IA-1000

HITACHI
Hitachi, Ltd. Tokyo Japan

HITACHI HI-FI COMPONENT PRE-MAIN AMPLIFIER

MODEL IA-1000

SERVICE MANUAL

No. 35 1971

1. SPECIFICATIONS

Type: ..... Solid State Stereo Amplifier
Circuit system: .... Sub-Complementary SEPP constant current drive system OTL circuitry
Semi-conductor: ..... IC: 2
Transistor: 36
Diode: 18
Music power (IHF): 140W (8Ω)
Practical output: 55/55W (8Ω)
Rate of all higher harmonic distortion: 0.5%
Frequency characteristic: 20Hz–80kHz
(only Main Amplifier)
Input sensitivity:
(at an output 1kHz, 40W)
* The numerals in parentheses show input impedances.

PHONO-1	MC	0.25mV (200Ω)
	MM	2mV (50kΩ)
PHONO-2		5mV (50kΩ)
MIC		2mV (35kΩ)
TUNER		140mV (100kΩ)
AUX-1, 2		140mV (100kΩ)
TAPE IN (Pin jack)		140mV (100kΩ)
TAPE IN (DIN)		500mV (100kΩ)

Recording output (at a rating output):

TAPE OUT (Pin jack)	140mV
TAPE OUT (DIN)	40mV

Center channel output: ..... 2.5V (at both channel outputs)
Channel separation:

PHONO-1, 2	More than 50dB
TUNER · AUX	More than 50dB

Signal-to-noise ratio (IHF):

PHONO-1	(MC) 60dB, (MM) 65dB
PHONO-2	70dB
TUNER AUX	85dB

Most suitable loading impedance: 4–16Ω
Damping factor: 50 (8Ω)
Equalizer characteristic: ..... RIAA ±0.5dB
Bass control ..... ±12dB (100Hz)
Treble control: ..... ±12dB (10kHz)
Loudness control (Volume–30dB): +10dB (50Hz), +4dB (10kHz)
Hi-filter (12dB/oct): ..... –10dB (10kHz)
Low filter (12dB/oct): ..... –8dB (50Hz)
Rating power consumption: 120V/60Hz 120W
(for U.S.A. standard)
120V/60Hz 87W
(for Canada standard)
220V, 50/60Hz 120W
240V, 50/60Hz 120W
Cabinet dimensions: ..... 446 (W) × 137 (H) × 330 (D) mm
(17-5/8 × 5-3/8 × 13 in)
Weight: ..... 12.6kg (27.8 lbs.)
Accessory devices: ..... VU meter, Microphone mixing circuitry, Loudness switch, Hi-filter switch, Low filter switch, Tape monitoring switch, DIN connector, Headphone jack, PHONO input sensitivity change-over switch, AC auxiliary power, Speaker change-over switch, Center channel output terminal, Pre-amp. output terminal, Main amp. input terminal.

2. FEATURES

1. Noise has been reduced to the minimum and S/N (Signal-to-Noise) ratio has been further improved by the adoption of Hitachi's high-performance, low-noise type hybrid IC (Integrated Circuits) in the equalizer section.
2. Since the tone control uses the NF type step-system, clear tone effect can be enjoyed.
3. Complementary ITL, OTL circuits of constant current drive system and Hitachi high-performance silicone transistors have realized the lowest distortion and minimum noise.
4. Since an amplifier for the exclusive use of a microphone is built-in, mixing with other program source is possible. Therefore, this model is very convenient for singing songs with background of some records or commenting on record concerts.
5. This amplifier can be used without any input transformer, because the head amplifier for MC (Moving Coil) type cartridge has been installed in the amplifier.
6. It is possible to use this model for various purposes, because the IA-1000 is equipped with a pre-main detachable terminal.
7. Using the center-channel output terminal makes it possible to utilize this model as a center woofer system.
8. An electronic protection circuit is adopted for safety use.
9. The one-touch system of speaker connection terminal makes speaker connection easier.
10. The VU meter built-in is convenient for output and balance ascertainment.

3. FRONT AND REAR PANEL

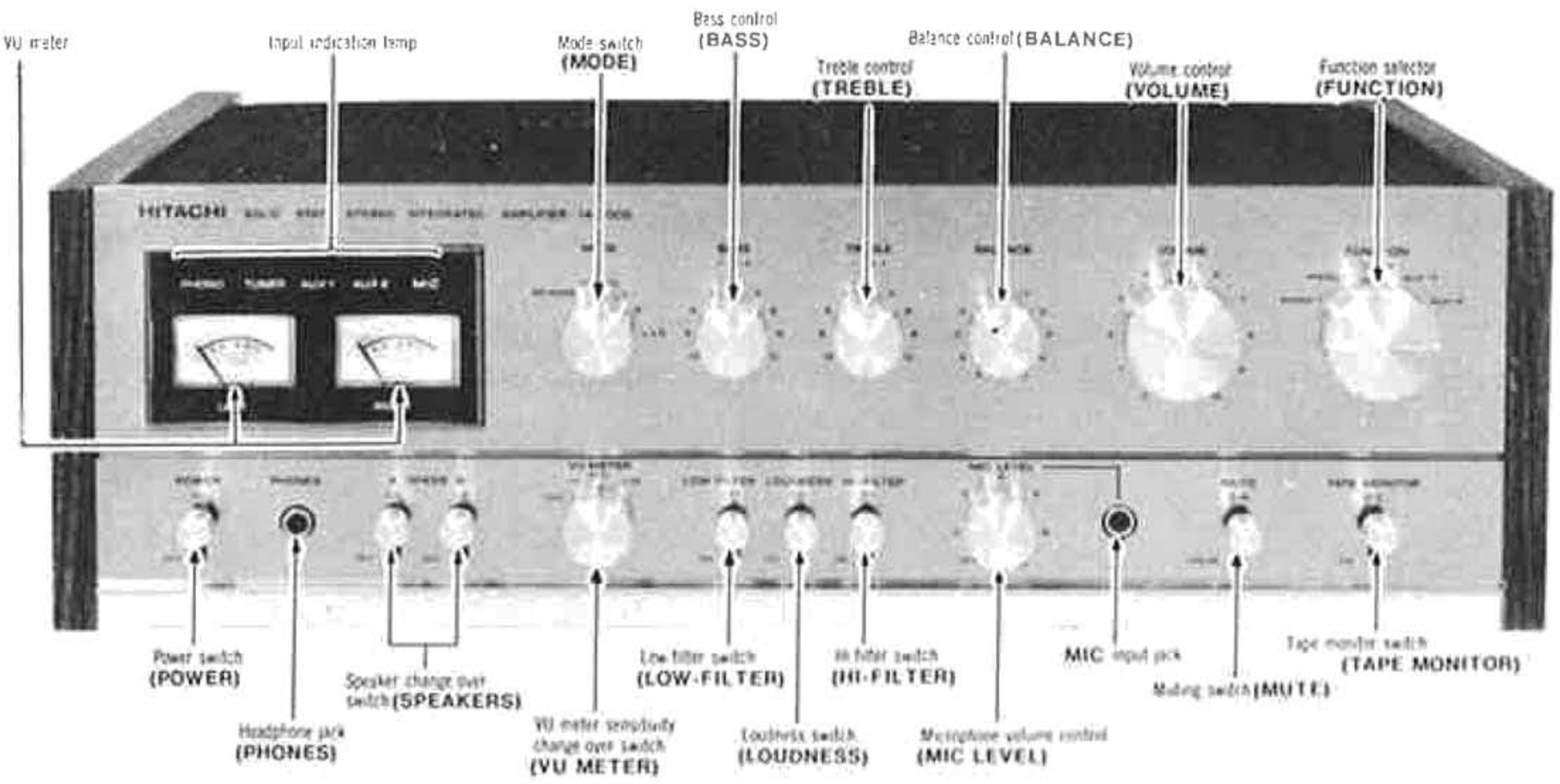


Fig. 1 FRONT PANEL

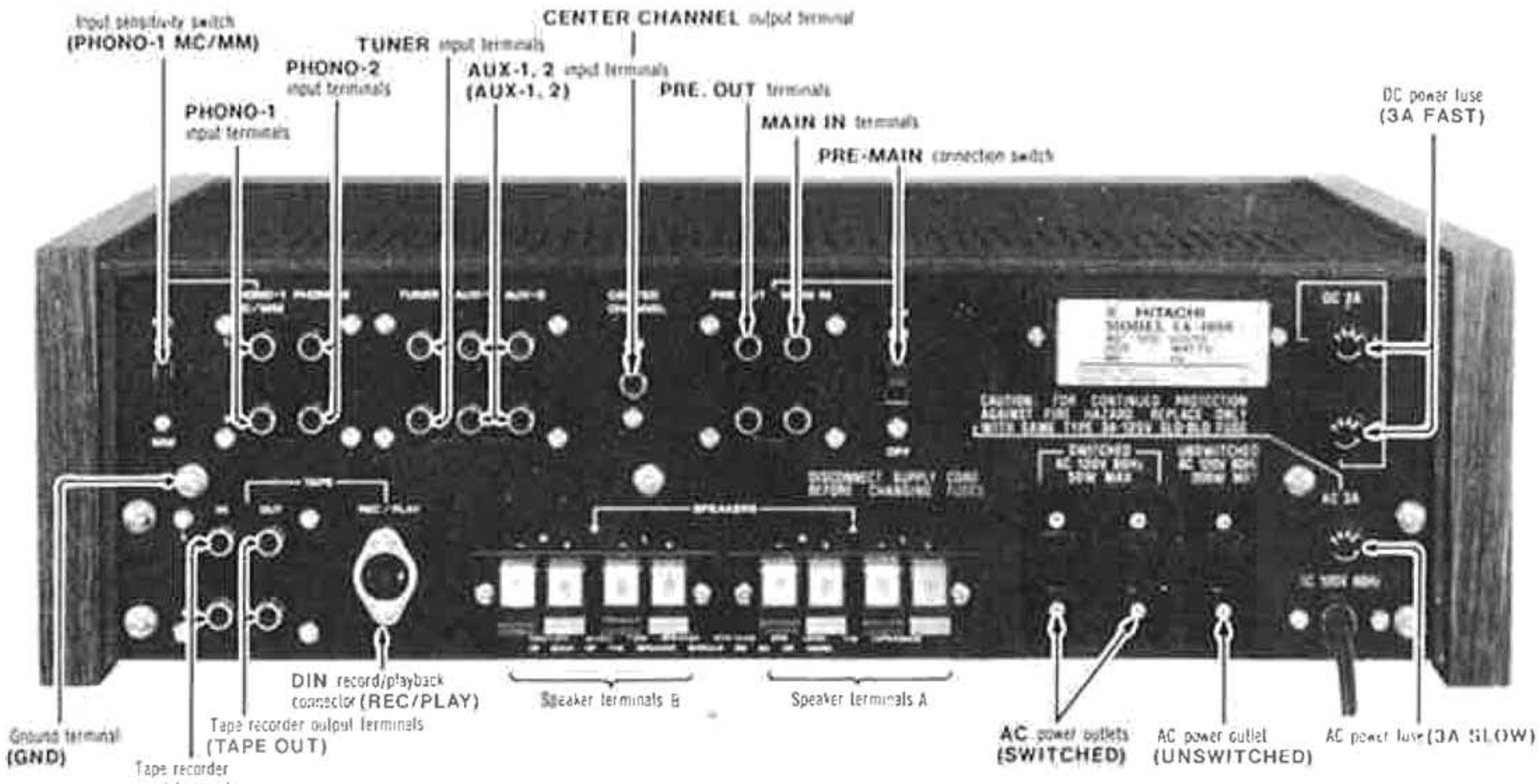


Fig. 2 REAR PANEL

4. SERVICE POINT

4-1 How to inspect the IC circuitry

The hybrid type IC adopted in this model is for an amplification of small signal.

The inside circuitry is, as shown in the circuit diagram on page 13, the same as the 2-stage amplification of an ordinary transistor.

At the time of servicing a set, we can find out damaged IC, as we always do on ordinary transistors, by inspecting each voltage of collector, emitter and base.

The following list shows the standard voltage value of each terminal at the time when IC operates normally.

In case that each terminal voltage value is remarkably different from each standard voltage value, we can consider that the IC has undergone some damage.

In this case, it is recommended to replace it with a new one.

The standard voltage in the following list have been measured by the use of a VTVM (Vacuum Tube Volt Meter) which has higher input impedance. If a tester is used to measure each voltage, values a little lower than these can be obtained.

IC TERMINAL NO. (The same as the seal No. on the Printed Circuit Board)		STANDARD VOLTAGE VALUE
①	1st stage collector voltage	2.4V
② INPUT TERMINAL	1st stage base voltage	0.85V
③	1st stage emitter voltage	0.23V
④ GROUND LEAD TERMINAL		0V
⑤	2nd stage emitter voltage	1.7V
⑥ OUTPUT TERMINAL	2nd stage collector voltage	14.0V
⑦ + POWER SOURCE TERMINAL		25.0V

4-2 Adjustment of Current

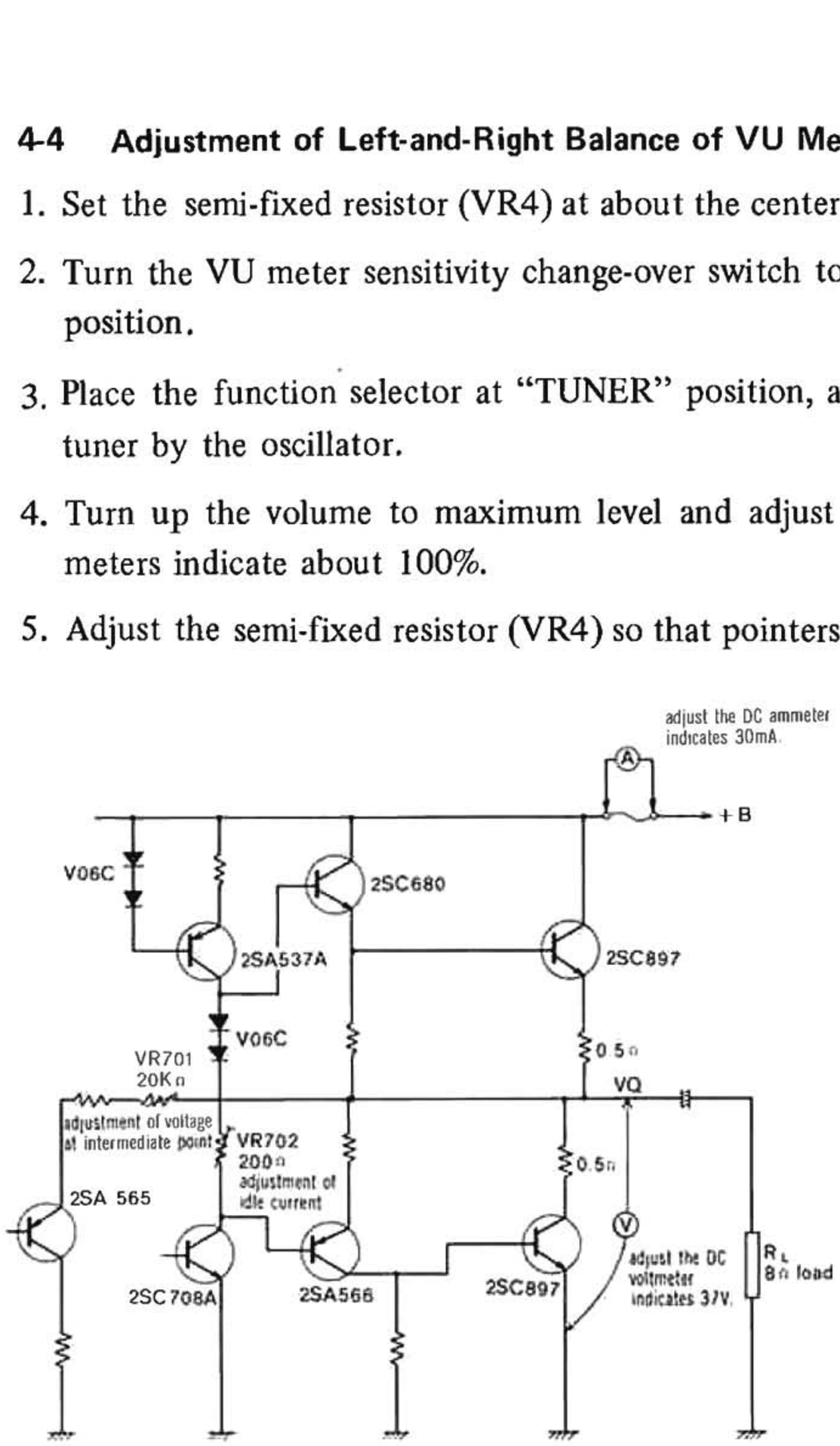
1. Adjustment of current can be made in the manner identical to conventional method. It will be convenient to use the fuse holder terminals for DC ammeter.
   That is, remove the fuse and connect the DC ammeter between terminals of fuse holder. (See Fig. 3)
2. Then adjust the semi-fixed resistor (VR702) so that the DC ammeter indicates 30mA.
3. Make this adjustment when the meter indication is stabilized about 5 minutes after the switch is turned on.

4-3 Adjustment of Voltage at Intermediate Point

1. Connect positive (+) side of the DC voltmeter to positive (+) side of electrolytic capacitor C7, and connect negative (–) side of the DC voltmeter to chassis. (See Fig. 3)
2. Adjust the semi-fixed resistor (VR701) so that the DC voltmeter indicates 37V.

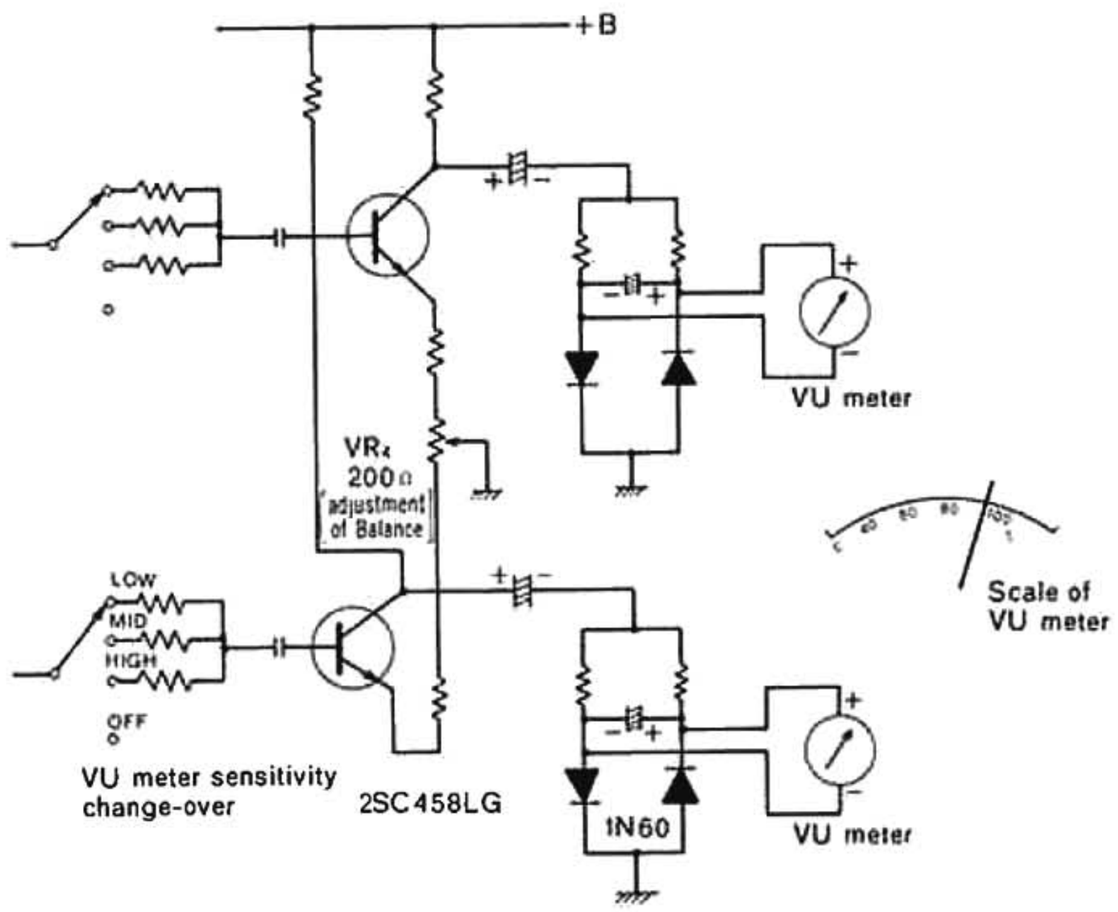
4-4 Adjustment of Left-and-Right Balance of VU Meter (See Fig. 4)

1. Set the semi-fixed resistor (VR4) at about the center.
2. Turn the VU meter sensitivity change-over switch to "LOW" position and set the mode switch to "L + R" position.
3. Place the function selector at "TUNER" position, and add sine wave of 1 kHz to the input terminal of the tuner by the oscillator.
4. Turn up the volume to maximum level and adjust the output voltage of the oscillator so that both VU meters indicate about 100%.
5. Adjust the semi-fixed resistor (VR4) so that pointers of both VU meters deviate to the identical extent.



Adjustment of current and voltage at intermediate points

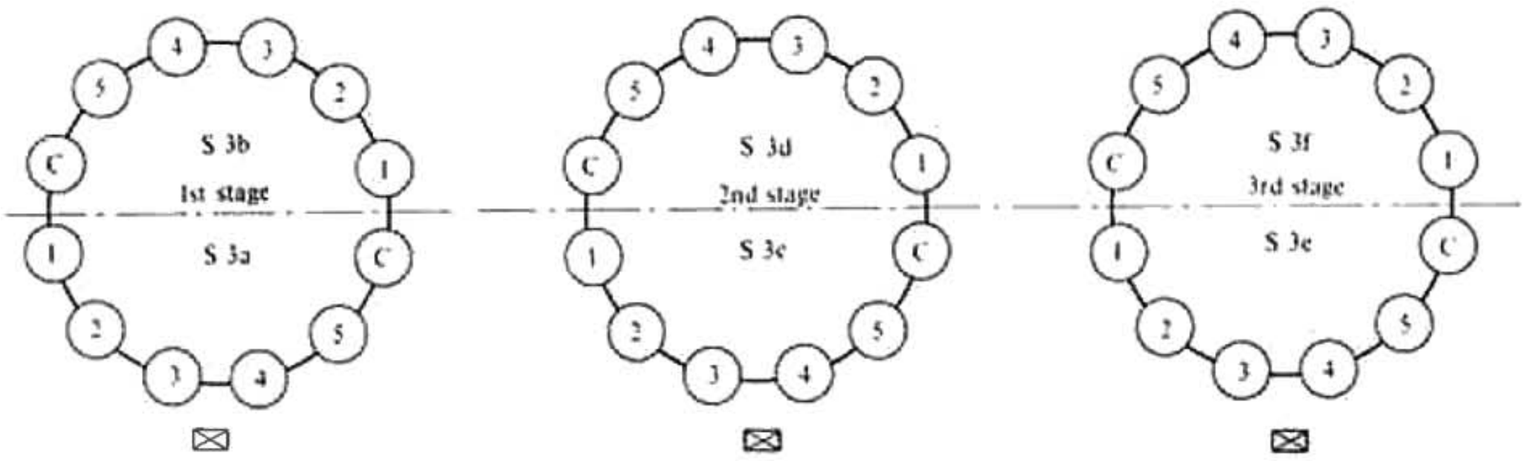
Fig. 3



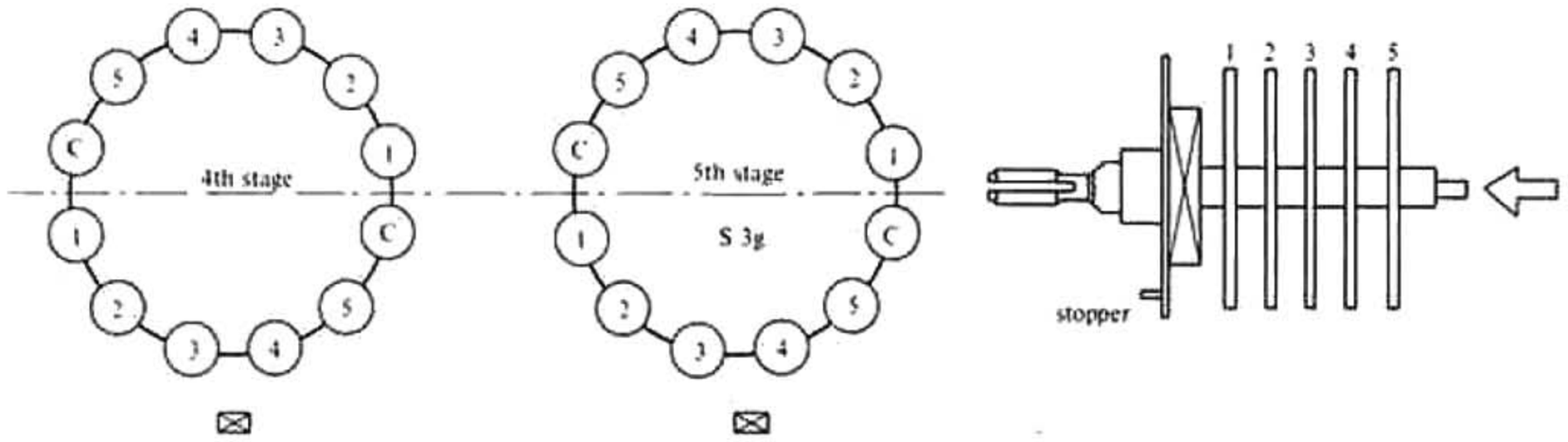
VU amplifier circuit

Fig. 4

4-5 Arrangement of rotary switch's terminals

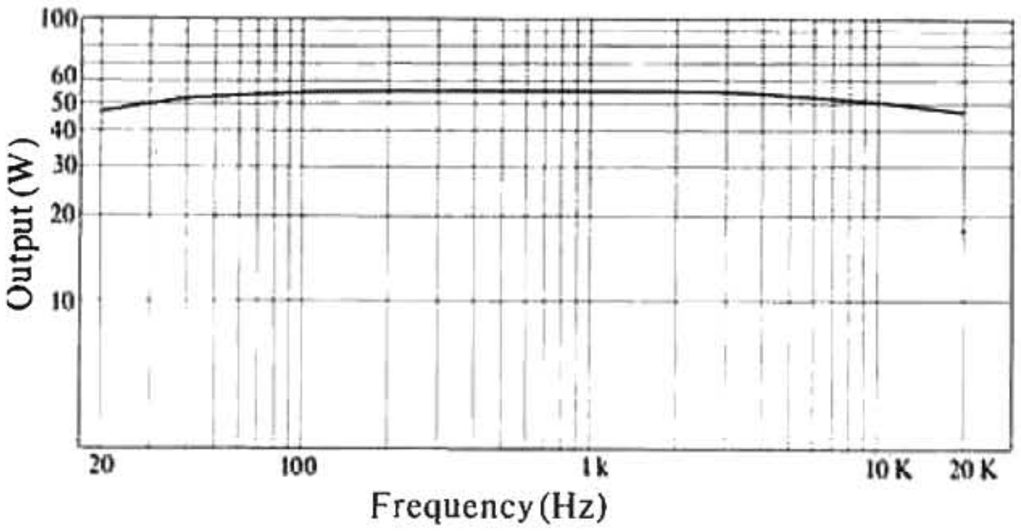


This figure shows a rotary switch viewed from its rear (arrow mark).
C implies COMMON, and ⊠ implies the position of a stopper.

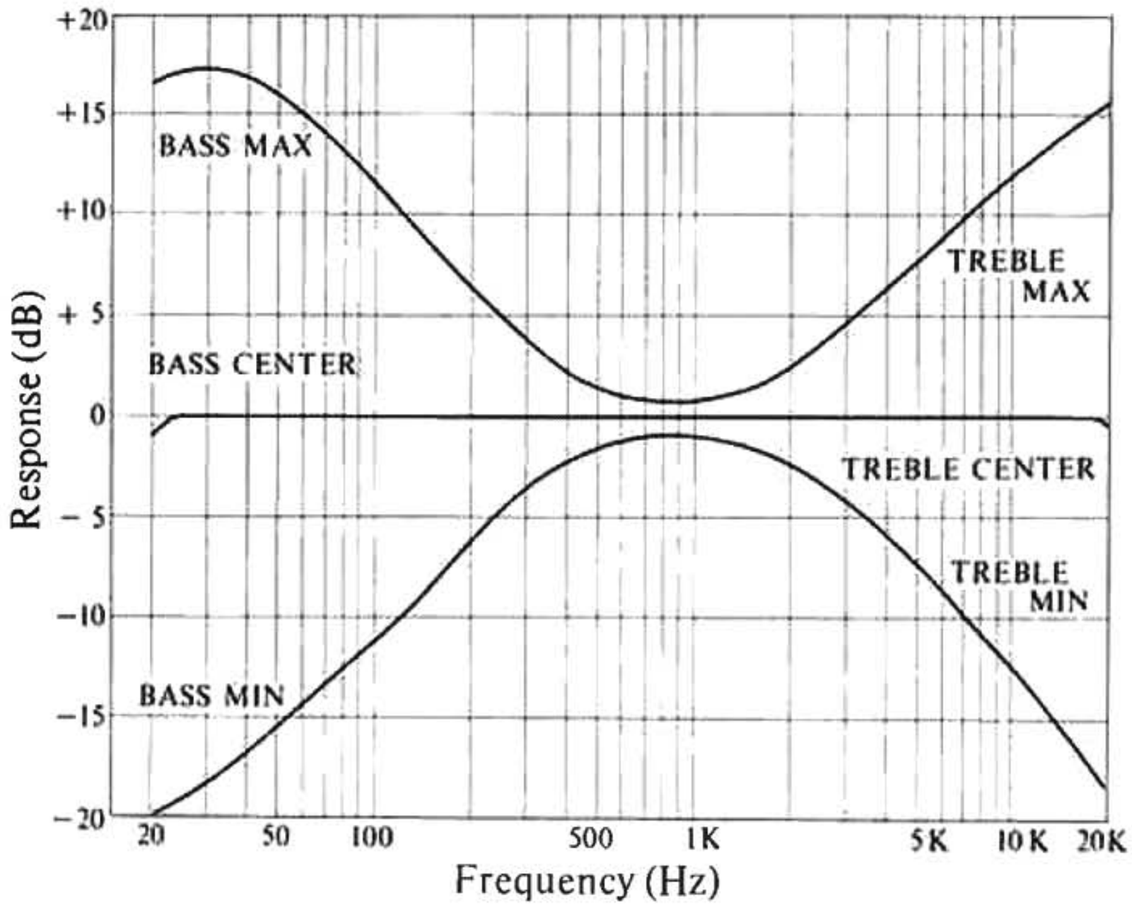


5. CHARACTERISTICS

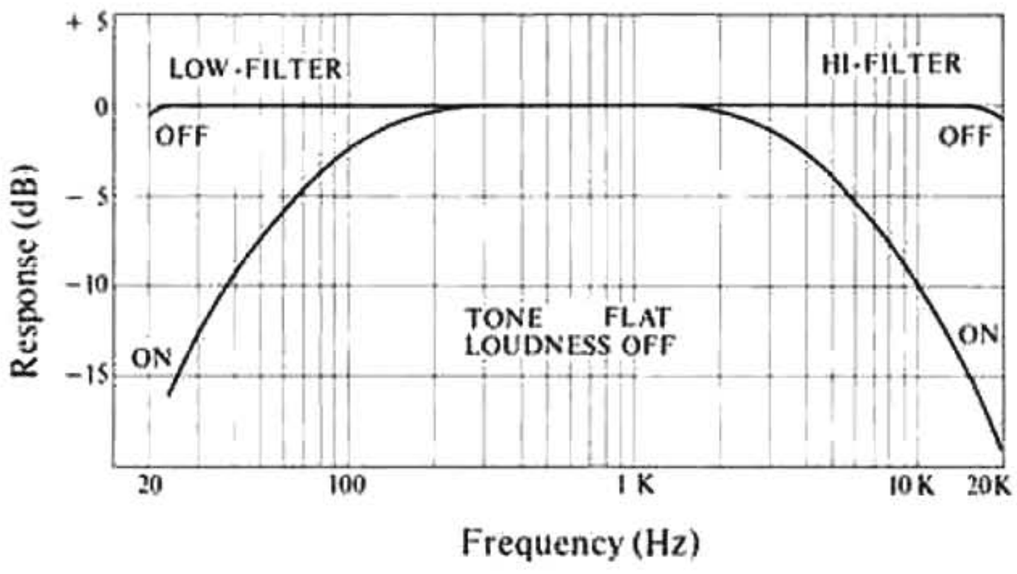
POWER BAND WIDTH
INPUT: TUNER
DISTORTION RATE : 0.5% constant



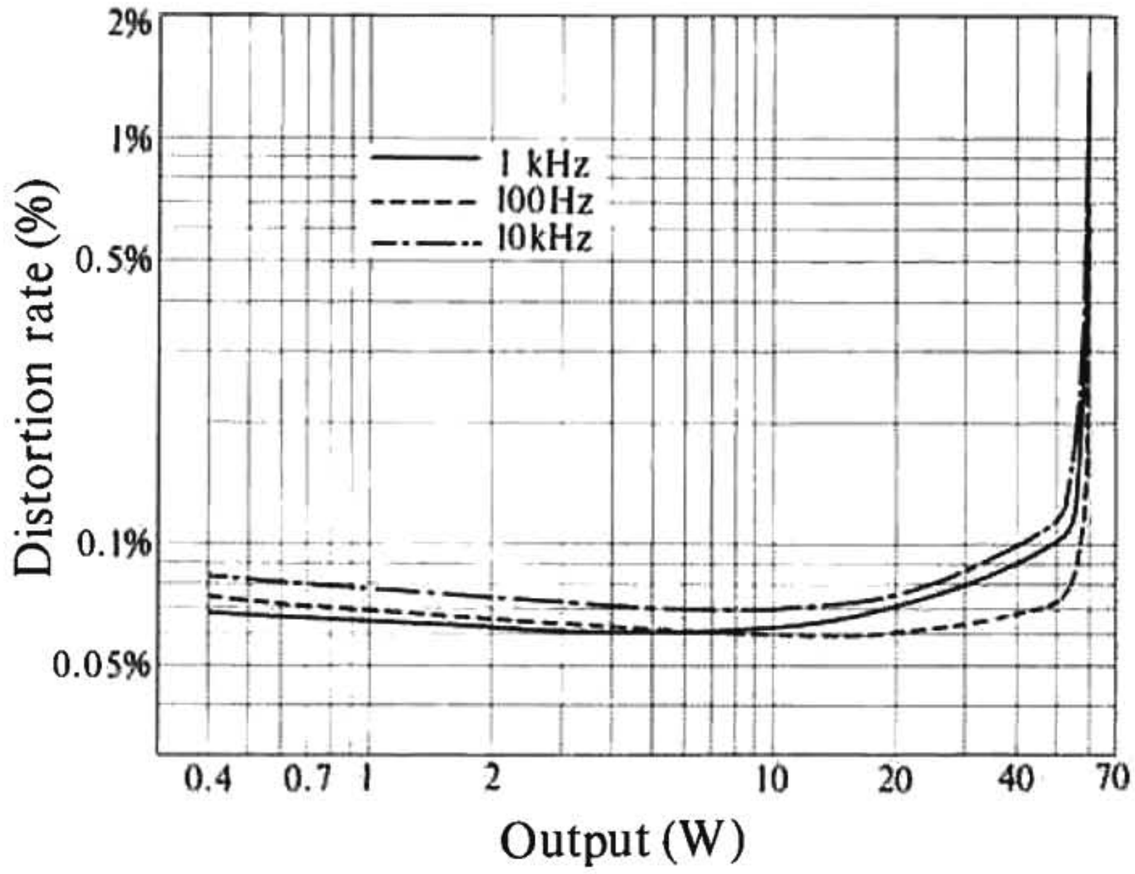
FREQUENCY CHARACTERISTIC
TONE CONTROL CHARACTERISTIC



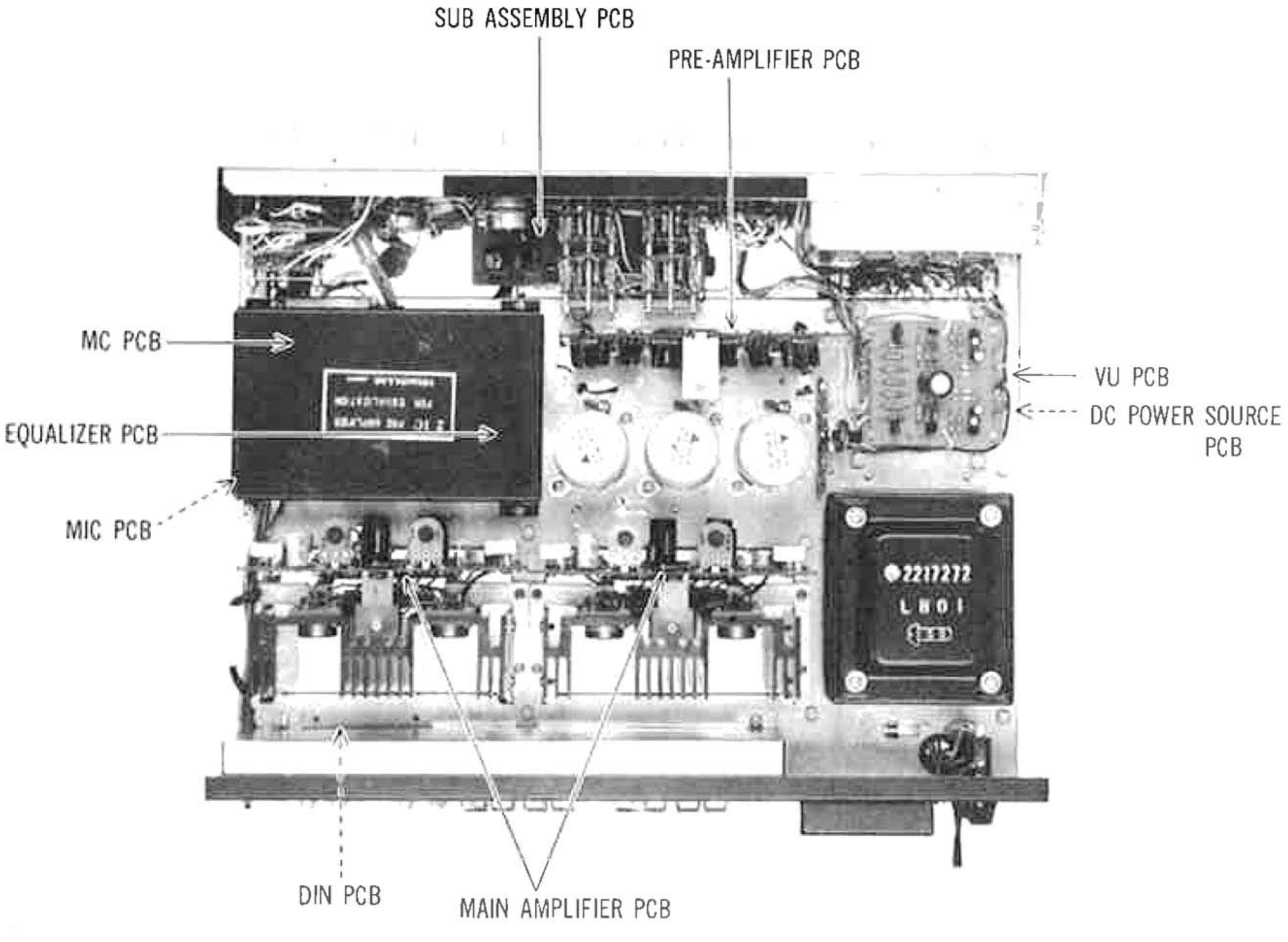
FILTER CHARACTERISTIC



OUTPUT–AND–DISTORTION RATE

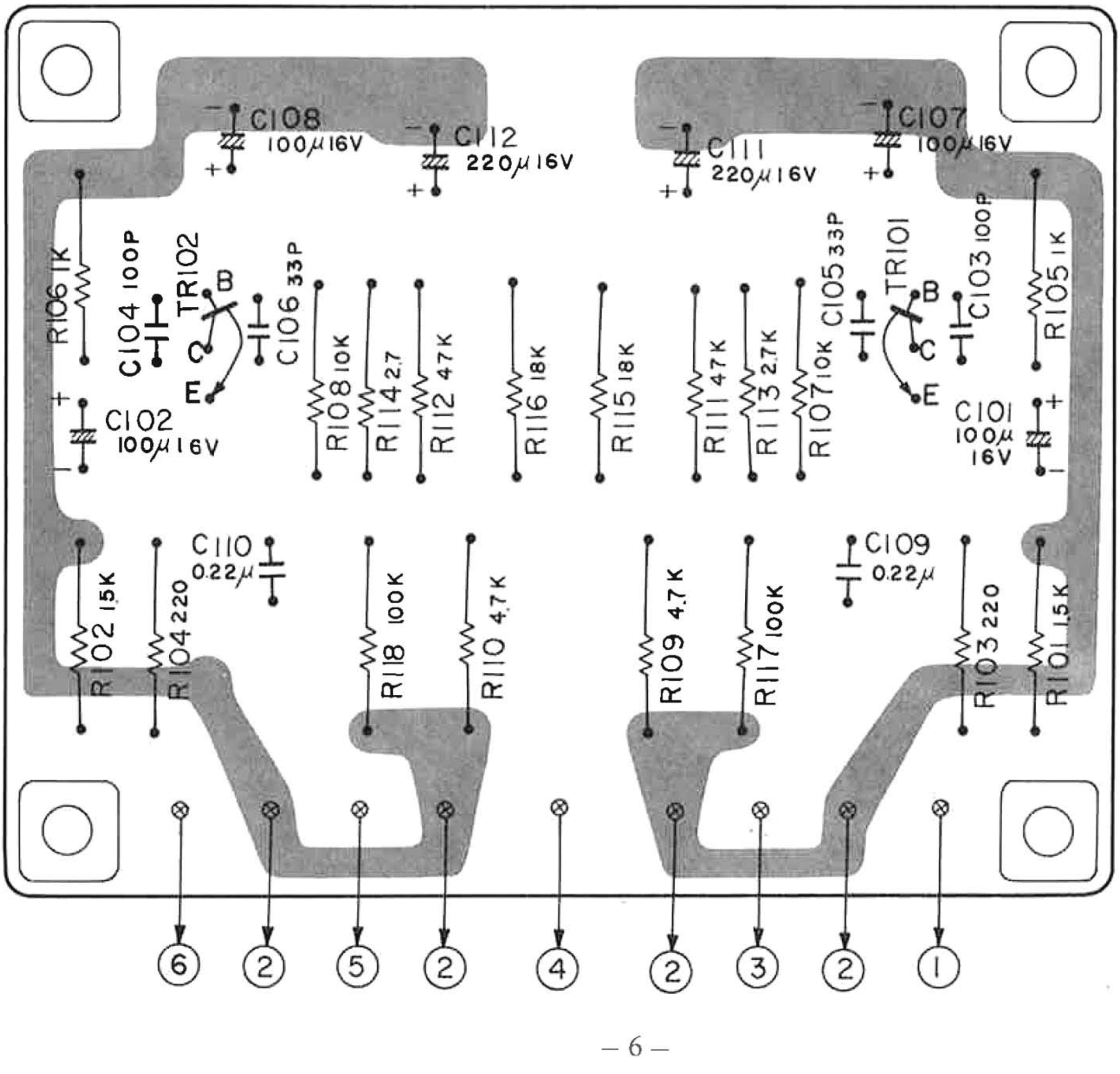


6. CHASSIS LAYOUT

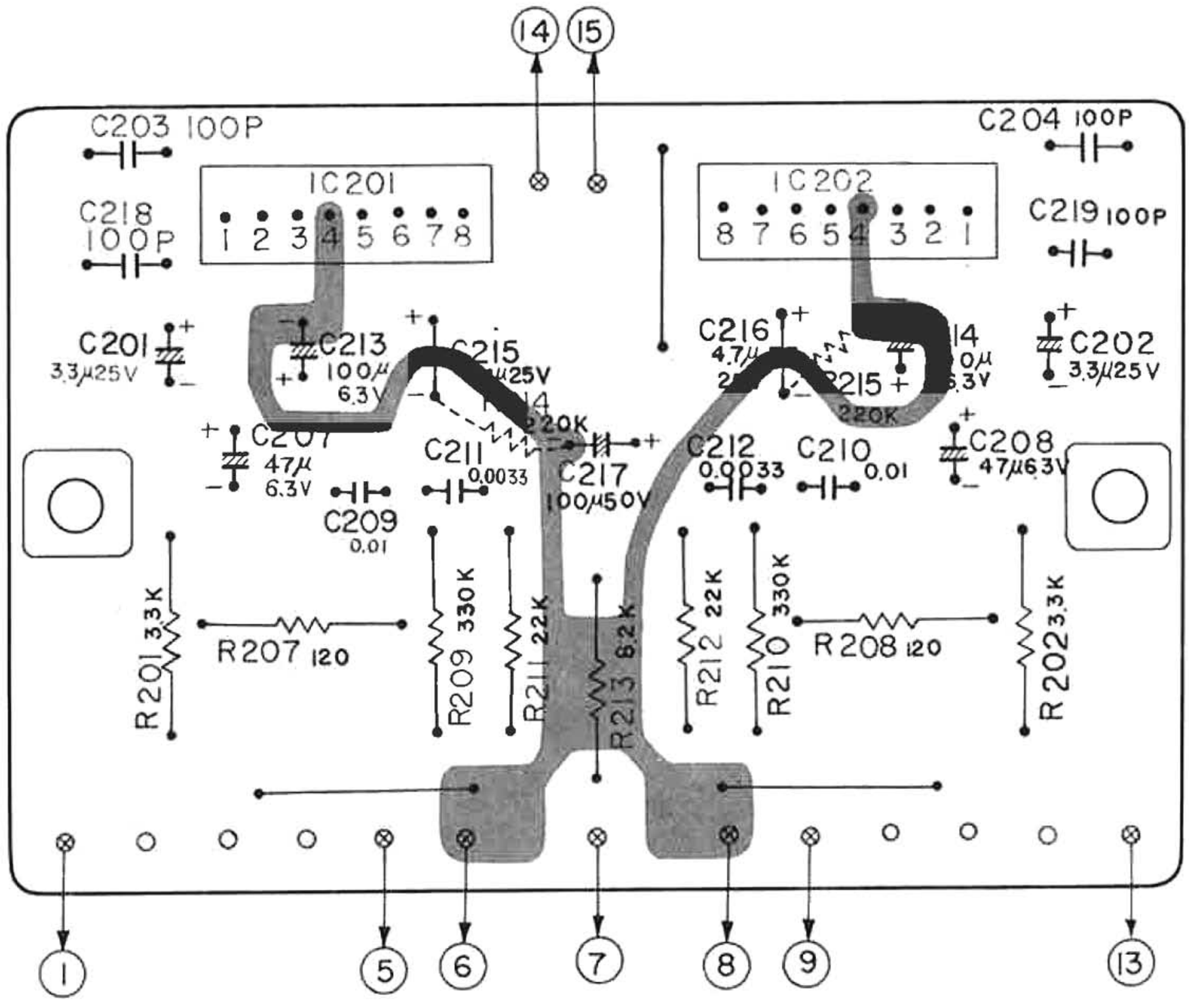


7. CIRCUIT BOARD

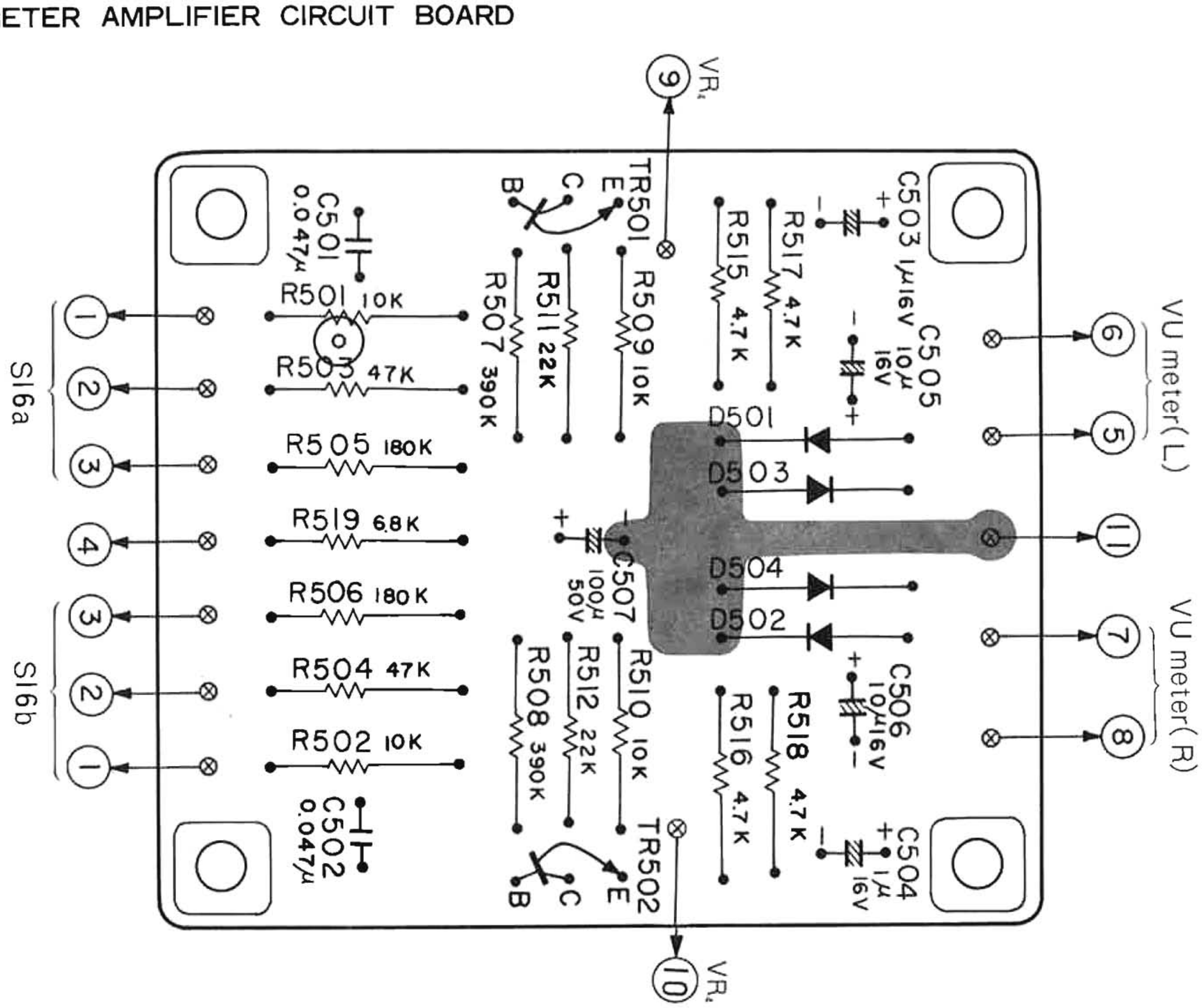
MC CIRCUIT BOARD



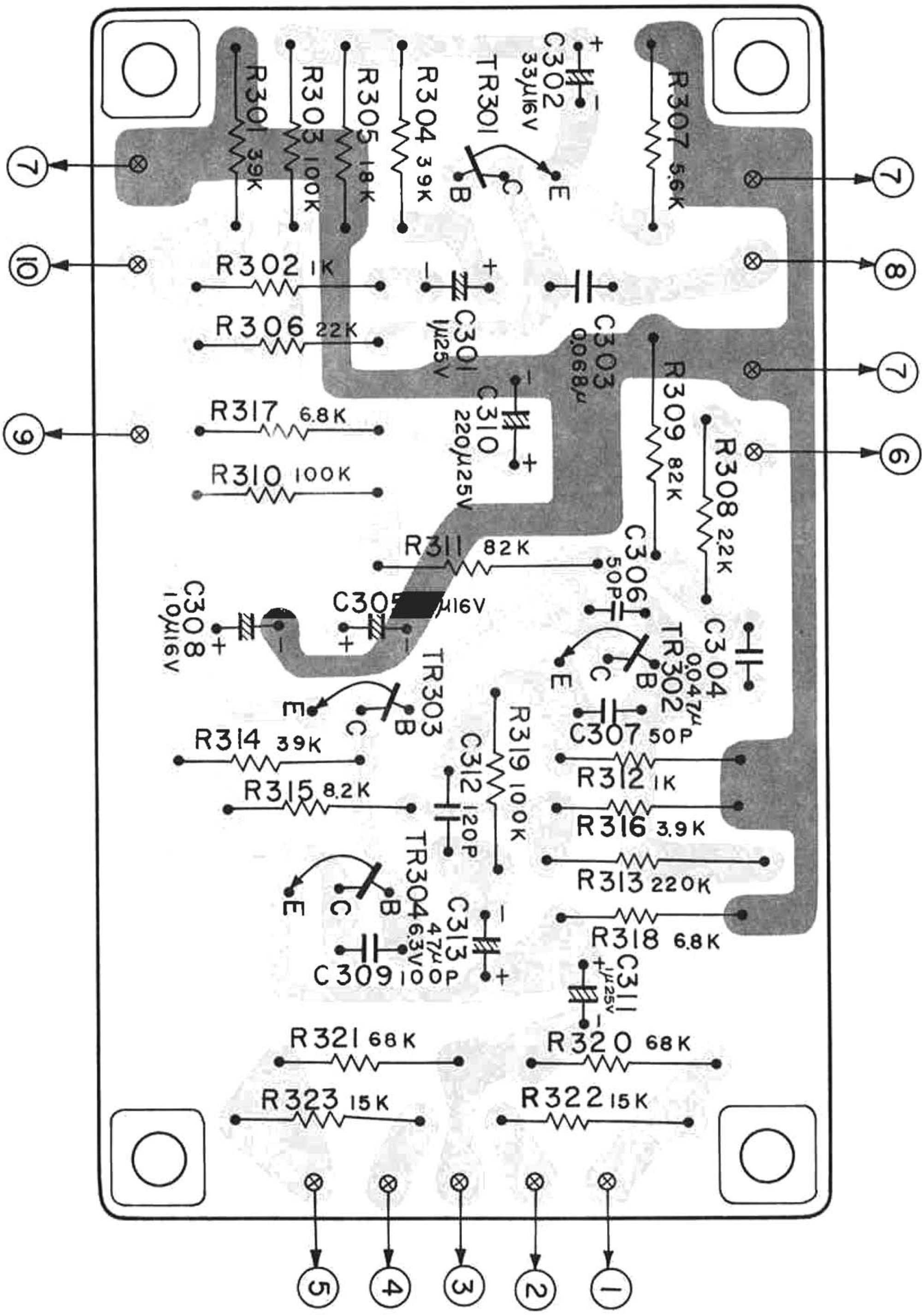
EQUALIZER CIRCUIT BOARD



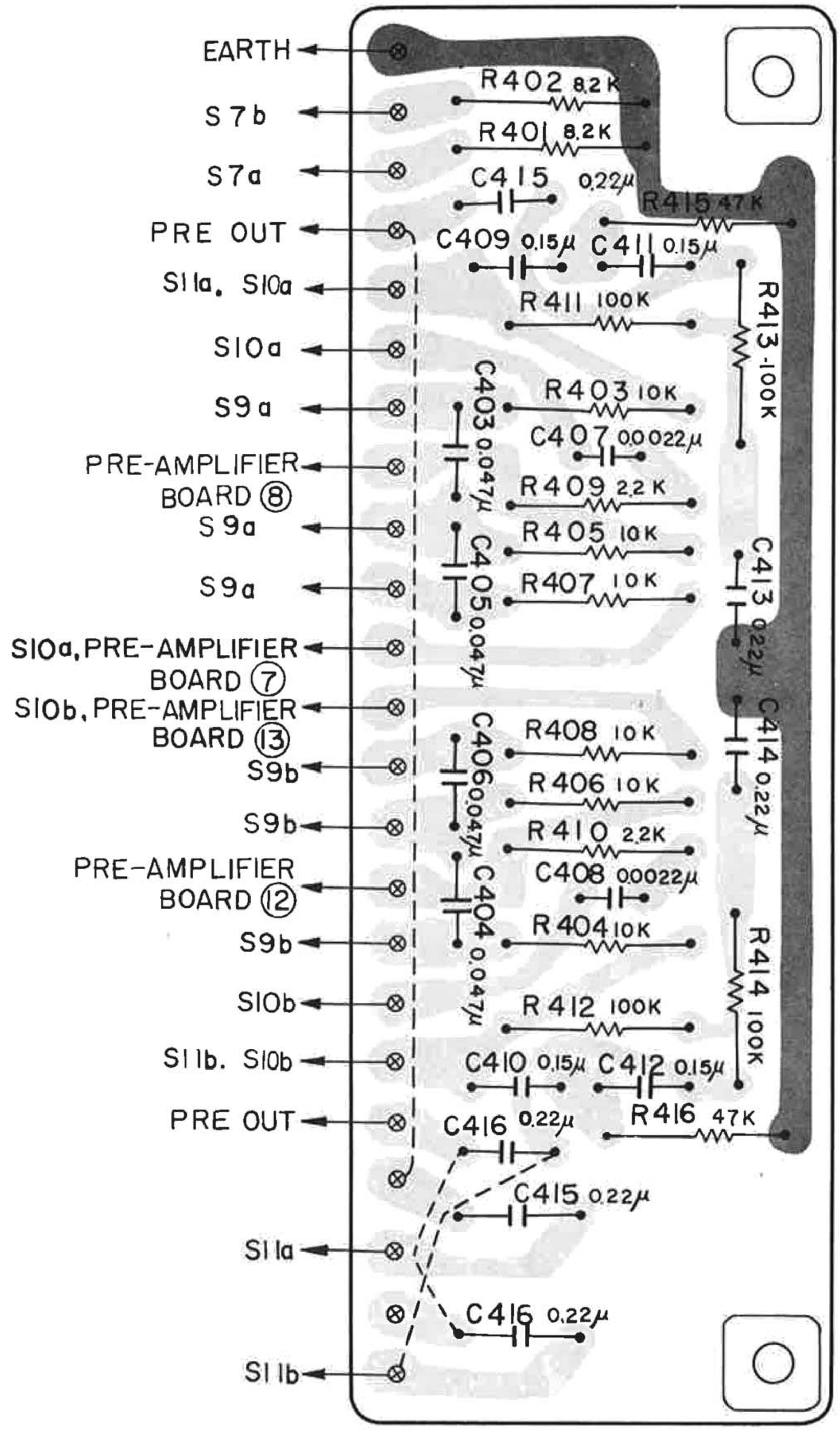
VU METER AMPLIFIER CIRCUIT BOARD



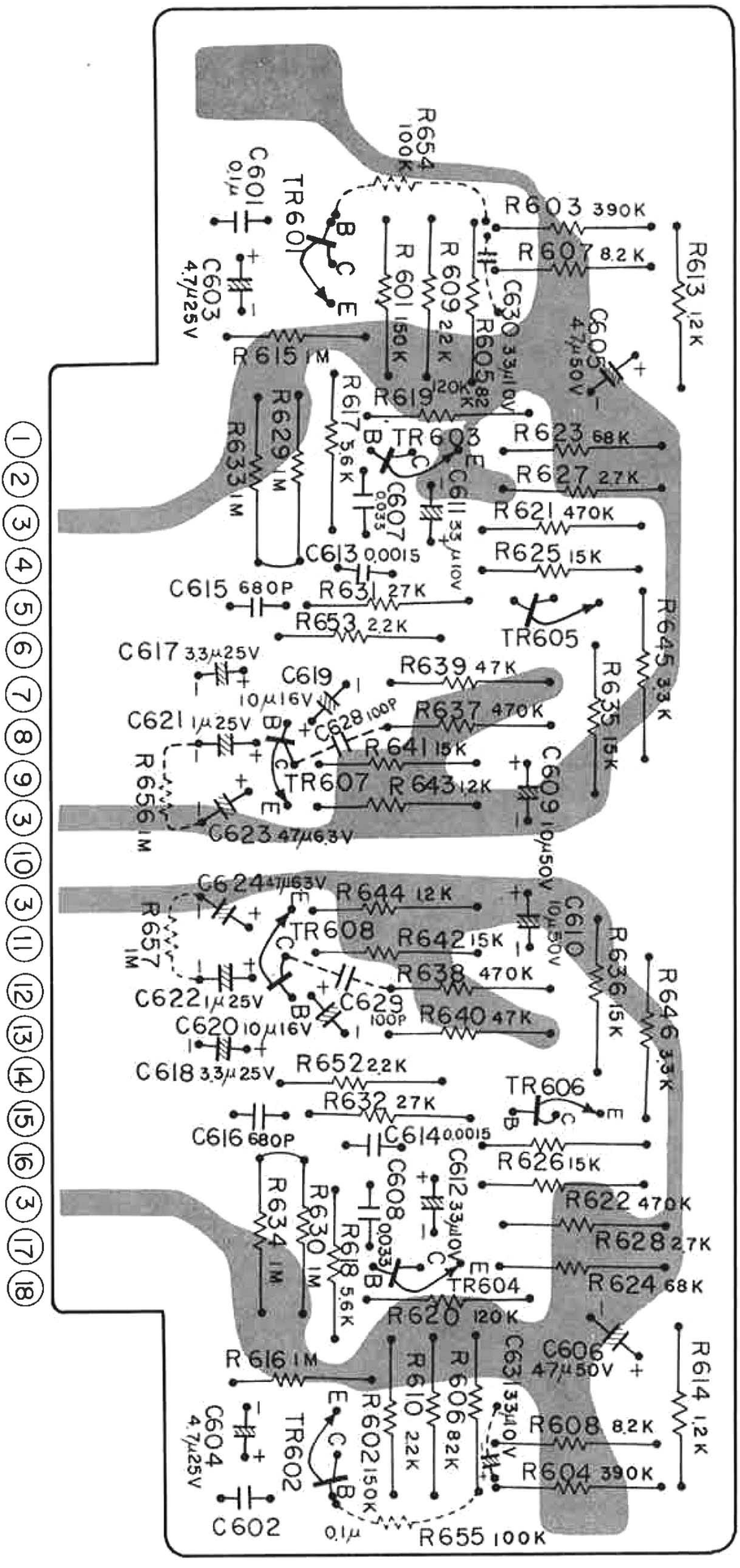
IC AMPLIFIER CIRCUIT BOARD



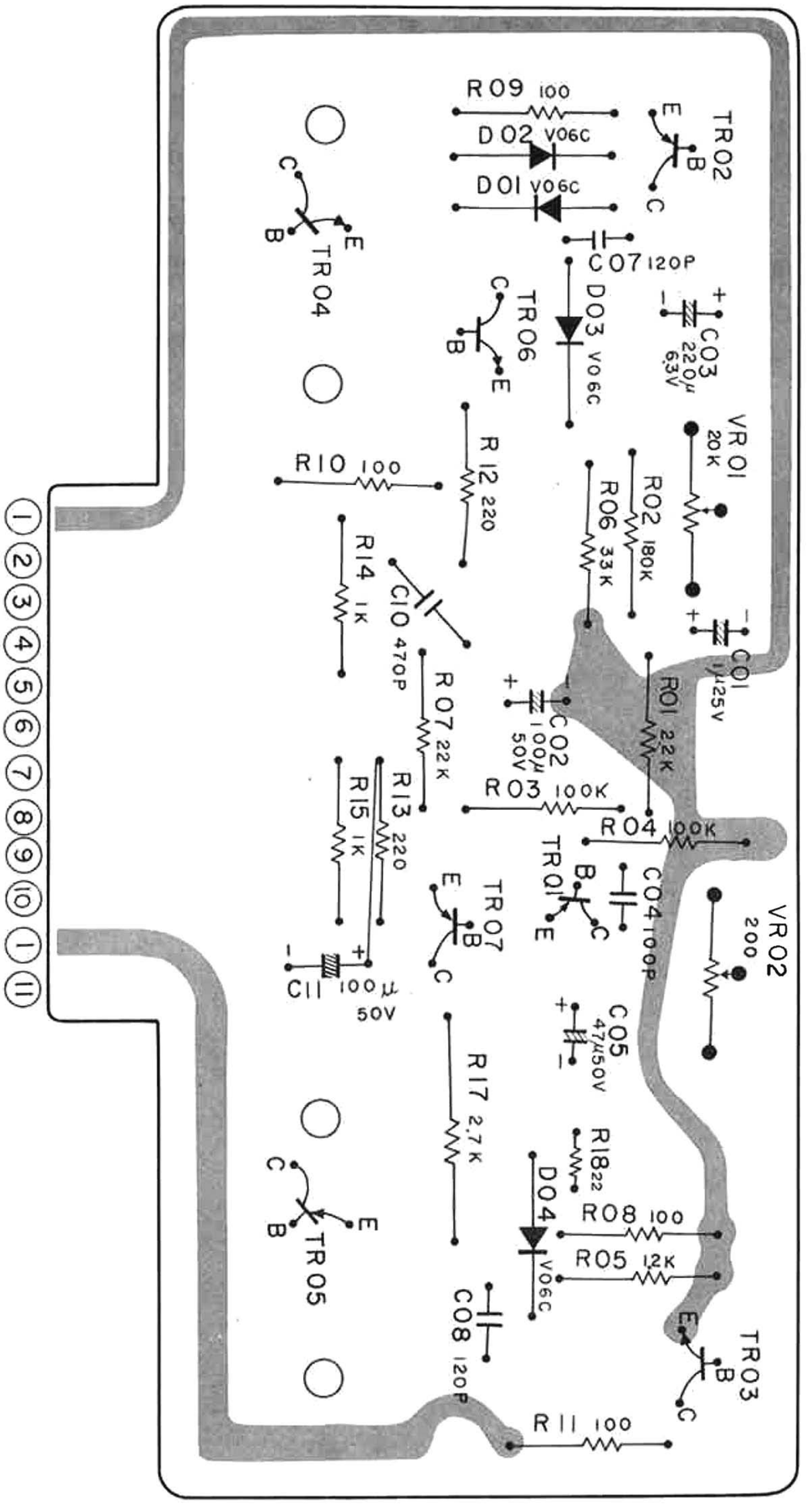
SUB ASSEMBLY CIRCUIT BOARD



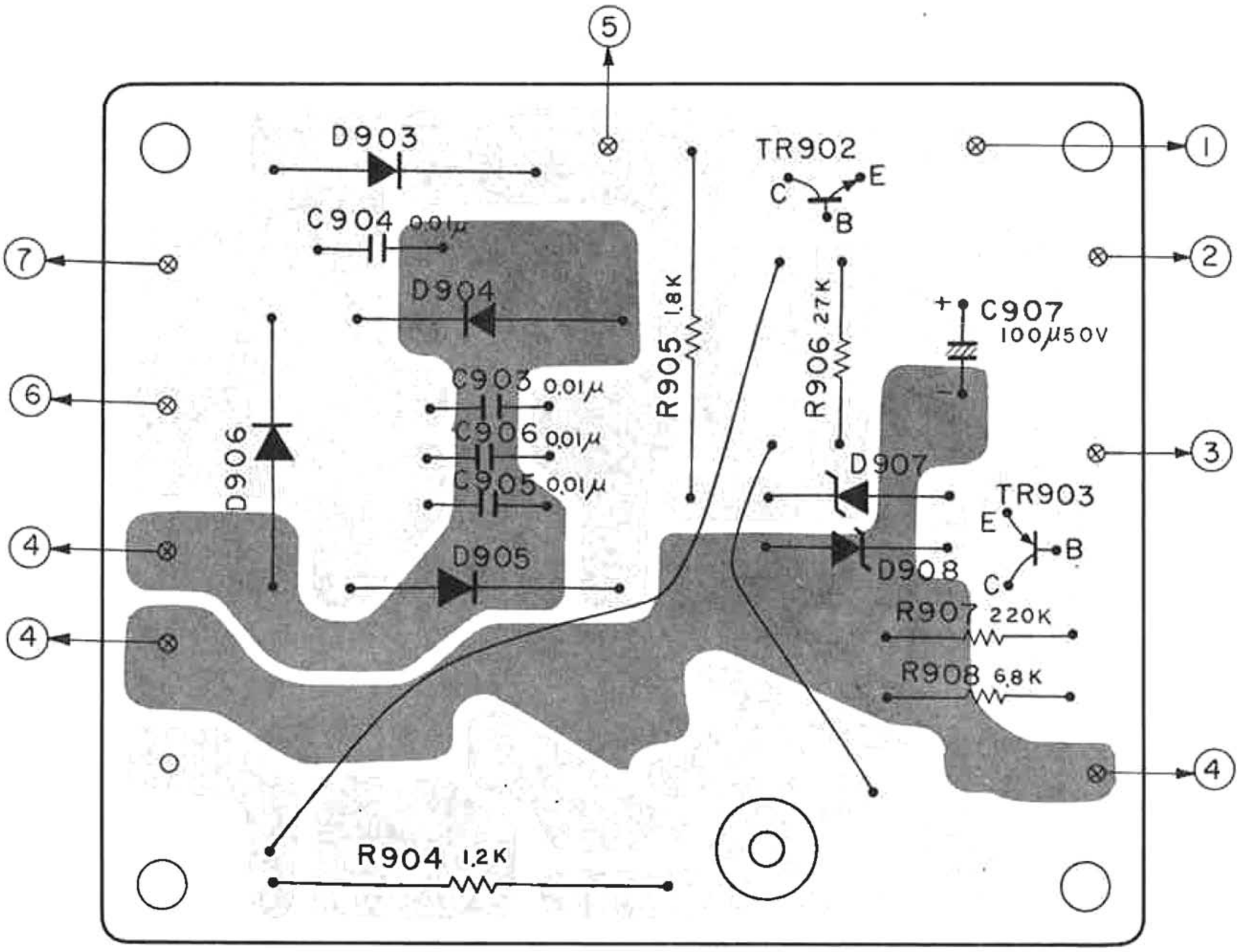
PRE-AMPLIFIER CIRCUIT BOARD



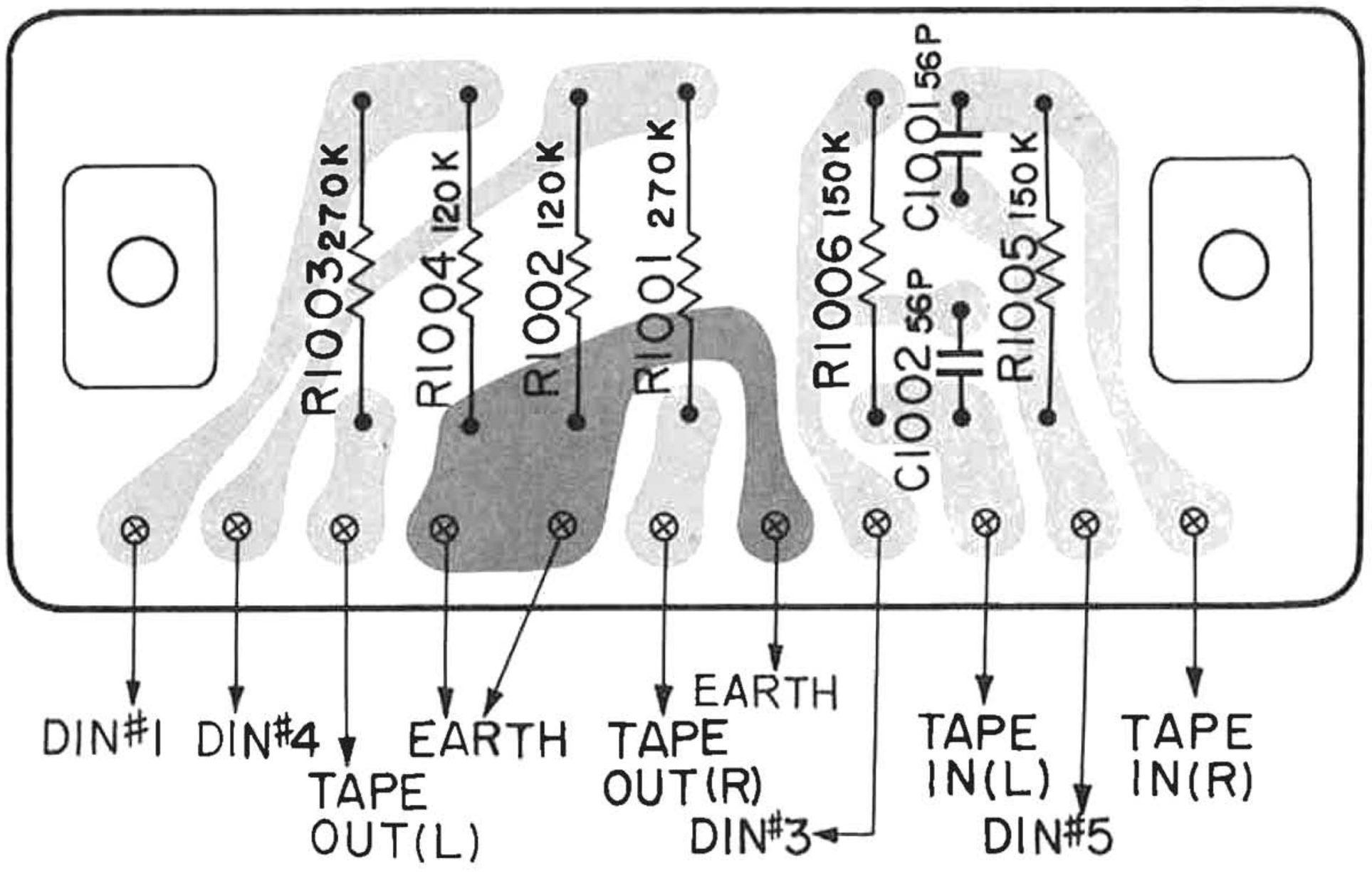
MAIN AMPLIFIER CIRCUIT BOARD



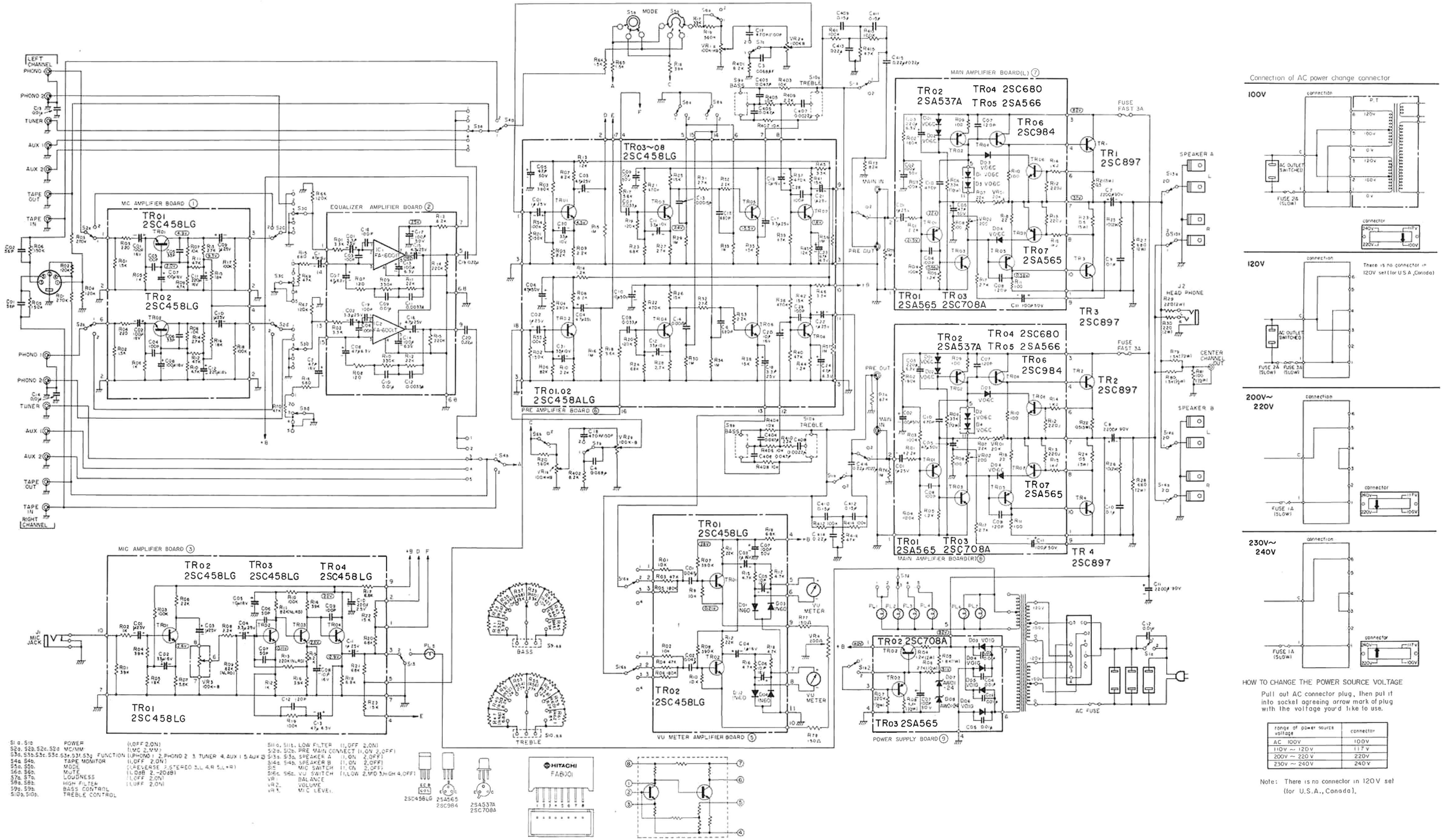
DC POWER SOURCE CIRCUIT BOARD



DIN CIRCUIT BOARD



8. CIRCUIT DIAGRAM



Connection of AC power change connector

HOW TO CHANGE THE POWER SOURCE VOLTAGE

Pull out AC connector plug, then put it into socket agreeing arrow mark of plug with the voltage you'd like to use.

range of power source voltage	connector
AC 100V	100V
110V ~ 120V	117V
200V ~ 220V	220V
230V ~ 240V	240V

Note: There is no connector in 120V set (for U.S.A., Canada).

9. REPLACEMENT PARTS LIST

SYMBOL NO.	STOCK NO.	DESCRIPTION			
CAPACITORS					
for MC CIRCUIT BOARD					
C101	0252531	electrolytic	100μF		16V
C102	0252531	electrolytic	100μF		16V
C103	0248724	ceramic, discal	100pF	K	
C104	0248724	ceramic, discal	100pF	K	
C105	0248712	ceramic, discal	33pF	K	
C106	0248712	ceramic, discal	33pF	K	
C107	0252531	electrolytic	100μF		16V
C108	0252531	electrolytic	100μF		16V
C109	0276013	mylar, film	0.22μF	K	
C110	0276013	mylar, film	0.22μF	K	
C111	0252532	electrolytic	220μF		16V
C112	0252532	electrolytic	220μF		16V
for EQUALIZER CIRCUIT BOARD					
C201	0252613	electrolytic	3.3μF		25V
C202	0252613	electrolytic	3.3μF		25V
C203	0248724	ceramic, discal	100pF	K	
C204	0248724	ceramic, discal	100pF	K	
C207	0252225	electrolytic	47μF		6.3V
C208	0252225	electrolytic	47μF		6.3V
C209	0275011	mylar,film	0.01μF	K	
C210	0275011	mylar, film	0.01μF	K	
C211	0274014	mylar, film	0.0033μF	K	
C212	0274014	mylar, film	0.0033μF	K	
C213	0252231	electrolytic	100μF		6.3V
C214	0252231	electrolytic	100μF		6.3V
C215	0252615	electrolytic	4.7μF		25V
C216	0252615	electrolytic	4.7μF		25V
C217	0252831	electrolytic	100μF		50V
C218	0248724	ceramic, discal	100pF	K	
C219	0248724	ceramic, discal	100pF	K	
for MIC AMPLIFIER CIRCUIT BOARD					
C301	0252611	electrolytic	1μF		25V
C302	0252523	electrolytic	33μF		16V
C303	0275016	mylar, film	0.068μF	K	
C304	0275015	mylar, film	0.047μF	K	
C305	0252521	electrolytic	10μF		16V
C306	0242011	ceramic, discal	50pF	K	
C307	0242011	ceramic, discal	50pF	K	
C308	0252521	electrolytic	10μF		16V
C309	0248724	ceramic, discal	100pF	K	
C310	0252632	electrolytic	220μF		25V
C311	0252611	electrolytic	1μF		25V
C312	0248726	ceramic, discal	120pF	K	
C313	0252225	electrolytic	47μF		6.3V
for SUB ASSEMBLY CIRCUIT BOARD					
C403	0275015	mylar, film	0.047μF		
C404	0275015	mylar, film	0.047μF		
C405	0275015	mylar, film	0.047μF		
C406	0275015	mylar, film	0.047μF		
C407	0274013	mylar, film	0.0022μF		
C408	0274013	mylar, film	0.0022μF		
C409	0276012	mylar, film	0.15μF		
C410	0276012	mylar, film	0.15μF		
C411	0276012	mylar, film	0.15μF		
C412	0276012	mylar, film	0.15μF		
C413	0276013	mylar, film	0.22μF		
C414	0276013	mylar, film	0.22μF		
C415	0276013	mylar, film	0.22μF		
C415	0276013	mylar, film	0.22μF		
C416	0276013	mylar, film	0.22μF		
C416	0276013	mylar, film	0.22μF		

SYMBOL NO.	STOCK NO.	DESCRIPTION			
for VU METER AMPLIFIER CIRCUIT BOARD					
C501	0275015	mylar, film	0.047μF	K	
C502	0275015	mylar, film	0.047μF	K	
C503	0252611	electrolytic	1μF		16V
C504	0252611	electrolytic	1μF		16V
C505	0252521	electrolytic	10μF		16V
C506	0252521	electrolytic	10μF		16V
C507	0252831	electrolytic	100μF		50V
for PRE-AMPLIFIER CIRCUIT BOARD					
C601	0276011	mylar, film	0.1μF	K	
C602	0276011	mylar, film	0.1μF	K	
C603	0252615	electrolytic	4.7μF		25V
C604	0252615	electrolytic	4.7μF		25V
C605	1252825	electrolytic	47μF		50V
C606	1252825	electrolytic	47μF		50V
C607	0275014	mylar, film	0.033μF	K	
C608	0275014	mylar, film	0.033μF	K	
C609	0252821	electrolytic	10μF		50V
C610	0252821	electrolytic	10μF		50V
C611	0252323	electrolytic	33μF		10V
C612	0252323	electrolytic	33μF		10V
C613	0274012	mylar, film	0.0015μF	K	
C614	0274012	mylar, film	0.0015μF	K	
C615	0221371	styrol	680pF	K	
C616	0221371	styrol	680pF	K	
C617	0252613	electrolytic	3.3μF		25V
C618	0252613	electrolytic	3.3μF		25V
C619	0252521	electrolytic	10μF		16V
C620	0252521	electrolytic	10μF		16V
C621	0252611	electrolytic	1μF		25V
C622	0252611	electrolytic	1μF		25V
C623	0252225	electrolytic	47μF		6.3V
C624	0252225	electrolytic	47μF		6.3V
C628	0248724	ceramic, discal	100pF	K	
C629	0248724	ceramic, discal	100pF	K	
C630	0252323	electrolytic	33μF		10V
C631	0252323	electrolytic	33μF		10V
for MAIN AMPLIFIER CIRCUIT BOARD					
C701	1252611	electrolytic	1μF		25V
C702	1252831	electrolytic	100μF		50V
C703	1252232	electrolytic	220μF		6.3V
C704	0248724	ceramic, discal	100pF	K	
C705	1252825	electrolytic	47μF		50V
C707	0248726	ceramic, discal	120pF	K	
C708	0248726	ceramic, discal	120pF	K	
C710	0221369	styrol	470pF	K	
C711	1252831	electrolytic	100μF		50V
C801	1252611	electrolytic	1μF		25V
C802	1252831	electrolytic	100μF		50V
C803	1252232	electrolytic	220μF		6.3V
C804	0248724	ceramic, discal	100pF	K	
C805	1252825	electrolytic	47μF		50V
C807	0248726	ceramic, discal	120pF	K	
C808	0248726	ceramic, discal	120pF	K	
C810	0221369	styrol	470pF	K	
C811	1252831	electrolytic	100μF		50V
for DC POWER SOURCE CIRCUIT BOARD					
C903	0245408	ceramic, discal	0.01μF		500V
C904	0245408	ceramic, discal	0.01μF		500V

SYMBOL NO.	STOCK NO.	DESCRIPTION			
C905	0245408	ceramic, discal	0.01μF		500V
C906	0245408	ceramic, discal	0.01μF		500V
C907	1252831	electrolytic	100μF		50V
for DIN CIRCUIT BOARD					
C1001	0248718	ceramic, discal	56pF	K	
C1002	0248718	ceramic, discal	56pF	K	
for CHASSIS ASSEMBLY					
C 1	0252525	electrolytic	47μF		
C 2	0252525	electrolytic	47μF		
C 3	0275016	mylar, film	0.068μF	K	
C 4	0275016	mylar, film	0.068μF	K	
C 7	0259797	mylar, film	2200μF		90V
C 8	0259797	mylar, film	2200μF		90V
C 9	0276011	mylar, film	0.1μ	K	
C 10	0276011	mylar, film	0.1μ	K	
C 11	0259797	electrolytic	2200μF		90V
C 12	0214469	ceramic, discal	0.01μF		
C 13	0275011	mylar, film	0.01μF	K	
C 14	0275011	mylar, film	0.01μF	K	
C 17	0243415	ceramic, discal	470pF	J	
	0248728	ceramic, discal	150pF	K	50V
C 18	0243415	ceramic, discal	470pF	J	
	0248728	ceramic, discal	150pF	K	50V
C 19	0276013	mylar, film	0.22μF	K	50V
C 20	0276013	mylar, film	0.22μF	K	50V

RESISTORS

SYMBOL NO.	STOCK NO.	DESCRIPTION			
for MC CIRCUIT BOARD					
R101	1114463	carbon, film	1.5kΩ	K	SRD¼P
R102	1114463	carbon, film	1.5kΩ	K	SRD¼P
R103	1114445	carbon, film	220Ω	K	SRD¼P
R104	1114445	carbon, film	220Ω	K	SRD¼P
R105	1114461	carbon, film	1kΩ	K	SRD¼P
R106	1114461	carbon, film	1kΩ	K	SRD¼P
R107	1114521	carbon, film	10kΩ	K	SRD¼P
R108	1114521	carbon, film	10kΩ	K	SRD¼P
R109	1114469	carbon, film	4.7kΩ	K	SRD¼P
R110	1114469	carbon, film	4.7kΩ	K	SRD¼P
R111	1114529	carbon, film	47kΩ	K	SRD¼P
R112	1114529	carbon, film	47kΩ	K	SRD¼P
R113	1114461	carbon, film	2.7kΩ	K	SRD¼P
R114	1114461	carbon, film	2.7kΩ	K	SRD¼P
R115	1114524	carbon, film	18kΩ	K	SRD¼P
R116	1114524	carbon, film	18kΩ	K	SRD¼P
R117	1114541	carbon, film	100kΩ	K	SRD¼P
R118	1114541	carbon, film	100kΩ	K	SRD¼P
for EQUALIZER CIRCUIT BOARD					
R201	1114467	carbon, film	3.3kΩ	K	SRD¼P
R202	1114467	carbon, film	3.3kΩ	K	SRD¼P
R207	1114442	carbon, film	120Ω	K	SRD¼P
R208	1114442	carbon, film	120Ω	K	SRD¼P
R209	1114547	carbon, film	330kΩ	K	SRD¼P
R210	1114547	carbon, film	330kΩ	K	SRD¼P
R211	1114525	carbon, film	22kΩ	K	SRD¼P
R212	1114525	carbon, film	22kΩ	K	SRD¼P
R213	1114472	carbon, film	8.2kΩ	K	SRD¼P
R214	1114545	carbon, film	220kΩ	K	SRD¼P
R215	1114545	carbon, film	220kΩ	K	SRD¼P
for MIC AMPLIFIER CIRCUIT BOARD					
R301	1114528	carbon, film	39kΩ	K	SRD¼P
R302	1114461	carbon, film	1kΩ	K	SRD¼P
R303	1114541	carbon, film	100kΩ	K	SRD¼P
R304	1114528	carbon, film	39kΩ	K	SRD¼P
R305	1114524	carbon, film	18kΩ	K	SRD¼P
R306	1114525	carbon, film	22kΩ	K	SRD¼P
R307	1114470	carbon, film	5.6kΩ	K	SRD¼P
R308	1114465	carbon, film	2.2kΩ	K	SRD¼P
R309	0112474	carbon, film	82kΩ	K	NLRD¼P
R310	1114541	carbon, film	100kΩ	K	SRD¼P
R311	0112474	carbon, film	82kΩ	K	NLRD¼P
R312	1114461	carbon, film	1kΩ	K	SRD¼P
R313	0112537	carbon, film	220kΩ	K	NLRD¼P
R314	1114528	carbon, film	39kΩ	K	SRD¼P
R315	1114472	carbon, film	8.2kΩ	K	SRD¼P
R316	1114468	carbon, film	3.9kΩ	K	SRD¼P
R317	1114471	carbon, film	6.8kΩ	K	SRD¼P
R318	1114471	carbon, film	6.8kΩ	K	SRD¼P
R319	1114531	carbon, film	100kΩ	K	SRD¼P
R320	1114541	carbon, film	68kΩ	K	SRD¼P
R321	1114541	carbon, film	68kΩ	K	SRD¼P
R322	1114531	carbon, film	15kΩ	K	SRD¼P
R323	1114531	carbon, film	15kΩ	K	SRD¼P
for SUB ASSEMBLY CIRCUIT BOARD					
R401	1114472	carbon, film	8.2kΩ	K	SRD¼P
R402	1114472	carbon, film	8.2kΩ	K	SRD¼P
R403	1114521	carbon, film	10kΩ	K	SRD¼P
R404	1114521	carbon, film	10kΩ	K	SRD¼P
R405	1114521	carbon, film	10kΩ	K	SRD¼P
R406	1114521	carbon, film	10kΩ	K	SRD¼P
R407	1114521	carbon, film	10kΩ	K	SRD¼P
R408	1114521	carbon, film	10kΩ	K	SRD¼P
R409	1114465	carbon, film	2.2kΩ	K	SRD¼P
R410	1114465	carbon, film	2.2kΩ	K	SRD¼P
R411	1114541	carbon, film	100kΩ	K	SRD¼P
R412	1114541	carbon, film	100kΩ	K	SRD¼P
R413	1114541	carbon, film	100kΩ	K	SRD¼P
R414	1114541	carbon, film	100kΩ	K	SRD¼P
R415	1114529	carbon, film	47kΩ	K	SRD¼P
R416	1114529	carbon, film	47kΩ	K	SRD¼P
for VU METER AMPLIFIER CIRCUIT BOARD					
R501	1114521	carbon, film	10kΩ	K	SRD¼P
R502	1114521	carbon, film	10kΩ	K	SRD¼P
R503	1114529	carbon, film	47kΩ	K	SRD¼P
R504	1114529	carbon, film	47kΩ	K	SRD¼P
R505	1114544	carbon, film	180kΩ	K	SRD¼P
R506	1114544	carbon,film	180kΩ	K	SRD¼P
R507	1114548	carbon, film	390kΩ	K	SRD¼P
R508	1114548	carbon, film	390kΩ	K	SRD¼P
R509	1114521	carbon, film	10kΩ	K	SRD¼P
R510	1114521	carbon, film	10kΩ	K	SRD¼P
R511	1114525	carbon, film	22kΩ	K	SRD¼P
R512	1114525	carbon, film	22kΩ	K	SRD¼P
R515	1114469	carbon, film	4.7kΩ	K	SRD¼P
R516	1114469	carbon, film	4.7kΩ	K	SRD¼P
R517	1114469	carbon, film	4.7kΩ	K	SRD¼P
R518	1114469	carbon, film	4.7kΩ	K	SRD¼P
R519	1114471	carbon, film	6.8kΩ	K	SRD¼P
for PRE-AMPLIFIER CIRCUIT BOARD					
R601	1114543	carbon, film	150kΩ	K	SRD¼P
R602	1114543	carbon, film	150kΩ	K	SRD¼P
R603	1114548	carbon, film	390kΩ	K	SRD¼P
R604	1114548	carbon, film	390kΩ	K	SRD¼P
R605	1114532	carbon, film	82kΩ	K	SRD¼P
R606	1114532	carbon, film	82kΩ	K	SRD¼P
R607	1114472	carbon, film	8.2kΩ	K	SRD¼P
R608	1114472	carbon, film	8.2kΩ	K	SRD¼P
R609	1114465	carbon, film	2.2kΩ	K	SRD¼P

SYMBOL NO.	STOCK NO.	DESCRIPTION			
R610	1114465	carbon, film	2.2kΩ	K	SRD¼P
R613	1114462	carbon, film	1.2kΩ	K	SRD¼P
R614	1114462	carbon, film	1.2kΩ	K	SRD¼P
R615	0131844	composition	1MΩ	K	RC¼GF
R616	0131844	composition	1MΩ	K	RC¼GF
R617	1114470	carbon, film	5.6kΩ	K	SRD¼P
R618	1114470	carbon, film	5.6kΩ	K	SRD¼P
R619	1114542	carbon, film	120kΩ	K	SRD¼P
R620	1114542	carbon, film	120kΩ	K	SRD¼P
R621	1114549	carbon, film	470kΩ	K	SRD¼P
R622	1114549	carbon, film	470kΩ	K	SRD¼P
R623	1114531	carbon, film	68kΩ	K	SRD¼P
R624	1114531	carbon, film	68kΩ	K	SRD¼P
R625	1114523	carbon, film	15kΩ	K	SRD¼P
R626	1114523	carbon, film	15kΩ	K	SRD¼P
R627	1114466	carbon, film	2.7kΩ	K	SRD¼P
R628	1114466	carbon, film	2.7kΩ	K	SRD¼P
R629	0131844	composition	1MΩ	K	RC¼GF
R630	0131844	composition	1MΩ	K	RC¼GF
R631	1114526	carbon, film	27kΩ	K	SRD¼P
R632	1114526	carbon, film	27kΩ	K	SRD¼P
R633	0131844	composition	1MΩ	K	RC¼GF
R634	0131844	composition	1MΩ	K	RC¼GF
R635	1114523	carbon, film	15kΩ	K	SRD¼P
R636	1114523	carbon, film	15kΩ	K	SRD¼P
R637	1114549	carbon, film	470kΩ	K	SRD¼P
R638	1114549	carbon, film	470kΩ	K	SRD¼P
R639	1114529	carbon, film	47kΩ	K	SRD¼P
R640	1114529	carbon, film	47kΩ	K	SRD¼P
R641	1114523	carbon, film	15kΩ	K	SRD¼P
R642	1114523	carbon, film	15kΩ	K	SRD¼P
R643	1114462	carbon, film	1.2kΩ	K	SRD¼P
R644	1114462	carbon, film	1.2kΩ	K	SRD¼P
R645	1114467	carbon, film	3.3kΩ	K	SRD¼P
R646	1114467	carbon, film	3.3kΩ	K	SRD¼P
R652	1114465	carbon, film	2.2kΩ	K	SRD¼P
R653	1114465	carbon, film	2.2kΩ	K	SRD¼P
R654	0114541	carbon, film	100kΩ	K	SRD¼P
R655	0114541	carbon, film	100kΩ	K	SRD¼P
R656	0131844	composition	1MΩ	K	RC¼GF
R657	0131844	composition	1MΩ	K	RC¼GF

for MAIN AMPLIFIER CIRCUIT BOARD

R701	1114465	carbon, film	2.2kΩ	K	SRD¼P
R702	1114544	carbon, film	180kΩ	K	SRD¼P
R703	1114541	carbon, film	100kΩ	K	SRD¼P
R704	1114541	carbon, film	100kΩ	K	SRD¼P
R705	1114462	carbon, film	1.2kΩ	K	SRD¼P
R706	0134371	composition	33kΩ	K	RC½GF
R707	0114525	carbon, film	22kΩ	K	SRD¼P
R708	1114441	carbon, film	100Ω	K	SRD¼P
R709	1114441	carbon, film	100Ω	K	SRD¼P
R710	1114441	carbon, film	100Ω	K	SRD¼P
R711	1114441	carbon, film	100Ω	K	SRD¼P
R712	1114139	carbon, film	220Ω	J	SRD¼P
R713	1114139	carbon, film	220Ω	J	SRD¼P
R714	1114161	carbon, film	1kΩ	J	SRD¼P
R715	1114161	carbon, film	1kΩ	J	SRD¼P
R717	1114464	carbon, film	2.7kΩ	J	SRD¼P
R718	0138293	carbon, film	22Ω	J	SRD¼SD
R801	1114465	carbon, film	2.2kΩ	K	SRD¼P
R802	1114544	carbon, film	180kΩ	K	SRD¼P
R803	1114541	carbon, film	100kΩ	K	SRD¼P

SYMBOL NO.	STOCK NO.	DESCRIPTION			
R804	1114541	carbon, film	100kΩ	K	SRD¼P
R805	1114462	carbon, film	1.2kΩ	K	SRD¼P
R806	0134391	composition	33kΩ	K	RC½GF
R807	0114525	carbon, film	22kΩ	K	SRD¼P
R808	1114441	carbon, film	100Ω	K	SRD¼P
R809	1114441	carbon, film	100Ω	K	SRD¼P
R810	1114441	carbon, film	100Ω	K	SRD¼P
R811	1114441	carbon, film	100Ω	K	SRD¼P
R812	1114139	carbon, film	220Ω	J	SRD¼P
R813	1114139	carbon, film	220Ω	J	SRD¼P
R814	1114161	carbon, film	1kΩ	J	SRD¼P
R815	1114161	carbon, film	1kΩ	J	SRD¼P
R817	1114464	carbon; film	2.7kΩ	J	SRD¼P
R818	0138293	carbon, film	22Ω	J	SRD¼SD

for DC POWER SOURCE CIRCUIT BOARD

R904	0111419	carbon, film	1.2kΩ	K	RD2PA
R905	0111246	carbon, film	1.8kΩ	K	RD1PA
R906	0134390	composition	27kΩ	K	RC½GF
R907	0134401	composition	220kΩ	K	RC½GF
R908	0134383	composition	6.8kΩ	K	RC½GF

for DIN CIRCUIT BOARD

R1001	1114546	carbon, film	270kΩ	K	SRD¼P
R1002	1114542	carbon, film	120kΩ	K	SRD¼P
R1003	1114546	carbon, film	270kΩ	K	SRD¼P
R1004	1114542	carbon, film	120kΩ	K	SRD¼P
R1005	1114543	carbon, film	150kΩ	K	SRD¼P
R1006	1114543	carbon, film	150kΩ	K	SRD¼P

for CHASSIS ASSEMBLY

R 15	0114451	carbon, film	680Ω	K	SRD¼P
R 16	0114451	carbon, film	680Ω	K	SRD¼P
R 17	0114528	carbon, film	39kΩ	K	SRD¼P
R 18	0114528	carbon, film	39kΩ	K	SRD¼P
R 19	0131810	composition	560kΩ	K	RC¼GF
R 20	0131810	composition	560kΩ	K	RC¼GF
R 21	0142228	wire-wound	0.5Ω	K	RWC5PS
R 22	0142228	wire-wound	0.5Ω	K	RWC5PS
R 23	0142228	wire-wound	0.5Ω	K	RWC5PS
R 24	0142228	wire-wound	0.5Ω	K	RWC5PS
R 25	0142229	wire-wound	10Ω	K	RWC2PS
R 26	0142229	wire-wound	10Ω	K	RWC2PS
R 27	0111416	metal oxide	680Ω	K	RDZPA
R 28	0111416	metal oxide	680Ω	K	RDZPA
R 29	0111410	metal oxide	220Ω	K	RDZPA
R 30	0111410	metal oxide	220Ω	K	RDZPA
R 31	0114468	carbon, film	3.9kΩ	K	SRD¼P
R 32	0114468	carbon, film	3.9kΩ	K	SRD¼P
R 33	0114470	carbon, film	5.6kΩ	K	SRD¼P
R 34	0114470	carbon, film	5.6kΩ	K	SRD¼P
R 35	0114521	carbon, film	10kΩ	K	SRD¼P
R 36	0114521	carbon, film	10kΩ	K	SRD¼P
R 37	0114527	carbon, film	33kΩ	K	SRD¼P
R 38	0114527	carbon, film	33kΩ	K	SRD¼P
R 39	0114527	carbon, film	33kΩ	K	SRD¼P
R 40	0114527	carbon, film	33kΩ	K	SRD¼P
R 41	0114521	carbon, film	10kΩ	K	SRD¼P
R 42	0114521	carbon, film	10kΩ	K	SRD¼P
R 43	0114470	carbon, film	5.6kΩ	K	SRD¼P
R 44	0114470	carbon, film	5.6kΩ	K	SRD¼P
R 45	0114468	carbon, film	3.9kΩ	K	SRD¼P
R 46	0114468	carbon, film	3.9kΩ	K	SRD¼P
R 47	0114471	carbon, film	6.8kΩ	K	SRD¼P
R 48	0114471	carbon, film	6.8kΩ	K	SRD¼P
R 49	0114472	carbon, film	8.2kΩ	K	SRD¼P
R 50	0114472	carbon, film	8.2kΩ	K	SRD¼P
R 51	0114522	carbon, film	12kΩ	K	SRD¼P

SYMBOL NO.	STOCK NO.	DESCRIPTION			
R 52	0114522	carbon, film	12kΩ	K	SRD¼P
R 53	0114526	carbon, film	27kΩ	K	SRD¼P
R 54	0114526	carbon, film	27kΩ	K	SRD¼P
R 55	0114526	carbon, film	27kΩ	K	SRD¼P
R 56	0114526	carbon, film	27kΩ	K	SRD¼P
R 57	0114522	carbon, film	12kΩ	K	SRD¼P
R 58	0114522	carbon, film	12kΩ	K	SRD¼P
R 59	0114472	carbon, film	8.2kΩ	K	SRD¼P
R 60	0114472	carbon, film	8.2kΩ	K	SRD¼P
R 61	0114471	carbon, film	6.8kΩ	K	SRD¼P
R 62	0114471	carbon, film	6.8kΩ	K	SRD¼P
R 64	0114463	carbon, film	1.5kΩ	K	SRD¼P
R 65	0114463	carbon, film	1.5kΩ	K	SRD¼P
R 66	0114542	carbon, film	120Ω	K	SRD¼P
R 67	0114542	carbon, film	120Ω	K	SRD¼P
R 69	0114529	carbon, film	47kΩ	K	SRD¼P
R 70	0114529	carbon, film	47kΩ	K	SRD¼P
R 73	0114532	carbon, film	82kΩ	K	SRD¼P
R 74	0114532	carbon, film	82kΩ	K	SRD¼P
R 75	0131844	composition	1MΩ	K	RC¼GF
R 76	0131844	composition	1MΩ	K	RC¼GF
R 77	0114443	carbon, film	150Ω	K	SRD¼P
R 78	0114443	carbon, film	150Ω	K	SRD¼P
R 79	0134375	composition	1.5kΩ	K	RC½GF
R 80	0134375	composition	1.5kΩ	K	RC½GF
R 81	0134361	composition	100Ω	K	RC½GF
	0114521	carbon, film	10kΩ	K	SRD¼P

TRANSISTORS

for MC CIRCUIT BOARD

TR101	2320073	2SC 458LG©
TR102	2320073	2SC 458LG©

for EQUALIZER CIRCUIT BOARD

IC201	2327302	FA – 6001T
IC202	2327302	FA – 6001T

for MIC AMPLIFIER CIRCUIT BOARD

TR301	2320073	2SC 458LG©
TR302	2320073	2SC 458LG©
TR303	2320073	2SC 458LG©
TR304	2320073	2SC 458LG©

for VU METER AMPLIFIER CIRCUIT BOARD

TR501	2320073	2SC 458LG©
TR502	2320073	2SC 458LG©

for PRE-AMPLIFIER CIRCUIT BOARD

TR601	2327122	2SC 458ALG©
TR602	2327122	2SC 458ALG©
TR603	2320073	2SC 458LG©
TR604	2320073	2SC 458LG©
TR605	2320073	2SC 458LG©
TR606	2320073	2SC 458LG©
TR607	2320073	2SC 458LG©
TR608	2320073	2SC 458LG©

for MAIN AMPLIFIER CIRCUIT BOARD

TR701	2320161	2SA 565Ⓑ
TR702	2320242	2SA 537AⒷ
TR703	2320232	2SC 708AⒷ
TR704	2327182	2SC 680Ⓑ
TR705	2327192	2SA 566Ⓑ
TR706	2327022	2SC 984Ⓑ
TR707	2320161	2SA 565Ⓑ
TR801	2320161	2SA 565Ⓑ
TR802	2320242	2SA 537AⒷ
TR803	2320232	2SC 708AⒷ
TR804	2327182	2SC 680Ⓑ
TR805	2327192	2SA 566Ⓑ
TR806	2327022	2SC 984Ⓑ
TR807	2320161	2SA 565Ⓑ

for DC POWER SOURCE CIRCUIT BOARD

TR902	2320232	2SC 708AⒷ
TR903	2320161	2SA 565Ⓑ

for CHASSIS ASSEMBLY

TR 1	2327172	2SC 897Ⓑ
TR 2	2327172	2SC 897Ⓑ
TR 3	2327172	2SC 897Ⓑ
TR 4	2327172	2SC 897Ⓑ

DIODES

for VU METER AMPLIFIER CIRCUIT BOARD

D501	0575019	IN60P
D502	0575019	IN60P
D503	0575019	IN60P
D504	0575019	IN60P

for MAIN AMPLIFIER CIRCUIT BOARD

D701	2327041	V06C
D702	2327041	V06C
D703	2327041	V06C
D704	2327041	V06C
D801	2327041	V06C
D802	2327041	V06C
D803	2327041	V06C
D804	2327041	V06C

for DC POWER SOURCE CIRCUIT BOARD

D903	0575050	V01G
D904	0575050	V01G
D905	0575050	V01G
D906	0575050	V01G
D907	2327073	AW01-24
D908	2327073	AW01-24

for CHASSIS ASSEMBLY

D 1	2327041	V06C
D 2	2327041	V06C
D 3	2327041	V06C
D 4	2327041	V06C

VARIABLE RESISTORS

VR 1	0156127	Balance	100kΩ–HB
VR 2	0156126	Volume	100kΩ–B
VR 3	0153232	MIC level	100kΩ–B
VR 4	0151202	VU meter balance	200Ω–B
VR701	0152518	Adjust main amp. center voltage	20kΩ–B
VR702	0152517	Adjust main amp. idle current	200Ω–B
VR801	0152518	Adjust main amp. center voltage	20kΩ–B
VR802	0152517	Adjust main amp. idle current	200Ω–B

SYMBOL NO.	STOCK NO.	DESCRIPTION
		MISCELLANEOUS
	2518171	MC circuit board assembly
	2518222	Equalizer circuit board assembly
	2518161	MIC amplifier circuit board assembly
	2518151	VU meter amplifier circuit board assembly
	2518291	Pre-amplifier circuit board assembly
	2518531	Main amplifier circuit board assembly
	2518241	DC power source circuit board assembly
	2518331	DIN circuit board assembly
	2518181	Sub assembly circuit board assembly
	4784571	Screw – 3 x 6φ baind screw (for radiation fin fixing and circuit board weight, etc.)
	4784101	Screw – 3 x 8φ baind tapping screw (for chassis parts fixing, etc.)
	4562401	Screw – earth screw
	4770255	Nut - 4φ nut with washer (for transformer fixing)
	0043793	Bushing (nylon)
	2740241	Cord – AC cord (UL)
	2747301	Cord – AC cord with SAA standard 3 pin plug
	2657051	Socket – AC socket
	2217272	Transformer – power transformer
	2727134	Fuse – fuse (AC 250V, 1.5A) SLOW (for 220, 240V set)
	2727012	Fuse – fuse (AC 125V, 3A) SLOW (for 120V set)
	2720033	Fuse – fuse (DC 100V, 3A) FAST
	2727086	Fuse – wired in fuse (AC125V, 4A) SLOW (for 120V set)
	2727062	Holder – fuse holder
	2677101	Jack – microphone jack
	2687141	4 pin terminal board
J 1, 2	2677063	Jack – headphone jack
	2687151	Pin jack – 6P US pin jack
	2670221	Pin jack – 4P US pin jack
	2687161	Pin jack – 1P US pin jack
PL 1–5	2767115	Lamp – pilot lamp (6.3V, 70mA)
PL 6–7	2760051	Lamp – pilot lamp (6.3V, 150mA)
	2720022	Holder – fuse holder (for pilot lamp socket)
	2657121	Plug – voltage change-over connector plug (for 220, 240V set)
	2787143	Connector – 22 pin circuit board connector
	2787141	Connector – 12 pin circuit board connector
	2680482	T-tipe mold 5 pin terminal board
	2650113	Socket – transistor socket
	0544404	6 pin terminal board
	0544402	2 pin terminal board
	0544384	4 pin terminal board
	0541358	Socket – 5pin socket (DIN terminal)
	4725312	Label (for AC 220V, 50/60 Hz)
	4725571	Label (for AC 1.5A)
	4725561	Label (for AC 1.5A, 250V)
	4725551	Label (for cover words)
	2577024	VU meter (1.2kΩ, 130mA)
SW 1	2637141	Switch – lever switch (AC power source, speaker change – over)
SW 2	0532183	Switch – slide switch (Input sensitivity MC/MM)
SW 3	2617191	Switch – rotary switch (Function)
SW 4	2637061	Switch – lever switch (Tape monitor)
SW 5	2617232	Switch – rotary switch (Mode)
SW 6–8	2637061	Switch – lever switch (Mute, Loudness, Hi-filter)
SW 9–10	2617181	Switch – rotary switch (Tone)
SW 11	2637061	Switch – lever switch (Low filter)
SW 12	2627011	Switch – slide switch (Pre-Main connection)
SW13–14	2637141	Switch – lever switch (AC power source, speaker change-over)
SW 15	0153232	Variable resistor (with switch, MIC level)
SW 16	2617071	Switch – rotary switch (VU change-over)

for FINAL ASSEMBLY

	3240941	Escutcheon assembly
	3914141	Knob – inside knob (function)
	3914131	Knob – inside knob (volume)
	4564651	Knob – volume knob assembly
	4564661	Knob – function knob assembly
	3280702	Switch – lever switch
	4358772	Cover assembly
	4924021	Side board assembly (left)
	4924011	Side board assembly (right)
	4564272	Screw – M4 baind screw (for side board and cover fixing)
	4680751	Leg

MODEL IA-1000 SERVICE MANUAL

HITACHI
Hitachi, Ltd. Tokyo Japan

Head Office : 5-1, 1-chome, Marunouchi, Chiyoda-ku, Tokyo
Tel. : Tokyo (212) 1111 (80 lines)
Cable Address: "HITACHY" TOKYO
Codes : All Codes Used

Printed in Japan (H)