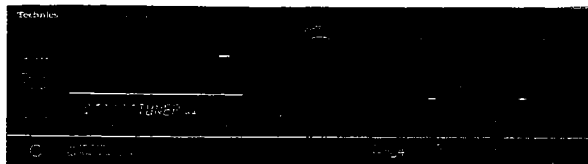


# Service Manual

Stereo Integrated Amplifier

Amplifier

## SU-G70



**Color**

(K) ..... Black Type

**Area**

Country Code	Area	Color
(P) (P2)	U.S.A.	(K)
(PC)	Canada	(K)

**Systems**

SD-S310 (SU-G70P) (SU-G70PC)  
SD-S410 (SU-G70P2)

### SPECIFICATIONS (IHF '78)

■ **AMPLIFIER SECTION**

**Rated minimum sine wave RMS power output**  
20 Hz~20 kHz both channels driven  
0.05% total harmonic distortion  
110 W per channel (8 ohms)

**1 kHz continuous power output**  
both channels driven  
0.05% total harmonic distortion 115 W per channel (8 ohms)

**Dynamic headroom** 1.1 dB (8 ohms)  
**Total harmonic distortion half power at 1 kHz** 0.03% (8 ohms)  
**SMPTE intermodulation distortion** 0.05% (8 ohms)

**Frequency response**  
PHONO RIAA standard curve ±0.8 dB  
TUNER, CD, TAPE, VCR 2/TV, VCR 1/EQ 10 Hz~80 kHz, -3 dB

**Input sensitivity**  
PHONO 0.4 mV (2.5 mV, IHF '66)  
TUNER, CD, TAPE, VCR 2/TV, VCR 1/EQ 15 mV (150 mV, IHF '66)

**S/N (IHF, A)**  
PHONO 71 dB (73 dB, IHF '66)  
TUNER, CD, TAPE, VCR 2/TV, VCR 1/EQ 75 dB (94 dB, IHF '66)

**Maximum input voltage**  
PHONO 128 mV (135 mV, 1 kHz)

**Input impedance**  
PHONO 47 kilohms  
TUNER, CD, TAPE, VCR 2/TV, VCR 1/EQ 47 kilohms

**Tone controls**

**BASS** 50 Hz, +10 dB~-10 dB  
**TREBLE** 20 kHz, +10 dB~-10 dB  
**SUPER BASS** 80 Hz, +6 dB  
**Output voltage TAPE REC OUT** 150 mV  
**Load impedance**  
A or B 8~16 ohms  
A and B 8~16 ohms

■ **REAR AMPLIFIER SECTION**

**Power output** 15x2 (8 ohms 1 kHz) at T.H.D 0.8%

■ **GENERAL**

**Power consumption** 430 W, 550 VA  
**Power supply** AC 120 V, 60 Hz  
**Dimensions (W×H×D)** 430×130.5×298 mm  
(16<sup>19</sup>/<sub>16</sub>"×5<sup>7</sup>/<sub>16</sub>"×11<sup>29</sup>/<sub>32</sub>" )  
**Weight** 8.8 kg (19.4 lb.)

**Notes:**

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

Matsushita Services Company  
Division of Matsushita Electric  
Corporation of America  
50 Meadowland Parkway,  
Secaucus, New Jersey 07094

Panasonic Sales Company,  
Division of Matsushita Electric  
of Puerto Rico, Inc.  
San Gabriel Industrial Park  
65th Infantry Ave. Km.9.5  
Carolina, P.R. 00630

Matsushita Electric of Canada  
Limited  
5770 Ambler Drive, Mississauga,  
Ontario, L4W 2T3

# CONTENTS

	Page
SAFETY PRECAUTION .....	2
BEFORE REPAIR .....	2
PROTECTION CIRCUITRY .....	3
ACCESSORIES .....	3
LOCATION OF CONTROLS .....	3, 4
CONNECTIONS .....	5
REMOTE-CONTROL OPERATION .....	6~8
DISASSEMBLY INSTRUCTIONS .....	9~12

	Page
BLOCK DIAGRAM .....	12~14
SCHEMATIC DIAGRAM .....	15~22
DESCRIPTION OF FL PANEL .....	23
WIRING CONNECTION DIAGRAM .....	24
PRINTED CIRCUIT BOARDS .....	25~28
REPLACEMENT PARTS LIST .....	29~32, 35
EXPLODED VIEW .....	33, 34

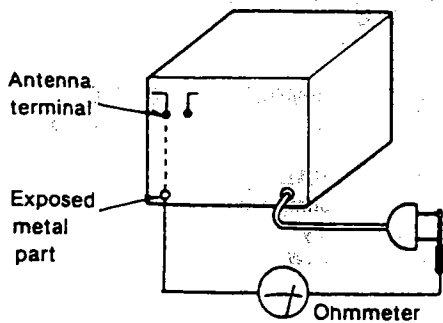
## SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

### INSULATION RESISTANCE TEST

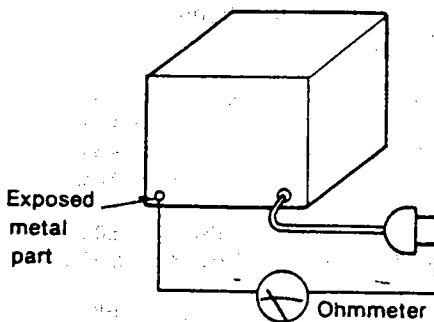
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads, antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between  $3M\Omega$  and  $5.2M\Omega$  to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

**Note:** Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance =  $3M\Omega - 5.2M\Omega$



(Fig. B)

Resistance = Approx  $\infty$

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

## BEFORE REPAIR

- (1) Turn off the power supply. Using a  $10\Omega$ , 10W resistor, connect both ends of power supply capacitors (C701, C702) in order to discharge the voltage.
- (2) 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 120V, 60Hz in NO SIGNAL mode is 430 mA~680 mA.

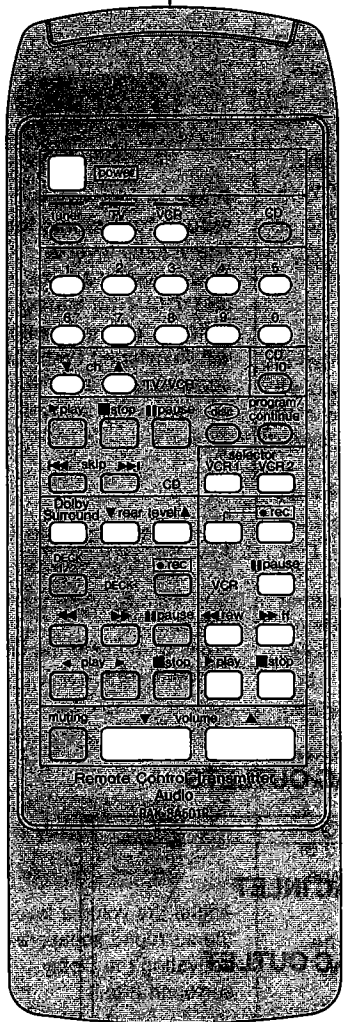
This remote-control transmitter can control selected Panasonic television or VCR which is equipped with remote-control function that has been introduced since 1984. (Consult your dealer for details.)

**Connection**

If the audio output terminals of TV or VCR are connected to the "VCR 1/EQ" or "VCR 2/TV" terminals of the amplifier, you can enjoy picture of TV or VCR with Hi-Fi sound.

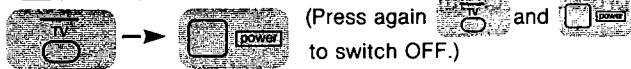
**Operation**

When operating TV and VCR, face the remote-control transmitter toward the remote-control signal receptor of each unit.

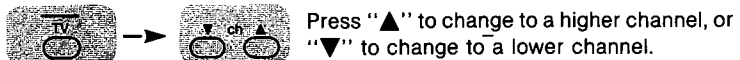
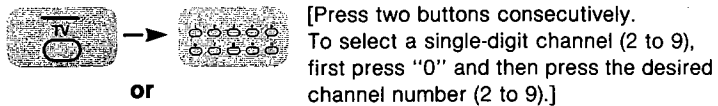


**Watching TV Broadcasts**

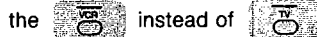
**To switch ON the power**



**To select the desired channel**



**Note:** When selecting the desired channel by the VCR, press



**To adjust the volume level**

• If the TV is connected to the "VCR 1/EQ" terminals;



• If the TV is connected to the "VCR 2/TV" terminals;

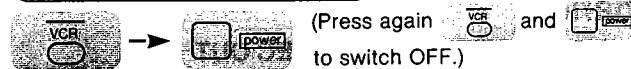


**To activate the Dolby surround effect**

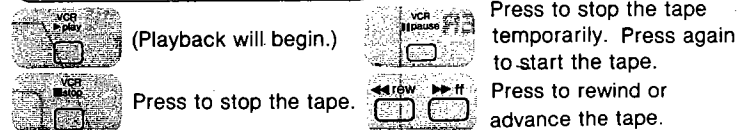


**Watching Video Tapes**

**To switch ON the power**



**To start the tape playback**



**To adjust the volume level**

• If the VCR is connected to the "VCR 1/EQ" terminals;



• If the VCR is connected to the "VCR 2/TV" terminals;



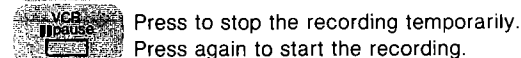
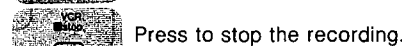
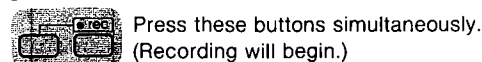
**To activate the Dolby surround effect**



**Recording video sources on the VCR**

**1** Select the desired TV channel for recording.

**2** Start the recording.



**Note:**

If the audio output terminals of a TV or VCR are connected to the "VCR 1/EQ" terminals of the amplifier, the Dolby surround effect will not be activated during sound playback.

## ■ 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 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 this unit are used.

If this occurs, follow the procedure outlined below:


1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. 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.


## ■ ACCESSORIES

- Remote-control transmitter... 1 (RAK-SA501P)
- Batteries... 2 (R03)



**For SD-S410 only**


- Speaker cables for surround speakers... 2 (SWXS255)



• AC power supply cord is included tape deck carton of this system.

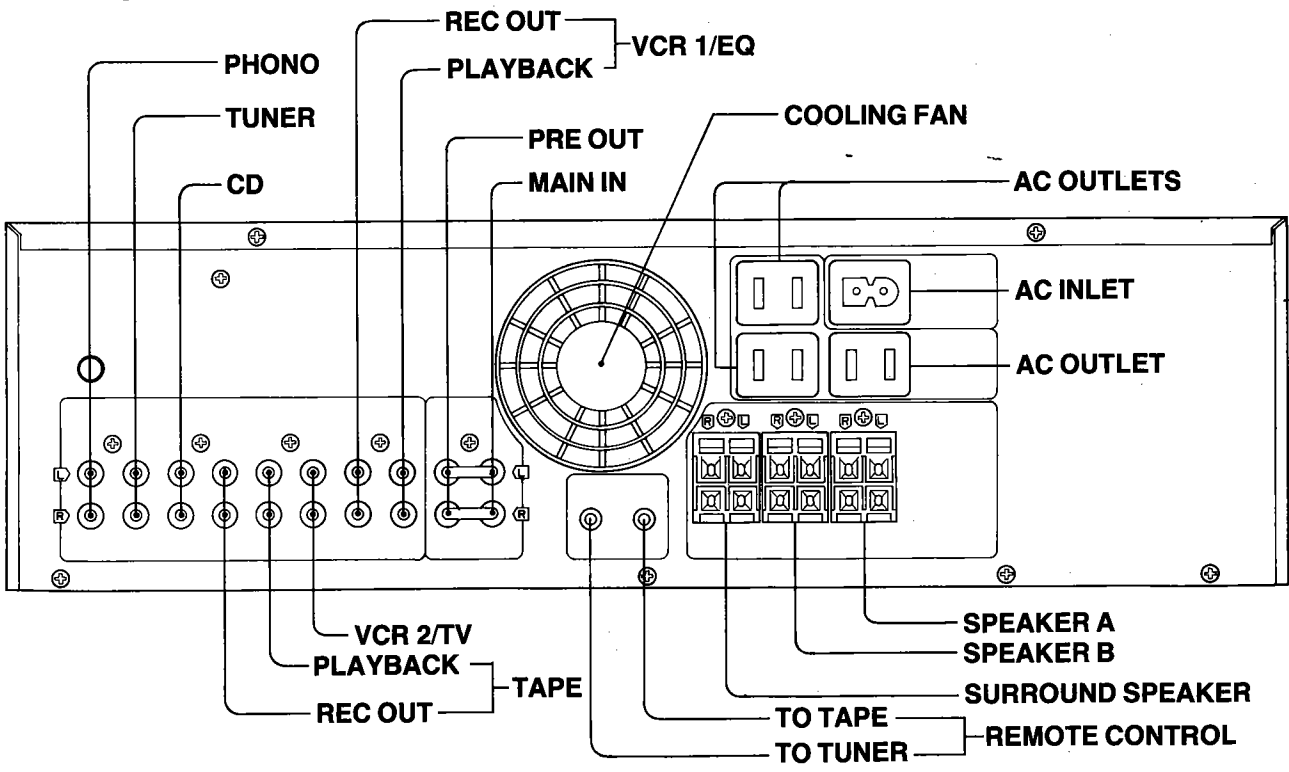
- AC power supply cord (polarized)... 1 (SJA172-2)...(P, P2) (SJA172-3)...(PC)

**Short thick type (SPT-2)**



## ■ LOCATION OF CONTROLS

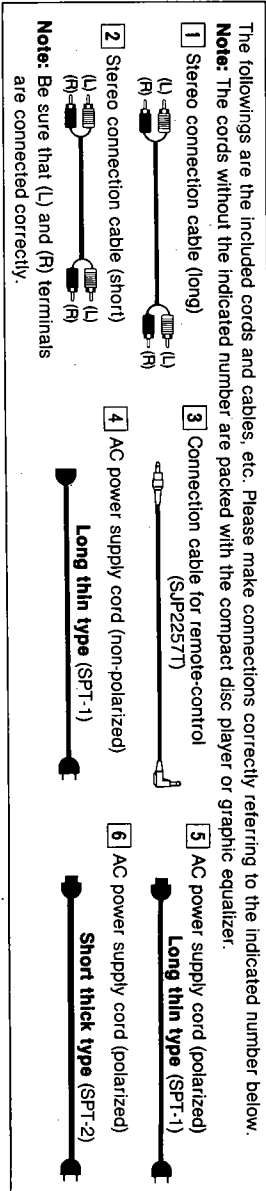
• Rear panel



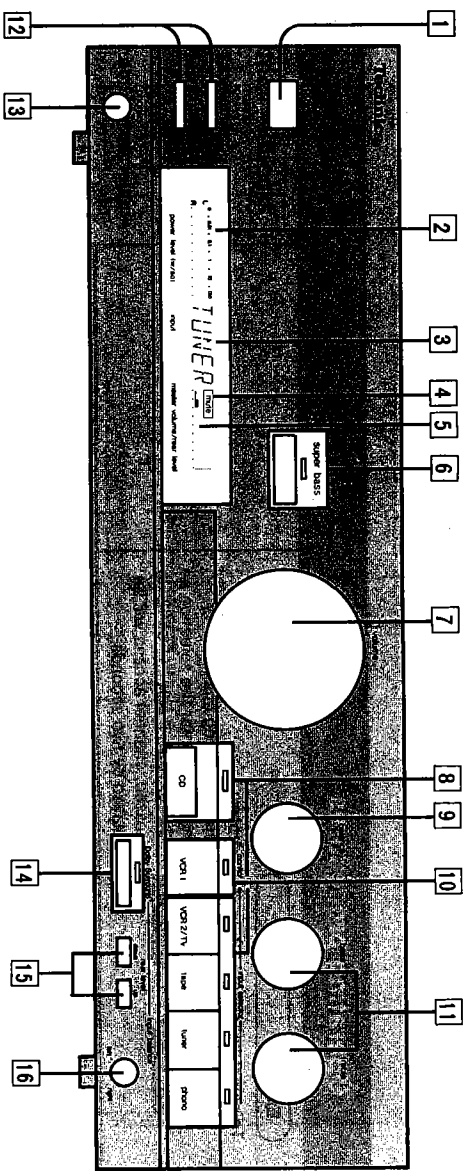
※Phono input capacitance is about 100 pF.

## CONNECTIONS

**Note:** Components capable of receiving remote-control transmission via the remote control cable, will not respond to the remote-control transmitter commands unless the audio cables are connected. The same applies to components connected for the "synchro-edit" operation.



## Front panel



### 1 Power switch (power)

These indicators indicate the peak power value of the output level to the speaker systems.

### 2 Peak-power indicators (power level)

This display usually shows the sound source selected by the input selectors. When the volume-control is used to adjust the volume level, the level is displayed in decibel for about three seconds, after which the display returns again to indication of the sound source.

### 3 Input selector/volume level display (input)

This indicator will illuminate when the muting button on the remote-control transmitter is pressed. To cancel the muting function without the remote-control transmitter, press the "phone" button of the input selectors on this unit for about 4 seconds, after reducing the volume level to the minimum position.

### 4 Muting indicator (mute)

This indicator (master volume/rear level) indicates the volume output level at a glance.

### 5 Volume indicator (master volume/rear level)

Low frequency sounds are reinforced when this switch is pressed. The indicator above will illuminate.

### 6 Super bass switch/indicator (super bass)

### 7 Volume control (volume)

### 8 Input selectors/indicators (input selector)

These selectors are used to select the sound source to be heard, such as a disc, radio broadcasts, etc. The corresponding input selector illuminates during operation to indicate the selected sound source. The selected sound source is also displayed on the input selector/volume level display.

### 9 Balance control (balance)

This control is used to adjust the left/right volume balance.

### 10 VCR 1-monitor switch/indicator (VCR 1)

Set this switch to the ON position (so that the indicator above is illuminated) when using a graphic equalizer or, playing back or monitoring the sound from a VCR connected to the "VCR 1/EC" terminals. This selector should be set to the OFF position (indicator off) at all other times.

### 11 Tone controls (bass/treble)

The bass control is used to adjust the low-frequency sound range, and the treble control is used to adjust the high-frequency sound range.

### 12 Speaker selectors (speakers)

These selectors are used to turn the speaker systems on and off.

**Note:** When only one speaker system is connected to the amplifier, no sound will be heard if both speaker selectors are pressed.

### 13 Headphone jack (phones)

### 14 Dolby surround ON/OFF switch (Dolby Surround)

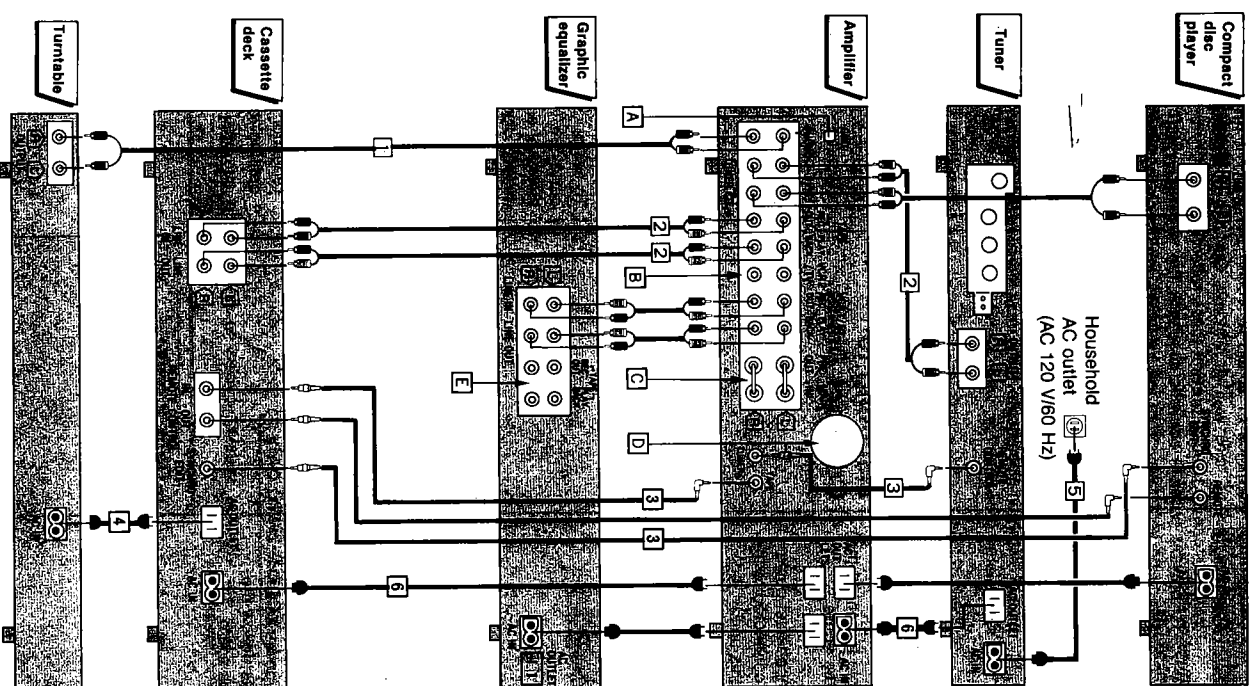
This switch is used to activate the Dolby surround effect. When this switch is switched OFF, no sound will be heard from the surround speaker systems.

### 15 Rear speaker volume controls (rear level)

These controls are used to adjust the volume level of the surround speaker systems.

### 16 Dolby surround input balance control (input balance)

This control is used to minimize dialogue leakage in the surround channel thereby optimizing the Dolby surround decoding operation.



## System Connection Options

**A "GND" terminal of the amplifier**  
This terminal is for use with a turntable which has a ground wire.

**B "VCR 2TV" terminals of the amplifier**  
For connection to the audio output of a VCR, TV, etc. (Refer to the operating instructions of the optional equipment.)

**C "PRE OUT/MAIN IN" terminals of the amplifier**  
Use these terminals to operate the amplifier as an independent preamplifier, main amplifier. Do not remove these pins otherwise. (No sound will be heard if they are removed.)

**D Cooling fan of the amplifier**  
The cooling fan operates only at high output power levels.

**E "TAPE" terminals of the graphic equalizer**  
(For SH-8017 only)  
For connections to the second audio tape deck or VCR.

## AC outlets

### "UNSWITCHED" outlets

Power is always available, regardless of the unit's power switch setting.

**Note:** The power rating of any particular AC outlet, listed as follows, is the rating for the total allowable power directly or indirectly connected to this outlet.

**For amplifier:** Audio equipment rated up to 100 W (total for all-outlets) can be connected here.

**For cassette deck:** Audio equipment rated up to 100 W can be connected here.

**For graphic equalizer (For SH-8017 only):** Audio equipment rated up to 150 W can be connected here.

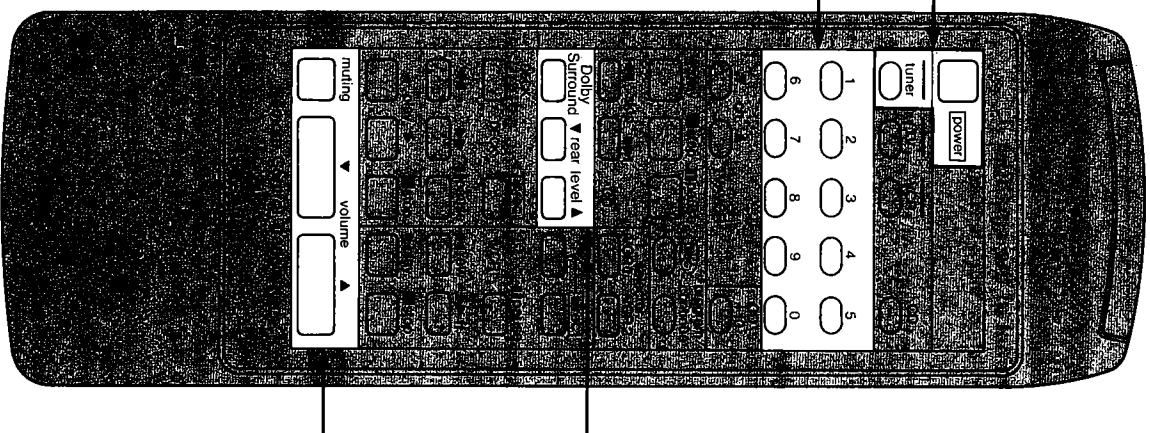
**Note:** If the "AC IN" of the amplifier is connected to the "SWITCHED" outlet of the tuner, power for each unit is only available when the tuner's power switch is "on".

### "SWITCHED" outlet

Power is controlled by power switch of the tuner.  
**For tuner:** Audio equipment rated up to 500 W can be connected here.

Before beginning

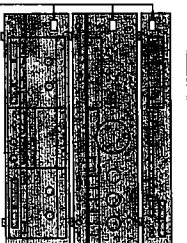
While listening to music



The operation of these buttons depends on the source selected.

Before beginning

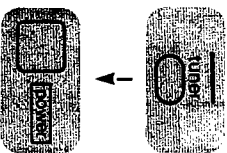
On the system



Set the power of each component to ON. For system with compact disc player, switch ON the power to compact disc player also.

By the remote-control transmitter

It is possible to control the system. (If the components' power cords are connected to the outlets of this unit.) To do this, follow the steps below:



The "standby" indicator (standby) on the tuner will illuminate, and the indicators of all other components will switch OFF. To restore power to all components, follow the above steps again.

Operating procedures

Listening to Radio Broadcasts



Select the desired channel.

Example To select "channel" 12.

Note: When selecting channel 1 or channel 2, enter the selection as "01" or "02". If only "1" or "2" is pressed, channel access will be delayed by two seconds.



Adjust the volume level. (The volume level will be displayed on the input selector/volume level display and volume indicator of the amplifier.)



Listening to Compact Discs

Set the power of each component to ON. For system with compact disc player, switch ON the power to compact disc player also.

Basic steps before listening to compact discs

Insert the disc into the disc trays.

Press to select the desired play mode. (The program indicator of the compact disc player will not illuminate in the continuous mode.)

Sequential play

To listen from the first track of the first disc



(Play will start.)

Direct-access play

To listen from a desired track of a desired disc



Select the desired track number.



Select the desired track number.

Program play

To select all tracks of a desired disc



Select the desired disc number.



Select the desired track number.

To select certain tracks of a desired disc



Select the desired disc number.



Select the desired track number.

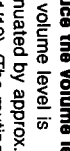
Repeat the previous steps until the desired program is completed.



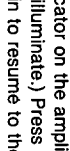
(Play will start.)

Notes: 1. If only the disc is selected in direct access play, play of all tracks on that disc (beginning from its first track) will begin in about ten seconds. 2. To select a track numbered 10 or higher in the direct-access play or program play mode, first press the "+10" button the necessary number of times (i.e., press two times to select 20) and then press the appropriate "numeric button" to select the least significant digit.

Press to stop the disc play. Press one of these buttons briefly to move the pick-up to the beginning of a specific track.



Press to stop the disc play temporarily. Press to start the disc play again.



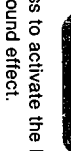
Press to stop the disc play. Press to stop the disc play temporarily. Press to start the disc play again.



Press to stop the disc play. Press to stop the disc play temporarily. Press to start the disc play again.

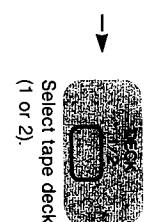


Press to stop the disc play. Press to stop the disc play temporarily. Press to start the disc play again.



Listening to Tapes

Insert the cassette tape into the holder of tape deck (1 and/or 2). Select the Dolby noise-reduction system and desired reverse mode.



Select tape deck (1 or 2).

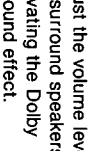


Select the tape side to be played back. "A" side (side facing outward) "B" side (deck 2 only)



(Playback will begin.)

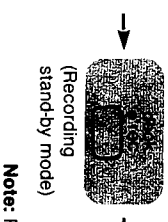
Adjust the volume level of the surround speakers after activating the Dolby surround effect.



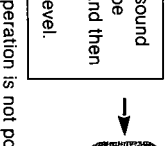
Deck 2 only

Recording

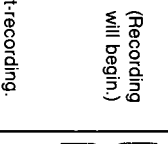
Begin the sound source to be recorded and then adjust the recording level.



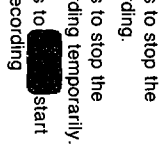
Begin the sound source to be recorded and then adjust the recording level.



(Recording will begin.)



Press to stop the recording. Press to stop the recording temporarily. Press to start the recording.



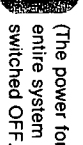
Press to stop the recording. Press to stop the recording temporarily. Press to start the recording.



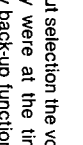
After Listening is Finished



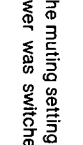
Reduce the volume level.



(The power for the entire system will be switched OFF.)



Note: The input selection the volume level, and the muting setting will be retained (as they were at the time when the power was switched OFF) by the memory back-up function.



Press to stop the recording. Press to stop the recording temporarily. Press to start the recording.



Press to stop the recording. Press to stop the recording temporarily. Press to start the recording.



While listening to music

Amplifier control



Adjust the volume level. (The volume level will be displayed on the input selector/volume level display and volume indicator of the amplifier.)



Press to temporarily reduce the volume level. The volume level is attenuated by approx. 20 dB (1/10). (The muting indicator on the amplifier will illuminate.) Press once again to resume to the previous volume level.



Press to activate the Dolby surround effect.

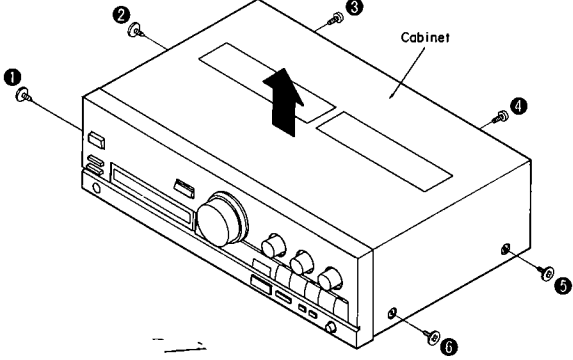
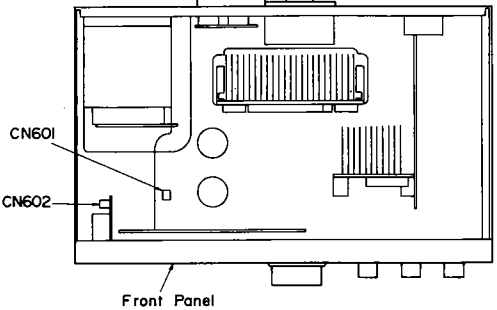
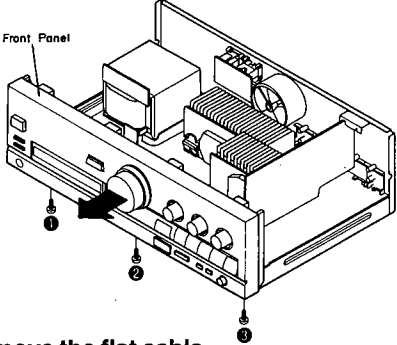
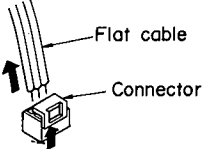
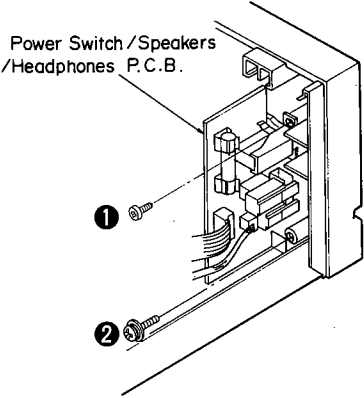
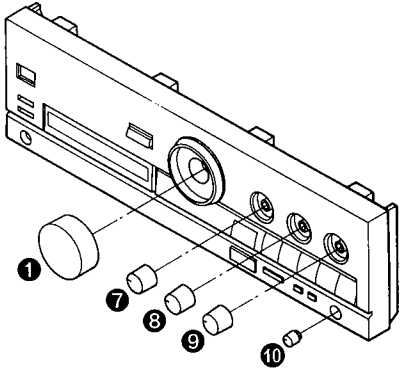


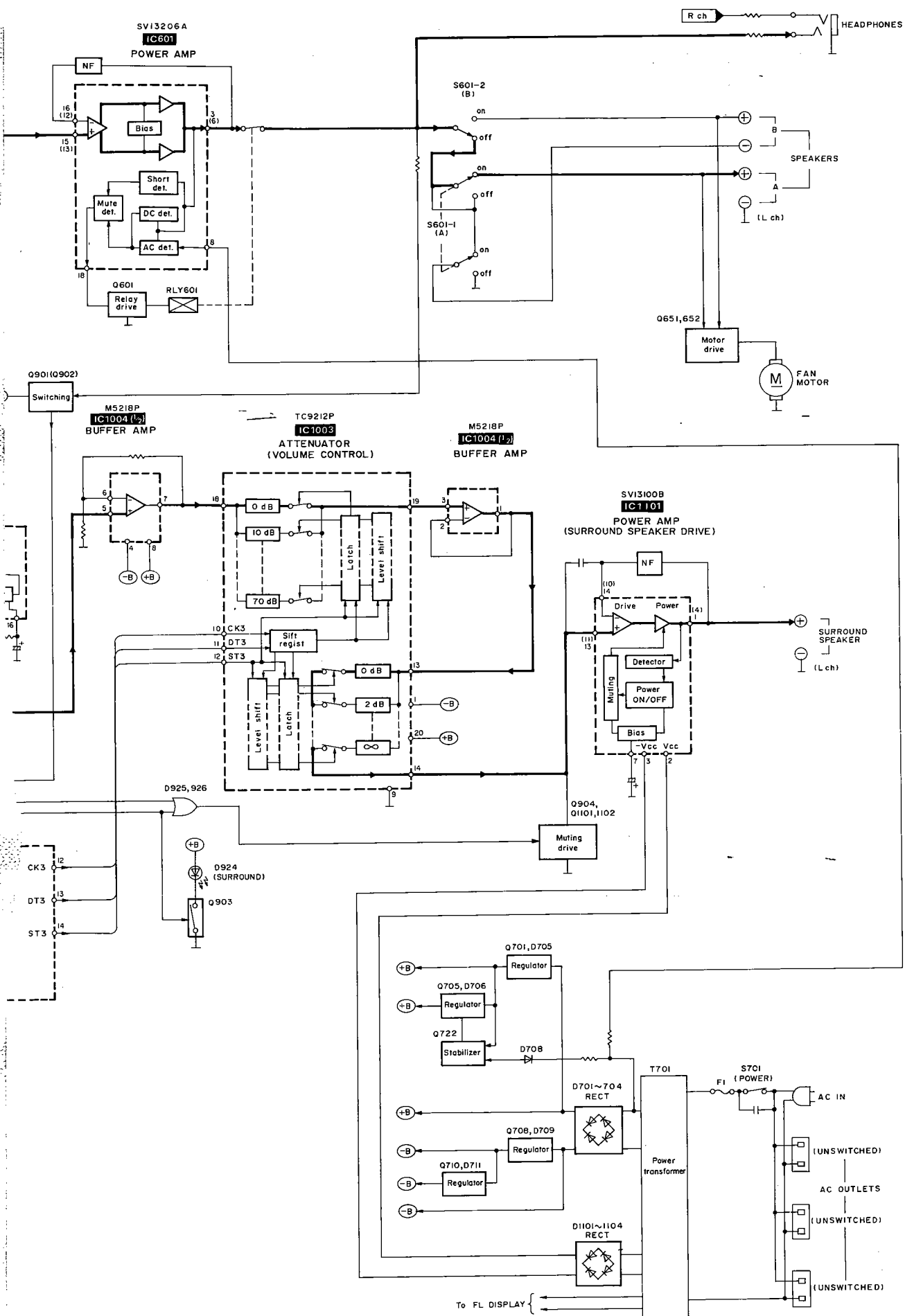
Adjust the volume level of the surround speakers after activating the Dolby surround effect.

# DISASSEMBLY INSTRUCTIONS

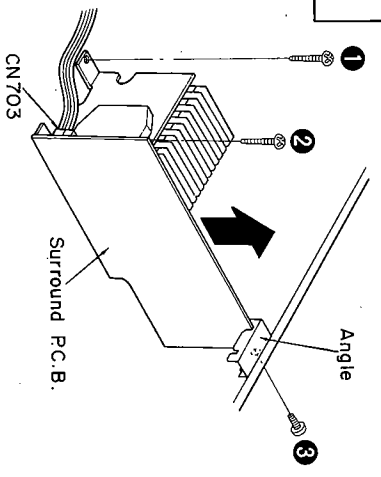
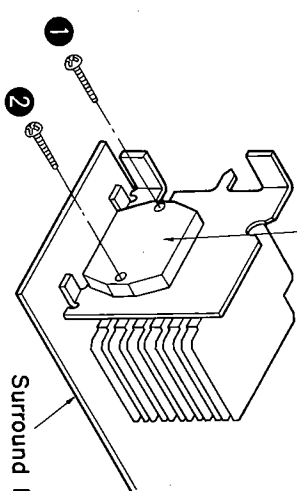
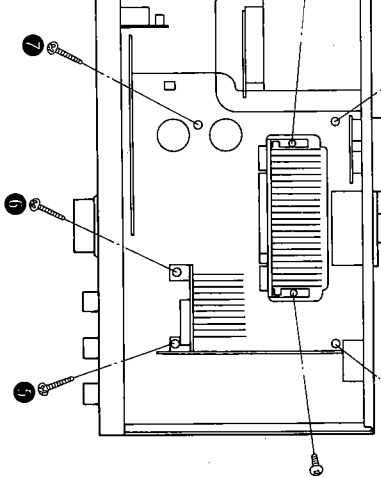
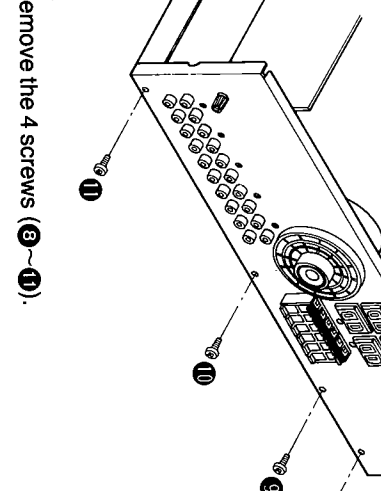
## "ATTENTION SERVICER"

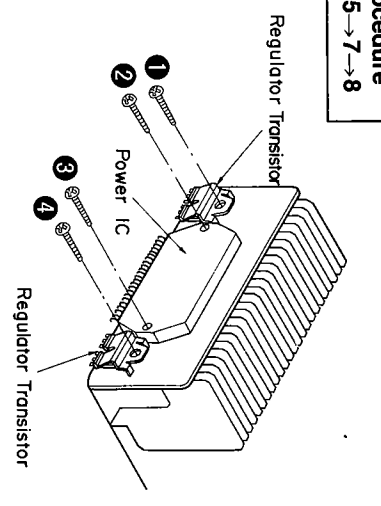
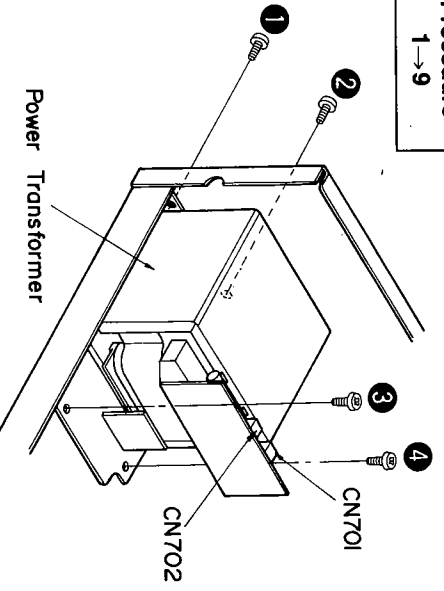
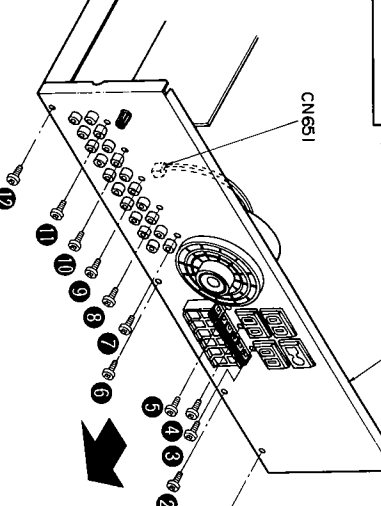
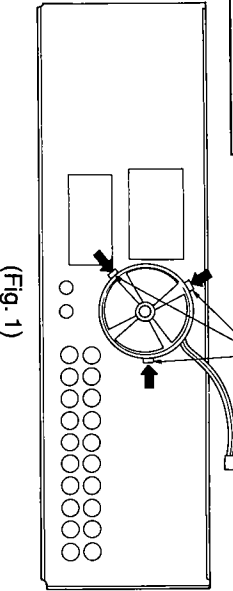
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the Cabinet	Ref. No. 2	Removal of the Front Panel
Procedure 1	 <p>● Remove the 6 screws (①~⑥).</p>	Procedure 1→2	 <ol style="list-style-type: none"> <li>1. Remove the 2 flat cables (CN601, CN602).</li> <li>2. Remove the 3 screws (①~③).</li> <li>3. Remove the front panel in the direction of the arrow.</li> </ol>
Ref. No. 3	Removal of the Power Switch/ Speakers/Headphones P.C.B	 <p>How to remove the flat cable</p> <ol style="list-style-type: none"> <li>1. Lift the connector.</li> <li>2. Pull out the flat cable.</li> </ol> 	
Procedure 1→2→3	 <p>● Remove the 2 screws (①, ②).</p>	Ref. No. 4	Removal of the Volume/FL P.C.B. and Operation P.C.B.
		Procedure 1→2→4	 <ol style="list-style-type: none"> <li>1. Pull out the 1 knob (①).</li> <li>2. Remove the 5 screws (②~⑥).</li> </ol> <ol style="list-style-type: none"> <li>1. Pull out the 4 knobs (⑦~⑩).</li> <li>2. Remove the 10 screws (⑪~⑳).</li> </ol>





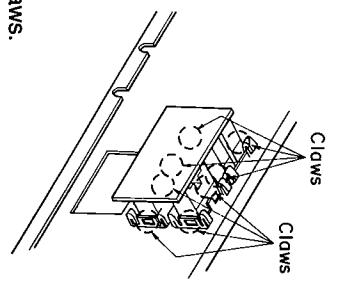
<p>Ref. No. 5</p> <p>Procedure 1→5</p>	<p>Removal of the Surround P.C.B.</p>  <ol style="list-style-type: none"> <li>1. Remove the flat cable (CN703).</li> <li>2. Remove the 3 screws (1~3).</li> <li>3. Remove the angle.</li> <li>4. Remove the surround P.C.B. in the direction of the arrow.</li> </ol>	<p>Ref. No. 6</p> <p>Procedure 1→5→6</p>	<p>Removal of the Power IC</p>  <ol style="list-style-type: none"> <li>1. Unsolder the power IC.</li> <li>2. Remove the 2 screws (1, 2).</li> </ol> <p>● When mounting the power IC, apply silicon thermal compound (SZZOL15 or equivalent) to the rear of the power IC.</p>
<p>Ref. No. 7</p> <p>Procedure 1→7</p>	<p>Check of the main P.C.B.</p>  <ol style="list-style-type: none"> <li>1. Remove the 7 screws (1~7).</li> </ol>	<p>Ref. No. 10</p> <p>Procedure 1→10</p>	<p>Removal of the Rear Panel</p>  <ol style="list-style-type: none"> <li>1. Remove the 1 connector (CN651).</li> <li>2. Remove the 12 screws (1~12).</li> <li>3. Remove the rear panel in the direction of the arrow.</li> </ol>
<p>Ref. No. 3</p> <p>Procedure 1→3</p>	<p>Ref. No. 4</p> <p>Procedure 1→4</p>	<p>Ref. No. 8</p> <p>Procedure 1→5→7→8</p>	<p>Ref. No. 9</p> <p>Procedure 1→9</p>

<p>Ref. No. 8</p> <p>Procedure 1→5→7→8</p>	<p>Removal of the Power IC and Regulator Transistor</p>  <ol style="list-style-type: none"> <li>1. Unsolder the power IC or regulator transistor.</li> <li>2. Remove the 4 screws (1~4).</li> </ol> <p>● When mounting the power IC or regulator transistor, Apply silicone compound (SZZOL15) to the rear side of power IC or regulator transistor.</p>	<p>Ref. No. 9</p> <p>Procedure 1→9</p>	<p>Removal of the Power Transformer</p>  <ol style="list-style-type: none"> <li>1. Remove the 2 flat cables (CN701, CN702).</li> <li>2. Remove the 4 screws (1~4).</li> </ol>
<p>Ref. No. 10</p> <p>Procedure 1→10</p>	<p>Removal of the Rear Panel</p>  <ol style="list-style-type: none"> <li>1. Remove the 1 connector (CN651).</li> <li>2. Remove the 12 screws (1~12).</li> <li>3. Remove the rear panel in the direction of the arrow.</li> </ol>	<p>Ref. No. 11</p> <p>Procedure 1→10→11</p>	<p>Removal of the Fan Motor</p>  <ol style="list-style-type: none"> <li>1. Release the 3 claws. (See Fig. 1)</li> </ol>
<p>Ref. No. 3</p> <p>Procedure 1→3</p>	<p>Ref. No. 4</p> <p>Procedure 1→4</p>	<p>Ref. No. 5</p> <p>Procedure 1→5</p>	<p>Ref. No. 6</p> <p>Procedure 1→6</p>

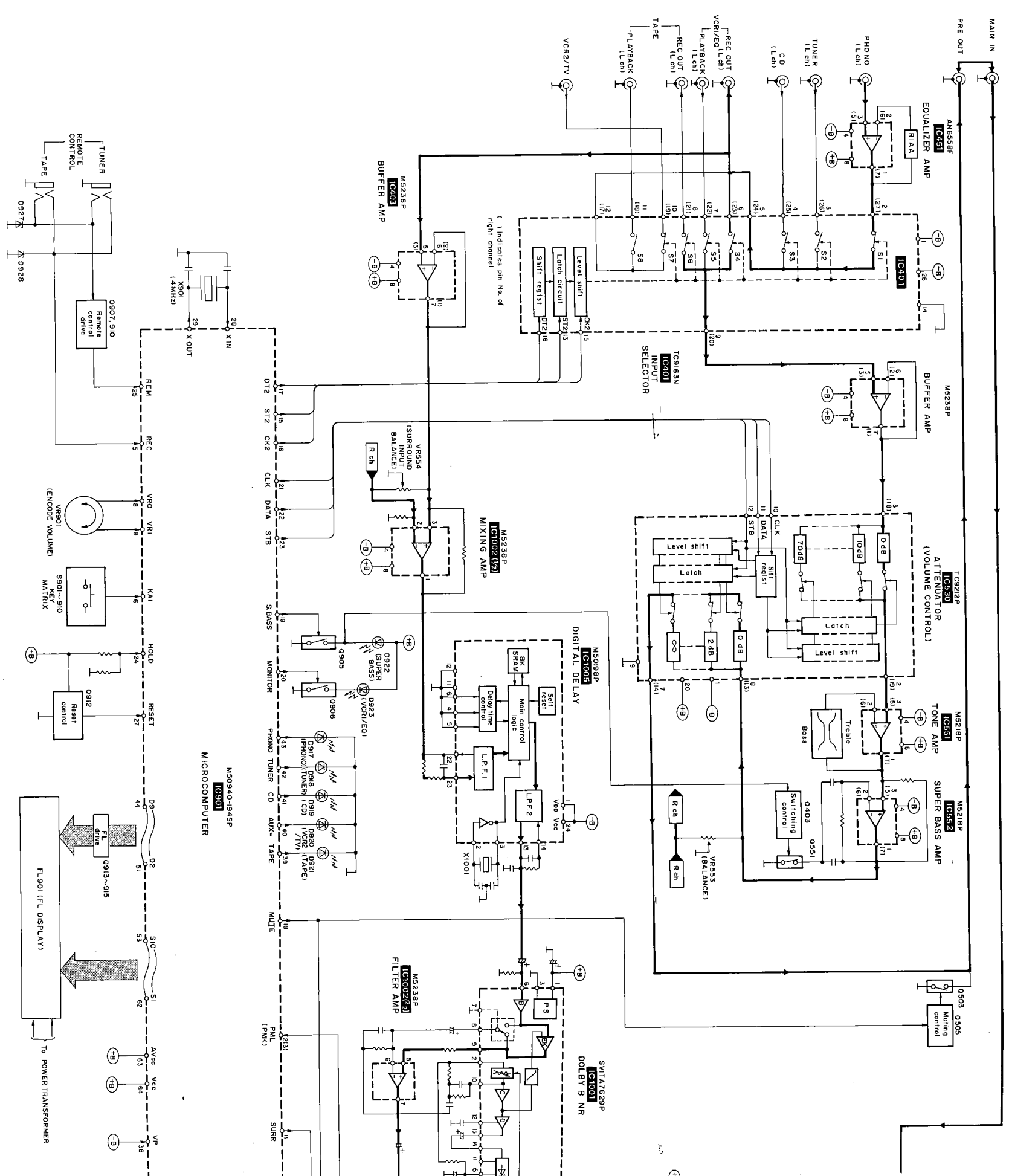
Ref. No. 12  
Removal of the AC Outlet/AC Inlet P.C.B.

Procedure  
1 → 10 → 12

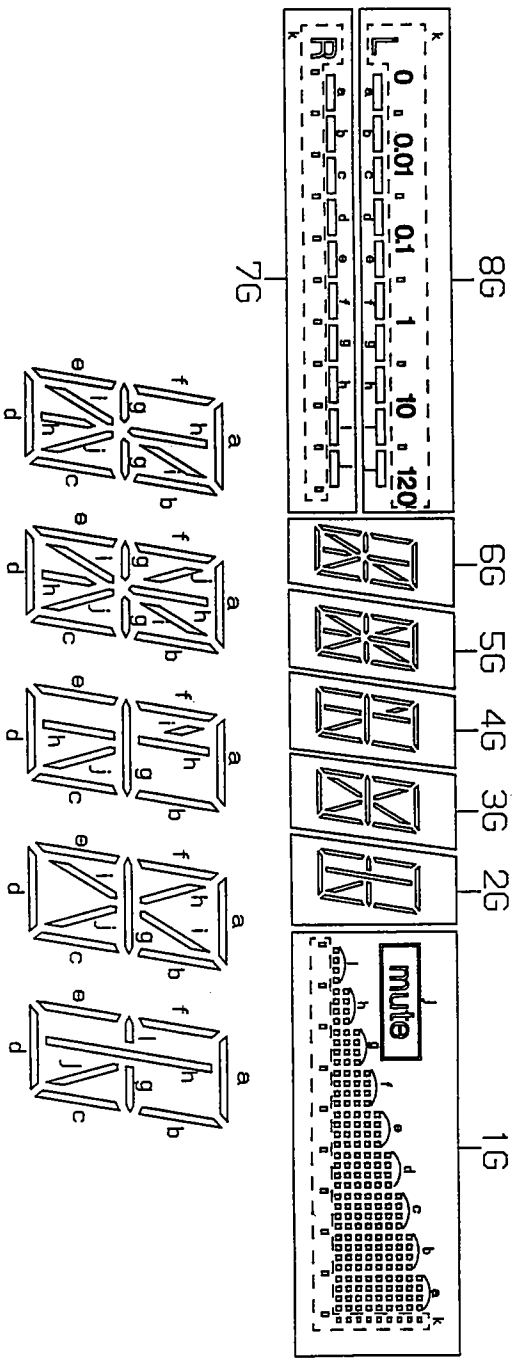
● Release the 8 claws.



■ BLOCK DIAGRAM



DESCRIPTION OF FL PANEL [FL901 (RSL0044-F)]  
GRID ASSIGNMENT



PIN CONNECTION

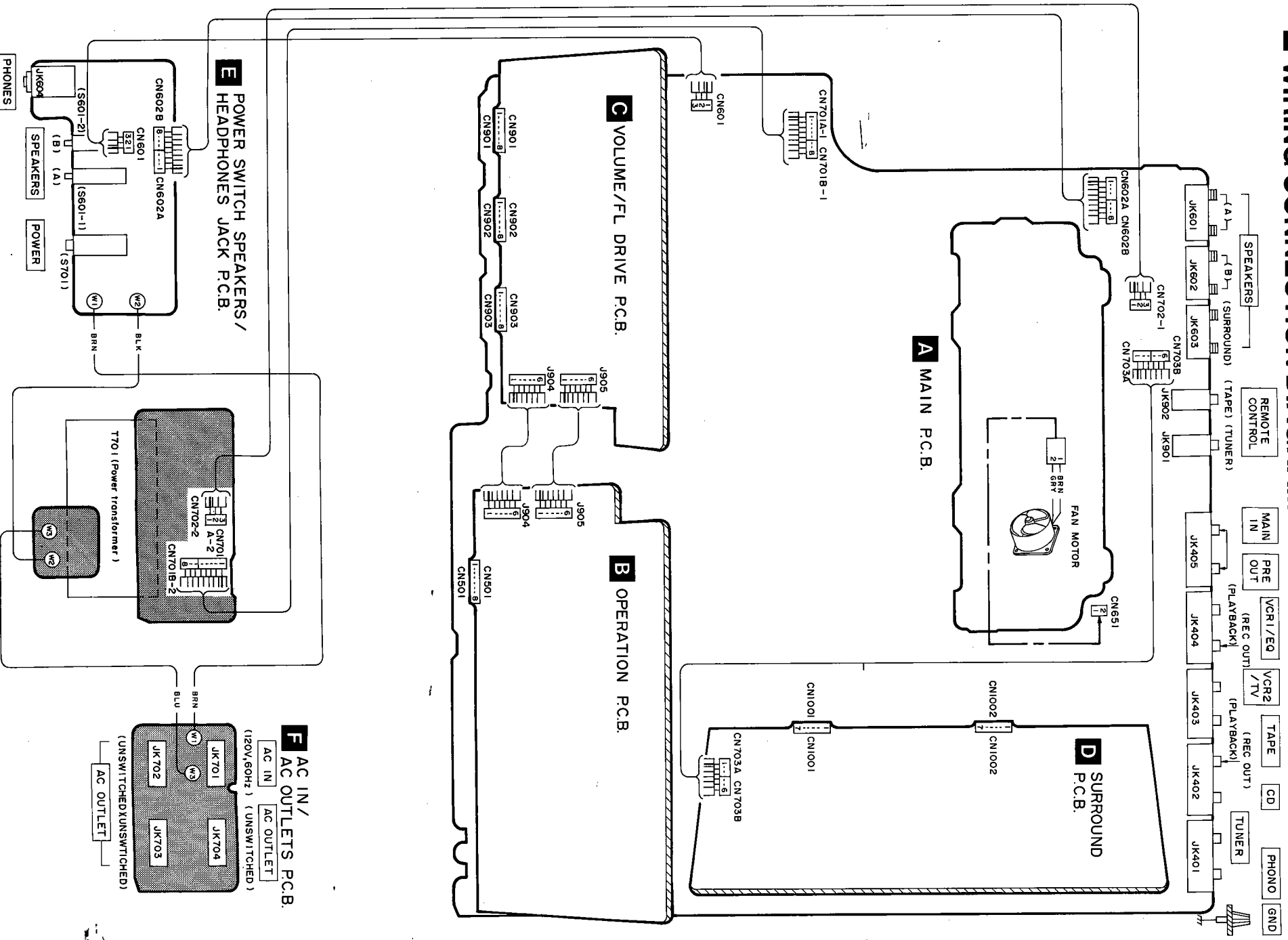
PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
CONNECTION	F	F	N	P	N	P	N	P	G	N	P	G	N	P	G	N	P	G	N	P	G	N	P	G	N	P	N	F	F

PIN NO.	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
CONNECTION	N	P	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P

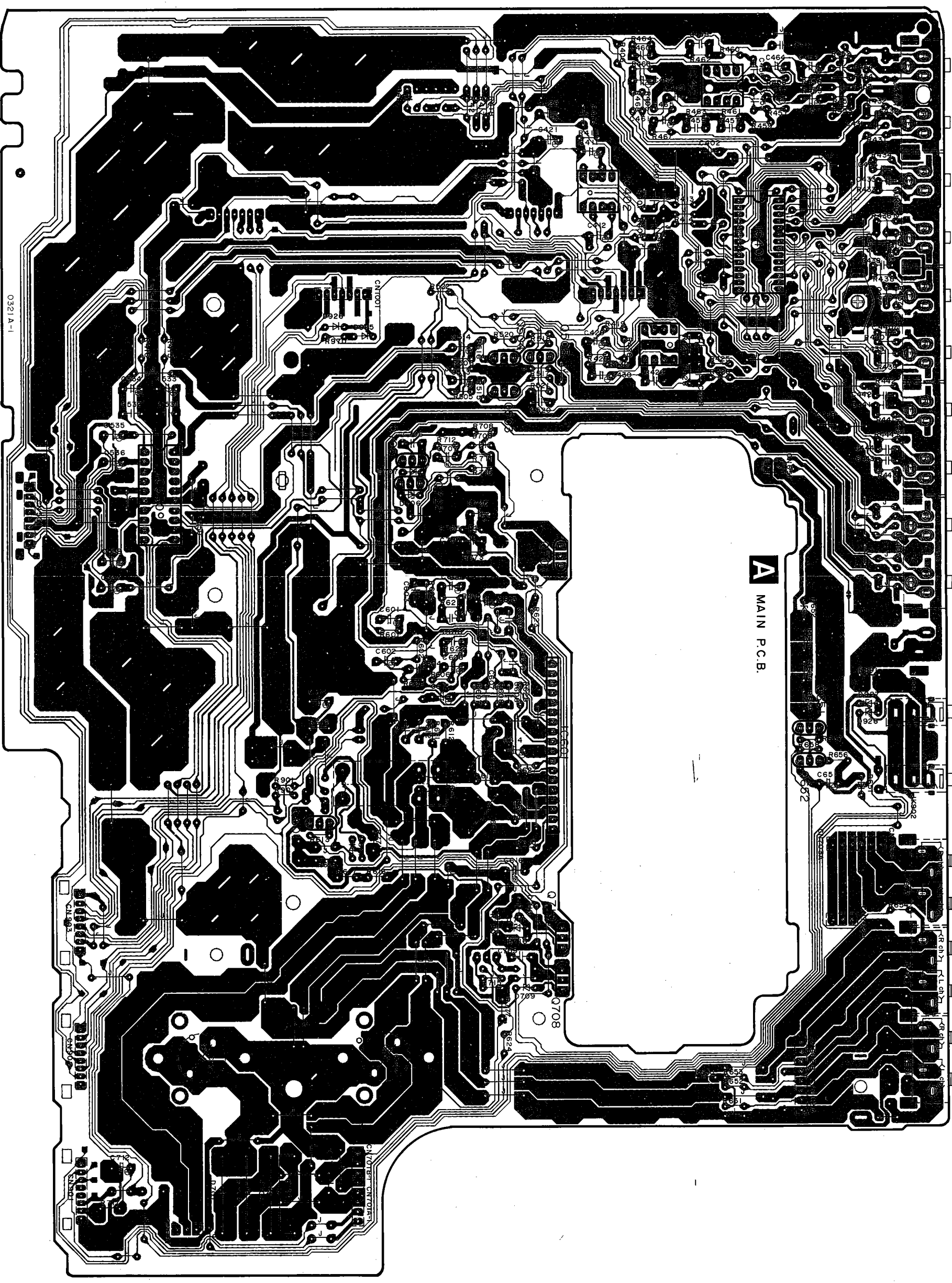
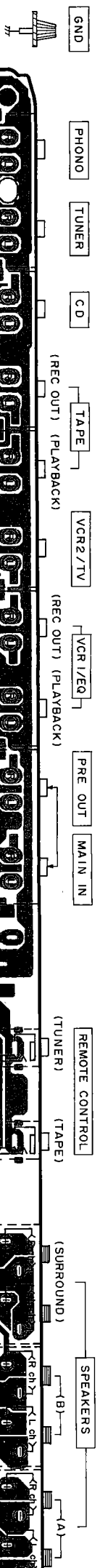
ANODE CONNECTION

	8G	7G	6G	5G	4G	3G	2G	1G
a	—	—	a	a	a	a	a	■■■■■■■■■■
b	—	—	b	b	b	b	b	■■■■■■■■■■
c	—	—	c	c	c	c	c	■■■■■■■■■■
d	—	—	d	d	d	d	d	■■■■■■■■■■
e	—	—	e	e	e	e	e	■■■■■■■■■■
f	—	—	f	f	f	f	f	■■■■■■■■■■
g	—	—	g	g	g	g	g	■■■■■■■■■■
h	—	—	h	h	h	h	h	■■■■■■■■■■
i	—	—	i	i	i	i	i	■■■■■■■■■■
j	—	—	j	j	j	j	j	■■■■■■■■■■
k	L0~120	R■■■■■■■■	-	-	-	-	-	■■■■■■■■■■

WIRING CONNECTION DIAGRAM



PRINTED CIRCUIT BOARDS (Parts list: pages 29-32; Terminal guide: page 22)





# REPLACEMENT PARTS LIST

SU-G70

SU-G70

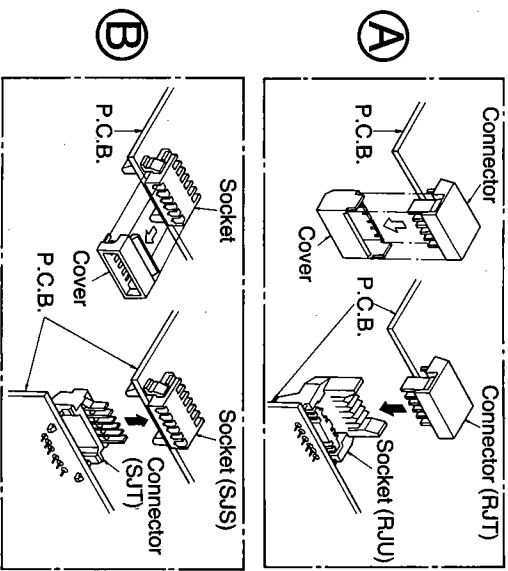
Notes : \* Important safety notice:  
 Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.  
 \* The parenthesized indications in the Remarks column specify the areas. (Refer to the cover page for area.)  
 Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT (S)	
IC401	TC9163N	IC, INPUT SELECTOR	
IC402, 403	ME238P	IC, BUFFER AMP.	
IC451	AN6558F	IC, PHONO EQ AMP.	
IC530	TC9212P	IC, ATTENUATOR (VOLUME)	
IC551, 552	ME218P	IC, TONE/SUPER BASS AMP.	
IC601	SV13206A	IC, POWER AMP.	$\Delta$
IC901	ME0940-194SP	IC, MICRO COMPUTER	
IC1001	SV17A7629P	IC, MODIFIED DOLBY & DECOR	
IC1002	ME238P	IC, BUFFER AMP.	
IC1003	TC9212P	IC, ATTENUATOR (VOLUME)	
IC1004	ME218P	IC, BUFFER AMP.	
IC1005	ME0198P	IC, DIGITAL DELAY	
IC1101	SV13100B	IC, POWER AMP. (S SP DRIVE)	$\Delta$
		TRANSISTOR(S)	
Q403	UN4111TA	TRANSISTOR	
Q503, 504	ZSC327AB7P	TRANSISTOR	
Q505	ZSA933SQ8STA	TRANSISTOR	
Q551, 552	ZSK301NS7A	TRANSISTOR	
Q601	ZSA992E	TRANSISTOR	
Q651	ZSC1740SQ8STA	TRANSISTOR	
Q652	ZSA933SQ8STA	TRANSISTOR	
Q701	ZSD1761DEF	TRANSISTOR	$\Delta$
Q705	ZSC3940AQ8STA	TRANSISTOR	
Q708	ZSB1187DEF	TRANSISTOR	$\Delta$
Q710	ZSB1187DEF	TRANSISTOR	
Q722	UN4211TA	TRANSISTOR	
Q901, 902	ZSC1740SQ8STA	TRANSISTOR	
Q903-906	UN4211TA	TRANSISTOR	
Q907	ZSA933SQ8STA	TRANSISTOR	
Q910	UN4211TA	TRANSISTOR	
Q912-915	UN4211TA	TRANSISTOR	
Q1101	ZSC327AB7P	TRANSISTOR	
Q1102	ZSA933SQ8STA	TRANSISTOR	
		DIODE (S)	
D601	MA165TA	DIODE	
D651	MA165TA	DIODE	
D652	MA4068MTA	DIODE	
D701-704	P300DLF	DIODE	$\Delta$
D705	MA4150MTA	DIODE	
D706	MA4068MTA	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D707	MA165TA	DIODE	
D708	MA167ATA	DIODE	
D709	MA4270MTA	DIODE	
D711	MA4150MTA	DIODE	
D901	ISS291TA	DIODE	
D905-913	MA165TA	DIODE	
D915	MA165TA	DIODE	
D916	MA4058MTA	DIODE	
D917-924	LN081516PM	LED	
D925, 926	MA165TA	DIODE	
D927, 928	MA4068MTA	DIODE	
D1001	MA4120MTA	DIODE	
D1002	MA165TA	DIODE	
D1101-1104	GP15GLF	DIODE	$\Delta$
		VARIABLE RESISTOR(S)	
V851, 552	EYJYAF02C15	BASS/TREBLE CONTROL	
V853	EYJ02QF02G15	BALANCE CONTROL	
V854	EYJ02SF01G15	SUB. BALANCE CONTROL	
V801	EYQNAF2524B	MAIN VOL. CONTROL	
		COIL (S)	
L601, 602	SLQ07G-40	COIL	
L901, 902	RLQZP101KT-Y	COIL	
L1001	RLQZP101KT-Y	COIL	
		TRANSFORMER(S)	
T701	RTPPSC004	POWER TRANSFORMER	$\Delta$
		OSCILLATOR (S)	
X901	EF0CC4004T4	OSCILLATOR	
X1001	EF0CC3004T4	OSCILLATOR	
		DISPLAY TUBE	
FL901	BSL0044-F	DISPLAY TUBE	
		FUSE (S)	
F1	XBAIF60N14	FUSE 125V 6.0A	$\Delta$
F2, 3	XBAIF25N14	FUSE 125V 2.5A	$\Delta$

Ref. No.	Part No.	Part Name & Description	Remarks
		SWITCH (S)	
SS01-1	SSH2128	SW, SP SELECTOR A	
SS01-2	SSH2128	SW, SP SELECTOR B	
S701	ES88249V	SW, POWER	$\Delta$
S901	EYQ21405R	SW, INPUT SELECTOR (PHONO)	
S902	EYQ21405R	SW, INPUT SELECTOR (TUNER)	
S903	EYQ21405R	SW, INPUT SELECTOR (CD)	
S904	EYQ21405R	SW, INPUT SELECTOR (TAPE)	
S905	EYQ21405R	SW, INPUT SELECTOR (VCR2)	
S906	EYQ21405R	SW, INPUT SELECTOR (VCR1)	
S907	EYQ21405R	SW, SUPER BASS	
S908	EYQ21405R	SW, REAR LEVEL (LP)	
S909	EYQ21405R	SW, REAR LEVEL (DMM)	
S910	EYQ21405R	SW, DOLBY SURROUND	
		JACK (S)	
JK401	SJF3069N	TERMINAL BOARD	
JK402	SJF3069N	TERMINAL BOARD	
JK403	SJF3069N	TERMINAL BOARD	
JK404	SJF3069N	TERMINAL BOARD	
JK405	SJF3069N	TERMINAL BOARD	
JK601	RLR0054	SP, A	
JK602	RLR0054	SP, B	
JK603	RLR0054	SP, SURROUND	
JK604	QJAD452C	H, P JACK	$\Delta$
JK701	SJS9234B	AC INLET	$\Delta$
JK702	SJS9233B	AC OUTLET	$\Delta$
JK703	SJS9233B	AC OUTLET	$\Delta$
JK704	SJS9233B	AC OUTLET	$\Delta$
JK901	RLJ33TR01	REMOTE (TUNER)	$\Delta$

Ref. No.	Part No.	Part Name & Description	Remarks
JK902	RLJ33TR01	REMOTE (TAPE)	
CN501	RLT003K008M1	CONNECTOR (8P)	
CN501	RLU003K008M1	SOCKET (8P) MAIN P. C. B.	
CN601	RLS1A1703	CONNECTOR (3P)	
CN602A	RLS1A1704	CONNECTOR (4P)	
CN602B	RLS1A1704	CONNECTOR (4P)	
CN651	SJT3213	CONNECTOR (2P)	
CN701A	RLS1A1705	CONNECTOR (5P)	
CN701B	RLS1A1703	CONNECTOR (3P)	
CN702	RLS1A1703	CONNECTOR (3P)	
CN703A	RLS1A1703	CONNECTOR (3P)	
CN703B	RLS1A1703	CONNECTOR (3P)	
CN801	RLT003K008M1	CONNECTOR (8P)	(Black or Gray)
CN801	SJS9087MF	SOCKET (8P)	(Ivory)
CN801	RLU003K008M1	SOCKET (8P) MAIN P. C. B.	(Black)
CN802	SJT30854MF	CONNECTOR (8P) MAIN P. C. B.	(Ivory)
CN802	RLT003K008M1	CONNECTOR (8P)	(Black or Gray)
CN802	SJS9087MF	SOCKET (8P)	(Ivory)
CN902	RLU003K008M1	SOCKET (8P)	(Ivory)
CN902	SJT30854MF	CONNECTOR (8P) MAIN P. C. B.	(Black)
CN903	RLT003K008M1	CONNECTOR (8P) MAIN P. C. B.	(Ivory)
CN903	SJS9087MF	SOCKET (8P)	(Ivory)
CN903	RLU003K008M1	SOCKET (8P) MAIN P. C. B.	(Black)
CN1001	SJT30854MF	CONNECTOR (8P) MAIN P. C. B.	(Ivory)
CN1001	RLT057M007	CONNECTOR (7P) MAIN P. C. B.	
CN1002	RLT057M007	CONNECTOR (7P) MAIN P. C. B.	
CN1002	RLU057M007	SOCKET (7P)	
		RELAY	
RLV601	SSV134	RELAY	$\Delta$



Pins	Part No.	Color
8 pin	RLT003K008M1	(Black or Gray)
8 pin	RLU003K008M1	(Black)
10 pin	RLT003K010M1	(Black or Gray)
10 pin	RLU003K010M1	(Black)

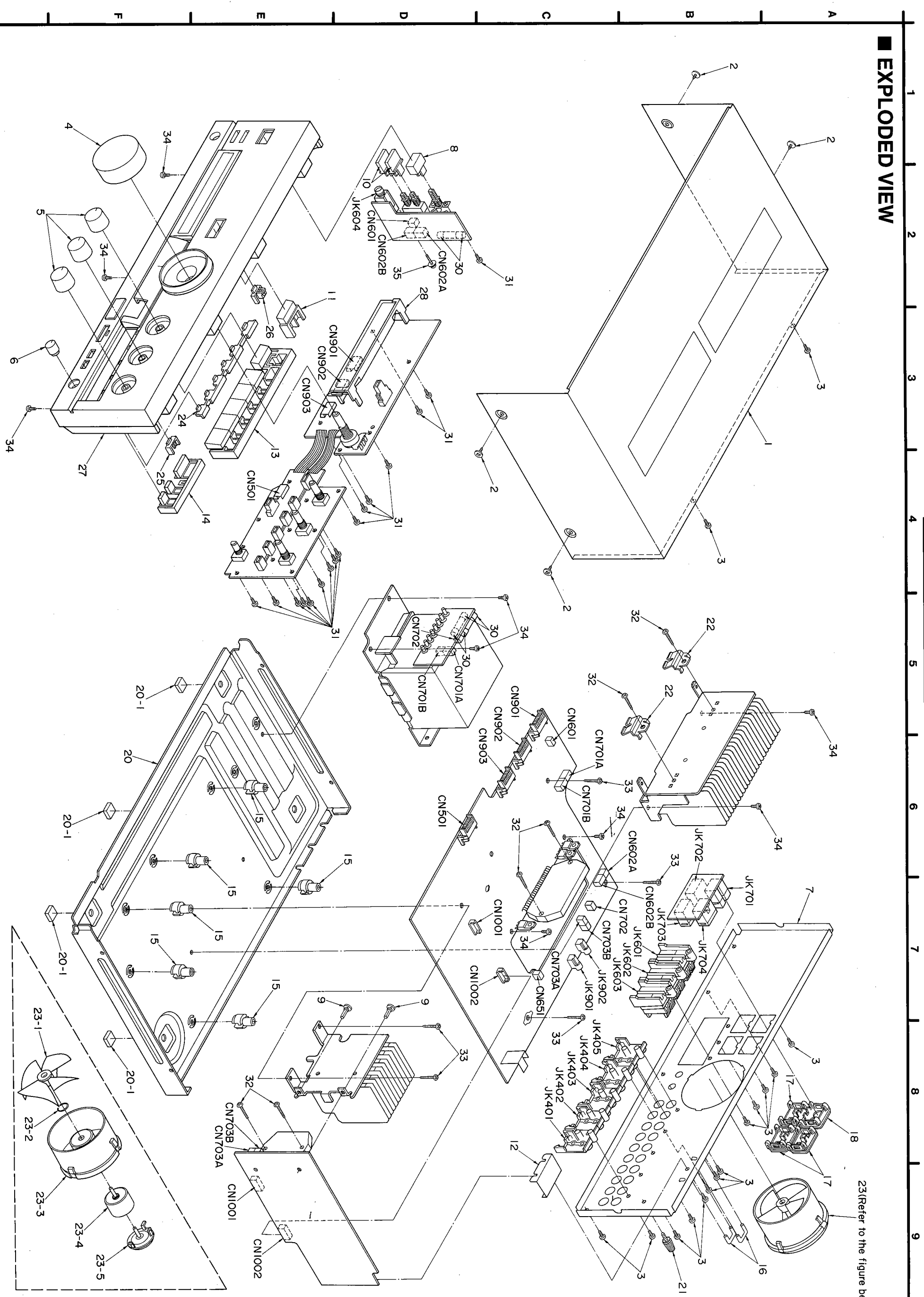
Pins	Part No.	Color
8 pin	SJS5087WVF	(Ivory)
8 pin	SJT30854WVF	(Ivory)
10 pin	SJS51087WVF	(Ivory)
10 pin	SJT31054WVF	(Ivory)

Notes:

- Regarding Ref. No. CN901, CN902, CN903, there are two types (Ⓐ) and (Ⓑ).
- Be sure to order the replacement parts of the desired color by the corresponding part numbers.
- The type-Ⓐ connector and the type-Ⓑ socket are protected with covers when they are supplied. Remove the cover after soldering the connector or socket to P. C. B.



EXPLODED VIEW



23(Refer to the figure below)



# SCHEMATIC DIAGRAM

(Parts list on pages 29~32)

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

## A

### Notes:

- S601-1, 601-2 : Speaker selector switches.
- S701 : Power switch in "on" position.
- S901~906 : Input selector switches.

- [S901: Phono, S902: Tuner
- [S903: CD, S904: Tape
- [S905: VCR 2/TV, S906: VCR 1]

- S907 : Super bass switch.
- S908, 909 : Rear speaker level control switches.
- S910 : Dolby surround switch.

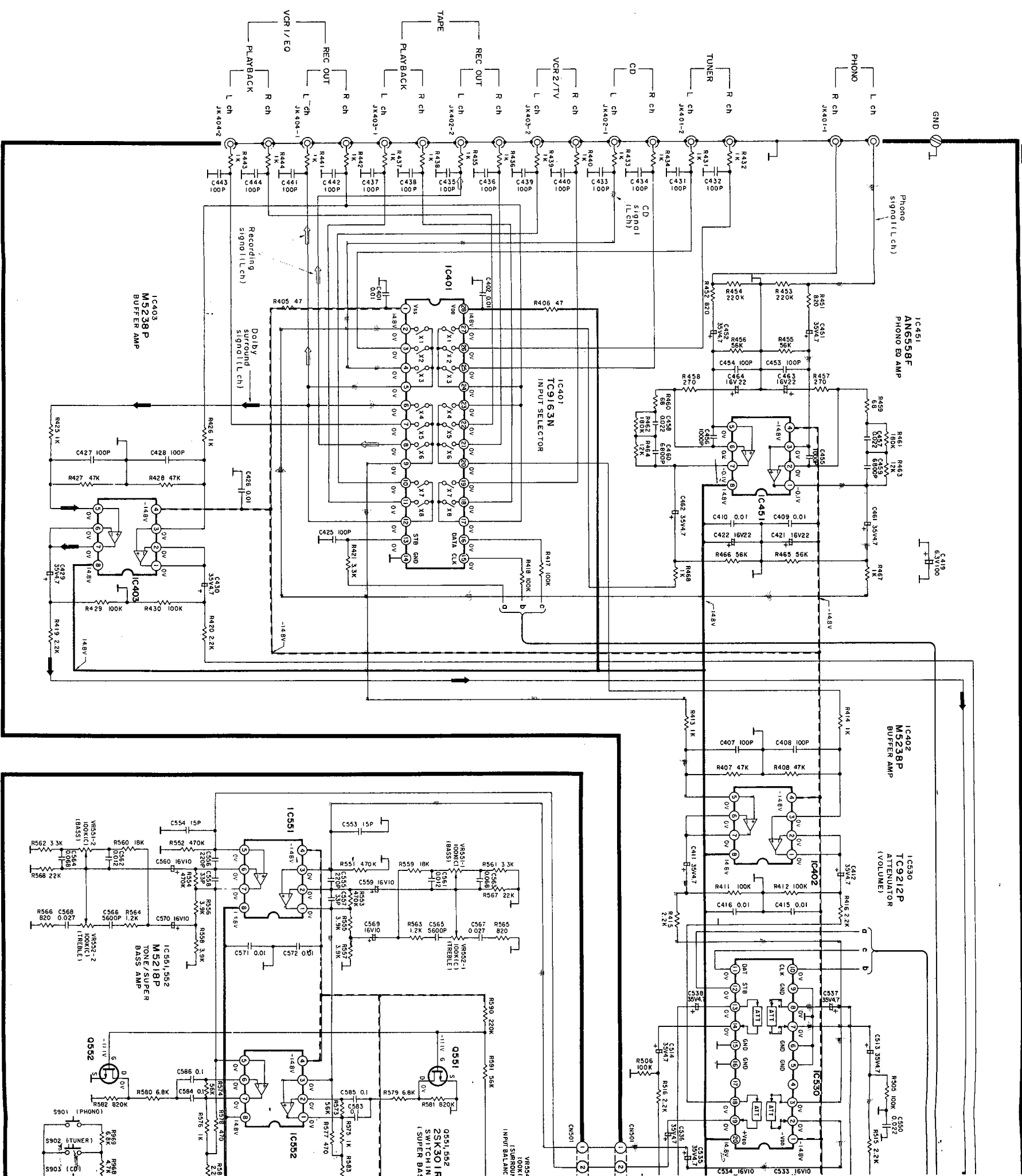
- CD • Phono signal line
- Dolby surround signal
- Positive voltage line
- Recording signal
- Negative voltage line

• 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.

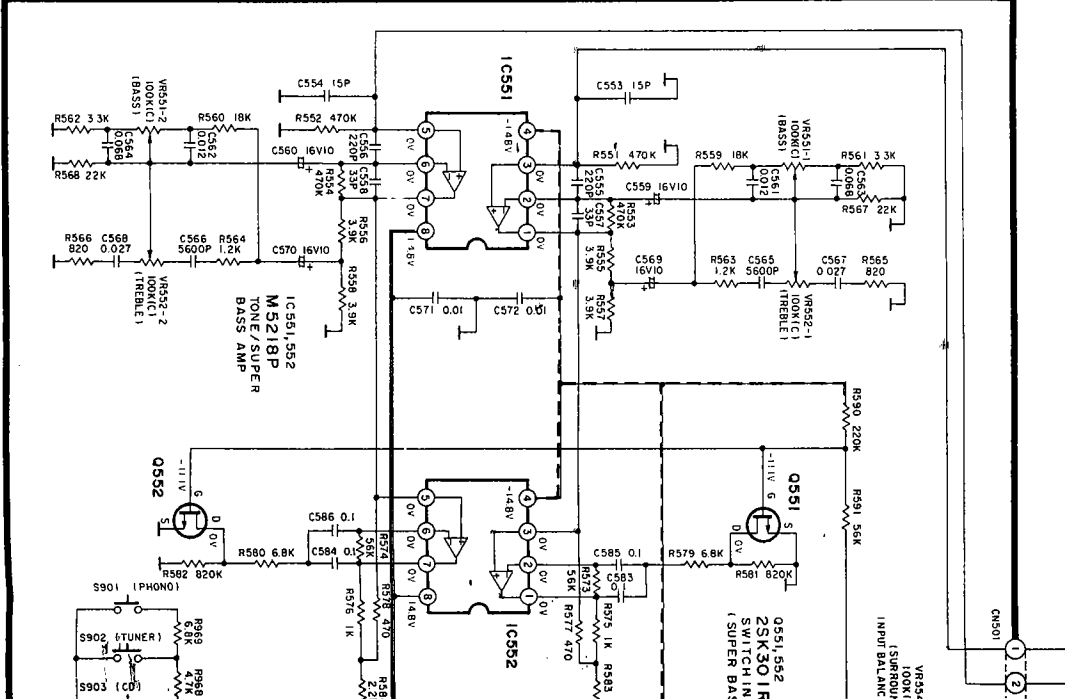
• Important safety notice:  
 • Components identified by  $\Delta$  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

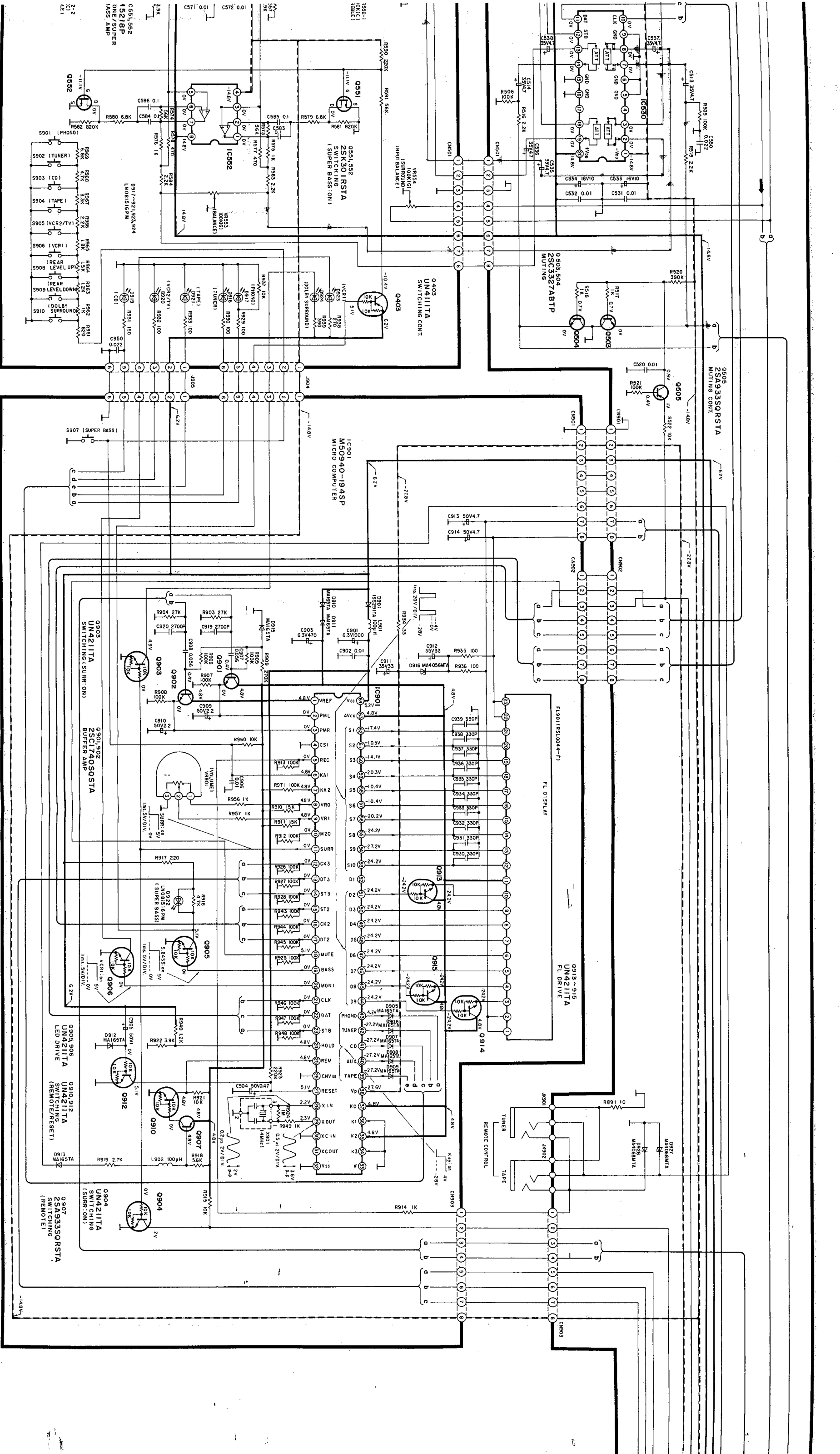
• **Caution!**  
 IC and LSI are sensitive to static electricity.  
 Secondary trouble can be prevented by taking care during repair.  
 • Cover the parts boxes made of plastics with aluminum foil.  
 • Ground the soldering iron.  
 • Put a conductive mat on the work table.  
 • Do not touch the legs of IC or LSI with the fingers directly.

## A MAIN CIRCUIT



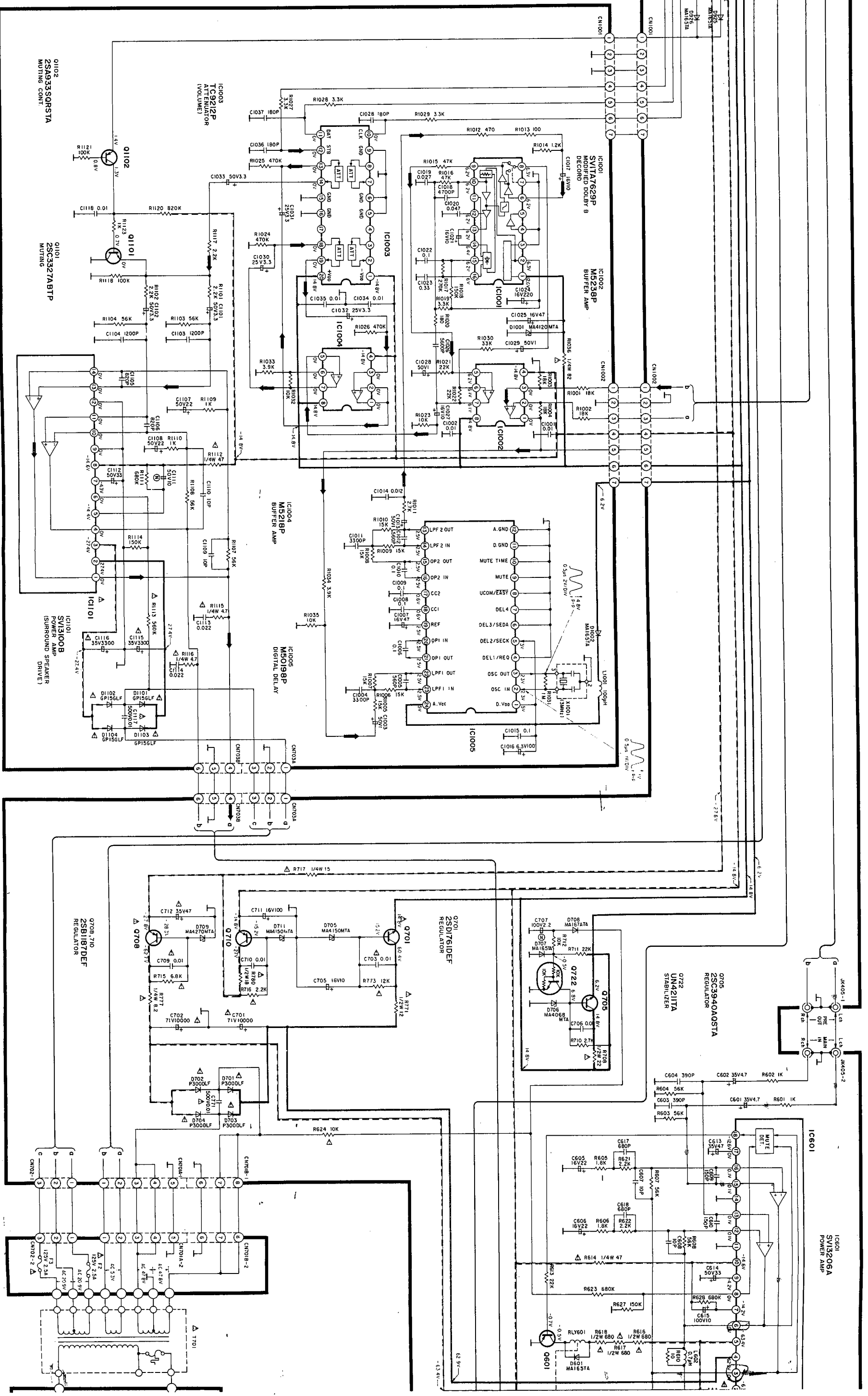
## B OPERATION CIRCUIT



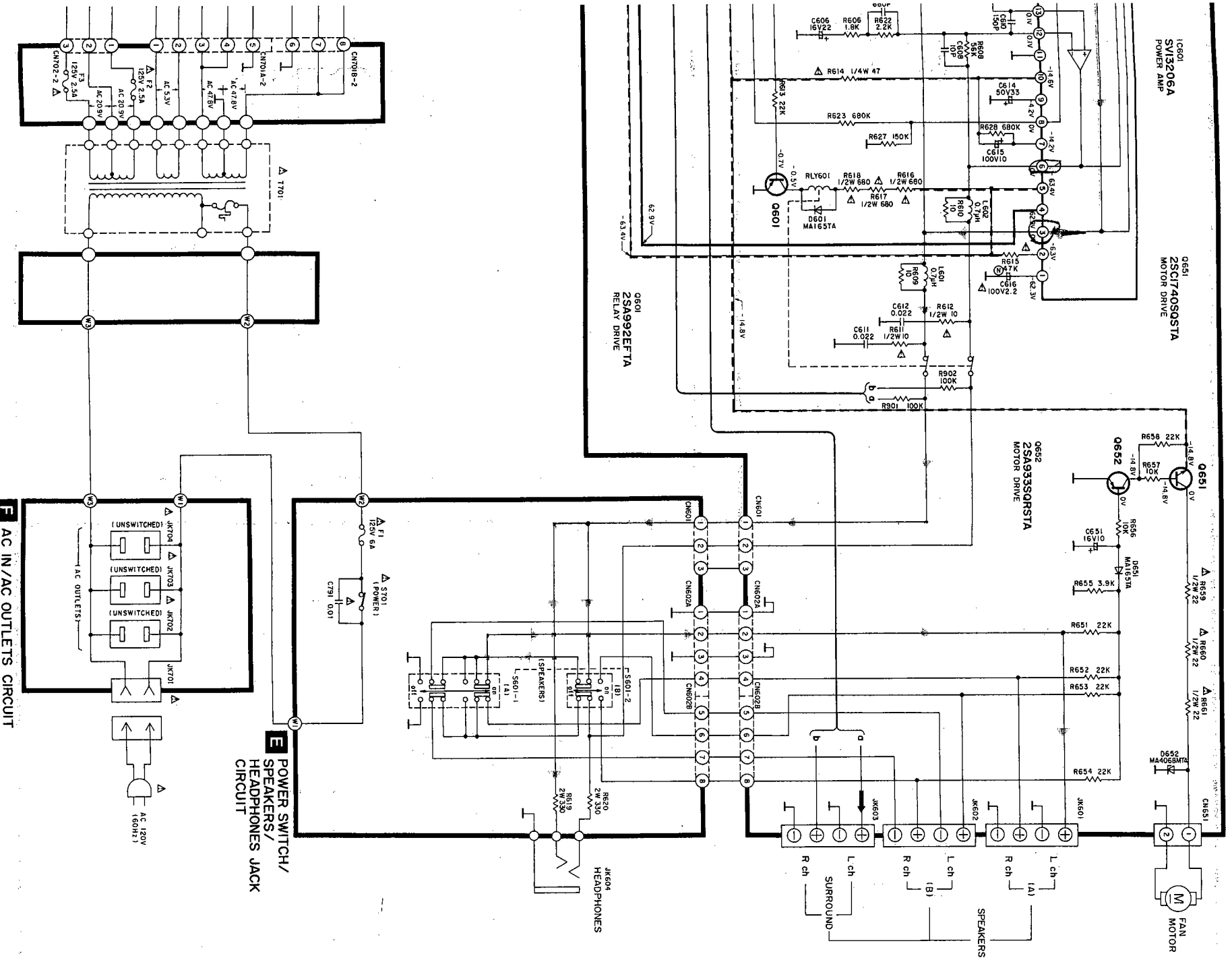


VOLUME/FL DRIVE CIRCUIT

D SURROUND CIRCUIT



D SURROUND CIRCUIT



**CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE 2.5 A 125 V/6 A 125 V FUSES.**

**RISK OF FIRE-REPLACE FUSE AS MARKED.**

**FUSE CAUTION**

— This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating, refer to the rating adjacent to the symbol.

— Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n'utiliser que des fusibles de même type. Ce dernier est indiqué là où le présent symbole est apposé

• TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES.

 M5218P	 M5238P	 AN6558F
 SV17A7629P	 TC9212P	 M50198P
 TC9163N	 M50940-194SP	 SV13100B
 SV13206A	 UN4111TA UN4211TA	 2SA992EFTA
 2SC3940AOSTA	 2SK301RSTA	 2SA933SQRSTA 2SC1740SQSTA 2SC3327ABTP
 2SB1187DEF 2SD1761DEF	 MA165TA MA167ATA 1SS291TA	 MA4056MTA MA4068MTA
 MA4120MTA MA4150MTA MA4270MTA	 P300DLF GP15GLF	 LN081516PM
 Anode Cathode	 Anode Cathode	 Anode Cathode

AC IN/AC OUTLETS CIRCUIT

POWER SWITCH/ SPEAKERS/ HEADPHONES JACK CIRCUIT

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS				ACCESSORIES	
1	RKMO016A-K	CABINET		A1	RQF0493	INSTRUCTIONS MANUAL ASS'Y	(P, P2)
2	SNE2129-1	SCREW		A1	RQF0693	INSTRUCTIONS MANUAL ASS'Y	(PC)
3	XTBS3+8JFZ1	SCREW		A1-1	RQT0397-P	INSTRUCTIONS MANUAL	(P, P2)
4	RGW0071	MAIN VOL KNOB		A1-1	RFKSUG70PC-K	INSTRUCTIONS MANUAL	(PC)
5	RGW0072	TONE KNOB		A1-2	SQX7179	WARRANTY CARD	(P, P2)
6	RGW0073	DOLBY SURROUND KNOB		A1-2	SQX7183	WARRANTY CARD	(PC)
7	RGRO080B-A2	REAR PANEL		A1-3	SQX9129-1	SERVICENTOR LIST	(P, P2)
8	RGU0030	POWER BUTTON		A1-3	SQX9131	SERVICENTOR LIST	(PC)
9	SHR411	LATCH		A5	RAK-SA501P	REMOTE CONTROLLER ASS'Y	
10	RGU0101	SP BUTTON		A5-1	RKK0020-K	BATTERY COVER	
11	RGU0350	BUPER BASS BUTTON		A6	SWXS255	SP CORD	(P2)
12	RMA0295	ANGLE		A7	SJA172-2	AC CORD	△ (P, P2)
13	RGU0349	SELECT BUTTON		A7	SJA172-3	AC CORD	△ (PC)
14	RGU0351	DOLBY SURROUND BUTTON		A8	SJP2257T	REMOTE CORD	
15	SHE187-2	HOLDER					
16	SJP9205-2T	SHORTING PIN					
17	SJS9233A	AC OUTLET COVER					
18	SJS9234A	AC INLET COVER					
20	RFKJUG70P-K	CHASSIS ASS'Y					
20-1	SKL293	FOOT					
21	SNE2123	GND SCREW					
22	SUS894-1	SPRING					
23	SYE1128-3	FAN ASS'Y					
23-1	SHE232	FAN					
23-2	SUS271	SPRING					
23-3	SHE233	FAN CASE					
23-4	MDN-4RB4MRC	MOTOR					
23-5	SHE234	CAP					
24	RFKNUG70P-K1	PANEL LIGHT					
25	RFKNUG70P-K2	PANEL LIGHT					
26	RFKNUG70P-K3	PANEL LIGHT					
27	RFKUG70P-K	FRONT PANEL ASS'Y					
28	SHR9861	FL HOLDER					
30	RJR0011	FUSE HOLDER	△				
31	XTBS26+8J	SCREW					
32	XTB3+14J	SCREW					
33	XTB3+20J	SCREW					
34	XTB3+8JFZ	SCREW					
35	XTWS3+8T	SCREW					
		PACKING MATERIAL					
P1	RPG0425	CARTON BOX					
P2	RPN0324	PAD					
P3	XZB52X60A01Z	PROTECTION COVER					
P4	SPSD155	ACCESSORIES BOX					