

Service Manual

Dolby NR-Equipped
Stereo Cassette Deck

Cassette Deck
RS-TR265



Color

(K)... Black Type



Area

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

RS-TR165 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/reel table drive	DC servo motor
(tape 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~16 kHz
	20 Hz~15 kHz (DIN)
CrO ₂	20 Hz~16 kHz
	20 Hz~15 kHz (DIN)
METAL	20 Hz~18 kHz
	20 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/800 Ω

HEADPHONES 30 mV/8 Ω

(8 Ω~600 Ω)

■ GENERAL

Power consumption

15 W

Power supply

For Great Britain and Oceania: AC 50/60 Hz, 240 V

For F.R. Germany, Italy and Continental Europe:

AC 50/60 Hz, 220 V

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

Dimensions (W × H × D)

430 × 136 × 290 mm

(16-15/16" × 5-3/8" × 11-13/32")

Weight

4.8 kg (10.6 lb.)

Note:

Specifications are subject to change without notice.

Weight and dimensions are approximate.

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

Technics

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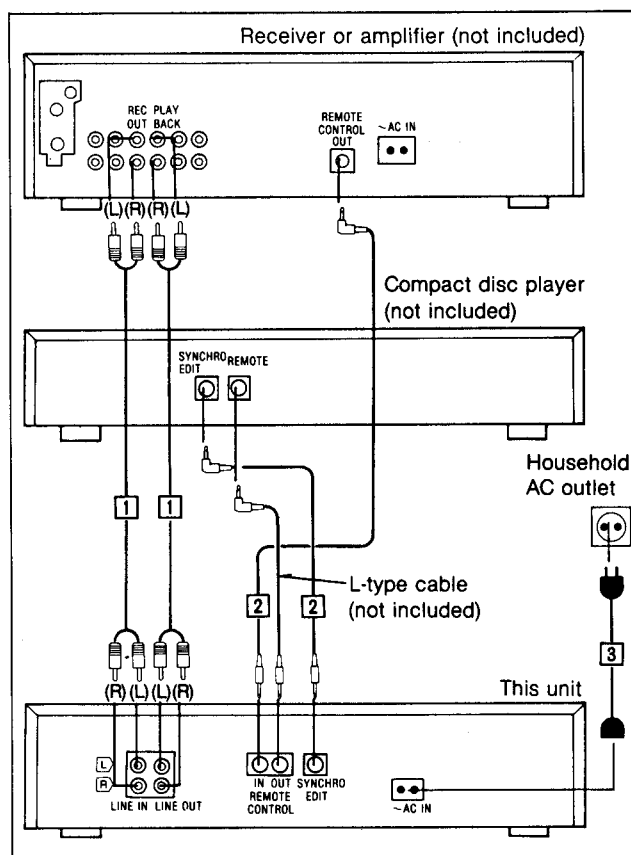
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CONNECTIONS

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

- 1 Connect the stereo connection cables.
- 2 Connect the L-type cables.
- 3 Connect the AC power supply cord.



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

Refer to the illustration together with the instructions provided below.

“REMOTE CONTROL IN” terminal

Make a connection from this terminal to the control terminal for a cassette deck with a Technics receiver or a Technics amplifier. (For detailed information, refer to the operating instructions of the Technics receiver or the Technics amplifier.)

“REMOTE CONTROL OUT” terminal

Make a connection from this terminal to the “REMOTE INPUT” terminal of a Technics graphic equalizer or to the “REMOTE” terminal of a Technics compact disc player. (For detailed information, refer to the operating instructions of the Technics graphic equalizer or the Technics compact disc player.)

“SYNCHRO EDIT” terminal

Make a connection from this terminal to a terminal that has the synchro-edit function of a Technics compact disc player.

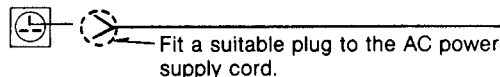
Refer to page 5. (Contact your dealer for details.)

AC power supply cord (3)

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

For United Kingdom

Household AC outlet



Placements hints

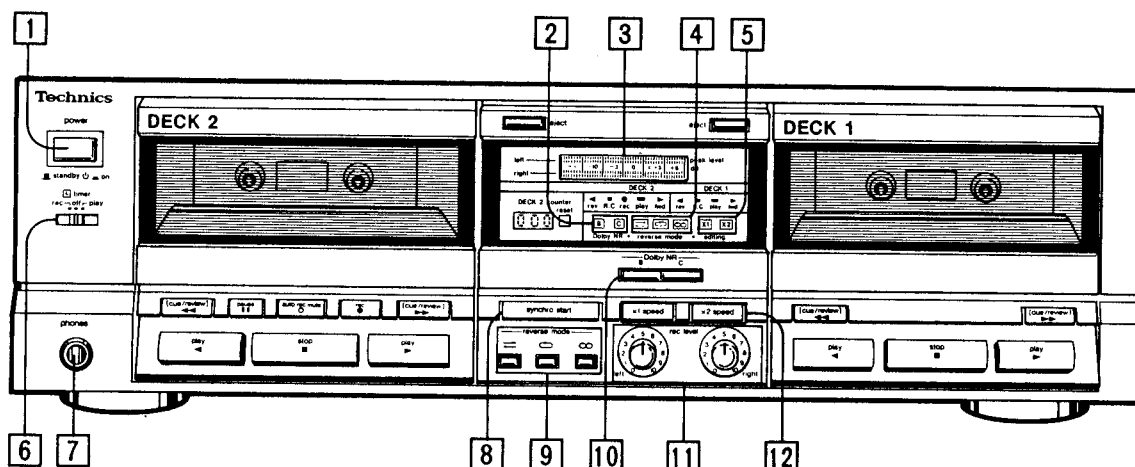
If this unit is placed near a receiver or a tuner, a “hum” noise may be heard during tape playback, recording, or AM reception of the receiver or the tuner.

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

ACCESSORIES

- | | | |
|---|---------------------------------------|---|
| • Stereo connection cables 2
(SJP2249-3) | • L-type cables 2
(SJP2257T) | • AC power supply cord 1
(SFDAC05E03: (E, EG)
SJA193-1: (EB)
SJA173-1: (GN)
RJA0004: (GC, PX) |
| • AC plug adaptor 1
(SJP9215: (GC, PX)) | | |

■ LOCATION OF CONTROLS



Controls common to both tape decks

1 Power "standby $\text{\textcircled{O}}$ / on" switch (power/ $\text{\textcircled{O}}$ standby $\text{\textcircled{O}}$ 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 $\text{\textcircled{O}}$ 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 Dolby noise-reduction indicators (B, C)

One of these indicators illuminates to show the type of Dolby noise-reduction system selected by pressing one of the Dolby noise-reduction buttons.

3 Input level meter (peak level)

During tape playback, this meter indicates the level of the recorded sound source. During recording, it indicates the level to which the recording-level controls have been adjusted.

4 Reverse-mode indicators (→, ←, ∞)

One of these indicators illuminates to show which of the reverse modes was selected by the reverse-mode selectors.

5 Edit-recording tape-speed indicators

($\times 1$, $\times 2$)

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.

6 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. (Refer to page 5.)

7 Headphones jack (phones)

8 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).

9 Reverse-mode selectors (reverse mode)

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

10 Dolby noise-reduction buttons (Dolby NR)

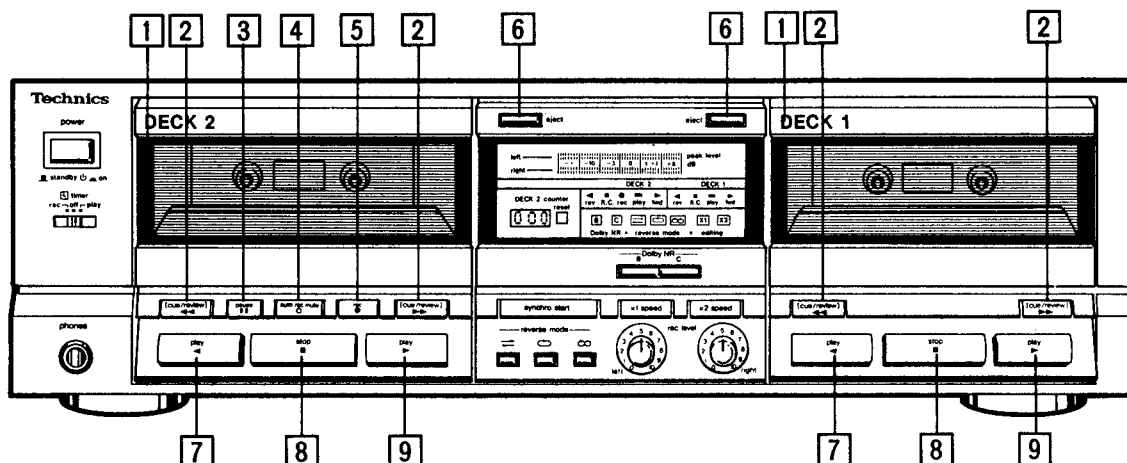
These buttons can be used to reduce the hiss noise that is characteristic of tape. This unit is provided with both the B-type and C-type noise-reduction systems.

11 Recording-level controls (rec level)

These controls can be used to regulate the recording level of tape deck 2.

12 Edit-recording tape-speed buttons (speed)

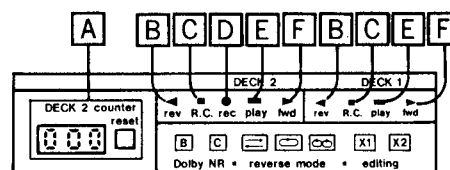
These buttons can be used to select the recording speed when a tape-to-tape recording is made.



Controls applicable to tape deck 1 and/or 2

- 1 Cassette holder**
- 2 Fast-forward/cue, rewind/review buttons (cue/review/▶▶/◀◀)**
These buttons can be 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. (Refer to page 8.)
- 3 Pause button (pause/||)**
This button can be used to temporarily stop the tape playback or recording of tape deck 2 only.
- 4 Automatic-record-muting button (auto rec mute/⊙)**
This button can be used to make a silent interval on the tape being recorded on tape deck 2.
- 5 Record button (rec/●)**
This button can be used to change tape deck 2 to the recording stand-by mode.
- 6 Eject button (eject)**
This button can be used to open the cassette holder.
- 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.)

Indicators applicable only to deck 1 or 2



- A Tape deck 2 counter/reset button (DECK 2 counter/reset)**
This tape counter shows the amount of tape movement of the tape in tape deck 2. The reset button can be used to reset the tape counter reading to "000".
- B Reverse-side indicator (rev/◀)**
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 (R.C./■)**
This indicator illuminates to indicate that this tape deck can now be controlled by the remote-control transmitter.
- D Recording indicator (rec/●)**
This indicator illuminates to indicate that tape deck 2 is in the recording stand-by mode, or is recording.
- E 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.
- F Forward-side indicator (fwd/▶)**
Illuminates during playback or recording (of tape deck 2 only), to indicate that side "A" of the tape is being used.

■ CONVENIENT FEATURES FOR RECORDING

Compact disc synchro-edit-recording

When a Technics compact disc player with the compact disc synchro-edit function is used in combination with this unit, recordings can be made on side "A" and side "B" of the tape, without interruptions of tracks, in conjunction with the tape length.

Procedure for this unit

1. Follow steps 1 through 9 in the section concerning recording.

Procedure for the compact disc player

2. Press the stop button. (Disc play will stop.)
3. Press the edit-tape-length button and specify the length of the tape to be used.

The tracks to be recorded to side "A" of the tape and those to be recorded to side "B" will then be automatically selected according to the tape's length.

4. Press the play button.

The recording will start at the same time that play starts at the compact disc player.

For more detailed information, refer to the operating instructions of the Technics compact disc player to be used.

Notes:

- Recordings cannot be made on the leader tape (attached to each end of recording tape), so advance the tape slightly from its end before starting a recording. Also check to be sure that side A ("fwd") indicator is illuminated.
- If the CD program contents to be recorded on side "A" of the tape are shorter than the actual tape length, this unit will continue to record until it reaches the end of side "A", while the compact disc player switches to the pause mode. At the end of side "A", deck 2 automatically switches to side "B" and after few seconds the compact disc player will resume play.
- When canceling the synchro-edit recording mode, press the stop button on the compact disc player and then press the stop button on this unit. (To cancel mid-way through a performance, press the stop button on the compact disc player twice in succession.)

■ TIMER RECORDING/PLAYBACK

If an audio timer (not included) is connected to this unit, recording of a radio broadcasts, or tape playback, will automatically begin at the preset time.

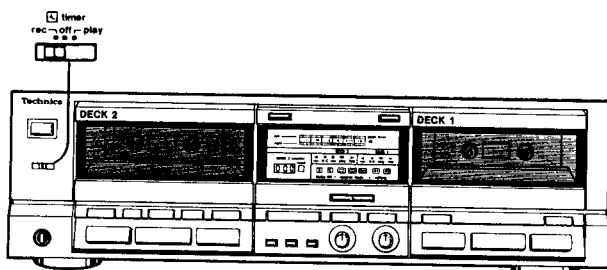
Timer recording or playback is also possible by using a tuner with a timer.

Connect the AC power cord of this unit to the power source outlet of the timer. (See the operating instructions of the timer for detailed information.)

Note:

Playback by one deck only can only be done by tape deck 2.

Timer recording (tape deck 2 only)



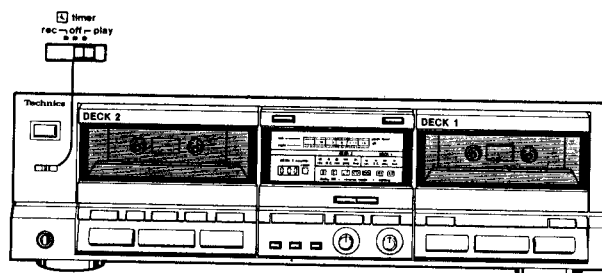
- 1 **Prepare for recording.**
Follow steps 1 through 9 of "Recording" on page 9. After adjusting the recording level, press the stop button. Check the tape side ("A" or "B") to be recorded on to be sure it is correct.
- 2 **Set the timer to the desired recording-start time.**
(Switch the power of this unit to standby mode.)
- 3 **Set the timer switch to the "rec" position.**
(At the set time, the power will be switched ON and the broadcast will be recorded.)

■ After setting the timer

Check to be sure that the power switch is set to the "on" position.

Timer playback

Series playback (tape deck 2 to tape deck 1) is also possible.



- 1 **Rewind the tape to the position from which you want playback to begin.**
Check the tape side ("A" or "B") to be played back to be sure it is correct.
- 2 **Set the timer to the desired playback-start time.**
(Switch the power of this unit to standby mode.)
- 3 **Set the timer switch to the "play" position.**
(At the set time, the power will be switched ON and the playback will begin.)

■ After setting the timer

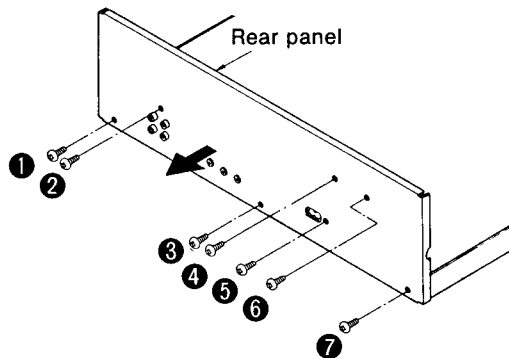
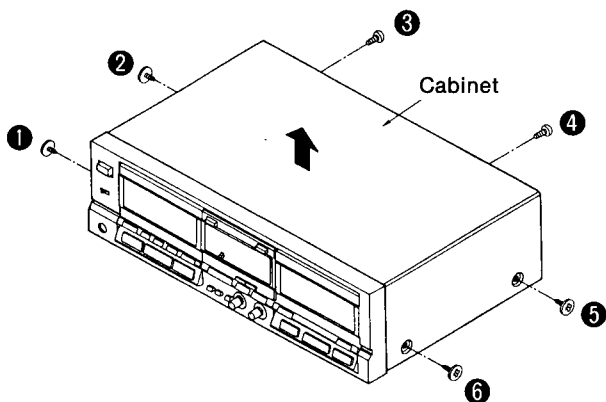
Check to be sure that the power switch is set to the "on" position.

DISASSEMBLY INSTRUCTIONS

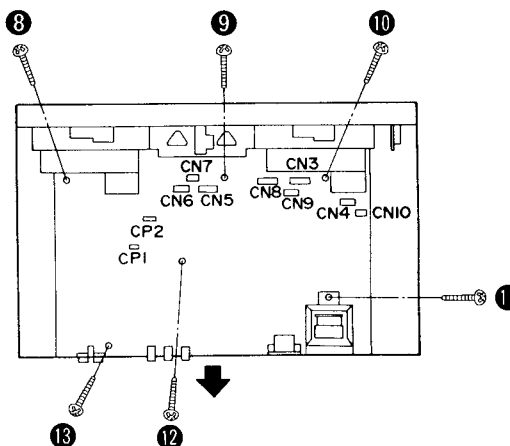
"ATTENTION SERVICER"

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

Ref. No. 1	Removal of the cabinet	Ref. No. 2	Removal of the main P.C.B.
Procedure 1	• Remove the 6 screws (1~6).	Procedure 1→2	1. Remove the 7 screws (1~7). 2. Remove the rear panel in the direction of the arrow.

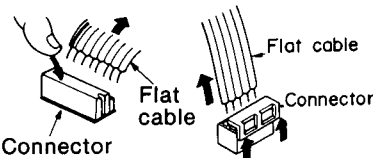


4. Remove the 6 screws (8~13).
5. Remove the 2 connectors (CP1, CP2).
6. Remove the 8 flat cables (CN3, CN4, CN5, CN6, CN7, CN8, CN9, CN10).
7. Remove the main P.C.B. in the direction of the arrow.



How to remove the flat cable

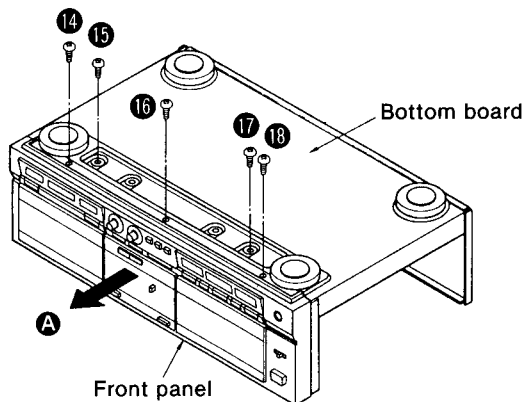
Pull out the flat cable while pressing the connector and pull out the connector.



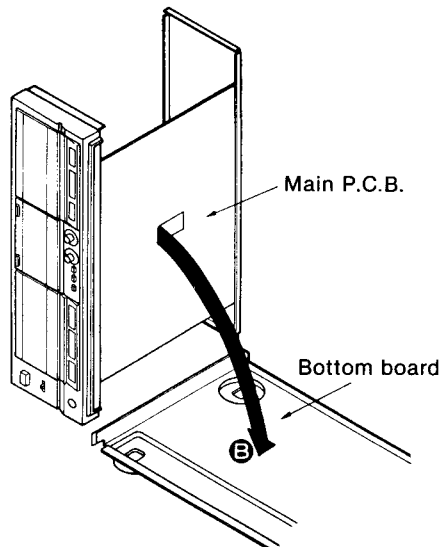
How to check the main P.C.B.

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

1. Remove the 14 screws (1, 3, 7~18).
2. Remove the front panel in the direction of the arrow A.

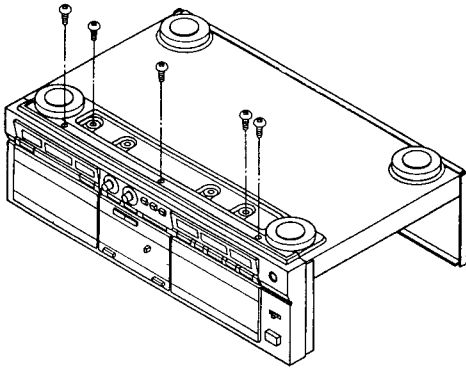


3. Remove the bottom board in direction of the arrow B.
4. Reinstall the front panel to the main P.C.B.

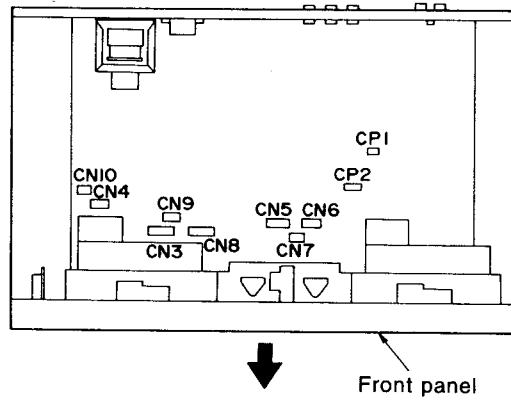


Ref. No. 3
Removal of the front panel ass'y

Procedure 1→3
1. Remove the 5 screws (①~⑤).

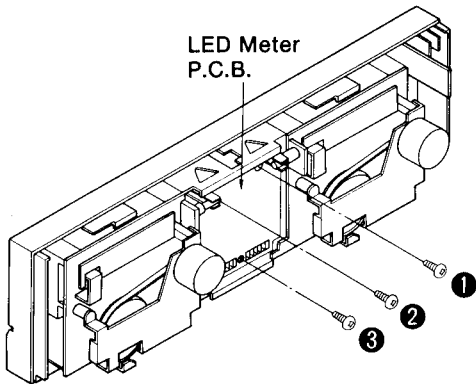


2. Remove the 2 connectors (CP1, CP2).
3. Remove the 8 flat cables (CN3, CN4, CN5, CN6, CN7, CN8, CN9, CN10).
4. Remove the front panel in the direction of the arrow.



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

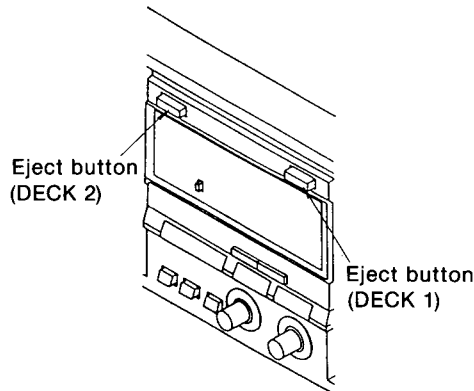
Procedure 1→3→4
1. Remove the 3 screws (①~③).
2. Remove the meter P.C.B. in the direction of the arrow.



Ref. No. 5
Removal of the mechanism units

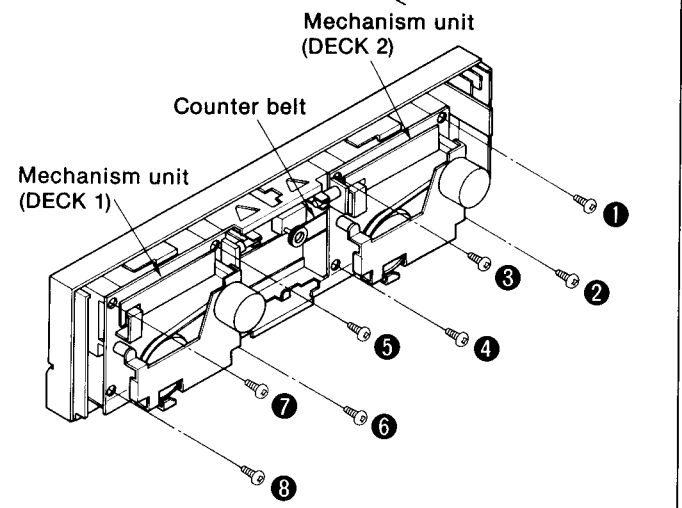
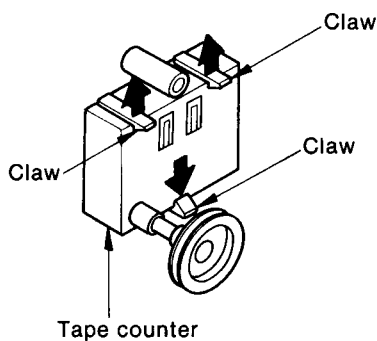
Procedure 1→3→4→5

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



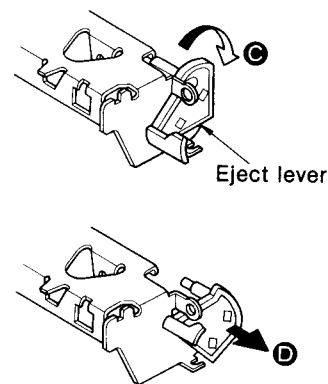
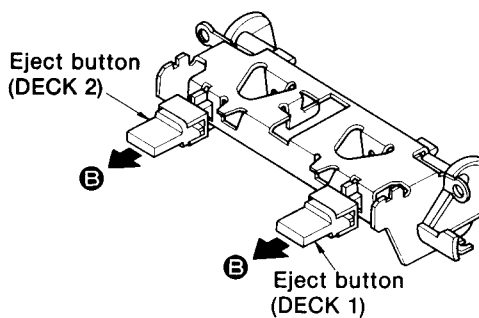
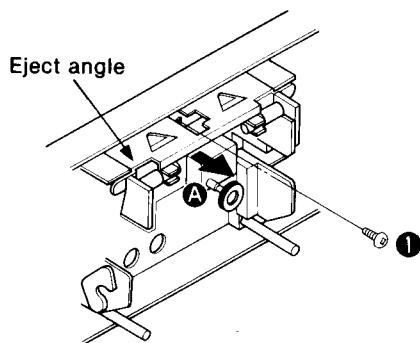
Ref. No. 6
Removal of the tape counter

Procedure 1→3→4→6
• Release the 3 claws.



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

Procedure
 3→4→5→11



1. Remove the 1 screw (1).
2. 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.

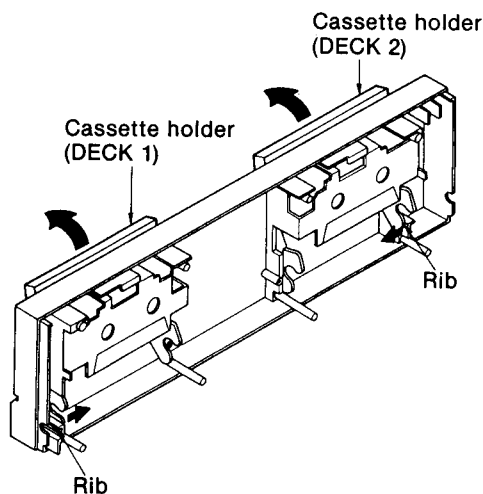
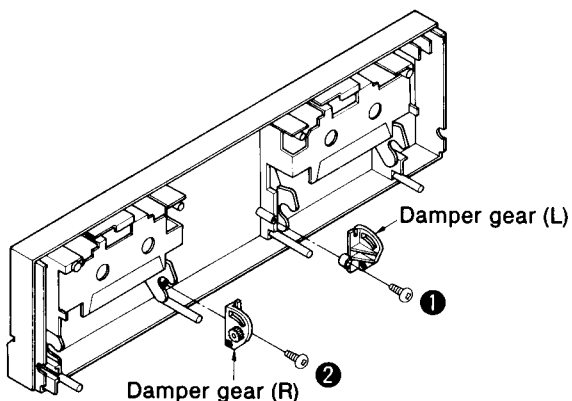
4. Turn the eject lever in the direction of the arrow C, and remove the eject lever in the direction of the arrow D.

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

Procedure
 5→8→12

1. Remove the 2 screws (1, 2).
2. Remove the damper gear (L) and damper gear (R).

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

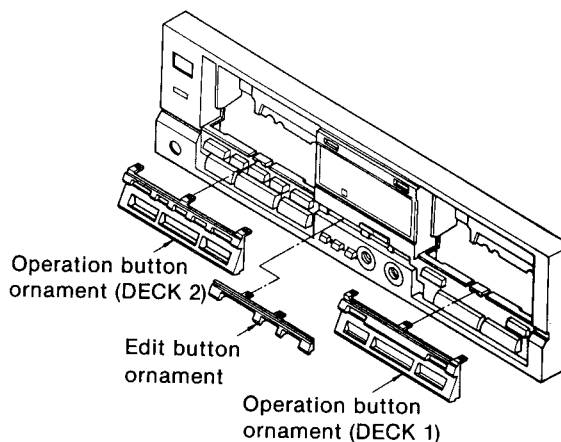
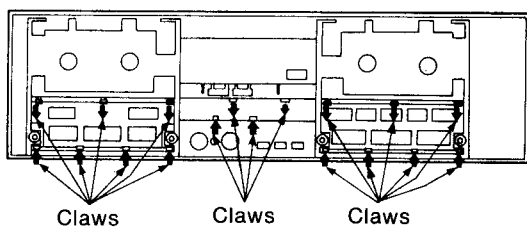


Ref. No. 13
Removal of the operation button ornament and edit button ornament

Procedure
 9→10→12→13

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

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



MEASUREMENT AND ADJUSTMENT METHODS

Measurement Condition

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

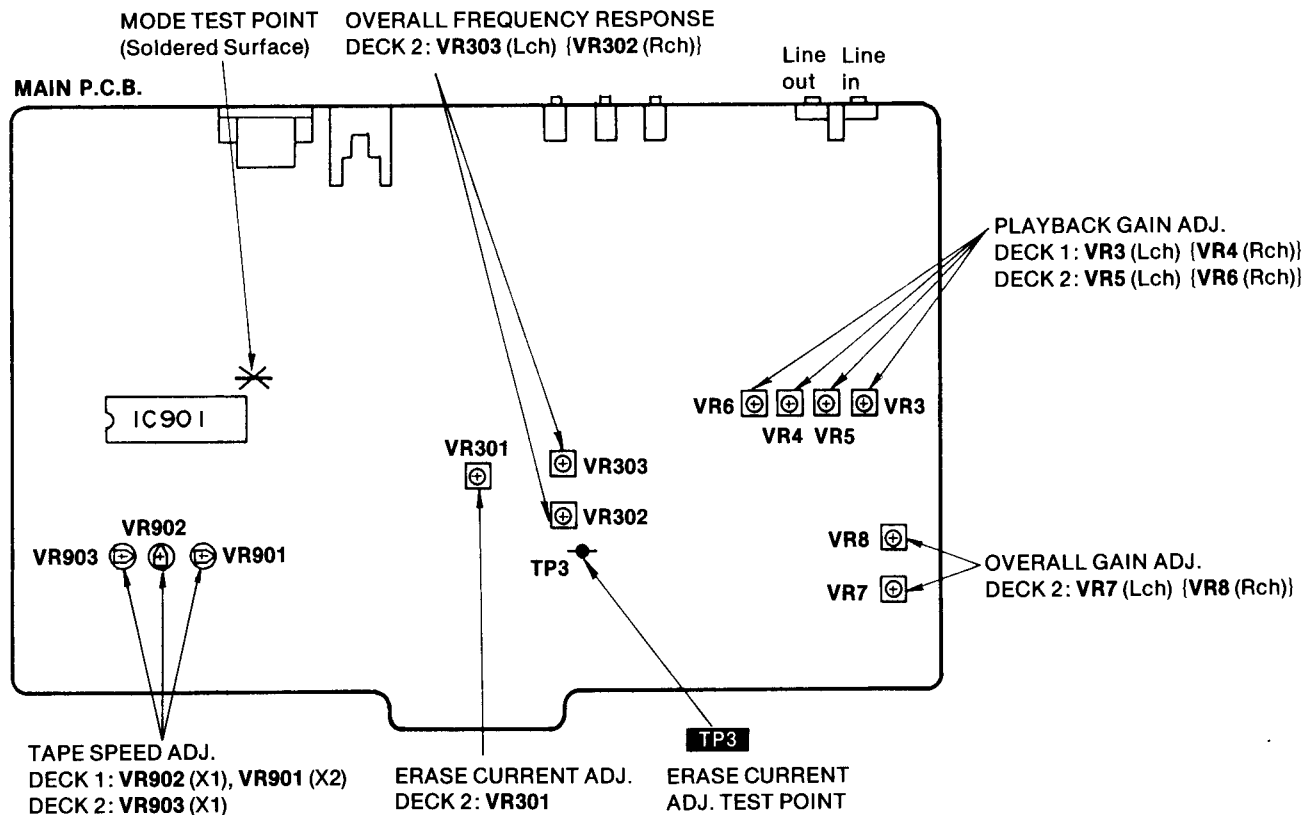
- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)

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)

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

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

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

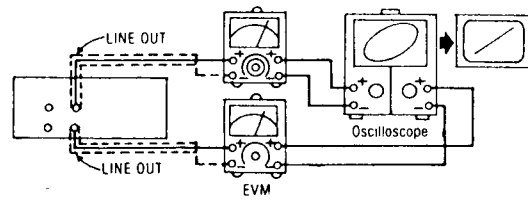


Fig. 1

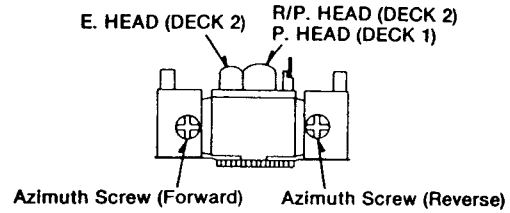


Fig. 2

TAPE SPEED ADJUSTMENT (DECK 2/1)

Normal speed

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

High speed

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

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

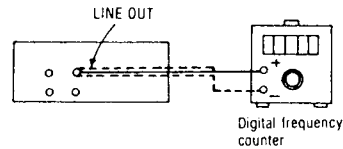


Fig. 3

Standard value: 3000 ± 15 Hz (Normal), 6000 ± 600 Hz (High)

PLAYBACK GAIN ADJUSTMENT (DECK 2/1)

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

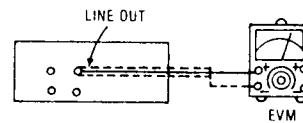


Fig. 4

Standard value: 0.4V ± 0.5dB

PLAYBACK FREQUENCY RESPONSE (DECK 2/1)

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

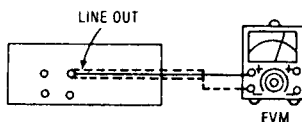


Fig. 5

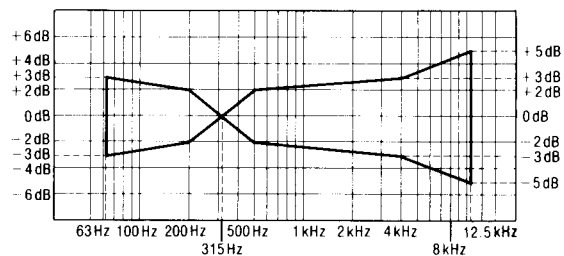


Fig. 6

ERASE CURRENT ADJUSTMENT (DECK 2)

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

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

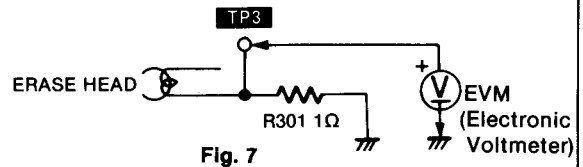


Fig. 7

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.

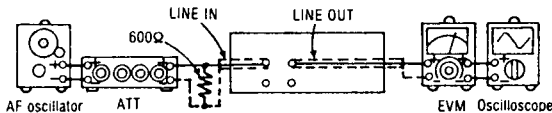


Fig. 10

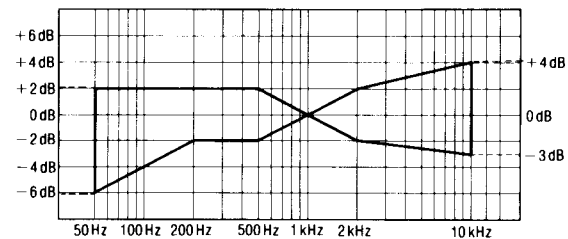
Normal Overall frequency response chart (NR OUT)

Fig. 8

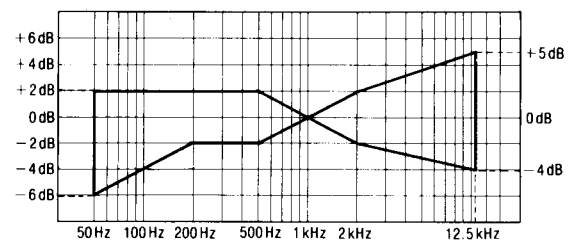
CrO₂/Metal Overall frequency response chart (NR OUT)

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 0.4V.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust VR7 (L-CH) and VR8 (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

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

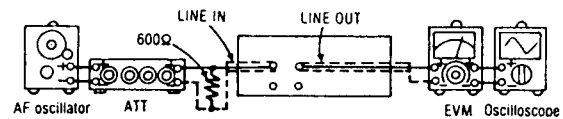


Fig. 11

■ TERMINAL FUNCTION OF IC's

• IC901 (M50746-145SP): MICROCOMPUTER

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

Pin No.	Mark	I/O Division	Function
36	REEL 2	I	Deck 2 Rotation pulse signal of reel table
37	RINH 2	I	Deck 2 Reverse Rec. Inh. switch select terminal
38	FINH 2	I	Deck 2 Forward Rec. Inh. switch select terminal
39	MODE 1	I	Deck 1 mechanism mode switch select terminal
40	HALF 1	I	Deck 1 cassette half detection switch <ul style="list-style-type: none"> • "L" level in half detection switch is on mode. • "H" level in half detection switch is off mode.
41	MPX	O	MPX filter IN/OUT control signal <ul style="list-style-type: none"> • "OPEN" with Dolby NR "IN" • "L" level with Dolby NR "OUT"
42	$\overline{T2}$	O	Deck 2 play select signal <ul style="list-style-type: none"> • "L" level with PLAY/CUE/REVIEW mode. • "H" level with any other mode.
43	$\overline{X2}$	O	X2 Speed LED display <ul style="list-style-type: none"> • "L" level when LED is on mode. • "OPEN" when other mode.
44	$\overline{X1}$	O	X1 Speed LED display <ul style="list-style-type: none"> • "L" level when LED is on mode. • "OPEN" when other mode.
45	T/S	I	Connected to GND
46	\overline{C}	O	Dolby C LED display <ul style="list-style-type: none"> • "L" level when LED is on mode. • "OPEN" when other mode.
47	\overline{B}	O	Dolby B LED display <ul style="list-style-type: none"> • "L" level when LED is on mode. • "OPEN" when other mode.
48	\overline{ENC}	O	Encode/Decode select signal <ul style="list-style-type: none"> • "L" level in encode mode. • "H" level in decode mode.
49	C/M	I	Deck 1 one-way mechanism select terminal (Connected to GND)
50	\overline{PWOUT}	O	Power ON/OFF output terminal
51	\overline{SDATA}	O	Serial data output (Not used, open)
52	P04 (∞)	O	Reverse mode (∞) LED display.
53	P03 (↶)	O	Reverse mode (↶) LED display.
54	P02 (↷)	O	Reverse mode (↷) LED display.
55	DIR 1	O	Direction indicator signal of deck 1 (Not used, open)
56	FINH 1	I	Deck 1 Forward Rec. Inh. switch select terminal
57	HSP 1	O	Deck 1 Motor speed control signal <ul style="list-style-type: none"> • "L" level when normal speed (X1). • "H" level when high speed (X2).
58	SOL 1	O	Deck 1 Solenoid control signal <ul style="list-style-type: none"> • "H" level when solenoid is on mode. • "L" level when solenoid is off mode.
59	MOTOR 1	O	Deck 1 Motor control signal <ul style="list-style-type: none"> • "H" level when motor is on mode. • "L" level when motor is off mode.
60	MODE 2	I	Deck 2 mechanism mode switch select terminal
61	HALF 2	I	Deck 2 cassette half detection switch <ul style="list-style-type: none"> • "L" level in half detection switch in on mode. • "H" level in half detection switch in off mode.
62	HSP 2	O	Deck 2 Motor speed control signal <ul style="list-style-type: none"> • "H" level when normal speed (X1). • "L" level when high speed (X2).
63	SOL 2	O	Deck 2 Solenoid control signal <ul style="list-style-type: none"> • "H" level when solenoid is on mode. • "L" level when solenoid is off mode.
64	MOTOR 2	O	Deck 2 Motor control signal <ul style="list-style-type: none"> • "H" level when motor is on mode. • "L" level when motor is off mode.

PRINTED CIRCUIT BOARDS

Power Source F

A

B

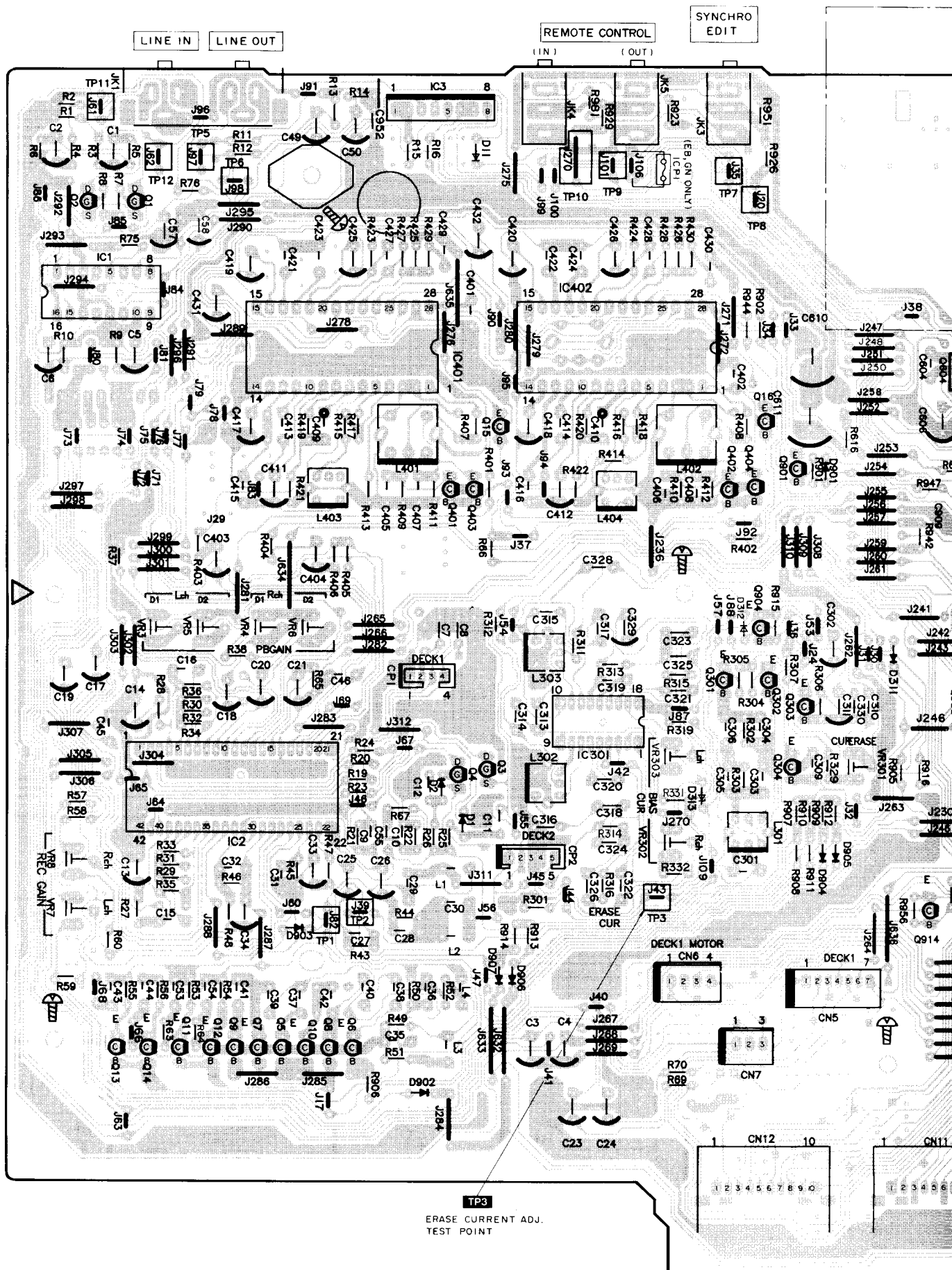
C

D

E

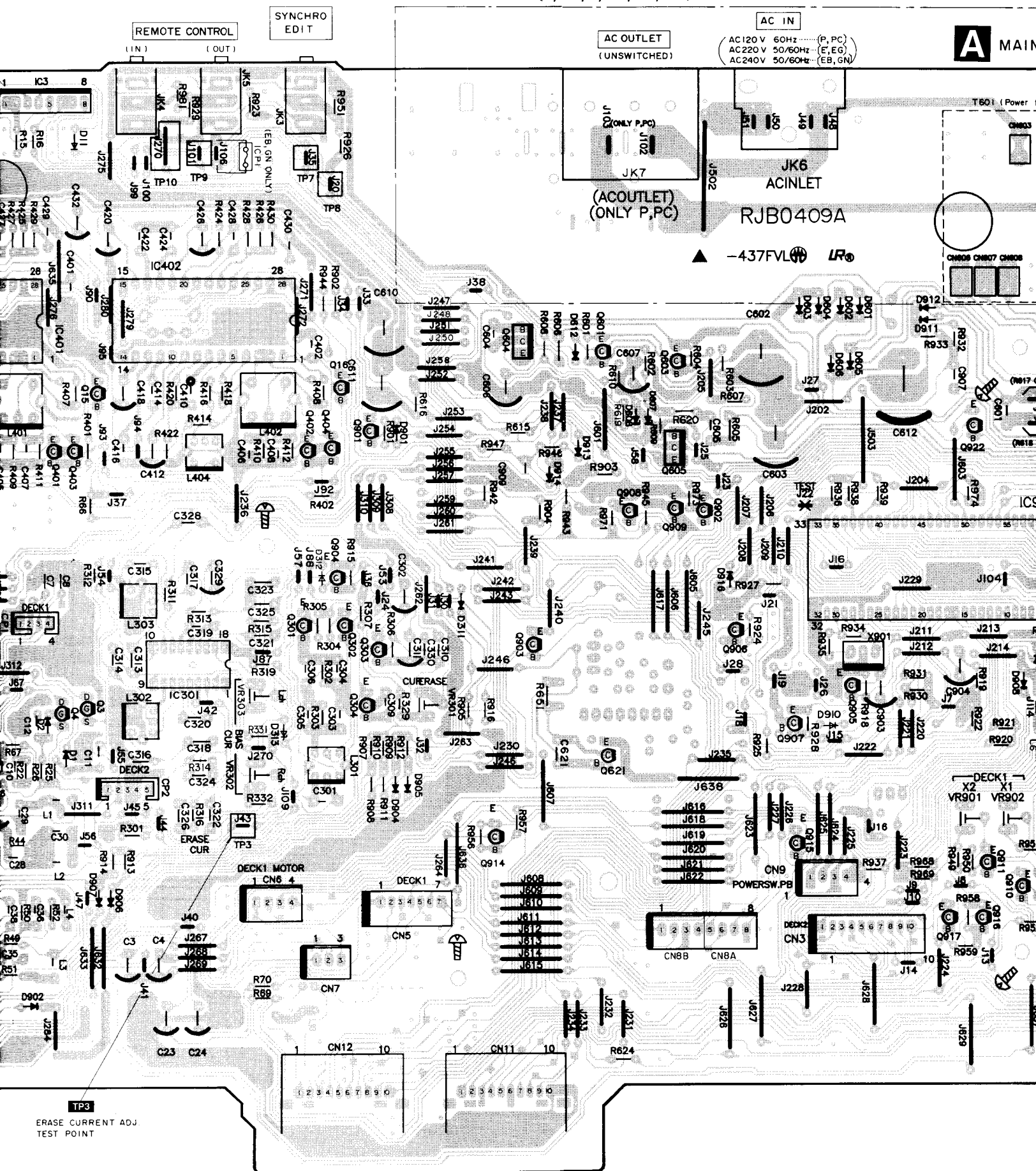
F

G



TP3
ERASE CURRENT ADJ.
TEST POINT

Power Source For (P, PC, E, EB, EG, GN) areas.



REMOTE CONTROL

SYNCHRO EDIT

AC OUTLET
(UNSWITCHED)

AC IN

AC120V 60Hz (P, PC)
AC220V 50/60Hz (E, EG)
AC240V 50/60Hz (EB, GN)

A MAIN

(ACOUTLET)
(ONLY P,PC)

RJB0409A

-437FVL LR

T601 (Power)

CN85 CN87 CN88

IC301

DECK1 X1 X2

VR901 VR902

R95 R96 R97 R98 R99

R958 R959 R960 R961 R962

R963 R964 R965 R966 R967

R968 R969 R970 R971 R972

R973 R974 R975 R976 R977

R978 R979 R980 R981 R982

R983 R984 R985 R986 R987

R988 R989 R990 R991 R992

R993 R994 R995 R996 R997

R998 R999 R1000

R1001 R1002 R1003 R1004

R1005 R1006 R1007 R1008

R1009 R1010 R1011 R1012

R1013 R1014 R1015 R1016

R1017 R1018 R1019 R1020

R1021 R1022 R1023 R1024

R1025 R1026 R1027 R1028

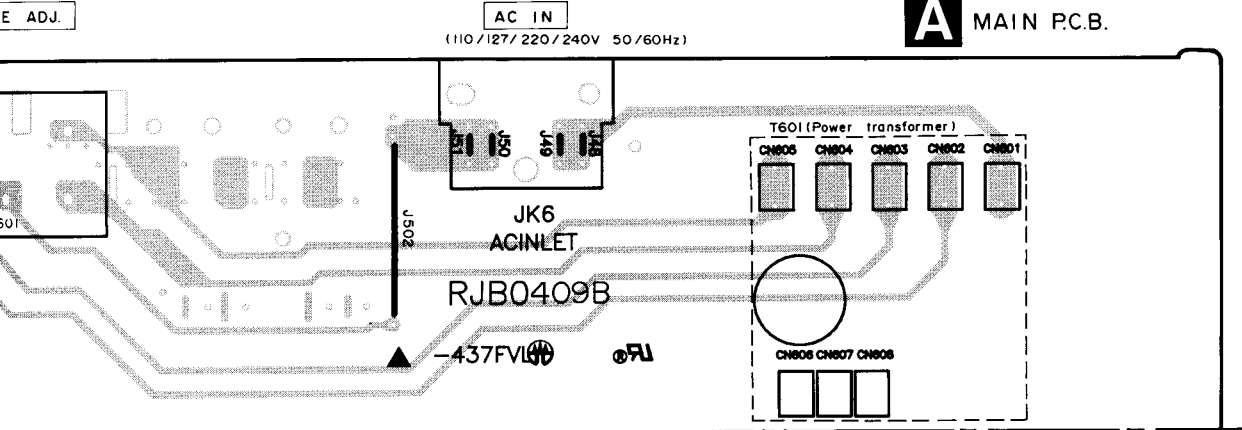
R1029 R1030 R1031 R1032

R1033 R1034 R1035 R1036

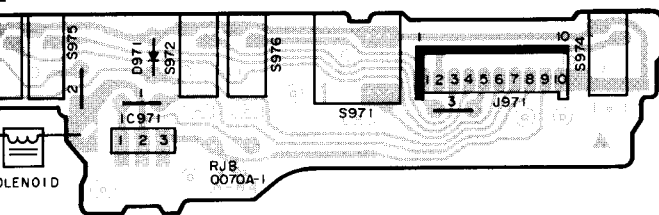
R1037 R1038 R1039 R1040

TP3
ERASE CURRENT ADJ
TEST POINT

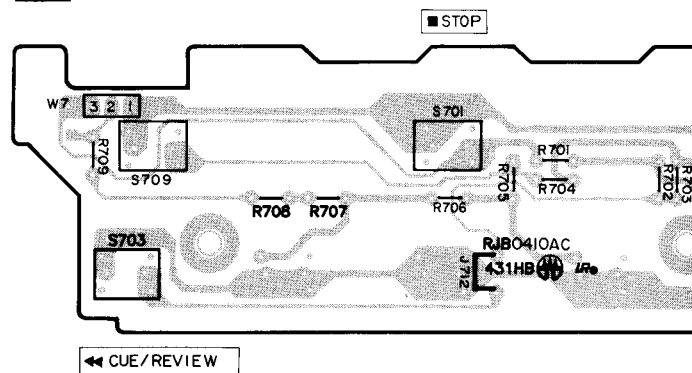
Source For (GC,PX) areas.



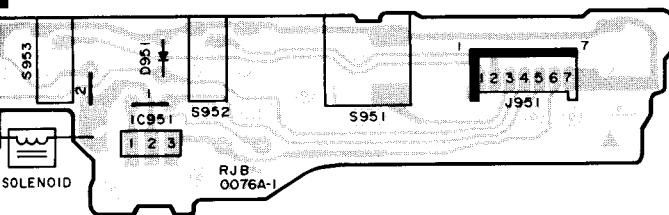
MECHANISM (DECK2) P.C.B.



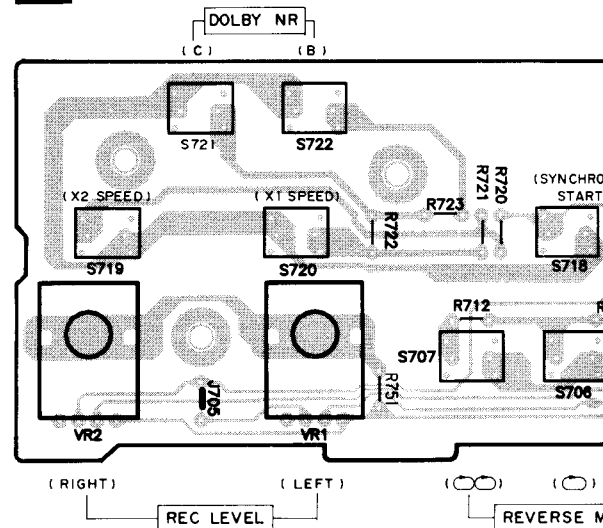
H OPERATION (DECK1) P.C.B.



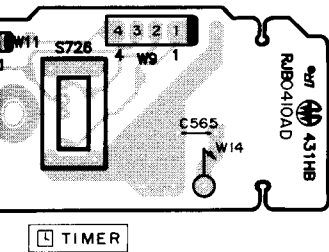
MECHANISM (DECK1) P.C.B.



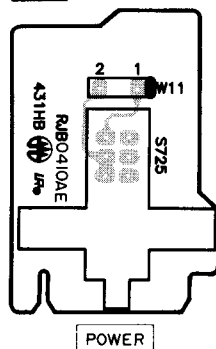
I OPERATION (DECK2) P.C.B.



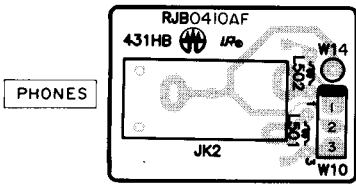
TIMER SWITCH P.C.B.



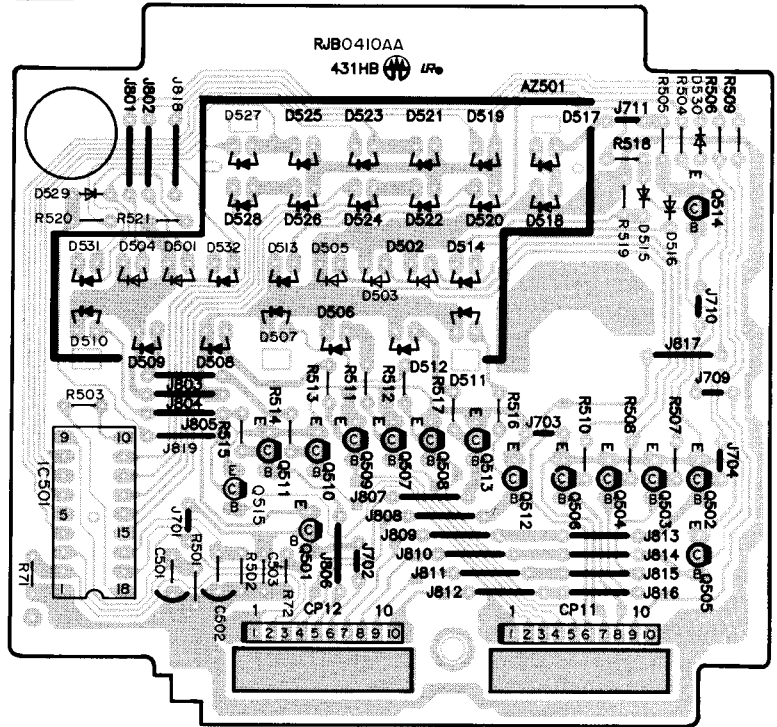
E POWER SWITCH P.C.B.



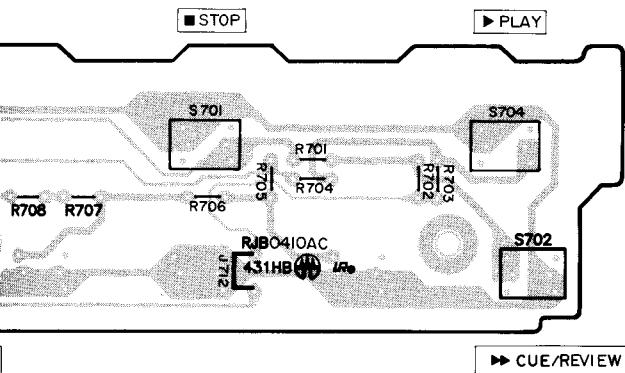
F HEADPHONES P.C.B.



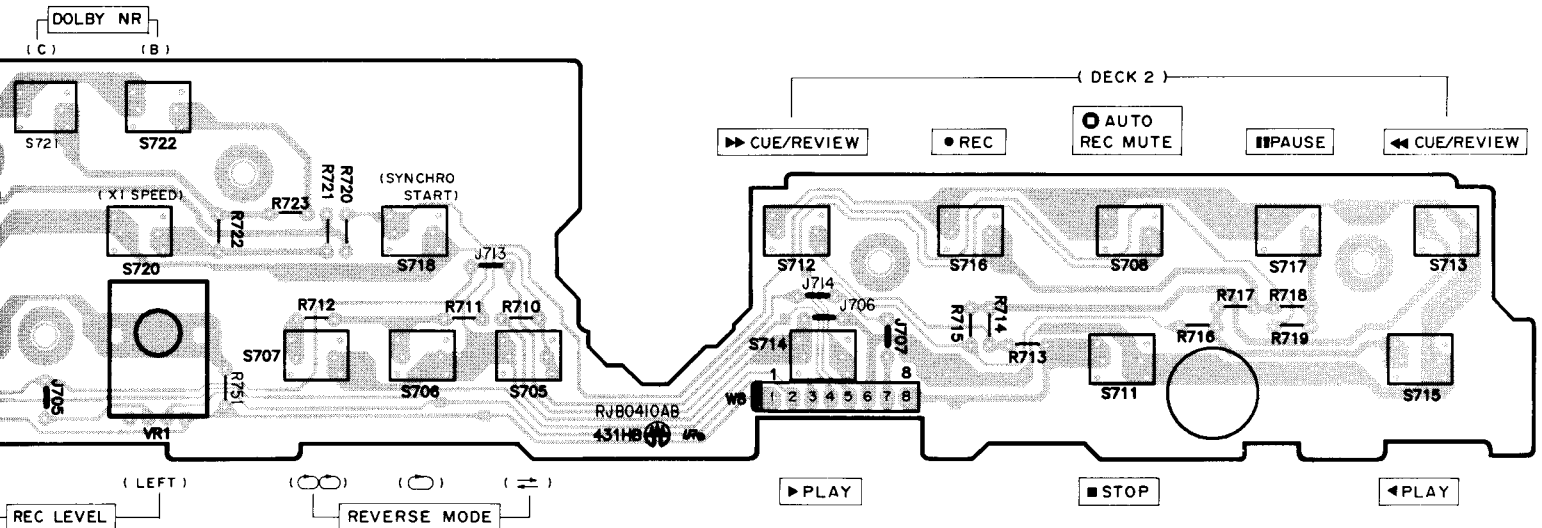
G LED METER P.C.B.



(DECK 1) P.C.B.



(DECK 2) P.C.B.



SCHEMATIC DIAGRAM

(Parts list on pages 39~42.)

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

Notes:

- S601: Voltage selector switch in "240" position.
(110V ← 127V ← 220V ← 240V) ((GC, PX) areas)
- S701: DECK 1 Stop switch in "off" position.
- S702: DECK 1 F.F. switch in "off" position.
- S703: DECK 1 Rew. switch in "off" position.
- S704: DECK 1 For. Playback switch in "off" position.
- S705: Reverse mode switch (↔) in "off" position.
- S706: Reverse mode switch (⊖) in "off" position.
- S707: Reverse mode switch (∞) in "off" position.
- S708: DECK 2 Auto rec. mute switch in "off" position.
- S709: DECK 1 Rev. Playback switch in "off" position.
- S711: DECK 2 Stop switch in "off" position.
- S712: DECK 2 F.F. switch in "off" position.
- S713: DECK 2 Rew. switch in "off" position.
- S714: DECK 2 For. Playback switch in "off" position.
- S715: DECK 2 Rev. Playback switch in "off" position.
- S716: DECK 2 Record switch in "off" position.
- S717: DECK 2 Pause switch in "off" position.
- S718: Synchro-start switch in "off" position.
- S719: Editing tape speed selector (X2) in "off" position.
- S720: Editing tape speed selector (X1) in "off" position.
- S721: Dolby NR C switch in "off" position.
- S722: Dolby NR B switch in "off" position.
- S725: Power switch in "on" position.
- S726: Timer switch in "off" position.
- S951: DECK 1 Mode switch in "off" position.
- S952: DECK 1 Cassette half detection switch in "off" position.
- S953: DECK 1 ATS (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.

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.

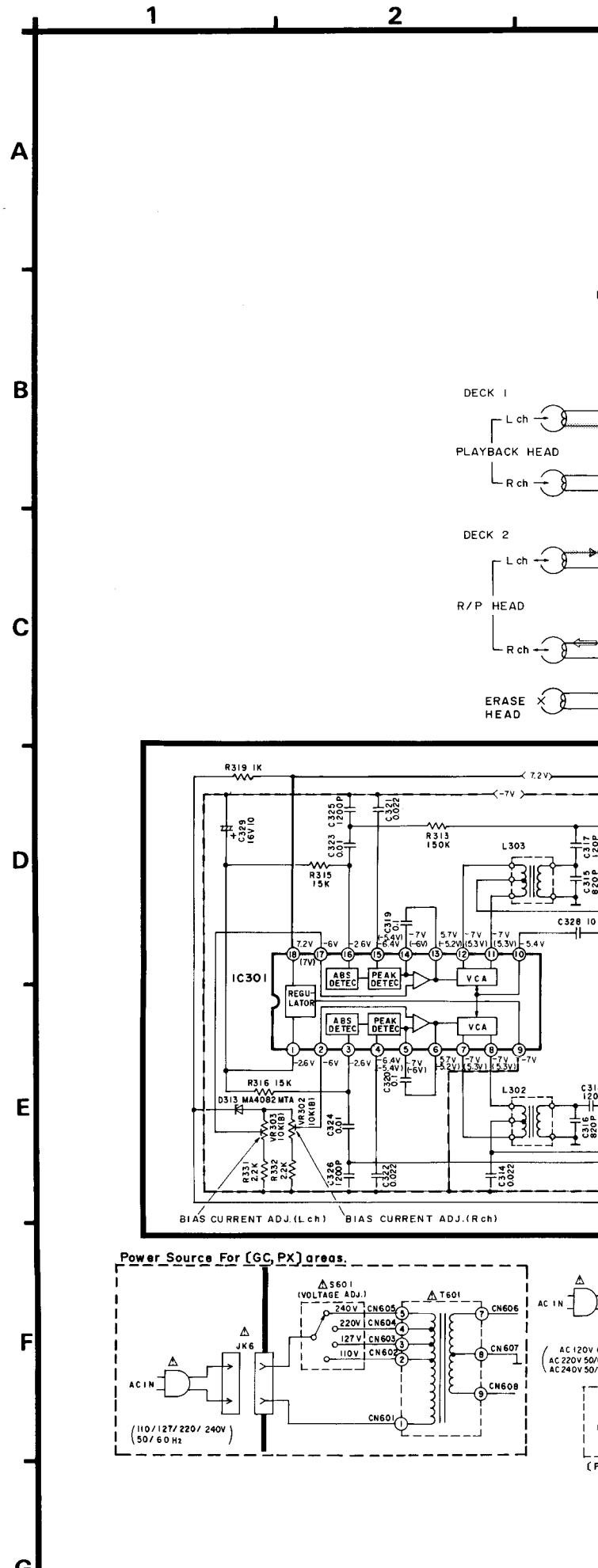
().....Voltage values at record mode.
For measurement us EVM.

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.

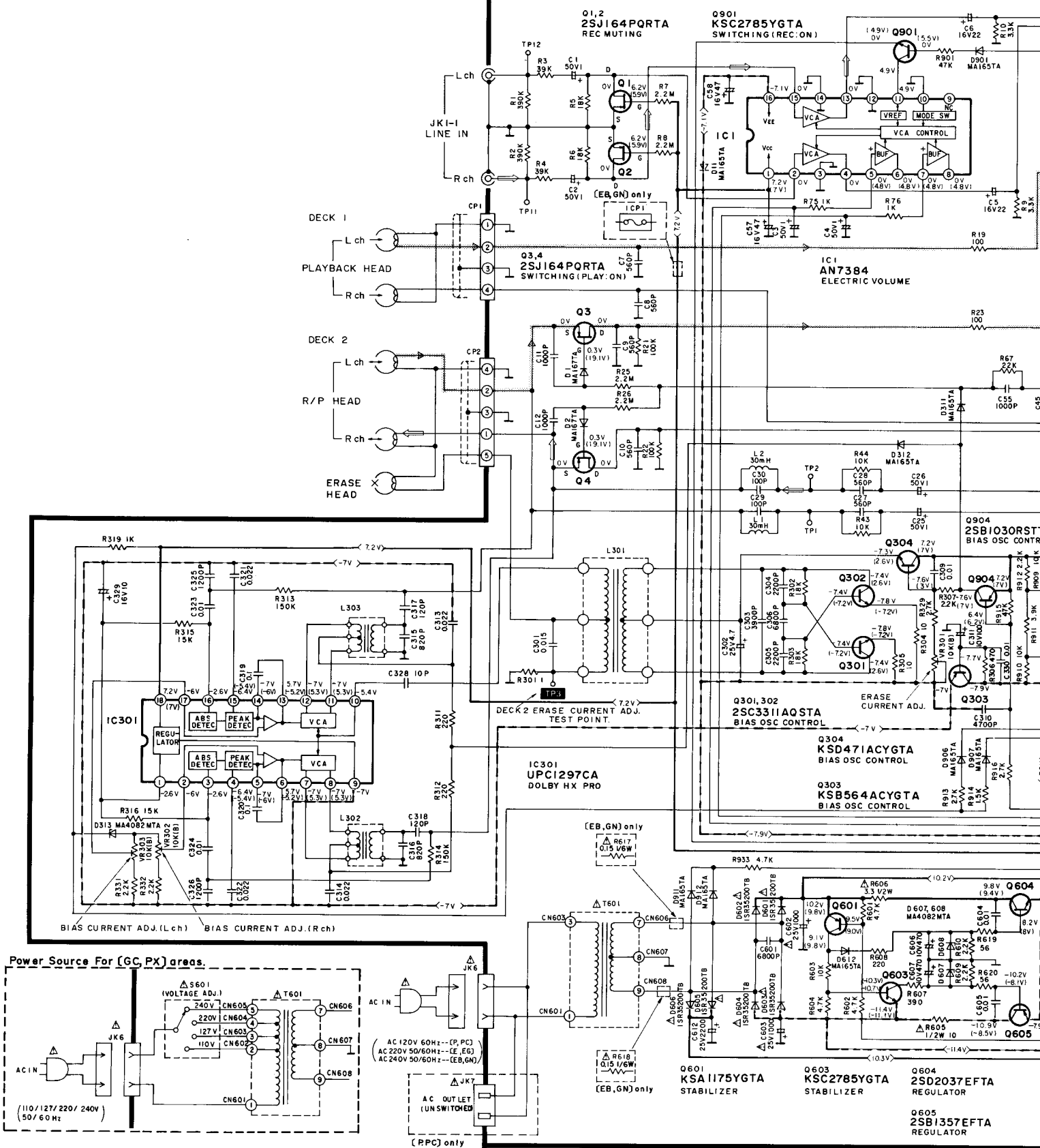
- (———< +B > ———) indicates +B (bias).
- (- - - -< -B > - - - -) indicates -B (bias).
- (⤴) indicates the flow of the playback signal.
- (⤵) indicates the flow of the record signal.

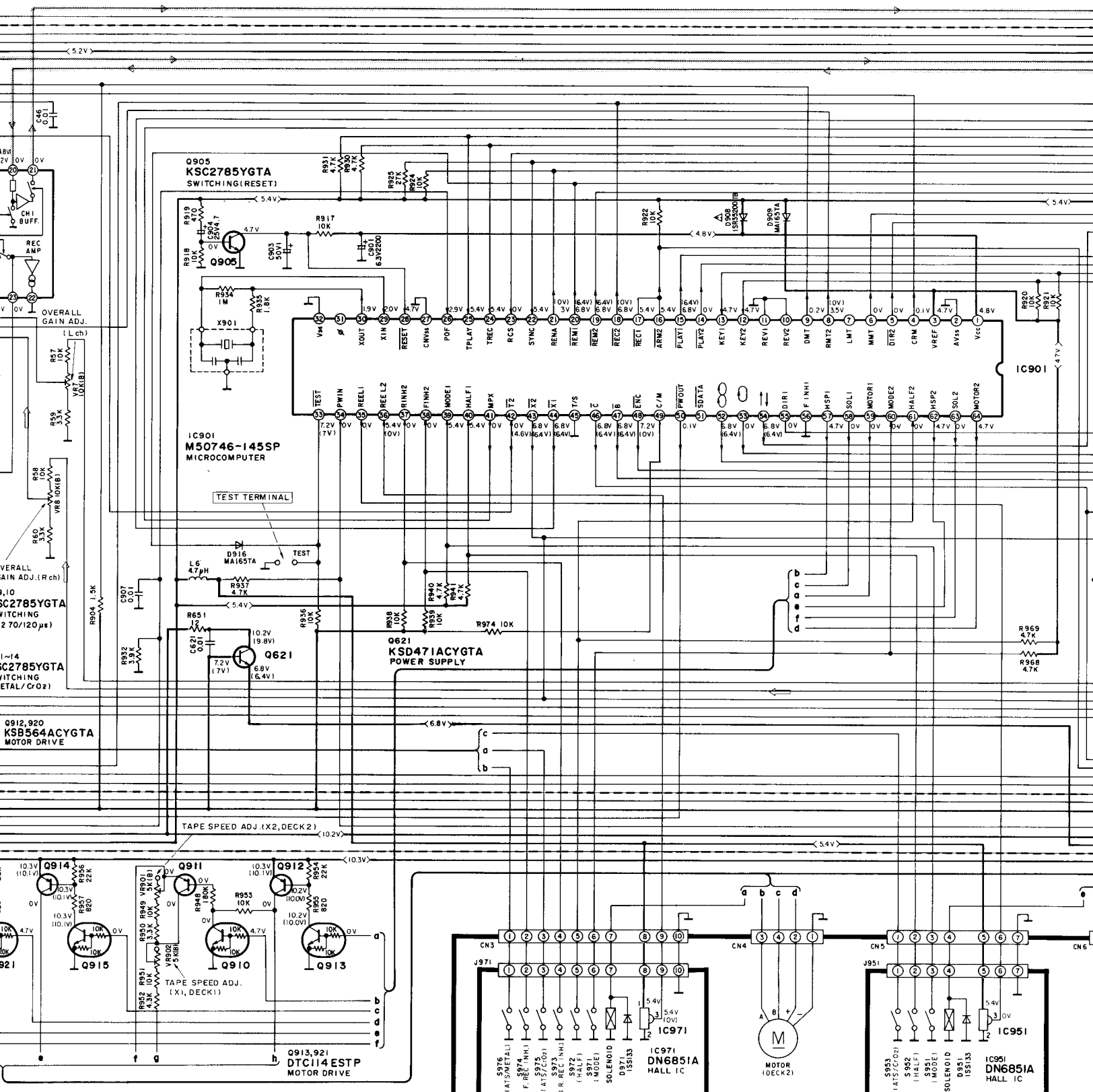
* Caution!

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



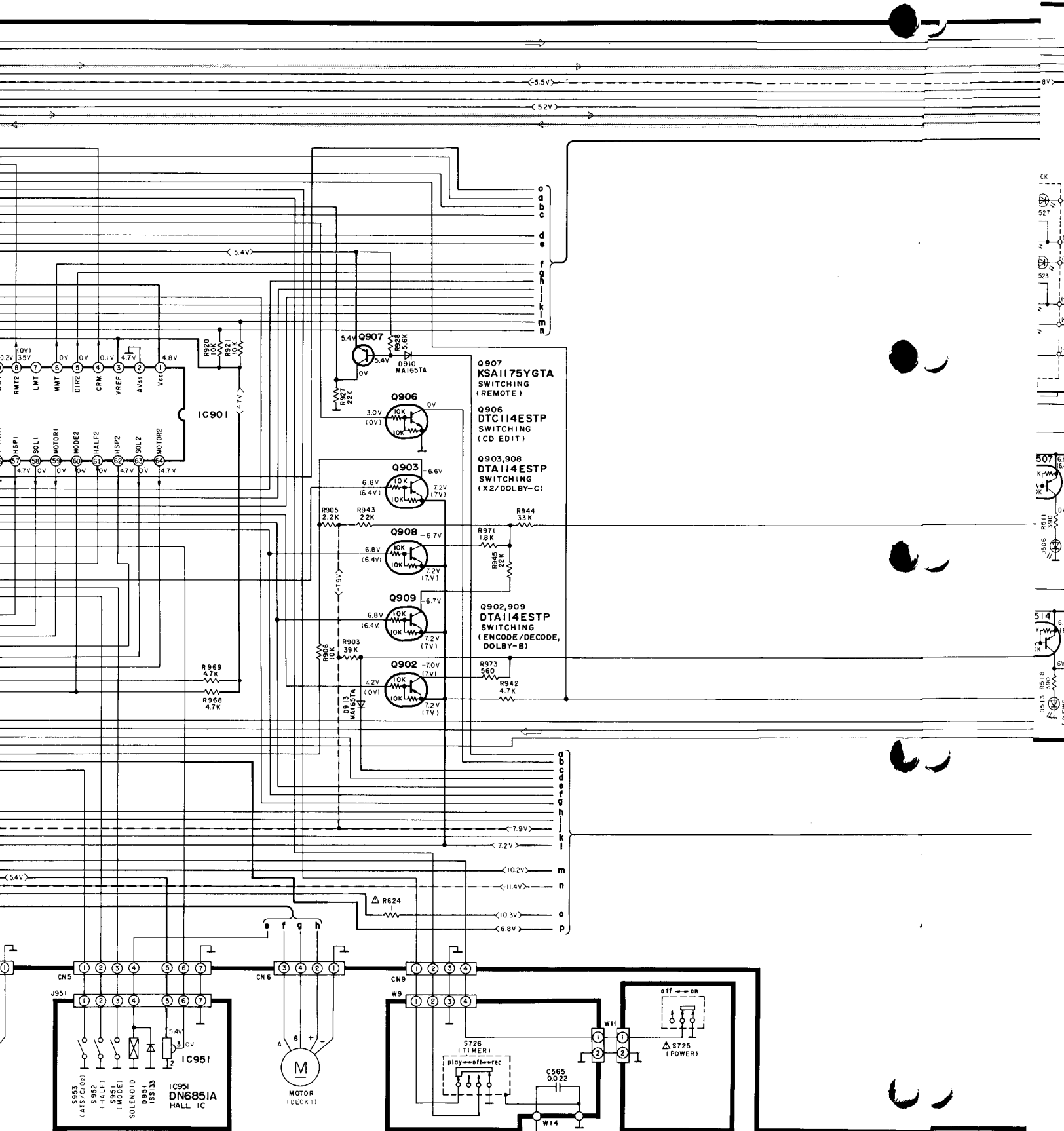
A MAIN CIRCUIT





B MECHANISM (DECK 2) CIRCUIT

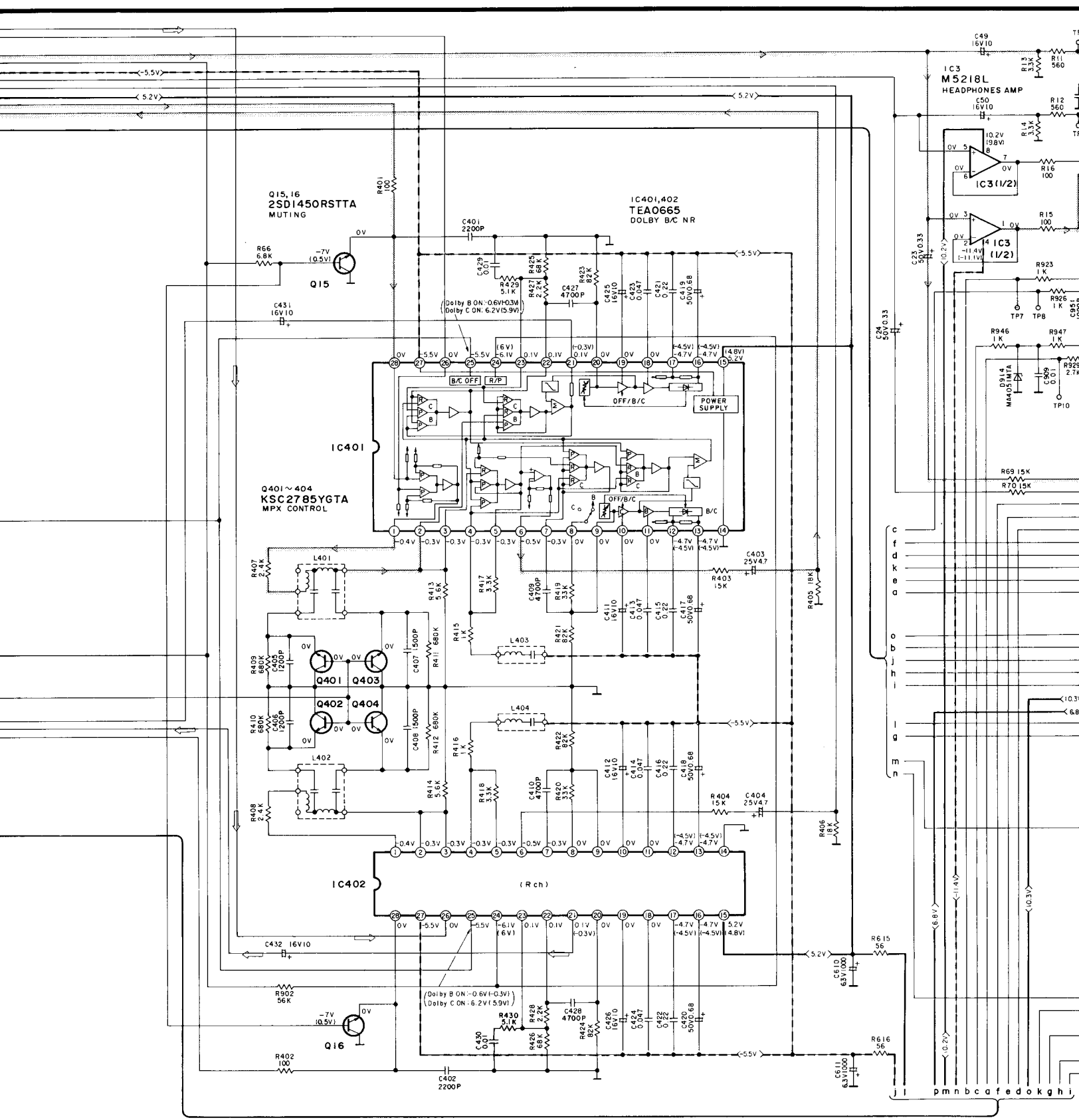
C MECHANISM (DECK 1) CIRCUIT



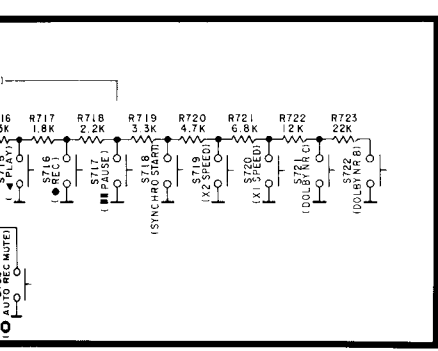
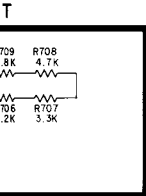
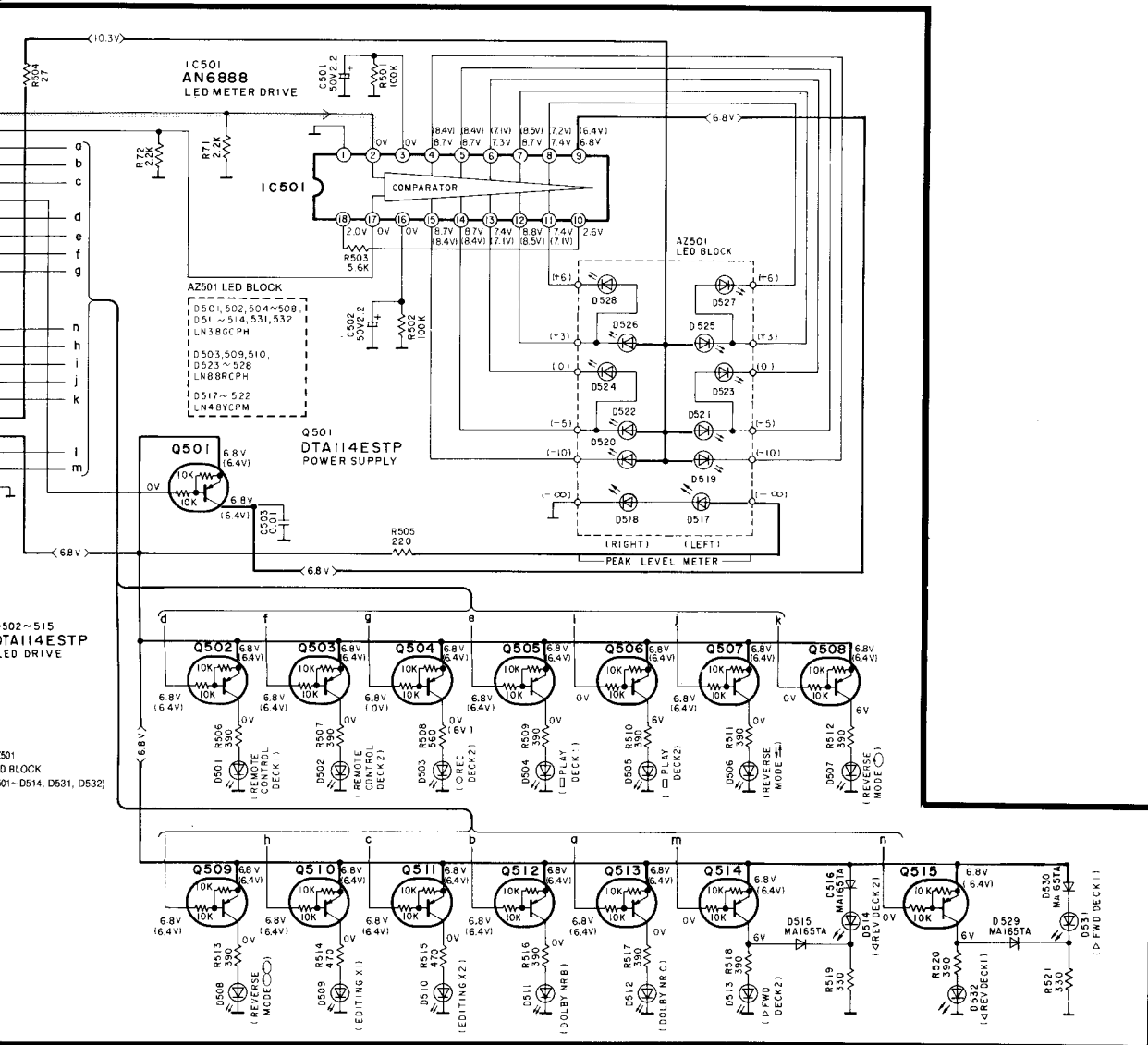
C MECHANISM (DECK I) CIRCUIT

D TIMER SWITCH CIRCUIT

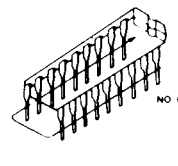
E POWER SWITCH CIRCUIT



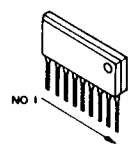
LED METER CIRCUIT



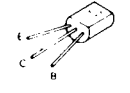
TERMINAL TRANS



- AN73
- AN68
- TEAC
- AN73
- M507
- UPC

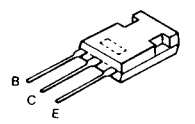
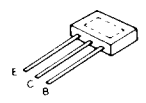


M52

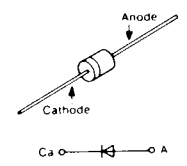


KSB56
KSD47

DTC114ESTP

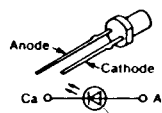


2SB1
2SD2

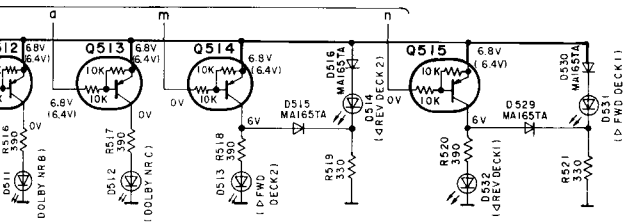
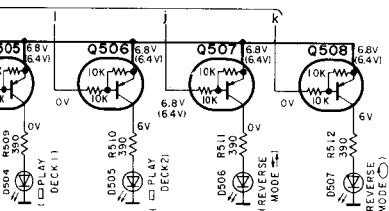
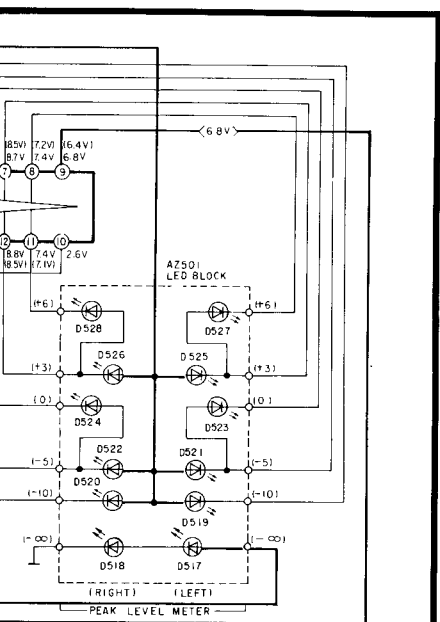


MA1
MA1
1SR
1SS

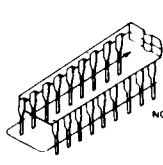
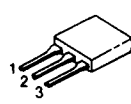
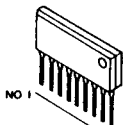
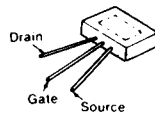
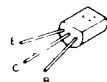
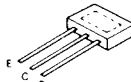
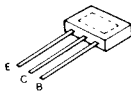

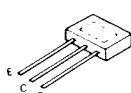
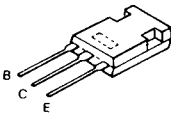
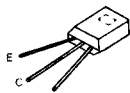
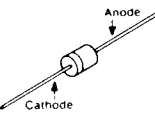
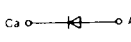
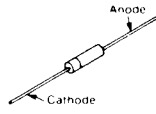
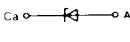
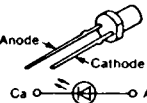
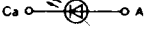
- LED BLOO



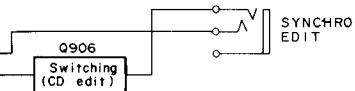
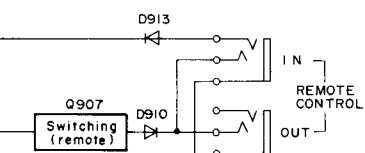
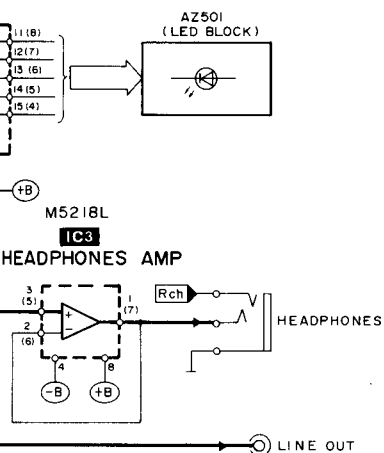
N38GC
LN48Y
LN88R



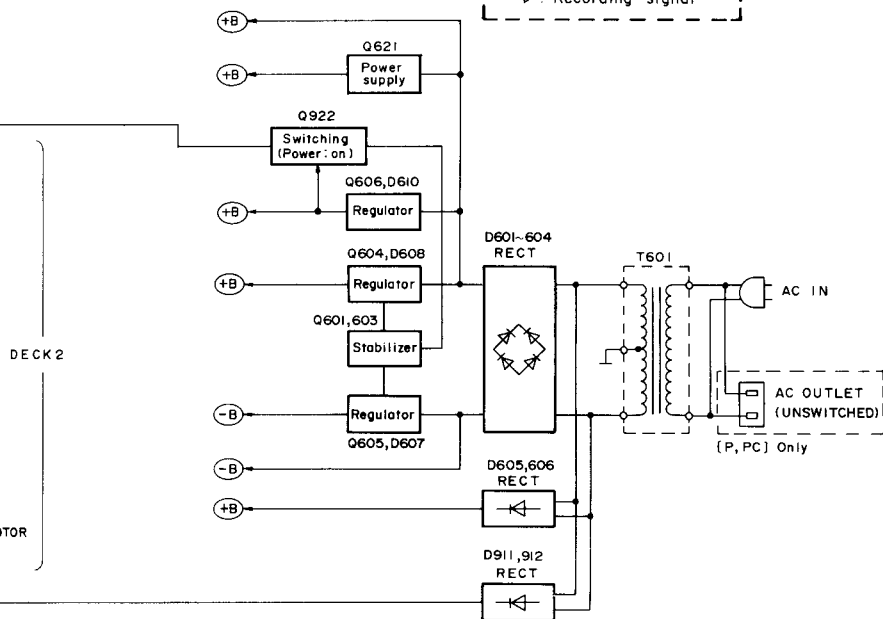
TERMINAL GUIDE OF IC's, TRANSISTORS AND DIODES

 <table border="1" data-bbox="990 194 1250 388"> <tr><td>AN7384</td><td>16 Pin</td></tr> <tr><td>AN6888</td><td>18 Pin</td></tr> <tr><td>TEA0665</td><td>28 Pin</td></tr> <tr><td>AN7351K</td><td>42 Pin</td></tr> <tr><td>M50746-145SP</td><td>64 Pin</td></tr> <tr><td>UPC1297CA</td><td>18 Pin</td></tr> </table>	AN7384	16 Pin	AN6888	18 Pin	TEA0665	28 Pin	AN7351K	42 Pin	M50746-145SP	64 Pin	UPC1297CA	18 Pin	 <table border="1" data-bbox="1299 337 1518 378"> <tr><td>DN6851A</td><td>3 Pin</td></tr> </table>	DN6851A	3 Pin
AN7384	16 Pin														
AN6888	18 Pin														
TEA0665	28 Pin														
AN7351K	42 Pin														
M50746-145SP	64 Pin														
UPC1297CA	18 Pin														
DN6851A	3 Pin														
 <table border="1" data-bbox="998 490 1250 531"> <tr><td>M5218L</td><td>8 Pin</td></tr> </table>	M5218L	8 Pin	<p>2SJ164PQRTA</p> 												
M5218L	8 Pin														
 <p>KSB564ACYGTA KSD471ACYGTA</p>	 <p>2SC3311AQSTA 2SD1450RSTTA 2SB1030RSTTA</p>														
<p>DTC114ESTP</p>  	<p>DTA114ESTP</p>  														
 <p>2SB1357EFTA 2SD2037EFTA</p>	 <p>KSA1175YGTA KSC2785YGTA</p>														
 <p>MA167TA MA165TA 1SR35200TB 1SS133</p> 	 <p>MA4062LTA MA4082MTA MA4051MTA</p> 														
<p align="center">- LED BLOCK -</p>  <p>N38GCPH (GREEN) LN48YCPM (AMBER) LN88RCPH (ORANGE)</p> 															

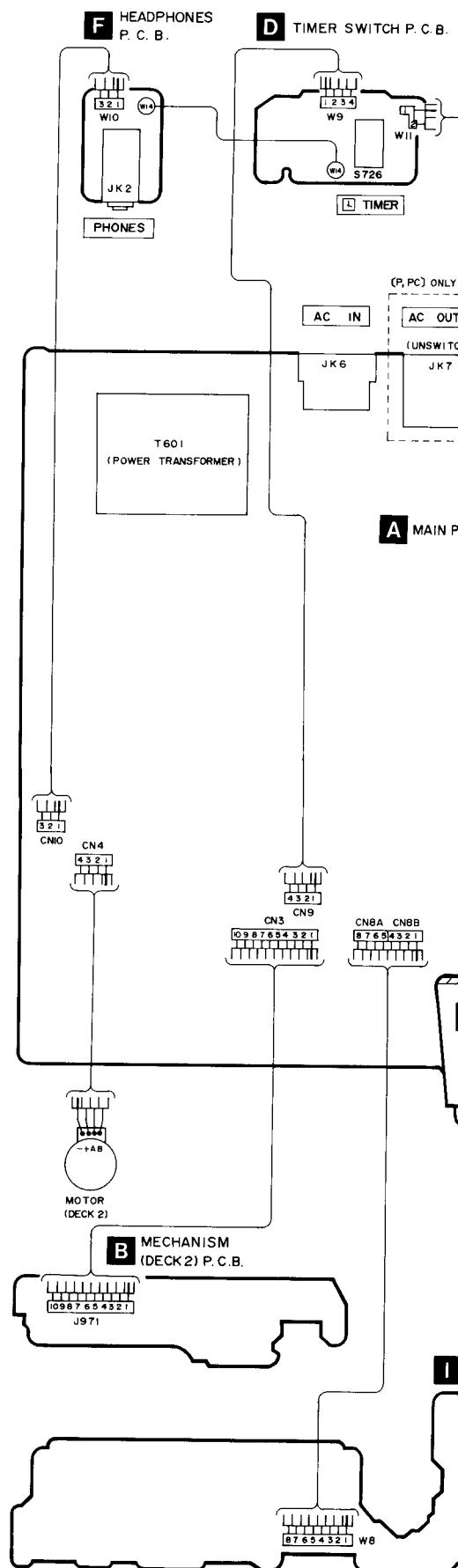
WIRING CONNECTION DIAG



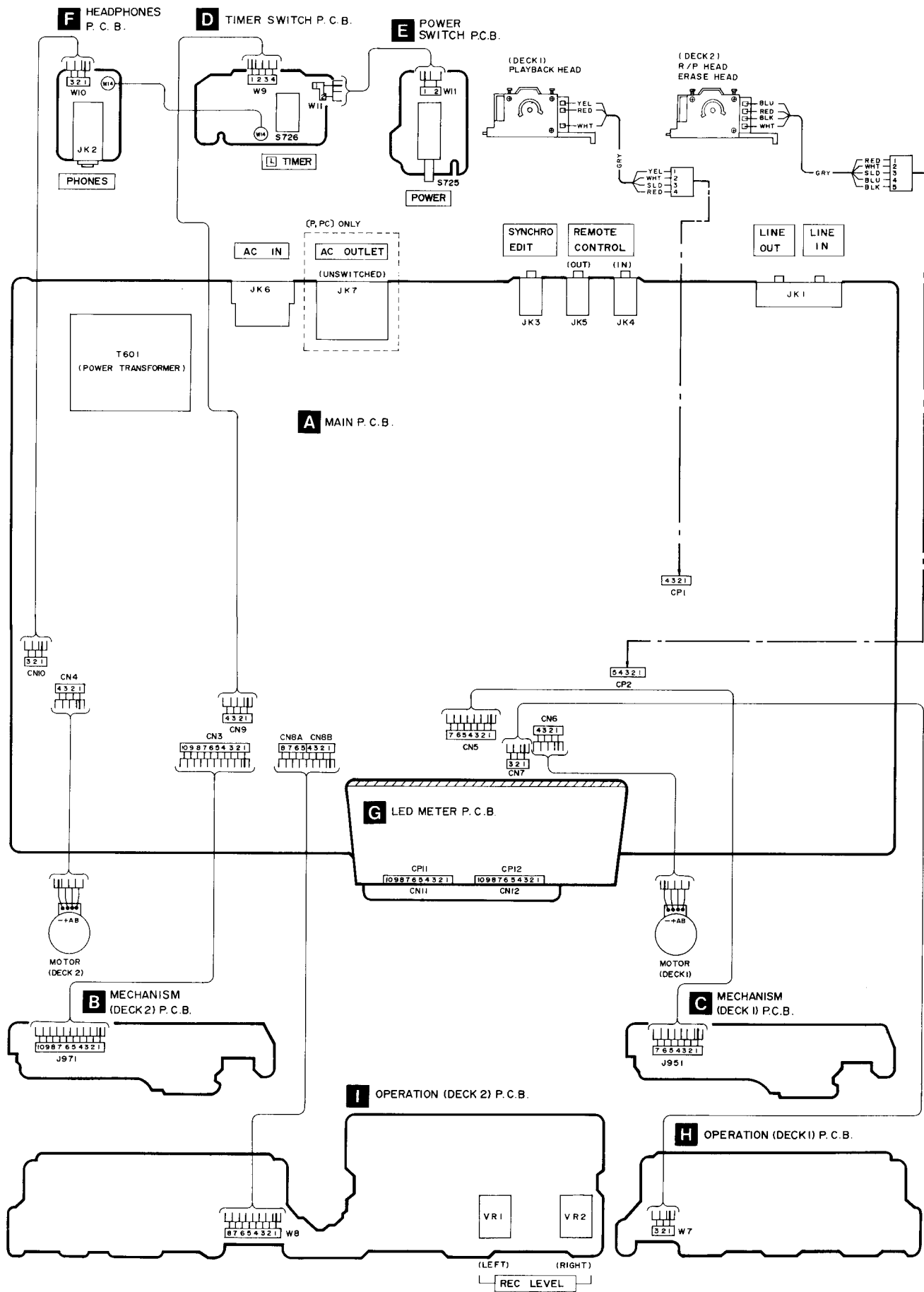
4,531,532



Notes:
 —▶ Playback signal
 —▶ Recording signal



WIRING CONNECTION DIAGRAM



REPLACEMENT PARTS LIST

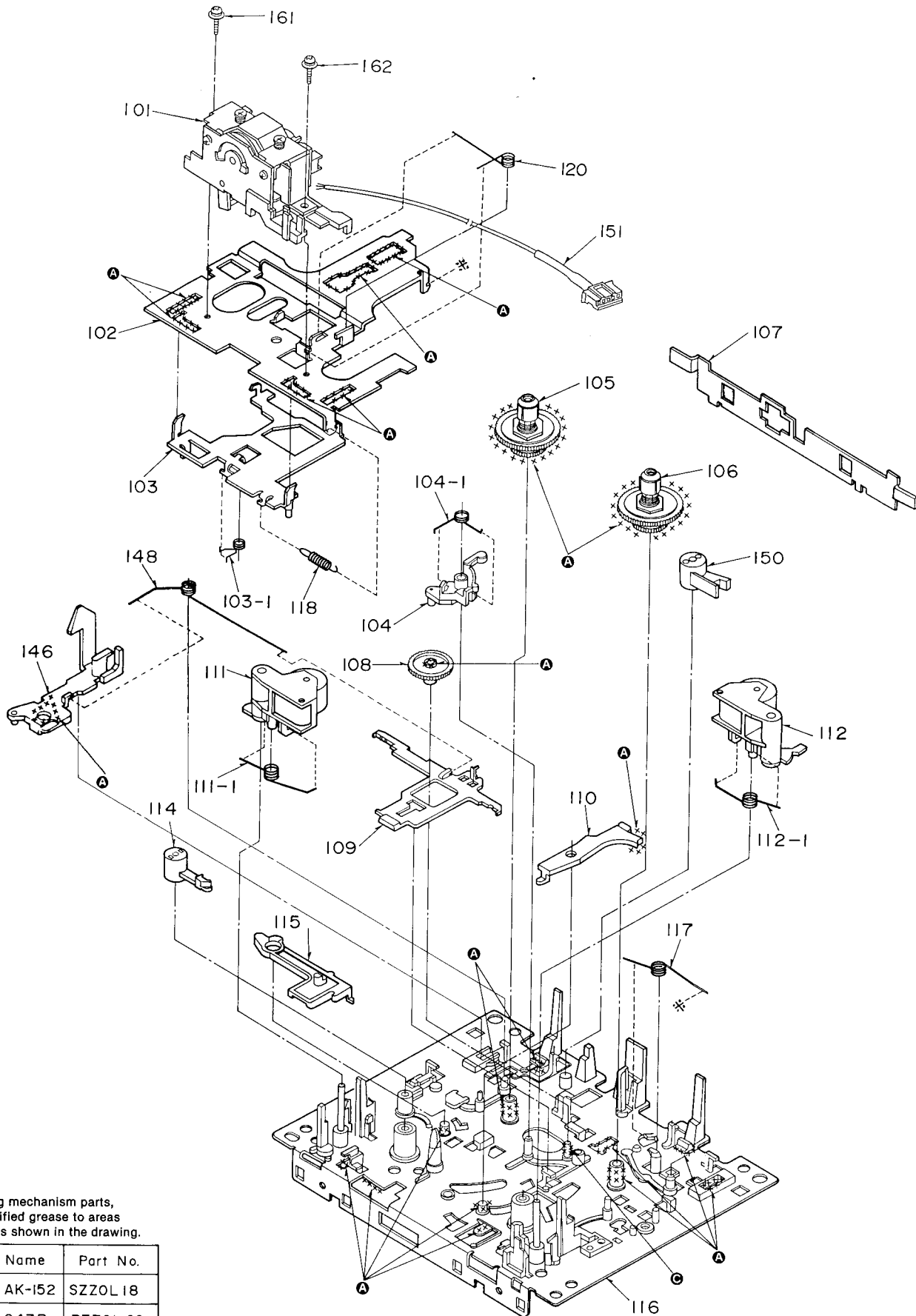
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST		143	RUB515Z	LEVER	
				144	RUB509ZA	LEVER	
				145	RDV108ZA	CAPSTAN BELT	
				146	RUB541ZB	EJECT ROD (L)	
DECK1				148	RUW167ZA	SPRING	
101	RXQ0021	HEAD BLOCK (PLAYBACK)		149	RHG3032Z	RUBBER CUSHION	
102	RUA793ZD	HEAD BASE		150	RNL180ZA	DAMPER ARM	
103	RZLAR300	ROD		151	REX0061	LEAD WIRE BLOCK	
103-1	RUW143Z	SPRING		161	XTW2+6L	SCREW	
104	1UB0089ZA	ARM		162	XTW2+8L	SCREW	
104-1	RUW148ZA	SPRING		163	XTN26+7J	SCREW	
105	1DM0018ZA	REEL TABLE (R)		164	XTN26+16F	SCREW	
106	1DM0017ZA	REEL TABLE (F)		165	XTW2+8S	SCREW	
107	RUB502Z	LEVER		166	XYC2+JF16	SCREW	
108	RDG5772Z	GEAR		167	QH1303	SCREW	
109	RUB508ZA	BRAKE ROD		168	SJT30744-H	CONNECTOR (7P), J951	
110	RUB506Z	LEVER		169	XYN26+F6	SCREW	
111	1UB0088ZA	ARM (R)					
111-1	RUW141Z	SPRING					
112	1UB0087ZA	ARM (F)					
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	RUL1030XA	ANGLE					
125	FMD5014Z	ANGLE					
126	RDG5927ZA	GEAR					
127	1DW00532B	FLYWHEEL (F)					
127-1	RNW139ZA	WASHER					
128	1DW00542B	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	RDG5773ZA	GEAR					
139	RUQ30Z	SPRING					
140	RUS609Z	TAPE PRESSURE SPRING					
141	RUB514Z	LEVER					
142	RUW147ZA	SPRING					

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	RNL180ZA	DAMPER ARM	
203-1	RUW143Z	SPRING		251	REX0059	LEAD WIRE BLOCK	
204	IUB0089ZA	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	RUB508ZA	BRAKE ROD		267	QH1303	SCREW	
210	RUB506Z	LEVER		268	SJT31044-H	CONNECTOR (10P), J971	
211	IUB0088ZA	ARM (R)		269	XYN26+F6	SCREW	
211-1	RUW141Z	SPRING					
212	IUB0087ZA	ARM (F)					
212-1	RUW140Z	SPRING					
213	RUB507Z	EJECT ROD (R)					
214	RNL1Z	DAMPER ARM					
215	RUB503Z	MAIN LEVER					
216	RZUSX980	CHASSIS					
217	RUW142ZA	SPRING					
218	RUD105Z	SPRING					
219	RUW144ZA	SPRING					
220	RUW139ZA	SPRING					
221	RFM133ZA	DC MOTOR					
222	IUE0015ZA	PLUNGER					
223	RUB428Z	MOVING IRON CORE					
224	RUL1030XA	ANGLE					
225	RMD5014Z	ANGLE					
226	RDG5927ZA	GEAR					
227	1DW00532B	FLYWHEEL (F)					
227-1	RNW139ZA	WASHER					
228	1DW00542B	FLYWHEEL (R)					
228-1	RNW138Z	WASHER					
229	1DG0006ZA	REEL TABLE GEAR					
230	RUB513Z	ARM					
231	IUB0091ZA	LEVER					
231-1	RUW146ZA	SPRING					
232	1DR0011ZA	MAIN PULLEY					
233	RDV902B	BELT					
234	RDG5769ZA	REEL TABLE GEAR					
235	RUQ10Z	SPRING					
236	RUW145ZA	SPRING					
237	IUB0090ZA	ROD					
237-1	RUB512Z	ROD					
238	RDG5773ZA	GEAR					
239	RUQ30Z	SPRING					
240	RUS609Z	TAPE PRESSURE SPRING					

MECHANICAL PARTS LOCATION

(DECK 1: Top View)

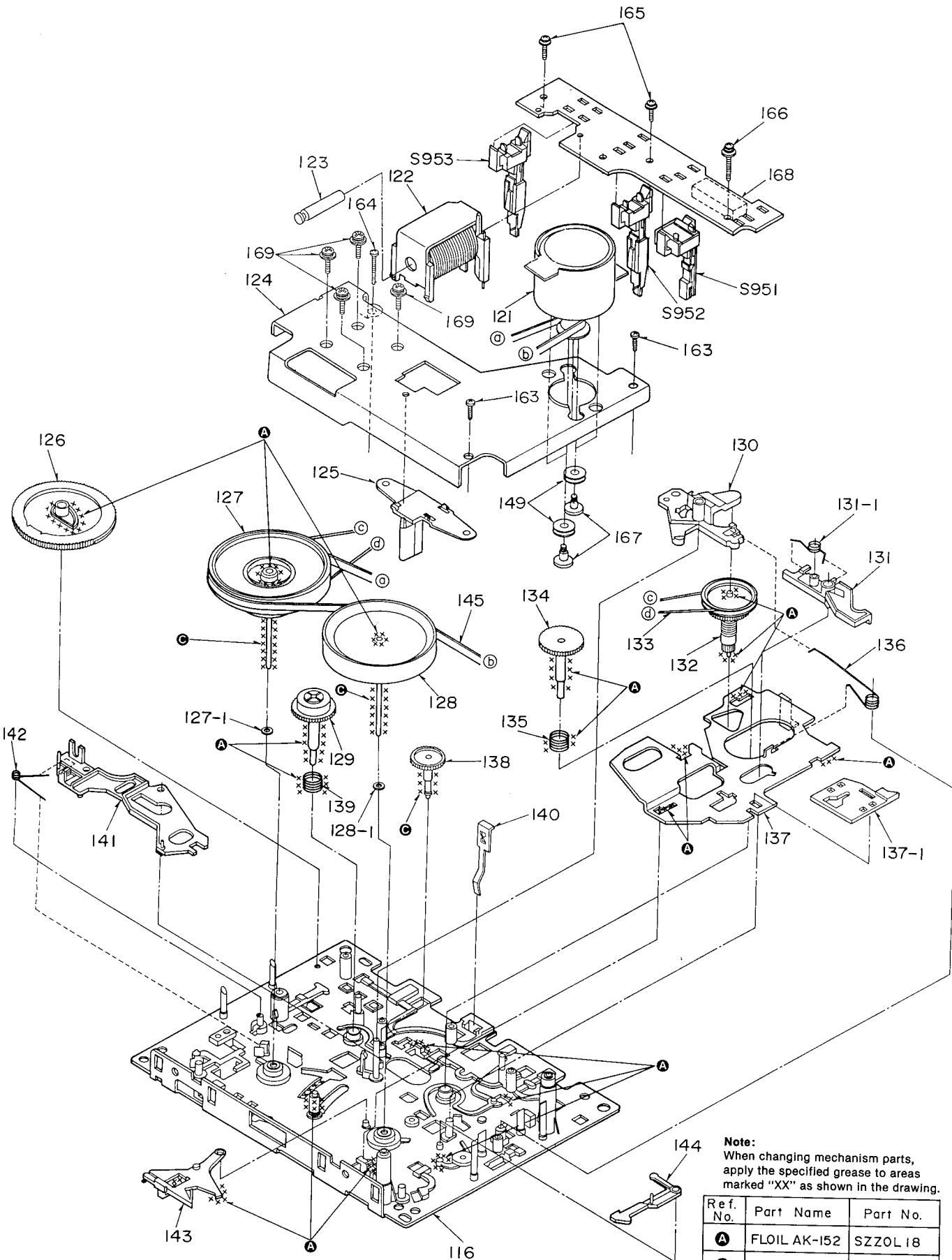
(DECK 1: Top View)



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

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL 18
C	FLOIL 947P	RZZOL 02

(DECK 1: Bottom View)



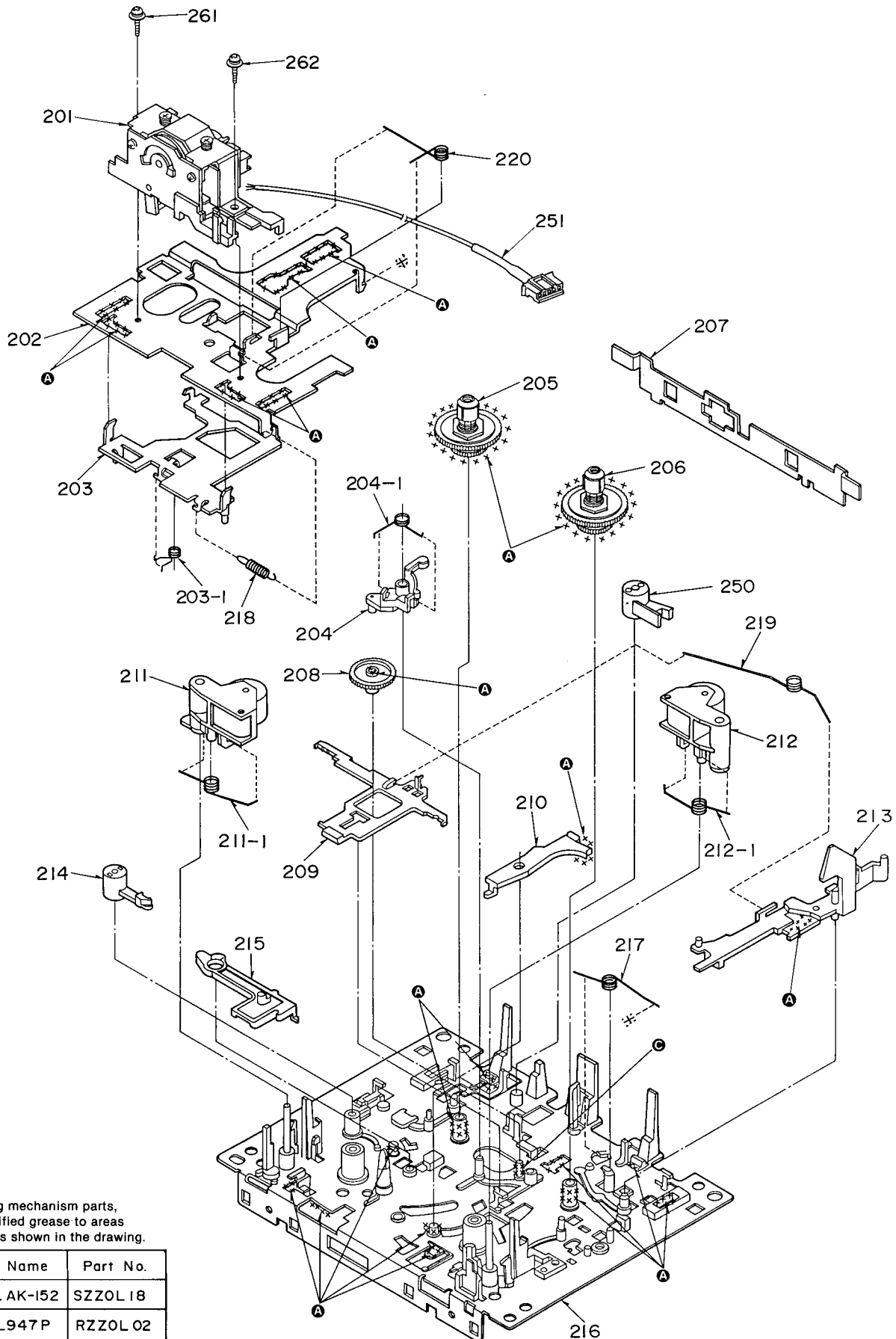
Note:
When changing mechanism parts,
apply the specified grease to areas
marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL 18
C	FL0IL947P	RZZOL 02

MECHANICAL PARTS LOCATION

(DECK 2: Top View)

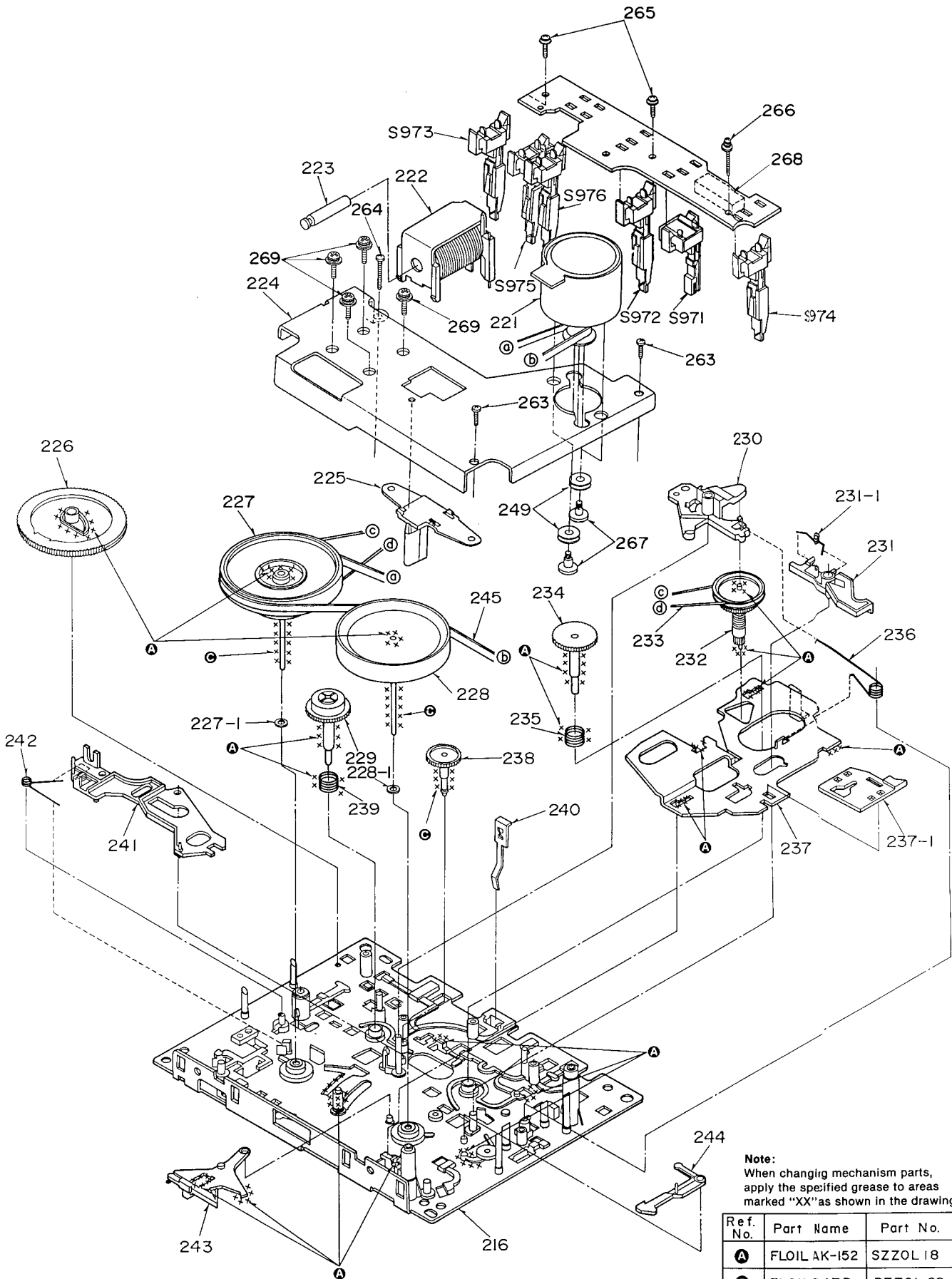
(DECK 2: B



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

Ref. No.	Part Name	Part No.
A	FLOIL AK-I52	SZZOL I8
C	FLOIL947P	RZZOL O2

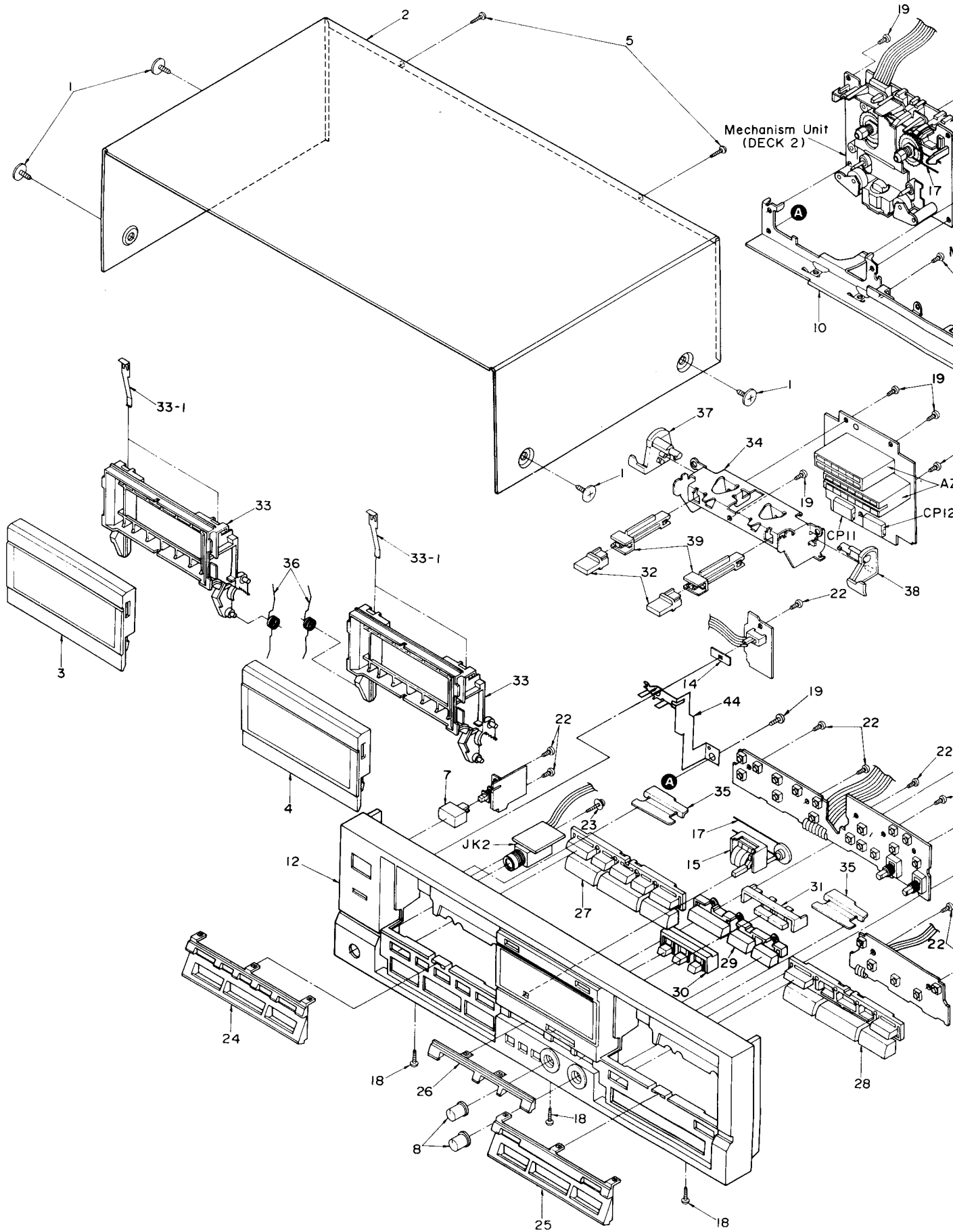
(DECK 2: Bottom View)

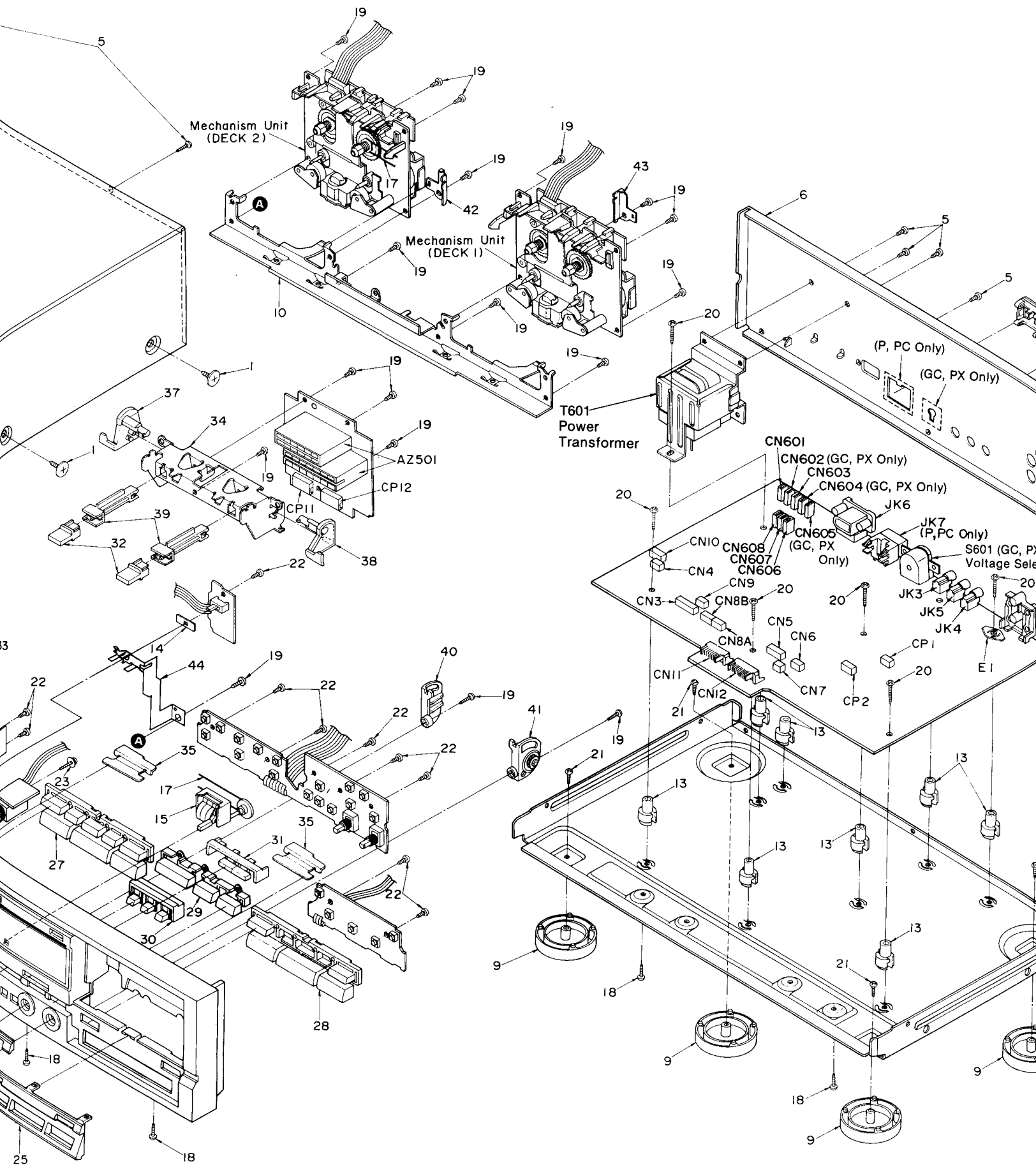


Note:
When changing mechanism parts,
apply the specified grease to areas
marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-I52	SZZOL 18
C	FLOIL947P	RZZOL 02

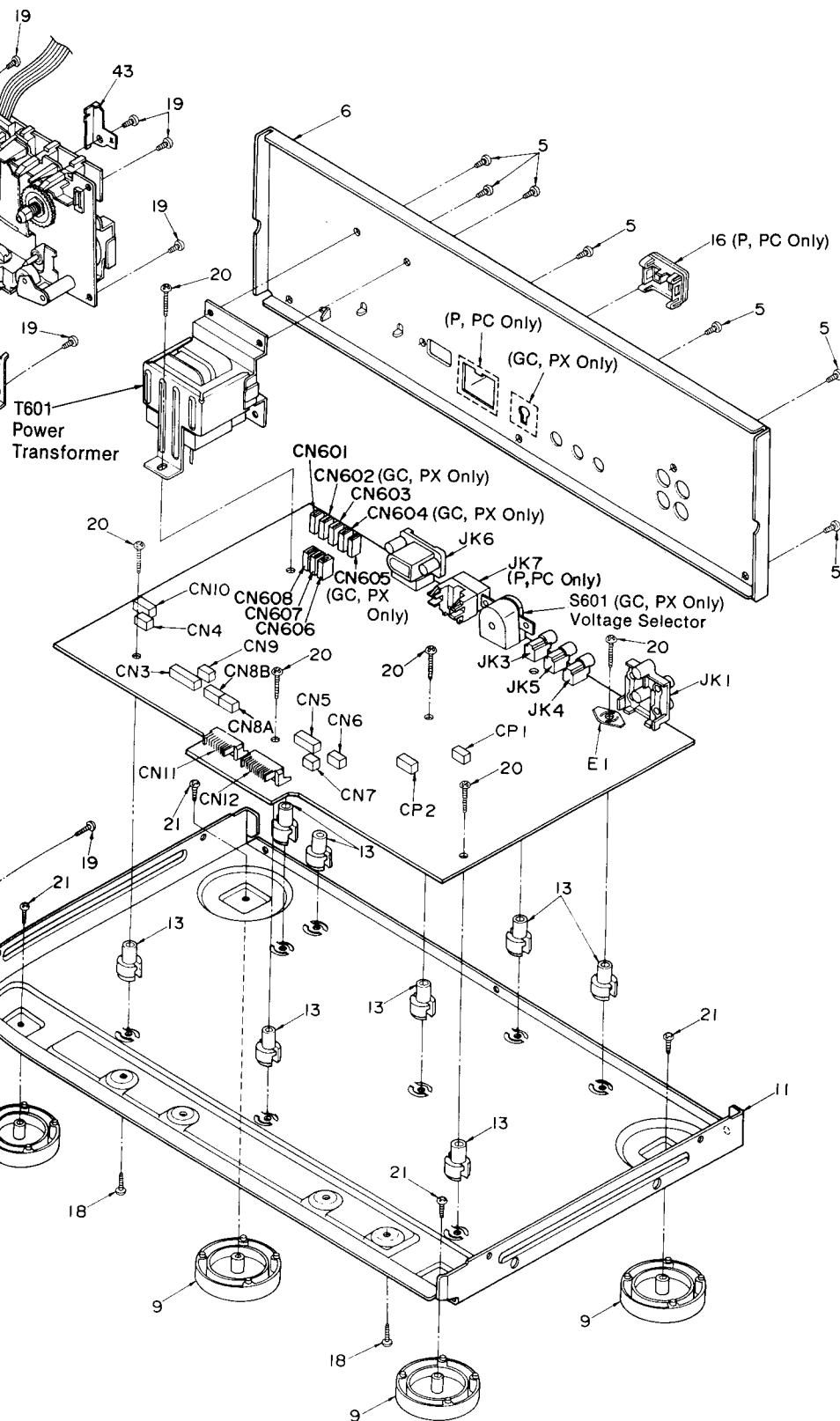
■ CABINET PARTS LOCATION





REPLACEMENT PARTS

Notes : * Important safety notice:
 Components identified by Δ
 components use only manufacturer's
 * The parenthesized indications
 Parts without these indications



Ref. No.	Part No.	Part Name & Description
		CABINET AND CHASSIS
1	SNE2129-1	SCREW
2	RKM0016-K1	CABINET
3	RYF0009N-K	CASSETTE LID (DECK 2)
4	RYF0009M-K	CASSETTE LID (DECK 1)
5	XTBS3+8JFZ1	SCREW
6	RGRO008A-1	REAR PANEL
6	RGRO008B-S	REAR PANEL
6	RGRO008B-Q	REAR PANEL
6	RGRO008B-R	REAR PANEL
6	RGRO008B-G	REAR PANEL
7	RGU0030	BUTTON, POWER
8	RGW0012	KNOB, REC. LEVEL
9	RKA0009-1	FOOT
10	RMA0050	BRACKET, MECHANISM
11	RMK0026-2	BOTTOM BOARD
12	RFKGSTR265EK	FRONT PANEL ASS'Y
12	RFKGSTR265PK	FRONT PANEL ASS'Y
13	SHE187-2	HOLDER
14	SHR6076	ORNAMENT
15	SJN32	TAPE COUNTER
16	SJS9331A	AC OUTLET COVER
17	SMQ20024	BELT, TAPE COUNTER
18	XTBS3+10JFZ1	SCREW
19	XTB3+10JFZ	SCREW
20	XTB3+20J	SCREW
21	XTB3+6J	SCREW
22	XTB3+8JFZ	SCREW
23	XTWS3+10Q	SCREW
24	RGK0049	ORNAMENT, BUTTON (DECK 2)
25	RGK0075	ORNAMENT, BUTTON (DECK 1)
26	RGK0051	ORNAMENT, EDIT BUTTON
27	RGU0064	BUTTON (DECK2)
28	RGU0136	BUTTON ASS'Y (DECK1)
29	RGU0066	BUTTON, EDIT
30	RGU0067	BUTTON, REVERSE
31	RGU0068	BUTTON, DOLBY
32	RGU0070	BUTTON, EJECT
33	RKF0020A-3	CASSETTE HOLDER
33-1	QBP2006A	SPRING, TAPE PRESSURE
34	RMA0051	EJECT ANGLE
35	RMA0052-1	BRACKET
36	RME0026	SPRING, CASSETTE HOLDER
37	RML0041	EJECT LEVER (L)
38	RML0042	EJECT LEVER (R)

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
		INTEGRATED CIRCUIT(S)	
IC1	AN7384	VOLUME CONTROL	
IC2	AN7351K	REC. /PLAYBACK AMP.	
IC3	M5218L	HEADPHONES AMP.	Δ
IC301	UPC1297CA	DOLBY HX PRO	
IC401, 402	TEA0665	DOLBY B-C NR	
IC501	AN6888	METER DRIVE	
IC901	M50746-145SP	MICROCOMPUTER	
IC951	DN6851A	HALL	
IC971	DN6851A	HALL	
		TRANSISTOR(S)	
Q1-4	2SJ164PQRTA	TRANSISTOR	
Q5-8	KSA1175YGTA	TRANSISTOR	
Q9-14	KSC2785YGTA	TRANSISTOR	
Q15, 16	2SD1450RSTTA	TRANSISTOR	
Q301, 302	2SC3311AQSTA	TRANSISTOR	
Q303	KSB564ACYGTA	TRANSISTOR	
Q304	KSD471ACYGTA	TRANSISTOR	
Q401-404	KSC2785YGTA	TRANSISTOR	
Q501-515	DTA114ESTP	TRANSISTOR	
Q601	KSA1175YGTA	TRANSISTOR	
Q603	KSC2785YGTA	TRANSISTOR	
Q604	2SD2037EFTA	TRANSISTOR	
Q605	2SB1357EFTA	TRANSISTOR	
Q606	KSD471ACYGTA	TRANSISTOR	
Q621	KSD471ACYGTA	TRANSISTOR	
Q901	KSC2785YGTA	TRANSISTOR	
Q902, 903	DTA114ESTP	TRANSISTOR	
Q904	2SB1030RSTTA	TRANSISTOR	
Q905	KSC2785YGTA	TRANSISTOR	
Q906	DTC114ESTP	TRANSISTOR	
Q907	KSA1175YGTA	TRANSISTOR	
Q908, 909	DTA114ESTP	TRANSISTOR	
Q910	DTC114ESTP	TRANSISTOR	
Q911	KSA1175YGTA	TRANSISTOR	
Q912	KSB564ACYGTA	TRANSISTOR	
Q913	DTC114ESTP	TRANSISTOR	
Q914	2SB1030RSTTA	TRANSISTOR	
Q915	DTC114ESTP	TRANSISTOR	
Q916	2SB1030RSTTA	TRANSISTOR	
Q917	DTC114ESTP	TRANSISTOR	
Q918	KSA1175YGTA	TRANSISTOR	
Q919	DTC114ESTP	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q920	KSB564ACYGTA	TRANSISTOR	
Q921, 922	DTC114ESTP	TRANSISTOR	
		DIODE(S)	
D1, 2	MA167TA	DIODE	
D11	MA165TA	DIODE	
D311, 312	MA165TA	DIODE	
D313	MA4082MTA	DIODE	
D515, 516	MA165TA	DIODE	
D529, 530	MA165TA	DIODE	
D601-606	1SR35200TB	DIODE	Δ
D607, 608	MA4082MTA	DIODE	
D610	MA4062LTA	DIODE	
D612	MA165TA	DIODE	
D901-907	MA165TA	DIODE	
D908	1SR35200TB	DIODE	Δ
D909-913	MA165TA	DIODE	
D914	MA4051MTA	DIODE	
D916	MA165TA	DIODE	
D951	ISS133	DIODE	
D971	ISS133	DIODE	
		I. C, PROTECTOR(S)	
ICP1	SRUN10T	I. C, PROTECTOR	(EB, GN)
		VARIABLE RESISTOR(S)	
VR1, 2	EVJ02FF01B15	REC. LEVEL CONTROL	
VR3-6	EVNDXAA00B24	PLAYBACK GAIN ADJ.	
VR7, 8	EVNDXAA00B14	OVERALL GAIN ADJ.	
VR301	EVNDXAA00B14	ERASE CURRENT ADJ.	
VR302, 303	EVNDXAA00B14	OVERALL FREQ. ADJ.	
VR901-903	EVNDXAA00BS3	TAPE SPEED ADJ.	
		COIL(S)	
L1, 2	SLQX303-1KT	COIL	
L3, 4	SLQX272-1YT	COIL	
L6	ELEPK4R7KA	COIL	
L301	SL09B4-K	COIL	
L302, 303	SL09B1-K	COIL	
L401, 402	QLM9Z10K	COIL	
L403, 404	SLM1B8-K	COIL	
L501, 502	RLQZP101KT-Y	COIL	

Ref. No.	Part
T601	RTP1K4E
T601	RTP1K4B
T601	RTP1K4E
T601	RTP1K4C
X901	EFOGC40
S601	SSR187-
S701	EVQ2140
S702	EVQ2140
S703	EVQ2140
S704	EVQ2140
S705-707	EVQ2140
S708	EVQ2140
S709	EVQ2140
S711	EVQ2140
S712	EVQ2140
S713	EVQ2140
S714	EVQ2140
S715	EVQ2140
S716	EVQ2140
S717	EVQ2140
S718	EVQ2140
S719	EVQ2140
S720	EVQ2140
S721	EVQ2140
S722	EVQ2140
S725	SSH1230
S726	SSS180-
S951	RSH1A89
S952	RSH1A90
S953	RSH1A90
S971	RSH1A89
S972	RSH1A90
S973	RSH1A90
S974	RSH1A90
S975, 976	RSH1A90
AZ501	LN2815
CN3	SJSD100
CN4	RJS1A1

Notes : *

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		TRANSFORMER (S)		CN5	SJSD0705	CONNECTOR (7P)	
T601	RTP1K4E003-V	POWER TRANSFORMER	(E, EG) △	CN6	RJS1A1704	CONNECTOR (4P)	
T601	RTP1K4B004-V	POWER TRANSFORMER	(EB, GN) △	CN7	RJS1A1703	CONNECTOR (3P)	
T601	RTP1K4E004-V	POWER TRANSFORMER	(GC, PX) △	CN8A, CN8B	RJS1A1704	CONNECTOR (4P)	
T601	RTP1K4C002-V	POWER TRANSFORMER	(P, PC) △	CN9	RJS1A1704	CONNECTOR (4P)	
		OSCILLATOR(S)		CN10	RJS1A1703	CONNECTOR (3P)	
X901	EFOGC4004T4	CERAMIC FILTER		CN11, 12	RJU003K010M1	SOCKET (10P)	
		SWITCH(ES)		CN601	RJS1A1101	SOCKET (1P)	
S601	SSR187-1	VOLTAGE SELECTOR	(GC, PX) △	CN602	RJS1A1101	SOCKET (1P)	(GC, PX)
S701	EVQ21405R	STOP (DECK1)		CN603	RJS1A1101	SOCKET (1P)	
S702	EVQ21405R	F. F. (DECK1)		CN604, 605	RJS1A1101	SOCKET (1P)	(GC, PX)
S703	EVQ21405R	REW. (DECK1)		CN606-608	RJS1A1101	SOCKET (1P)	
S704	EVQ21405R	F. PLAYBACK (DECK1)		CP1	SJTD413	CONNECTOR (4P)	
S705-707	EVQ21405R	REVERSE MODE		CP2	SJTD513	CONNECTOR (5P)	
S708	EVQ21405R	AUTO REC MUTE (DECK2)		CP11, 12	RJT003K010M1	CONNECTOR (10P)	
S709	EVQ21405R	R. PLAYBACK (DECK1)				GND PART(S)	
S711	EVQ21405R	STOP (DECK2)		E1	SNE1004-1	GND PLATE	
S712	EVQ21405R	F. F. (DECK2)				JACK(S)	
S713	EVQ21405R	REW. (DECK2)		JK1	SJF3069N	TERMINAL BOARD	
S714	EVQ21405R	F. PLAYBACK (DECK2)		JK2	SJJ134B	JACK, HEADPHONES	
S715	EVQ21405R	R. PLAYBACK (DECK2)		JK3	RJJ33T01	M3 JACK (BLACK)	
S716	EVQ21405R	REC. (DECK2)		JK4, 5	RJJ33TR01	M3 JACK (RED)	
S717	EVQ21405R	PAUSE (DECK2)		JK6	SJSD16	AC INLET	(GN, P, PC) △
S718	EVQ21405R	SYNCHRO-START		JK6	SJS9236	AC INLET	(E, EG, EB, GC, PX) △
S719	EVQ21405R	X2 SPEED		JK7	SJS9331B	AC OUTLET	(P, PC) △
S720	EVQ21405R	X1 SPEED					
S721	EVQ21405R	DOLBY C NR					
S722	EVQ21405R	DOLBY B NR					
S725	SSH1230	POWER	△				
S726	SSS180-1	TIMER					
S951	RSH1A89Z	MODE (DECK1)					
S952	RSH1A90Z	HALF (DECK1)					
S953	RSH1A90Z	ATS (DECK1)					
S971	RSH1A89Z	MODE (DECK2)					
S972	RSH1A90Z	HALF (DECK2)					
S973	RSH1A90Z	REC INH (R) (DECK2)					
S974	RSH1A90Z	REC INH (F) (DECK2)					
S975, 976	RSH1A90Z	ATS (DECK2)					
		LED BLOCK (S)					
AZ501	LN281517PT	LED BLOCK UNIT	(D501 - D514, D517 - D528, D531, D532)				
		CONNECTOR (S)					
CN3	SJSD1005	CONNECTOR (10P)					
CN4	RJS1A1704	CONNECTOR (4P)					

Ref. No.	Remarks
R1, 2	ERD
R3, 4	ERD
R5, 6	ERD
R7, 8	ERD
R9, 10	ERD
R11, 12	ERD
R13, 14	ERD
R15, 16	ERD
R19, 20	ERD
R21, 22	ERD
R23, 24	ERD
R25, 26	ERD
R27, 28	ERD
R29, 30	ERD
R31, 32	ERD
R33, 34	ERD
R35, 36	ERD
R37, 38	ERD
R43, 44	ERD
R45, 46	ERD
R47, 48	ERD
R49, 50	ERD
R51, 52	ERD
R53, 54	ERD
R55, 56	ERD
R57, 58	ERD
R59, 60	ERD
R63, 64	ERD
R65	ERD
R66	ERD
R67	ERD
R69, 70	ERD
R71, 72	ERD
R75, 76	ERD
R301	ERD
R302, 303	ERD
R304, 305	ERD
R306	ERD
R307	ERD
R311, 312	ERD
R313, 314	ERD
R315, 316	ERD
R319	ERD
R329	ERD
R331, 332	ERD
R401, 402	ERD

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R936	ERDS2TJ103T	1/4W 10K	C39, 40	ECQB1H103JZ3	50V 0.01U	C901	ECEAJU222B	6.3V 2200U
R937	ERDS2TJ472T	1/4W 4.7K	C41, 42	ECQB1H223JZ3	50V 0.022U	C903	ECEA1HK010B	50V 1U
R938, 939	ERDS2TJ103T	1/4W 10K	C43, 44	ECQB1H103JZ3	50V 0.01U	C904	ECEA1EK4R7B	25V 4.7U
R940-942	ERDS2TJ472T	1/4W 4.7K	C45, 46	ECKR1H103ZF5	50V 0.01U	C907	ECKR1H103ZF5	50V 0.01U
R943	ERDS2TJ223T	1/4W 22K	C49, 50	ECEA1CK100B	16V 10U	C909	ECKR1H103ZF5	50V 0.01U
R944	ERDS2TJ333T	1/4W 33K	C53, 54	ECQB1H273JZ3	50V 0.027U	C951	ECBT1H102KB5	50V 1000P
R945	ERDS2TJ223T	1/4W 22K	C55	ECBT1H102KB5	50V 1000P	C952	ECBT1E103ZF5	25V 0.01U
R946, 947	ERDS2TJ102T	1/4W 1K	C57, 58	ECEA1CU470B	16V 47U			
R948	ERDS2TJ184T	1/4W 180K	C301	ECQP1153JZ	50V 0.015U			
R949	ERDS2TJ103T	1/4W 10K	C302	ECEA1EK4R7B	25V 4.7U			
R950	ERDS2TJ332T	1/4W 3.3K	C303	ECKR1H392KB5	50V 3900P			
R951	ERDS2TJ103P	1/4W 10K	C304, 305	ECFR1E222KAY	25V 2200P			
R952	ERDS2TJ432	1/4W 4.3K	C306	ECFR1E682KAY	25V 6800P			
R953	ERDS2TJ103T	1/4W 10K	C309	ECKR1H103ZF5	50V 0.01U			
R954	ERDS2TJ223T	1/4W 22K	C310	ECKD1H472KB	50V 4700P			
R955	ERDS2TJ821T	1/4W 820	C311	ECEA1AU221B	10V 220U			
R956	ERDS2TJ223T	1/4W 22K	C313, 314	ECQB1H223JZ3	50V 0.022U			
R957	ERDS2TJ821T	1/4W 820	C315, 316	ECBT1H821KB5	50V 820P			
R958	ERDS2TJ223T	1/4W 22K	C317, 318	ECCD1H121K	50V 120P			
R959	ERDS2TJ821T	1/4W 820	C319, 320	ECQV1H104JZ3	50V 0.1U			
R960	ERDS2TJ153T	1/4W 15K	C321, 322	ECQB1H223JZ3	50V 0.022U			
R961	ERDS2TJ561T	1/4W 560	C323, 324	ECQB1H103JZ3	50V 0.01U			
R962	ERDS2TJ103T	1/4W 10K	C325, 326	ECKD1H122KB	50V 1200P			
R963	ERDS2TJ432	1/4W 4.3K	C328	ECCR1H100K5	50V 10P			
R964	ERDS2TJ184T	1/4W 180K	C329	ECEA1CK100B	16V 10U			
R965	ERDS2TJ103T	1/4W 10K	C330	ECBT1E103ZF5	25V 0.01U			
R966	ERDS2TJ223T	1/4W 22K	C401, 402	ECFR1E222KAY	25V 2200P			
R967	ERDS2TJ821T	1/4W 820	C403, 404	ECEA1EK4R7B	25V 4.7U			
R968, 969	ERDS2TJ472T	1/4W 4.7K	C405, 406	ECKD1H122KB	50V 1200P			
R971	ERDS2TJ182T	1/4W 1.8K	C407, 408	ECKD1H152KB	50V 1500P			
R973	ERDS2TJ561T	1/4W 560	C409, 410	ECQB1H472JZ3	50V 4700P			
R974	ERDS2TJ103T	1/4W 10K	C411, 412	ECEA1CK100B	16V 10U			
R981	ERDS2TJ100T	1/4W 10	C413, 414	ECQV1H473JZ3	50V 0.047U			
			C415, 416	ECQV1H224JZ3	50V 0.22U			
		CAPACITORS	C417-420	ECEA1HKR68B	50V 0.68U			
			C421, 422	ECQV1H224JZ3	50V 0.22U			
C1-4	ECEA1HK010B	50V 1U	C423, 424	ECQV1H473JZ3	50V 0.047U			
C5, 6	ECEA1CK220B	16V 22U	C425, 426	ECEA1CK100B	16V 10U			
C7-10	ECBT1H561KB5	50V 560P	C427, 428	ECQB1H472JZ3	50V 4700P			
C11, 12	ECBT1H102KB5	50V 1000P	C429, 430	ECQB1H103JZ3	50V 0.01U			
C13, 14	ECEAJU101B	6.3V 100U	C431, 432	ECEA1CK100B	16V 10U			
C15, 16	ECQB1H682JZ3	50V 6800P	C501, 502	ECEA1HK2R2B	50V 2.2U			
C17-20	ECEA1EK4R7B	25V 4.7U	C503	ECKR1H103ZF5	50V 0.01U			
C21	ECEAJU101B	6.3V 100U	C565	ECKR1H223ZF5	50V 0.022U			
C23, 24	ECEA1HKR33B	50V 0.33U	C601	ECKD2H682PE	500V 6800P			
C25, 26	ECEA1HK010B	50V 1U	C602, 603	ECEA1EU102B	25V 1000U Δ			
C27, 28	ECBT1H561KB5	50V 560P	C604, 605	ECKR1H103ZF5	50V 0.01U			
C29, 30	ECKD2H101KB	500V 100P	C606, 607	ECEAJU471B	10V 470U			
C31, 32	ECCD1H181K	50V 180P	C608	ECKR1H103ZF5	50V 0.01U			
C33, 34	ECEA1HKR47B	50V 0.47U	C610, 611	ECEAJU102B	6.3V 1000U			
C35, 36	ECQB1H472JZ3	50V 4700P	C612	ECEA1EU222E	25V 2200U			
C37, 38	ECQB1H223JZ3	50V 0.022U	C621	ECKR1H103ZF5	50V 0.01U			