

CDP-C 345

CDP-C235 / C335

SERVICE MANUAL

US Model
 Canadian Model
 AEP Model
CDP-C235/335
 Australian Model
CDP-C235
 UK Model
 E Model
CDP-C335



Photo : CDP-C235

Model Name Using Similar Mechanism	CDP-C225/C325
Optical Pick-up Block Type	BU-5BD13

SPECIFICATIONS

Compact Disc Player

System Compact disc digital audio system
 Laser Semiconductor laser
 Wavelength 780-790 nm
 Frequency response 2 Hz-20 kHz (± 0.5 dB)
 Signal to noise ratio More than 102 dB
 Dynamic range More than 98 dB
 Harmonic distortion Less than 0.0045%
 Channel separation More than 100 dB

Outputs

LINE OUT Output level 2 V (at 50 kilohms)
 (phono jacks) Load impedance over 10 kilohms
 PHONES Output level max. 10 mW
 (stereo phone jack) Load impedance 32 ohms
 (CDP-C335 only)

General

Power requirements Model for US and Canadian
 120V AC, 60Hz
 Model for Australian and UK
 240V AC, 50/60 Hz
 Model for E
 110—120V, 220—240V AC, 50/60Hz

Power consumption 14 W
 Dimensions (w/h/d)

Approx. 430 × 125 × 385 mm
 (17 × 5 × 15¹/₄ inches)
 (CDP-C335/C235)
 Including projecting parts and
 controls

Mass Approx. 5.6 kg , net
 (12 lbs 6oz)
 (CDP-C335/C235)

Remote Commander **RM-D335 (CDP-C335 only)**
 Remote control system Infrared control
 Power requirements 3 V DC with two size AA batteries
 (IEC designation R6)

Dimensions 45 × 185 × 20 mm (w/h/d)
 (1 13/16 × 7 3/8 × 13/16 inches)
 Mass 100 g (3.5 oz) including batteries

Supplied accessories

Audio signal connecting cord
 (phono plug x 2 — phono plug x 2) (1)
 Remote commander (1) (CDP-C335 only)
 Sony SUM-3 (NS) batteries (2) (CDP-C335 only)
 AC plug adaptor (1) (CDP-C335 E model only)

Design and specifications are subject to change without
 notice.



COMPACT DISC PLAYER
SONY®

For the Customers in Canada

CAUTION
 TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

THIS APPARATUS COMPLIES WITH THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS SET OUT IN RADIO INTERFERENCE REGULATIONS.

For the Customers in Australia

The following caution label is located inside of the unit.

<p>DANGER INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.</p>	<p>DANGER RADIATION DE LASER INVISIBLE LORS D'OUVERTURE AVEC L'ENCLenchEMENT DE SECURITE ANNULE. EVITER L'EXPOSITION DIRECTE AU RAYON.</p> <p style="text-align: right; font-size: small;">4-906-403-01</p>
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CLASS 1 LASER PRODUCT
 LUOKAN 1 LASERLAITE
 KLASS 1 LASERAPPARAT

This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.


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SAFETY-RELATED COMPONENT WARNING!!

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

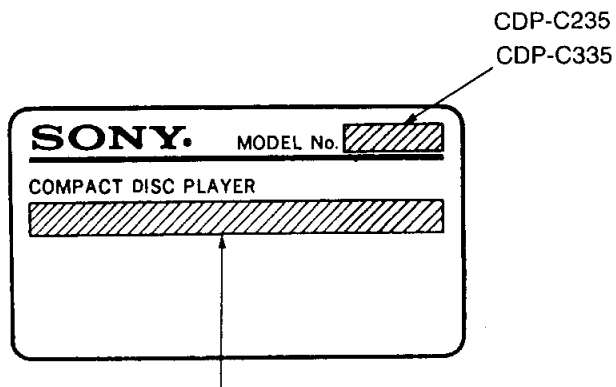
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  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.

SAFETY CHECK-OUT

MODEL IDENTIFICATION

—Model Number Label—



US, Canadian model: AC: 120V 60Hz

UK, Australian model: AC: 240V-50/60Hz

AEP model: AC: 220-230V-50/60Hz

E model: AC: 110-120V, 220-240V-50/60Hz

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

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

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

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

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

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

LEAKAGE TEST

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

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

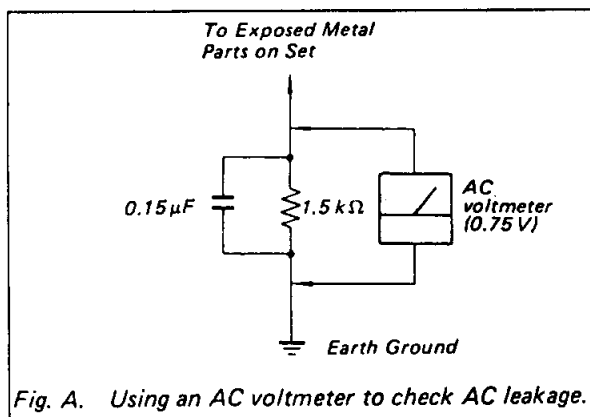


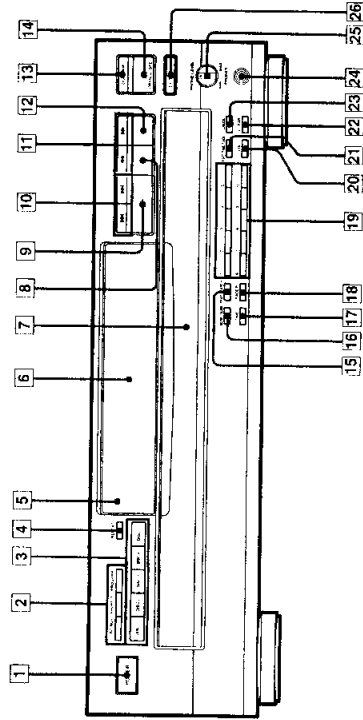
Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1 GENERAL

This section is extracted from instruction manual.

Identifying the Parts

Front Panel

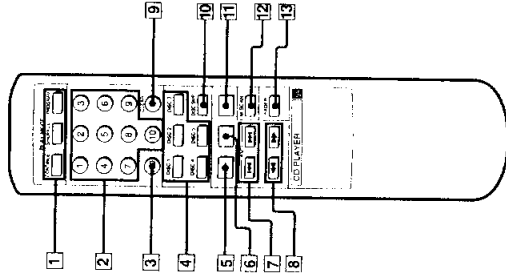


See the pages indicated in () for details.

- 1 POWER switch (8)
- 2 PLAY MODE buttons
CONTINUE button (8)
SHUFFLE button (13)
PROGRAM button (14)
- 3 DISC 1-5 buttons (8)
- 4 REPEAT button (18)
- 5 Remote sensor (4)
- 6 Display window (8)
- 7 Disc tray (8)
- 8 II (pause) button (8)
- 9 ► (play) button (8)
- 10 ◀◀◀ (AMS*) buttons (10)
- 11 ◀◀ (manual search) buttons (10)
- 12 ■ (stop) button (8)
- 13 DISC SKIP button (8)
- 14 ▲ OPEN/CLOSE button (8)
- 15 PEAK SEARCH button (19)
- 16 MUSIC SCAN (M. SCAN) button (17)
- 17 TIME button (9)
- 18 FADER button (12)
- 19 Numeric buttons (10)
- 20 >10 (over 10) button (10)
- 21 EDIT/TIME FADE button (20)
- 22 CLEAR button (14)
- 23 CHECK button (16)
- 24 PHONES jack (CDP-C335 only) (9)
- 25 PHONE LEVEL control (CDP-C335 only) (9)
- 26 EX-CHANGE button (11)

* AMS is the abbreviation for Automatic Music Sensor.

Remote Commander (CDP-C335 only)

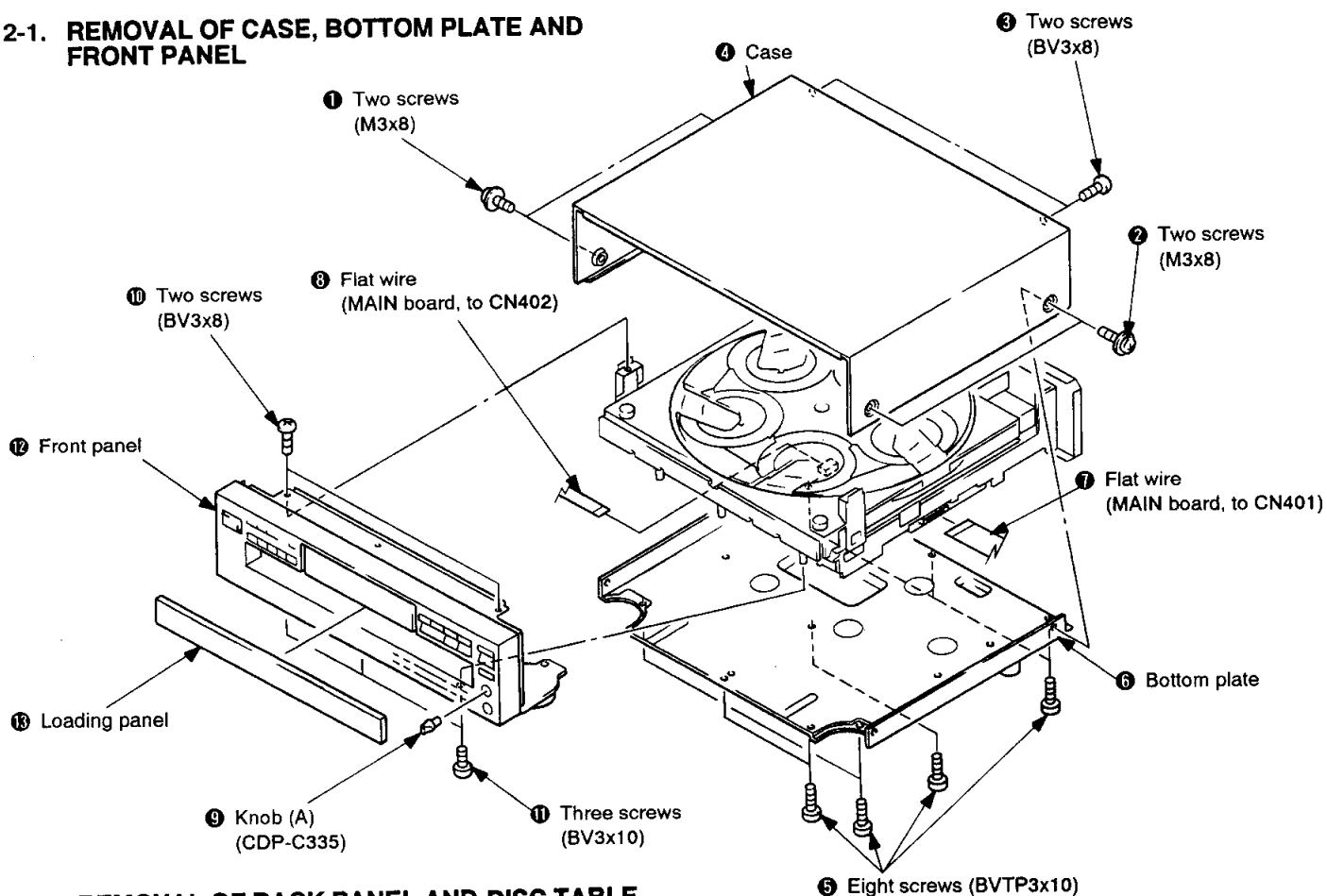


See the pages indicated in () for details.

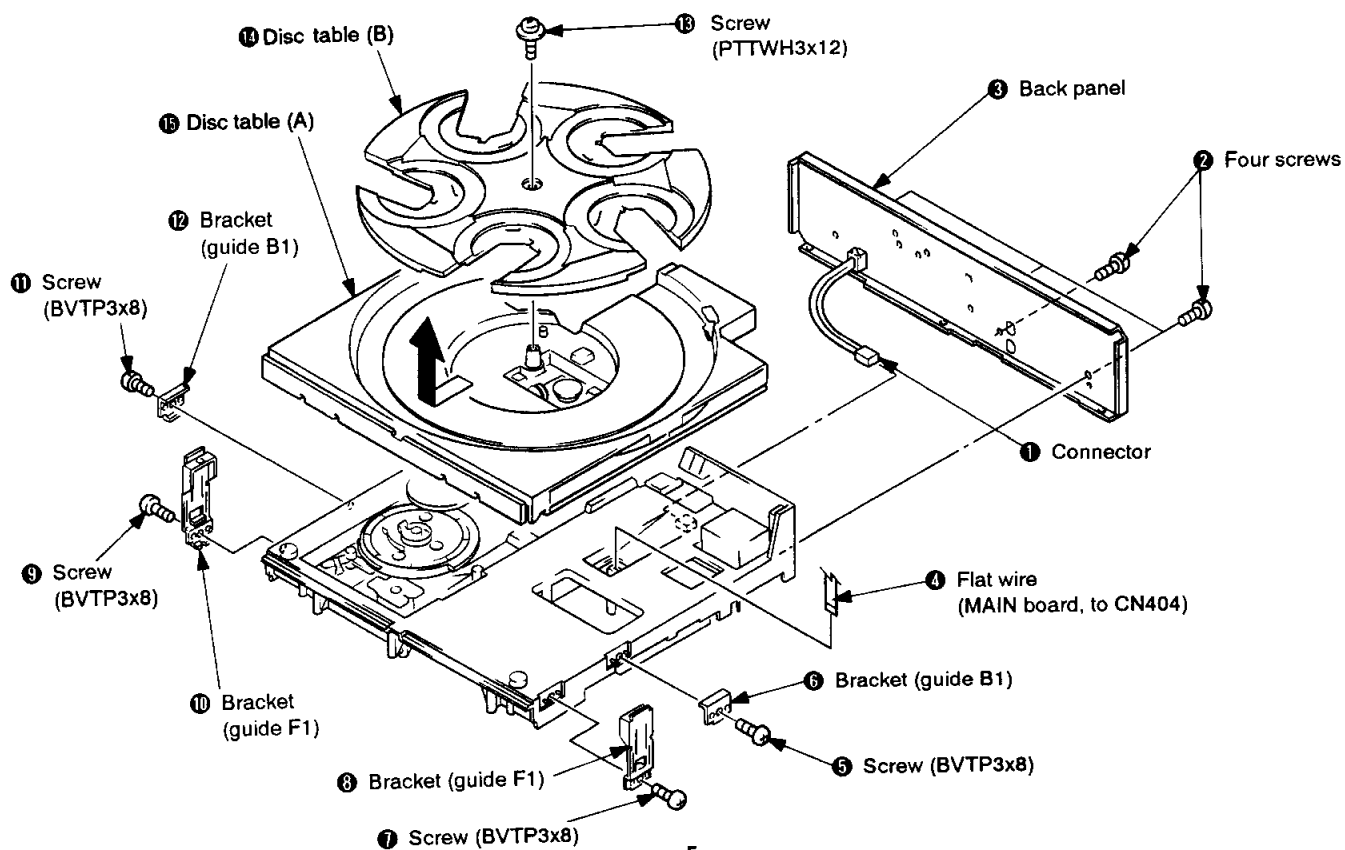
- 1 PLAY MODE buttons
CONTINUE button (8)
SHUFFLE button (13)
PROGRAM button (14)
- 2 Numeric buttons (10)
- 3 >10 (over 10) button (10)
- 4 ► (play) button (8)
- 5 II (pause) button (8)
- 6 ◀◀◀ (AMS) buttons (10)
- 7 ◀◀ (manual search) buttons (10)
- 8 CLEAR button (14)
- 9 DISC SKIP button (8)
- 10 ■ (stop) button (8)
- 11 MUSIC SCAN (M. SCAN) button (17)
- 12 FADER button (12)

SECTION 2 DISASSEMBLY

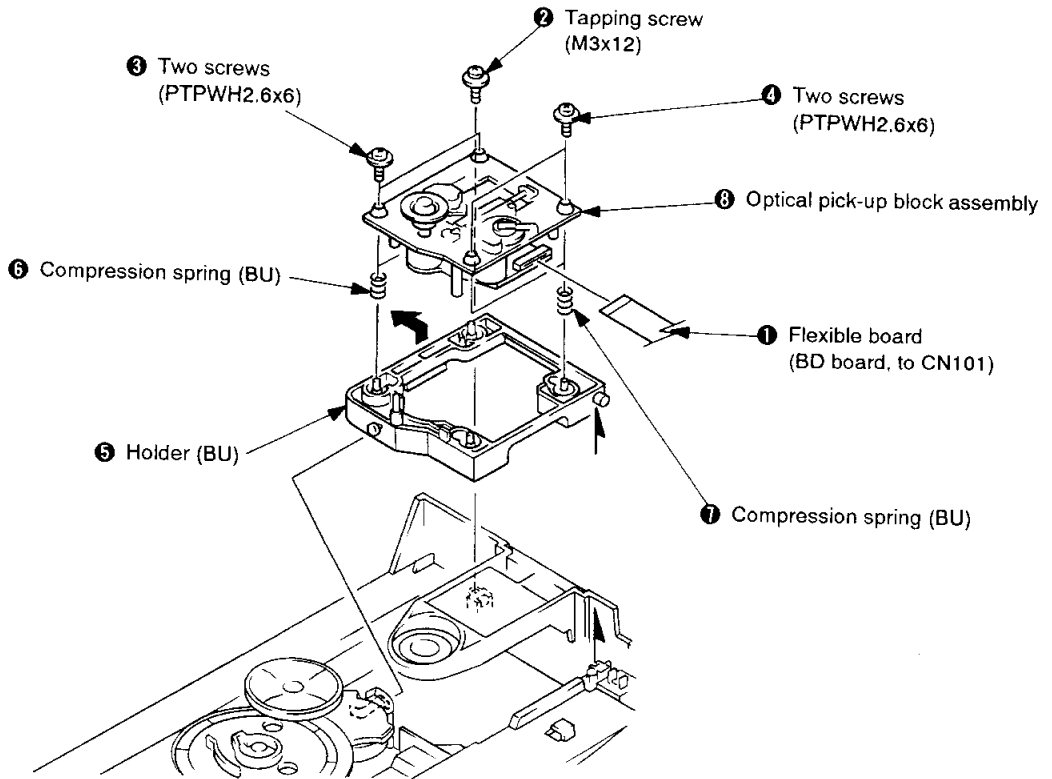
2-1. REMOVAL OF CASE, BOTTOM PLATE AND FRONT PANEL



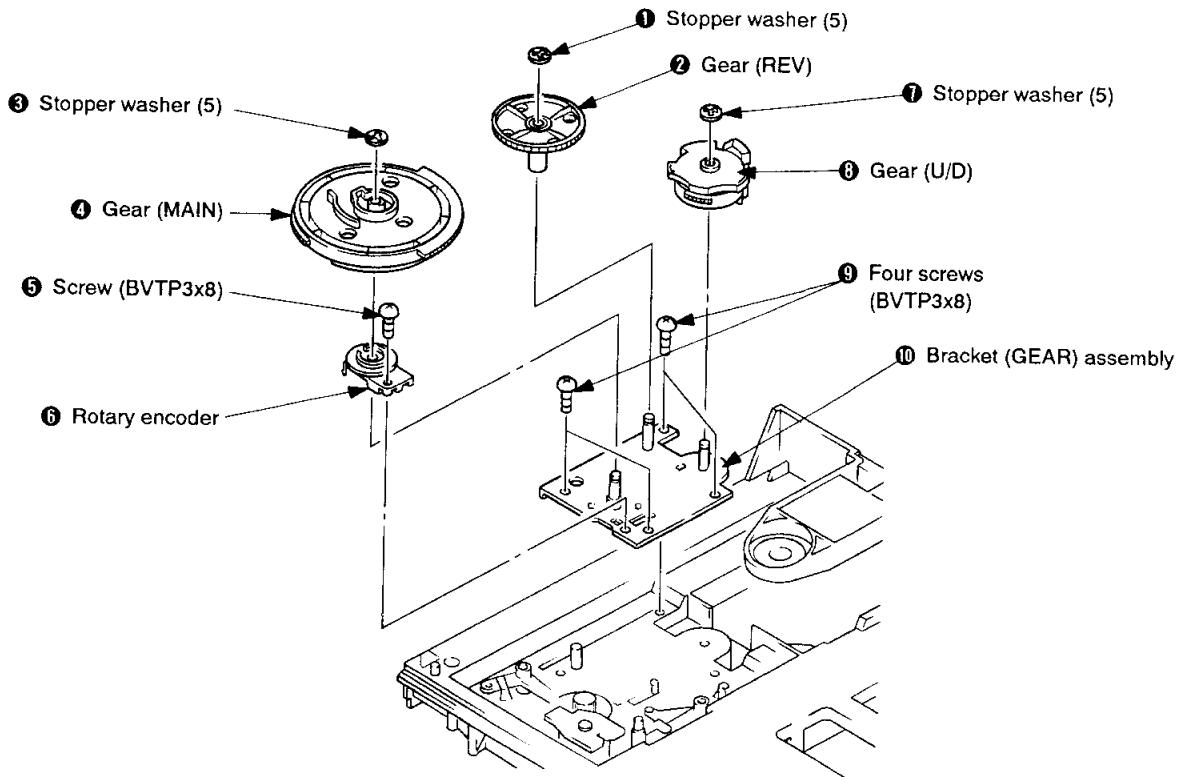
2-2. REMOVAL OF BACK PANEL AND DISC TABLE



2-3. REMOVAL OF OPTICAL PICK-UP BLOCK ASSEMBLY



2-4. REMOVAL OF BRACKET (GEAR) ASSEMBLY

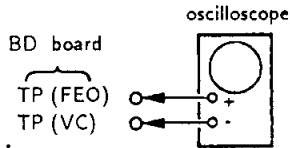


SECTION 3 ELECTRICAL BLOCK CHECKING

Note :

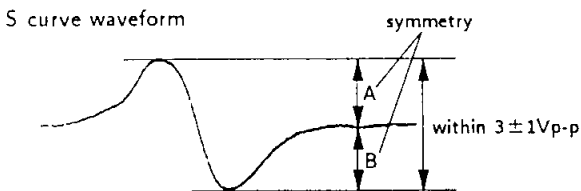
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal 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 (FE1) and TP (VC) by lead wire
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3 \pm 1V_{p-p}$.

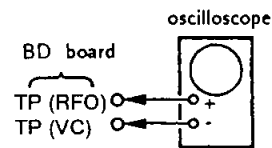


5. After check, remove the lead wire connected in step 2.

Note :

- Try to mesure several times to make sure that 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

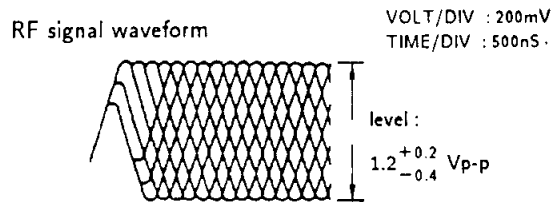


Procedure :

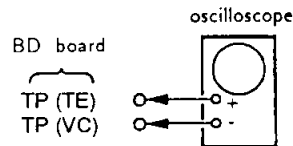
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

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

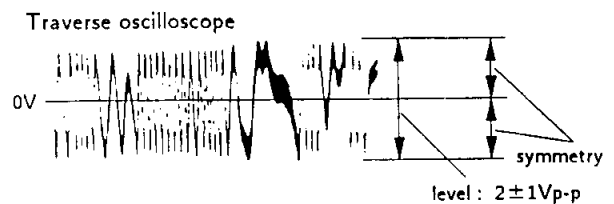


E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) to ground and TP (TE1) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

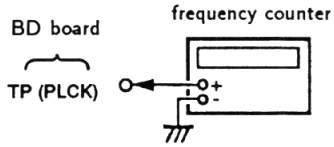


6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

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



2. Turn Power switch on.
3. Confirm that reading on frequency counter is
4. 3218MHz.

Focus/Tracking Gain

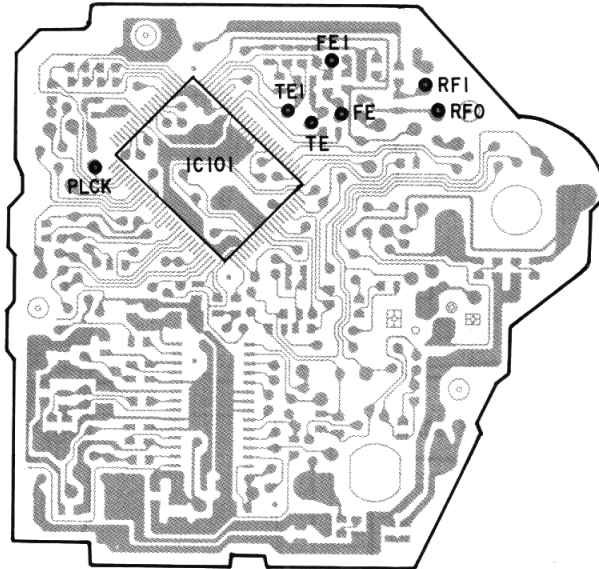
This gain has a margin, so even if it is slightly off. There is no problem.

Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Locations : [BD board]

— conductor side —



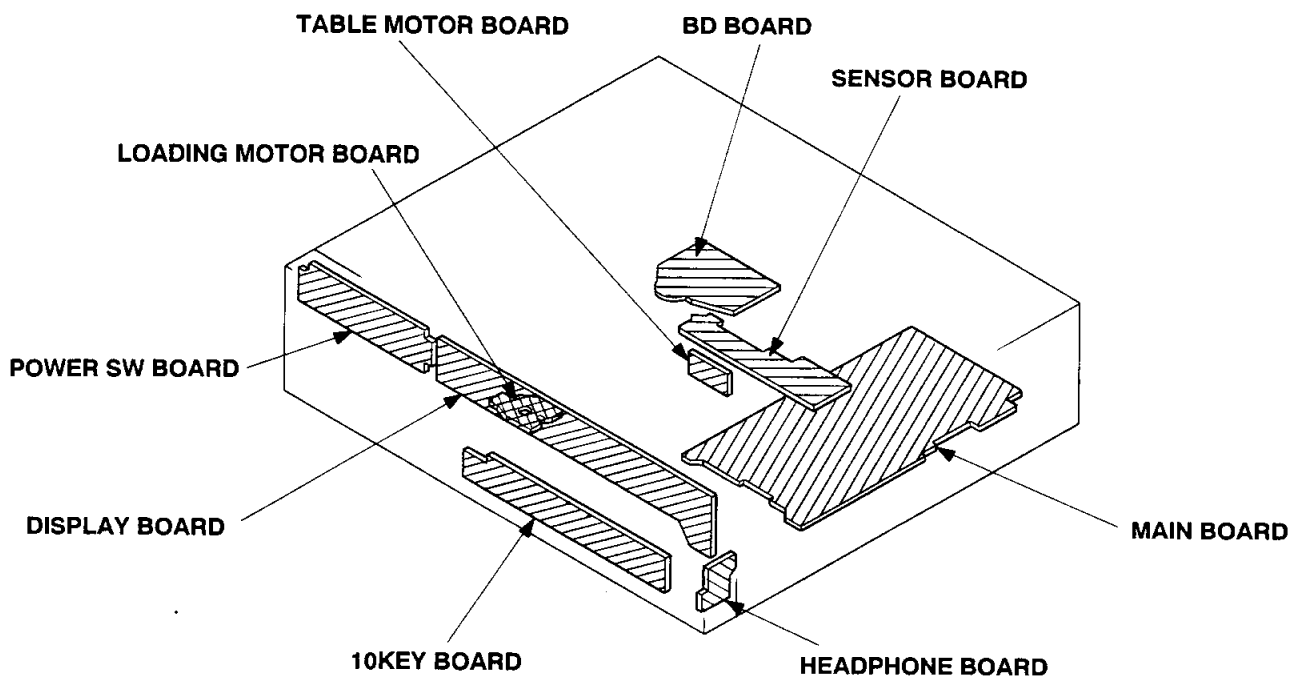
SECTION 4 IC PIN FUNCTIONS

CXP82316-020Q (IC401) PIN FUNCTIONS

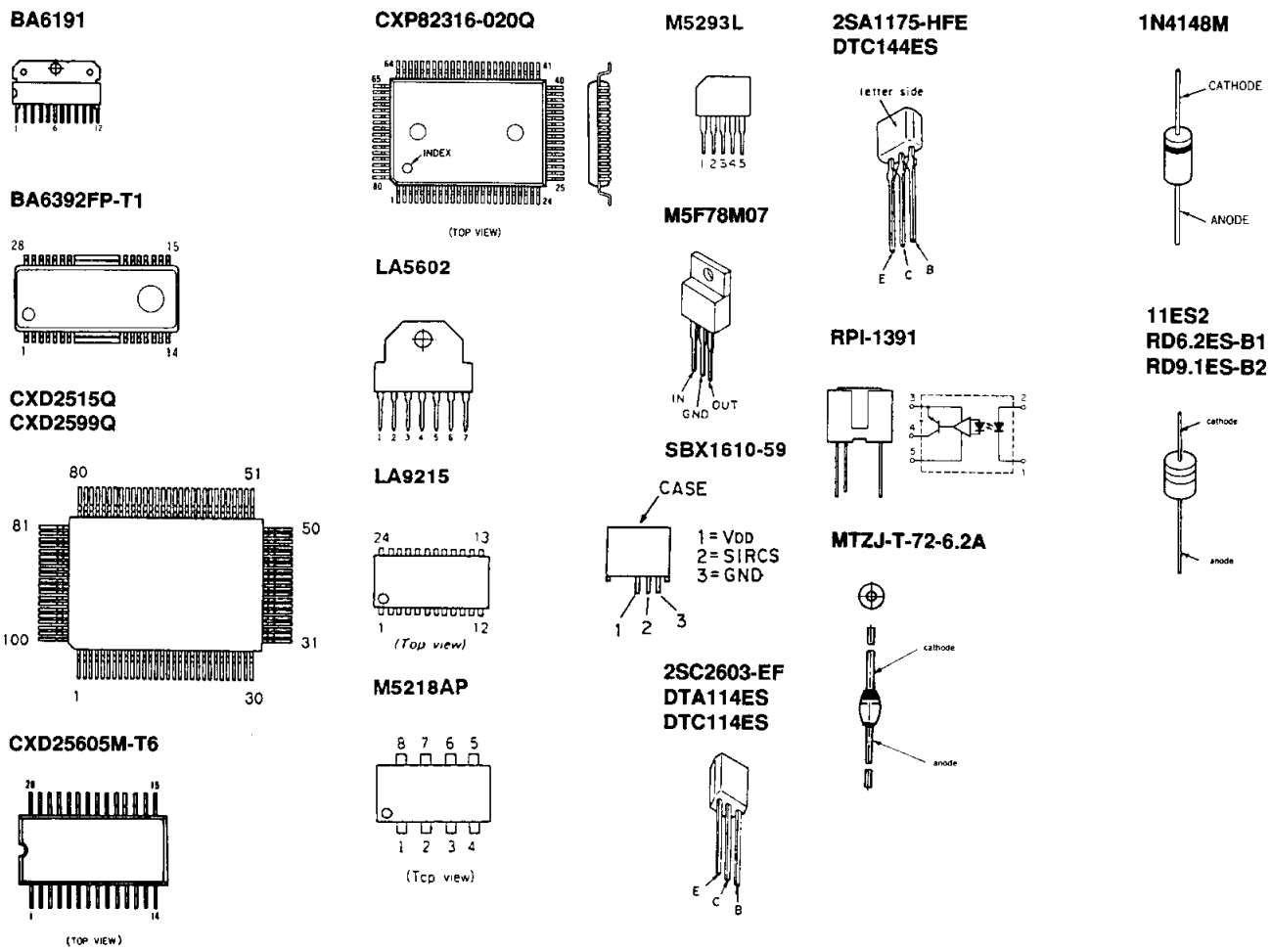
PIN No.	PIN NAME	I/O	FUNCTION
1	AF ADJ	I	Test mode pin. Normally: "H"
2	RM IN	I	Remote control signal input pin.
3	ADJ	I	Test mode pin. Normally: "H"
4	A MUTE	O	Analog muting control signal output pin.
5	LDON	O	Optical pick-up laser diode control pin. ON: "H"
6	T.SENS	I	Slit sensor of disc table input 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	—	—	Not used.
21	L.MODE	I	Loading mode setup pin.
22 to 27	KEY0 to KEY5	I	Key input pin. (A/D)
28	PICK	I	Optical pick-up setup pin. 0V: KSS-240A, 2.5V: KSS-390A, 5V: Automatic discrimination
29	D.MODE	I	Disc table feeling and stop precision fine adjustment pin.
30	XRST	I	Reset signal input pin.
31	X1	I	10MHz clock input pin.
32	X2	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		—	Not used.
63 to 70	G1 to G8	O	FL timing output pin.
71	-30V	—	-30V
72	+5V	—	+5V
73		—	+5V
74 to 77		—	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 DIAGRAMS

5-1. CIRCUIT BOARDS LOCATION



5-2. SEMICONDUCTOR LEAD LAYOUTS

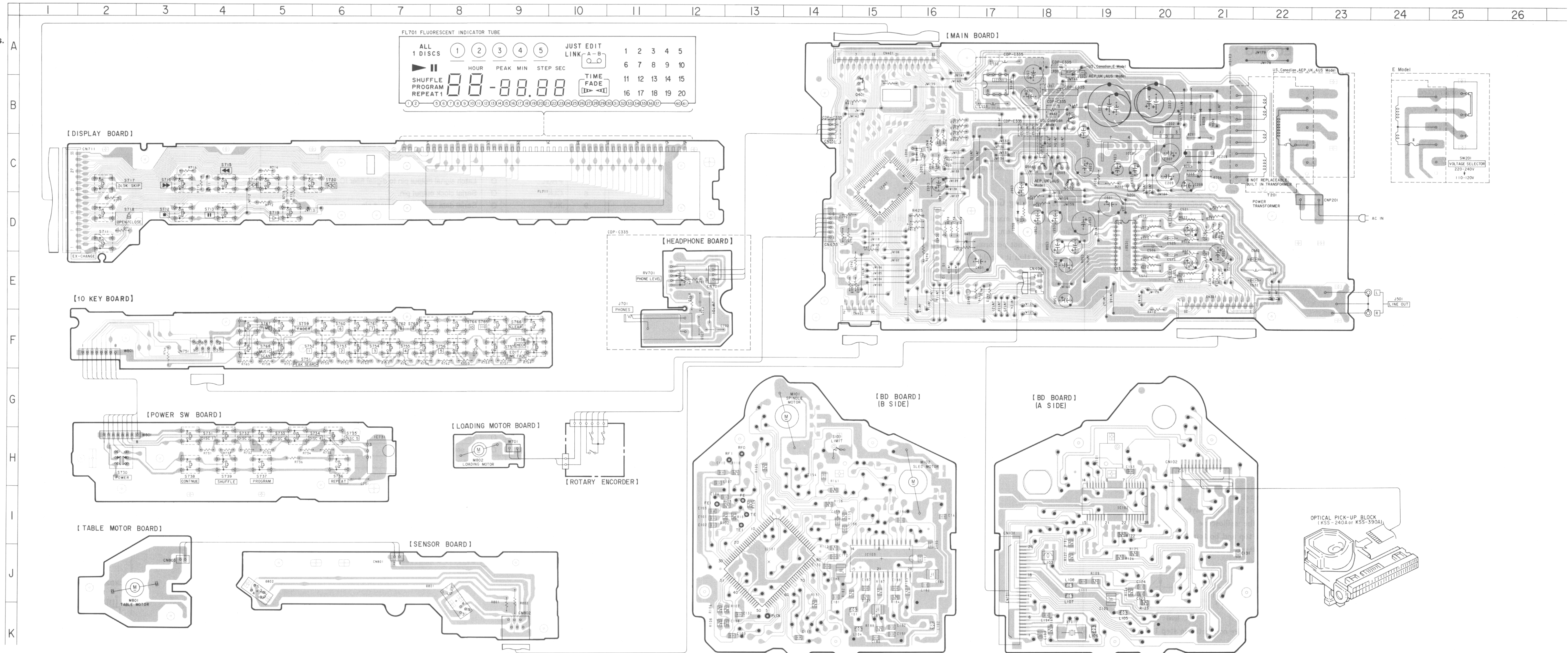


5-3. PRINTED WIRING BOARDS
 •See page 10 for Circuit Boards Location and Semiconductor Lead Layouts.

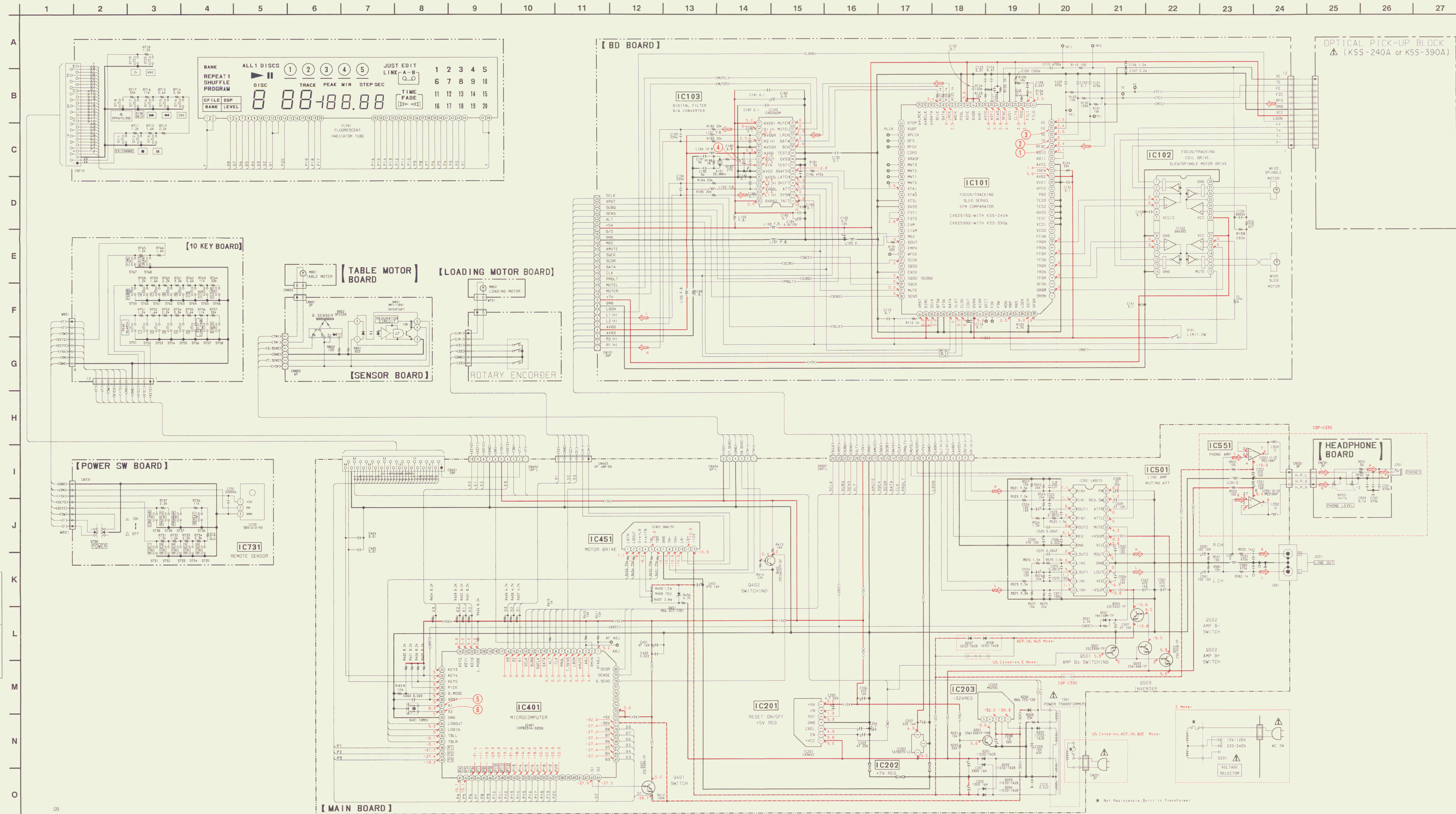
SEMICONDUCTOR LOCATION

Ref. No.	Location
D201	C-21
D202	B-20
D203	B-21
D204	B-21
D205	C-21
D206	C-21
D207	B-18
D208	C-18
D451	E-17
D501	D-17
D801	K-5
D802	K-8
IC101	J-13
IC102	I-19
IC103	J-15
IC201	C-19
IC203	C-21
IC401	D-15
IC501	E-19
IC551	B-17
IC731	H-7
Q201	D-19
Q401	B-15
Q402	E-17
Q501	C-18
Q502	D-18
Q503	C-18
Q504	C-18

Note:
 ○ : parts extracted from the component side.
 ● : parts extracted from the component side.
 ○ : Through hole.
 ○ : Pattern on the side which is seen.
 • AUS model : Australian model



5-4. SCHEMATIC DIAGRAM
• See page 19, 20 for IC Block Diagrams.



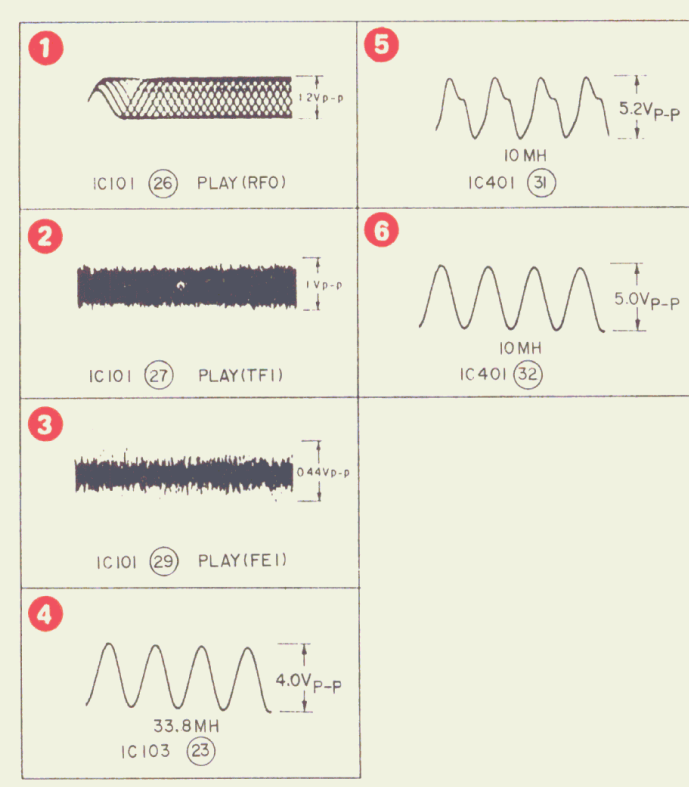
Note on Schematic Diagram:

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

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

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

- : B+ line
- - -: B- line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltagés are taken with a VOM (Input Impedance 10K Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- \rightarrow : CD
- AUS model: Australian model



SECTION 6 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE) ... (RED)
 ↑ ↑
Parts color Cabinet's color

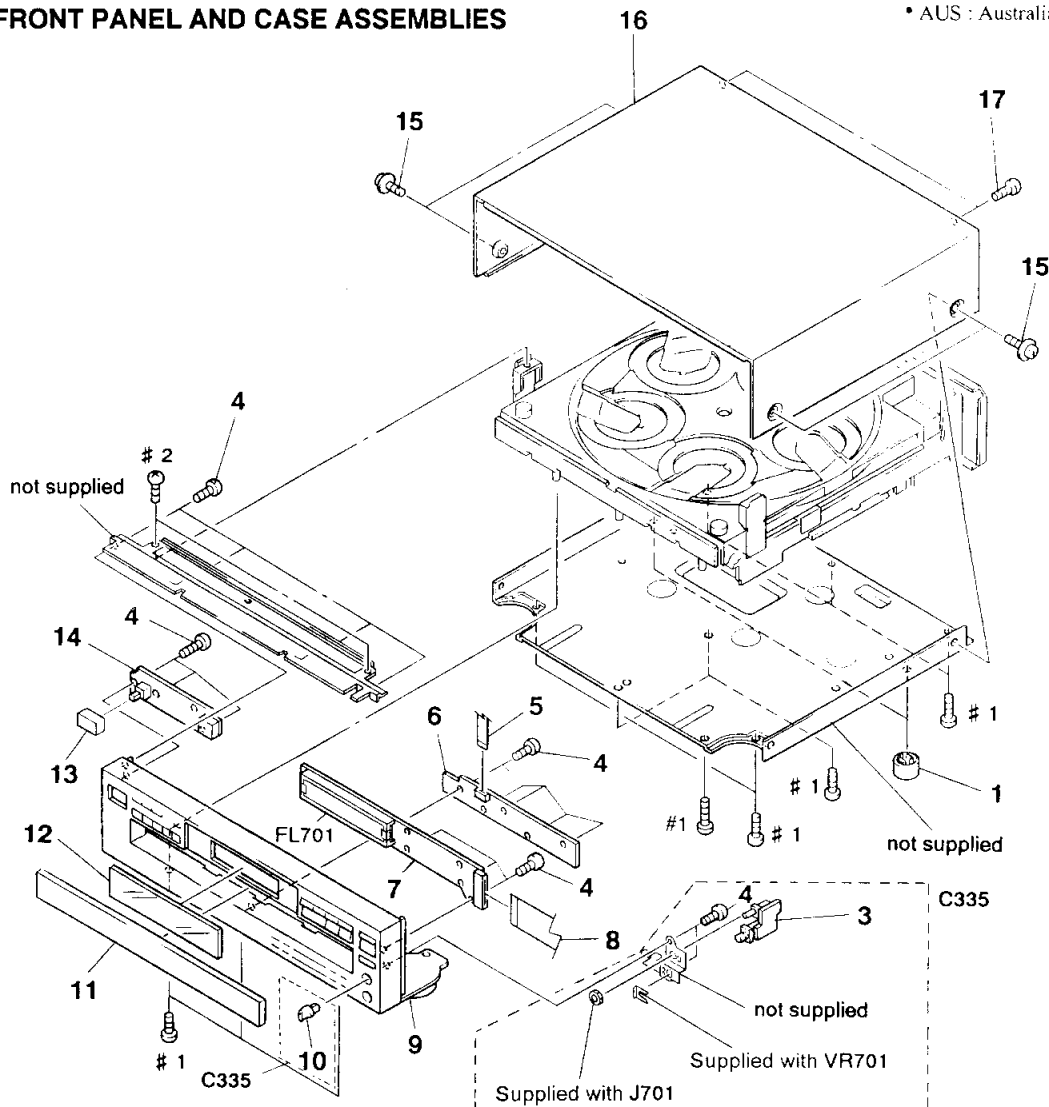
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

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

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

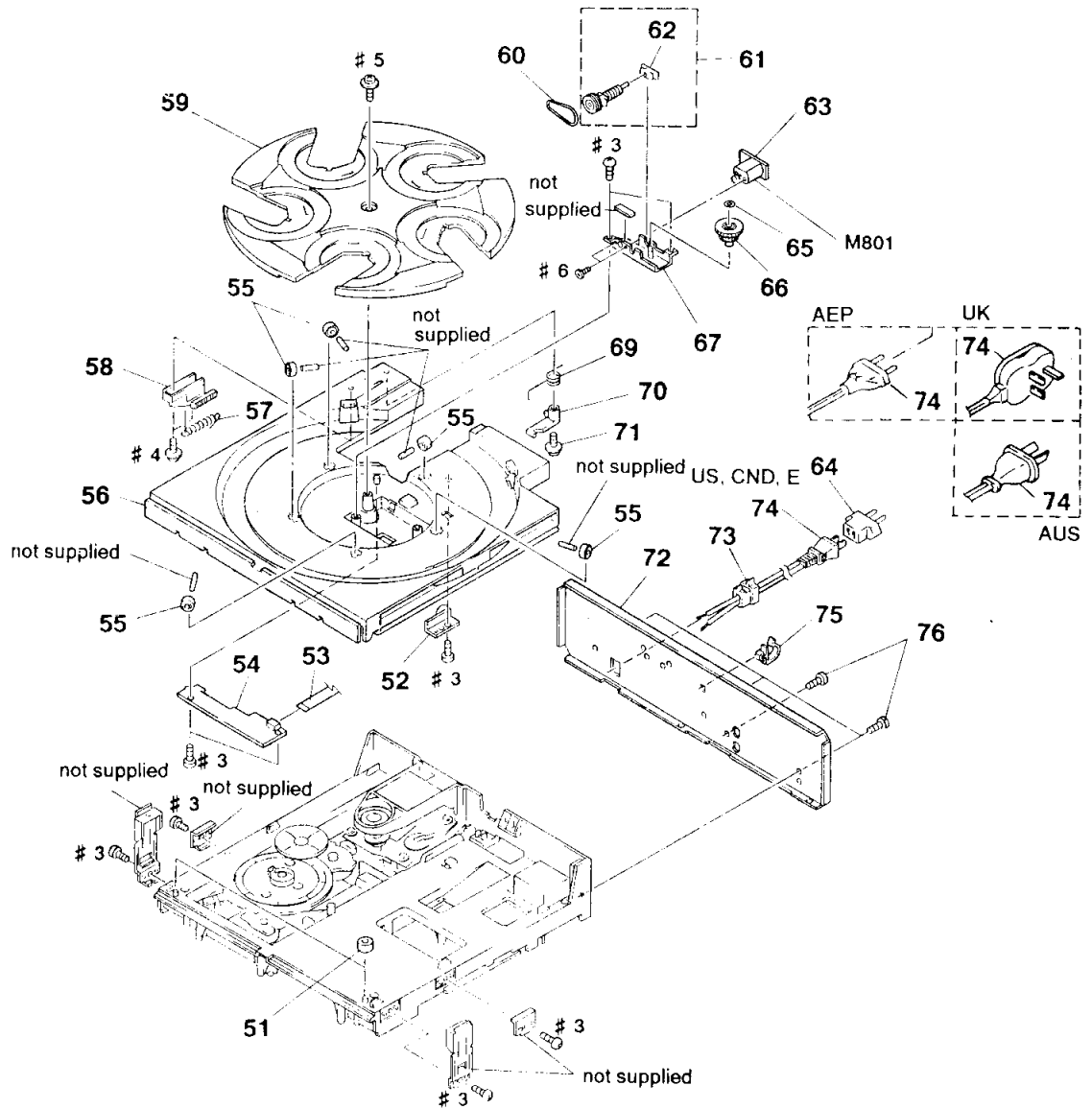
- CND : Canadian model
- AUS : Australian model

6-1. FRONT PANEL AND CASE ASSEMBLIES



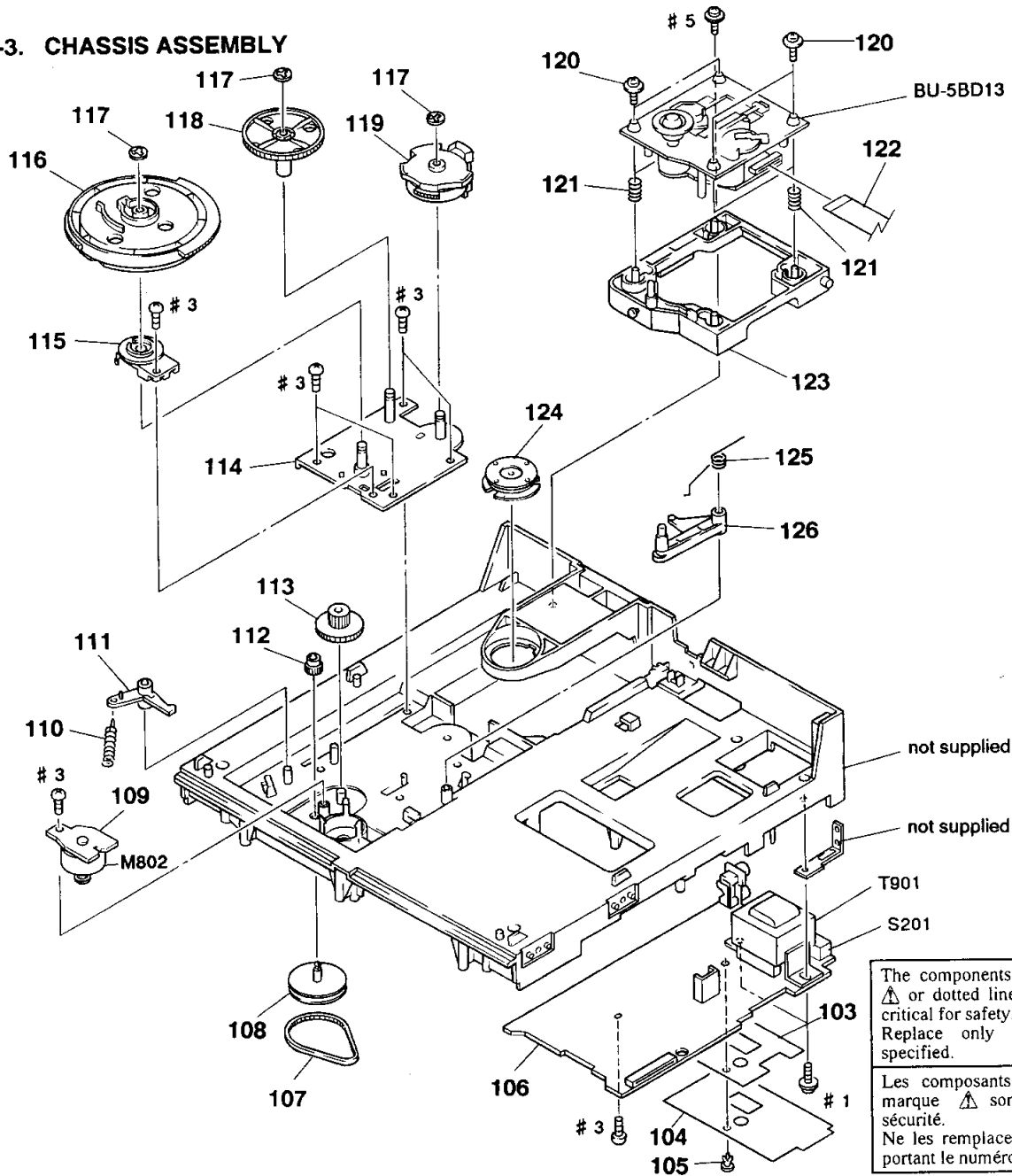
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-933-601-01	FOOT		10	4-950-189-01	KNOB (A) (VOL) (C335)	
* 3	1-647-544-11	HEADPHONE BOARD (C335)		11	4-957-557-01	PANEL, LOADING (C335)	
4	4-951-620-01	SCREW (2.6X8), +BVTP		11	4-957-557-11	PANEL, LOADING (C235)	
5	1-751-054-11	WIRE (FLAT TYPE) (10 CORE)		12	4-957-548-01	PLATE (FL), INDICATION (C335)	
* 6	1-647-543-11	10 KEY BOARD		12	4-957-548-11	PLATE (FL), INDICATION (C235)	
* 7	A-4649-651-A	DISPLAY BOARD, COMPLETE		13	4-922-921-01	BUTTON (POWER)	
8	1-751-053-11	WIRE (FLAT TYPE) (33 CORE)		* 14	1-647-542-11	POWER SW BOARD	
9	X-4943-506-1	PANEL ASSY, FRONT (C335:US, CND)		15	3-704-366-01	SCREW (CASE) (M3X8)	
9	X-4943-507-1	PANEL ASSY, FRONT (C335:AEP, UK, E)		* 16	4-944-153-01	CASE	
9	X-4943-510-1	PANEL ASSY, FRONT (C235:US, CND)		17	3-703-685-21	SCREW (+BV 3X8)	
9	X-4943-511-1	PANEL ASSY, FRONT (C235:AEP, AUS)		FL701	1-517-164-11	INDICATOR TUBE, FLUORESCENT	

6-2. BACK PANEL AND DISC TABLE ASSEMBLIES



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	4-951-619-01	CUSHION (A)		71	4-957-868-01	SCREW (+PTPWH 2.6X20)	
52	X-4943-480-1	BRACKET (ROLLER D) ASSY		* 72	4-957-560-01	PANEL, BACK (C335:US, CND)	
53	1-751-052-11	WIRE (FLAT TYPE) (6 CORE)		* 72	4-957-560-11	PANEL, BACK (C335:AEP)	
* 54	1-647-362-11	SENSOR BOARD		* 72	4-957-560-21	PANEL, BACK (C335:E)	
55	X-4924-457-1	ROLLER ASSY		* 72	4-957-560-31	PANEL, BACK (C235:AUS)	
* 56	4-957-298-01	TABLE (A), DISC		* 72	4-957-560-41	PANEL, BACK (C335:UK)	
57	4-957-294-01	SPRING (D.T), TENSION		* 72	4-957-560-51	PANEL, BACK (C235:US, CND)	
58	4-957-292-01	SLIDER (RACK)		* 72	4-957-560-61	PANEL, BACK (C235:AEP)	
59	4-957-299-01	TABLE (B), DISC		* 73	3-703-244-00	BUSHING (2104), CORD (EXCEPT FOR E)	
60	4-957-304-01	BELT (RM)		* 73	3-703-571-11	BUSHING (S) (4516), CORD (E)	
61	X-4943-479-1	GEAR (ROTARY A) ASSY		74	1-575-651-21	CORD, POWER (AEP)	
62	4-957-278-01	BEARING (ROTARY A)		74	1-590-836-11	CORD, POWER (US, CND)	
63	1-647-364-11	TABLE MOTOR BOARD		74	1-696-027-11	CORD, POWER (E)	
64	1-569-007-11	ADAPTER, CONVERSION 2P (C335:E)		74	1-696-571-11	CORD, POWER (UK)	
65	3-325-697-01	WASHER		74	1-696-845-11	CORD, POWER (AUS)	
66	4-957-284-01	GEAR (LOTARY B)		* 75	4-949-235-01	HOOK	
67	X-4943-477-1	BRACKET (RM) ASSY		76	3-704-515-21	SCREW (BV/RING)	
69	4-957-293-01	SPRING (RACK RELEASE)		M801	A-4660-322-A	MOTOR ASSY, ROTARY (TABLE)	
70	4-957-291-01	LEVER (RACK RELEASE)					

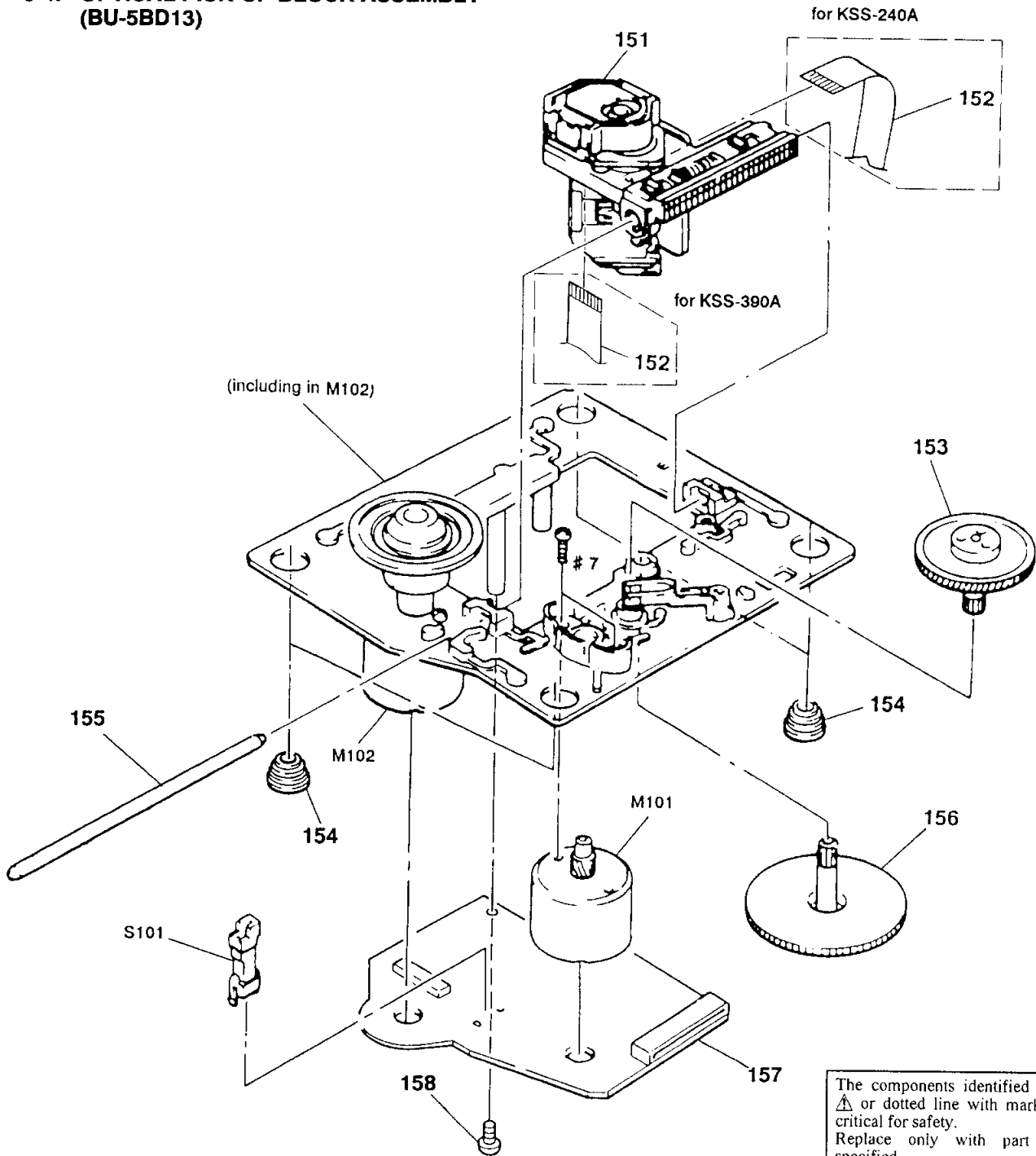
6-3. CHASSIS ASSEMBLY



Ref. No.	Part No.	Description	Remark
* 103	4-957-556-01	SHEET, INSULATING (AEP, AUS, UK)	
* 104	4-957-555-01	SHEET, INSULATING	
105	3-531-576-11	RIVET	
106	A-4649-649-A	MAIN BOARD, COMPLETE (C335:US, CND)	
106	A-4649-654-A	MAIN BOARD, COMPLETE (C335:AEP, UK)	
106	A-4649-655-A	MAIN BOARD, COMPLETE (C335:E)	
106	A-4649-656-A	MAIN BOARD, COMPLETE (C235:US, CND)	
106	A-4649-657-A	MAIN BOARD, COMPLETE (C235:AEP, AUS)	
107	4-944-490-01	BELT (TIMING)	
108	X-4941-529-1	PULLEY ASSY	
109	1-647-363-11	LOADING MOTOR BOARD	
110	4-924-412-01	SPRING (B), TENSION	
111	4-957-285-01	LEVER, SET	
112	4-934-375-01	GEAR (LOADING B)	
113	4-957-303-01	GEAR (LOADING C)	
114	X-4943-478-1	BRACKET (GEAR) ASSY	
115	1-466-996-11	ENCODER, ROTARY	

Ref. No.	Part No.	Description	Remark
116	4-957-288-01	GEAR (MAIN)	
117	4-957-283-01	WASHER (5), STOPPER	
118	4-957-287-01	GEAR (REV)	
119	4-957-286-01	GEAR (U/D)	
120	4-933-134-01	SCREW (+PTPWH M2. 6X6)	
121	4-958-593-01	SPRING (BU), COMPRESSION	
* 122	1-648-409-11	PC BOARD, FLEXIBLE	
* 123	4-957-289-01	HOLDER (BU)	
* 124	1-452-538-11	MAGNET	
125	4-957-281-01	SPRING (LOCK LEVER)	
126	4-957-279-01	LEVER, LOCK	
M802	A-4604-834-A	MOTOR ASSY, LOADING	
△S201	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (E)	
△T901	1-423-553-11	TRANSFORMER, POWER (US, CND)	
△T901	1-423-554-11	TRANSFORMER, POWER (AEP, AUS, UK)	
△T901	1-423-555-11	TRANSFORMER, POWER (E)	

6-4. OPTICAL PICK-UP BLOCK ASSEMBLY (BU-5BD13)



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

Les composants identifiés par une marque ▲ 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
▲151	8-848-144-11	DEVICE, OPTICAL KSS-240A		156	4-917-564-01	GEAR (P), FLATNESS	
▲151	8-848-281-11	DEVICE, OPTICAL KSS-390A		* 157	A-4649-610-A	BD BOARD, COMPLETE	
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE) (for KSS-240A)		158	4-951-620-01	SCREW (2.6X8), +BVTP	
152	1-647-341-11	PC BOARD, FLEXIBLE (for KSS-390A)		M101	X-4917-504-1	MOTOR ASSY (SLED)	
153	4-917-567-01	GEAR (M)		M102	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	
154	4-951-940-01	INSULATOR (BU)		S101	1-572-085-11	SWITCH, LEAF	
155	4-917-565-01	SHAFT, SLED					

HEADPHONE

LOADING MOTOR

MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
		< JACK >					
J701	1-750-162-41	JACK (LARGE TYPE) (PHONES)		C503	1-124-994-11	ELECT 100uF 20% 10V	
		< RESISTOR >		C504	1-124-994-11	ELECT 100uF 20% 10V	
R701	1-249-402-11	CARBON 56 5% 1/4W F		C505	1-124-997-11	ELECT 470uF 20% 10V	
R702	1-249-402-11	CARBON 56 5% 1/4W F		C506	1-161-494-00	CERAMIC 0.022uF 25V	
		< VARIABLE RESISTOR >		C507	1-126-022-11	ELECT 47uF 20% 16V	
RV701	1-223-359-11	RES. VAR. CARBON 1K/1K (PHONE LEVEL)		C508	1-126-788-91	ELECT 22uF 20% 25V	
*****				C509	1-126-786-11	ELECT 47uF 20% 16V	
*	1-647-363-11	LOADING MOTOR BOARD		C521	1-162-282-31	CERAMIC 100PF 10% 50V	
*****				C522	1-162-282-31	CERAMIC 100PF 10% 50V	
*	A-4649-656-A	MAIN BOARD, COMPLETE (C235:US, CND)		C523	1-130-472-00	MYLAR 0.0012uF 5% 50V	
*****				C524	1-124-994-11	ELECT 100uF 20% 10V	
*	A-4649-657-A	MAIN BOARD, COMPLETE (C235:AEP, AUS)		C525	1-106-359-00	MYLAR 4700PF 5% 200V	
*****				C531	1-124-994-11	ELECT 100uF 20% 10V	
*	A-4649-649-A	MAIN BOARD, COMPLETE (C335:US, CND)		C532	1-130-467-00	MYLAR 470PF 5% 50V	
*****				C551	1-126-024-11	ELECT 220uF 20% 16V (C335)	
*	A-4649-654-A	MAIN BOARD, COMPLETE (C335:AEP, UK)		C552	1-126-024-11	ELECT 220uF 20% 16V (C335)	
*****				C571	1-162-282-31	CERAMIC 100PF 10% 50V	
*	A-4649-655-A	MAIN BOARD, COMPLETE (C335:E)		C572	1-162-282-31	CERAMIC 100PF 10% 50V	
*****				C573	1-130-472-00	MYLAR 0.0012uF 5% 50V	
	7-685-871-01	SCREW +BVTT 3X6 (S)		C574	1-124-994-11	ELECT 100uF 20% 10V	
		< CAPACITOR >		C575	1-106-359-00	MYLAR 4700PF 5% 200V	
C201	1-124-887-00	ELECT 3300uF 20% 16V		C581	1-124-994-11	ELECT 100uF 20% 10V	
C202	1-124-360-00	ELECT 1000uF 20% 16V		C582	1-130-467-00	MYLAR 470PF 5% 50V	
C203	1-124-910-11	ELECT 47uF 20% 50V				< CONNECTOR >	
C204	1-126-163-11	ELECT 4.7uF 20% 50V		* CN201	1-573-047-11	PIN, CONNECTOR (PC BOARD) 2P	
C205	1-126-163-11	ELECT 4.7uF 20% 50V		CN301	1-750-236-11	CONNECTOR, FFC(LIGHT ANGLE)24P	
C206	1-124-997-11	ELECT 470uF 20% 10V		CN401	1-750-237-11	CONNECTOR, FFC(LIGHT ANGLE)33P	
C207	1-126-024-11	ELECT 220uF 20% 16V		CN402	1-750-228-11	CONNECTOR, FFC(LIGHT ANGLE)10P	
C208	1-126-059-11	ELECT 10uF 20% 50V		* CN403	1-695-006-11	PIN, CONNECTOR (PC BOARD) 6P	
C209	1-124-572-11	ELECT 100uF 20% 63V		CN404	1-750-223-11	CONNECTOR, FFC(STRAIGHT TYPE)6P	
C210	1-161-494-00	CERAMIC 0.022uF 25V		* CN551	1-568-941-11	PIN, CONNECTOR 3P (C335)	
C401	1-126-022-11	ELECT 47uF 20% 16V				< DIODE >	
C402	1-161-494-00	CERAMIC 0.022uF 25V		D201	8-719-200-82	DIODE 11ES2	
C403	1-161-494-00	CERAMIC 0.022uF 25V		D202	8-719-200-82	DIODE 11ES2	
C404	1-162-306-11	CERAMIC 0.01uF 20% 16V		D203	8-719-200-82	DIODE 11ES2	
C405	1-162-306-11	CERAMIC 0.01uF 20% 16V		D204	8-719-200-82	DIODE 11ES2	
C451	1-126-012-11	ELECT 470uF 20% 16V		D205	8-719-200-82	DIODE 11ES2	
C501	1-126-012-11	ELECT 470uF 20% 16V		D206	8-719-110-13	DIODE RD9. 1ES-B2	
C502	1-126-012-11	ELECT 470uF 20% 16V		D207	8-719-200-82	DIODE 11ES2 (C235:AEP, AUS/C335:AEP, UK)	
				D208	8-719-200-82	DIODE 11ES2 (C235:AEP, AUS/C335:AEP, UK)	
				D451	8-719-012-99	DIODE UZ-6. 2BSA-TP	
				D451	8-719-109-92	DIODE RD6. 2ES-B1	
				D451	8-719-947-24	DIODE MTZJ-T-72-6. 2A	
				D501	8-719-987-63	DIODE 1N4148M	
						< IC >	
				IC201	8-759-061-65	IC LA5602	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC202	8-759-605-00	IC M5P78M07		R453	1-247-876-11	CARBON 75K 5% 1/4W	
IC203	8-759-633-42	IC M5293L		R454	1-247-876-11	CARBON 75K 5% 1/4W	
IC401	8-752-843-25	IC CXP82316-020Q		R456	1-249-425-11	CARBON 4.7K 5% 1/4W F	
IC451	8-759-172-31	IC BA6191		R457	1-247-840-00	CARBON 2.4K 5% 1/4W F	
IC501	8-759-061-66	IC LA9215		R458	1-247-828-11	CARBON 750 5% 1/4W F	
IC551	8-759-634-51	IC M5218AP (C335)		R459	1-249-418-11	CARBON 1.2K 5% 1/4W F	
< JACK >				R501	1-249-422-11	CARBON 2.7K 5% 1/4W F	
J501	1-750-679-11	JACK, PIN 2P (LINE OUT)		R521	1-247-852-11	CARBON 7.5K 5% 1/4W	
< COIL >				R522	1-247-864-11	CARBON 24K 5% 1/4W	
L501	1-412-473-21	INDUCTOR 0uH		R523	1-247-852-11	CARBON 7.5K 5% 1/4W	
L551	1-412-473-21	INDUCTOR 0uH (C335)		R524	1-247-864-11	CARBON 24K 5% 1/4W	
L552	1-412-473-21	INDUCTOR 0uH (C335)		R525	1-249-419-11	CARBON 1.5K 5% 1/4W F	
L553	1-412-473-21	INDUCTOR 0uH (C335)		R526	1-249-419-11	CARBON 1.5K 5% 1/4W F	
< TRANSISTOR >				R527	1-249-429-11	CARBON 10K 5% 1/4W	
Q201	8-729-119-76	TRANSISTOR 2SA1175-HFE		R531	1-249-429-11	CARBON 10K 5% 1/4W	
Q401	8-729-900-89	TRANSISTOR DTC144ES		R532	1-249-417-11	CARBON 1K 5% 1/4W F	
Q402	8-729-620-05	TRANSISTOR 2SC2603-EF		R551	1-249-405-11	CARBON 100 5% 1/4W F	(C335)
Q501	8-729-900-89	TRANSISTOR DTC144ES		R552	1-249-405-11	CARBON 100 5% 1/4W F	(C335)
Q502	8-729-900-61	TRANSISTOR DTA114ES		R571	1-247-852-11	CARBON 7.5K 5% 1/4W	
Q503	8-729-900-61	TRANSISTOR DTA114ES		R572	1-247-864-11	CARBON 24K 5% 1/4W	
Q504	8-729-900-80	TRANSISTOR DTC114ES		R573	1-247-852-11	CARBON 7.5K 5% 1/4W	
< RESISTOR >				R574	1-247-864-11	CARBON 24K 5% 1/4W	
R201	1-249-429-11	CARBON 10K 5% 1/4W		R575	1-249-419-11	CARBON 1.5K 5% 1/4W F	
R202	1-249-438-11	CARBON 56K 5% 1/4W		R576	1-249-419-11	CARBON 1.5K 5% 1/4W F	
R203	1-249-435-11	CARBON 33K 5% 1/4W		R577	1-249-429-11	CARBON 10K 5% 1/4W	
R401	1-249-428-11	CARBON 8.2K 5% 1/4W F		R581	1-249-429-11	CARBON 10K 5% 1/4W	
R402	1-249-428-11	CARBON 8.2K 5% 1/4W F		R582	1-249-417-11	CARBON 1K 5% 1/4W F	
R403	1-249-428-11	CARBON 8.2K 5% 1/4W F		< SWITCH >			
R404	1-249-428-11	CARBON 8.2K 5% 1/4W F		△S201	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (C335:E)	
R405	1-249-428-11	CARBON 8.2K 5% 1/4W F		< VIBRATOR >			
R406	1-249-428-11	CARBON 8.2K 5% 1/4W F		X401	1-579-175-11	VIBRATOR, CERAMIC (10MHz)	
R407	1-249-425-11	CARBON 4.7K 5% 1/4W F		*****			
R408	1-249-425-11	CARBON 4.7K 5% 1/4W F		*	A-4649-610-A	BD BOARD, COMPLETE	
R409	1-249-425-11	CARBON 4.7K 5% 1/4W F		*****			
R410	1-249-429-11	CARBON 10K 5% 1/4W		< CAPACITOR >			
R411	1-249-429-11	CARBON 10K 5% 1/4W		C101	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
R412	1-249-441-11	CARBON 100K 5% 1/4W		C102	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
R413	1-249-429-11	CARBON 10K 5% 1/4W		C103	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
R414	1-249-430-11	CARBON 12K 5% 1/4W		C105	1-135-155-21	TANTALUM CHIP 4.7uF 10% 16V	
R415	1-249-417-11	CARBON 1K 5% 1/4W F		C106	1-164-346-11	CERAMIC CHIP 1uF 16V	
R421	1-249-428-11	CARBON 8.2K 5% 1/4W F		C107	1-164-505-11	CERAMIC CHIP 2.2uF 16V	
R422	1-249-428-11	CARBON 8.2K 5% 1/4W F		C108	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
R424	1-249-430-11	CARBON 12K 5% 1/4W		C109	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
R426	1-249-428-11	CARBON 8.2K 5% 1/4W F		C110	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
R451	1-247-876-11	CARBON 75K 5% 1/4W					
R452	1-247-876-11	CARBON 75K 5% 1/4W					

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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BD POWER SW

Ref.No.	Part No.	Description	Remark
C111	1-163-251-11	CERAMIC CHIP 100PF 5%	50V
C112	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C113	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C123	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C124	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C131	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C132	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C133	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C153	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C159	1-163-019-00	CERAMIC CHIP 0.0068uF 10%	50V
C161	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C181	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C182	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C183	1-135-156-21	TANTALUM CHIP 6.8uF 10%	10V
C184	1-135-156-21	TANTALUM CHIP 6.8uF 10%	10V
C185	1-135-156-21	TANTALUM CHIP 6.8uF 10%	10V
C186	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C187	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C188	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C191	1-163-091-00	CERAMIC CHIP 8PF	50V
C192	1-163-091-00	CERAMIC CHIP 8PF	50V
C193	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C194	1-163-125-00	CERAMIC CHIP 220PF 5%	50V
C195	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C196	1-163-005-11	CERAMIC CHIP 470PF 10%	50V
C197	1-163-038-00	CERAMIC CHIP 0.1uF	25V
< CONNECTOR >			
* CN101	1-580-875-11	SOCKET, CONNECTOR (SMT) 26P	
CN102	1-580-866-11	SOCKET, CONNECTOR (SMT) 12P	
< IC >			
IC101	8-752-351-94	IC CXD2515Q (for KSS-240A)	
IC101	8-752-360-75	IC CXD2599Q (for KSS-390A)	
IC102	8-759-164-29	IC BA6392FP-T1	
IC103	8-752-355-45	IC CXD2565M-T6	
< COIL >			
L101	1-414-234-21	INDUCTOR, FERRITE BEAD	
L102	1-414-234-21	INDUCTOR, FERRITE BEAD	
L103	1-414-234-21	INDUCTOR, FERRITE BEAD	
L104	1-216-001-00	METAL CHIP 10 5%	1/10W
L105	1-216-295-00	METAL CHIP 0 5%	1/10W
L106	1-414-234-21	INDUCTOR, FERRITE BEAD	
L107	1-414-234-21	INDUCTOR, FERRITE BEAD	
L108	1-414-234-21	INDUCTOR, FERRITE BEAD	

Ref.No.	Part No.	Description	Remark
< RESISTOR >			
R101	1-216-077-00	METAL CHIP 15K 5%	1/10W
R102	1-216-097-00	METAL CHIP 100K 5%	1/10W
R103	1-216-077-00	METAL CHIP 15K 5%	1/10W
R104	1-216-085-00	METAL CHIP 33K 5%	1/10W
R105	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R106	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R107	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R108	1-216-073-00	METAL CHIP 10K 5%	1/10W
R109	1-216-121-00	METAL CHIP 1M 5%	1/10W
R110	1-216-025-00	METAL CHIP 100 5%	1/10W
R112	1-216-049-00	METAL CHIP 1K 5%	1/10W
R122	1-216-295-00	METAL CHIP 0 5%	1/10W
R123	1-216-073-00	METAL CHIP 10K 5%	1/10W
R124	1-216-097-00	METAL CHIP 100K 5%	1/10W
R125	1-216-049-00	METAL CHIP 1K 5%	1/10W
R126	1-216-049-00	METAL CHIP 1K 5%	1/10W
R127	1-216-049-00	METAL CHIP 1K 5%	1/10W
R131	1-216-037-00	METAL CHIP 330 5%	1/10W
R158	1-216-111-00	METAL CHIP 390K 5%	1/10W
R159	1-216-101-00	METAL CHIP 150K 5%	1/10W
R181	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R182	1-216-080-00	METAL CHIP 20K 5%	1/10W
R183	1-216-080-00	METAL CHIP 20K 5%	1/10W
R184	1-216-080-00	METAL CHIP 20K 5%	1/10W
R185	1-216-080-00	METAL CHIP 20K 5%	1/10W
R187	1-216-035-00	METAL CHIP 270 5%	1/10W
R188	1-216-121-00	METAL CHIP 1M 5%	1/10W
R189	1-414-234-21	INDUCTOR, FERRITE BEAD	
< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
< VIBRATOR >			
X101	1-579-904-21	VIBRATOR, CRYSTAL (33.8MHz)	

* 1-647-542-11	POWER SW BOARD *****		
< CAPACITOR >			
C731	1-161-494-00	CERAMIC 0.022uF	25V
< IC >			
IC731	8-741-100-48	IC SBX1610-59	
< RESISTOR >			
R731	1-249-418-11	CARBON 1.2K 5%	1/4W F

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R732	1-247-836-11	CARBON	1.6K 5% 1/4W	△151	8-848-144-11	DEVICE, OPTICAL KSS-240A	
R733	1-249-421-11	CARBON	2.2K 5% 1/4W F	△151	8-848-281-11	DEVICE, OPTICAL KSS-390A	
R734	1-249-423-11	CARBON	3.3K 5% 1/4W F	152	1-575-001-11	WIRE, FLAT TYPE (12 CORE) (for KSS-240A)	
R735	1-249-426-11	CARBON	5.6K 5% 1/4W	152	1-647-341-11	PC BOARD, FLEXIBLE (for KSS-390A)	
R736	1-247-856-00	CARBON	11K 5% 1/4W	M101	X-4917-504-1	MOTOR ASSY (SLED)	
R737	1-249-421-11	CARBON	2.2K 5% 1/4W F	M102	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	
		< SWITCH >		M801	A-4660-322-A	MOTOR ASSY, ROTARY (TABLE)	
S730	1-572-714-11	SWITCH, PUSH (POWER)		M802	A-4604-834-A	MOTOR ASSY, LOADING	
S731	1-554-303-21	SWITCH, TACTILE (DISC 1)		△T901	1-423-553-11	TRANSFORMER, POWER (US, CND)	
S732	1-554-303-21	SWITCH, TACTILE (DISC 2)		△T901	1-423-554-11	TRANSFORMER, POWER (AEP, AUS, UK)	
S733	1-554-303-21	SWITCH, TACTILE (DISC 3)		△T901	1-423-555-11	TRANSFORMER, POWER (E)	
S734	1-554-303-21	SWITCH, TACTILE (DISC 4)		*****			
S735	1-554-303-21	SWITCH, TACTILE (DISC 5)		ACCESSORIES & PACKING MATERIALS			
S736	1-554-303-21	SWITCH, TACTILE (REPEAT)		*****			
S737	1-554-303-21	SWITCH, TACTILE (PROGRAM)		1-467-123-11	REMOTE COMMANDER (RM-D335) (C335)		
S738	1-554-303-21	SWITCH, TACTILE (SHUFFLE)		1-558-271-11	CORD, CONNECTION		
S739	1-554-303-21	SWITCH, TACTILE (CONTINUE)		3-756-520-11	MANUAL, INSTRUCTION		

*	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 IC RPI-1391					
D802	8-749-924-30	DIODE PHOTO SENSOR GP2S28					
		< RESISTOR >					
R801	1-249-416-11	CARBON	820 5% 1/4W F				
R802	1-249-406-11	CARBON	120 5% 1/4W F				

		MISCELLANEOUS	*****				
5	1-751-054-11	WIRE (FLAT TYPE) (10 CORE)					
8	1-751-053-11	WIRE (FLAT TYPE) (33 CORE)					
53	1-751-052-11	WIRE (FLAT TYPE) (6 CORE)					
64	1-569-007-11	ADAPTER, CONVERSION 2P (C335:E)					
△74	1-575-651-21	CORD, POWER (AEP)					
△74	1-590-836-11	CORD, POWER (US, CND)					
△74	1-696-027-11	CORD, POWER (E)					
△74	1-696-571-11	CORD, POWER (UK)					
△74	1-696-845-11	CORD, POWER (AUS)					
115	1-466-996-11	ENCODER, ROTARY					
* 122	1-648-409-11	PC BOARD, FLEXIBLE					
* 124	1-452-538-11	MAGNET					

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