

CDP-561/561E

SERVICE MANUAL

AEP Model
CDP-561

UK Model
CDP-561E

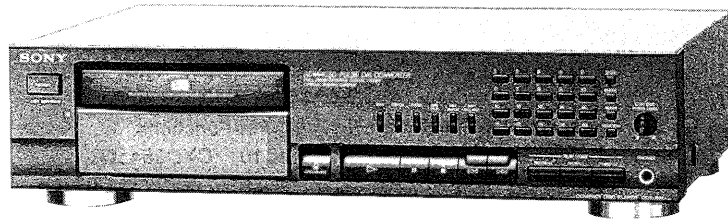


Photo : CDP-561

Model Name Using Similar Mechanism	CDP-715/715E
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 108 dB
Dynamic range	More than 99 dB
Harmonic distortion	Less than 0.0027%
Channel separation	More than 103 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	13 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.)	3.8 kg (8 lbs 4 oz)

Supplied accessories

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

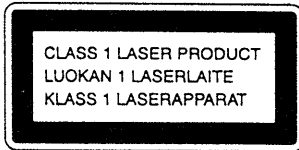
Design and specifications are subject to change without notice.

COMPACT DISC PLAYER
SONY[®]

CAUTION

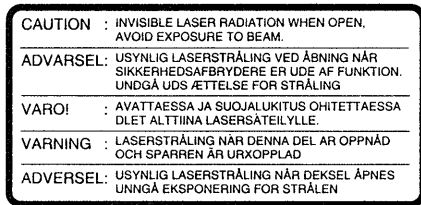
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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 the unit.



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 !!

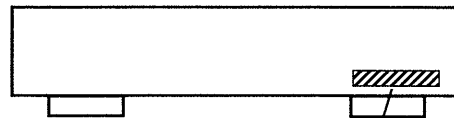
COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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MODEL IDENTIFICATION

— BACK PANEL —



CDP-561 (AEP Model) : 4-962-202-5□
 CDP-561 (German Model) : 4-962-202-6□
 CDP-561E (UK Model) : 4-962-202-7□

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.

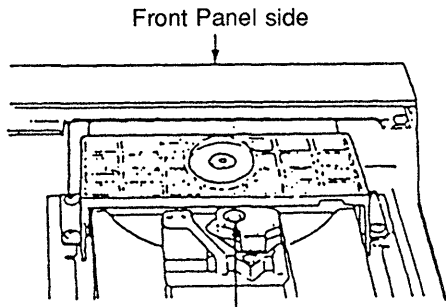
The flexible board is easily damaged and should be handled with care.

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.

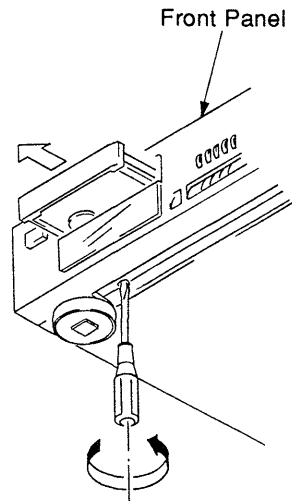


- ① Confirm that laser beam is spread.
- ② Up and down motion of the objective lens. (3 times)

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF

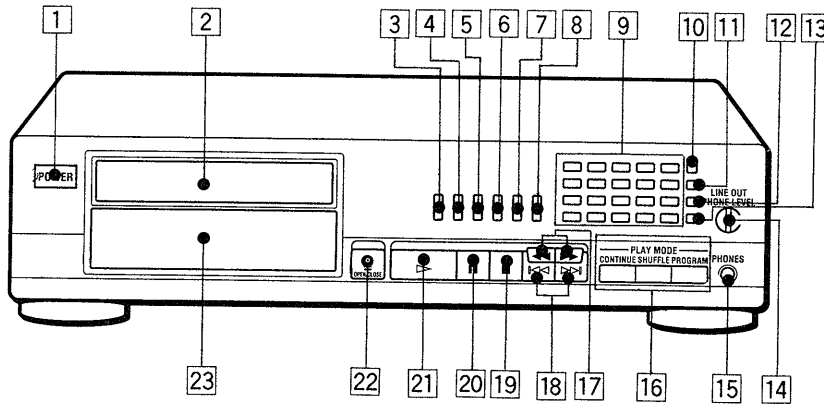
Insert a tapering driver into the aperture of the unit bottom, and turn in the direction of arrow.

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

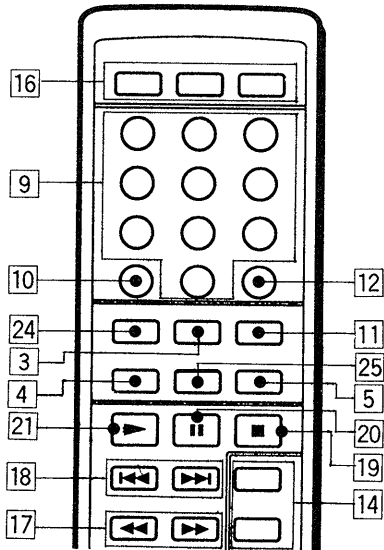


SECTION 2 GENERAL

Identifying the Parts



RM-D820



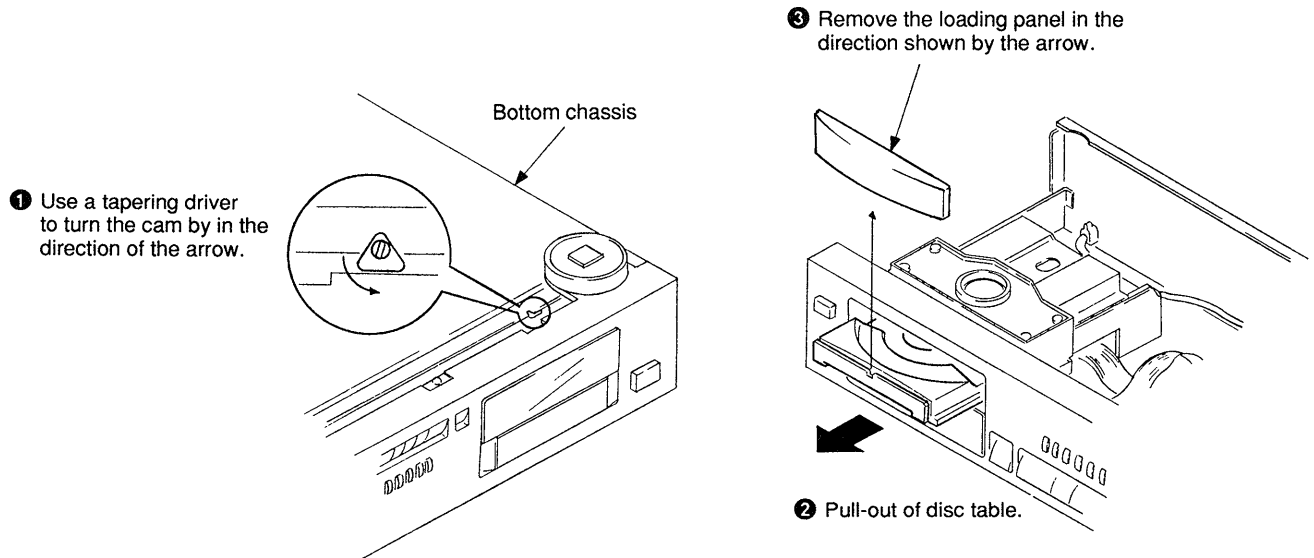
- 1 Power switch
- 2 Disc tray
- 3 TIME button
- 4 REPEAT button
- 5 FADER button
- 6 AUTO SPACE button
- 7 PEAK SEARCH button
- 8 EDIT/TIME FADE button
- 9 Number buttons
- 10 >20 (over 20) button
(>10 (over 10) button on the remote commander)
- 11 CHECK (Program check) button
- 12 CLEAR (Program clear)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

* AMS is the abbreviation of Automatic Music Sensor.

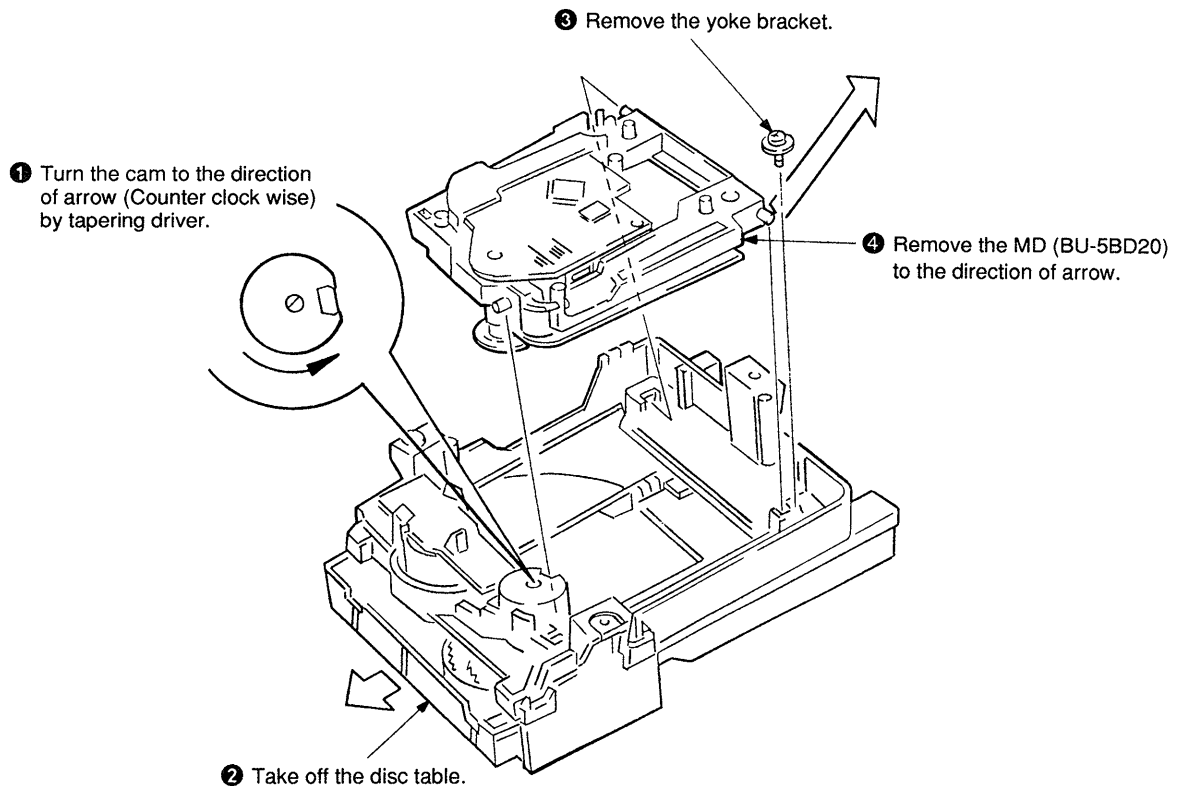
SECTION 3 DISASSEMBLY

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

3-1. LOADING PANEL



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



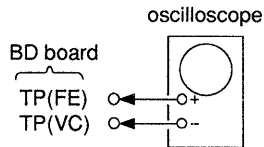
SECTION 4

ELECTRICAL BLOCK CHECKING

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.

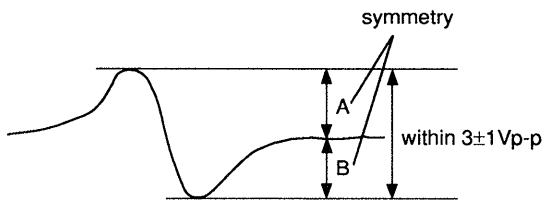
S Curve Check



Procedure :

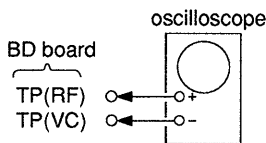
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)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

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 :

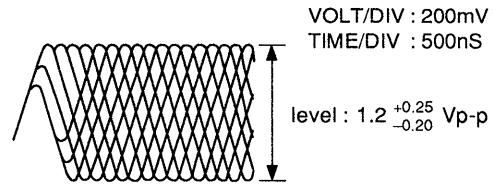
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.

3. Put disc (YEDS-18) in to play the number five track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

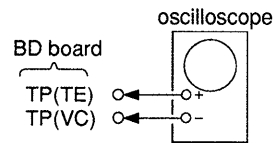
Note :

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

RF signal waveform



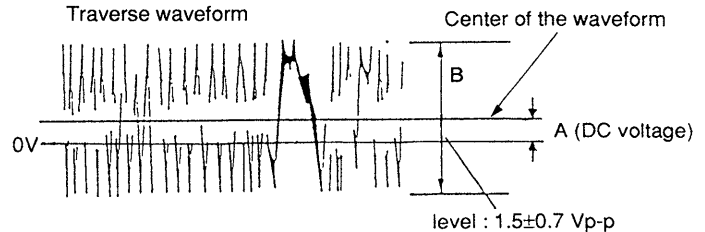
E-F Balance Check



Procedure :

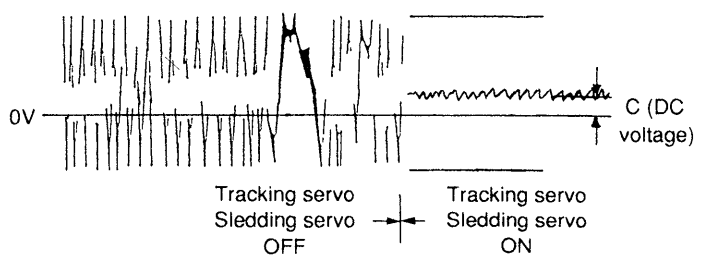
1. Connect test point TP (ADJ) to ground with lead wire.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in to play the number five track.
5. Press the CHECK button. (The tracking servo and the sledding servo are turned OFF.)
6. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform. Confirm the following :
 $A/B \times 100 = \text{less than } \pm 20\%$.

Traverse waveform



7. Press the CLEAR button. (The tracking servo and sledding servo are turned ON.) Confirm the C (DC voltage) is almost equal to the A (DC voltage) in step 6.

Traverse waveform

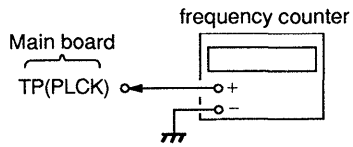


8. Disconnect the laed wire of TP (ADJ) connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

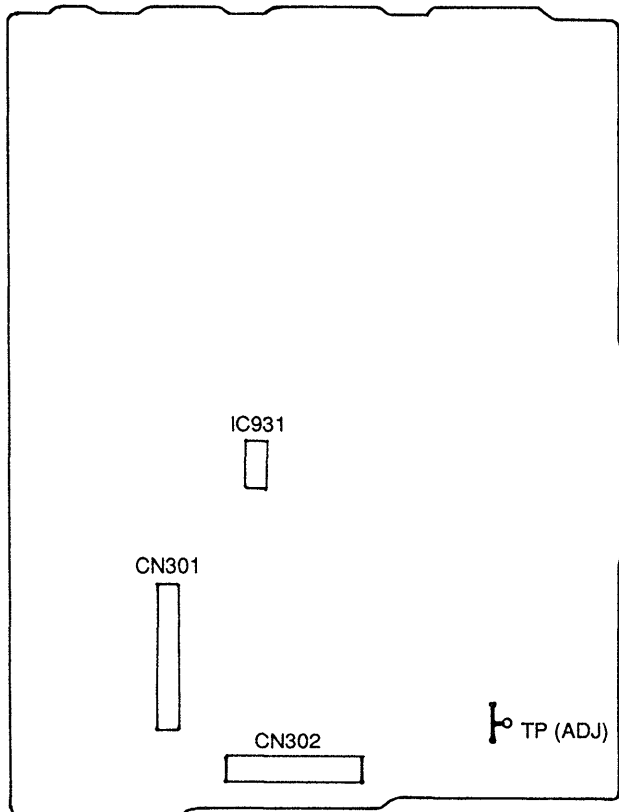
1. Connect frequency counter to test point (PLCK) with lead wire.



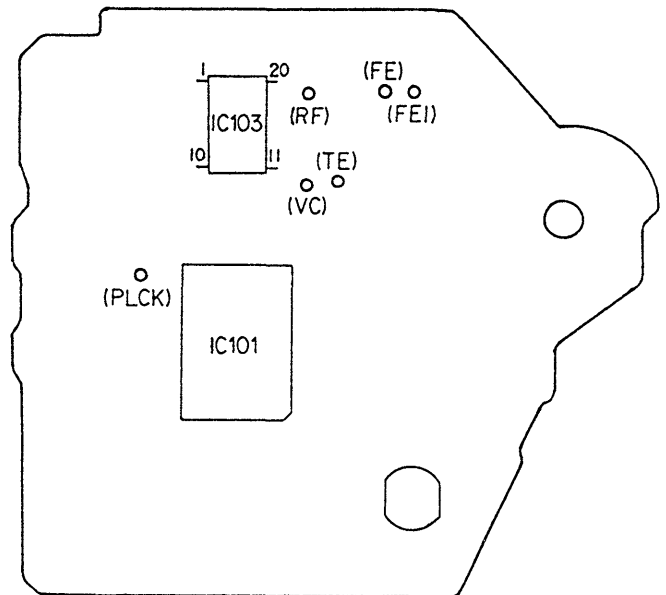
2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218MHz.

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 compare voltage input
39	ASYO	O	EFM full swing output
40	AVD1	—	Analog power supply

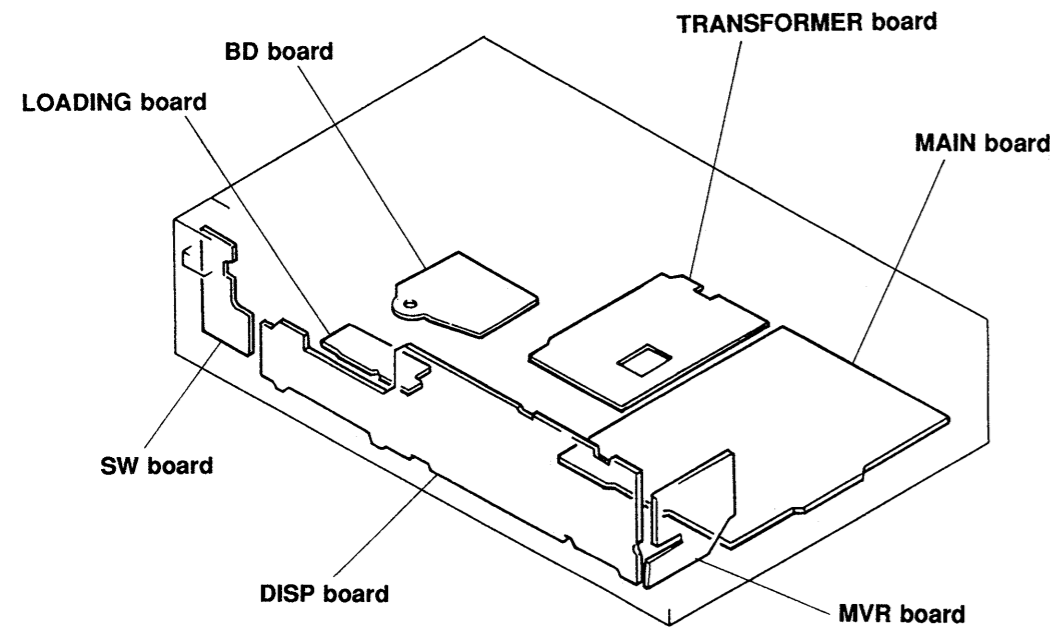
Pin No.	Pin Name	I/O	Function
41	DVDD	—	Digital power supply
42	ASYE	I	Asymmetry circuit ON/OFF
43	PSSL	I	Audio data output mode selection input
44	WDCK	O	48-bit slot D/A interface. Word clock
45	LRCK	O	48-bit slot D/A interface. LR clock
46	DATA	O	DA 16 output when PSSL=1. 48-bit slot serial data when 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	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	PRGL	O	Latch signal output to digital filter (IC303).
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, 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	V _{ss}	—	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	V _{DD} (+5V)	—	} +5V pin.
73	—	—	
74	SEL1	—	Connected to GND.
75	IN PORT	—	} Connected to +5 V.
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	—	Connected to GND.

5-2. CIRCUIT BOARDS LOCATION



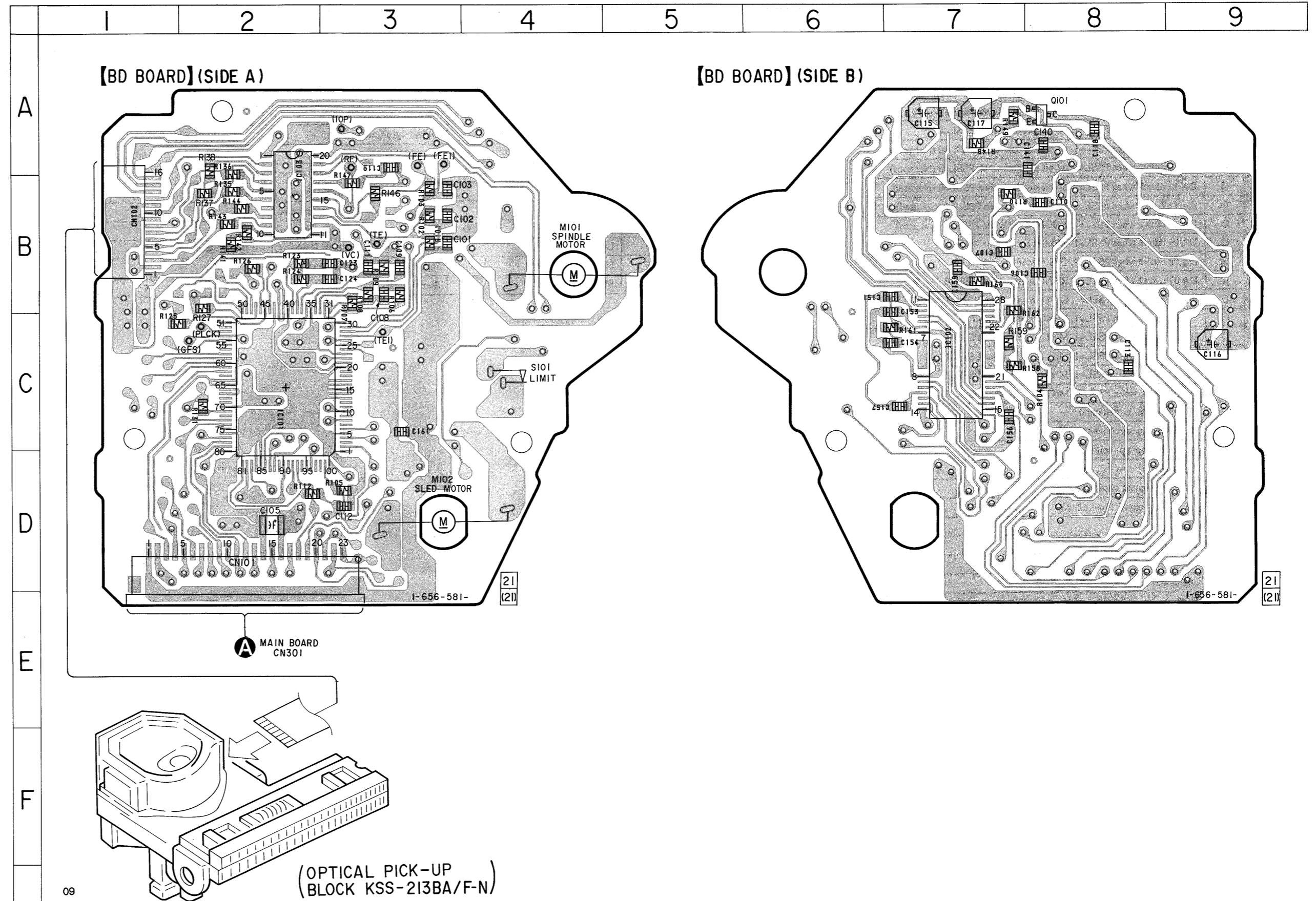
• Semiconductor Location

Ref. No.	Location
IC101	C-2
IC102	C-7
IC103	B-2
Q101	A-8

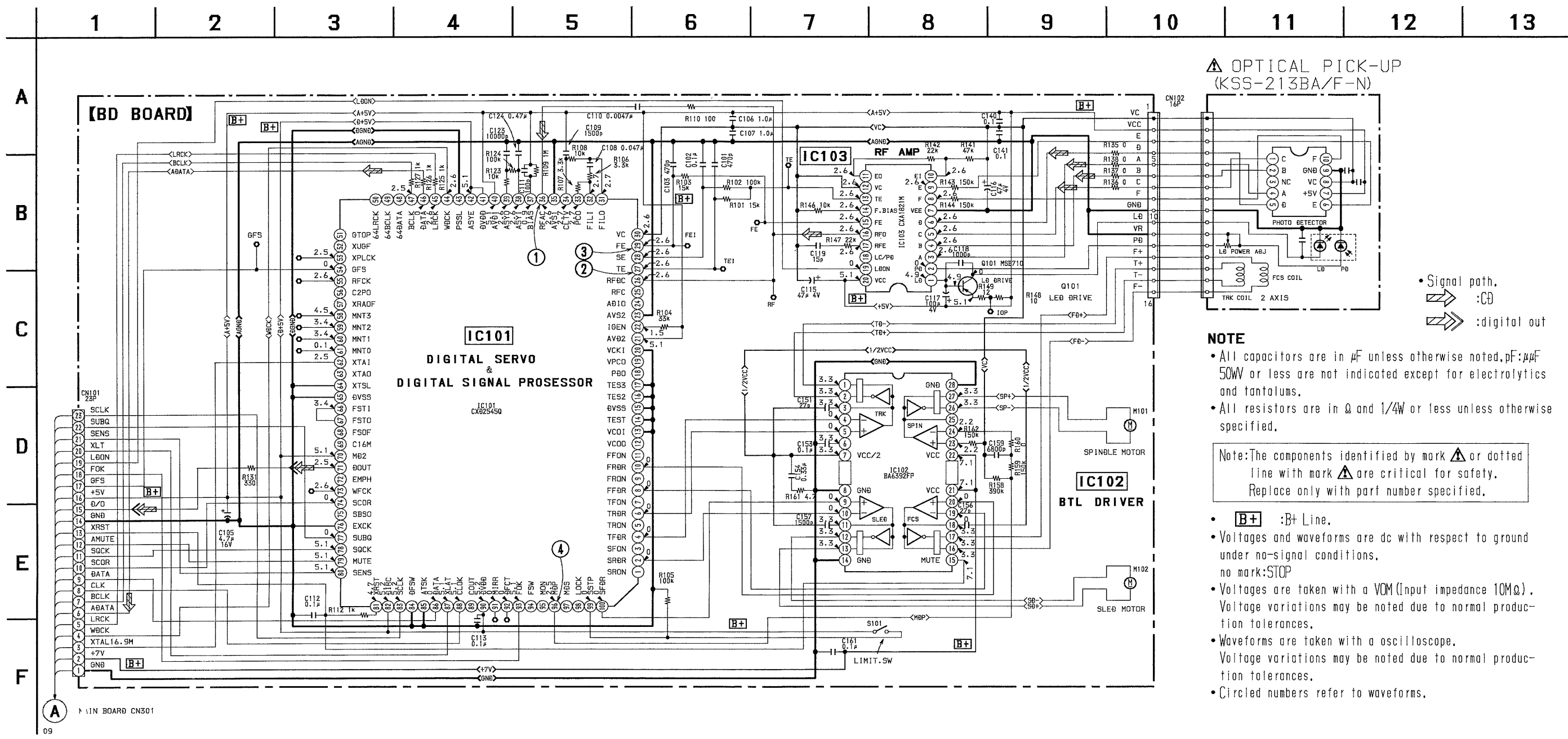
Note:

- ○ : parts extracted from the components side.
- — : parts extracted from the conductor side.
- ○ : Through hole.
- ■ : Pattern from the side which enable seeing.
(The other layer's patterns are not indicated.)

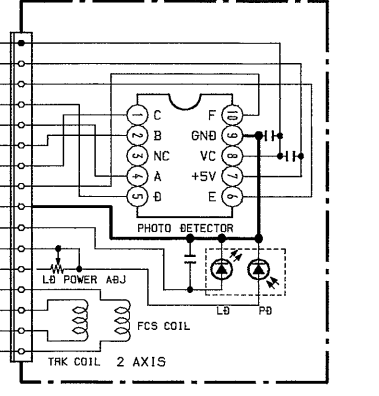
5-3. PRINTED WIRING BOARD — BD SECTION —



5-4. SCHEMATIC DIAGRAM — BD SECTION —
 • See page 8 for IC Pin Function. (IC101)



OPTICAL PICK-UP (KSS-213BA/F-N)



• Signal path, :CD
 • :digital out

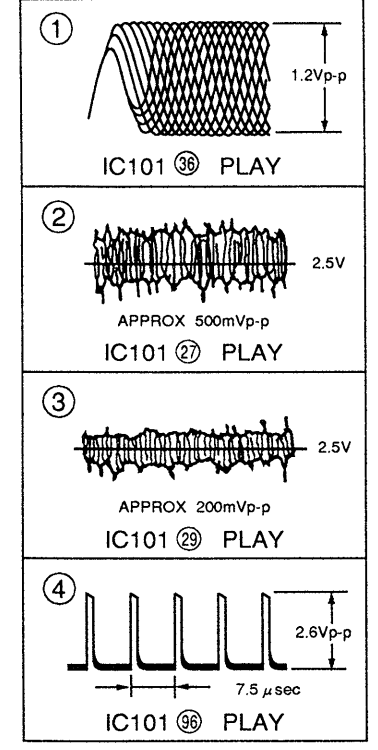
NOTE

- All capacitors are in μF unless otherwise noted. pF : μF 50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.

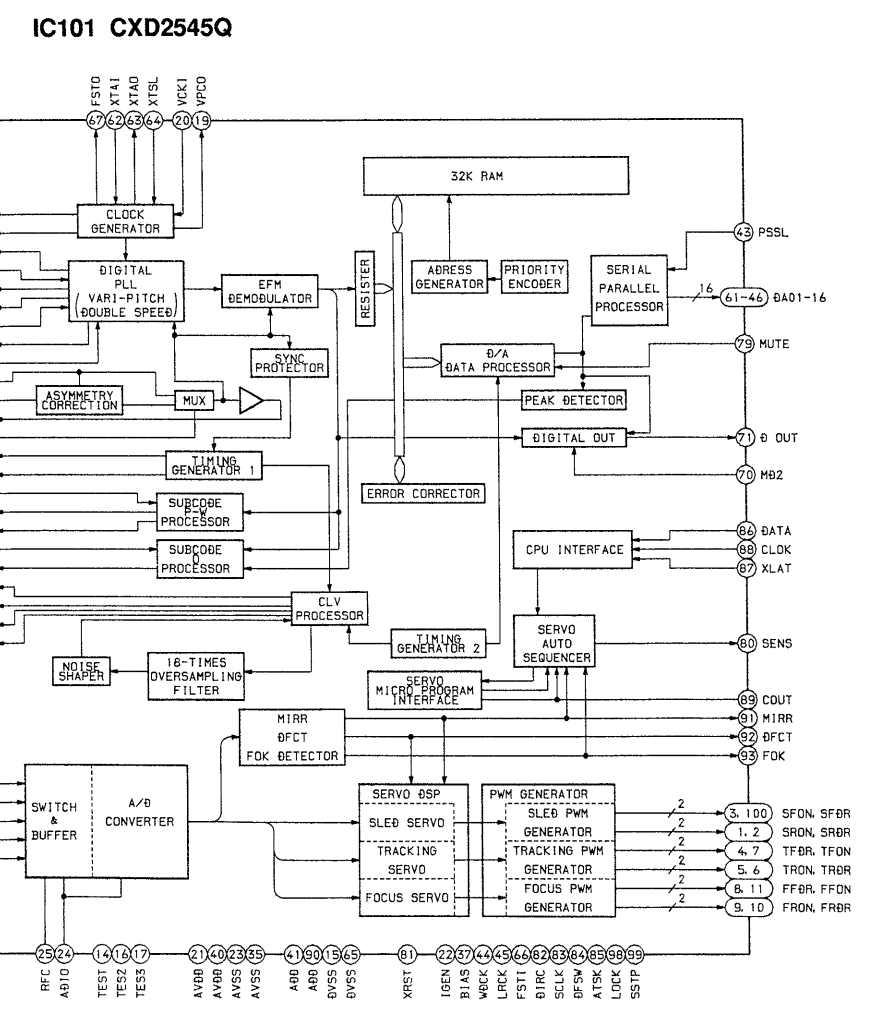
Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- **B+** :B+ Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark:STOP
- Voltages are taken with a VOM (input impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

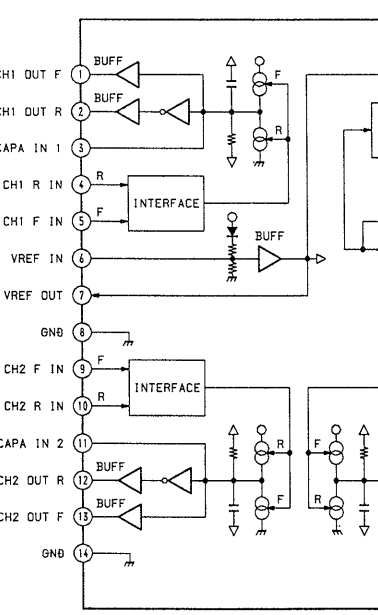
Waveforms



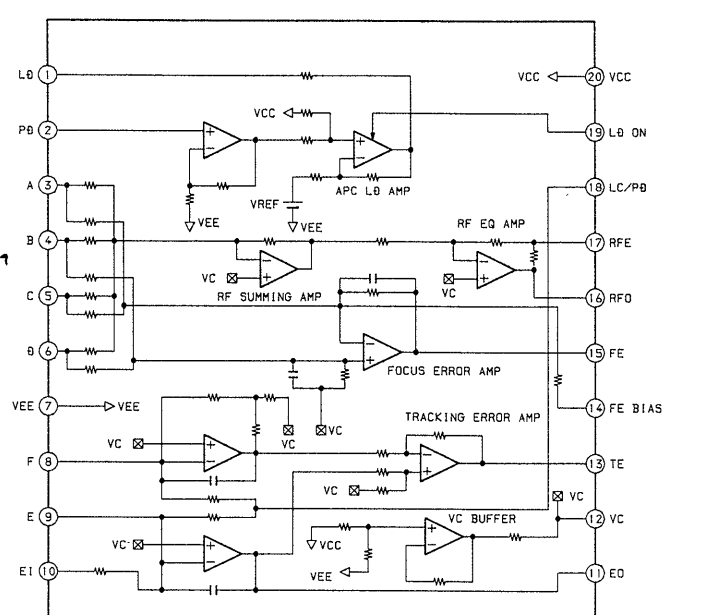
IC Block Diagrams



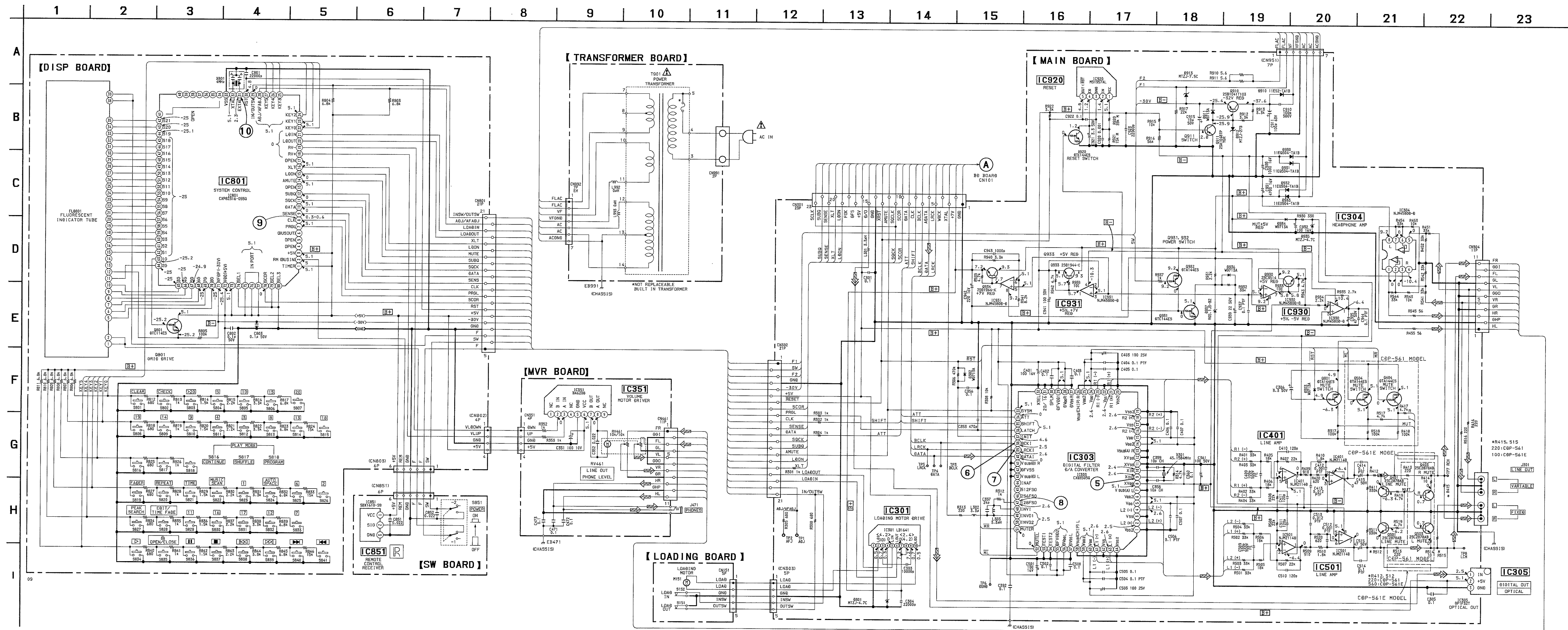
IC102 BA6392FP



IC103 CXA1821M



5-5. SCHEMATIC DIAGRAM — MAIN SECTION —
 • See page 11 for IC Pin Function. (IC801)



NOTE

- All capacitors are in μF unless otherwise noted. μF , μF , 50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ 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.

- \square : B+ Line.
- \square : B- Line.

Voltages and waveforms are dc with respect to ground under no-signal (returned) conditions.

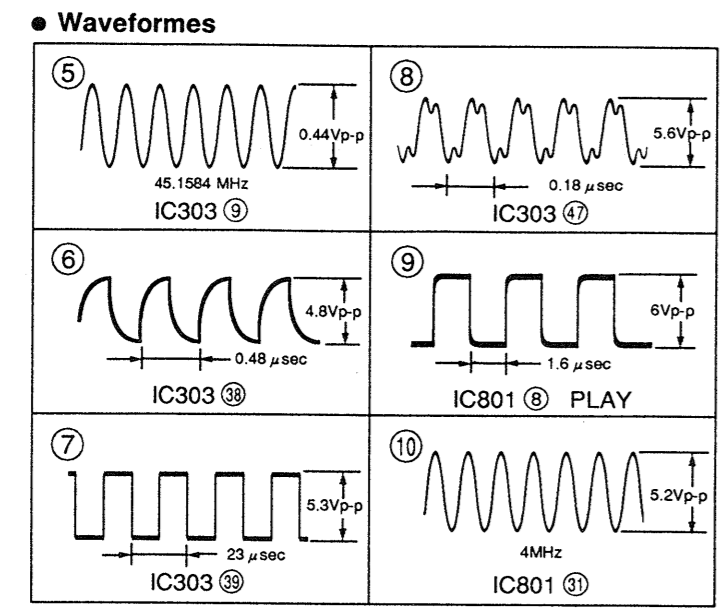
no mark: STOP
() : LOAD OUT
< > : LOAD IN

Voltages are taken with a VOM (input impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.

Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.

Circled numbers refer to waveforms.

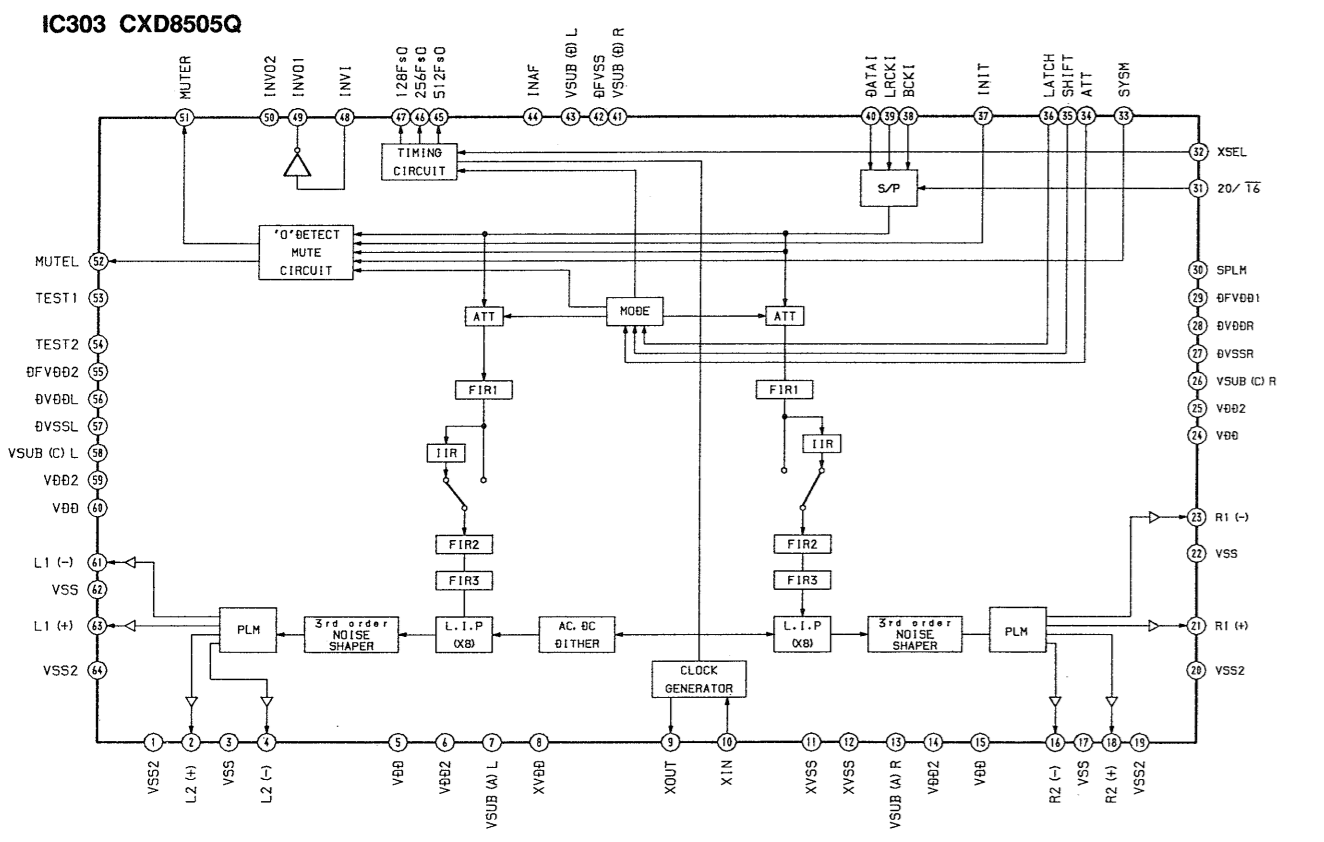
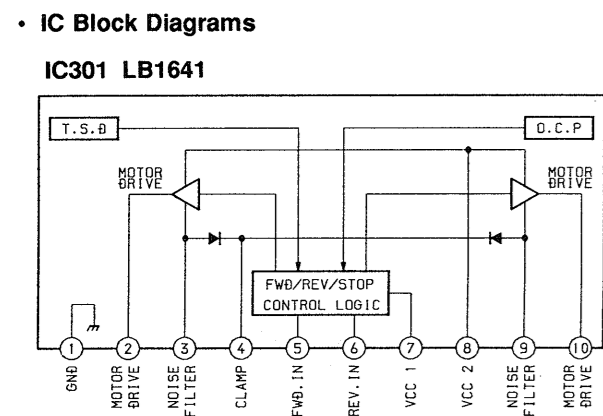
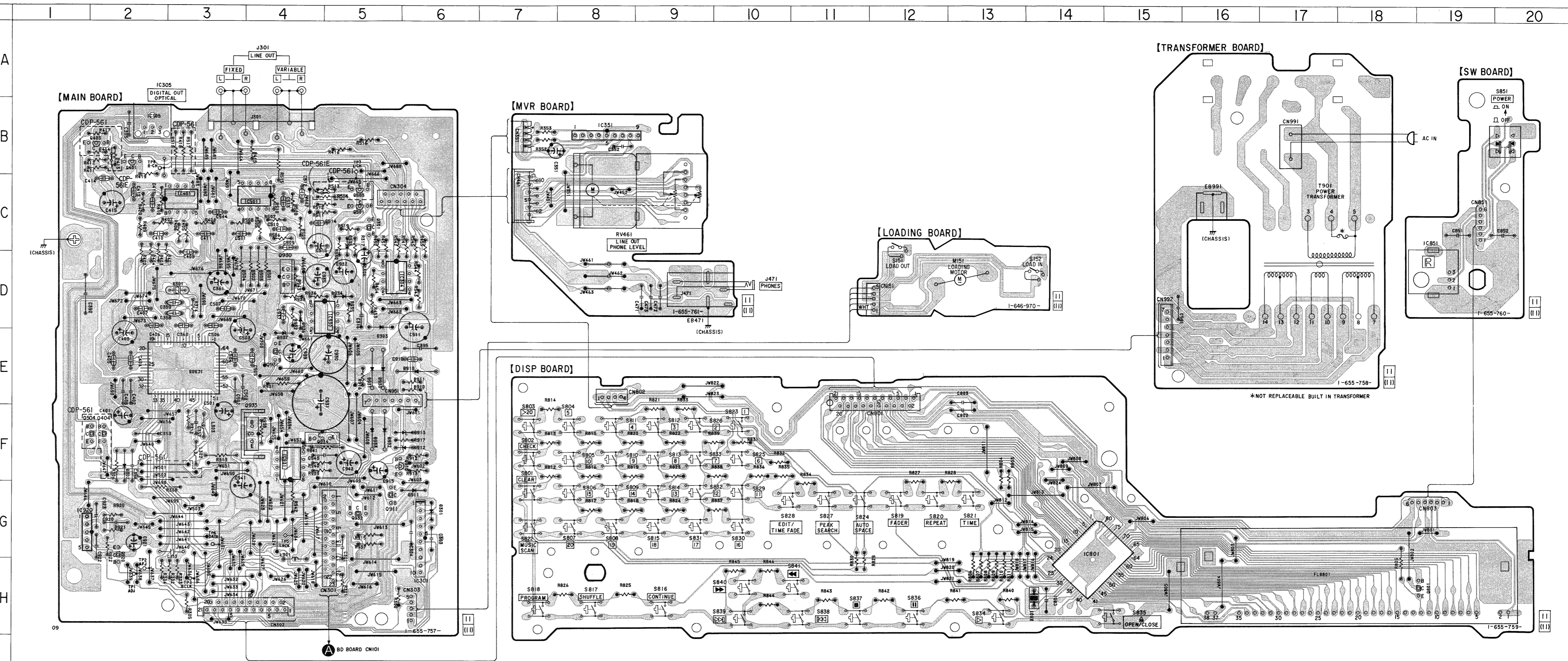
Signal path:
 : CD
 : Digital out



Semiconductor Location

Ref. No.	Location
D301	G-6
D302	F-2
D303	D-5
D910	E-6
D911	Q-6
D912	F-6
D913	F-6
D930	E-5
D931	E-5
D932	F-5
D933	F-5
D934	D-5
D935	C-5
D936	D-4
D937	E-4
IC301	G-6
IC303	E-3
IC304	D-5
IC305	B-2
IC351	B-8
IC401	C-3
IC501	C-4
IC801	Q-14
IC851	Q-19
IC920	G-1
IC930	D-5
IC931	F-4
Q301	C-5
Q401	B-2
Q403	B-2
Q404	F-2
Q501	C-5
Q503	C-5
Q504	F-2
Q801	H-19
Q910	F-5
Q911	G-5
Q920	G-2
Q930	D-4
Q931	E-4
Q932	G-5
Q933	F-4
Q934	F-4

5-6. PRINTED WIRING BOARD — MAIN SECTION —
 • See page 12 for Circuit Boards Location.



Note:

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

Note:

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

SECTION 6 EXPLODED VIEWS

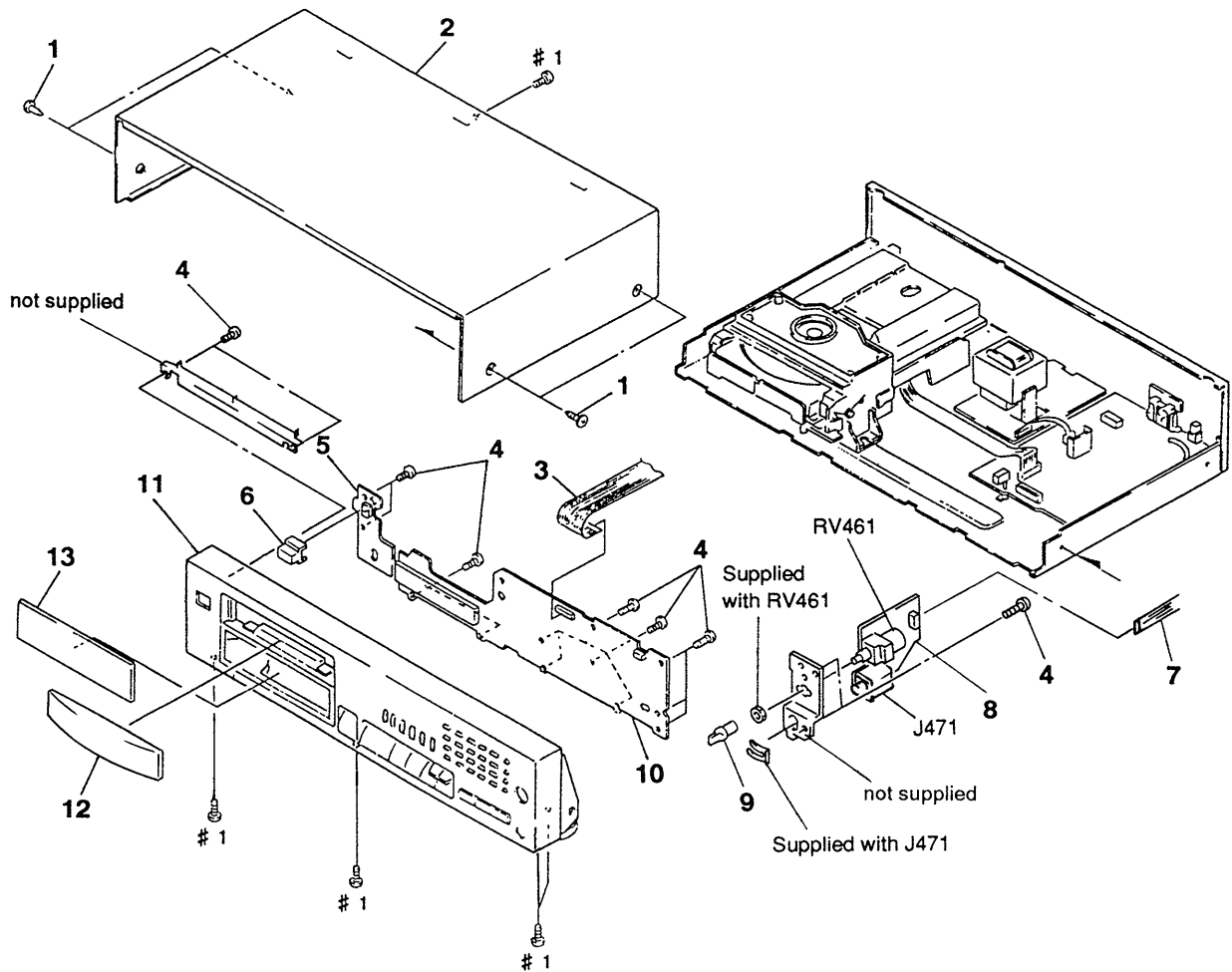
NOTE:

- Items marked “ * ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- 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

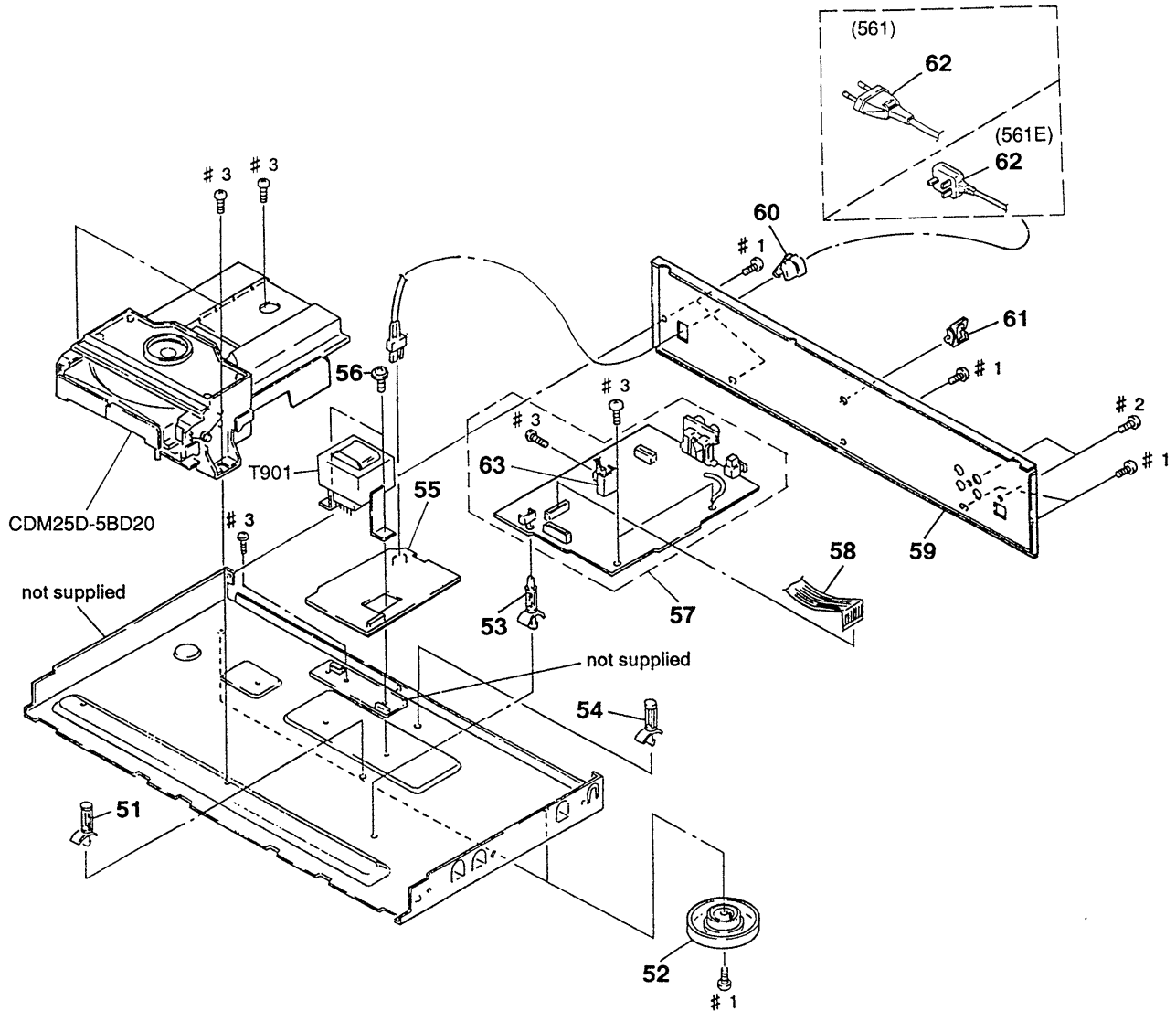
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

6-1. CASE AND FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-363-099-01	SCREW (CASE 3 TP2)		* 10	A-4673-498-A	DISP BOARD, COMPLETE	
2	4-937-817-01	CASE		11	X-4945-692-1	PANEL ASSY, FRONT (561E)	
3	1-751-947-11	WIRE (FLAT TYPE) (21 CORE)		11	X-4945-975-1	PANEL ASSY, FRONT (561)	
4	4-951-620-01	SCREW (2. 6X8), +BVTP		12	4-971-681-01	PANEL, LOADING	
* 5	1-655-760-11	SW BOARD		13	4-962-199-01	PLATE, INDICATION	
6	4-947-034-01	BUTTON (POWER)		J471	1-750-162-61	JACK (LARGE TYPE) (PHONES)	
7	1-751-712-11	WIRE (FLAT TYPE) (11 CORE)		RV461	1-223-875-11	RES, VAR, CARBON 10K/10K (LINE OUT, PHONE LEVEL)	
* 8	1-655-761-11	MVR BOARD					
9	4-950-189-01	KNOB (A) (VOL)					

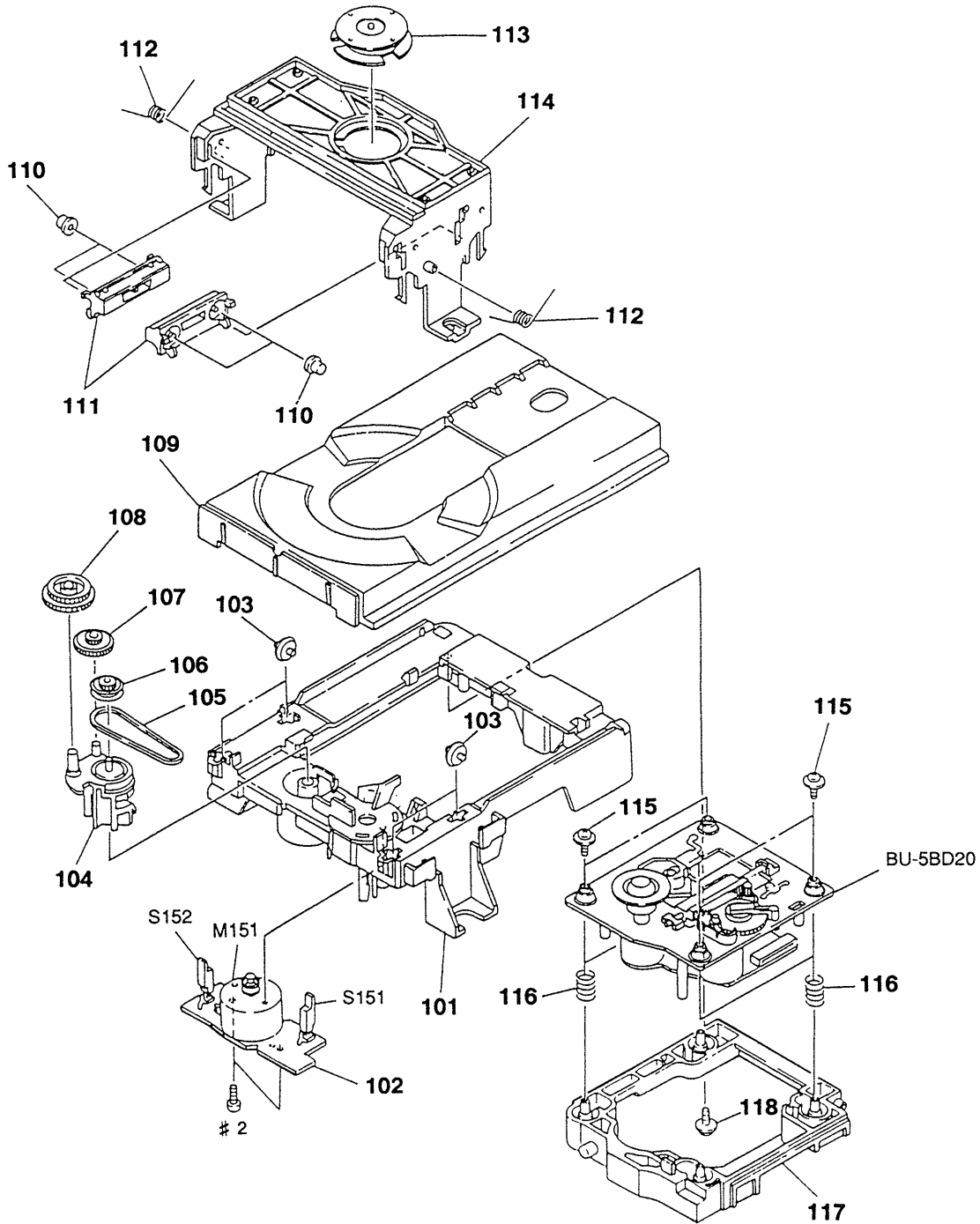
6-2. CHASSIS SECTION



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	Ref. No.	Part No.	Description	Remark
* 51	4-944-316-01	HOLDER, PC BOARD		* 59	4-962-202-63	PANEL (AL), BACK (561:G)	
52	4-956-885-11	FOOT (F58175S2W)		* 59	4-962-202-71	PANEL (AL), BACK (561E)	
* 53	4-924-098-31	HOLDER, PC BOARD		60	3-703-244-00	BUSHING, CORD	
* 54	3-349-025-41	HOLDER, PC BOARD		* 61	3-681-263-11	SADDLE, WIRE	
* 55	1-655-758-11	TRANSFORMER BOARD		▲62	1-575-651-21	CORD, POWER (561)	
56	2-383-566-00	SCREW		▲62	1-696-907-11	CORD, POWER (561E)	
* 57	A-4673-497-A	MAIN BOARD, COMPLETE (561)		* 63	3-309-144-21	HEAT SINK	
* 57	A-4673-568-A	MAIN BOARD, COMPLETE (561E)		▲T901	1-449-925-11	TRANSFORMER, POWER	
58	1-696-760-11	WIRE (FLAT TYPE) (23 CORE)					
* 59	4-962-202-51	PANEL (AL), BACK (561:AEP)					

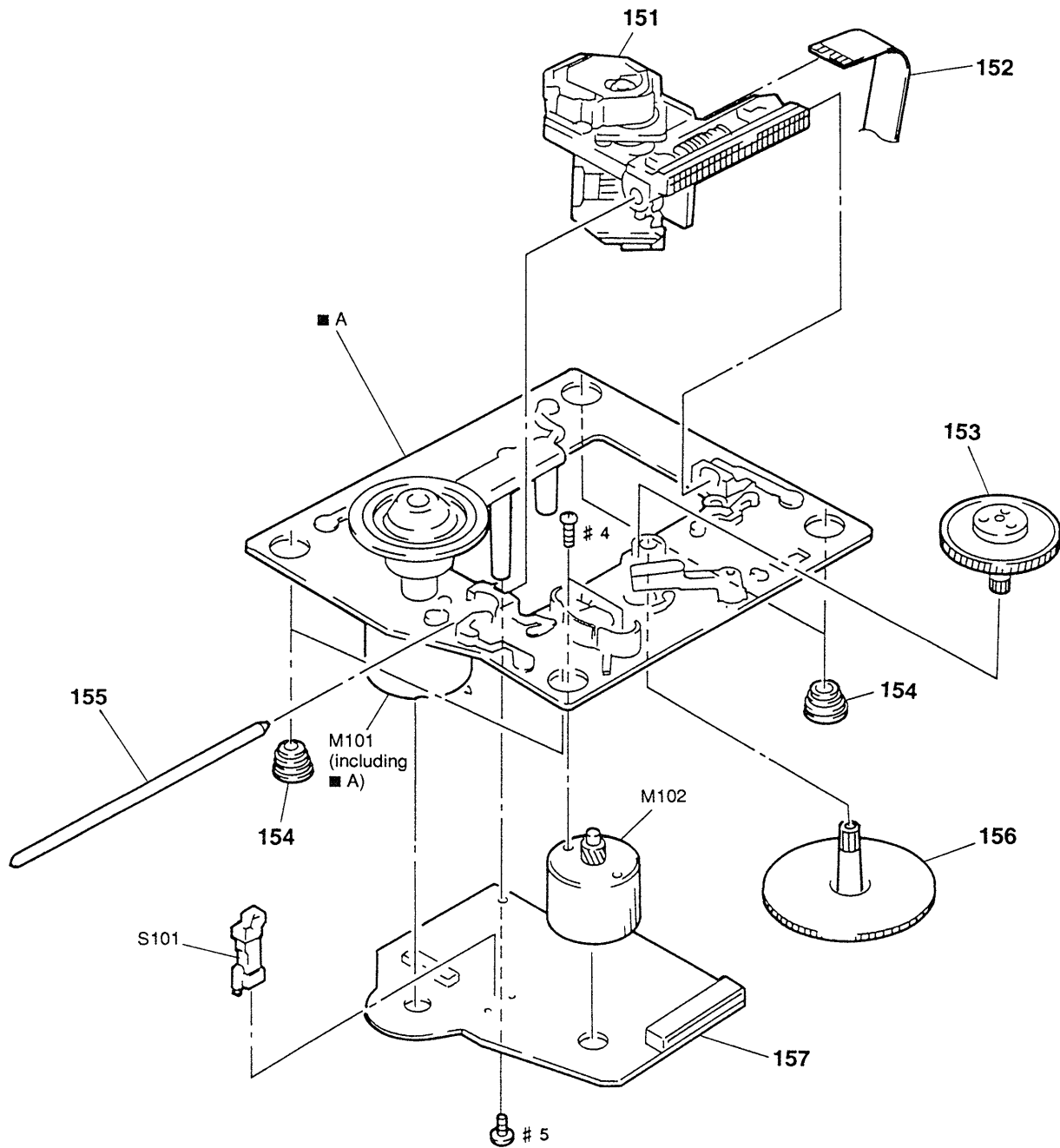
6-3. MECHANISM SECTION (CDM25D-5BD20)



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

Remark	Ref.No.	Part No.	Description	Remark
	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	4-917-567-21	GEAR (M)		M101	X-4917-523-4	BASE (OUTSERT) 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)	

SECTION 7

ELECTRICAL PARTS LIST

BD

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.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- 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...: 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 *****		M102	X-4917-504-1	MOTOR ASSY (SLED)	
		< CAPACITOR >				< TRANSISTOR >	
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			< RESISTOR >
C103	1-163-005-11	CERAMIC CHIP	470PF 10%	50V	R101	1-216-077-00	METAL CHIP 15K 5% 1/10W
C105	1-135-155-21	TANTALUM CHIP	4.7uF 10%	16V	R102	1-216-097-00	METAL CHIP 100K 5% 1/10W
C106	1-163-038-91	CERAMIC CHIP	0.1uF	25V	R103	1-216-077-00	METAL CHIP 15K 5% 1/10W
C107	1-163-038-91	CERAMIC CHIP	0.1uF	25V	R104	1-216-085-00	METAL CHIP 33K 5% 1/10W
C108	1-163-035-00	CERAMIC CHIP	0.047uF	50V	R105	1-216-097-00	METAL CHIP 100K 5% 1/10W
C109	1-163-145-00	CERAMIC CHIP	0.0015uF 5%	50V	R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
C110	1-163-017-00	CERAMIC CHIP	0.0047uF 5%	50V	R107	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
C111	1-163-251-11	CERAMIC CHIP	100PF 5%	50V	R108	1-216-073-00	METAL CHIP 10K 5% 1/10W
C112	1-163-038-91	CERAMIC CHIP	0.1uF	25V	R109	1-216-121-00	METAL CHIP 1M 5% 1/10W
C113	1-163-038-91	CERAMIC CHIP	0.1uF	25V	R110	1-216-025-91	METAL GLAZE 100 5% 1/10W
C115	1-126-607-11	ELECT CHIP	47uF 20%	4V	R112	1-216-049-91	METAL GLAZE 1K 5% 1/10W
C116	1-126-607-11	ELECT CHIP	47uF 20%	4V	R123	1-216-073-00	METAL CHIP 10K 5% 1/10W
C117	1-126-209-11	ELECT	100uF 20%	4V	R124	1-216-097-00	METAL CHIP 100K 5% 1/10W
C118	1-163-275-11	CERAMIC CHIP	0.001uF 5%	50V	R125	1-216-049-91	METAL GLAZE 1K 5% 1/10W
C119	1-163-097-00	CERAMIC CHIP	15PF 5%	50V	R126	1-216-049-91	METAL GLAZE 1K 5% 1/10W
C123	1-164-232-11	CERAMIC CHIP	0.01uF	50V	R127	1-216-049-91	METAL GLAZE 1K 5% 1/10W
C124	1-164-005-11	CERAMIC CHIP	0.47uF	25V	R131	1-216-037-00	METAL CHIP 330 5% 1/10W
C151	1-163-237-11	CERAMIC CHIP	27PF 5%	50V	R135	1-216-295-91	CONDUCTOR, CHIP (2012)
C153	1-163-038-91	CERAMIC CHIP	0.1uF	25V	R136	1-216-295-91	CONDUCTOR, CHIP (2012)
C154	1-164-336-11	CERAMIC CHIP	0.33uF	25V	R137	1-216-295-91	CONDUCTOR, CHIP (2012)
C156	1-163-237-11	CERAMIC CHIP	27PF 5%	50V	R138	1-216-295-91	CONDUCTOR, CHIP (2012)
C157	1-163-145-00	CERAMIC CHIP	0.0015uF 5%	50V	R141	1-216-089-00	METAL CHIP 47K 5% 1/10W
C159	1-163-019-00	CERAMIC CHIP	0.0068uF 10%	50V	R142	1-216-081-00	METAL CHIP 22K 5% 1/10W
C161	1-163-038-91	CERAMIC CHIP	0.1uF	25V	R143	1-216-101-00	METAL CHIP 150K 5% 1/10W
		< CONNECTOR >		R144	1-216-101-00	METAL CHIP 150K 5% 1/10W	
CN101	1-770-072-11	CONNECTOR (FFC) 23P		R146	1-216-073-00	METAL CHIP 10K 5% 1/10W	
CN102	1-770-014-11	CONNECTOR, FFC/FPC 16P		R147	1-216-081-00	METAL CHIP 22K 5% 1/10W	
		< IC >		R148	1-216-001-00	METAL CHIP 10 5% 1/10W	
IC101	8-752-369-78	IC CXD2545Q		R149	1-216-003-11	METAL GLAZE 12 5% 1/10W	
IC102	8-759-176-09	IC BA6392FP		R158	1-216-111-00	METAL CHIP 390K 5% 1/10W	
IC103	8-752-072-45	IC CXA1821M-T6		R159	1-216-101-00	METAL CHIP 150K 5% 1/10W	
		< MOTOR >		R160	1-216-295-91	CONDUCTOR, CHIP (2012)	
M101	X-4917-523-4	BASE (OUTSERT) ASSY (SPINDLE)		R161	1-216-308-00	METAL CHIP 4.7 5% 1/10W	
				R162	1-216-101-00	METAL CHIP 150K 5% 1/10W	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< SWITCH >		R826	1-249-417-11	CARBON	1K 5% 1/4W F
S101	1-572-085-11	SWITCH, LEAF (LIMIT)		R827	1-249-415-11	CARBON	680 5% 1/4W F

*	A-4673-498-A	DISP BOARD, COMPLETE		R828	1-249-417-11	CARBON	1K 5% 1/4W F
		*****		R829	1-249-419-11	CARBON	1.5K 5% 1/4W F
		< CAPACITOR >		R830	1-249-421-11	CARBON	2.2K 5% 1/4W F
C801	1-161-494-00	CERAMIC 0.022uF	25V	R831	1-249-423-11	CARBON	3.3K 5% 1/4W F
C802	1-164-159-11	CERAMIC 0.1uF	50V	R832	1-249-427-11	CARBON	6.8K 5% 1/4W F
C803	1-164-159-11	CERAMIC 0.1uF	50V				
		< CONNECTOR >		R833	1-249-431-11	CARBON	15K 5% 1/4W
CN801	1-568-838-11	SOCKET, CONNECTOR 21P		R834	1-249-415-11	CARBON	680 5% 1/4W F
		< FLUORESCENT INDICATOR >		R835	1-249-417-11	CARBON	1K 5% 1/4W F
FLD801	1-519-757-11	INDICATOR TUBE, FLUORESCENT		R836	1-249-419-11	CARBON	1.5K 5% 1/4W F
		< IC >		R837	1-249-421-11	CARBON	2.2K 5% 1/4W F
IC801	8-752-863-44	IC CXP82316-055Q					
		< TRANSISTOR >		R838	1-249-423-11	CARBON	3.3K 5% 1/4W F
Q801	8-729-900-80	TRANSISTOR DTC114ES		R839	1-249-427-11	CARBON	6.8K 5% 1/4W F
		< RESISTOR >		R840	1-249-415-11	CARBON	680 5% 1/4W F
R803	1-249-427-11	CARBON	6.8K 5% 1/4W F	R841	1-249-417-11	CARBON	1K 5% 1/4W F
R804	1-249-427-11	CARBON	6.8K 5% 1/4W F	R842	1-249-419-11	CARBON	1.5K 5% 1/4W F
R805	1-249-441-11	CARBON	100K 5% 1/4W				
R806	1-249-427-11	CARBON	6.8K 5% 1/4W F	R843	1-249-421-11	CARBON	2.2K 5% 1/4W F
R807	1-249-427-11	CARBON	6.8K 5% 1/4W F	R844	1-249-423-11	CARBON	3.3K 5% 1/4W F
R808	1-249-427-11	CARBON	6.8K 5% 1/4W F	R845	1-249-427-11	CARBON	6.8K 5% 1/4W F
R809	1-249-427-11	CARBON	6.8K 5% 1/4W F	R846	1-249-431-11	CARBON	15K 5% 1/4W
R810	1-249-427-11	CARBON	6.8K 5% 1/4W F				
R811	1-249-427-11	CARBON	6.8K 5% 1/4W F	< SWITCH >			
R812	1-249-415-11	CARBON	680 5% 1/4W F	S801	1-554-303-21	SWITCH, TACTILE (CLEAR)	
R813	1-249-417-11	CARBON	1K 5% 1/4W F	S802	1-554-303-21	SWITCH, TACTILE (CHECK)	
R814	1-249-419-11	CARBON	1.5K 5% 1/4W F	S803	1-554-303-21	SWITCH, TACTILE (>20)	
R815	1-249-421-11	CARBON	2.2K 5% 1/4W F	S804	1-554-303-21	SWITCH, TACTILE (5)	
R816	1-249-423-11	CARBON	3.3K 5% 1/4W F	S805	1-554-303-21	SWITCH, TACTILE (10)	
R817	1-249-427-11	CARBON	6.8K 5% 1/4W F	S806	1-554-303-21	SWITCH, TACTILE (15)	
R818	1-249-415-11	CARBON	680 5% 1/4W F	S807	1-554-303-21	SWITCH, TACTILE (20)	
R819	1-249-417-11	CARBON	1K 5% 1/4W F	S808	1-554-303-21	SWITCH, TACTILE (19)	
R820	1-249-419-11	CARBON	1.5K 5% 1/4W F	S809	1-554-303-21	SWITCH, TACTILE (14)	
R821	1-249-421-11	CARBON	2.2K 5% 1/4W F	S810	1-554-303-21	SWITCH, TACTILE (9)	
R822	1-249-423-11	CARBON	3.3K 5% 1/4W F	S811	1-554-303-21	SWITCH, TACTILE (4)	
R823	1-249-427-11	CARBON	6.8K 5% 1/4W F	S812	1-554-303-21	SWITCH, TACTILE (3)	
R824	1-249-431-11	CARBON	15K 5% 1/4W	S813	1-554-303-21	SWITCH, TACTILE (8)	
R825	1-249-415-11	CARBON	680 5% 1/4W F	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 (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)	

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
S828	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)		C356	1-164-159-11	CERAMIC	0.1uF 50V
S829	1-554-303-21	SWITCH, TACTILE (11)		C357	1-162-208-31	CERAMIC	24PF 5% 50V
S830	1-554-303-21	SWITCH, TACTILE (16)		C358	1-102-947-00	CERAMIC	10PF 5% 50V
				C359	1-102-947-00	CERAMIC	10PF 5% 50V
S831	1-554-303-21	SWITCH, TACTILE (17)		C360	1-130-495-00	MYLAR	0.1uF 5% 50V
S832	1-554-303-21	SWITCH, TACTILE (12)		C361	1-124-572-11	ELECT	100uF 20% 63V
S833	1-554-303-21	SWITCH, TACTILE (7)		C392	1-164-159-11	CERAMIC	0.1uF 50V
S834	1-554-303-21	SWITCH, TACTILE (▷)		C401	1-104-665-11	ELECT	100uF 20% 16V
S835	1-554-303-21	SWITCH, TACTILE (△ OPEN/CLOSE)		C402	1-164-159-11	CERAMIC	0.1uF 50V
S836	1-554-303-21	SWITCH, TACTILE (■)		C403	1-124-122-11	ELECT	100uF 20% 50V
S837	1-554-303-21	SWITCH, TACTILE (■)		C404	1-130-495-00	MYLAR	0.1uF 5% 50V
S838	1-554-303-21	SWITCH, TACTILE (◀◀)		C405	1-130-495-00	MYLAR	0.1uF 5% 50V
S839	1-554-303-21	SWITCH, TACTILE (▷▷)		C406	1-130-495-00	MYLAR	0.1uF 5% 50V
S840	1-554-303-21	SWITCH, TACTILE (▶▶)		C407	1-130-495-00	MYLAR	0.1uF 5% 50V
S841	1-554-303-21	SWITCH, TACTILE (◀◀)		C408	1-164-159-11	CERAMIC	0.1uF 50V
		< VIBRATOR >		C409	1-107-611-11	MICA	100PF 5% 500V
X801	1-577-082-11	VIBRATOR, CERAMIC (4MHz)		C410	1-102-816-00	CERAMIC	120PF 5% 50V
				C411	1-102-816-00	CERAMIC	120PF 5% 50V
				C412	1-106-343-00	MYLAR	1000PF 5% 200V

*	1-646-970-11	LOADING BOARD		C413	1-130-484-00	MYLAR	0.012uF 5% 50V
		*****		C414	1-130-495-00	MYLAR	0.1uF 5% 50V
		< CONNECTOR >		C415	1-124-910-11	ELECT	47uF 20% 50V
* CN151	1-568-943-11	PIN, CONNECTOR 5P		C501	1-104-665-11	ELECT	100uF 20% 16V
		< MOTOR >		C502	1-164-159-11	CERAMIC	0.1uF 50V
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)		C503	1-124-122-11	ELECT	100uF 20% 50V
		< SWITCH >		C504	1-130-495-00	MYLAR	0.1uF 5% 50V
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)		C505	1-130-495-00	MYLAR	0.1uF 5% 50V
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)		C506	1-130-495-00	MYLAR	0.1uF 5% 50V
				C507	1-130-495-00	MYLAR	0.1uF 5% 50V

*	A-4673-497-A	MAIN BOARD, COMPLETE (561)		C508	1-164-159-11	CERAMIC	0.1uF 50V
		*****		C509	1-107-611-11	MICA	100PF 5% 500V
*	A-4673-568-A	MAIN BOARD, COMPLETE (561E)		C510	1-102-816-00	CERAMIC	120PF 5% 50V
		*****		C511	1-102-816-00	CERAMIC	120PF 5% 50V
*	3-309-144-21	HEAT SINK		C512	1-106-343-00	MYLAR	1000PF 5% 200V
	7-685-871-01	SCREW +BVTT 3X6 (S)		C513	1-130-484-00	MYLAR	0.012uF 5% 50V
		< CAPACITOR >		C514	1-130-495-00	MYLAR	0.1uF 5% 50V
C301	1-164-159-11	CERAMIC	0.1uF 50V	C515	1-124-910-11	ELECT	47uF 20% 50V
C303	1-162-306-11	CERAMIC	0.01uF 30% 16V	C910	1-107-611-11	MICA	100PF 5% 500V
C304	1-161-494-00	CERAMIC	0.022uF 25V	C911	1-124-572-11	ELECT	100uF 20% 63V
C305	1-164-159-11	CERAMIC	0.1uF 50V	C915	1-124-907-11	ELECT	10uF 20% 50V
C306	1-126-962-11	ELECT	3.3uF 20% 50V	C920	1-162-294-31	CERAMIC	0.001uF 10% 50V
C353	1-162-290-31	CERAMIC	470PF 10% 50V	C921	1-126-962-11	ELECT	3.3uF 20% 50V
				C922	1-164-159-11	CERAMIC	0.1uF 50V
				C923	1-161-494-00	CERAMIC	0.022uF 25V
				C930	1-124-360-00	ELECT	1000uF 20% 16V
				C931	1-124-523-11	ELECT	4700uF 20% 16V
				C932	1-104-665-11	ELECT	100uF 20% 16V
				C935	1-124-910-11	ELECT	47uF 20% 50V
				C937	1-130-495-00	MYLAR	0.1uF 5% 50V
				C939	1-124-916-11	ELECT	22uF 20% 63V

MAIN

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C941	1-126-052-11	ELECT	100uF 20% 50V	Q501	8-729-231-55	TRANSISTOR	2SC2878-AB
C942	1-124-120-11	ELECT	220uF 20% 25V	Q503	8-729-231-55	TRANSISTOR	2SC2878-AB (561)
C943	1-162-294-31	CERAMIC	0.001uF 10% 50V	Q504	8-729-900-65	TRANSISTOR	DTA144ES (561)
C944	1-130-495-00	MYLAR	0.1uF 5% 50V	Q910	8-729-019-64	TRANSISTOR	2SB1041
< CONNECTOR >				Q911	8-729-119-76	TRANSISTOR	2SA1175-HFE
CN301	1-750-428-11	CONNECTOR, FFC/FPC	23P	Q920	8-729-900-89	TRANSISTOR	DTC144ES
CN302	1-750-426-11	CONNECTOR, FFC/FPC	21P	Q930	8-729-104-18	TRANSISTOR	2SC3514-Q
* CN304	1-750-416-11	CONNECTOR, FFC/FPC	11P	Q931	8-729-900-89	TRANSISTOR	DTC144ES
< DIODE >				Q932	8-729-900-65	TRANSISTOR	DTA144ES
D301	8-719-921-40	DIODE	MTZJ-4.7C	Q933	8-729-021-82	TRANSISTOR	2SD2396K
D302	8-719-815-85	DIODE	1S1585	Q934	8-729-021-82	TRANSISTOR	2SD2396K
D303	8-719-815-85	DIODE	1S1585	< RESISTOR >			
D910	8-719-200-82	DIODE	11ES2	R300	1-249-415-11	CARBON	680 5% 1/4W F
D911	8-719-815-85	DIODE	1S1585	R301	1-249-417-11	CARBON	1K 5% 1/4W F
D912	8-719-982-15	DIODE	MTZJ-27B	R302	1-249-417-11	CARBON	1K 5% 1/4W F
D913	8-719-110-03	DIODE	RD7.5ESB2	R303	1-249-417-11	CARBON	1K 5% 1/4W F
D930	8-719-210-21	DIODE	11EQS04	R304	1-249-417-11	CARBON	1K 5% 1/4W F
D931	8-719-210-21	DIODE	11EQS04	R305	1-249-415-11	CARBON	680 5% 1/4W F
D932	8-719-210-21	DIODE	11EQS04	R306	1-247-895-00	CARBON	470K 5% 1/4W
D933	8-719-210-21	DIODE	11EQS04	R308	1-249-429-11	CARBON	10K 5% 1/4W
D934	8-719-815-85	DIODE	1S1585	R312	1-249-417-11	CARBON	1K 5% 1/4W F
D935	8-719-921-40	DIODE	MTZJ-4.7C	R313	1-247-815-91	CARBON	220 5% 1/4W
D936	8-719-815-85	DIODE	1S1585	R314	1-249-425-11	CARBON	4.7K 5% 1/4W F
D937	8-719-115-38	DIODE	RD5.1JS-T1B2	R317	1-249-441-11	CARBON	100K 5% 1/4W
< IC >				R401	1-249-435-11	CARBON	33K 5% 1/4W
IC301	8-759-822-09	IC	LB1641	R402	1-249-435-11	CARBON	33K 5% 1/4W
IC303	8-759-287-70	IC	CXD8505Q	R403	1-249-435-11	CARBON	33K 5% 1/4W
IC304	8-759-710-59	IC	NJM4580D-D	R404	1-249-435-11	CARBON	33K 5% 1/4W
IC305	8-749-921-12	IC	GP1F32T	R405	1-249-432-11	CARBON	18K 5% 1/4W
IC401	8-759-712-02	IC	NJM2114D	R406	1-249-432-11	CARBON	18K 5% 1/4W
IC501	8-759-712-02	IC	NJM2114D	R407	1-247-863-91	CARBON	22K 5% 1/4W
IC920	8-759-636-16	IC	M51957AL	R408	1-247-863-91	CARBON	22K 5% 1/4W
IC930	8-759-710-59	IC	NJM4580D-D	R409	1-247-830-11	CARBON	910 5% 1/4W
IC931	8-759-710-59	IC	NJM4580D-D	R410	1-249-420-11	CARBON	1.8K 5% 1/4W F
< JACK >				R411	1-247-891-00	CARBON	330K 5% 1/4W
J301	1-569-443-21	JACK, PIN 4P (LINE OUT)	(FIXD, VARIABLE)	R412	1-247-815-91	CARBON	220 5% 1/4W (561)
< COIL >				R412	1-249-414-11	CARBON	560 5% 1/4W F (561E)
L301	1-410-322-11	INDUCTOR	3.3uH	R413	1-247-815-91	CARBON	220 5% 1/4W (561)
L302	1-410-322-11	INDUCTOR	3.3uH	R414	1-249-393-11	CARBON	10 5% 1/4W F (561)
L303	1-410-503-11	INDUCTOR	3.3uH	R415	1-247-807-31	CARBON	100 5% 1/4W (561E)
< TRANSISTOR >				R415	1-247-815-91	CARBON	220 5% 1/4W (561)
Q301	8-729-900-65	TRANSISTOR	DTA144ES	R416	1-247-815-91	CARBON	220 5% 1/4W
Q401	8-729-231-55	TRANSISTOR	2SC2878-AB	R417	1-249-425-11	CARBON	4.7K 5% 1/4W F (561)
Q403	8-729-231-55	TRANSISTOR	2SC2878-AB (561)	R418	1-249-441-11	CARBON	100K 5% 1/4W (561)
Q404	8-729-900-65	TRANSISTOR	DTA144ES (561)	R419	1-249-425-11	CARBON	4.7K 5% 1/4W F
				R420	1-247-826-00	CARBON	620 5% 1/4W
				R451	1-249-435-11	CARBON	33K 5% 1/4W
				R452	1-249-435-11	CARBON	33K 5% 1/4W
				R453	1-249-429-11	CARBON	10K 5% 1/4W

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R454	1-249-435-11	CARBON	33K 5% 1/4W	R942	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R455	1-249-402-11	CARBON	56 5% 1/4W	R943	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R501	1-249-435-11	CARBON	33K 5% 1/4W			< TRANSFORMER >	
R502	1-249-435-11	CARBON	33K 5% 1/4W	△T901	1-449-925-11	TRANSFORMER, POWER	
R503	1-249-435-11	CARBON	33K 5% 1/4W			< VIBRATOR >	
R504	1-249-435-11	CARBON	33K 5% 1/4W	X301	1-579-161-11	VIBRATOR, CRYSTAL (45.1584MHz)	
R505	1-249-432-11	CARBON	18K 5% 1/4W			*****	
R506	1-249-432-11	CARBON	18K 5% 1/4W				
R507	1-247-863-91	CARBON	22K 5% 1/4W				
R508	1-247-863-91	CARBON	22K 5% 1/4W				
R509	1-247-830-11	CARBON	910 5% 1/4W				
R510	1-249-420-11	CARBON	1.8K 5% 1/4W	*	1-655-761-11	MVR BOARD	
R511	1-247-891-00	CARBON	330K 5% 1/4W			*****	
R512	1-247-815-91	CARBON	220 5% 1/4W			< CAPACITOR >	
R512	1-249-414-11	CARBON	560 5% 1/4W				
R513	1-247-815-91	CARBON	220 5% 1/4W	C351	1-124-443-00	ELECT 100uF 20% 10V	
R514	1-249-393-11	CARBON	10 5% 1/4W	C352	1-161-494-00	CERAMIC 0.022uF 25V	
R515	1-247-807-31	CARBON	100 5% 1/4W	C471	1-164-159-11	CERAMIC 0.1uF 50V	
R515	1-247-815-91	CARBON	220 5% 1/4W	C472	1-164-159-11	CERAMIC 0.1uF 50V	
R516	1-247-815-91	CARBON	220 5% 1/4W	C473	1-164-159-11	CERAMIC 0.1uF 50V	
R517	1-249-425-11	CARBON	4.7K 5% 1/4W			< CONNECTOR >	
R518	1-249-441-11	CARBON	100K 5% 1/4W	* CN351	1-568-942-11	PIN, CONNECTOR 4P	
R519	1-249-425-11	CARBON	4.7K 5% 1/4W	CN461	1-750-452-11	CONNECTOR, FFC/FPC 11P	
R520	1-247-826-00	CARBON	620 5% 1/4W			< PLATE >	
R541	1-249-435-11	CARBON	33K 5% 1/4W	* EB471	4-962-201-01	PLATE (HP), GROUND	
R542	1-249-435-11	CARBON	33K 5% 1/4W			< IC >	
R543	1-249-429-11	CARBON	10K 5% 1/4W	IC351	8-759-962-08	IC BA6208	
R544	1-249-435-11	CARBON	33K 5% 1/4W			< JACK >	
R545	1-249-402-11	CARBON	56 5% 1/4W	J471	1-750-162-61	JACK (LARGE TYPE) (PHONES)	
R910	1-249-390-11	CARBON	5.6 5% 1/4W			< RESISTOR >	
R911	1-249-390-11	CARBON	5.6 5% 1/4W	R352	1-249-417-11	CARBON 1K 5% 1/4W	F
R912	1-249-423-11	CARBON	3.3K 5% 1/4W	R353	1-249-417-11	CARBON 1K 5% 1/4W	F
R913	1-249-423-11	CARBON	3.3K 5% 1/4W			< VARIABLE RESISTOR >	
R915	1-249-429-11	CARBON	10K 5% 1/4W	RV461	1-223-875-11	RES, VAR, CARBON 10K/10K	(LINE OUT, PHONE LEVEL)
R916	1-249-438-11	CARBON	56K 5% 1/4W			*****	
R917	1-247-863-91	CARBON	22K 5% 1/4W	*	1-655-760-11	SW BOARD	
R920	1-249-436-11	CARBON	39K 5% 1/4W			*****	
R921	1-249-431-11	CARBON	15K 5% 1/4W			< CAPACITOR >	
R922	1-249-423-11	CARBON	3.3K 5% 1/4W				
R930	1-249-411-11	CARBON	330 5% 1/4W	C851	1-161-494-00	CERAMIC 0.022uF 25V	
R931	1-249-421-11	CARBON	2.2K 5% 1/4W	C852	1-161-494-00	CERAMIC 0.022uF 25V	
R932	1-249-436-11	CARBON	39K 5% 1/4W				
R933	1-247-807-31	CARBON	100 5% 1/4W				
R934	1-249-421-11	CARBON	2.2K 5% 1/4W				
R935	1-249-422-11	CARBON	2.7K 5% 1/4W				
R937	1-249-417-11	CARBON	1K 5% 1/4W				
R938	1-247-807-31	CARBON	100 5% 1/4W				
R939	1-249-425-11	CARBON	4.7K 5% 1/4W				
R940	1-249-423-11	CARBON	3.3K 5% 1/4W				
R941	1-249-428-11	CARBON	8.2K 5% 1/4W				

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

SW TRANSFORMER

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< IC >				ACCESSORIES & PACKING MATERIALS	
IC851	8-741-810-59	IC SBX1810-59				*****	
		< SWITCH >				1-473-125-11 REMOTE COMMANDER (RM-D820)	
S851	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)				1-590-925-31 CORD, CONNECTION (AUDIO 100cm)	
*****						3-759-994-51 MANUAL, INSTRUCTION	
*	1-655-758-11	TRANSFORMER BOARD				(ENGLISH, FRENCH, SPANISH, SWEDISH) (561:AEP/561E)	
		*****				3-759-994-61 MANUAL, INSTRUCTION	
		< CAPACITOR >				(GERMAN, DUTCH, ITALIAN, PORTUGUESE) (561:AEP)	
C991	1-164-159-11	CERAMIC 0.1uF	50V			3-759-994-71 MANUAL, INSTRUCTION (GERMAN) (561:G)	
		< CONNECTOR >				4-941-925-02 CUSHION	
CN991	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P		*		4-962-615-01 COVER, BATTERY (for RM-D820)	
CN992	1-564-510-11	PLUG, CONNECTOR 7P		*		4-973-638-11 INDIVIDUAL CARTON (561)	
		< PLATE >		*		4-973-638-21 INDIVIDUAL CARTON (561E)	
* EB991	4-962-200-01	PLATE (TR), GROUND		*****			
*****						*****	
		MISCELLANEOUS				HARDWARE LIST	
		*****				*****	
3	1-751-947-11	WIRE (FLAT TYPE) (21 CORE)		#1	7-682-548-09	SCREW +BVTT 3X8 (S)	
7	1-751-712-11	WIRE (FLAT TYPE) (11 CORE)		#2	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
58	1-696-760-11	WIRE (FLAT TYPE) (23 CORE)		#3	7-685-871-01	SCREW +BVTT 3X6 (S)	
△62	1-575-651-21	CORD, POWER (561)		#4	7-621-255-15	SCREW +P 2X3	
△62	1-696-907-11	CORD, POWER (561E)		#5	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
△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	BASE (OUTSERT) 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				*****	
*****						*****	

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