

# TXD-RE210

## SERVICE MANUAL

AEP Model



Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol  $\square\square$  are trademarks of Dolby Laboratories Licensing Corporation.

CD Section	Model Name Using Similar Mechanism	NEW
	CD Mechanism Type	CDM28-5BD23
	Base Unit Name	BU-5BD23
Tape deck Section	Optical Pick-up Type	KSS-213B/S-N
	Model Name Using Similar Mechanism	TXD-R11
	Tape Transport Mechanism Type	TCM-190RB52C

### SPECIFICATIONS

#### Compact Disc Player Section

##### System

Type Compact disc digital audio system

Laser Semiconductor laser ( $\lambda = 780$  nm)  
Emission duration: continuous

Laser output Less than 44.6  $\mu$ W\*  
\* This output is the value measured at distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.

Frequency response 2 Hz - 20 kHz ( $\pm 0.5$  dB)

Signal-to-noise ratio More than 100 dB

Dynamic range More than 95 dB

Harmonic distortion Less than 0.007%

Channel separation More than 95 dB

#### Cassette Deck Section

##### System

Recording system 4-track 2-channel stereo

Bias AC bias

Head (x 1) Erasing F & F  
Playback/Recording SD

Motor Capstan motor  $\times 1$  (DC servo motor)  
Reel motor  $\times 1$  (DC motor)

##### Fast-winding time (approx.)

90 sec. (with Sony C-60 cassette)

##### Frequency response (Dolby NR off)

Type I tape, Sony Type I (NORMAL):  
30 - 16,000 Hz ( $\pm 3$  dB)  
20 - 18,000 Hz ( $\pm 6$  dB)  
Type II tape, Sony Type II (HIGH):  
30 - 17,000 Hz ( $\pm 3$  dB)  
20 - 19,000 Hz ( $\pm 6$  dB)  
Type IV tape, Sony Type IV (METAL):  
30 - 19,000 Hz ( $\pm 3$  dB)  
20 - 21,000 Hz ( $\pm 6$  dB)

##### Signal-to-noise ratio (at peak level, weighted, and with Dolby NR off)

Type I tape, Sony Type I (NORMAL):  
55 dB  
Type II tape, Sony Type II (HIGH):  
57 dB  
Type IV tape, Sony Type IV (METAL):  
58 dB

##### S/N ratio improvement

Dolby NR on	Approximate values
B	5 dB at 1 kHz, 10 dB at 5 kHz
C	15 dB at 500 Hz, 20 dB at 1 kHz

Harmonic distortion Type I tape, Sony Type I (NORMAL):  
0.4% (160 nWb/m 315 Hz, 3rd H.D.)  
Type IV tape, Sony Type IV (METAL):  
1.8% (250 nWb/m 315 Hz, 3rd H.D.)

##### Inputs

	Jack type	Maximum input sensitivity
TAPE IN	Phono jacks	0.16 V (input impedance: 47 kilohms)

##### Outputs

	Jack type	Maximum output level	Load impedance
TAPE OUT (FIXED)	Phono jacks	0.5 V (at a load impedance of 47 kilohms)	Over 10 kilohms
CD OUT (FIXED)	Phono jacks	2 V (at a load impedance of 50 kilohms)	Over 10 kilohms
PHONES (VARIABLE) jack	Stereo phone jack	0 - 3 mW (at a load impedance of 32 ohms)	

##### General

Power requirements 220 V - 230 V AC, 50/60 Hz

Power consumption 23 W

Dimensions 430  $\times$  120  $\times$  282 mm (w/h/d)  
(17  $\times$  4  $\frac{3}{4}$   $\times$  11  $\frac{1}{8}$  inches)

Mass (approx.) 4.5 kg (9 lb. 15 oz.)

Design and specifications are subject to change without notice.

## COMPACT DISC CASSETTE DECK

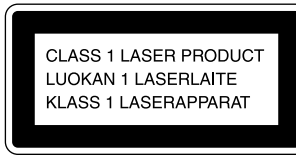


# SONY®

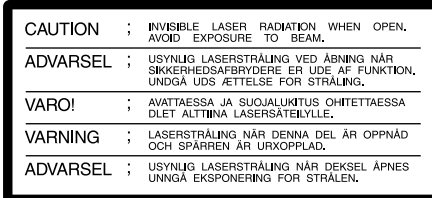
## TABLE OF CONTENTS

Specifications .....	1
<b>1. SERVICING NOTE</b> .....	3
<b>2. GENERAL</b>	
Location and Function of Controls .....	4
<b>3. DISASSEMBLY</b>	
3-1. Front Panel Removal .....	5
3-2. CD Mechanism Removal .....	5
3-3. Mechanism Deck Removal .....	6
<b>4. ADJUSTMENTS</b>	
4-1. Mechanical Adjustments .....	7
4-2. Electrical Adjustments .....	7
<b>5. EXPLANATION OF IC TERMINALS</b> .....	11
<b>6. DIAGRAMS</b>	
6-1. Printed Wiring Boards – BD Section – .....	14
6-2. Schematic Diagram – BD Section – .....	17
6-3. Schematic Diagram – Main Section – .....	22
6-4. Printed Wiring Boards – Main Section – .....	27
<b>7. EXPLODED VIEWS</b>	
7-1. Chassis Section .....	30
7-2. Panel Section .....	31
7-3. Mechanism Section -1 .....	32
7-4. Mechanism Section -2 .....	33
7-5. CD Mechanism Section -1 .....	34
7-6. CD Mechanism Section -2 .....	35
<b>8. ELECTRICAL PARTS LIST</b> .....	36

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.



This caution label is located inside the unit.

**CAUTION**  
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

### SAFETY-RELATED COMPONENT WARNING!!

**COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

# SECTION 1

## SERVICING NOTE

### NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts. The flexible board is easily damaged and should be handled with care.

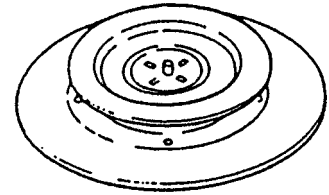
### NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30 cm away from the objective lens.

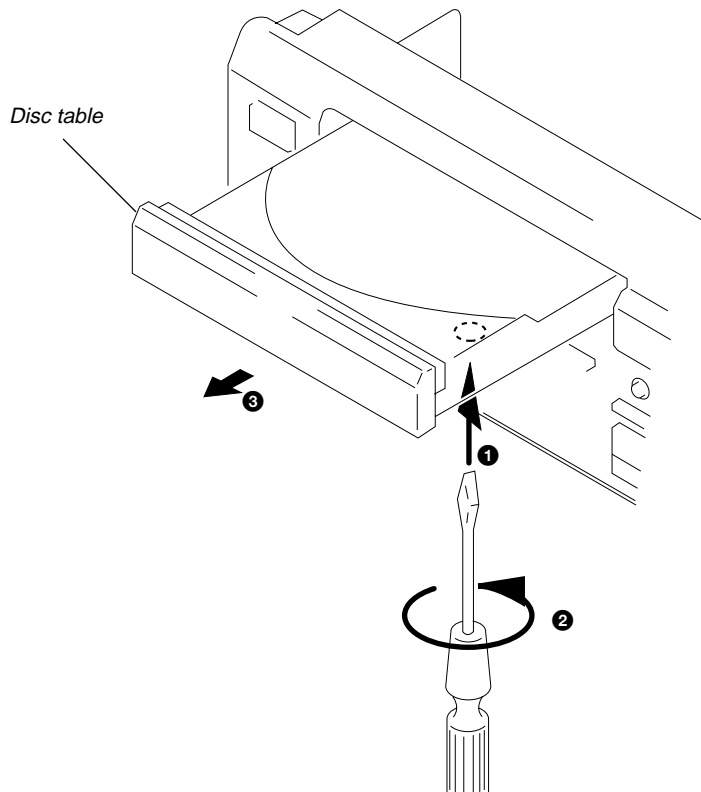
### CHUCK PLATE JIG ON REPAIRING

On repairing CD section, playing a disc without the CD lid, use Chuck Plate Jig.

- Code number of Chuck Plate Jig : X-4918-255-1



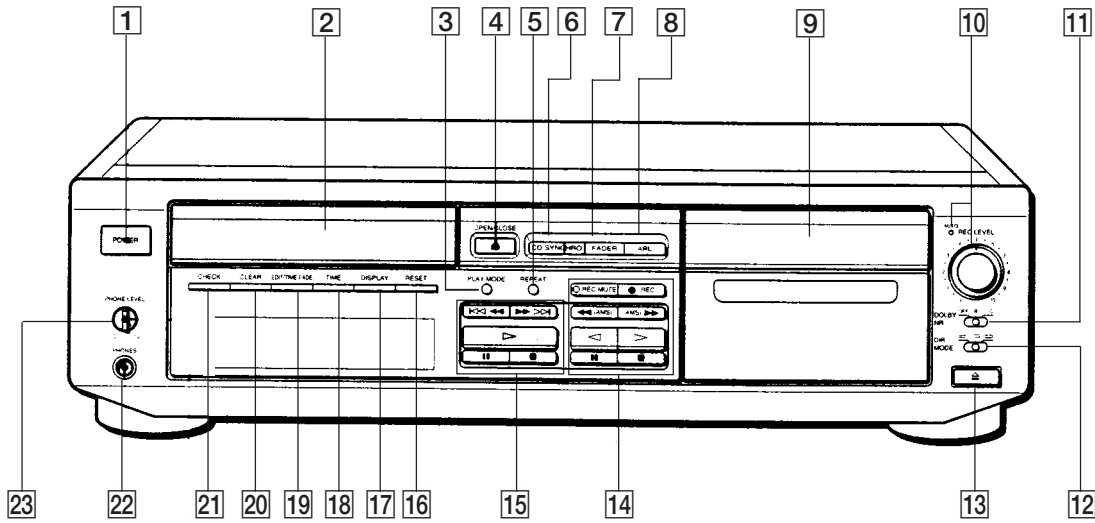
- Disc table getting out procedure on the power supply is OFF.



## SECTION 2 GENERAL

This section is extracted from instruction manual.

### LOCATION AND FUNCTION OF CONTROLS

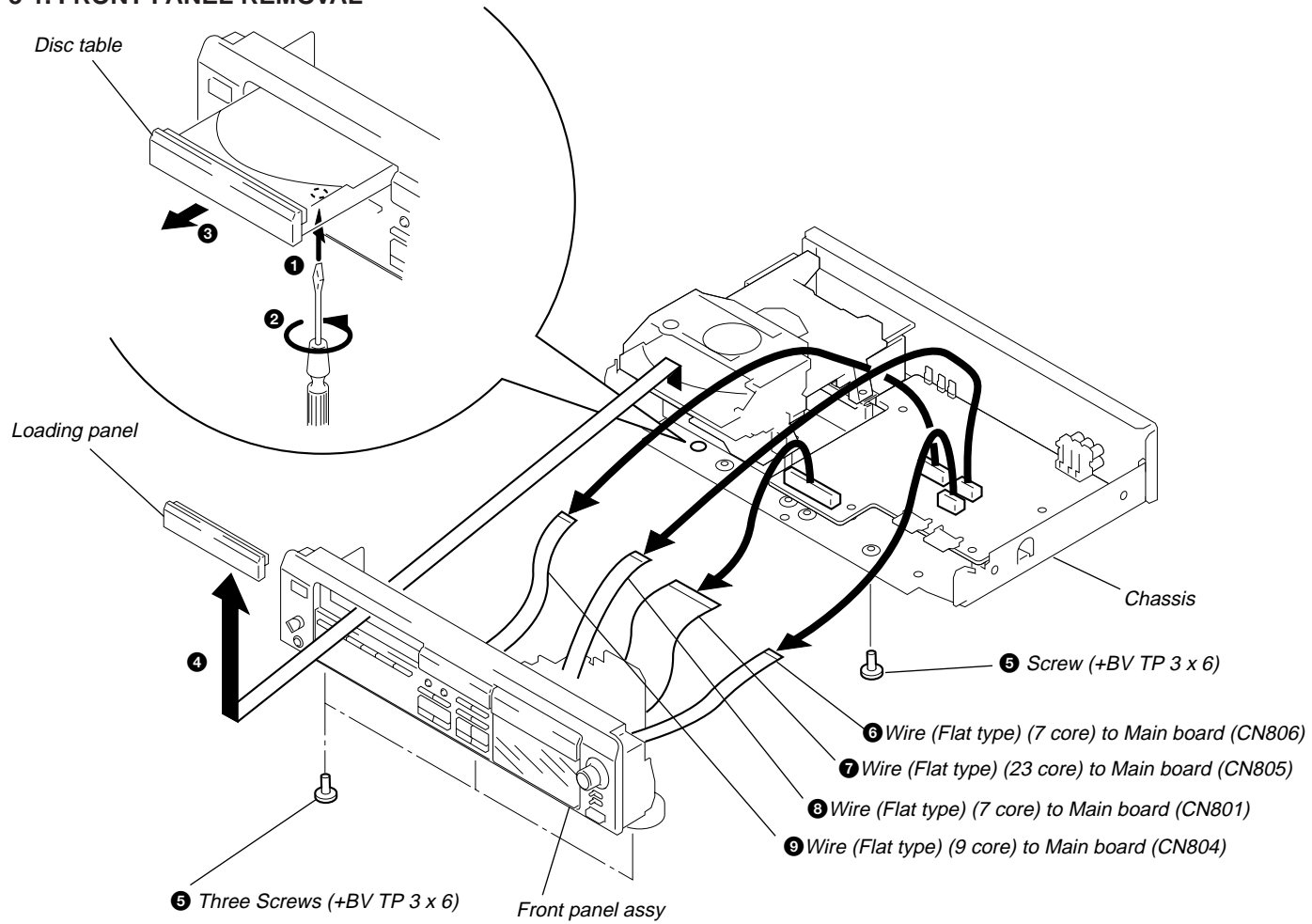


- |   |  |
|---|--|
| <p><b>1</b> POWER switch</p> <p><b>2</b> Disc tray</p> <p><b>3</b> PLAY MODE button</p> <p><b>4</b> OPEN/CLOSE button</p> <p><b>5</b> REPEAT button</p> <p><b>6</b> CD SYNCHRO button</p> <p><b>7</b> FADER button</p> <p><b>8</b> ARL button</p> <p><b>9</b> Cassette deck</p> <p><b>10</b> REC LEVEL control/AUTO indicator</p> <p><b>11</b> DOLBY NR switch</p> <p><b>12</b> DIRection MODE switch</p> <p><b>13</b> Eject button</p> <p><b>14</b> Tape operating buttons</p> <ul style="list-style-type: none"> <li>● REC button</li> <li>○ REC MUTE button</li> <li>◀▶, ▶▶ buttons</li> <li>◁▷ buttons</li> <li>■ (stop) button</li> <li>   (pause) button</li> </ul> | <p><b>15</b> CD operating buttons</p> <ul style="list-style-type: none"> <li>▶▶▶▶ button</li> <li>◀◀◀◀ button</li> <li>▷ button</li> <li>■ (stop) button</li> <li>   (pause) button</li> </ul> <p><b>16</b> RESET button</p> <p><b>17</b> DISPLAY button</p> <p><b>18</b> TIME button</p> <p><b>19</b> EDIT/TIME FADE button</p> <p><b>20</b> CLEAR button</p> <p><b>21</b> CHECK button</p> <p><b>22</b> PHONES jack</p> <p><b>23</b> PHONE LEVEL control</p> |
|---|--|

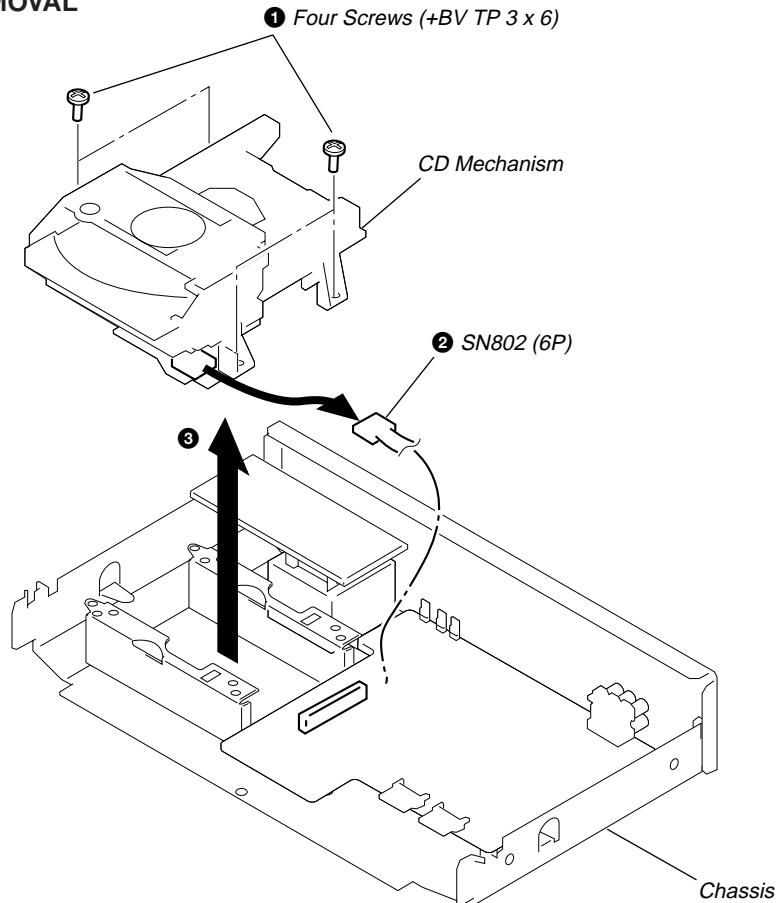
## SECTION 3 DISASSEMBLY

**Note :** Follow the disassembly procedure in the numerical order given.

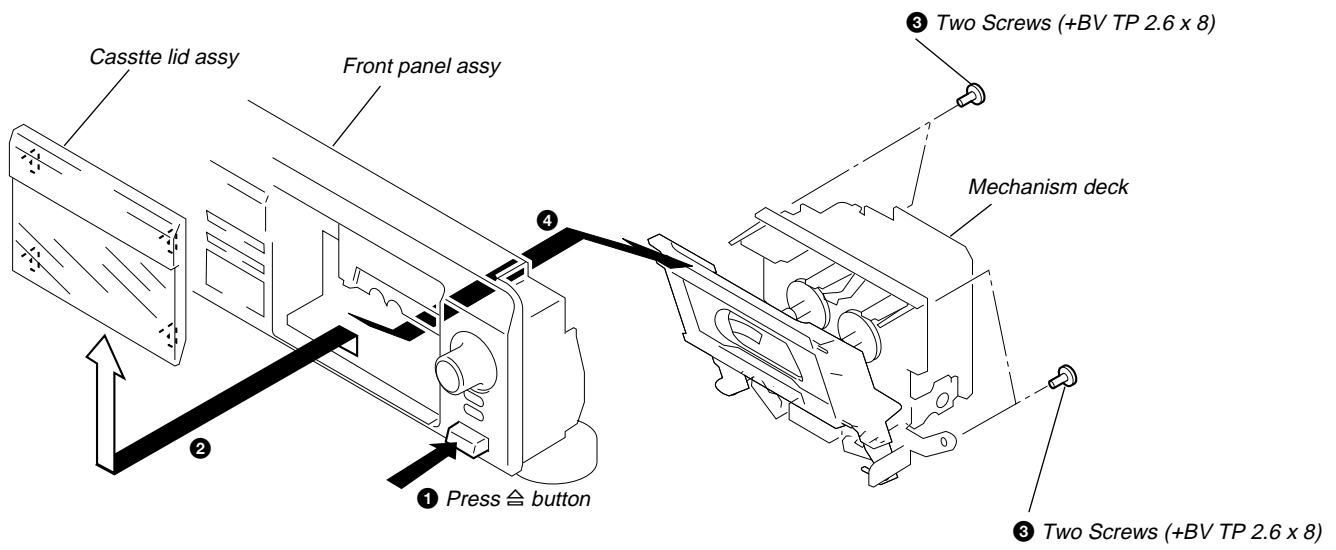
### 3-1. FRONT PANEL REMOVAL



### 3-2. CD MECHANISM REMOVAL



### 3-3. MECHANISM DECK REMOVAL



# SECTION 4 ADJUSTMENTS

## 4-1. MECHANICAL ADJUSTMENTS

### PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
  - record/playback head    pinch roller
  - erase head                    rubber belts
  - capstan
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

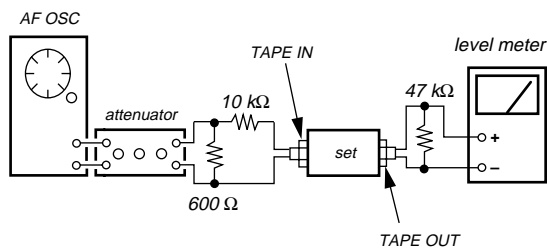
### ● Torque Measurement

Mode	Torque Meter	Meter Reading
Forward	CQ-102C	30 to 65 g•cm (0.42 – 0.9 oz•inch)
Forward Back Tension	CQ-102C	1 to 7 g•cm (0.0134– 0.097 oz•inch)
Reverse	CQ-102RC	30 to 65 g•cm (0.41 – 0.9 oz•inch)
Reverse Back Tension	CQ-102RC	1 to 7 g•cm (0.0134– 0.097 oz•inch)
FF, REW	CQ-201B	70 to 120 g•cm (0.972– 1.66 oz•inch)

## 4-2. ELECTRICAL ADJUSTMENTS

1. The adjustment should be performed in the publication.  
(Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
  - Switch position
    - DOLBY NR switch : OFF
    - DIR MODE switch :  $\rightleftarrows$
  - Standard record position :  
Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

### Record Mode



### ● Standard Input Level

Input Terminal	TAPE IN
source impedance	10kΩ
input signal level	0.5V (–3.8dB)

### ● Standard Output Level

Output Terminal	TAPE OUT
load impedance	47kΩ
output signal level	0.5V (–3.8dB)

### ● Test tape

Tape	Contents	Use
P-4-A100	10 kHz, –10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

0dB=0.775V

### TC Test Mode

setting : Push POWER button with STOP key and REC MUTE key.

function : ● when start recording, COUNTER is set to “0000” and COUNTER MEMORY function is effective (“MEMORY” appears on FLD).  
● While playing or AMS, the signal level is displayed. (“L” / “H”)

### ● Test tape

Tape	Contents	Use
P-4-A100	10 kHz, –10dB	Head Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

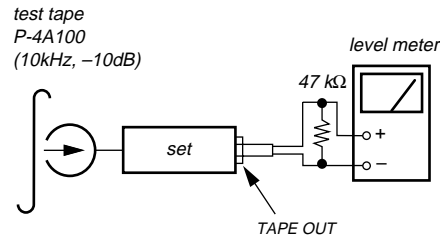
0dB=0.775V

### Record/Playback Head Azimuth Adjustment

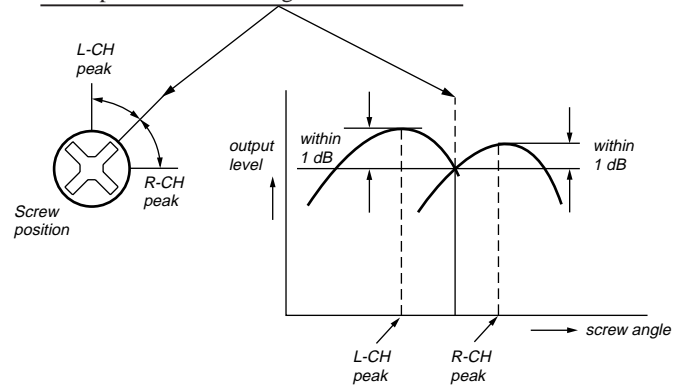
● Carrey out servicing or repairs form the REVERSE direction first.

### Procedure :

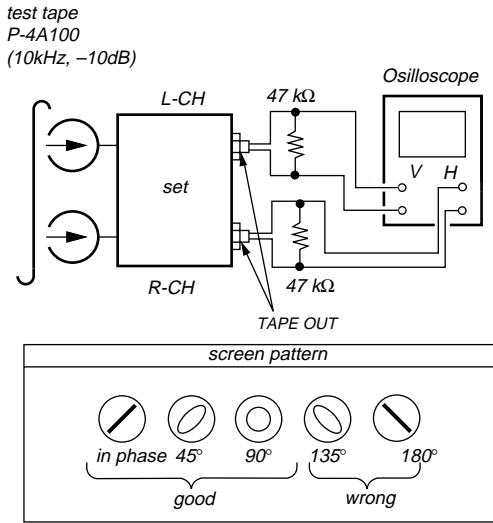
1. Mode : Forward playback



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



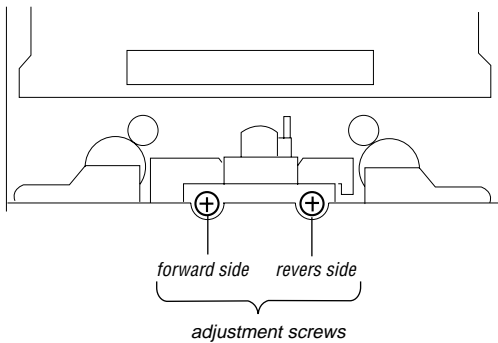
### 3. Playback Mode



4. Change the reverse playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

#### Adjustment Location :

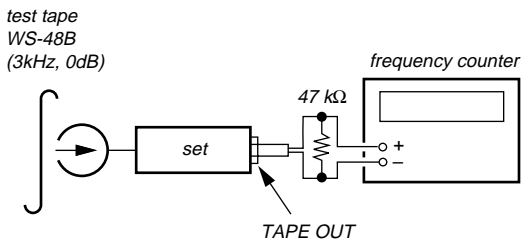
– record/playback head –



### Tape Speed Adjustment

#### Procedure :

Mode : Playback



1. Set to forward playback mode.
2. Adjust RV71 so that frequency reading becomes  $3,000 \pm 90$ Hz.

Frequency difference between the beginning and the end of the tape should be within  $\pm 3\%$ .

**Adjustment Location :** AUDIO board.  
(see page 9)

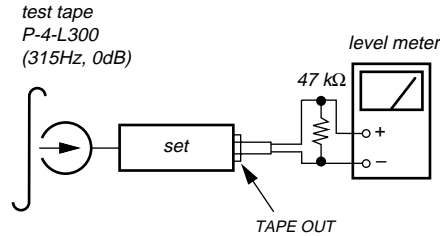
### Sample Value of Wow and flutter

W. RMS (JIS) within 0.3%  
(test tape : WS-48B)

### Playback Level Adjustment

#### Procedure :

Mode : Playback



Adjust RV11 (L-CH) and RV21 (R-CH) so the level meter reading becomes the adjustment limits below.

#### Adjustment Level :

TAPE OUT level :  $-7.7 \pm 0.5$ dB (0.301 to 0.338V)  
Level Difference between Channels : within 0.5dB

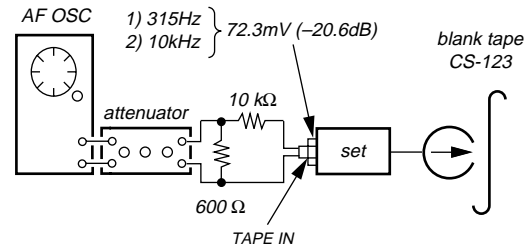
Confirm the TAPE OUT level does not change in playback mode while changing the mode from playback to stop several times.

**Adjustment Location :** AUDIO board.  
(see page 9)

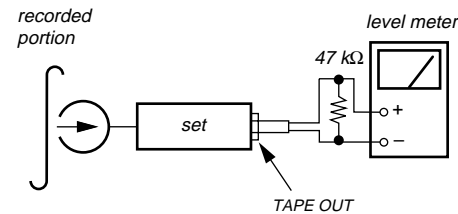
### Record Bias Adjustment

#### Procedure :

1. Mode : Record



2. Mode : Playback



3. Confirm playback the signal recorded in step 1 become adjustment level as follows.
4. If these levels do not adjustment level, adjust the RV12 (L-CH) and RV22 (R-CH) to repeat step 1 and 4.

**Adjustment level :** Playback output of 315Hz to playback output of 10kHz :  $\pm 0.5$ dB.

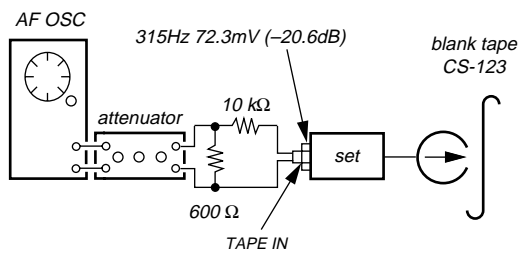
**Adjustment Location :** AUDIO board.



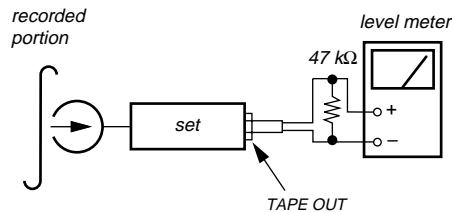
## Record Level Adjustment

### Procedure :

1. Mode : Record



2. Mode : Playback



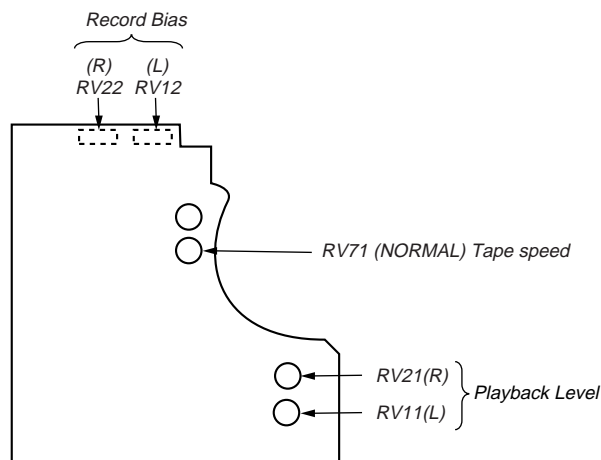
3. Confirm playback the signal recorded in step 1 become adjustment level as follows.
4. If these levels do not adjustment level, adjust the RV111 (L-CH) and RV211 (R-CH) to repeat step 1 and 4.

### Adjustment Level :

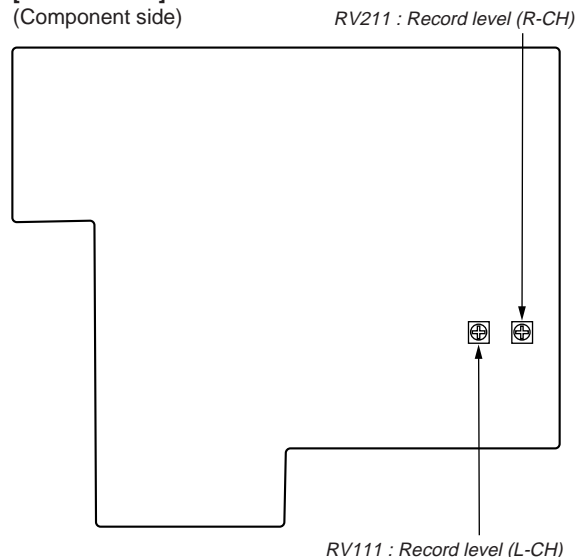
TAPE OUT level :  $-26 \pm 0.5\text{dB}$  (36.7 to 41.1mV)

### Adjustment Location : MAIN board.

#### [AUDIO BOARD] (Conductor side)



#### [MAIN BOARD] (Component side)

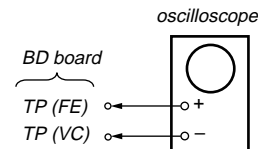


## CD SECTION

### Note :

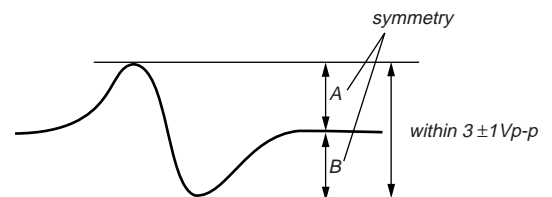
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than  $10\text{M}\Omega$  impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

### S-Curve Check



### Procedure :

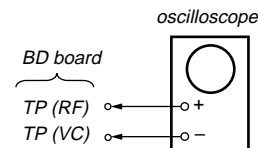
1. Connect oscilloscope to test point TP(FE) and BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (Actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within  $3 \pm 1\text{Vp-p}$ .



6. After check, remove the lead wire connected in step 2.

- Note :**
- Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
  - Take sweep time as long as possible and light up the brightness to obtain best waveform.

### RF Level Check

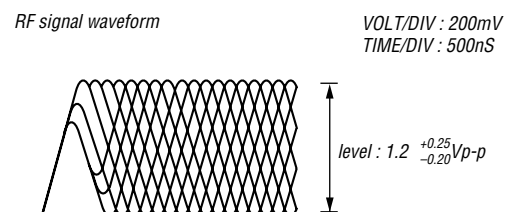


### Procedure :

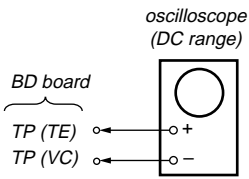
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

### Note :

Clear RF signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.



### E-F Balance (1 Track Jump) Check



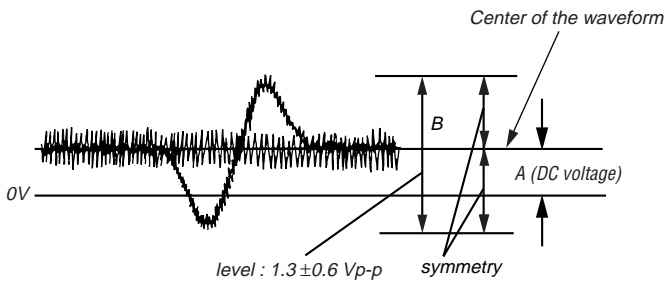
#### Procedure :

1. Connect oscilloscope to test point TP(TE) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the "|| (Pause)" button. (Becomes the 1 track jump mode)
5. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform.

Confirm the following :

$$A/B \times 100 = \text{less than } \pm 22\%$$

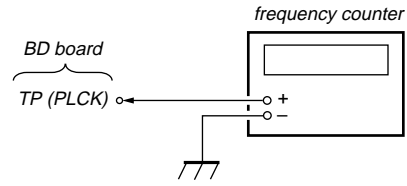
1 track jump waveform



### RF PLL Free-run Frequency Check

#### Procedure :

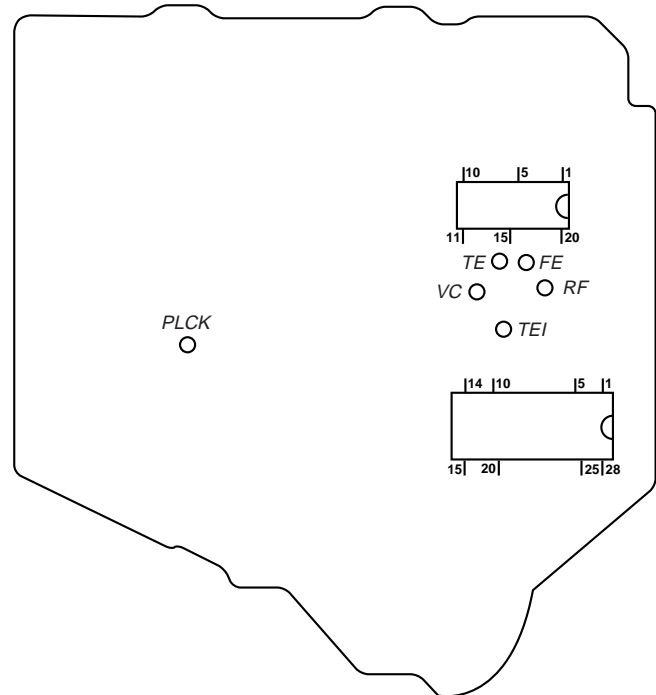
1. Connect frequency counter to test point (PLCK) with lead wire.



2. Turned Power switch on.
3. Put disc (YEDS-18) in to play the number five track.  
Confirm that reading on frequency counter is 4.3218MHz.

#### Adjustment Location :

[BD BOARD] (Side B)



## SECTION 5

### EXPLANATION OF IC TERMINALS

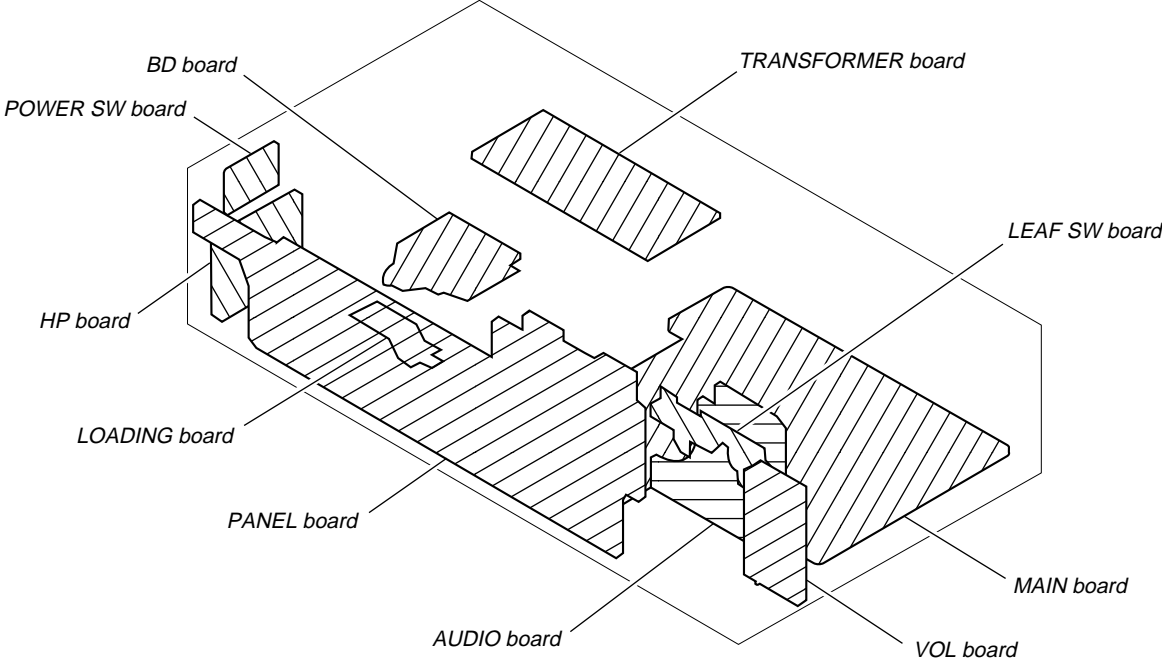
#### IC801 $\mu$ PD78044FGF029-3B9 (SYSTEM CONTROL)

Pin No.	Pin name	I/O	Description
1	LED	O	AUTO REC LEVEL LED ON/OFF.
2-7	1G - 6G	O	FL grid drive.
8	VDD	-	Power supply (+5V)
9	CLK	O	Command clock output for IC101 and IC104.
10	DATA	O	Command data output for IC101 and IC104.
11	SENS	I	SENS input for IC101 and IC104.
12	PGML	O	Command latch output for IC104.
13	AMUTE	O	Mute control output.
14	SQCLK	O	Q-data read-out for clock output.
15	NC	O	Not used (Open).
16	SUBQ	I	Q-data input.
17	RESET	I	System reset input.
18	METAL	I	Metal tape detect input.
19	TC TEST	I	TC test mode input. "L" : Test mode.
20	AVSS	-	A/D ground terminal.
21	LD IN	O	CD loading-in output.
22	LD OUT	O	CD loading-out output.
23	AD CTRL1	O	A/D extended input (1) select signal output.
24	AD CTRL0	O	A/D extended input (0) select signal output.
25	AD1	I	A/D extended input (1).
26	AD0	I	A/D extended input (0).
27	S. REEL	I	Supply reel pulse input.
28	CD TEST	I	CD test mode input.
29	AVDD	-	A/D analog power supply.
30	AVREF	I	A/D reference voltage input.
31	STOP SW	I	STOP switch input.
32	XT2	-	Not used (Open).
33	VSS	-	Ground terminal.
34	X1	I	System clock. (4MHz)
35	X2	O	System clock. (4MHz)
36	NR1	O	Dolby mode select output (1).
37	NR0	O	Dolby mode select output (2).
38	BS/AMS	O	Blank skip/AMS select output.
39	RELAY	O	REC/PLAY select output.
40	XLT	O	Command lutch output.
41	REEL-	O	Reel motor control output.
42	REEL+	O	Reel motor control output.
43	VOL OUT	O	Electrical volume control.
44	REC MUTE	O	REC mute ON/OFF control.
45	POWER OUT	O	Power switch control.
46	SCOR	I	Q-data sync input.
47	SIRCS IN	I	Remote control signal input.
48	VSS (IC)	-	Ground terminal.
49	AMS IN	I	AMS signal input.
50	POWER IN	I	Power OFF detect input.

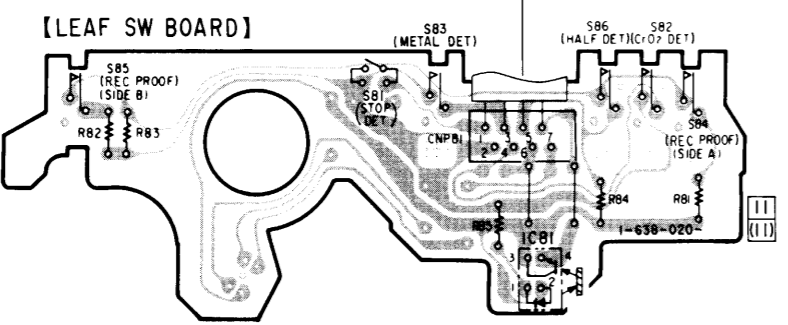
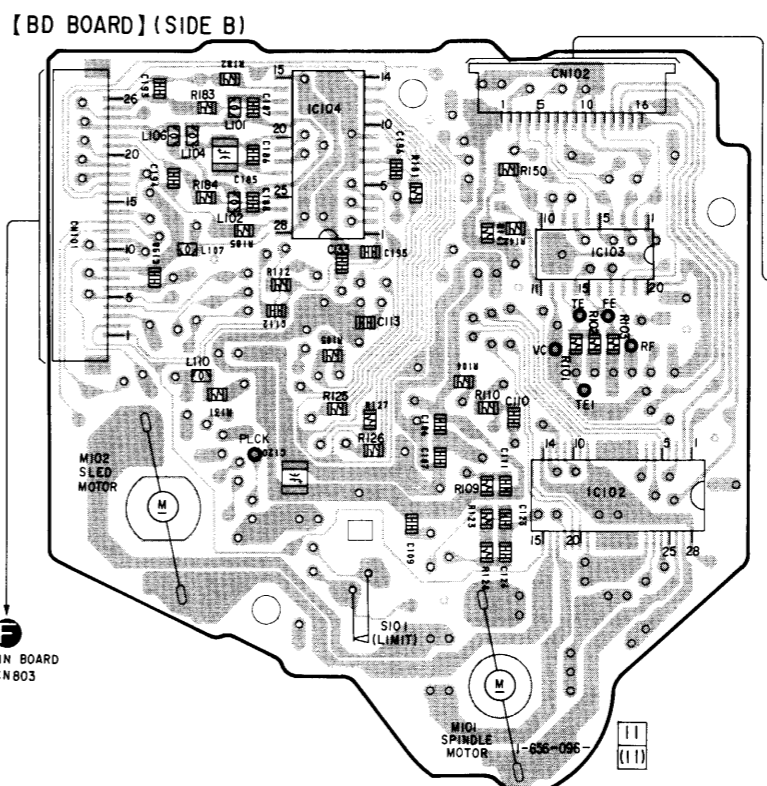
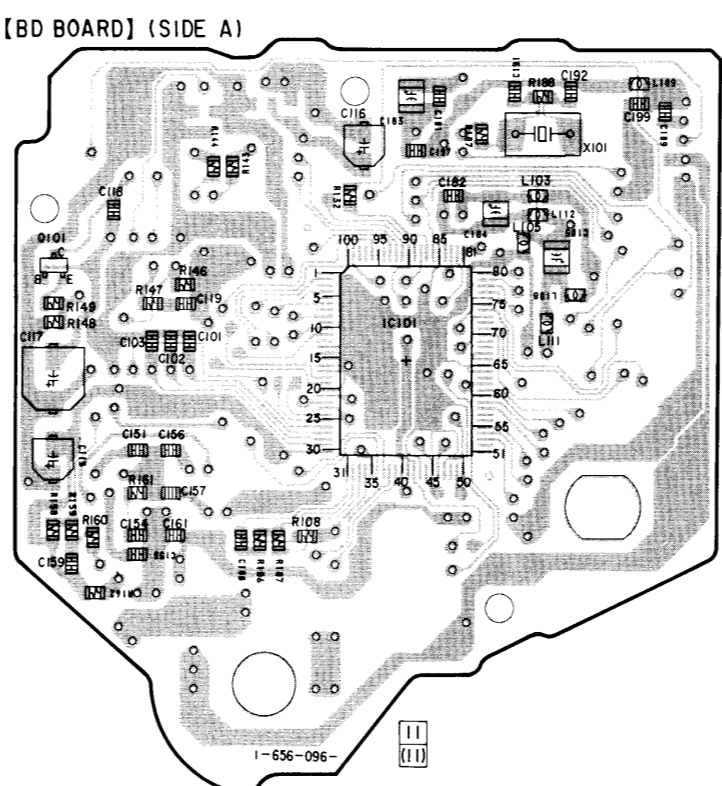
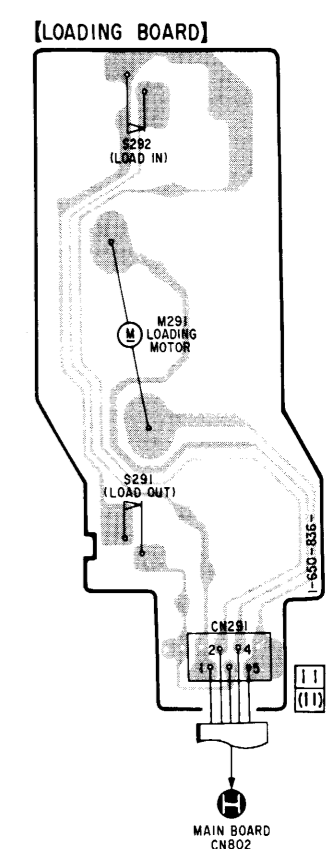
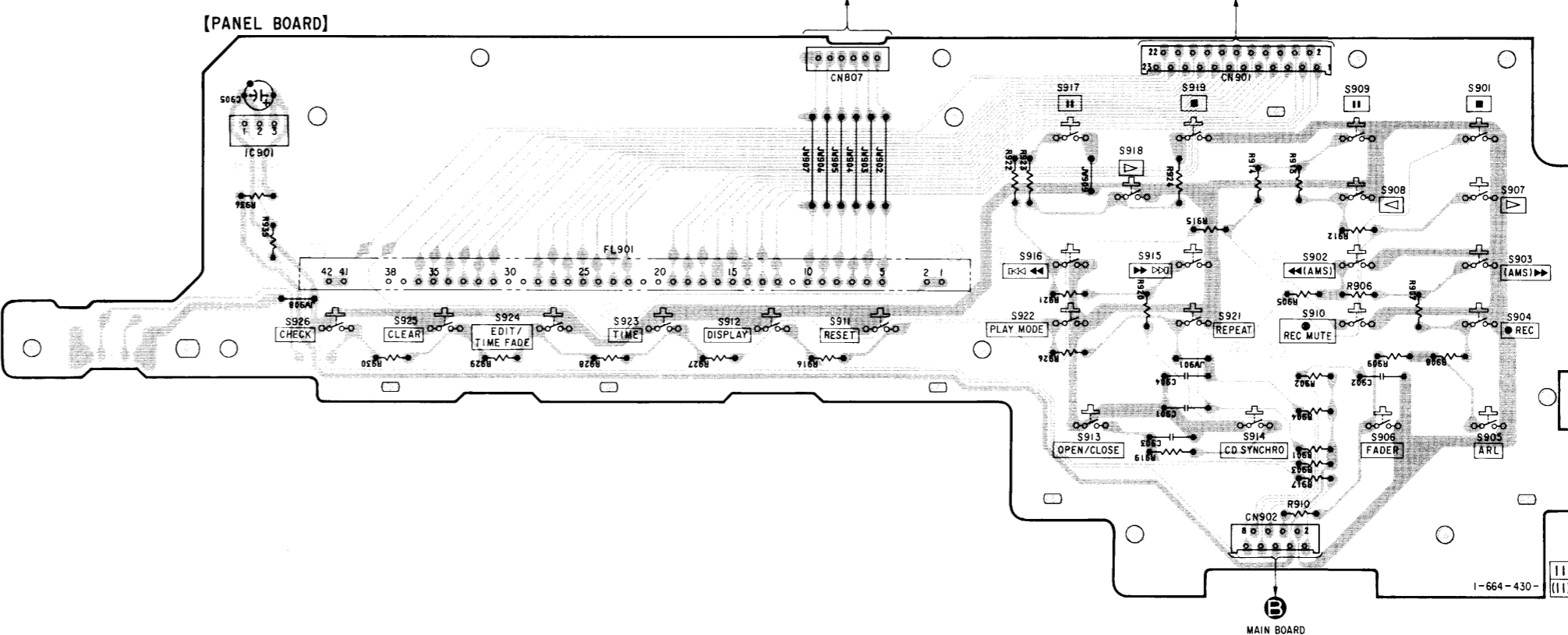
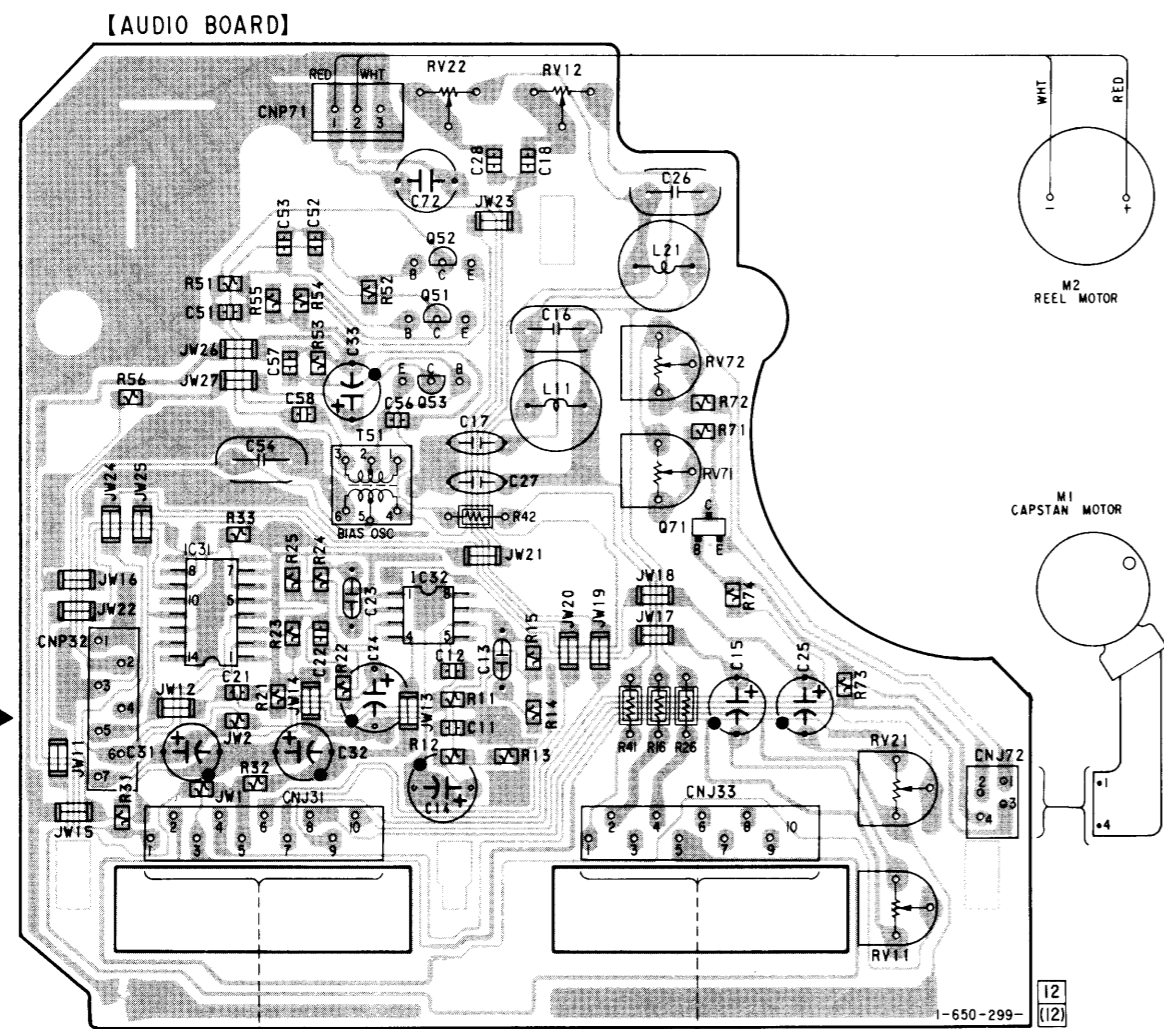
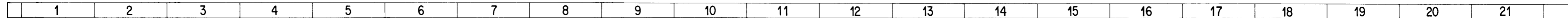
Pin No.	Pin name	I/O	Description
51	LD ON	O	Laser diode ON output.
52	VDD	–	Power supply (+5V).
53	HP SEL	O	Headphone output selection.
54	INPUT SEL	O	Recording source select.
55	TC LINE MUTE	O	TC line mute control output.
56–70	S1–S15	O	FL segment output.
71	VDISP	–	Power supply for FL.
72–77	S16–S21	O	FL segment output.
78	BIAS	O	Bias ON/OFF output.
79	PB/REC	O	PB/REC select output for Dolby (IC501).
80	CAP.M	O	Capstan motor ON/OFF control.

# SECTION 6 DIAGRAMS

## ● CIRCUIT BOARDS LOCATION



6-1. PRINTED WIRING BOARDS - BD SECTION -



SEMICONDUCTOR LOCATION

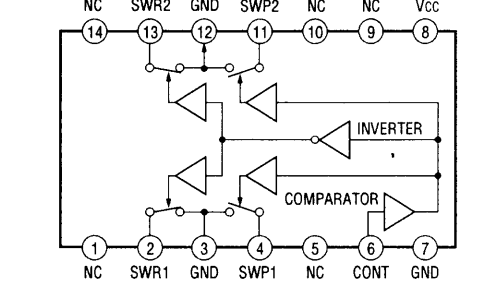
Ref. No.	Location
IC031	D-3
IC032	D-4
IC081	I-6
IC101	G-12
IC102	H-17
IC103	G-17
IC104	F-15
IC901	B-11
Q051	C-4
Q052	B-4
Q053	C-4
Q071	D-6
Q101	G-10

- Note:
- : parts extracted from the component side.
  - : Through hole.
  - ▨ : Pattern on the side which is seen.

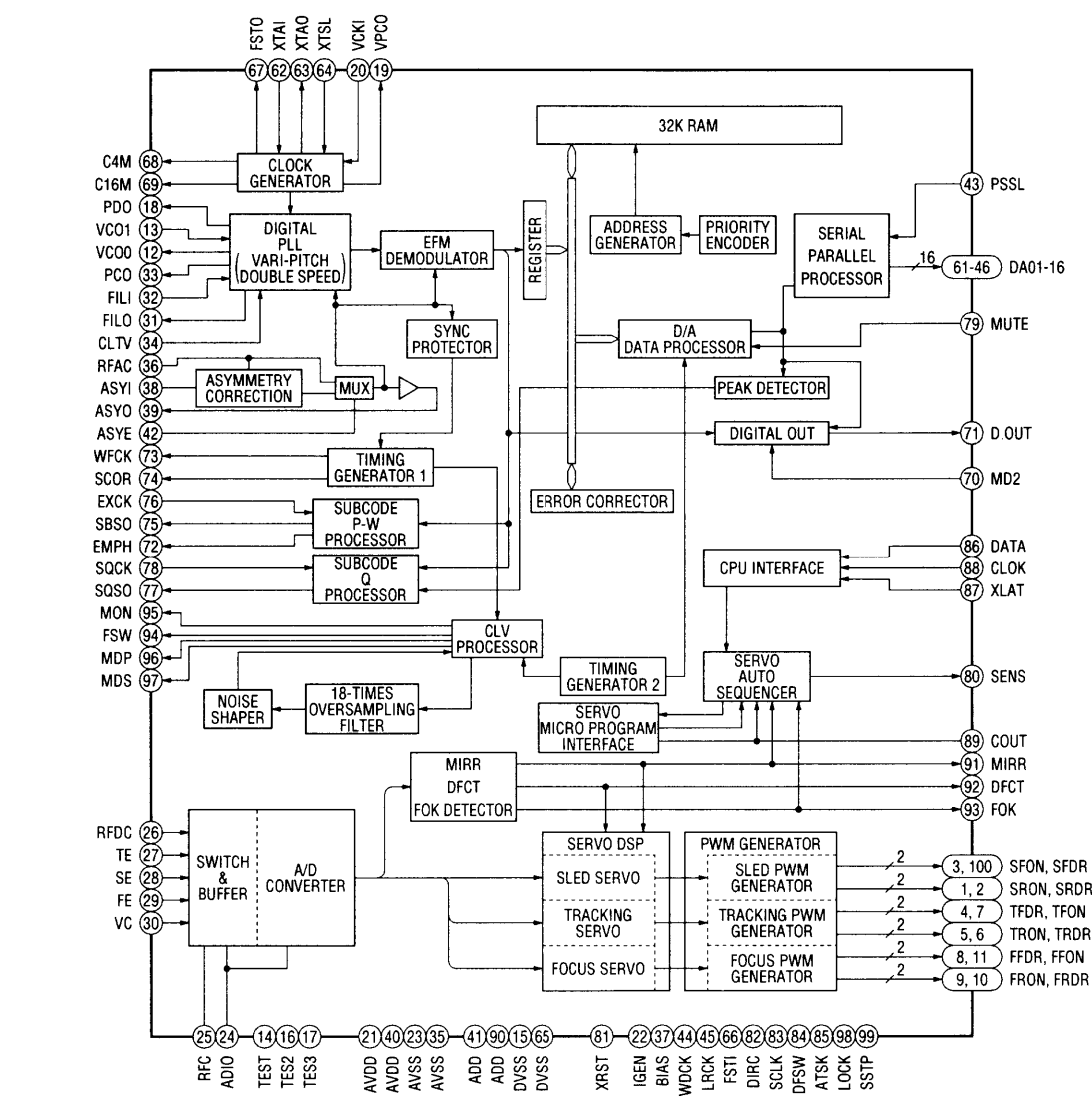


IC BLOCK DIAGRAMS - BD SECTION -

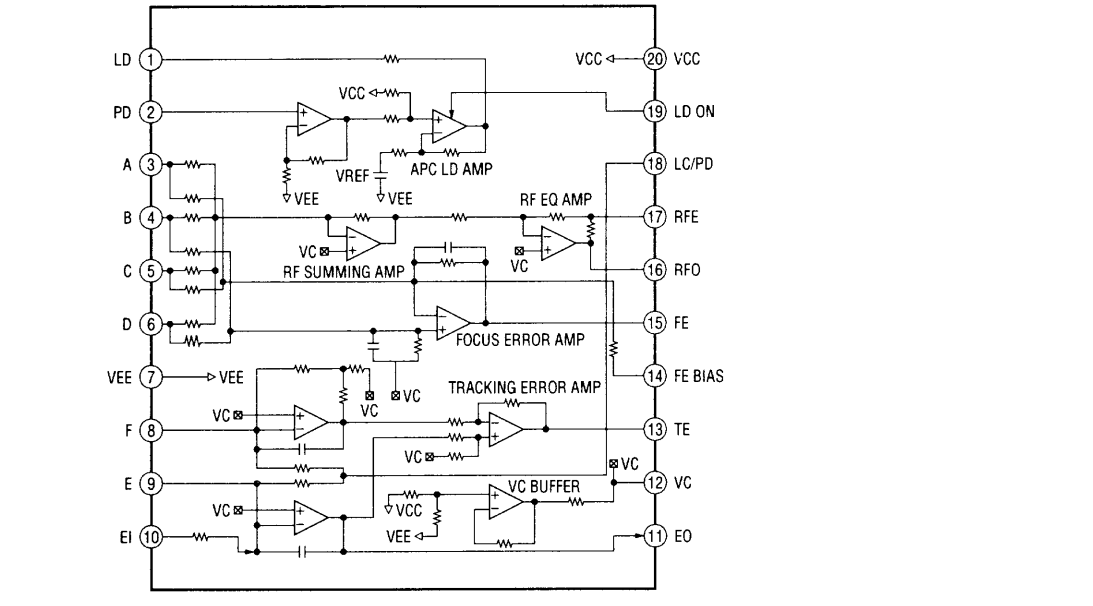
IC31 uPC1330GR



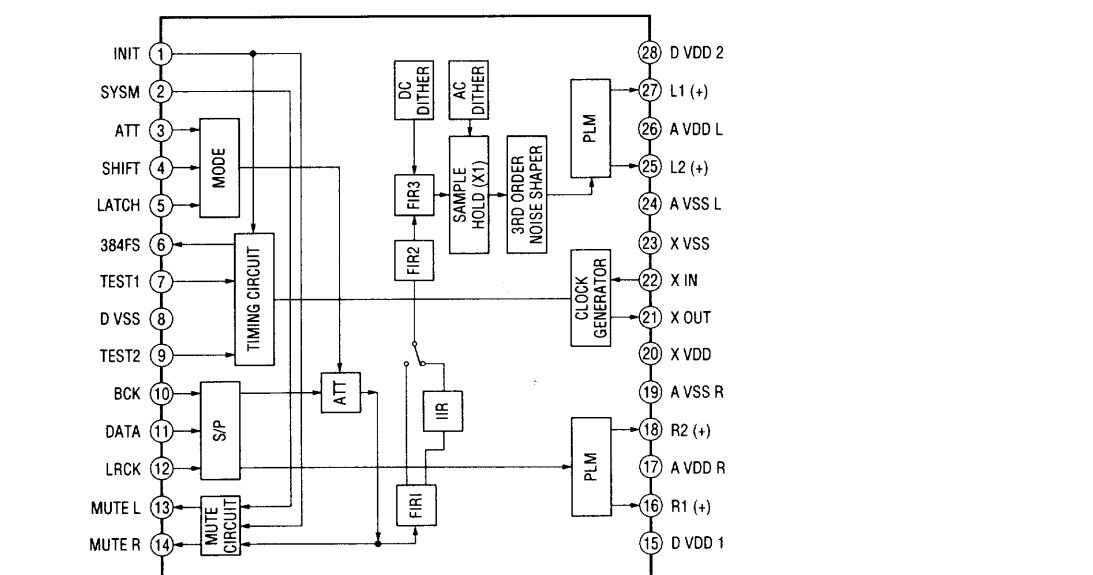
IC101 CXD254Q



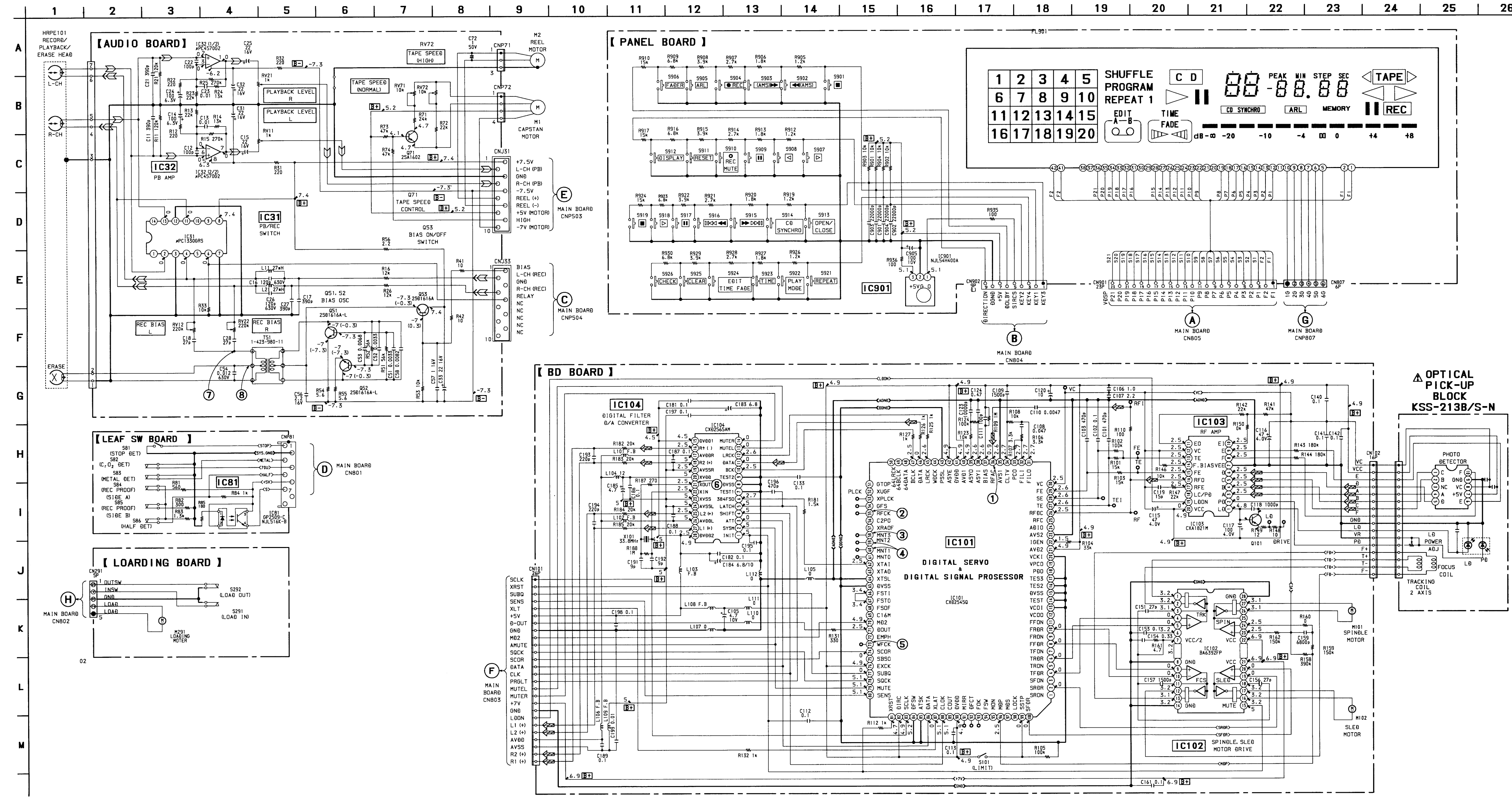
IC103 CXA1821M-T6



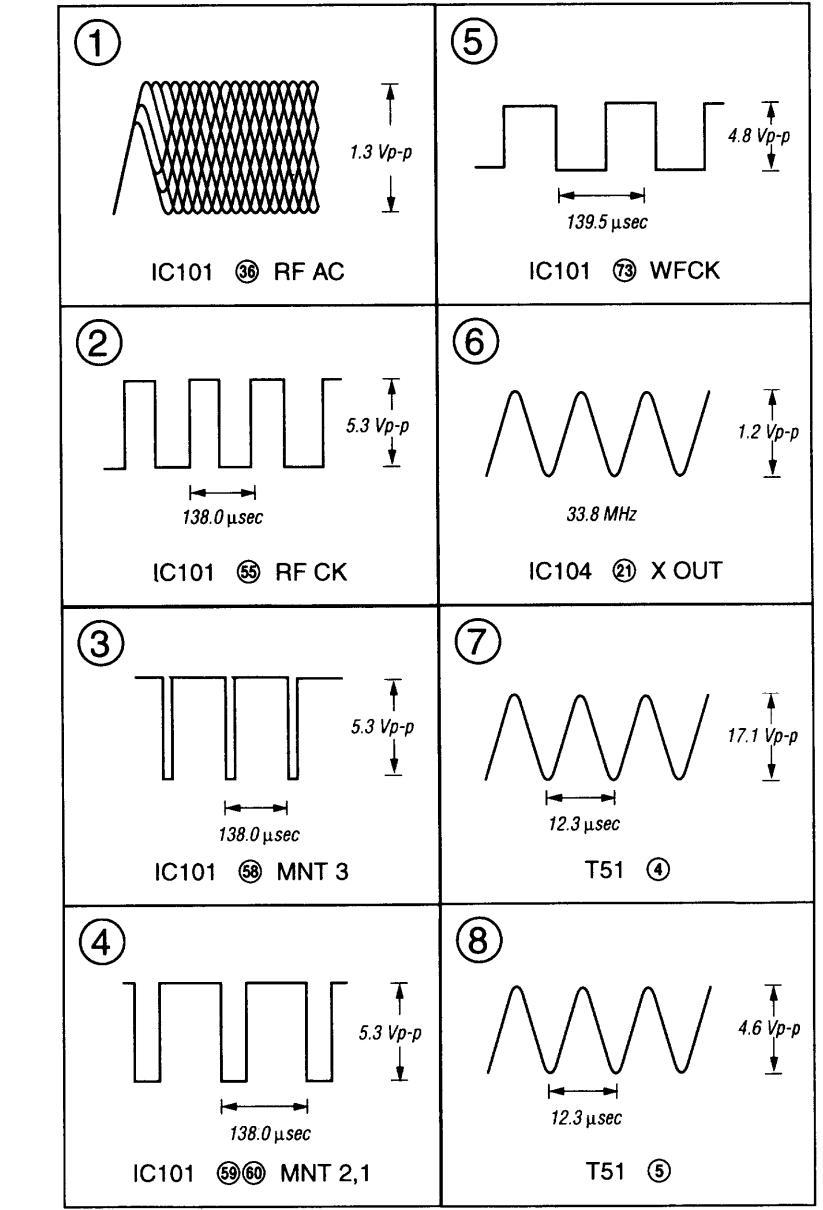
IC104 CXD2565M



6-2. SCHEMATIC DIAGRAM - BD SECTION -

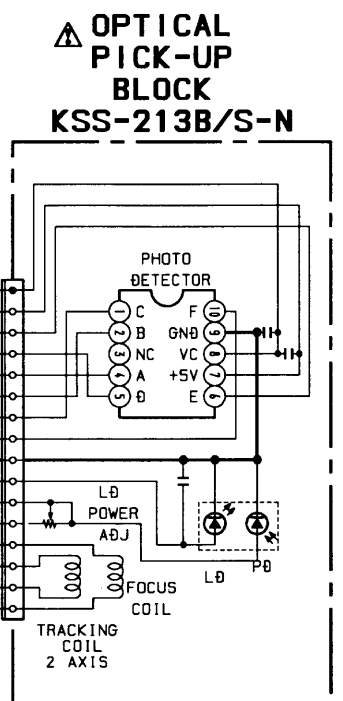


WAVEFORMS

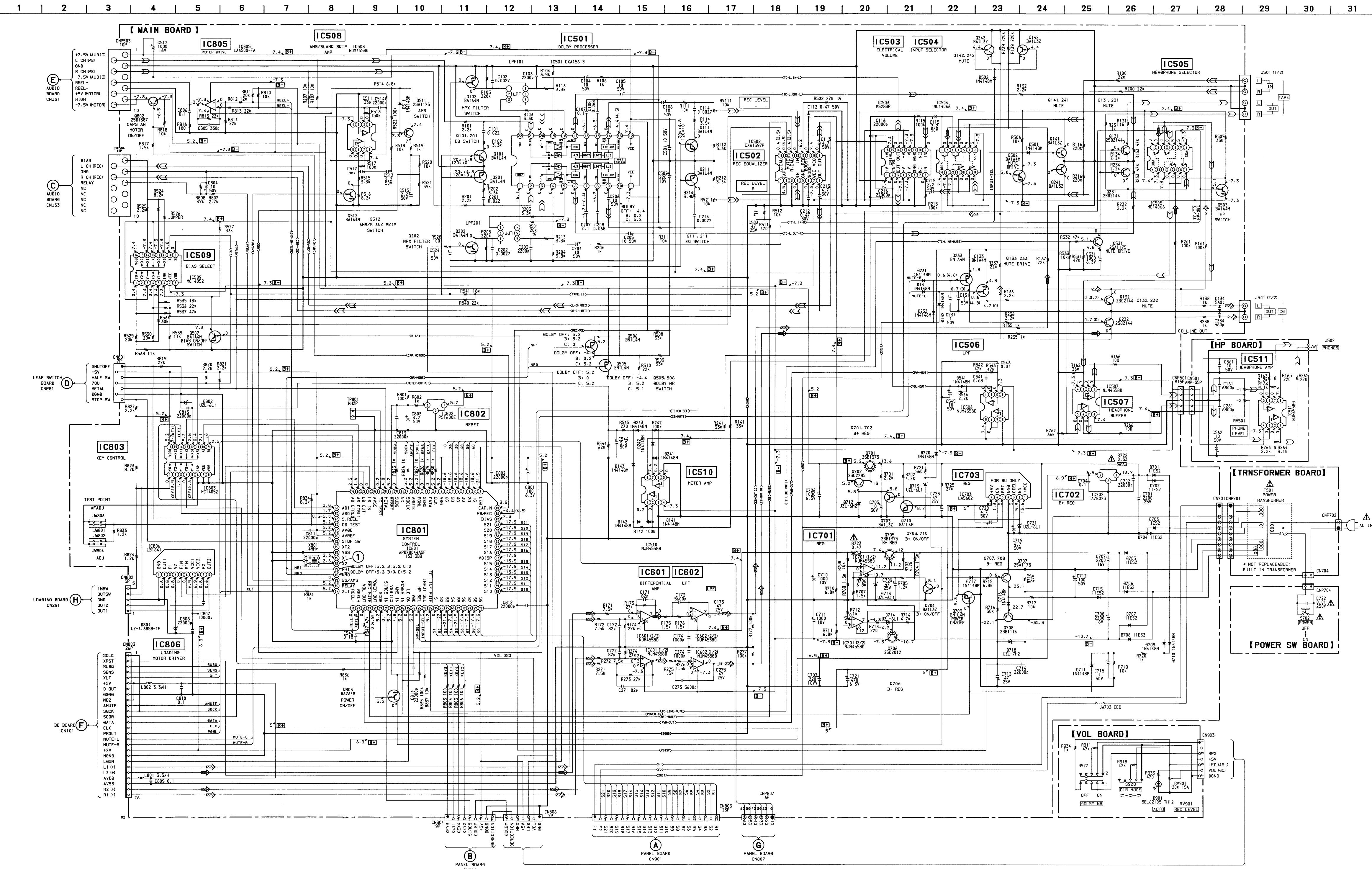


Note: All capacitors are in uF unless otherwise noted. pF: pF. 50W or less are not indicated except for electrolytics and tantalums. All resistors are in Ohm and 1/4-W or less unless otherwise specified. [Symbol] : nonflammable resistor. Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

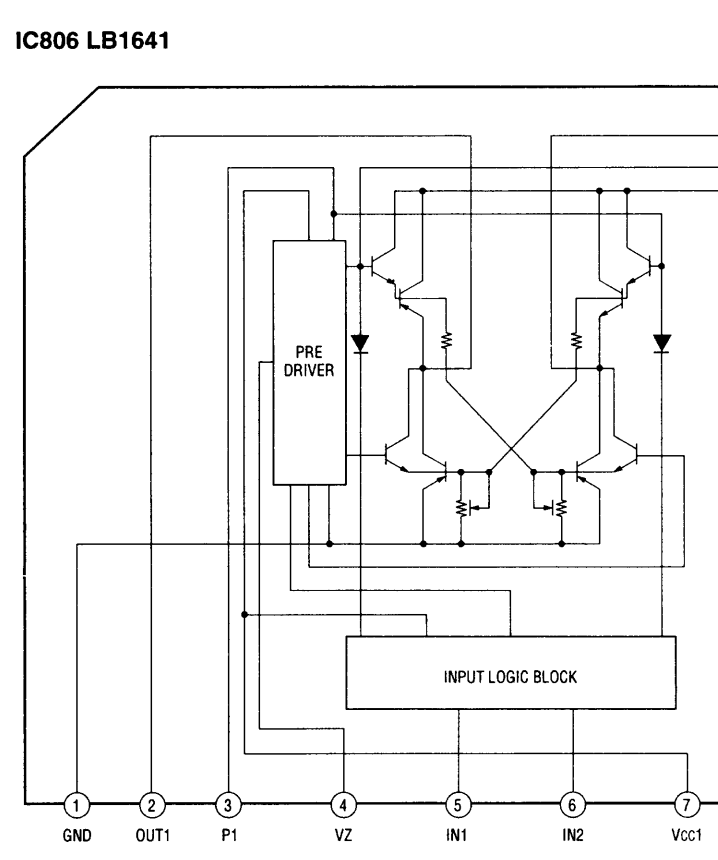
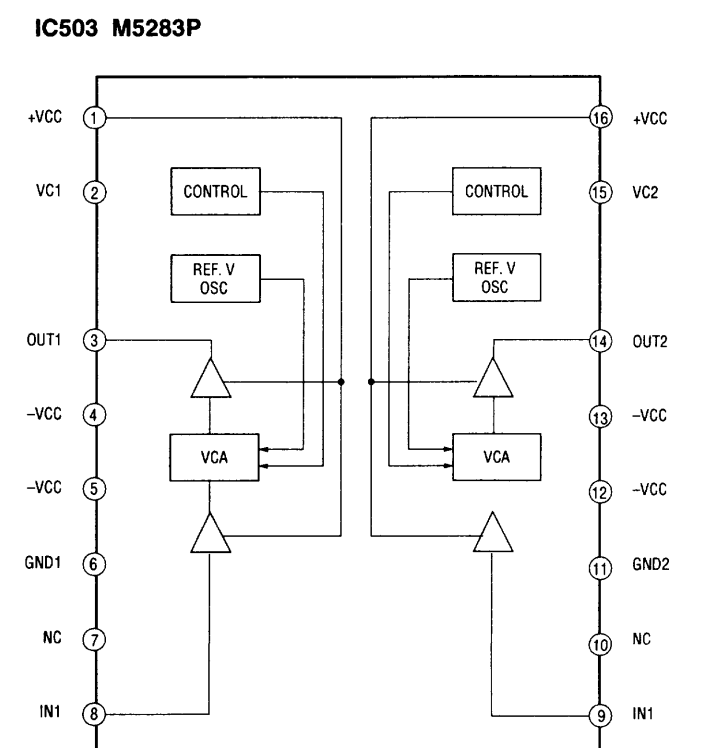
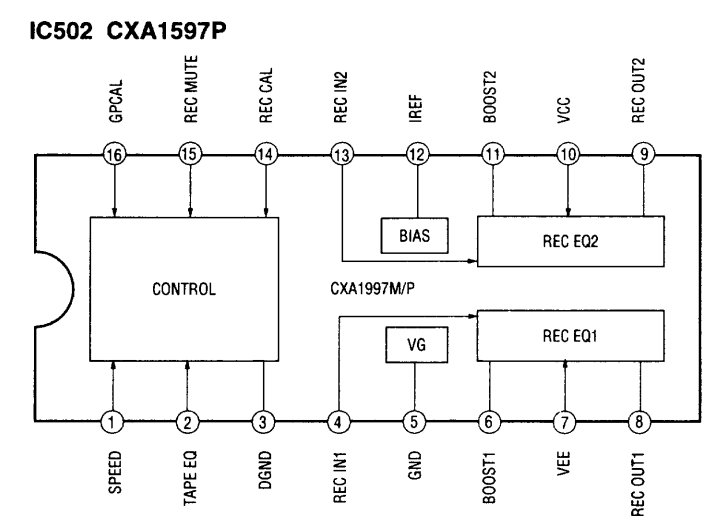
Legend: [Symbol] : B+ Line, [Symbol] : B- Line, [Symbol] : adjustment for repair. Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions. no mark : PLAY (TAPE SECTION), STOP (CD SECTION) ( ) : REC (TAPE SECTION). Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances. Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances. Circled numbers refer to waveforms. Signal path: [Symbol] : PB, [Symbol] : CD, [Symbol] : REC.



6-3. SCHEMATIC DIAGRAM - MAIN SECTION -



IC BLOCK DIAGRAMS - MAIN SECTION -

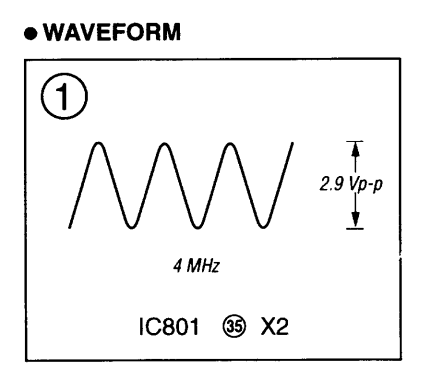


- [B+]: B+ Line
- [B-]: B- Line
- [ ]: adjustment for repair.
- no mark: PLAY (TAPE SECTION), STOP (CD SECTION)
- ( ): REC (TAPE SECTION), (PLAY) (CD SECTION)
- Voltages are taken with a VOM (input impedance 10MΩ).
- Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path:
- : PB
- : CD

**Note:**

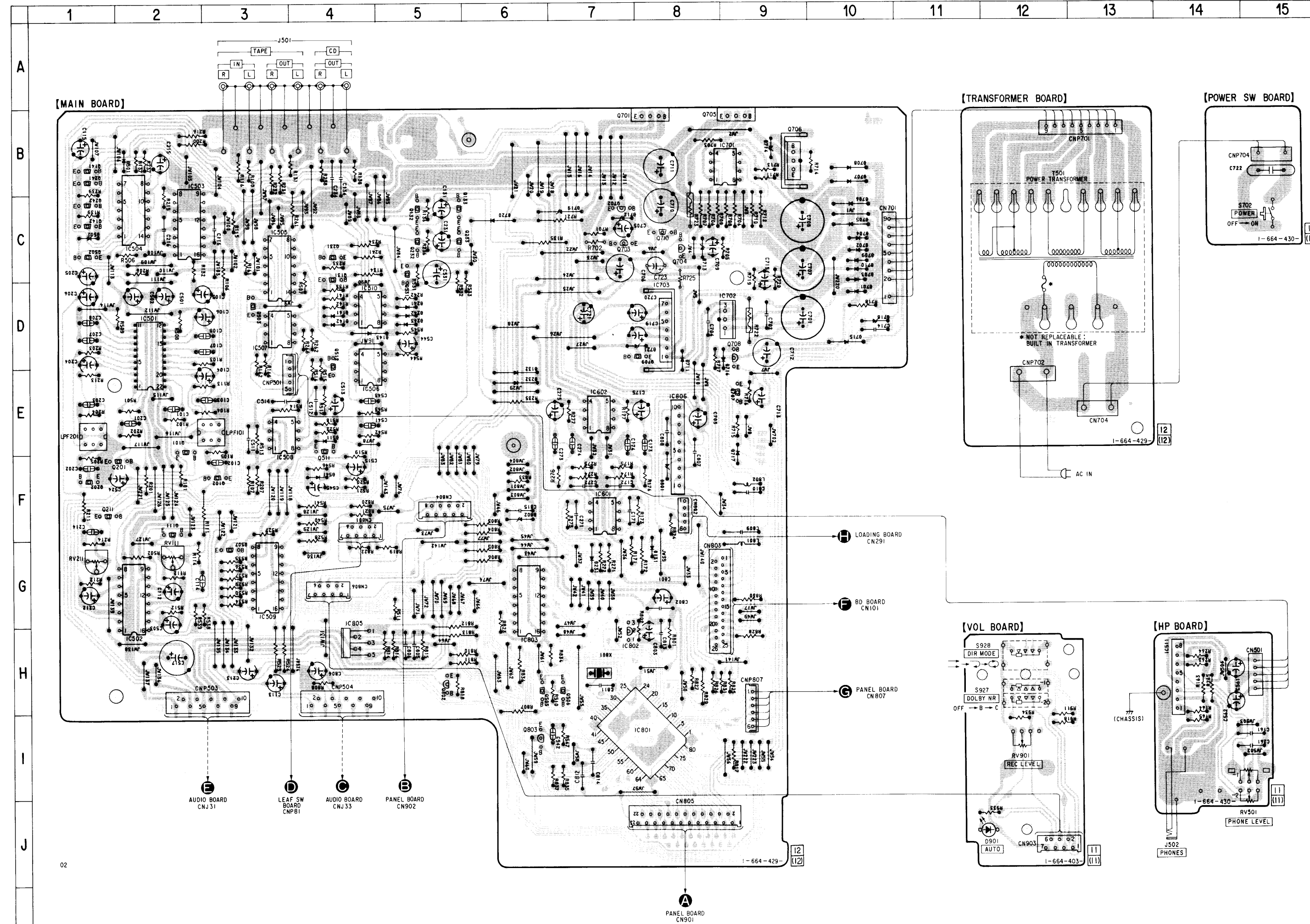
- All capacitors are in μF unless otherwise noted. pF, μF, μF, 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4-W or less unless otherwise specified.
- %: indicates tolerance.
- Δ: internal component.
- ⊕: fusible resistor.

**Note:** The components identified by mark Δ or dotted line with mark ⊕ are critical for safety. Replace only with part number specified.





6-4. PRINTED WIRING BOARDS - MAIN SECTION -



● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D131	G-8	IC511	H-14
D132	E-6	IC601	F-7
D141	D-4	IC602	E-7
D142	D-4	IC701	B-9
D143	D-4	IC702	D-9
D231	G-7	IC703	D-8
D232	E-6	IC801	I-8
D241	D-5	IC802	H-7
D242	D-5	IC803	G-6
D243	D-5	IC805	H-4
D501	B-2	IC806	E-8
D502	C-1		
D511	E-4		
D541	F-4	Q101	E-2
D701	D10	Q102	F-3
		Q111	F-2
D702	C10	Q131	Q-4
D703	C10	Q132	C-5
D704	C10		
D705	C10	Q133	C-5
D706	C10	Q141	B-1
		Q142	C-1
D707	B-10	Q201	F-2
D708	B-10	Q202	F-1
D709	C-10		
D710	C-10	Q211	F-1
D711	D-8	Q231	Q-4
		Q232	C-5
		Q233	C-5
D712	C-7	Q241	B-1
D713	C-8		
D714	B-9		
D715	D-10	Q242	C-1
D716	D-9	Q502	C-1
		Q503	D-3
D717	E-9	Q505	H-6
D718	D-10	Q506	H-7
D719	C-7		
D720	C-6	Q507	G-3
D721	D-8	Q511	E-4
		Q512	D-4
D801	F-8	Q531	C-5
D802	F-6	Q701	B-8
D901	J-12		
		Q702	C-7
		Q703	C-7
		Q704	C-8
IC501	D-2	Q705	B-9
IC502	G-2	Q706	B-9
IC503	C-2		
IC504	C-2		
IC505	C-3	Q707	E-9
		Q708	D-9
IC506	E-4	Q709	D-8
IC507	D-3	Q710	C-8
IC508	E-3	Q802	H-5
IC509	G-3		
IC510	D-4	Q803	I-6

Note on Printed Wiring Boards:

- Note:
- — parts extracted from the component side.
  - — Pattern on the side which is seen.

## SECTION 7 EXPLODED VIEWS

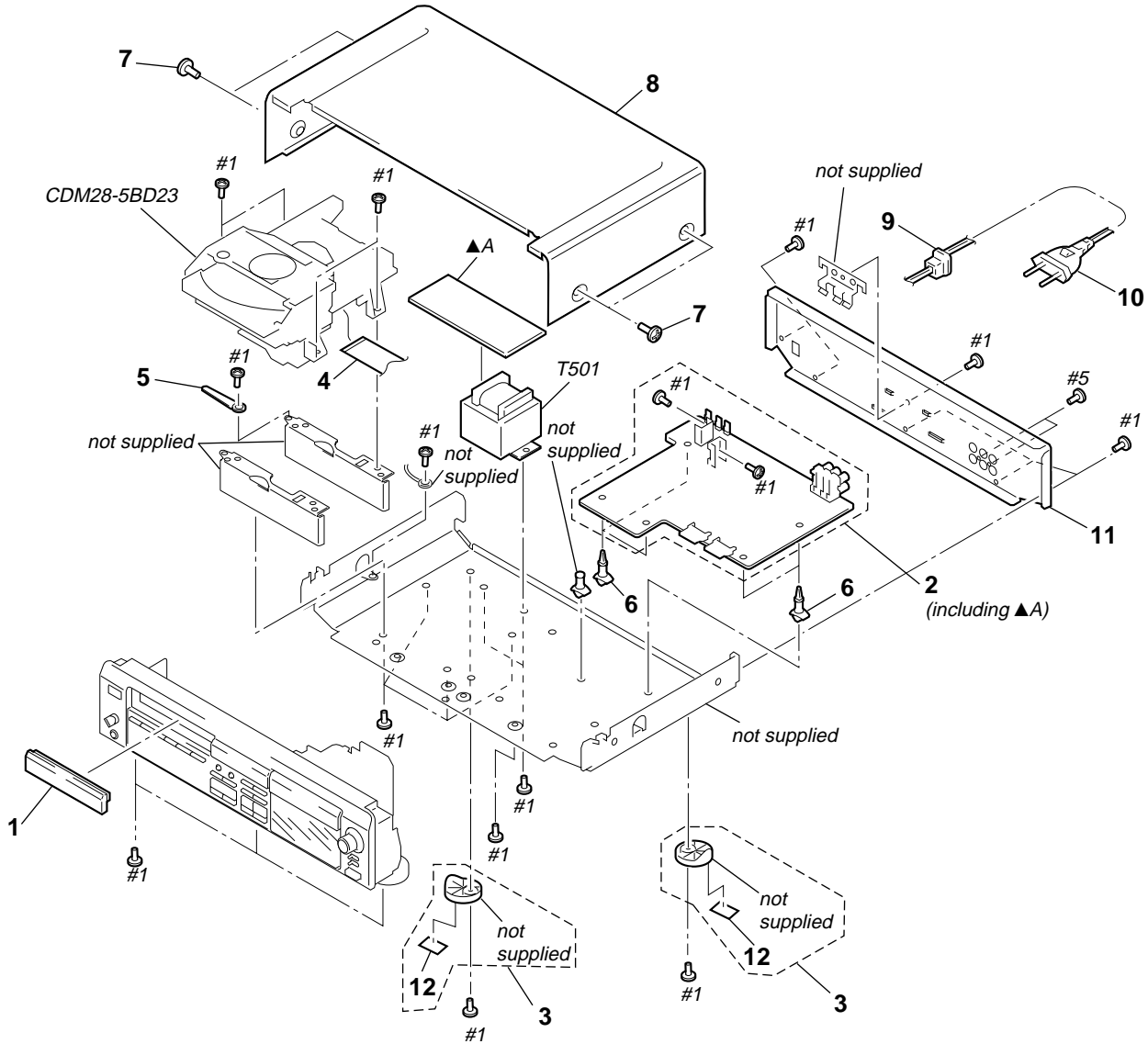
**NOTE :**

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

### 7-1. CHASSIS SECTION

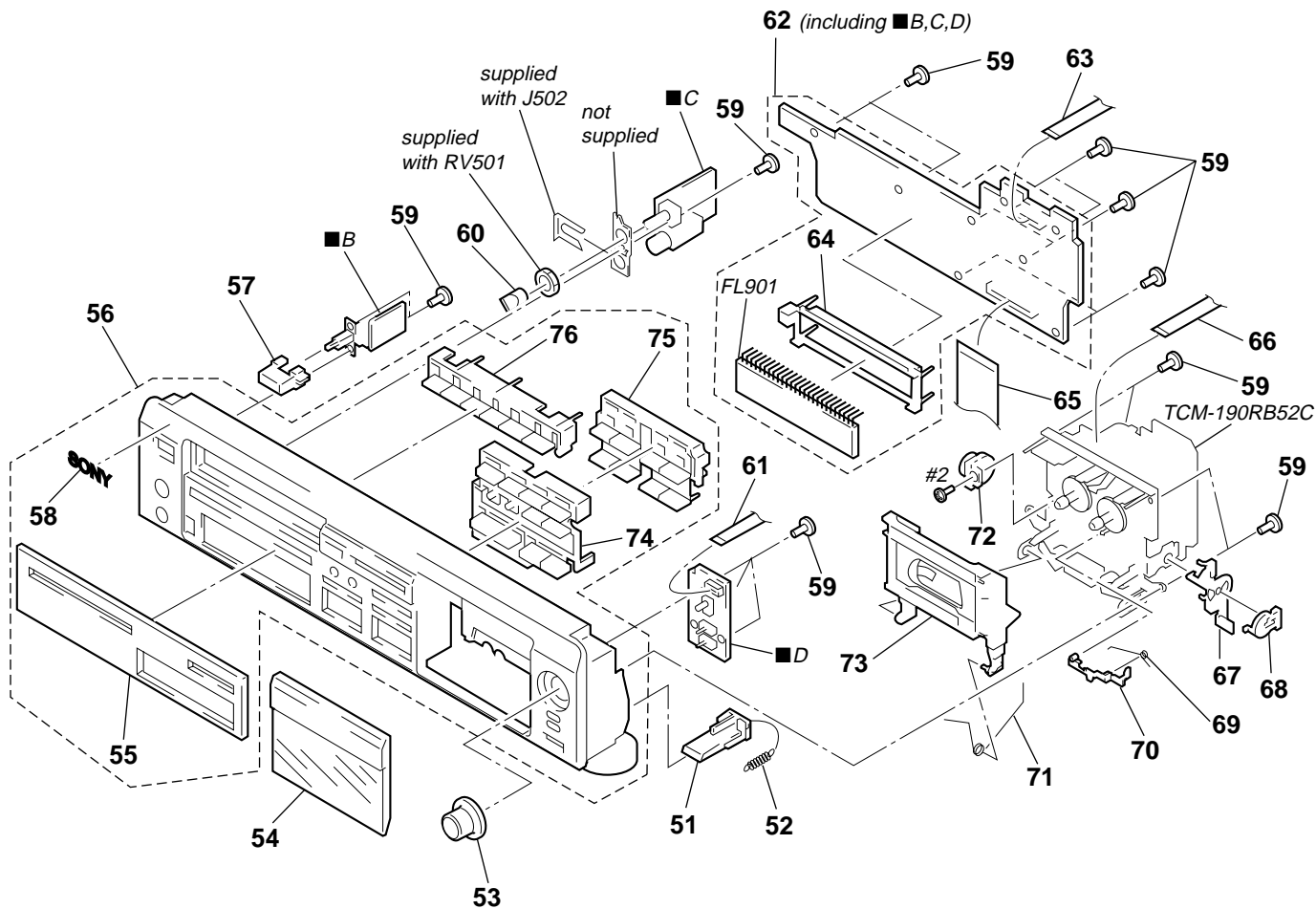
▲A : TRANSFORMER board



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-010-294-01	PANEL, LOADING		* 8	3-931-432-01	CASE (410726)	
* 2	A-2007-704-A	MAIN BOARD, COMPLETE		* 9	3-703-244-00	BUSHING (2104), CORD	
3	X-4947-207-2	FOOT ASSY (F50150S)		$\triangle$ 10	1-575-651-21	CORD, POWER	
4	1-782-313-11	WIRE (FLAT TYPE) (26 CORE)		* 11	3-010-302-01	PANEL, BACK	
5	3-703-397-01	STOPPER, WIRING		12	4-977-358-11	CUSHION (8X12.5)	
* 6	3-346-265-31	HOLDER, PC BOARD		$\triangle$ T501	1-427-910-11	TRANSFORMER, POWER	
7	3-704-366-01	SCREW (CASE) (M3X8)					

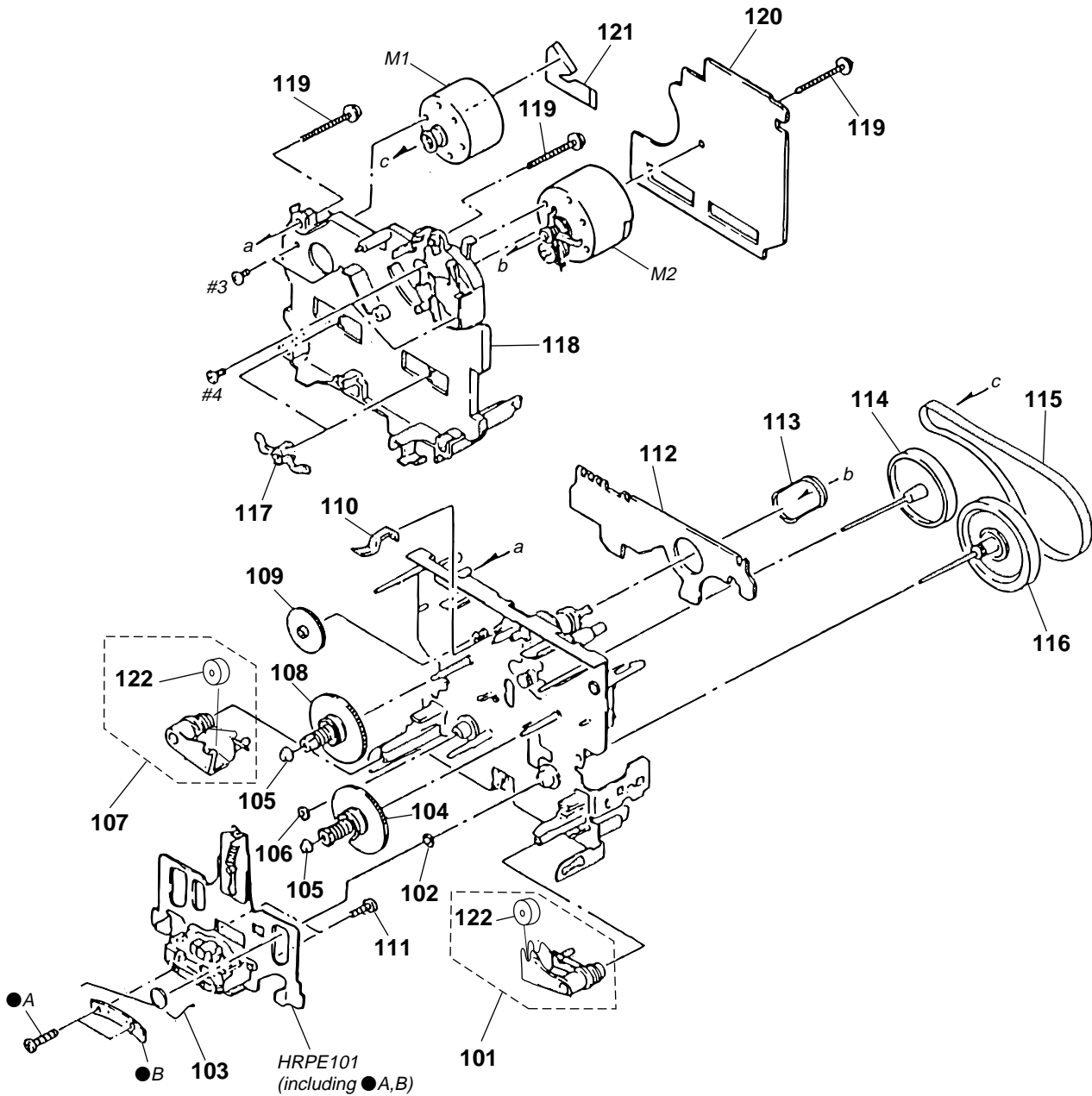
## 7-2. PANEL SECTION

- B : POWER SW board
- C : HP board
- D : VOL board



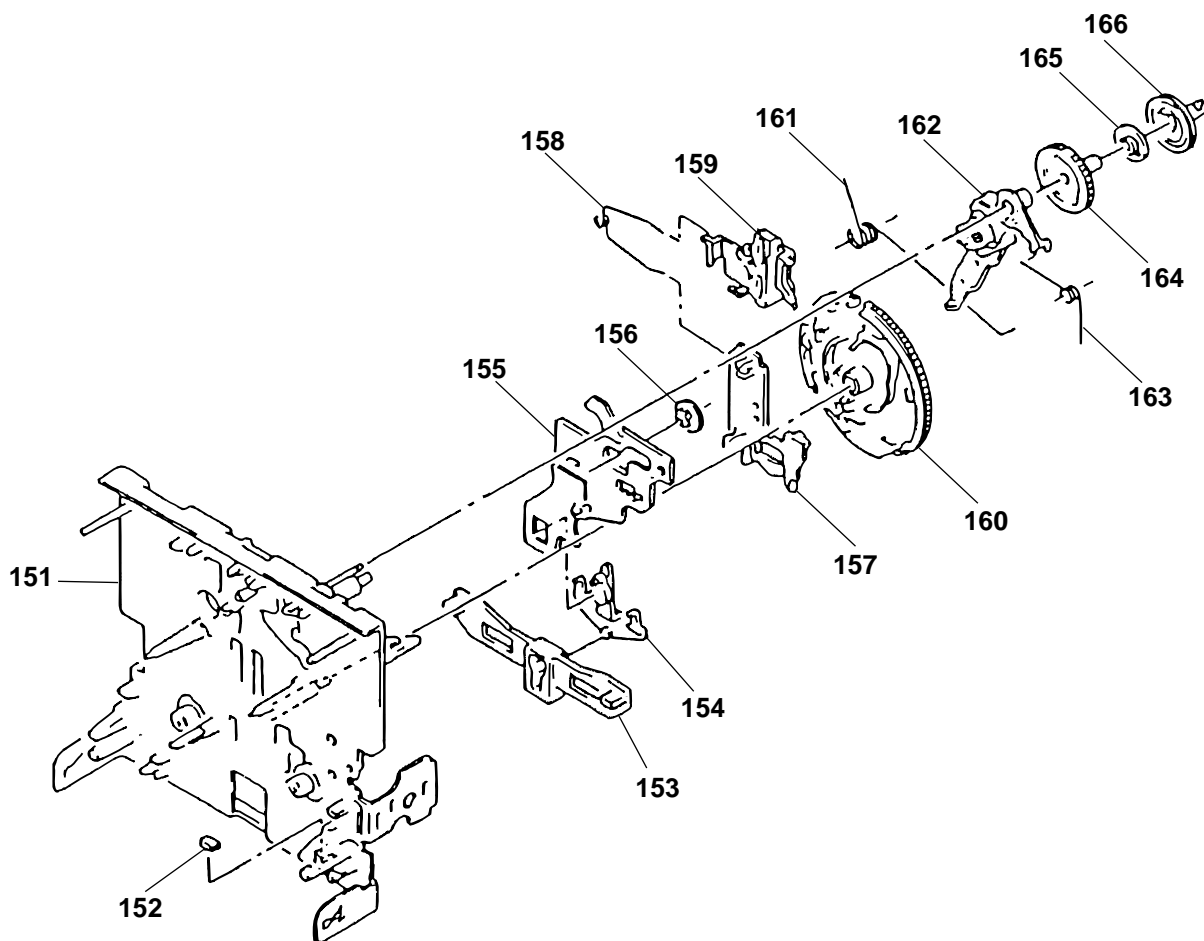
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-010-299-01	BUTTON (EJ)		* 64	3-923-303-01	HOLDER (FL TUBE)	
52	3-937-169-01	SPRING, TENSION		65	1-773-182-11	WIRE (FLAT TYPE) (23 CORE)	
53	3-931-430-11	KNOB (REC)		66	1-775-370-11	WIRE (FLAT TYPE) (7 CORE)	
54	X-3373-253-1	LID ASSY, CASSETTE		* 67	3-354-954-01	LEVER (LOCK LEVER R)	
55	3-010-300-01	WINDOW (FL)		68	3-354-957-01	JOINT (LOCK LEVER)	
56	X-3373-251-1	PANEL ASSY, FRONT		69	3-354-962-01	SPRING (EJ SAFTY SPRING R)	
57	3-931-429-01	BUTTON (POWER)		70	3-354-956-07	LEVER (EJ SAFTY LEVER R)	
58	3-008-600-11	EMBLEM (5-AR), SONY		71	4-959-232-11	SPRING (R), TORSION	
59	4-951-620-01	SCREW (2.6X8), +BVTP		72	3-354-963-01	DAMPER	
60	3-931-378-01	KNOB (F10)		73	X-4945-946-1	HOLDER (R) ASSY, CASSETTE	
61	1-765-319-11	WIRE (FLAT TYPE) (7 CORE)		74	3-010-295-01	BUTTON (A)	
* 62	A-2007-705-A	PANEL BOARD, COMPLETE		75	3-010-296-01	BUTTON (B)	
63	1-769-917-11	WIRE (FLAT TYPE) (9 CORE)		76	3-010-297-01	BUTTON (C)	

7-3. MECHANISM SECTION-1  
TCM-190RB52C



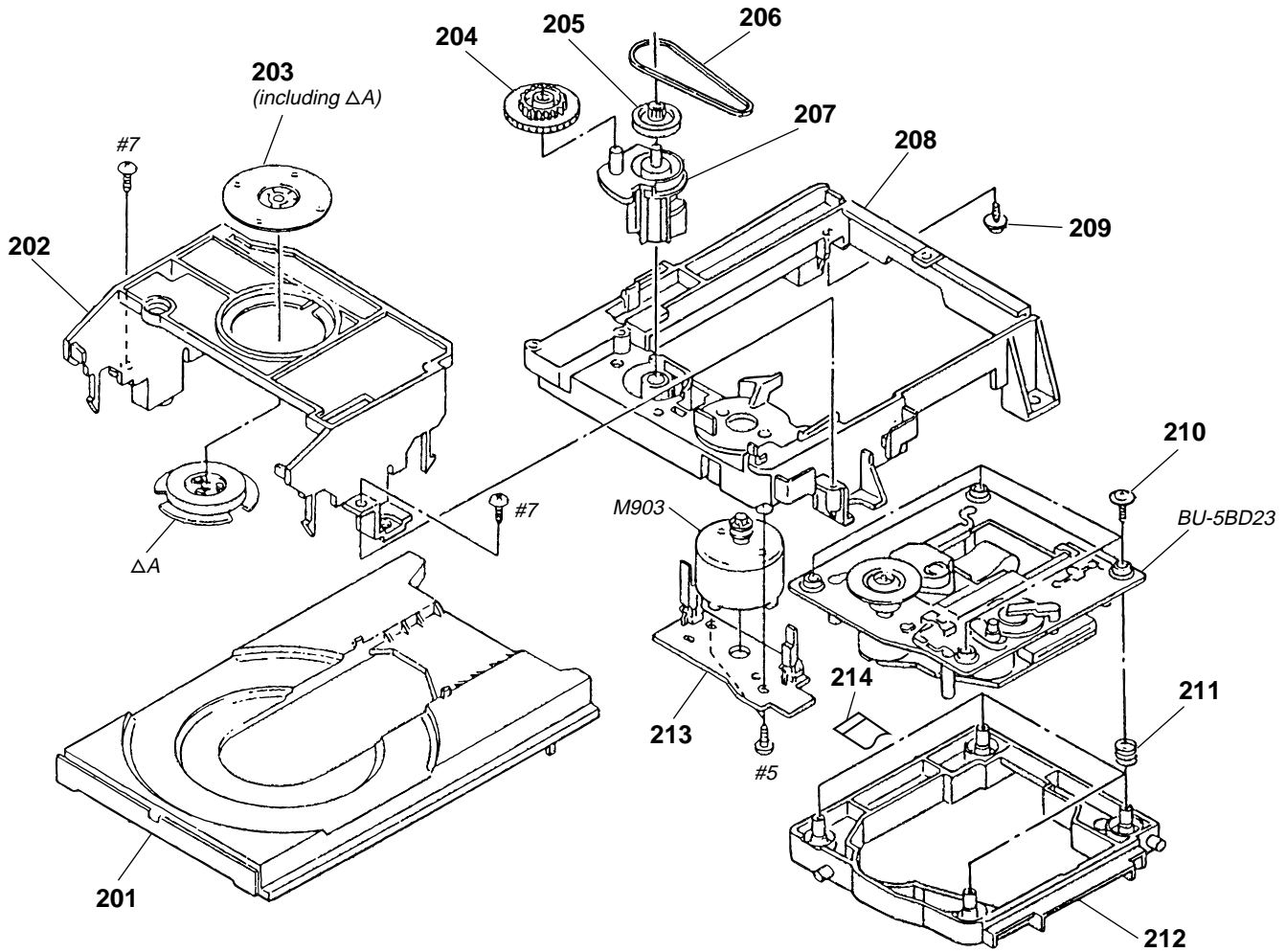
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-3366-047-1	LEVER (PINCH F) ASSY		114	X-3367-630-1	FLYWHEEL (REV) ASSY	
102	3-356-713-01	WASHER		115	3-359-417-01	BELT (FLAT), CAPSTAN	
103	3-907-362-01	SPRING, TORSION		116	X-3367-629-1	FLYWHEEL (FWD) ASSY	
104	X-3366-970-1	TABLE ASSY, REEL		117	3-575-321-00	RETAINER, THRUST, CAPSTAN	
105	3-362-308-01	CAP (REEL)		118	3-359-436-11	BASE (THRUST RETAINER),FITTING	
106	3-356-714-01	WASHER		119	3-359-414-01	SCREW (+PTPWH 2X23)	
107	X-3366-048-1	LEVER (PINCH R) ASSY		* 120	A-2007-133-A	AUDIO BOARD, COMPLETE	
108	X-3369-508-1	TABLE (C) ASSY, REEL		121	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
109	3-359-424-01	GEAR (REV GEAR)		122	3-355-808-02	PINCH ROLLER	
110	3-359-430-01	SPRING(CASSETTE RETAINER),LEAF		M1	X-3365-377-2	MOTOR ASSY (CAPSTAN)	
111	3-388-848-01	SCREW (P2X6) (B TIGHT)		M2	X-3363-501-2	MOTOR ASSY (REEL)	
* 112	1-638-020-11	LEAF SW BOARD		HRPE101 A-2004-527-A	DECK ASSY, HEAD	(PLAYBACK/RECORD/ERASE)	
113	3-359-466-01	BELT (FR), SQUARE					

**7-4. MECHANISM SECTION-2  
TCM-190RB52C**



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
151	X-3363-790-1	CHASSIS ASSY MECHANICAL		159	3-359-429-11	SLIDER (BRAKE PLATE)	
152	3-359-469-01	SPACER		160	3-359-420-01	GEAR (CAM GEAR)	
153	3-359-425-01	SLIDER (REVERSE SLIDER)		161	3-359-456-01	SPRING(TRIGGER SPRING),TORSION	
154	3-359-426-01	LEVER (REVERSE LEVER)		162	X-3366-569-1	ARM ASSY, FR	
155	3-359-415-11	SLIDER (TRIGGER SLIDER)		163	3-924-185-11	SPRING (FR ARM), TORSION	
156	3-359-448-01	GEAR (TRIGGER)		164	3-359-419-11	GEAR (FR GEAR)	
157	3-359-427-01	SLIDER (LEVERSE SLIDER)		165	3-359-421-01	CLUTCH (REEL DISK)	
158	3-359-454-01	SPRING, TORSION		166	3-359-418-01	PULLEY (FR PULLEY)	

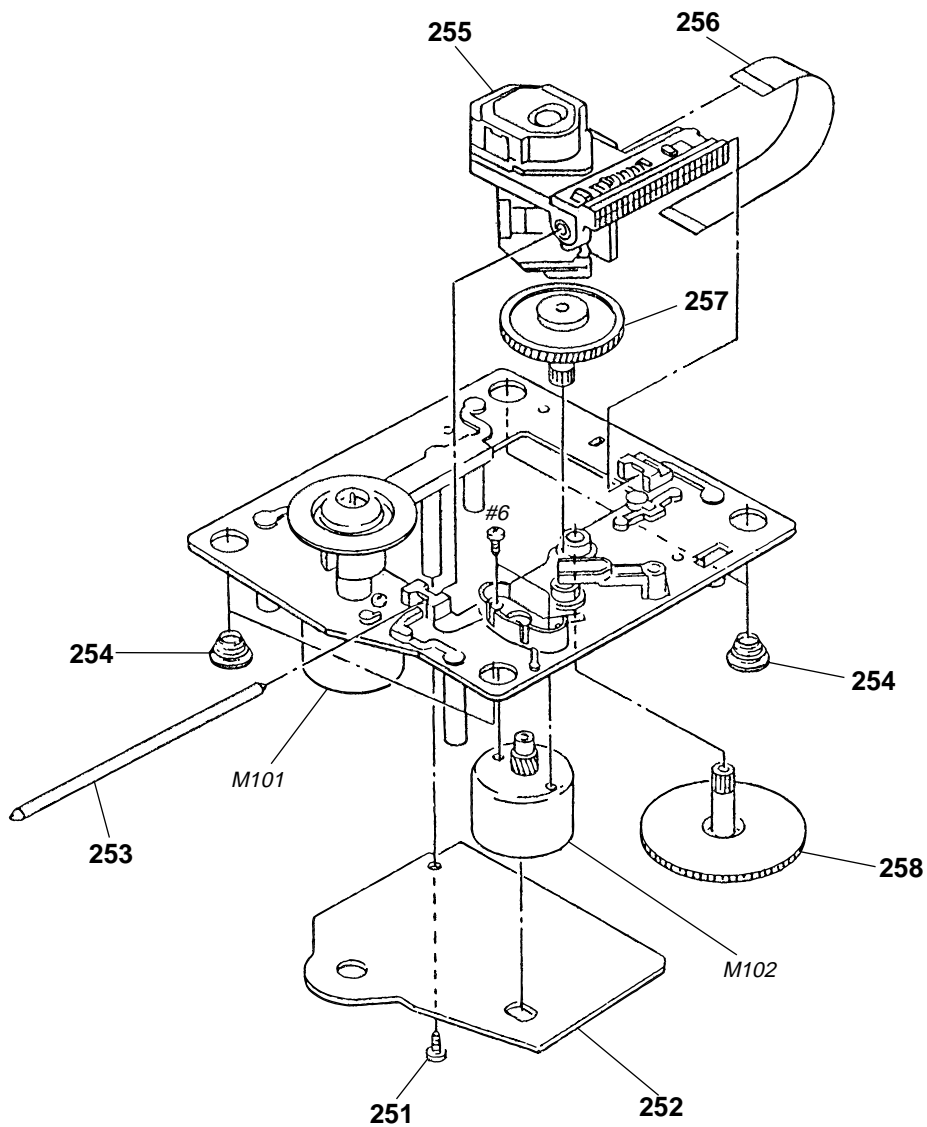
7-5. CD MECHANISM SECTION-1  
CDM28-5BD23



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	4-960-836-01	TABLE, DISC		209	4-917-583-21	BRACKET, YOKE	
202	4-960-835-01	HOLDER (M)		210	4-933-134-01	SCREW (+PTPWH M2.6X6)	
203	1-452-719-11	MAGNET ASSY		211	4-959-996-01	SPRING (932), COMPRESSION	
204	4-960-842-01	GEAR (P)		212	4-960-834-01	HOLDER (BU)	
205	4-960-841-01	PULLEY (S)		* 213	1-650-836-11	LOADING BOARD	
206	4-927-649-01	BELT		214	1-751-806-11	WIRE (FLAT TYPE) (5 CORE)	
* 207	4-960-839-01	CAM		M903	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
208	4-960-838-03	BASE (MD)					



7-6. CD MECHANISM SECTION-2  
BU-5BD23



The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	4-951-620-01	SCREW (2.6X8), +BVTP		256	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
* 252	A-4673-515-A	BD BOARD, COMPLETE		257	4-917-567-01	GEAR (M)	
253	4-917-565-01	SHAFT, SLED		258	4-917-564-01	GEAR (P), FLATNESS	
254	4-951-940-01	INSULATOR (BU)		M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
$\triangle$ 255	8-848-379-31	OPTICAL PICK-UP KSS-213B/S-N		M102	X-4917-504-1	MOTOR ASSY (SLED)	

**SECTION 8  
ELECTRICAL PARTS LIST**

**NOTE :**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms  
METAL : Metal-film resistor  
METAL OXIDE :Metal oxide-film resistor  
F : nonflammable
- Items marked “ \* ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

● SEMICONDUCTORS

In each case, u :  $\mu$  , for example :  
uA.... :  $\mu$  A.... , uPA.... :  $\mu$  PA....  
uPB.... :  $\mu$  PB.... , uPC.... :  $\mu$  PC....  
uPD.... :  $\mu$  PD....

● CAPACITORS

uF :  $\mu$  F

● COILS

uH :  $\mu$  H

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-2007-133-A	AUDIO BOARD, COMPLETE *****		JW11	1-216-296-00	METAL CHIP	0 5% 1/8W
		< CAPACITOR >		JW12	1-216-296-00	METAL CHIP	0 5% 1/8W
C11	1-163-131-00	CERAMIC CHIP 390PF	5% 50V	JW13	1-216-296-00	METAL CHIP	0 5% 1/8W
C12	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	JW14	1-216-296-00	METAL CHIP	0 5% 1/8W
C13	1-136-153-00	FILM 0.01uF	5% 50V	JW15	1-216-296-00	METAL CHIP	0 5% 1/8W
C14	1-126-177-11	ELECT 100uF	20% 10V	JW16	1-216-296-00	METAL CHIP	0 5% 1/8W
C15	1-124-234-00	ELECT 22uF	20% 16V	JW17	1-216-296-00	METAL CHIP	0 5% 1/8W
C16	1-136-434-11	FILM 120PF	5% 630V	JW18	1-216-296-00	METAL CHIP	0 5% 1/8W
C17	1-102-113-00	CERAMIC 390PF	10% 50V	JW19	1-216-296-00	METAL CHIP	0 5% 1/8W
C18	1-163-237-11	CERAMIC CHIP 27PF	5% 50V	JW20	1-216-296-00	METAL CHIP	0 5% 1/8W
C21	1-163-131-00	CERAMIC CHIP 390PF	5% 50V	JW21	1-216-296-00	METAL CHIP	0 5% 1/8W
C22	1-163-251-11	CERAMIC CHIP 100PF	5% 50V	JW22	1-216-296-00	METAL CHIP	0 5% 1/8W
C23	1-136-153-00	FILM 0.01uF	5% 50V	JW23	1-216-296-00	METAL CHIP	0 5% 1/8W
C24	1-126-177-11	ELECT 100uF	20% 10V	JW24	1-216-296-00	METAL CHIP	0 5% 1/8W
C25	1-124-234-00	ELECT 22uF	20% 16V	JW25	1-216-296-00	METAL CHIP	0 5% 1/8W
C26	1-136-434-11	FILM 120PF	5% 630V	JW26	1-216-296-00	METAL CHIP	0 5% 1/8W
C27	1-102-113-00	CERAMIC 390PF	10% 50V	JW27	1-216-296-00	METAL CHIP	0 5% 1/8W
C28	1-163-237-11	CERAMIC CHIP 27PF	5% 50V			< COIL >	
C31	1-124-234-00	ELECT 22uF	20% 16V	L11	1-410-780-11	INDUCTOR 27mH	
C32	1-124-234-00	ELECT 22uF	20% 16V	L21	1-410-780-11	INDUCTOR 27mH	
C33	1-124-234-00	ELECT 22uF	20% 16V			< TRANSISTOR >	
C51	1-164-182-11	CERAMIC CHIP 0.0033uF	10% 50V	Q51	8-729-111-29	TRANSISTOR 2SD1616A-K	
C52	1-164-182-11	CERAMIC CHIP 0.0033uF	10% 50V	Q52	8-729-111-29	TRANSISTOR 2SD1616A-K	
C53	1-163-019-00	CERAMIC CHIP 0.0068uF	10% 50V	Q53	8-729-111-29	TRANSISTOR 2SD1616A-K	
C54	1-136-967-11	FILM 0.012uF	5% 100V	Q71	8-729-216-22	TRANSISTOR 2SA1162-G	
C56	1-164-505-11	CERAMIC CHIP 2.2uF	16V			< RESISTOR >	
C57	1-164-346-11	CERAMIC CHIP 1uF	16V	R11	1-216-099-00	METAL CHIP 120K	5% 1/10W
C58	1-163-020-00	CERAMIC CHIP 0.0082uF	10% 50V	R12	1-216-033-00	METAL CHIP 220	5% 1/10W
C72	1-109-889-11	ELECT 1uF	20% 50V	R13	1-216-081-00	METAL CHIP 22K	5% 1/10W
		< CONNECTOR >		R14	1-216-076-00	METAL CHIP 13K	5% 1/10W
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD		R15	1-216-107-00	METAL CHIP 270K	5% 1/10W
* CNJ33	1-580-782-11	CONNECTOR, BOARD TO BOARD		R16	1-249-430-11	CARBON 12K	5% 1/4W
CNJ72	1-764-902-11	CONNECTOR, FFC/FPC 4P		R21	1-216-099-00	METAL CHIP 120K	5% 1/10W
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P		R22	1-216-033-00	METAL CHIP 220	5% 1/10W
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P		R23	1-216-081-00	METAL CHIP 22K	5% 1/10W
		< IC >		R24	1-216-076-00	METAL CHIP 13K	5% 1/10W
IC31	8-759-249-21	IC uPC1330AGR		R25	1-216-107-00	METAL CHIP 270K	5% 1/10W
IC32	8-759-106-02	IC uPC4570G2		R26	1-249-430-11	CARBON 12K	5% 1/4W
		< JUMPER RESISTOR >		R31	1-216-033-00	METAL CHIP 220	5% 1/10W
JW1	1-216-295-00	METAL CHIP 0	5% 1/10W	R32	1-216-033-00	METAL CHIP 220	5% 1/10W
JW2	1-216-295-00	METAL CHIP 0	5% 1/10W	R33	1-216-073-00	METAL CHIP 10K	5% 1/10W
				R41	1-249-393-11	CARBON 10	5% 1/4W
				R42	1-249-393-11	CARBON 10	5% 1/4W



Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R51	1-216-091-00	METAL CHIP	56K	5%	1/10W	C184	1-135-156-21	TANTALUM CHIP	6.8uF	10%	10V
R52	1-216-091-00	METAL CHIP	56K	5%	1/10W	C185	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W	C186	1-163-038-91	CERAMIC CHIP	0.1uF		25V
						C187	1-163-038-91	CERAMIC CHIP	0.1uF		25V
R54	1-216-309-00	METAL CHIP	5.6	5%	1/10W	C188	1-163-038-91	CERAMIC CHIP	0.1uF		25V
R55	1-216-309-00	METAL CHIP	5.6	5%	1/10W	C189	1-163-038-91	CERAMIC CHIP	0.1uF		25V
R56	1-216-298-00	METAL CHIP	2.2	5%	1/10W	C191	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W	C192	1-163-092-00	CERAMIC CHIP	9PF	0.25PF	50V
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W	C193	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
R73	1-216-089-91	METAL GLAZE	47K	5%	1/10W	C194	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
R74	1-216-089-91	METAL GLAZE	47K	5%	1/10W	C195	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< VARIABLE RESISTOR >				C196	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
RV11	1-241-761-11	RES, ADJ, CARBON 1K (PLAYBACK LEVEL L)				C197	1-163-038-91	CERAMIC CHIP	0.1uF		25V
RV12	1-238-551-11	RES, ADJ, CARBON 220K (RECORD BIAS L)				C198	1-163-038-91	CERAMIC CHIP	0.1uF		25V
RV21	1-241-761-11	RES, ADJ, CARBON 1K (PLAYBACK LEVEL R)				C199	1-164-232-11	CERAMIC CHIP	0.01uF		50V
RV22	1-238-551-11	RES, ADJ, CARBON 220K (RECORD BIAS R)						< CONNECTOR >			
RV71	1-241-630-11	RES, ADJ, CARBON 10K (TAPE SPEED, NORMAL)				CN101	1-774-794-11	CONNECTOR, FFC/FPC 26P			
RV72	1-241-630-11	RES, ADJ, CARBON 10K (TAPE SPEED, HIGHT)				CN102	1-770-014-11	CONNECTOR, FFC/FPC 16P			
		< TRANSFORMER >						< IC >			
T51	1-429-290-11	TRANSFORMER, BIAS OSCILLATION				IC101	8-752-369-78	IC CXD2545Q			
*****											
*	A-4673-515-A	BD BOARD, COMPLETE				IC102	8-759-176-09	IC BA6392FP			
		*****				IC103	8-752-072-45	IC CXA1821M-T6			
		< CAPACITOR >				IC104	8-752-367-61	IC CXD2565AM			
								< COIL >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	L101	1-414-234-11	INDUCTOR, FERRITE BEAD			
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V	L102	1-414-234-11	INDUCTOR, FERRITE BEAD			
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	L103	1-414-234-11	INDUCTOR, FERRITE BEAD			
C105	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V	L104	1-216-003-11	METAL GLAZE	12	5%	1/10W
C106	1-164-346-11	CERAMIC CHIP	1uF		16V	L105	1-216-295-00	METAL CHIP	0	5%	1/10W
C107	1-164-505-11	CERAMIC CHIP	2.2uF		16V	L106	1-414-234-11	INDUCTOR, FERRITE BEAD			
C108	1-163-035-00	CERAMIC CHIP	0.047uF		50V	L107	1-216-295-00	METAL CHIP	0	5%	1/10W
C109	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	L108	1-414-234-11	INDUCTOR, FERRITE BEAD			
C110	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	L109	1-414-234-11	INDUCTOR, FERRITE BEAD			
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	L110	1-216-295-00	METAL CHIP	0	5%	1/10W
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V	L111	1-216-295-00	METAL CHIP	0	5%	1/10W
C113	1-163-038-91	CERAMIC CHIP	0.1uF		25V	L112	1-216-295-00	METAL CHIP	0	5%	1/10W
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V			< TRANSISTOR >			
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V	Q101	8-729-010-08	TRANSISTOR MSB710-R			
C117	1-126-209-11	ELECT	100uF	20%	4V			< RESISTOR >			
C118	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
C119	1-163-231-11	CERAMIC CHIP	15PF	5%	50V	R102	1-216-097-91	METAL GLAZE	100K	5%	1/10W
C120	1-135-216-11	TANTALUM CHIP	10uF	20%	10V	R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
C123	1-164-232-11	CERAMIC CHIP	0.01uF		50V	R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V	R105	1-216-097-91	METAL GLAZE	100K	5%	1/10W
C133	1-163-038-91	CERAMIC CHIP	0.1uF		25V	R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
C151	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
C153	1-163-038-91	CERAMIC CHIP	0.1uF		25V	R108	1-216-073-00	METAL CHIP	10K	5%	1/10W
C154	1-164-336-11	CERAMIC CHIP	0.33uF		25V	R109	1-216-121-91	METAL GLAZE	1M	5%	1/10W
C156	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	R110	1-216-025-91	METAL GLAZE	100	5%	1/10W
C157	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V	R112	1-216-049-91	METAL GLAZE	1K	5%	1/10W
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V	R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
C161	1-163-038-91	CERAMIC CHIP	0.1uF		25V	R124	1-216-097-91	METAL GLAZE	100K	5%	1/10W
C181	1-163-038-91	CERAMIC CHIP	0.1uF		25V	R125	1-216-049-91	METAL GLAZE	1K	5%	1/10W
C182	1-163-038-91	CERAMIC CHIP	0.1uF		25V	R126	1-216-049-91	METAL GLAZE	1K	5%	1/10W
C183	1-135-156-21	TANTALUM CHIP	6.8uF	10%	10V						

<b>BD</b>	<b>LEAF SW</b>	<b>LOADING</b>	<b>MAIN</b>	<b>TRANSFORMER</b>
-----------	----------------	----------------	-------------	--------------------

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description		Remark		
R127	1-216-049-91	METAL GLAZE	1K	5%	1/10W	*	1-650-836-11	LOADING BOARD				
R131	1-216-037-00	METAL CHIP	330	5%	1/10W			*****				
R132	1-216-049-91	METAL GLAZE	1K	5%	1/10W			< CONNECTOR >				
R141	1-216-089-91	METAL GLAZE	47K	5%	1/10W							
R142	1-216-081-00	METAL CHIP	22K	5%	1/10W							
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W		CN291	1-580-918-11	HOUSING, CONNECTOR 5P			
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W			< SWITCH >				
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W							
R147	1-216-081-00	METAL CHIP	22K	5%	1/10W		S291	1-572-086-11	SWITCH, LEAF (LOAD OUT)			
R148	1-216-001-00	METAL CHIP	10	5%	1/10W		S292	1-572-086-11	SWITCH, LEAF (LOAD IN)			
								*****				
R149	1-216-003-11	METAL GLAZE	12	5%	1/10W							
R150	1-216-295-00	METAL CHIP	0	5%	1/10W	*	A-2007-704-A	MAIN BOARD, COMPLETE				
R158	1-216-111-91	METAL GLAZE	390K	5%	1/10W			*****				
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W			TRANSFORMER BOARD				
R160	1-216-295-00	METAL CHIP	0	5%	1/10W			*****				
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W							
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W							
R181	1-216-053-00	METAL CHIP	1.5K	5%	1/10W		7-685-871-01	SCREW +BVTT 3X6 (S)				
R182	1-216-080-00	METAL CHIP	20K	5%	1/10W			< CAPACITOR >				
R183	1-216-080-00	METAL CHIP	20K	5%	1/10W							
R184	1-216-080-00	METAL CHIP	20K	5%	1/10W		C101	1-136-157-00	FILM	0.022uF	5%	50V
R185	1-216-080-00	METAL CHIP	20K	5%	1/10W		C102	1-106-353-00	MYLAR	0.0027uF	5%	50V
R187	1-216-035-00	METAL CHIP	270	5%	1/10W		C103	1-106-351-00	MYLAR	2200PF	5%	200V
R188	1-216-121-91	METAL GLAZE	1M	5%	1/10W		C104	1-126-964-11	ELECT	10uF	20%	50V
		< SWITCH >					C105	1-126-964-11	ELECT	10uF	20%	50V
S101	1-572-085-11	SWITCH, LEAF (LIMIT)					C106	1-126-964-11	ELECT	10uF	20%	50V
		< VIBRATOR >					C107	1-136-165-00	FILM	0.1uF	5%	50V
X101	1-579-904-11	VIBRATOR, CRYSTAL (33.8MHz)					C108	1-136-163-00	FILM	0.068uF	5%	50V
		*****					C112	1-126-959-11	ELECT	0.47uF	20%	50V
							C113	1-126-963-11	ELECT	4.7uF	20%	50V
*	1-638-020-11	LEAF SW BOARD					C114	1-106-353-00	MYLAR	0.0027uF	5%	50V
		*****					C115	1-126-961-11	ELECT	2.2uF	20%	50V
		< CONNECTOR >					C116	1-161-494-00	CERAMIC	0.022uF		25V
CNP81	1-695-368-31	PIN, CONNECTOR (PC BOARD) 7P					C131	1-126-960-11	ELECT	1uF	20%	50V
		< IC >					C134	1-162-291-31	CERAMIC	560PF	10%	50V
IC81	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)					C171	1-162-280-31	CERAMIC	82PF	10%	50V
		< RESISTOR >					C172	1-162-280-31	CERAMIC	82PF	10%	50V
R81	1-249-414-11	CARBON	560	5%	1/4W		C173	1-130-480-00	MYLAR	0.0056uF	5%	50V
R82	1-247-818-11	CARBON	300	5%	1/4W		C174	1-106-343-00	MYLAR	1000PF	5%	200V
R83	1-247-834-11	CARBON	1.3K	5%	1/4W		C175	1-104-664-11	ELECT	47uF	20%	25V
R84	1-249-417-11	CARBON	1K	5%	1/4W		C201	1-136-157-00	FILM	0.022uF	5%	50V
R85	1-249-408-11	CARBON	180	5%	1/4W		C202	1-106-353-00	MYLAR	0.0027uF	5%	50V
		< SWITCH >					C203	1-106-351-00	MYLAR	2200PF	5%	200V
S81	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)					C204	1-126-964-11	ELECT	10uF	20%	50V
S82	1-571-281-21	SWITCH, LEAF (CrO2 DET)					C205	1-126-964-11	ELECT	10uF	20%	50V
S83	1-571-281-21	SWITCH, LEAF (METAL DET)					C206	1-126-964-11	ELECT	10uF	20%	50V
S84	1-571-281-21	SWITCH, LEAF (REC PROOF,SIDE A)					C207	1-136-165-00	FILM	0.1uF	5%	50V
S85	1-571-281-21	SWITCH, LEAF (REC PROOF,SIDE B)					C208	1-136-163-00	FILM	0.068uF	5%	50V
							C212	1-126-959-11	ELECT	0.47uF	20%	50V
S86	1-571-281-21	SWITCH, LEAF (HALF DET)					C213	1-126-963-11	ELECT	4.7uF	20%	50V
		*****					C214	1-106-353-00	MYLAR	0.0027uF	5%	50V
							C215	1-126-961-11	ELECT	2.2uF	20%	50V
							C216	1-161-494-00	CERAMIC	0.022uF		25V
							C231	1-126-960-11	ELECT	1uF	20%	50V
							C234	1-162-291-31	CERAMIC	560PF	10%	50V
							C271	1-162-280-31	CERAMIC	82PF	10%	50V
							C272	1-162-280-31	CERAMIC	82PF	10%	50V
							C273	1-130-480-00	MYLAR	0.0056uF	5%	50V
							C274	1-106-343-00	MYLAR	1000PF	5%	200V
							C275	1-104-664-11	ELECT	47uF	20%	25V

<b>MAIN</b>	<b>TRANSFORMER</b>
-------------	--------------------

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description		Remark
C501	1-126-964-11	ELECT	10uF	20%	50V	* CNP504	1-691-916-11	CONNECTOR, BOARD TO BOARD		
C502	1-126-923-11	ELECT	220uF	20%	10V	CNP701	1-564-524-11	PLUG, CONNECTOR 9P		
C503	1-104-664-11	ELECT	47uF	20%	25V					
C511	1-162-211-31	CERAMIC	33PF	5%	50V	* CNP702	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P		
C512	1-162-217-31	CERAMIC	56PF	5%	50V					
C513	1-126-961-11	ELECT	2.2uF	20%	50V					
C514	1-161-494-00	CERAMIC	0.022uF		25V	D131	8-719-987-63	DIODE 1N4148M		
C515	1-126-961-11	ELECT	2.2uF	20%	50V	D132	8-719-987-63	DIODE 1N4148M		
C517	1-126-767-11	ELECT	1000uF	20%	16V	D141	8-719-987-63	DIODE 1N4148M		
C524	1-126-960-11	ELECT	1uF	20%	50V	D142	8-719-987-63	DIODE 1N4148M		
C531	1-126-916-11	ELECT	1000uF	20%	6.3V	D143	8-719-987-63	DIODE 1N4148M		
C541	1-136-175-00	FILM	0.68uF	5%	50V	D231	8-719-987-63	DIODE 1N4148M		
C542	1-136-168-00	FILM	0.18uF	5%	50V	D232	8-719-987-63	DIODE 1N4148M		
C543	1-136-153-00	FILM	0.01uF	5%	50V	D241	8-719-987-63	DIODE 1N4148M		
C544	1-126-962-11	ELECT	3.3uF	20%	50V	D242	8-719-987-63	DIODE 1N4148M		
C545	1-126-964-11	ELECT	10uF	20%	50V	D243	8-719-987-63	DIODE 1N4148M		
C701	1-126-943-11	ELECT	2200uF	20%	25V	D501	8-719-987-63	DIODE 1N4148M		
C702	1-161-494-00	CERAMIC	0.022uF		25V	D502	8-719-987-63	DIODE 1N4148M		
C703	1-126-923-11	ELECT	220uF	20%	10V	D511	8-719-987-63	DIODE 1N4148M		
C704	1-164-159-11	CERAMIC	0.1uF		50V	D541	8-719-987-63	DIODE 1N4148M		
C705	1-126-964-11	ELECT	10uF	20%	50V	D701	8-719-200-82	DIODE 11ES2		
C706	1-126-916-11	ELECT	1000uF	20%	6.3V	D702	8-719-200-82	DIODE 11ES2		
C707	1-126-768-11	ELECT	2200uF	20%	16V	D703	8-719-200-82	DIODE 11ES2		
C708	1-126-768-11	ELECT	2200uF	20%	16V	D704	8-719-200-82	DIODE 11ES2		
C709	1-104-664-11	ELECT	47uF	20%	25V	D705	8-719-024-99	DIODE 11ES2-NTA2B		
C710	1-126-926-11	ELECT	1000uF	20%	10V	D706	8-719-024-99	DIODE 11ES2-NTA2B		
C711	1-126-926-11	ELECT	1000uF	20%	10V	D707	8-719-024-99	DIODE 11ES2-NTA2B		
C712	1-126-968-11	ELECT	100uF	20%	50V	D708	8-719-024-99	DIODE 11ES2-NTA2B		
C713	1-104-664-11	ELECT	47uF	20%	25V	D709	8-719-987-63	DIODE 1N4148M		
C714	1-161-494-00	CERAMIC	0.022uF		25V	D710	8-719-987-63	DIODE 1N4148M		
C715	1-126-960-11	ELECT	1uF	20%	50V	D711	8-719-987-63	DIODE 1N4148M		
C719	1-126-963-11	ELECT	4.7uF	20%	50V	D712	8-719-934-41	DIODE HZS6B2LT2		
C720	1-126-963-11	ELECT	4.7uF	20%	50V	D713	8-719-933-33	DIODE HZS6A1L		
C721	1-126-935-11	ELECT	470uF	20%	6.3V	D714	8-719-933-33	DIODE HZS6A1L		
C723	1-126-963-11	ELECT	4.7uF	20%	50V	D715	8-719-024-99	DIODE 11ES2-NTA2B		
C801	1-126-933-11	ELECT	100uF	20%	10V	D716	8-719-987-63	DIODE 1N4148M		
C802	1-161-494-00	CERAMIC	0.022uF		25V	D717	8-719-987-63	DIODE 1N4148M		
C803	1-126-963-11	ELECT	4.7uF	20%	50V	D718	8-719-933-50	DIODE HZS7C2L		
C804	1-126-964-11	ELECT	10uF	20%	50V	D719	8-719-933-33	DIODE HZS6A1L		
C805	1-162-288-31	CERAMIC	330PF	10%	50V	D720	8-719-987-63	DIODE 1N4148M		
C806	1-164-159-11	CERAMIC	0.1uF		50V	D721	8-719-933-33	DIODE HZS6A1L		
C807	1-162-306-11	CERAMIC	0.01uF	20%	16V	D801	8-719-010-29	DIODE UZ-4.3BSB		
C808	1-161-494-00	CERAMIC	0.022uF		25V	D802	8-719-933-33	DIODE HZS6A1L		
C809	1-164-159-11	CERAMIC	0.1uF		50V					
C810	1-164-159-11	CERAMIC	0.1uF		50V					
C811	1-161-494-00	CERAMIC	0.022uF		25V	IC501	8-752-060-46	IC CXA1561S		
C812	1-161-494-00	CERAMIC	0.022uF		25V	IC502	8-752-070-67	IC CXA1597P		
C813	1-161-494-00	CERAMIC	0.022uF		25V	IC503	8-759-635-26	IC M5283P		
C814	1-161-494-00	CERAMIC	0.022uF		25V	IC504	8-759-000-49	IC MC14066BCP		
C815	1-161-494-00	CERAMIC	0.022uF		25V	IC505	8-759-000-49	IC MC14066BCP		
		< CONNECTOR >				IC506	8-759-634-51	IC M5218AP		
* CN801	1-568-826-11	SOCKET, CONNECTOR 7P				IC507	8-759-634-51	IC M5218AP		
CN803	1-779-512-11	CONNECTOR, FFC/FPC 26P				IC508	8-759-634-51	IC M5218AP		
* CN804	1-568-828-11	SOCKET, CONNECTOR 9P				IC509	8-759-000-48	IC MC14052BCP		
* CN805	1-568-839-11	SOCKET, CONNECTOR 23P				IC510	8-759-634-51	IC M5218AP		
* CN806	1-568-826-11	SOCKET, CONNECTOR 7P				IC601	8-759-634-51	IC M5218AP		
* CN807	1-568-955-11	PIN, CONNECTOR 6P				IC602	8-759-634-51	IC M5218AP		
* CNP501	1-568-954-11	PIN, CONNECTOR 5P				IC701	8-759-634-51	IC M5218AP		
* CNP503	1-691-916-11	CONNECTOR, BOARD TO BOARD				IC702	8-759-071-48	IC TA7807S		
						IC703	8-759-061-65	IC LA5602		

**MAIN**

**TRANSFORMER**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC801	8-759-453-42	IC uPD78044FGF-029-3B9		R103	1-247-843-11	CARBON 3.3K 5%	1/4W
IC802	8-759-165-82	IC PST600E-T		R104	1-249-424-11	CARBON 3.9K 5%	1/4W
IC803	8-759-000-48	IC MC14052BCP		R105	1-247-887-00	CARBON 220K 5%	1/4W
IC805	8-759-803-42	IC LA6500-FA		R106	1-249-417-11	CARBON 1K 5%	1/4W
IC806	8-759-822-09	IC LB1641		R107	1-249-429-11	CARBON 10K 5%	1/4W
		< JACK >		R111	1-249-429-11	CARBON 10K 5%	1/4W
J501	1-691-887-11	JACK, PIN 6P (TAPE IN/OUT, CD OUT)		R112	1-247-843-11	CARBON 3.3K 5%	1/4W
		< COIL >		R113	1-247-843-11	CARBON 3.3K 5%	1/4W
L801	1-410-322-11	INDUCTOR 3.3uH		R114	1-249-424-11	CARBON 3.9K 5%	1/4W
L802	1-410-322-11	INDUCTOR 3.3uH		R115	1-249-441-11	CARBON 100K 5%	1/4W
		< FILTER >		R116	1-247-887-00	CARBON 220K 5%	1/4W
LPF101	1-233-875-11	FILTER, LOW PASS		R131	1-249-417-11	CARBON 1K 5%	1/4W
LPF201	1-233-875-11	FILTER, LOW PASS		R132	1-249-421-11	CARBON 2.2K 5%	1/4W
		< TRANSISTOR >		R133	1-249-437-11	CARBON 47K 5%	1/4W
Q101	8-729-900-89	TRANSISTOR DTC144ES		R134	1-249-421-11	CARBON 2.2K 5%	1/4W
Q102	8-729-900-80	TRANSISTOR DTC114ES		R135	1-249-417-11	CARBON 1K 5%	1/4W
Q111	8-729-900-80	TRANSISTOR DTC114ES		R136	1-249-421-11	CARBON 2.2K 5%	1/4W
Q131	8-729-922-37	TRANSISTOR 2SD2144S		R137	1-249-433-11	CARBON 22K 5%	1/4W
Q132	8-729-922-37	TRANSISTOR 2SD2144S		R138	1-249-417-11	CARBON 1K 5%	1/4W
Q133	8-729-422-57	TRANSISTOR UN4111		R139	1-247-887-00	CARBON 220K 5%	1/4W
Q141	8-729-900-74	TRANSISTOR DTC143TS		R141	1-249-435-11	CARBON 33K 5%	1/4W
Q142	8-729-900-74	TRANSISTOR DTC143TS		R142	1-249-441-11	CARBON 100K 5%	1/4W
Q201	8-729-900-89	TRANSISTOR DTC144ES		R161	1-249-441-11	CARBON 100K 5%	1/4W
Q202	8-729-900-80	TRANSISTOR DTC114ES		R162	1-247-868-11	CARBON 36K 5%	1/4W
Q211	8-729-900-80	TRANSISTOR DTC114ES		R166	1-247-807-31	CARBON 100 5%	1/4W
Q231	8-729-922-37	TRANSISTOR 2SD2144S		R171	1-247-852-11	CARBON 7.5K 5%	1/4W
Q232	8-729-922-37	TRANSISTOR 2SD2144S		R172	1-247-852-11	CARBON 7.5K 5%	1/4W
Q233	8-729-422-57	TRANSISTOR UN4111		R173	1-249-434-11	CARBON 27K 5%	1/4W
Q241	8-729-900-74	TRANSISTOR DTC143TS		R174	1-249-434-11	CARBON 27K 5%	1/4W
Q242	8-729-900-74	TRANSISTOR DTC143TS		R175	1-249-419-11	CARBON 1.5K 5%	1/4W
Q502	8-729-900-80	TRANSISTOR DTC114ES		R176	1-249-419-11	CARBON 1.5K 5%	1/4W
Q503	8-729-900-80	TRANSISTOR DTC114ES		R177	1-249-441-11	CARBON 100K 5%	1/4W
Q505	8-729-900-65	TRANSISTOR DTA144ES		R200	1-249-433-11	CARBON 22K 5%	1/4W
Q506	8-729-900-65	TRANSISTOR DTA144ES		R201	1-249-421-11	CARBON 2.2K 5%	1/4W
Q507	8-729-900-80	TRANSISTOR DTC114ES		R202	1-247-843-11	CARBON 3.3K 5%	1/4W
Q511	8-729-119-76	TRANSISTOR 2SA1175-HFE		R203	1-247-843-11	CARBON 3.3K 5%	1/4W
Q512	8-729-900-80	TRANSISTOR DTC114ES		R204	1-249-424-11	CARBON 3.9K 5%	1/4W
Q531	8-729-119-76	TRANSISTOR 2SA1175-HFE		R205	1-247-887-00	CARBON 220K 5%	1/4W
Q701	8-729-141-83	TRANSISTOR 2SB1094-LK		R206	1-249-417-11	CARBON 1K 5%	1/4W
Q702	8-729-119-78	TRANSISTOR 2SC403SP-51		R207	1-249-429-11	CARBON 10K 5%	1/4W
Q703	8-729-900-74	TRANSISTOR DTC143TS		R211	1-249-429-11	CARBON 10K 5%	1/4W
Q704	8-729-900-74	TRANSISTOR DTC143TS		R212	1-247-843-11	CARBON 3.3K 5%	1/4W
Q705	8-729-141-83	TRANSISTOR 2SB1094-LK		R213	1-247-843-11	CARBON 3.3K 5%	1/4W
Q706	8-729-209-15	TRANSISTOR 2SD2012		R214	1-249-424-11	CARBON 3.9K 5%	1/4W
Q707	8-729-119-76	TRANSISTOR 2SA1175-HFE		R215	1-249-441-11	CARBON 100K 5%	1/4W
Q708	8-729-140-04	TRANSISTOR 2SB1116A-L		R216	1-247-887-00	CARBON 220K 5%	1/4W
Q709	8-729-900-65	TRANSISTOR DTA144ES		R231	1-249-417-11	CARBON 1K 5%	1/4W
Q710	8-729-900-85	TRANSISTOR DTC144WS		R232	1-249-421-11	CARBON 2.2K 5%	1/4W
Q802	8-729-801-93	TRANSISTOR 2SD1387		R233	1-249-437-11	CARBON 47K 5%	1/4W
Q803	8-729-900-80	TRANSISTOR DTC114ES		R234	1-249-421-11	CARBON 2.2K 5%	1/4W
		< RESISTOR >		R235	1-249-417-11	CARBON 1K 5%	1/4W
R100	1-249-433-11	CARBON 22K 5%	1/4W	R236	1-249-421-11	CARBON 2.2K 5%	1/4W
R101	1-249-421-11	CARBON 2.2K 5%	1/4W	R237	1-249-433-11	CARBON 22K 5%	1/4W
R102	1-247-843-11	CARBON 3.3K 5%	1/4W	R238	1-249-417-11	CARBON 1K 5%	1/4W
				R239	1-247-887-00	CARBON 220K 5%	1/4W
				R241	1-249-435-11	CARBON 33K 5%	1/4W
				R242	1-249-441-11	CARBON 100K 5%	1/4W
				R261	1-249-441-11	CARBON 100K 5%	1/4W
				R262	1-247-868-11	CARBON 36K 5%	1/4W

**MAIN**

**TRANSFORMER**

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R266	1-247-807-31	CARBON	100	5%	1/4W	R708	1-249-429-11	CARBON	10K	5%	1/4W
R271	1-247-852-11	CARBON	7.5K	5%	1/4W	R709	1-249-419-11	CARBON	1.5K	5%	1/4W
R272	1-247-852-11	CARBON	7.5K	5%	1/4W	R710	1-249-427-11	CARBON	6.8K	5%	1/4W
R273	1-249-434-11	CARBON	27K	5%	1/4W	R711	1-249-427-11	CARBON	6.8K	5%	1/4W
R274	1-249-434-11	CARBON	27K	5%	1/4W	R712	1-249-417-11	CARBON	1K	5%	1/4W
R275	1-249-419-11	CARBON	1.5K	5%	1/4W	R713	1-249-409-11	CARBON	220	5%	1/4W
R276	1-249-419-11	CARBON	1.5K	5%	1/4W	R714	1-249-425-11	CARBON	4.7K	5%	1/4W
R277	1-249-441-11	CARBON	100K	5%	1/4W	R715	1-249-427-11	CARBON	6.8K	5%	1/4W
R501	1-215-452-00	METAL	20K	1%	1/4W	R716	1-247-866-11	CARBON	30K	5%	1/4W
R502	1-215-455-00	METAL	27K	1%	1/4W	R717	1-249-429-11	CARBON	10K	5%	1/4W
R506	1-249-429-11	CARBON	10K	5%	1/4W	R718	1-249-437-11	CARBON	47K	5%	1/4W
R507	1-249-435-11	CARBON	33K	5%	1/4W	R719	1-249-429-11	CARBON	10K	5%	1/4W
R508	1-249-435-11	CARBON	33K	5%	1/4W	R720	1-249-417-11	CARBON	1K	5%	1/4W
R509	1-249-435-11	CARBON	33K	5%	1/4W	R721	1-249-414-11	CARBON	560	5%	1/4W
R510	1-249-433-11	CARBON	22K	5%	1/4W	△ R722	1-219-137-11	FUSIBLE	0.33	10%	1/4W F
R511	1-249-413-11	CARBON	470	5%	1/4W	△ R723	1-219-138-91	FUSIBLE	0.47	10%	1/4W F
R512	1-249-429-11	CARBON	10K	5%	1/4W	R725	1-249-434-11	CARBON	27K	5%	1/4W
R513	1-247-883-00	CARBON	150K	5%	1/4W	R801	1-249-441-11	CARBON	100K	5%	1/4W
R514	1-249-427-11	CARBON	6.8K	5%	1/4W	R802	1-249-417-11	CARBON	1K	5%	1/4W
R515	1-247-843-11	CARBON	3.3K	5%	1/4W	R803	1-247-807-31	CARBON	100	5%	1/4W
R516	1-249-428-11	CARBON	8.2K	5%	1/4W	R804	1-247-807-31	CARBON	100	5%	1/4W
R517	1-249-441-11	CARBON	100K	5%	1/4W	R805	1-247-807-31	CARBON	100	5%	1/4W
R518	1-249-429-11	CARBON	10K	5%	1/4W	R806	1-247-807-31	CARBON	100	5%	1/4W
R519	1-249-417-11	CARBON	1K	5%	1/4W	R807	1-249-422-11	CARBON	2.7K	5%	1/4W
R520	1-249-432-11	CARBON	18K	5%	1/4W	R808	1-249-437-11	CARBON	47K	5%	1/4W
R521	1-249-436-11	CARBON	39K	5%	1/4W	R810	1-249-429-11	CARBON	10K	5%	1/4W
R522	1-249-441-11	CARBON	100K	5%	1/4W	R811	1-247-862-11	CARBON	20K	5%	1/4W
R524	1-249-428-11	CARBON	8.2K	5%	1/4W	R812	1-249-430-11	CARBON	12K	5%	1/4W
R525	1-249-421-11	CARBON	2.2K	5%	1/4W	R813	1-249-433-11	CARBON	22K	5%	1/4W
R527	1-249-435-11	CARBON	33K	5%	1/4W	R814	1-249-433-11	CARBON	22K	5%	1/4W
R528	1-247-807-31	CARBON	100	5%	1/4W	R815	1-249-433-11	CARBON	22K	5%	1/4W
R529	1-247-862-11	CARBON	20K	5%	1/4W	R816	1-247-807-31	CARBON	100	5%	1/4W
R530	1-247-862-11	CARBON	20K	5%	1/4W	R817	1-249-419-11	CARBON	1.5K	5%	1/4W
R531	1-249-437-11	CARBON	47K	5%	1/4W	R818	1-249-429-11	CARBON	10K	5%	1/4W
R532	1-249-437-11	CARBON	47K	5%	1/4W	R819	1-249-434-11	CARBON	27K	5%	1/4W
R533	1-249-429-11	CARBON	10K	5%	1/4W	R820	1-249-421-11	CARBON	2.2K	5%	1/4W
R534	1-247-866-11	CARBON	30K	5%	1/4W	R821	1-249-421-11	CARBON	2.2K	5%	1/4W
R535	1-247-858-11	CARBON	13K	5%	1/4W	R822	1-249-421-11	CARBON	2.2K	5%	1/4W
R536	1-249-433-11	CARBON	22K	5%	1/4W	R823	1-249-428-11	CARBON	8.2K	5%	1/4W
R537	1-249-437-11	CARBON	47K	5%	1/4W	R824	1-249-418-11	CARBON	1.2K	5%	1/4W
R538	1-247-856-00	CARBON	11K	5%	1/4W	R825	1-249-417-11	CARBON	1K	5%	1/4W
R539	1-247-856-00	CARBON	11K	5%	1/4W	R826	1-249-417-11	CARBON	1K	5%	1/4W
R540	1-249-433-11	CARBON	22K	5%	1/4W	R827	1-249-417-11	CARBON	1K	5%	1/4W
R541	1-249-432-11	CARBON	18K	5%	1/4W	R828	1-249-417-11	CARBON	1K	5%	1/4W
R542	1-249-437-11	CARBON	47K	5%	1/4W	R829	1-249-417-11	CARBON	1K	5%	1/4W
R543	1-249-437-11	CARBON	47K	5%	1/4W	R830	1-249-417-11	CARBON	1K	5%	1/4W
R544	1-247-874-11	CARBON	62K	5%	1/4W	R831	1-249-417-11	CARBON	1K	5%	1/4W
R545	1-249-410-11	CARBON	270	5%	1/4W	R833	1-249-418-11	CARBON	1.2K	5%	1/4W
R546	1-249-421-11	CARBON	2.2K	5%	1/4W	R834	1-249-428-11	CARBON	8.2K	5%	1/4W
R547	1-249-437-11	CARBON	47K	5%	1/4W	R835	1-249-441-11	CARBON	100K	5%	1/4W
R701	1-249-421-11	CARBON	2.2K	5%	1/4W	R836	1-249-417-11	CARBON	1K	5%	1/4W
R702	1-249-425-11	CARBON	4.7K	5%	1/4W	R837	1-249-429-11	CARBON	10K	5%	1/4W
R703	1-249-425-11	CARBON	4.7K	5%	1/4W						
R704	1-249-419-11	CARBON	1.5K	5%	1/4W						< VARIABLE RESISTOR >
R705	1-249-418-11	CARBON	1.2K	5%	1/4W	RV111	1-241-630-11	RES, ADJ, CARBON 10K (RECORD, LEVEL L)			
R706	1-249-427-11	CARBON	6.8K	5%	1/4W	RV211	1-241-630-11	RES, ADJ, CARBON 10K (RECORD, LEVEL R)			
R707	1-249-419-11	CARBON	1.5K	5%	1/4W						

The components identified by mark △ or dotted line with mark △ are critical for safety.  
 Replace only with part number specified.



**MAIN****TRANSFORMER****PANEL****HP****POWER SW****VOL**

Ref. No.	Part No.	Description	Remark		
		< VIBRATOR >			
X801	1-577-358-21	VIBRATOR, CERAMIC (4MHz)			
*****					
*	A-2007-705-A	PANEL BOARD, COMPLETE			
		*****			
		HP BOARD			
		*****			
		POWER SW BOARD			
		*****			
		VOL BOARD			
		*****			
*	3-923-303-01	HOLDER (FL TUBE)			
		< CAPACITOR >			
C161	1-162-305-11	CERAMIC	0.0068uF	30%	16V
C261	1-162-305-11	CERAMIC	0.0068uF	30%	16V
C561	1-126-964-11	ELECT	10uF	20%	50V
C562	1-126-964-11	ELECT	10uF	20%	50V
C722	1-113-925-11	CERAMIC	0.01uF	20%	250V
C901	1-161-494-00	CERAMIC	0.022uF		25V
C902	1-161-494-00	CERAMIC	0.022uF		25V
C903	1-161-494-00	CERAMIC	0.022uF		25V
C904	1-161-494-00	CERAMIC	0.022uF		25V
C905	1-126-933-11	ELECT	100uF	20%	10V
		< CONNECTOR >			
* CN901	1-568-839-11	SOCKET, CONNECTOR 23P			
* CN902	1-568-828-11	SOCKET, CONNECTOR 9P			
* CN903	1-568-826-11	SOCKET, CONNECTOR 7P			
CNP704	1-568-226-11	PIN, CONNECTOR 2P			
		< DIODE >			
D901	8-719-313-48	LED SEL6210S-TH12 (AUTO)			
		< FLUORESCENT INDICATOR TUBE >			
FL901	1-517-421-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC511	8-759-505-55	IC NJM4558L			
IC901	8-759-459-84	IC NJL56H400			
		< JACK >			
J502	1-568-519-41	JACK, LARGE TYPE (PHONES)			
		< RESISTOR >			
R163	1-249-421-11	CARBON	2.2K	5%	1/4W
R164	1-247-854-11	CARBON	9.1K	5%	1/4W
R165	1-249-409-11	CARBON	220	5%	1/4W
R263	1-249-421-11	CARBON	2.2K	5%	1/4W
R264	1-247-854-11	CARBON	9.1K	5%	1/4W
R265	1-249-409-11	CARBON	220	5%	1/4W
R901	1-249-429-11	CARBON	10K	5%	1/4W
R902	1-249-429-11	CARBON	10K	5%	1/4W
R903	1-249-429-11	CARBON	10K	5%	1/4W
R904	1-249-429-11	CARBON	10K	5%	1/4W
R905	1-249-418-11	CARBON	1.2K	5%	1/4W
R906	1-249-420-11	CARBON	1.8K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R907	1-249-422-11	CARBON	2.7K	5%	1/4W
R908	1-249-424-11	CARBON	3.9K	5%	1/4W
R909	1-249-427-11	CARBON	6.8K	5%	1/4W
R910	1-249-431-11	CARBON	15K	5%	1/4W
R911	1-249-437-11	CARBON	47K	5%	1/4W
R912	1-249-418-11	CARBON	1.2K	5%	1/4W
R913	1-249-420-11	CARBON	1.8K	5%	1/4W
R914	1-249-422-11	CARBON	2.7K	5%	1/4W
R915	1-249-424-11	CARBON	3.9K	5%	1/4W
R916	1-249-427-11	CARBON	6.8K	5%	1/4W
R917	1-249-431-11	CARBON	15K	5%	1/4W
R918	1-249-437-11	CARBON	47K	5%	1/4W
R919	1-249-418-11	CARBON	1.2K	5%	1/4W
R920	1-249-420-11	CARBON	1.8K	5%	1/4W
R921	1-249-422-11	CARBON	2.7K	5%	1/4W
R922	1-249-424-11	CARBON	3.9K	5%	1/4W
R923	1-249-427-11	CARBON	6.8K	5%	1/4W
R924	1-249-431-11	CARBON	15K	5%	1/4W
R926	1-249-418-11	CARBON	1.2K	5%	1/4W
R927	1-249-420-11	CARBON	1.8K	5%	1/4W
R928	1-249-422-11	CARBON	2.7K	5%	1/4W
R929	1-249-424-11	CARBON	3.9K	5%	1/4W
R930	1-249-427-11	CARBON	6.8K	5%	1/4W
R933	1-249-413-11	CARBON	470	5%	1/4W
R934	1-249-417-11	CARBON	1K	5%	1/4W
R935	1-247-807-31	CARBON	100	5%	1/4W
R936	1-247-807-31	CARBON	100	5%	1/4W
		< VARIABLE RESISTOR >			
RV501	1-225-379-11	RES, VAR, CARBON 1K/1K (PHONE LEVEL)			
RV901	1-241-797-11	RES, VAR, CARBON 20K (REC LEVEL)			
		< SWITCH >			
S702	1-762-581-11	SWITCH, AC POWER PUSH (1 KEY) (POWER)			
S901	1-572-184-11	SWITCH, KEYBOARD (■)			
S902	1-572-184-11	SWITCH, KEYBOARD (◀◀)			
S903	1-572-184-11	SWITCH, KEYBOARD (▶▶)			
S904	1-572-184-11	SWITCH, KEYBOARD (●REC)			
S905	1-572-184-11	SWITCH, KEYBOARD (ARL)			
S906	1-572-184-11	SWITCH, KEYBOARD (FADER)			
S907	1-572-184-11	SWITCH, KEYBOARD (▷)			
S908	1-572-184-11	SWITCH, KEYBOARD (◁)			
S909	1-572-184-11	SWITCH, KEYBOARD (■)			
S910	1-572-184-11	SWITCH, KEYBOARD (○REC MUTE)			
S911	1-572-184-11	SWITCH, KEYBOARD (RESET)			
S912	1-572-184-11	SWITCH, KEYBOARD (DISPLAY)			
S913	1-572-184-11	SWITCH, KEYBOARD (OPEN/CLOSE)			
S914	1-572-184-11	SWITCH, KEYBOARD (CD SYNCHRO)			
S915	1-572-184-11	SWITCH, KEYBOARD (▶▶▶▶▶)			
S916	1-572-184-11	SWITCH, KEYBOARD (◀◀◀◀◀)			
S917	1-572-184-11	SWITCH, KEYBOARD (■)			
S918	1-572-184-11	SWITCH, KEYBOARD (▷)			
S919	1-572-184-11	SWITCH, KEYBOARD (■)			
S921	1-572-184-11	SWITCH, KEYBOARD (REPEAT)			
S922	1-572-184-11	SWITCH, KEYBOARD (PLAY MODE)			
S923	1-572-184-11	SWITCH, KEYBOARD (TIME)			
S924	1-572-184-11	SWITCH, KEYBOARD (EDIT/TIME FADE)			
S925	1-572-184-11	SWITCH, KEYBOARD (CLEAR)			
S926	1-572-184-11	SWITCH, KEYBOARD (CHECK)			

Ref. No.	Part No.	Description	Remark
S927	1-762-567-11	SWITCH, SLIDE (DOLBY NR)	
S928	1-762-609-11	SWITCH, SLIDE (DIR MODE)	
*****			
MISCELLANEOUS			
*****			
4	1-782-313-11	WIRE (FLAT TYPE) (26 CORE)	
△ 10	1-575-651-21	CORD, POWER	
63	1-769-917-11	WIRE (FLAT TYPE) (9 CORE)	
65	1-773-182-11	WIRE (FLAT TYPE) (23 CORE)	
66	1-775-370-11	WIRE (FLAT TYPE) (7 CORE)	
75	1-765-319-11	WIRE (FLAT TYPE) (7 CORE)	
121	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
203	1-452-719-11	MAGNET ASSY	
214	1-751-806-11	WIRE (FLAT TYPE) (5 CORE)	
△ 255	8-848-379-31	OPTICAL PICK-UP KSS-213B/S-N	
256	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
HRPE101A-2004-527-A		DECK ASSY, HEAD (PLAYBACK/RECORD/ERASE)	
M1	X-3365-377-2	MOTOR ASSY (CAPSTAN)	
M2	X-3363-501-2	MOTOR ASSY (REEL)	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M903	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
△ T501	1-427-910-11	TRANSFORMER, POWER	
*****			
ACCESSORIES & PACKING MATERIALS			
*****			
	1-776-263-11	CORD, CONNECTION (AUDIO 100cm)	
	3-859-137-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH,SPANISH,PORTUGUESE)	
	3-859-137-21	MANUAL, INSTRUCTION (GERMAM,DUTCH,SWEDISH,ITALIAN)	
*****			
*****			
<b>HARDWARE LIST</b>			
*****			
#1	7-685-871-01	SCREW +BVTT 3X6 (S)	
#2	7-685-862-09	SCREW +BVTT 2.6X6 (S)	
#3	7-621-775-00	SCREW +B 2.6X3	
#4	7-627-556-08	SCREW +P 2.6X2.8	
#5	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#6	7-621-255-15	SCREW +P 2X3	
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	

The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

