

Service Manual

Stereo Double Cassette Deck

Cassette Deck

RS-TR313

Color

(K) Black Type



Areas

Country Code	Area	Color
(P)	U.S.A.	(K)
(PC)	Canada.	
(E)	Continental Europe.	
(EB)	Great Britain.	
(EG)	F.R. Germany and Italy.	
(GC)	Asia, Latin America, Middle Near East and Africa.	
(GN)	Oceania.	
(PX)	Far East-PX	

RS-TR165 MECHANISM SERIES (AR300)

SPECIFICATIONS

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
(deck 1) Play	Permalloy head
(deck 2) Rec/Play	Permalloy head
Erasing	Double-gap ferrite head
Motors	
(deck 1) Capstan/reel table drive	DC servo motor
(deck 2) Capstan/reel table drive	DC servo motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speed	4.8 cm/sec. (1 7/8 ips)
Frequency response (w/o Dolby NR)	
NORMAL	20 Hz~17 kHz
	40 Hz~15 kHz (±3 dB)
CrO ₂	20 Hz~17 kHz
	40 Hz~15 kHz (±3 dB)
METAL	20 Hz~18 kHz
	40 Hz~16 kHz (±3 dB)
S/N (signal level=max recording level, CrO ₂ type tape)	
Dolby C NR on	74 dB (CCIR)
Dolby B NR on	66 dB (CCIR)
Dolby NR off	56 dB (A weighted)
Wow and flutter	0.1% (WRMS)
Fast forward and rewind time:	
	Approx. 110 seconds with C-60 cassette tape

Input sensitivity and impedance

LINE 60 mV/47 kΩ

Output voltage and impedance

LINE 400 mV/800 Ω

HEADPHONES 30 mV/8 Ω

LOAD IMPEDANCE 8 Ω~600 Ω

■ GENERAL

Power consumption 17 W

Power supply AC 60 Hz, 120 V

Dimensions (W×H×D) 430×136×290 mm

(16 1/16"×5 3/8"×11 1/32")

Weight 4.7 kg (10.4 lb.)

Notes:

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

***Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.**

"Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

***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

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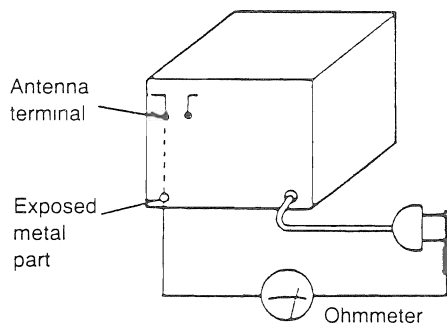
■ SAFETY PRECAUTION (This “safety precaution” is applied only in U.S.A.)

- 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

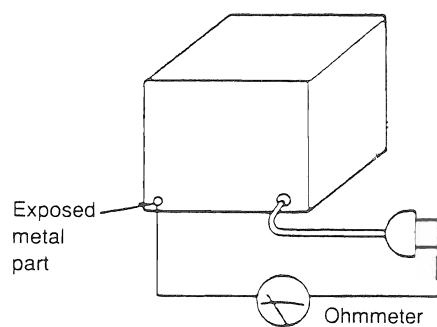
- 1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
- 2. Turn on the power switch.
- 3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment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

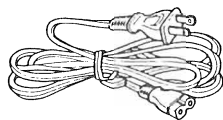


(Fig. B)

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

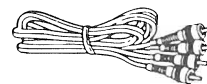


- AC power supply cord (polarized) 1 pc.
- (SJA175-1) (P)
- (SJA175) (PC)
- (SFDAC05E03)..... (E, EG)
- (SJA193-1)(EB)
- (SJA173-1) (GN)
- (RJA0004)(GC, PX)



- Stereo mini cables (SJP2257T) 2 pcs.

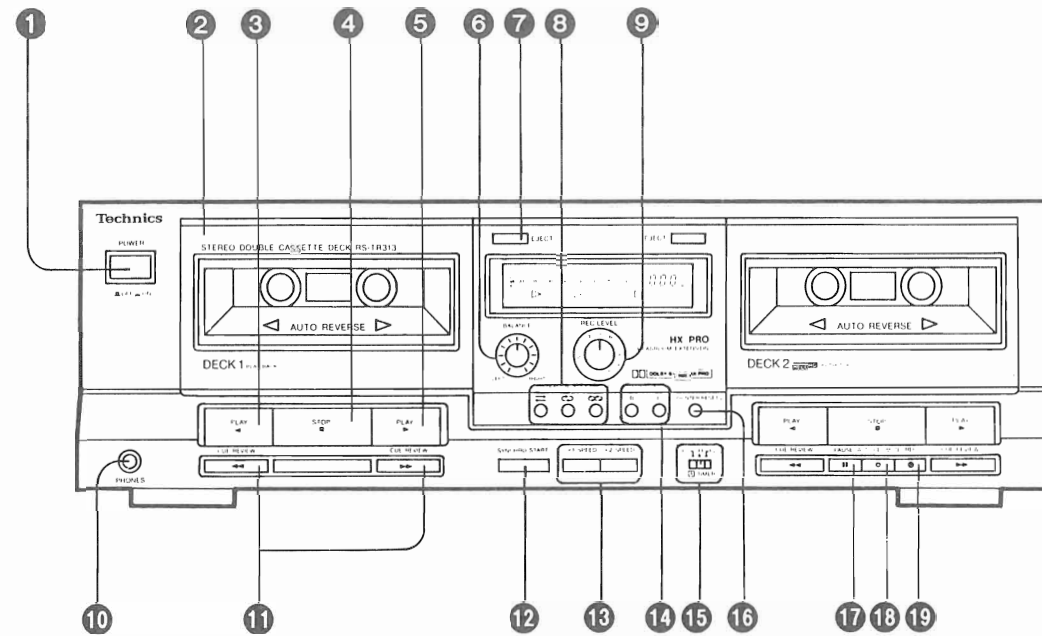
- For remote control cable 1
- For synchro edit cable 1



- Stereo connection cables (SJP2249-3) 2 pcs.

- AC plug adaptor 1 pc.
- (For GC, PX areas only)

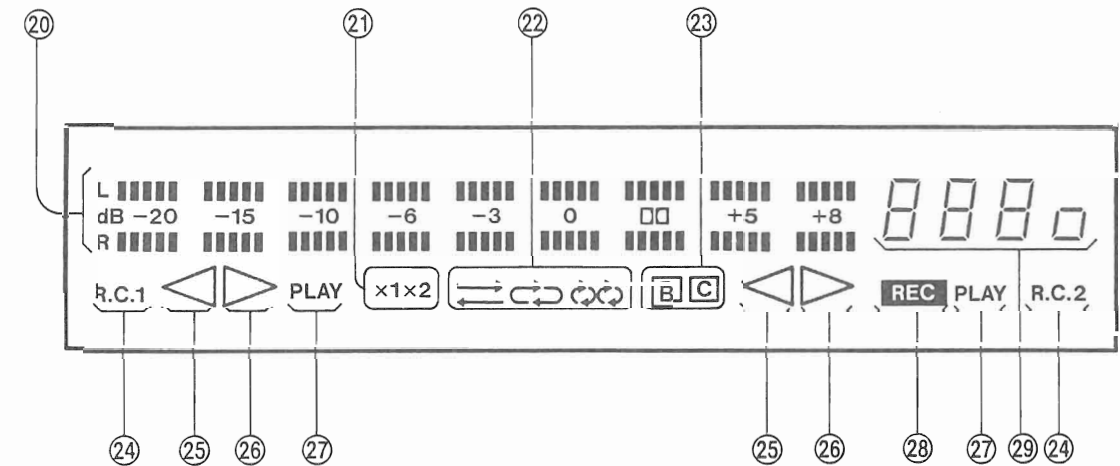
■ LOCATION OF CONTROLS



● Controls common to both tape decks/Controls applicable to tape deck 1 and/or 2

- 1 Power switch (POWER)**
Press (■) to switch the power on.
Press again (■) to switch the power off.
- 2 Cassette holder**
- 3 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.)
- 4 Stop button (■ STOP)**
This button is used to stop the tape movement.
- 5 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.)
- 6 Recording balance control (BALANCE)**
This control is used to balance the left and right sound levels of deck 2 during recording.
- 7 Eject button (EJECT)**
This button is used to open the cassette holder.
- 8 Reverse-mode selectors (REVERSE MODE)**
These selectors are used for selection of the reverse mode (for either playback or recording).
- 9 Recording-level control (REC LEVEL)**
This control is used to regulate the recording level of deck 2.
- 10 Headphones jack (PHONES)**
- 11 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.
- 12 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).
- 13 Edit-recording tape-speed buttons (×1 SPEED, ×2 SPEED)**
These buttons are used to select the recording speed during edit-recording.
- 14 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.
- 15 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.
("off" position) (rec/off/play)
- 16 Tape counter reset button (COUNTER RESET 2)**
This button is used to reset the tape counter indication to "000".
- 17 Pause button (|| PAUSE)**
This button is used to temporarily stop the tape playback or recording of deck 2 only.
- 18 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.
- 19 Record button (● REC)**
This button is used to set deck 2 to the recording stand-by mode.

● Display Section



● Indicators common to both tape decks

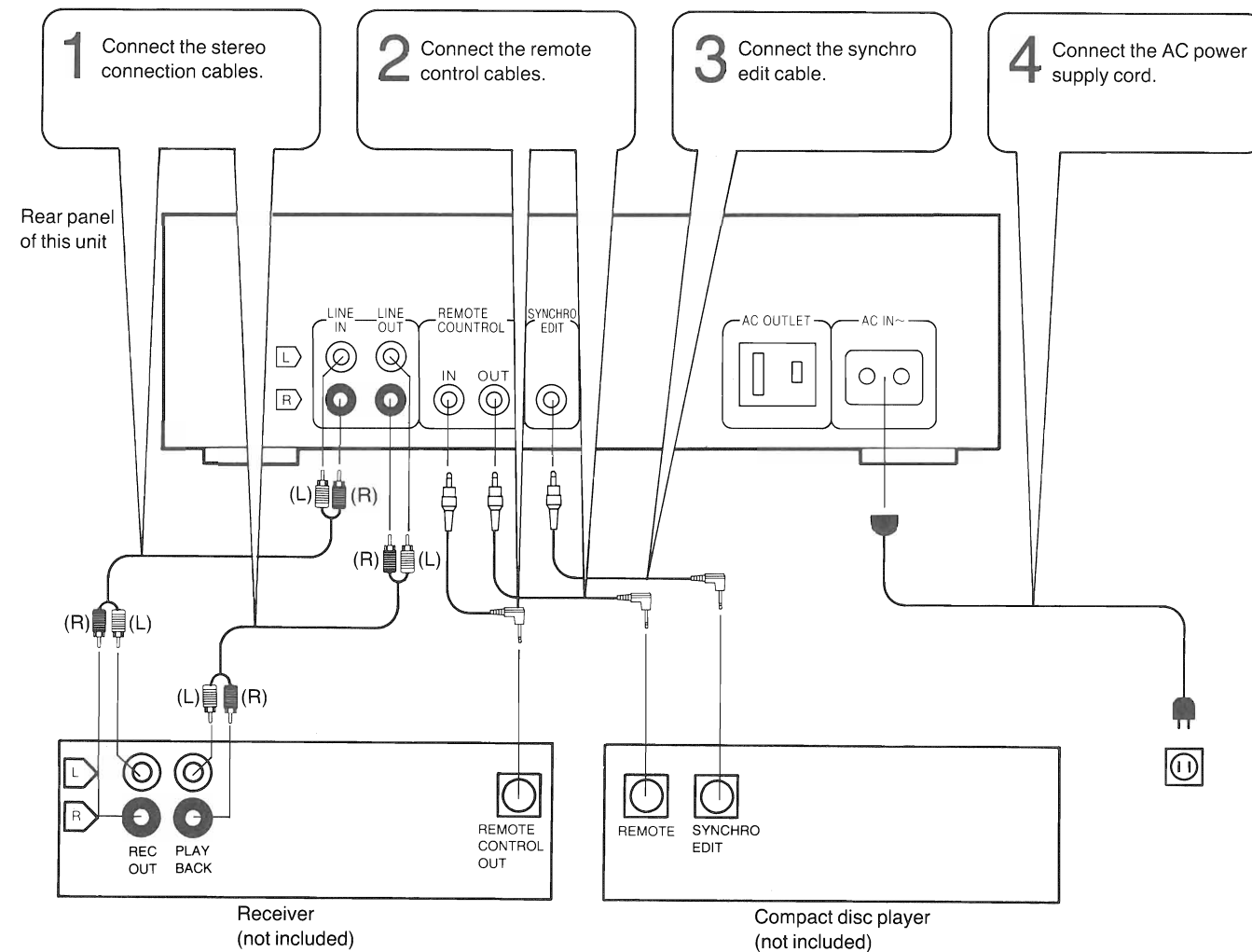
- 20 Input level meter**
During playback, this meter indicates the level of the recorded sound.
During recording, it indicates the level being recorded, adjusted by the recording-level controls.
- 21 Edit-recording tape-speed indicators (×1, ×2)**
One of these indicators illuminates to show which of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

- 24 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.
- 25 Reverse-side indicator (◀)**
Illuminates during playback or recording (of deck 2 only), to indicate that side "B" of the tape is being used.
- 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 Recording indicator (REC)**
Illuminates to indicate that deck 2 is in the recording stand-by mode or is recording.
- 28 Forward-side indicator (▶)**
Illuminates during playback or recording (of deck 2 only), to indicate that side "A" of the tape is being used.
- 29 Tape counter**
Indicates the amount of tape movement separately for deck 2. The least significant digit indicates tape movement.

■ CONNECTIONS

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



- 1 Connect the stereo connection cables (included) to the REC OUT and PLAYBACK terminals of the amplifier or 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 amplifier or 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.

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

"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.

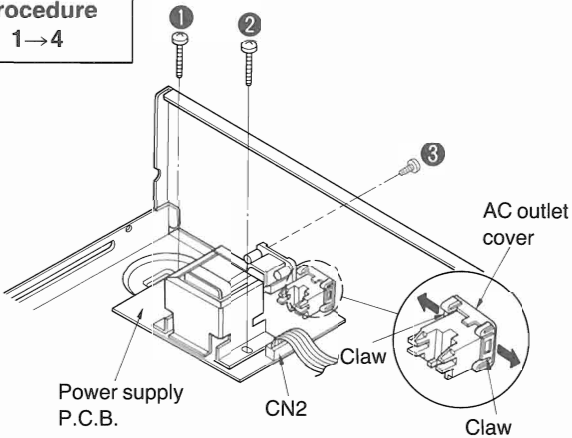
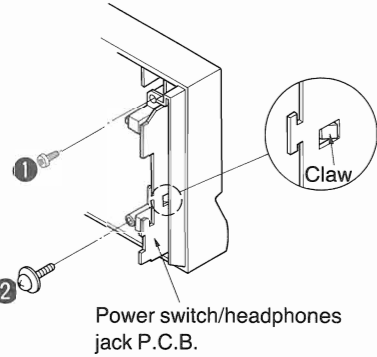
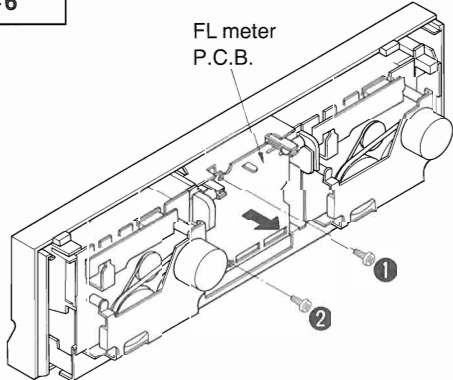
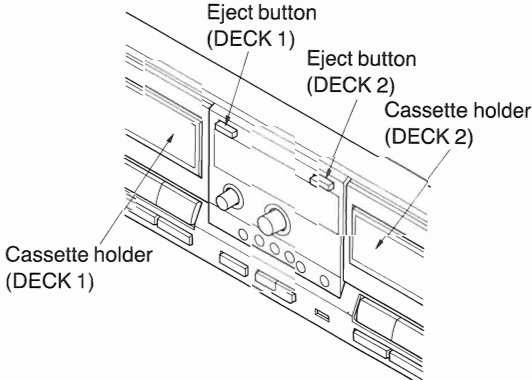
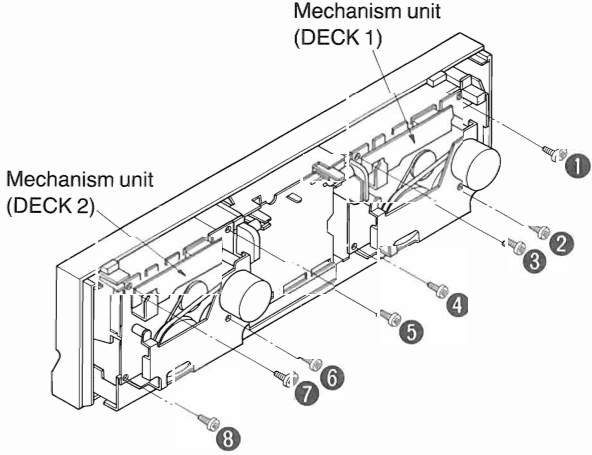
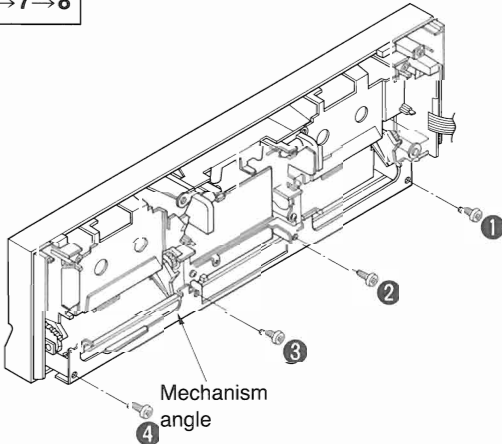
If this occurs, leave as much space as possible between the units, or place them where there is the least amount of "hum".

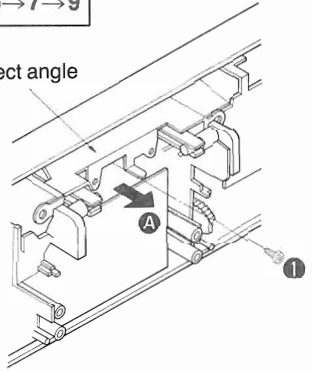
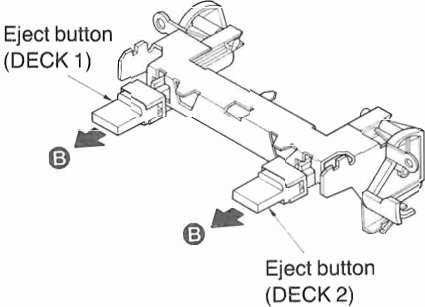
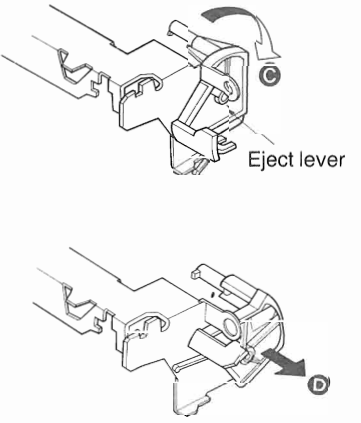
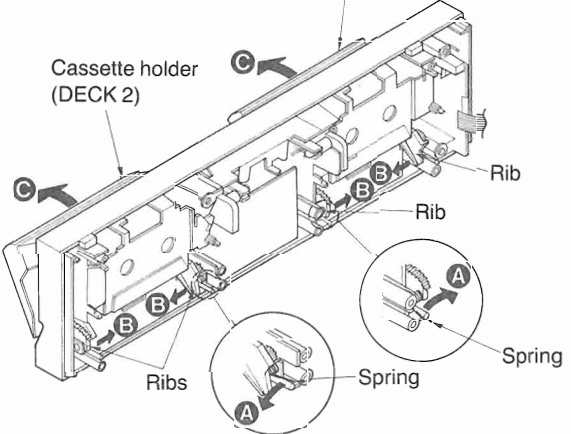
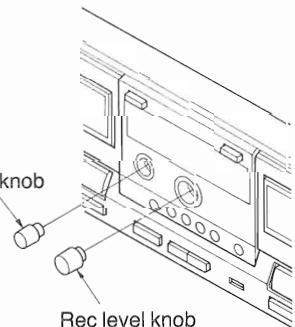
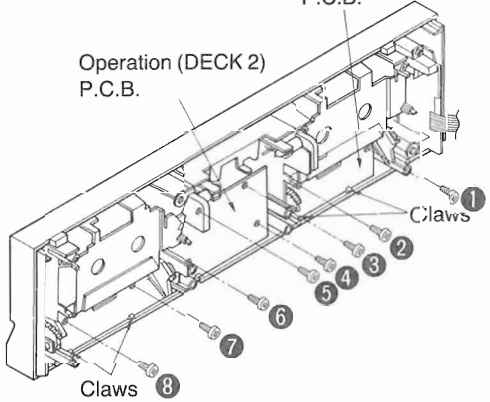
■ DISASSEMBLY INSTRUCTIONS

"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
Procedure 1	• Remove the 6 screws (1~6).	Procedure 1→2	
Ref. No. 3	Removal of the Main P.C.B.		
Procedure 1→2→3	1. Remove the 6 screws (1~6). 2. Remove the 1 flat cable (CN13).		1. Remove the 5 screws (1~5). 2. Remove the 2 connectors (CP1, CP2). 3. Remove the 5 flat cables (CN3, CN4, CN5, CN6, CN10). 4. Remove the front panel in the direction of the arrow.
			How to remove the Flat Cable • Pull out the flat cable while pressing the connector. (CN3, CN5) 1. Lift the connector. 2. Pull out the flat cable. (CN4, CN6, CN10)

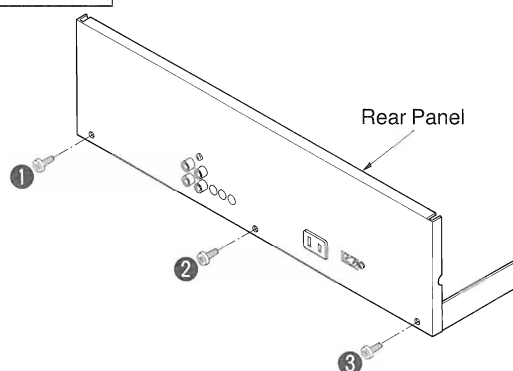
Ref. No. 4	Removal of the Power Supply P.C.B.	Ref. No. 5	Removal of the Power Switch Headphones Jack P.C.B.
Procedure 1→4	 1. Remove the 1 flat cable (CN2). 2. Remove the 3 screws (①~③). 3. Release the 2 claws of the AC outlet cover. (P, PC areas only.)	Procedure 1→2→5	 1. Remove the 2 screws (①, ②). 2. Release the 1 claw.
Ref. No. 6	Removal of the FL Meter P.C.B.	Ref. No. 7	Removal of the Mechanism Units (DECK 1, DECK 2)
Procedure 1→2→6	 1. Remove the 2 screws (①, ②). 2. Remove the FL meter P.C.B. in the direction of the arrow.	Procedure 1→2→7	■ Mechanism Unit (DECK 1) 1. Press the eject button and open the cassette holder. 2. Remove the 4 screws (①~④). ■ Mechanism Unit (DECK 2) 1. Press the eject button and open the cassette holder. 2. Remove the 4 screws (⑤~⑧). 
Ref. No. 8	Removal of the Mechanism Angle	 ● Remove the 4 screws (①~④).	
Procedure 1→2→6→7→8			

Ref. No. 9	Removal of the Eject Angle, Eject Buttons, and Eject Lever	Eject angle  Eject button (DECK 1) Eject button (DECK 2)  Eject lever  1. Remove the 1 screw (1). 2. Pull out the eject angle in the direction of the arrow A. 3. Pull out the eject buttons in the direction of the arrow B. 4. Turn the eject lever in the direction of the arrow C, and remove the eject lever in the direction of the arrow D.
Ref. No. 10 Procedure 1→2→6→7 →8→10	Removal of the Cassette Holder (DECK 1, DECK 2)	 Cassette holder (DECK 1) Cassette holder (DECK 2) Damper gear (L) Damper gear (R) Rib Spring Ribs 1. Remove the 2 screws (1, 2). 2. Remove the damper gear (L) and damper gear (R). 3. Remove the spring in the direction of the arrow A. 4. Remove the ribs in the direction of the arrow B. 5. Remove the cassette holder in the direction of the arrow C.
Ref. No. 11 Procedure 1→2→6→7 →8→10→11	Removal of the Operation (DECK 1) P.C.B. and Operation (DECK 2) P.C.B.	Balance knob Rec level knob  Operation (DECK 1) P.C.B. Operation (DECK 2) P.C.B. Claws Claws  1. Remove the balance knob and rec level knob. 2. Remove the 8 screws (1~8). 3. Release the 4 claws.

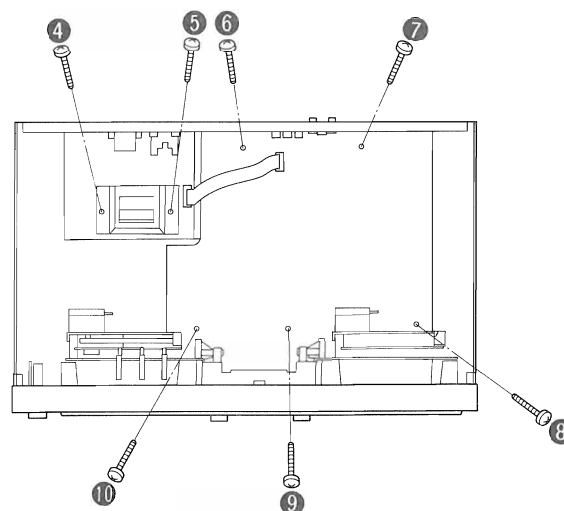
Ref. No. 12	How to check the Main P.C.B.
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Procedure
 1→12

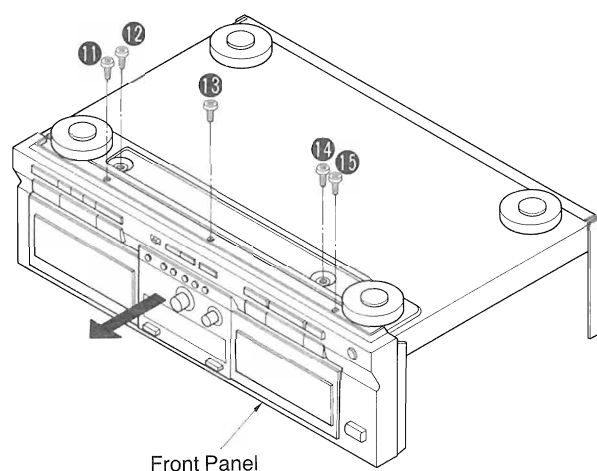
- When checking the soldered surfaces of main P.C.B. and replacing the parts, do as show.



1. Remove the 3 screws (1~3).

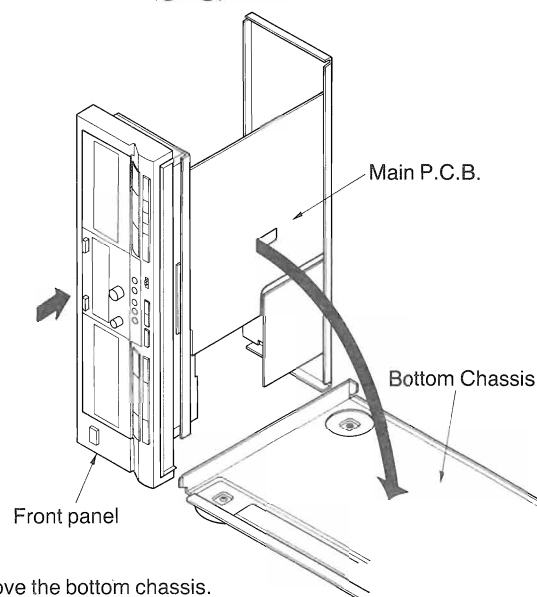


2. Remove the 7 screws (4~10).



3. Remove the 5 screws (11~15).

4. Remove the front panel in the direction of the arrow.

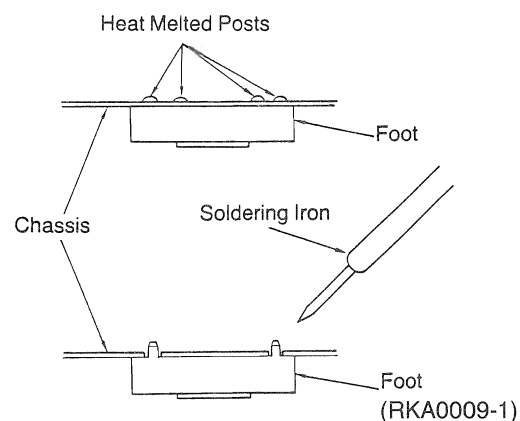


5. Remove the bottom chassis.

6. Reinstall the front panel to the main P.C.B.

●Replacement of the Foot.

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



MEASUREMENTS AND ADJUSTMENTS

Measurement Condition

- Rec. level control; Maximum
- Timer switch; Off
- Reverse-mode selector switch; $\longleftrightarrow$
- 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

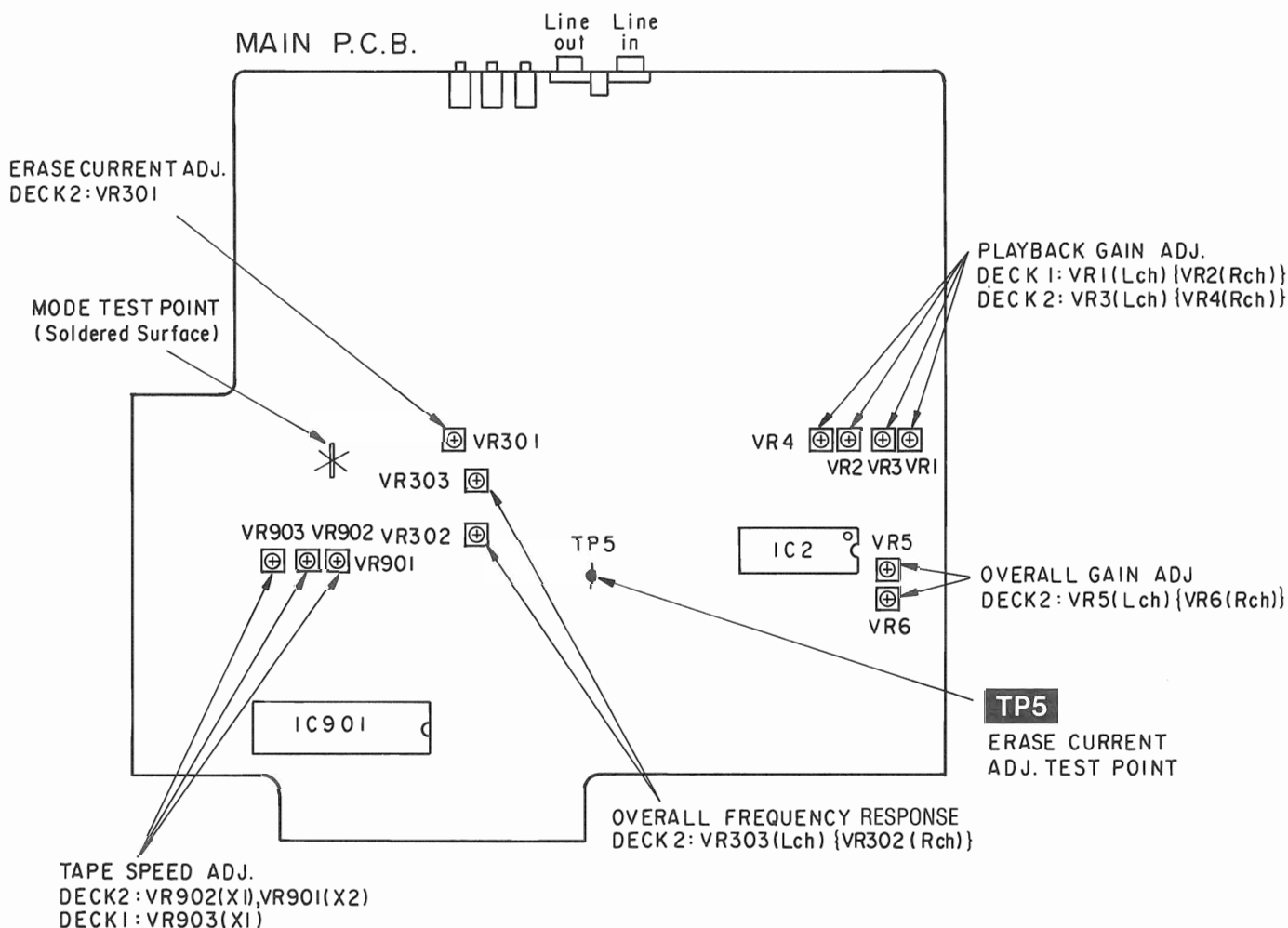
- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)

Test tape

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

- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment
Normal reference blank tape; QZZCRA
CrO₂ reference blank tape; QZZCRX
Metal reference blank tape; QZZCRZ

Adjustment Points



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

1. Playback the azimuth adjustment portion (8 kHz, -20 dB) 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.

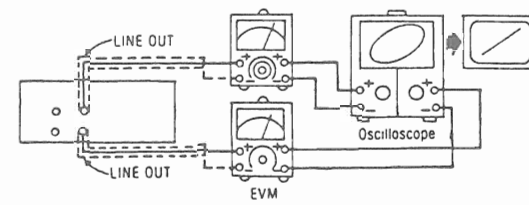


Fig. 1

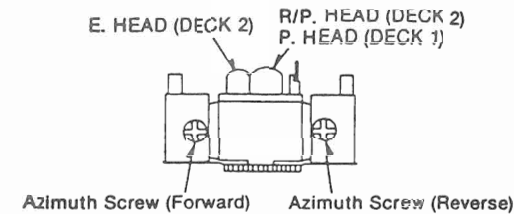


Fig. 2

TAPE SPEED ADJUSTMENT (DECK 2/1) (FWD)**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=VR903 and Deck 2=VR902 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 2=VR901 so that the output is within the standard value.

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

Standard value: 3000 ± 15 Hz (Normal), 6000 ± 630 Hz (High)

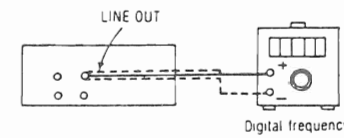


Fig. 3

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

1. Playback the gain adjusted portion (315 Hz, 0 dB) 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 ± 0.5 dB

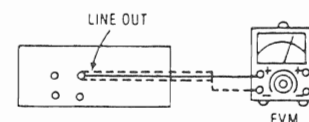


Fig. 4

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

1. Playback the frequency response portion (315 Hz, 12.5 kHz ~ 63 Hz, -20 dB) 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.

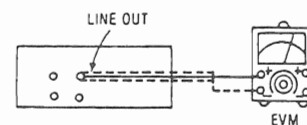


Fig. 5

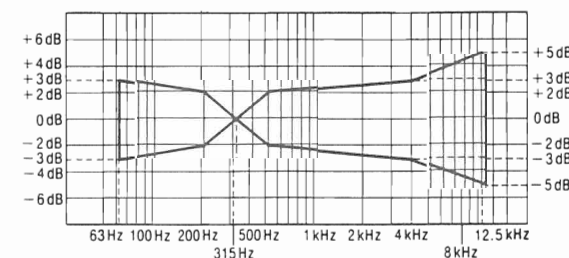


Fig. 6

ERASE CURRENT ADJUSTMENT (DECK 2) (FWD)

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

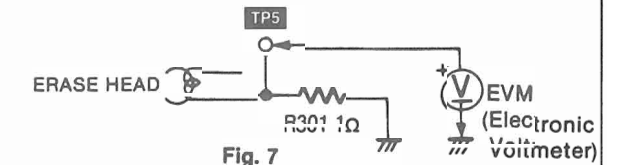


Fig. 7

OVERALL FREQUENCY RESPONSE (DECK 2) (FWD)

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record Pause mode.
2. Apply a reference input signal (1 kHz, -24 dB) through an attenuator.
3. Attenuate the signal by 20 dB and adjust the frequency from 50 Hz ~ 10 kHz.
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 (1 kHz).
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 CrO₂ tape (QZZCRX) and the Metal tape (QZZCRZ) increasing the frequency range to 12.5 kHz (50 Hz ~ 12.5 kHz).
8. Assure that the level is within the range shown in Fig. 9.

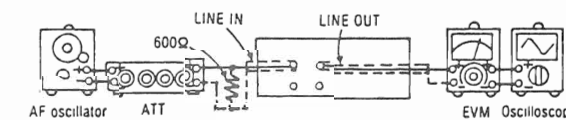


Fig. 10

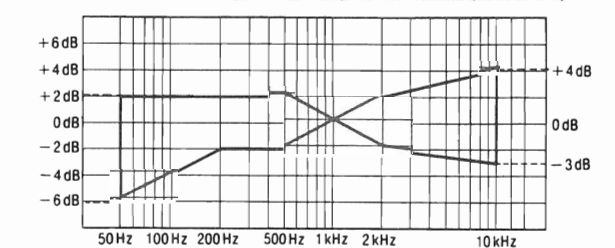
Normal Overall frequency response chart (NR OUT)

Fig. 8

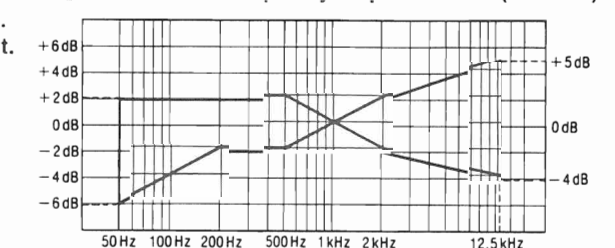
CrO₂/Metal Overall frequency response chart (NR OUT)

Fig. 9

OVERALL GAIN ADJUSTMENT (DECK 2) (FWD)

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record pause mode.
2. Apply a reference input signal (1 kHz, -24 dB). Attenuate the output so that its level becomes 0.4 V.
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 ± 0.5 dB

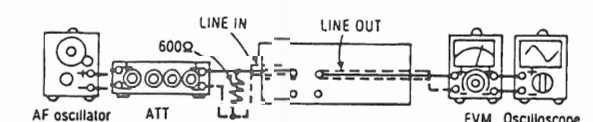


Fig. 11

DECK 2) (FWD)
RZ) and set the unit
green TP5 and GND

...EVM Reading: $190 \pm 5 \text{ mV}$

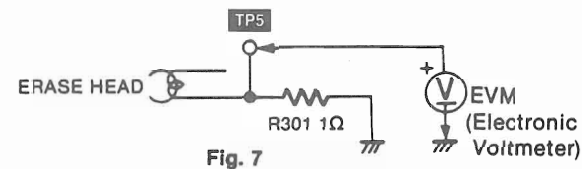


Fig. 7

(DECK 2) (FWD)
CRA) and set the
-24dB) through an
adjust the frequency

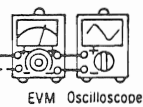
ure that it is within
on to the reference

adjust VR303
frequency level is

...Increase the bias current.
...Decrease the bias current.

CrO₂ tape (QZZCRX)
sing the frequency

ge shown in Fig. 9.



Normal Overall frequency response chart (NR OUT)

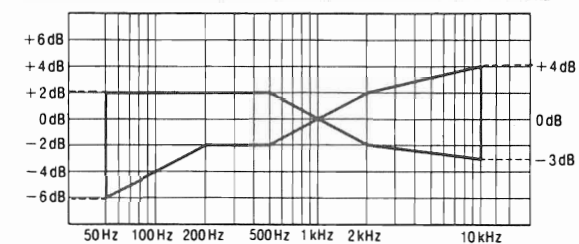


Fig. 8

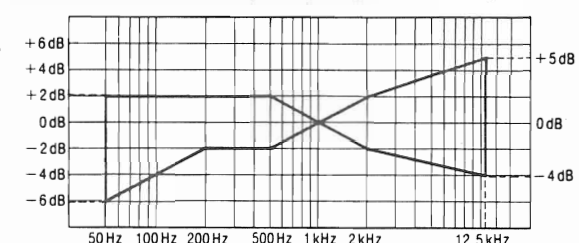
CrO₂/Metal Overall frequency response chart (NR OUT)

Fig. 9

CK 2) (FWD)
CZCRA) and set the

-24 dB).
becomes 0.4V.

above, and assure
value.

adjust VR5 (L-CH)

output is within the

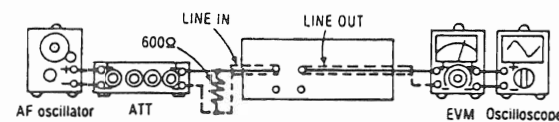
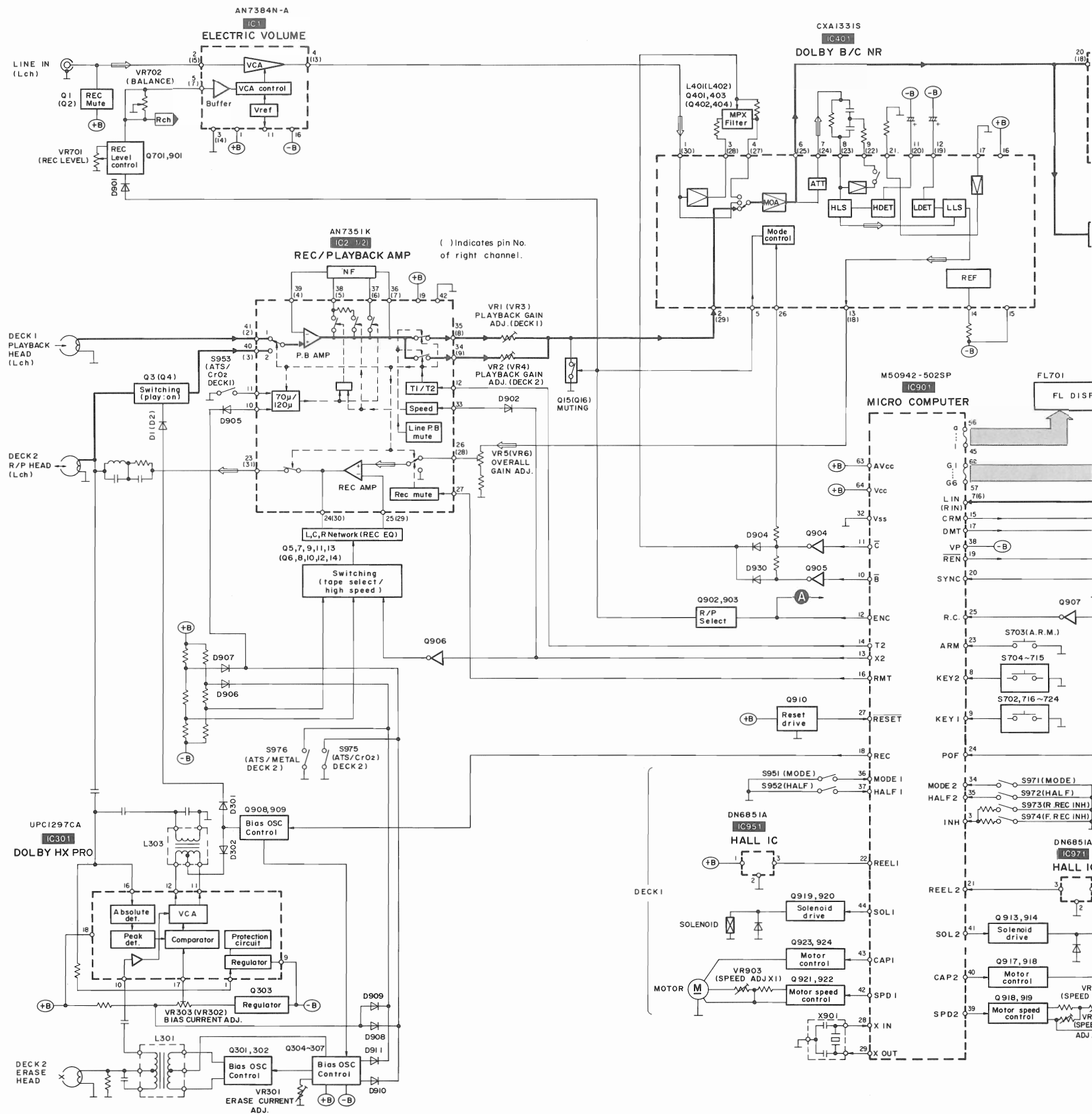
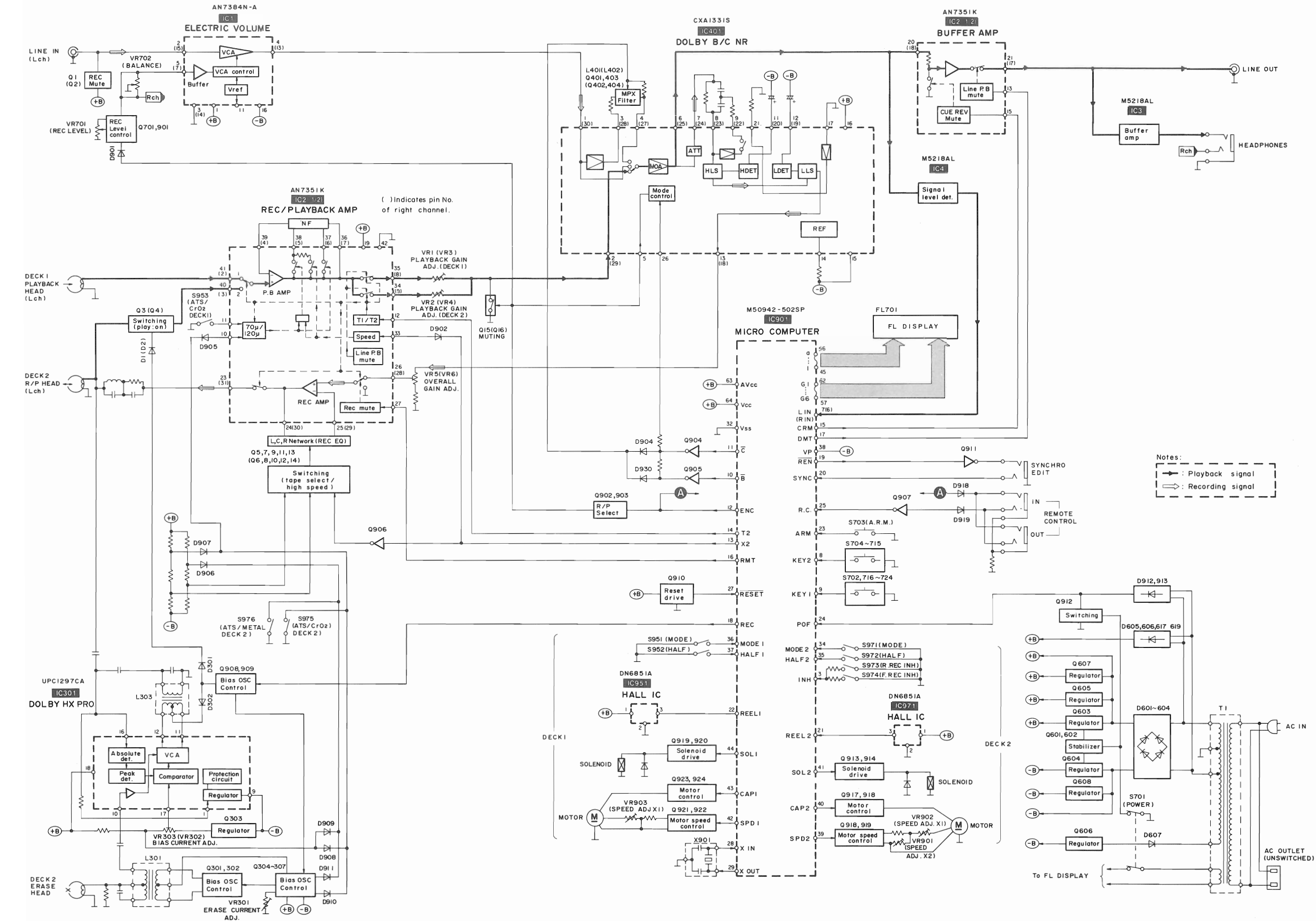


Fig. 11

BLOCK DIAGRAM



AM



SCHEMATIC DIAGRAM

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

Notes:

- S1 (JK703): Voltage selector switch in "240 V" position. (110 V/127 V/220 V/240 V) (GC, PX) areas only
- S701 : Power switch in "on" position.
- S702 : Timer switch in "rec" position. (rec/off/play)
- S703 : Auto rec. mute switch.
- S704 : DECK 2 ■ STOP switch.
- S705 : DECK 2 ►► CUE/REVIEW
- S706 : DECK 2 ◄◄ CUE/REVIEW
- S707 : DECK 2 ► Play switch.
- S708 : DECK 2 ◄ Play switch.
- S709 : DECK 2 ● REC switch.
- S710 : DECK 2 ■ PAUSE switch.
- S711 : Synchro-start switch.
- S712 : Editing tape speed (×1) switch.
- S713 : Editing tape speed (×2) switch.
- S714 : Dolby NR B switch.
- S715 : Dolby NR C switch.
- S716 : DECK 1 ■ STOP switch.
- S717 : DECK 1 ►► CUE/REVIEW switch.
- S718 : DECK 1 ◄◄ CUE/REVIEW switch.
- S719 : DECK 1 ► Play switch.
- S720 : DECK 1 ◄ Play switch.
- S721 : Reverse mode (↔) switch.
- S722 : Reverse mode (↺) switch.
- S723 : Reverse mode (↻) switch.
- S724 : DECK 2 COUNTER RESET 2 switch.
- S951 : DECK 1 Mode switch in "off" position.
- S952 : DECK 1 Cassette half detection switch in "off" position.
- S953 : DECK 1 ATS (CrO₂) 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 (CrO₂) switch in "off" position.
- S976 : DECK 2 ATS (Metal) switch in "off" position.

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

● No mark...Playback ()...Recording

— : Positive voltage lines - - - : Negative voltage lines

→ : Record signal lines → : Playback signal lines

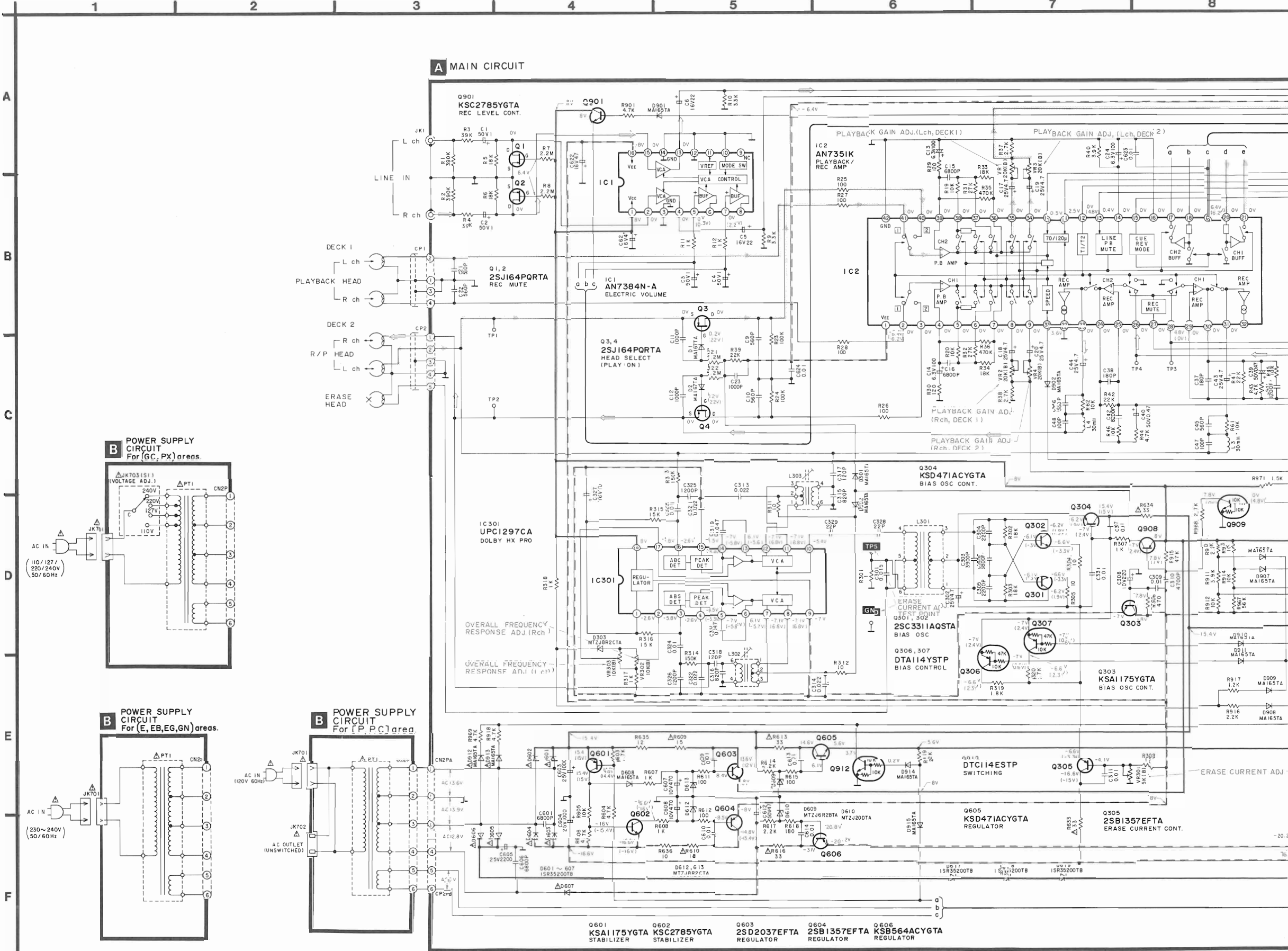
● Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

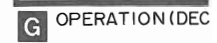
● The supply part number is described alone in the replacement parts list.

Ref. No.	Production Part No.	Supply Part No.
IC1	AN7384N-A	AN7384
IC3, IC4	M5218AL	M5218L

Caution!

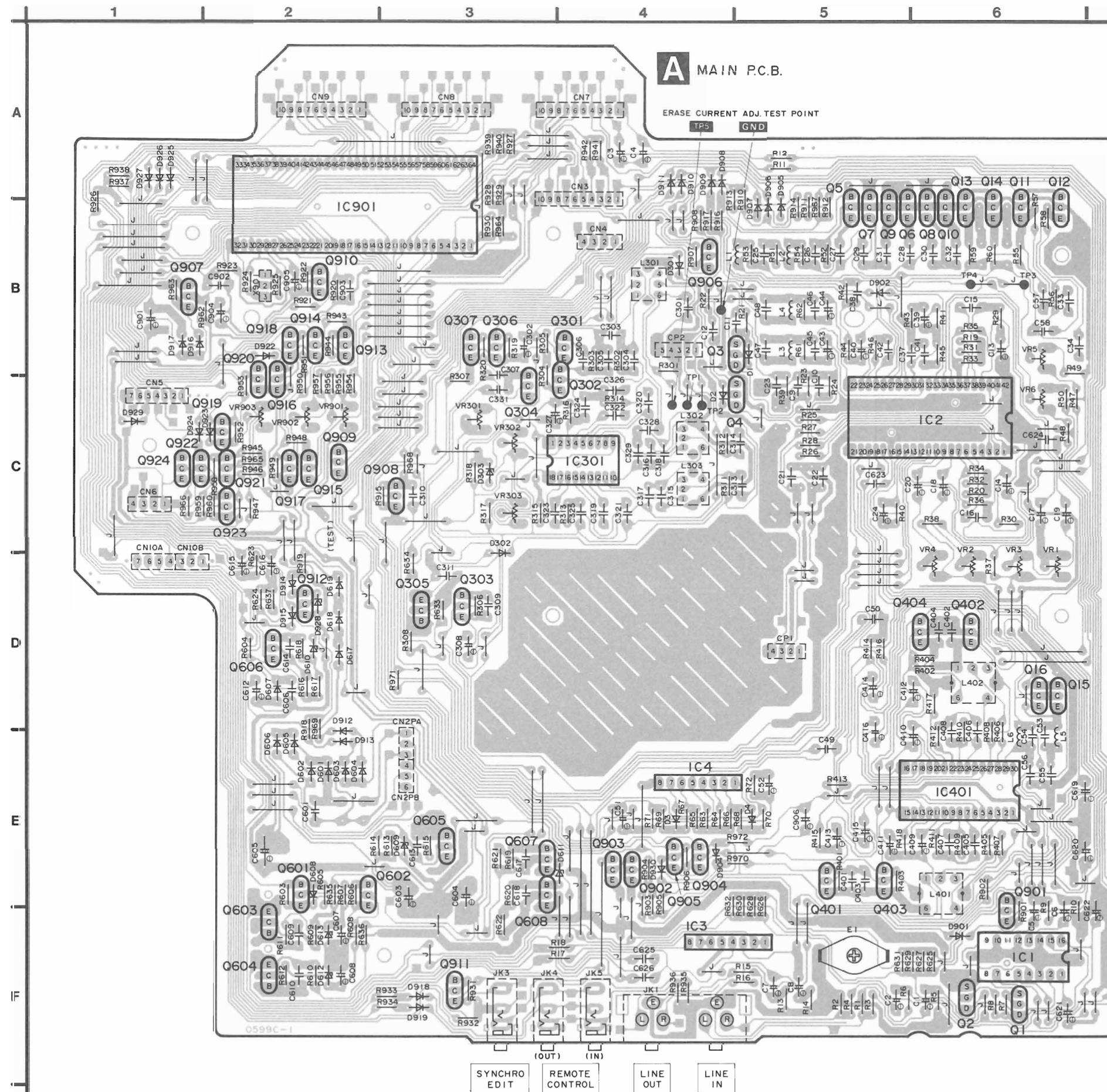
- IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers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





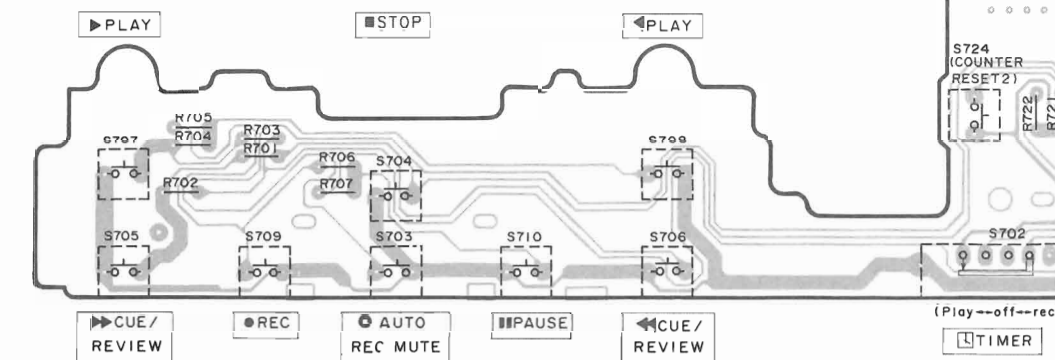


■ PRINTED CIRCUIT BOARDS

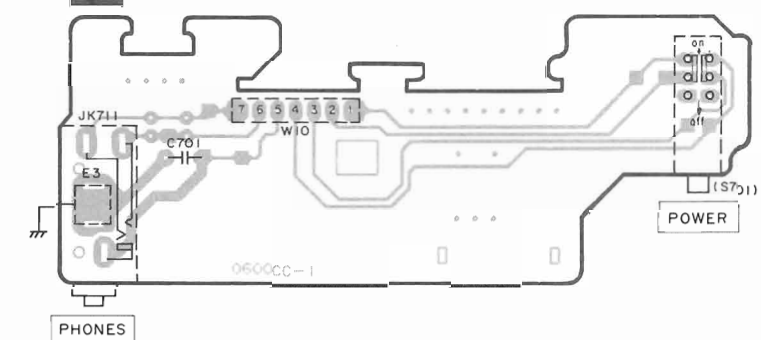


A MAIN P.C.B.

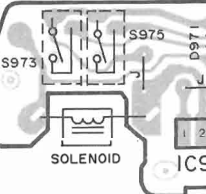
H OPERATION (DECK2) P.C.B.



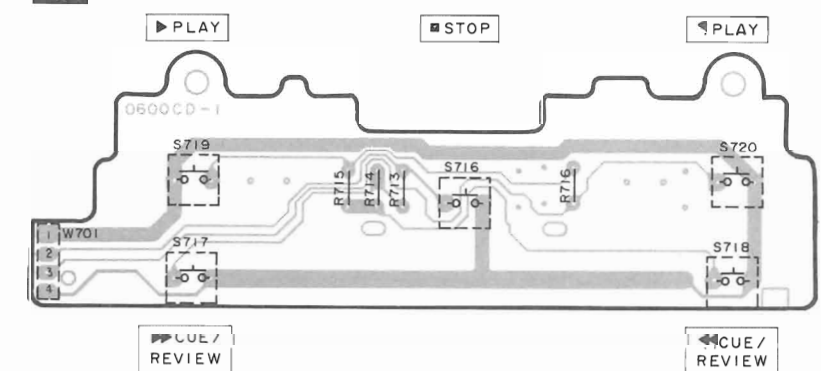
F POWER SWITCH/HEADPHONES JACK P.C.B.



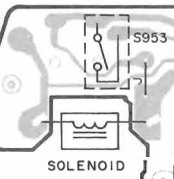
C MECHANISM

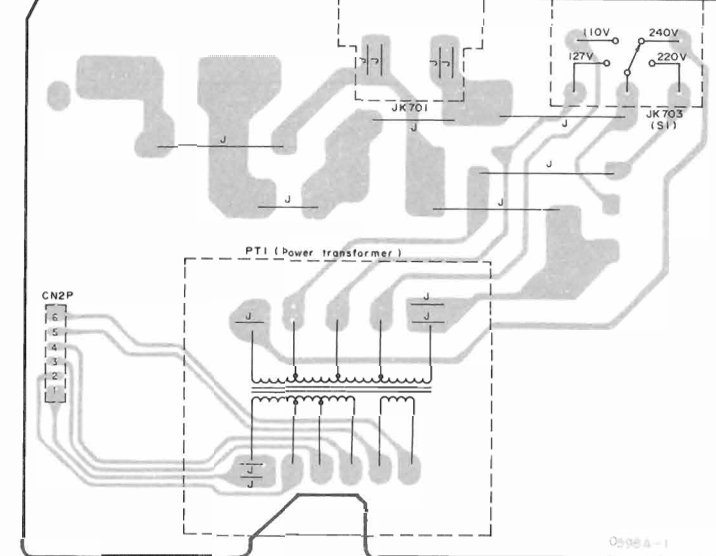
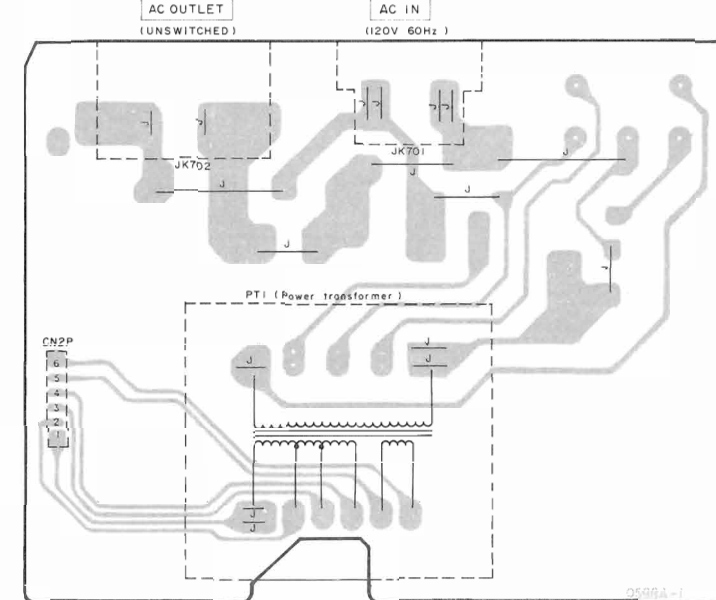
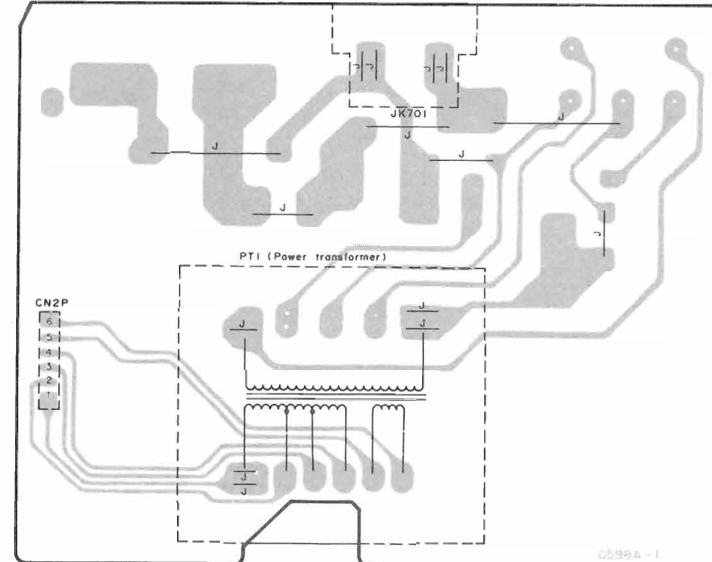
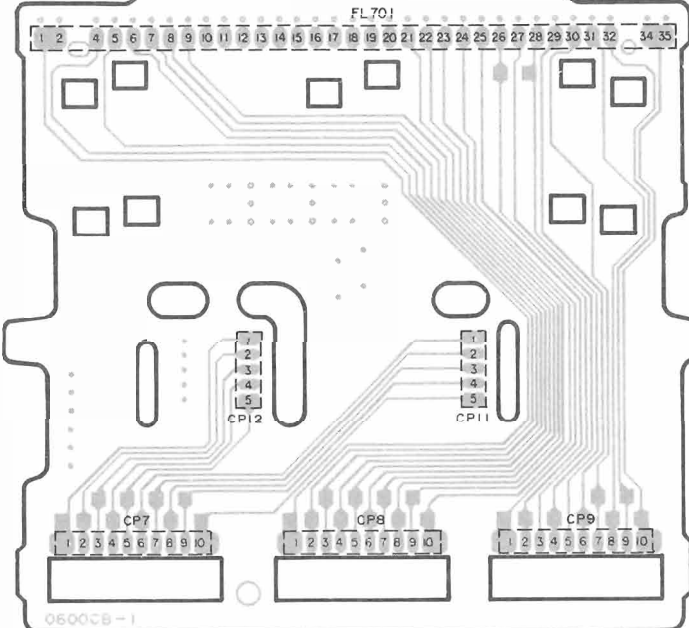
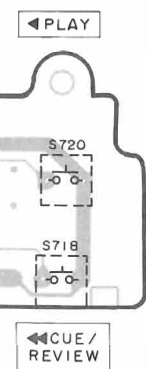


OPERATION (DECK I) P.C.B.

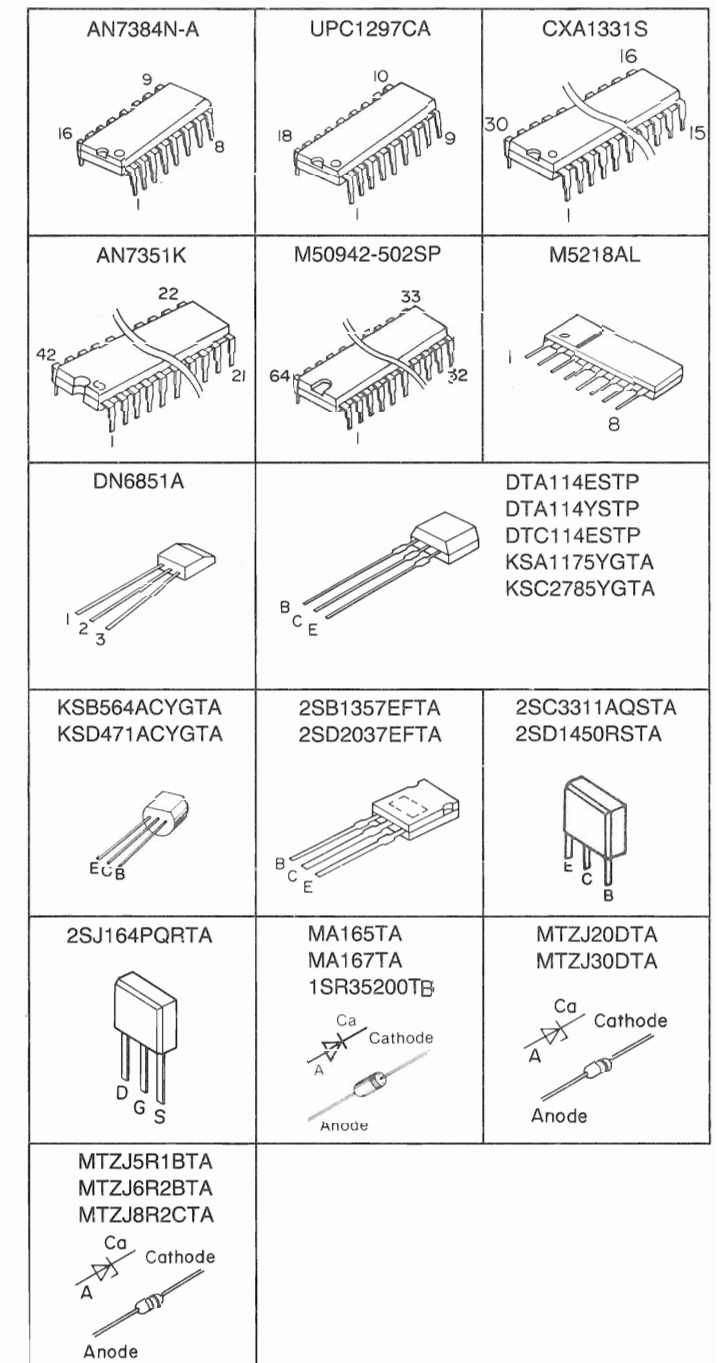


D MECHAN

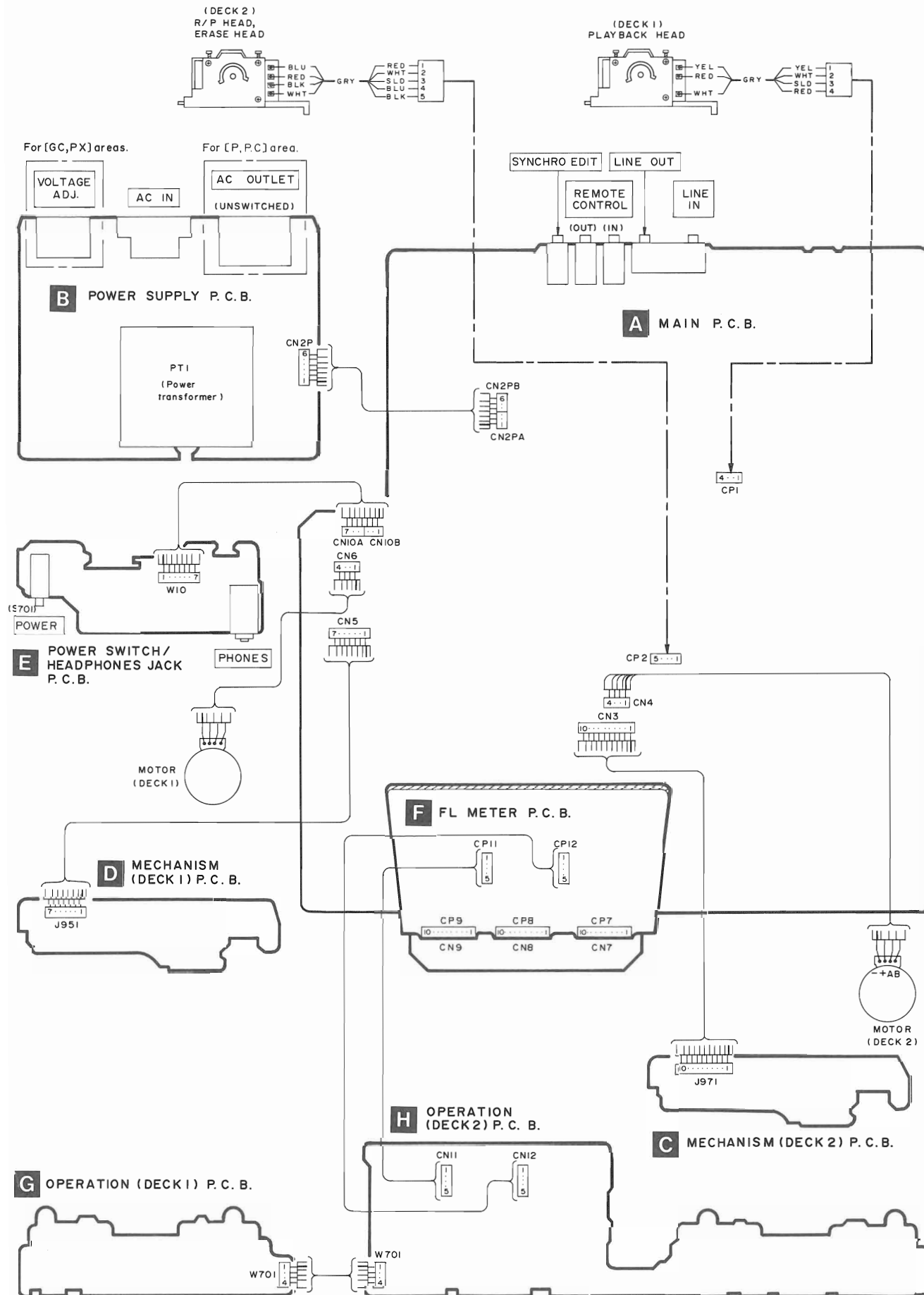




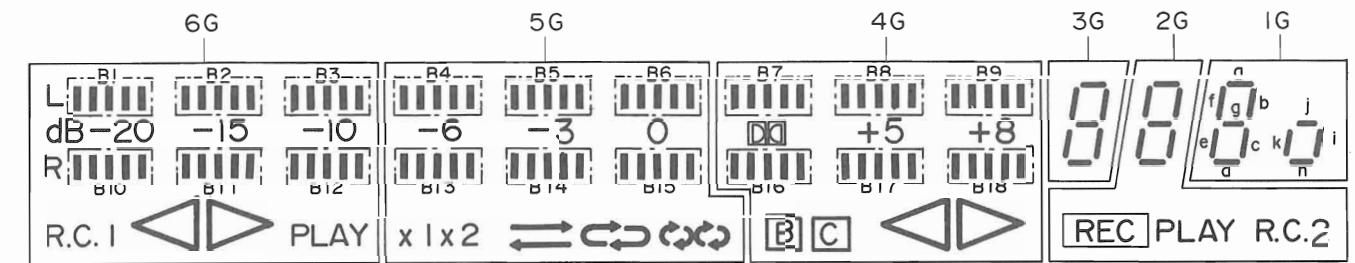
•Terminal guide of IC's, transistors and diodes.



■ WIRING CONNECTION DIAGRAM



■ DESCRIPTION OF FL PANEL [FL 701 (RSL0086-F)]



- **Pin connection**

PIN NO.	3 5	3 4	3 3	3 2	3 1	3 0	2 9	2 8	2 7	2 6	2 5	2 4	2 3	2 2	2 1	2 0	1 9	1 8	1 7	1 6	1 5	1 4	1 3	1 2	1 1	1 0	9	8	7	6	5	4	3	2	1
CONNECTION	F 2	F 2	N P	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9	P 0	P 1	P 1	N 2	N C	N C	N C	N C	N C	N C	N C	N C	N C	N C	G 6	G 5	G 4	G 3	G 2	G 1	N P	F 1	F 1

Note

- | | | | |
|-----------------|----------|----------------|---------------|
| 1) F1, F2 | Filament | 3) NC | No connection |
| 2) NP | No pin | 4) 1G~6G | Grid |

•ANODE CONNECTION

	6G	5G	4G	3G	2G	1G
P1	B1	B4	B7	a	a	a
P2	B2	B5	B8	b	b	b
P3	B3	B6	B9	c	c	c
P4	B10	B13	B16	d	d	d
P5	B11	B14	B17	e	e	e
P6	B12	B15	B18	f	f	f
P7	R.C. 1	x 1		g	g	g
P8		x 2		—		h
P9				—	PLAY	i
P10	PLAY			—	R.C.2	j
P11	—		—	—	—	k
P12	L dB-20 -15 -10 R	-6 -3 0	 +5 +8	—	—	—

■ FUNCO

► IC901 (M50

Pin No.	Mark
1	V_{REF}
2	$\overline{1\text{ WA}}\overline{\text{REV}}$
3	INH
4	QUI2
5	QUI1
6	R IN
7	L IN
8	KEY 2
9	KEY 1
10	$\overline{B}$
11	$\overline{C}$
12	ENC
13	$\times 2$
14	$\overline{TP2}$
15	CRM
16	RMT
17	DMT
18	REC
19	$\overline{REN}$
20	SYNO
21	REEL
22	REEL
23	ARM
24	$\overline{POP}$

FUNCTIONS OF IC TERMINALS

IC901 (M50942-502SP): MICROCOMPUTER

Pin No.	Mark	I/O	Description
1	V _{REF}	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		
7	L IN	I	Line signal level input terminal
8	KEY 2	I	Key switch scan (DECK 1: STOP, F.F., REW, F.PLAY, R.PLAY, REVERSE MODE, TIMER R/P)
9	KEY 1	I	Key switch scan (DECK 2: STOP, F.F., REW, F.PLAY, R.PLAY, REC., PAUSE, S.START, ×2, ×1, DOLBY 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 _{SS}	I	Connected to V _{SS} .
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 _{SS}
31	XC OUT	O	_____
32	V _{SS}	I	Connected to GND
33	_____	_____	_____
34	MODE 2	I	Deck 2 mechanism mode switch select terminal ●“L”...PLAY, F.F., REW 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, F.F., REW 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 _{CC})
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 }	a } I }	O	Segment signal for FL display
57 } 62 }	G1 } G6 }	O	Grid signal for FL display
63	AV _{CC}	I	Power supply terminal (A/D)
64	V _{CC}	I	Power supply terminal

REPLACEMENT PARTS LIST

Notes : * 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.
* 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
				Q917	KSB564ACYGTA	TRANSISTOR	
		INTEGRATED CIRCUIT(S)		Q918	DTC114ESTP	TRANSISTOR	
				Q919	KSB564ACYGTA	TRANSISTOR	
IC1	AN7384	I. C, VOLUME CONTROL		Q920	DTC114ESTP	TRANSISTOR	
IC2	AN7351K	I. C, REC. /PLAYBACK AMP.		Q921	KSA1175YGTA	TRANSISTOR	
IC3, 4	M5218L	I. C, HEADPHONES AMP.		Q922	DTC114ESTP	TRANSISTOR	
IC301	UPC1297CA	I. C, DOLBY HX PRO.		Q923	KSB564ACYGTA	TRANSISTOR	
IC401	CXA1331S	I. C, DOLBY NR		Q924	DTC114ESTP	TRANSISTOR	
IC901	M50942-502SP	I. C, MICROCOMPUTER				DIODE (S)	
IC951	DN6851A	I. C, HALL					
IC971	DN6851A	I. C, HALL					
				D1, 2	MA167	DIODE	
		TRANSISTOR (S)		D3, 4	MA165	DIODE	
				D301, 302	MA165	DIODE	
Q1-4	2SJ164PQRTA	TRANSISTOR		D303	MTZJ8R2CTA	DIODE	
Q5-8	KSA1175YGTA	TRANSISTOR		D601-607	1SR35200TB	DIODE	Δ
Q9	KSC2785YGTA	TRANSISTOR		D608	MA165	DIODE	
Q10-14	KSC2785YGTA	TRANSISTOR		D609	MTZJ6R2BTA	DIODE	
Q15, 16	2SD1450RSTA	TRANSISTOR		D610	MTZJ20DTA	DIODE	
Q301, 302	2SC3311A-Q	TRANSISTOR		D611	MTZJ30DTA	DIODE	
Q303	KSA1175YGTA	TRANSISTOR		D612, 613	MTZJ8R2CTA	DIODE	
Q304	KSD471ACYGTA	TRANSISTOR		D617-619	1SR35200TB	DIODE	
Q305	2SB1357EFTA	TRANSISTOR		D901, 902	MA165	DIODE	
Q306, 307	DTA114YSTP	TRANSISTOR		D904-911	MA165	DIODE	
Q401-404	KSC2785YGTA	TRANSISTOR		D912, 913	MA165	DIODE	Δ
Q601	KSA1175YGTA	TRANSISTOR		D914, 915	MA165	DIODE	
Q602	KSC2785YGTA	TRANSISTOR		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	KSB564ACYGTA	TRANSISTOR		D929, 930	MA165	DIODE	
Q607	KSC2785YGTA	TRANSISTOR		D951	1SS133	DIODE (DECK1)	
Q608	KSA1175YGTA	TRANSISTOR		D971	1SS133	DIODE (DECK2)	
Q701	KSC2785YGTA	TRANSISTOR				VARIABLE RESISTOR(S)	
Q901	KSC2785YGTA	TRANSISTOR					
Q902	DTA114ESTP	TRANSISTOR					
Q903	DTC114ESTP	TRANSISTOR		VR1-4	EVNDXAA00B24	V. R, RLAYBACK GAIN ADJ.	
Q904-906	DTA114ESTP	TRANSISTOR		VR5, 6	EVNDXAA00B14	V. R, OVERALL GAIN ADJ.	
Q907	KSA1175YGTA	TRANSISTOR		VR301	EVNDXAA00B53	V. R, ERASE CURRENT ADJ.	
Q908	KSB564ACYGTA	TRANSISTOR		VR302, 303	EVNDXAA00B14	V. R, OVERALL FREQ. ADJ.	
Q909	DTC114ESTP	TRANSISTOR		VR701	EVJ02FF02B15	V. R, REC. LEVEL CONTROL	
Q910	KSC2785YGTA	TRANSISTOR		VR702	EVJ02SF02G15	V. R, BALANCE	
Q911, 912	DTC114ESTP	TRANSISTOR		VR901-903	EVNDXAA00B53	V. R, TAPE SPEED ADJ.	
Q913	KSB564ACYGTA	TRANSISTOR				COIL (S)	
Q914	DTC114ESTP	TRANSISTOR					
Q915	KSA1175YGTA	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		S975, 976	RSH1A90Z	ATS (DECK2)	
L5, 6	RLQB103JT-Y	COIL				CONNECTOR (S)	
L301	SL09B4-K	COIL					
L302, 303	SL09B1-Z	COIL		CN3	SJSD1005	CONNECTOR (10P)	
L401, 402	QLM9Z10K	COIL		CN4	RJS1A1704	SOCKET (4P)	
		TRANSFORMER (S)		CN5	RJS7T4ZA	SOCKET (7P)	
				CN6	RJS1A1704	SOCKET (4P)	
PT1	RTP1K4C008-V	POWER TRANSFORMER	(P, PC) △	CN7-9	RJU003K010M1	SOCKET (10P)	
PT1	RTP1K4E014-V	POWER TRANSFORMER	(E, EB, EG, GN) △	CN11, 12	SJS50581BB	SOCKET (5P)	
PT1	RTP1K4E015-V	POWER TRANSFORMER	(GC, PX) △	CN10A	RJS1A1704	SOCKET (4P)	
				CN10B	RJS1A1703	CONNECTOR (3P)	
		OSCILLATOR (S)		CN2PA	RJS1A1703	CONNECTOR (3P)	
				CN2PB	RJS1A1703	CONNECTOR (3P)	
X901	EF0GC4004A4	CERAMIC FILTER		CN2P	SJT30643-V	CONNECTOR (6P)	
				CP1	SJTD413	CONNECTOR (4P)	
		DISPLAY TUBE		CP2	RJP5G18ZA	CONNECTOR (5P)	
				CP7-9	RJT003K010M1	CONNECTOR (10P)	
FL701	RSL0086-F	DISPLAY TUBE		CP11, 12	SJT30548BB1	CONNECTOR (5P)	
				J951	RJS7T7ZA	SOCKET (7P) (DECK1)	
		SWITCH (ES)		J971	RJS10T7ZA	SOCKET (10P) (DECK2)	
						JACK (S)	
S1 (JK703)	SSR187-1	VOLTAGE SELECTOR	(GC, PX) △				
S701	SSH1230	POWER	△	JK1	SJF3069N	TERMINAL BOARD	
S702	RSS3A18YA-H	TIMER		JK3	RJJ33T01	M3 JACK (BLACK)	
S703	EVQ21405R	AUTO REC. MUTE		JK4, 5	RJJ33TR01	M3 JACK (RED)	
S704	EVQ21405R	STOP (DECK2)		JK701	SJSD16	AC INLET	(P, PC, GN) △
S705	EVQ21405R	F. F. (DECK2)		JK701	SJS9236	AC INLET	(E, EB, EG, GC, PX) △
S706	EVQ21405R	REW. (DECK2)		JK702	SJS9331B	AC OUTLET	(P, PC) △
S707	EVQ21405R	F. PLAY (DECK2)		JK711	SJJ146B	HEADPHONES JACK	
S708	EVQ21405R	R. PLAY (DECK2)					
S709	EVQ21405R	REC. (DECK2)					
S710	EVQ21405R	PAUSE (DECK2)					
S711	EVQ21405R	SYNCHRO-START (DECK2)					
S712	EVQ21405R	EDITING TAPE SPEED (X1)					
S713	EVQ21405R	EDITING TAPE SPEED (X2)					
S714	EVQ21405R	DOLBY NR B					
S715	EVQ21405R	DOLBY NR C					
S716	EVQ21405R	STOP (DECK1)					
S717	EVQ21405R	F. F. (DECK1)					
S718	EVQ21405R	REW. (DECK1)					
S719	EVQ21405R	F. PLAY (DECK1)					
S720	EVQ21405R	R. PLAY (DECK1)					
S721-723	EVQ21405R	REVERSE MODE					
S724	EVQ21405R	C. RESET (DECK2)					
S951	RSH1A89Z	MODE (DECK1)					
S952	RSH1A90Z	HALF (DECK1)					
S953	RSH1A90Z	ATS (DECK1)					
S971	RSH1A89Z	MODE (DECK2)					
S972	RSH1A90Z	HALF (DECK2)					
S973	RSH1A90Z	REC. 1NH (R) (DECK2)					
S974	RSH1A90Z	REC. 1NH (F) (DECK2)					

Notes : * Capacity valuse are in microtarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)

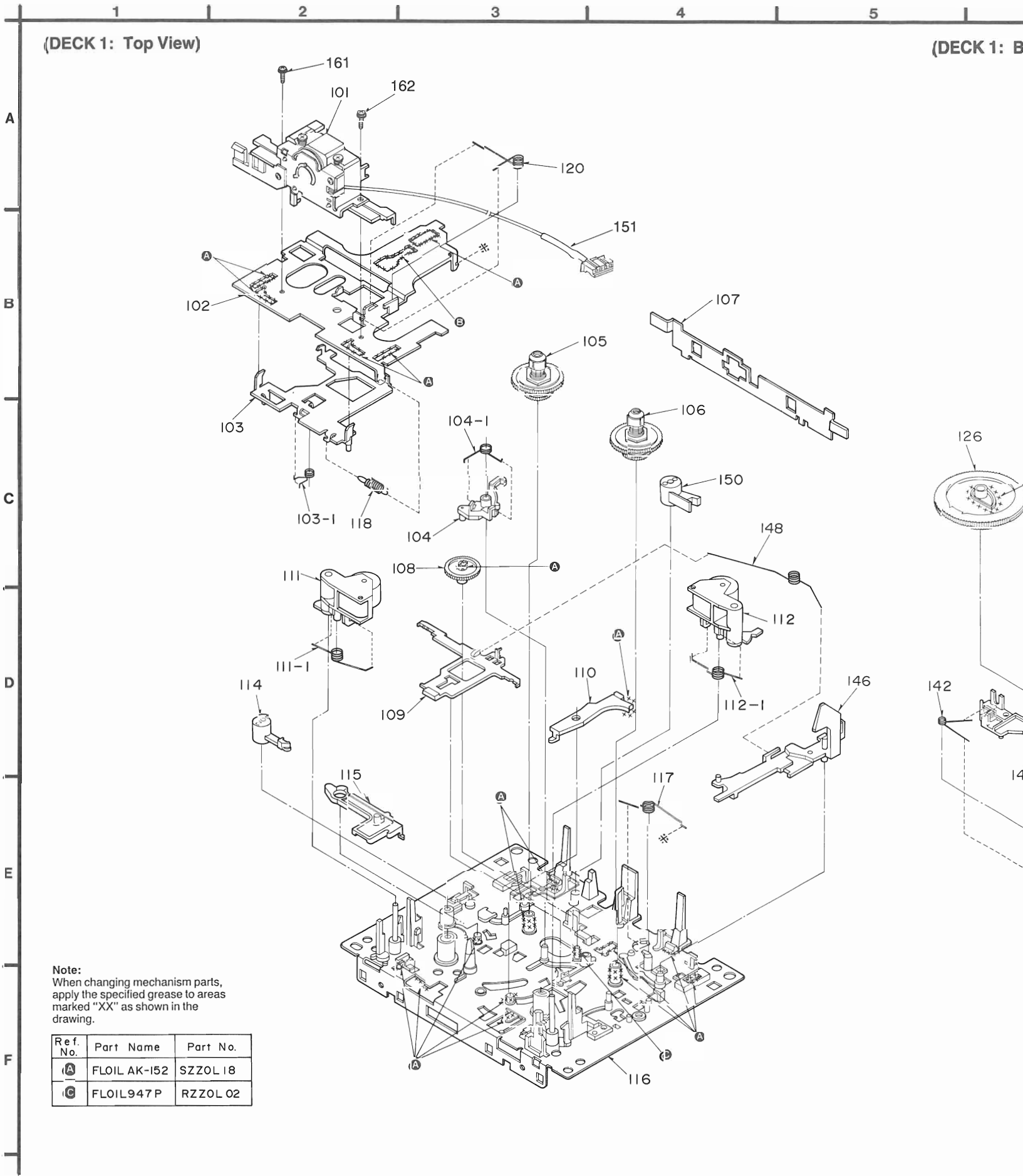
Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
			R320	ERDS2TJ272T	1/4W 2. 7K	R719	ERDS2TJ332	1/4W 3. 3K
		RESISTORS	R401-404	ERDS2TJ684	1/4W 680K	R720	ERDS2TJ472	1/4W 4. 7K
			R405, 406	ERDS2TJ242	1/4W 2. 4K	R721	ERDS2TJ682T	1/4W 6. 8K
R1, 2	ERDS2TJ394	1/4W 390K	R407, 408	ERDS2TJ562	1/4W 5. 6K	R722	ERDS2TJ123	1/4W 12K
R3, 4	ERDS2TJ393	1/4W 39K	R409, 410	ERDS2TJ243T	1/4W 24K	R723	ERDS2TJ153	1/4W 15K
R5, 6	ERDS2TJ183T	1/4W 18K	R411, 412	ERDS2TJ561	1/4W 560	R724, 725	ERDS2TJ102	1/4W 1K
R7, 8	ERDS2TJ225	1/4W 2. 2M	R413, 414	ERDS2TJ682T	1/4W 6. 8K	R726, 727	ERDS2TJ562	1/4W 5. 6K
R9	ERDS2TJ332	1/4W 3. 3K	R415, 416	ERDS2TJ562	1/4W 5. 6K	R901	ERDS2TJ472	1/4W 4. 7K
R10	ERDS2TJ332	1/4W 3. 3K	R417	ERDS2TJ151	1/4W 150	R902	ERDS2TJ822	1/4W 8. 2K
R11, 12	ERDS2TJ102	1/4W 1K	R418	ERDS2TJ273	1/4W 27K	R903	ERDS2TJ472	1/4W 4. 7K
R13, 14	ERDS2TJ332	1/4W 3. 3K	R603, 604	ERDS2TJ472	1/4W 4. 7K	R904	ERDS2TJ122	1/4W 1. 2K
R15, 16	ERDS2TJ561	1/4W 560	R605	ERDS2TJ103	1/4W 10K	R905, 906	ERDS2TJ103	1/4W 10K
R17, 18	ERDS2TJ101	1/4W 100	R606	ERDS2TJ472	1/4W 4. 7K	R907, 908	ERDS2TJ472	1/4W 4. 7K
R19, 20	ERDS2TJ103	1/4W 10K	R607, 608	ERDS2TJ102	1/4W 1K	R910	ERDS2TJ222	1/4W 2. 2K
R21, 22	ERDS2TJ225	1/4W 2. 2M	R609	ERD2FCVG150T	1/4W 15 △	R911	ERDS2TJ392T	1/4W 3. 9K
R23, 24	ERDS2TJ104	1/4W 100K	R610	ERD2FCVG180T	1/4W 18 △	R912-914	ERDS2TJ103	1/4W 10K
R25-28	ERDS2TJ101	1/4W 100	R611, 612	ERDS2TJ101	1/4W 100	R915	ERDS2TJ473	1/4W 47K
R29, 30	ERDS2EJ121	1/4W 120	R613	ERD2FCVG330T	1/4W 33 △	R916	ERDS2TJ222	1/4W 2. 2K
R31, 32	ERDS2TJ273	1/4W 27K	R614	ERDS2TJ222	1/4W 2. 2K	R917	ERDS2TJ122	1/4W 1. 2K
R33, 34	ERDS2TJ183T	1/4W 18K	R615	ERDS2TJ101	1/4W 100	R918	ERDS2TJ472	1/4W 4. 7K
R35, 36	ERDS2TJ474	1/4W 470K	R616	ERD2FCVG330T	1/4W 33 △	R919	ERDS2TJ223	1/4W 22K
R37, 38	ERDS2TJ272T	1/4W 2. 7K	R617	ERDS2TJ222	1/4W 2. 2K	R920	ERDS2TJ392T	1/4W 3. 9K
R39	ERDS2TJ223	1/4W 22K	R618	ERDS2TJ181T	1/4W 180	R921	ERDS2TJ471	1/4W 470
R40	ERDS2TJ392T	1/4W 3. 9K	R619, 620	ERDS2TJ681	1/4W 680	R922, 923	ERDS2TJ103	1/4W 10K
R41, 42	ERDS2TJ223	1/4W 22K	R621, 622	ERD2FCVG100T	1/4W 10 △	R924	ERDS2TJ102	1/4W 1K
R43, 44	ERDS2TJ472	1/4W 4. 7K	R623, 624	ERDS2TJ122	1/4W 1. 2K	R925	ERDS2TJ105T	1/4W 1M
R45-48	ERDS2TJ103	1/4W 10K	R625-632	ERDS2TJ221	1/4W 220	R926	ERDS2TJ223	1/4W 22K
R49, 50	ERDS2TJ332	1/4W 3. 3K	R633, 634	ERD2FCVG330T	1/4W 33 △	R927	ERDS2TJ472	1/4W 4. 7K
R51, 52	ERDS2TJ122	1/4W 1. 2K	R635	ERDS2TJ120T	1/4W 12	R928-930	ERDS2TJ103	1/4W 10K
R53, 54	ERDS2TJ330	1/4W 33	R636	ERDS2TJ100	1/4W 10	R931-933	ERDS2TJ102	1/4W 1K
R55, 56	ERDS2TJ562	1/4W 5. 6K	R637	ERDS1FVJ220T	1/2W 22 △	R934	ERDS2TJ272T	1/4W 2. 7K
R57, 58	ERDS2TJ152	1/4W 1. 5K	R701	ERDS2TJ821	1/4W 820	R935, 936	ERDS2TJ100	1/4W 10
R59, 60	ERDS2TJ272T	1/4W 2. 7K	R702	ERDS2TJ102	1/4W 1K	R937-941	ERDS2TJ472	1/4W 4. 7K
R61, 62	ERDS2TJ103	1/4W 10K	R703	ERDS2TJ122	1/4W 1. 2K	R942	ERDS2TJ822	1/4W 8. 2K
R63, 64	ERDS2TJ104	1/4W 100K	R704	ERDS2TJ152	1/4W 1. 5K	R943	ERDS2TJ223	1/4W 22K
R65, 66	ERDS2TJ473	1/4W 47K	R705	ERDS2TJ182	1/4W 1. 8K	R944	ERDS2TJ821	1/4W 820
R67, 68	ERDS2TJ124T	1/4W 120K	R706	ERDS2TJ222	1/4W 2. 2K	R945	ERDS2TJ221	1/4W 220
R69, 70	ERDS2TJ220T	1/4W 22	R707	ERDS2TJ332	1/4W 3. 3K	R946	ERDS2TJ103	1/4W 10K
R71, 72	ERDS2TJ152	1/4W 1. 5K	R708	ERDS2TJ472	1/4W 4. 7K	R947	ERDS2TJ392T	1/4W 3. 9K
R301	ERDS2TJ1R0	1/4W 1. 0	R709	ERDS2TJ682T	1/4W 6. 8K	R948	ERDS2TJ184T	1/4W 180K
R302, 303	ERDS2TJ183T	1/4W 18K	R710	ERDS2TJ123	1/4W 12K	R949	ERDS2TJ103	1/4W 10K
R304, 305	ERDS2TJ100	1/4W 10	R711	ERDS2TJ223	1/4W 22K	R950	ERDS2TJ223	1/4W 22K
R306	ERDS2TJ471	1/4W 470	R712	ERDS2TJ683	1/4W 68K	R951	ERDS2TJ821	1/4W 820
R307, 308	ERDS2TJ102	1/4W 1K	R713	ERDS2TJ821	1/4W 820	R952	ERDS2TJ223	1/4W 22K
R311, 312	ERDS2TJ100	1/4W 10	R714	ERDS2TJ102	1/4W 1K	R953	ERDS2TJ821	1/4W 820
R313, 314	ERDS2TJ154	1/4W 150K	R715	ERDS2TJ122	1/4W 1. 2K	R954	ERDS2TJ103	1/4W 10K
R315, 316	ERDS2TJ153	1/4W 15K	R716	ERDS2TJ152	1/4W 1. 5K	R955	ERDS2TJ332	1/4W 3. 3K
R317, 318	ERDS2TJ102	1/4W 1K	R717	ERDS2TJ182	1/4W 1. 8K	R956	ERDS2TJ103	1/4W 10K
R319	ERDS2TJ182	1/4W 1. 8K	R718	ERDS2TJ222	1/4W 2. 2K	R957	ERDS2TJ392T	1/4W 3. 9K

Notes : * Capacity value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F) * Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)								
Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
			R320	ERDS2TJ272T	1/4W 2. 7K	R719	ERDS2TJ332	1/4W 3. 3K
		RESISTORS	R401-404	ERDS2TJ684	1/4W 680K	R720	ERDS2TJ472	1/4W 4. 7K
			R405, 406	ERDS2TJ242	1/4W 2. 4K	R721	ERDS2TJ682T	1/4W 6. 8K
R1, 2	ERDS2TJ394	1/4W 390K	R407, 408	ERDS2TJ562	1/4W 5. 6K	R722	ERDS2TJ123	1/4W 12K
R3, 4	ERDS2TJ393	1/4W 39K	R409, 410	ERDS2TJ243T	1/4W 24K	R723	ERDS2TJ153	1/4W 15K
R5, 6	ERDS2TJ183T	1/4W 18K	R411, 412	ERDS2TJ561	1/4W 560	R724, 725	ERDS2TJ102	1/4W 1K
R7, 8	ERDS2TJ225	1/4W 2. 2M	R413, 414	ERDS2TJ682T	1/4W 6. 8K	R726, 727	ERDS2TJ562	1/4W 5. 6K
R9	ERDS2TJ332	1/4W 3. 3K	R415, 416	ERDS2TJ562	1/4W 5. 6K	R901	ERDS2TJ472	1/4W 4. 7K
R10	ERDS2TJ332	1/4W 3. 3K	R417	ERDS2TJ151	1/4W 150	R902	ERDS2TJ822	1/4W 8. 2K
R11, 12	ERDS2TJ102	1/4W 1K	R418	ERDS2TJ273	1/4W 27K	R903	ERDS2TJ472	1/4W 4. 7K
R13, 14	ERDS2TJ332	1/4W 3. 3K	R603, 604	ERDS2TJ472	1/4W 4. 7K	R904	ERDS2TJ122	1/4W 1. 2K
R15, 16	ERDS2TJ561	1/4W 560	R605	ERDS2TJ103	1/4W 10K	R905, 906	ERDS2TJ103	1/4W 10K
R17, 18	ERDS2TJ101	1/4W 100	R606	ERDS2TJ472	1/4W 4. 7K	R907, 908	ERDS2TJ472	1/4W 4. 7K
R19, 20	ERDS2TJ103	1/4W 10K	R607, 608	ERDS2TJ102	1/4W 1K	R910	ERDS2TJ222	1/4W 2. 2K
R21, 22	ERDS2TJ225	1/4W 2. 2M	R609	ERD2FCVG150T	1/4W 15 Δ	R911	ERDS2TJ392T	1/4W 3. 9K
R23, 24	ERDS2TJ104	1/4W 100K	R610	ERD2FCVG180T	1/4W 18 Δ	R912-914	ERDS2TJ103	1/4W 10K
R25-28	ERDS2TJ101	1/4W 100	R611, 612	ERDS2TJ101	1/4W 100	R915	ERDS2TJ473	1/4W 47K
R29, 30	ERDS2EJ121	1/4W 120	R613	ERD2FCVG330T	1/4W 33 Δ	R916	ERDS2TJ222	1/4W 2. 2K
R31, 32	ERDS2TJ273	1/4W 27K	R614	ERDS2TJ222	1/4W 2. 2K	R917	ERDS2TJ122	1/4W 1. 2K
R33, 34	ERDS2TJ183T	1/4W 18K	R615	ERDS2TJ101	1/4W 100	R918	ERDS2TJ472	1/4W 4. 7K
R35, 36	ERDS2TJ474	1/4W 470K	R616	ERD2FCVG330T	1/4W 33 Δ	R919	ERDS2TJ223	1/4W 22K
R37, 38	ERDS2TJ272T	1/4W 2. 7K	R617	ERDS2TJ222	1/4W 2. 2K	R920	ERDS2TJ392T	1/4W 3. 9K
R39	ERDS2TJ223	1/4W 22K	R618	ERDS2TJ181T	1/4W 180	R921	ERDS2TJ471	1/4W 470
R40	ERDS2TJ392T	1/4W 3. 9K	R619, 620	ERDS2TJ681	1/4W 680	R922, 923	ERDS2TJ103	1/4W 10K
R41, 42	ERDS2TJ223	1/4W 22K	R621, 622	ERD2FCVG100T	1/4W 10 Δ	R924	ERDS2TJ102	1/4W 1K
R43, 44	ERDS2TJ472	1/4W 4. 7K	R623, 624	ERDS2TJ122	1/4W 1. 2K	R925	ERDS2TJ105T	1/4W 1M
R45-48	ERDS2TJ103	1/4W 10K	R625-632	ERDS2TJ221	1/4W 220	R926	ERDS2TJ223	1/4W 22K
R49, 50	ERDS2TJ332	1/4W 3. 3K	R633, 634	ERD2FCVG330T	1/4W 33 Δ	R927	ERDS2TJ472	1/4W 4. 7K
R51, 52	ERDS2TJ122	1/4W 1. 2K	R635	ERDS2TJ120T	1/4W 12	R928-930	ERDS2TJ103	1/4W 10K
R53, 54	ERDS2TJ330	1/4W 33	R636	ERDS2TJ100	1/4W 10	R931-933	ERDS2TJ102	1/4W 1K
R55, 56	ERDS2TJ562	1/4W 5. 6K	R637	ERDS1FVJ220T	1/2W 22 Δ	R934	ERDS2TJ272T	1/4W 2. 7K
R57, 58	ERDS2TJ152	1/4W 1. 5K	R701	ERDS2TJ821	1/4W 820	R935, 936	ERDS2TJ100	1/4W 10
R59, 60	ERDS2TJ272T	1/4W 2. 7K	R702	ERDS2TJ102	1/4W 1K	R937-941	ERDS2TJ472	1/4W 4. 7K

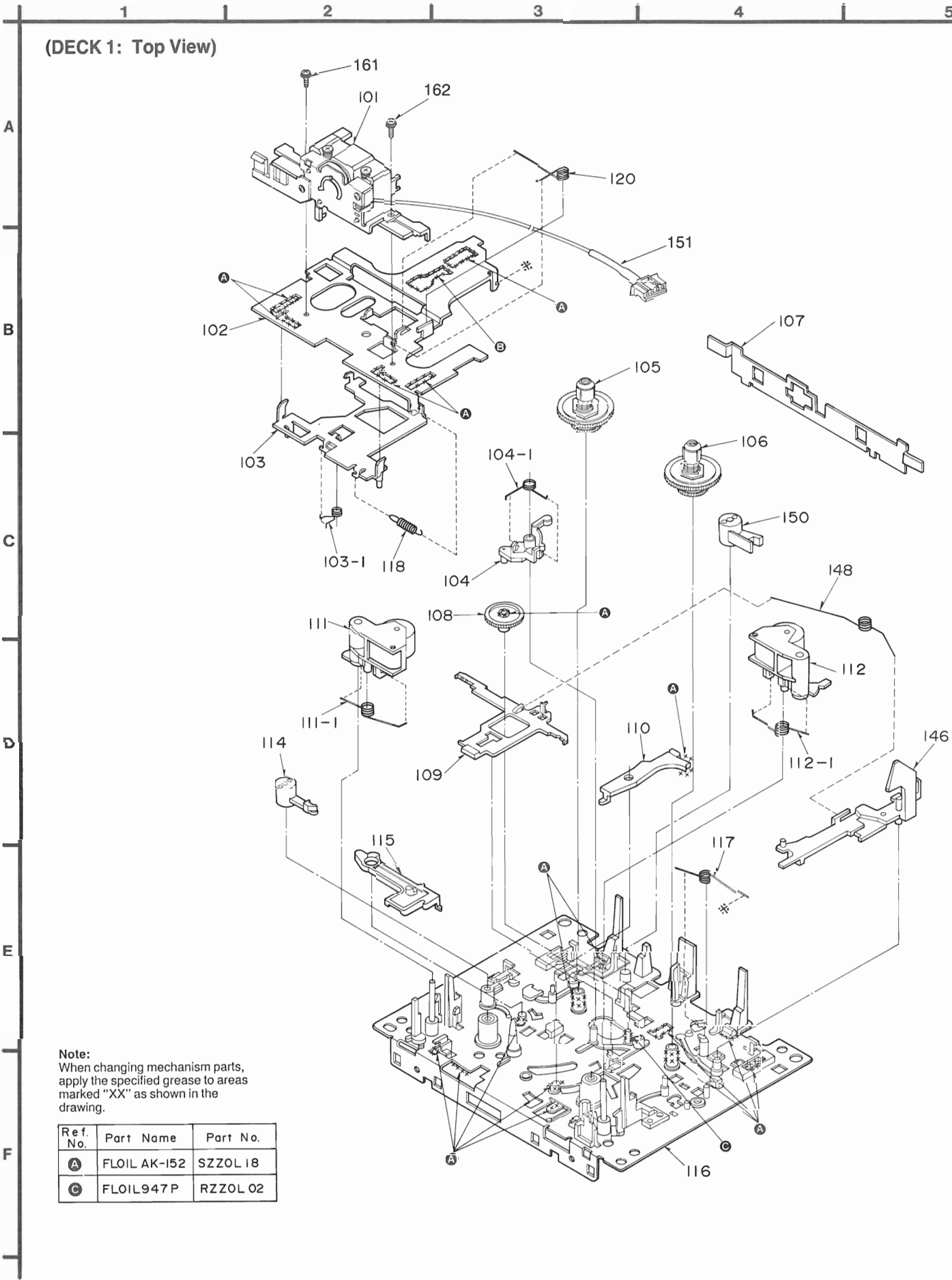
Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R958	ERDS2TJ184T	1/4W 180K	C310	ECKR1H472KB5	50V 4700P
R959	ERDS2TJ103	1/4W 10K	C311	ECKR1H103ZF5	50V 0.01U
R960	ERDS2TJ223	1/4W 22K	C313, 314	ECKT1H223ZF	50V 0.022U
R962	ERDS2TJ223	1/4W 22K	C315, 316	ECKR2H821KB5	500V 820P
R963	ERDS2TJ562	1/4W 5.6K	C317, 318	ECBT1H121KB5	50V 120P
R964	ERDS2TJ223	1/4W 22K	C319, 320	ECQV1H473JZ3	50V 0.047U
R965	ERDS2TJ153	1/4W 15K	C321, 322	ECQB1H223JZ3	50V 0.022U
R966	ERDS2TJ821	1/4W 820	C323, 324	ECQB1H103JZ	50V 0.01U
R967	ERDS2TJ563	1/4W 56K	C325, 326	ECKT1H122KB	50V 1200P
R968	ERDS2TJ272T	1/4W 2.7K	C327	ECEA1CK100B	16V 10U
R969, 970	ERDS2TJ472	1/4W 4.7K	C328, 329	ECCF1H220K	50V 22P
R971	ERDS2TJ152	1/4W 1.5K	C331	ECKR1H103ZF5	50V 0.01U
R972	ERDS2TJ103	1/4W 10K	C401, 402	ECKT1H122KB	50V 1200P
			C403, 404	ECKD1H152KB	50V 1500P
		CAPACITORS	C405-408	ECQB1H222JZ3	50V 2200P
			C409, 410	ECEA1HUR56B	50V 0.56U
C1-4	ECEA1HK010B	50V 1U	C411, 412	ECEA1HUR33	50V 0.33U
C5, 6	ECEA1CK220	16V 22U	C413, 414	ECEA1EK4R7	25V 4.7U
C7, 8	ECEA1CK100B	16V 10U	C415, 416	ECEA1CK100B	16V 10U
C9	ECBT1H561KB5	50V 560P	C601	ECKR2H682PE	500V 6800P
C10	ECBT1H561KB5	50V 560P	C603, 604	ECEA1EU102B	25V 1000U
C11, 12	ECBT1H102KB5	50V 1000P	C605	ECEA1EU222	25V 2200U
C13, 14	ECEA0JU101B	6.3V 100U	C606	ECKR2H682PE	500V 6800P
C15, 16	ECQB1H682JZ3	50V 6800P	C607, 608	ECEA1AU471	10V 470U
C17-20	ECEA1EK4R7	25V 4.7U	C609, 610	ECKR1H103ZF5	50V 0.01U
C21, 22	ECBT1H561KB5	50V 560P	C612	ECEA1HU470	50V 47U
C23	ECBT1H102KB5	50V 1000P	C613, 614	ECKR1H103ZF5	50V 0.01U
C24	ECEA0JU101B	6.3V 100U	C615, 616	ECEA1VU220	35V 22U
C25, 26	ECQB1H472JZ	50V 4700P	C617, 618	ECKR1H103ZF5	50V 0.01U
C27, 28	ECQB1H223JZ3	50V 0.022U	C619, 620	ECEA1AU102B	10V 1000U
C29, 30	ECQB1H103JZ	50V 0.01U	C621, 622	ECEA1CK470	16V 47U
C31, 32	ECQB1H223JZ3	50V 0.022U	C623, 624	ECBT1E103ZF	25V 0.01U
C33, 34	ECQV1H563JZ3	50V 0.056U	C625, 626	ECKR1H103ZF5	50V 0.01U
C37, 38	ECBT1H181KB5	50V 180P	C701	ECKR1H103ZF5	50V 0.01U
C39, 40	ECEA1HUR47	50V 0.47U	C702	ECBT1E103ZF	25V 0.01U
C41, 42	ECQB1H822JZ	50V 8200P	C901	ECEA0JU222B	6.3V 2200U
C43, 44	ECEA1EK4R7	25V 4.7U	C902, 903	ECKR1H103ZF5	50V 0.01U
C45, 46	ECBT1H561KB5	50V 560P	C904	ECEA1EK4R7	25V 4.7U
C47, 48	ECKR2H101KB5	500V 100P	C905	ECEA1HK010B	50V 1U
C49, 50	ECQV1H104JZ3	50V 0.1U	C906	ECEA1CK100B	16V 10U
C51, 52	ECEA0JU101B	6.3V 100U			
C53, 54	ECBT1H391KB5	50V 390P			
C55, 56	ECBT1C472KR5	16V 4700P			
C57, 58	ECQB1H153JZ	50V 0.015U			
C301	ECQP1153JZ	100V 0.015U			
C302	ECEA1EK4R7	25V 4.7U			
C303	ECKR1H392KB5	50V 3900P			
C304, 305	ECKW1H222KB5	50V 2200P			
C306	ECKD1H682KB	50V 6800P			
C307	ECKR1H103ZF5	50V 0.01U			
C308	ECEA1AU221	10V 220U			
C309	ECKR1H103ZF5	50V 0.01U			

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST					
DECK1				143	RUB515Z	LEVER	
101	RXQ0021	HEAD BLOCK (PLAYBACK)		144	RUB509ZA	LEVER	
102	RJA793ZD	HEAD BASE		145	RDV108ZA	CAPSTAN BELT	
103	RZLAR300	ROD		146	RUB507Z	EJECT ROD (L)	
103-1	RUW143Z	SPRING		148	RUW144ZA	SPRING	
104	1UB0089ZA	ARM		149	RHG3032Z	RUBBER CUSHION	
104-1	RUW148ZA	SPRING		150	RNL180ZB	DAMPER ARM	
105	1DM0018ZA	REEL TABLE (R)		151	REX0061	LEAD WIRE BLOCK	
106	1DM0017ZA	REEL TABLE (F)		161	XTW2+6L	SCREW	
107	RUB502Z	LEVER		162	XTW2+8L	SCREW	
108	RDG5772Z	GEAR		163	XTN26+7J	SCREW	
109	RUB508ZB	BRAKE ROD		164	XTN26+16F	SCREW	
110	RUB506Z	LEVER		165	XTW2+8S	SCREW	
111	1UB0088ZA	ARM (R)		166	XYC2+JF16	SCREW	
111-1	RUW141Z	SPRING		167	QHQ1303	SCREW	
112	1UB0087ZA	ARM (F)		169	XYN26+F6	SCREW	
112-1	RUW140Z	SPRING					
114	RNL1Z	DAMPER ARM					
115	RUB503Z	MAIN LEVER					
116	RZUSX980	CHASSIS					
117	RUW142ZA	SPRING					
118	RUD105Z	SPRING					
120	RUW139ZA	SPRING					
121	RFM133ZA	DC MOTOR					
122	1UE0015ZA	PLUNGER					
123	RUB428Z	MOVING IRON CORE					
124	RUL1030XC	ANGLE					
125	RMD5014Z	ANGLE					
126	RDG5927ZG	GEAR					
127	1DW0053ZB	FLYWHEEL (F)					
127-1	RNW139ZC	WASHER					
128	1DW0054ZC	FLYWHEEL (R)					
128-1	RNW138Z	WASHER					
129	1DG0006ZA	REEL TABLE GEAR					
130	RUB513Z	ARM					
131	1UB0091ZA	LEVER					
131-1	RUW146ZA	SPRING					
132	1DR0011ZA	MAIN PULLEY					
133	RDV90ZB	BELT					
134	RDG5769ZA	REEL TABLE GEAR					
135	RUQ10Z	SPRING					
136	RUW145ZA	SPRING					
137	1UB0090ZA	ROD					
137-1	RUB512Z	ROD					
138	RDG5773ZB	GEAR					
139	RUQ30Z	SPRING					
140	RUS609Z	TAPE PRESSURE SPRING					
141	RUB514Z	LEVER					
142	RUW147ZA	SPRING					

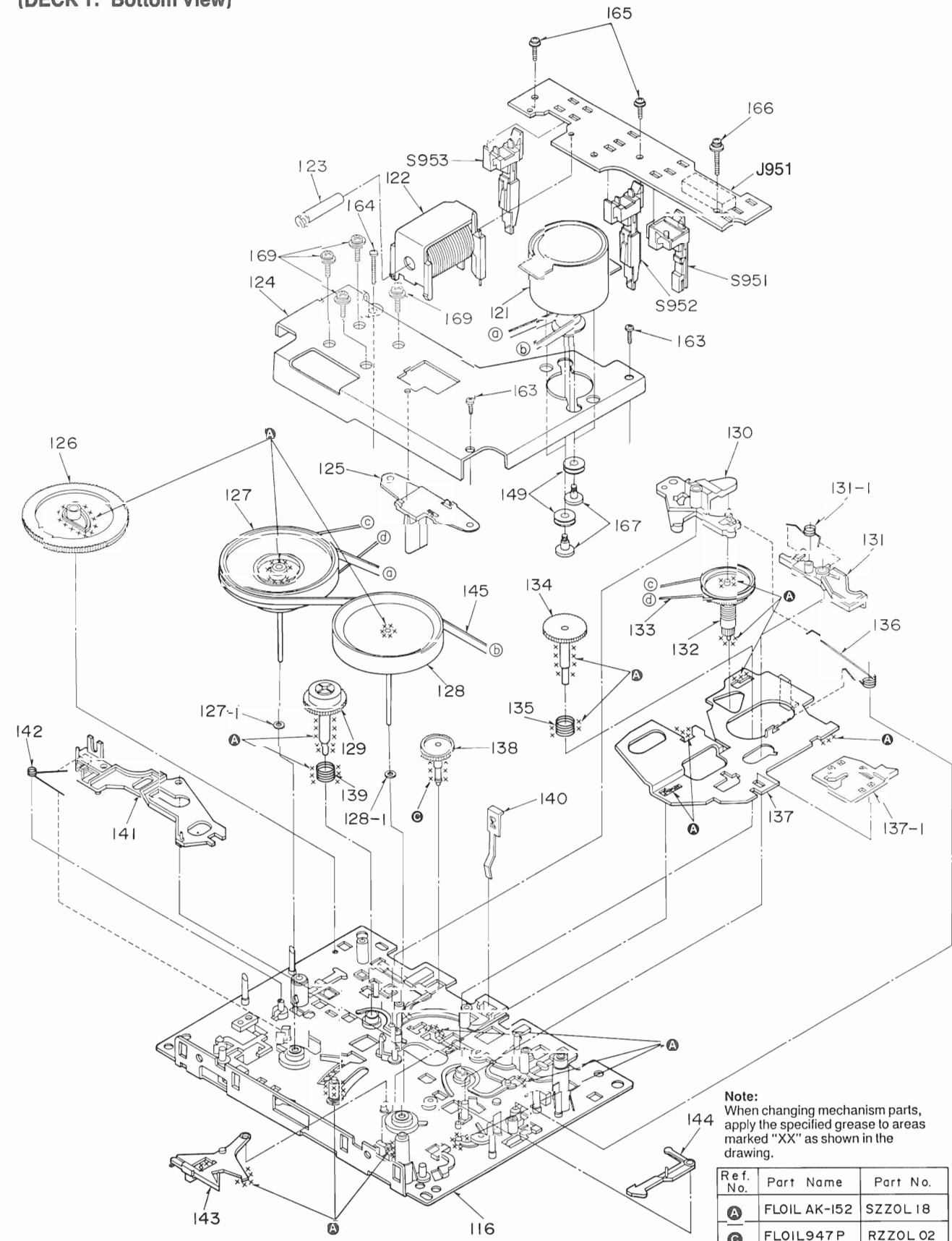
MECHANISM PARTS LOCATION •DECK 1



MECHANISM PARTS LOCATION •DECK 1

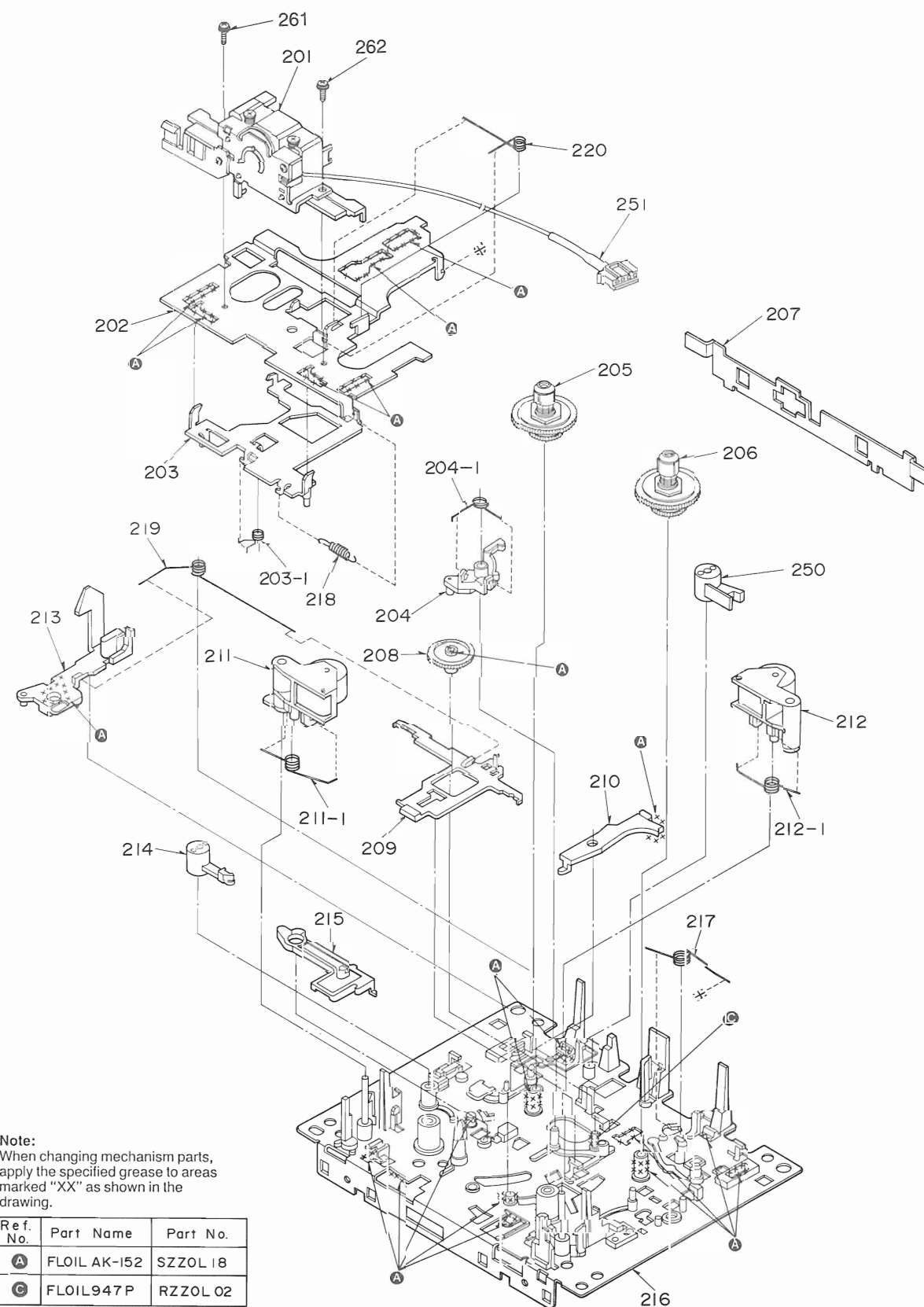


(DECK 1: Bottom View)

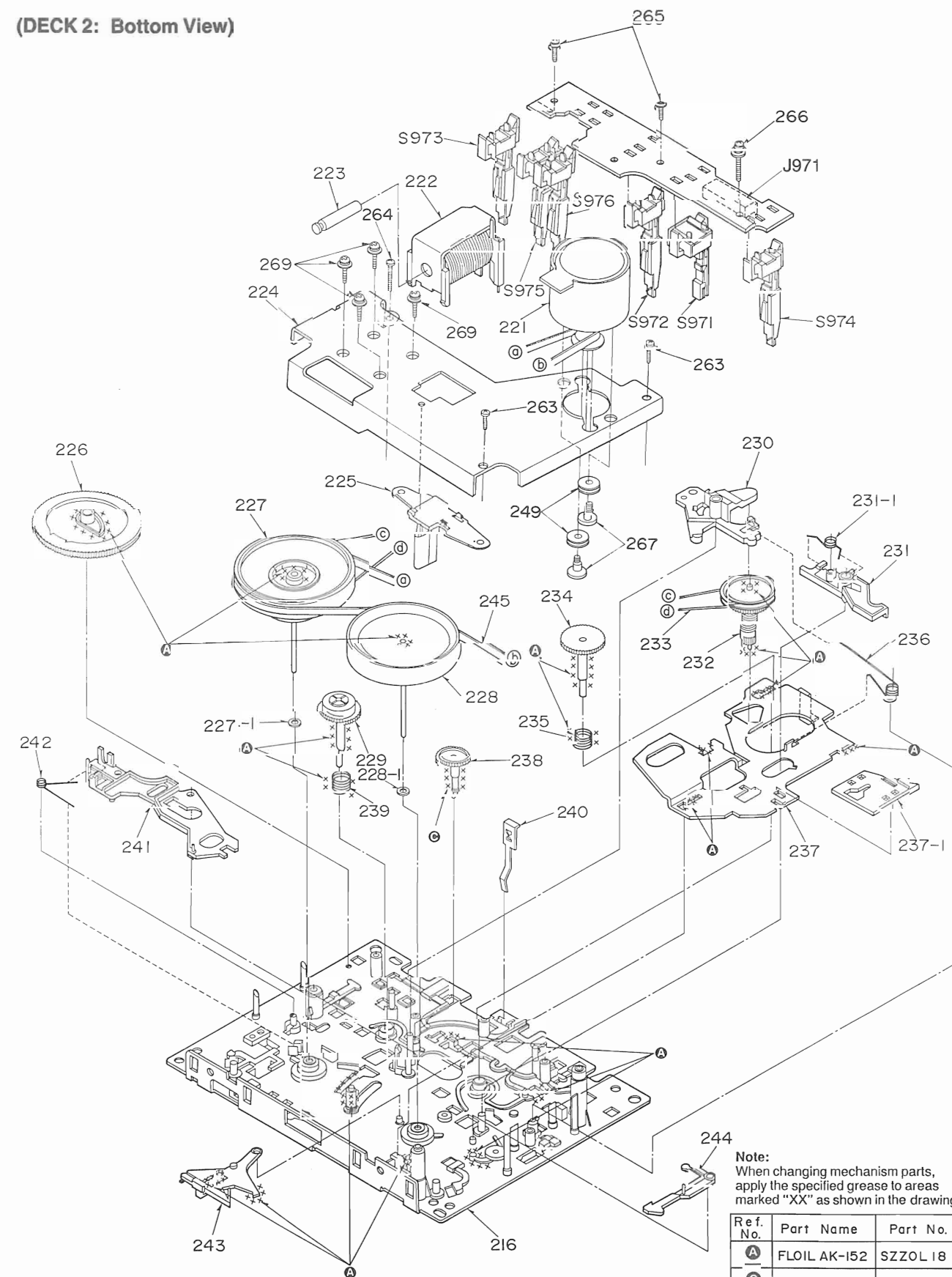


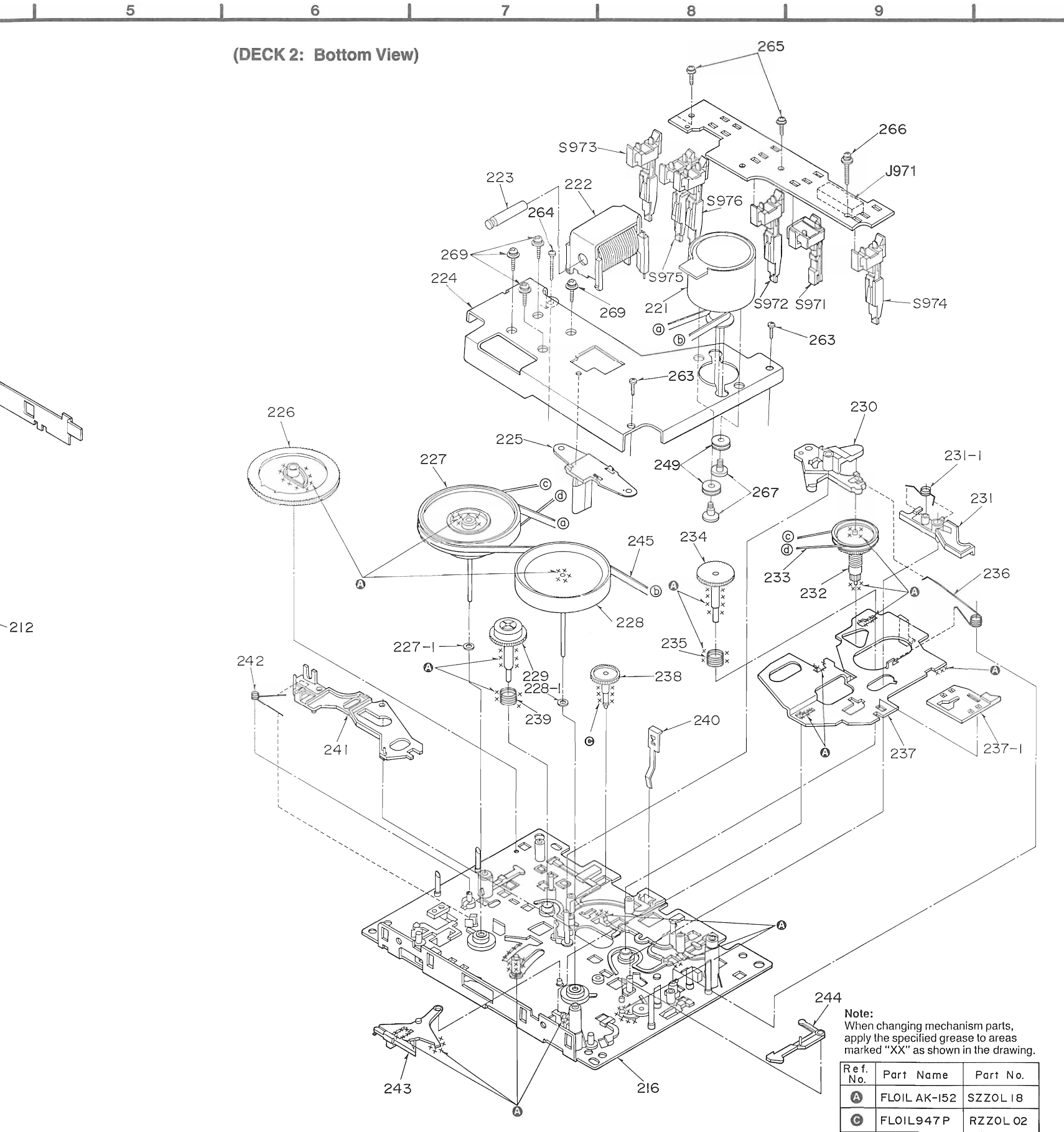
MECHANISM PARTS LOCATION • DECK 2

(DECK 2: Top View)



(DECK 2: Bottom View)





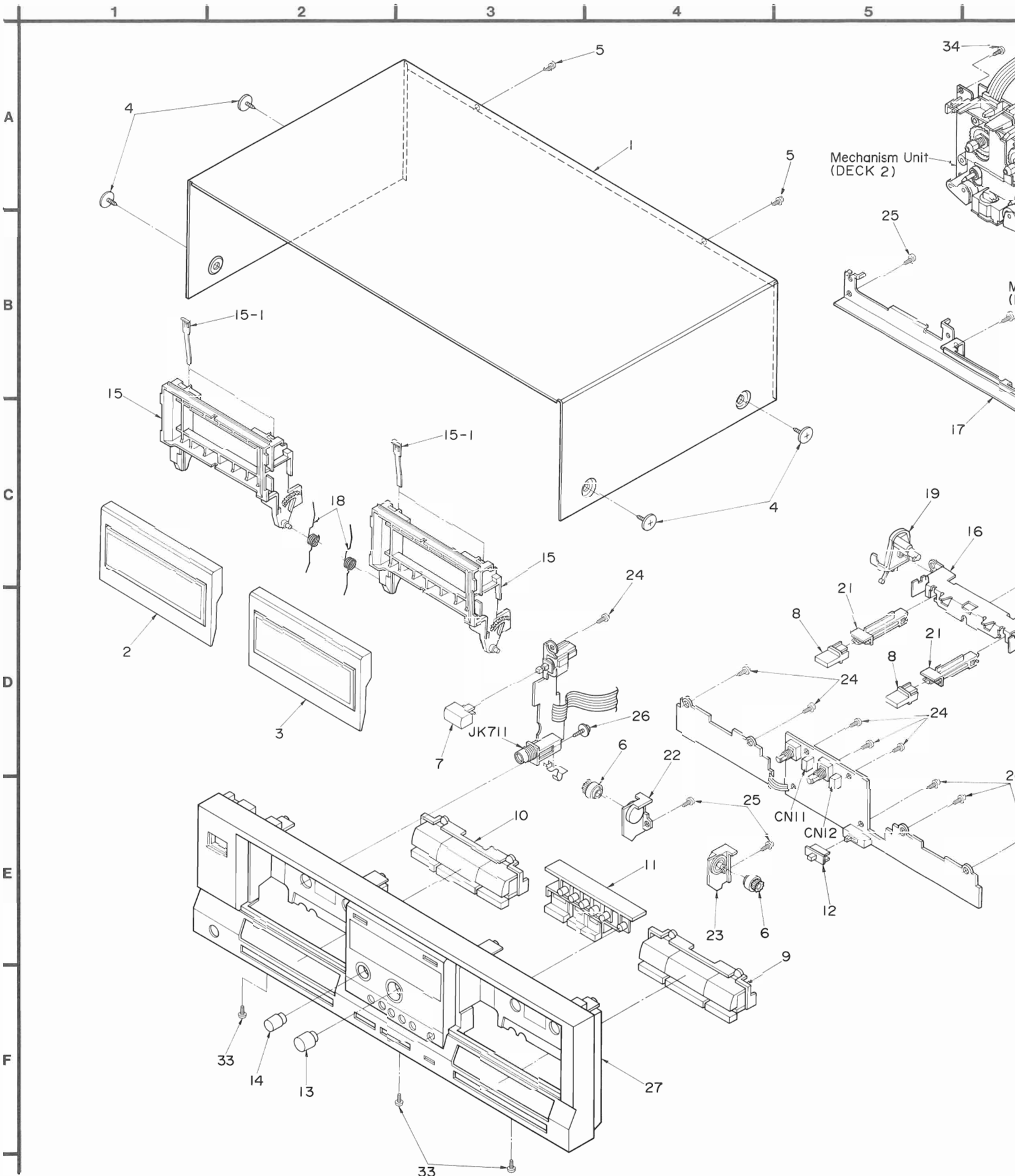
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Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST		241	RUB514Z	LEVER	
				242	RUW147ZA	SPRING	
				243	RUB515Z	LEVER	
DECK2				244	RUB509ZA	LEVER	
201	RXQ0019	HEAD BLOCK (REC./PLAYBACK)		245	RDV108ZA	CAPSTAN BELT	
202	RUA793Z	HEAD BASE		249	RHG3032Z	RUBBER CUSHION	
203	RZLAR300	ROD		250	RNL180ZB	DAMPER ARM	
203-1	RUW143Z	SPRING		251	REX0059	LEAD WIRE BLOCK	
204	1UB0089ZA	ARM		261	XTW2+6L	SCREW	
204-1	RUW148ZA	SPRING		262	XTW2+8L	SCREW	
205	1DM0018ZA	REEL TABLE (R)		263	XTN26+7J	SCREW	
206	1DM0017ZA	REEL TABLE (F)		264	XTN26+16F	SCREW	
207	RUB502Z	LEVER		265	XTW2+8S	SCREW	
208	RDG5772Z	GEAR		266	XYC2+JF16	SCREW	
209	RUB508ZB	BRAKE ROD		267	QH1303	SCREW	
210	RUB506Z	LEVER		269	XYN26+F6	SCREW	
211	1UB0088ZA	ARM (R)					
211-1	RUW141Z	SPRING					
212	1UB0087ZA	ARM (F)					
212-1	RUW140Z	SPRING					
213	RUB541Z	EJECT ROD (R)					
214	RNL1Z	DAMPER ARM					
215	RUB503Z	MAIN LEVER					
216	RZUSX980	CHASSIS					
217	RUW142ZA	SPRING					
218	RUD105Z	SPRING					
219	RUW167ZA	SPRING					
220	RUW139ZA	SPRING					
221	RFM133ZA	DC MOTOR					
222	1UE0015ZA	PLUNGER					
223	RUB428Z	MOVING IRON CORE					
224	RUL1030XC	ANGLE					
225	RMD5014Z	ANGLE					
226	RDG5927ZG	GEAR					
227	1DW0053ZB	FLYWHEEL (F)					
227-1	RNW139ZA	WASHER					
228	1DW0054ZC	FLYWHEEL (R)					
228-1	RNW138Z	WASHER					
229	1DG0006ZA	REEL TABLE GEAR					
230	RUB513Z	ARM					
231	1UB0091ZA	LEVER					
231-1	RUW146ZA	SPRING					
232	1DR0011ZA	MAIN PULLEY					
233	RDV90ZB	BELT					
234	RDG5769ZA	REEL TABLE GEAR					
235	RUQ10Z	SPRING					
236	RUW145ZA	SPRING					
237	1UB0090ZA	ROD					
237-1	RUB512Z	ROD					
238	RDG5773ZB	GEAR					
239	RUQ30Z	SPRING					
240	RUS609Z	TAPE PRESSURE SPRING					

Ref.No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RKM0016-K1	COVER	
2	RYF0119C-K	CASSETTE LID (DECK1)	
3	RYF0119D-K	CASSETTE LID (DECK2)	
4	SNE2129-1	SCREW	
5	XTBS3+8JFZ1	SCREW	
6	RDG0145	GEAR	
7	RGU0030	BUTTON	
8	RGU0070	BUTTON	
9	RGU0519A-K	BUTTON	
10	RGU0520A-K	BUTTON	
11	RGU0522A-K	BUTTON	
12	RGV0072-K	KNOB	
13	RGW0109-K	KNOB	
14	RGW0110-K	KNOB	
15	RKF0169A-K	CASSETTE HOLDER	
15-1	QBP2006A	SPRING	
16	RMA0406	ANGLE	
17	RMA0407	ANGLE	
18	RME0068-1	SPRING	
19	RML0185-1	LEVER(L)	
20	RML0186-1	LEVER(R)	
21	RMM0014	ROD	
22	RMRO357	HOLDER(L)	
23	RMRO358	HOLDER(R)	
24	XTBS26+8J	SCREW	
25	XTB3+10JFZ	SCREW	
26	XTWS3+10Q	SCREW	
27	RFKGSTR313PK	FRONT PANEL ASS'Y	<P, PC>
27	RFKGSTR313EK	FRONT PANEL ASS'Y	<E, EB, EG, GC, GN, PX>
28	RGR0112A-B2	REAR PANEL	<P, PC>
28	RGR0112B-D1	REAR PANEL	<E>
28	RGR0112B-E1	REAR PANEL	<EG>
28	RGR0112B-F1	REAR PANEL	<EB, GN>
28	RGR0112C-B2	REAR PANEL	<GC>
28	RGR0112C-C2	REAR PANEL	<PX>
30	RKQ0089	HOLDER	
31	RFKJSTR313PK	BOTTOM BOARD ASS'Y	
31-1	RKA0009-1	FOOT	
32	SJS9331A	AC OUTLET COVER	<P, PC>
33	XTBS3+8JFZ1	SCREW	
34	XTB3+10JFZ	SCREW	
35	XTB3+20JFZ	SCREW	
36	RMN0112	FL HOLDER	
		PACKING MATERIAL	
P1	RPG0801	CARTON BOX	<P, PX>
P1	RPG0802	CARTON BOX	<PC>
P1	RPG0803	CARTON BOX	<E, EB, EG, GC, GN>

Ref.No.	Part No.	Part Name & Description	Remarks
P2	RPN0296	PAD	
P3	SPSD152	CARTON BOX, ACCESSORIES	
		ACCESSORIES	
A1	RQF0931	INST. MANUAL ASS'Y	<P>
A1	RQF0932	INST. MANUAL ASS'Y	<PC>
A1	RQF0933	INST. MANUAL ASS'Y	<E>
A1	RQF0934	INST. MANUAL ASS'Y	<EB>
A1	RQF0935	INST. MANUAL ASS'Y	<EG>
A1	RQF0936	INST. MANUAL ASS'Y	<GC>
A1	RQF0937	INST. MANUAL ASS'Y	<GN>
A1	RQF0938	INST. MANUAL ASS'Y	<PX>
A1-1	RQT0830-P	INSTRUCTION MANUAL	<P>
A1-1	RFKSSTR313PC	INSTRUCTION MANUAL	<PC>
A1-1	RFKSSTR313EK	INSTRUCTION MANUAL	<E>
A1-1	RQT0835-D	INSTRUCTION MANUAL	<EG>
A1-1	RQT0834-B	INSTRUCTION MANUAL	<EB, GN>
A1-1	RQT0832-G	INSTRUCTION MANUAL	<GC>
A1-1	RQT0836-M	INSTRUCTION MANUAL	<PX>
A1-2	SQX7179	WARRANTY CARD	<P>
A1-2	SQX7183	WARRANTY CARD	<PC>
A1-2	RQA0013	WARRANTY CARD	<E, EB, EG>
A1-2	SQX7186	WARRANTY CARD	<GN>
A1-2	SQX7071-1	WARRANTY CARD	<PX>
A1-3	SQX9129-1	SERVICE CENTER LIST	<P>
A1-3	SQX9131	SERVICE CENTER LIST	<PC>
A1-3	RQCB0169	SERVICE CENTER LIST	<E, EB, EG, GC, GN>
A1-4	XZB24X33C04	COVER	<P>
A1-4	SPB1061	COVER	<PC, E, EB, EG, GC, GN, PX>
A2	RJA0004	AC POWER SUPPLY CORD	<GC, PX> △
A2	SFDAC05E03	AC POWER SUPPLY CORD	<E, EG> △
A2	SJA173-1	AC POWER SUPPLY CORD	<GN> △
A2	SJA175	AC POWER SUPPLY CORD	<PC> △
A2	SJA175-1	AC POWER SUPPLY CORD	<P> △
A2	SJA193-1	AC POWER SUPPLY CORD	<EB> △
A3	SJP2249-3	STEREO CONNECTION CABLE	
A4	SJP2257T	STEREO MINI CABLE	
A5	SJP9215	AC PLUG ADAPTOR	<GC, PX>△

CABINET PARTS LOCATION



CABINET PARTS LOCATION

