

Service Manual

Dolby NR-Equipped
Stereo Double Cassette Deck

Cassette Deck
RS-X502



Color

(K)... Black Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	
(EG)	F.R. Germany and Italy.	
(GC)	Asia, Latin America, Middle Near East and Africa.	
(GN)	Oceania.	

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MECHANISM SERIES (AR300)

SPECIFICATIONS

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
(tape deck 1) Play	Permalloy head
(tape deck 2) Rec/play	Permalloy head
Erasing	Double-gap ferrite head
Motors	
(tape deck 1) Capstan	DC servo motor
(tape deck 2) Capstan	DC servo motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speeds	4.8 cm/sec. (1 7/8 ips)
Frequency response	
NORMAL	30 Hz~16 kHz
	40 Hz~15 kHz (DIN)
CrO ₂	30 Hz~17 kHz
	40 Hz~16 kHz (DIN)
METAL	30 Hz~18 kHz
	40 Hz~17 kHz (DIN)
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 0.07% (WRMS)
±0.2% (DIN)

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

Input sensitivity and impedance
LINE IN 60 mV/47 kΩ

Output voltage and impedance
LINE OUT 400 mV/800Ω

■ GENERAL

Power consumption 20 W

Power supply
For Great Britain and Oceania AC 50/60 Hz, 230—240 V
For Continental Europe, F.R. Germany and Italy AC 50/60 Hz, 230—240 V

For others AC 50/60 Hz, 110 V/127 V/220 V/240 V

Dimensions (W × H × D) 360 × 129 × 297 mm
(14³/₁₆" × 5³/₃₂" × 11¹¹/₁₆")

Weight 4.6 kg (10.1 lb.)

Note:

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

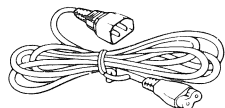
Technics

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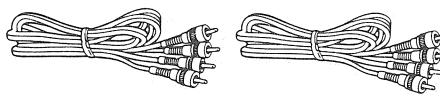
ACCESSORIES



AC power supply cord
 (SJA173)..... (GN)
 (SJA187)..... (E, EG) 1 pc.
 (SJA188)..... (EB)
 (RJA0004) (GC)



L-type cable
 (SJP2257T)..... 1 pc.



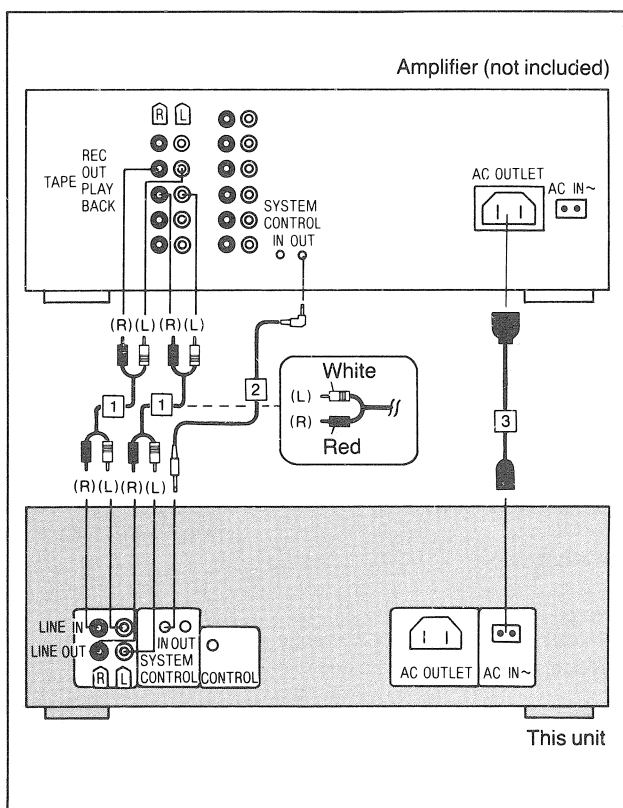
Stereo connection cables
 (SJP2249-3)..... 2 pcs.

AC plug adaptor
 (SJP9215)..... 1 pc.
 (For GC area only)

CONNECTIONS

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

- 1 Connect the stereo connection cables.
- 2 Connect the L-type cable.
- 3 Connect the AC power supply cord to the "AC OUTLET" of the amplifier or the household AC outlet.



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

Refer to the illustration together with the instructions provided below.

"SYSTEM CONTROL IN" terminal

Make a connection from this terminal to the "SYSTEM CONTROL OUT" terminal for a cassette deck on a Technics amplifier.
 (For detailed information, refer to the operating instructions of the Technics amplifier.)

"SYSTEM CONTROL OUT" terminal

Make a connection from this terminal to the "SYSTEM CONTROL IN" terminal of a Technics stereo sound processor or to the "SYSTEM CONTROL IN" terminal of a Technics compact disc player.

(For detailed information, refer to the operating instructions of the Technics stereo sound processor or the Technics compact disc player.)

"CONTROL" terminal

Make a connection from this terminal to the "CONTROL" terminal for a cassette deck on a Technics multi compact disc player.
 (For detailed information, refer to the operating instructions of the Technics multi compact disc player.)

AC power supply cord (3)

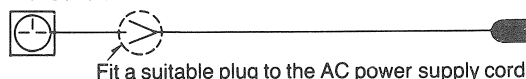
Notes:

- The configuration of the AC outlet and AC power supply cord differs according to area.
- If this unit is not to be connected with the amplifier, the cord is to be connected to the household AC outlet.

For United Kingdom

Cut off and dispose of the plug and replace with a suitable plug. (Refer to "For United Kingdom" above.)

Household AC outlet

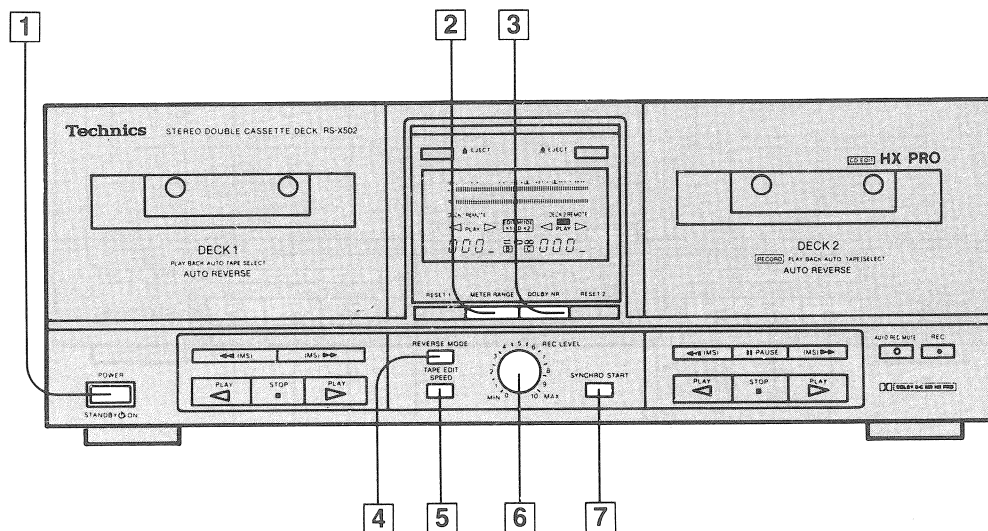


"AC OUTLET"

"UNSWITCHED" outlet

Power is always available, regardless of power switch.
 Audio equipment rated up to 100 W can be connected.

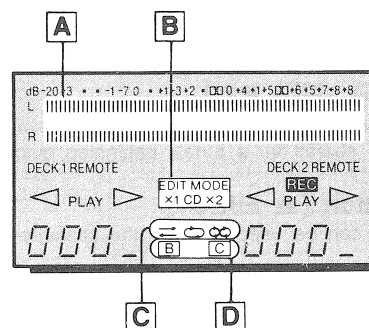
LOCATION OF CONTROLS



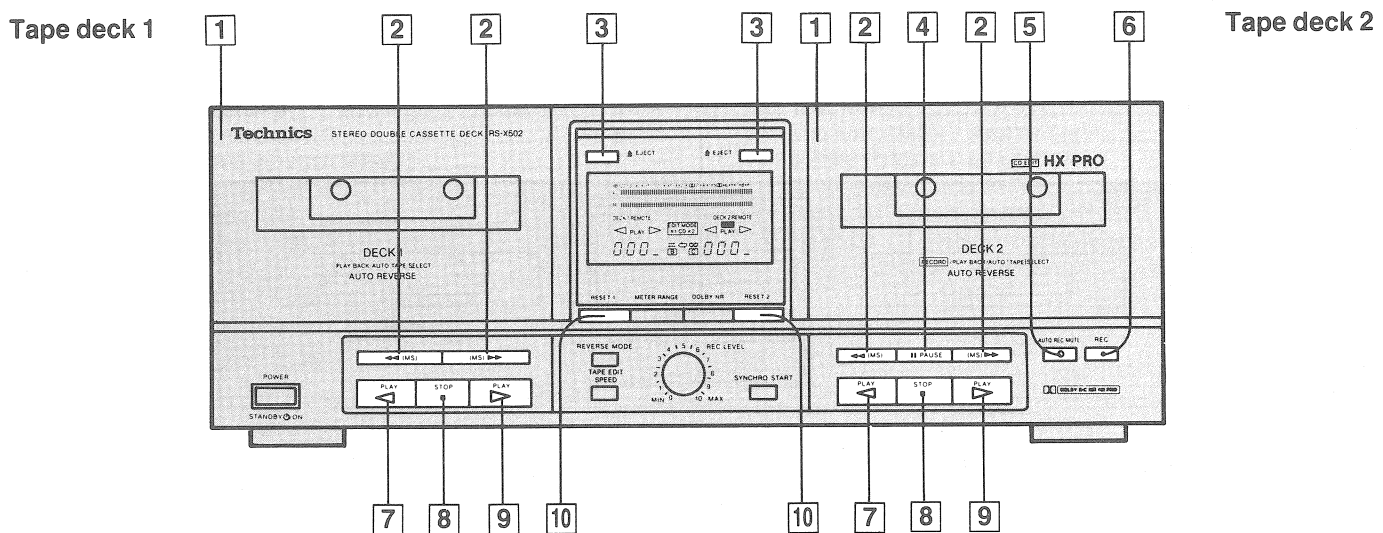
Controls common to both tape decks

- 1 Power "STANDBY  /ON" switch (POWER, STANDBY  /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  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 Meter-range selector (METER RANGE)**
This selector can be used to select the meter-range display of the input level meter.
- 3 Dolby noise-reduction selector (DOLBY NR)**
This selector can be used to reduce the hiss noise that is characteristic of tape. This unit is provided with both the B-type and C-type noise-reduction systems.
- 4 Reverse-mode selector (REVERSE MODE)**
This selector can be used for selection of the reverse mode (for either playback or recording).
- 5 Tape-to-tape recording tape-speed selector (TAPE EDIT SPEED)**
This selector can be used to select the recording speed when a tape-to-tape recording is made.
- 6 Recording-level control (REC LEVEL)**
This control can be used to regulate the recording level of tape deck 2.
- 7 Synchro-start button (SYNCHRO START)**
This button can be used to start a tape-to-tape recording, simultaneously starting tape deck 1 (the playback deck) and tape deck 2 (the recording deck).

Indicators common to both tape decks



- A Input level meter**
During playback, this meter indicates the level of the recorded sound source.
During recording, it indicates the level being recorded, adjusted by the recording-level control.
- B Edit-recording indicators (EDIT MODE, CD, $\times 1$, $\times 2$)**
The words "EDIT MODE" and " $\times 1$ " (or " $\times 2$ ") indicator will illuminate when a tape-to-tape recording is made.
The words "EDIT MODE" and "CD" indicator will illuminate when a CD edit-recording is made.
- C Reverse-mode indicators ( ,  , )**
One of these indicators illuminates to show which of the reverse modes was selected by the reverse-mode selector.
- D Dolby noise-reduction indicators ( , )**
One of these indicators illuminates to show the type of Dolby noise-reduction system selected by pressing the Dolby noise-reduction selector.



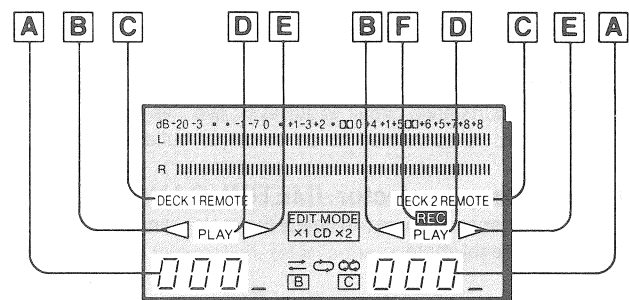
Controls applicable to tape deck 1 and/or 2

- 1 Cassette holder**
- 2 Fast-forward/rewind/search buttons [◀◀ (MS), (MS) ▶▶]**
These buttons can be used to fast-forward or rewind the tape, or to easily search for a tune's beginning quickly.
- 3 Eject button (▲ EJECT)**
This button can be used to open the cassette holder.
- 4 Pause button (⏸ PAUSE)**
This button can be used to temporarily stop the tape playback or recording, on the tape deck 2 only.
- 5 Automatic-record-muting button (⏏ AUTO REC MUTE)**
This button can be used to make a silent interval on the tape being recorded, on the tape deck 2 only.
- 6 Record button (● REC)**
This button can be used to change the tape deck 2 to the recording stand-by mode.
- 7 Reverse-side playback button (◁ PLAY)**
This button can be used to start the playback or recording (of tape deck 2 only) of side "B" of the cassette.
(The tape will then begin moving in the right-to-left direction.)
- 8 Stop button (■ STOP)**
This button can be used to stop tape movement.
- 9 Forward-side playback button (▷ PLAY)**
This button can be used to start the playback or recording (of tape deck 2 only) of side "A" of the cassette.
(The tape will then begin moving in the left-to-right direction.)

10 Tape counter reset button (RESET 1, RESET 2)

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

Indicators applicable to tape deck 1 and/or 2

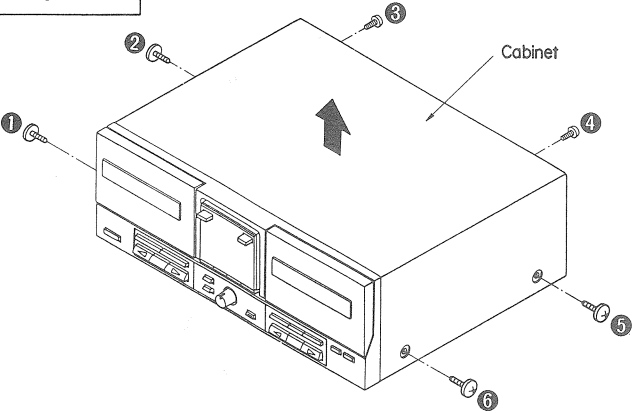
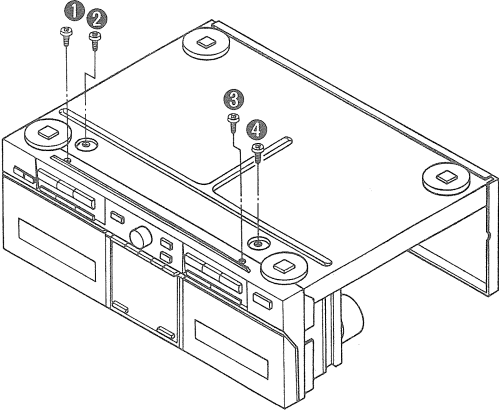
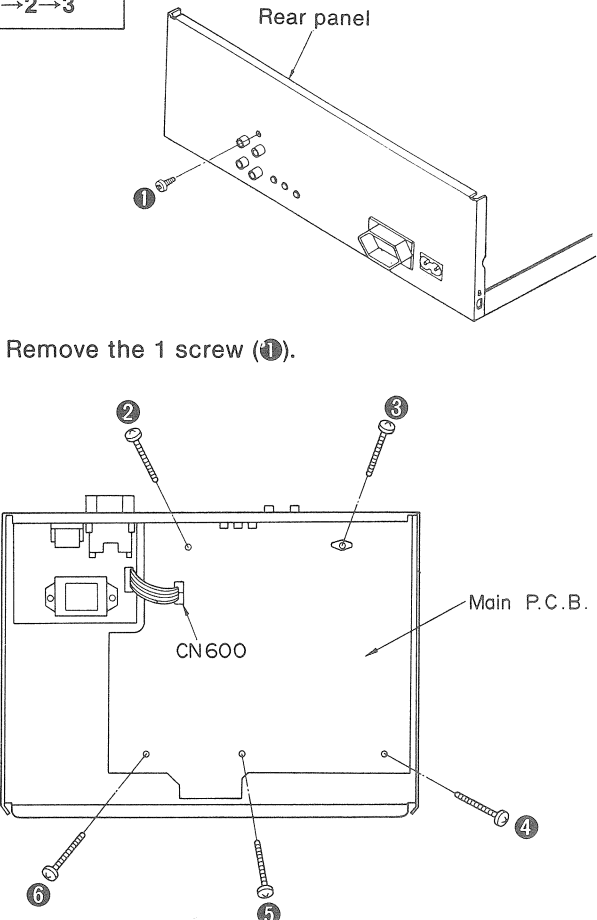
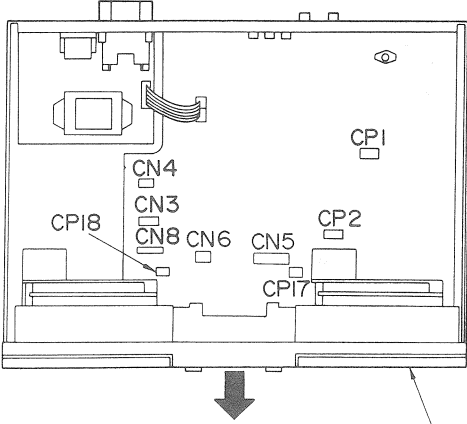
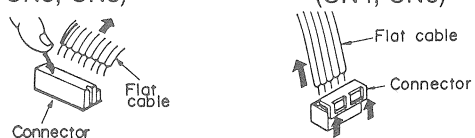


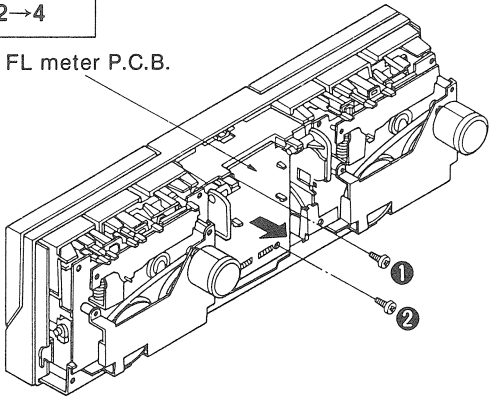
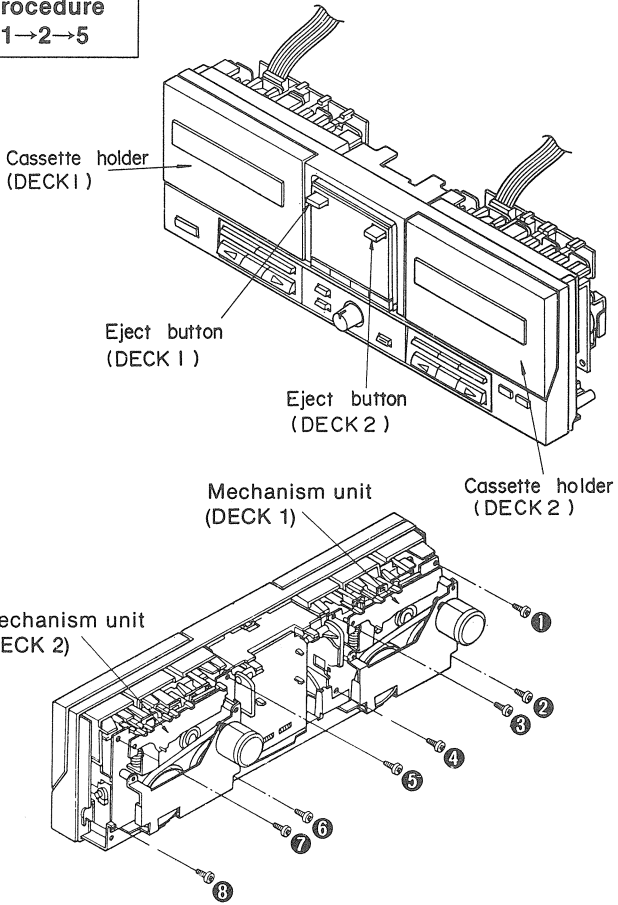
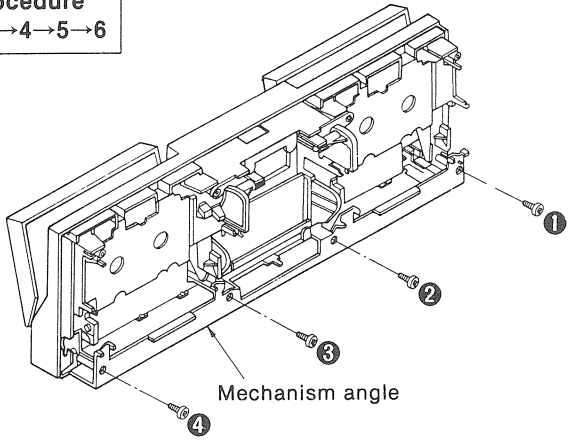
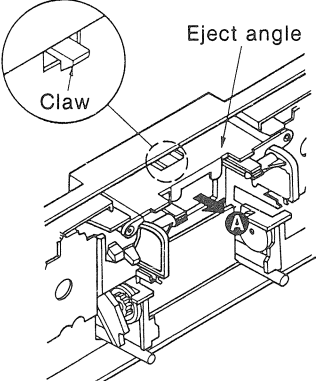
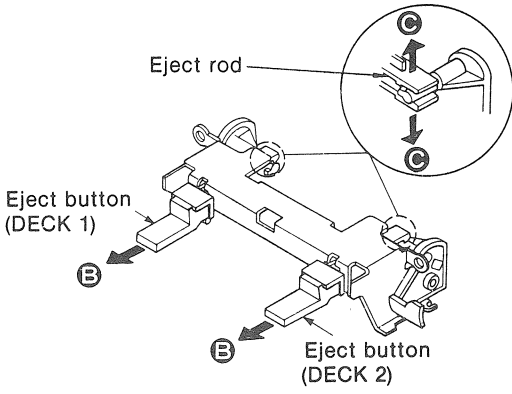
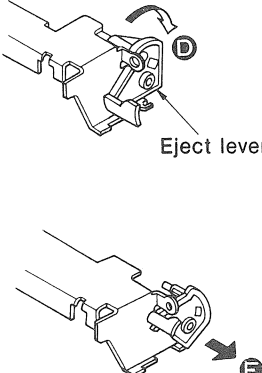
- A Tape counter**
Indicates the amount of tape movement (separately for tape deck 1 and tape deck 2).
- B Reverse-side indicator (◁)**
Illuminates during playback or recording (of tape deck 2 only) to indicate that side "B" of the tape is being used.
- C Remote-control indicator (DECK 1 REMOTE, DECK 2 REMOTE)**
This indicator illuminates to indicate that this tape deck can now be controlled by the remote-control transmitter (included with tuner).
- D Playback indicator (PLAY)**
When this indicator illuminates steadily, it indicates that this tape deck is in the playback mode or the recording mode (of tape deck 2 only). When it flashes continually, this is an indication that tape deck 2 is in the pause mode or the recording stand-by mode. When it flashes rapidly, this is an indication that this tape deck is in the search mode.
- E Forward-side indicator (▷)**
Illuminates during playback or recording (of tape deck 2 only) to indicate that side "A" of the tape is being used.
- F Recording indicator (REC)**
This indicator illuminates to indicate that this tape deck 2 is in the recording stand-by mode, or is recording.

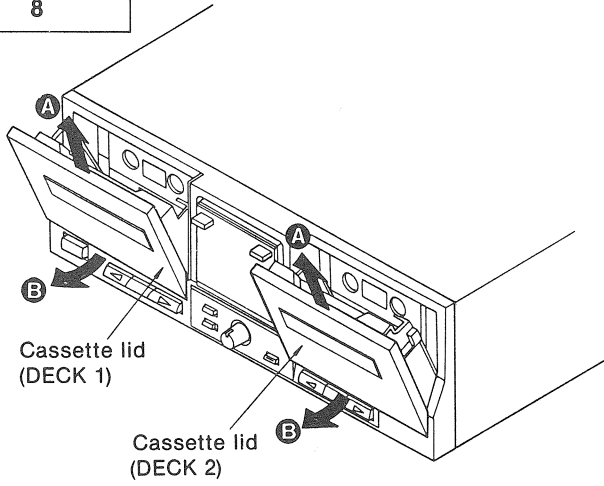
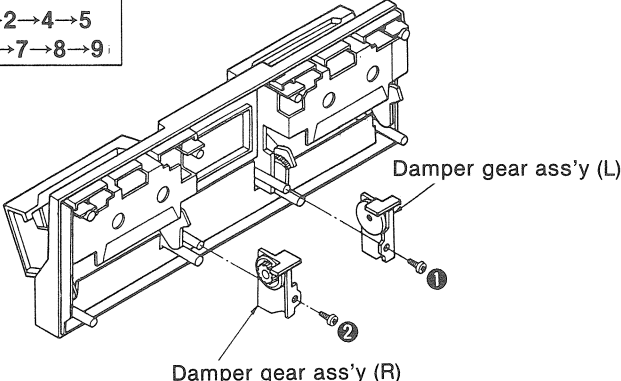
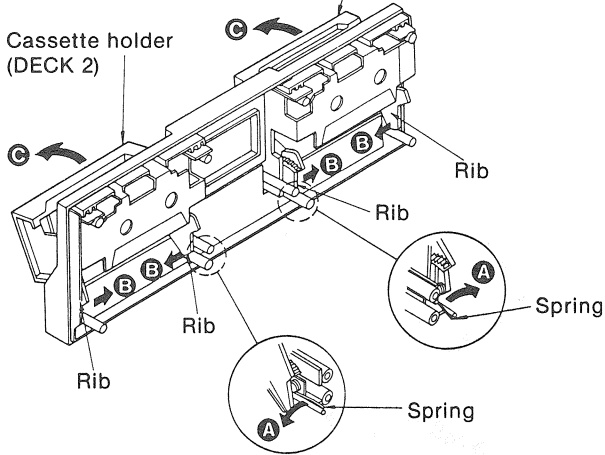
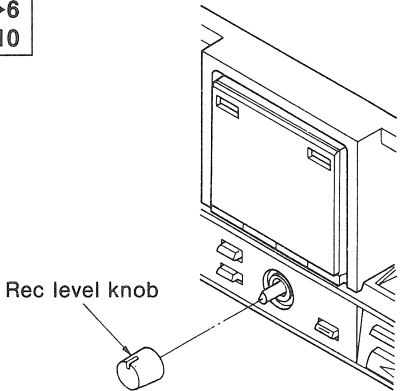
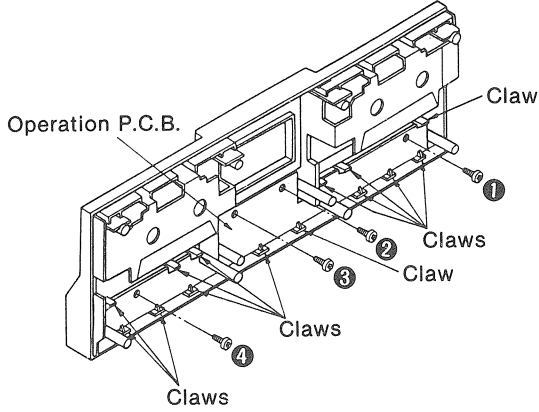
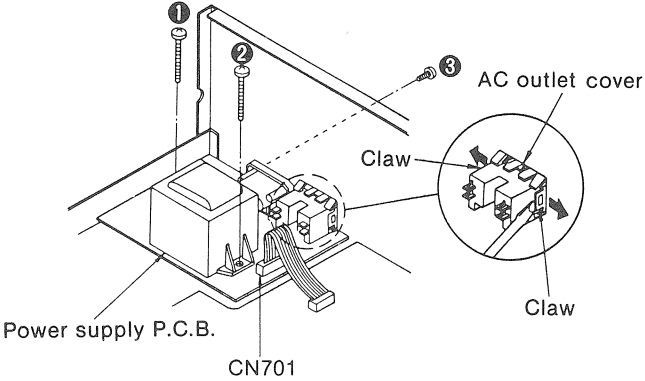
DISASSEMBLY INSTRUCTIONS

"ATTENTION SERVICER"

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

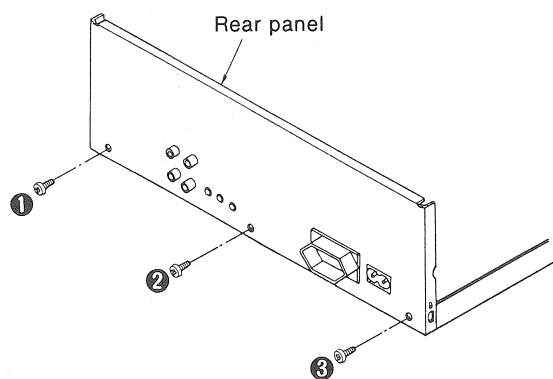
Ref. No. 1	Removal of the cabinet	Ref. No. 2	Removal of the front panel ass'y
Procedure 1		Procedure 1→2	
	 • Remove the 6 screws (①~⑥).		 1. Remove the 4 screws (①~④).
Ref. No. 3	Removal of the main P.C.B.		
Procedure 1→2→3			
	 1. Remove the 1 screw (①). 2. Remove the 5 screws (②~⑥). 3. Remove the 1 flat cable (CN600).		 2. Remove the 4 connectors (CP1, CP2, CP17, CP18). 3. Remove the 5 flat cables (CN3, CN4, CN5, CN6, CN8). 4. Remove the front panel ass'y in the direction of arrow. How to remove the flat cable • Pull out the flat cable while pressing the connector. (CN3, CN5, CN8) 1. Lift the connector. 2. Pull out the flat cable. (CN4, CN6) 

Ref. No. 4	Removal of the FL meter P.C.B.	Ref. No. 5	Removal of the mechanism units (DECK 1, DECK 2)
Procedure 1→2→4	 FL meter P.C.B. 1. Remove the 2 screws (①, ②). 2. Remove the FL meter P.C.B. in the direction of arrow.	Procedure 1→2→5	 Cassette holder (DECK 1) Eject button (DECK 1) Eject button (DECK 2) Mechanism unit (DECK 1) Cassette holder (DECK 2) Mechanism unit (DECK 2) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ■ Removal of the mechanism unit (DECK 1) 1. Press the eject button and open the cassette holder. 2. Remove the 4 screws (①~④). ■ Removal of the mechanism unit (DECK 2) 1. Press the eject button and open the cassette holder. 2. Remove the 4 screws (⑤~⑧).
Ref. No. 6	Removal of the mechanism angle		
Procedure 1→2→4→5→6	 Mechanism angle ① ② ③ ④ • Remove the 4 screws (①~④).		
Ref. No. 7	Removal of the eject angle, eject buttons, and eject lever		
Procedure 1→2→4→5→7	 Eject angle Claw ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ 1. Release the 1 claw. 2. Pull out the eject angle in the direction of arrow A.	 Eject rod Eject button (DECK 1) Eject button (DECK 2) ③ ④ ⑤ ⑥ ⑦ ⑧ 3. Pull out the claw of the eject rod in the direction of arrow B, remove the eject buttons and the eject rod in the direction of arrow C.	 Eject lever 4. Turn the eject lever in the direction of arrow D, and remove the eject lever in the direction of arrow E.

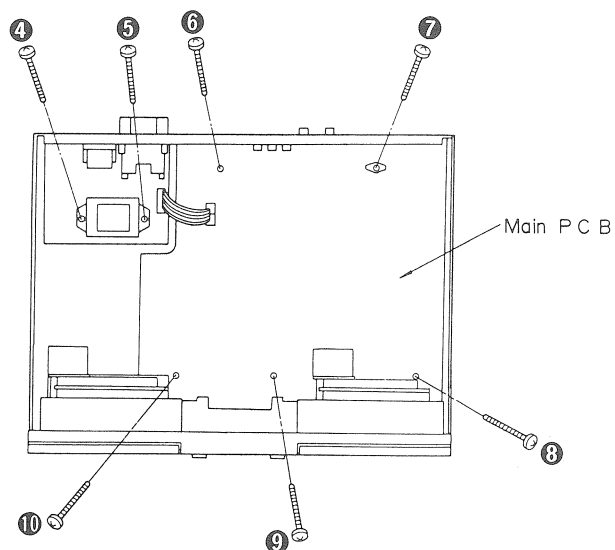
Ref. No. 8	Removal of the cassette lid (DECK 1, DECK 2)	Ref. No. 9	Removal of the cassette holder (DECK 1, DECK 2)
Procedure 8	 Cassette lid (DECK 1) Cassette lid (DECK 2) Lift the cassette lid in the direction of arrow A and remove it in the direction of arrow B.	Procedure 1→2→4→5 →6→7→8→9	 Damper gear ass'y (L) Damper gear ass'y (R) - Remove the 2 screws (1, 2). - Remove the damper gear ass'y (L) and damper gear ass'y (R).
Ref. No. 10	Removal of the operation P.C.B.	 Cassette holder (DECK 1) Cassette holder (DECK 2) Rib Rib Rib Rib Spring Spring - Remove the springs in the direction of arrow A. - Remove the ribs in the direction of arrow B. - Remove the cassette holder in the direction of arrow C.	
Procedure 1→2→4→5→6 →7→8→9→10	 Rec level knob Remove the rec level knob.	Ref. No. 11	Removal of the power supply P.C.B.
 Operation P.C.B. Claw Claws Claw Claws Claws - Remove the 4 screws (1~4). - Release the 14 claws.		Procedure 1→11	 AC outlet cover Claw Claw Power supply P.C.B. CN701 - Remove the 1 flat cable (CN701). - Remove the 3 screws (1~3). - Release the 2 claws of the AC outlet cover.

Ref. No.
12

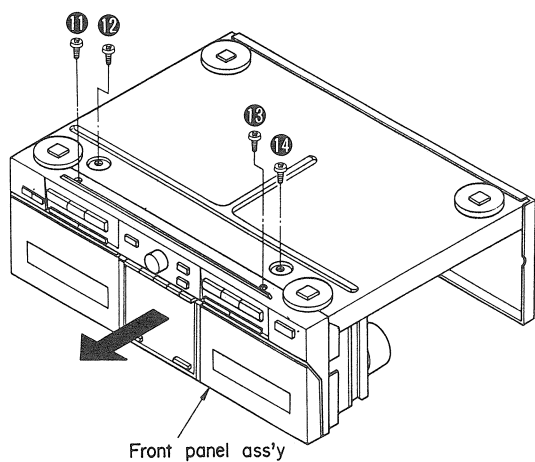
How to check the main P.C.B.

Procedure
1→12

1. Remove the 3 screws (①~③).

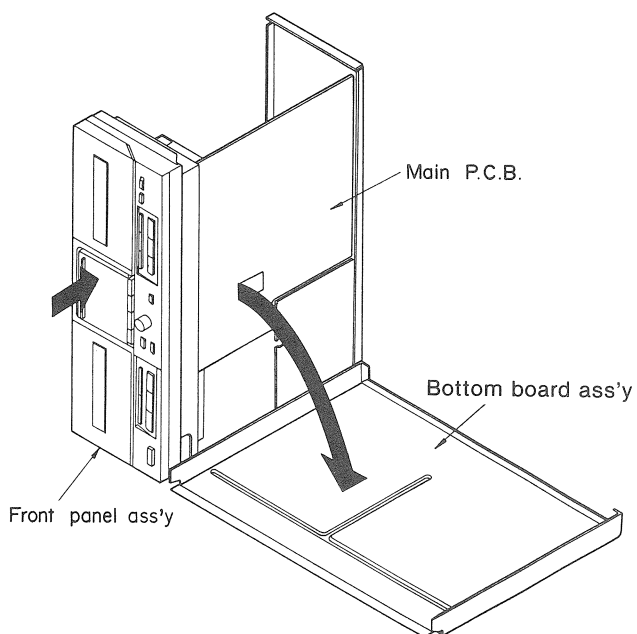


2. Remove the 7 screws (④~⑩).



3. Remove the 4 screws (⑪~⑭).

4. Remove the front panel ass'y in the direction of arrow.



5. Remove the bottom board ass'y.

6. Reinstall the front panel ass'y to the main P.C.B.

MEASUREMENTS AND ADJUSTMENTS

Measurement Condition

- Rec. level control; Maximum
- Reverse-mode selector switch; $\rightleftarrows$
- Tape-to-tape recording tape-speed selector; X1
- Dolby NR selector 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

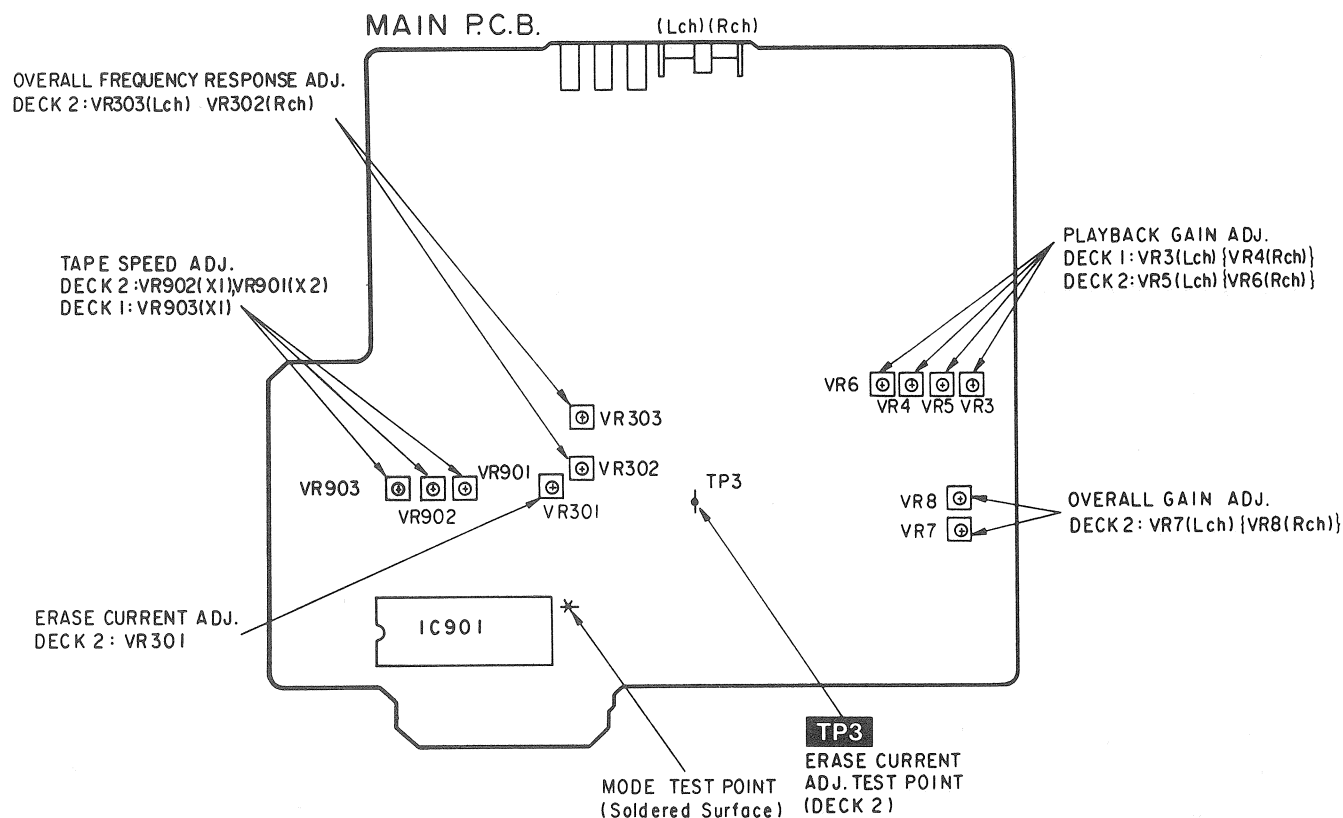
- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)

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

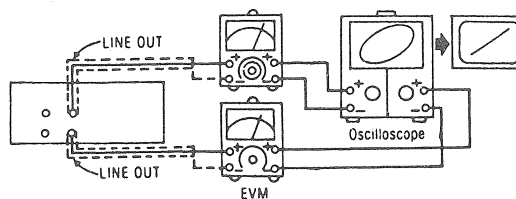
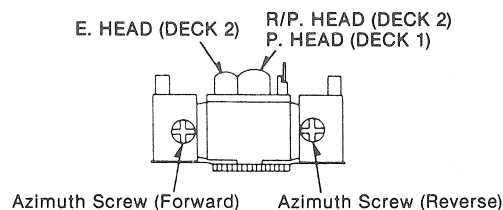


HEAD AZIMUTH ADJUSTMENT (DECK 1/2)

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

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

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

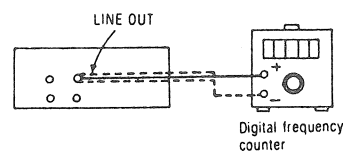
**Fig. 1****Fig. 2****TAPE SPEED ADJUSTMENT (DECK 1/2)****Normal speed**

1. Shift the Tape-to-tape recording tape-speed selector 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 Tape-to-tape recording tape-speed switch 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.

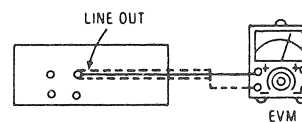
**Fig. 3**

(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)], 6000 ± 30 Hz [High (X2)]

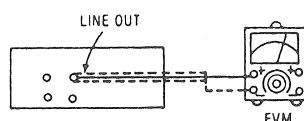
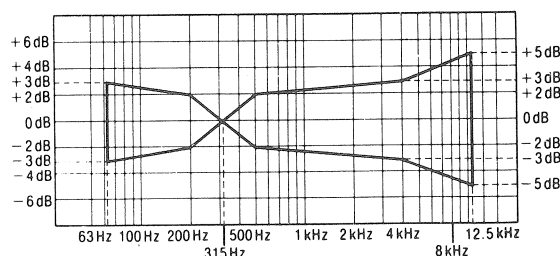
PLAYBACK GAIN ADJUSTMENT (DECK 1/2)

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

Standard value: $0.4V \pm 0.5dB$

**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 TP3 and GND is within the standard value.

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

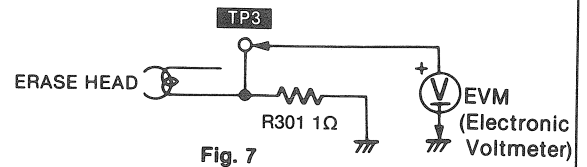


Fig. 7

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 (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 rangeIncrease 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.

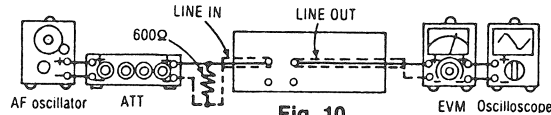


Fig. 10

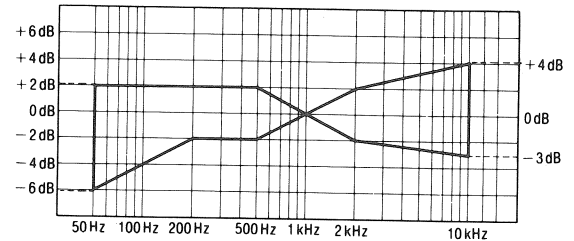
Normal Overall frequency response chart (NR OUT)

Fig. 8

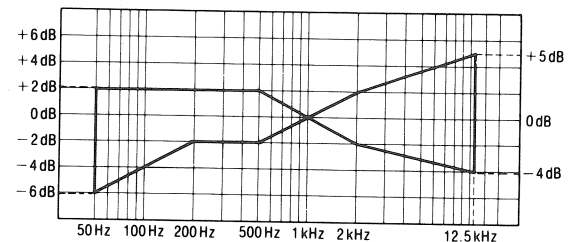
CrO₂ Metal Overall frequency response chart (NR OUT)

Fig. 9

OVERALL GAIN ADJUSTMENT (DECK 2)

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 VR7 (L-CH) and VR8 (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

Standard value: $0.4 \text{ V} \pm 0.5 \text{ dB}$

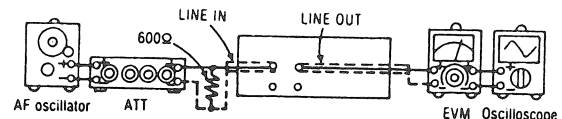
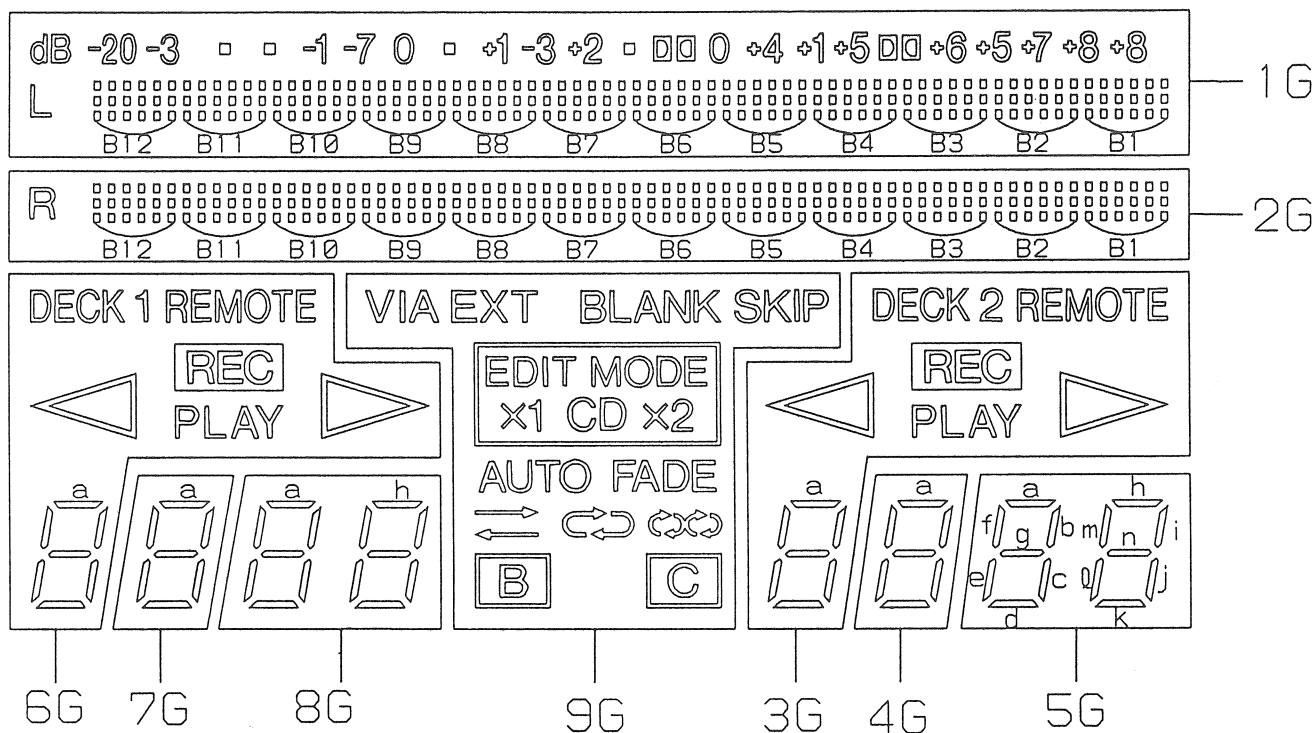


Fig. 11

INTERNAL CONNECTION OF FL

• Grid connection diagram



• Anode connection table

	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1		n	-		n	-		B1	B1
P2		j	-	PLAY	j	-	PLAY	B2	B2
P3		l	-		l	-		B3	B3
P4	EDIT MODE	k	-	DECK 1 REMOTE	k	-	DECK 2 REMOTE	B4	B4
P5	CD	h	-	REC	h	-	REC	B5	B5
P6	x2	a	a	a	a	a	a	B6	B6
P7	x1	b	b	b	b	b	b	B7	B7
P8	-	f	f	f	f	f	f	B8	B8
P9	B	g	g	g	g	g	g	B9	B9
P10	C	c	c	c	c	c	c	B10	B10
P11	VIA EXT	e	e	e	e	e	e	B11	B11
P12	BLANK SKIP	d	d	d	d	d	d	B12	B12
P13	-	i	-	-	i	-	-	-	S1
P14	-	m	-	-	m	-	-	-	S2
P15	-	-	-	-	-	-	-	R	L dB
P16	AUTO FADE	-	-	-	-	-	-	-	-

• Pin connection

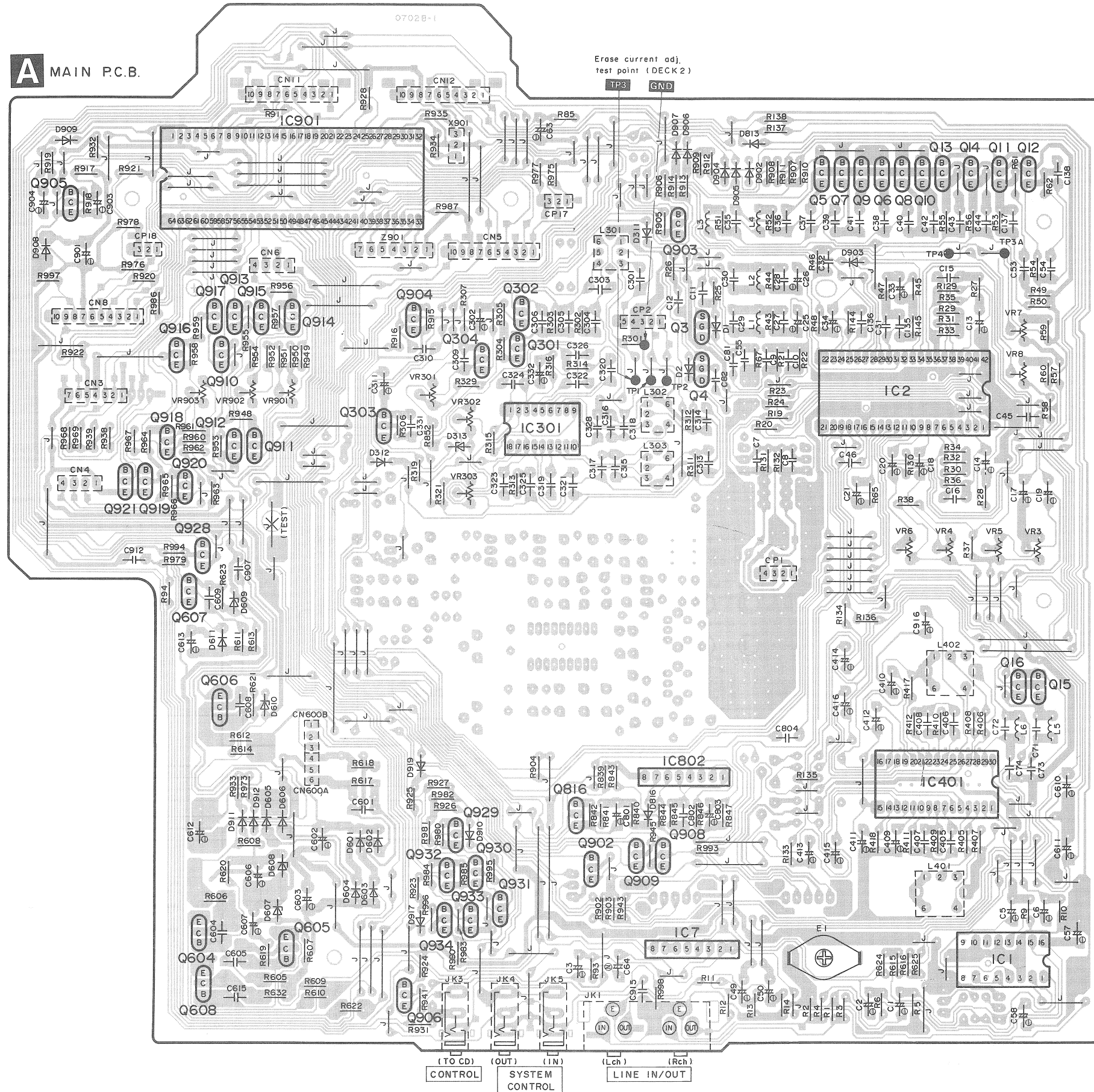
PIN NO.	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F 2	F 2	N P	N P	P 15	P 12	P 11	P 10	P 9	P 8	P 7	P 6	P 5	P 4	P 3	P 2	P 1	P 16	P 14	P 13	N C	9 G	8 G	7 G	6 G	5 G	4 G	3 G	2 G	1 G	N P	N P	F 1	F 1

Note

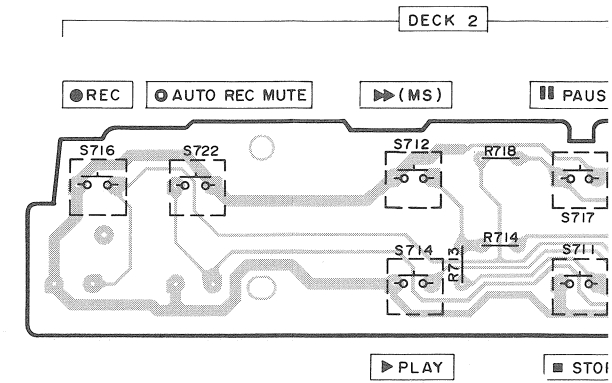
- 1) F1, F2Filament
 2) NPNo pin
 3) NC.....No connection
 4) 1G~9G.....Grid

PRINTED CIRCUIT BOARDS

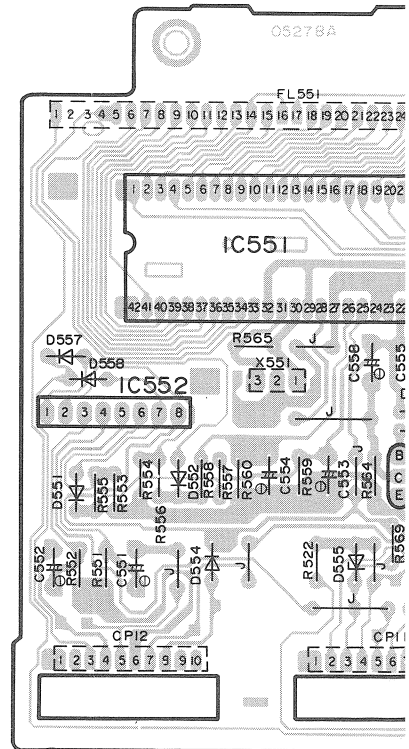
A MAIN P.C.B.



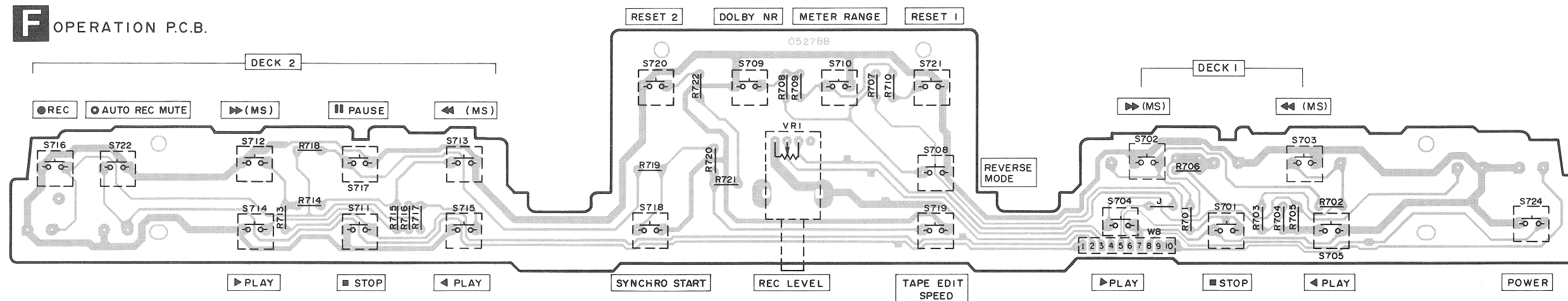
F OPERATION P.C.B.



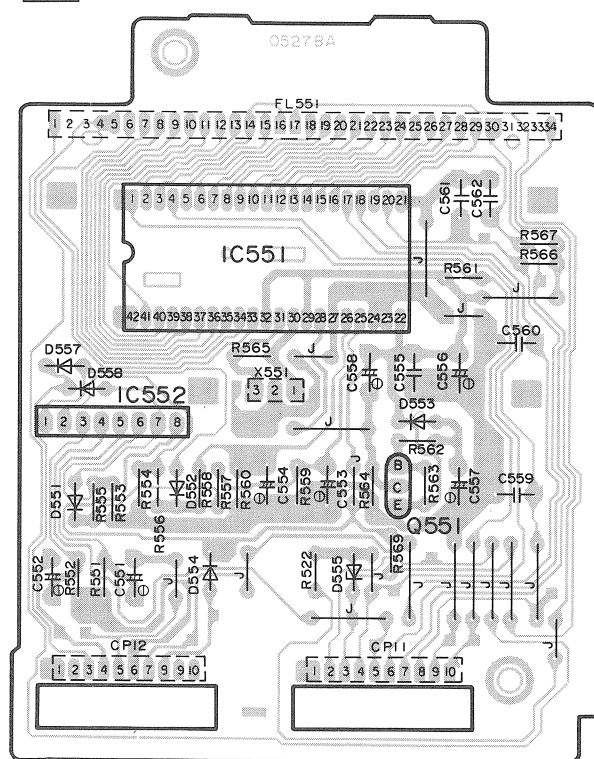
E FL METER P.C.B.



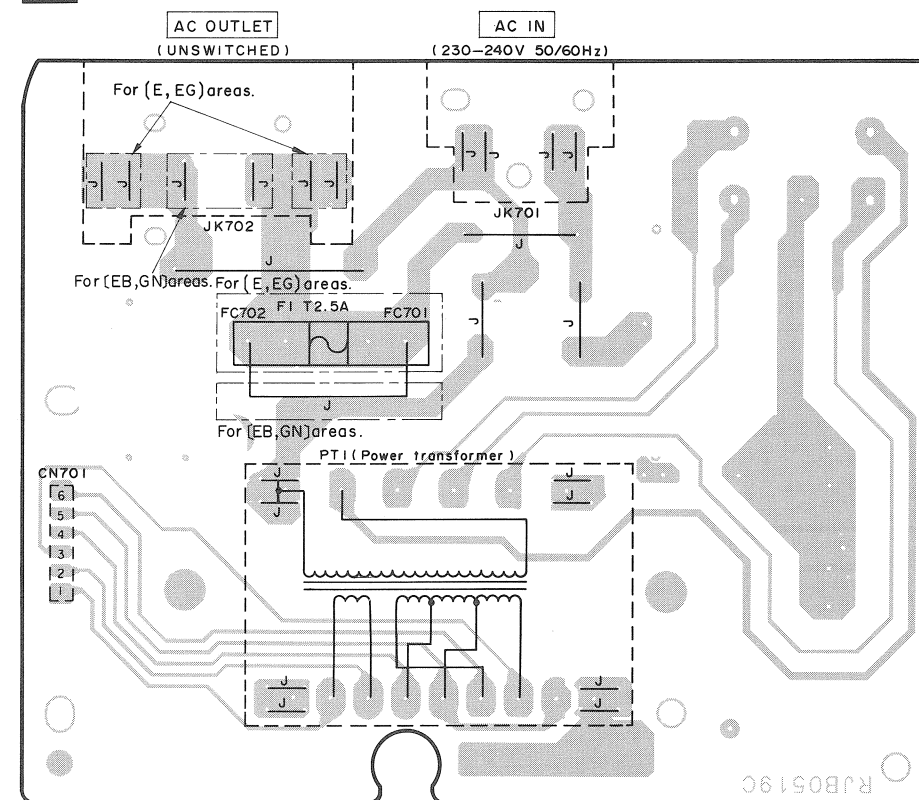
F OPERATION P.C.B.



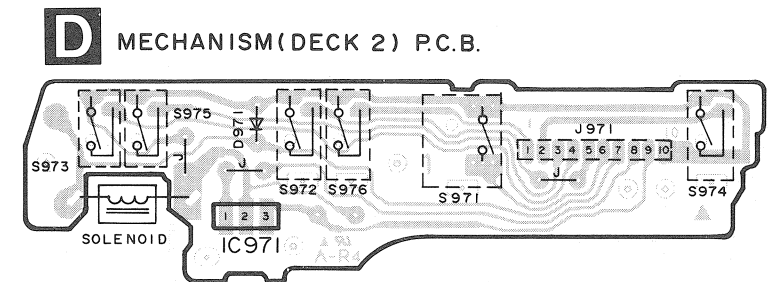
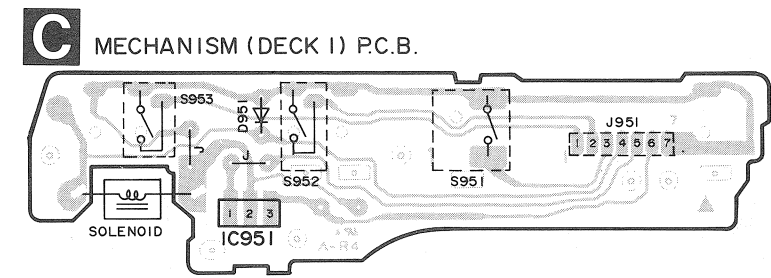
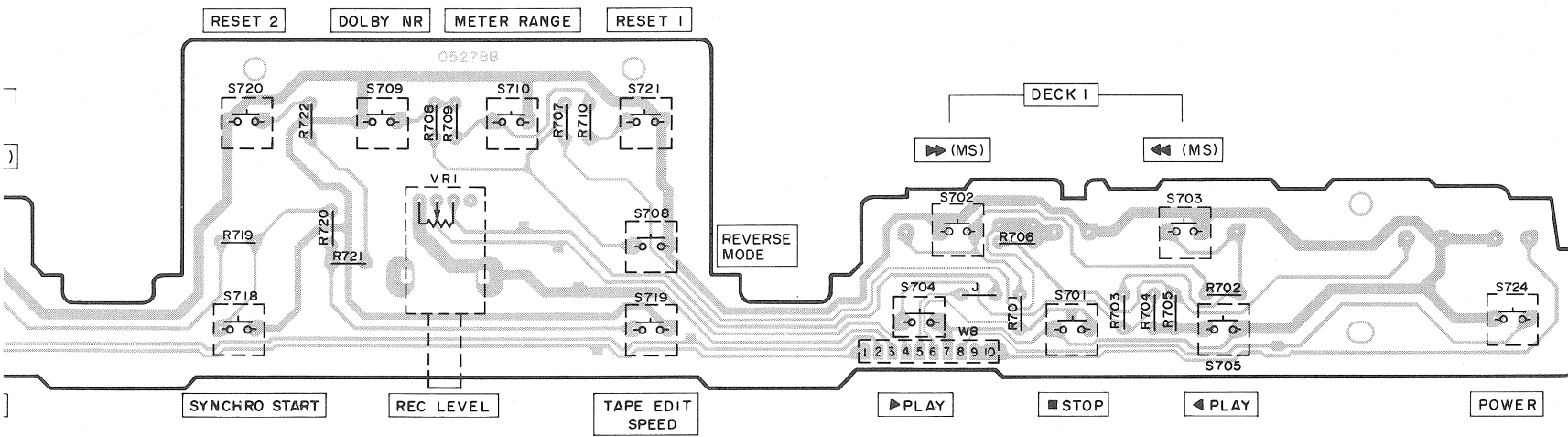
E FL METER P.C.B.



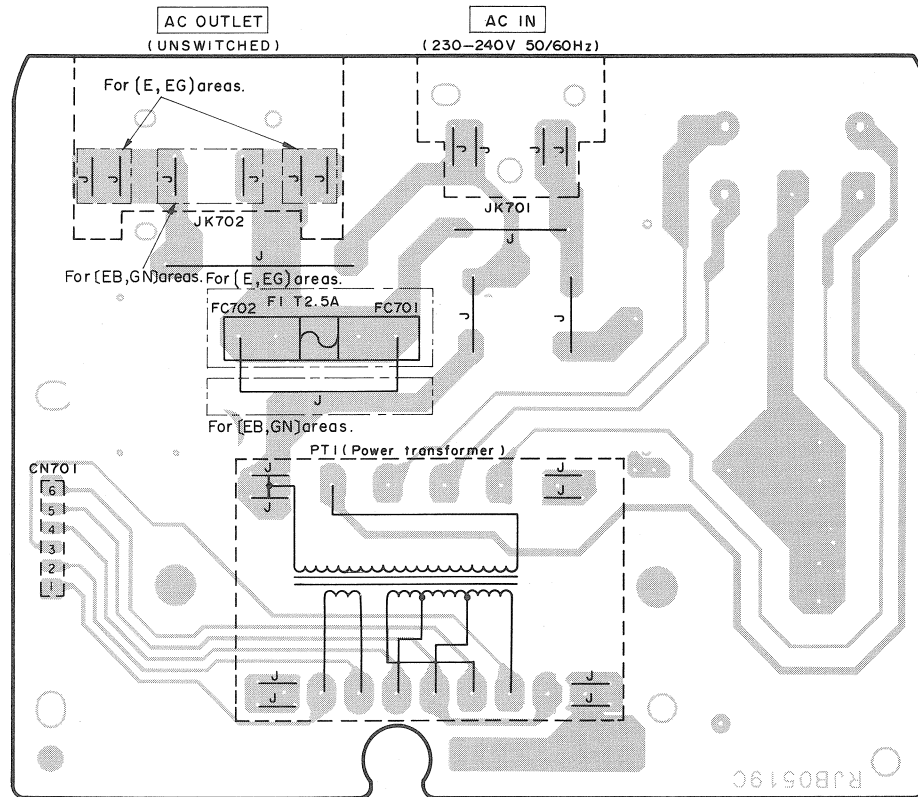
B POWER SUPPLY P.C.B. For [E,EB,EG,GN] areas.



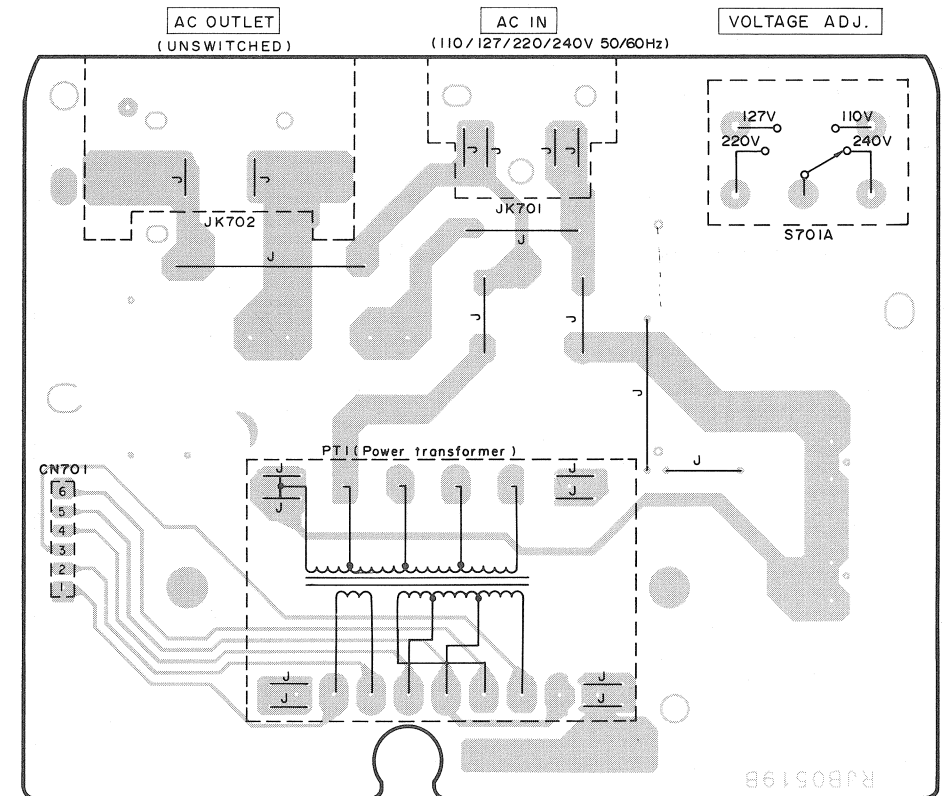
1 12 13 14 15 16 17 18 19 20 21



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



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



SCHEMATIC DIAGRAM (Parts list on pages 32~35.)

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

Notes:

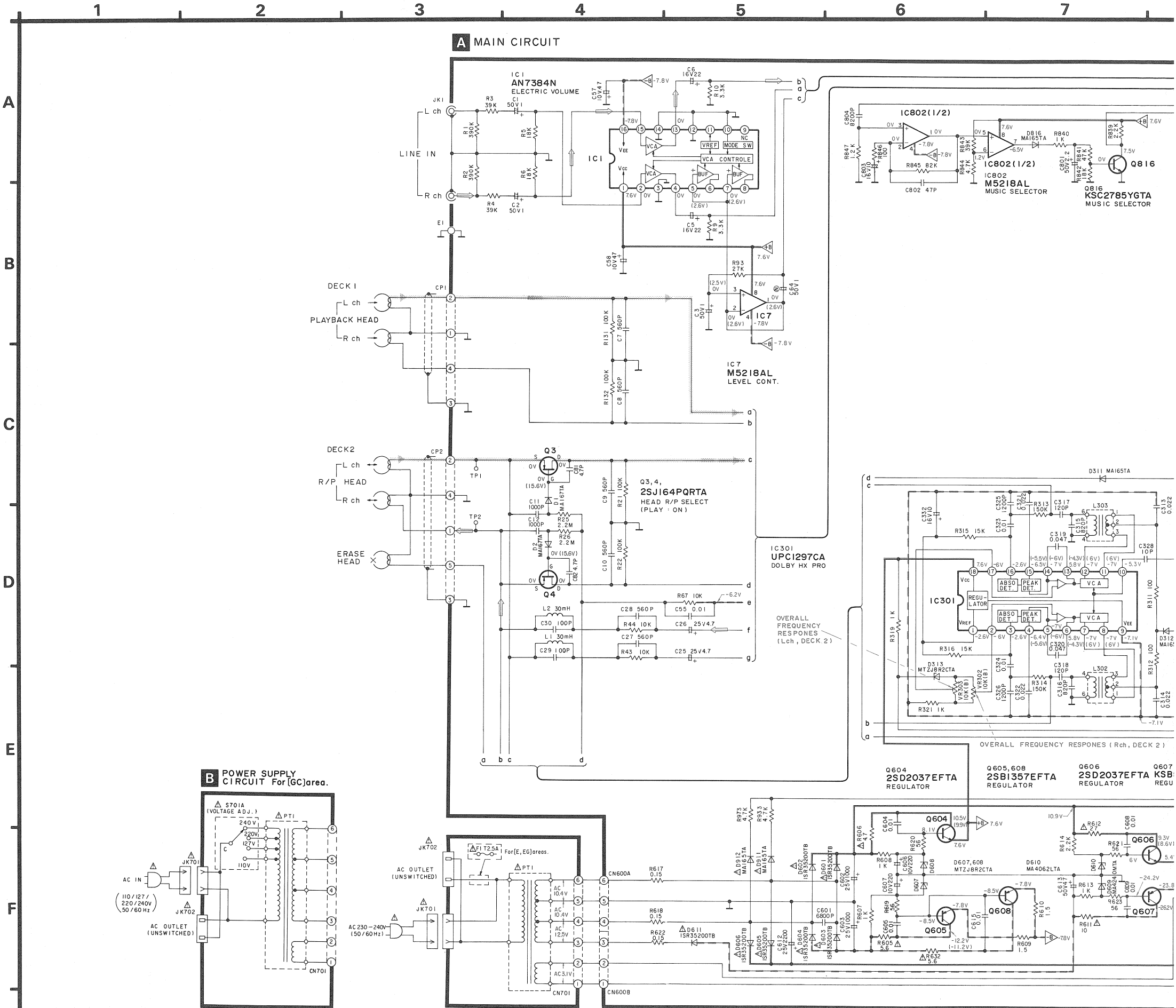
- S701: DECK 1 Stop switch (■ STOP).
- S701A: Voltage selector in "240V" position.
(For [GC] area only.)
(100V ↔ 127V ↔ 220V ↔ 240V)
- S702: DECK 1 Fast-forward switch (MS ►►).
- S703: DECK 1 Rewind switch (◄◄ MS).
- S704: DECK 1 Forward-side playback switch (▷ PLAY).
- S705: DECK 1 Reverse-side playback switch (◁ PLAY).
- S708: Reverse mode switch (REVERSE MODE; ◄, ►, ∞).
- S709: Dolby noise-reduction selector switch (Dolby NR; B, C).
- S710: Meter-range selector switch (METER RANGE).
- S711: DECK 2 Stop switch (■ STOP).
- S712: DECK 2 Fast-forward switch (MS ►►).
- S713: DECK 2 Rewind switch (◄◄ MS).
- S714: DECK 2 Forward-side playback switch (▷ PLAY).
- S715: DECK 2 Reverse-side playback switch (◁ PLAY).
- S716: DECK 2 Record switch (● REC).
- S717: DECK 2 Pause switch (■ PAUSE).
- S718: Synchro-start switch (SYNCHRO START).
- S719: Tape-to-tape recording tape-speed selector switch (TAPE EDIT SPEED).
- S720: DECK 2 Tape counter reset 2 switch (RESET 2).
- S721: DECK 1 Tape counter reset 1 switch (RESET 1).
- S722: DECK 2 Automatic-record-muting switch (● AUTO REC MUTE).
- S724: Power switch in "on" position (POWER, STANDBY ⏻/ON).
- 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 Reverse rec. inhibit switch in "off" position.
- S974: DECK 2 Forward rec. inhibit switch in "off" position.
- S975: DECK 2 ATS (CrO₂) 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.

- (— + B —) indicates +B (bias).
- (— - B —) 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.

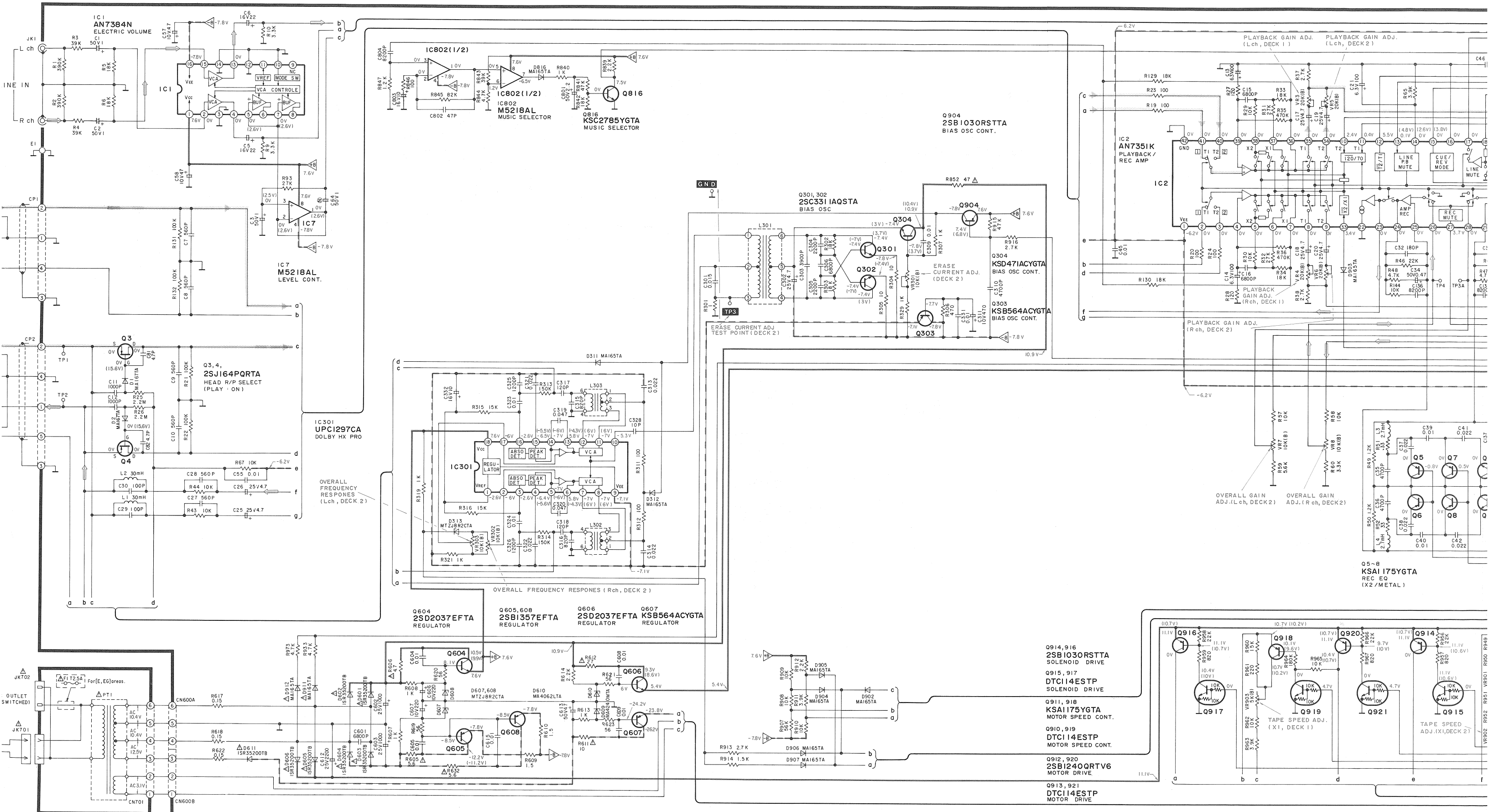
Ref. No.	Production Part No.	Supply Part No.
IC7, 552, 802	M5218AL	M5218L

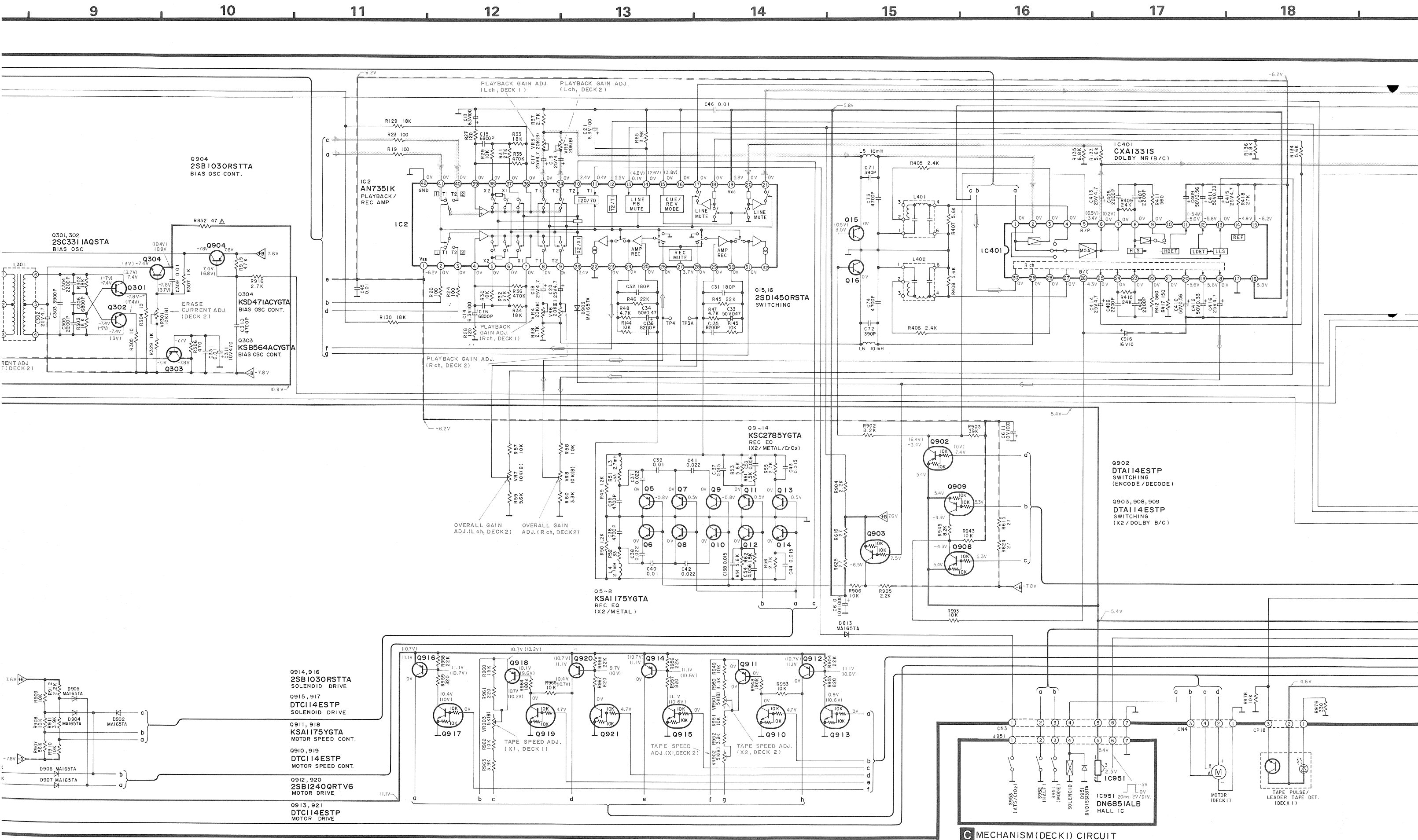
* **Caution!**
IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
* Cover the parts boxes made of plastics with aluminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with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

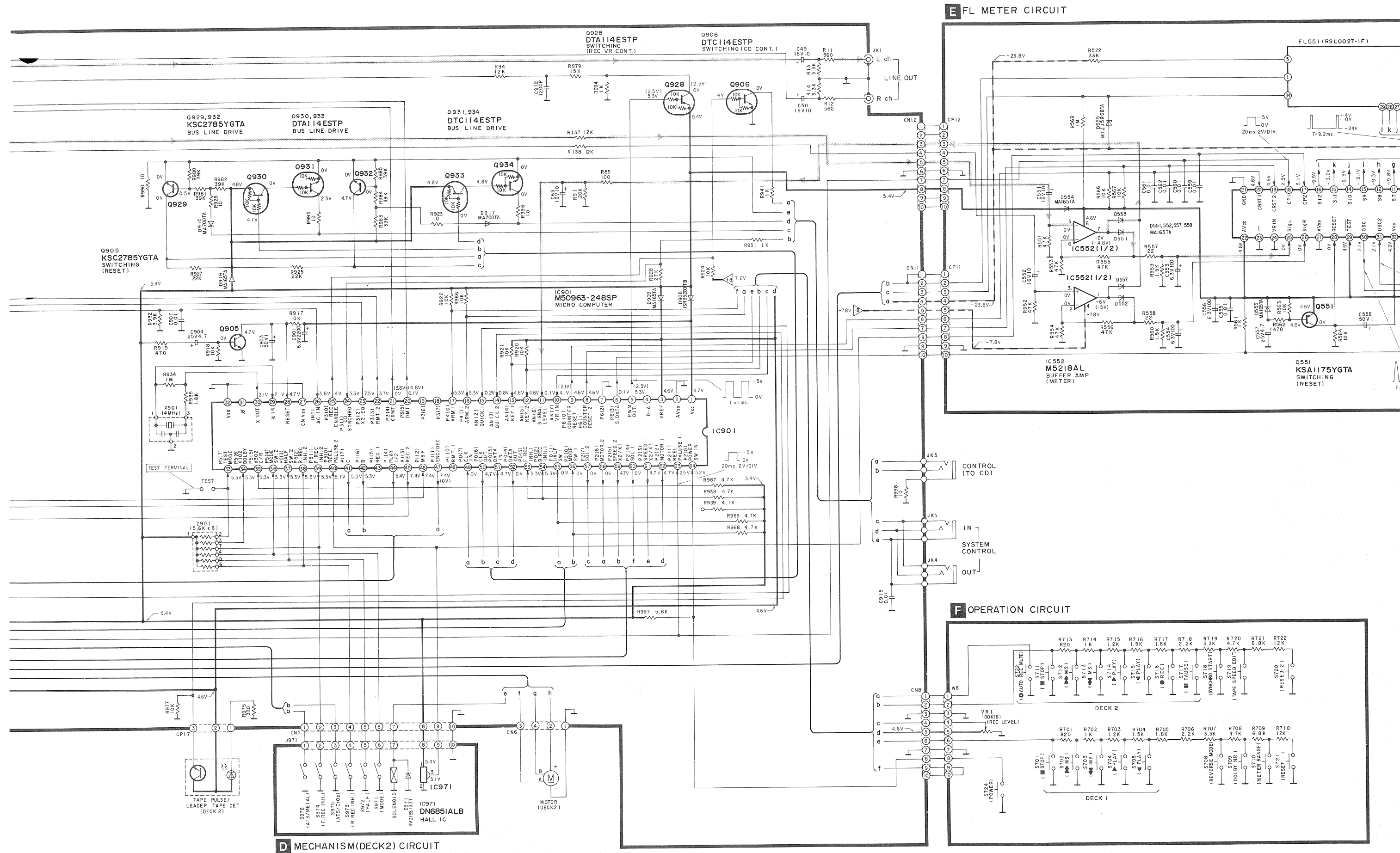


B POWER SUPPLY CIRCUIT For [E, EB, EG, GN] areas.

A MAIN CIRCUIT

B POWER SUPPLY CIRCUIT
For [E, EB, EG, GN] areas.





D MECHANISM(DECK2) CIRCUIT

OPERATION CIRCUIT

23

24

25

26

28

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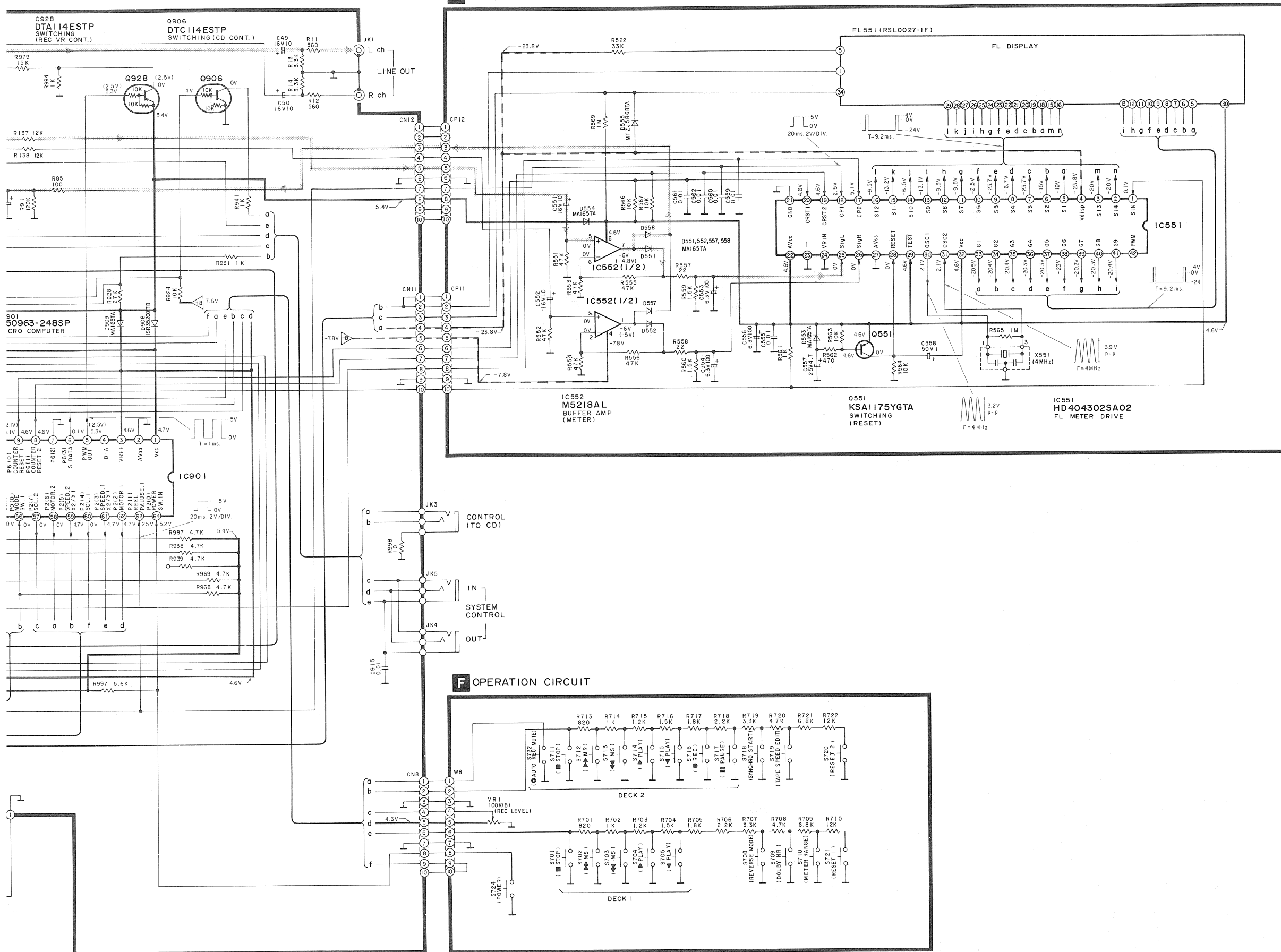
31

32

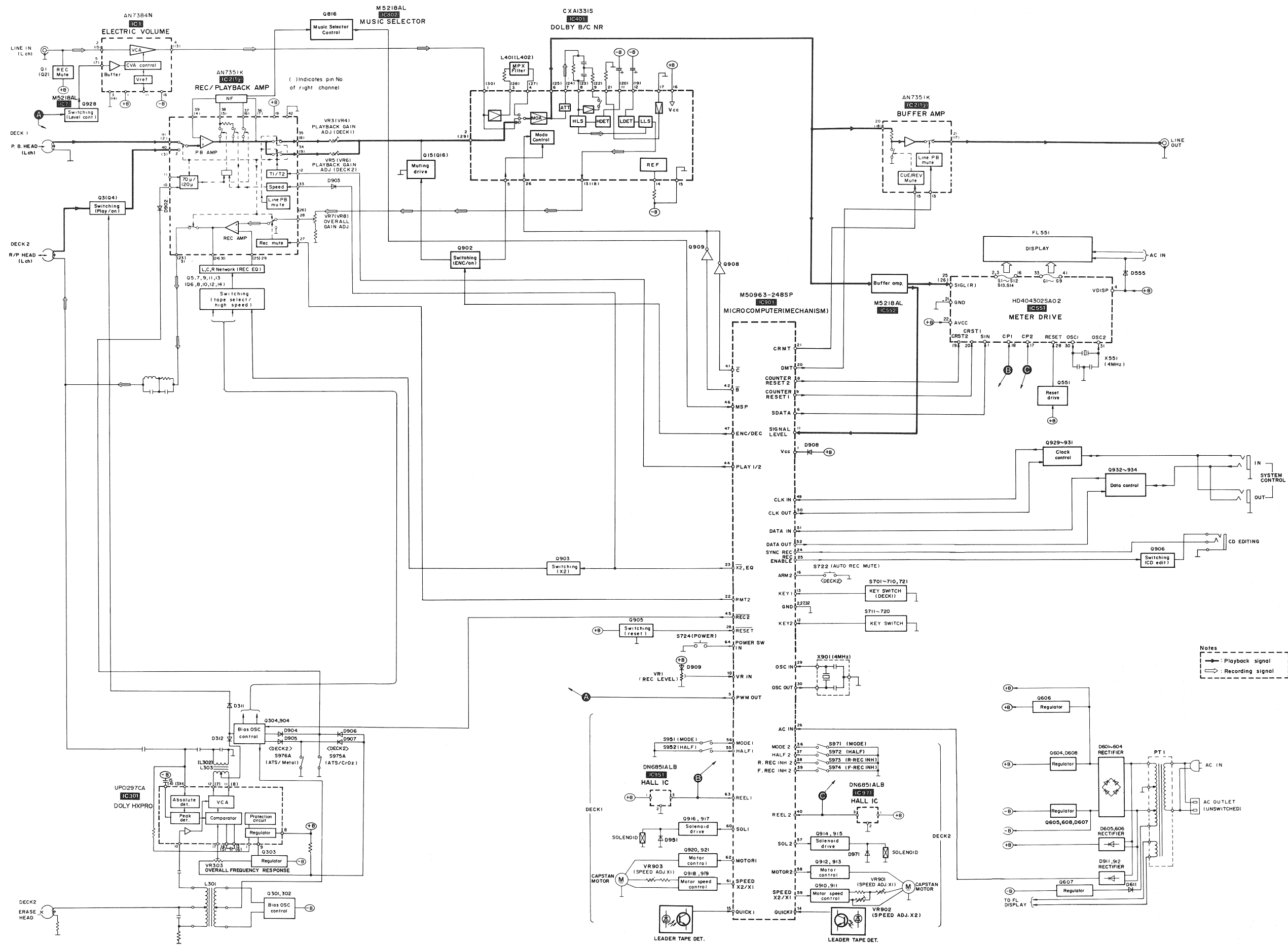
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34

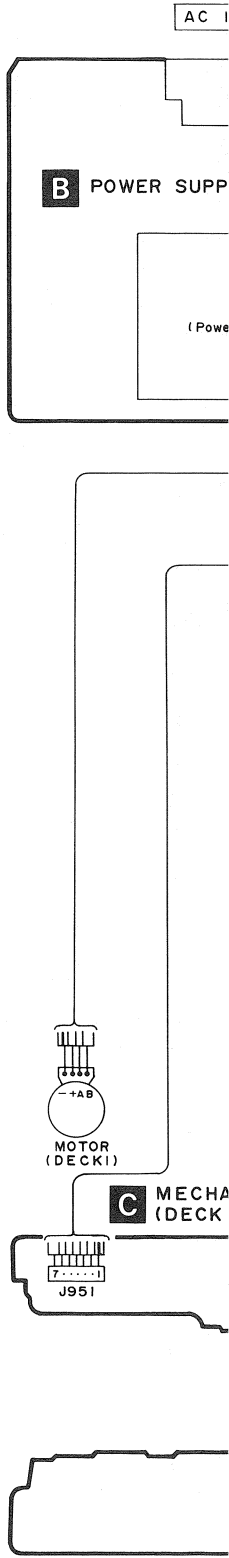
E FL METER CIRCUIT



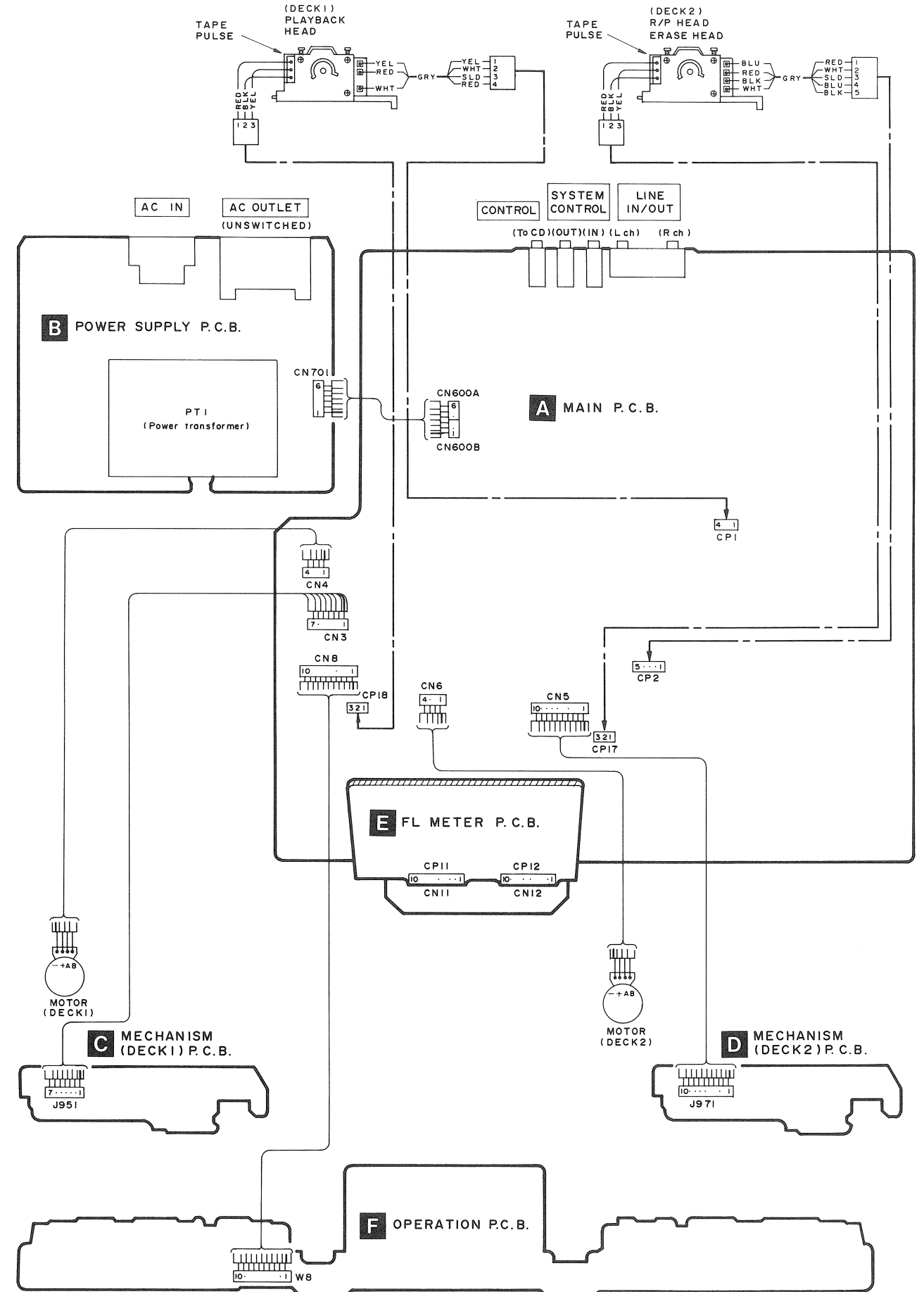
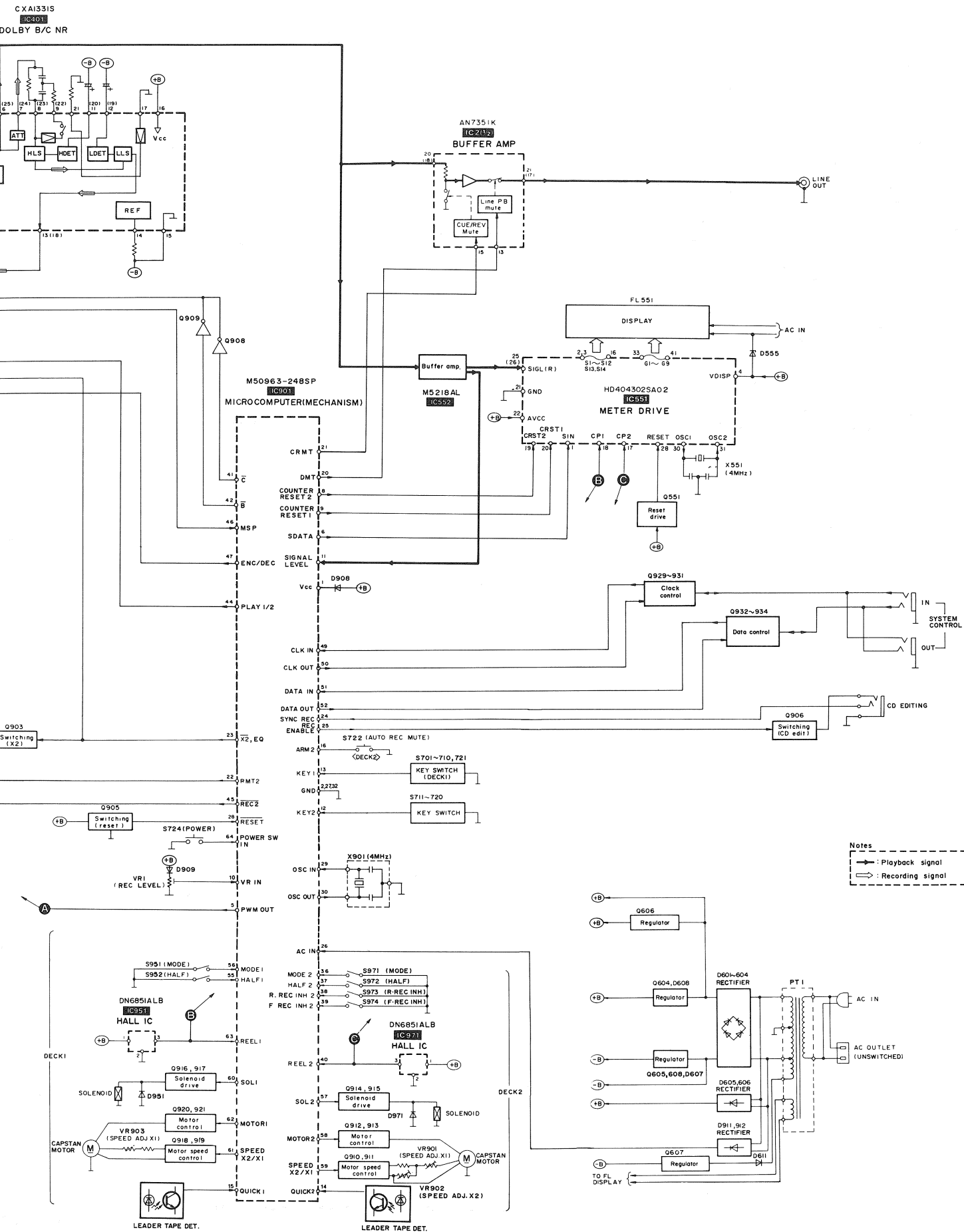
BLOCK DIAGRAM



WIRING CON



WIRING CONNECTION DIAGRAM



■ TERMINAL FUNCTION OF IC'S

• IC901 (M50963-248SP): MICROCOMPUTER (This microcomputer is used for mechanical operation.)

Pin No.	Mark	I/O Division	Function
1	V _{CC}	I	Power supply terminal
2	AV _{SS} (GND)	—	GND terminal
3	V _{REF}	I	Reference voltage terminal
4	D-A	—	Not used, open
5	PWM	O	Pulse width modulated signal
6	P6 (3)	O	Serial signal for FL display
7	P6 (2)	—	Not used, open
8	P6 (1)	O	Counter reset signal of deck 2 ("RESET": "L", others: "H")
9	P6 (0)	O	Counter reset signal of deck 1 ("RESET": "L", others: "H")
10	AN (7)	I	Variable voltage level signal of rec. level volume
11	AN (6)	I	Peak voltage terminal of rec. signal
12	AN (5)	I	Operation key switches Deck 2: STOP, F.F./REW, PLAY, REC, PAUSE, SYNCHRO START, X1/X2, counter reset
13	AN (4)	I	Operation key switches Deck 1: STOP, F.F./REW, F. PLAY, R. PLAY, Reverse-mode, Dolby B/C, Meter-range, counter reset
14	AN (3)	I	Leader tape det. signal of deck 2
15	AN (2)	I	Leader tape det. signal of deck 1
16	P4 (1)	I	"AUTO REC MUTE" key switch signal of deck 2 ("ON": "L", "OFF": "H")
17	P4 (0)	I	Not used, open
18	P3 (7)	—	Not used
19	P3 (6)	—	Not used
20	P3 (5)	O	Mute signal of line out (Mute "ON": "H", Mute "OFF": "L")
21	P3 (4)	O	Mute signal with Cue/Review action (Mute "ON": "H", Mute "OFF": "L")
22	P3 (3)	O	Rec. mute signal of deck 2 (Mute "ON": "H", Mute "OFF": "L")

Pin No.	Mark	I/O Division	Function
23	P3 (2)	O	Playback equalizer select signal with tape edit of deck 1 (Normal: "H", X2 edit: "L")
24	P3 (1)	I	CD Synchro rec. signal (CD STOP: "H", CD PLAY: "L")
25	P3 (0)	O	CD Synchro rec. possible/impossible signal (possible: "L", impossible: "H")
26	INTI	I	"AC POWER OFF" det. terminal
27	CNV _{SS}	—	GND terminal
28	RESET	I	Reset signal ("L" = RESET, Normal: "H")
29	X _{IN}	I	Clock OSC terminal
30	X _{OUT}	O	
31	φ	—	Not used, open
32	V _{SS}	—	GND terminal
33	P5 (7)	I	Test terminal (Normal = "H")
34	P5 (6)	I	Model select (Normal: "H")
35	P5 (5)	I	Model select (Normal: "H")
36	P5 (4)	I	Mechanism mode switch ("ON": "L", "OFF": "H")
37	P5 (3)	I	Cassette half det. switch ("ON": "L", "OFF": "H")
38	P5 (2)	I	Reverse rec. inh. switch of deck 2 ("ON": "L", "OFF": "H")
39	P5 (1)	I	Forward rec. inh. switch of deck 2 ("ON": "L", "OFF": "H")
40	P5 (0)	I	Reel rotation pulse signal of deck 2
41	P1 (7)	O	Dolby C "ON/OFF" select signal ("ON": "L", "OFF": "H")
42	P1 (6)	O	Dolby B "ON/OFF" select signal ("ON": "L", "OFF": "H")
43	P1 (5)	—	Not used, open
44	P1 (4)	O	Playback amp. select signal (Deck 2-P.B: "L", others: "H")
45	P1 (3)	O	Bias OSC "ON/OFF" select signal ("ON": "L", "OFF": "H")
46	P1 (2)	I	Playback signal det. output signal ("ON": "L", "OFF": "H")

Pin No.	Mark	I/O Division	Function
47	P1 (1)	O	Dolby circuit encord/decord select signal (encord: "L", decord: "H")
48	P1 (0)	O	Rec. mute signal of deck 2 (Mute "ON": "H", Mute "OFF": "L")
49	P0 (7)	I	Bus clock signal
50	P0 (6)	O	
51	P0 (5)	I	Bus data signal
52	P0 (4)	O	
53	P0 (3)	I	Forward rec. inh. switch of deck 1 ("ON": "L", "OFF": "H")
54	P0 (2)	I	Reverse rec. inh. switch of deck 1 ("ON": "L", "OFF": "H")
55	P0 (1)	I	Cassette-half det. switch of deck 1 ("ON": "L", "OFF": "H")
56	P0 (0)	I	Mechanism mode-switch of deck 1 ("ON": "L", "OFF": "H")
57	P2 (7)	O	Mechanism plunger "ON/OFF" select signal of deck 2 ("ON": "H", "OFF": "L")

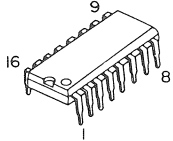
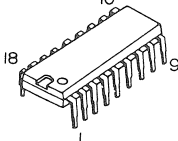
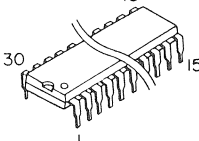
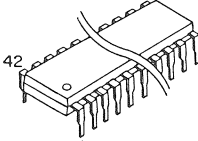
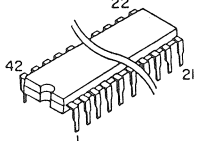
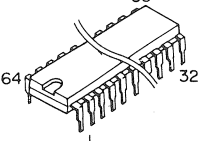
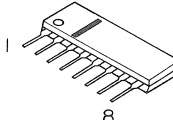
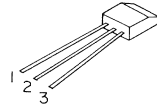
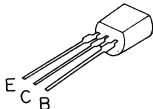
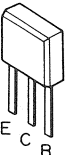
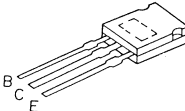
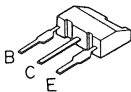
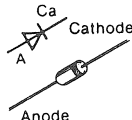
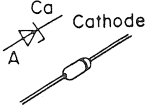
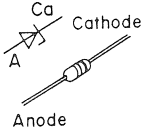
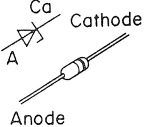
Pin No.	Mark	I/O Division	Function
58	P2 (6)	O	Mechanism motor "ON/OFF" select signal of deck 2 ("ON": "H", "OFF": "L")
59	P2 (5)	O	Mechanism motor speed select signal of deck 2 ("X1": "H", "X2": "L")
60	P2 (4)	O	Mechanism plunger "ON/OFF" select signal of deck 1 ("ON": "H", "OFF": "L")
61	P2 (3)	O	Mechanism motor speed select signal of deck 1 ("X1": "H", "X2": "L")
62	P2 (2)	O	Mechanism motor "ON/OFF" select signal of deck 1 ("ON": "H", "OFF": "L")
63	P2 (1)	I	Mechanism reel rotation pulse signal of deck 1
64	P2 (0)	I	Power switch ("ON": "L", "OFF": "H")

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

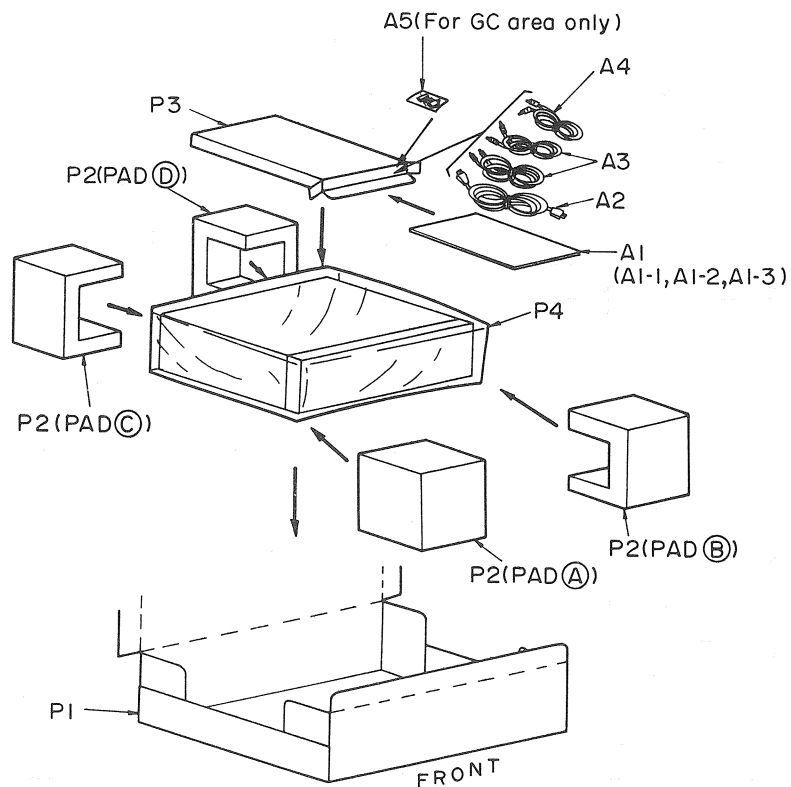
Pin No.	Mark	I/O Division	Function
1	SIN	I	Serial data signal
2 • 3 • 5 • 16	S1 } S14	O	Segment signal for FL display
4	V disp	I	Pull down power supply terminal ($-V_{CC}$)
17	CP2	I	Peel pulse signal of deck 2
18	CP1		
19	CRST2	I	Tape counter reset terminal of deck 2
20	CRST1	I	Tape counter reset terminal of deck 1
21	GND	—	GND terminal
22	AVCC	I	Power supply terminal

Pin No.	Mark	I/O Division	Function
23	—	—	—
24	VRIN	—	Rec level control signal
25	SIGL	I	Lch level signal
26	SIGR	I	Rch level signal
27	AVSS	—	GND terminal
28	RESET	I	Reset terminal ("RESET": "H")
29	$\overline{\text{TEST}}$	I	Test terminal
30	OSC1	O	Clock OSC terminal (4MHz)
31	OSC2	I	
32	VCC	I	Power supply terminal
33 • 41	G1 } G9	O	Grid signal for FL display
42	PWM	—	Not used, open

■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

AN7384N 	UPC1297CA 	CXA1331S 	HD404302SA02 	AN7351K 	M50963-248SP 
M5218AL 	DN6851ALB 	KSB564ACYGTA KSD471ACYGTA 	KSA1175YGTA KSC2785YGTA 2SC3311AQSTA DTA114ESTP DTC114ESTP		2SB1030RSTTA 2SD1450RSTA 
2SB1357EFTA 2SD2037EFTA 	2SJ164PQRTA 	2SB1240QRTV6 	 Ca Cathode Anode MA165TA MA167TA MA700TA 1SR35200TB RVD1SS133TA		MTZJ5R6BTA MTZJ8R2CTA  Ca Cathode Anode
MA4062LTA  Ca Cathode Anode	MA4240MTA  Ca Cathode Anode				

■ PACKING



<PAD A, B, C, D Part No. : RPN0383-1>

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
		INTEGRATED CIRCUIT(S)		Q920	2SB1240-P	TRANSISTOR	
				Q921	DTC114ESTP	TRANSISTOR	
				Q928	DTA114ESTP	TRANSISTOR	
IC1	AN7384N	ELECTRIC VOLUME		Q929	KSC2785YGTA	TRANSISTOR	
IC2	AN7351K	PLAYBACK/REC AMP		Q930	DTA114ESTP	TRANSISTOR	
IC7	M5218L	REC LEVEL CONTROL		Q931	DTC114ESTP	TRANSISTOR	
IC301	UPC1297CA	DOLBY HX PRO		Q932	KSC2785YGTA	TRANSISTOR	
IC401	CXA1331S	DOLBY B/C NR		Q933	DTA114ESTP	TRANSISTOR	
IC551	HD404302SA02	MICROCOMPUTER; FL METER		Q934	DTC114ESTP	TRANSISTOR	
IC552	M5218L	BUFFER AMP					
IC802	M5218L	MUSIC SELECTOR AMP				DIODE(S)	
IC901	M50963-248SP	MICROCOMPUTER; MECHANICAL					
IC951	DN6851ALB	HALL (DECK1)		D1, 2	MA167	DIODE	
IC971	DN6851ALB	HALL (DECK2)		D311, 312	MA165	DIODE	
		TRANSISTOR(S)		D313	MTZJ8R2CTA	DIODE	
				D551-554	MA165	DIODE	
Q3, 4	2SJ164PQRTA	TRANSISTOR		D555	MTZJ5R6BTA	DIODE	
Q5-8	KSA1175YGTA	TRANSISTOR		D557, 558	MA165	DIODE	
Q9	KSC2785YGTA	TRANSISTOR		D601-606	1SR35200TB	DIODE	Δ
Q10-14	KSC2785YGTA	TRANSISTOR		D607, 608	MTZJ8R2CTA	DIODE	
Q15, 16	2SD1450RSTA	TRANSISTOR		D609	MA4240H	DIODE	
Q301, 302	2SC3311A-Q	TRANSISTOR		D610	MA4062	DIODE	
Q303	KSB564ACYGTA	TRANSISTOR		D611	1SR35200TB	DIODE	Δ
Q304	KSD471ACYGTA	TRANSISTOR		D813	MA165	DIODE	
Q551	KSA1175YGTA	TRANSISTOR		D816	MA165	DIODE	
Q604	2SD2037EFTA	TRANSISTOR		D902-907	MA165	DIODE	
Q605	2SB1357EFTA	TRANSISTOR		D908	1SR35200TB	DIODE	
Q606	2SD2037EFTA	TRANSISTOR		D909	MA165	DIODE	
Q607	KSB564ACYGTA	TRANSISTOR		D910	MA700TA	DIODE	
Q608	2SB1357EFTA	TRANSISTOR		D911, 912	MA165	DIODE	Δ
Q816	KSC2785YGTA	TRANSISTOR		D917	MA700TA	DIODE	
Q902, 903	DTA114ESTP	TRANSISTOR		D919	MA165	DIODE	
Q904	2SB1030QTA	TRANSISTOR		D951	RVD1SS133TA	DIODE (DECK1)	
Q905	KSC2785YGTA	TRANSISTOR		D971	RVD1SS133TA	DIODE (DECK2)	
Q906	DTC114ESTP	TRANSISTOR					
Q908, 909	DTA114ESTP	TRANSISTOR				VARIABLE RESISTOR(S)	
Q910	DTC114ESTP	TRANSISTOR					
Q911	KSA1175YGTA	TRANSISTOR		VR1	EVJ02FF01B15	REC LEVEL CONTROL	
Q912	2SB1240-P	TRANSISTOR		VR3-6	EVNDXAA00B24	PLAYBACK GAIN ADJ.	
Q913	DTC114ESTP	TRANSISTOR		VR7, 8	EVNDXAA00B14	OVERALL GAIN ADJ.	
Q914	2SB1030QTA	TRANSISTOR		VR301	EVNDXAA00B14	ERASE CURRENT ADJ.	
Q915	DTC114ESTP	TRANSISTOR		VR302, 303	EVNDXAA00B14	OVERALL FREQ. ADJ.	
Q916	2SB1030QTA	TRANSISTOR		VR901-903	EVNDXAA00B53	TAPE SPEED ADJ.	
Q917	DTC114ESTP	TRANSISTOR					
Q918	KSA1175YGTA	TRANSISTOR				COMPONENT COMBINATION(S)	
Q919	DTC114ESTP	TRANSISTOR					
				Z901	EXBF7E562JYV	COMBINATION PART(5. 6kX6)	

■ RESISTORS & CAPACITORS

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

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R319	ERDS2TJ102	1/4W 1K	R718	ERDS2TJ222	1/4W 2. 2K
			R321	ERDS2TJ102	1/4W 1K	R719	ERDS2TJ332	1/4W 3. 3K
			R329	ERDS2TJ102	1/4W 1K	R720	ERDS2TJ472	1/4W 4. 7K
R1, 2	ERDS2TJ394	1/4W 390K	R405, 406	ERDS2TJ242	1/4W 2. 4K	R721	ERDS2TJ682T	1/4W 6. 8K
R3, 4	ERDS2TJ393	1/4W 39K	R407, 408	ERDS2TJ562	1/4W 5. 6K	R722	ERDS2TJ123	1/4W 12K
R5, 6	ERDS2TJ183T	1/4W 18K	R409, 410	ERDS2TJ243T	1/4W 24K	R839	ERDS2TJ222	1/4W 2. 2K
R9, 10	ERDS2TJ332	1/4W 3. 3K	R411, 412	ERDS2TJ561	1/4W 560	R840	ERDS2TJ102	1/4W 1K
R11, 12	ERDS2TJ561	1/4W 560	R417	ERDS2TJ151	1/4W 150	R841	ERDS2TJ473	1/4W 47K
R13, 14	ERDS2TJ332	1/4W 3. 3K	R418	ERDS2TJ273	1/4W 27K	R842	ERDS2TJ183T	1/4W 18K
R19, 20	ERDS2TJ101	1/4W 100	R522	ERDS2TJ333	1/4W 33K	R843	ERDS2TJ393	1/4W 39K
R21, 22	ERDS2TJ104	1/4W 100K	R551-556	ERDS2TJ473	1/4W 47K	R844	ERDS2TJ472	1/4W 4. 7K
R23, 24	ERDS2TJ101	1/4W 100	R557, 558	ERDS2TJ220T	1/4W 22	R845	ERDS2TJ823T	1/4W 82K
R25, 26	ERDS2TJ225	1/4W 2. 2M	R559, 560	ERDS2TJ152	1/4W 1. 5K	R846	ERDS2TJ101	1/4W 100
R27, 28	ERDS2EJ121	1/4W 120	R561	ERDS2TJ102	1/4W 1K	R847	ERDS2TJ122	1/4W 1. 2K
R29, 30	ERDS2TJ103	1/4W 10K	R562	ERDS2TJ471	1/4W 470	R852	ERD2FCVG470T	1/4W 47 △
R31, 32	ERDS2TJ273	1/4W 27K	R563, 564	ERDS2TJ103	1/4W 10K	R902	ERDS2TJ822	1/4W 8. 2K
R33, 34	ERDS2TJ183T	1/4W 18K	R565	ERDS2TJ105T	1/4W 1M	R903	ERDS2TJ393	1/4W 39K
R35, 36	ERDS2TJ474	1/4W 470K	R566, 567	ERDS2TJ103	1/4W 10K	R904, 905	ERDS2TJ222	1/4W 2. 2K
R37, 38	ERDS2TJ272T	1/4W 2. 7K	R569	ERDS2TJ105T	1/4W 1M	R906	ERDS2TJ103	1/4W 10K
R43, 44	ERDS2TJ103	1/4W 10K	R605	ERD2FCVJ5R6T	1/4W 5. 6 △	R907	ERDS2TJ563	1/4W 56K
R45, 46	ERDS2TJ223	1/4W 22K	R606	ERD2FCVJ4R7T	1/4W 4. 7 △	R908-910	ERDS2TJ103	1/4W 10K
R47, 48	ERDS2TJ472	1/4W 4. 7K	R607, 608	ERDS2TJ102	1/4W 1K	R911	ERDS2TJ392T	1/4W 3. 9K
R49, 50	ERDS2TJ122	1/4W 1. 2K	R609, 610	ERDS2TJ1R5T	1/4W 1. 5	R912	ERDS2TJ222	1/4W 2. 2K
R51, 52	ERDS2TJ330	1/4W 33	R611	ERD2FCVG100T	1/4W 10 △	R913	ERDS2TJ272T	1/4W 2. 7K
R53, 54	ERDS2TJ562	1/4W 5. 6K	R612	ERD2FCVG270T	1/4W 27 △	R914	ERDS2TJ152	1/4W 1. 5K
R55, 56	ERDS2TJ272T	1/4W 2. 7K	R613	ERDS2TJ102	1/4W 1K	R915	ERDS2TJ473	1/4W 47K
R57, 58	ERDS2TJ103	1/4W 10K	R614	ERDS2TJ222	1/4W 2. 2K	R916	ERDS2TJ272T	1/4W 2. 7K
R59, 60	ERDS2TJ332	1/4W 3. 3K	R615, 616	ERDS2TJ270T	1/4W 27	R917, 918	ERDS2TJ103	1/4W 10K
R61, 62	ERDS2TJ152	1/4W 1. 5K	R617, 618	ERQ16NKWR15E	1W 0. 15	R919	ERDS2TJ471	1/4W 470
R65	ERDS2TJ392T	1/4W 3. 9K	R619-621	ERDS2TJ560T	1/4W 56	R920-922	ERDS2TJ103	1/4W 10K
R67	ERDS2TJ103	1/4W 10K	R622	ERQ16NKWR15E	1W 0. 15	R923	ERDS2TJ100	1/4W 10
R85	ERDS2TJ101	1/4W 100	R623	ERDS2TJ560T	1/4W 56	R924	ERDS2TJ103	1/4W 10K
R91	ERDS2TJ124T	1/4W 120K	R624, 625	ERDS2TJ270T	1/4W 27	R925	ERDS2TJ223	1/4W 22K
R93	ERDS2TJ273	1/4W 27K	R632	ERD2FCVJ5R6T	1/4W 5. 6 △	R926	ERDS2TJ100	1/4W 10
R94	ERDS2TJ123	1/4W 12K	R701	ERDS2TJ821	1/4W 820	R927	ERDS2TJ223	1/4W 22K
R129, 130	ERDS2TJ183T	1/4W 18K	R702	ERDS2TJ102	1/4W 1K	R928	ERDS2TJ273	1/4W 27K
R131, 132	ERDS2TJ104	1/4W 100K	R703	ERDS2TJ122	1/4W 1. 2K	R931	ERDS2TJ102	1/4W 1K
R133, 134	ERDS2TJ562	1/4W 5. 6K	R704	ERDS2TJ152	1/4W 1. 5K	R932	ERDS2TJ392T	1/4W 3. 9K
R135, 136	ERDS2TJ682T	1/4W 6. 8K	R705	ERDS2TJ182	1/4W 1. 8K	R933	ERDS2TJ472	1/4W 4. 7K
R137, 138	ERDS2TJ123	1/4W 12K	R706	ERDS2TJ222	1/4W 2. 2K	R934	ERDS2TJ105T	1/4W 1M
R144, 145	ERDS2TJ103	1/4W 10K	R707	ERDS2TJ332	1/4W 3. 3K	R935	ERDS2TJ182	1/4W 1. 8K
R301	ERDS2TJ1R0	1/4W 1. 0	R708	ERDS2TJ472	1/4W 4. 7K	R938, 939	ERDS2TJ472	1/4W 4. 7K
R302, 303	ERDS2TJ183T	1/4W 18K	R709	ERDS2TJ682T	1/4W 6. 8K	R941	ERDS2TJ102	1/4W 1K
R304, 305	ERDS2TJ100	1/4W 10	R710	ERDS2TJ123	1/4W 12K	R943	ERDS2TJ103	1/4W 10K
R306	ERDS2TJ471	1/4W 470	R713	ERDS2TJ821	1/4W 820	R945	ERDS2TJ822	1/4W 8. 2K
R307	ERDS2TJ102	1/4W 1K	R714	ERDS2TJ102	1/4W 1K	R948	ERDS2TJ184T	1/4W 180K
R311, 312	ERDS2TJ101	1/4W 100	R715	ERDS2TJ122	1/4W 1. 2K	R949	ERDS2TJ103	1/4W 10K
R313, 314	ERDS2TJ154	1/4W 150K	R716	ERDS2TJ152	1/4W 1. 5K	R950	ERDS2TJ332	1/4W 3. 3K
R315, 316	ERDS2TJ153	1/4W 15K	R717	ERDS2TJ182	1/4W 1. 8K	R951	ERDS2TJ103	1/4W 10K

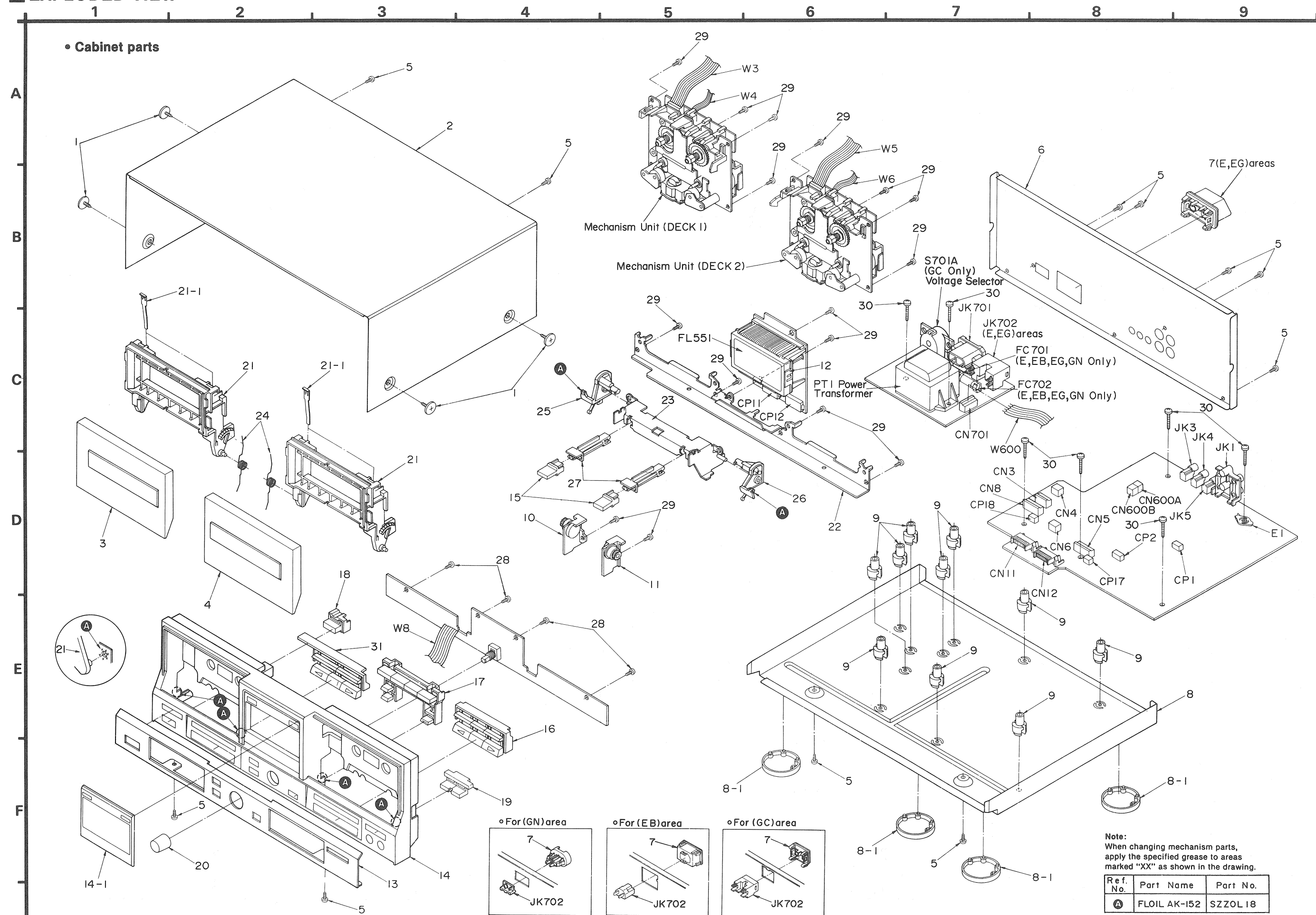
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
				S952	RSH1A90YB-U	HALF (DECK1)	
		COIL (S)		S953	RSH1A90YB-U	ATS (DECK1)	
				S971	RSH1A89ZB-U	MODE (DECK2)	
L1, 2	SLQX303-1KT	COIL		S972	RSH1A90YB-U	HALF (DECK2)	
L3, 4	SLQX272-1YT	COIL		S973	RSH1A90YB-U	R. REC INH (DECK2)	
L5, 6	RLQB103JT-Y	COIL		S974	RSH1A90YB-U	F. REC INH (DECK2)	
L301	SL09B4-K	COIL		S975	RSH1A90YB-U	ATS (DECK2)	
L302, 303	SL09B1-Z	COIL		S976	RSH1A90YB-U	ATS (DECK2)	
L401, 402	QLM9Z10K	COIL				CONNECTOR (S) AND SOCKET (S)	
		TRANSFORMER (S)					
				CN3	RJS7T4ZA	CONNECTOR (7P)	
PT1	RTP1K4B013	POWER TRANSFORMER	(E, EB, EG, GN) △	CN4	RJS1A1704	CONNECTOR (4P)	
PT1	RTP1K4E021	POWER TRANSFORMER	(GC) △	CN5	SJSD1005	CONNECTOR (10P)	
				CN6	RJS1A1704	CONNECTOR (4P)	
		OSCILLATOR (S)		CN8	SJSD1005	CONNECTOR (10P)	
				CN11, 12	RJU003K010M1	SOCKET (10P)	
X551	EFOGC4004A4	CERAMIC FILTER (4MHz)		CN600A	RJS1A1703	CONNECTOR (3P)	
X901	EFOGC4004A4	CERAMIC FILTER (4MHz)		CN600B	RJS1A1703	CONNECTOR (3P)	
				CN701	SJT30643-V	CONNECTOR (6P)	
		DISPLAY TUBE		CP1	SJTD413	CONNECTOR (4P)	
				CP2	RJP5G18ZA	CONNECTOR (5P)	
FL551	RSL0027-1F	DISPLAY TUBE		CP11, 12	RJT003K010M1	CONNECTOR (10P)	
				CP17, 18	SJTD313	CONNECTOR (3P)	
		FUSE (S)				JACK (S)	
F1	XBA2C25TB0	FUSE 250V T2. 5A	(E, EB, EG, GN) △				
				JK1	SJF3069-2N	TERMINAL BOARD	
		SWITCH (ES)		JK3-5	RJJ33T01	M3 JACK	
				JK701	SJS9236	AC INLET	(E, EB, EG, GC) △
S701	EVQ21405R	STOP (DECK1)		JK701	SJSD16	AC INLET	(GN) △
S701A	SSR187-1	VOLTAGE SELECTOR	(GC) △	JK702	RJS1A4802-B	AC OUTLET	(EB) △
S702	EVQ21405R	F. F. (DECK1)		JK702	RJS1A4902-B	AC OUTLET	(E, EG) △
S703	EVQ21405R	REW. (DECK1)		JK702	RJS1A8102	AC OUTLET	(GN) △
S704	EVQ21405R	F. PLAYBACK (DECK1)		JK702	SJS9331B	AC OUTLET	(GC) △
S705	EVQ21405R	R. PLAYBACK (DECK1)					
S708	EVQ21405R	REVERSE MODE				GND PART (S)	
S709	EVQ21405R	DOLBY NR					
S710	EVQ21405R	METER RANGE		E1	SNE1004-1	GND PLATE	
S711	EVQ21405R	STOP (DECK2)					
S712	EVQ21405R	F. F. (DECK2)				FUSE HOLDER (S)	
S713	EVQ21405R	REW. (DECK2)					
S714	EVQ21405R	F. PLAYBACK (DECK2)		FC701, 702	EYF52BC	FUSE HOLDER	(E, EB, EG, GN)
S715	EVQ21405R	R. PLAYBACK (DECK2)					
S716	EVQ21405R	REC (DECK2)				FLAT CABLE (S)	
S717	EVQ21405R	PAUSE (DECK2)					
S718	EVQ21405R	SYNCHRO START		W3	RWJ0207210QQ	FLAT CABLE (7P)	
S719	EVQ21405R	TAPE EDIT SPEED (X1/X2)		W4	RWJ1804200QQ	FLAT CABLE (4P)	
S720	EVQ21405R	COUNTER RESET2 (DECK2)		W5	RWJ0210200QQ	FLAT CABLE (10P)	
S721	EVQ21405R	COUNTER RESET1 (DECK1)		W6	RWJ1804200QQ	FLAT CABLE (4P)	
S722	EVQ21405R	AUTO REC MUTE (DECK2)		W8	RWJ0210200KQ	FLAT CABLE (10P)	
S724	EVQ21405R	POWER		W600	RWJ1806120QQ	FLAT CABLE (6P)	
S951	RSH1A89ZB-U	MODE (DECK1)					

Ref. No.
R952
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R977, 978
R979
R980-985
R986
R987
R990
R993
R994
R995, 996
R997
R998
C1-3
C5, 6
C7-10
C11, 12
C13, 14
C15, 16
C17-20
C21
C25, 26
C27, 28
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C33, 34
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C37, 38
C39, 40
C41, 42
C43, 44
C45, 46

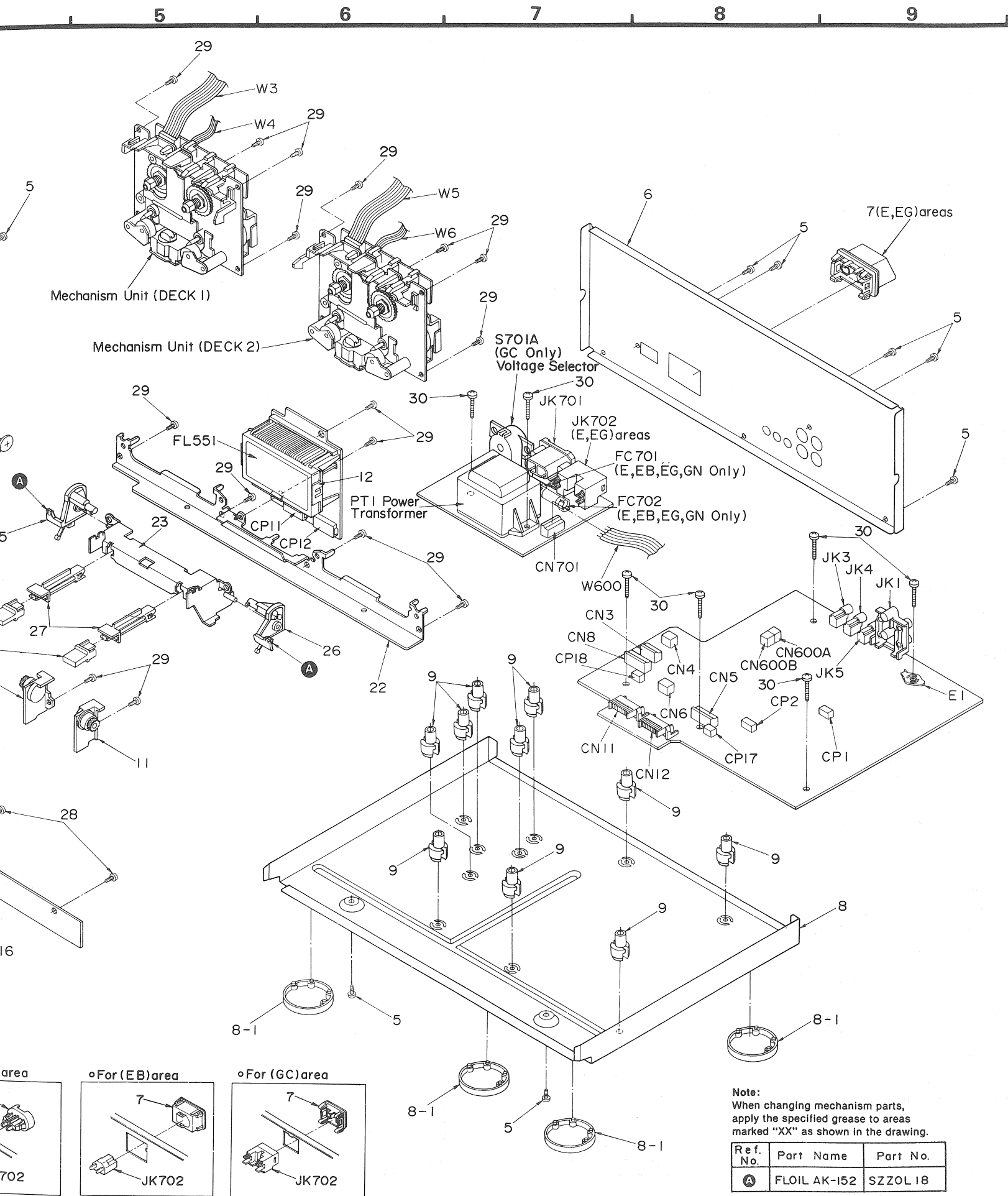
■ EXPLODED VIEW

REPLACEMENT

Notes : * Important Components components
* The parent Parts with



Ref. No.	Part No.	
		C/
1	RHD30007	SK
2	RKMD024-2K	C/
3	RYF0136A-K	C/
4	RYF0137A-K	C/
5	XTBS3+8JFZ1	SK
6	RGRO102B-A	RI
6	RGRO102C-A	RI
6	RGRO102C-C	RI
6	RGRO102D-A	RI
6	RGRO102E-A	RI
7	RJS1A4802-A	AC
7	RJS1A4902-A	AC
7	RJS1A4602	AC
7	SJS9331A	AC
8	RFKJSX502E-K	BE
8-1	RKA0011-2	FO
9	RKQ0089	P.
10	RFKNSDN7AK	D/
11	RFKNSDN7BK	D/
12	RMN0049	FI
13	RGG0066A-K	FI
14	RFKGSX502E-K	FI
14-1	RKW0124A-K1	TI
15	RGU0461-K	BU
16	RGU0601-K	BU
17	RGU0603-K	BU
18	RGU0604-K	BU
19	RGU0605-K	BU
20	RGW0098-K	KO
21	RKF0169A-K	C/
21-1	QBP2006A	T/
22	RMA0159-1	ME
23	RMA0373	E.
24	RME0068-1	SI
25	RML0185-1	E.
26	RML0186-1	E.
27	RMMD041	E.
28	XTBS26+10J	SK
29	XTB3+10JFZ	SK
30	XTB3+20JFZ	SK
31	RGU0458-K1	BU
		P/

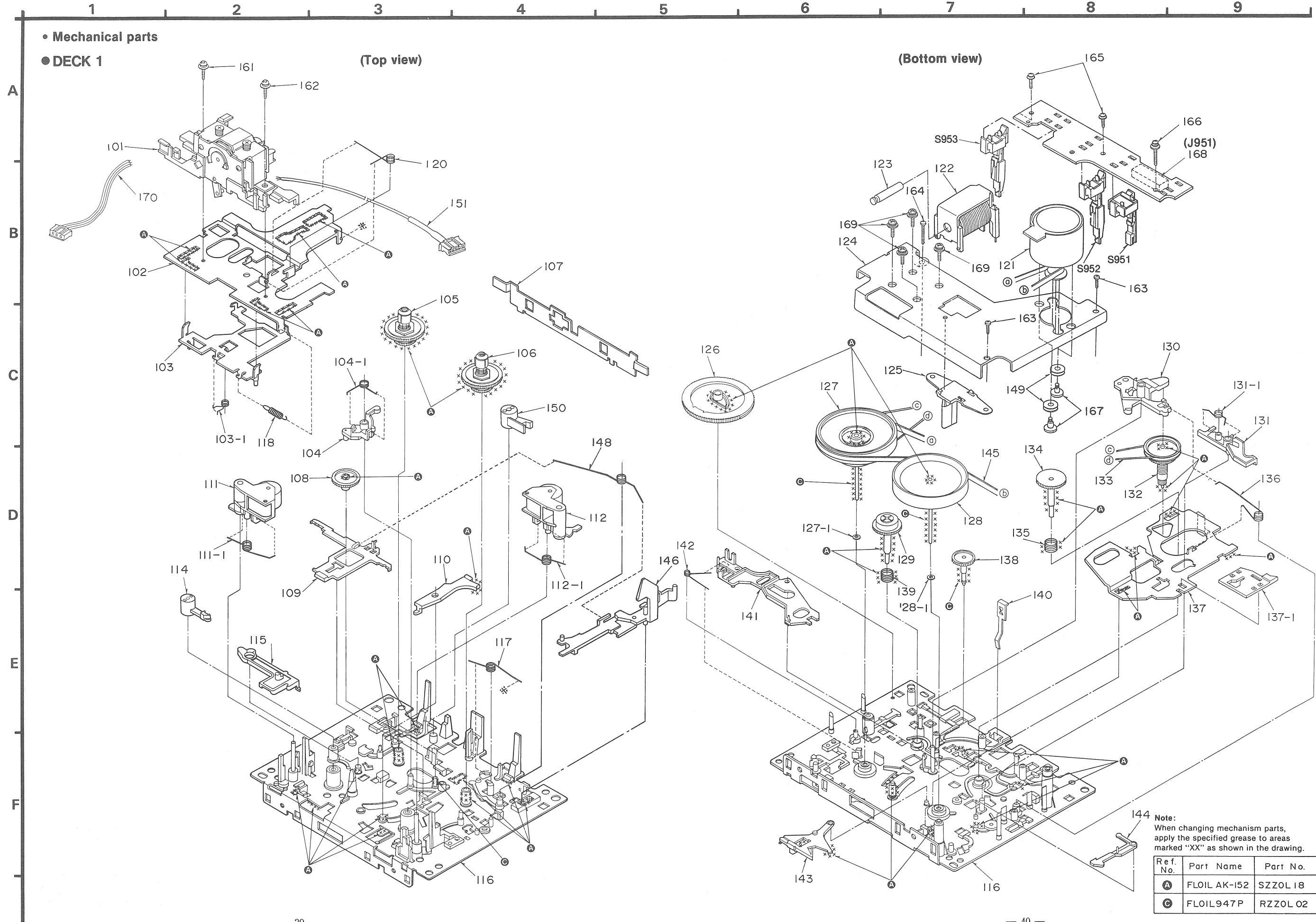


REPLACEMENT PARTS LIST

Notes : * Important safety notice:
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* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
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Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		P1	RPG0844	CARTON BOX	
				P2	RPN0383-1	PAD	
				P3	SPSD152	ACCESSORIES BOX	
				P4	SPP756	PROTECTION COVER	
						ACCESSORIES	
1	RHD30007	SCREW		A1	RQF1073	INSTRUCTION MANUAL UNIT	(E)
2	RKM0024-2K	CABINET		A1	RQF1074	INSTRUCTION MANUAL UNIT	(EB)
3	RYF0136A-K	CASSETTE LID (DECK1)		A1	RQF1075	INSTRUCTION MANUAL UNIT	(EG)
4	RYF0137A-K	CASSETTE LID (DECK2)		A1	RQF1076	INSTRUCTION MANUAL UNIT	(GC)
5	XTBS3+8JFZ1	SCREW		A1	RQF1077	INSTRUCTION MANUAL UNIT	(GN)
6	RGR0102B-A	REAR PANEL	(EB)	A1-1	RFKSSX502E-K	INSTRUCTION MANUAL ASS'Y	(E)
6	RGR0102C-A	REAR PANEL	(EG)	A1-1	RQT0978-G	INSTRUCTION MANUAL	(GC)
6	RGR0102C-C	REAR PANEL	(E)	A1-1	RQT0980-B	INSTRUCTION MANUAL	(EB, GN)
6	RGR0102D-A	REAR PANEL	(GC)	A1-1	RQT0981-D	INSTRUCTION MANUAL	(EG)
6	RGR0102E-A	REAR PANEL	(GN)	A1-2	RQA0013	WARRANTY CARD	(E, EB, EG)
7	RJS1A4802-A	AC OUTLET COVER	(EB)	A1-2	SQX7186	WARRANTY CARD	(GN)
7	RJS1A4902-A	AC OUTLET COVER	(E, EG)	A1-3	RQCB0169	SERVICENTER LIST	
7	RJS1A4602	AC OUTLET COVER	(GN)	A2	RJA0004	AC POWER SUPPLY CORD	(GC) $\triangle$
7	SJS9331A	AC OUTLET COVER	(GC)	A2	SJA173	AC POWER SUPPLY CORD	(GN) $\triangle$
8	RFKJSX502E-K	BOTTOM BOARD ASS'Y		A2	SJA187	AC POWER SUPPLY CORD	(E, EG) $\triangle$
8-1	RKA0011-2	FOOT		A2	SJA188	AC POWER SUPPLY CORD	(EB) $\triangle$
9	RKQ0089	P. C. B. HOLDER		A3	SJP2249-3	STEREO CONNECTION CABLE	
10	RFKNSDN7AK	DAMPER GEAR ASS'Y (L)		A4	SJP2257T	L-TYPE CABLE	
11	RFKNSDN7BK	DAMPER GEAR ASS'Y (R)		A5	SJP9215	AC PLUG ADAPTOR	(GC) $\triangle$
12	RMN0049	FL. HOLDER					
13	RGG0066A-K	FRONT AL. PANEL					
14	RFKGSX502E-K	FRONT PANEL ASS'Y					
14-1	RKWD124A-K1	TRANSPARENT PLATE					
15	RGU0461-K	BUTTON, EJECT					
16	RGU0601-K	BUTTON, OPERATION (DECK2)					
17	RGU0603-K	BUTTON, COUNTER/SYNCHRO					
18	RGU0604-K	BUTTON, POWER					
19	RGU0605-K	BUTTON, REC					
20	RGW0098-K	KNOB, REC LEVEL					
21	RKF0169A-K	CASSETTE HOLDER					
21-1	QBP2006A	TAPE PRESSURE SPRING					
22	RMA0159-1	MECHANISM ANGLE					
23	RMA0373	EJECT ANGLE					
24	RME0068-1	SPRING					
25	RML0185-1	EJECT LEVER (L)					
26	RML0186-1	EJECT LEVER (R)					
27	RMM0041	EJECT ROD					
28	XTBS26+10J	SCREW					
29	XTB3+10JFZ	SCREW					
30	XTB3+20JFZ	SCREW					
31	RGU0458-K1	BUTTON, OPERATION (DECK1)					
		PACKING MATERIAL					

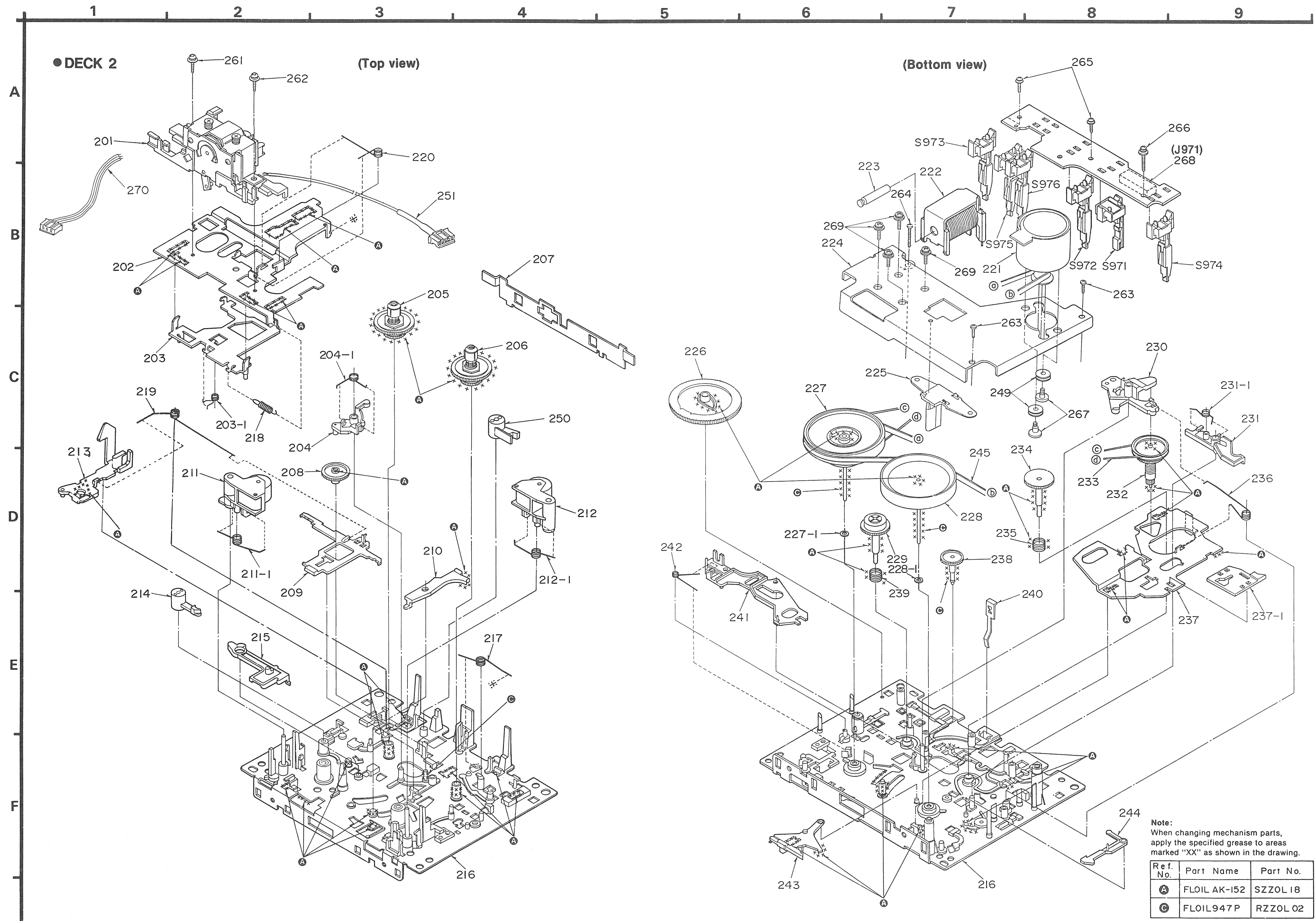
EXPLODED VIEWS



- Mechanical parts
- DECK 1

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

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



REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST		143	RUB515ZA	LEVER	
				144	RUB509ZA	LEVER	
				145	RDV0015	CAPSTAN BELT	
DECK1				146	RUB507ZD	EJECT ROD(R)	
101	RXQ0062	HEAD BLOCK(PLAYBACK)		148	RUW144ZA	SPRING	
102	RUA793ZF	HEAD BASE		149	RHG3032ZA	RUBBER CUSHION	
103	RZLAR300	ROD		150	RNL180ZB	DAMPER ARM	
103-1	RUW143ZA	SPRING		151	REX0061	LEAD WIRE BLOCK(4P)	
104	1UB0089ZA	ARM		161	XTW2+6L	SCREW	
104-1	RUW148ZA	SPRING		162	XTW2+8L	SCREW	
105	1DM0018ZA	REEL TABLE (R)		163	XTN26+7J	SCREW	
106	1DM0017ZA	REEL TABLE (F)		164	RHE5203ZA	SCREW	
107	RML0069-1	LEVER		165	XTW2+8S	SCREW	
108	RDG5772ZC	GEAR		166	XYC2+JF16	SCREW	
109	RUB508ZB	BRAKE ROD		167	RHD26002	SCREW	
110	RUB506ZB	LEVER		168	RJS7T7ZA	CONNECTOR(7P), J951	
111	1UB0088ZA	ARM (R)		169	RHD26003	SCREW	
111-1	RUW141ZA	SPRING		170	REX0145	LEAD WIRE BLOCK(3P)	
112	1UB0087ZA	ARM (F)					
112-1	RUW140ZC	SPRING					
114	RNL12D	DAMPER ARM					
115	RUB503ZD	MAIN LEVER					
116	RZUSX980	CHASSIS					
117	RUW142ZA	SPRING					
118	RUD105ZA	SPRING					
120	RUW139ZA	SPRING					
121	RFM133ZA	DC MOTOR					
122	1UE0015ZA	PLUNGER					
123	RUB428ZE	MOVING IRON CORE					
124	RUL1030XB	ANGLE					
125	RMD5014ZC	ANGLE					
126	RDG5927ZG	GEAR					
127	1DW0053ZB	FLYWHEEL (F)					
127-1	RNW139ZA	WASHER					
128	1DW0054ZB	FLYWHEEL (R)					
128-1	RNW138ZA	WASHER					
129	1DG0006ZA	REEL TABLE GEAR					
130	RUB513ZD	ARM					
131	1UB0091ZA	LEVER					
131-1	RUW146ZA	SPRING					
132	1DR0011ZA	MAIN PULLEY					
133	RDV90ZB	BELT					
134	RDG5769ZA	REEL TABLE GEAR					
135	RUQ111ZB	SPRING					
136	RUW145ZA	SPRING					
137	1UB0090ZA	ROD					
137-1	RUB512ZB	F. F. ROD					
138	RDG5773ZB	GEAR					
139	RUQ112ZA	SPRING					
140	RUS609ZC	TAPE PRESSURE SPRING					
141	RUB514ZC	LEVER					
142	RUW147ZA	SPRING					

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	RXQ0008	HEAD BLOCK (REC. /PLAYBACK)		245	RDV0015	CAPSTAN BELT	
202	RUA793ZF	HEAD BASE		249	RHG3032ZA	RUBBER CUSHION	
203	RZLAR300	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		262	XTW2+8L	SCREW	
205	1DM0018ZA	REEL TABLE (R)		263	XTN26+7J	SCREW	
206	1DM0017ZA	REEL TABLE (F)		264	RHE5203ZA	SCREW	
207	RML0069-1	LEVER		265	XTW2+8S	SCREW	
208	RDG5772ZC	GEAR		266	XYC2+JF16	SCREW	
209	RUB508ZB	BRAKE ROD		267	RHD26002	SCREW	
210	RUB506ZB	LEVER		268	RJS10T7ZA	CONNECTOR(10P), J971	
211	1UB0088ZA	ARM(R)		269	RHD26003	SCREW	
211-1	RUW141ZA	SPRING		270	REX0145	LEAD WIRE BLOCK(3P)	
212	1UB0087ZA	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	1UE0015ZA	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	1DG0006ZA	REEL TABLE GEAR					
230	RUB513ZD	ARM					
231	1UB0091ZA	LEVER					
231-1	RUW146ZA	SPRING					
232	1DR0011ZA	MAIN PULLEY					
233	RDV90ZB	BELT					
234	RDG5769ZA	REEL TABLE GEAR					
235	RUQ111ZB	SPRING					
236	RUW145ZA	SPRING					
237	1UB0090ZA	ROD					
237-1	RUB512ZB	F. F. ROD					
238	RDG5773ZB	GEAR					
239	RUQ112ZA	SPRING					
240	RUS609ZC	TAPE PRESSURE SPRING					