

# Service Manual

Stereo Integrated Amplifier

Amplifier

## SU-V670



Color

(K) ..... Black Type

Area

Country Code	Areas	Color
(E)	Continental Europe	(K)
(EB)	Great Britain	(K)
(EG)	F.R. Germany & Italy	(K)

### SPECIFICATIONS

(DIN 45 500)

20 Hz~20 kHz continuous power output both channels driven	2 × 85 W (8 Ω)
1 kHz continuous power output both channels driven (THD: 1%)	2 × 95 W (8 Ω) 2 × 135 W (4 Ω)
63 Hz~12.5 kHz continuous power output both channels driven (0.7%)	2 × 85 W (8 Ω) 2 × 120 W (4 Ω)
<b>Total harmonic distortion (Power Amp Direct input)</b>	
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)
<b>Intermodulation distortion</b>	
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	650 mV/330 Ω
<b>Load impedance</b>	
A or B	4 Ω~16 Ω
A and B	8 Ω~16 Ω
<b>Input sensitivity and impedance</b>	
PHONO MM	2.5 mV/47 kΩ
PHONO MC	170 μV/220 Ω
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT	150 mV/22 kΩ
POWER AMP DIRECT	1 V/18 kΩ
<b>Phono maximum input voltage (IHF '66, 1 kHz, RMS)</b>	
MM	170 mV
MC	12 mV
<b>S/N</b>	
rated power (4 Ω)	
PHONO MM	79 dB (IHF '66: 86 dB)
PHONO MC	67 dB (IHF '66: 68 dB, S=250 μV)
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT	97 dB (IHF '66: 100 dB)
POWER AMP DIRECT	106 dB (IHF '66: 115 dB)
<b>-26 dB power (4 Ω)</b>	
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 MM	RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
TUNER, CD, AUX, TAPE 1, TAPE 2/DAT	3 Hz~100 kHz (+0, -3 dB) +0 dB, -0.2 dB (20 Hz~20 kHz)
POWER AMP DIRECT	2 Hz~120 kHz (+0, -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	±1 dB
Channel separation, AUX 1 kHz	50 dB

### ■ GENERAL

Power consumption	640 W
<b>Power supply</b>	
For Great Britain:	AC 50 Hz/60 Hz, 240 V
For Others:	AC 50 Hz/60 Hz, 220 V
<b>Dimensions (W × H × D)</b>	
	430 × 158 × 370 mm (16-15/16" × 6-7/32" × 14-9/16")
<b>Weight</b>	
	12.3 kg (27.1 lb.)

Notes:

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

# Technics

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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 contoller,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 contoller 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 220 V	AC 240 V
Consumed current	50 Hz	120~360 mA	100~300 mA
	60 Hz	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.

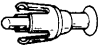
## ■ ACCESSORY

- |                              |                         |
|------------------------------|-------------------------|
| ● AC power supply cord ..... | 1                       |
| (SFDAC05E03) .....           | For [E] and [EG] areas. |
| (SJA193) .....               | For [EB] area only.     |

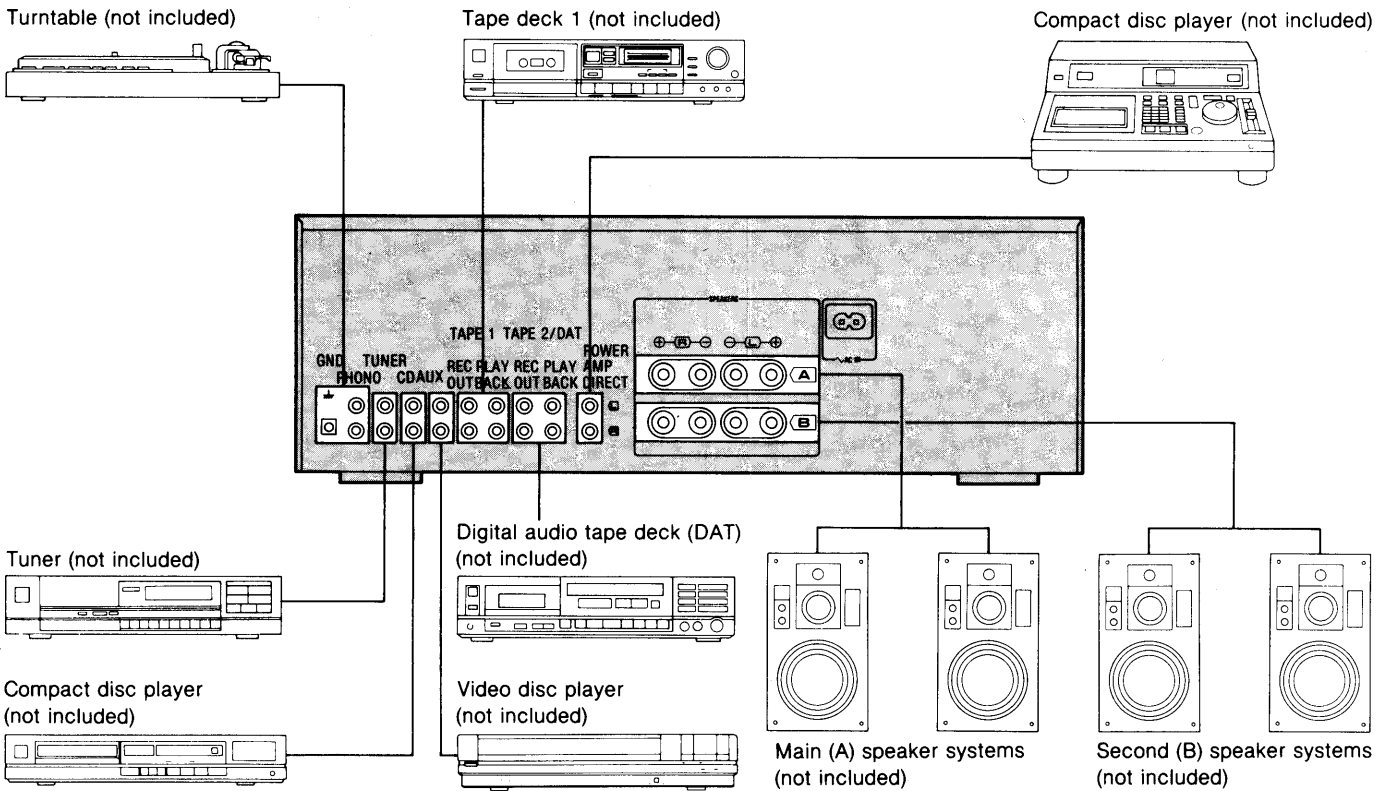
# CONNECTIONS

## Using the short-circuit pins (included)

Shorting pins are inserted into the "PHONO" terminals to reduce noise. Remove the pins before connecting a turntable and reinsert the pins if the turntable is later disconnected. Never connect a shorting pin to a "REC OUT" terminal or any terminal other than those above.



## System configurations



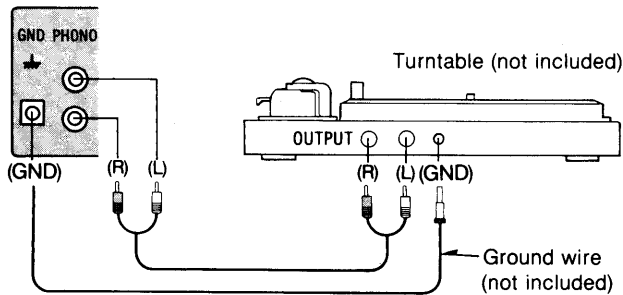
\*Phono input capacitance is about 270 pF for EG area (about 100 pF for other areas).

## To connect to each terminals

Make connections to each component in the system by using stereo connection cables (not included).

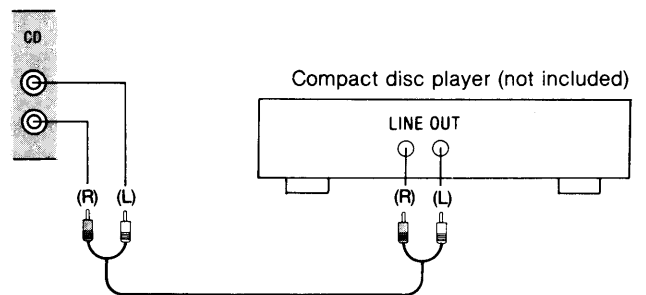
### "PHONO" terminals

Connect a turntable. See "Using the short-circuit pins", above.



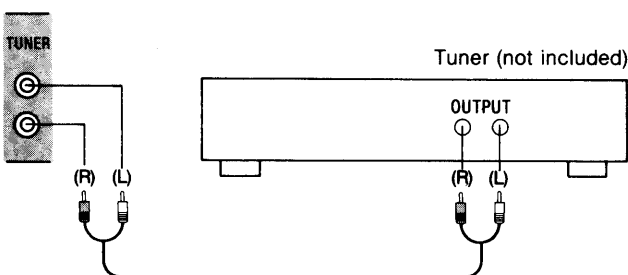
### "CD" terminals

Connect a compact disc player.



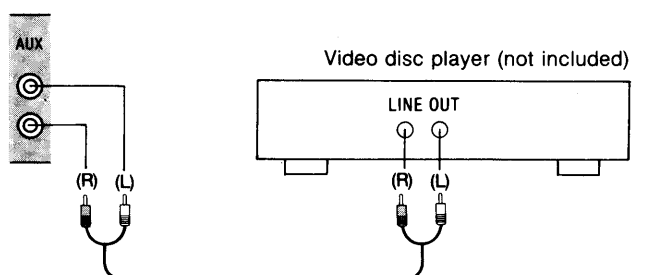
### "TUNER" terminals

Connect a tuner.



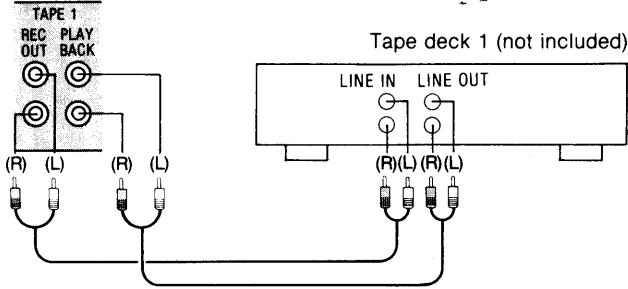
### "AUX" terminals

Connect a component such as a video disc player (audio only connectable), etc.



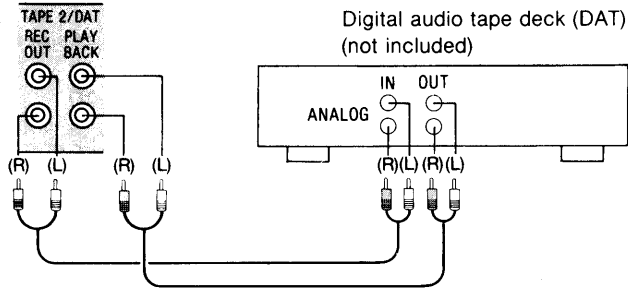
**"TAPE 1" terminals**

Connect a first tape deck.



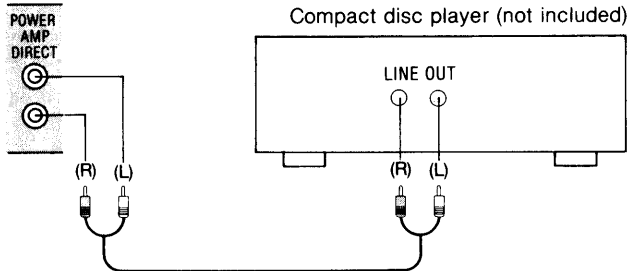
**"TAPE 2/DAT" terminals**

Connect a second tape deck or a digital audio tape deck (DAT).



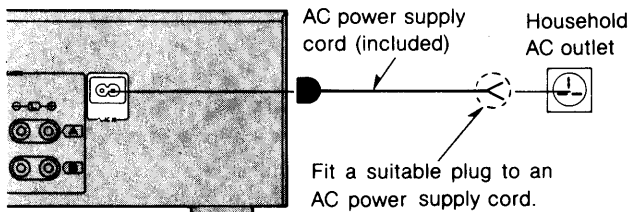
**"POWER AMP DIRECT" terminals**

Connect a compact disc player. A superior level of tone quality can be obtained, because the signal from these terminals are sent directly to the volume control and power amp section of this unit. The sounds from a component connected to these terminals cannot be recorded.



**To connect the AC power supply cord (included)**

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



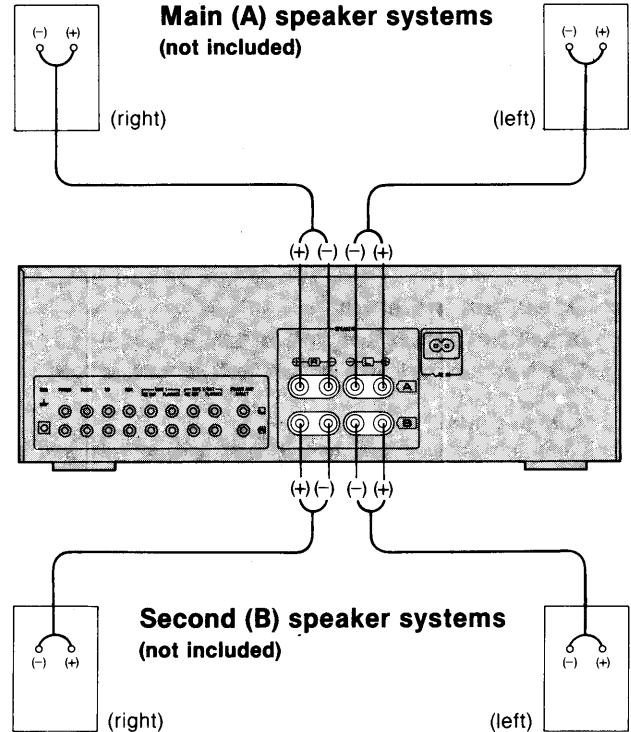
**Connection to speaker systems**

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

**Load impedance**

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

**To connect main (A) and/or second (B) speaker systems**



**To connect cords to terminals**

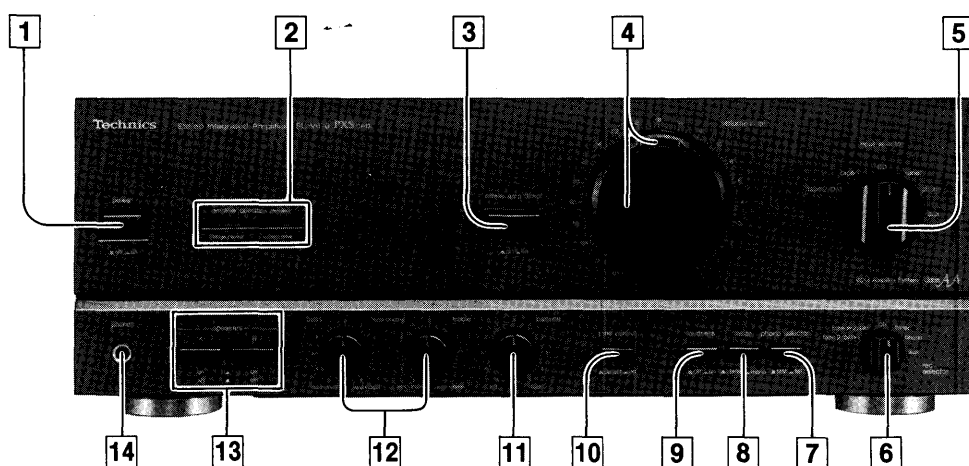
- ① Strip off the outer covering, and twist the center conductor. 10 mm (13/32") Twist.

- ② Turn 5 or 6 times.
- ③ Insert the wire and tighten screw completely. Pull the wire to assure a proper connection.

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

**Note:** To prevent damage to circuitry, never short-circuit the plus (+) and minus (-) speaker terminals.

## ■ LOCATION OF CONTROLS



### 1 Power switch (power)

### 2 Operation indicators (amplifier operation monitor)

This indicator illuminates to indicate the operating condition of this unit.

#### **voltage control:**

When the power is switched ON, this indicator illuminates when the unit is in the operation condition.

#### **current drive:**

When the power is switched ON, this indicator illuminates after about 4 seconds when the unit is in the operation condition.

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

### 3 Power amplifier direct switch (power amp direct)

This switch is used to listen to the sound from a component connected to the "POWER AMP DIRECT" terminals.

When this switch is pressed inward to the "on" position, a superior level of tone quality can be obtained, because the signals from the component connected to the "POWER AMP DIRECT" terminals are sent directly to the volume control and power amp section of this unit. The mode selector, loudness switch, balance control and tone control circuit are bypassed.

### 4 Volume control/indicator (volume)

There are two types of volume scale indications: one for when the power amplifier direct switch is OFF, and one for when it is ON (Indicator will illuminate.).

### 5 Input selector (input selector)

This selector is used to select the sound source to be heard, such as a disc, radio broadcast, etc.

### 6 Recording output selector (rec selector)

This selector is used to select the sound source to be recorded by the connected tape deck 1 and/or tape deck 2 (or DAT).

### 7 Phono cartridge selector (phono selector)

This selector should be set to the position which corresponds to the type of cartridge used on the turntable.

### 8 Mode selector (mode)

This selector is used to select stereo or monaural operation.

### 9 Loudness switch (loudness)

This switch is used when listening to music at a low volume level. Auditory perception of sound in the low frequency range falls off at low volume, but when the switch is set to the "on" position, this deficiency is compensated for, so that the full impact of the musical performance can be enjoyed.

### 10 Tone control switch (tone control)

This switch is used to turn the tone control circuit (bass, treble) on or off.

### 11 Balance control (balance)

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

### 12 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.

### 13 Speaker selectors (speakers)

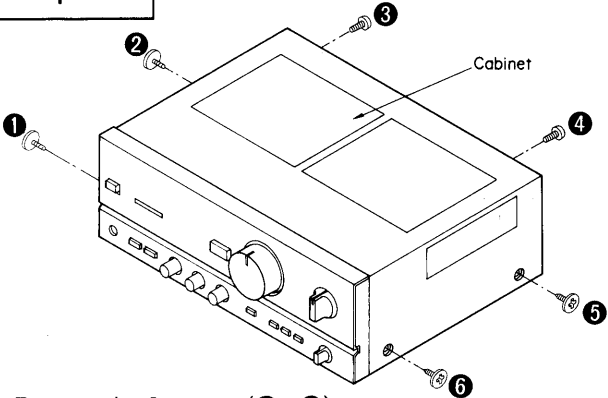
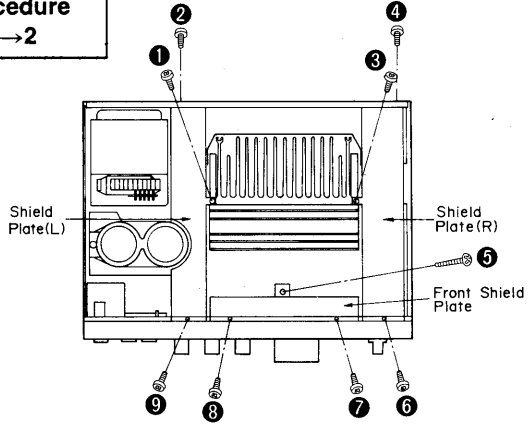
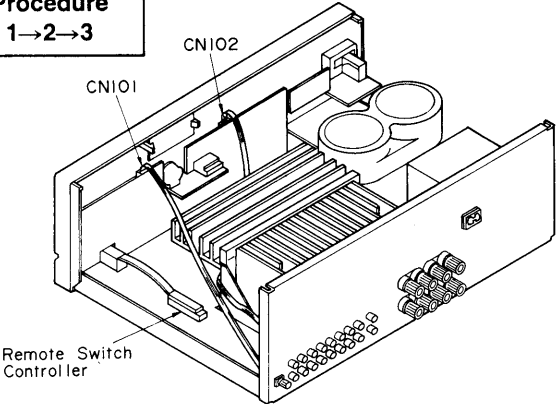
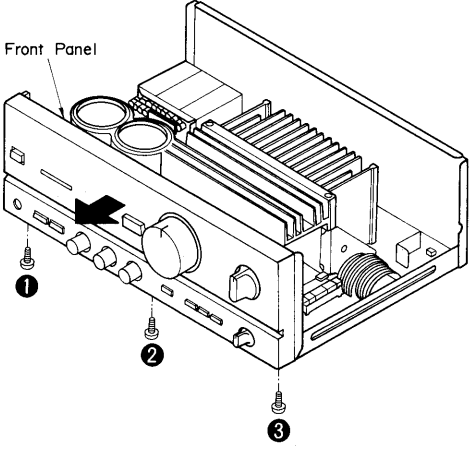
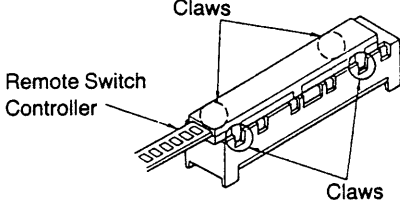
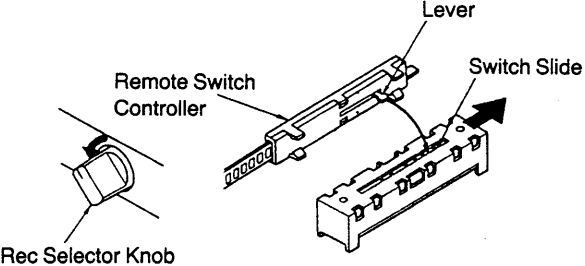
These selectors are used to turn the speaker systems on and off.

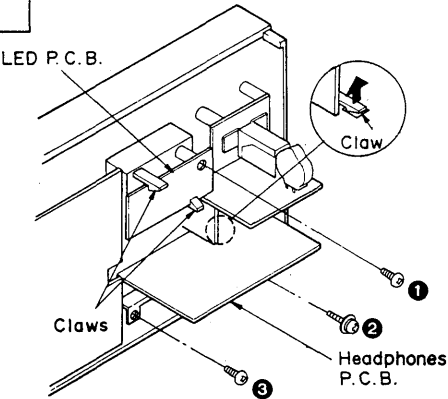
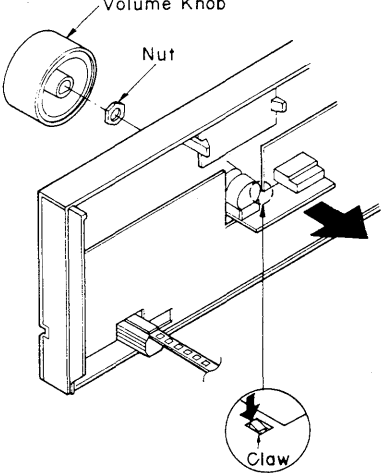
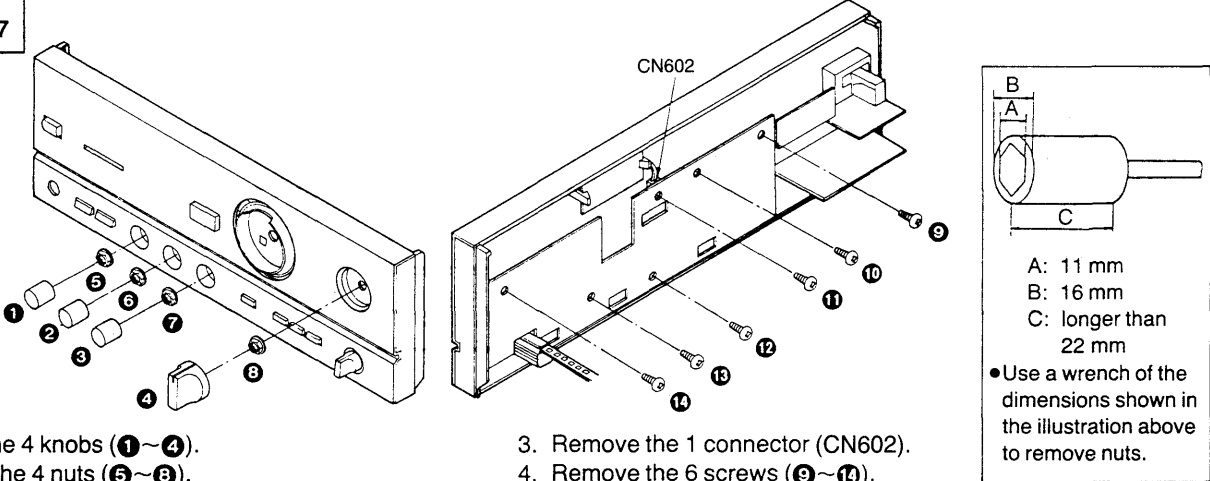
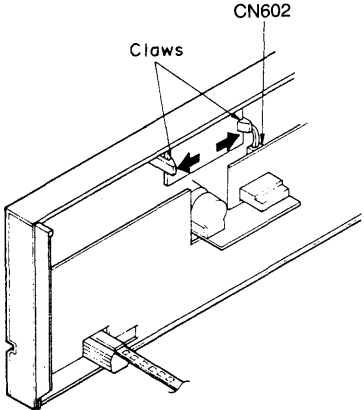
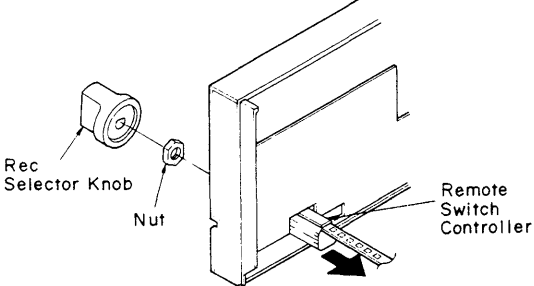
### 14 Headphones jack (phones)

# DISASSEMBLY INSTRUCTIONS

## "ATTENTION SERVICER"

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

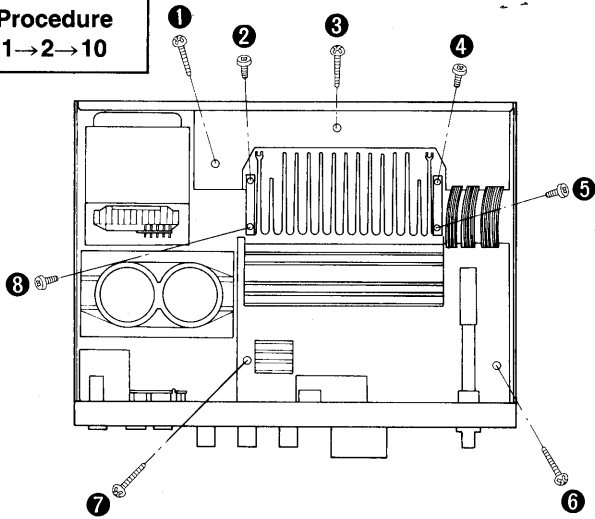
<p><b>Ref. No.</b> 1</p> <p><b>Removal of the cabinet</b></p>	<p><b>Ref. No.</b> 2</p> <p><b>Removal of the shield plate (L)/(R) and front shield plate.</b></p>
<p><b>Procedure</b> 1</p>  <p>● Remove the 6 screws (1~6).</p>	<p><b>Procedure</b> 1→2</p>  <p>● Remove the 9 screws (1~9).</p>
<p><b>Ref. No.</b> 3</p> <p><b>Removal of the front panel</b></p>	<p>3. Remove the 3 screws (1~3).</p> <p>4. Remove the front panel in the direction of the arrow.</p>
<p><b>Procedure</b> 1→2→3</p>  <p>1. Remove the 2 connectors (CN101, CN102).</p> <p>2. Remove the remote switch controller.</p>	 <p>● <b>Removal of the remote switch controller</b></p> <p>● Remove the 4 claws.</p>  <p>■ <b>Replacing of the remote switch controller</b></p> <p>1. Fully rotate the Recording Selector Control counterclockwise.</p> <p>2. Push the Switch Slide in the direction of the arrow.</p> 
<p><b>Ref. No.</b> 4</p> <p><b>Removal of the power switch P.C.B.</b></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><b>Removal of the LED P.C.B.</b> 1. Remove the 1 screw (①). 2. Release the 2 claws.</p> <p><b>Removal of the headphones P.C.B.</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 (CN602). 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 volume LED P.C.B.</p>	<p>Ref. No. 9</p>	<p>Removal of the remote switch controller</p>
<p>Procedure 1→2→3→7</p>	 <p>1. Remove the 1 connector (CN602). 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>

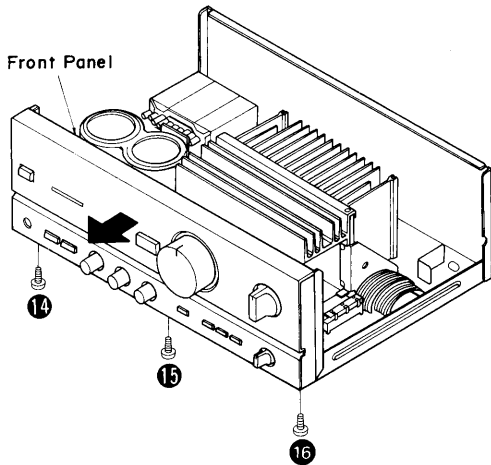
Ref. No.  
10

### Check of the main P.C.B.

Procedure  
1→2→10

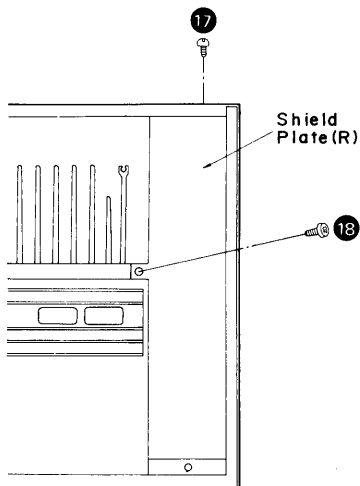


1. Remove the 8 screws (1~8).

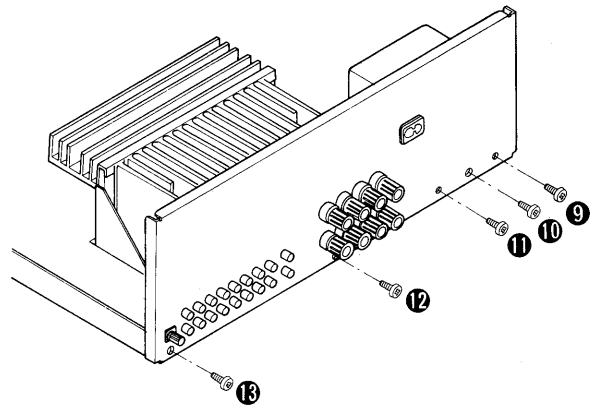


3. Remove the 3 screws (14~16).

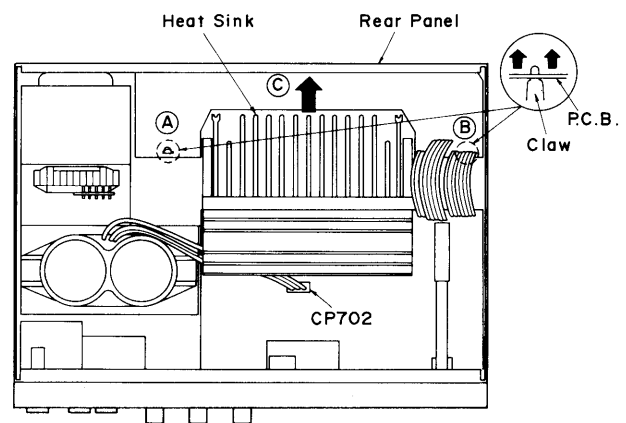
4. Remove the front panel.



8. Install the shield plate (R) in the rear panel and the heat sink with the 2 screws (17 and 18).



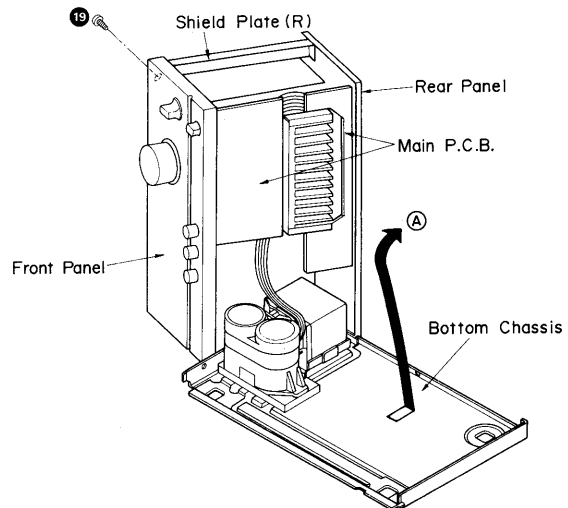
2. Remove the 5 screws (9~13).



5. Remove the connector (CP702).

6. Loosen sections (A) and (B) on the main P.C.B. and then release the claws of the bottom chassis and remove the rear panel.

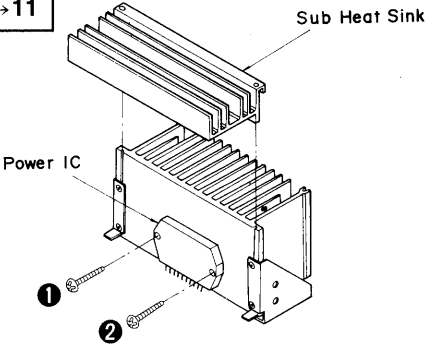
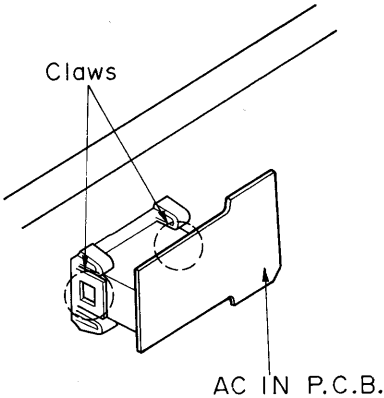
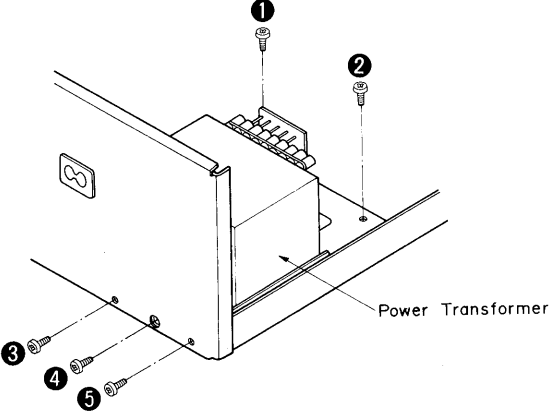
7. Slide the heat sink in the direction of arrow (C).



9. Place the rear panel, the heat sink, the main P.C.B. and the front panel in the direction of arrow (A) as shown.

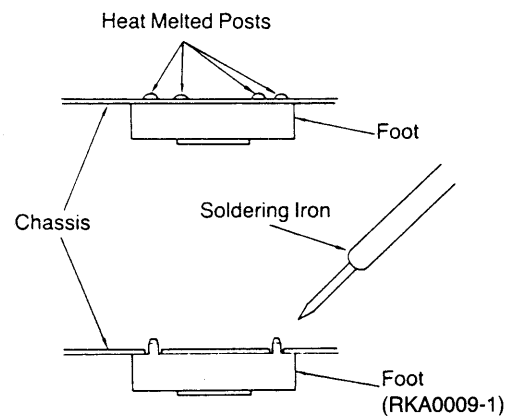
10. Re-install the front panel in the main P.C.B. and then mount the shield plate (R) and fix it with the screw (19).



<b>Ref. No.</b> 11	<b>Removal of the power IC</b>	<b>Ref. No.</b> 12	<b>Removal of the AC IN P.C.B.</b>
<b>Procedure</b> 1→2→10→11	 <p>Sub Heat Sink</p> <p>Power IC</p> <p>1</p> <p>2</p> <ol style="list-style-type: none"> <li>1. Remove the sub heat sink.</li> <li>2. Remove the 2 screws (1, 2).</li> </ol> <p>•When mounting the power IC and sub heat sink, apply silicon thermal compound (SZZOL15 or equivalent) to the rear of the power IC.</p>	<b>Procedure</b> 1→2→12	 <p>Claws</p> <p>AC IN P.C.B.</p> <p>•Release the 2 claws.</p>
<b>Ref. No.</b> 13	<b>Removal of the power transformer</b>	 <p>Power Transformer</p> <p>1</p> <p>2</p> <p>3</p> <p>4</p> <p>5</p> <p>•Remove the 5 screws (1~5).</p>	

### •Replacement of the Foot.

1. Remove the 4 heat melted posts on the chassis with a pair of diagonal pliers or similar tool.
2. To mount the foot (RKA0009-1) on the chassis, melt the 4 posts with a soldering iron.



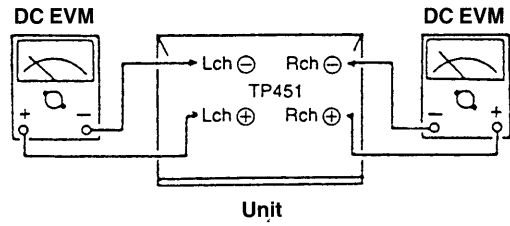
# MEASUREMENTS AND ADJUSTMENTS

## Control positions and equipment used.

- Volume knob.....∞ (Minimum)
- Speaker selectors (A) switch ..... off
- Speaker selectors (B) switch ..... off
- Balance control knob ..... 0

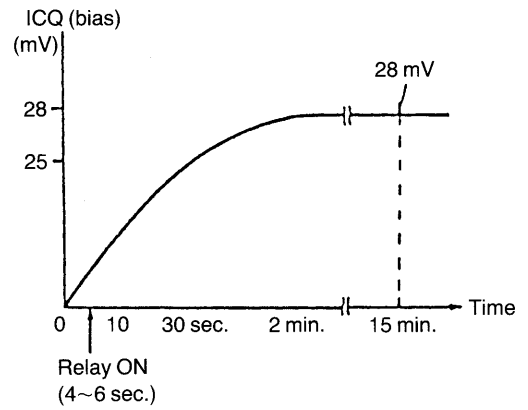
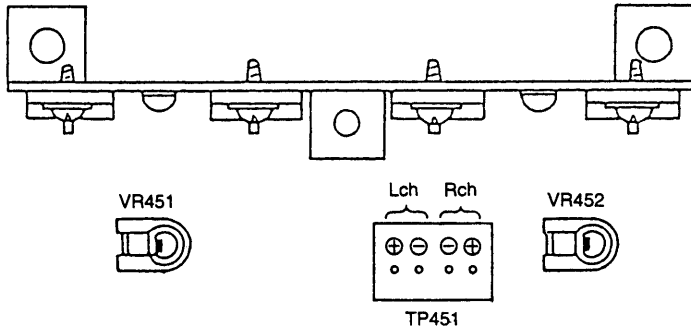
## VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT

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.)

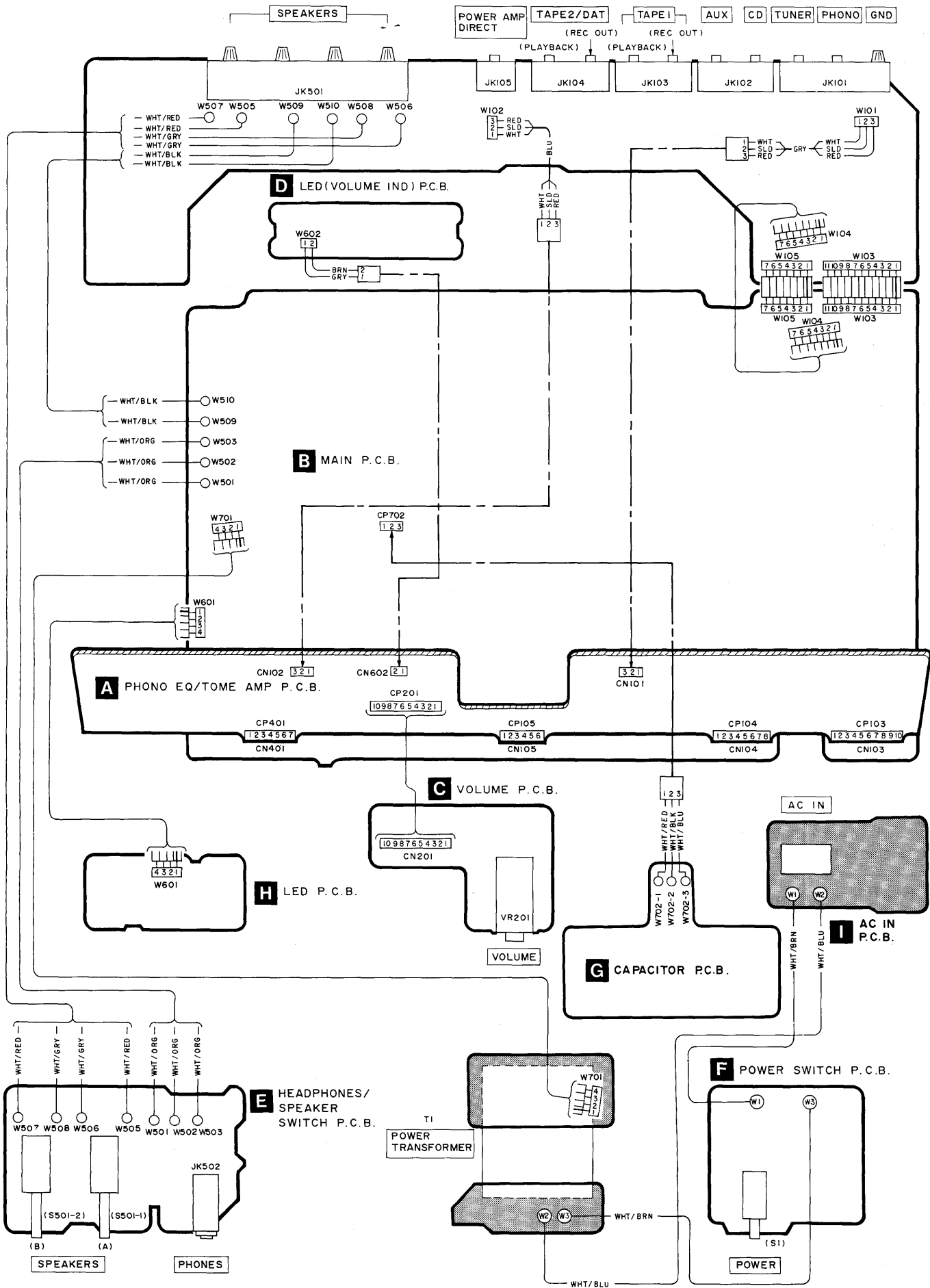


## Adjustment points

Voltage control Amp.



# WIRING CONNECTION DIAGRAM



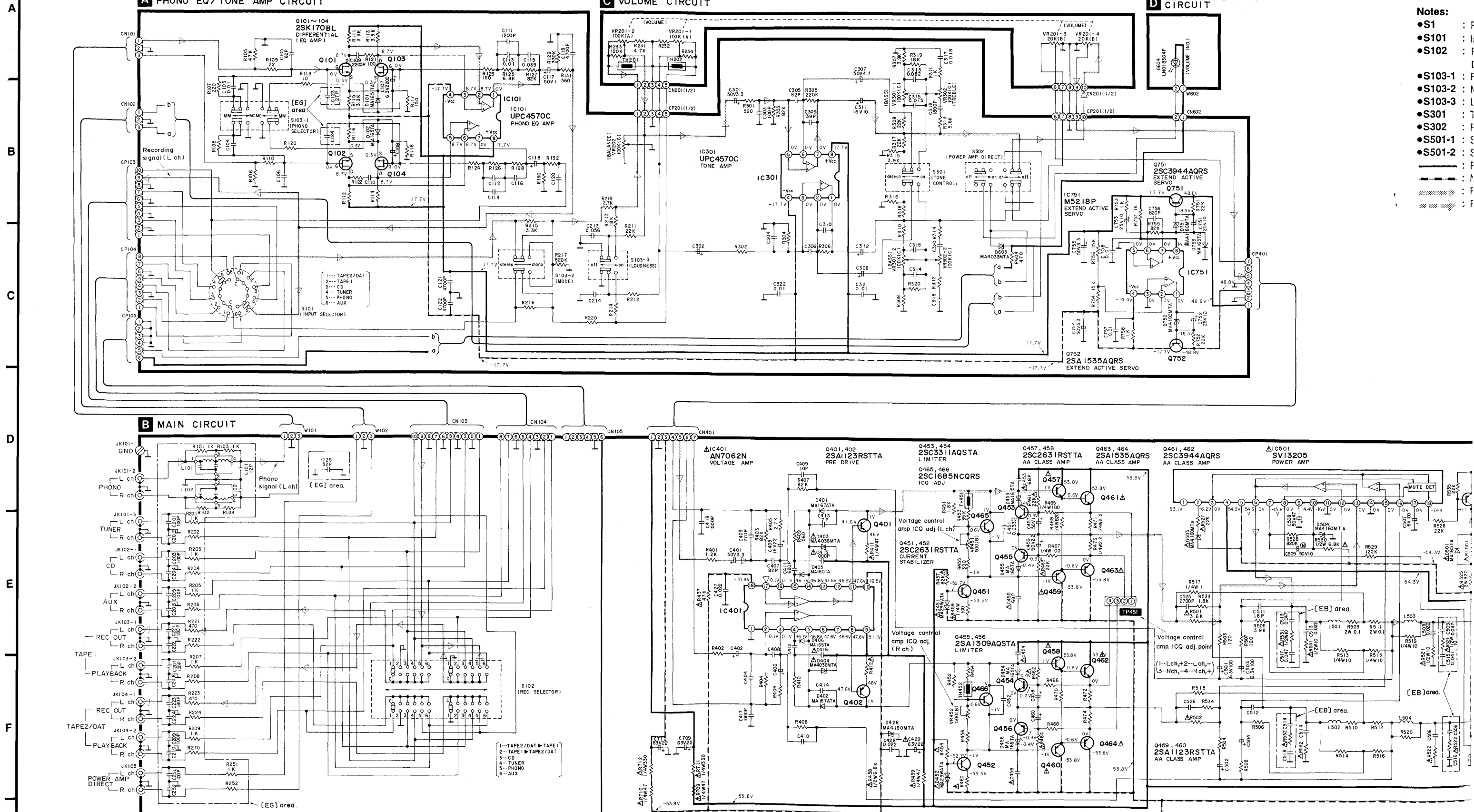
# SCHEMATIC DIAGRAM

(Parts list on pages 21, 22, 25, 26)

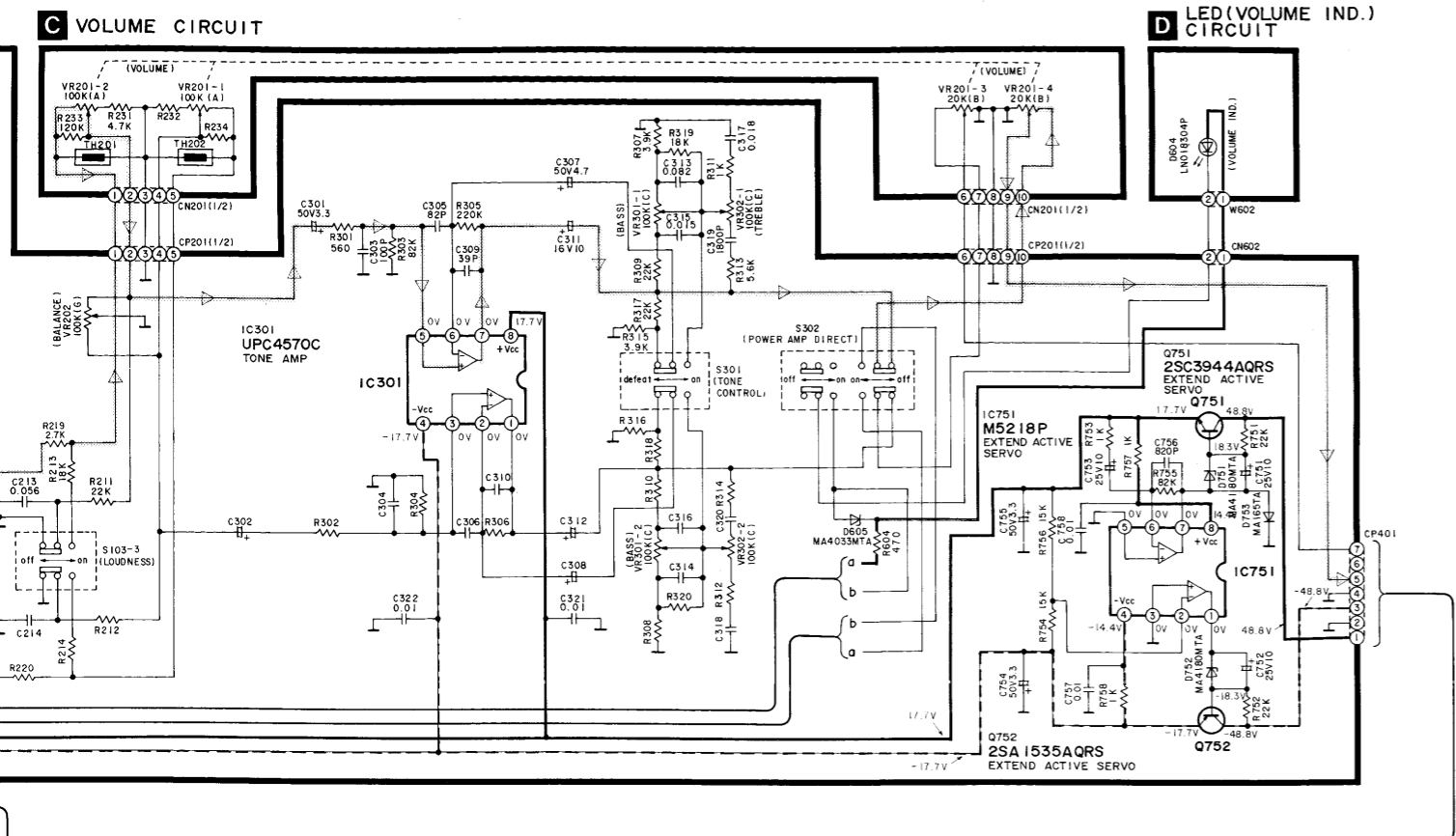
(This schematic development)

### Notes:

- S1 : F
- S101 : I
- S102 : F
- S103-1 : F
- S103-2 : M
- S103-3 : L
- S301 : T
- S302 : F
- S501-1 : S
- S501-2 : S



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



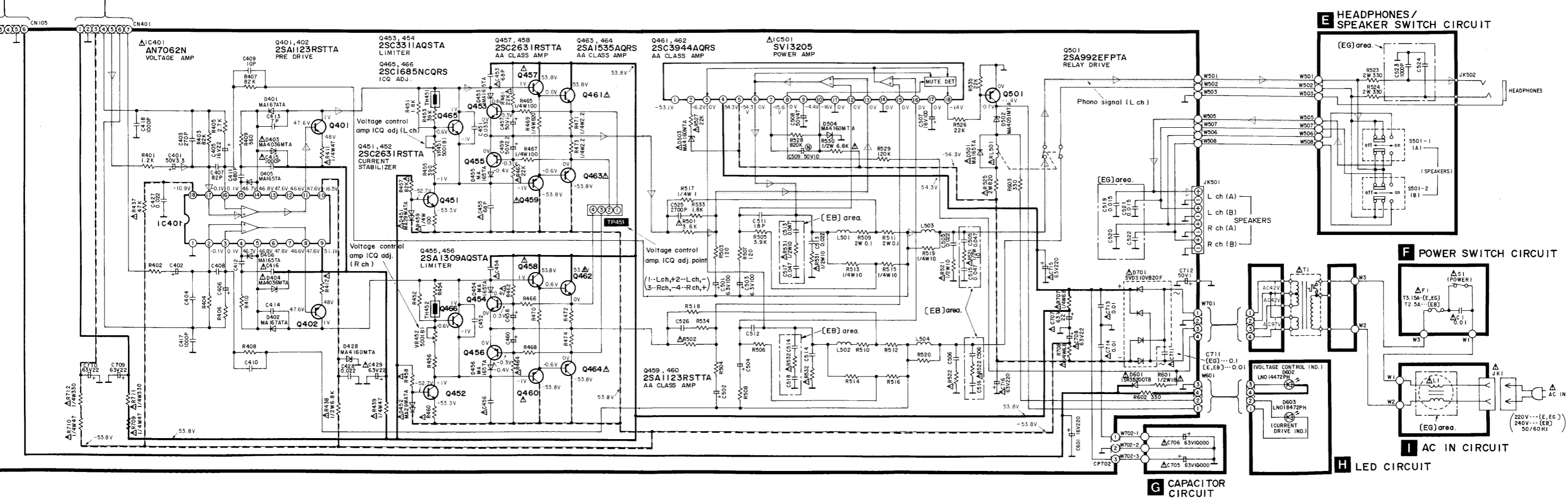
Notes:

- S1 : Power switch in "on" position.
  - S101 : Input selector switch in "phono" position.
  - S102 : Recording output selector switch in "tape 2/ DAT ▶ 1" position.
  - S103-1 : Phono cartridge selector switch in "MM" position.
  - S103-2 : Mode selector switch in "stereo" position.
  - S103-3 : Loudness switch in "off" position.
  - S301 : Tone control switch in "defeat" position.
  - S302 : Power amplifier direct switch in "off" position.
  - S501-1 : Speaker (A) selector switch in "off" position.
  - S501-2 : Speaker (B) selector switch in "off" position.
- : Positive voltage lines.  
 - - - : Negative voltage lines.  
 [Symbol] : Phono Signal (Lch)  
 [Symbol] : Recording Signal

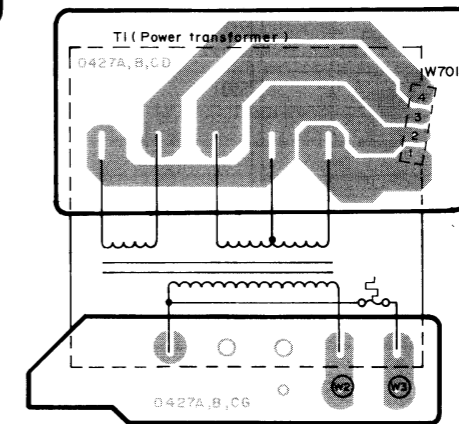
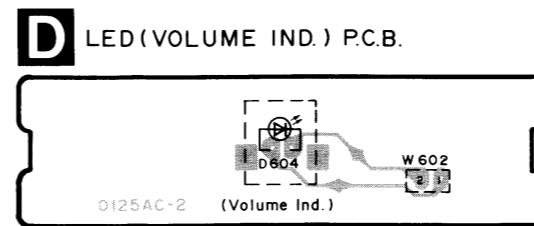
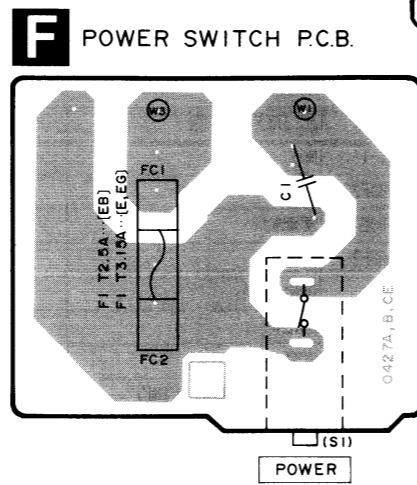
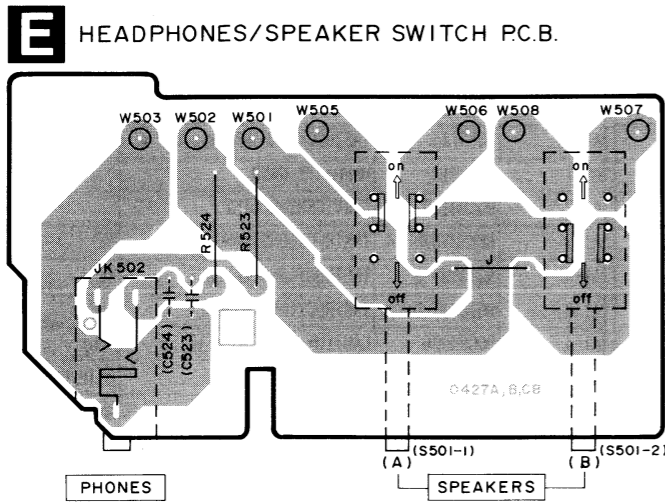
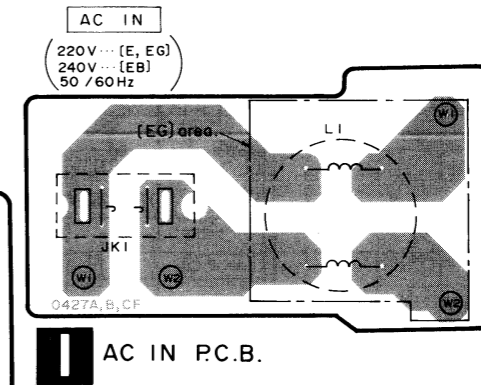
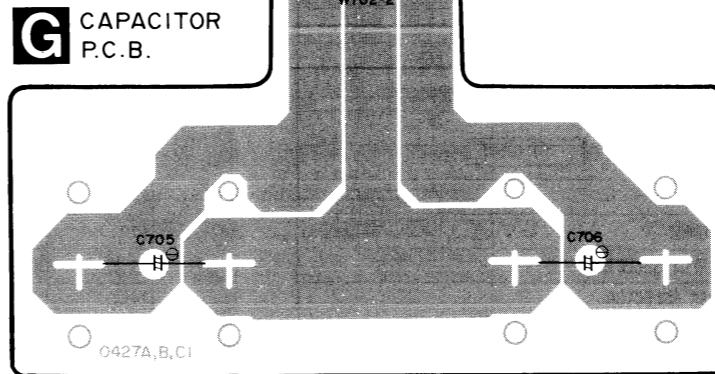
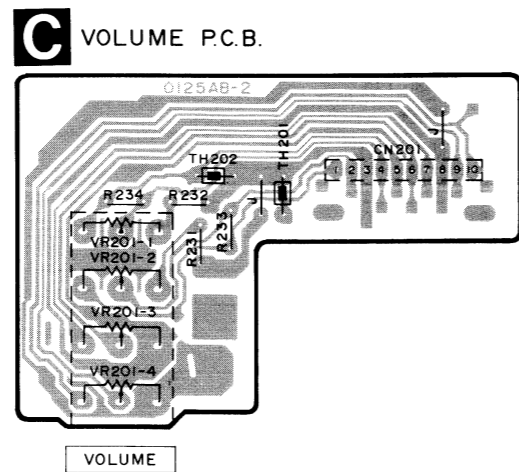
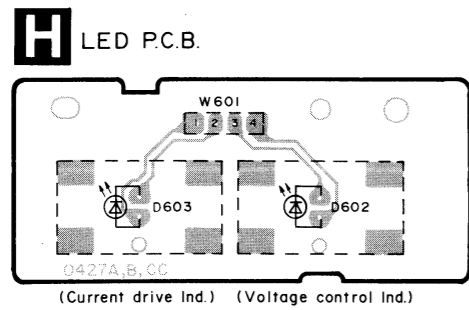
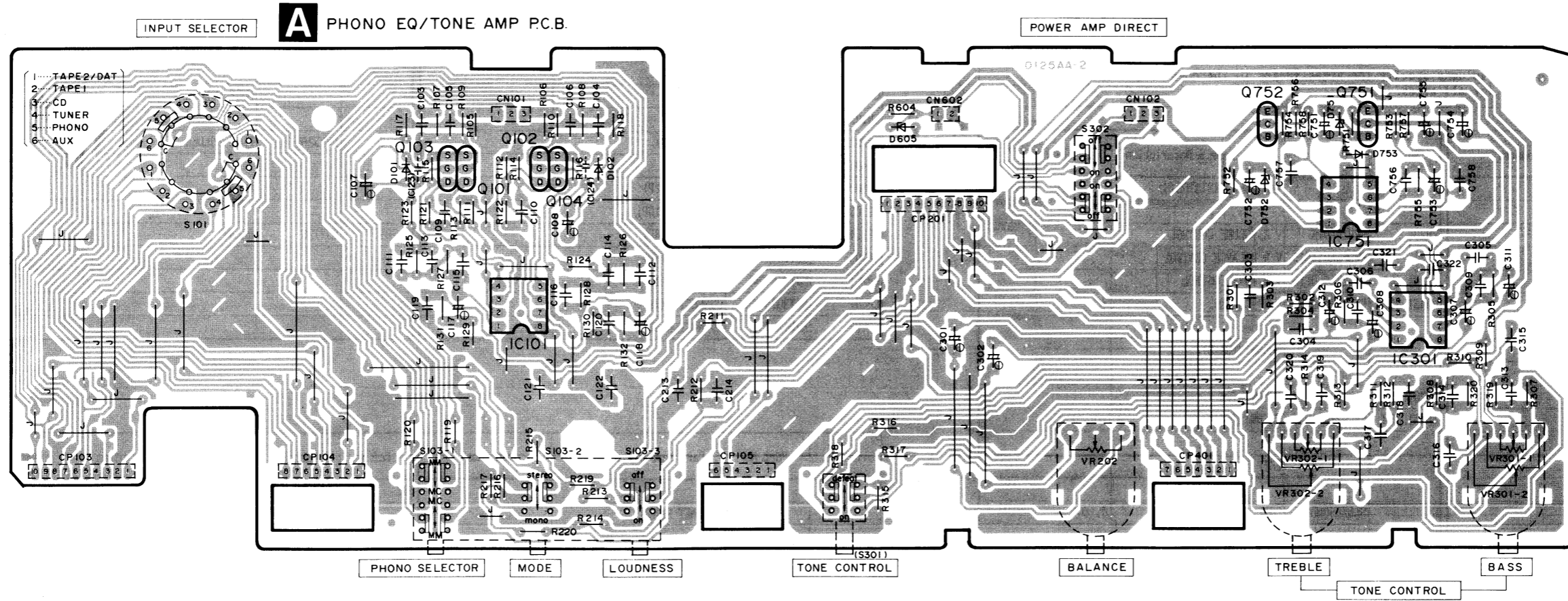
•Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

**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.

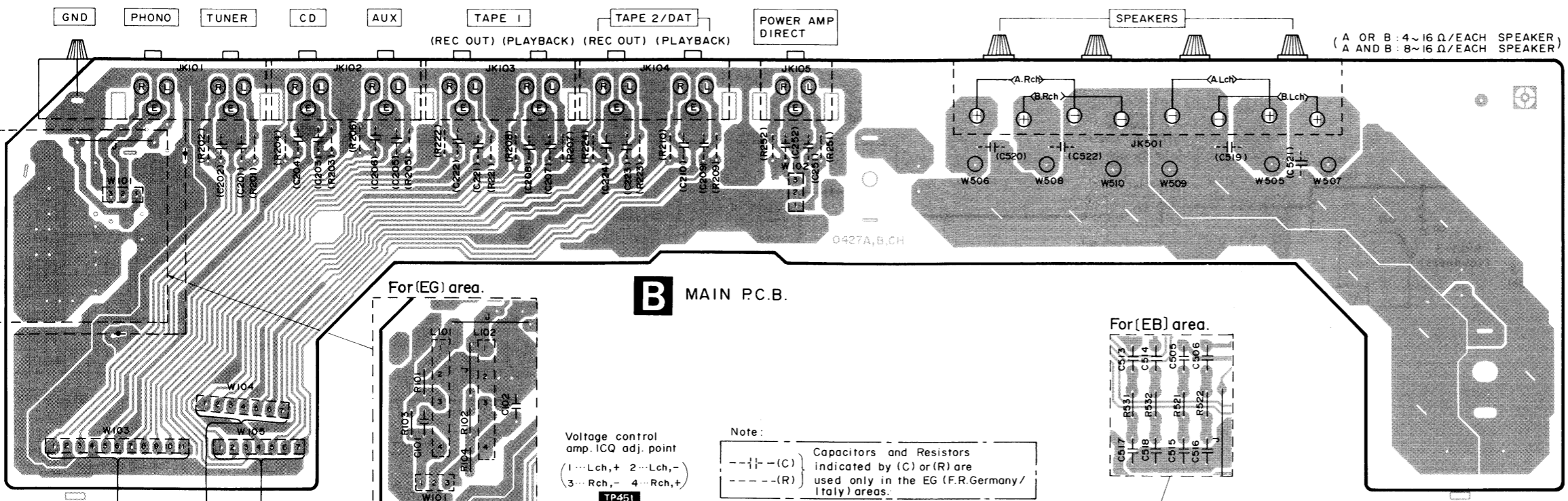
**\*Caution!**  
 IC and LSI are sensitive to static electricity.  
 Secondary trouble can be prevented by taking care during repair.  
 \*Cover the parts boxes made of plastics with aluminum foil.  
 \*Ground the soldering iron.  
 \*Put a conductive mat on the work table.  
 \*Do not touch the legs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



**PRINTED CIRCUIT BOARDS** (Parts list on pages 21, 22, 25, 26)



■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



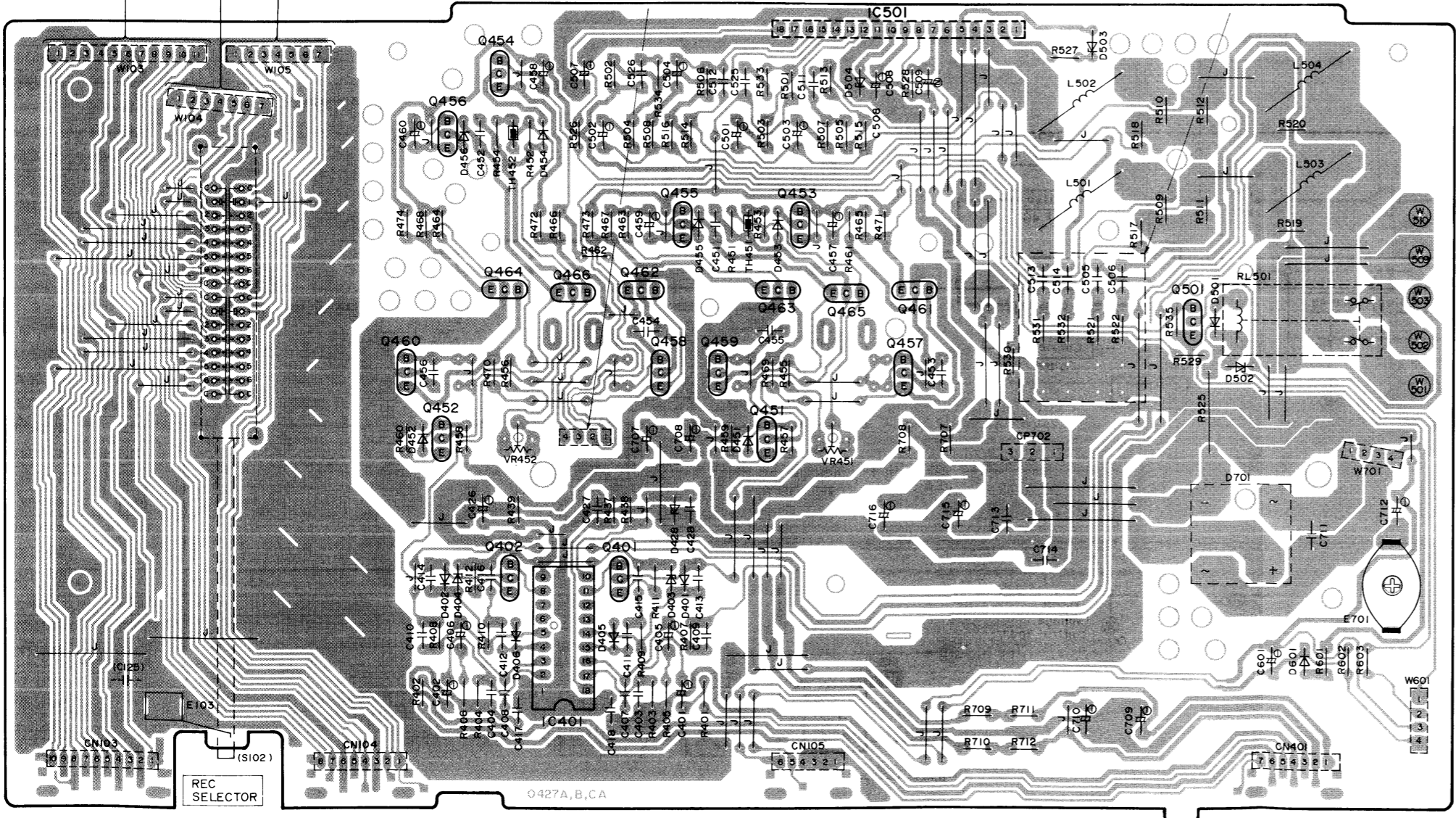
For (EG) area.

**B** MAIN P.C.B.

For (EB) area.

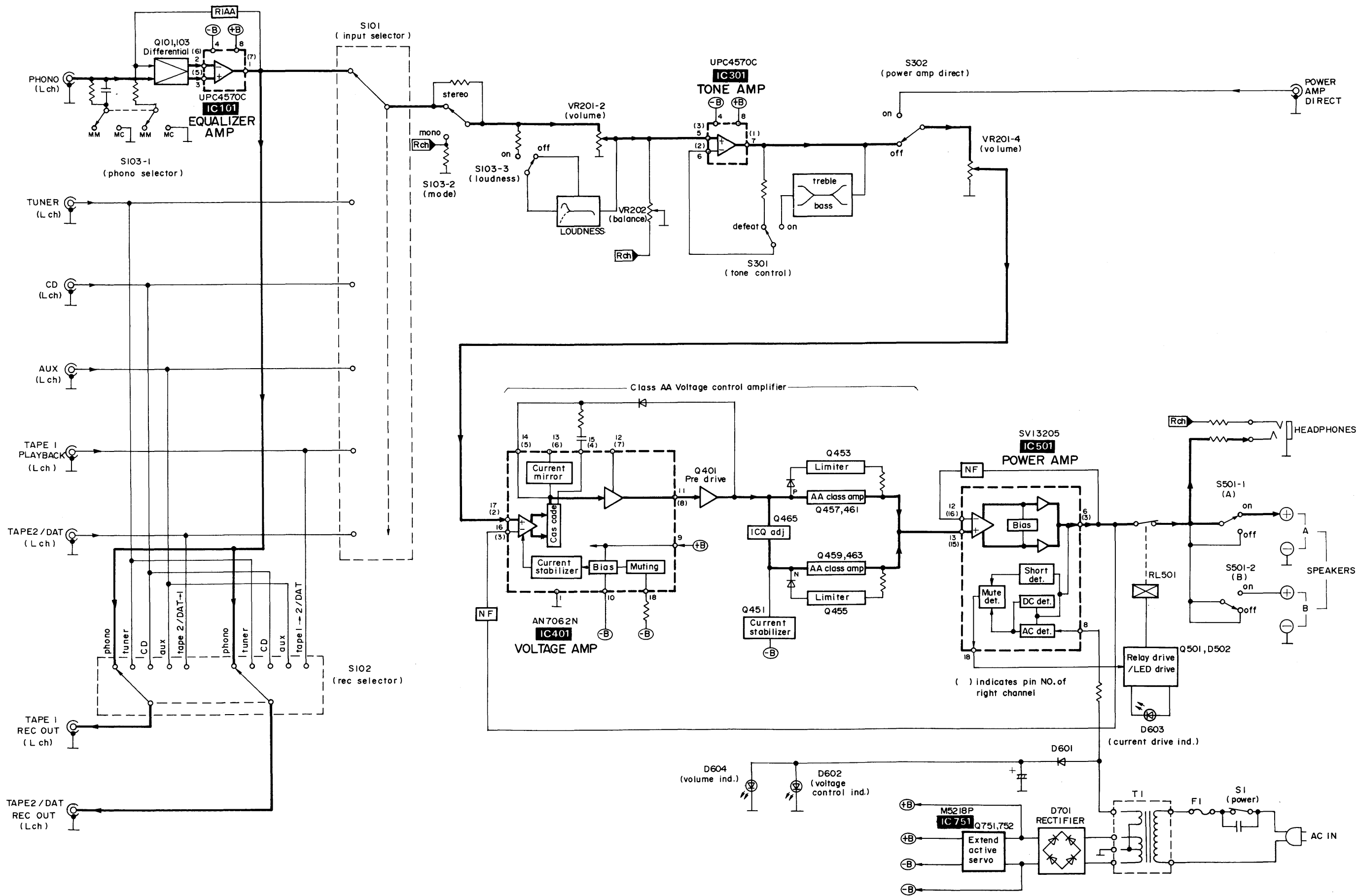
Voltage control amp. ICQ adj. point  
 1...Lch,+ 2...Lch,-  
 3...Rch,- 4...Rch,+  
 TP45

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



<p>M5218P</p>	<p>UPC4570C</p>
<p>AN7062N</p>	<p>SVI3205</p>
<p>2SC3311AQSTA 2SA1309AQSTA</p>	<p>2SK170BL</p>
<p>2SA1123RSTA 2SC1685NCQRS 2SC2631RSTTA 2SA992EFPTA</p>	<p>2SC3944AQRS 2SA1535AQRS</p>
	<p>MA165TA MA167ATA MA29WATA 1SR35200TB</p>
	<p>MA4033MTA MA4080MTA MA4036MTA MA4051MTA</p>
<p>MA4160MTA</p>	<p>SVDS10VB20F</p>
<p>LN014472PH LN018472PH</p>	<p>LN018304P</p>

■ BLOCK DIAGRAM





# 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.

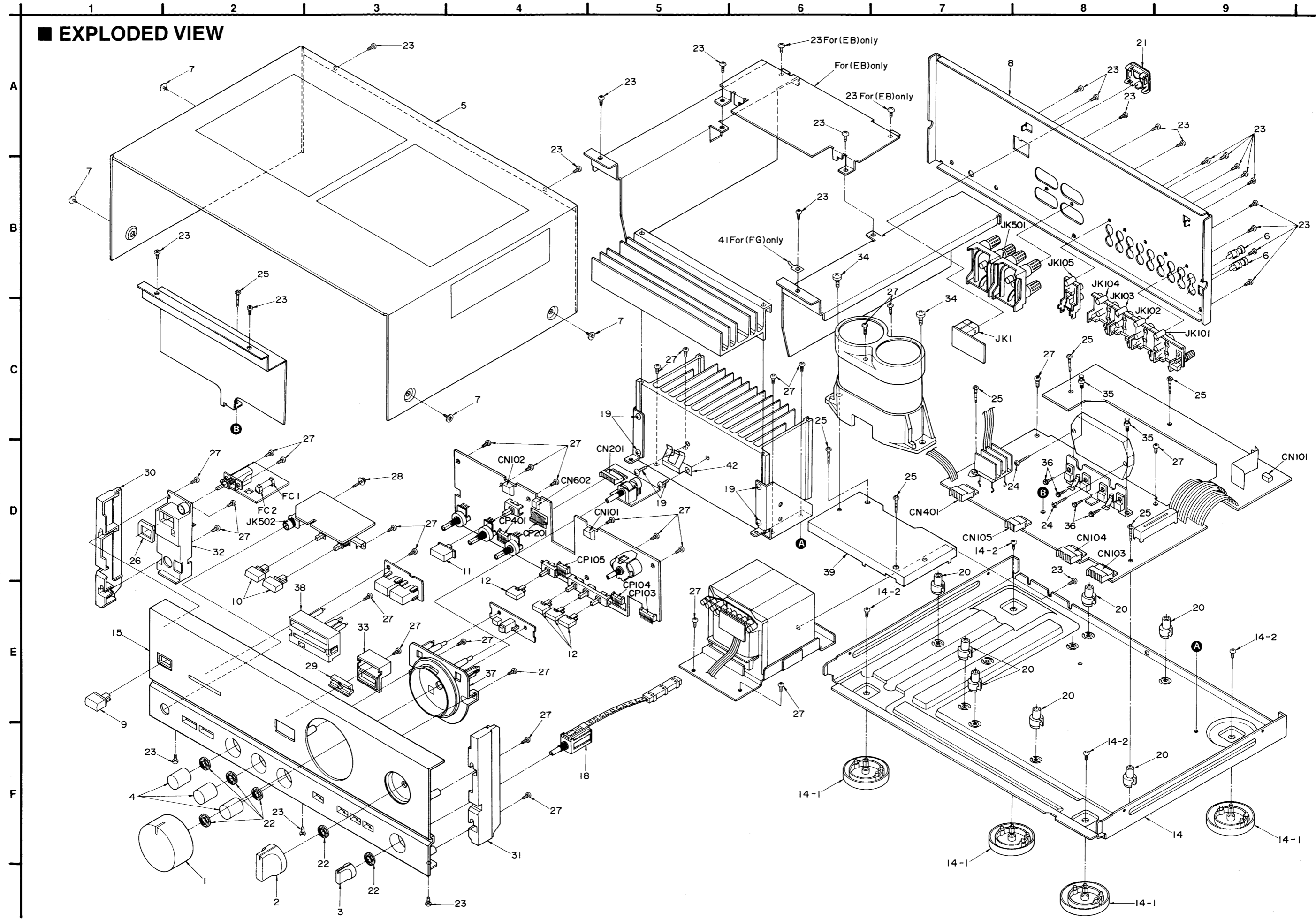
\* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)				VARIABLE RESISTOR(S)	
IC101	UPC4570C	IC, PHONO/EQ AMP.		VR201	RRV16J01A	V. R, VOLUME CONTROL	
IC301	UPC4570C	IC, TONE AMP.		VR202	EWHFDA014G15	V. R, BALANCE CONTROL	
IC401	AN7062N	IC, VOLTAGE AMP.	$\triangle$	VR301, 302	EW2XA000C15	V. R, TONE CONTROL	
IC501	SVI3205	IC, POWER AMP.	$\triangle$	VR451, 452	EVNDXAA00B52	V. R, ICQ ADJ.	
IC751	M5218P	IC, ACTIVE SERVO				THERMISTOR(S)	
		TRANSISTOR(S)		TH201, 202	ERTD2ZHL104T	THERMISTOR	
Q101-104	2SK170BL	TRANSISTOR		TH451, 452	ERTD2ZHL104T	THERMISTOR	
Q401, 402	2SA1123RSTTA	TRANSISTOR				COIL(S)	
Q451, 452	2SC2631RSTTA	TRANSISTOR		L1	SLQZ650MH49	COIL	$\triangle$ (EG)
Q453, 454	2SC3311AQSTA	TRANSISTOR		L101, 102	SLM1Z33	COIL	(EG)
Q455, 456	2SA1309AQSTA	TRANSISTOR		L501-504	SLQY18G-10	COIL	
Q457, 458	2SC2631RSTTA	TRANSISTOR	$\triangle$			TRANSFORMER(S)	
Q459, 460	2SA1123RSTTA	TRANSISTOR	$\triangle$	T1	RFKCUV670E-K	POWER TRANSFORMER	$\triangle$ (E, EG)
Q461, 462	2SC3944AQRS	TRANSISTOR	$\triangle$	T1	RFKCUV670EBK	POWER TRANSFORMER	$\triangle$ (EB)
Q463, 464	2SA1535AQRS	TRANSISTOR	$\triangle$			FUSE(S)	
Q465, 466	2SC1685NCQRS	TRANSISTOR		F1	XBA2C31TBO	FUSE 250V T3. 15A	$\triangle$ (E, EG)
Q501	2SA992EFPTA	TRANSISTOR		F1	XBA2C25TBO	FUSE 250V T2. 5A	$\triangle$ (EB)
Q751	2SC3944AQRS	TRANSISTOR				SWITCH(ES)	
Q752	2SA1535AQRS	TRANSISTOR		S1	ESB8249V	SW, POWER	$\triangle$
		DIODE(S)		S101	RSR6B001	SW, INPUT SELECTOR	
D101, 102	MA165TA	DIODE		S102	RSS6D001	SW, REC SELECTOR	
D401, 402	MA167ATA	DIODE		S103	ESB68106	SW, MODE/LOUDNESS/PHONO	
D403, 404	MA4036MTA	DIODE	$\triangle$	S301	ESB68107	SW, TONE CONTROL	
D405, 406	MA165TA	DIODE		S302	ESB68109	SW, POWER AMP DIRECT	
D428	MA4160MTA	DIODE		S501	RSP2002	SW, SPEAKER SELECTOR	
D451, 452	MA29WATA	DIODE	$\triangle$			JACK(S)	
D453-456	MA165TA	DIODE		JK1	SJS9231-1B	AC INLET	$\triangle$
D501	MA165TA	DIODE	$\triangle$	JK101	SJF3067NJ	TERMINAL BOARD	
D502	MA4051MTA	DIODE		JK102-104	SJF3069N	TERMINAL BOARD	
D503	MA4160MTA	DIODE	$\triangle$	JK105	SJF3068NJ	TERMINAL BOARD	
D504	MA4160MTA	DIODE		JK501	SJF4819	SP TERMINAL	
D601	1SR35200TB	DIODE	$\triangle$	JK502	SJJD19	HEADPHONES JACK	
D602	LN014472PH	LED		CN101, 102	SJT3321	CONNECTOR(3P)	
D603	LN018472PH	LED					
D604	LN018304P	LED					
D605	MA4033MTA	DIODE					
D701	SVDS10VB20F	DIODE	$\triangle$				
D751, 752	MA4180MTA	DIODE					
D753	MA165TA	DIODE					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
CN103	SJS51080WL	SOCKET (10P)					
CN104	SJS50880WL	SOCKET (8P)				FUSE HOLDER	
CN105	SJS50680WL	SOCKET (6P)					
CN201	SJS51080WL	SOCKET (10P)		FC1, 2	EYF52BC	FUSE HOLDER	△
CN401	SJS50780WL	SOCKET (7P)					
CN602	SJT3215	CONNECTOR (2P)				RELAY	
CP103	SJT31047WL	CONNECTOR (10P)					
CP104	SJT30847WL	CONNECTOR (8P)		RL501	SSY126	RELAY	△
CP105	SJT30647WL	CONNECTOR (6P)					
CP201	SJT31047WL	CONNECTOR (10P)					
CP401	SJT30747WL	CONNECTOR (7P)					
CP702	RJPIA3303	CONNECTOR (3P)					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS					
1	RGW002-2K	VOLUME KNOB		31	RGK0108-K	SIDE ORNAMENT (R)	
2	RGW0029-K	INPUT SELECT KNOB		32	RMRO144	HOLDER	
3	RGW0027-2K	REC SELECT KNOB		33	RMRO137-K	HOLDER	
4	RGW0030-K	BALANCE/TONE KNOB		34	XTB4+10FFZ	SCREW	
5	RKMO041-K	CABINET		35	SHR415	LATCH	
6	SJPA11-1	SHORT PIN		36	XTW3+8T	SCREW	
7	SNE2129-1	SCREW		37	RFKNUV570EK1	VOLUME ORNAMENT	
8	RGR0021A-E	REAR PANEL	(E)	38	RFKNUV470EK2	INDICATOR ORNAMENT	
8	RGR0021A-G	REAR PANEL	(EB)	39	RMN0083	BASE	
8	RGR0021A-F	REAR PANEL	(EG)	41	SUS890	SPRING	(EG)
9	RGU0030	POWER BUTTON		42	RMC0032	SPRING	
10	RGU0118-K	SPEAKER BUTTON				PACKING MATERIAL	
11	RGU0119-K	DIRECT BUTTON		P1	RPG0554	CARTON BOX	
12	RGU0120-K	SIGNAL BUTTON		P2	SPS5185	PAD (POWER CORD)	
14	RFKJUV670E-K	CHASSIS ASS'Y		P3	SPS5257-2	PAD (FRONT)	
14-1	RKA0009-1	FOOT		P4	SPS5258-2	PAD (REAR)	
14-2	XTB3+6J	SCREW		P5	SPP701	PROTECTION COVER	
15	RFKJUV670E-K	FRONT PANEL ASS'Y				ACCESSORIES	
18	RSQ0004	REC SELECTOR		A1	RQF0712	INSTRUCTIONS MANUAL ASS'Y	(E)
19	XTB3+8J	SCREW		A1	RQF0713	INSTRUCTIONS MANUAL ASS'Y	(EB)
20	SHE187-2	HOLDER		A1	RQF0714	INSTRUCTIONS MANUAL ASS'Y	(EG)
21	SJS9231A	AC INLET COVER		A1-1	RQA0013	WARRANTY CARD	
22	SNE4021-1	NUT		A1-2	RQCB0169	SERVICENTOR LIST	
23	XTBS3+8JFZ1	SCREW		A1-3	RFKSUV670E-K	INSTRUCTIONS MANUAL	(E)
24	XTB3+16JFZ	SCREW		A1-3	RQT0708-B	INSTRUCTIONS MANUAL	(EB)
25	XTB3+20JFZ	SCREW		A1-3	RQT0617-D	INSTRUCTIONS MANUAL	(EG)
26	RGQ0006-1	ORNAMENT		A1-4	RQCS0009	CAUTION NOTE for FTZ	(EG)
27	XTB3+8JFZ	SCREW		A2	SFDAC05E03	POWER CORD	△ (E, EG)
28	XTWS3+8T	SCREW		A2	SJA193	POWER CORD	△ (EB)
29	RGK0097	ORNAMENT (GOLD LINE)					
30	RGK0109-K	SIDE ORNAMENT (L)					

EXPLODED VIEW



Notes : \* Capacity value are in microfarads ( $\mu\text{F}$ ) 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.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R455, 456	ERDS2TJ391T	1/4W 390	C115, 116	ECQV1H393JZ3	50V 0.039U
			R457, 458	ERDS2TJ823T	1/4W 82K $\Delta$	C117, 118	UES1H010M1TA	50V 1U
			R459, 460	ERDFS2VJ101T	1/4W 100 $\Delta$	C119, 120	ECQM1H472KV3	50V 4700P
R101-104	ERDS2TJ102T	1/4W 1K (EG)	R461-464	ERDS2TJ223T	1/4W 22K $\Delta$	C121, 122	ECKR1H472KB5	50V 4700P
R105, 106	ERDS2TJ473T	1/4W 47K	R465-468	ERDFS2VJ101T	1/4W 100	C123, 124	ECBT1H270J5	50V 27P (EG)
R107, 108	ERDS2TJ221T	1/4W 220	R469, 470	ERDFS2VJ821T	1/4W 820	C125	ECBT1H820KB5	50V 82P (EG)
R109, 110	ERDS2TJ220T	1/4W 22	R471-474	ERDFS2VJ2R2T	1/4W 2.2	C201-210	ECBT1H101KB5	50V 100P (EG)
R111-116	FSR25TJ332T2	1/4W 3.3K	R501, 502	ERD25FVJ362T	1/4W 3.6K $\Delta$	C213, 214	ECQV1H563JZ3	50V 0.056U
R117, 118	ERDS2TJ151T	1/4W 150	R503, 504	ERDFS2VJ121T	1/4W 120	C221-224	ECBT1H181KB5	50V 180P (EG)
R119, 120	ERDS2TJ100T	1/4W 10	R505, 506	ERDFS2VJ392T	1/4W 3.9K	C251, 252	ECBT1H101KB5	50V 100P (EG)
R121, 122	ERDS2TJ101T	1/4W 100	R507, 508	ERDFS2VJ121T	1/4W 120	C301, 302	ECA1HPXS3R3B	50V 3.3U
R123, 124	ERDS2TJ151T	1/4W 150	R509-512	RREMKR1OSC	2W 0.1	C303, 304	ECBT1H101KB5	50V 100P
R125, 126	ERDS2TJ682T	1/4W 6.8K	R513-516	ERDFS2VJ100T	1/4W 10	C305, 306	ECBT1H820KB5	50V 82P
R127, 128	ERDS2TJ823T	1/4W 82K	R517, 518	ERDFS2VJ1R0T	1/4W 1	C307, 308	ECA1HPXS4R7B	50V 4.7U
R129, 130	ERDS2TJ334T	1/4W 330K	R519, 520	ERDFS2VJ100T	1/4W 10	C309, 310	ECBT1H390J5	50V 39P
R131, 132	ERDS2TJ561T	1/4W 560	R521, 522	ERDS1FVJ100T	1/2W 10 $\Delta$	C311, 312	ECA1CPXS100B	16V 10U
R201, 202	ERDS2TJ102T	1/4W 1K (EG)	R523, 524	ERG2SJ331H	2W 330	C313, 314	ECQV1H823JZ3	50V 0.082U
R203, 204	ERDAS3G102T	1/4W 1K (EG)	R525	ERG2SJ821H	2W 820 $\Delta$	C315, 316	ECQM1H153KV3	50V 0.015U
R205-210	ERDS2TJ102T	1/4W 1K (EG)	R526	ERDS2TJ223T	1/4W 22K	C317, 318	ECQM1H183KV3	50V 0.018U
R211, 212	ERDAS3G223T	1/4W 22K	R527	ERDS2TJ223T	1/4W 22K $\Delta$	C319, 320	ECQM1H182KV3	50V 1800P
R213, 214	ERDS2TJ183T	1/4W 18K	R528	ERDS2TJ824T	1/4W 820K	C321, 322	ECKR1H103ZF5	50V 0.01U
R215, 216	ERDS2TJ332T	1/4W 3.3K	R529	ERDS2TJ124T	1/4W 120K	C401, 402	ECA1HPXS3R3B	50V 3.3U
R217	ERDS2TJ824T	1/4W 820K	R530	ERDS1FVJ682T	1/2W 6.8K $\Delta$	C403, 404	ECBT1H271KB5	50V 270P
R219, 220	ERDAS3G272T	1/4W 2.7K	R531, 532	ERDS1FVJ100T	1/2W 10 $\Delta$	C405, 406	ECA1CPXS220B	16V 22U
R221-224	ERDS2TJ471T	1/4W 470 (EG)	R533, 534	ERDS2TJ182T	1/4W 1.8K	C407, 408	ECBT1H820KB5	50V 82P
R231, 232	ERDAS3G472T	1/4W 4.7K	R535	ERDS2TJ223T	1/4W 22K	C409, 410	ECBT1H100J5	50V 10P
R233, 234	ERDAS3G124T	1/4W 120K	R601	ERDS1FVJ180T	1/2W 18 $\Delta$	C411, 412	ECBT1H681KB5	50V 680P
R251, 252	ERDAS3G102T	1/4W 1K (EG)	R602, 603	ERDS2TJ331T	1/4W 330	C413, 414	ECCR2H070D5	500V 7P
R301, 302	ERDAS3G561T	1/4W 560	R604	ERDS2TJ471T	1/4W 470	C415, 416	ECBT1H102KB5	50V 1000P $\Delta$
R303, 304	ERDS2TJ823T	1/4W 82K	R707, 708	ERDFS2VJ6R8T	1/4W 6.8 $\Delta$	C417, 418	ECBT1H102KB5	50V 1000P
R305, 306	ERDS2TJ224T	1/4W 220K	R709, 710	ERDFS2VJ470T	1/4W 47 $\Delta$	C427, 428	ECKR1H223ZF5	50V 0.022U
R307, 308	ERDS2TJ392T	1/4W 3.9K	R711, 712	ERDFS2VJ331T	1/4W 330 $\Delta$	C429	ECEA1JU220B	63V 22U $\Delta$
R309, 310	ERDS2TJ223T	1/4W 22K	R751, 752	ERDS2TJ223T	1/4W 22K	C451, 452	ECKR1H333ZF5	50V 0.033U
R311, 312	ERDS2TJ102T	1/4W 1K	R753	ERDS2TJ102T	1/4W 1K	C453-456	ECCR2H680K5	500V 68P $\Delta$
R313, 314	ERDS2TJ562T	1/4W 5.6K	R754	ERDS2TJ153T	1/4W 15K	C457, 458	ECEA1HK010B	50V 1U
R315, 316	ERDAS3G392T	1/4W 3.9K	R755	ERDS2TJ823T	1/4W 82K	C459, 460	ECEA1HK2R2B	50V 2.2U
R317, 318	ERDAS3G223T	1/4W 22K	R756	ERDS2TJ153T	1/4W 15K	C501-504	ECAQ1PXS101B	6V 100U
R319, 320	ERDS2TJ183T	1/4W 18K	R757, 758	ERDS2TJ102T	1/4W 1K	C505, 506	ECKR1H223ZF5	50V 0.022U (E, EG)
R401, 402	ERDS2TJ122T	1/4W 1.2K				C505, 506	ECKR1H473ZF5	50V 0.047U (EB)
R403, 404	ERDS2TJ823T	1/4W 82K			CAPACITORS	C507	ECEA1CU101B	16V 100U
R405, 406	ERDAS3G272T	1/4W 2.7K				C508	ECEA1HU470B	50V 47U
R407, 408	ERDAS3G823T	1/4W 82K	C1	ECKWKC103PF2	400V 0.01U $\Delta$	C509	ECEA1HN100SB	50V 10U
R409, 410	ERDS2TJ561T	1/4W 560	C101, 102	ECBT1H120J5	50V 12P (EG)	C511, 512	ECBT1H180J5	50V 18P
R411, 412	ERDFS2VJ470T	1/4W 47 $\Delta$	C103, 104	ECKR1H103ZF5	50V 0.01U	C513, 514	ECKR1H223ZF5	50V 0.022U (E, EG)
R437	ERDS2TJ473T	1/4W 47K $\Delta$	C105, 106	ECBT1H820KB5	50V 82P	C513, 514	ECKR1H473ZF5	50V 0.047U (EB)
R438	ERDS1FVJ682T	1/2W 6.8K $\Delta$	C107, 108	ECEA0JU22E	6.3V 2200U	C515-518	ECKR1H473ZF5	50V 0.047U (EB)
R439	ERDFS2VJ470T	1/4W 47 $\Delta$	C109, 110	ECQM1H222KV3	50V 2200P	C519-522	ECQM1H153KV3	50V 0.015U (EG)
R451, 452	ERDS2TJ182T	1/4W 1.8K	C111, 112	ECQM1H122KV3	50V 1200P	C523, 524	ECBT1H102KB5	50V 1000P (EG)
R453, 454	ERDS2TJ393T	1/4W 39K	C113, 114	ECQM1H103KV3	50V 0.01U	C525, 526	ECQB1H272JZ3	50V 2700P

