

# Service Manual

Dolby NR-Equipped  
Stereo Double Cassette Deck

Cassette Deck  
**RS-TR355**

Color

(K)... Black Type  
(S)... Silver Type

 \* **DOLBY B-C NR HX PRO**



**Area**

Country Code	Area	Color
(P)	U.S.A.	(K)
(PC)	Canada.	(K)
(E, E5)	Continental Europe.	(K) (S)
(EB)	Great Britain.	(K) (S)
(EG)	F.R.G. and Italy (West Germany).	(K) (S)
(GC)	Saudi Arabia.	(K)
(GN)	New Zealand.	(K)

## SPECIFICATIONS

### ■ CASSETTE DECK SECTION

<b>Deck system</b>	Stereo cassette deck
<b>Track system</b>	4-track, 2-channel
<b>Heads</b>	
(tape deck 1) Play	Permalloy head
(tape deck 2) Rec/play	Permalloy head
Erasing	Double-gap ferrite head
<b>Motors</b>	
(tape deck 1) Capstan/reel table drive	DC servo motor
(tape deck 2) Capstan/reel table drive	DC servo motor
<b>Recording system</b>	AC bias
Bias frequency	80 kHz
<b>Erasing system</b>	AC erase
<b>Tape speed</b>	4.8 cm/sec. (1-7/8 ips)
<b>Frequency response (w/o Dolby NR) (Except P, PC Areas)</b>	
<b>NORMAL</b>	20 Hz~18 kHz
<b>CrO<sub>2</sub></b>	20 Hz~17 kHz (DIN)
<b>METAL</b>	20 Hz~17 kHz (DIN)
<b>Erasing</b>	20 Hz~19 kHz (DIN)
<b>Erasing</b>	20 Hz~18 kHz (DIN)
<b>Frequency response (w/o Dolby NR) (P, PC Areas)</b>	
<b>NORMAL</b>	20 Hz~18 kHz
<b>CrO<sub>2</sub></b>	20 Hz~18 kHz
<b>METAL</b>	20 Hz~19 kHz
<b>S/N</b> (signal level = max recording level, CrO <sub>2</sub> type tape)	
<b>Dolby C NR on</b>	74 dB (CCIR)
<b>Dolby B NR on</b>	66 dB (CCIR)
<b>Dolby NR off</b>	56 dB (A weighted)
<b>Wow and flutter (Except P, PC Areas)</b>	0.07 % (WRMS) ±0.2 % (DIN)

**Wow and flutter (P, PC Areas)** 0.1 % (WRMS)

**Fast forward and rewind times**  
Approx. 110 seconds with C-60 cassette tape

<b>Input sensitivity and impedance</b>	
<b>LINE</b>	60 mV/47 kΩ
<b>Output voltage and impedance</b>	
<b>LINE</b>	400 mV/800 Ω
<b>HEADPHONES</b>	30 mV/8 Ω
<b>LOAD IMPEDANCE</b>	(8 Ω~600 Ω)

### ■ GENERAL

<b>Power consumption</b>	15 W
<b>Power supply</b>	
<b>For U.S.A. and Canada</b>	AC 120V, 60Hz
<b>For Great Britain and New Zealand</b>	AC 240V, 50/60Hz
<b>For Saudi Arabia</b>	AC 110V/127V/220V/240V, 50/60Hz
<b>For others</b>	AC 220V, 50Hz/60Hz
<b>Dimensions (W × H × D)</b>	430 × 136 × 290 mm (16-15/16" × 5-3/8" × 11-13/32")
<b>Weight</b>	4.8 kg (10.6 lb.)

**Note:**

Specifications are subject to change without notice.  
Weight and dimensions are approximate.

\* HX Pro headroom extension originated by Bang Olufsen and manufactured under license from Dolby Laboratories Licensing Corporation.  
"DOLBY", the double-D symbol, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

# Technics

Matsushita Services Company  
50 Meadowland Parkway,  
Secaucus, New Jersey 07094

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

Panasonic Hawaii, Inc.  
99-859, Iwaiwa Street  
P.O. Box 774  
Honolulu, Hawaii 96808-0774

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

Matsushita Electric Industrial Co., Ltd.  
Central P.O. Box 288, Osaka 530-91, Japan

## CONTENTS

	Page		Page
• Safety Precaution .....	2	• Block Diagram .....	30, 31
• Accessories .....	3	• Wiring Connection Diagram .....	32
• How to Connection .....	3	• Resistors & Capacitors .....	33~36
• Location of Controls .....	4, 5	• Replacement Parts List (Electrical Parts) .....	37~39
• Disassembly Instructions .....	6~9	• Cabinet Parts Location .....	40, 41
• Measurement and Adjustment Methodes.....	10~12	• Replacement Parts List (Cabinet Parts) .....	42
• Terminal Function of IC's .....	13~15	• Replacement Parts List (Mechanical Parts) (DECK 1) .....	43
• Internal Connection of FL .....	16	• Mechanical Parts Location (DECK 1) .....	44, 45
• Printed Circuit Boards .....	17~21	• Replacement Parts List (Mechanical Parts) (DECK 2) .....	46
• Schematic Diagram .....	22~29	• Mechanical Parts Location (DECK 2) .....	47, 48
• Terminal Guide of IC's, Transistor and Diodes .....	29		

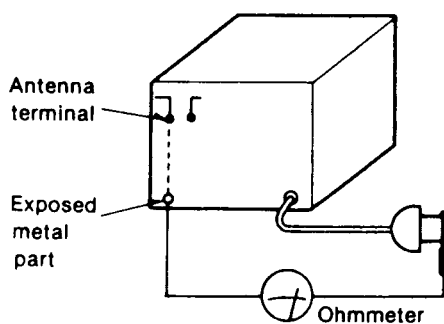
## SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

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

### INSULATION RESISTANCE TEST

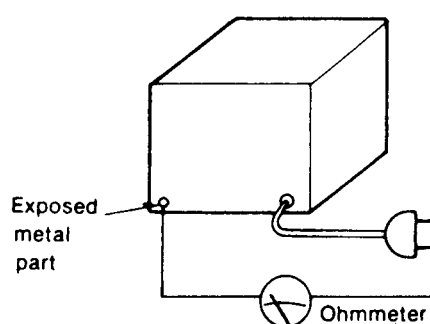
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with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

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



(Fig. A)

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

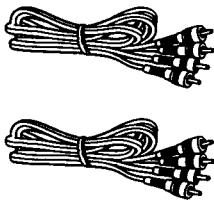
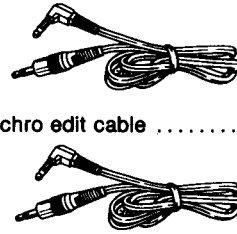
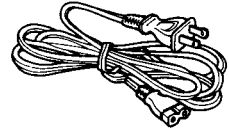

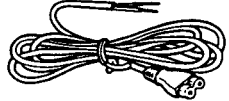


(Fig. B)

Resistance = Approx  $\infty$

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

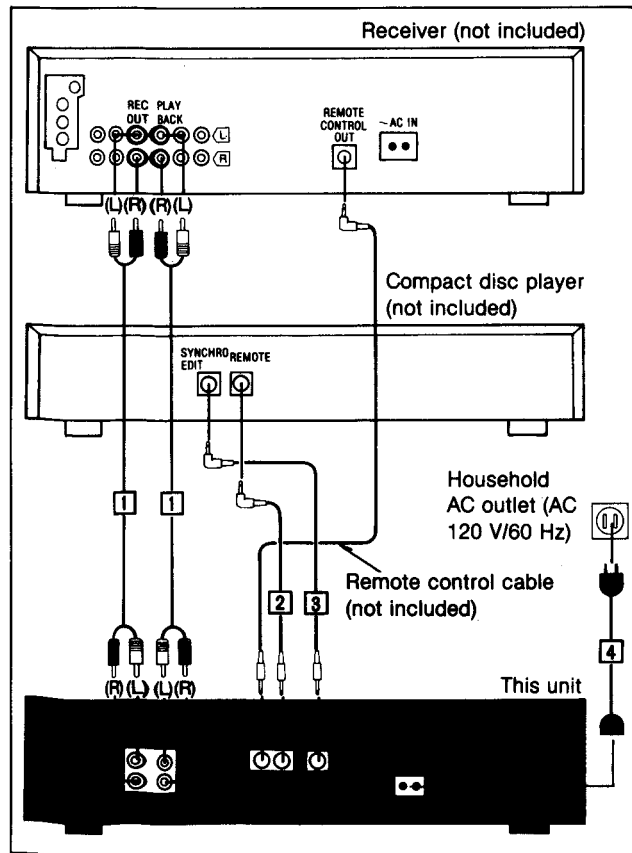
## ACCESSORIES

<ul style="list-style-type: none"> <li>• Stereo connection cables..... 2 [RFA006]</li> </ul> 	<ul style="list-style-type: none"> <li>• Stereo mini cables ..... 2 [SJP2257T: (P.PC only)] (Remote control cable..... 1)</li> </ul> 	<ul style="list-style-type: none"> <li>• AC power supply cord (polarized).... 1 [SJA175-1: (P), SJA175: (PC), SFDAC05E03: (E, E5, EG), SJA173-1: (GN), RJA0004: (GC)]</li> </ul> 
<ul style="list-style-type: none"> <li>• AC plug adaptor..... 1 [SJP9215: (GC)]</li> </ul>	<ul style="list-style-type: none"> <li>(Synchro edit cable ..... 1)</li> </ul> 	<ul style="list-style-type: none"> <li>[SJA193-1: (EB)]</li> </ul> 

## HOW TO CONNECTION (Example P.PC areas)

Make connections in the numbered sequence by using the included cables.

- 1 Connect the stereo connection cables.
- 2 Connect the remote control cable.
- 3 Connect the synchro edit cable.
- 4 Connect the AC power supply cord.



The illustration at the left shows an example of connections made when this unit is combined with a Technics hi-fi component system, and shows only the connections to be made to and from this unit in that combination.

Refer to the illustration together with the instructions provided below.

### REMOTE CONTROL "IN" terminal

This terminal can be used only with Technics receivers or amplifiers having the appropriate remote-control terminal. (Contact your dealer for details.)

The following functions can be operated by remote-control (When connected to the appropriate Technics amplifier or receiver): Playback, Stop, Pause, Fast-forward/cue, Rewind/review, Record, Auto record mute, and 2-1 deck selection.

### REMOTE CONTROL "OUT" terminal

This terminal can be used only with Technics graphic equalizer or compact disc players having the appropriate remote-control terminal. (Contact your dealer for details.)

### "SYNCHRO EDIT" terminal

This terminal can be used only with selected Technics compact disc players.

### "AC OUTLET" (UNSWITCHED)

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

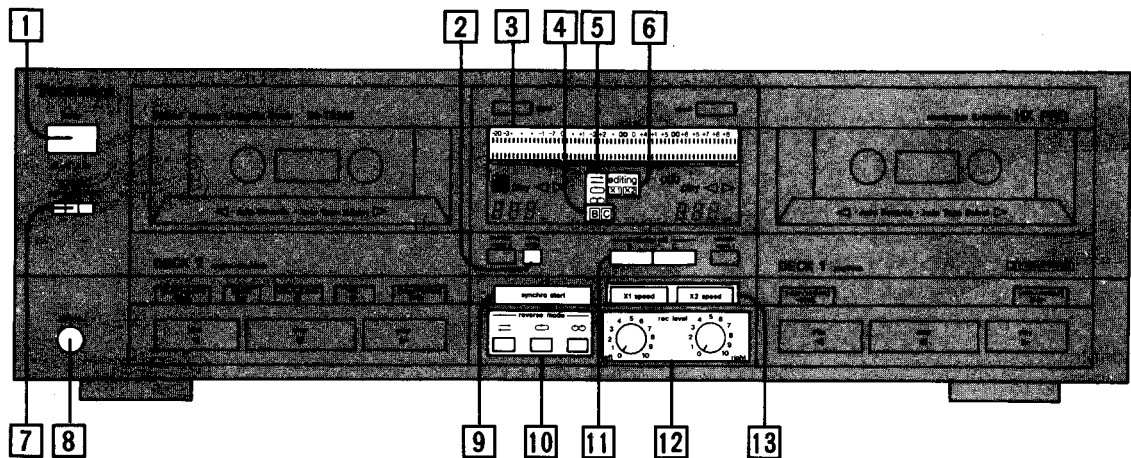
Audio equipment rated up to 100 W can be connected.

### Placements hints

If this unit is placed near a receiver or a tuner, a "hum" noise may be heard during tape playback, recording, or AM reception of the receiver or the tuner.

If this occurs, leave as much space as possible between the units, or place them where there is the least amount of "hum".

## LOCATION OF CONTROLS



### Controls common to both decks

#### 1 Power switch (power)

#### 2 Meter-range selector (meter range)

This selector is used to select the input level range shown on the display.

#### 3 Input level meter (peak level)

During playback, this meter indicates the level of the recorded sound.

During recording, it indicates the level being recorded, adjusted by the recording-level controls.

#### 4 Dolby noise-reduction Indicators (B, C)

Each indicator illuminates to show the type of Dolby noise-reduction system selected by pressing one of the Dolby noise-reduction buttons.

#### 5 Reverse-mode indicators (⇐, ⇐, ∞)

Each indicator illuminates to show which of the reverse modes was selected by the reverse-mode selectors.

#### 6 Edit-recording tape-speed indicators (editing, ×1, ×2)

The word "editing" and either the "×1" or "×2" indicator illuminate to show which of the tape-to-tape recording speeds was selected when pressing one of the edit-recording tape-speed buttons.

#### 7 Timer switch (⏰ timer)

This switch is used to automatically begin a tape recording or tape playback at a certain time, selected by an optional timer.

#### 8 Headphones jack (phones)

#### 9 Synchro-start button (synchro start)

This button is used to start a tape-to-tape recording, simultaneously starting deck 1 (the playback deck) and deck 2 (the recording deck).

#### 10 Reverse-mode selectors (reverse mode)

These selectors are used for selection of the reverse mode (for either playback or recording).

#### 11 Dolby noise-reduction buttons (Dolby NR)

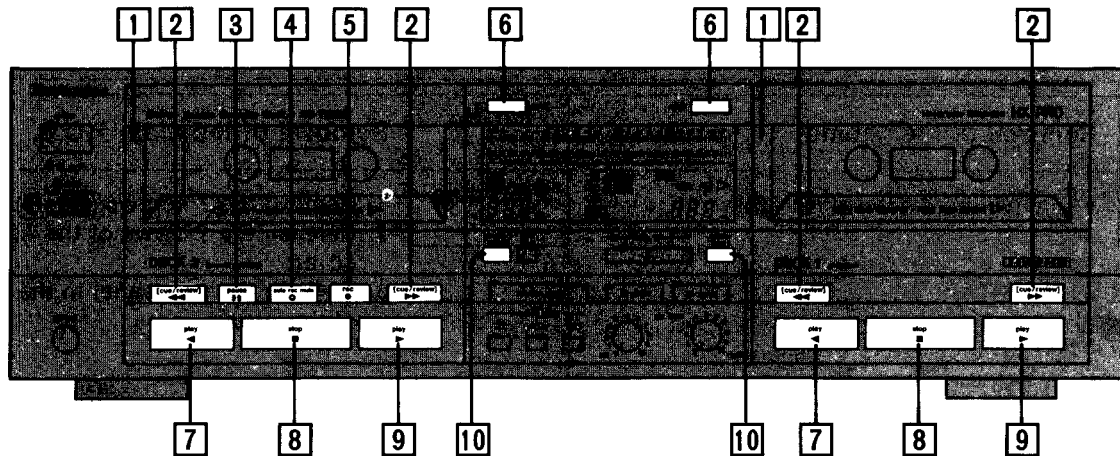
These buttons are used to reduce the hissing noise heard from the tape. This unit is provided with both the B-type and C-type noise-reduction systems.

#### 12 Recording-level controls (rec level)

These controls are used to regulate the recording level of deck 2.

#### 13 Edit-recording tape-speed buttons (speed)

These buttons are used to select the recording speed during edit-recording.



## Controls applicable to deck 1 and/or 2

### 1 Cassette holder

### 2 Fast-forward/cue, rewind/review buttons (cue/review/▶▶/◀◀)

These buttons are used to advance or rewind the tape. During playback these buttons are used to cue or review while listening to the contents at high speed.

### 3 Pause button (pause/||)

This button is used to temporarily stop the tape playback or recording of deck 2 only.

### 4 Automatic-record-muting button (auto rec mute/⊙)

This button is used to make a silent interval on the tape while recording is in progress on deck 2.

### 5 Record button (rec/●)

This button is used to set deck 2 to the recording stand-by mode.

### 6 Eject button (eject)

This button is used to open the cassette holder.

### 7 Reverse-side playback button (play/◀)

This button is used to start the playback or recording (of deck 2 only) of side "B" of the cassette. (The tape will move in the right-to-left direction.)

### 8 Stop button (stop/■)

This button is used to stop the tape movement.

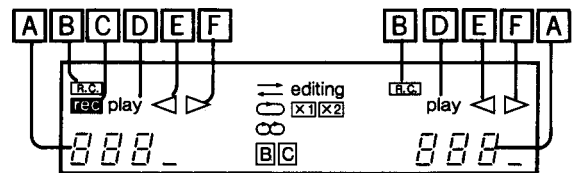
### 9 Forward-side playback button (play/▶)

This button is used to start the playback or recording (of deck 2 only) of side "A" of the cassette. (The tape will move in the left-to-right direction.)

### 10 Tape counter reset button (counter reset 1/2)

This button is used to reset the tape counter indication to "000".

## Indicators applicable only to deck 1 or 2



### A Tape counter

Indicates the amount of tape movement separately for deck 1 and deck 2. The least significant digit indicates tape movement.

### B Remote-control indicator (R.C.)

Illuminates to indicate that this unit can now be controlled by the remote-control transmitter.

### C Recording indicator (rec)

Illuminates to indicate that deck 2 is in the recording stand-by mode or is recording.

### D Playback indicator (play)

When this indicator illuminates steadily, it indicates that this unit is in the playback or recording mode (of deck 2 only). When flashing continually, indicates that deck 2 is in the pause mode or in the recording stand-by mode.

### E Reverse-side indicator (◀)

Illuminates during playback or recording (of deck 2 only), to indicate that side "B" of the tape is being used.

### F Forward-side indicator (▶)

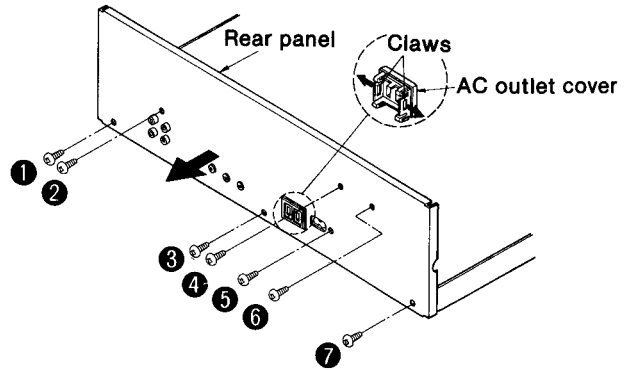
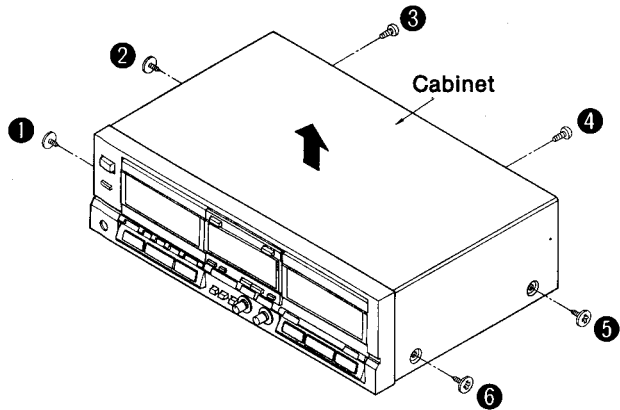
Illuminates during playback or recording (of deck 2 only), to indicate that side "A" of the tape is being used.

# DISASSEMBLY INSTRUCTIONS

## “ATTENTION SERVICER”

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

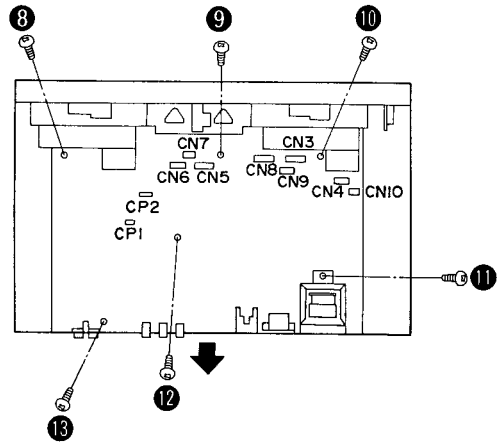
Ref. No. 1	Removal of the cabinet	Ref. No. 2	Removal of the main P.C.B.
Procedure 1	<ul style="list-style-type: none"> <li>Remove the 6 screws (1~6).</li> </ul>	Procedure 1→2	<ol style="list-style-type: none"> <li>Remove the 7 screws (1~7).</li> <li>Release the 2 claws of the AC outlet cover.</li> <li>Remove the rear panel in the direction of the arrow.</li> </ol>



- Remove the 6 screws (8~13).
- Remove the 2 connectors (CP1, CP2).
- Remove the 8 flat cables (CN3, CN4, CN5, CN6, CN7, CN8, CN9, CN10).
- Remove the main P.C.B. in the direction of the arrow.

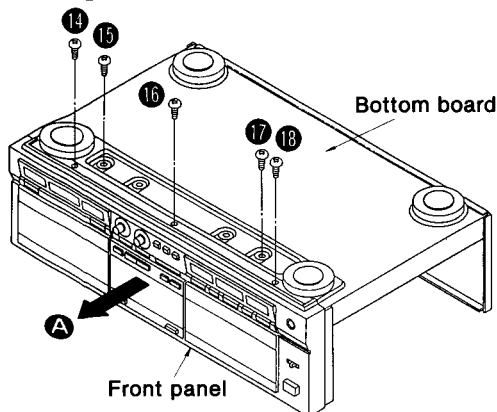
### How to remove the flat cable

- Pull out the flat cable while pressing the connector.
- Lift the connector.
  - Pull out the flat cable.

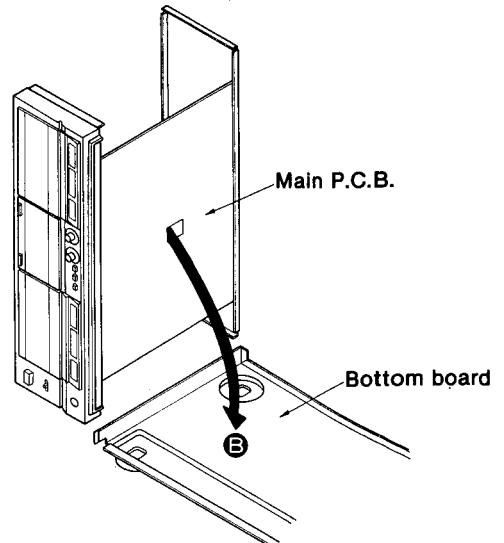


### How to check the main P.C.B.

- When checking the soldered surfaces of main P.C.B. and replacing the parts, do as show.
- Remove the 14 screws (1, 3, 7~16).
  - Remove the front panel in the direction of the arrow A.

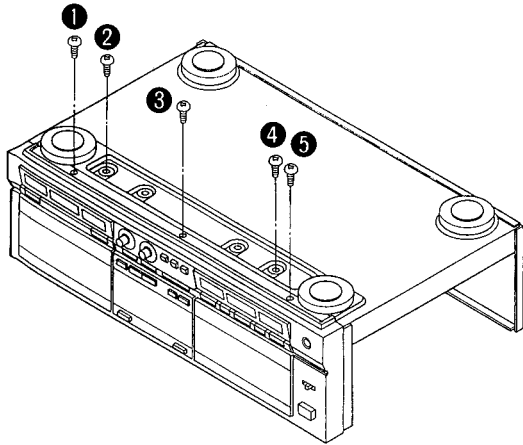


- Remove the bottom board in the direction of the arrow B.
- Reinstall the front panel to the main P.C.B.

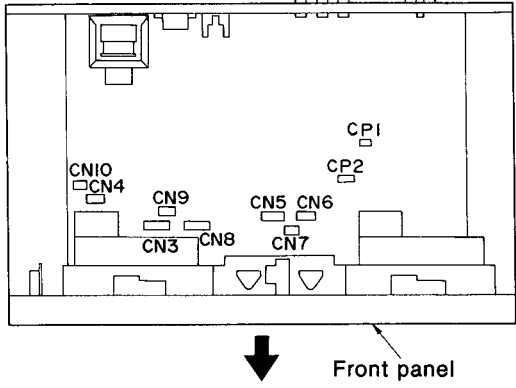


**Ref. No. 3**  
**Removal of the front panel**

**Procedure 1-3**  
1. Remove the 5 screws (1-5).

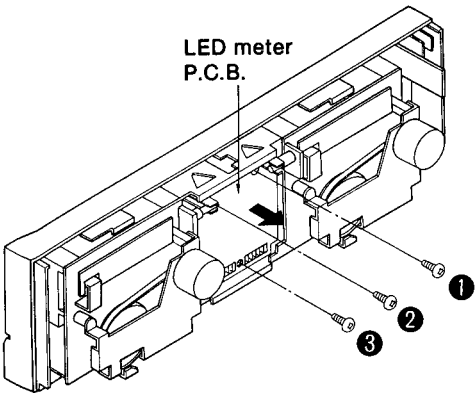


2. Remove the 2 connectors (CP1, CP2).  
3. Remove the 8 flat cables (CN3, CN4, CN5, CN6, CN7, CN8, CN9, CN10).  
4. Remove the front panel in the direction of the arrow.



**Ref. No. 4**  
**Removal of the LED meter P.C.B.**

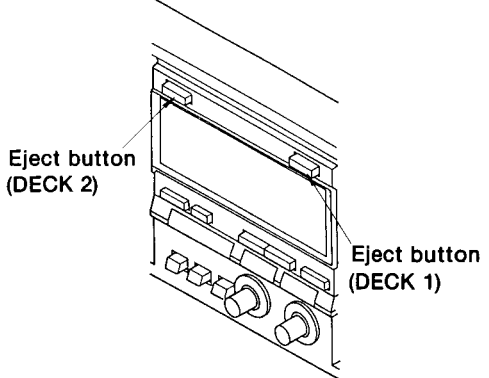
**Procedure 1-3-4**  
1. Remove the 3 screws (1-3).  
2. Remove the meter P.C.B. in the direction of the arrow.



**Ref. No. 5**  
**Removal of the mechanism units**

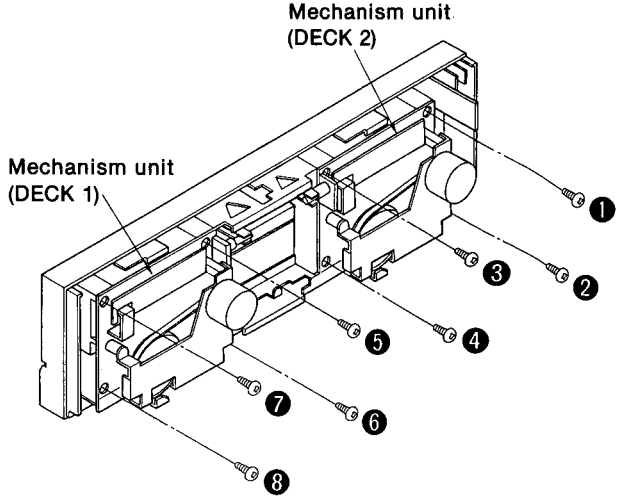
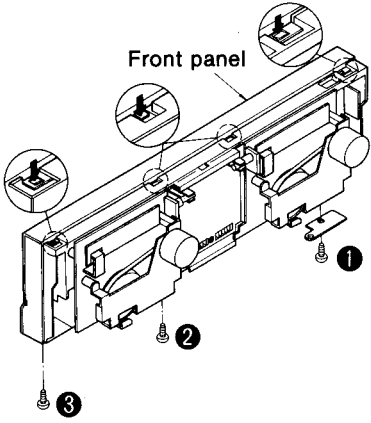
**Procedure 1-3-5**

- Mechanism unit (DECK 2)
  1. Push the eject button.
  2. Remove the 4 screws (1-4).
- Mechanism unit (DECK 1)
  1. Push the eject button.
  2. Remove the 4 screws (5-8).



**Ref. No. 6**  
**Removal of the front panel**

**Procedure 1-3-6**  
1. Remove the 3 screws (1-3).  
2. Release the 4 claws.

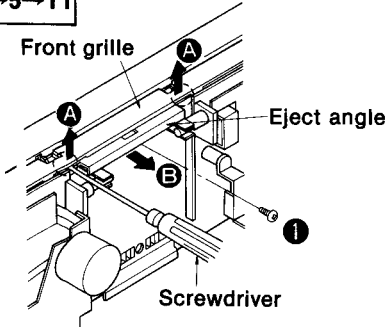


<p><b>Ref. No.</b> 7</p>	<p><b>Removal of the power switch P.C.B., timer switch P.C.B. and headphones P.C.B.</b></p>	<p>Power switch P.C.B.</p> <p>Timer switch P.C.B.</p> <p>Headphones P.C.B.</p> <p>Claw</p>	
<p><b>Procedure</b> 1→3→7</p>	<ul style="list-style-type: none"> <li>• Removal of the power switch P.C.B.</li> <li>1. Remove the 2 screws (①, ②).</li> <li>• Removal of the timer switch P.C.B.</li> <li>1. Remove the 1 screw (③).</li> <li>• Removal of the headphones P.C.B.</li> <li>1. Release the 1 claw.</li> </ul>	<p><b>Ref. No.</b> 8</p>	<p><b>Ref. No.</b> 9</p>
<p><b>Procedure</b> 5→8</p>	<ul style="list-style-type: none"> <li>• Remove the 4 screws (①~④).</li> </ul>	<p><b>Procedure</b> 5→8→9</p>	<ul style="list-style-type: none"> <li>1. Remove the 2 screws (①, ②).</li> <li>2. Release the 5 claws.</li> </ul>
<p>Mechanism angle</p>		<p>Operation (DECK 1) P.C.B.</p> <p>Claws</p> <p>Claws</p>	
<p><b>Ref. No.</b> 10</p>	<p><b>Removal of the operation (DECK 2) P.C.B.</b></p>	<ul style="list-style-type: none"> <li>2. Remove the 5 screws (①~⑤).</li> <li>3. Release the 8 claws.</li> </ul>	
<p><b>Procedure</b> 5→8→10</p>	<ul style="list-style-type: none"> <li>1. Remove the rec level 2 knobs.</li> </ul>	<p>Rec level knob</p> <p>Operation (DECK 2) P.C.B.</p> <p>Claws</p> <p>Claw</p> <p>Claws</p>	

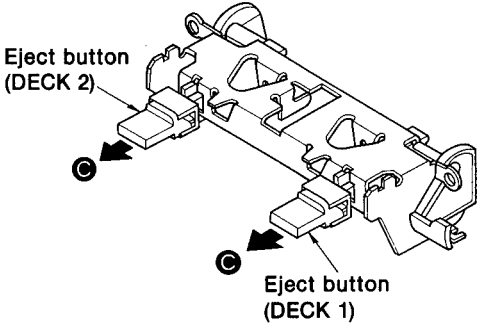


**Ref. No. 11**  
**Removal of the eject angle, eject buttons, and eject lever**

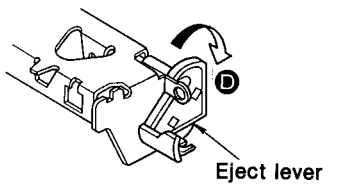
**Procedure**  
 3→4→5→11



1. Remove the 1 screw (1).
2. Lift the front grille slightly using a screw driver etc. in the direction of the arrow A, and take out the eject angle in the direction of the arrow B.



3. Pull out the eject buttons in the direction of the arrow C.



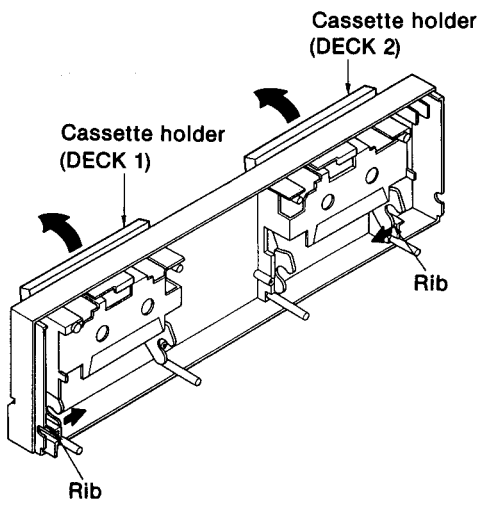
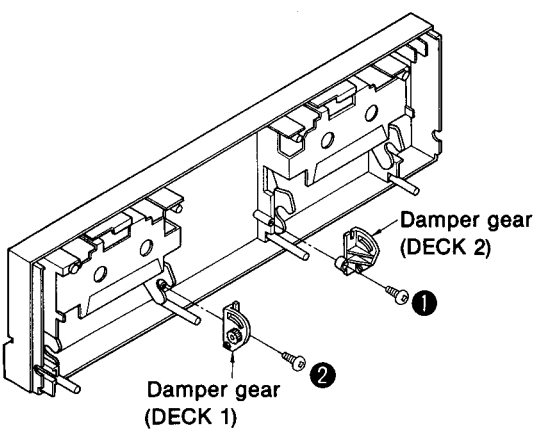
4. Turn the eject lever in the direction of the arrow D, and remove the eject lever in the direction of the arrow E.

**Ref. No. 12**  
**Removal of the cassette holder (DECK 1 & DECK 2)**

**Procedure**  
 5→8→12

1. Remove the 2 screws (1, 2).
2. Remove the damper gear.

3. Remove the rib in the direction of the arrow.
4. Remove the cassette holder in the direction of the arrow.

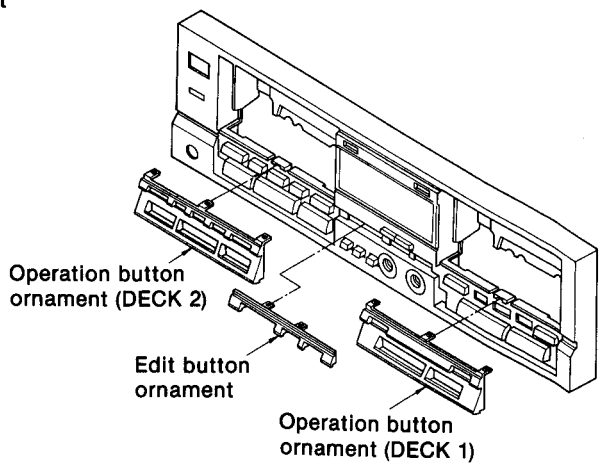
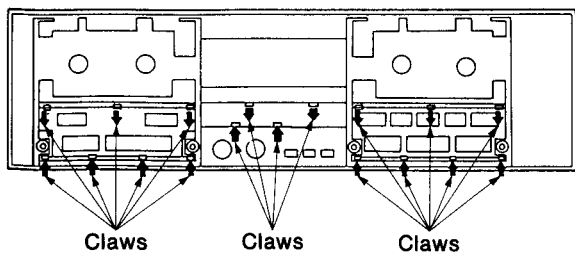


**Ref. No. 13**  
**Removal of the operation button ornament and edit button ornament**

**Procedure**  
 9→10→12→13

- A. Removal of the operation button ornament (DECK 1, DECK 2).**
1. Release the 14 claws.

- B. Removal of the edit button ornament.**
1. Release the 4 claws.



## MEASUREMENT AND ADJUSTMENT METHODS

### Measurement Condition

- Rec. level control; Maximum
- Timer switch; Off
- Reverse-mode selector switch;  $\rightarrow$
- Edit-recording tape-speed selector; X1

- Dolby NR switch; Off
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature  $20 \pm 5^\circ\text{C}$  ( $68 \pm 9^\circ\text{F}$ )

### Measuring Instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

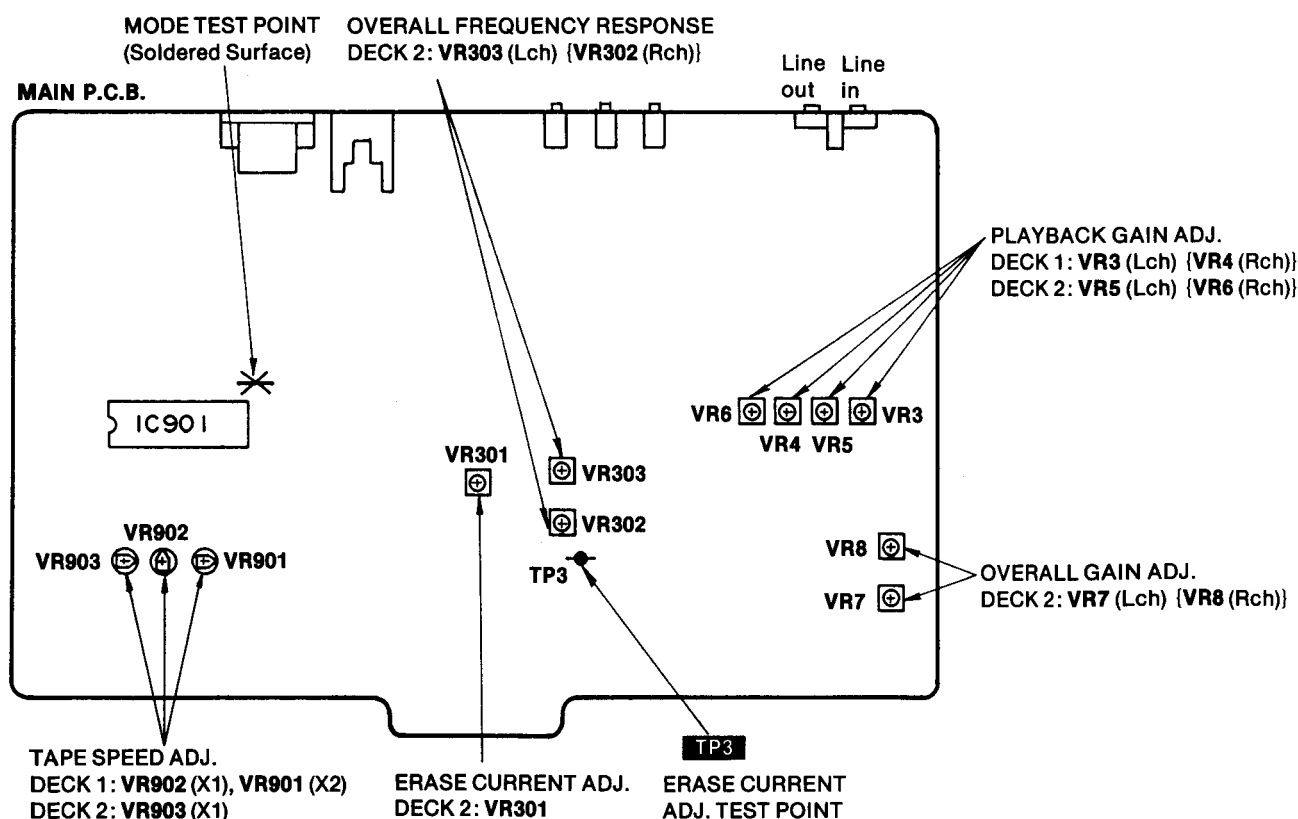
- ATT (Attenuator)
- DC voltmeter
- Resistor ( $600\Omega$ )

### Test tape

- Head azimuth adjustment (8kHz,  $-20\text{dB}$ ); QZZCFM
- Tape speed adjustment (3kHz,  $-10\text{dB}$ ); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz,  $-20\text{dB}$ ); QZZCFM

- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment  
Normal reference blank tape; QZZCRA  
Cr<sub>2</sub> reference blank tape; QZZCRX  
Metal reference blank tape; QZZCRZ

## Adjustment Points



**HEAD AZIMUTH ADJUSTMENT (DECK 2/1)**

1. Playback the azimuth adjustment portion (8kHz, -20dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the outputs of the L-CH and R-CH are maximized and the lissajous waveform, as illustrated, approaches 0 degrees.

**Note:** If L-CH and R-CH are not maximized at the same point, adjust to the point where the levels of each channel are maximized and equal.

2. Perform the same adjustment in the play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

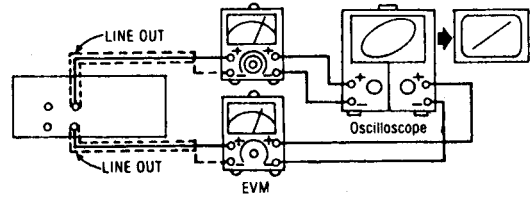


Fig. 1

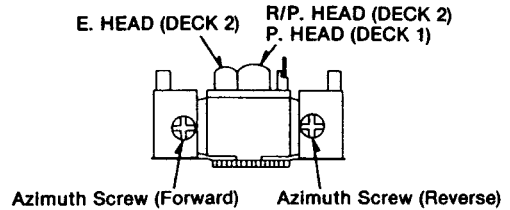


Fig. 2

**TAPE SPEED ADJUSTMENT (DECK 2/1)**

**Normal speed**

1. Shift the edit-recording tape-speed selector to "X1".
2. Playback the middle portion of the test tape (QZZCWAT).
3. Adjust Deck 1=VR902 and Deck 2=VR903 so that the output is within the standard value.

**High speed**

4. Shift the edit-recording tape speed switch to "X2".
5. Playback the middle portion of the test tape (QZZCWAT).
6. Adjust Deck 1=VR901 so that the output is within the standard value.

**Note:** The Normal speed adjustment must be done before the high speed adjustment.

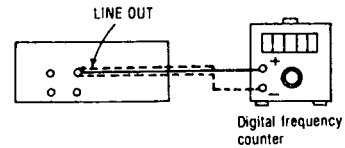


Fig. 3

(DECK 1) Standard value: 3000 ± 15 Hz [Normal (X1)], 6000 ± 30 Hz [High (X2)]  
 (DECK 2) Standard value: 3000 ± 15 Hz [Normal (X1)], 6000 ± 600 Hz [High (X2), only confirmation]

**PLAYBACK GAIN ADJUSTMENT (DECK 2/1)**

1. Playback the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust Deck 1=VR3 (L-CH) [[VR4 (R-CH)]] and Deck 2=VR5 (L-CH) [[VR6 (R-CH)]] so that the output is within the standard value.

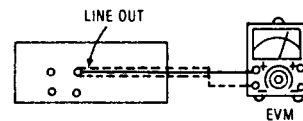


Fig. 4

Standard value: 0.4V ± 0.5dB

**PLAYBACK FREQUENCY RESPONSE (DECK 2/1)**

1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, -20dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in Fig. 6 for both L-CH and R-CH.

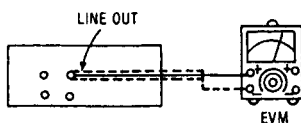


Fig. 5

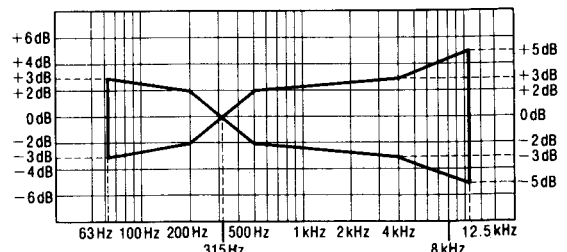


Fig. 6

**ERASE CURRENT ADJUSTMENT (DECK 2)**

1. Insert the metal blank test tape (QZZCRZ) and set the unit to the record pause mode.
2. Adjust VR301 so that the output between TP3 and GND is within the standard value.

**Standard value: 190 ± 5 mA (Metal)...EVM Reading: 190 ± 5 mV**

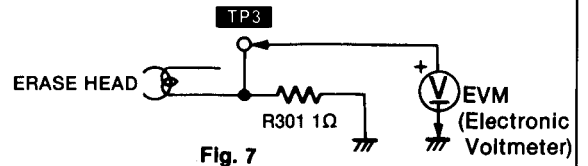


Fig. 7

**OVERALL FREQUENCY RESPONSE (DECK 2)**

1. Insert the normal blank test tape (QZZCRA) and set the unit to the record pause mode.
2. Apply a reference input signal (1kHz, -24dB) through an attenuator.
3. Attenuate the signal by 20dB and adjust the frequency from 50Hz~10kHz.
4. Record the frequency sweep.
5. Playback the recorded signal and assure that it is within the range shown in Fig. 8 in comparison to the reference frequency (1kHz).
6. If it is not within the standard range, adjust VR303 (L-CH) and VR302 (R-CH) so that the frequency level is within the standard range.
  - Level up in high frequency range .....Increase the bias current.
  - Level down in high frequency range ...Decrease the bias current.
7. Repeat steps 2~6 above using the CrO<sub>2</sub> tape (QZZCRX) and the metal tape (QZZCRZ) increasing the frequency range to 12.5kHz (50Hz~12.5kHz).
8. Assure that the level is within the range shown in Fig. 9.

**Normal Overall frequency response chart (NR OUT)**

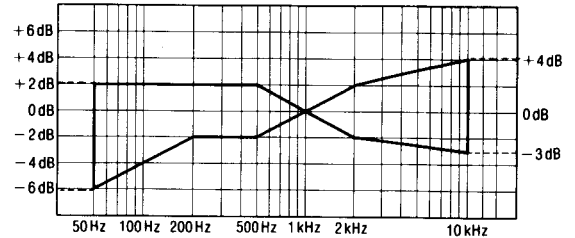


Fig. 8

**CrO<sub>2</sub> Metal Overall frequency response chart (NR OUT)**

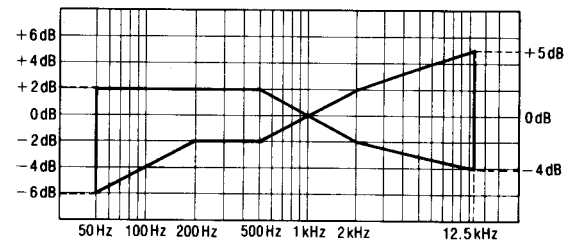


Fig. 9

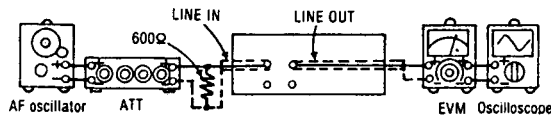


Fig. 10

**OVERALL GAIN ADJUSTMENT (DECK 2)**

1. Insert the normal blank test tape (QZZCRA) and set the unit to the record pause mode.
2. Apply a reference input signal (1kHz, -24dB). Attenuate the output so that its level becomes 0.4V.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust VR7 (L-CH) and VR8 (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

**Standard value: 0.4V ± 0.5dB**

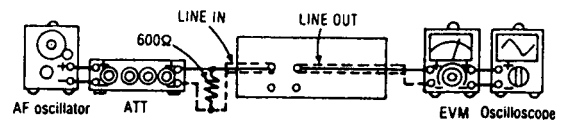


Fig. 11

## ■ TERMINAL FUNCTION OF IC's

• IC901 (M50746-145SP): MICROCOMPUTER (This microcomputer is used for mechanical operation)

Pin No.	Mark	I/O Division	Function
1	V <sub>CC</sub>	I	Power supply terminal
2	AV <sub>SS</sub>	—	• Connected to V <sub>SS</sub>
3	V <sub>REF</sub>	I	Standard voltage terminal (5V)
4	CRM	O	CUE/REV mute signal • "L" level in muting is off mode. • "H" level in muting is on mode.
5	DIR 2	O	Not used, open
6	MMT	O	Not used, open
7	LMT	O	Line out mute signal (Not used, open)
8	RMT 2	O	Rec. amp. mute signal of deck 2 • "L" level in mute is off mode. • "H" level in mute is on mode.
9	DMT	O	Line out mute signal • "L" level in muting is off mode. • "OPEN" when muting is on mode.
10	REV 2	—	Connected to GND
11	REV 1	—	Connected to GND
12	KEY 2	I	Key switch scan (DECK 2: STOP, F.F., REW, F. PLAY, R. PLAY, REC., PAUSE, S. START, X2, X1, DOLBY C, B)
13	KEY 1	I	Key switch scan (DECK 1: STOP, F.F., REW, F. PLAY, R. PLAY, $\overline{\text{REW}}$ , $\overline{\text{PLAY}}$ , $\infty$ )
14	PLAY 2	O	Not used, open
15	PLAY 1	O	Not used, open
16	ARM 2	I	Auto rec. mute terminal. "L"=KEY ON, "H"=KEY OFF
17	REC 1	I	Not used.
18	REC 2	O	Not used.
19	REM 2	O	Not used, open
20	REM 1	O	Not used, open
21	RENA	O	B side select signal to CD player, used during CD synchro editing mode.
22	SYNC	I	Synchro start signal input from CD player
23	RCS	I	Remote control serial data
24	TREC	I	Timer rec terminal
25	TPLAY	I	Timer play terminal
26	POF	I	Primary AC power detection terminal
27	CNV <sub>SS</sub>	—	Connected to GND
28	RESET	I	Reset terminal • "L" level when reset is on mode. • "L" → "H" level when reset is off mode.
29	XIN	I	Clock OSC terminal
30	XOUT	O	
31	$\phi$	I	Not used, open.
32	V <sub>SS</sub>	—	Connected to GND
33	TEST	—	Test terminal
34	PWIN	I	Power ON/OFF switch input • "L" level with power ON • "H" level with power OFF
35	REEL 1	I	Deck 1 rotation pulse signal of reel table

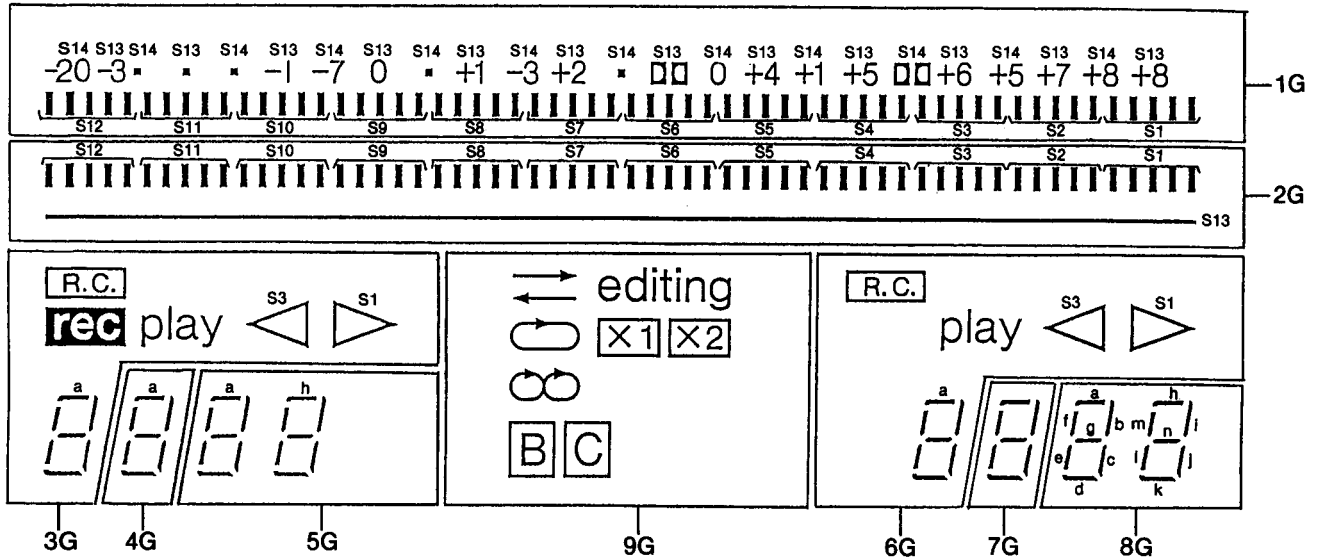
Pin No.	Mark	I/O Division	Function
36	REEL 2	I	Deck 2 rotation pulse signal of reel table
37	RINH 2	I	Deck 2 reverse rec. Inh. switch select terminal
38	FINH 2	I	Deck 2 forward rec. Inh. switch select terminal
39	MODE 1	I	Deck 1 mechanism mode switch select terminal
40	HALF 1	I	Deck 1 cassette half detection switch • "L" level in half detection switch is on mode. • "H" level in half detection switch is off mode.
41	MPX	O	MPX filter IN/OUT control signal • "OPEN" with Dolby NR "IN" • "L" level with Dolby NR "OUT"
42	$\overline{T2}$	O	Deck 2 play select signal • "L" level with PLAY/CUE/REVIEW mode. • "H" level with any other mode.
43	$\overline{X2}$	O	X2 speed FL meter display • "L" level when FL meter is on mode. • "OPEN" when other mode.
44	$\overline{X1}$	O	Not used, open
45	T/S	—	Connected to GND
46	$\overline{C}$	O	Dolby C FL meter display • "L" level when FL meter is on mode. • "OPEN" when other mode.
47	$\overline{B}$	O	Dolby B FL meter display • "L" level when FL meter is on mode. • "OPEN" when other mode.
48	$\overline{ENC}$	O	Encode/decode select signal • "L" level in encode mode. • "H" level in decode mode.
49	C/M	O	Deck 1 reverse mechanism select terminal
50	$\overline{PWOUT}$	O	Power ON/OFF output terminal
51	$\overline{SDATA}$	O	Serial data output
52	P04 (∞)	O	Not used, open
53	P03 (↻)	O	Not used, open
54	P02 (↻)	O	Not used, open
55	DIR 1	O	Not used, open
56	FINH 1	—	Connected to GND
57	HSP 1	O	Deck 1 motor speed control signal • "L" level when normal speed (X1). • "H" level when high speed (X2).
58	SOL 1	O	Deck 1 solenoid control signal • "H" level when solenoid is on mode. • "L" level when solenoid is off mode.
59	MOTOR 1	O	Deck 1 motor control signal • "H" level when motor is on mode. • "L" level when motor is off mode.
60	MODE 2	I	Deck 2 mechanism mode switch select terminal
61	HALF 2	I	Deck 2 cassette half detection switch • "L" level in half detection switch in on mode. • "H" level in half detection switch in off mode.
62	HSP 2	O	Deck 2 motor speed control signal • "H" level when normal speed (X1). • "L" level when high speed (X2).
63	SOL 2	O	Deck 2 solenoid control signal • "H" level when solenoid is on mode. • "L" level when solenoid is off mode.
64	MOTOR 2	O	Deck 2 motor control signal • "H" level when motor is on mode. • "L" level when motor is off mode.

• IC551 (HD404302SA02): MICROCOMPUTER (This microcomputer is used for FL meter operation.)

Pin No.	Mark	I/O Division	Function
1	SIN	I	Serial data input
2	S14	O	FL anode signal
3	S13		
5	S1		
6	S2		
7	S3		
8	S4		
9	S5		
10	S6		
11	S7		
12	S8		
13	S9		
14	S10		
15	S11		
16	S12		
4	Vdisp	I	Display power supply (Vdisp=VCC-35V)
17	NTA	I	DECK 2 reel table pulse
18	NTB	I	DECK 1 reel table pulse
19	CRST 2	I	DECK 2 counter reset terminal
20	CRST 1	I	DECK 1 counter reset terminal
21	GND	—	GND terminal
23			
22	AVCC	I	Power supply for A-D converter (+4.5V)
24	VRIN	—	Connected to GND
25	Sig L	I	Lch Level meter terminal (A-D input)
26	Sig R	I	Rch Level meter terminal (A-D input)
27	AVSS	—	Connected to GND
28	RESET	I	Reset terminal
29	$\overline{\text{TEST}}$	I	Test terminal
30	OSC1	O	Clock OSC terminal
31	OSC2	I	
32	VCC	I	Power supply terminal
33	G1	O	FL grid signal
34	G2		
35	G3		
36	G4		
37	G5		
38	G6		
39	G7		
40	G8		
41	G9		
42	PWM	O	PWM output (Not used, open.)

## INTERNAL CONNECTION OF FL

### • Grid connection diagram



### • Anode connection table

	9G	8G	7G	6G	5G	4G	3G	2G	1G
S1		n	-		n	-			
S2		j	-	play	j	-	play		
S3		l	-		l	-			
S4	editing	k	-	[R.C.]	k	-	[R.C.]		
S5	-	h	-	-	h	-	rec		
S6	[x2]	a	a	a	a	a	a		
S7	[x1]	b	b	b	b	b	b		
S8	-	f	f	f	f	f	f		
S9	[B]	g	g	g	g	g	g		
S10	[C]	c	c	c	c	c	c		
S11	-	e	e	e	e	e	e		
S12	-	d	d	d	d	d	d		
S13	-	i	-	-	i	-	-	—————	S13
S14	-	m	-	-	m	-	-	-	S14

### • Pin connection

PIN NO.	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
CONNECTION	F	F	N	N	N	S	S	S	S	S	S	S	S	S	S	S	N	S	S	N	9	8	7	6	5	4	3	2	1	N	N	N	F	F		
	2	2	P	P	P	12	11	10	9	8	7	6	5	4	3	2	1	P	14	13	P	G	G	G	G	G	G	G	G	G	G	P	P	P	1	1

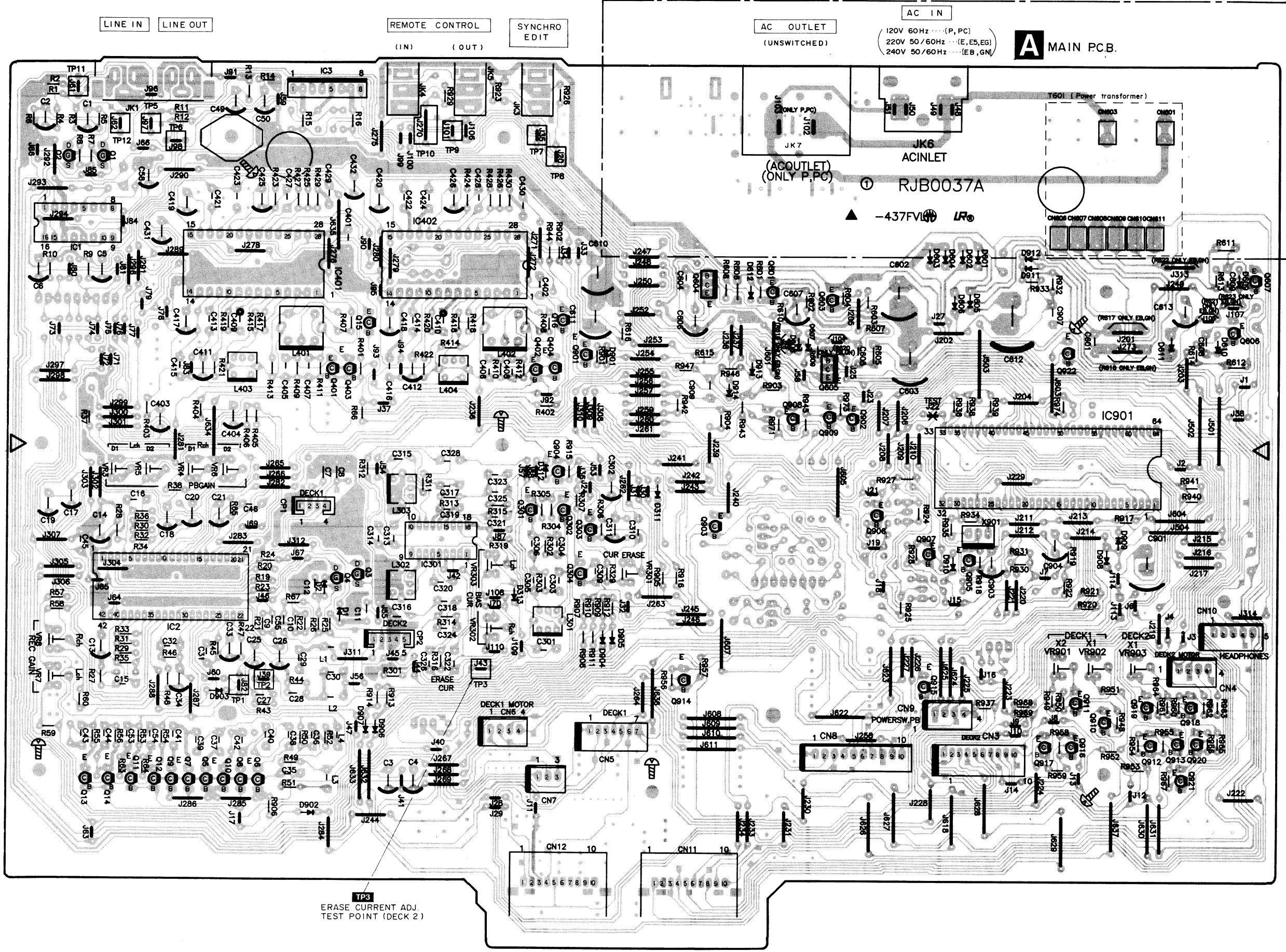


**PRINTED CIRCUIT BOARDS**

Power Source For [P, PC, E, E5, EB, EG, GC] areas

Power Source For (GC) area.

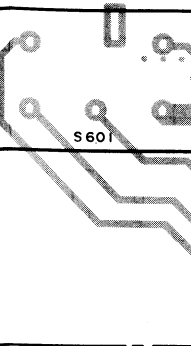
A  
B  
C  
D  
E  
F  
G



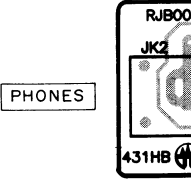
TP3  
ERASE CURRENT ADJ.  
TEST POINT (DECK 2)

**A** MAIN PCB.

VOLTAGE ADJ.

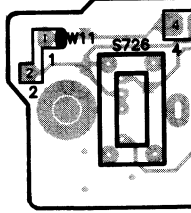


**F** HEADPHONE

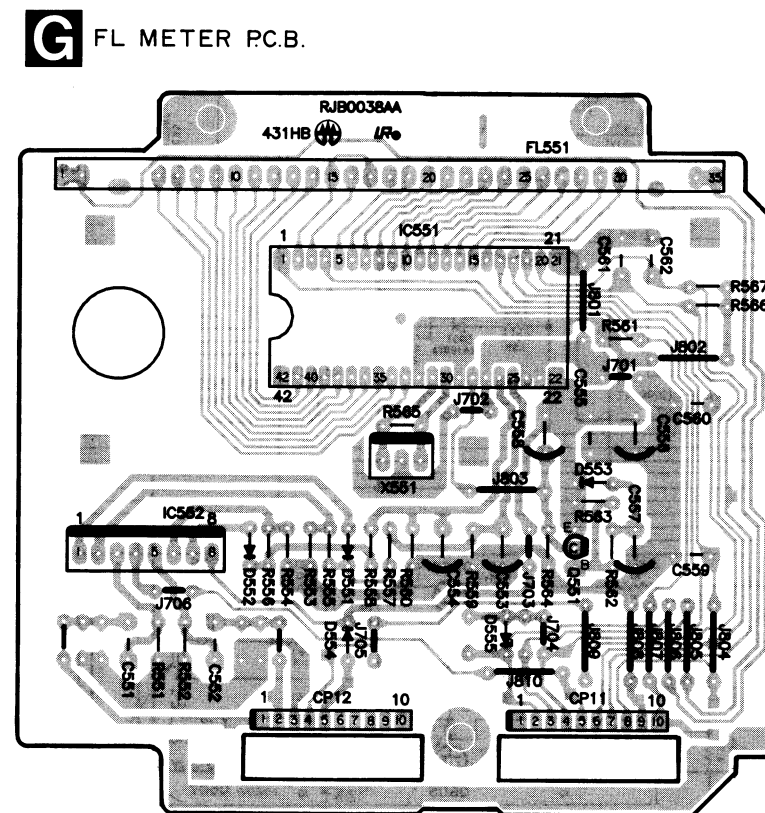
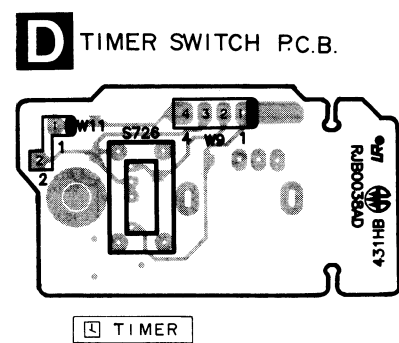
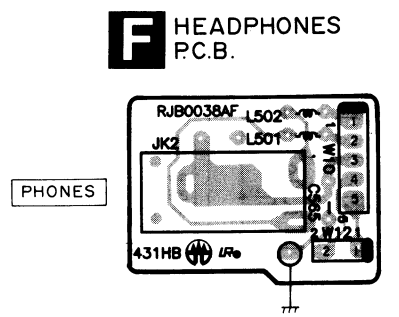
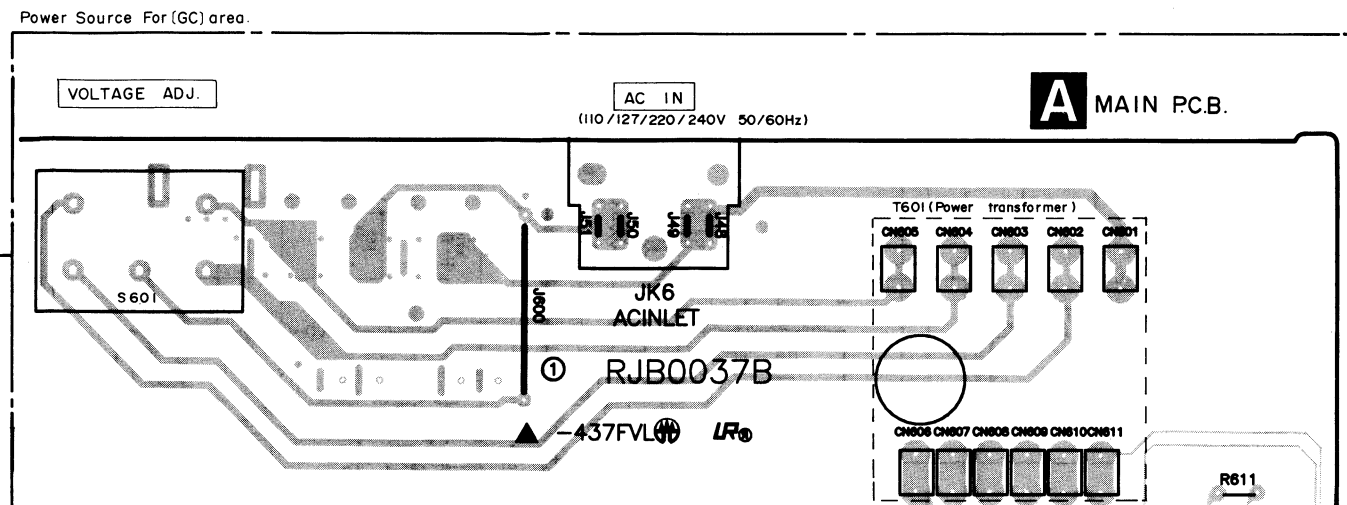
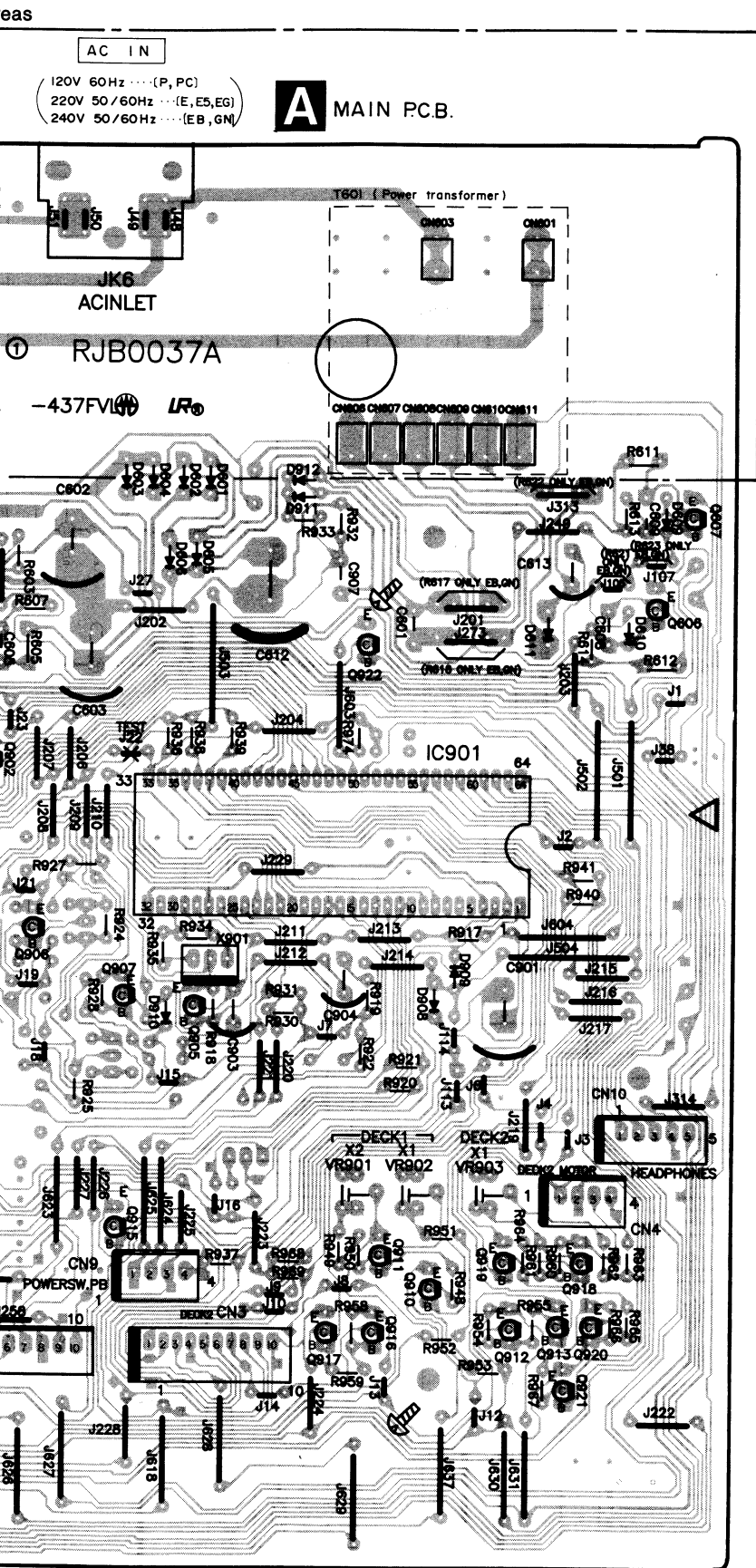


PHONES

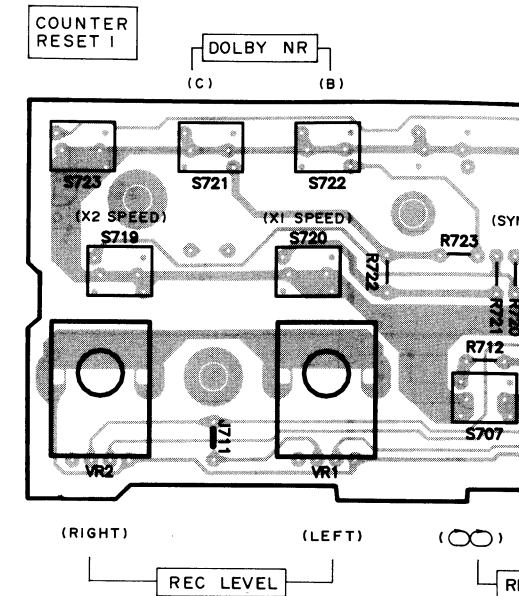
**D** TIMER SWITCH



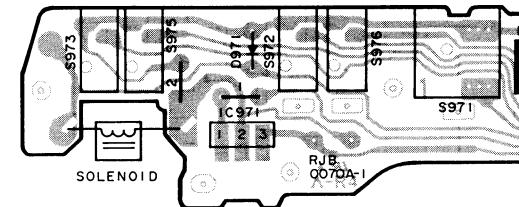
TIMER



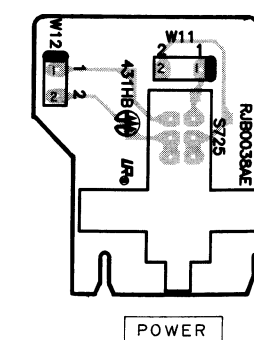
**I** OPERATION (DECK 2) P.C.B.

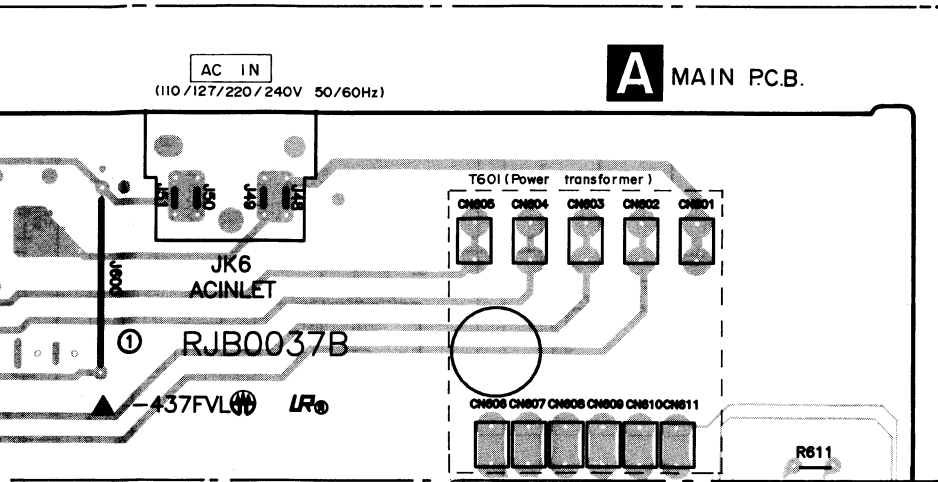


**B** MECHANISM (DECK 2) P.C.B.

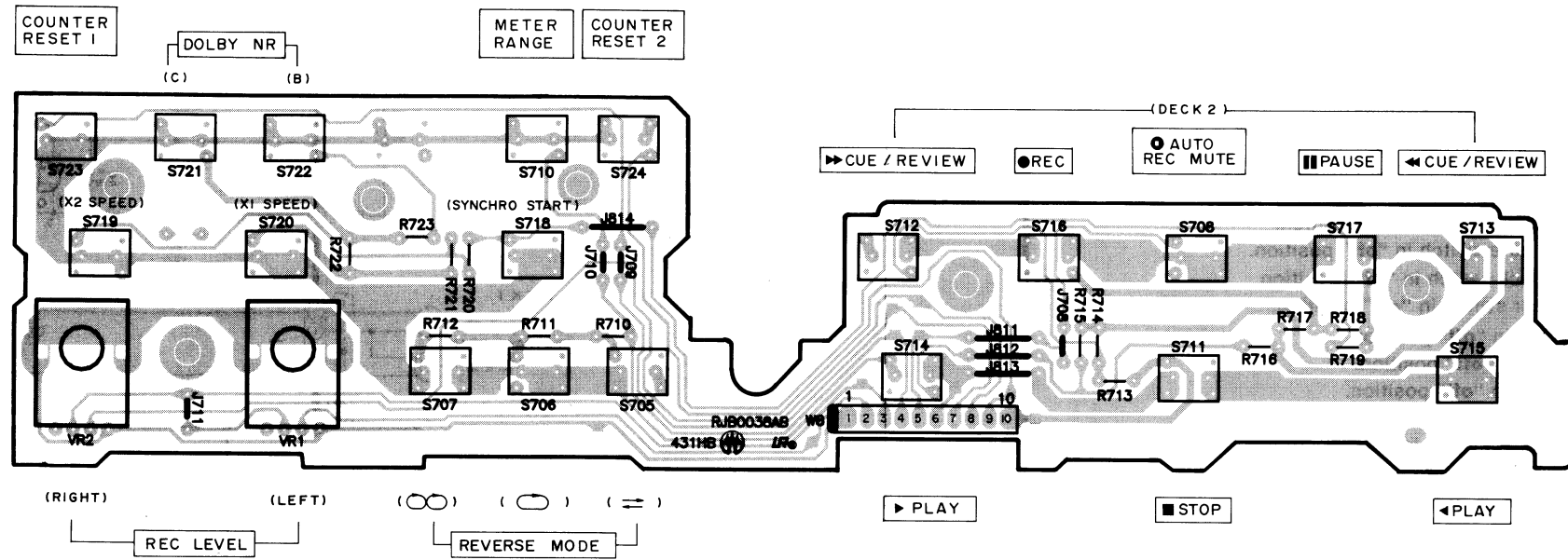


**E** POWER SWITCH PCB.

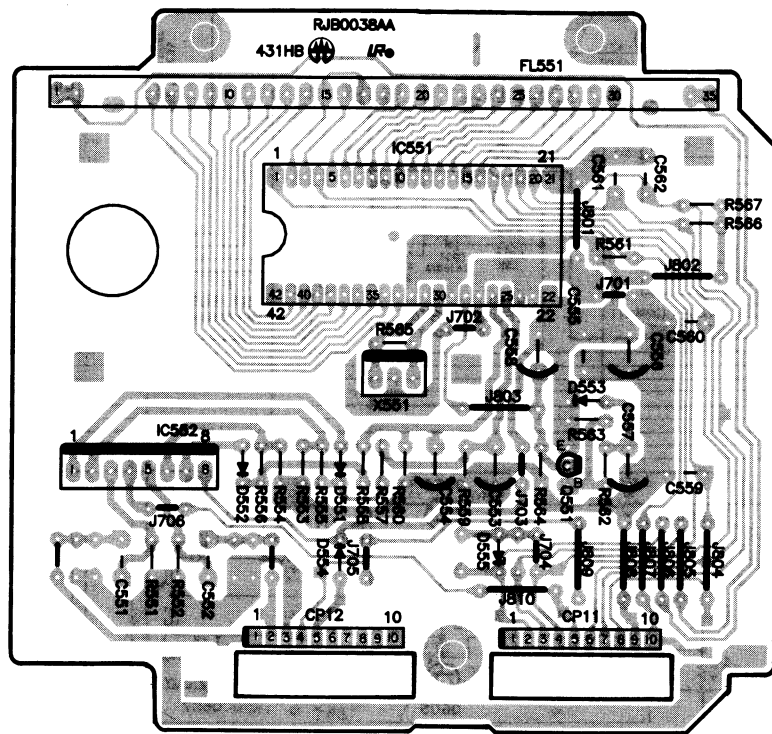




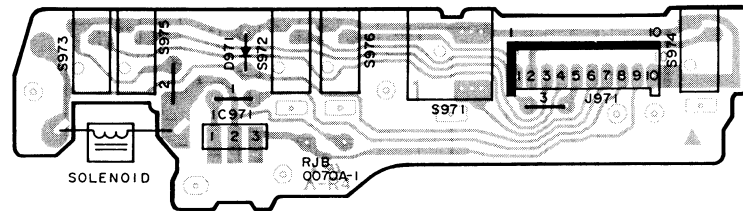
**I** OPERATION (DECK 2) P.C.B.



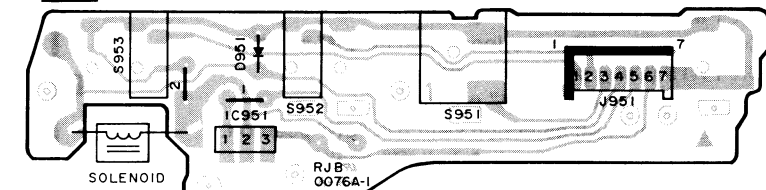
**G** FL METER P.C.B.



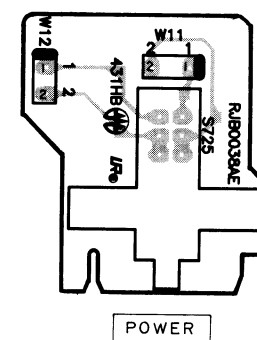
**B** MECHANISM (DECK 2) P.C.B.



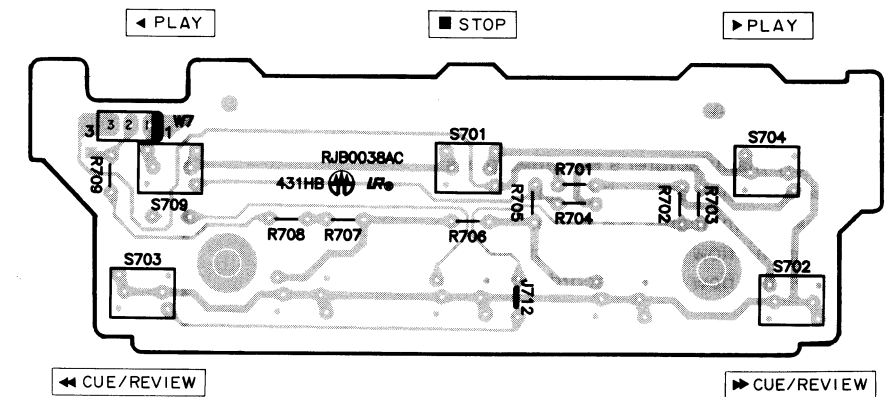
**C** MECHANISM (DECK 1) P.C.B.



**E** POWER SWITCH P.C.B.



**H** OPERATION (DECK 1) P.C.B.



# SCHEMATIC DIAGRAM

(Parts list on pages 33~39.)

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

## Notes:

- S601: Voltage selector switch in "240V" position. (110V ← 127V ← 220V ← 240V) ((GC) area only)
- S701: DECK 1 Stop switch in "off" position.
- S702: DECK 1 F.F. switch in "off" position.
- S703: DECK 1 Rew. switch in "off" position.
- S704: DECK 1 For. Playback switch in "off" position.
- S705: Reverse mode switch (↔) in "off" position.
- S706: Reverse mode switch (⊖) in "off" position.
- S707: Reverse mode switch (∞) in "off" position.
- S708: DECK 2 Auto rec. mute switch in "off" position.
- S709: DECK 1 Rev. Playback switch in "off" position.
- S710: Meter-range selector switch in "off" position.
- S711: DECK 2 Stop switch in "off" position.
- S712: DECK 2 F.F. switch in "off" position.
- S713: DECK 2 Rew. switch in "off" position.
- S714: DECK 2 For. Playback switch in "off" position.
- S715: DECK 2 Rev. Playback switch in "off" position.
- S716: DECK 2 Record switch in "off" position.
- S717: DECK 2 Pause switch in "off" position.
- S718: Synchro-start switch in "off" position.
- S719: Editing tape speed selector (X2) in "off" position.
- S720: Editing tape speed selector (X1) in "off" position.
- S721: Dolby NR C switch in "off" position.
- S722: Dolby NR B switch in "off" position.
- S723: Tape counter reset 1 switch "off" position.
- S724: Tape counter reset 2 switch "off" position.
- S725: Power switch in "on" position.
- S726: Timer switch in "off" position.
- S951: DECK 1 Mode switch in "off" position.
- S952: DECK 1 Cassette half detection switch in "off" position.
- S953: DECK 1 ATS (CrO<sub>2</sub>) switch in "off" position.
- S971: DECK 2 Mode switch in "off" position.
- S972: DECK 2 Cassette half detection switch in "off" position.
- S973: DECK 2 Rev. Rec Inhibit switch in "off" position.
- S974: DECK 2 For. Rec Inhibit switch in "off" position.
- S975: DECK 2 ATS (CrO<sub>2</sub>) switch in "off" position.
- S976: DECK 2 ATS (Metal) switch in "off" position.

1K=1,000 (Ω), 1M=1,000k (Ω)

• Capacity are in micro-farads (μF) unless specified otherwise.

• All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.

( ).....Voltage values at record mode.

For measurement us EVM.

## Important safety notice

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

• ( ———— < +B > ———— ) indicates +B (bias).

• ( - - - - - < -B > - - - - - ) indicates -B (bias).

• ( ⚡ ) indicates the flow of the playback signal.

• ( → ) indicates the flow of the record signal.

## \* Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

\* Cover the parts boxes made of plastics with aluminum foil.

\* Ground the soldering iron.

\* Put a conductive mat on the work table.

\* Do not touch the legs of IC or LSI with the fingers directly.

A

B

C

D

E

F

G

1

2

3

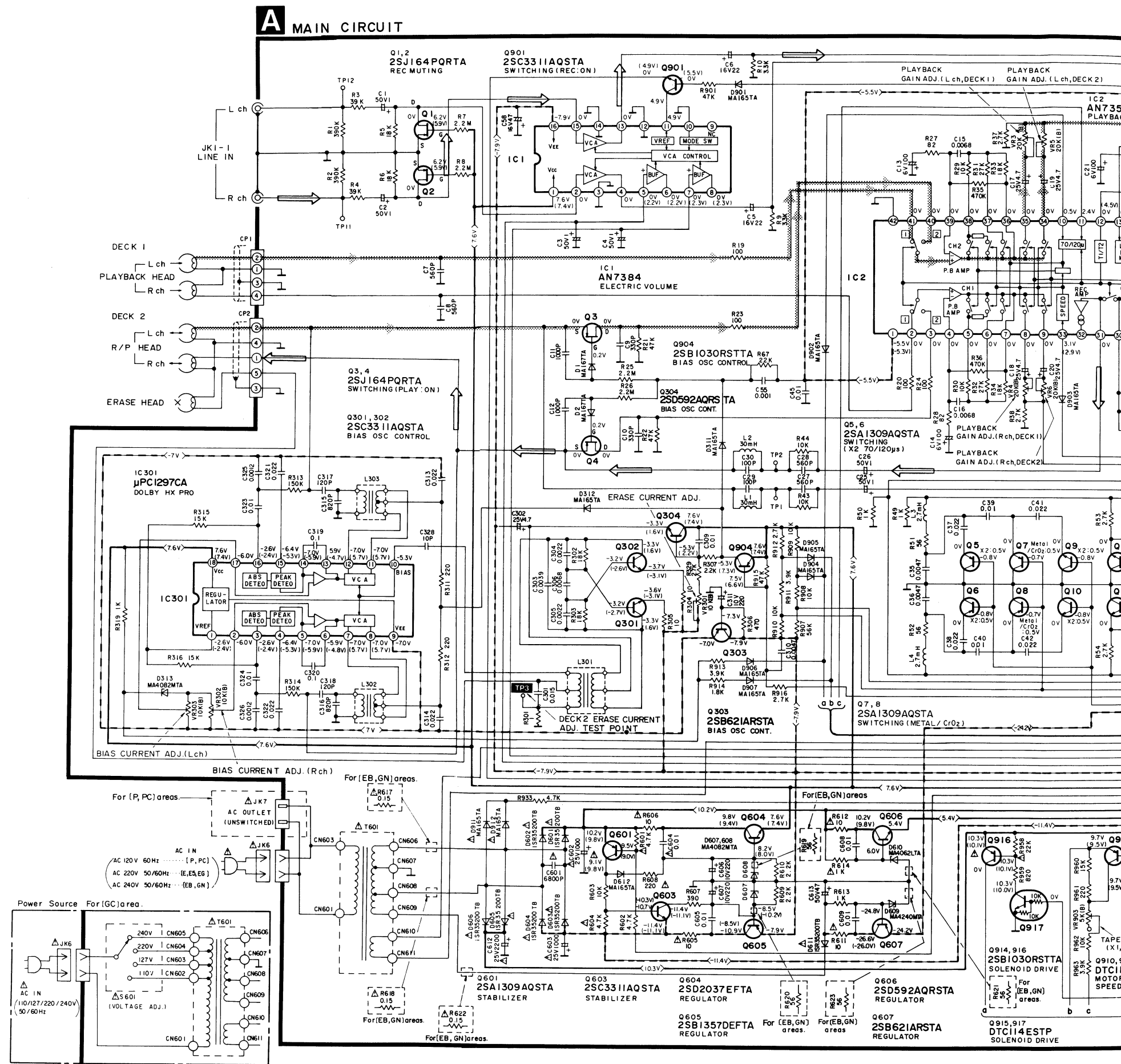
4

5

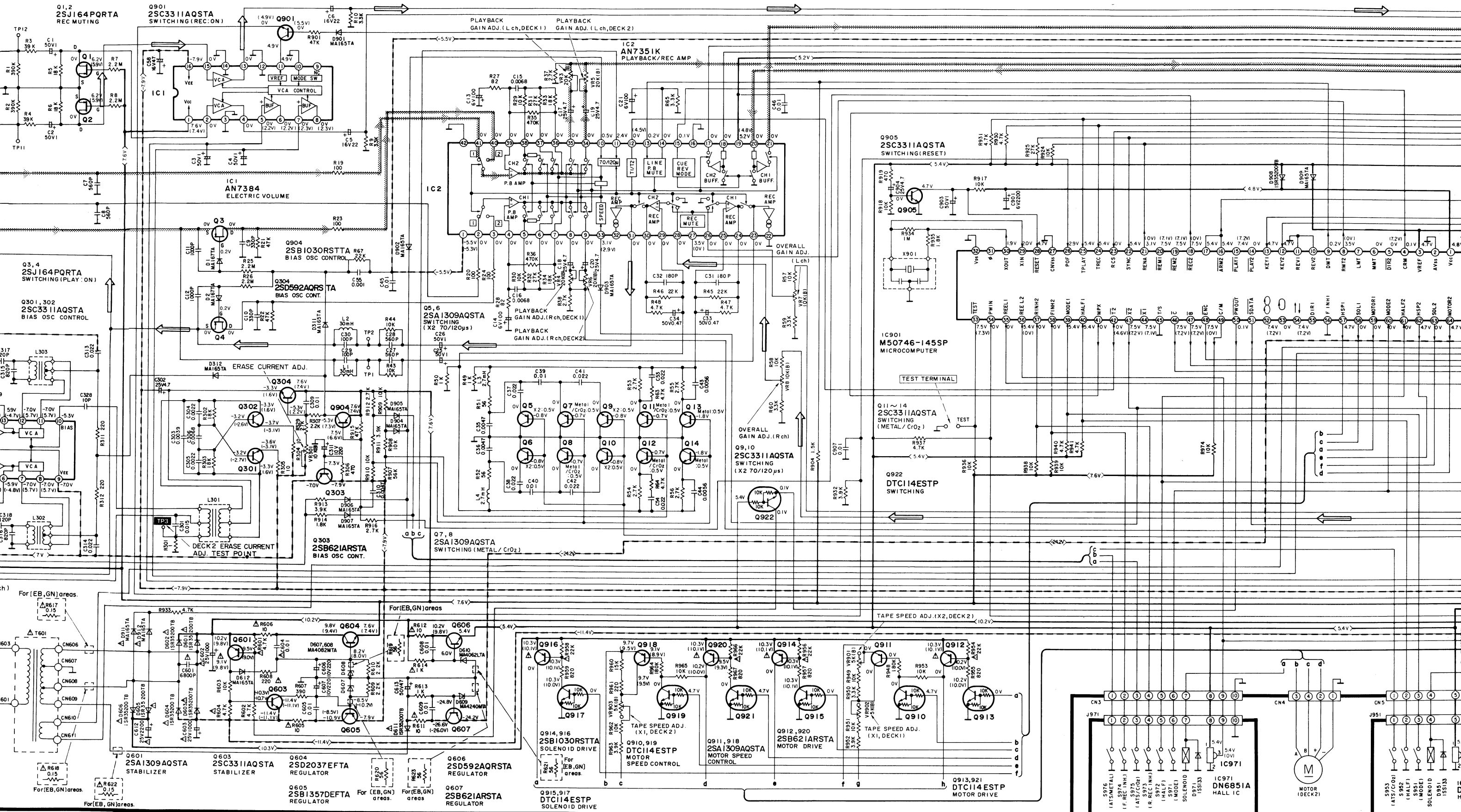
6

7

8

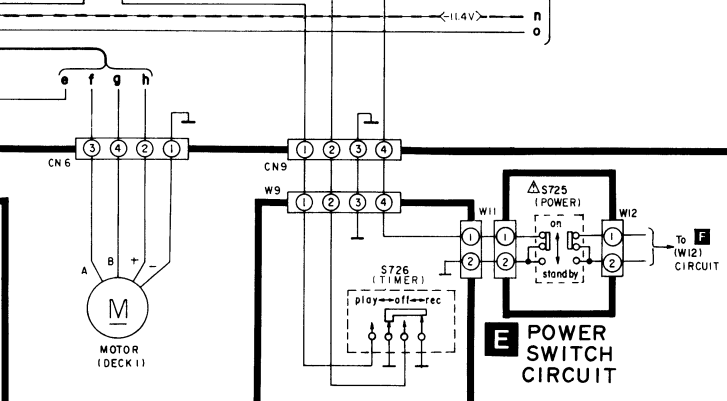
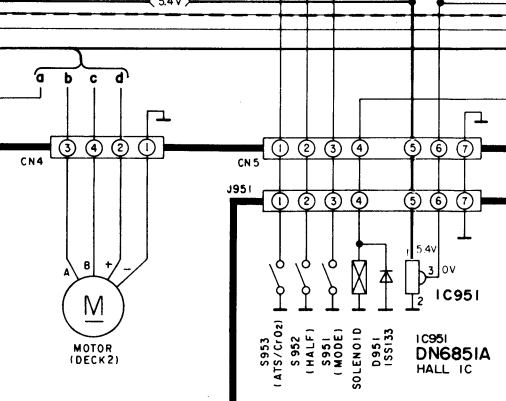
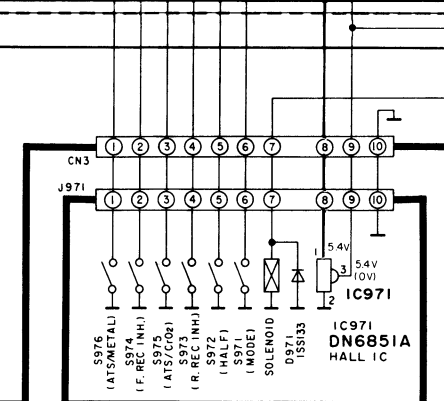
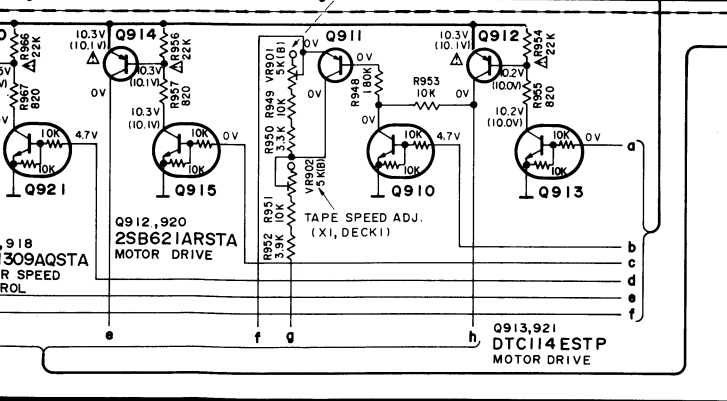
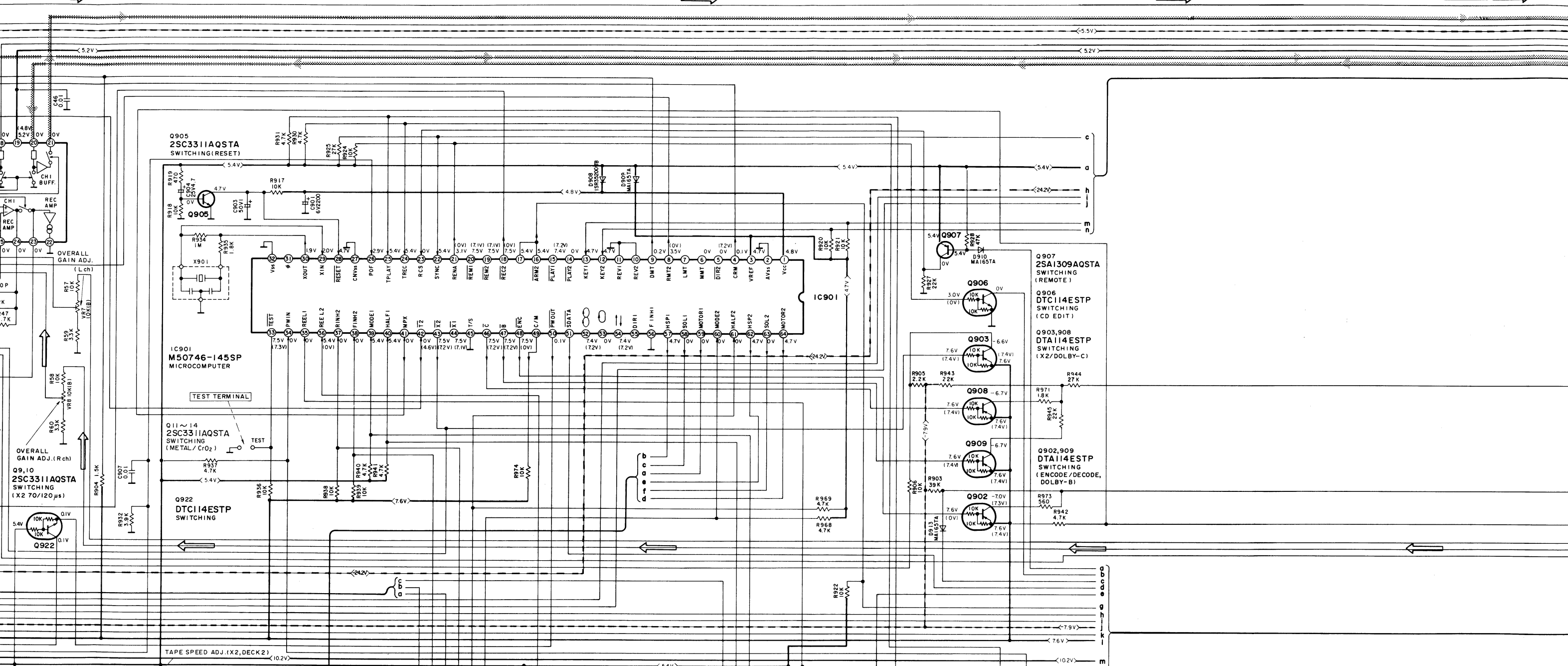


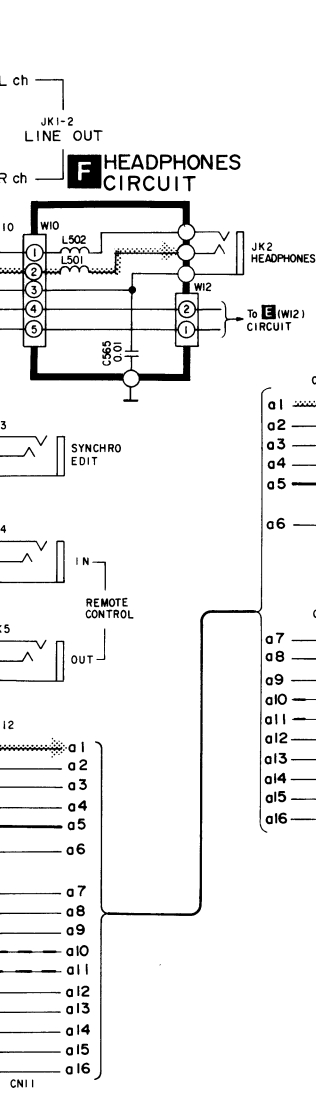
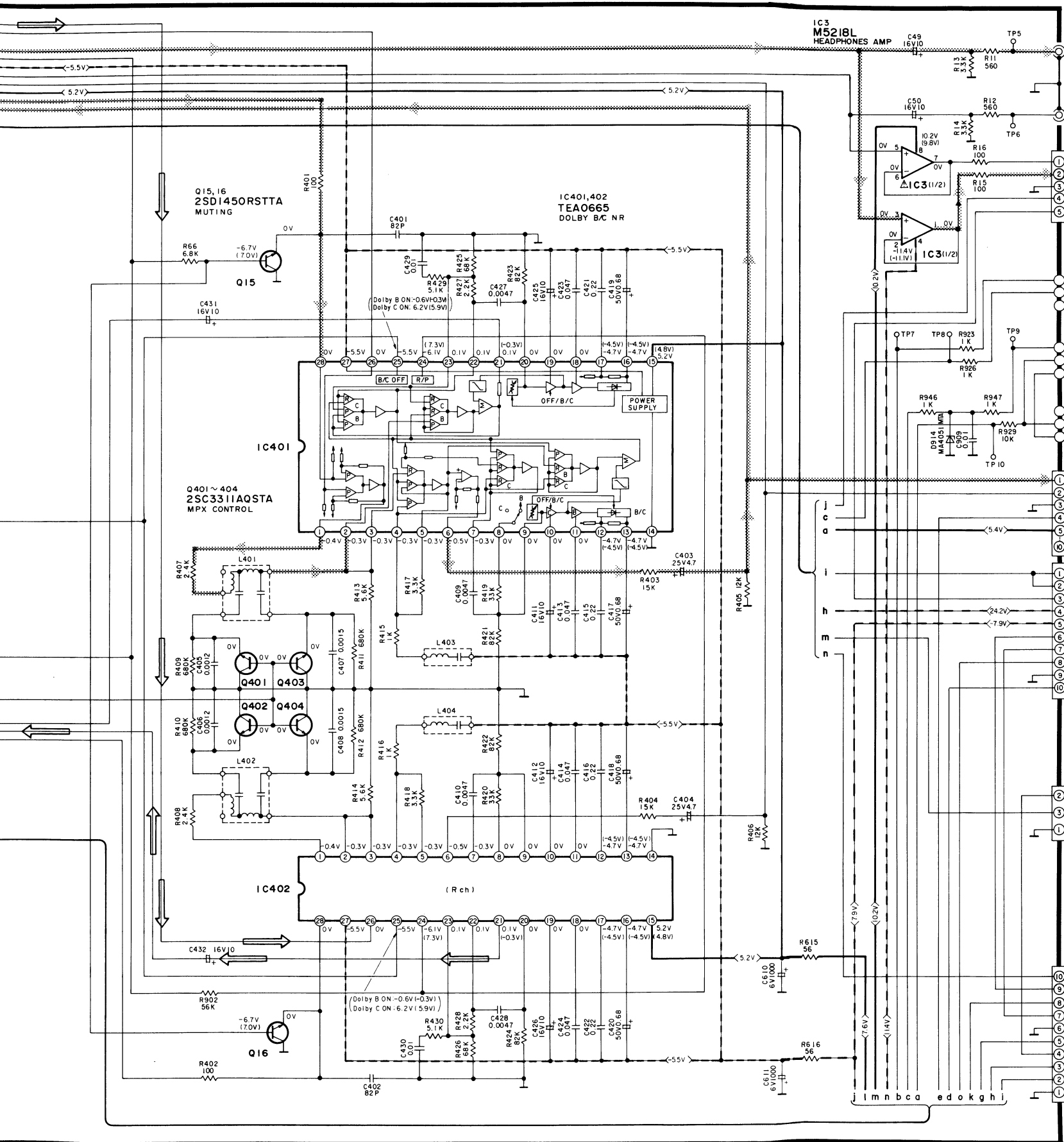
N CIRCUIT



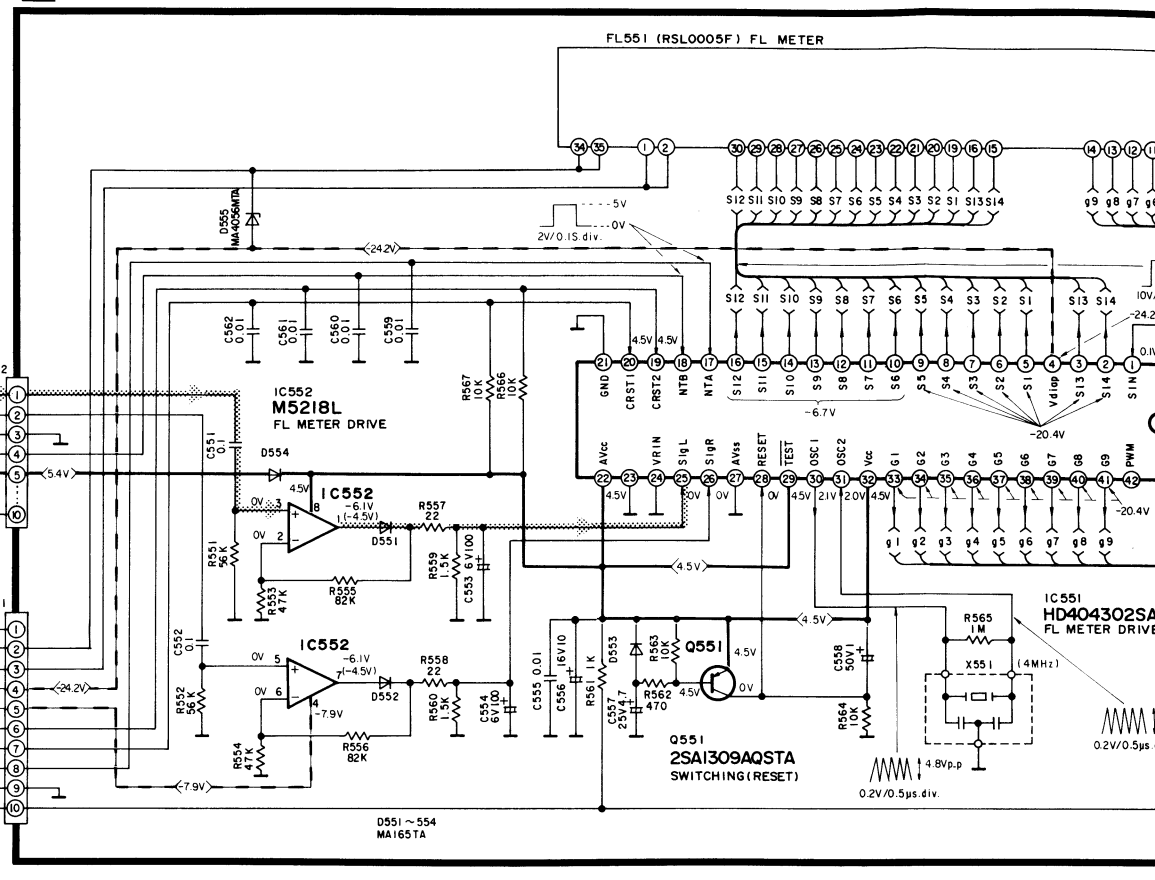
B MECHANISM (DECK 2) CIRCUIT

C MECHANISM (DECK 1) CIRCUIT

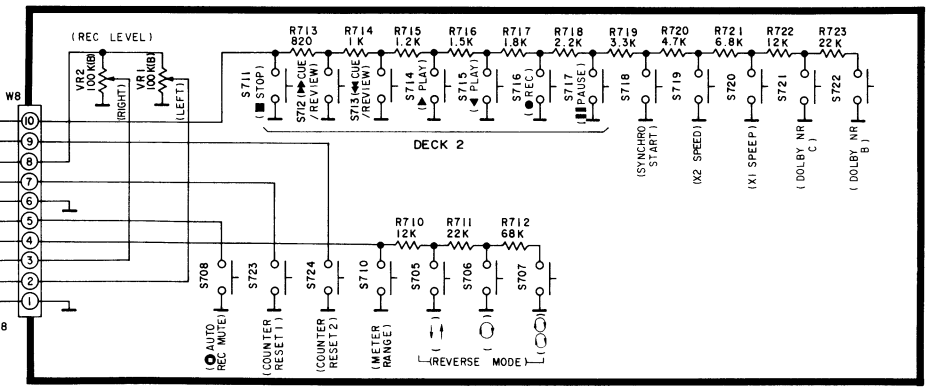
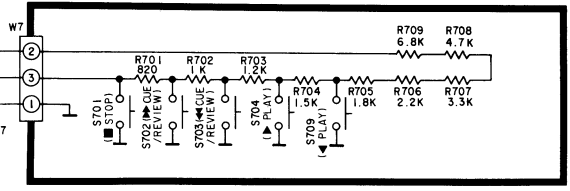




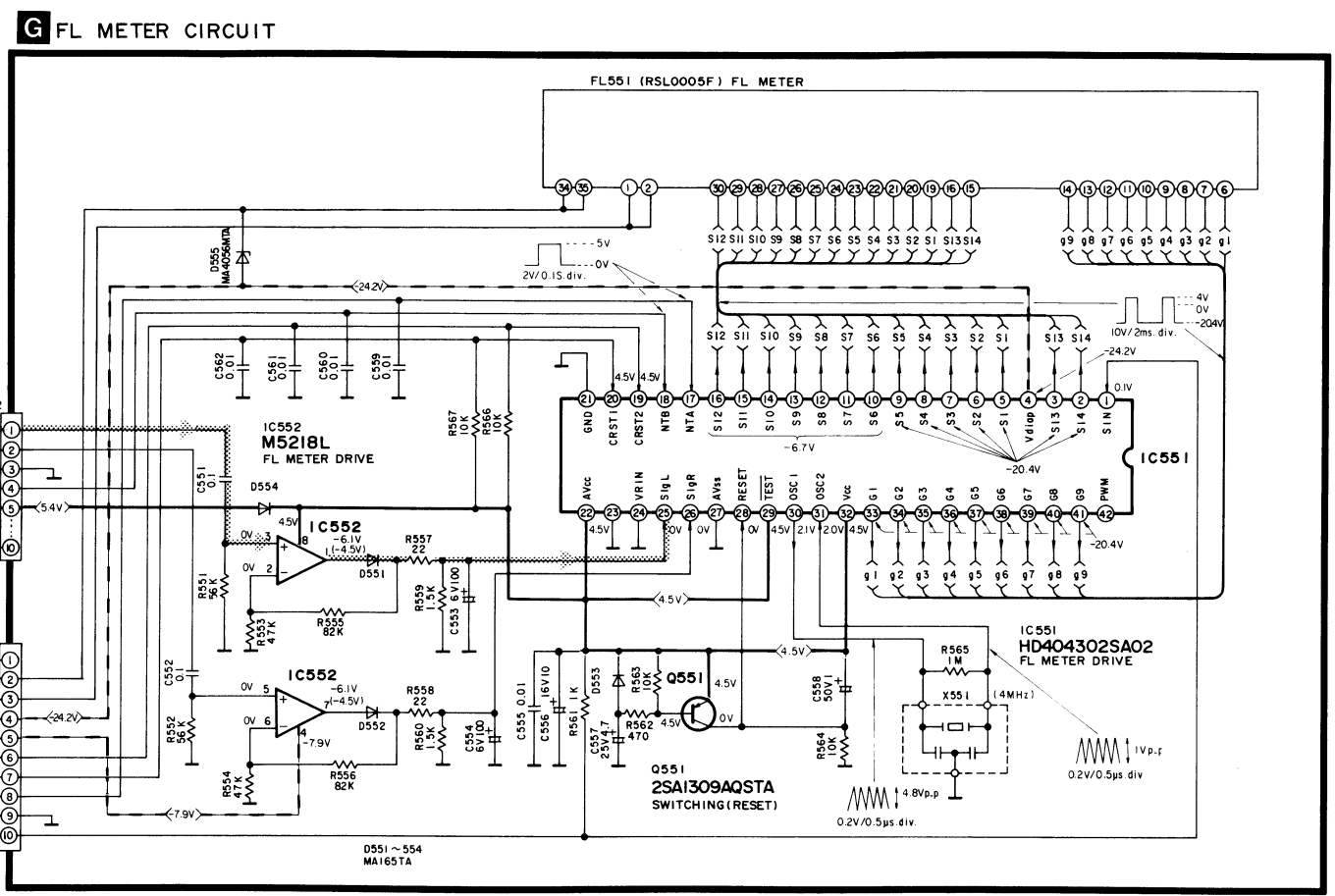
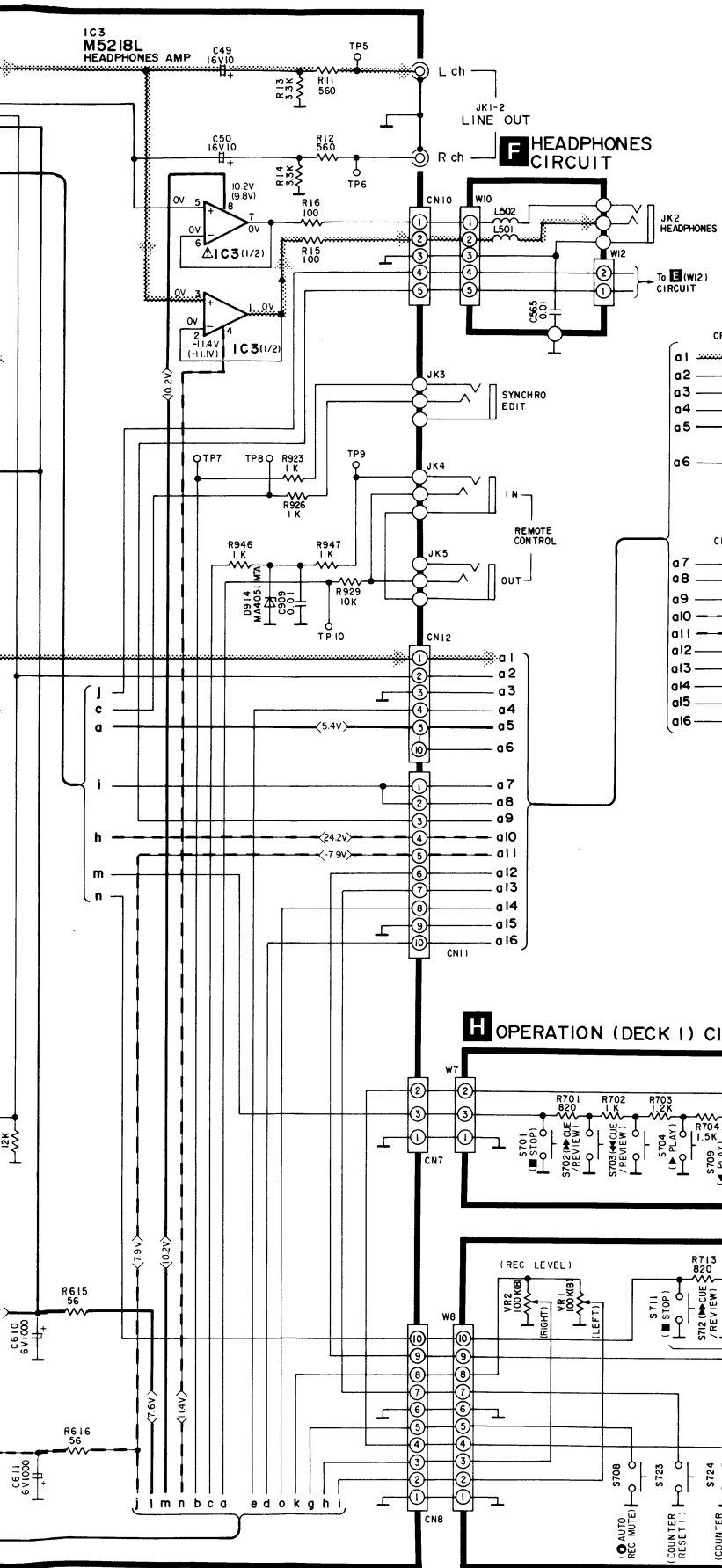
**G FL METER CIRCUIT**



**H OPERATION (DECK 1) CIRCUIT**



**I OPERATION (DECK 2) CIRCUIT**

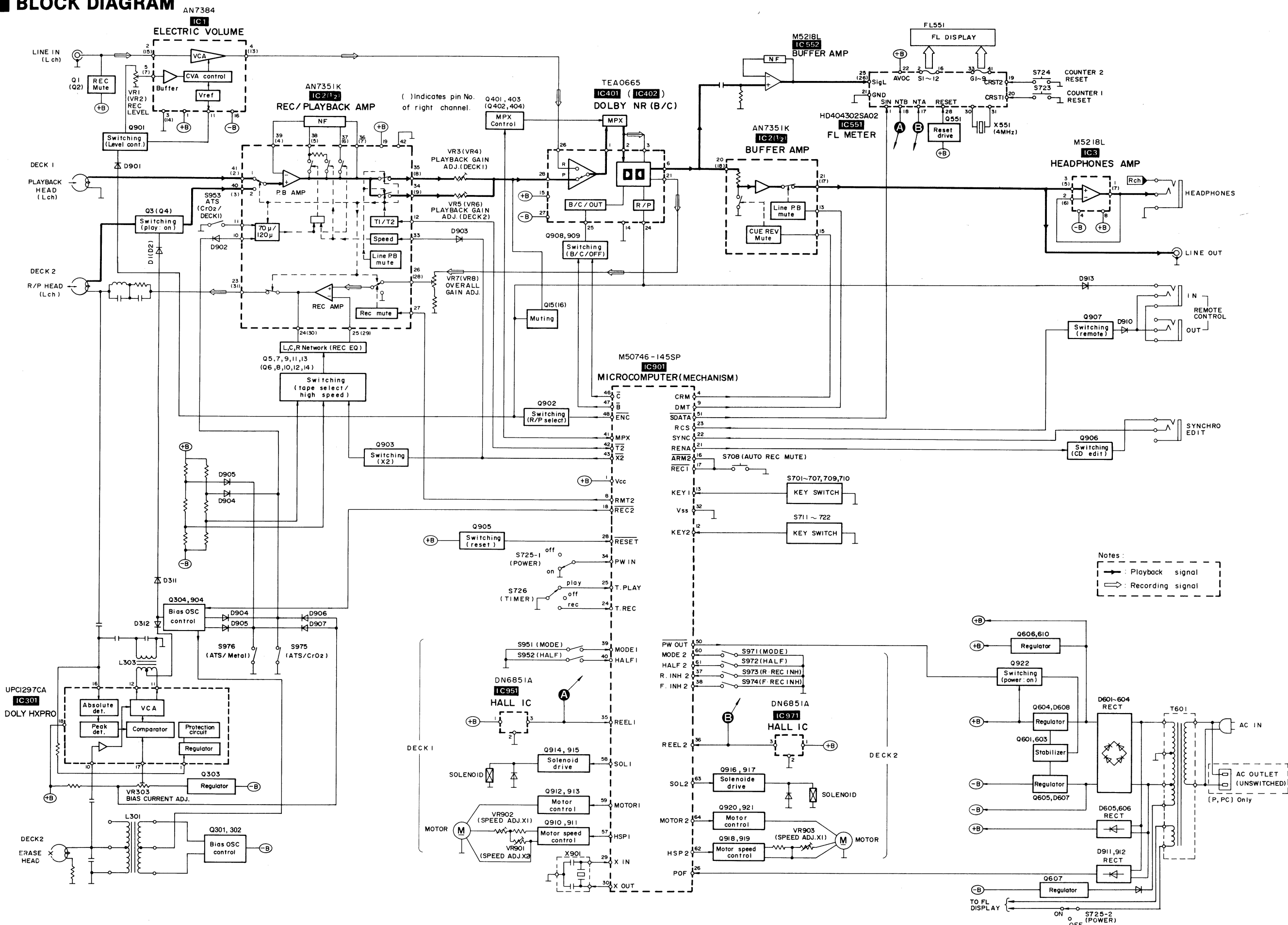


**TERMINAL GUIDE OF IC's, TRANSISTORS AND DIODES**

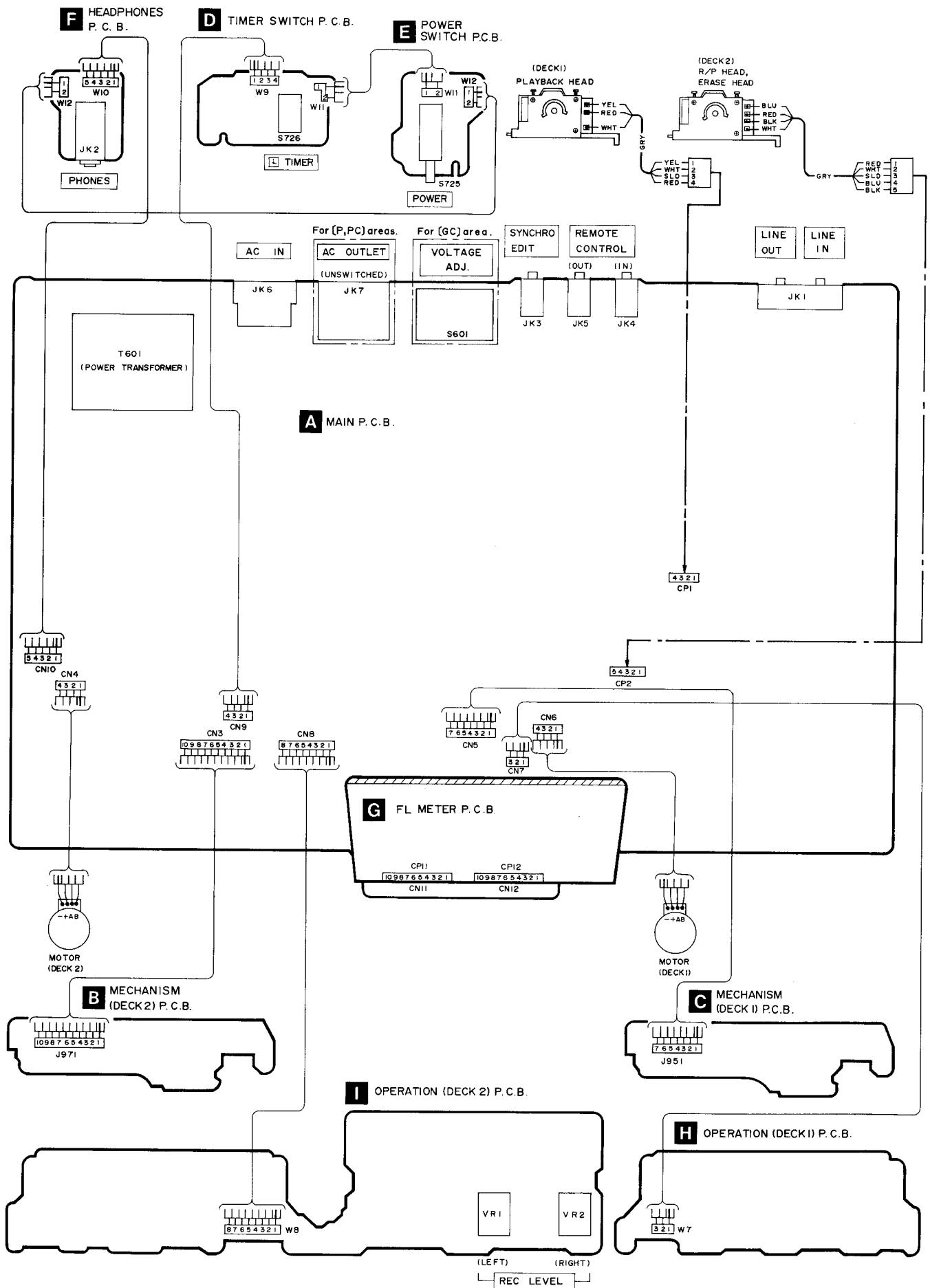
	<table border="1"> <tr><td>AN7384</td><td>16 Pin</td></tr> <tr><td>UPC1297CA</td><td>18 Pin</td></tr> <tr><td>TEA0665</td><td>28 Pin</td></tr> <tr><td>AN7351K</td><td>42 Pin</td></tr> <tr><td>HD404302SA02</td><td>42 Pin</td></tr> <tr><td>M50746-145SP</td><td>64 Pin</td></tr> </table>	AN7384	16 Pin	UPC1297CA	18 Pin	TEA0665	28 Pin	AN7351K	42 Pin	HD404302SA02	42 Pin	M50746-145SP	64 Pin		DN6851A 3 Pin
AN7384	16 Pin														
UPC1297CA	18 Pin														
TEA0665	28 Pin														
AN7351K	42 Pin														
HD404302SA02	42 Pin														
M50746-145SP	64 Pin														
	M5218L 8 Pin		2SJ164PQRTA												
	2SB621ARSTA 2SD592QRSTA		2SA1309AQSTA 2SC3311AQSTA 2SD1450RSTTA 2SB1030RSTTA												
	DTC114ESTP		DTA114ESTP												
	2SB1357DEFTA 2SD2037EFTA		MA167TA MA165TA 1SR35200TB 1SS133												
	MA4062LTA MA4240MTA MA4082MTA MA4051MTA MA4056MTA														



# BLOCK DIAGRAM



# WIRING CONNECTION DIAGRAM



# RESISTORS & CAPACITORS

Notes : \* Important safety notice :

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

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

### Numbering System For Resistors

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1K $\Omega$ )
ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470 $\Omega$ )

### Numbering System For Capacitors

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001 $\mu$ F)	Tolerance	Unique
ECEA	50	M		330
Type	Voltage (50V)	Characteristics		Value (33 $\mu$ F)

- P=Pico-farads (pF), U=microfarads ( $\mu$ F).
- Resistance values are in ohms ( $\Omega$ ), unless specified otherwise, 1K = 1,000 $\Omega$ , 1M = 1,000k $\Omega$

Resistor Type	Wattage		Tolerance
ERD : Carbon	10 : 1/8W	12 : 1/2W	J : $\pm$ 5%
ERG : Metal Oxide	14 : 1/4W	25 : 1/4W	F : $\pm$ 1%
ERQ : Fuse Type Metal	1A : 1W	18 : 1/8W	G : $\pm$ 2%
ERX : Metal Film	S2 : 1/4W	S1 : 1/2W	J : $\pm$ 5%
ERD L : Carbon (chip)	2F : 1/4W	50 : 1/2W	K : $\pm$ 10%
ERO K : Metal Film (chip)	2A : 2W	3A : 3W	M : $\pm$ 20%
ERC : Solid	6G : 1/10W	8G : 1/8W	
ERF : Incombustible Box-Shaped			
ERM : Wire-Wound			
RRJ : Chip Resistor			
ERJ : Chip Resistor			

Capacitor Type	Voltage		Tolerance
ECE : Electrolytic	0J : 6.3V	1A : 10V	K : $\pm$ 10%
ECCD : Ceramic	1C : 16V	1E : 25V	M : $\pm$ 20%
ECKD : Ceramic Capacitor	1H : 50V	1V : 35V	Z : +80% -20%
EQQM : Polyester	50 : 50V	05 : 50V	J : $\pm$ 5%
EQCP : Polypropylene	2H : 500V	2A : 100V	G : $\pm$ 2%
ECG : Ceramic	1 : 100V	1J : 63V	F : $\pm$ 1%
ECEA N : Non Polar Electrolytic	KC : 400V AC		C : $\pm$ 0.25pF
QCU : Ceramic (Chip Type)	KC : 125V AC		D : $\pm$ 0.5pF
ECUX : Ceramic (Chip Type)	(UL)		
ECF : Semiconductor			
EECW : Liquid electrolyte double layer capacitor			

Ref. No.	Part No.	Part Name & Description	Remarks
		RESISTORS	
R1	ERDS2TJ394T	C. RESISTOR 1/4W 390K	
R2	ERDS2TJ394T	C. RESISTOR 1/4W 390K	
R3	ERDS2TJ393T	C. RESISTOR 1/4W 39K	
R4	ERDS2TJ393T	C. RESISTOR 1/4W 39K	
R5	ERDS2TJ183T	C. RESISTOR 1/4W 18K	
R6	ERDS2TJ183T	C. RESISTOR 1/4W 18K	
R7	ERDS2TJ225	C. RESISTOR 1/4W 2. 2M	
R8	ERDS2TJ225	C. RESISTOR 1/4W 2. 2M	
R9	ERDS2TJ332T	C. RESISTOR 1/4W 3. 3K	
R10	ERDS2TJ332T	C. RESISTOR 1/4W 3. 3K	
R11	ERDS2TJ561T	C. RESISTOR 1/4W 560	
R12	ERDS2TJ561T	C. RESISTOR 1/4W 560	
R13	ERDS2TJ332T	C. RESISTOR 1/4W 3. 3K	
R14	ERDS2TJ332T	C. RESISTOR 1/4W 3. 3K	
R15	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R16	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R19	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R20	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R21	ERDS2TJ473T	C. RESISTOR 1/4W 47K	
R22	ERDS2TJ473T	C. RESISTOR 1/4W 47K	
R23	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R24	ERDS2TJ101T	C. RESISTOR 1/4W 100	
R25	ERDS2TJ225	C. RESISTOR 1/4W 2. 2M	
R26	ERDS2TJ225	C. RESISTOR 1/4W 2. 2M	
R27	ERDS2TJ820T	C. RESISTOR 1/4W 82	

Ref. No.	Part No.	Part Name & Description	Remarks
R28	ERDS2TJ820T	C. RESISTOR 1/4W 82	
R29	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R30	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R31	ERDS2TJ273T	C. RESISTOR 1/4W 27K	
R32	ERDS2TJ273T	C. RESISTOR 1/4W 27K	
R33	ERDS2TJ183T	C. RESISTOR 1/4W 18K	
R34	ERDS2TJ183T	C. RESISTOR 1/4W 18K	
R35	ERDS2TJ474T	C. RESISTOR 1/4W 470K	
R36	ERDS2TJ474T	C. RESISTOR 1/4W 470K	
R37	ERDS2TJ272T	C. RESISTOR 1/4W 2. 7K	
R38	ERDS2TJ272T	C. RESISTOR 1/4W 2. 7K	
R43	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R44	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R45	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R46	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R47	ERDS2TJ472T	C. RESISTOR 1/4W 4. 7K	
R48	ERDS2TJ472T	C. RESISTOR 1/4W 4. 7K	
R49	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R50	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R51	ERDS2TJ560	C. RESISTOR 1/4W 56	
R52	ERDS2TJ560	C. RESISTOR 1/4W 56	
R53	ERDS2TJ272T	C. RESISTOR 1/4W 2. 7K	
R54	ERDS2TJ272T	C. RESISTOR 1/4W 2. 7K	
R55	ERDS2TJ272T	C. RESISTOR 1/4W 2. 7K	
R56	ERDS2TJ272T	C. RESISTOR 1/4W 2. 7K	
R57	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R58	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R59	ERDS2TJ332T	C. RESISTOR 1/4W 3. 3K	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
R60	ERDS2TJ332T	C. RESISTOR 1/4W 3.3K		R552	ERDS2TJ563	C. RESISTOR 1/4W 56K	
R63	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K		R553	ERDS2TJ473T	C. RESISTOR 1/4W 47K	
R64	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K		R554	ERDS2TJ473T	C. RESISTOR 1/4W 47K	
R65	ERDS2TJ332T	C. RESISTOR 1/4W 3.3K		R555	ERDS2TJ823T	C. RESISTOR 1/4W 82K	
R66	ERDS2TJ682T	C. RESISTOR 1/4W 6.8K		R556	ERDS2TJ823T	C. RESISTOR 1/4W 82K	
R67	ERDS2TJ223T	C. RESISTOR 1/4W 22K		R557	ERDS2TJ220T	C. RESISTOR 1/4W 22	
R301	ERDS2TJ180T	C. RESISTOR 1/4W 1.0		R558	ERDS2TJ220T	C. RESISTOR 1/4W 22	
R302	ERDS2TJ183T	C. RESISTOR 1/4W 18K		R559	ERDS2TJ152T	C. RESISTOR 1/4W 1.5K	
R303	ERDS2TJ183T	C. RESISTOR 1/4W 18K		R560	ERDS2TJ152T	C. RESISTOR 1/4W 1.5K	
R304	ERDS2TJ100T	C. RESISTOR 1/4W 10		R561	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R305	ERDS2TJ100T	C. RESISTOR 1/4W 10		R562	ERDS2TJ471T	C. RESISTOR 1/4W 470	
R306	ERDS2TJ471T	C. RESISTOR 1/4W 470		R563	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R307	ERDS2TJ222T	C. RESISTOR 1/4W 2.2K		R564	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R311	ERDS2TJ221T	C. RESISTOR 1/4W 220		R565	ERDS2TJ105T	C. RESISTOR 1/4W 1M	
R312	ERDS2TJ221T	C. RESISTOR 1/4W 220		R566	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R313	ERDS2TJ154T	C. RESISTOR 1/4W 150K		R567	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R314	ERDS2TJ154T	C. RESISTOR 1/4W 150K		R601	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K	△
R315	ERDS2TJ153T	C. RESISTOR 1/4W 15K		R602	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K	
R316	ERDS2TJ153T	C. RESISTOR 1/4W 15K		R603	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R319	ERDS2TJ102T	C. RESISTOR 1/4W 1K		R604	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K	△
R329	ERDS2TJ272T	C. RESISTOR 1/4W 2.7K		R605	ERDS1FJ150	C. RESISTOR 1/2W 15	(P, PC, E, E5, EG, GC) △
R401	ERDS2TJ101T	C. RESISTOR 1/4W 100		R605	ERD2FCVG150T	C. RESISTOR 1/4W 15	(EB, GN) △
R402	ERDS2TJ101T	C. RESISTOR 1/4W 100		R606	ERDS1FVJ100T	C. RESISTOR 1/2W 10	(P, PC, E, E5, EG, GC) △
R403	ERDS2TJ153T	C. RESISTOR 1/4W 15K		R606	ERD2FCVG100T	C. RESISTOR 1/4W 10	(EB, GN) △
R404	ERDS2TJ153T	C. RESISTOR 1/4W 15K		R607	ERDS2TJ391	C. RESISTOR 1/4W 390	
R405	ERDS2TJ123T	C. RESISTOR 1/4W 12K		R608	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R406	ERDS2TJ123T	C. RESISTOR 1/4W 12K		R609	ERDS2TJ222T	C. RESISTOR 1/4W 2.2K	
R407	ERDS2TJ242	C. RESISTOR 1/4W 2.4K		R610	ERDS2TJ222T	C. RESISTOR 1/4W 2.2K	
R408	ERDS2TJ242	C. RESISTOR 1/4W 2.4K		R611	ERDS1FVJ100T	C. RESISTOR 1/2W 10	(P, PC, E, E5, EG, GC) △
R409	ERDS2TJ684T	C. RESISTOR 1/4W 680K		R611	ERD2FCVG100T	C. RESISTOR 1/4W 10	(EB, GN) △
R410	ERDS2TJ684T	C. RESISTOR 1/4W 680K		R612	ERDS1FVJ100T	C. RESISTOR 1/2W 10	(P, PC, E, E5, EG, GC) △
R411	ERDS2TJ684T	C. RESISTOR 1/4W 680K		R612	ERD2FCVG100T	C. RESISTOR 1/4W 10	(EB, GN) △
R412	ERDS2TJ684T	C. RESISTOR 1/4W 680K		R613	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R413	ERDS2TJ562T	C. RESISTOR 1/4W 5.6K		R614	ERDS2TJ102T	C. RESISTOR 1/4W 1K	△
R414	ERDS2TJ562T	C. RESISTOR 1/4W 5.6K		R615	ERDS2TJ560	C. RESISTOR 1/4W 56	
R415	ERDS2TJ102T	C. RESISTOR 1/4W 1K		R616	ERDS2TJ560	C. RESISTOR 1/4W 56	
R416	ERDS2TJ102T	C. RESISTOR 1/4W 1K		R617	ERQ16NKR15E	F. RESISTOR 1/6W 0.15	(EB, GN) △
R417	ERDS2TJ332T	C. RESISTOR 1/4W 3.3K		R618	ERQ16NKR15E	F. RESISTOR 1/6W 0.15	(EB, GN) △
R418	ERDS2TJ332T	C. RESISTOR 1/4W 3.3K		R619	ERDS2TJ560	C. RESISTOR 1/4W 56	(EB, GN)
R419	ERDS2TJ333T	C. RESISTOR 1/4W 33K		R620	ERDS2TJ560	C. RESISTOR 1/4W 56	(EB, GN)
R420	ERDS2TJ333T	C. RESISTOR 1/4W 33K		R621	ERDS2TJ560	C. RESISTOR 1/4W 56	(EB, GN)
R421	ERDS2TJ823T	C. RESISTOR 1/4W 82K		R622	ERQ16NKR15E	F. RESISTOR 1/6W 0.15	(EB, GN) △
R422	ERDS2TJ823T	C. RESISTOR 1/4W 82K		R623	ERDS2TJ560	C. RESISTOR 1/4W 56	(EB, GN)
R423	ERDS2TJ823T	C. RESISTOR 1/4W 82K		R701	ERDS2TJ821T	C. RESISTOR 1/4W 820	
R424	ERDS2TJ823T	C. RESISTOR 1/4W 82K		R702	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R425	ERDS2TJ683T	C. RESISTOR 1/4W 68K		R703	ERDS2TJ122T	C. RESISTOR 1/4W 1.2K	
R426	ERDS2TJ683T	C. RESISTOR 1/4W 68K		R704	ERDS2TJ152T	C. RESISTOR 1/4W 1.5K	
R427	ERDS2TJ222T	C. RESISTOR 1/4W 2.2K		R705	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K	
R428	ERDS2TJ222T	C. RESISTOR 1/4W 2.2K		R706	ERDS2TJ222T	C. RESISTOR 1/4W 2.2K	
R429	ERDS2TJ512	C. RESISTOR 1/4W 5.1K		R707	ERDS2TJ332T	C. RESISTOR 1/4W 3.3K	
R430	ERDS2TJ512	C. RESISTOR 1/4W 5.1K		R708	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K	
R551	ERDS2TJ563	C. RESISTOR 1/4W 56K		R709	ERDS2TJ682T	C. RESISTOR 1/4W 6.8K	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
R710	ERDS2TJ123T	C. RESISTOR 1/4W 12K		R939	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R711	ERDS2TJ223T	C. RESISTOR 1/4W 22K		R940	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K	
R712	ERDS2TJ683T	C. RESISTOR 1/4W 68K		R941	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K	
R713	ERDS2TJ821T	C. RESISTOR 1/4W 820		R942	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K	
R714	ERDS2TJ102T	C. RESISTOR 1/4W 1K		R943	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R715	ERDS2TJ122T	C. RESISTOR 1/4W 1.2K		R944	ERDS2TJ273T	C. RESISTOR 1/4W 27K	
R716	ERDS2TJ152T	C. RESISTOR 1/4W 1.5K		R945	ERDS2TJ223T	C. RESISTOR 1/4W 22K	
R717	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K		R946	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R718	ERDS2TJ222T	C. RESISTOR 1/4W 2.2K		R947	ERDS2TJ102T	C. RESISTOR 1/4W 1K	
R719	ERDS2TJ332T	C. RESISTOR 1/4W 3.3K		R948	ERDS2TJ184	C. RESISTOR 1/4W 180K	
R720	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K		R949	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R721	ERDS2TJ682T	C. RESISTOR 1/4W 6.8K		R950	ERDS2TJ332T	C. RESISTOR 1/4W 3.3K	
R722	ERDS2TJ123T	C. RESISTOR 1/4W 12K		R951	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R723	ERDS2TJ223T	C. RESISTOR 1/4W 22K		R952	ERDS2TJ392T	C. RESISTOR 1/4W 3.9K	
R901	ERDS2TJ473T	C. RESISTOR 1/4W 47K		R953	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R902	ERDS2TJ563	C. RESISTOR 1/4W 56K		R954	ERDS2TJ223T	C. RESISTOR 1/4W 22K	△
R903	ERDS2TJ393T	C. RESISTOR 1/4W 39K		R955	ERDS2TJ821T	C. RESISTOR 1/4W 820	
R904	ERDS2TJ152T	C. RESISTOR 1/4W 1.5K		R956	ERDS2TJ223T	C. RESISTOR 1/4W 22K	△
R905	ERDS2TJ222T	C. RESISTOR 1/4W 2.2K		R957	ERDS2TJ821T	C. RESISTOR 1/4W 820	
R906	ERDS2TJ103T	C. RESISTOR 1/4W 10K		R958	ERDS2TJ223T	C. RESISTOR 1/4W 22K	△
R907	ERDS2TJ563	C. RESISTOR 1/4W 56K		R959	ERDS2TJ821T	C. RESISTOR 1/4W 820	
R908	ERDS2TJ103T	C. RESISTOR 1/4W 10K		R960	ERDS2TJ153T	C. RESISTOR 1/4W 15K	
R909	ERDS2TJ103T	C. RESISTOR 1/4W 10K		R961	ERDS2TJ221T	C. RESISTOR 1/4W 220	
R910	ERDS2TJ103T	C. RESISTOR 1/4W 10K		R962	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R911	ERDS2TJ392T	C. RESISTOR 1/4W 3.9K		R963	ERDS2TJ392T	C. RESISTOR 1/4W 3.9K	
R912	ERDS2TJ272T	C. RESISTOR 1/4W 2.7K		R964	ERDS2TJ184	C. RESISTOR 1/4W 180K	
R913	ERDS2TJ392T	C. RESISTOR 1/4W 3.9K		R965	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R914	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K		R966	ERDS2TJ223T	C. RESISTOR 1/4W 22K	△
R915	ERDS2TJ473T	C. RESISTOR 1/4W 47K		R967	ERDS2TJ821T	C. RESISTOR 1/4W 820	
R916	ERDS2TJ272T	C. RESISTOR 1/4W 2.7K		R968	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K	
R917	ERDS2TJ103T	C. RESISTOR 1/4W 10K		R969	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K	
R918	ERDS2TJ103T	C. RESISTOR 1/4W 10K		R971	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K	
R919	ERDS2TJ471T	C. RESISTOR 1/4W 470		R973	ERDS2TJ561T	C. RESISTOR 1/4W 560	
R920	ERDS2TJ103T	C. RESISTOR 1/4W 10K		R974	ERDS2TJ103T	C. RESISTOR 1/4W 10K	
R921	ERDS2TJ103T	C. RESISTOR 1/4W 10K					
R922	ERDS2TJ103T	C. RESISTOR 1/4W 10K				CAPACITORS	
R923	ERDS2TJ102T	C. RESISTOR 1/4W 1K					
R924	ERDS2TJ103T	C. RESISTOR 1/4W 10K		C1	ECEA1HK010B	E. CAPACITOR 50V 1U	
R925	ERDS2TJ273T	C. RESISTOR 1/4W 27K		C2	ECEA1HK010B	E. CAPACITOR 50V 1U	
R926	ERDS2TJ102T	C. RESISTOR 1/4W 1K		C3	ECEA1HK010B	E. CAPACITOR 50V 1U	
R927	ERDS2TJ223T	C. RESISTOR 1/4W 22K		C4	ECEA1HK010B	E. CAPACITOR 50V 1U	
R928	ERDS2TJ473T	C. RESISTOR 1/4W 47K		C5	ECEA1CK220B	E. CAPACITOR 16V 22U	
R929	ERDS2TJ103T	C. RESISTOR 1/4W 10K		C6	ECEA1CK220B	E. CAPACITOR 16V 22U	
R930	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K		C7	ECBT1H561KB5	C. CAPACITOR 50V 560P	
R931	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K		C8	ECBT1H561KB5	C. CAPACITOR 50V 560P	
R932	ERDS2TJ392T	C. RESISTOR 1/4W 3.9K		C9	RCBS1H331KBY	C. CAPACITOR 50V 330P	
R933	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K		C10	RCBS1H331KBY	C. CAPACITOR 50V 330P	
R934	ERDS2TJ105T	C. RESISTOR 1/4W 1M		C11	ECBT1H102KB5	C. CAPACITOR 50V 1000P	
R935	ERDS2TJ182T	C. RESISTOR 1/4W 1.8K		C12	ECBT1H102KB5	C. CAPACITOR 50V 1000P	
R936	ERDS2TJ103T	C. RESISTOR 1/4W 10K		C13	ECEA0JU101B	E. CAPACITOR 6.3V 100U	
R937	ERDS2TJ472T	C. RESISTOR 1/4W 4.7K		C14	ECEA0JU101B	E. CAPACITOR 6.3V 100U	
R938	ERDS2TJ103T	C. RESISTOR 1/4W 10K		C15	ECQB1H682JZ3	P. CAPACITOR 50V 6800P	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
C16	ECQB1H682JZ3	P. CAPACITOR 50V 6800P		C322	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U	
C17	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U		C323	ECQB1H103JZ	P. CAPACITOR 50V 0.01U	
C18	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U		C324	ECQB1H103JZ	P. CAPACITOR 50V 0.01U	
C19	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U		C325	ECKD1H122KB	C. CAPACITOR 50V 1200P	
C20	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U		C326	ECKD1H122KB	C. CAPACITOR 50V 1200P	
C21	ECEAOJU101B	E. CAPACITOR 6.3V 100U		C328	ECCT1H100K	C. CAPACITOR 50V 10P	
C25	ECEA1HK010B	E. CAPACITOR 50V 1U		C401	ECCT1H820K	C. CAPACITOR 50V 82P	
C26	ECEA1HK010B	E. CAPACITOR 50V 1U		C402	ECCT1H820K	C. CAPACITOR 50V 82P	
C27	ECBT1H561KB5	C. CAPACITOR 50V 560P		C403	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U	
C28	ECBT1H561KB5	C. CAPACITOR 50V 560P		C404	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U	
C29	ECKD2H101KB	C. CAPACITOR 500V 100P		C405	ECKD1H122KB	C. CAPACITOR 50V 1200P	
C30	ECKD2H101KB	C. CAPACITOR 500V 100P		C406	ECKD1H122KB	C. CAPACITOR 50V 1200P	
C31	ECCT1H181K	C. CAPACITOR 50V 180P		C407	ECKT1H152KB	C. CAPACITOR 50V 1500P	
C32	ECCT1H181K	C. CAPACITOR 50V 180P		C408	ECKT1H152KB	C. CAPACITOR 50V 1500P	
C33	ECEA1HKR47	E. CAPACITOR 50V 0.47U		C409	ECQB1H472JZ3	P. CAPACITOR 50V 4700P	
C34	ECEA1HKR47	E. CAPACITOR 50V 0.47U		C410	ECQB1H472JZ3	P. CAPACITOR 50V 4700P	
C35	ECQB1H472JZ3	P. CAPACITOR 50V 4700P		C411	ECEA1CK100B	E. CAPACITOR 16V 10U	
C36	ECQB1H472JZ3	P. CAPACITOR 50V 4700P		C412	ECEA1CK100B	E. CAPACITOR 16V 10U	
C37	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U		C413	ECQV1H473JZ	P. CAPACITOR 50V 0.047U	
C38	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U		C414	ECQV1H473JZ	P. CAPACITOR 50V 0.047U	
C39	ECQB1H103JZ	P. CAPACITOR 50V 0.01U		C415	ECQV1H224JZ3	P. CAPACITOR 50V 0.22U	
C40	ECQB1H103JZ	P. CAPACITOR 50V 0.01U		C416	ECQV1H224JZ3	P. CAPACITOR 50V 0.22U	
C41	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U		C417	ECEA1HKR68	E. CAPACITOR 50V 0.68U	
C42	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U		C418	ECEA1HKR68	E. CAPACITOR 50V 0.68U	
C43	ECQB1H562JZ3	P. CAPACITOR 50V 5600P		C419	ECEA1HKR68	E. CAPACITOR 50V 0.68U	
C44	ECQB1H562JZ3	P. CAPACITOR 50V 5600P		C420	ECEA1HKR68	E. CAPACITOR 50V 0.68U	
C45	ECKT1H103ZF	C. CAPACITOR 50V 0.01U		C421	ECQV1H224JZ3	P. CAPACITOR 50V 0.22U	
C46	ECKT1H103ZF	C. CAPACITOR 50V 0.01U		C422	ECQV1H224JZ3	P. CAPACITOR 50V 0.22U	
C49	ECEA1CK100B	E. CAPACITOR 16V 10U		C423	ECQV1H473JZ	P. CAPACITOR 50V 0.047U	
C50	ECEA1CK100B	E. CAPACITOR 16V 10U		C424	ECQV1H473JZ	P. CAPACITOR 50V 0.047U	
C53	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U		C425	ECEA1CK100B	E. CAPACITOR 16V 10U	
C54	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U		C426	ECEA1CK100B	E. CAPACITOR 16V 10U	
C55	ECBT1H102KB5	C. CAPACITOR 50V 1000P		C427	ECQB1H472JZ3	P. CAPACITOR 50V 4700P	
C58	ECEA1CU470	E. CAPACITOR 16V 47U		C428	ECQB1H472JZ3	P. CAPACITOR 50V 4700P	
C301	ECQP1153JZ	P. CAPACITOR 50V 0.015U		C429	ECQB1H103JZ	P. CAPACITOR 50V 0.01U	
C302	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U		C430	ECQB1H103JZ	P. CAPACITOR 50V 0.01U	
C303	ECKD1H392K	C. CAPACITOR 50V 3900P		C431	ECEA1CK100B	E. CAPACITOR 16V 10U	
C304	ECFR1E222KAY	S. CAPACITOR 25V 2200P		C432	ECEA1CK100B	E. CAPACITOR 16V 10U	
C305	ECFR1E222KAY	S. CAPACITOR 25V 2200P		C551	ECQV1H104JZ3	P. CAPACITOR 50V 0.1U	
C306	ECFR1E682KAY	S. CAPACITOR 25V 6800P		C552	ECQV1H104JZ3	P. CAPACITOR 50V 0.1U	
C309	ECKT1H103ZF	C. CAPACITOR 50V 0.01U		C553	ECEAOJK101B	E. CAPACITOR 6.3V 100U	
C310	ECKD1H472KB	C. CAPACITOR 50V 4700P		C554	ECEAOJK101B	E. CAPACITOR 6.3V 100U	
C311	ECEA1AU221B	E. CAPACITOR 10V 220U		C555	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C313	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U		C556	ECEA1CK100B	E. CAPACITOR 16V 10U	
C314	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U		C557	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U	
C315	ECBT1H821KB5	C. CAPACITOR 50V 820P		C558	ECEA1HK010B	E. CAPACITOR 50V 1U	
C316	ECBT1H821KB5	C. CAPACITOR 50V 820P		C559	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C317	ECCD1H121K	C. CAPACITOR 50V 120P		C560	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C318	ECCD1H121K	C. CAPACITOR 50V 120P		C561	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C319	ECQV1H104JZ3	P. CAPACITOR 50V 0.1U		C562	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C320	ECQV1H104JZ3	P. CAPACITOR 50V 0.1U		C565	ECBT1E103ZF5	C. CAPACITOR 25V 0.01U	
C321	ECQB1H223JZ3	P. CAPACITOR 50V 0.022U		C601	ECKT2H682PEL	C. CAPACITOR 500V 6800P	△

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
C602	ECEA1EU102B	E. CAPACITOR 25V 1000U	△	C611	ECEAOJU102E	E. CAPACITOR 6.3V 1000U	
C603	ECEA1EU102B	E. CAPACITOR 25V 1000U	△	C612	ECEA1EU222E	E. CAPACITOR 25V 2200U	△
C604	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	△	C613	ECEA1HJ470	E. CAPACITOR 50V 47U	
C605	ECKT1H103ZF	C. CAPACITOR 50V 0.01U		C901	ECEAOJU222B	E. CAPACITOR 6.3V 2200U	
C606	ECEA1AU221B	E. CAPACITOR 10V 220U		C903	ECEA1HK010B	E. CAPACITOR 50V 1U	
C607	ECEA1AU221B	E. CAPACITOR 10V 220U		C904	ECEA1EK4R7B	E. CAPACITOR 25V 4.7U	
C608	ECKT1H103ZF	C. CAPACITOR 50V 0.01U		C907	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C609	ECKT1H103ZF	C. CAPACITOR 50V 0.01U		C909	ECKT1H103ZF	C. CAPACITOR 50V 0.01U	
C610	ECEAOJU102E	E. CAPACITOR 6.3V 1000U					

## REPLACEMENT PARTS LIST

Notes : \* Important safety notice :

Components identified by △ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

\* Bracketed indications in Remarks columns specify the area. (Refer to the first page for area.)

Parts without these indications can be used for all areas.

\* "(K)" mark parts are used for black type only.

\* "(S)" mark parts are used for silver type only.

Parts other than "(K)" and "(S)" marked are used for all color types.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUITS		Q12	2SC3311A-Q	TRANSISTOR	
				Q13	2SC3311A-Q	TRANSISTOR	
				Q14	2SC3311A-Q	TRANSISTOR	
IC1	AN7384	IC, ELECTRIC VOLUME		Q15	2SD1450RSTTA	TRANSISTOR	
IC2	AN7351K	IC, PLAYBACK/REC AMP		Q16	2SD1450RSTTA	TRANSISTOR	
IC3	M5218L	IC, HEADPHONES AMP	△	Q301	2SC3311A-Q	TRANSISTOR	
IC301	UPC1297CA	IC, DOLBY HX PRO		Q302	2SC3311A-Q	TRANSISTOR	
IC401	TEA0665	IC, DOLBY B/C NR		Q303	2SB621ARSTA	TRANSISTOR	
IC402	TEA0665	IC, DOLBY B/C NR		Q304	2SD592A	TRANSISTOR	
IC551	HD404302SA02	IC, MICROCOMPUTER, FL METER		Q401	2SC3311A-Q	TRANSISTOR	
IC552	M5218L	IC, BUFFER AMP		Q402	2SC3311A-Q	TRANSISTOR	
IC901	M50746-145SP	IC, MICROCOMPUTER, MECHANICAL		Q403	2SC3311A-Q	TRANSISTOR	
IC951	DN6851A	IC, HALL		Q404	2SC3311A-Q	TRANSISTOR	
IC971	DN6851A	IC, HALL		Q551	2SA1309AQSTA	TRANSISTOR	
		TRANSISTORS		Q601	2SA1309AQSTA	TRANSISTOR	△
				Q603	2SC3311A-Q	TRANSISTOR	△
Q1	2SJ164PQRTA	TRANSISTOR		Q604	2SD2037EFTA	TRANSISTOR	
Q2	2SJ164PQRTA	TRANSISTOR		Q605	2SB1357DEFTA	TRANSISTOR	
Q3	2SJ164PQRTA	TRANSISTOR		Q606	2SD592A	TRANSISTOR	
Q4	2SJ164PQRTA	TRANSISTOR		Q607	2SB621ARSTA	TRANSISTOR	
Q5	2SA1309AQSTA	TRANSISTOR		Q901	2SC3311A-Q	TRANSISTOR	
Q6	2SA1309AQSTA	TRANSISTOR		Q902	DTA114ESTP	TRANSISTOR	
Q7	2SA1309AQSTA	TRANSISTOR		Q903	DTA114ESTP	TRANSISTOR	
Q8	2SA1309AQSTA	TRANSISTOR		Q904	2SB1030RSTTA	TRANSISTOR	
Q9	2SC3311A-Q	TRANSISTOR		Q905	2SC3311A-Q	TRANSISTOR	
Q10	2SC3311A-Q	TRANSISTOR		Q906	DTC114ESTP	TRANSISTOR	
Q11	2SC3311A-Q	TRANSISTOR		Q907	2SA1309AQSTA	TRANSISTOR	
				Q908	DTA114ESTP	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q909	DTA114ESTP	TRANSISTOR	
Q910	DTC114ESTP	TRANSISTOR	
Q911	2SA1309AQSTA	TRANSISTOR	
Q912	2SB621ARSTA	TRANSISTOR	△
Q913	DTC114ESTP	TRANSISTOR	
Q914	2SB1030RSTTA	TRANSISTOR	△
Q915	DTC114ESTP	TRANSISTOR	
Q916	2SB1030RSTTA	TRANSISTOR	△
Q917	DTC114ESTP	TRANSISTOR	
Q918	2SA1309AQSTA	TRANSISTOR	
Q919	DTC114ESTP	TRANSISTOR	
Q920	2SB621ARSTA	TRANSISTOR	△
Q921	DTC114ESTP	TRANSISTOR	
Q922	DTC114ESTP	TRANSISTOR	
		DIODES	
D1	MA167TA	DIODE	
D2	MA167TA	DIODE	
D311	MA165TA	DIODE	
D312	MA165TA	DIODE	
D313	MA4082MTA	DIODE	
D551	MA165TA	DIODE	
D552	MA165TA	DIODE	
D553	MA165TA	DIODE	
D554	MA165TA	DIODE	
D555	MA4056MTA	DIODE	
D601	1SR35200TB	DIODE	△
D602	1SR35200TB	DIODE	△
D603	1SR35200TB	DIODE	△
D604	1SR35200TB	DIODE	△
D605	1SR35200TB	DIODE	△
D606	1SR35200TB	DIODE	△
D607	MA4082MTA	DIODE	
D608	MA4082MTA	DIODE	
D609	MA4240H	DIODE	
D610	MA4062LTA	DIODE	
D611	1SR35200TB	DIODE	△
D612	MA165TA	DIODE	
D901	MA165TA	DIODE	
D902	MA165TA	DIODE	
D903	MA165TA	DIODE	
D904	MA165TA	DIODE	
D905	MA165TA	DIODE	
D906	MA165TA	DIODE	
D907	MA165TA	DIODE	
D908	1SR35200TB	DIODE	
D909	MA165TA	DIODE	
D910	MA165TA	DIODE	
D911	MA165TA	DIODE	△
D912	MA165TA	DIODE	△
D913	MA165TA	DIODE	

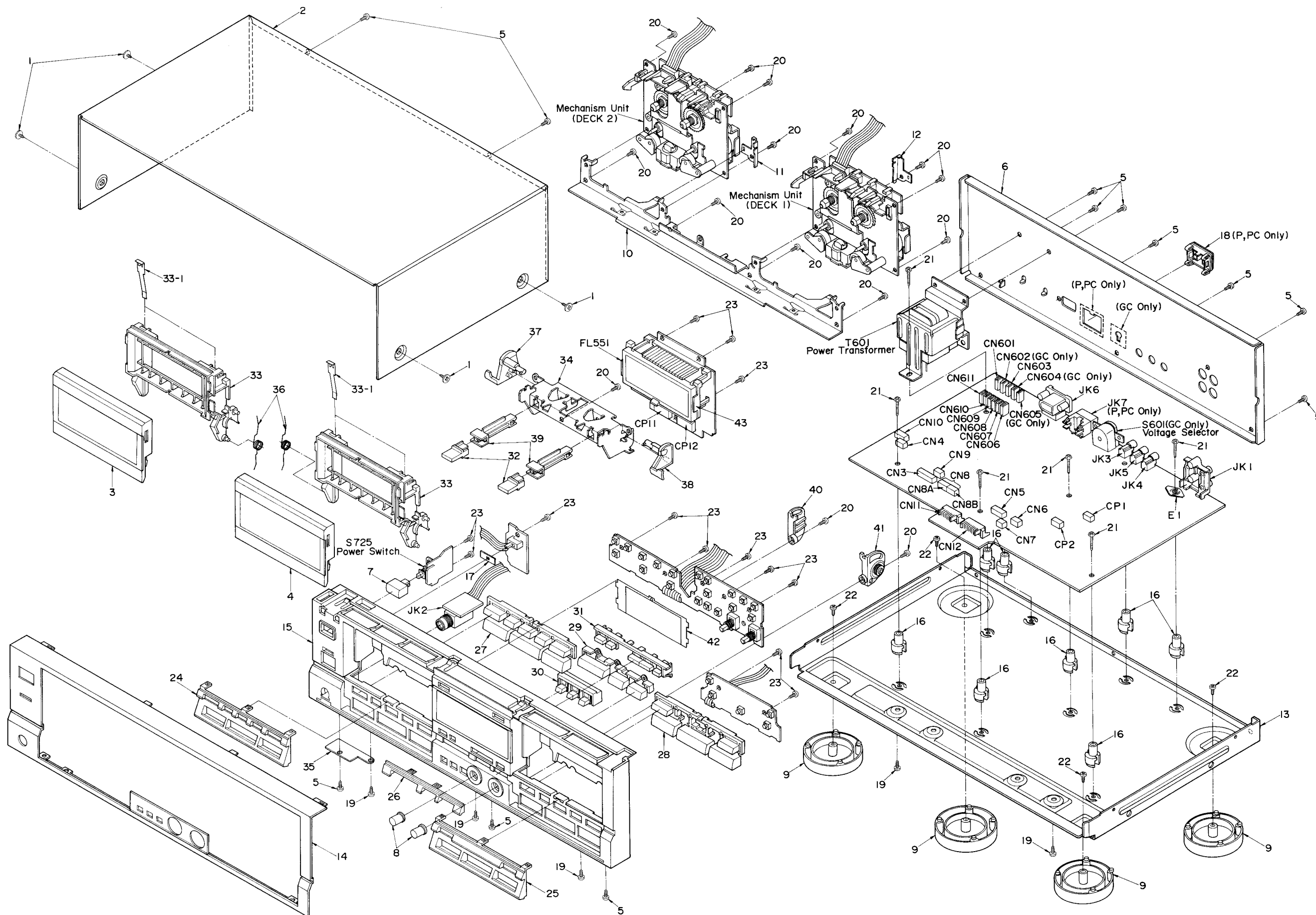
Ref. No.	Part No.	Part Name & Description	Remarks
D914	MA4051MTA	DIODE	
D951	ISS133	DIODE	
D971	ISS133	DIODE	
		VARIABLE RESISTORS	
VR1	EVJ02FF01B15	V. R. REC. LEVEL CONTROL	
VR2	EVJ02FF01B15	V. R. REC. LEVEL CONTROL	
VR3	EVNDXAA00B24	V. R. PLAYBACK GAIN ADJ.	
VR4	EVNDXAA00B24	V. R. PLAYBACK GAIN ADJ.	
VR5	EVNDXAA00B24	V. R. PLAYBACK GAIN ADJ.	
VR6	EVNDXAA00B24	V. R. PLAYBACK GAIN ADJ.	
VR7	EVNDXAA00B14	V. R. OVERALL GAIN ADJ.	
VR8	EVNDXAA00B14	V. R. OVERALL GAIN ADJ.	
VR301	EVNDXAA00B14	V. R. ERASE CURRENT ADJ.	
VR302	EVNDXAA00B14	V. R. OVERALL FREQ. ADJ.	
VR303	EVNDXAA00B14	V. R. OVERALL FREQ. ADJ.	
VR901	EVN4LCA00B53	V. R. TAPE SPEED ADJ. (X2)	
VR902	EVN4LCA00B53	V. R. TAPE SPEED ADJ. (X1)	
VR903	EVN4LCA00B53	V. R. TAPE SPEED ADJ. (X1)	
		COILS	
L1	SLQX303-1KT	COIL	
L2	SLQX303-1KT	COIL	
L3	SLQX272-1YT	COIL	
L4	SLQX272-1YT	COIL	
L301	SL09B4-K	COIL	
L302	SL09B1-K	COIL	
L303	SL09B1-K	COIL	
L401	QLM9Z10K	COIL	
L402	QLM9Z10K	COIL	
L403	SLM1B8-K	COIL	
L404	SLM1B8-K	COIL	
L501	RLQZP101KT-Y	COIL	
L502	RLQZP101KT-Y	COIL	
		TRANSFORMERS	
T601	RTP1K4B005-V	POWER TRANSFORMER	(EB, GN) △
T601	RTP1K4C003-V	POWER TRANSFORMER	(P, PC) △
T601	RTP1K4E005-V	POWER TRANSFORMER	(E, E5, EG) △
T601	RTP1K4E006-V	POWER TRANSFORMER	(GC) △
		OSCILLATORS	
X551	EF0GC4004T4	CERAMIC FILTER	
X901	EF0GC4004T4	CERAMIC FILTER	
		DISPLAY TUBE	
FL551	RSLO005F	DISPLAY TUBE (FL METER)	

Ref. No.
S801
S701
S702
S703
S704
S705
S706
S707
S708
S709
S710
S711
S712
S713
S714
S715
S716
S717
S718
S719
S720
S721
S722
S723
S724
S725
S726
S726
S951
S952
S953
S971
S972
S973
S974
S975
S976
CN3
CN4
CN5
CN6
CN7
CN8
CN8A
CN8B
CN9



Remarks	Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
			SWITCHES		CN10	RJS1A1705	CONNECTOR (5P)	
					CN11	RJU003K010M	SOCKET (10P)	
					CN12	RJU003K010M	SOCKET (10P)	
	S601	SSR187-1	SW, VOLTAGE SELECTOR	(GC) △	CN601	RJS1A1101	SOCKET (1P)	
	S701	EVQQB005R	SW, STOP (DECK 1)		CN602	RJS1A1101	SOCKET (1P)	(GC)
	S702	EVQQB005R	SW, F. F. (DECK 1)		CN603	RJS1A1101	SOCKET (1P)	
	S703	EVQQB005R	SW, REW. (DECK 1)		CN604	RJS1A1101	SOCKET (1P)	(GC)
	S704	EVQQB005R	SW, F. PLAYBACK (DECK 1)		CN605	RJS1A1101	SOCKET (1P)	(GC)
	S705	EVQQB005R	SW, REVERSE MODE		CN606	RJS1A1101	SOCKET (1P)	
	S706	EVQQB005R	SW, REVERSE MODE		CN607	RJS1A1101	SOCKET (1P)	
	S707	EVQQB005R	SW, REVERSE MODE		CN608	RJS1A1101	SOCKET (1P)	
	S708	EVQQB005R	SW, AUTO REC MUTE (DECK 2)		CN609	RJS1A1101	SOCKET (1P)	
	S709	EVQQB005R	SW, R. PLAYBACK (DECK 1)		CN610	RJS1A1101	SOCKET (1P)	
	S710	EVQQB005R	SW, METER RANGE		CN611	RJS1A1101	SOCKET (1P)	
	S711	EVQQB005R	SW, STOP (DECK 2)		CP1	SJTD413	CONNECTOR (4P)	
	S712	EVQQB005R	SW, F. F. (DECK 2)		CP2	SJTD513	CONNECTOR (5P)	
	S713	EVQQB005R	SW, REW. (DECK 2)		CP11	RJT003K010	CONNECTOR (10P)	
	S714	EVQQB005R	SW, F. PLAYBACK (DECK 2)		CP12	RJT003K010	CONNECTOR (10P)	
	S715	EVQQB005R	SW, R. PLAYBACK (DECK 2)					
	S716	EVQQB005R	SW, REC. (DECK 2)				GND PARTS	
	S717	EVQQB005R	SW, PAUSE (DECK 2)					
	S718	EVQQB005R	SW, SYNCHRO-START		E1	SNE1004	GND PLATE	
	S719	EVQQB005R	SW, X2 SPEED					
	S720	EVQQB005R	SW, X1 SPEED				JACKS	
	S721	EVQQB005R	SW, DOLBY C NR					
	S722	EVQQB005R	SW, DOLBY B NR		JK1	SJF3069N	TERMINAL BOARD	
	S723	EVQQB005R	SW, COUNTER RESET 1		JK2	SJJ134B	JACK, HEADPHONES	
	S724	EVQQB005R	SW, COUNTER RESET 2		JK3	RJJ33T01	M3 JACK (BLACK)	
	S725	SSH1230	SW, POWER	△	JK4	RJJ33TR01	M3 JACK (RED)	
	S726	SSS180-1	SW, TIMER	(K)	JK5	RJJ33TR01	M3 JACK (RED)	
	S726	SSS180-2	SW, TIMER	(S)	JK6	SJSD16	AC INLET	(P, PC, GN) △
	S951	RSH1A89Z	SW, MODE (DECK 1)		JK6	SJS9236	AC INLET	(E, E5, EB, EG, GC) △
	S952	RSH1A90Z	SW, HALF (DECK 1)		JK7	SJS9331B	AC OUTLET	(P, PC) △
	S953	RSH1A90Z	SW, ATS (DECK 1)					
	S971	RSH1A89Z	SW, MODE (DECK 2)					
	S972	RSH1A90Z	SW, HALF (DECK 2)					
	S973	RSH1A90Z	SW, REC INH (R) (DECK 2)					
	S974	RSH1A90Z	SW, REC INH (F) (DECK 2)					
	S975	RSH1A90Z	SW, ATS (DECK 2)					
	S976	RSH1A90Z	SW, ATS (DECK 2)					
			CONNECTORS AND SOCKETS					
	CN3	SJSD1005	CONNECTOR (10P)					
	CN4	RJS1A1704	CONNECTOR (4P)					
	CN5	SJSD0705	CONNECTOR (7P)					
	CN6	RJS1A1704	CONNECTOR (4P)					
	CN7	RJS1A1703	CONNECTOR (3P)					
	CN8							
	CN8A	RJS1A1705	CONNECTOR (5P)					
	CN8B	RJS1A1705	CONNECTOR (5P)					
	CN9	RJS1A1704	CONNECTOR (4P)					

# CABINET PARTS LOCATION



# REPLACEMENT PARTS LIST

**Notes :** \* Important safety notice :

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

\* Bracketed indications in Remarks columns specify the area. (Refer to the first page for area.)

Parts without these indications can be used for all areas.

\* "(K)" mark parts are used for black type only.

\* "(S)" mark parts are used for silver type only.

Parts other than "(K)" and "(S)" marked are used for all color types.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		26	RGK0051	ORNAMENT, EDIT BUTTON	(K)
				26	RGK0051-S	ORNAMENT, EDIT BUTTON	(S)
				27	RGU0064	BUTTON, OPERATION (DECK 2)	(K)
				27	RGU0064-S	BUTTON, OPERATION (DECK 2)	(S)
1	SNE2129-1	SCREW	(K)	28	RGU0136	BUTTON ASS' Y, OPERATION	(K)
1	SNE2129	SCREW	(S)			(DECK 1)	
2	RKM0016-K	CABINET	(K)	28	RGU0138	BUTTON ASS' Y, OPERATION	(S)
2	RKM0016-S	CABINET	(S)			(DECK 1)	
3	RYF0009F-K	CASSETTE LID (DECK 2)	(K)	29	RGU0066	BUTTON, EDIT	(K)
3	RYF0009H-S	CASSETTE LID (DECK 2)	(S)	29	RGU0066-S	BUTTON, EDIT	(S)
4	RYF0009E-K	CASSETTE LID (DECK 1)	(K)	30	RGU0067	BUTTON, REVERSE	(K)
4	RYF0009G-S	CASSETTE LID (DECK 1)	(S)	30	RGU0067-S	BUTTON, REVERSE	(S)
5	XTBS3+8JFZ1	SCREW		31	RGU0137	BUTTON ASS' Y, DOLBY NR	(K)
6	RGRO008A-C	REAR PANEL	(P, PC)	31	RGU0139	BUTTON ASS' Y, DOLBY NR	(S)
6	RGRO008B-E	REAR PANEL	(EG)	32	RGU0070	BUTTON, EJECT	(K)
6	RGRO008B-F	REAR PANEL	(E, E5)	32	RGU0070-S	BUTTON, EJECT	(S)
6	RGRO008B-G	REAR PANEL	(EB)	33	RKF0020A-1	CASSETTE HOLDER	
6	RGRO008B-H	REAR PANEL	(GN)	33-1	QBP2006A	SPRING, TAPE PRESSURE	
6	RGRO008C-B	REAR PANEL	(GC)	34	RMA0051	EJECT ANGLE	
7	RGU0030	BUTTON, POWER	(K)	35	RJR0016	BRACKET	
7	RGU0030-S	BUTTON, POWER	(S)	36	RME0026	SPRING, CASSETTE HOLDER	
8	RGW0012	KNOB, REC. LEVEL	(K)	37	RML0041	EJECT LEVER (L)	
8	RGW0012-S	KNOB, REC. LEVEL	(S)	38	RML0042	EJECT LEVER (R)	
9	RKA0009	FOOT		39	RMD0014	EJECT ROD	
10	RMA0050	BRACKET, MECHANISM		40	RMR0153	DAMPER GEAR (L) ASS' Y	
11	RMA0113	DAMPER ANGLE (L)		41	RMR0154	DAMPER GEAR (R) ASS' Y	
12	RMA0114	DAMPER ANGLE (R)		42	RGK0076	METER FILTER	
13	RMK0026	BOTTOM BOARD		43	RJF0001	FL HOLDER	
14	RGG0019	FRONT PANEL ASS' Y	(K) (P, PC)			PACKING MATERIAL	
14	RGG0020	FRONT PANEL ASS' Y	(K) (E, E5, EB, EG, GC, GN)	P1	RPG0104	CARTON BOX	(K) (PC, E, E5, EB, EG, GC, GN)
14	RGG0021	FRONT PANEL ASS' Y	(S)	P1	RPG0105	CARTON BOX	(S)
15	RGPO041	FRONT GRILLE ASS'Y	(K)	P1	RPG0109	CARTON BOX	(K) (P)
15	RGPO042	FRONT GRILLE ASS'Y	(S)	P2	RPN0087A	PAD, FRONT	
16	SHE187-2	HOLDER		P3	RPN0087B	PAD, BACK	
17	SHR6076	ORNAMENT	(K)	P4	SPS5185	PAD, ACCESSORIES	
17	SHR6076-1	ORNAMENT	(S)	P5	SPP756	PROTECTION COVER	(K)
18	SJS9331A	AC OUTLET COVER	(P, PC)	P5	XZB50X65B02	PROTECTION COVER	(S)
19	XTBS3+10JFZ1	SCREW				ACCESSORIES	
20	XTB3+10J	SCREW		A1	RQF0070	INSTRUCTION MANUAL	(EG)
21	XTB3+20J	SCREW		A1	RQF0085	INSTRUCTION MANUAL	(E, E5)
22	XTB3+6J	SCREW					
23	XTB3+8J	SCREW					
24	RGK0049	ORNAMENT, BUTTON (DECK 2)	(K)				
24	RGK0049-S	ORNAMENT, BUTTON (DECK 2)	(S)				
25	RGK0075	ORNAMENT, BUTTON (DECK 1)	(K)				
25	RGK0075-S	ORNAMENT, BUTTON (DECK 1)	(S)				

Ref. No.	Part No.	Part Name & Description	Remarks
A1	RQF0086	INSTRUCTION MANUAL	(EB)
A1	RQF0087	INSTRUCTION MANUAL	(GC, GN)
A1	RQF0088	INSTRUCTION MANUAL	(P)
A1	RQF0089	INSTRUCTION MANUAL	(PC)
A2	SFDAC05E03	POWER CORD	(E, E5, EG) △
A2	SJA173-1	POWER CORD	(GN) △
A2	SJA175	POWER CORD	(PC) △

Ref. No.	Part No.	Part Name & Description	Remarks
A2	SJA175-1	POWER CORD	(P) △
A2	SJA193-1	POWER CORD	(EB) △
A2	RJA0004	POWER CORD	(GC) △
A3	RFA006	CORD	△
A4	SJP2257T	REMOTE CONTROL CORD	(P, PC)
A5	SJP9215	AC PLUG ADAPTOR	(GC) △

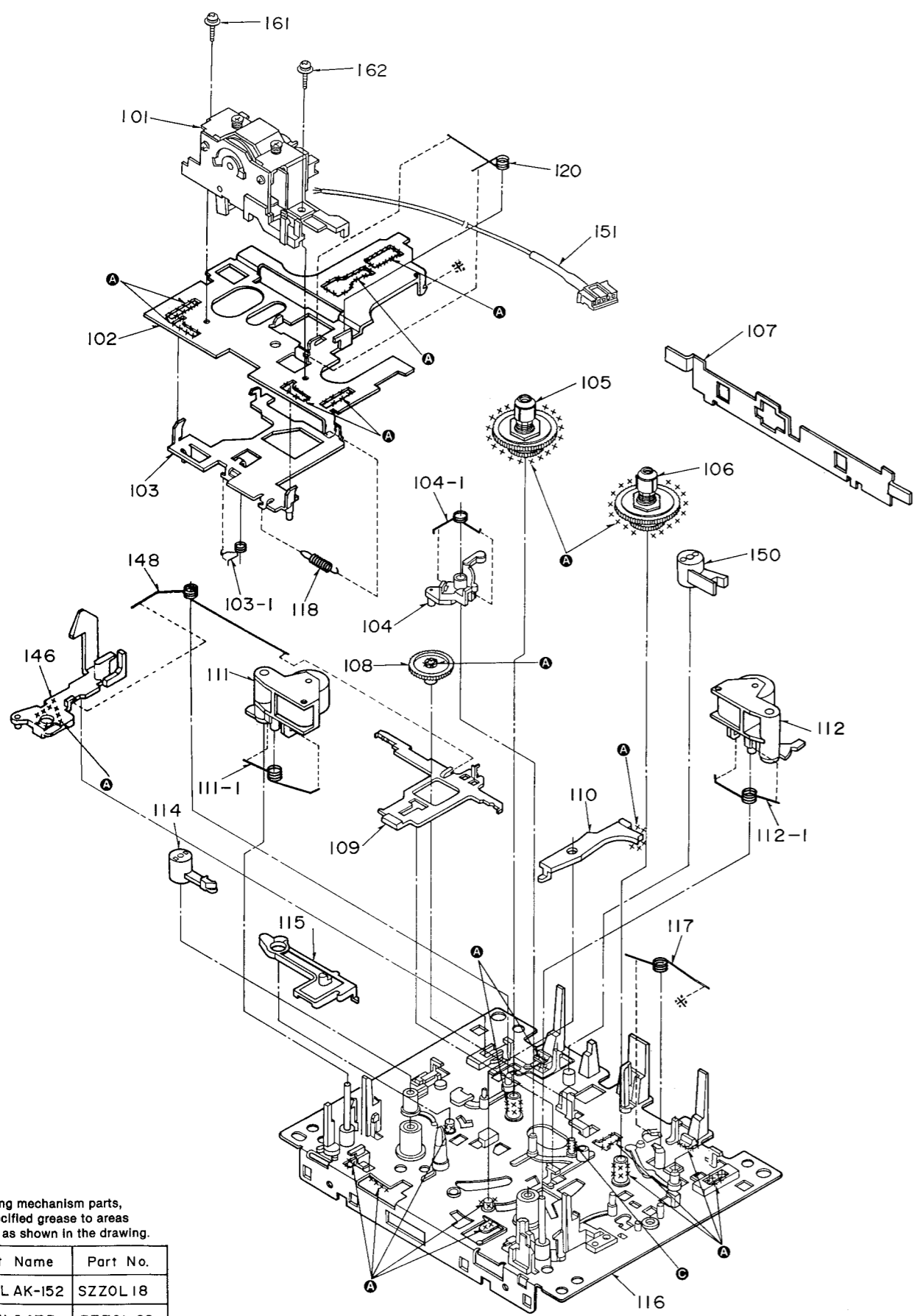
## REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST	
DECK 1			
101	RXQ0021	HEAD BLOCK (PLAYBACK)	
102	RJA793ZD	HEAD BASE	
103	RZLAR300	ROD	
103-1	RJW143Z	SPRING	
104	1UB0089ZA	ARM	
104-1	RJW148ZA	SPRING	
105	1DW0018ZA	REEL TABLE (R)	
106	1DW0017ZA	REEL TABLE (F)	
107	RUB502Z	LEVER	
108	RDG5772Z	GEAR	
109	RUB508ZA	BRAKE ROD	
110	RUB506Z	LEVER	
111	1UB0088ZA	ARM (R)	
111-1	RJW141Z	SPRING	
112	1UB0087ZA	ARM (F)	
112-1	RJW140Z	SPRING	
114	RNL1Z	DAMPER ARM	
115	RUB503Z	MAIN LEVER	
116	RZUSX980	CHASSIS	
117	RJW142ZA	SPRING	
118	RJD105Z	SPRING	
120	RJW139ZA	SPRING	
121	RFM134ZA	DC MOTOR	
122	1UE0015ZA	PLUNGER	
123	RJB428Z	MOVING IRON CORE	
124	RJL1030XA	ANGLE	
125	RMD5014Z	ANGLE	
126	RDG5927ZA	GEAR	
127	1DW0053ZA	FLYWHEEL (F)	
127-1	RNW139ZA	WASHER	
128	1DW0054ZA	FLYWHEEL (R)	
128-1	RNW138Z	WASHER	
129	1DG0006ZA	REEL TABLE GEAR	
130	RUB513Z	ARM	
131	1UB0091ZA	LEVER	
131-1	RJW146ZA	SPRING	

Ref. No.	Part No.	Part Name & Description	Remarks
132	1DR0011ZA	MAIN PULLEY	
133	RDV902B	BELT	
134	RDG5769ZA	REEL TABLE GEAR	
135	RJQ10Z	SPRING	
136	RJW145ZA	SPRING	
137	1UB0090ZA	ROD	
137-1	RUB512Z	ROD	
138	RDG5773ZA	GEAR	
139	RJQ30Z	SPRING	
140	RUS609Z	TAPE PRESSURE SPRING	
141	RUB514Z	LEVER	
142	RJW147ZA	SPRING	
143	RUB515Z	LEVER	
144	RUB509ZA	LEVER	
145	RDV108ZA	CAPSTAN BELT	
146	RUB5412B	EJECT ROD (L)	
148	RJW167ZA	SPRING	
149	RHG3032Z	RUBBER CUSHION	
150	RNL180ZA	DAMPER ARM	
151	REX0061	LEAD WIRE BLOCK	
161	XTW2+6L	SCREW	
162	XTW2+8L	SCREW	
163	XTN26+7J	SCREW	
164	XTN26+16F	SCREW	
165	XTW2+8S	SCREW	
166	XYC2+JF16	SCREW	
167	QH1303	SCREW	
168	SJT30744-H	CONNECTOR (7P), J951	
169	XYN26+F6	SCREW	

# MECHANICAL PARTS LOCATION

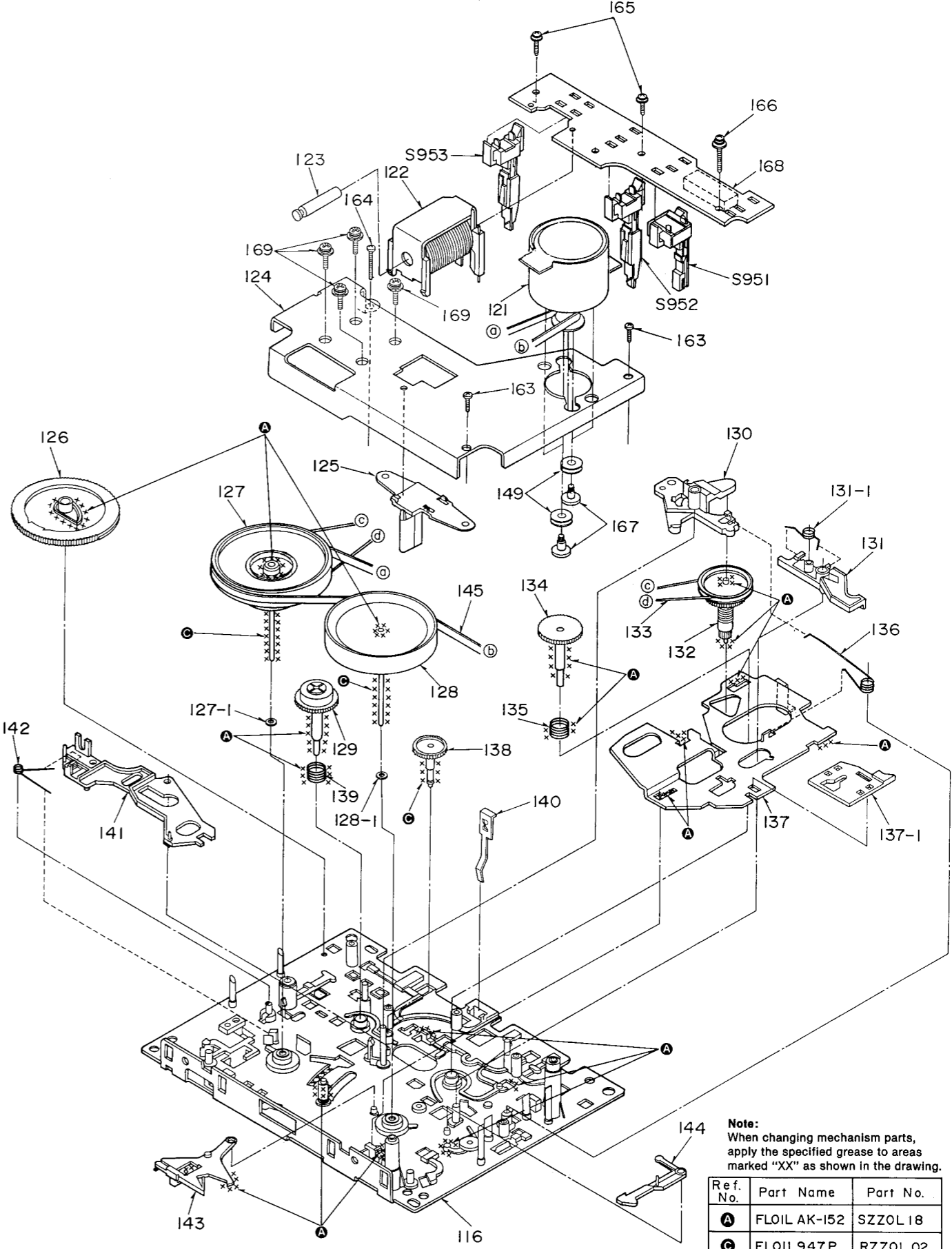
(DECK 1: Top View)



**Note:**  
When changing mechanism parts,  
apply the specified grease to areas  
marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL 18
C	FLOIL947P	RZZOL 02

(DECK 1: Bottom View)

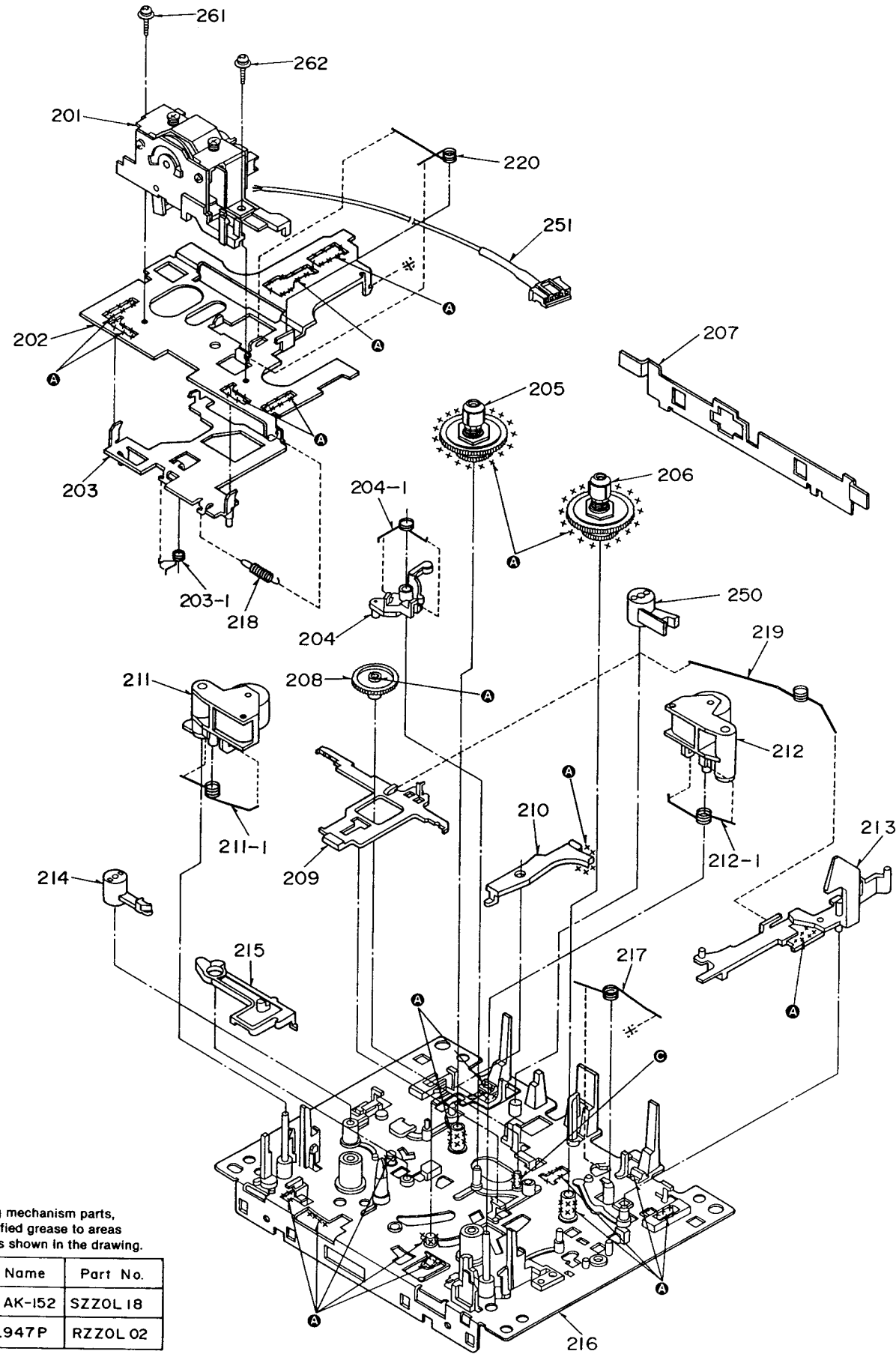


**Note:**  
When changing mechanism parts,  
apply the specified grease to areas  
marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL 18
C	FLOIL947P	RZZOL 02

# MECHANICAL PARTS LOCATION

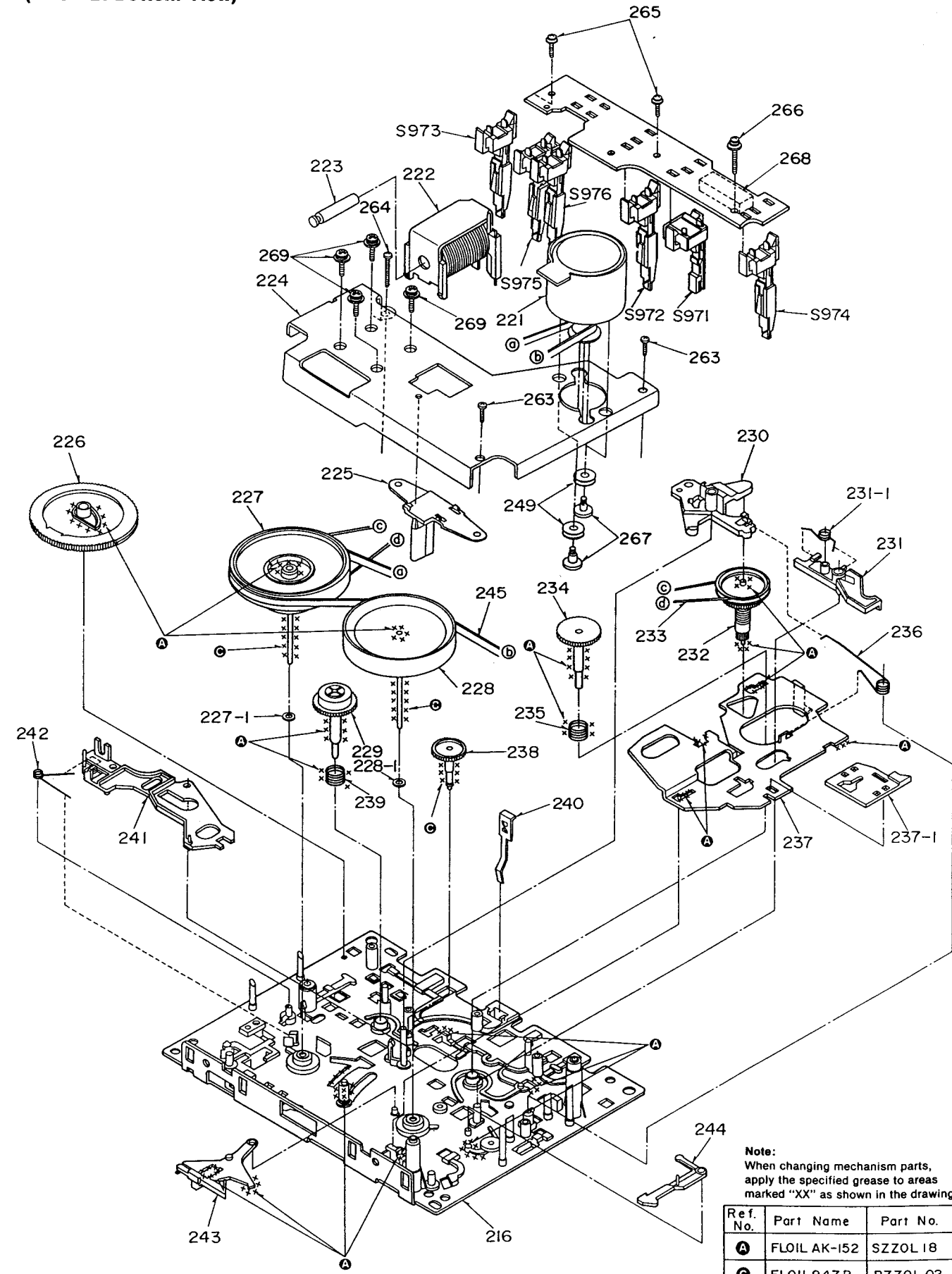
(DECK 2: Top View)



**Note:**  
When changing mechanism parts,  
apply the specified grease to areas  
marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL 18
C	FLOIL947P	RZZOL 02

(DECK 2: Bottom View)



**Note:**  
When changing mechanism parts,  
apply the specified grease to areas  
marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL 18
C	FLOIL947P	RZZOL 02

# REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST		239	RJQ30Z	SPRING	
				240	RJS609Z	TAPE PRESSURE SPRING	
				241	RJB514Z	LEVER	
DECK 2				242	RJW147ZA	SPRING	
201	RXQ0019	HEAD BLOCK (REC./PLAYBACK)		243	RJB515Z	LEVER	
202	RJA793Z	HEAD BASE		244	RJB509ZA	LEVER	
203	RZLAR300	ROD		245	RDV108ZA	CAPSTAN BELT	
203-1	RJW143Z	SPRING		249	RHG3032Z	RUBBER CUSHION	
204	IUB0089ZA	ARM		250	RNL180ZA	DAMPER ARM	
204-1	RJW148ZA	SPRING		251	REX0059	LEAD WIRE BLOCK	
205	1DM0018ZA	REEL TABLE (R)		261	XTW2+6L	SCREW	
206	1DM0017ZA	REEL TABLE (F)		262	XTW2+8L	SCREW	
207	RJB502Z	LEVER		263	XTN26+7J	SCREW	
208	RDG5772Z	GEAR		264	XTN26+16F	SCREW	
209	RUB508ZA	BRAKE ROD		265	XTW2+8S	SCREW	
210	RUB506Z	LEVER		266	XYC2+JF16	SCREW	
211	IUB0088ZA	ARM (R)		267	QHQ1303	SCREW	
211-1	RJW141Z	SPRING		268	SJT31044-H	CONNECTOR (10P), J971	
212	IUB0087ZA	ARM (F)		269	XYN26+F6	SCREW	
212-1	RJW140Z	SPRING					
213	RUB507Z	EJECT ROD (R)					
214	RNL1Z	DAMPER ARM					
215	RUB503Z	MAIN LEVER					
216	RZUSX980	CHASSIS					
217	RJW142ZA	SPRING					
218	RJD105Z	SPRING					
219	RJW144ZA	SPRING					
220	RJW139ZA	SPRING					
221	RFM134ZA	DC MOTOR					
222	IUED015ZA	PLUNGER					
223	RUB428Z	MOVING IRON CORE					
224	RUL1030XA	ANGLE					
225	RMD5014Z	ANGLE					
226	RDG5927ZA	GEAR					
227	1DWO053ZA	FLYWHEEL (F)	(P, PC, GC, GN)				
227	1DWO053ZB	FLYWHEEL (F)	(E, E5, EB, EG)				
227-1	RNW139ZA	WASHER					
228	1DWO054ZA	FLYWHEEL (R)	(P, PC, GC, GN)				
228	1DWO054ZB	FLYWHEEL (R)	(E, E5, EB, EG)				
228-1	RNW138Z	WASHER					
229	1DG0006ZA	REEL TABLE GEAR					
230	RUB513Z	ARM					
231	IUB0091ZA	LEVER					
231-1	RJW146ZA	SPRING					
232	1DR0011ZA	MAIN PULLEY					
233	RDV902B	BELT					
234	RDG5769ZA	REEL TABLE GEAR					
235	RJQ10Z	SPRING					
236	RJW145ZA	SPRING					
237	IUB0090ZA	ROD					
237-1	RJB512Z	ROD					
238	RDG5773ZA	GEAR					