% 1/4W	
				R601	1-247-727-11	CARBON 10 5% 1/2W	
				△R602	1-202-934-71	FUSIBLE 4.7 5% 1/2W F	
				R603	1-247-891-00	CARBON 330K 5% 1/4W	
				R604	1-247-887-00	CARBON 220K 5% 1/4W	
				R605	1-249-462-11	CARBON 22K 5% 1/4W	

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

SP.OUT**SW**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R606	1-247-721-11	CARBON	4.7K 5% 1/4W F			MISCELLANEOUS	
R607	1-249-520-11	CARBON	47 5% 1/4W			*****	
R608	1-249-469-11	CARBON	100K 5% 1/4W	△58	1-554-538-00	SWITCH, PUSH (AC POWER) (1 KEY)	
R609	1-249-461-11	CARBON	18K 5% 1/4W	△60	1-559-479-11	CORD, POWER (US)	
R610	1-249-657-11	CARBON	220 5% 1/2W	△60	1-575-953-11	CORD, POWER (AEP1, CE3, G)	
R611	1-249-437-11	CARBON	47K 5% 1/4W	* 62	1-537-800-11	TERMINAL BOARD (SP) (US, AEP1, G)	
R612	1-247-721-11	CARBON	4.7K 5% 1/4W F	62	1-537-800-21	TERMINAL BOARD (SP) (CE3)	
R613	1-249-437-11	CARBON	47K 5% 1/4W	C502	1-110-496-11	CAP, ELECT 18000uF	
R614	1-249-437-11	CARBON	47K 5% 1/4W	C503	1-110-496-11	CAP, ELECT 18000uF	
R615	1-249-462-11	CARBON	22K 5% 1/4W	△F1	1-532-299-00	FUSE, TIME-LAG (T5A, 250V) (AEP1, CE3, G)	
R616	1-249-437-11	CARBON	47K 5% 1/4W	△F1	1-532-749-11	FUSE, GLASS TUBE (8A, 125V) (US)	
R617	1-249-799-11	CARBON	750 5% 1/2W	Q413	8-729-203-45	TRANSISTOR 2SC3423-O	
R618	1-249-799-11	CARBON	750 5% 1/2W	Q415	8-729-018-19	TRANSISTOR 2SK2013-Y	
R651	1-247-727-11	CARBON	10 5% 1/2W	Q416	8-729-018-21	TRANSISTOR 2SJ313-Y	
△R652	1-202-934-71	FUSIBLE	4.7 5% 1/2W F	Q417	8-729-018-11	TRANSISTOR 2SK1530A-Y	
R653	1-247-891-00	CARBON	330K 5% 1/4W	Q418	8-729-018-11	TRANSISTOR 2SK1530A-Y	
		< RELAY >		Q419	8-729-018-13	TRANSISTOR 2SJ201A-Y	
RY601	1-515-676-11	RELAY		Q420	8-729-018-13	TRANSISTOR 2SJ201A-Y	
RY651	1-515-676-11	RELAY		Q463	8-729-203-45	TRANSISTOR 2SC3423-O	
		< CONNECTOR >		Q465	8-729-018-19	TRANSISTOR 2SK2013-Y	
SE601	1-766-897-11	PIN, CONNECTOR (PC BOARD) 4P		Q466	8-729-018-21	TRANSISTOR 2SJ313-Y	
SE602	1-564-321-00	PIN, CONNECTOR 2P		Q467	8-729-018-11	TRANSISTOR 2SK1530A-Y	
SE652	1-564-321-00	PIN, CONNECTOR 2P		Q468	8-729-018-11	TRANSISTOR 2SK1530A-Y	
		*****		Q469	8-729-018-13	TRANSISTOR 2SJ201A-Y	
*	1-654-124-11	SW BOARD		Q470	8-729-018-13	TRANSISTOR 2SJ201A-Y	
		*****		△T501	1-427-646-11	TRANSFORMER, POWER (AEP1, CE3, G)	
		< CAPACITOR >		△T501	1-427-647-11	TRANSFORMER, POWER (US)	
C611	1-124-791-11	ELECT	1.0uF 20% 100V			*****	
		< CONNECTOR >				ACCESSORIES & PACKING MATERIALS	
EH605	1-691-767-11	PLUG (MICRO CONNECTOR) 5P				*****	
EH606	1-691-767-31	PLUG (MICRO CONNECTOR) 5P				3-703-351-00	LABEL (CTV), FTZ (AEP1, CE3, G)
		< TRANSISTOR >				3-703-710-41	STICKER, SONY SYMBOL (12) (AEP1, CE3, G)
Q605	8-729-119-78	TRANSISTOR 2SC403SP-51				3-759-992-11	MANUAL, INSTRUCTION (US, AEP1, CE3)
		< RESISTOR >					(ENGLISH, FRENCH, SPANISH, PORTUGUESE)
R620	1-247-721-11	CARBON	4.7K 5% 1/4W F			3-759-992-41	MANUAL, INSTRUCTION (AEP1, CE3, G)
R621	1-247-725-11	CARBON	10K 5% 1/4W F				(GERMAN, DUTCH, SWEDISH, ITALIAN)
		< SWITCH >				4-970-079-01	CUSHION
S601	1-554-338-00	SWITCH, LEVER SLIDE (BALANCED)				4-970-080-01	INDIVIDUAL CARTON
		*****				*****	

						HARDWARE LIST	

				#1	7-682-247-09	SCREW +K 3X6	
				#2	7-682-548-09	SCREW (3X8)	
				#3	7-623-112-05	W 5, SMALL	
				#4	7-684-025-04	N 5, TYPE 2	

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

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

English
94J090474-1
Printed in Japan
© 1994. 10
Published by Home A&V Products Div.
Quality Engineering Dept.