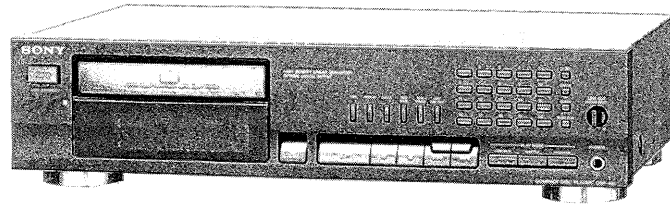


CDP-461

SERVICE MANUAL

AEP Model



Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM25D-5BD20
Base Unit Type	BU-5BD20
Optical Pick-up Type	KSS-213BA

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser
Wavelength	780 – 790 nm
Frequency response	2 Hz to 20 kHz \pm 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

	Jack type	Maximum output level	Load impedance
LINE OUT (FIXED)	Phono jacks	2 V (at 50 kilohms)	Over 10 kilohms
LINE OUT (VARIABLE)	Phono jacks	2 V (at 50 kilohms)	Over 50 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	-18 dBm	Wave length: 660 nm
PHONES	Stereo phone jack	10 mW	32 ohms

General

Power requirements	220 V – 230 V AC, 50/60 Hz
Power consumption	12 W
Dimensions (approx.) (w/h/d)	430 x 110 x 295 mm (17 x 4 3/8 x 11 5/8 in.) incl. projecting parts
Mass (approx.)	3.7 kg (8 lbs 2 oz)

Supplied accessories

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

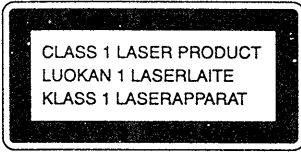
Design and specifications are subject to change without notice.

COMPACT DISC PLAYER
SONY[®]

CAUTION

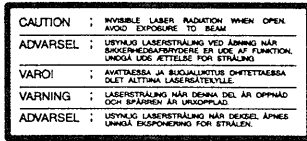
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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 recorder.



- Notes on chip component replacement
- Never reuse a disconnected chip component.
 - Notice that the minus side of a tantalum capacitor may be damaged by heat.

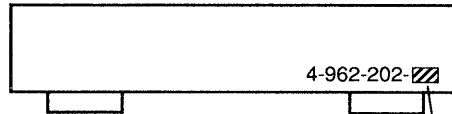
SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ 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.

<u>Section</u>	<u>Title</u>	<u>Page</u>
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	• IC801 (CXP82316-055Q)	10
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MODEL IDENTIFICATION

— BACK PANEL —



- AEP Model : 3
- German Model : 4

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 repair parts.

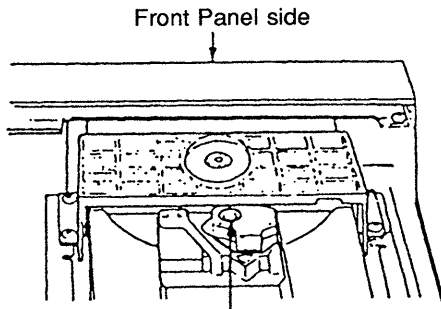
The flexible board is easily damaged and should be handled with care.

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 30 cm away from the objective lens.

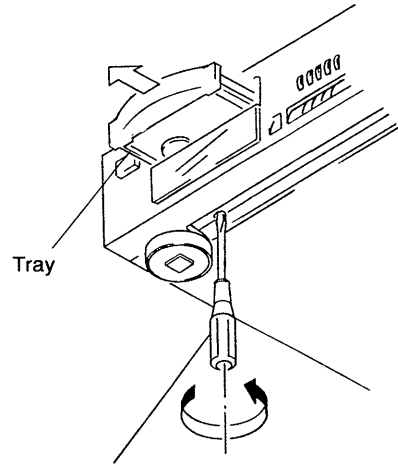
LASER DIODE AND FOCUS SEARCH OPERATION CHECK

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.



- ① Confirm that laser beam is spread.
- ② Up and down motion of the objective lens. (3 times)

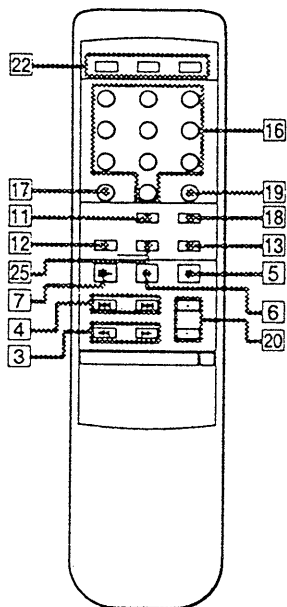
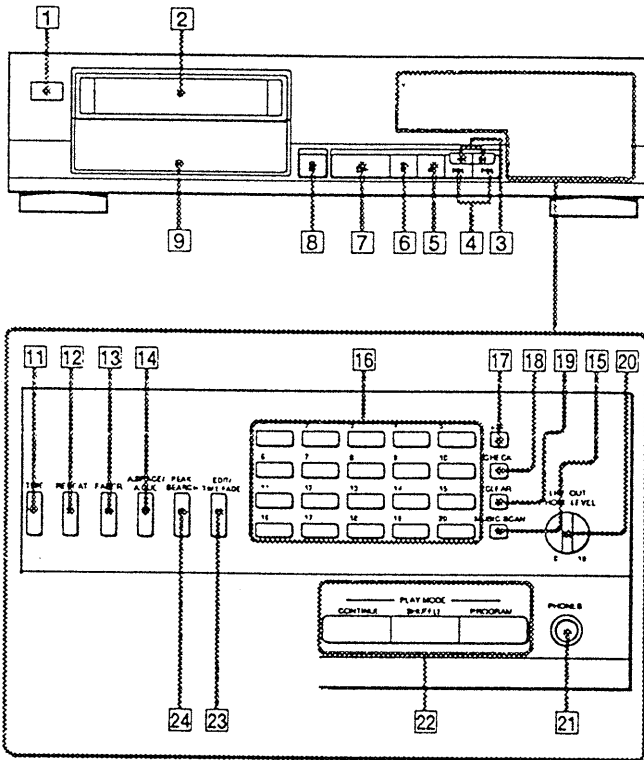
HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



Insert a tapering driver into the aperture of the unit bottom, and turn in the direction of arrow.

* To close the disc tray, turn the driver in the reverse direction.

SECTION 2 GENERAL



Identifying the Parts

Refer to the pages indicated in parentheses for details.

Front Panel/ Remote Commander

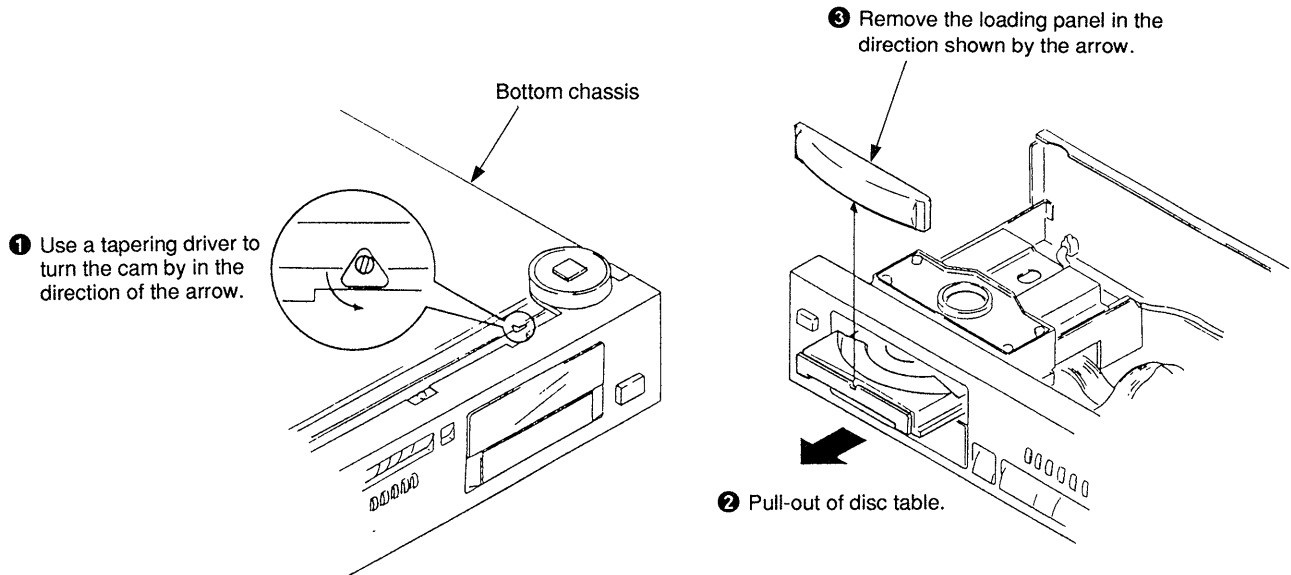
- 1 POWER switch
- 2 Disc tray
- 3 <</>> (manual search) buttons
- 4 <<</>>> (AMS*) buttons
- 5 ■ (stop) button
- 6 || (pause) button
- 7 ▷ (play) button
- 8 Ⓞ OPEN/CLOSE button
- 9 Display
- 11 TIME button
- 12 REPEAT button
(CLEAR REPEAT button on the remote commander)
- 13 FADER button
- 14 AUTO SPACE button
- 15 MUSIC SCAN button
- 16 Numeric buttons
- 17 >20 (over 20) button
(>10 (over 10) button on the remote commander)
- 18 CHECK (program check) button
- 19 CLEAR (program clear) button
- 20 LINE OUT/PHONE LEVEL control
(LINE OUT LEVEL +/- buttons on the remote commander)
- 21 PHONES jack
- 22 Play mode buttons
CONTINUE button
SHUFFLE button
PROGRAM button
- 23 EDIT/TIME FADE button
- 24 PEAK SEARCH button
- 25 A ↔ B button

* AMS is the abbreviation of Automatic Music Sensor.

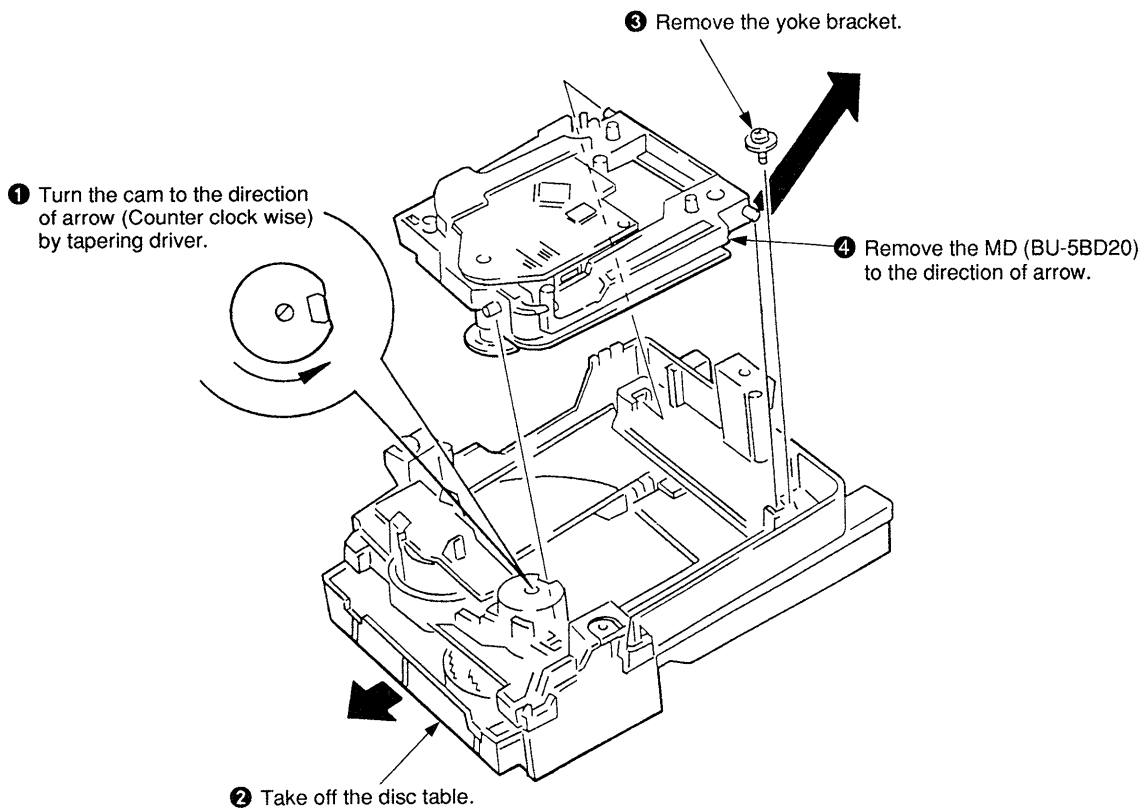
SECTION 3 DISASSEMBLY

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

3-1. LOADING PANEL



3-2. MD (BU-5BD20) BLOCK



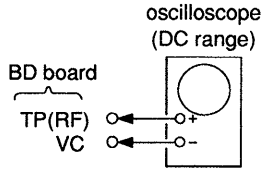
SECTION 4

ELECTRICAL BLOCK ADJUSTMENT

Note :

1. CD Block is basically designed 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 an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
5. Adjust the focus bias adjustment when optical block is replaced.

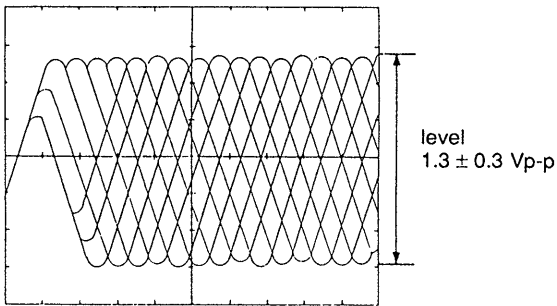
Focus Bias Adjustment



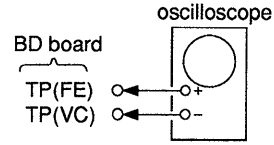
Procedure:

1. Connect oscilloscope to test point TP (RF). (GND terminal : VC)
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Adjust RV101 so that the waveform is clear. (Clear RF signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.)
5. After adjustment, check the RF signal level.

- RF signal
VOLT/DIV : 200 mV
TIME/DIV : 500 nS



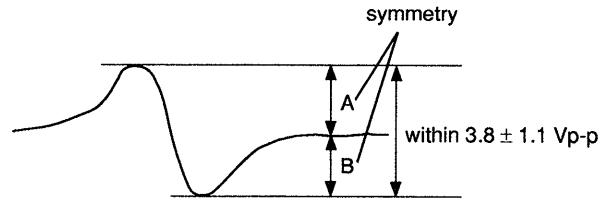
S Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FE).
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turn 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 3.8 ± 1.1 Vp-p.

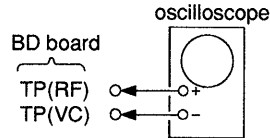
S-curve waveform



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

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

RF Level Check



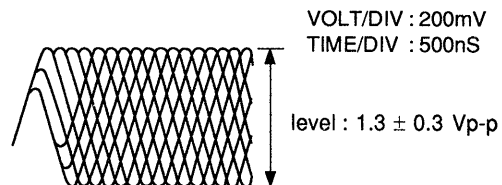
Procedure :

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

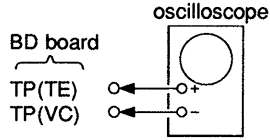
Note :

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

RF signal waveform

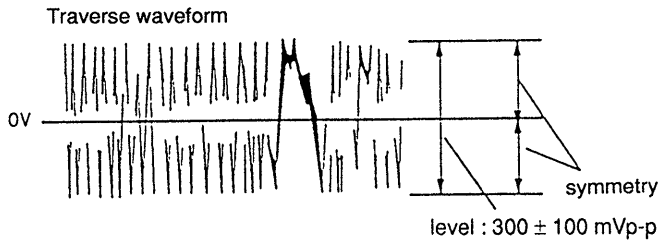


E-F Balance Check



Procedure :

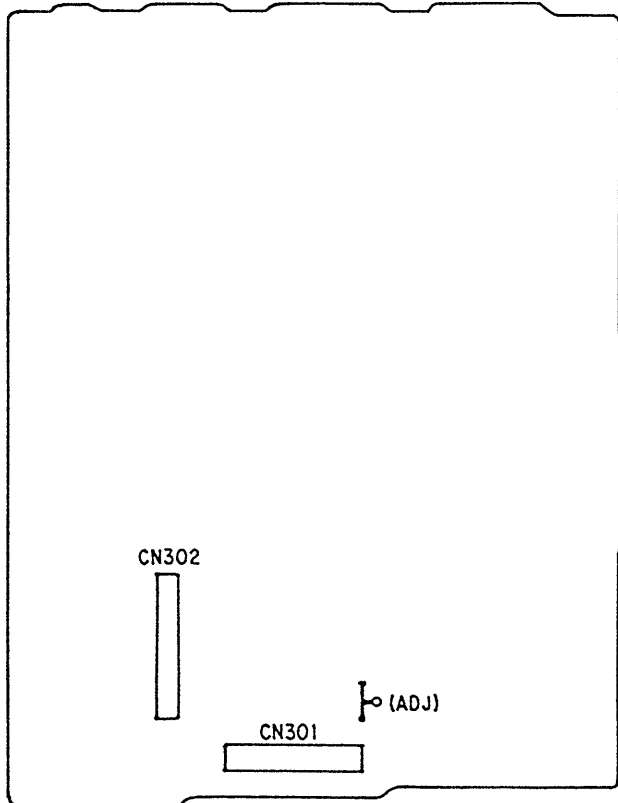
1. Connect pin TP (ADJ) on the main board to GND and TP (TEI : IC101 ②7 pin) to TP (VC) with a lead wire.
2. Connect oscilloscope to test point TP (TE).
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.



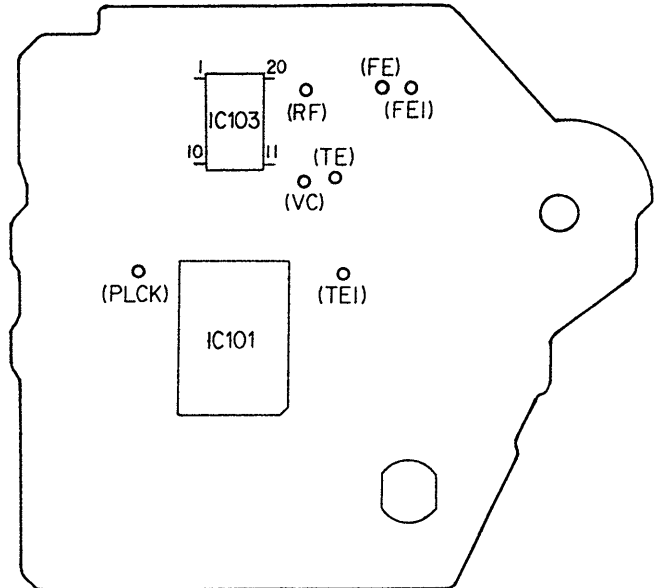
6. Remove the lead wire connected in step 1.

Adjustment Location :

[MAIN BOARD] — Component Side —



[BD BOARD] — SIDE A —



SECTION 5 DIAGRAMS

5-1. IC PIN FUNCTIONS

• IC101 (CXD2545Q)

Pin No.	Pin Name	I/O	Function
1	SRON	O	Sled drive output (Not used)
2	SRDR	O	Sled drive output
3	SFON	O	Sled drive output (Not used)
4	TFDR	O	Tracking drive output
5	TRON	O	Tracking drive output (Not used)
6	TRDR	O	Tracking drive output
7	TFON	O	Tracking drive output (Not used)
8	FFDR	O	Focus drive output
9	FRON	O	Focus drive output (Not used)
10	FRDR	O	Focus drive output
11	FFON	O	Focus drive output (Not used)
12	VCOO	O	VCO output for analog EFM PLL (Not used)
13	VCOI	I	VCO output for analog EFM PLL (GND)
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 (Not used)
19	VPCO	O	Charge-pump output for variable pitch PLL (Not used)
20	VCKI	I	Clock input from variable pitch external VCO (GND)
21	AVD2	—	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers
23	AVS2	—	Analog GND
24	ADIO	I	(Not used)
25	RFC	O	(Not used)
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

Pin No.	Pin Name	I/O	Function
41	DVDD	–	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
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 (Not used)
49	64BCLK	O	DA 13 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
50	64LRCK	O	DA 12 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
51	GTOP	O	DA 11 output when PSSL=1. GTOP output when PSSL=0 (Not used)
52	XUGF	O	DA 10 output when PSSL=1. XUGF output when PSSL=0 (Not used)
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 (Not used)
57	XRA0F	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 (Not used)
64	XTSL	I	X'tal selection input pin (GND)
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	FSOF	O	(Not used)
69	C16M	O	16.9344 MHz output (Not used)
70	MD2	I	Digital-out ON/OFF control pin (+5V)
71	DOUT	O	Digital-out output pin
72	EMPH	O	Playback disc output in emphasis mode (Not used)
73	WFCK	O	WFCK output
74	SCOR	O	Sub-code sync output
75	SBSO	O	Sub-P through Sub-W serial output (Not used)
76	EXCK	I	Clock input for SBS0 read-out (GND)
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 (+5V)
83	SCLK	I	SENS serial data read-out clock
84	DFSW	I	DFCT selection pin (GND)
85	ATSK	I	Input pin for anti-shock (GND)

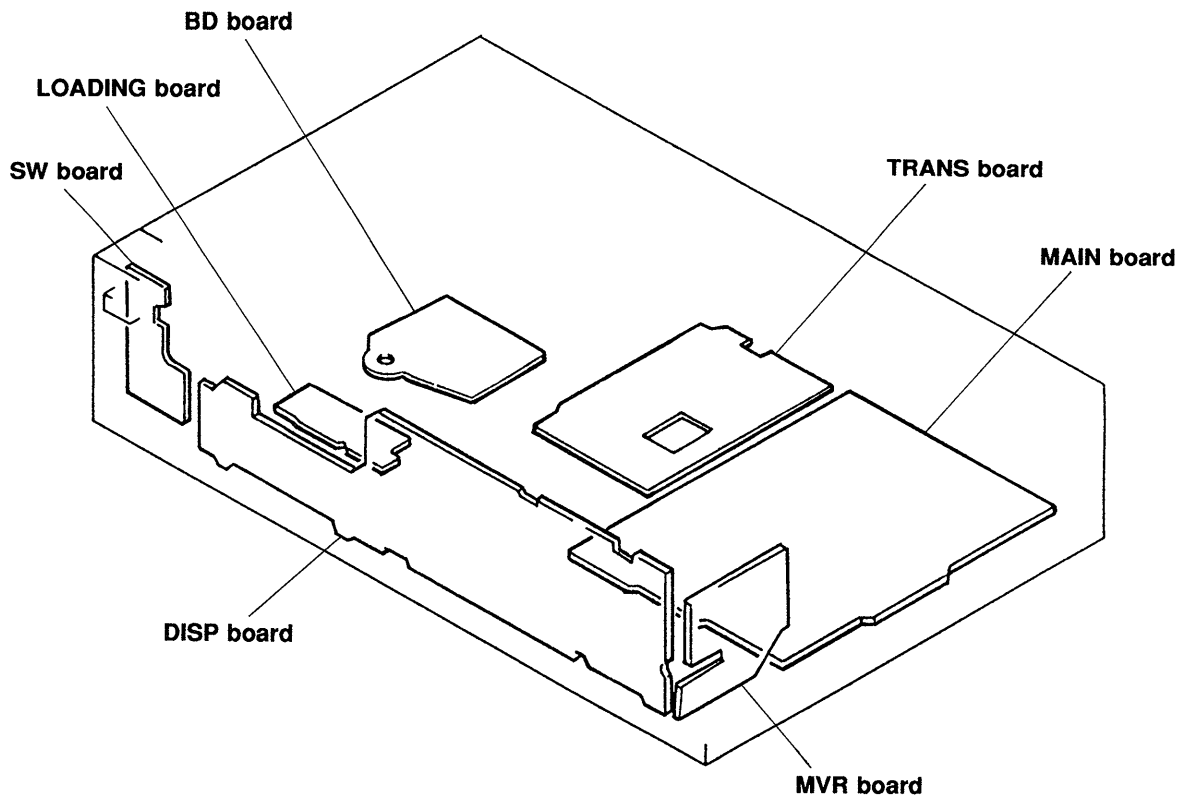
Pin No.	Pin Name	I/O	Function
86	DATA	I	Serial data input, supplied from CPU
87	XLAT	I	Latch input, supplied from CPU
88	CLOK	I	Serial data transfer clock input, supplied from CPU
89	COUT	O	Numbers of track counted signal output (Not used)
90	DVDD	—	Digital power supply
91	MIRR	O	Mirror signal output
92	DFCT	O	Defect signal output
93	FOK	O	Focus OK output
94	FSW	O	Output to select spindle motor output filter (Not used)
95	MON	O	Output to control ON/OFF of spindle motor (Not used)
96	MDP	O	Output to control spindle motor servo
97	MDS	O	Output to control spindle motor servo (Not used)
98	LOCK	O	GFS is sampled by 460 Hz. H when GFS is H (Not used)
99	SSTP	I	Input signal to detect disc inner most track
100	SFDR	O	Sled drive output

• IC801 (CXP82316-055Q)

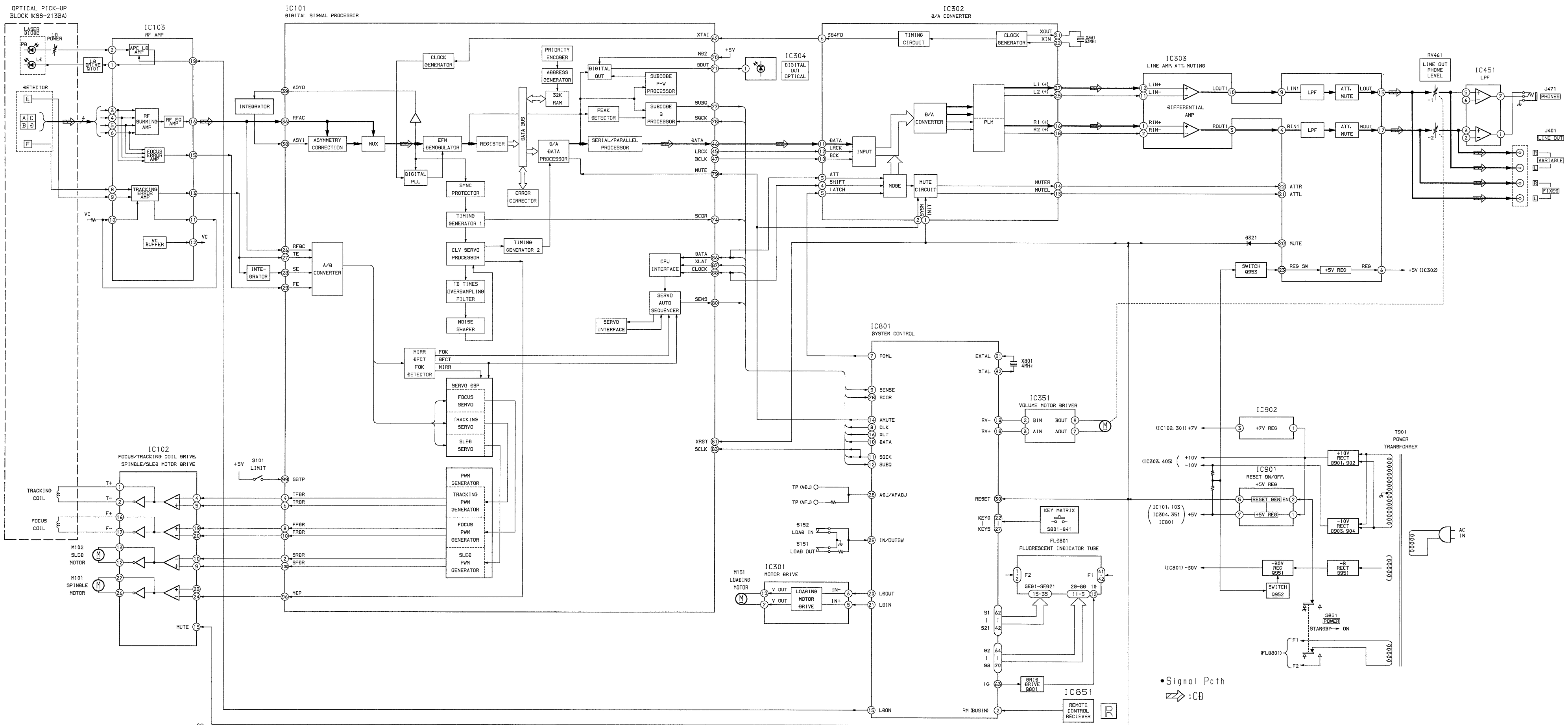
Pin No.	Pin Name	I/O	Function
1	CENTER	—	Focus bias select.
2	RM (BUSIN)	I	Remote commander input.
3	+5V	—	Connected to +5V.
4	OPEN	—	} Not used. (open)
5	OPEN	—	
6	(BUS-OUT)	—	
7	PGML	O	Latch signal output to digital filter (IC302).
8	CLK	O	Serial clock output.
9	SENSE	I	SENSE signal input.
10	DATA	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	OPEN	—	Not used. (open)
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, AFADJ test pin.
29	IN/OUTSW	I	Loading IN/OUT switch input.

Pin No.	Pin Name	I/O	Function
30	RST	I	Reset signal input.
31	EXTAL	I	Clock input. (4 MHz)
32	XTAL	O	Clock output. (4 MHz)
33	V _{SS}	—	GND
34 to 41	OPEN	—	Not used. (open)
42 to 62	S21 to S1	O	FL segment output.
63 to 70	1G to 8G	O	FL grid output.
71	VFDP (-30V)	—	-30V pin for FL display tube.
72	V _{DD} (+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 GND.
80	SEL3	—	

5-2. CIRCUIT BOARDS LOCATION



5-3. BLOCK DIAGRAM



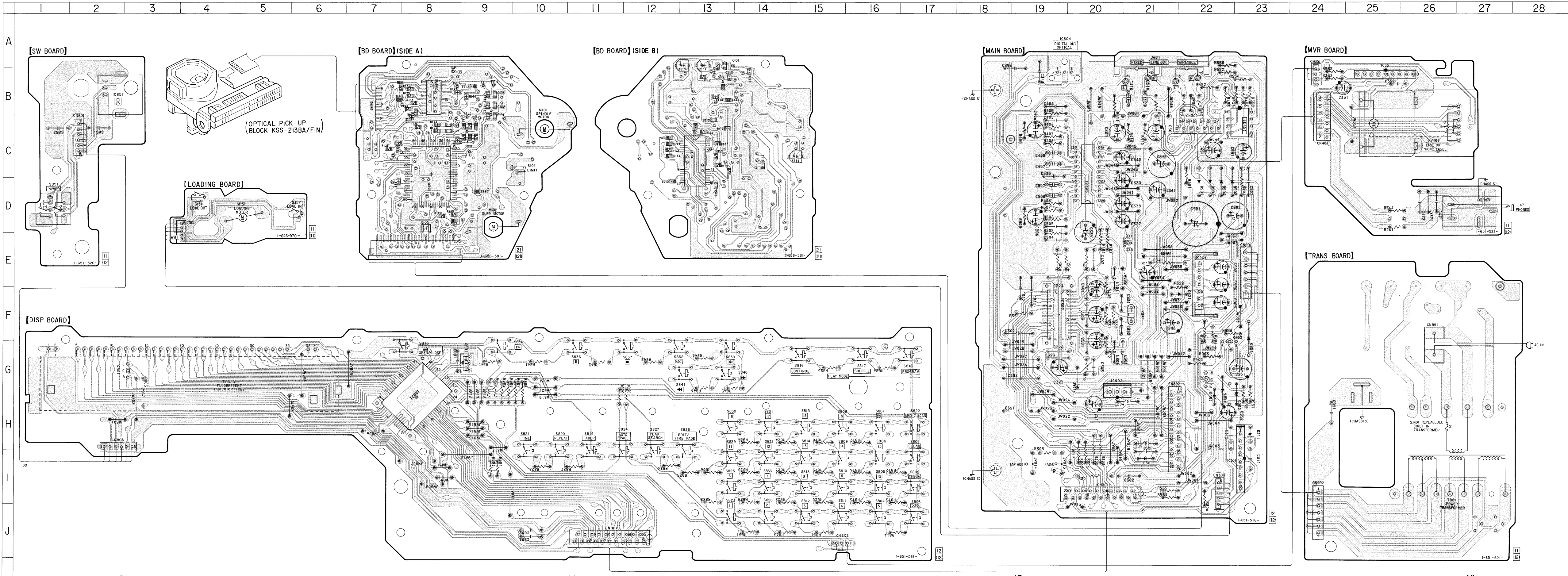
• Signal Path
 ⇨ : CD

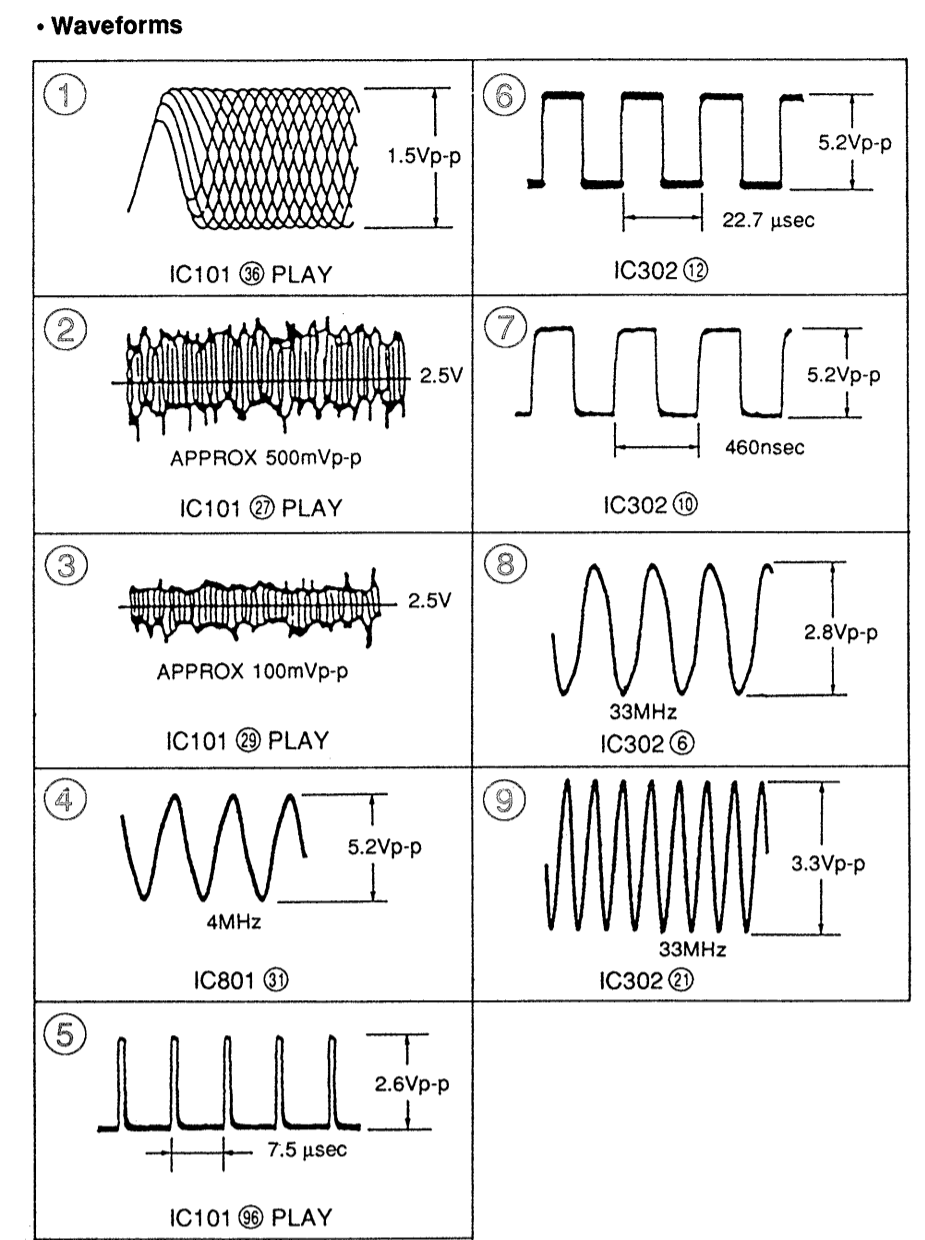
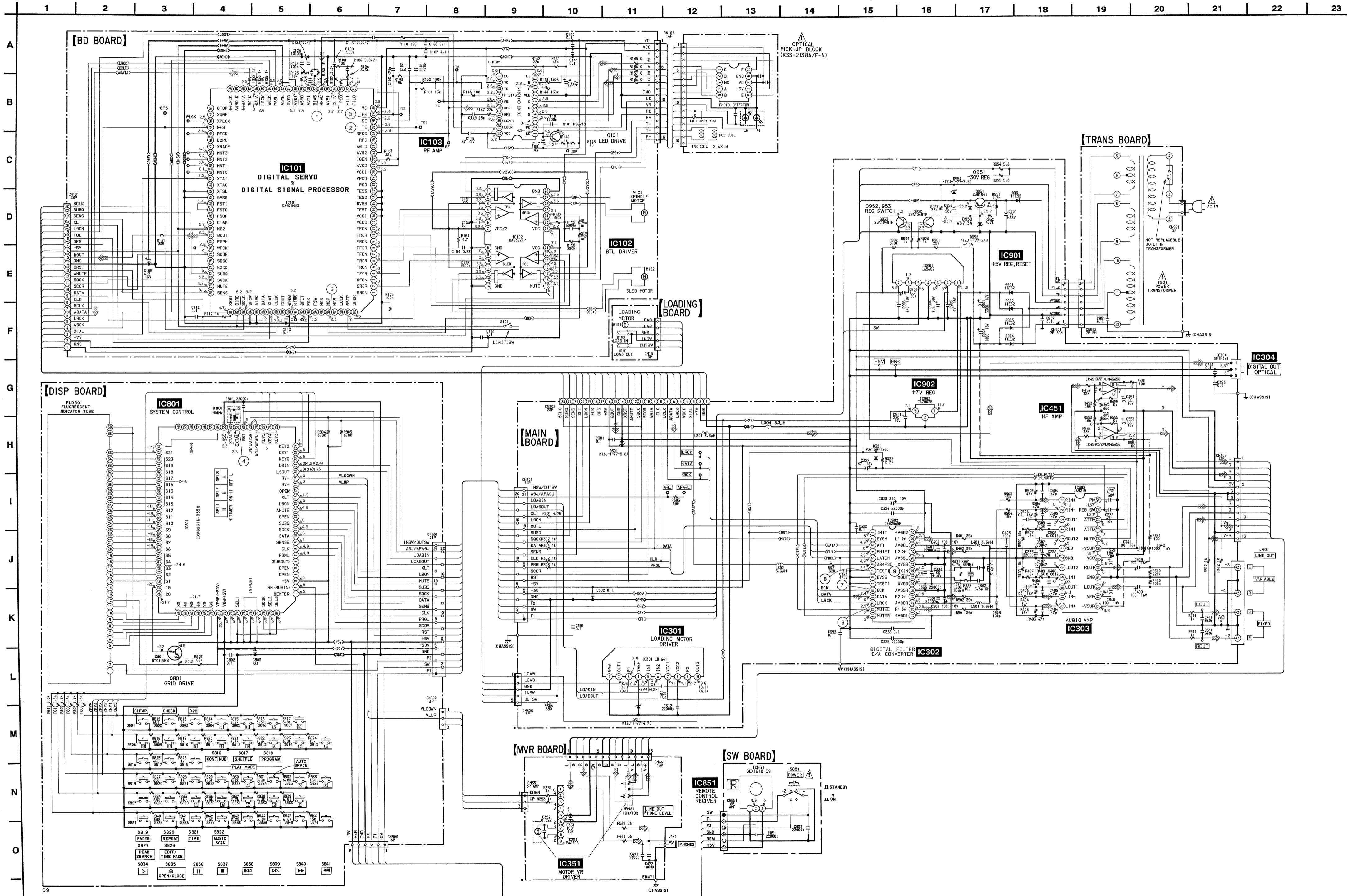
5-4. PRINTED WIRING BOARD
• See page 11 for Circuit Boards Location.

Note:
• : parts extracted from the components side.
• : Through hole.
• : Denotes that Jumper wire works as Test Point.
• : Pattern from the side which enable seeing.

• Semiconductor Location

Ref. No.	Location
D301	I-21
D311	H-23
D321	F-22
D901	D-22
D902	D-22
D903	D-22
D904	D-22
D951	G-23
D952	H-22
D953	H-22
D954	H-22
IC101	D-8
IC102	C-13
IC103	B-8
IC301	I-22
IC302	F-19
IC303	D-20
IC304	A-19
IC351	A-25
IC451	C-23
IC801	G-8
IC851	B-2
IC901	E-22
IC902	G-20
Q101	A-13
Q801	G-2
Q951	G-22
Q952	F-22
Q953	E-20





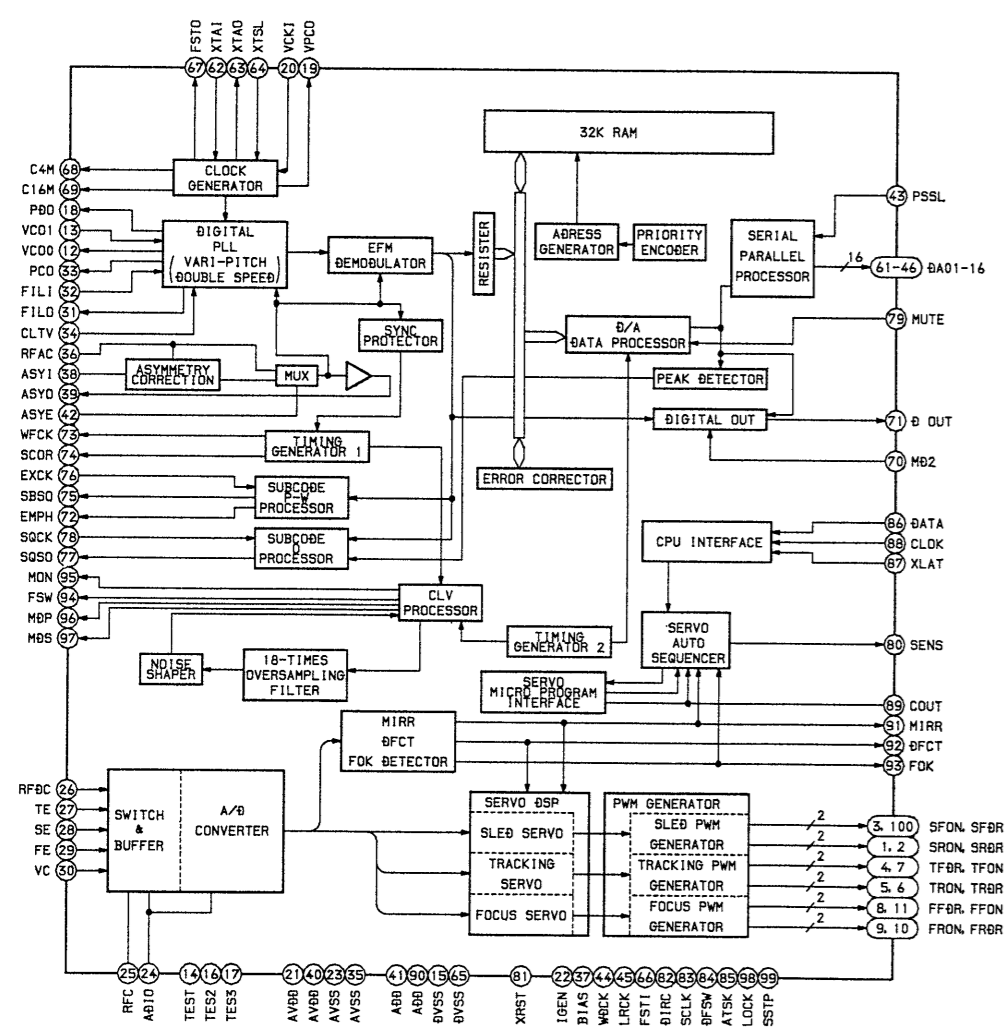
Note:
 • All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
 • All resistors are in Ω and 1/4W or less unless otherwise specified.
 • Δ : internal component.
 • \square : panel designation.

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

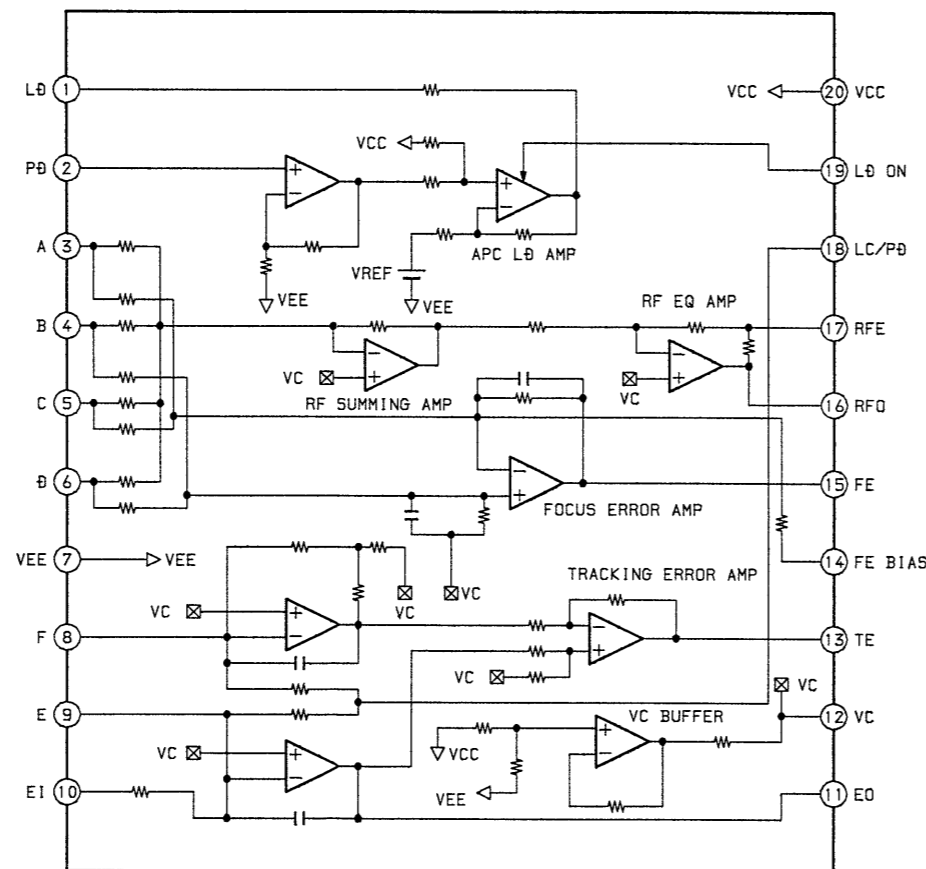
• — : B+ Line
 • - - - : B- Line
 • Voltage and waveforms are dc with respect to ground under no-signal conditions.
 • no mark : STOP mode
 • () : LOAD IN
 • < > : LOAD OUT
 • Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
 • Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
 • Circled numbers refer to waveforms.
 • Signal path:
 • \Rightarrow : CD
 • \Rightarrow : digital out

5-6. IC BLOCK DIAGRAMS

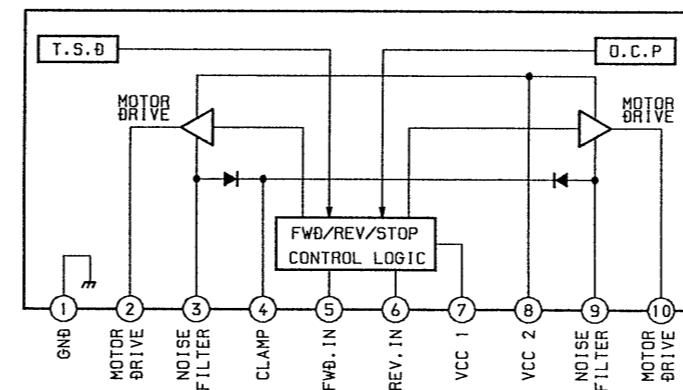
IC101 CXD2545Q



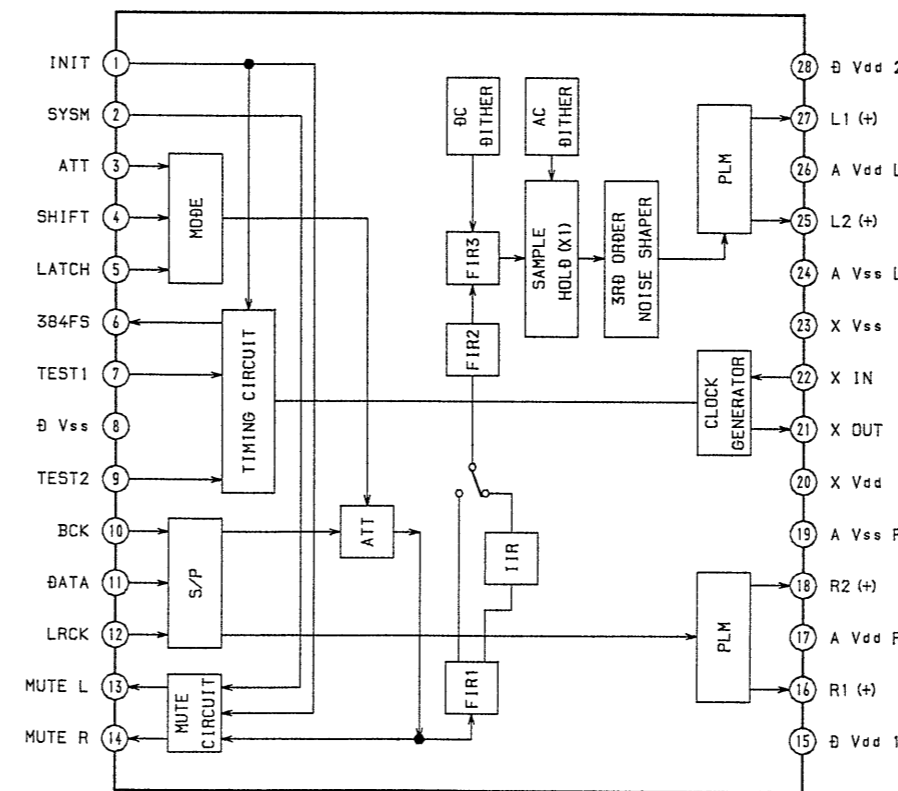
IC103 CXA1821M



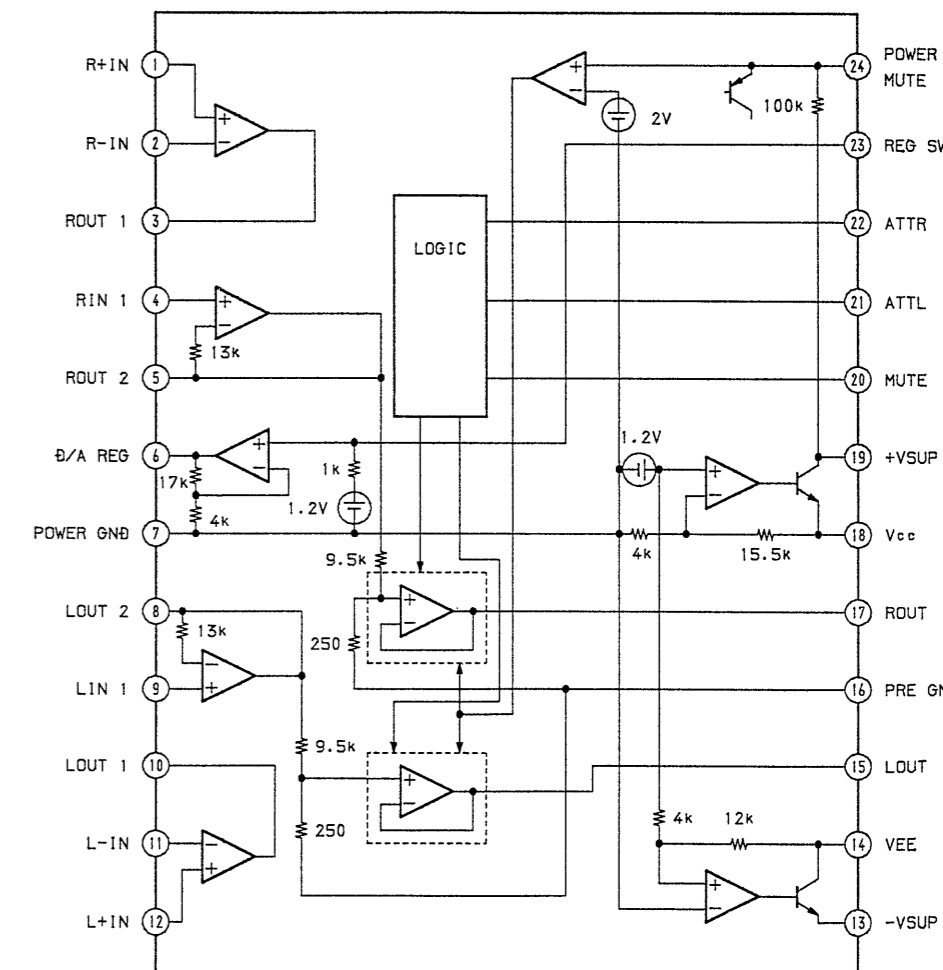
IC301 LB1641



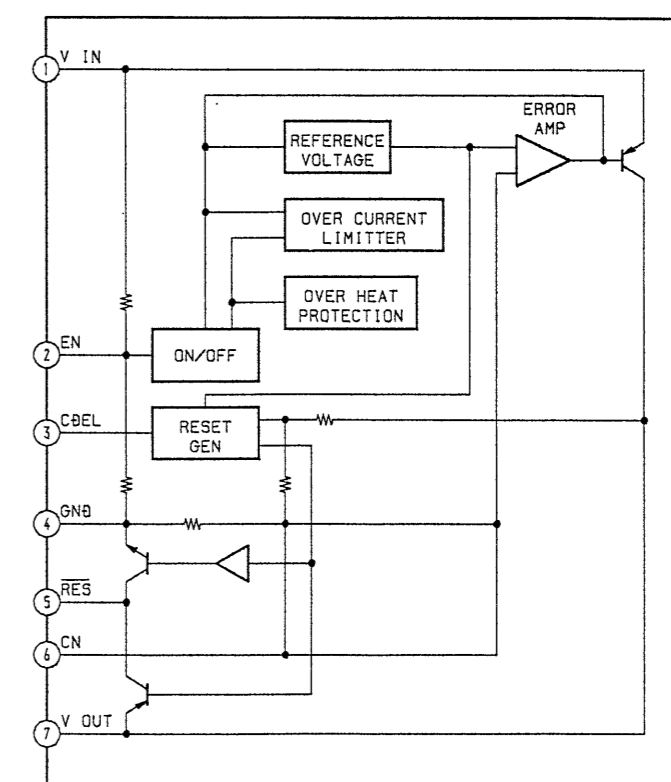
IC302 CXD2565M



IC303 LA9215



IC901 LA5602



SECTION 6

EXPLODED VIEWS

NOTE:

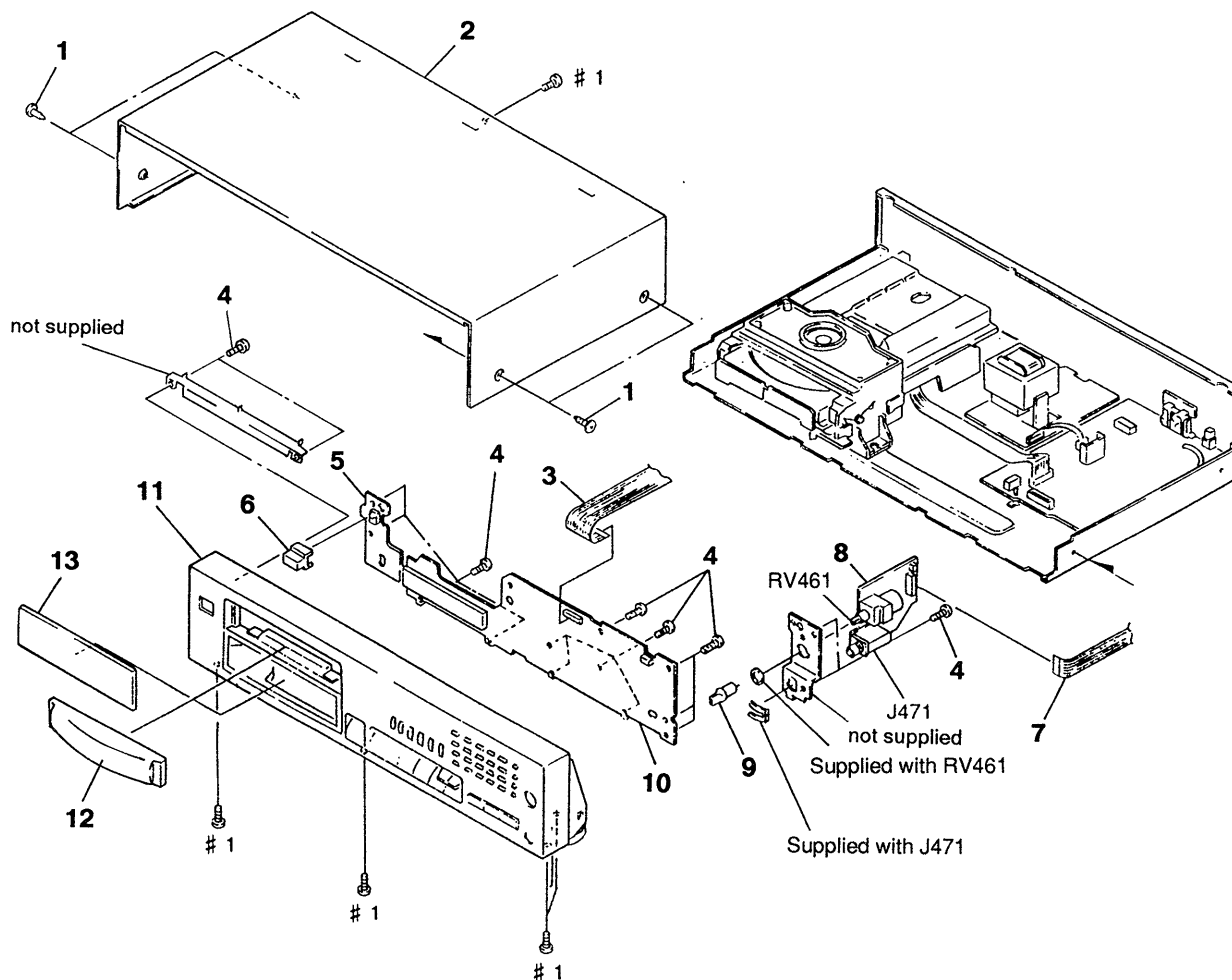
- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) . . . (RED)

↑ ↑
Parts color Cabinet's color

- 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.
- Abbreviation
G : German model

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

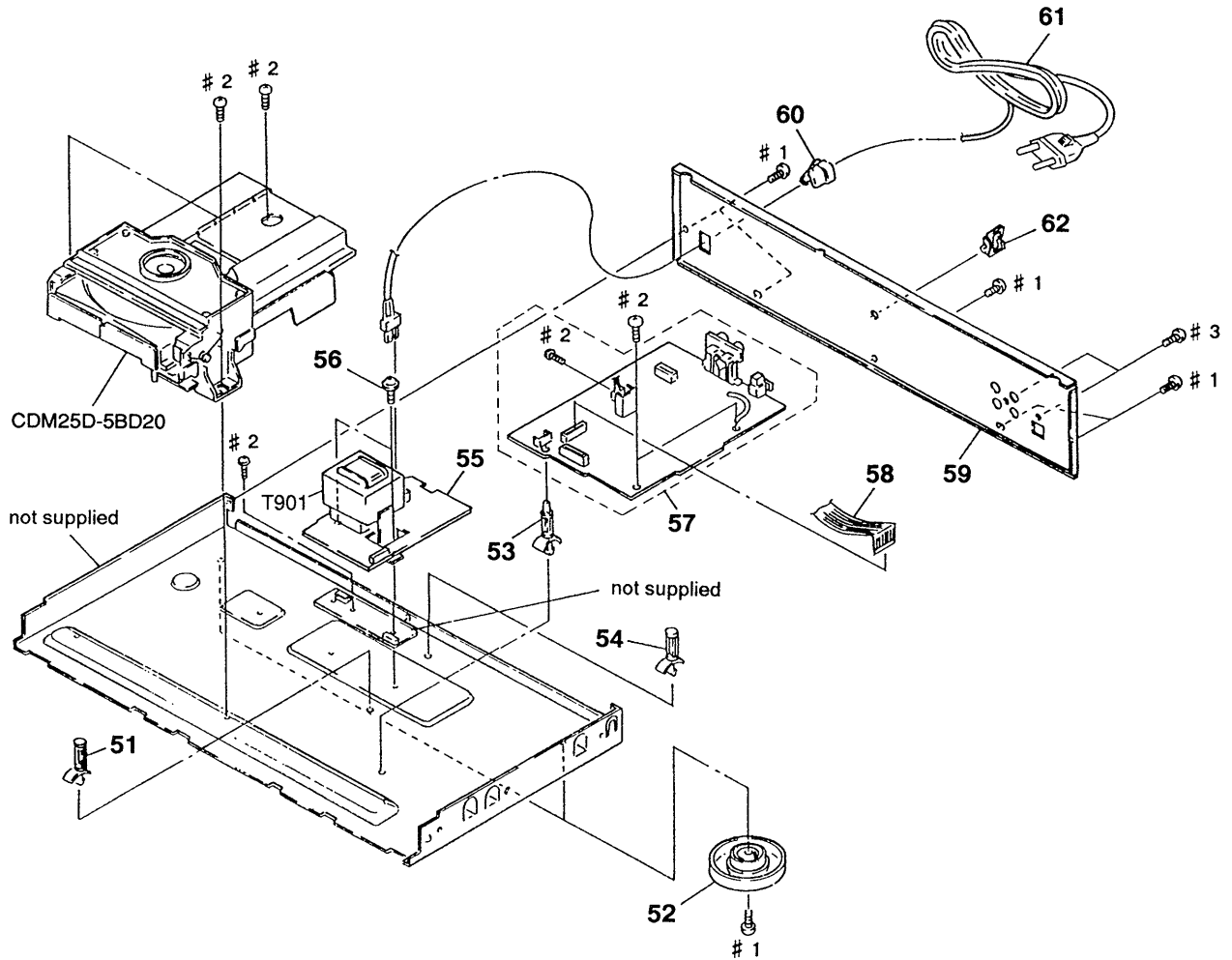
6-1. CASE AND FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	3-363-099-01	SCREW (CASE 3 TP2) (BLACK).. (BLACK)	
1	3-363-099-11	SCREW (CASE 3 TP2) (SILVER).. (SILVER)	
2	4-937-817-01	CASE (BLACK).. (BLACK)	
* 2	4-937-817-51	CASE (SILVER).. (SILVER)	
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) (BLACK).. (BLACK)	
6	4-947-034-11	BUTTON (POWER) (SILVER).. (SILVER)	
7	1-751-948-11	WIRE (FLAT TYPE) (13 CORE)	
* 8	1-651-522-11	MVR BOARD	

Ref. No.	Part No.	Description	Remark
9	4-950-189-01	KNOB (A) (VOL) (BLACK).. (BLACK)	
9	4-950-189-31	KNOB (A) (VOL) (SILVER).. (SILVER)	
* 10	A-4673-426-A	DISP BOARD, COMPLETE	
11	X-4945-596-1	PANEL ASSY, FRONT (BLACK).. (BLACK)	
11	X-4945-597-1	PANEL ASSY, FRONT (SILVER).. (SILVER)	
12	4-971-681-01	PANEL, LOADING (BLACK).. (BLACK)	
12	4-971-681-11	PANEL, LOADING (SILVER).. (SILVER)	
13	4-962-199-01	PLATE, INDICATION	
J471	1-750-162-61	JACK (LARGE TYPE) (PHONES)	
RV461	1-223-875-11	RES, VAR, CARBON 10K/10K (LINE OUT PHONE LEVEL)	

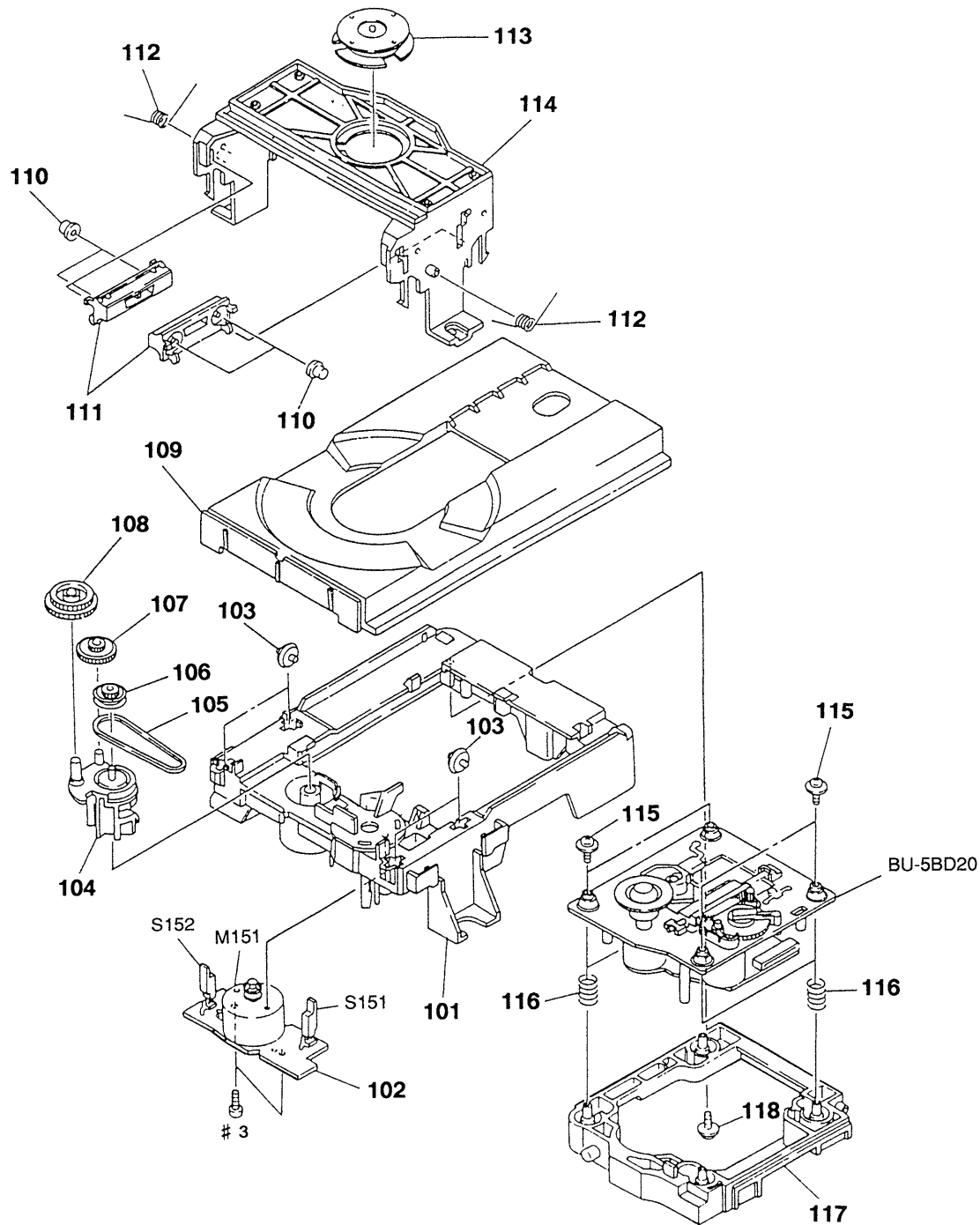
6-2. CHASSIS SECTION



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 51	4-944-316-01	HOLDER, PC BOARD		58	1-696-760-11	WIRE (FLAT TYPE) (23 CORE)	
52	4-956-885-11	FOOT (F58175S2W)		* 59	4-962-202-31	PANEL (AL), BACK (AEP)	
* 53	4-924-098-31	HOLDER, PC BOARD		* 59	4-962-202-41	PANEL (AL), BACK (G)	
* 54	3-349-025-41	HOLDER, PC BOARD		60	3-703-244-00	BUSHING, CORD	
* 55	1-651-521-11	TRANS BOARD		Δ 61	1-775-309-11	CORD, POWER	
56	2-383-566-00	SCREW		* 62	3-681-263-11	SADDLE, WIRE	
* 57	A-4673-425-A	MAIN BOARD, COMPLETE		Δ T901	1-449-925-11	TRANSFORMER, POWER	

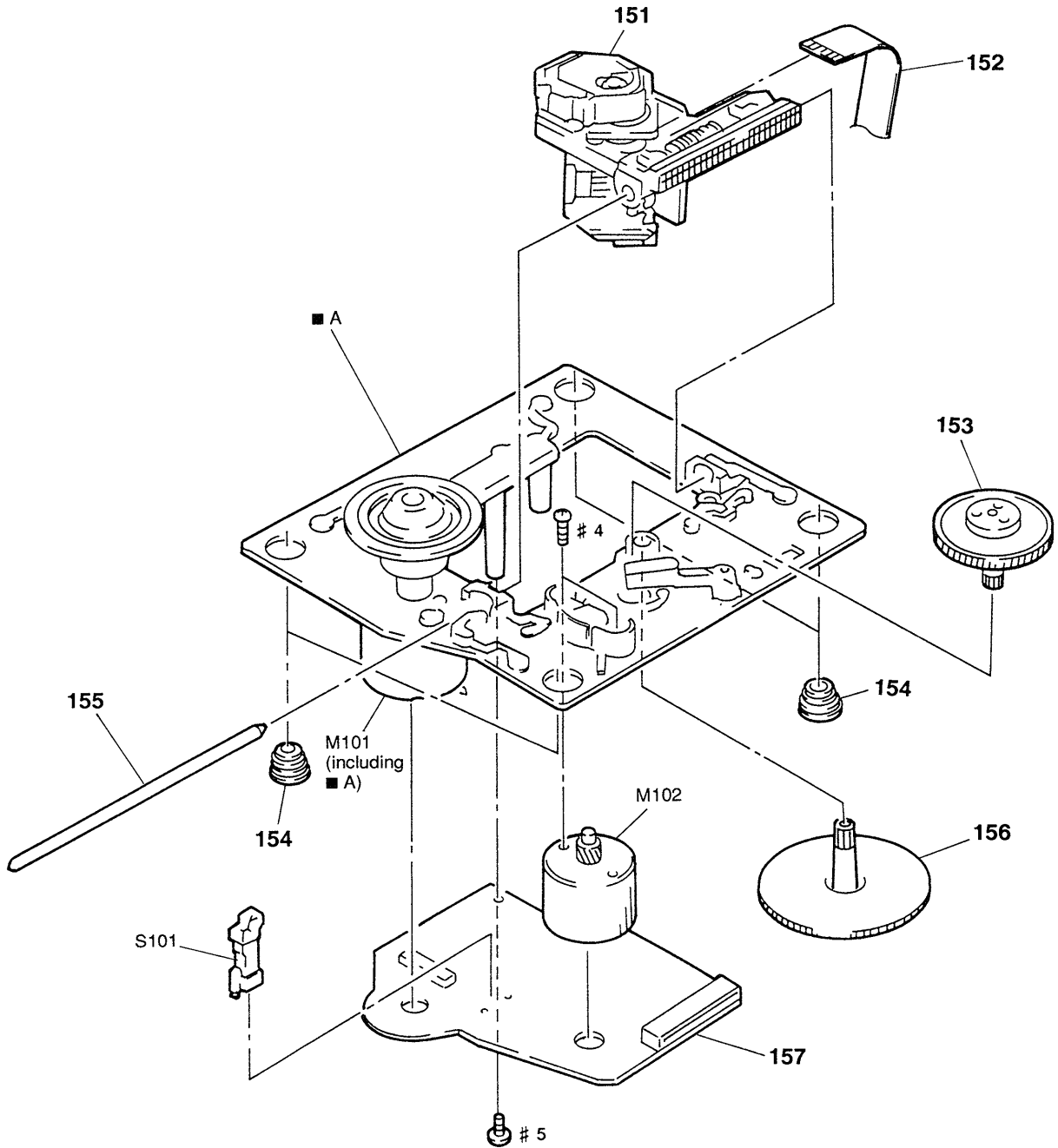
6-3. MECHANISM SECTION (CDM25D-5BD20)



Ref. No.	Part No.	Description
* 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	4-967-268-01	GEAR (C)
108	4-933-107-01	GEAR (PL)
109	4-961-794-11	TABLE, DISC
110	4-954-194-01	ROLLER (B)
111	4-954-199-01	PLATE, SLIDE

Ref. No.	Part No.	Description
112	4-954-195-01	SPRING, TORSION
* 113	1-452-538-11	MAGNET
* 114	4-954-192-11	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
M151	A-4604-363-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. BASE UNIT SECTION (BU-5BD20)



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
\triangle 151	8-848-367-11	OPTICAL PICK-UP BLOCK KSS-213BA/F-N		156	4-917-564-01	GEAR (P), FLATNESS	
152	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)		157	A-4673-511-A	BD BOARD, COMPLETE	
153	4-917-567-01	GEAR (M)		M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
154	4-951-940-01	INSULATOR (BU)		M102	X-4917-504-1	MOTOR ASSY (SLED)	
155	4-917-565-01	SHAFT, SLED		S101	1-572-085-11	SWITCH, LEAF (LIMIT)	

BD

SECTION 7 ELECTRICAL PARTS LIST

NOTE:

The components identified by mark Δ or dotted line with mark Δ 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.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor

- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
G : German model

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
	A-4673-511-A	BD BOARD, COMPLETE *****				< TRANSISTOR >	
		< CAPACITOR >				< RESISTOR >	
C101	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		Q101	8-729-010-08	TRANSISTOR MSB710-R	
C102	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R101	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C103	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		R102	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C105	1-135-155-21	TANTALUM CHIP 4.7uF 10% 16V		R103	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C106	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R104	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C107	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R105	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C108	1-163-035-00	CERAMIC CHIP 0.047uF 50V		R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C109	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V		R107	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C110	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V		R108	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C111	1-163-251-11	CERAMIC CHIP 100PF 5% 50V		R109	1-216-121-00	METAL CHIP 1M 5% 1/10W	
C112	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R110	1-216-025-91	METAL CHIP 100 5% 1/10W	
C113	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R112	1-216-049-91	METAL CHIP 1K 5% 1/10W	
C115	1-126-607-11	ELECT CHIP 47uF 20% 4V		R123	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C116	1-126-607-11	ELECT CHIP 47uF 20% 4V		R124	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C117	1-126-209-11	ELECT 100uF 20% 4V		R125	1-216-049-91	METAL CHIP 1K 5% 1/10W	
C118	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V		R126	1-216-049-91	METAL CHIP 1K 5% 1/10W	
C119	1-163-097-00	CERAMIC CHIP 15PF 5% 50V		R127	1-216-049-91	METAL CHIP 1K 5% 1/10W	
C123	1-164-232-11	CERAMIC CHIP 0.01uF 50V		R131	1-216-037-00	METAL CHIP 330 5% 1/10W	
C124	1-164-005-11	CERAMIC CHIP 0.47uF 25V		R135	1-216-295-00	METAL CHIP 0 5% 1/10W	
C140	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R136	1-216-295-00	METAL CHIP 0 5% 1/10W	
C141	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R137	1-216-295-00	METAL CHIP 0 5% 1/10W	
C151	1-163-237-11	CERAMIC CHIP 27PF 5% 50V		R138	1-216-295-00	METAL CHIP 0 5% 1/10W	
C153	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R141	1-216-089-00	METAL CHIP 47K 5% 1/10W	
C154	1-164-336-11	CERAMIC CHIP 0.33uF 25V		R142	1-216-081-00	METAL CHIP 22K 5% 1/10W	
C156	1-163-237-11	CERAMIC CHIP 27PF 5% 50V		R143	1-216-101-00	METAL CHIP 150K 5% 1/10W	
C157	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V		R144	1-216-101-00	METAL CHIP 150K 5% 1/10W	
C159	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V		R146	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C161	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R147	1-216-081-00	METAL CHIP 22K 5% 1/10W	
		< CONNECTOR >		R148	1-216-001-00	METAL CHIP 10 5% 1/10W	
CN101	1-770-072-11	CONNECTOR (FFC) 23P		R149	1-216-003-11	METAL CHIP 12 5% 1/10W	
CN102	1-770-014-11	CONNECTOR, FFC/FPC 16P		R158	1-216-111-00	METAL CHIP 390K 5% 1/10W	
		< IC >		R159	1-216-101-00	METAL CHIP 150K 5% 1/10W	
IC101	8-752-369-78	IC CXD2545Q		R160	1-216-295-00	METAL CHIP 0 5% 1/10W	
IC102	8-759-176-09	IC BA6392FP		R161	1-216-308-00	METAL CHIP 4.7 5% 1/10W	
IC103	8-752-072-45	IC CXA1821M		R162	1-216-101-00	METAL CHIP 150K 5% 1/10W	
		< MOTOR >				< SWITCH >	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)		S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
M102	X-4917-504-1	MOTOR ASSY (SLED)				*****	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4673-426-A	DISP BOARD, COMPLETE *****		R829	1-249-419-11	CARBON	1.5K 5% 1/4W F
	7-685-871-01	SCREW +BVTT 3X6 (S)		R830	1-249-421-11	CARBON	2.2K 5% 1/4W F
		< CAPACITOR >		R831	1-249-423-11	CARBON	3.3K 5% 1/4W F
C801	1-161-494-00	CERAMIC 0.022uF	25V	R832	1-249-427-11	CARBON	6.8K 5% 1/4W F
C802	1-164-159-11	CERAMIC 0.1uF	50V	R833	1-249-431-11	CARBON	15K 5% 1/4W
C803	1-164-159-11	CERAMIC 0.1uF	50V	R834	1-249-415-11	CARBON	680 5% 1/4W F
		< CONNECTOR >		R835	1-249-417-11	CARBON	1K 5% 1/4W F
CN801	1-568-838-11	SOCKET, CONNECTOR 21P		R836	1-249-419-11	CARBON	1.5K 5% 1/4W F
		< FLUORESCENT INDICATOR >		R837	1-249-421-11	CARBON	2.2K 5% 1/4W F
FLD801	1-519-757-11	INDICATOR TUBE, FLUORESCENT		R838	1-249-423-11	CARBON	3.3K 5% 1/4W F
		< IC >		R839	1-249-427-11	CARBON	6.8K 5% 1/4W F
IC801	8-752-863-44	IC CXP82316-055Q		R840	1-249-415-11	CARBON	680 5% 1/4W F
		< TRANSISTOR >		R841	1-249-417-11	CARBON	1K 5% 1/4W F
Q801	8-729-900-80	TRANSISTOR DTC114ES		R842	1-249-419-11	CARBON	1.5K 5% 1/4W F
		< RESISTOR >		R843	1-249-421-11	CARBON	2.2K 5% 1/4W F
R803	1-249-427-11	CARBON 6.8K 5%	1/4W F	R844	1-249-423-11	CARBON	3.3K 5% 1/4W F
R804	1-249-427-11	CARBON 6.8K 5%	1/4W F	R845	1-249-427-11	CARBON	6.8K 5% 1/4W F
R805	1-249-441-11	CARBON 100K 5%	1/4W	R846	1-249-431-11	CARBON	15K 5% 1/4W
R806	1-249-427-11	CARBON 6.8K 5%	1/4W F			< SWITCH >	
R807	1-249-427-11	CARBON 6.8K 5%	1/4W F	S801	1-554-303-21	SWITCH, TACTILE (CLEAR)	
R808	1-249-427-11	CARBON 6.8K 5%	1/4W F	S802	1-554-303-21	SWITCH, TACTILE (CHECK)	
R809	1-249-427-11	CARBON 6.8K 5%	1/4W F	S803	1-554-303-21	SWITCH, TACTILE (>20)	
R810	1-249-427-11	CARBON 6.8K 5%	1/4W F	S804	1-554-303-21	SWITCH, TACTILE (5)	
R811	1-249-427-11	CARBON 6.8K 5%	1/4W F	S805	1-554-303-21	SWITCH, TACTILE (10)	
R812	1-249-415-11	CARBON 680 5%	1/4W F	S806	1-554-303-21	SWITCH, TACTILE (15)	
R813	1-249-417-11	CARBON 1K 5%	1/4W F	S807	1-554-303-21	SWITCH, TACTILE (20)	
R814	1-249-419-11	CARBON 1.5K 5%	1/4W F	S808	1-554-303-21	SWITCH, TACTILE (19)	
R815	1-249-421-11	CARBON 2.2K 5%	1/4W F	S809	1-554-303-21	SWITCH, TACTILE (14)	
R816	1-249-423-11	CARBON 3.3K 5%	1/4W F	S810	1-554-303-21	SWITCH, TACTILE (9)	
R817	1-249-427-11	CARBON 6.8K 5%	1/4W F	S811	1-554-303-21	SWITCH, TACTILE (4)	
R818	1-249-415-11	CARBON 680 5%	1/4W F	S812	1-554-303-21	SWITCH, TACTILE (3)	
R819	1-249-417-11	CARBON 1K 5%	1/4W F	S813	1-554-303-21	SWITCH, TACTILE (8)	
R820	1-249-419-11	CARBON 1.5K 5%	1/4W F	S814	1-554-303-21	SWITCH, TACTILE (13)	
R821	1-249-421-11	CARBON 2.2K 5%	1/4W F	S815	1-554-303-21	SWITCH, TACTILE (18)	
R822	1-249-423-11	CARBON 3.3K 5%	1/4W F	S816	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
R823	1-249-427-11	CARBON 6.8K 5%	1/4W F	S817	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
R824	1-249-431-11	CARBON 15K 5%	1/4W	S818	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
R825	1-249-415-11	CARBON 680 5%	1/4W F	S819	1-554-303-21	SWITCH, TACTILE (FADER)	
R826	1-249-417-11	CARBON 1K 5%	1/4W F	S820	1-554-303-21	SWITCH, TACTILE (REPEAT)	
R827	1-249-415-11	CARBON 680 5%	1/4W F	S821	1-554-303-21	SWITCH, TACTILE (TIME)	
R828	1-249-417-11	CARBON 1K 5%	1/4W F	S822	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)	
				S823	1-554-303-21	SWITCH, TACTILE (1)	
				S824	1-554-303-21	SWITCH, TACTILE (AUTO SPACE)	
				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)	

DISP

LOADING

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
S831	1-554-303-21	SWITCH, TACTILE (17)		C335	1-161-494-00	CERAMIC	0.022uF 25V
S832	1-554-303-21	SWITCH, TACTILE (12)		C336	1-126-103-11	ELECT	470uF 20% 16V
S833	1-554-303-21	SWITCH, TACTILE (7)		C337	1-124-927-11	ELECT	4.7uF 20% 100V
S834	1-554-303-21	SWITCH, TACTILE (▷)		C338	1-124-477-11	ELECT	47uF 20% 25V
S835	1-554-303-21	SWITCH, TACTILE (△ OPEN/CLOSE)		C339	1-126-101-11	ELECT	100uF 20% 16V
S836	1-554-303-21	SWITCH, TACTILE (■)		C340	1-126-101-11	ELECT	100uF 20% 16V
S837	1-554-303-21	SWITCH, TACTILE (■)		C341	1-126-101-11	ELECT	100uF 20% 16V
S838	1-554-303-21	SWITCH, TACTILE (◁◁◁)		C342	1-126-952-11	ELECT	1000uF 20% 16V
S839	1-554-303-21	SWITCH, TACTILE (▷▷▷)		C343	1-164-159-11	CERAMIC	0.1uF 50V
S840	1-554-303-21	SWITCH, TACTILE (▶▶▶)		C391	1-164-159-11	CERAMIC	0.1uF 50V
S841	1-554-303-21	SWITCH, TACTILE (◀◀◀)		C392	1-164-159-11	CERAMIC	0.1uF 50V
		< VIBRATOR >		C393	1-164-159-11	CERAMIC	0.1uF 50V
X801	1-577-082-11	VIBRATOR, CERAMIC (4MHz)		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
*	1-646-970-11	LOADING BOARD		C404	1-162-215-31	CERAMIC	47PF 5% 50V
		*****		C405	1-162-215-31	CERAMIC	47PF 5% 50V
		< CONNECTOR >		C406	1-124-122-11	ELECT	100uF 20% 50V
* CN151	1-568-943-11	PIN, CONNECTOR 5P		C407	1-106-359-00	MYLAR	4700PF 5% 200V
		< MOTOR >		C408	1-130-472-00	MYLAR	0.0012uF 5% 50V
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)		C409	1-124-122-11	ELECT	100uF 20% 50V
		< SWITCH >		C410	1-130-468-00	MYLAR	560PF 5% 50V
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)		C451	1-126-101-11	ELECT	100uF 20% 16V
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)		C501	1-161-494-00	CERAMIC	0.022uF 25V
		*****		C502	1-126-101-11	ELECT	100uF 20% 16V
*	A-4673-425-A	MAIN BOARD, COMPLETE		C503	1-162-282-31	CERAMIC	100PF 10% 50V
		*****		C504	1-162-215-31	CERAMIC	47PF 5% 50V
		< CAPACITOR >		C505	1-162-215-31	CERAMIC	47PF 5% 50V
C301	1-164-159-11	CERAMIC	0.1uF 50V	C506	1-124-122-11	ELECT	100uF 20% 50V
C302	1-164-159-11	CERAMIC	0.1uF 50V	C507	1-106-359-00	MYLAR	4700PF 5% 200V
C311	1-162-306-11	CERAMIC	0.01uF 20% 16V	C508	1-130-472-00	MYLAR	0.0012uF 5% 50V
C312	1-161-494-00	CERAMIC	0.022uF 25V	C509	1-124-122-11	ELECT	100uF 20% 50V
C321	1-162-290-31	CERAMIC	470PF 10% 50V	C510	1-130-468-00	MYLAR	560PF 5% 50V
C322	1-164-159-11	CERAMIC	0.1uF 50V	C551	1-126-101-11	ELECT	100uF 20% 16V
C323	1-126-176-11	ELECT	220uF 20% 10V	C901	1-128-489-11	ELECT	3300uF 20% 16V
C324	1-161-494-00	CERAMIC	0.022uF 25V	C902	1-126-952-11	ELECT	1000uF 20% 16V
C325	1-161-494-00	CERAMIC	0.022uF 25V	C903	1-124-477-11	ELECT	47uF 20% 25V
C326	1-164-159-11	CERAMIC	0.1uF 50V	C904	1-124-927-11	ELECT	4.7uF 20% 100V
C327	1-124-477-11	ELECT	47uF 20% 25V	C905	1-124-927-11	ELECT	4.7uF 20% 100V
C331	1-162-196-31	CERAMIC	5.6PF 10% 50V	C906	1-124-472-11	ELECT	470uF 20% 10V
C332	1-162-196-31	CERAMIC	5.6PF 10% 50V	C907	1-164-159-11	CERAMIC	0.1uF 50V
C333	1-161-494-00	CERAMIC	0.022uF 25V	C911	1-126-176-11	ELECT	220uF 20% 10V
C334	1-126-101-11	ELECT	100uF 20% 16V	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	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< DIODE >				R306	1-249-415-11	CARBON	680 5% 1/4W F
D301	8-719-109-88	DIODE RD5.6ES-B1		R307	1-249-417-11	CARBON	1K 5% 1/4W F
D311	8-719-921-40	DIODE HTZJ-4.7C		R321	1-249-411-11	CARBON	330 5% 1/4W
D321	8-719-815-85	DIODE 1S1585		R322	1-249-422-11	CARBON	2.7K 5% 1/4W F
D901	8-719-210-21	DIODE 11EQS04		R331	1-249-425-11	CARBON	4.7K 5% 1/4W F
D902	8-719-210-21	DIODE 11EQS04		R332	1-247-807-31	CARBON	100 5% 1/4W
D903	8-719-210-21	DIODE 11EQS04		R341	1-247-807-31	CARBON	100 5% 1/4W
D904	8-719-210-21	DIODE 11EQS04		R401	1-249-436-11	CARBON	39K 5% 1/4W
D951	8-719-200-82	DIODE 11ES2		R402	1-249-436-11	CARBON	39K 5% 1/4W
D952	8-719-982-15	DIODE MTZJ-27B		R403	1-249-431-11	CARBON	15K 5% 1/4W
D953	8-719-815-85	DIODE 1S1585		R404	1-249-431-11	CARBON	15K 5% 1/4W
D954	8-719-110-03	DIODE RD7.5ESB2		R405	1-249-437-11	CARBON	47K 5% 1/4W
< GROUND PLATE >				R406	1-249-437-11	CARBON	47K 5% 1/4W
* EB991	4-962-200-01	PLATE (TR), GROUND		R407	1-249-419-11	CARBON	1.5K 5% 1/4W F
< IC >				R408	1-249-419-11	CARBON	1.5K 5% 1/4W F
IC301	8-759-822-09	IC LB1641		R409	1-249-429-11	CARBON	10K 5% 1/4W
IC302	8-752-360-60	IC CXD2565M-1		R410	1-247-887-00	CARBON	220K 5% 1/4W
IC303	8-759-175-88	IC LA9215-ST		R411	1-249-417-11	CARBON	1K 5% 1/4W F
IC304	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)		R412	1-249-417-11	CARBON	1K 5% 1/4W F
IC451	8-759-167-88	IC NJM4565D		R451	1-247-807-31	CARBON	100 5% 1/4W
IC851	8-741-810-59	IC SBX1810-59		R452	1-249-435-11	CARBON	33K 5% 1/4W
IC901	8-759-061-65	IC LA5602		R453	1-249-432-11	CARBON	18K 5% 1/4W
IC902	8-759-604-86	IC M5F7807L		R454	1-249-422-11	CARBON	2.7K 5% 1/4W F
< JACK >				R455	1-249-429-11	CARBON	10K 5% 1/4W
* J401	1-569-443-11	JACK, PIN 4P (LINE OUT)		R501	1-249-436-11	CARBON	39K 5% 1/4W
< COIL >				R502	1-249-436-11	CARBON	39K 5% 1/4W
L301	1-410-322-11	INDUCTOR 3.3uH		R503	1-249-431-11	CARBON	15K 5% 1/4W
L302	1-410-322-11	INDUCTOR 3.3uH		R504	1-249-431-11	CARBON	15K 5% 1/4W
L303	1-410-322-11	INDUCTOR 3.3uH		R505	1-249-437-11	CARBON	47K 5% 1/4W
L304	1-410-322-11	INDUCTOR 3.3uH		R506	1-249-437-11	CARBON	47K 5% 1/4W
L401	1-410-322-11	INDUCTOR 3.3uH		R507	1-249-419-11	CARBON	1.5K 5% 1/4W F
L501	1-410-322-11	INDUCTOR 3.3uH		R508	1-249-419-11	CARBON	1.5K 5% 1/4W F
< TRANSISTOR >				R509	1-249-429-11	CARBON	10K 5% 1/4W
Q951	8-729-019-64	TRANSISTOR 2SB1041		R510	1-247-887-00	CARBON	220K 5% 1/4W
Q952	8-729-119-76	TRANSISTOR 2SA1175-HFE		R511	1-249-417-11	CARBON	1K 5% 1/4W F
Q953	8-729-119-76	TRANSISTOR 2SA1175-HFE		R512	1-249-417-11	CARBON	1K 5% 1/4W F
< RESISTOR >				R551	1-247-807-31	CARBON	100 5% 1/4W
R301	1-249-425-11	CARBON 4.7K 5%	1/4W F	R552	1-249-435-11	CARBON	33K 5% 1/4W
R302	1-249-417-11	CARBON 1K 5%	1/4W F	R553	1-249-432-11	CARBON	18K 5% 1/4W
R303	1-249-417-11	CARBON 1K 5%	1/4W F	R554	1-249-422-11	CARBON	2.7K 5% 1/4W F
R304	1-249-417-11	CARBON 1K 5%	1/4W F	R555	1-249-429-11	CARBON	10K 5% 1/4W
R305	1-249-415-11	CARBON 680 5%	1/4W F	R901	1-247-863-91	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
R903	1-249-417-11	CARBON 1K 5%	1/4W F	R904	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
R951	1-249-425-11	CARBON 4.7K 5%	1/4W F	R952	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
R953	1-249-435-11	CARBON 33K 5%	1/4W	R954	1-249-390-11	CARBON	5.6 5% 1/4W F
R954	1-249-390-11	CARBON 5.6 5%	1/4W F	R955	1-249-390-11	CARBON	5.6 5% 1/4W F
R955	1-249-390-11	CARBON 5.6 5%	1/4W F				

MAIN MVR SW TRANS

Ref. No.	Part No.	Description	Remark
		< VIBRATOR >	
X331	1-579-834-11	VIBRATOR, CRYSTAL (33MHz)	

*	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	
		< GROUND PLATE >	
* EB471	4-962-201-01	PLATE (HP), GROUND	
		< IC >	
IC351	8-759-962-08	IC BA6208	
		< JACK >	
J471	1-750-162-61	JACK (LARGE TYPE) (PHONES)	
		< RESISTOR >	
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	1-223-875-11	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	
		< 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) 2P	
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	1-696-760-11	WIRE (FLAT TYPE) (23 CORE)	
△61	1-775-309-11	CORD, POWER	
* 113	1-452-538-11	MAGNET	
△151	8-848-367-11	OPTICAL PICK-UP BLOCK KSS-213BA/F-N	
152	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
J471	1-750-162-61	JACK (LARGE TYPE) (PHONES)	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
RV461	1-223-875-11	RES, VAR, CARBON 10K/10K (LINE OUT PHONE LEVEL)	
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 *****	
	1-473-125-11	REMOTE COMMANDER (RM-D820)	
	1-558-271-11	CORD, CONNECTION (AUDIO 108cm)	
	3-759-994-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, SWEDISH) (AEP)	
	3-759-994-61	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN, PORTUGUESE) (AEP)	
	3-759-994-71	MANUAL, INSTRUCTION (GERMAN) (G)	
	4-941-925-02	CUSHION	
	4-962-615-01	COVER, BATTERY (for RM-D820)	
*	4-973-638-01	INDIVIDUAL CARTON	

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

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
		***** HARDWARE LIST *****	
#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
#2	7-685-871-01	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	

