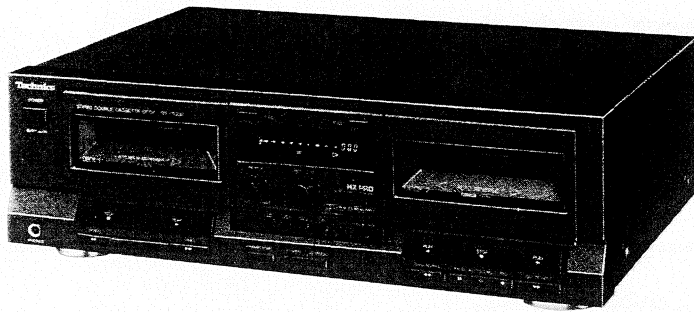
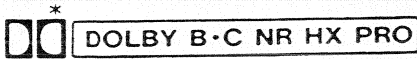


# Service Manual

Cassette Deck

Dolby NR-Equipped  
Stereo Double Cassette Deck

## RS-TR232



※ 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.

### Colour

(K)... Black Type

### Area

Suffix for Model No.	Area	Colour
(P)	U.S.A.	(K)
(PC)	Canada.	
(EB)	Great Britain.	
(EG)	Germany and Italy./ Continental Europe.	
(GC)	Asia, Latin America, Middle Near East and Africa.	
(GN)	Oceania.	

## RS-T330R MECHANISM SERIES (AR300)

### SPECIFICATIONS

#### ■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Recording system	AC bias
Bias frequency	80kHz
Erasing system	AC erase
Heads	
Deck 1	Playback head (Permalloy) × 1
Deck 2	Recording/Playback head (Permalloy) × 1 Erasing head (Double-gap ferrite) × 1
Motors	
Deck 1	Capstan/Reel table drive (DC servo motor) × 1
Deck 2	Capstan/Reel table drive (DC servo motor) × 1
Tape speed	4.8cm/sec. (1 <sup>7</sup> / <sub>8</sub> ips)
Wow and flutter	
For (P, PC) areas	0.1% (WRMS)
For others	0.07% (WRMS) ±0.2% (DIN)
Fast forward and rewind times	Approx. 110 seconds with C-60 cassette tape
Frequency response (Dolby NR off)	
NORMAL	40Hz~15kHz ±3dB
For (P, PC) areas	20Hz~17kHz
For others	20Hz~16kHz (DIN)
CrO <sub>2</sub>	40Hz~15kHz ±3dB
For (P, PC) areas	20Hz~17kHz
For others	20Hz~16kHz (DIN)

METAL	40Hz~16kHz ±3dB
For (P, PC) areas	20Hz~18kHz
For others	20Hz~17kHz (DIN)
S/N (Signal level = max recording level, CrO <sub>2</sub> type tape)	
NR off	56dB (A weighted)
Dolby B NR on	66dB (CCIR)
Dolby C NR on	74dB (CCIR)
Input sensitivity and impedance	
LINE IN	60mV/47kΩ
Output voltage and impedance	
LINE OUT	400mV/800Ω
HEADPHONES	30mV/(8Ω) (Load impedance 8Ω~600Ω)

#### ■ GENERAL

Power consumption	17W
Power supply	
For (P, PC) areas	AC 60 Hz, 120V
For (GC) area	AC 50/60Hz, 110V/127V/200V/240V
For others	AC 50/60Hz, 230-240V
Dimensions (W × H × D)	430 × 135 × 290mm (16 <sup>15</sup> / <sub>16</sub> " × 5 <sup>3</sup> / <sub>8</sub> " × 11 <sup>13</sup> / <sub>32</sub> "
Weight	4.7kg (10.4lb.)

#### Note:

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

# Technics

## CONTENTS

	Page		Page
SAFETY PRECAUTION .....	2	WIRING CONNECTION DIAGRAM .....	26
ACCESSORIES .....	2	BLOCK DIAGRAM .....	27, 28
CONNECTIONS .....	3	INTERNAL CONNECTION OF FL .....	29
LOCATION OF CONTROLS .....	4~6	REPLACEMENT PARTS LIST .....	30
DISASSEMBLY INSTRUCTIONS .....	7~10	EXPLODED VIEWS (Cabinet parts and	
MEASUREMENTS AND ADJUSTMENTS .....	11~13	Mechanical parts: DECK 1) .....	31~34
TERMINAL FUNCTION OF IC .....	14	REPLACEMENT PARTS LIST .....	35, 36
PRINTED CIRCUIT BOARDS .....	15~19	EXPLODED VIEW (Mechanical parts: DECK 2) .....	37, 38
SCHEMATIC DIAGRAM .....	20~25	REPLACEMENT PARTS LIST .....	39, 40
TERMINAL GUIDE OF IC'S, TRANSISTORS		RESISTORS & CAPACITORS .....	41, 42
AND DIODES .....	25	PACKING .....	42

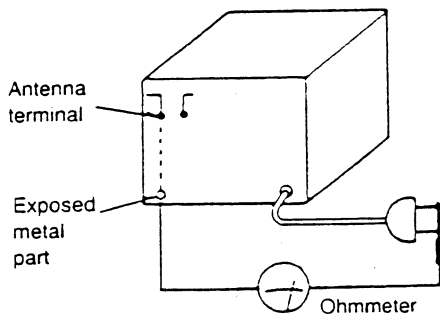
## SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

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

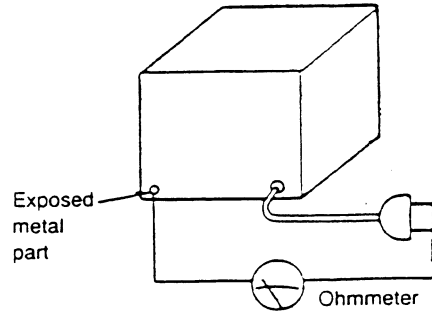
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3 MΩ and 5.2 MΩ 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 = 3 MΩ - 5.2 MΩ

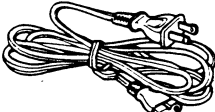
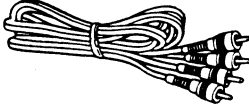






(Fig. B)

Resistance = Approx. ∞

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.

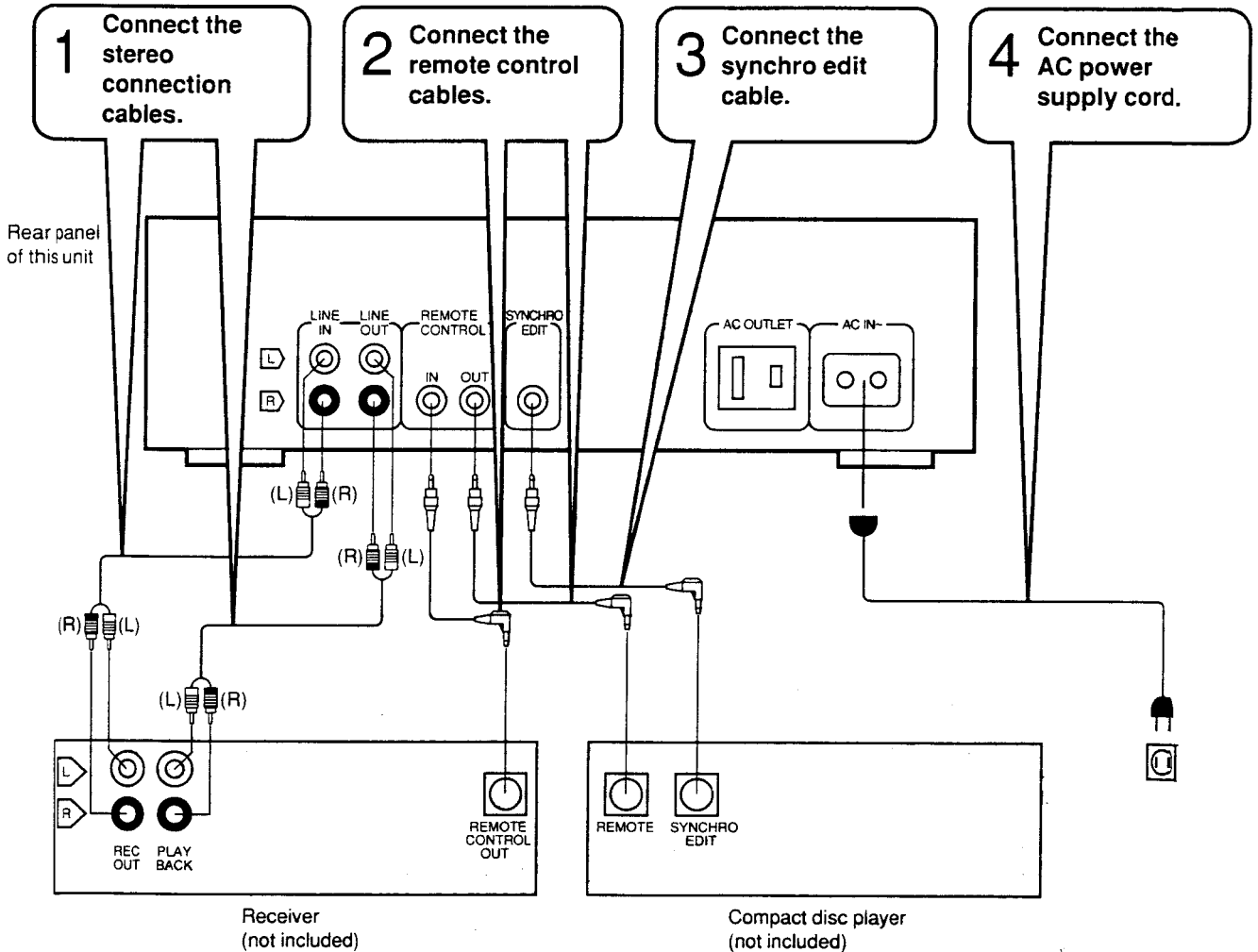
## ACCESSORIES

		
AC power supply cord [(RJA0004)..... (GC)] [(RJA0019-1K)..... (EG)] [(SJA172)..... (PC)] [(SJA173)..... (GN)] [(SJA175-1)..... (P)] [(SJA193)..... (EB)] ..... 1 pc.	Stereo connection cable (SJP2249-3) ..... 2 pcs.	Stereo mini cable (SJP2257T) ..... 2 pcs.
		
	Power plug adaptor (SJP9215) ..... 1 pc. (For GC area only)	Remote control cable ..... 1 pc.
		
		Synchro edit cable ..... 1 pc.

**Note:** Configuration of AC power supply cord differs according to area.

## CONNECTIONS

Before making connections, be sure that the power to this unit and all other system components turned off first.  
See the operating instructions of the receiver or the compact disc player for details.



- 1 Connect the stereo connection cables (included) to the REC OUT and PLAYBACK terminals of the receiver.
- 2 Use the included remote control cable to connect the REMOTE CONTROL Input to the REMOTE CONTROL Output on the receiver.

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

The REMOTE CONTROL "OUT" terminal is provided to connect a Technics Compact Disc Player or Graphic Equalizer.

- 3 Connect the synchro edit cable (included) to the "SYNCHRO EDIT" terminal of selected Technics compact disc player.
- 4 Connect the power supply cord (included) to the household AC outlet (AC 120V/60Hz, P, PC areas only).

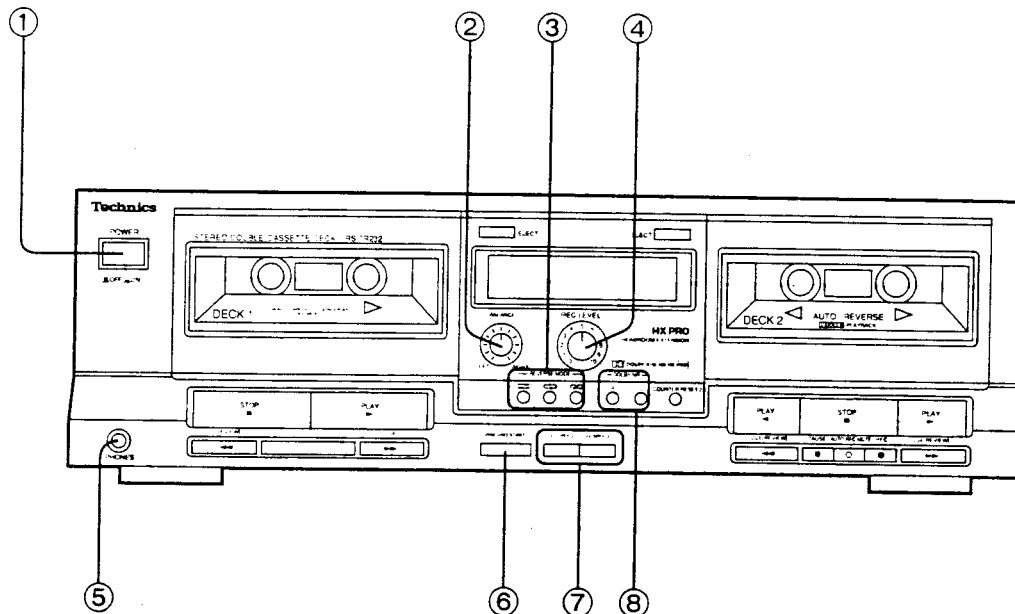
The REMOTE CONTROL and SYNCHRO EDIT terminal can only be used with selected Technics Components. Please contact your dealer for details.

### "AC OUTLET" (UNSWITCHED: P, PC areas only)

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

Audio equipment rated up to 100 W can be connected.

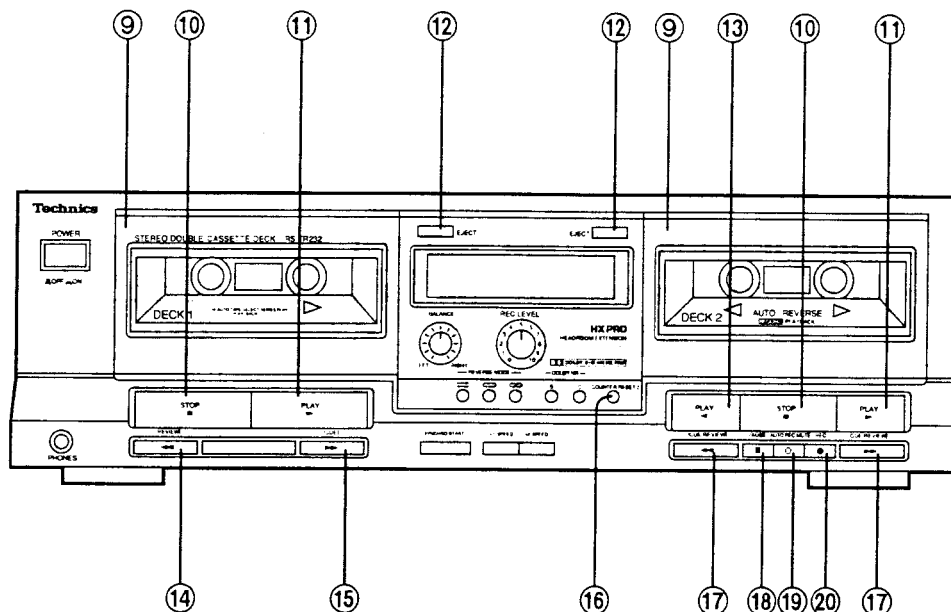
## ■ LOCATION OF CONTROLS



## Control section

### Controls common to both tape decks

- ① **Power switch (POWER)...**For P, PC areas  
Press (■) to switch the power on.  
Press again (■) to switch the power off.
- Power "STANDBY  $\phi$  /ON" switch...**For others  
(POWER ■ STANDBY  $\phi$  ON)  
This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY  $\phi$  position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.
- ② **Recording-balance control (BALANCE)**  
This control is used to balance the left and right sound levels of deck 2 during recording.
- ③ **Reverse-mode selectors (REVERSE MODE)**  
These selectors are used for selection of the reverse mode (for either playback or recording).
- ④ **Recording-level control (REC LEVEL)**  
This control is used to regulate the recording level of deck 2.
- ⑤ **Headphones jack (PHONES)**
- ⑥ **Synchro-start button (SYNCHRO START)**  
This button is used to start a edit-recording, simultaneously starting deck 1 (the playback deck) and deck 2 (the recording deck).
- ⑦ **Edit-recording tape-speed buttons (X1 SPEED, X2 SPEED)**  
These buttons are used to select the recording speed during edit-recording.
- ⑧ **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.

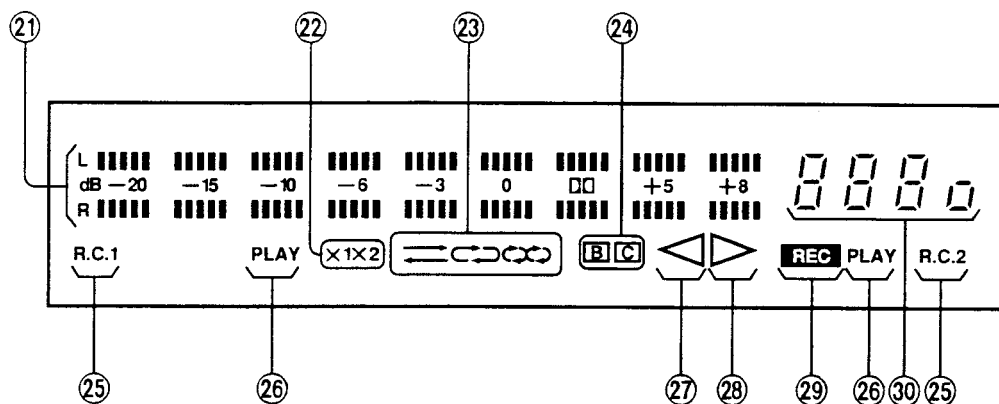


## Controls applicable to tape deck 1 and/or 2

- ⑨ **Cassette holder**
- ⑩ **Stop button (■ STOP)**  
This button is used to stop the tape movement.
- ⑪ **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 right-to-left direction.)
- ⑫ **Eject button (EJECT)**  
This button is used to open the cassette holder.
- ⑬ **Reverse-side playback button (◀ PLAY)**  
This button is used to start the playback or recording of side "B" of the cassette in deck 2.  
(The tape will move in the left-to-right direction.)
- ⑭ **Rewind/review button (◀◀ REVIEW)**  
This button is used to rewind the tape.  
During playback this button is used to review the contents at high speed.
- ⑮ **Fast-forward/cue button (▶▶ CUE)**  
This button is used to advance the tape. During playback this button is used to cue the contents at high speed.
- ⑯ **Tape counter reset button (COUNTER RESET 2)**  
This button is used to reset the tape counter indication to "000".
- ⑰ **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.
- ⑱ **Pause button (|| PAUSE)**  
This button is used to temporarily stop the tape playback or recording of deck 2 only.
- ⑲ **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.
- ⑳ **Record button (● REC)**  
This button is used to set deck 2 to the recording stand-by mode.

(Continued on next page)

(continued)



## Display section

### Indicators common to both tape decks

- ②① **Input level meter**  
 During playback, this meter indicates the level of the recorded sound.  
 During recording, it indicates the level being recorded, adjusted by the recording-level control.
- ②② **Edit-recording tape-speed indicators (×1, ×2)**  
 One of these indicators illuminates to show which of the edit recording speeds was selected by pressing one of the edit-recording tape-speed buttons.
- ②③ **Reverse-mode indicators (⏮, ⏪, ⏩, ⏭)**  
 Each indicator illuminates to show which of the reverse modes was selected by the reverse-mode selectors.
- ②④ **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.

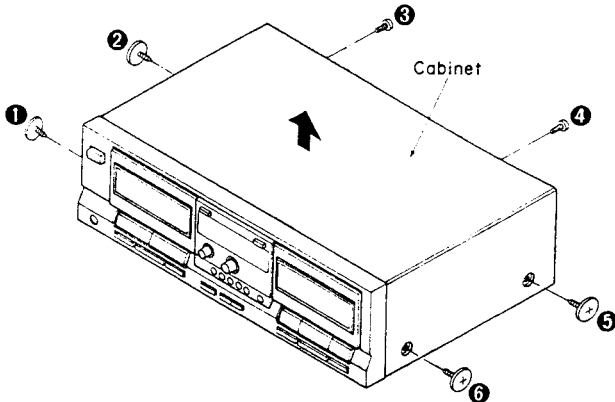
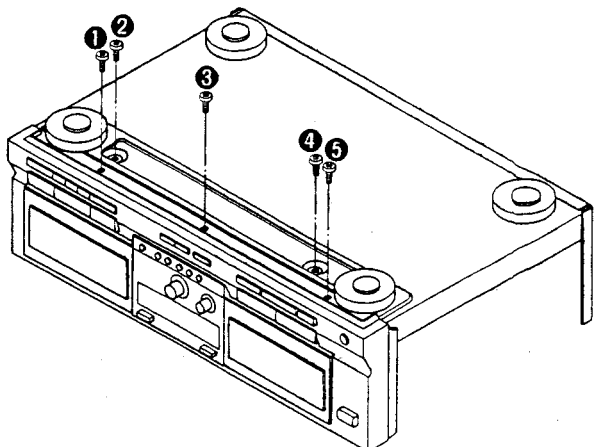
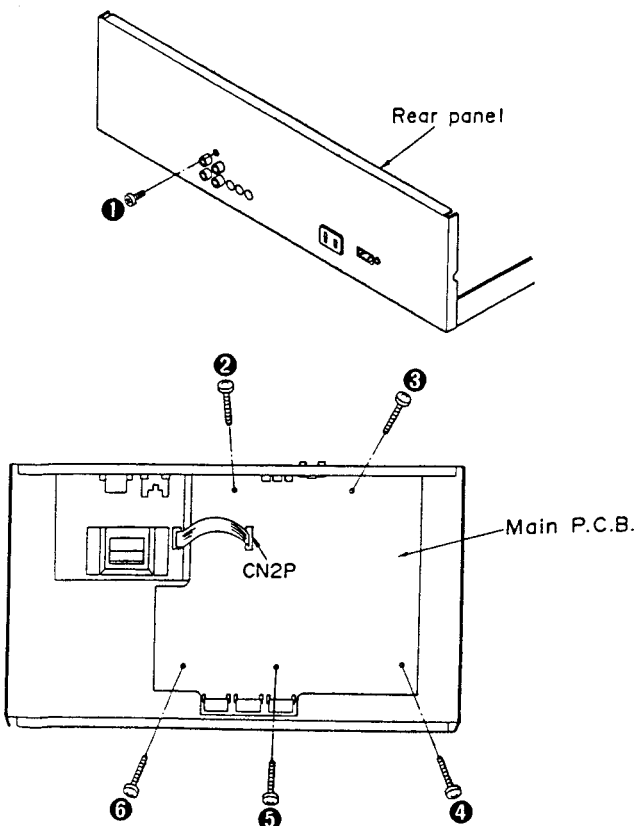
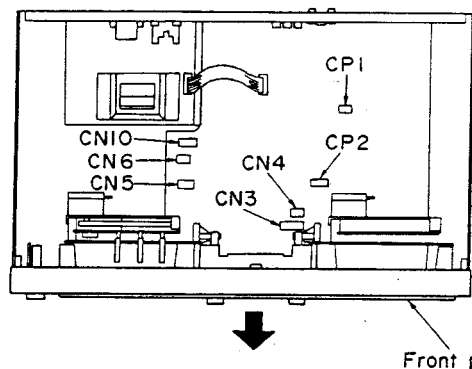
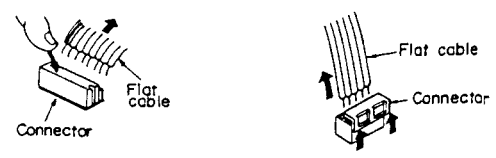
### Indicators applicable only to tape deck 1 or 2

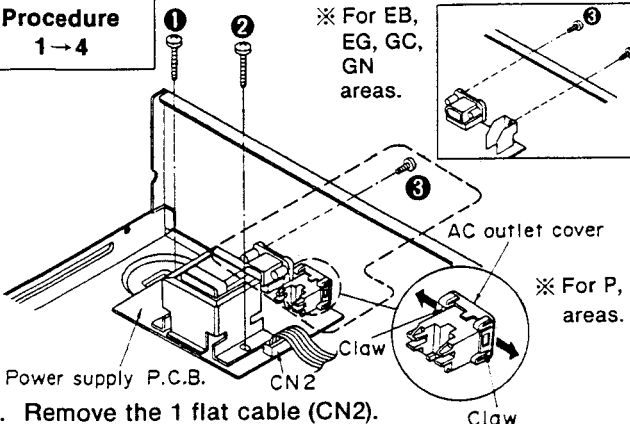
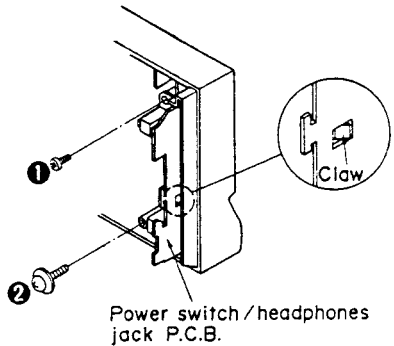
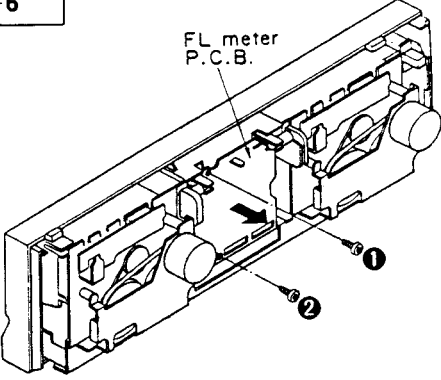
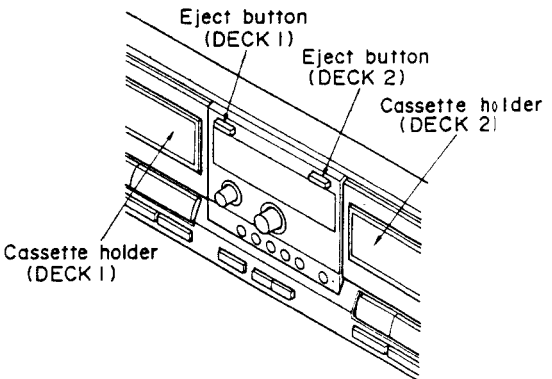
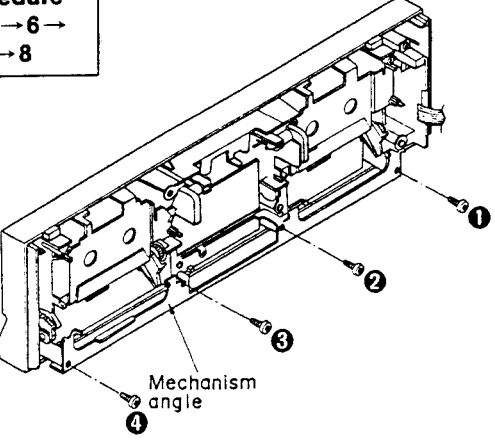
- ②⑤ **Remote-control indicator (R.C.1, R.C.2)**  
 Illuminates to indicate that this unit can now be controlled by the remote-control transmitter of the appropriate receiver connected.
- ②⑥ **Playback indicator (PLAY)**  
 When this indicator illuminates steadily, it indicates that this unit is in the 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.
- ②⑦ **Reverse-side indicator (<)**  
 Illuminates during playback or recording of deck 2, to indicate that side "B" of the tape is being used.
- ②⑧ **Forward-side indicator (>)**  
 Illuminates during playback or recording of deck 2, to indicate that side "A" of the tape is being used.
- ②⑨ **Recording indicator (REC)**  
 Illuminates to indicate that deck 2 is in the recording stand-by mode or is recording.
- ③① **Tape counter**  
 Indicates the amount of tape movement separately for deck 2. The least significant digit indicates tape movement.

## DISASSEMBLY INSTRUCTIONS

### "ATTENTION SERVICER"

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

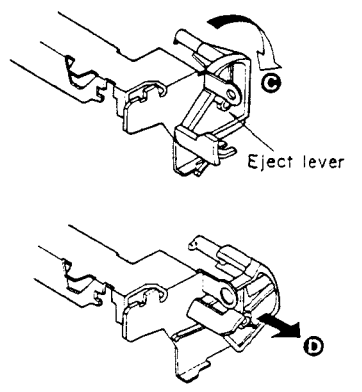
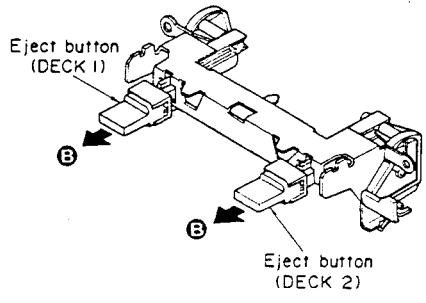
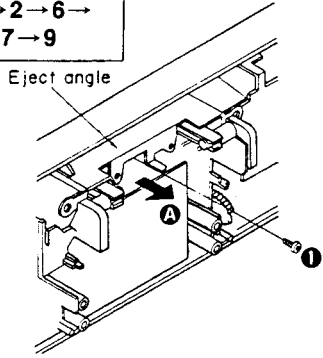
Ref. No. 1	Removal of the Cabinet	Ref. No. 2	Removal of the Front Panel Ass'y
Procedure 1	 <p>• Remove the 6 screws (1~6).</p>	Procedure 1→2	 <p>1. Remove the 5 screws (1~5).</p>
Ref. No. 3	Removal of the Main P.C.B.		
Procedure 1→2→3	 <p>1. Remove the 6 screws (1~6) 2. Remove the 1 flat cable (CN2P).</p>	 <p>2. Remove the 2 connectors (CP1, CP2). 3. Remove the 5 flat cables (CN3, CN4, CN5, CN6, CN10). 4. Remove the front panel ass'y in the direction of arrow.</p> <p><b>How to remove the Flat Cable</b></p> <ul style="list-style-type: none"> <li>• Pull out the flat cable while pressing the connector. (CN3, CN5)</li> <li>1. Lift the connector.</li> <li>2. Pull out the flat cable. (CN4, CN6, CN10)</li> </ul> 	

<p>Ref. No. 4</p>	<p><b>Removal of the Power Supply P.C.B.</b></p>	<p>Ref. No. 5</p>	<p><b>Removal of the Power Switch Headphones Jack P.C.B.</b></p>
<p>Procedure 1→4</p>	 <p>※ For EB, EG, GC, GN areas.</p> <p>※ For P, PC areas.</p> <ol style="list-style-type: none"> <li>1. Remove the 1 flat cable (CN2).</li> <li>2. Remove the 3 screws (①~③).</li> <li>3. Remove the 1 screw (④). (For EB, EG, GC, GN areas)</li> <li>4. Release the 2 claws of the AC outlet cover. (For P, PC areas)</li> </ol>	<p>Procedure 1→2→5</p>	 <ol style="list-style-type: none"> <li>1. Remove the 2 screws (①, ②).</li> <li>2. Release the 1 claw.</li> </ol>
<p>Ref. No. 6</p>	<p><b>Removal of the FL Meter P.C.B.</b></p>	<p>Ref. No. 7</p>	<p><b>Removal of the Mechanism Units (DECK 1, DECK 2)</b></p>
<p>Procedure 1→2→6</p>	 <ol style="list-style-type: none"> <li>1. Remove the 2 screws (①, ②).</li> <li>2. Remove the FL meter P.C.B. in the direction of arrow.</li> </ol>	<p>Procedure 1→2→7</p>	<p>■ Mechanism Unit (DECK 1)</p> <ol style="list-style-type: none"> <li>1. Press the eject button and open the cassette holder.</li> <li>2. Remove the 4 screws (①~④).</li> </ol> <p>■ Mechanism Unit (DECK 2)</p> <ol style="list-style-type: none"> <li>1. Press the eject button and open the cassette holder.</li> <li>2. Remove the 4 screws (⑤~⑧).</li> </ol> 
<p>Ref. No. 8</p>	<p><b>Removal of the Mechanism Angle</b></p>	 <p>• Remove the 4 screws (①~④).</p>	



**Ref. No. 9**  
**Removal of the Eject Angle, Eject Buttons, and Eject Lever**

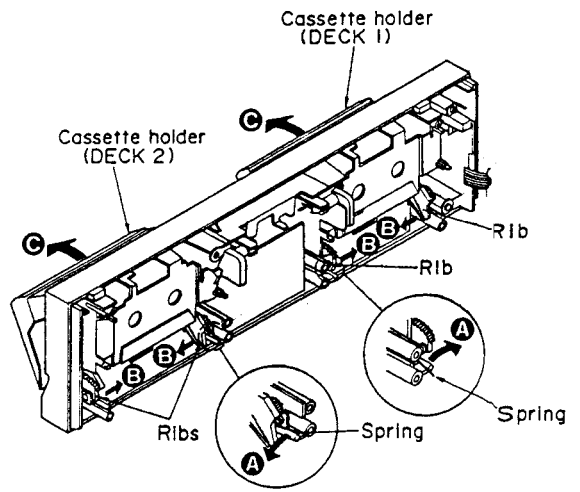
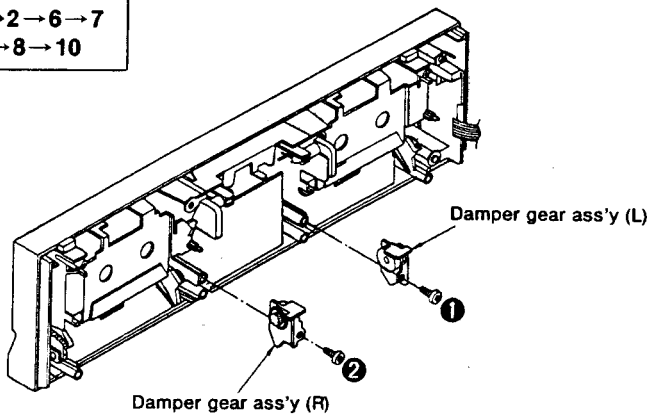
**Procedure**  
1→2→6→  
7→9



1. Remove the 1 screw (1).
2. Pull out the eject angle in the direction of arrow A.
3. Pull out the eject buttons in the direction of arrow B.
4. Turn the eject lever in the direction of arrow C, and remove the eject lever in the direction of arrow D.

**Ref. No. 10**  
**Removal of the Cassette Holder (DECK 1, DECK 2)**

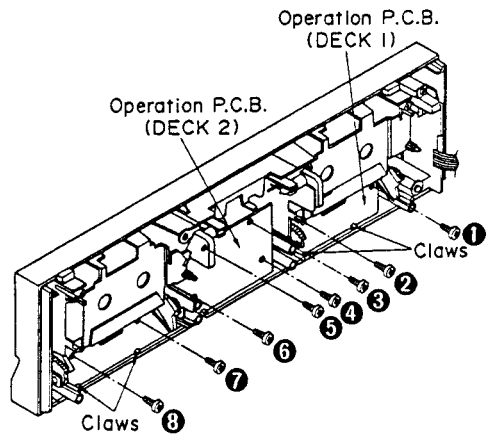
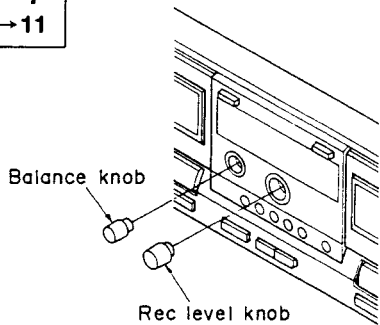
**Procedure**  
1→2→6→7  
→8→10



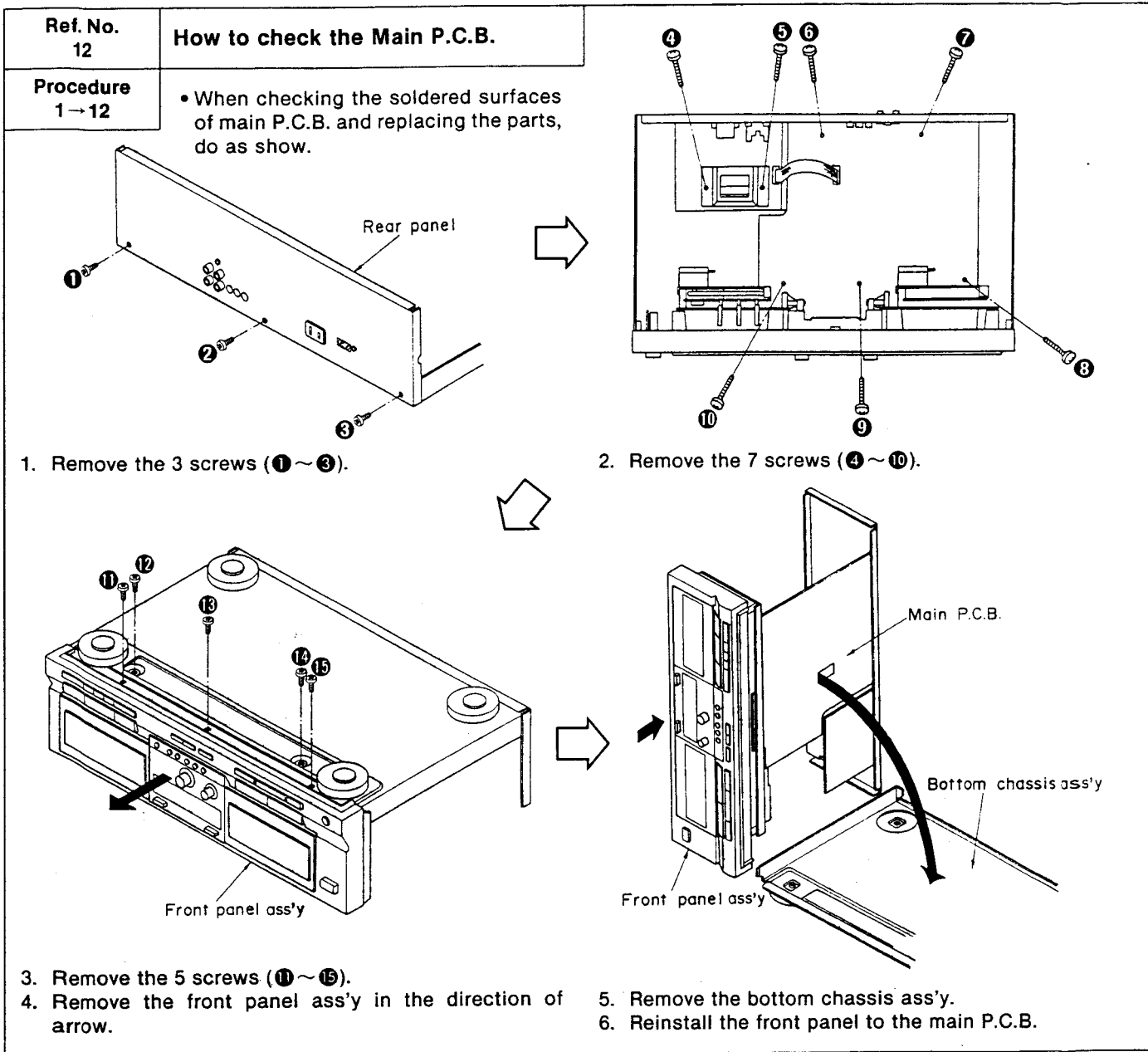
1. Remove the 2 screws (1, 2).
2. Remove the damper gear ass'y (L) and damper gear ass'y (R).
3. Remove the spring in the direction of arrow A.
4. Remove the ribs in the direction of arrow B.
5. Remove the cassette holder in the direction of arrow C.

**Ref. No. 11**  
**Removal of the Operation (DECK 1) P.C.B. and Operation (DECK 2) P.C.B.**

**Procedure**  
1→2→6→7  
→8→10→11



1. Remove the balance knob and rec level knob.
2. Remove the 8 screws (1~8).
3. Release the 4 claws.



## MEASUREMENTS AND ADJUSTMENTS

### Measurement Condition

- Recording-level control; Maximum
- Recording-balance control; Center
- Reverse-mode selector switch; ⇌
- Edit-recording tape-speed selector switch; 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

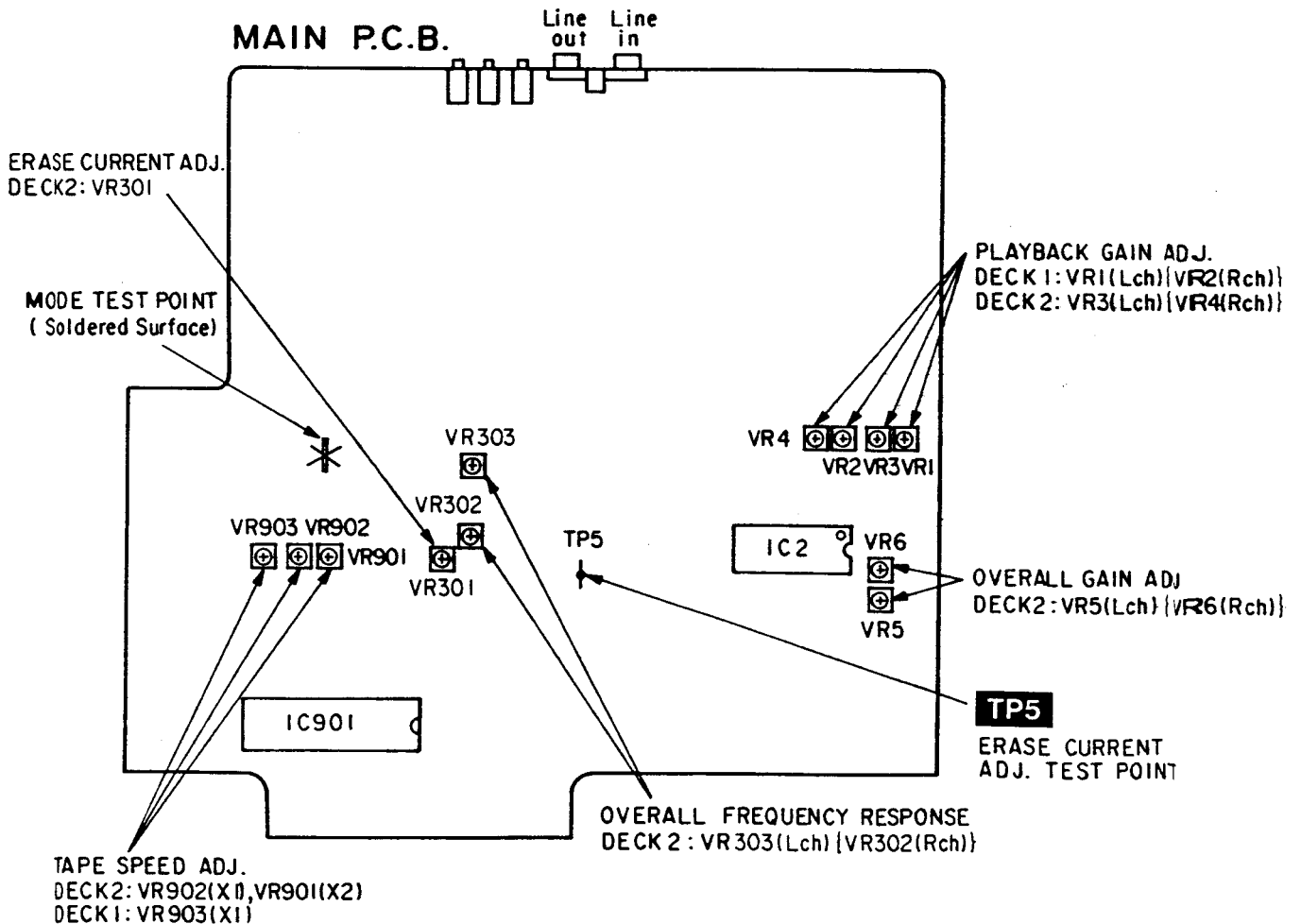
- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)

### Test tape

- Head azimuth adjustment (8 kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM

- Overall frequency response, Overall gain adjustment, Erase current adjustment  
Normal reference blank tape; QZZCRA  
CrO<sub>2</sub> reference blank tape; QZZCRX  
Metal reference blank tape; QZZCRZ

### Adjustment Points



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

1. Playback the azimuth adjustment portion (8kHz, -20dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the output of the R-CH are maximized.
2. Perform the same adjustment in the play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

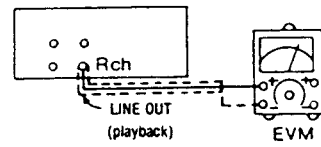


Fig. 1

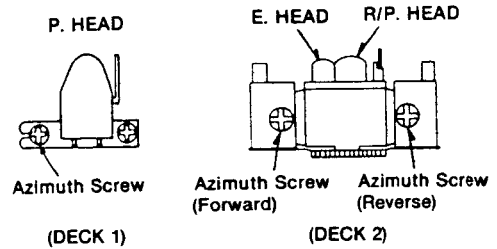


Fig. 2

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

**Normal speed**

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

**High speed**

4. Shift the edit-recording tape-speed switch selector to "X2" and press the synchro-start button.
5. Playback the middle portion of the test tape (QZZCWAT).
6. Adjust Deck 2=VR901 so that the output is within the standard value.

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

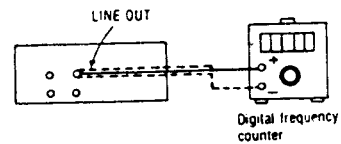


Fig. 3

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

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

1. Playback the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust Deck 1=VR1 (L-CH) [[VR2 (R-CH)]] and Deck 2=VR3 (L-CH) [[VR4 (R-CH)]] so that the output is within the standard value.

Standard value: 0.4V ± 0.5dB

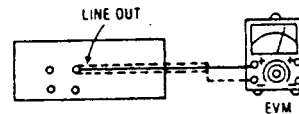


Fig. 4

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

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.

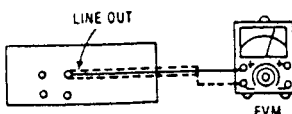


Fig. 5

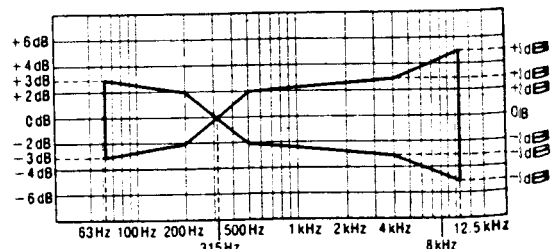


Fig. 6

**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 TP5 and GND is within the standard value.

**Standard value:  $190 \pm 5$  mA (Metal)...EVM Reading:  $190 \pm 5$  mV**

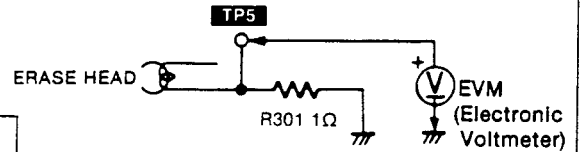


Fig. 7

**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.

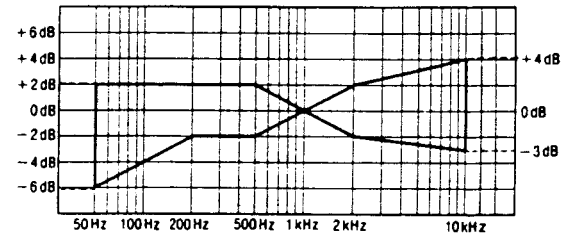
**Normal Overall frequency response chart (NR OUT)**

Fig. 8

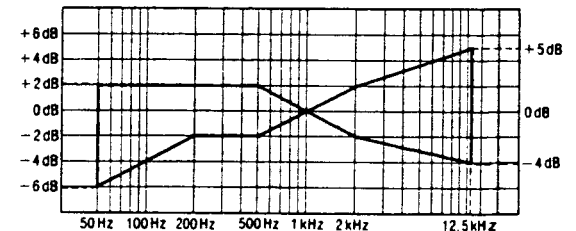
**CrO<sub>2</sub> Metal Overall frequency response chart (NR OUT)**

Fig. 9

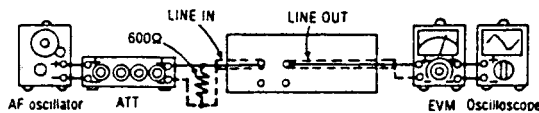


Fig. 10

**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 VR5 (L-CH) and VR6 (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

**Standard value:  $0.4V \pm 0.5$  dB**

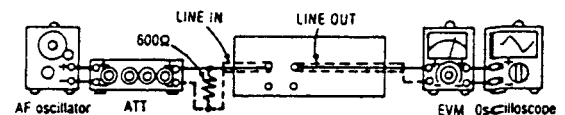


Fig. 11

## ■ TERMINAL FUNCTION OF IC

### ● IC901 (M50942-502SP): MICROCOMPUTER

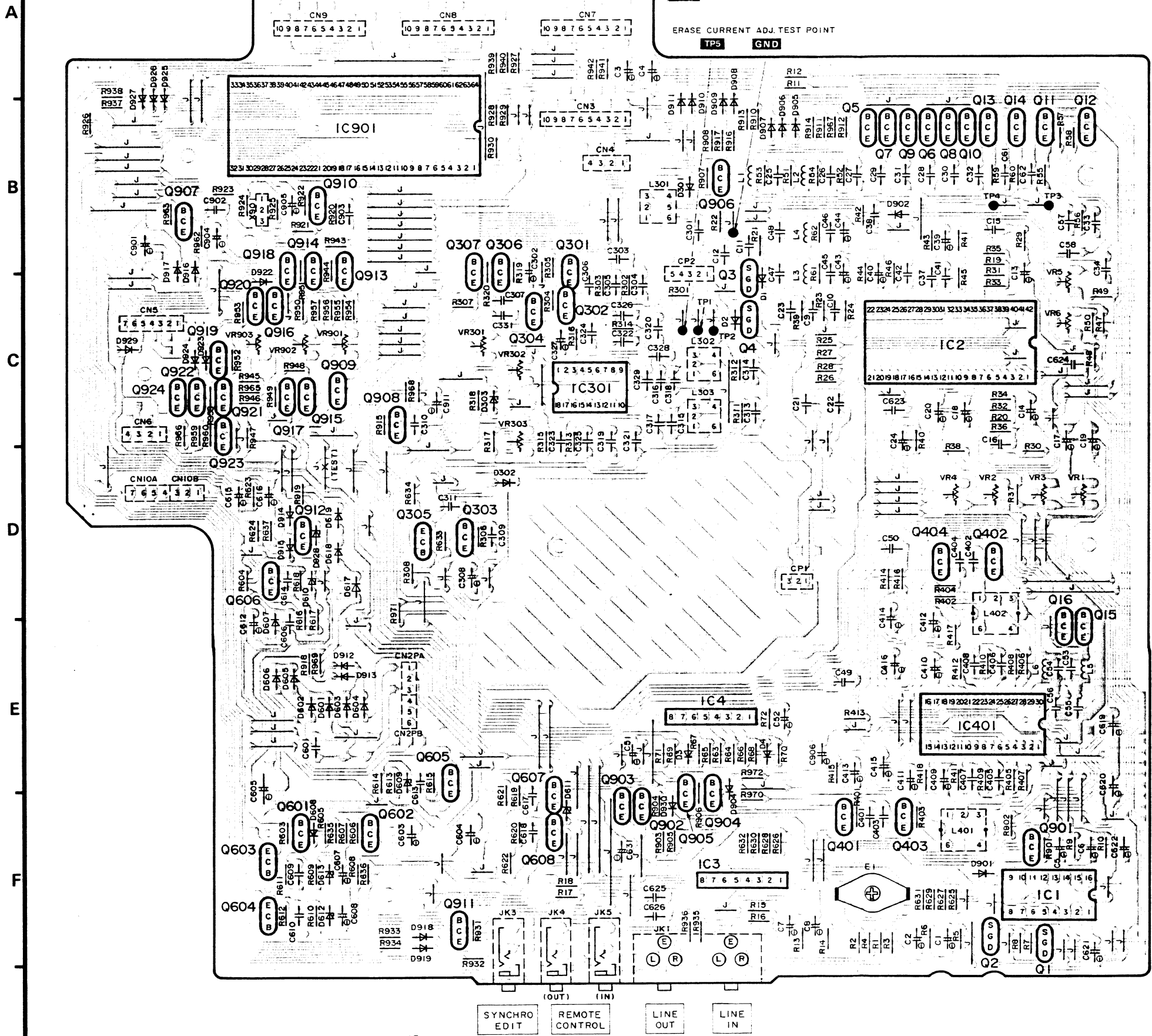
Pin No.	Mark	I/O	Description
1	V <sub>REF</sub>	I	Standard voltage terminal (5 V)
2	1 WAY REV	I	Model select input terminal D1 1 Way... "L", D1 Reverse... "H"
3	INH	I	Deck 2 Forward/Reverse Rec. Inh. switch select terminal
4	QUI2	I	Connected to GND
5	QUI1		
6	R IN	I	Line signal level input terminal
7	L IN		
8	KEY 2	I	Key switch scan (DECK 1 STOP, CUE/REV., F. PLAY, REVERSE MODE, C-RES 2)
9	KEY 1	I	Key switch scan (DECK 2: STOP, CUE/REV., F. PLAY, R. PLAY, REC., PAUSE S. START, × 1, × 2, DOLBY B, C NR)
10	B̄	O	Dolby NR amp. select terminal DOLBY "B"... "L", etc... "H"
11	C̄	O	DOLBY NR amp. select terminal DOLBY "C"... "L", etc... "H"
12	ENC	O	Encode/Decode select terminal ● "H" level in encode mode. ● "L" level in decode mode.
13	×2	O	×2 Speed select terminal ● "×2"... "L", etc... "H"
14	TP2	O	Deck 2 play select terminal ● "L" level with PLAY/CUE/REVIEW mode. ● "H" level with any other mode.
15	CRM	O	CUE/REV. mute terminal ● "L" level in muting is off mode. ● "H" level in muting is on mode.
16	RMT	O	Rec. amp. mute signal of deck 2 ● "L" level in mute is off mode. ● "H" level in mute is on mode.
17	DMT	O	Line out mute terminal ● "L" level in muting is off mode. ● "OPEN" when muting is on mode.
18	REC	O	Rec. mode output terminal ● "L" level in REC. mode. ● "H" level in any other mode.
19	REN	O	Rec. Enable output terminal ● "L" level in REC. mode ● "H" level in any other mode
20	SYNC	I	Synchro start signal input terminal ● "L"...Synchro start
21	REEL 2	I	Rotation pulse signal of reel table
22	REEL 1		
23	ARM	I	Auto rec. mute terminal ● "L"...key "on"
24	POF	I	Primary AC power detection terminal ● "L"...off

Pin No.	Mark	I/O	Description
25	R.C	I	Remote control serial data terminal
26	CN V <sub>SS</sub>	I	Connected to V <sub>SS</sub> .
27	RESET	I	Reset input terminal ● "L"...Reset "on"
28	X IN	I	Clock OSC terminal (4 MHz)
29	X OUT	O	
30	XC IN	I	Connected to V <sub>SS</sub>
31	XC OUT	O	—————
32	V <sub>SS</sub>	I	Connected to GND
33	φ	O	—————
34	MODE 2	I	Deck 2 mechanism mode switch select terminal ● "L"...PLAY, CUE/REV. mode
35	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.
36	MODE 1	I	Deck 1 mechanism mode switch select terminal ● "L"...PLAY, CUE/REV. mode
37	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.
38	VP	I	Pull down power supply terminal (-V <sub>CC</sub> )
39	SPD 2	O	Deck 2 motor speed select terminal ● "L" level in "×2" mode ● "H" level in "×1" mode
40	CAP 2	O	Deck 2 motor ON/OFF control terminal ● "H" level in "ON"
41	SOL 2	O	Deck 2 solenoid ON/OFF control terminal ● "H" level in "ON"
42	SPD 1	O	Deck 1 motor speed select terminal ● "L" level in "×2" mode ● "H" level in "×1" mode
43	CAP 1	O	Deck 1 motor ON/OFF control terminal ● "H" level in "ON"
44	SOL 1	O	Deck 1 solenoid ON/OFF control terminal ● "H" level in "ON"
45 } 56	I } a	O	Segment signal for FL display
57 } 62	G6 } G1	O	Grid signal for FL display
63	AV <sub>CC</sub>	I	Power supply terminal (A/D)
64	V <sub>CC</sub>	I	Power supply terminal

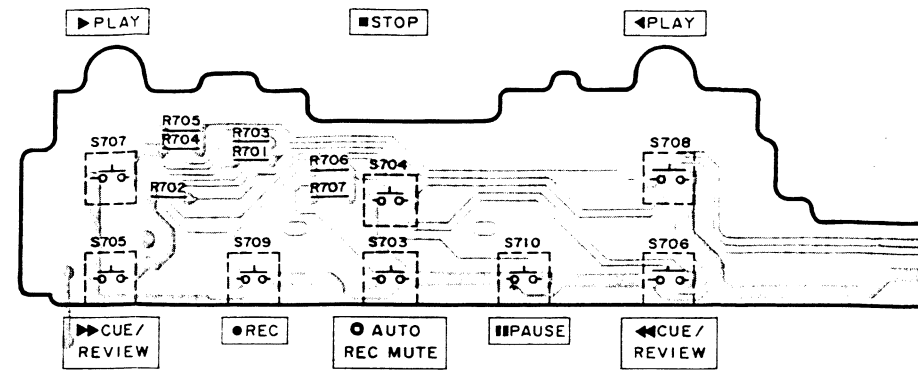
PRINTED CIRCUIT BOARDS

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

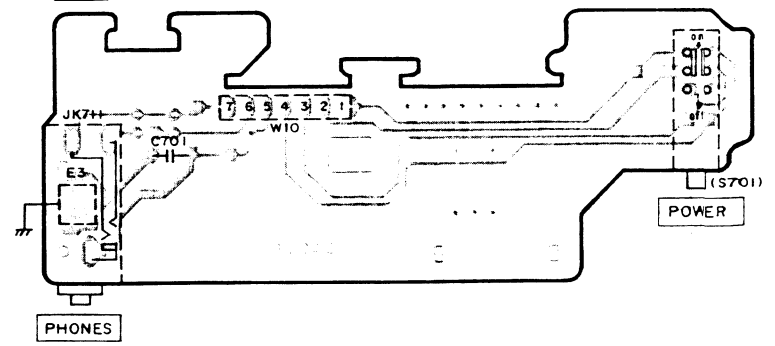
ERASE CURRENT ADJ. TEST POINT  
TP5 GND



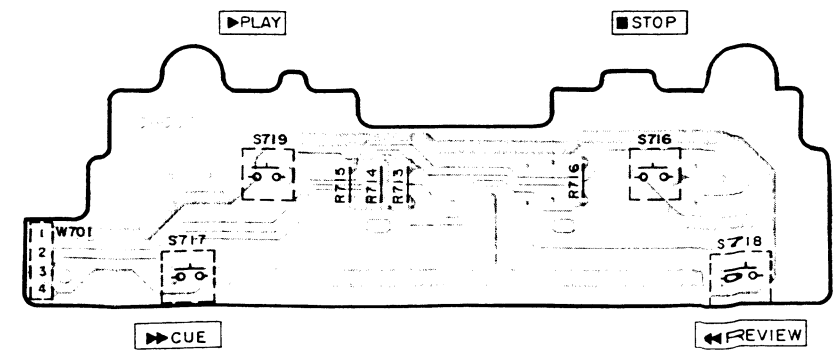
**H** OPERATION (DECK 2) P.C.B.



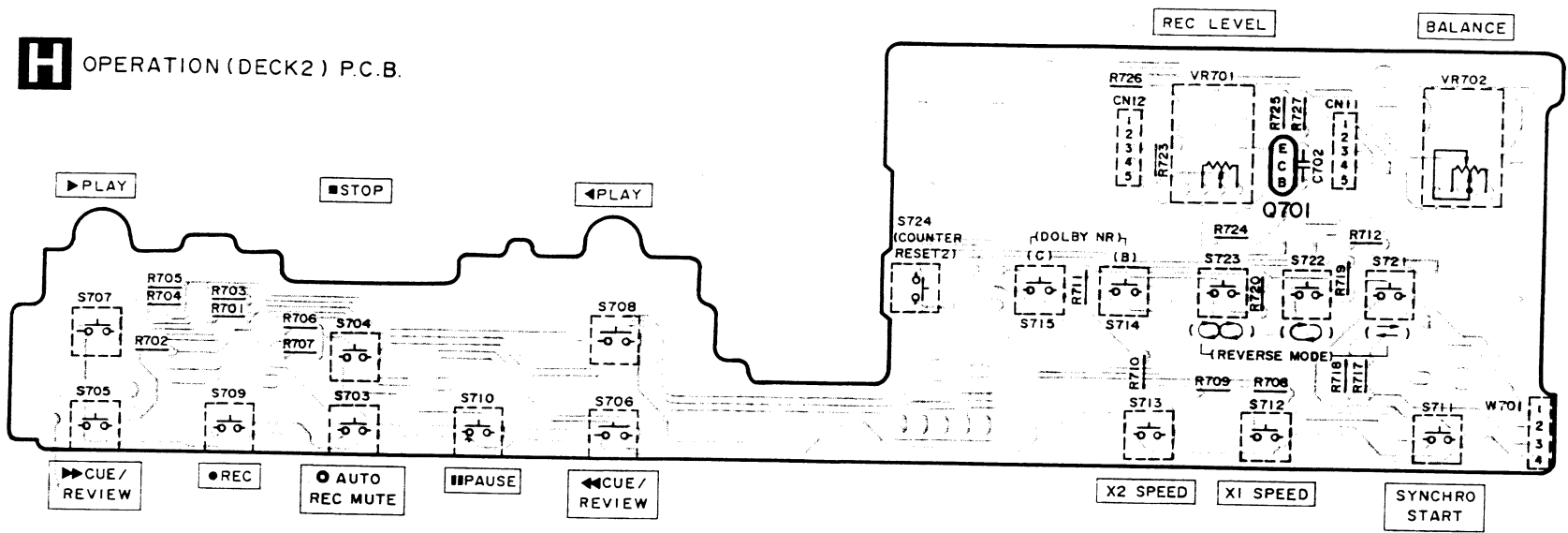
**E** POWER SWITCH/HEADPHONES JACK P.C.B.



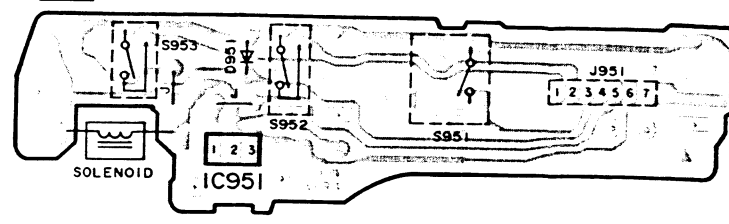
**G** OPERATION (DECK 1) P.C.B.



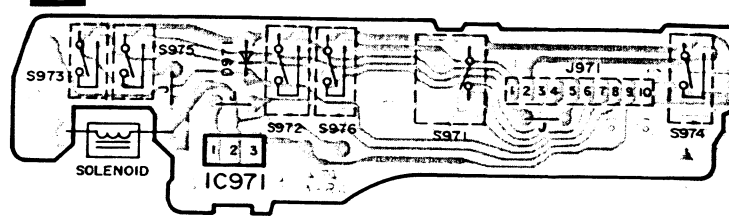
**H** OPERATION (DECK 2) P.C.B.



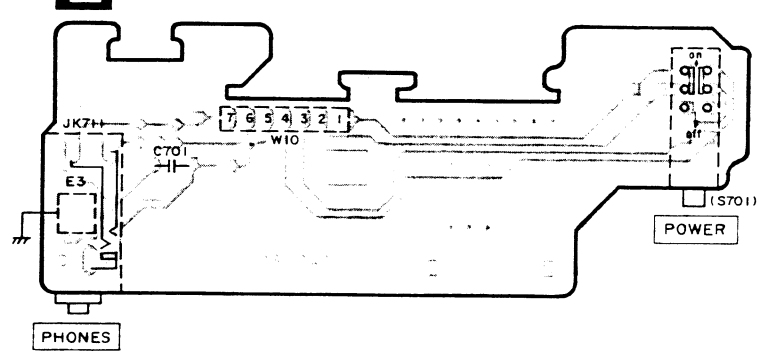
**D** MECHANISM (DECK 1) P.C.B.



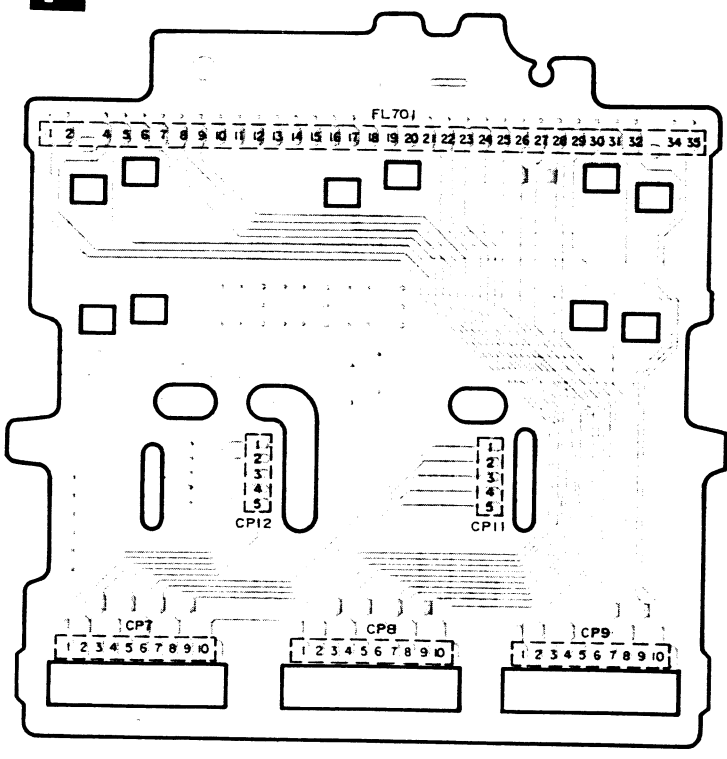
**C** MECHANISM (DECK 2) P.C.B.



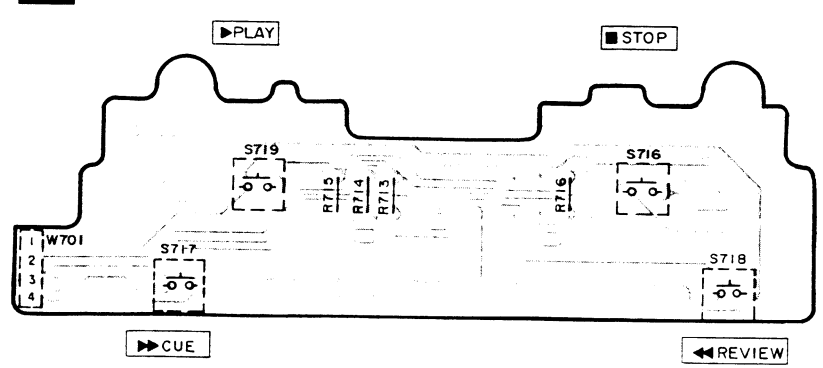
**E** POWER SWITCH/HEADPHONES JACK P.C.B.



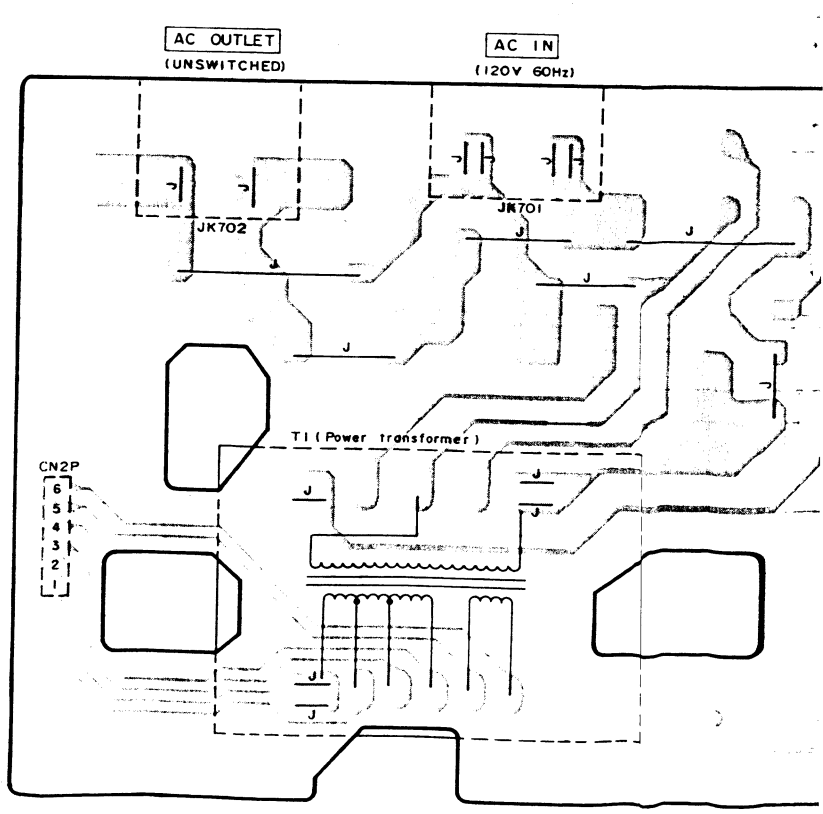
**F** FL METER P.C.B.



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



**B** POWER SUPPLY P.C.B. For [P,PC] areas.





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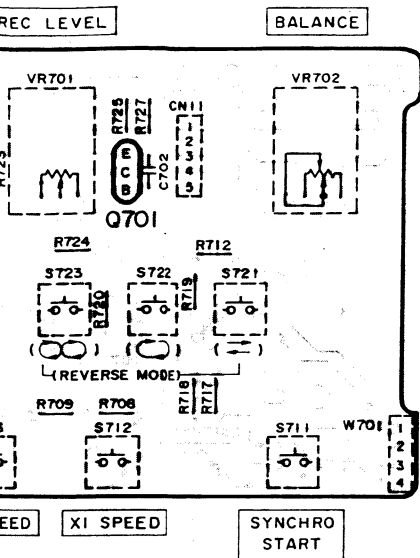
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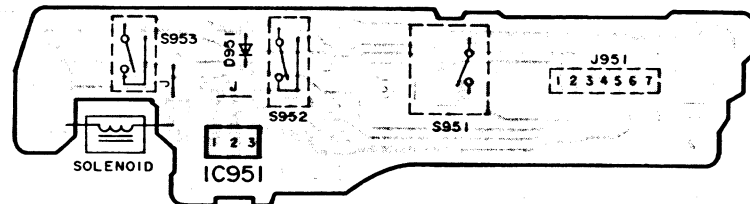
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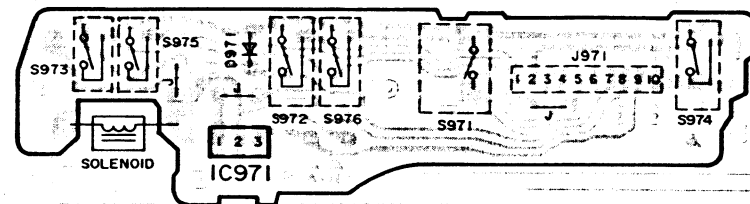
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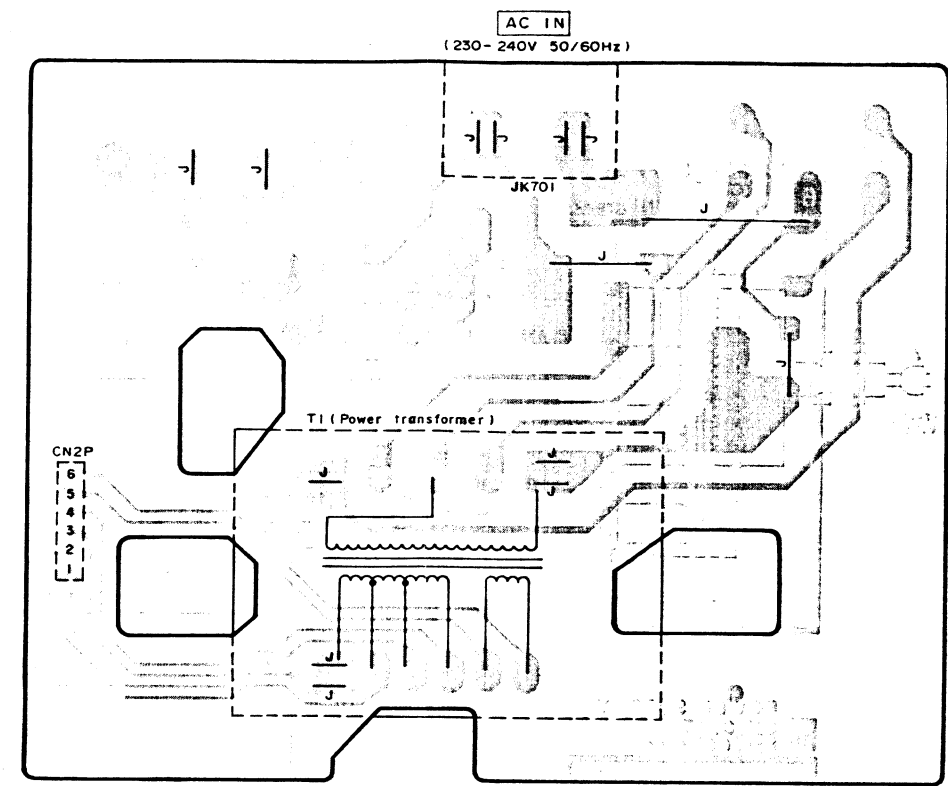
**D** MECHANISM (DECK 1) P.C.B.



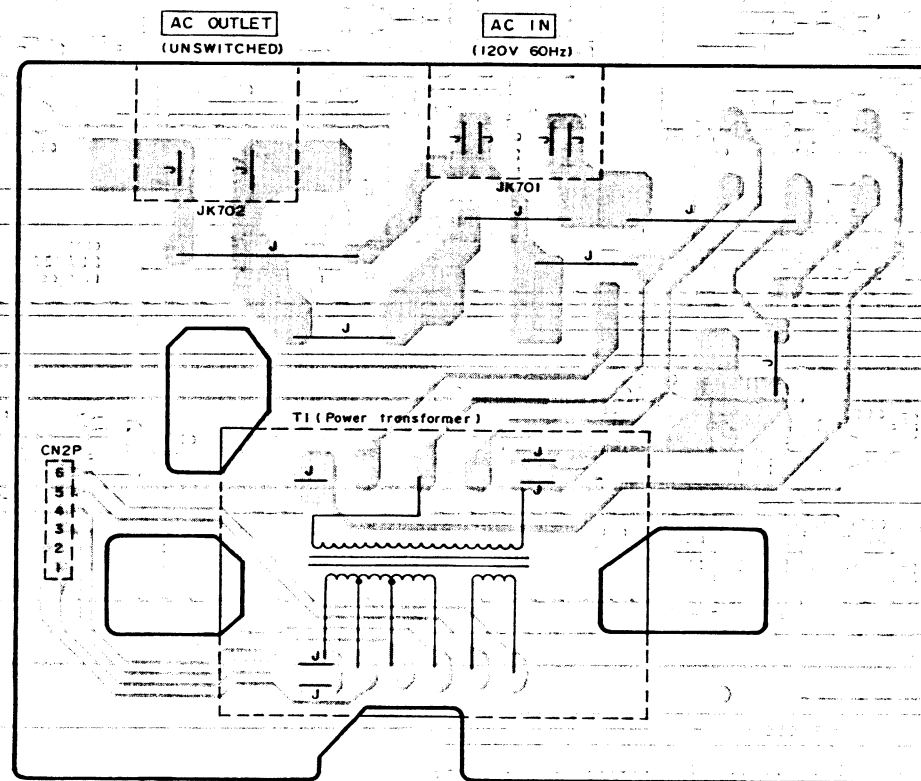
**C** MECHANISM (DECK 2) P.C.B.



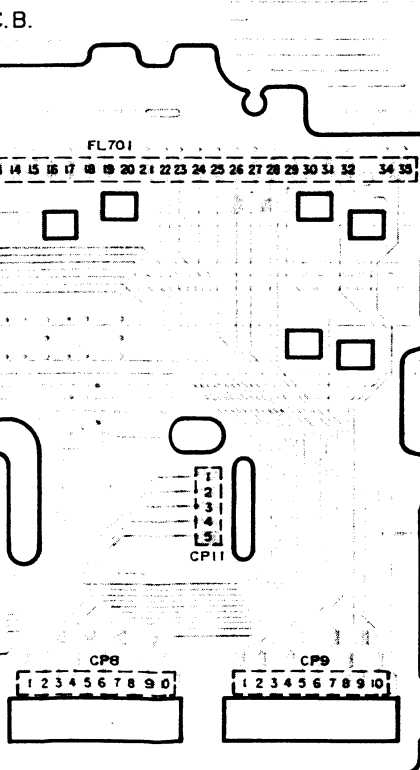
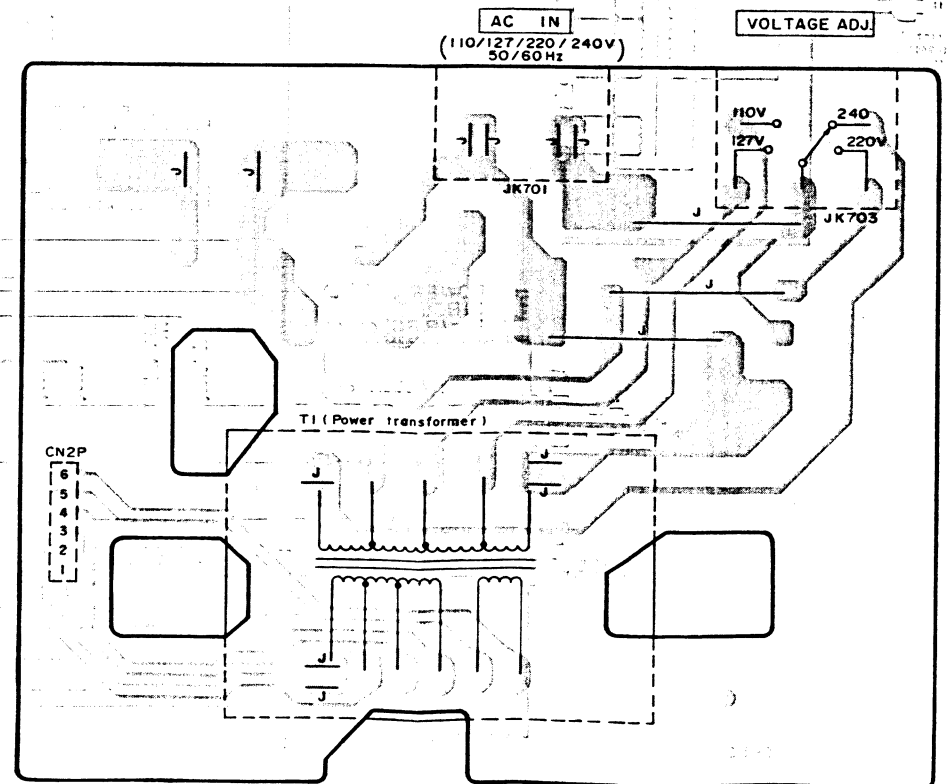
**B** POWER SUPPLY P.C.B. For [EB, EG, GN] areas.

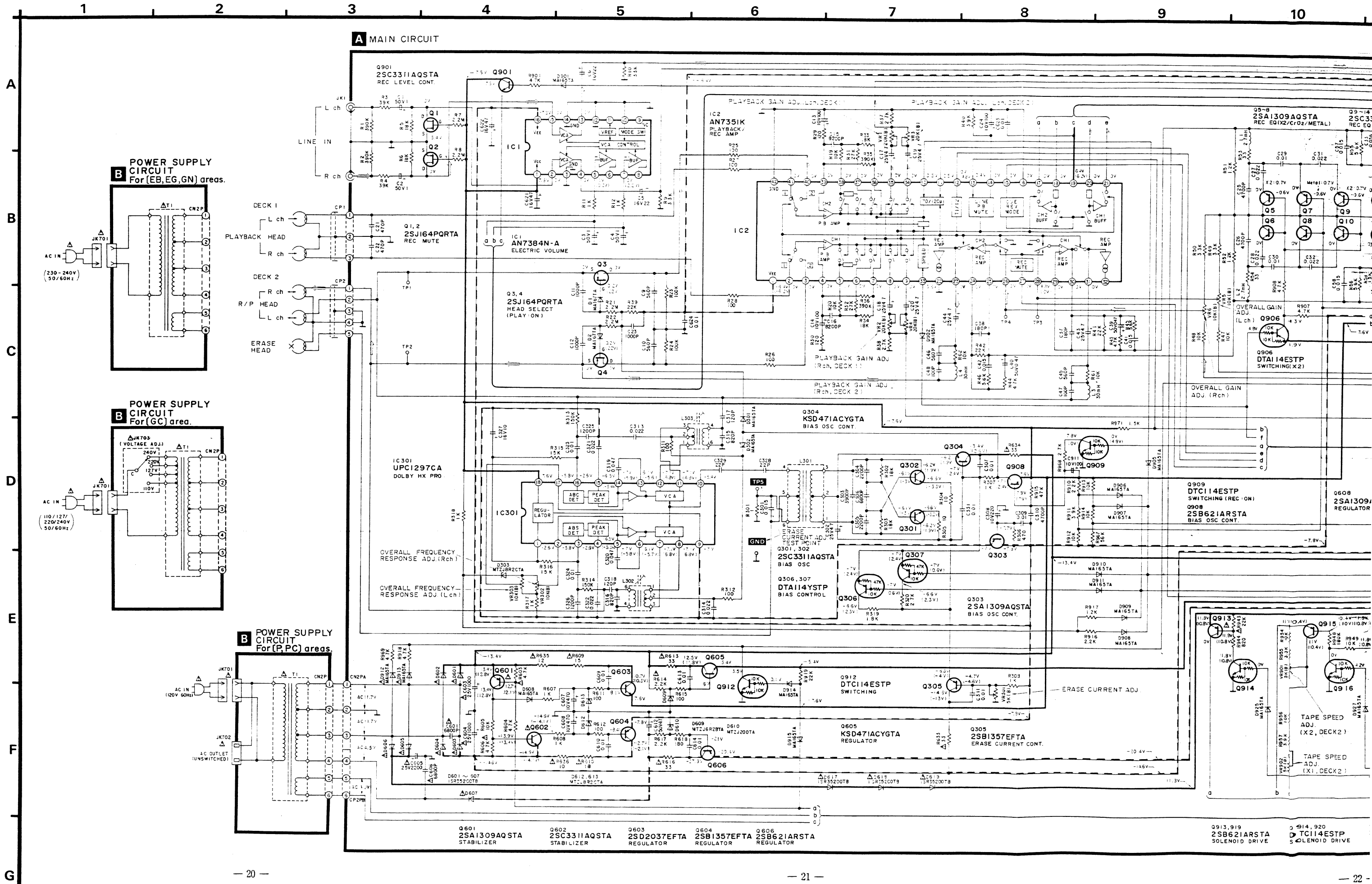


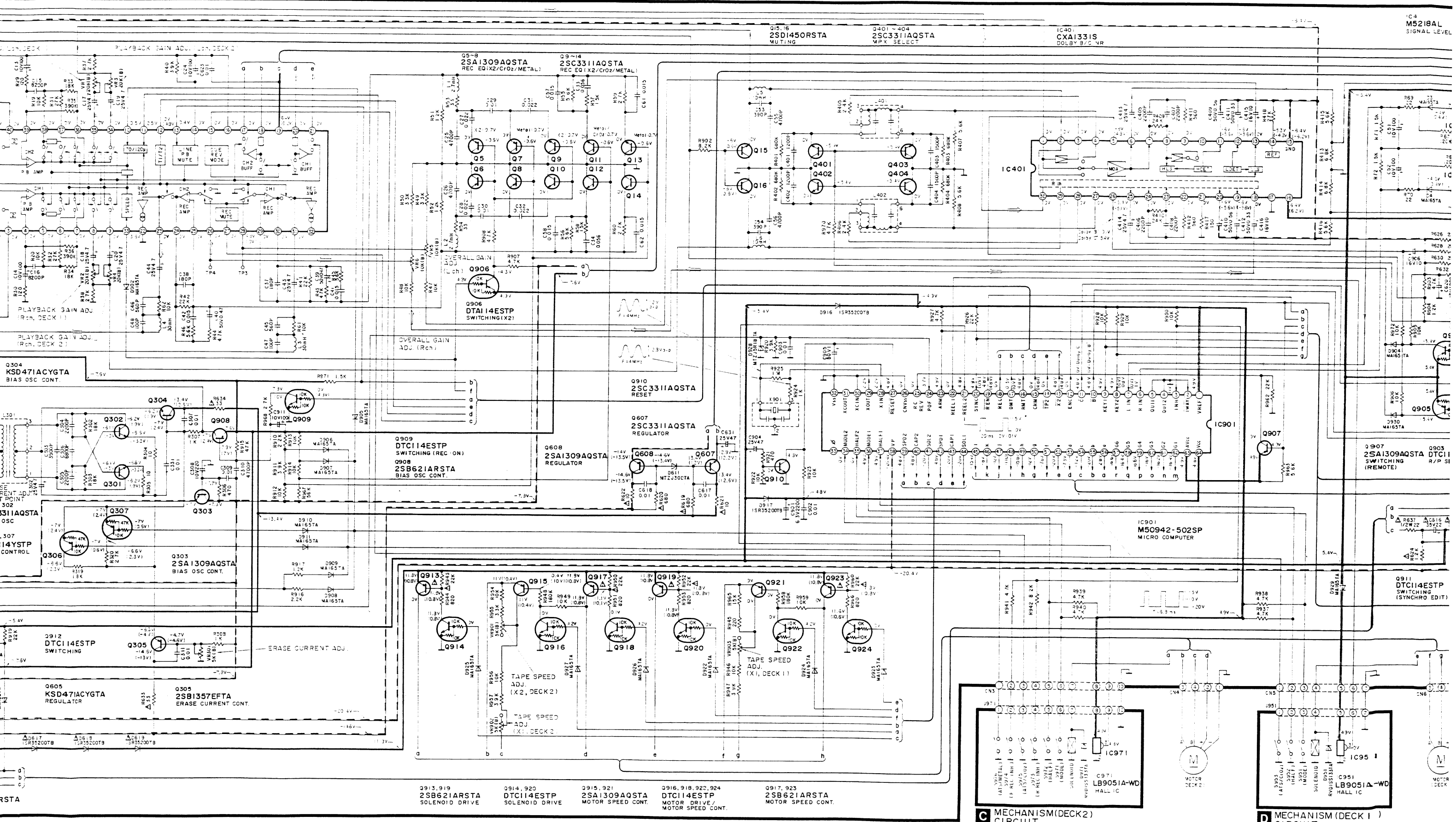
**B** POWER SUPPLY P.C.B. For [P, PC] areas.



**B** POWER SUPPLY P.C.B. For [GC] area.

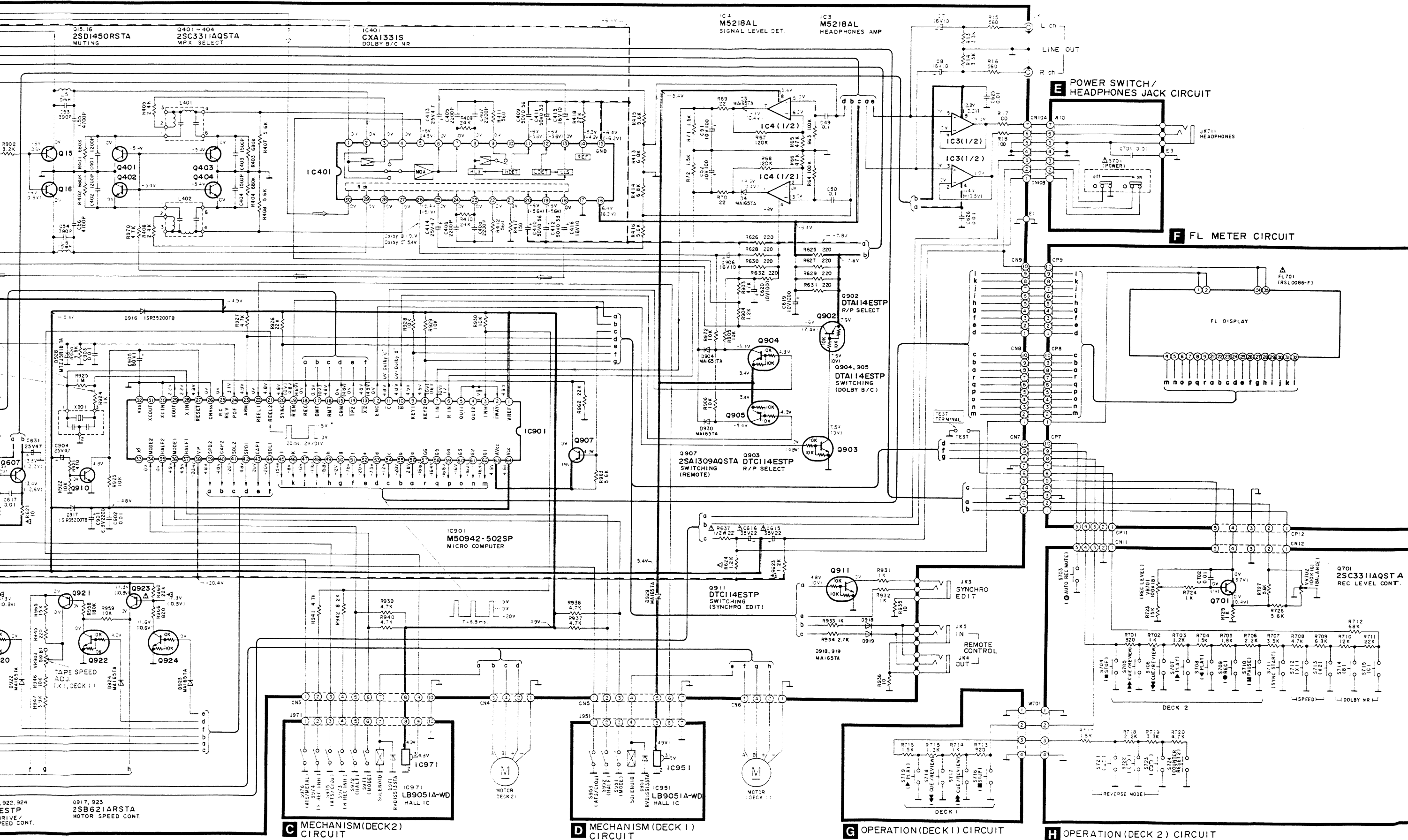






C MECHANISM (DECK 2) CIRCUIT

D MECHANISM (DECK 1) CIRCUIT



C MECHANISM (DECK 2) CIRCUIT

D MECHANISM (DECK 1) CIRCUIT

G OPERATION (DECK 1) CIRCUIT

H OPERATION (DECK 2) CIRCUIT

## ■ SCHEMATIC DIAGRAM (Parts list on pages 39~42.)

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

### Notes:

- JK703 : Voltage selector in "240V" position. (For [GC] area only.) (110V → 127V → 220V → 240V)
- S701 : Power switch in "on" position (P, PC areas: POWER/ OFF ON, Others areas: POWER/ standby ON).
- S703 : DECK 2 Automatic-record-muting switch (AUTO REC MUTE).
- S704 : DECK 2 Stop switch (STOP).
- S705 : DECK 2 Fast-forward/cue switch (CUE).
- S706 : DECK 2 Rewind/review switch (REVIEW).
- S707 : DECK 2 Forward-side playback switch (PLAY).
- S708 : DECK 2 Reverse-side playback switch (PLAY).
- S709 : DECK 2 Record switch (REC).
- S710 : DECK 2 Pause switch (PAUSE).
- S711 : Synchro-start switch (SYNCHRO START).
- S712 : Edit-recording tape-speed selector switch (X1 SPEED).
- S713 : Edit-recording tape-speed selector switch (X2 SPEED).
- S714 : Dolby noise-reduction selector switch (Dolby NR; [B]).
- S715 : Dolby noise-reduction selector switch (Dolby NR; [C]).
- S716 : DECK 1 Stop switch (STOP).
- S717 : DECK 1 Fast-forward/cue switch (CUE).
- S718 : DECK 1 Rewind/review switch (REVIEW).
- S719 : DECK 1 Forward-side playback switch (PLAY).
- S721 : Reverse-mode switch (REVERSE MODE; [A]).
- S722 : Reverse-mode switch (REVERSE MODE; [B]).
- S723 : Reverse-mode switch (REVERSE MODE; [C]).
- S724 : DECK 2 Tape counter reset 2 switch (COUNTER RESET 2).
- S951 : DECK 1 Mode switch "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 Reverse rec. inhibit switch in "off" position.
- S974 : DECK 2 Forward 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.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise. 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.

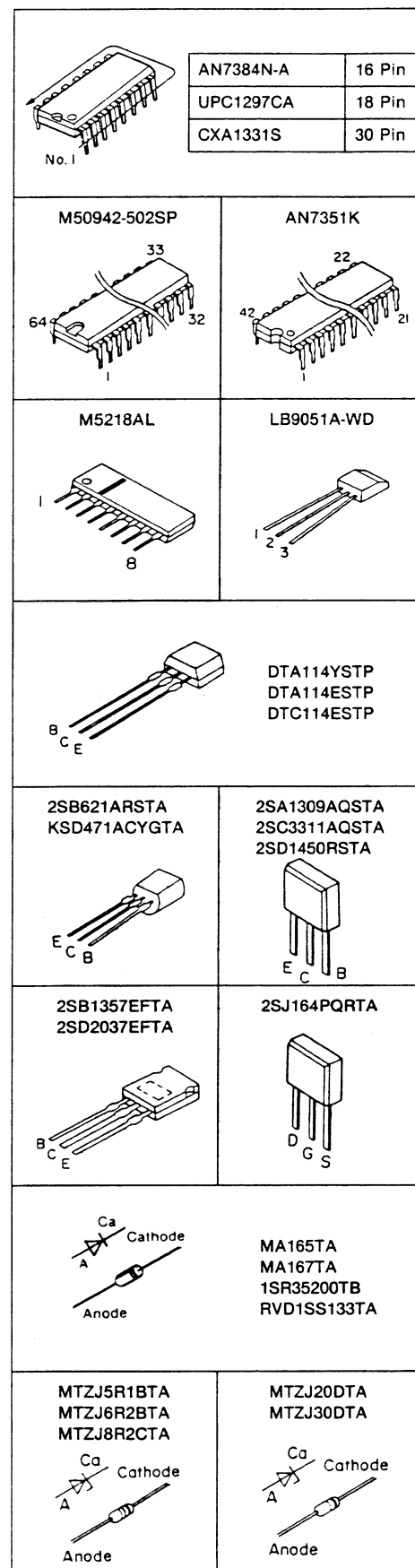
- ( ) indicates +B (bias).
- ( ) indicates -B (bias).
- ( ) indicates the flow of the playback signal.
- ( ) indicates the flow of the record signal.
- The supply part number is described alone in the replacement parts list.

Ref. No.	Production Part No.	Supply Part No.
IC1	AN7384N-A	AN7384
IC3, 4	M5218AL	M5218L

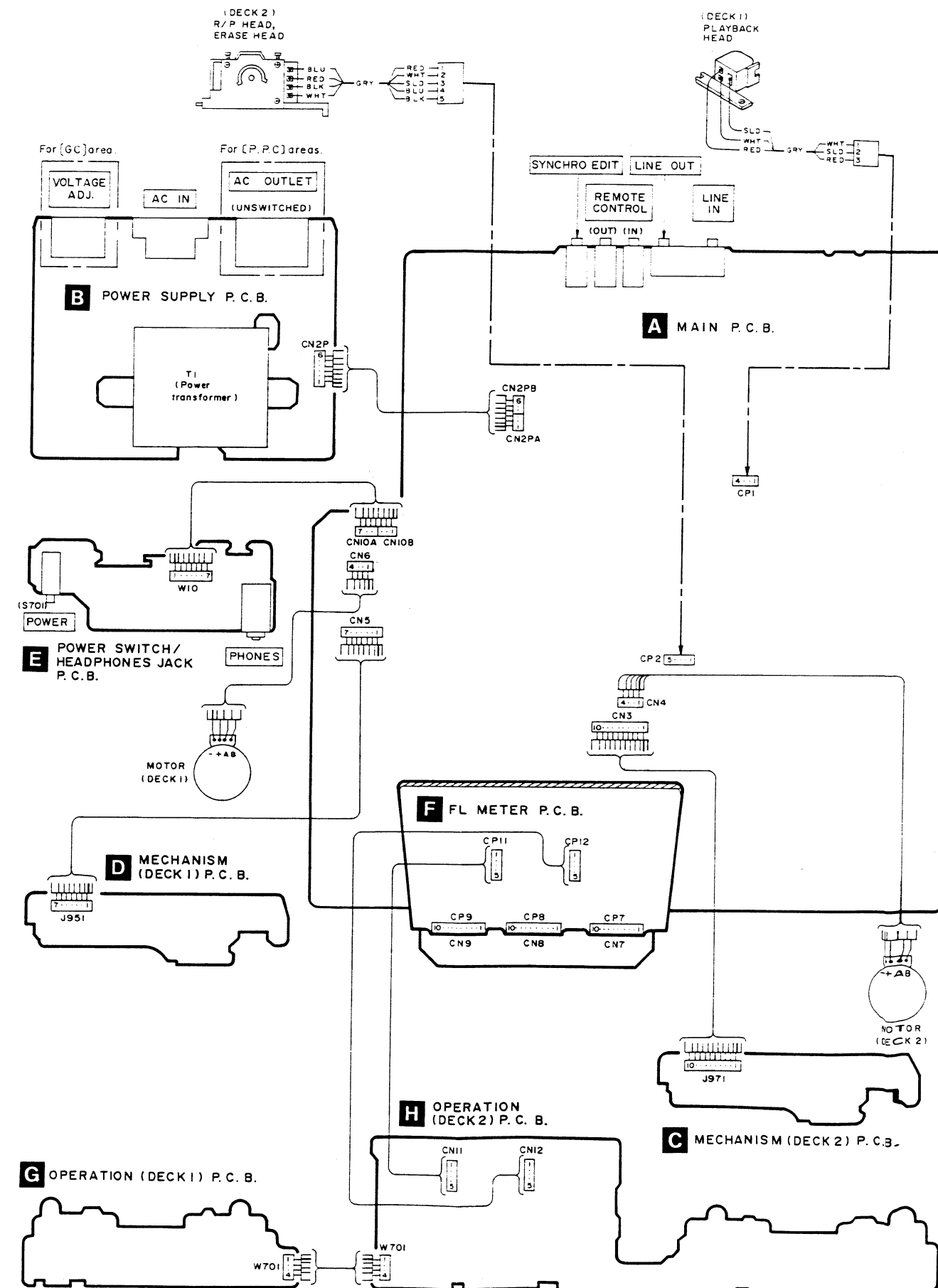
### \* Caution !

- 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.

## ■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



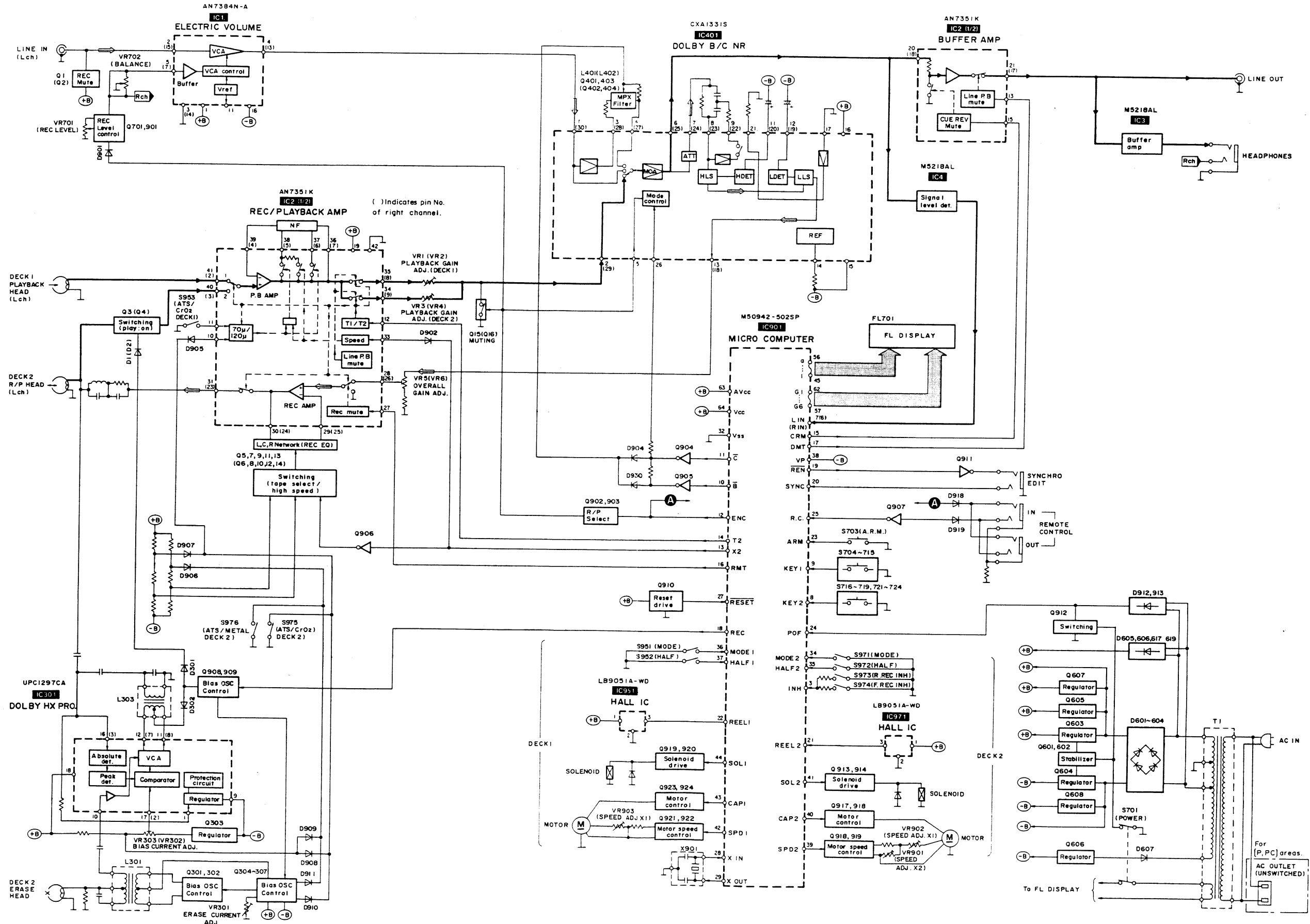
## ■ WIRING CONNECTION DIAGRAM





**BLOCK DIAGRAM**

RS-TR232 RS-TR232



**Notes:**  
 • → Playback signal  
 • → Recording signal



## REPLACEMENT PARTS LIST

Notes : \* Important safety notice:

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

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

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		P1	RPG1131	CARTON BOX	(PC)
				P1	RPG1132	CARTON BOX	(EB, EG, GC, GN)
				P2	RPW0296	CUSHION	
				P3	RPQ0164	ACCESSORIES PAD	
				P4	XZB50X65A02Z	PROTECTION COVER (THIS UNIT)	
				P5	XZB24X34C04	PROTECTION BAG (E. B., ACC.)	
						ACCESSORIES	
1	RKMD016-K1	CABINET		A1	RFKSSTR232EG	INSTRUCTION MANUAL ASS'Y	(EG)
2	RYF0119J-K	CASSETTE LID (DECK1)		A1	RFKSSTR232PC	INSTRUCTION MANUAL ASS'Y	(PC)
3	RYF0119B-K1	CASSETTE LID (DECK2)		A1	RQT1365-P	INSTRUCTION MANUAL	(P)
4	SNE2129-1	SCREW		A1	RQT1367-G	INSTRUCTION MANUAL	(GC)
5	XTBS3+8JFZ1	SCREW		A1	RQT1369-B	INSTRUCTION MANUAL	(EB, GN)
6	RGR0112A-F1	REAR PANEL	(P, PC)	A2	RQA0013	WARRANTY CARD	(EB, EG)
6	RGR0112E-A	REAR PANEL	(EG)	A2	RQX7433ZA	WARRANTY CARD	(GN)
6	RGR0112E-B	REAR PANEL	(EB, GN)	A2	SQX7179	WARRANTY CARD	(P)
6	RGR0112F-A	REAR PANEL	(GC)	A2	SQX7183	WARRANTY CARD	(PC)
7	RFKJSTR313PK	BOTTOM CHASSIS ASS'Y		A3	RQCB0169	SERVICENTER LIST	(EB, EG, GC, GN)
7-1	RKA0009-1	FOOT		A3	SQX9129-1	SERVICENTER LIST	(P)
8	RKQ0089	P. C. B. HOLDER		A3	SQX9131	SERVICENTER LIST	(PC)
9	RMND112	FL. HOLDER		A4	RJA0004	AC POWER SUPPLY CORD	(GC) $\triangle$
10	RFKNSDN7AK	DAMPER GEAR ASS'Y (L)		A4	RJA0019-1K	AC POWER SUPPLY CORD	(EG) $\triangle$
11	RFKNSDN7BK	DAMPER GEAR ASS'Y (R)		A4	SJA172	AC POWER SUPPLY CORD	(PC) $\triangle$
12	RFKSTR232EB	FRONT PANEL ASS'Y	(EB, EG, GC, GN)	A4	SJA173	AC POWER SUPPLY CORD	(GN) $\triangle$
12	RFKSTR232P	FRONT PANEL ASS'Y	(P, PC)	A4	SJA175-1	AC POWER SUPPLY CORD	(P) $\triangle$
12-1	RKWD139A-K1	TRANSPARENT PLATE		A4	SJA193	AC POWER SUPPLY CORD	(EB) $\triangle$
13	RGU0030	BUTTON, POWER		A5	SJP2249-3	STEREO CONNECTION CABLE	
14	RGU0070	BUTTON, EJECT		A6	SJP2257T	STEREO MINI CABLE	
15	RGU0518A-K	BUTTON, OPERATION (DECK1)		A7	SJP9215	POWER PLUG ADAPTOR	(GC) $\triangle$
16	RGU0519A-K	BUTTON, OPERATION (DECK2)		A8	RQLA0134	CAUTION LABEL (VOL. SELECTOR)	(GC)
17	RFKNSTR232P	BUTTON ASS'Y, SYNCHRO					
18	RGW0109-K	KNOB, REC LEVEL					
19	RGW0110-K	KNOB, BALANCE					
20	RKFO169A-K	CASSETTE HOLDER					
20-1	QBP2006A	TAPE PRESSURE SPRING					
21	RMAD406	EJECT ANGLE					
22	RMAD407	MECHANISM ANGLE					
23	RME0068-1	SPRING					
24	RML0185-1	EJECT LEVER (L)					
25	RML0186-1	EJECT LEVER (R)					
26	RMMD014	EJECT ROD					
27	XTBS26+8J	SCREW					
28	XTB3+10JFZ	SCREW					
29	XTWS3+10Q	SCREW					
30	SJS9331A	AC OUTLET COVER	(P, PC)				
31	XTBS3+8JFZ1	SCREW	(EB, EG, GC, GN)				
32	XTB3+20JFZ	SCREW					
33	RMAD582	BRACKET, P. TRANSFORMER	(EB, EG, GC, GN)				
		PACKING MATERIAL					
P1	RPG1130	CARTON BOX	(P)				



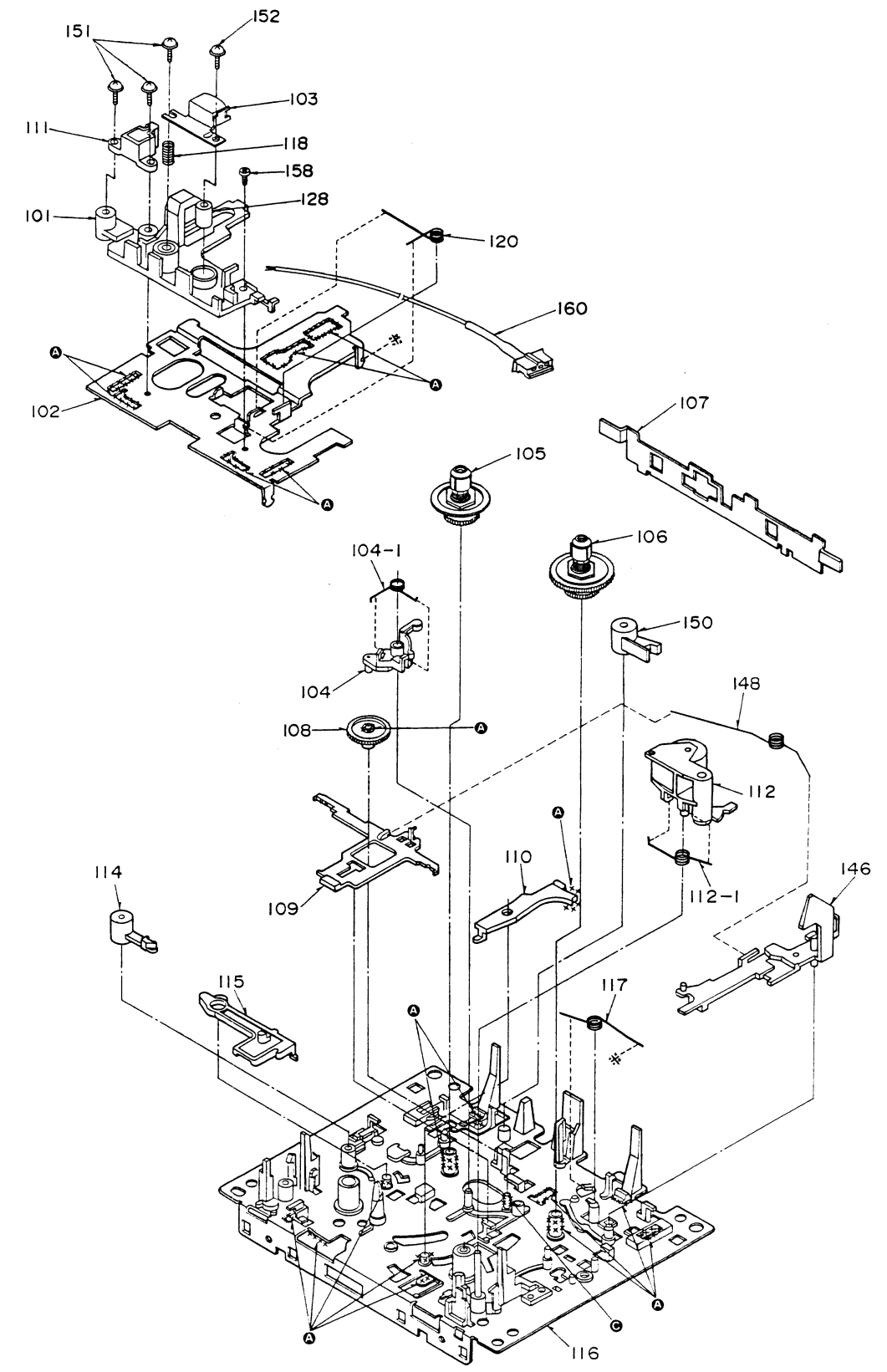


- Mechanical parts
- DECK 1

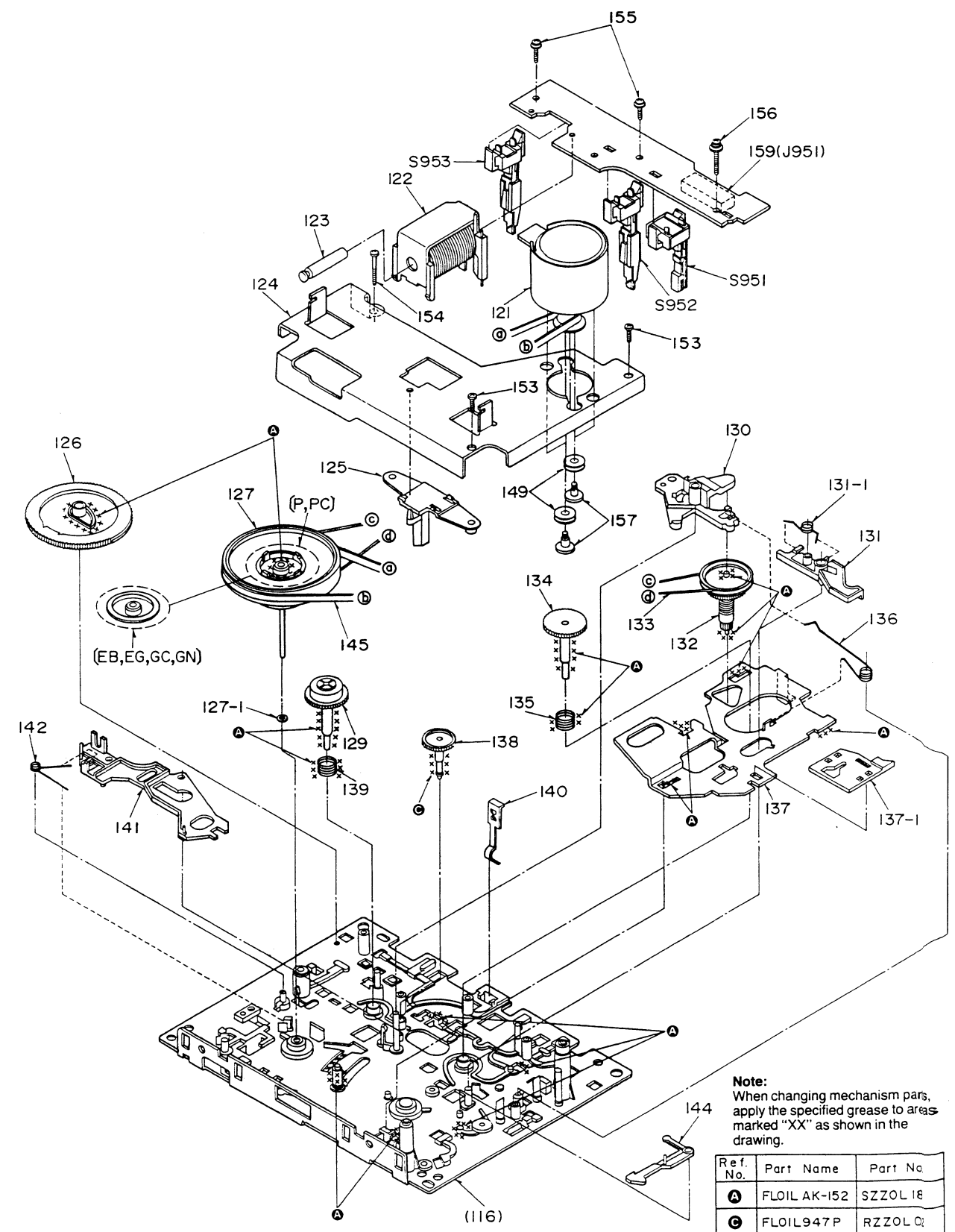
A  
B  
C  
D  
E  
F  
G

1 2 3 4 5 6 7 8 9

(Top view)



(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-I52	SZZOL 18
C	FLOIL947P	RZZOL C1

# REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST					
DECK1							
101	RMD5013ZD	HEAD ANGLE		146	RUB507ZD	EJECT ROD(R)	
102	RUA793YC	HEAD BASE		148	RUW144ZA	SPRING	
103	RJH4C35GYAM	PLAYBACK HEAD		149	RHG3032ZA	RUBBER CUSHION	
104	1UB0089ZA	ARM		150	RNL180ZB	DAMPER ARM	
104-1	RUW148ZA	SPRING		151	QHQ1361A	SCREW	
105	1DM0005ZA	REEL TABLE (R)		152	RHE5201ZA	SCREW	
106	1DM0017ZB	REEL TABLE (F)		153	XTN26+7J	SCREW	
107	RML0069-1	LEVER		154	RHE5203ZA	SCREW	
108	RDG5772ZC	GEAR		155	XTW2+8S	SCREW	
109	RUB508ZB	BRAKE ROD		156	XYC2+JF16	SCREW	
110	RUB506ZB	ROCK LEVER		157	RHD26002	SCREW	
111	RUG82ZA	DAMMY HEAD		158	XTN2+5F	SCREW	
112	1UB0087ZB	ARM		159	RJS7T7ZA	CONNECTOR(7P), J951	
112-1	RUW140ZC	SPRING		160	REX0060	LEAD WIRE BLOCK(3P)	
114	RNL1ZD	DAMPER ARM					
115	RUB503ZD	MAIN LEVER					
116	RZUAR300A	CHASSIS					
117	RUW142ZA	SPRING					
118	QBC1278A	SPRING					
120	RUW139ZA	SPRING					
121	RFM133ZA	DC MOTOR					
122	1UE0015ZB	PLUNGER					
123	RUB428ZE	MOVING IRON CORE					
124	RUL1030YA	ANGLE					
125	RMD5014ZC	ANGLE					
126	RDG5927ZG	MAIN GEAR					
127	1DW0037ZB	FLYWHEEL (F)	(P, PC)				
127	1DW0053ZB	FLYWHEEL (F)	(EB, EG, GC, GN)				
127-1	RNW139ZA	WASHER					
128	RHM278ZA	SPACER					
129	1DG0006ZB	REEL TABLE GEAR					
130	RUB513ZD	ARM					
131	1UB0091ZA	LEVER					
131-1	RUW146ZA	SPRING					
132	1DR0011ZB	MAIN PULLEY					
133	RDV90ZB	BELT					
134	RDG5769ZA	REEL TABLE GEAR					
135	RUQ111ZB	SPRING					
136	RUW145ZA	SPRING					
137	1UB0090ZA	ROD					
137-1	RUB512ZB	ROD					
138	RDG5773ZB	GEAR					
139	RUQ112ZA	SPRING					
140	RUS609ZC	TAPE PRESSURE SPRING					
141	RUB514ZC	LEVER					
142	RUW147ZA	SPRING					
144	RUB509ZA	LEVER					
145	RDV109ZA	CAPSTAN BELT					

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST		241	RUB514ZC	LEVER	
				242	RUW147ZA	SPRING	
				243	RUB515ZA	LEVER	
DECK2				244	RUB509ZA	LEVER	
201	RXQ0019	HEAD BLOCK (REC. /PLAYBACK)		245	RDV0015	CAPSTAN BELT	
202	RUA793ZF	HEAD BASE		249	RHG3032ZA	RUBBER CUSHION	
203	RZLAR300A	ROD		250	RNL180ZB	DAMPER ARM	
203-1	RUW143ZA	SPRING		251	REX0059	LEAD WIRE BLOCK (5P)	
204	1UB0089ZA	ARM		261	XTW2+6L	SCREW	
204-1	RUW148ZA	SPRING		263	XTN26+7J	SCREW	
205	1DM0018ZB	REEL TABLE (R)		264	RHE5203ZA	SCREW	
206	1DM0017ZB	REEL TABLE (F)		265	XTW2+8S	SCREW	
207	RML0069-1	LEVER		266	XYC2+JF16	SCREW	
208	RDG5772ZC	GEAR		267	RHD26002	SCREW	
209	RUB508ZB	BRAKE ROD		268	RJS1077ZA	CONNECTOR (10P), J971	
210	RUB506ZB	LEVER		269	RHD26003	SCREW	
211	1UB0088ZB	ARM (R)					
211-1	RUW141ZA	SPRING					
212	1UB0087ZB	ARM (F)					
212-1	RUW140ZC	SPRING					
213	RUB541ZB	EJECT ROD (L)					
214	RNL1ZD	DAMPER ARM					
215	RUB503ZD	MAIN LEVER					
216	RZUSX980	CHASSIS					
217	RUW142ZA	SPRING					
218	RUD105ZA	SPRING					
219	RUW167ZA	SPRING					
220	RUW139ZA	SPRING					
221	RFM133ZA	DC MOTOR					
222	1UE0015ZB	PLUNGER					
223	RUB428ZE	MOVING IRON CORE					
224	RUL1030XB	ANGLE					
225	RMD5014ZC	ANGLE					
226	RDG5927ZG	GEAR					
227	1DW0053ZB	FLYWHEEL (F)					
227-1	RNW139ZA	WASHER					
228	1DW0054ZB	FLYWHEEL (R)					
228-1	RNW138ZA	WASHER					
229	1DG0006ZB	REEL TABLE GEAR					
230	RUB513ZD	ARM					
231	1UB0091ZA	LEVER					
231-1	RUW146ZA	SPRING					
232	1DF0011ZB	MAIN PULLEY					
233	RDV90ZB	BELT					
234	RDG5769ZA	REEL TABLE GEAR					
235	RUQ111ZB	SPRING					
236	RUW145ZA	SPRING					
237	1UB0090ZA	ROD					
237-1	RUB512ZB	ROD					
238	RDG5773ZB	GEAR					
239	RUQ112ZA	SPRING					
240	RUS609ZC	TAPE PRESSURE SPRING					

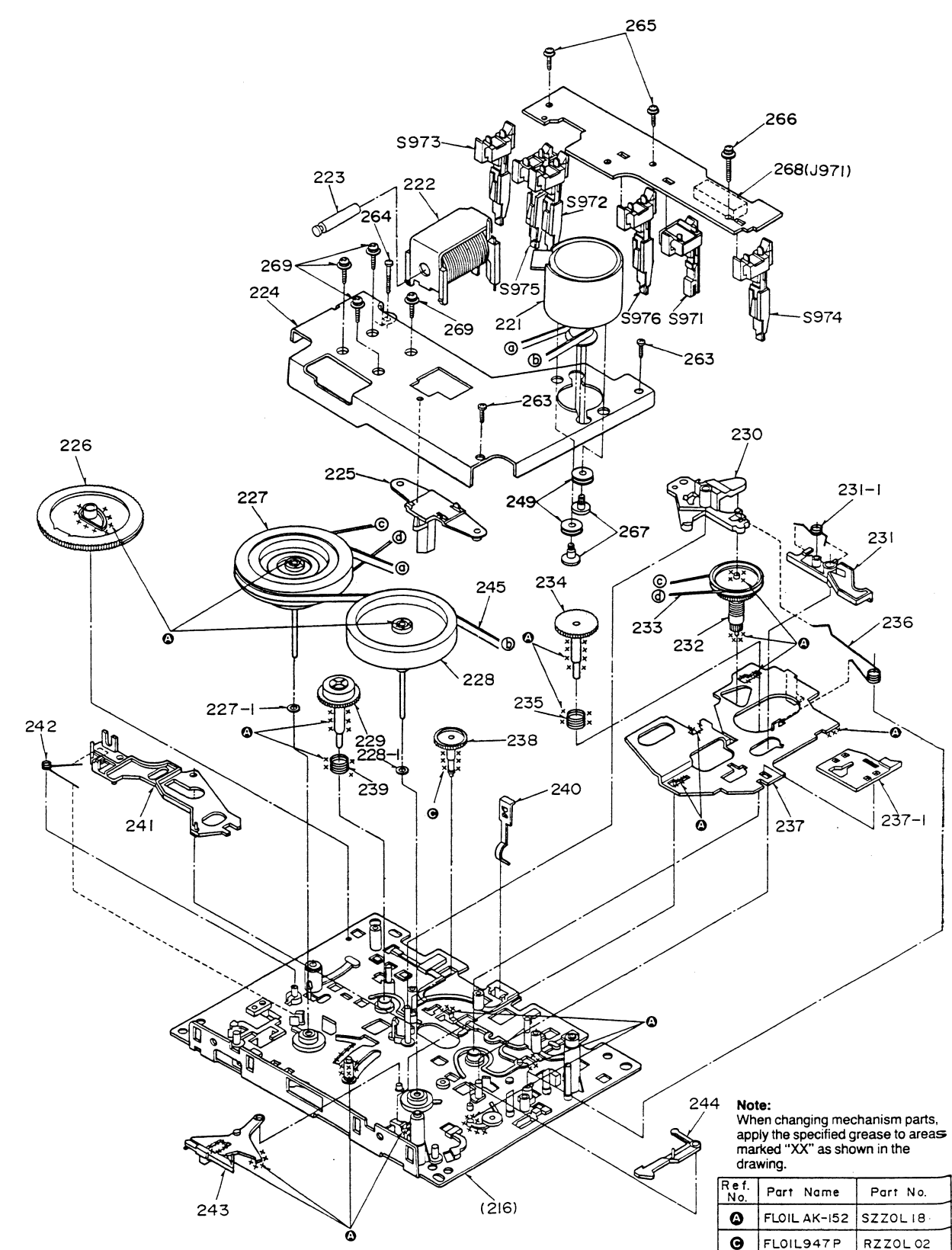
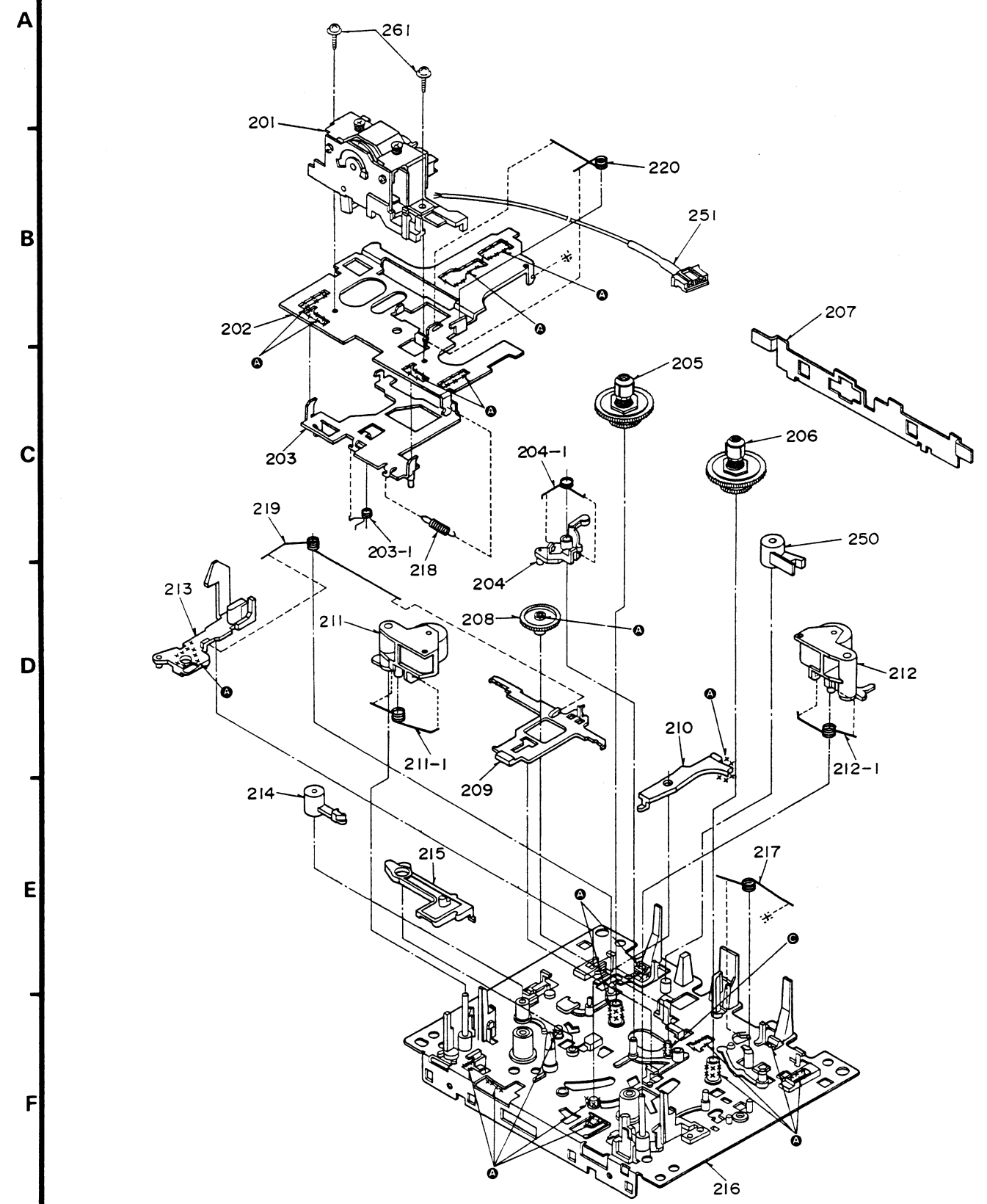
EXPLODED VIEWS

1 2 3 4 5 6 7 8 9

- Mechanical parts
- DECK 2

(Top view)

(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	FLOIL 947P	RZZOL 02

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

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)					
IC1	AN7384	ELECTRIC VOLUME		Q917	2SB621A-R	TRANSISTOR	$\Delta$
IC2	AN7351K	PLAYBACK/REC AMP		Q918	DTC114ESTP	TRANSISTOR	
IC3	MS218L	HEADPHONES AMP		Q919	2SB621A-R	TRANSISTOR	$\Delta$
IC4	MS218L	SIGNAL LEVEL DET.		Q920	DTC114ESTP	TRANSISTOR	
IC301	UPC1297CA	DOLBY HX PRO		Q921	2SA1309A-R	TRANSISTOR	
IC401	CXA1331S	DOLBY B/C NR		Q922	DTC114ESTP	TRANSISTOR	
IC901	MS0942-502SP	MICROCOMPUTER		Q923	2SB621A-R	TRANSISTOR	$\Delta$
IC951	LB9051A-WD	HALL (DECK1)		Q924	DTC114ESTP	TRANSISTOR	
IC971	LB9051A-WD	HALL (DECK2)				DIODE (S)	
		TRANSISTOR (S)		D1, 2	MA167	DIODE	
				D3, 4	MA165	DIODE	
				D301, 302	MA165	DIODE	
				D303	MTZJ8R2CTA	DIODE	
Q1-4	2SJ164PQRTA	TRANSISTOR		D601-607	1SR35200TB	DIODE	$\Delta$
Q5-8	2SA1309A-R	TRANSISTOR		D608	MA165	DIODE	
Q9-14	2SC3311A-Q	TRANSISTOR		D609	MTZJ6R2BTA	DIODE	
Q15, 16	2SD1450RSTA	TRANSISTOR		D610	MTZJ20DTA	DIODE	
Q301, 302	2SC3311A-Q	TRANSISTOR		D611	MTZJ30DTA	DIODE	
Q303	2SA1309A-R	TRANSISTOR		D612, 613	MTZJ8R2CTA	DIODE	
Q304	KSD471ACYGTA	TRANSISTOR		D617-619	1SR35200TB	DIODE	$\Delta$
Q305	2SB1357EFTA	TRANSISTOR		D901, 902	MA165	DIODE	
Q306, 307	DTA114YSTP	TRANSISTOR		D904-911	MA165	DIODE	
Q401-404	2SC3311A-Q	TRANSISTOR		D912, 913	MA165	DIODE	$\Delta$
Q601	2SA1309A-R	TRANSISTOR	$\Delta$	D914, 915	MA165	DIODE	
Q602	2SC3311A-Q	TRANSISTOR	$\Delta$	D916, 917	1SR35200TB	DIODE	
Q603	2SD2037EFTA	TRANSISTOR		D918, 919	MA165	DIODE	
Q604	2SB1357EFTA	TRANSISTOR		D922-927	MA165	DIODE	
Q605	KSD471ACYGTA	TRANSISTOR		D928	MTZJ5R1BTA	DIODE	
Q606	2SB621A-R	TRANSISTOR		D929, 930	MA165	DIODE	
Q607	2SC3311A-Q	TRANSISTOR		D951	RVD1SS133TA	DIODE (DECK1)	
Q608	2SA1309A-R	TRANSISTOR		D971	RVD1SS133TA	DIODE (DECK2)	
Q701	2SC3311A-Q	TRANSISTOR				VARIABLE RESISTOR (S)	
Q901	2SC3311A-Q	TRANSISTOR					
Q902	DTA114ESTP	TRANSISTOR		VR1-4	EVNDXAA00B24	PLAYBACK GAIN ADJ.	
Q903	DTC114ESTP	TRANSISTOR		VR5, 6	EVNDXAA00B14	OVERALL GAIN ADJ.	
Q904-906	DTA114ESTP	TRANSISTOR		VR301	EVNDXAA00B53	ERASE CURRENT ADJ.	
Q907	2SA1309A-R	TRANSISTOR		VR302, 303	EVNDXAA00B14	OVERALL FREQ. ADJ.	
Q908	2SB621A-R	TRANSISTOR		VR701	EVJ02FF02B15	REC LEVEL CONTROL	
Q909	DTC114ESTP	TRANSISTOR		VR702	EVJ02SF02G15	BALANCE	
Q910	2SC3311A-Q	TRANSISTOR		VR901-903	EVNDXAA00B53	TAPE SPEED ADJ.	
Q911, 912	DTC114ESTP	TRANSISTOR					
Q913	2SB621A-R	TRANSISTOR	$\Delta$			COIL (S)	
Q914	DTC114ESTP	TRANSISTOR					
Q915	2SA1309A-R	TRANSISTOR					
Q916	DTC114ESTP	TRANSISTOR		L1, 2	SLQX272-1YT	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
L3, 4	SLQX303-1KT	COIL		CN2P	SJT30643-V	CONNECTOR (6P)	
L5, 6	RLQB103JT-Y	COIL		CN2PA	RJS1A6603	CONNECTOR (3P)	
L301	SL09B4-K	COIL		CN2PB	RJS1A6603	CONNECTOR (3P)	
L302, 303	SL09B1-Z	COIL		CN3	SJSD1005	CONNECTOR (10P)	
L401, 402	QLM9Z10K	COIL		CN4	RJS1A6604	CONNECTOR (4P)	
		TRANSFORMER (S)		CN5	RJS7T4ZA	CONNECTOR (7P)	
				CN6	RJS1A6604	CONNECTOR (4P)	
T1	RTP1K4C008-V	POWER TRANSFORMER	(P, PC) $\Delta$	CN7-9	RJU003K010M1	SOCKET (10P)	
T1	RTP1K4E014-V	POWER TRANSFORMER	(EB, EG, GN) $\Delta$	CN10A	RJS1A6604	CONNECTOR (4P)	
T1	RTP1K4E015-V	POWER TRANSFORMER	(GC) $\Delta$	CN10B	RJS1A6603	CONNECTOR (3P)	
		OSCILLATOR (S)		CN11, 12	SJS50581BB	SOCKET (5P)	
				CP1	SJTD313	CONNECTOR (3P)	
				CP2	RJP5G18ZA	CONNECTOR (5P)	
X901	EF0GC4004A4	CERAMIC FILTER (4MHz)		CP7-9	RJU003K010M1	CONNECTOR (10P)	
		DISPLAY TUBE (S)		CP11, 12	SJT30548BB1	CONNECTOR (5P)	
						JACK (S)	
FL701	RSL0086-F	DISPLAY TUBE	$\Delta$				
		SWITCH (ES)					
				JK1	SJF3069N	TERMINAL BOARD	
				JK3	RJJ33T01	M3 JACK (BLACK)	
				JK4, 5	RJJ33TR01	M3 JACK (RED)	
S701	SSH1238	POWER	$\Delta$	JK701	SJSD16	AC INLET	(P, PC, GN) $\Delta$
S703	EVQ21405R	AUTO REC MUTE (DECK2)		JK701	SJS9236	AC INLET	(EB, EG, GN) $\Delta$
S704	EVQ21405R	STOP (DECK2)		JK702	SJS9331B	AC OUTLET	(P, PC) $\Delta$
S705	EVQ21405R	F. F. (DECK2)		JK703	SSR187-1	VOLTAGE SELECTOR	(GC) $\Delta$
S706	EVQ21405R	REW. (DECK2)		JK711	SJJ146B	HEADPHONES JACK	
S707	EVQ21405R	F. PLAYBACK (DECK2)					
S708	EVQ21405R	R. PLAYBACK (DECK2)				GND PART (S)	
S709	EVQ21405R	REC (DECK2)					
S710	EVQ21405R	PAUSE (DECK2)		E1	SNE1004-1	GND PLATE	
S711	EVQ21405R	SYNCHRO START		E3	SUSD165	GND SPRING	
S712	EVQ21405R	EDITING TAPE SPEED (X1)					
S713	EVQ21405R	EDITING TAPE SPEED (X2)				FLAT CABLE (S)	
S714	EVQ21405R	DOLBY NR B					
S715	EVQ21405R	DOLBY NR C		W2P	RWJ1806110QQ	FLAT CABLE (6P)	
S716	EVQ21405R	STOP (DECK1)		W3	RWJ5710200QQ	FLAT CABLE (10P)	
S717	EVQ21405R	F. F. (DECK1)		W4	RWJ1804160QQ	FLAT CABLE (4P)	
S718	EVQ21405R	REW. (DECK1)		W5	RWJ5707200QQ	FLAT CABLE (7P)	
S719	EVQ21405R	PLAYBACK (DECK1)		W6	RWJ1804160QQ	FLAT CABLE (4P)	
S721-723	EVQ21405R	REVERSE MODE		W10	RWJ1807300KQ	FLAT CABLE (7P)	
S724	EVQ21405R	COUNTER RESET2 (DECK2)		W701	RWJ1804040EE	FLAT CABLE (4P)	
S951	RSH1A89ZB-U	MODE (DECK1)					
S952	RSH1A90YB-U	HALF (DECK1)					
S953	RSH1A90YB-U	ATS (DECK1)					
S971	RSH1A89ZB-U	MODE (DECK2)					
S972	RSH1A90YB-U	HALF (DECK2)					
S973	RSH1A90YB-U	R. REC INH. (DECK2)					
S974	RSH1A90YB-U	F. REC INH. (DECK2)					
S975, 976	RSH1A90YB-U	ATS (DECK2)					
		CONNECTOR (S) AND SOCKET (S)					

## RESISTORS & CAPACITORS

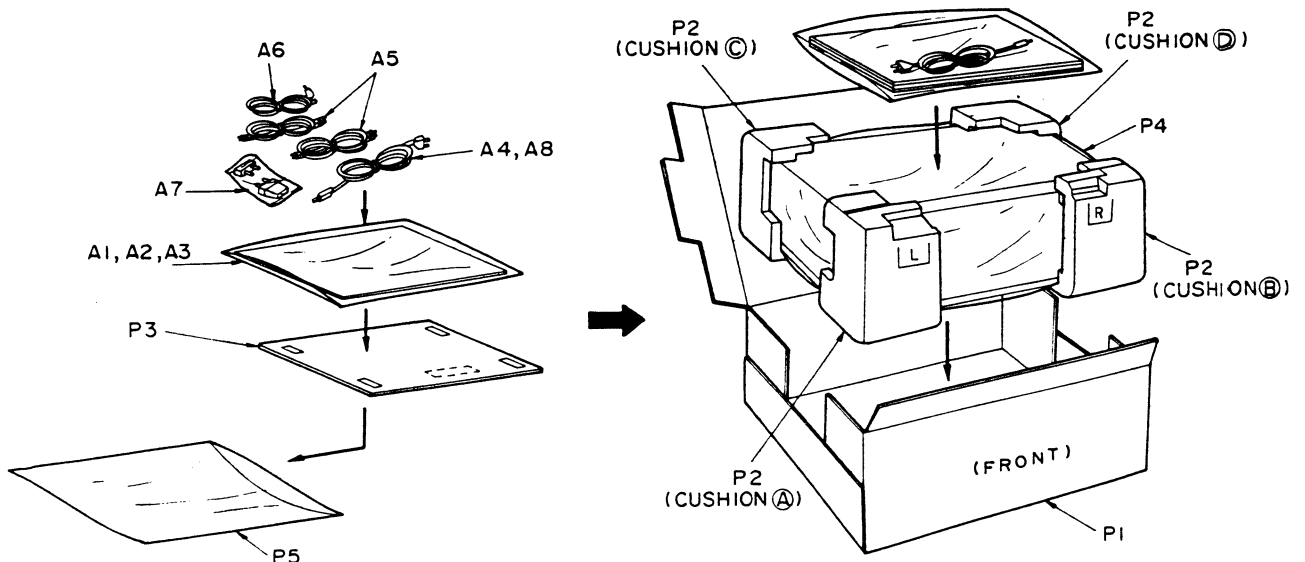
Notes : \* Capacity values are in microfarads ( $\mu\text{F}$ ) unless specified otherwise, P=Pico-farads ( $\text{pF}$ ) F=Farads (F)  
 \* Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R320	ERDS2TJ272T	1/4W 2.7K	R718	ERDS2TJ222	1/4W 2.2K
			R401-404	ERDS2TJ684	1/4W 680K	R719	ERDS2TJ332	1/4W 3.3K
			R405, 406	ERDS2TJ242	1/4W 2.4K	R720	ERDS2TJ472	1/4W 4.7K
R1. 2	ERDS2TJ394	1/4W 390K	R407, 408	ERDS2TJ562	1/4W 5.6K	R723	ERDS2TJ153	1/4W 15K
R3. 4	ERDS2TJ393	1/4W 39K	R409, 410	ERDS2TJ243T	1/4W 24K	R724, 725	ERDS2TJ102	1/4W 1K
R5. 6	ERDS2TJ183T	1/4W 18K	R411, 412	ERDS2TJ561	1/4W 560	R726, 727	ERDS2TJ562	1/4W 5.6K
R7. 8	ERDS2TJ225	1/4W 2.2M	R413, 414	ERDS2TJ682T	1/4W 6.8K	R901	ERDS2TJ472	1/4W 4.7K
R9. 10	ERDS2TJ332	1/4W 3.3K	R415, 416	ERDS2TJ562	1/4W 5.6K	R902	ERDS2TJ822	1/4W 8.2K
R11. 12	ERDS2TJ102	1/4W 1K	R417	ERDS2TJ151	1/4W 150	R903	ERDS2TJ472	1/4W 4.7K
R13. 14	ERDS2TJ332	1/4W 3.3K	R418	ERDS2TJ273	1/4W 27K	R904	ERDS2TJ122	1/4W 1.2K
R15. 16	ERDS2TJ561	1/4W 560	R603	ERDS2TJ472	1/4W 4.7K $\Delta$	R905, 906	ERDS2TJ103	1/4W 10K
R17. 18	ERDS2TJ101	1/4W 100	R604	ERDS2TJ472	1/4W 4.7K	R907, 908	ERDS2TJ472	1/4W 4.7K
R19. 20	ERDS2TJ103	1/4W 10K	R605	ERDS2TJ103	1/4W 10K	R910	ERDS2TJ222	1/4W 2.2K
R21. 22	ERDS2TJ225	1/4W 2.2M	R606	ERDS2TJ472	1/4W 4.7K $\Delta$	R911	ERDS2TJ392T	1/4W 3.9K
R23. 24	ERDS2TJ104	1/4W 100K	R607, 608	ERDS2TJ102	1/4W 1K	R912-914	ERDS2TJ103	1/4W 10K
R25-28	ERDS2TJ101	1/4W 100	R609.	ERD2FCVG150T	1/4W 15 $\Delta$	R915	ERDS2TJ473	1/4W 47K
R29. 30	ERDS2EJ121	1/4W 120	R610	ERD2FCVG180T	1/4W 18 $\Delta$	R916	ERDS2TJ222	1/4W 2.2K
R31. 32	ERDS2TJ273	1/4W 27K	R611, 612	ERDS2TJ101	1/4W 100	R917	ERDS2TJ122	1/4W 1.2K
R33. 34	ERDS2TJ183T	1/4W 18K	R613	ERD2FCVG330T	1/4W 33 $\Delta$	R918	ERDS2TJ472	1/4W 4.7K
R35. 36	ERDS2TJ394	1/4W 390K	R614	ERDS2TJ222	1/4W 2.2K $\Delta$	R919	ERDS2TJ223	1/4W 22K
R37. 38	ERDS2TJ272T	1/4W 2.7K	R615	ERDS2TJ101	1/4W 100	R920	ERDS2TJ392T	1/4W 3.9K
R39	ERDS2TJ223	1/4W 22K	R616	ERD2FCVG330T	1/4W 33 $\Delta$	R921	ERDS2TJ471	1/4W 470
R40	ERDS2TJ392T	1/4W 3.9K	R617	ERDS2TJ222	1/4W 2.2K	R922, 923	ERDS2TJ103	1/4W 10K
R41. 42	ERDS2TJ223	1/4W 22K	R618	ERDS2TJ181T	1/4W 180	R924	ERDS2TJ102	1/4W 1K
R43. 44	ERDS2TJ472	1/4W 4.7K	R619, 620	ERDS2TJ681	1/4W 680 $\Delta$	R925	ERDS2TJ105T	1/4W 1M
R45. 46	ERDS2TJ562	1/4W 5.6K	R621, 622	ERD2FCVG100T	1/4W 10 $\Delta$	R926	ERDS2TJ223	1/4W 22K
R47. 48	ERDS2TJ103	1/4W 10K	R623, 624	ERDS2TJ122	1/4W 1.2K $\Delta$	R927	ERDS2TJ472	1/4W 4.7K
R49. 50	ERDS2TJ332	1/4W 3.3K	R625-632	ERDS2TJ221	1/4W 220	R928-930	ERDS2TJ103	1/4W 10K
R51. 52	ERDS2TJ122	1/4W 1.2K	R633, 634	ERD2FCVG330T	1/4W 33 $\Delta$	R931-933	ERDS2TJ102	1/4W 1K
R53. 54	ERDS2TJ330	1/4W 33	R635	ERDS2TJ120T	1/4W 12 $\Delta$	R934	ERDS2TJ272T	1/4W 2.7K
R55. 56	ERDS2TJ562	1/4W 5.6K	R636	ERDS2TJ100	1/4W 10 $\Delta$	R935, 936	ERDS2TJ100	1/4W 10
R57. 58	ERDS2TJ152	1/4W 1.5K	R637	ERDS1FWJ220T	1/2W 22 $\Delta$	R937-941	ERDS2TJ472	1/4W 4.7K
R59. 60	ERDS2TJ272T	1/4W 2.7K	R701	ERDS2TJ821	1/4W 820	R942	ERDS2TJ822	1/4W 8.2K
R61. 62	ERDS2TJ103	1/4W 10K	R702	ERDS2TJ102	1/4W 1K	R943	ERDS2TJ223	1/4W 22K $\Delta$
R63. 64	ERDS2TJ104	1/4W 100K	R703	ERDS2TJ122	1/4W 1.2K	R944	ERDS2TJ821	1/4W 820
R65. 66	ERDS2TJ473	1/4W 47K	R704	ERDS2TJ152	1/4W 1.5K	R945	ERDS2TJ221	1/4W 220
R67. 68	ERDS2TJ124T	1/4W 120K	R705	ERDS2TJ182	1/4W 1.8K	R946	ERDS2TJ103	1/4W 10K
R69. 70	ERDS2TJ220T	1/4W 22	R706	ERDS2TJ222	1/4W 2.2K	R947	ERDS2TJ392T	1/4W 3.9K
R71. 72	ERDS2TJ152	1/4W 1.5K	R707	ERDS2TJ332	1/4W 3.3K	R948	ERDS2TJ184T	1/4W 180K
R301	ERDS2TJ1R0	1/4W 1.0	R708	ERDS2TJ472	1/4W 4.7K	R949	ERDS2TJ103	1/4W 10K
R302. 303	ERDS2TJ183T	1/4W 18K	R709	ERDS2TJ682T	1/4W 6.8K	R950	ERDS2TJ223	1/4W 22K $\Delta$
R304. 305	ERDS2TJ100	1/4W 10	R710	ERDS2TJ123	1/4W 12K	R951	ERDS2TJ821	1/4W 820
R306	ERDS2TJ471	1/4W 470	R711	ERDS2TJ223	1/4W 22K	R952	ERDS2TJ223	1/4W 22K $\Delta$
R307. 308	ERDS2TJ102	1/4W 1K	R712	ERDS2TJ683	1/4W 68K	R953	ERDS2TJ821	1/4W 820
R311. 312	ERDS2TJ101	1/4W 100	R713	ERDS2TJ821	1/4W 820	R954	ERDS2TJ103	1/4W 10K
R313. 314	ERDS2TJ154	1/4W 150K	R714	ERDS2TJ102	1/4W 1K	R955	ERDS2TJ332	1/4W 3.3K
R315. 316	ERDS2TJ153	1/4W 15K	R715	ERDS2TJ122	1/4W 1.2K	R956	ERDS2TJ103	1/4W 10K
R317. 318	ERDS2TJ102	1/4W 1K	R716	ERDS2TJ152	1/4W 1.5K	R957	ERDS2TJ392T	1/4W 3.9K
R319	ERDS2TJ182	1/4W 1.8K	R717	ERDS2TJ182	1/4W 1.8K	R958	ERDS2TJ184T	1/4W 180K



Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R959	ERDS2TJ103	1/4W 10K	C39, 40	ECEA1HKAR47B	50V 0.47U	C401, 402	ECKT1H122KB	50V 1200P
R960	ERDS2TJ223	1/4W 22K △	C41, 42	ECQB1H153JF3	50V 0.015U	C403, 404	ECKD1H152KB	50V 1500P
R962	ERDS2TJ223	1/4W 22K	C43, 44	ECEA1EKA4R7B	25V 4.7U	C405-408	ECQB1H222JF3	50V 2200P
R963	ERDS2TJ562	1/4W 5.6K	C45, 46	ECBT1H561KB5	50V 560P	C409, 410	ECEA1HUR56B	50V 0.56U
R965	ERDS2TJ153	1/4W 15K	C47, 48	ECKR2H101KB5	500V 100P	C411, 412	ECEA1HKAR33B	50V 0.33U
R966	ERDS2TJ821	1/4W 820	C49, 50	ECQV1H104JZ3	50V 0.1U	C413, 414	ECEA1EKA4R7B	25V 4.7U
R967	ERDS2TJ563	1/4W 56K	C51, 52	ECEA1AU101	10V 100U	C415, 416	ECEA1CKA100B	16V 10U
R968	ERDS2TJ272T	1/4W 2.7K	C53, 54	ECBT1H391KB5	50V 390P	C601	ECKR2H682PE	500V 6800P △
R969, 970	ERDS2TJ472	1/4W 4.7K	C55, 56	ECBT1C472KR5	16V 4700P	C603, 604	ECA1EM102B	25V 1000U △
R971	ERDS2TJ152	1/4W 1.5K	C57, 58	ECQB1H153JF3	50V 0.015U	C605	ECEA1EU222B	25V 2200U △
R972	ERDS2TJ103	1/4W 10K	C61, 62	ECQB1H153JF3	50V 0.015U	C606	ECKR2H682PE	500V 6800P △
			C301	ECQP1153JZ	100V 0.015U	C607, 608	ECEA1AU471	10V 470U
		CAPACITORS	C302	ECEA1EKA4R7B	25V 4.7U	C609, 610	ECKR1H103ZF5	50V 0.01U
			C303	ECKR1H392KB5	50V 3900P	C612	ECA1HM470B	50V 47U
C1-4	ECEA1HKA010B	50V 1U	C304, 305	ECKW1H222KB5	50V 2200P	C613, 614	ECKR1H103ZF5	50V 0.01U
C5, 6	ECEA1CKA220B	16V 22U	C306	ECKD1H682KB	50V 6800P	C615, 616	ECEA1VU220	35V 22U △
C7, 8	ECEA1CKA100B	16V 10U	C307	ECKR1H103ZF5	50V 0.01U	C617, 618	ECKR1H103ZF5	50V 0.01U
C9, 10	ECBT1H561KB5	50V 560P	C308	ECEA1AU221	10V 220U	C619, 620	ECA1AM102B	10V 1000U
C11, 12	ECBT1H102KB5	50V 1000P	C309	ECKR1H103ZF5	50V 0.01U	C621, 622	ECEA1CKA470B	16V 47U
C13, 14	ECEA1AU101	10V 100U	C310	ECKR1H472KB5	50V 4700P	C623, 624	ECBT1E103ZF	25V 0.01U
C15, 16	ECQB1H822JF3	50V 8200P	C311	ECKR1H103ZF5	50V 0.01U	C625, 626	ECKR1H103ZF5	50V 0.01U
C17-20	ECEA1EKA4R7B	25V 4.7U	C313, 314	ECKT1H223ZF	50V 0.022U	C631	ECEA1EU470	25V 47U
C21, 22	ECBT1H471KB5	50V 470P	C315, 316	ECKR2H821KB5	500V 820P	C701	ECKR1H103ZF5	50V 0.01U
C23	ECBT1H102KB5	50V 1000P	C317, 318	ECBT1H121KB5	50V 120P	C702	ECBT1E103ZF	25V 0.01U
C24	ECEA1AU101	10V 100U	C319, 320	ECQV1H473JZ3	50V 0.047U	C901	ECA0JM222B	6.3V 2200U
C25, 26	ECQB1H472JF3	50V 4700P	C321, 322	ECQB1H223JF3	50V 0.022U	C902, 903	ECKR1H103ZF5	50V 0.01U
C27, 28	ECQB1H223JF3	50V 0.022U	C323, 324	ECQB1H103JF3	50V 0.01U	C904	ECEA1EKA4R7B	25V 4.7U
C29, 30	ECQB1H103JF3	50V 0.01U	C325, 326	ECKT1H122KB	50V 1200P	C905	ECEA1HKA010B	50V 1U
C31, 32	ECQB1H223JF3	50V 0.022U	C327	ECEA1CKA100B	16V 10U	C906	ECEA1CKA100B	16V 10U
C33, 34	ECQV1H563JZ3	50V 0.056U	C328, 329	ECCF1H220K	50V 22P	C911	ECEA1AU101	10V 100U
C37, 38	ECBT1H181KB5	50V 180P	C331	ECKR1H103ZF5	50V 0.01U			

PACKING



<CUSHION (A), (B), (C), (D) Part No.: RPN0296>