

# CDP-997

## SERVICE MANUAL

US Model  
AEP Model



Model Name Using Similar Mechanism	CDP-597
CD Mechanism Type	CDM14-5BD8A
Optical Pick-Up Block Type	BU-5BD8A

### SPECIFICATIONS

#### Compact disc player

Frequency response	2 Hz – 20 kHz $\pm$ 0.3 dB
Signal to noise ratio	More than 115 dB
Dynamic range	More than 100 dB
Harmonic distortion	Less than 0.0025%
Channel separation	More than 110 dB

#### Outputs

LINE OUT (FIXED) (phone jacks)	Output level 2 V (at 50 kilohms, non DSP mode) Load impedance over 10 kilohms
LINE OUT (VARIABLE) (phone jacks)	Output level max. 2 V (at 50 kilohms, non DSP mode) Load impedance over 50 kilohms
DIGITAL OUTPUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level –18 dBm
HEADPHONES (stereo phone jack)	Output level max. 28 mW Load impedance 32 ohms

#### General

Power requirements	120 V AC, 60 Hz
Power consumption	17 W

Dimensions	Approx. 430×110×355 mm (w/h/d) (17×4 <sup>3</sup> / <sub>8</sub> ×14 inches) Including projecting parts and controls
Weight	Approx. 4.6 kg (9 lbs 15 oz)

#### Remote commander (RM-D997)

Remote control system	Infrared control
Power requirements	3 V DC with two batteries size AA (IEC designation R6)
Dimensions	Approx. 62×18×175 mm (w/h/d) (2 <sup>1</sup> / <sub>2</sub> ×2 <sup>3</sup> / <sub>32</sub> ×7 inches)
Weight	135 g (4.6 oz) Including batteries

#### Supplied accessories

Connecting cord (1)  
(2 phono plugs ↔ 2 phono plugs)  
Remote commander (1)  
Sony SUM-3(NS) batteries (2)

— Continued on next page —



COMPACT DISC PLAYER  
**SONY**®

**Optional accessory**

Audio optical connecting cord POC-15

Design and specifications are subject to change without notice.


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**WARNING !!**

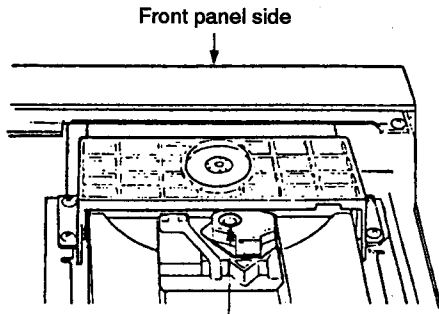
**AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.**

**SAFETY-RELATED COMPONENT WARNING !!**

**COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS 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.**

### [CHECKING METHODS OF LASER DIODE AND FOCUS SEARCH OPERATIONS]

- Turn the power switch ON with the condition of the disc table closed without disc. And then watch the objective lens to check whether the operation can be performed or not, as the below figure shows.



- The laser beams diffused can be observed.
- The up and down movements of the objective lens (Twice)

### 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 from more than 30cm away from the objective lens.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

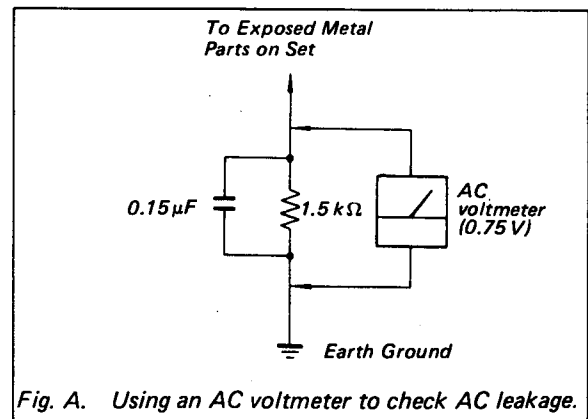
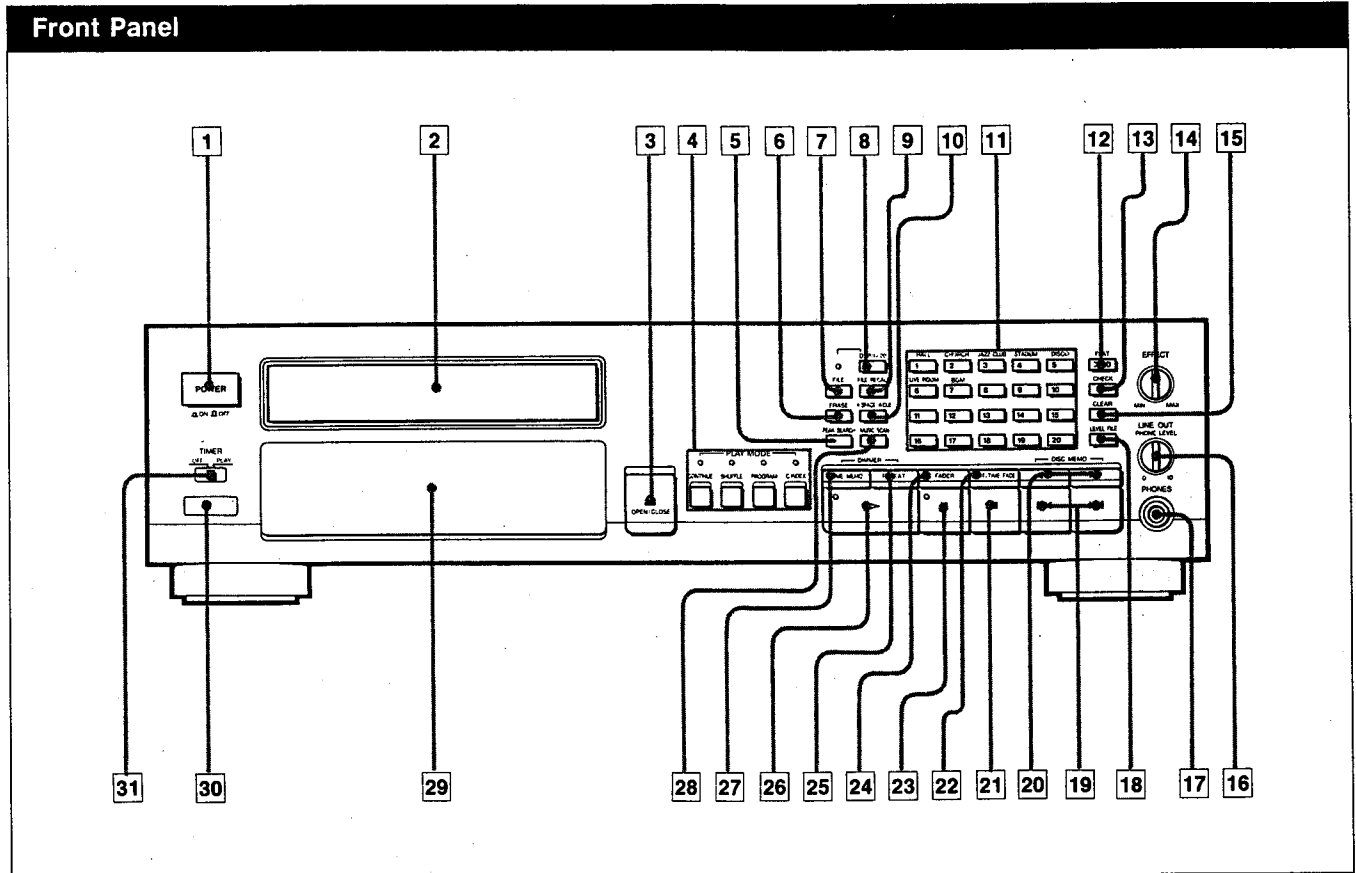


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1  
GENERAL

This section is extracted from  
instruction manual.

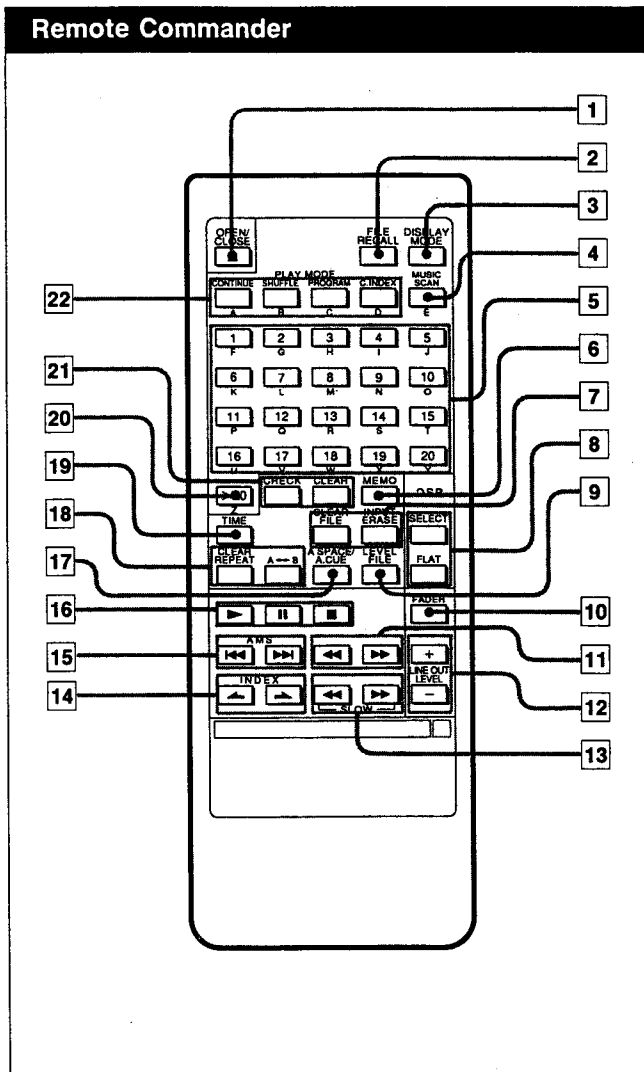
1-1. IDENTIFYING THE PARTS



- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1 POWER switch</li> <li>2 Disc tray</li> <li>3 ▲ OPEN/CLOSE button</li> <li>4 PLAY MODE buttons<br/>CONTINUE button and indicator<br/>SHUFFLE button and indicator<br/>PROGRAM button and indicator<br/>C. (custom) INDEX button and indicator</li> <li>5 PEAK SEARCH button</li> <li>6 ERASE (memory erase) button</li> <li>7 FILE (custom file) button</li> <li>8 DSP/1-20 button and indicator</li> <li>9 FILE RECALL button</li> <li>10 A.SPACE/A.CUE button</li> <li>11 Numeric buttons/DSP SELECT button</li> <li>12 &gt; 20 (over 20)/FLAT button</li> <li>13 CHECK (program check) button</li> <li>14 EFFECT level</li> <li>15 CLEAR (program clear) button</li> </ul> | <ul style="list-style-type: none"> <li>16 LINE OUT/PHONE LEVEL control</li> <li>17 PHONES jack</li> <li>18 LEVEL FILE button</li> <li>19 ◀▶▶▶ AMS* buttons</li> <li>20 ◀◀◀▶ (manual search) DISC MEMO buttons</li> <li>21 ■ (stop) button</li> <li>22 EDIT/TIME FADE button</li> <li>23    (pause) button and indicator</li> <li>24 FADER (fade in/fade out) button</li> <li>25 REPEAT button</li> <li>26 ▶ (play) button and indicator</li> <li>27 TIME/MEMO button</li> <li>28 MUSIC SCAN button</li> <li>29 Display window</li> <li>30 Remote sensor</li> <li>31 TIMER switch</li> </ul> |
|---|---|

\* AMS is the abbreviation of Automatic Music Sensor.

Remote Commander



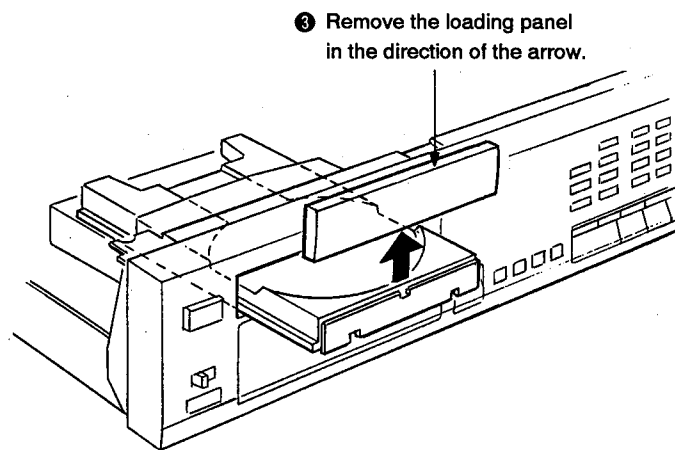
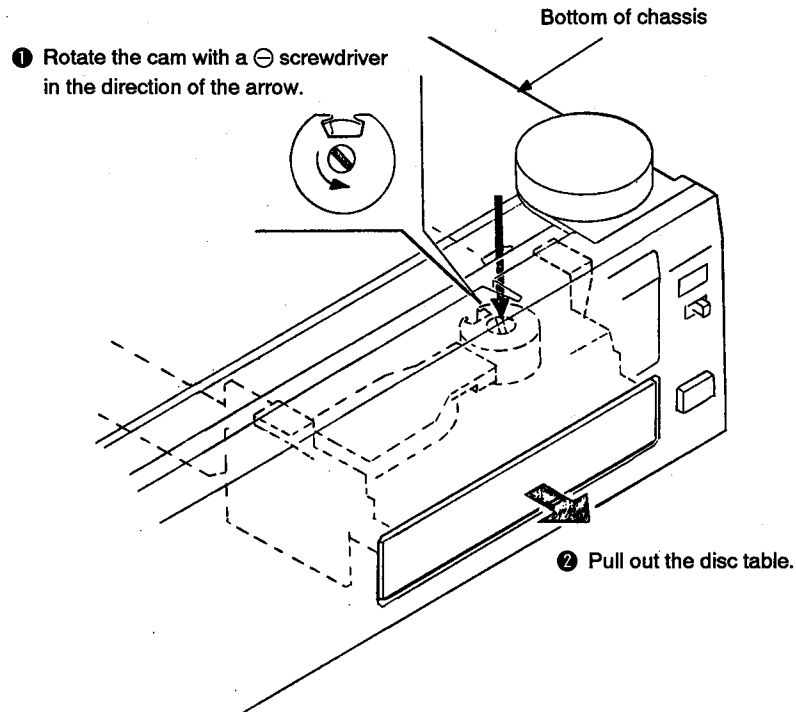
- 1 ▲ OPEN/CLOSE button
- 2 FILE RECALL button
- 3 DISPLAY MODE button
- 4 MUSIC SCAN button
- 5 Numeric buttons
- 6 MEMO INPUT button
- 7 FILE (custom file) button  
ERASE button
- 8 DSP SELECT button  
DSP FLAT button
- 9 LEVEL FILE button
- 10 FADER (fade in/fade out) button
- 11 ◀◀▶▶ (manual search) buttons
- 12 LINE OUT LEVEL (line out/headphone level) buttons
- 13 ◀◀▶▶ SLOW (low speed manual search) buttons
- 14 ◀ ▶ INDEX buttons
- 15 ◀◀▶▶ AMS buttons
- 16 ■ (stop) button  
▮ (pause) button  
▶ (play) button
- 17 A. SPACE (auto space)/A. CUE (auto cue) button
- 18 REPEAT button (repeat/A ↔ B repeat clear) button
- 19 TIME button
- 20 >20 (over 20) button
- 21 CLEAR button  
CHECK button
- 22 PLAY MODE buttons  
CONTINUE button  
SHUFFLE button  
PROGRAM button  
C (custom). INDEX button

Buttons with orange letters (A, B, C, ..... ) are for entering a disc memo (page 26).

## SECTION 2 DISASSEMBLY

- In order to remove the front panel block when the power supply does not turn on, rotate the cam with minus screw-driver as the figure shows, and the loading part will be moved.

Then pull out the loading part by your hand to remove the loading panel as the figure shows. After that take out the front panel block.



## SECTION 3

### IC PIN FUNCTIONS

#### • IC342 (CXD2561M-1)

Pin No.	Symbol	I/O	Description
1	DVDD	—	Digital power supply
2	TEST	I	Test pin Normally fixed to "L"
3	INIT	I	Re-synchronizes at rising edge of this signal.
4	LRCKI	I	LRCK input
5	DATAR	I	Rch data input
6	DATAL	I	Lch data input
7	BCKI	I	BCK input
8	DVss	—	Digital GND
9	512Fs	O	512 Fs output
10	XVss	—	Clock GND
11	XIN	I	Crystal oscillation input pin (512 Fs)
12	XOUT	O	Crystal oscillation output pin (22.5 MHz)
13	XVDD	—	Clock power supply
14	VSUB	—	Substrait Connected to GND
15	AVDDR	—	Analog power supply
16	R1 (+)	O	Rch PLM output 1 (in-phase)
17	AVSSR	—	Analog GND
18	R1 (-)	O	Rch PLM output 1 (antiphase)
19	R2 (+)	O	Rch PLM output 2 (in-phase)
20	R2 (-)	O	Rch PLM output 2 (antiphase)
21	AVDD	—	Analog power supply
22	AVss	—	Analog GND
23	L2 (-)	O	Lch PLM output 2 (antiphase)
24	L2 (+)	O	Lch PLM output 2 (in-phase)
25	L1 (-)	O	Lch PLM output 1 (antiphase)
26	AVSSL	—	Analog GND
27	L1 (+)	O	Lch PLM output 1 (in-phase)
28	AVDDL	—	Analog power supply

#### • IC341 (CXD2560M)

Pin No.	Symbol	I/O	Description
1	Vss	—	Power supply pin (GND)
2	SYSM	I	System mute input "H": active
3	ATT	I	CTL "L": ATT data input CTL "H": EMP input
4	SHIFT	I	CTL "L": shift clock input CTL "H": FS32 input
5	LATCH	I	CTL "L": latch clock input CTL "H": FS48 input
6	CTL	I	Pull-down within IC "H": direct input mode. "L": serial transfer mode.
7	INIT	I	Re-synchronizes at rising edge of this signal.
8	BCKI	I	BCK input
9	DATAI	I	Data input
10	LRCKI	I	LRCK input
11	TEST	I	Test pin Normally fixed to "L"
12	Vss	—	Power supply pin (GND)
13	128Fs	O	128 Fs clock output
14	INVI	I	Inverter input
15	INVO	O	Inverter output
16	INVO2	O	Inverter output
17	MCLK	I	Master clock input (f=512 Fs)
18	VDD	—	Power supply pin (+5V)
19	BCKO	O	BCK output
20	DL	O	Lch data output
21	DR	O	Rch data output
22	LRCKO	O	LRCK output
23	FLGL	O	Lch $\phi$ mute flag output
24	FLGR	O	Rch $\phi$ mute flag output

## • IC901 (CXD2701Q)

Pin No.	Symbol	I/O	Description
1	IMODE	I	Input data format setting pin. Data position is changed according to "H" and "L".
2	IDIR	I	Input data format setting pin. "H": MSB first, "L": LSB first
3	DATAI	I	Serial data input pin of 1 sampling 2 channels. Data format: two's complement
4	BCLKI	I	Serial bit clock input pin of serial input data
5	LRCKI	I	Sampling frequency clock input pin of serial I/O. Transfers Lch data at "H" and Rch data at "L".
6	Vss1	—	GND pin
7	DATAO	O	Serial data output pin. Data format: two's complement.
8	BCKO	O	Bit clock output pin. 64-slot.
9	LRCKO	O	Sampling frequency clock output pin of serial data
10	BS1	I	Output data bit number setting pin BS2=H, BS1=H 24-bit BS2=H, BS1=L 20-bit
11	BS2	I	BS2=L, BS1=H 18-bit BS2=L, BS1=L 16-bit
12	ODIR	I	Output data format setting pin. "H": MSB first, "L": LSB first
13	Vss3	—	GND pin
14	SCK	O	System clock output pin. fsck=fxt=512 fs
15	XOUT	O	Output pin of crystal oscillation circuit
16	XIN	I	Input pin of crystal oscillation circuit. fxt=512 fs
17	VDD1	—	+5V power pin
18	I/O4	I/O	External DRAM data input/output I/O4
19	I/O3	I/O	External DRAM data input/output I/O3
20	CAS	O	External DRAM column address strobe output pin
21	I/O2	I/O	External DRAM data input/output I/O2
22	I/O1	I/O	External DRAM data input/output I/O1
23	WE	O	External DRAM write enable output pin. "L": active
24	A0	O	External DRAM address output A0
25	RAS	O	External DRAM low address strobe output pin
26	A1	O	External DRAM address output A1
27	A2	O	External DRAM address output A2
28	Vss2	—	GND pin
29	A3	O	External DRAM address output A3
30	A4	O	External DRAM address output A4
31	A5	O	External DRAM address output A5
32	A6	O	External DRAM address output A6
33	A7	O	External DRAM address output A7
34	A8	O	External DRAM address output A8
35	TEST1	I	Test pin. Normally fixed to GND.
36	TEST2	I	Test pin. Normally fixed to GND.
37	TEST3	I	Test pin. Normally fixed to GND.
38	TEST0	O	Test pin
39	VDD2	—	+5V power pin
40	PRGD	I	Serial data input pin where commands, coefficient, and controls, etc. are transferred from microprocessor.
41	PRGCK	I	PRGD serial clock input pin. Data is fetched at rising edge.
42	PRGL	I	Latch input pin to latch the serial data within IC from microprocessor. "L": active.
43	INIT	I	Initialization pin. "L": active.. Re-synchronizes at rising.
44	OVF	O	Outputs 5-bit overflow flag of DSP, Lch MIX, Rch MIX, Lch EQ, and Rch EQ.



## • IC301 (M38063M6)

Pin No.	Symbol	I/O	Description
1	DSPVOL	I	DSP effect level input
2	VLEVEL	I	Volume level input
3	VOLLED	O	Volume LED
4	VOLDWN	O	Remote control volume down output
5	VOLUP	O	Remote control volume up output
6	LODOUT	O	Loading-out output
7	LODIN	O	Loading-in output
8	PRGL	O	IC901 (CXD2701) data latch pulse output
9	PRGCK	O	IC901 (CXD2701) data clock output
10	PRGD	O	IC901 (CXD2701) data output
11	NC	–	No connection
12	GAIN3	O	Analog gain control 3
13	GAIN2	O	Analog gain control 2
14	GAIN1	O	Analog gain control 1
15	CNIN	I	Track jump number count signal input
16	LDON	O	Laser diode ON/OFF output
17	FOK	I	FOK monitor input
18	GFS	I	GFS monitor input
19	SENSE	I	SENSE input of IC331 (CXD2500) and IC101 (CXD2501)
20	NC	–	No connection
21	SQCK	O	Subcode read out clock output
22	NC	–	No connection
23	SUBQ	I	Subcode data input
24	SCOR	I	SCOR input
25	NC	–	No connection
26	CNVSS	–	GND
27	XRST	I	Reset input
28	ADJ	I	Test mode pin
29	AFADJ	I	Test mode pin for electrical adjustment
30	XIN	–	Clock input
31	XOUT	–	Clock output
32	GND	–	GND
33	D7	I/O	64K-SRAM data input/output 7
34	D6	I/O	64K-SRAM data input/output 6
35	D5	I/O	64K-SRAM data input/output 5
36	D4	I/O	64K-SRAM data input/output 4
37	D3	I/O	64K-SRAM data input/output 3
38	D2	I/O	64K-SRAM data input/output 2
39	D1	I/O	64K-SRAM data input/output 1
40	D0	I/O	64K-SRAM data input/output 0

Pin No.	Symbol	I/O	Description
41	NC	—	No connection
42	NC	—	No connection
43	WE	O	64K-SRAM write enable output
44	A12	O	64K-SRAM address 12
45	A11	O	64K-SRAM address 11
46	A10	O	64K-SRAM address 10
47	A9	O	64K-SRAM address 9
48	A8	O	64K-SRAM address 8
49	A7	O	64K-SRAM address 7
50	A6	O	64K-SRAM address 6
51	A5	O	64K-SRAM address 5
52	A4	O	64K-SRAM address 4
53	A3	O	64K-SRAM address 3
54	A2	O	64K-SRAM address 2
55	A1	O	64K-SRAM address 1
56	A0	O	64K-SRAM address 0
57	QINT	O	Command output pulse
58	M/F	I/O	Master/file command select input/output
59	SACK	O	Command acknowledge output
60	MREQ	I	Command request input
61	CMD3	I/O	Master microprocessor interface 3
62	CMD2	I/O	Master microprocessor interface 2
63	CMD1	I/O	Master microprocessor interface 1
64	CMD0	I/O	Master microprocessor interface 0
65	XLT	O	Data latch pulse output of IC331 (CXD2500) and IC101 (CXD2501)
66	CLK	O	Data clock output of IC331 (CXD2500) and IC101 (CXD2501)
67	DATA	O	Data output of IC331 (CXD2500) and IC101 (CXD2501)
68	SCLK	O	Coefficient data read out clock output of IC101 (CXD2501)
69	DIRC	O	Direct control pin (not used) of IC101 (CXD2501)
70	ATT	O	Attenuation data output of IC341 (CXD2560)
71	SHIFT	O	Attenuation data clock output of IC341 (CXD2560)
72	LATCH	O	Attenuation data latch pulse output of IC341 (CXD2560)
73	Vcc	—	+5V
74	VREF	—	+5V
75	AVss	—	GND
76	AMUTE	O	Audio mute output
77	MUTE	O	Digital mute output
78	NC	—	No connection
79	INSW	I	Loading in-switch input
80	OUTSW	I	Loading out-switch input

## • IC331 (CXD2500AQ)

Pin No.	Symbol	I/O	Description
1	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
2	FSW	O	Spindle motor output filter select output
3	MON	O	Spindle motor ON/OFF control output
4	MDP	O	Spindle motor servo control
5	MDS	O	Spindle motor servo control
6	LOCK	O	GFS is sampled at 460 Hz. "H" output: when GFS "H". "L" output: when continuously "L" eight times.
7	NC	—	
8	VCOO	O	Analog EFM PLL oscillation circuit output
9	VCOI	I	Analog EFM PLL oscillation circuit input. f <sub>LOCK</sub> =8.6436 MHz
10	TEST	I	Test pin. Normally: GND
11	PDO	O	Analog EFM PLL charge pump output
12	Vss		GND
13	NC	—	
14	NC	—	
15	NC	—	
16	VPCO	O	Variable pitch PLL charge pump output
17	VCKI	I	Clock input (f <sub>center</sub> =16.9344 MHz) from variable pitch external VCO
18	FILO	O	Master PLL (slave=digital PLL) filter output
19	FILI	I	Master PLL filter input
20	PCO	O	Master PLL charge pump output
21	AVss		Analog GND
22	CLTV	I	Master VCO control voltage input
23	AVDD		Analog power supply (+5V)
24	RF	I	EFM signal input
25	BIAS	I	Asymmetry circuit constant-current input
26	ASYI	I	Asymmetry comparator voltage input
27	ASYO	O	EFM full swing output (L=V <sub>ss</sub> , H=V <sub>DD</sub> )
28	ASYE	I	"L": asymmetry circuit OFF. "H": asymmetry circuit ON
29	NC	—	Not used
30	PSSL	I	Audio data output mode select input. "L": serial output, "H": parallel output.
31	WDCK	O	48-bit slot D/A interface. Word clock f=2F <sub>s</sub>
32	LRCK	O	48-bit slot D/A interface. LR clock f=F <sub>s</sub>
33	V <sub>DD</sub>		Power supply (+5V)
34	DA16	O	DA16 (MSB) output when PSSL=1. 48-bit slot serial data (2s'COMP, MSB first) when PSSL=0.
35	DA15	O	DA15 output when PSSL=1. 48-bit slot bit clock when PSSL=0.
36	DA14	O	DA14 output when PSSL=1. 64-bit slot serial data (2s'COMP, LSB first) when PSSL=0.
37	DA13	O	DA13 output when PSSL=1. 64-bit slot bit clock when PSSL=0.
38	DA12	O	DA12 output when PSSL=1. 64-bit slot LR clock when PSSL=0.
39	DA11	O	DA11 output when PSSL=1. G <sub>TOP</sub> output when PSSL=0.
40	DA10	O	DA10 output when PSSL=1. XUGF output when PSSL=0.

Pin No.	Symbol	I/O	Description
41	DA09	O	DA09 output when PSSL=1. XPLCK output when PSSL=0.
42	DA08	O	DA08 output when PSSL=1. GFS output when PSSL=0.
43	DA07	O	DA07 output when PSSL=1. RFCK output when PSSL=0.
44	DA06	O	DA06 output when PSSL=1. C2P0 output when PSSL=0.
45	DA05	O	DA05 output when PSSL=1. XRAOF output when PSSL=0.
46	DA04	O	DA04 output when PSSL=1. MNT3 output when PSSL=0.
47	DA03	O	DA03 output when PSSL=1. MNT2 output when PSSL=0.
48	DA02	O	DA02 output when PSSL=1. MNT1 output when PSSL=0.
49	DA01	O	DA01 output when PSSL=1. MNT0 output when PSSL=0.
50	APTR	O	Control output for aperture compensation. "H": Rch.
51	APTL	O	Control output for aperture compensation. "H": Lch.
52	Vss		GND
53	XTAI	I	Crystal oscillation circuit input of 16.9344 MHz or 33.8688 MHz input.
54	XTAO	O	Crystal oscillation circuit output of 16.9344 MHz.
55	XTSL	I	Crystal select input pin. "L": when crystal=16.9344 MHz. "H": when crystal=33.8688 MHz.
56	FSTT	O	2/3 frequency-divided output of Pins 53 and 54. Not changed by variable pitch.
57	C4M	O	4.2336 MHz output. Simultaneously changed when variable pitched.
58	C16M	O	16.9344 MHz output. Simultaneously changed when variable pitched.
59	MD2	I	Digital-out ON/OFF control. "H": ON, "L": OFF.
60	DOUT	O	Digital-out output pin
61	EMPH	O	"H" output when the playback disc has emphasis. "L" output when no emphasis.
62	WFCK	O	WFCK (Write Frame Clock) output
63	SCOR	O	"H" output when subcode sync S0 or S1 is detected.
64	SBSO	O	Serial output of subP through subW.
65	EXCK	I	SBSO read out clock input
66	SQSO	O	Output of subQ 80-bit, PCM peak, and level data 16-bit.
67	SQCK	I	SQSO read out clock input
68	MUTE	I	Cancelled by mute "L" at "H".
69	SENS	-	SENS output. Output to CPU.
70	XRST	I	System reset. "L": reset.
71	DATA	I	Serial data input from CPU
72	XLAT	I	Latch input from CPU. Serial data is latched at falling.
73	VDD		Power supply (+5V)
74	CLOK	I	Serial data transfer clock input from CPU
75	SEIN	I	SENSE input from SSP
76	CNIN	I	Track jump number count signal input
77	DATO	O	Serial data output to SSP
78	XLTO	O	Serial data latch output to SSP. Latched at falling.
79	CLKO	O	Serial data transfer clock output to SSP
80	MIRR	I	Mirror signal input. Used for jumping 128 tracks or more in auto sequencer.

• IC401 (  $\mu$ SC62408)

Pin No.	Symbol	I/O	Description
1	SCAN6	O	Key-scan signal output
2	TIMER	I	Timer switch signal input
3	KEY0	I	Key-scan signal input
4	KEY1	I	Key-scan signal input
5	KEY2	I	Key-scan signal input
6	KEY3	I	Key-scan signal input
7	KEY4	I	Key-scan signal input
8	KEY5	I	Key-scan signal input
9	KEY6	I	Key-scan signal input
10	CMD0	I/O	Communication data input/output pin with mechanical controller
11	CMD1	I/O	Communication data input/output pin with mechanical controller
12	CMD2	I/O	Communication data input/output pin with mechanical controller
13	CMD3	I/O	Communication data input/output pin with mechanical controller
14	MREQ	O	Command request signal to mechanical controller
15	SACK	I	Command accept signal input
16	M/F	I/O	Master/File command select signal
17	RMIN	I	Remote control signal interrupt input
18	NAVI OFF		Not used
19	QINT	I	Mechanical controller interrupt signal input
20	RESET	I	Reset signal input
21	TEST		Not used
22	CONT	O	CONTINUE LED drive signal output
23	TEST		Not used
24	SHU	O	SHUFFLE LED drive signal output
25	PGM	O	PROGRAM LED drive signal output
26	INDEX	O	INDEX LED drive signal output
27	DSP	O	DSP/1-20 LED drive signal output
28	PAUSE	O	PAUSE LED drive signal output
29	PLAY	O	PLAY LED drive signal output
30	OSC0	O	Oscillation pin (4.19 MHz)
31	OSC1	I	Oscillation pin
32	Vss		GND
33	T0	O	Timing signal output
34	T1	O	Timing signal output
35	T2	O	Timing signal output
36	T3	O	Timing signal output
37	T4	O	Timing signal output
38	T5	O	Timing signal output
39	T6	O	Timing signal output
40	T7	O	Timing signal output

## • IC101 (CXD2501Q)

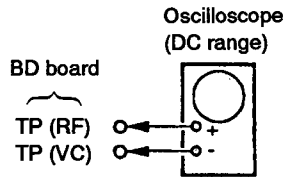
Pin No.	Symbol	I/O	Description
1	ADII	I	A/D signal input
2	ADIO	O	Analog switch output
3	RF	I	RF signal input
4	TE	I	Tracking error signal input
5	SE	I	SE signal input
6	NC		Not used
7	FE	I	Focus error signal input
8	VC	I	Center voltage (2.5V) input
9	DVss		Digital GND
10	NC		Not used
11	ATSK		Not used
12	NC		Not used
13	DFSW	I	DFCT circuit is not operated at "H".
14	DFCT	O	DFCT signal output
15	XTAL	I	Master clock signal input
16	NC		Not used
17	XTSL	I	Frequency selection of input master clock signal. "H": 22 MHz. "L": 11 MHz.
18	LOCK	I	Lock signal input
19	FOK	O	Focus OK signal output
20	MIRR	O	MIRR signal output
21	CLK	I	Clock signal when the data is sent from microprocessor.
22	NC		Not used
23	XLT	I	Latch signal when the data is sent from microprocessor.
24	DATA	I	Data from microprocessor
25	COUT	O	Track jump number count signal output
26	NC		Not used
27	DVDD		Digital +5V
28	NC		Not used
29	SENS	O	SENS signal output
30	SCLK	I	Clock for serial data read out
31	NC		Not used
32	DIRC	I	DIRC signal input
33	XRST	I	Reset signal input
34	SOCK		Not used
35	XOLT		Not used
36	SOUT		Not used
37	NC		Not used
38	SFDR	O	Thread drive signal output (FWD)
39	SRON		Not used
40	SRDR	O	Thread drive signal output (REVERSE)

Pin No.	Symbol	I/O	Description
41	T8	O	Timing signal output
42	T9	O	Timing signal output
43	T10	O	Timing signal output
44	T11	O	Timing signal output
45	NC		Not used
46	S27	O	Segment signal output
47	S26	O	Segment signal output
48	S25	O	Segment signal output
49	VFLT		+34V
50	S24	O	Segment signal output
51	S23	O	Segment signal output
52	S22	O	Segment signal output
53	S21	O	Segment signal output
54	S20	O	Segment signal output
55	S19	O	Segment signal output
56	S18	O	Segment signal output
57	S17	O	Segment signal output
58	S16	O	Segment signal output
59	S15	O	Segment signal output
60	S14	O	Segment signal output
61	S13	O	Segment signal output
62	S12	O	Segment signal output
63	S11	O	Segment signal output
64	S10	O	Segment signal output
65	S9	O	Segment signal output
66	S8	O	Segment signal output
67	S7	O	Segment signal output
68	S6	O	Segment signal output
69	S5	O	Segment signal output
70	S4	O	Segment signal output
71	S3	O	Segment signal output
72	S2	O	Segment signal output
73	S1	O	Segment signal output
74	VDD		Power
75	SCAN0	O	Key-scan signal output
76	SCAN1	O	Key-scan signal output
77	SCAN2	O	Key-scan signal output
78	SCAN3	O	Key-scan signal output
79	SCAN4	O	Key-scan signal output
80	SCAN5	O	Key-scan signal output

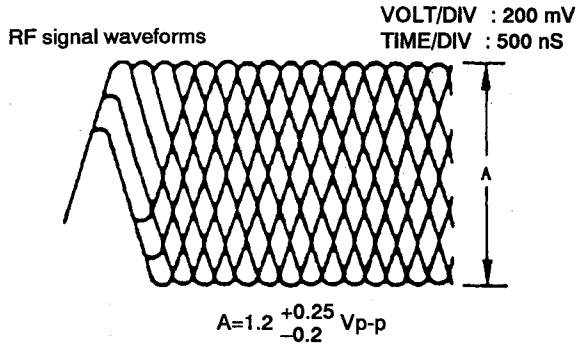
## SECTION 4 ELECTRICAL BLOCK CHECKING

1. Check in order of descriptions below.
2. The disc [YEDS-18] part code No. 3-702-101-01, should be used but do not apply it unless direction is given.
3. Use the oscilloscope with more than 10 MΩ impedance.

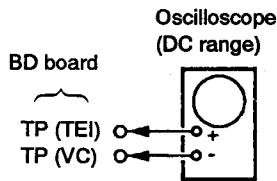
### [RF Level Check]



1. Connect the oscilloscope to test points, TP (RF) and TP (VC).
2. Turn POWER switch on.
3. Insert the disc (YEDS-18) and to press ▷ PLAY button.
4. Check the waveforms to be normal and RF level to be proper. Normal waveforms means ◊ form can be observed clearly in the center of the each waveform.

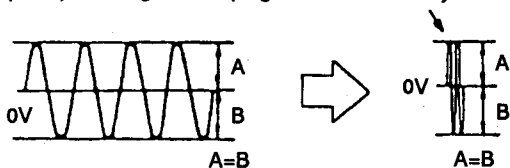


### [E-F Balance Check]

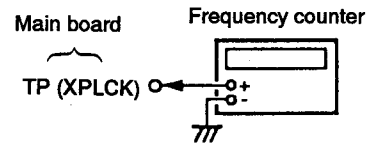


1. Earch TP (ADJ) and TP (TE).
2. Connect the oscilloscope to TP (TEI).
3. Turn POWER switch on.
4. Insert ther disc (YEDS-18) and press the ▷ PLAY button.
5. Confirm waveforms of the oscilloscope to be vertically symmetrical in relation to 0V line.
6. Remove the earths of TP (ADJ) and TP (TE).

(Note) Prolonged sweeping time makes it easy to see.



### [RF PLL Free-running Frequency Check]



1. Turn POWER switch on.
2. Insert the disc (YEDS-18) and push the ▷ PLAY button. Confirm the frequency of TP (XPLCK) to be 4.3218 MHz.

### [Focus/Tracking Gain Check]

Focus/Tracking gain determines the follow-up of pick-up relating to mechanical noise and shock which occur when the 2-axis device operates.

However, as these are contrary to each other, the micro-computer automatically adjusts the position to the point that both are satisfied with.

- When gain is raised, the noise in the 2-axis device operation increases.
- When gain is lowered, it is more susceptible to mechanical shock, and tends to skip easily.

When gain is not normal, the symptoms below appears.

Symptoms \ Gain	Focus	Tracking
• It takes longer time till music starts when STOP → ▷ PLAY or automatic selection (◀◀, ▶▶ buttons pressed). (Normally it takes about 2 seconds).	low	low or high
• In spite of STOP → ▷ PLAY or automatic selection (◀◀, ▶▶ button pressed), disc continues to rotate without music beginning to play.	—	low
• Sound is interrupted during PLAY. Or the time counter display stops to progress.	—	low
• The noise increases during 2-axis device operating.	high	high



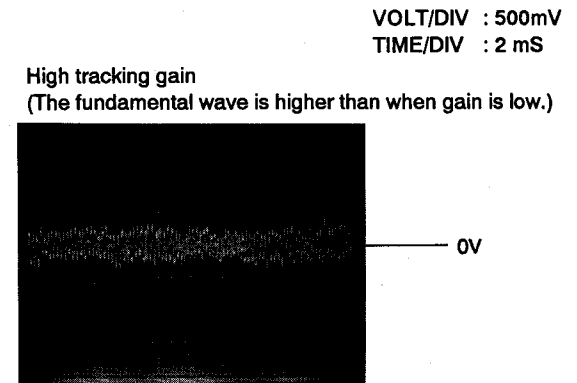
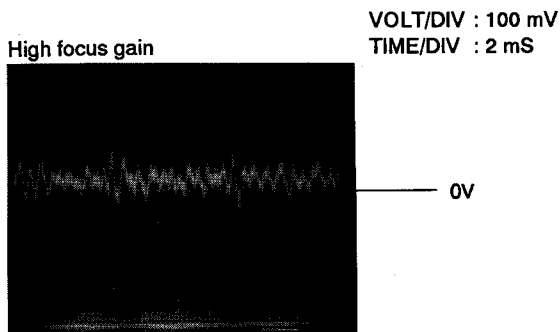
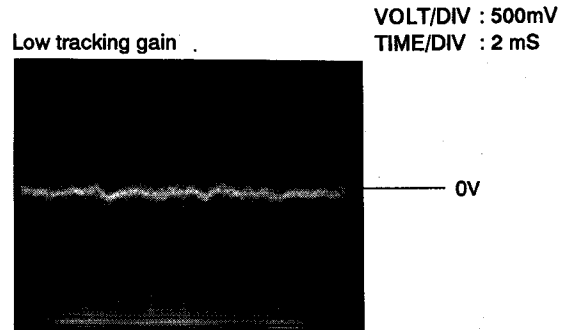
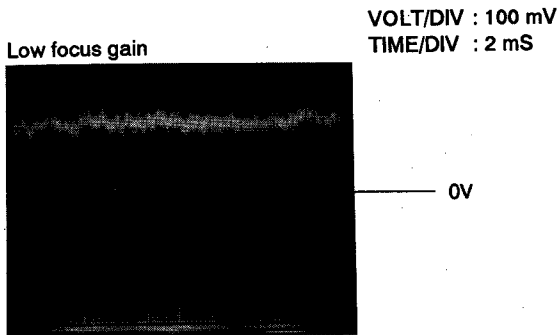
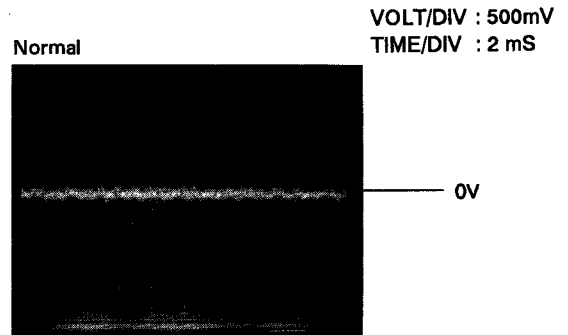
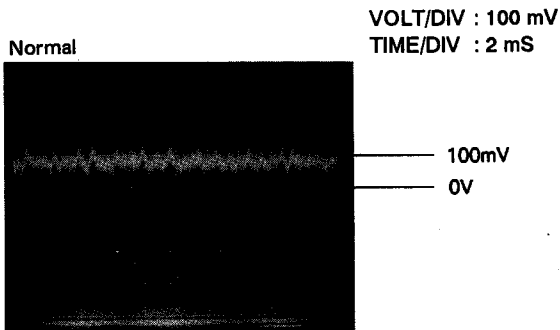
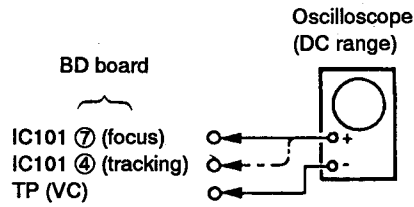
**[Focus Gain Check]**

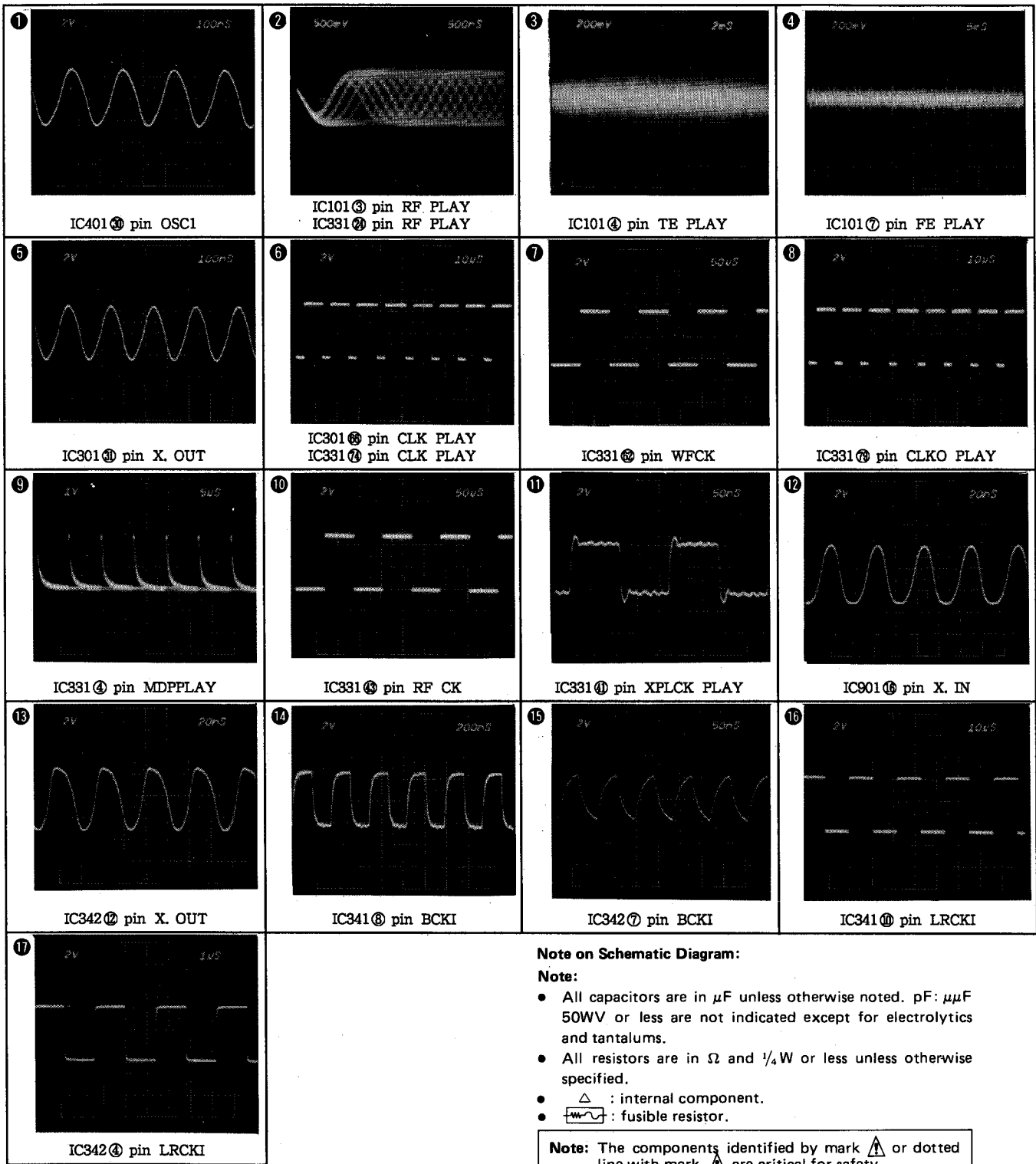
1. Keep the set horizontal.  
(Keep the set horizontal, or this adjustment cannot be performed due to the gravity against the 2-axis device.)
2. Insert disc (YEDS-18: the 5th song) and press ▷ PLAY button.
3. Connect the oscilloscope to IC101 ⑦ terminal on BD board.
4. Check waveforms of the oscilloscope to shape ones as shown in figure below.

**[Tracking Gain Check]**

1. Connect the oscilloscope to the IC101 ④ terminal.
2. Check waveforms of the oscilloscope to shape ones as shown in figure below.


Measuring points:









**Note on Schematic Diagram:**

**Note:**






- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$  50VV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
- $\triangle$  : internal component.
-  : fusible resistor.

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

-  : B+ Line
-  : B- Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (input impedance  $10\text{M}\Omega$ ). 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.  : CD  
 : digital out

**Note on Mounting Diagram:**

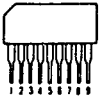
**Note:**

-  — : parts extracted from the component side.
-  : Through hole.
-  : Pattern on the side which is seen.
-  : Pattern of the rear side.
-  : Denotes that Jumper wire works as Test Point.

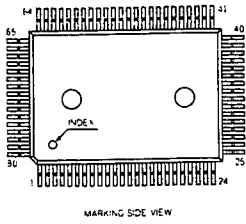
G: GERMANY

● SEMICONDUCTOR LEAD LAYOUTS

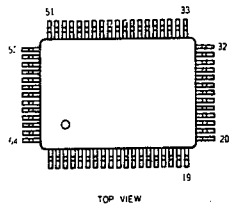
BA6208



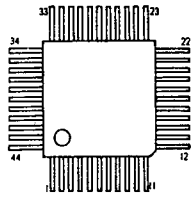
CXD2500AQ  
MSC62408-033GS-VIK  
M38063M6-162FP



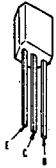
CXD2501Q



CXD2701Q



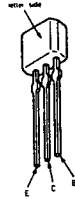
DTA114ES  
DTA124ES  
DTC114ES  
2SC1815-Y



DTC114EF



2SA1175-HFE  
2SC2785-HFE



2SC2878-B



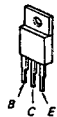
2SC3623A-LK



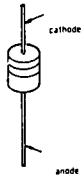
2SD774-34



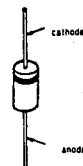
2SB1274SA-RS



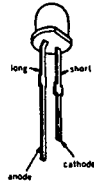
HZS36-3L  
RD5.1ESB2  
RD7.5ESB2  
RD8.2ESB2  
11ES2



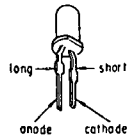
1N4148M



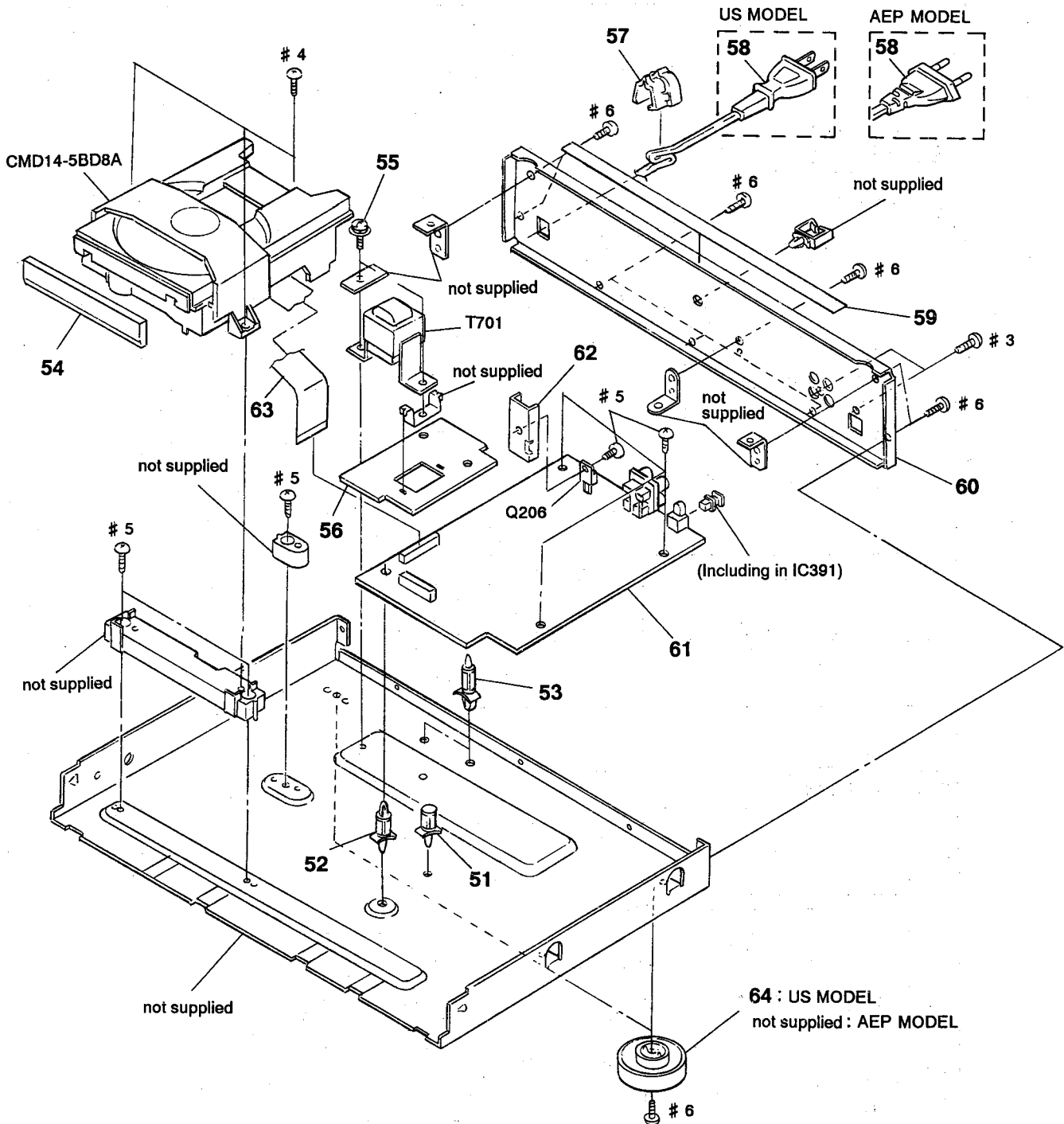
MAA3371X  
MBG3371X-9.5



SEL3210S-CD  
SEL3510C-CD  
SEL3710K-CD  
SEL3910A-CD  
SEL3810A-CD



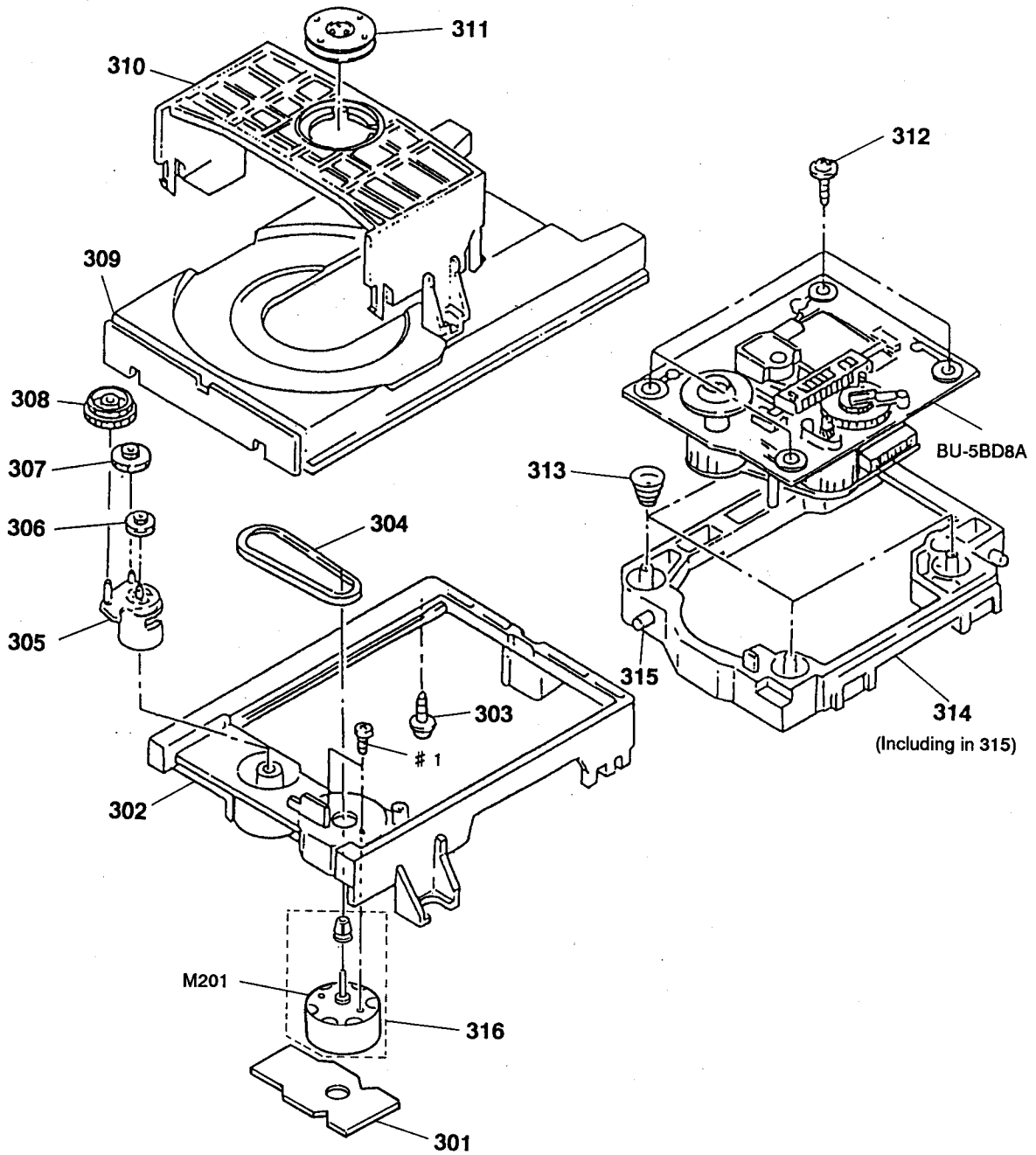
6-2. MAIN ASSEMBLY



Ref. No.	Part No.	Description	Remark
* 51	3-349-025-41	HOLDER, PC BOARD	
* 52	4-924-098-01	HOLDER, PC BOARD	
* 53	4-943-687-11	HOLDER, PC BOARD	
54	4-947-572-01	PANEL, LOADING	
55	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
* 56	1-641-571-11	POWER TRANSFORMER BOARD	
* 57	3-703-244-00	BUSHING (2104), CORD	
△58	1-575-651-21	CORD, POWER (AEP)	
△58	1-590-836-11	CORD, POWER (US)	
* 59	4-927-653-01	SHEET (F/P)	

Ref. No.	Part No.	Description	Remark
* 60	4-946-788-11	PANEL, BACK (US)	
* 60	4-946-788-41	PANEL, BACK (AEP)	
* 61	A-4649-336-A	MAIN BOARD, COMPLETE (AEP)	
* 61	A-4649-348-A	MAIN BOARD, COMPLETE (US)	
* 61	A-4649-351-A	MAIN BOARD, COMPLETE (G)	
* 62	4-941-237-01	HEAT SINK	
63	1-575-002-11	WIRE, FLAT TYPE (22 CORE)	
64	4-943-148-32	FOOT (F58175SW) (US)	
Q206	8-729-821-73	TRANSISTOR 2SB1274SA-RS	
△T701	1-449-921-11	TRANSFORMER, POWER (US)	
△T701	1-449-922-11	TRANSFORMER, POWER (AEP)	

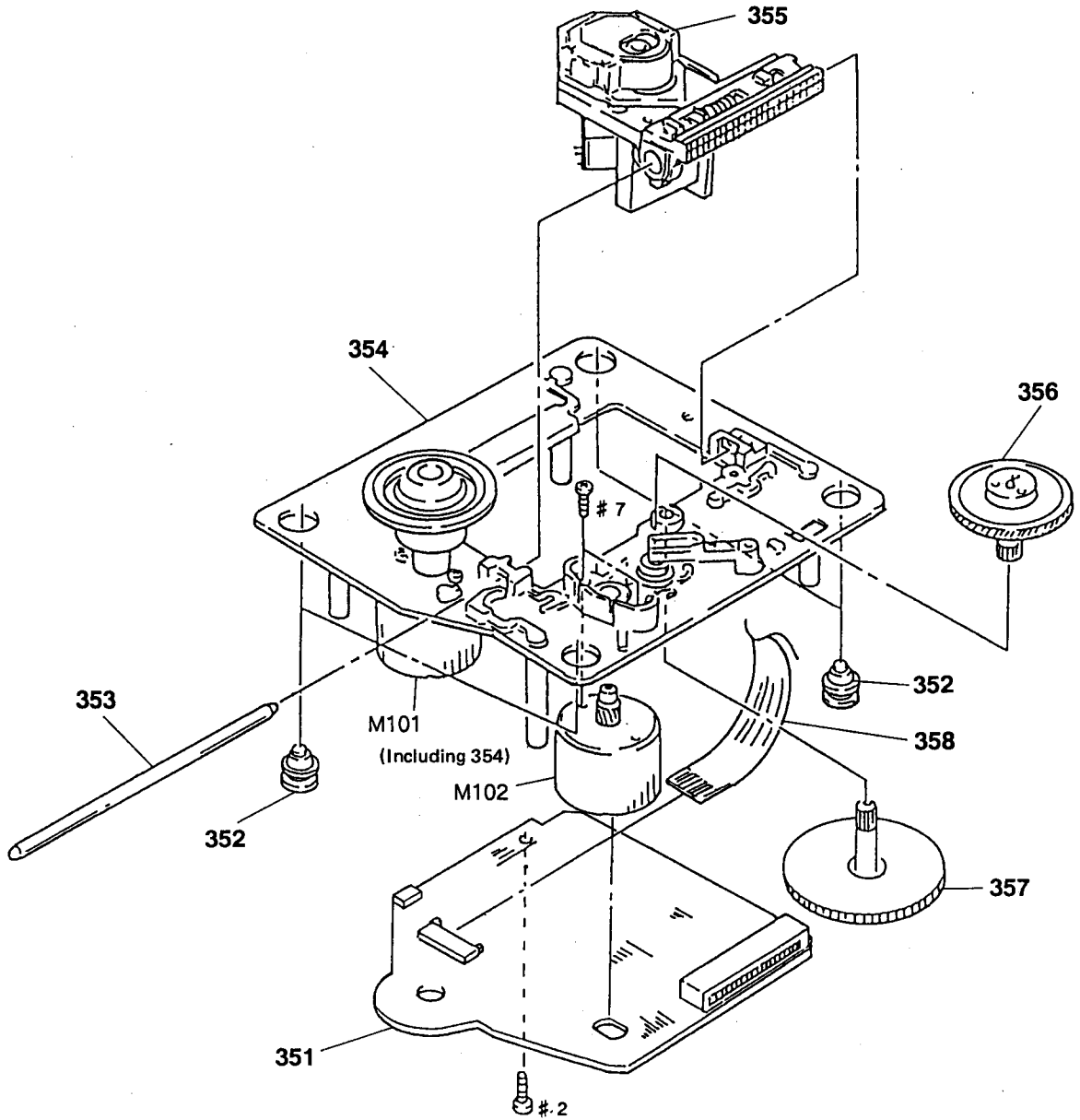
6-3. MD ASSEMBLY (CDM-5BD8A)



Ref. No.	Part No.	Description	Remark
* 301	1-632-202-11	LOADING BOARD	
302	4-933-111-01	CHASSIS (MD)	
* 303	4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	
309	4-933-112-01	TABLE, DISK	
310	4-933-110-01	HOLDER (MG)	

Ref. No.	Part No.	Description	Remark
* 311	1-452-538-11	MAGNET	
312	4-933-134-01	SCREW (+PTPWH M2. 6X6)	
313	4-948-503-01	SPRING (BU), COMPRESSION	
314	4-933-129-01	HOLDER (BU)	
315	4-933-108-01	SHAFT (CAM)	
316	A-4604-363-A	MOTOR (L) ASSY	
M201	1-541-632-11	MOTOR, DC (LOADING)	

6-4. OPTICAL PICK-UP ASSEMBLY (BU-5BD8)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 351	A-4617-977-A	BD BOARD, COMPLETE		356	4-917-567-01	GEAR (M)	
	4-933-126-01	INSULATOR (A)		357	4-917-564-01	GEAR (P), FLATNESS	
	4-917-565-01	SHAFT, SLED		358	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
	X-4917-523-3	BASE ASSY (OUTSERT) (Including M101)		359	4-951-620-01	SCREW (2.6X8), +BVTP	
▲ 355	8-848-144-11	PICK-UP, OPTICAL KSS-240A		M102	X-4917-504-1	MOTOR ASSY (SLED)	

# SECTION 7 ELECTRICAL PARTS LIST

BD

**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 and -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 G: GERMANY
- COILS  
uH:  $\mu$ H

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

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

**G: GERMANY**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* A-4617-977-A BD BOARD, COMPLETE *****				< RESISTOR >			
< CAPACITOR >				R101	1-216-077-00	METAL CHIP	15K 5% 1/10W
C101	1-163-005-11	CERAMIC CHIP	470PF 10% 50V	R102	1-216-097-00	METAL CHIP	100K 5% 1/10W
C102	1-163-038-00	CERAMIC CHIP	0.1uF 25V	R103	1-216-077-00	METAL CHIP	15K 5% 1/10W
C103	1-163-005-11	CERAMIC CHIP	470PF 10% 50V	R104	1-216-085-00	METAL CHIP	33K 5% 1/10W
C104	1-164-505-11	CERAMIC CHIP	2.2uF 16V	R105	1-216-097-00	METAL CHIP	100K 5% 1/10W
C105	1-135-155-21	TANTALUM CHIP	4.7uF 10% 16V	R112	1-216-049-00	METAL CHIP	1K 5% 1/10W
C106	1-164-346-11	CERAMIC CHIP	1uF 16V	R113	1-216-077-00	METAL CHIP	15K 5% 1/10W
C107	1-164-505-11	CERAMIC CHIP	2.2uF 16V	R114	1-216-077-00	METAL CHIP	15K 5% 1/10W
C108	1-164-346-11	CERAMIC CHIP	1uF 16V	R117	1-216-077-00	METAL CHIP	15K 5% 1/10W
C112	1-163-038-00	CERAMIC CHIP	0.1uF 25V	R118	1-216-077-00	METAL CHIP	15K 5% 1/10W
C151	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	R121	1-216-077-00	METAL CHIP	15K 5% 1/10W
C152	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	R122	1-216-077-00	METAL CHIP	15K 5% 1/10W
C153	1-163-038-00	CERAMIC CHIP	0.1uF 25V	R151	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C154	1-164-336-11	CERAMIC CHIP	0.33uF 25V	R152	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C155	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	R153	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C156	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	R154	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C157	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	R155	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C158	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	R156	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C159	1-163-023-00	CERAMIC CHIP	0.015uF 5% 50V	R157	1-216-085-00	METAL CHIP	33K 5% 1/10W
C160	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	R158	1-216-076-00	METAL CHIP	13K 5% 1/10W
C181	1-163-038-00	CERAMIC CHIP	0.1uF 25V	R159	1-216-085-00	METAL CHIP	33K 5% 1/10W
< CONNECTOR >				R160	1-216-081-00	METAL CHIP	22K 5% 1/10W
CN101	1-568-796-11	SOCKET, CONNECTOR 22P		R161	1-216-093-00	METAL CHIP	68K 5% 1/10W
CN102	1-568-795-11	SOCKET, CONNECTOR 12P		R162	1-216-085-00	METAL CHIP	33K 5% 1/10W
CN103	1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P		R163	1-216-308-00	METAL CHIP	4.7 5% 1/10W
< IC >				R181	1-216-021-00	METAL CHIP	68 5% 1/10W
IC101	8-752-344-48	IC	CXD2501Q	R182	1-216-021-00	METAL CHIP	68 5% 1/10W
IC102	8-759-071-80	IC	BA6297AFP	< SWITCH >			
IC103	8-759-040-83	IC	BA6287F	S101	1-572-085-11	SWITCH, LEAF (LIMIT)	

**DISP    DSP    FUNCTION**

Ref. No.	Part No.	Description	Remark
*	A-4617-978-A	DISP BOARD, COMPLETE *****	
< CAPACITOR >			
C401	1-164-159-11	CERAMIC            0.1uF	50V
C402	1-164-159-11	CERAMIC            0.1uF	50V
C403	1-164-159-11	CERAMIC            0.1uF	50V
< CONNECTOR >			
CN401	1-568-802-11	SOCKET, CONNECTOR 19P	
* CN402	1-691-188-11	CONNECTOR, BOARD TO BOARD 18P	
< DIODE >			
D403	8-719-018-46	DIODE    SEL3510C-CD	
D404	8-719-023-94	DIODE    SEL3910A-CD	
D405	8-719-313-69	DIODE    SEL3210S-CD	
D406	8-719-023-95	DIODE    SEL3710K-CD	
D411	8-719-987-63	DIODE    1N4148M	
D412	8-719-987-63	DIODE    1N4148M	
D413	8-719-987-63	DIODE    1N4148M	
D414	8-719-987-63	DIODE    1N4148M	
D415	8-719-987-63	DIODE    1N4148M	
D416	8-719-987-63	DIODE    1N4148M	
D417	8-719-987-63	DIODE    1N4148M	
< INDICATOR TUBE >			
FLD401	1-519-695-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC401	8-759-074-74	IC    MSC62408-033GS-V1K	
IC402	8-741-100-48	IC    SBX1610-59	
< TRANSISTOR >			
Q403	8-729-900-45	TRANSISTOR    DTC114EF	
Q404	8-729-900-45	TRANSISTOR    DTC114EF	
Q405	8-729-900-45	TRANSISTOR    DTC114EF	
Q406	8-729-900-45	TRANSISTOR    DTC114EF	
Q410	8-729-900-45	TRANSISTOR    DTC114EF	
Q411	8-729-900-45	TRANSISTOR    DTC114EF	
< RESISTOR >			
R401	1-249-429-11	CARBON            10K    5%    1/4W	
R402	1-249-429-11	CARBON            10K    5%    1/4W	
R403	1-249-410-11	CARBON            270    5%    1/4W	
R404	1-249-413-11	CARBON            470    5%    1/4W	
R405	1-249-417-11	CARBON            1K     5%    1/4W	
R406	1-249-416-11	CARBON            820    5%    1/4W	

Ref. No.	Part No.	Description	Remark
R409	1-247-903-00	CARBON            1M    5%    1/4W	
R410	1-249-441-11	CARBON            100K   5%    1/4W	
R411	1-249-441-11	CARBON            100K   5%    1/4W	
< SWITCH >			
S401	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)	
S402	1-570-157-51	SWITCH, SLIDE (TIMER)	
S403	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S404	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S405	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S406	1-554-303-21	SWITCH, TACTILE (C. INDEX)	
S407	1-554-303-21	SWITCH, TACTILE (△ OPEN/CLOSE)	
< CRYSTAL >			
X401	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)	
*****			
*	1-641-569-11	DSP VOL BOARD *****	
< VARIABLE RESISTOR >			
RV521	1-241-738-11	RES, VAR, CARBON 10K (EFFECT)	
*****			
*	1-641-572-11	FUNCTION BOARD *****	
*	3-362-478-31	HOLDER (T), LED	
< CONNECTOR >			
* CN801	1-691-187-11	CONNECTOR, BOARD TO BOARD 18P	
< DIODE >			
D801	8-719-987-93	DIODE    MBG3371X-9.5	
D802	8-719-313-72	DIODE    SEL3810A-CD	
D803	8-719-987-91	DIODE    MMA3371X	
< TRANSISTOR >			
Q801	8-729-900-45	TRANSISTOR    DTC114EF	
Q802	8-729-900-45	TRANSISTOR    DTC114EF	
Q803	8-729-900-45	TRANSISTOR    DTC114EF	
< RESISTOR >			
R801	1-249-408-11	CARBON            180    5%    1/4W	
R802	1-249-415-11	CARBON            680    5%    1/4W	
R803	1-249-412-11	CARBON            390    5%    1/4W	
< SWITCH >			
S801	1-554-303-21	SWITCH, TACTILE (DSP/1-20)	



**FUNCTION**   **H.P**   **LOADING**   **MAIN**

Ref. No.	Part No.	Description	Remark
S802	1-554-303-21	SWITCH, TACTILE (HALL/1)	
S803	1-554-303-21	SWITCH, TACTILE (CHURCH/2)	
S804	1-554-303-21	SWITCH, TACTILE (JAZZ CLUB/3)	
S805	1-554-303-21	SWITCH, TACTILE (STADIUM/4)	
S806	1-554-303-21	SWITCH, TACTILE (DISCO/5)	
S807	1-554-303-21	SWITCH, TACTILE (FILE/RECALL)	
S808	1-554-303-21	SWITCH, TACTILE (LIVE ROOM/6)	
S809	1-554-303-21	SWITCH, TACTILE (BGM/7)	
S810	1-554-303-21	SWITCH, TACTILE (8)	
S811	1-554-303-21	SWITCH, TACTILE (9)	
S812	1-554-303-21	SWITCH, TACTILE (10)	
S813	1-554-303-21	SWITCH, TACTILE (A. SPACE/A. CUE)	
S814	1-554-303-21	SWITCH, TACTILE (11)	
S815	1-554-303-21	SWITCH, TACTILE (12)	
S816	1-554-303-21	SWITCH, TACTILE (13)	
S817	1-554-303-21	SWITCH, TACTILE (14)	
S818	1-554-303-21	SWITCH, TACTILE (15)	
S819	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)	
S820	1-554-303-21	SWITCH, TACTILE (16)	
S821	1-554-303-21	SWITCH, TACTILE (17)	
S822	1-554-303-21	SWITCH, TACTILE (18)	
S823	1-554-303-21	SWITCH, TACTILE (19)	
S824	1-554-303-21	SWITCH, TACTILE (20)	
S825	1-554-303-21	SWITCH, TACTILE (FILE)	
S826	1-554-303-21	SWITCH, TACTILE (▷)	
S827	1-554-303-21	SWITCH, TACTILE (LEVEL FILE)	
S828	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S829	1-554-303-21	SWITCH, TACTILE (CHECK)	
S830	1-554-303-21	SWITCH, TACTILE (FLAT/>20)	
S831	1-554-303-21	SWITCH, TACTILE (ERASE)	
S832	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)	
S833	1-554-303-21	SWITCH, TACTILE (◀)	
S834	1-554-303-21	SWITCH, TACTILE (▷)	
S835	1-554-303-21	SWITCH, TACTILE (◀)	
S836	1-554-303-21	SWITCH, TACTILE (■)	
S837	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)	
S838	1-554-303-21	SWITCH, TACTILE (TIME MEMO)	
S839	1-554-303-21	SWITCH, TACTILE (▶)	
S840	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S841	1-554-303-21	SWITCH, TACTILE (FADER)	
S842	1-554-303-21	SWITCH, TACTILE (■)	
*****			
*	1-641-573-11	H. P BOARD	
*****			
< CAPACITOR >			
C511	1-162-294-31	CERAMIC	0.001uF 10% 50V
C512	1-162-294-31	CERAMIC	0.001uF 10% 50V

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
* CN511	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
< JACK >			
J511	1-568-519-41	JACK, LARGE TYPE (PHONES)	
< COIL >			
L511	1-410-397-21	FERRITE BEAD INDUCTOR (US)	
L512	1-410-397-21	FERRITE BEAD INDUCTOR (US)	
L513	1-410-397-21	FERRITE BEAD INDUCTOR (US)	
*****			
*	1-632-202-11	LOADING BOARD	
*****			
< CONNECTOR >			
* CN301	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
< SWITCH >			
S271	1-572-086-11	SWITCH, LEAF (LOAD OUT)	
S272	1-572-086-11	SWITCH, LEAF (LOAD IN)	
*****			
*	A-4649-336-A	MAIN BOARD, COMPLETE (AEP)	
*	A-4649-348-A	MAIN BOARD, COMPLETE (US)	
*****			
*	4-941-237-01	HEAT SINK	
< CAPACITOR >			
C201	1-124-572-11	ELECT	100uF 20% 63V
C203	1-126-059-11	ELECT	10uF 20% 50V
C204	1-126-016-11	ELECT	4700uF 20% 16V
C205	1-126-016-11	ELECT	4700uF 20% 16V (US)
C205	1-126-017-11	ELECT	6800uF 20% 16V (AEP)
C206	1-126-059-11	ELECT	10uF 20% 50V
C207	1-126-163-11	ELECT	4.7uF 20% 50V
C208	1-126-059-11	ELECT	10uF 20% 50V
C209	1-126-013-11	ELECT	1000uF 20% 16V
C210	1-126-013-11	ELECT	1000uF 20% 16V
C211	1-124-556-11	ELECT	2200uF 20% 16V
C212	1-164-159-11	CERAMIC	0.1uF 50V
C214	1-126-024-11	ELECT	220uF 20% 16V
C215	1-125-622-11	CAP. DOUBLE LAYERS	0.1uF 5.5V
C216	1-164-159-11	CERAMIC	0.1uF 50V
C217	1-164-159-11	CERAMIC	0.1uF 50V
C218	1-126-163-11	ELECT	4.7uF 20% 50V

MAIN

Ref. No.	Part No.	Description	Remark		Ref. No.	Part No.	Description	Remark	
C220	1-124-997-11	ELECT	470uF	20% 10V	C626	1-130-467-00	MYLAR	470PF	5% 50V
C221	1-130-491-00	MYLAR	0.047uF	5% 50V	C627	1-126-024-11	ELECT	220uF	20% 16V
C301	1-126-022-11	ELECT	47uF	20% 16V	C661	1-130-467-00	MYLAR	470PF	5% 50V
C302	1-161-494-00	CERAMIC	0.022uF	25V	C663	1-126-012-11	ELECT	470uF	20% 16V
C303	1-164-159-11	CERAMIC	0.1uF	50V	C671	1-130-467-00	MYLAR	470PF	5% 50V
C304	1-126-022-11	ELECT	47uF	20% 16V	C673	1-126-012-11	ELECT	470uF	20% 16V
C311	1-136-161-00	FILM	0.047uF	5% 50V	C901	1-164-159-11	CERAMIC	0.1uF	50V
C312	1-161-374-11	CERAMIC	0.0015uF	20% 50V	C902	1-126-022-11	ELECT	47uF	20% 16V
C313	1-161-494-00	CERAMIC	0.022uF	25V	C903	1-164-159-11	CERAMIC	0.1uF	50V
C314	1-162-306-11	CERAMIC	0.01uF	20% 16V	C904	1-126-012-11	ELECT	470uF	20% 16V
C315	1-126-300-11	ELECT	0.47uF	20% 50V	C905	1-126-012-11	ELECT	470uF	20% 16V
C316	1-164-159-11	CERAMIC	0.1uF	50V	C911	1-124-463-00	ELECT	0.1uF	20% 50V
C317	1-162-282-31	CERAMIC	100PF	10% 50V	C912	1-124-463-00	ELECT	0.1uF	20% 50V
C318	1-126-022-11	ELECT	47uF	20% 16V	C913	1-124-463-00	ELECT	0.1uF	20% 50V
C319	1-126-022-11	ELECT	47uF	20% 16V	C914	1-126-051-11	ELECT	47uF	20% 50V
C320	1-161-494-00	CERAMIC	0.022uF	25V	C915	1-162-211-31	CERAMIC	33PF	5% 50V
C321	1-164-159-11	CERAMIC	0.1uF	50V	C916	1-126-051-11	ELECT	47uF	20% 50V
C322	1-130-483-00	MYLAR	0.01uF	5% 50V	C931	1-124-463-00	ELECT	0.1uF	20% 50V
C341	1-162-208-31	CERAMIC	24PF	5% 50V	C932	1-124-463-00	ELECT	0.1uF	20% 50V
C343	1-136-165-00	FILM	0.1uF	5% 50V	C933	1-124-463-00	ELECT	0.1uF	20% 50V
C344	1-126-022-11	ELECT	47uF	20% 16V	C934	1-126-051-11	ELECT	47uF	20% 50V
C345	1-164-159-11	CERAMIC	0.1uF	50V	C935	1-162-211-31	CERAMIC	33PF	5% 50V
C346	1-124-994-11	ELECT	100uF	20% 10V	C936	1-126-051-11	ELECT	47uF	20% 50V
C347	1-136-165-00	FILM	0.1uF	5% 50V					
C348	1-124-997-11	ELECT	470uF	20% 10V			< CONNECTOR >		
C349	1-136-165-00	FILM	0.1uF	5% 50V	* CN201	1-564-509-11	PLUG, CONNECTOR	6P	
C350	1-124-994-11	ELECT	100uF	20% 10V	CN301	1-506-468-11	CONNECTOR	3P, MALE	
C351	1-126-101-11	ELECT	100uF	20% 16V	* CN302	1-568-955-11	PIN, CONNECTOR	6P	
C352	1-136-165-00	FILM	0.1uF	5% 50V	CN303	1-568-802-11	SOCKET, CONNECTOR	19P	
C353	1-162-205-31	CERAMIC	18PF	5% 50V	* CN304	1-568-822-11	SOCKET, CONNECTOR	22P	
C354	1-162-205-31	CERAMIC	18PF	5% 50V	* CN661	1-564-711-11	PIN, CONNECTOR (SMALL TYPE)	9P	
C355	1-136-165-00	FILM	0.1uF	5% 50V			< DIODE >		
C356	1-124-994-11	ELECT	100uF	20% 10V	D201	8-719-200-82	DIODE	11ES2	
C361	1-162-281-31	CERAMIC	91PF	10% 50V	D202	8-719-200-82	DIODE	11ES2	
C367	1-162-281-31	CERAMIC	91PF	10% 50V	D203	8-719-200-82	DIODE	11ES2	
C391	1-164-159-11	CERAMIC	0.1uF	50V	D204	8-719-200-82	DIODE	11ES2	
C392	1-162-286-31	CERAMIC	220PF	10% 50V	D205	8-719-200-82	DIODE	11ES2	
C601	1-162-213-31	CERAMIC	39PF	5% 50V	D206	8-719-987-63	DIODE	1N4148M	
C602	1-162-213-31	CERAMIC	39PF	5% 50V	D207	8-719-109-85	DIODE	RD5.1ES-B2	
C603	1-106-359-00	MYLAR	4700PF	5% 200V	D208	8-719-934-31	DIODE	HZS36-3L	
C604	1-130-472-00	MYLAR	0.0012uF	5% 50V	D209	8-719-110-03	DIODE	RD7.5ES-B2	
C605	1-136-165-00	FILM	0.1uF	5% 50V	D210	8-719-987-63	DIODE	1N4148M	
C606	1-130-467-00	MYLAR	470PF	5% 50V	D211	8-719-110-08	DIODE	RD8.2ES-B2	
C607	1-126-024-11	ELECT	220uF	20% 16V	D601	8-719-987-63	DIODE	1N4148M	
C621	1-162-213-31	CERAMIC	39PF	5% 50V	D621	8-719-987-63	DIODE	1N4148M	
C622	1-162-213-31	CERAMIC	39PF	5% 50V	D651	8-719-987-63	DIODE	1N4148M	
C623	1-106-359-00	MYLAR	4700PF	5% 200V					
C624	1-130-472-00	MYLAR	0.0012uF	5% 50V					
C625	1-136-165-00	FILM	0.1uF	5% 50V					

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< IC >							
IC201	8-759-630-21	IC M5290P-16		Q651	8-729-900-61	TRANSISTOR	DTA114ES
IC202	8-759-945-58	IC RC4558P		Q652	8-729-900-80	TRANSISTOR	DTC114ES
IC301	8-759-062-61	IC M38063M6-168FP		Q901	8-729-900-63	TRANSISTOR	DTA124ES
IC302	8-759-512-81	IC LH5160N-10L		Q902	8-729-900-63	TRANSISTOR	DTA124ES
IC303	8-759-962-08	IC BA6208		Q903	8-729-900-63	TRANSISTOR	DTA124ES
IC331	8-752-337-26	IC CXD2500AQ		Q911	8-729-201-05	TRANSISTOR	2SC2878-B
IC332	8-759-232-07	IC TC74HCD4AP		Q912	8-729-201-05	TRANSISTOR	2SC2878-B
IC341	8-752-342-65	IC CXD2560M		Q913	8-729-201-05	TRANSISTOR	2SC2878-B
IC342	8-752-349-02	IC CXD2561AM-1		Q931	8-729-201-05	TRANSISTOR	2SC2878-B
IC391	8-749-921-20	IC T-1550		Q932	8-729-201-05	TRANSISTOR	2SC2878-B
IC601	8-759-982-03	IC RC5532D-D		Q933	8-729-201-05	TRANSISTOR	2SC2878-B
IC602	8-759-982-03	IC RC5532D-D		< RESISTOR >			
IC661	8-759-981-85	IC RC4556D		R201	1-249-425-11	CARBON	4.7K 5% 1/4W
IC901	8-752-341-99	IC CXD2701Q		R202	1-249-425-11	CARBON	4.7K 5% 1/4W
IC902	8-759-508-41	IC MS51464-10NS		R203	1-249-424-11	CARBON	3.9K 5% 1/4W
IC903	8-759-982-03	IC RC5532D-D		△R204	1-212-869-00	FUSIBLE	33 5% 1/4W F
< JACK >				R205	1-249-435-11	CARBON	33K 5% 1/4W
* J601	1-569-443-11	JACK, PIN 4P (LINE OUT FIXED/VARIABLE)		R206	1-249-413-11	CARBON	470 5% 1/4W
< COIL >				R207	1-249-429-11	CARBON	10K 5% 1/4W
L331	1-408-403-00	INDUCTOR	3.3uH	R208	1-249-425-11	CARBON	4.7K 5% 1/4W
L332	1-408-403-00	INDUCTOR	3.3uH	R210	1-249-438-11	CARBON	56K 5% 1/4W
L341	1-408-403-00	INDUCTOR	3.3uH	R211	1-249-429-11	CARBON	10K 5% 1/4W
L342	1-408-403-00	INDUCTOR	3.3uH (US)	R213	1-249-417-11	CARBON	1K 5% 1/4W
< TRANSISTOR >				R214	1-249-417-11	CARBON	1K 5% 1/4W
Q202	8-729-900-80	TRANSISTOR	DTC114ES	R215	1-249-429-11	CARBON	10K 5% 1/4W
Q203	8-729-900-61	TRANSISTOR	DTA114ES	R216	1-249-410-11	CARBON	270 5% 1/4W
Q204	8-729-140-96	TRANSISTOR	2SD774-34	R217	1-249-429-11	CARBON	10K 5% 1/4W
Q205	8-729-900-80	TRANSISTOR	DTC114ES	R301	1-249-417-11	CARBON	1K 5% 1/4W
Q206	8-729-821-73	TRANSISTOR	2SB1274SA-RS	R302	1-249-417-11	CARBON	1K 5% 1/4W
Q207	8-729-140-96	TRANSISTOR	2SD774-34	R303	1-249-417-11	CARBON	1K 5% 1/4W
Q208	8-729-119-78	TRANSISTOR	2SC2785-HFE	R304	1-249-433-11	CARBON	22K 5% 1/4W
Q209	8-729-119-78	TRANSISTOR	2SC2785-HFE	R305	1-249-433-11	CARBON	22K 5% 1/4W
Q210	8-729-821-73	TRANSISTOR	2SB1274SA-RS	R306	1-249-425-11	CARBON	4.7K 5% 1/4W
Q215	8-729-281-52	TRANSISTOR	2SC1815-Y	R307	1-249-425-11	CARBON	4.7K 5% 1/4W
Q301	8-729-900-80	TRANSISTOR	DTC114ES	R308	1-249-429-11	CARBON	10K 5% 1/4W
Q391	8-729-119-76	TRANSISTOR	2SA1175-HFE	R309	1-249-429-11	CARBON	10K 5% 1/4W
Q601	8-729-141-30	TRANSISTOR	2SC3623A-LK	R310	1-249-429-11	CARBON	10K 5% 1/4W
Q602	8-729-141-30	TRANSISTOR	2SC3623A-LK	R311	1-249-429-11	CARBON	10K 5% 1/4W
Q603	8-729-201-05	TRANSISTOR	2SC2878-B	R312	1-249-429-11	CARBON	10K 5% 1/4W
Q604	8-729-900-61	TRANSISTOR	DTA114ES	R313	1-249-429-11	CARBON	10K 5% 1/4W
Q621	8-729-141-30	TRANSISTOR	2SC3623A-LK	R314	1-249-429-11	CARBON	10K 5% 1/4W
Q622	8-729-141-30	TRANSISTOR	2SC3623A-LK	R315	1-249-429-11	CARBON	10K 5% 1/4W
Q623	8-729-201-05	TRANSISTOR	2SC2878-B	R316	1-249-429-11	CARBON	10K 5% 1/4W
Q624	8-729-900-61	TRANSISTOR	DTA114ES	R317	1-249-429-11	CARBON	10K 5% 1/4W
				R318	1-249-429-11	CARBON	10K 5% 1/4W
				R319	1-247-903-00	CARBON	1M 5% 1/4W
				R320	1-249-417-11	CARBON	1K 5% 1/4W

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

## MAIN

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
R321	1-249-417-11	CARBON	1K	5%	1/4W	R601	1-215-451-00	METAL	18K	1%	1/6W
R322	1-249-417-11	CARBON	1K	5%	1/4W	R602	1-215-451-00	METAL	18K	1%	1/6W
R323	1-249-417-11	CARBON	1K	5%	1/4W	R603	1-215-463-00	METAL	56K	1%	1/6W
R324	1-249-417-11	CARBON	1K	5%	1/4W	R604	1-215-463-00	METAL	56K	1%	1/6W
R325	1-249-417-11	CARBON	1K	5%	1/4W	R605	1-249-419-11	CARBON	1.5K	5%	1/4W
R326	1-249-429-11	CARBON	10K	5%	1/4W	R606	1-249-419-11	CARBON	1.5K	5%	1/4W
R327	1-249-441-11	CARBON	100K	5%	1/4W	R607	1-249-409-11	CARBON	220	5%	1/4W
R328	1-249-423-11	CARBON	3.3K	5%	1/4W	R608	1-249-409-11	CARBON	220	5%	1/4W
R329	1-249-423-11	CARBON	3.3K	5%	1/4W	R609	1-249-393-11	CARBON	10	5%	1/4W
R330	1-249-429-11	CARBON	10K	5%	1/4W	R610	1-249-425-11	CARBON	4.7K	5%	1/4W
R331	1-247-887-00	CARBON	220K	5%	1/4W	R611	1-249-425-11	CARBON	4.7K	5%	1/4W
R332	1-249-417-11	CARBON	1K	5%	1/4W	R612	1-249-436-11	CARBON	39K	5%	1/4W
R333	1-249-417-11	CARBON	1K	5%	1/4W	R613	1-249-428-11	CARBON	8.2K	5%	1/4W
R334	1-249-425-11	CARBON	4.7K	5%	1/4W	R615	1-249-411-11	CARBON	330	5%	1/4W
R335	1-249-425-11	CARBON	4.7K	5%	1/4W	R621	1-215-451-00	METAL	18K	1%	1/6W
R336	1-249-425-11	CARBON	4.7K	5%	1/4W	R622	1-215-451-00	METAL	18K	1%	1/6W
R337	1-249-429-11	CARBON	10K	5%	1/4W	R623	1-215-463-00	METAL	56K	1%	1/6W
R338	1-249-411-11	CARBON	330	5%	1/4W	R624	1-215-463-00	METAL	56K	1%	1/6W
R339	1-247-903-00	CARBON	1M	5%	1/4W	R625	1-249-419-11	CARBON	1.5K	5%	1/4W
R340	1-249-409-11	CARBON	220	5%	1/4W	R626	1-249-419-11	CARBON	1.5K	5%	1/4W
R341	1-249-417-11	CARBON	1K	5%	1/4W	R627	1-249-409-11	CARBON	220	5%	1/4W
R342	1-249-417-11	CARBON	1K	5%	1/4W	R628	1-249-409-11	CARBON	220	5%	1/4W
R343	1-249-417-11	CARBON	1K	5%	1/4W	R629	1-249-393-11	CARBON	10	5%	1/4W
R344	1-249-417-11	CARBON	1K	5%	1/4W	R630	1-249-425-11	CARBON	4.7K	5%	1/4W
R345	1-249-417-11	CARBON	1K	5%	1/4W	R631	1-249-425-11	CARBON	4.7K	5%	1/4W
R346	1-249-416-11	CARBON	820	5%	1/4W	R632	1-249-436-11	CARBON	39K	5%	1/4W
R347	1-249-417-11	CARBON	1K	5%	1/4W	R633	1-249-428-11	CARBON	8.2K	5%	1/4W
R348	1-249-405-11	CARBON	100	5%	1/4W	R635	1-249-411-11	CARBON	330	5%	1/4W
R349	1-249-401-11	CARBON	47	5%	1/4W (US)	R651	1-249-441-11	CARBON	100K	5%	1/4W
R351	1-215-459-00	METAL	39K	1%	1/6W	R652	1-249-429-11	CARBON	10K	5%	1/4W
R352	1-215-459-00	METAL	39K	1%	1/6W	R662	1-249-414-11	CARBON	560	5%	1/4W
R353	1-215-459-00	METAL	39K	1%	1/6W	R663	1-249-435-11	CARBON	33K	5%	1/4W
R354	1-215-459-00	METAL	39K	1%	1/6W	R664	1-249-435-11	CARBON	33K	5%	1/4W
R355	1-215-459-00	METAL	39K	1%	1/6W	R665	1-249-425-11	CARBON	4.7K	5%	1/4W
R356	1-215-459-00	METAL	39K	1%	1/6W	R666	1-249-435-11	CARBON	33K	5%	1/4W
R357	1-215-459-00	METAL	39K	1%	1/6W	R667	1-249-402-11	CARBON	56	5%	1/4W
R358	1-215-459-00	METAL	39K	1%	1/6W	R672	1-249-414-11	CARBON	560	5%	1/4W
R359	1-247-903-00	CARBON	1M	5%	1/4W	R673	1-249-435-11	CARBON	33K	5%	1/4W
R360	1-249-416-11	CARBON	820	5%	1/4W	R674	1-249-435-11	CARBON	33K	5%	1/4W
R361	1-249-429-11	CARBON	10K	5%	1/4W	R675	1-249-425-11	CARBON	4.7K	5%	1/4W
R362	1-249-429-11	CARBON	10K	5%	1/4W	R676	1-249-435-11	CARBON	33K	5%	1/4W
R363	1-249-429-11	CARBON	10K	5%	1/4W	R677	1-249-402-11	CARBON	56	5%	1/4W
R364	1-249-429-11	CARBON	10K	5%	1/4W	R901	1-249-417-11	CARBON	1K	5%	1/4W
R371	1-249-433-11	CARBON	22K	5%	1/4W	R902	1-249-417-11	CARBON	1K	5%	1/4W
R372	1-249-433-11	CARBON	22K	5%	1/4W	R903	1-249-417-11	CARBON	1K	5%	1/4W
R391	1-249-411-11	CARBON	330	5%	1/4W	R904	1-249-441-11	CARBON	100K	5%	1/4W
R392	1-249-405-11	CARBON	100	5%	1/4W	R905	1-249-441-11	CARBON	100K	5%	1/4W
R393	1-249-406-11	CARBON	120	5%	1/4W	R906	1-249-441-11	CARBON	100K	5%	1/4W
R394	1-249-435-11	CARBON	33K	5%	1/4W	R908	1-249-405-11	CARBON	100	5%	1/4W

**MAIN POWER TRANSFORMER REMOTE CONTROL VOL**

Ref. No.	Part No.	Description	Remark
R909	1-249-405-11	CARBON	100 5% 1/4W
R911	1-249-425-11	CARBON	4.7K 5% 1/4W
R912	1-249-425-11	CARBON	4.7K 5% 1/4W
R913	1-249-425-11	CARBON	4.7K 5% 1/4W
R914	1-249-421-11	CARBON	2.2K 5% 1/4W
R915	1-247-836-11	CARBON	1.6K 5% 1/4W
R916	1-247-832-11	CARBON	1.1K 5% 1/4W
R917	1-249-422-11	CARBON	2.7K 5% 1/4W
R918	1-247-828-11	CARBON	750 5% 1/4W
R919	1-249-410-11	CARBON	270 5% 1/4W
R920	1-249-441-11	CARBON	100K 5% 1/4W
R921	1-249-419-11	CARBON	1.5K 5% 1/4W
R923	1-247-891-00	CARBON	330K 5% 1/4W
R931	1-249-425-11	CARBON	4.7K 5% 1/4W
R932	1-249-425-11	CARBON	4.7K 5% 1/4W
R933	1-249-425-11	CARBON	4.7K 5% 1/4W
R934	1-249-421-11	CARBON	2.2K 5% 1/4W
R935	1-247-836-11	CARBON	1.6K 5% 1/4W
R936	1-247-832-11	CARBON	1.1K 5% 1/4W
R937	1-249-422-11	CARBON	2.7K 5% 1/4W
R938	1-247-828-11	CARBON	750 5% 1/4W
R939	1-249-410-11	CARBON	270 5% 1/4W
R940	1-249-441-11	CARBON	100K 5% 1/4W
R941	1-249-419-11	CARBON	1.5K 5% 1/4W
R943	1-247-891-00	CARBON	330K 5% 1/4W
R951	1-249-417-11	CARBON	1K 5% 1/4W
R952	1-249-417-11	CARBON	1K 5% 1/4W
R953	1-249-417-11	CARBON	1K 5% 1/4W

< CRYSTAL >

X351 1-579-314-11 VIBRATOR, CRYSTAL (22.5MHz)  
 X355 1-579-233-11 VIBRATOR, CERAMIC (5MHz)

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\* 1-641-571-11 POWER TRANSFORMER BOARD  
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< CAPACITOR >

C701	1-164-159-11	CERAMIC	0.1uF 50V
C702	1-164-159-11	CERAMIC	0.1uF 50V (US)
C703	1-164-159-11	CERAMIC	0.1uF 50V (US)
C704	1-164-159-11	CERAMIC	0.1uF 50V (US)

< CONNECTOR >

\* CN701 1-580-230-11 PIN, CONNECTOR (PC BOARD) 3P  
 \* CN702 1-564-509-11 PLUG, CONNECTOR 6P

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Ref. No.	Part No.	Description	Remark
*	1-641-568-11	REMOTE CONTROL VOL BOARD *****	
		< CAPACITOR >	
C501	1-164-159-11	CERAMIC 0.1uF	50V
		< CONNECTOR >	
* CN501	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
* CN502	1-568-955-11	PIN, CONNECTOR 6P	
		< VARIABLE RESISTOR >	
RV501	1-238-776-11	RES, VAR, CARBON 10KX3 (LINE OUT PHONE LEVEL)	

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MISCELLANEOUS

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17	1-690-438-11	WIRE, FLAT TYPE (19 CORE)	
△58	1-575-651-21	CORD, POWER (AEP)	
△58	1-590-836-11	CORD, POWER (US)	
63	1-575-002-11	WIRE, FLAT TYPE (22 CORE)	
* 311	1-452-538-11	MAGNET	
△355	8-848-144-11	PICK-UP, OPTICAL KSS-240A	
358	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M201	1-541-632-11	MOTOR, DC (LOADING)	
△T701	1-449-921-11	TRANSFORMER, POWER (US)	
△T701	1-449-922-11	TRANSFORMER, POWER (AEP)	

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ACCESSORIES & PACKING MATERIALS

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1-465-873-11	REMOTE COMMANDER (RM-D997)
1-558-271-11	CORD, CONNECTION
3-707-584-01	COVER, BATTERY
3-754-170-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP)
3-754-170-21	MANUAL, INSTRUCTION (ENGLISH) (US)
3-754-170-41	MANUAL, INSTRUCTION (GERMAN, ITALIAN, DUTCH, SWEDISH) (AEP)
* 4-934-088-01	CUSHION
* 4-941-548-01	LABEL, CLASS 1 (AEP)
* 4-948-310-11	INDIVIDUAL CARTON

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

Ref. No.	Part No.	Description	Remark
		HARDWARE LIST	
		*****	
#1	7-621-775-10	SCREW +B 2.6X4	
#2	7-621-255-15	SCREW +P 2X3	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#5	7-682-548-04	SCREW +BVTT 3X8 (S)	
#6	7-682-548-09	SCREW +BVTT 3X8 (S)	