CDP-415

SERVICE MANUAL

AEP Model

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM25C-5BD10B
Base Unit Type	BU-5BD10B
Optical Pick-up Type	KSS-240A

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser
Wavelength	780 – 790 nm
Frequency response	2 Hz to 20 kHz ±0.5 dB
Signal-to-noise ratio	More than 102 dB
Dynamic range	More than 98 dB
Harmonic distortion	Less than 0.0035%
Channel separation	More than 100 dB

Outputs

LINE OUT (FIXED) (phono jacks)
Output level 2 V (at 50 kilohms)
Load impedance over 10 kilohms
LINE OUT (VARIABLE) (phono jacks)
Output level max. 2 V (at 50 kilohms)
Load impedance over 50 kilohms
DIGITAL OUT (OPTICAL) (optical output connector)
Wavelength 660 nm
Output level –18 dBm
PHONES (stereo phone jack)
Output level max. 10 mW
Load impedance 32 ohms

General

Power requirements	220 V – 230 V AC, 50/60 Hz
Power consumption	12W
Dimensions (approx., including projections)	430 x 110 x 295 mm (w/h/d) ($17 \times 4\,^3/_8 \times 11\,^5/_8$ inches)
Mass (approx.)	3.7 kg (8 lb 3 oz)

Remote commander

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions (approx., including projections)	44 x 21 x 185 mm (w/h/d) ($1\,^3/_4 \times\,^7/_8 \times 7\,^3/_8$ inches)
Mass (approx.)	100 g (4 oz)

Supplied accessories

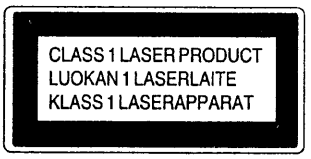
Audio connecting cord	(1) (2 phono plugs – 2 phono plugs)
Remote commander	(1)
Sony SUM-3 (NS) batteries	(2)

Design and specifications are subject to change without notice.

COMPACT DISC PLAYER

SONY®

The 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.

The following caution label is located inside of the unit.

CAUTION	: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL	: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅUDS ÆTTELSE FOR STRÅNING.
VAROI	: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING	: LASERSTRALING NAR DENNA DEL AR OPPNAD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL	: USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGA EKSPONERING FOR STRÅLEN.

TABLE OF CONTENTS

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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

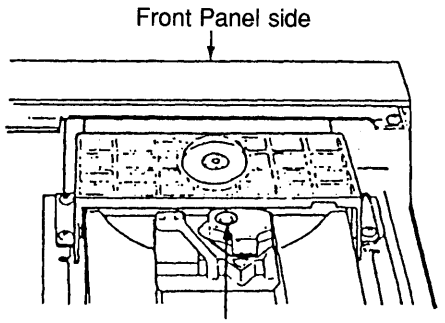
The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repain 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 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.

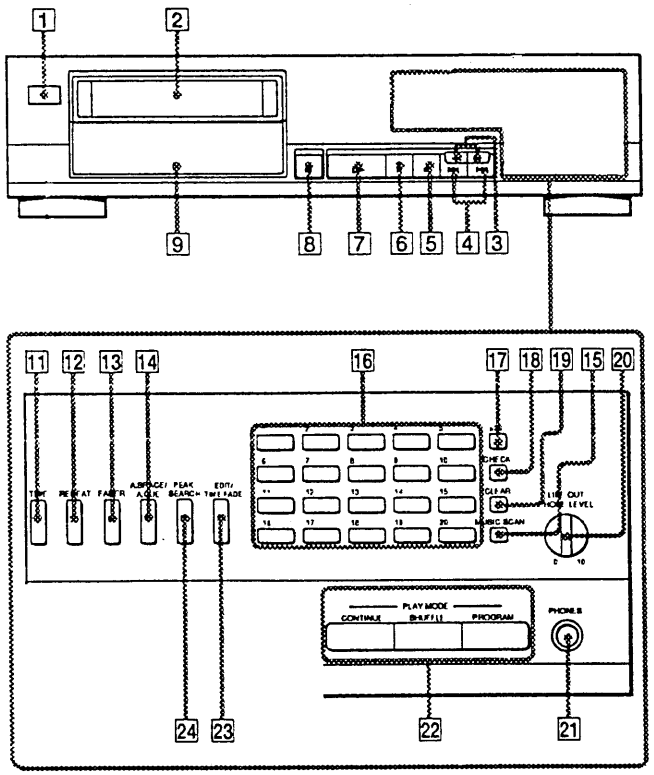


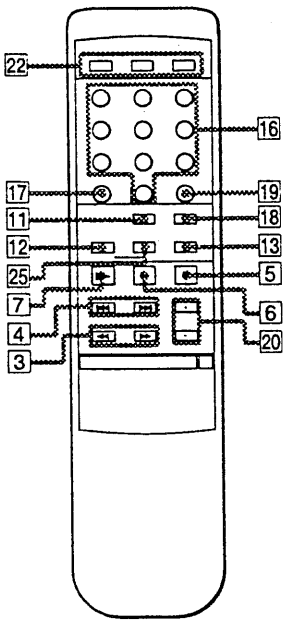
❶ Confirm that laser beam is spread.
❷ Up and down motion of the objective lens. (3 times)

How to open the DISC TRAY when POWER SWITCH turns off
See page 5 for SECTION 3 DISASSEMBLY.

SECTION 2
GENERAL

This section is extracted from instruction manual.





Identifying the Parts

Refer to the pages indicated in parentheses for details.

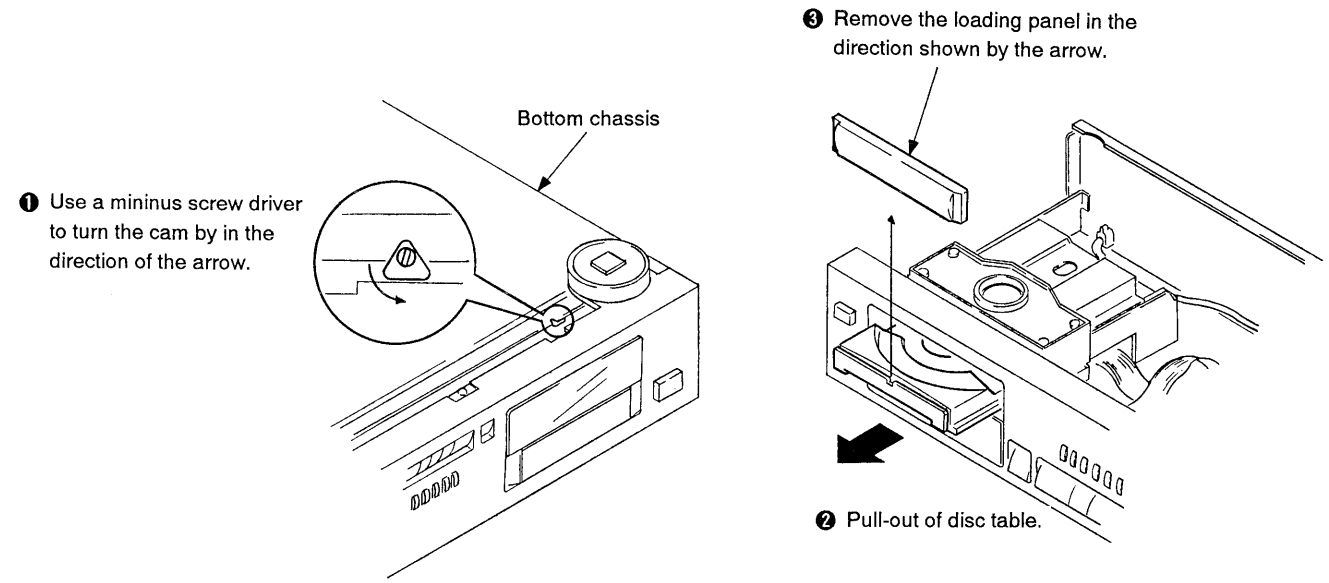
Front Panel/ Remote Commander

1 POWER switch (16)
2 Disc tray (16)
3 ◀◀/▶▶ (manual search) buttons (20)
4 I◁◁/▷▷I (AMS*) buttons (20, 34, 48)
5 ■ (stop) button (16)
6 II (pause) button (16)
7 ▷ (play) button (16)
8 ⏏ OPEN/CLOSE button (16)
9 Display (16)
11 TIME button (18)
12 REPEAT button (40)
(CLEAR REPEAT button on the remote commander)
13 FADER button (44)
14 A.SPACE/A.CUE button (22, 24)
15 MUSIC SCAN button (38)
16 Numeric buttons (20, 28, 32, 44, 46)
17 >20 (over 20) button (20)
(>10 (over 10) button on the remote commander)
18 CHECK (program check) button (36)
19 CLEAR (program clear) button (28, 30, 36)
20 LINE OUT/PHONE LEVEL control (12, 16)
(LINE OUT LEVEL +/– buttons on the remote commander)
21 PHONES jack (16)
22 Play mode buttons
CONTINUE button (26, 30)
SHUFFLE button (26, 28, 30)
PROGRAM button (32, 34)
23 EDIT/TIME FADE button (46, 52)
24 PEAK SEARCH button (54)
25 A ⟷ B button (42)

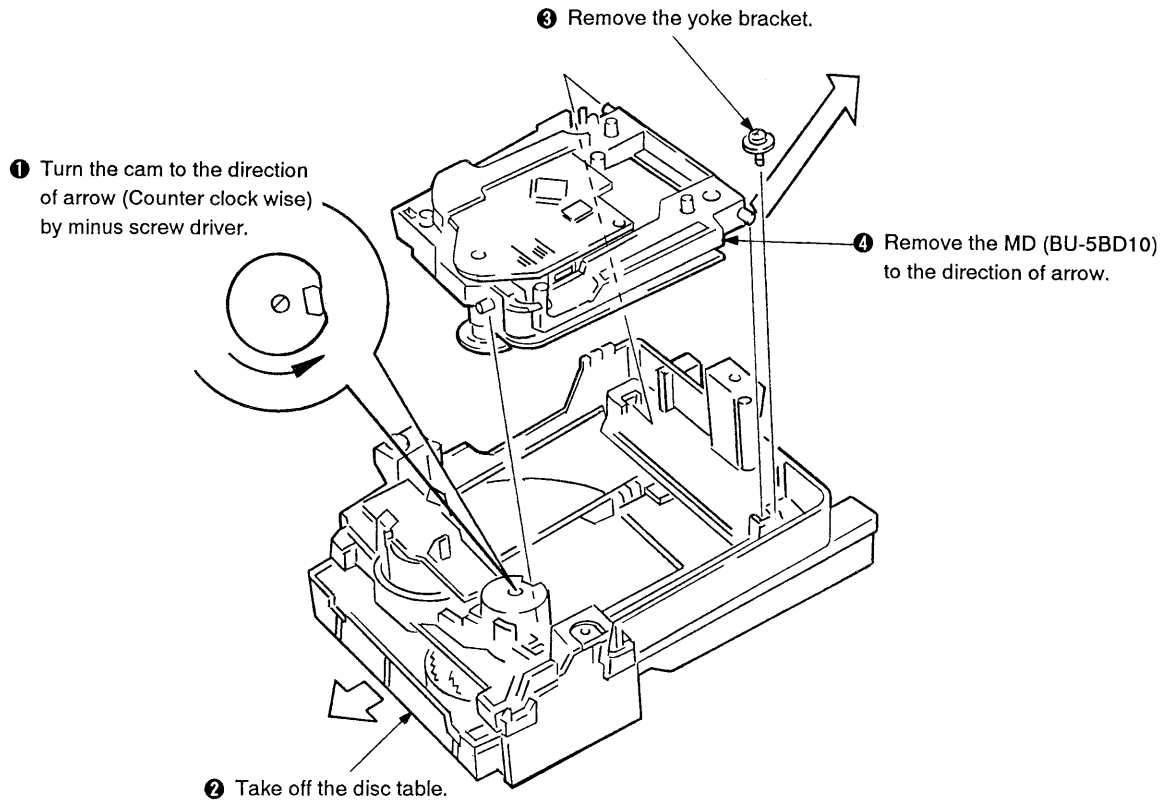
* AMS is the abbreviation of Automatic Music Sensor.

SECTION 3
DISASSEMBLY

3-1. REMOVAL OF LOADING PANEL



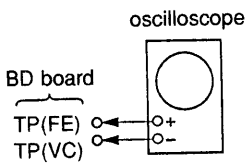
3-2. REMOVAL OF MD (BU-5BD10) BLOCK



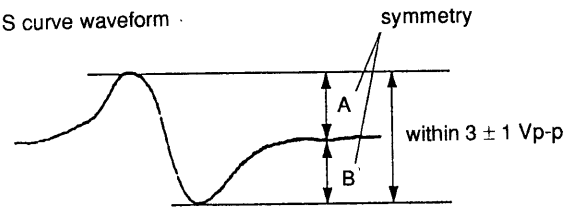
SECTION 4
ELECTRICAL BLOCK CHECKING

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 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal lever is low than specified value with the following checks.

S Curve Check



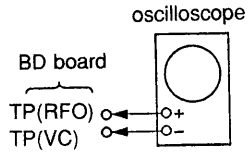
Procedure :
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving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



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

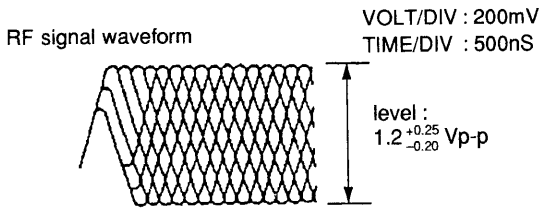
Note :
- Try to mesure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as loge as possible and light up the brightness to obtain best waveform.

RF Level Check

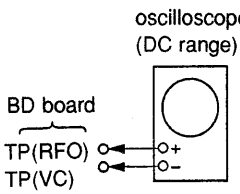


Procedure :
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

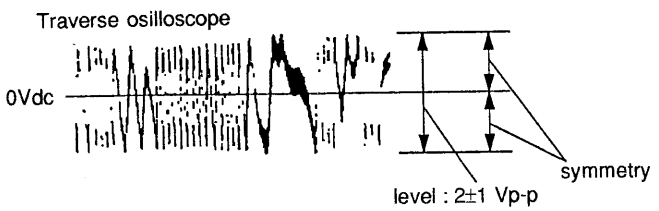
Note :
Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.



E-F Balance Check



Procedure :
1. Turned Power switch on.
2. Connect test point TP (ADJ) on MAIN board to ground and TP(TEI : IC101 ㉗ PIN) to TP (VC) with lead wire.
3. Connect oscilloscpe to test point TP (TEO) on BD board.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check.

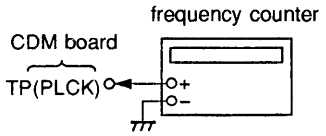


6. Remove the lead wire connected in step 1.

RF Free-run Frequency Check

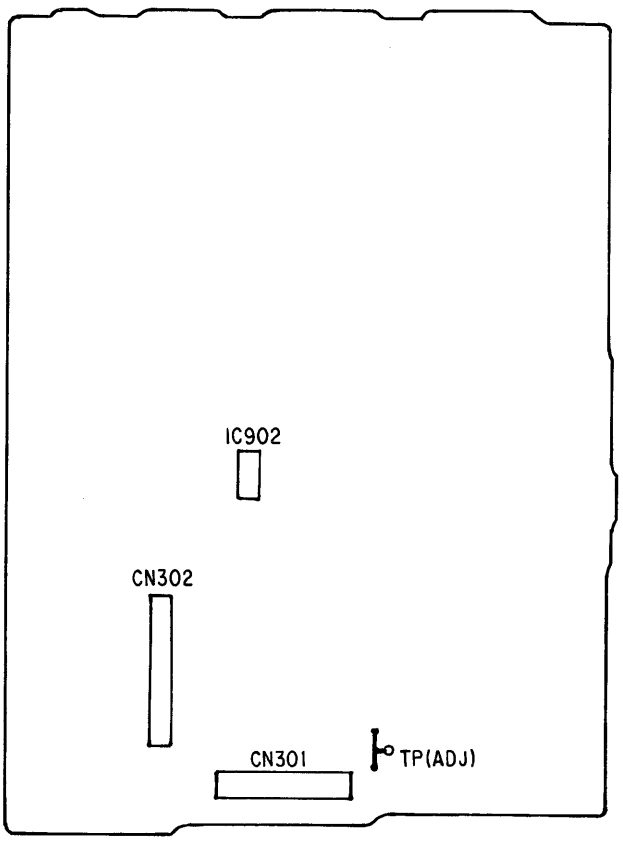
Procedure :

1. Connect frequency counter to test point (PLCK : IC101 ㊸ PIN) with lead wire.



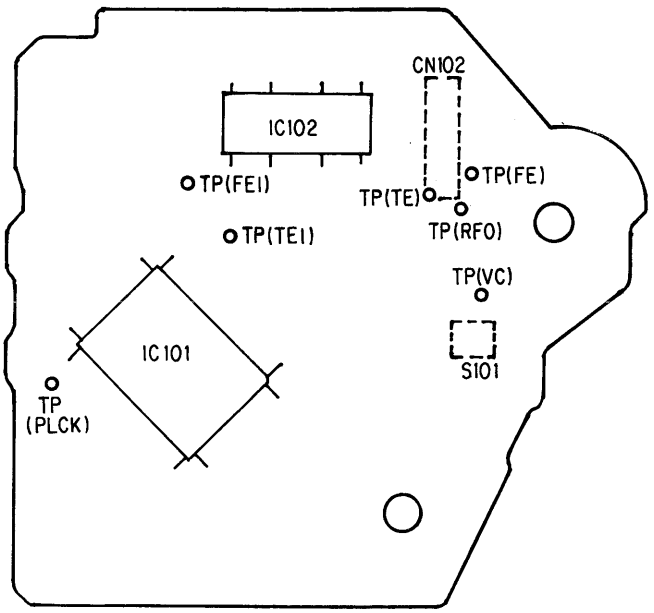
2. Turned Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

[MAIN BOARD] — Component Side —



Adjustment Location :

[BD BOARD] — Conductor Side —



SECTION 5
DIAGRAMS

5-1. IC PIN FUNCTIONS

• **IC101 (CXD2515Q)**

No.	Pin Name	I/O	Description
1	SRON	O	Sled drive output
2	SRDR	O	Sled drive output
3	SFON	O	Sled drive output
4	TFDR	O	Tracking drive output
5	TRON	O	Tracking drive output
6	TRDR	O	Tracking drive output
7	TFON	O	Tracking drive output
8	FFDR	O	Focus drive output
9	FRON	O	Focus drive output
10	FRDR	O	Focus drive output
11	FFON	O	Focus drive output
12	VCOO	O	VCO output for analog EFM PLL
13	VCOI	I	VCO output for analog EFM PLL
14	TEST	I	TEST pin connected normally to GND
15	DVss	—	Digital GND
16	TES2	I	TEST pin connected normally to GND
17	TES3	I	TEST pin connected normally to GND
18	PDO	O	Charge-pump output for analog EFM PLL
19	VPCO	O	Charge-pump output for variable pitch PLL
20	VCKI	I	Clock input from variable pitch external VCO
21	AVD2	—	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers
23	AVS2	—	Analog GND
24	ADII	I	Input pin for A/D converter
25	ADIO	O	Operational amplifier output pin
26	RFDC	I	RF signal input
27	TE	I	Tracking error signal input
28	SE	I	Sled error signal input
29	FE	I	Focus error signal input
30	VC	I	Center voltage input pin
31	FILO	O	Filter output for master PLL
32	FILI	I	Filter input for master PLL
33	PCO	O	Charge-pump output for master PLL
34	CLTV	I	Control voltage input for master VCO
35	AVS1	—	Analog GND
36	RFAC	I	EFM signal input
37	BIAS	I	Asymmetry circuit constant current input
38	ASYI	I	Asymmetry comparate voltage input
39	ASYO	O	EFM full swing output
40	AVD1	—	Analog power supply
41	DV_{DD}	—	Digital power supply
42	ASYE	I	Asymmetry circuit ON/OFF
43	PSSL	I	Audio data output mode selection input
44	WDCK	O	48-bit slot D/A interface. Word clock

No.	Pin Name	I/O	Description
45	LRCK	O	48-bit slot D/A interface. LR clock
46	DATA	O	DA 16 output when PSSL = 1. 48-bit slot serial data when PSSL = 0
47	BCLK	O	DA 15 output when PSSL = 1. 48-bit slot data when PSSL = 0
48	64DATA	O	DA 14 output when PSSL = 1. 64-bit slot data when PSSL = 0
49	64BCLK	O	DA 13 output when PSSL = 1. 64-bit slot data when PSSL = 0
50	64LRCK	O	DA 12 output when PSSL = 1. 64-bit slot data when PSSL = 0
51	GTOP	O	DA 11 output when PSSL = 1. GTOP output when PSSL = 0
52	XUGF	O	DA 10 output when PSSL = 1. XUGF output when PSSL = 0
53	XPLCK	O	DA 09 output when PSSL = 1. XPLCK output when PSSL = 0
54	GFS	O	DA 08 output when PSSL = 1. GFS output when PSSL = 0
55	PFCK	O	DA 07 output when PSSL = 1. RFCK output when PSSL = 0
56	C2PO	O	DA 06 output when PSSL = 1. C2PO output when PSSL = 0
57	XRAOF	O	DA 05 output when PSSL = 1. XRA0F output when PSSL = 0
58	MNT3	O	DA 04 output when PSSL = 1. MNT3 output when PSSL = 0
59	MNT2	O	DA 03 output when PSSL = 1. MNT2 output when PSSL = 0
60	MNT1	O	DA 02 output when PSSL = 1. MNT1 output when PSSL = 0
61	MNT0	O	DA 01 output when PSSL = 1. MNT0 output when PSSL = 0
62	XTAI	I	X'tal oscillator circuit input
63	XTAO	O	X'tal oscillator circuit output
64	XTSL	I	X'tal selection input pin
65	DVss	—	Digital GND
66	FSTI	I	2/3 divider output of pins 62,63
67	FSTO	O	2/3 divider output of pins 62,63
68	C4M	O	4.2336MHz output
69	C16M	O	16.9344MHz output
70	MD2	I	Digital-out ON/OFF control pin
71	DOUT	O	Digital-out output pin
72	EMPH	O	Playback disc output in emphasis mode
73	WFCK	O	WFCK output
74	SCOR	O	Sub-code sync output
75	SBSO	O	Sub-P through Sub-W serial output
76	EXCK	I	Clock input for SBS0 read-out
77	SUBQ	O	Sub-Q 80-bit output
78	SQCK	I	Clock input for SQS0 read-out
79	MUTE	I	Muting selection pin
80	SENS	O	SENS output
81	XRST	I	System reset
82	DIRC	I	Used in 1-track jump mode
83	SCLK	I	SENS serial data read-out clock
84	DFSW	I	DFCT selection pin
85	ATSK	I	Input pin for anti-shock
86	DATA	I	Serial data input, supplied from CPU
87	XLAT	I	Latch input, supplied from CPU
88	CLOK	I	Serial data transfer clock input, supplied from CPU

No.	Pin Name	I/O	Description
89	COUT	O	Numbers of track counted signal output
90	DV_{DD}	—	Digital power supply
91	MIRR	O	Mirror signal output
92	DFCT	O	Defect signal output
93	FOK	O	Focus OK output
94	FSW	O	Output to select spindle motor output filter
95	MON	O	Output to control ON/OFF of spindle motor
96	MDP	O	Output to control spindle motor servo
97	MDS	O	Output to control spindle motor servo
98	LOCK	O	GFS is sampled by 460Hz. H when GFS is H.
99	SSTP	I	Input signal to detect disc inner most track
100	SFDR	O	Sled drive output

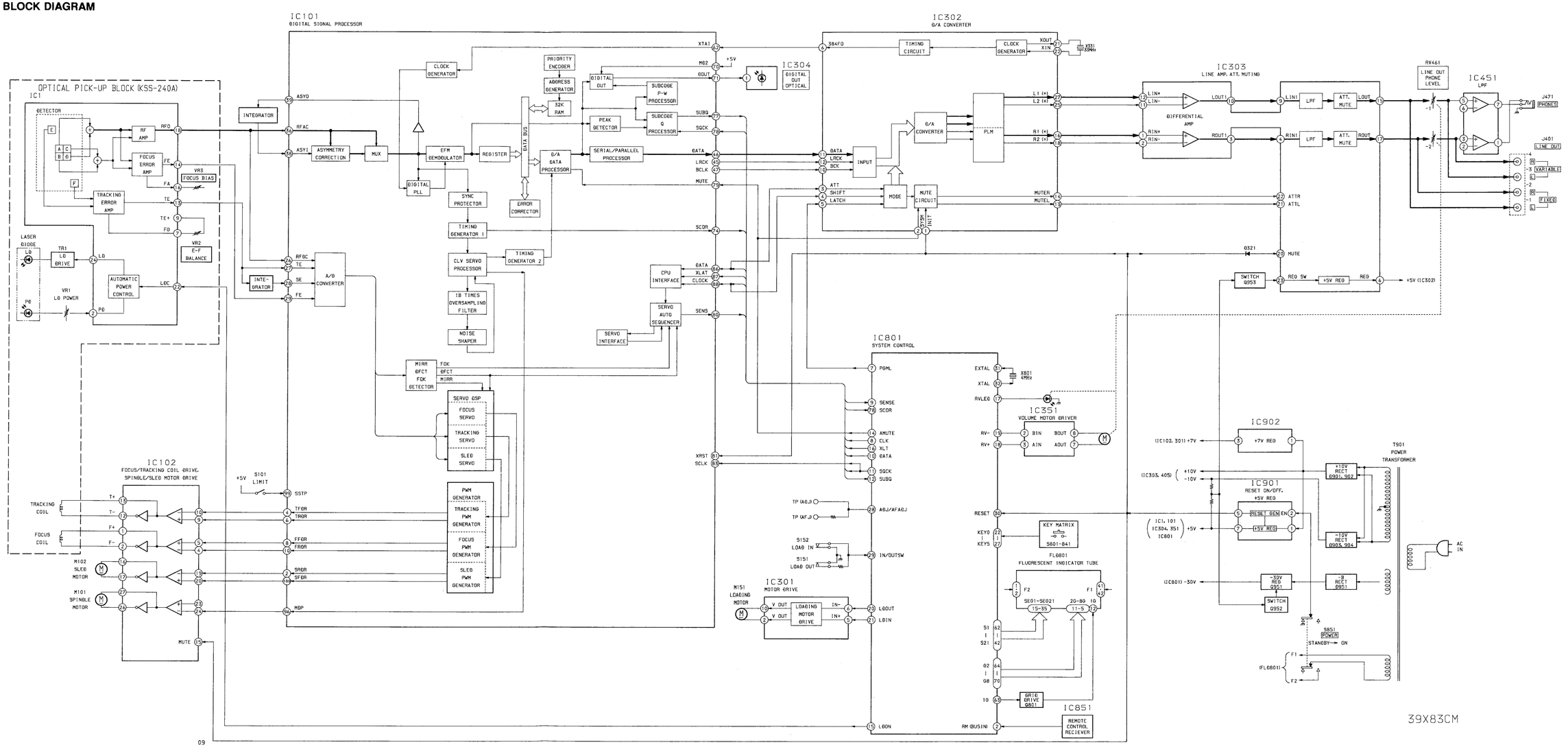
• IC302 (CXD2565M-1)

No.	Pin Name	I/O	Description
1	INIT	I	Re-synchronizing at rise-up edge of this signal
2	SYSM	I	System muting input
3	DATA	I	Attenuation data input
4	CLK	I	Shift clock input
5	PGML	I	Latch clock input
6	256fsO (D7) 384fsO (411/511)	O	256fs clock output (D7). 384fs clock output (411/511).
7	TEST1	I	Test pin. Fixed to "L" level during normal operation.
8	DVss	—	Digital GND
9	TEST2	I	Test pin. Fixed to "L" level during normal operation.
10	BCK	I	BCK input
11	DATA	I	Data input
12	LRCK	I	LRCK input
13	MUTEL	O	L-ch muting flag output
14	MUTER	O	R-ch muting flag output
15	$DV_{DD}1$	—	Digital power supply
16	R1 (+)	O	R-ch PLM output-1 (positive phase)
17	$AV_{DD}R$	—	L-ch analog power supply
18	R2 (+)	O	R-ch PLM output-2 (positive phase)
19	AVssR	—	L-ch analog GND
20	XV_{DD}	—	Master clock power supply
21	XOUT	O	X'tal oscillator output (512fs) (D7) / (768fs) (411/511).
22	XIN	I	X'tal oscillator input (512fs) (D7) / (768fs) (411/511).
23	XVss	—	Master clock GND
24	AVssL	—	L-ch analog GND
25	L2 (+)	O	L-ch PLM output-2 (positive phase)
26	$AV_{DD}L$	—	L-ch analog power supply
27	L1 (+)	O	L-ch PLM output-1 (positive phase)
28	$DV_{DD}2$	—	Digital power supply

• **IC801 (CXP82316-032Q)**

Pin No.	Pin Name	I/O	Function
1	TIMER	–	Connected to +5V.
2	RM (BUSIN)	I	Audio bus input.
3	+5V	–	Connected to +5V.
4	OPEN	–	Not used. (open)
5	OPEN	–	
6	(BUS-OUT)	–	
7	PRML	O	Latch signal output to digital filter (IC302).
8	CLK	O	Serial clock output.
9	SENSE	I	SENSE signal input.
10	DATA	O	Serial data output.
11	SQCK	O	Read out clock output for subcode Q data.
12	SUBQ	I	Subcode Q data input.
13	OPEN	–	Not used. (open)
14	AMUTE	O	Analog muting control signal output.
15	LDON	O	Optical pickup laser diode control output.
16	XLT	O	Serial data latch signal output.
17	RV LED	O	Remote commander volume LED.
18	RV+	O	Remote commander volume +.
19	RV–	O	Remote commander volume –.
20	LDOUT	O	Loading motor control signal output.
21	LDIN	O	
22 to 27	KEY0 to KEY5	I	Key input. (S801 to S841)
28	ADJ/AFADJ	–	ADJ, AFJ test pin.
29	IN/OUTSW	I	Loading IN/OUT switch input.
30	RST	I	Reset signal input.
31	EXTAL	I	Clock input. (4 MHz)
32	XTAL	O	Clock output. (4 MHz)
33	Vss	–	GND
34 to 41	OPEN	–	Not used. (open)
42 to 62	SEG1 to SEG21	O	FL segment output.
63 to 70	1G to 8G	O	FL grid output.
71	VFDP (–30V)	–	–30V pin for FL display tube.
72	VDD (+5V)	–	+5V pin.
73	——	–	
74	SEL1	–	Connected to +5 V.
75	IN PORT	–	
76	IN PORT	–	
77	IN PORT	–	
78	SCOR	I	Read out timing signal input for subcode Q data.
79	SEL2	–	Connected to +5 V.
80	SEL3	–	

5-2. BLOCK DIAGRAM



5-3. PRINTED WIRING BOARD

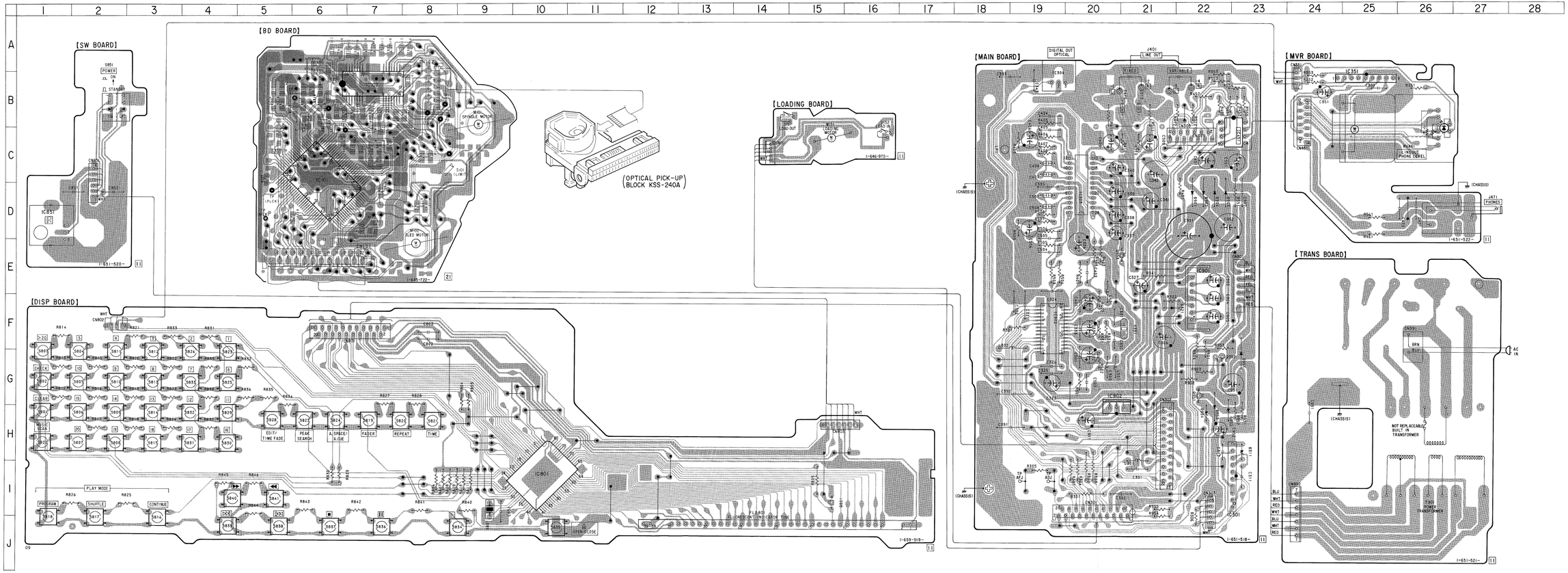
• See page 26 Semiconductor Lead Layouts.

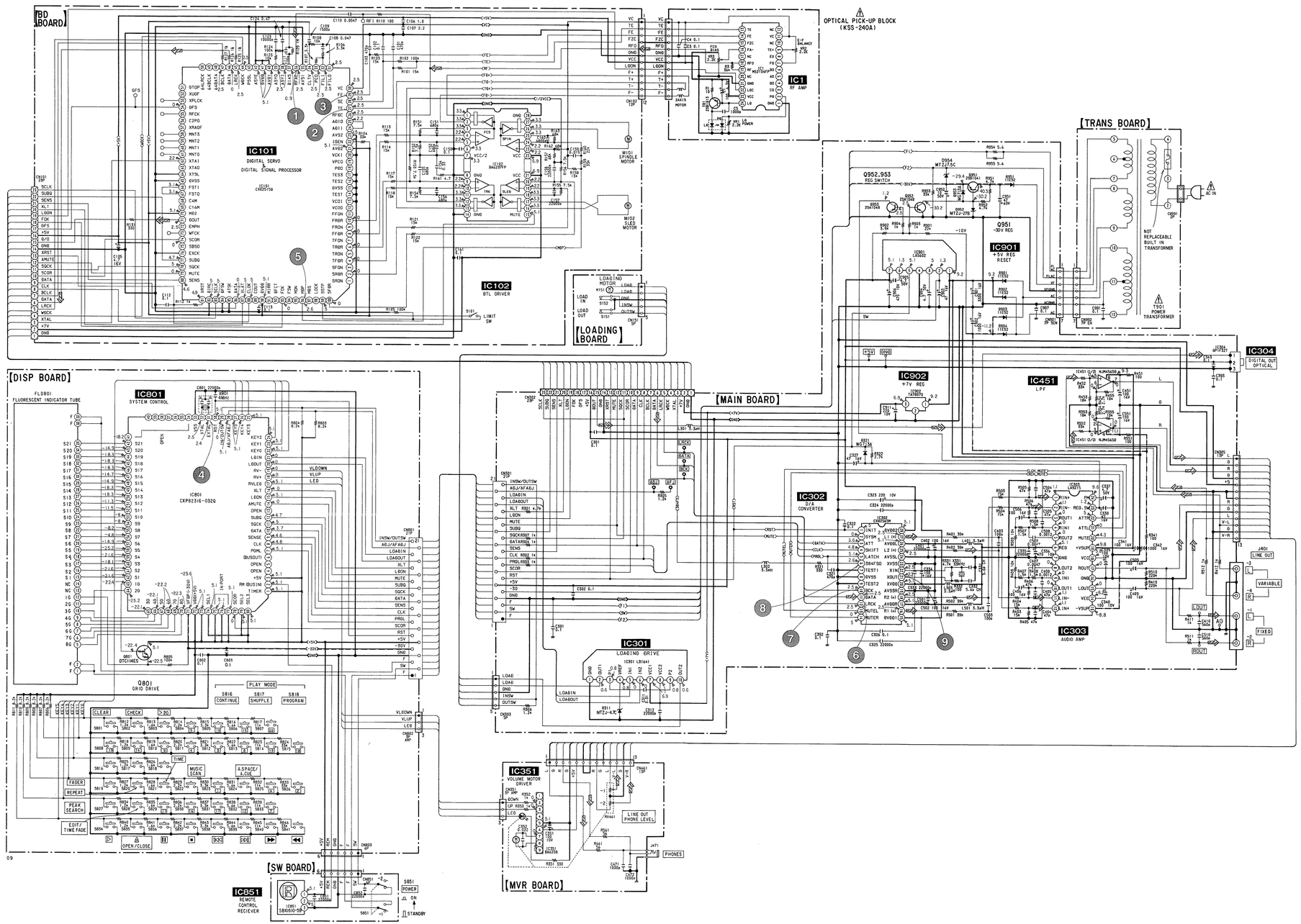
• **Semiconductor Location**

Ref. No.	Location
D311	H-23
D321	F-22
D901	D-22
D902	D-22
D903	D-22
D904	D-22
D951	G-23
D952	H-23
D953	H-22
D954	H-22
IC101	C-6
IC102	B-7
IC301	J-23
IC302	F-19
IC303	D-20
IC304	B-19
IC351	B-25
IC451	C-23
IC801	I-10
IC851	D-1
IC901	E-22
IC902	G-20
Q801	I-15
Q951	G-22
Q952	G-23
Q953	E-21

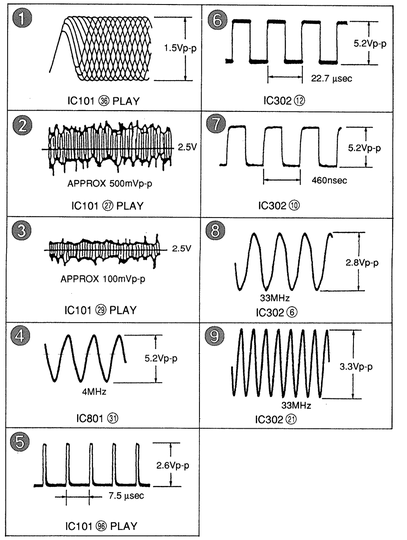
Note:

- ○—— : parts extracted from the components side.
- ● : Through hole.
- ○—○ : Denotes that Jumper wire works as Test Point.
- ▒▒▒ : Pattern from the side which enable seeing.
- ▒▒▒ : Pattern of the rear side.





- **WAVEFORMS**



Note:

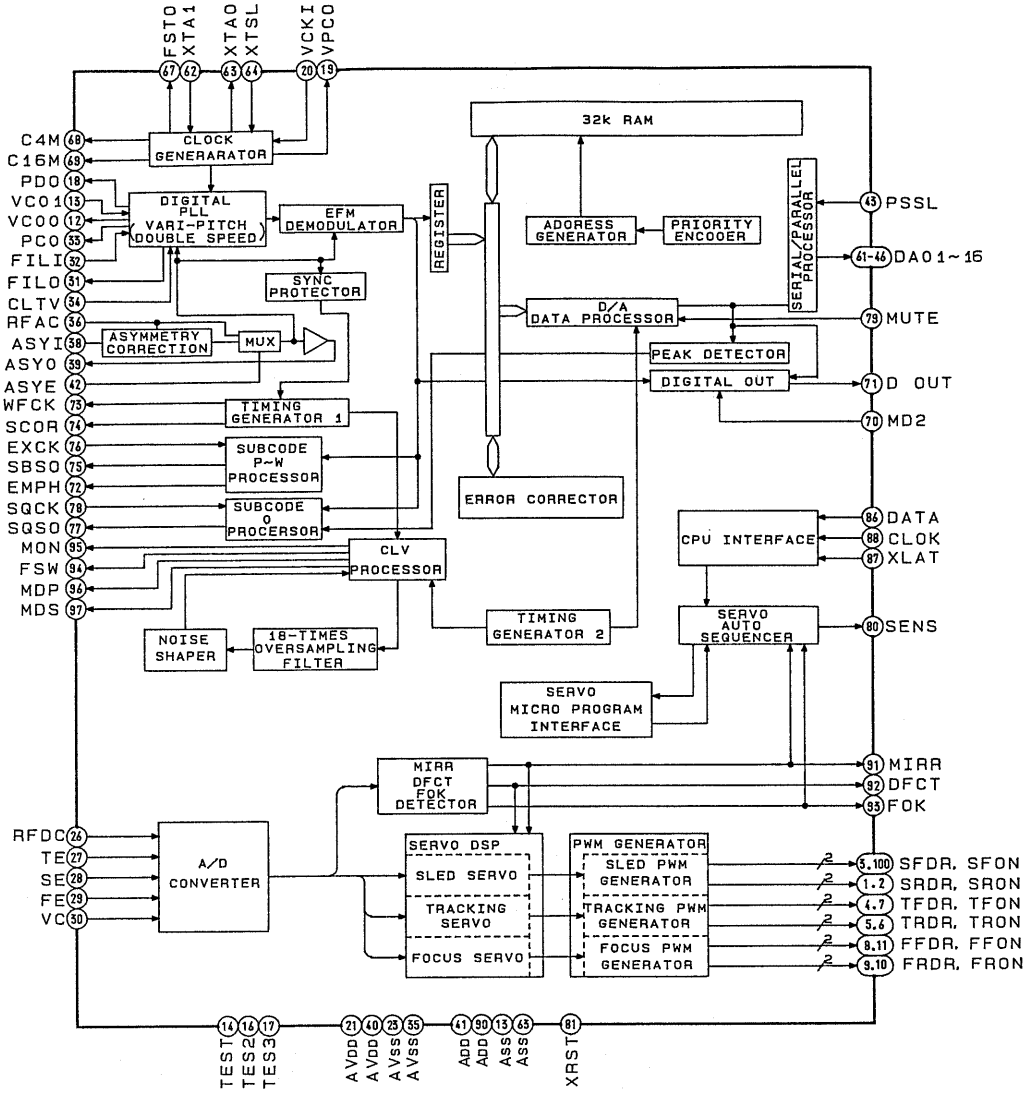
- All capacitors are in µF unless otherwise noted. pF:µµF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

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

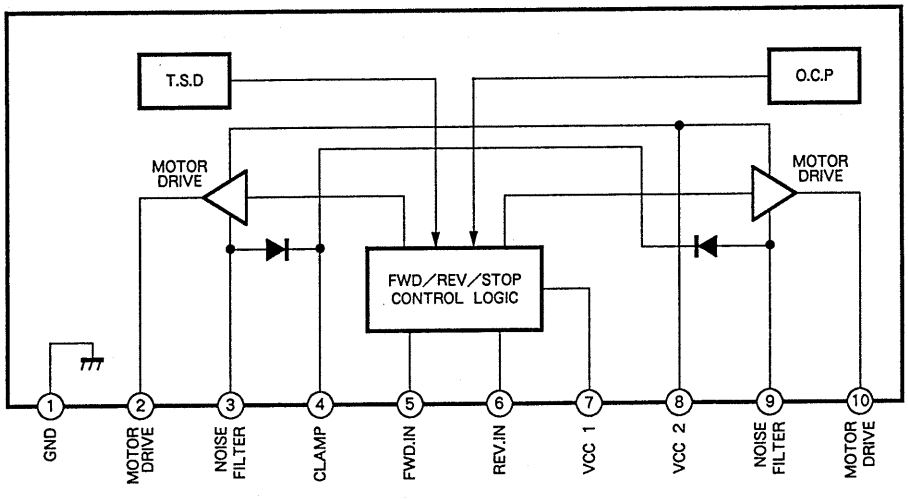
- ▬▬ : B+ Line
- ▬▬▬ : B– Line
- Voltage and waveforms are dc with respect to ground in play mode.
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD
  ⇨ : digital out

5-5. IC BLOCK DIAGRAMS

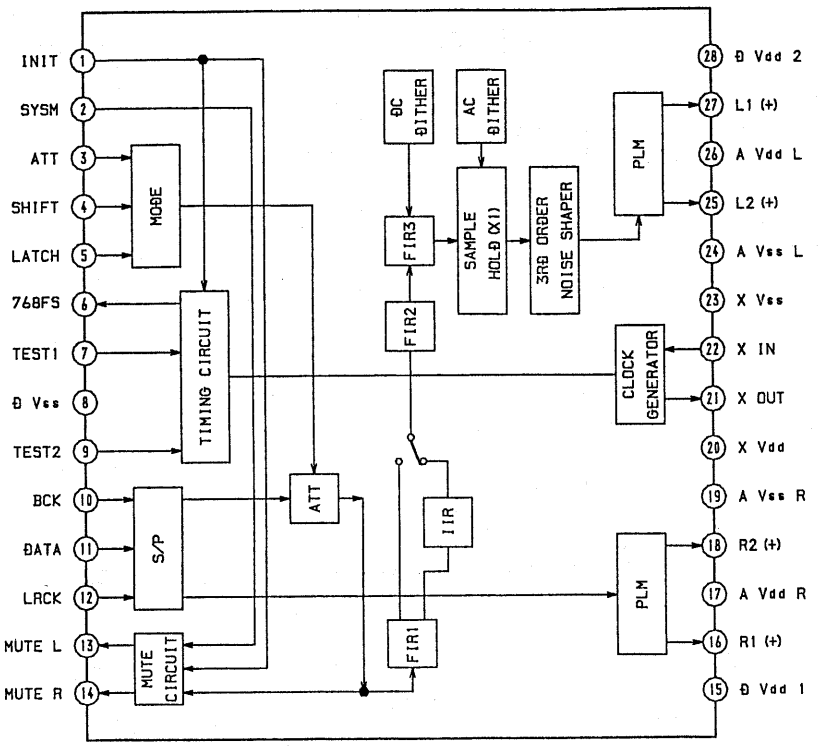
IC101 CXD2515Q



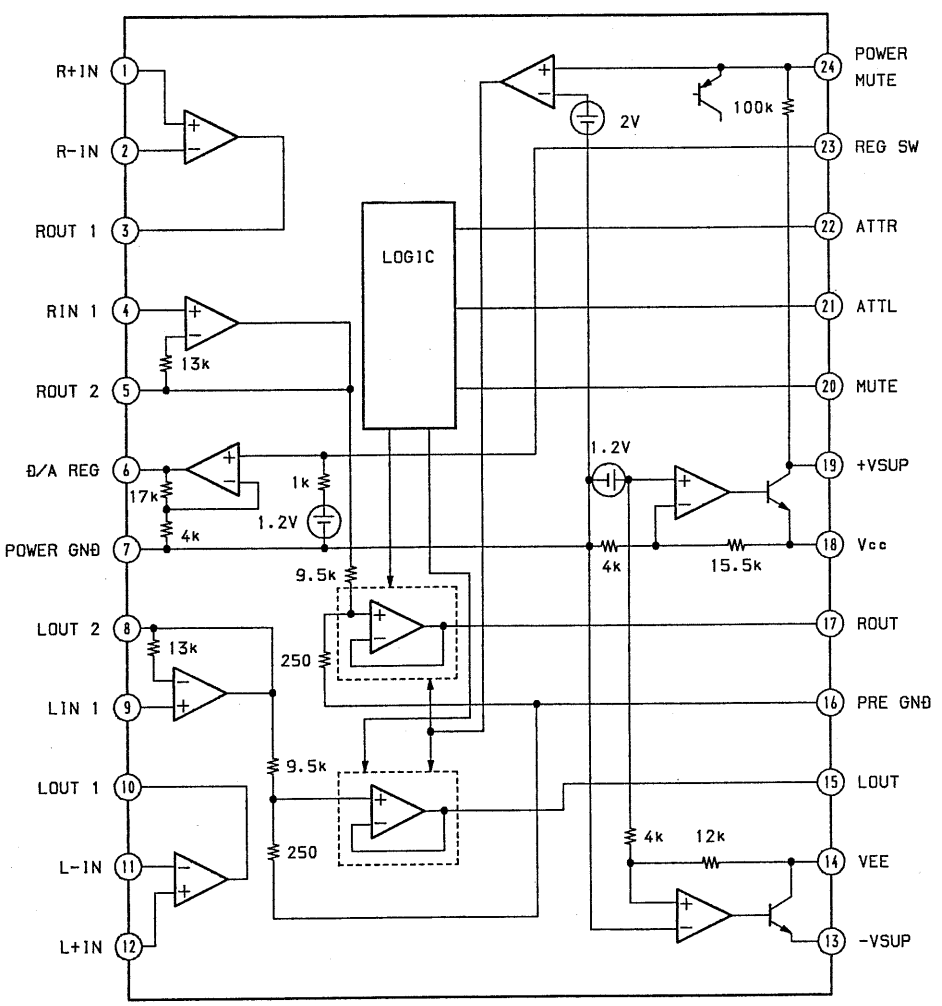
IC301 LB1641



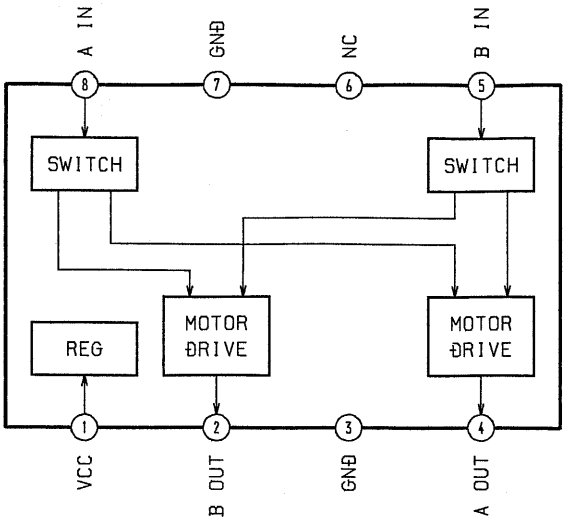
IC302 CXD2565M



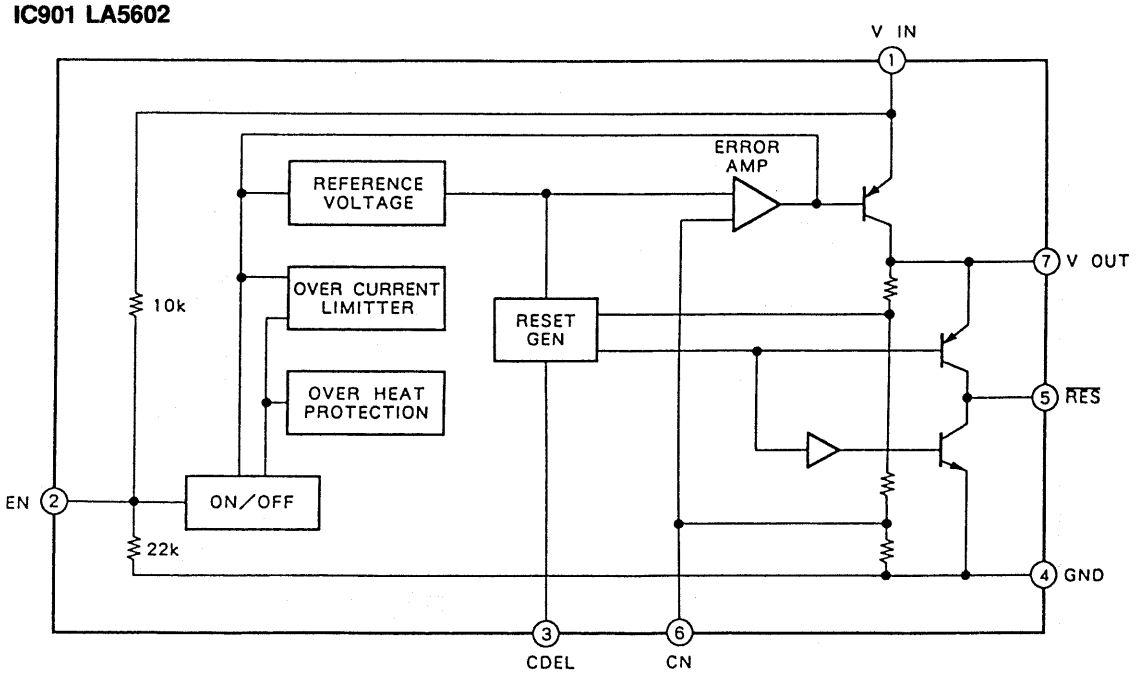
IC303 LA9215



IC351 BA6208

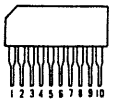


IC901 LA5602

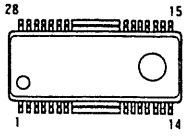


5-6. SEMICONDUCTOR LEAD LAYOUTS

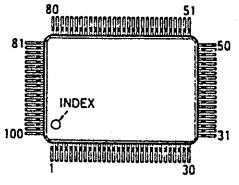
BA6208



BA6297AFP

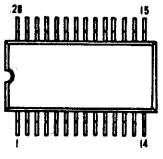


CXD2515Q



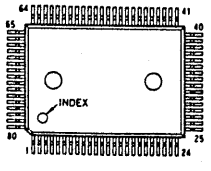
(TOP VIEW)

CXD2565M-1



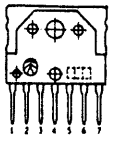
(TOP VIEW)

CXP82316-032Q

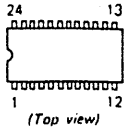


(TOP VIEW)

LA5602

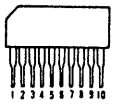


LA9215-ST

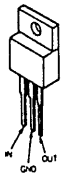


(Top view)

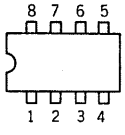
LB1641



M5F78M07L

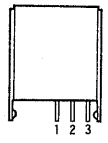


NJM4565D



(Top view)

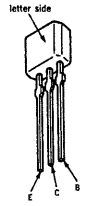
SBX1610-59



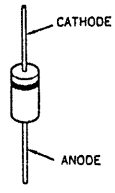
1. VCC
2. VOUT
3. GND

DTC114ES

2SA1175-HFE
2SB1041



MTZJ4.7C
MTZJ-27B
RD7.5ES2
1SS119
11ES2



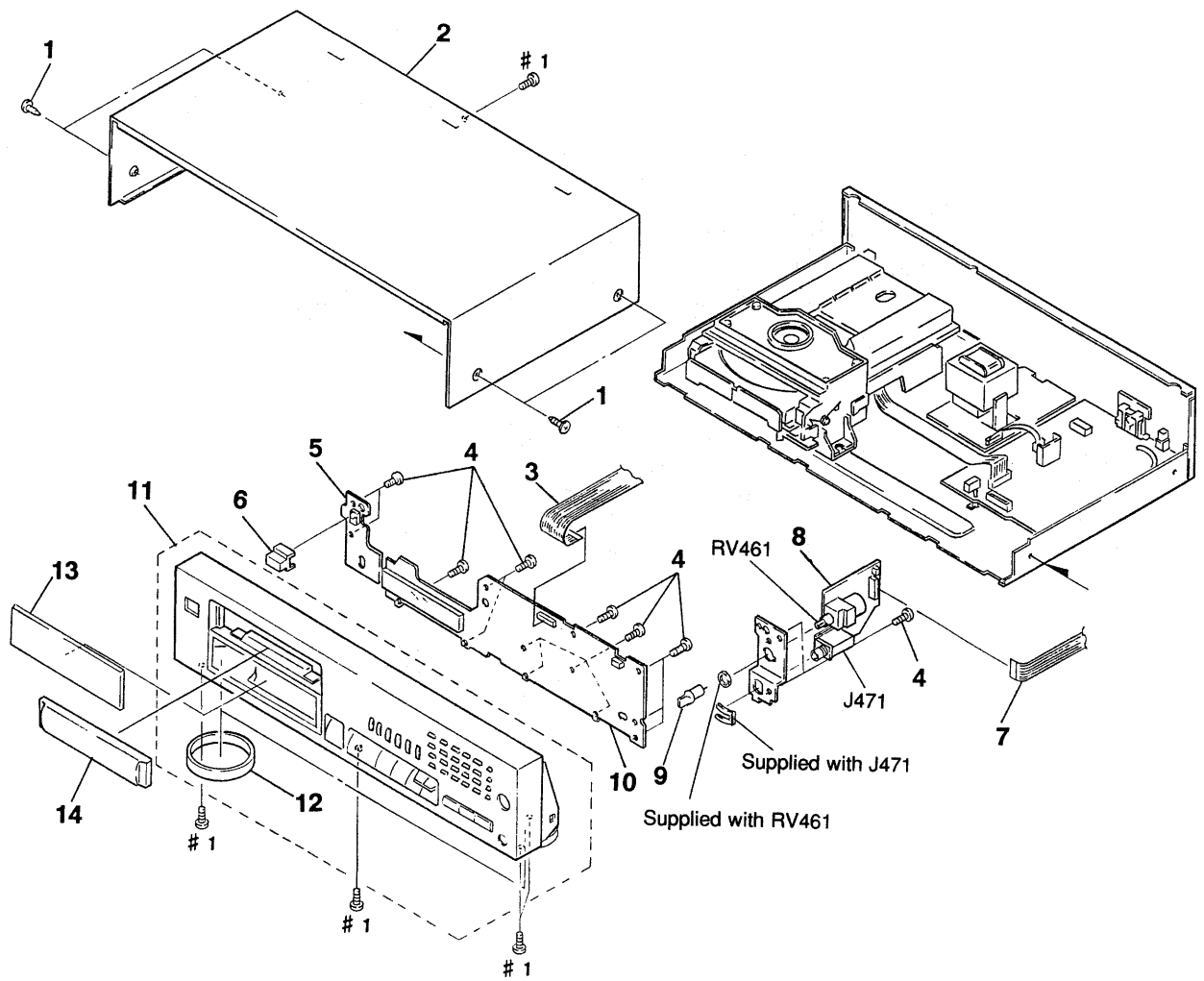
SECTION 6
EXPLODED VIEWS

NOTE:

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- 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.
- G: German model.

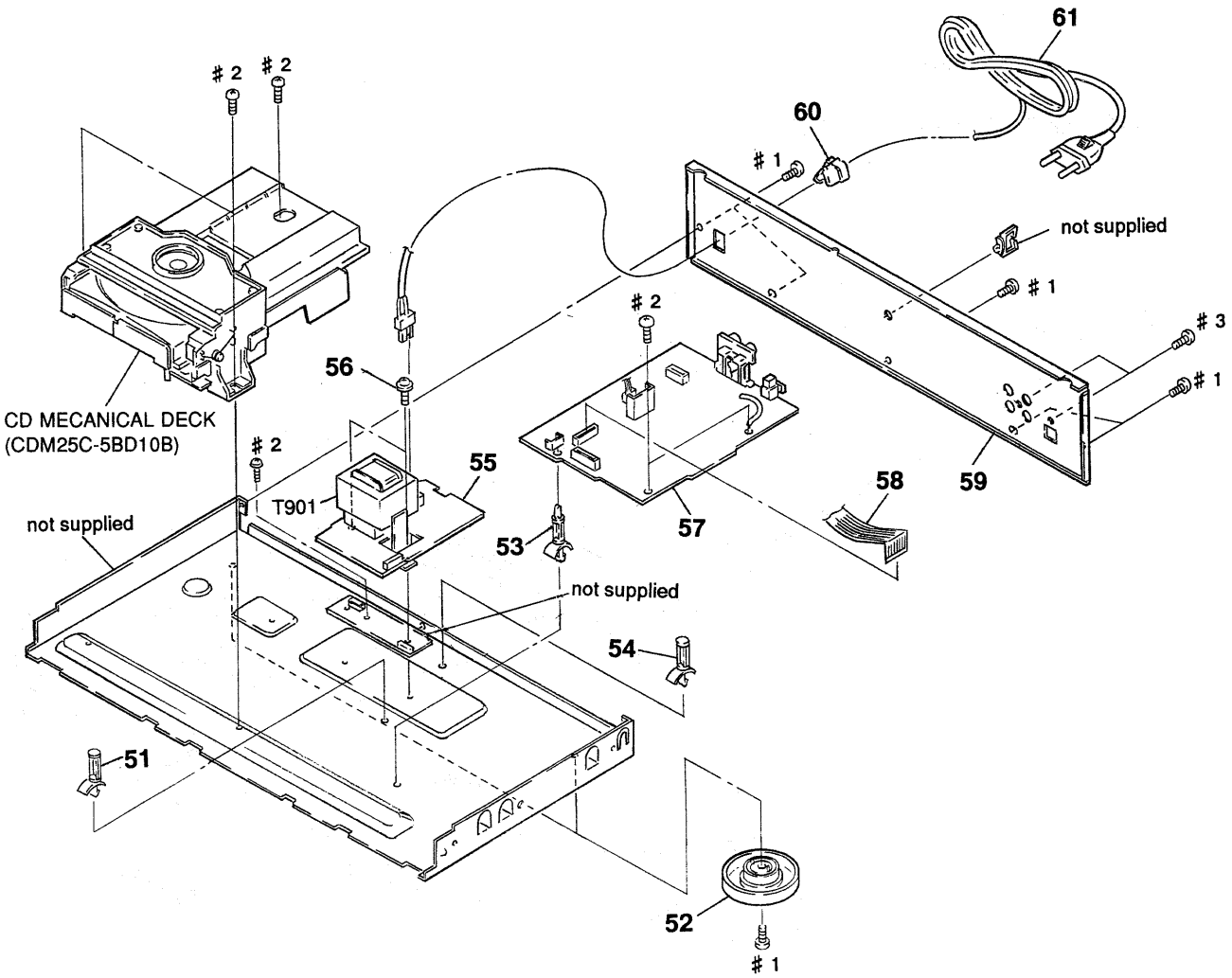
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

6-1. CASE AND FRONT PANEL BLOCK



Ref. No.	Part No.	Description	Remark
1	3-363-099-01	SCREW (CASE 3 TP2)	
2	4-937-817-01	CASE	
3	1-751-947-11	WIRE (FLAT TYPE) (21 CORE)	
4	4-951-620-01	SCREW (2.6X8), +BVTP	
* 5	1-651-520-11	SW BOARD	
6	4-947-034-01	BUTTON (POWER)	
7	1-751-948-11	WIRE (FLAT TYPE) (13 CORE)	
* 8	1-651-522-11	MVR BOARD	
9	A-4660-231-A	KNOB (HP) ASSY	
* 10	A-4649-907-A	DISP BOARD, COMPLETE	
11	X-4944-124-1	PANEL ASSY, FRONT	
12	4-933-135-01	RING (DIA. 58A), ORNAMENTAL	
13	4-962-199-01	PLATE, INDICATION	
14	4-962-733-01	PANEL, LOADING	

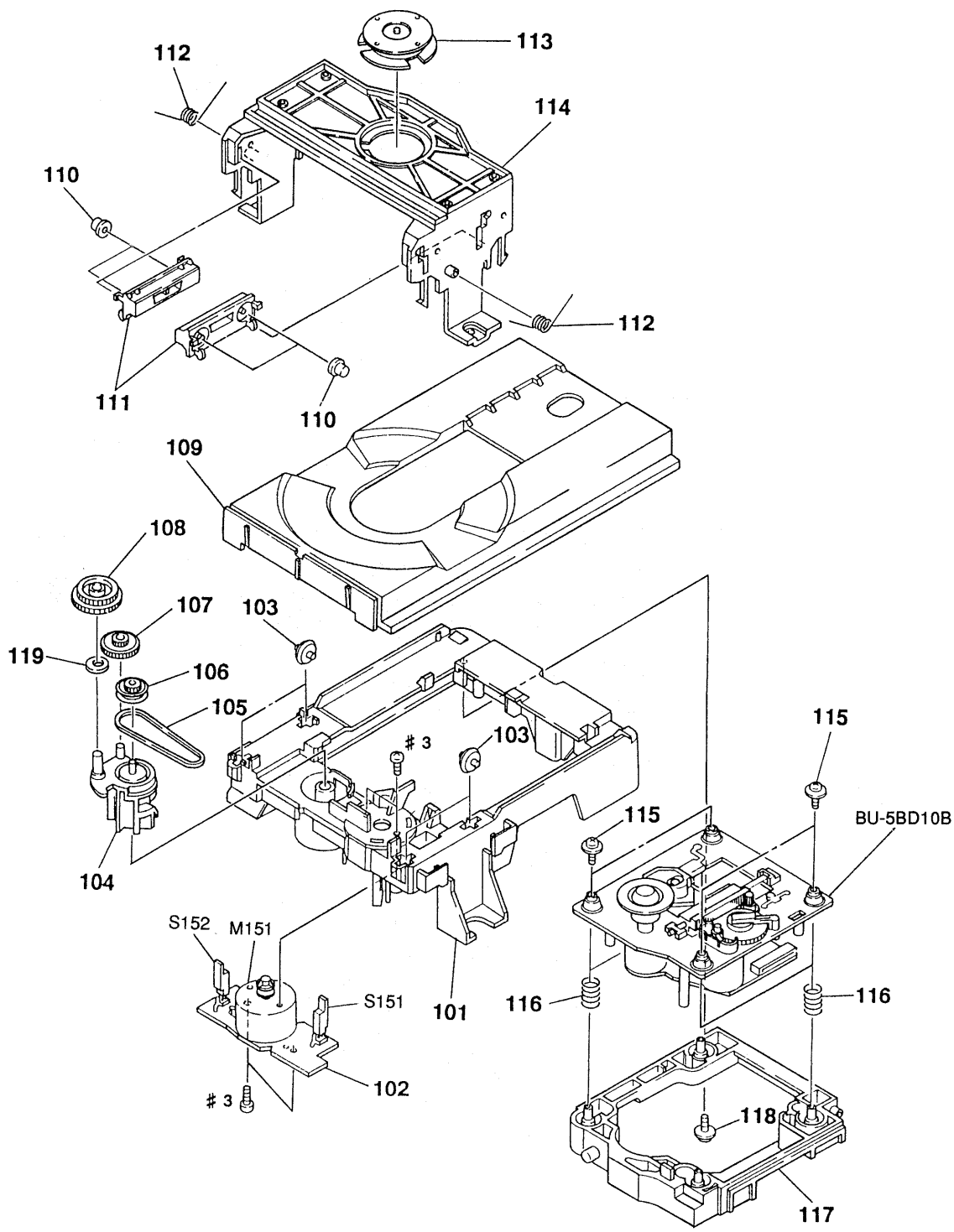
6-2. CHASSIS BLOCK



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

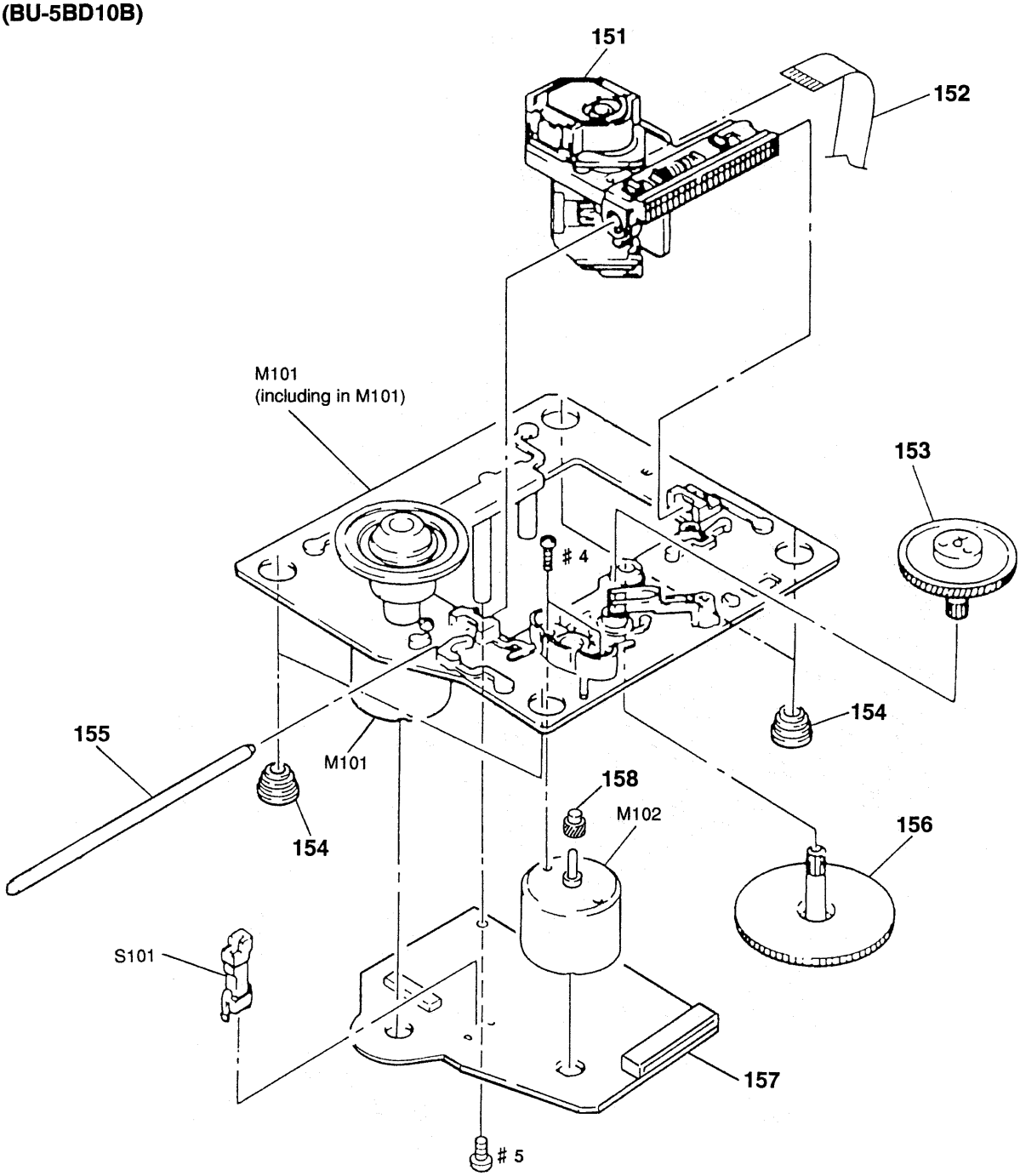
Ref. No.	Part No.	Description	Remark
* 51	4-944-316-01	HOLDER, PC BOARD	
52	4-956-885-11	FOOT (F58175S2W)	
* 53	4-924-098-31	HOLDER, PC BOARD	
* 54	3-349-025-41	HOLDER, PC BOARD	
* 55	1-651-521-11	TRANS BOARD	
56	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
* 57	A-4649-906-A	MAIN BOARD, COMPLETE	
58	1-751-950-11	WIRE (FLAT TYPE) (23 CORE)	
* 59	4-962-202-03	PANEL (AL), BACK	
60	3-703-244-00	BUSHING, CORD	
⚠61	1-575-651-21	CORD, POWER	
⚠T901	1-449-925-11	TRANSFORMER, POWER	

6-3. MECHANISM BLOCK (CDM25C-5BD10B)



Ref. No.	Part No.	Description	Remark
* 101	4-954-190-01	BASE (MD)	
* 102	1-646-970-11	LOADING BOARD	
103	4-954-193-01	ROLLER (A)	
104	4-933-109-01	CAM	
105	4-927-649-01	BELT	
106	4-927-651-01	PULLEY (S)	
107	4-927-628-01	GEAR (C)	
108	4-933-107-01	GEAR (PL)	
109	4-961-794-01	TABLE, DISK	
110	4-954-194-01	ROLLER (B)	
111	4-954-199-01	PLATE, SLIDE	
112	4-954-195-01	SPRING, TORSION	
* 113	1-452-538-11	MAGNET	
* 114	4-954-192-01	HOLDER (M)	
115	4-933-134-01	SCREW +PTPWH M2.6X6	
116	4-959-996-01	SPRING (932), COMPRESSION	
117	4-933-129-01	HOLDER (BU)	
* 118	4-917-583-21	BRACKET, YOKE	
119	3-701-443-11	WASHER	
M151	A-4660-315-A	MOTOR (L) ASSY (LOADING)	
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)	
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)	

6-4. OPTICAL PICK-UP BLOCK (BU-5BD10B)



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
⚠151	8-848-144-11	OPTICAL PICK-UP KSS-240A	
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
153	4-917-567-01	GEAR (M)	
154	4-951-940-01	INSULATOR (BU)	
155	4-917-565-01	SHAFT, SLED	
156	4-917-564-01	GEAR (P), FLATNESS	
* 157	A-4649-430-A	BD BOARD, COMPLETE	
158	4-917-566-01	GEAR (S)	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	

SECTION 7
ELECTRICAL PARTS LIST

BD

NOTE:

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

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

- 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.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- G: German model

Ref.No.	Part No.	Description			Remark
*	A-4649-430-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-135-287-91	TANTAL. CHIP	4.7uF	20%	16V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C108	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C109	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C110	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C123	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C151	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C152	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C153	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C154	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C155	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C156	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C157	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C158	1-163-033-00	CERAMIC CHIP	0.022uF		50V
C159	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C160	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
* CN101	1-568-865-11	SOCKET, CONNECTOR 23P			
CN102	1-568-795-11	SOCKET, CONNECTOR 12P			
		< IC >			
IC101	8-752-367-16	IC CXD2515Q			
IC102	8-759-071-79	IC BA6297AFP			
		< MOTOR >			
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)			
M102	X-4917-504-1	MOTOR ASSY (SLED)			

Ref.No.	Part No.	Description			Remark
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-097-00	METAL CHIP	100K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W
R109	1-216-121-00	METAL CHIP	1M	5%	1/10W
R110	1-216-025-00	METAL CHIP	100	5%	1/10W
R112	1-216-049-00	METAL CHIP	1K	5%	1/10W
R113	1-216-077-00	METAL CHIP	15K	5%	1/10W
R114	1-216-077-00	METAL CHIP	15K	5%	1/10W
R117	1-216-077-00	METAL CHIP	15K	5%	1/10W
R118	1-216-077-00	METAL CHIP	15K	5%	1/10W
R121	1-216-077-00	METAL CHIP	15K	5%	1/10W
R122	1-216-077-00	METAL CHIP	15K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-00	METAL CHIP	100K	5%	1/10W
R125	1-216-049-00	METAL CHIP	1K	5%	1/10W
R126	1-216-049-00	METAL CHIP	1K	5%	1/10W
R127	1-216-049-00	METAL CHIP	1K	5%	1/10W
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R151	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R152	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R153	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R154	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R155	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R156	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R157	1-216-093-00	METAL CHIP	68K	5%	1/10W
R158	1-216-076-00	METAL CHIP	13K	5%	1/10W
R159	1-216-085-00	METAL CHIP	33K	5%	1/10W
R160	1-216-081-00	METAL CHIP	22K	5%	1/10W
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R162	1-216-093-00	METAL CHIP	68K	5%	1/10W
R163	1-216-093-00	METAL CHIP	68K	5%	1/10W
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			

****

DISP

Ref. No.	Part No.	Description			Remark
*	A-4649-985-A	DISP BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C801	1-161-494-00	CERAMIC	0.022uF		25V
C802	1-164-159-11	CERAMIC	0.1uF		50V
C803	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
CN801	1-568-838-11	SOCKET, CONNECTOR 21P			
		< FLUORESCENT INDICATOR >			
FLD801	1-519-757-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC801	8-752-851-78	IC CXP82316-032Q			
		< TRANSISTOR >			
Q801	8-729-900-80	TRANSISTOR DTC114ES			
		< RESISTOR >			
R803	1-249-428-11	CARBON	8.2K	5% 1/4W	F
R804	1-249-428-11	CARBON	8.2K	5% 1/4W	F
R805	1-249-441-11	CARBON	100K	5% 1/4W	
R806	1-249-428-11	CARBON	8.2K	5% 1/4W	F
R807	1-249-428-11	CARBON	8.2K	5% 1/4W	F
R808	1-249-428-11	CARBON	8.2K	5% 1/4W	F
R809	1-249-428-11	CARBON	8.2K	5% 1/4W	F
R810	1-249-428-11	CARBON	8.2K	5% 1/4W	F
R811	1-249-428-11	CARBON	8.2K	5% 1/4W	F
R812	1-249-418-11	CARBON	1.2K	5% 1/4W	F
R813	1-247-836-11	CARBON	1.6K	5% 1/4W	
R814	1-249-421-11	CARBON	2.2K	5% 1/4W	F
R815	1-249-423-11	CARBON	3.3K	5% 1/4W	F
R816	1-249-426-11	CARBON	5.6K	5% 1/4W	
R817	1-247-856-00	CARBON	11K	5% 1/4W	
R818	1-249-418-11	CARBON	1.2K	5% 1/4W	F
R819	1-247-836-11	CARBON	1.6K	5% 1/4W	
R820	1-249-421-11	CARBON	2.2K	5% 1/4W	F
R821	1-249-423-11	CARBON	3.3K	5% 1/4W	F
R822	1-249-426-11	CARBON	5.6K	5% 1/4W	
R823	1-247-856-00	CARBON	11K	5% 1/4W	
R824	1-249-435-11	CARBON	33K	5% 1/4W	
R825	1-249-418-11	CARBON	1.2K	5% 1/4W	F
R826	1-247-836-11	CARBON	1.6K	5% 1/4W	
R827	1-249-418-11	CARBON	1.2K	5% 1/4W	F
R828	1-247-836-11	CARBON	1.6K	5% 1/4W	
R829	1-249-421-11	CARBON	2.2K	5% 1/4W	F
R830	1-249-423-11	CARBON	3.3K	5% 1/4W	F
R831	1-249-426-11	CARBON	5.6K	5% 1/4W	
R832	1-247-856-00	CARBON	11K	5% 1/4W	
R833	1-249-435-11	CARBON	33K	5% 1/4W	
R834	1-249-418-11	CARBON	1.2K	5% 1/4W	F
R835	1-247-836-11	CARBON	1.6K	5% 1/4W	
R836	1-249-421-11	CARBON	2.2K	5% 1/4W	F
R837	1-249-423-11	CARBON	3.3K	5% 1/4W	F
R838	1-249-426-11	CARBON	5.6K	5% 1/4W	
R839	1-247-856-00	CARBON	11K	5% 1/4W	
R840	1-249-418-11	CARBON	1.2K	5% 1/4W	F
R841	1-247-836-11	CARBON	1.6K	5% 1/4W	
R842	1-249-421-11	CARBON	2.2K	5% 1/4W	F
R843	1-249-423-11	CARBON	3.3K	5% 1/4W	F
R844	1-249-426-11	CARBON	5.6K	5% 1/4W	
R845	1-247-856-00	CARBON	11K	5% 1/4W	
R846	1-249-435-11	CARBON	33K	5% 1/4W	
		< SWITCH >			
S801	1-554-303-21	SWITCH, TACTILE (CLEAR)			
S802	1-554-303-21	SWITCH, TACTILE (CHECK)			
S803	1-554-303-21	SWITCH, TACTILE (> 20)			
S804	1-554-303-21	SWITCH, TACTILE (5)			
S805	1-554-303-21	SWITCH, TACTILE (10)			
S806	1-554-303-21	SWITCH, TACTILE (15)			
S807	1-554-303-21	SWITCH, TACTILE (20)			
S808	1-554-303-21	SWITCH, TACTILE (19)			
S809	1-554-303-21	SWITCH, TACTILE (14)			
S810	1-554-303-21	SWITCH, TACTILE (9)			
S811	1-554-303-21	SWITCH, TACTILE (4)			
S812	1-554-303-21	SWITCH, TACTILE (3)			
S813	1-554-303-21	SWITCH, TACTILE (8)			
S814	1-554-303-21	SWITCH, TACTILE (13)			
S815	1-554-303-21	SWITCH, TACTILE (18)			
S816	1-554-303-21	SWITCH, TACTILE (CONTINUE)			
S817	1-554-303-21	SWITCH, TACTILE (SHUFFLE)			
S818	1-554-303-21	SWITCH, TACTILE (PROGRAM)			
S819	1-554-303-21	SWITCH, TACTILE (FADER)			
S820	1-554-303-21	SWITCH, TACTILE (REPEAT)			
S821	1-554-303-21	SWITCH, TACTILE (TIME)			
S822	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)			
S823	1-554-303-21	SWITCH, TACTILE (1)			
S824	1-554-303-21	SWITCH, TACTILE (A.SPACE/A.CUE)			
S825	1-554-303-21	SWITCH, TACTILE (6)			
S826	1-554-303-21	SWITCH, TACTILE (2)			
S827	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)			
S828	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)			
S829	1-554-303-21	SWITCH, TACTILE (11)			
S830	1-554-303-21	SWITCH, TACTILE (16)			
S831	1-554-303-21	SWITCH, TACTILE (17)			
S832	1-554-303-21	SWITCH, TACTILE (12)			

Ref.No.	Part No.	Description			Remark
S833	1-554-303-21	SWITCH, TACTILE (7)			
S834	1-554-303-21	SWITCH, TACTILE (▷)			
S835	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)			
S836	1-554-303-21	SWITCH, TACTILE (▮▮)			
S837	1-554-303-21	SWITCH, TACTILE (■)			
S838	1-554-303-21	SWITCH, TACTILE (⏮◁)			
S839	1-554-303-21	SWITCH, TACTILE (▷⏭)			
S840	1-554-303-21	SWITCH, TACTILE (▶▶)			
S841	1-554-303-21	SWITCH, TACTILE (◀◀)			
		< VIBRATOR >			
X801	1-577-082-11	VIBRATOR, CERAMIC (4MHz)			
**********					
*	1-646-970-11	LOADING BOARD			
		**********			
		< CONNECTOR >			
* CN151	1-568-943-11	PIN, CONNECTOR 5P			
		< MOTOR >			
M151	A-4660-315-A	MOTOR (L) ASSY (LOADING)			
		< SWITCH >			
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)			
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)			
**********					
*	A-4649-984-A	MAIN BOARD, COMPLETE			
		**********			
	7-682-547-09	SCREW +BVTT 3X6 (S)			
		< CAPACITOR >			
C301	1-164-159-11	CERAMIC	0.1uF		50V
C302	1-164-159-11	CERAMIC	0.1uF		50V
C311	1-162-306-11	CERAMIC	0.01uF	20%	16V
C312	1-161-494-00	CERAMIC	0.022uF		25V
C321	1-162-290-31	CERAMIC	470PF	10%	50V
C322	1-164-159-11	CERAMIC	0.1uF		50V
C323	1-126-176-11	ELECT	220uF	20%	10V
C324	1-161-494-00	CERAMIC	0.022uF		25V
C325	1-161-494-00	CERAMIC	0.022uF		25V
C326	1-164-159-11	CERAMIC	0.1uF		50V
C327	1-124-477-11	ELECT	47uF	20%	25V
C331	1-162-196-31	CERAMIC	5.6PF	10%	50V
C332	1-162-196-31	CERAMIC	5.6PF	10%	50V
C333	1-161-494-00	CERAMIC	0.022uF		25V
C334	1-126-101-11	ELECT	100uF	20%	16V
C335	1-161-494-00	CERAMIC	0.022uF		25V
C336	1-124-472-11	ELECT	470uF	20%	10V
C337	1-124-927-11	ELECT	4.7uF	20%	100V
C338	1-124-477-11	ELECT	47uF	20%	25V
C339	1-124-443-00	ELECT	100uF	20%	10V
C340	1-124-443-00	ELECT	100uF	20%	10V
C341	1-126-101-11	ELECT	100uF	20%	16V
C342	1-126-952-11	ELECT	1000uF	20%	16V
C343	1-164-159-11	CERAMIC	0.1uF		50V
C391	1-164-159-11	CERAMIC	0.1uF		50V
C392	1-164-159-11	CERAMIC	0.1uF		50V
C393	1-164-159-11	CERAMIC	0.1uF		50V
C401	1-161-494-00	CERAMIC	0.022uF		25V
C402	1-126-101-11	ELECT	100uF	20%	16V
C403	1-162-282-31	CERAMIC	100PF	10%	50V
C404	1-162-215-31	CERAMIC	47PF	5%	50V
C405	1-162-215-31	CERAMIC	47PF	5%	50V
C406	1-126-101-11	ELECT	100uF	20%	16V
C407	1-106-359-00	MYLAR	4700PF	5%	200V
C408	1-130-472-00	MYLAR	0.0012uF	5%	50V
C409	1-126-101-11	ELECT	100uF	20%	16V
C410	1-130-468-00	MYLAR	560PF	5%	50V
C451	1-126-101-11	ELECT	100uF	20%	16V
C501	1-161-494-00	CERAMIC	0.022uF		25V
C502	1-126-101-11	ELECT	100uF	20%	16V
C503	1-162-282-31	CERAMIC	100PF	10%	50V
C504	1-162-215-31	CERAMIC	47PF	5%	50V
C505	1-162-215-31	CERAMIC	47PF	5%	50V
C506	1-126-101-11	ELECT	100uF	20%	16V
C507	1-106-359-00	MYLAR	4700PF	5%	200V
C508	1-130-472-00	MYLAR	0.0012uF	5%	50V
C509	1-126-101-11	ELECT	100uF	20%	16V
C510	1-130-468-00	MYLAR	560PF	5%	50V
C551	1-126-101-11	ELECT	100uF	20%	16V
C901	1-124-887-00	ELECT	3300uF	20%	16V
C902	1-126-952-11	ELECT	1000uF	20%	16V
C903	1-124-477-11	ELECT	47uF	20%	25V
C904	1-124-927-11	ELECT	4.7uF	20%	100V
C905	1-124-927-11	ELECT	4.7uF	20%	100V
C906	1-124-472-11	ELECT	470uF	20%	10V
C907	1-164-159-11	CERAMIC	0.1uF		50V
C911	1-126-176-11	ELECT	220uF	20%	10V
C951	1-124-918-11	ELECT	47uF	20%	63V
C952	1-124-907-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
CN301	1-568-838-11	SOCKET, CONNECTOR 21P			
* CN302	1-568-839-11	SOCKET, CONNECTOR 23P			
* CN305	1-568-832-11	SOCKET, CONNECTOR 13P			

MAIN

Ref.No.	Part No.	Description	Remark
		< DIODE >	
D311	8-719-921-40	DIODE MTZJ-4.7C	
D321	8-719-911-19	DIODE 1SS119	
D901	8-719-200-82	DIODE 11ES2	
D902	8-719-200-82	DIODE 11ES2	
D903	8-719-200-82	DIODE 11ES2	
D904	8-719-200-82	DIODE 11ES2	
D951	8-719-200-82	DIODE 11ES2	
D952	8-719-982-15	DIODE MTZJ-27B	
D953	8-719-911-19	DIODE 1SS119	
D954	8-719-110-03	DIODE RD7.5ESB2	
		< GROUND PLATE >	
* EB471	4-962-201-01	PLATE (HP), GROUND	
* EB991	4-962-200-01	PLATE (TR), GROUND	
		< IC >	
IC301	8-759-822-09	IC LB1641	
IC302	8-752-360-60	IC CXD2565M-1	
IC303	8-759-175-88	IC LA9215-ST	
IC304	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	
IC451	8-759-167-88	IC NJM4565D	
IC901	8-759-061-65	IC LA5602	
IC902	8-759-605-00	IC M5F78M07L (LINE OUT)	
		< JACK >	
* J401	1-569-443-11	JACK, PIN 4P (LINE OUT)	
		< COIL >	
L301	1-410-322-11	INDUCTOR 3.3uH	
L302	1-410-322-11	INDUCTOR 3.3uH	
L303	1-410-322-11	INDUCTOR 3.3uH	
L401	1-410-322-11	INDUCTOR 3.3uH	
L501	1-410-322-11	INDUCTOR 3.3uH	
		< TRANSISTOR >	
Q951	8-729-019-64	TRANSISTOR 2SB1041	
Q952	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q953	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R301	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R302	1-249-417-11	CARBON 1K 5% 1/4W	F
R303	1-249-417-11	CARBON 1K 5% 1/4W	F
R304	1-249-417-11	CARBON 1K 5% 1/4W	F
R305	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R306	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R307	1-249-417-11	CARBON 1K 5% 1/4W	F
R321	1-249-411-11	CARBON 330 5% 1/4W	
R322	1-249-422-11	CARBON 2.7K 5% 1/4W	F

Ref.No.	Part No.	Description	Remark
R331	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R332	1-247-807-31	CARBON 100 5% 1/4W	
R341	1-247-807-31	CARBON 100 5% 1/4W	
R401	1-249-436-11	CARBON 39K 5% 1/4W	
R402	1-249-436-11	CARBON 39K 5% 1/4W	
R403	1-249-431-11	CARBON 15K 5% 1/4W	
R404	1-249-431-11	CARBON 15K 5% 1/4W	
R405	1-249-437-11	CARBON 47K 5% 1/4W	
R406	1-249-437-11	CARBON 47K 5% 1/4W	
R407	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R408	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R409	1-249-429-11	CARBON 10K 5% 1/4W	
R410	1-247-887-00	CARBON 220K 5% 1/4W	
R411	1-249-417-11	CARBON 1K 5% 1/4W	F
R412	1-249-417-11	CARBON 1K 5% 1/4W	F
R451	1-247-807-31	CARBON 100 5% 1/4W	
R452	1-249-435-11	CARBON 33K 5% 1/4W	
R453	1-249-432-11	CARBON 18K 5% 1/4W	
R454	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R455	1-249-429-11	CARBON 10K 5% 1/4W	
R501	1-249-436-11	CARBON 39K 5% 1/4W	
R502	1-249-436-11	CARBON 39K 5% 1/4W	
R503	1-249-431-11	CARBON 15K 5% 1/4W	
R504	1-249-431-11	CARBON 15K 5% 1/4W	
R505	1-249-437-11	CARBON 47K 5% 1/4W	
R506	1-249-437-11	CARBON 47K 5% 1/4W	
R507	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R508	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R509	1-249-429-11	CARBON 10K 5% 1/4W	
R510	1-247-887-00	CARBON 220K 5% 1/4W	
R511	1-249-417-11	CARBON 1K 5% 1/4W	F
R512	1-249-417-11	CARBON 1K 5% 1/4W	F
R551	1-247-807-31	CARBON 100 5% 1/4W	
R552	1-249-435-11	CARBON 33K 5% 1/4W	
R553	1-249-432-11	CARBON 18K 5% 1/4W	
R554	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R555	1-249-429-11	CARBON 10K 5% 1/4W	
R901	1-249-433-11	CARBON 22K 5% 1/4W	
R902	1-249-424-11	CARBON 3.9K 5% 1/4W	F
R903	1-249-417-11	CARBON 1K 5% 1/4W	F
R904	1-249-417-11	CARBON 1K 5% 1/4W	F
R951	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R952	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R953	1-249-435-11	CARBON 33K 5% 1/4W	
R954	1-249-390-11	CARBON 5.6 5% 1/6W	F
R955	1-249-390-11	CARBON 5.6 5% 1/6W	F
		< VIBRATOR >	
X331	1-579-834-11	VIBRATOR, CRYSTAL (33MHz)	

****

Ref.No.	Part No.	Description				Remark
*	1-651-522-11	MVR BOARD				
		*********				
		< CAPACITOR >				
C351	1-124-443-00	ELECT	100uF	20%	10V	
C352	1-161-494-00	CERAMIC	0.022uF		25V	
C471	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C472	1-162-294-31	CERAMIC	0.001uF	10%	50V	
		< CONNECTOR >				
CN351	1-506-468-11	PIN, CONNECTOR 3P				
* CN461	1-568-832-11	SOCKET, CONNECTOR 13P				
		< IC >				
IC351	8-759-962-08	IC BA6208				
		< JACK >				
J471	1-750-162-41	JACK (LARGE TYPE) (PHONES)				
		< RESISTOR >				
R351	1-249-411-11	CARBON	330	5%	1/4W	
R352	1-249-417-11	CARBON	1K	5%	1/4W	F
R353	1-249-417-11	CARBON	1K	5%	1/4W	F
R461	1-249-402-11	CARBON	56	5%	1/4W	F
R561	1-249-402-11	CARBON	56	5%	1/4W	F
		< VARIABLE RESISTOR >				
RV461	1-223-571-11	RES, VAR, CARBON 10K/10K (LINE OUT/PHONE LEVEL)				
**********						
*	1-651-520-11	SW BOARD				
		********				
		< CAPACITOR >				
C851	1-161-494-00	CERAMIC	0.022uF		25V	
C852	1-161-494-00	CERAMIC	0.022uF		25V	
		< IC >				
IC851	8-741-100-48	IC SBX1610-59				
		< SWITCH >				
S851	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)				
**********						

Ref.No.	Part No.	Description		Remark
*	1-651-521-11	TRANS BOARD		
		**********		
		< CAPACITOR >		
C991	1-164-159-11	CERAMIC	0.1uF	50V
		< CONNECTOR >		
* CN991	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P		
CN992	1-564-510-11	PLUG, CONNECTOR 7P		
		< TRANSFORMER >		
⚠T901	1-449-925-11	TRANSFORMER, POWER		
**********				
		MISCELLANEOUS		
		**********		
3	1-751-947-11	WIRE (FLAT TYPE) (21 CORE)		
7	1-751-948-11	WIRE (FLAT TYPE) (13 CORE)		
58	1-751-950-11	WIRE (FLAT TYPE) (23 CORE)		
⚠61	1-575-651-21	CORD, POWER		
* 113	1-452-538-11	MAGNET		
⚠151	8-848-144-11	OPTICAL PICK-UP KSS-240A		
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE)		
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)		
M102	X-4917-504-1	MOTOR ASSY (SLED)		
M151	A-4660-315-A	MOTOR (L) ASSY (LOADING)		
S101	1-572-085-11	SWITCH, LEAF (LIMIT)		
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)		
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)		
⚠T901	1-449-925-11	TRANSFORMER, POWER		
**********				
		ACCESSORIES & PACKING MATERIALS		
		**********		
	1-467-315-11	REMOTE COMMANDER (RM-D720)		
	1-558-271-11	CORD, CONNECTION (AUDIO) (108cm)		
	3-757-601-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, DANISH) (AEP)		
	3-757-601-61	MANUAL, INSTRUCTION (GERMAN, ITALIAN, DUTCH, PORTUGUESE) (AEP)		
	3-757-601-71	MANUAL, INSTRUCTION (GERMAN) (G)		
	4-941-925-01	CUSHION		
*	4-955-664-71	INDIVIDUAL CARTON		
	4-962-615-01	COVER, BATTERY (FOR RM-D720)		
**********				

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	7-682-548-09	SCREW +BVTT 3X8 (S)	
#2	7-682-547-09	SCREW +BVTT 3X6 (S)	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-621-255-15	SCREW +P 2X3	
#5	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	

9-959-321-11

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Audio Group

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