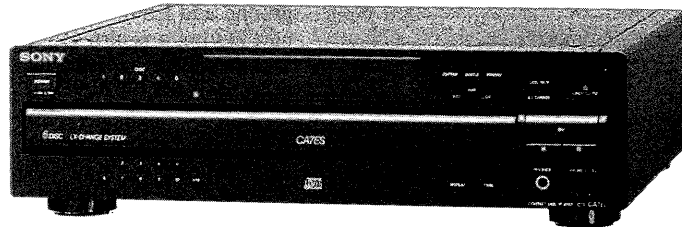


# CDP-CA7ES

## SERVICE MANUAL

US Model  
Canadian Model



Model Name Using Similar Mechanism	CDP-C265/C365
CD Mechanism Type	CDM27D
Base Unit Type	BU-5BD20
Optical Pick-up Type	KSS-213B/K-N

### SPECIFICATIONS

#### Compact disc player

<b>Laser</b>	Semiconductor laser
<b>Wavelength</b>	780–790 nm
<b>Frequency response</b>	2Hz to 20kHz±0.3 dB
<b>Signal-to-noise ratio</b>	More than 116 dB
<b>Dynamic range</b>	More than 100 dB
<b>Harmonic distortion</b>	Less than 0.0025%
<b>Channel separation</b>	More than 110 dB

#### Output

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

#### General

<b>Power requirements</b>	120 V AC, 60 Hz
<b>Power consumption</b>	14 W
<b>Dimensions (approx.) (w/h/d)</b>	430 x 125 x 400 mm (17 x 5 x 153/4 in.) incl. projecting parts
<b>Mass (approx.)</b>	5.9 kg (13 lbs)

#### 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**®

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### CAUTION

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

#### 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  $\Delta$  OR DOTTED LINE WITH MARK  $\Delta$  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.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE

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

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

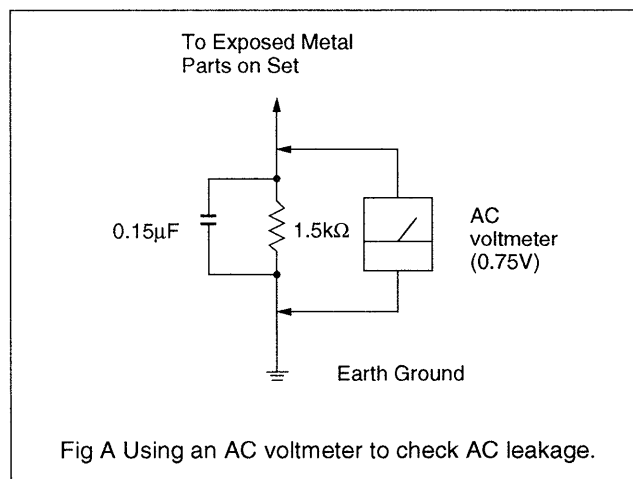


Fig A Using an AC voltmeter to check AC leakage.

#### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\Delta$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## 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.

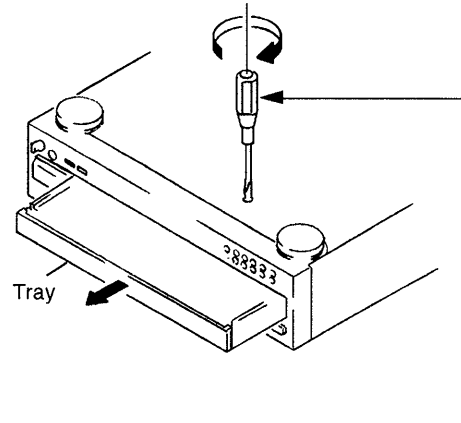
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

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.

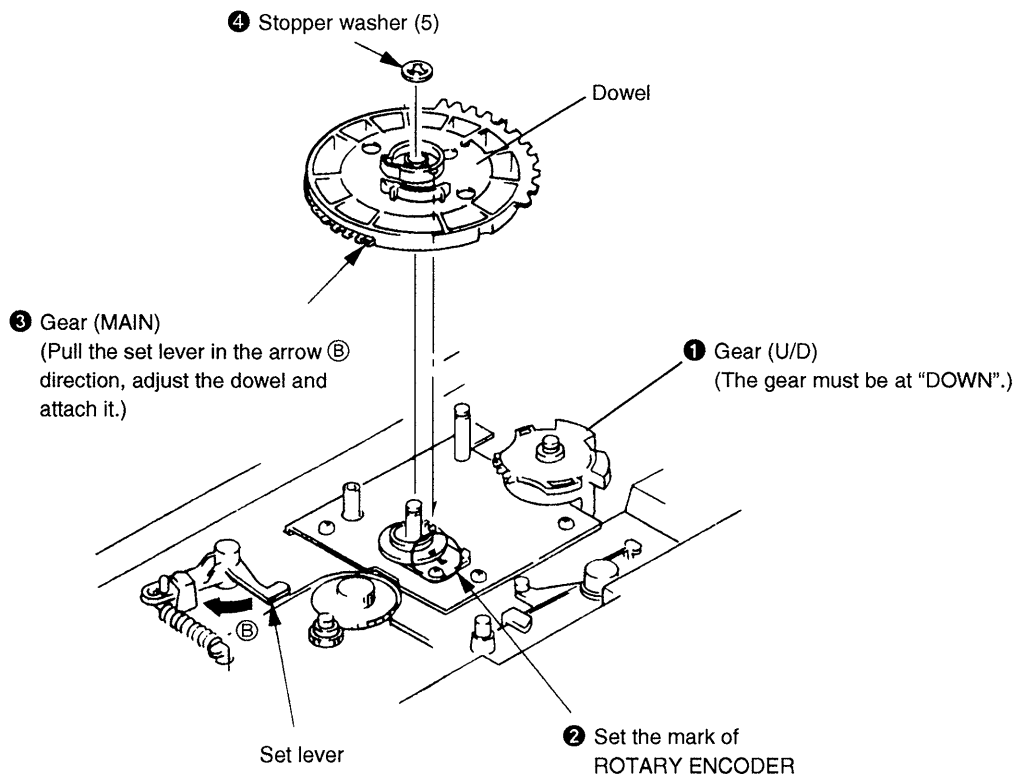
### HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



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

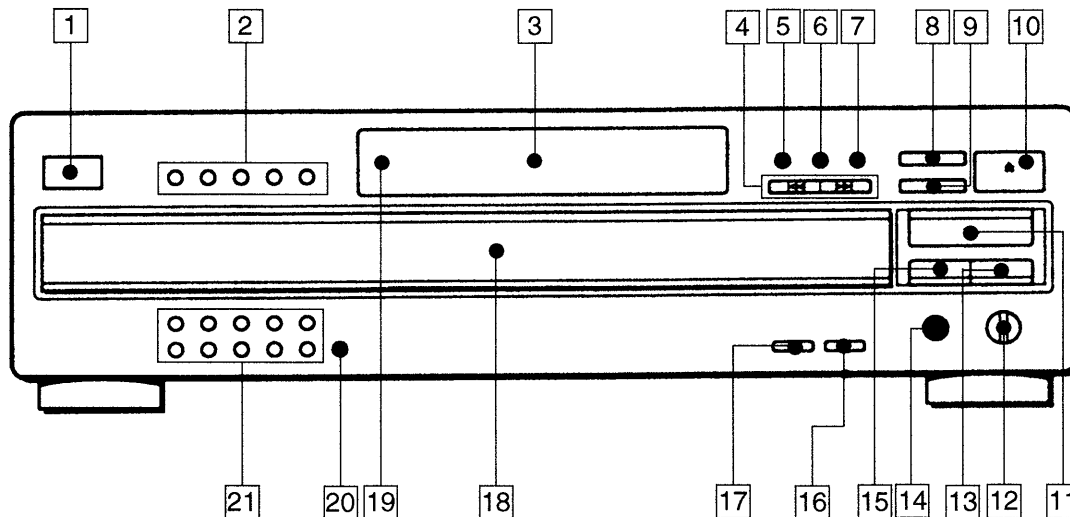
\* To close the disc tray, turn the driver in the reverse direction.

### NOTE FOR MAIN GEAR INSTALLATION



## SECTION 1 GENERAL

### LOCATION OF CONTROL



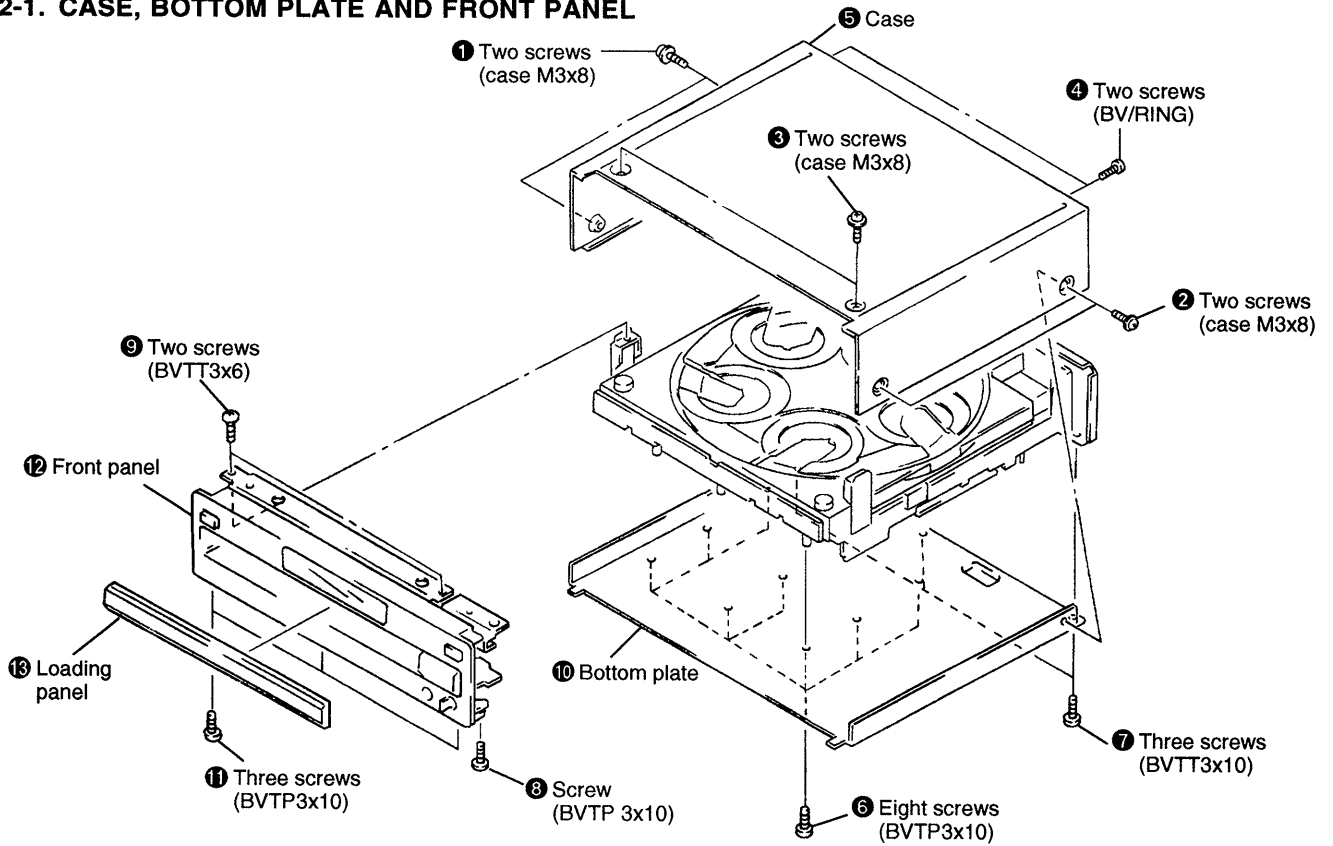
- |                                |  |                      |
|--------------------------------|--|----------------------|
| 1 POWER button                 | 8 DISC SKIP button                     | 15    (pause) button |
| 2 DISC 1 to 5 buttons          | 9 EX-CHANGE button                     | 16 TIME button       |
| 3 DISPLAY WINDOW               | 10 $\triangle$ OPEN/CLOSE button       | 17 REPEAT button     |
| 4 $\lll / \ggg$ (AMS*) buttons | 11 $\blacktriangleright$ (play) button | 18 DISC tray         |
| 5 CONTINUE button              | 12 PHONE LEVEL control                 | 19 Remote sensor     |
| 6 SHUFFLE button               | 13 $\blacksquare$ (stop) button        | 20 >10 button        |
| 7 PROGRAM button               | 14 PHONES jack                         | 21 Number buttons    |

\* AMS is the abbreviation for Automatic Music Sensor.

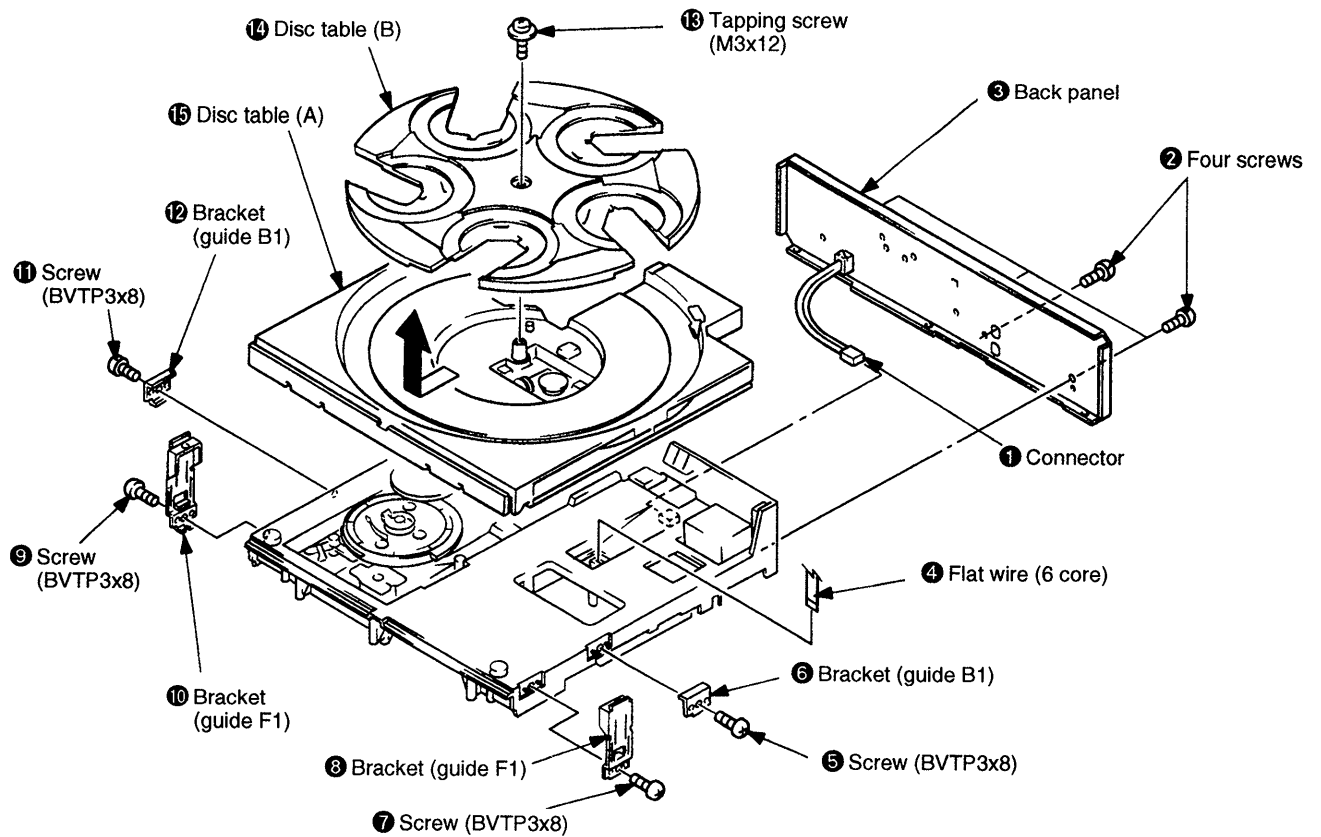
## SECTION 2 DISASSEMBLY

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

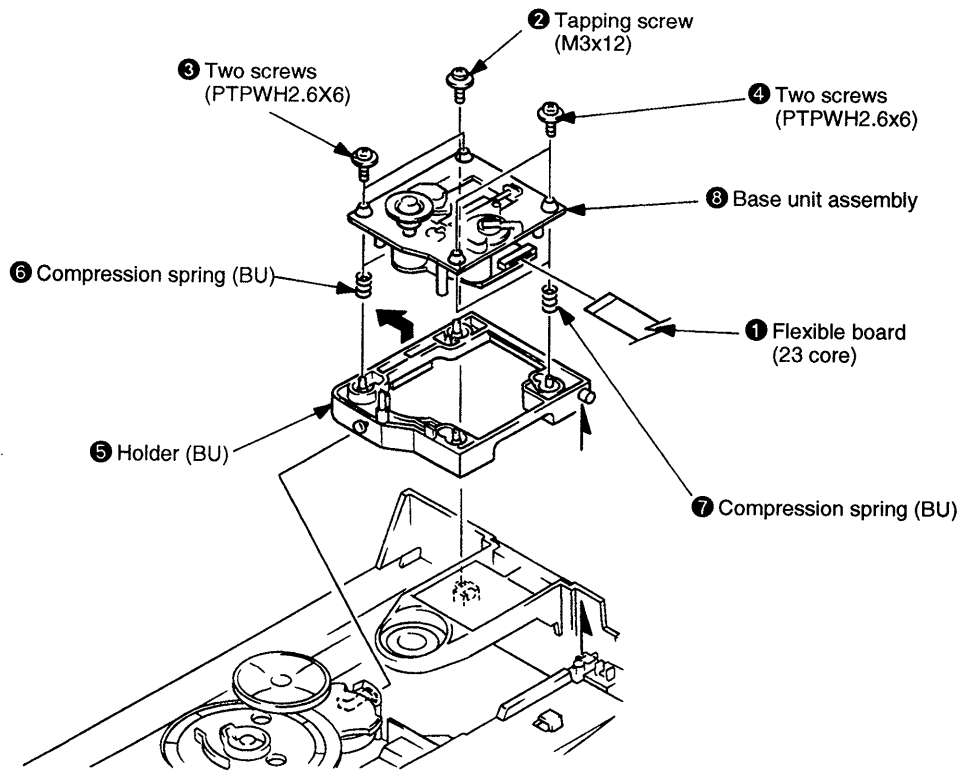
### 2-1. CASE, BOTTOM PLATE AND FRONT PANEL



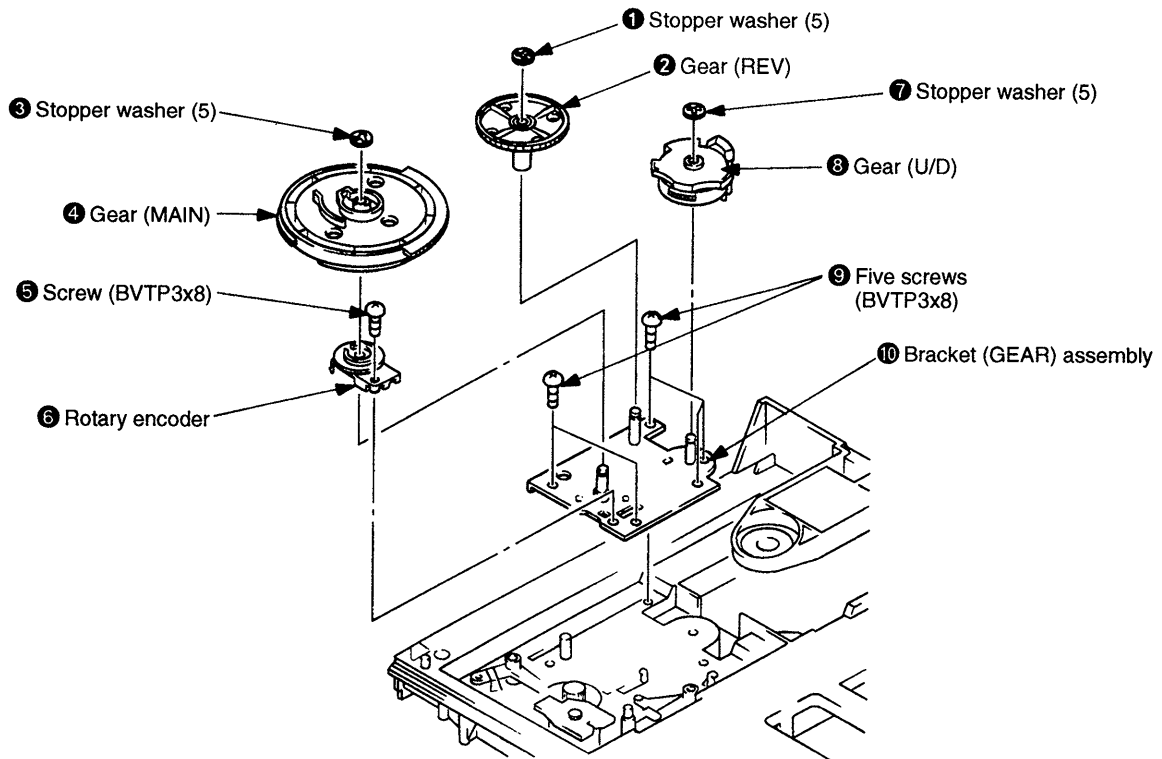
### 2-2. BACK PANEL AND DISC TABLE



### 2-3. BASE UNIT ASSEMBLY



### 2-4. BRACKET (GEAR) ASSEMBLY



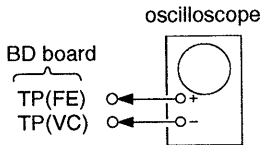
## SECTION 3

### 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.

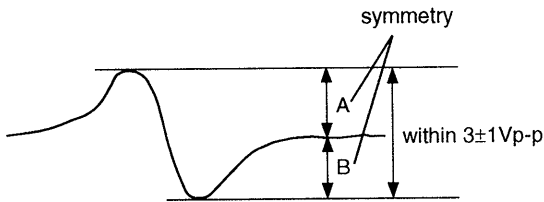
**S Curve Check**



**Procedure :**

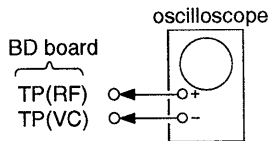
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)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

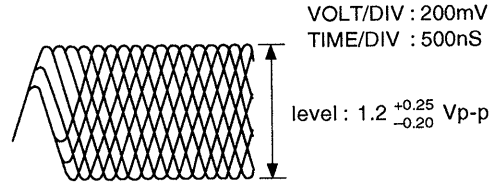
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.

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.

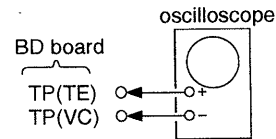
**Note :**

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

**RF signal waveform**



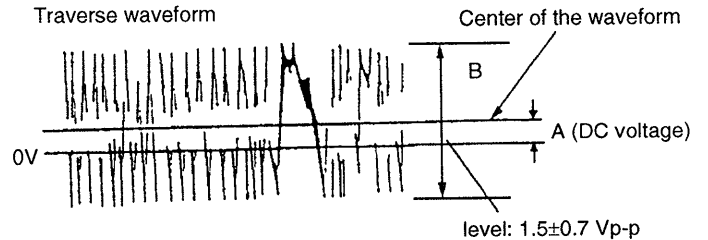
**E-F Balance Check**



**Procedure :**

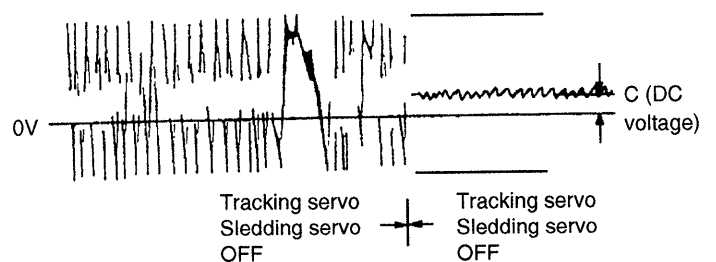
1. Connect test point TP (ADJ: IC402 ③ Pin) on MAIN board to ground with lead wire.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in to play the number five track.
5. Press the CHECK button. (The tracking servo and the sledding servo are turned 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 x 100 = less than ± 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**

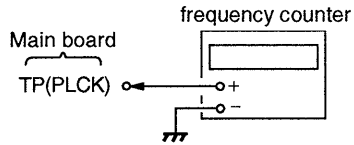


8. Disconnect the laed wire of TP (ADJ) connected in step 1.

**RF PLL Free-run Frequency Check**

**Procedure :**

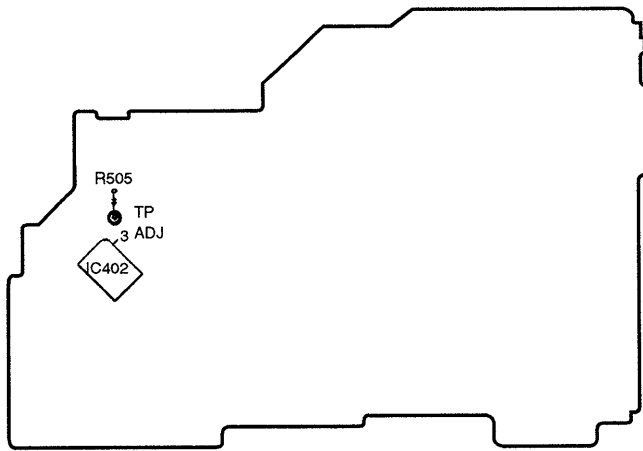
1. Connect frequency counter to test point (PLCK) with lead wire.



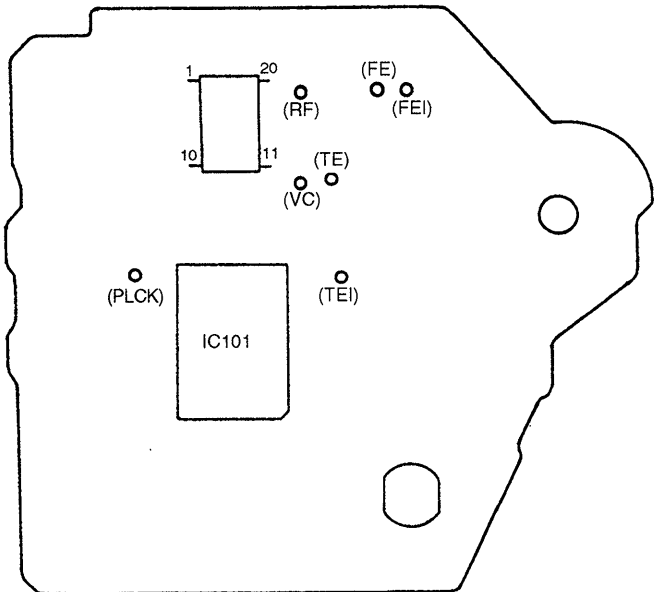
2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218MHz.

**Adjustment Location :**

[ MAIN BOARD ] — Component Side —



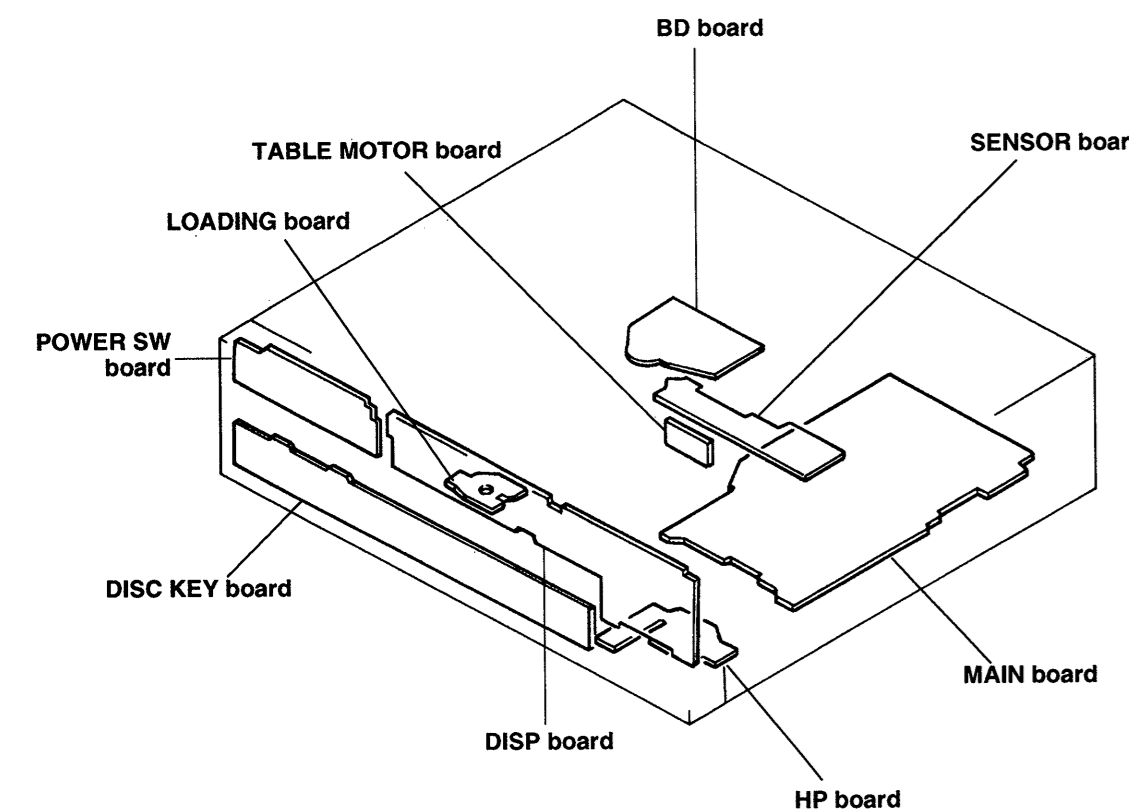
[ BD BOARD ] — SIDE A —



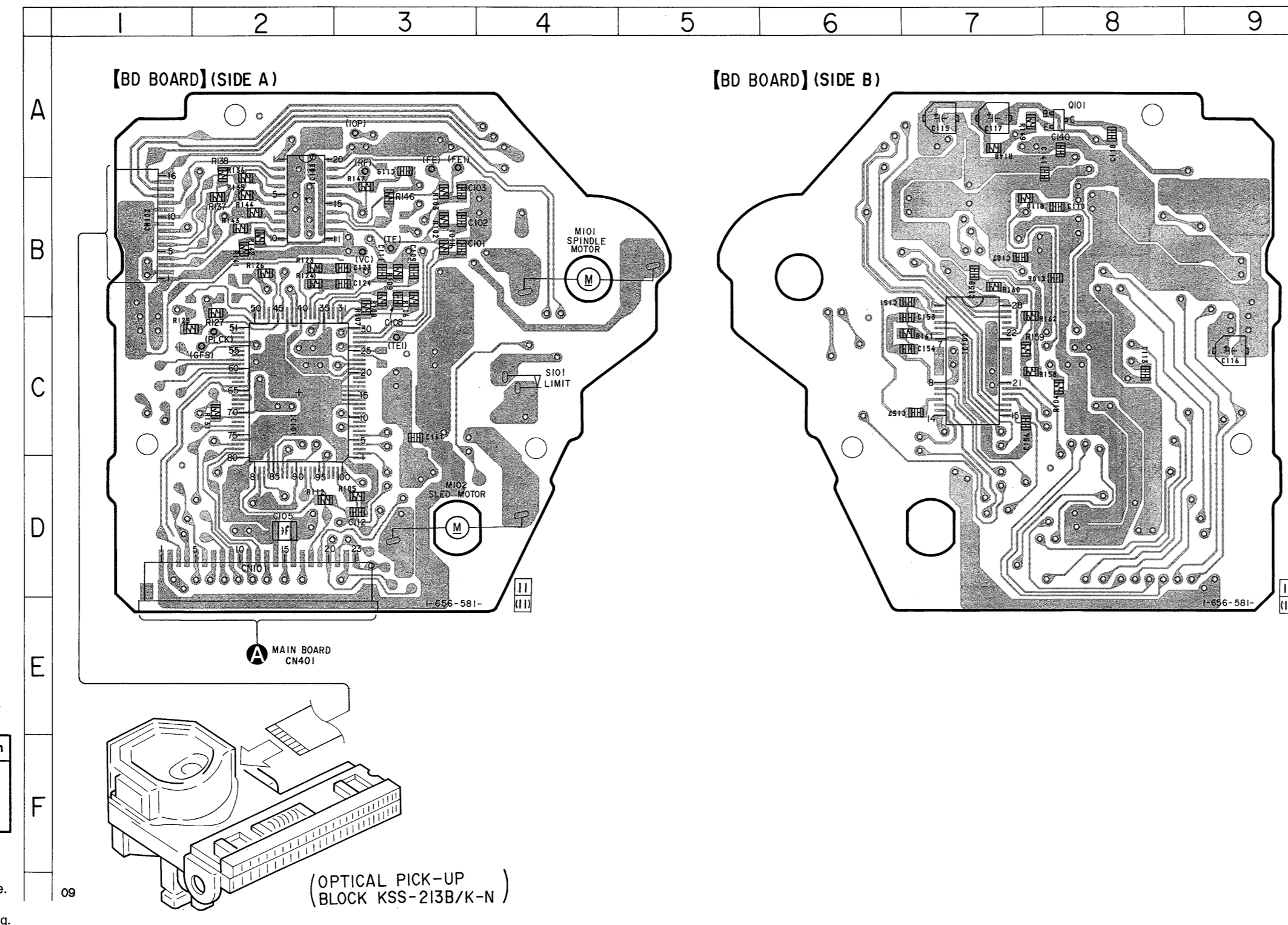


SECTION 4  
DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION



4-2. PRINTED WIRING BOARD — BD SECTION —



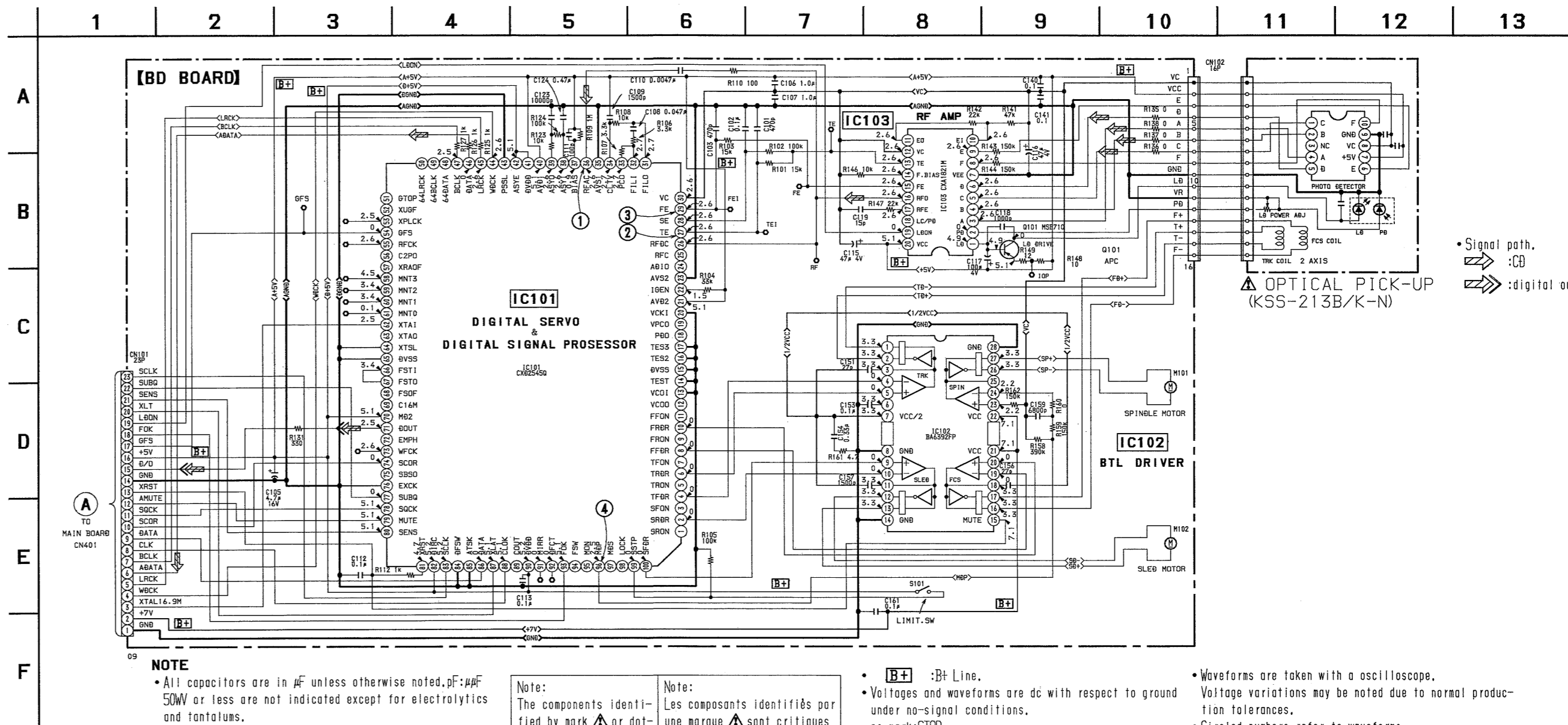
• Semiconductor Location

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

Note:  
 • — : parts extracted from the components side.  
 • ○ : Through hole.  
 • [Pattern] : Pattern from the side which enable seeing.

4-3. SCHEMATIC DIAGRAM — BD SECTION —

- See page 23 for IC Block Diagrams.
- See page 25 for IC Pin Functions.



NOTE  
 • All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\mu\text{F}$ :  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.  
 • All resistors are in  $\Omega$  and 1/4W or less unless otherwise specified.

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

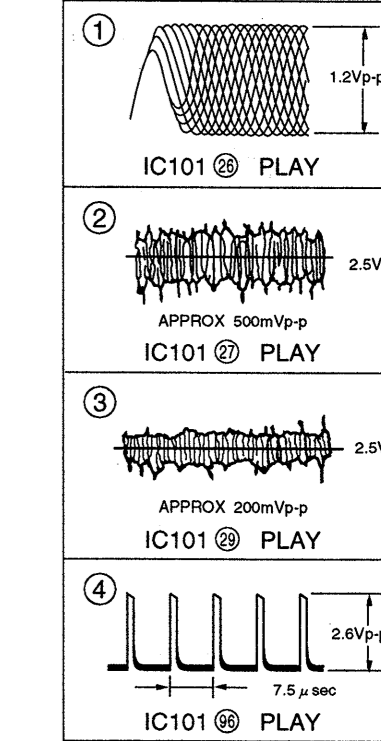
Note:  
 Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- [B-1] : 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 10M $\Omega$ ). 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.  
 ⇨ : CB  
 ⇨⇨ : digital out

• Waveforms

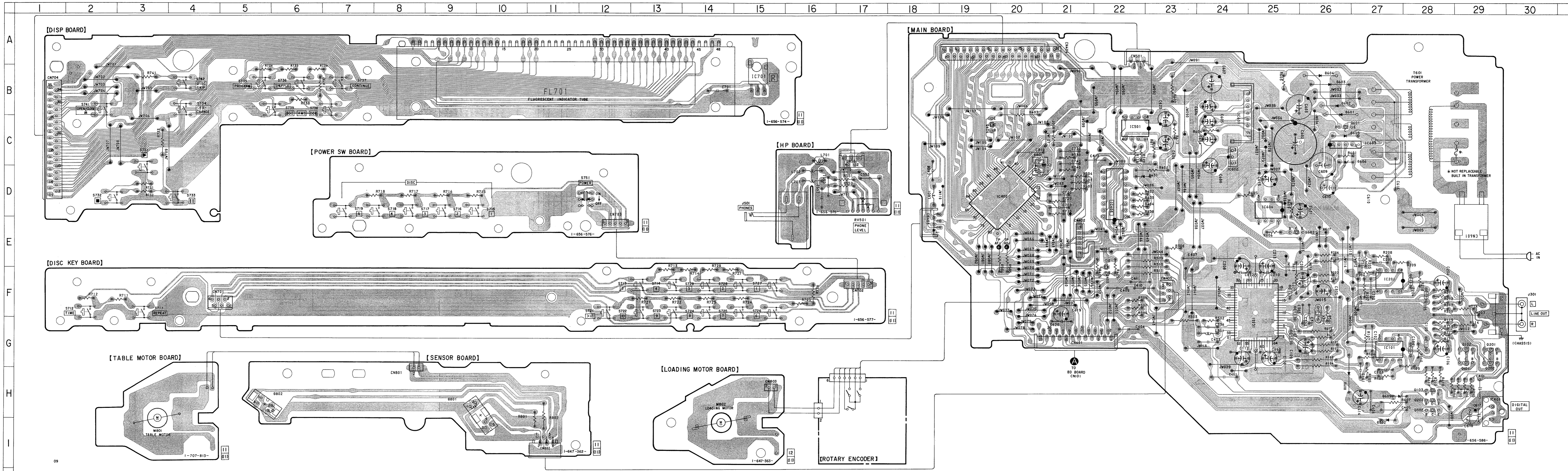




4-4. PRINTED WIRING BOARD — MAIN SECTION —  
 • See page 9 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location
D302	H-27
D401	D-22
D601	B-26
D602	B-26
D603	B-26
D604	B-26
D605	C-26
D606	C-26
D608	H-27
D609	H-27
D801	H-10
D802	H-5
IC101	G-27
IC201	F-27
IC301	F-25
IC401	H-29
IC402	D-20
IC403	D-22
IC501	C-22
IC601	B-24
IC602	C-24
IC603	C-26
IC604	D-25
IC701	B-15
Q101	G-29
Q102	G-29
Q103	H-28
Q201	G-29
Q202	G-29
Q203	H-28
Q403	E-22
Q404	C-19
Q502	H-28
Q601	C-26
Q602	E-25

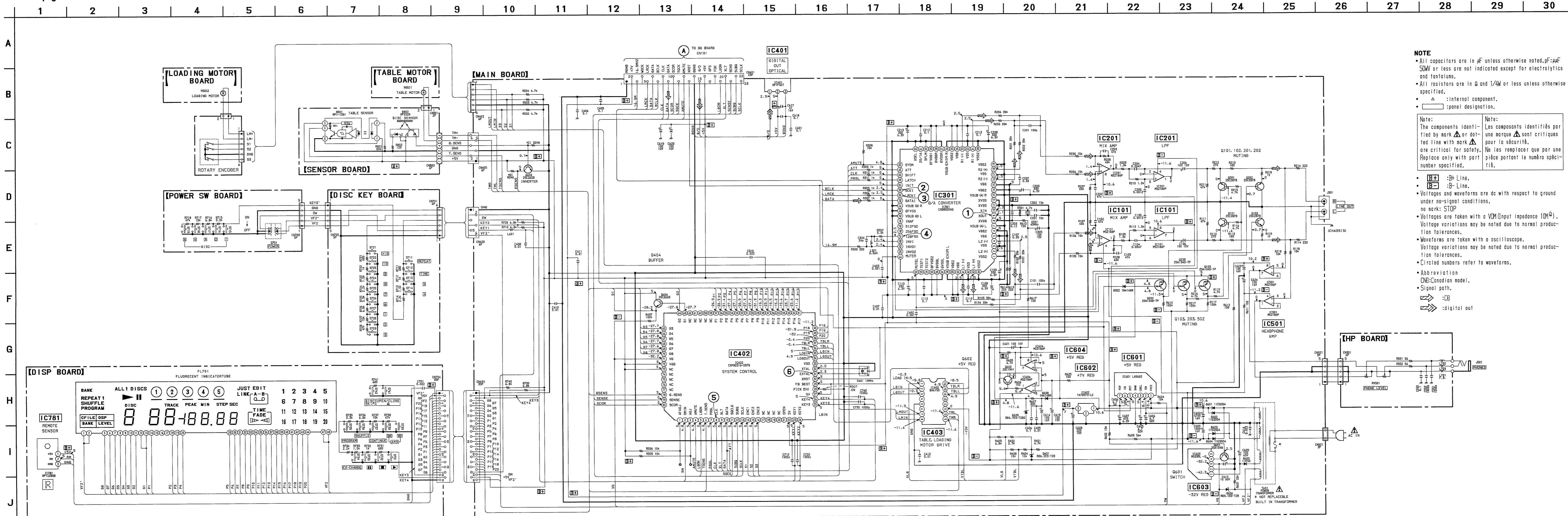


Note:  
 • : parts extracted from the components side.  
 • Δ : Internal component.  
 • : Pattern from the side which enable seeing.



4-5. SCHEMATIC DIAGRAM — MAIN SECTION —

- See page 23 for IC Block Diagrams.
- See page 28 for IC Pin Functions.



**NOTE**

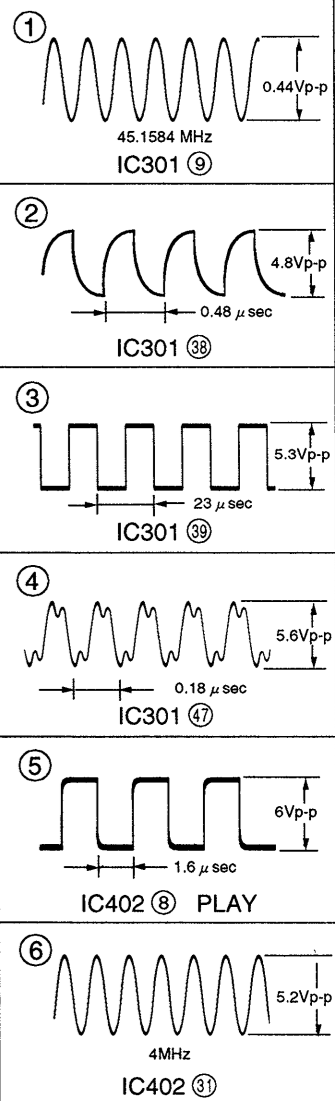
- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF} = \mu\text{F} \times 10^{-6}$  or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4W$  or less unless otherwise specified.
- $\Delta$  : internal component.
- $\square$  : panel designation.

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

Note: Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

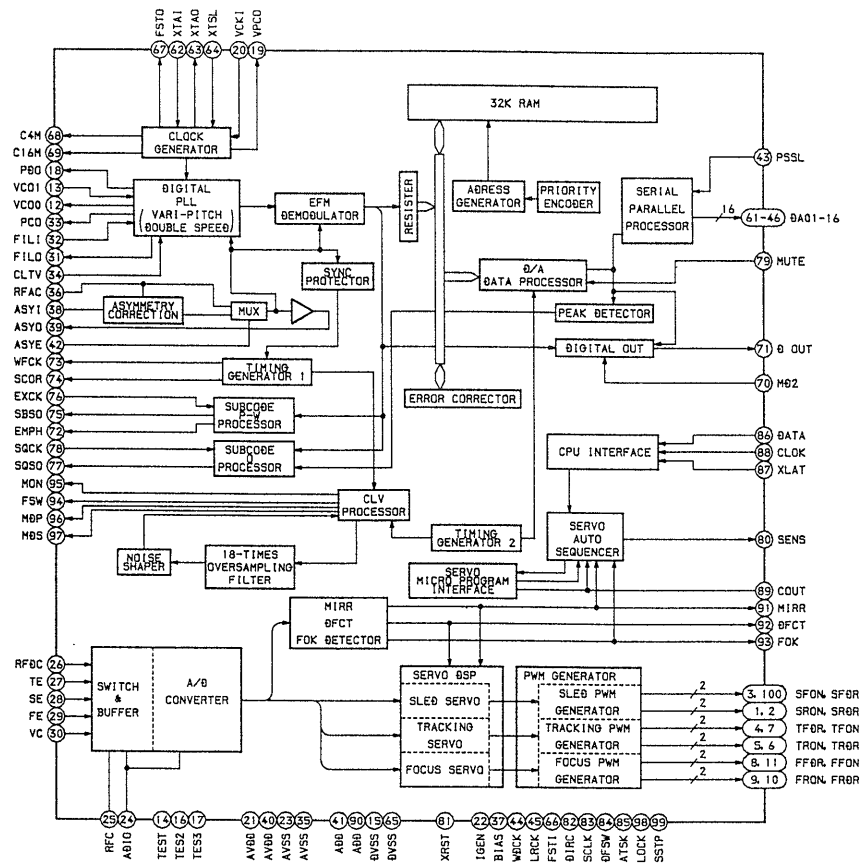
- $\text{B+}$  : B+ Line.
- $\text{B-}$  : B- Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark: STOP.
- Voltages are taken with a VOM (Input impedance  $10M\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Abbreviation  $\text{CND}$ : Canadian model.
- Signal path.
- $\Rightarrow$  : CD
- $\Rightarrow$  : digital out

• Waveforms

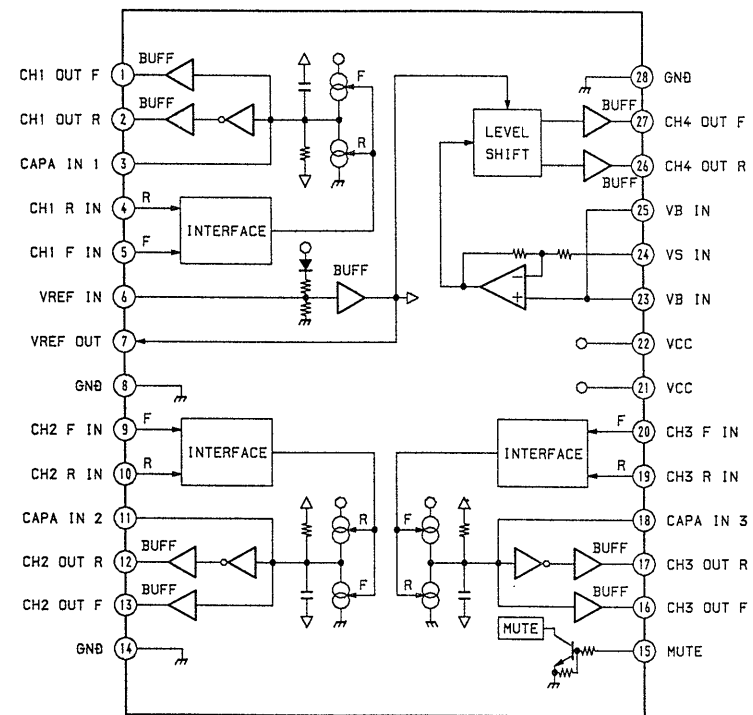


4-6. IC BLOCK DIAGRAMS

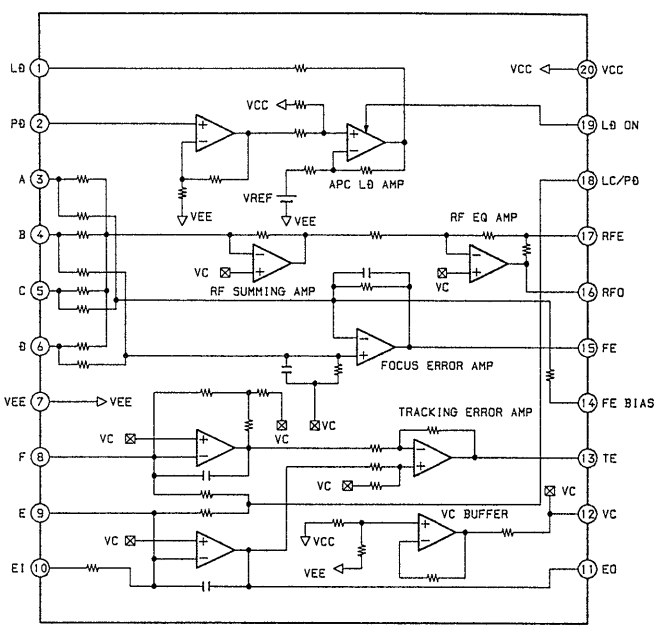
IC101 CXD2545Q



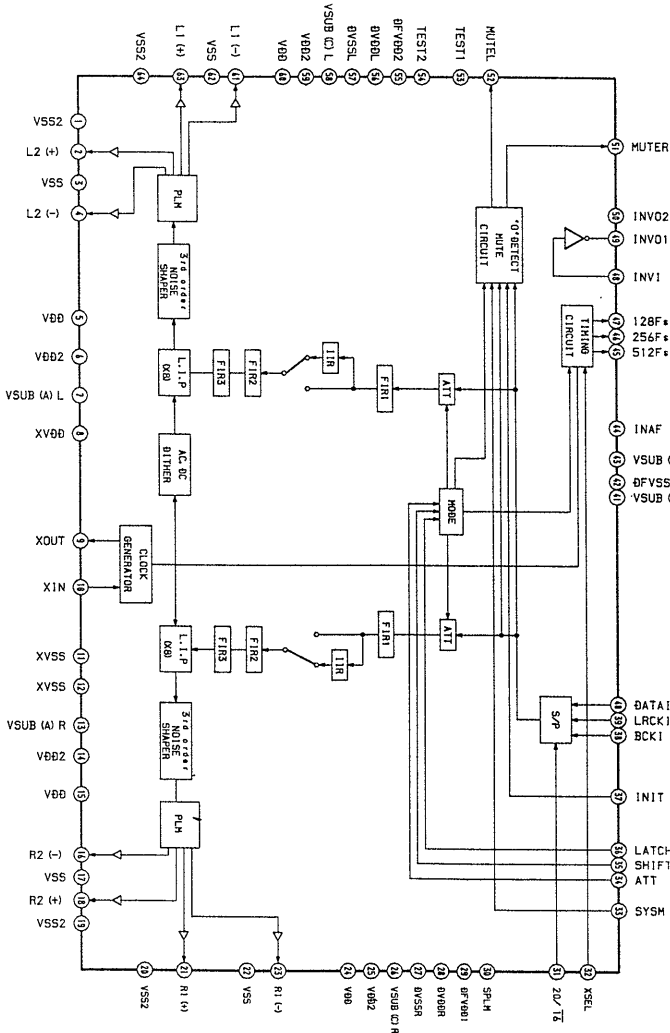
IC102 BA6392FP



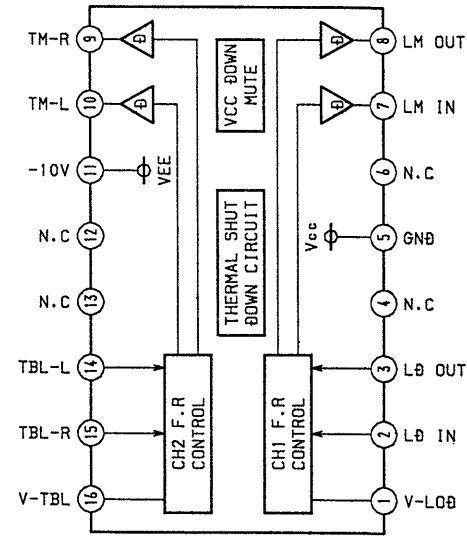
IC103 CXA1821M



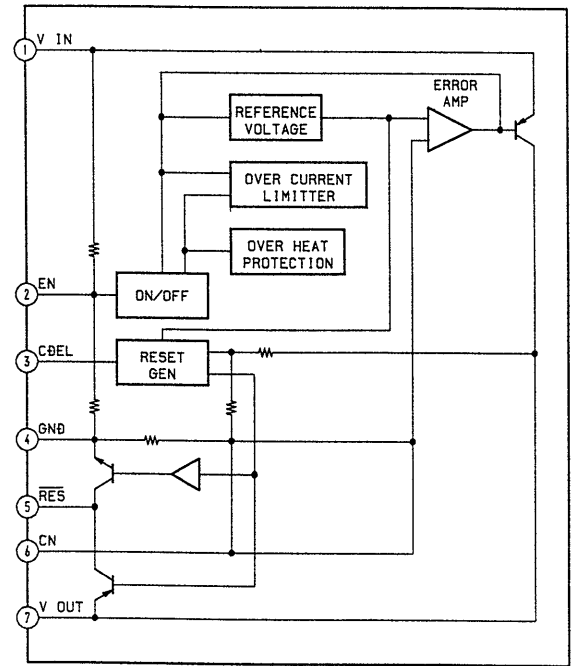
IC301 CXD8505AQ



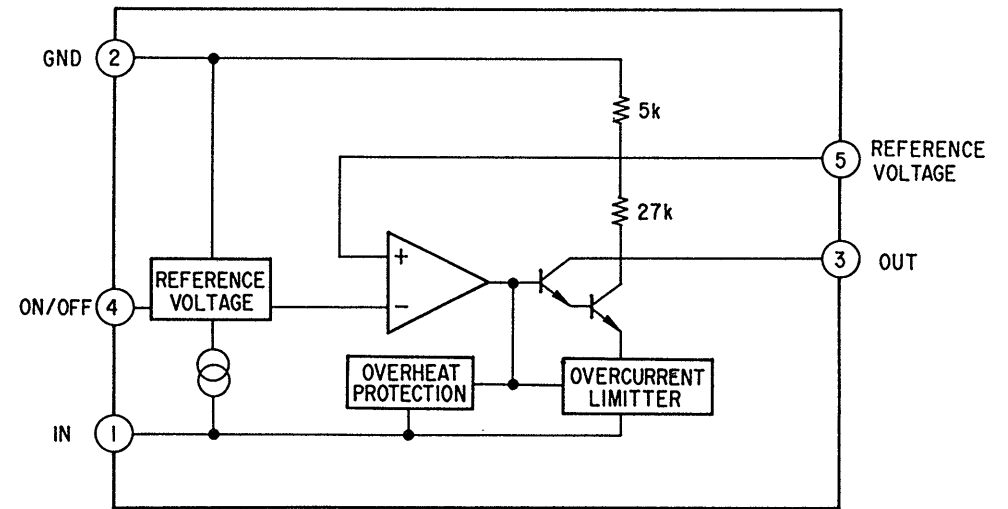
IC403 BA6193



IC601 LA5602



IC603 M5293L



## 4-7. 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	FFPM	O	Focus drive output (Not used)
12	VCPP	O	VCO output for analog EEMPLL (Not used)
13	VCOI	I	VCO pin connected normally to 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 EEM 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	AVS2	-	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	DA16 output when PSSL=1. 48-bit slot data when PSSL=0
47	BCLK	O	DA15 output when PSSL=1. 48-bit slot data when PSSL=0
48	64DATA	O	DA14 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
49	64BCLK	O	DA13 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
50	64LRCK	O	DA12 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
51	GTOP	O	DA11 output when PSSL=1. GTOP output when PSSL=0 (Not used)
52	XUGF	O	DA10 output when PSSL=1. XUGF output when PSSL=0 (Not used)
53	XPLCK	O	DA09 output when PSSL=1. XPLCK output when PSSL=0
54	GFS	O	DA08 output when PSSL=1. GFS output when PSSL=0
55	PFCK	O	DA07 output when PSSL=1. RFCK output when PSSL=0
56	C2PO	O	DA06 output when PSSL=1. C2PO output when PSSL=0 (Not used)
57	XRAOF	O	DA05 output when PSSL=1. XRA0F output when PSSL=0
58	MNT3	O	DA04 output when PSSL=1. MNT3 output when PSSL=0
59	MNT2	O	DA03 output when PSSL=1. MNT2 output when PSSL=0
60	MNT1	O	DA02 output when PSSL=1. MNT1 output when PSSL=0
61	MNT0	O	DA01 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 SQS0 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	CLOCK	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)
98	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

• IC402 SYSTEM CONTROL (CXP82316-057Q)

Pin No.	Pin Name	I/O	Function
1	AF ADJ	I	Test mode pin. Normally: "H"
2	RM IN	I	Remote control signal input pin.
3	ADJ	I	Test mode pin. Normally: "H"
4	A MUTE	O	Analog muting control signal output pin.
5	LDON	O	Optical pick-up laser diode control pin. ON: "H"
6	T.SENS	I	Slit sensor of disc table input pin.
7	PRGL	O	Latch signal output pin to digital filter IC.
8	CLK	O	Serial clock output pin.
9	XLT	O	Serial data latch signal output pin.
10	DATA	O	Serial data output pin.
11	SQCLK	O	Subcode Q data readout clock output pin.
12	SUBQ	I	Subcode Q data input pin.
13	SCLK	O	Internal register of SSP/DSP readout clock output pin.
14 to 16	ENC1 to ENC3	I	Loading encoder input pin.
17 to 20	N.C	-	Not used.
21	OPEN	-	OPEN
22	5V	-	OPEN (+5V)
23 to 26	KEY1 to KEY4	I	Key input pin. (A/D)
27	5V	-	OPEN (+5V)
28	PICK (+5V)	I	Optical pick-up setup pin. 0V: KSS-213B/K-N, KSS-240A, 2.5V: KSS-390A, 5V: Automatic discrimination (not used open)
29	FB BEST	-	+5V (Normal)
30	XRST	I	Reset signal input pin.
31	EXTAL	I	10MHz clock input pin.
32	XTAL	O	10MHz clock output pin.
33	GND	-	GND
34	LODOUT	O	Loading motor control pin.
35	LODIN	O	Loading motor control pin.
36	TBLL	O	Table motor control pin.
37	TBLR	O	Table motor control pin.
38 to 57	P1 to P20	O	FL segment output pin.
58 to 62	N.C	-	Not used.
63 to 70	G1 to G8	O	FL timing output pin.
71	-30V	-	-30V
72	+5V	-	+5V
73	+5V	-	+5V
74 to 77	N.C	-	Not used.
78	D.SENS	I	Disc sensor input pin. "L": disc present.
79	SENSE	I	SENSE signal input pin.
80	SCOR	I	Subcode Q data readout timing signal input pin.



## SECTION 5

### EXPLODED VIEWS

**NOTE:**

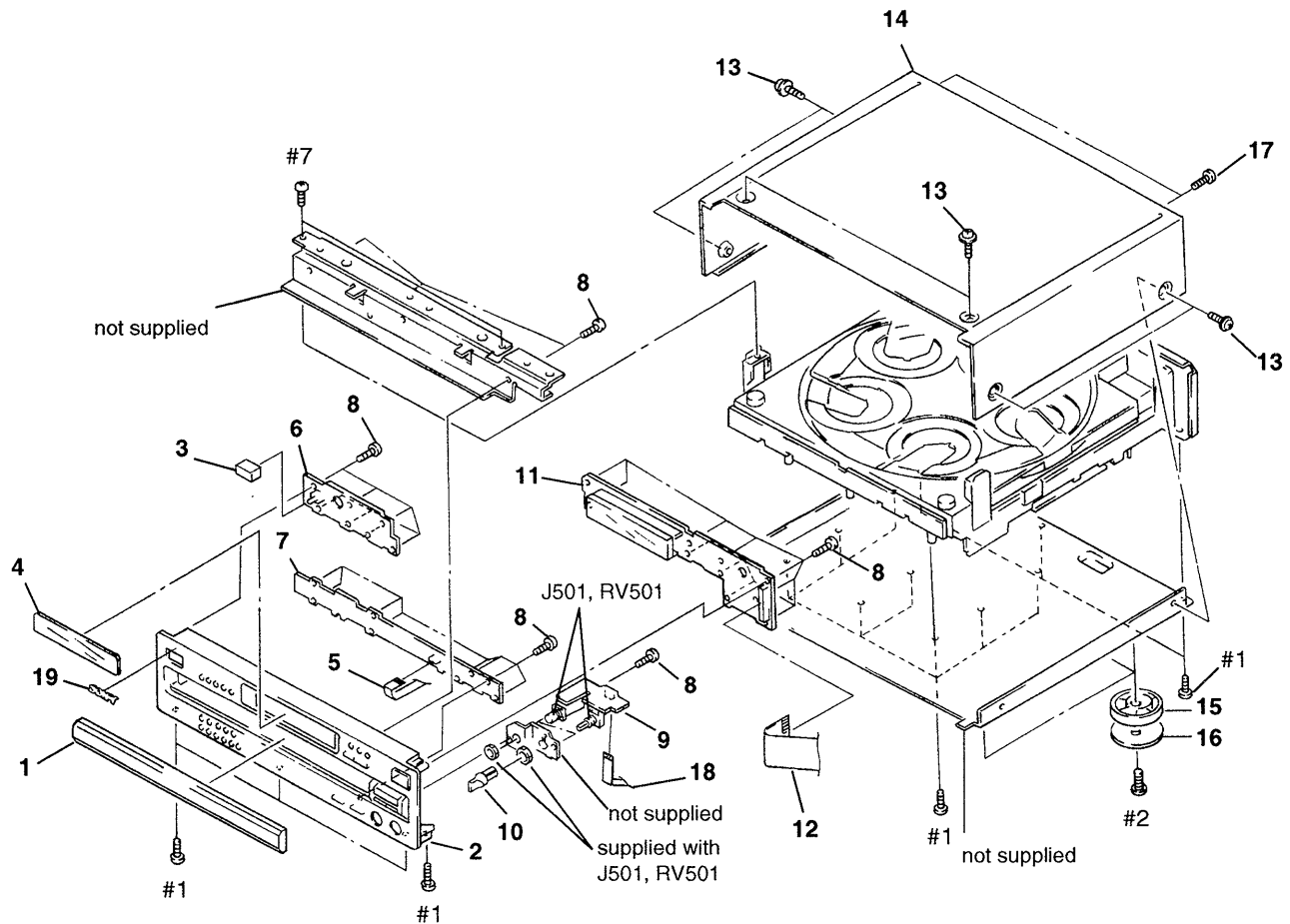
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.
- Abbreviation  
CND : Canadian model

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

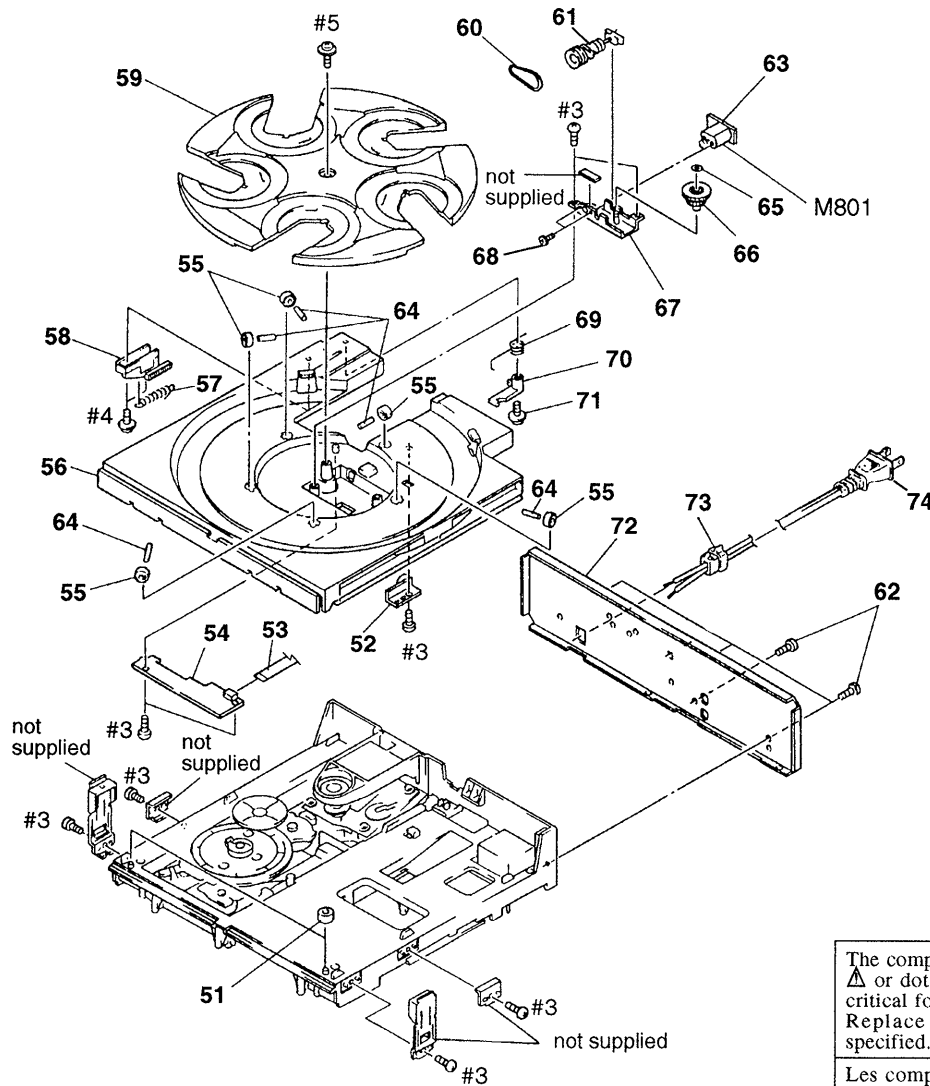
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

#### 5-1. FRONT PANEL SECTION



REF. No.	Part No.	Description	Remark	REF. No.	Part No.	Description	Remark
1	4-972-205-21	PANEL, LOADING		13	3-704-366-01	SCREW (CASE) (M3X8)	
2	X-4946-016-1	PANEL ASSY, FRONT		14	4-972-223-11	CASE	
3	4-922-921-01	BUTTON (POWER)		15	4-970-123-01	FOOT (F50180S)	
4	4-973-968-01	PLATE, INDICATION		16	4-970-124-01	CUSHION (F50180S)	
5	1-775-303-11	WIRE (FLAT TYPE) (6 CORE)		17	3-704-515-21	SCREW (BV/RING)	
* 6	1-656-576-11	POWER SW BOARD		18	1-769-780-11	WIRE (FLAT TYPE) (5 CORE)	
* 7	1-656-577-11	DISC KEY BOARD		19	4-942-568-01	EMBLEM (NO.5), SONY	
8	4-951-620-01	SCREW (2.6X8), +BVTP		J501	1-750-162-61	JACK (LARGE TYPE) (PHONES)	
* 9	1-656-575-11	HP BOARD		RV501	1-223-926-11	RES, VAR (PHONE LEVEL)	
10	4-950-189-01	KNOB (A) (VOL)					
* 11	1-656-574-11	DISP BOARD					
12	1-769-781-11	WIRE (FLAT TYPE) (35 CORE)					

## 5-2. BACK PANEL AND DISC TABLE SECTION

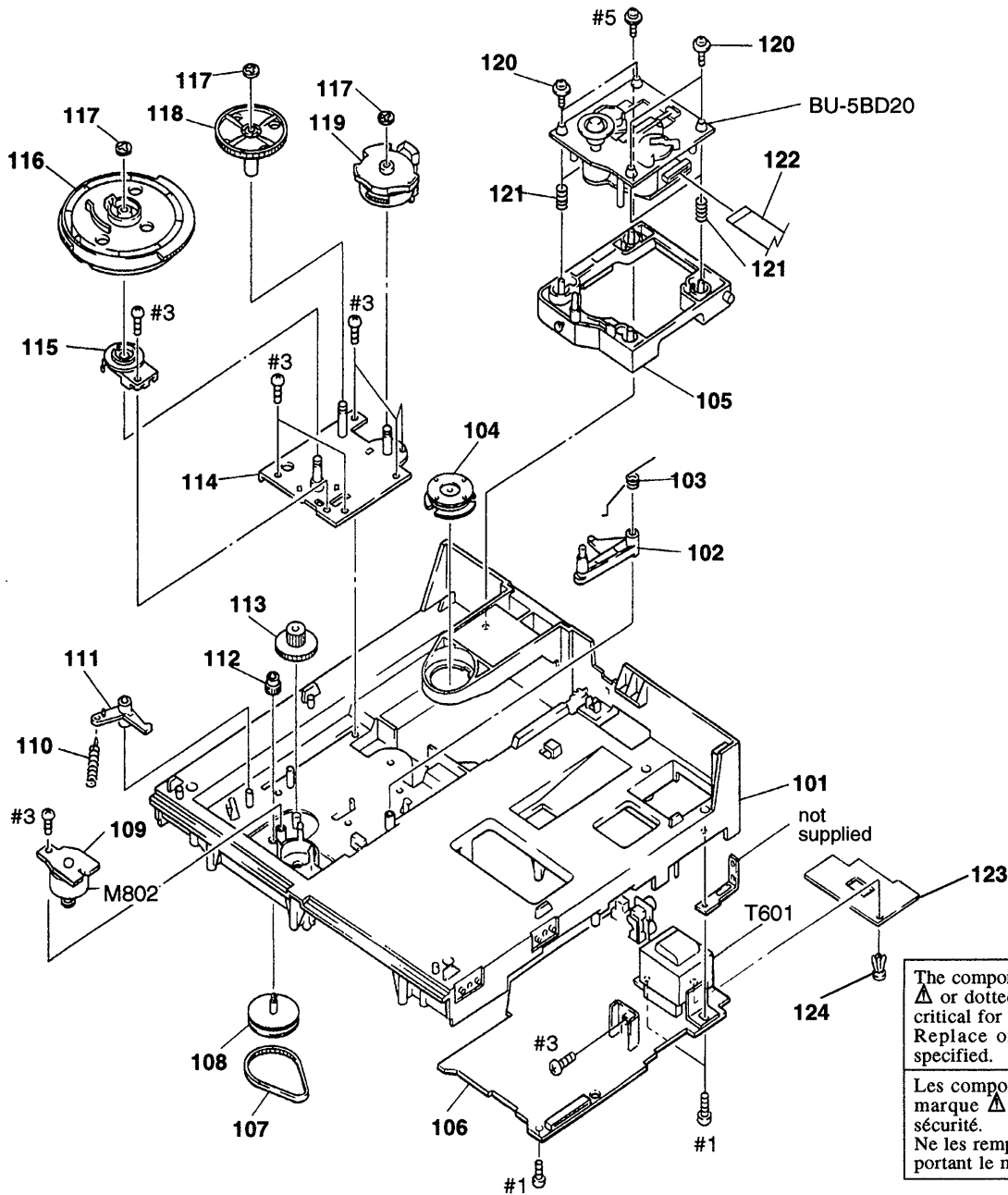


The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

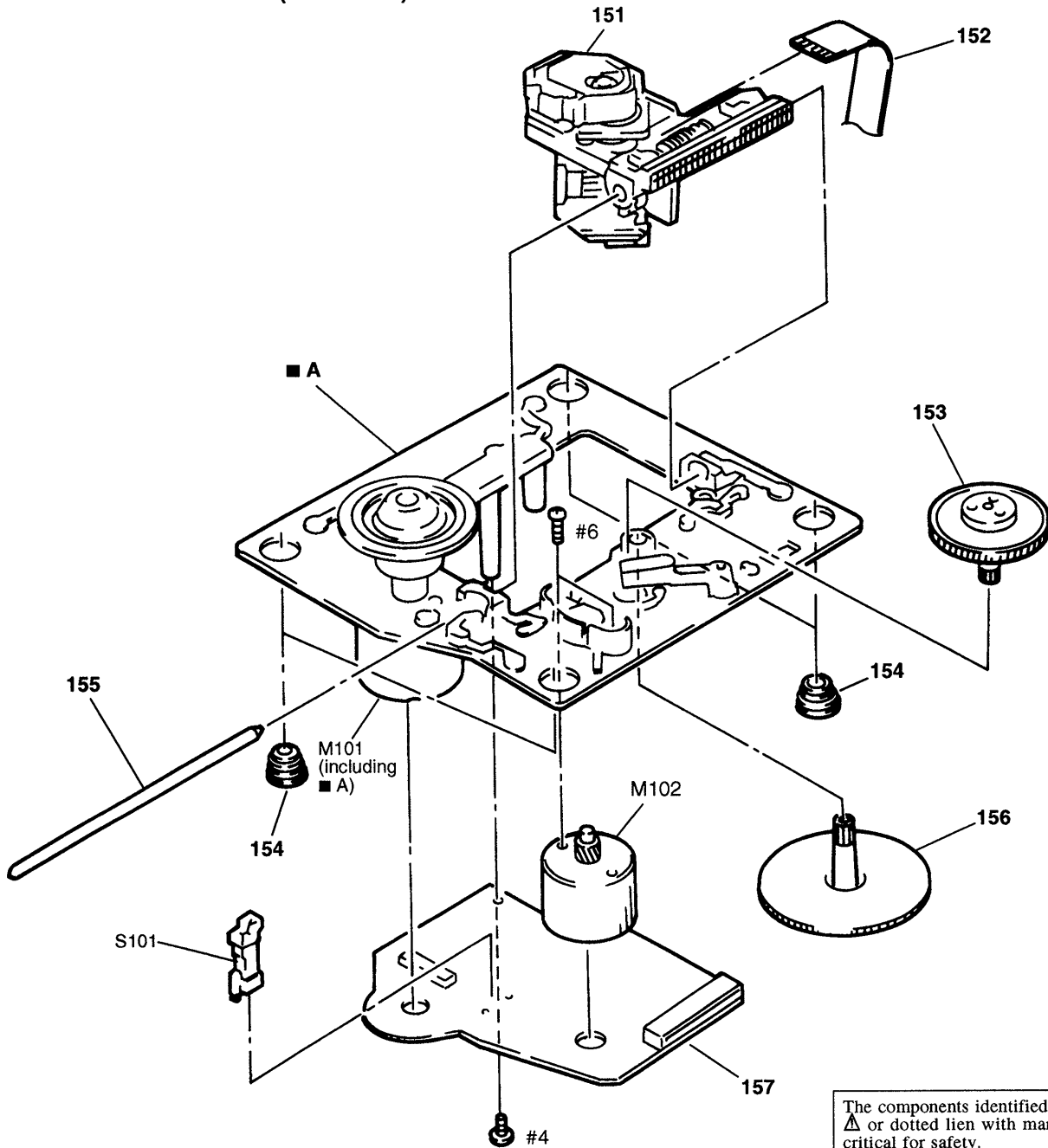
REF. No.	Part No.	Description	Remark	REF. No.	Part No.	Description	Remark
* 51	4-951-619-01	CUSHION (A)		64	4-934-376-01	SHAFT (ROLLER)	
52	X-4943-480-1	BRACKET (ROLLER D) ASSY		65	3-325-697-01	WASHER	
53	1-751-052-11	WIRE (FLAT TYPE) (6 CORE)		66	4-957-284-01	GEAR (LOTARY B)	
* 54	1-647-362-11	SENSOR BOARD		67	X-4943-477-1	BRACKET (RM) ASSY	
55	X-4924-457-1	ROLLER ASSY		68	4-965-659-01	SCREW (+B 2X2.2)	
* 56	4-957-298-01	TABLE (A), DISK		69	4-957-293-01	SPRING (RACK RELEASE)	
57	4-957-294-01	SPRING (D.T), TENSION		70	4-957-291-01	LEVER (RACK RELEASE)	
58	4-957-292-01	SLIDER (RACK)		71	4-957-868-01	SCREW (+PTPWH 2.6X20)	
59	4-957-299-01	TABLE (B), DISK		* 72	4-972-221-71	PANEL, BACK (US)	
60	4-957-304-01	BELT (RM)		* 72	4-972-221-81	PANEL, BACK (CND)	
61	X-4943-479-1	GEAR (ROTARY A) ASSY		* 73	3-703-244-00	BUSHING (2104), CORD	
62	3-704-515-21	SCREW (BV/RING)		$\Delta$ 74	1-590-836-11	CORD, POWER	
* 63	1-647-364-11	TABLE MOTOR BOARD		M801	A-4660-322-A	MOTOR ASSY, ROTARY (TABLE)	

### 5-3. CHASSIS SECTION



REF. No.	Part No.	Description	Remark	REF. No.	Part No.	Description	Remark
* 101	4-957-300-03	CHASSIS		114	X-4943-478-1	BRACKET (GEAR) ASSY	
102	4-957-279-01	LEVER, LOCK		115	1-466-996-11	ENCODER, ROTARY	
103	4-957-281-01	SPRING (LOCK LEVER)		116	4-957-288-01	GEAR (MAIN)	
* 104	1-452-538-11	MAGNET		117	4-957-283-01	WASHER (5), STOPPER	
* 105	4-957-289-01	HOLDER (BU)		118	4-957-287-01	GEAR (REV)	
* 106	A-4673-522-A	MAIN BOARD, COMPLETE		119	4-957-286-01	GEAR (U/D)	
107	4-944-490-01	BELT (TIMING)		120	4-933-134-01	SCREW (+PTPWH M2.6X6)	
108	X-4941-529-1	PULLEY ASSY		121	4-948-503-01	SPRING (BU), COMPRESSION	
* 109	1-647-363-11	LOADING MOTOR BOARD		122	1-765-265-11	WIRE (FLAT TYPE) (23 CORE)	
110	4-962-087-01	SPRING (S), TENSION		123	4-976-489-01	SHEET (W)	
111	4-957-285-01	LEVER, SET		124	3-531-576-11	RIVET, NYLON	
112	4-934-375-01	GEAR (LOADING B)		M802	A-4604-834-A	MOTOR ASSY, LOADING (LOADING)	
113	4-957-303-01	GEAR (LOADING C)		$\Delta$ T601	1-427-944-11	TRANSFORMER, POWER	

### 5-4. BASE UNIT SECTION (BU-5BD20)



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

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

REF. No.	Part No.	Description	Remark	REF. No.	Part No.	Description	Remark
$\Delta$ 151	8-848-367-11	OPTICAL PICK-UP BLOCK KSS-213B/K-N		156	4-917-564-01	GEAR (P), FLATNESS	
152	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)		157	A-4673-509-A	BD BOARD, COMPLETE	
153	4-917-567-01	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 6**

**ELECTRICAL PARTS LIST**

**NOTE:**

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

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité.  
 Ne les remplacer que par une pièce portant le numéro spécifié.

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  
 METAL OXIDE: Metal Oxide-film resistor  
 F: nonflammable
- SEMICONDUCTORS  
 In each case, u:  $\mu$ , for example:  
 uA...:  $\mu$ A..., uPA...:  $\mu$ PA..., uPB...:  $\mu$ PB...,  
 uPC...:  $\mu$ PC..., uPD...:  $\mu$ PD...
- CAPACITORS  
 uF :  $\mu$ F
- COILS  
 uH :  $\mu$ H
- Abbreviation  
 CND : Canadian model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4673-509-A	BD BOARD, COMPLETE *****				< MOTOR >	
		< CAPACITOR >		M101	X-4917-504-1	MOTOR ASSY (SLED)	
				M102	X-4917-523-4	BASE (OUTSERT) ASSY (SPINDLE)	
C101	1-163-005-11	CERAMIC CHIP	470PF 10% 50V			< TRANSISTOR >	
C102	1-163-038-00	CERAMIC CHIP	0.1uF 25V				
C103	1-163-005-11	CERAMIC CHIP	470PF 10% 50V	Q101	8-729-010-08	TRANSISTOR MSB710-R	
C105	1-135-155-21	TANTALUM CHIP	4.7uF 10% 16V			< RESISTOR >	
C106	1-164-346-11	CERAMIC CHIP	1.0uF 16V	R101	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C107	1-164-346-11	CERAMIC CHIP	1.0uF 16V	R102	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C108	1-163-035-00	CERAMIC CHIP	0.047uF 50V	R103	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C109	1-163-145-00	CERAMIC CHIP	0.0015uF 5% 50V	R104	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C110	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	R105	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C111	1-163-251-11	CERAMIC CHIP	100PF 5% 50V	R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C112	1-163-038-00	CERAMIC CHIP	0.1uF 25V	R107	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C113	1-163-038-00	CERAMIC CHIP	0.1uF 25V	R108	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C115	1-126-607-11	ELECT CHIP	47uF 20% 4V	R109	1-216-121-00	METAL CHIP 1M 5% 1/10W	
C116	1-126-607-11	ELECT CHIP	47uF 20% 4V	R110	1-216-025-00	METAL CHIP 100 5% 1/10W	
C117	1-126-209-11	ELECT	100uF 20% 4V	R112	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C118	1-163-275-11	CERAMIC CHIP	0.001uF 5% 50V	R123	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C119	1-163-097-00	CERAMIC CHIP	15PF 5% 50V	R124	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C123	1-164-232-11	CERAMIC CHIP	0.01uF 50V	R125	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C124	1-164-005-11	CERAMIC CHIP	0.47uF 25V	R126	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C140	1-163-038-11	CERAMIC CHIP	0.1uF 25V	R127	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C141	1-163-038-11	CERAMIC CHIP	0.1uF 25V	R131	1-216-037-00	METAL CHIP 330 5% 1/10W	
C151	1-163-237-11	CERAMIC CHIP	27PF 5% 50V	R135	1-216-295-00	METAL CHIP 0 5% 1/10W	
C153	1-163-038-00	CERAMIC CHIP	0.1uF 25V	R136	1-216-295-00	METAL CHIP 0 5% 1/10W	
C154	1-164-336-11	CERAMIC CHIP	0.33uF 25V	R137	1-216-295-00	METAL CHIP 0 5% 1/10W	
C156	1-163-237-11	CERAMIC CHIP	27PF 5% 50V	R138	1-216-295-00	METAL CHIP 0 5% 1/10W	
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	1-163-038-00	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		R159	1-216-101-00	METAL CHIP 150K 5% 1/10W	
				R160	1-216-295-00	METAL CHIP 0 5% 1/10W	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R161	1-216-308-00	METAL CHIP	4.7 5% 1/10W	C602	1-126-937-11	ELECT	4700uF 20% 16V
R162	1-216-101-00	METAL CHIP	150K 5% 1/10W	C603	1-126-013-11	ELECT	1000uF 20% 16V
		< SWITCH >		C604	1-126-163-11	ELECT	4.7uF 20% 50V
S101	1-572-085-11	SWITCH, LEAF (LIMIT)		C605	1-126-163-11	ELECT	4.7uF 20% 50V
*****							
*	A-4673-522-A	MAIN BOARD, COMPLETE	*****	C606	1-126-163-11	ELECT	4.7uF 20% 50V
	7-685-646-79	SCREW +BVTP	3X8 TYPE2 N-S	C607	1-124-472-11	ELECT	470uF 20% 10V
		< CAPACITOR >		C608	1-126-101-11	ELECT	100uF 20% 16V
C101	1-162-282-31	CERAMIC	100PF 10% 50V	C609	1-124-572-11	ELECT	100uF 20% 63V
C102	1-162-215-31	CERAMIC	47PF 5% 50V	C610	1-126-059-11	ELECT	10uF 20% 50V
C103	1-162-215-31	CERAMIC	47PF 5% 50V	C614	1-126-023-11	ELECT	100uF 20% 16V
C104	1-106-359-00	MYLAR	4700PF 5% 200V	C615	1-124-994-11	ELECT	100uF 20% 10V
C105	1-130-472-00	MYLAR	0.0012uF 5% 50V	C616	1-161-494-00	CERAMIC	0.022uF 25V
C106	1-124-994-11	ELECT	100uF 20% 10V	C617	1-126-022-11	ELECT	47uF 20% 16V
C107	1-136-172-00	FILM	0.39uF 5% 50V	C618	1-164-159-11	CERAMIC	0.1uF 50V
C108	1-128-057-11	ELECT	330uF 20% 6.3V	C619	1-124-994-11	ELECT	100uF 20% 10V
C109	1-124-442-00	ELECT	330uF 20% 6.3V	C620	1-164-159-11	CERAMIC	0.1uF 50V
C110	1-164-159-11	CERAMIC	0.1uF 50V	C623	1-126-023-11	ELECT	100uF 20% 16V
C112	1-164-159-11	CERAMIC	0.1uF 50V	C624	1-126-023-11	ELECT	100uF 20% 16V
C113	1-128-057-11	ELECT	330uF 20% 6.3V	C710	1-162-294-31	CERAMIC	0.001uF 10% 50V
C201	1-162-282-31	CERAMIC	100PF 10% 50V	C720	1-162-294-31	CERAMIC	0.001uF 10% 50V
C202	1-162-215-31	CERAMIC	47PF 5% 50V	C730	1-162-294-31	CERAMIC	0.001uF 10% 50V
C203	1-162-215-31	CERAMIC	47PF 5% 50V	C740	1-162-294-31	CERAMIC	0.001uF 10% 50V
C204	1-106-359-00	MYLAR	4700PF 5% 200V			< CONNECTOR >	
C205	1-130-472-00	MYLAR	0.0012uF 5% 50V	* CN401	1-568-865-11	SOCKET, CONNECTOR 23P	
C206	1-124-994-11	ELECT	100uF 20% 10V	CN403	1-568-849-11	SOCKET, CONNECTOR 6P	
C207	1-136-172-00	FILM	0.39uF 5% 50V	CN404	1-764-411-11	SOCKET, CONNECTOR 35P	
C208	1-128-057-11	ELECT	330uF 20% 6.3V	* CN405	1-695-329-31	PIN, CONNECTOR (PC BOARD) 6P	
C209	1-124-442-00	ELECT	330uF 20% 6.3V	* CN501	1-568-848-11	SOCKET, CONNECTOR 5P	
C210	1-164-159-11	CERAMIC	0.1uF 50V	* CN601	1-573-047-11	PIN, CONNECTOR (PC BOARD) 2P	
C212	1-164-159-11	CERAMIC	0.1uF 50V			< DIODE >	
C213	1-128-057-11	ELECT	330uF 20% 6.3V	D302	8-719-987-63	DIODE	1N4148M
C301	1-162-199-31	CERAMIC	10PF 5% 50V	D401	8-719-109-93	DIODE	RD6.2ESB2
C302	1-162-199-31	CERAMIC	10PF 5% 50V	D601	8-719-210-21	DIODE	11EQS04
C303	1-136-166-00	FILM	0.12uF 5% 50V	D602	8-719-210-21	DIODE	11EQS04
C304	1-162-208-31	CERAMIC	24PF 5% 50V	D603	8-719-210-21	DIODE	11EQS04
C305	1-124-994-11	ELECT	100uF 20% 10V	D604	8-719-210-21	DIODE	11EQS04
C310	1-161-494-00	CERAMIC	0.022uF 30% 25V	D605	8-719-200-82	DIODE	11ES2
C401	1-164-159-11	CERAMIC	0.1uF 50V	D606	8-719-110-13	DIODE	RD9.1ESB2
C402	1-162-294-11	CERAMIC	0.001uF 10% 50V	D608	8-719-987-63	DIODE	1N4148M
C403	1-162-294-11	CERAMIC	0.001uF 10% 50V	D609	8-719-109-81	DIODE	RD4.7ESB2
C404	1-164-159-11	CERAMIC	0.1uF 50V			< IC >	
C405	1-162-306-11	CERAMIC	0.01uF 20% 16V	IC101	8-759-634-51	IC	M5218AP
C406	1-164-159-11	CERAMIC	0.1uF 50V	IC201	8-759-634-51	IC	M5218AP
C407	1-162-306-11	CERAMIC	0.01uF 20% 16V	IC301	8-759-334-75	IC	CXD8505AQ
C408	1-162-306-11	CERAMIC	0.01uF 20% 16V	IC401	8-749-921-12	IC	GP1F32T
C409	1-164-159-11	CERAMIC	0.1uF 50V	IC402	8-752-861-50	IC	CXP82316-057Q
C410	1-162-306-11	CERAMIC	0.01uF 20% 16V	IC403	8-759-330-30	IC	BA6193
C411	1-162-306-11	CERAMIC	0.01uF 20% 16V	IC501	8-759-634-51	IC	M5218AP
C413	1-162-306-11	CERAMIC	0.01uF 20% 16V	IC601	8-759-061-65	IC	LA5602
				IC602	8-759-605-00	IC	M5F78M07L
				IC603	8-759-633-42	IC	M5293L
				IC604	8-759-634-51	IC	M5218AP

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< JACK >					
J301	1-766-507-11	JACK, PIN 2P (LINE OUT)		R215	1-249-425-11	CARBON 4.7K 5% 1/4W F	
		< COIL >		R216	1-249-425-11	CARBON 4.7K 5% 1/4W F	
L301	1-412-297-11	INDUCTOR 3.3uH		R217	1-249-441-11	CARBON 100K 5% 1/4W	
L601	1-412-473-21	INDUCTOR		R218	1-249-429-11	CARBON 10K 5% 1/4W	
		< TRANSISTOR >		R219	1-249-393-11	CARBON 10 5% 1/4W F	
Q101	8-729-231-55	TRANSISTOR 2SC2878-AB		R301	1-249-425-11	CARBON 4.7K 5% 1/4W F	
Q102	8-729-231-55	TRANSISTOR 2SC2878-AB		R302	1-249-423-11	CARBON 3.3K 5% 1/4W F	
Q103	8-729-900-65	TRANSISTOR DTA144ES		R303	1-249-411-11	CARBON 330 5% 1/4W	
Q201	8-729-231-55	TRANSISTOR 2SC2878-AB		R305	1-249-417-11	CARBON 1K 5% 1/4W F	
Q202	8-729-231-55	TRANSISTOR 2SC2878-AB		R306	1-249-417-11	CARBON 1K 5% 1/4W F	
Q203	8-729-900-65	TRANSISTOR DTA144ES		R307	1-249-417-11	CARBON 1K 5% 1/4W F	
Q403	8-729-620-05	TRANSISTOR 2SC2603-EF		R308	-249-429-11	CARBON 10K 5% 1/4W	
Q404	8-729-620-05	TRANSISTOR 2SC2603-EF		R309	1-249-417-11	CARBON 1K 5% 1/4W F	
Q502	8-729-900-61	TRANSISTOR DTA114ES		R310	1-249-417-11	CARBON 1K 5% 1/4W F	
Q601	8-729-119-76	TRANSISTOR 2SA1175-HFE		R311	1-249-417-11	CARBON 1K 5% 1/4W F	
Q602	8-729-803-82	TRANSISTOR 2SC3468-E		R401	1-249-425-11	CARBON 4.7K 5% 1/4W F	
		< RESISTOR >		R402	1-249-422-11	CARBON 2.7K 5% 1/4W F	
R101	1-249-436-11	CARBON 39K 5% 1/4W		R403	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R102	1-249-436-11	CARBON 39K 5% 1/4W		R404	1-249-429-11	CARBON 10K 5% 1/4W	
R103	1-249-436-11	CARBON 39K 5% 1/4W		R405	1-249-430-11	CARBON 12K 5% 1/4W	
R104	1-249-436-11	CARBON 39K 5% 1/4W		R406	1-249-429-11	CARBON 10K 5% 1/4W	
R105	1-249-431-11	CARBON 15K 5% 1/4W		R407	1-249-441-11	CARBON 100K 5% 1/4W	
R106	1-249-431-11	CARBON 15K 5% 1/4W		R408	1-249-429-11	CARBON 10K 5% 1/4W	
R107	1-247-870-11	CARBON 43K 5% 1/4W		R502	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R108	1-247-870-11	CARBON 43K 5% 1/4W		R503	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R109	1-247-834-11	CARBON 1.3K 5% 1/4W		R504	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R110	1-247-834-11	CARBON 1.3K 5% 1/4W		R505	1-249-429-11	CARBON 10K 5% 1/4W	
R111	1-249-437-11	CARBON 47K 5% 1/4W		R506	1-249-429-11	CARBON 10K 5% 1/4W	
R112	1-249-410-11	CARBON 270 5% 1/4W F		R507	1-249-429-11	CARBON 10K 5% 1/4W	
R113	1-249-408-11	CARBON 180 5% 1/4W F		R601	1-249-435-11	CARBON 33K 5% 1/4W	
R114	1-249-409-11	CARBON 220 5% 1/4W F		R602	1-249-429-11	CARBON 10K 5% 1/4W	
R115	1-249-425-11	CARBON 4.7K 5% 1/4W F		R603	1-249-438-11	CARBON 56K 5% 1/4W	
R116	1-249-425-11	CARBON 4.7K 5% 1/4W F		R604	1-249-429-11	CARBON 10K 5% 1/4W	
R117	1-249-441-11	CARBON 100K 5% 1/4W		R605	1-247-807-31	CARBON 100 5% 1/4W	
R118	1-249-429-11	CARBON 10K 5% 1/4W		R606	1-247-807-31	CARBON 100 5% 1/4W	
R119	1-249-393-11	CARBON 10 5% 1/4W F		R607	1-249-411-11	CARBON 330 5% 1/4W	
R201	1-249-436-11	CARBON 39K 5% 1/4W		R609	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R202	1-249-436-11	CARBON 39K 5% 1/4W		R610	1-249-441-11	CARBON 100K 5% 1/4W	
R203	1-249-436-11	CARBON 39K 5% 1/4W		R611	1-247-807-31	CARBON 100 5% 1/4W	
R204	1-249-436-11	CARBON 39K 5% 1/4W		R612	1-247-807-31	CARBON 100 5% 1/4W	
R205	1-249-431-11	CARBON 15K 5% 1/4W		R613	1-249-409-11	CARBON 220 5% 1/4W	
R206	1-249-431-11	CARBON 15K 5% 1/4W		R614	1-249-409-11	CARBON 220 5% 1/4W	
R207	1-247-870-11	CARBON 43K 5% 1/4W		R615	1-247-807-31	CARBON 100 5% 1/4W	
R208	1-247-870-11	CARBON 43K 5% 1/4W		R617	1-247-807-31	CARBON 100 5% 1/4W	
R209	1-247-834-11	CARBON 1.3K 5% 1/4W		R710	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R210	1-247-834-11	CARBON 1.3K 5% 1/4W		R720	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R211	1-249-437-11	CARBON 47K 5% 1/4W		R730	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R212	1-249-410-11	CARBON 270 5% 1/4W F		R740	1-249-427-11	CARBON 6.8K 5% 1/4W F	
R213	1-249-408-11	CARBON 180 5% 1/4W F				< TRANSFORMER >	
R214	1-249-409-11	CARBON 220 5% 1/4W F		△ T601	1-427-944-11	TRANSFORMER, POWER	
						< VIBRATOR >	
				X301	1-579-161-11	VIBRATOR, CRYSTAL (45MHz)	
				X401	1-579-175-11	VIBRATOR, CERAMIC (10MHz)	

The components identified by mark <b>△</b> or dotted lien with mark <b>△</b> are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque <b>△</b> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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**LOADING MOTOR**

**DISP**

**HP**

**POWER SW**

**DISC KEY**

Ref. No.	Part No.	Description	Remark
*****			
*	1-647-363-11	LOADING MOTOR BOARD *****	
*	1-656-574-11	DISP BOARD *****	
*	1-656-575-11	HP BOARD *****	
*	1-656-576-11	POWER SW BOARD *****	
*	1-656-577-11	DISC KEY BOARD *****	
		< CAPACITOR >	
C551	1-162-294-31	CERAMIC	0.001uF 10% 50V
C552	1-162-294-31	CERAMIC	0.001uF 10% 50V
C553	1-164-159-11	CERAMIC	0.1uF 50V
C701	1-161-494-00	CERAMIC	0.022uF 25V
		< CONNECTOR >	
* CN351	1-568-824-11	SOCKET, CONNECTOR 5P	
* CN701	1-568-825-11	SOCKET, CONNECTOR 6P	
* CN704	1-691-958-11	SOCKET, CONNECTOR 35P	
		< INDICATOR TUBE >	
FL701	1-517-164-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC701	8-759-339-53	IC GP1U28XB	
		< JACK >	
J501	1-750-162-61	JACK (LARGE TYPE) (PHONES)	
		< COIL >	
L701	1-410-397-21	INDUCTOR	1.1uH
L702	1-412-473-21	INDUCTOR	
L703	1-412-473-21	INDUCTOR	
		< MOTOR >	
M802	A-4604-834-A	MOTOR ASSY, LOADING (LOADING)	
		< RESISTOR >	
R551	1-249-402-11	CARBON	56 5% 1/4W F
R552	1-249-402-11	CARBON	56 5% 1/4W F
R711	1-249-415-11	CARBON	680 5% 1/4W F
R712	1-249-417-11	CARBON	1K 5% 1/4W F
R713	1-249-419-11	CARBON	1.5K 5% 1/4W F
R714	1-249-421-11	CARBON	2.2K 5% 1/4W F
R715	1-249-423-11	CARBON	3.3K 5% 1/4W F
R716	1-249-427-11	CARBON	6.8K 5% 1/4W F
R717	1-249-431-11	CARBON	15K 5% 1/4W

Ref. No.	Part No.	Description	Remark
R718	1-249-437-11	CARBON	47K 5% 1/4W
R721	1-249-415-11	CARBON	680 5% 1/4W F
R722	1-249-417-11	CARBON	1K 5% 1/4W F
R723	1-249-419-11	CARBON	1.5K 5% 1/4W F
R724	1-249-421-11	CARBON	2.2K 5% 1/4W F
R725	1-249-423-11	CARBON	3.3K 5% 1/4W F
R726	1-249-427-11	CARBON	6.8K 5% 1/4W F
R727	1-249-431-11	CARBON	15K 5% 1/4W
R728	1-249-437-11	CARBON	47K 5% 1/4W
R731	1-249-415-11	CARBON	680 5% 1/4W F
R732	1-249-417-11	CARBON	1K 5% 1/4W F
R733	1-249-419-11	CARBON	1.5K 5% 1/4W F
R734	1-249-421-11	CARBON	2.2K 5% 1/4W F
R735	1-249-423-11	CARBON	3.3K 5% 1/4W F
R736	1-249-427-11	CARBON	6.8K 5% 1/4W F
R737	1-249-431-11	CARBON	15K 5% 1/4W
R738	1-249-437-11	CARBON	47K 5% 1/4W
R741	1-249-415-11	CARBON	680 5% 1/4W F
		< VARIABLE RESISTOR >	
RV501	1-223-926-11	RES, VAR (PHONE LEVEL)	
		< SWITCH >	
S711	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S712	1-554-303-21	SWITCH, TACTILE (TIME)	
S713	1-554-303-21	SWITCH, TACTILE (5)	
S714	1-554-303-21	SWITCH, TACTILE (4)	
S715	1-554-303-21	SWITCH, TACTILE (DISC 1)	
S716	1-554-303-21	SWITCH, TACTILE (DISC 2)	
S717	1-554-303-21	SWITCH, TACTILE (DISC 3)	
S718	1-554-303-21	SWITCH, TACTILE (DISC 4)	
S719	1-554-303-21	SWITCH, TACTILE (DISC 5)	
S721	1-554-303-21	SWITCH, TACTILE (>10)	
S722	1-554-303-21	SWITCH, TACTILE (10)	
S723	1-554-303-21	SWITCH, TACTILE (9)	
S724	1-554-303-21	SWITCH, TACTILE (8)	
S725	1-554-303-21	SWITCH, TACTILE (7)	
S726	1-554-303-21	SWITCH, TACTILE (6)	
S727	1-554-303-21	SWITCH, TACTILE (1)	
S728	1-554-303-21	SWITCH, TACTILE (2)	
S729	1-554-303-21	SWITCH, TACTILE (3)	
S731	1-554-303-21	SWITCH, TACTILE (▶)	
S732	1-554-303-21	SWITCH, TACTILE (■)	
S733	1-554-303-21	SWITCH, TACTILE (■■)	
S734	1-554-303-21	SWITCH, TACTILE (EX-CHANGE)	
S735	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S736	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S737	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S738	1-554-303-21	SWITCH, TACTILE (AMS ◀◀)	
S739	1-554-303-21	SWITCH, TACTILE (AMS ▶▶)	
S741	1-554-303-21	SWITCH, TACTILE (OPEN/CLOSE △)	
S742	1-554-303-21	SWITCH, TACTILE (DISC SKIP)	
S751	1-572-714-11	SWITCH, PUSH (POWER)	

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# SENSOR

# TABLE MOTOR

Ref. No.	Part No.	Description	Remark
*	1-647-362-11	SENSOR BOARD *****	
		< CONNECTOR >	
CN801	1-573-383-11	PIN, CONNECTOR (PC BOARD) 2P	
CN802	1-750-243-11	SOCKET, CONNECTOR 6P	
		< DIODE >	
D801	8-749-924-18	DIODE PHOTO INTERRUPTER RPI-1391	
D802	8-749-924-30	DIODE PHOTO REFLECTOR GP2S28	
		< RESISTOR >	
R801	1-249-416-11	CARBON      820      5%    1/4W F	
R802	1-249-406-11	CARBON      120      5%    1/4W F	
*****			
*	1-647-364-11	TABLE MOTOR BOARD *****	
		< MOTOR >	
M801	A-4660-332-A	MOTOR ASSY, ROTARY (TABLE)	
*****			
		MISCELLANEOUS *****	
5	1-775-303-11	WIRE (FLAT TYPE) (6 CORE)	
12	1-769-781-11	WIRE (FLAT TYPE) (35 CORE)	
18	1-769-780-11	WIRE (FLAT TYPE) (5 CORE)	
53	1-751-052-11	WIRE (FLAT TYPE) (6 CORE)	
△ 74	1-590-836-11	CORD, POWER	
115	1-466-996-11	ENCODER, ROTARY	
122	1-765-265-11	WIRE (FLAT TYPE) (23 CORE)	
△ 151	8-848-367-11	OPTICAL PICK-UP BLOCK KSS-213B/K-N	
152	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
J501	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)	
M801	A-4660-322-A	MOTOR ASSY, ROTARY (TABLE)	
M802	A-4604-834-A	MOTOR ASSY, LOADING (LOADING)	
RV501	1-223-926-11	RES, VAR (PHONE LEVEL)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
△ T601	1-427-944-11	TRANSFORMER, POWER	
*****			

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS *****	
	1-467-123-21	REMOTE COMMANDER (RM-D335)	
	1-558-271-11	CORD, CONNECTION (AUDIO 108cm)	
	3-800-101-11	MANUAL, INSTRUCTION (FRENCH) (CND)	
	3-800-101-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	4-959-044-01	COVER, BATTERY (for RM-D335)	
*	4-965-971-01	CUSHION (FRONT)	
*	4-965-972-01	CUSHION (REAR)	
*	4-975-933-01	INDIVIDUAL CARTON	
*****			
		***** HARDWARE LIST *****	
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#2	7-682-564-04	SCREW +P 4X14	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#5	7-685-648-79	SCREW (M3X12), TAPPING	
#6	7-621-255-15	SCREW +P 2X3	
#7	7-685-871-01	SCREW +BVTT 3X6 (S)	

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