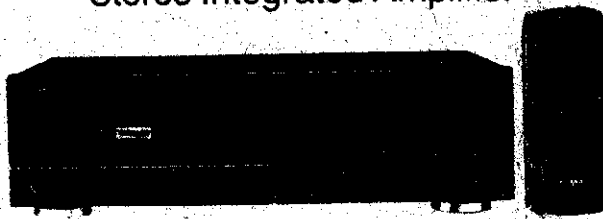


Service Manual

Amplifier

SU-VX720

Stereo Integrated Amplifier



Colour

(K) Black Type

Areas

Suffix for Model No.	Area	Colour
(EG)	Europe	(K)
(EB)	Great Britain	
(EO)	Switzerland	
(GC)	Asia, Latin America, Middle Near East and Africa	
(GN)	Oceania	

SPECIFICATIONS (DIN 45 500)

- 20 Hz~20 kHz continuous power output both channels driven 2 × 55 W (8 Ω)
- 1 kHz continuous power output both channels driven (THD: 1%) : 2 × 70 W (8 Ω)
2 × 100 W (4 Ω)
- 63 Hz~12.5 kHz continuous power output both channels driven (THD: 0.7%) : 2 × 65 W (8 Ω)
2 × 85 W (4 Ω)
- Total harmonic distortion rated power at 20 Hz~20 kHz 0.007% (8 Ω)
- Intermodulation distortion (50 Hz: 7 kHz = 4:1, SMPTE) rated power 0.007% (8 Ω)
- Residual hum and noise 1 mV
- Damping factor 60 (8 Ω), 30 (4 Ω)
- Headphones output level/impedance 540 mV/330 Ω
- Load impedance 4 Ω~16 Ω
8 Ω~16 Ω
- Input sensitivity/impedance 2.5 mV/47 kΩ
- PHONO MM 170 μV/220 Ω
- PHONO MC 150 mV/22 kΩ
- TUNER, CD, AUX, TAPE 1, TAPE 2/DAT
- Phono maximum input voltage (1 kHz, RMS) 160 mV (IHF '66)
12 mV (IHF '66)
- MM
- MC
- S/N (rated power, 4 Ω) 78 dB (85 dB, IHF '66)
- PHONO MM 64 dB (S = 250 μV, 66 dB, IHF '66)
- PHONO MC
- TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 91 dB (99 dB, IHF '66)
- S/N at -26 dB power (4 Ω) 68 dB
- PHONO MM 63 dB
- PHONO MC
- TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 70 dB

S/N at 50 mW power (4 Ω)

- PHONO MM 64 dB
- PHONO MC 60 dB
- TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 84 dB

Frequency response

- PHONO MM RIAA standard curve ±0.3 dB
(30 Hz~15 kHz)
- TUNER, CD, AUX, TAPE 1, TAPE 2/DAT 3 Hz~80 kHz (+0, -3 dB)
+0 dB, -0.3 dB (20 Hz~20 kHz)

Tone controls

- BASS 50 Hz, +10~-10 dB
- TREBLE 20 kHz, +10~-10 dB
- Subsonic filter 30 Hz, -6 dB/oct
- Loudness control (volume at -30 dB) 50 Hz, +9 dB
- Output voltage 150 mV
- TAPE 1, TAPE 2/DAT REC OUT ±1 dB
- Channel balance (AUX 250 Hz~6.3 kHz)
- Channel separation (AUX 1 kHz) 50 dB

■ GENERAL

- Power consumption 250 W
- Power supply AC 50 Hz/60 Hz, 230 V/240 V
- For (EG), (EB), (EO), (GN) areas
- For (GC) area AC 50 Hz/60 Hz, 110 V~127 V/220 V~240 V
- Dimensions (W × H × D) 430 × 125 × 316 mm
- Weight 8.7 kg

Notes:

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

Technics

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•PRINTED CIRCUIT BOARD DIAGRAM	19-24		

BEFORE REPAIR AND ADJUSTMENT

- (1) Turn off the power supply. Using a 10Ω, 10 W resistor, shortcircuit both ends of power supply capacitors Z701-1 and Z701-2 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 110~127 V	AC 220~240 V	AC 230 V	AC 240 V
Consumed current	50 Hz 320~520 mA	110~310 mA	110~310 mA	100~300 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.

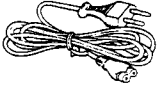



If this occurs, follow the procedure outlined below:

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

Note:

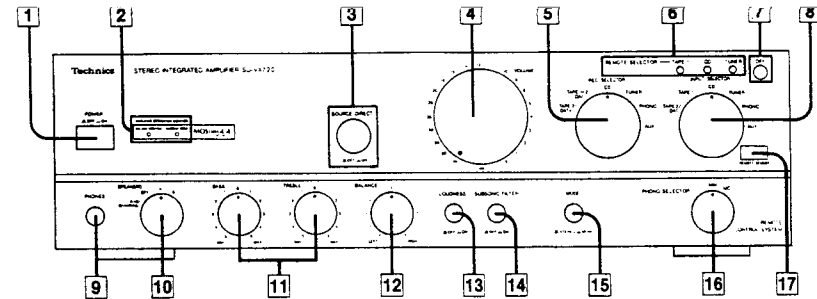
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

ACCESSORIES

<ul style="list-style-type: none"> •AC power supply cord <RJA0019-1K>: (EG), (EO) <SJA193>: (EB) <RJA0004>: (GC) <SJA173>: (GN) 	<ul style="list-style-type: none"> •Remote control transmitter (RAK-SU301W) 1 
<ul style="list-style-type: none"> •Batteries <R03> 	<ul style="list-style-type: none"> •Power plug adaptor <SJP9215>: (GC) area only 1 

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

FUNCTION 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 Source direct switch (SOURCE DIRECT)

This switch is used when enjoying high quality sound playback such as that from a CD.

4 Volume control (VOLUME)

5 Recording selector (REC SELECTOR)

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

6 Remote control input indicator (REMOTE SELECTOR)

This indicator illuminates to indicate the input source selected (TAPE 1, CD or TUNER).

While this indicator is illuminated, the input will not change even if the input source is changed using the main unit input selector.

7 Remote control input erase button (OFF)

This button is used to erase the input selected on the remote control transmitter in order to select the desired source using the input selector on the main unit.

8 Input selector (INPUT SELECTOR)

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

9 Headphones jack (PHONES)

10 Speaker selector (SPEAKERS)

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

11 Tone controls (BASS/TREBLE)

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

12 Balance control (BALANCE)

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

13 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.

14 Subsonic filter switch (SUBSONIC FILTER)

This switch 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.

15 Mode selector (MODE)

This selector is used to select stereo or monaural operation.

16 Phono cartridge selector (PHONO SELECTOR)

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

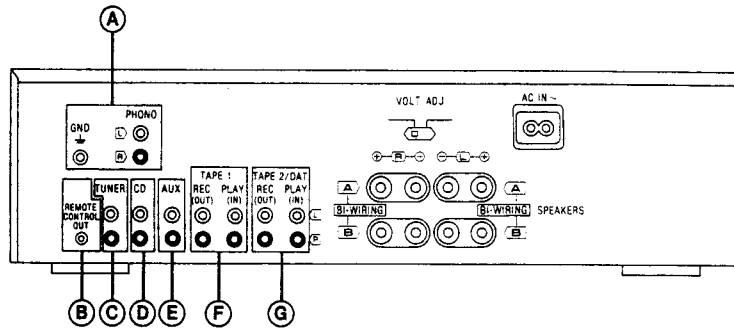
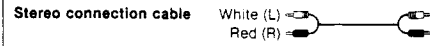
17 Remote control signal receptor (REMOTE SENSOR)

Receives the signals from the remote control.

CONNECTIONS

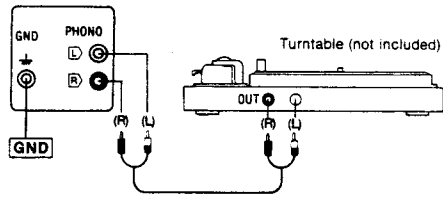
To connect to each terminals

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



A "PHONO" terminals

Connect to a turntable.



•Phono input capacitance is about 470 pF.

■ "GND" terminal

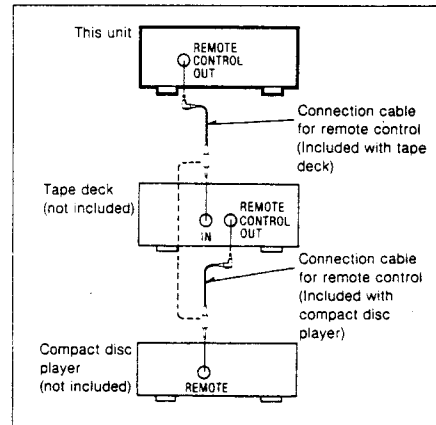
This terminal is for use with a turntable which has a ground wire.

B "REMOTE CONTROL OUT" terminals

This terminal can be used only with Technics tape deck and compact disc player which have the appropriate remote control terminal. (Consult your dealer for details.) Proper connection with remote control connection cables will allow control of some functions from this unit's remote control transmitter.

Connect to a tape deck and/or compact disc player as shown below.

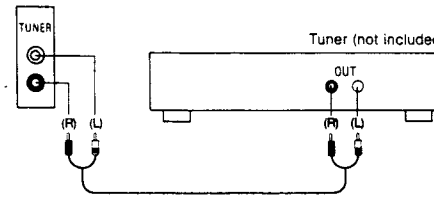
If a tape deck is not being used, the compact disc player can be connected directly (dotted line).



Note: For a compact disc player with a remote control sensor the above connection is not necessary.

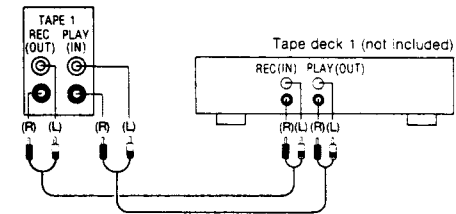
C "TUNER" terminals

Connect to a tuner.



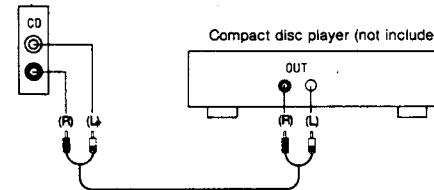
F "TAPE 1" terminals

Connect to a first tape deck.



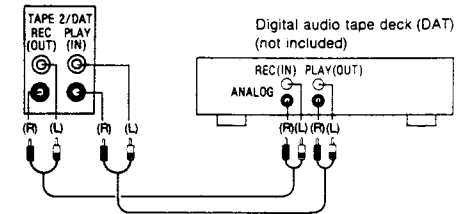
D "CD" terminals

Connect to a compact disc player.



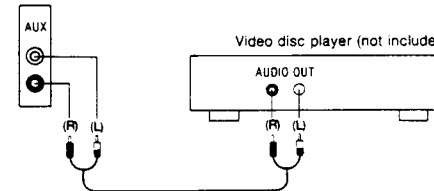
G "TAPE 2/DAT" terminals

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

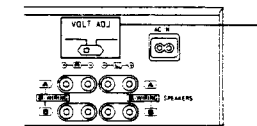


E "AUX" terminals

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



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]

For (EG), (EB), (EO), (GN) areas
Set the voltage setting to "230 V" or "240 V".

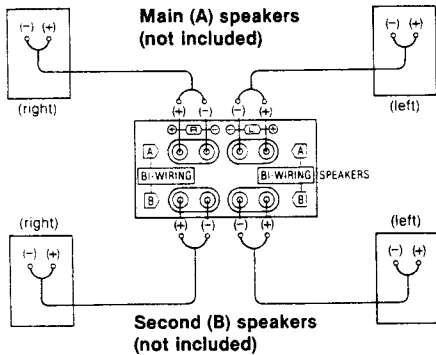
For others
Set the voltage setting to "110 V-127 V" or "220 V-240 V".

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

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.

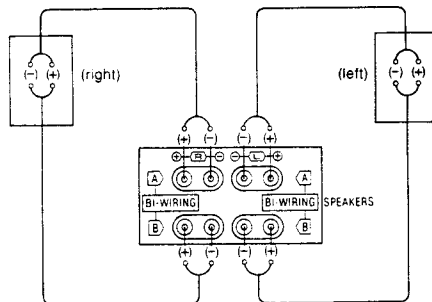
To connect main and/or second speakers



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 (not included)



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

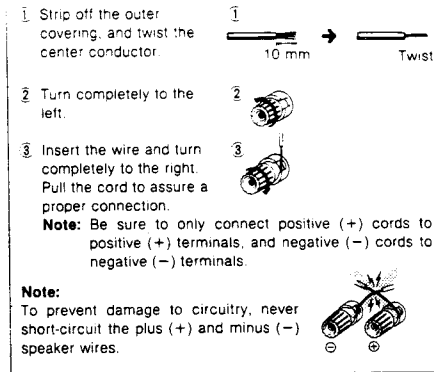
Load impedance

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

Bi-wiring

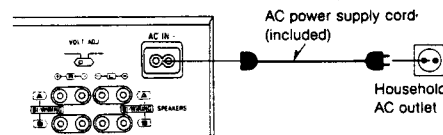
The treble range and the bass range of the speakers are connected to the speaker terminals of the amplifier by using two speaker connection cords separately for each. As a result of making connections in this way, sound can be reproduced with much greater nuance and detail, with the feelings of air oscillation 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



To connect the AC power supply cord (included)

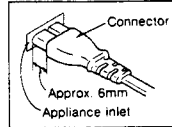
Connect the AC power supply cord (included) after all other cables and cords are connected.



For Europe

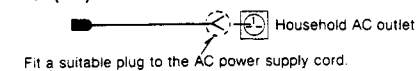
Insertion of Connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing. However, there is no problem using the unit.

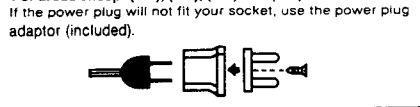


Note: The configuration of the AC power supply cord differs according to area.

For (EB) area



For areas except (EG), (EB), (EO) and (GN)

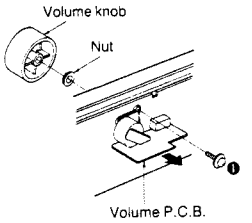
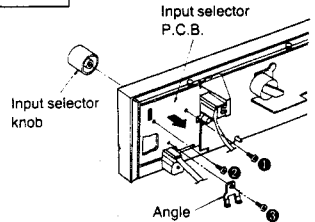
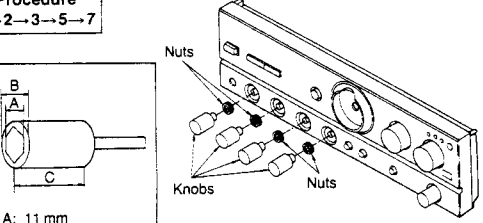
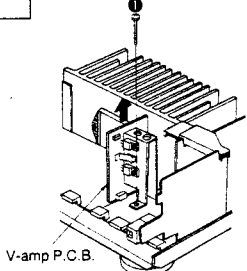


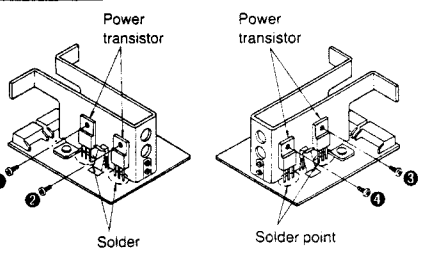
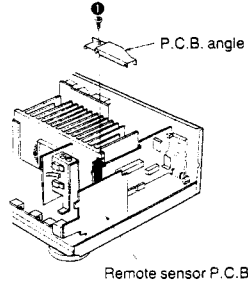
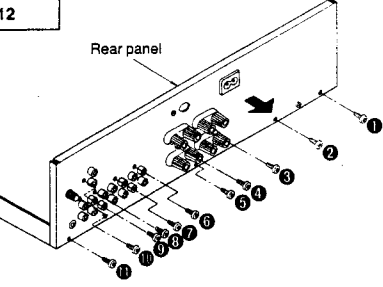
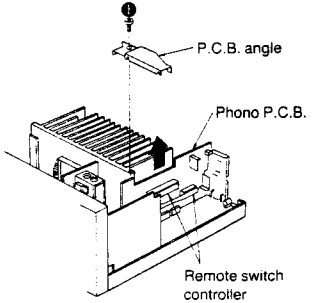
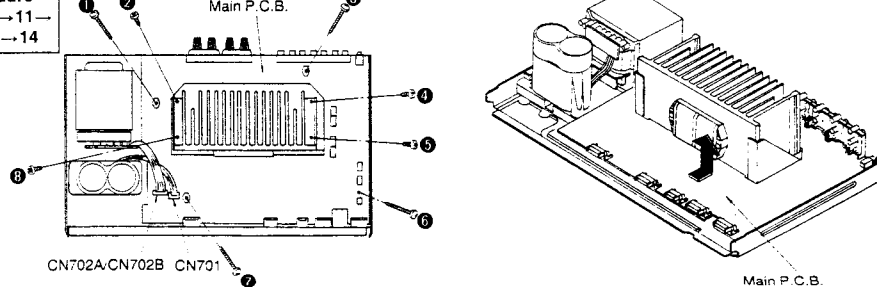
DISASSEMBLY INSTRUCTIONS

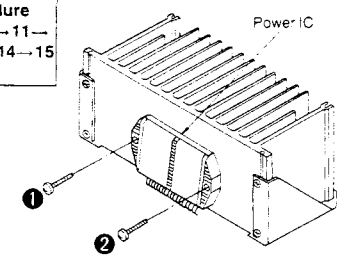
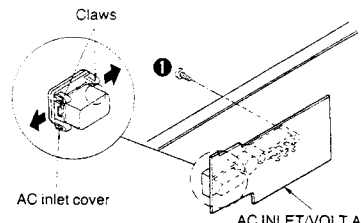
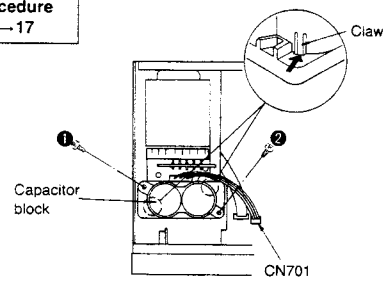
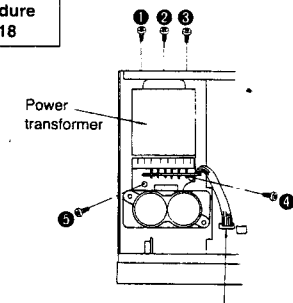
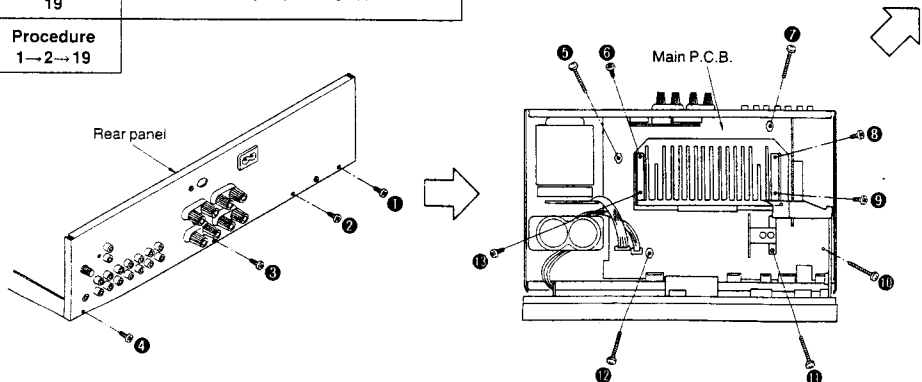
"ATTENTION SERVICER"

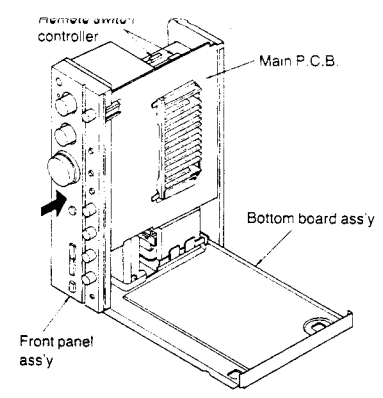
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the cabinet	Ref. No. 2	Removal of the front panel ass'y
Procedure 1	<ol style="list-style-type: none"> 1. Remove the 7 screws (1-7). 2. Remove the 4 screws (8-11). (For EB, EO areas) 3. Remove the upper plate. (For EB, EO areas) 	Procedure 1-2	<ol style="list-style-type: none"> 1. Remove the remote switch controller. 2. Remove the 5 screws (1-5). 3. Remove the earth plate and angle. 4. Remove the front panel ass'y in the direction of arrow.
	<p>Removal of the remote switch controller</p> <p>• Remove the 4 claws.</p> <p>S102 (REC SELECTOR) S103 (PHONO SELECTOR)</p>		<p>Replacing of the remote switch controller</p> <ol style="list-style-type: none"> 1. Turn the selector knobs to the arrows. 2. Put the switch slider to end and put in the remote switch controller.
Ref. No. 3	Removal of the power switch P.C.B.	Ref. No. 4	Removal of the remote switch controller
Procedure 1-2-3	<ol style="list-style-type: none"> 1. Remove the 1 connector (CP501). 2. Release the cables from code clamper. 3. Remove the 2 screws (1, 2). 	Procedure 1-2-4	<ol style="list-style-type: none"> 1. Pull out the 2 knobs. 2. Remove the 2 nuts. 3. Remove the 3 screws (1-3). 4. Remove the rec earth spring and angle. 5. Remove the remote switch controller in the direction of arrow.

<p>Ref. No. 5</p> <p>Removal of the volume P.C.B.</p>	<p>Ref. No. 6</p> <p>Removal of the input selector P.C.B.</p>
<p>Procedure 1→2→5</p>  <ol style="list-style-type: none"> 1. Pull out the volume knob. 2. Remove the nut. 3. Remove the 1 screw (1). 4. Remove the volume P.C.B. in the direction of arrow. 	 <ol style="list-style-type: none"> 1. Pull out the input selector knob. 2. Remove the 3 screws (1-3). 3. Remove the angle. 4. Remove the input selector P.C.B. in the direction of arrow.
<p>Ref. No. 7</p> <p>Removal of the operation P.C.B.</p>	<p>Ref. No. 9</p> <p>Removal of the V-amp P.C.B.</p>
<p>Procedure 1→2→3→5→7</p>  <p>A: 11 mm B: 16 mm C: longer than 22 mm ● Use a wrench of the dimensions shown in the illustration above to remove nuts.</p> <ol style="list-style-type: none"> 1. Pull out the 4 knobs. 2. Remove the 4 nut. 	 <ol style="list-style-type: none"> 1. Remove the 1 screw (1). 2. Remove the V-amp P.C.B. in the direction of arrow.

<p>Ref. No. 10</p> <p>Removal of the power transistor</p>	<p>Ref. No. 11</p> <p>Removal of the remote sensor P.C.B.</p>
<p>Procedure 1→9→10</p>  <ol style="list-style-type: none"> 1. Unsolder the power transistor. 2. Remove the 4 screws (1-4). ● When mounting power transistor, apply silicon thermal compound (RFKX002) to the rear of the power transistor. 	 <ol style="list-style-type: none"> 1. Remove the 1 screw (1). 2. Remove the P.C.B. angle. 3. Remove the remote sensor P.C.B. in the direction of arrow.
<p>Ref. No. 12</p> <p>Removal of the rear panel</p>	<p>Ref. No. 13</p> <p>Removal of the phono P.C.B.</p>
<p>Procedure 1→12</p>  <ol style="list-style-type: none"> 1. Remove the 11 screws (1-11). 2. Remove the rear panel in the direction of arrow. 	 <ol style="list-style-type: none"> 1. Remove the 1 screw (1). 2. Remove the P.C.B. angle. 3. Remove the remote switch controller. 4. Remove the phono P.C.B. in the direction of arrow.
<p>Ref. No. 14</p> <p>Removal of the main P.C.B.</p>	
<p>Procedure 1→2→9→11→12→13→14</p>  <ol style="list-style-type: none"> 1. Remove the 1 connector (CN701). 2. Remove the 1 flat cable (CN702A/CN702B). 3. Remove the 8 screws (1-8). 4. Remove the main P.C.B. in the direction of arrow. 	

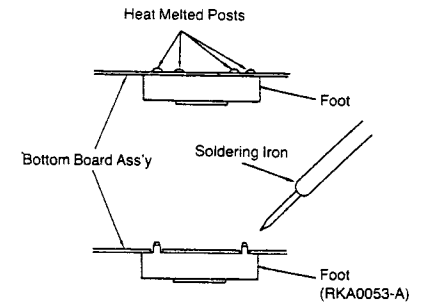
<p>Ref. No. 15</p> <p>Removal of the power IC</p> <p>Procedure 1→2→9→11→12→13→14→15</p>  <p>1. Unsolder the power IC. 2. Remove the 2 screws (1, 2). •When mounting the power IC and heat sink, apply silicon thermal compound (RFKX0002 or equivalent) to the rear of the power IC.</p>	<p>Ref. No. 16</p> <p>Removal of the AC INLET/VOLT ADJ. P.C.B.</p> <p>Procedure 1→12→16</p>  <p>1. Remove the 1 screw (1). 2. Release the 2 claws of AC inlet cover.</p>
<p>Ref. No. 17</p> <p>Removal of the capacitor block</p> <p>Procedure 1→17</p>  <p>1. Remove the 1 connector (CN701). 2. Remove the 2 screws (1, 2). 3. Release the 2 claws.</p>	<p>Ref. No. 18</p> <p>Removal of the power transformer</p> <p>Procedure 1→18</p>  <p>1. Remove the 1 flat cable (CN702A/CN702B). 2. Remove the 5 screws (1-5).</p>
<p>Ref. No. 19</p> <p>Check of the main P.C.B.</p> <p>Procedure 1→2→19</p>  <p>1. Remove the 4 screws (1-4). 2. Remove the 9 screws (6-14).</p>	



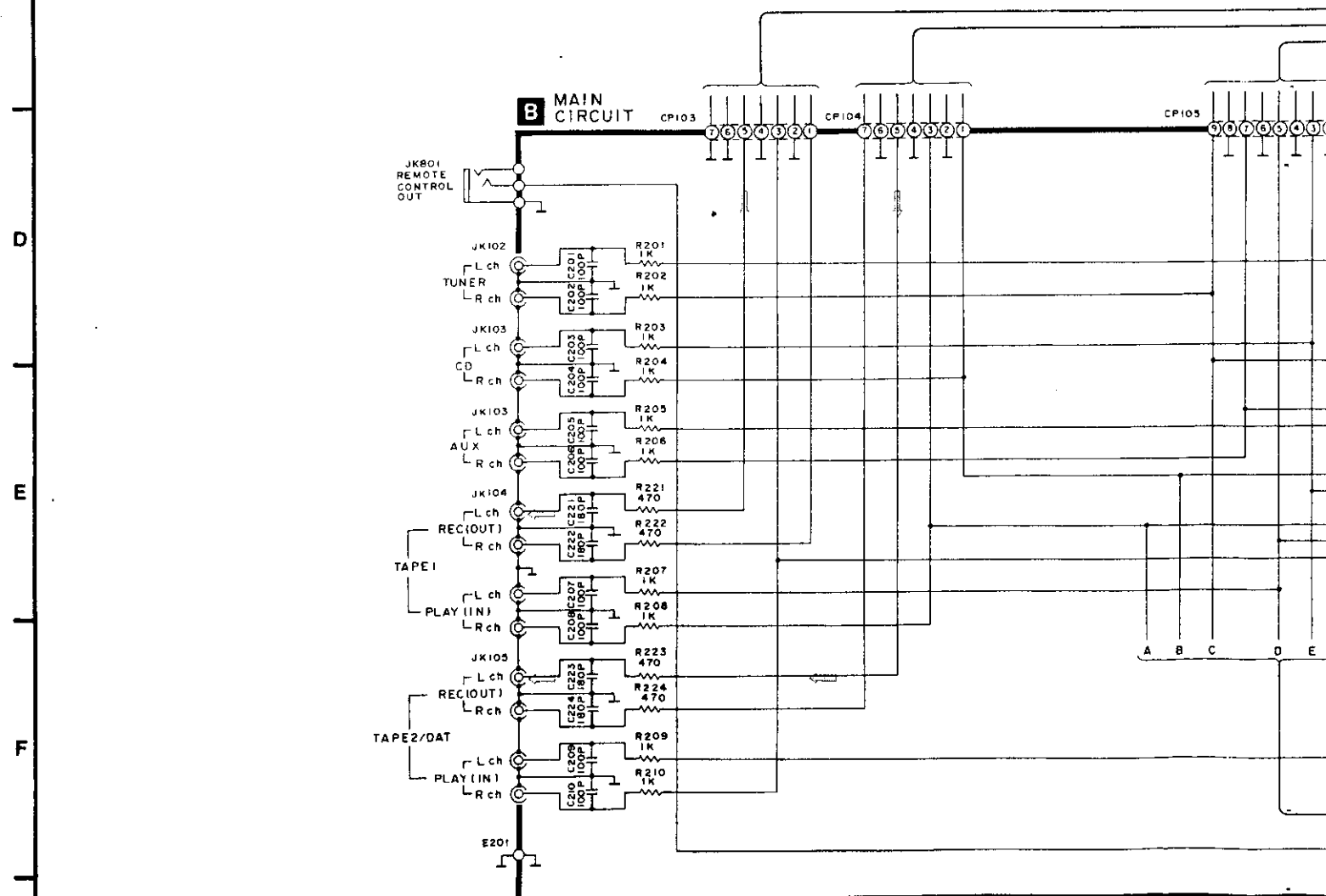
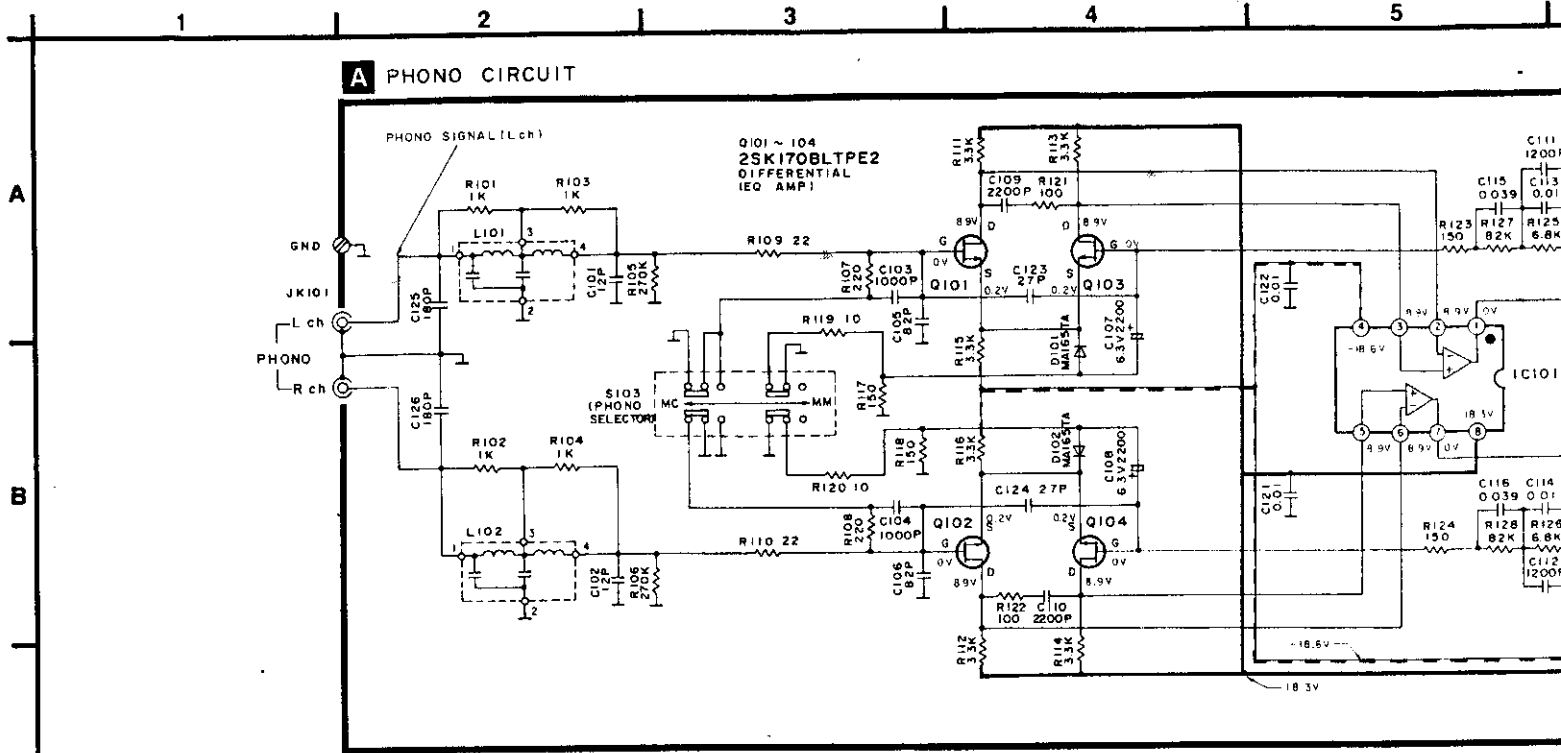
3. Remove the bottom board ass'y.
4. Reinstall the front panel ass'y to the main P.C.B. and place the unit as shown right.
5. Reinstall the remote switch controller to the switch.

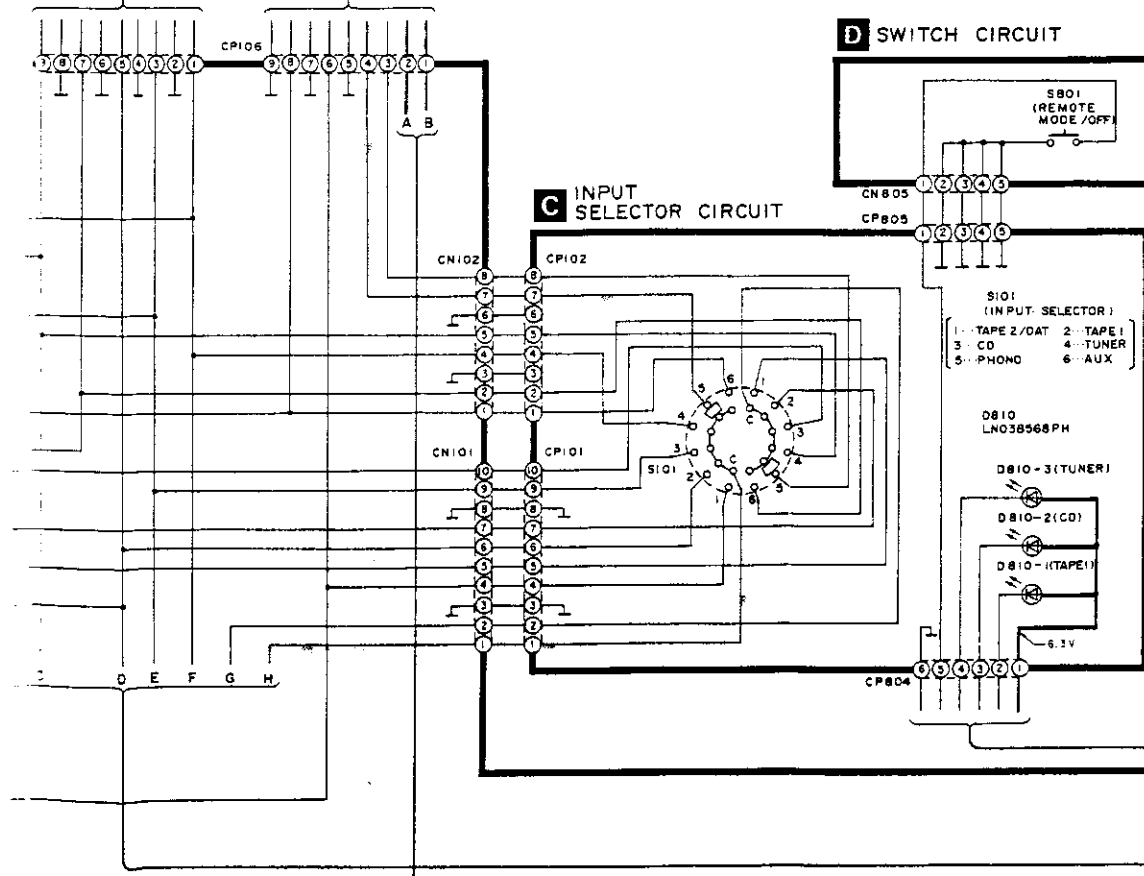
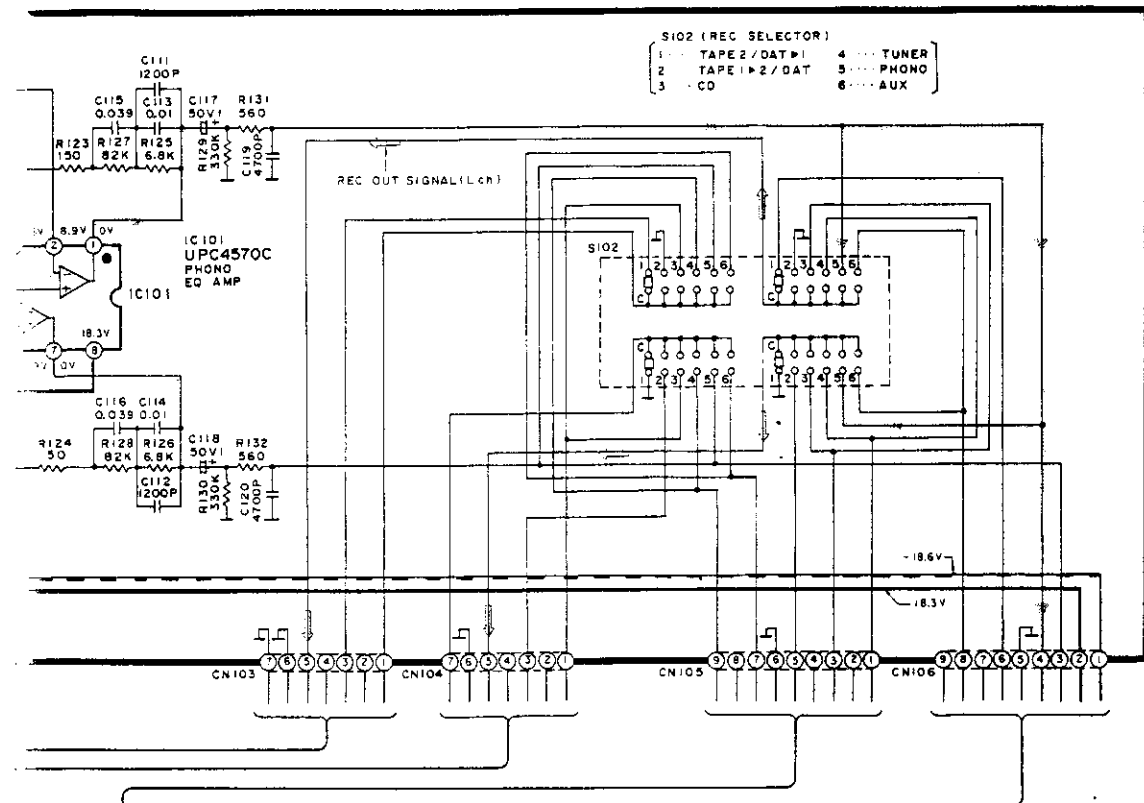
•REPLACEMENT OF THE FOOT

1. Remove the 4 heat melted posts on the bottom board ass'y with a pair of nippers or similar tool.
2. To replace the foot (RKA0053-A) on the bottom board ass'y, melt the 4 posts with a soldering iron.

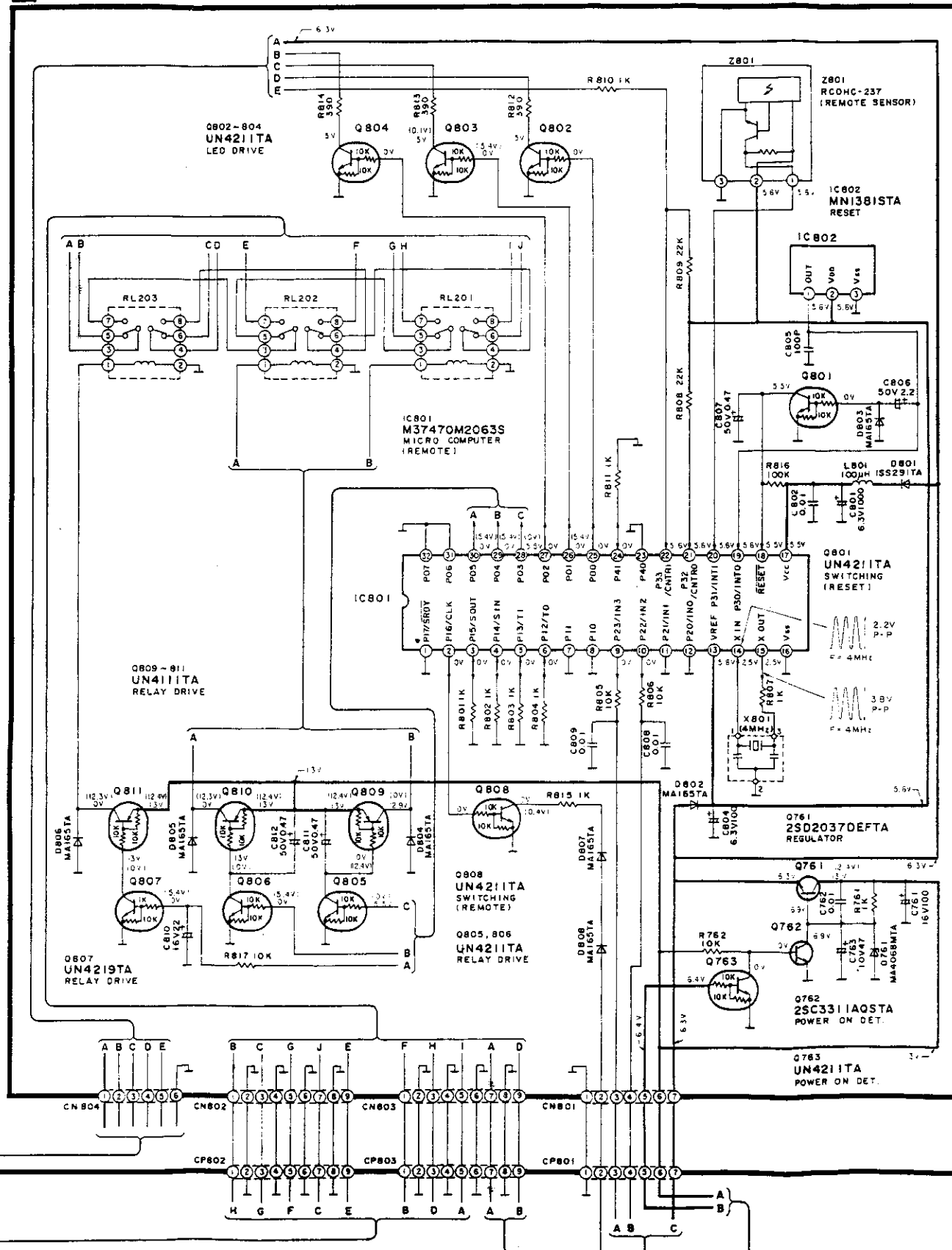


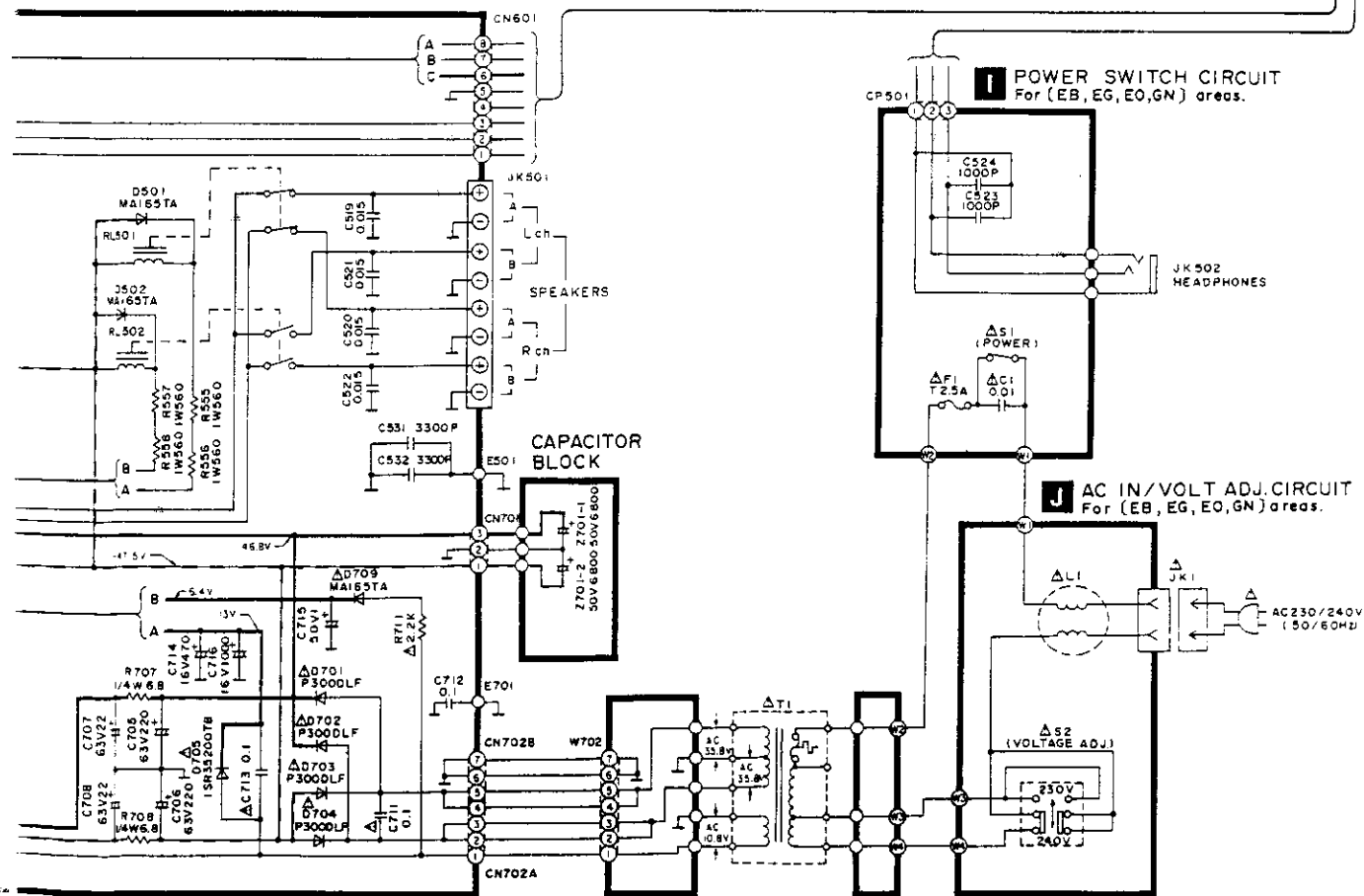
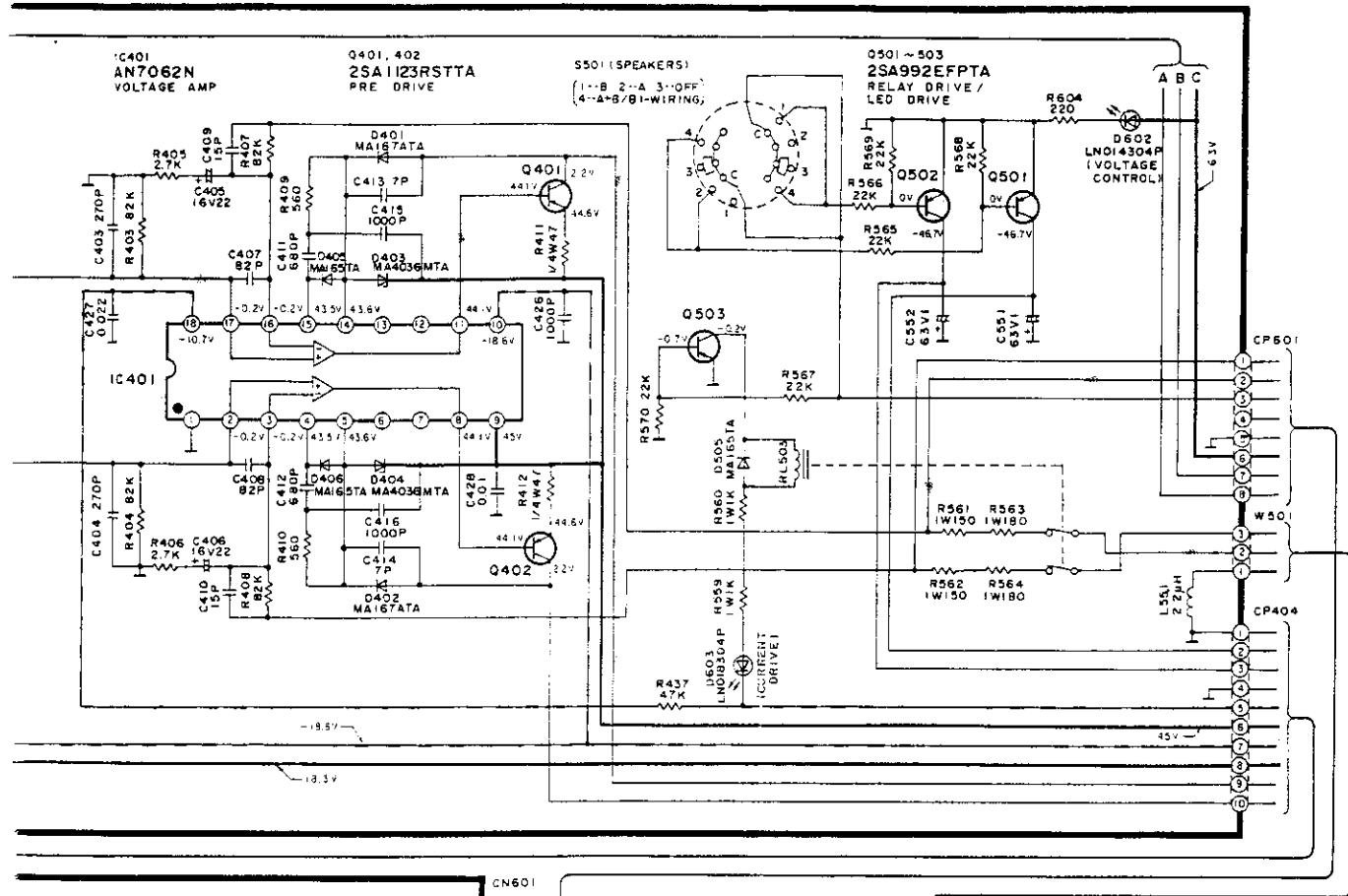
SCHEMATIC DIAGRAM (Parts list on pages 29-32.)





E REMOTE SENSOR CIRCUIT





Notes:

- S1 : Power switch in "ON" position. (POWER)
(OFF, ON)
- S2 : Voltage select switch in "240 V" position. (VOLT ADJ) for (EG) (EB) (EO) (GN) areas
Voltage select switch in "110 V-127 V" position. (VOLT ADJ) for (GC) area
- S101 : Input select switch in "PHONO" position. (INPUT SELECT)
- S102 : Rec select switch in "TAPE 2/DAT ▶ 1" position. (REC SELECTOR)
- S103 : Phono cartridge select switch in "MC" position. (PHONO SELECTOR)
- S201 : Mode select switch in "STEREO" position. (MODE)
- S202 : Loudness switch in "OFF" position. (LOUDNESS)
- S203 : Source direct switch in "ON" position. (SOURCE DIRECT)
- S204 : Subsonic filter switch "OFF" position. (SUBSONIC FILTER)
- S501 : Speaker select switch in "OFF" position. (SPEAKERS)
- S801 : Remote control input erase switch. (OFF)

•Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester. No mark: Power ON () Indicated voltage: When D810-2 is lighting up

•Important safety notice:
Components identified by Δ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

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

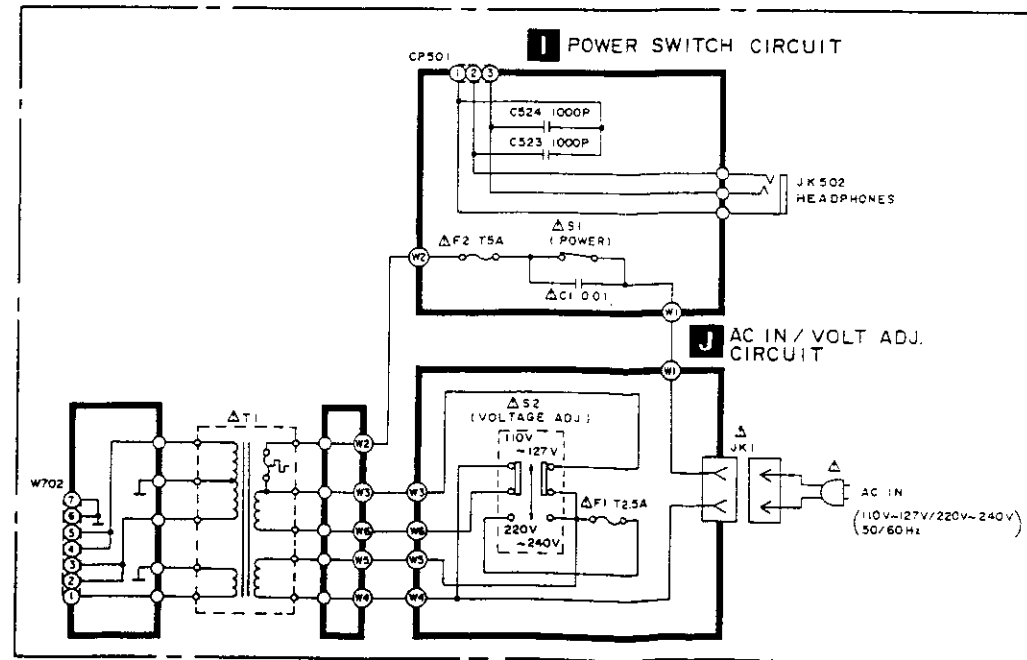
•Caution!

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

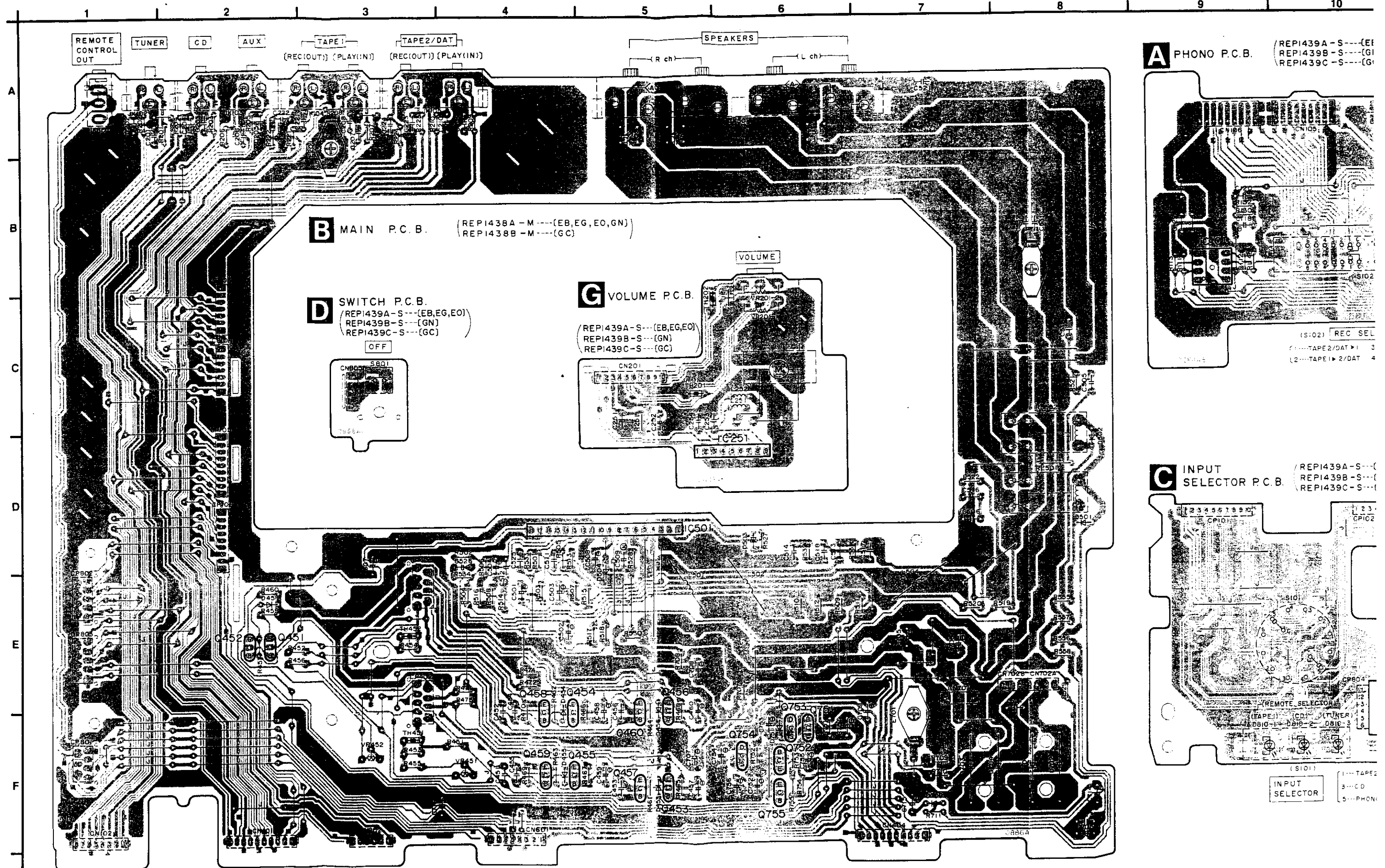
•Voltage and signal line

- : Positive voltage line.
- - - : Negative voltage line.
- ⋯ : Phono signal line.
- : Recording output signal line.

Power Source For (GC) area.



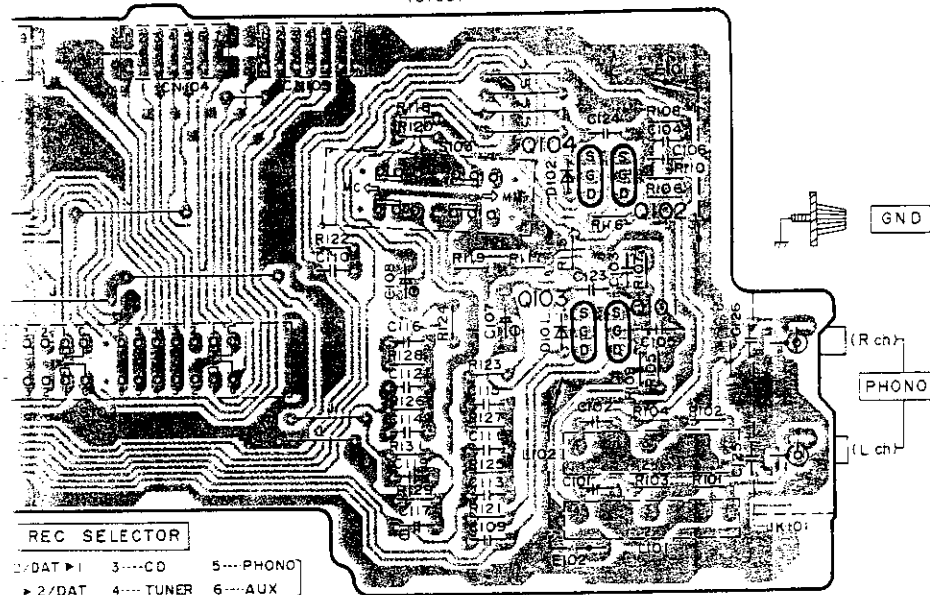
PRINTED CIRCUIT BOARD DIAGRAM (Parts list on pages 29-32.)



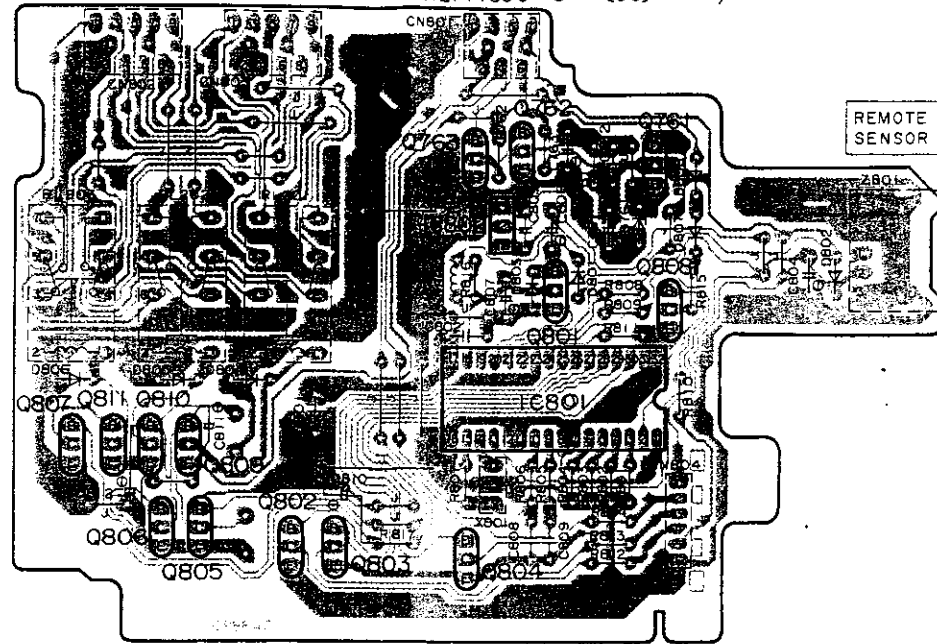
1-S---(EB,EG,E0)
3-S---(GN)
5-S---(GC)

PHONO SELECTOR

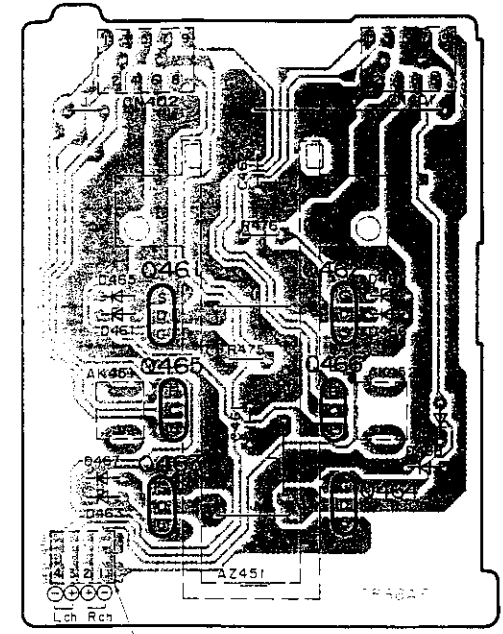
(S103)



E REMOTE SENSOR P.C.B. (REPI439A-S---(EB,EG,E0)
REPI439B-S---(GN)
REPI439C-S---(GC)

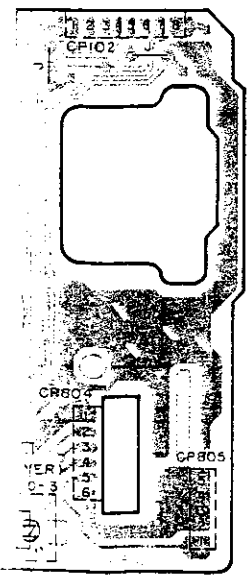


F V-AMP P.C.B. (REPI439A-S---(EB,EG,E0)
REPI439B-S---(GN)
REPI439C-S---(GC)



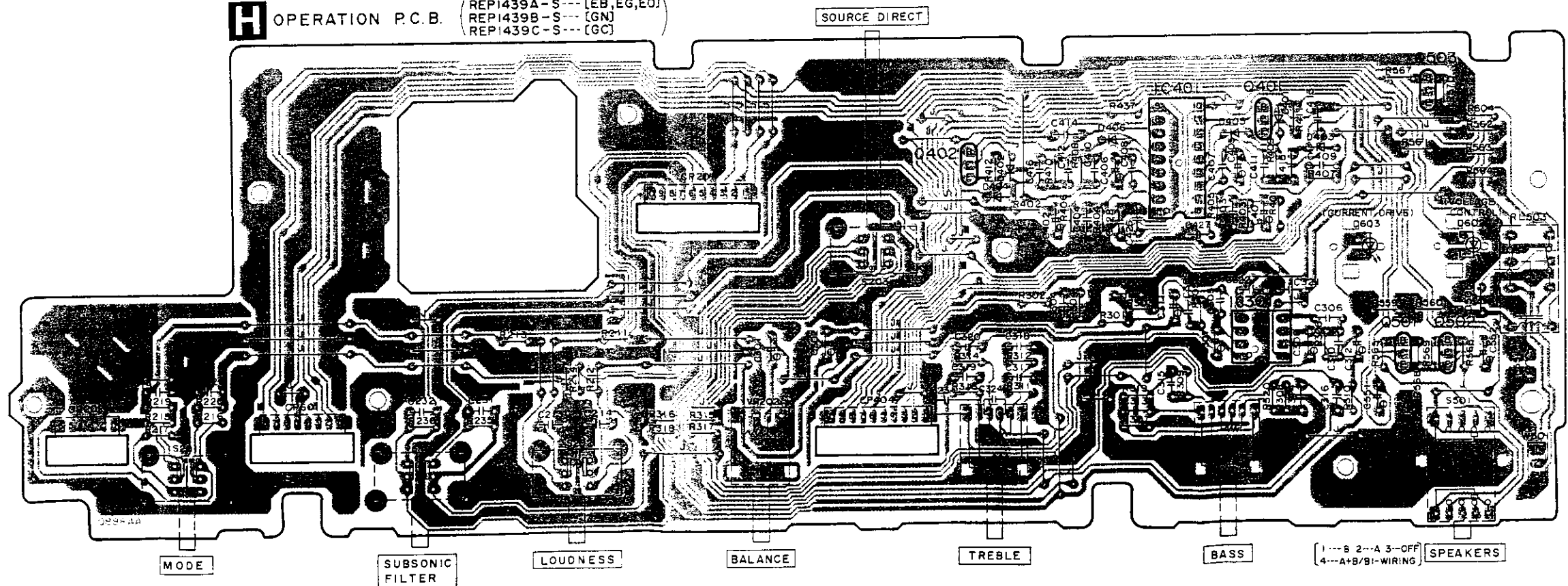
VOLTAGE CONTROL (V) AMP
IDLING (ICQ) ADJ.

39A-S---(EB,EG,E0)
39B-S---(GN)
39C-S---(GC)

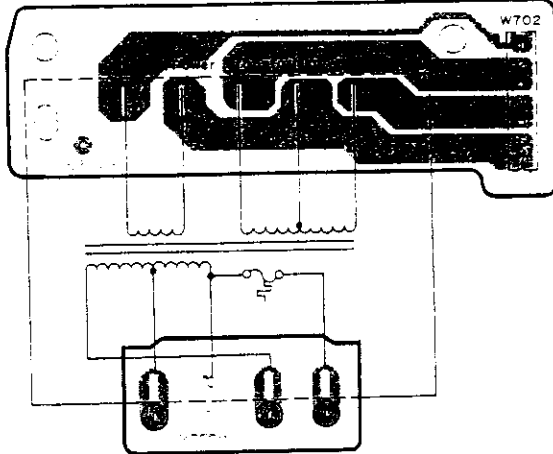


1---TAPE2/DAT 2---TAPE1
3---CD 4---TUNER
5---PHONO 6---AUX

H OPERATION P.C.B. (REPI439A-S---(EB,EG,E0)
REPI439B-S---(GN)
REPI439C-S---(GC)

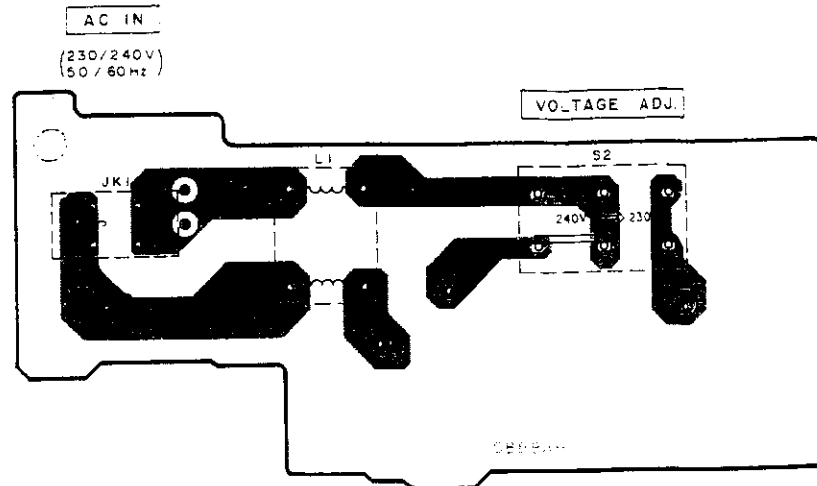


(REPI439A-S---[EB,EG,EO])
(REPI439B-S---[GN])

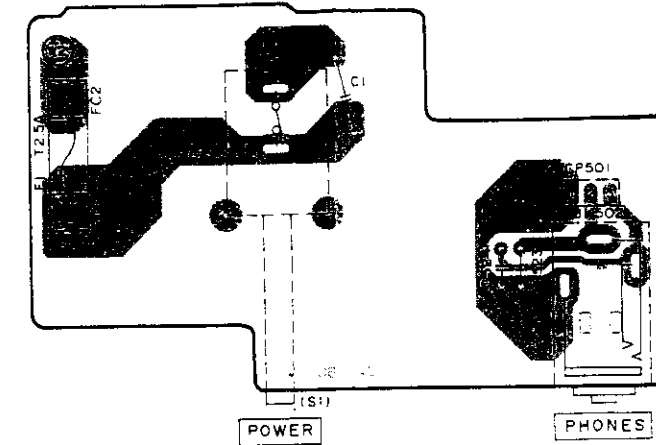


(REPI439A-S---[EB,EG,EO])
(REPI439B-S---[GN])

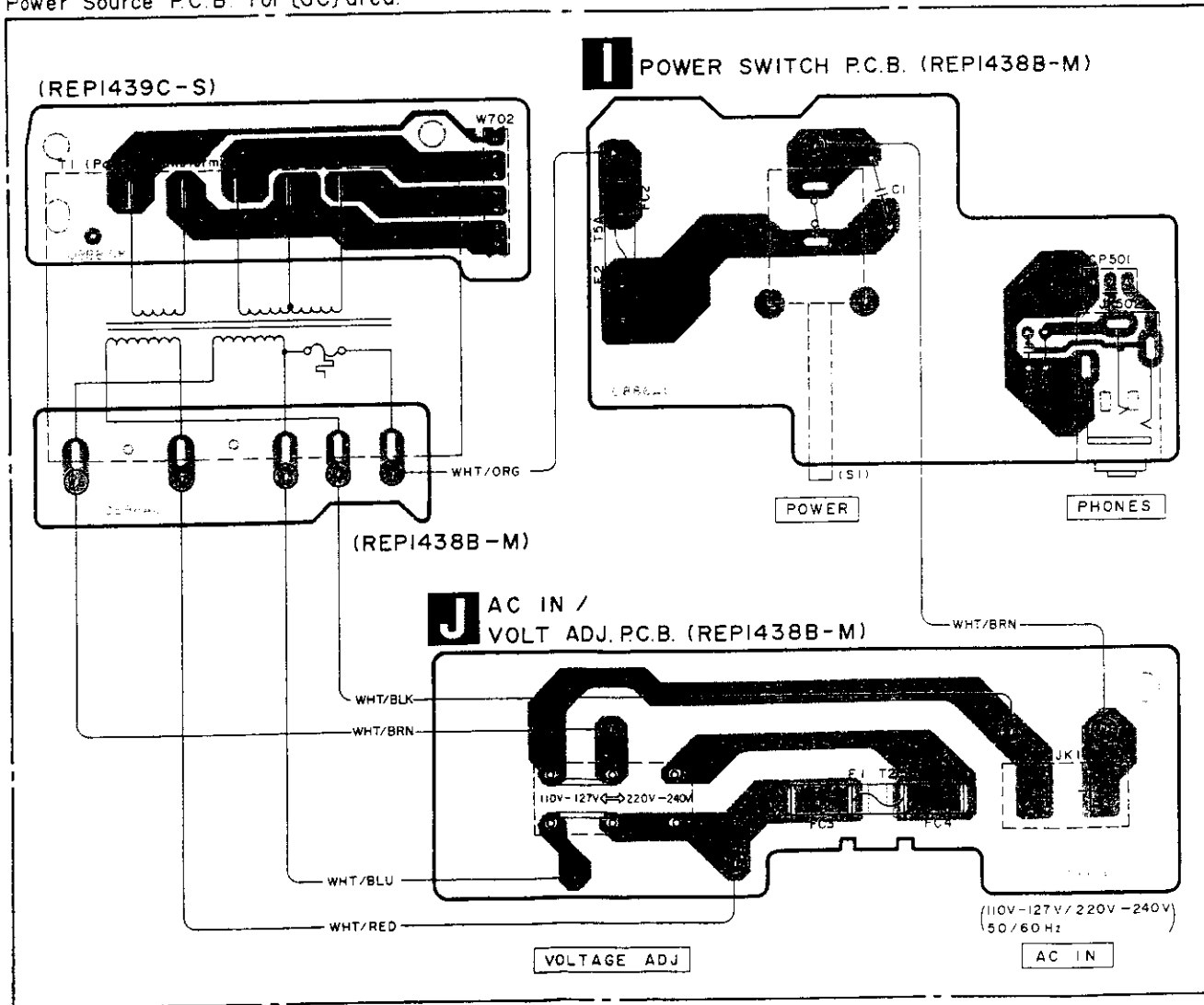
J AC IN/VOLT ADJ. P.C.B. (REPI439A-S---[EB,EG,EO])
For [EB,EG,EO,GN] areas. (REPI439B-S---[GN])



I POWER SWITCH P.C.B. (REPI439A-S---[EB,EG,EO])
For [EB,EG,EO,GN] areas. (REPI439B-S---[GN])



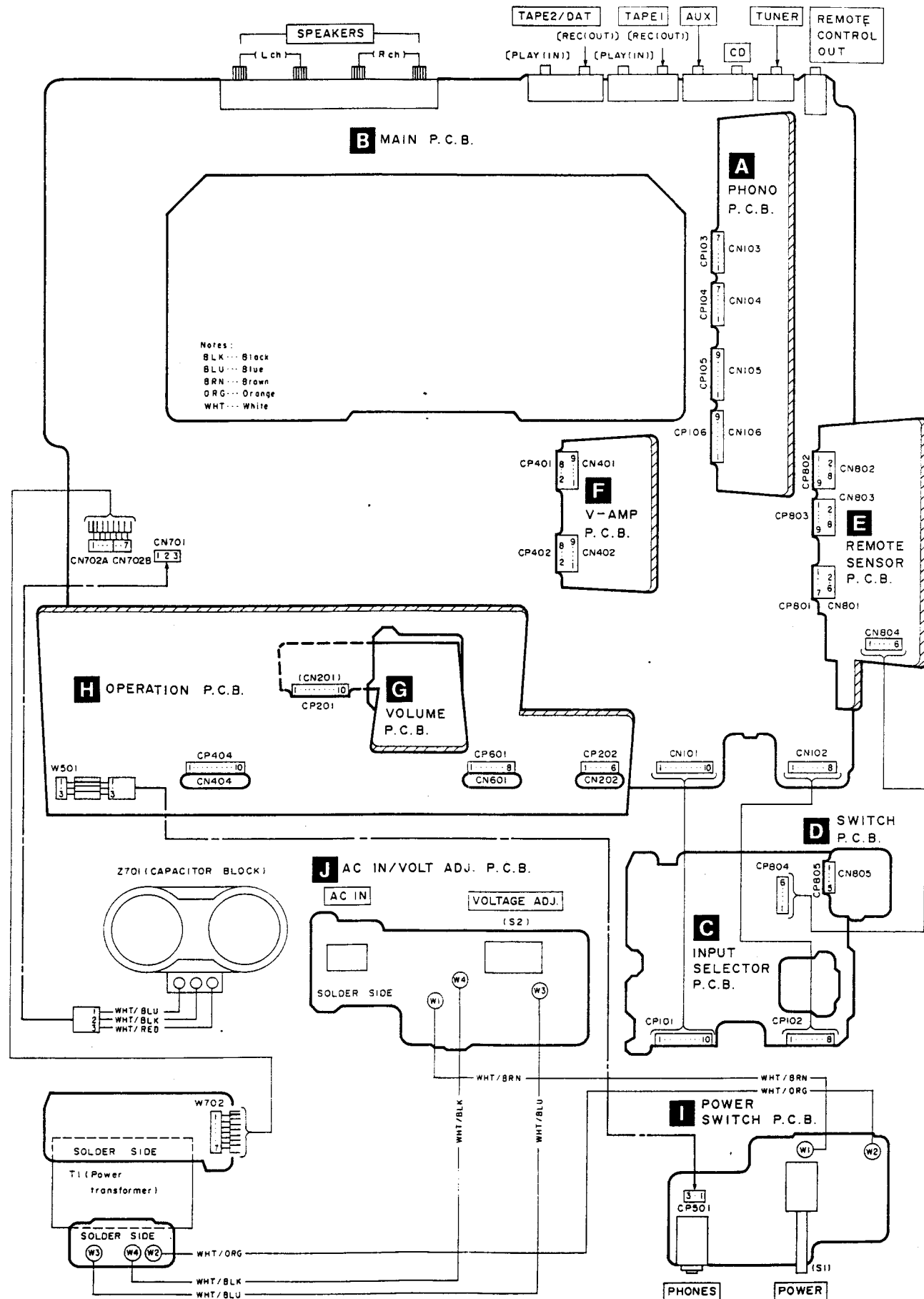
Power Source P.C.B. For [GC] area.



•Terminal guide of IC's, transistors and diodes

UPC4570C 8 Pin AN7062N 18 Pin 	M37470M2063S 	SVI3205B 	BA6218 	MN1381STA 	2SK170BLTPE2 2SK301PQTA
	2SA992EFPTA 2SA1123RSTTA 2SC1685RST 2SC2631RSTTA 		2SA1309AQSTA 2SC3311AQSTA UN4111TA UN4211TA UN4219TA 	2SB1357DEFTA 2SD2037DEFTA 	2SK20130Y 2SJ3130Y
	1SR35200TB MA165TA MA167ATA MA29WATA 	MA4036MTA MA4068MTA 	MA4160MTA MA4180MTA MA4240MTA 	1SS291TA 	P300DLF
LN014304P LN018304P 	LN038568PH 				

WIRING CONNECTION DIAGRAM



MEASUREMENTS AND ADJUSTMENTS

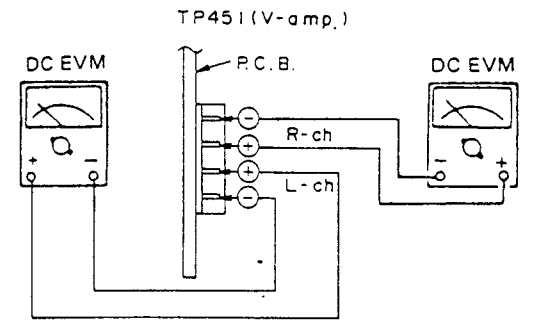
ADJUSTMENT

Control positions and equipment used

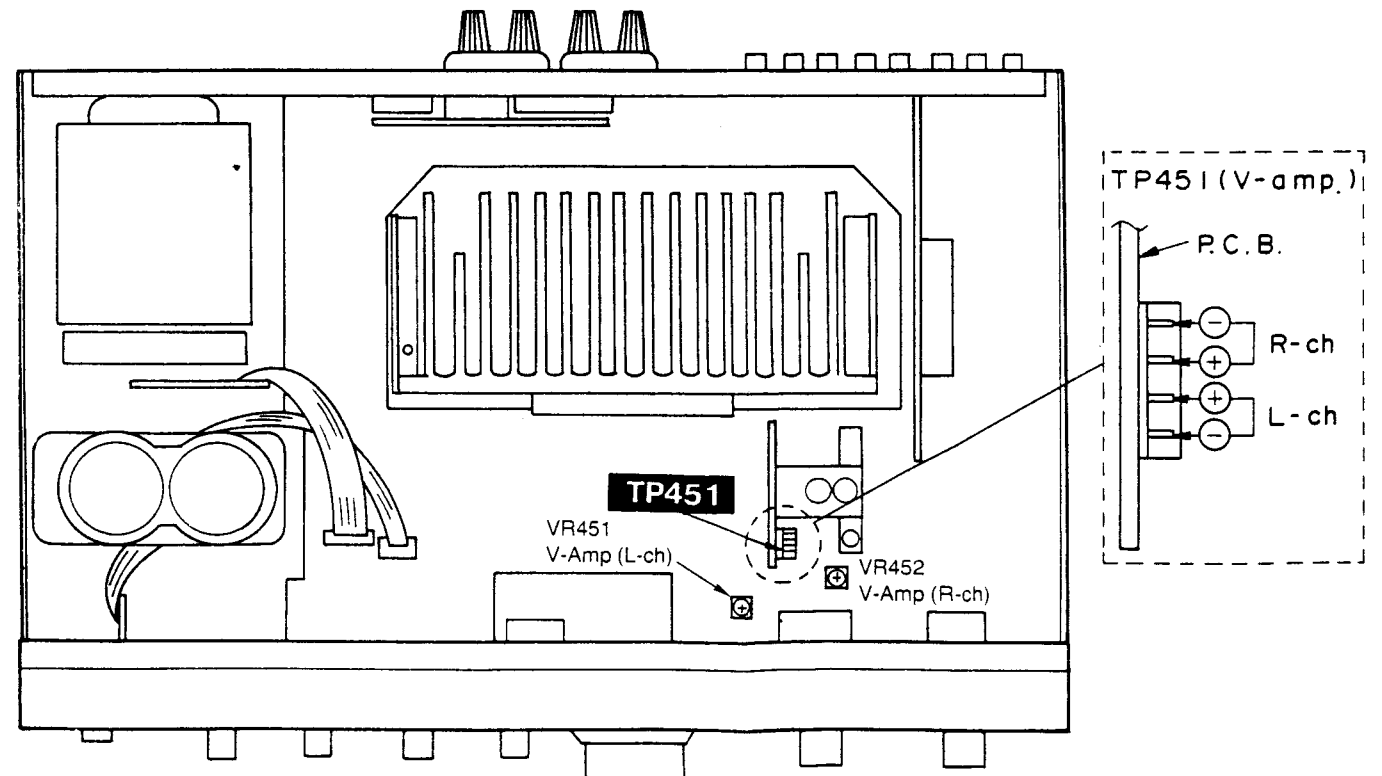
- Volume knob ∞ (Minimum)
- Speaker selector OFF
- DC electronic voltmeter (EVM)

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 100 ± 10 mV.



ADJUSTMENT POINTS

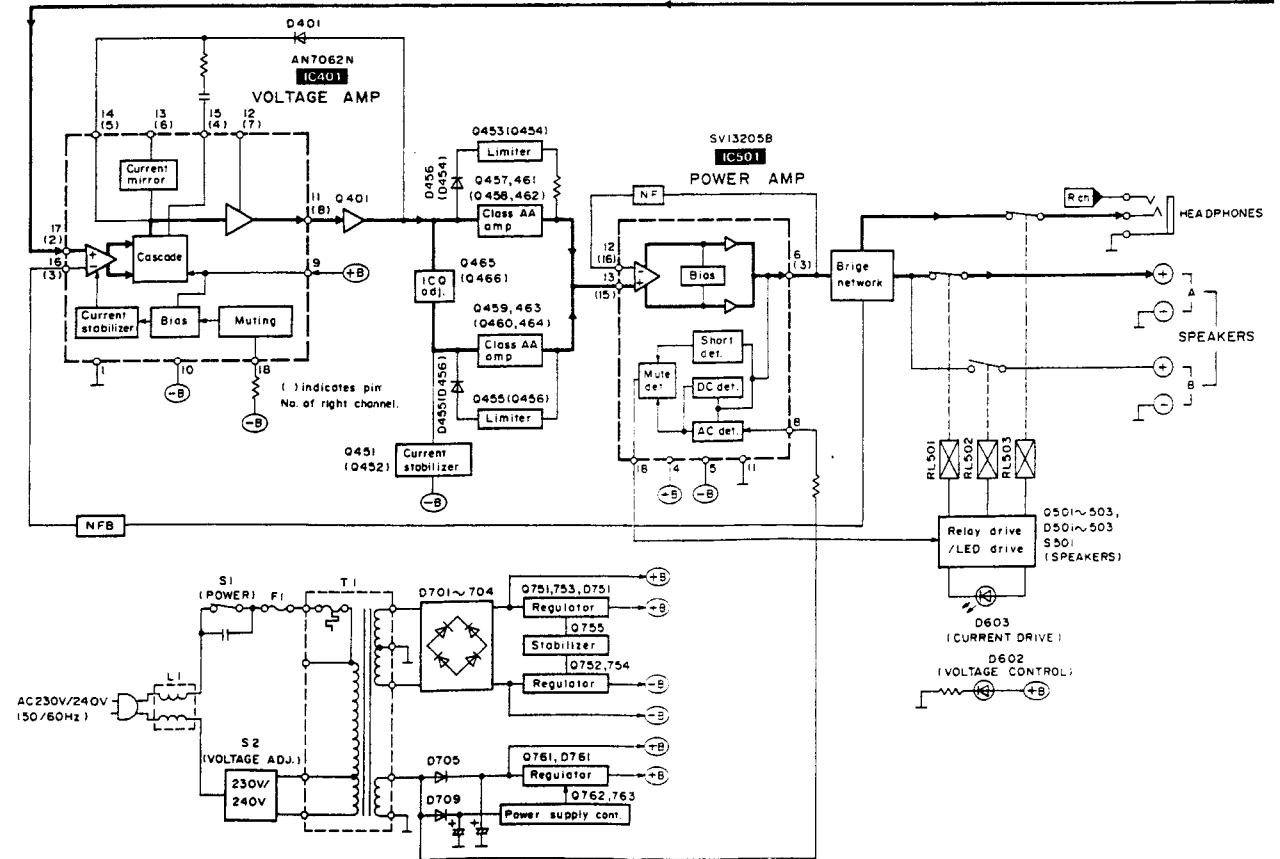
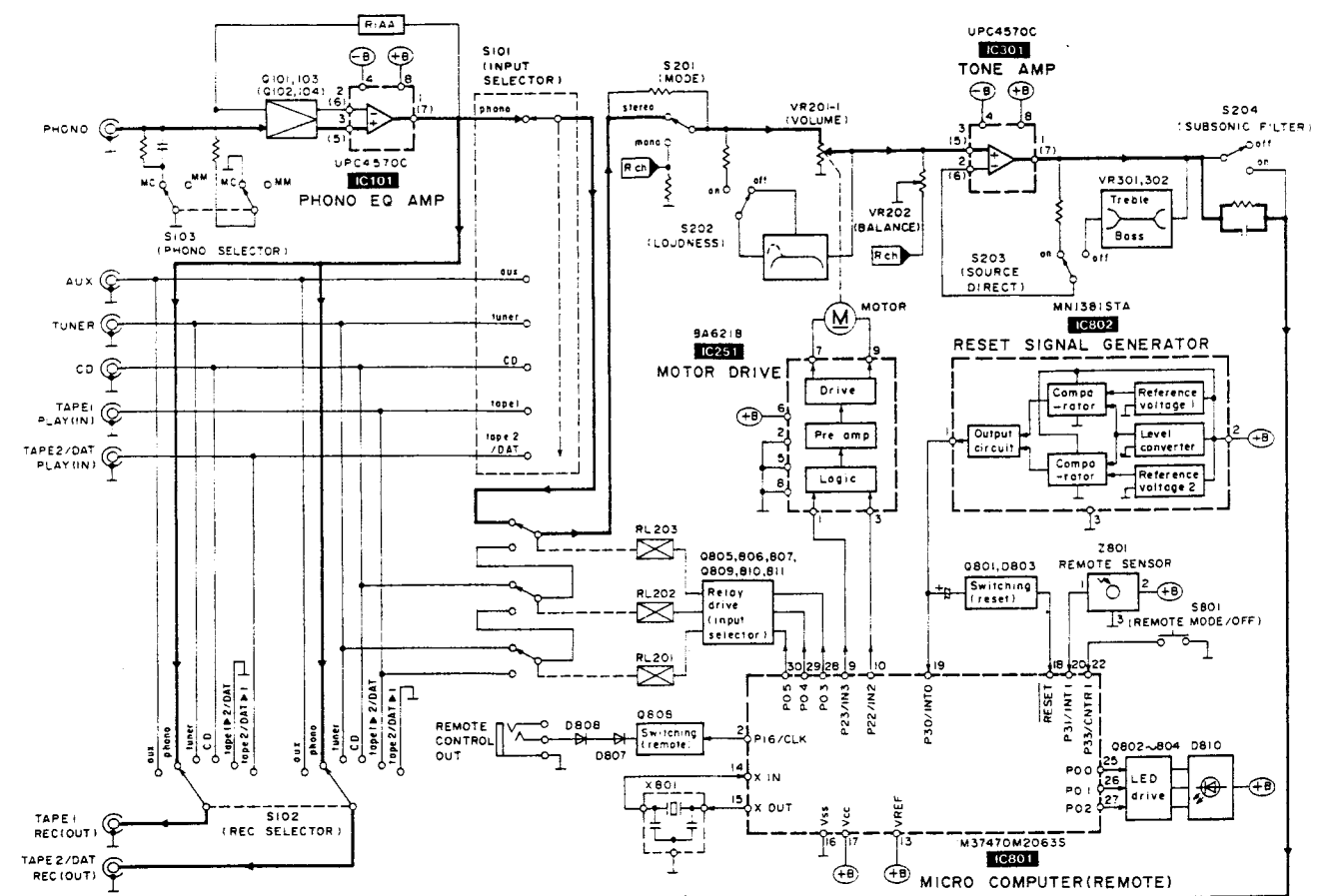


FUNCTIONS OF IC TERMINALS (IC801: M37470M2063S)

Pin No.	Terminal Name	I/O	Function
1	P17/SRDY	—	Connected to GND.
2	P16/CLK	O	Remote control signal output.
3	P15/SOUT	—	Not used.
4	P14/SIN		
5	P13/T1		
6	P12/TO		
7	P11	—	Connected to GND.
8	P10		
9	P23/IN3	O	Level encoder volume control signal output.
10	P22/IN2		
11	P21/IN1	—	Connected to GND.
12	P20/IN0		
13	VREF	I	Reference voltage input.
14	X IN	I	Connected to ceramic oscillator.
15	X OUT	O	
16	V _{SS}	—	GND terminal.
17	V _{CC}	—	Power supply (+5 V).

Pin No.	Terminal Name	I/O	Function
18	RESET	I	Reset signal input.
19	P30/INTO	I	Back-up detector signal input.
20	P31/INT1	I	Remote control receiving signal input.
21	P32/CNTR0	I	POWER switch input.
22	P33/CNTRI	I	SELECTOR MODE switch input.
23	P40	—	Connected to GND.
24	P41		
25	P00	O	SELECTOR LED (TUNER) drive.
26	P01	O	SELECTOR LED (CD) drive.
27	P02	O	SELECTOR LED (TAPE 1) drive.
28	P03	O	SELECTOR RELAY 1 output.
29	P04	O	SELECTOR RELAY 2 output.
30	P05	O	SELECTOR RELAY 3 output.
31	P06	—	Connected to GND.
32	P07		

BLOCK DIAGRAM



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 areas.)
 Parts without these indications can be used for all areas.
 *Remote Control Assy.
 *Supply period for three years from termination of production.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
INTEGRATED CIRCUIT(S)							
IC101	UPC4570C	I. C. PHONO EQ AMP.		D501, 502	MA165	DIODE	
IC251	BA6218	I. C. MOTOR DRIVE		D503, 504	MA4160M	DIODE	
IC301	UPC4570C	I. C. TONE AMP.		D505	MA165	DIODE	
IC401	AN7062N	I. C. VOLTAGE AMP.		D602	LN014304P	DIODE (LED)	
IC501	SV13205B	I. C. POWER AMP.		D603	LN018304P	DIODE (LED)	
IC801	M37470M2063S	I. C. MICRO COMPUTER		D701-704	P300DLF	DIODE	Δ
IC802	MY1381STA	I. C. RESET		D705	1SR35200TB	DIODE	Δ
		TRANSISTOR(S)		D709	MA165	DIODE	Δ
Q101-104	2SK170BLTPE2	TRANSISTOR		D751	MA4180-M	DIODE	
Q401, 402	2SA1123RSTTA	TRANSISTOR		D761	MA4068M	DIODE	
Q451, 452	2SC2631RSTTA	TRANSISTOR		D801	1SS291TA	DIODE	
Q453, 454	2SC3311A-Q	TRANSISTOR		D802-808	MA165	DIODE	
Q455, 456	2SA1309A-R	TRANSISTOR		D810	LN038568PH	DIODE (LED)	
Q457, 458	2SC2631RSTTA	TRANSISTOR				VARIABLE RESISTOR(S)	
Q459, 460	2SA1123RSTTA	TRANSISTOR		VR201	EJW001815	V. R. VOLUME CONTROL	
Q461, 462	2SK20130Y	TRANSISTOR		VR202	EVJ02QFA2G15	V. R. BALANCE	
Q463, 464	2SJ130Y	TRANSISTOR		VR301, 302	EVJYA1FA2C15	V. R. BASS/TREBLE CONTROL	
Q465, 466	2SC1685RST	TRANSISTOR		VR451, 452	EVNDXAA00B13	V. R. FCQ ADJ.	
Q501-503	2SA992FFPTA	TRANSISTOR				THEIRMISTOR(S)	
Q751	2SD2037DEFTA	TRANSISTOR		TH201, 202	ERTD2ZHL104T	THEIRMISTOR	
Q752	2SB1357DEFTA	TRANSISTOR		TH451, 452	ERTD2ZGL251T	THEIRMISTOR	
Q753, 754	2SK301PQTA	TRANSISTOR				COMPONENT COMBINATION(S)	
Q755	2SA1309A-R	TRANSISTOR		Z701	ECEDI1HT682P	CAPACITOR BLOCK	
Q761	2SD2037DEFTA	TRANSISTOR		Z801	BCDHC-237	REMOTE SENSER	
Q762	2SC3311A-Q	TRANSISTOR				COIL(S)	
Q763	UN4211	TRANSISTOR		L1	SLQ2650MH49	COIL	(EG, EB, EO, GN) Δ
Q801-806	UN4211	TRANSISTOR		L1D1, 102	SLM1233	COIL	
Q807	UN4219TA	TRANSISTOR		L251, 252	ELEXT1R0KA9	COIL	
Q808	LN4211	TRANSISTOR		L501-504	SLQY18G-10	COIL	
Q809-811	UN4111	TRANSISTOR		L551	ELEPK2R2MA	COIL	
		DIODE(S)		L801	ELEXT101KA9	COIL	
D101, 102	MA165	DIODE				TRANSFORMER(S)	
D401, 402	MA167	DIODE		T1	RTP1P5B004	POWER TRANSFORMER	Δ (EG, EB, EO, GN)
D403, 404	MA4036MTA	DIODE		T1	RTP1P5E007	POWER TRANSFORMER	Δ (GC)
D405, 406	MA165	DIODE				OSCILLATOR(S)	
D451	MA29WA	DIODE					
D453-456	MA165	DIODE					
D461-464	MA4240H	DIODE					
D465-468	MA167	DIODE					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		FUSE(S)		CP802, 803	RJT063W09T	CONNECTOR (8P)	
X801	EFOGC4004A4	OSCILLATOR		CP804	RJT003K006-1	CONNECTOR (6P)	
		FUSE(S)		CP805	SJT30549B81	CONNECTOR (5P)	
		SWITCH(ES)				EARTH TERMINAL(S)	
F1	XBA2C25T80	FUSE	Δ				
F2	XBA2C50T80	FUSE	Δ (GC)	AK451, 452	SJS227	TRANSISTOR SPRING	
		SWITCH(ES)		E101, 102	SMC1009	SHIELD PLATE	
S1	ESB8249V	SW. POWER	Δ	E201	SNE1004-1	GND. PLATE	
S2	ESD26200A	SW. VOLTAGE SELECTOR	Δ	E501	SNE1004-1	GND. PLATE	
S101	RSR6B002-J	SW. INPUT SELECTOR		E701	SNE1004-1	GND. PLATE	
S102	RSS6D001	SW. REC. SELECTOR				FUSE HOLDER(S)	
S103	RSS2D006-A	SW. PHONO SELECTOR		FC1, 2	EYF52BC	FUSE HOLDER	Δ
S201	ESB68137	SW. MODE		FC3, 4	SJT388	FUSE HOLDER	Δ (GC)
S202	ESB68113	SW. LOUDNESS				RELAY(S)	
S203, 204	ESB68137	SW. SOURCE DIRECT/SUBSONIC		RL201-203	RSY0014M-0	RELAY	
S501	RSR4B004-A	SW. SPEAKER SELECTOR		RL501, 502	RSY0013-0	RELAY	
S801	EVQ21405R	SW. (REMOTE MODE) OFF		RL503	RSY0014M-0	RELAY	
		CONNECTOR(S)				JACK(S)	
CN101	RJU003K010M1	SOCKET (10P)					
CN102	RJU003K008M1	SOCKET (8P)					
CN103	RJU057W007	SOCKET (7P)					
CN104	RJU057W007	SOCKET (7P)					
CN105	RJU057W009	SOCKET (9P)					
CN106	RJU057W009	SOCKET (9P)					
CN201	RJU003K010M1	SOCKET (10P)					
CN202	RJU003K006M1	SOCKET (6P)					
CN401, 402	RJU063W09T	SOCKET (9P)					
CN404	RJU003K010M1	SOCKET (10P)					
CN601	RJU003K008M1	SOCKET (8P)					
CN701	RJP1A3303	CONNECTOR (3P)					
CN801	RJU063W07T	SOCKET (7P)					
CN802, 803	RJU063W09T	SOCKET (9P)					
CN804	RJU003K006M1	SOCKET (6P)					
CN805	SJS50581B8	SOCKET (5P)					
CN702A	RJS1A1704	SOCKET (4P)					
CN702B	RJS1A1703	SOCKET (3P)					
CP101	RJT003K010-1	CONNECTOR (10P)					
CP102	RJT003K008-1	CONNECTOR (8P)					
CP103, 104	RJT057W007-1	CONNECTOR (7P)					
CP105, 106	RJT057W009-1	CONNECTOR (9P)					
CP201	RJT003K010-1	CONNECTOR (10P)					
CP202	RJT003K006-1	CONNECTOR (6P)					
CP401, 402	RJT063W09T	CONNECTOR (9P)					
CP404	RJT003K010-1	CONNECTOR (10P)					
CP501	SJT30345JQ	CONNECTOR (3P)					
CP601	RJT003K006-1	CONNECTOR (6P)					
CP801	RJT063W07T	CONNECTOR (7P)					

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	R469, 470	ERDAF2VJ182T	1/4W 1.8K	C109, 110	ECQW1H222KBS	50V 2200P
			R471-474	ERDAF2VJ2R2T	1/4W 2.2	C111, 112	ECQB1H122JF3	50V 1200P
			R475, 476	ERDAF2VJ151T	1/4W 150	C113, 114	ECQB1H103JF3	50V 0.01U
R101-104	ERDS2TJ102	1/4W 1K	R501, 502	ERDS2TJ362T	1/4W 3.6K	C115, 116	ECQB1H393JF3	50V 0.039U
R105, 106	ERDS2TJ274	1/4W 270K	R503, 504	ERDAF2VJ121T	1/4W 120	C117, 118	ECEA1HKA010B	50V 1U
R107, 108	ERDS2TJ221	1/4W 220	R505, 506	ERDS2TJ392T	1/4W 3.9K	C119, 120	ECQB1H472JF3	50V 4700P
R109, 110	ERDS2TJ220T	1/4W 22	R507, 508	ERDAF2VJ121T	1/4W 120	C121, 122	ECKRH1032F5	50V 0.01U
R111-116	ERDAS3G332T	1/4W 3.3K	R509-512	EPF2EXR10V	2W 0.1	C123, 124	ECBT1H270J5	50V 27P
R117, 118	ERDS2TJ151	1/4W 150	R513-516	ERDAF2VJ100T	1/4W 10	C125, 126	ECBT1H181KB5	50V 180P
R119, 120	ERDS2TJ100	1/4W 10	R517, 518	ERDAF2VJ1R0T	1/4W 1	C201-204	ECCRH101K5	50V 100P
R121, 122	ERDS2TJ101	1/4W 100	R519, 520	ERDS1FVJ6R8T	1/2W 6.8 Δ	C205-208	ECBT1H101KB5	50V 100P
R123, 124	ERDS2TJ151	1/4W 150	R521, 522	ERDS1FVJ100T	1/2W 10 Δ	C209, 210	ECCRH101K5	50V 100P
R125, 126	ERDS2TJ682T	1/4W 6.8K	R527	ERDS2TJ223	1/4W 22K	C213, 214	ECQV1H563JM3	50V 0.056U
R127, 128	ERDS2TJ823T	1/4W 82K	R528	ERDS2TJ824	1/4W 820K	C219, 220	ECBT1H271KB5	50V 270P
R129, 130	ERDS2TJ334	1/4W 330K	R529	ERDS2TJ124T	1/4W 120K Δ	C221-224	ECBT1H181KB5	50V 180P
R131, 132	ERDS2TJ561	1/4W 560	R530	ERDS1FVJ682T	1/2W 6.8K Δ	C231, 232	ECQV1H563JM3	50V 0.056U
R201-210	ERDAS3G102T	1/4W 1K	R531, 532	ERDS1FVJ100T	1/2W 10 Δ	C251, 252	ECEADJKA101B	6.3V 100U
R211, 212	ERDAS3G563T	1/4W 56K	R533, 534	ERDS2TJ182	1/4W 1.8K	C253, 254	ECQV1H104JM3	50V 0.1U
R213, 214	ERDS2TJ183T	1/4W 18K	R555-558	ERG1SJ561E	1W 560	C301, 302	ECA1HPXS3R3B	50V 3.3U
R215, 216	ERDS2TJ332	1/4W 3.3K	R559, 560	ERG1SJ102E	1W 1K	C303, 304	ECCRH101K5	50V 100P
R217	ERDS2TJ824	1/4W 820K	R561, 562	ERG1SJ151E	1W 150	C305, 306	ECBT1H820KB5	50V 82P
R219, 220	ERDLS2VJ272T	1/4W 2.7K	R563, 564	ERG1SJ181E	1W 180	C307, 308	ECA1HPXS4R7B	50V 4.7U
R221-224	ERDS2TJ471	1/4W 470	R565-570	ERDS2TJ223	1/4W 22K	C309, 310	ECBT1H90J5	50V 39P
R235, 236	ERDS2TJ824	1/4W 820K	R604	ERDS2TJ221	1/4W 220	C311, 312	ECA1CPXS100B	16V 10U
R251	ERDS1FVJ100T	1/2W 10 Δ	R707, 708	ERDAF2VJ6R8T	1/4W 6.8	C313, 314	ECQV1H23JM3	50V 0.082U
R301, 302	ERDAS3G561	1/4W 560	R709, 710	ERDAF2VJ470T	1/4W 47	C315, 316	ECQB1H153JF3	50V 0.015U
R303, 304	ERDS2TJ823T	1/4W 82K	R711	ERDS2TJ222	1/4W 2.2K Δ	C317, 318	ECQB1H183JF3	50V 0.018U
R305, 306	ERDS2TJ224T	1/4W 220K	R751, 752	ERDAF2VJ221T	1/4W 220 Δ	C319, 320	ECQB1H222JF3	50V 2200P
R307, 308	ERDS2TJ392T	1/4W 3.9K	R753, 754	ERDS2TJ183T	1/4W 18K	C321, 322	ECBT1E2232F	25V 0.022U
R309, 310	ERDS2TJ223	1/4W 22K	R755	ERDS2TJ102	1/4W 1K	C323, 324	ECBT1H121KB5	50V 120P
R311, 312	ERDS2TJ102	1/4W 1K	R761	ERDS2TJ102	1/4W 1K	C401, 402	ECA1HPXS3R3B	50V 3.3U
R313, 314	ERDS2TJ392T	1/4W 3.9K	R762	ERDS2TJ103	1/4W 10K	C403, 404	ECCRH1271K5	50V 270P
R315, 316	ERDAS3G392T	1/4W 3.9K	R801-804	ERDS2TJ102	1/4W 1K	C405, 406	ECA1CPXS220B	16V 22U
R317, 318	ERDAS3G223T	1/4W 22K	R805, 806	ERDS2TJ103	1/4W 10K	C407, 408	ECBT1H820KB5	50V 82P
R319, 320	ERDS2TJ183T	1/4W 18K	R807	ERDS2TJ102	1/4W 1K	C409, 410	ECBT1H150J5	50V 15P
R401, 402	ERDS2TJ122	1/4W 1.2K	R808, 809	ERDS2TJ223	1/4W 22K	C411, 412	ECBA1H681KB5	50V 680P
R403, 404	ERDS2TJ823T	1/4W 82K	R810, 811	ERDS2TJ102	1/4W 1K	C413, 414	ECCV2H070D	500V 7P
R405, 406	ERDAS3G272T	1/4W 2.7K	R812-814	ERDS2TJ391	1/4W 390	C415, 416	ECQB1H102JF3	50V 1000P
R407, 408	ERDAS3G823T	1/4W 82K	R815	ERDS2TJ102	1/4W 1K	C426	ECBT1H102KB5	50V 1000P
R409, 410	ERDS2TJ561	1/4W 560	R816	ERDS2TJ104	1/4W 100K	C427	ECBT1E2232F	25V 0.022U
R411, 412	ERDAF2VJ470T	1/4W 47	R817	ERDS2TJ103	1/4W 10K	C428	ECKRH1032F5	50V 0.01U
R437	ERDS2TJ473	1/4W 47K				C451, 452	ECCRH13332F5	50V 0.033U
R451, 452	ERDAF2VJ472T	1/4W 4.7K				C453-456	ECCV2H680K	500V 68P
R453, 454	ERDAF2VJ151T	1/4W 150				C457-460	ECEA1HKA3R3B	50V 3.3U
R455, 456	ERDAF2VJ271T	1/4W 270				C461, 462	ECKRH1032U	500V 0.01U
R457	ERDS2TJ823T	1/4W 82K				C501-504	ECA0JPKS101B	6.3V 100U
R459, 460	ERDAF2VJ101T	1/4W 100				C505, 506	ECQV1H473JM3	50V 0.047U
R461-464	ERDS2TJ223	1/4W 22K				C507	ECEADJKA101B	6.3V 100U
R465-468	ERDAF2VJ101T	1/4W 100				C508	ECA1HM470B	50V 47U
		CAPACITORS						
			C1	ECXWNS1032VS	500V 0.01U Δ			
			C101, 102	ECBT1H120J5	50V 12P			
			C103, 104	ECBT1H102KB5	50V 1000P			
			C105, 106	ECBT1H820KB5	50V 82P			
			C107, 108	ECA0JM22B	6.3V 2200U			

Ref. No.	Part No.	Values & Remarks			
C509	ECEA1HN100SB	50V 10U Δ			
C511, 512	ECBT1H180J5	50V 18P			
C513-518	ECQV1H473JM3	50V 0.047U			
C519-522	ECQB1H153JF3	50V 0.015U			
C523, 524	ECBT1H102KB5	50V 1000P			
C525, 526	ECQB1H152JF3	50V 1500P			
C531, 532	ECBT1C332KR5	16V 3300P			
C551, 552	ECEAJJU010B	53V 1U			
C705, 706	ECA1JPKS221B	63V 220U			
C707-709	ECA1JAP220B	63V 22U			
C711	ECQE2104KF3	250V 0.1U Δ			
C712	ECQV1H104JM3	50V 0.1U			
C713	ECQV1H104JM3	50V 0.1U Δ			
C714	ECA1CM471B	16V 470U			
C715	ECEA1HKA010B	50V 1U			
C716	ECA1CM102B	16V 1000U			
C751-756	ECA1HPXS4R7B	50V 4.7U			
C761	ECEA1CKA101B	16V 100U			
C762	ECBT1E1032F	25V 0.01U			
C763	ECEA1AKA470B	10V 47U			
C801	ECA0JM102B	6.3V 1000U			
C802	ECBT1E1032F	25V 0.01U			
C804	ECEADJKA101B	6.3V 100U			
C805	ECBT1H101KB5	50V 100P			
C806	ECEA1HKA2R2B	50V 2.2U			
C807	ECEA1HKA47B	50V 0.47U			
C808, 809	ECBT1E1032F	25V 0.01U			
C810	ECEA1CKA220B	16V 22U			
C811, 812	ECEA1HKA47B	50V 0.47U			

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS		46	RSC0216	ANGLE	
				47	RSQ023	REMOTE SWITCH CONTROLLER	
				48	RSC0245	SHIELD PLATE	
1	RGW0127A-K	VOLUME KNOB		49	RMQ0250-1	ANGLE	
2	RGW0150-K	TONE KNOB		50	RWJ3907130QQ	FLAT CABLE (7P) (W702)	
3	RGW0151-K	SELECTOR KNOB		51	RWJ390305HMK	FLAT CABLE (3P) (W501)	
4	RMND036A-K	CABINET	(EG, GC, GN)	52	RMNG143	CAPACITOR BASE	
4	RMND179-K	CABINET	(EB, EO)			PACKING MATERIALS	
5	SNE2129-1	SCREW					
6	XTBS3-8JFZ1	SCREW		P1	RPG1303	PACKING CASE	
7	RGRO152A-D	REAR PANEL	(EG)	P2	RPND0539	PAD	
7	RGRO152A-E	REAR PANEL	(EB)	P3	XZBS0X65A022	PROTECTION COVER	
7	RGRO152A-F	REAR PANEL	(EO)	P4	RPQ0164	ACCESSORIES PAD	
7	RGRO152A-G	REAR PANEL	(GC)	P5	XZB24X34CD4	PROTECTION COVER	
7	RGRO152A-E	REAR PANEL	(GN)	P6	XZB22X20CD3	PROTECTION COVER	
8	RGLO030	POWER BUTTON				ACCESSORIES	
9	RHNS90001	NUT		A1	RAK-SU301W	REMOTE CONTROL TRANSMITTER	
10	RFKJUVX620EG	BOTTOM BOARD ASS'Y		A1-1	RKK0020-K	BATTERY COVER	for REMOTE CONT.
10-1	RKA0053-A	FOOT		A2	RJA0019-1K	AC POWER SUPPLY CORD	△ (EG, EO)
11	RMCO142	REC. EARTH SPRING		A2	SJA1193	AC POWER SUPPLY CORD	△ (EB)
12	RMND189	P. C. B. ANGLE		A2	RJAD004	AC POWER SUPPLY CORD	△ (GC)
13	RSQ0022	REMOTE SWITCH CONTROLLER		A2	SJA1173	AC POWER SUPPLY CORD	△ (GN)
17	XTB3-8JFZ	SCREW		A3	RFKSUVX620EG	INSTRUCTIONS MANUAL	(EG)
18	SHR415	LATCH		A3	RQT1623-B	INSTRUCTIONS MANUAL	(EB, GN)
19	RGKD394-A	RING		A3	RQT1624-E	INSTRUCTIONS MANUAL	(EO)
20	RGKD412-K	SIDE ORNAMENT (L)		A3	RFKSUVX720GC	INSTRUCTIONS MANUAL	(GC)
21	RGKD413-K	SIDE ORNAMENT (R)		A4	RQAD013	WARRANTY CARD	
22	RGKD480-K	VOLUME ORNAMENT		A5	RQC00169	SERVICE CENTER LIST	
23	RGLO164-C	ORNAMENT		A6	SJP9215	POWER PLUG ADAPTOR	△ (GC)
24	RGLO165-C	ORNAMENT					
25	RGU0609-K	MODE BUTTON					
26	RGU0611-K	DIRECT BUTTON					
27	RGU0764-K	REMOTE CONTROL BUTTON					
28	RMRO460-K	HOLDER					
29	RMRO461-K	HOLDER					
30	RMRO502	SPACER					
31	RSC0287	SHIELD PLATE					
32	XTBS26-8J	SCREW					
33	SHE187-2	P. C. B. SPACER					
34	SHR9814	CLAMP					
35	SJS9231A	AC INLET COVER	(EG, EB, EO, GC)				
35	SJS9234A	AC INLET COVER	(GN)				
36	SNE2123	GND SCREW					
37	SUS890	SPRING					
38	XTBS3-8JFZ1	SCREW					
39	XTW3-15T	SCREW					
40	XTB3-20JFZ	SCREW					
41	XTB3-8JFZ	SCREW					
42	XTWS3-8T	SCREW					
43	XTBS26-8J	SCREW					
44	RFKGLVX720EG	FRONT PANEL ASS'Y					
45	RGKD415-K	UPPER PLATE	(EB, EO)				

