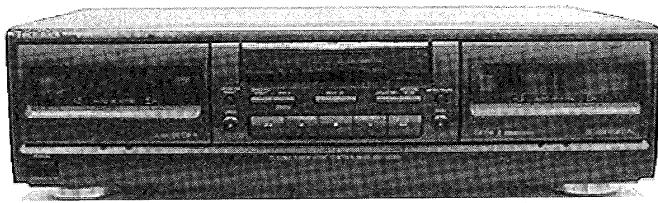


# Service Manual

Stereo Cassette Deck



Cassette Deck

RS-TR272

Colour

Area	(K) ..... Black Type	
Suffix for Model No.	Area	Colour
(GC)	Asia, Latin America, Africa and Middle Near East	(K)
(GN)	Oceania	
(GT)	Taiwan	

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## AR-2 MECHANISM SERIES

### Specifications (IHF '78)

#### ■ Cassette Deck Section

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Recording system	AC bias
Bias frequency	80 kHz(approx.)
Erasing system	AC erase
Heads	
Deck 1	Playback head(Permalloy) X 1
Deck 2	Recording/Playback head(Permalloy) X 1
	Erasing head(Double-gap ferrite) X 1
Motors	
Deck 1	Capstan/Reel table drive(DC servo motor) X 1
Deck 2	Capstan/Reel table drive(DC servo motor) X 1
Tape speed	4.8 cm/sec.(1-7/8 ips)
Wow and flutter	0.18%(WRMS)
Fast forward and rewind times	Approx. 120 seconds with C-60 cassette tape
Frequency response(Dolby NR off)	
TYPE I (NORMAL)	40 Hz-14 kHz, ±3 dB 20 Hz-17 kHz
TYPE II (HIGH POSITION)	40 Hz-14 kHz, ±3 dB 20 Hz-17 kHz
TYPE III (METAL)	40 Hz-15 kHz, ±3 dB 20 Hz- 18 kHz

#### S/N (signal level = max recording level, TYPE II type tape)

NR off	54 dB (A weighted)
Dolby B NR on	64 dB (A weighted)
Dolby C NR on	72 dB (A weighted)

#### Input sensitivity and impedance

REC (IN)	500mV/47 kΩ
Output voltage and impedance PLAY (OUT)	500mV/500 Ω

#### ■ General

##### Power consumption

For GC, GT	21W
For GN	18W

##### Power supply

For GC, GT	AC 50/60Hz, 110V/127V/220V/230V~240V
For GN	AC 50/60Hz, 230V~240V

Dimensions (W X H X D) 430 X 136 X 286 mm

Weight 3.8 kg

##### Notes:

Specifications are subject to change without notice.

Weight and dimensions are approximate.

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**WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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**Before Use (for GC and GT area only)**

Be sure to disconnect the mains cord before adjusting the voltage selector.  
 Use a minus(-) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be used.  
 (If the power supply in your area is 117V or 120V, set to the "110 - 127V" position.)  
 Note that this unit will be seriously damaged if this setting is not made correctly.  
 (There is no voltage selector for some countries; the correct voltage is already set.)

## ■ Operation Checks

**"ATTENTION SERVICER"** Some chassis components may have sharp edges. Be careful when disassembling and servicing.

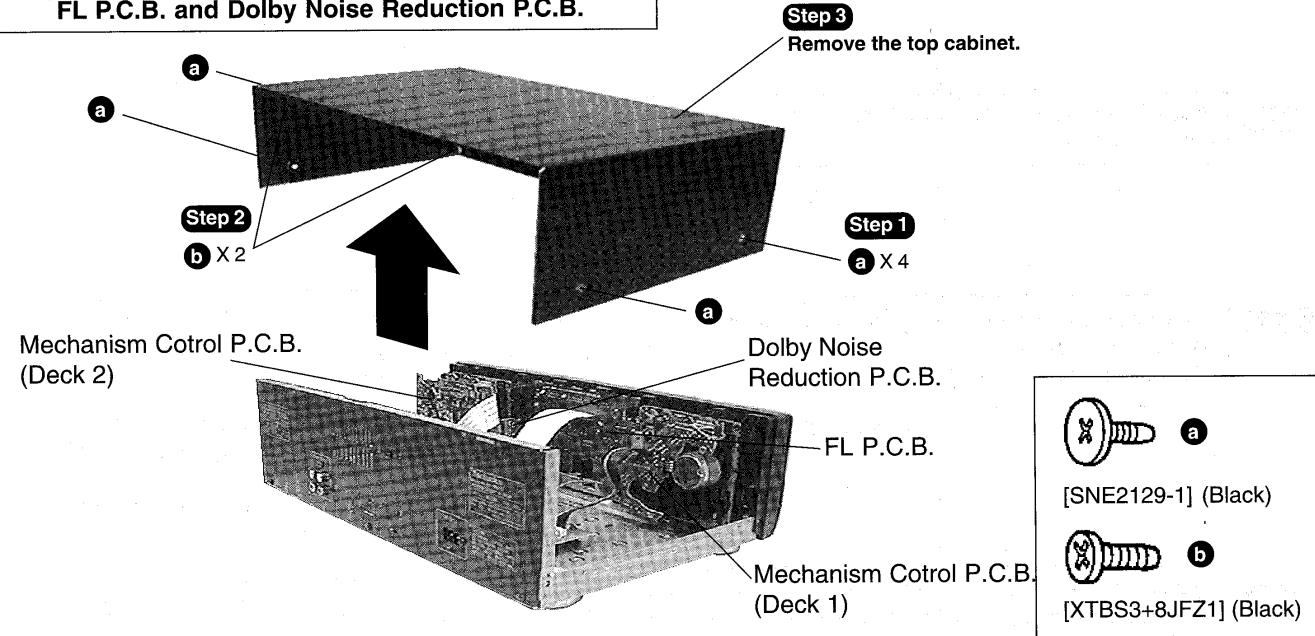
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures.  
Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.

- **Contents**

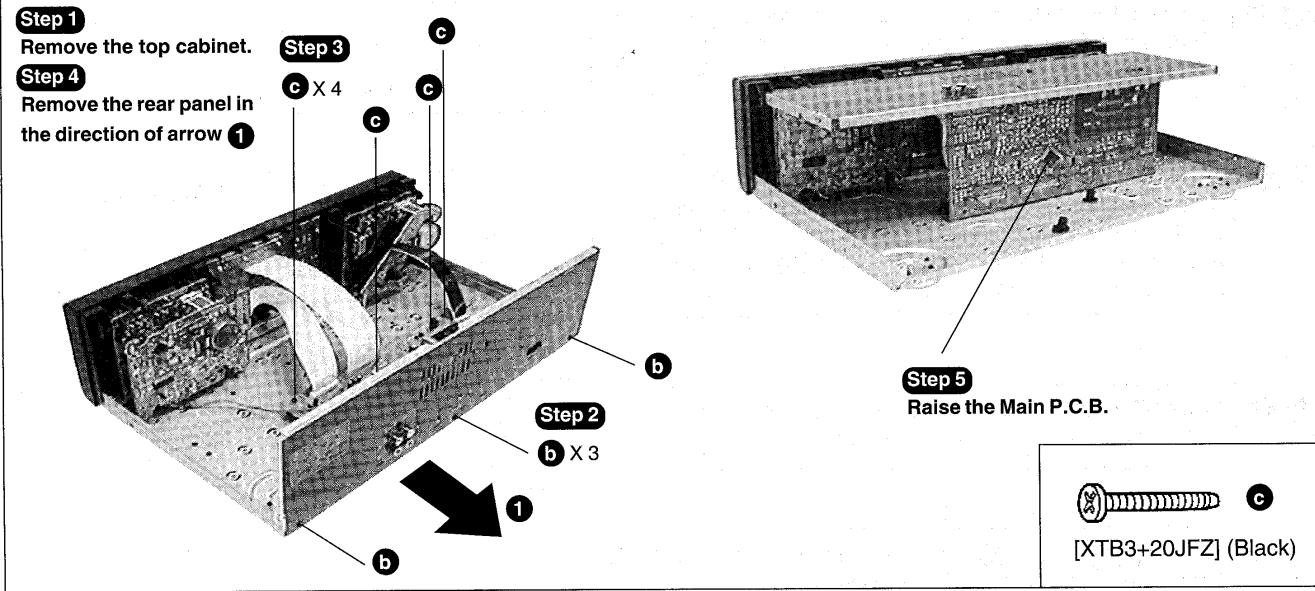
• Checking Procedure For Each Major P.C.B. ....	page 3
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## ■ Checking Procedure For Each Major P.C.B.

### 1. Checking of the Mechanism Control P.C.B., FL P.C.B. and Dolby Noise Reduction P.C.B.



### 2. Checking of the Main P.C.B.



## ■ EEPROM Data Write

Various factory-preset data and adjusted values are stored in this unit's EEPROM (IC502). When the IC502 EEPROM is replaced, its data and adjusted values need to be written to a new EEPROM.

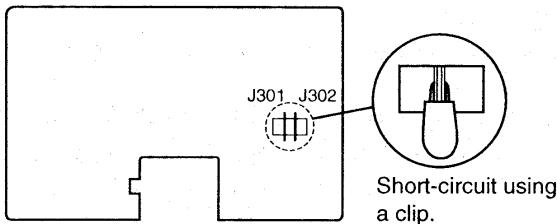
### ● EEPROM Write Procedure

#### Note:

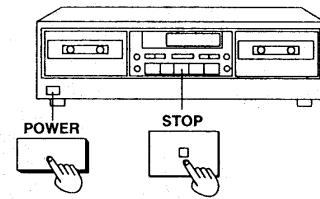
Follow this procedure only when the IC502 EEPROM is replaced. No writing of EEPROM data and adjusted values is required for the replacement of any other component.

#### FL P. C. B.

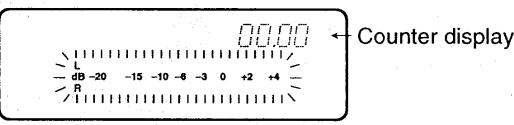
**Step 1** Short-circuit the TEST mode terminal (J301↔J302) using a clip.



**Step 2** Press the POWER button while keeping the STOP ■ button pressed.



**Step 3** The display level meter blinks, with "00 00" appearing on the counter display.  
(The unit enters the EEPROM write mode.)

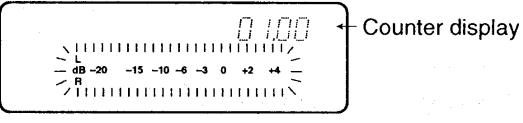


The write data is set to "00 00."

- The address is represented by the two left-hand digits of the counter display and the data by the two right-hand digits.
- When an address is changed, the previously set address and data are written.

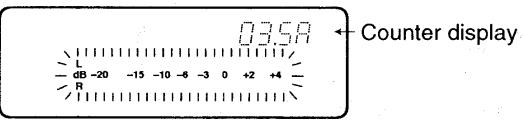
**Step 4** Press the FF ►► button to set the 2 left digits (Address) of the counter display to "01" but leave the two right-hand digits (Data) at "00."

The write data is set to "01 00."

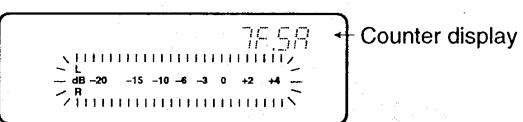


**Step 5** Press the FF ►► button to set the two left-hand digits (Address) of the counter display to "03" and press the F.PLAY ► button to set the 2 right digits (Data) to "5A."

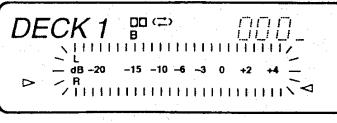
The write data is set to "03 5A."



**Step 6** Similarly (set the two left-hand digits (Address) of the counter display using the FF ►► and REW ◀◀ buttons and the two right-hand digits (Data) using the F.PLAY ► and R.PLAY ◀ buttons), write data at the ████ columns in Table 1 up to "7F 00."



**Step 7** Press STOP ■ button. (EEPROM write is completed, and the unit enters the adjustment mode.)



**Step 8** Follow **Step 4** ~ **Step 9** in the "Adjusted Value Rewrite Procedure" to rewrite the adjusted values.

Table 1: EEPROM Address/Data map

Address	Data	Address	Data	Address	Data	Address	Data
00	00	20	B0	40	—	60	92
01	00	21	B0	41	—	61	A0
02	—	22	A0	42	—	62	89
03	5A	23	05	43	—	63	7C
04	—	24	—	44	—	64	60
05	—	25	—	45	—	65	60
06	—	26	—	46	—	66	40
07	—	27	—	47	—	67	56
08	—	28	—	48	—	68	79
09	—	29	—	49	—	69	70
0A	—	2A	78	4A	—	6A	28
0B	—	2B	71	4B	—	6B	40
0C	—	2C	4E	4C	—	6C	75
0D	—	2D	65	4D	—	6D	90
0E	—	2E	4F	4E	—	6E	—
0F	—	2F	5E	4F	—	6F	—
10	—	30	A0	50	78	70	BD
11	—	31	71	51	84	71	D0
12	—	32	44	52	6F	72	A3
13	—	33	47	53	65	73	94
14	—	34	4F	54	4C	74	57
15	—	35	5E	55	68	75	26
16	—	36	—	56	05	76	40
17	EC	37	—	57	56	77	58
18	80	38	—	58	90	78	A0
19	80	39	—	59	4D	79	60
1A	80	3A	—	5A	40	7A	40
1B	80	3B	—	5B	23	7B	50
1C	80	3C	—	5C	7C	7C	90
1D	80	3D	—	5D	90	7D	90
1E	80	3E	—	5E	—	7E	0A
1F	80	3F	—	5F	—	7F	00

Note: At an address with no data value indicated (e.g. 02 —), the EEPROM operates normally irrespective of the kind of the data supplied.

## ■ Adjusted Value Rewrite

Various factory-preset data and adjusted values are stored in the EEPROM (IC502) of this unit. Re-adjust the following components when replaced. Upon completion of the re-adjustments, the necessary data can be automatically rewritten.

### Applicable components

- MECHANISM HEAD
- IC2: PLAY BACK AMP IC
- IC302: DOLBY HX PRO IC
- IC401: DOLBY BC IC
- Q301, Q302

### Cassette tapes to be prepared

- Normal blank tape: QZZCRA
- Playback gain adjustment (315 Hz, 0 dB): QZZCFM

### Measurement Condition

- 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)
- AF oscillator
- Digital frequency counter
- Attenuator
- Resistor (600 Ω)

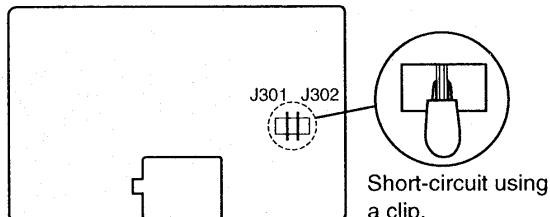
### ● Adjusted Value Rewrite Procedure (Adjusted values can be automatically rewritten.)

**Note:** No rewriting of the adjusted values are needed even for the replacement of the system control IC (IC501).

#### Step 1

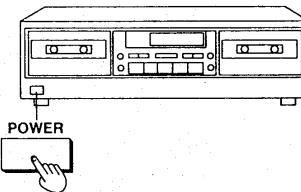
Short-circuit the TEST mode terminal (J301↔J302) using a clip.

#### FL P. C. B.



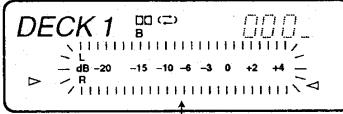
#### Step 2

Press the POWER button.



#### Step 3

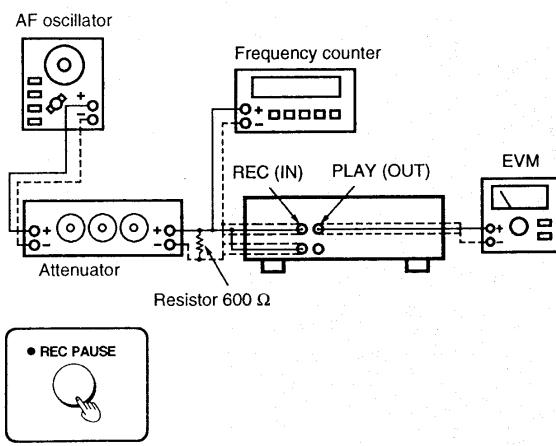
The display level meter blinks. (The unit enters the adjustment mode.)



#### Step 4

##### Setting Playback Gain Level

1. Load DECK 2 with the test tape (QZZCFM) (at the section with 315 Hz and 0 dB)
2. Apply an input signal at **315 Hz** to the REC (IN) jack from the AF oscillator.
3. Leave the REC PAUSE button pressed.
4. Adjust the attenuator to bring an output signal from the PLAY (OUT) jack close to **320 mV ± 20 mV**.
5. Release the REC PAUSE button.
6. Repeat 3 through 5 above (to reset the Auto Level Control circuit) and finally set the output signal from the PLAY (OUT) jack to **320 mV ± 20 mV**.
7. When the output signal from the PLAY (OUT) jack is set to **320 mV ± 20 mV**, release the REC PAUSE button after about 2 seconds.

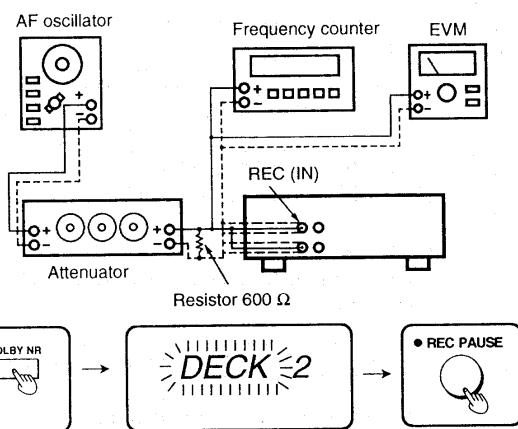


To Step 5

**Step 5****Adjusting MPX**

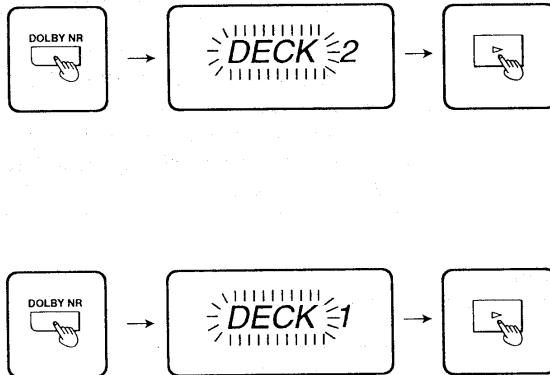
1. Apply an input signal at  $19 \text{ kHz} \pm 10 \text{ Hz}$  and  $320 \text{ mV}$  to the REC (IN) jack from the AF oscillator.
2. Press the DOLBY NR button.  
(The DECK display slowly blinks.)
3. Press the REC PAUSE button.  
(No mechanism operates, but the DECK display disappears after several seconds.)

**Note:** If no proper adjustment is made, the DECK display quickly blinks. In this case, adjust the input level from the AF oscillator to within the range of  $320 \text{ mV} \pm 50 \text{ mV}$  and repeat steps 2 and 3 above. Upon completion of the adjustment, the DECK display disappears.

**Step 6****Adjusting Playback Gain**

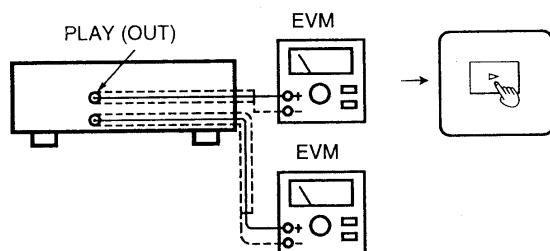
1. Press the DOLBY NR button. (The DECK display slowly blinks.)
2. Press the F.PLAY ▶ button.  
(The mechanism automatically runs for the FWD PLAY/REV PLAY and stops, and the DECK display disappears.)
3. Load DECK 1 with the test tape (QZZCFM)  
(at the section with 315 Hz and 0 dB).
4. Press the DOLBY NR button.  
(The DECK display slowly blinks.)
5. Press the F.PLAY ▶ button.  
(The mechanism automatically runs for the FWD PLAY/REV PLAY and stops, and the DECK display disappears.)

**Note:** If no proper adjustment is made, the DECK display quickly blinks. In this case, repeat **Step 4** and **Step 6**. Upon completion of the adjustment, the DECK display disappears.

**Step 7****Checking Playback Gain**

1. Press the F.PLAY ▶ button.  
(Play the test tape (QZZCFM: 315 Hz, 0 dB) in DECK 1.)
2. Check the output stays within the standard value range.  
**Standard value range:  $280 \text{ mV} \sim 360 \text{ mV}$**
3. Load DECK 2 with a test tape (QZZCFM).  
(At the section with 315 Hz and 0 dB)
4. Press the F.PLAY ▶ button.  
(Play the test tape (QZZCFM: 315 Hz, 0 dB) in DECK 2.)
5. Check the output stays within the standard value range.  
**Standard value range:  $280 \text{ mV} \sim 360 \text{ mV}$**

**Note:** If the output stays outside the standard value range, repeat **Step 4**, **Step 6** and **Step 7**.



To **Step 8**

From Step 7

**Step 8****Adjusting Overall Gain and Overall Frequency Characteristics**

1. Load DECK 2 with a normal blank tape (QZZCRA).

2. Press the DOLBY NR button.  
(The DECK display slowly blinks.)

3. Press the REC PAUSE button.  
(The mechanism automatically performs the following operations.)

Forward record (for recording the reference signal)

Rewind (for rewinding the tape and locating the start of the reference signal)

Forward play (for playing the reference signal)

Adjusted values to be written in the EEPROM

STOP (The DECK display disappears.)



**Note:** If no proper adjustment is made, the DECK display quickly blinks. In this case, check the tape for scratches, creases and any other damage. If the tape is damaged, replace it with a new one and repeat the above step. Upon completion of the adjustment, the DECK display disappears.

**Step 9****Clearing the Adjusted Value****Rewrite mode**

1. Remove the clip from the TEST mode terminal.

2. Press the POWER button to turn off the unit.

## ■ Measurements and Adjustments

### Measurement Condition

- 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)
- AF oscillator
- Digital frequency counter
- Attenuator
- Resistor ( $600 \Omega$ )

### ● Adjustment Points

#### Deck 1 Mechanism Control P.C.B.

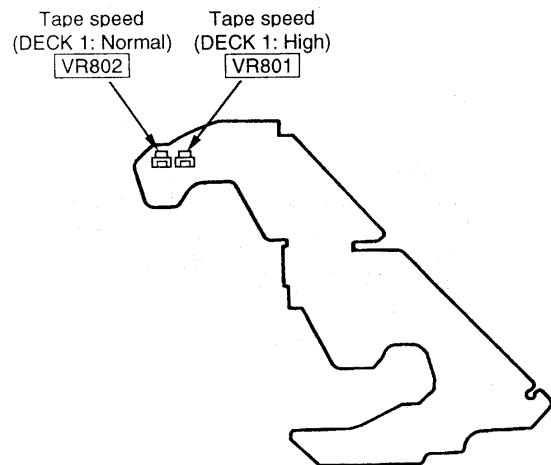


Fig. 1

#### Test Tape

- Head azimuth adjustment (8 kHz, -20 dB); QZZCFM
- Tape speed adjustment (3 kHz, -10 dB); QZZCWAT
- Playback gain adjustment (315 Hz, 0 dB); QZZCFM
- Recording/playback frequency response adjustment; QZZCFM (315 Hz/0 dB, 315 Hz/-20 dB, 12.5 kHz~63 Hz/-20 dB)
- QZZCRA (Normal blank Tape)
- QZZCRX (CrO<sub>2</sub> blank Tape)
- QZZCRZ (Metal blank Tape)

#### Deck 2 Mechanism Control P.C.B.

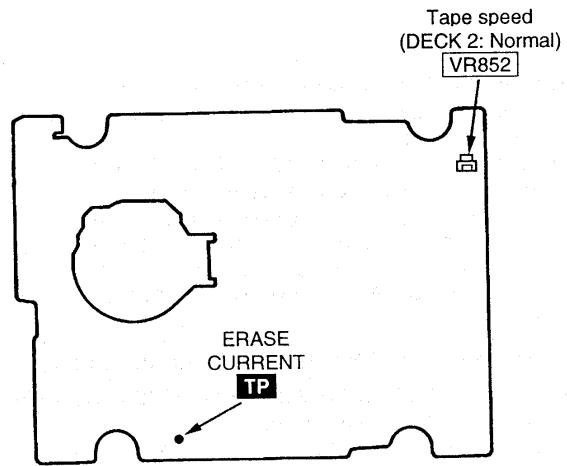


Fig. 2

#### FL P.C.B.

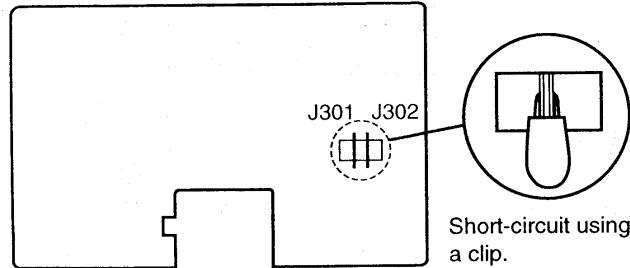


Fig. 3

#### Main P.C.B.

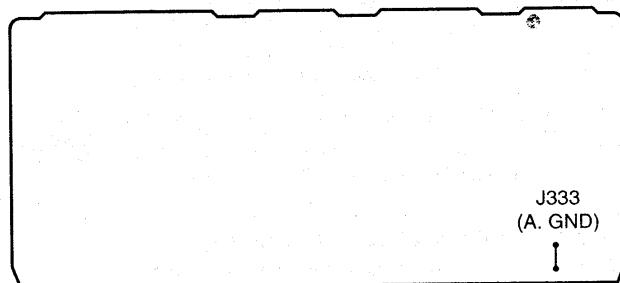


Fig. 4

### Head Azimuth Adjustment (Decks 1 and 2)

- Connect the measuring instruments as shown in Fig. 5.
- Replace the azimuth adjustment screws (for both forward and reverse plays) with new ones.  
At this point, remove the screw lock bond stuck to the area around the heads. If the screw lock bond remains in place, no fine adjustment can be made.  
(Azimuth adjustment screw supply model: RHD17015)
- Forward play the azimuth adjusting portion (8 kHz, -20 dB) of a test tape (QZZCFM) and adjust the azimuth adjustment screw so the output at the left and right channels is at the maximum. (See Fig. 6.)
- For the reverse play, make the azimuth adjustment in a similar manner.

### Difference check between forward and reverse play levels

- Play the playback gain adjusting portion (315 Hz, 0 dB) of the test tape (QZZCFM) and ensure the difference between the forward and reverse play levels remains within the range of 1.5 dB.
- After completing the adjustment, lock the azimuth adjustment screws.

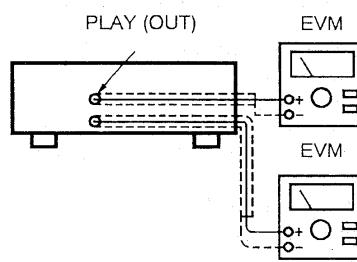


Fig. 5

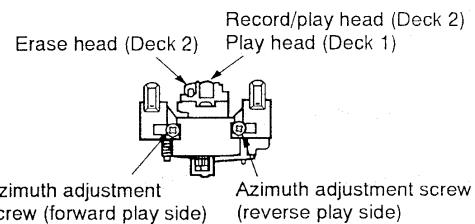


Fig. 6

### Tape Speed Adjustment (Decks 1 and 2)

- Turn on the power to the unit and short-circuit the TEST mode terminal (J301↔J302) using a clip.

#### Normal speed adjustment (adjust in the FWD play mode)

- Product specification value: 3,000 Hz ± 45 Hz
- Connect the measuring instruments as shown in Fig. 7.
  - Press the SPEED button to set the tape speed to the Normal position.
  - Play the middle portion of the test tape (QZZCWAT).
  - Adjust VR802 for DECK 1 and VR852 for DECK 2 so their outputs have the following value.

**Adjusted value: 3,000 Hz ± 15 Hz (Normal speed)**

#### High speed adjustment (Adjust in the FWD play mode.)

- Product specification value: 3,000 Hz ± 45 Hz
- Play the middle portion of the test tape (QZZCWAT).
  - Press the SPEED button to set the tape speed to the High position.
  - At this point, ensure the output of DECK 2 stays within the specification value.

**DECK 2 specification value: 6,000 Hz ± 600 Hz (High speed)**

- Adjust VR801 for DECK 1 so its output frequency remains within ± 30 Hz of that of DECK 2.
- Clear the short circuit of the TEST terminal.

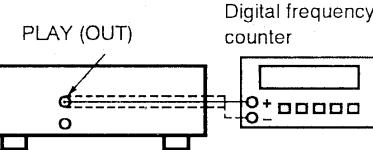


Fig. 7

### Playback Gain Check (Decks 1 and 2)

- Connect the measuring instruments as shown in Fig. 8.
- Play the 315 Hz, 0 dB section of the test tape (QZZCFM).
- Ensure the output stays within the standard value range.

**Standard value range (Decks 1 and 2): 280 mV ~ 360 mV**

Note: If the output is outside the standard value range, follow **Step 1** ~ **Step 4** in the "Adjusted Value Rewrite." (See page 6)

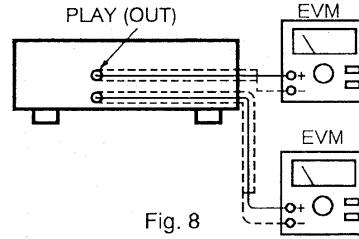


Fig. 8

### Erase Current Check (Decks 1 and 2)

- Connect the measuring instruments as shown in Fig. 9.
- Load DECK 2 with a normal, CrO2 or metal tape.
- Press the REC PAUSE button to pause the recording.
- Ensure the measured erase current of the tape stays within the standard value.

Standard value	Measured value with EVM
Normal tape : 140 mA ± 25 mA	(140 mA ± 25 mV)
CrO2 tape : 140 mA ± 25 mA	(140 mA ± 25 mV)
Metal tape : 220 mA ± 25 mA	(220 mA ± 25 mV)

Note: If the measured value is outside the standard range, follow **Step 1** ~ **Step 9** in the "Adjusted Value Rewrite." (See pages 6, 7)

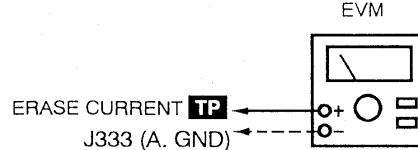


Fig. 9

### Playback Frequency Characteristic Check (Decks 1 and 2)

1. Connect the measuring instruments as shown in Fig. 10.
2. Play the playback frequency characteristic check portions (315 Hz, 12.5 kHz ~ 63 Hz, -20 dB) of the test tape (QZZCFM).
3. With the output produced at 315 Hz as a standard, check the playback output levels (both L- and R-channels) at the individual frequencies stay within the range shown in Fig. 11.

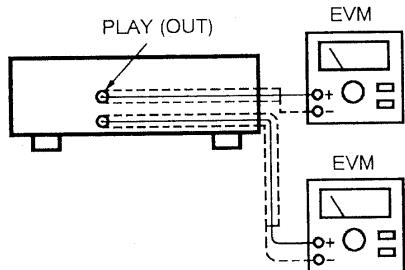


Fig. 10

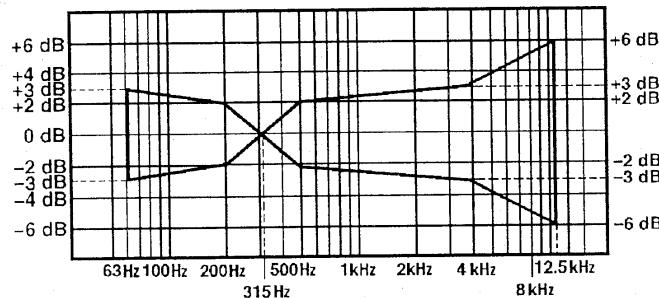


Fig. 11

Note: If these levels are outside the standard value range, follow **Step 1** ~ **Step 6** in the "Adjusted Value Rewrite." (See pages 6, 7)

### Record/Playback Frequency Characteristic Check (Deck 2)

#### Normal tape check

1. Connect the measuring instruments as shown in Fig. 12.
2. Load DECK 2 with a test tape (QZZCRA: normal blank tape).
3. Press the DOLBY NR button to set it to the DOLBY OFF position.
4. Using an input level of 32 mV, record signals at 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 2 kHz, 10 kHz and 12.5 kHz. (The recording time at each individual frequency is immaterial.)
5. Play the recorded signals.
6. With the output produced at 1 kHz as a standard, ensure the playback output levels (both left and right channels) at the individual frequencies stay within the range shown in Fig. 13.

#### CrO2/metal tape check

7. Load DECK 2 with a CrO2 or metal tape.
8. Follow the procedure for the "Normal Tape Check" and ensure the playback output levels stay within the range shown in Fig. 14.

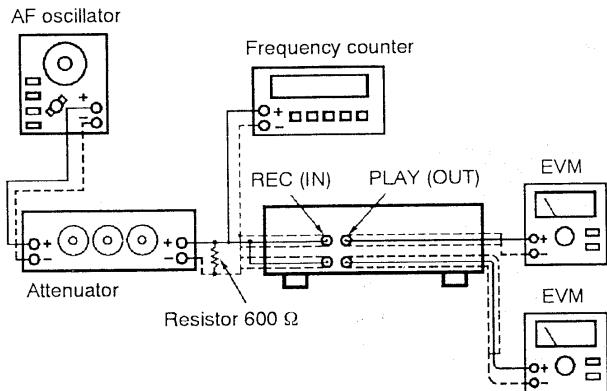


Fig. 12

#### Normal tape overall frequency characteristics (DOLBY NR: OFF)

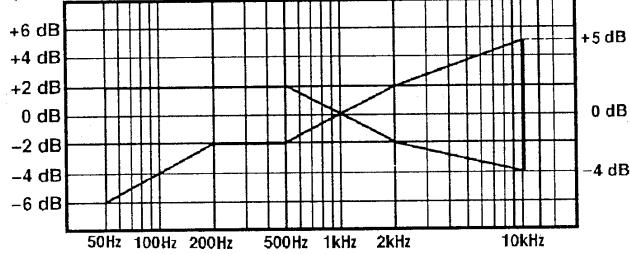


Fig. 13

#### CrO2/metal tape overall frequency characteristics (DOLBY NR: OFF)

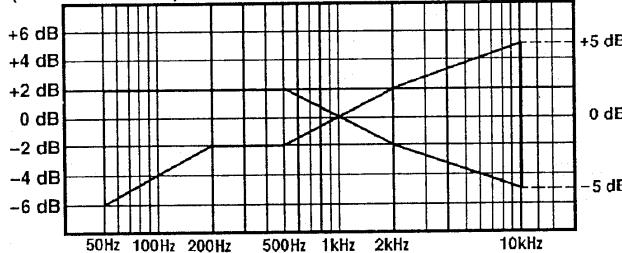


Fig. 14

Note: If the outputs stay outside the standard value range, follow **Step 1** ~ **Step 9** in the "Adjusted Value Rewrite." (See pages 6 ~ 8)

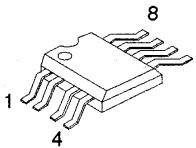
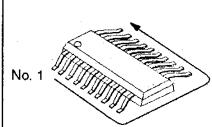
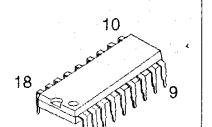
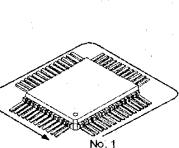
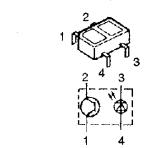
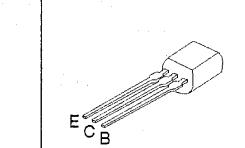
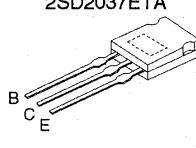
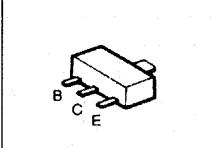
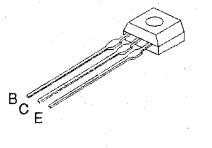
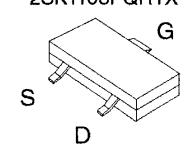
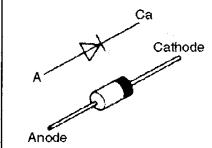
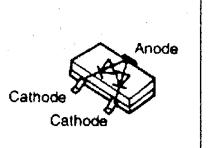
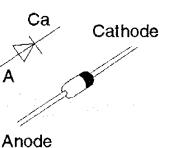
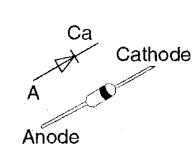
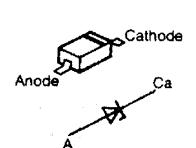
## ■ Terminal Function Of IC's

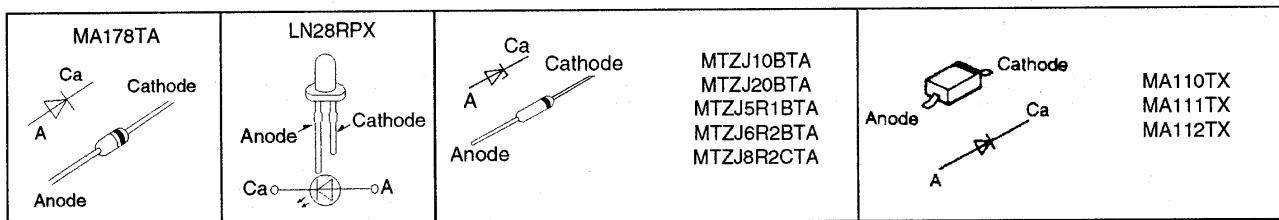
### • IC501 (M38122M3352F) System Microprocessor

Pin No.	Mark	I/O	Function
1	KEY1	I	Operation switch(S701, S707, S708, S709 S710, S711, S721) signal input
2	KEY2	I	Operation switch(S714, S715, S716, S717 S718, S719, S720, S723) signal input
3	LM/MSP	I	Level meter signal input
4	RPS2	O	Not used
5	SOL2	O	DECK 2 solenoid drive signal input
6	MOTOR 2	O	DECK 2 motor drive signal input
7	POWER	O	Power control signal output
8	CONTROL	O	Level meter(Lch/Rch)select signal output
9	MODEL 1	I	Model select terminal
10	MODEL 2	I	
11	REC-L	O	Auto level control circuit drive signal output
12	EDATA	I/O	EEPROM(IC502)serial data input/output
13	ECLK	O	EEPROM(IC502)clock signal output
14	ECS	I/O	EEPROM(IC502)chip select signal output
15	SCLK	O	Audio adjustment signal output
16	SDATA	O	Audio IC(IC2)serial data output
17	REMOTE	I	Remote control signal input
18	POF	I	Power off detection signal input
19	RESET	I	Reset signal input
20	P71	I	Not used
21	P70	I	

Pin No.	Mark	I/O	Function
22	XIN	I	Clock signal(6 MHz)input
23	XOUT	O	Clock signal(6 MHz)output
24	VSS	-	GND terminal
25	P27	I	Not used
26	X1/X2	O	Motor speed control signal output
27	SOL1	O	DECK 1 solenoid drive signal output
28	MOTOR1	O	DECK 1 motor drive signal output
29~45	P1~P17	O	Segment signal output
46~52	G1~G7	O	Grid signal output
53~56	P33~P30	O	Not used
57	VCC	-	Power supply(+5V)
58	VEE	-	FL meter pull down voltage input terminal
59	AVSS	-	GND terminal for A/D converter
60	VREF	-	Reference voltage input terminal for A/D converter(+5V)
61	AN7	I	Not used
62	AD1D1	I	Deck 1 mechanism switch signal input(Half, Mode, Cro2, Reel pulse)
63	AD2D2	I	Deck 2 mechanism switch signal input(Half, Mode, F. REC INH., R. REC INH.)
64	AD1D2	I	Deck 1 mechanism switch signal input (Metal, Cro2, Reel pulse)

## ■ Terminal Guide of IC's, Transistors and Diodes

BA4560FE2 ST93C46TM6TR 	AN7356SC-E2 	UPC1297CA 	AN7357FB-V(48PIN) M38122M3352F(64PIN) 	ON2180RLC 	KSB564ACYGTA KSD471ACYGTA 
2SB1357ETA 2SD2037ETA 	2SD874QRSTX 	2SA1309ARTA 2SC3311ARTA RVTDT114EST 2SC3312RSTA 	B C E	C B E	2SB709ATX 2SB710AQRSTX 2SD601ATX
2SJ163PQRTX 2SK1103PQRTX 	RL1N4003NO2 	MA152WATX 	MA29TATA 	MA165TA 	MA8056MTX 



## ■ Schematic Diagram

(All schematic diagrams may be modified at any time with the development of new technology)

Note :

- S601 : Voltage selector switch
- S701 : Power switch
- S707 : DECK 1 cassette holder open switch
- S708 : Dolby noise-reduction switch
- S709 : Reverse-mode select switch
- S710 : Synchro-start switch
- S711 : Tape-to-tape recording-speed switch
- S714 : Stop switch
- S715 : Forward-side playback switch
- S716 : Reverse-side playback switch
- S717 : Fast forward switch
- S718 : Rewind switch
- S719 : DECK 2 cassette holder open switch
- S720 : Record pause switch
- S721 : Tape deck select switch
- S723 : Counter reset switch
- S951 : DECK 1 mode detect switch
- S952 : DECK 1 half detect switch
- S953 : DECK 1 CrO<sub>2</sub> tape detect switch
- S971 : DECK 2 mode detect switch
- S972 : DECK 2 half detect switch
- S973 : DECK 2 CrO<sub>2</sub> tape detect switch
- S974 : DECK 2 reverse side record prevention tab detect switch
- S975 : DECK 2 forward side record prevention tab detect switch
- S976 : DECK 2 METAL tape detect switch
- VR801 ~ VR802 : Tape speed adjustment
- VR852 : Tape speed adjustment

• Signal line



• The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.

Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

No mark : Playback      ( ).....Recording

• Importance safety notice:

Components identified by mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !

IC, LSI and VLSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

• Cover the parts boxes made of plastics with aluminium foil.

• Ground the soldering iron.

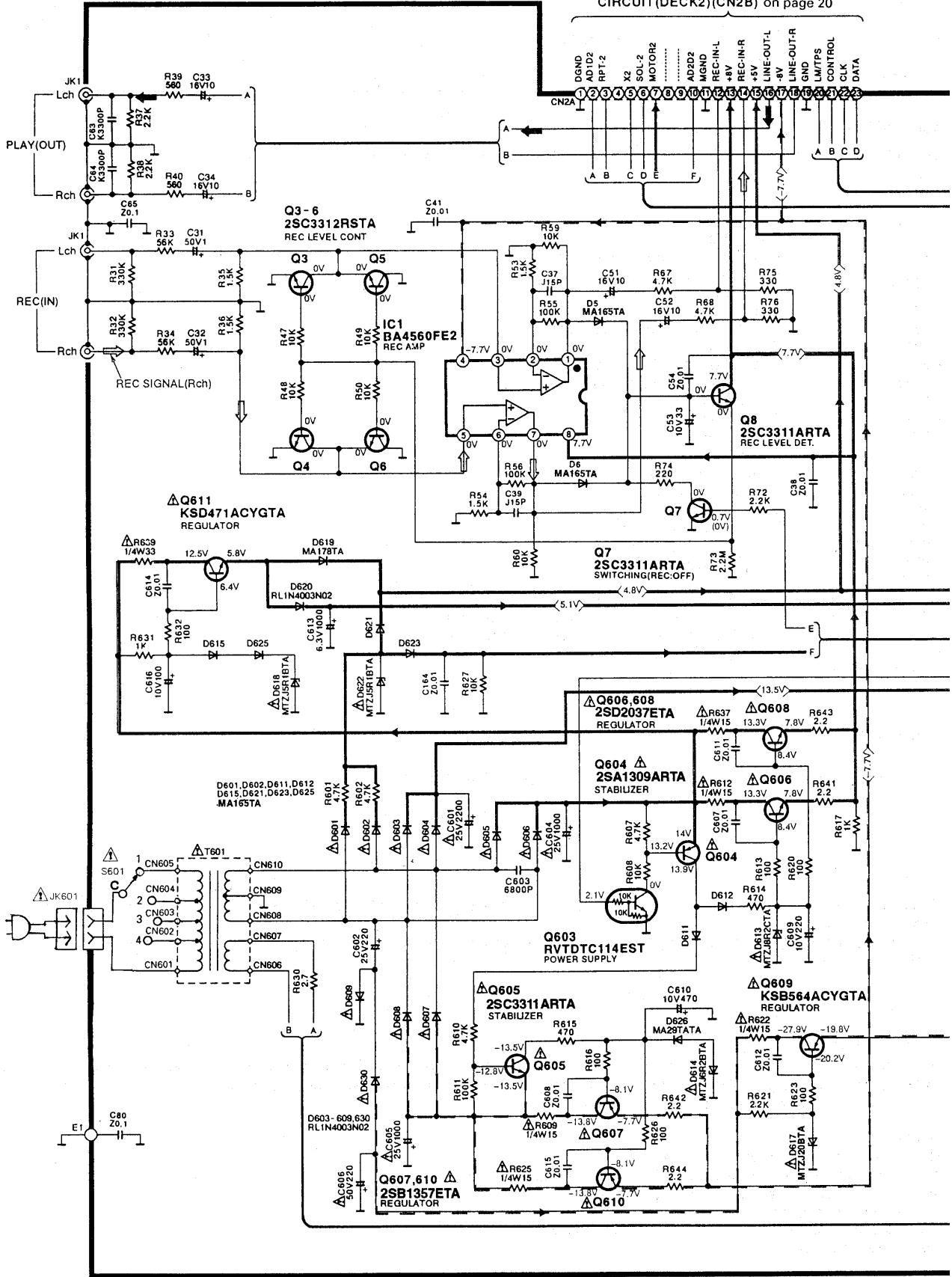
• Do not touch the pins of IC, LSI or VLSI with fingers directly.

• Put a conductive mat on the work table.

## ■ Schematic Diagram

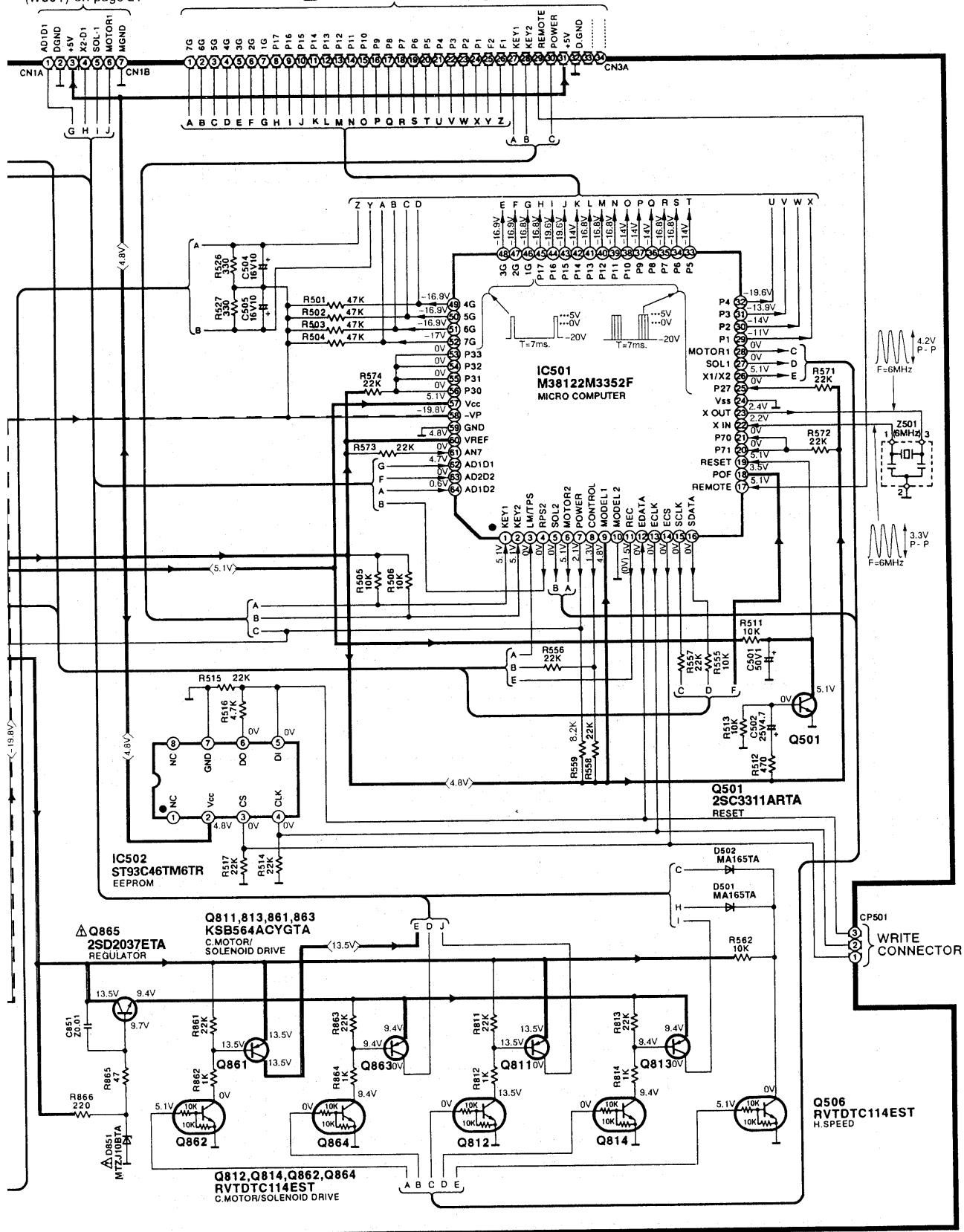
**A MAIN CIRCUIT (FOR GC/GT AREAS)**

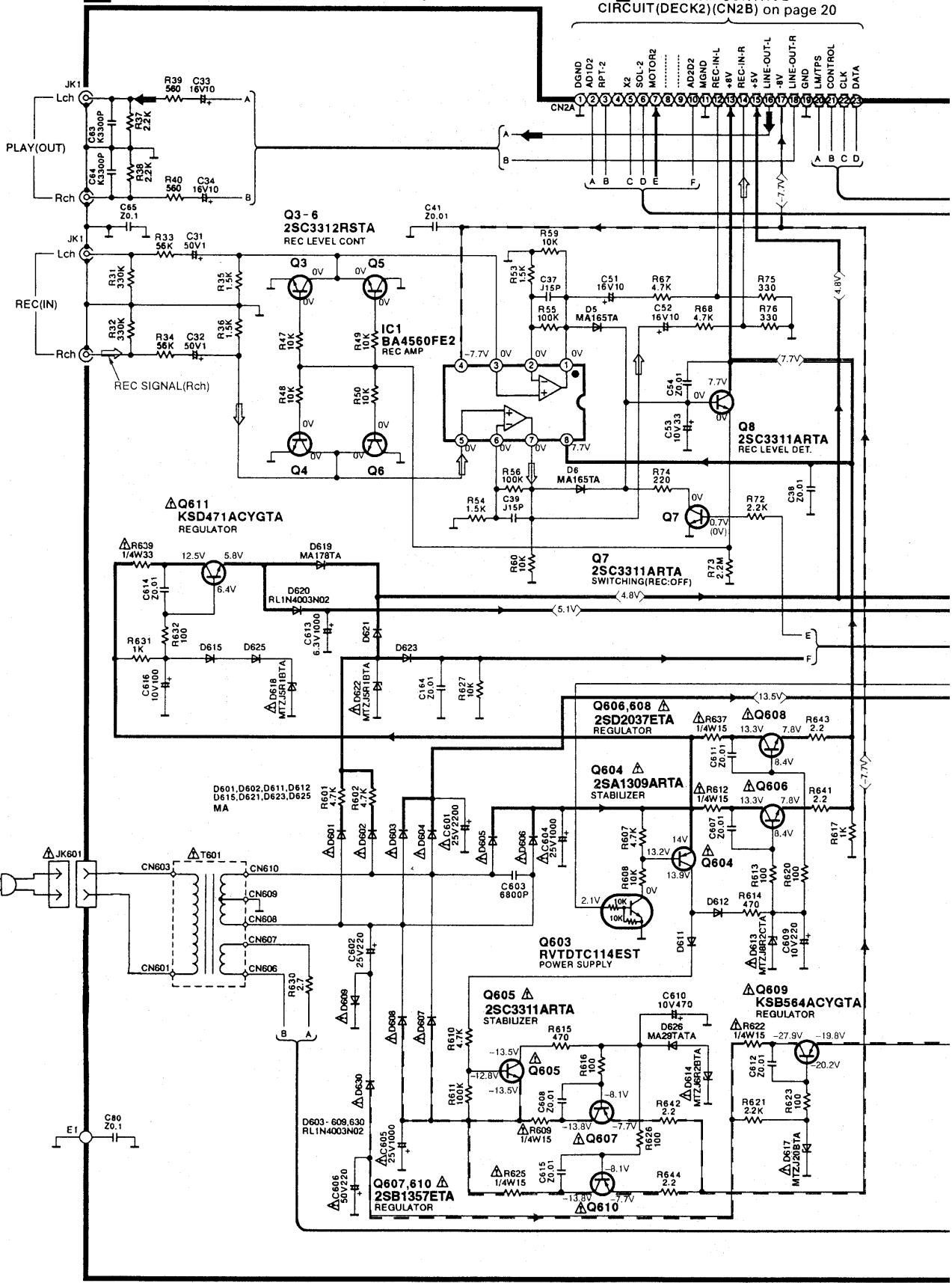
To **B** MECHANISM CONTROL  
CIRCUIT(DECK2)(CN2B) on page 20



To **H** MECHANISM  
CONTROL CIRCUIT(DECk1)  
(W801) on page 21

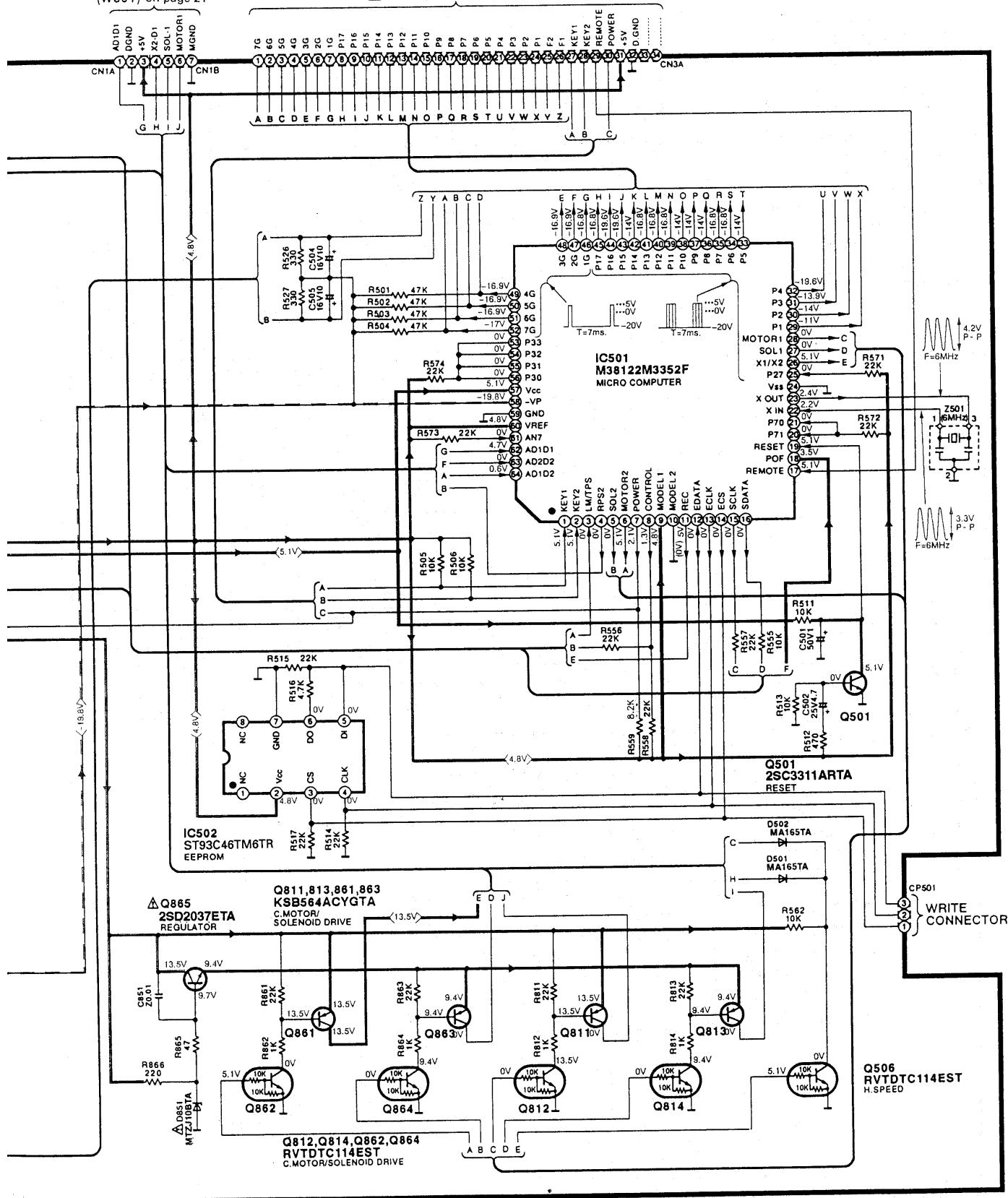
To **E** FL CIRCUIT (CN3B) on page 21

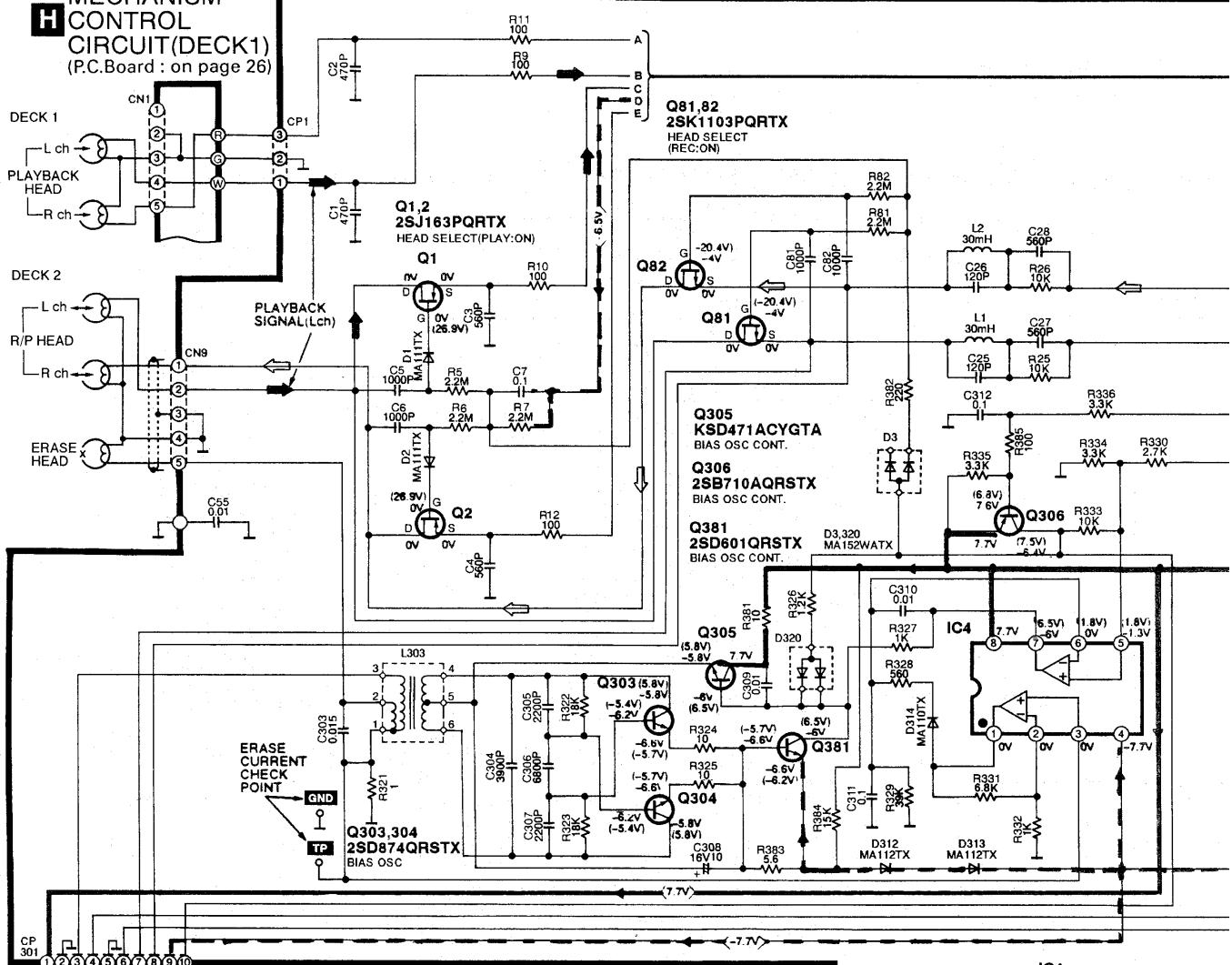
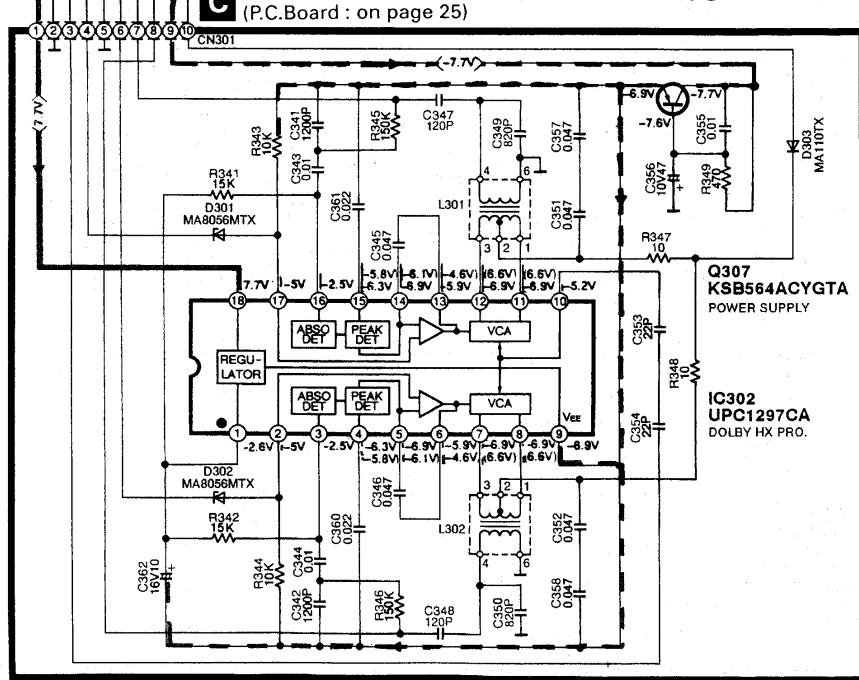


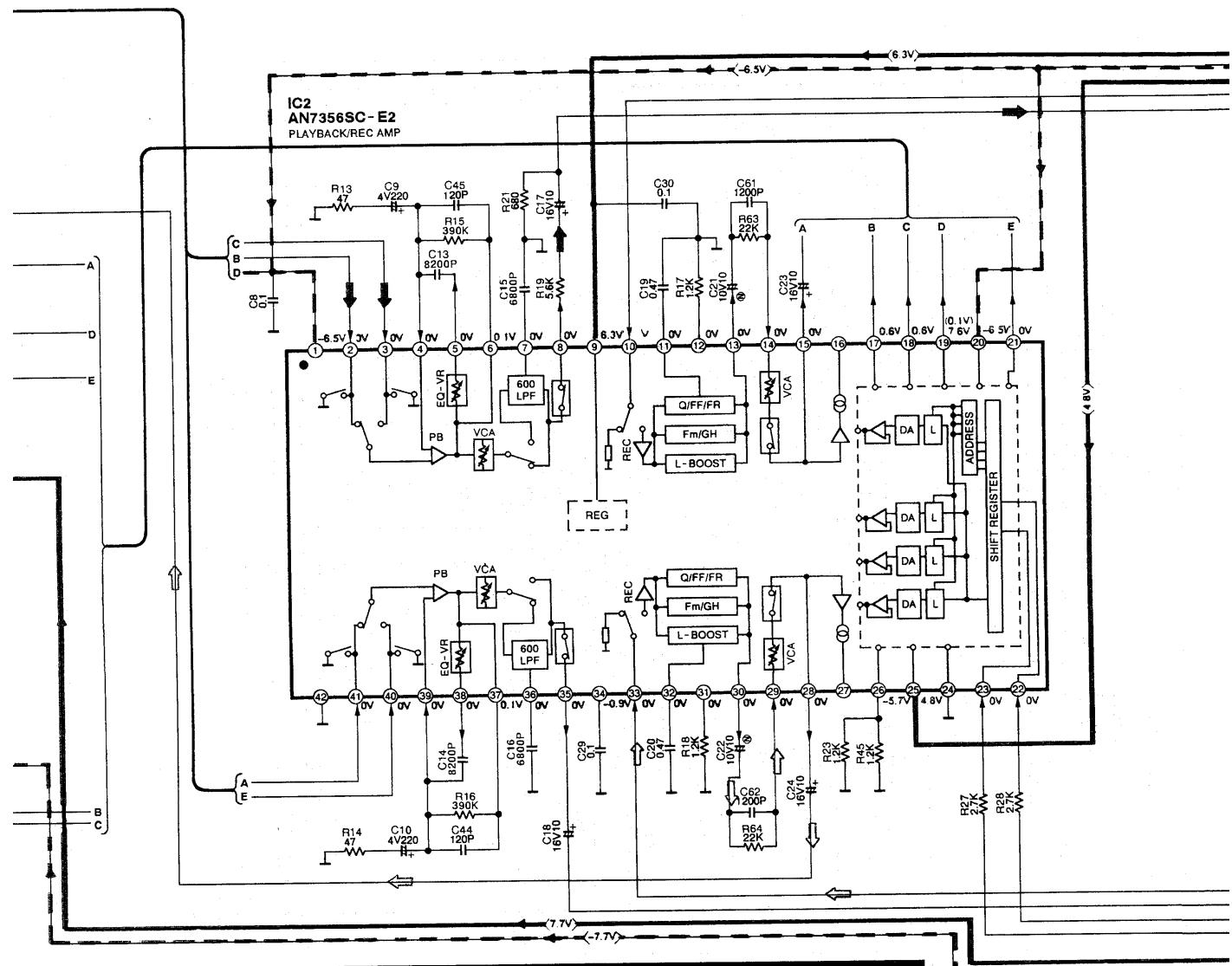
**A MAIN CIRCUIT (FOR GN AREA)**To **B MECHANISM CONTROL CIRCUIT(DECK2)(CN2B)** on page 20

To **H** MECHANISM  
CONTROL CIRCUIT(DECK1)  
(W801) on page 21

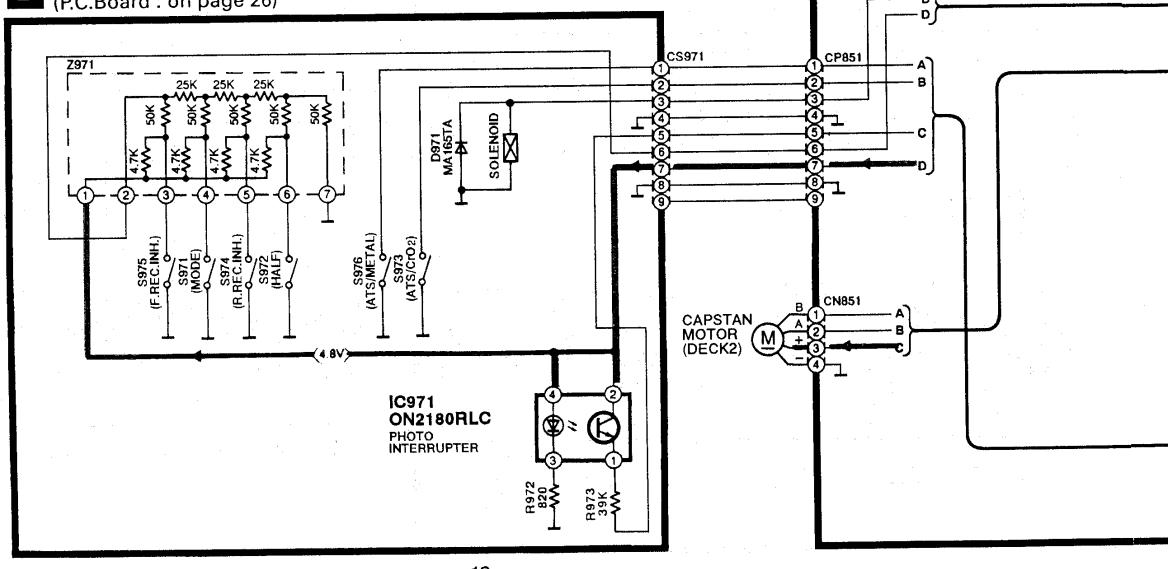
To **E** FL CIRCUIT(CN3B) on page 21



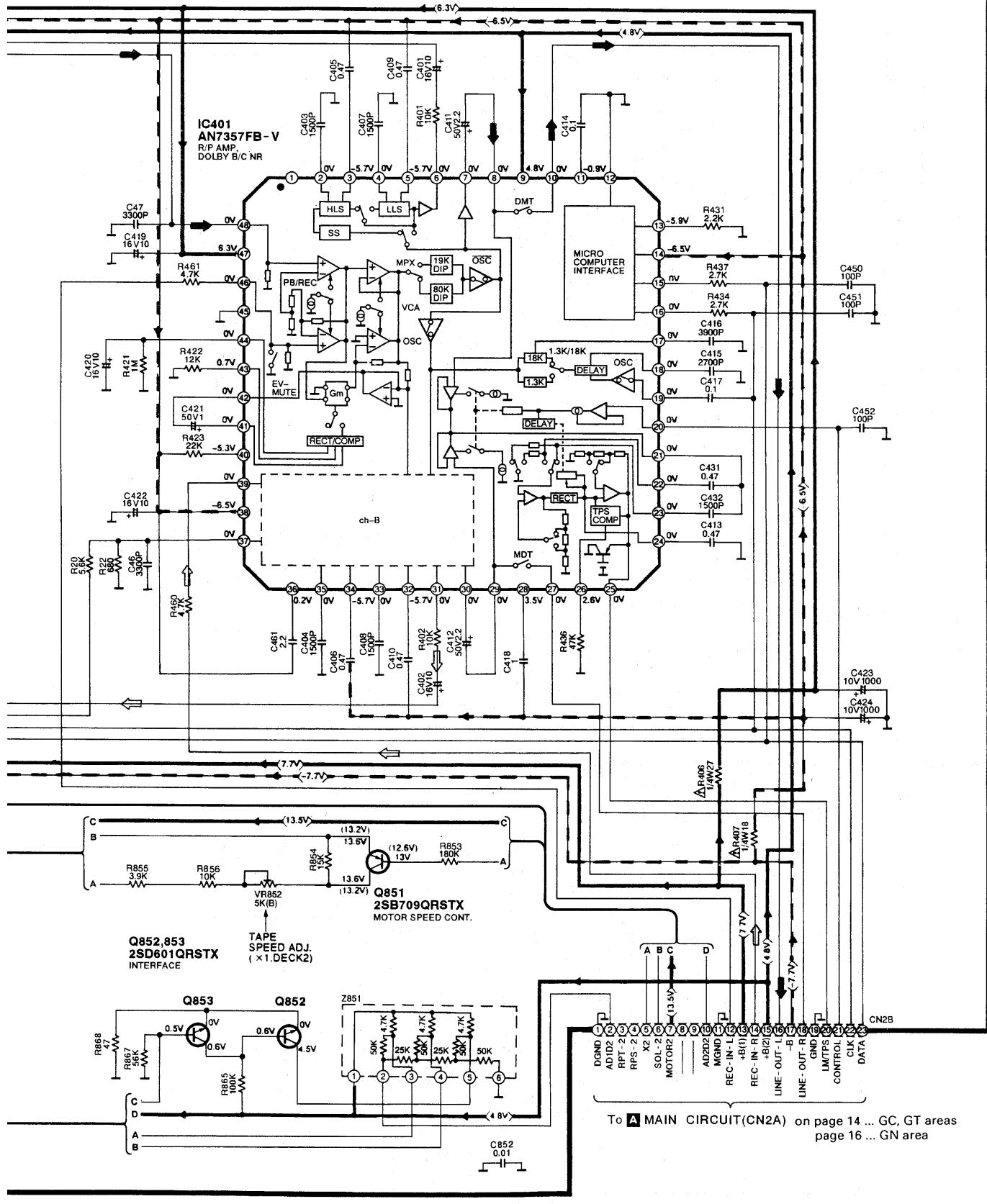
**B MECHANISM CONTROL CIRCUIT(DECK2) (P.C.Board : on page 24)****H MECHANISM CONTROL CIRCUIT(DECK1) (P.C.Board : on page 26)****C DOLBY NOISE REDUCTION CIRCUIT (P.C.Board : on page 25)**



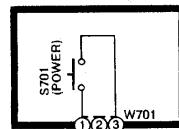
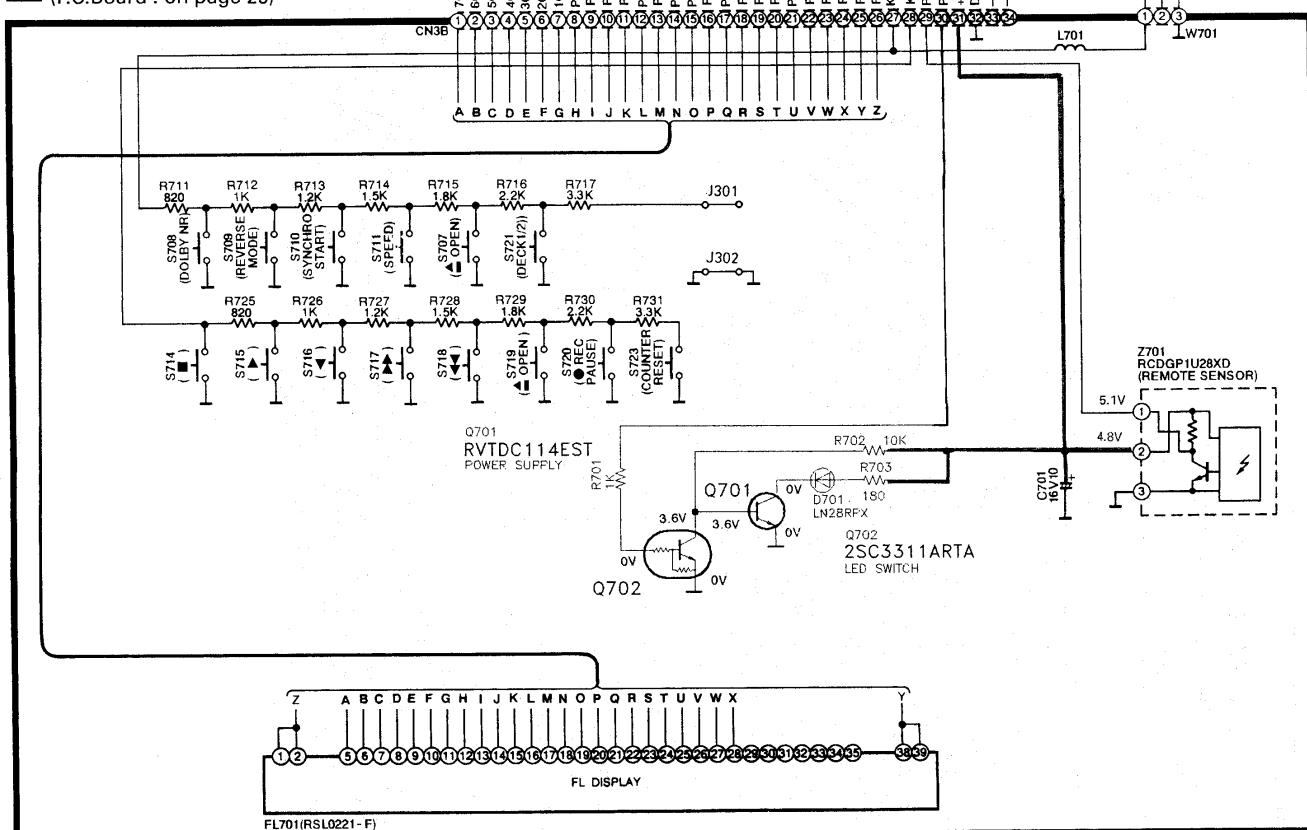
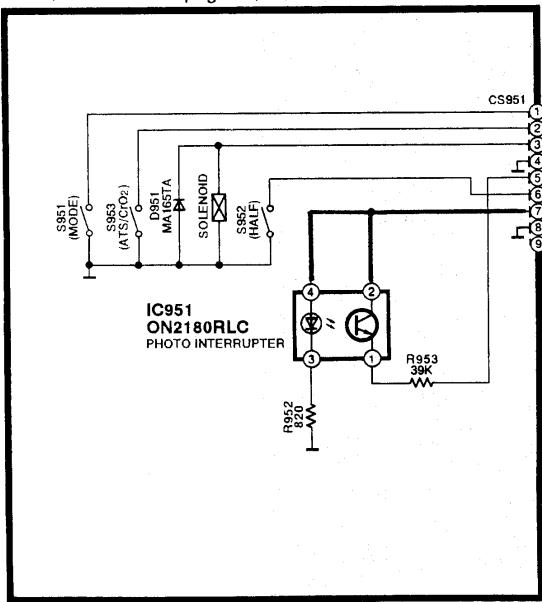
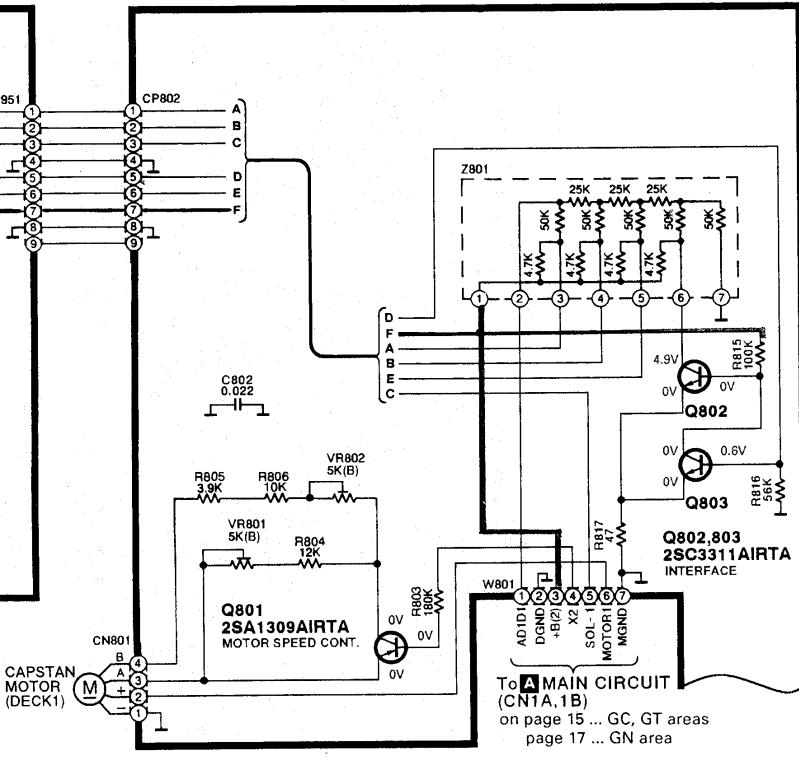
**D MECHANISM CIRCUIT(DECK2)**  
(P.C. Board : on page 26)



**B** MECHANISM CONTROL CIRCUIT(DECK2) (P.C.Board : on page 24)



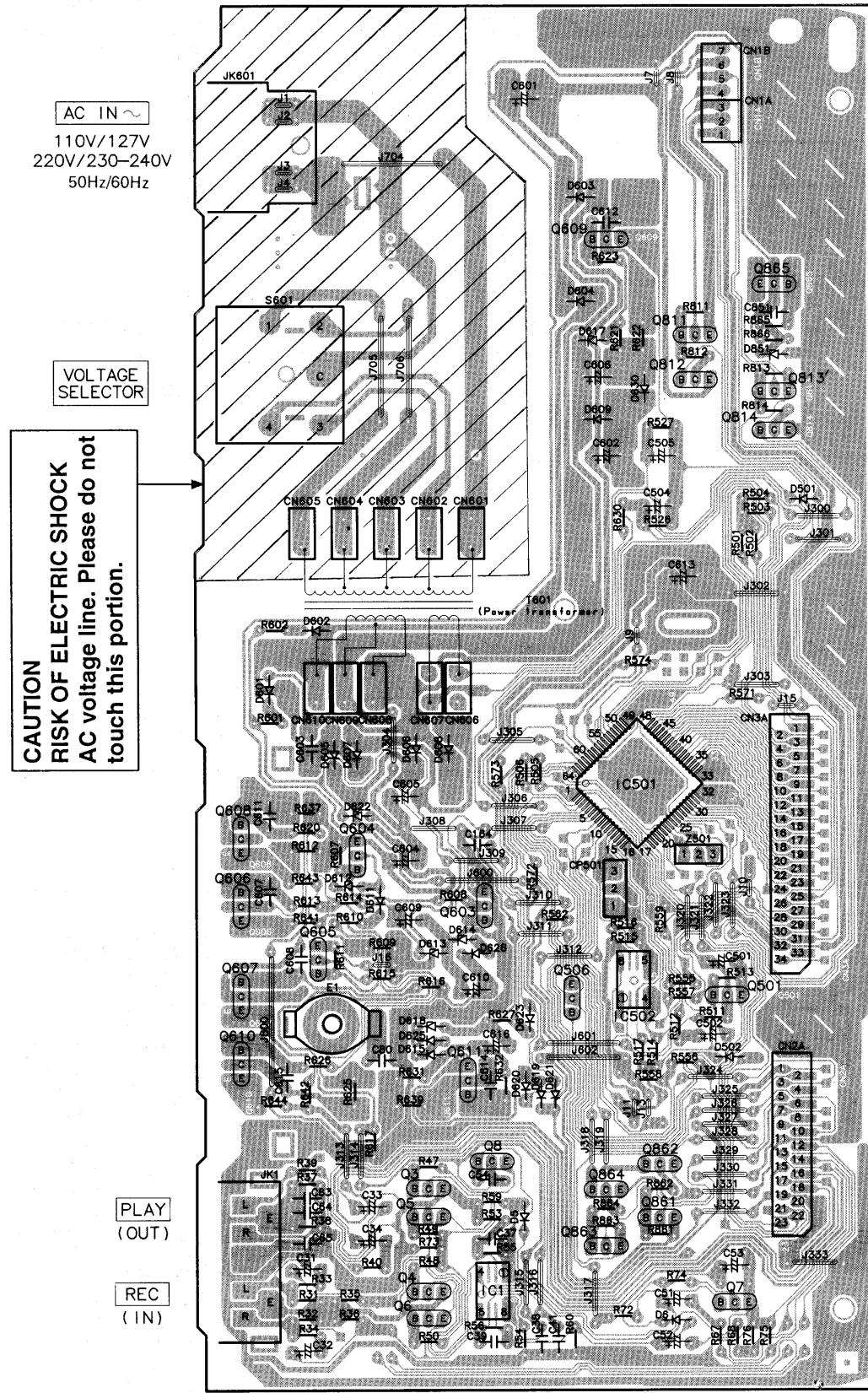
**F POWER SWITCH CIRCUIT**  
(P.C.Board : on page 25)

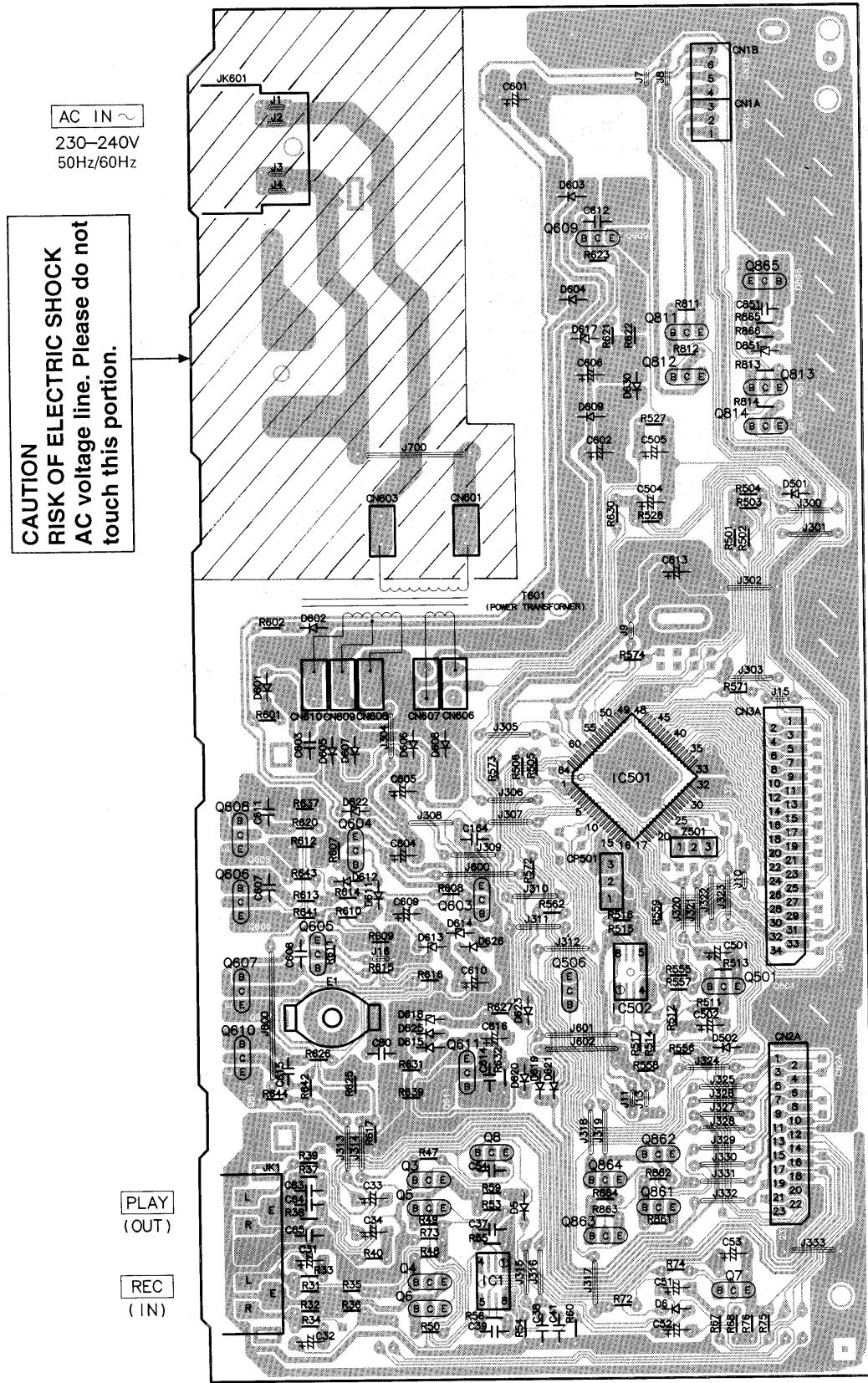
To **A MAIN CIRCUIT(CN3A)** on page 15 ... GC, GT areas  
page 17 ... GN area

**E FL CIRCUIT**  
(P.C.Board : on page 25)

**G MECHANISM CIRCUIT(DECK1)**  
(P.C.Board : on page 26)

**H MECHANISM CONTROL CIRCUIT(DECK1)**  
(P.C.Board : on page 26)


## ■ Printed Circuit Board

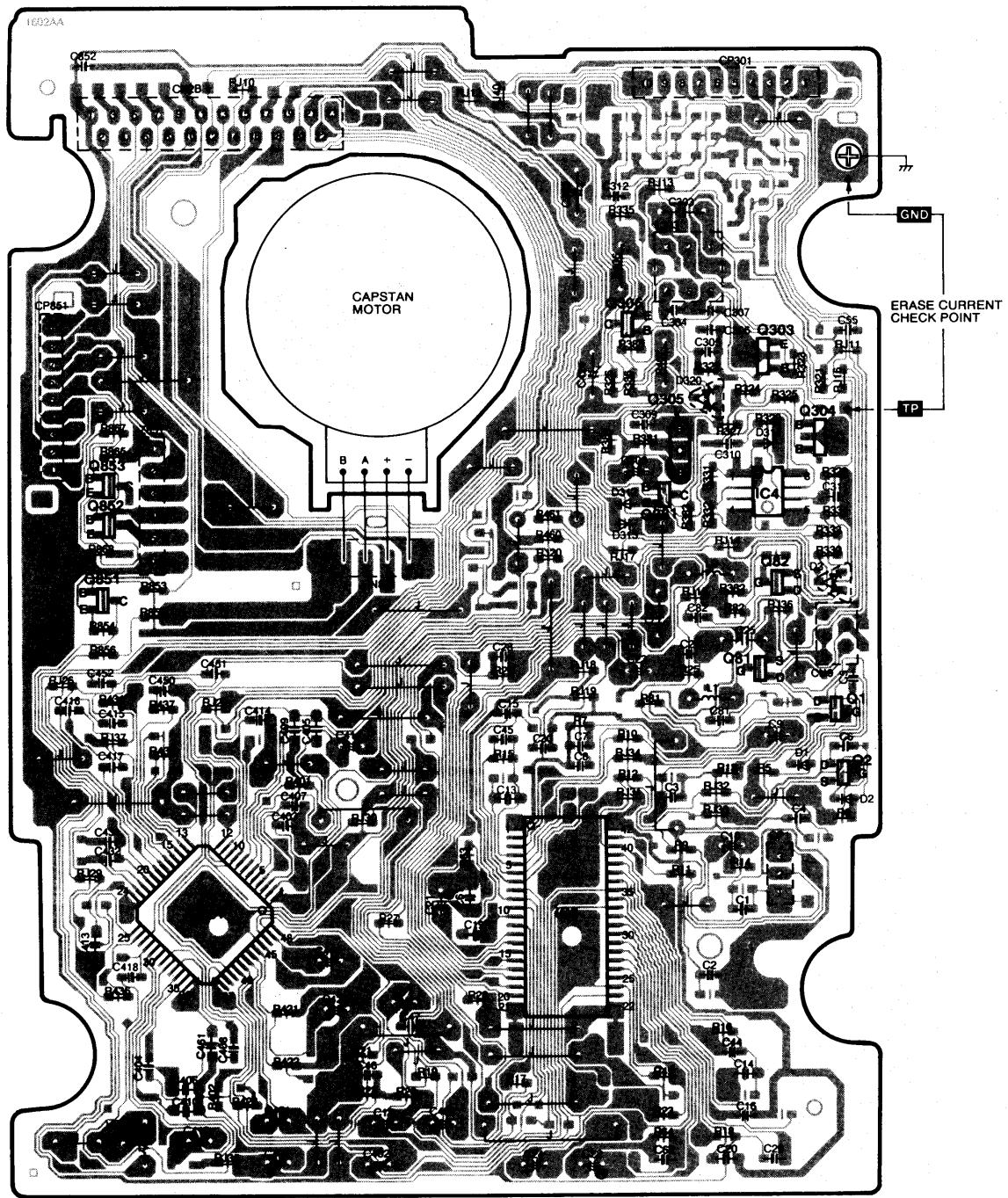
- This circuit board diagram may be modified at any time with the development of new technology.

**A MAIN P.C.B. (REP2259D-M)...GC,GT**

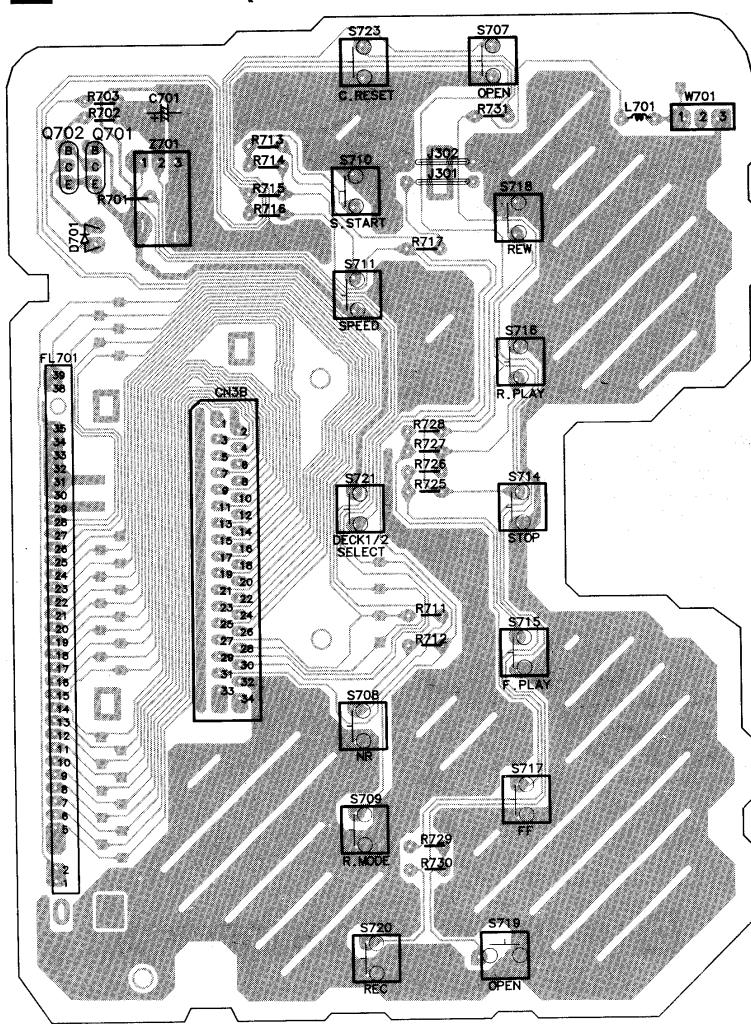


**A MAIN P.C.B. (REP2259E-M)...GN**

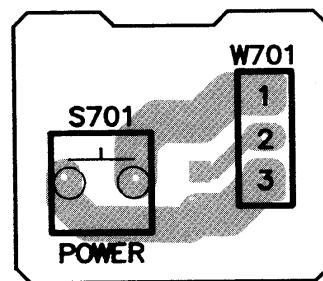
**B MECHANISM CONTROL P.C.B.(DECK 2)  
(REP2262B-T)**



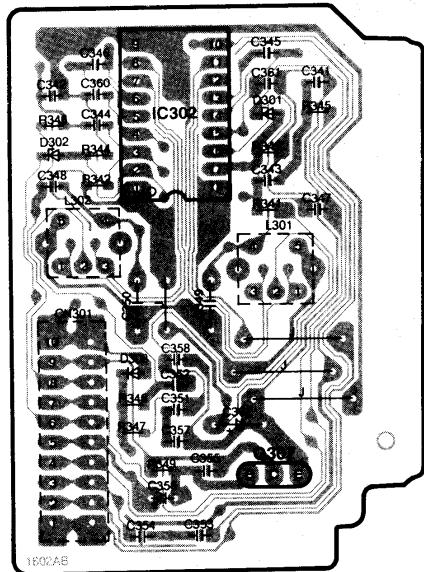
**E FL P.C.B. (REP2260C-S)**



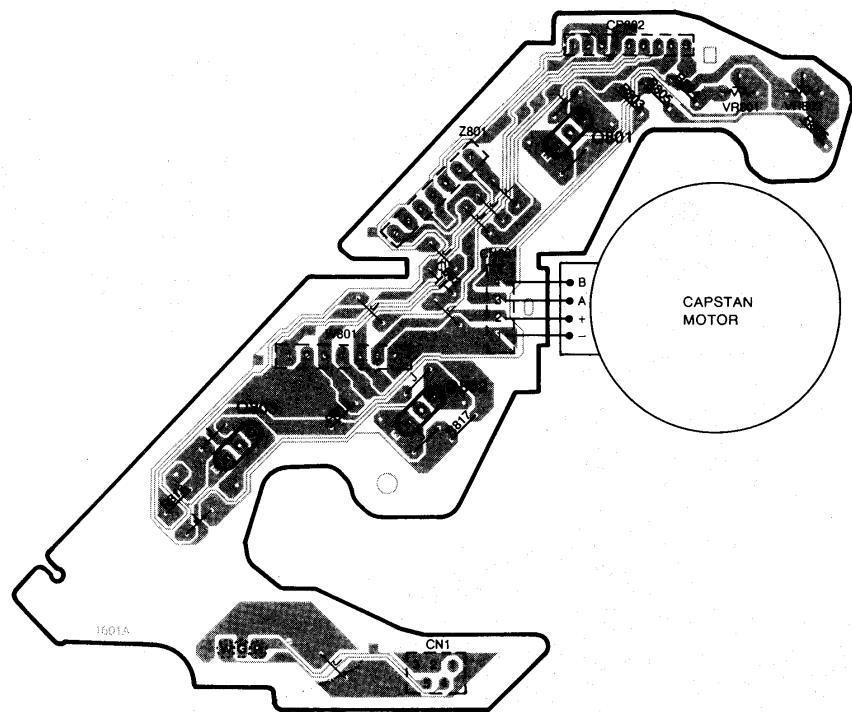
**F POWER SWITCH P.C.B.  
(REP2260C-S)**



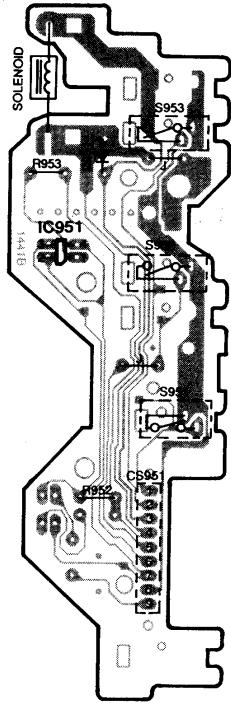
**C DOLBY NOISE REDUCTION P.C.B.  
(REP2262B-T)**



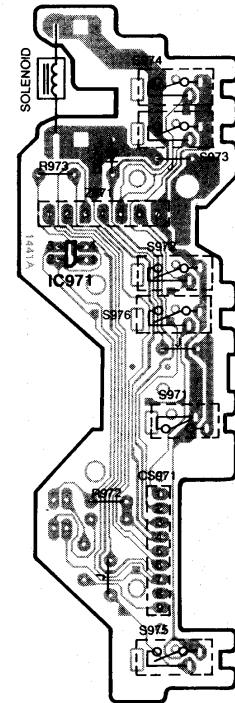
**H MECHANISM CONTROL P.C.B.(DECK 1)  
(REP2261A-T)**



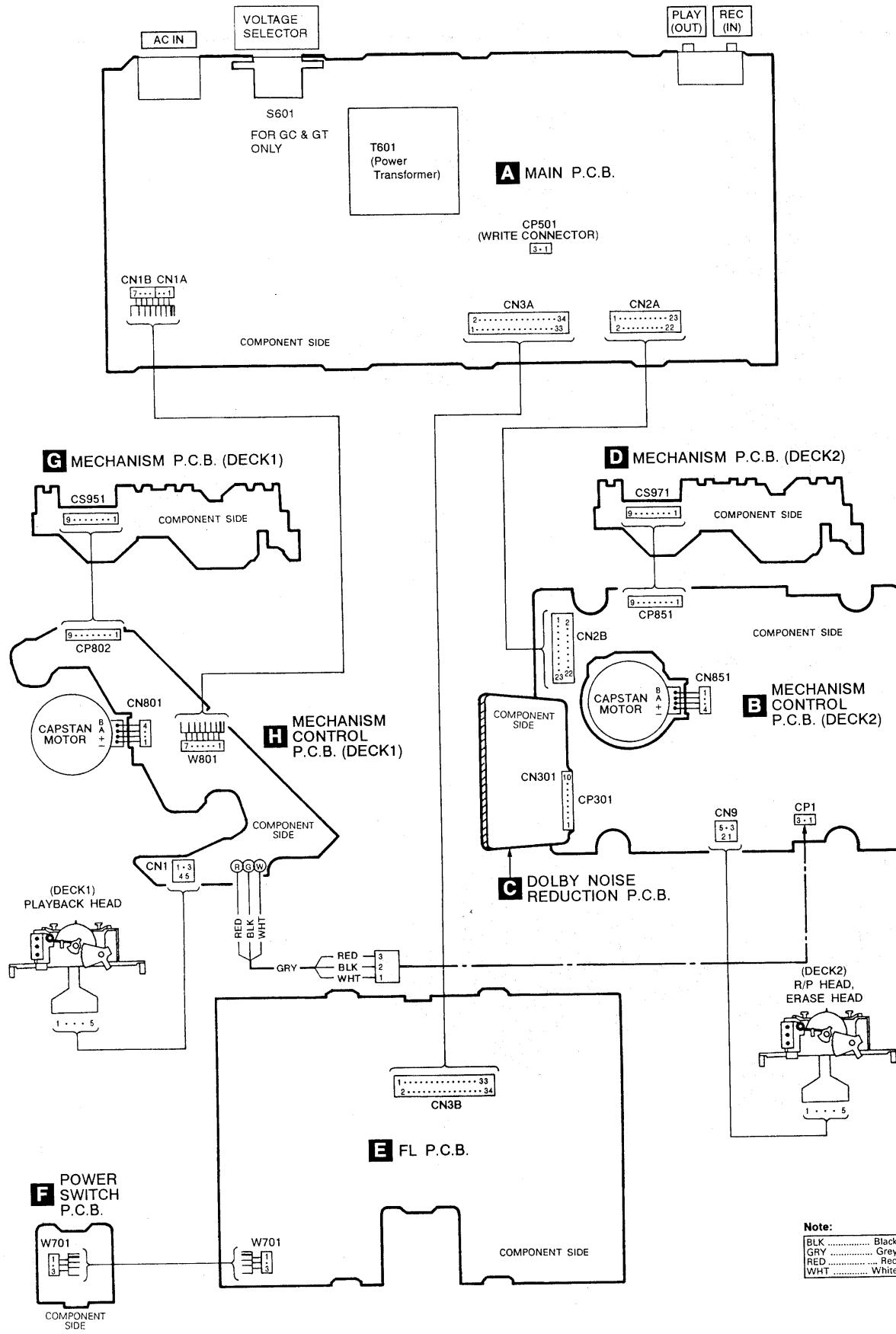
**G MECHANISM P.C.B.(DECK 1)  
(REPX0108A)**



**D MECHANISM P.C.B.(DECK 2)  
(REPX0108B)**

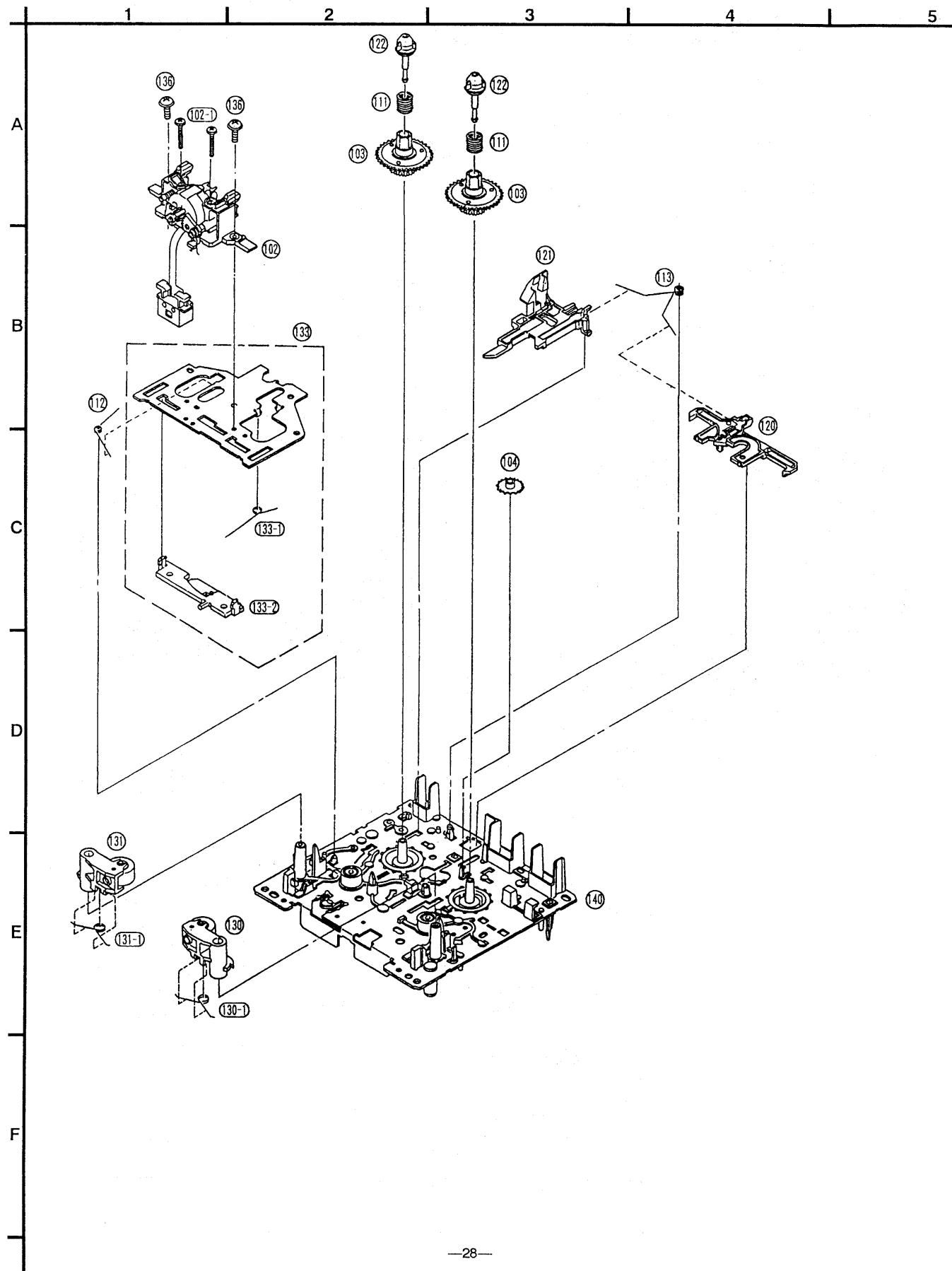


## ■ Wiring Connection Diagram

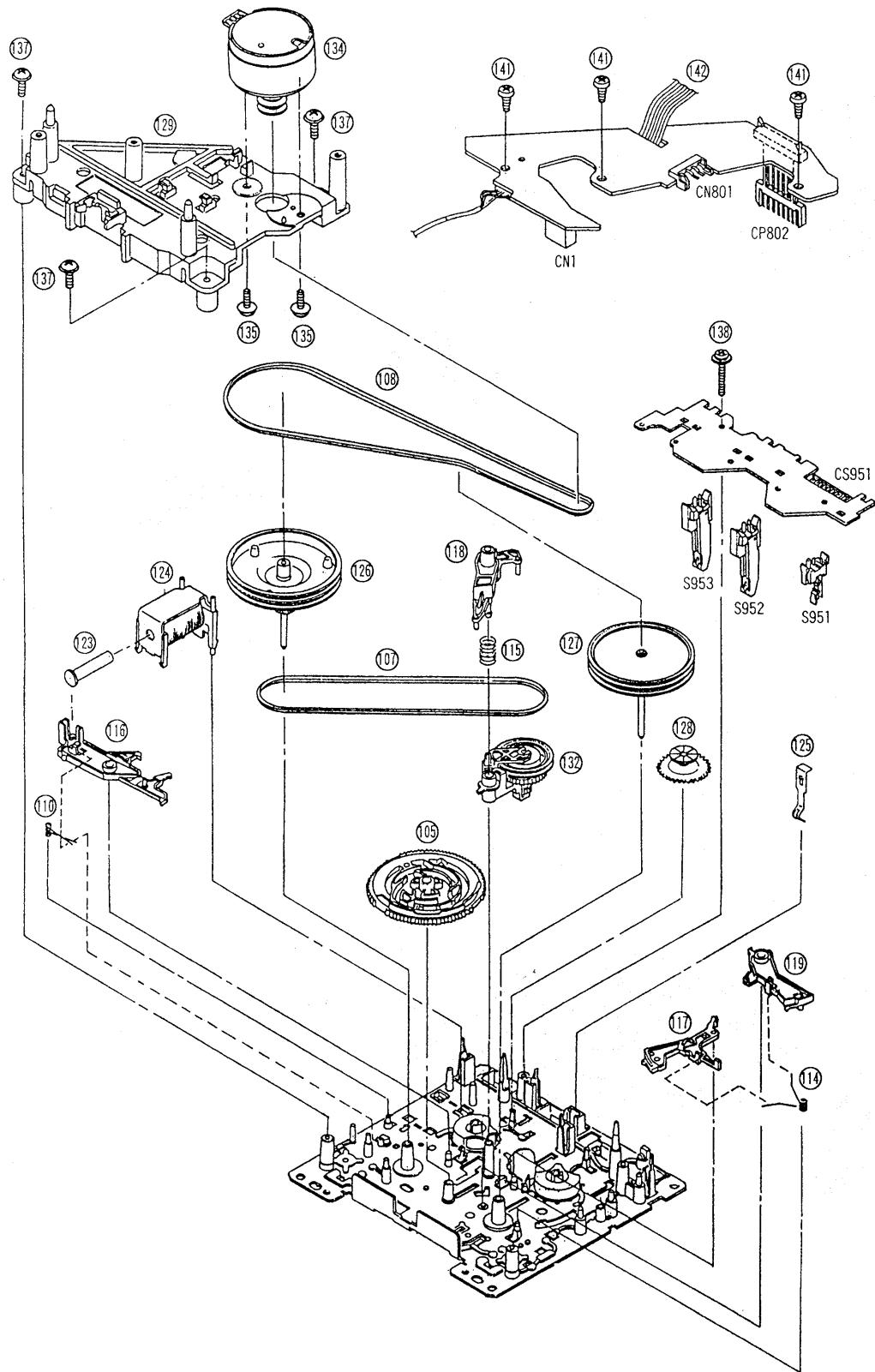


## ■ Mechanism Parts Location

### • DECK 1 (PLAYBACK)

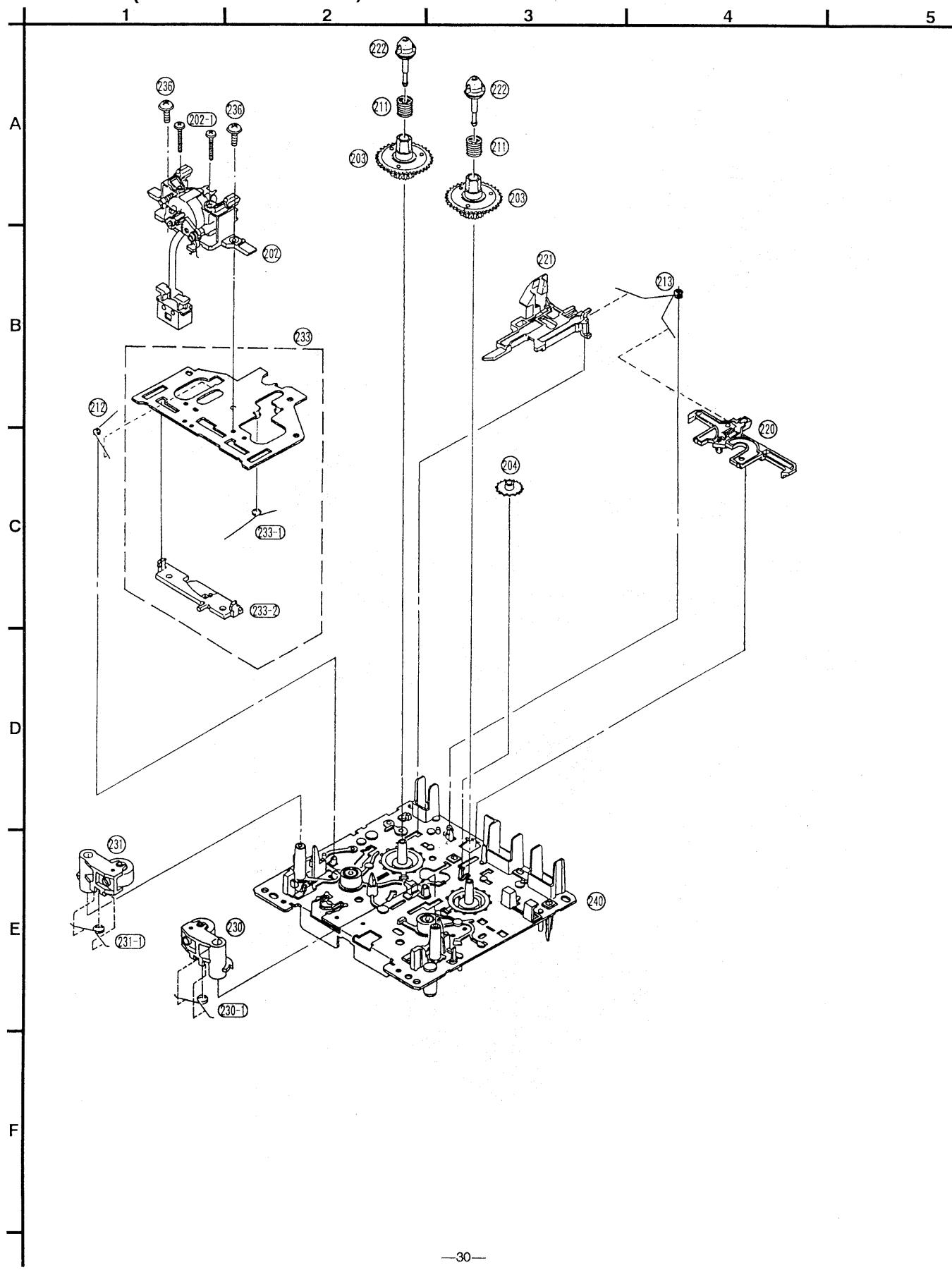


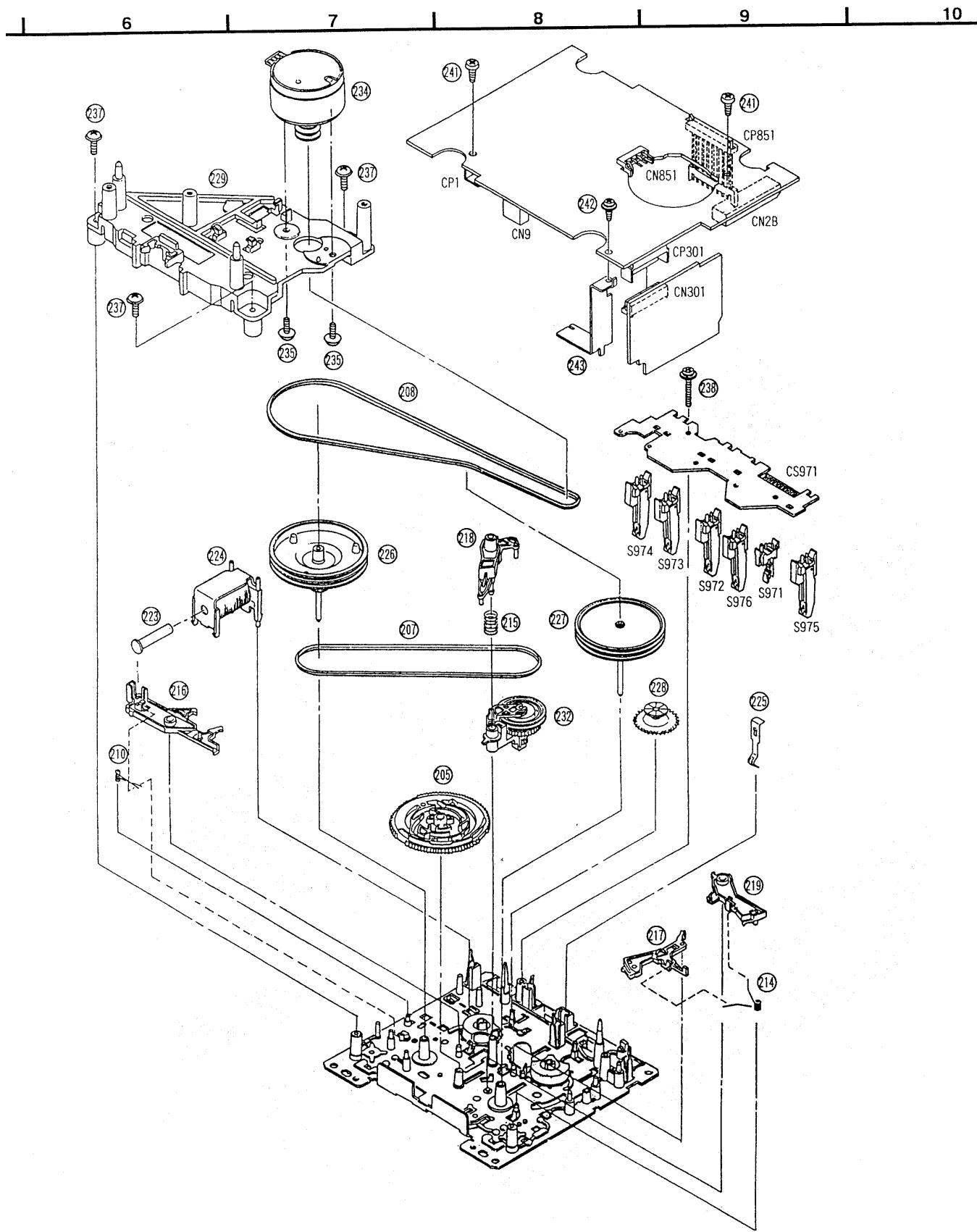
6 \_\_\_\_\_ 7 \_\_\_\_\_ 8 \_\_\_\_\_ 9 \_\_\_\_\_ 10 \_\_\_\_\_



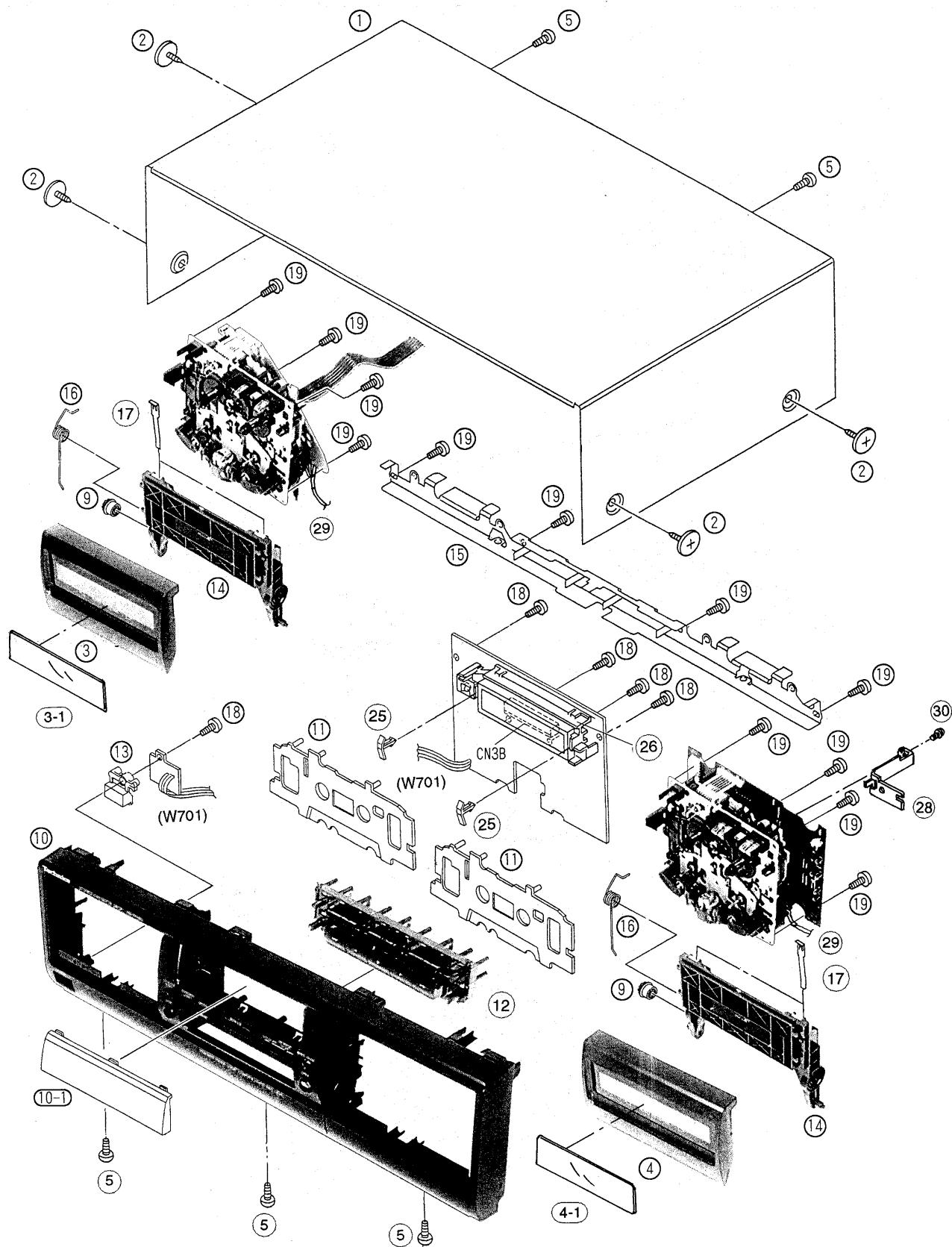
## ■ Mechanism Parts Location

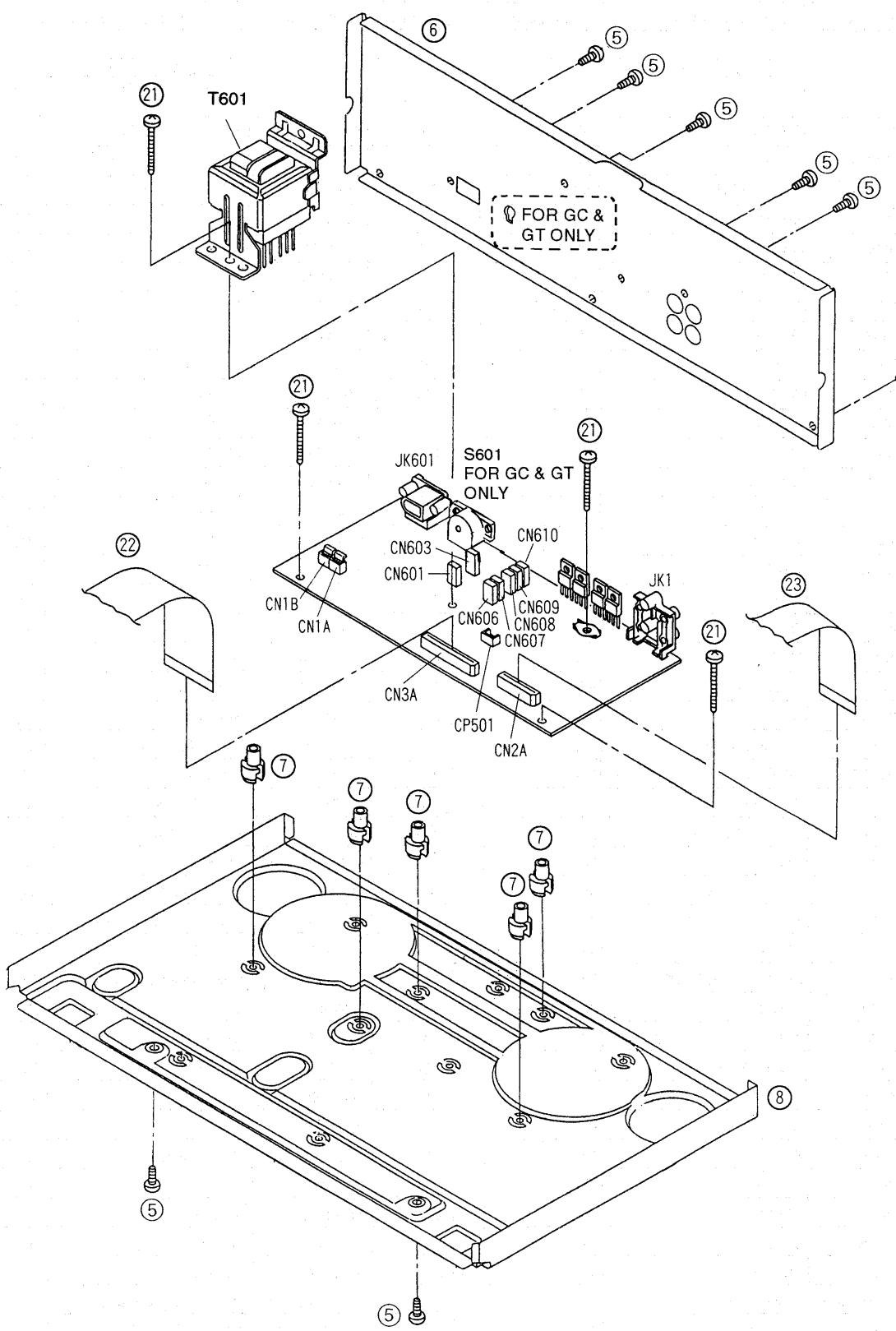
### • DECK 2 (RECORD/PLAYBACK)





## ■ Cabinet Parts Location





## ■ Mechanism Parts List

Note : [M] mark in Remarks column indicates parts that are supplied by MESA

Ref.No.	Part No.	Part Name & Description	Remarks
MECHANISM PARTS LIST			
<b>DECK 1</b>			
102	RED0038	HEAD BLOCK (P.B)	[M]
102-1	RHD17015	SCREW	[M]
103	RDG0300	REEL TABLE A'SSY	[M]
104	RDG0301	GEAR	[M]
105	RDK0026	GEAR	[M]
107	RDV0033-1	BELI1	[M]
108	RDV0034	BELT2	[M]
110	RUW147ZA	SPRING	[M]
111	RMB0400	SPRING	[M]
112	RMB0403	SPRING	[M]
113	RMB0404	SPRING	[M]
114	RMB0406	SPRING	[M]
115	RMB0408	SPRING	[M]
116	RML0370	LEVER	[M]
117	RML0371	LEVER	[M]
118	RML0372	LEVER	[M]
119	RML0374	LEVER	[M]
120	RMM0131	ROD	[M]
121	RMM0133	ROD	[M]
122	RMQ0519	REEL CAP	[M]
123	RMS0398-1	SHAFT	[M]
124	RSJ0003	PLUNGER ASS'Y	[M]
125	RUS609ZC	SPRING	[M]
126	RXF0049	FLYWHEEL ASS'Y	[M]
127	RXF0050	FLYWHEEL ASS'Y	[M]
128	RXG0040	GEAR	[M]
129	RMK0283	SUB CHASSIS	[M]
130	RXL0124	PINCH ROLLER ASS'Y	[M]
130-1	RMB0401	SPRING	[M]
131	RXL0125	PINCH ROLLER ASS'Y	[M]
131-1	RMB0402	SPRING	[M]
132	RXL0126	ARM	[M]
133	RXQ0412	CHASSIS ASS'Y	[M]
133-1	RMB0405	SPRING	[M]
133-2	RMM0132	ROD	[M]
134	REM0055	MOTOR ASS'Y	[M]
135	RHD26022	SCREW	[M]
136	XTW2+5L	SCREW	[M]
137	XTW26+10S	SCREW	[M]
138	XYC2+JF17	SCREW	[M]
140	RFKJSTR280PP	MAIN CHASSIS ASS'Y	[M]
141	XTBS26+8J	SCREW	[M]
142	REZ0893	WIRE ASS'Y	[M]

Ref.No.	Part No.	Part Name & Description	Remarks
MECHANISM PARTS LIST			
<b>DECK 2</b>			
202	RED0037	HEAD BLOCK (R/P)	[M]
202-1	RHD17015	SCREW	[M]
203	RDG0300	REEL TABLE A'SSY	[M]
204	RDG0301	GEAR	[M]
205	RDK0026	GEAR	[M]
207	RDV0033-1	BELI1	[M]
208	RDV0034	BELT2	[M]
210	RMB0399	SPRING	[M]
211	RMB0400	SPRING	[M]
212	RMB0403	SPRING	[M]
213	RMB0404	SPRING	[M]
214	RMB0406	SPRING	[M]
215	RMB0408	SPRING	[M]
216	RML0370	LEVER	[M]
217	RML0371	LEVER	[M]
218	RML0372	LEVER	[M]
219	RML0374	LEVER	[M]
220	RMM0131	ROD	[M]
221	RMM0133	ROD	[M]
222	RMQ0519	REEL CAP	[M]
223	RMS0398-1	SHAFT	[M]
224	RSJ0003	PLUNGER ASS'Y	[M]
225	RUS609ZC	SPRING	[M]
226	RXF0049	FLYWHEEL ASS'Y	[M]
227	RXF0050	FLYWHEEL ASS'Y	[M]
228	RXG0040	GEAR	[M]
229	RMK0283	SUB CHASSIS	[M]
230	RXL0124	PINCH ROLLER ASS'Y	[M]
230-1	RMB0401	SPRING	[M]
231	RXL0125	PINCH ROLLER ASS'Y	[M]
231-1	RMB0402	SPRING	[M]
232	RXL0126	ARM	[M]
233	RXQ0412	CHASSIS ASS'Y	[M]
233-1	RMB0405	SPRING	[M]
233-2	RMM0132	ROD	[M]
234	REM0055	MOTOR ASS'Y	[M]
235	RHD26022	SCREW	[M]
236	XTW2+5L	SCREW	[M]
237	XTW26+10S	SCREW	[M]
238	XYC2+JF17	SCREW	[M]
240	RFKJSTR280PP	MAIN CHASSIS ASS'Y	[M]
241	XTBS26+8J	SCREW	[M]
242	XYC26+JF6	SCREW	[M]
243	RMA0942	ANGLE	[M]

## ■ Replacement Parts List

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

Components identified by mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.  
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

\* The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area.)

Parts without these indication can be used for all areas.

\* [M] in Remarks column indicates parts that are supplied by MESA.

\* The "(SF)" mark denotes the standard part.

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
				IC2	AN7356SC-E2	IC, PB/REC AMP	[M]	Q702	2SC3311ARTA	TRANSISTOR	[M]
		CABINET AND CHASSIS		IC4	BA4560FE2	IC, OP AMP	[M]	Q801	2SA1309ARTA	TRANSISTOR	[M]
1	RKM0260-K1J	CABINET	[M]	IC302	UPC1297CA	IC, DOLBY HX PRO	[M]	Q802	2SC3311ARTA	TRANSISTOR	[M]
2	SNE2129-1	SCREW	[M]	IC401	AN7357FB-V	IC, DOLBY BC	[M]	Q803	2SC3311ARTA	TRANSISTOR	[M]
3	RFKLTR272PBK	CASSETTE LID 1 ASSY	[M]	IC501	M38122M3352F	IC, MICROCOM	[M]	Q811	KSB564ACYGTA	TRANSISTOR	[M]
3-1	RKW0450-K1	CASS. WINDOW	[M]	IC502	ST93C46TM6TR	IC, EEPROM	[M]	Q812	RVTDT114EST	TRANSISTOR	[M]
4	RFKLTR272PAK	CASSETTE LID 2 ASSY	[M]	IC951	ON2180RLC	IC, PHOTOINTERRUPTER	[M]	Q813	KSB564ACYGTA	TRANSISTOR	[M]
4-1	RKW0450-K1	CASS. WINDOW	[M]	IC971	ON2180RLC	IC, PHOTOINTERRUPTER	[M]	Q814	RVTDT114EST	TRANSISTOR	[M]
5	XTBS3+8JFZ1	SCREW	[M]					Q851	2SB709ATX	TRANSISTOR	[M]
6	RGR0238D-A	REAR PANEL	[M] GC					Q852	2SD601ATX	TRANSISTOR	[M]
6	RGR0239G-A1	REAR PANEL	[M] GN					Q853	2SD601ATX	TRANSISTOR	[M]
6	RGR0238D-B	REAR PANEL	[M] GT	Q1	2SJ163PQRTX	TRANSISTOR	[M]	Q861	KSB564ACYGTA	TRANSISTOR	[M]
7	RKQ0089	PCB HOLDER	[M]	Q2	2SJ163PQRTX	TRANSISTOR	[M]	Q862	RVTDT114EST	TRANSISTOR	[M]
8	RFKJTR272GCK	BOTTOM CHASIS ASSY	[M]	Q3	2SC3312RSTA	TRANSISTOR	[M]	Q863	KSB564ACYGTA	TRANSISTOR	[M]
9	RDG0357	DUMPPING GEAR	[M]	Q4	2SC3312RSTA	TRANSISTOR	[M]	Q864	RVTDT114EST	TRANSISTOR	[M]
10	RFKGTR272GCK	FRONT PANEL ASSY	[M]	Q5	2SC3312RSTA	TRANSISTOR	[M]	Q865	2SD2037ETA	TRANSISTOR	[M]
10-1	RKW0443B-R	FL WINDOW	[M]	Q6	2SC3312RSTA	TRANSISTOR	[M]				
11	RGK0802-K	ORNAMENT PLATE	[M]	Q7	2SC3311ARTA	TRANSISTOR	[M]				
12	RGU1380-K	OPERATION BUTTON	[M]	Q8	2SC3311ARTA	TRANSISTOR	[M]				
13	RGU1381-K	POWER BUTTON	[M]	Q81	2SK1103PQRTX	TRANSISTOR	[M]	D1	MA111TX	DIODE	[M]
14	RFKLTR272PCK	CASSETTE HOLDER ASSY	[M]	Q82	2SK1103PQRTX	TRANSISTOR	[M]	D2	MA111TX	DIODE	[M]
15	RMA0943	MECHA ANGLE	[M]	Q303	2SD874QRSTX	TRANSISTOR	[M]	D3	MA152WATX	DIODE	[M]
16	RMB0477	OPEN SPRING	[M]	Q304	2SD874QRSTX	TRANSISTOR	[M]	D5	MA165TA	DIODE	[M]
17	RUS757ZAA	CASS. HALF SPRING	[M]	Q305	KSD471ACYGTA	TRANSISTOR	[M]	D6	MA165TA	DIODE	[M]
18	XTBS26+8J	SCREW	[M]	Q306	2SB710AQRSTX	TRANSISTOR	[M]	D301	MA8056MTX	DIODE	[M]
19	XTB3+10JFZ	SCREW	[M]	Q307	KSB564ACYGTA	TRANSISTOR	[M]	D302	MA8056MTX	DIODE	[M]
21	XTB3+20JFZ	SCREW	[M]	Q381	2SD601ATX	TRANSISTOR	[M]	D303	MA110TX	DIODE	[M]
22	REE0787	34 FFC L=190	[M]	Q501	2SC3311ARTA	TRANSISTOR	[M]	D312	MA112TX	DIODE	[M]
23	REE0788	23 FFC L=175	[M]	Q506	RVTDT114EST	TRANSISTOR	[M]	D313	MA112TX	DIODE	[M]
25	RMN0195	FL-SUPPORT	[M]	Q603	RVTDT114EST	TRANSISTOR	[M]	D314	MA110TX	DIODE	[M]
26	RMN0377	FL HOLDER	[M]	Q604	2SA1309ARTA	TRANSISTOR	[M]	D320	MA152WATX	DIODE	[M]
28	RMA0942	MECHA PB ANGLE	[M]	Q605	2SC3311ARTA	TRANSISTOR	[M]	D501	MA165TA	DIODE	[M]
29	REZ0894	HEAD WIRE KIT	[M]	Q606	2SD2037ETA	TRANSISTOR	[M]	D502	MA165TA	DIODE	[M]
				Q607	2SB1357ETA	TRANSISTOR	[M]	D601	MA165TA	DIODE	[M]
				Q608	2SD2037ETA	TRANSISTOR	[M]	D602	MA165TA	DIODE	[M]
				Q609	KSB564ACYGTA	TRANSISTOR	[M]	D603	RL1N4003N02	DIODE	[M]
				Q610	2SB1357ETA	TRANSISTOR	[M]	D604	RL1N4003N02	DIODE	[M]
				Q611	KSD471ACYGTA	TRANSISTOR	[M]	D605	RL1N4003N02	DIODE	[M]
				Q701	RVTDT114EST	TRANSISTOR	[M]	D606	RL1N4003N02	DIODE	[M]
IC1	BA4560FE2	IC, OP AMP	[M]								

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
D607	RL1N4003N02	DIODE	[M]▲	S952	RSH1A019-2U	SW,HALF(DECK1)	[M]	T601	RTP1K4E032-V	POWERTRANSFORMER▲	[M]GC,GT
D608	RL1N4003N02	DIODE	[M]▲	S953	RSH1A019-2U	SW,ATS/CrO2(DECK1)	[M]				
D609	RL1N4003N02	DIODE	[M]▲	S971	RSH1A018-1U	SW,MODE(DECK2)	[M]				
D611	MA165TA	DIODE	[M]	S972	RSH1A019-2U	SW,HALF(DECK12)	[M]				COMPONENT COMBINATION
D612	MA165TA	DIODE	[M]	S973	RSH1A019-2U	SW,ATS/CrO2(DECK2)	[M]				
D613	MTZJ8R2CTA	DIODE	[M]▲	S974	RSH1A019-2U	SW,R,REC.1NH.(DECK2)	[M]	Z501	EFOEC6004T4	CERAMIC OSCILLATOR	[M]
D614	MTZJ6R2BTA	DIODE	[M]▲	S975	RSH1A019-2U	SW,F,REC.1NH.(DECK2)	[M]	Z701	RCDGP1U28XD	REMOTE SENSOR	[M]
D615	MA165TA	DIODE	[M]	S976	RSH1A019-2U	SW,ATS/METAL(DECK2)	[M]	Z801	EXBF7L355SYV	RADIAL RESISTOR	[M]
D617	MTZJ20BTA	DIODE	[M]▲					Z851	EXBF6L306SYV	BLOCK RESISTOR	[M]
D618	MTZJ5R1BTA	DIODE	[M]▲					Z971	EXBF7L355SYV	COMPONENTCOMBINATION	[M]
D619	MA178TA	DIODE	[M]								
D620	RL1N4003N02	DIODE	[M]	CN1	RJS2A0205-2S	5P CONNECTOR	[M]				DISPLAY TUBE
D621	MA165TA	DIODE	[M]	CN1	RJS7T5ZA	7P CONNECTOR	[M]				
D622	MTZJ5R1BTA	DIODE	[M]▲	CN2A	RJS1A9423	FFC CONNECTOR	[M]	FL701	RSL0221-F	FL DISPLAY	[M]
D623	MA165TA	DIODE	[M]	CN2B	RJS1A9323	FFC CONNECTOR	[M]				
D625	MA165TA	DIODE	[M]	CN3A	RJS1A6834	FFC CONNECTOR	[M]				JACKS
D626	MA29TATA	DIODE	[M]	CN3B	RJS1A6234-1	FFC CONNECTOR	[M]				
D630	RL1N4003N02	DIODE	[M]▲	CN9	RJS2A0205-2S	HEAD SOCKET	[M]	JK1	SJF3069-5N	LINE IN JACK	[M]
D701	LN28RPX	DIODE	[M]	CN301	RJU057W010	CONNECTOR	[M]	JK601	SJS9236	SOCKET	[M]▲
D851	MTZJ10BTA	DIODE	[M]▲	CN601	RJS1A1101T1	CONNECTOR	[M]				EARTH TERMINAL
D951	MA165TA	DIODE	[M]	CN602	RJS1A1101T1	CONNECTOR	[M]GC,GT				
D971	MA165TA	DIODE	[M]	CN603	RJS1A1101T1	CONNECTOR	[M]				
				CN604	RJS1A1101T1	CONNECTOR	[M]GC,GT				
		VARIABLERESISTORS		CN605	RJS1A1101T1	CONNECTOR	[M]GC,GT				
				CN606	RJS1A1101T1	CONNECTOR	[M]				PACKING MATERIALS
VR801	EVND2AA03B53	VARIABLERESISTOR	[M]	CN607	RJS1A1101T1	CONNECTOR	[M]				
VR802	EVND2AA03B53	VARIABLERESISTOR	[M]	CN608	RJS1A1101T1	CONNECTOR	[M]	P1	RPG3338	PACKING BLOCK	[M]GC,GN
VR852	EVNDCAA03B53	VARIABLERESISTOR	[M]	CN609	RJS1A1101T1	CONNECTOR	[M]	P1	RPG3590	PACKING BLOCK	[M]GT
				CN610	RJS1A1101T1	CONNECTOR	[M]	P2	RPN0664-1	POLYFOAM	[M]
		SWITCHES		CN801	RJR0113	4P CONNECTOR	[M]	P3	RPQ0164	ACCESSORY PAD	[M]
S601	RSR4A001S-H	VOLTAGE SELECTOR▲	[M]GC,GT	CN851	RJR0113	4P CONNECTOR	[M]	P4	RPFX0005	MIRAMAT BAG	[M]
S701	EVQ21405R	SW, POWER	[M]	CP1	RJP3G17ZA	3P CONNECTOR	[M]				ACCESSORIES
S707	EVQ21405R	SW, OPEN/CLOSE	[M]	CP301	RJT057W010-1	CONNECTOR	[M]				
S708	EVQ21405R	SW, DOLBY NR	[M]	CP501	RJT029W03VT	2.5MM CONNECTOR	[M]				
S709	EVQ21405R	SW, REVERSE MODE	[M]	CP802	RJT071H09A	9P B-B PIN	[M]	A1	RJA0019-2A	AC CORD (SF)▲	[M]GC,GT
S710	EVQ21405R	SW, SYNCHRO START	[M]	CP851	RJT071H09A	9P B-B PIN	[M]	A1	RJA0035-K	AC CORD (SF)▲	[M]GN
S711	EVQ21405R	SW, SPEED	[M]	CS951	RJU071H09M	CONNECTOR(9P)	[M]	A2	RJL2P004B08	STEREO CONN CABLE	[M]
S714	EVQ21405R	SW, STOP	[M]	CS971	RJU071H09M	CONNECTOR(9P)	[M]	A3	XZB24X33C04	VINYL BAG	[M]
S715	EVQ21405R	SW, F. PLAY	[M]					A4	RFKSTR272GCK	INSTR MANUAL ASS'Y	[M]GC
S716	EVQ21405R	SW, R. PLAY	[M]					A4	RQT3812-G	INSTR MANUAL	[M]GN,GT
S717	EVQ21405R	SW, FF	[M]	L1	RLQX303JT-K	INDUCTOR	[M]	A5	SJP5213-2	AC CORD ADAPTOR	[M]GC,GT
S718	EVQ21405R	SW, REW	[M]	L2	RLQX303JT-K	INDUCTOR	[M]				
S719	EVQ21405R	SW, OPEN/CLOSE	[M]	L301	SL09B1-Z	COIL	[M]				
S720	EVQ21405R	SW, REC PAUSE	[M]	L302	SL09B1-Z	COIL	[M]				
S721	EVQ21405R	SW, DECK 1/2	[M]	L303	SL09B4-K	COIL	[M]				
S723	EVQ21405R	SW, COUNTER RESET	[M]	L701	RLQZP100KT-Y	AXIAL COIL	[M]				
S951	RSH1A018-1U	SW,MODE(DECK1)	[M]	T601	RTP1K4B026-V	POWERTRANSFORMER	[M]GN▲				

## ■ Resistors & Capacitors

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When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

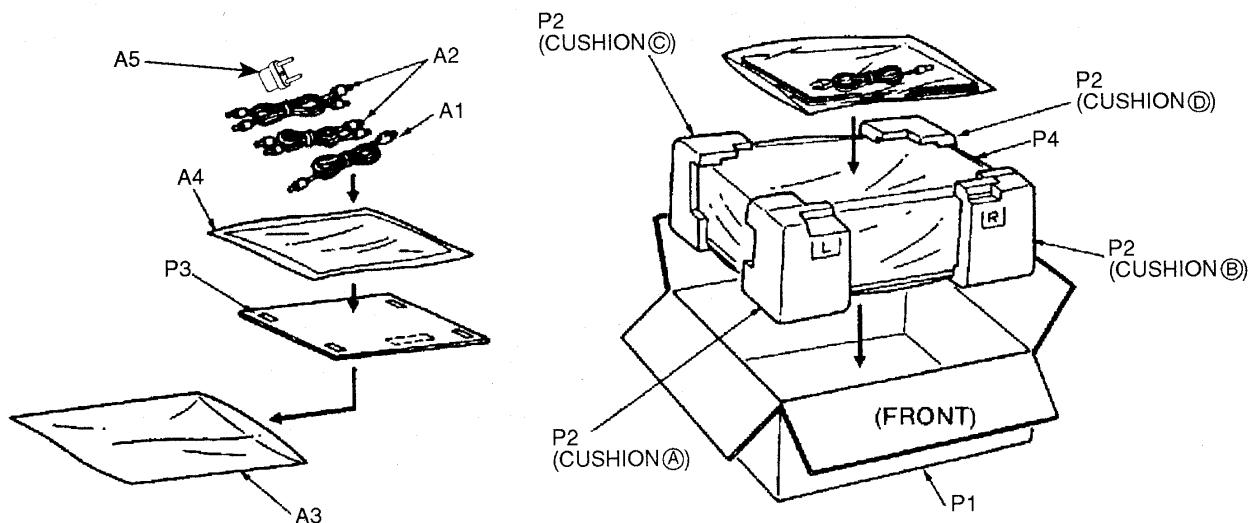
\* Capacitor values are in microfarad ( $\mu\text{F}$ ) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)

\* Resistors 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	Ref No.	Part No.	Values & Remarks
	<b>RESISTORS</b>		R56	ERDS2TJ104T	100K 1/4W [M]	R384	ERJ6GEYJ153V	15K 1/10W [M]	R607	ERDS2TJ472T	4.7K 1/4W [M]
			R59	ERDS2TJ103T	10K 1/4W [M]	R385	ERJ6GEYJ101V	100 1/10W [M]	R608	ERDS2TJ103T	10K 1/4W [M]
R5	ERJ6GEYJ225V	2.2M 1/10W [M]	R60	ERDS2TJ103T	10K 1/4W [M]	R401	ERJ6GEYJ103V	10K 1/10W [M]	R609	ERD2FCVG150T	15 1/4W [M]
R6	ERJ6GEYJ225V	2.2M 1/10W [M]	R63	ERJ6GEYJ223V	22K 1/10W [M]	R402	ERJ6GEYJ103V	10K 1/10W [M]	R610	ERDS2TJ472T	4.7K 1/4W [M]
R7	ERJ6GEYJ225V	2.2M 1/10W [M]	R64	ERJ6GEYJ223V	22K 1/10W [M]	R406	ERD2FCVG270T	27 1/4W [M]	R611	ERDS2TJ104T	100K 1/4W [M]
R9	ERJ6GEYJ101V	100 1/10W [M]	R67	ERDS2TJ472T	4.7K 1/4W [M]	R407	ERD2FCVG180T	18 1/4W [M]	R612	ERD2FCVG150T	15 1/4W [M]
R10	ERJ6GEYJ101V	100 1/10W [M]	R68	ERDS2TJ472T	4.7K 1/4W [M]	R421	ERJ6GEYJ105V	1M 1/10W [M]	R613	ERDS2TJ101T	100 1/4W [M]
R11	ERJ6GEYJ101V	100 1/10W [M]	R72	ERDS2TJ222T	2.2K 1/4W [M]	R422	ERJ6GEYJ123V	12K 1/10W [M]	R614	ERDS2TJ471T	470 1/4W [M]
R12	ERJ6GEYJ101V	100 1/10W [M]	R73	ERDS2TJ225T	2.2M 1/4W [M]	R423	ERJ6GEYJ223V	22K 1/10W [M]	R615	ERDS2TJ471T	470 1/4W [M]
R13	ERJ6GEYJ470V	47 1/10W [M]	R74	ERDS2TJ221T	220 1/4W [M]	R431	ERJ6GEYJ222V	2.2K 1/10W [M]	R616	ERDS2TJ101T	100 1/4W [M]
R14	ERJ6GEYJ470V	47 1/10W [M]	R75	ERDS2TJ331T	330 1/4W [M]	R434	ERJ6GEYJ272V	2.7K 1/10W [M]	R617	ERDS2TJ102T	1K 1/4W [M]
R15	ERJ6GEYJ394V	390K 1/10W [M]	R76	ERDS2TJ331T	330 1/4W [M]	R436	ERJ6GEYJ473V	47K 1/10W [M]	R620	ERDS2TJ101T	100 1/4W [M]
R16	ERJ6GEYJ394V	390K 1/10W [M]	R81	ERJ6GEYJ225V	2.2M 1/10W [M]	R437	ERJ6GEYJ272V	2.7K 1/10W [M]	R621	ERDS2TJ222T	2.2K 1/4W [M]
R17	ERJ6GEYJ122V	1.2K 1/10W [M]	R82	ERJ6GEYJ225V	2.2M 1/10W [M]	R460	ERJ6GEYJ472V	4.7K 1/10W [M]	R622	ERD2FCVG150T	15 1/4W [M]
R18	ERJ6GEYJ122V	1.2K 1/10W [M]	R321	ERJ6GEYJ1R0V	1 1/10W [M]	R461	ERJ6GEYJ472V	4.7K 1/10W [M]	R623	ERDS2TJ101T	100 1/4W [M]
R19	ERJ6GEYJ562V	5.6K 1/10W [M]	R322	ERJ6GEYJ183V	18K 1/10W [M]	R501	ERDS2TJ473T	47K 1/4W [M]	R625	ERD2FCVG150T	15 1/4W [M]
R20	ERJ6GEYJ562V	5.6K 1/10W [M]	R323	ERJ6GEYJ183V	18K 1/10W [M]	R502	ERDS2TJ473T	47K 1/4W [M]	R626	ERDS2TJ101T	100 1/4W [M]
R21	ERJ6GEYJ681V	680 1/10W [M]	R324	ERJ6GEYJ100V	10 1/10W [M]	R503	ERDS2TJ473T	47K 1/4W [M]	R627	ERDS2TJ103T	10K 1/4W [M]
R22	ERJ6GEYJ681V	680 1/10W [M]	R325	ERJ6GEYJ100V	10 1/10W [M]	R504	ERDS2TJ473T	47K 1/4W [M]	R630	ERDS2TJ2R7T	2.7 1/4W [M]
R23	ERJ6GEYJ122V	1.2K 1/10W [M]	R326	ERJ6GEYJ122V	1.2K 1/10W [M]	R505	ERDS2TJ103T	10K 1/4W [M]	R631	ERDS2TJ102T	1K 1/4W [M]
R25	ERJ6GEYJ103V	10K 1/10W [M]	R327	ERJ6GEYJ102V	1K 1/10W [M]	R506	ERDS2TJ103T	10K 1/4W [M]	R632	ERDS2TJ101T	100 1/4W [M]
R26	ERJ6GEYJ103V	10K 1/10W [M]	R328	ERJ6GEYJ561V	560 1/10W [M]	R511	ERDS2TJ103T	10K 1/4W [M]	R637	ERD2FCVG150T	15 1/4W [M]
R27	ERJ6GEYJ272V	2.7K 1/10W [M]	R329	ERJ6GEYJ393V	39K 1/10W [M]	R512	ERDS2TJ471T	470 1/4W [M]	R639	ERD2FCVG330T	33 1/4W [M]
R28	ERJ6GEYJ272V	2.7K 1/10W [M]	R330	ERJ6GEYJ272V	2.7K 1/10W [M]	R513	ERDS2TJ103T	10K 1/4W [M]	R641	ERDS2TJ2R2T	2.2 1/4W [M]
R31	ERDS2TJ334T	330K 1/4W [M]	R331	ERJ6GEYJ682V	6.8K 1/10W [M]	R514	ERDS2TJ223T	22K 1/4W [M]	R642	ERDS2TJ2R2T	2.2 1/4W [M]
R32	ERDS2TJ334T	330K 1/4W [M]	R332	ERJ6GEYJ102V	1K 1/10W [M]	R515	ERDS2TJ223T	22K 1/4W [M]	R643	ERDS2TJ2R2T	2.2 1/4W [M]
R33	ERDS2TJ563T	56K 1/4W [M]	R333	ERJ6GEYJ103V	10K 1/10W [M]	R516	ERDS2TJ472T	4.7K 1/4W [M]	R644	ERDS2TJ2R2T	2.2 1/4W [M]
R34	ERDS2TJ563T	56K 1/4W [M]	R334	ERJ6GEYJ332V	3.3K 1/10W [M]	R517	ERDS2TJ223T	22K 1/4W [M]	R701	ERDS2TJ102T	1K 1/4W [M]
R35	ERDS2TJ152T	1.5K 1/4W [M]	R335	ERJ6GEYJ332V	3.3K 1/10W [M]	R526	ERDS2TJ331T	330 1/4W [M]	R702	ERDS2TJ103T	10K 1/4W [M]
R36	ERDS2TJ152T	1.5K 1/4W [M]	R336	ERJ6GEYJ332V	3.3K 1/10W [M]	R527	ERDS2TJ331T	330 1/4W [M]	R703	ERDS2TJ181T	180 1/4W [M]
R37	ERDS2TJ222T	2.2K 1/4W [M]	R341	ERJ6GEYJ153V	15K 1/10W [M]	R555	ERDS2TJ103T	10K 1/4W [M]	R711	ERDS2TJ821T	820 1/4W [M]
R38	ERDS2TJ222T	2.2K 1/4W [M]	R342	ERJ6GEYJ153V	15K 1/10W [M]	R556	ERDS2TJ223T	22K 1/4W [M]	R712	ERDS2TJ102T	1K 1/4W [M]
R39	ERDS2TJ561T	560 1/4W [M]	R343	ERJ6GEYJ103V	10K 1/10W [M]	R557	ERDS2TJ223T	22K 1/4W [M]	R713	ERDS2TJ122T	1.2K 1/4W [M]
R40	ERDS2TJ561T	560 1/4W [M]	R344	ERJ6GEYJ103V	10K 1/10W [M]	R558	ERDS2TJ223T	22K 1/4W [M]	R714	ERDS2TJ152T	1.5K 1/4W [M]
R45	ERJ6GEYJ122V	1.2K 1/10W [M]	R345	ERJ6GEYJ154V	150K 1/10W [M]	R559	ERDS2TJ822T	8.2K 1/4W [M]	R715	ERDS2TJ182T	1.8K 1/4W [M]
R47	ERDS2TJ103T	10K 1/4W [M]	R346	ERJ6GEYJ154V	150K 1/10W [M]	R562	ERDS2TJ103T	10K 1/4W [M]	R716	ERDS2TJ222T	2.2K 1/4W [M]
R48	ERDS2TJ103T	10K 1/4W [M]	R347	ERJ6GEYJ100V	10 1/10W [M]	R571	ERDS2TJ223T	22K 1/4W [M]	R717	ERDS2TJ332T	3.3K 1/4W [M]
R49	ERDS2TJ103T	10K 1/4W [M]	R348	ERJ6GEYJ100V	10 1/10W [M]	R572	ERDS2TJ223T	22K 1/4W [M]	R725	ERDS2TJ821T	820 1/4W [M]
R50	ERDS2TJ103T	10K 1/4W [M]	R349	ERJ6GEYJ471V	470 1/10W [M]	R573	ERDS2TJ223T	22K 1/4W [M]	R726	ERDS2TJ102T	1K 1/4W [M]
R53	ERDS2TJ152T	1.5K 1/4W [M]	R381	ERJ6GEYJ100V	10 1/10W [M]	R574	ERDS2TJ223T	22K 1/4W [M]	R727	ERDS2TJ122T	1.2K 1/4W [M]
R54	ERDS2TJ152T	1.5K 1/4W [M]	R382	ERJ6GEYJ221V	220 1/10W [M]	R601	ERDS2TJ472T	4.7K 1/4W [M]	R728	ERDS2TJ152T	1.5K 1/4W [M]
R55	ERDS2TJ104T	100K 1/4W [M]	R383	ERJ6GEYJ5R6V	5.6 1/10W [M]	R602	ERDS2TJ472T	4.7K 1/4W [M]	R729	ERDS2TJ182T	1.8K 1/4W [M]

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
R730	ERDS2TJ222T	2.2K 1/4W [M]	C18	ECEA1CKS100I	10 16V[M]	C312	ECUV1E104ZFN	0.1 25V[M]	C450	ECUV1H101KCN	100P 50V[M]
R731	ERDS2TJ332T	3.3K 1/4W [M]	C19	ECUV1C474KBM	0.47 16V[M]	C341	ECUV1H122KBN	1200P 50V[M]	C451	ECUV1H101KCN	100P 50V[M]
R803	ERDS2TJ184T	180K 1/4W [M]	C20	ECUV1C474KBM	0.47 16V[M]	C342	ECUV1H122KBN	1200P 50V[M]	C452	ECUV1H101KCN	100P 50V[M]
R804	ERDS2TJ123T	12K 1/4W [M]	C21	ECEA1ASN100I	10 10V[M]	C343	ECUV1H103KBN	0.01 50V[M]	C461	ECUV1C225ZFN	22 16V[M]
R805	ERDS2TJ392T	3.9K 1/4W [M]	C22	ECEA1ASN100I	10 10V[M]	C344	ECUV1H103KBN	0.01 50V[M]	C501	ECEA1HKA010B	1 50V[M]
R806	ERDS2TJ103T	10K 1/4W [M]	C23	ECEA1CKS100I	10 16V[M]	C345	ECUV1E473KBN	0.047 25V[M]	C502	ECEA1EKA4R7B	4.7 25V[M]
R811	ERDS2TJ223T	22K 1/4W [M]	C24	ECEA1CKS100I	10 16V[M]	C346	ECUV1E473KBN	0.047 25V[M]	C504	ECEA1CKA100B	10 16V[M]
R812	ERDS2TJ102T	1K 1/4W [M]	C25	ECKR2H121KB5	120P 500V[M]	C347	ECUV1H121KCN	120P 50V[M]	C505	ECEA1CKA100B	10 16V[M]
R813	ERDS2TJ223T	22K 1/4W [M]	C26	ECKR2H121KB5	120P 500V[M]	C348	ECUV1H121KCN	120P 50V[M]	C601	ECEA1EU222B	2200 25V[M]
R814	ERDS2TJ102T	1K 1/4W [M]	C27	ECUV1H561KBN	560P 50V[M]	C349	ECKR2H821KB5	820P 500V[M]	C602	ECA1EM221B	220 25V[M]
R815	ERDS2TJ104T	100K 1/4W [M]	C28	ECUV1H561KBN	560P 50V[M]	C350	ECKR2H821KB5	820P 500V[M]	C603	ECKR2H682PE	6800P 500V[M]
R816	ERDS2TJ563T	56K 1/4W [M]	C29	ECUV1E104ZFN	0.1 25V[M]	C351	ECUV1E473ZFN	0.047 25V[M]	C604	ECA1EM102B	1000P 25V[M]
R817	ERDS2TJ470T	47 1/4W [M]	C30	ECUV1E104ZFN	0.1 25V[M]	C352	ECUV1E473ZFN	0.047 25V[M]	C605	ECA1EM102B	1000P 25V[M]
R853	ERJ6GEYJ184V	180K 1/10W[M]	C31	ECEA1HKA010B	1 50V[M]	C353	ECUV1H220KCN	22P 50V[M]	C606	RCE1HM221BV	220 50V[M]
R854	ERJ6GEYJ153V	15K 1/10W[M]	C32	ECEA1HKA010B	1 50V[M]	C354	ECUV1H220KCN	22P 50V[M]	C607	ECBT1E103ZF5	0.01 25V[M]
R855	ERJ6GEYJ392V	3.9K 1/10W[M]	C33	ECEA1CKA100B	10 16V[M]	C355	ECUV1H103ZFN	0.01 50V[M]	C608	ECBT1E103ZF5	0.01 25V[M]
R856	ERJ6GEYJ103V	10K 1/10W[M]	C34	ECEA1CKA100B	10 16V[M]	C356	ECEA1AKS470I	47 10V[M]	C609	ECEA1AKA221Q	220 10V[M]
R861	ERDS2TJ223T	22K 1/4W [M]	C37	ECBT1H150J5	15P 50V[M]	C357	ECUV1E473ZFN	0.047 25V[M]	C610	ECA1AM471B	470P 10V[M]
R862	ERDS2TJ102T	1K 1/4W [M]	C38	ECBT1E103ZF5	0.01 25V[M]	C358	ECUV1E473ZFN	0.047 25V[M]	C611	ECBT1E103ZF5	0.01 25V[M]
R863	ERDS2TJ223T	22K 1/4W [M]	C39	ECBT1H150J5	15P 50V[M]	C360	ECUV1E223KBN	0.022 25V[M]	C612	ECBT1E103ZF5	0.01 25V[M]
R864	ERDS2TJ102T	1K 1/4W [M]	C41	ECBT1E103ZF5	0.01 25V[M]	C361	ECUV1E223KBN	0.022 25V[M]	C613	ECA0JM102B	1000P 6.3V[M]
R865	ERDS2TJ470T	47 1/4W [M]	C44	ECUV1H121KCN	120P 50V[M]	C362	ECEA1CKA100B	10 16V[M]	C614	ECBT1E103ZF5	0.01 25V[M]
R865	ERJ6GEYJ104V	100K 1/10W[M]	C45	ECUV1H121KCN	120P 50V[M]	C401	ECEA1CKS100I	10 16V[M]	C615	ECBT1E103ZF5	0.01 25V[M]
R866	ERDS2TJ221T	220 1/4W [M]	C46	ECUV1H332KBN	3300P 50V[M]	C402	ECEA1CKS100I	10 16V[M]	C616	ECEA1AKA101B	100 10V[M]
R867	ERJ6GEYJ563V	56K 1/10W[M]	C47	ECUV1H332KBN	3300P 50V[M]	C403	ECUV1H182KBN	1800P 50V[M]	C701	ECEA1CKA100B	10 16V[M]
R868	ERJ6GEYJ470V	47 1/10W[M]	C51	ECEA1CKA100B	10 16V[M]	C404	ECUV1H182KBN	1800P 50V[M]	C802	ECBT1E223ZF5	0.022 25V[M]
R952	ERDS2TJ821	1/4W 820 [M]	C52	ECEA1CKA100B	10 16V[M]	C405	ECUV1C474KBM	0.47 16V[M]	C851	ECBT1E103ZF5	0.01 25V[M]
R953	ERDS2TJ393	1/4W 39K [M]	C53	ECEA1AKA330B	33 10V[M]	C406	ECUV1C474KBM	0.47 16V[M]	C852	ECUV1H103ZFN	0.01 50V[M]
R972	ERDS2TJ821	1/4W 820 [M]	C54	ECBT1E103ZF5	0.01 25V[M]	C407	ECUV1H152KBN	1500P 50V[M]			
R973	ERDS2TJ393	1/4W 39K [M]	C55	ECUV1H103ZFN	0.01 50V[M]	C408	ECUV1H152KBN	1500P 50V[M]			
			C61	ECUV1H122KBN	1200P 50V[M]	C409	ECUV1C474KBM	0.47 16V[M]			
<b>CAPACITORS</b>			C62	ECUV1H122KBN	1200P 50V[M]	C410	ECUV1C474KBM	0.47 16V[M]			
C1	ECUV1H471KBN	470P 50V[M]	C63	ECBT1C332KR5	3300P 16V[M]	C411	ECEA1HKS2R2I	2.2 50V[M]			
C2	ECUV1H471KBN	470P 50V[M]	C64	ECBT1C332KR5	3300P 16V[M]	C412	ECEA1HKS2R2I	2.2 50V[M]			
C3	ECUV1H561KBN	560P 50V[M]	C65	ECBT1H104ZFN	0.1 50V[M]	C413	ECUV1C474KBM	0.47 16V[M]			
C4	ECUV1H561KBN	560P 50V[M]	C80	ECBT1H104ZFN	0.1 50V[M]	C414	ECUV1E104ZFN	0.1 25V[M]			
C5	ECUV1H102KBN	1000P 50V[M]	C81	ECUV1H102KBN	1000P 50V[M]	C415	ECUV1H272KBN	2700P 50V[M]			
C6	ECUV1H102KBN	1000P 50V[M]	C82	ECUV1H102KBN	1000P 50V[M]	C416	ECUV1H392KBN	3900P 50V[M]			
C7	ECUV1E104ZFN	0.1 25V[M]	C164	ECBT1E103ZF5	0.01 25V[M]	C417	ECUV1E104ZFN	0.1 25V[M]			
C8	ECUV1E104ZFN	0.1 25V[M]	C303	ECQP2A153JZ	0.015 100V[M]	C418	ECUV1C105ZFN	10 16V[M]			
C9	ECEA0GKS221I	220 4V [M]	C304	ECUV1H392KBN	3900P 50V[M]	C419	ECEA1CKS100I	10 16V[M]			
C10	ECEA0GKS221I	220 4V [M]	C305	ECUV1H222KBN	2200P 50V[M]	C420	ECEA1CKS100I	10 16V[M]			
C13	ECUV1H822KBN	8200P 50V[M]	C306	ECUV1H682KBN	6800P 50V[M]	C421	ECEA1HKS010I	1 50V[M]			
C14	ECUV1H822KBN	8200P 50V[M]	C307	ECUV1H222KBN	2200P 50V[M]	C422	ECEA1CKS100I	10 16V[M]			
C15	ECUV1H682KBN	6800P 50V[M]	C308	ECEA1CKS100I	10 16V[M]	C423	ECA1AM102B	1000P 10V[M]			
C16	ECUV1H682KBN	6800P 50V[M]	C309	ECUV1H103ZFN	0.01 50V[M]	C424	ECA1AM102B	1000P 10V[M]			
C17	ECEA1CKS100I	10 16V[M]	C310	ECUV1H103ZFN	0.01 50V[M]	C431	ECUV1C474ZFN	0.47 16V[M]			
			C311	ECUV1E104ZFN	0.1 25V[M]	C432	ECUV1H152KBN	1500P 50V[M]			

## ■ Packaging (Refer to page 36 for the Parts List.)



< CUSHION A, B, C, D, Part No. : RPN0664-1 >