

Service Manual

Stereo Integrated Amplifier

Amplifier

SU-VX820



Colour

(K)	Black Type
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Areas

Suffix for Model No.	Area	Colour
(EB)	Great Britain.	(K)
(EG)	Europe	

SPECIFICATIONS (DIN 45 500)

■ MAIN AMP. SECTION (POWER AMP. DIRECT input)

20 Hz~20 kHz continuous power output
both channels driven: 2×90 W (8Ω)

1 kHz continuous power output
both channels driven (THD: 1%): 2×100 W (8Ω)
2×135 W (4Ω)

63 Hz~12.5 kHz continuous power output
both channels driven (THD: 0.7%): 2×90 W (8Ω)
2×125 W (4Ω)

Total harmonic distortion
rated power at 20 Hz~20 kHz: 0.007% (8Ω)
half power at 20 Hz~20 kHz: 0.005% (8Ω)
half power at 1 kHz: 0.0009% (8Ω)
0.002% (4Ω)

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

Residual hum and noise: 0.2 mV

Damping factor: 80 (8Ω)
40 (4Ω)

Headphones output level/impedance: 635 mV/330Ω

Load impedance
A or B, BI-WIRING: 4~16Ω
A and B: 8~16Ω

■ PRE AMP. SECTION

Input sensitivity/impedance
PHONO MM: 2.5 mV/47 kΩ
MC: 250 μV/220Ω

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT: 150 mV/22 kΩ

POWER AMP. DIRECT: 1 V/18 kΩ

Phono maximum input voltage (1 kHz, RMS)
MM: 170 mV
MC: 15 mV

S/N (Rated power, 4Ω)

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

MC: 68 dB (68 dB, IHF '66)

TUNER, CD, AUX, TAPE 1, TAPE 2/DAT:
97 dB (100 dB, IHF '66)
106 dB (115 dB, IHF '66)

POWER AMP. DIRECT:

S/N at -26 dB power (4Ω)

PHONO MM: 77 dB

MC: 67 dB

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

S/N at 50 mW power (4Ω)

PHONO MM: 75 dB

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:
3 Hz~120 kHz (+0, -3 dB)
+0 dB, -0.2 dB (20 Hz~20 kHz)

Tone controls

BASS: 50 Hz, +10~-10 dB

TREBLE: 20 kHz, +10~-10 dB

Muting: -20 dB

Subsonic filter: 20 Hz, -12 dB/oct

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~6.3 kHz): ±1 dB

Channel separation (AUX 1 kHz): 50 dB

Technics

■ GENERAL

Power consumption: 320 W
 Power supply: AC 50 Hz/60 Hz, 230/240 V
 Dimensions (W×H×D): 430×158×429 mm
 Weight: 13.4 kg

Notes:

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

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■ BEFORE REPAIR AND ADJUSTMENT

- (1) Turn off the power supply. Using a 10Ω, 10 W resistor, shortcircuit both ends of power supply capacitors (C601, C602) 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, VR452, VR501 and VR502) 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 230 V	AC 240 V
Consumed current	50 Hz	110~210 mA	100~200 mA
	60 Hz		

■ 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.

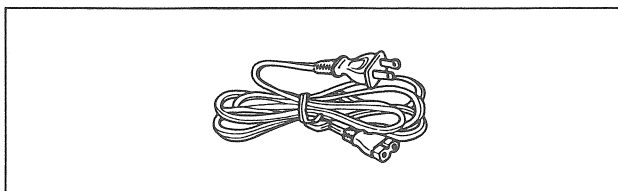
If this occurs, follow the procedure outlined below:

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

Note:

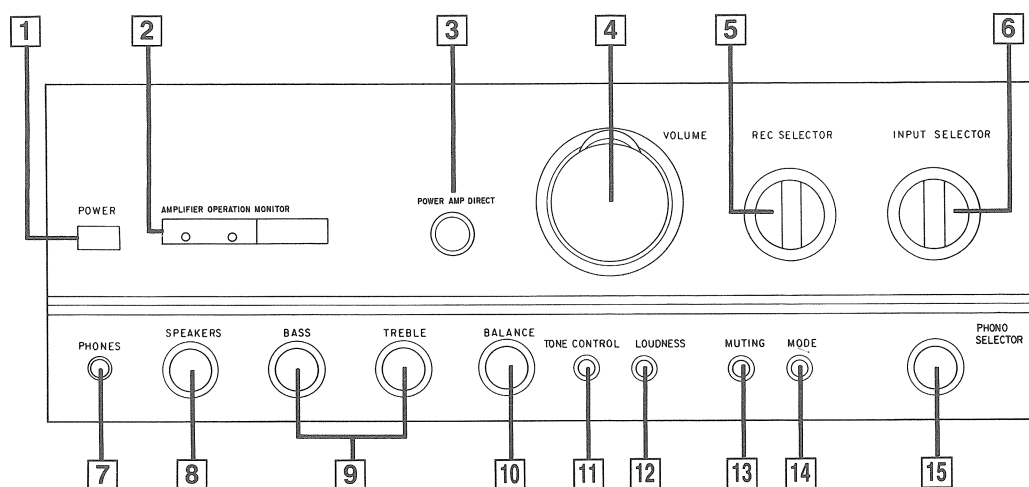
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ ACCESSORY



- AC power supply cords 1
 <RJA0019-1K> For (EG) area.
 <SJA193> For (EB) area.

■ LOCATION OF CONTROLS



1 Power switch (POWER)

2 Operation indicators (AMPLIFIER OPERATION MONITOR)

These indicators illuminate 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 operating condition.

CURRENT DRIVE:

When the power is switched ON, this indicator illuminates after about 4 seconds when the unit is in the operating 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 will 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 amplifier section of this unit. The tone control circuit, balance control, loudness switch, muting switch and mode selector are bypassed.

4 Volume control/indicator (VOLUME)

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

5 Recording 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).

6 Input selector (INPUT SELECTOR)

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

7 Headphones jack (PHONES)

8 Speaker selector (SPEAKERS)

This selector is used to select the speakers to be used.

9 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.

10 Balance control (BALANCE)

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

11 Tone control switch (TONE CONTROL)

This switch is used to set the tone control circuit (bass, treble) to ON or DEFEAT.

12 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.

13 Muting switch (MUTING)

This switch is used to temporarily reduce the volume level (approx. 1/10).

The effect activates when setting this switch to the "ON" position.

14 Mode selector (MODE)

This selector is used to select stereo or monaural operation.

15 Phono cartridge selector (PHONO SELECTOR)

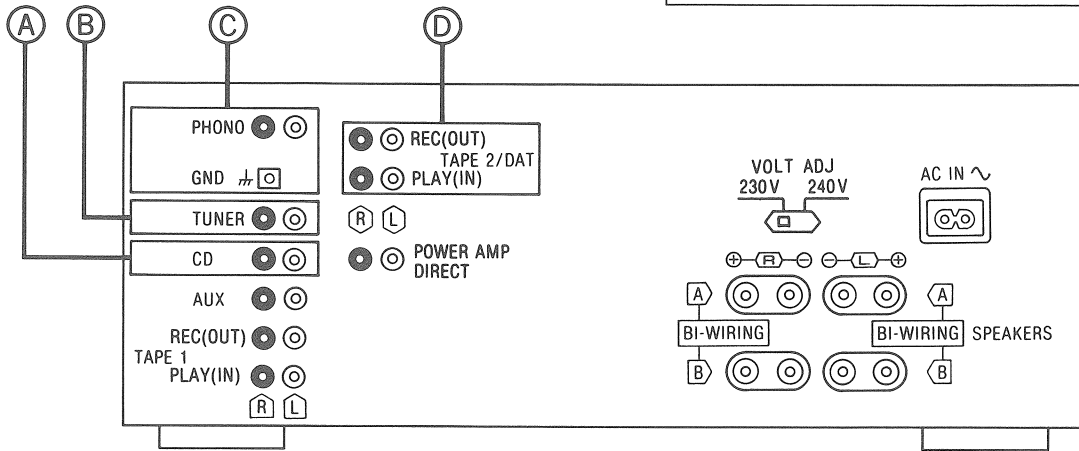
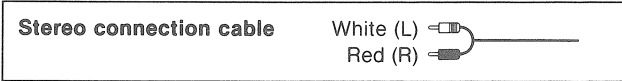
This selector should be set to the position which corresponds to the type of cartridge used on the turntable.

The "SUBSONIC" position is used to eliminate ultra-low-frequency noise such as motor "rumble" and unusual vibration of the woofer cone caused by a warped disc, etc.

CONNECTIONS

To connect to each terminals

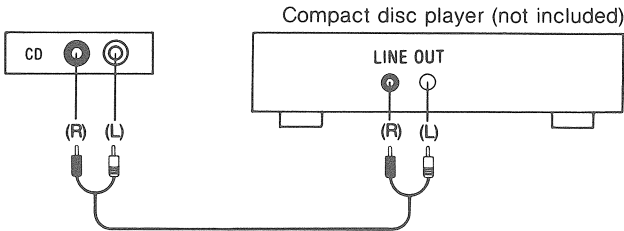
Make connections to each component in the system by using stereo connection cables (not included).



•Phono input capacitance is about 220 pF.

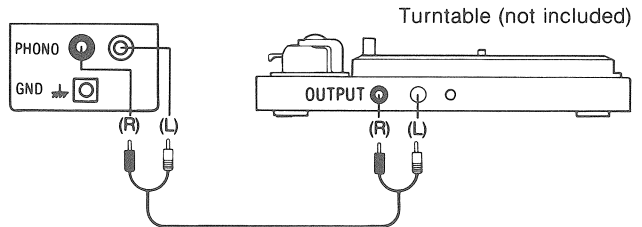
A "CD" terminals

Connect to a compact disc player



C "PHONO" terminals

Connect to a turntable.

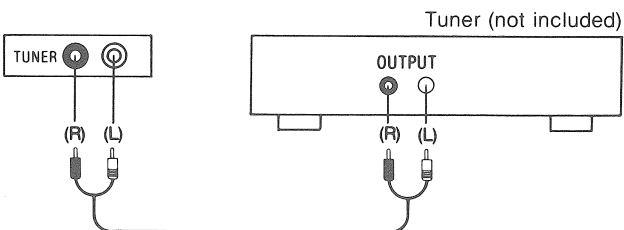


"GND" terminal

This terminal is for use with a turntable which has a ground wire.

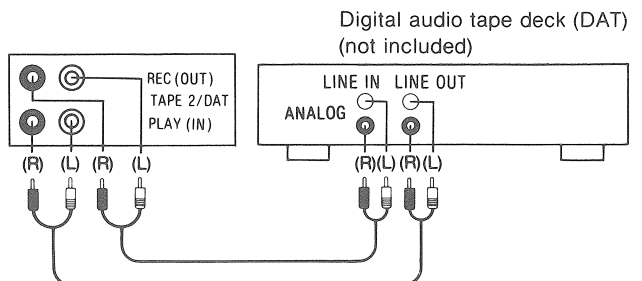
B "TUNER" terminals

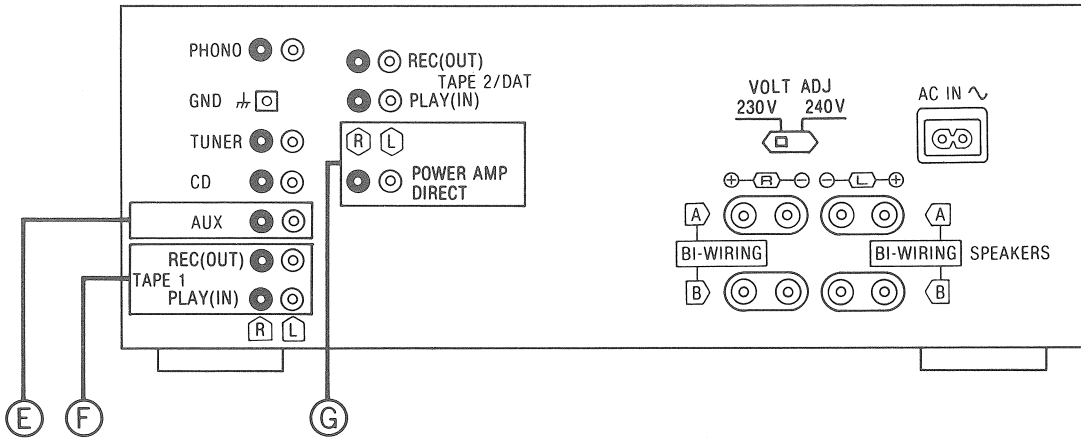
Connect to a tuner



D "TAPE 2/DAT" terminals

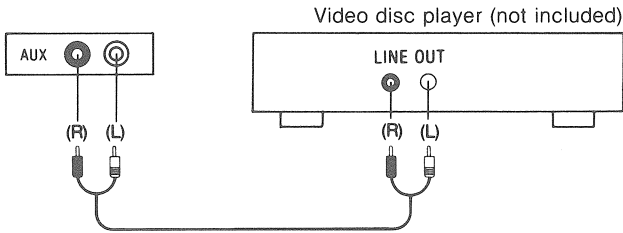
Connect to a second tape deck or a digital audio tape deck (DAT).





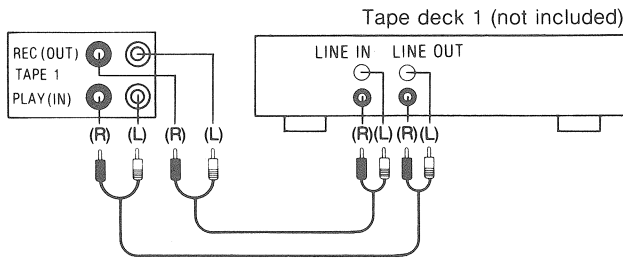
E “AUX” terminals

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



F “TAPE 1” terminals

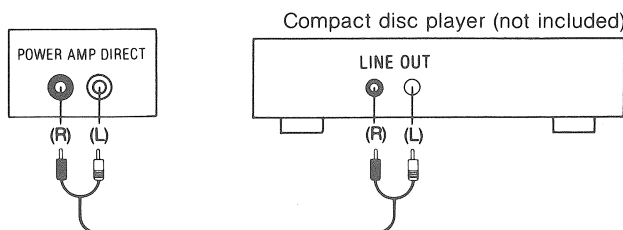
Connect to a first tape deck.



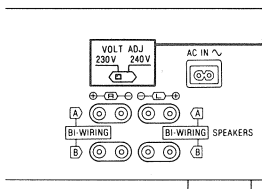
G “POWER AMP DIRECT” terminals

Connect to a compact disc player, a digital audio tape deck, or a D/A converter.

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



To set the power voltage



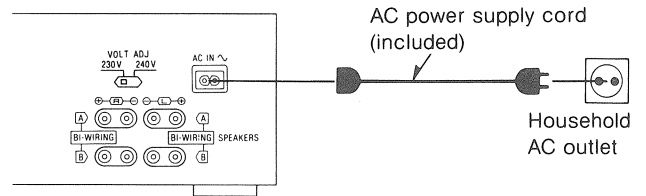
Set the voltage selector to the voltage setting for the area in which the unit will be used. [Use a minus (-) screwdriver]

Note:

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

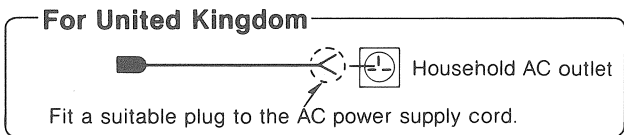
To connect the AC power supply cord (included)

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



Note:

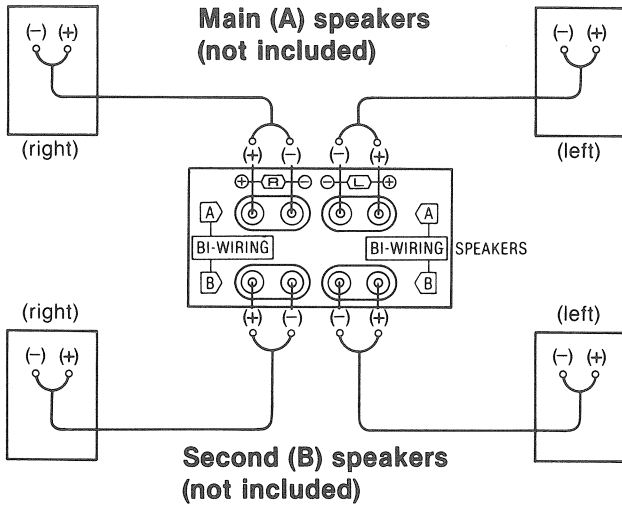
The configuration of the AC power supply cord differs according to area.



To connect to speakers

One pair of speakers can be connected to the "A" terminals of this unit and one pair to the "B" terminals, or only one pair of bi-wired speakers can be connected to all terminals.

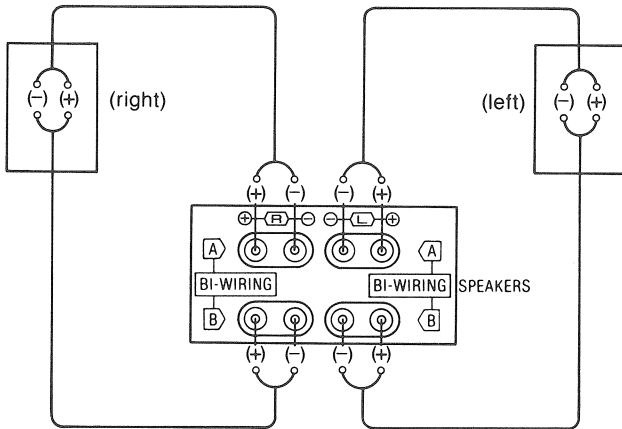
To connect main and/or second speakers



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 bi-wired speakers



Note: Connect only bi-wired speakers in this way.

Load impedance

When bi-wired speakers are used: 4 – 16 ohms

Bi-wiring

The treble range and the bass range of the speakers are connected to the speaker terminals of the amplifier by using two speaker connection cords separately for each.

As a result of making connections in this way, sound can be reproduced with much greater nuance and detail, with the feelings of air oscillation and deepness of sound provided by an input source that suppresses reciprocal band-range interference. (Refer to the operating instructions of the speakers.)

To connect cords to terminals

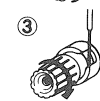
- 1 Strip off the outer covering, and twist the center conductor.



- 2 Turn completely to the left.



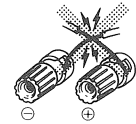
- 3 Insert the wire and turn completely to the right. Pull the cord to assure a proper connection.



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

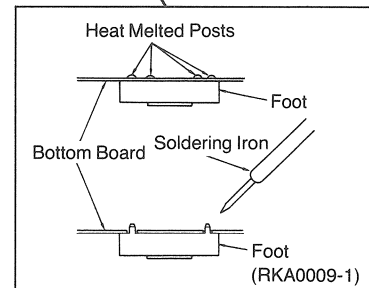
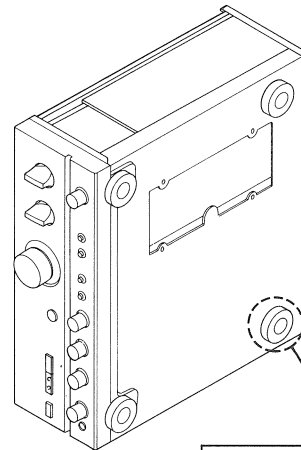
Note:

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



Replacement of the Foot

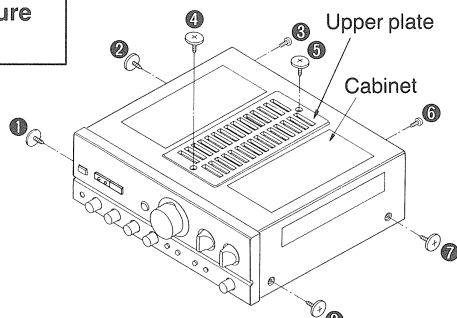
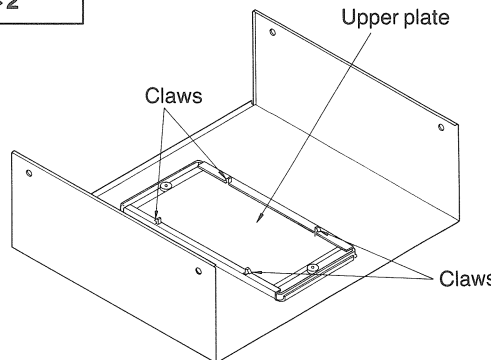
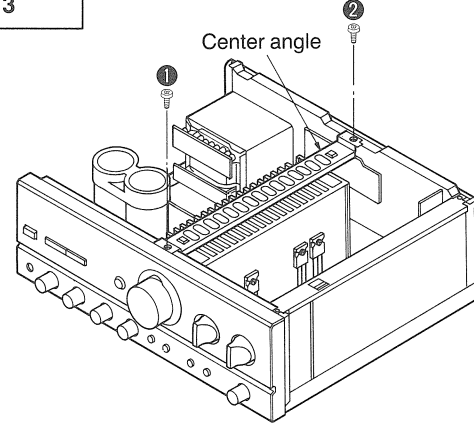
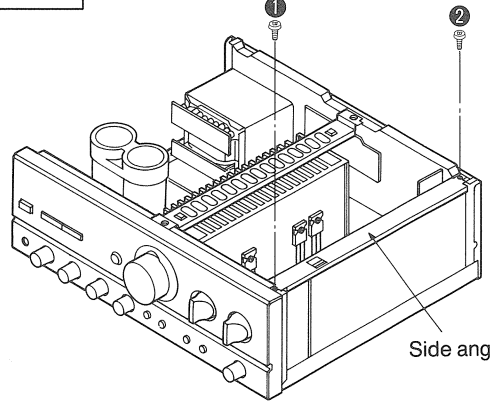
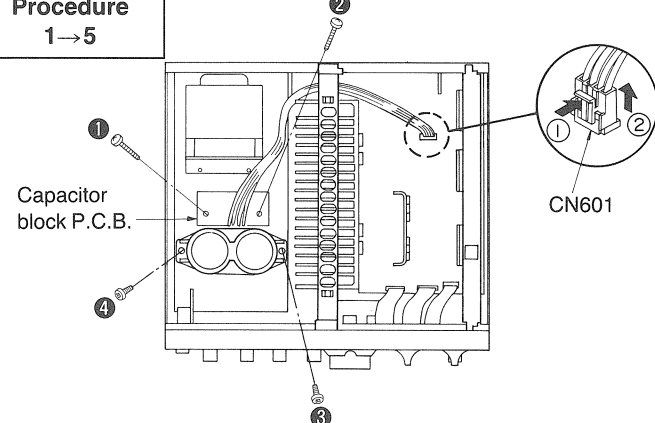
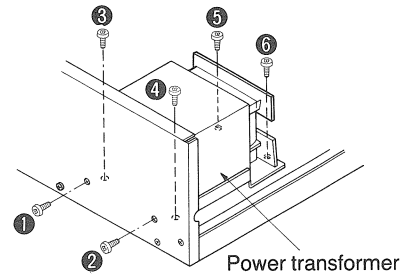
1. Remove the 4 heat melted posts on the chassis with a pair of nippers or similar tool.
2. To replace the foot (RKA0009-1) on the chassis, melt the 4 posts with a soldering iron.



DISASSEMBLY INSTRUCTIONS

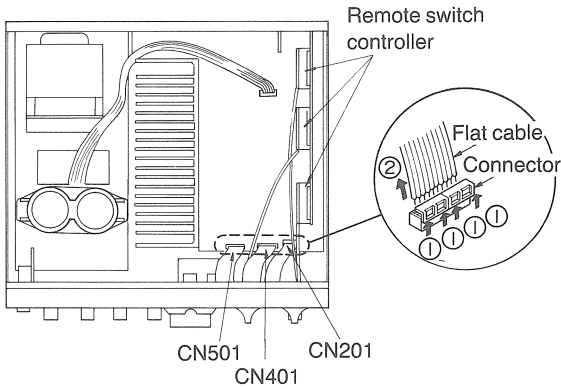
“ATTENTION SERVICER”

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

<p>Ref. No. 1</p>	<p>Removal of the cabinet</p>	<p>Ref. No. 2</p>	<p>Removal of the Upper Plate</p>
<p>Procedure 1</p>	 <p>● Remove 8 screws (①~⑧). Attention: When removing the cabinet from the unit, please don't forget to remove the 2 screws (④, ⑤) of the upper plate. Unless you remove the 2 screws (④, ⑤), it may change shape of the cabinet.</p>	<p>Procedure 1→2</p>	 <p>● Release the 4 claws.</p>
<p>Ref. No. 3</p>	<p>Removal of the Center Angle</p>	<p>Ref. No. 4</p>	<p>Removal of the Side Angle</p>
<p>Procedure 1→3</p>	 <p>● Remove the 2 screws (①, ②).</p>	<p>Procedure 1→4</p>	 <p>● Remove the 2 screws (①, ②).</p>
<p>Ref. No. 5</p>	<p>Removal of the Capacitor Block P.C.B.</p>	<p>Ref. No. 6</p>	<p>Removal of the Power Transformer</p>
<p>Procedure 1→5</p>	 <p>1. Remove the 1 connector (CN601). 2. Remove the 4 screws (①~④).</p>	<p>Procedure 1→6</p>	 <p>● Remove the 6 screws (①~⑥).</p>

Ref. No. 7
Removal of the Front Panel Ass'y

Procedure
1→3→
4→7

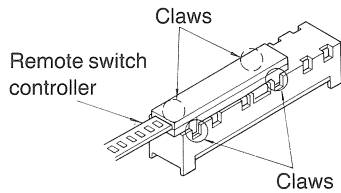


1. Remove the remote switch controller.
2. Remove the 3 flat cables (CN201, CN401, CN501).

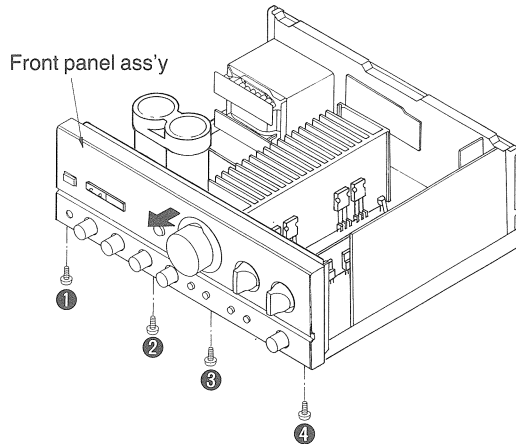
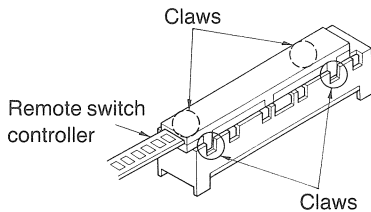
■ **Removal of the remote switch controller**

● Remove the 4 claws.

S101 (PHONO)



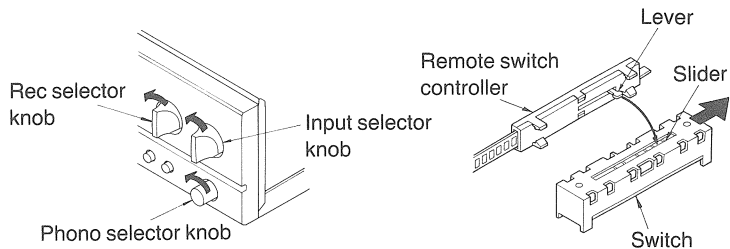
S102, S103 (REC, INPUT)



3. Remove the 4 screws (①-④).
4. Remove the front panel ass'y in the direction of arrow.

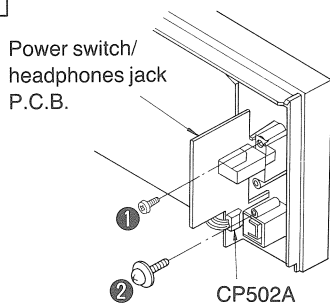
■ **Replacing of the remote switch controller**

1. Turn the selector knobs to the arrows.
2. Put the switch slider of switch to end and put in the remote switch controller.



Ref. No. 8
Removal of the Power Switch/Headphones Jack P.C.B.

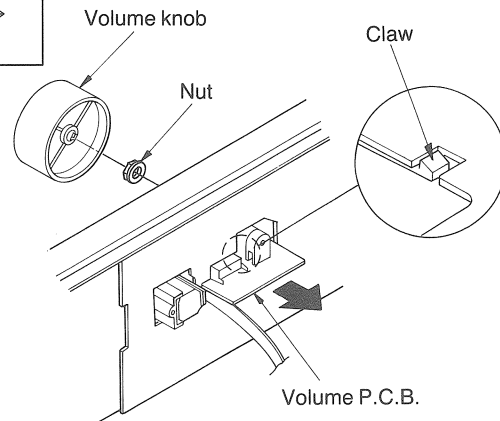
Procedure
1→3→4→
7→8



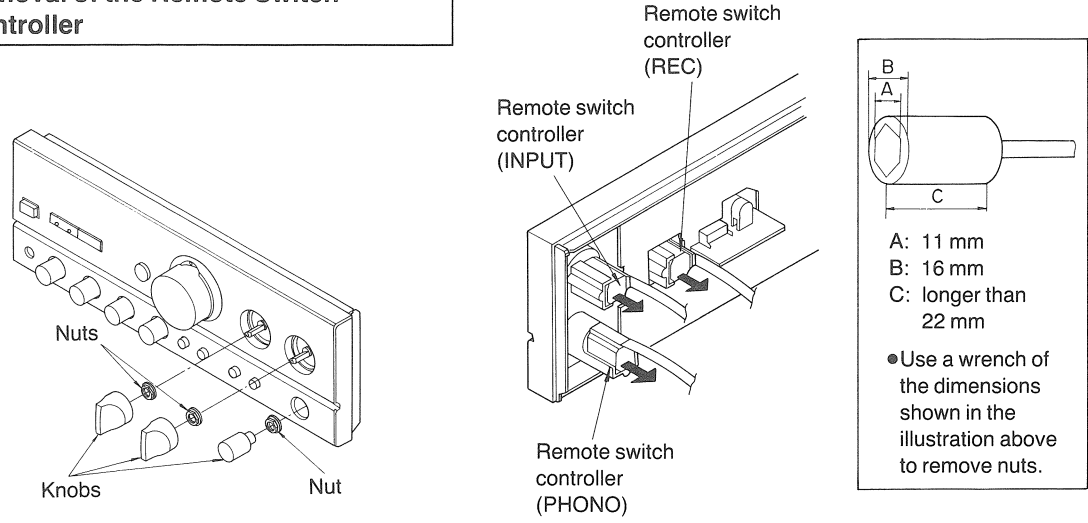
1. Remove the 1 connector (CP502A).
2. Remove the 2 screws (①, ②).

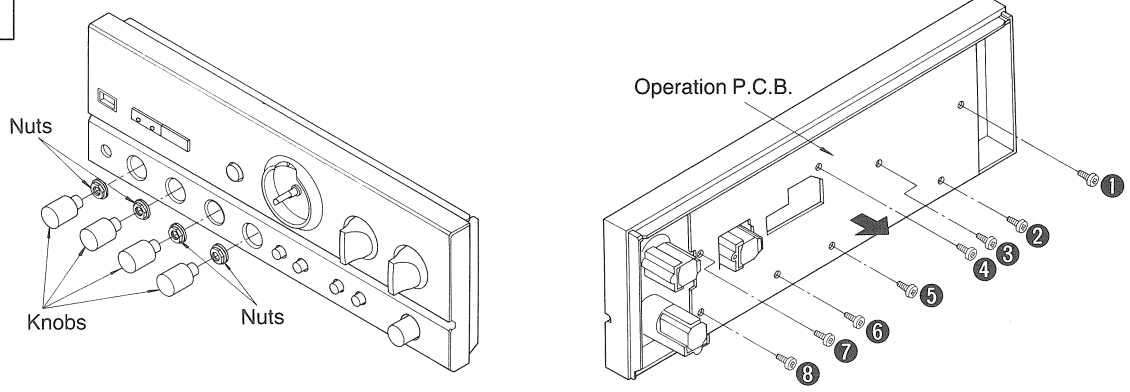
Ref. No. 9
Removal of the Volume P.C.B.

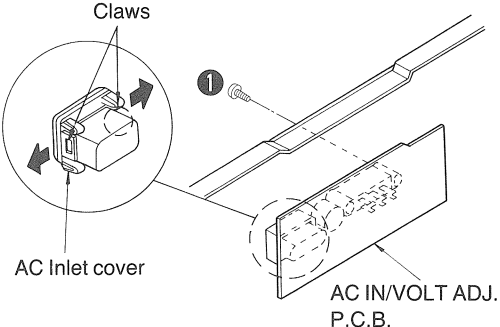
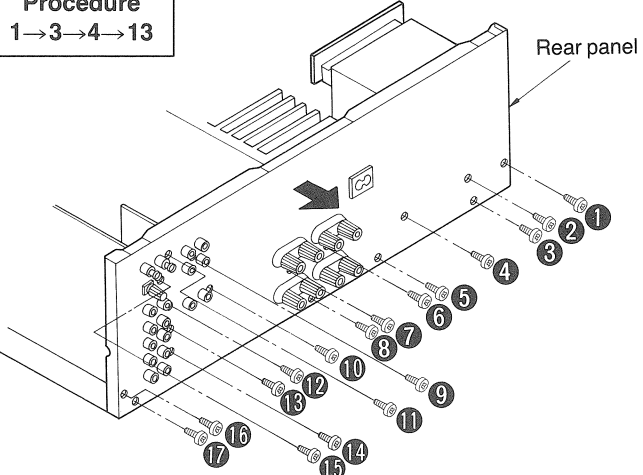
Procedure
1→3→4→
7→9

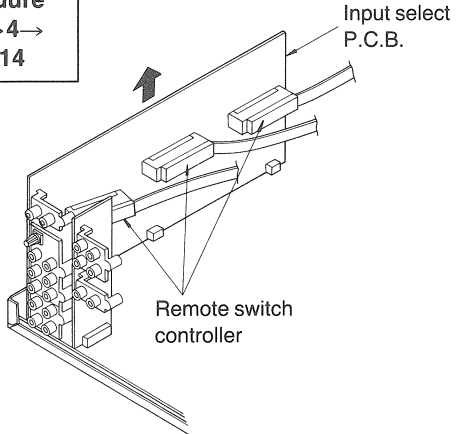
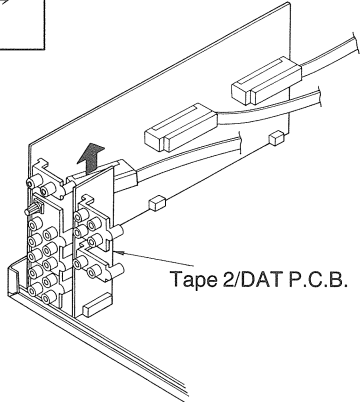


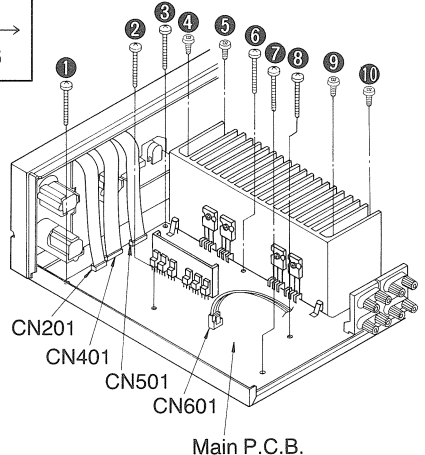
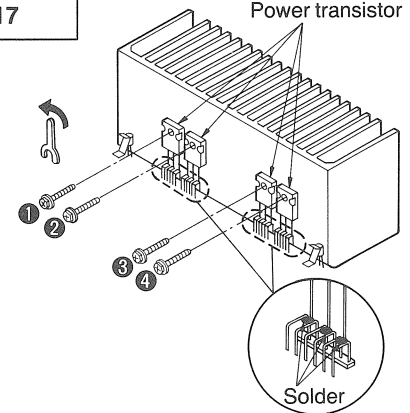
1. Pull out the volume knob.
2. Remove the nut.
3. Release the 1 claw.

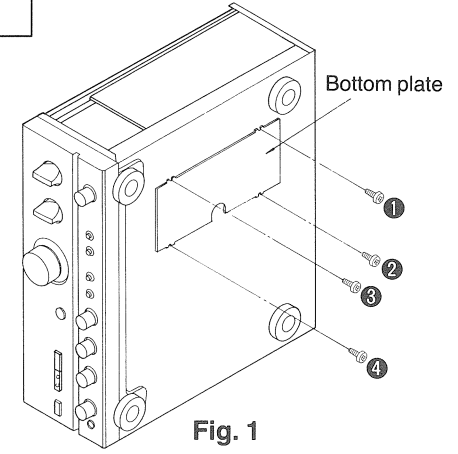
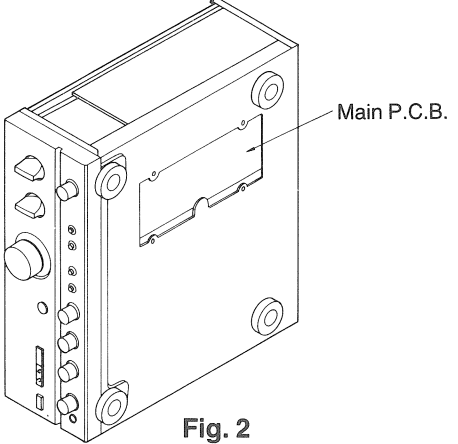
<p>Ref. No. 10</p>	<p>Removal of the Remote Switch Controller</p>	 <p>Remote switch controller (REC)</p> <p>Remote switch controller (INPUT)</p> <p>Remote switch controller (PHONO)</p> <p>Nuts</p> <p>Knobs</p> <p>Nut</p> <p>1. Pull out the 3 knobs. 2. Remove the 3 nuts.</p> <p>3. Remove the remote switch controller in the direction of arrow.</p>
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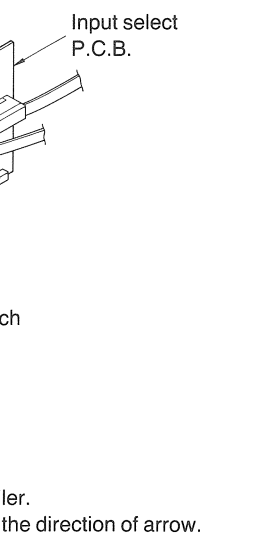
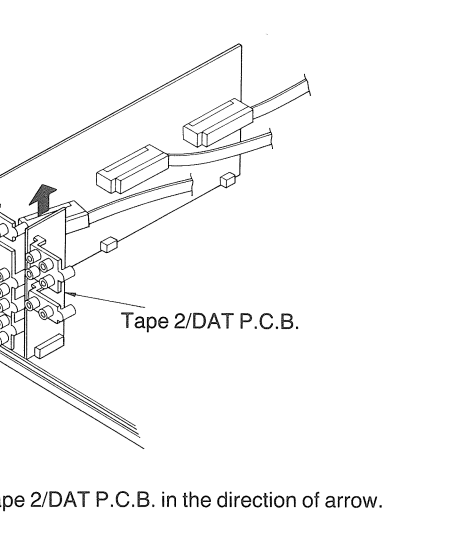
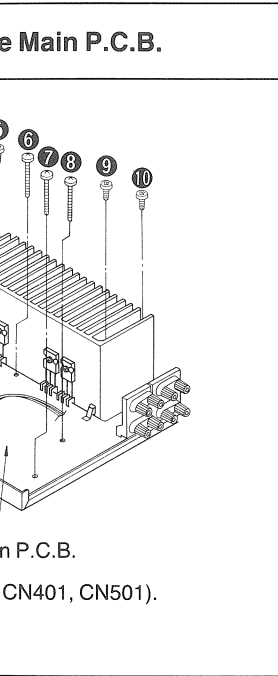
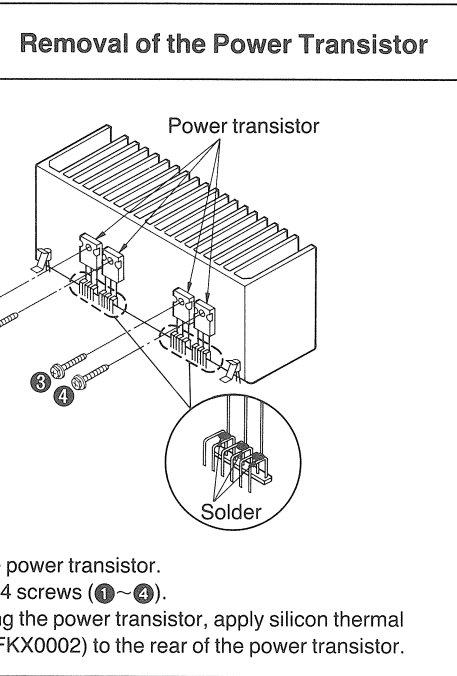
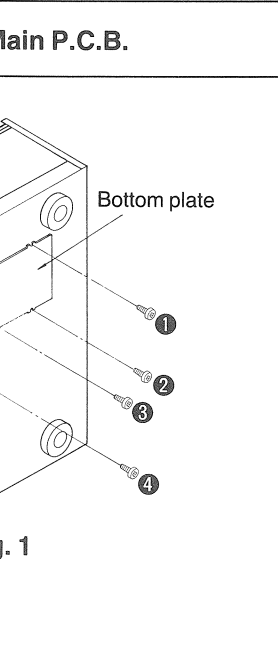
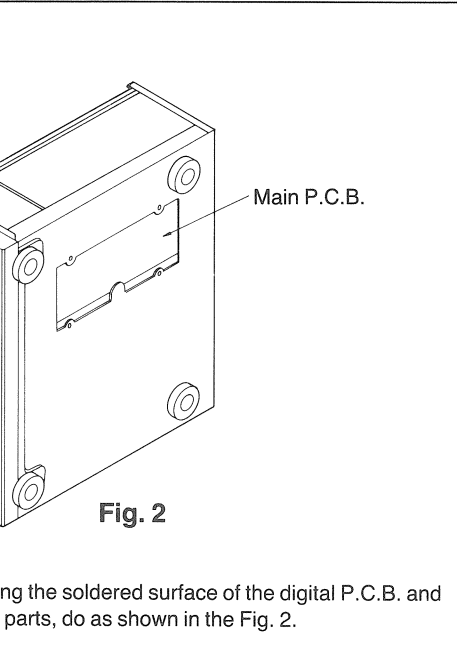
<p>Ref. No. 11</p>	<p>Removal of the Operation P.C.B.</p>	 <p>Operation P.C.B.</p> <p>Knobs</p> <p>Nuts</p> <p>1. Pull out the 4 knobs. 2. Remove the 4 nuts.</p> <p>3. Remove the 8 screws (1~8). 4. Remove the operation P.C.B. in the direction of arrow.</p>
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<p>Ref. No. 12</p>	<p>Removal of the AC IN/VOLT ADJ. P.C.B.</p>	<p>Ref. No. 13</p>	<p>Removal of the Rear Panel</p>
<p>Procedure 1→3→12</p>		<p>Procedure 1→3→4→13</p>	
 <p>Claws</p> <p>AC Inlet cover</p> <p>AC IN/VOLT ADJ. P.C.B.</p> <p>1. Remove the 1 screw (1). 2. Release the 2 claws of AC inlet cover.</p>		 <p>Rear panel</p> <p>1. Remove the 17 screws (1~17). 2. Remove the rear panel in the direction of arrow.</p>	

<p>Ref. No. 14</p>	<p>Removal of the Input Select P.C.B.</p>	<p>Ref. No. 15</p>	<p>Removal of the Tape 2/DAT P.C.B.</p>
<p>Procedure 1→3→4→ 13→14</p>		<p>Procedure 1→3→4→ 13→15</p>	
 <p>Input select P.C.B.</p> <p>Remote switch controller</p> <p>1. Remove the remote switch controller. 2. Remove the input select P.C.B. in the direction of arrow.</p>		 <p>Tape 2/DAT P.C.B.</p> <p>•Remove the tape 2/DAT P.C.B. in the direction of arrow.</p>	

<p>Ref. No. 16</p>	<p>Removal of the Main P.C.B.</p>	<p>Ref. No. 17</p>	<p>Removal of the Power Transistor</p>
<p>Procedure 1→3→4→13→ 14→15→16</p>		<p>Procedure 1→17</p>	
 <p>CN201</p> <p>CN401</p> <p>CN501</p> <p>CN601</p> <p>Main P.C.B.</p> <p>1. Remove the 3-flat cables (CN201, CN401, CN501). 2. Remove the 1 connector (CN601). 3. Remove the 10 screws (1~10).</p>		 <p>Power transistor</p> <p>Solder</p> <p>1. Unsolder the power transistor. 2. Remove the 4 screws (1~4). •When mounting the power transistor, apply silicon thermal compound (RFKX0002) to the rear of the power transistor.</p>	

<p>Ref. No. 18</p>	<p>Check of the Main P.C.B.</p>	
<p>Procedure 1→18</p>		
 <p>Bottom plate</p> <p>1. Remove the 4 screws (1~4).</p>		 <p>Main P.C.B.</p> <p>Fig. 2</p> <p>2. When checking the soldered surface of the digital P.C.B. and replacing the parts, do as shown in the Fig. 2.</p>

<p>Input Select P.C.B.</p> 	<p>Ref. No. 15</p> <p>Procedure 1→3→4→13→15</p>	<p>Removal of the Tape 2/DAT P.C.B.</p>  <p>Remove the tape 2/DAT P.C.B. in the direction of arrow.</p>
<p>Main P.C.B.</p> 	<p>Ref. No. 17</p> <p>Procedure 1→17</p>	<p>Removal of the Power Transistor</p>  <p>1. Unsolder the power transistor. 2. Remove the 4 screws (1~4). •When mounting the power transistor, apply silicon thermal compound (RFKX0002) to the rear of the power transistor.</p>
<p>Main P.C.B.</p> 	<p>Fig. 2</p>	<p>2. When checking the soldered surface of the digital P.C.B. and replacing the parts, do as shown in the Fig. 2.</p> 

MEASUREMENTS AND ADJUSTMENTS

ADJUSTMENT

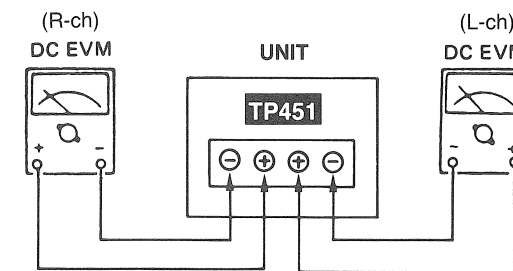
Control positions and equipment used.

- Volume knob ∞ (Minimum)
- Speaker selector off

•AC and DC electronic voltmeter (EVM)

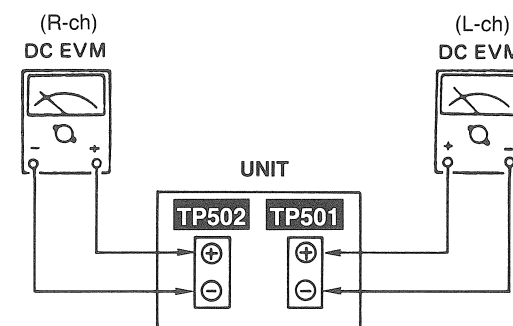
(1) VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT

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 about 8 sec. later, adjust VR451 and VR452 so that the voltage is 60 mV.

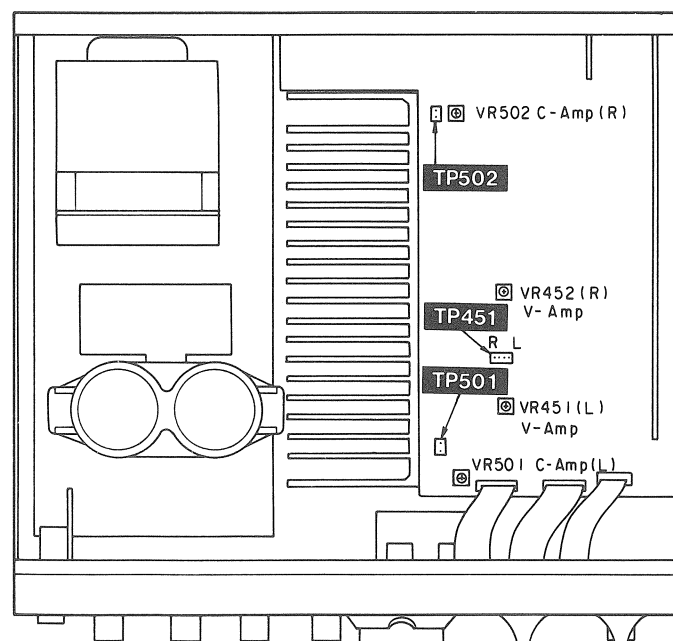


(2) CURRENT DRIVE (C) AMP. IDLING (ICQ) ADJUSTMENT

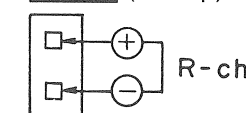
1. Test equipment connection is shown in figure. (Connect the DC EVM on both channels.)
2. Completely turn the (C) amp. adjusting volumes (VR501, VR502) counter-clockwise.
3. Turn ON the set when it is cold, and the "VOLTAGE CONTROL (V) AMP. IDLING (ICQ) ADJUSTMENT" later, adjust VR501 and VR502 so that the voltage is 2 mV.



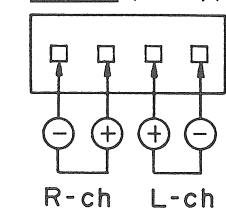
ADJUSTMENT POINTS



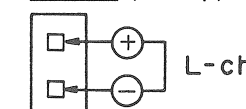
TP502 (C-amp)



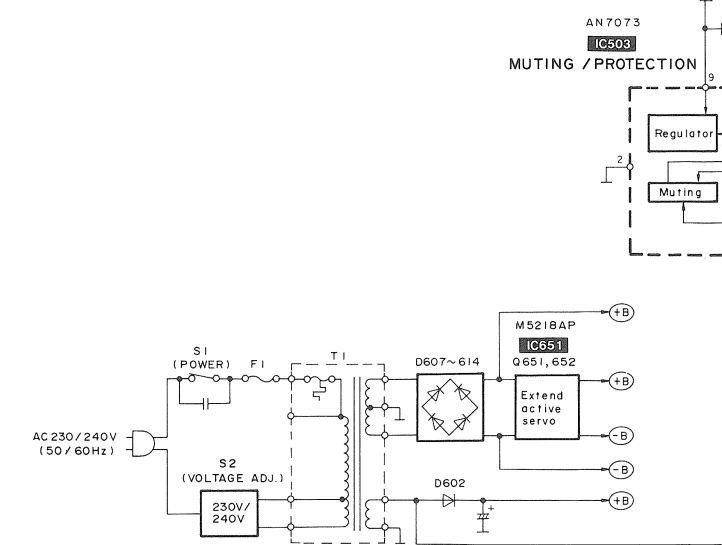
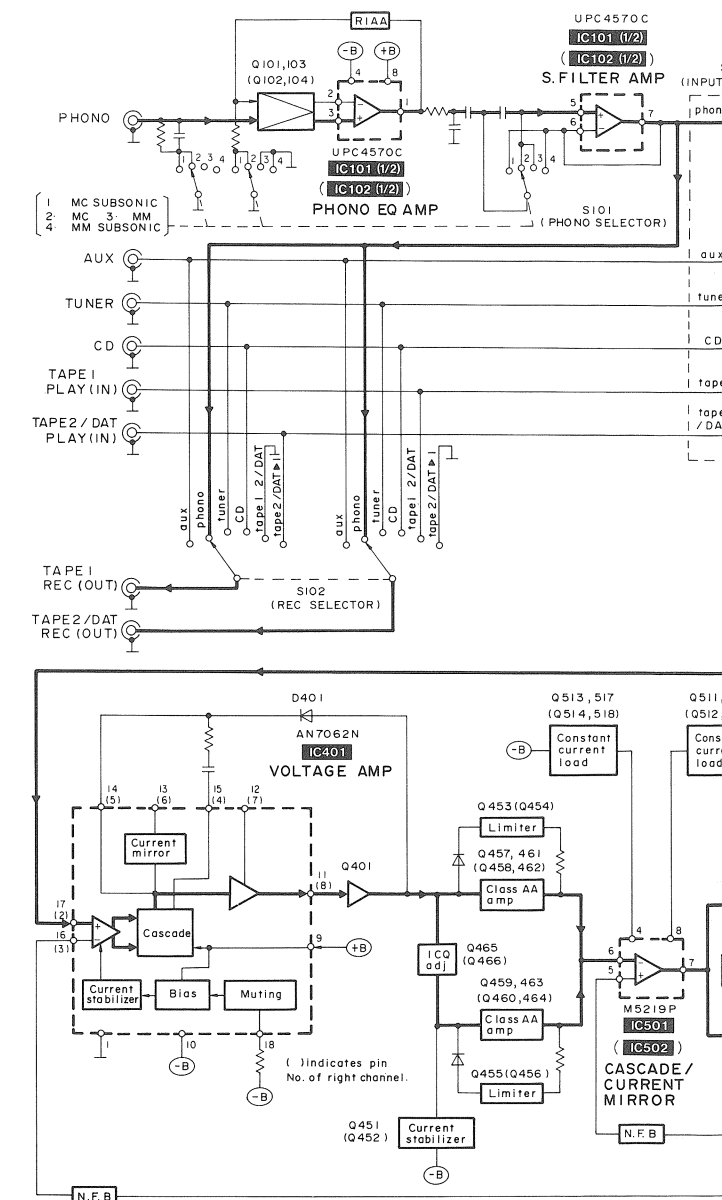
TP451 (V-amp)



TP501 (C-amp)



BLOCK DIAGRAM



TESTS AND ADJUSTMENTS

Instrument used.
 ∞ (Minimum)
 off

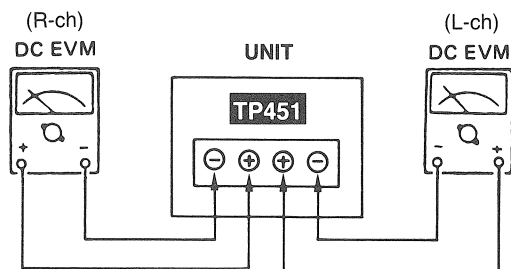
● AC and DC electronic voltmeter (EVM)

VOLUME AMP. IDLING (ICQ)

Adjustment is shown in figure. (Connect DC EVM to both channels.)

Adjust V-amp adjusting volumes (VR451, VR452) clockwise.

When it is cold, and about 8 sec. later, adjust VR452 so that the voltage is 60 mV.

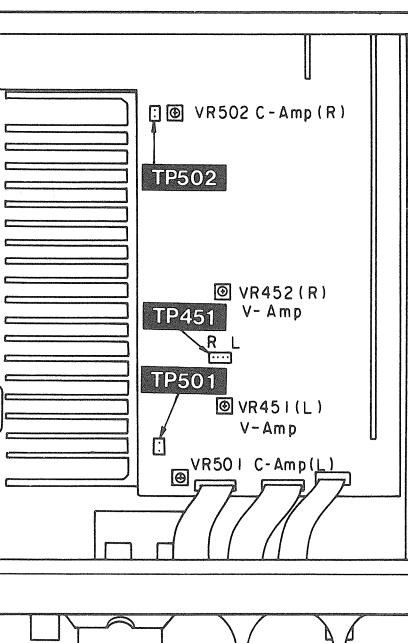
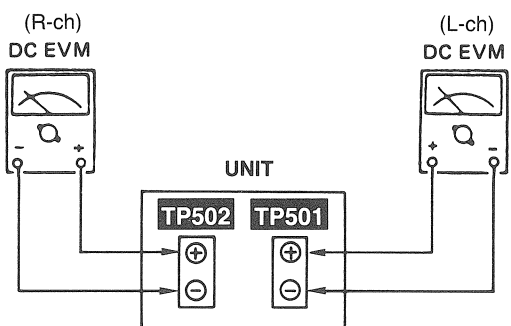


VOLUME AMP. IDLING (ICQ) ADJUSTMENT

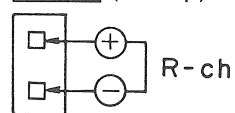
Adjustment is shown in figure. (Connect DC EVM to both channels.)

Adjust C-amp adjusting volumes (VR501, VR502) clockwise.

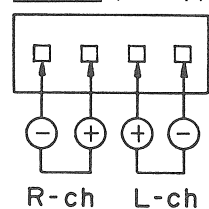
When it is cold, and the "VOLTAGE POINT" is on, adjust VR501 and VR502 so that the voltage is 60 mV.



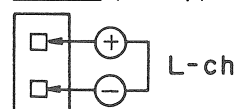
TP502 (C-amp)



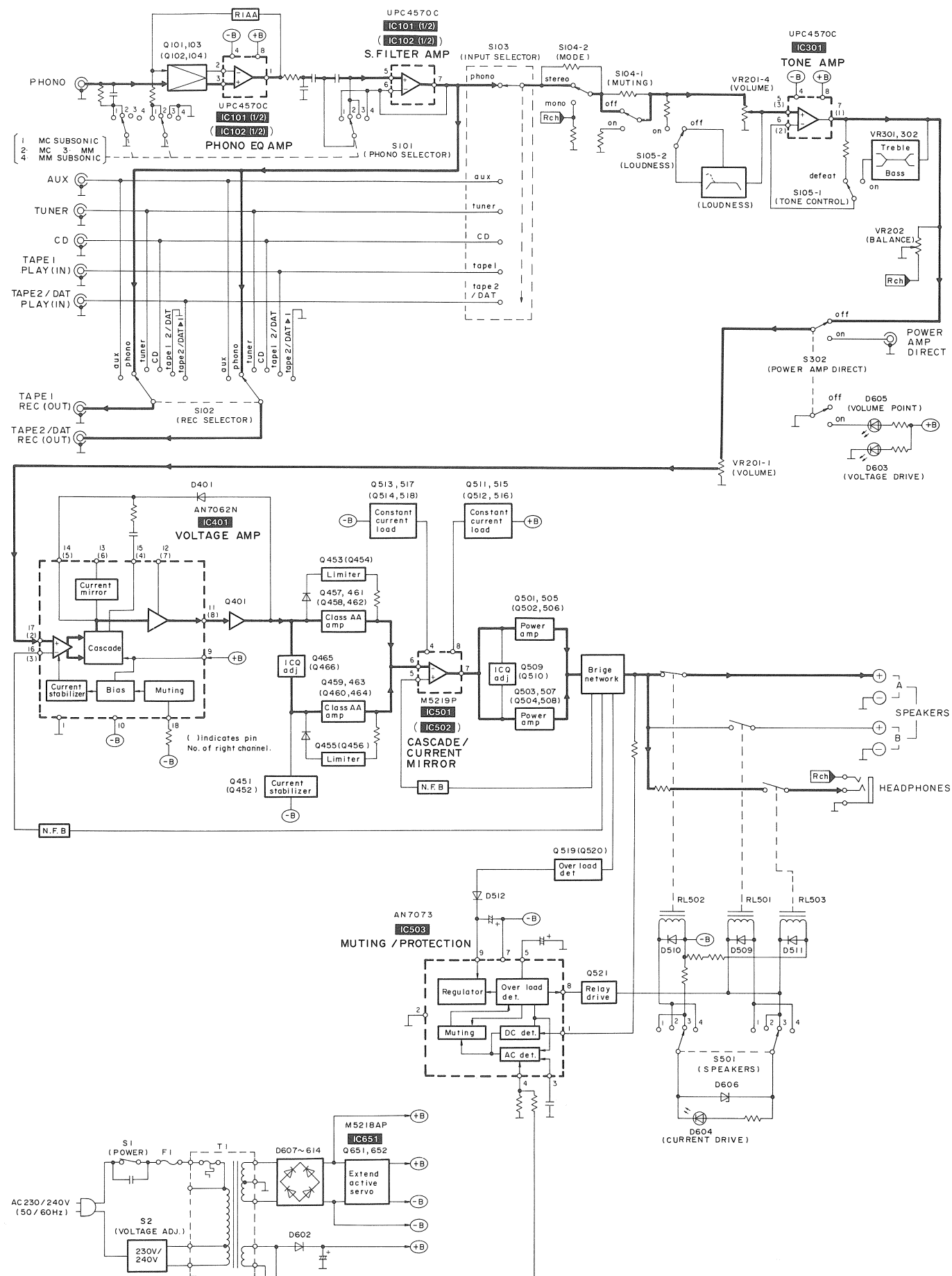
TP451 (V-amp)



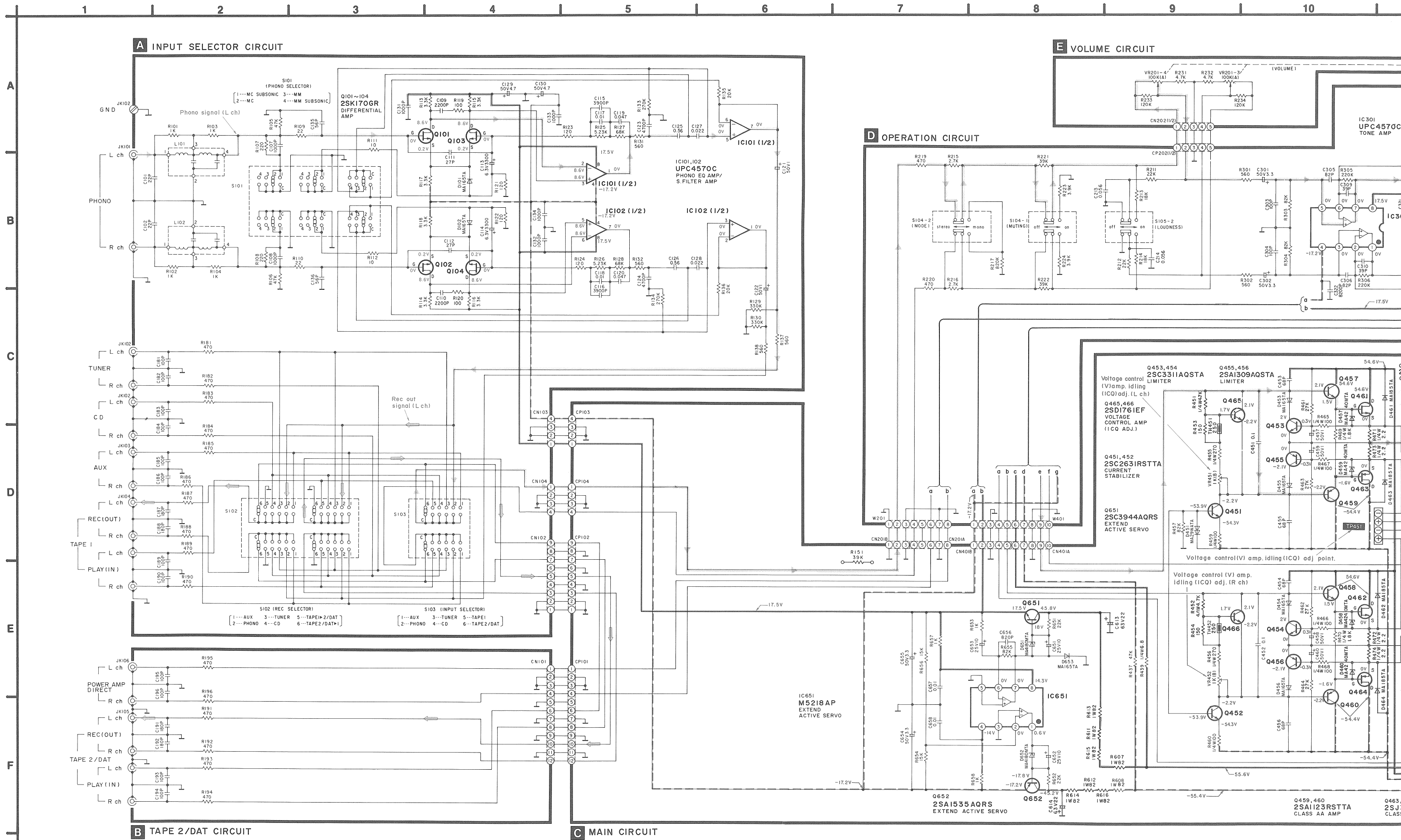
TP501 (C-amp)

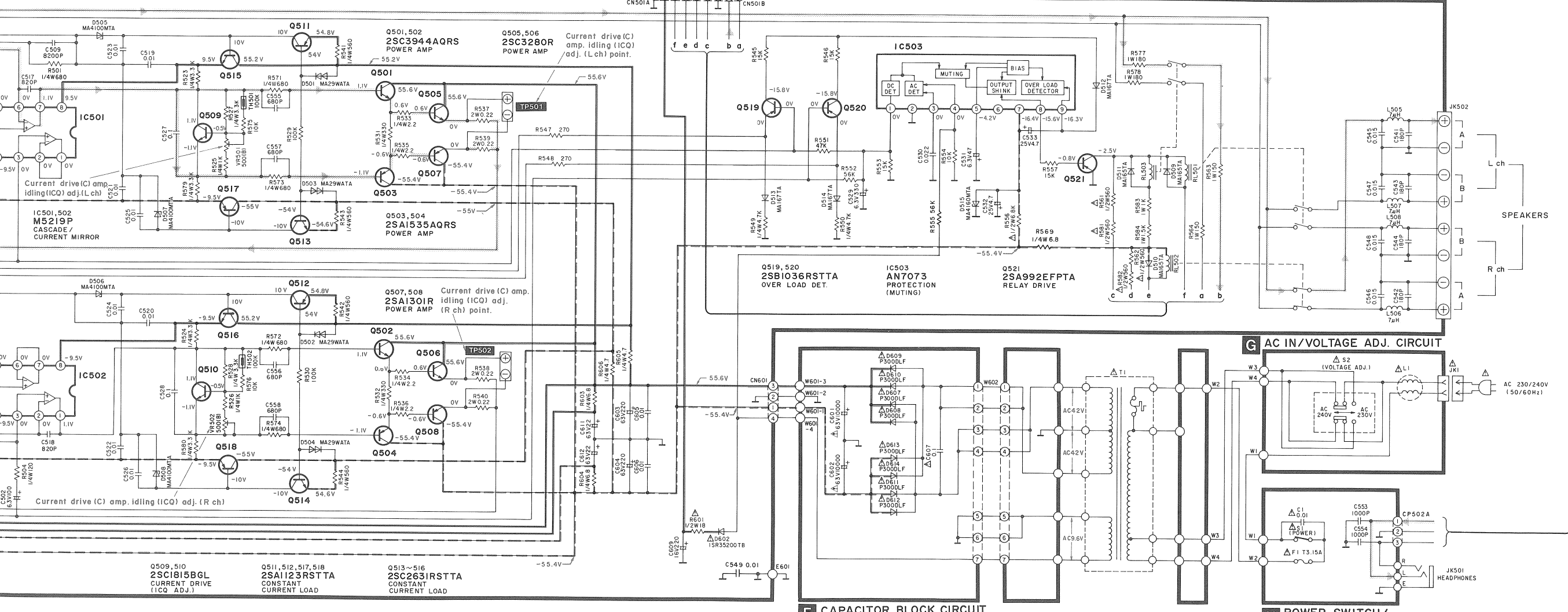
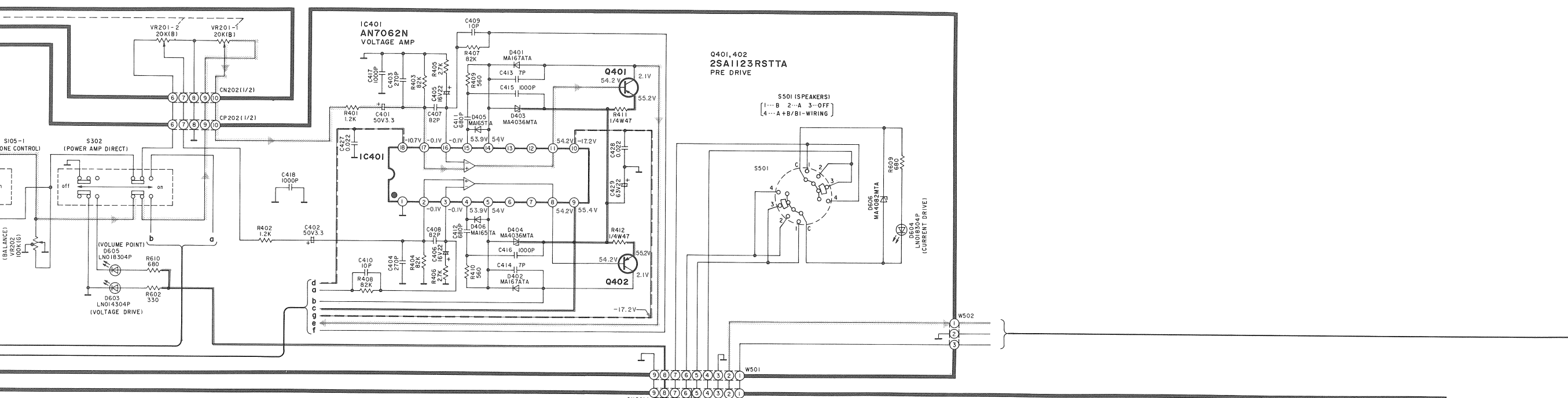


■ BLOCK DIAGRAM



SCHEMATIC DIAGRAM (Parts list on pages 23~26.)

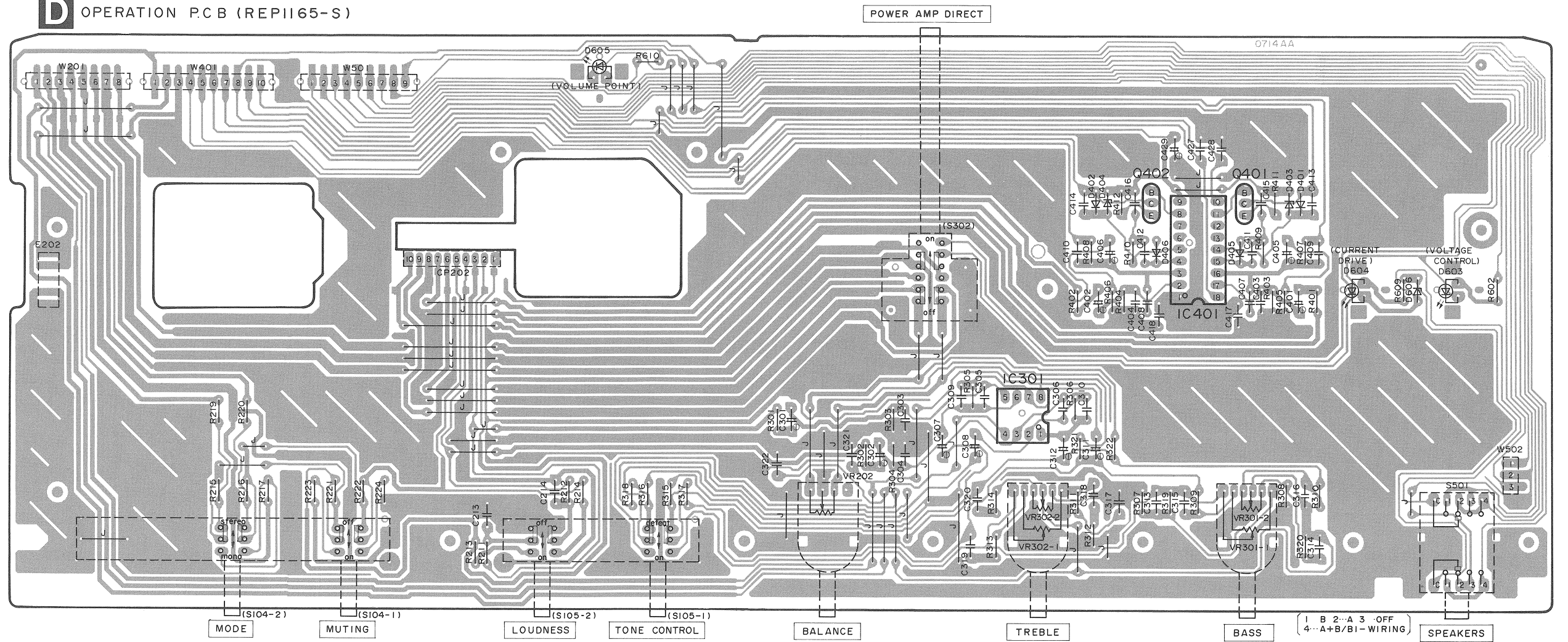




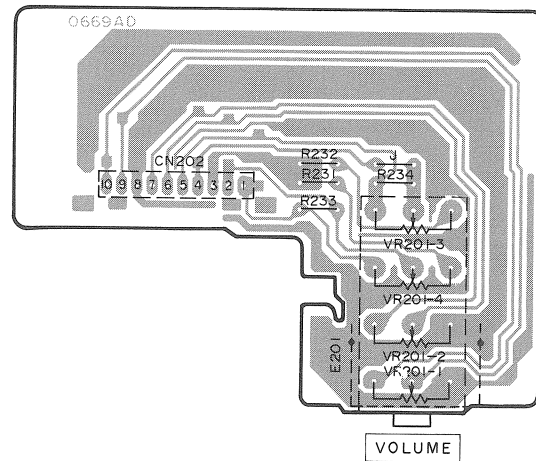


•This circuit board diagram may be modified at any time with the development of new technology.

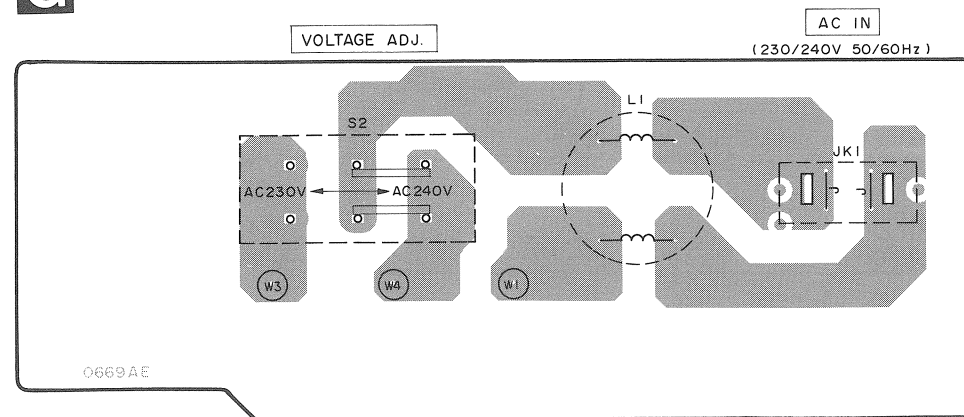
D OPERATION P.C.B (REPI165-S)



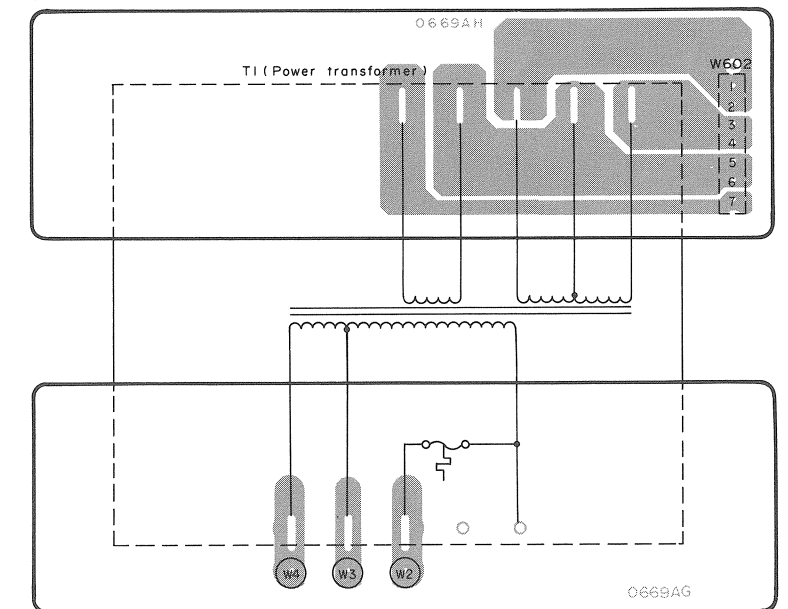
E VOLUME PCB.(REPI046-P)



G AC IN/VOLTAGE ADJ. P.C.B.(REPI046-P)



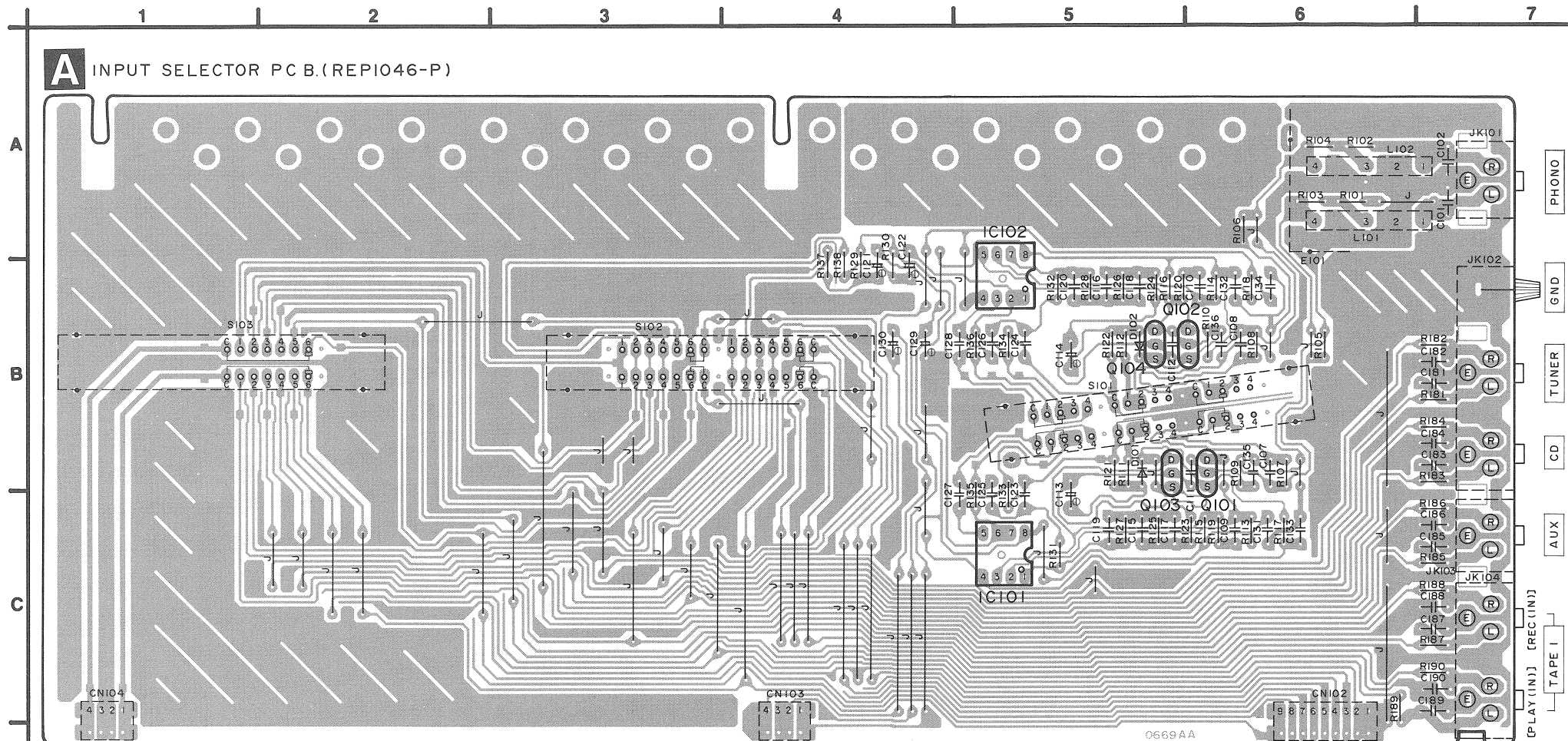
(REPI046-P)



(REPI046-P)

PRINTED CIRCUIT BOARDS (Parts list on pages 23~26.)

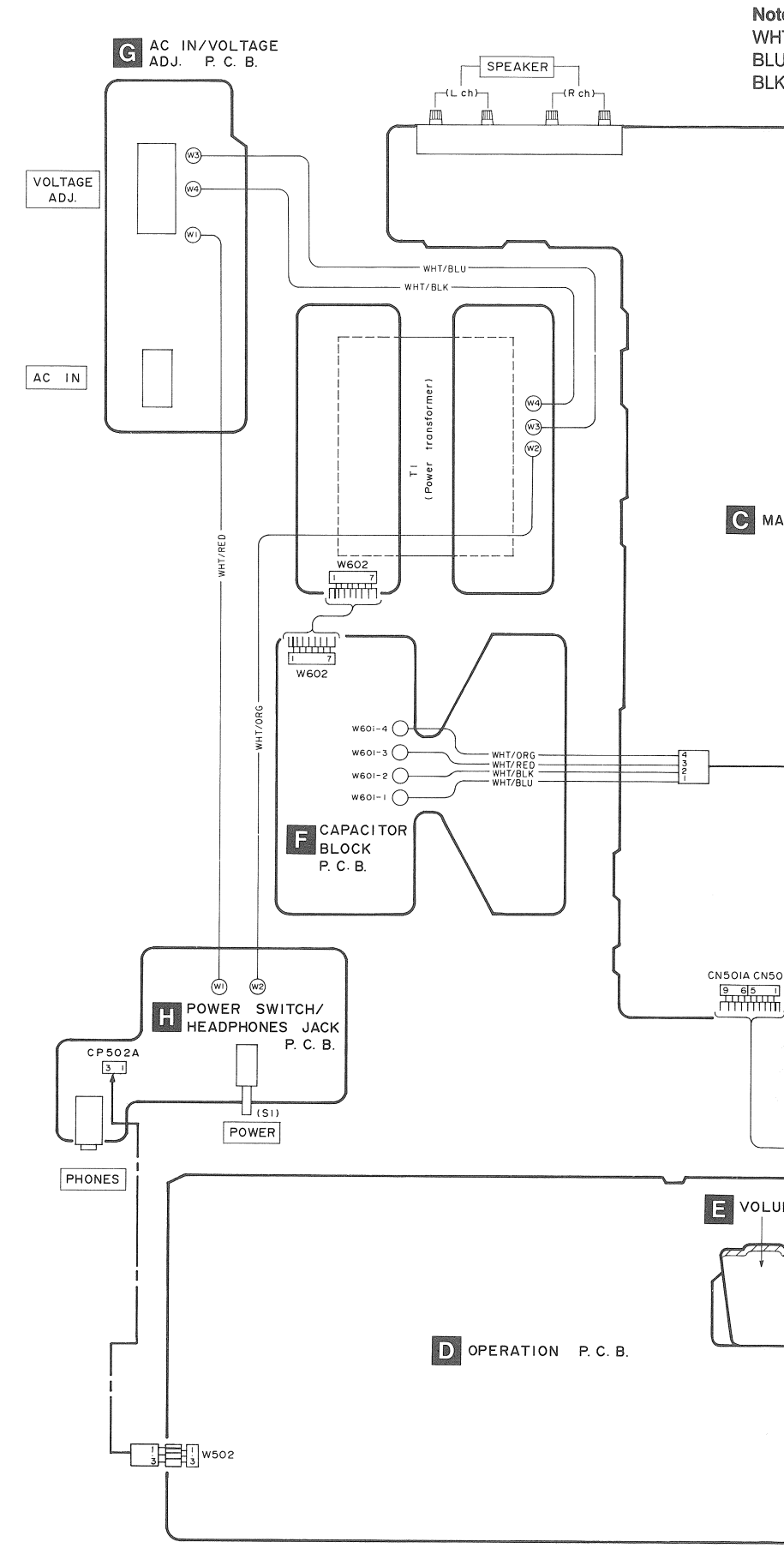
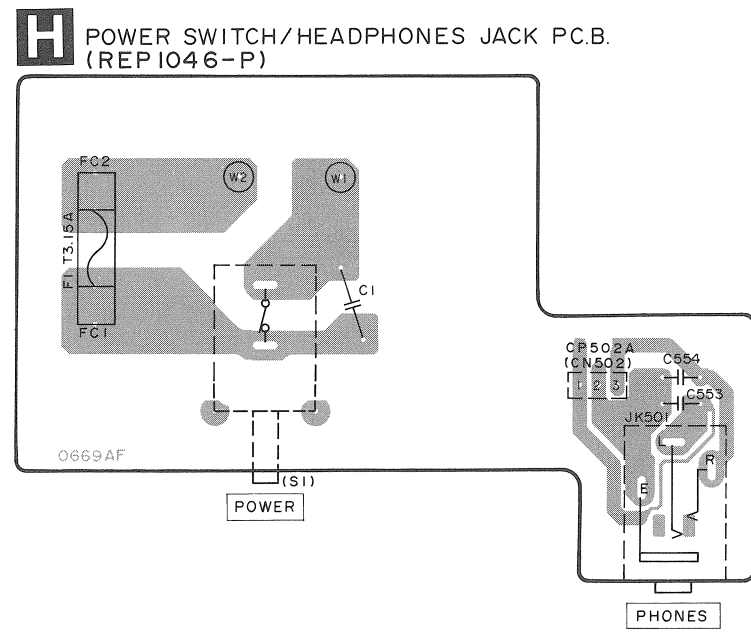
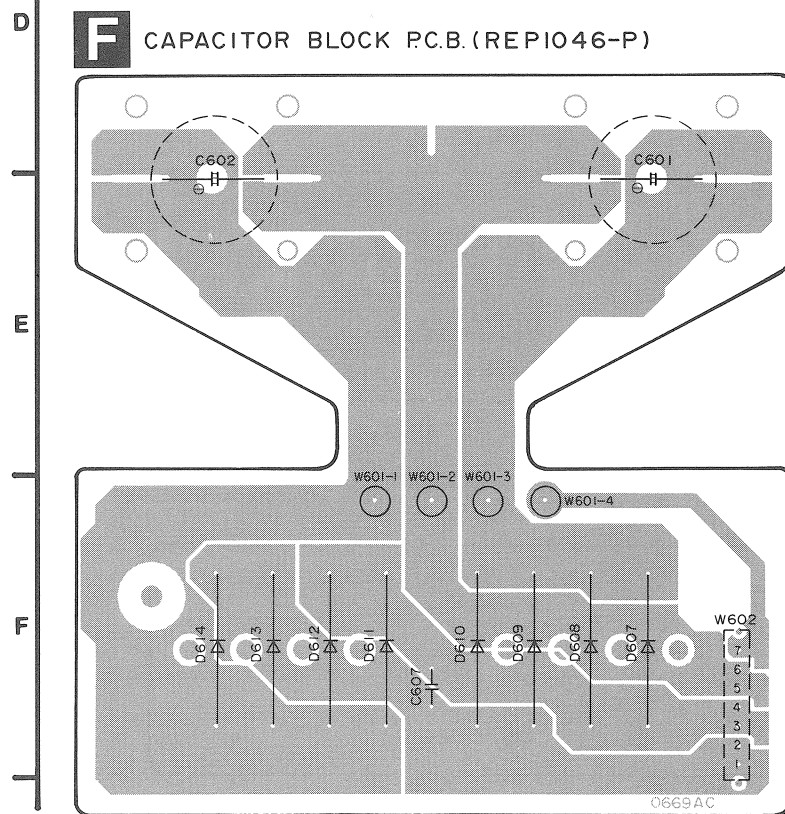
WIRING CONNECTION DIAGRAM



(S103) INPUT SELECTOR
 1--AUX 3--TUNER 5--TAPE1
 2--PHONO 4--CD 6--TAPE2/DAT

(S102) REC SELECTOR
 1--AUX 3--TUNER 5--TAPE1/2/DAT
 2--PHONO 4--CD 6--TAPE2/DAT/1

(S101) PHONO SELECTOR
 1--MC SUBSONIC 3--MM
 2--MC 4--MM SUBSONIC



Notes
 WHT.
 BLU.
 BLK.

REPLACEMENT PARTS LIST

Notes: *Important safety notice:

 Components identified by Δ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

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

Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		D505-508	MA4100MTA	DIODE	
				D509-511	MA165	DIODE	
				D512-514	MA167	DIODE	
IC101, 102	UPC4570C	I. C. PHONO/EQ. AMP.		D515	MA4160M	DIODE	
IC301	UPC4570C	I. C. TONE AMP.		D602	1SR35200TB	DIODE	Δ
IC401	AN7062N	I. C. VOLTAGE AMP.		D603	LN014304P	L. E. D.	
IC501, 502	M5219P	I. C. CASCADE/CURRENT MIRROR		D604, 605	LN018304P	L. E. D.	
IC503	AN7073	I. C. PROTECTION		D606	MA4082MTA	DIODE	
IC651	M5218AP	I. C. EXTEND ACTIVE SERVO		D607-614	P300DLF	DIODE	Δ
		TRANSISTOR(S)		D651, 652	MA4180-M	DIODE	
				D653	MA165	DIODE	
						VARIABLE RESISTOR(S)	
Q101-104	2SK170GR	TRANSISTOR		VR201	RRV16J02A	V. R. VOLUME CONTROL	
Q401, 402	2SA1123RSTTA	TRANSISTOR		VR202	EVJ02QFA2G15	V. R. BALANCE	
Q451, 452	2SC2631RSTTA	TRANSISTOR		VR301, 302	EVJYA1FA2C15	V. R. BASS/TREBLE CONTROL	
Q453, 454	2SC3311A-Q	TRANSISTOR		VR451, 452	EVNDXAA00B13	V. R. ICQ ADJ. (V-AMP.)	
Q455, 456	2SA1309A-R	TRANSISTOR		VR501, 502	EVNDXAA00B52	V. R. ICQ ADJ. (C-AMP.)	
Q457, 458	2SC2631RSTTA	TRANSISTOR				THERMISTOR(S)	
Q459, 460	2SA1123RSTTA	TRANSISTOR		TH451, 452	ERTD2ZGL251T	THERMISTOR	
Q461, 462	2SK20130Y	TRANSISTOR		TH501, 502	ERTD2ZHL104T	THERMISTOR	
Q463, 464	2SJ3130Y	TRANSISTOR				COIL(S)	
Q465, 466	2SD1761EF	TRANSISTOR					
Q501, 502	2SC3944AQRS	TRANSISTOR		L1	SLQZ650MH49	COIL	Δ
Q503, 504	2SA1535AQRS	TRANSISTOR		L101, 102	SLM1Z33	COIL	
Q505, 506	2SC3280R	TRANSISTOR		L501, 502	SLQY07G-40	COIL	
Q507, 508	2SA1301R	TRANSISTOR		L503, 504	SLQY18G-10	COIL	
Q509, 510	2SC1815BG	TRANSISTOR		L505-508	SLQY07G-40	COIL	
Q511, 512	2SA1123RSTTA	TRANSISTOR				TRANSFORMER(S)	
Q513-516	2SC2631RSTTA	TRANSISTOR		T1	RTP1Q5E005-W	POWER TRANSFORMER	Δ
Q517, 518	2SA1123RSTTA	TRANSISTOR				FUSE(S)	
Q519, 520	2SB1036R	TRANSISTOR		F1	XBA2C31TB0	FUSE, 250V T3. 15A	Δ
Q521	2SA992EFPPTA	TRANSISTOR				SWITCH(ES)	
Q651	2SC3944AQRS	TRANSISTOR		S1	ESB8249V	SW. POWER	Δ
Q652	2SA1535AQRS	TRANSISTOR		S2	ESD26200A	SW. VOLTAGE SELECTOR	Δ
		DIODE(S)		S101	RSS4F001-A	SW. PHONO SELECTOR	
D101, 102	MA165	DIODE					
D401, 402	MA167	DIODE					
D403, 404	MA4036MTA	DIODE					
D405, 406	MA165	DIODE					
D451	MA29WA	DIODE					
D453-456	MA165	DIODE					
D457-460	MA4240H	DIODE					
D461-464	MA185TA	DIODE					
D501-504	MA29WA	DIODE					

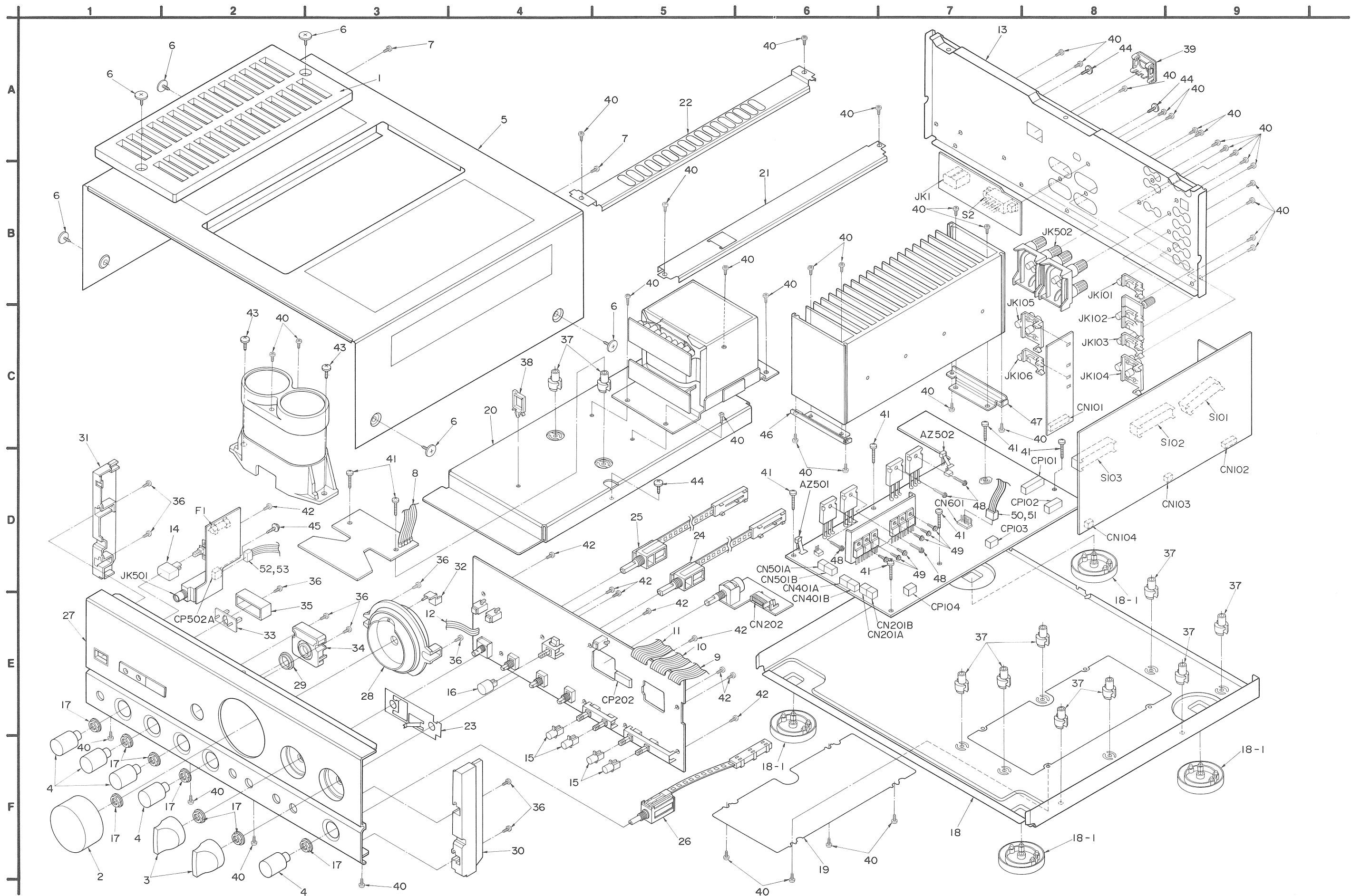
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
S102	RSS6D001	SW. REC SELECTOR		JK106	SJF3068N	POWER AMP. DIRECT JACK	
S103	RSS6B001	SW. INPUT SELECTOR		JK501	QJA0455ZC-A	HEADPHONES JACK	
S104	ESB68133	SW. MUTING/MODE		JK502	RJH4801-1	SPEAKER TERMINAL	
S105	ESB68130	SW. LOUDNESS/TONE				TEST POINT(S)	
S302	RSP2D008-A	SW. POWER AMP. DIRECT		TP451	SJT3409	TEST POINT	
S501	RSR4B004-A	SW. SPEAKER SELECTOR		TP501	SJT3209	TEST POINT	
		CONNECTOR(S)		TP502	SJT3209	TEST POINT	
CN101	RJU057W012	SOCKET (12P)					
CN102	RJU057W009	SOCKET (9P)					
CN103, 104	RJU057W004	SOCKET (4P)					
CN202	RJU003K010M1	SOCKET (10P)					
CN601	RJP1A3404	PLUG (4P)					
CN201A	RJS1A1705	SOCKET (5P)					
CN401A	RJS1A1705	SOCKET (5P)					
CN501A	RJS1A1704	SOCKET (4P)					
CN201B	RJS1A1703	SOCKET (3P)					
CN401B	RJS1A1705	SOCKET (5P)					
CN501B	RJS1A1705	SOCKET (5P)					
CP101	RJT057W012-1	CONNECTOR (12P)					
CP102	RJT057W009-1	CONNECTOR (9P)					
CP103, 104	RJT057W004-1	CONNECTOR (4P)					
CP202	RJT003K010-1	CONNECTOR (10P)					
CP501	RJR0081	CONNECTOR					
CP502	RJP3G9YA	CONNECTOR					
CP502-504	RJR0081	CONNECTOR					
		EARTH TERMINAL(S)					
AZ501, 502	SUS227	TRANSISTOR SPRING					
E101	SMC1009	SHIELD PLATE					
E201	RSQ0007-2	SHIELD PLATE					
E601	SNE1004-1	GND PLATE					
		FUSE HOLDER(S)					
FC1, 2	EYF52BC	FUSE HOLDER	Δ				
		RELAY(S)					
RL501, 502	RSY0013-0	RELAY					
RL503	RSY0009-0	RELAY					
		JACK(S)					
JK1	SJS9231-1B	AC INLET	Δ				
JK101	SJF3068N	PHONO JACK					
JK102	SJF3067N	TUNER/CD JACK					
JK103	SJF3068N	AUX JACK					
JK104	SJF3069N	TAPE 1 JACK					
JK105	SJF3069N	TAPE 2/DAT JACK					

Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 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						
R101-104	ERDS2TJ102	1/4W 1K	R453, 454	ERDS2TJ151	1/4W 150	R605, 606	ERDFS2VJ4R7T	1/4W 4.7
R105, 106	ERDS2TJ473	1/4W 47K	R455, 456	ERDFS2VJ271T	1/4W 270	R607, 608	ERG1SJ820E	1W 82
R107, 108	ERDS2TJ221	1/4W 220	R457	ERDS2TJ823T	1/4W 82K	R609, 610	ERDS2TJ681	1/4W 680
R109, 110	ERDS2TJ220T	1/4W 22	R459, 460	ERDFS2VJ101T	1/4W 100	R611-616	ERG1SJ820E	1W 82
R111, 112	ERDS2TJ100	1/4W 10	R461-464	ERDS2TJ273	1/4W 27K	R651, 652	ERDS2TJ223	1/4W 22K
R113-118	ERDAS3G332T	1/4W 3.3K	R465-468	ERDFS2VJ101T	1/4W 100	R653	ERDS2TJ102	1/4W 1K
R119, 120	ERDS2TJ101	1/4W 100	R469, 470	ERDFS2VJ182T	1/4W 1.8K	R654	ERDS2TJ153	1/4W 15K
R121-124	ERDAS3G121	1/4W 120	R471-474	ERDFS2VJ2R2T	1/4W 2.2	R655	ERDS2TJ823T	1/4W 82K
R125, 126	EROS2TKF5231	1/4W 5.23K	R501, 502	ERDFS2VJ681T	1/4W 680	R656	ERDS2TJ153	1/4W 15K
R127, 128	EROS2TKG6802	1/4W 68K	R503, 504	ERDFS2VJ121T	1/4W 120	R657, 658	ERDS2TJ102	1/4W 1K
R129, 130	ERDS2TJ334	1/4W 330K	R505, 506	ERDFS2VJ681T	1/4W 680			CAPACITORS
R131, 132	ERDAS3G561	1/4W 560	R507, 508	ERDFS2VJ121T	1/4W 120			
R133, 134	ERDS2TJ274	1/4W 270K	R509-512	ERF2EXKR10V	2W 0.1			
R135, 136	ERDS2TJ203T	1/4W 20K	R513-516	ERDFS2VJ100T	1/4W 10	C1	ECKWNS103ZVS	500V 0.01uF Δ
R137, 138	ERDAS3G561	1/4W 560	R517, 518	ERDFS2VJ1R0T	1/4W 1	C101, 102	ECBT1H220J5	50V 22P
R151	ERDS2TJ393	1/4W 39K	R519, 520	ERDFS2VJ100T	1/4W 10	C107, 108	ECQB1H102KF3	50V 1000P
R181-196	ERDAS3G471T	1/4W 470	R523, 524	ERDFS2VJ332T	1/4W 3.3K	C109, 110	ECQB1H222JF3	50V 2200P
R211, 212	ERDAS3G223T	1/4W 22K	R525, 526	ERDFS2VJ102T	1/4W 1K	C111, 112	ECBT1H270JU5	50V 27P
R213, 214	ERDS2TJ183T	1/4W 18K	R527, 528	ERDFS2VJ332T	1/4W 3.3K	C113, 114	ECA0JAP332E	6.3V 3300U
R215, 216	ERDS2TJ272T	1/4W 2.7K	R529, 530	ERDS2TJ104	1/4W 100K	C115, 116	ECQB1H392JF3	50V 3900P
R217	ERDS2TJ824	1/4W 820K	R531, 532	ERDFS2VJ331T	1/4W 330	C117, 118	ECQB1H103JF3	50V 0.01U
R219, 220	ERDAS3G471T	1/4W 470	R533-536	ERDFS2VJ2R2T	1/4W 2.2	C119, 120	ECQV1H473JZ3	50V 0.047U
R221, 222	ERDAS3G393T	1/4W 39K	R537-540	ERF2EXKR22V	2W 0.22	C121, 122	ECA1HPXS010B	50V 1U
R223, 224	ERDAS3G392T	1/4W 3.9K	R541-544	ERDFS2VJ561T	1/4W 560	C123, 124	ECQB1H472JF3	50V 4700P
R231, 232	ERDAS3G472T	1/4W 4.7K	R545, 546	ERDS2TJ153	1/4W 15K	C125, 126	ECQV1H564JZ3	50V 0.56U
R233, 234	ERDAS3G124T	1/4W 120K	R547, 548	ERDFS2VJ271T	1/4W 270	C127, 128	ECQB1H223JF3	50V 0.022U
R301, 302	ERDAS3G561	1/4W 560	R549, 550	ERDFS2VJ472T	1/4W 4.7K	C129, 130	ECA1HPXS4R7B	50V 4.7U
R303, 304	ERDS2TJ823T	1/4W 82K	R551	ERDS2TJ473	1/4W 47K	C131-134	ECQB1H102KF3	50V 1000P
R305, 306	ERDS2TJ224T	1/4W 220K	R552	ERDS2TJ563	1/4W 56K	C135, 136	ECBT1H560J5	50V 56P
R307, 308	ERDS2TJ392T	1/4W 3.9K	R553	ERDS2TJ153	1/4W 15K	C181-186	ECCRIH101K5	50V 100P
R309, 310	ERDS2TJ223	1/4W 22K	R554	ERDS2TJ103	1/4W 10K	C187, 188	ECCRIH181K5	50V 180P
R311, 312	ERDS2TJ102	1/4W 1K	R555	ERDS2TJ563	1/4W 56K	C189, 190	ECCRIH101K5	50V 100P
R313, 314	ERDS2TJ562	1/4W 5.6K	R556	ERDS1FVJ682T	1/2W 6.8K Δ	C191, 192	ECBT1H181KB5	50V 180P
R315, 316	ERDAS3G392T	1/4W 3.9K	R557	ERDS2TJ153	1/4W 15K	C193-196	ECCRIH101K5	50V 100P
R317, 318	ERDAS3G223T	1/4W 22K	R559, 560	ERDS1FVJ100T	1/2W 10 Δ	C213, 214	ECQV1H563JZ3	50V 0.056U
R319, 320	ERDS2TJ183T	1/4W 18K	R561, 562	ERDS1FVJ561T	1/2W 560 Δ	C301, 302	ECA1HPXS3R3B	50V 3.3U
R321, 322	ERDAS3G182	1/4W 1.8K	R563, 564	ERG1SJ151E	1W 150	C303, 304	ECBT1H101KB5	50V 100P
R401, 402	ERDS2TJ122	1/4W 1.2K	R569	ERDFS2VJ6R8T	1/4W 6.8	C305, 306	ECBT1H820KB5	50V 82P
R403, 404	ERDS2TJ823T	1/4W 82K	R571-574	ERDFS2VJ681T	1/4W 680	C307, 308	ECA1HPXS4R7B	50V 4.7U
R405, 406	ERDAS3G272T	1/4W 2.7K	R575, 576	ERDS2TJ103	1/4W 10K	C309, 310	ECBT1H390J5	50V 39P
R407, 408	ERDAS3G823T	1/4W 82K	R577, 578	ERG1SJ181E	1W 180	C311, 312	ECA1CPXS100B	16V 10U
R409, 410	ERDS2TJ561	1/4W 560	R579, 580	ERDFS2VJ332T	1/4W 3.3K	C313, 314	ECQV1H823JZ	50V 0.082U
R411, 412	ERDFS2VJ470T	1/4W 47	R581, 582	ERDS1FVJ561T	1/2W 560 Δ	C315, 316	ECQB1H153JF3	50V 0.015U
R437	ERDS2TJ473	1/4W 47K	R583	ERG1SJ102E	1W 1K	C317, 318	ECQB1H183JF3	50V 0.018U
R439	ERDFS2VJ6R8T	1/4W 6.8	R584	ERG1SJ152E	1W 1.5K	C319, 320	ECQB1H182JF3	50V 1800P
R451, 452	ERDFS2VJ472T	1/4W 4.7K	R585-592	ERG1SJ100E	1W 10	C321, 322	ECQB1H822JF3	50V 8200P
			R601	ERDS1FVJ180T	1/2W 18 Δ	C401, 402	ECA1HPXS3R3B	50V 3.3U
			R602	ERDS2TJ331	1/4W 330	C403, 404	ECBT1H271KB5	50V 270P
			R603, 604	ERDFS2VJ6R8T	1/4W 6.8	C405, 406	ECA1CPXS220B	16V 22U

Ref. No.	Part No.	Values & Remarks			
C407, 408	ECBT1H820KB5	50V 82P			
C409, 410	ECBT1H100J5	50V 10P			
C411, 412	ECBA1H681KB5	50V 680P			
C413, 414	ECCV2H070D	500V 7P			
C415-418	ECBT1H102KB5	50V 1000P			
C427, 428	ECQB1H223JF3	50V 0.022U			
C429	ECA1JAP220B	63V 22U			
C451, 452	ECBT1H104ZF5	50V 0.1U			
C453-456	ECCV2H680K	500V 68P			
C457-460	ECEA1HKA010B	50V 1U			
C501-504	ECA0JPXS101B	6V 100U			
C505-508	ECQM1H224JZ	50V 0.22U			
C509, 510	ECQB1H822JF3	50V 8200P			
C513-516	ECKR1H473ZF5	50V 0.047U			
C517, 518	ECBT1H821KB5	50V 820P			
C519-526	ECKR1H103ZF5	50V 0.01U			
C527, 528	ECBT1H104ZF5	50V 0.1U			
C529	ECA0JAP331B	6.3V 330U			
C530	ECFR1E223KR	25V 0.022U			
C531	ECEA0JKA470B	6.3V 47U			
C532, 533	ECEA1EKA4R7B	25V 4.7U			
C541-544	ECCRIH181K5	50V 180P			
C545-548	ECQB1H153KF3	50V 0.015U			
C549	ECKR1H103ZF5	50V 0.01U			
C553, 554	ECKT1H102KB	50V 1000P			
C555-558	ECBA1H681KB5	50V 680P			
C601, 602	ECED1JM103T	63V 10000U Δ			
C603, 604	ECA1JPXS221E	63V 220U			
C605, 606	ECHR1H103JZ3	50V 0.01U			
C607	ECQE2104KF3	100V 0.1U Δ			
C609	ECA1CM221B	16V 220U			
C611-614	ECA1JAP220B	63V 22U			
C651-653	ECA1EPXS100B	25V 10U			
C654, 655	ECA1HPXS3R3B	50V 3.3U			
C656	ECBT1H821KB5	50V 820P			
C657, 658	ECKR1H103ZF5	50V 0.01U			

CABINET PARTS LOCATION



Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS		48	SNE2117-1	SCREW	
				49	XTB3+8JFZ	SCREW	
				50	RJS1A3404	SOCKET (4P)	
1	RGK0397-K	UPPER PLATE		51	RJT053	TERMINAL	
2	RGW0122-K	VOLUME KNOB		52	SJS5331	SOCKET (3P)	
3	RGW0123-K	REC. /INPUT KNOB		53	SJT783	TERMINAL	
4	RGW0150-K	TONE/PHONO/S. P. SELECT KNOB					
5	RKMD172-K	CABINET				PACKING MATERIALS	
6	SNE2129-3	SCREW					
7	XTBS3+8JFZ1	SCREW		P1	RPG1214	PACKING CASE	
8	RWJ3907150QQ	FLAT CABLE (7P) (W602)		P2	RPN0511-1	PAD	
9	RWJ3908170QQ	FLAT CABLE (8P) (W201)		P3	SPH223	PROTECTION SHEET (A)	
10	RWJ3910170QQ	FLAT CABLE (10P) (W401)		P4	SPH6434	PROTECTION SHEET (B)	
11	RWJ3909170QQ	FLAT CABLE (9P) (W501)		P5	RPQ0164	ACCESSORIES BOX	
12	RWJ3903070XK	FLAT CABLE (3P) (W502)		P6	XZB24X34C04	PROTECTION COVER (ACCESSORY)	
13	RGR0124A-E1A	REAR PANEL	(EB)				
13	RGR0124A-D1A	REAR PANEL	(EG)			ACCESSORIES	
14	RGU0030	POWER BUTTON					
15	RGU0609-K	LOUDNESS/MUTING/MODE BUTTON		A1	RFKSUVX820EG	INSTRUCTIONS MANUAL	(EG)
16	RGU0611-K	DIRECT BUTTON		A1	RQT1486-B	INSTRUCTIONS MANUAL	(EB)
17	RHN90001	NUT		A2	RQA0013	WARRANTY CARD	
18	RFKJUVX800EK	BOTTOM BOARD ASS' Y		A3	RQCB0169	SERVICE CENTER LIST	
18-1	RKA0009-1	FOOT		A4	SJA193	AC POWER SUPPLY CORD	△ (EB)
19	RKU0036	BOTTOM PLATE		A4	RJA0019-1K	AC POWER SUPPLY CORD	△ (EG)
20	RMA0476-2	ANGLE					
21	RMA0584	SIDE ANGLE					
22	RMA0585	CENTER ANGLE					
23	RMQ0255-1	PLATE					
24	RSQ0019	REMOTE SWITCH (INPUT)					
25	RSQ0020	REMOTE SWITCH (REC. SEL.)					
26	RSQ0021	REMOTE SWITCH (PHONO)					
27	RFKGVX820EG	FRONT PANEL ASS' Y					
28	RGK0393-K	VOLUME ORNAMENT					
29	RGK0394-A	RING					
30	RGK0398-K	SIDE ORNAMENT (R)					
31	RGK0399-K	SIDE ORNAMENT (L)					
32	RGL0136-C1	ORNAMENT					
33	RGL0164-C	ORNAMENT					
34	RMRO460-K	HOLDER					
35	RMRO461-K	HOLDER					
36	XTBS26+8J	SCREW					
37	SHE187-2	P. C. B. SPACER					
38	SHR9814	CLUMPER					
39	SJS9231A	AC INLET COVER					
40	XTBS3+8JFZ1	SCREW					
41	XTB3+20JFZ	SCREW					
42	XTBS26+8J	SCREW					
43	XTB4+10FFZ	SCREW					
44	XTB4+8FFZ	SCREW					
45	XTWS3+8T	SCREW					
46	RMQ0239	ANGLE					
47	RMQ0240	ANGLE					

■ PACKAGING

