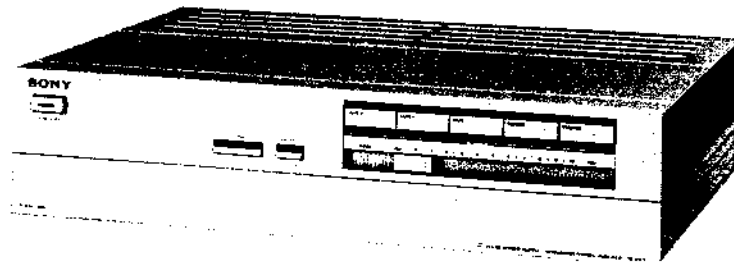


# TA-AX7

AEP Model  
UK Model



## INTEGRATED STEREO AMPLIFIER

### SPECIFICATIONS

#### Amplifier section

##### Continuous RMS power output

(Less than 0.004% THD, both channels driven simultaneously) 20 Hz - 20 kHz  
80 + 80 watts (8 ohms)  
According to DIN 45500  
80 + 80 watts (8 ohms)

##### Power bandwidth (IHF)

5 Hz - 100 kHz

##### Dynamic headroom

1.9 dB\*

##### Slew rate

200 V/μ sec  
480 V/μ sec (power stage)

##### Harmonic distortion

Less than 0.004% at rated output

Less than 0.003% at 40 W output

##### Intermodulation (IM) distortion

(60 Hz : 7 kHz = 4 : 1) Less than 0.004% at rated output

Less than 0.003% at 40 W output

##### Frequency response

PHONO RIAA equalization curve ±0.2 dB

TUNER ) 0.1 Hz - 600 kHz ±0.3 dB

AUX )

TAPE 1,2 )

##### Residual noise

Less than 25 μV (8 ohms, network A)

##### Damping factor

150 (8 ohms, 1 kHz)

#### WARNING!!

THIS SET USES THE SWITCHING-TYPE POWER-SUPPLY CIRCUIT, WHICH IS DIRECTLY CONNECTED TO THE AC POWER LINE. AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD.


#### Inputs

	Setting of the CARTRIDGE LOAD selector	Sensitivity	Impedance	Maximum input capability (1 kHz)	S/N (weighting network, input level)
MM	100 pF	2.5 mV	50 kΩ	160 mV	83 dB 80 dB* (A, 2.5 mV)
	300 pF				
PHONO	40 Ω 3 Ω	0.13 mV	100 Ω 30 Ω	8 mV	64 dB 70 dB* (A, 0.25 mV)
TUNER	—	150 mV	50 kΩ	—	85 dB 92 dB* (A, 150 mV)
AUX					
TAPE 1, 2					

\* '78 IHF

— Continued on page 2 —

#### SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS 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.



# SONY

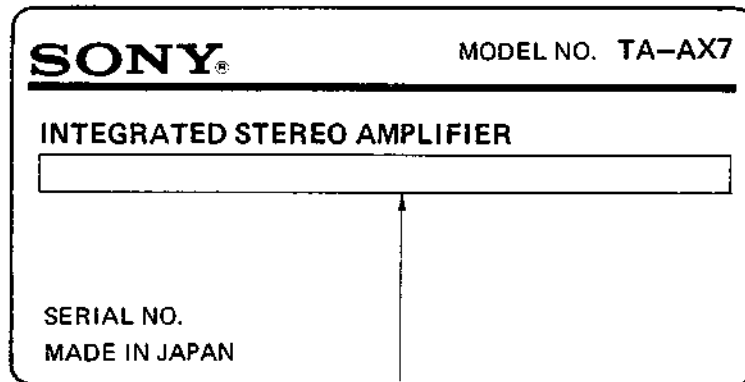
## SERVICE MANUAL

# TA-AX7

Outputs	REC OUT 1,2 Voltage 150 mV Impedance 1 kilohm	Low filter Muting	6 dB/octave attenuation below 15 Hz -20 dB
	SPEAKERS A or B: Accepts speakers of 4 - 16 ohms. A + B: Accept speakers of 8 - 16 ohms.	<b>General</b> System	Current-drive integrated stereo amplifier
	HEADPHONES Accepts low and high impedance headphones.	Power requirements	AEP model: 220V ac, 50Hz UK model: 240V ac, 50 Hz
Tone controls	BASS ±10 dB at 60 Hz (turnover frequency 300 Hz)	Power consumption	AEP model: 200 watts UK model: 370 watts
	TREBLE ±10 dB at 25 kHz (turnover frequency 5 kHz)	Dimensions	Approx. 430 × 105 × 350 mm (w/h/d) (17 × 4 <sup>1</sup> / <sub>8</sub> × 13 <sup>3</sup> / <sub>4</sub> inches) including projecting parts and controls
Bass boost	+ 4 dB at 50 Hz	Weight	Approx. 6.7 kg (14 lb 12 oz) net Approx. 7.5 kg (16 lb 9 oz) in shipping carton

## MODEL IDENTIFICATION

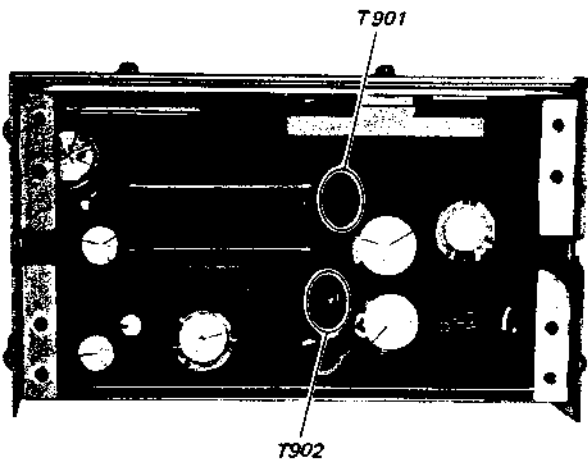
— Specification Label —



AEP model: AC 220V ~ 50/60Hz 200W  
UK model: AC 240V ~ 50/60Hz 370W

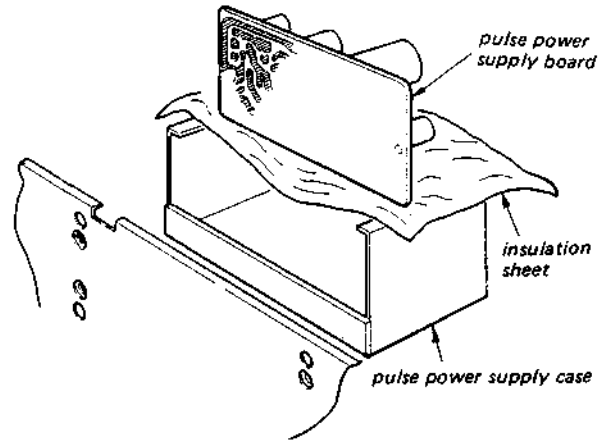
## SERVICING NOTES

1. This set employs a pulse power supply as opposed to a conventional circuit with a power transformer.
  - 1) The pulse power supply rectifies and filters the commercial power source directly, so a higher than usual DC voltage is applied to the power supply section. Take sufficient care when servicing.
  - 2) The pulse waves contain a large amount of high cycle components, and in order to prevent interference from this waste radiation, the pulse power supply board is enclosed in a separate aluminum case.
  - 3) If either Q903 or Q904 is defective, replace both. The replacement part includes both transistors.  
 Service Code  
 X-4873-603-1 transistor kit  
 (25C2944)
2. After AC rectification, there is still voltage remaining in the aluminum electrolytic capacitor (C952) even when the power switch is OFF, so be very careful when discharging. Be sure to use a resistor with 100Ω value. It is dangerous to discharge by using a lead directly.



### Servicing Notes/Checking the Pulse Power Supply Section

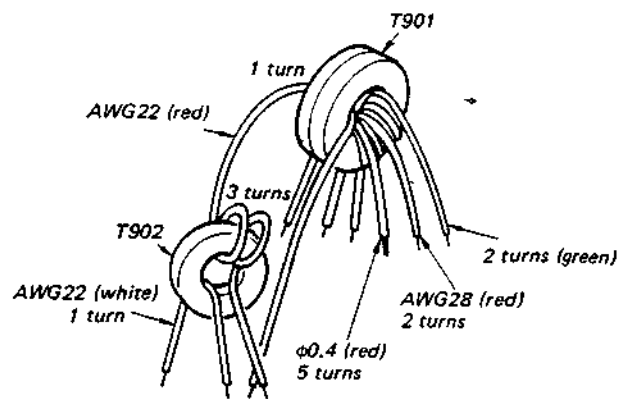
1. When checking or servicing the pulse power supply, spread an insulation sheet on top of the chassis or the case.
2. Be careful not to cause a short in the chassis or the case.



### Replacement of Pulse Power Supply Transformers (T901, 902)

The leads of transformers T901, 902 in the inverter circuit are shown in the illustration below. Only the core is supplied for T901, 902 replacements parts, without the lead cover.

In the event of a defect, refer to the illustration to prepare the transformer. Make sure that the leads are of uniform length.



(MEMO)

Dotted lines for writing content.

## SECTION 1 OUTLINE

### 1-1. CIRCUIT DESCRIPTION

#### V-I Amp, Current-type Tone Control, Servo System

The general composition of TA-AX7 is shown in Figure 1. New circuits are the V-I converter (V-I amp), current-type tone control and the servo system.

#### • Servo System

There is a servo loop in the equalizer amp and the V-I converter. Following is a basic explanation using the equalizer amp as an example. The servo in the V-I converter is discussed in the section on the converter. The equalizer amp basically consists of a DC amp, but when there is no servo loop, a considerable amount of offset voltage will appear in the output signal. Even if the offset voltage is suppressed by balance adjustment, it usually drifts over a long period of time. Generally, a capacitor is inserted into the output circuit to intercept the DC components. In this case the following two problems arise:

- 1) When DC potential is applied to the input circuit, the output signal actuation point deviates and the upper or lower part of the waveform will be clipped.

- 2) There is a danger of deterioration in sound quality because of the capacitor.

The servo loop serves to prevent these problems. Basically, it detects the DC voltage deviation in the output signal and feeds it out-of-phase to the input signal, thus removing the deviation.

Figure 3 is a theoretical diagram. Here  $\beta_1$  is a conventional feedback loop, and without  $\beta_2$ , the system's gain is around  $1/\beta_1$  ( $\beta_1$  in Figure 5).  $\beta_2$  servo loop amplifies only the DC components and returns them to the input circuit, so it consists of the integrator.

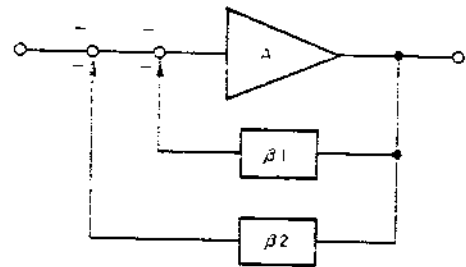


Fig. 3

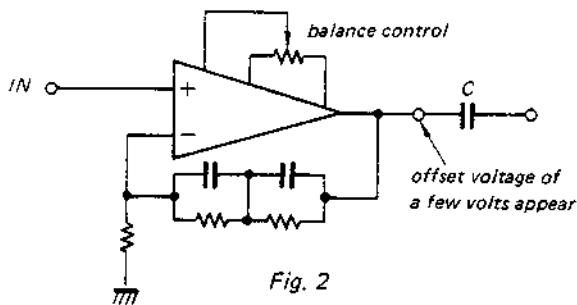


Fig. 2

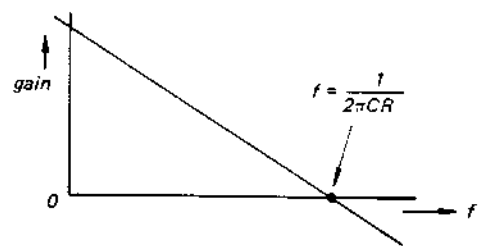
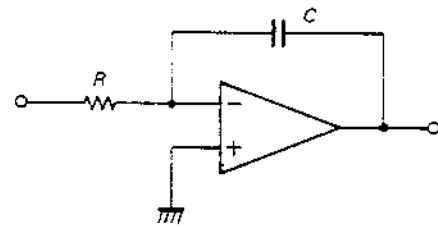


Fig. 4

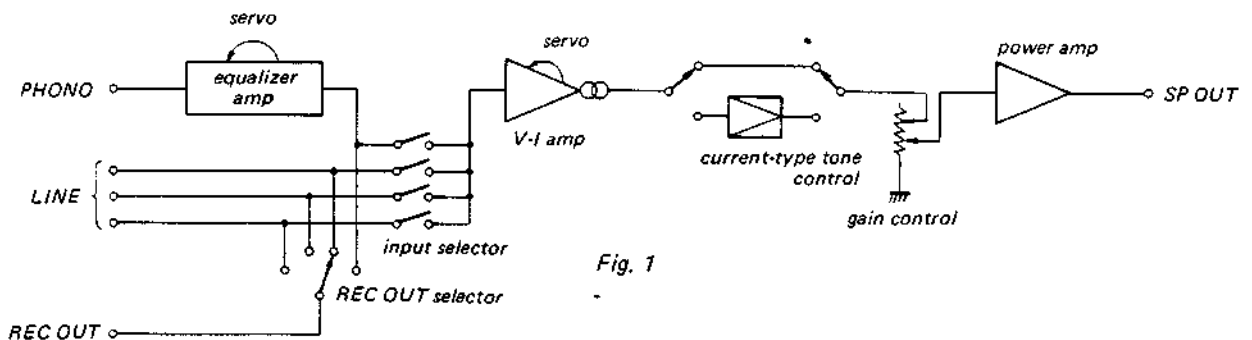


Fig. 1

In the Bode's diagram in Figure 5, if A is the amp open-loop gain, and  $\beta_1$  is a regular feedback loop (here, equalizer element), and without  $\beta_2$ , the system's frequency response becomes  $\beta_1$  (same as conventional system). When  $\beta_2$  loop is added, and the frequency is below the intersecting point of the frequency responses of  $\beta_1$  and  $\beta_2$ , the gain is less than  $\beta_1$ , and ultimately becomes  $\beta_2$ . The difference between  $\beta_1$  and  $\beta_2$  is due to the increase in NFB amount, so the offset drift is improved as shown by the slanting lines in the diagram. (At frequency  $f_L$  (Hz), suppressed to  $1/GL$ .) Also, as seen at  $\beta_2$ , the gain becomes even less as the frequency is lowered, so even if dc component is applied to the input signal, it will not appear in the output.

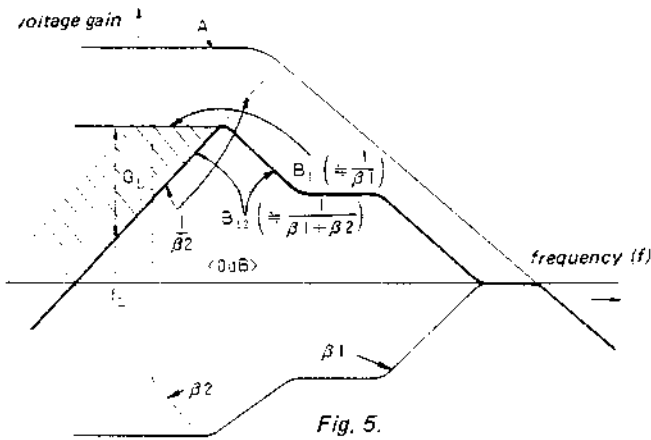


Fig. 5.

In Figure 3,  $\beta_2$  was described as simply feeding back to the input signal, but in TA-AX7's equalizer it passes through an auxiliary circuit and feeds in partway along the circuit. Figure 6 shows the location where it feeds in.

In the input section of the CX550 equalizer, an FET one-stage buffer is added. And, the integrated output signal of the servo detection is applied to the differential amp of the two transistors. It is fed into the circuit by adding the current from this collector to the FET drain. The feed-in to the V-I amp will be explained later.

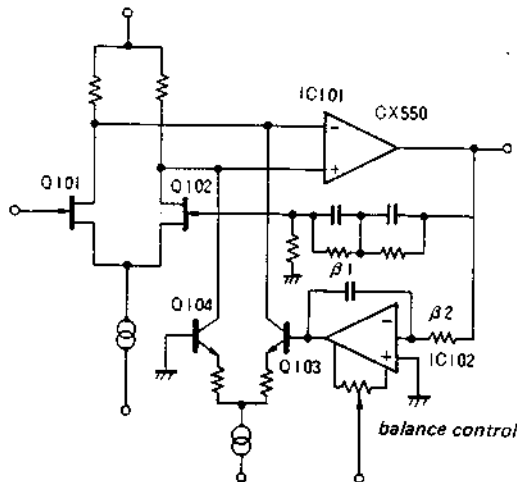


Fig. 6.

### V-I Converter (IC201)

In TA-AX7, the input voltage signal is converted once to a current signal, and the signal is transmitted by changing it back to voltage form through a resistor. Gain control is accomplished through this variable resistor. In Figure 7, if V-I amp input is  $e_i$  (V) and output current is  $i_o$  (A),

$$i_o = g \cdot e_i \dots \dots \dots \textcircled{1}$$

"g" is converter conductance, and the unit is S (Si seimence). In this set "g" is 0.67 (mS).

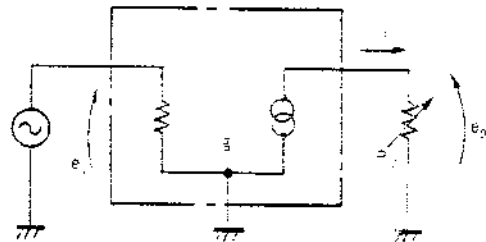


Fig. 7.

This current  $i_o$  is changed back to output voltage  $e_o$  (power amp input voltage) by resistance  $R_v$ . In other words:

$$e_o = i_o \cdot R_v \dots \dots \dots \textcircled{2}$$

This formula for voltage gain is for a circuit including both V-I amp and  $R_v$ .  $R_v$  does the gain control, and  $g=0.67$  (mS), so when  $R_v=1.5$  (k $\Omega$ ), it becomes unity gain (0dB).

Figure 8 is a basic diagram of the V-I converter circuit.

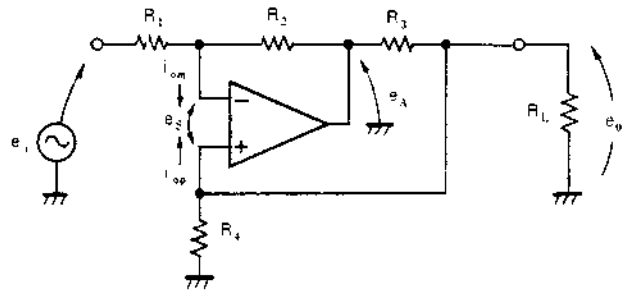


Fig. 8.

(Note: In TA-AX7 circuit,  $R_1$  -  $R_4$  correspond to the following resistors:  $R_1$  - R205,  $R_2$  - R208,  $R_3$  - R209,  $R_4$  - R206.)

Assume the following:

1. The operation amp is operating normally, so  
 $i_{op} = 0, e_s = 0, i_{om} = 0$
2.  $\frac{R_1}{R_4} = \frac{R_2}{R_3}$  (condition for constant current)

Also,  $R_1 = R_4$ , and  $R_2 = R_3$ .

Figure 9 shows Figure 8 rewritten. First,

$i_{om} = 0$  therefore  $i_1 = i_2$   
 $i_{op} = 0$  therefore  $i_4 + i_L = i_3$  ..... ③

Also,  $R_2 = R_3$  and  $e_s = 0$ , so  
 $i_2 = i_3$  ..... ④

Therefore, from ③ and ④:  
 $i_1 = i_4 + i_L$  ..... ⑤

This means that the sum of the current flowing on  $R_1$  is equal to that flowing on  $R_4$  plus  $R_L$ . By focusing on  $R_1$ , this current value is as follows:

$i_1 = (e_o - e_i)/R_1 = -e_i/R_1 + e_o/R_1$  ..... ⑥

For the same value ( $i_4 + i_L$ ),  $i_4$  is:

$i_4 = e_o/R_4 = e_o/R_1$  (because  $R_4 = R_1$ )

So, from formula ⑥, the remaining  $i_L$  is  $-e_i/R_1$ . or:

$i_L = -\frac{1}{R_1} \times e_i$  ..... ⑦

$R_L$  does not appear in this formula, so "output current has no relation to load resistance" or the current is constant.

It can be seen from formulas ① and ⑦ that the aforementioned "g" is  $g = -1/R_1$ . The negative sign indicates the reverse amplifier. When there is signal-source resistance on the input circuit, this V-I converter destroys the constant current, so a buffer stage is inserted before it. Also, the servo is the same up to detecting  $e_A$  level and integrating, but after that this is V-I converted and fed into the connecting point of  $R_1$  and  $R_2$ . Then it controls  $i_1$  flowing into  $R_1$ , so it is the same feed-in value as that of the  $e_i$  which originally produced one part of  $i_1$ .

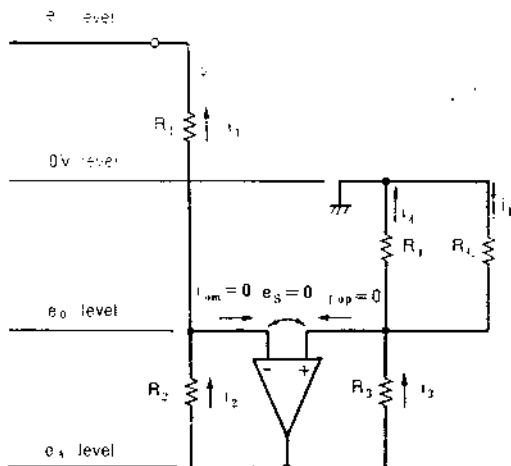


Fig. 9.

• Current-type Tone Control

This is a current input-output type tone amp inserted between the V-I amp output signal and gain controller (RV607). The basic diagram of the current-current amp is shown in Figure 10. Note that there is no potential difference between the input and output terminals. Based on this the diagram is rewritten as shown in Figure 11.

If the current does not flow into the operation amp, and  $e_s = 0V$ ,  $i_1 \cdot Z_1 = i_o \cdot Z_2$

$\therefore i_o = i_1 \frac{Z_1}{Z_2}$

From the above formula it can be seen that the value of the ratio of  $i_1$  to  $i_o$  is determined by the ratio of  $Z_2$  to  $Z_1$ . Actually, as shown in Figure 12, conventional impedance is employed. The part below the dotted line sets the impedance ratio for high frequency, and the part above for low frequency. The section with the switch is Bass Boost, and Switch OFF  $\rightarrow Z_1$  impedance rising in low frequency  $\rightarrow Z_1 > Z_2 \rightarrow i_o > i_1 =$  low boost.

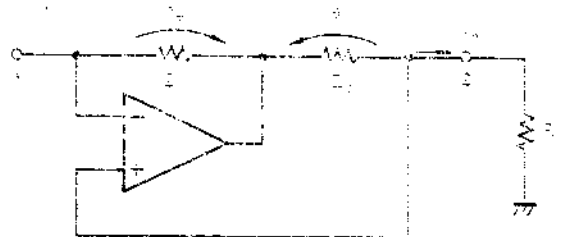


Fig. 10.

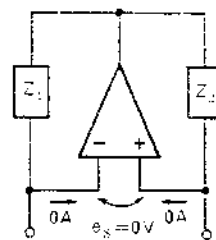


Fig. 11.

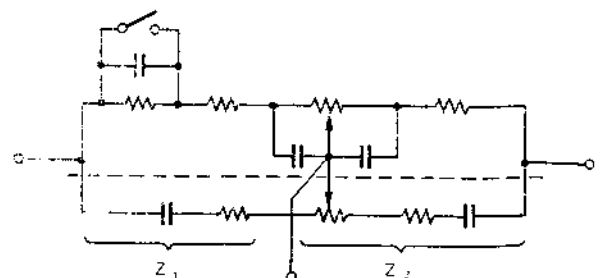


Fig. 12.

## Checking of Individual Boards

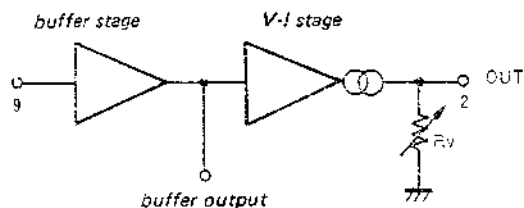


Fig. A

If breakdown is suspected in any of the individual boards (equalizer amp, V-I amp, power drive), use the following methods for voltage and operation checks.

### — Equalizer Amp Board —

Connect as shown in Figure C. If it is just an operation check, the equalizer element only requires resistance. Use as thick a ground as possible, and the bypass capacitor should be around 470-1,000  $\mu\text{F}$  (25V). The center gain will be about 36dB at 1kHz. Therefore, when input level is -36dB, the output voltage will be 0dB.

### — V-I Amp Board —

Connect as shown in Figure D. Bypass with a capacitor with a good high frequency response on +6 and 8- pins. (Without the capacitor, there is a danger of oscillation in the buffer stage.) The V-I amp board is composed of the buffer stage and V-I amp. The buffer outputs at pin 7, so the defective point should be determined before or after this point. (See Figure A) There is a small amount (less than 1V) of dc offset voltage in the buffer stage. Output at pin 2 is current output, so pass it through resistor  $R_v$  when doing a voltage check. When  $R_v = 1.5\text{k}\Omega$ , IN/OUT becomes unity gain, so if input voltage is -16dB, output voltage is around 0dB. The set will receive maximum volume control of  $10\text{k}\Omega$  so check up to  $10\text{k}\Omega$ .

### — Power Drive Board —

Connect as shown in Figure E. Because center gain is 28dB, if input voltage is -28dB the output voltage will become 0dB. If the lead wires are not arranged properly on the board, oscillation may occur. In this event put a capacitor of around 47pF between IN and the ground (pin 1, 2) and 12pF between pin 4 and the ground to stop the oscillation.

1S1555X6, MV12NX3, SV04+MC12V, etc. can be used for the 6 diodes between pins 9-15.

In actual connection there is no balance adjustment so dc offset voltage is generated, but by reconnecting in either of the ways shown in Figure B, the plus and minus of the output offset voltage should reverse.

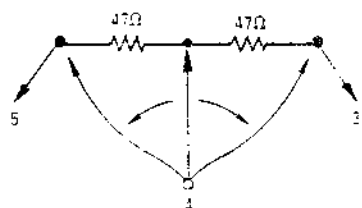
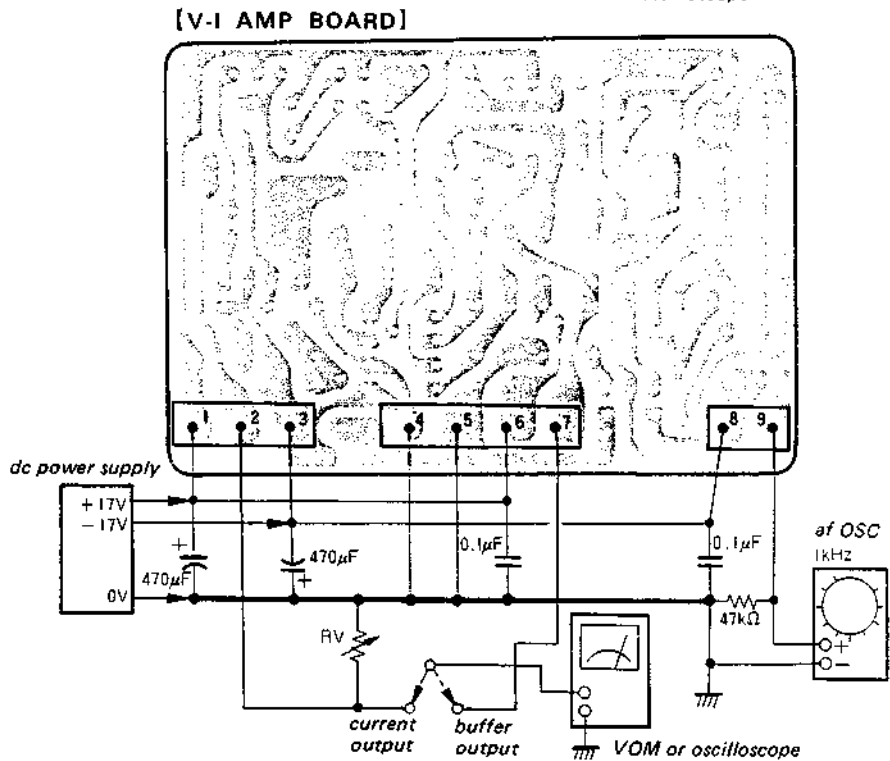
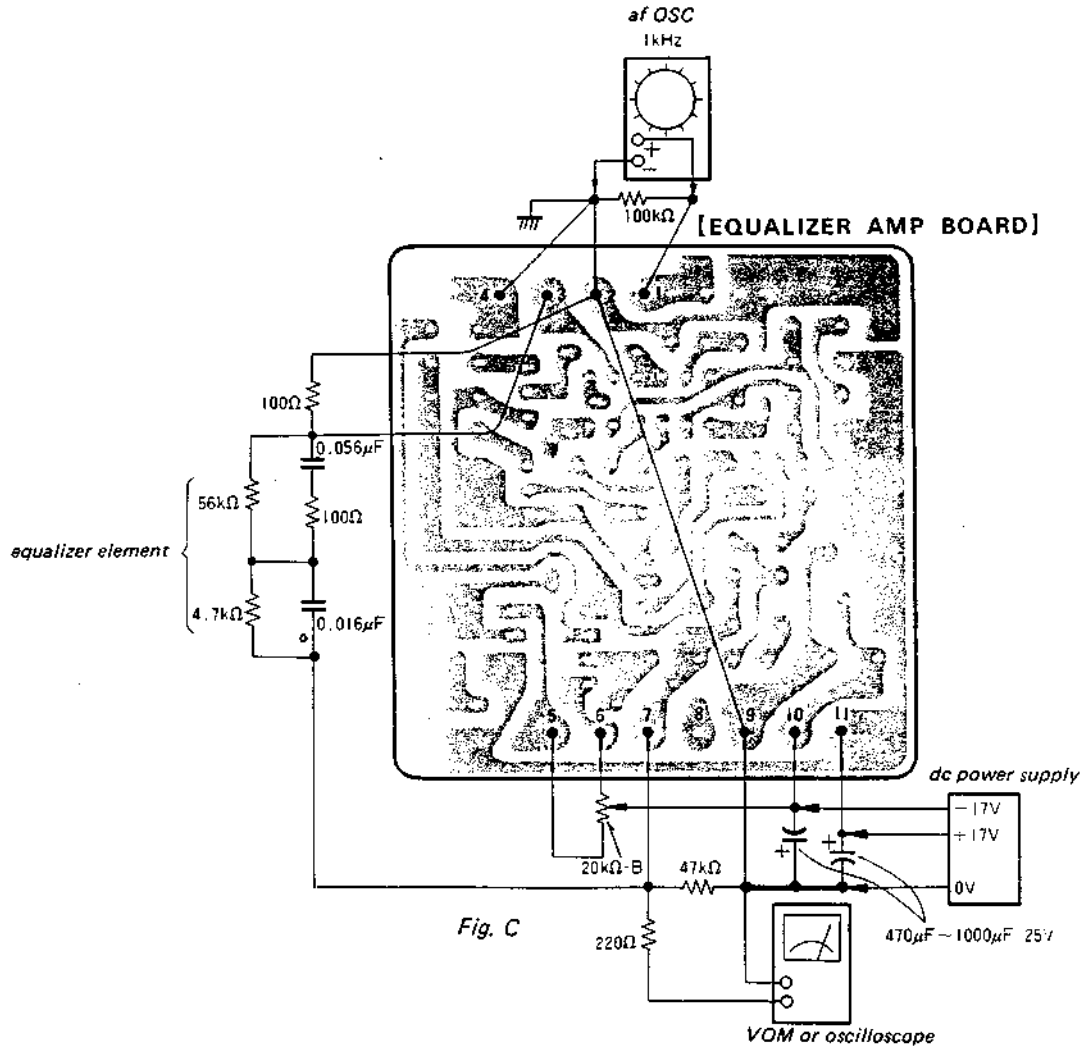


Fig. B





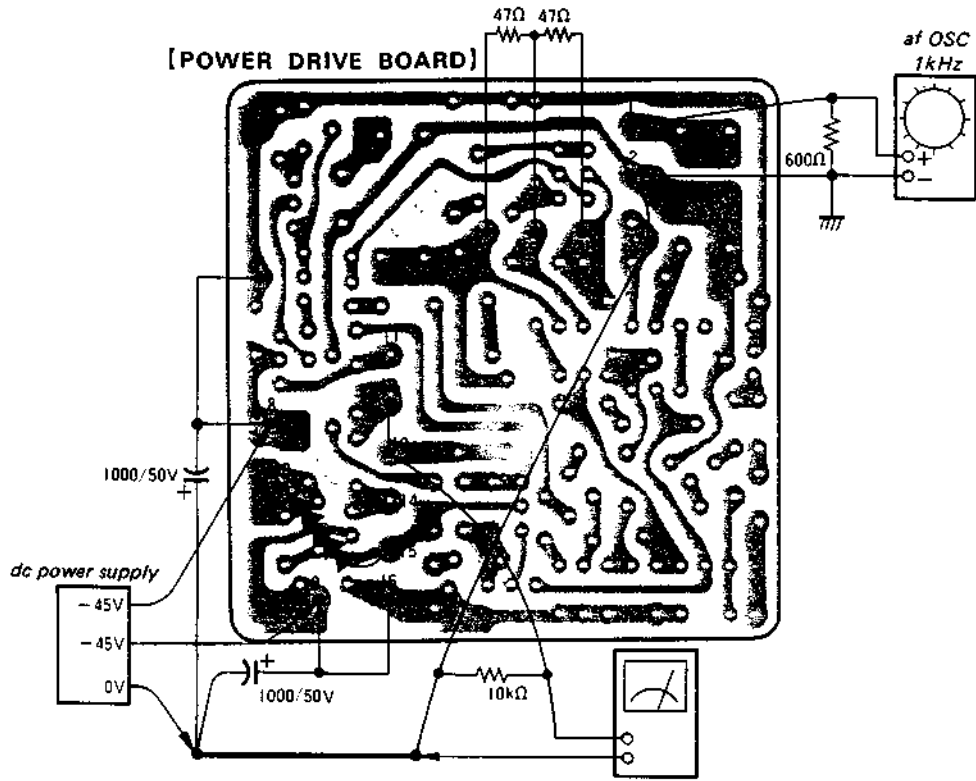
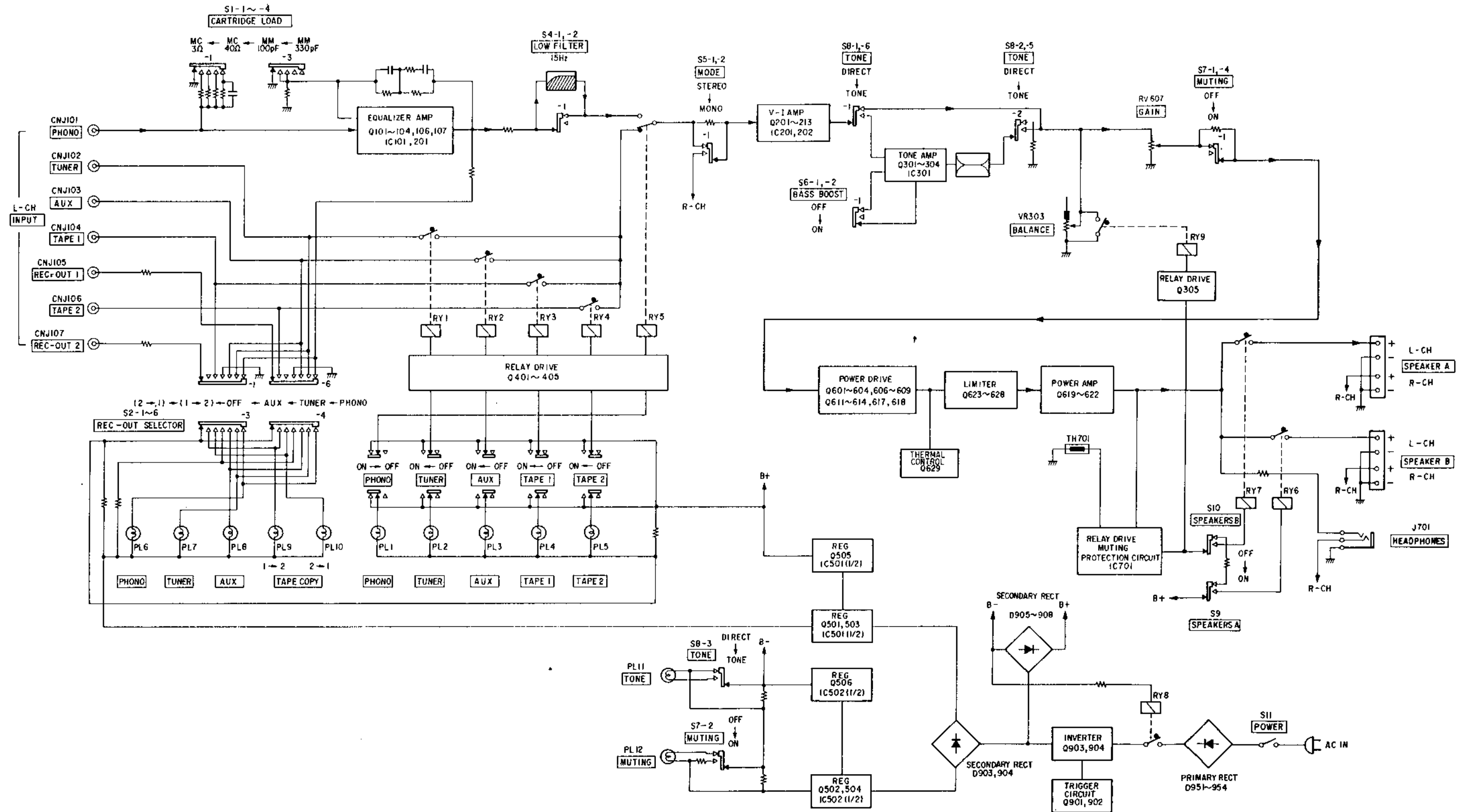


Fig. E VOM or oscilloscope

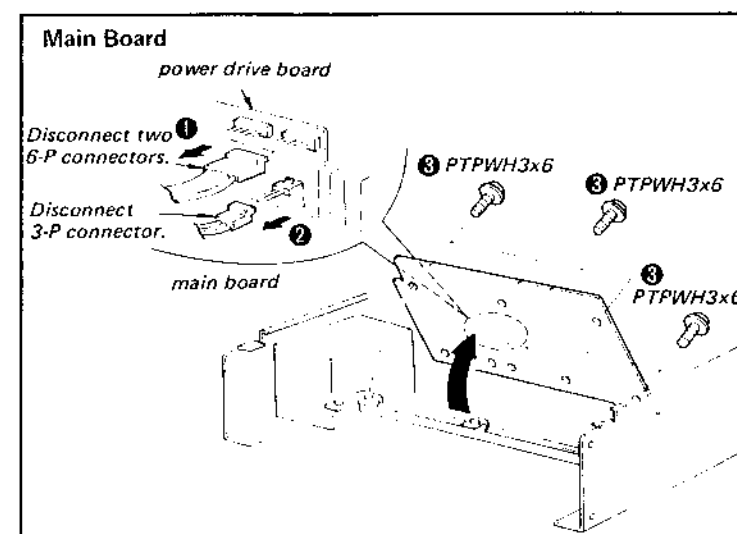
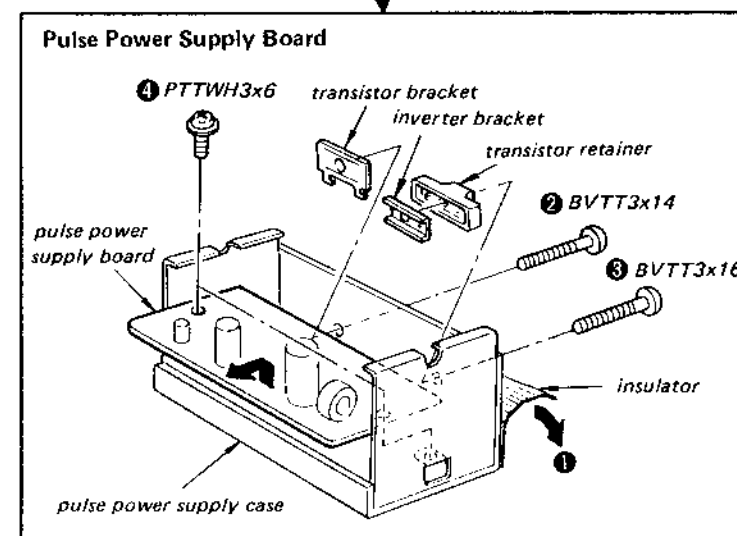
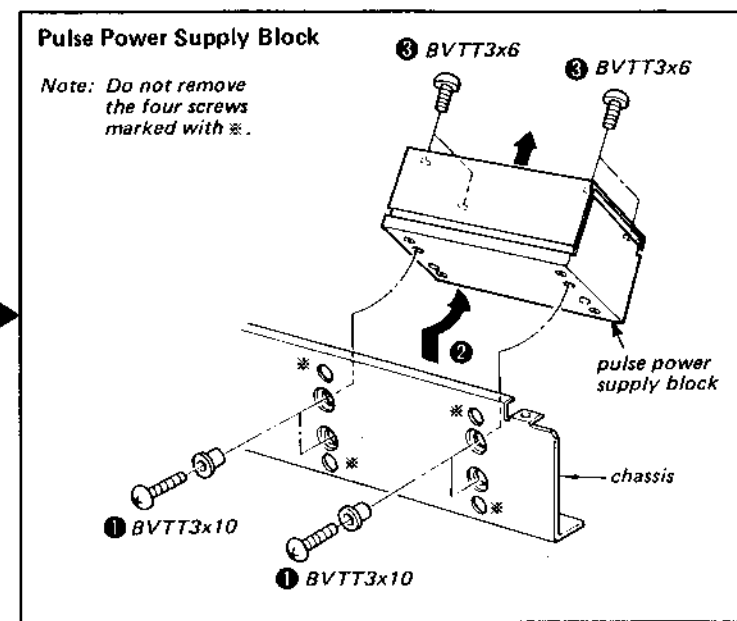
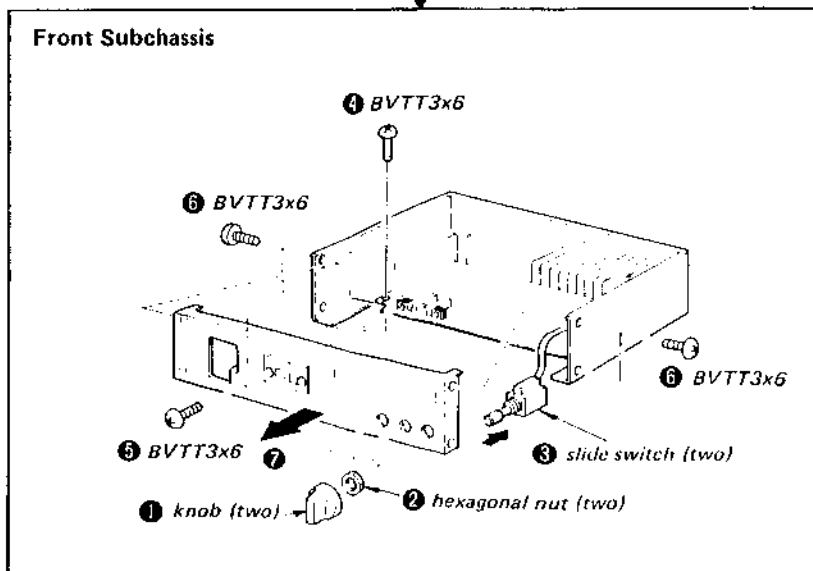
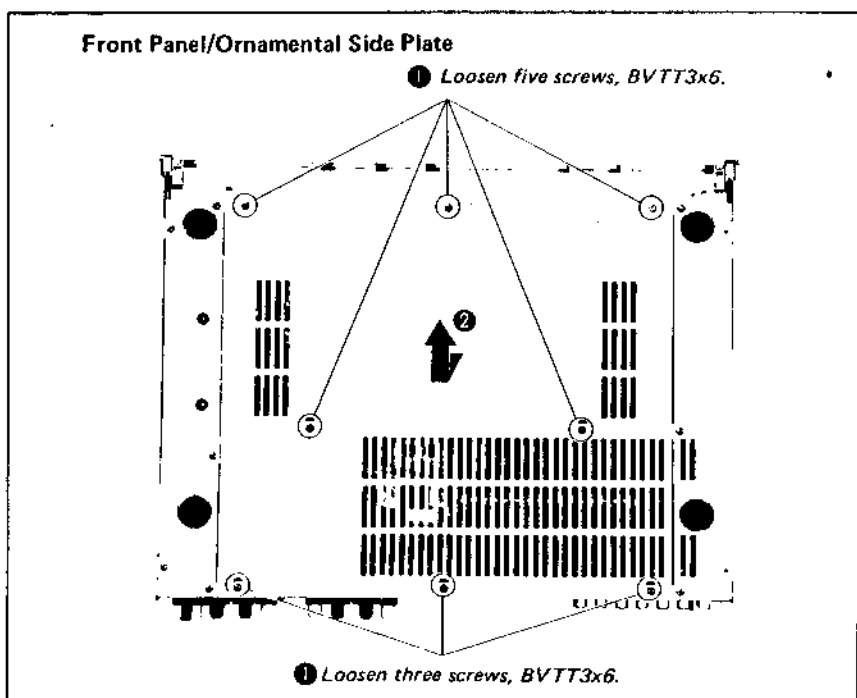
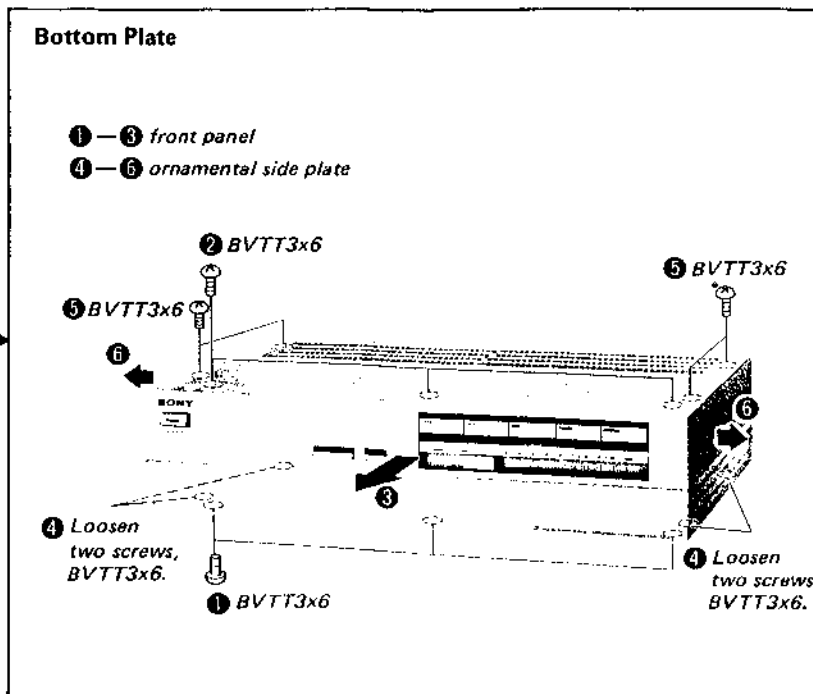
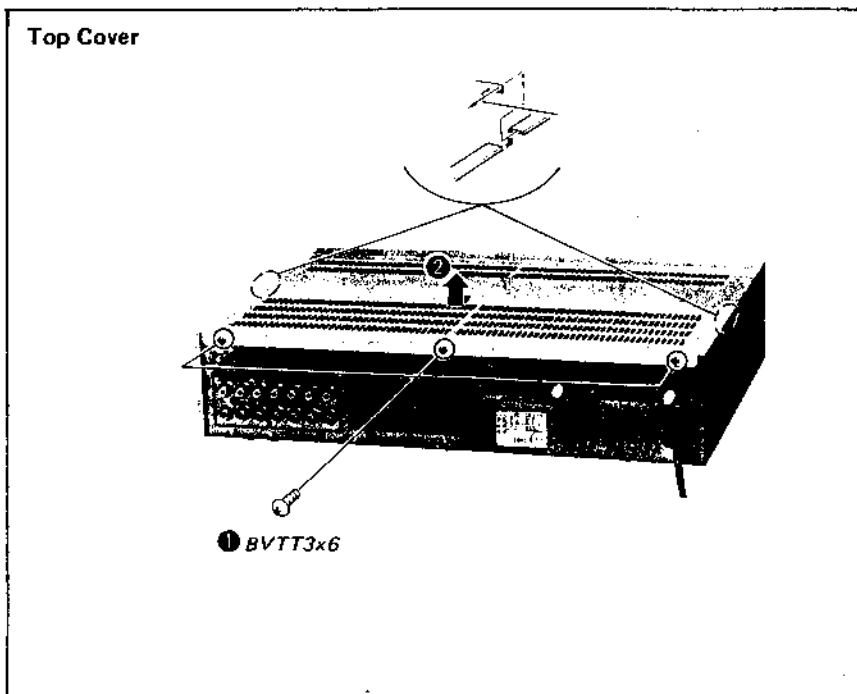
1-2. BLOCK DIAGRAM



SECTION 2  
DISASSEMBLY

2-1. REMOVAL

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

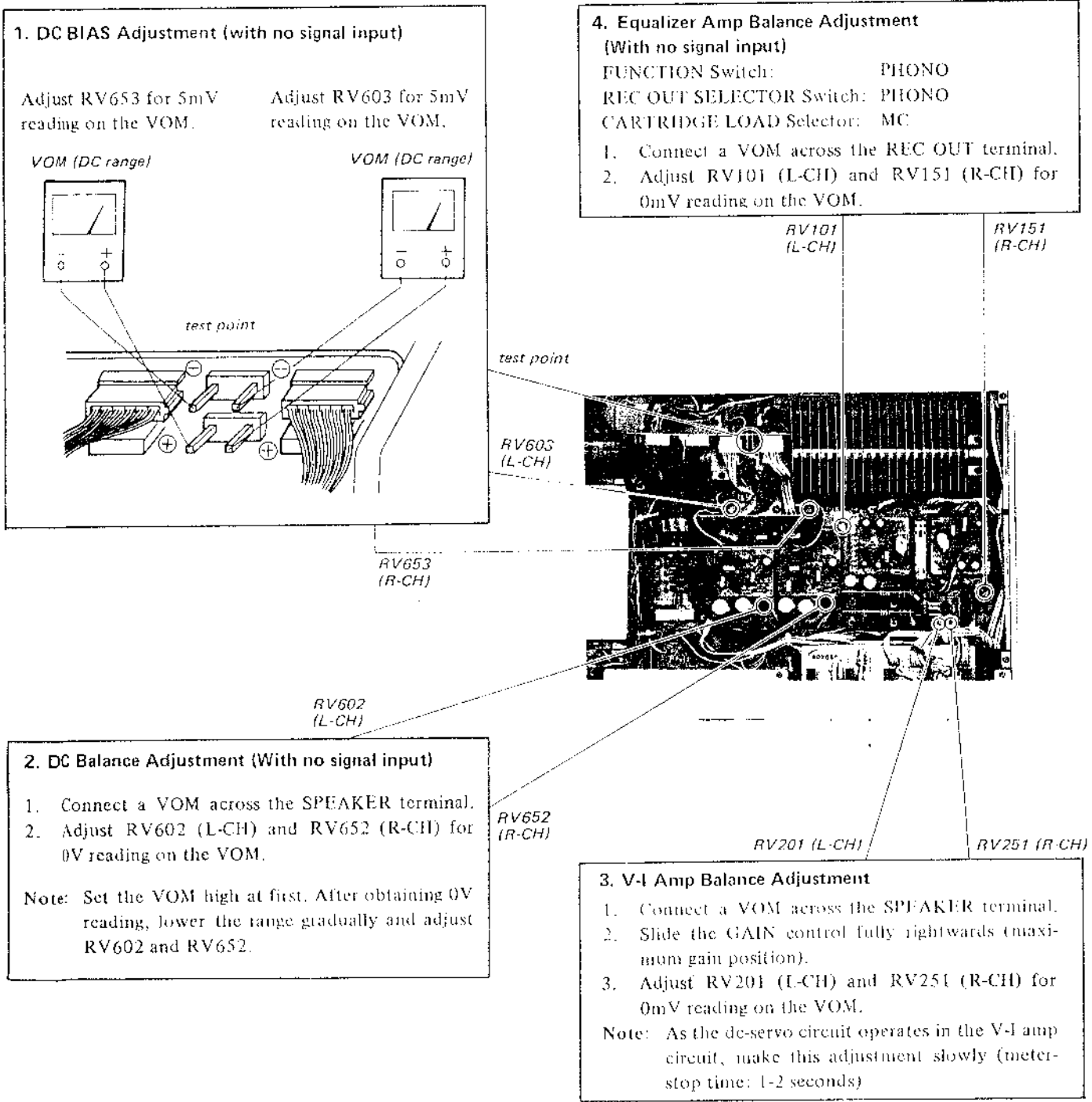


SECTION 3  
ADJUSTMENTS

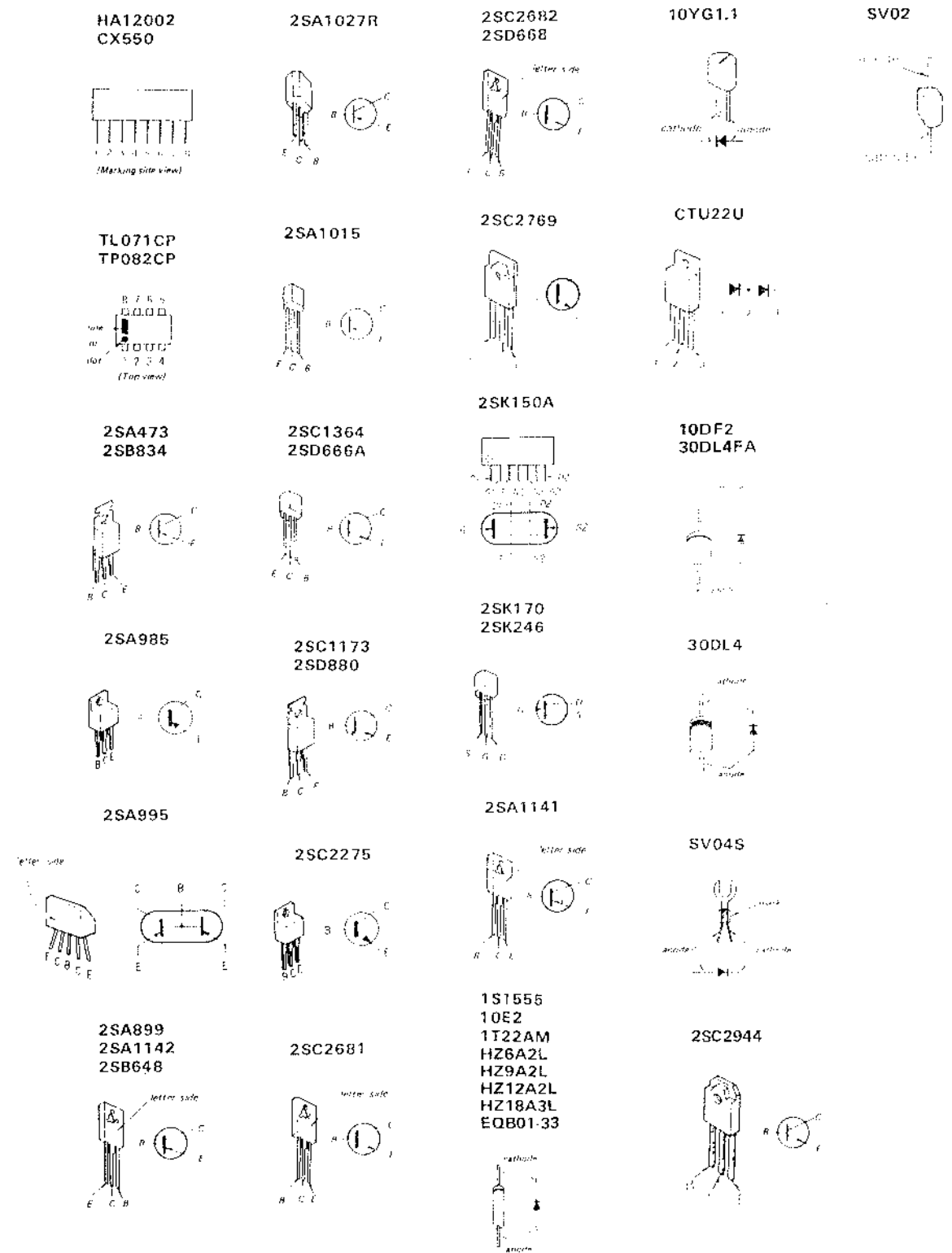
3-1. ELECTRICAL ADJUSTMENTS

Note:

1. DC BIAS and DC BALANCE adjustments should be made several minutes after the POWER switch is turned on (POWER ON).
2. Make DC BIAS adjustment first.
3. Repeat DC BIAS and DC BALANCE adjustments two or three times.
4. After replacing the power transistors, DC BIAS and DC BALANCE adjustments should be made.
5. Perform the adjustments in the numerical order given.



Semiconductor Lead Layouts



SECTION 4  
DIAGRAMS

4-1. MOUNTING DIAGRAM  
— Power Supply Section —

D	404	403	404	403	402	401	D
Q	401	402					Q

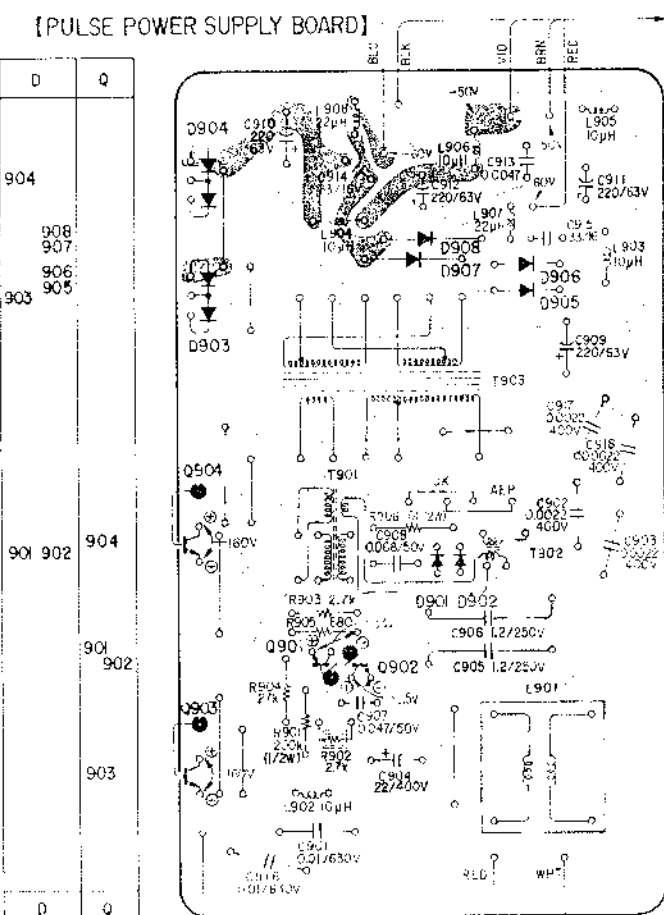
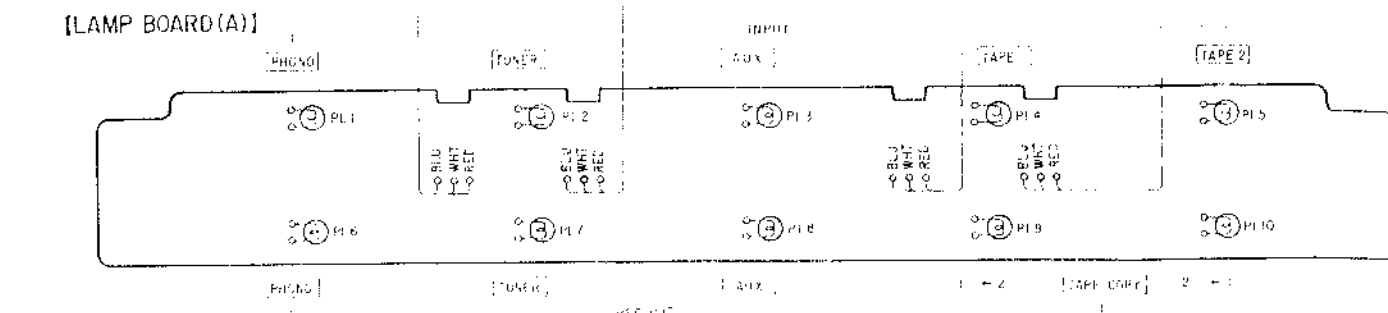
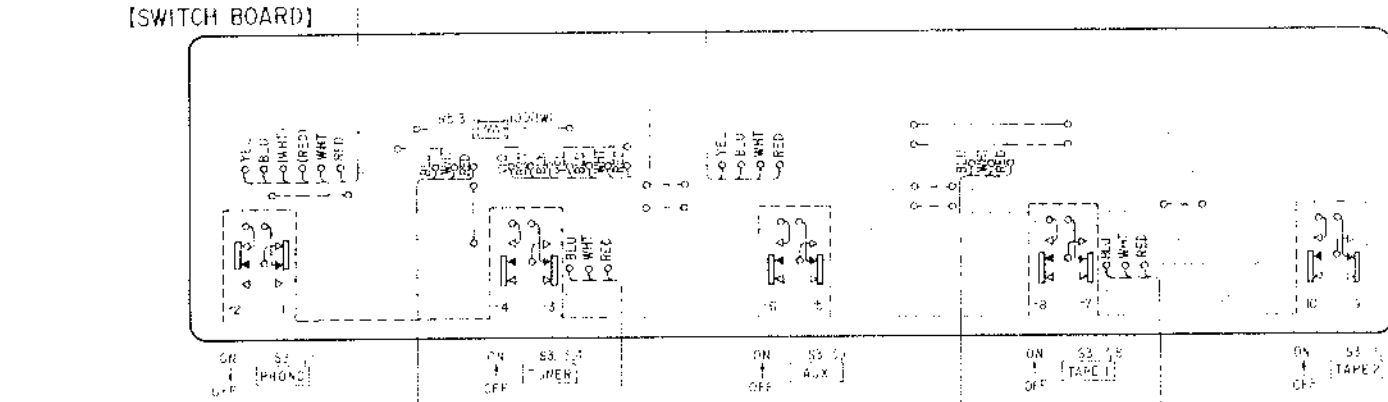
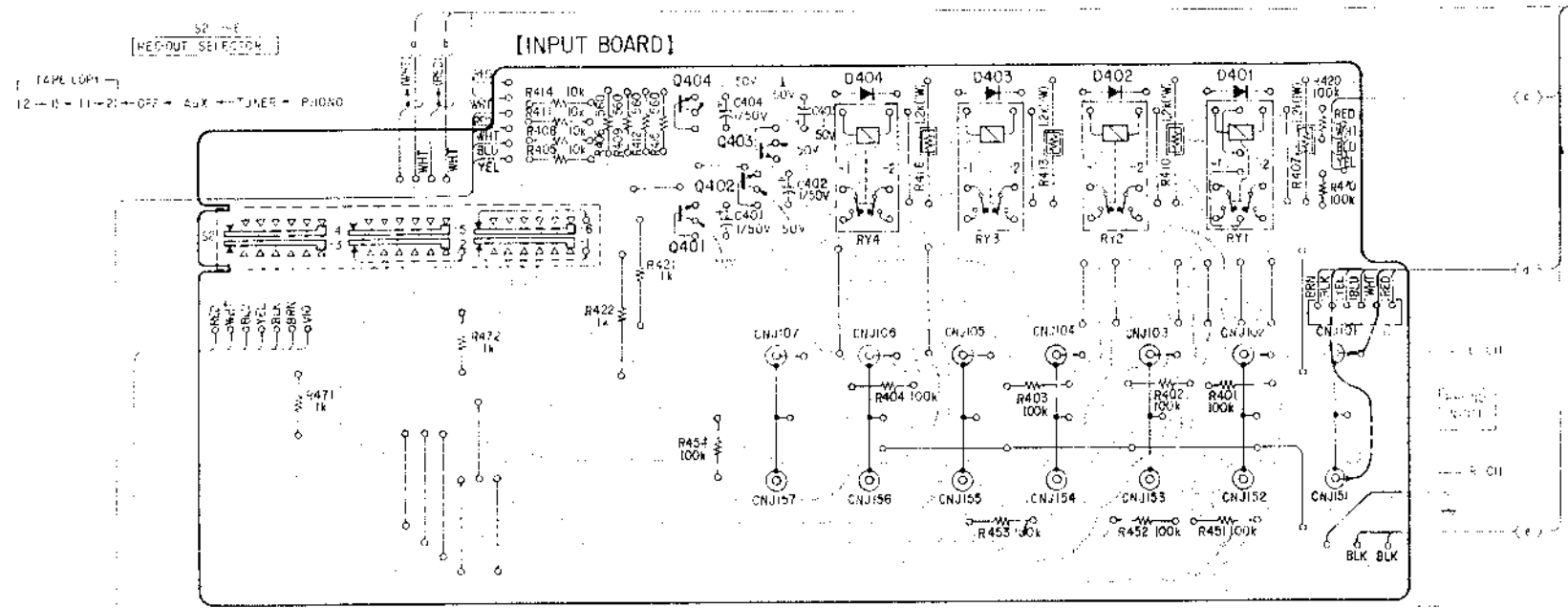
1

2

3

4

5



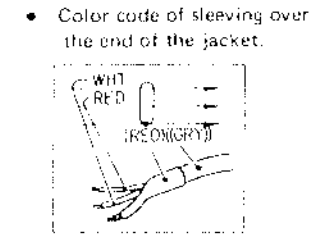
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Ⓑ TO MAIN BOARD

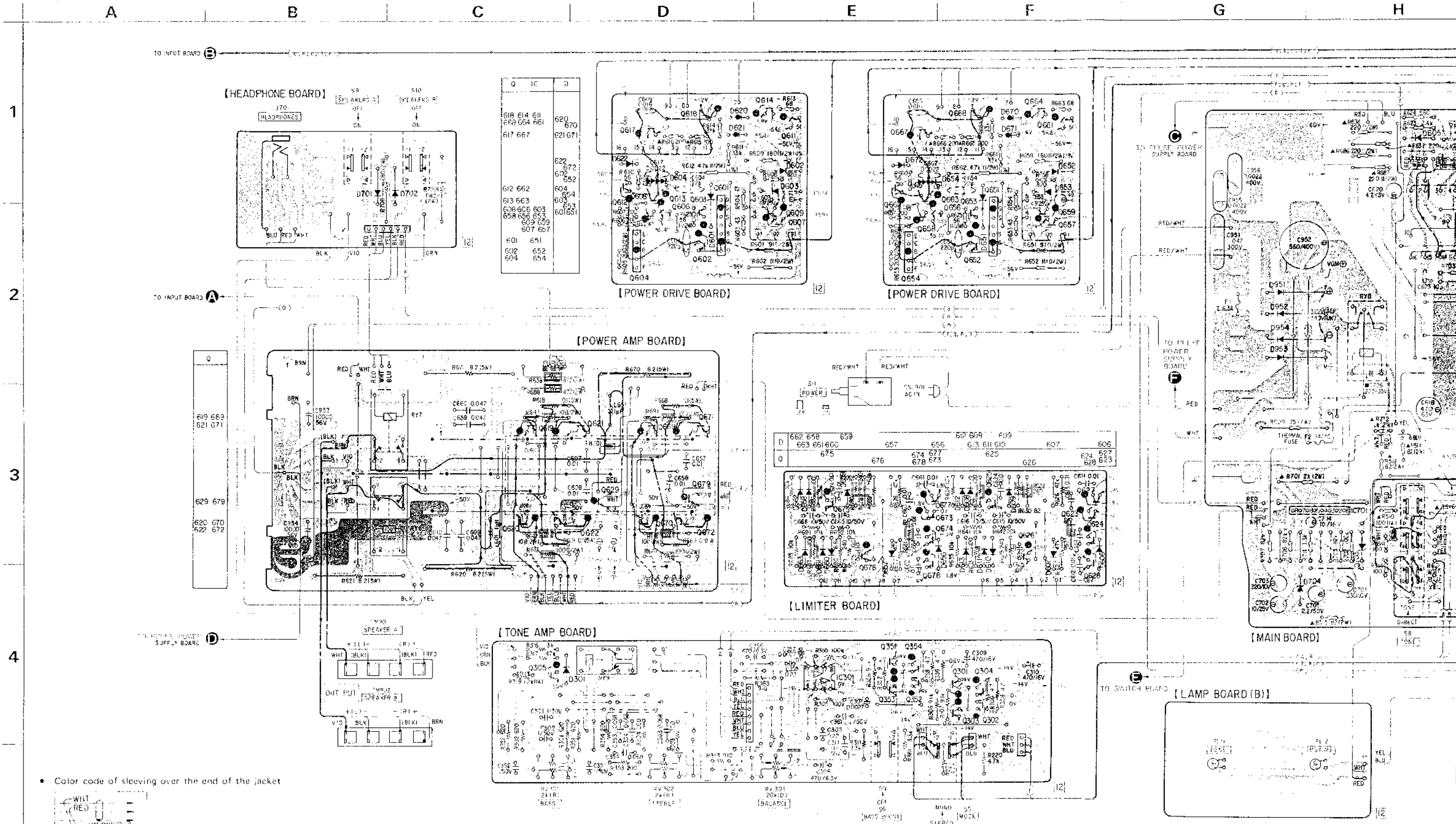
Ⓒ TO MAIN BOARD  
Ⓓ TO POWER AMP BOARD

Ⓔ TO MAIN BOARD

⓫ TO MAIN BOARD

- B/F pattern
- Lined B pattern
- signal path
- L-CH signal path
- R-CH signal path





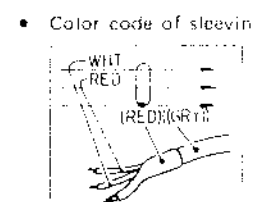
Q	IC	D
618 614 611		620 679
617 667		621 671
612 662		622 672
613 663		602 652
608 606 603		604 654
658 656 653		653 653
609 609		607 657
601 651		
602 652		
604 654		

Q
619 663
621 671
629 679
620 670
622 672

D	662 658 659	657	656	617 609	609	606
Q	663 661 600	676	674 677	678 673	625	626
					624 627	628 623

D	301					
Q	305					
IC		IC301	351 353	354 352	301 303	304 302

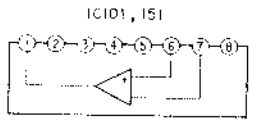
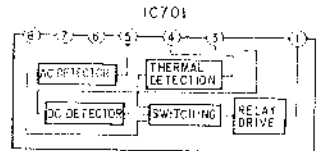
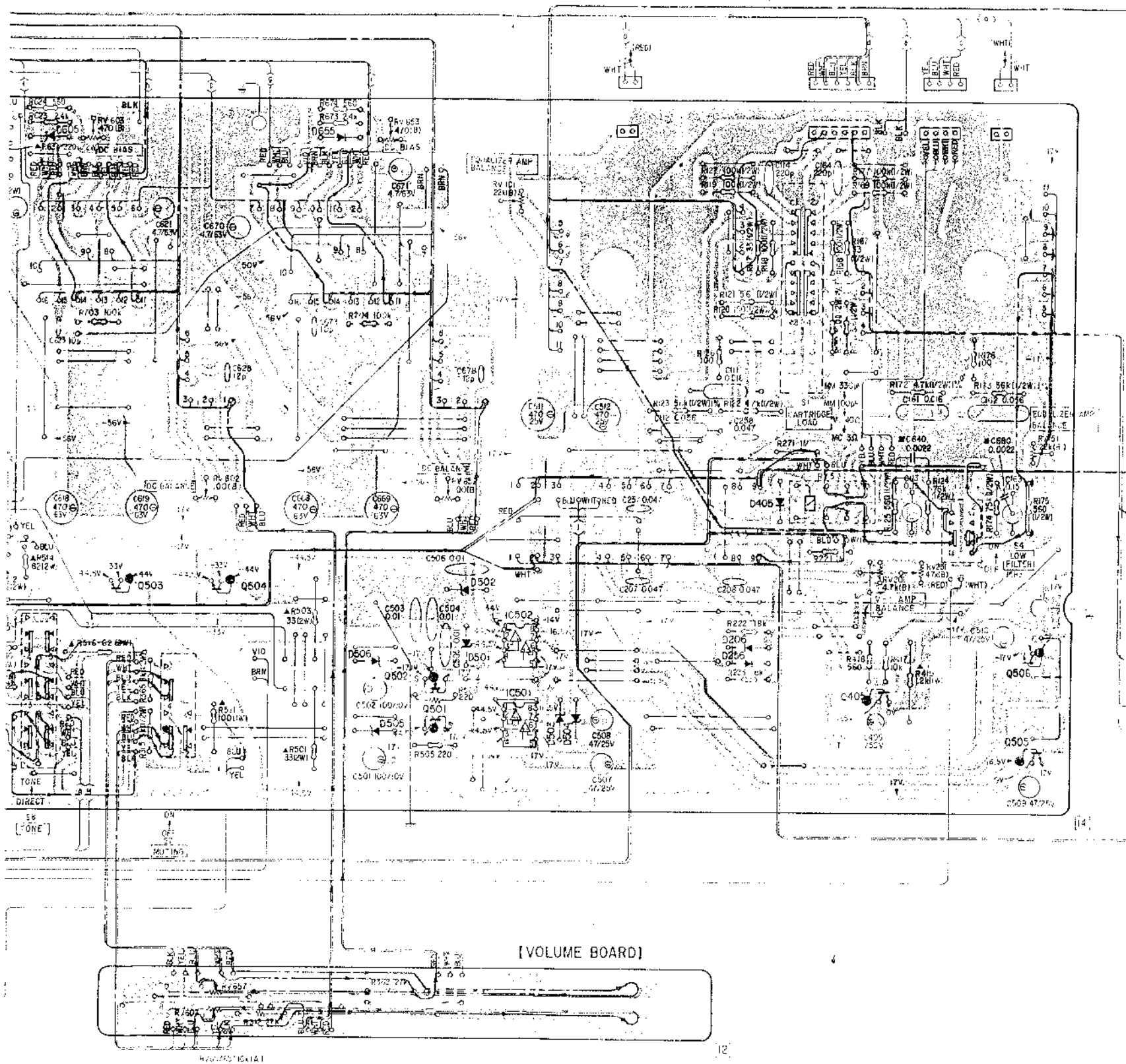
D	952 954	704	703	605
Q	953			
IC		IC701		



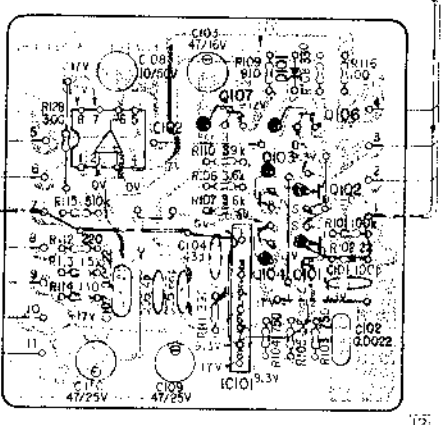
- Color code of sleeving over the end of the jacket
- [Symbol] : B+ pattern
- [Symbol] : B- pattern
- [Symbol] : signal path
- [Symbol] : L-CH signal path
- [Symbol] : R-CH signal path

TA-AX7 TA-AX7

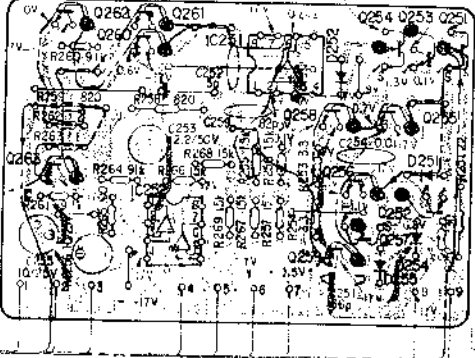
H I J K L M N O



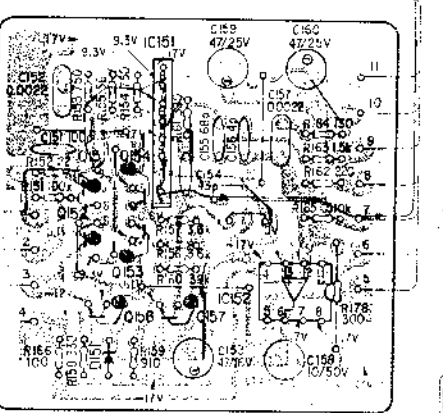
[EQUALIZER AMP BOARD]



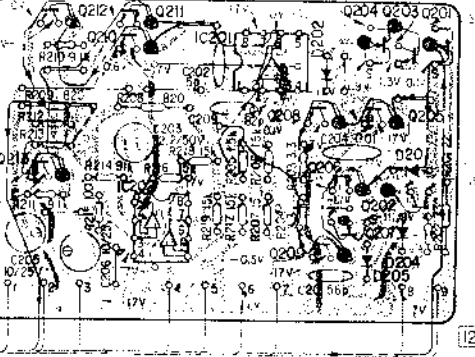
[V-I AMP BOARD]



[EQUALIZER AMP BOARD]



[V-I AMP BOARD]

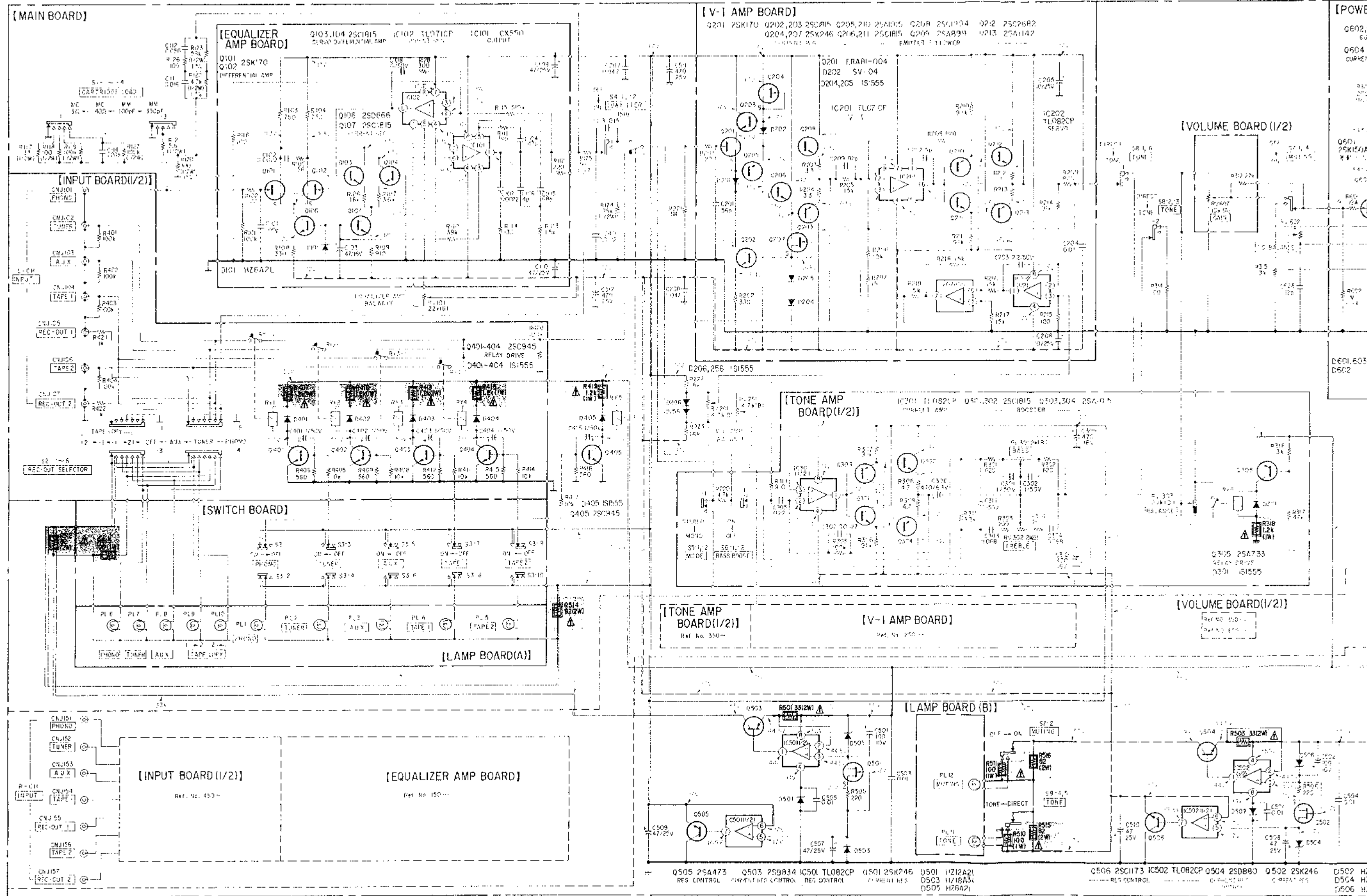


D	151	107	106	262	261	252	251	D
Q	IC102	104	102	263	260	256	254	Q
IC	151 154	IC151	104 101	212	211 IC252	IC251	256 254 253 251	IC
	152 153	IC101		213	210	IC201	259 256 255 252	
	156 157		IC152			IC202	204 204 201	
							208 206 202	
							209 206 207	

605	655	506	502	501	504	405	D
		505	501			206 206	Q
503	504	502	IC502		405	506	C
		501	IC501			506	

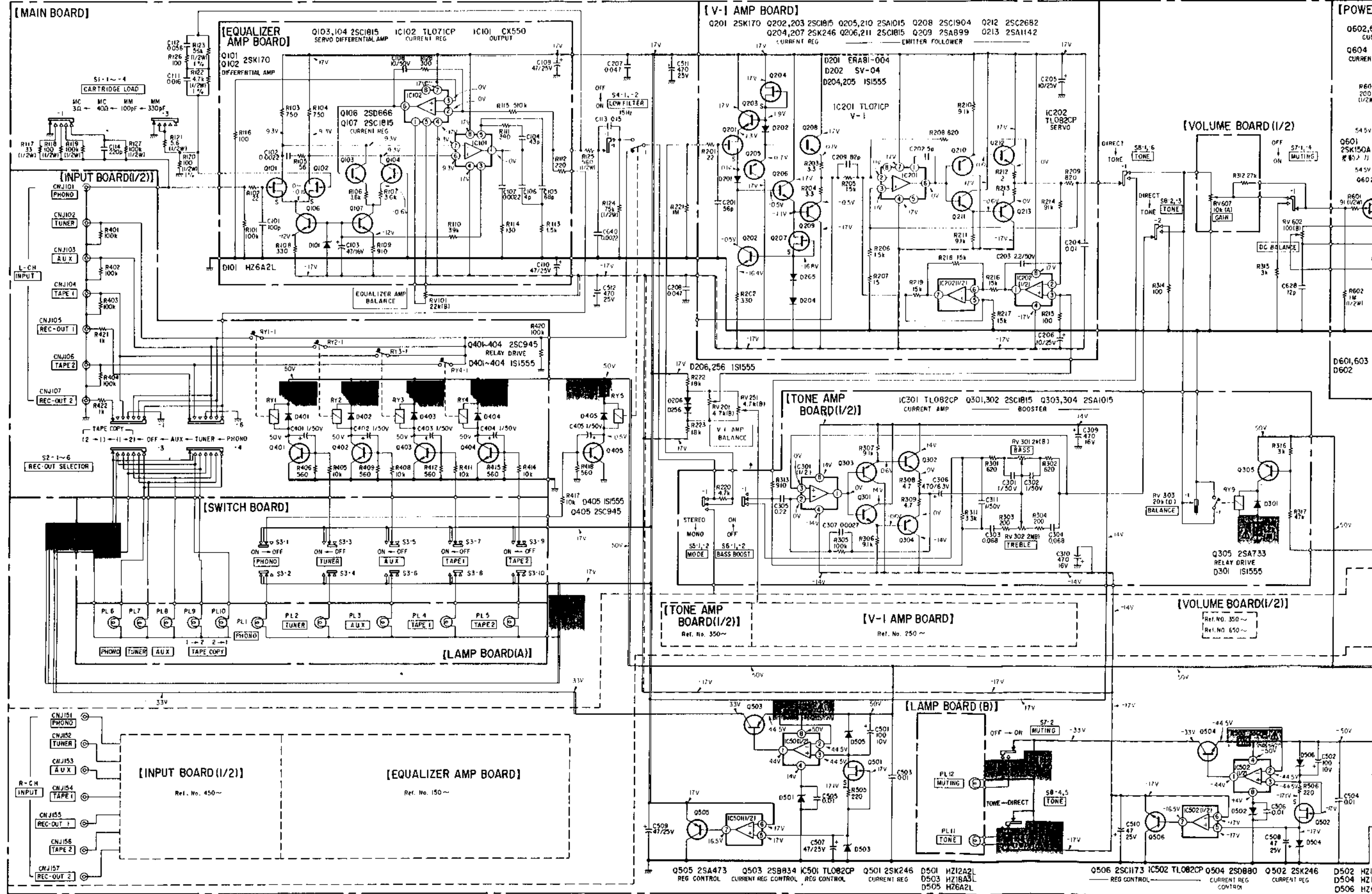


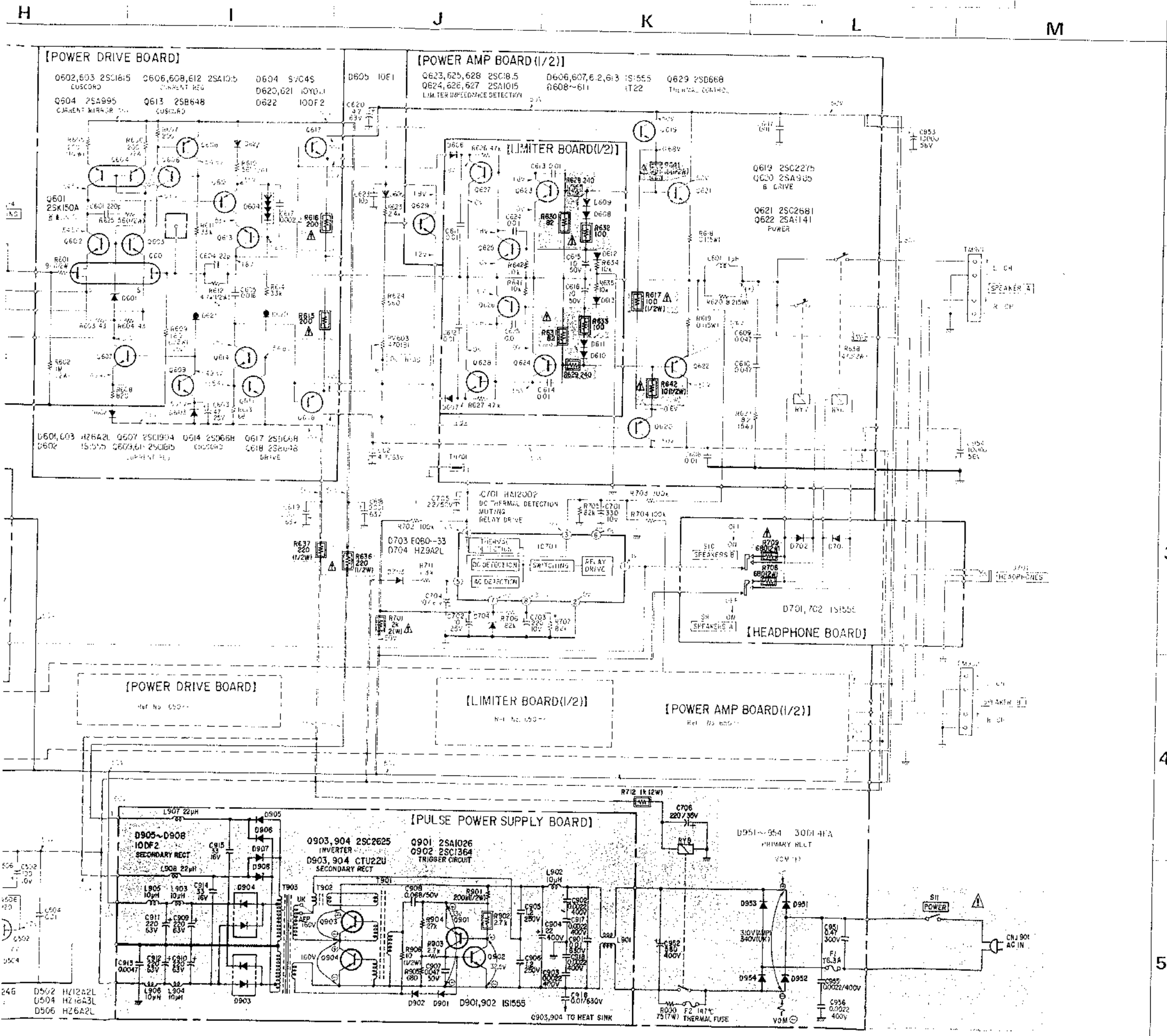
4-3. SCHEMATIC DIAGRAM



1  
2  
3  
4  
5

4-3. SCHEMATIC DIAGRAM





Note: Voltage are measured with a VOM (50kΩ/V).

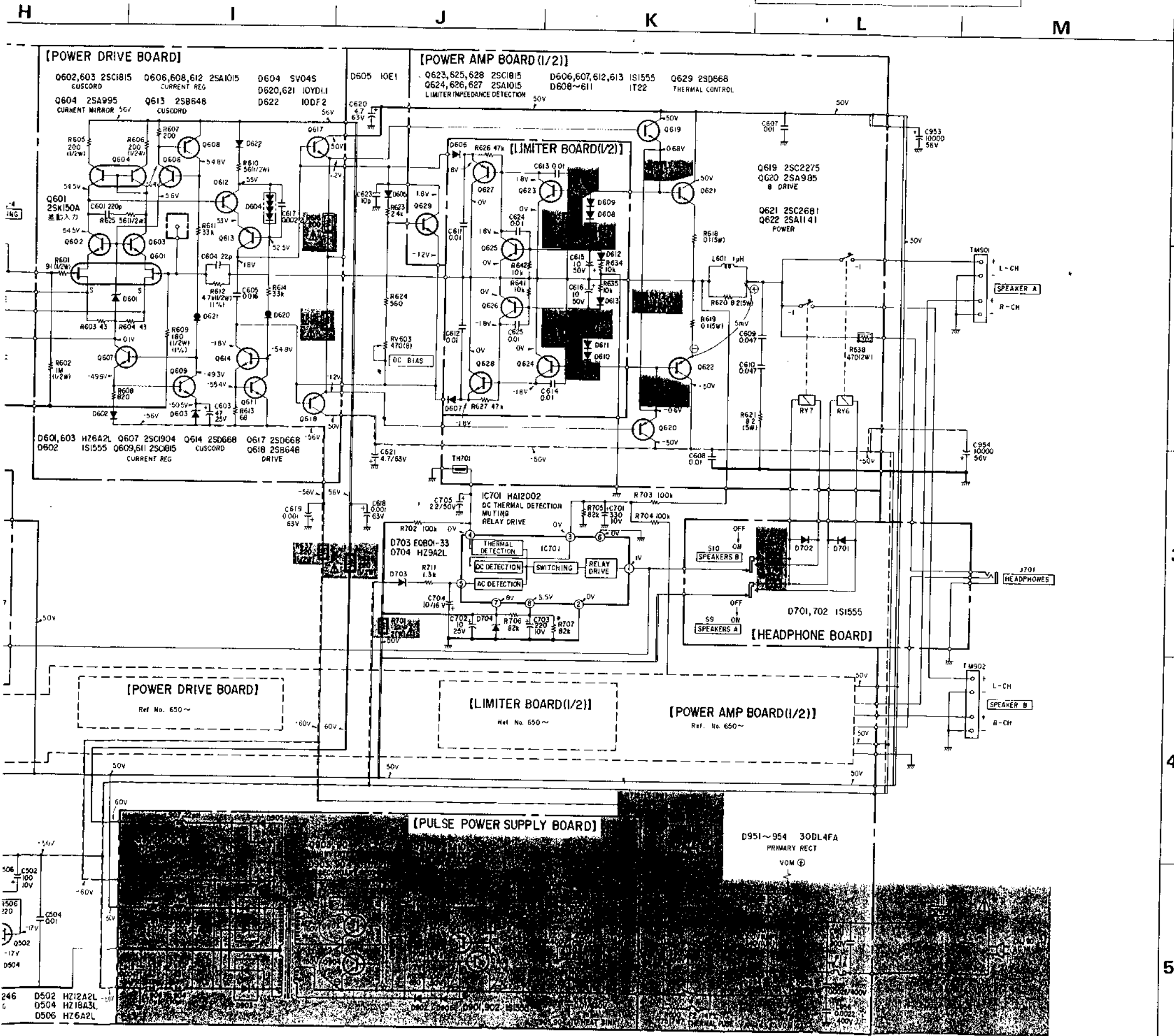
Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

- Components for right channel have same values as for left channel.
  - All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in ohms, 1/4W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
  - nonflammable resistor.
  - 1/2 Watt.
  - 1/4 Watt.
  - No tapes and do not respect to any other units otherwise noted.
  - Readings are taken under no-load conditions.
- No Mark AEP, UK model.  
 ( ) ACP model.  
 ( ) JK model.


• Voltage variations may be noted due to normal production tolerances.




• Switch

Ref. No.	Switch	Position
S1-1-4	CARTRIDGE LOAD	MM 330pF
S2-1-6	REC OUT SELECTOR	PHONO 4
S3-1-10	FUNCTION	PHONO
S4-1, 2	LOW FILTER	OFF
S5-1, 2	MODE	STEREO
S6-1, 2	BASS BOOST	OFF
S7-1-4	MUTING	OFF
S8-1-6	TONE	DIRECT
S9	SPEAKERS A	OFF
S10	SPEAKERS B	OFF
S11	POWER	OFF



Note: Voltage are measured with a VOM (50kΩ/V).

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

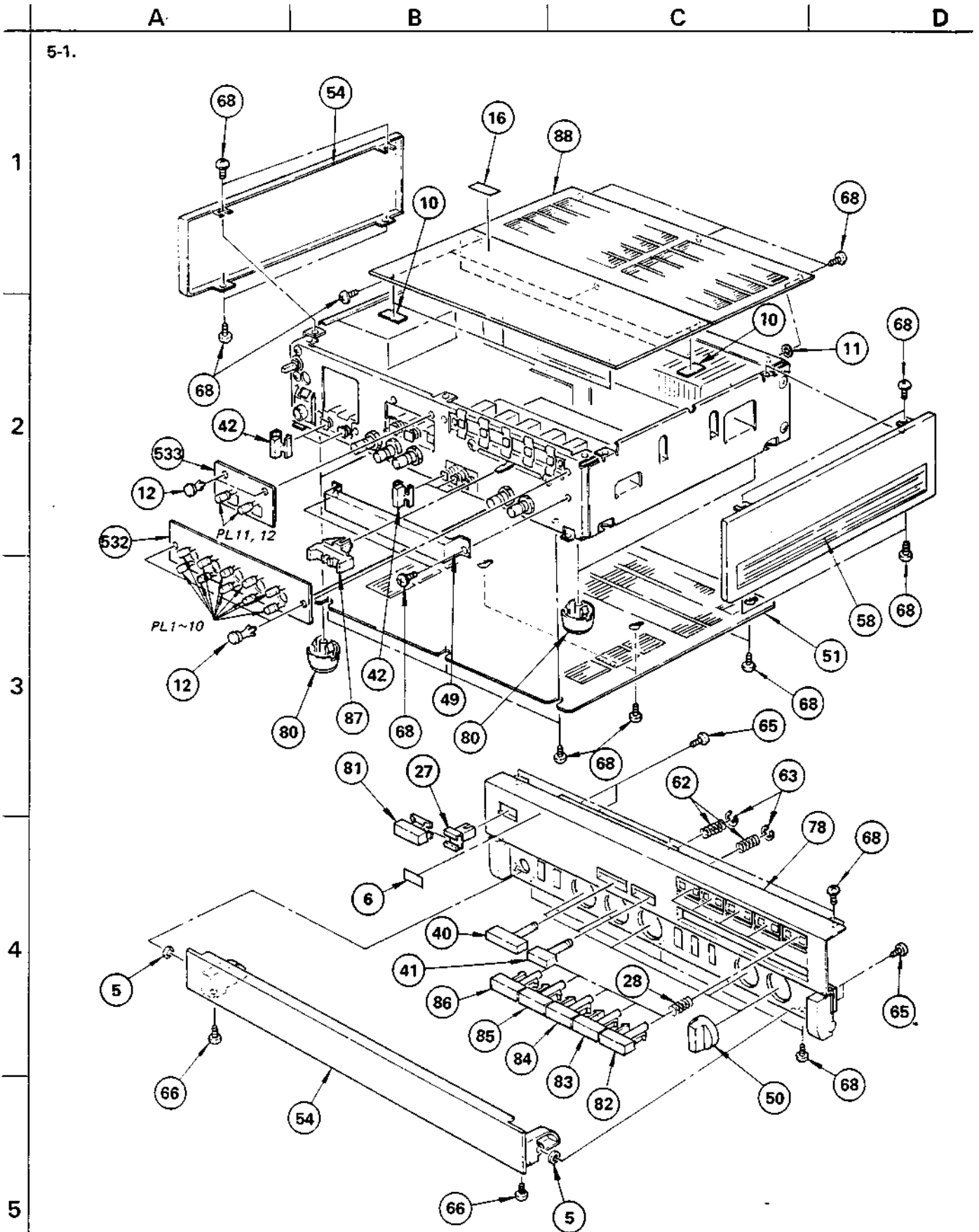
- Components for right channel have same values as for left channel.
- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/2 W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
-  : nonflammable resistor.
-  : B+ bus.
-  : B- bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions.

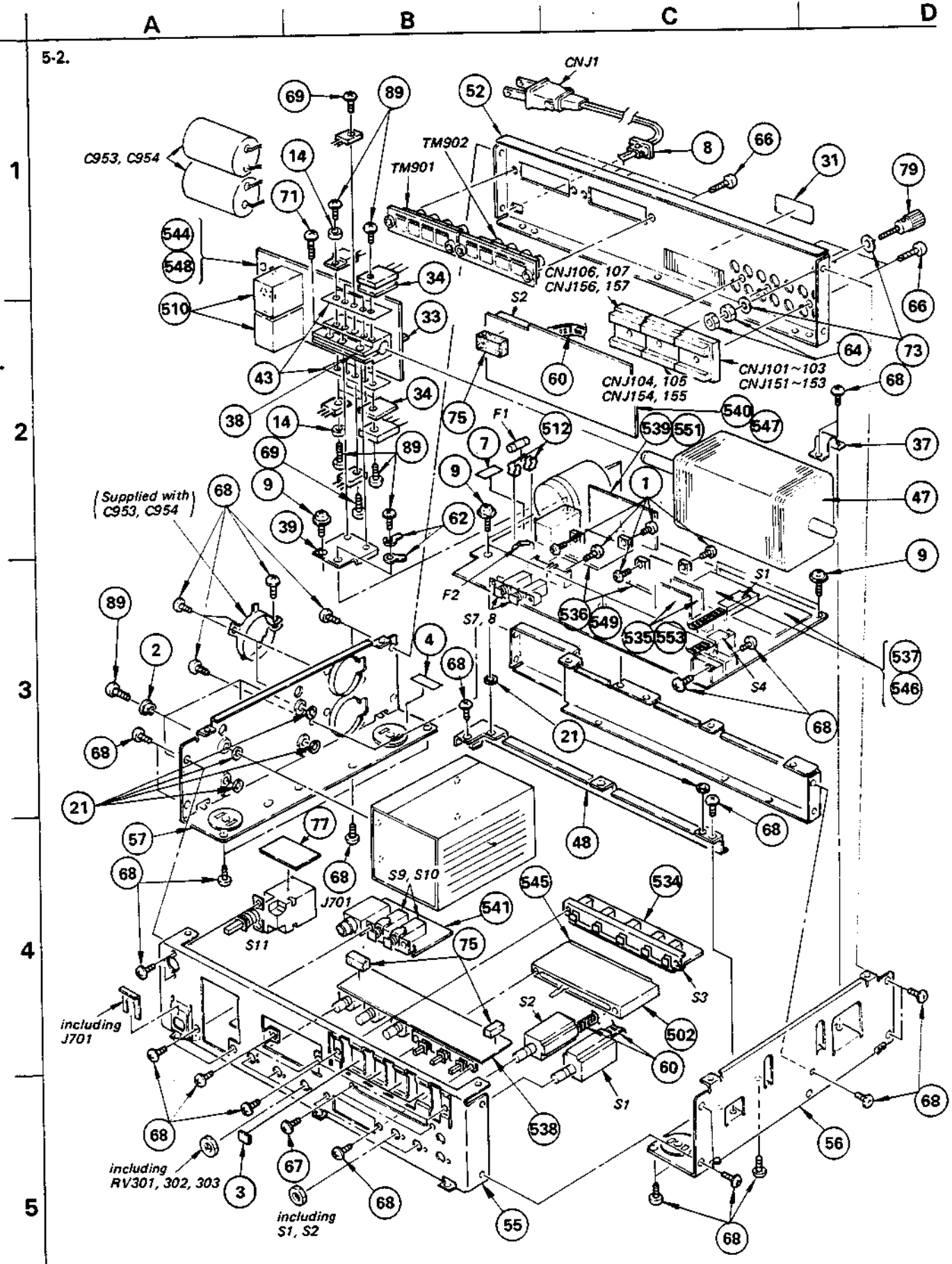
No Mark : AEP, UK model  
 ( ) : AEP model  
 ( ) : UK model

- Voltage variations may be noted due to normal production tolerances.
- Switch

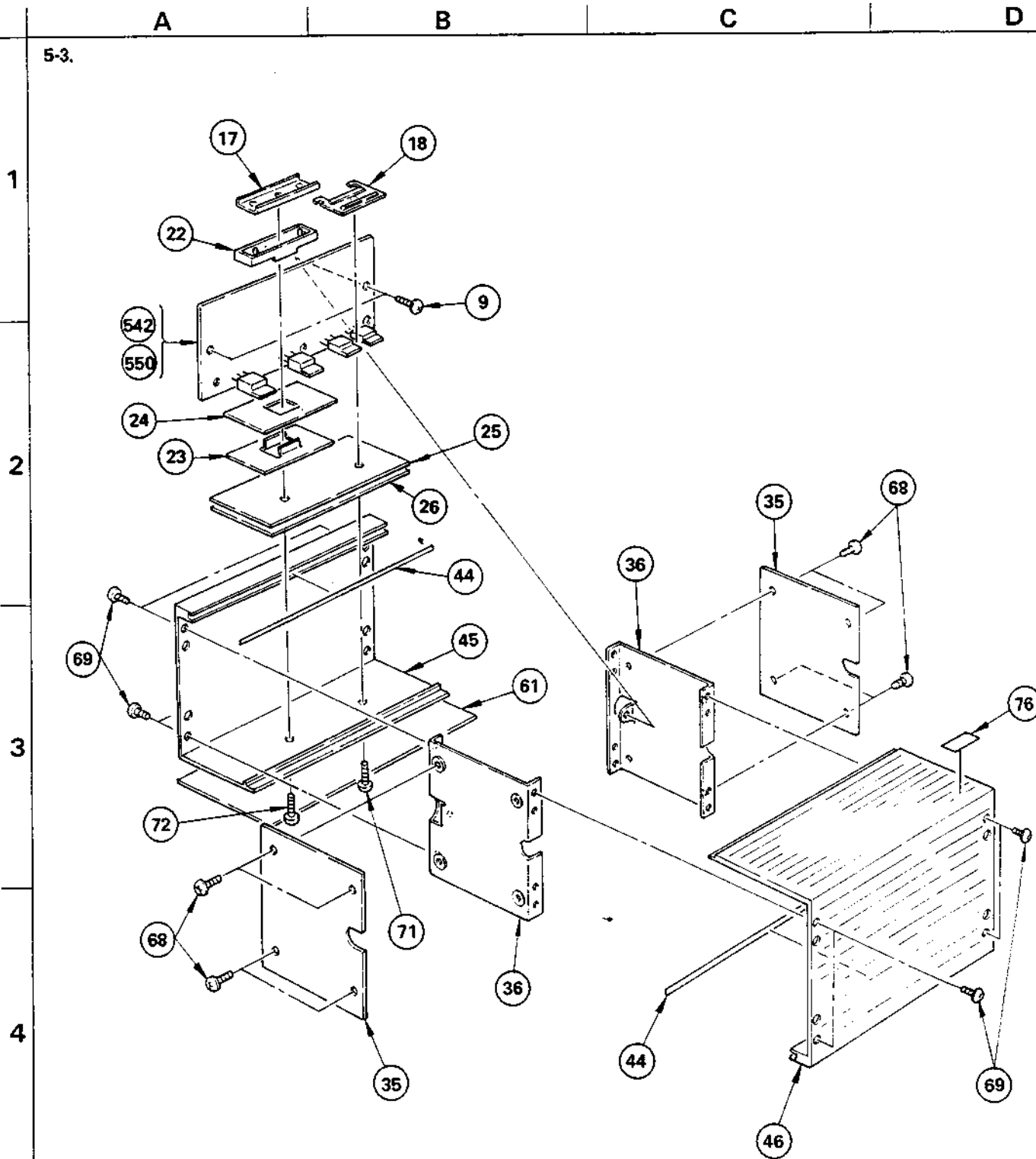
Ref. No.	Switch	Position
S1-1-4	CARTRIDGE LOAD	MM 330pF
S2-1-6	REC OUT SELECTOR	PHONO 4
S3-1-10	FUNCTION	PHONO
S4-1, 2	LOW FILTER	OFF
S5-1, 2	MODE	STEREO
S6-1, 2	BASS BOOST	OFF
S7-1-4	MUTING	OFF
S8-1-6	TONE	DIRECT
S9	SPEAKERS A	OFF
S10	SPEAKERS B	OFF
S11	POWER	OFF

SECTION 5  
EXPLODED VIEWS AND PARTS LIST





5-3.



## GENERAL SECTION

No.	Part No.	Description
1	2-259-121-00	SCREW, TR
2	2-832-002-00	BUSHING, INSULATING
3	3-572-759-00	SUPPORT
4	3-701-030-00	LABEL, SERIAL NUMBER
5	3-701-439-11	WASHER
6	3-701-690-00	(UK)....LABEL TACK (MADE IN JAPAN)
7	3-701-948-22	LABEL, FUSE
9	3-703-249-01	SCREW, S TIGHT, +PTTWH 3X6
10	3-831-441-XX	CUSHION, SPEAKER
11	3-848-223-00	WASHER (A), FIBER
12	4-812-134-11	RIVET, NYLON, 3.5
13	4-835-639-00	PLATE, GROUND
14	4-857-425-00	BUSHING, O3P INSULATING
15	.....	
16	4-861-045-00	LABEL, CAUTION
17	4-862-237-00	BRACKET, INVERTER
18	4-862-238-00	BRACKET, TRANSISTOR
19	4-863-132-00	HEAT SINK (SMALL)
20	4-866-080-00	HEAT SINK
21	4-866-147-11	SPACER
22	4-866-315-00	RETAINER, TRANSISTOR
23	4-866-316-00	HEAT SINK
24	4-866-317-00	SARCON, TRANSISTOR
25	4-866-318-01	SERCON, HEAT SINK, CHASSIS
26	4-866-318-11	SERCON, HEAT SINK, CHASSIS
27	4-866-342-00	JOINT (B), KNOB
28	4-866-652-00	SPRING, COMPRESSION
29	4-866-654-00	HEAT SINK (S)
30	4-871-324-00	ESCUTCHEON, POWER KNOB
31	4-873-604-00	LABEL, MODEL NUMBER (AEP)
32	4-873-605-00	(UK)....LABEL, MODEL NUMBER
33	4-873-609-00	BOARD (C), TERMINAL
34	4-873-611-00	HEAT SINK
35	4-873-701-00	LID, CASE
36	4-873-702-00	BRACKET, CHASSIS
37	4-873-703-00	RETAINER, PIPE
38	4-873-704-00	BLOCK
39	4-873-705-00	RETAINER, BLOCK
40	4-873-711-00	KNOB (A)
41	4-873-712-00	KNOB (B)
42	4-873-717-00	KNOB, PUSH
43	4-873-720-00	INSULATOR
44	4-873-722-00	PLATE, SHIELD
45	4-873-728-00	CASE (A)

## GENERAL SECTION

No.	Part No.	Description
46	4-873-729-00	CASE (B)
47	4-873-730-00	HEAT SINK
48	4-873-731-00	CHANNEL (A)
49	4-873-735-00	PLATE, BACK
50	4-873-736-00	KNOB (DIA. 22)
51	4-873-738-00	PLATE, BOTTOM
52	4-873-739-01	PLATE, JACK
53	4-873-741-00	CHANNEL (B)
54	4-873-744-11	LID, PANEL
55	4-873-746-00	SUBCHASSIS, FRONT
56	4-873-747-00	PLATE, SIDE, RIGHT
57	4-873-748-00	PLATE, SIDE, LEFT
58	4-873-749-00	PLATE, SIDE, ORNAMENTAL (RIGHT)
59	4-873-750-00	PLATE, SIDE, ORNAMENTAL (LEFT)
60	4-873-753-00	BAND, JOINT
61	4-873-759-00	TAPE, INSULATING, PPS
62	7-623-508-01	LUG, 3
63	7-624-105-04	STOP RING 2.3, TYPE -E
64	7-684-023-04	N 3, TYPE 2
65	7-685-134-11	SCREW -P 2.6X8 TYPE2 NON-SLIT
66	7-685-647-11	SCREW -BVTP 3X10 TYPE2 N-S
67	7-685-870-01	SCREW -BVTT 3X5 (S)
68	7-685-871-01	SCREW -BVTT 3X6 (S)
69	7-685-872-01	SCREW -BVTT 3X8 (S)
70	7-685-874-01	SCREW -BVTT 3X2 (S)
71	7-685-875-01	SCREW -BVTT 3X14 (S)
72	7-685-876-01	SCREW -BVTT 3X16 (S)
73	7-688-003-11	W 3, MIDDLE
74	9-911-840-XX	RUBBER (B)
75	9-911-843-XX	CUSHION, FLYWHEEL
76	7-685-873-01	SCREW -BVTT 3X10 (S)
77	9-911-863-XX	INSULATOR
78	A-4322-312-A	PANEL ASSY
79	X-4854-207-0	TERMINAL ASSY, GROUND
80	X-4864-303-0	FOOT ASSY
81	X-4873-701-0	KNOB ASSY, POWER
82	X-4873-702-0	KNOB ASSY, PHONO
83	X-4873-703-0	KNOB ASSY, TUNER
84	X-4873-704-0	KNOB ASSY, AUX
85	X-4873-705-0	KNOB ASSY, TAPE 1
86	X-4873-706-0	KNOB ASSY, TAPE 2
87	X-4873-707-0	KNOB ASSY, VR
88	X-4873-709-0	BOARD ASSY, TOP

### NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

### 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: $\mu\text{uF}$ .

### RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

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

### COILS

- MMH : mH, UH : LH



ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
101	2-701-360-00	(AEP)...LABEL, TACK
102	3-791-630-00	BAG, POLYETHYLENE
103	3-792-607-00	(UK)...LABEL, GUARANTY
104	3-793-412-11	MANUAL, INSTRUCTION
105	4-353-076-00	SHEET, PROTECTION
106	4-873-608-00	CUSHION
107	4-873-612-00	CUSHION, SUPPORT
108	4-873-614-00	INDIVIDUAL CARTON

ELECTRICAL PARTS

Ref.No.	Part No.	Description
501	.....	
502	1-223-109-00	RES, VAR, SLIDE 10K
503	▲ 1-247-123-00	RES, CARBON 470
504	♣ 1-508-809-00	BASE POST (14MM) 2P
505	♣ 1-508-815-00	14MM BASE POST
506	♣ 1-508-823-12	F-TYPE BASE POST
507	♣ 1-508-825-12	F-TYPE BASE POST
508	♣ 1-508-831-12	F-TYPE BASE POST
509	♣ 1-508-833-12	F-TYPE BASE POST
510	1-518-403-00	RELAY
511	▲ 1-532-325-00	FUSE, TIME-LAG
512	1-533-131-00	HOLDER, FUSE
513	♣ 1-535-113-00	TERMINAL
514	♣ 1-535-116-00	TERMINAL
515	♣ 1-535-117-00	TERMINAL
516	♣ 1-535-120-00	TERMINAL
517	♣ 1-535-135-00	BASE POST 14MM (10MM PITCH)
518	♣ 1-535-139-00	BASE POST 19MM (10MM PITCH)
519	1-536-354-00	POST PIN
520	1-553-596-00	SWITCH, ROTARY SLIDE (RED OUT SELECTOR)
521	1-553-623-00	SWITCH, ROTARY SLIDE (CARTRIDGE LOAD)
522	♣ 1-560-060-00	PIN, CONNECTOR 2P
523	♣ 1-560-062-00	PIN, CONNECTOR 3P
524	♣ 1-560-064-00	PIN, CONNECTOR 6P
525	♣ 1-560-065-00	PIN, CONNECTOR 8P
526	♣ 1-560-200-00	BASE POST, MOD CONNECTOR 2P
527	♣ 1-560-232-00	PIN, CONNECTOR 7P
528	♣ 1-561-296-00	SOCKET, CONNECTOR 10P
529	♣ 1-561-297-00	SOCKET, CONNECTOR 12P
530	♣ 1-561-350-00	SOCKET, CONNECTOR 4P
531	♣ 1-561-471-00	SOCKET, CONNECTOR 8P
532	♣ 1-604-209-00	PC BOARD, LAMP (A)
533	♣ 1-604-210-00	PC BOARD, LAMP (B)
534	♣ 1-604-211-00	PC BOARD, SWITCH
535	♣ 1-604-213-00	PC BOARD, V-T AMP
536	♣ 1-604-214-00	PC BOARD, POWER DRIVE
537	♣ 1-604-215-00	PC BOARD, EQUALIZER AMP
538	♣ 1-604-216-00	PC BOARD, TONE AMP
539	♣ 1-604-217-00	PC BOARD, LIMITER
540	♣ 1-604-218-00	PC BOARD, INPUT
541	♣ 1-604-219-00	PC BOARD, HEADPHONE
542	♣ 1-604-221-00	PC BOARD, PULSE POWER SUPPLY
543	♣ 1-604-222-00	PC BOARD, MAIN
544	♣ 1-604-223-00	PC BOARD, POWER AMP
545	♣ 1-604-256-00	PC BOARD, VOLUME

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "♣" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:

- All capacitors are in pF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μuF.

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

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

COILS

- MMH : mH, UH : μH

## ELECTRICAL PARTS

Ref.No.	Part No.	Description			
546	▲A-4358-028-A	MOUNTED PCB, EQUALIZER AMP			
547	▲A-4382-070-A	MOUNTED PCB, INPUT			
548	▲A-4388-247-A	MOUNTED PCB, AMPLIFIER, POWER			
549	▲A-4388-258-A	MOUNTED PCB, POWER DRIVE			
550	▲A-4394-254-A	MOUNTED PCB, PULSE POWER SUPPLY			
551	▲A-4409-415-A	MOUNTED PCB, LIMITER			
552	▲A-4409-419-A	MOUNTED PCB, AMP TONE			
553	▲A-4409-501-A	MOUNTED PCB, V-I AMPLIFIER			
554	▲A-4409-513-A	MOUNTED PCB, MAIN			
C101	1-107-300-00	MICA	100PF	5%	100V
C111	1-104-141-00	POLYSTYRENE	0.016MF	1%	125V
C112	1-104-142-00	POLYSTYRENE	0.056MF	1%	125V
C114	1-107-302-00	MICA	220PF	5%	100V
C161	1-104-141-00	POLYSTYRENE	0.016MF	1%	125V
C162	1-104-142-00	POLYSTYRENE	0.056MF	1%	125V
C164	1-107-308-00	MICA	220PF	5%	100V
C203	1-123-222-00	ELECT	2.2MF	20%	50V
C205	1-123-356-00	ELECT	10MF	20%	25V
C206	1-123-356-00	ELECT	10MF	20%	25V
C309	1-107-293-00	MICA	32PF	5%	100V
C301	1-123-523-00	ELECT	1MF	20%	50V
C302	1-123-323-00	ELECT	1MF	20%	50V
C311	1-123-323-00	ELECT	1MF	20%	50V
C351	1-123-323-00	ELECT	1MF	20%	50V
C352	1-123-323-00	ELECT	1MF	20%	50V
C361	1-123-323-00	ELECT	1MF	20%	50V
C401	1-123-352-00	ELECT	1MF	20%	50V
C402	1-123-352-00	ELECT	1MF	20%	50V
C402	1-123-352-00	ELECT	1MF	20%	50V
C404	1-123-352-00	ELECT	1MF	20%	50V
C405	1-123-352-00	ELECT	1MF	20%	50V
C511	1-123-336-00	ELECT	470MF	20%	25V
C512	1-123-336-00	ELECT	470MF	20%	25V
C601	1-107-310-00	MICA	220PF	5%	500V
C605	1-104-152-00	POLYSTYRENE	0.016MF	10%	125V
C609	1-130-688-00	FILM	0.047MF	5%	100V
C610	1-130-688-00	FILM	0.047MF	5%	100V
C618	1-123-262-00	ELECT	1000MF	20%	63V
C619	1-123-262-00	ELECT	1000MF	20%	63V
C623	1-107-279-00	MICA	10PF	0.5PF	100V
C628	1-107-280-00	MICA	12PF	5%	100V
C640	1-108-230-00	MYLAR	0.0022MF	10%	50V
C659	1-130-688-00	FILM	0.047MF	5%	100V
C660	1-130-688-00	FILM	0.047MF	5%	100V
C668	1-123-262-00	ELECT	1000MF	20%	63V

## ELECTRICAL PARTS

Ref.No.	Part No.	Description				
C669	1-123-262-00	ELECT	1000MF	20%	63V	
C673	1-107-279-00	MICA	10PF	0.5PF	100V	
C678	1-107-280-00	MICA	12PF	5%	100V	
C690	1-108-230-00	MYLAR	0.0022MF	10%	50V	
C702	1-123-323-00	ELECT	10MF	20%	25V	
C703	1-123-323-00	ELECT	220MF	20%	10V	
C704	1-123-323-00	ELECT	10MF	20%	16V	
C705	1-123-323-00	ELECT	2.2MF	20%	50V	
C706	1-123-323-00	ELECT	220MF	20%	35V	
C901	▲1-130-141-00	MYLAR	0.01MF	20%	630V	
C902	▲1-161-734-00	CERAMIC	0.0022MF	20%	400V	
C903	▲1-161-734-00	CERAMIC	0.0022MF	20%	400V	
C904	▲1-123-402-00	ELECT	22MF	20%	400V	
C905	▲1-130-358-00	FILM	1.2MF	10%	250V	
C906	▲1-130-358-00	FILM	1.2MF	10%	250V	
C907	▲1-108-246-00	MYLAR	0.047MF	10%	50V	
C908	▲1-108-249-00	MYLAR	0.068MF	10%	50V	
C909	▲1-123-523-00	ELECT	220MF	20%	63V	
C910	▲1-123-523-00	ELECT	220MF	20%	63V	
C911	▲1-123-523-00	ELECT	220MF	20%	63V	
C912	▲1-123-523-00	ELECT	220MF	20%	63V	
C913	▲1-108-234-00	MYLAR	0.0047MF	10%	50V	
C914	▲1-123-893-00	ELECT	33MF	20%	16V	
C915	▲1-123-893-00	ELECT	33MF	20%	16V	
C916	▲1-130-141-00	MYLAR	0.01MF	20%	630V	
C917	▲1-161-734-00	CERAMIC	0.0022MF	20%	400V	
C918	▲1-161-734-00	CERAMIC	0.0022MF	20%	400V	
C951	▲1-130-701-00	FILM	0.047MF	20%	300V	
C952	▲1-125-271-00	ELECT(BLOCK)	560MF	20%	400V	
C953	1-125-243-00	ELECT	10000MF	20%	55V	
C954	1-125-243-00	ELECT	10000MF	20%	55V	
C955	▲1-161-734-00	CERAMIC	0.0022MF	20%	400V	
CNJ1	▲1-555-795-00	(AEP) CORD, POWER				
CNJ1	▲1-551-884-00	(UK) CORD, POWER				
CNJ101	1-507-701-00	JACK, PIN 6P				
CNJ102	1-507-701-00	JACK, PIN 6P				
CNJ103	1-507-701-00	JACK, PIN 6P				
CNJ104	1-507-700-00	JACK, PIN 4P				
CNJ105	1-507-700-00	JACK, PIN 4P				
CNJ106	1-507-700-00	JACK, PIN 4P				
CNJ107	1-507-700-00	JACK, PIN 4P				
CNJ151	1-507-701-00	JACK, PIN 6P				
CNJ152	1-507-701-00	JACK, PIN 6P				
CNJ153	1-507-701-00	JACK, PIN 6P				
CNJ154	1-507-700-00	JACK, PIN 4P				
CNJ155	1-507-700-00	JACK, PIN 4P				

### NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (▲-2222-222-XX or ▲-2222-222-X) may be different from those used in the set.

### CAPACITORS:

- All capacitors are in pF. Common capacitors are omitted. Refer to the following lists for their part numbers.
- MF: MF, PF: PF.

### RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F: nonflammable

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

### COILS

- MMH: mH, UH: μH

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CNJ156	1-507-700-00	JACK, PIN 4P
CNJ157	1-507-700-00	JACK, PIN 4P
D101	8-719-910-62	DIODE HZ6A2L
D151	8-719-910-62	DIODE HZ6A2L
D201	8-719-981-01	DIODE ERA81-004
D202	8-719-300-02	DIODE SV02
D204	8-719-815-55	DIODE 1S1555
D205	8-719-815-55	DIODE 1S1555
D206	8-719-815-55	DIODE 1S1555
D251	8-719-981-01	DIODE ERA81-004
D252	8-719-300-02	DIODE SV02
D254	8-719-815-55	DIODE 1S1555
D255	8-719-815-55	DIODE 1S1555
D256	8-719-815-55	DIODE 1S1555
D301	8-719-815-55	DIODE 1S1555
D401	8-719-815-55	DIODE 1S1555
D402	8-719-815-55	DIODE 1S1555
D403	8-719-815-55	DIODE 1S1555
D404	8-719-815-55	DIODE 1S1555
D405	8-719-815-55	DIODE 1S1555
D501	8-719-910-22	DIODE HZ12A2L
D502	8-719-910-22	DIODE HZ12A2L
D503	8-719-910-83	DIODE HZ18A3L
D504	8-719-910-83	DIODE HZ18A3L
D505	8-719-910-62	DIODE HZ6A2L
D506	8-719-910-62	DIODE HZ6A2L
D601	8-719-910-62	DIODE HZ6A2L
D602	8-719-815-55	DIODE 1S1555
D603	8-719-910-62	DIODE HZ6A2L
D604	8-719-300-11	DIODE SV04S
D605	8-719-200-02	DIODE 10E2
D606	8-719-815-55	DIODE 1S1555
D607	8-719-815-55	DIODE 1S1555
D608	8-719-422-21	DIODE 1T22AM
D609	8-719-422-21	DIODE 1T22AM
D610	8-719-422-21	DIODE 1T22AM
D611	8-719-422-21	DIODE 1T22AM
D612	8-719-815-55	DIODE 1S1555
D613	8-719-815-55	DIODE 1S1555
D620	8-719-201-11	DIODE 10Y61.1
D621	8-719-201-11	DIODE 10Y61.1
D622	8-719-210-12	DIODE 10DF2
D651	8-719-910-62	DIODE HZ6A2L
D652	8-719-815-55	DIODE 1S1555
D653	8-719-910-62	DIODE HZ6A2L
D654	8-719-300-11	DIODE SV04S

D655 to D954 : See page 36.

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (1-500-000-XX or 1-500-000-XX-X) may be different from those used in the set.

ELECTRICAL PARTS

Ref.No.	Part No.	Description
F1	1-532-325-00	FUSE, TIME-LAG 6.3A
F2	1-532-556-00	FUSE, TEMPERATURE
IC101	8-759-305-50	IC CX550
IC102	8-759-907-01	IC TL071CP
IC151	8-759-305-50	IC CX550
IC152	8-759-907-01	IC TL071CP
IC201	8-759-907-01	IC TL071CP
IC202	8-759-990-82	IC TL082CP
IC251	8-759-907-01	IC TL071CP
IC252	8-759-990-82	IC TL082CP
IC301	8-759-990-82	IC TL082CP
IC501	8-759-990-82	IC TL082CP
IC502	8-759-990-82	IC TL082CP
IC701	8-759-320-02	IC HA12002
J701	1-507-669-00	JACK
L601	1-422-031-00	COIL, AIRCORE 1UH
L651	1-422-031-00	COIL, AIRCORE 1UH
L901	1-421-479-00	FILTER LINE
L902	1-421-461-00	COIL, CHOKE 10UH
L903	1-421-461-00	COIL, CHOKE 10UH
L904	1-421-461-00	COIL, CHOKE 10UH
L905	1-421-461-00	COIL, CHOKE 10UH
L906	1-421-461-00	COIL, CHOKE 10UH
L907	1-407-161-XX	MICRO INDUCTOR 22UH
L908	1-407-161-XX	MICRO INDUCTOR 22UH
PL1	1-518-453-21	LAMP, PILOT
PL2	1-518-453-21	LAMP, PILOT
PL3	1-518-453-21	LAMP, PILOT
PL4	1-518-453-21	LAMP, PILOT
PL5	1-518-453-21	LAMP, PILOT
PL6	1-518-453-31	LAMP, PILOT
PL7	1-518-453-31	LAMP, PILOT
PL8	1-518-453-31	LAMP, PILOT
PL9	1-518-453-31	LAMP, PILOT
PL10	1-518-453-31	LAMP, PILOT
PL11	1-518-453-21	LAMP, PILOT
PL12	1-518-453-41	LAMP, PILOT
Q101	8-729-217-03	TRANSISTOR 2SK170
Q102	8-729-217-03	TRANSISTOR 2SK170
Q103	8-729-663-47	TRANSISTOR 2SC1364
Q104	8-729-663-47	TRANSISTOR 2SC1364
Q106	8-729-300-62	TRANSISTOR 2SD666A
Q107	8-729-663-47	TRANSISTOR 2SC1364
Q151	8-729-217-03	TRANSISTOR 2SK170
Q152	8-729-217-03	TRANSISTOR 2SK170
Q153	8-729-663-47	TRANSISTOR 2SC1364

CAPACITORS:

- All capacitors are in pF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:µF, PF:pF.

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

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

COILS

- MMH : mH, UH : µH

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q154	8-729-663-47	TRANSISTOR 2SC1364
Q156	8-729-300-62	TRANSISTOR 2SD666A
Q157	8-729-663-47	TRANSISTOR 2SC1364
Q201	8-729-217-03	TRANSISTOR 2SK170
Q202	8-729-663-47	TRANSISTOR 2SC1364
Q203	8-729-663-47	TRANSISTOR 2SC1364
Q204	8-729-224-61	TRANSISTOR 2SK246
Q205	8-729-201-52	TRANSISTOR 2SA1015
Q206	8-729-663-47	TRANSISTOR 2SC1364
Q207	8-729-224-61	TRANSISTOR 2SK246
Q208	8-729-366-81	TRANSISTOR 2SD668
Q209	8-729-364-81	TRANSISTOR 2SB648
Q210	8-729-201-52	TRANSISTOR 2SA1015
Q211	8-729-663-47	TRANSISTOR 2SC1364
Q212	8-729-168-22	TRANSISTOR 2SC2682
Q213	8-729-114-22	TRANSISTOR 2SA1142
Q251	8-729-217-03	TRANSISTOR 2SK170
Q252	8-729-663-47	TRANSISTOR 2SC1364
Q253	8-729-663-47	TRANSISTOR 2SC1364
Q254	8-729-224-61	TRANSISTOR 2SK246
Q255	8-729-201-52	TRANSISTOR 2SA1015
Q256	8-729-663-47	TRANSISTOR 2SC1364
Q257	8-729-224-61	TRANSISTOR 2SK246
Q258	8-729-366-81	TRANSISTOR 2SD668
Q259	8-729-364-81	TRANSISTOR 2SB648
Q260	8-729-201-52	TRANSISTOR 2SA1015
Q261	8-729-663-47	TRANSISTOR 2SC1364
Q262	8-729-168-22	TRANSISTOR 2SC2682
Q263	8-729-114-42	TRANSISTOR 2SA1142
Q301	8-729-663-47	TRANSISTOR 2SC1364
Q302	8-729-663-47	TRANSISTOR 2SC1364
Q303	8-729-201-52	TRANSISTOR 2SA1015
Q304	8-729-201-52	TRANSISTOR 2SA1015
Q305	8-729-612-77	TRANSISTOR 2SA1027R
Q351	8-729-663-47	TRANSISTOR 2SC1364
Q352	8-729-663-47	TRANSISTOR 2SC1364
Q353	8-729-201-52	TRANSISTOR 2SA1015
Q354	8-729-201-52	TRANSISTOR 2SA1015
Q401	8-729-663-47	TRANSISTOR 2SC1364
Q402	8-729-663-47	TRANSISTOR 2SC1364
Q403	8-729-663-47	TRANSISTOR 2SC1364
Q404	8-729-663-47	TRANSISTOR 2SC1364
Q405	8-729-663-47	TRANSISTOR 2SC1364
Q501	8-729-224-61	TRANSISTOR 2SK246
Q502	8-729-224-61	TRANSISTOR 2SK246

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q503	8-729-283-42	TRANSISTOR 2SB834
Q504	8-729-288-02	TRANSISTOR 2SD880
Q505	8-729-247-33	TRANSISTOR 2SA473
Q506	8-729-217-33	TRANSISTOR 2SC1173
Q601	8-729-215-12	TRANSISTOR 2SK150A
Q602	8-729-663-47	TRANSISTOR 2SC1364
Q603	8-729-663-47	TRANSISTOR 2SC1364
Q604	8-729-699-51	TRANSISTOR 2SA995
Q606	8-729-201-52	TRANSISTOR 2SA1015
Q607	8-729-366-81	TRANSISTOR 2SD668
Q608	8-729-201-52	TRANSISTOR 2SA1015
Q609	8-729-663-47	TRANSISTOR 2SC1364
Q611	8-729-663-47	TRANSISTOR 2SC1364
Q612	8-729-201-52	TRANSISTOR 2SA1015
Q613	8-729-364-81	TRANSISTOR 2SB648
Q614	8-729-366-81	TRANSISTOR 2SD668
Q617	8-729-366-81	TRANSISTOR 2SD668
Q618	8-729-364-81	TRANSISTOR 2SB648
Q619	8-729-107-53	TRANSISTOR 2SC2275A
Q620	8-729-190-53	TRANSISTOR 2SA985A
Q621	8-729-168-11	TRANSISTOR 2SC2681
Q622	8-729-114-11	TRANSISTOR 2SA1141
Q623	8-729-663-47	TRANSISTOR 2SC1364
Q624	8-729-201-52	TRANSISTOR 2SA1015
Q625	8-729-663-47	TRANSISTOR 2SC1364
Q626	8-729-201-52	TRANSISTOR 2SA1015
Q627	8-729-201-52	TRANSISTOR 2SA1015
Q628	8-729-663-47	TRANSISTOR 2SC1364
Q629	8-729-366-81	TRANSISTOR 2SD668
Q651	8-729-215-21	TRANSISTOR 2SK150A
Q652	8-729-663-47	TRANSISTOR 2SC1364
Q653	8-729-663-47	TRANSISTOR 2SC1364
Q654	8-729-699-51	TRANSISTOR 2SA995
Q656	8-729-201-52	TRANSISTOR 2SA1015
Q657	8-729-366-81	TRANSISTOR 2SD668
Q658	8-729-201-52	TRANSISTOR 2SA1015
Q659	8-729-663-47	TRANSISTOR 2SC1364
Q661	8-729-663-47	TRANSISTOR 2SC1364
Q662	8-729-201-52	TRANSISTOR 2SA1015
Q663	8-729-364-81	TRANSISTOR 2SB648
Q664	8-729-366-81	TRANSISTOR 2SD668
Q667	8-729-366-81	TRANSISTOR 2SD668
Q668	8-729-364-81	TRANSISTOR 2SB648
Q669	8-729-107-53	TRANSISTOR 2SC2275A
Q670	8-729-190-53	TRANSISTOR 2SA985A

### NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.


### CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.  
MF:μF, PF:μμF.

### RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

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

### COILS

- MH : mH, UH : μH

ELECTRICAL PARTS

Ref.No.	Part No.	Description					
Q671	8-729-168-11	TRANSISTOR	2SC2821				
Q672	8-729-114-11	TRANSISTOR	2SA1141				
Q673	8-729-663-47	TRANSISTOR	2SC1364				
Q674	8-729-201-52	TRANSISTOR	2SA1015				
Q675	8-729-663-47	TRANSISTOR	2SC1364				
Q676	8-729-201-52	TRANSISTOR	2SA1015				
Q677	8-729-201-52	TRANSISTOR	2SA1015				
Q678	8-729-663-47	TRANSISTOR	2SC1364				
Q679	8-729-366-81	TRANSISTOR	2SD668				
Q901	▲ 8-729-612-77	TRANSISTOR	2SA1027R				
Q902	▲ 8-729-663-47	TRANSISTOR	2SC1364				
Q903	▲ X-4873-603-1	TRANSISTOR KIT	2SC2944				
Q904	▲ X-4873-603-1	TRANSISTOR KIT	2SC2944				
R000	▲ 1-205-670-00	WIREWOUND	75K	10%	7W		
R117	1-244-837-00	CARBON	33	5%	1/2W		
R118	1-244-849-00	CARBON	100	5%	1/2W		
R119	1-244-921-00	CARBON	100K	5%	1/2W		
R120	1-244-840-00	METAL	100	1%	1/2W		
R121	1-244-819-00	CARBON	5.6	5%	1/2W		
R122	1-244-820-00	METAL	4.7K	1%	1/2W		
R123	1-244-907-00	METAL	56K	1%	1/2W		
R124	1-244-918-00	CARBON	75K	5%	1/2W		
R125	1-244-857-00	CARBON	560	5%	1/2W		
R127	1-244-821-00	CARBON	100K	5%	1/2W		
R130	1-244-827-00	CARBON	33	5%	1/2W		
R169	1-244-849-00	CARBON	100	5%	1/2W		
R189	1-244-921-00	CARBON	100K	5%	1/2W		
R190	1-244-840-00	METAL	100	1%	1/2W		
R171	1-244-918-00	CARBON	5.6	5%	1/2W		
R172	1-244-890-00	METAL	4.7K	1%	1/2W		
R173	1-244-907-00	METAL	56K	1%	1/2W		
R194	1-244-918-00	CARBON	5.6	5%	1/2W		
R196	1-244-857-00	CARBON	560	5%	1/2W		
R177	1-244-921-00	CARBON	100K	5%	1/2W		
R318	▲ 1-213-144-00	METAL	1.2K	5%	1W	F	
R407	▲ 1-213-144-00	METAL	1.2K	5%	1W	F	
R410	▲ 1-213-144-00	METAL	1.2K	5%	1W	F	
R413	▲ 1-213-144-00	METAL	1.2K	5%	1W	F	
R416	▲ 1-213-144-00	METAL	1.2K	5%	1W	F	
R419	▲ 1-213-144-00	METAL	1.2K	5%	1W	F	
R501	▲ 1-206-475-00	METAL	33	5%	2W	F	
R503	▲ 1-206-475-00	METAL	33	5%	2W	F	
R510	▲ 1-213-131-00	METAL	100	5%	1W	F	
R511	▲ 1-213-131-00	METAL	100	5%	1W	F	
R512	▲ 1-206-485-00	METAL	82	5%	2W	F	
R513	▲ 1-213-131-00	METAL	100	5%	1W	F	

ELECTRICAL PARTS

Ref.No.	Part No.	Description					
R514	1-206-485-00	METAL	82	5%	2W	F	
R515	1-206-485-00	METAL	82	5%	2W	F	
R516	1-206-485-00	METAL	82	5%	2W	F	
R601	1-244-840-00	CARBON	91	5%	1/2W		
R602	1-244-840-00	CARBON	1M	5%	1/2W		
R605	1-244-855-00	CARBON	200	5%	1/2W		
R606	1-244-855-00	CARBON	200	5%	1/2W		
R609	1-214-846-00	METAL	180	1%	1/2W		
R610	1-244-843-00	CARBON	56	5%	1/2W		
R612	1-214-830-00	METAL	4.7K	1%	1/2W		
R615	▲ 1-247-114-00	CARBON	200	5%	1/4W	F	
R616	▲ 1-247-114-00	CARBON	200	5%	1/4W	F	
R617	▲ 1-247-216-00	CARBON	100	5%	1/2W	F	
R618	1-214-839-00	RES. METAL PLATE	0.1		5W		
R619	1-214-839-00	RES. METAL PLATE	0.1		5W		
R620	1-217-582-00	WIREWOUND	5.7	10%	5W		
R621	1-217-582-00	WIREWOUND	5.7	10%	5W		
R625	1-244-848-00	CARBON	56	5%	1/2W		
R628	1-247-106-00	CARBON	240	5%	1/4W	F	
R629	1-247-116-00	CARBON	240	5%	1/4W	F	
R630	1-247-106-00	CARBON	32	5%	1/4W	F	
R631	1-247-106-00	CARBON	32	5%	1/4W	F	
R632	▲ 1-247-107-00	CARBON	100	5%	1/4W	F	
R633	▲ 1-247-107-00	CARBON	100	5%	1/4W	F	
R636	1-247-104-00	CARBON	200	5%	1/2W	F	
R637	1-247-104-00	CARBON	200	5%	1/2W	F	
R638	▲ 1-206-656-00	METAL	470	5%	2W	F	
R641	▲ 1-247-192-00	CARBON	10	5%	1/2W	F	
R642	▲ 1-247-192-00	CARBON	10	5%	1/2W	F	
R667	▲ 1-247-216-00	CARBON	100	5%	1/2W	F	
R668	1-214-839-00	RES. METAL PLATE	0.1		5W		
R669	1-214-839-00	RES. METAL PLATE	0.1		5W		
R670	1-217-582-00	WIREWOUND	5.7	10%	5W		
R671	1-217-582-00	WIREWOUND	5.7	10%	5W		
R675	1-247-106-00	CARBON	240	5%	1/4W	F	
R679	1-247-106-00	CARBON	240	5%	1/4W	F	
R680	1-247-106-00	CARBON	32	5%	1/4W	F	
R681	1-247-106-00	CARBON	32	5%	1/4W	F	
R682	1-247-107-00	CARBON	100	5%	1/4W	F	
R683	1-247-106-00	CARBON	100	5%	1/4W	F	
R684	1-247-106-00	CARBON	100	5%	1/4W	F	
R687	1-247-104-00	CARBON	200	5%	1/2W	F	
R690	1-206-656-00	METAL	470	5%	2W	F	
R691	▲ 1-247-192-00	CARBON	10	5%	1/2W	F	
R692	▲ 1-247-192-00	CARBON	10	5%	1/2W	F	

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked with a star (★) are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (A-100-000-XX or A-1000-000-K) may be different from those used in the set.

CAPACITORS:

- All capacitors are in pF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:MF, PF:PF.

RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F: nonflammable

The components identified by shading and mark (▲) are critical for safety. Replace only with part number specified.

COILS

- MMH: mH, OH: ΩH

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
R781	1-206-671-00	METAL 2K 5% 2W
R788	1-206-660-00	METAL 680 5% 2W
R789	1-206-660-00	METAL 680 5% 2W
R712	1-206-664-00	METAL 1K 5% 2W
R901	1-244-928-00	CARBON 200K 5% 1/2W
R902	1-247-141-00	CARBON 217K 5% 1/4W
R903	1-246-483-00	RES. CARBON 227K 5% 1/4W
R904	1-246-507-00	RES. CARBON 27K 5% 1/4W
R905	1-246-469-00	RES. CARBON 680 5% 1/4W
R906	1-244-825-00	CARBON 10 5% 1/2W
RV101	1-224-268-XX	RES. ADJ. SOLID 22K
RV151	1-224-253-XX	RES. ADJ. SOLID 22K
RV201	1-224-251-XX	RES. ADJ. SOLID 4.7K
RV251	1-224-261-XX	RES. ADJ. SOLID 4.7K
RV301	1-228-098-00	RES. VAR. CARBON 2K/2K
RV302	1-228-098-00	RES. VAR. CARBON 2K/2K
RV303	1-228-099-00	RES. VAR. CARBON 20K/20K
RV351	1-228-098-00	RES. VAR. CARBON 2K/2K
RV352	1-228-098-00	RES. VAR. CARBON 2K/2K
RV353	1-228-099-00	RES. VAR. CARBON 20K/20K
RV602	1-224-247-XX	RES. ADJ. METAL SLAZE 100
RV603	1-224-248-XX	RES. ADJ. SOLID 470
RV604	1-224-247-XX	RES. ADJ. METAL SLAZE 100
RV605	1-224-248-XX	RES. ADJ. SOLID 470
RY1	1-515-401-00	RELAY
RY7	1-515-401-00	RELAY
RY8	1-515-401-00	RELAY
RY8	1-515-367-00	RELAY
RY9	1-515-401-00	RELAY
S1	1-552-629-00	SWITCH, ROTARY SLIDE
S1	1-552-604-00	SWITCH, SLIDE (REMOTE OPER.)
S2	1-552-592-00	SWITCH, SLIDE (REMOTE TYPE)
S2	1-552-596-00	SWITCH, ROTARY SLIDE
S3	1-552-614-00	SWITCH, PUSH 10 KEYS
S4	1-552-592-00	SWITCH, PUSH 10 KEYS
S4	1-552-597-00	SWITCH, SLIDE (REMOTE TYPE)
S5	1-552-592-00	SWITCH, PUSH 10 KEYS
S6	1-552-592-00	SWITCH, PUSH 10 KEYS
S7	1-552-592-00	SWITCH, PUSH 10 KEYS
S8	1-552-592-00	SWITCH, PUSH 10 KEYS
S9	1-552-592-00	SWITCH, PUSH 10 KEYS
S10	1-552-592-00	SWITCH, PUSH 10 KEYS
S11	1-552-141-00	SWITCH, PUSH 10 KEYS

## ELECTRICAL PARTS

Ref.No.	Part No.	Description
T901	1-543-098-00	CORE
T902	1-543-100-00	CORE
T903	1-447-099-00	TRANSFORMER, CONVERTER
TH701	1-800-427-00	RESISTOR
TY901	1-536-571-00	TERMINAL BOARD, 4P (SPEAKER 2)
TY902	1-536-571-00	TERMINAL BOARD, 4P (SPEAKER 8)
D658	8-719-210-02	10E2
D656	8-719-210-02	1S1555
D657	8-719-210-02	1S1555
D658	8-719-420-21	1T224M
D659	8-719-420-21	1T224M
D660	8-719-420-21	1T224M
D661	8-719-420-21	1T224M
D662	8-719-616-55	1S1555
D663	8-719-616-55	1S1555
D701	8-719-518-55	1S1555
D702	8-719-518-55	1S1555
D703	8-719-534-55	EC201 55
D704	8-719-810-55	HZ3421
D901	8-719-815-55	1S1555
D902	8-719-815-55	1S1555
D903	8-719-300-22	CTU22U
D904	8-719-300-22	CTU22U
D905	8-719-210-12	10DF2
D906	8-719-210-12	10DF2
D907	8-719-210-12	10DF2
D908	8-719-210-12	10DF2
D951	8-719-230-24	30DL4FA
D952	8-719-230-24	30DL4FA
D953	8-719-230-24	30DL4FA
D954	8-719-230-24	30DL4FA

### NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked "♦" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (A-AAA-AAA-XX or A-AAA-AAA-X) may be different from those used in the set.

### CAPACITORS:

- All capacitors are in  $\mu F$ . Common capacitors are omitted. Refer to the following lists for their part numbers. MF10F, PF10F.

### RESISTORS

- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.

- F : nonflammable

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

### COILS

- MMH : mH, JH :  $\mu H$

1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		