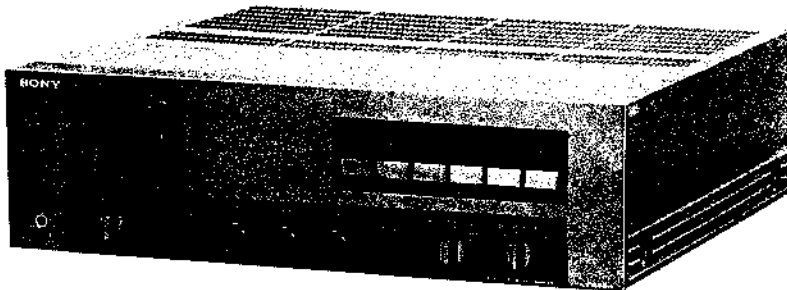


# TA-F444ES

## SERVICE MANUAL

US Model  
Canadian Model  
AEP Model  
UK Model  
E Model



### SPECIFICATIONS

#### Amplifier section

##### Continuous RMS power output

(both channels driven simultaneously)

##### AEP Model

At 20 Hz - 20 kHz

105 + 105 watts (0.006% THD, 6 ohms)

80 + 80 watts (0.004% THD, 8 ohms)

##### E, UK Model

At 20 Hz - 20 kHz

110 + 110 watts (0.008% THD, 4 ohms)

80 + 80 watts (0.004% THD, 8 ohms)

##### US, Canadian Model

At 20 Hz - 20 kHz

100 + 100 watts (0.008% THD, 4 ohms)

80 + 80 watts (0.004% THD, 8 ohms)

##### G-AEP Model

At 20 Hz - 20 kHz

110 + 110 watts (0.015% THD, 4 ohms)

80 + 80 watts (0.006% THD, 8 ohms)

##### Power bandwidth (IHF)

5 Hz - 80 kHz

##### Dynamic headroom

1.2 dB (78 IHF)

#### Harmonic distortion

##### AEP Model

Less than 0.006% at rated output (6 ohms)

Less than 0.004% at rated output (8 ohms)

##### US, Canadian, E, UK Model

Less than 0.008% at rated output (4 ohms)

Less than 0.004% at rated output (8 ohms)


##### G-AEP Model

Less than 0.015% at rated output (4 ohms)


Less than 0.006% at rated output (8 ohms)

- Continued on page 2 -

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND 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.

#### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  SUR LES DIAGRAMMES SCHEMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## INTEGRATED STEREO AMPLIFIER

# SONY®



AUD

# TA-F444ES

## Intermodulation (IM) distortion

(60 Hz : 7 kHz = 4 : 1) AEP Model  
 Less than 0.006% at rated output (6 ohms)  
 Less than 0.004% at rated output (8 ohms)  
 US, Canadian  
 E, UK Model  
 Less than 0.008% at rated output (4 ohms)  
 Less than 0.004% at rated output (8 ohms)  
 G-AEP Model  
 Less than 0.015% at rated output (4 ohms)  
 Less than 0.006% at rated output (8 ohms)

Slew rate 125 V/μ sec.  
 250 V/μ sec. (inside)  
 Dynamic range TUNER, AUX, CD, TAPE 1,2 : 120dB  
 Channel separation  
 (at 1 kHz) PHONO MC : 80 dB  
 MM : 95 dB  
 TUNER, AUX, CD, TAPE 1,2 : 100dB

Frequency response  
 PHONO : RIAA equalization curve ±0.2 dB  
 TUNER  
 CD  
 AUX  
 TAPE 1,2 } 5 Hz - 200 kHz  $\pm \begin{matrix} 0 \\ 3 \end{matrix}$  dB

Residual noise Less than 25 μV (8 ohms, network A)

Damping factor 125 (8 ohms, 1 kHz)

## Inputs

	Setting of the CARTRIDGE LOAD selector	Sensitivity	Impedance	Maximum input capability (1 kHz)	S/N (weighting network, input level)
PHONO	MM	2.5 mV	50 kilohm	150 mV	87 dB 83 dB* (A, 2.5 mV)
	MC	40 Ω	0.17 mV	100 Ω	9 mV
3 Ω		40 Ω			
TUNER, AUX, CD, TAPE 1, 2		150 mV	50 kilohm		97 dB 102 dB* (A, 150 mV)

\* 78 IHF

Outputs REC OUT 1,2  
 Voltage 150 mV  
 Impedance 1 kilohms  
 SPEAKER A, B  
 AEP Model:  
 Accepts speakers of 6 - 16 ohms.  
 US, Canadian, UK, G-AEP, E Model:  
 Accepts speakers of 4 - 16 ohms.  
 HEADPHONES  
 Accepts low and high impedance headphones.  
 Tone controls BASS  
 ±8 dB at 60 Hz (turnover freq. 300 Hz)  
 TREBLE  
 ±8 dB at 25 kHz (turnover freq. 5 kHz)  
 Bass boost + 4 dB at 50 Hz  
 Subsonic filter 6 dB/octave attenuation below 15 Hz

## General System

Integrated stereo amplifier  
 Power amplifier section  
 Legato linear, pure-complementary, triple-Darlington OCL SEPP dc power amplifier with all stages direct coupled, Constant current shunt regulator  
 Preamplifier section  
 Equalizer section : Low-noise ICL equalizer amp (MC or MM cartridge load selectable)  
 Audio Current Transfer section : Bridge-balance type voltage-to-current converter with dc servo amp

## Power requirements

AEP, G-AEP Model:  
 220 V ac (or 240 V ac adjustable by authorized Sony personnel), 50/60 Hz  
 UK Model: 240 V ac  
 (or 220 V ac adjustable by authorized Sony personnel), 50Hz  
 US, Canadian Model: 120 V ac, 60Hz  
 E Model:  
 120, 220, or 240 V ac adjustable, 50/60 Hz

## Power consumption

US Model: 260 W  
 AEP Model: 195 W  
 UK, E, G-AEP Model: 210 W  
 Canadian Model: 500 VA

## AC outlets

AEP, UK Model: 1 switched, 100 watts max.  
 US, Canadian Model: 2 switched, total 100 watts max.  
 2 unswitched, total 100 watts max.  
 G-AEP Model: 2 switched, total 100 watts max.

## Dimensions

Approx. 430 x 130 x 430 mm (w/h/d)  
 (17<sup>1</sup>/<sub>8</sub> x 5<sup>1</sup>/<sub>8</sub> x 17<sup>1</sup>/<sub>8</sub> inches)

## Weight

including projecting parts and controls  
 Approx. 13.5 kg (29 lbs 13 oz) net  
 Approx. 15.6 kg (34 lbs 6.3 oz) in shipping carton

**SAFETY CHECK-OUT (US Model)**

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

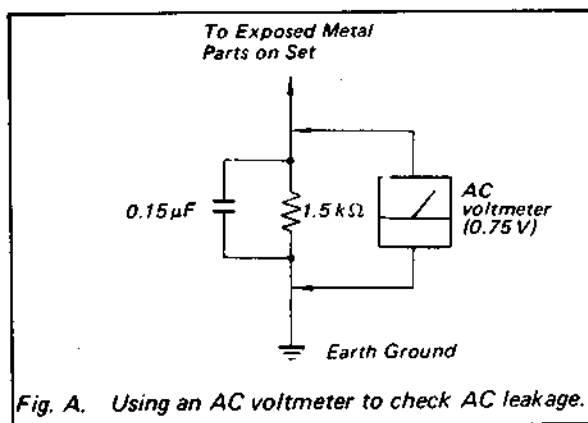
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

**LEAKAGE TEST**

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 microampers). Leakage current can be measured by any one of three methods.

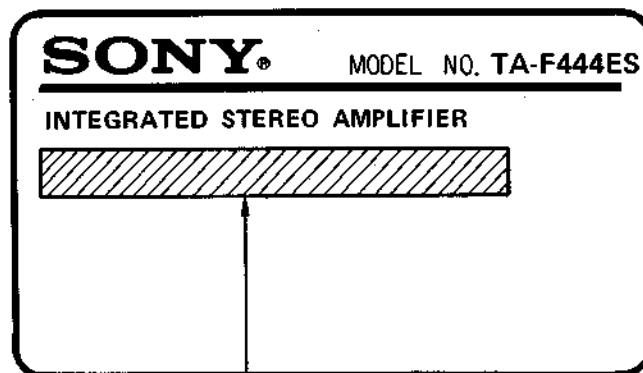
1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

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 2 V AC range are suitable. (See Fig. A)



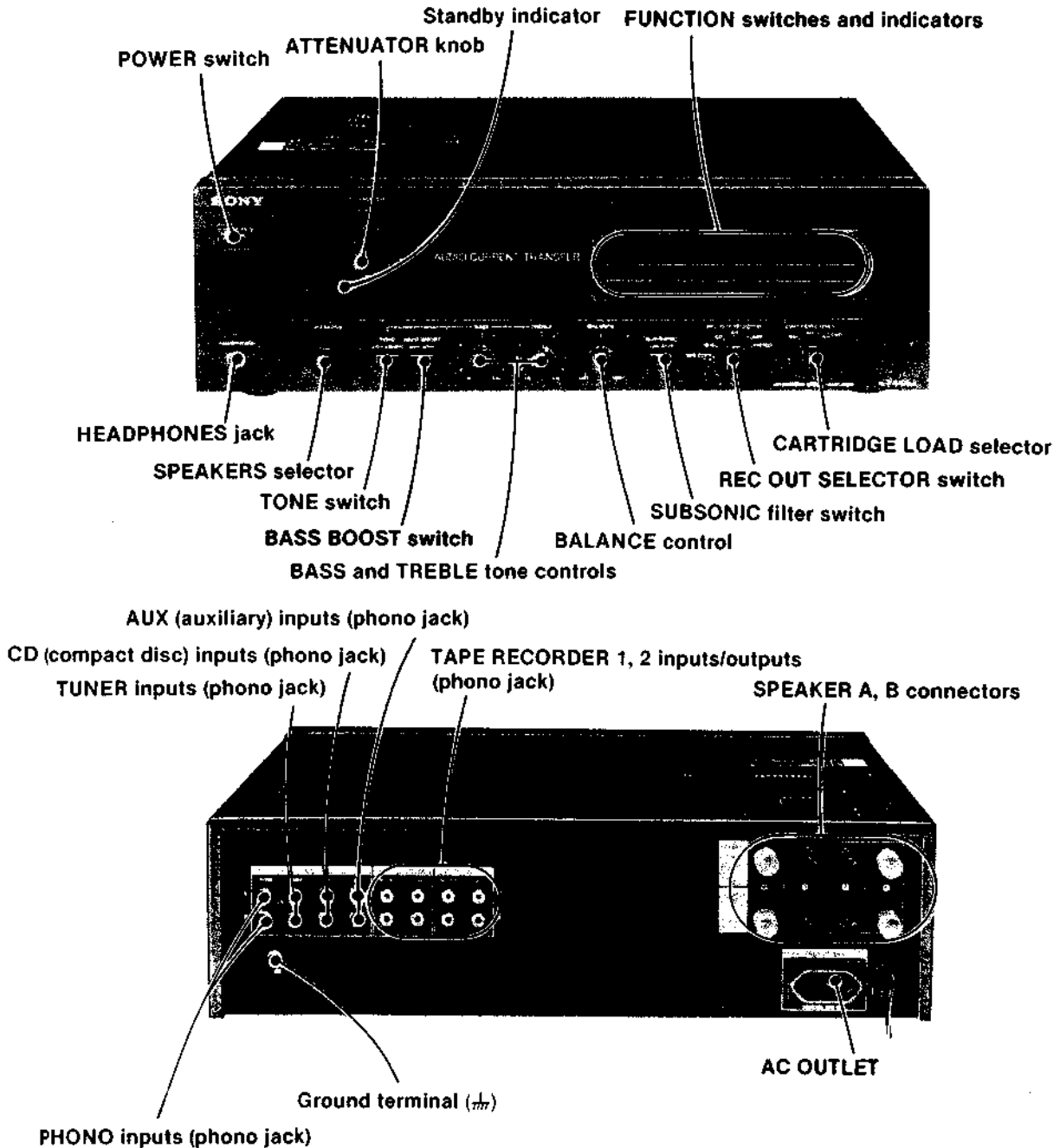
**MODEL IDENTIFICATION**

— Specification Label —

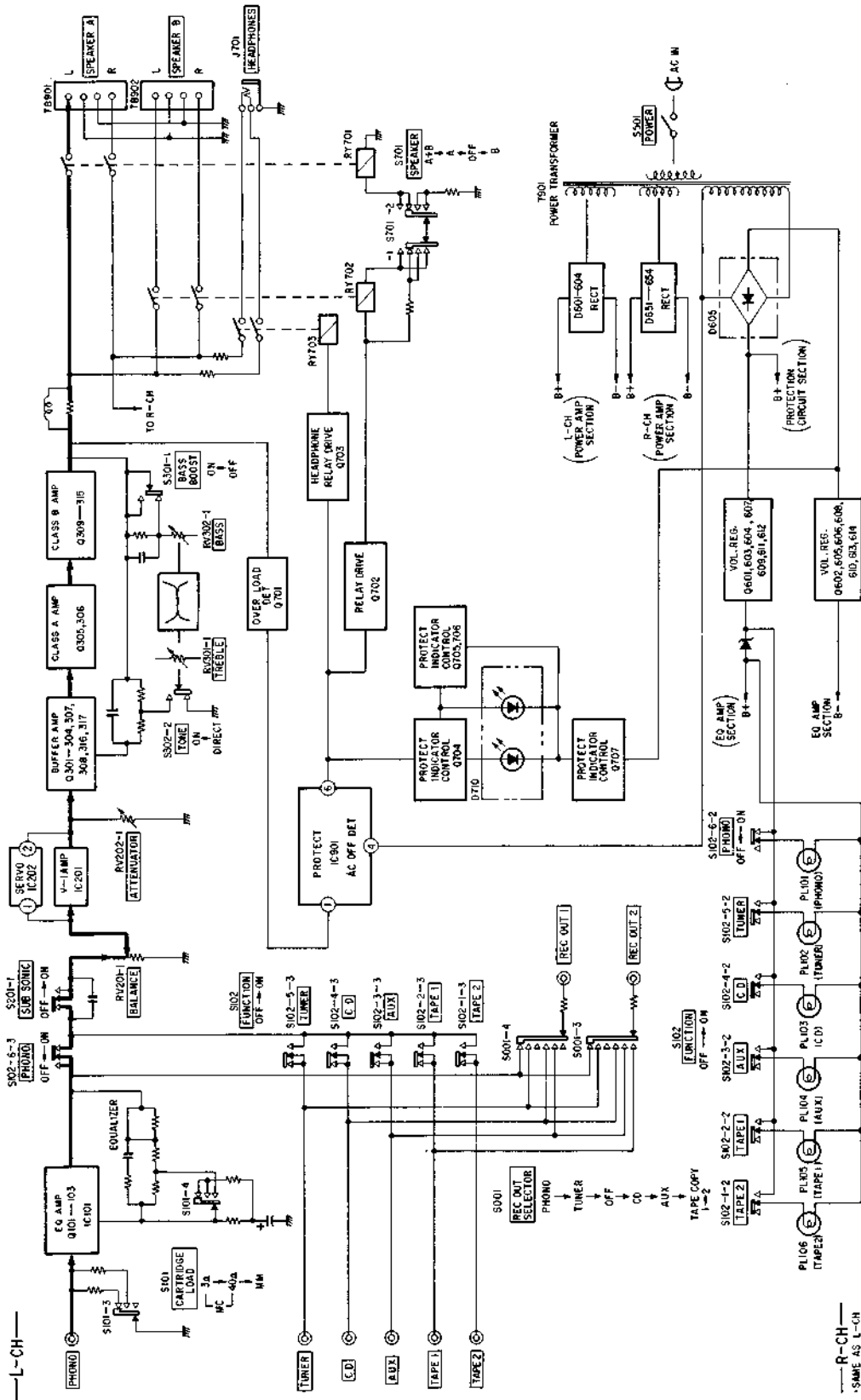


- US Model: AC: 120 V ~ 60 Hz     260 W
- Canadian Model: AC: 120 V ~ 60 Hz     500 VA
- AEP Model: AC: 220 V ~ 50/60 Hz     195 W
- UK Model: AC: 240 V ~ 50/60 Hz     210 W
- E Model: AC: 120/220/240 V ~ 50/60 Hz     210 W
- G-AEP Model: AC: 220 V ~ 50/60 Hz, 210 W

**FUNCTION OF CONTROLS**



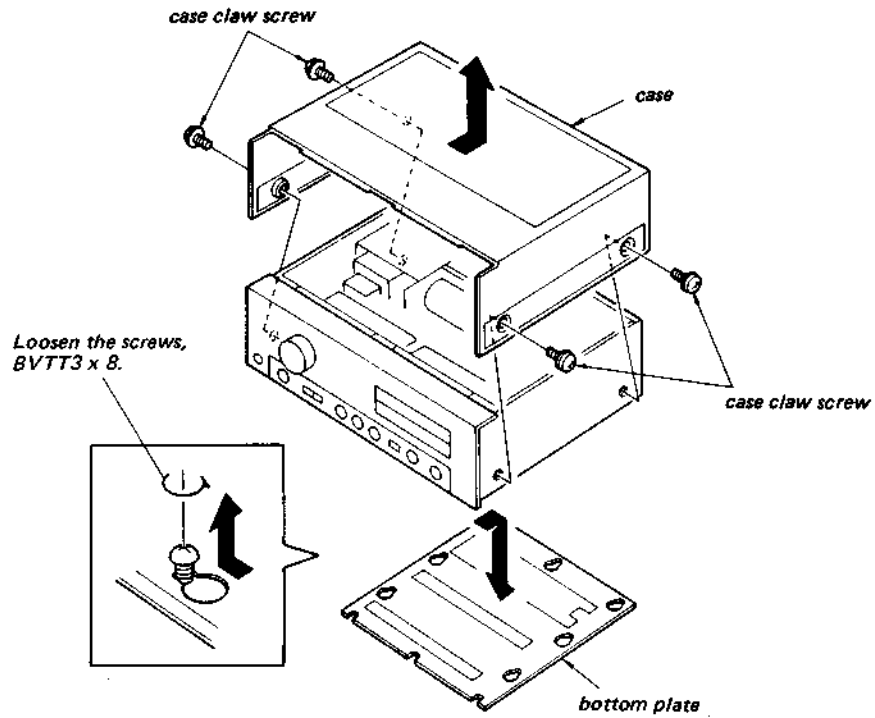
SECTION 1  
BLOCK DIAGRAM



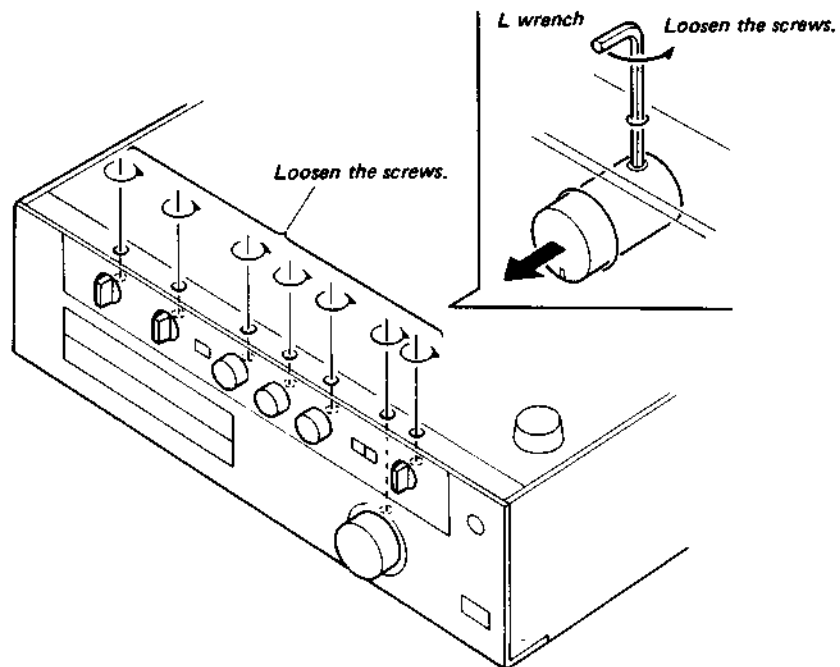
**SECTION 2  
DISASSEMBLY**

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

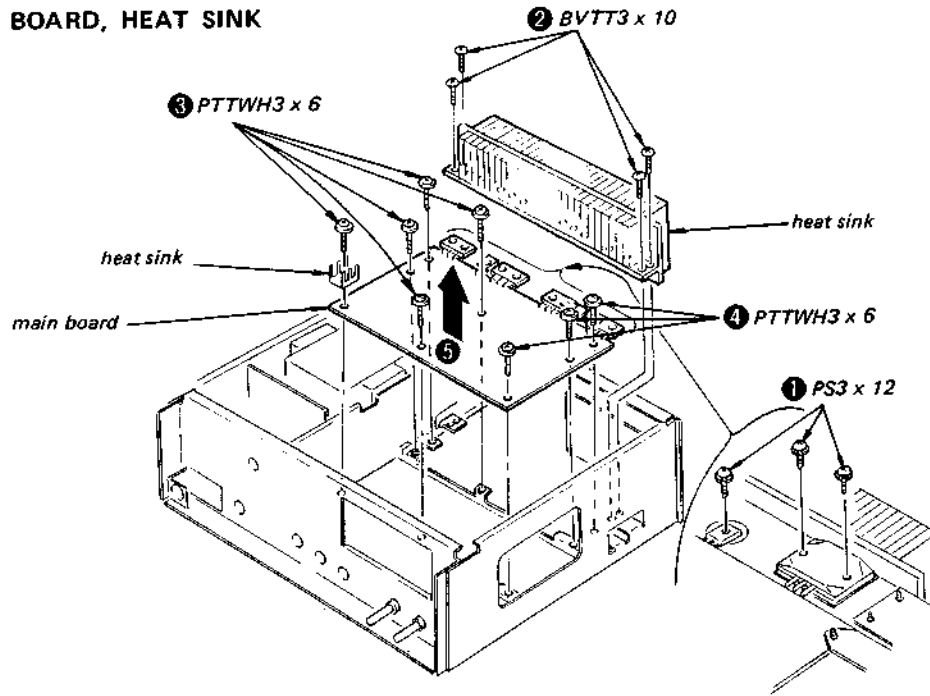
**CASE, BOTTOM PLATE**



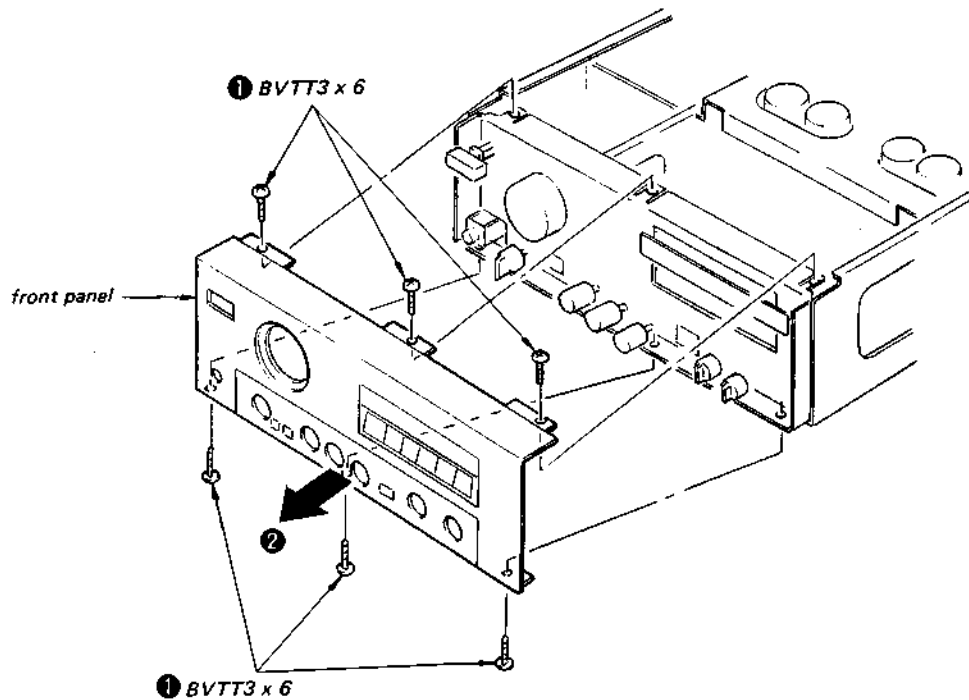
**KNOBS**



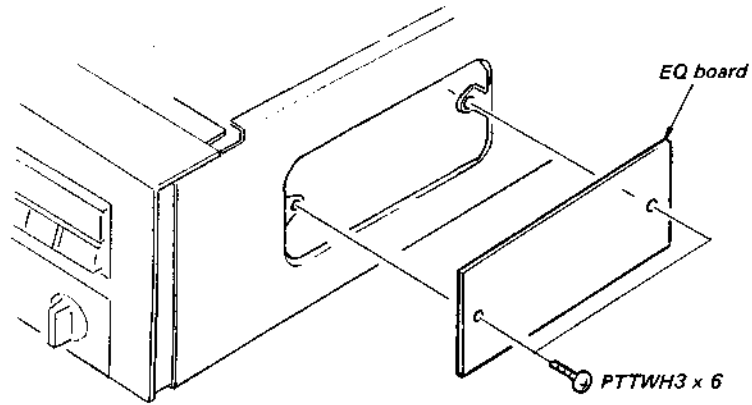
MAIN BOARD, HEAT SINK



FRONT PANEL

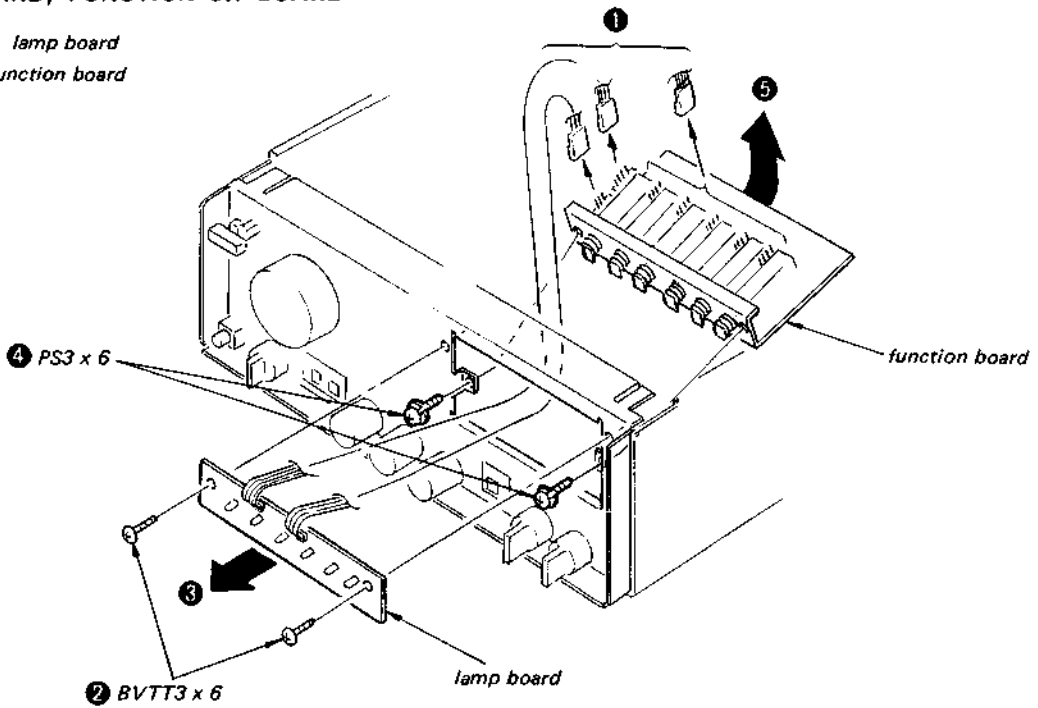


EQ BOARD



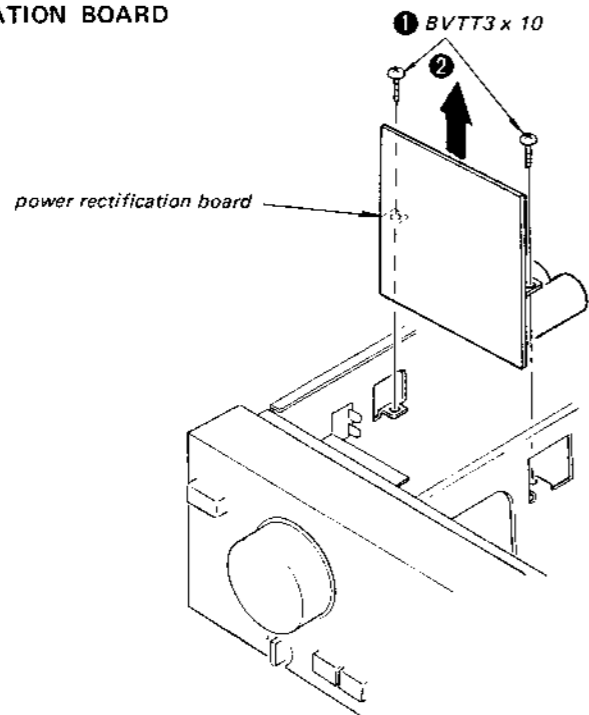
LAMP BOARD, FUNCTION SW BOARD

- ① - ③ : lamp board
- ④, ⑤ : function board

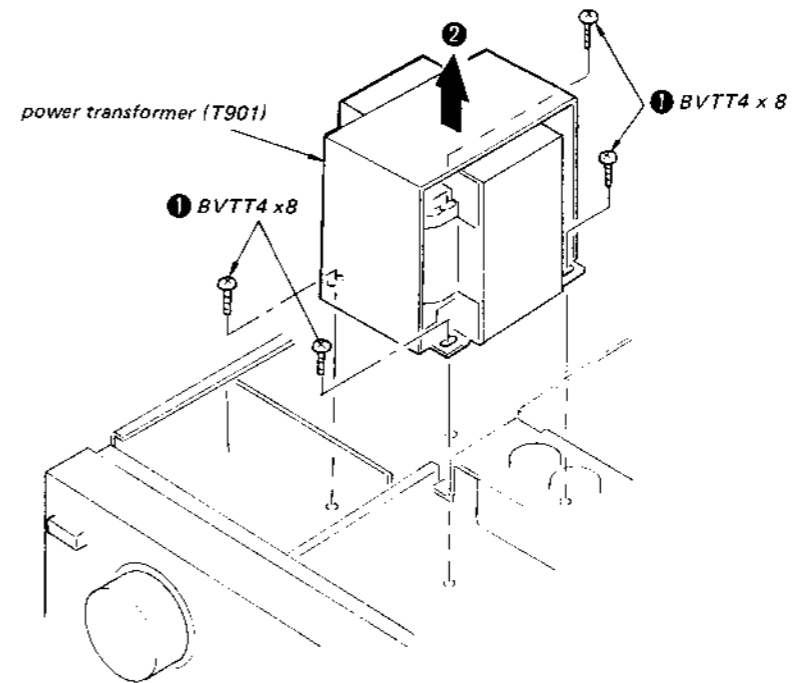




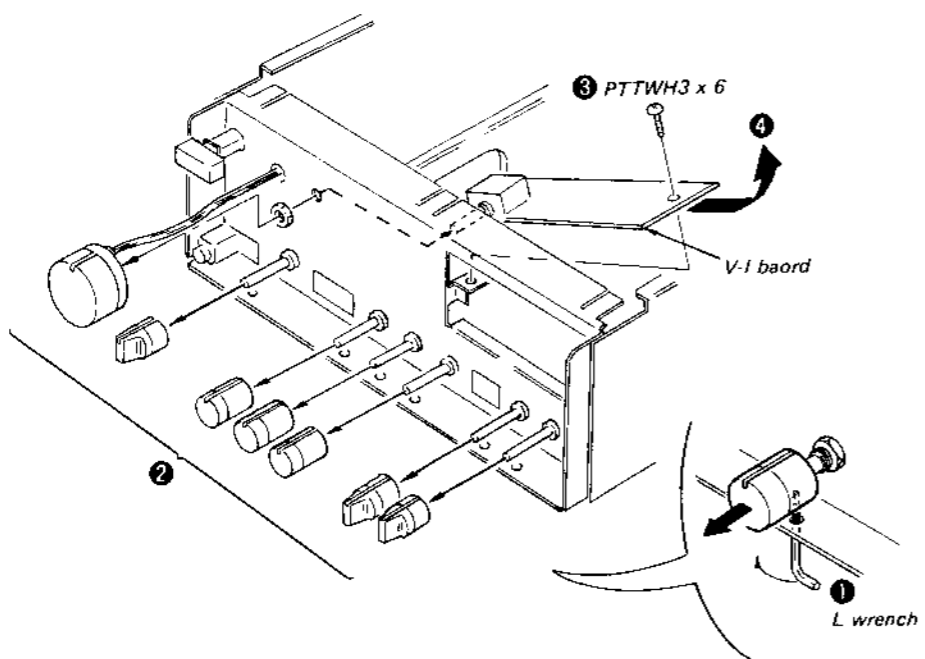
POWER RECTIFICATION BOARD



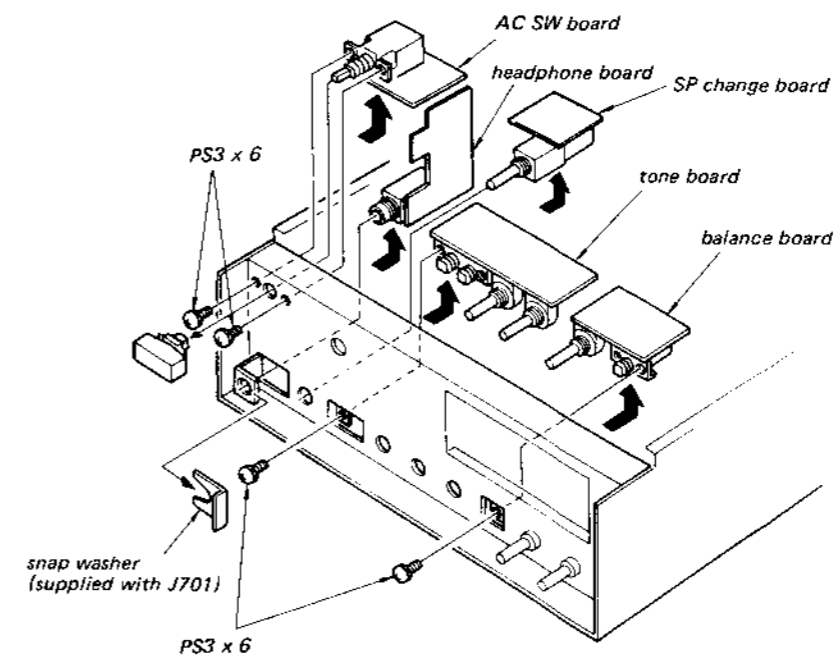
POWER TRANSFORMER



KNOBS, V-I BOARD



AC SW BOARD, HEADPHONE BOARD, SP CHANGE BOARD, TONE BOARD, BALANCE BOARD



JACK

- 1
- 4
- 8

4 Unst

5 claw sc

6

CIRCU

A

SECTION 3  
ADJUSTMENTS

ELECTRICAL ADJUSTMENTS

Note:

1. DC BIAS and DC BALANCE adjustments should be made 5 minutes after the POWER switch is turned on (POWER ON.).
2. DC BALANCE adjustment should be performed first.
3. After replacing the power transistors, DC BIAS and DC BALANCE adjustments should be made.

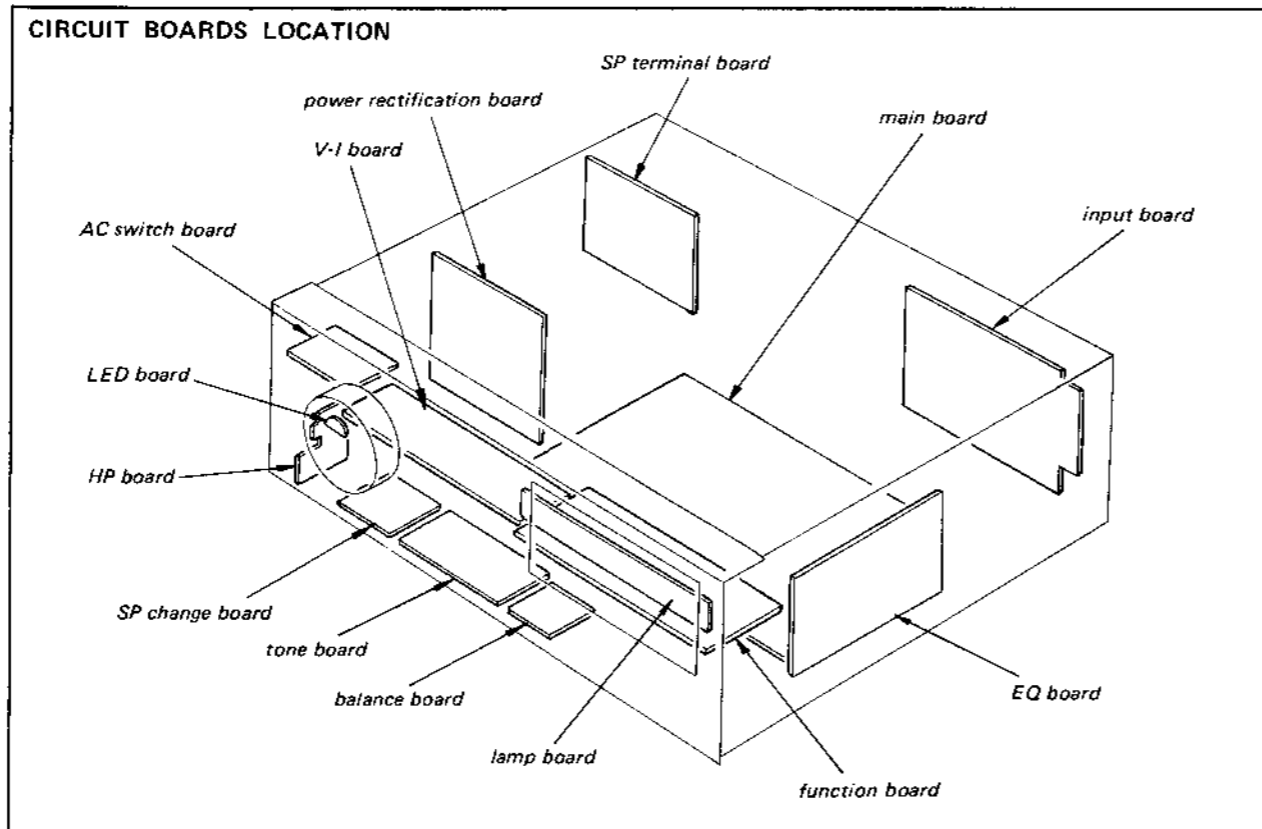
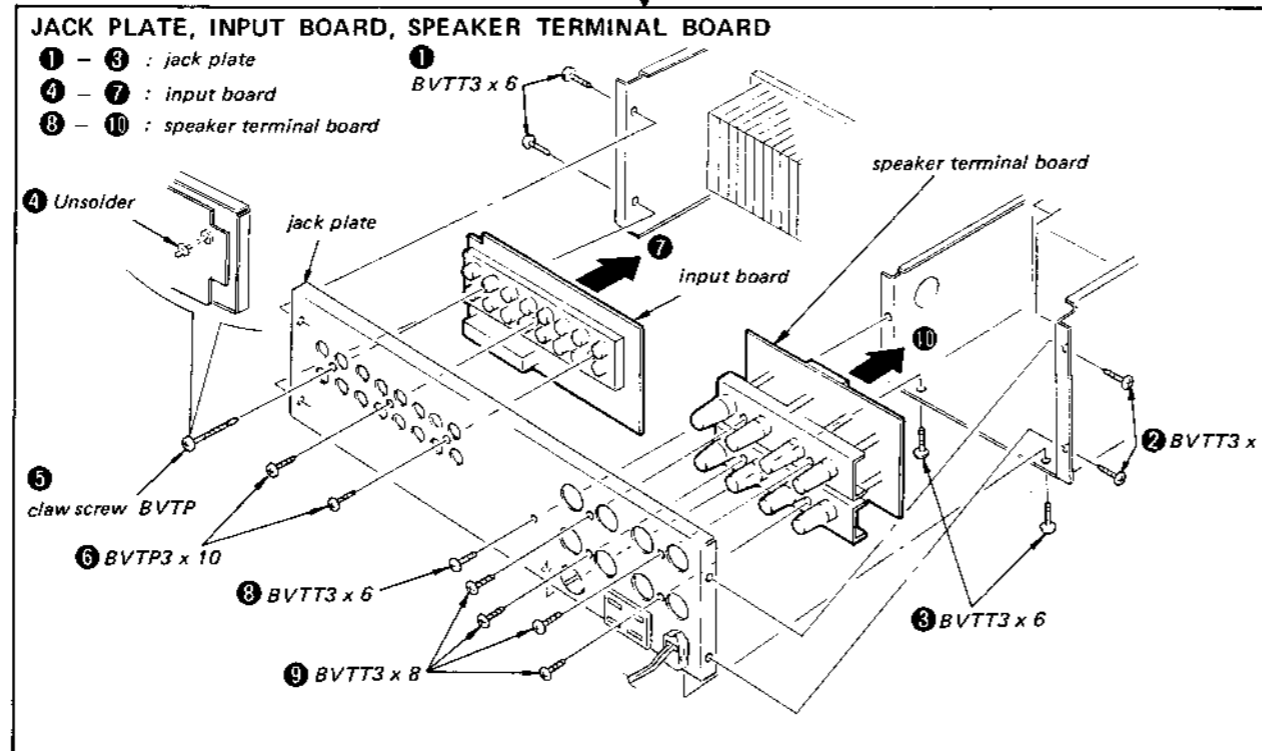
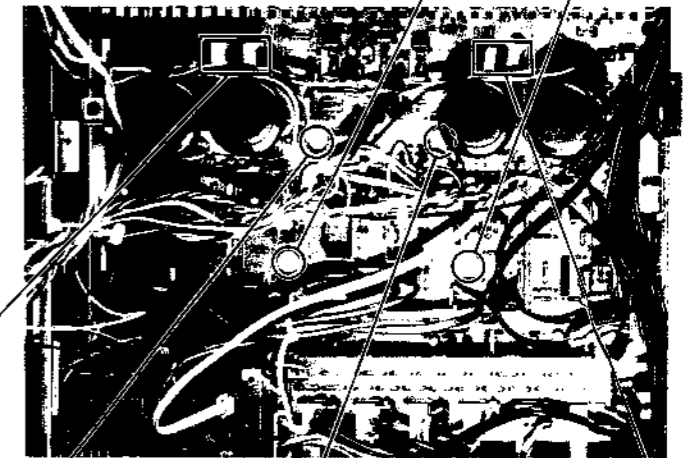
DC BALANCE adjustment (with no

- Turn on the POWER switch and adjust the TENUATOR knob to MIN. Control the speaker output terminal. (any 1)
- Adjust RT301 (L) and 351 (R) for the VTVM.
- Set the VTVM to high level range. 0 V reading, lower the level range. Repeat above procedures for precise

Specification: -10 mV to +10

Adjustment Location:

- main board -



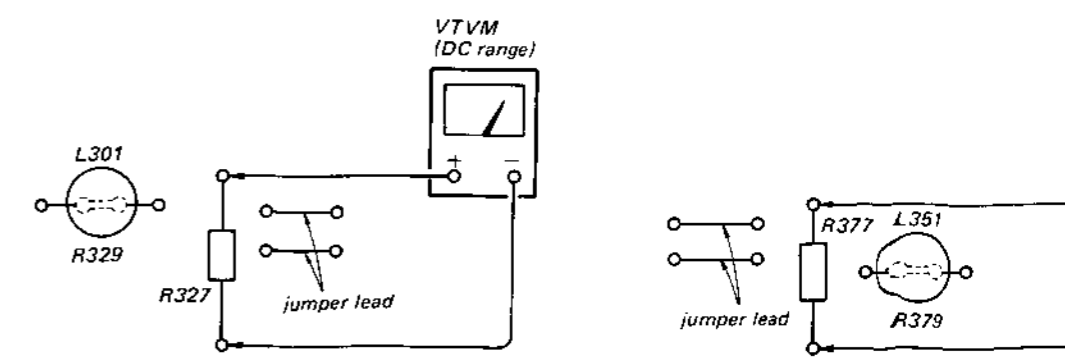
DC BIAS Adjustment (with no signal input)

Procedure:

- L-CH -
1. Connect a VTVM as illustrated.
  2. Adjust RT302 for 7.5 mV reading on the VTVM.

- R-CH -

1. Connect a VTVM as illustrated.
2. Adjust RT352 for 7.5 mV reading



SECTION 3  
ADJUSTMENTS

ELECTRICAL ADJUSTMENTS

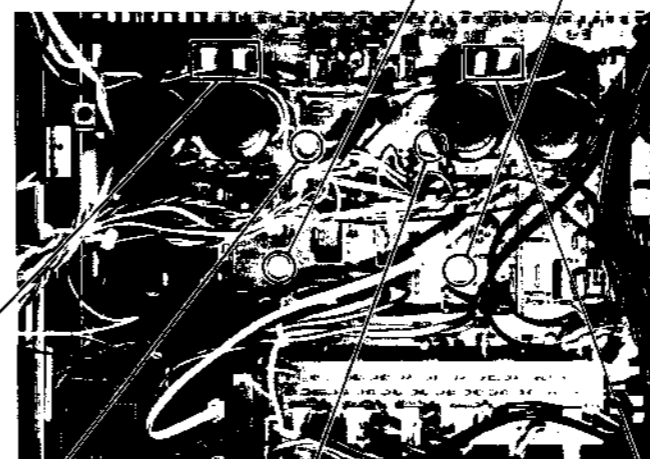
- Note:
1. DC BIAS and DC BALANCE adjustments should be made 5 minutes after the POWER switch is turned on (POWER ON).
  2. DC BALANCE adjustment should be performed first.
  3. After replacing the power transistors, DC BIAS and DC BALANCE adjustments should be made.

**DC BALANCE adjustment (with no signal input)**

- Turn on the POWER switch and set the ATTENUATOR knob to MIN. Connect a VTVM to the speaker output terminal. (any polarity)
- Adjust RT301 (L) and 351 (R) for 0 V reading on the VTVM.
- Set the VTVM to high level range. When getting 0 V reading, lower the level range by one rank. Repeat above procedures for precise 0 V reading.

Specification: -10 mV to +10 mV

Adjustment Location:  
- main board -



**DC BIAS Adjustment (with no signal input)**

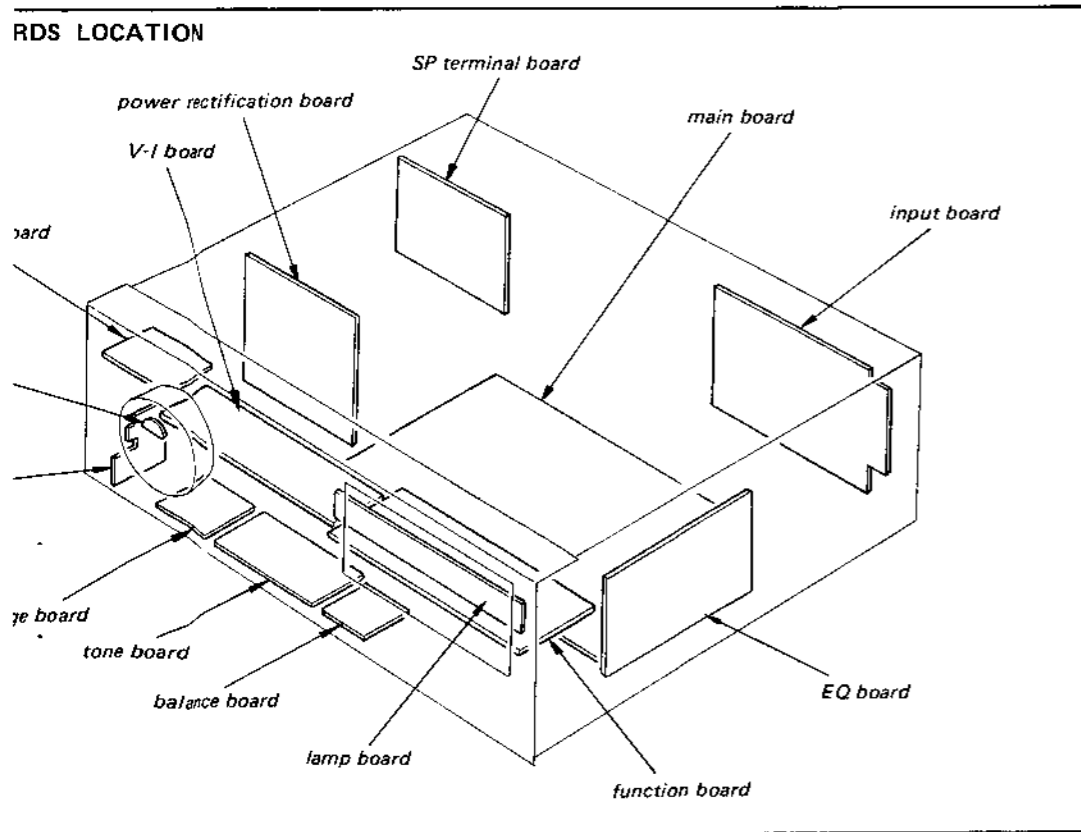
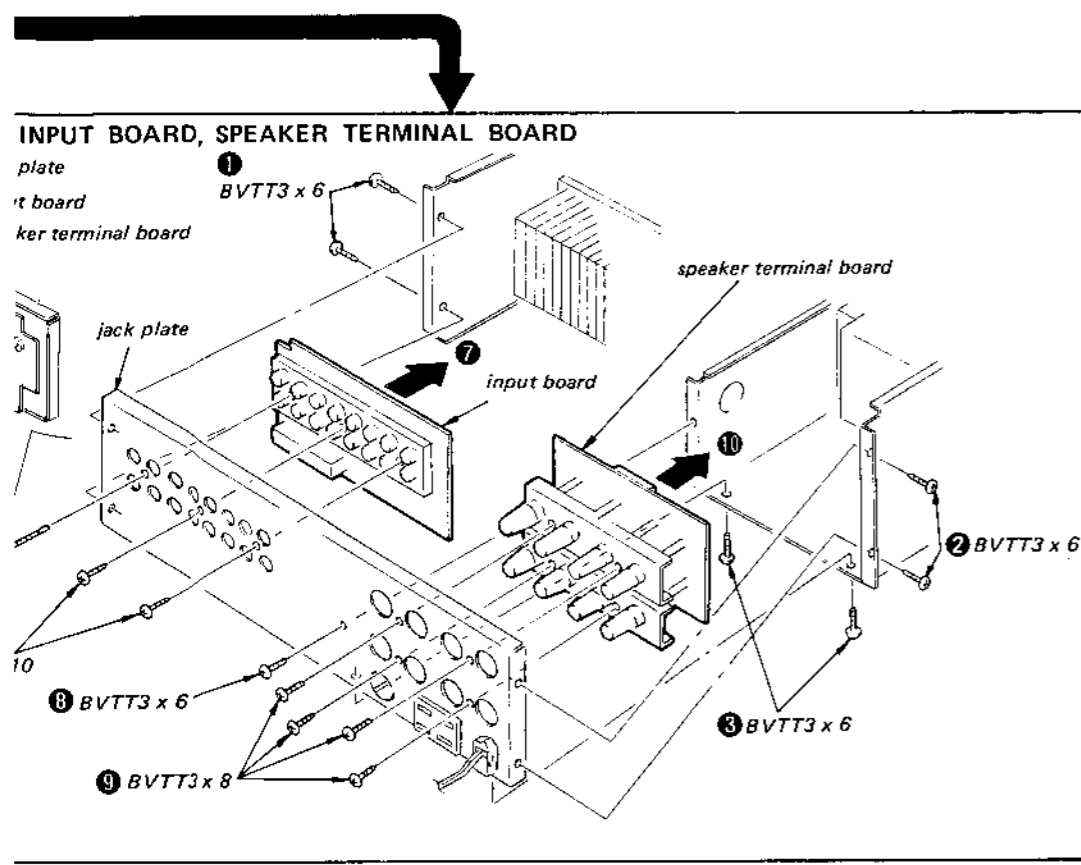
Procedure:

- L-CH -

1. Connect a VTVM as illustrated.
2. Adjust RT302 for 7.5 mV reading on the VTVM.

- R-CH -

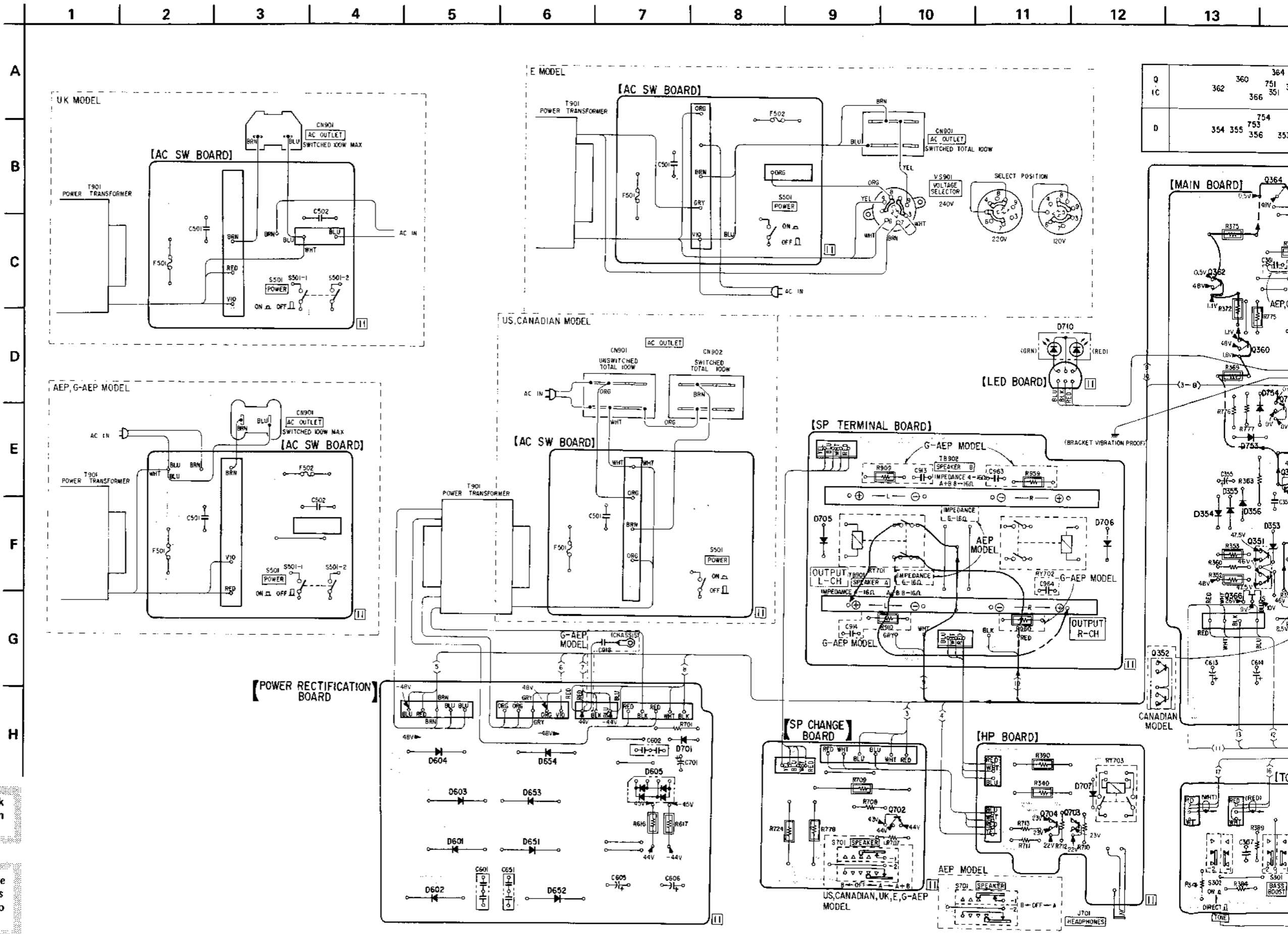
1. Connect a VTVM as illustrated.
2. Adjust RT352 for 7.5 mV reading on the VTVM.



DIAGRAMS

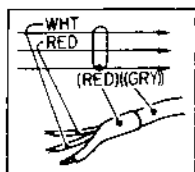
4-1. MOUNTING DIAGRAM

• See page 23 for Semiconductor Lead Layouts.



Note on Mounting Diagram:

- Color code of sleeving over the end of the jacket.



- ○ : parts extracted from the component side.
- ● : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- □ : B + pattern

- — : signal path
- — : L-CH signal path
- — : R-CH signal path

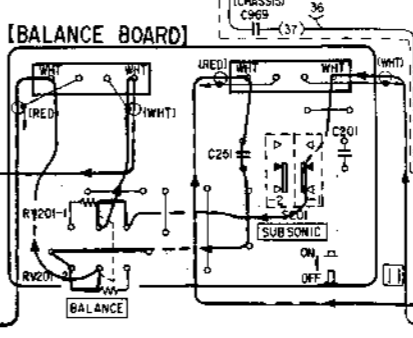
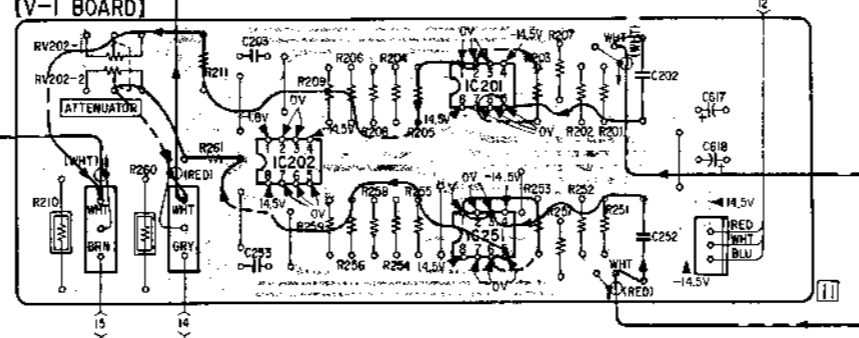
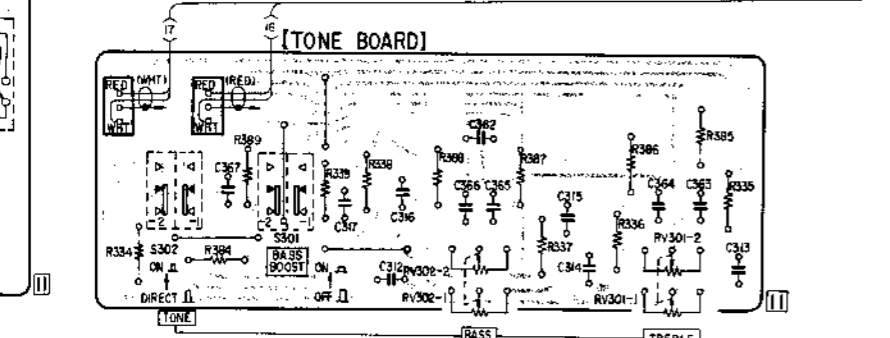
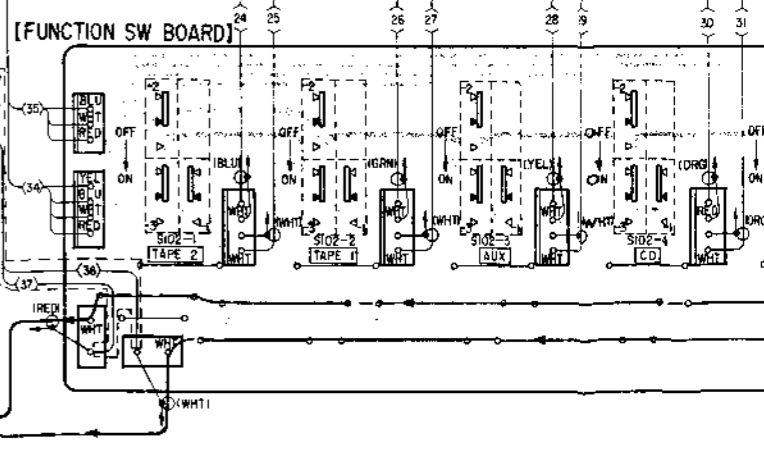
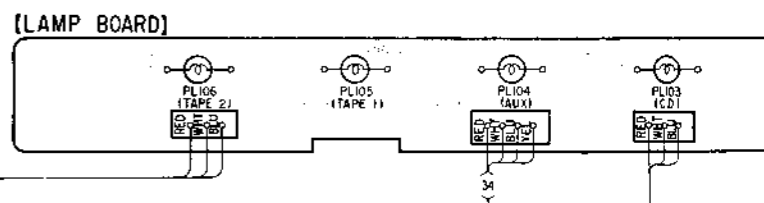
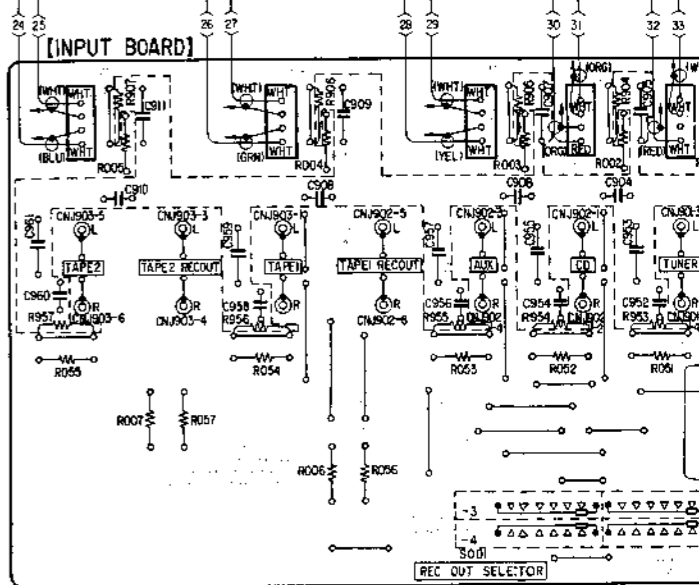
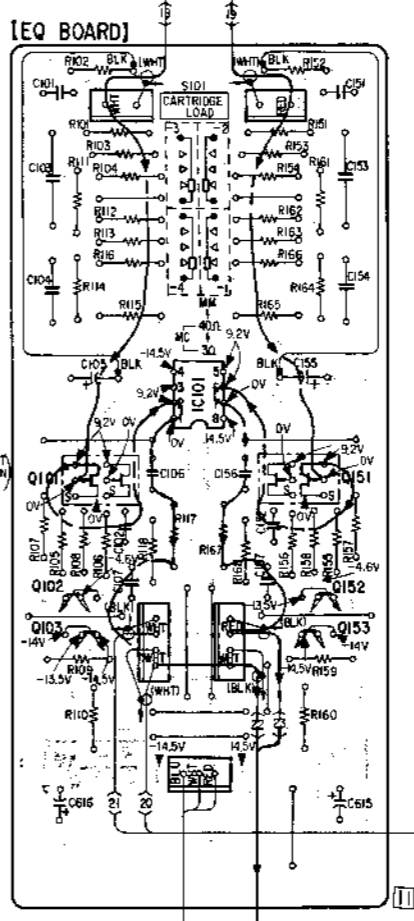
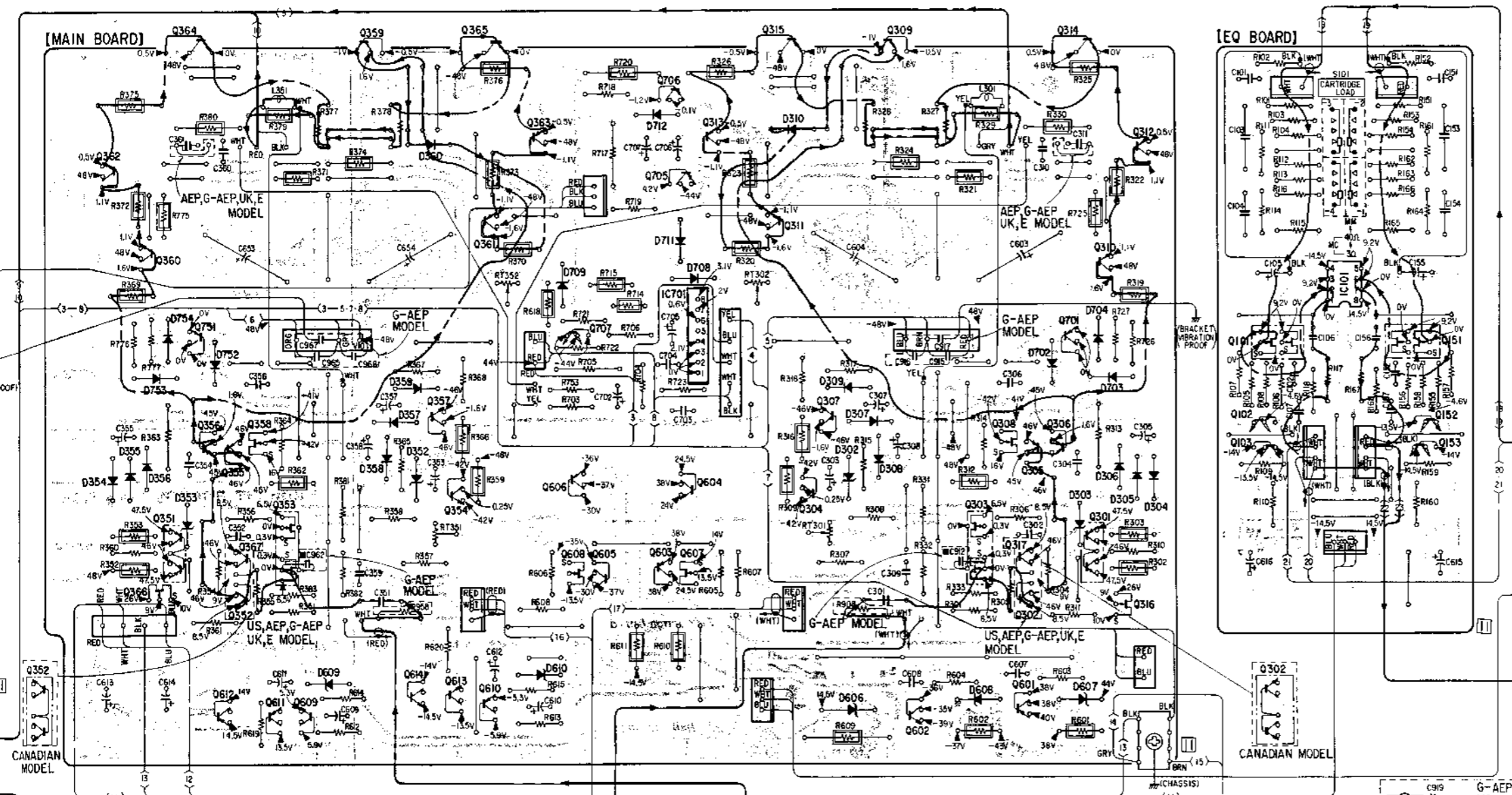
Note on Schematic Diagram:

- Components for right channel have same values as for left channel.
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms,  $\frac{1}{2}\text{W}$  unless otherwise noted.  $\text{k}\Omega$ : 1000  $\Omega$ ,  $\text{M}\Omega$ : 1000  $\text{k}\Omega$
- : nonflammable resistor.
- : panel designation.
- : signal path.
- : adjustment for repair.
- : B + bus.
- : B - bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50  $\text{k}\Omega/\text{V}$ ).
- Voltage variations may be noted due to normal production tolerances.

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Q	362	360	364	367	358	353	359	365	361	363	707	706	705	313	315	307	309	308	305	314	312	101	IC101	151	Q	
IC											606	608	605	603	607	604		602	303	317	701	310	102	103	152	IC
D	354	355	754	356	353	609		360	359		709	712	711	708			309		702	704	703				D	
											610						302	308		303	306					
																	606		608			301	316			



A

B

C

D

E

F

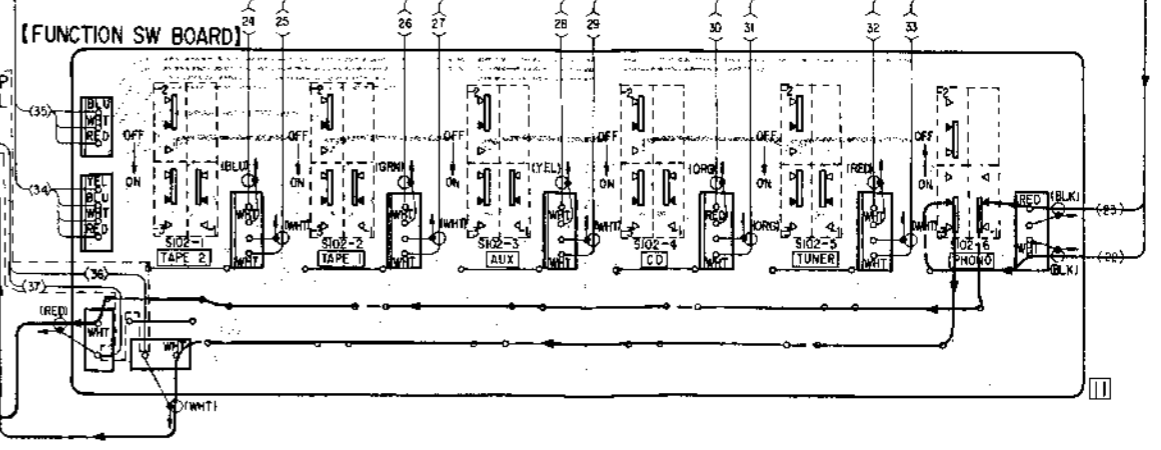
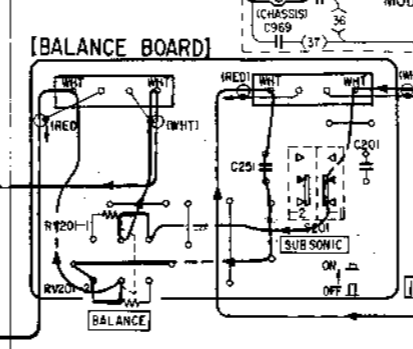
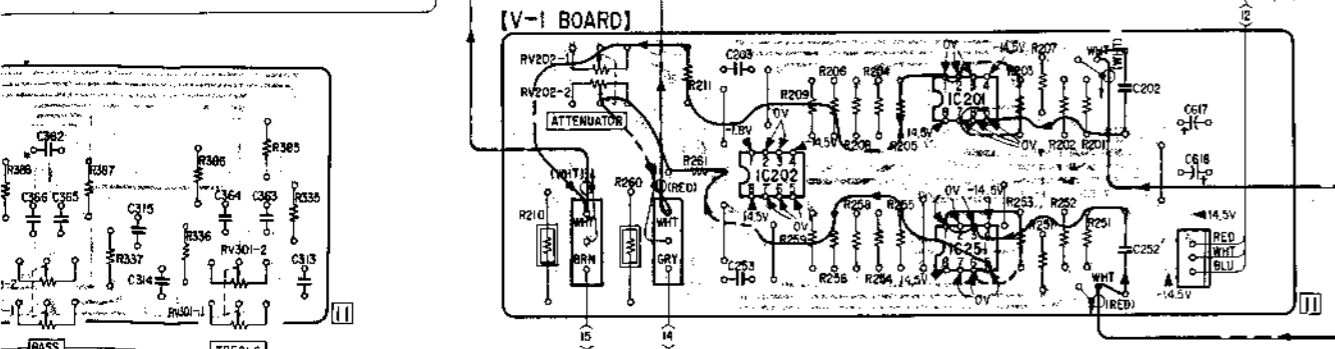
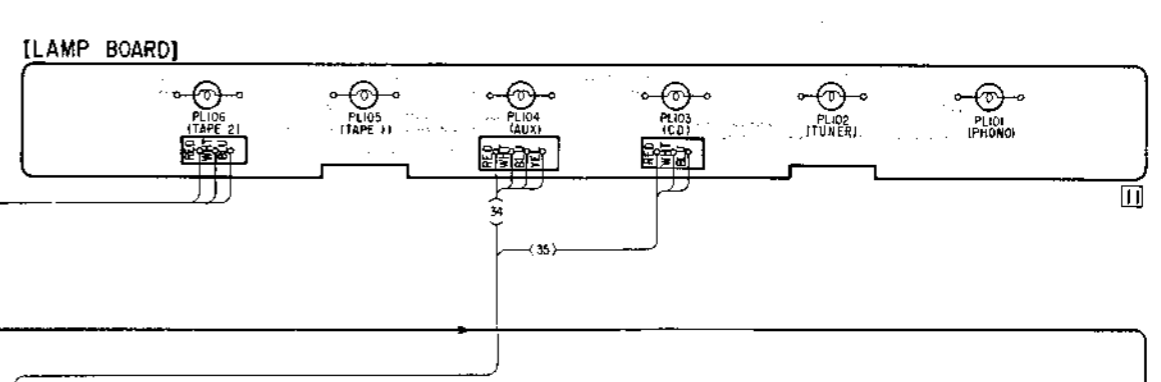
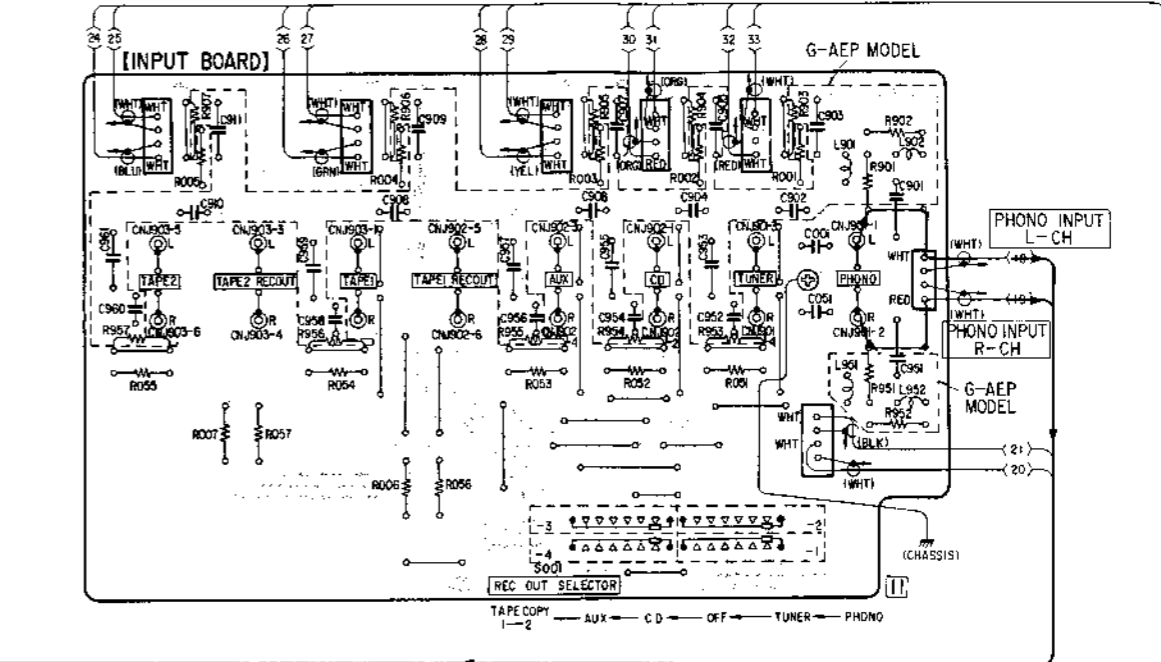
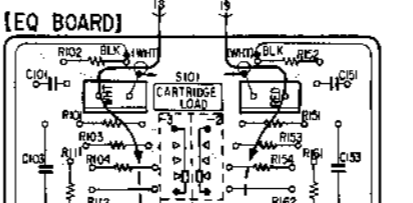
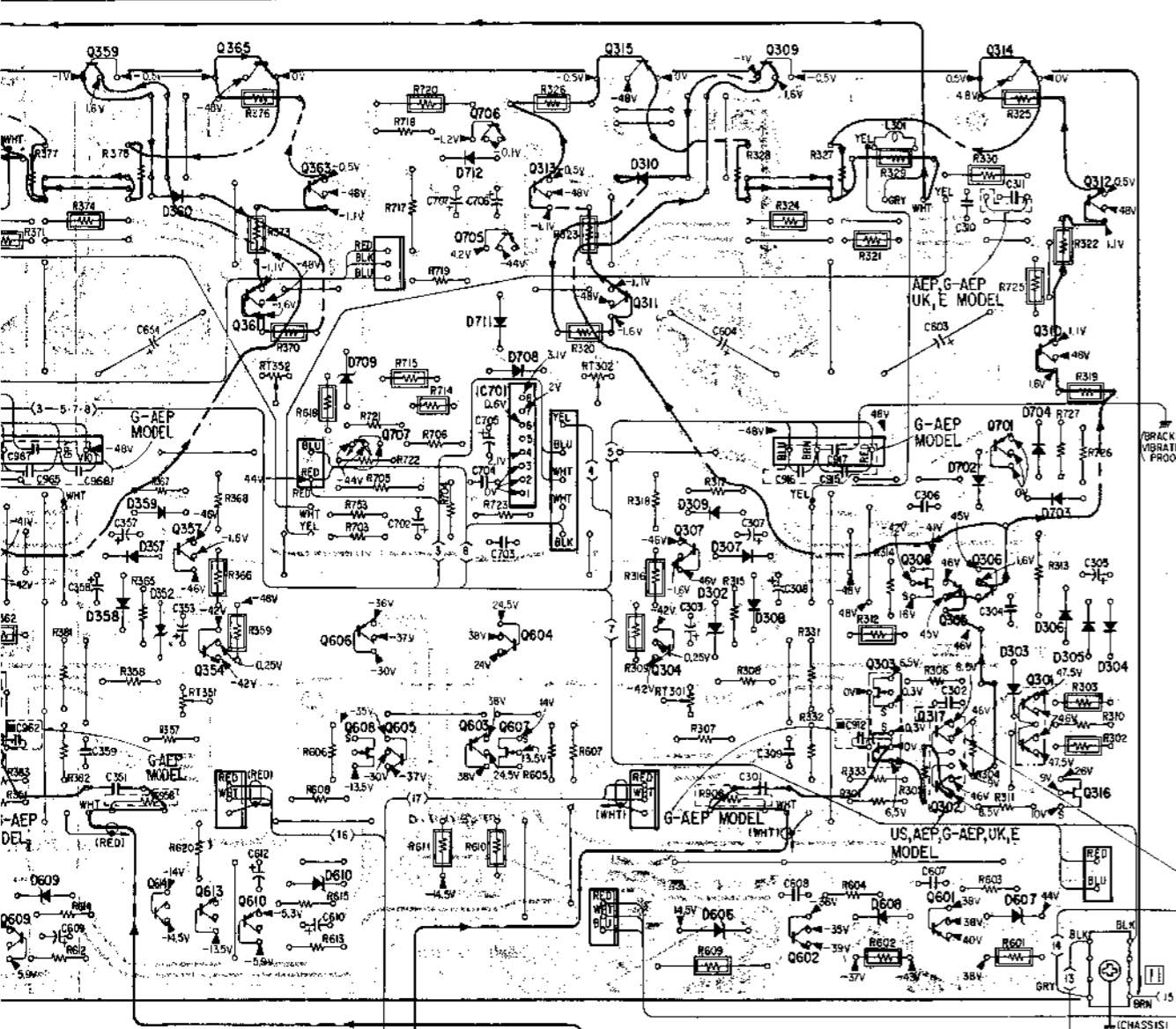
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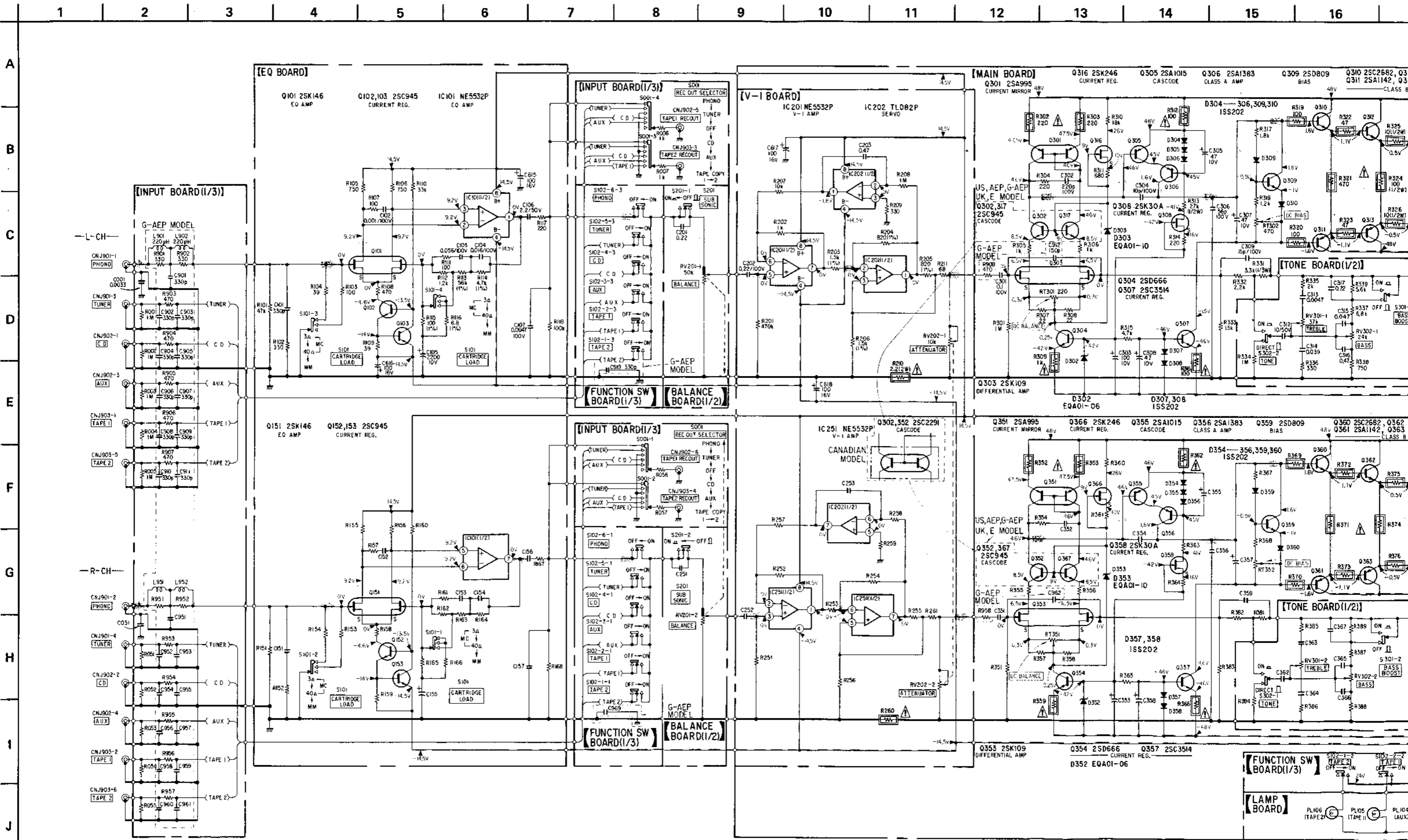
H

I

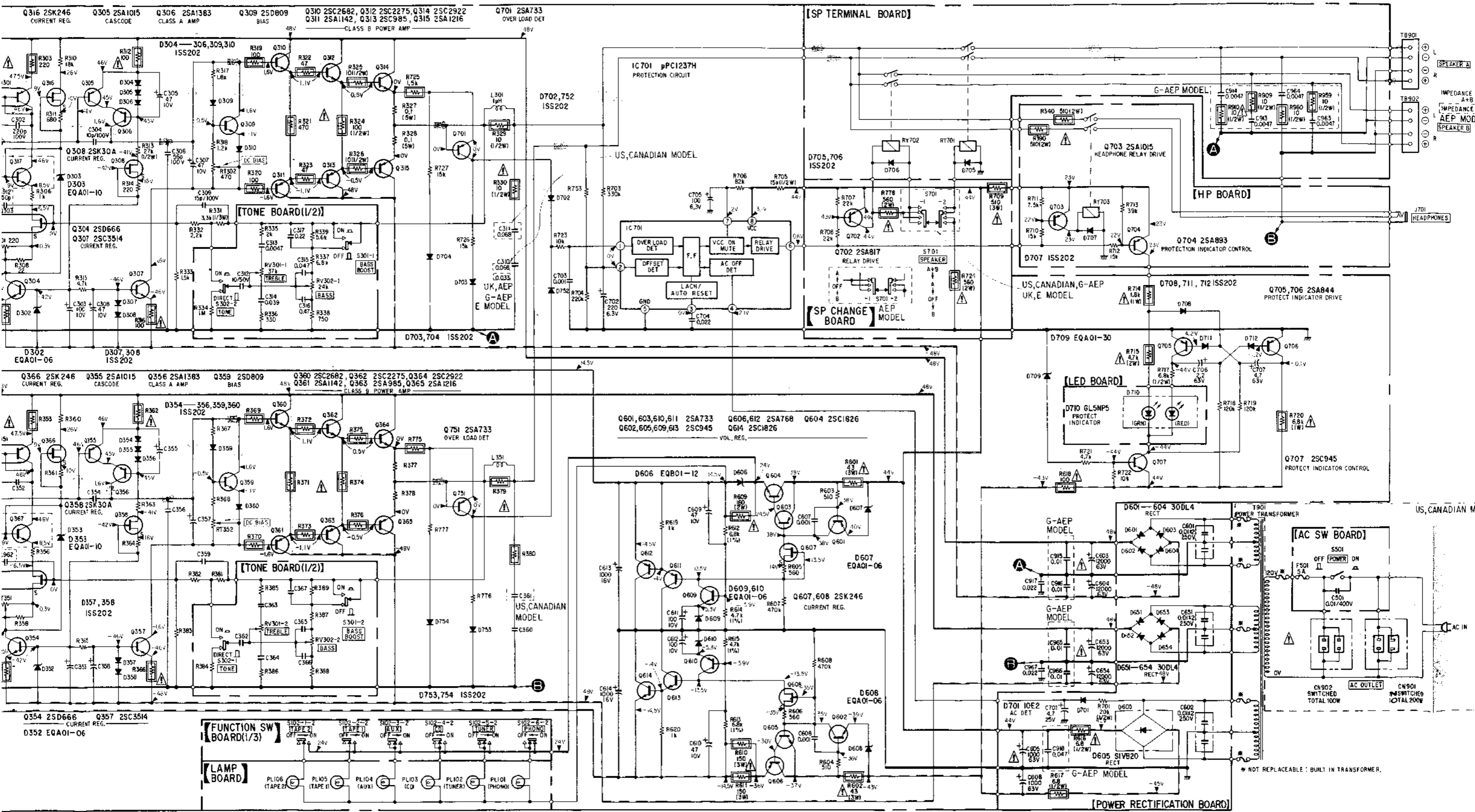
J

353	359	365	361	363	707	706	705	313	315	307	309	308	305	314	312	101	102	103	101	151	152	153	Q	
609	609	614	613	610	606	608	605	603	607	604	IC701	311	304	602	IC201	IC251	601	702	704	703	306	301	316	IC
	360	359			709	712	711		310	309										702	704	703	306	D
	609	365	352		610		708			302	308	606		608						303	306	301	316	





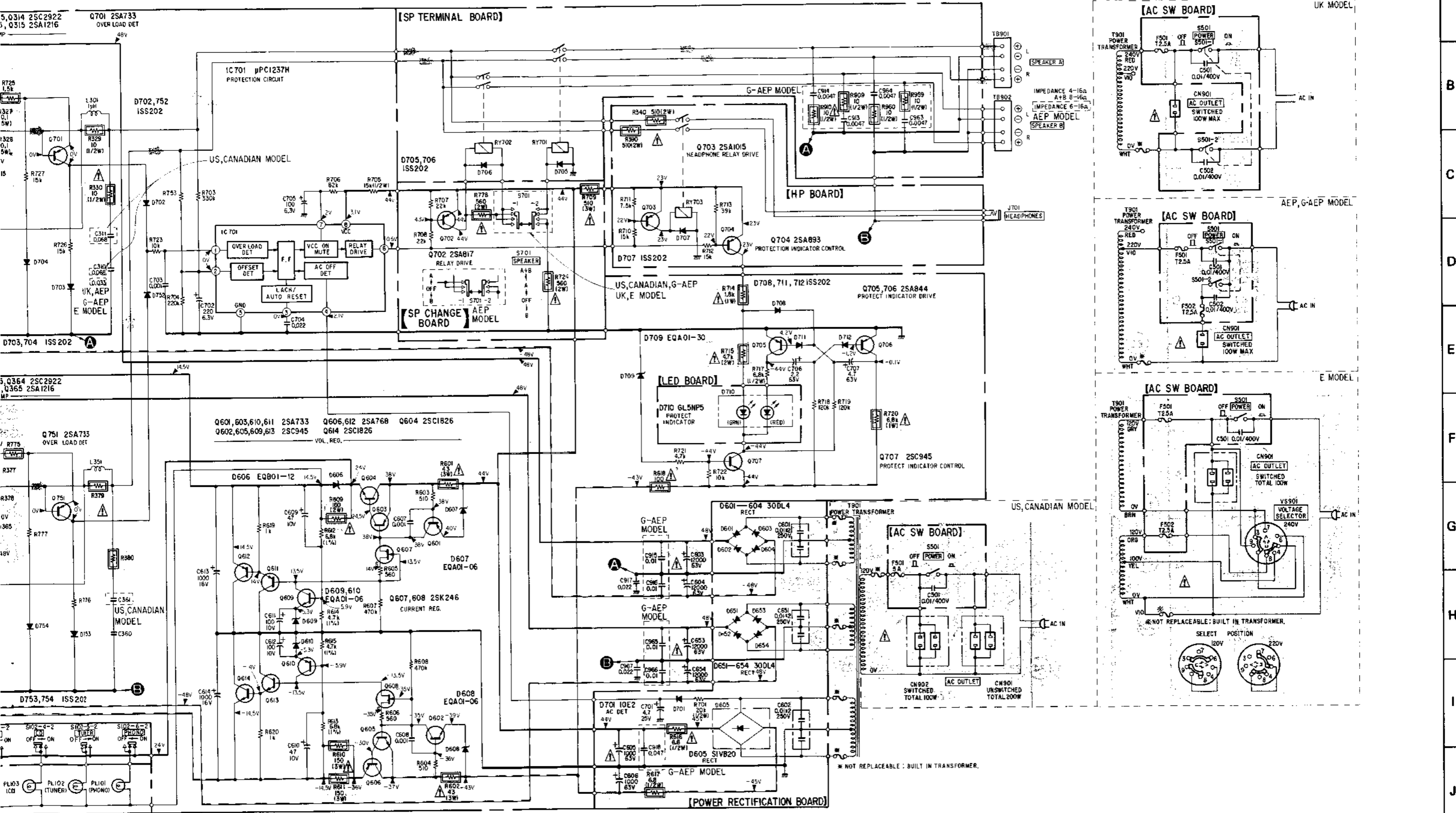






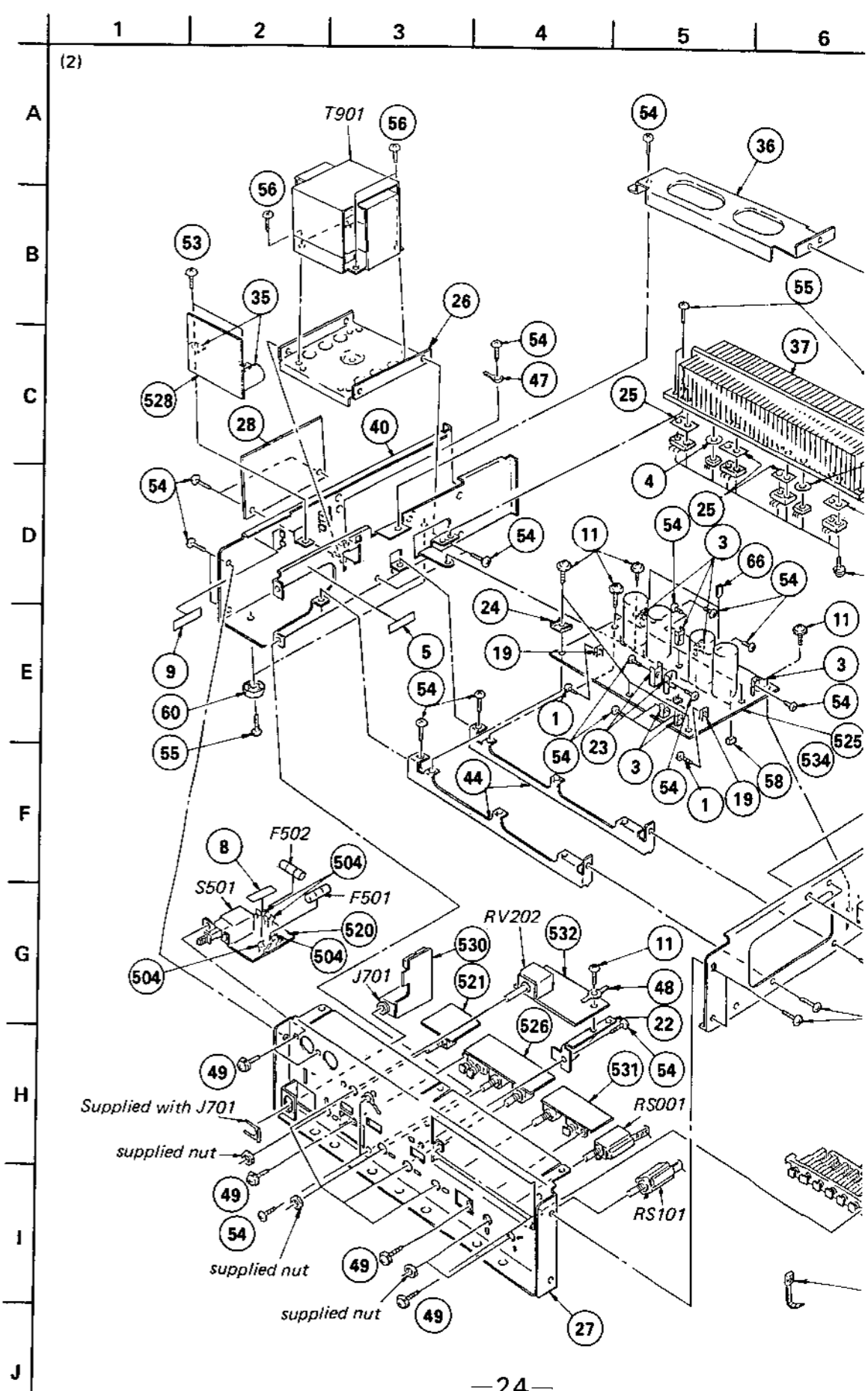
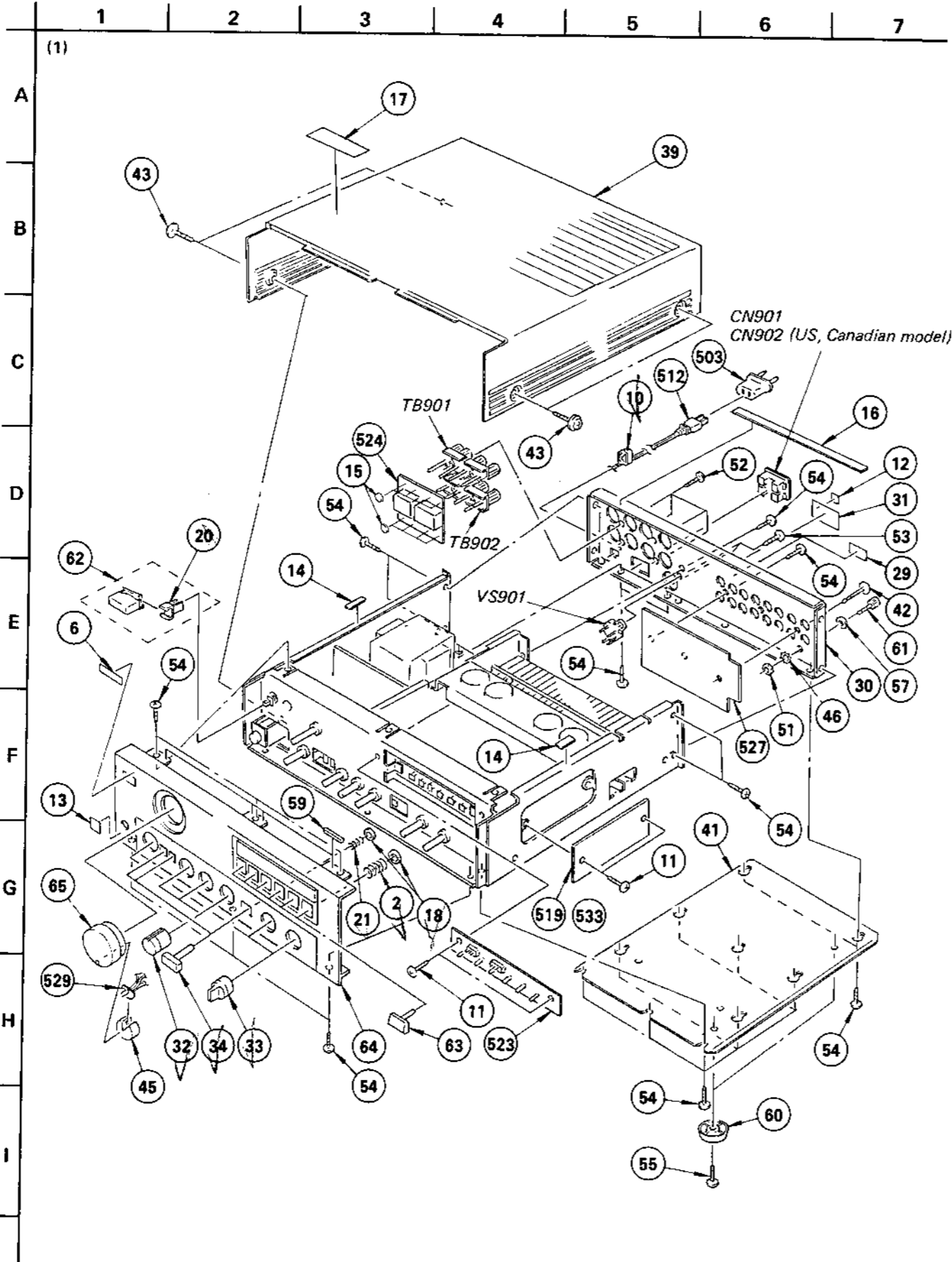
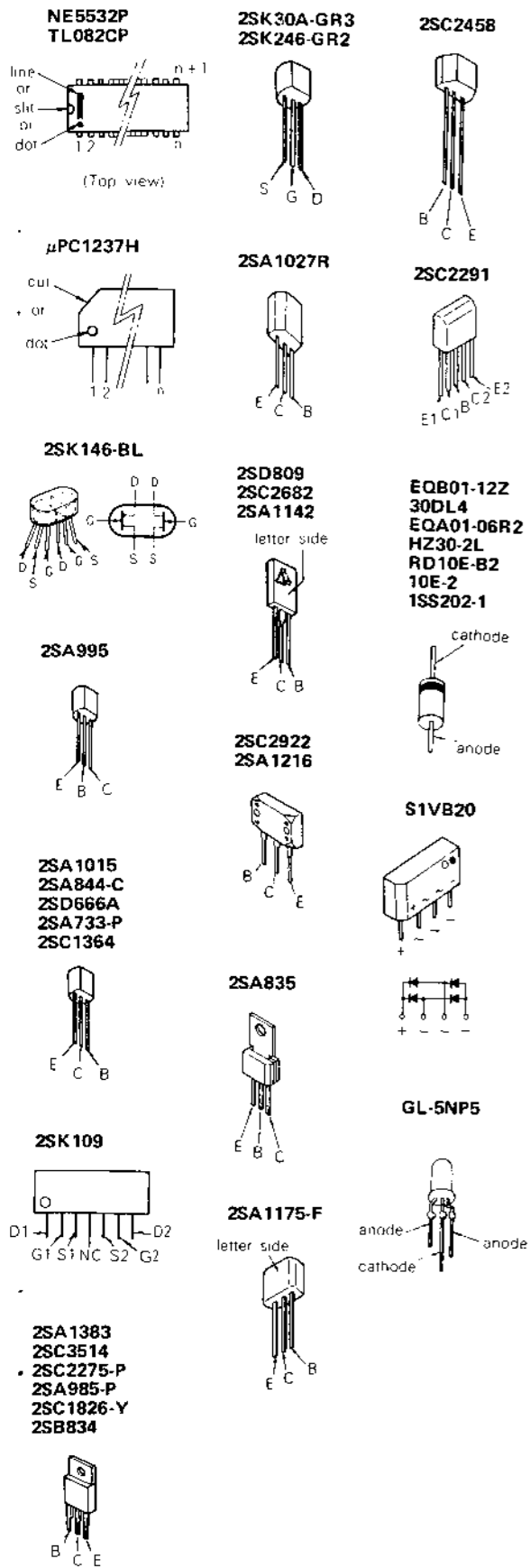
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33

A  
B  
C  
D  
E  
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J

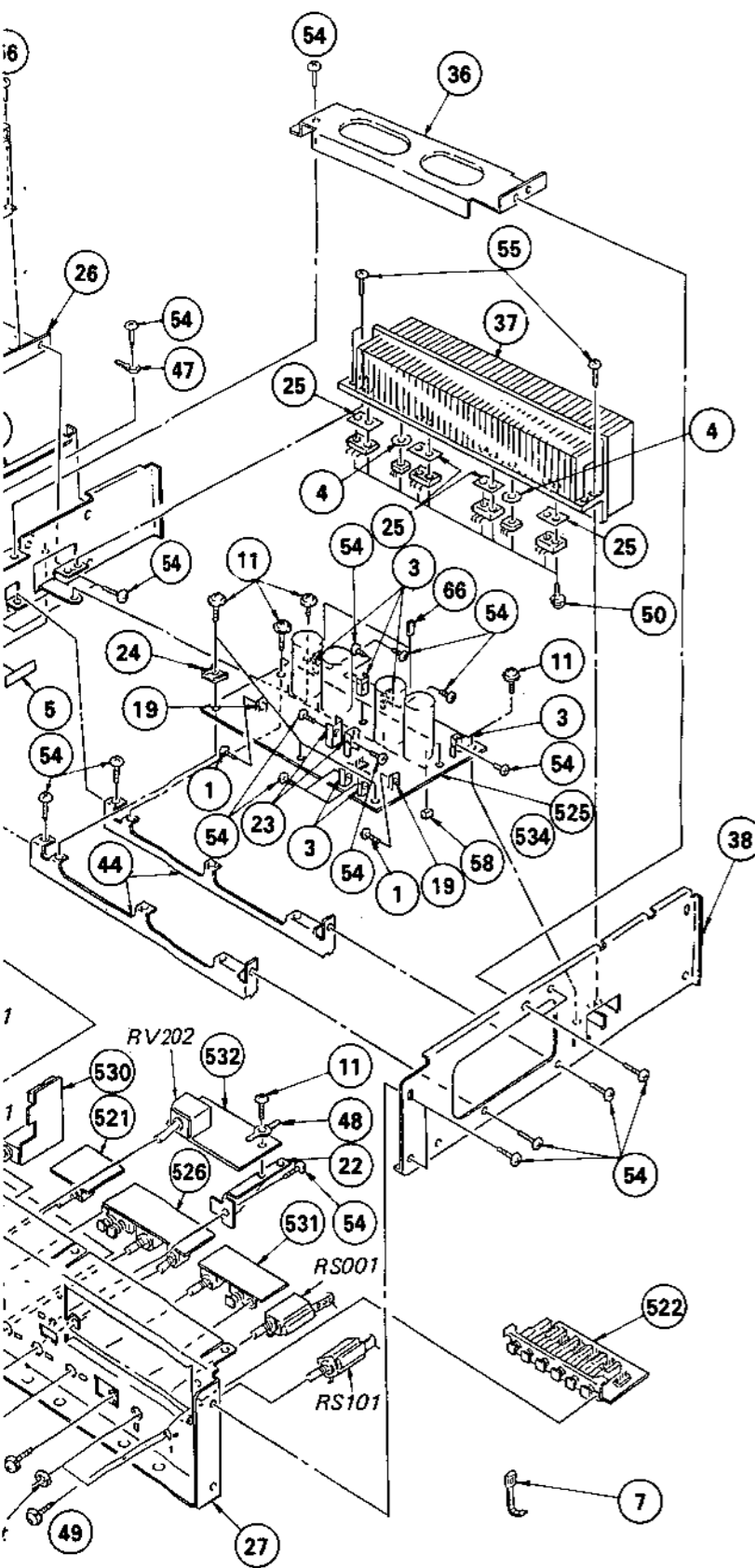


SECTION 5  
EXPLODED VIEWS AND PARTS LIST

• Semiconductor Lead Layouts



3 4 5 6 7



GENERAL SECTION

No.	Part No.	Description
1	2-259-121-00	SCREW, TR
2	2-267-020-00	SPRING, COMPRESSION
3	*3-309-144-01	HEAT SINK
4	3-572-365-01	SHEET (A), INSULATING
5	3-701-030-00	LABEL, SERIAL NUMBER
6	3-701-690-00	(UK)...LABEL (MADE IN JAPAN)
7	3-701-748-00	CLAMP
8	3-701-946-27	(US,Canadian)...LABEL, FUSE
9	3-703-044-26	(US,Canadian)...LABEL, CAUTION
10	3-703-244-00	(US,Canadian,AEP,G-AEP,UK)...BUSHING, CORD
10	3-703-571-00	(E)...BUSHING (S), CORD
11	3-703-249-01	SCREW, S TIGHT, +PITWH 3X6
12	*3-703-591-01	(G-AEP)...LABEL (23585)(SMALL), FTZ
13	3-703-710-41	STICKER, SONY SYMBOL (12)
14	3-831-441-XX	CUSHION, SPEAKER
15	*4-843-416-11	PLATE, FIXED, CAP
16	4-848-642-00	CUSHION, VIBRATION
17	4-861-045-00	LABEL, CAUTION
18	*4-862-338-00	RING, STOPPER
19	*4-866-080-00	HEAT SINK
20	*4-866-342-00	JOINT (B), KNOB
21	4-866-652-00	SPRING, COMPRESSION
22	*4-875-325-00	BRACKET, CHASSIS
23	*4-880-403-00	HEAT SINK
24	*4-880-404-01	(Canadian,AEP,UK,E,G-AEP)...PLATE, GROUND
24	*4-880-404-11	(US)...PLATE, GROUND, CONCENTRATION
25	4-885-901-11	SHEET, RADIATION
26	*4-885-916-11	BRACKET, TRANSFORMER
27	*4-885-924-11	CHASSIS, SUB
28	*4-885-938-00	PLATE, SHIELD
29	*4-885-940-01	(Canadian)...LABEL, CAUTION, SPEAKER
30	4-885-942-11	(US,Canadian)...PLATE, JACK
30	4-885-942-21	(AEP)...PLATE, JACK
30	4-885-942-31	(UK)...PLATE, JACK
30	4-885-942-41	(E)...PLATE, JACK
30	4-885-942-51	(G-AEP)...PLATE, JACK
31	*4-885-944-01	(US)...LABEL, MODEL NUMBER
31	*4-885-945-01	(Canadian)...LABEL, MODEL NUMBER
31	*4-885-946-01	(AEP)...LABEL, MODEL NUMBER
31	*4-885-947-01	(UK)...LABEL, MODEL NUMBER
31	*4-885-948-01	(E)...LABEL, MODEL NUMBER
31	*4-885-959-01	(G-AEP)...LABEL, MODEL NUMBER
32	4-885-953-01	KNOB (DIA. 20)
33	4-885-955-01	KNOB (A)
34	4-885-956-01	KNOB, PUSH
35	*4-885-958-01	BRACKET, PC BOARD

NOTE:  
 The mechanical parts with no reference number in the exploded views are not supplied.  
 Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.  
 If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:  
 All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
 MF:  $\mu\text{F}$ , PF:  $\mu\text{PF}$ .  
 COILS  
 MMH : mH, UH :  $\mu\text{H}$   
 SEMICONDUCTORS  
 In each case, U :  $\mu$ , for example:  
 UA...:  $\mu\text{A}$ ..., UPA...:  $\mu\text{PA}$ ..., UPC...:  $\mu\text{PC}$ ..., UPD...:  $\mu\text{PD}$ ...

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.  
 Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

GENERAL SECTION

No.	Part No.	Description
36	*4-885-961-01	BRACKET, VIBRATION PROOF
37	*4-885-962-01	HEAT SINK
38	*4-885-963-01	PLATE, SIDE, RIGHT
39	4-885-965-01	CASE
40	*4-885-966-01	PLATE, SIDE, LEFT
41	*4-885-967-01	PLATE, BOTTOM
42	4-887-711-00	SCREW, TERMINAL, CLAW, +BVTP
43	4-889-321-11	SCREW
44	*4-889-824-00	CHANNEL
45	*4-901-919-00	HOUSE, LED LAMP
46	7-623-422-07	LW 3, TYPE B
47	7-623-508-01	(G-AEP)...LUG, 3
48	7-623-520-01	(G-AEP)...LUG, 3
49	7-682-647-01	SCREW +PS 3X6
50	7-682-650-01	SCREW +PS 3X12
51	7-684-023-04	N 3, TYPE 2
52	7-685-646-19	SCREW +BVTP 3X8 TYPE2 N-S
53	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
54	7-685-751-09	SCREW +BVTT 3X6 (S)
55	7-685-873-01	SCREW +BVTT 3X10 (S)
56	7-685-881-01	SCREW +BVTT 4X8 (S)
57	7-688-003-11	W 3, MIDDLE
58	9-911-843-XX	CUSHION, CHASSIS
59	9-911-845-XX	CUSHION, COUNTER
60	X-4310-310-0	FOOT ASSY
61	X-4854-207-0	TERMINAL ASSY, GROUND
62	X-4885-901-0	KNOB ASSY, POWER
63	X-4885-905-1	KNOB, TYPE T
64	X-4885-906-1	(US,Canadian,UK,G-AEP,F)...PANEL ASSY
64	X-4885-907-1	(AEP)...PANEL ASSY
65	X-4901-901-0	KNOB (NA-48) ASSY, R
66	9-911-841-XX	CUSHION

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
101	2-297-403-00	SHEET (LARGE), PROTECTION
102	3-701-630-00	BAG, POLYETHYLENE
103	3-703-390-01	(US)...INSTRUCTION
104	3-773-806-11	(Canadian,AEP,UK,E)...MANUAL, INSTRUCTION
104	3-773-806-21	(US)...MANUAL, INSTRUCTION
104	*3-773-806-41	(AEP)...MANUAL, INSTRUCTION
104	3-773-806-51	(G-AEP)...MANUAL, INSTRUCTION
105	4-885-949-01	CUSHION (FRONT) UPPER
106	4-885-950-01	CUSHION (REAR) UPPER
107	4-885-951-01	CUSHION (FRONT) LOWER
108	4-885-952-01	CUSHION (REAR) LOWER
109	4-885-968-01	INDIVIDUAL CARTON

NOTE:  
 The mechanical parts with no reference number in the exploded views are not supplied.  
 Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.  
 If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:  
 All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
 MF:  $\mu\text{F}$ , PF:  $\mu\text{PF}$ .  
 COILS  
 MMH : mH, UH :  $\mu\text{H}$   
 SEMICONDUCTORS  
 In each case, U :  $\mu$ , for example:  
 UA...:  $\mu\text{A}$ ..., UPA...:  $\mu\text{PA}$ ..., UPC...:  $\mu\text{PC}$ ..., UPD...:  $\mu\text{PD}$ ...

GENERAL SECTION

No.	Part No.	Description
1	2-259-121-00	SCREW, TR
2	2-267-020-00	SPRING, COMPRESSION
3	3-309-144-01	HEAT SINK
4	3-572-365-01	SHEET (A), INSULATING
5	3-701-030-00	LABEL, SERIAL NUMBER
6	3-701-690-00	(UK)...LABEL (MADE IN JAPAN)
7	3-701-748-00	CLAMP
8	3-701-946-27	(US,Canadian)...LABEL, FUSE
9	3-703-044-26	(US,Canadian)...LABEL, CAUTION
10	3-703-244-00	(US,Canadian,AEP,G-AEP,UK)...BUSHING, CORD
11	3-703-249-01	SCREW, S TIGHT, +PTTW 3X6
12	3-703-591-01	(G-AEP)...LABEL (235855)(SMALL), FTZ
13	3-703-710-41	STICKER, SONY SYMBOL (12)
14	3-831-441-XX	CUSHION, SPEAKER
15	4-843-416-11	PLATE, FIXED, CAP
16	4-848-642-00	CUSHION, VIBRATION
17	4-861-045-00	LABEL, CAUTION
18	4-862-338-00	RING, STOPPER
19	4-866-080-00	HEAT SINK
20	4-866-342-00	JOINT (B), KNOB
21	4-866-652-00	SPRING, COMPRESSION
22	4-875-325-00	BRACKET, CHASSIS
23	4-880-403-00	HEAT SINK
24	4-880-404-01	(Canadian,AEP,UK,E,G-AEP)...PLATE, GROUND
25	4-885-901-11	SHEET, RADIATION
26	4-885-916-11	BRACKET, TRANSFORMER
27	4-885-924-11	CHASSIS, SUB
28	4-885-938-00	PLATE, SHIELD
29	4-885-940-01	(Canadian)...LABEL, CAUTION, SPEAKER
30	4-885-942-11	(US,Canadian)...PLATE, JACK
31	4-885-942-21	(AEP)...PLATE, JACK
32	4-885-942-31	(UK)...PLATE, JACK
33	4-885-942-41	(E)...PLATE, JACK
34	4-885-942-51	(G-AEP)...PLATE, JACK
35	4-885-944-01	(US)...LABEL, MODEL NUMBER
36	4-885-945-01	(Canadian)...LABEL, MODEL NUMBER
37	4-885-946-01	(AEP)...LABEL, MODEL NUMBER
38	4-885-947-01	(UK)...LABEL, MODEL NUMBER
39	4-885-948-01	(E)...LABEL, MODEL NUMBER
40	4-885-959-01	(G-AEP)...LABEL, MODEL NUMBER
41	4-885-953-01	KNOB (DIA. 20)
42	4-885-955-01	KNOB (A)
43	4-885-956-01	KNOB, PUSH
44	4-885-958-01	BRACKET, PC BOARD

GENERAL SECTION

No.	Part No.	Description
36	4-885-961-01	BRACKET, VIBRATION PROOF
37	4-885-962-01	HEAT SINK
38	4-885-963-01	PLATE, SIDE, RIGHT
39	4-885-965-01	CASE
40	4-885-966-01	PLATE, SIDE, LEFT
41	4-885-967-01	PLATE, BOTTOM
42	4-887-711-00	SCREW, TERMINAL, CLAW, +BVTP
43	4-889-321-11	SCREW
44	4-889-824-00	CHANNEL
45	4-901-919-00	HOUSE, LED LAMP
46	7-623-422-07	LW 3, TYPE B
47	7-623-508-01	(G-AEP)...LUG, 3
48	7-623-520-01	(G-AEP)...LUG, 3
49	7-682-647-01	SCREW +PS 3X6
50	7-682-650-01	SCREW +PS 3X12
51	7-684-023-04	N 3, TYPE 2
52	7-685-646-19	SCREW +BVTP 3X8 TYPE2 N-S
53	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
54	7-685-751-09	SCREW +BVTT 3X6 (S)
55	7-685-873-01	SCREW +BVTT 3X10 (S)
56	7-685-881-01	SCREW +BVTT 4X8 (S)
57	7-688-003-11	W 3, MIDDLE
58	9-911-843-XX	CUSHION, CHASSIS
59	9-911-845-XX	CUSHION, COUNTER
60	X-4310-310-0	FOOT ASSY
61	X-4854-207-0	TERMINAL ASSY, GROUND
62	X-4885-901-0	KNOB ASSY, POWER
63	X-4885-905-1	KNOB, TYPE T
64	X-4885-906-1	(US,Canadian,UK,G-AEP,E)...PANEL ASSY
65	X-4885-907-1	(AEP)...PANEL ASSY
66	X-4901-901-0	KNOB (NA-48) ASSY, R
67	9-911-841-XX	CUSHION

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
101	2-297-403-00	SHEET (LARGE), PROTECTION
102	3-701-630-00	BAG, POLYETHYLENE
103	3-703-390-01	(US)...INSTRUCTION
104	3-773-806-11	(Canadian,AEP,UK,E)...MANUAL, INSTRUCTION
104	3-773-806-21	(US)...MANUAL, INSTRUCTION
104	3-773-806-41	(AEP)...MANUAL, INSTRUCTION
104	3-773-806-51	(G-AEP)...MANUAL, INSTRUCTION
105	4-885-949-01	CUSHION (FRONT) UPPER
106	4-885-950-01	CUSHION (REAR) UPPER
107	4-885-951-01	CUSHION (FRONT) LOWER
108	4-885-952-01	CUSHION (REAR) LOWER
109	4-885-958-01	INDIVIDUAL CARTON

ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	*1-508-830-12	H TYPE BASE POST
502	*1-508-832-12	H TYPE BASE POST
503	1-526-565-00	(E3 ONLY)...AC PLUG ADAPTOR
504	1-533-131-00	(AEP,G-AEP,UK,E)...HOLDER, FUSE
505	*1-535-115-00	TERMINAL
506	*1-535-116-00	TERMINAL
507	*1-535-117-00	TERMINAL
508	*1-535-118-00	TERMINAL
509	*1-535-119-00	TERMINAL
510	*1-535-139-00	(AEP,G-AEP,UK,E)...BASE POST 19MM (10MM PITCH) 2P
511	*1-535-142-00	BASE POST 22MM (10MM PITCH) 5P
512	1-551-884-00	(UK)...CORD, POWER
512	1-555-701-00	(US,Canadian)...CORD, POWER
512	1-555-795-00	(AEP,G-AEP)...CORD, POWER
512	1-556-091-00	(E)...CORD, POWER
513	*1-560-061-00	PIN, CONNECTOR 3P
514	*1-560-062-00	PIN, CONNECTOR 4P
515	*1-560-242-21	BUS BAR 4P
516	*1-560-242-61	BUS BAR 2P
517	*1-562-249-00	SOCKET, CONNECTOR 4P
518	*1-562-327-00	SOCKET, CONNECTOR 3P
519	*1-612-692-11	PC BOARD, EQ
520	*1-612-693-11	PC BOARD, AC SW
521	*1-612-694-11	PC BOARD, SP CHANGE
522	*1-612-695-11	PC BOARD, FUNCTION SW
523	*1-612-696-11	PC BOARD, LAMP
524	*1-612-697-11	PC BOARD, SP TERMINAL
525	*1-612-698-11	PC BOARD, MAIN
526	*1-612-699-11	PC BOARD, TONE
527	*1-612-700-11	PC BOARD, INPUT
528	*1-612-701-11	PC BOARD, POWER RECTIFICATION
529	*1-612-702-11	PC BOARD, LED
530	*1-612-703-11	PC BOARD, HP
531	*1-612-704-11	PC BOARD, BALANCE
532	*1-612-705-11	PC BOARD, V-I
533	*A-4358-131-A	MOUNTED PCB, EQ
534	*A-4388-392-A	(AEP,UK,E)...MOUNTED PCB, MAIN
534	*A-4388-393-A	(US,Canadian)...MOUNTED PCB, MAIN
534	*A-4388-394-A	(G-AEP)...MOUNTED PCB, MAIN
535	1-535-416-00	TERMINAL
C001	1-161-007-00	CERAMIC 0.0033MF 10% 25V
C051	1-161-007-00	CERAMIC 0.0033MF 10% 25V
C101	1-130-012-00	FILM 330PF 5% 50V

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
MF:  $\mu\text{F}$ , PF:  $\mu\text{pF}$ .

COILS

MMH : mH, UH :  $\mu\text{H}$

SEMICONDUCTORS

In each case, U :  $\mu$ , for example:  
UA...:  $\mu\text{A}$ ..., UPA...:  $\mu\text{PA}$ ..., UPC...:  $\mu\text{PC}$ ..., UPD...:  $\mu\text{PD}$ ...

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
MF:  $\mu\text{F}$ , PF:  $\mu\text{pF}$ .

COILS

MMH : mH, UH :  $\mu\text{H}$

SEMICONDUCTORS

In each case, U :  $\mu$ , for example:  
UA...:  $\mu\text{A}$ ..., UPA...:  $\mu\text{PA}$ ..., UPC...:  $\mu\text{PC}$ ..., UPD...:  $\mu\text{PD}$ ...

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C102	1-130-273-00	FILM	0.001MF	5%	100V
C103	1-136-248-00	FILM	0.056MF	3%	100V
C104	1-136-247-00	FILM	0.016MF	3%	100V
C105	1-123-325-00	ELECT	2200MF	20%	10V
C106	1-123-829-00	ELECT	2.2MF	20%	50V
C107	1-130-289-00	FILM	0.0047MF	5%	100V
C151	1-130-012-00	FILM	330PF	5%	50V
C152	1-130-273-00	FILM	0.001MF	5%	100V
C153	1-136-248-00	FILM	0.056MF	3%	100V
C154	1-136-247-00	FILM	0.016MF	3%	100V
C155	1-123-325-00	ELECT	2200MF	20%	10V
C156	1-123-829-00	ELECT	2.2MF	20%	50V
C157	1-130-289-00	FILM	0.0047MF	5%	100V
C201	1-130-636-00	FILM	0.22MF	5%	50V
C202	1-136-266-00	FILM	0.22MF	5%	100V
C203	1-130-640-00	FILM	0.47MF	5%	50V
C251	1-130-636-00	FILM	0.22MF	5%	50V
C252	1-136-266-00	FILM	0.22MF	5%	100V
C253	1-130-640-00	FILM	0.47MF	5%	50V
C301	1-130-321-00	FILM	0.1MF	5%	100V
C302	1-107-308-00	MICA	220PF	5%	100V
C303	1-124-069-00	ELECT	100MF	20%	10V
C304	1-107-279-00	MICA	10PF	0.5PF	100V
C305	1-124-068-91	ELECT	47MF	20%	10V
C306	1-107-294-91	MICA	56PF	5%	100V
C307	1-124-068-91	ELECT	47MF	20%	10V
C308	1-124-068-91	ELECT	47MF	20%	10V
C309	1-107-281-91	MICA	15PF	5%	100V
C310	1-130-626-00	(AEP,G-AEP,UK,E)...FILM	0.033MF	5%	50V
C310	1-130-630-00	(US,Canadian)...FILM	0.068MF	5%	50V
C311	1-130-630-00	(US,Canadian)...FILM	0.068MF	5%	50V
C312	1-123-831-00	ELECT	10MF	20%	50V
C313	1-108-571-00	MYLAR	0.0047MF	5%	50V
C314	1-130-627-00	FILM	0.039MF	5%	50V
C315	1-130-628-00	FILM	0.047MF	5%	50V
C316	1-130-640-00	FILM	0.47MF	5%	50V
C317	1-130-636-00	FILM	0.22MF	5%	50V
C351	1-130-321-00	FILM	0.1MF	5%	100V
C352	1-107-308-00	MICA	220PF	5%	100V
C353	1-124-069-00	ELECT	100MF	20%	10V
C354	1-107-279-00	MICA	10PF	0.5PF	100V
C355	1-124-068-91	ELECT	47MF	20%	10V
C356	1-107-294-91	MICA	56PF	5%	100V
C357	1-124-068-91	ELECT	47MF	20%	10V
C358	1-124-068-91	ELECT	47MF	20%	10V
C359	1-107-281-91	MICA	15PF	5%	100V

**NOTE:**  
 The mechanical parts with no reference number in the exploded views are not supplied.  
 Items marked \* are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.  
 If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**  
 All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.  
 MF: μF, PF: μμF.  
**COILS**  
 MMH : mH, UH : μH  
**SEMICONDUCTORS**  
 In each case, U : μ, for example:  
 UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.  
 Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C360	1-130-626-00	(AEP,G-AEP,UK,E)...FILM	0.033MF	5%	50V
C360	1-130-630-00	(US,Canadian)...FILM	0.068MF	5%	50V
C361	1-130-630-00	(US,Canadian)...FILM	0.068MF	5%	50V
C362	1-123-831-00	ELECT	10MF	20%	50V
C363	1-108-571-00	MYLAR	0.0047MF	5%	50V
C364	1-130-627-00	FILM	0.039MF	5%	50V
C365	1-130-628-00	FILM	0.047MF	5%	50V
C366	1-130-640-00	FILM	0.47MF	5%	50V
C367	1-130-636-00	FILM	0.22MF	5%	50V
C501	1-161-744-00	CERAMIC	0.01MF	10%	400V
C502	1-161-744-00	(AEP,G-AEP,UK)...CERAMIC	0.01MF	10%	400V
C601	1-102-394-00	CERAMIC (0.01+0.01)MF			250V
C602	1-102-394-00	CERAMIC (0.01+0.01)MF			250V
C603	1-125-368-11	ELECT(BLOCK)	12000MF	20%	63V
C604	1-125-368-11	ELECT(BLOCK)	12000MF	20%	63V
C605	1-123-378-00	ELECT	1000MF	20%	63V
C606	1-123-378-00	ELECT	1000MF	20%	63V
C607	1-102-074-81	CERAMIC	0.001MF	10%	50V
C608	1-102-074-81	CERAMIC	0.001MF	10%	50V
C609	1-124-068-91	ELECT	47MF	20%	10V
C610	1-124-068-91	ELECT	47MF	20%	10V
C611	1-124-069-00	ELECT	100MF	20%	10V
C612	1-124-069-00	ELECT	100MF	20%	10V
C613	1-124-077-51	ELECT	1000MF	20%	16V
C614	1-124-077-51	ELECT	1000MF	20%	16V
C615	1-123-333-00	ELECT	100MF	20%	16V
C616	1-123-333-00	ELECT	100MF	20%	16V
C617	1-123-333-00	ELECT	100MF	20%	16V
C618	1-123-333-00	ELECT	100MF	20%	16V
C651	1-102-394-00	CERAMIC (0.01+0.01)MF			250V
C653	1-125-368-11	ELECT(BLOCK)	12000MF	20%	63V
C654	1-125-368-11	ELECT(BLOCK)	12000MF	20%	63V
C701	1-123-369-00	ELECT	4.7MF	20%	25V
C702	1-123-308-00	ELECT	220MF	20%	6.3V
C703	1-102-074-81	CERAMIC	0.001MF	10%	50V
C704	1-130-624-00	FILM	0.022MF	5%	50V
C705	1-123-307-00	ELECT	100MF	20%	6.3V
C706	1-123-367-00	ELECT	2.2MF	20%	63V
C707	1-123-369-00	ELECT	4.7MF	20%	63V
C901	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C902	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C903	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C904	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C905	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C906	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C907	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C908	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C909	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C910	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C911	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C912	1-102-108-00	(G-AEP)...CERAMIC	150PF	10%	50V
C913	1-102-125-00	(G-AEP)...CERAMIC	0.0047MF	10%	50V
C914	1-102-125-00	(G-AEP)...CERAMIC	0.0047MF	10%	50V
C915	1-102-125-00	(G-AEP)...CERAMIC	0.01MF	10%	50V
C916	1-102-129-00	(G-AEP)...CERAMIC	0.01MF	10%	50V
C917	1-101-005-00	(G-AEP)...CERAMIC	0.022MF	10%	50V
C918	1-101-006-00	(G-AEP)...CERAMIC	0.047MF	10%	50V
C919	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C951	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C952	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C953	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C954	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C955	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C956	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C957	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C958	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C959	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C960	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
C961	1-161-317-00	(G-AEP)...CERAMIC	330PF	10%	50V
C962	1-102-108-00	(G-AEP)...CERAMIC	150PF	10%	50V
C963	1-102-125-00	(G-AEP)...CERAMIC	0.0047MF	10%	50V
C964	1-102-125-00	(G-AEP)...CERAMIC	0.0047MF	10%	50V
C965	1-102-129-00	(G-AEP)...CERAMIC	0.01MF	10%	50V
C966	1-102-129-00	(G-AEP)...CERAMIC	0.01MF	10%	50V
C967	1-101-005-00	(G-AEP)...CERAMIC	0.022MF	10%	50V
C968	1-101-006-00	(G-AEP)...CERAMIC	0.047MF	10%	50V
C969	1-102-112-00	(G-AEP)...CERAMIC	330PF	10%	50V
CN901	1-526-894-00	(AEP,G-AEP)...OUTLET, AC			
CN901	1-526-751-00	(UK)...OUTLET, AC			
CN901	1-526-752-00	(US,Canadian)...OUTLET, AC (2 GANG)			
CN901	1-526-883-00	(E)...OUTLET, AC			
CN902	1-526-752-00	(US,Canadian)...OUTLET, AC (2 GANG)			
CNJ901	1-507-830-00	JACK, PIN 4P			
CNJ902	1-507-831-00	JACK, PIN 6P			
CNJ903	1-507-831-00	JACK, PIN 6P			
D302	8-719-902-97	DIODE EQA01-06R2			
D303	8-719-931-10	DIODE RD10E-B2			
D304	8-719-107-94	DIODE 1SS202-1			
D305	8-719-107-94	DIODE 1SS202-1			
D306	8-719-107-94	DIODE 1SS202-1			
D307	8-719-107-94	DIODE 1SS202-1			

**NOTE:**  
 The mechanical parts with no reference number in the exploded views are not supplied.  
 Items marked \* are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.  
 If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**  
 All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.  
 MF: μF, PF: μμF.  
**COILS**  
 MMH : mH, UH : μH  
**SEMICONDUCTORS**  
 In each case, U : μ, for example:  
 UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

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F501 1-532-272-XX (US,Canadian)...FUSE, GLASS TUBE 5A  
 F501 1-532-464-00 (AEP,G-AEP,UK,E)...FUSE, 2.5A TIME LAG  
 F502 1-532-464-00 (AEP,G-AEP,E)...FUSE, 2.5A TIME LAG

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.  
 Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC101	8-759-900-72	IC NE5532P
IC201	8-759-900-72	IC NE5532P
IC202	8-759-990-82	IC TL082CP
IC251	8-759-900-72	IC NE5532P
IC701	8-759-101-23	IC UPC1237H
J701	1-507-669-00	JACK (HEADPHONES) 2x
L301	*1-422-031-00	COIL, AIRCORE
L351	*1-422-031-00	COIL, AIRCORE
L901	1-413-101-00	(G-AEP)....COIL, INPUT
L902	1-413-101-00	(G-AEP)....COIL, INPUT
L951	1-413-101-00	(G-AEP)....COIL, INPUT
L952	1-413-101-00	(G-AEP)....COIL, INPUT
PL601	1-518-511-32	LAMP, PILOT 10x
PL602	1-518-511-32	LAMP, PILOT
PL603	1-518-511-32	LAMP, PILOT
PL604	1-518-511-32	LAMP, PILOT
PL605	1-518-511-32	LAMP, PILOT
PL606	1-518-511-32	LAMP, PILOT
Q101	8-729-201-28	TRANSISTOR 2SK146-BL
Q102	8-729-663-47	TRANSISTOR 2SC1364
Q103	8-729-663-47	TRANSISTOR 2SC1364
Q151	8-729-201-28	TRANSISTOR 2SK146-BL
Q152	8-729-663-47	TRANSISTOR 2SC1364
Q153	8-729-663-47	TRANSISTOR 2SC1364
Q301	8-729-699-51	TRANSISTOR 2SA995
Q302	8-729-629-12	(Canadian).....TRANSISTOR 2SC2291
Q302	8-729-663-47	(US,AEP,UK,E,G-AEP)..TRANSISTOR 2SC1364
Q303	8-729-610-92	TRANSISTOR 2SK109
Q304	8-729-300-62	TRANSISTOR 2SD666A
Q305	8-729-201-52	TRANSISTOR 2SA1015
Q306	8-729-104-91	TRANSISTOR 2SA1383
Q307	8-729-104-18	TRANSISTOR 2SC3514
Q308	8-729-203-05	TRANSISTOR 2SK30A-GR3
Q309	8-729-180-93	TRANSISTOR 2SD809
Q310	8-729-168-22	TRANSISTOR 2SC2682
Q311	8-729-114-22	TRANSISTOR 2SA1142
Q312	8-729-127-53	TRANSISTOR 2SC2275-P
Q313	8-729-118-53	TRANSISTOR 2SA985-P
Q314	8-729-300-11	TRANSISTOR 2AC2922
Q315	8-729-300-10	TRANSISTOR 2SA1216
Q316	8-729-201-56	TRANSISTOR 2SK246-GR2
Q317	8-729-663-47	(US,AEP,UK,E,G-AEP)..TRANSISTOR 2SC1364
Q351	8-729-699-51	TRANSISTOR 2SA995
Q352	8-729-629-12	(Canadian).....TRANSISTOR 2SC2291
Q352	8-729-663-47	(US,AEP,UK,E,G-AEP)..TRANSISTOR 2SC1364

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q353	8-729-610-92	TRANSISTOR 2SK109
Q354	8-729-300-62	TRANSISTOR 2SD666A
Q355	8-729-201-52	TRANSISTOR 2SA1015
Q356	8-729-104-91	TRANSISTOR 2SA1383
Q357	8-729-104-18	TRANSISTOR 2SC3514
Q358	8-729-203-05	TRANSISTOR 2SK30A-GR3
Q359	8-729-180-93	TRANSISTOR 2SD809
Q360	8-729-168-22	TRANSISTOR 2SC2682
Q361	8-729-114-22	TRANSISTOR 2SA1142
Q362	8-729-127-53	TRANSISTOR 2SC2275-P
Q363	8-729-118-53	TRANSISTOR 2SA985-P
Q364	8-729-300-11	TRANSISTOR 2AC2922
Q365	8-729-300-10	TRANSISTOR 2SA1216
Q366	8-729-201-56	TRANSISTOR 2SK246-GR2
Q367	8-729-663-47	(US,AEP,UK,E,G-AEP)..TRANSISTOR 2SC1364
Q601	8-729-173-37	TRANSISTOR 2SA733-P
Q602	8-729-663-47	TRANSISTOR 2SC1364
Q603	8-729-173-37	TRANSISTOR 2SA733-P
Q604	8-729-382-63	TRANSISTOR 2SC1826-Y
Q605	8-729-663-47	TRANSISTOR 2SC1364
Q606	8-729-283-42	TRANSISTOR 2SB834
Q607	8-729-201-56	TRANSISTOR 2SK246-GR2
Q608	8-729-201-56	TRANSISTOR 2SK246-GR2
Q609	8-729-663-47	TRANSISTOR 2SC1364
Q610	8-729-173-37	TRANSISTOR 2SA733-P
Q611	8-729-173-37	TRANSISTOR 2SA733-P
Q612	8-729-283-42	TRANSISTOR 2SB834
Q613	8-729-663-47	TRANSISTOR 2SC1364
Q614	8-729-382-63	TRANSISTOR 2SC1826-Y
Q701	8-729-173-37	TRANSISTOR 2SA733-P
Q702	8-762-020-00	TRANSISTOR 2SA835
Q703	8-729-117-54	TRANSISTOR 2SA1175-F
Q704	8-729-612-77	TRANSISTOR 2SA1027R
Q705	8-729-384-46	TRANSISTOR 2SA844-C
Q706	8-729-384-46	TRANSISTOR 2SA844-C
Q707	8-729-245-83	TRANSISTOR 2SC2458
Q751	8-729-173-37	TRANSISTOR 2SA733-P
R001	1-246-545-00	CARBON 1M 5% 1/4W
R002	1-246-545-00	CARBON 1M 5% 1/4W
R003	1-246-545-00	CARBON 1M 5% 1/4W
R004	1-246-545-00	CARBON 1M 5% 1/4W
R005	1-246-545-00	CARBON 1M 5% 1/4W
R006	1-247-131-00	CARBON 1K 5% 1/4W
R007	1-247-131-00	CARBON 1K 5% 1/4W
R051	1-246-545-00	CARBON 1M 5% 1/4W
R052	1-246-545-00	CARBON 1M 5% 1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R053	1-246-545-00	CARBON 1M 5% 1/4W
R054	1-246-545-00	CARBON 1M 5% 1/4W
R055	1-246-545-00	CARBON 1M 5% 1/4W
R056	1-247-131-00	CARBON 1K 5% 1/4W
R057	1-247-131-00	CARBON 1K 5% 1/4W
R101	1-247-171-00	CARBON 47K 5% 1/4W
R102	1-247-119-00	CARBON 330 5% 1/4W
R103	1-247-107-00	CARBON 100 5% 1/4W
R104	1-246-439-00	CARBON 39 5% 1/4W
R105	1-246-470-00	CARBON 750 5% 1/4W
R106	1-246-470-00	CARBON 750 5% 1/4W
R107	1-247-107-00	CARBON 100 5% 1/4W
R108	1-247-123-00	CARBON 470 5% 1/4W
R109	1-246-439-00	CARBON 39 5% 1/4W
R110	1-247-167-00	CARBON 33K 5% 1/4W
R111	1-247-107-00	CARBON 100 5% 1/4W
R112	1-247-133-00	CARBON 1.2K 5% 1/4W
R113	1-214-771-00	METAL 56K 1% 1/4W
R114	1-214-745-00	METAL 4.7K 1% 1/4W
R115	1-214-705-00	METAL 100 1% 1/4W
R116	1-214-677-00	METAL 6.8 1% 1/4W
R117	1-247-115-00	CARBON 220 5% 1/4W
R118	1-247-179-00	CARBON 100K 5% 1/4W
R151	1-247-171-00	CARBON 47K 5% 1/4W
R152	1-247-119-00	CARBON 330 5% 1/4W
R153	1-247-107-00	CARBON 100 5% 1/4W
R154	1-246-439-00	CARBON 39 5% 1/4W
R155	1-246-470-00	CARBON 750 5% 1/4W
R156	1-246-470-00	CARBON 750 5% 1/4W
R157	1-247-107-00	CARBON 100 5% 1/4W
R158	1-247-123-00	CARBON 470 5% 1/4W
R159	1-246-439-00	CARBON 39 5% 1/4W
R160	1-247-167-00	CARBON 33K 5% 1/4W
R161	1-247-107-00	CARBON 100 5% 1/4W
R162	1-247-133-00	CARBON 1.2K 5% 1/4W
R163	1-214-771-00	METAL 56K 1% 1/4W
R164	1-214-745-00	METAL 4.7K 1% 1/4W
R165	1-214-705-00	METAL 100 1% 1/4W
R166	1-214-677-00	METAL 6.8 1% 1/4W
R167	1-247-115-00	CARBON 220 5% 1/4W
R168	1-247-179-00	CARBON 100K 5% 1/4W
R201	1-246-537-00	CARBON 470K 5% 1/4W
R202	1-247-131-00	CARBON 1K 5% 1/4W
R203	1-214-733-00	METAL 1.5K 1% 1/4W
R204	1-214-727-00	METAL 820 1% 1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R205	1-214-727-00	METAL 820 1% 1/4W
R206	1-214-733-00	METAL 1.5K 1% 1/4W
R207	1-247-155-00	CARBON 10K 5% 1/4W
R208	1-246-545-00	CARBON 1M 5% 1/4W
R209	1-247-119-00	CARBON 330 5% 1/4W
R210	1-206-447-00	METAL OXIDE 2.2 5% 2W
R211	1-247-103-00	CARBON 68 5% 1/4W
R251	1-246-537-00	CARBON 470K 5% 1/4W
R252	1-247-131-00	CARBON 1K 5% 1/4W
R253	1-214-733-00	METAL 1.5K 1% 1/4W
R254	1-214-727-00	METAL 820 1% 1/4W
R255	1-214-727-00	METAL 820 1% 1/4W
R256	1-214-733-00	METAL 1.5K 1% 1/4W
R257	1-247-155-00	CARBON 10K 5% 1/4W
R258	1-246-545-00	CARBON 1M 5% 1/4W
R259	1-247-119-00	CARBON 330 5% 1/4W
R260	1-206-447-00	METAL OXIDE 2.2 5% 2W
R261	1-247-103-00	CARBON 68 5% 1/4W
R301	1-246-545-00	CARBON 1M 5% 1/4W
R302	1-247-115-00	CARBON 220 5% 1/4W
R303	1-247-115-00	CARBON 220 5% 1/4W
R304	1-247-115-00	CARBON 220 5% 1/4W
R305	1-247-131-00	CARBON 1K 5% 1/4W
R306	1-247-131-00	CARBON 1K 5% 1/4W
R307	1-247-091-00	CARBON 22 5% 1/4W
R308	1-247-091-00	CARBON 22 5% 1/4W
R309	1-247-131-00	CARBON 1K 5% 1/4W
R310	1-247-161-00	CARBON 18K 5% 1/4W
R311	1-247-127-00	CARBON 680 5% 1/4W
R312	1-247-107-00	CARBON 100 5% 1/4W
R313	1-244-907-00	CARBON 27K 5% 1/2W
R314	1-247-115-00	CARBON 220 5% 1/4W
R315	1-247-147-00	CARBON 4.7K 5% 1/4W
R316	1-247-107-00	CARBON 100 5% 1/4W
R317	1-247-137-00	CARBON 1.8K 5% 1/4W
R318	1-247-133-00	CARBON 1.2K 5% 1/4W
R319	1-247-107-00	CARBON 100 5% 1/4W
R320	1-247-107-00	CARBON 100 5% 1/4W
R321	1-247-123-00	CARBON 470 5% 1/4W
R322	1-247-099-00	CARBON 47 5% 1/4W
R323	1-247-099-00	CARBON 47 5% 1/4W
R324	1-247-216-00	CARBON 100 5% 1/2W
R325	1-247-192-00	CARBON 10 5% 1/2W
R326	1-247-192-00	CARBON 10 5% 1/2W
R327	1-217-657-11	RES, METAL PLATE 0.1 10% 5W

NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.  
 Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.  
 If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
 MF:  $\mu\text{F}$ , PF:  $\mu\text{pF}$ .

COILS

MMH : mH, UH :  $\mu\text{H}$

SEMICONDUCTORS

In each case, U :  $\mu$ , for example:  
 UA... :  $\mu\text{A}$ ..., UPA... :  $\mu\text{PA}$ ..., UPC... :  $\mu\text{PC}$ ..., UPD... :  $\mu\text{PD}$ ...

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.  
 Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.  
 If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
 MF:  $\mu\text{F}$ , PF:  $\mu\text{pF}$ .

COILS

MMH : mH, UH :  $\mu\text{H}$

SEMICONDUCTORS

In each case, U :  $\mu$ , for example:  
 UA... :  $\mu\text{A}$ ..., UPA... :  $\mu\text{PA}$ ..., UPC... :  $\mu\text{PC}$ ..., UPD... :  $\mu\text{PD}$ ...

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R328	△ 1-217-657-11	RES, METAL PLATE 0.1	10%	5W	X
R329	△ 1-247-192-00	CARBON	10	5% 1/2W	F
R330	△ 1-247-192-00	CARBON	10	5% 1/2W	F
R331	1-249-246-51	CARBON	33K	5% 1/3W	
R332	1-247-139-00	CARBON	2.2K	5% 1/4W	
R333	1-247-135-00	CARBON	1.5K	5% 1/4W	
R334	1-246-545-00	CARBON	1M	5% 1/4W	
R335	1-247-138-00	CARBON	2K	5% 1/4W	
R336	1-247-119-00	CARBON	330	5% 1/4W	
R337	1-247-151-00	CARBON	6.8K	5% 1/4W	
R338	1-246-470-00	CARBON	750	5% 1/4W	
R339	1-247-149-00	CARBON	5.6K	5% 1/4W	
R340	△ 1-206-657-00	METAL OXIDE	510	5% 2W	F
R351	1-246-545-00	CARBON	1M	5% 1/4W	
R352	△ 1-247-115-00	CARBON	220	5% 1/4W	F
R353	△ 1-247-115-00	CARBON	220	5% 1/4W	F
R354	1-247-115-00	CARBON	220	5% 1/4W	
R355	1-247-131-00	CARBON	1K	5% 1/4W	
R356	1-247-131-00	CARBON	1K	5% 1/4W	
R357	1-247-091-00	CARBON	22	5% 1/4W	
R358	1-247-091-00	CARBON	22	5% 1/4W	
R359	△ 1-247-131-00	CARBON	1K	5% 1/4W	F
R360	1-247-161-00	CARBON	18K	5% 1/4W	
R361	1-247-127-00	CARBON	680	5% 1/4W	
R362	△ 1-247-107-00	CARBON	100	5% 1/4W	F
R363	1-244-907-00	CARBON	27K	5% 1/2W	
R364	1-247-115-00	CARBON	220	5% 1/4W	
R365	1-247-147-00	CARBON	4.7K	5% 1/4W	
R366	△ 1-247-107-00	CARBON	100	5% 1/4W	F
R367	1-247-137-00	CARBON	1.8K	5% 1/4W	
R368	1-247-133-00	CARBON	1.2K	5% 1/4W	
R369	△ 1-247-107-00	CARBON	100	5% 1/4W	F
R370	△ 1-247-107-00	CARBON	100	5% 1/4W	F
R371	△ 1-247-123-00	CARBON	470	5% 1/4W	F
R372	△ 1-247-099-00	CARBON	47	5% 1/4W	F
R373	△ 1-247-099-00	CARBON	47	5% 1/4W	F
R374	△ 1-247-216-00	CARBON	100	5% 1/2W	F
R375	△ 1-247-192-00	CARBON	10	5% 1/2W	F
R376	△ 1-247-192-00	CARBON	10	5% 1/2W	F
R377	△ 1-217-657-11	RES, METAL PLATE 0.1	10%	5W	
R378	△ 1-217-657-11	RES, METAL PLATE 0.1	10%	5W	
R379	△ 1-247-192-00	CARBON	10	5% 1/2W	F
R380	△ 1-247-192-00	CARBON	10	5% 1/2W	F
R381	1-249-246-51	CARBON	33K	5% 1/3W	
R382	1-247-139-00	CARBON	2.2K	5% 1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R383	1-247-135-00	CARBON	1.5K	5% 1/4W	
R384	1-246-545-00	CARBON	1M	5% 1/4W	
R385	1-247-138-00	CARBON	2K	5% 1/4W	
R386	1-247-119-00	CARBON	330	5% 1/4W	
R387	1-247-151-00	CARBON	6.8K	5% 1/4W	
R388	1-246-470-00	CARBON	750	5% 1/4W	
R389	1-247-149-00	CARBON	5.6K	5% 1/4W	
R390	△ 1-206-657-00	METAL OXIDE	510	5% 2W	F
R601	△ 1-206-526-00	METAL OXIDE	43	5% 3W	F
R602	△ 1-206-526-00	METAL OXIDE	43	5% 3W	F
R603	1-247-124-00	CARBON	510	5% 1/4W	
R604	1-247-124-00	CARBON	510	5% 1/4W	
R605	1-247-125-00	CARBON	560	5% 1/4W	
R606	1-247-125-00	CARBON	560	5% 1/4W	
R607	1-246-537-00	CARBON	470K	5% 1/4W	
R608	1-246-537-00	CARBON	470K	5% 1/4W	
R609	△ 1-206-645-00	METAL OXIDE	160	5% 2W	F
R610	△ 1-206-705-00	METAL OXIDE	150	5% 3W	F
R611	△ 1-206-705-00	METAL OXIDE	150	5% 3W	F
R612	1-214-749-00	METAL	6.8K	1% 1/4W	
R613	1-214-749-00	METAL	6.8K	1% 1/4W	
R614	1-214-745-00	METAL	4.7K	1% 1/4W	
R615	1-214-745-00	METAL	4.7K	1% 1/4W	
R616	△ 1-247-188-00	CARBON	4.7	5% 1/2W	F
R617	△ 1-247-190-00	CARBON	6.8	5% 1/2W	F
R618	△ 1-247-107-00	CARBON	100	5% 1/4W	F
R619	1-247-131-00	CARBON	1K	5% 1/4W	
R620	1-247-131-00	CARBON	1K	5% 1/4W	
R701	1-244-904-00	CARBON	20K	5% 1/2W	
R703	1-246-533-00	CARBON	330K	5% 1/4W	
R704	1-246-529-00	CARBON	220K	5% 1/4W	
R705	1-244-901-00	CARBON	15K	5% 1/2W	
R706	1-247-177-00	CARBON	82K	5% 1/4W	
R707	1-247-163-00	CARBON	22K	5% 1/4W	
R708	1-247-163-00	CARBON	22K	5% 1/4W	
R709	△ 1-206-718-00	METAL OXIDE	510	5% 3W	F
R710	1-247-159-00	CARBON	15K	5% 1/4W	
R711	1-247-152-00	CARBON	7.5K	5% 1/4W	
R712	1-247-159-00	CARBON	15K	5% 1/4W	
R713	1-247-169-00	CARBON	39K	5% 1/4W	
R714	△ 1-213-146-00	METAL OXIDE	1.8K	5% 1W	F
R715	△ 1-206-680-00	METAL OXIDE	4.7K	5% 2W	F
R717	1-244-893-00	CARBON	6.8K	5% 1/2W	
R718	1-246-523-00	CARBON	120K	5% 1/4W	
R719	1-246-523-00	CARBON	120K	5% 1/4W	

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NOTE:

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- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

All capacitors are in  $\mu\text{F}$ . Common capacitors are omitted. Refer to the following lists for their part numbers.  
MF:  $\mu\text{F}$ , PF:  $\mu\mu\text{F}$ .

COILS

MMH : mH, UH :  $\mu\text{H}$

SEMICONDUCTORS

In each case, U :  $\mu$ , for example:  
UA...:  $\mu\text{A}$ ..., UPA...:  $\mu\text{PA}$ ..., UPC...:  $\mu\text{PC}$ ,  
UPD...:  $\mu\text{PD}$ ...

The components identified by shading and mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R720	1-213-153-00	METAL OXIDE	6.8K	5%	1W	F
R721	1-247-147-00	CARBON	4.7K	5%	1/4W	
R722	1-247-155-00	CARBON	10K	5%	1/4W	
R723	1-247-155-00	CARBON	10K	5%	1/4W	
R724	1-206-658-00	METAL OXIDE	560	5%	2W	F
R725	1-247-135-00	CARBON	1.5K	5%	1/4W	F
R726	1-247-159-00	CARBON	15K	5%	1/4W	
R727	1-247-159-00	CARBON	15K	5%	1/4W	
R753	1-246-533-00	CARBON	330K	5%	1/4W	
R775	1-247-135-00	CARBON	1.5K	5%	1/4W	F
R776	1-247-159-00	CARBON	15K	5%	1/4W	
R777	1-247-159-00	CARBON	15K	5%	1/4W	
R778	1-206-658-00	METAL OXIDE	560	5%	2W	F
R901	1-247-119-00	(G-AEP)...CARBON	330	5%	1/4W	
R902	1-247-119-00	(G-AEP)...CARBON	330	5%	1/4W	
R903	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R904	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R905	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R906	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R907	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R908	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R909	1-247-192-00	(G-AEP)...CARBON	10	5%	1/2W	F
R910	1-247-192-00	(G-AEP)...CARBON	10	5%	1/2W	F
R951	1-247-119-00	(G-AEP)...CARBON	330	5%	1/4W	
R952	1-247-119-00	(G-AEP)...CARBON	330	5%	1/4W	
R953	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R954	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R955	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R956	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R957	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R958	1-247-123-00	(G-AEP)...CARBON	470	5%	1/4W	
R959	1-247-192-00	(G-AEP)...CARBON	10	5%	1/2W	F
R960	1-247-192-00	(G-AEP)...CARBON	10	5%	1/2W	F
RS001	1-554-877-11	SWITCH, ROTARY SLIDE (REMOTE) (REC OUT SELECTOR)				
RS101	1-554-878-11	SWITCH, ROTARY SLIDE (REMOTE) (CARTRIDGE LOAD)				

## ELECTRICAL PARTS

Ref.No.	Part No.	Description	
RT301	1-224-550-21	RES, ADJ, SOLID 220	
RT302	1-224-805-21	RES, ADJ, SOLID 470	
RT351	1-224-550-21	RES, ADJ, SOLID 220	
RT352	1-224-805-21	RES, ADJ, SOLID 470	
RV201	1-228-905-00	RES, VAR, CARBON 50K/50K (BALANCE)	} 2x
RV202	1-230-130-00	RES, VAR, CARBON 10K/10K (ATTENUATOR)	
RV301	1-228-906-00	RES, VAR, CARBON 37K/37K (TREBLE)	} 2x
RV302	1-228-907-00	RES, VAR, CARBON 24K/24K (BASS)	
RY701	1-515-356-00	RELAY	} 2x
RY702	1-515-356-00	RELAY	
RY703	1-515-503-00	RELAY	
S001	1-554-879-11	SWITCH, SLIDE (REC OUT SELECTOR)	} 2x
S101	1-554-019-00	SWITCH, SLIDE (REMOTE TYPE) (CARTRIDGE LOAD)	
S102	1-554-354-00	SWITCH, PUSH (6 KEY)(FUNCTION)	} 2x
S201	1-554-352-00	SWITCH, PUSH (1 KEY)(SUB SONIC)	
S301	1-554-353-00	SWITCH, PUSH (2 KEY)(BASS BOOST)	
S302	1-554-353-00	SWITCH, PUSH (2 KEY)(TONE)	
S501	1-552-246-00	(US,Canadian)...SWITCH, PUSH (AC POWER)	} 2x
S501	1-554-880-11	(AEP,G-AEP,UK,E)...SWITCH, PUSH (1 KEY)(AC POWER)	
S701	1-554-681-00	(AEP)...SWITCH, ROTARY (SPEAKER)	} 2x
S701	1-554-876-11	(US,Canadian,G-AEP,UK,E)...SWITCH, ROTARY (SPEAKER)	
T901	1-447-855-11	(US,Canadian)...TRANSFORMER, POWER	} 2x
T901	1-447-856-11	(UK,AEP,G-AEP)...TRANSFORMER, POWER	
T901	1-447-857-11	(E)...TRANSFORMER, POWER	
TB901	1-536-767-00	TERMINAL BOARD, SPEAKER	
TB902	1-536-767-00	TERMINAL BOARD, SPEAKER	
VS901	1-526-576-31	(E)...SELECTOR, POWER VOLTAGE	

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### COILS

MMH : mH, UH :  $\mu\text{H}$

### SEMICONDUCTORS

In each case, U :  $\mu$ , for example:  
UA...:  $\mu\text{A}$ ..., UPA...:  $\mu\text{PA}$ ..., UPC...:  $\mu\text{PC}$ ,  
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