

Service Manual

Stereo Integrated Amplifier

Amplifier

SU-V660



Color

(K)...Black Type

Area

Country Code	Area	Color
(E) (E5)	Continental Europe	(K)
(EB)	Great Britain	(K)
(EG)	F.R. Germany & Italy	(K)
(GC)	Saudi Arabia	(K)
(GN)	Oceania	(K)

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

20 Hz~20 kHz continuous power output
both channels driven $2 \times 90 \text{ W}$ (8 Ω)

1 kHz continuous power output
both channels driven (THD: 1%) $2 \times 100 \text{ W}$ (8 Ω)
 $2 \times 140 \text{ W}$ (4 Ω)

63 Hz~12.5 kHz continuous power output
both channels driven (0.7%) $2 \times 90 \text{ W}$ (8 Ω)
 $2 \times 125 \text{ W}$ (4 Ω)

Total harmonic distortion (Power Amp Direct Input)
rated power at 20 Hz~20 kHz 0.005 % (8 Ω)
rated power at 1 kHz 0.0009 % (8 Ω)
0.002 % (4 Ω)

half power at 20 Hz~20 kHz 0.005 % (8 Ω)
half power at 1 kHz 0.0009 % (8 Ω)
0.002 % (4 Ω)

Intermodulation distortion
rated power at 50 Hz: 7 kHz = 4:1, SMPTE, 8 Ω 0.007 %

Residual hum and noise 0.2 mV

Damping factor 60 (8 Ω), 30 (4 Ω)

Headphones output level and impedance 635 mV/330 Ω

Load impedance

A or B 4 Ω ~16 Ω

A and B 8 Ω ~16 Ω

Input sensitivity and impedance

PHONO MM 2.5 mV/47 k Ω

PHONO MC 170 μ V/220 Ω

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 150 mV/22 k Ω

POWER AMP DIRECT 1 V/18 k Ω

Phono maximum input voltage (IHF '66, 1 kHz, RMS)

MM 170 mV

MC 12 mV

S/N

rated power (4 Ω)

PHONO MM 79 dB (IHF '66: 86 dB)

PHONO MC 67 dB (IHF '66: 68 dB, 250 μ V)

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 97 dB (IHF '66: 100 dB)

POWER AMP DIRECT 106 dB (IHF '66: 115 dB)

−26 dB power (4 Ω)

PHONO MM 77 dB

PHONO MC 67 dB

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 84 dB

50 mW power (4 Ω)

PHONO MM 75 dB

PHONO MC 67 dB

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 78 dB

Frequency response

PHONO RIAA standard curve
 $\pm 0.8 \text{ dB}$ (30 Hz~15 kHz)

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
3 Hz~100 kHz (−3 dB)

+0 dB, −0.2 dB (20 Hz~20 kHz)

POWER AMP DIRECT
2 Hz~120 kHz (−3 dB)

+0 dB, −0.2 dB (20 Hz~20 kHz)

Tone controls

BASS 50 Hz, +10 dB, −10 dB

TREBLE 20 kHz, +10 dB, −10 dB

Loudness control (volume at −30 dB) 50 Hz, +9 dB

Output voltage

TAPE 1, TAPE 2/DAT, REC OUT 150 mV

Channel balance, AUX 250 Hz~6,300 Hz $\pm 1 \text{ dB}$

Channel separation, AUX 1 kHz 50 dB

■ GENERAL

Power consumption 690 W

Power supply

For Great Britain and Oceania AC 50 Hz/60 Hz, 240 V

For Continental Europe AC 50 Hz/60 Hz, 220 V

For others AC 50 Hz/60 Hz, 110 V/127 V/220 V/240 V

Dimensions (W \times H \times D) 430 \times 158 \times 370 mm
(16-15/16" \times 6-7/32" \times 14-9/16")

Weight 11.5 kg (25.4 lb.)

Weight

Notes:

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

Technics

Matsushita Electric Industrial Co., Ltd.

Central P.O. Box 288, Osaka 530-91, Japan

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■ BEFORE REPAIR AND ADJUSTMENT

- (1) Turn off the power supply. Using a 10Ω, 10W resistor, shortcircuit both ends of power supply capacitors (C705,C706) in order to discharge the voltage.
- (2) Before turning on the power switch of the unit.
 - A. Connect the voltage controller to the primary side.
 - B. Connect the AC ampere meter to the primary side or connect the DC voltage meter to the "±B" circuit of the secondary side.
 - C. Turn the VR of ICQ (VR451 and VR452) to minimum (counterclockwise).
 - D. After setting the output to zero of the voltage controller, turn on the power switch of the unit.
And increase the output of voltage controller gradually.
Then, check carefully whether the current value of primary side become more than following value or whether the DC voltage of secondary side is increasing slowly.
 - E. If the value of current is increasing unusually or the DC voltage is not increasing, lower the output level of voltage controller immediately.
 - The current value of the primary side at no signal. (Confirm the power supply voltage of each area and provided voltage of the unit.)

Power supply voltage		AC 110 V	AC 120 V	AC 220 V	AC 240 V
Consumed current	50 Hz	200~600 mA	180~550 mA	120~360 mA	100~300 mA
	60 Hz	180~550 mA	160~530 mA	110~330 mA	90~280 mA

■ PROTECTION CIRCUITRY

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

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

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

If this occurs, follow the procedure outlined below:

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

Note:

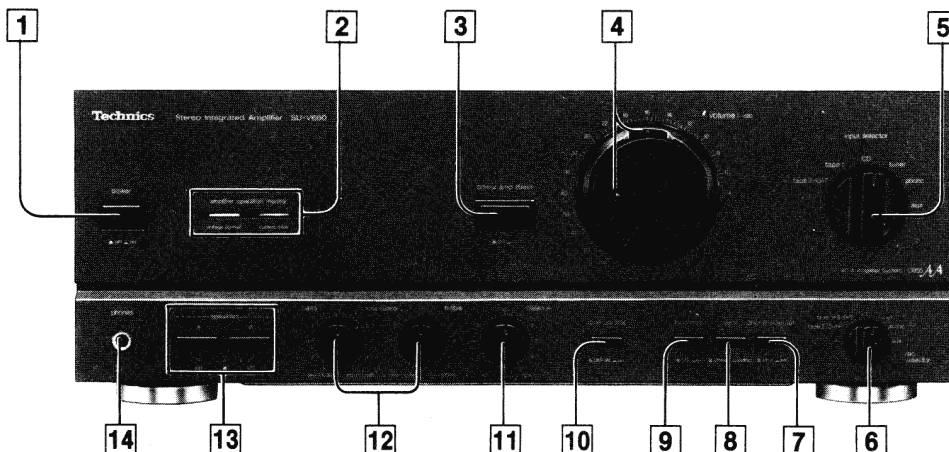
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ ACCESSORIES

- | | | | |
|------------------------------|-------------------------------|-------------------------|---------------------|
| ● AC power supply cord | 1 | ● AC plug adaptor | 1 |
| (SFDAC05E03) | For (E), (E5) and (EG) areas. | (SJP9215) | For (GC) area only. |
| (SJA193) | For (EB) area only. | | |
| (RJA0004) | For (GC) area only. | | |
| (SJA173) | For (GN) area only. | | |

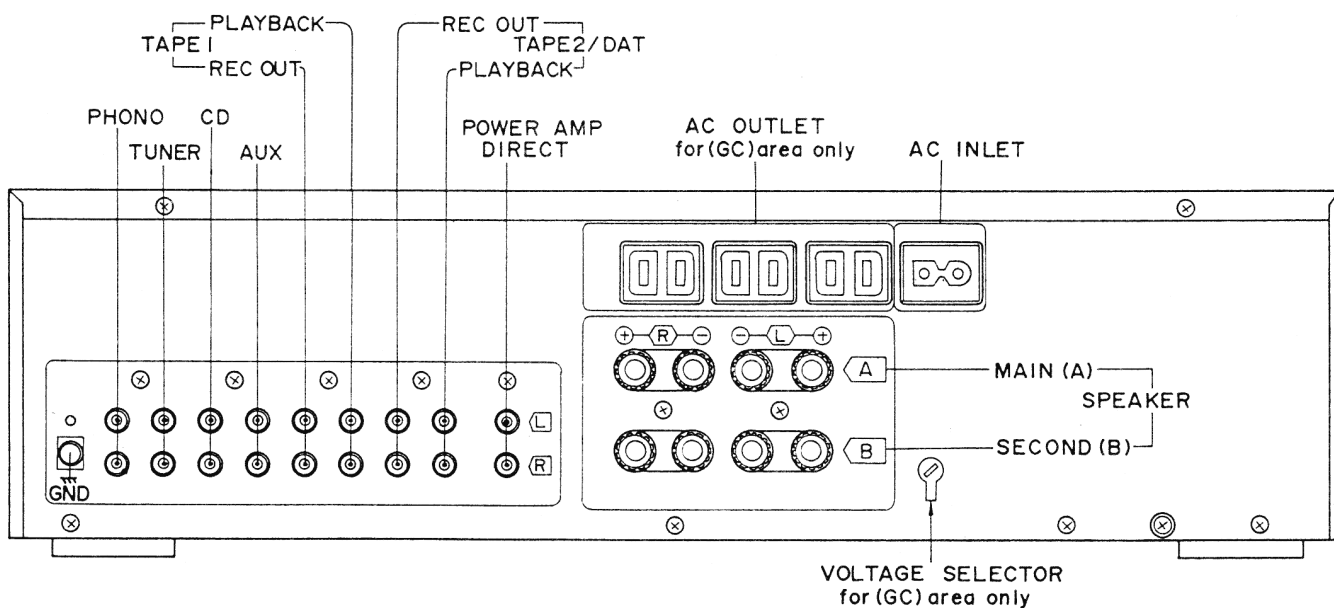
■ LOCATION OF CONTROLS

● Front Panel



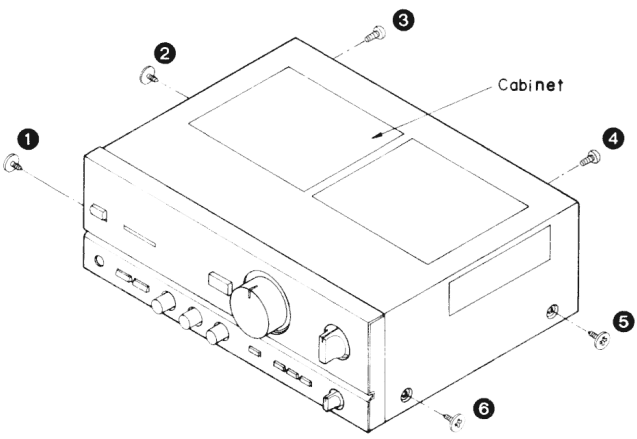
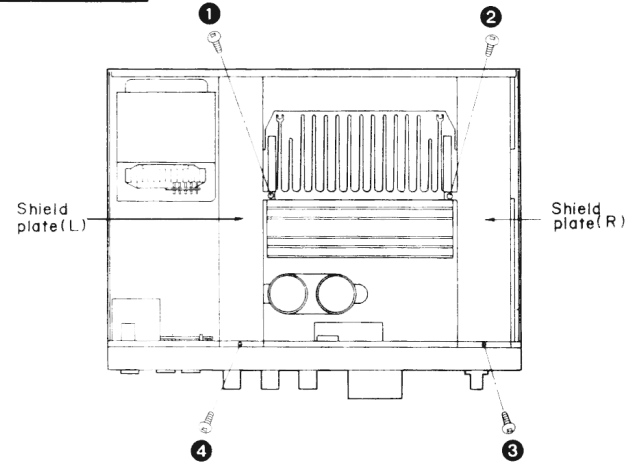
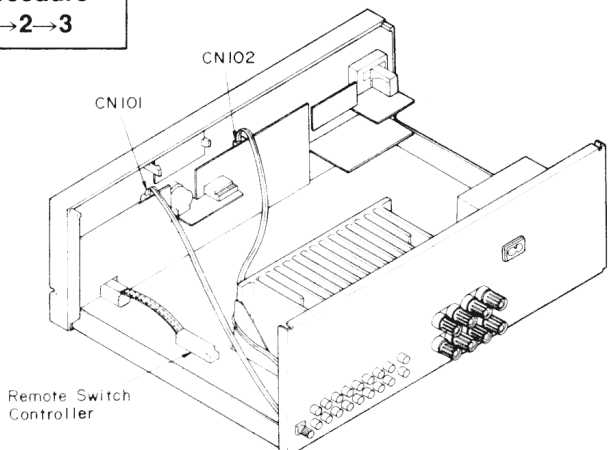
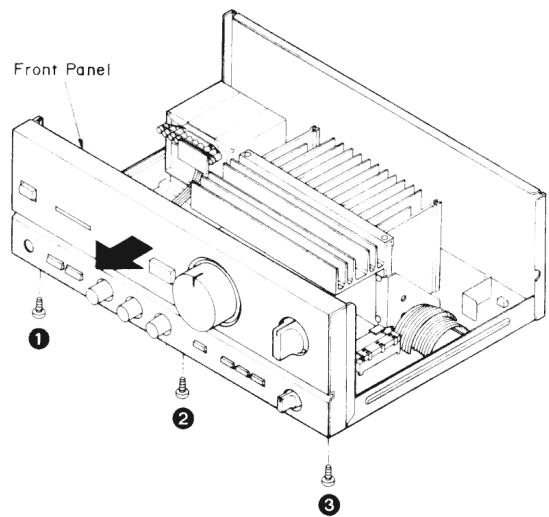
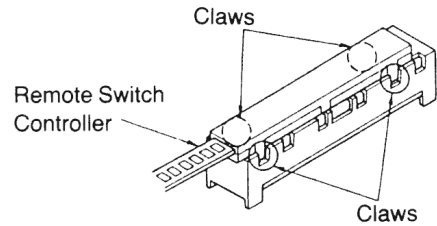
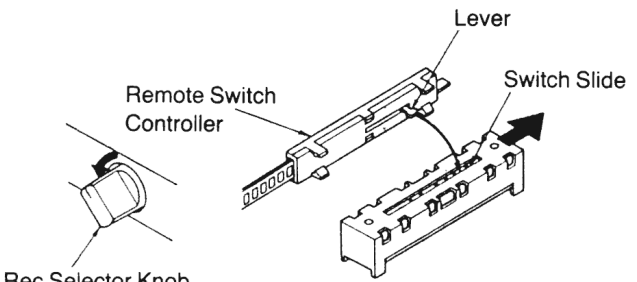
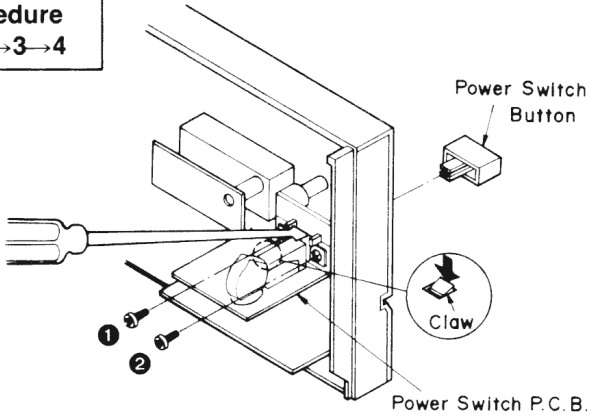
- | | |
|--|---|
| 1 Power switch (power) | 7 Phono cartridge selector (phono selector) |
| 2 Operation indicators (amplifier operation monitor) | 8 Mode selector (mode) |
| 3 Power amplifier direct switch (power amp direct) | 9 Loudness switch (loudness) |
| 4 Volume control/indicator (volume) | 10 Tone control switch (tone control) |
| 5 Input selector (input selector) | 11 Balance control (balance) |
| 6 Recording output selector (rec selector) | 12 Tone controls (bass/treble) |
| | 13 Speaker selectors (speakers) |
| | 14 Headphones jack (phones) |

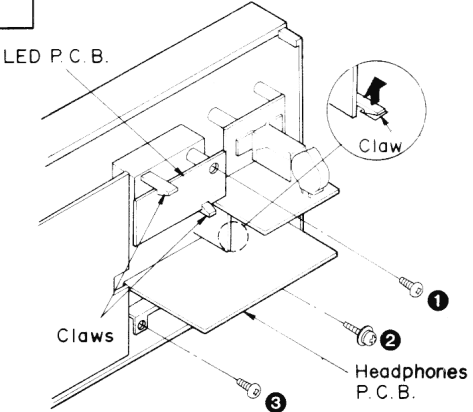
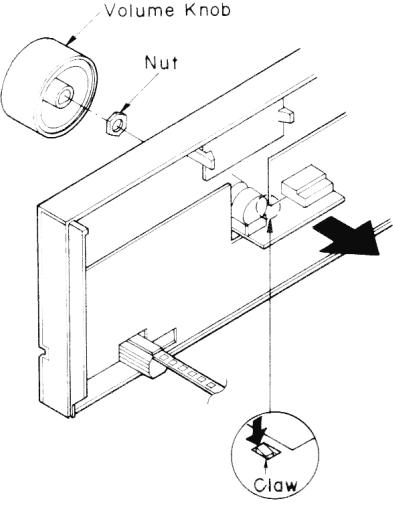
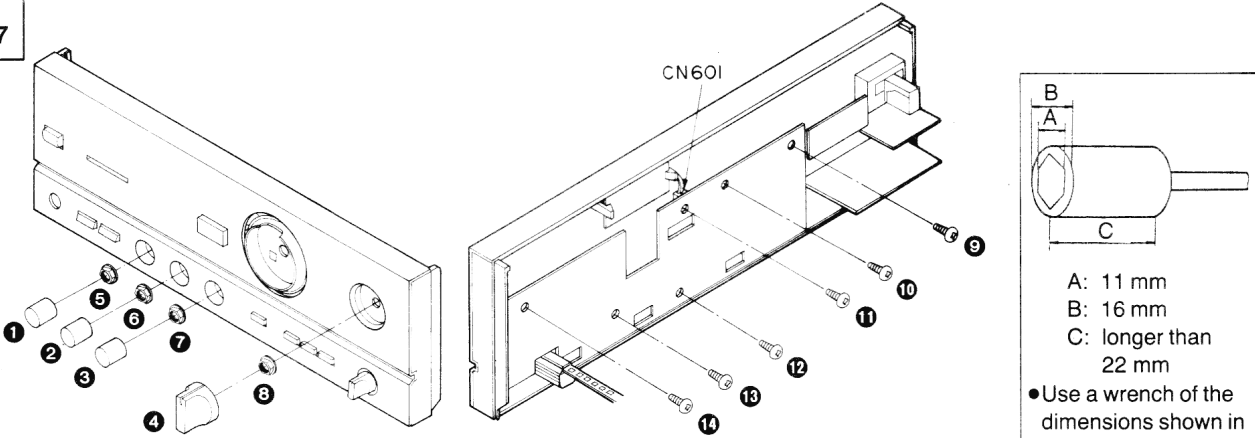
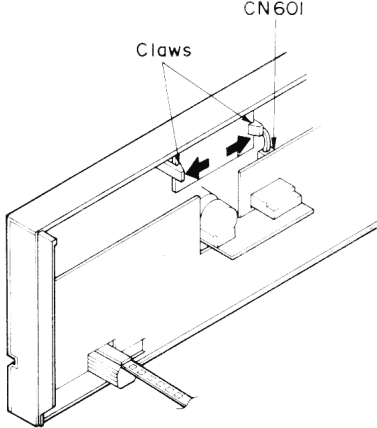
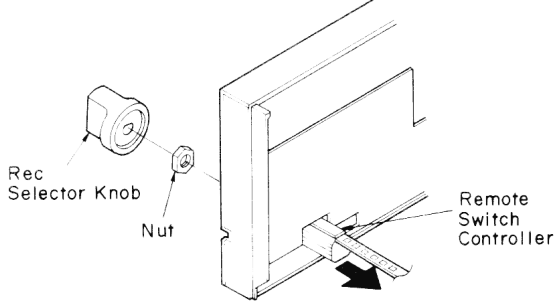
● Rear Panel



*Phono input capacitance is about 270 pF for EG area (about 100 pF for other areas).

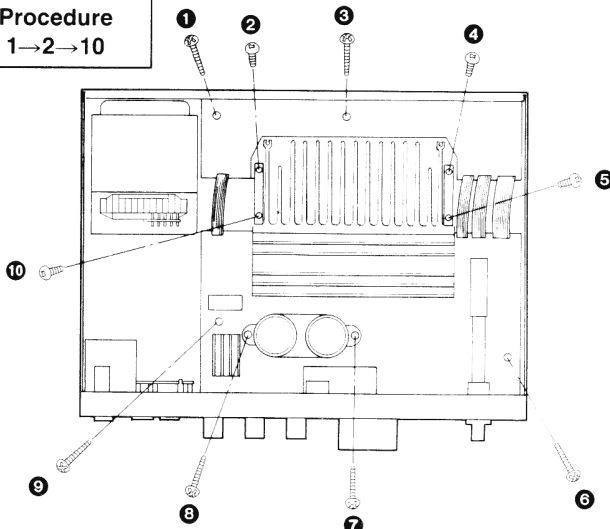
DISASSEMBLY INSTRUCTIONS

<p>Ref. No. 1</p>	<p>Removal of the cabinet</p>	<p>Ref. No. 2</p>	<p>Removal of the shield plate (L) and shield plate (R)</p>
<p>Procedure 1</p>		<p>Procedure 1→2</p>	
 <p>● Remove the 6 screws (1~6).</p>		 <p>● Remove the 4 screws (1~4).</p>	
<p>Ref. No. 3</p>	<p>Removal of the front panel</p>	<p>3. Remove the 3 screws (1~3).</p> <p>4. Remove the front panel in the direction of the arrow.</p>	
<p>Procedure 1→2→3</p>	 <p>1. Remove the 2 connectors (CN101, CN102).</p> <p>2. Remove the remote switch controller.</p>	 <p>■ Removal of the remote switch controller</p> <p>● Remove the 4 claws.</p>  <p>■ Replacing of the remote switch controller</p> <ol style="list-style-type: none"> 1. Fully rotate the Recording Selector Control counterclockwise. 2. Push the Switch Slide in the direction of the arrow. 	
<p>Ref. No. 4</p>	<p>Removal of the power switch P.C.B.</p>		
<p>Procedure 1→2→3→4</p>	 <p>1. Remove the 2 screws (1, 2).</p> <p>2. Remove the power switch button by pushing it from behind the front panel.</p> <p>3. Release the 1 claw.</p>		

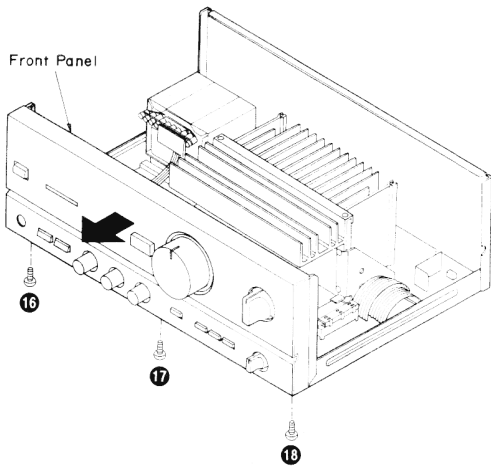
<p>Ref. No. 5</p>	<p>Removal of the LED P.C.B. and headphones P.C.B.</p>	<p>Ref. No. 6</p>	<p>Removal of the volume P.C.B.</p>
<p>Procedure 1→2→3→5</p>	 <p>Removal of the LED P.C.B. 1. Remove the 1 screw (1). 2. Release the 2 claws.</p> <p>Removal of the headphones P.C.B. 1. Remove the 2 screws (2, 3). 2. Release the 1 claw.</p>	<p>Procedure 1→2→3→6</p>	 <p>1. Pull out the volume knob. 2. Remove the nut. 3. Release the 1 claw.</p>
<p>Ref. No. 7</p>	<p>Removal of the operation P.C.B.</p>	 <p>1. Pull out the 4 knobs (1~4). 2. Remove the 4 nuts (5~8).</p> <p>3. Remove the 1 connector (CN601). 4. Remove the 6 screws (9~14).</p> <p>A: 11 mm B: 16 mm C: longer than 22 mm</p> <p>● Use a wrench of the dimensions shown in the illustration above to remove nuts.</p>	
<p>Ref. No. 8</p>	<p>Removal of the remote switch controller</p>	<p>Ref. No. 9</p>	<p>Removal of the volume LED P.C.B.</p>
<p>Procedure 1→2→3→7</p>	 <p>1. Remove the 1 connector (CN601). 2. Release the 2 claws.</p>	<p>Procedure 1→2→3→8</p>	 <p>1. Pull out the rec selector knob. 2. Remove the nut. 3. Remove the remote switch controller in the direction of the arrow.</p>

Ref. No. 10	Checking of the main P.C.B.
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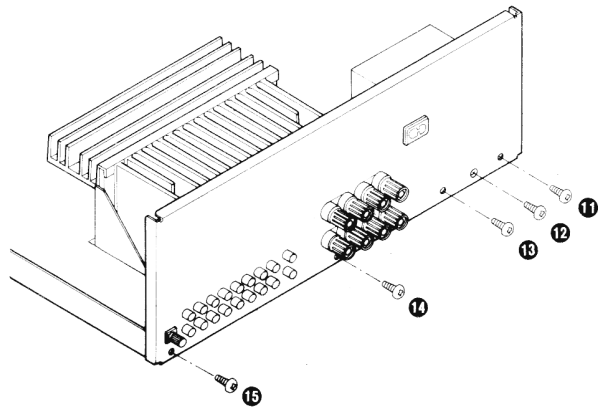
Procedure
1→2→10



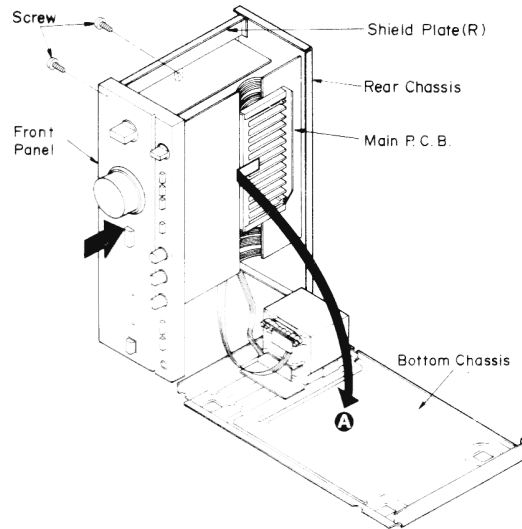
1. Remove the 10 screws (1~10).



3. Remove the 3 screws (16~18).
4. Remove the front panel.



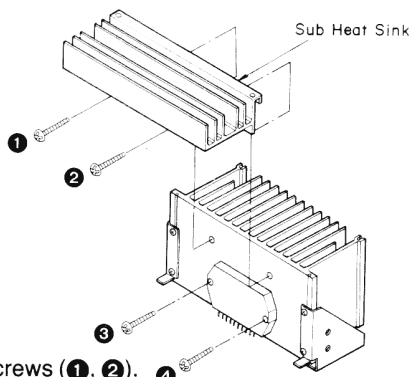
2. Remove the 5 screws (11~15).



5. Remove the bottom chassis in the direction of the arrow (A).
6. Reinstall the front panel to the main P.C.B.
7. Insert the shield plate (R) in the unit between the front panel and rear chassis and then secure it with the screws.

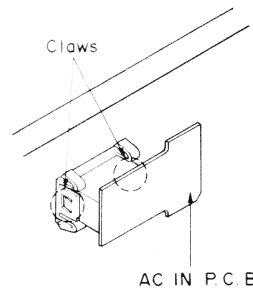
Ref. No. 11	Removal of the power IC	Ref. No. 12	Removal of the AC IN P.C.B.
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Procedure
1→2→10→11



1. Remove the 2 screws (1, 2).
2. Remove the sub heat sink.
3. Unsolder the power IC.
4. Remove the 2 screws (3, 4).
●When mounting the power IC, apply silicon thermal compound (SZZOL15 or equivalent) to the rear of the power IC.

Procedure
1→2→12



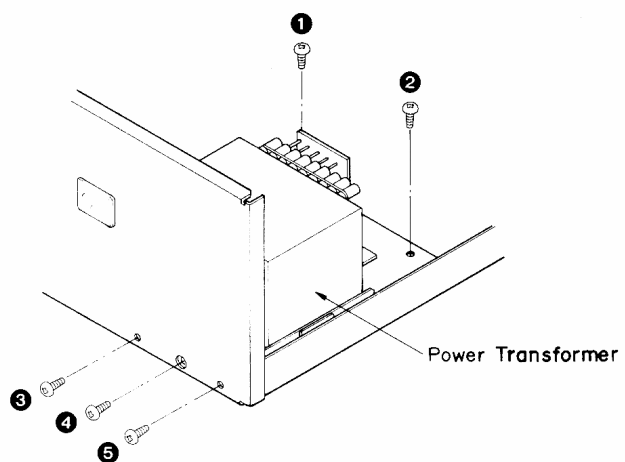
●Release the 2 claws.

Ref. No.
13

Removal of the power transformer

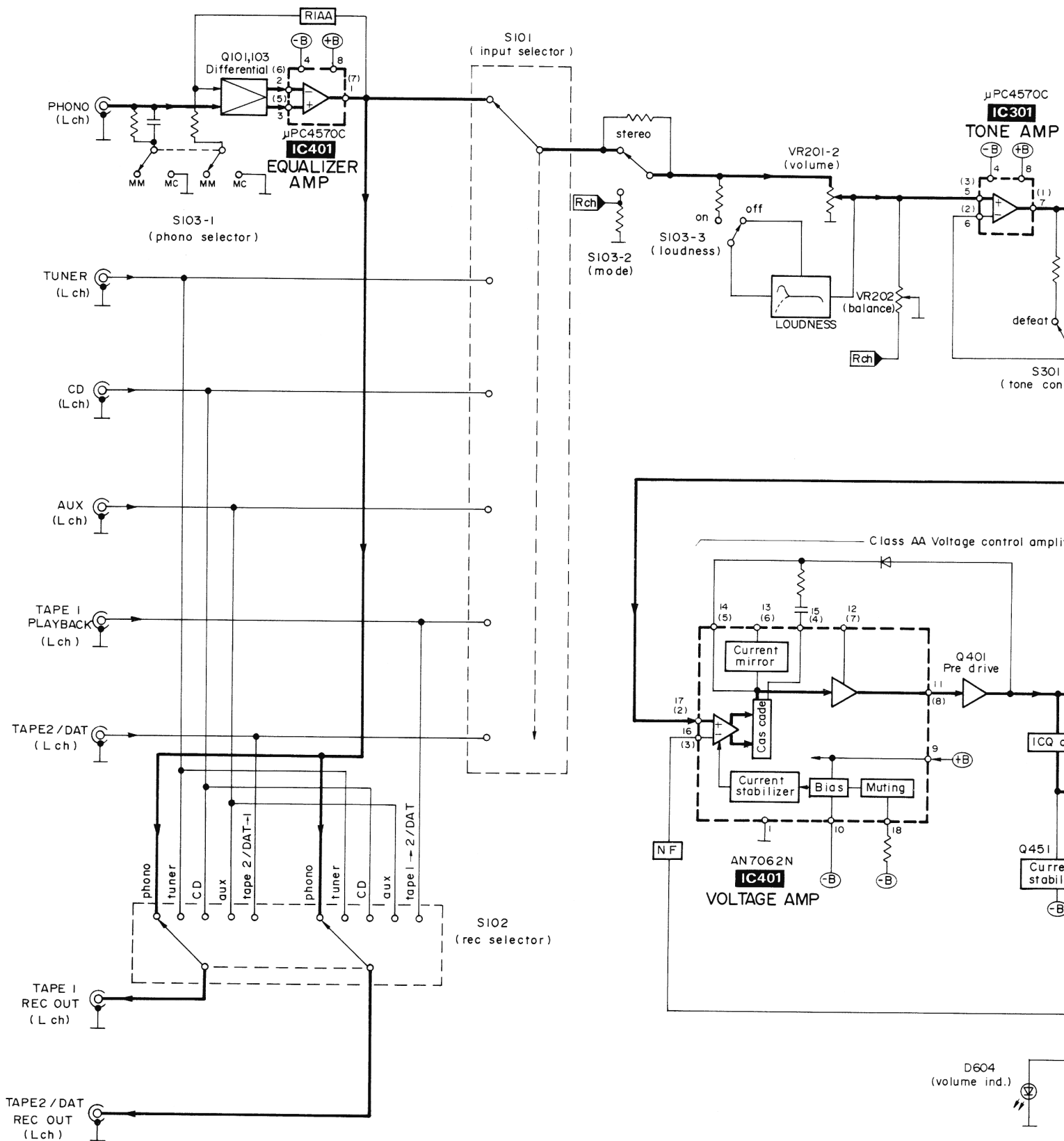
Procedure
1→13

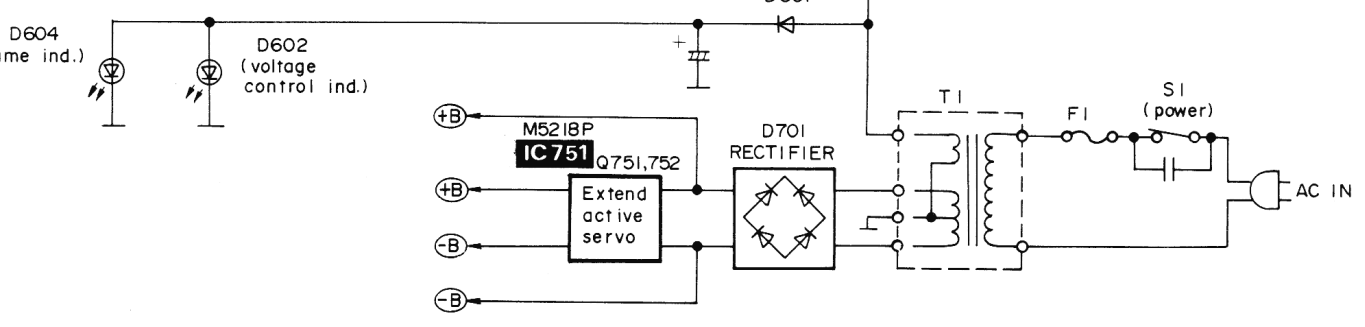
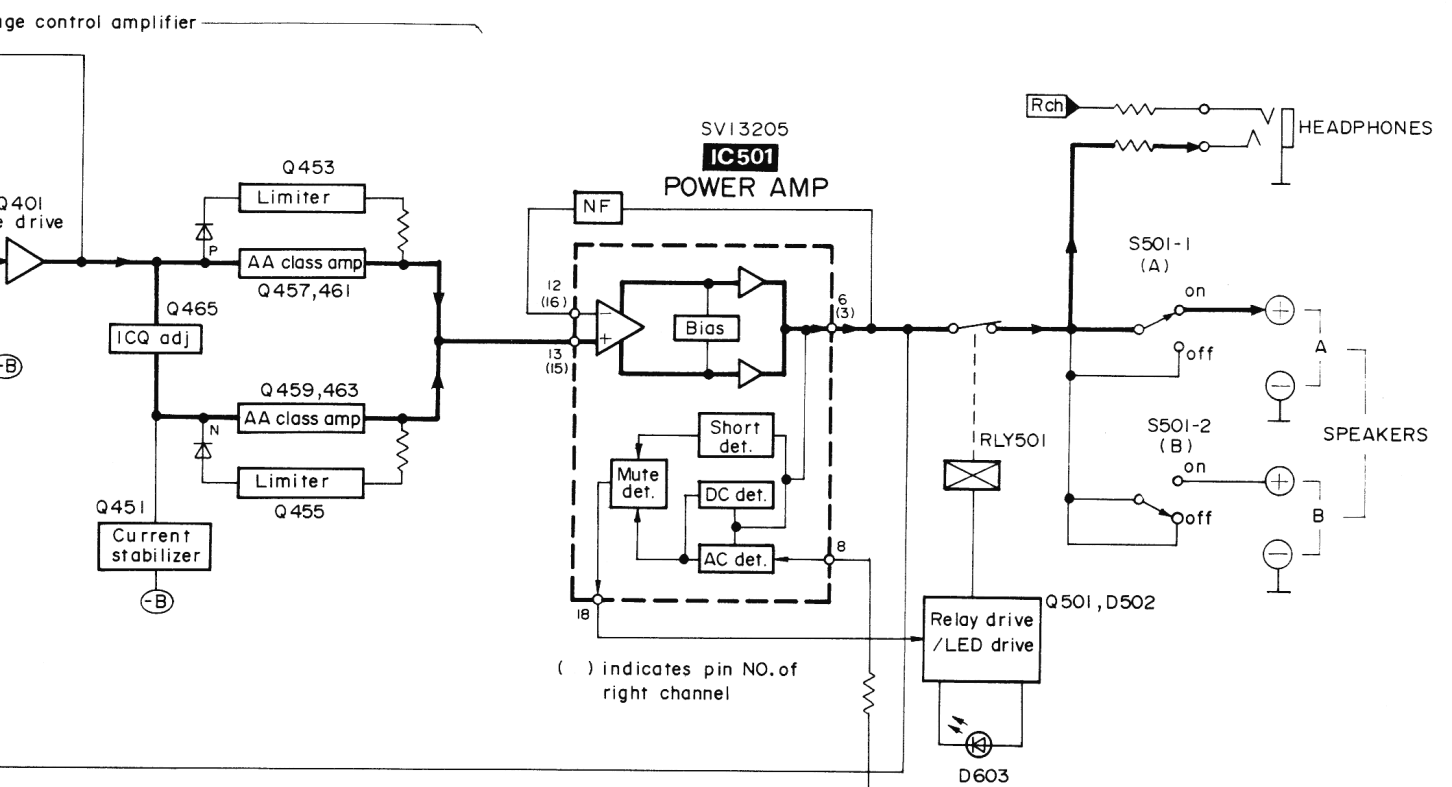
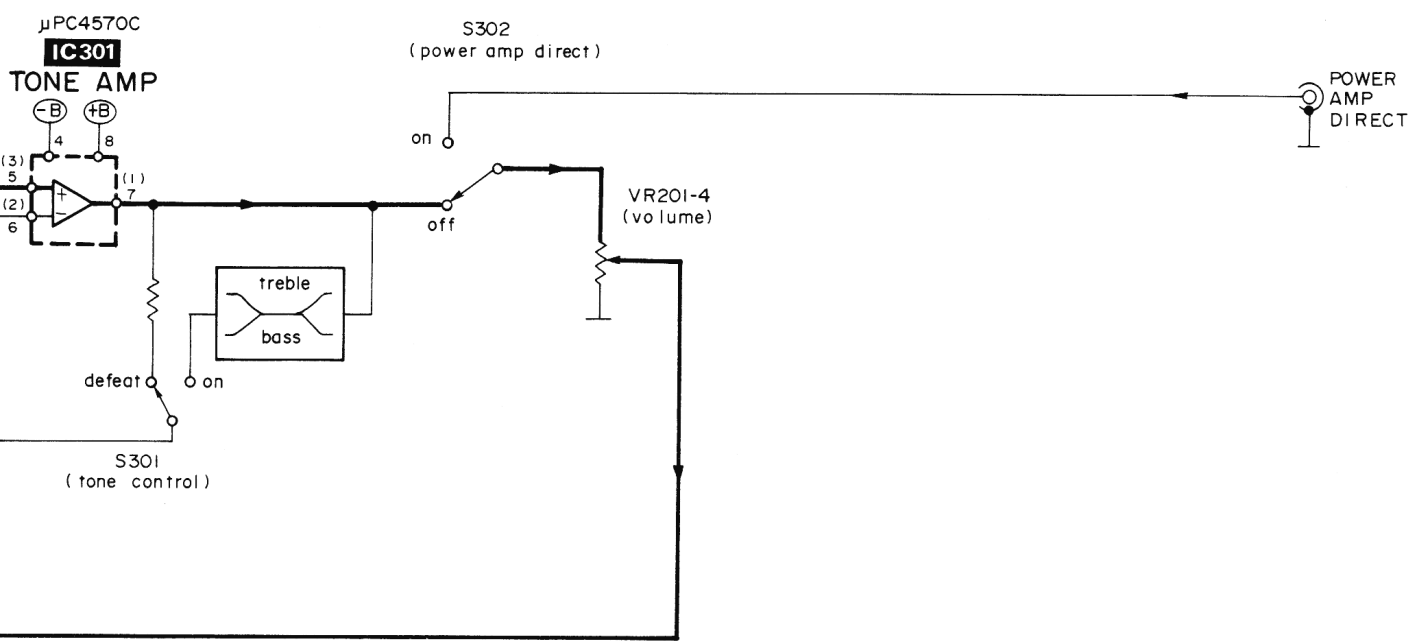
- Remove the 5 screws (1~5).



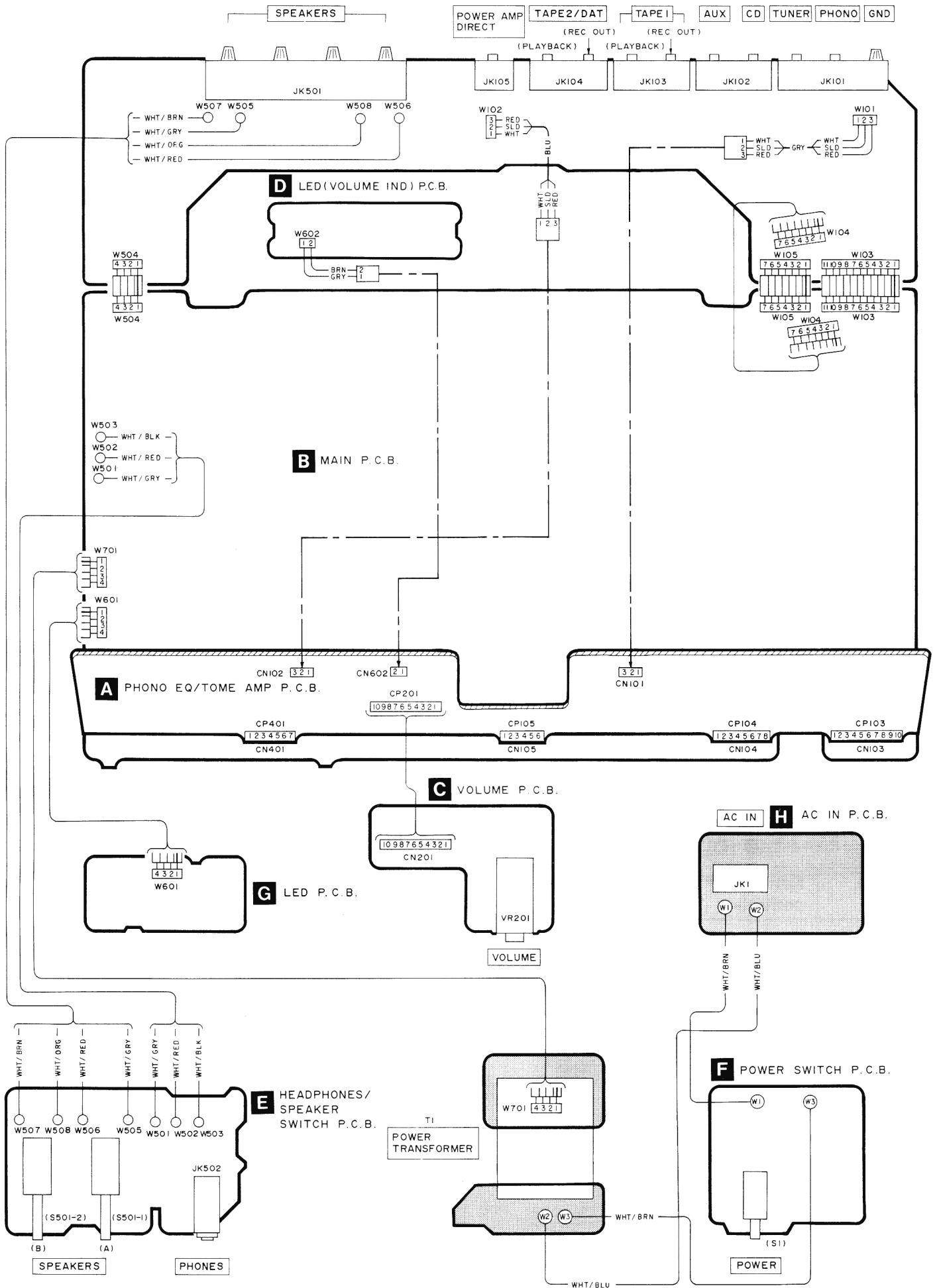
SU-V660

BLOCK DIAGRAM

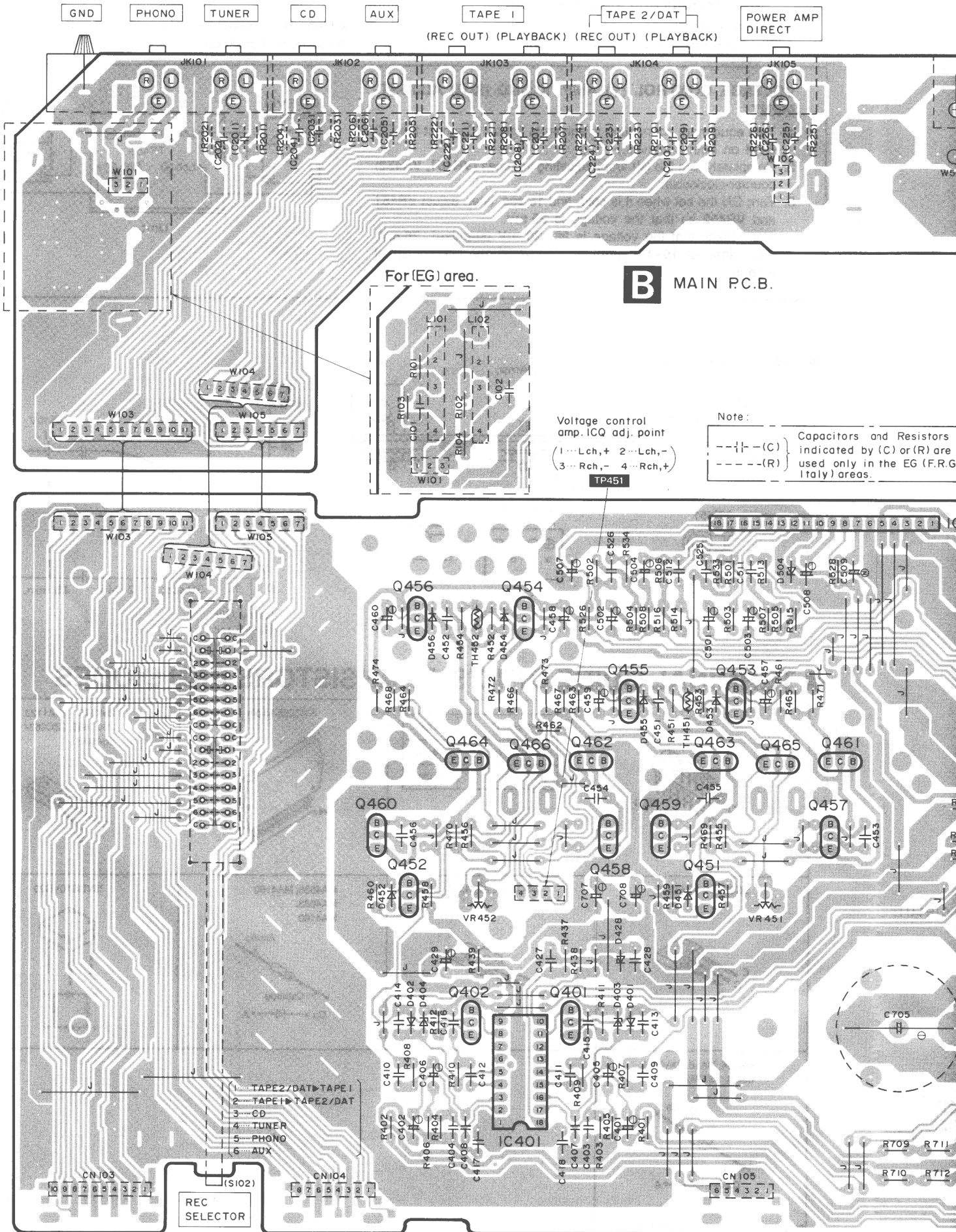




WIRING CONNECTION DIAGRAM



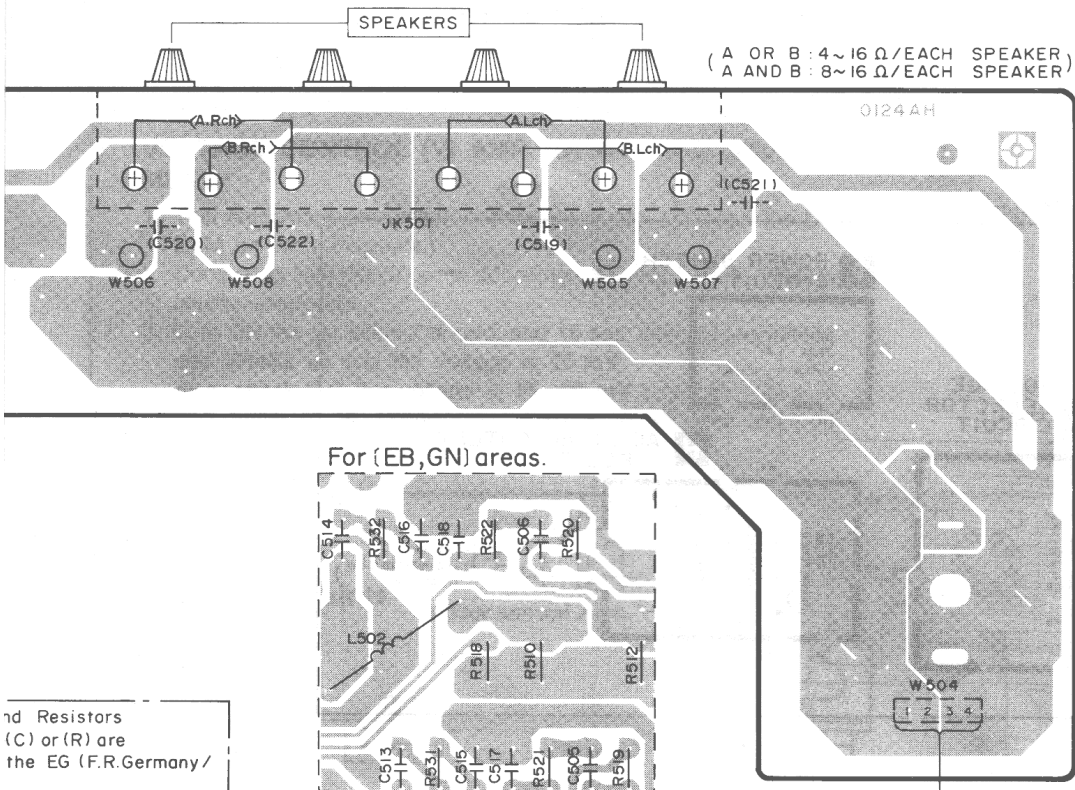
PRINTED CIRCUIT BOARDS



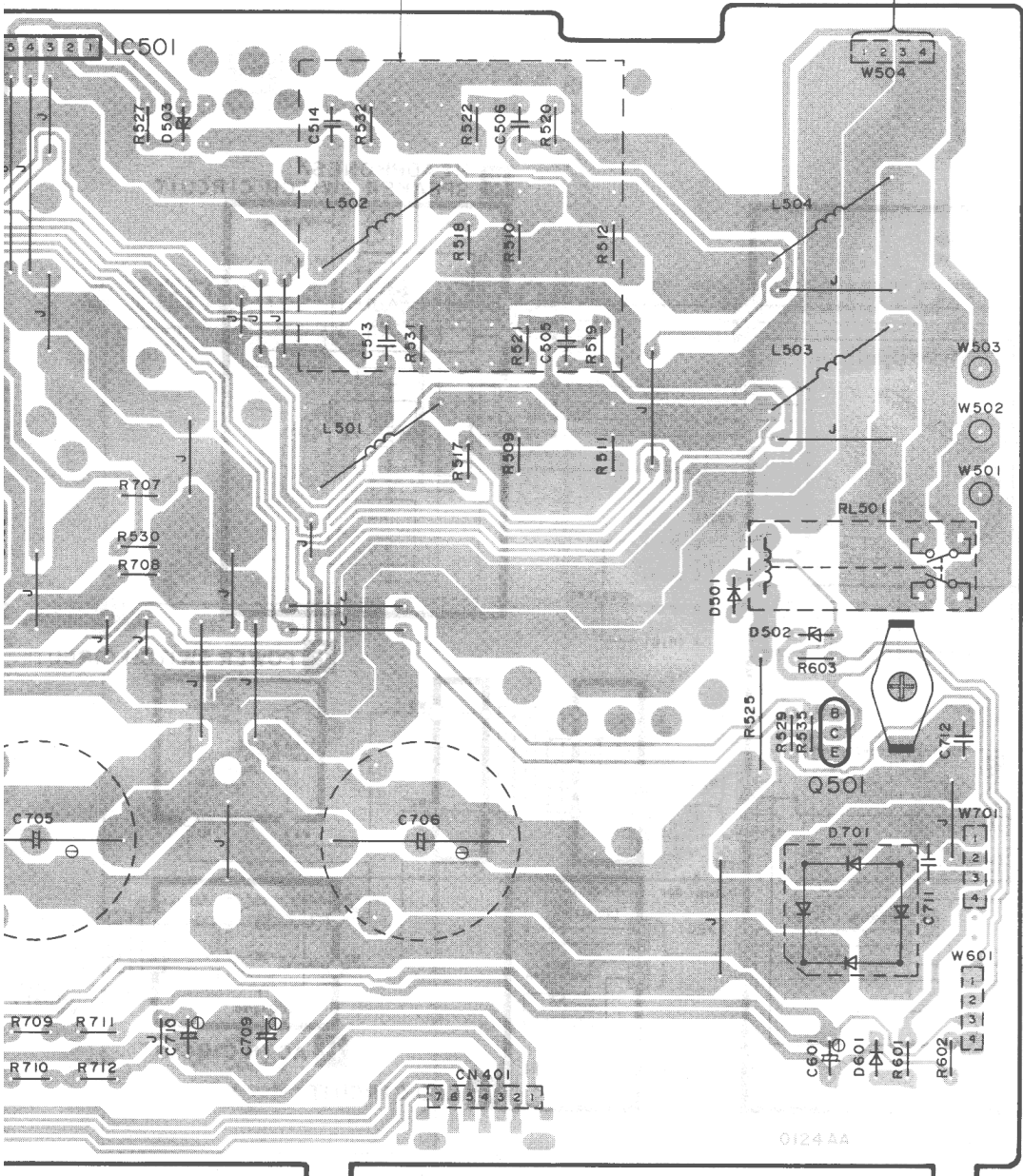
B MAIN P.C.B.

Voltage control
amp. ICQ adj. point
(1...Lch, + 2...Lch, -)
(3...Rch, - 4...Rch, +)
TP451

Note:
 ---||---(C) Capacitors and Resistors
 ---||---(R) indicated by (C) or (R) are
 used only in the EG (F.R.G.
 Italy) areas.



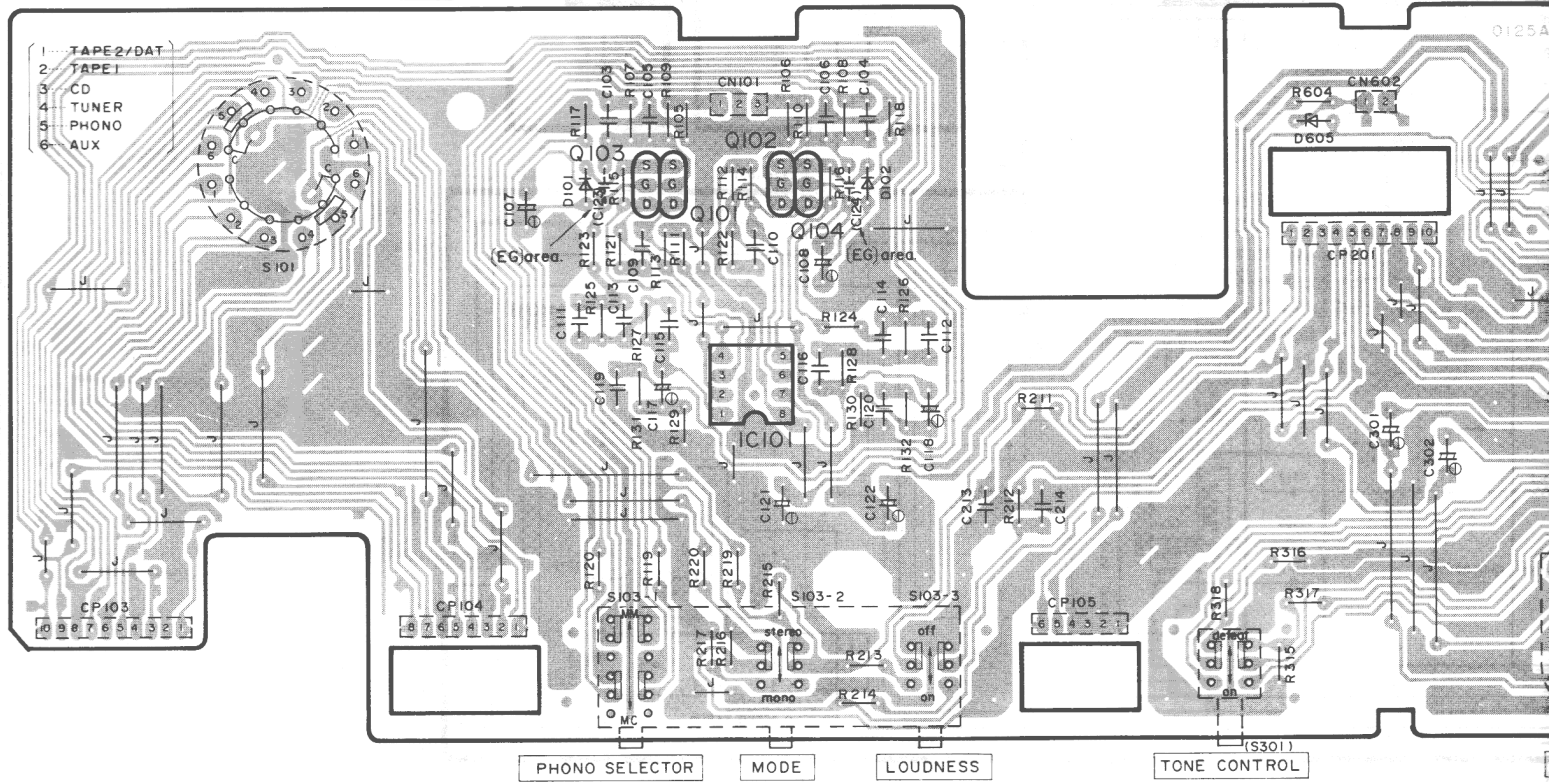
nd Resistors
(C) or (R) are
the EG (F.R.Germany/



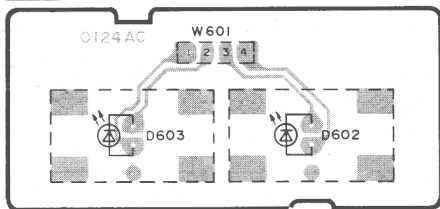
INPUT SELECTOR

A PHONO EQ/TONE AMP P.C.B.

POWER

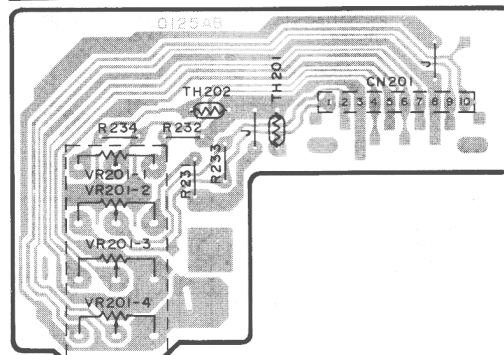


G LED P.C.B.



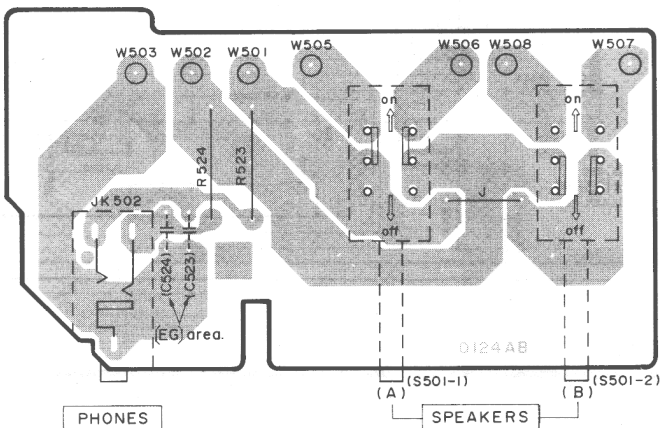
(Current drive Ind.) (Voltage control Ind.)

C VOLUME P.C.B.

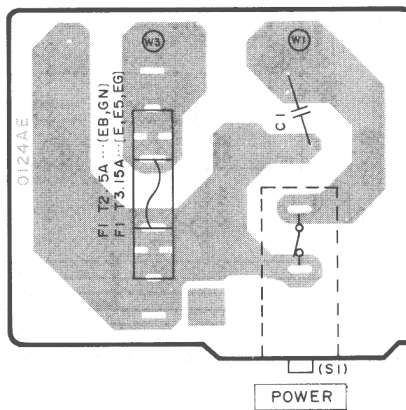


VOLUME

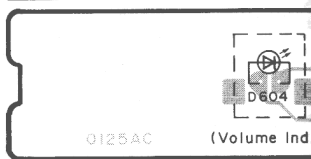
E HEADPHONES/SPEAKER SWITCH P.C.B.



F POWER SWITCH P.C.B.

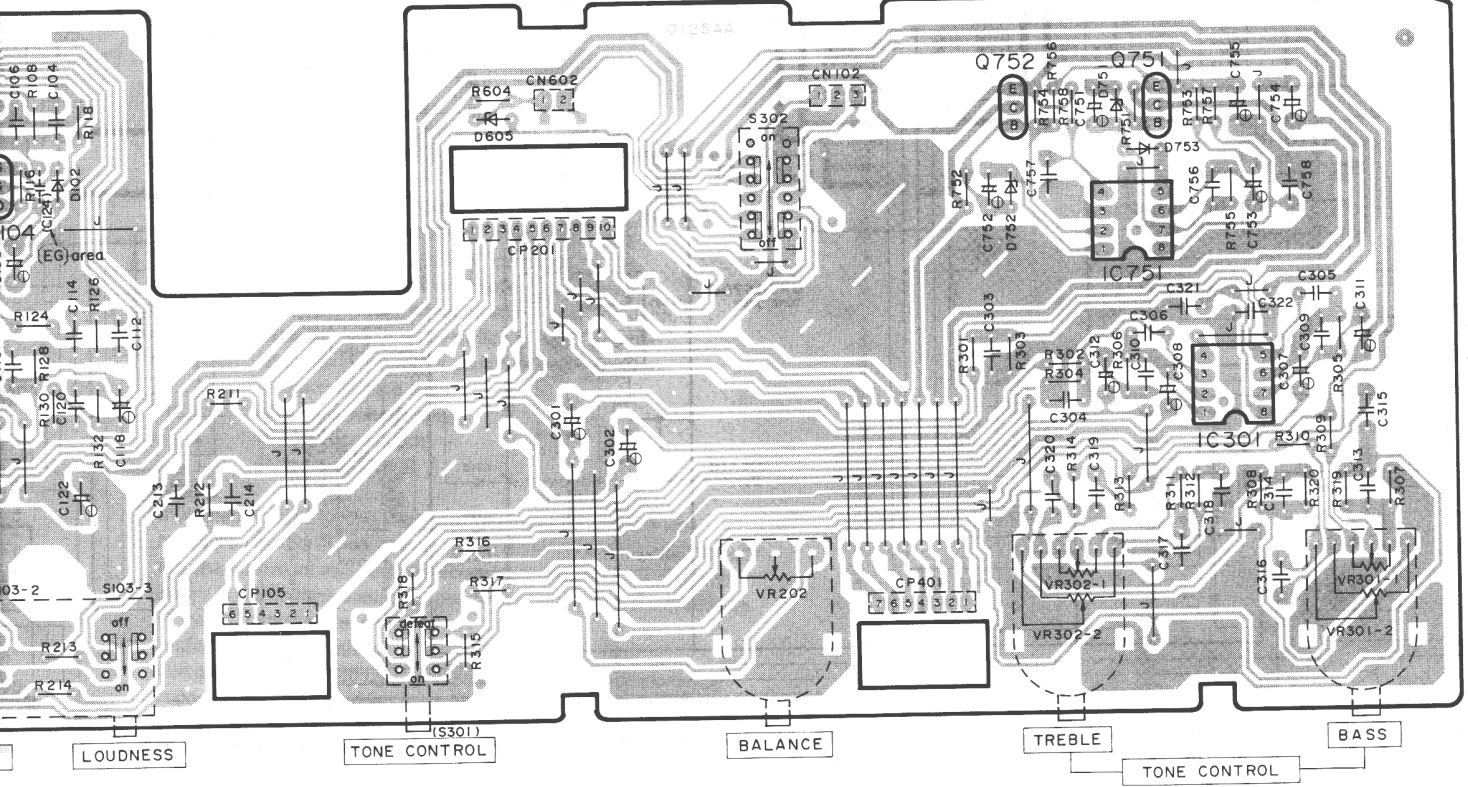


D LED (VOLUME IND.)

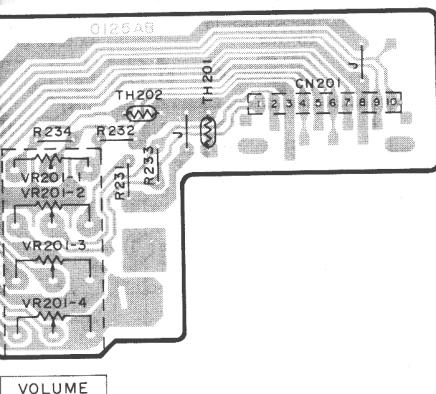


(Volume Ind)

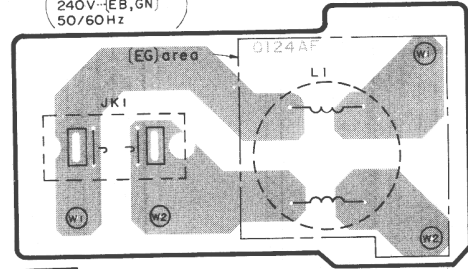
POWER AMP DIRECT



VOLUME P.C.B.

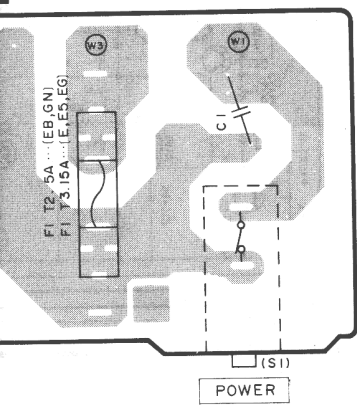


AC IN (220V-[E, E5, EG] 240V-[EB, GN] 50/60Hz)

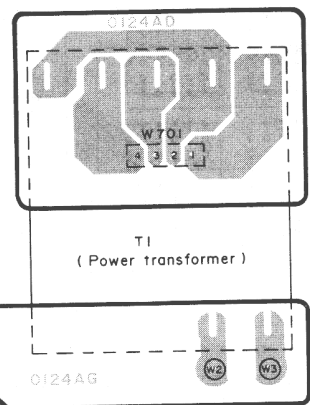
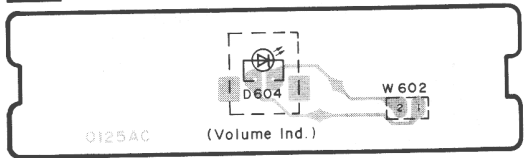


AC IN P.C.B.

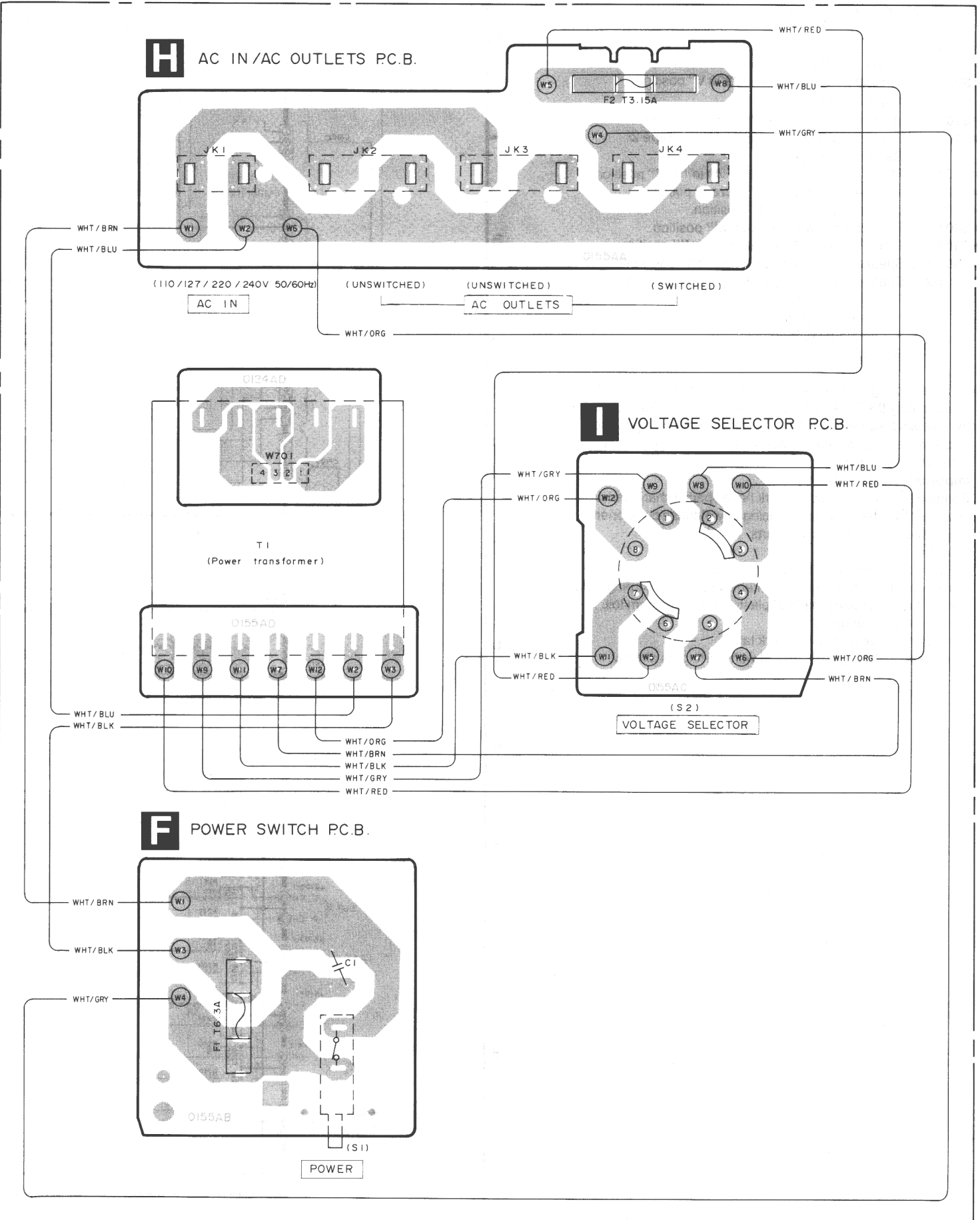
POWER SWITCH P.C.B.



LED (VOLUME IND.) P.C.B.



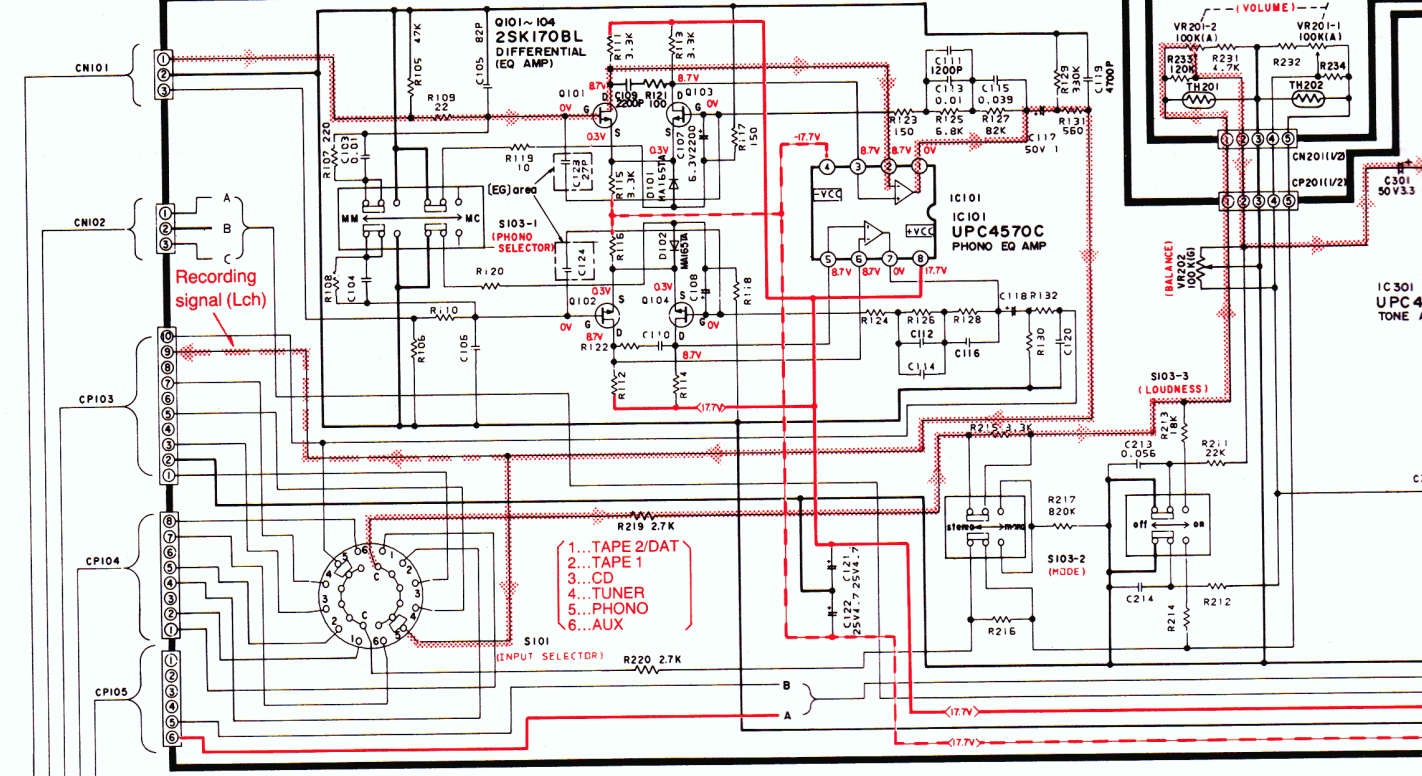
Power Source For(GC)area.



A PHONO EQ/TONE AMP CIRCUIT

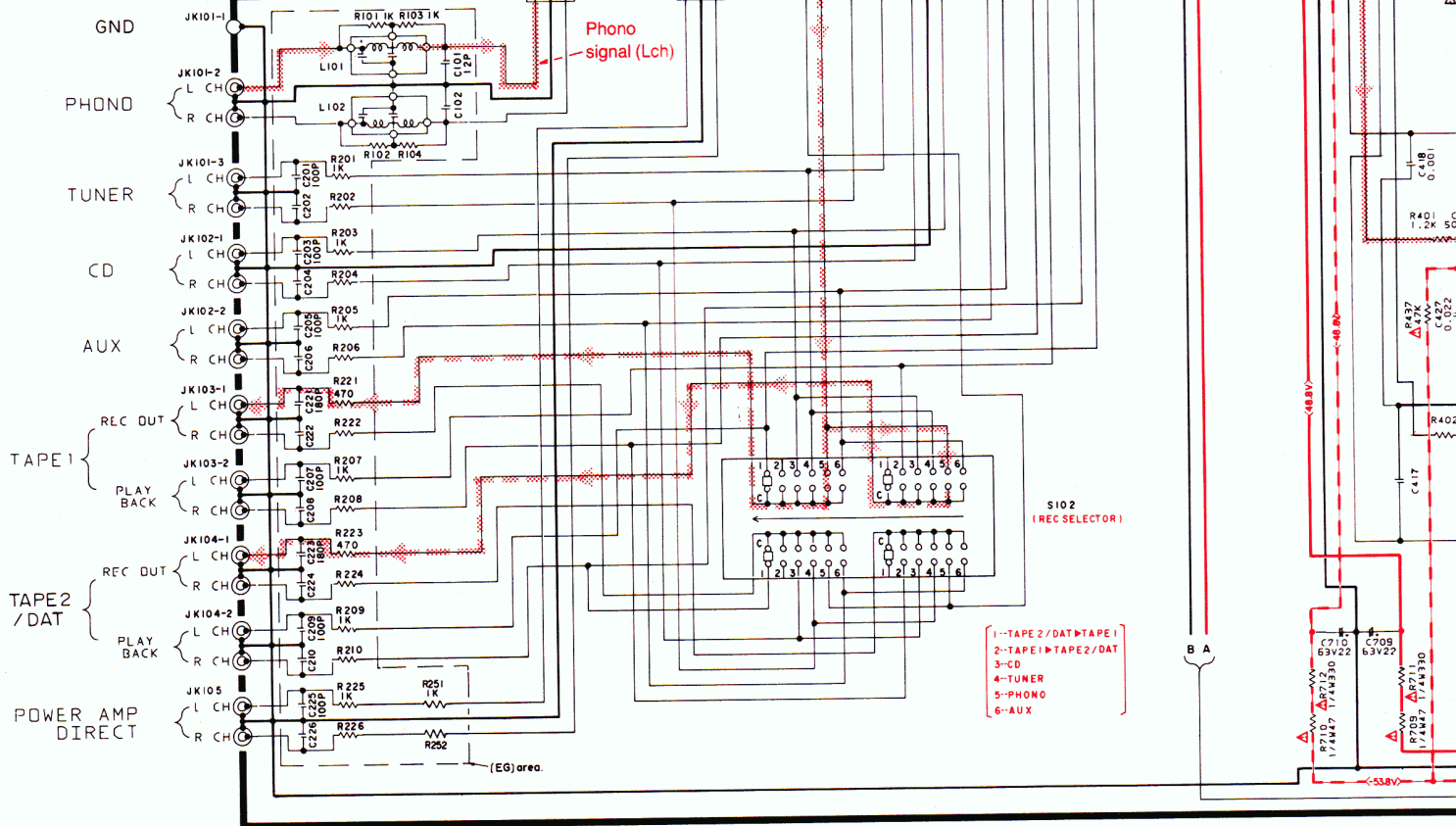
C VOLUME CIRCUIT

A
B
C

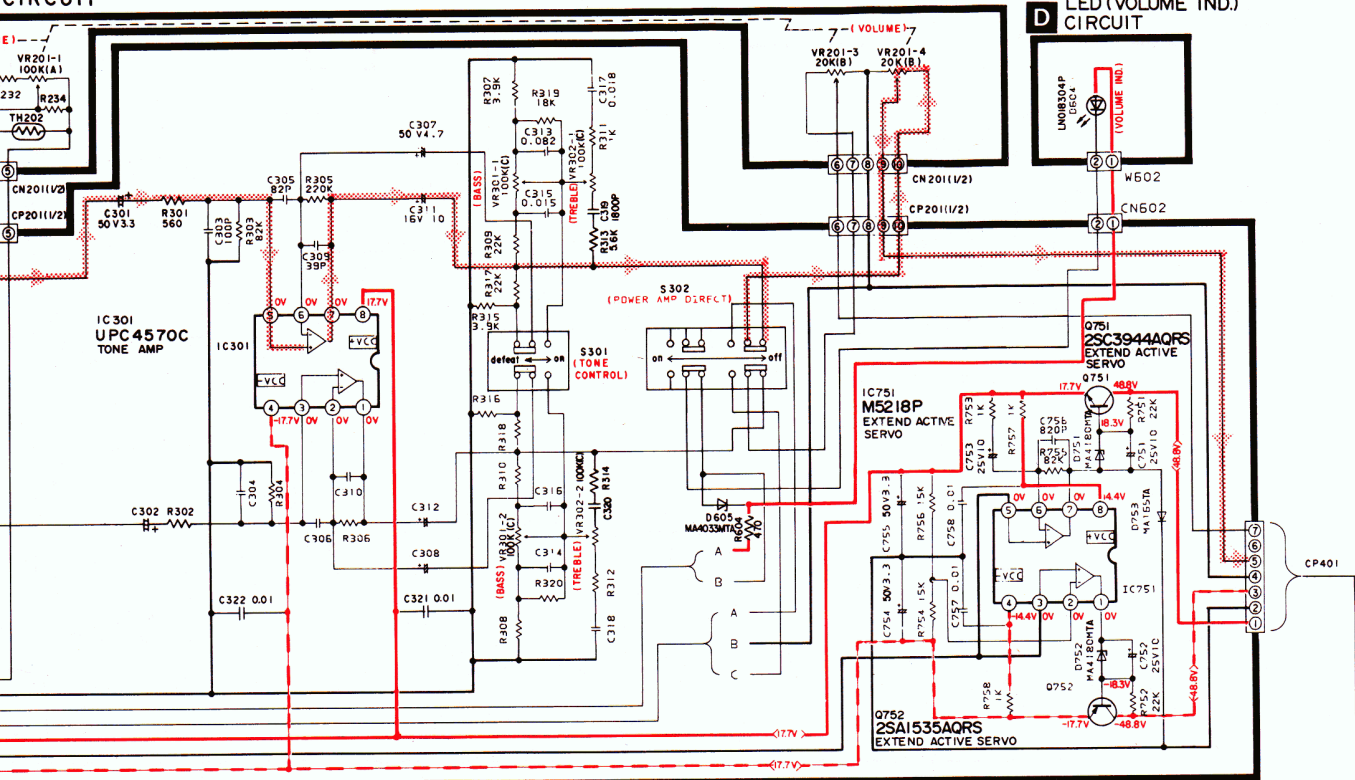


B MAIN CIRCUIT

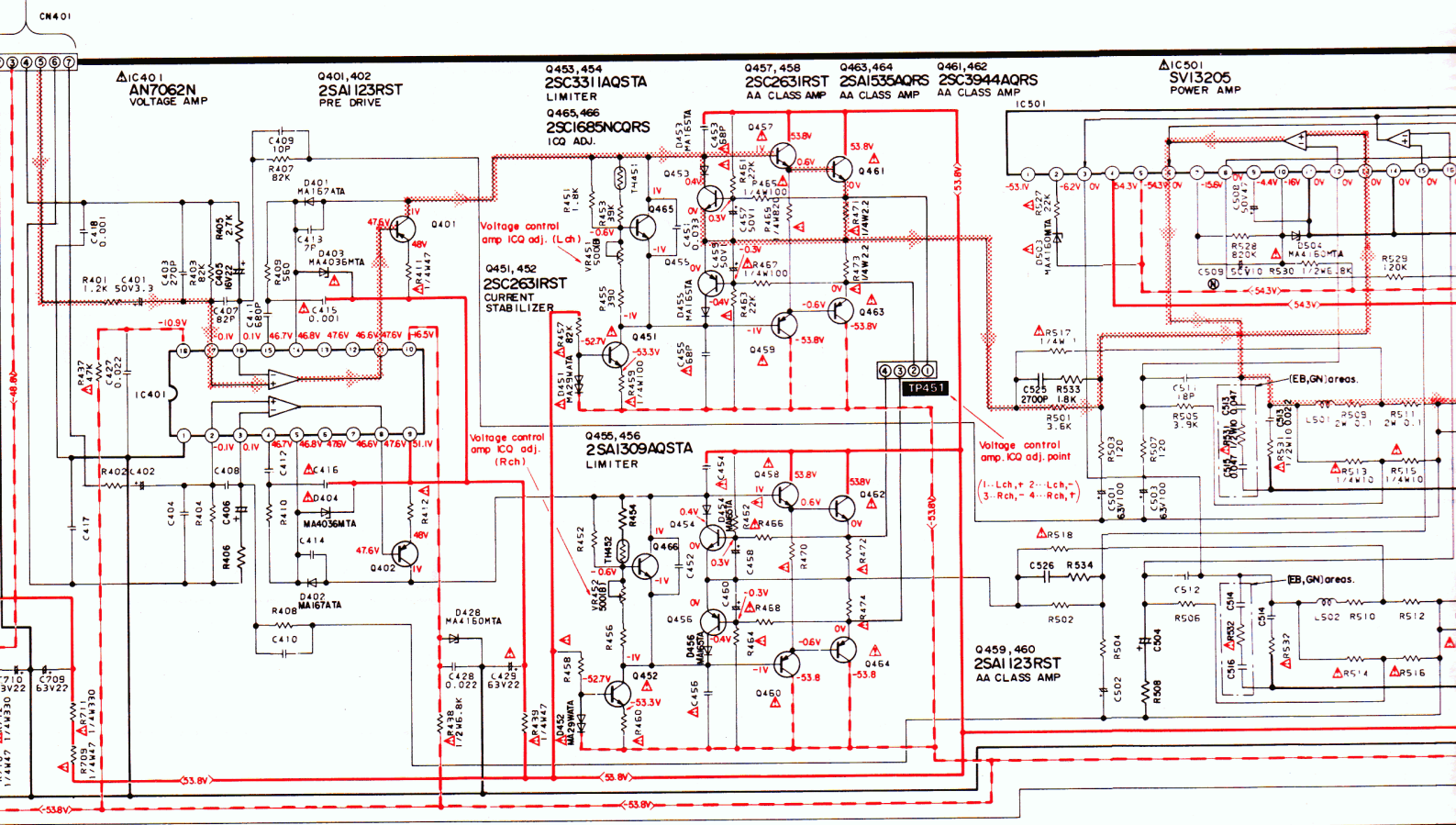
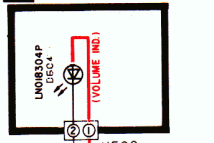
D
E
F



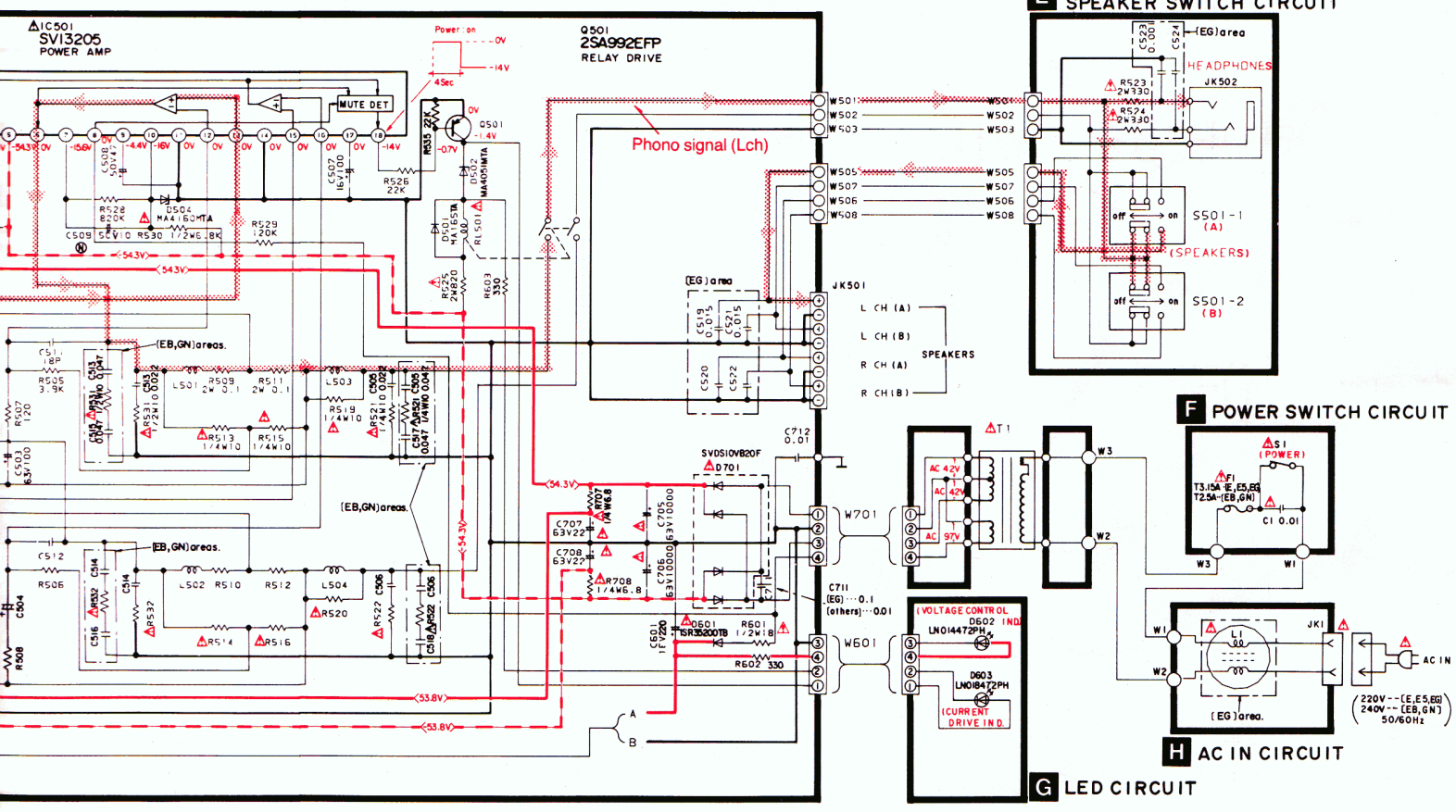
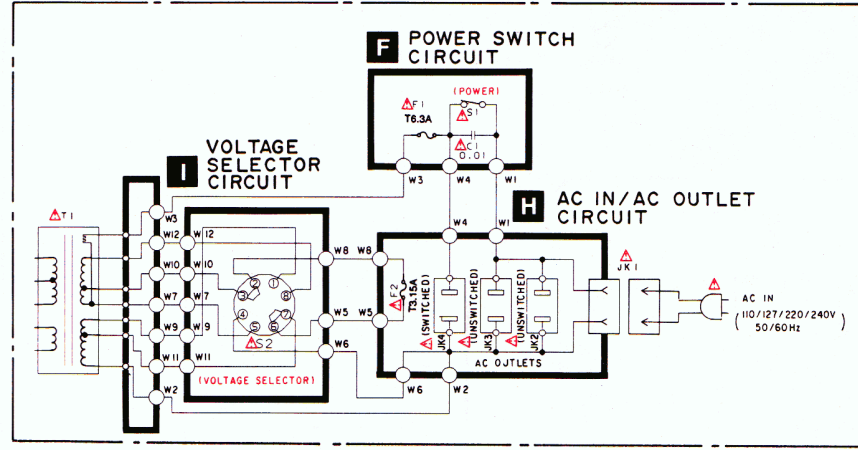
CIRCUIT



LED (VOLUME IND.) CIRCUIT



Power Source For (GC) area.



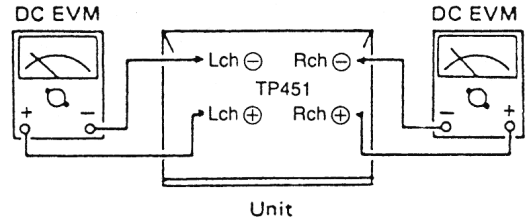
MEASUREMENTS AND ADJUSTMENTS

Control positions and equipment used.

- Volume knob.....∞ (Minimum)
- Main speaker selector.....off
- Remote speaker selector.....off
- Balance control knob 0

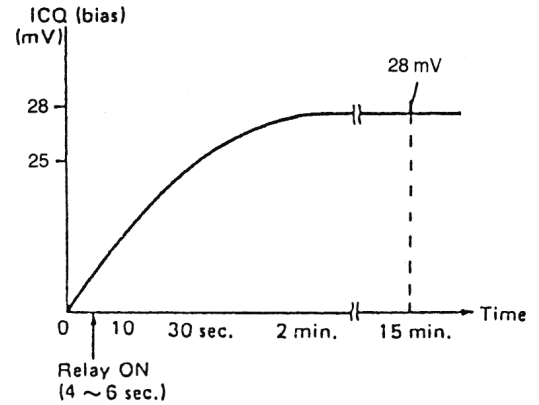
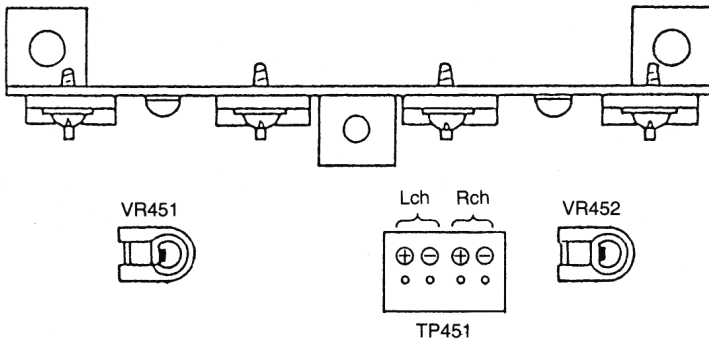
VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT

1. Test equipment connection is shown in figure. (Connect the DC EVM on both channels.)
2. Completely turn the (V) amp. adjusting volumes (VR451, VR452) counter-clockwise.
3. Turn ON the set when it is cold, and 15 sec. later, adjust VR451 and VR452 so that the voltage is 25 mV.
Also, check that the voltage is 25~30 mV (standard: 28 mV) after lapse of 10~15 minutes. (Below 30 mV after lapse of 60 min.)



Adjustment points

Voltage control Amp.



TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

<p>NO. 1</p>	<table border="1"> <tr> <td>UPC4570C</td> <td>8 pin</td> </tr> <tr> <td>AN7062N</td> <td>18 pin</td> </tr> <tr> <td>M5218P</td> <td>8 pin</td> </tr> </table>	UPC4570C	8 pin	AN7062N	18 pin	M5218P	8 pin	<p>SVI3205 18 pin</p>	<p>2SK170 2SA1123 2SC1685, 2SC2631 2SA992</p>
UPC4570C	8 pin								
AN7062N	18 pin								
M5218P	8 pin								
<p>2SC3311, 2SA1309</p>	<p>2SC3944, 2SA1535</p>	<p>MA4036, MA4160 MA4033, MA4180</p>	<p>SVDS10VB20</p>						
<p>MA165, MA16, MA4051 MA29, 1SR35200TB</p>									

REPLACEMENT PARTS LIST

Notes: *Important safety notice:

Components identified by \triangle 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 columns specify the areas. (Refer to the first page for area.)

Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		RESISTORS		R439	ERD25FVJ470T	C. RESISTOR 1/4W 47	\triangle
R101 ~ 104	ERDS2TJ102T	C. RESISTOR 1/4W 1K	(EG)	R451, 452	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K	
R105, 106	ERDS2TJ473T	C. RESISTOR 1/4W 47K		R453, 454	ERDS2TJ393T	C. RESISTOR 1/4W 39K	
R107, 108	ERDS2TJ221T	C. RESISTOR 1/4W 220		R455, 456	ERDS2TJ391T	C. RESISTOR 1/4W 390	
R109, 110	ERDS2TJ220T	C. RESISTOR 1/4W 22		R457, 458	ERDS2TJ823T	C. RESISTOR 1/4W 82K	\triangle
R111 ~ 116	ERDAS3G332T	C. RESISTOR 1/4W 3.3K		R459, 460	ERD25FVJ101T	C. RESISTOR 1/4W 100	\triangle
R117, 118	ERDS2TJ151T	C. RESISTOR 1/4W 150		R461 ~ 464	ERDS2TJ223T	C. RESISTOR 1/4W 22K	\triangle
R119, 120	ERDS2TJ100T	C. RESISTOR 1/4W 10		R465 ~ 468	ERD25FVJ101T	C. RESISTOR 1/4W 100	\triangle
R121, 122	ERDS2TJ101T	C. RESISTOR 1/4W 100		R469, 470	ERD25FVJ821T	C. RESISTOR 1/4W 820	\triangle
R123, 124	ERDS2TJ151T	C. RESISTOR 1/4W 150		R471 ~ 474	ERD25FVJ2R2T	C. RESISTOR 1/4W 2.2	\triangle
R125, 126	ERDS2TJ682T	C. RESISTOR 1/4W 6.8K		R501, 502	ERDS2TJ362T	C. RESISTOR 1/4W 3.6K	
R127, 128	ERDS2TJ823T	C. RESISTOR 1/4W 82K		R503, 504	ERDS2TJ121T	C. RESISTOR 1/4W 120	
R129, 130	ERDS2TJ334T	C. RESISTOR 1/4W 330K		R505, 506	ERDS2TJ392T	C. RESISTOR 1/4W 3.9K	
R131, 132	ERDS2TJ561T	C. RESISTOR 1/4W 560		R507, 508	ERDS2TJ121T	C. RESISTOR 1/4W 120	
R201, 202	ERDS2TJ102T	C. RESISTOR 1/4W 1K	(EG)	R509 ~ 512	RREEMKR10SC	C. RESISTOR 2W 0.1	
R203, 204	ERDAS3G102T	C. RESISTOR 1/4W 1K	(EG)	R513 ~ 516	ERD25FVJ100T	C. RESISTOR 1/4W 10	\triangle
R205 ~ 210	ERDS2TJ102T	C. RESISTOR 1/4W 1K	(EG)	R517, 518	ERD25FVJ1R0T	C. RESISTOR 1/4W 1.0	\triangle
R211, 212	ERDAS3G223T	C. RESISTOR 1/4W 22K		R519 ~ 522	ERD25FVJ100T	C. RESISTOR 1/4W 10	\triangle
R213, 214	ERDS2TJ183T	C. RESISTOR 1/4W 18K		R523, 524	ERG2S3331H	M. RESISTOR 2W 330	\triangle
R215, 216	ERDS2TJ332T	C. RESISTOR 1/4W 3.3K		R525	ERG2S3821H	M. RESISTOR 2W 820	\triangle
R217	ERDS2TJ824T	C. RESISTOR 1/4W 820K		R526, 527	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R219, 220	ERDAS3G272T	C. RESISTOR 1/4W 2.7K		R528	ERDS2TJ824T	C. RESISTOR 1/4W 820K	
R221 ~ 224	ERDS2TJ471T	C. RESISTOR 1/4W 470	(EG)	R529	ERDS2TJ124T	C. RESISTOR 1/4W 120K	
R225, 226	ERDS2TJ102T	C. RESISTOR 1/4W 1K	(EG)	R530	ERDS1FVJ682T	C. RESISTOR 1/2W 6.8K	\triangle
R231, 232	ERDAS3G472T	C. RESISTOR 1/4W 4.7K		R531, 532	ERDS1FVJ100T	C. RESISTOR 1/2W 10	\triangle
R233, 234	ERDAS3G124T	C. RESISTOR 1/4W 120K		R533, 534	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K	
R251, R252	ERDAS3G102T	C. RESISTOR 1/4W 1K	(EG)	R535	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R301, 302	ERDAS3G561T	C. RESISTOR 1/4W 560		R601	ERDS1FVJ180T	C. RESISTOR 1/2W 18	\triangle
R303, 304	ERDS2TJ823T	C. RESISTOR 1/4W 82K		R602, 603	ERDS2TJ331T	C. RESISTOR 1/4W 330	
R305, 306	ERDS2TJ224T	C. RESISTOR 1/4W 220K		R604	ERDS2TJ471T	C. RESISTOR 1/4W 470	
R307, 308	ERDS2TJ392T	C. RESISTOR 1/4W 3.9K		R707, 708	ERD25FVJ6R8T	C. RESISTOR 1/4W 6.8	\triangle
R309, 310	ERDS2TJ223T	C. RESISTOR 1/4W 22K		R709, 710	ERD25FVJ470T	C. RESISTOR 1/4W 47	\triangle
R311, 312	ERDS2TJ102T	C. RESISTOR 1/4W 1K		R711, 712	ERD25FVJ331T	C. RESISTOR 1/4W 330	\triangle
R313, 314	ERDS2TJ562T	C. RESISTOR 1/4W 5.6K		R751, 752	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R315, 316	ERDAS3G392T	C. RESISTOR 1/4W 3.9K		R753	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R317, 318	ERDAS3G223T	C. RESISTOR 1/4W 22K		R754	ERDS2TJ153T	C. RESISTOR 1/4W 15K	
R319, 320	ERDS2TJ183T	C. RESISTOR 1/4W 18K		R755	ERDS2TJ823T	C. RESISTOR 1/4W 82K	
R401, 402	ERDS2TJ122T	C. RESISTOR 1/4W 1.2K		R756	ERDS2TJ153T	C. RESISTOR 1/4W 15K	
R403, 404	ERDS2TJ823T	C. RESISTOR 1/4W 82K		R757, 758	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R405, 406	ERDAS3G272T	C. RESISTOR 1/4W 2.7K				CAPACITORS	
R407, 408	ERDAS3G823T	C. RESISTOR 1/4W 82K		C1	ECKWNS103ZVS	C. CAPACITOR 250V 0.01U	\triangle
R409, 410	ERDS2TJ561T	C. RESISTOR 1/4W 560		C11, 12	ECBT1H102KB5	C. CAPACITOR 50V 0.001U	
R411, 412	ERD25FVJ470T	C. RESISTOR 1/4W 47	\triangle	C101, 102	RCBS1H120JLY	C. CAPACITOR 50V 12P	(EG)
R437	ERDS2TJ473T	C. RESISTOR 1/4W 47K	\triangle	C103, 104	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
R438	ERDS1FVJ682T	C. RESISTOR 1/2W 6.8K	\triangle	C105, 106	RCBS1H820KBY	C. CAPACITOR 50V 82P	

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUITS	
IC101	UPC4570C	IC, PHONO/EQ AMP.	
IC301	UPC4570C	IC, TONE AMP.	
IC401	AN7062N	IC, VOLTAGE AMP.	△
IC501	SVI3205	IC, POWER AMP.	△
IC751	M5218P	IC, ACTIVE SERVO	
		TRANSISTORS	
Q101 ~ 104	2SK170BL	TRANSISTOR	
Q401, 402	2SA1123RST	TRANSISTOR	
Q451, 452	2SC2631RST	TRANSISTOR	△
Q453, 454	2SC3311AQSTA	TRANSISTOR	
Q455, 456	2SA1309AQSTA	TRANSISTOR	
Q457, 458	2SC2631RST	TRANSISTOR	△
Q459, 460	2SA1123RST	TRANSISTOR	△
Q461, 462	2SC3944AQRS	TRANSISTOR	△
Q463, 464	2SA1535AQRS	TRANSISTOR	△
Q465, 466	2SC1685NCQRS	TRANSISTOR	
Q501	2SA992EFP	TRANSISTOR	
Q751	2SC3944AQRS	TRANSISTOR	
Q752	2SA1535AQRS	TRANSISTOR	
		DIODES	
D101, 102	MA165TA	DIODE	
D401, 402	MA167ATA	DIODE	
D403, 404	MA4036MTA	DIODE	△
D428	MA4160MTA	DIODE	
D451, 452	MA29WATA	DIODE	△
D453 ~ 456	MA165TA	DIODE	
D501	MA165TA	DIODE	
D502	MA4051MTA	DIODE	
D503	MA4160MTA	DIODE	△
D504	MA4160MTA	DIODE	
D601	1SR35200TB	DIODE	△
D602	LN014472PH	DIODE	
D603	LN018472PH	DIODE	
D604	LN018304P	DIODE	
D605	MA4033MTA	DIODE	
D701	SVDS10VB20F	DIODE	△
D751, 752	MA4180MTA	DIODE	
D753	MA165TA	DIODE	
		VARIABLE RESISTORS	
VR201	RRV16J01A	V. R, VOLUME CONTROL	
VR202	EWHFDA014G15	V. R, BALANCE	
VR301	EW2XA000C15	V. R, BASS	
VR302	EW2XA000C15	V. R, TREBLE	

Ref. No.	Part No.	Part Name & Description	Remarks
VR451	EVNDXAA00B52	V. R, ICQ ADJ. (Lch)	
VR452	EVNDXAA00B52	V. R, ICQ ADJ. (Rch)	
		THERMISTOR	
TH201, 202	ERTD2ZHL104T	THERMISTOR	
TH451, 452	ERTD2ZHL104T	THERMISTOR	
		COILS	
L1	SLQZ650MH49	COIL	△ (EG)
L101, 102	SLM1Z33	COIL	(EG)
L501 ~ 504	SLQY18G-10	COIL	
		TRANSFORMERS	
T1	RTP1Q5E001-W	POWER TRANSFORMER	△ (E, E5, EG)
T1	RTP1Q5B001-W	POWER TRANSFORMER	△ (EB, GN)
T1	RTP1Q5E002-W	POWER TRANSFORMER	△ (GC)
		FUSES	
F1	XBA2C31TB0	FUSE 250V T3. 15A	△ (E, E5, EG)
F1	XBA2C25TB0	FUSE 250V T2. 5A	△ (EB, GN)
F1	XBA2C63TB0	FUSE 250V T6. 3A	△ (GC)
F2	XBA2C31TB0	FUSE 250V T3. 15A	△ (GC)
		SWITCHES	
S1	ESB8249V	SW, POWER	△ (E, E5, EG, EB, GN)
S1	ESB8279V	SW, POWER	△ (GC)
S2	ESE37263	SW, VOLTAGESELECTOR	△ (GC)
S101	RSR6B001	SW, INPUT SELECTOR	
S102	RSS6D001	SW, REC SELECTOR	
S103	ESB68106	SW, MODE/LOUDNESS/PHONO	
S301	ESB68109	SW, TONE CONTROL	
S302	ESB68107	SW, POWER AMP DIRECT	
S501	RSP2002	SW, SPEAKER SELECTOR	
		JACKS	
CN101	SJT3321	CONNECTOR (3P)	
CN102	SJT3321	CONNECTOR (3P)	
CN103	SJS51080WL	SOCKET (10P)	
CN104	SJS50880WL	SOCKET (8P)	
CN105	SJS50680WL	SOCKET (6P)	
CN201	SJS51080WL	SOCKET (10P)	
CN401	SJS50780WL	SOCKET (7P)	
CN602	SJT3215	CONNECTOR (2P)	
CP103	SJT31047WL	CONNECTOR (10P)	
CP104	SJT30847WL	CONNECTOR (8P)	
CP105	SJT30647WL	CONNECTOR (6P)	

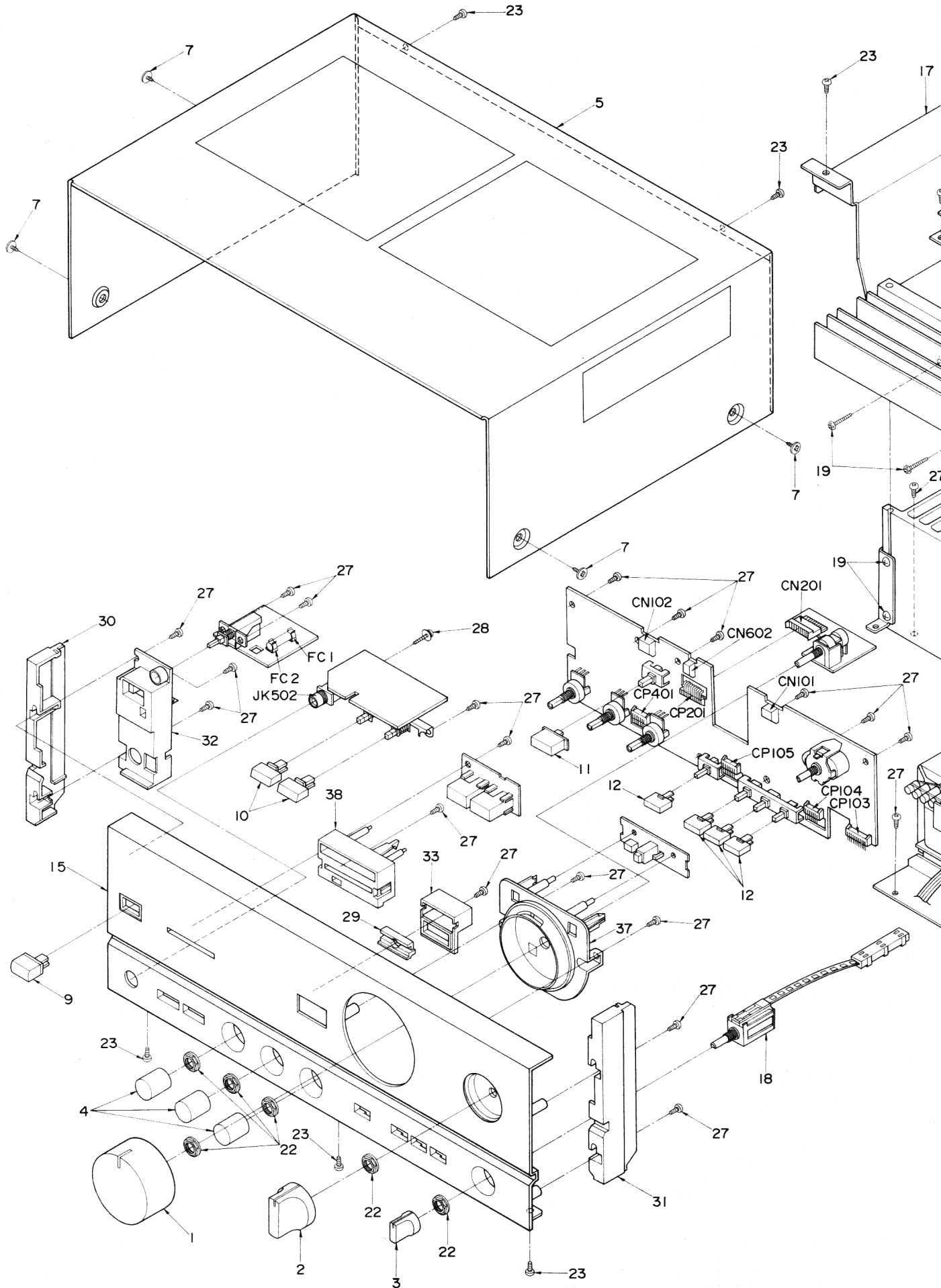
Ref. No.	Part No.	Part Name & Description	Remarks
CP201	SJT31047WL	CONNECTOR (10P)	
CP401	SJT30747WL	CONNECTOR (7P)	
JK1	SJS9231-1B	AC INLET	△ (E, E5, EG, EB, GC)
JK1	SJS9234B	AC INLET	△ (GN)
JK2 ~ 4	SJS9233B	AC OUTLET	△ (GC)
JK101	SJF3067NJ	TERMINAL	
JK102	SJF3069N	TERMINAL	
JK103	SJF3069N	TERMINAL	
JK104	SJF3069N	TERMINAL	
JK105	SJF3068NJ	TERMINAL	
JK501	SJF4819	TERMINAL, SPEAKER	
JK502	SJJD19	HEADPHONES JACK	

Ref. No.	Part No.	Part Name & Description	Remarks
		FUSE HOLDERS	
FC1, 2	SJT390	FUSE HOLDER	△
FC3, 4	SJT388	FUSE HOLDER	△ (GC)
		RELAY	
RL501	SSY126	RELAY	△

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RGW002-2K	VOLUME KNOB	
2	RGW0029-K	INPUT SELECT KNOB	
2-1	SUS45-1	SPRING	
3	RGW0027-K	REC SELECT KNOB	
4	RGW0030-K	BALANCE/TONE KNOB	
5	RKMD041-K	CABINET	
6	SJPA11-1	SHORT PIN	
7	SNE2129-1	SCREW	
8	RGR0021A-A	REAR PANEL	(E)
8	RGR0053	REAR PANEL	(E5)
8	RGR0021A-C	REAR PANEL	(EB)
8	RGR0021A-B	REAR PANEL	(EG)
8	RGR0021B-A	REAR PANEL	(GC)
8	RGR0021A-D	REAR PANEL	(GN)
9	RGU0030	POWER BUTTON	
10	RGU0118-K	SPEAKER BUTTON	
11	RGU0119-K	DIRECT BUTTON	
12	RGU0120-K	SIGNAL BUTTON	
13	RKA0009-1	FOOT	
14	RMKD047	CHASSIS	
15	RYP0113	FRONT PANEL	
16	RSC0044	SHILD PLATE (R)	(E, E5, EG, GC, GN)
16	RSC0063	SHILD PLATE (R)	(EB)
17	RSC0045	SHILD PLATE (L)	
18	RSQ0004	REC SELECTOR	
19	XTB3+8J	SCREW	
20	SHE187-2	HOLDER	
21	SJS9231A	AC INLET COVER	(E, E5, EB, EG, GC)
21	SJS9234A	AC INLET COVER	(GN)
22	SNE4021-1	NUT	
23	XTBS3+8JFZ1	SCREW	
24	XTB3+16JFZ	SCREW	
25	XTB3+20JFZ	SCREW	
26	XTB3+6J	SCREW	

Ref. No.	Part No.	Part Name & Description	Remarks
27	XTB3+8JFZ	SCREW	
28	XTWS3+8T	SCREW	
29	RGK0097	ORNAMENT (GOLD LINE)	
30	RGK0109-K	SIDE ORNAMENT (L)	
31	RGK0108-K	SIDE ORNAMENT (R)	
32	RMR0144	HOLDER	
33	RMR0137-K	HOLDER	
34	RMQ0069-1	HEAT SINK COVER	(EB)
35	SHR415	LATCH	
36	XTW3+8T	SCREW	
37	RGK0158	VOLUME ORNAMENT	
38	RGK0156-K	INDICATOR ORNAMENT	
39	RMR0143	HOLDER	
41	SUS890	SPRING	(EG)
42	XYN3+C6FZ	SCREW	(GC)
43	SJS9233A	AC OUTLET COVER	(GC)
		PACKING MATERIAL	
P1	RPG0198	CARTON BOX	
P2	SPS5185	PAD	
P3	SPS5257-1	PAD	
P4	SPS5258-1	PAD	
		ACCESSORIES	
A1	RQF0193	INSTRUCTIONS MANUAL	(E, E5)
A1	RQT0138B	INSTRUCTIONS MANUAL	(EB, GN)
A1	RQT0138D	INSTRUCTIONS MANUAL	(EG)
A1	RQF0196	INSTRUCTIONS MANUAL	(GC)
A2	SFDAC05E03	POWER CORD	△ (E, E5, EG)
A2	SJA193	POWER CORD	△ (EB)
A2	RJA0004	POWER CORD	△ (GC)
A2	SJA173	POWER CORD	△ (GN)
A3	SJP9215	AC PLUG ADAPTOR	△ (GC)

EXPLODED VIEW



V660 SU-V660

