

# Service Manual

Stereo Cassette Deck

Cassette Deck

## RS-BX747

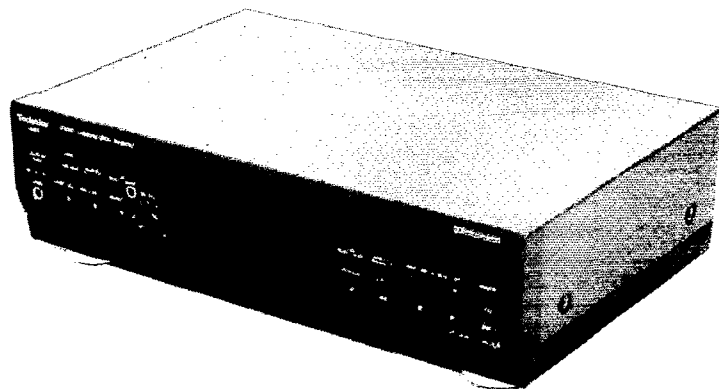


Colour

(K) ... Black Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe.	(K)
(EB)	Great Britain.	
(EG)	Germany and Italy.	



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

RS-TR555 MECHANISM SERIES (AR350)

## SPECIFICATIONS

### ■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Heads	Recording head [Permalloy (combination)]×1 Playback head [Permalloy (combination)]×1 Erasing head (Double-gap ferrite)×1
Motors	Capstan drive (Quartz DD MOTOR)×1 Reel table drive (DC MOTOR)×1 Cassette holder open/close (DC MOTOR)×1
Tape speed	4.8 cm/sec. (1-7/8 ips)
Wow and flutter	0.05% (WRMS) ±0.14% (DIN)

Fast forward and rewind times  
Approx. 50 seconds with C-60 cassette tape

Frequency response (Dolby NR off)	
NORMAL	30 Hz-17 kHz, ±3 dB 20 Hz-18 kHz (DIN)
CrO <sub>2</sub>	30 Hz-18 kHz, ±3 dB 20 Hz-19 kHz (DIN)
METAL	30 Hz-19 kHz, ±3 dB 20 Hz-20 kHz (DIN)

S/N (Signal level=max recording level, CrO<sub>2</sub> type tape)

NR off	57 dB (A weighted)
Dolby B NR on	66 dB (A weighted)
Dolby C NR on	74 dB (A weighted)

Input sensitivity and impedance

REC (IN)	100 mV/47 kΩ
Output voltage and impedance	
PLAY (OUT)	500 mV/500Ω
HEADPHONES	190 mV/(8Ω)
	(Load impedance 8Ω-600Ω)

### ■ GENERAL

Power consumption	23 V
Power supply	AC 50 Hz/60 Hz, 230 V-240 V
Dimensions (W×H×D)	430×125×293 mm
Weight	4.6 kg

#### Note:

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

# Technics

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### ※ TECHNICAL INFORMATION

This technical information is located on pp 45-51 of the RS-B555 Service Manual (Order No. AD8907231C5). Therefore, refer to that Service Manual. There is a few differences in this schematic diagram. But this is the same as RS-B555 basically.

## ACCESSORIES

AC power supply cord ..... 1pc.  
 (VJA0733)..... (EB) (RJA0019-2K)..... (E, EG)

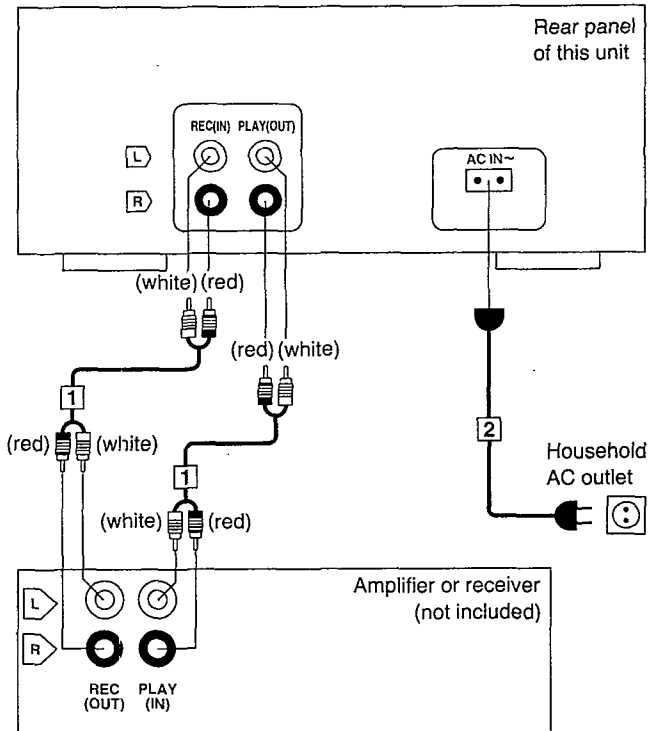


Stereo connection cables..... 2pcs.  
 (SJP2276)



## CONNECTIONS

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



### 1 Connect the stereo connection cables.

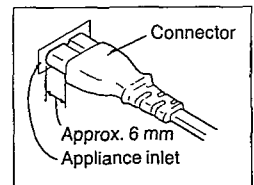
**FOR UNITED KINGDOM ONLY**  
**BE SURE TO READ THE CAUTION FOR AC POWER SUPPLY CORD ON PAGE 3 BEFORE PROCEEDING TO THE STEP 2.**

### 2 Connect the AC power supply cord after you have connected all other cables and cords.

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

#### Insertion of Connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing. However there is no problem using the unit.



#### Note:

Avoid letting the cables touch each other as much as possible, otherwise noise will be generated.

#### 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 is the least amount of "hum".

The above illustration 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.

## ■ CAUTION FOR AC MAINS LEAD



("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

### CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

### IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:


Blue: Neutral

Brown: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

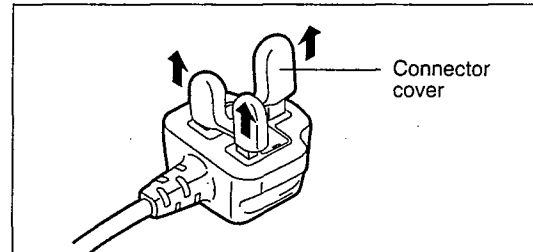
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol .

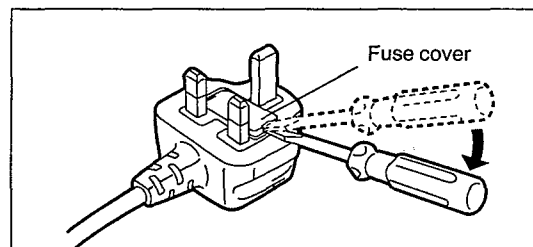
### Before use

Remove the connector cover as follows.

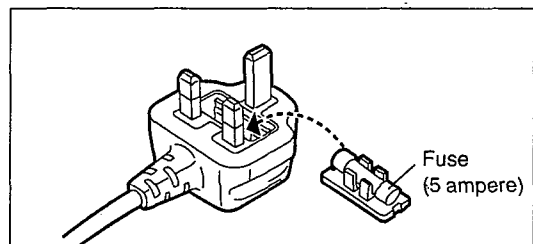


### How to replace the fuse

1. Remove the fuse cover with a screwdriver.

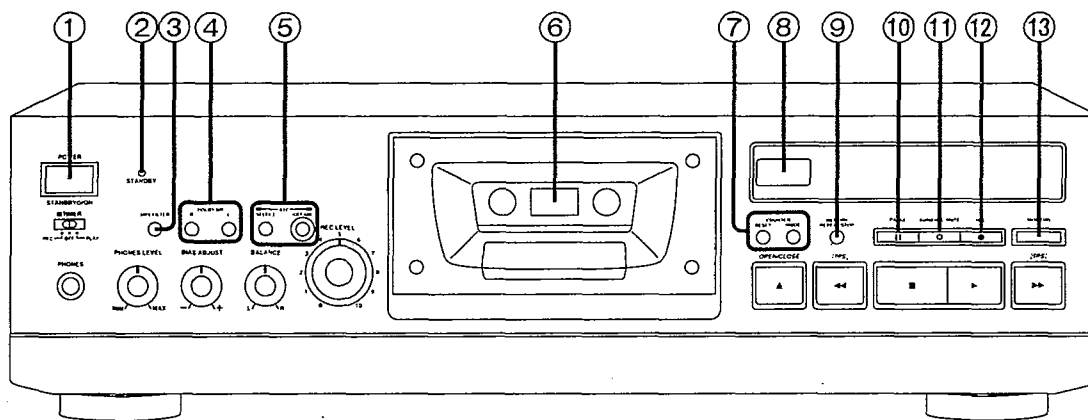


2. Replace the fuse and attach the fuse cover.



## FRONT PANEL CONTROLS AND FUNCTIONS

### Control section



#### ① Power "STANDBY $\odot$ /ON" switch (POWER, STANDBY $\odot$ /ON)

Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

#### ② Standby indicator (STANDBY)

When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.

#### ③ Multiplex filter button (MPX FILTER)

This prevents the Dolby NR circuit from operating in error when FM stereo broadcasts are recorded using the noise reduction function.

#### ④ Dolby noise reduction buttons (DOLBY NR B, C)

These buttons are used to reduce the hissing noise heard from the tape. This unit is provided with both the B-type and C-type noise reduction systems. (See page 7.)

#### ⑤ ATC buttons (ATC)

These buttons are used to set the most appropriate bias, level and equalizer according to the type of tapes.

**SELECT:** Each time the button is pressed, the bias position changes as follows:  
Standard  $\rightarrow$  High  $\rightarrow$  Low

**OFF/ON:** This button is used to perform or to cancel ATC (Auto Tape Calibration).

#### ⑥ Cassette holder

#### ⑦ Tape counter buttons (COUNTER)

**RESET:** This button is used to reset the tape counter indication to "000\_" or "00.00".

**MODE:** This button is used to select the tape/linear counter indication.

#### ⑧ Remote control signal sensor

You can operate this unit from the remote control equipped with Technics amplifier.

#### ⑨ Memory button (MEMORY REPEAT/STOP)

This button is used to activate the memory repeat play and locate the designated point during playback or recording.

#### ⑩ Pause button (II PAUSE)

This button is used to temporarily stop the tape playback or recording. (See page 7.)

#### ⑪ Automatic record muting button ( $\odot$ AUTO REC MUTE)

This button is used to make a silent interval on the tape while recording is in progress.

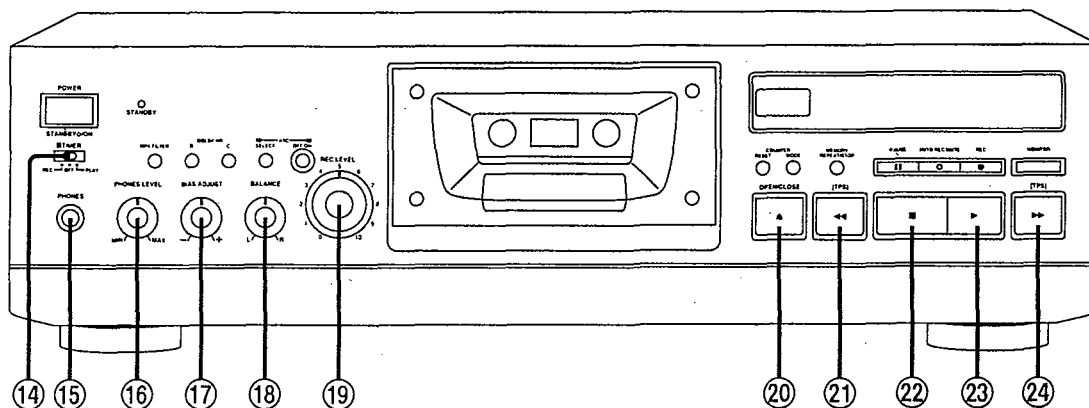
#### ⑫ Record button ( $\bullet$ REC)

This button is used to set deck to the recording standby mode.

#### ⑬ Monitor button (MONITOR)

In order to check the recording condition, the sound being recorded and the sound from the sound source can be alternately selected by pressing this button. (The corresponding indicator will illuminate.)

## Control section



⑭ **Timer switch (☐ TIMER)**

This switch is used to automatically start a tape recording or begin tape playback at a certain time, selected by an optional timer.

⑮ **Headphones jack (PHONES)**

⑯ **Headphones volume control (PHONES LEVEL)**

(See page 7.)

⑰ **Bias control (BIAS ADJUST)**

This control is used to adjust the sound characteristics in the high frequency range during recording.

⑱ **Recording balance control (BALANCE)**

This control is used to balance the left and right sound levels during recording.

⑲ **Recording level control (REC LEVEL)**

This control is used to regulate the recording level.

⑳ **Cassette holder open/close button (▲ OPEN/CLOSE)**

This button is used to open or close the cassette holder. (See page 7.)

㉑ **Rewind/TPS button (◀◀ [TPS])**

This button is used to rewind the tape or to easily and quickly search for the beginning of a tune.

㉒ **Stop button (■)**

This button is used to stop the tape movement.

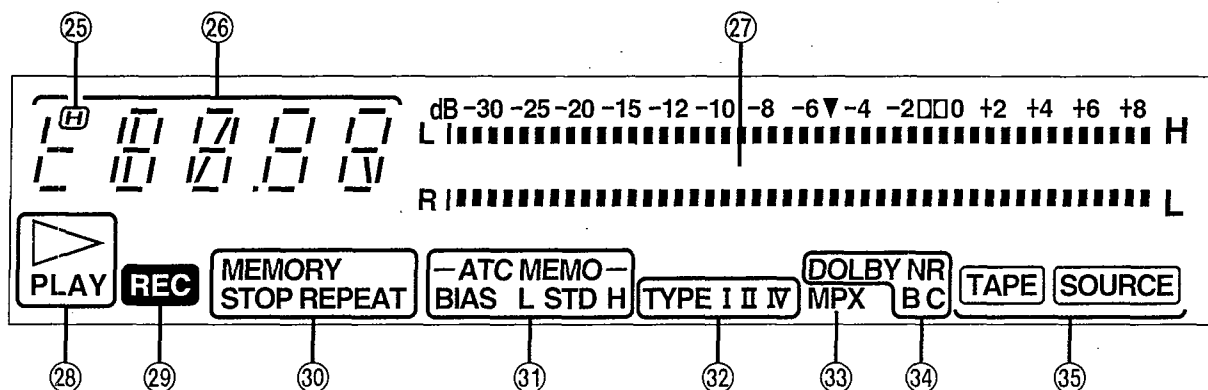
㉓ **Playback button (▶)**

This button is used to start the playback or recording. (See page 7.)

㉔ **Fast forward/TPS button (▶▶ [TPS])**

This button is used to advance the tape or to easily and quickly search for the beginning of a tune.

## Display section



②⑤ **High-speed rewind/fast-forward search indicator (H)**

Illuminates during high-speed rewind/fast-forward or high speed search.

②⑥ **Tape counter/ATC display**

Normally functions as the tape/linear counter display. During ATC (Auto Tape Calibration), displays the present condition of the ATC operation.

②⑦ **Level meter**

Indicates the level of the recorded sound during playback. Indicates the level being recorded, adjusted by the recording-level control. Also displays the present condition of the ATC operation.

②⑧ **Playback indicator (▷ PLAY)**

Illuminates in the playback or the recording mode. Flashes in the pause or recording standby mode.

②⑨ **Recording indicator (REC)**

Illuminates in the recording standby mode or recording mode.

③⑩ **Memory indicators (MEMORY STOP, MEMORY REPEAT)**

Each indicator illuminates to show which of the memory modes was set by the memory button.

③① **ATC memory indicator (ATC MEMO)**

Indicates one of the programs of bias position as follows. Flashes during ATC (auto tape calibration), and then remains illuminated when the ATC operation is completed.

BIAS STD: Standard  
BIAS H: High  
BIAS L: Low

③② **Tape select indicators (TYPE)**

The type of tape being used will be automatically detected and the indicator will illuminate.

I: NORMAL  
II: CrO<sub>2</sub>  
IV: METAL

③③ **MPX filter indicator (MPX)**

Illuminates to indicate that the multiplex filter is on.

③④ **Dolby noise-reduction indicators (DOLBY NR B, C)**

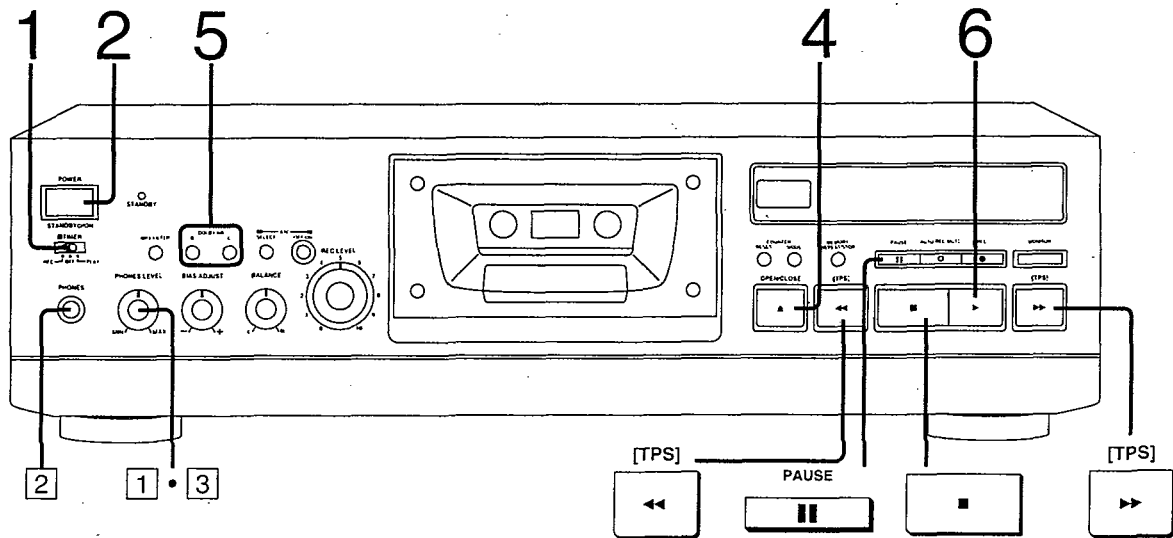
Indicator B or C illuminates when the corresponding noise reduction button (B or C) is pressed.

③⑤ **Monitor indicators (TAPE, SOURCE)**

Each indicator illuminates to show which sound is selected by the monitor switch.

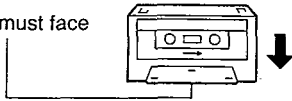
## PLAYBACK (Basic play)

Either normal, CrO<sub>2</sub>, or metal type cassettes can be used.



- 1 Set the timer switch to "OFF".
- 2 Press POWER STANDBY/ON to turn the unit on.
- 3 Select the "TAPE" input source on the amplifier.
- 4 Press OPEN/CLOSE and insert the cassette tape.

The exposed tape must face downward.



The cassette holder will automatically close.

This unit will automatically detect the type of tape being used, and then makes the suitable adjustments of the bias and equalization accordingly.

The tape select indicator will illuminate as follows:

TYPE I: NORMAL  
 TYPE II: CrO<sub>2</sub>  
 TYPE IV: METAL

- 5 Press either DOLBY NR B or C to select the appropriate noise reduction system.  
 Set to off if neither of the Dolby noise-reduction systems is to be used.  
 To cancel Dolby noise reduction, press either B or C again. (DOLBY NR B or C indication will go out.)
- 6 Press the playback button (▶).  
 The playback indicator will illuminate, and playback will begin.

### To temporarily stop playback

Press PAUSE.

PAUSE



The playback indicator will begin flashing.

To resume playback, press PAUSE again or press the playback button.

### To stop playback

Press the stop button (■).

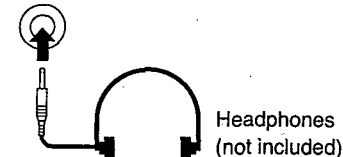


The playback indicator will go out.

### Listening through headphones

- 1 Reduce the volume.
- 2 Connect the headphones (not included) to the headphones jack.  
 Plug type: 6,3 mm phone plug, stereo type.

PHONES



- 3 Adjust the volume.

Turn to the right to increase or turn to the left to reduce.

### Note:

Avoid listening for prolonged periods of time to prevent hearing damage.

## DISASSEMBLY INSTRUCTIONS

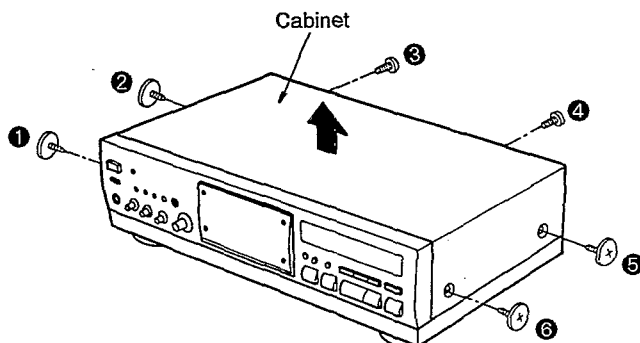
### "ATTENTION SERVICER"

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

<b>Ref.No.</b> 1	<b>Removal of the cabinet</b>
---------------------	-------------------------------

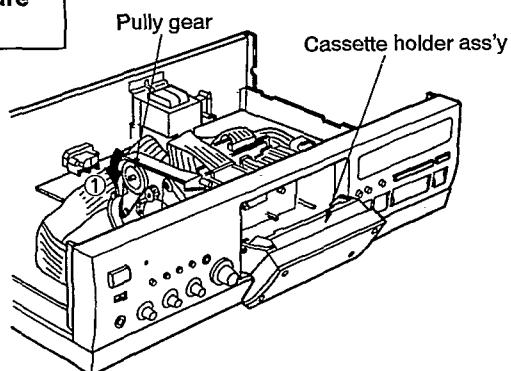
<b>Procedure</b> 1
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1. Remove the 6 screws (①~⑥).
2. Remove the cabinet in the direction of arrow.

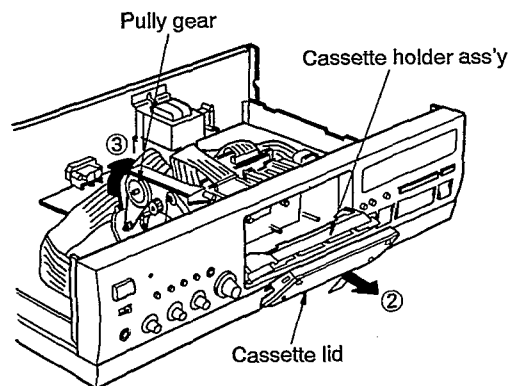


<b>Ref.No.</b> 2	<b>Removal of the front panel ass'y</b>
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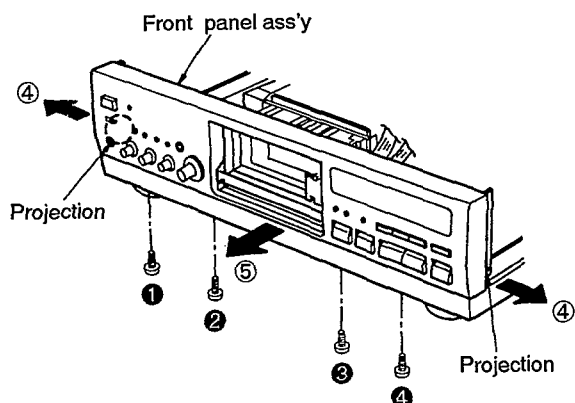
<b>Procedure</b> 1 → 2
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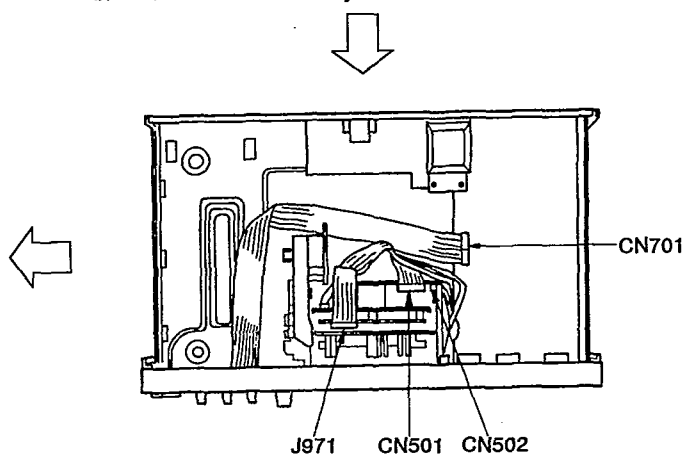
1. Turn the pulley gear in the direction of arrow ①, and open the cassette holder ass'y.



2. Remove the cassette lid in the direction of arrow ②.
3. Turn the pulley gear in the direction of arrow ③, and close the cassette holder ass'y.



5. Remove the 4 screws (①~④).
6. Pull the front panel ass'y in both directions of arrow ④ to unlock it from the projection of the chassis.
7. Remove the front panel ass'y in the direction of arrow ⑤.

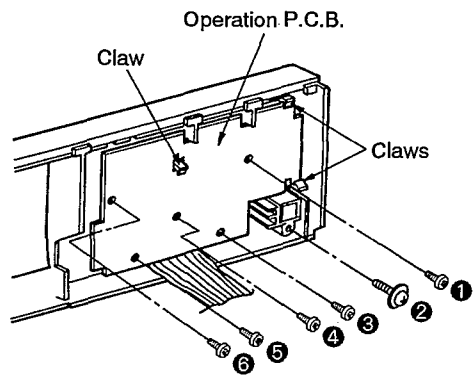
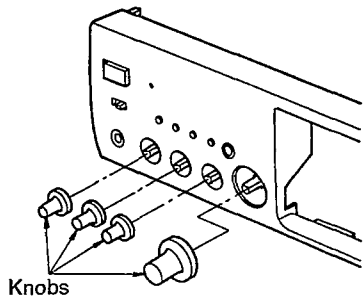


4. Remove the 4 connectors (CN501, CN502, CN701, J971).



**Ref.No. 3**  
**Removal of the operation P.C.B.**

**Procedure**  
1 → 2 → 3

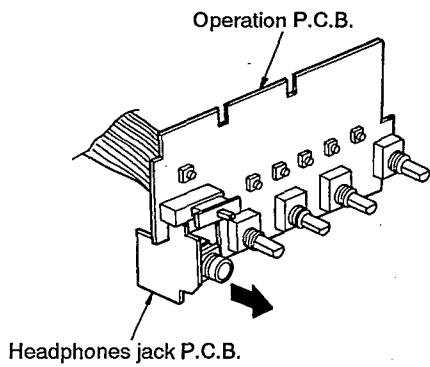


1. Pull out the 4 knobs.

2. Remove the 6 screws (① ~ ⑥).  
3. Release the 3 claws.

**Ref.No. 4**  
**Removal of the headphones jack P.C.B.**

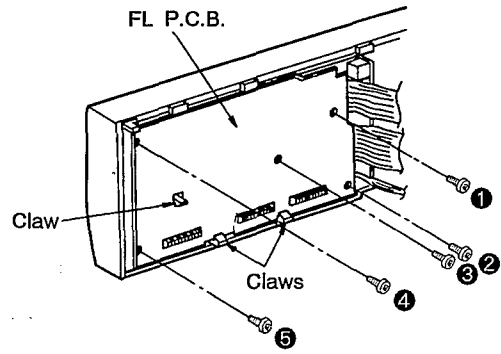
**Procedure**  
1 → 2 → 3 → 4



• Remove the headphones jack P.C.B. in the direction of arrow.

**Ref.No. 5**  
**Removal of the FL P.C.B.**

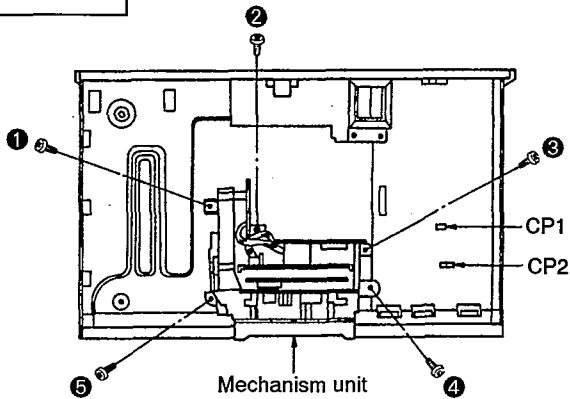
**Procedure**  
1 → 2 → 5



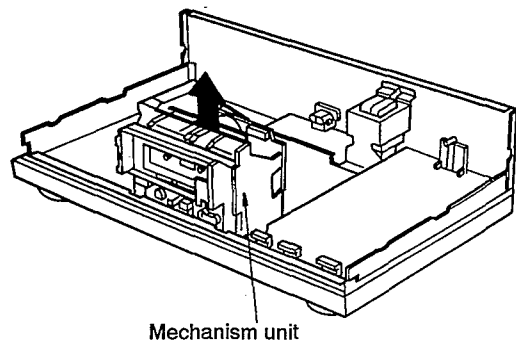
1. Remove the 5 screws (① ~ ⑤).  
2. Release the 3 claws.

**Ref.No. 6**  
**Removal of the mechanism unit**

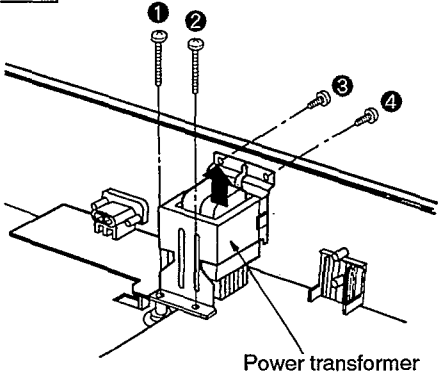
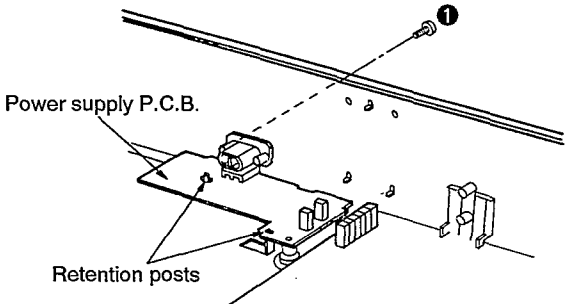
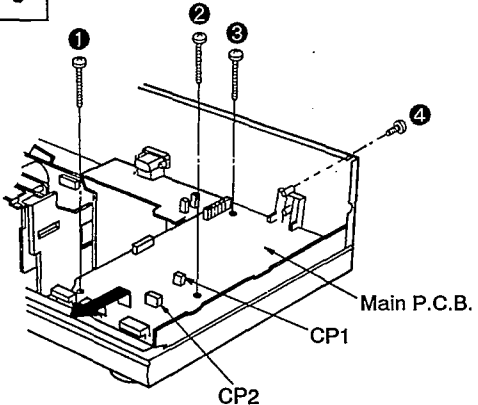
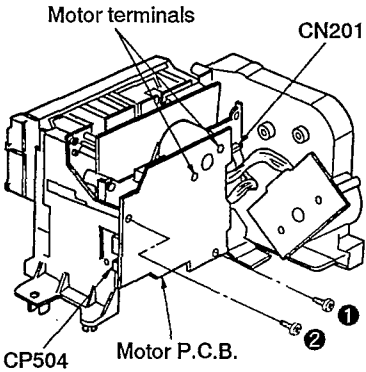
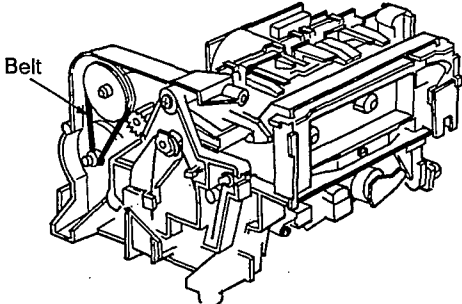
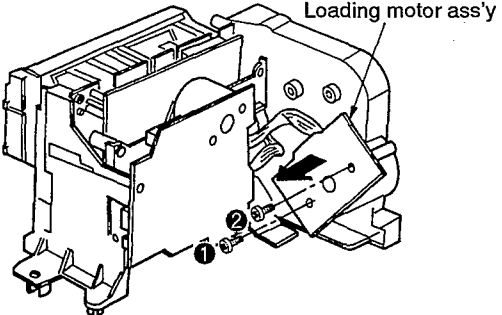
**Procedure**  
1 → 2 → 6

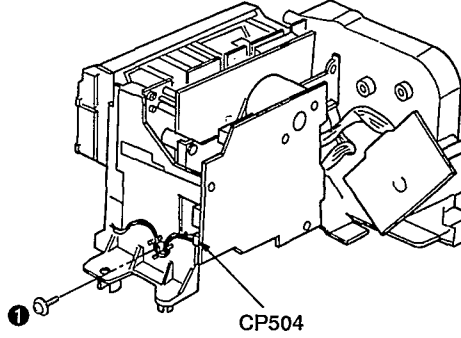
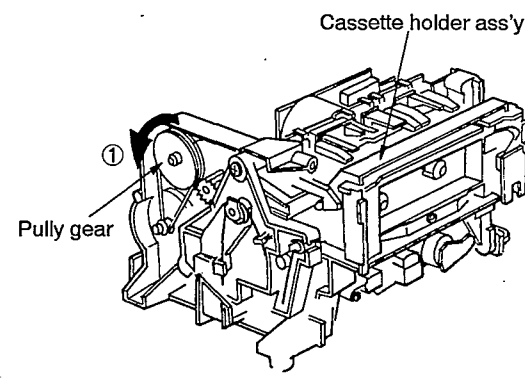
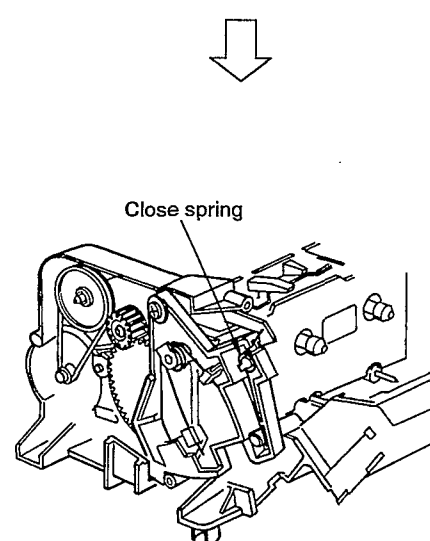
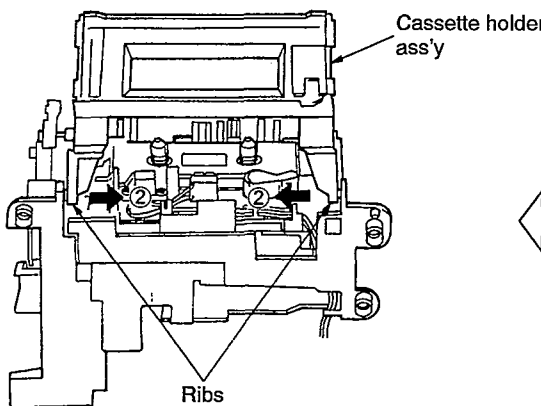
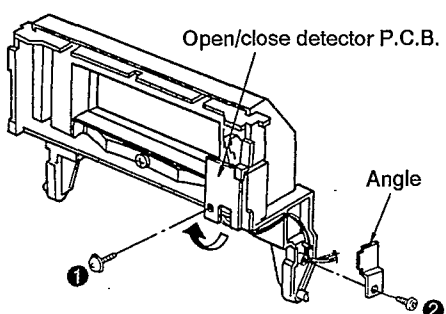
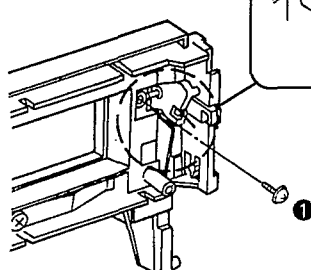
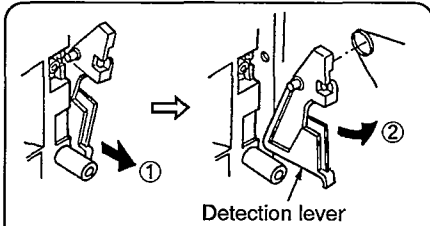


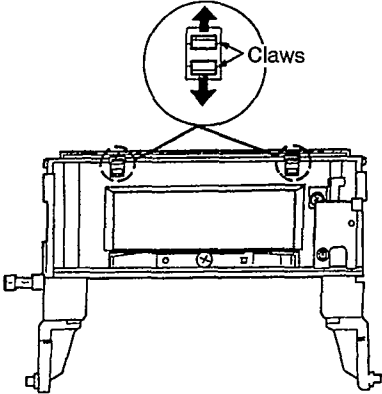
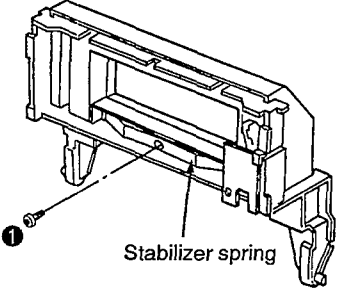
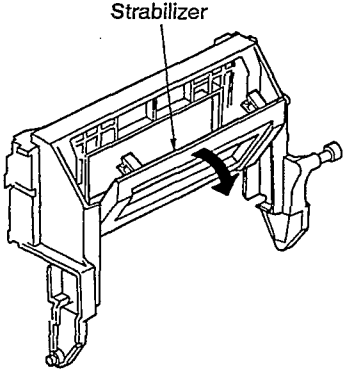
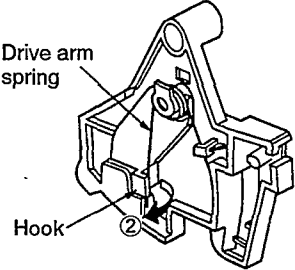
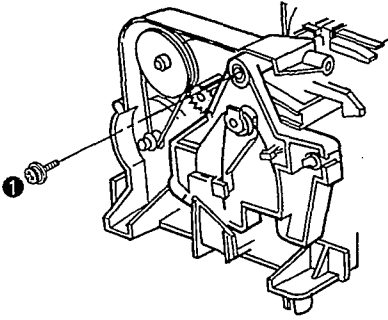
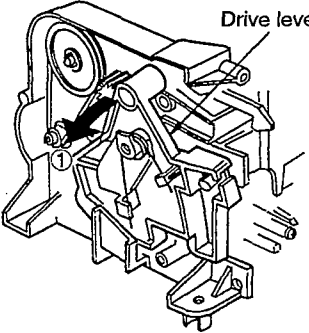

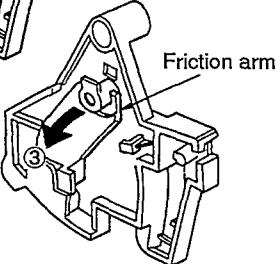
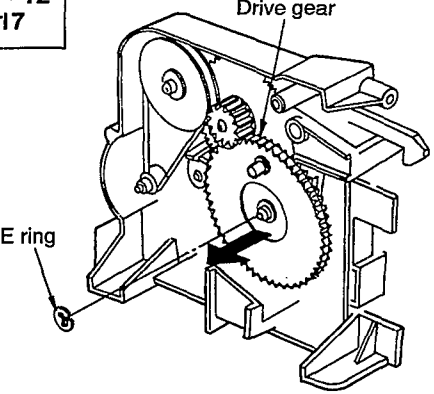
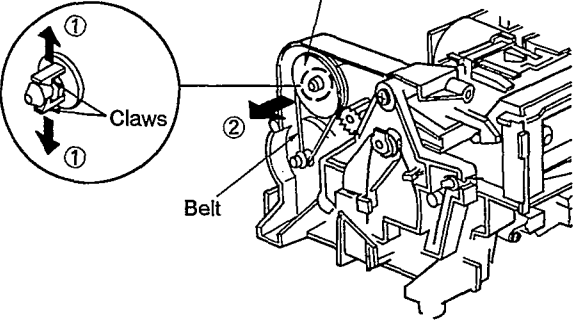
1. Remove the 2 connectors (CP1, CP2).  
2. Remove the 5 screws (① ~ ⑤).

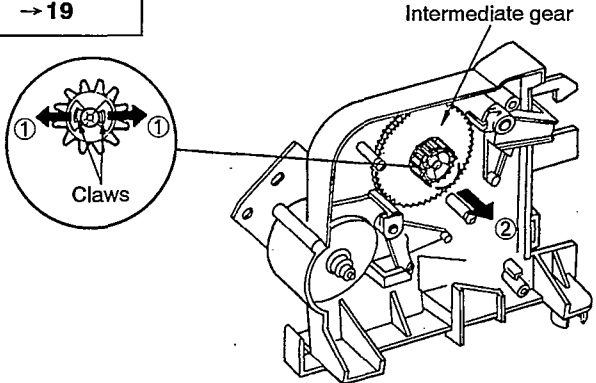
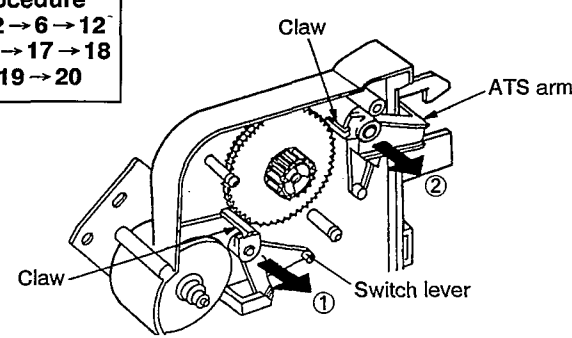


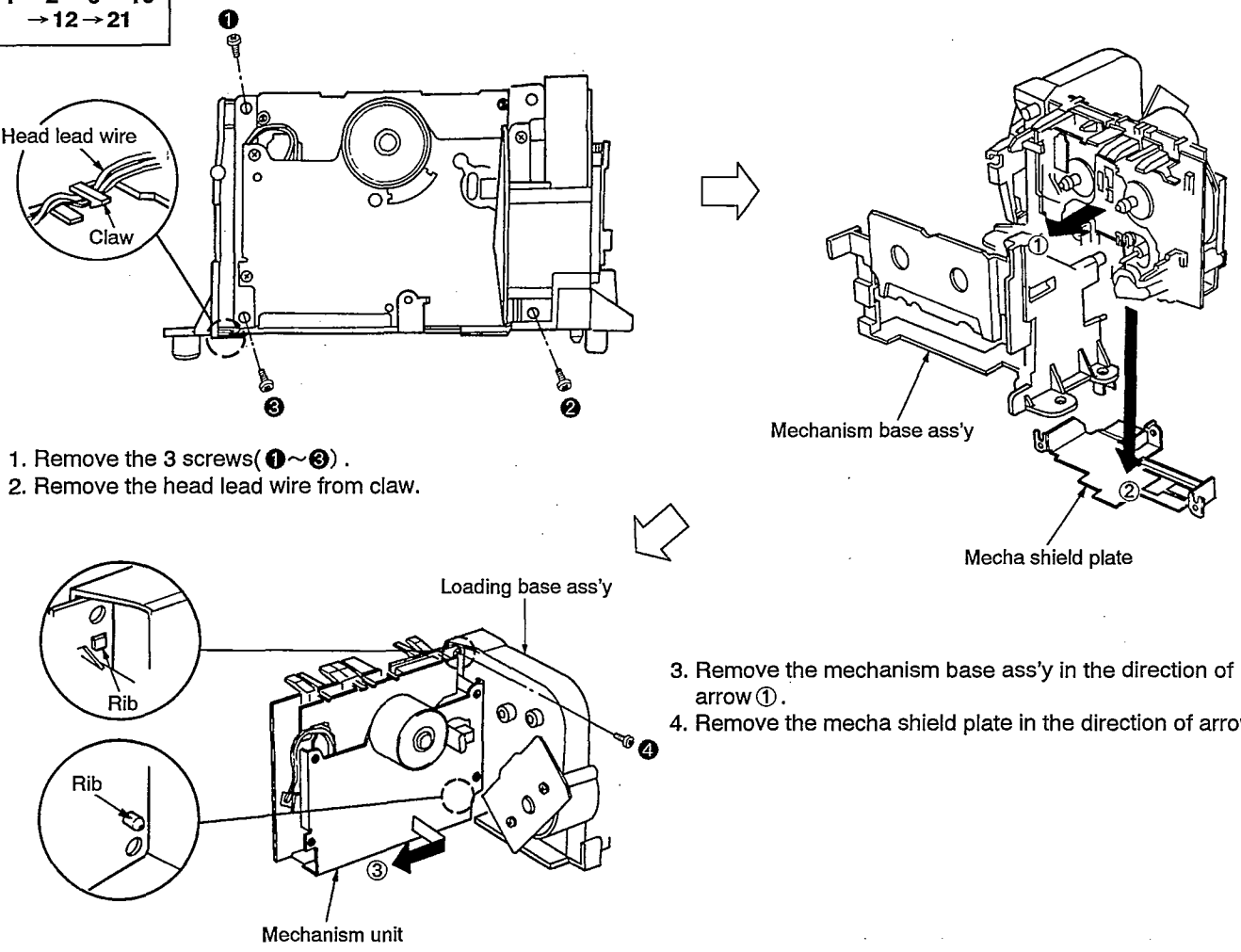
3. Remove the mechanism unit in the direction of arrow.

<p><b>Ref.No.</b> 7</p>	<p><b>Removal of the power transformer</b></p>	<p><b>Ref.No.</b> 8</p>	<p><b>Removal of the power supply P.C.B.</b></p>
<p><b>Procedure</b> 1 → 7</p>		<p><b>Procedure</b> 1 → 7 → 8</p>	
	 <p>Power transformer</p> <ol style="list-style-type: none"> <li>1. Remove the 4 screws(①~④).</li> <li>2. Remove the power transformer in the direction of arrow.</li> </ol>		 <p>Power supply P.C.B.</p> <p>Retention posts</p> <ol style="list-style-type: none"> <li>1. Remove the 1 screw(①).</li> <li>2. Lift the power supply P.C.B. off the retention posts on the bottom chassis.</li> </ol>
<p><b>Ref.No.</b> 9</p>	<p><b>Removal of the main P.C.B.</b></p>	<p><b>Ref.No.</b> 10</p>	<p><b>Removal of the motor P.C.B.</b></p>
<p><b>Procedure</b> 1 → 2 → 7 → 9</p>		<p><b>Procedure</b> 1 → 2 → 6 → 10</p>	
	 <p>Main P.C.B.</p> <p>CP1</p> <p>CP2</p> <ol style="list-style-type: none"> <li>1. Remove the 2 connectors(CP1, CP2).</li> <li>2. Remove the 4 screws(①~④).</li> <li>3. Remove the main P.C.B. in the direction of arrow.</li> </ol>		 <p>Motor terminals</p> <p>CN201</p> <p>CP504</p> <p>Motor P.C.B.</p> <ol style="list-style-type: none"> <li>1. Remove the 2 connectors(CN201, CP504).</li> <li>2. Unsolder the motor terminal.</li> <li>3. Remove the 2 screws(①, ②).</li> </ol>
<p><b>Ref.No.</b> 11</p>	<p><b>Removal of the loading motor ass'y</b></p>		
<p><b>Procedure</b> 1 → 2 → 6 → 11</p>			
 <p>Belt</p> <ol style="list-style-type: none"> <li>1. Remove the belt.</li> </ol>	 <p>Loading motor ass'y</p> <ol style="list-style-type: none"> <li>2. Remove the 2 screws(①, ②).</li> <li>3. Remove the loading motor ass'y in the direction of arrow.</li> </ol>		

<p><b>Ref.No.</b> 12</p>	<p><b>Removal of the cassette holder ass'y</b></p>		
<p><b>Procedure</b> 1 → 2 → 6 → 12</p>			
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>1. Remove the 1 screw (①). 2. Remove the 1 connector (CP504).</p> </div> <div style="text-align: center;">  <p>3. Turn the pulley gear in the direction of arrow ①, and open the cassette holder ass'y</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  <p>4. Remove the close spring.</p> </div> <div style="text-align: center;">  <p>5. Remove the ribs in the direction of arrow ②.</p> </div> </div>			
<p><b>Ref.No.</b> 13</p>	<p><b>Removal of the open/close detector P.C.B.</b></p>	<p><b>Ref.No.</b> 14</p>	<p><b>Removal of the detection lever</b></p>
<p><b>Procedure</b> 1 → 2 → 6 → 12 → 13</p>		<p><b>Procedure</b> 1 → 2 → 6 → 12 → 13 → 14</p>	
<div style="text-align: center;">  <p>1. Remove the 2 screws (①, ②). 2. Remove the angle. 3. Remove the open/close detector P.C.B. in the direction of arrow.</p> </div>		<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;">  <p>Detection lever</p> </div> </div> <p>1. Remove the 1 screw (①). 2. Remove the detection lever in the direction of arrow ①, ②.</p>	

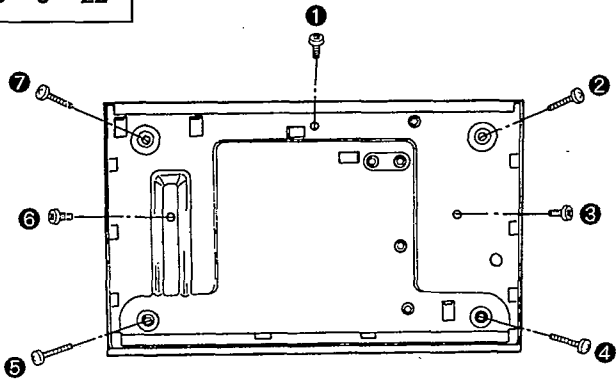
<p><b>Ref.No.</b> 15</p>	<p><b>Removal of the stabilizer</b></p>		
<p><b>Procedure</b> 1 → 2 → 6 → 12 → 15</p>			
 <p>1. Remove the 1 screw (❶).</p> <p>2. Remove the stabilizer spring.</p>	<p>3. Release the 4 claws.</p>	 <p>4. Remove the stabilizer in the direction of arrow.</p>	
<p><b>Ref.No.</b> 16</p>	<p><b>Removal of the drive lever and friction arm</b></p>		
<p><b>Procedure</b> 1 → 2 → 6 → 12 → 16</p>			
 <p>1. Remove the 1 screw (❶).</p>	 <p>2. Remove the drive lever in the direction of arrow ❶.</p>	 <p>3. Release the drive arm spring from the hook in the direction of arrow ❷ and remove the drive arm spring.</p>  <p>4. Remove the friction arm in the direction of arrow ❸.</p>	
<p><b>Ref.No.</b> 17</p>	<p><b>Removal of the drive gear</b></p>	<p><b>Ref.No.</b> 18</p>	<p><b>Removal of the pulley gear</b></p>
<p><b>Procedure</b> 1 → 2 → 6 → 12 → 16 → 17</p>	<p><b>Procedure</b> 1 → 2 → 6 → 18</p>		
 <p>• Remove the E ring and then remove the drive gear in the direction of arrow.</p>	 <p>1. Remove the belt.</p> <p>2. Release the 2 claws in the direction of arrow ❶.</p> <p>3. Remove the pulley gear in the direction of arrow ❷.</p>		

Ref.No. 19	Removal of the intermediate gear	Ref.No. 20	Removal of the switch lever and ATS arm
<p><b>Procedure</b> 1 → 2 → 6 → 12 → 16 → 17 → 18 → 19</p>	 <p>Intermediate gear</p> <p>Claws</p> <ol style="list-style-type: none"> <li>1. Release the 2 claws in the direction of arrow ①.</li> <li>2. Remove the Intermediate gear in the direction of arrow ②.</li> </ol>	<p><b>Procedure</b> 1 → 2 → 6 → 12 → 16 → 17 → 18 → 19 → 20</p>	 <p>Claw</p> <p>ATS arm</p> <p>Claw</p> <p>Switch lever</p> <ul style="list-style-type: none"> <li>■ <b>Removal of the switch lever</b> <ul style="list-style-type: none"> <li>• Release the 1 claw and then remove the switch lever in the direction of arrow ①.</li> </ul> </li> <li>■ <b>Removal of the ATS arm</b> <ul style="list-style-type: none"> <li>• Release the 1 claw and then remove the ATS arm in the direction of arrow ②.</li> </ul> </li> </ul>

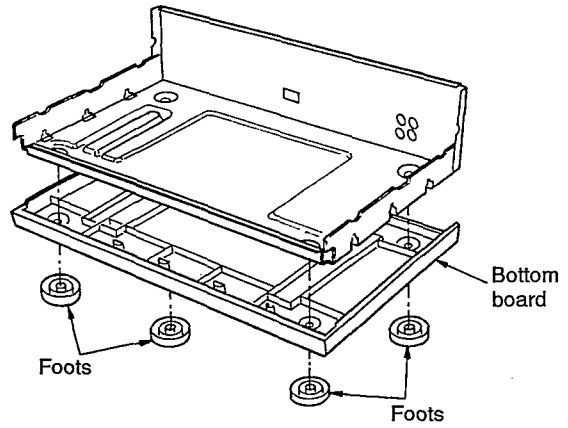
Ref.No. 21	Removal of the mechanism base ass'y, mecha shield plate, loading base ass'y and mechanism unit		
<p><b>Procedure</b> 1 → 2 → 6 → 10 → 12 → 21</p>	 <p>Head lead wire</p> <p>Claw</p> <p>Mechanism base ass'y</p> <p>Mecha shield plate</p> <p>Loading base ass'y</p> <p>Rib</p> <p>Mechanism unit</p> <ol style="list-style-type: none"> <li>1. Remove the 3 screws (①~③).</li> <li>2. Remove the head lead wire from claw.</li> <li>3. Remove the mechanism base ass'y in the direction of arrow ①.</li> <li>4. Remove the mecha shield plate in the direction of arrow ②.</li> <li>5. Remove the 1 screw (④).</li> <li>6. Remove the 2 ribs and then remove the mechanism unit in the direction of arrow ③.</li> </ol>		

**Ref.No. 22**      **Removal of the bottom board**

**Procedure**  
 1 → 2 → 6 → 7  
 → 8 → 9 → 22



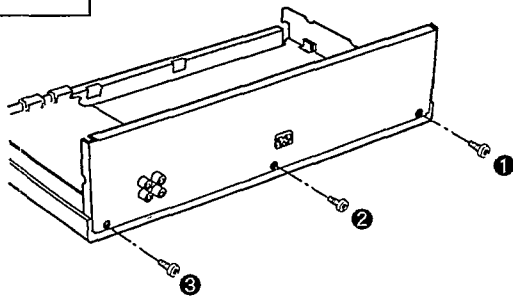
1. Remove the 7 screws (① ~ ⑦).



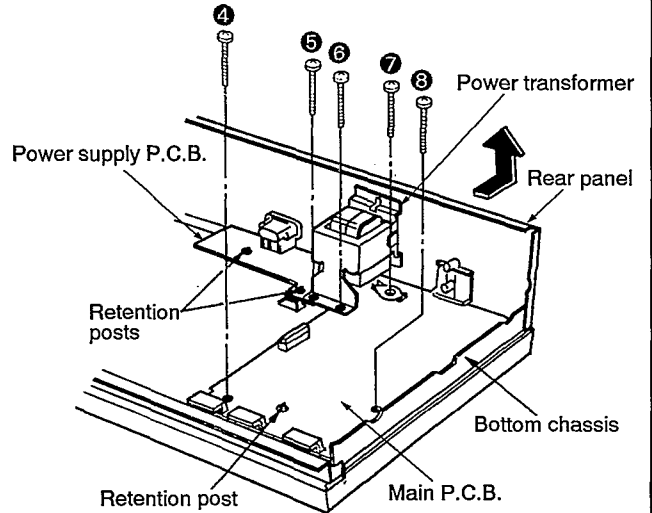
2. Remove the foods.  
 3. Remove the bottom board.

**Ref.No. 23**      **How to check the main P.C.B.**

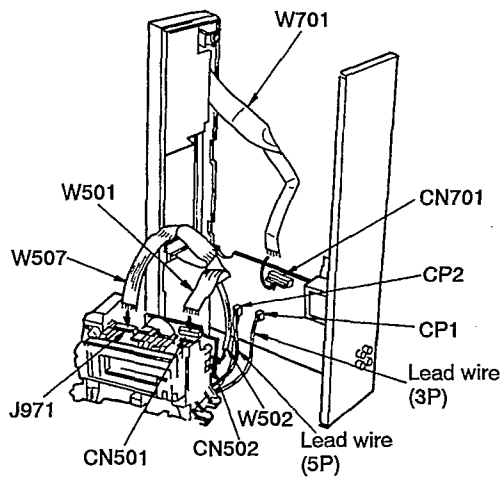
**Procedure**  
 1 → 2 → 6 → 23



1. Remove the 3 screws (① ~ ③).

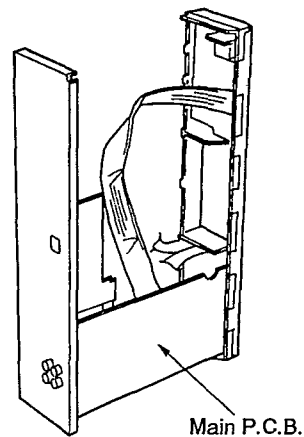


2. Remove the 5 screws (④ ~ ⑧).  
 3. Lift the main P.C.B. and power supply P.C.B. off the retention posts on the bottom chassis.  
 4. Remove the main P.C.B., power supply P.C.B., rear panel and power transformer in the direction of arrow.



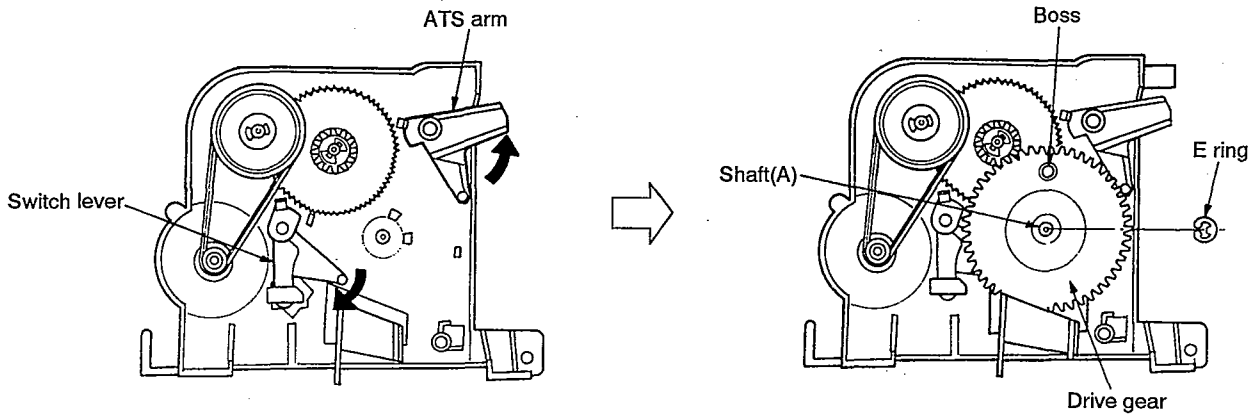
5. Connect the flat cables and lead wires to the connectors as follows.

- Lead wire(3P) ↔ Connector(CP1)
- Lead wire(5P) ↔ Connector(CP2)
- Flat cable(W501) ↔ Connector(CN501)
- Flat cable(W502) ↔ Connector(CN501)
- Flat cable(W507) ↔ Connector(J971)
- Flat cable(W701) ↔ Connector(CN701)



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

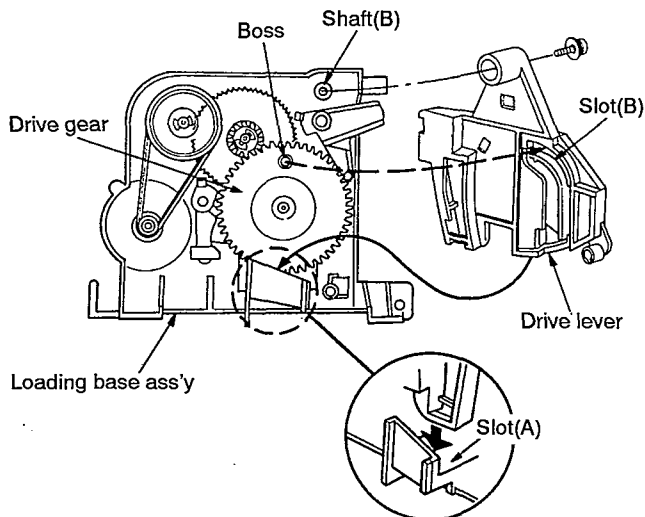
## ■ INSTALLATION OF THE DRIVE GEAR



1. Rotate the ATS arm and switch lever fully in the direction of arrow.

2. Position the boss on the drive gear located to the top and attach the drive gear to the shaft(A).  
3. Fix the E ring.

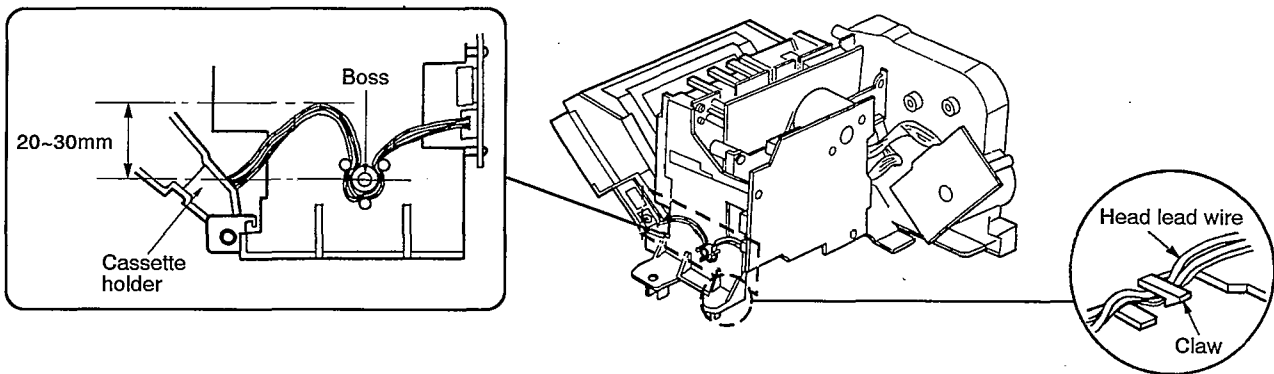
## ■ INSTALLATION OF THE DRIVE LEVER



1. Align the lower portion of drive lever with the slot(A) on the loading base ass'y.  
2. Attach the drive lever to the shaft(B) and tighten the screw.

**Note:** When installing the drive lever to the loading base ass'y, align the boss on the drive gear with the slot(B) on the drive lever.

## ■ WIRE ARRANGEMENT



• Leave the cassette holder open and arrange the lead wire to provide 20 to 30mm slack between the cassette holder and boss.

• Pass the head lead wire through the claw as shown above.

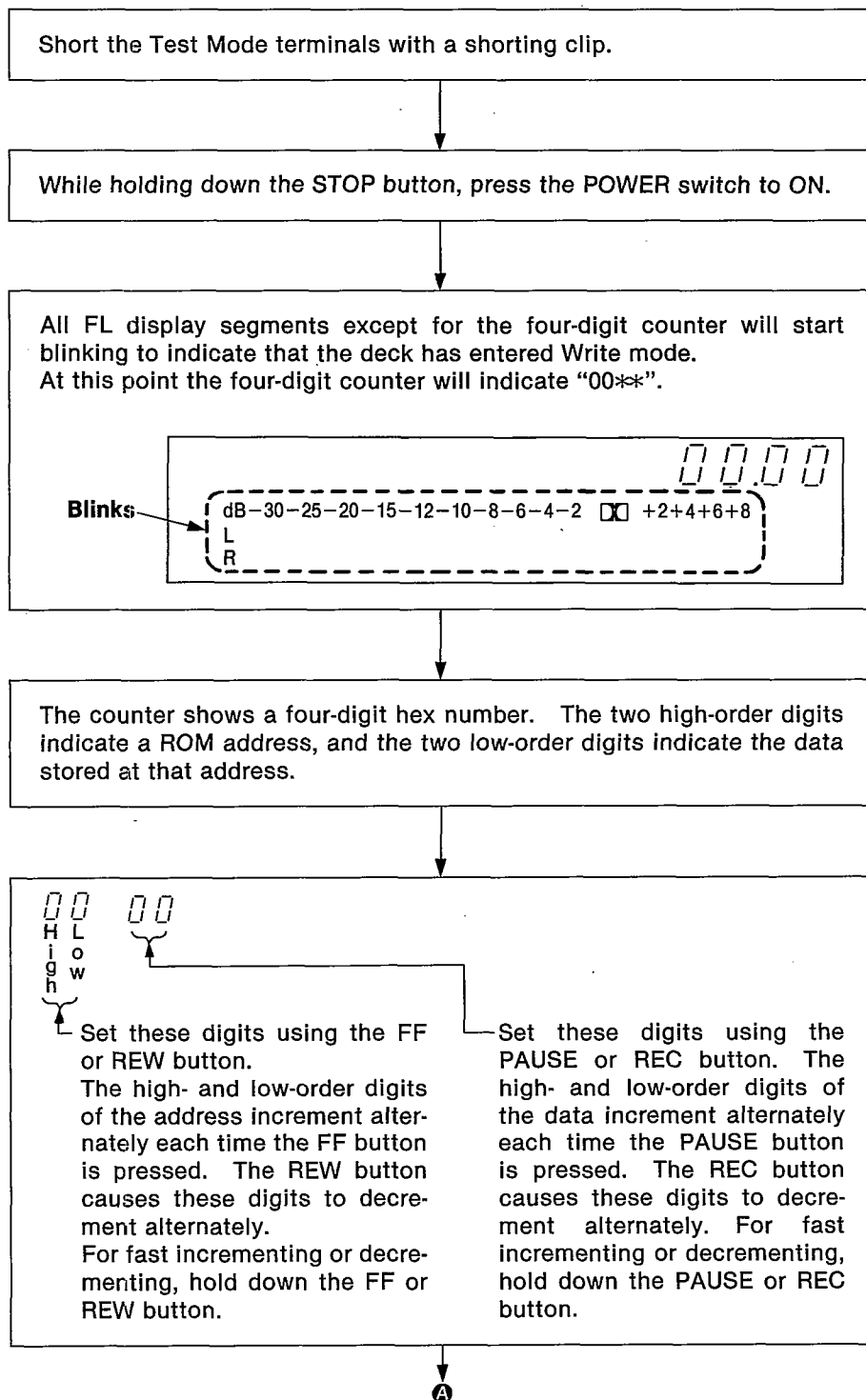
## ■ ADJUSTMENT PROCEDURE

This unit holds recording bias and equalization data in its EEPROM chip. An internal CPU automatically adjusts playback gain, recording bias, overall gain, and overall frequency response according to the ROM data. Manual adjustment with potentiometers is no longer necessary except for head azimuth and tape speed. All other items require only measurement data checks.

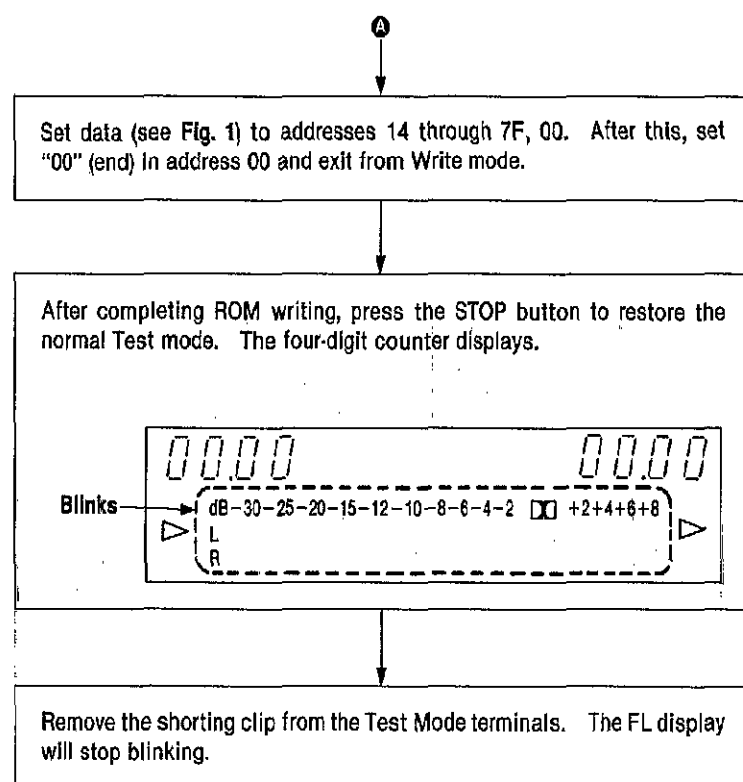
The adjustment and checkout procedures are as follows.

### • Writing to EEPROM

The EEPROM chip holds the optimal recording bias and equalization data. If the chip has been replaced, be sure to write to it, following the steps below:







• EEPROM MAP

Low	High	0	1	2	3	4	5	6	7
0	00	—	60	8E	94	—	—	—	—
1	—	—	83	94	9A	—	—	—	—
2	—	—	34	1E	1A	—	—	—	—
3	—	—	6F	7F	8E	—	—	—	—
4	—	08	C0	BF	B8	60	8E	9D	—
5	—	20	7C	74	6F	83	98	9D	—
6	—	12	60	8E	9D	44	1E	1A	—
7	—	07	83	98	9D	64	6A	79	—
8	—	FB	44	1E	1A	C0	BF	BC	—
9	—	F5	5A	62	73	—	—	—	—
A	—	5E	C0	BF	BC	26	30	80	—
B	—	99	88	87	88	7C	7D	7D	—
C	—	50	8C	8C	94	70	6B	6B	—
D	—	7C	0F	0E	0D	83	83	83	—
E	—	4B	95	96	97	—	FF	01	—
F	—	51	0E	0D	0D	—	—	00	—

Fig. 1

MEASUREMENTS AND ADJUSTMENTS

Measurement Condition

- Recording level control; Maximum
- Timer switch; Off
- Recording balance control; Center
- Bias control; Center
- Headphones volume control; Maximum

- Dolby NR switch; Off
- ATC switch; Off
- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature 20±5°C (68±9°F)

Measuring instrument

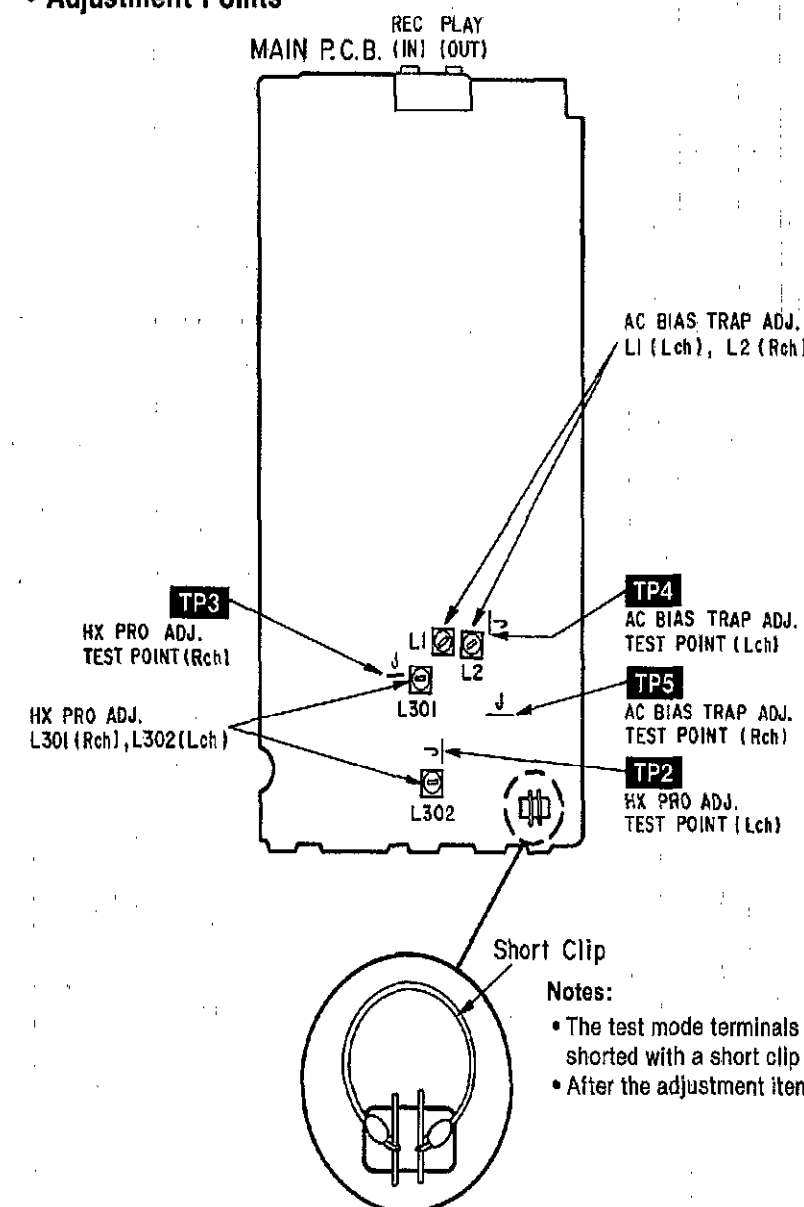
- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

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

Test tape

- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZGWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM
- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall gain adjustment and Overall frequency response, AC bias trap adjustment and HX PRO adjustment. Normal reference blank tape; QZZCRA CrO<sub>2</sub> reference blank tape; QZZCRX Metal reference blank tape; QZZCRZ

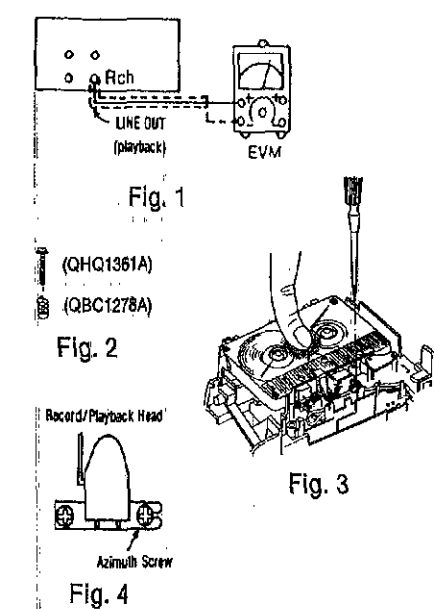
• Adjustment Points



HEAD AZIMUTH ADJUSTMENT

Caution:

- Please replace both azimuth adjustment screws (QH1361A) and springs (QBC1278A) used for to new ones simultaneously when readjusting the head azimuth. (Shown in Fig. 2.) Even if you wish to readjust the head azimuth without replacing the screws and springs, a fine adjustment can not be done because of the screw-locking bond adhered to the azimuth screw and spring.
- Please remove the screw-locking bond left on the head base when replacing the azimuth screw.
- If you wish to readjust the head azimuth, be sure to adjust with adhering the cassette tape closely to the mechanism by pushing the center of cassette tape with your finger. (Shown in Fig. 3.)

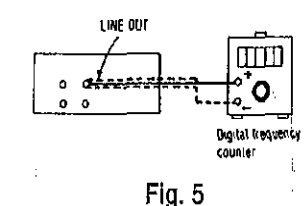


1. Playback the azimuth adjustment portion (8kHz, -20dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the output of the R-CH are maximized.
2. Perform the same adjustment in the play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

CHECK OF TAPE SPEED

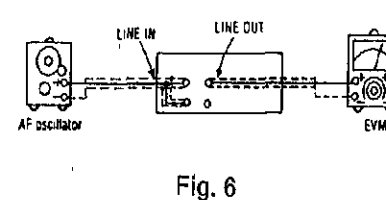
Normal speed (Standard Value: ±27Hz)

1. Playback the middle portion of the test tape (QZZGWAT).
2. Check the output value.



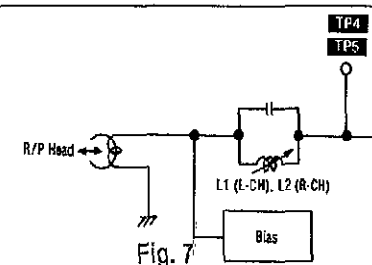
PLAYBACK GAIN ADJUSTMENT

1. Set the AF oscillator's output frequency to 315Hz.
2. With no tape loaded in the deck, press and hold the REC button. Adjust the test signal level using the Rec. Level and Balance controls until the line output levels on both channels are 320mV. When the adjustment is complete, release the REC button. (The deck stores the data at the moment the REC button is released.)
3. Load the test tape (QZZCFM) into the deck and locate the part where the playback gain test tone (315Hz, 0dB) is recorded. Press the ATC button, then the PLAY button. (At this point the deck automatically adjusts the playback gains.) After this, play back the tape and verify that the output level falls in the specified range.



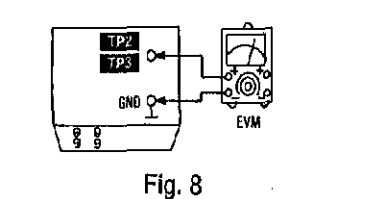
AC BIAS TRAP ADJUSTMENT

1. Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record mode.
2. Adjust L1 (L-CH) [L2 (R-CH)] so that the output voltage between TP4 (L-CH) [TP5 (R-CH)] and GND is less than the minimum value.



HX PRO ADJUSTMENT

1. Insert the Metal blank tape (QZZCRZ) and set the unit to the Record Pause mode.
2. Connect a DC voltmeter across TP2 (L-CH) and GND, TP3 (R-CH) and GND.
3. Adjust L301 (L-CH) and L302 (R-CH) so that the output is the minimum value.



PLAYBACK FREQUENCY RESPONSE

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. 10 for both L-CH and R-CH.

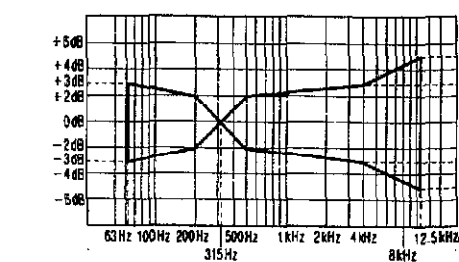
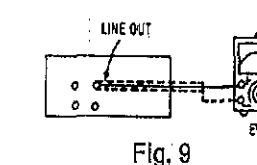
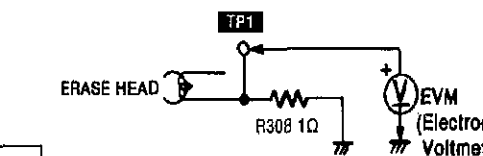


Fig. 10

ERASE CURRENT ADJUSTMENT

1. With no tape loaded in the deck, press the Record button.
2. Check if the output at this time between the erase current confirmation point TP1 and GND (chassis) is within the standard value.



Standard value: 190±20mA (Metal)...EVM Reading: 190±20mV

Fig. 11

OVERALL GAIN ADJUSTMENT AND OVERALL FREQUENCY RESPONSE

1. Load a Normal blank test tape (QZZCRA) into the deck under test. Press the ATC button, then the REC button. (At this point the deck automatically adjusts the overall gain and frequency response.)
2. With the deck placed in Record. Pause mode, apply the reference test signal (1kHz) to the Rec. input and adjust the output level to 320mV with the attenuator (ATT). After this, start recording.
3. While playing back the reference signal just recorded, verify that the output level falls in the following range.

Standard value: 320mV±0.5dB

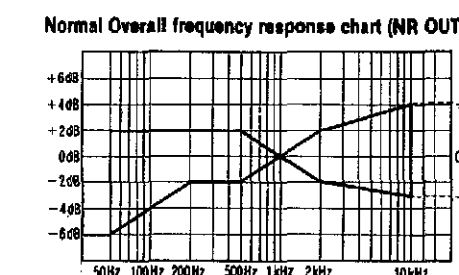


Fig. 13

4. Apply test signals (with the specified test frequencies covering the range from 50Hz to 10kHz) whose levels are 20dB lower than the reference signal level (1kHz) to the Rec. input and record these signals in sequence.
  5. Play back the test signals just recorded and verify that the levels at the test frequencies fall in the ranges specified in Fig. 13 with respect to the reference signal level.
  6. Repeat steps 4 and 5 above for CrO<sub>2</sub> blank test tape (QZZCRX) and Metal blank test tape (QZZCRZ), in these cases raising the upper end of the test signal frequency range to 12.5kHz. Verify that the signal levels at the test frequencies fall in the ranges specified in Fig. 14 with respect to the reference signal level.
- Steps 1 through 3 above are concerned with overall gain; steps 4 through 6 pertain to overall frequency response.

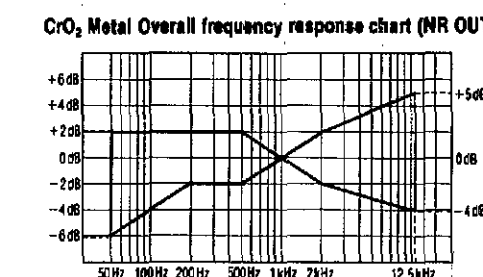


Fig. 14

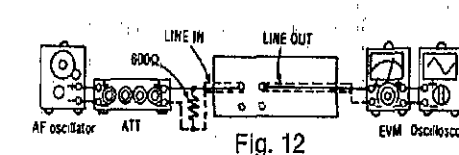
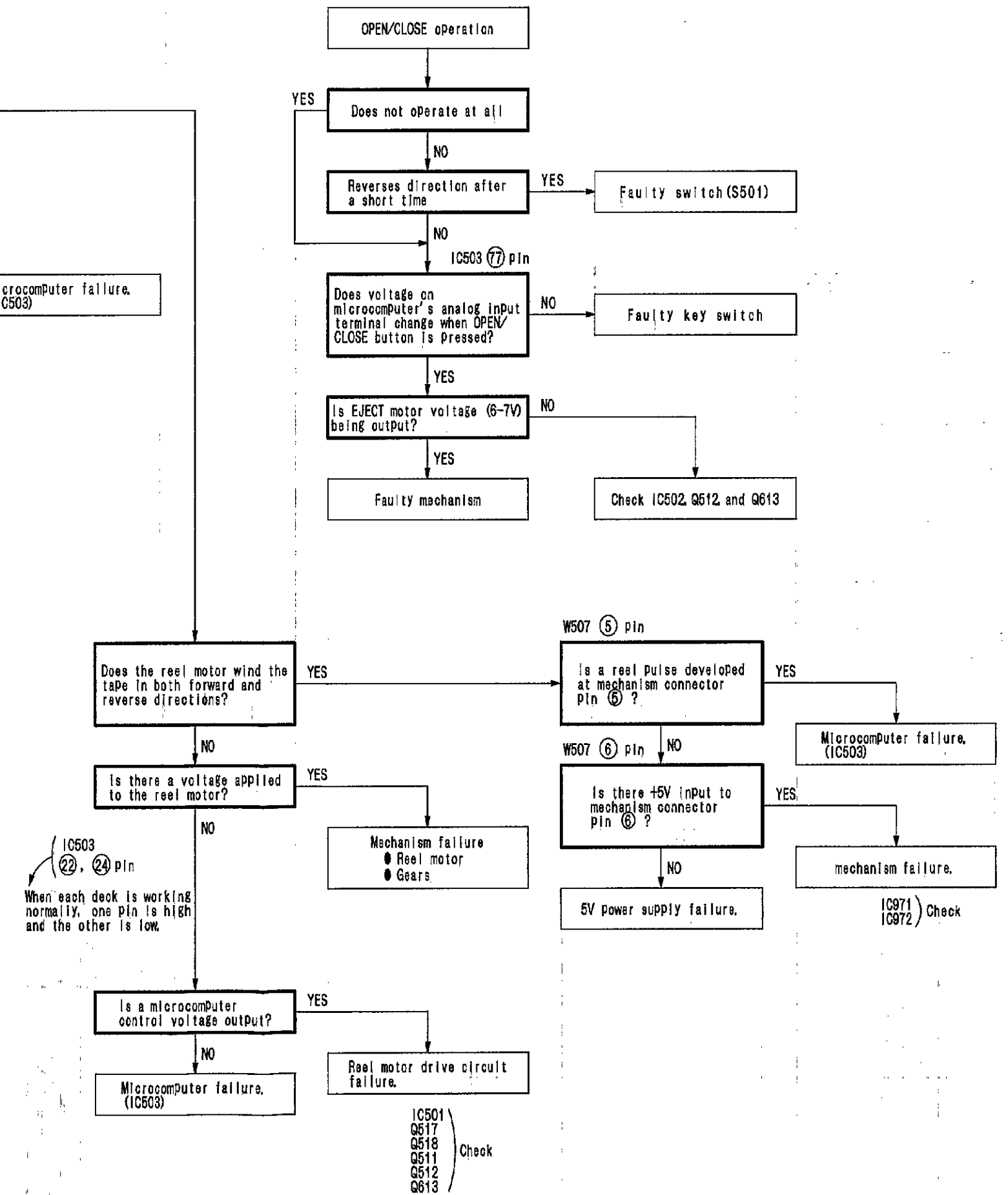
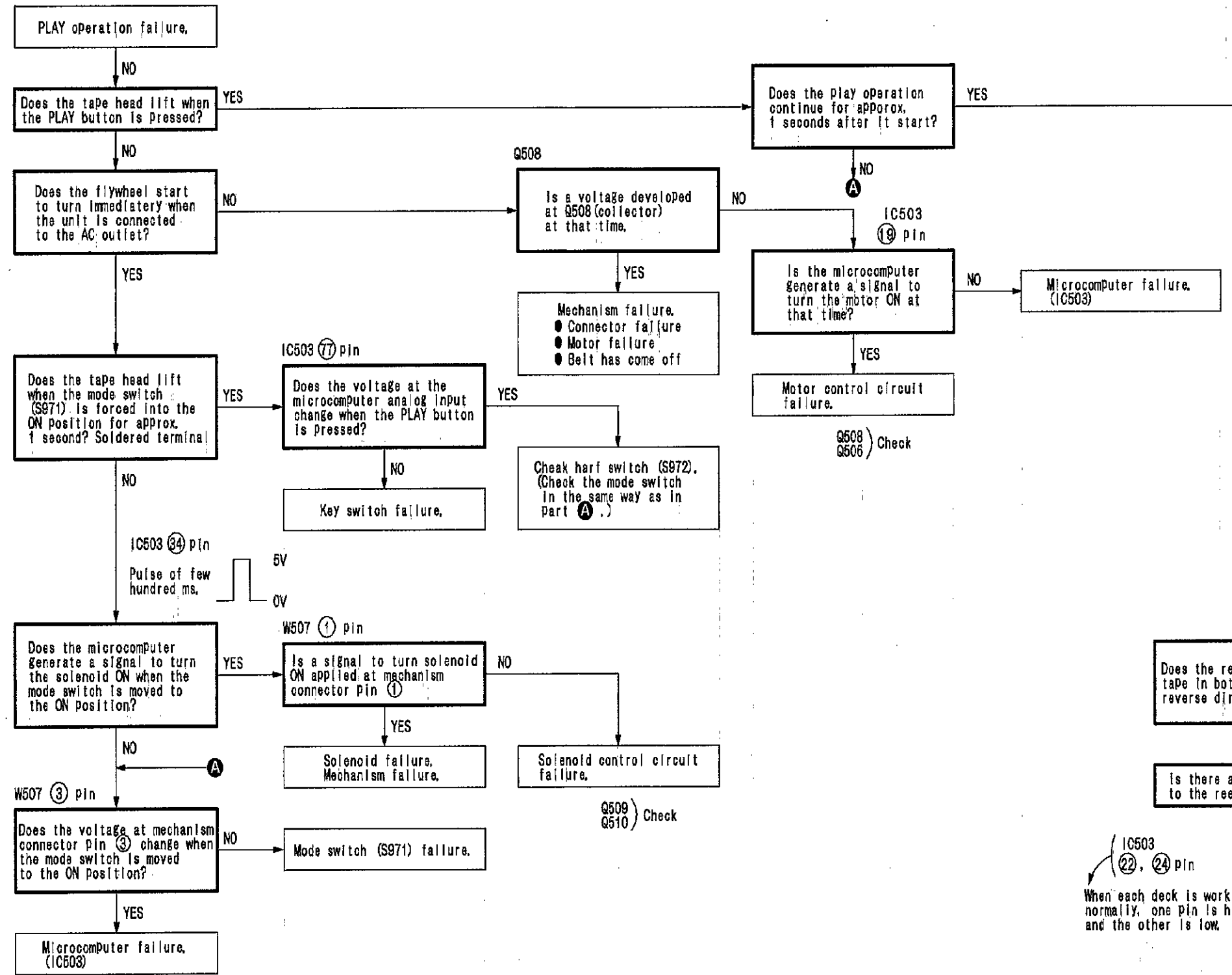
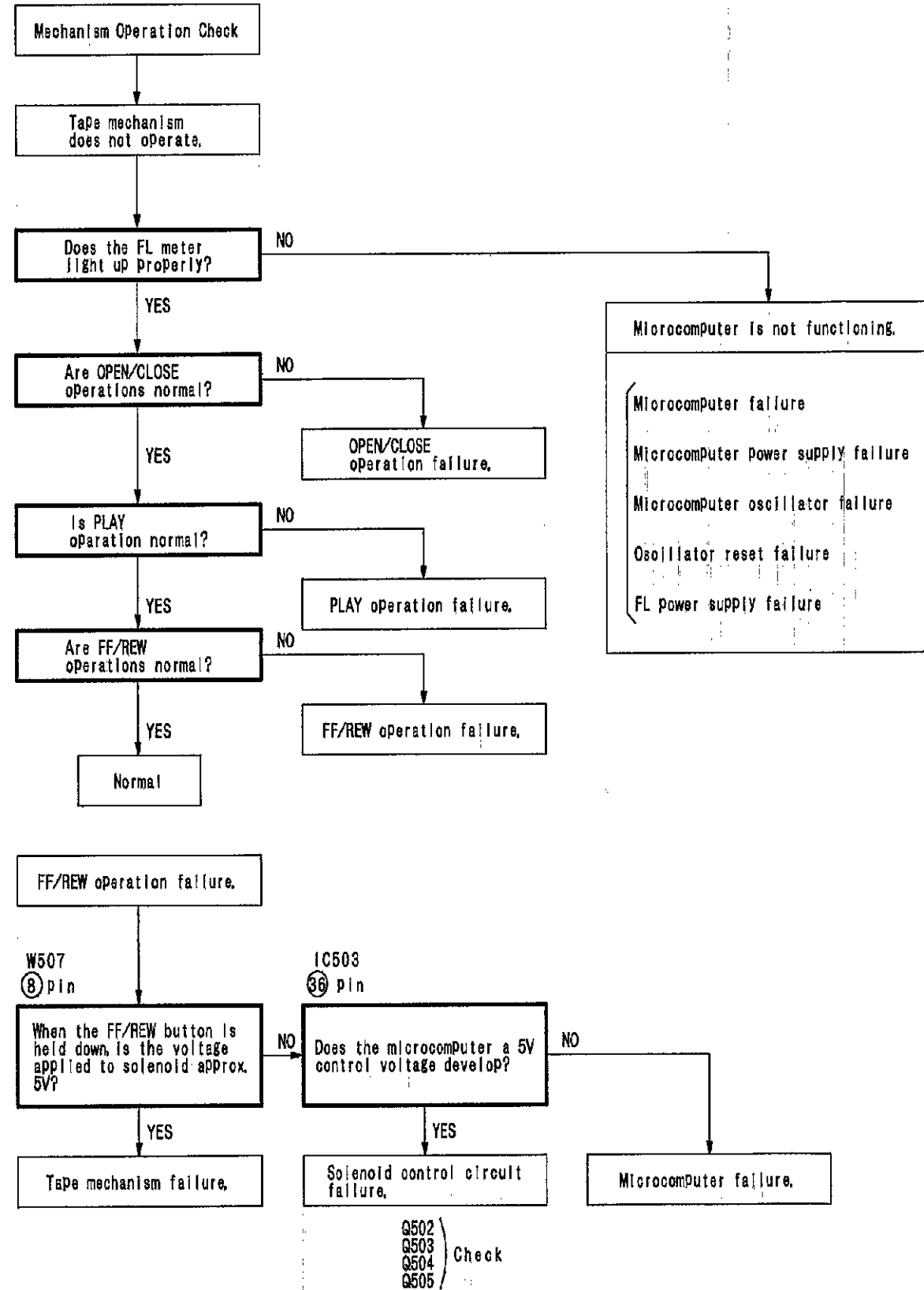


Fig. 12

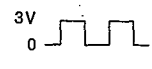

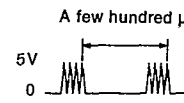
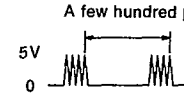
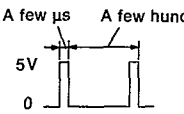

■ TROUBLESHOOTING GUIDE

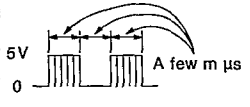

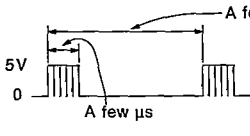


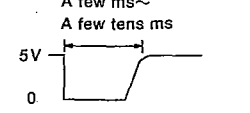


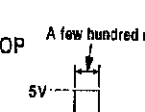
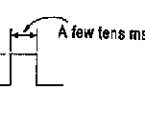
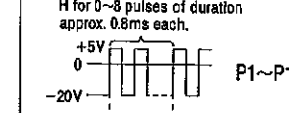
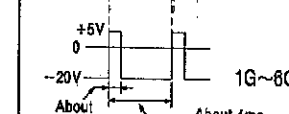
# TERMINAL FUNCTION OF IC

## • IC503 (M38172M2500F): MICROCOMPUTER

\* To check the contents of the item "※" in the IC terminal table, set the unit to the state described in the "Motor Control PCB Checking Method" on page 15.

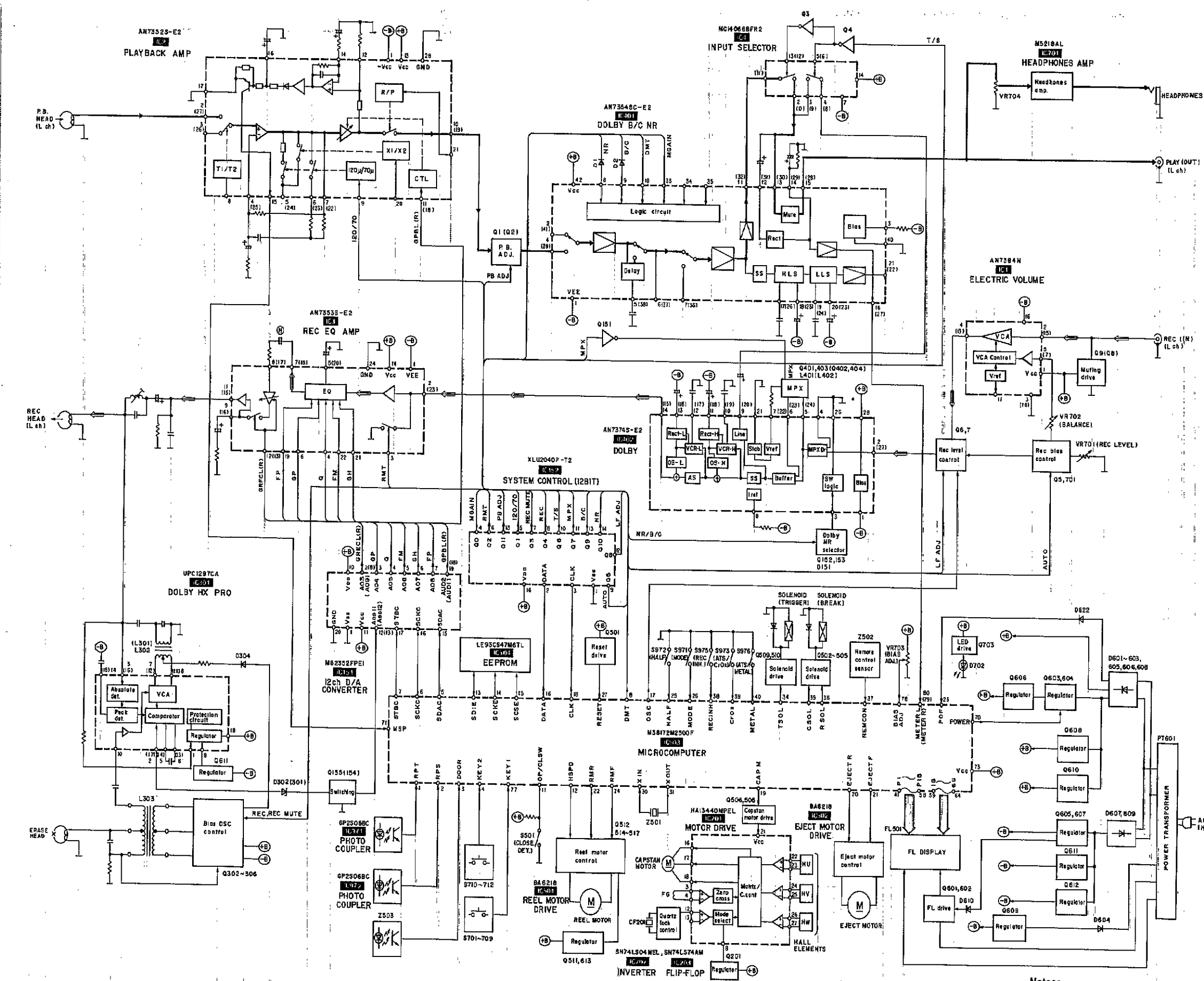
Pin No.	Mark	I/O Division	Function	Check point	※ Discription
1	RPT	I	Reel pulse det. input (take up side)	Connector W507 ⑥ pin	 <p>Changes within the 0 ↔ 3V range each time the take up reel is through approximately 30 degrees.</p>
2	RPS	I	Reel pulse det. input (supply side)	Connector W507 ⑩ pin	 <p>Changes within the 0 ↔ 3V range each time the take up reel is through approximately 30 degrees.</p>
3	DOOR	I	Cassette holder half det. input (photo det.)	Connector W501 ⑧ pin	Tape in: 5V Tape out: 0V
4	KEY2	I	Key switch (COUNTER RESET, COUNTER MODE, MEMORY REPEAT/STOP, POWER, DOLBY B, DOLBY C, MPX, ATC ON/OFF, ATC SELECT, TIMER REC/PLAY) input	Connector IC503 ④ pin	+5V without key input and 0V with the stop key ON. An analog value (0~5V) is used for each key ON.
5	SDAC	O	DA converter data output ON: "L", OFF: "H"	Connector CP3 ④ pin	 <p>Usually</p>
6	SCKC	O	DA converter serial clock output ON: "L", OFF: "H"	Connector CP3 ③ pin	 <p>Usually</p>
7	STBC	O	DA converter strove signal output ON: "H", OFF: "L"	Connector CP3 ② pin	 <p>Usually</p>
8	DMT	O	Line out mute signal output ON: "L", OFF: "H"	Connector CP3 ① pin	"L" (=0V) when sound is being produced in the play or REC mode and "H" (=5V) when no sound is produced in the stop or FF/REW mode.
9	$\overline{CS}$	—	Not used	—	Connected to GND
10	CLK1				
11	OP/CL SW	I	Can switch of eject mechanism input	Connector W501 ③ pin	Cassette holder open/close condition: 0V Cassette holder active: 5V
12	HSPD	O	High speed take up selector output of reel motor	Connector W501 ② pin	"H" (=5V) when deck is in the high-speed FF/REW or TPS mode and "L" (=0V) in other modes.
13	SDIK	I/O	E2PROM chip select signal (ON: "H", OFF: "L")	Connector CN503 ⑤ pin	 <p>(ex...PLAY ↔ STOP mode is changed)</p>

Pin No.	Mark	I/O Division	Function	Check point	※ Discription
14	SCKE	O	E2PROM serial clock signal output ON: "H", OFF: "L"	Connector CN503 ④ pin	 (ex...PLAY ↔ STOP mode is changed)
15	SCSE	O	E2PROM serial data signal output ON: "H", OFF: "L"	Connector CN503 ③ pin	 (ex...PLAY ↔ STOP mode is changed)
16	DATA	O	Serial data for amp control output ON: "H", OFF: "L"	Connector CP3 ⑧ pin	 Usually
17	OSC	O	Audio signal for adjustment output ON: "H", OFF: "L"	Connector CP3 ⑦ pin	Generates signals at approx. 400Hz or 10kHz (square wave (H and L, 0 and 5V) in REC mode during adjustment of ATC).
18	CLK	O	Serial clock for serial data output	Connector CP3 ⑥ pin	 Data output in response to serial data
19	CAPM	O	Capstan motor ON/OFF control output ON: "H", OFF: "L"	Connector W502 ③ pin	STOP mode: "L" (=0V) PLAY mode: "H" (=5V)
20	EJECT R	O	Eject motor close control output	Connector W501 ⑤ pin	OPEN → CLOSE mode: "H" (=5V) Other mode: "L" (=0V)
21	EJECT F	O	Eject motor open control output	Connector W501 ④ pin	CLOSE → OPEN mode: "H" (=5V) Other mode: "L" (=0V)
22	RMR	O	Reel motor reverse output	Connector W501 ⑥ pin	REW mode: "L" (=0V) Other mode: "H" (=5V)
23	POF	I	Power off det. input ON: "H", OFF: "L"	Connector CP4 ⑤ pin	 Rectified waveform at both 50 and 60Hz (clamping at 5V)
24	RMF	O	Reel motor forward output	Connector W501 ⑦ pin	PLAY/FF mode: "L" (=0V) Other mode: "H" (=5V)
25	HALF	I	Cassette half det. switch input	Connector W507 ② pin	Tape in close mode: "L" (=0V) Other mode: "H" (=5V)
26	MODE	I	Mechanism mode switch det. input	Connector W507 ③ pin	STOP/FF/REW mode: "H" (=5V) PLAY/TPS mode: "L" (=0V)
27	RESET	I	Reset input ON: "L", OFF: "H"	TRANSISTOR Q501 collector	 Usually H (=5V) but L for a period of a few to a few tens of milliseconds is first plugged in when the player
28	XCIN	—	Not used	—	—
29	XCOUT	—	Not used	—	—

Pin No.	Mark	I/O Division	Function	Check point	※ Discription
30	XIN	I	Microcomputer clock OSC terminal	Z501 ① pin terminal	Oscillator waveform at 6MHz
31	XOUT	O	Microcomputer clock OSC terminal	Z501 ② pin terminal	Oscillator waveform at 6MHz
32	V <sub>SS</sub>	-	Microcomputer GND	Connector CP5 ⑨ pin	0V
33	RMSP	O	Trigger solenoid control output	Connector W507 ① pin	STOP → PLAY or PLAY → STOP mode 
34	T SOL	O	Reel motor speed control output	D504 ④ terminal	FF/REW mode: "H" (=5V) PLAY mode: "L" (=0V)
35	CSOL	O	Brake solenoid hold control output	IC503 ⑥ pin	FF/REW/TPS mode: "H" (=5V) Other mode: "L" (=0V)
36	BSOL	O	Brake solenoid control output	Q503 ③ terminal	STOP → FF/REW or PLAY → TPS mode 
37	REMOCON	I	Remocon signal input ON: "H", OFF: "L"	Z502 ① pin	H and L pulse waveform appears on the input of a remote control signal.
38	RECINH	I	Rec inhibit switch Input	Connector W507 ② pin	Rec OK: "L" (=0V) Rec NG: "H" (=5V)
39	CrO <sub>2</sub>	I	CrO <sub>2</sub> tape det. input	Connector W507 ③ pin	CrO <sub>2</sub> /Metal or no tape: "H" (=5V) Normal tape: "L" (=0V)
40	METAL	I	Metal tape det. Input	Connector W507 ④ pin	Metal or no tape: "H" (=5V) Normal or CrO <sub>2</sub> tape: "L" (=0V)
41 58	P1 P18	O	FL meter segment output ON: "H", OFF: "L"	FL501 ⑩~⑮ pin	H for 0~8 pulses of duration approx. 0.8ms each. 
59 64	1G 6G	O	FL meter glid output ON: "H", OFF: "L"	FL501 ①~⑥ pin	
65 69	7G 11G	-	Not used	-	-
70	POWER	O	Power control output ON: "H", OFF: "L"	Connector CP3 ③ pin	Power ON: "H" (=5V) Power OFF: "L" (=0V)
71	MSP	I	TPS signal det. Input ON: "L", OFF: "H"	Connector CP3 ④ pin	TPS mode No program: "H" (=5V) Programs: "L" (=0V)

Pin No.	Mark	I/O Division	Function	Check point	※ Discription
72	TEST	-	Test mode input	Connector CP3 ③ pin	Normal: "H" (=5V) Test (Service) mode: "L" (=0V)
73	V <sub>CC</sub>	I	Power supply terminal	Connector CP4 ④ pin	+5V
74	V <sub>EE</sub>	I	FL meter pull down voltage Input terminal	Connector CP5 ⑤ pin	-20V
75	AV <sub>SS</sub>	-	GND terminal (A/D)	Connector CP5 ⑥ pin	0V
76	VREF	I	Reference power supply (+5V) (A/D)	Connector CP5 ⑤ pin	+5V
77	KEY1	I	Key switch (STOP, FF, MONITOR, REW, PLAY, REC, ARM, PAUSE, OPEN/CLOSE) input	IC503 ① pin	+5V without key input on deck 1 and 0V with the stop key ON. An analog value (0~5V) is used for each key ON.
78	BIAS ADJ	O	Bias adj. V.R terminal	Connector CP3 ③ pin	Bias ADJ. Vol. min..... 0V center..... About 2.5V max..... About 5V
79	METER R	I	Rch meter level input	Connector CP3 ③ pin	Source mode: No signal (About 0V): 0V 0VU (-20dB) Input: About 1V Changes within 0 ~ 5V range each input level mode.
80	METER L	I	Lch meter level input	Connector CP3 ④ pin	

■ BLOCK DIAGRAM



Notes:  
 • → Playback signal  
 • ⇄ Recording signal

SCHEMATIC DIAGRAM (Parts list on pages 53~56.)

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

Note:

- S501 : Close switch (Loading).
- S701 : Stop switch (■).
- S702 : Fast forward/TPS switch (▶▶) [TPS].
- S703 : Monitor switch.
- S704 : Rewind/TPS switch (◀◀) [TPS].
- S705 : Playback switch (▶).
- S706 : Record switch (● REC).
- S707 : Automatic record muting switch (● AUTO REC MUTE).
- S708 : Pause switch (■ PAUSE).
- S709 : Cassette holder open/close switch (▲ OPEN/ CLOSE).
- S710 : Tape counter switch.  
711 (S710: RESET, S711: MODE)
- S712 : Memory switch (MEMORY REPEAT/STOP).
- S713 : Power "STANDBY" switch (POWER, STANDBY & ON).
- S714 : Multiplex filter switch (MPX FILTER).
- S715 : Dolby noise reduction switches.  
716 (S715: DOLBY NR B, S716: DOLBY NR C)
- S717 : ATC switch (ATC).  
718 (S717: OFF/ON (Auto Tape Calibration), S718: SELECT (Standard → High → Low).)
- S719 : Timer switch (⏱ TIMER).
- S971 : Mode switch in "off" position.
- S972 : Cassette half detection switch in "off" position.
- S973 : ATS (CrO<sub>2</sub>) switch in "off" position.
- S975 : Rec inhibit switch in "off" position.
- S976 : 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 use EVM.  
Important safety notice  
Components identified by Δ mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.

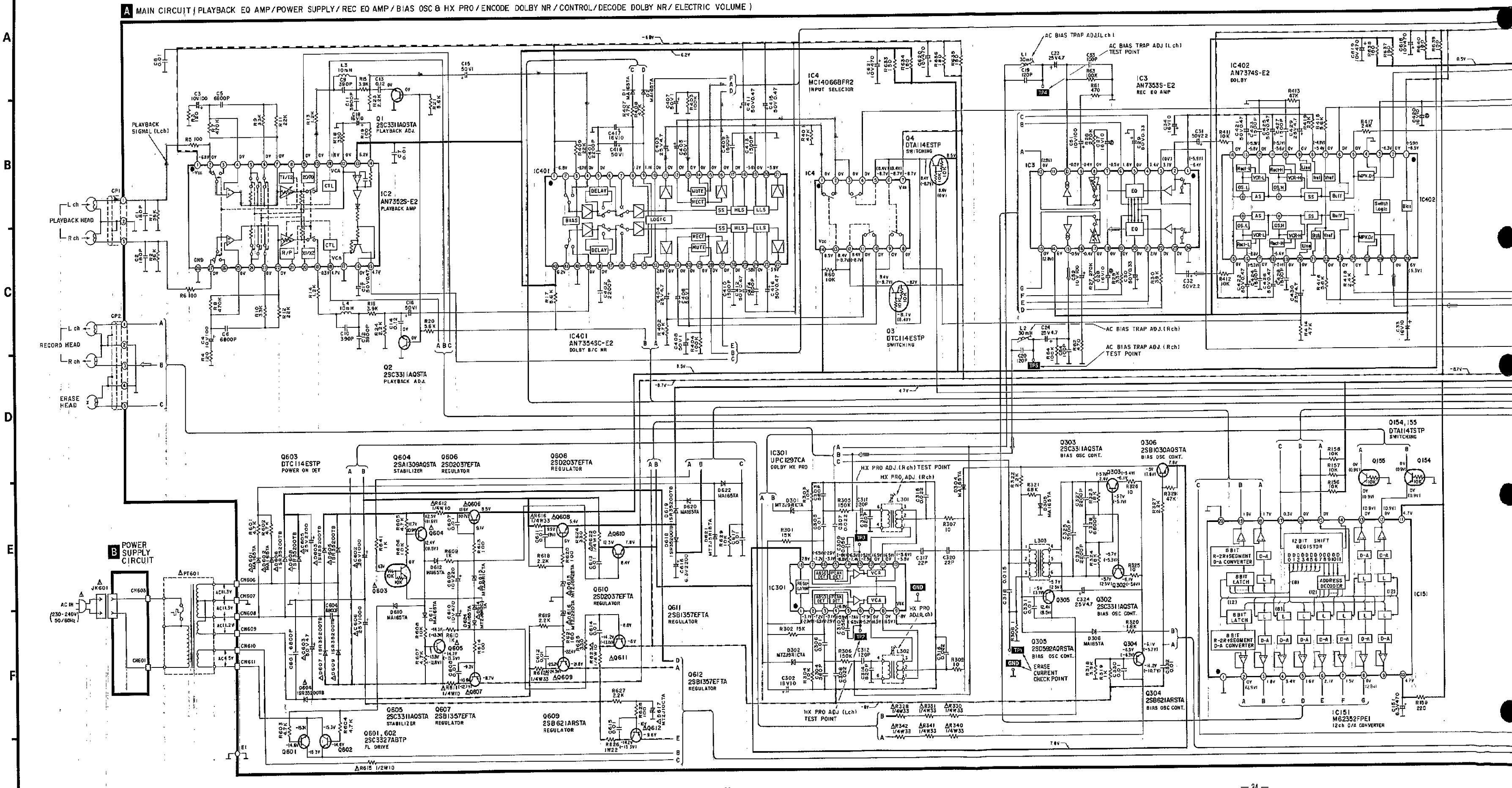
( ) Indicates +B (bias).  
( ) Indicates -B (bias).  
( ) Indicates the flow of the playback signal.  
( ) Indicates the flow of the record signal.  
The supply part number is described alone in the replacement parts list.

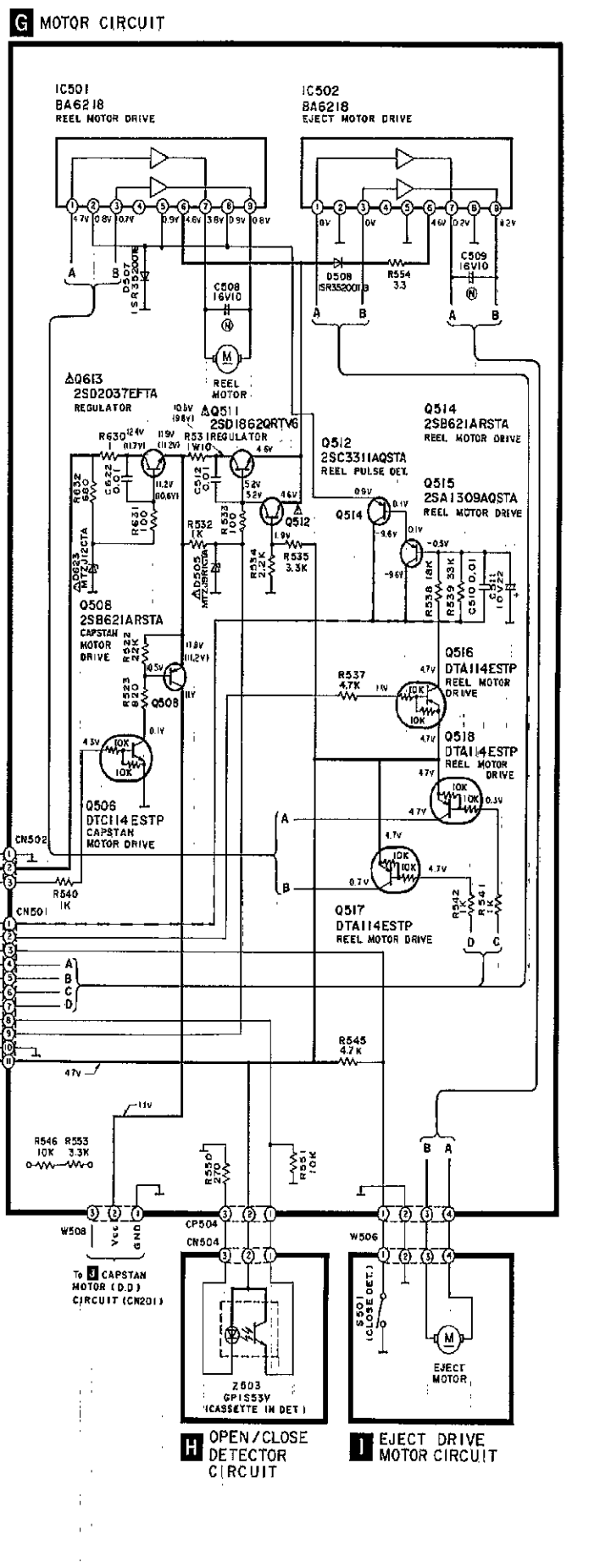
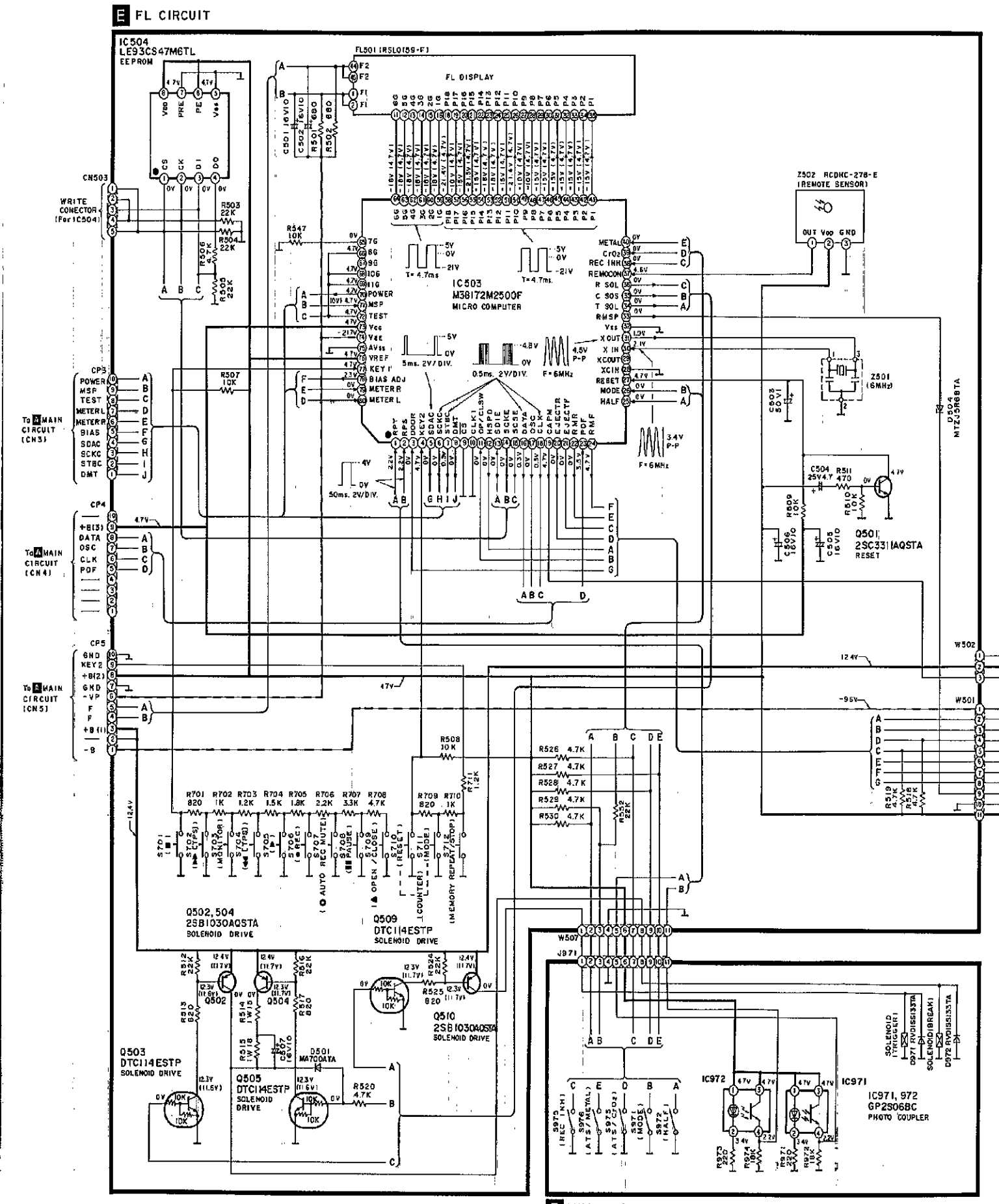
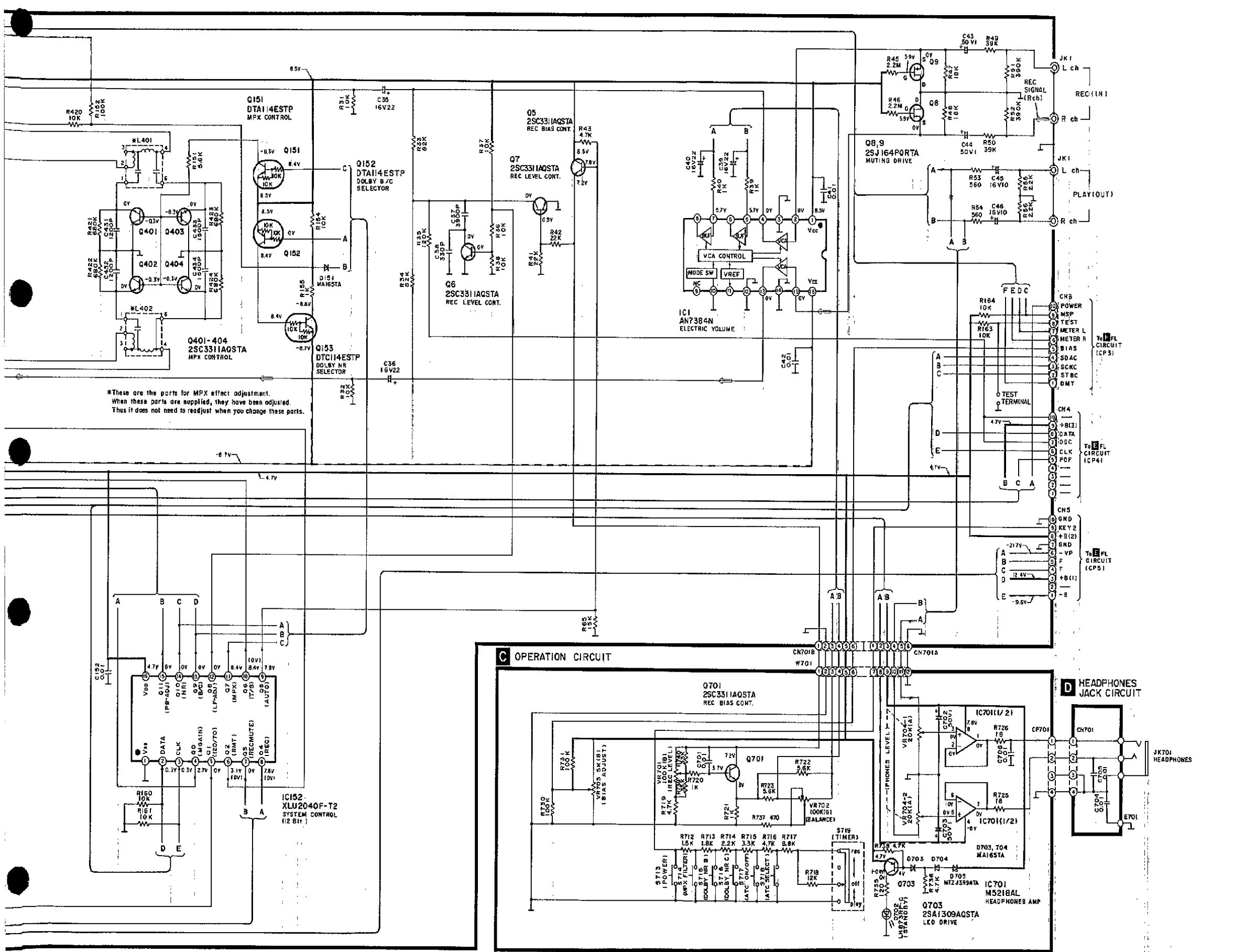
Ref. No.	Production Part No.	Supply Part No.
IC152	XLU2040F-T2	XLU2040F-T1
IC203	SN74LS74AMEL	SN74LS74AM
IC701	M5218AL	M5218L
Z502	RCDHC-278-E	RCDHC-278
Z503	GP1S53V	SVDGP1S53

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

TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

MC14066BFR2 14 Pin	AN7353S-E2 24 Pin	LE93CS47M5TL 8	M38172M2500F 8	M5218AL 8
SN74LS04AMEL 14 Pin	AN7352S-E2 28 Pin	BA6216 9	AN7384N 16 Pin	HA13440MPEL 17
SN74LS74AMEL 14 Pin	AN7374S-E2 28 Pin	2SA1309AQSTA 2SB1030AQSTA 2SC3311AQSTA	2SB1357EFTA 2SD2037EFTA	2SD1862QRTV6 2SJ164PQRTA
XLU2040F-T2 16 Pin	AN7354S-E2 42 Pin	2SC3327ABTP 2SD582AQRSTA	DTA114TSTP DTA114ESTP DTC114ESTP	GP2S08BC 3
M62352FPF1 20 Pin		2SA1309AQSTA 2SB1030AQSTA 2SC3311AQSTA	2SB1357EFTA 2SD2037EFTA	2SD1862QRTV6 2SJ164PQRTA
		MTZJ3R9ATA MTZJ5R1BTA MTZJ5R8BTA MTZJ6R2BTA MTZJ8R2CCTA MTZJ9R1CCTA MTZJ10CCTA MTZJ12CCTA MTZJ220TA	MA168TA MA700ATA FVD1SS133TA 1SR35200TB	LN873RP-C Anode Cathode

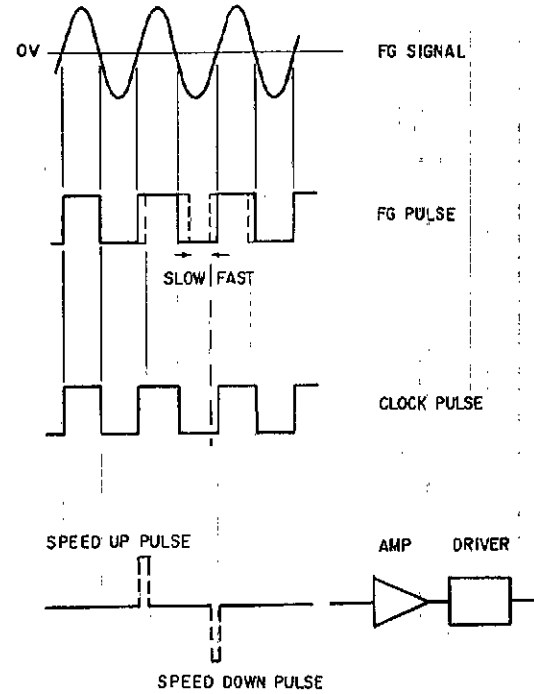




### ■ TROUBLESHOOTING OF DIRECT DRIVE MOTOR

#### • OUTLINE OF THE DIRECT DRIVE MOTOR SYSTEM

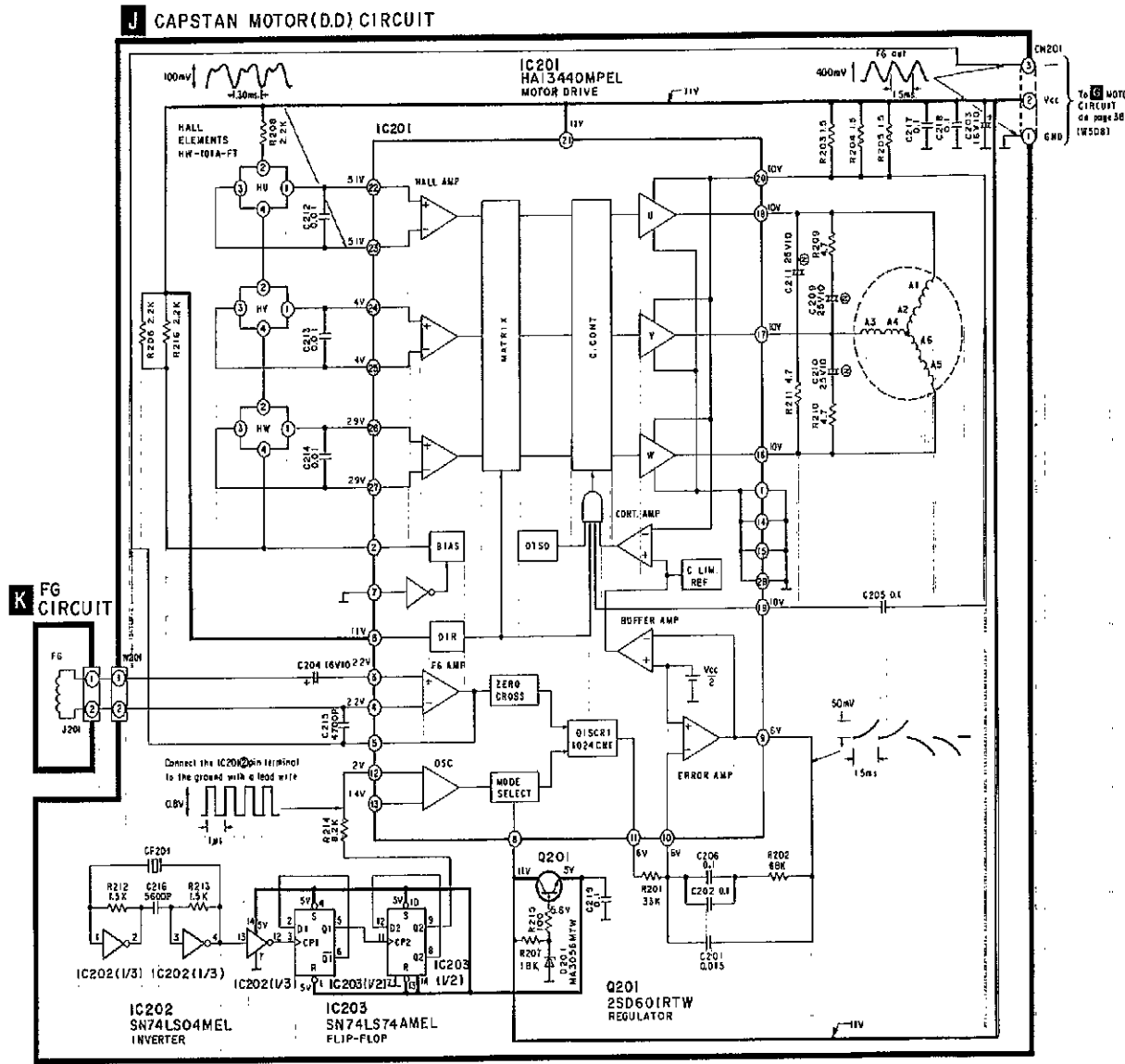
The capstan motor is actuated by the DD motor digital servo system. The FG pulse is generated after the detection of the zero crosspoint, and the reference signal generated from the quartz oscillator is compared with this FG pulse. From this comparison, the accelerated and reduced speed pulses are generated, causing the driving coil to function.



#### • TROUBLESHOOTING OF DIRECT DRIVE MOTOR

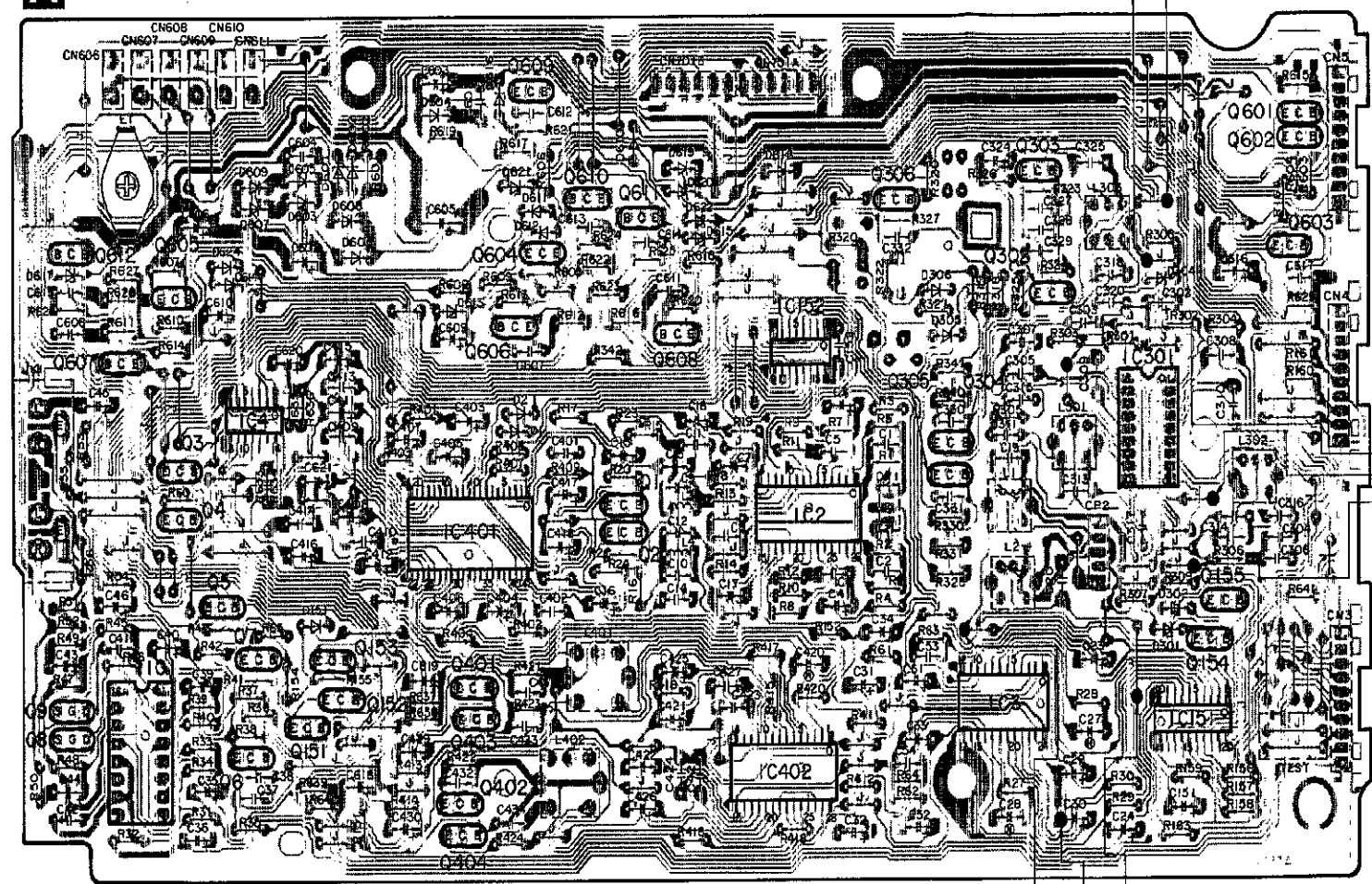
Problem	Possible Cause	Check Points
1. The motor does not rotate.	1. No power supply (+12V). 2. The Hall element has failed (Current does not flow). 3. The ceramic (or crystal) does not oscillate.	• Check the voltage applied to the connector. • Check the DC potential on IC201 pins ②~④. *Check the waveform of IC201 pin ②.
2. The motor does not rotate properly. (When pressed, it stops at certain angles. Sometimes it does not rotate even if power is ON.)	1. The coil is broken or not properly soldered. 2. Output of the Hall element is not proper.	*Check the conductance of the coil. If normal, the resistances between IC201 pins ①~②, ③~④, ⑤~⑥ will reach 20 ohms. • Check the waveform of IC201 pins ②~④.
3. The motor is out of control.	1. The FG coil is broken.	• Check the waveform of IC201 pin ②. • Check if the FG coil is broken.
4. Abnormal wow.	1. Same as those described for problem 2.	

Note: Check the points marked with an asterisk (\*) by removing the DD motor control P.C.B. and then connecting IC201 pin ② to GND with a lead wire. (After the DD motor control P.C.B. is removed, current will start flowing through the coil, heating the IC.)

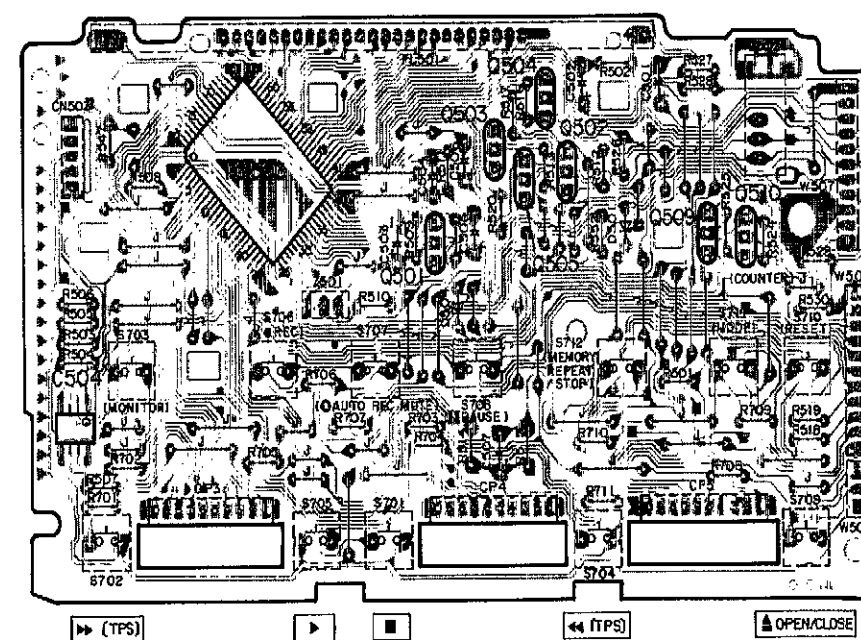


### ■ PRINTED CIRCUIT BOARDS

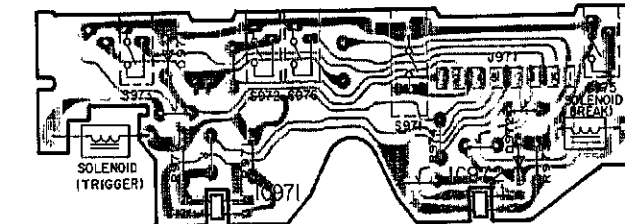
A MAIN P.C.B. (REP1632A-M)



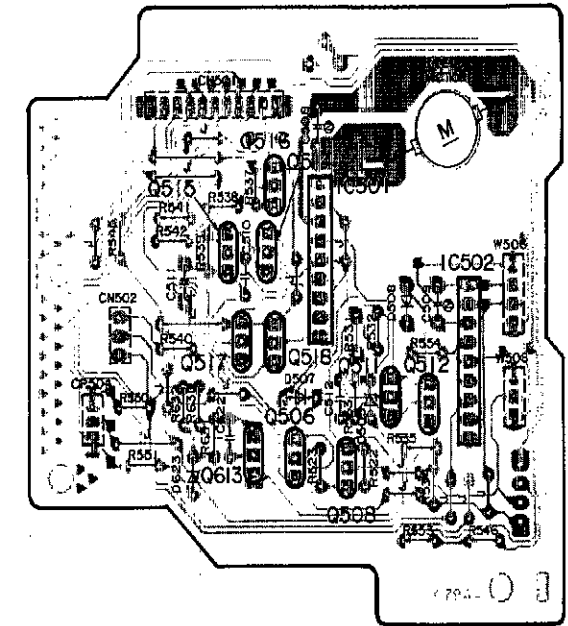
E FL P.C.B. (REP1633B-S)



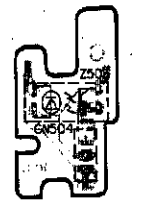
F MECHANISM P.C.B. (REP0267)



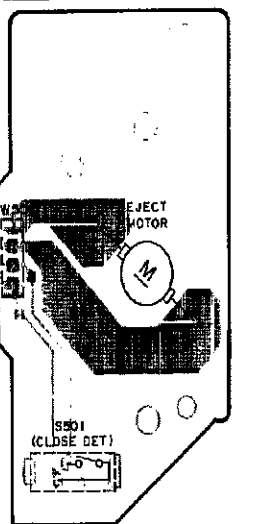
G MOTOR P.C.B. (REP1634B-T)



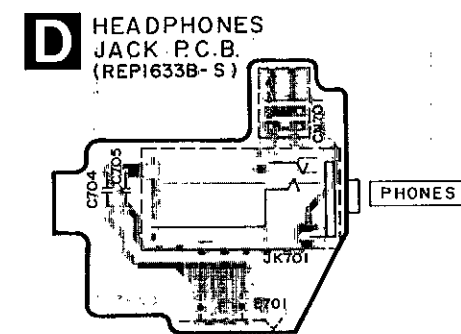
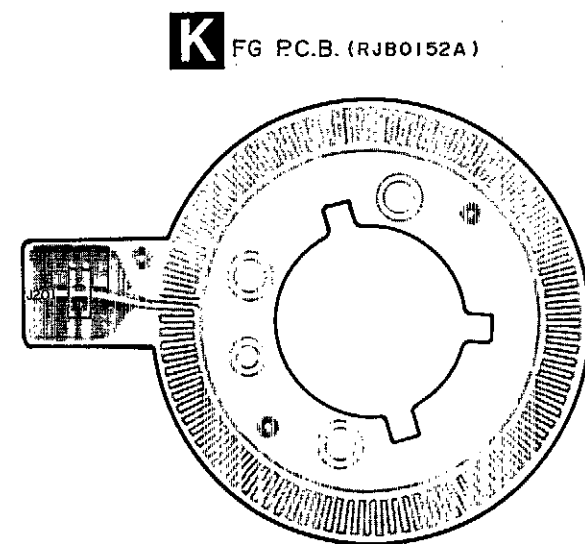
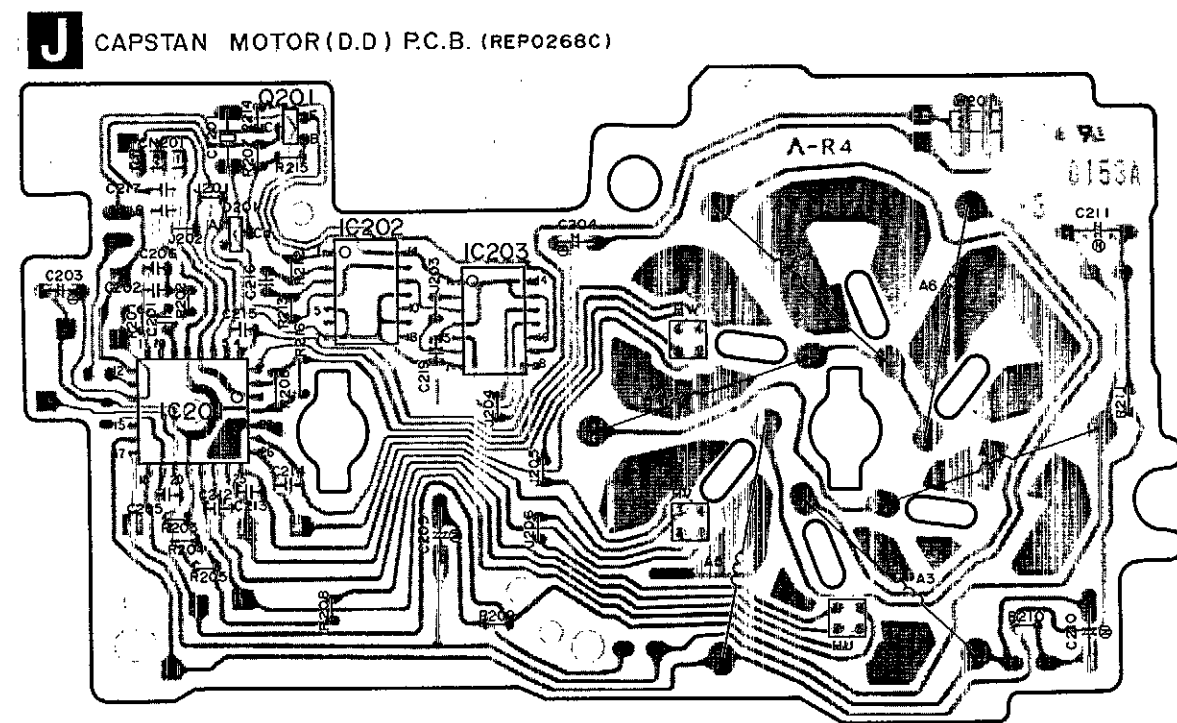
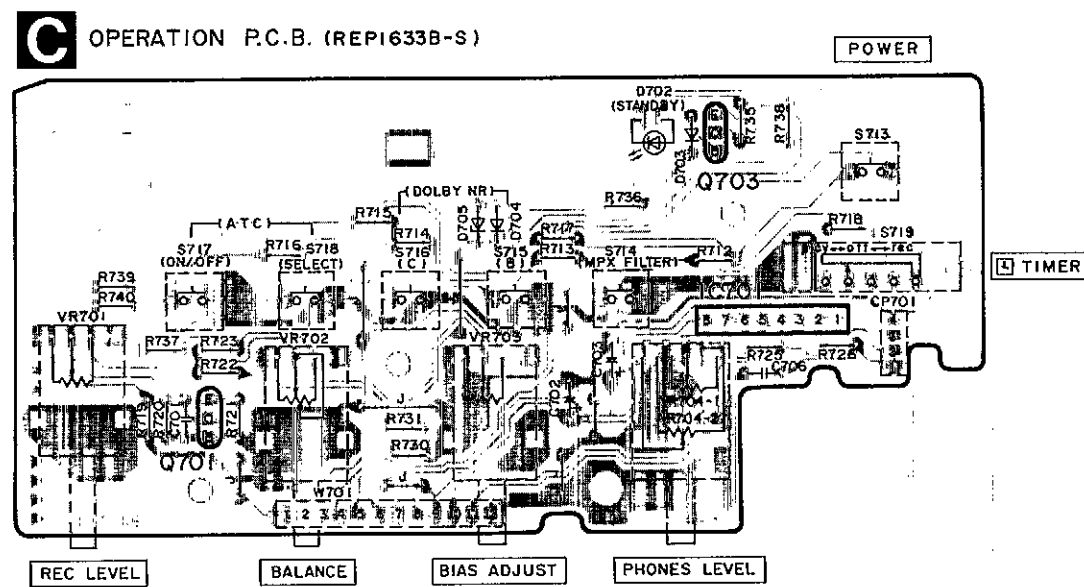
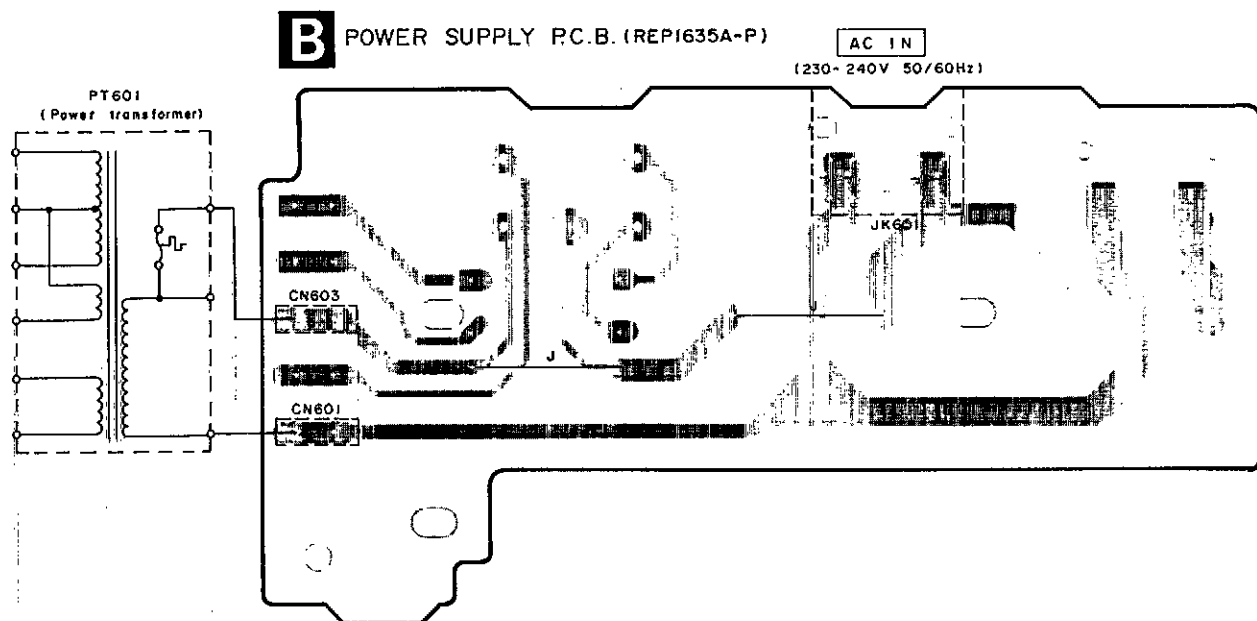
H OPEN/CLOSE DETECTOR P.C.B. (REP1634B-T)



I EJECT DRIVE MOTOR P.C.B. (REP1634B-T)

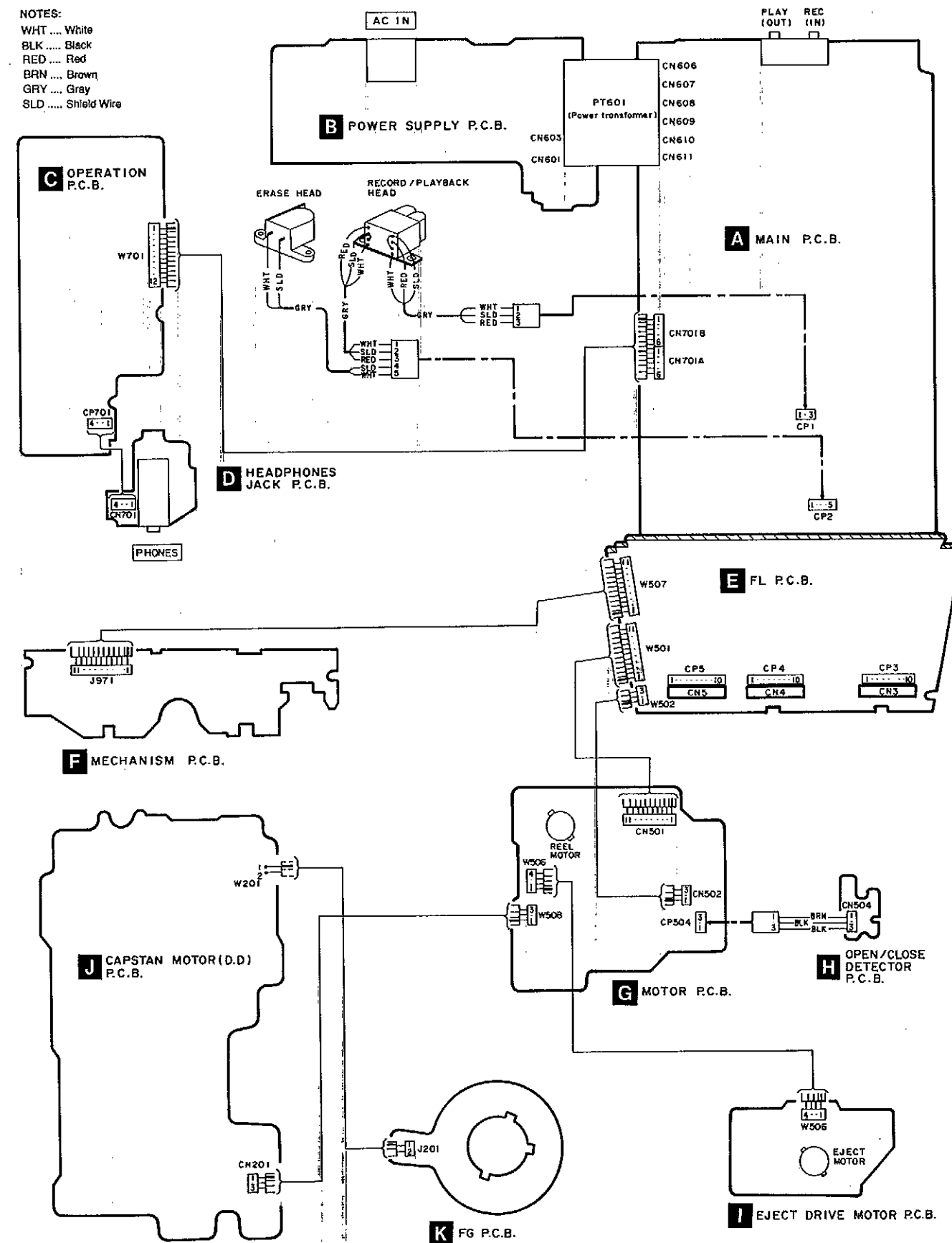






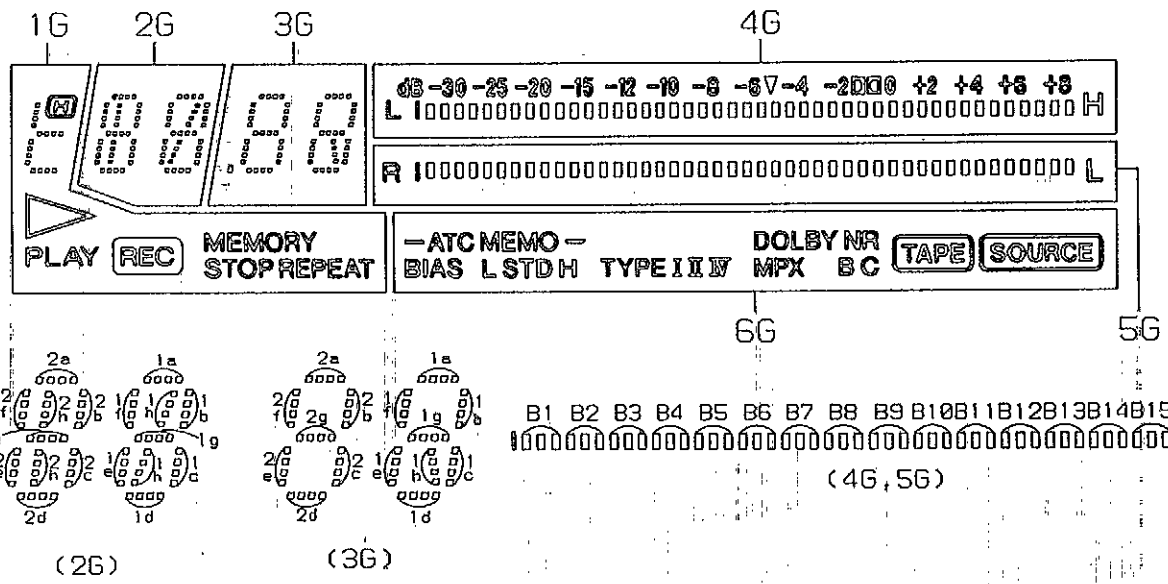
WIRING CONNECTION DIAGRAM

NOTES:  
WHT .... White  
BLK .... Black  
RED .... Red  
BRN .... Brown  
GRY .... Gray  
SLD .... Shield Wire



### INTERNAL CONNECTION OF FL

• Grid connection diagram



• Anode connection diagram

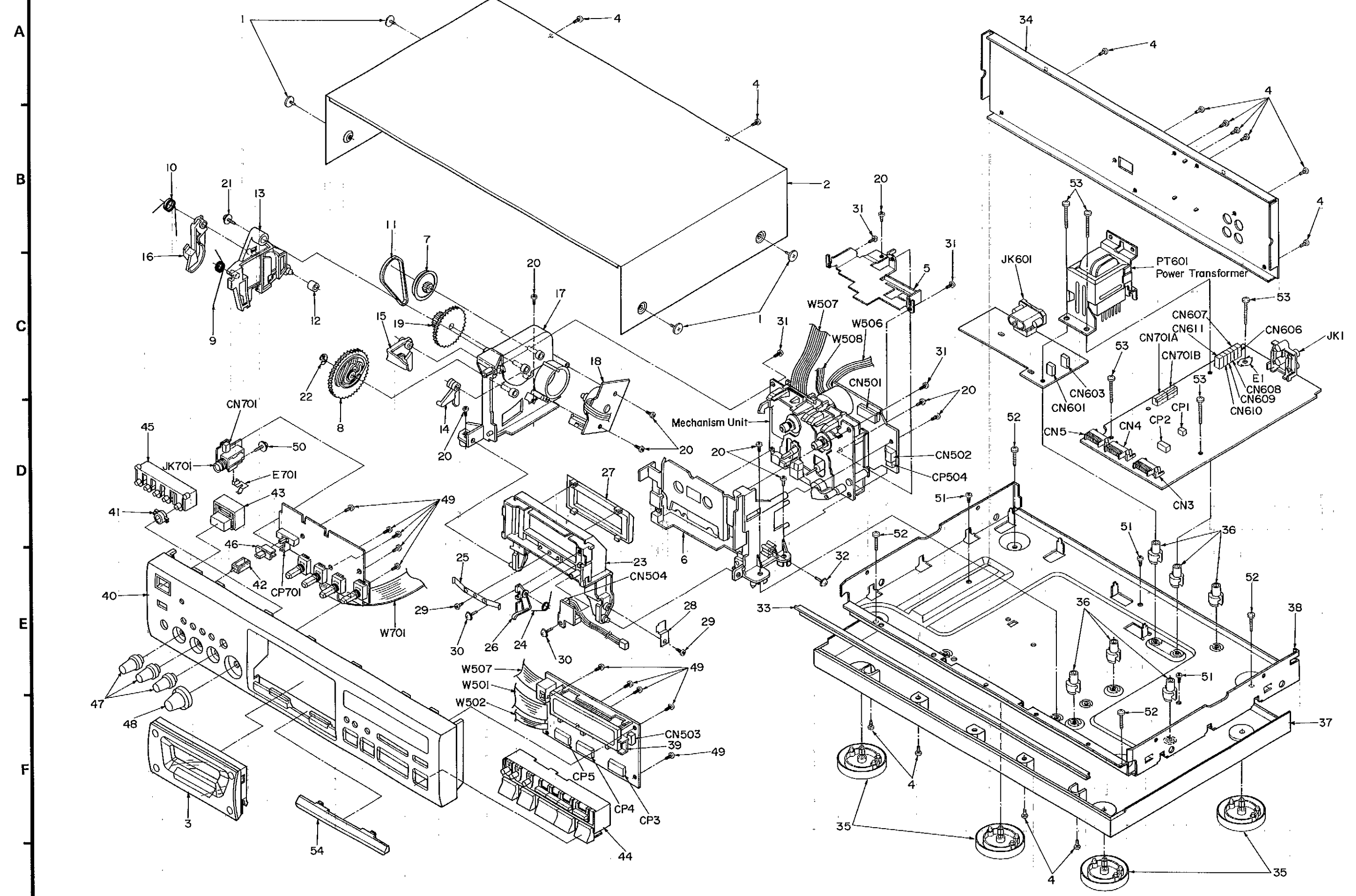
	1G	2G	3G	4G	5G	6G
P1	-	1a	1a	B1	B1	-ATC -
P2	----	1b	1b	B2	B2	L
P3	M	1f	1f	B3	B3	STD
P4	-	1g	1g	B4	B4	H
P5	-	1c	1c	B5	B5	TYPE
P6	-	1e	1e	B6	B6	I
P7	-	1d	1d	B7	B7	II
P8	▷	2a	2a	B8	B8	III
P9	PLAY	2b	2b	B9	B9	MEMO
P10	REC	2f	2f	B10	B10	-
P11	MEMORY	2g	2g	B11	B11	BIAS
P12	STOP	2c	2c	B12	B12	-
P13	REPEAT	2e	2e	B13	B13	DOLBY NR
P14	-	2d	2d	B14	B14	MPX
P15	-	1h	1h	B15	B15	B
P16	-	2h	<sup>a</sup> (DP)	-	-	C
P17	-	-	-	30 - 30 ~ +8	R I	TAPE
P18	-	-	-	V H L	L	SOURCE

• Pin connection

PIN NO.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	
CONNECTION	F	F	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	F
	2	2	P	P	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	P

- Note
- 1) F1, F2..... Filament
  - 2) NP..... No pin
  - 3) NX..... No extend pin
  - 4) NC..... No connection
  - 5) DL..... Datum Line
  - 6) 1G~6G..... Grid

### CABINET PARTS LOCATION



# REPLACEMENT PARTS LIST

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

 Components identified by  $\Delta$  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 indications in the Remarks columns specify the areas. (Refer to the cover page for area.)

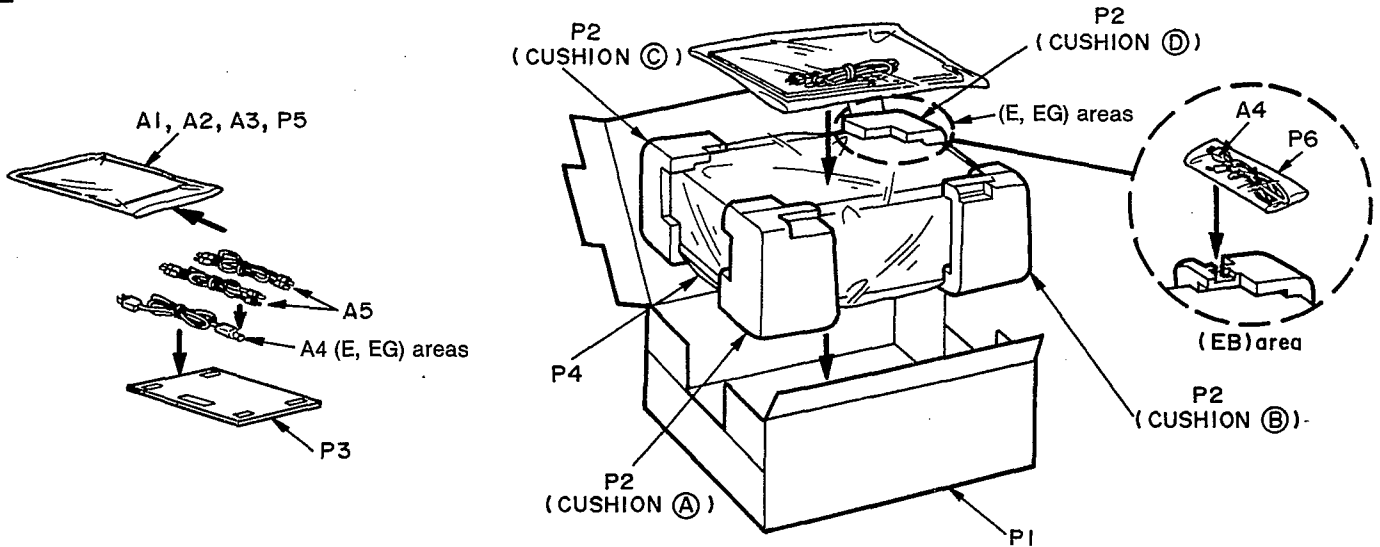
Parts without these indications can be used for all areas.

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

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		44	RGU0883-K	BUTTON, OPERATION	
				45	RGU0885-K	BUTTON, ATC	
				46	RGV0112-K	KNOB, TIMER	
1	RHD30035-K	SCREW		47	RGW0175-K	KNOB, H. P. LEVEL/BIAS/BAL.	
2	RKMD114-K	CABINET		48	RGW0177-K	KNOB, REC LEVEL	
3	RYF0217-K	CASSETTE LID		49	XTBS26+8J	SCREW	
4	XTBS3+8JFZ1	SCREW		50	XTWS3+10T	SCREW	
5	RMA0693	MECHA. SHIELD PLATE		51	XTB3+10GFZ	SCREW	
6	RFKNBX747EAK	MECHANISM BASE ASS'Y		52	XTB3+16CFN	SCREW	
7	RDG0081	PULLEY GEAR		53	XTB3+20JFZ	SCREW	
8	RDG0242	DRIVE GEAR		54	RGK0545-K	HEAD ORNAMENT	
9	RME0134	CLOSE SPRING				PACKING MATERIAL	
10	RME0138	DRIVE ARM SPRING					
11	RMG0121	BELT		P1	RPG1623	PACKING CASE	(E, EG)
12	RMG0330-C	CUSHION RUBBER		P1	RPG1624-1	PACKING CASE	(EB)
13	RML0305	DRIVE LEVER		P2	RPN0697	CUSHION	(E, EG)
14	RML0306	SWITCH LEVER		P2	RPN0698	CUSHION	(EB)
15	RML0307	ATS ARM		P3	RPQ0164	ACCESSORIES PAD	
16	RML0311	FRICTION ARM		P4	XZB52X60A01Z	PROTECTION COVER (THIS UNIT)	
17	RFKNBX747EBK	LOADING BASE ASS'Y		P5	XZB24X34C04	PROTECTION BAG (F. B., ACC.)	
18	REM0026	LOADING MOTOR ASS'Y		P6	RPH0032	MIRROR SHEET	(EB)
19	SFUGF01N02	INTERMEDIATE GEAR				ACCESSORIES	
20	XTB3+8JFZ	SCREW		A1	RFKSBX747E-K	INSTRUCTION MANUAL ASS'Y	(E)
21	XTWS3+10Q	SCREW		A1	RFKSBX747EGK	INSTRUCTION MANUAL ASS'Y	(EG)
22	XUC3FY	E RING		A1	RQT2029-B	INSTRUCTION MANUAL	(EB)
23	RFKNBX747ECK	CASSETTE HOLDER ASS'Y		A2	RQA0013	WARRANTY CARD	
24	RMBO286	SWITCH LEVER SPRING		A3	RQCBO169	SERVICENTER LIST	
25	RMCO038	STABILIZER SPRING		A4	RJA0019-2K	AC POWER SUPPLY CORD	(E, EG) $\Delta$ (SF)
26	RML0308	DETECTION LEVER		A4	VJA0733	AC POWER SUPPLY CORD	(EB) $\Delta$ (SF)
27	RMQ0371	STABILIZER		A5	SJP2276	STEREO CONNECTION CABLE	
28	RMQ0407	ANGLE					
29	XTB3+6J	SCREW					
30	XTW2+5L	SCREW					
31	XTB3+10JFZ	SCREW					
32	XTW3+8J	SCREW					
33	RGK0550-T	MOLE					
34	RGRO169A-C1	REAR PANEL	(E, EG)				
34	RGRO169A-D1	REAR PANEL	(EB)				
35	RKA0053-A	FOOT					
36	RKQ0089	P. C. B. HOLDER					
37	RKU0049A-K	BOTTOM BOARD					
38	RMK0202A	BOTTOM CHASSIS					
39	RMNO221	FL HOLDER					
40	RFKGBX747E-K	FRONT PANEL ASS'Y					
41	RGK0534-N	ORNAMENT, ATC BUTTON					
42	RGLO206-Q	PANEL LIGHT					
43	RGU0882-K	BUTTON, POWER					

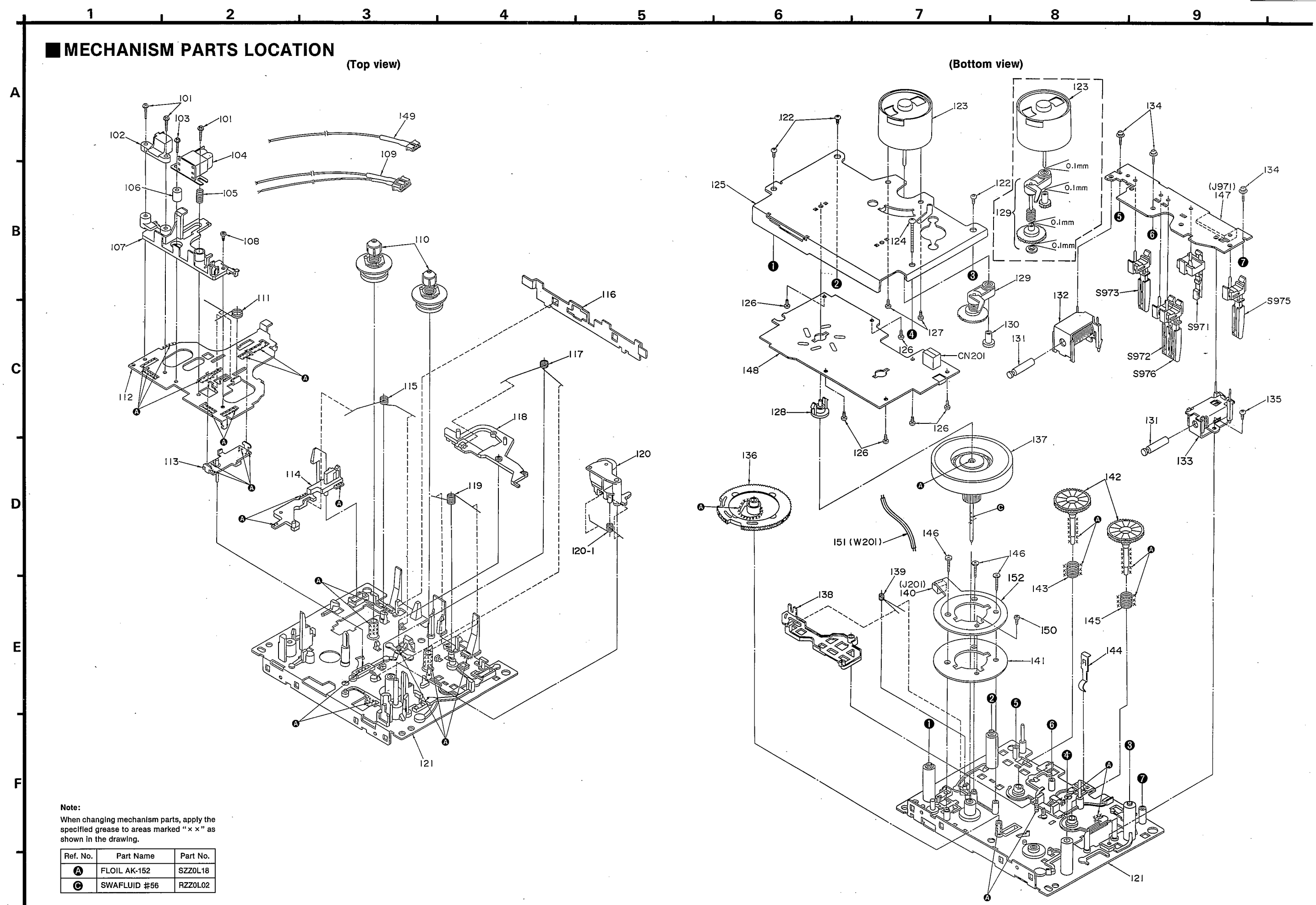
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST		125	RMA0048A	FLYWHEEL PLATE	
				126	XTN2+3F	SCREW	
				127	XSN26+3	SCREW	
101	QH01361A	SCREW		128	RXD0010	THRUST BEARING	
102	SJH96-1	E HEAD		129	RXG0009	IDLE GEAR ASS'Y	
103	RHE5201ZA	SCREW		130	RDG0034	REEL MOTOR GEAR	
104	RBR4CY009-C	R/P HEAD		131	RUB428ZE	MOVING IRON CORE	
105	QBC1278A	HEAD SPRING		132	RSJ0003	SOLENOID	
106	RMX0014	SPACER		133	RXQ0011	BRAKE SOLENOID	
107	RMRO184	HEAD SPACER		134	XTW2+8S	SCREW	
108	XTN2+5F	SCREW		135	XTN26+4F	SCREW	
109	REX0092-1	LEAD WIRE BLOCK		136	RDG0030	MAIN GEAR	
110	RXR0009	REEL TABLE		137	RXF0008	FLYWHEEL	
111	RUW139ZA	HEAD BASE SPRING		138	RML0037	TRIGGER LEVER	
112	RMA0047A-1	HEAD BASE		139	RUW147ZA	TRIGGER LEVER SPRING	
113	RXQ0078	MAIN ROD ASS'Y		140	RJS2T7ZA	CONNECTOR (2P), J201	
114	RM0012-2	EJECT ROD (L)		141	RMQ0037	FG YOKE	
115	RME0018-1	SPRING, EJECT ROD (L)		142	RXG0003	REEL TABLE GEAR	
116	RML0069-1	LEVER		143	RUQ112ZA	SPRING	
117	RME0020	BRAKE SPRING		144	RJS609ZC	TAPE PRESSURE SPRING	
118	RML0040-2	BRAKE LEVER		145	RUQ1112B	SPRING	
119	RUW142ZA	SPRING		146	RHE5204ZB	SPRING	
120	RXPO004	PINCH ROLLER ARM (F)		147	RJS11T7ZA	CONNECTOR (11P), J971	
120-1	RUW140ZC	SPRING, PINCH ROLLER ARM (F)		148	REPO268C	STATER P. C. B. ASS'Y	
121	RFKRSB555E-K	CHASSIS ASS'Y		149	REX0093-2	LEAD WIRE BLOCK	
122	XTN26+7J	SCREW		150	XQN2+AF3	SCREW	
123	MMN-6F4RA88	REEL MOTOR		151	RWJ0202090XX	FLAT CABLE (2P), W201	
124	XTN26+26F	SCREW		152	RJB0152A	FG P. C. B.	

**PACKAGING**



<CUSHION (A), (B), (C), (D) Part No.: RPN0697 (E, EG), RPN0698 (EB)>

MECHANISM PARTS LOCATION



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

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZ0L18
C	SWAFLUID #56	RZZ0L02

REPLACEMENT PARTS LIST

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Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)					
IC1	AN7384N	ELECTRIC VOLUME		Q512	2SC3311A-Q	TRANSISTOR	Δ
IC2	AN7352S-E2	PLAYBACK AMP		Q514	2SB621A-R	TRANSISTOR	
IC3	AN7353S-E2	REC EQ AMP		Q515	2SA1309A-R	TRANSISTOR	
IC4	MC14066BFR2	INPUT SELECTOR		Q516-518	DTA114ESTP	TRANSISTOR	
IC151	M62352FPE1	12ch D/A CONVERTER		Q601, 602	2SC3327-A	TRANSISTOR	
IC152	XLU2040F-T1	SYSTEM CONTROL (12BIT)		Q603	DTC114ESTP	TRANSISTOR	Δ
IC201	HA13440MPEL	MOTOR DRIVE		Q604	2SA1309A-R	TRANSISTOR	Δ
IC202	SN74LS04MEL	INVERTER		Q605	2SC3311A-Q	TRANSISTOR	Δ
IC203	SN74LS74AM	FLIP-FLOP		Q606	2SD2037EFTA	TRANSISTOR	Δ
IC301	UPC1297CA	DOLBY HX PRO		Q607	2SB1357EFTA	TRANSISTOR	Δ
IC401	AN7354SC-E2	DOLBY B/C NR		Q608	2SD2037EFTA	TRANSISTOR	Δ
IC402	AN7374S-E2	DOLBY		Q609	2SB621A-R	TRANSISTOR	Δ
IC501	BA6218	REEL MOTOR DRIVE		Q610	2SD2037EFTA	TRANSISTOR	Δ
IC502	BA6218	EJECT MOTOR DRIVE		Q611, 612	2SB1357EFTA	TRANSISTOR	Δ
IC503	M38172M2500F	MICROCOMPUTER		Q613	2SD2037EFTA	TRANSISTOR	Δ
IC504	LE93CS47M6TL	EEPROM		Q701	2SC3311A-Q	TRANSISTOR	
IC701	M5218L	HEADPHONES AMP		Q703	2SA1309A-R	TRANSISTOR	
IC971, 972	GP2S06BC	PHOTO COUPLER				DIODE (S)	
		TRANSISTOR(S)		D1, 2	MA165	DIODE	
Q1, 2	2SC3311A-Q	TRANSISTOR		D151	MA165	DIODE	
Q3	DTC114ESTP	TRANSISTOR		D201	MA3056-MTX	DIODE	
Q4	DTA114ESTP	TRANSISTOR		D301, 302	MTZJ9R1CTA	DIODE	
Q5-7	2SC3311A-Q	TRANSISTOR		D304-306	MA165	DIODE	
Q8, 9	2SJ164PQRTA	TRANSISTOR		D501	MA700	DIODE	
Q151, 152	DTA114ESTP	TRANSISTOR		D504	MTZJ5R6BTA	DIODE	
Q153	DTC114ESTP	TRANSISTOR		D505	MTZJ9R1CTA	DIODE	Δ
Q154, 155	DTA114ESTP	TRANSISTOR		D507, 508	1SR35200TB	DIODE	
Q201	2SD601R	TRANSISTOR		D601, 602	MA165	DIODE	Δ
Q302, 303	2SC3311A-Q	TRANSISTOR		D603-609	1SR35200TB	DIODE	Δ
Q304	2SB621A-R	TRANSISTOR		D610-612	MA165	DIODE	
Q305	2SD592ANCQ	TRANSISTOR		D613	MTZJ9R1CTA	DIODE	Δ
Q306	2SB1030AQSTA	TRANSISTOR		D614	MTZJ8R2CTA	DIODE	Δ
Q401-404	2SC3311A-Q	TRANSISTOR		D615	MTZJ6R2BTA	DIODE	Δ
Q501	2SC3311A-Q	TRANSISTOR		D616	MTZJ22DTA	DIODE	Δ
Q502	2SB1030AQSTA	TRANSISTOR		D617	MTZJ10CTA	DIODE	Δ
Q503	DTC114ESTP	TRANSISTOR		D618, 619	1SR35200TB	DIODE	
Q504	2SB1030AQSTA	TRANSISTOR		D620	MA165	DIODE	
Q505, 506	DTC114ESTP	TRANSISTOR		D621	MTZJ5R1BTA	DIODE	
Q508	2SB621A-R	TRANSISTOR		D622	MA165	DIODE	
Q509	DTC114ESTP	TRANSISTOR		D623	MTZJ12CTA	DIODE	Δ
Q510	2SB1030AQSTA	TRANSISTOR		D624	MA165	DIODE	
Q511	2SD1862QRTV6	TRANSISTOR	Δ	D702	LN873RP-C	L. E. D.	
				D703, 704	MA165	DIODE	
				D705	MTZJ3R9ATA	DIODE	
				D971, 972	RVD1SS133TA	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		VARIABLE RESISTOR(S)		S716	EVQ21405R	DOLBY NR C	
				S717	EVQ21405R	ATC ON/OFF (A. T. CALIBRATION)	
				S718	EVQ21405R	ATC SELECT	
VR701	EVJ02FF02B15	REC LEVEL CONTROL		S719	RSS3A18YA-H	TIMER	
VR702	EVJ02SF02G15	BALANCE CONTROL		S971	RSH1A892D-U	MODE	
VR703	EVJ02KF02B53	BIAS ADJ. CONTROL		S972	RSH1A90YD-U	HALF	
VR704	EVJY10F02A24	HEADPHONES CONTROL		S973	RSH1A90YD-U	ATS	
		COIL (S)		S975	RSH1A90YD-U	REC INHIBIT	
				S976	RSH1A90YD-U	ATS	
L1, 2	RLZ0003	COIL (AC BIAS TRAP ADJ.)				CONNECTOR AND SOCKET(S)	
L3, 4	RLQB103JT-Y	COIL		CN3-5	RJU003K010MI	SOCKET (10P)	
L301, 302	SL09B1-Z	COIL		CN201	RJS3T4ZA	CONNECTOR (3P)	
L303	SL09B4-K	COIL (HX PRO ADJ.)		CN501	RJS11T7ZA	CONNECTOR (11P)	
L401, 402	QLM9Z10K	COIL		CN502	SJT30344-H	CONNECTOR (3P)	
		COMPONENT COMBINATION (S)		CN503	SJS50581BB	SOCKET (5P)	
				CN504	REX0508	CONNECTOR ASS'Y (3P)	
Z501	EFOEC6004T4	CERAMIC OSCILLATOR (6MHz)		CN601	RJS1A1101T1	SOCKET (1P)	
Z502	RCDHC-278	REMOTE SENSOR		CN603	RJS1A1101T1	SOCKET (1P)	
Z503	SVDPG1S53	PHOTO COUPLER		CN606-611	RJS1A1101T1	SOCKET (1P)	
		OSCILLATOR (S)		CN701	RJU057W004	SOCKET (4P)	
				CN701A	RJS1A6606	CONNECTOR (6P)	
CF201	RSXA3M74S01	CRYSTAL OSCILLATOR		CN701B	RJS1A6606	CONNECTOR (6P)	
		TRANSFORMER		CP1	SJT0313	CONNECTOR (3P)	
				CP2	RJP5G18ZA	CONNECTOR (5P)	
PT601	RTP1K4B016-V	POWER TRANSFORMER	Δ	CP3-5	RJT003K010-1	CONNECTOR (10P)	
		DISPLAY TUBE (S)		CP504	RJP3G17ZA	CONNECTOR (3P)	
				CP701	RJT057W004-1	CONNECTOR (4P)	
FL501	RSL0159-F	DISPLAY TUBE				JACK(S)	
		SWITCH (ES)		JK1	SJF3069N	TERMINAL BOARD: REC/PLAY	
S501	RSH1A005	CLOSE;LOADING		JK601	SJS9236	AC INLET	Δ
S701	EVQ21405R	STOP		JK701	RJJ63TA01	HEADPHONES JACK	
S702	EVQ21405R	F. F. <TPS>				GND PART(S)	
S703	EVQ21405R	MONITOR		E1	SNE1004-1	GND PLATE	
S704	EVQ21405R	REW. <TPS>		E701	PMC0210	GND PLATE	
S705	EVQ21405R	PLAYBACK				FLAT CABLE (S)	
S706	EVQ21405R	REC		W501	RWJ5711230KX	FLAT CABLE (11P)	
S707	EVQ21405R	AUTO REC MUTE		W502	RWJ1803200KX	FLAT CABLE (3P)	
S708	EVQ21405R	PAUSE		W506	RWJ1804100KX	FLAT CABLE (4P)	
S709	EVQ21405R	OPEN/CLOSE; CASSETTE HOLDER		W507	RWJ5711300KX	FLAT CABLE (11P)	
S710	EVQ21405R	COUNTER RESET		W508	RWJ1803090KQ	FLAT CABLE (3P)	
S711	EVQ21405R	COUNTER MODE		W701	RWJ1812390KX	FLAT CABLE (12P)	
S712	EVQ21405R	MEMORY REPEAT/STOP					
S713	EVQ21405R	POWER					
S714	EVQ21405R	MPX FILTER					
S715	EVQ21405R	DOLBY NR B					

## RESISTORS AND CAPACITORS

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

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R208	ERJ6GEYJ222V	1/10W 2.2K	R524	ERDS2TJ223	1/4W 22K
			R209-211	ERJ6GEYJ4R7V	1/10W 4.7	R525	ERDS2TJ821	1/4W 820
			R212, 213	ERJ6GEYJ152V	1/10W 1.5K	R526-530	ERDS2TJ472	1/4W 4.7K
R1, 2	ERDS2TJ563	1/4W 56K	R214	ERJ6GEYJ822V	1/10W 8.2K	R531	ERGISJ100E	1W 10
R3, 4	ERDS2EJ121	1/4W 120	R215	ERJ6GEYJ101V	1/10W 100	R532	ERDS2TJ102	1/4W 1K
R5, 6	ERDS2TJ101	1/4W 100	R216	ERJ8GEYJ222V	1/8W 2.2K	R533	ERDS2TJ101	1/4W 100
R7, 8	ERDS2TJ474	1/4W 470K	R301, 302	ERDS2TJ153	1/4W 15K	R534	ERDS2TJ222	1/4W 2.2K
R9, 10	ERDS2TJ333	1/4W 33K	R303, 304	ERDS2TJ103	1/4W 10K	R535	ERDS2TJ332	1/4W 3.3K
R11, 12	ERDS2TJ223	1/4W 22K	R305, 306	ERDS2TJ154	1/4W 150K	R537	ERDS2TJ472	1/4W 4.7K
R13, 14	ERDS2TJ122	1/4W 1.2K	R307	ERDS2TJ100	1/4W 10	R538	ERDS2TJ183T	1/4W 18K
R15, 16	ERDS2TJ392T	1/4W 3.9K	R308	ERDS2TJ1R0	1/4W 1.0	R539	ERDS2TJ333	1/4W 33K
R17	ERDS2TJ562	1/4W 5.6K	R309	ERDS2TJ100	1/4W 10	R540-542	ERDS2TJ102	1/4W 1K
R18	ERDS2TJ331	1/4W 330	R318	ERDS2TJ392T	1/4W 3.9K	R545	ERDS2TJ472	1/4W 4.7K
R19	ERDS2TJ101	1/4W 100	R319	ERDS2TJ102	1/4W 1K	R546, 547	ERDS2TJ103	1/4W 10K
R20, 21	ERDS2TJ562	1/4W 5.6K	R320	ERDS2TJ182	1/4W 1.8K	R550	ERDS2TJ271	1/4W 270
R23, 24	ERDS2TJ222	1/4W 2.2K	R321	ERDS2TJ682T	1/4W 6.8K	R551	ERDS2TJ103	1/4W 10K
R27, 28	ERDS2TJ274	1/4W 270K	R322	ERDS2TJ222	1/4W 2.2K	R552	ERDS2TJ223	1/4W 22K
R29	ERDS2TJ333	1/4W 33K	R323, 324	ERDS2TJ183T	1/4W 18K	R553	ERDS2TJ332	1/4W 3.3K
R30	ERDS2TJ393	1/4W 39K	R325, 326	ERDS2TJ100	1/4W 10	R554	ERDS2TJ3R3T	1/4W 3.3
R31, 32	ERDS2TJ103	1/4W 10K	R327	ERDS2TJ222	1/4W 2.2K	R601-605	ERDS2TJ472	1/4W 4.7K
R33, 34	ERDS2TJ823T	1/4W 82K	R328	ERD2FCVG330T	1/4W 33 $\Delta$	R606	ERDS2TJ103	1/4W 10K
R35	ERDS2TJ124T	1/4W 120K	R329	ERDS2TJ473	1/4W 47K	R607	ERDS2TJ472	1/4W 4.7K
R36-38	ERDS2TJ103	1/4W 10K	R330, 331	ERD2FCVG330T	1/4W 33 $\Delta$	R608	ERDS2TJ103	1/4W 10K
R39, 40	ERDS2TJ102	1/4W 1K	R340-342	ERD2FCVG330T	1/4W 33 $\Delta$	R609, 610	ERDS2TJ102	1/4W 1K
R41, 42	ERDS2TJ223	1/4W 22K	R401, 402	ERDS2TJ473	1/4W 47K	R611, 612	ERD2FCVG100T	1/4W 10 $\Delta$
R43	ERDS2TJ472	1/4W 4.7K	R403, 404	ERDS2TJ104	1/4W 100K	R613, 614	ERDS2TJ101	1/4W 100
R45, 46	ERDS2TJ225	1/4W 2.2M	R407, 408	ERDS2TJ473	1/4W 47K	R615	ERDS1FVJ100T	1/2W 10 $\Delta$
R47, 48	ERDS2TJ183T	1/4W 18K	R409	ERDS2TJ223	1/4W 22K	R616, 617	ERD2FCVG330T	1/4W 33 $\Delta$
R49, 50	ERDS2TJ393	1/4W 39K	R411, 412	ERDS2TJ103	1/4W 10K	R618, 619	ERDS2TJ222	1/4W 2.2K
R51, 52	ERDS2TJ394	1/4W 390K	R413, 414	ERDS2TJ473	1/4W 47K	R620	ERDS2TJ101	1/4W 100
R53, 54	ERDS2TJ561	1/4W 560	R415, 416	ERDS2TJ562	1/4W 5.6K	R621	ERDS2TJ181T	1/4W 180
R55, 56	ERDS2TJ222	1/4W 2.2K	R417, 418	ERDS2TJ242	1/4W 2.4K	R622, 623	ERD2FCVG100T	1/4W 10 $\Delta$
R60	ERDS2TJ103	1/4W 10K	R419	ERDS2TJ223	1/4W 22K	R624, 625	ERDS2TJ331	1/4W 330
R61, 62	ERDS2TJ471	1/4W 470	R420	ERDS2TJ103	1/4W 10K	R626	ERGISJ220E	1W 22
R63, 64	ERDS2TJ104	1/4W 100K	R421-424	ERDS2TJ684	1/4W 680K	R627	ERDS2TJ222	1/4W 2.2K
R65	ERDS2TJ153	1/4W 15K	R501, 502	ERDS2TJ681	1/4W 680	R628	ERDS2TJ101	1/4W 100
R151	ERDS2TJ562	1/4W 5.6K	R503-505	ERDS2TJ223	1/4W 22K	R629	ERDS2TJ103	1/4W 10K
R152	ERDS2TJ104	1/4W 100K	R506	ERDS2TJ472	1/4W 4.7K	R630	ERDS2TJ1R0	1/4W 1.0
R154	ERDS2TJ103	1/4W 10K	R507-510	ERDS2TJ103	1/4W 10K	R631	ERDS2TJ101	1/4W 100
R155	ERDS2TJ102	1/4W 1K	R511	ERDS2TJ471	1/4W 470	R632	ERDS2TJ681	1/4W 680
R156-158	ERDS2TJ103	1/4W 10K	R512	ERDS2TJ223	1/4W 22K	R633	ERDS2TJ151	1/4W 150
R159	ERDS2TJ221	1/4W 220	R513	ERDS2TJ821	1/4W 820	R634	ERDS2TJ181T	1/4W 180
R160, 161	ERDS2TJ103	1/4W 10K	R514	ERGISJ150E	1W 15	R635	ERDS2TJ151	1/4W 150
R163, 164	ERDS2TJ103	1/4W 10K	R515	ERGISJ180E	1W 18	R636	ERDS2TJ181T	1/4W 180
R201	ERJ6GEYJ333V	1/10W 33K	R516	ERDS2TJ223	1/4W 22K	R637	ERDS2TJ151	1/4W 150
R202	ERJ6GEYJ683V	1/10W 68K	R517	ERDS2TJ821	1/4W 820	R638	ERDS2TJ181T	1/4W 180
R203-205	ERJ6GEYJ1R5V	1/10W 1.5	R518-520	ERDS2TJ472	1/4W 4.7K	R639	ERDS2TJ151	1/4W 150
R206	ERJ8GEYJ222V	1/8W 2.2K	R522	ERDS2TJ223	1/4W 22K	R640	ERDS2TJ181T	1/4W 180
R207	ERJ6GEYJ182V	1/10W 1.8K	R523	ERDS2TJ821	1/4W 820	R641	ERDS2TJ102	1/4W 1K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R701	ERDS2TJ821	1/4W 820	C29, 30	ECEA1HKAR33B	50V 0.33U	C423, 424	ECQB1H152JF3	50V 1500P
R702	ERDS2TJ102	1/4W 1K	C31, 32	ECEA1HKA2R2B	50V 2.2U	C425, 426	ECEA1HKAR47B	50V 0.47U
R703	ERDS2TJ122	1/4W 1.2K	C33, 34	ECEA1CKA100B	16V 10U	C427, 428	ECQB1H152JF3	50V 1500P
R704	ERDS2TJ152	1/4W 1.5K	C35, 36	ECEA1CKA220B	16V 22U	C429, 430	ECEA1EKA4R7B	25V 4.7U
R705	ERDS2TJ182	1/4W 1.8K	C37	ECQB1H392JF3	50V 3900P	C431, 432	ECBT1C122KR5	16V 1200P
R706	ERDS2TJ222	1/4W 2.2K	C38	ECBT1H331KB5	50V 330P	C433, 434	ECBT1C152KR5	16V 1500P
R707	ERDS2TJ332	1/4W 3.3K	C39, 40	ECEA1CKA220B	16V 22U	C501, 502	ECEA1CKA100B	16V 10U
R708	ERDS2TJ472	1/4W 4.7K	C41, 42	ECBT1E103ZF	25V 0.01U	C503	ECEA1HKA010B	50V 1U
R709	ERDS2TJ821	1/4W 820	C43, 44	ECEA1HKA010B	50V 1U	C504	ECEA1EKA4R7B	25V 4.7U
R710	ERDS2TJ102	1/4W 1K	C45, 46	ECEA1CKA100B	16V 10U	C505-507	ECEA1CKA100B	16V 10U
R711	ERDS2TJ122	1/4W 1.2K	C51, 52	ECEA1AU101	10V 100U	C508, 509	ECEA1CN100SB	16V 10U
R712	ERDS2TJ152	1/4W 1.5K	C53, 54	ECBT1H101KB5	50V 100P	C510	ECBT1E103ZF	25V 0.01U
R713	ERDS2TJ182	1/4W 1.8K	C151	ECA0JM471B	6.3V 470U	C511	ECEA1AKA220B	10V 22U
R714	ERDS2TJ222	1/4W 2.2K	C152	ECBT1E103ZF	25V 0.01U	C512	ECBT1E103ZF	25V 0.01U
R715	ERDS2TJ332	1/4W 3.3K	C201	ECUV1E153KBN	25V 0.015U	C601	ECKR2H682PE	500V 6800P
R716	ERDS2TJ472	1/4W 4.7K	C202	ECUV1E104KBN	25V 0.1U	C602	ECA1EM102B	25V 1000U Δ
R717	ERDS2TJ682T	1/4W 6.8K	C203, 204	ECEV1CA100R	16V 10U	C603	ECA1HM470B	50V 47U Δ
R718	ERDS2TJ123	1/4W 12K	C205	ECUV1E104ZFN	25V 0.1U	C604	ECKR2H682PE	500V 6800P
R719	ERDS2TJ472	1/4W 4.7K	C206	ECUV1E104KBN	25V 0.1U	C605	ECEA1EU222	25V 2200U Δ
R720, 721	ERDS2TJ102	1/4W 1K	C209-211	ECEV1EN100R	25V 10U	C606	ECA1EM102B	25V 1000U Δ
R722, 723	ERDS2TJ562	1/4W 5.6K	C212-214	ECUV1H103ZFN	50V 0.01U	C607, 608	ECBT1E103ZF	25V 0.01U
R725, 726	ERDS2TJ180T	1/4W 18	C215	ECUV1H472ZFN	50V 4700P	C609	ECEA1AU221	10V 220U
R730, 731	ERDS2TJ104	1/4W 100K	C216	ECUV1E562KBN	25V 5600P	C610	ECEA1AJ471	10V 470U
R735	ERDS2EJ121	1/4W 120	C217-219	ECUV1E104ZFN	25V 0.1U	C611-615	ECBT1E103ZF	25V 0.01U
R736	ERDS2TJ472	1/4W 4.7K	C302	ECEA1CKA100B	16V 10U	C616	ECA0JM222B	6.3V 2200U
R737	ERDS2TJ471	1/4W 470	C303, 304	ECBT1H561KB5	50V 560P	C617	ECBT1E103ZF	25V 0.01U
R738	ERDS2TJ472	1/4W 4.7K	C305, 306	ECQB1H103JF3	50V 0.01U	C618-621	ECEA1AJ471	10V 470U
R739, 740	ERDS2TJ333	1/4W 33K	C307, 308	ECQB1H223JF3	50V 0.022U	C622	ECBT1E103ZF	25V 0.01U
R971	ERDS2TJ221	1/4W 220	C309, 310	ECQV1H563JM3	50V 0.056U	C701	ECBT1E103ZF	25V 0.01U
R972	ERDS2TJ183T	1/4W 18K	C311, 312	ECBT1H121KB5	50V 120P	C702, 703	ECEA1HKA010B	50V 1U
R973	ERDS2TJ221	1/4W 220	C313, 314	ECKR2H821KB5	500V 820P	C704-706	ECBT1E103ZF	25V 0.01U
R974	ERDS2TJ183T	1/4W 18K	C315, 316	ECBT1E223ZF	25V 0.022U			
			C317	ECBT1H220J5	50V 22P			
		CHIP JUMPERS	C318	ECQP1153JZ	100V 0.015U			
			C320	ECBT1H220J5	50V 22P			
J201-206	ERJ6GEY0R00V	CHIP JUMPER	C324	ECEA1EKA4R7B	25V 4.7U			
			C325	ECKR1H392KB5	50V 3900P			
		CAPACITORS	C327	ECKW1H222KB5	50V 2200P			
			C328	ECKD1H682KB	50V 6800P			
G1, 2	ECBT1H181KB5	50V 180P	C329	ECKW1H222KB5	50V 2200P			
C3, 4	ECEA1AU101	10V 100U	C330-332	ECBT1E103ZF	25V 0.01U			
C5, 6	ECQB1H682JF3	50V 6800P	C401, 402	ECBT1C222KR5	16V 2200P			
C7, 8	ECBT1E103ZF	25V 0.01U	C403, 404	ECEA1EKA4R7B	25V 4.7U			
C9, 10	ECBT1H391KB5	50V 390P	C405-408	ECEA1HKA010B	50V 1U			
C11, 12	ECBT1C392KR5	16V 3900P	C409, 410	ECQB1H152JF3	50V 1500P			
C13, 14	ECQV1H124JM3	50V 0.12U	C411, 412	ECEA1HKAR47B	50V 0.47U			
C15, 16	ECEA1HKA010B	50V 1U	C413, 414	ECQB1H152JF3	50V 1500P			
C17	ECEA1HKAR47B	50V 0.47U	C415, 416	ECEA1HKAR47B	50V 0.47U			
C18	ECEA1CKA100B	16V 10U	C417	ECEA1CKA100B	16V 10U			
C19, 20	ECKR2H121KB5	500V 120P	C418	ECEA1HKA010B	50V 1U			
C23, 24	ECEA1EKA4R7B	25V 4.7U	C420	ECEA1CN100SB	16V 10U			
C27, 28	ECEA1CN100SB	16V 10U	C421, 422	ECEA1HKAR47B	50V 0.47U			