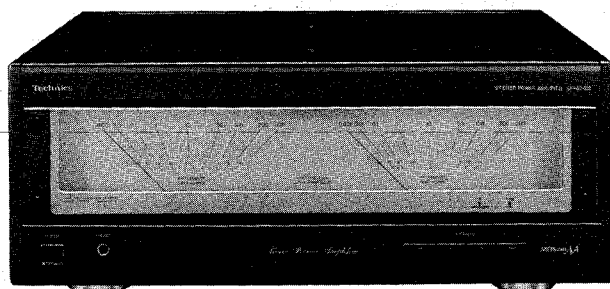


Service Manual

Stereo Power Amplifier

Amplifier

SE-A2000



Colour

(K)... Black Type

Area

Suffix for Model No.	Area	Colour
(EG)	Europe.	(K)
(EB)	Great Britain.	
(G)	Asia, Latin America, Middle Near East and Africa.	

SPECIFICATIONS (DIN 45 500)

20 Hz–20 kHz continuous power output both channels driven	2 × 100 W (8 Ω) 2 × 140 W (4 Ω)
1 kHz continuous power output both channels driven (THD: 1%)	2 × 110 W (8 Ω) 2 × 160 W (4 Ω)
63 Hz–12.5 kHz continuous power output both channels driven (THD: 0.7%)	2 × 105 W (8 Ω) 2 × 145 W (4 Ω)
Total harmonic distortion rated power at 20 Hz–20 kHz	0.005% (8 Ω) 0.009% (4 Ω)
half power at 20 Hz–20 kHz	0.003% (8 Ω)
Intermodulation distortion (50 Hz: 7 kHz = 4:1, SMPTE) rated power	0.005% (8 Ω)
Power bandwidth (both channel driven) –3 dB THD 0.05%	5 Hz–80 kHz (8 Ω)
Residual hum and noise	0.15 mV
Damping factor	100 (8 Ω) 50 (4 Ω)
Headphones output level/impedance	680 mV/330 Ω
Load impedance	
A or B	4 Ω–16 Ω
A and B	8 Ω–16 Ω
Input sensitivity/impedance	1.0 V/33 kΩ
S/N (rated power, 4 Ω)	107 dB (115 dB, IHF '66)
Frequency response	0.8 Hz–150 kHz (+0, –3 dB) +0 dB, –0.2 dB (20 Hz–20 kHz)

■ GENERAL

Power consumption	380 W
Power supply	
For (EG) area.	AC 50 Hz/60 Hz, 230 V
For (EB) area.	AC 50 Hz/60 Hz, 230 V–240 V
For (G) area.	AC 50 Hz/60 Hz, 110 V–127 V/220 V–240 V
Dimensions (W × H × D)	448 × 186 × 431 mm
Weight	22 kg

Notes:

- Design and specifications are subject to change without notice. Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.
- For areas except (EG)**
The specification values given have been measured while using a 240 V power supply.

Technics

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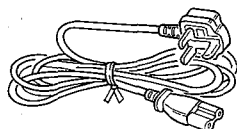
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ACCESSORIES

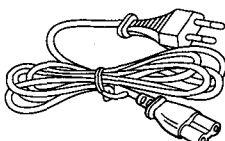
- AC power supply cord..... 1

[FOR (EB) area.]



(VJA0733)

[FOR (EG, G) areas.]



(RJA0019-2K)

- Power plug adaptor..... 1

[FOR (G) area.]



(SJP5213-2)

PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

BEFORE REPAIR AND ADJUSTMENT

Disconnect AC power, Discharge both Power Supply Capacitors C701~C704 through a 10Ω, 5W resistor to ground.

DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices. After repairs are completed, restore power gradually using a variac, to avoid overcurrent.

Current consumption at 50Hz/60Hz in NO SIGNAL mode should be shown below with respect to supply voltage 230V/240V/110~127V/220~240V.

Power supply voltage	AC 230V		AC 240V		AC 120V (AC 110~127V)		AC 240V (AC 220~240V)	
Consumed current 50/60Hz	50Hz	150~450mA	50Hz	140~430mA	50Hz	260~880mA	50Hz	140~430mA
	60Hz	120~360mA	60Hz	112~344mA	60Hz	208~704mA	60Hz	112~344mA

■ CAUTION FOR AC MAINS LEAD

[For (EB) area.]

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362. Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

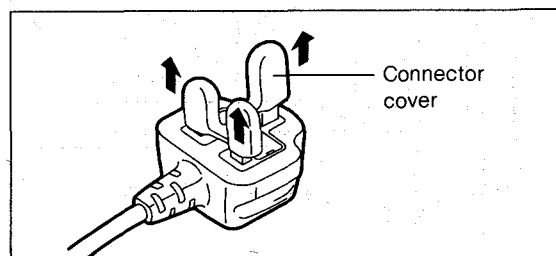
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol .

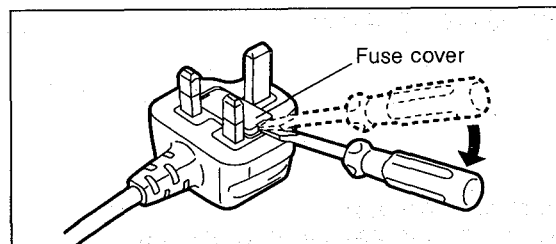
Before use

Remove the connector cover as follows.

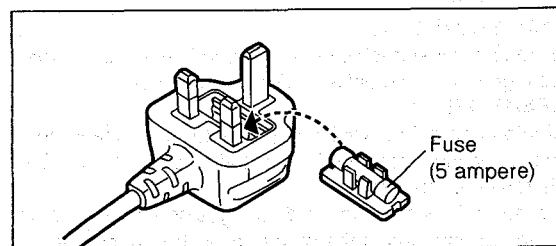


How to replace the fuse

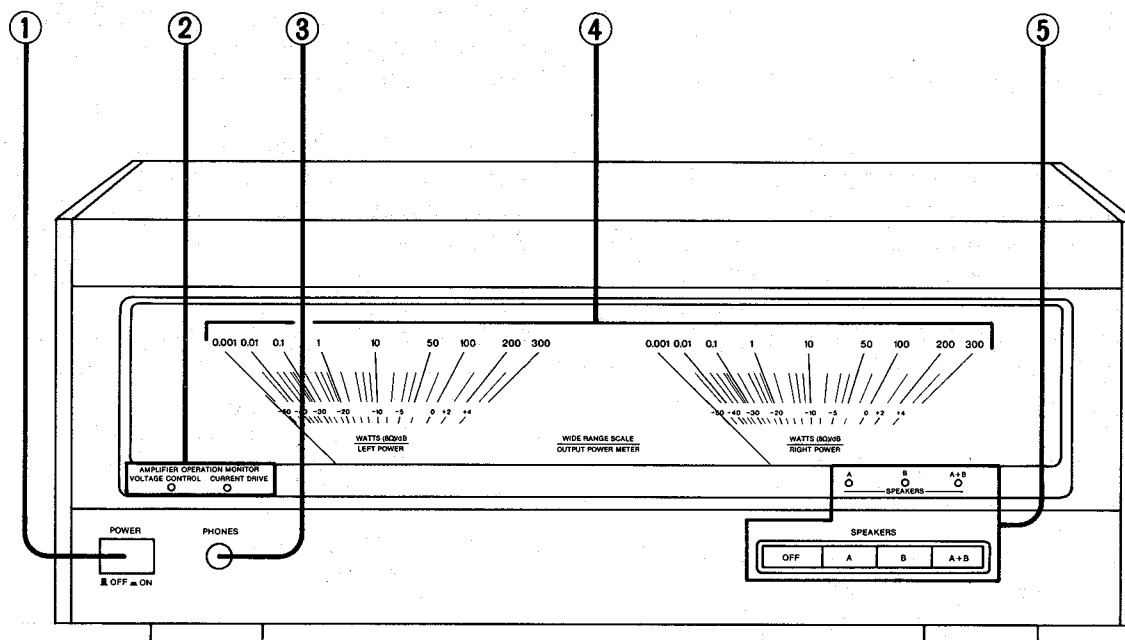
1. Remove the fuse cover with a screwdriver.



2. Replace the fuse and attach the fuse cover.



FRONT PANEL CONTROLS AND FUNCTIONS



① Power switch (POWER)

② Operation indicators (AMPLIFIER OPERATION MONITOR)

These indicators illuminate to indicate the operating condition of this unit.

VOLTAGE CONTROL:

Illuminates up when the power is switched on. Indicates that the voltage control amplifier is ready to operate.

CURRENT DRIVE:

Illuminates approximately 3 seconds after the voltage control amplifier indicator illuminates. Indicates that the main unit is ready to operate.

If an abnormal condition in the circuitry is detected, such as DC voltage appearing in the output, or a short-circuit of the positive (+) and negative (-) wires from the speaker terminals, the protection circuit functions and this indicator will not illuminate.

③ Headphones jack (PHONES)

④ Power meters

Indicate the output (watts) of this unit.

When speakers having an impedance of $8\ \Omega$ are connected, the output level will be as indicated. However, if the speaker impedance is $16\ \Omega$, the output level will be one-half the indicated value, and if the impedance is $4\ \Omega$, the output level will be double the indicated value.

$$\text{Actual output} = \text{meter indication} \times \frac{8\ (\Omega)}{\text{impedance of the speakers}\ (\Omega)}$$

⑤ Speaker selectors/indicators (SPEAKERS)

These selectors are used to select the speakers (A and/or B).

OFF: No sound will be heard from the speakers.

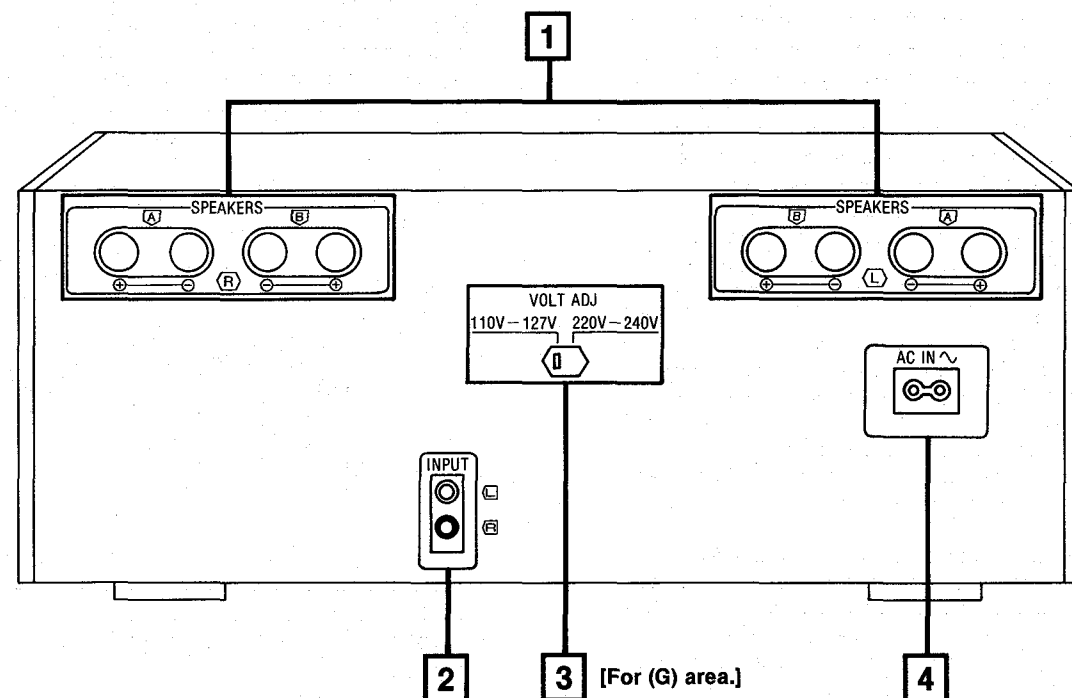
A: Sound can be heard from the speakers connected to the "A" terminals.

B: Sound can be heard from the speakers connected to the "B" terminals.

A + B: Sound can be heard simultaneously from the speakers connected to the "A" terminals and the "B" terminals.

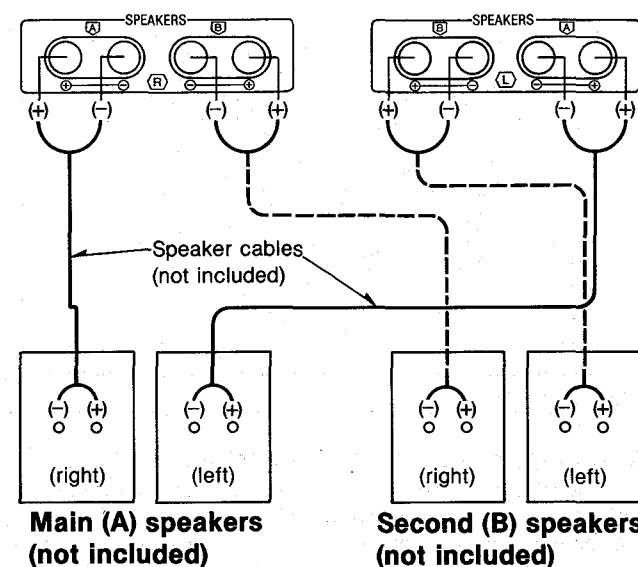
■ CONNECTIONS

Before making connections, be sure that the power to this unit and all other equipment is first turned off.



1 To connect speakers

One pair of speakers can be connected to the "A" terminals of this unit and one pair to the "B" terminals.



Note:
Be sure to only connect positive (+) wires to positive (+) terminals, and negative (-) wires to negative (-) terminals.

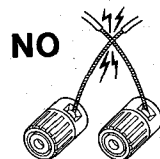
■ Speaker impedance

- When only the "A" or only the "B" terminals are used: 4–16 ohms
- When both the "A" and the "B" terminals are used simultaneously: 8–16 ohms

■ Connection of speaker wires

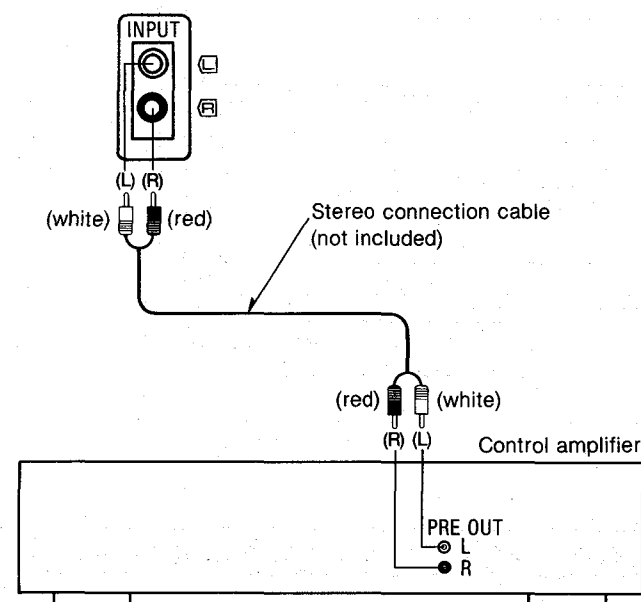
1. Twist the center conductor. 15 mm → Twist.
2. Turn the knob to the left and insert the wire. →
3. Tighten the knob by turning it to the right and pull the wire to assure a proper connection. →

To prevent damage to the circuitry, never short-circuit positive (+) and negative (-) speaker wires.



2 To connect to the control amplifier

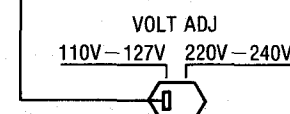
Use a stereo connection cable (not included) to connect to the output terminals of the control amplifier.



3 To set the power voltage

[For (G) area.]

Set the voltage selector to "110 V–127 V" or "220 V–240 V" according to the area in which the unit will be used. [Use a minus (-) screwdriver]



Note:
Note that this unit will be seriously damaged if this setting is not made correctly.

Caution:
Do not place books, etc., on top of this unit so that the heat radiation vents remain unblocked.

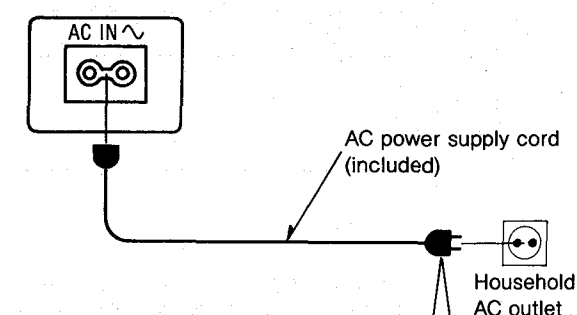
4 To connect the AC power supply cord

[For (EB) area.]

BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 3 BEFORE MAKING THE FOLLOWING CONNECTION.

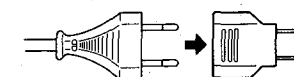
Connect the AC power supply cord (included) after all other cables and cords are connected.

Note:
The configuration of the AC power supply cord differs according to area.



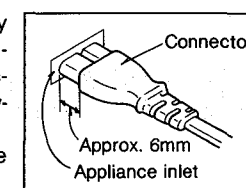
[For (G) area.]

If the power plug will not fit your socket, use the power plug adaptor (included).

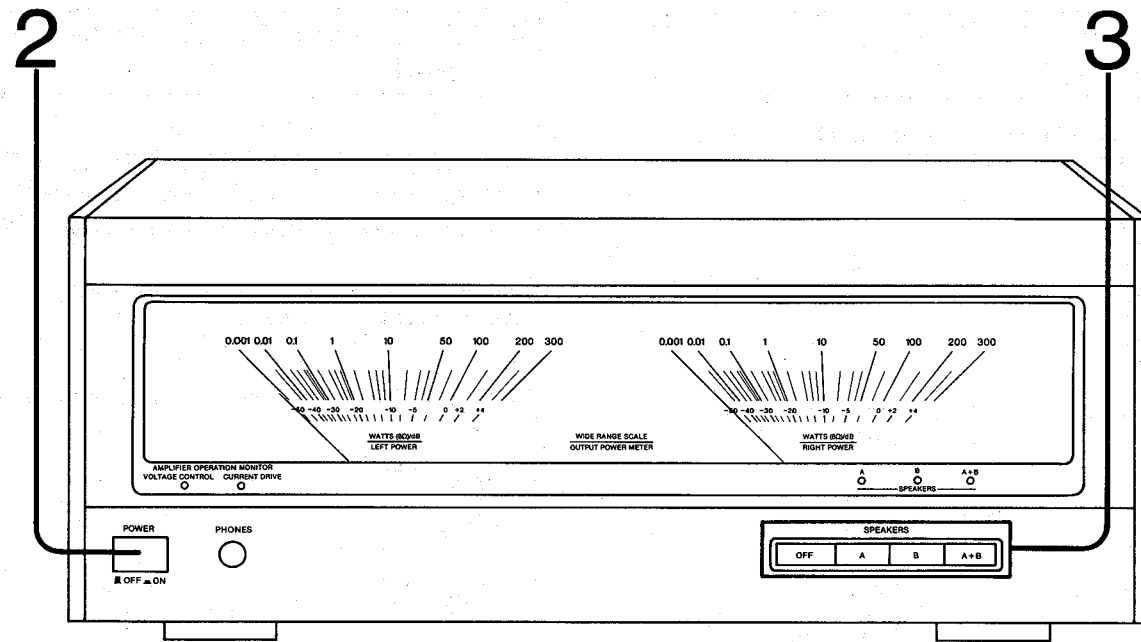


Insertion of Connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing. However there is no problem using the unit.



■ OPERATION



In order to protect the speakers, before performing the following procedure, set the volume on the control amplifier to the minimum position.

1 Switch on the power of the control amplifier.

2 Switch ON the power of this unit. (The operation indicators will illuminate.)

3 Select the speakers to be used. (The corresponding speaker indicator will illuminate.)

4 Operate the tape deck, CD player, or other equipment and adjust the volume on the control amplifier.

NOTE:

Because this unit has a very high output level, if the permissible input of the speaker is only low, the speakers could become damaged. Therefore, watch the power meters while adjusting the volume on the control amplifier and do not exceed the permissible input of the speakers being used.

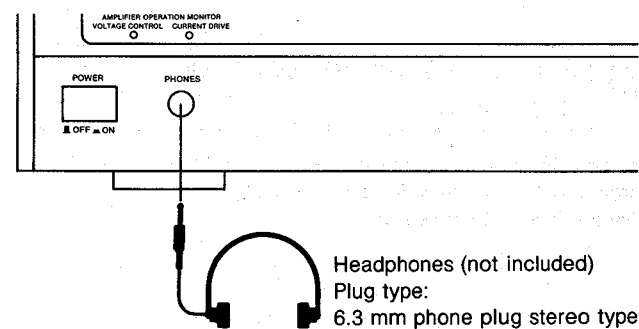
After listening is finished:

First switch off the power of this unit, and then switch off the power of the control amplifier.

When listening through headphones

Connect the headphones to the headphones jack.

Always be sure to turn down the volume on the control amplifier before connecting the headphones.



Headphones (not included)
Plug type:
6.3 mm phone plug stereo type

If the sound from the speakers is not wanted, set the speaker selector to the "OFF" position.

Note:

Avoid listening for prolonged periods of time to prevent hearing damage.

■ DESCRIPTION OF TECHNICAL FEATURES

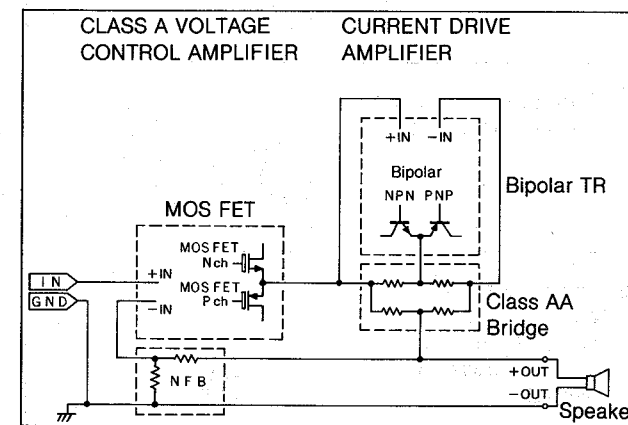
Newly developed "MOS class AA" circuit

Technics developed the Class AA circuit in 1985, and since that time it has been used in many amplifiers. With the conventional power amplifiers, a single amplifier was used to perform two functions: "amplify the voltage" and "drive the current to the speakers". The Class AA circuit is a totally new and unique concept which has succeeded in combining two separate amplifiers, each of which performs one specific function.

Great progress has recently been made in semiconductor mass production technology, and the MOS FET, said to be the ideal semiconductor amplifier component, has been improved for use in audio equipment. However, as a component for the output stage, the MOS FET still has its own strong points and weak points when compared with the conventional bipolar transistor. Thus, by extending and expanding the features of the Class AA circuit, which created a whole new concept for the relationship between an amplifier's voltage amplification and current amplification, Technics has now developed the new MOS Class AA circuit, which combines the strong points of both the bipolar transistor and the MOS FET.

Considering the special features of the MOS Class AA circuit from the circuitry aspect, it is comprised of an A class voltage control amplifier which performs overall control of the entire amplifier, and a B class amplifier which generates the current to drive the speakers, thus combining high-quality A class sound with the capability to drive any type of speaker. Furthermore, in order to make the most of the features of this circuitry composition, a MOS FET which has excellent input and output linearity is used for the voltage control amplifier, and a bipolar transistor which has outstanding drive capability is used for the current drive amplifier.

As a result, the sound data from the input source is faithfully reproduced without the addition of any unwanted noise.



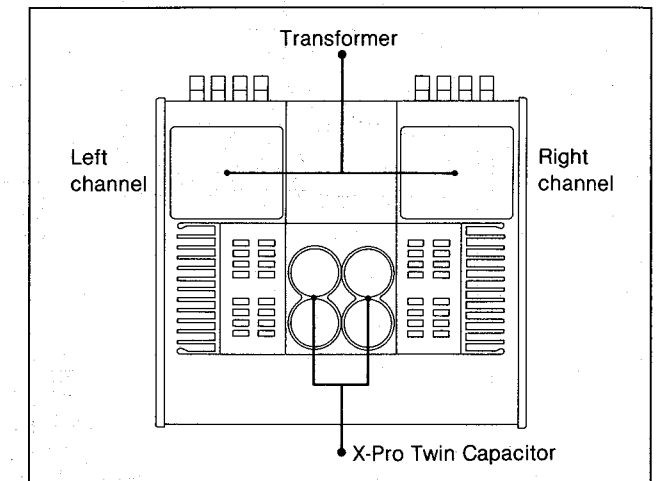
MOS Class AA circuit

Twin-monaural composition with high-performance power supply units

This circuit features a twin-monaural composition in which the left channel and the right channel are independent of each other. As a result, noise generated by mutual interference between the two channels and the cross talk phenomenon have been drastically reduced.

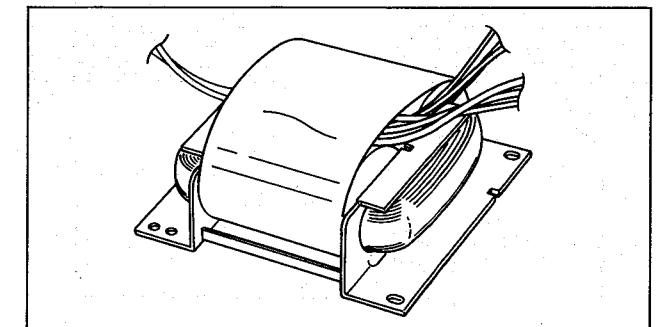
The power supply section for each channel is equipped with a high-performance R-shaped core transformer having extremely low leakage flux. In addition, X-Pro twin capacitors are used for the electrolytic capacitors. In this composition, for each capacitor, there are two electrolytic capacitors, one for the (+)

side and one for the (−) side, packed together with shock-absorbing material into a resin case with a copper cap, thus reducing both mechanical vibration and electromagnetic radiation. Using this twin-monaural composition with its high-performance power supply units, it is possible to reproduce powerful super-bass sounds and achieve excellent channel separation.



R-shaped core transformer with low leakage flux

Most transformers use an EI type core or a toroidal core. However, in either case the core's cross-section is square-shaped, so the magnetic flux induced by the coil is not uniform, but rather lopsided at certain parts. In contrast, this power amplifier is equipped with a transformer which has a core with an R-shaped cross-section, thus reducing leakage flux and preventing the entrance of unwanted noise.



Other features

■ High-precision large-sized power meters

This model is equipped with the same large-sized power meters which have become a tradition on Technics power amplifiers. Furthermore, it is also equipped with operation indicators that confirm when the voltage control amplifier and the current drive amplifier are ready to operate and with speaker indicators.

■ Electronic speaker selectors

Electronic switches are used for the speaker selectors. Gold-clad contacts are used for the selector relays, thus providing light-touch operation and high reliability.

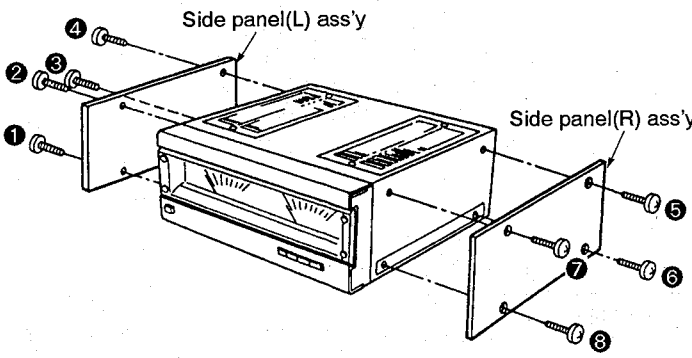
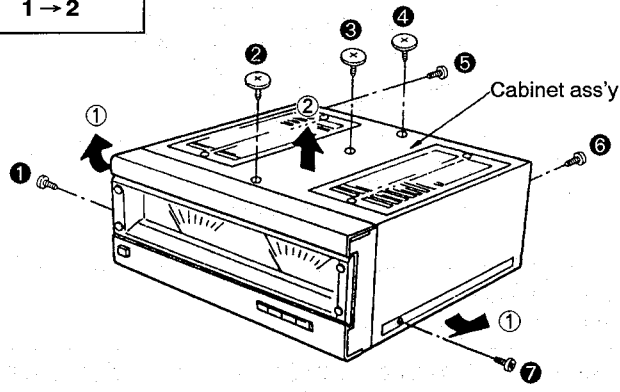
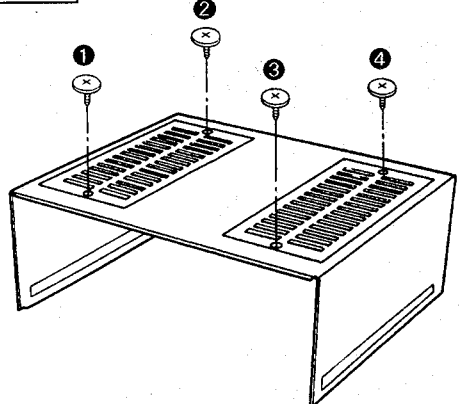
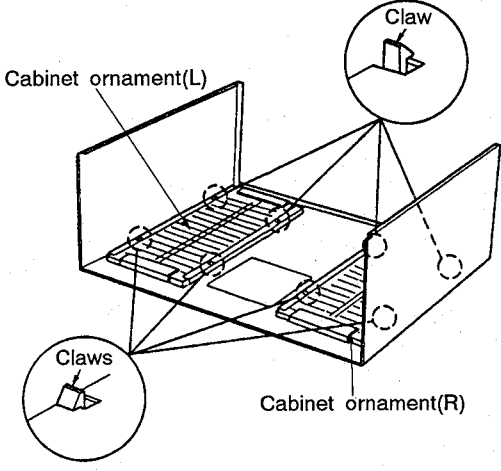
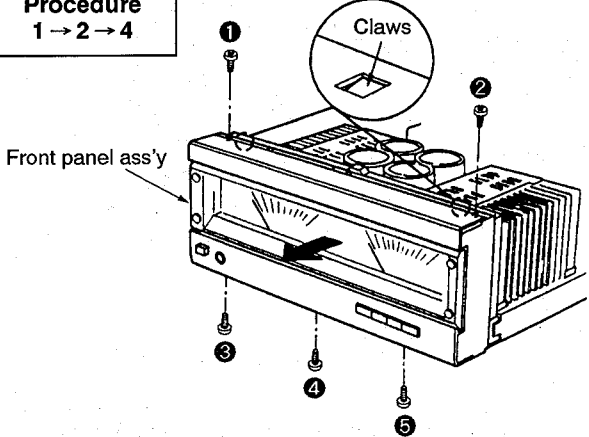
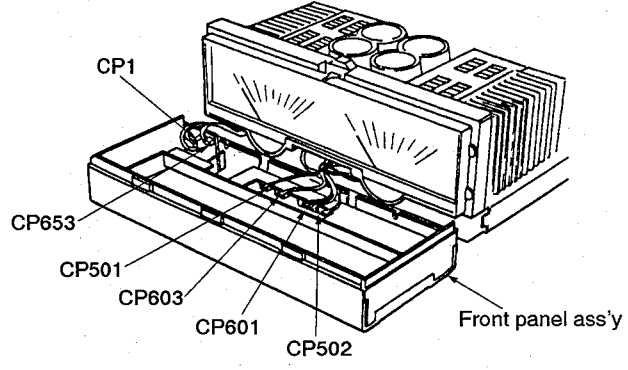
■ High-rigidity chassis

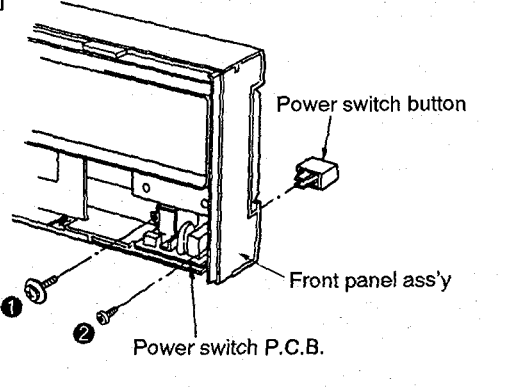
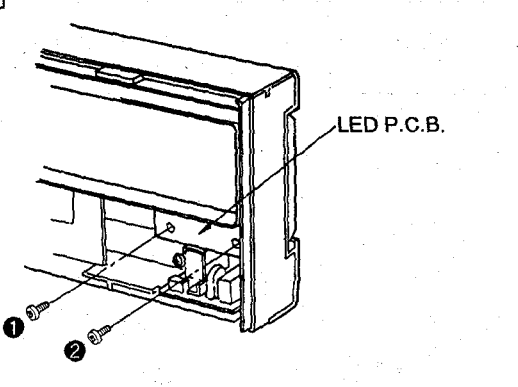
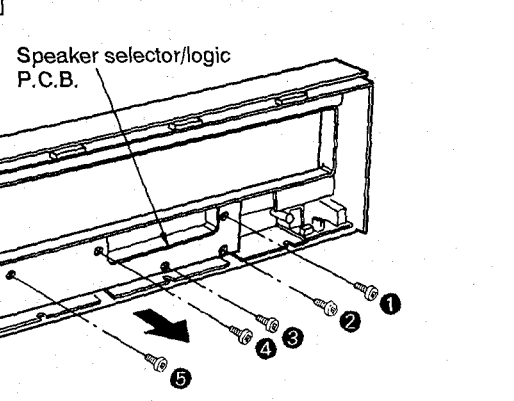
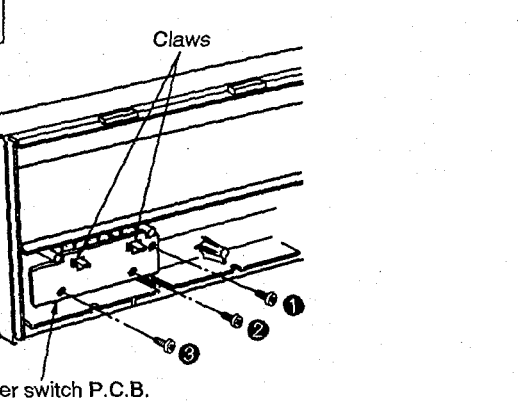
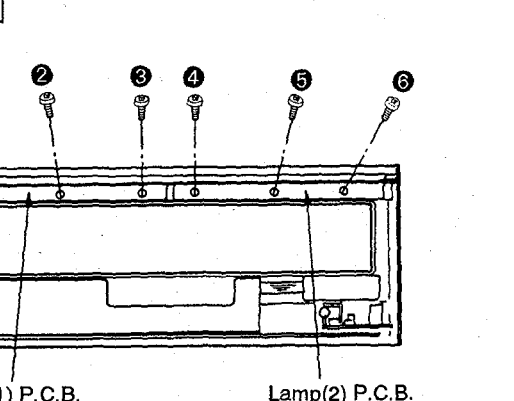
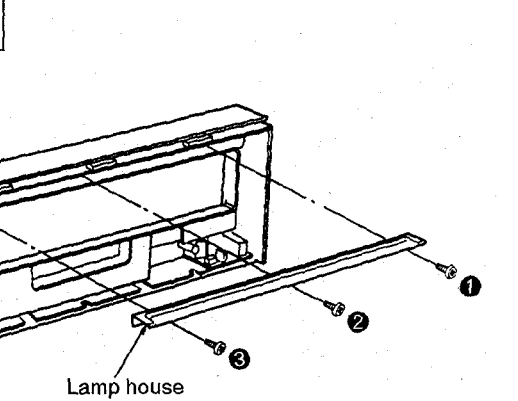
In order to provide solid support for the high-performance circuitry components, the cabinet features a completely vibration-proof design made possible by a high-rigidity chassis.

DISASSEMBLY INSTRUCTIONS

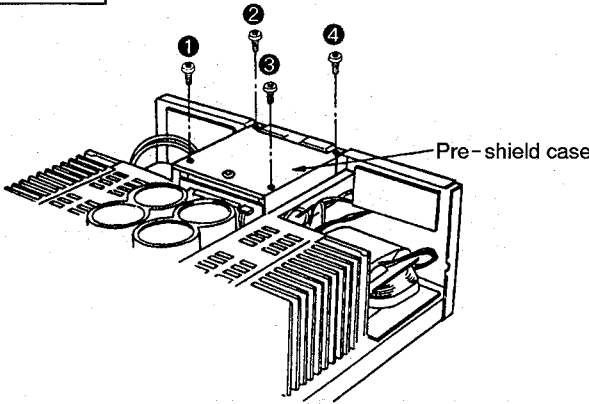
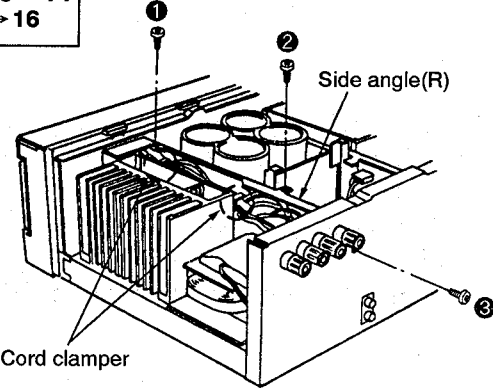
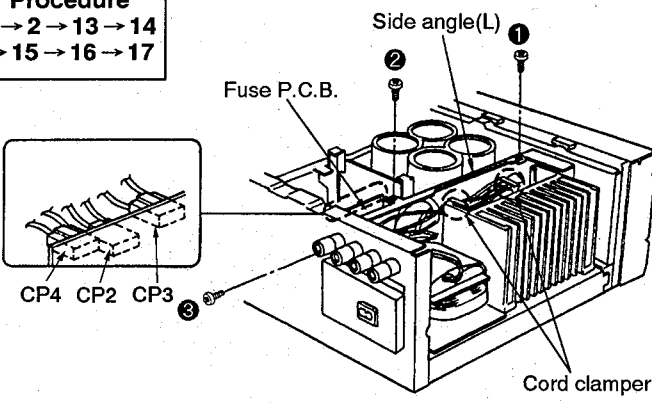
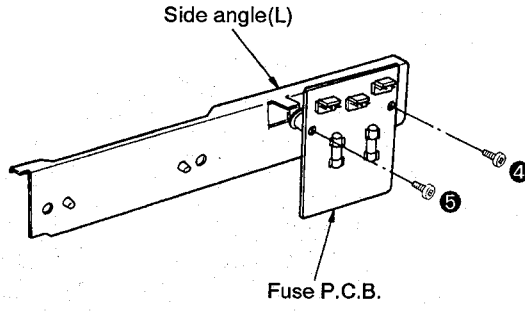
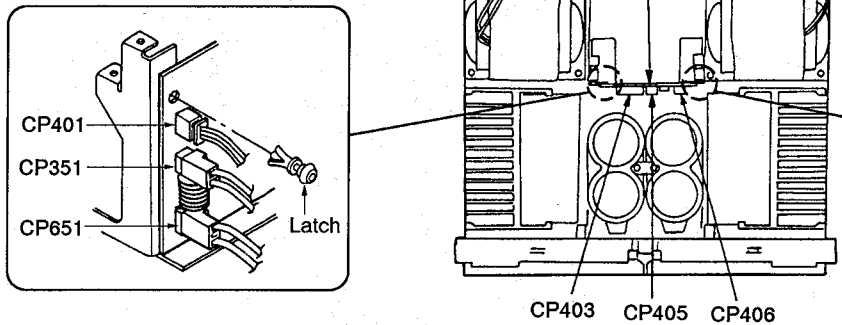
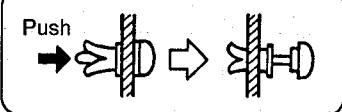
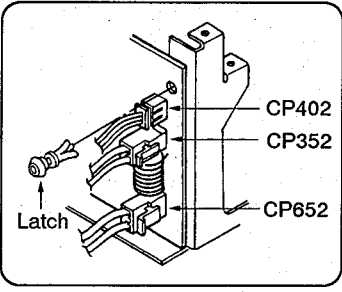
"ATTENTION SERVICER"

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

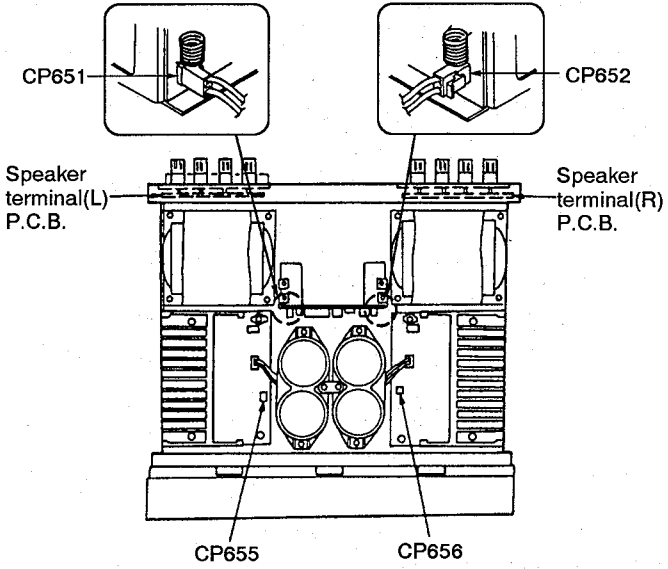
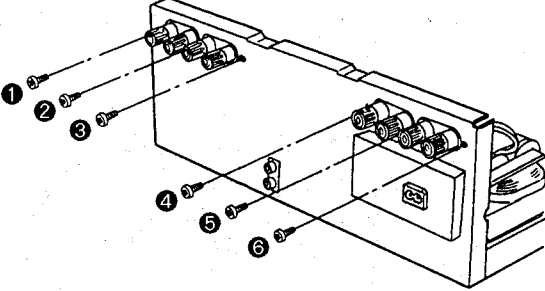
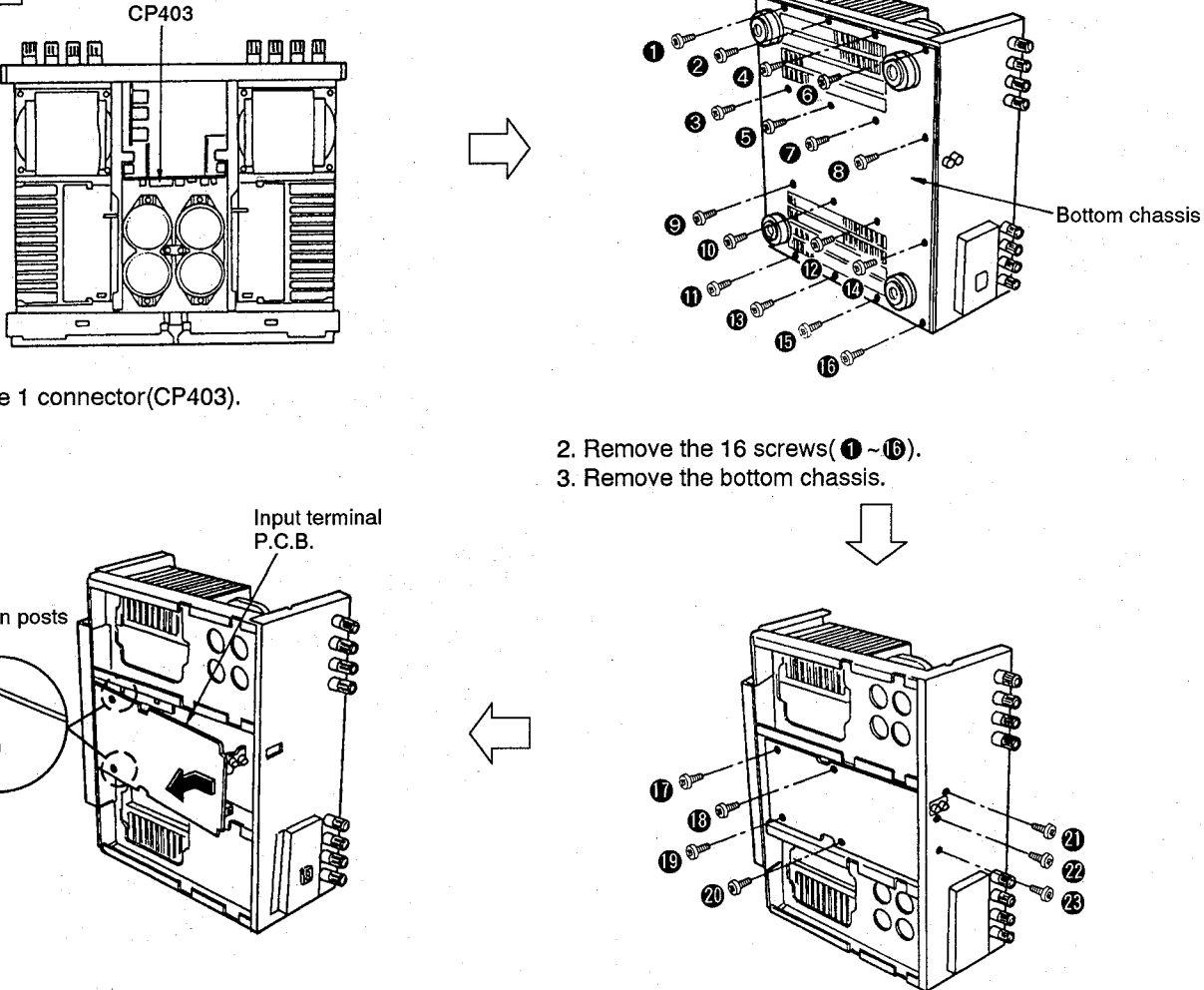
Ref.No. 1	Removal of the side panel(L) ass'y and side panel(R) ass'y	Ref.No. 2	Removal of the cabinet ass'y
Procedure 1		Procedure 1 → 2	
	 • Remove the 8 screws(① ~ ⑧).		 1. Remove the 7 screws(① ~ ⑦). 2. Stretch the cabinet ass'y in the direction of arrow ①, and then remove the cabinet ass'y in the direction of arrow ②.
Ref.No. 3	Removal of the cabinet ornament(L) and cabinet ornament(R)	Ref.No. 4	Removal of front panel ass'y
Procedure 1 → 2 → 3		Procedure 1 → 2 → 4	
 1. Remove the 4 screws(① ~ ④).  2. Release the 8 claws.			 1. Remove the 5 screws(① ~ ⑤). 2. Release the 2 claws and then remove the front panel ass'y in the direction of arrow.  3. Remove the 6 connectors(CP1, CP501, CP502, CP601, CP603, CP653).

Ref.No. 5	Removal of the power switch P.C.B.	Ref.No. 6	Removal of the LED P.C.B.
Procedure 1→2→4→5	 1. Remove the power switch button by pushing it from behind the front panel ass'y. 2. Remove the 2 screws(①, ②).	Procedure 1→2→4→6	 • Remove the 2 screws(①, ②).
Ref.No. 7	Removal of the speaker selector/logic P.C.B.	Ref.No. 8	Removal of the speaker switch P.C.B.
Procedure 1→2→4→7	 1. Remove the 5 screws(① ~ ⑤). 2. Remove the speaker selector/logic P.C.B. in the direction of arrow.	Procedure 1→2→4→7 →8	 1. Remove the 3 screws(① ~ ③). 2. Release the 2 claws.
Ref.No. 9	Removal of the lamp(1) P.C.B. and lamp(2) P.C.B.	Ref.No. 10	Removal of the lamp house
Procedure 1→2→4→9	 • Remove the 6 screws(① ~ ⑥).	Procedure 1→2→4→9 →10	 • Remove the 3 screws(① ~ ③).

Ref.No. 11	Removal of the transparent glass	1. Remove the 4 nuts (① ~ ④). 2. Remove the 4 washers. 3. Pull out the 4 screws (⑤ ~ ⑧) and bushing(B). 4. Remove the transparent glass in the direction of arrow.	
Ref.No. 12	Removal of the meter	Ref.No. 13	Removal of the sub radiating plate (L) and sub radiating plate (R)
Procedure 1 → 2 → 4 → 12	1. Remove the 8 screws (① ~ ⑧). 2. Remove the meter holder.	Procedure 1 → 2 → 13	• Remove the 8 screws (① ~ ⑧).
Ref.No. 14	Removal of the voltage control amp(L) P.C.B. and voltage control amp(R) P.C.B.	■ Removal of the voltage control amp(L) P.C.B. 1. Remove the flat cable form cord clamber. 2. Pull out the voltage control amp(L) P.C.B. in the direction of arrow ①. 3. Remove the 1 connector(CP201). ■ Removal of the voltage control amp(R) P.C.B. 1. Remove the flat cable form cord clamber. 2. Pull out the voltage control amp(R) P.C.B. in the direction of arrow ②. 3. Remove the 1 connector(CP202).	

Ref.No. 15	Removal of the pre-shield case	Ref.No. 16	Removal of the side angle(R)
Procedure 1 → 2 → 15	 • Remove the 4 screws(❶ ~ ❹).	Procedure 1 → 2 → 13 → 14 → 15 → 16	 1. Remove the lead wire form cord clamer. 2. Remove the 3 screws(❶ ~ ❸).
Ref.No. 17	Removal of the side angle(L) and fuse P.C.B.		
Procedure 1 → 2 → 13 → 14 → 15 → 16 → 17	 1. Remove the 3 connectors(CP2, CP3, CP4). 2. Remove the lead wire form cord clamer. 3. Remove the 3 screws(❶ ~ ❸). 4. Remove the side angle(L) and fuse P.C.B.	 5. Remove the 2 screws(❹, ❺), and then remove the fuse P.C.B.	
Ref.No. 18	Removal of the relay P.C.B.		
Procedure 1 → 2 → 4 → 13 → 14 → 15 → 16 → 17 → 18	 1. Remove the 2 latches. 2. Remove the 9 connectors(CP351, CP352, CP401, CP402, CP403, CP405, CP406, CP651, CP652).	■ Removal of the latch  	

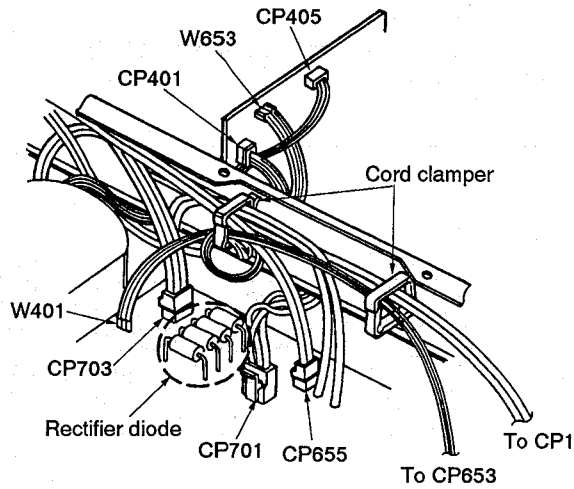
Ref.No. 19	Removal of the twin capacitor(L) and twin capacitor(R)	Ref.No. 20	Removal of the power transformer (L) and power transformer(R)
Procedure 1 → 2 → 13 → 14 → 15 → 16 → 17 → 19	1. Remove the 2 connectors(CP701, CP702) 2. Remove the 6 screws(① ~ ⑥). 3. Remove the capacitor holder.	Procedure 1 → 2 → 13 → 14 → 15 → 20	1. Remove the 8 screws(① ~ ⑧). 2. Remove the 4 connectors(CP3, CP4, CP703, CP704).
Ref.No. 21	Removal of the current drive amp(L) P.C.B. and current drive amp(R) P.C.B.		
Procedure 1 → 2 → 13 → 14 → 15 → 16 → 17 → 21	■ Removal of the current drive amp(L) P.C.B. 1. Remove the 4 screws(① ~ ④). 2. Remove the 5 connectors(CP351, CP401, CP655, CP701, CP703). ■ Removal of the current drive amp(R) P.C.B. 1. Remove the 4 screws(⑤ ~ ⑧). 2. Remove the 5 connectors(CP352, CP402, CP656, CP702, CP704).	Ref.No. 22	Removal of the power transistor
Procedure 1 → 2 → 13 → 14 → 15 → 16 → 17 → 21 → 22		1. Unsolder the power transistor. 2. Remove the 4 screws(① ~ ④). (This figure show the left (L ch) power transistor. Remove the right (R ch) power transistor in the same way.) • When mounting the regulator transistor. Apply silicone compound (RFKX0002) to the rear side of regulator transistor.	

Ref.No. 23	Removal of the speaker terminal(L) P.C.B. and speaker terminal(R) P.C.B.	
Procedure 1 → 2 → 13 → 14 → 15 → 16 → 17 → 23		1. Remove the 6 screws(❶ ~ ❺). 2. Remove the 4 connectors(CP651, CP652, CP655, CP656).
Ref.No. 24	Removal of the input terminal P.C.B.	
Procedure 1 → 2 → 4 → 13 → 14 → 15 → 24	1. Remove the 1 connector(CP403). 5. Lift the input terminal P.C.B. off the retention posts on the chassis ass'y. 6. Remove the input terminal P.C.B. in the direction of arrow.	2. Remove the 16 screws(❶ ~ ❷). 3. Remove the bottom chassis. 4. Remove the 7 screws(❷ ~ ❸).

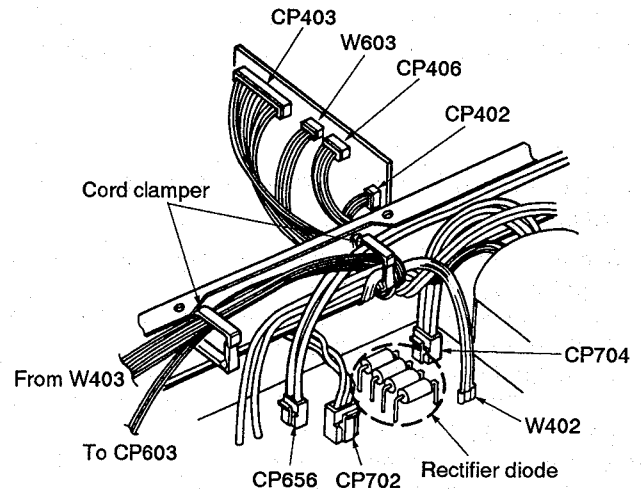
Ref.No. 25	Removal of the AC inlet P.C.B.
Procedure 1 → 2 → 4 → 13 → 15 → 25	1. Remove the 1 connector(CP2). 2. Remove the 4 screws(① ~ ④). 3. Remove the sub rear panel in the direction of arrow. 4. Release the 2 claws.
Ref.No. 26	How to check the current drive amp(L) P.C.B., current drive amp(R) P.C.B. and input terminal P.C.B.
Procedure 1 → 2 → 26	1. Remove the 19 screws(① ~ ⑱). 2. Remove the bottom chassis. 3. When checking the soldered surface of current drive amp (L), (R) P.C.B. and replacing the parts, do as shown. 7. Connect the G.N.D. terminal to the rear panel by the lead wire. 8. When checking the soldered surface of input terminal P.C.B. and replacing the parts, do as shown. 4. Remove the 7 screws(⑳ ~ ㉔). 5. Lift the input terminal P.C.B. off the retention posts on the chassis ass'y. 6. Remove the input terminal P.C.B. in the direction of arrow.

Ref.No. 27	How to check the speaker selector /logic P.C.B.	
Procedure 1 → 2 → 27		
Front panel ass'y 1. Remove the 5 screws (1 ~ 5). 2. Release the 2 claws and then remove the front panel ass'y in the direction of arrow.		Speaker selector /logic P.C.B. 3. When checking the soldered surface of speaker selector /logic P.C.B. and replacing the parts, do as shown.
Ref.No. 28	How to check the voltage control amp(L) P.C.B. and voltage control amp(R) P.C.B.	
Procedure 1 → 2 → 13 → 28		
Voltage control amp(L) P.C.B. Voltage control amp(R) P.C.B. Fig. 1 1. Remove the 8 screws (1 ~ 8). Note: • Connect the ground terminal of current drive amp(L) P.C.B. and chassis by lead wire. • Figure 2 and figure 3 show the left (L ch) voltage control amp(L) P.C.B. • Remove the right (R ch) voltage control amp(R) P.C.B. in the same way.		Voltage control amp(L) P.C.B. Radiator Fig. 2 2. Pull out the radiator and voltage control amp(L) P.C.B. in the direction of arrow. Ground terminal Lead wire Current drive amp(L) P.C.B. Voltage control amp(L) P.C.B. Fig. 3 3. When checking the solderd surface of voltage control amp(L) P.C.B. and replacing the parts, do as shown.

■ Lead wire and flat cable arrangement

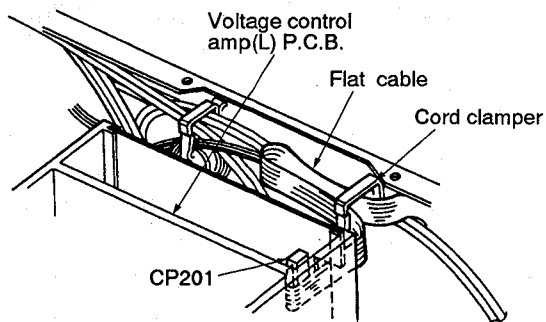


[L side]

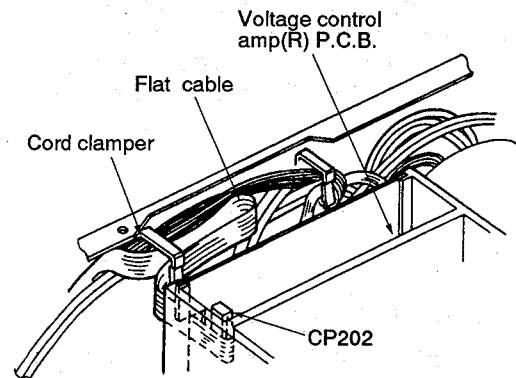


[R side]

1. Put the lead wires and flat cable through the cord clamber.
2. Arrange the various lead wires so that they are not touching the rectifier diode.
3. Care must be taken to avoid damage to the lead wires or flat cable.



[L side]



[R side]

4. After installing the voltage control amp(L), (R) P.C.B., put the flat cable attached to the connector (CP201, CP202) through the cord clamber.

MEASUREMENTS AND ADJUSTMENTS

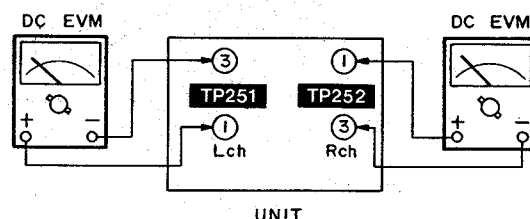
Control positions and equipment used.

- Volume knob..... ∞ (Minimum)
- AC and DC electronic voltmeter (EVM)
- AF Oscillator

(1) VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT

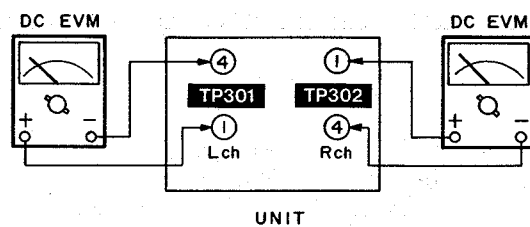
1. Connect the DC voltmeters to both channels of the amplifier, as shown on the right.
2. Set amplifier trimmer potentiometers **VR251** (L-ch.) and **VR252** (R-ch.) to center position.
3. Immediately after power-up (within 8sec. per channel), adjust **VR251** (L-ch.) and **VR252** (R-ch.) so the DC voltmeters read $70 \pm 5\text{mV}$.

Note: During adjustment, do not decrease the voltage below 30mV, as it may cause low-level oscillations.



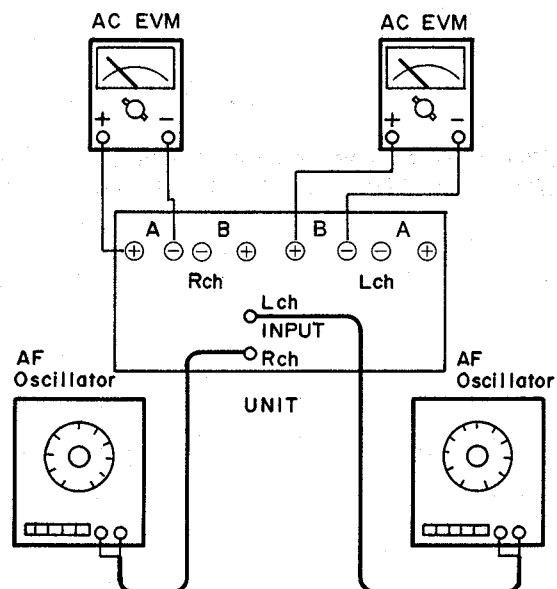
(2) CURRENT DRIVE (C) AMP. IDLING (ICQ) ADJUSTMENT

1. Connect the DC voltmeters to both channels of the amplifier, as shown on the right.
2. Turn amplifier trimmer potentiometers **VR301** (L-ch.) and **VR302** (R-ch.) fully counterclockwise.
3. Adjust **VR301** (L-ch.) and **VR302** (R-ch.) so the DC voltmeters read $3 \pm 1\text{mV}$ 90 seconds after power on.

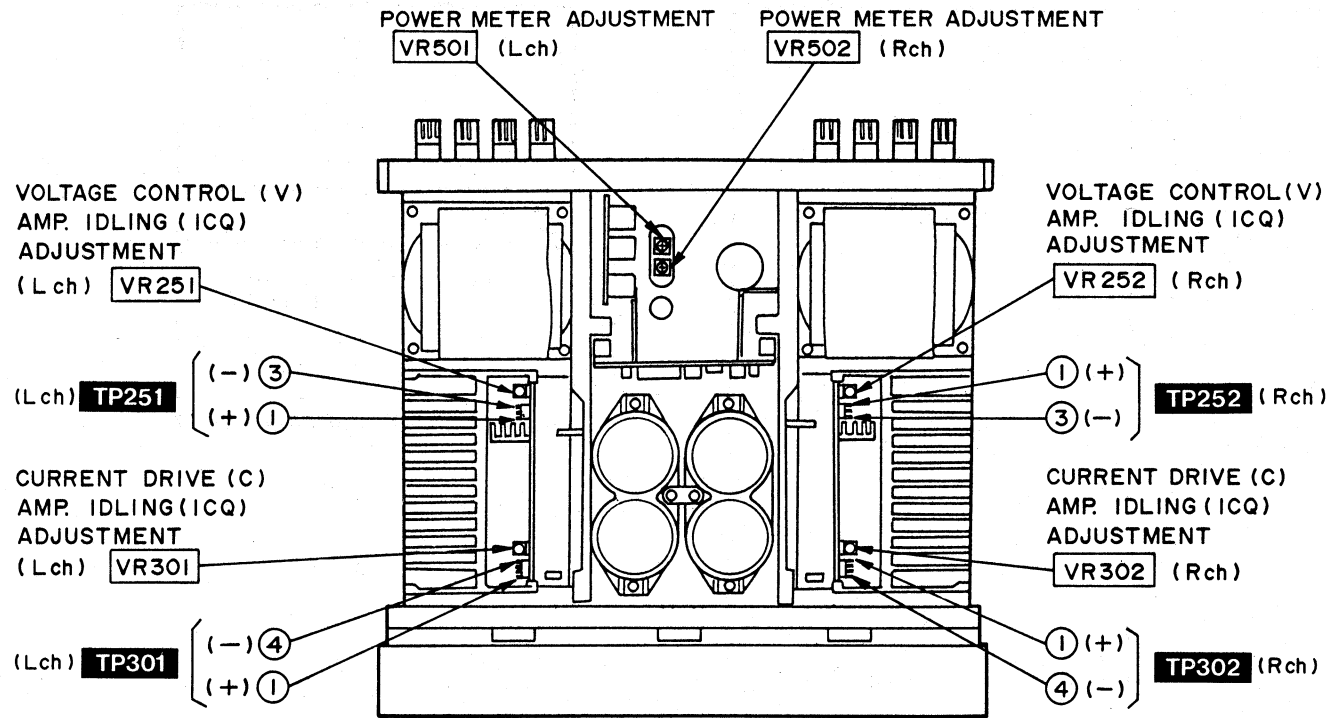


(3) POWER METER ADJUSTMENT

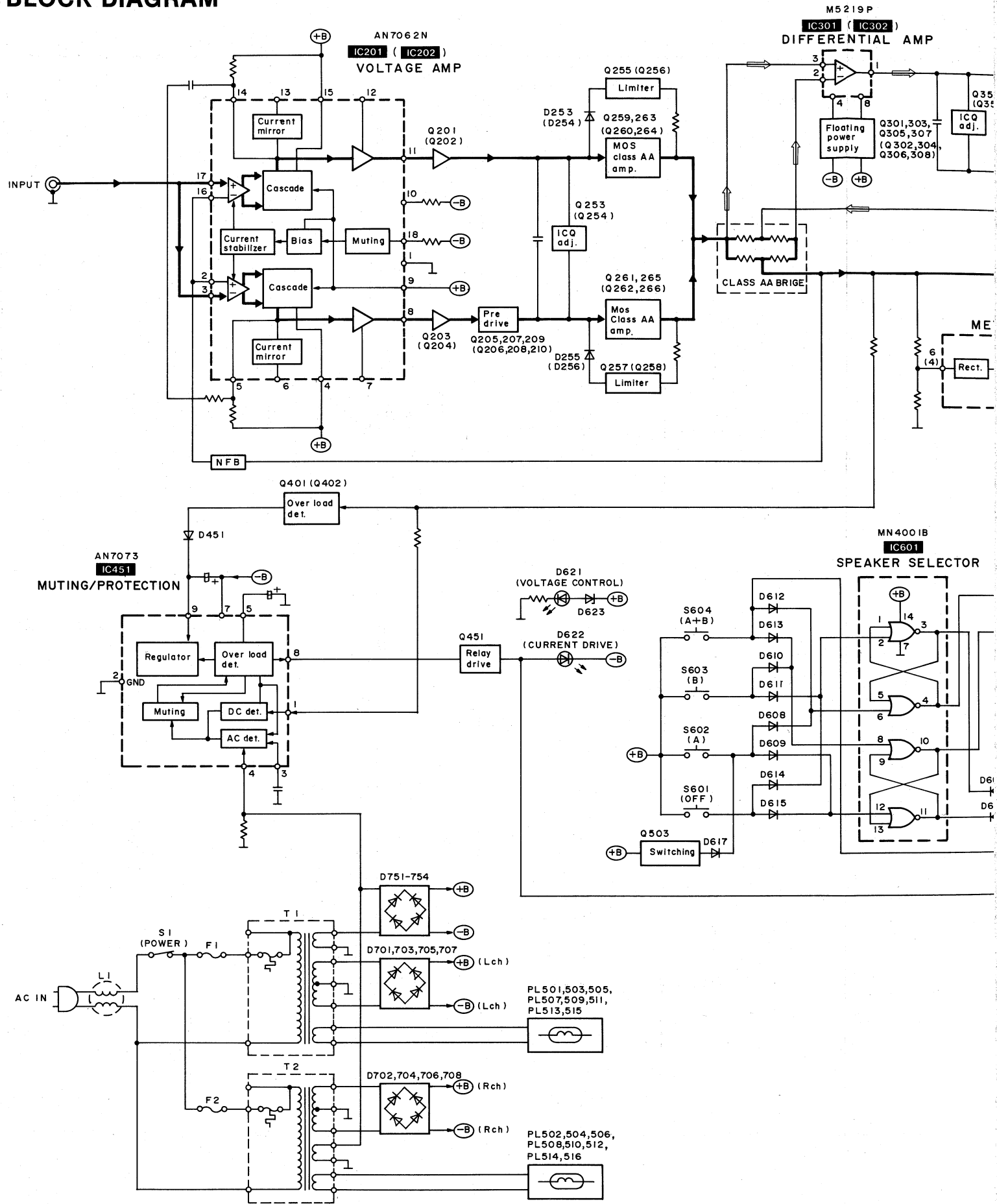
1. Connect an AF signal generator and power meter to the amplifier, as shown on the right.
2. Before powering the amplifier, set **VR501** (L-ch.) and **VR502** (R-ch.) to center position.
3. Zero adjust the power meter.
4. Apply a 1-kHz sinusoidal signal to the amplifier's input jack so the output voltage across the speaker terminals is 28.3V (speaker load: ∞) (adjust the signal level with the AF generator's output attenuator).
5. Adjust **VR501** (L-ch.) and **VR502** (R-ch.) until the power meter reads 100W (0dB).



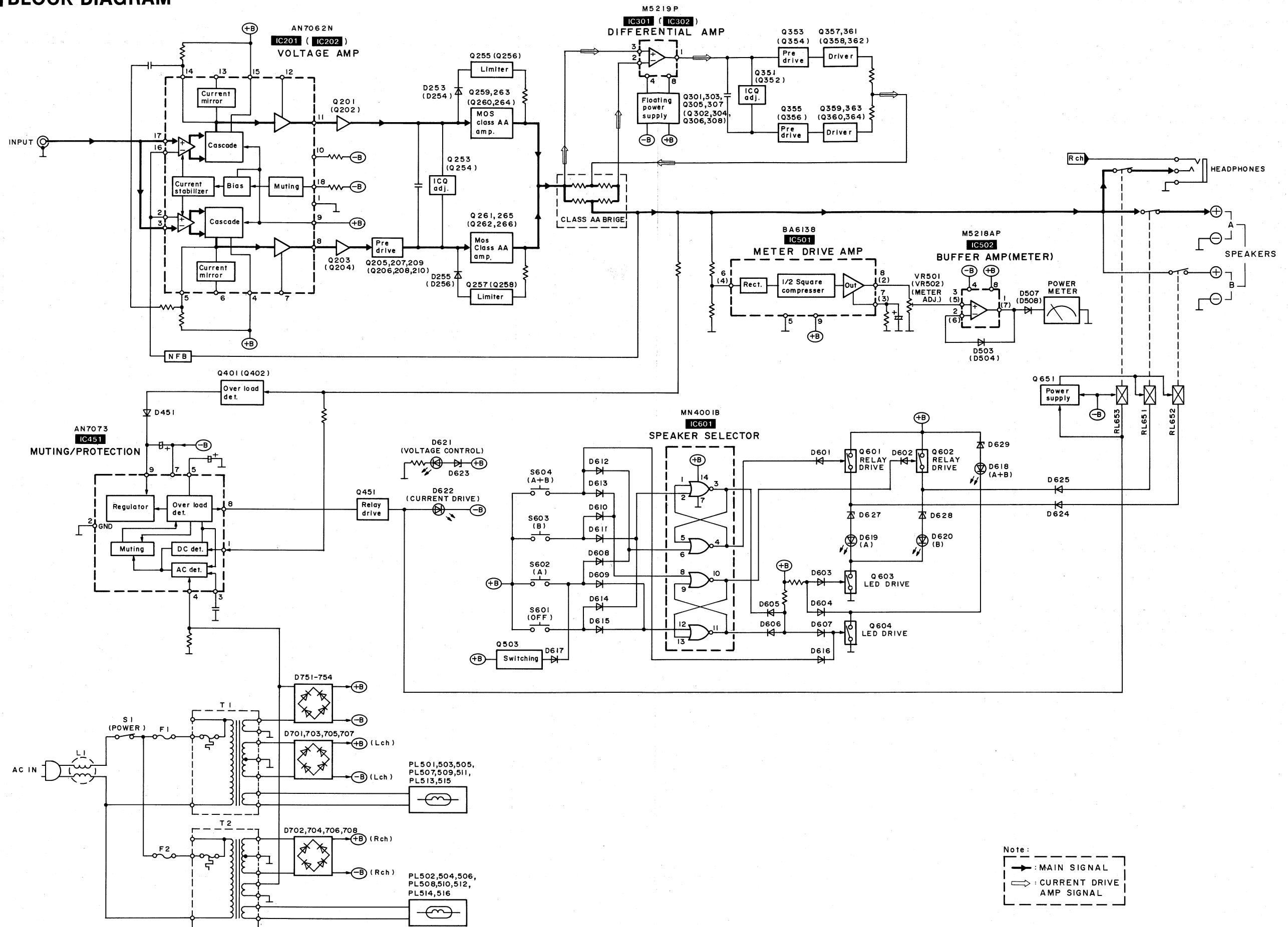
- **Adjustment points**



■ BLOCK DIAGRAM



BLOCK DIAGRAM



SCHEMATIC DIAGRAM

(Parts list on pages 42~45.)

(This schematic diagram may be modified at any time with the development of new technology.)

Note 1:

- S1 : Power (POWER) switch.
- S2 : Voltage Adjustment switch in "220V~240V" position.
(110V~127V ↔ 220V~240V)
[For (G) area.]
- S601~S604:
Speaker selectors (SPEAKERS) switches.
[S601: OFF, S602: A
S603: B, S604: A+B]
- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
- Signal line
 : Main signal (Lch)
 → : Current drive amp signal (Lch)
 — : +B line
 --- : -B line
- Important safety notice
 Components identified by Δ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used as occasion calls. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
- Caution!
 IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
 • Cover the parts boxes made of plastics with aluminum foil.
 • Ground the soldering iron.
 • Put a conductive mat on the work table.
 • Do not touch the legs of IC or LSI with the fingers directly.

A

B

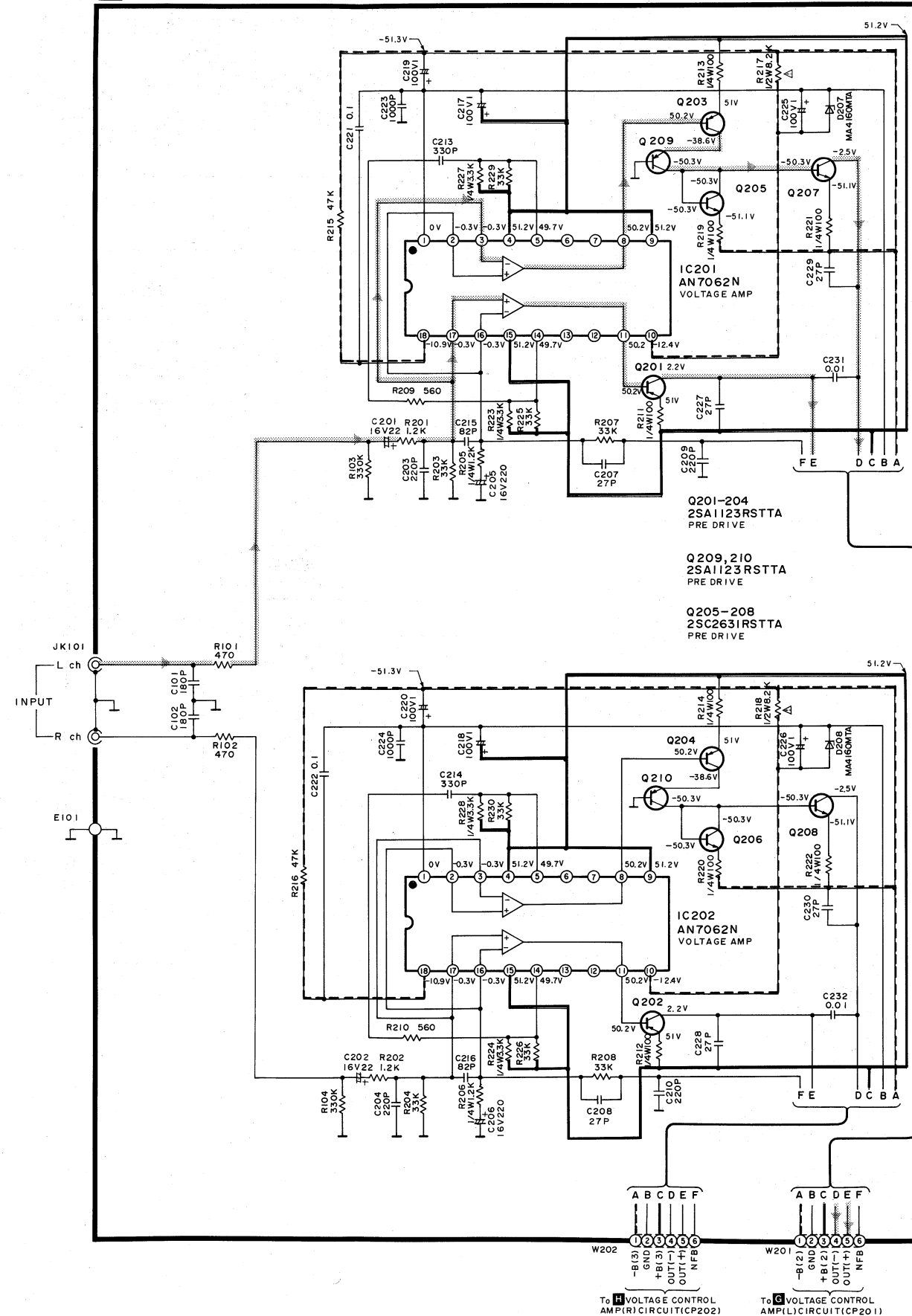
C

D

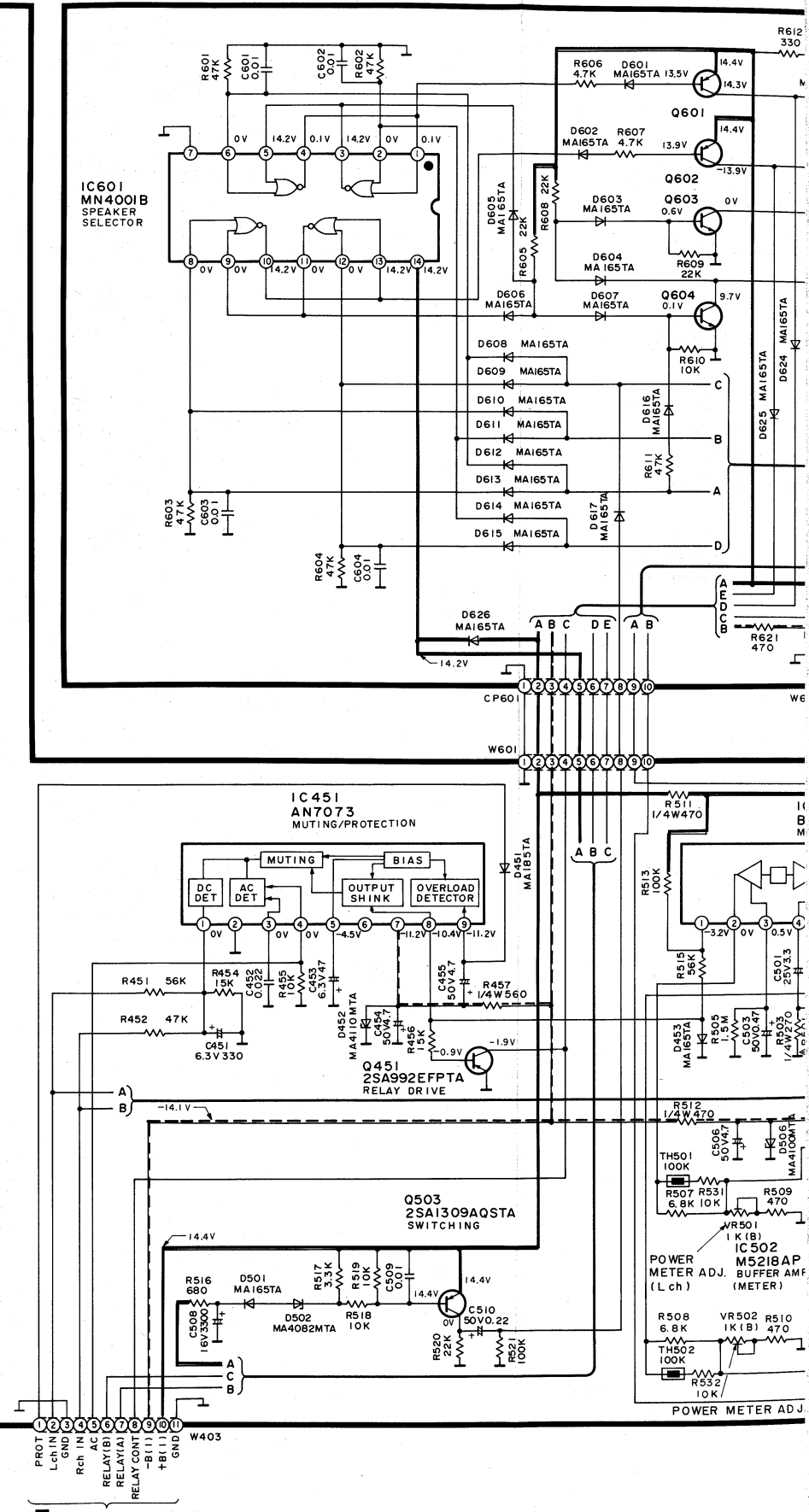
E

F

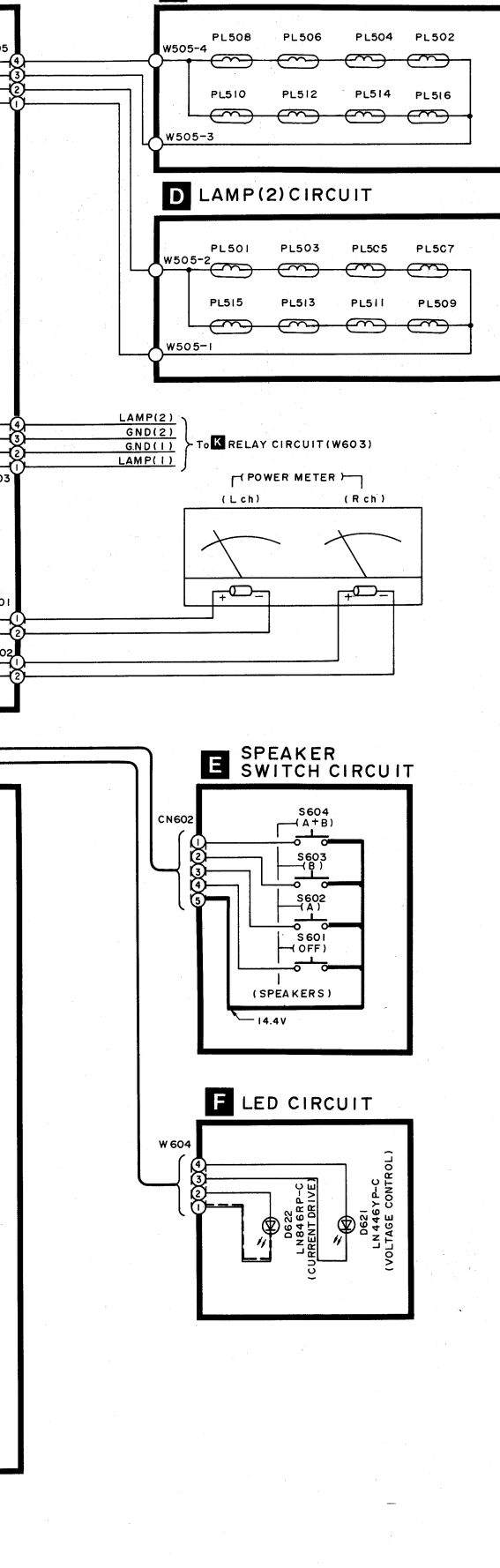
A INPUT TERMINAL CIRCUIT (VOLTAGE AMP/METER AMP/MUTING/PROTECTOR)



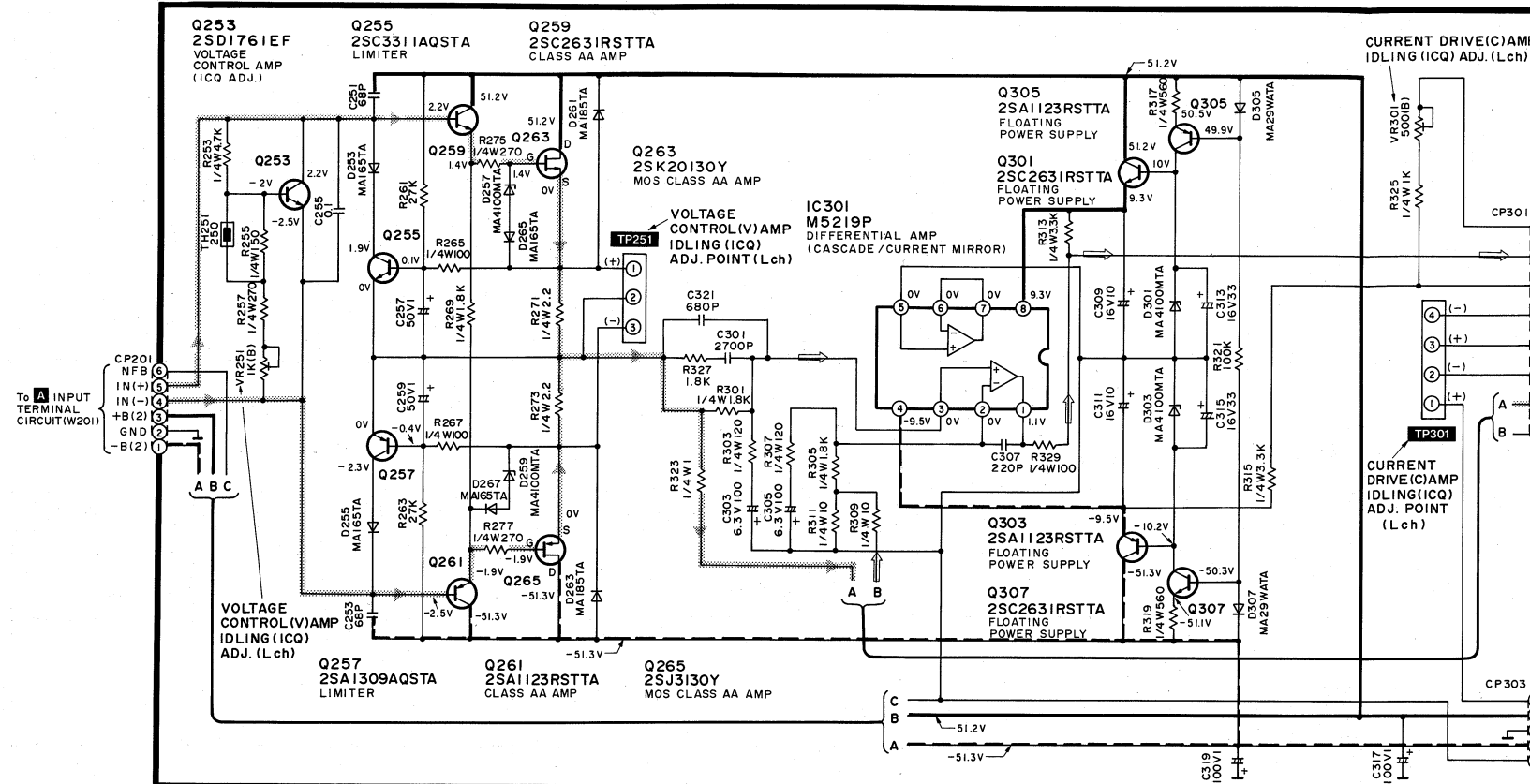
B SPEAKER SELECTOR/LOGIC CIRCUIT



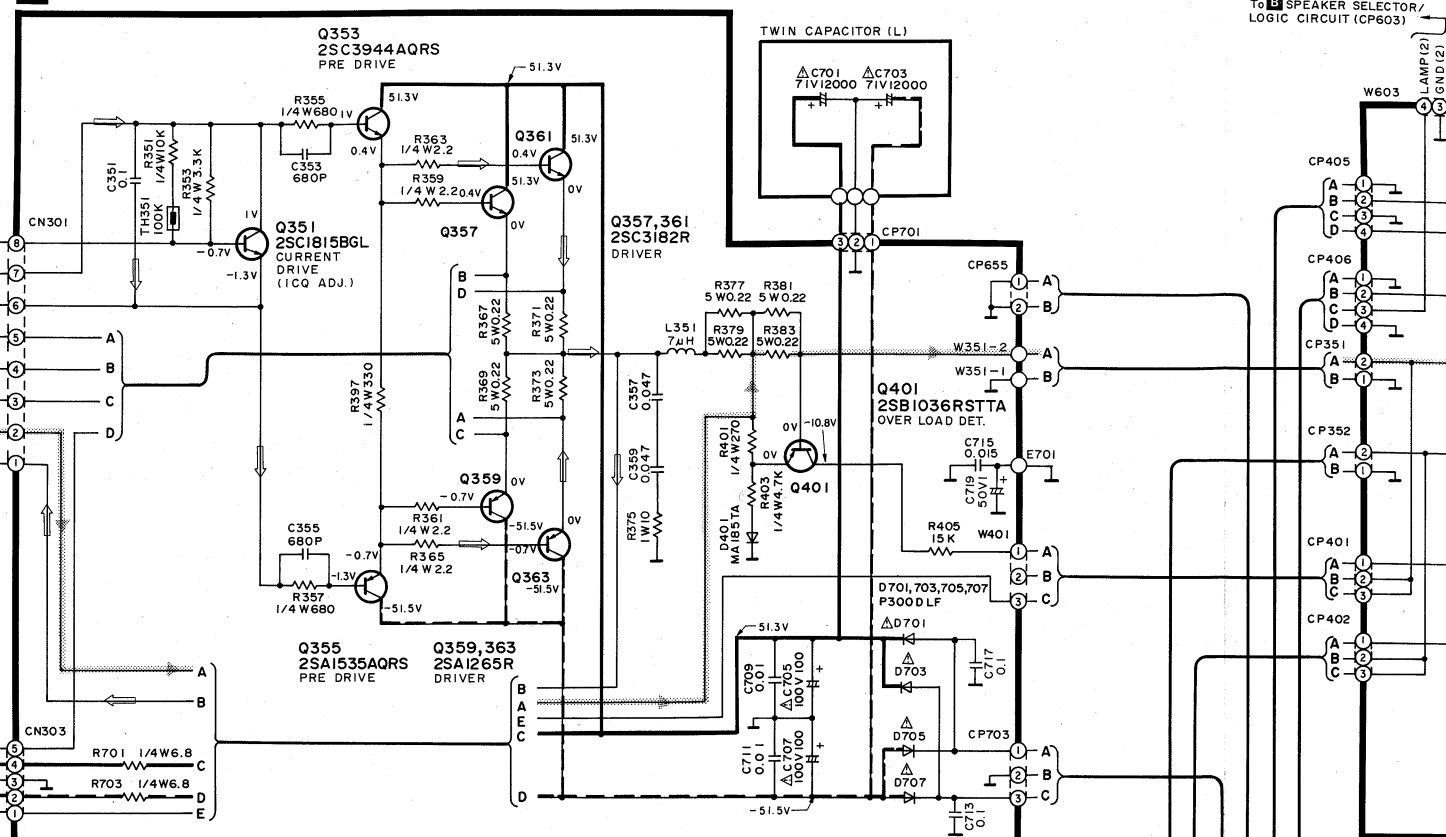
F LED CIRCUIT



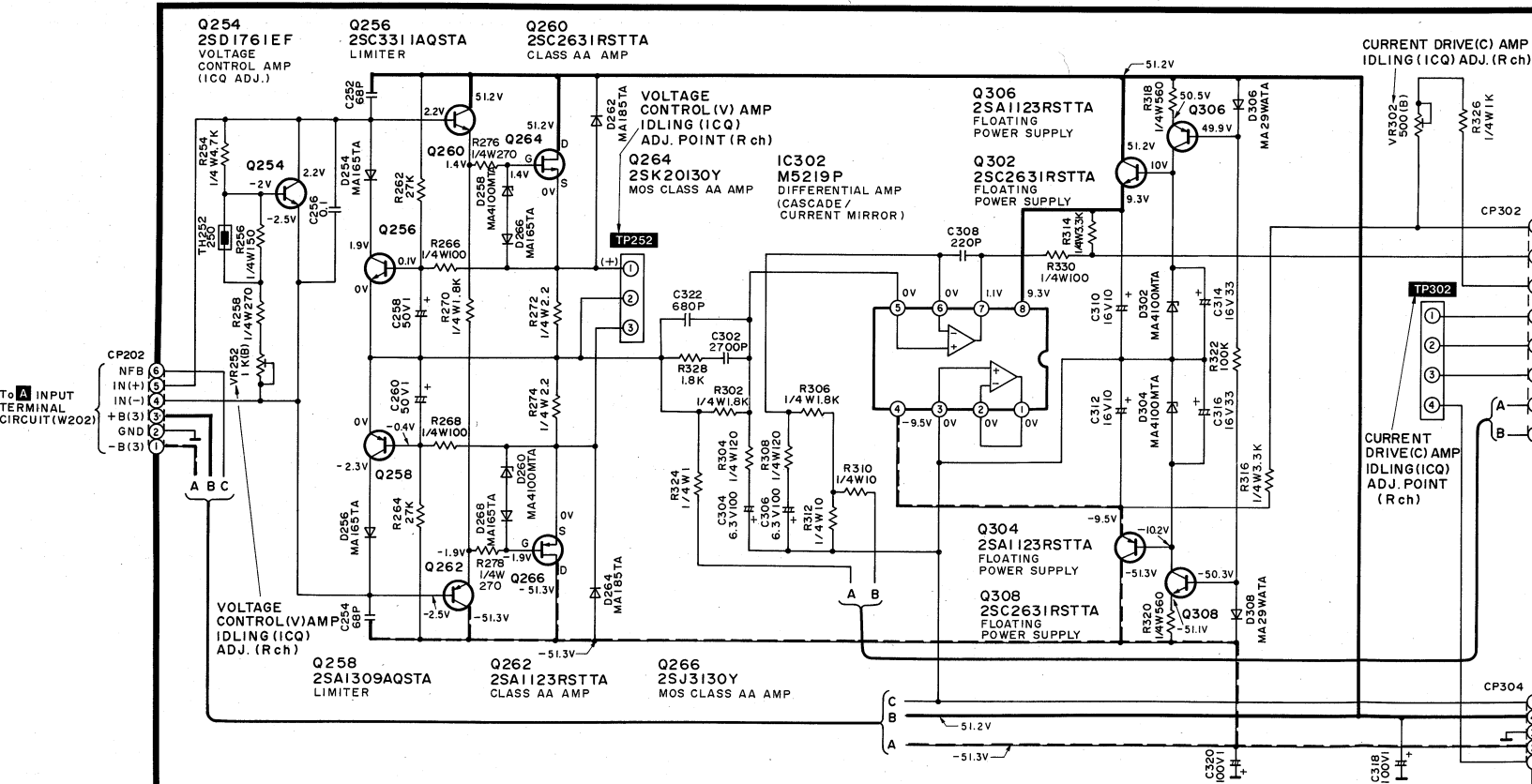
G VOLTAGE CONTROL AMP (L) CIRCUIT



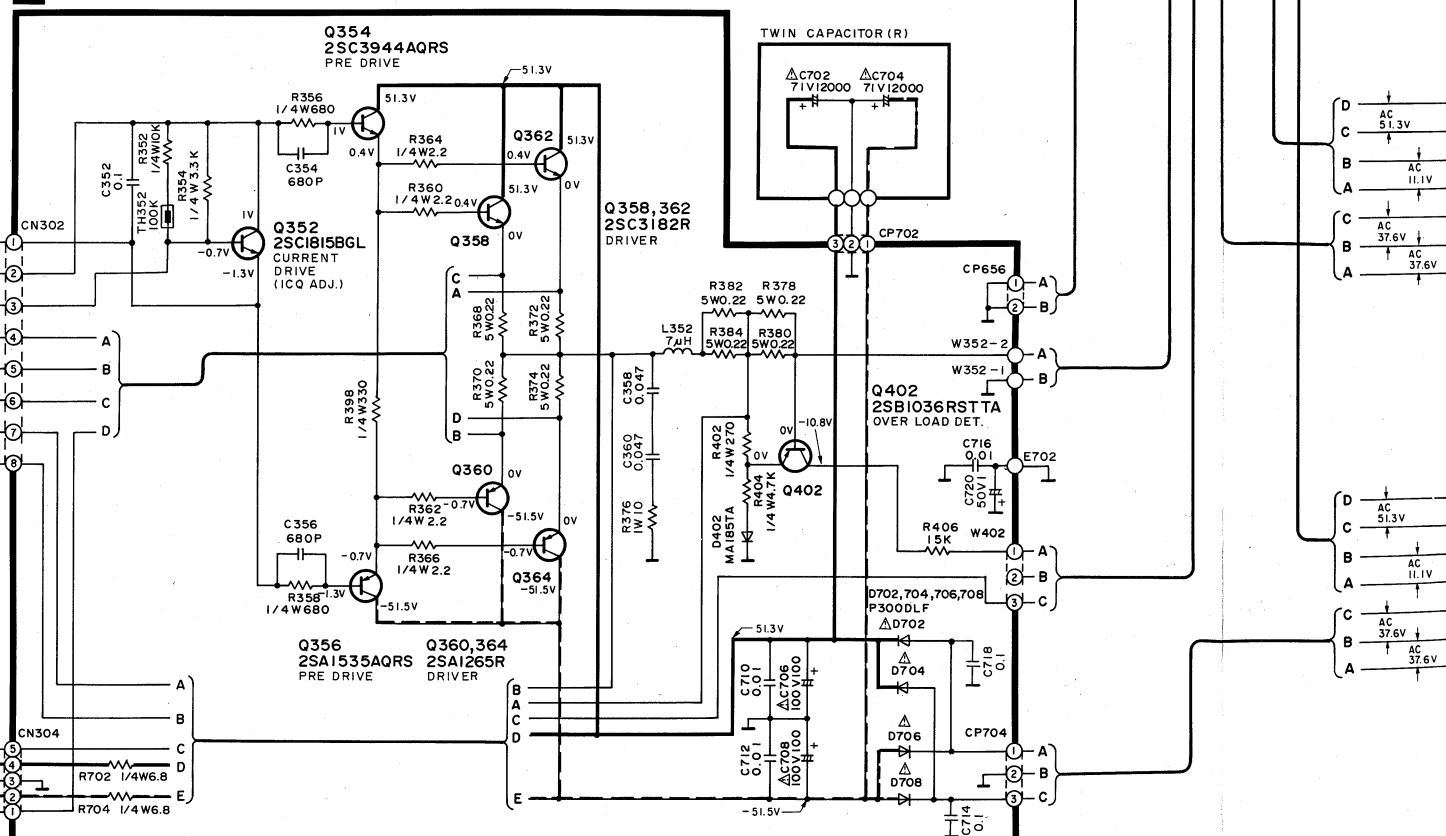
I CURRENT DRIVE AMP (L) CIRCUIT

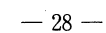
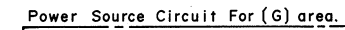


H VOLTAGE CONTROL AMP (R) CIRCUIT

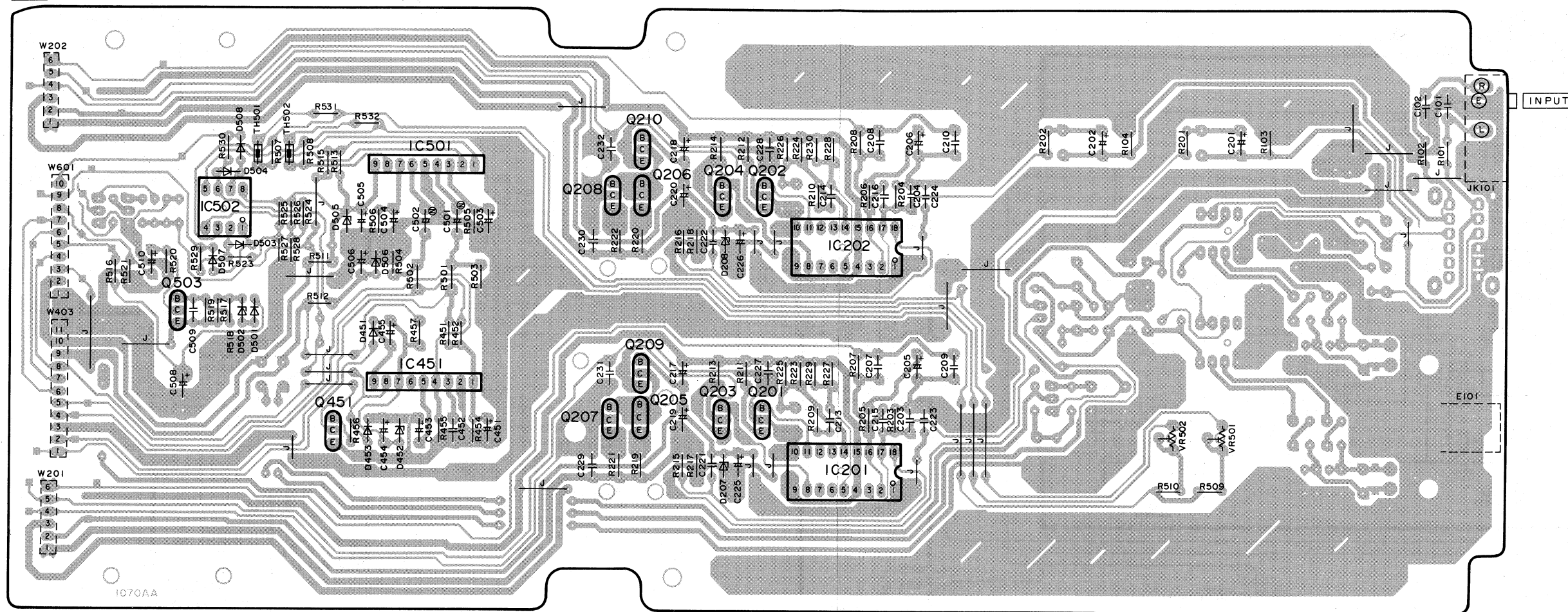
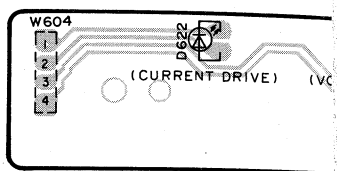
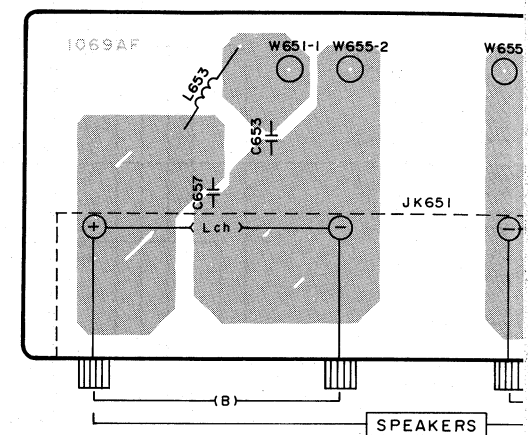
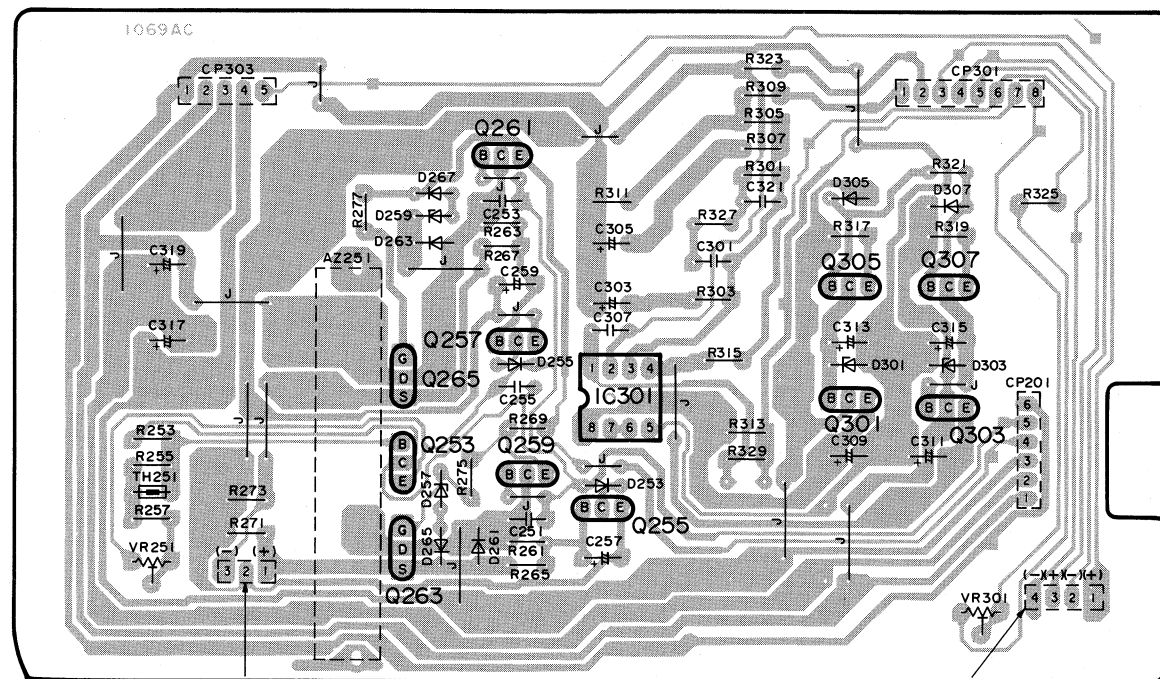


J CURRENT DRIVE AMP (R) CIRCUIT

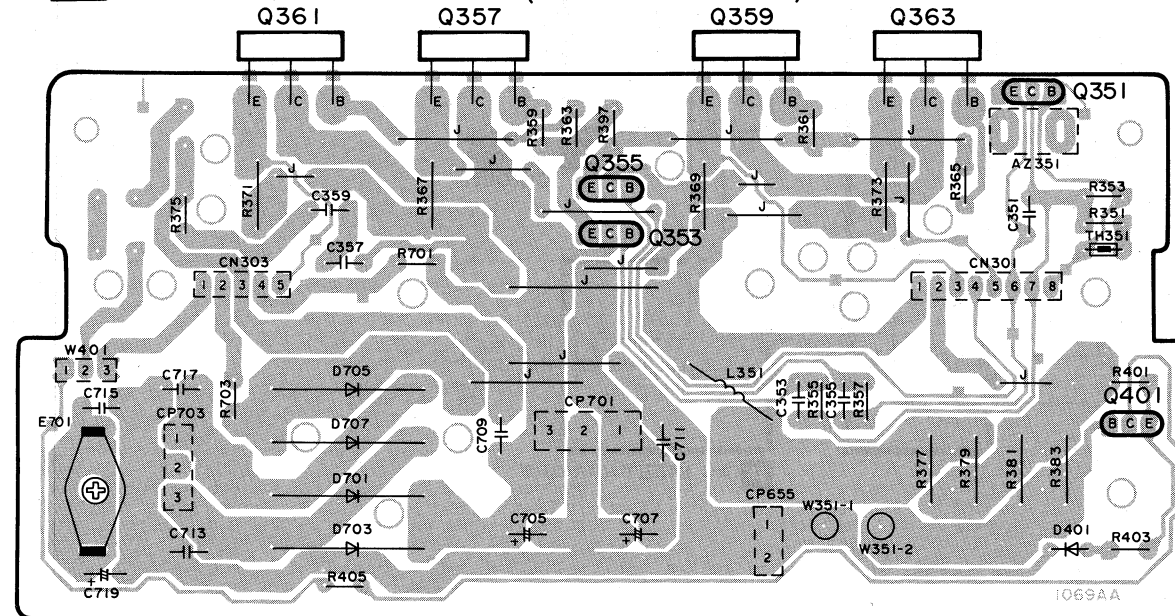




PRINTED CIRCUIT BOARDS DIAGRAM

A INPUT TERMINAL P.C.B. (REPI616A-S... (EB, EG)
REPI616B-S... (G))F LED P.C.B. (REPI616A-S... (EB, EG)
REPI616B-S... (G))L SPEAKER TERMINAL (L) P.C.B. (REPI616A-S... (EB, EG)
REPI616B-S... (G))G VOLTAGE CONTROL AMP (L) P.C.B. (REPI615A-M... (EB, EG)
REPI615B-M... (G))

TP251
VOLTAGE CONTROL (V) AMP.
IDLING (ICQ) ADJ. POINT (Lch)

I CURRENT DRIVE AMP (L) P.C.B. (REPI615A-M... (EB, EG)
REPI615B-M... (G))

TP301
CURRENT DRIVE (C) AMP.
IDLING (ICQ) ADJ. POINT (Lch)

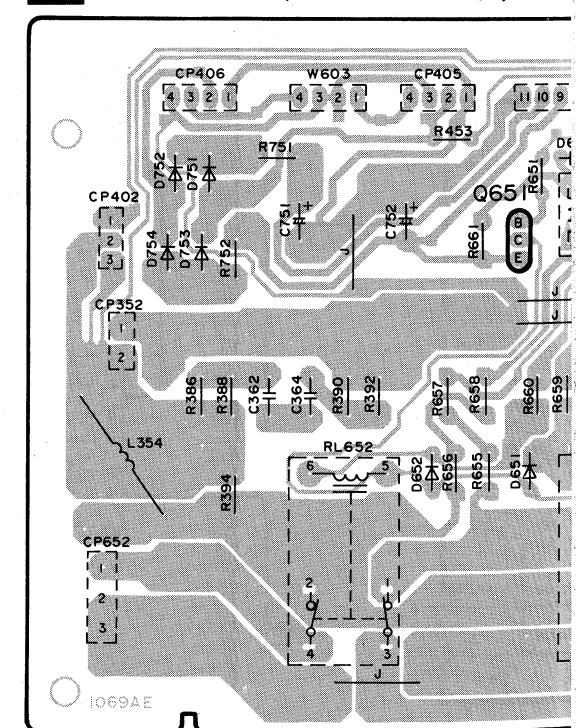
K RELAY P.C.B. (REPI615A-M... (EB, EG)
REPI615B-M... (G))

Diagram of the 1070AD board. It shows a connector labeled W604 with pins 1 through 4. Two components, D522 and D521, are shown with their respective pin connections. D522 is labeled (CURRENT DRIVE) and D521 is labeled (VOLTAGE CONTROL). The board is labeled 1070AD.

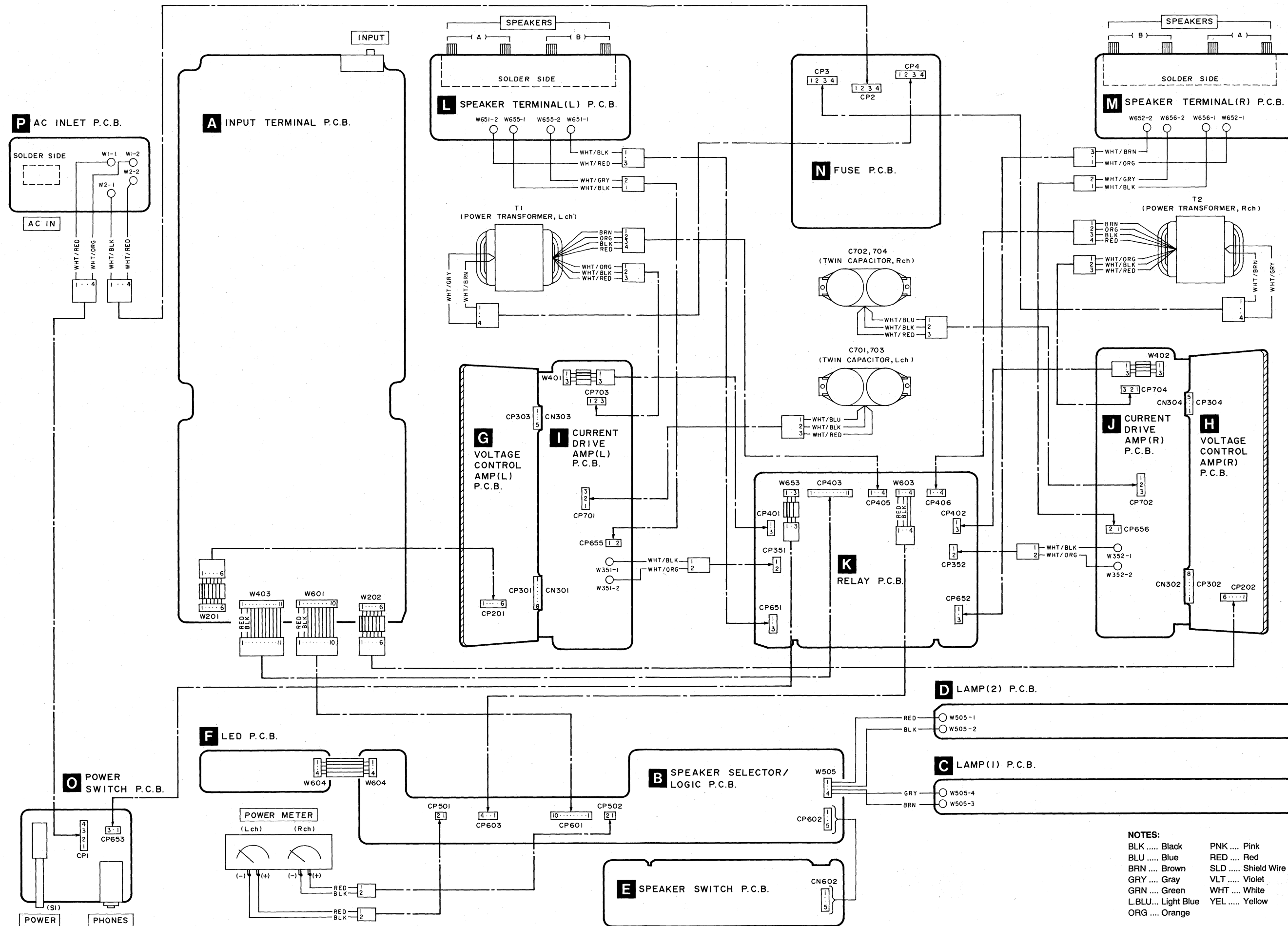
IO70AG

AC IN

230V.....(EG)
230-240V...(EB)
50/60 Hz

The diagram illustrates the internal wiring and components of the 1069A G tube. It features two main sections, labeled (A) and (B), which are connected to a common 'SPEAKERS' terminal. Section (A) includes a speaker connection point, a resistor labeled 'Rch', and a capacitor labeled 'C656'. Section (B) includes a speaker connection point, a resistor labeled 'Rch', and a capacitor labeled 'C658'. The diagram also shows two vacuum tube sockets, W652-1 and W652-2, and two vacuum tube types, 6X4 and 6X3. The overall layout is symmetrical, with components connected to a common ground line at the bottom.

REPLACE



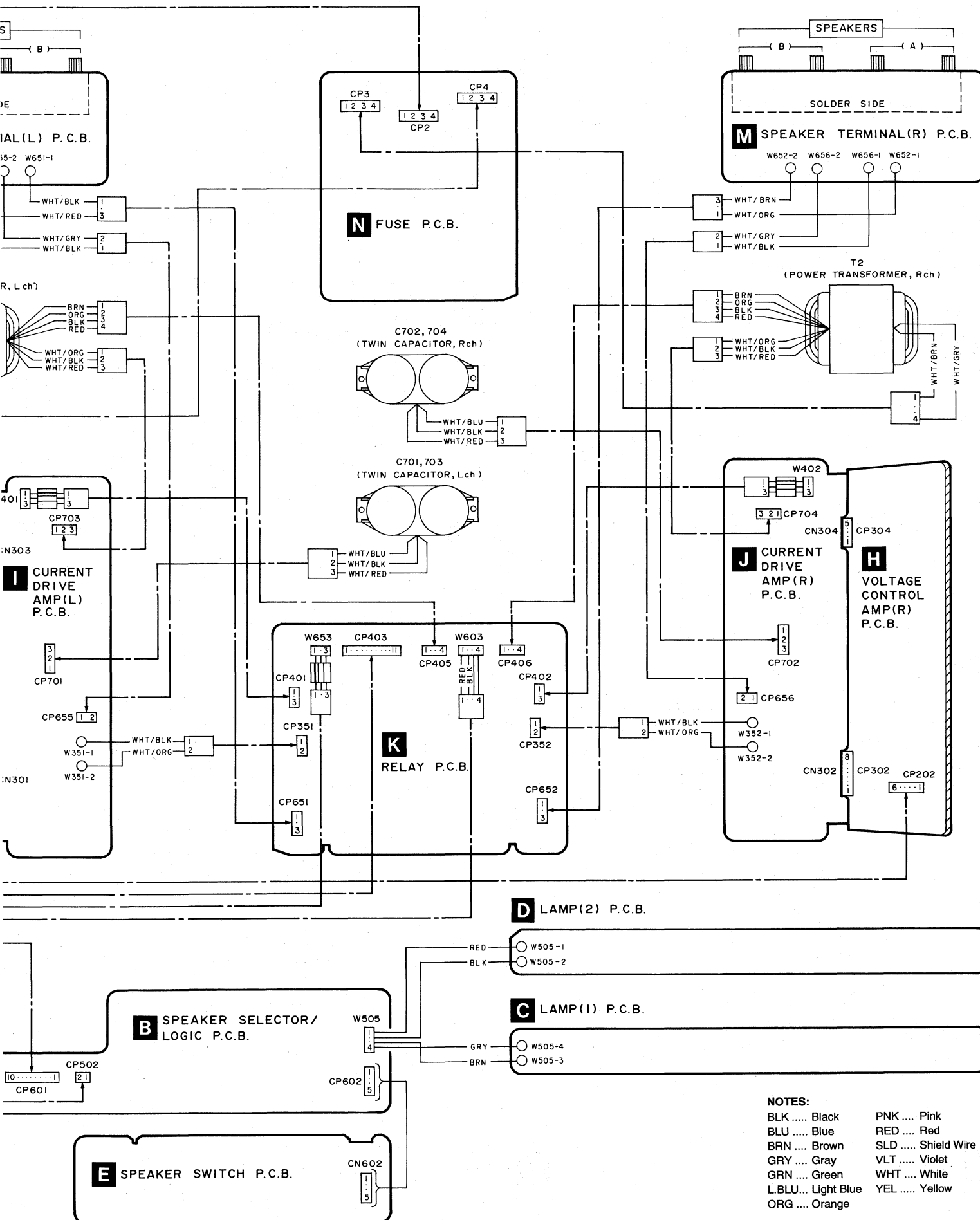
Note: *The parentheses
Parts without t

Ref. No.	Part No.
1	RGK0397-K
2	RFKNA2000EG
3	RFKNA2000EG
4	RHD30034
5	RFKKEA2000EG
6	SNE2095-5
7	SNE2129-3
8	XTBS3+8JFZ1
9	RFKKEA2000EG
10	RGQ0085-K
11	RGRO069B-B
12	RGRO172A-A
12	RGRO172A-B
12	RGRO172B-A
13	RKU018-2
14	FMQ0250
15	FMQ0251
16	FMQ0697
17	FMQ0698
18	RFKNA2000EG
19	RFKNA2000EG
20	FMQ0112-1
21	FMQ0113
22	FMQ0114
23	RSC0077A
24	RSC0078A
25	RSE0003
26	RFKGEA2000
27	RGK0557-T
28	RGLO192-Q
29	RGLO193-Q
30	RGU0512C-K
31	RGU0890-K
32	RHD30042
33	RHN30004
34	FMQ0699
35	FMQ0308-K
36	XTBS26+8J
37	XTWS3+8T
38	XWG3
39	SHE187-2
40	SHR415
41	SHR9814
42	SJS9231A

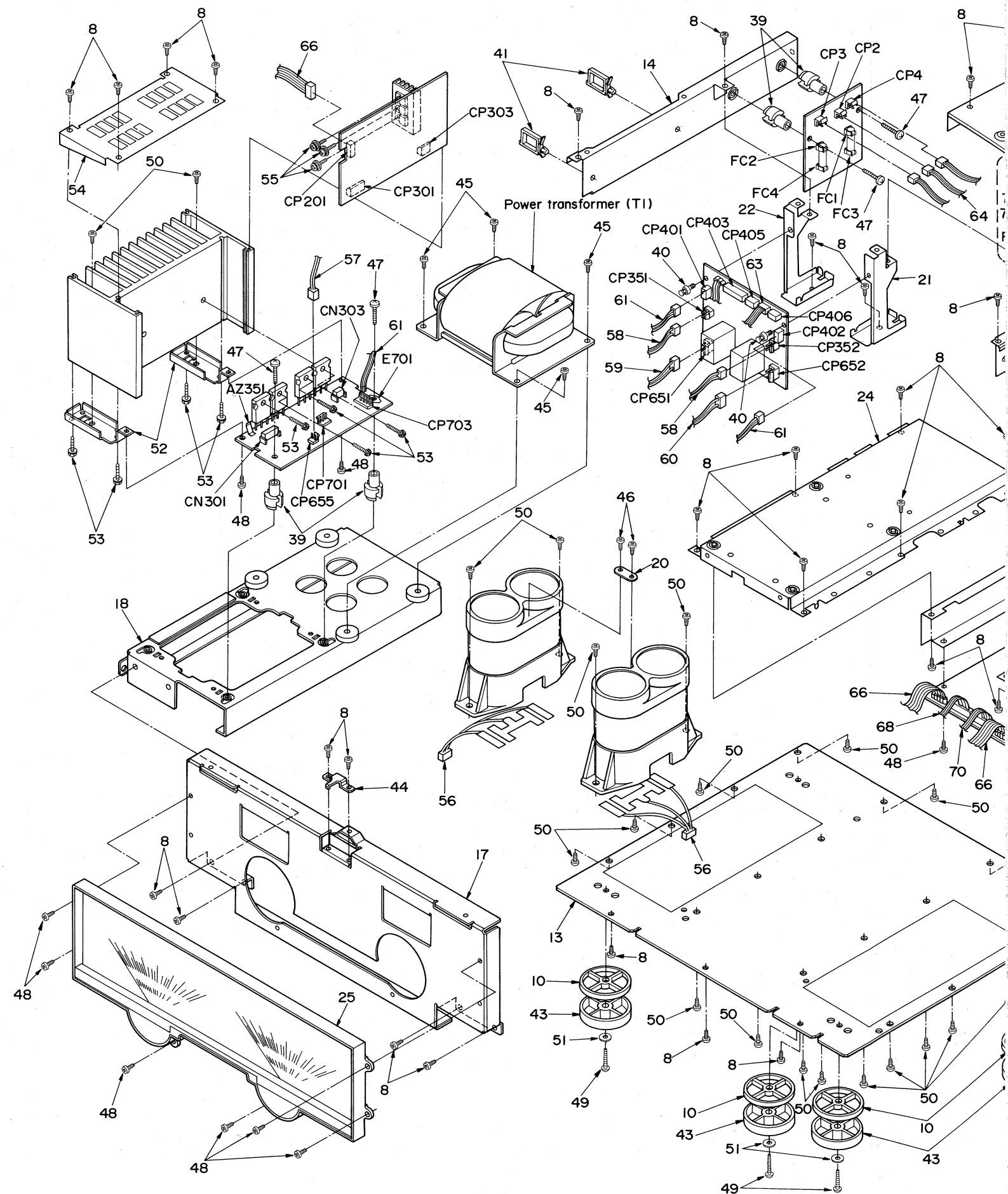
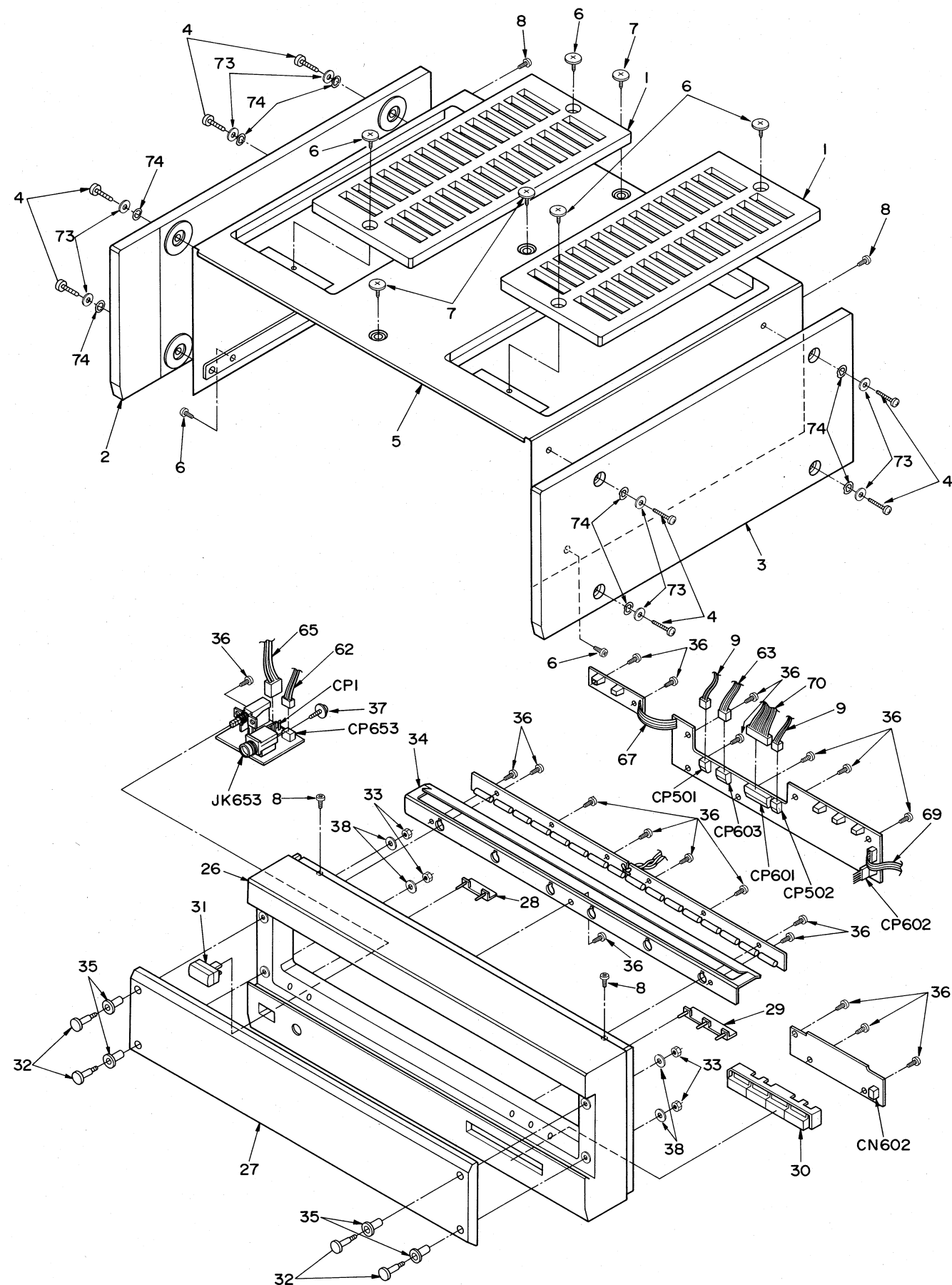
REPLACEMENT PARTS LIST

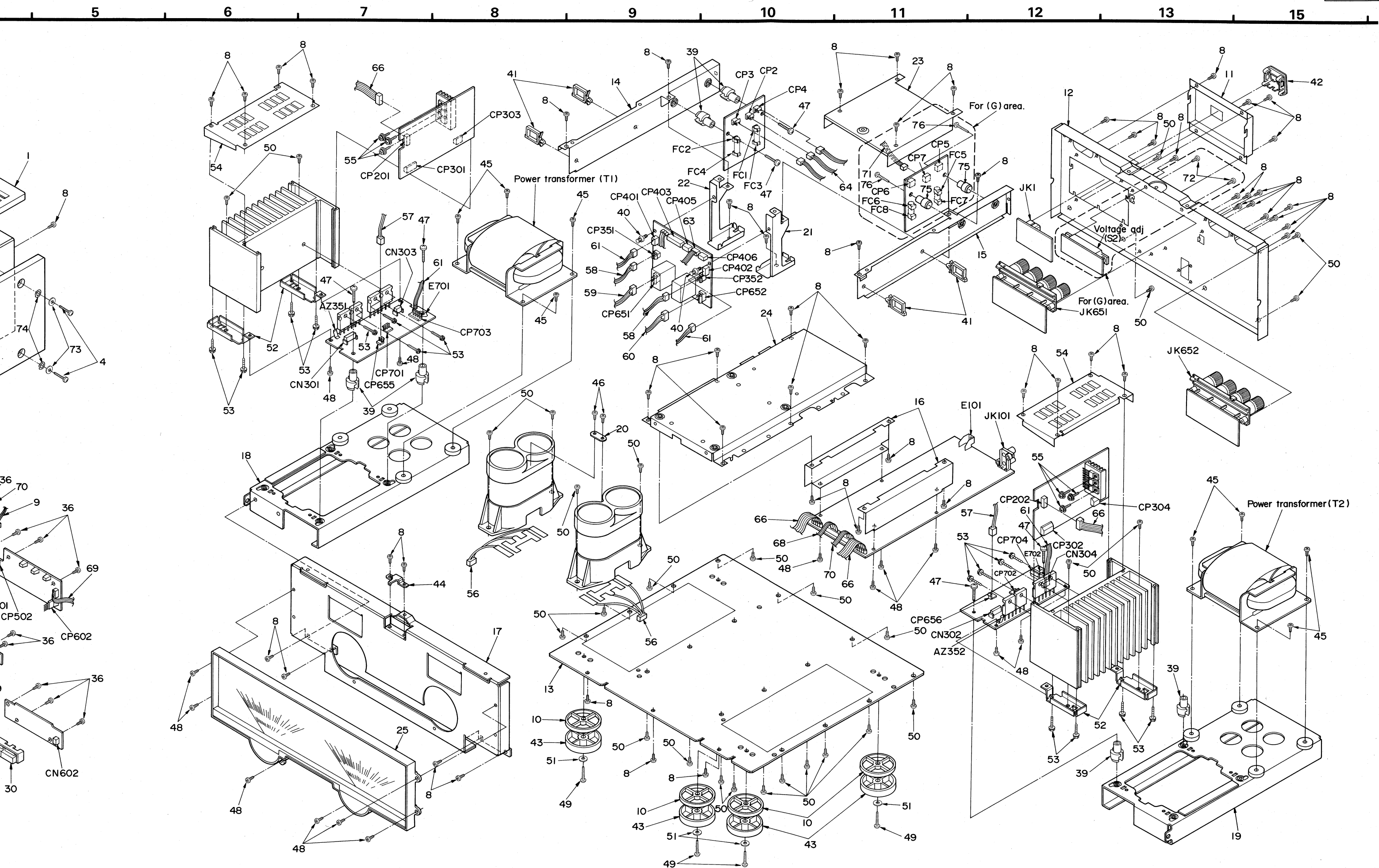
Note: *The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		43	SKL306	RUBBER FOOT	
				44	SUW2987	METER HOLDER	
				45	XTBS3+10JFZ1	SCREW	
				46	XTB3+10JFZ	SCREW	
				47	XTB3+20J	SCREW	
				48	XTB3+8JFZ	SCREW	
				49	XTB4+16FFZ	SCREW	
				50	XTB4+8FFZ	SCREW	
				51	XWE5X12FVC	WASHER	
				52	RMQ0111	RADIATOR ANGLE	
				53	SNE2117-1	SCREW	
				54	RMV0036	SUB RADIATING PLATE (L) · (R)	
				55	XYN3+F8	SCREW	
				56	REZ0158	CONNECTOR ASS' Y (3P)	
				57	RFKEA2000EGB	CONNECTOR ASS' Y (2P)	
				58	RFKEA2000EGC	CONNECTOR ASS' Y (2P)	
				59	RFKEA2000EGD	CONNECTOR ASS' Y (3P)	
				60	RFKEA2000EGE	CONNECTOR ASS' Y (3P)	
				61	RFKEA2000EGF	CONNECTOR ASS' Y (3P)	
				62	RFKEA2000EGG	CONNECTOR ASS' Y (3P)	
				63	RFKEA2000EGH	CONNECTOR ASS' Y (4P)	
				64	RFKEA2000EGI	CONNECTOR ASS' Y (4P)	
				65	RFKEA2000EGJ	CONNECTOR ASS' Y (4P)	
				66	RFKEA2000EGK	CONNECTOR ASS' Y (6P)	
				67	RFKEA2000EGL	CABLE ASS' Y (4P)	
				68	RFKEA2000EGM	CONNECTOR ASS' Y (11P)	
				69	RFKEA2000EGN	CONNECTOR ASS' Y (4P)	
				70	RFKEA2000EGP	CONNECTOR ASS' Y (10P)	
				71	RFKEA2000GQ	CONNECTOR ASS' Y (5P)	(G)
				72	XTBS3+8JFZ1	SCREW	(G)
				73	RHW85001	WAVE WASHER	
				74	XWE6FZ	WASHER	
				75	SHE187-2	P. C. B. SUPPORT	(G)
				76	XTB3+20J	SCREW	(G)
1	RGK0397-K	CABINET ORNAMENT (L) · (R)					
2	RFKNA2000EGA	SIDE PANEL (L) ASS' Y					
3	RFKNA2000EGB	SIDE PANEL (R) ASS' Y					
4	RHD30034	SCREW					
5	RFKKEA2000EG	CABINET ASS' Y					
6	SNE2095-5	SCREW					
7	SNE2129-3	SCREW					
8	XTBS3+8JFZ1	SCREW					
9	RFKEA2000EGA	CONNECTOR ASS' Y (2P)					
10	RGQ0085-K	FOOT SPACER					
11	RGR0069B-B	SUB REAR PANEL					
12	RGR0172A-A	REAR PANEL	(EG)				
12	RGR0172A-B	REAR PANEL	(EB)				
12	RGR0172B-A	REAR PANEL	(G)				
13	RKU0018-2	BOTTOM CHASSIS					
14	RMA0250	SIDE ANGLE (L)					
15	RMA0251	SIDE ANGLE (R)					
16	RMA0697	P. C. B. HOLDER					
17	RMA0698	METER HOLDER					
18	RFKNA2000EGC	TRANSFORMER CHASSIS (L) ASS' Y					
19	RFKNA2000EGD	TRANSFORMER CHASSIS (R) ASS' Y					
20	RMQ0112-1	CAPACITOR HOLDER					
21	RMQ0113	P. C. B. HOLDER (R)					
22	RMQ0114	P. C. B. HOLDER (L)					
23	RSC0077A	PRE SHIELD CASE					
24	RSC0078A	DAC CASE					
25	RSE0003	METER					
26	RFKGEA2000EG	FRONT PANEL ASS' Y					
27	RGK0557-T	TRANSPARENT GLASS					
28	RGL0192-Q	PANEL LIGHT (A)					
29	RGL0193-Q	PANEL LIGHT (B)					
30	RGU0512C-K	SPEAKERS BUTTON					
31	RGU0890-K	POWER SWITCH BUTTON					
32	RHD30042	SCREW					
33	RHN30004	NUT					
34	RMA0699	LAMP HOUSE					
35	RMG0308-K	BUSHING (B)					
36	XTBS26+8J	SCREW					
37	XTWS3+8T	SCREW					
38	XWG3	WASHER					
39	SHE187-2	P. C. B. SUPPORT					
40	SHR415	LATCH					
41	SHR9814	CLAMPER					
42	SJS9231A	AC INLET COVER					



CABINET PARTS LOCATION





REPLACEMENT PARTS LIST

Notes: *Important safety notice:

Components identified by Δ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)

Parts without these indications can be used for all areas.

*The "(SF)" mark denotes the standard part.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		D305-308	MA29WA	DIODE	
				D401, 402	MA185TA	DIODE	
				D451	MA185TA	DIODE	
				D452	MA4110MTA	DIODE	
				D453	MA165	DIODE	
IC201, 202	AN7062N	VOLTAGE AMP		D501	MA165	DIODE	
IC301, 302	M5219P	DIFFERENTIAL AMP		D502	MA4082MTA	DIODE	
IC451	AN7073	MUTING/PROTECTION		D503, 504	MA165	DIODE	
IC501	BA6138	METER DRIVE AMP		D505, 506	MA4100MTA	DIODE	
IC502	M5218AP	METER DRIVE BUFFER AMP		D507, 508	MA165	DIODE	
IC601	MN4001B	SPEAKER SELECTOR		D601-617	MA165	DIODE	
		TRANSISTOR(S)		D618-620	LN846RP-C	L. E. D.	
				D621	LN446YP	L. E. D.	
Q201-204	2SA1123RSTTA	TRANSISTOR		D622	LN846RP-C	L. E. D.	
Q205-208	2SC2631RSTTA	TRANSISTOR		D623	MA4036MTA	DIODE	
Q209, 210	2SA1123RSTTA	TRANSISTOR		D624-626	MA165	DIODE	
Q253, 254	2SD1761EF	TRANSISTOR		D627-629	MA4051MTA	DIODE	
Q255, 256	2SC3311A-Q	TRANSISTOR		D651-653	MA165	DIODE	
Q257, 258	2SA1309A-R	TRANSISTOR		D701-708	P300DLF	DIODE	Δ
Q259, 260	2SC2631RSTTA	TRANSISTOR		D751-754	1SR35200TB	DIODE	Δ
Q261, 262	2SA1123RSTTA	TRANSISTOR				VARIABLE RESISTOR(S)	
Q263, 264	2SK20130Y	TRANSISTOR					
Q265, 266	2SJ3130Y	TRANSISTOR		VR251, 252	EVNDCAA03B13	VOLT. CONTROL AMP ICQ ADJ.	
Q301, 302	2SC2631RSTTA	TRANSISTOR		VR301, 302	EVNDCAA03B52	CURRENT DRIVE AMP ICQ ADJ.	
Q303-306	2SA1123RSTTA	TRANSISTOR		VR501, 502	EVNDXAA00B13	POWER METER ADJ.	
Q307, 308	2SC2631RSTTA	TRANSISTOR				THERMISTOR(S)	
Q351, 352	2SC1815BG	TRANSISTOR					
Q353, 354	2SC3944AQRS	TRANSISTOR		TH251, 252	ERTD2ZGL251T	THERMISTOR	
Q355, 356	2SA1535AQRS	TRANSISTOR		TH351, 352	ERTD2ZHL104T	THERMISTOR	
Q357, 358	2SC3182R	TRANSISTOR		TH501, 502	ERTD2ZHL104T	THERMISTOR	
Q359, 360	2SA1265R	TRANSISTOR				COIL(S)	
Q361, 362	2SC3182R	TRANSISTOR					
Q363, 364	2SA1265R	TRANSISTOR		L1	SLQZ650MH49	COIL	(EG, EB) Δ
Q401, 402	2SB1036R	TRANSISTOR		L351, 352	SLQY07G-40	COIL	
Q451	2SA992EFPTA	TRANSISTOR		L353, 354	SLQY18G-10	COIL	
Q503	2SA1309A-R	TRANSISTOR		L651-654	SLQY07G-40	COIL	
Q601, 602	2SA1309A-R	TRANSISTOR				TRANSFORMER(S)	
Q603, 604	2SC3311A-Q	TRANSISTOR					
Q651	2SC3311A-Q	TRANSISTOR		T1, 2	RTP7K5E004-W	POWER TRANSFORMER	(EG) Δ
		DIODE(S)		T1, 2	RTP7K5B003-W	POWER TRANSFORMER	(EB) Δ
				T1, 2	RTP7K5E006-W	POWER TRANSFORMER	(G) Δ
D207, 208	MA4160M	DIODE				LAMP(S)	
D253-256	MA165	DIODE					
D257-260	MA4100MTA	DIODE					
D261-264	MA185TA	DIODE					
D265-268	MA165	DIODE					
D301-304	MA4100MTA	DIODE					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
				FC5-8	EYF52BC	FUSE HOLDER	(G)
PL501-516	XAMR128S	LAMP				RELAY (S)	
		FUSE (S)					
F1, 2	XBA2C20TB0	FUSE 250V, T2A	△	RL651, 652	RSY0004-1	RELAY	△
F3, 4	XBA2C20TB0	FUSE 250V, T2A	(G) △	RL653	RSYG5A237P12	RELAY	△
		SWITCH(ES)				TERMINAL (S)	
S1	ESB8279V	POWER	△	JK1	SJS9231-1B	AC INLET	△
S2	ESD26200A	VOLTAGE ADJ.	(G) △	JK101	SJF3225-5A	UNBALANCE INPUT	
S601	EVQ21405R	OFF		JK651, 652	RJH4403	SPEAKER A/B	
S602	EVQ21405R	SPEAKER A		JK653	QJA04552C-A	HEADPHONES	
S603	EVQ21405R	SPEAKER B				PACKING MATERIAL	
S604	EVQ21405R	SPEAKER A+B					
		CONNECTOR (S) AND SOCKET (S)		P1	RPG1582	PACKING CASE	(EG, G)
				P1	RPG1583-1	PACKING CASE	(EB)
CN301, 302	SJS50878JQ	SOCKET (8P)		P2	RPN0687	CUSHION	
CN303, 304	SJS50578JQ	SOCKET (5P)		P3	RPH0101	KRAFT PAPER	
CN602	SJS50581BB	SOCKET (5P)		P4	SPH6434	PROTECTION SHEET	
CP1, 2	RJP1A4204-1	CONNECTOR (3P)		P5	RPQ0164	PAD	
CP3, 4	RJP1A4204-1	CONNECTOR (3P)	(EG, EB)	P6	RPH0032	MIRROR SHEET	(EB)
CP3, 5	RJP1A4205	CONNECTOR (4P)	(G)			ACCESSORIES	
CP6	RJP1A4204-1	CONNECTOR (3P)	(G)				
CP7	RJP1A4205	CONNECTOR (4P)	(G)	A1	RFKSEA2000EG	INSTRUCTION MANUAL ASS'Y	(EG)
CP201, 202	SJT3611	CONNECTOR (6P)		A1	RQT1988-B	INSTRUCTION MANUAL	(EB)
CP301, 302	SJT30845JQ	CONNECTOR (8P)		A1	RFKSEA2000G	INSTRUCTION MANUAL ASS'Y	(G)
CP303, 304	SJT30545JQ	CONNECTOR (5P)		A2	RJA0019-2K	AC POWER SUPPLY CORD	(EG, G) △ (SF)
CP351, 352	RJP1A3202	CONNECTOR (2P)		A2	VJA0733	AC POWER SUPPLY CORD	(EB) △ (SF)
CP401, 402	SJT3319	CONNECTOR (3P)		A3	RQA0013	WARRANTY CARD	(EG, EB)
CP403	SJT3011	CONNECTOR (11P)		A4	RQCB0169	SERVICENTER LIST	
CP405, 406	SJT3415	CONNECTOR (4P)		A5	SJP5213-2	POWER PLUG ADAPTOR	(G) △
CP501, 502	SJT3215	CONNECTOR (2P)		A6	RQLA0134	VOLTAGE CAUTION LABEL	(G)
CP601	SJT3007	CONNECTOR (10P)					
CP602	SJT30549BB1	CONNECTOR (5P)					
CP603	SJT3417	CONNECTOR (4P)					
CP651, 652	RJP1A4103	CONNECTOR (2P)					
CP653	SJT3319	CONNECTOR (3P)					
CP655, 656	RJP1A3202	CONNECTOR (2P)					
CP701-704	RJP1A3303	CONNECTOR (3P)					
		GND PLATE					
AZ351, 352	SUS227	GND PLATE					
E101	FMN0132	GND PLATE					
E701, 702	SNE1004-1	GND PLATE					
		FUSE HOLDER					
FC1-4	EYF52BC	FUSE HOLDER					

RESISTORS AND CAPACITORS

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1 K = 1,000 (OHM), 1 M = 1,000 k (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R401, 402	ERDAF2VJ271T	1/4W 270			CAPACITORS
			R403, 404	ERDAF2VJ472T	1/4W 4.7K			
			R405, 406	ERDS2TJ153	1/4W 15K	C1	ECKWNS103ZVS	500V 0.01u Δ
R1	ERC12ZGK335	1/2W 3.3M (EG, EB) Δ	R451	ERDS2TJ563	1/4W 56K	C101, 102	ECCR1H181K5	50V 180P
R101, 102	ERDAS3G471T	1/4W 470	R452	ERDS2TJ473	1/4W 47K	C201, 202	ECA1CPXS220B	16V 22u
R103, 104	ERDAS3G334T	1/4W 330K	R453	ERDS2TJ273	1/4W 27K	C203, 204	ECKT1H221KB	50V 220P
R201, 202	ERDAS3G122	1/4W 1.2K	R454	ERDS2TJ153	1/4W 15K	C205, 206	ECA1CPXS221B	16V 220u
R203, 204	ERDAS3G333	1/4W 33K	R455	ERDS2TJ103	1/4W 10K	C207, 208	ECCR2H270K5	500V 27P
R205, 206	ERDAF2VJ122T	1/4W 1.2K	R456	ERDS2TJ153	1/4W 15K	C209, 210	ECKR2H221KB5	500V 220P
R207, 208	ERDLS2VJ333T	1/4W 33K	R457	ERDAF2VJ561T	1/4W 560	C213, 214	ECBT1H331KB5	50V 330P
R209, 210	ERDAS3G561	1/4W 560	R501, 502	ERDS1FVJ472T	1/2W 4.7K Δ	C215, 216	ECBT1H820KB5	50V 82P
R211-214	ERDAF2VJ101T	1/4W 100	R503, 504	ERDAF2VJ271T	1/4W 270	C217-220	ECA2APXS010B	100V 1u
R215, 216	ERDAS3G473	1/4W 47K	R505, 506	ERDS2TJ155	1/4W 1.5M	C221, 222	ECBT1H104ZF5	50V 0.1u
R217, 218	ERDS1FVJ822T	1/2W 8.2K Δ	R507, 508	ERDS2TJ682T	1/4W 6.8K	C223, 224	ECBT1H102KB5	50V 1000P
R219-222	ERDAF2VJ101T	1/4W 100	R509, 510	ERDS2TJ471	1/4W 470	C225, 226	ECA2APXS010B	100V 1u
R223, 224	ERDAF2VJ332T	1/4W 3.3K	R511, 512	ERDAF2VJ471T	1/4W 470	C227-230	ECCR2H270K5	500V 27P
R225, 226	ERDAS3G333	1/4W 33K	R513	ERDS2TJ104	1/4W 100K	C231, 232	ECKR1H103ZF5	50V 0.01u
R227, 228	ERDAF2VJ332T	1/4W 3.3K	R515	ERDS2TJ563	1/4W 56K	C251-254	ECCV2H680K	500V 68P
R229, 230	ERDAS3G333	1/4W 33K	R516	ERDS2TJ681	1/4W 680	C255, 256	ECBT1H104ZF5	50V 0.1u
R253, 254	ERDAF2VJ472T	1/4W 4.7K	R517	ERDS2TJ332	1/4W 3.3K	C257-260	ECEA1HKA010B	50V 1u
R255, 256	ERDAF2VJ151T	1/4W 150	R518, 519	ERDS2TJ103	1/4W 10K	C301, 302	ECQB1H272JF3	50V 2700P
R257, 258	ERDAF2VJ271T	1/4W 270	R520	ERDS2TJ223	1/4W 22K	C303-306	ECA0JPXS010B	6.3V 100u
R261-264	ERDS2TJ273	1/4W 27K	R521	ERDS2TJ104	1/4W 100K	C307, 308	ECBT1H221KB5	50V 220P
R265-268	ERDAF2VJ101T	1/4W 100	R523, 524	ERDS2TJ154	1/4W 150K	C309-312	ECA1CPXS100B	16V 10u
R269, 270	ERDAF2VJ182T	1/4W 1.8K	R525, 526	ERDS2TJ223	1/4W 22K	C313-316	ECA1CPXS330B	16V 33u
R271-274	ERDAF2VJ2R2T	1/4W 2.2	R527, 528	ERDS2TJ102	1/4W 1K	C317-320	ECA2APXS010B	100V 1u
R275-278	ERDAF2VJ271T	1/4W 270	R529, 530	ERDS2TJ123	1/4W 12K	C321, 322	ECBA1H681KB5	50V 680P
R301, 302	ERDAF2VJ182T	1/4W 1.8K	R531, 532	ERDS2TJ103	1/4W 10K	C351, 352	ECBT1H104ZF5	50V 0.1u
R303, 304	ERDAF2VJ121T	1/4W 120	R601-604	ERDS2TJ473	1/4W 47K	C353-356	ECBA1H681KB5	50V 680P
R305, 306	ERDAF2VJ182T	1/4W 1.8K	R605	ERDS2TJ223	1/4W 22K	C357-360	ECQV1H473JM3	50V 0.047u
R307, 308	ERDAF2VJ121T	1/4W 120	R606, 607	ERDS2TJ472	1/4W 4.7K	C361-364	ECQV1H224JM3	50V 0.22u
R309-312	ERDAF2VJ100T	1/4W 10	R608, 609	ERDS2TJ223	1/4W 22K	C451	ECA0JAP331B	6.3V 330u
R313-316	ERDAF2VJ332T	1/4W 3.3K	R610	ERDS2TJ103	1/4W 10K	C452	ECKT1H223ZF	50V 0.022u
R317-320	ERDAF2VJ561T	1/4W 560	R611	ERDS2TJ473	1/4W 47K	C453	ECEA0JKA470B	6.3V 47u
R321, 322	ERDAS3G104	1/4W 100K	R612, 613	ERDS2TJ331	1/4W 330	C454, 455	ECEA1HKA4R7B	50V 4.7u
R323, 324	ERDAF2VJ1R0T	1/4W 1	R616, 617	ERDS2TJ331	1/4W 330	C501, 502	ECEA1EKN3R3B	25V 3.3u
R325, 326	ERDAF2VJ102T	1/4W 1K	R619, 620	ERDS2TJ331	1/4W 330	C503, 504	ECEA1HKA4R7B	50V 0.47u
R327, 328	ERDAS3G182	1/4W 1.8K	R621	ERDS2TJ471	1/4W 470	C505, 506	ECEA1HKA4R7B	50V 4.7u
R329, 330	ERDAF2VJ101T	1/4W 100	R622	ERDS2TJ331	1/4W 330	C508	ECA1CM332E	16V 3300u
R351, 352	ERDAF2VJ103T	1/4W 10K	R623	ERDS2TJ471	1/4W 470	C509	ECBT1E103ZF	25V 0.01u
R353, 354	ERDAF2VJ332T	1/4W 3.3K	R624	ERDS2TJ151	1/4W 150	C510	ECEA1HKA22B	50V 0.22u
R355-358	ERDAF2VJ681T	1/4W 680	R651	ERDS2TJ472	1/4W 4.7K	C601-604	ECBT1E103ZF	25V 0.01u
R359-366	ERDAF2VJ2R2T	1/4W 2.2	R655, 656	ERG1SJ181E	1W 180	C651-654	ECQB1H153JF3	50V 0.015u
R367-374	RRECMKR22SC	5W 0.22	R657, 658	ERG1SJ151E	1W 150	C655-658	ECKR1H181KB5	50V 180P
R375, 376	ERG1SJ100E	1W 10	R659, 660	ERD2FCVG221T	1/4W 220	C659, 660	ECBT1H102KB5	50V 1000P
R377-384	RRECMKR22SC	5W 0.22	R661	ERDAF2VJ221T	1/4W 220	C701-704	ECED71M123TM	71V 12000u Δ
R385-392	ERG1SJ100E	1W 10	R701-704	ERDAF2VJ6R8T	1/4W 6.8	C705-708	ECA2APXS010E	100V 100u Δ
R393, 394	ERDAF2VJ100T	1/4W 10	R751, 752	ERDAF2VJ2R2T	1/4W 2.2	C709-712	ECHR1H103JZ3	50V 0.01u
R397, 398	ERDAF2VJ331T	1/4W 330				C713, 714	ECQE2104KF3	125V 0.1u

Ref. No.	Part No.	Values & Remarks
C715, 716	ECKR1H103ZF5	50V 0.01U
C717, 718	ECQE2104KF3	125V 0.1U
C719, 720	ECEA1HKA010B	50V 1U
C751, 752	ECA1EM471E	25V 470U Δ

PACKAGING

