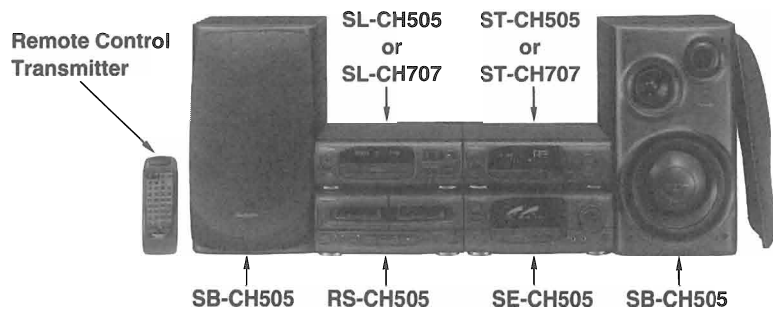


Service Manual

Amplifier

SE-CH505

Amplifier



Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

Colour

(K) Black Type

Areas

Suffix for Model No.	Area	Colour
(GC)	Asia, Latin America, Middle Near East and Africa	(K)
(GN)	Oceania	

System: SC-CH505

Specifications

Power output

DIN 1 kHz, THD 1%, both channel driven
2×50 W (6Ω)

Total harmonic distortion

Rated power at 1 kHz 1% (6Ω)
Half power at 1 kHz 0.09% (6Ω)

Load impedance

MAIN 6~8Ω

SURROUND 8Ω

S/N (rated power) 84 dB

Input MIC; 600Ω, Ø6.2

Output HEADPHONE; 32Ω, Ø3.5

■ General

Power consumption 170 W

Power supply

For (GN) area 230 V~240 V, AC 50/60 Hz

For (GC) area 110/127/220/240 V, AC 50/60 Hz

Dimensions (W×H×D) 270×118.5×335 mm

Weight 4.4 kg

Notes:

1. Weights and dimensions shown are approximate.
2. Design and specifications are subject to change without notice.
3. Total harmonic distortion is measured by the digital spectrum analyzer.

System	Tuner	Compact disc player	Amplifier	Cassette deck	Speakers
SC-CH505	ST-CH505: (GN) area ST-CH707: (GC) area	SL-CH505: (GN) area SL-CH707: (GC) area	SE-CH505	RS-CH505	*SB-CH505

*Made in Taiwan

Technics

■ Contents

	Page		Page
● BEFORE REPAIR	2	● SCHEMATIC DIAGRAM	15~19
● PROTECTION CIRCUITRY	2	● PRINTED CIRCUIT BOARD DIAGRAM	20~22
● BEFORE USE FOR (GC) AREA	2	● WIRING CONNECTION DIAGRAM	23
● ACCESSORIES	3	● BLOCK DIAGRAM	24
● LOCATION OF CONTROLS	4	● POWER SOURCE ON/OFF OF THIS UNIT SE-CH505	25
● STACKING THE COMPONENTS	5	● FUNCTION OF IC TERMINALS	25
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● DISASSEMBLY INSTRUCTIONS	11~14	● CABINET PARTS LOCATION	30
		● PACKAGING	31, 32

■ Before Repair

- Turn off the power supply. Using a 10Ω, 10 W resistor, connect both ends of power supply capacitors (C701, C702) in order to discharge the voltage.
- Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 50/60 Hz in NO SIGNAL mode should be shown below with respect to supply voltage 110 V/127 V/220 V/240 V.

Power supply voltage	AC 110~127 V	AC 220~240 V	AC 240 V
Consumed current 50 Hz	160~380 mA	80~190 mA	80~180 mA

■ Protection Circuitry

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

- *No sound is heard when the power is switched ON.
- *Sound stops during a performance.

The functions 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 this unit are used.

If this occurs, follow the procedure outlined below:

- Switch OFF the power.
- Determine the cause of the problem and correct it.
- Switch ON the power once again.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

■ Before Use for (GC) Area

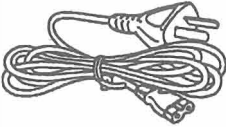

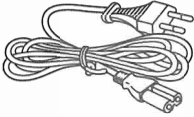
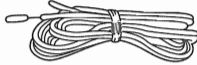
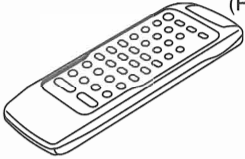
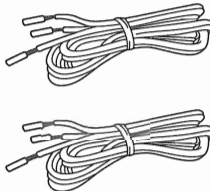
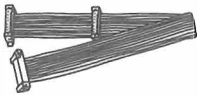
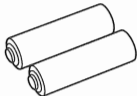

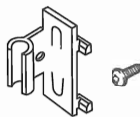
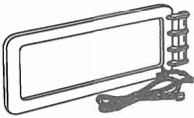
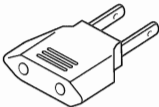
Be sure to disconnect the mains cord before adjusting the voltage selector.

Use a minus (–) screwdriver to set the voltage selector (on the bottom of the amplifier) to the voltage setting for the area in which the unit will be used.

(If the power supply in your area is 117 V or 120 V, set to the "127 V" position.)

Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)

■ Accessories

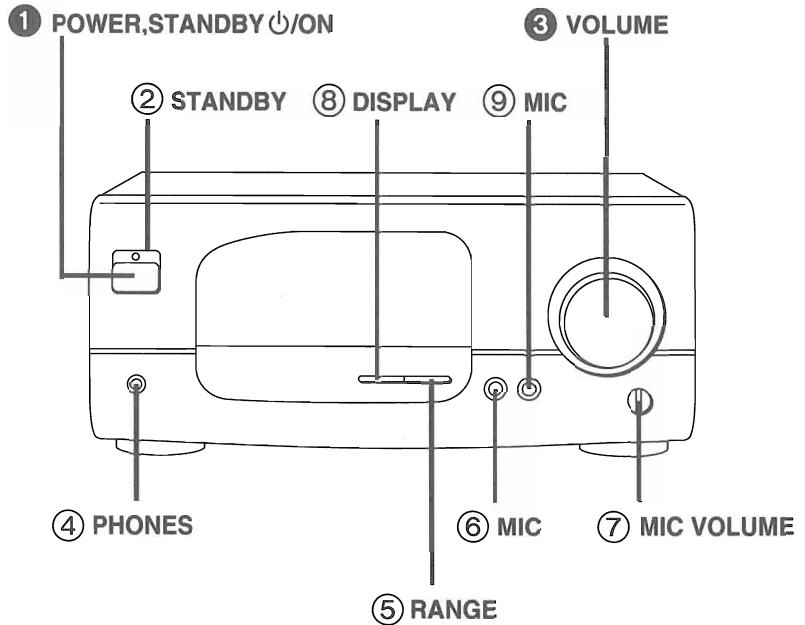
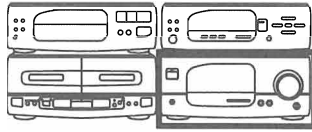
<p>AC power supply cord1 pc. (RJA0036-K) for (GN) area</p> 	<p>Video connection cable1 pc. (SJP2198) for (GC) area</p> 
<p>AC power supply cord1 pc. (RJA0019-2K) for (GC) area</p> 	<p>FM indoor antenna1 pc. (RSA0006)</p> 
<p>Remote control transmitter1 pc. (RAK-CH101WH)</p> 	<p>Speaker cords2 pcs. (REE0393)</p> 
<p>Flat cable (long)1 pc. (REX0511)</p> 	<p>Remote control batteries (UM-4, "AAA", R03)2 pcs. Note: These are available on sales route.</p> 
<p>Flat cable (short)1 pc. (REX0512)</p> 	<p>Antenna holder1 pc. (RMN0244) Screw1 pc. (XTN3+12AFZ)</p> 
<p>AM loop antenna1 pc. (RSA0010)</p> 	<p>Power plug adaptor1 pc. (SJP5213-2) for (GC) area</p> 

■ Location of Controls

The functions indicated by the numbers with black background (for example ❶) can also be activated from the remote control transmitter.

Amplifier section

- ❶ **Power "STANDBY $\text{\textcircled{O}}$ /ON" switch**
(POWER, STANDBY $\text{\textcircled{O}}$ /ON)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- ❷ **Standby indicator (STANDBY)**
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.
- ❸ **Volume control**
- ❹ **Headphones jack ($\text{\textcircled{O}}$ 3.5, 32 Ω)**
- ❺ **Range select button**
- ❻ **Microphone jack ($\text{\textcircled{O}}$ 6.2, 600 Ω)**
- ❼ **Microphone volume control**
- ❽ **Display mode button**
- ❾ **Microphone jack**
For (GC) area



Stacking the Components

Stacking the components

Install the various components as shown below.

Depending on the area, the model number of the unit is different. It is indicated in a ().

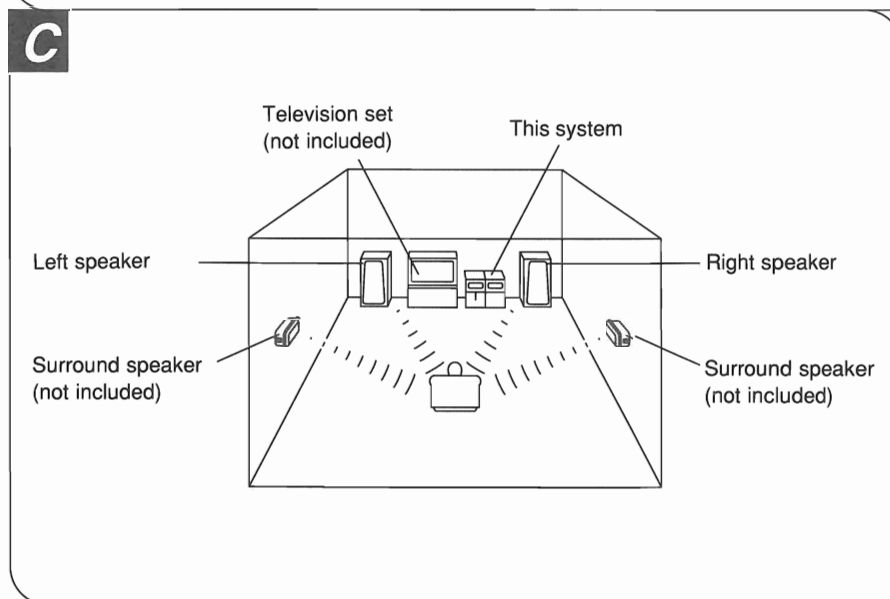
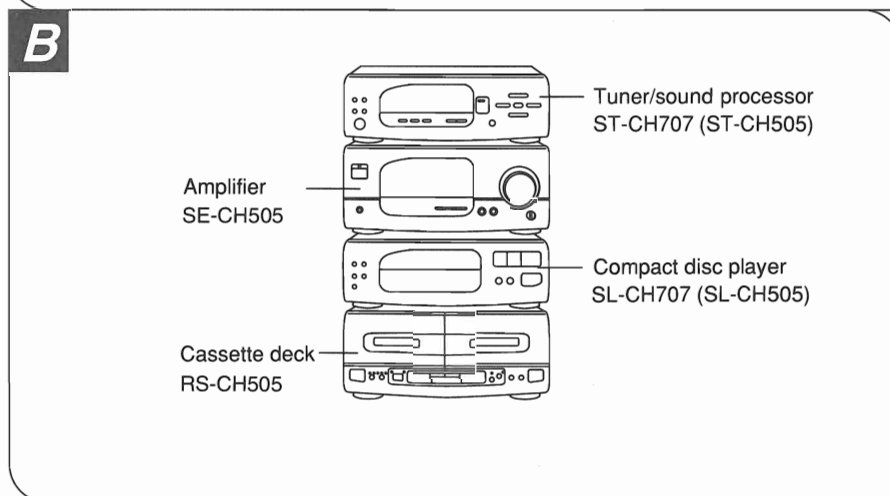
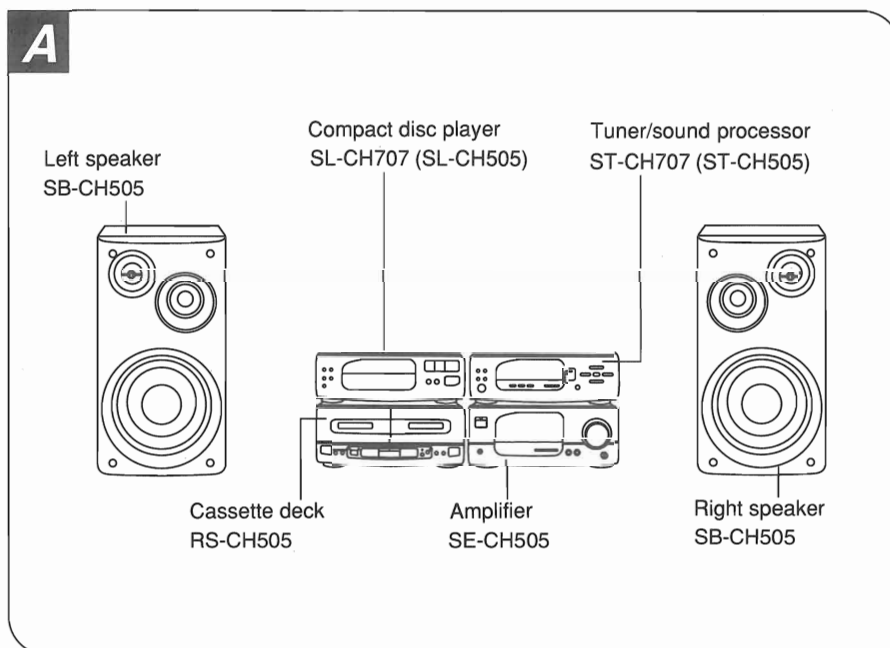
Horizontal stacking **A**

Vertical stacking **B**

System layout example **C**

To produce a better stereo sound, install both speakers away from the system.

Surround sound effect differs according to where you install the surround speakers. Install them as you like.



■ Connections

1 Connect the flat cables.

Hold the connector with the recessed part up and press in at the center until you hear a click.

1. Connect the shorter flat cable to the terminal of the tuner/sound processor and amplifier.
2. Connect the longer flat cable to the terminal of the tuner/sound processor, compact disc player, and cassette deck.

Route the cable horizontally (underneath the heat outlet grille) so that the side with the white-color lead is positioned at the front.

Be sure to connect the blue-colored connector to B1 (tuner/sound processor).

After connection, hold and press the cable as flat to the back of the unit as possible.

Do not try connecting or disconnecting the flat cables while the power is switched to ON.

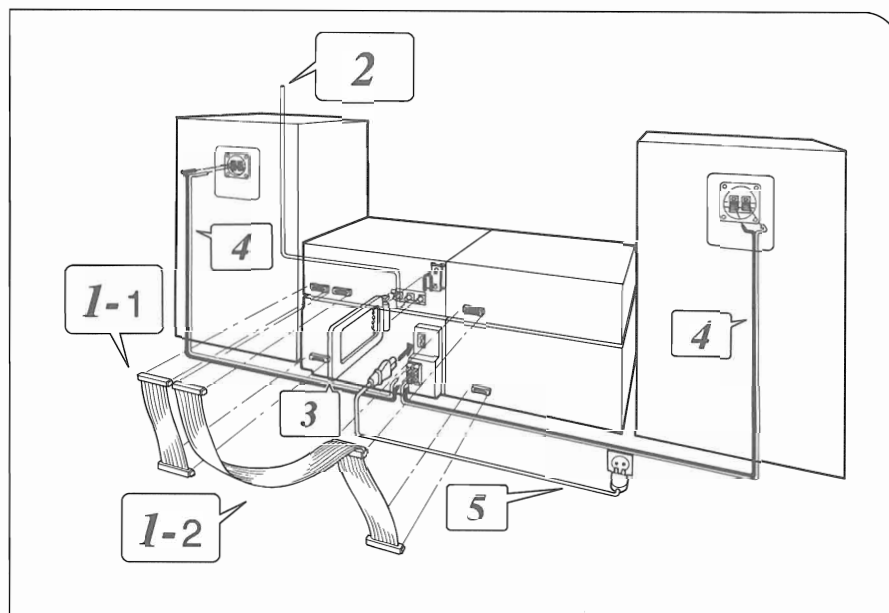
2 Connect the FM indoor antenna.

Install the antenna on a wall at a height and in a direction which result in the best reception.

The tip of the internal antenna wire should not come into contact with any metal objects.

When you cannot get a good reception with this FM indoor antenna, we recommend you install an FM outdoor antenna (not included).

(To be continued)

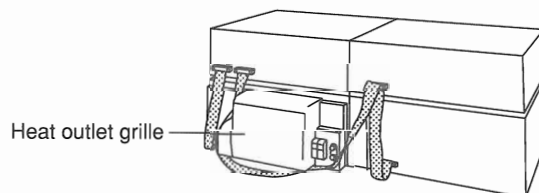
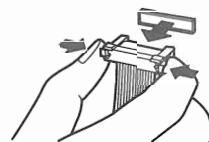


1

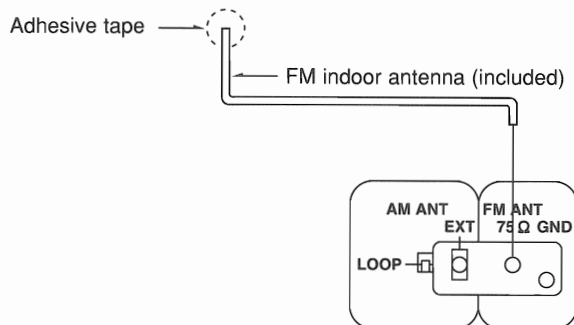
Connecting



Disconnecting



2



3 Connect the AM (MW/LW) loop antenna.

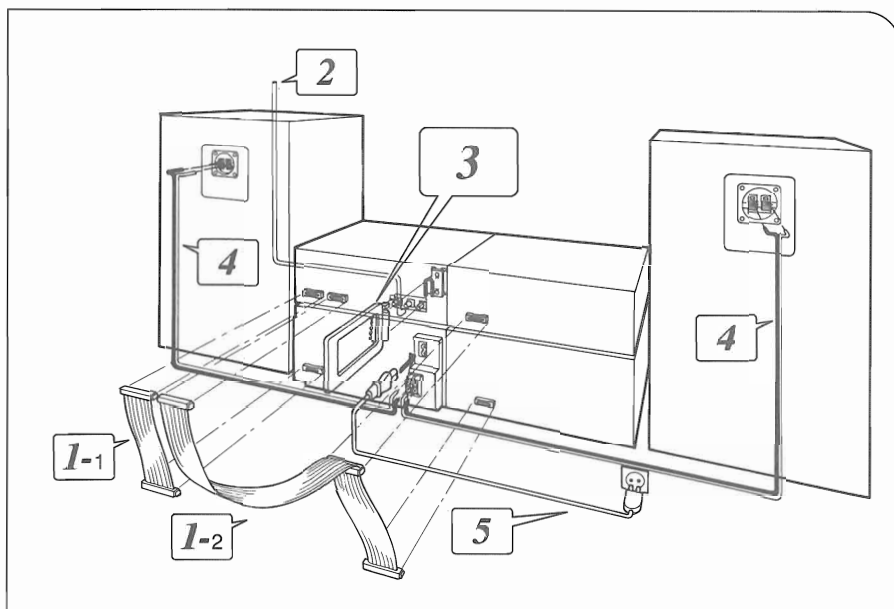
1. Attach the antenna holder to the rear panel of the tuner/sound processor.
2. Clamp the antenna to the antenna holder and connect the antenna terminal to the rear panel of the tuner/sound processor.
3. Position the loop for the best reception.

You may attach the antenna holder to a rack or other structure. Use a screw (included) to attach as shown in the figure. **A**

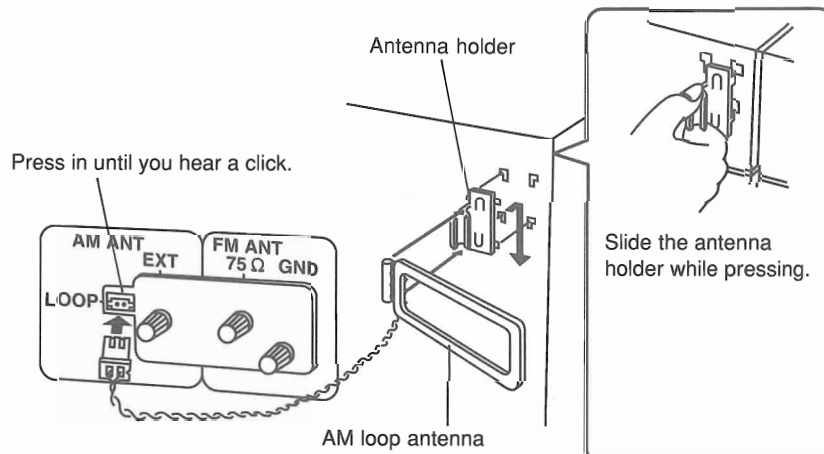
Note

To minimize noise pickup, keep the AM loop antenna cord away from the flat cables.

(To be continued)



3



A



4 Connect the right (R) left (L) speaker cables.

Note

Be sure to connect speaker cables before connecting the AC power supply cord.

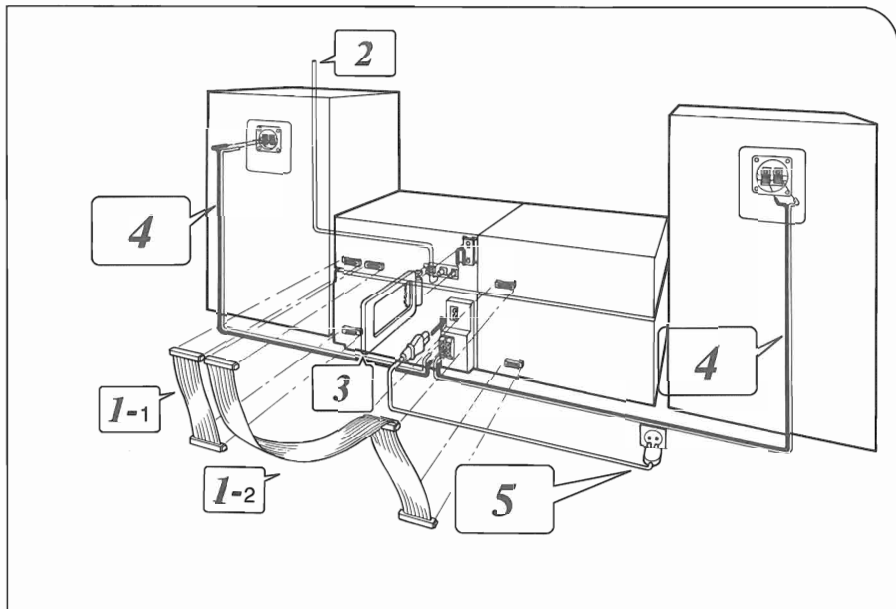
- The load impedance of any speaker used with this unit must be 6–8 ohms.

Connection of speaker cables **A**

1. Strip off the outer covering, and twist the center conductor. Make sure the bare ends of the wires are not unraveled. (If they are, twist them tight again.)
2. ① Tilt the lever back and insert the wire.
② Close the lever and pull the cord gently to be sure that it is secured.
3. Insert the wire to the rear panel of the amplifier, and pull down the lever.

Notes

- To prevent damage to circuitry, never short-circuit positive (+) and negative (–) speaker wires.
- Be sure to connect only positive (+) wires to positive (+) terminals and negative (–) wires to negative (–) terminals.



5 Connect the AC power supply cord after you have connected all other cables and cords.

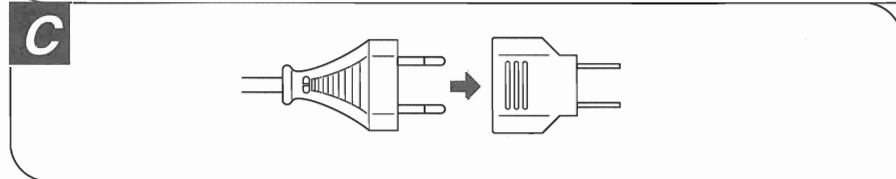
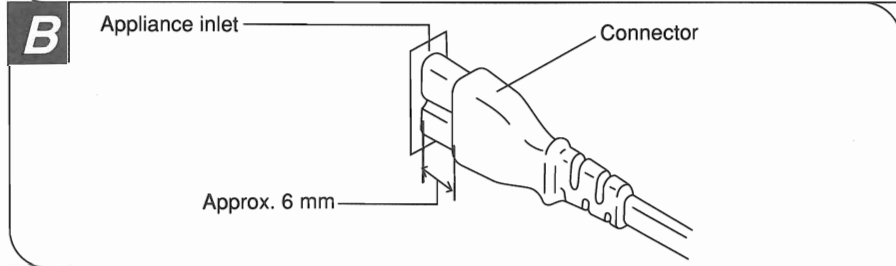
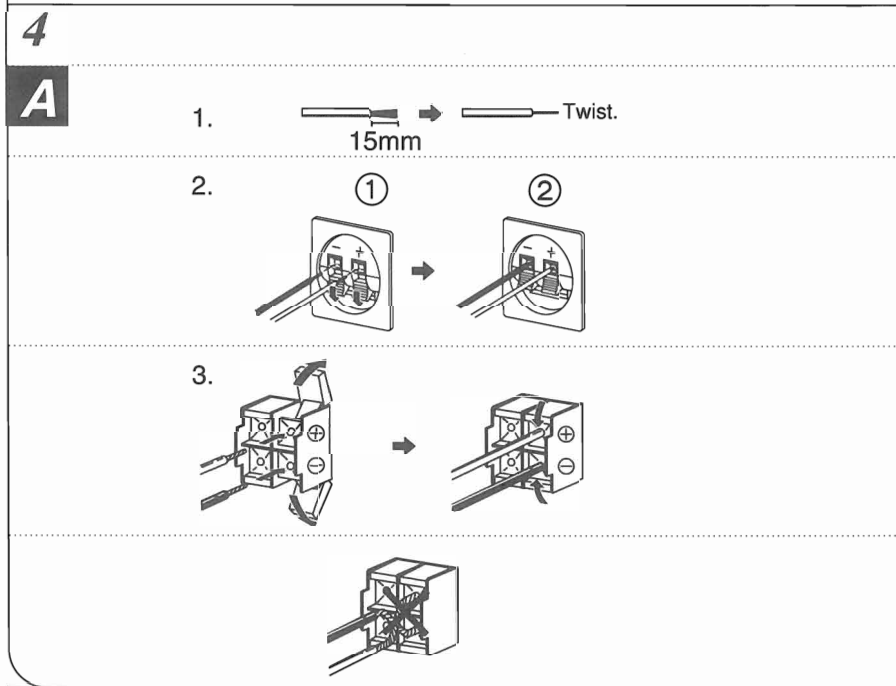
For (GC) area

Insertion of connector **B**

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.

For (GC) area **C**

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



(To be continued)

Optional antenna connections

FM outdoor antenna (not included)

A

If the FM indoor antenna does not provide satisfactory reception of FM broadcasts, use an outdoor antenna.

You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc. An outdoor antenna should be installed by a competent technician only.

Connection of the FM outdoor antenna

1. Remove a piece of the outer vinyl sheath from the end.
2. Bundle the shield braid, and remove a piece of the inner vinyl sheath covering the core wire.
3. Connect the core wire and the shield braid.

AM (MW/LW) outdoor antenna (not included) **B**

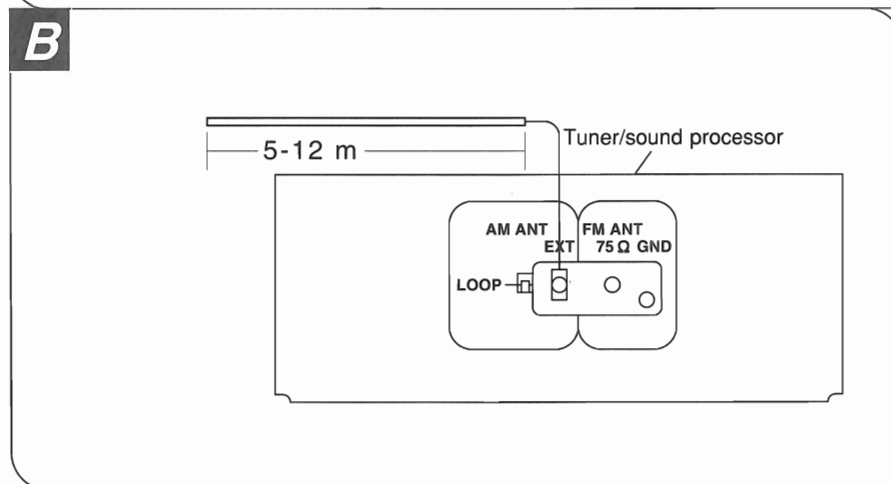
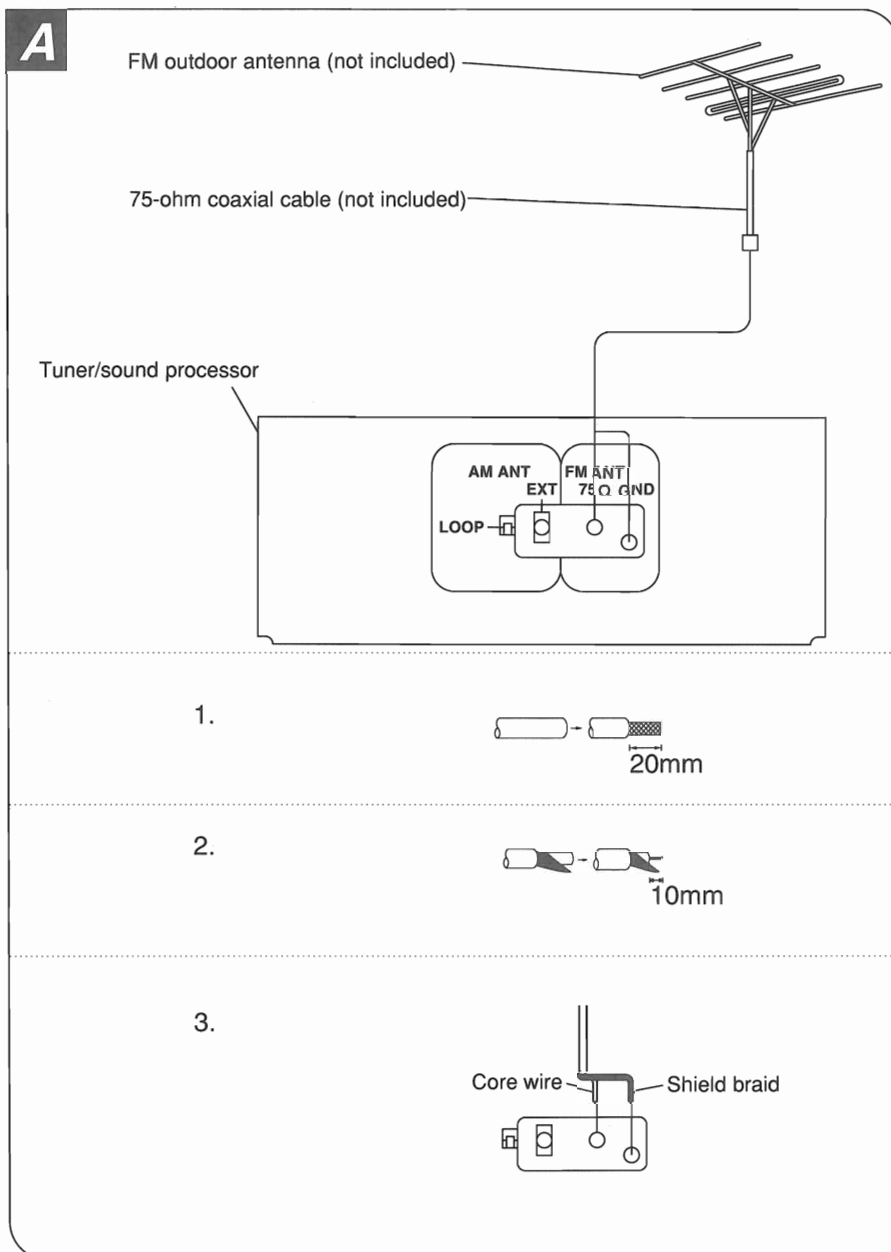
An outdoor antenna may be required in a mountainous region, or if this system is located inside a reinforced-concrete building, etc.

Run 5 to 12 m of vinyl-covered wire horizontally along a window or other convenient location.

Note

Do not remove the AM loop antenna.

(To be continued)



External unit connection

DCC (digital compact cassette deck)

A

Analog player

Rear surround speakers

Note

Be sure to connect both speaker systems. If only one side is connected, no sound will be heard.

Install each speaker left and right at the back of the listening space.

For (GC) area

CD graphics

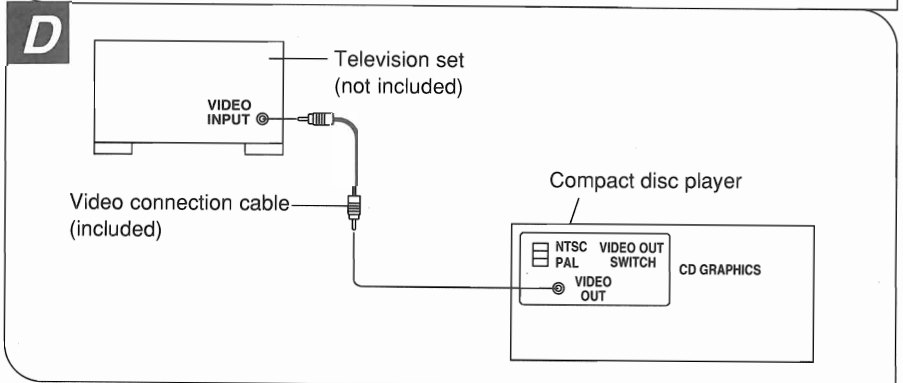
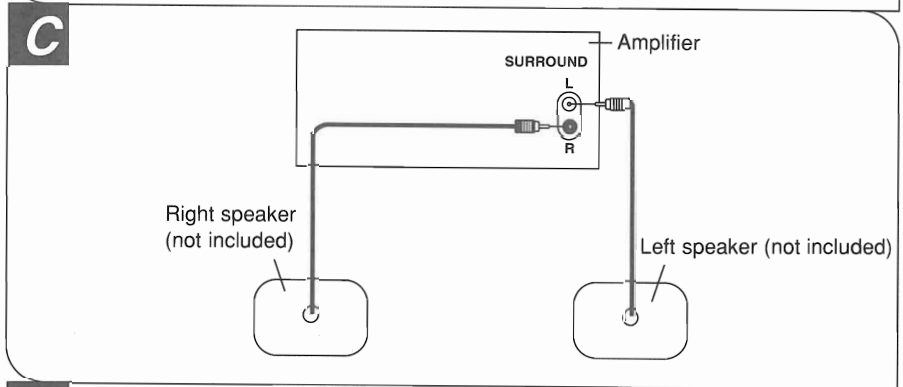
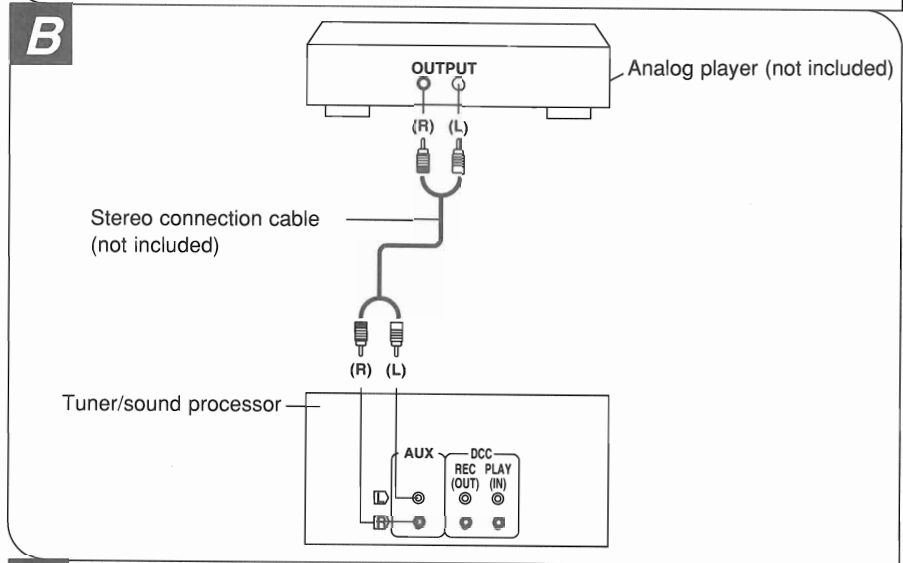
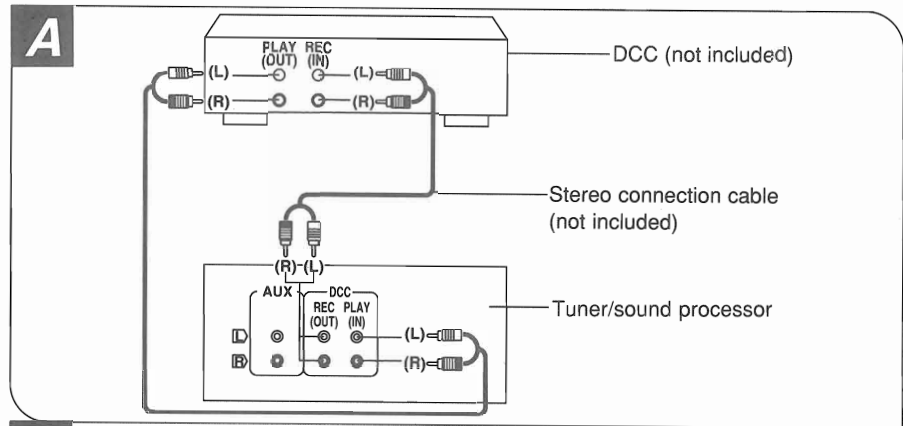
"CD graphics" refers to CDs containing pre-recorded still-picture data and the text in addition to their music, and it is mainly used for karaoke.

You can enjoy karaoke complete with visual imagery by connecting your TV set to this unit.

1. Connect the TV set to this unit.
2. Set the TV's TV/VCR selector to the "video" position.
3. Proceed with steps 1 to 4 in the section on "Karaoke".

Notes

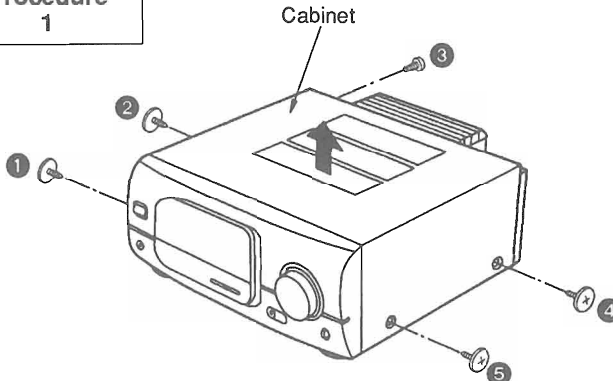
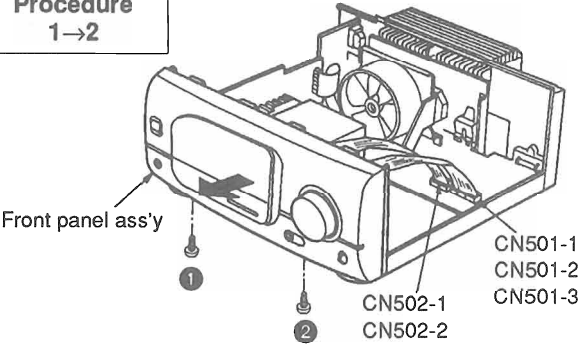
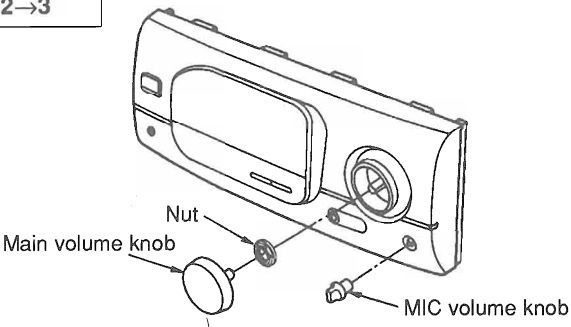
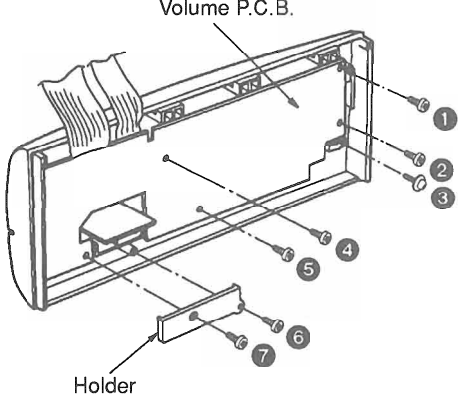
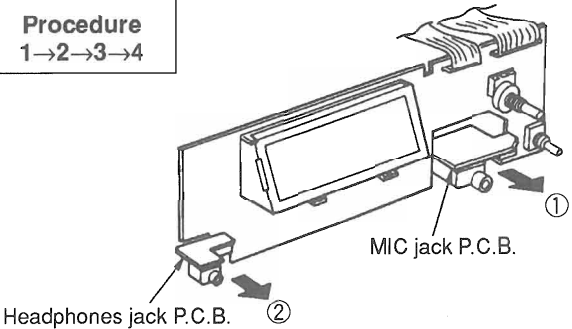
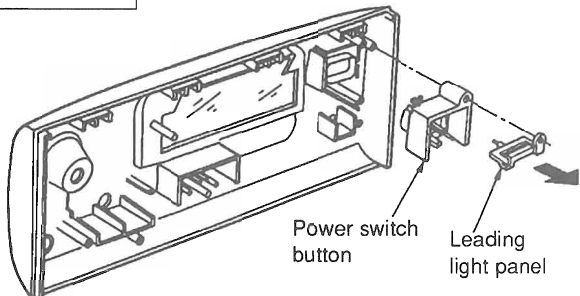
- Use CDs marked **GRAPHICS** to enjoy CD graphics. No picture will appear with CDs which are not marked in this way.
- Skipping forward or backward during CD graphics play may cause the picture to shift for a short period of time. This is not indicative of malfunctioning. If play is left to continue, the picture will return to normal.
- This unit does not come with a graphics channel selection or fade-out function.
- Set the CD player according to the television set.
 NTSC: When receiving NTSC signals
 PAL: When receiving PAL signals
- For details, see the operation manual of the television set.



Disassembly Instructions

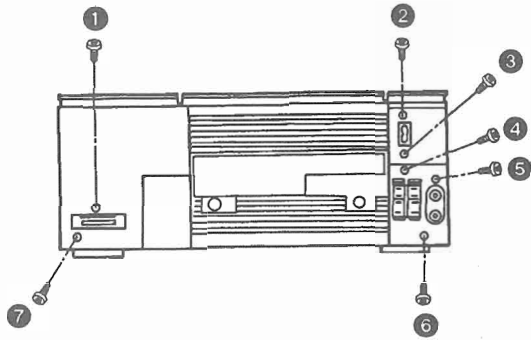
“ATTENTION SERVICER”

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

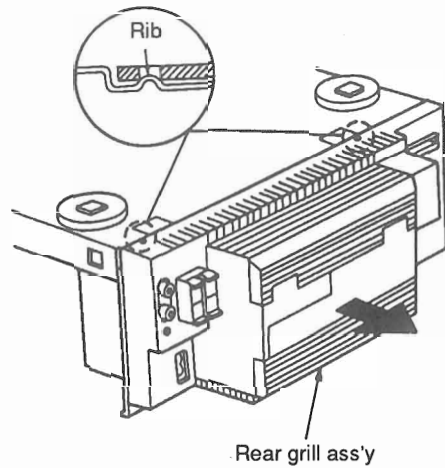
Ref. No. 1	Removal of the Cabinet	Ref. No. 2	Removal of the Front Panel Ass'y
Procedure 1	 <p>1. Remove 5 screws (①~⑤).</p> <p>2. Remove the cabinet in the direction of the arrow.</p>	Procedure 1→2	 <p>1. Remove 5 connectors (CN501-1, CN501-2, CN501-3, CN502-1, CN502-2).</p> <p>2. Remove 2 screws (①, ②).</p> <p>3. Remove the front panel ass'y in the direction of the arrow.</p>
Ref. No. 3	Removal of the Volume P.C.B.		
Procedure 1→2→3	 <p>1. Pull out the main volume knob.</p> <p>2. Pull out the mic volume knob.</p> <p>3. Remove the nut.</p>		 <p>4. Remove 7 screws (①~⑦).</p> <p>5. Remove the holder.</p>
Ref. No. 4	Removal of the Mic Jack P.C.B. and Headphones Jack P.C.B.	Ref. No. 5	Removal of the Power Switch Button
Procedure 1→2→3→4	 <p>■ Removal of the MIC Jack P.C.B.</p> <ul style="list-style-type: none"> ● Remove the mic jack P.C.B. in the direction of the arrow ①. <p>■ Removal of the Headphones Jack P.C.B.</p> <ul style="list-style-type: none"> ● Remove the headphones jack P.C.B. in the direction of the arrow ②. 	Procedure 1→2→3→5	 <ul style="list-style-type: none"> ● Remove the power switch button and Leading light panel in the direction of the arrow.

Ref. No. 6 **Removal of the Rear Grill Ass'y**

Procedure
1→6



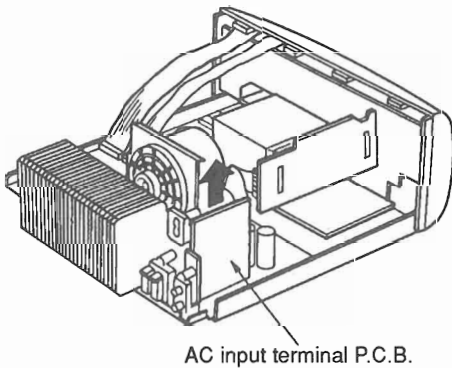
1. Remove 7 screws (1~7).



2. Remove 2 ribs.
3. Remove the rear grill ass'y in the direction of the arrow.

Ref. No. 7 **Removal of the AC Input Terminal P.C.B.**

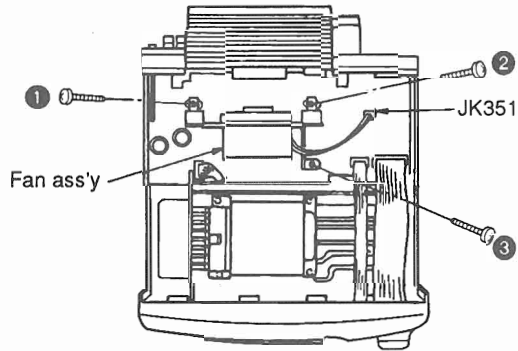
Procedure
1→6→7



● Remove the AC input terminal P.C.B. in the direction of the arrow.

Ref. No. 8 **Removal of the Fan Ass'y.**

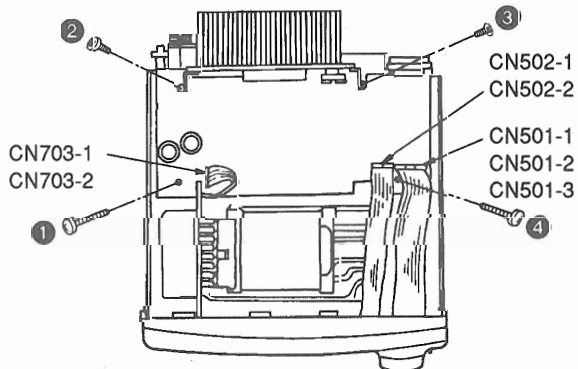
Procedure
1→8



1. Remove the connector (JK351).
2. Remove 3 screws (1~3).

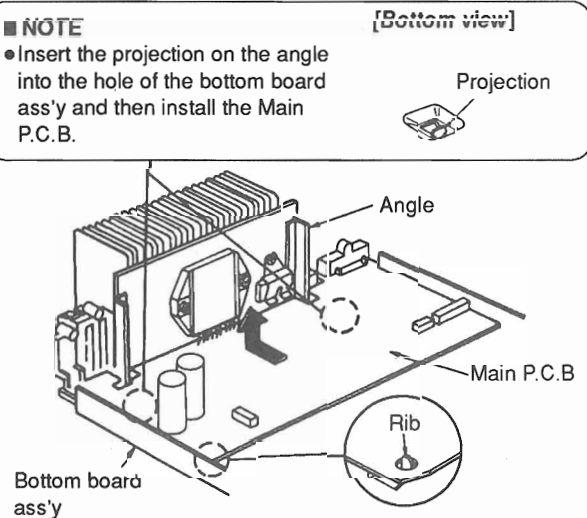
Ref. No. 9 **Removal of the Main P.C.B.**

Procedure
1→6→7→8→9

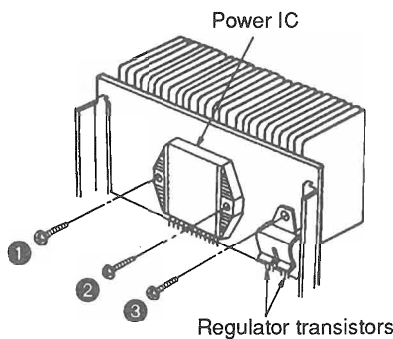
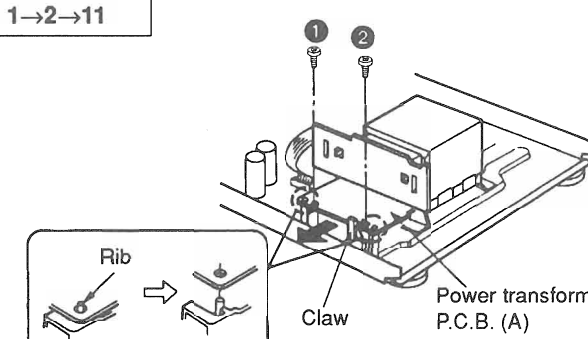
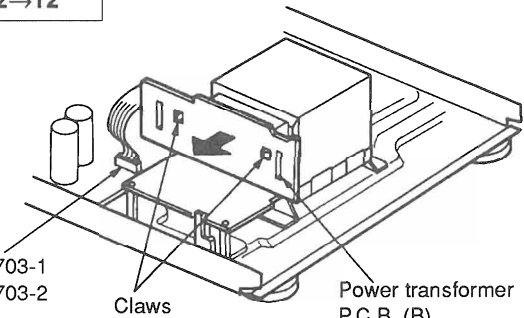
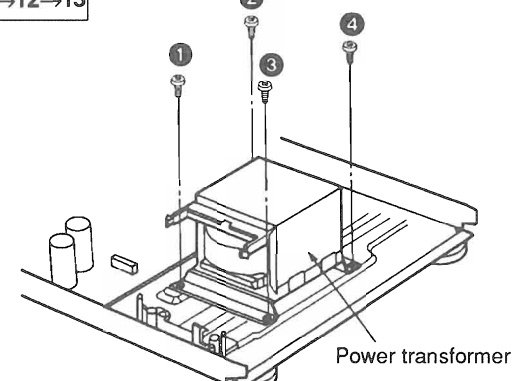
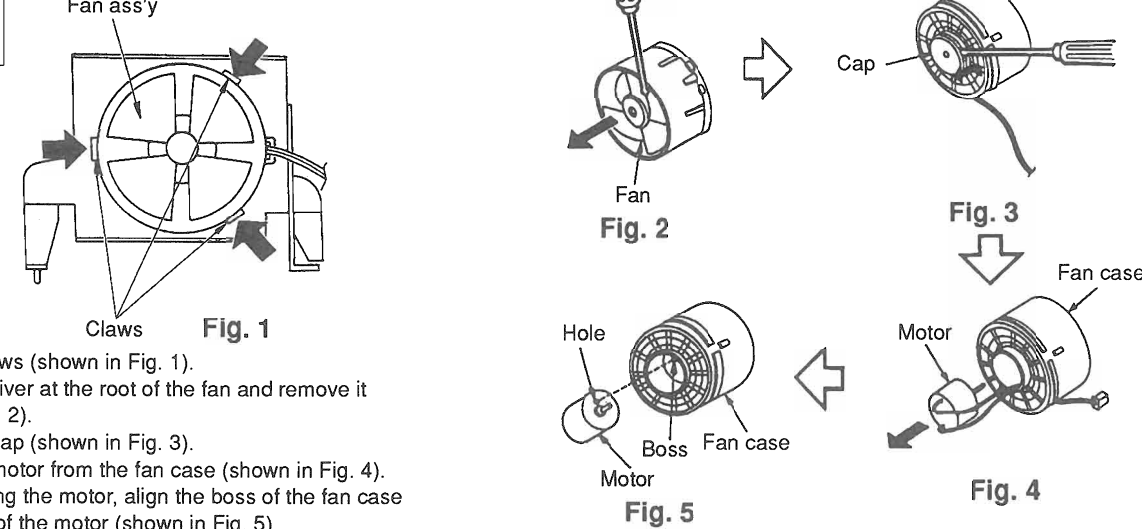


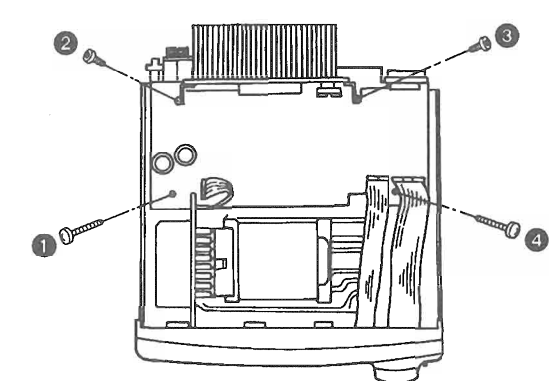
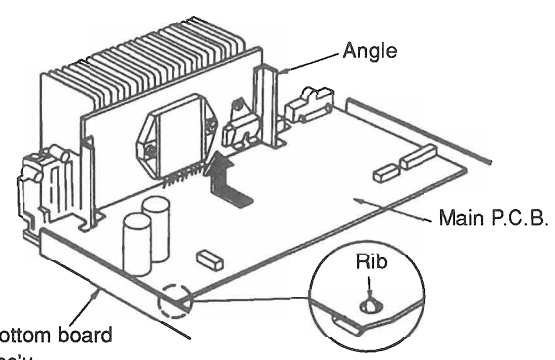
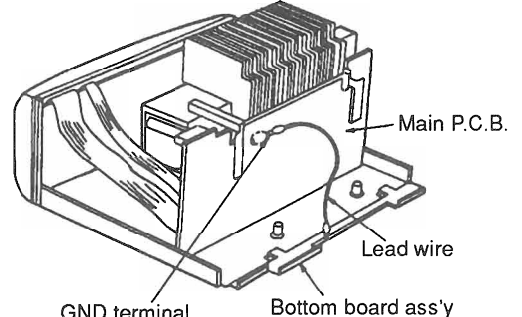
1. Remove 4 screws (1~4).
2. Remove 7 connectors (CN501-1, CN501-2, CN501-3, CN502-1, CN502-2, CN703-1, CN703-2).

NOTE
● Insert the projection on the angle into the hole of the bottom board ass'y and then install the Main P.C.B.



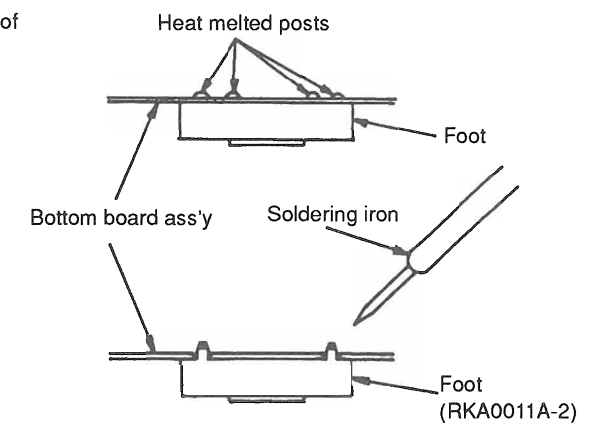
3. Lift the main P.C.B. off the rib on the bottom board ass'y.
4. Remove the main P.C.B. in the direction of the arrow.

Ref. No. 10	Removal of the Power IC and Regulator Transistor	Ref. No. 11	Removal of the Power Transformer P.C.B. (A)
Procedure 1→6→7→8 →9→10	 <p>1. Unsolder the power IC or regulator transistors. 2. Remove 3 screws (1~3).</p> <p>•When replacing the power IC or regulator transistors, apply silicone compound (RFKX0002) to the rear side of power IC or regulator transistors.</p>	Procedure 1→2→11	 <p>1. Remove 2 screws (1, 2). 2. Release the claw. 3. Remove 2 ribs. 4. Remove the power transformer P.C.B. (A) in the direction of the arrow.</p>
Ref. No. 12	Removal of the Power Transformer P.C.B. (B)	Ref. No. 13	Removal of the Power Transformer
Procedure 1→2→12	 <p>1. Remove 2 connector (CN703-1, CN703-2). 2. Release 2 claws. 3. Remove the power transformer P.C.B. (B) in the direction of the arrow.</p>	Procedure 1→2→11→12→13	 <p>•Remove 4 screws (1~4).</p>
Ref. No. 14	Removal of the Fan Motor		
Procedure 1→8→14	 <p>1. Release 3 claws (shown in Fig. 1). 2. Put a screwdriver at the root of the fan and remove it (shown in Fig. 2). 3. Remove the cap (shown in Fig. 3). 4. Remove the motor from the fan case (shown in Fig. 4). 5. When replacing the motor, align the boss of the fan case with the hole of the motor (shown in Fig. 5).</p>		

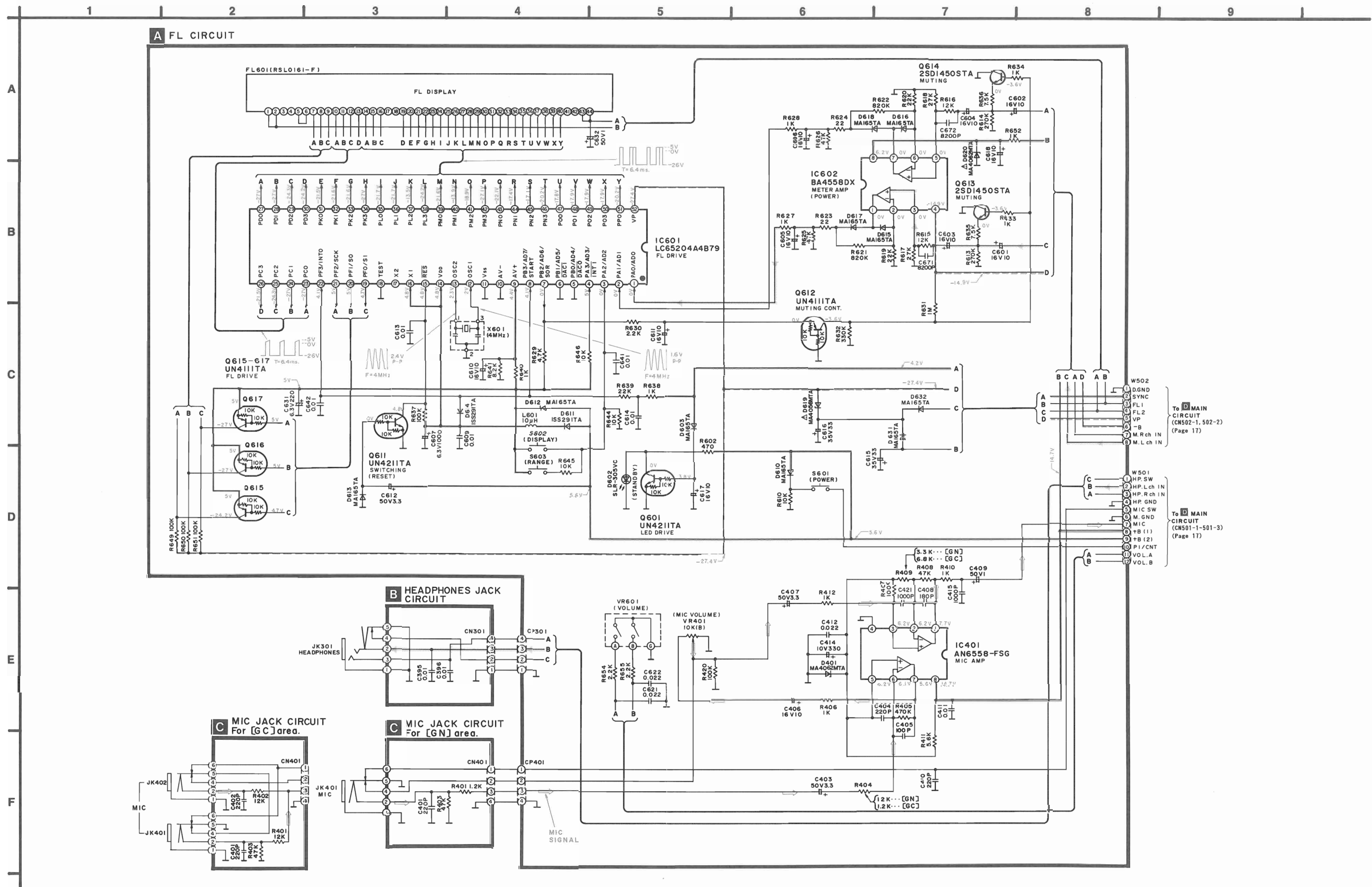
Ref. No. 15	How to check the Main P.C.B.		
Procedure 1→8→15	<p>•When checking the soldered surfaces of main P.C.B. and replacing the parts, do as shown below.</p>  <p>1. Remove 4 screws (1~4).</p>	 <p>2. Lift the main P.C.B. off the rib on the bottom board ass'y. 3. Remove the main P.C.B. in the direction of the arrow.</p>  <p>4. Connect the GND terminal to the bottom board ass'y by the lead wire.</p>	

•Replacement of the Foot

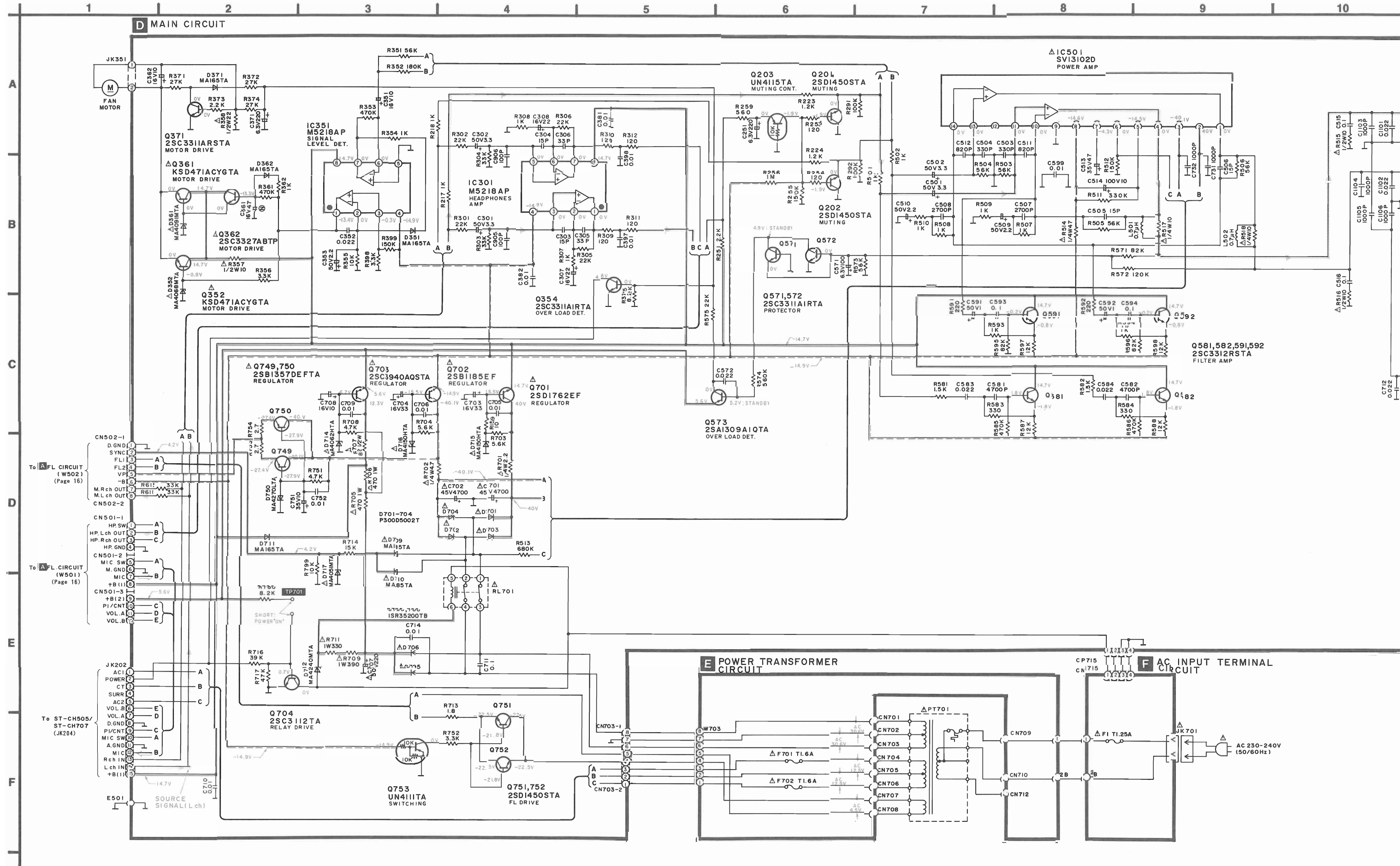
1. Remove 4 heat melted posts on the Bottom board ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0011A-2) on the Bottom board ass'y, melt the 4 posts with a soldering iron.



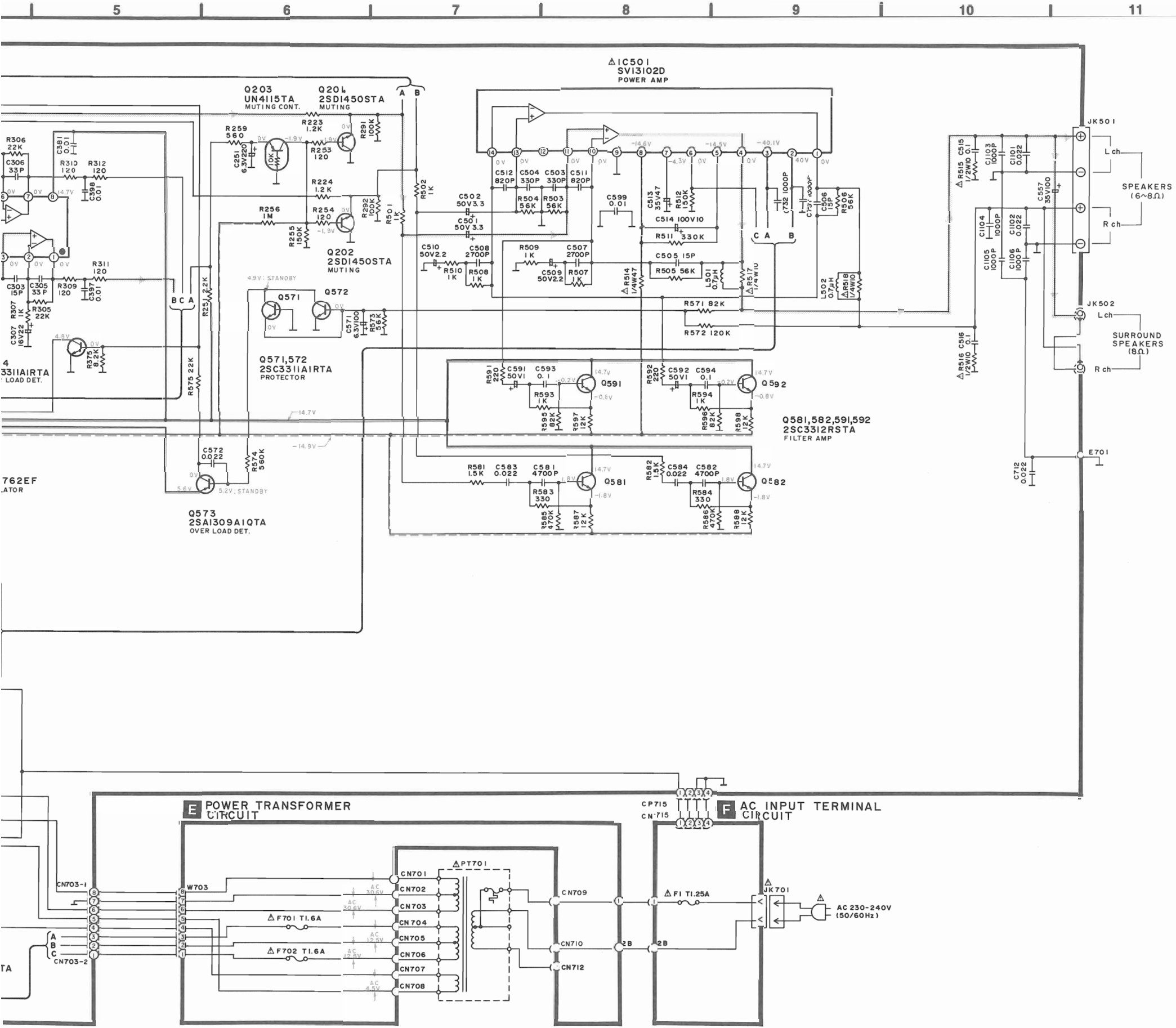
Schematic Diagram • FL/headphones jack/mic jack circuit (Parts list on pages 26~28)



Schematic Diagram • Main/power transformer/AC input terminal circuit (Parts list on pages 26~28)



Unit (Parts list on pages 26~28)



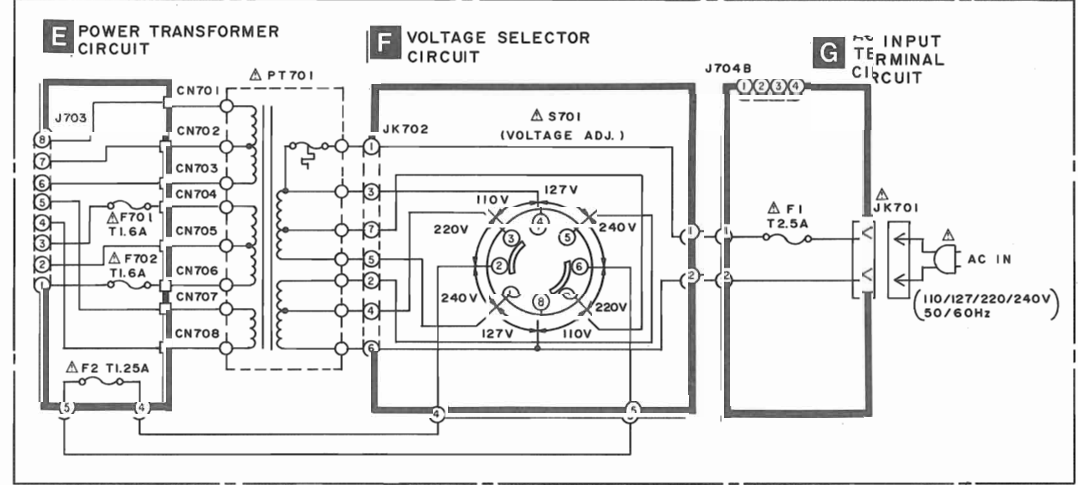
Notes:

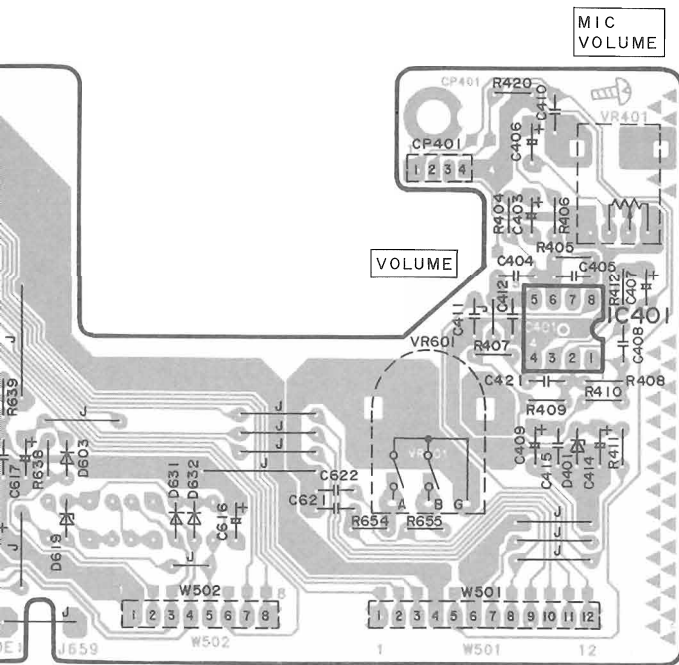
- S601 : Power "STANDBY ϕ /ON" switch (POWER STANDBY ϕ /ON)
 - S602 : Display mode switch (DISPLAY)
 - S603 : Range select switch (RANGE)
 - S701 : Voltage select switch in "220 V" position for (GC) area (VOLT ADJ.)
 - VR401 : Microphone volume control (MIC VOLUME)
 - VR601 : Volume control (VOLUME)
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
No mark : Power ON
- 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.
- This schematic diagram may be modified at any time with the development of new technology.
- 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.

●Voltage and signal line

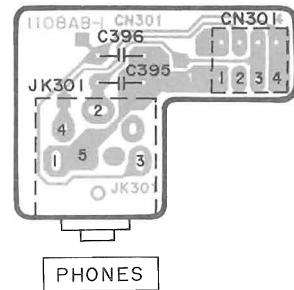
- : Positive voltage line
- - - : Negative voltage line
- : Source signal line
- ⇨ : Mic signal (Lch)

Power Source For [GC] area.

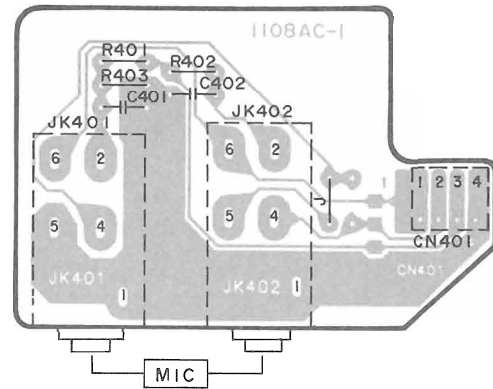




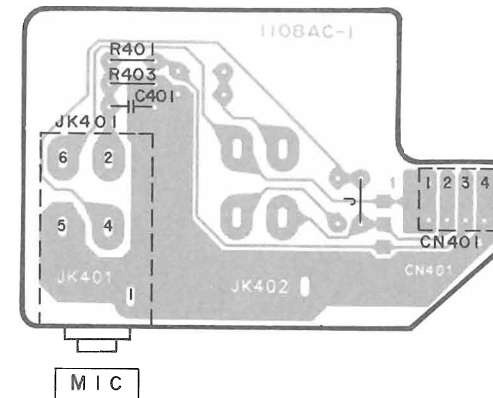
B HEADPHONES JACK P.C.B. (REPI671D-S...(GN)
REPI671B-S...(GC))



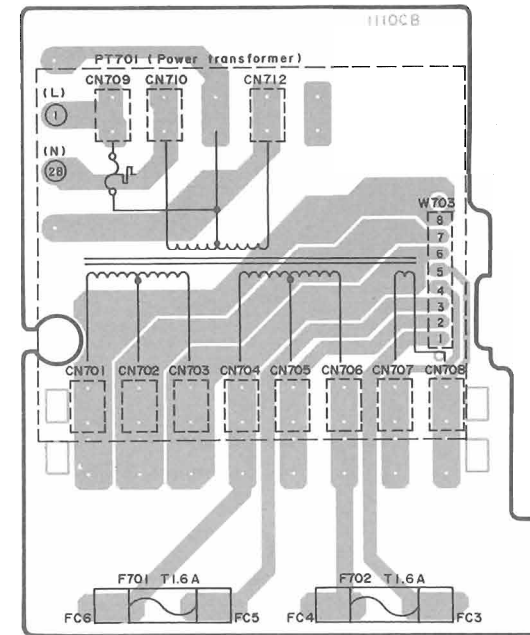
C MIC JACK P.C.B. (REPI671B-S...(GC))



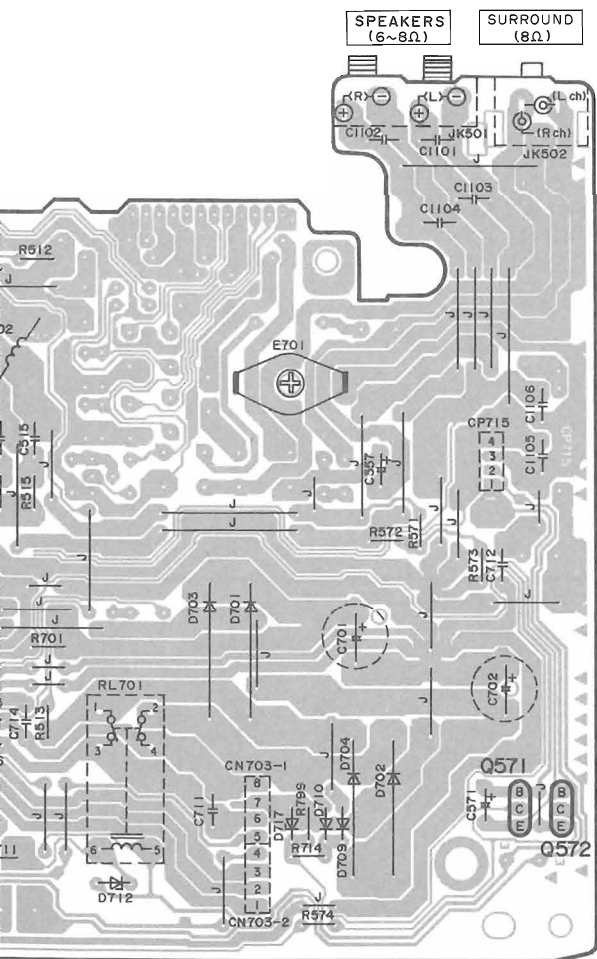
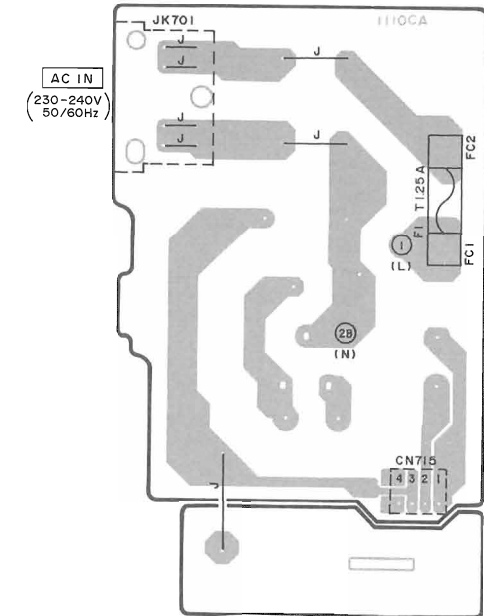
C MIC JACK P.C.B. (REPI671D-S...(GN))



E POWER TRANSFORMER P.C.B. (REPI672D-P)

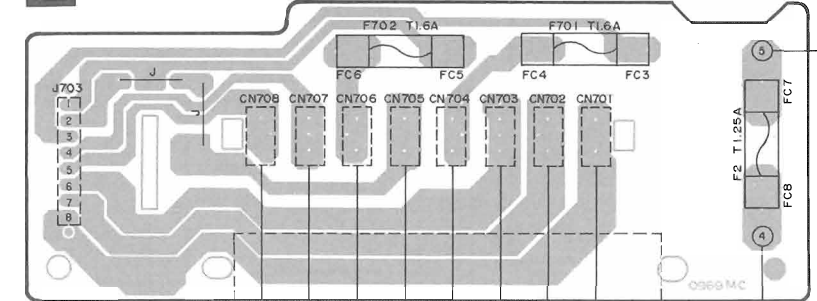


F AC INPUT TERMINAL P.C.B. (REPI672D-P)

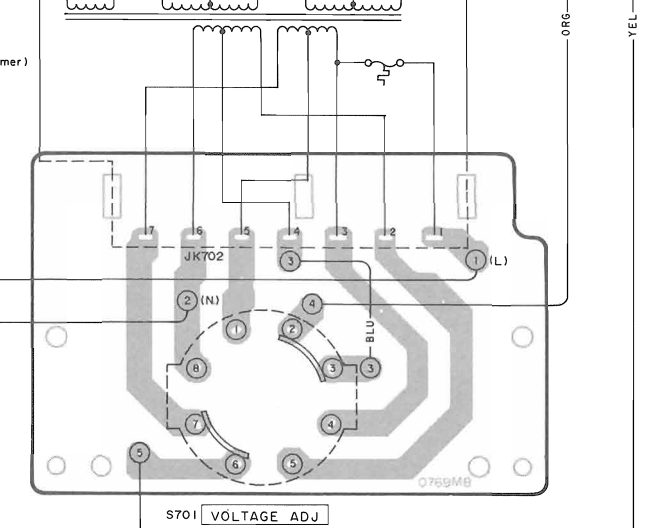
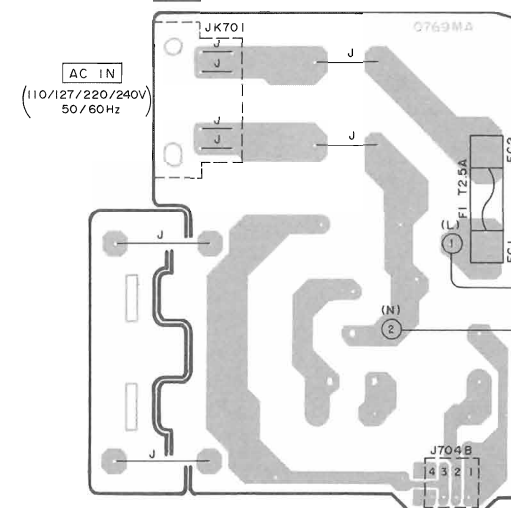


Power Source P.C.B. For (GC) area.

E POWER TRANSFORMER P.C.B.(REPI451T-P)

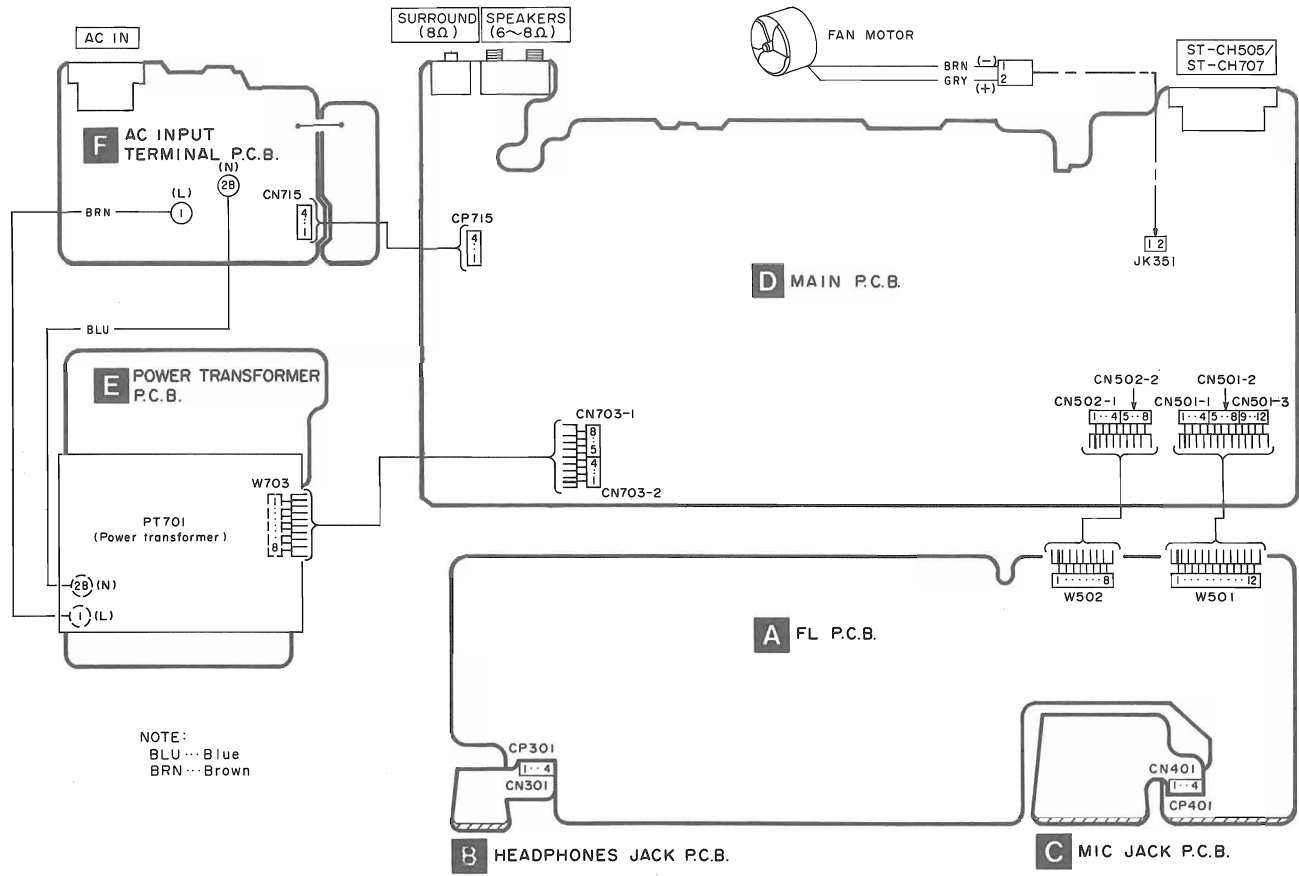


G AC INPUT TERMINAL P.C.B. (REPI451T-P)



F VOLTAGE SELECTOR P.C.B. (REPI451T-P)

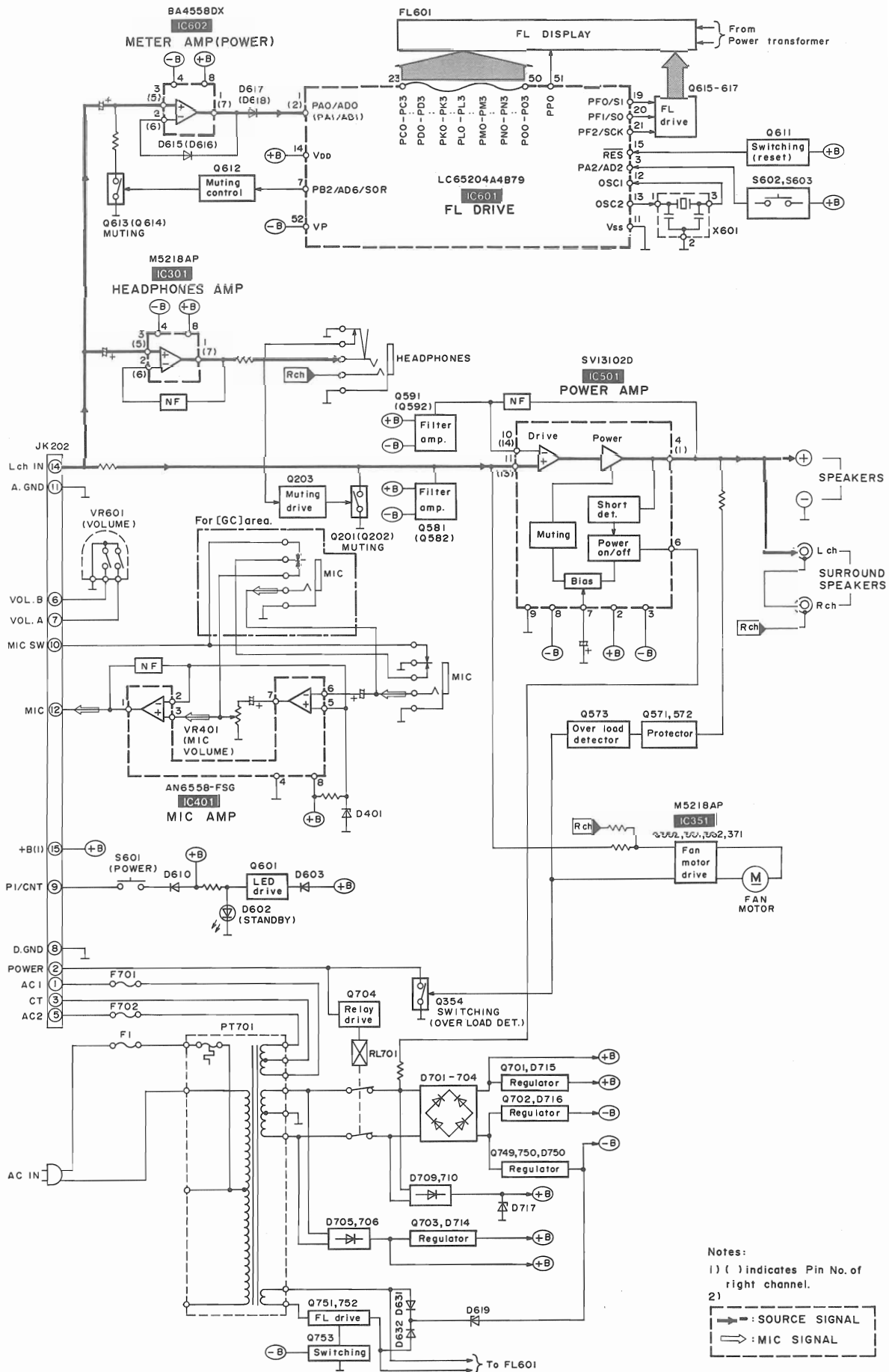
Wiring Connection Diagram



Terminal guide of IC's, transistors and diodes

AN6558-FSG BA4558DX 	M5218AP 	LC65204A4B79 	SVI3102D 		2SA1309AIQTA 2SC3311AIRTA 2SC3312RSTA 2SD1450STA UN4111TA UN4115TA UN4211TA 2SC3311ARSTA
2SB1357DEFTA 	2SC3940AQSTA 		2SC3112TA 2SC3327ABTP KSD471ACYGTA	2SB1185EF 2SD1762EF 	MA165TA
MA185TA 1SS291TA 		MA4051MTA MA4056MTA MA4062MTA MA4068MTA MA4091MTA MA4062HTA		MA4150HTA MA4240MTA MA4270LTA	P300D5002T 1SR35200TB
SLR-305VC 					

Block Diagram



Notes:
 1) () indicates Pin No. of right channel.
 2)
 → : SOURCE SIGNAL
 ⇄ : MIC SIGNAL

■ Power Source ON/OFF of This Unit SE-CH505

1. Connect the AC power cord of this unit to an AC outlet and turn it on.
(This unit comes to stand-by mode.)
2. Make test point TP701 (**TP701**) short as shown in Fig. 1.
POWER indicator lights and this unit comes to power ON mode.

●Operation Check

1. Set this unit to power ON mode.
2. Input a signal (1 kHz, 100 mV) to the section between the resistor R217 (LINE IN for Lch) and the jumper J93 (LINE IN GND) as well as the section between the resistor R218 (LINE IN for Rch) and the jumper.
3. Connect the speaker to the speaker terminals and check if it sounds from the speaker.

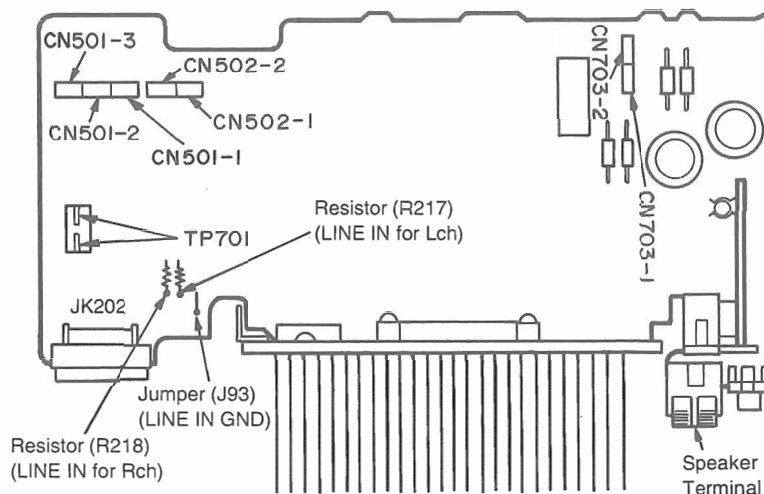


Fig. 1

■ Function of IC Terminals

●IC601 (LC65204A4B79)

Pin No.	Terminal Name	I/O	Function
1	PA0/AD0	I	L-ch level signal input from IC602
2	PA1/AD1	I	R-ch level signal input from IC602
3	PA2/AD2	I	Operation key ON/OFF signal input
4	PA3/AD3	I	Check mode input (Mode ON: "H")
5	PB0/AD4	—	Connected to GND
6	PB1/AD5		
7	PB2/AD6	O	Meter range switching signal input (×1 mode: "H", X0.1 mode: "L")
8	PB3/AD7	I	Power ON detection signal input
9	AV+	I	A/D converter standard voltage input
10	AV-	—	
11	V _{ss}	—	Connected to GND
12	OSC1	I/O	Clock signal input/output (Connected to X601)
13	OSC2		

Pin No.	Terminal Name	I/O	Function
14	V _{DD}	I	Power supply terminal (+5 V input)
15	$\overline{\text{RES}}$	I	Reset signal input (Operation mode: "H", Reset mode: "L")
16	×1	I	Connected to VDD
17	×2	—	—
18	TEST	—	Connected to GND
19	PF0/S1	O	FL segment drive output (Pulse signal output)
21	PF2/SCK		
22	PF3/INT0	I	Power OFF detection signal input
23	PC0	O	FL segment drive output (Pulse signal output)
45	PN2		
46	PN3	O	FL grid drive output (Pulse signal output)
51	PP0		
52	VP	—	FL pull-down power source input

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.

*Remote Control Ass'y: Supply period for three years from termination of production.

*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)		D610	MA165	DIODE	
IC301	M5218AP	I. C, HEADPHONES AMP.		D611	1SS291TA	DIODE	
IC351	M5218AP	I. C, SIGNAL LEVEL DET.		D612, 613	MA165	DIODE	
IC401	AN6558-FSG	I. C, MIC AMP.		D614	1SS291TA	DIODE	
IC501	SV13102D	I. C, POWER AMP.	Δ	D615-618	MA165	DIODE	
IC601	LC65204A4B79	I. C, FL DRIVE		D619	MA4056MTA	DIODE	Δ
IC602	BA4558DX	I. C, METER AMP.		D620	MA4062MTA	DIODE	Δ
		TRANSISTOR(S)		D631, 632	MA165	DIODE	
Q201, 202	2SD1450RTA	TRANSISTOR		D701-704	P300D5002T	DIODE	Δ
Q203	UN4115	TRANSISTOR		D705, 706	1SR35200TB	DIODE	Δ
Q352	KSD471ACYGTA	TRANSISTOR	Δ	D709, 710	MA185TA	DIODE	Δ
Q354	2SC3311A1RTA	TRANSISTOR		D711	MA165	DIODE	
Q361	KSD471ACYGTA	TRANSISTOR	Δ	D712	MA4240H	DIODE	
Q362	2SC3327-A	TRANSISTOR	Δ	D714	MA4062-H	DIODE	Δ
Q371	2SC3311ARSTA	TRANSISTOR		D715, 716	MA4150M	DIODE	Δ
Q571, 572	2SC3311A1RTA	TRANSISTOR		D717	MA4051MTA	DIODE	Δ
Q573	2SA1309A1QTA	TRANSISTOR		D750	MA4270LTA	DIODE	
Q581, 582	2SC3312RSTA	TRANSISTOR				VARIABLE RESISTOR(S)	
Q591, 592	2SC3312RSTA	TRANSISTOR		VR401	EVJ02BF02B14	V. R, MIC VOLUME CONTROL	
Q601	UN4211	TRANSISTOR		VR601	EVQWQAF2524B	V. R, MAIN VOLUME CONTROL	
Q611	UN4211	TRANSISTOR				COIL(S)	
Q612	UN4111	TRANSISTOR		L501, 502	SLQY07G-40	COIL	
Q613, 614	2SD1450RTA	TRANSISTOR		L601	ELEXT100KA9	COIL	
Q615-617	UN4111	TRANSISTOR				OSCILLATOR(S)	
Q701	2SD1762EF	TRANSISTOR	Δ	X601	EF0EC4004T4	OSCILLATOR (4MHz)	
Q702	2SB1185EF	TRANSISTOR	Δ			DISPLAY	
Q703	2SC3940AQSTA	TRANSISTOR	Δ	FL601	RSL0161-F	FL DISPLAY	
Q704	2SC3112TA	TRANSISTOR				FUSE(S)	
Q749, 750	2SB1357DEFTA	TRANSISTOR	Δ	F1	XBA2C25TB0	FUSE, 250V T2. 5A	Δ (GC)
Q751, 752	2SD1450RTA	TRANSISTOR		F1	XBA2C12TB0	FUSE, 250V T1. 25A	Δ (GN)
Q753	UN4111	TRANSISTOR		F2	XBA2C12TB0S	FUSE, 250V T1. 25A	Δ (GC)
		DIODE(S)		F701, 702	XBA2C16TB0	FUSE, 250V T1. 6A	Δ
D351	MA165	DIODE				SWITCH(ES)	
D352	MA4068M	DIODE	Δ	S601	EVQ21405R	SW, POWER/STANDBY	
D361	MA4091-M	DIODE	Δ				
D362	MA165	DIODE					
D371	MA165	DIODE					
D401	MA4062MTA	DIODE					
D602	SLR-305VC	LED					
D603	MA165	DIODE					

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

Ref. No.	Part No.	Part Name & Description	Remarks
S602	EVQ21405R	SW, DISPLAY	
S603	EVQ21405R	SW, RANGE	
S701	ESE37263	SW, VOLTAGE ADJ.	Δ (GC)
		CONNECTOR (S)	
J704B	RJU057W004	SOCKET (4P)	(GC)
CN301	RJU057W004	SOCKET (4P)	
CN401	RJU057W004	SOCKET (4P)	
CN701-708	RJS1A1101T1	SOCKET (1P)	
CN709, 710	RJS1A1101T1	SOCKET (1P)	(GN)
CN712	RJS1A1101T1	SOCKET (1P)	(GN)
CN715	RJU057W004	SOCKET (4P)	(GN)
CN501-1-3	RJS1A6604	SOCKET (4P)	
CN502-1, 2	RJS1A6604	SOCKET (4P)	
CN703-1, 2	RJS1A6604	SOCKET (4P)	
CP301	RJT057W004-1	CONNECTOR (4P)	
CP401	RJT057W004-1	CONNECTOR (4P)	
CP715	RJT057W004-1	CONNECTOR (4P)	
		EARTH TERMINAL (S)	
E501	SNE1004-1	GND PLATE	
E701	SNE1004-1	GND PLATE	
		FUSE HOLDER (S)	
FC1-6	EYF52BC	FUSE HOLDER	
FC7, 8	EYF52BC	FUSE HOLDER	(GC)
		TRANSFORMER (S)	
PT701	RTP2M5G002	POWER TRANSFORMER	Δ (GC)
PT701	RTP2M5B003	POWER TRANSFORMER	Δ (GN)
		RELAY	
RL701	RSY0013M-0	RELAY	Δ
		JACK (S)	
JK202	RJT065W15	CONNECTOR (15P)	
JK301	RJJ37TN01-C	HEADPHONES JACK	
JK351	SJT3213	CONNECTOR (2P)	
JK401	RJJ65MA01	MIC JACK	
JK402	RJJ65MA01	MIC JACK	(GC)
JK501	RJR0054M	SPEAKER TERMINAL	
JK502	SJF3068-6N	SPEAKER TERMINAL (SURROUND)	
JK701	SJS9236	AC INLET	Δ (GC)
JK701	SJSD16	AC INLET	Δ (GN)
JK702	SJS702-1	CONNECTOR	(GC)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R159	ERDS2TJ100	1/4W 10
R217, 218	ERDS2TJ102	1/4W 1K
R223, 224	ERDS2TJ122	1/4W 1.2K
R251	ERDS2TJ222	1/4W 2.2K
R253, 254	ERDS2EJ121	1/4W 120
R255	ERDS2TJ154	1/4W 150K
R256	ERDS2TJ105T	1/4W 1M
R259	ERDS2TJ561	1/4W 560
R291, 292	ERDS2TJ104	1/4W 100K
R301, 302	ERDS2TJ223	1/4W 22K
R303, 304	ERDS2TJ333	1/4W 33K
R305, 306	ERDS2TJ223	1/4W 22K
R307, 308	ERDS2TJ102	1/4W 1K
R309-312	ERDS2EJ121	1/4W 120
R351	ERDS2TJ563	1/4W 56K
R352	ERDS2TJ184T	1/4W 180K
R353	ERDS2TJ474	1/4W 470K
R354	ERDS2TJ102	1/4W 1K
R355	ERDS2TJ103	1/4W 10K
R356	ERDS2TJ332	1/4W 3.3K
R357	ERDS1FVJ100T	1/2W 10 Δ
R358	ERDS1FVJ220T	1/2W 22 Δ
R361	ERDS2TJ474	1/4W 470K
R362	ERDS2TJ102	1/4W 1K
R371, 372	ERDS2TJ273	1/4W 27K
R373	ERDS2TJ222	1/4W 2.2K
R374	ERDS2TJ273	1/4W 27K
R375	ERDS2TJ822	1/4W 8.2K
R398	ERDS2TJ332	1/4W 3.3K
R399	ERDS2TJ154	1/4W 150K
R401	ERDS2TJ122T	1/4W 1.2K (GN)
R401, 402	ERDS2TJ123	1/4W 12K (GC)
R403	ERDS2TJ473	1/4W 47K
R404	ERDS2TJ122	1/4W 1.2K (GC)
R404	ERDS2TJ123T	1/4W 12K (GN)
R405	ERDS2TJ474	1/4W 470K
R406	ERDS2TJ102	1/4W 1K
R407	ERDS2TJ104	1/4W 100K
R408	ERDS2TJ473	1/4W 47K
R409	ERDS2TJ682T	1/4W 6.8K (GC)
R409	ERDS2TJ332T	1/4W 3.3K (GN)
R410	ERDS2TJ102	1/4W 1K
R411	ERDS2TJ562	1/4W 5.6K
R412	ERDS2TJ102	1/4W 1K
R420	ERDS2TJ104	1/4W 100K
R501, 502	ERDS2TJ102	1/4W 1K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R503-506	ERDS2TJ563	1/4W 56K	R708	ERDS2TJ472	1/4W 4. 7K	C557	ECA1VM101B	35V 100U
R507-510	ERDS2TJ102	1/4W 1K	R709	ERG1SJ391E	1W 390 △	C571	ECEAOJKA101B	6. 3V 100U
R511	ERDS2TJ334	1/4W 330K	R711	ERG1SJ331E	1W 330 △	C572	ECBT1E223ZF	25V 0. 022U
R512	ERDS2TJ154	1/4W 150K	R713	ERDS2TJ1R8T	1/4W 1. 8	C581, 582	ECBT1C472KR5	16V 4700P
R513	ERDS2TJ684	1/4W 680K	R714	ERDS2TJ153	1/4W 15K	C583, 584	ECBT0J223MS5	6. 3V 0. 022U
R514	ERD25FJ470	1/4W 47 △	R716	ERDS2TJ393	1/4W 39K	C591, 592	ECEA1HKA010B	50V 1U
R515, 516	ERDS1FVJ100T	1/2W 10 △	R717	ERDS2TJ473	1/4W 47K	C593, 594	ECQV1H104JM3	50V 0. 1U
R517, 518	ERD25FVJ100T	1/4W 10 △	R751	ERDS2TJ472	1/4W 4. 7K	C599	ECBT1C103MS5	16V 0. 01U
R571	ERDS2TJ823T	1/4W 82K	R752	ERDS2TJ332	1/4W 3. 3K	C601-606	ECEA1CKA100B	16V 10U
R572	ERDS2TJ124T	1/4W 120K	R753, 754	ERDS2TJ2R7T	1/4W 2. 7	C607	ECEAOJU102	6. 3V 1000U
R573	ERDS2TJ563	1/4W 56K	R780	ERDS2TJ822	1/4W 8. 2K	C609	ECBT1E103ZF	25V 0. 01U
R574	ERDS2TJ564	1/4W 560K	R799	ERDS2TJ103	1/4W 10K	C610, 611	ECEA1CKA100B	16V 10U
R575	ERDS2TJ223	1/4W 22K				C612	ECEA1HKA3R3B	50V 3. 3U
R581, 582	ERDS2TJ152	1/4W 1. 5K			CAPACITORS	C613, 614	ECBT1E103ZF	25V 0. 01U
R583, 584	ERDS2TJ331	1/4W 330	C251	ECEAOJKA221B	6. 3V 220U	C615, 616	ECEA1VKA330B	35V 33U
R585, 586	ERDS2TJ474	1/4W 470K	C301, 302	ECEA1HKA3R3B	50V 3. 3U	C617, 618	ECEA1CKA100B	16V 10U
R587, 588	ERDS2TJ123	1/4W 12K	C303, 304	ECBT1H150J5	50V 15P	C621, 622	ECBT1E223ZF	25V 0. 022U
R591, 592	ERDS2TJ221	1/4W 220	C305, 306	ECBT1H330J5	50V 33P	C631	ECEAOJKA221B	6. 3V 220U
R593, 594	ERDS2TJ102	1/4W 1K	C307, 308	ECEA1CKA220B	16V 22U	C632	ECEA1HKA010B	50V 1U
R595, 596	ERDS2TJ823T	1/4W 82K	C351	ECEA1CKA100B	16V 10U	C641, 642	ECBT1E103ZF	25V 0. 01U
R597, 598	ERDS2TJ123	1/4W 12K	C352	ECBT1E223ZF	25V 0. 022U	C671, 672	ECBT1C822KS5	16V 8200P
R602	ERDS2TJ471	1/4W 470	C353	ECEA1HKA2R2B	50V 2. 2U	C701, 702	ECEA45V472YB	45V 4700U △
R610	ERDS2TJ103	1/4W 10K	C361	ECEA1CN470SB	16V 47U	C703, 704	ECEA1CKA330B	16V 33U
R611, 612	ERDS2TJ333	1/4W 33K	C362	ECEA1CKA100B	16V 10U	C705, 706	ECKR1H103ZF5	50V 0. 01U
R613, 614	ERDS2TJ274	1/4W 270K	C371	ECEAOJKA221B	6. 3V 220U	C707	ECA1HM221B	50V 220U △
R615, 616	ERDS2TJ123	1/4W 12K	C381, 382	ECBT1E103ZF	25V 0. 01U	C708	ECEA1CKA100B	16V 10U
R617, 618	ERDS2TJ273	1/4W 27K	C395-398	ECBT1E103ZF	25V 0. 01U	C709, 710	ECBT1E103ZF	25V 0. 01U
R619, 620	ERDS2TJ223	1/4W 22K	C401	ECBT1H221KB5	50V 220P	C711	ECQE1104KF3	100V 0. 1U
R621, 622	ERDS2TJ824	1/4W 820K	C402	ECBT1H221KB5	50V 220P (GC)	C712	ECBT1E223ZF	25V 0. 022U
R623, 624	ERDS2TJ220T	1/4W 22	C403	ECEA1HKA3R3B	50V 3. 3U	C714	ECKR1H103ZF5	50V 0. 01U
R625, 626	ERDS2TJ473	1/4W 47K	C404	ECBT1H221KB5	50V 220P	C731, 732	ECKT1H102KB	50V 1000P
R627, 628	ERDS2TJ102	1/4W 1K	C405	ECBT1H101KB5	50V 100P	C751	ECEA1VKA100B	35V 10U
R629	ERDS2TJ472	1/4W 4. 7K	C406	ECEA1CKA100B	16V 10U	C752	ECKR1H103ZF5	50V 0. 01U
R630	ERDS2TJ222	1/4W 2. 2K	C407	ECEA1HKA3R3B	50V 3. 3U	C905, 906	ECBT1H101KB5	50V 100P
R631	ERDS2TJ105T	1/4W 1M	C408	ECBT1H181KB5	50V 180P	C1101, 1102	ECBT1E223ZF	25V 0. 022U
R632	ERDS2TJ334	1/4W 330K	C409	ECEA1HKA010B	50V 1U	C1103-1106	ECBT1H102KB5	50V 1000P
R633, 634	ERDS2TJ102	1/4W 1K	C410	ECBT1H221KB5	50V 220P			
R635, 636	ERDS2TJ752T	1/4W 7. 5K	C411	ECBT1E103ZF	25V 0. 01U			
R637	ERDS2TJ104	1/4W 100K	C412	ECBT1E223ZF	25V 0. 022U			
R638	ERDS2TJ102	1/4W 1K	C414	ECA1AM331B	10V 330U			
R639	ERDS2TJ223	1/4W 22K	C415	ECBT1H102KB5	50V 1000P			
R640	ERDS2TJ102	1/4W 1K	C421	ECBT1H102KB5	50V 1000P			
R641	ERDS2TJ822	1/4W 8. 2K	C501, 502	ECA1HAP3R3B	50V 3. 3U			
R644-646	ERDS2TJ103	1/4W 10K	C503, 504	ECBT1H331KB5	50V 330P			
R649-651	ERDS2TJ104	1/4W 100K	C505, 506	ECBT1H150J5	50V 15P			
R652	ERDS2TJ102	1/4W 1K	C507, 508	ECBT1C272KR5	16V 2700P			
R654, 655	ERDS2TJ222	1/4W 2. 2K	C509, 510	ECEA1HKA2R2B	50V 2. 2U			
R701	ERQ16NKW2R2E	1/4W 2. 2 △	C511, 512	ECBT1H821KB5	50V 820P			
R702	ERD2FCVJ4R7T	1/4W 4. 7 △	C513	ECEA1VU470	35V 47U			
R703, 704	ERDS2TJ562	1/4W 5. 6K	C514	ECA2AAP100B	100V 10U			
R705, 706	ERG1SJ471E	1W 470 △	C515, 516	ECBT1H104ZF5	50V 0. 1U			
R707	ERDS1FVJ820T	1/2W 82 △						

■ Packaging

