

CDP-C235/C335

SERVICE MANUAL

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

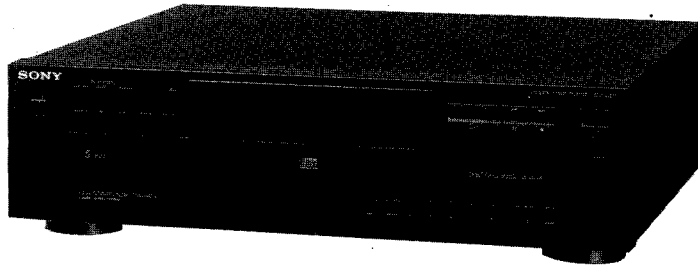


Photo : CDP-C235

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 (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
PHONES (stereo phone jack)	Output level max. 10 mW 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 × 15 ¹ / 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

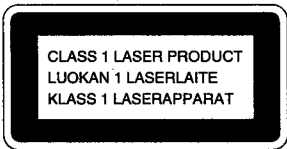
CAUTION
 TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

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 LESER INVISIBLE LORS D'OUVERTURE AVEC L'ENCLICHEMENT DE SECURITE ANNULE. EVITER L'EXPOSITION DIRECTE AU RAYON.</p> <p style="text-align: right; font-size: small;">4-906-403-01</p>
--	--



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

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
SECTION 1. GENERAL		
Identifying the Parts		4
SECTION 2. DISASSEMBLY		
2-1. Removal of Case, Bottom Plate and Front Panel		5
2-2. Removal of Back Panel and Disc Table		5
2-3. Removal of Optical Pick-up Block Assembly		6
2-4. Removal of Bracket (Gear) Assembly		6
SECTION 3. ELECTRICAL BLOCK CHECKING		
7		
SECTION 4. IC PIN FUNCTIONS		
9		
SECTION 5. DIAGRAMS		
5-1. Circuit Boards Location		10
5-2. Semiconductor Lead Layouts		10
5-3. Printed Wiring Board		11
5-4. Schematic Diagram		15
5-5. IC Block Diagrams		19
SECTION 6. EXPLODED VIEWS		
6-1. Front Panel and Case Assemblies		21
6-2. Back Panel and Disc Table Assemblies		22
6-3. Chassis Assembly		23
6-4. Optical Pick-up Block Assembly (BU-5BD13)		24
SECTION 7. ELECTRICAL PARTS LIST		
25		

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.

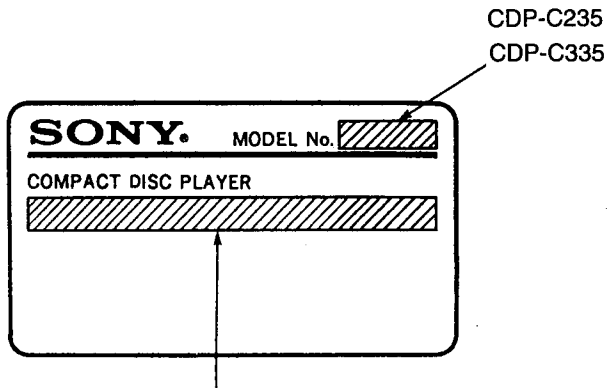
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

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.

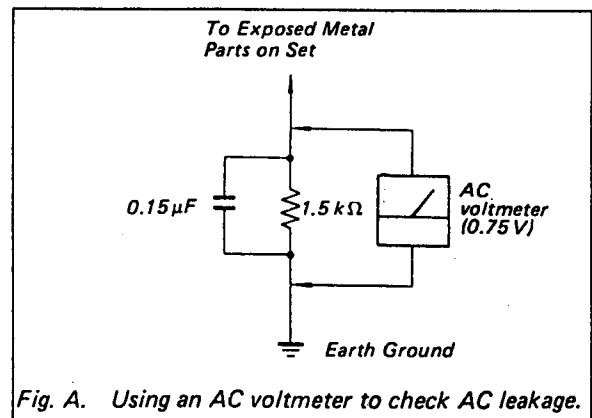
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

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 microamperes). Leakage current can be measured by any one of three methods.

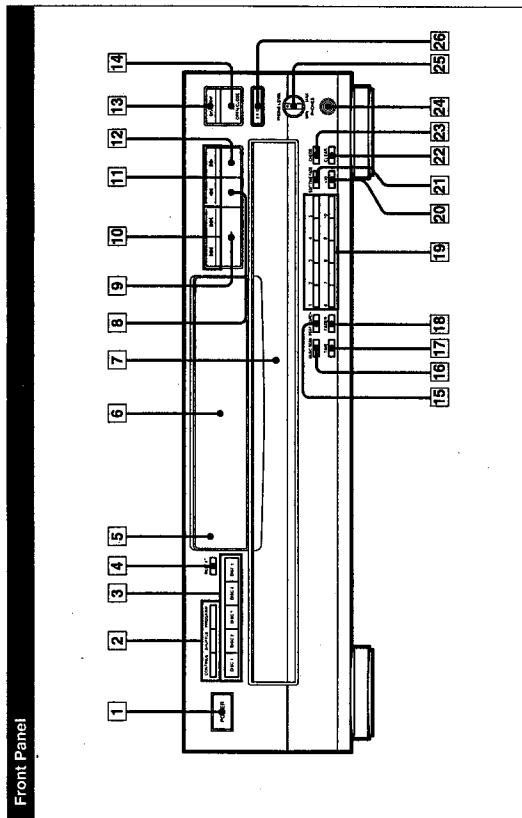
1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means 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)



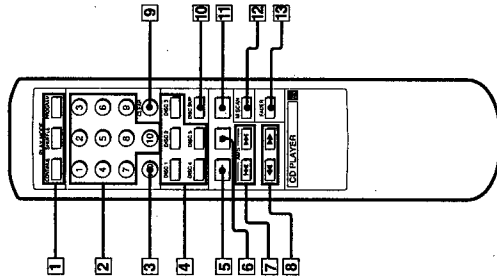
SECTION 1 GENERAL

This section is extracted from instruction manual.

Identifying the Parts



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)
 - Numeric buttons (10)
 - >10 (over 10) button (10)
 - DISC 1-5 buttons (8)
 - ▶ (play) button (8)
 - ⏸ (pause) button (8)
 - ◀▶ (AMS*) buttons (10)
 - ◀▶▶ (manual search) buttons (10)
 - CLEAR button (14)
 - DISC SKIP button (8)
 - (stop) button (8)
 - MUSIC SCAN (M. SCAN) button (17)
 - FADER button (12)

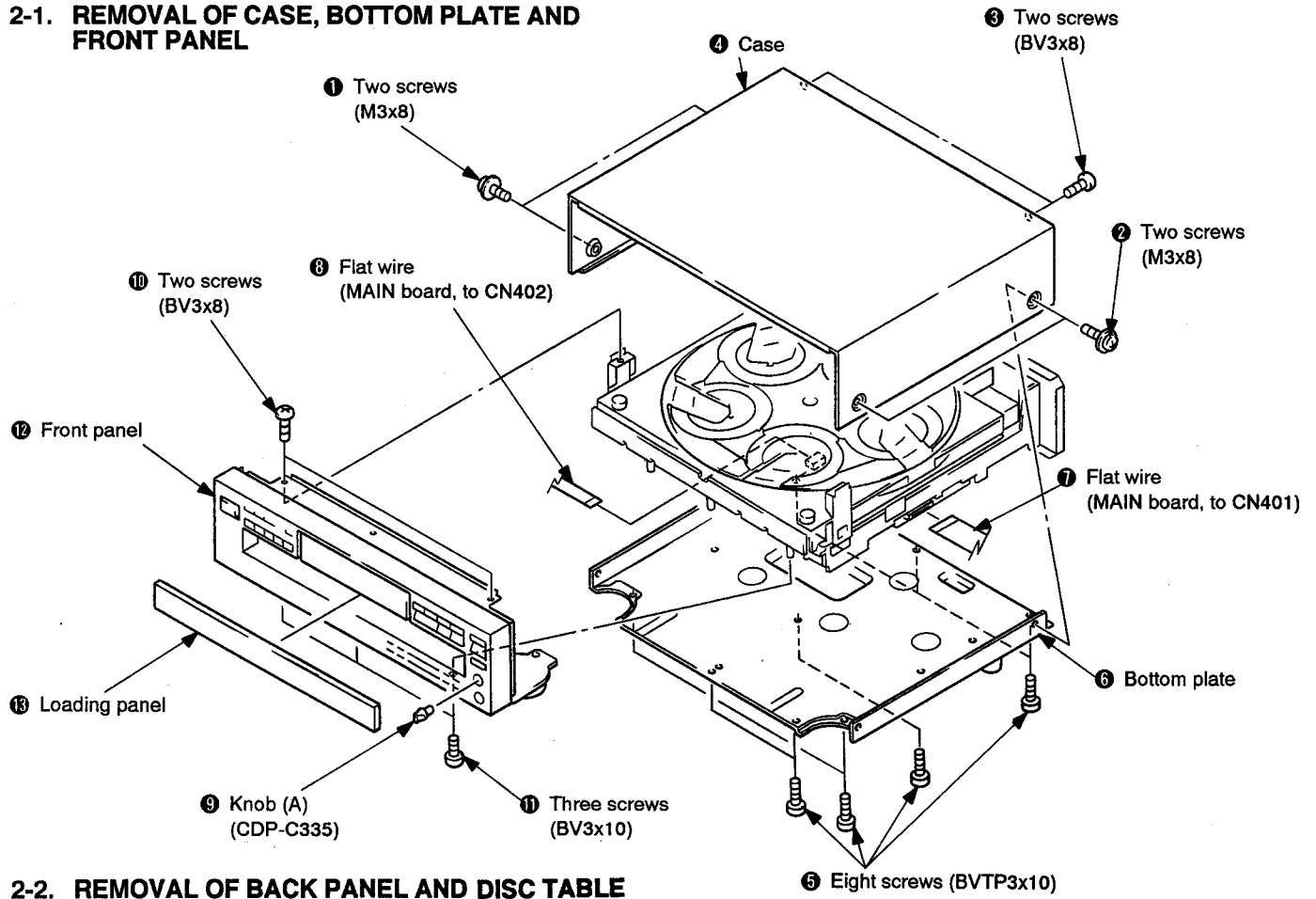
See the pages indicated in () for details.

- 1 POWER switch (8)
- 2 PLAY MODE buttons
- CONTINUE button (8)
- SHUFFLE button (13)
- PROGRAM button (14)
- REPEAT button (18)
- Remote sensor (4)
- Display window (8)
- Disc tray (8)
- ▶ (play) button (8)
- ⏸ (pause) button (8)
- ◀▶▶ (AMS*) buttons (10)
- ◀▶▶ (manual search) buttons (10)
- (stop) button (8)
- 13 DISC SKIP button (8)
- ▲ 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 PHONES jack (CDP-C335 only) (9)
- 26 EX-CHANGE button (11)

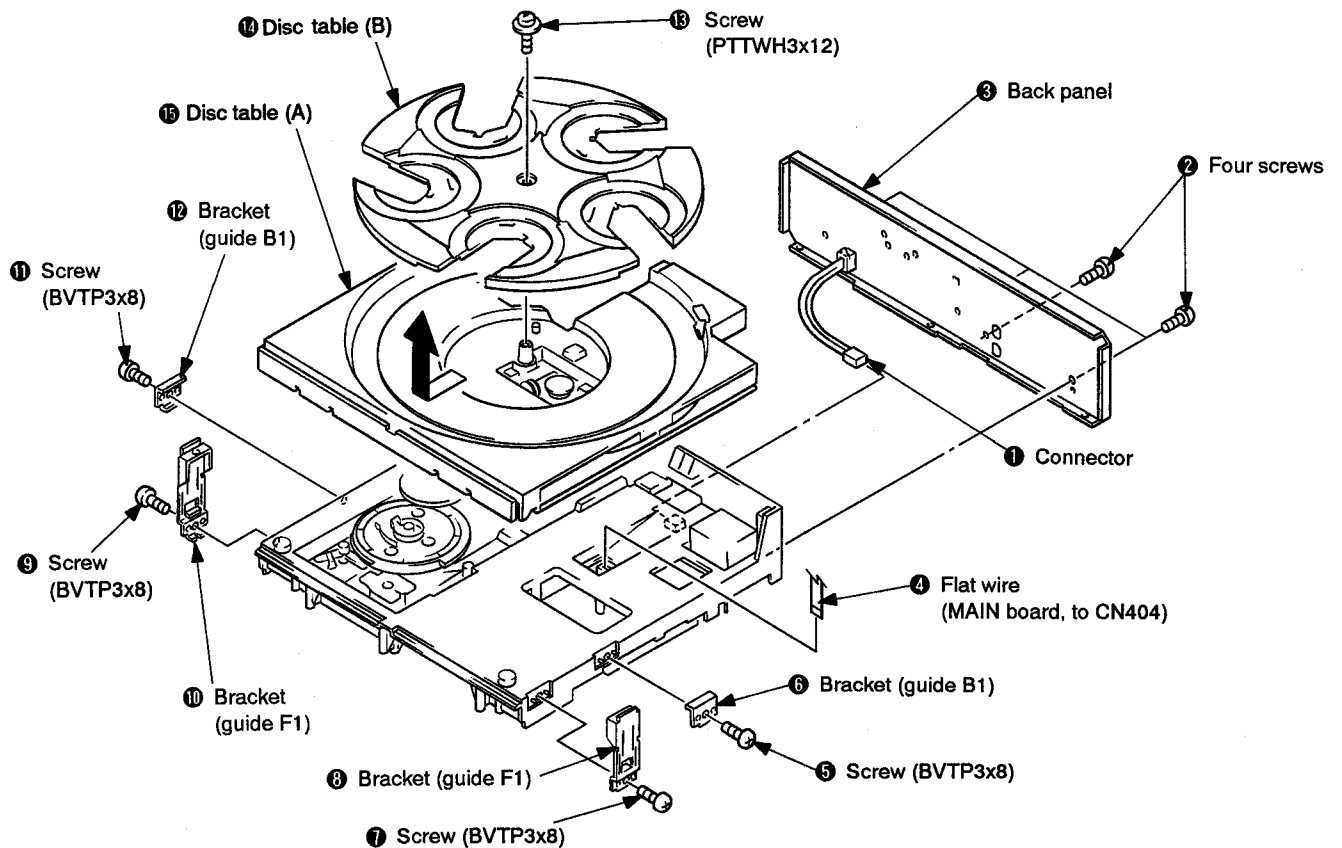
* AMS is the abbreviation for Automatic Music Sensor.

SECTION 2 DISASSEMBLY

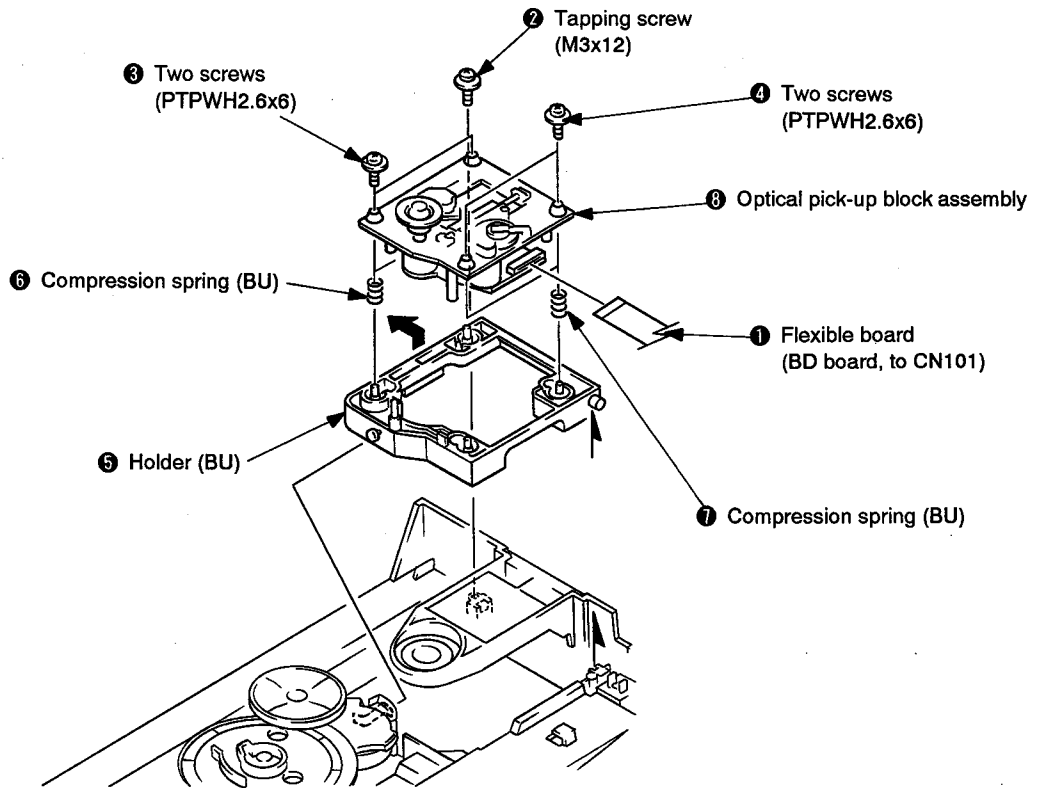
2-1. REMOVAL OF CASE, BOTTOM PLATE AND FRONT PANEL



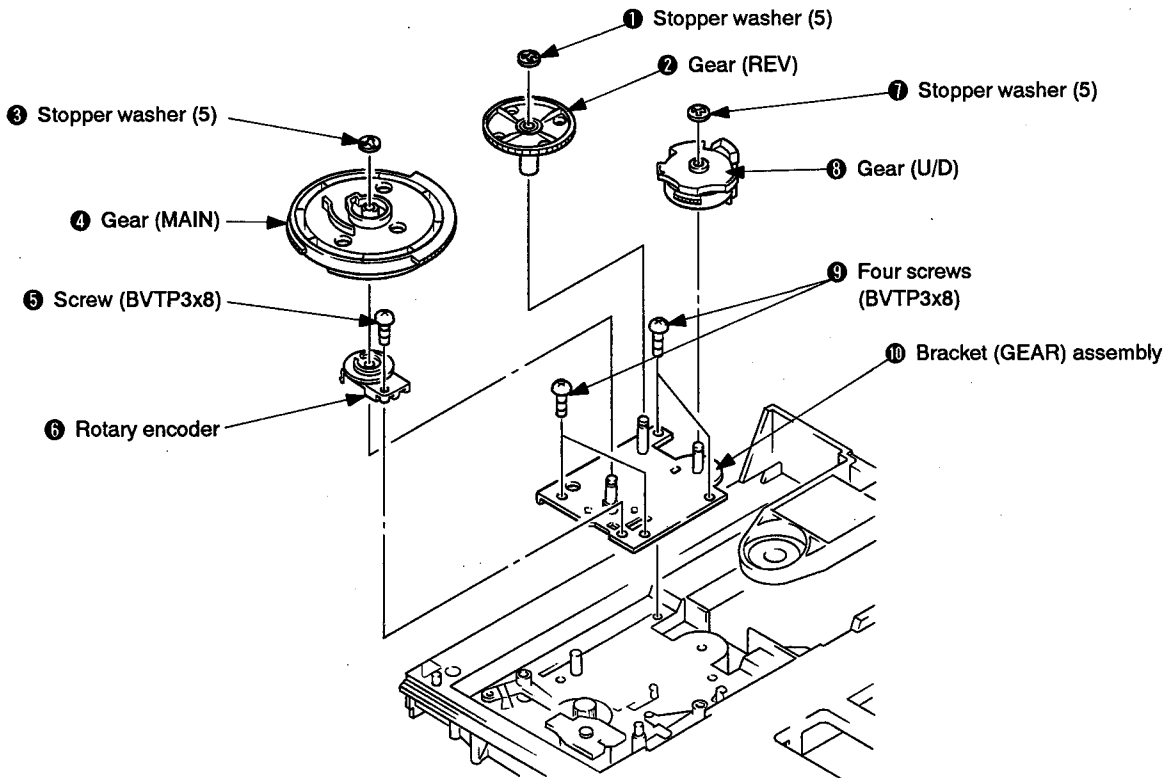
2-2. REMOVAL OF BACK PANEL AND DISC TABLE



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



2-4. REMOVAL OF BRACKET (GEAR) ASSEMBLY

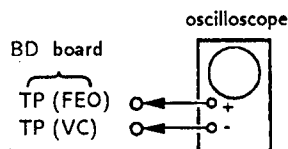


SECTION 3 ELECTRICAL BLOCK CHECKING

Note :

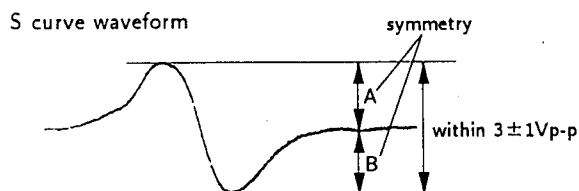
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than $10M\Omega$ impedance.
4. Clean an object lens by an applicator with neutral detergent when 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 $3\pm 1V_{p-p}$.

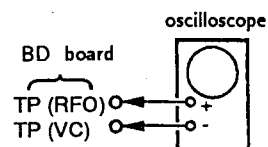


5. After check, remove the lead wire connected in step 2.

Note : • Try to measure 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

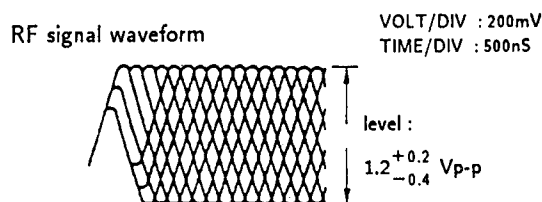


Procedure :

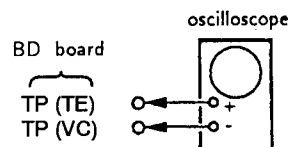
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

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

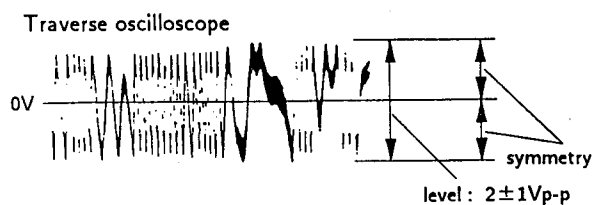


E-F Balance Check



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 oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

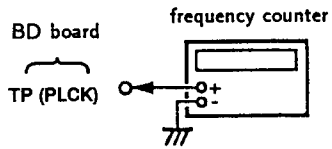


6. Remove the lead wire connected in step 1.

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

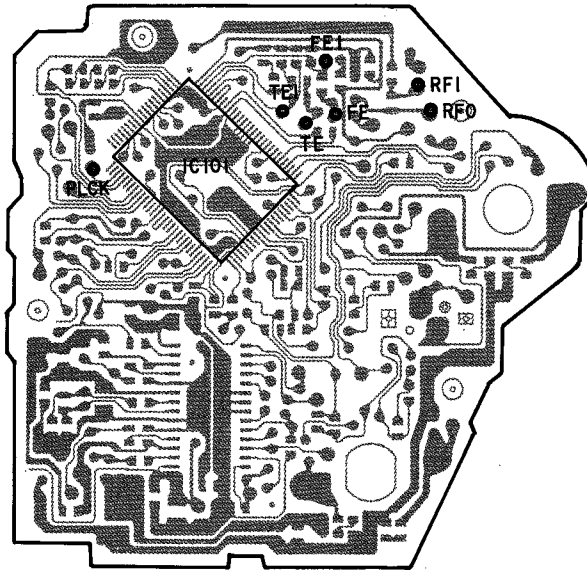
This gain has a margin, so even if it is slightly off. There is no problem.

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 —



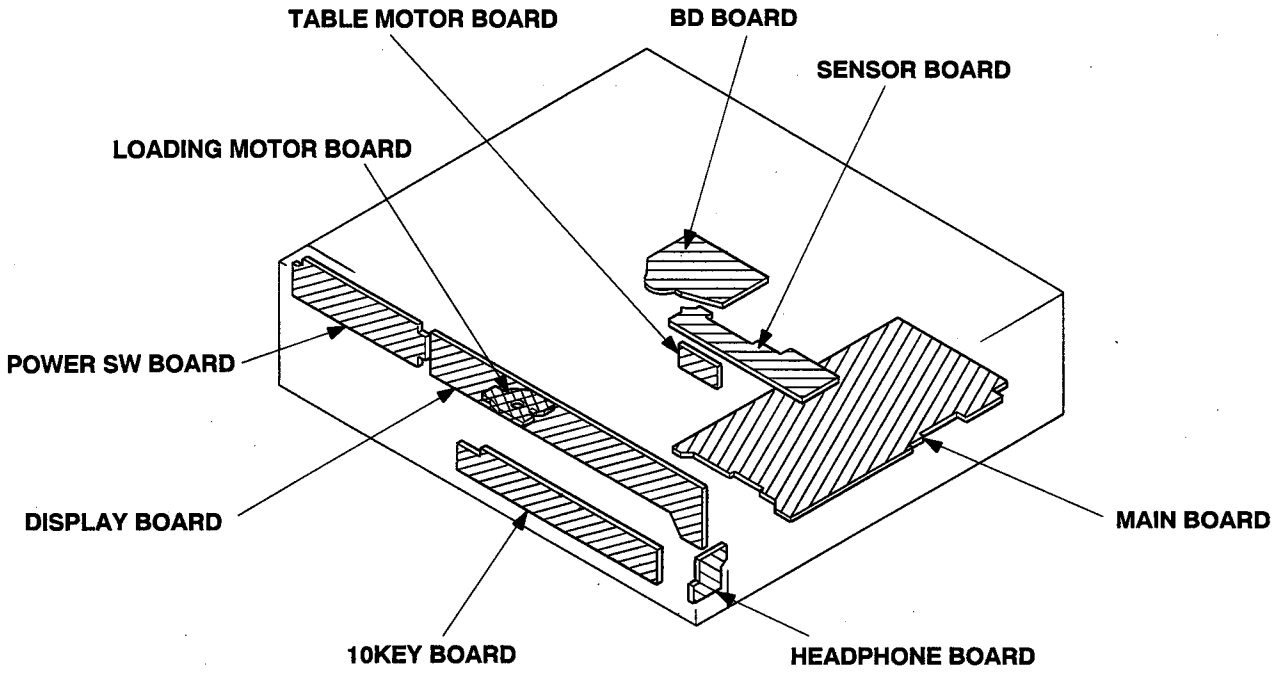
SECTION 4 IC PIN FUNCTIONS

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

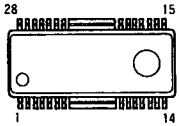


5-2. SEMICONDUCTOR LEAD LAYOUTS

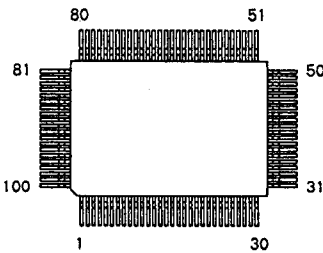
BA6191



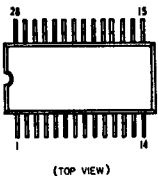
BA6392FP-T1



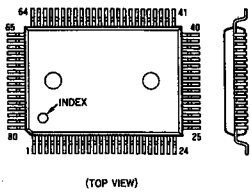
CXD2515Q
CXD2599Q



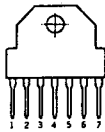
CXD25605M-T6



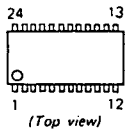
CXP82316-020Q



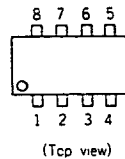
LA5602



LA9215



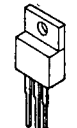
M5218AP



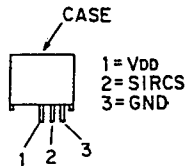
M5293L



M5F78M07



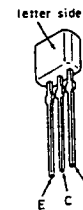
SBX1610-59



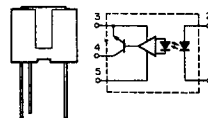
2SC2603-EF
DTA114ES
DTC114ES



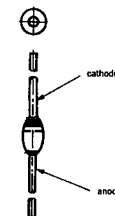
2SA1175-HFE
DTC144ES



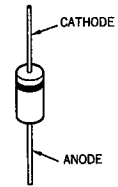
RPI-1391



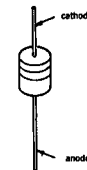
MTZJ-T-72-6.2A



1N4148M

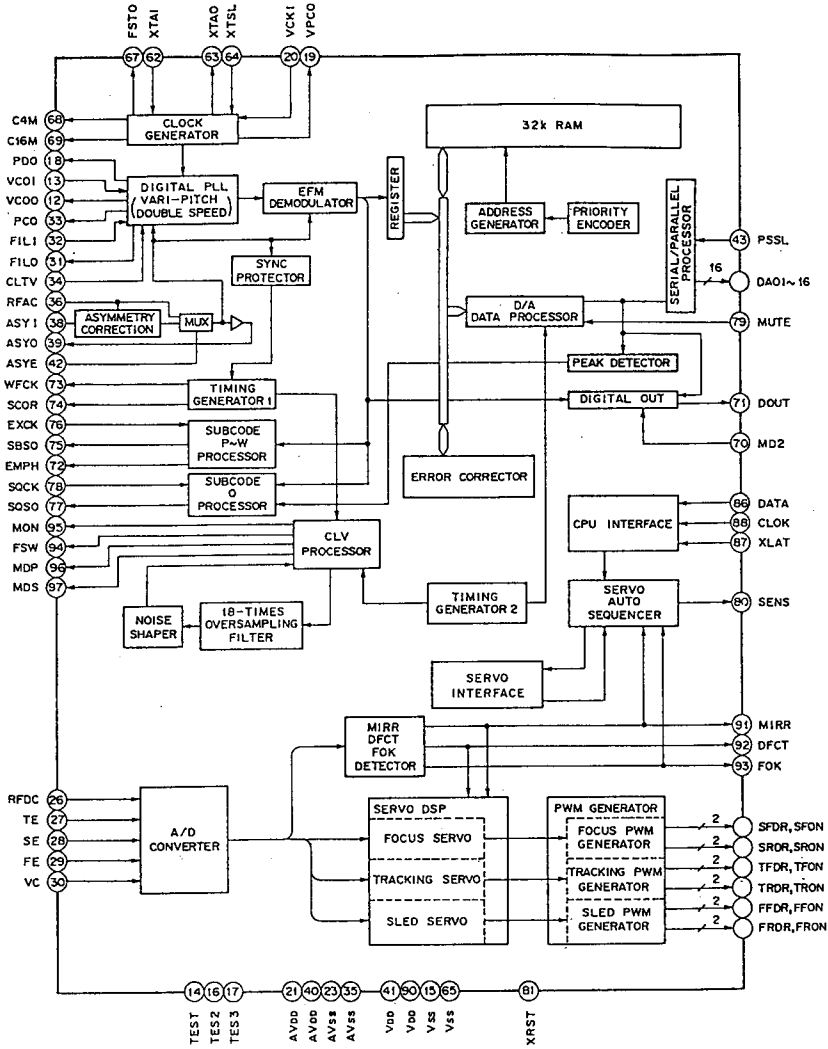


11ES2
RD6.2ES-B1
RD9.1ES-B2

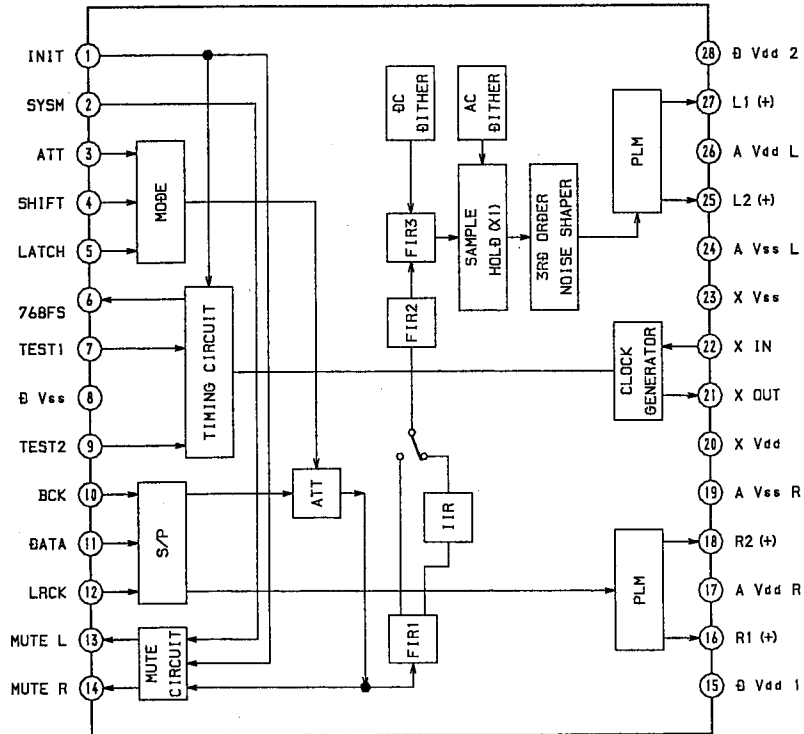


5-5. IC BLOCK DIAGRAM

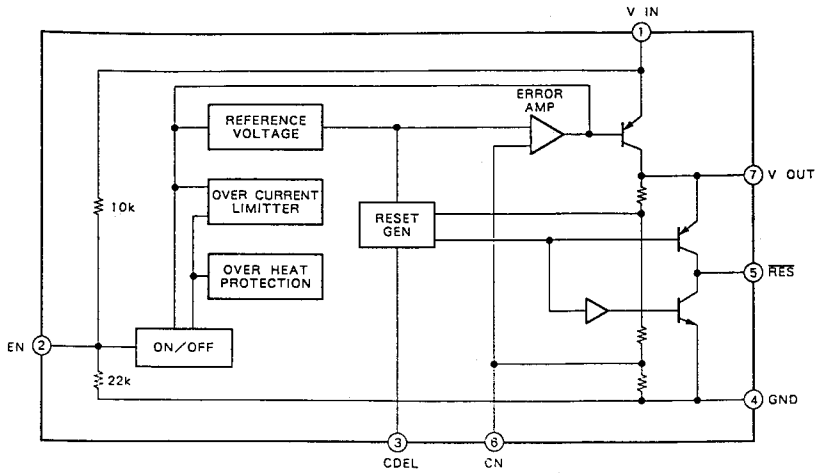
IC101 CXD2515Q/2599Q



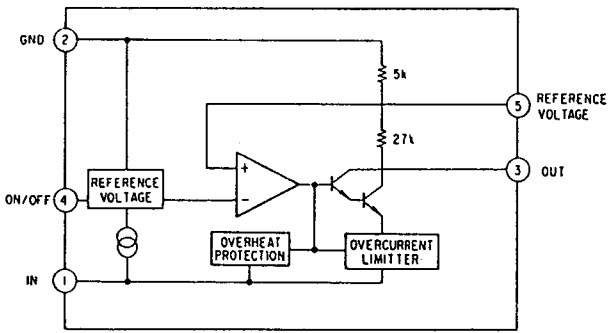
IC103 CXD2565M



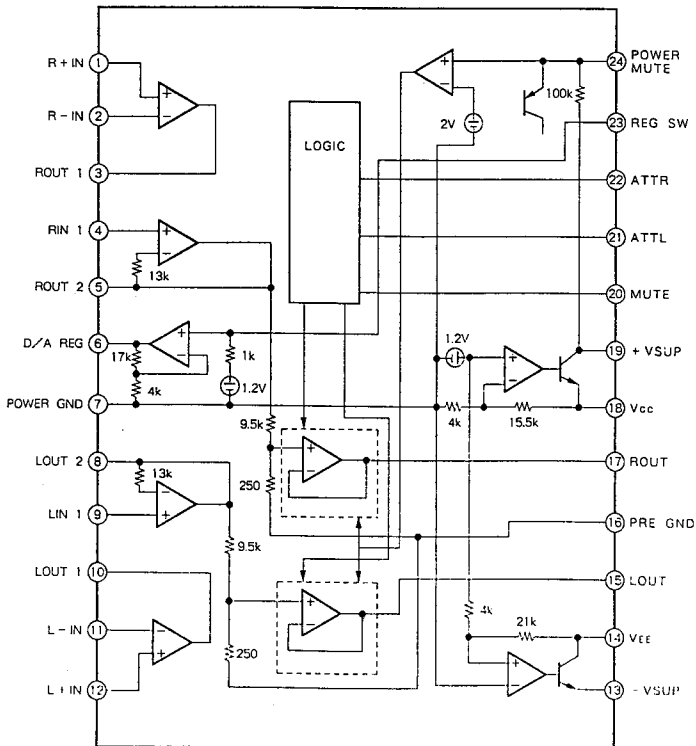
IC201 LA5602



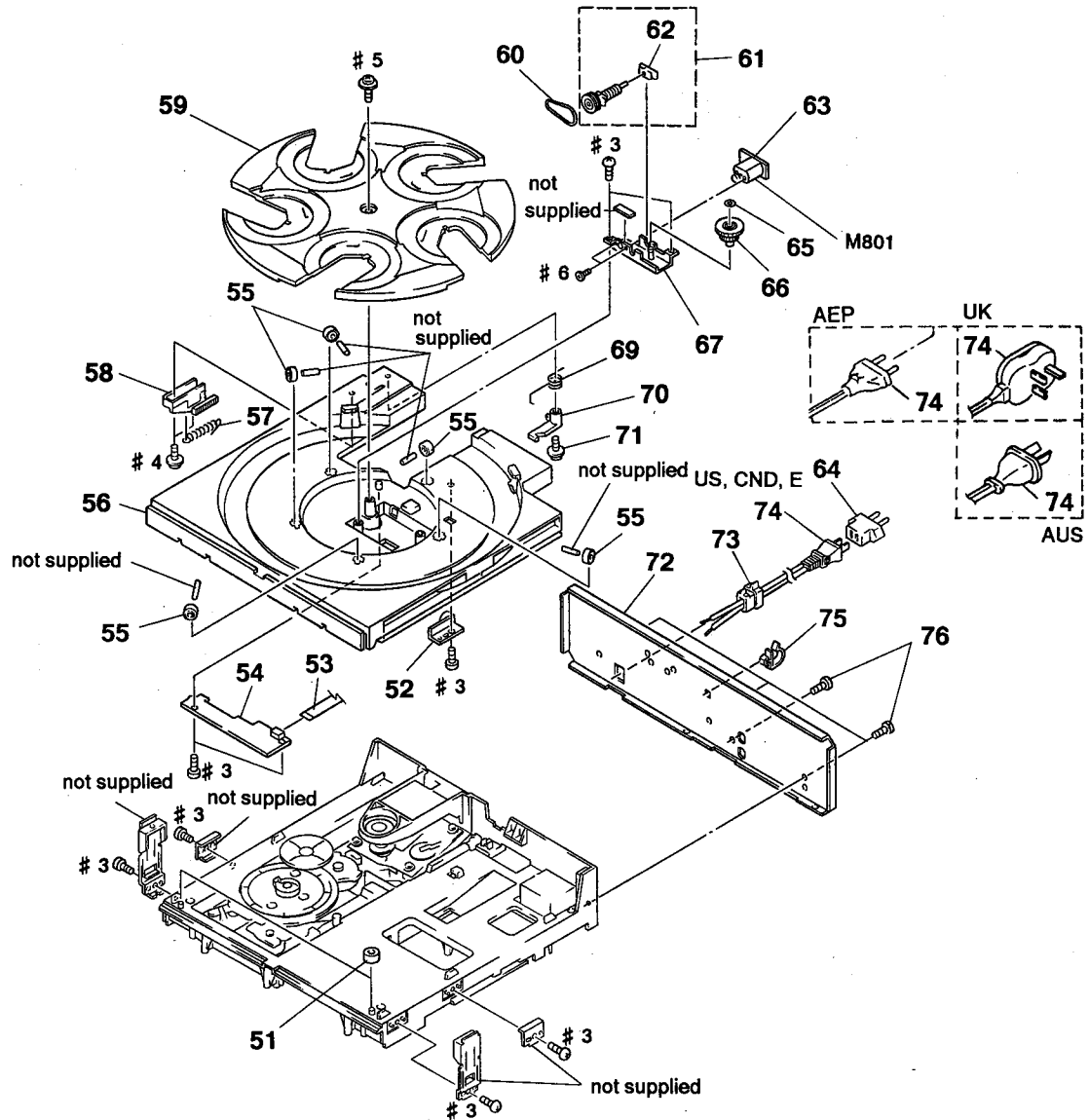
IC203 M5293L



IC501 LA9215

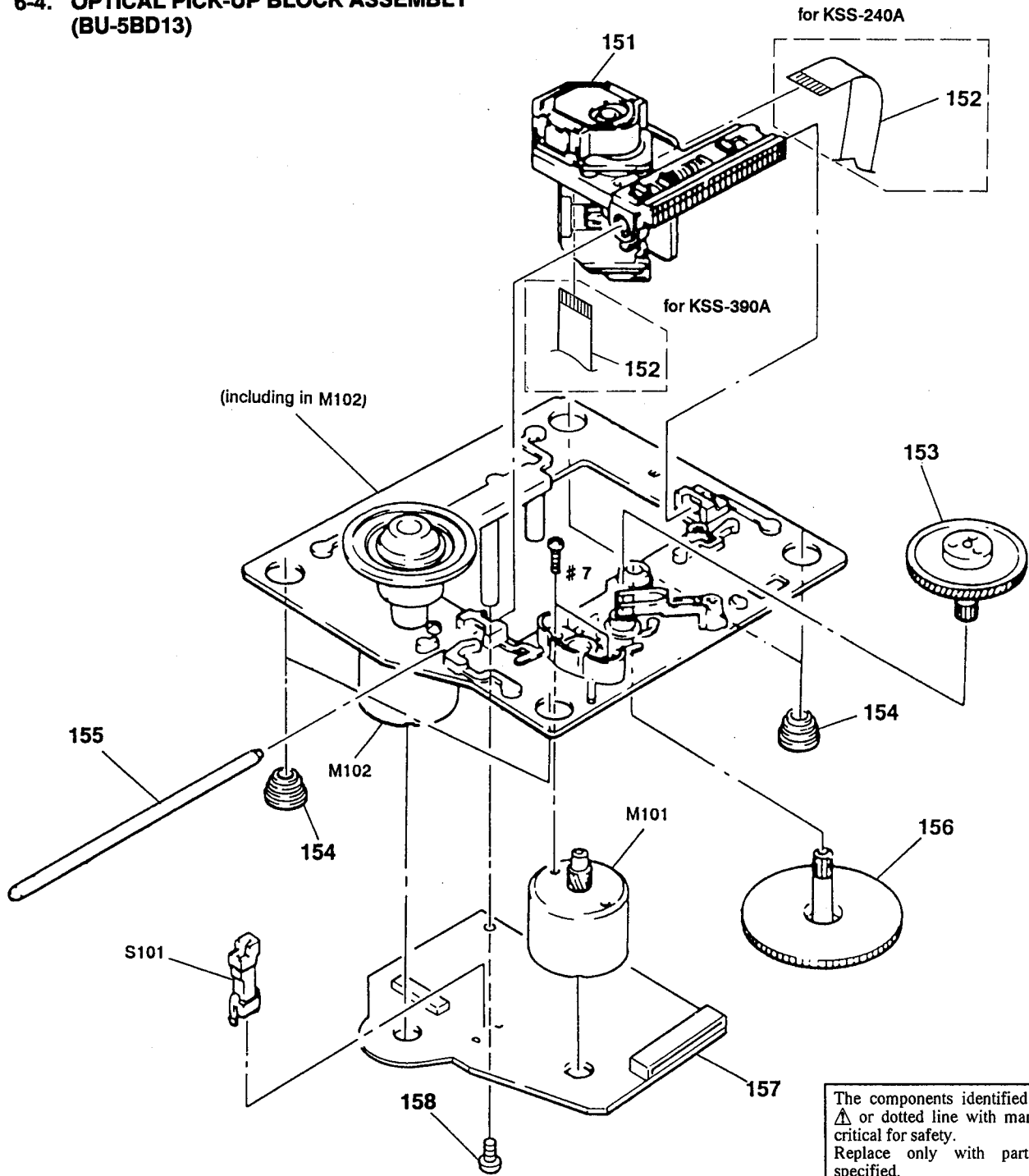


6-2. BACK PANEL AND DISC TABLE ASSEMBLIES



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)					

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



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Δ151	8-848-144-11	DEVICE, OPTICAL KSS-240A		156	4-917-564-01	GEAR (P), FLATNESS	
Δ151	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	

*	1-647-363-11	LOADING MOTOR BOARD		C509	1-126-786-11	ELECT 47uF 20% 16V	

*	A-4649-656-A	MAIN BOARD, COMPLETE (C235:US, CND)		C521	1-162-282-31	CERAMIC 100PF 10% 50V	

*	A-4649-657-A	MAIN BOARD, COMPLETE (C235:AEP, AUS)		C522	1-162-282-31	CERAMIC 100PF 10% 50V	

*	A-4649-649-A	MAIN BOARD, COMPLETE (C335:US, CND)		C523	1-130-472-00	MYLAR 0.0012uF 5% 50V	

*	A-4649-654-A	MAIN BOARD, COMPLETE (C335:AEP, UK)		C524	1-124-994-11	ELECT 100uF 20% 10V	

*	A-4649-655-A	MAIN BOARD, COMPLETE (C335:E)		C525	1-106-359-00	MYLAR 4700PF 5% 200V	

	7-685-871-01	SCREW +BVT 3X6 (S)		C531	1-124-994-11	ELECT 100uF 20% 10V	
		< CAPACITOR >		C532	1-130-467-00	MYLAR 470PF 5% 50V	
C201	1-124-887-00	ELECT 3300uF 20% 16V		C551	1-126-024-11	ELECT 220uF 20% 16V (C335)	
C202	1-124-360-00	ELECT 1000uF 20% 16V		C552	1-126-024-11	ELECT 220uF 20% 16V (C335)	
C203	1-124-910-11	ELECT 47uF 20% 50V		C571	1-162-282-31	CERAMIC 100PF 10% 50V	
C204	1-126-163-11	ELECT 4.7uF 20% 50V		C572	1-162-282-31	CERAMIC 100PF 10% 50V	
C205	1-126-163-11	ELECT 4.7uF 20% 50V		C573	1-130-472-00	MYLAR 0.0012uF 5% 50V	
C206	1-124-997-11	ELECT 470uF 20% 10V		C574	1-124-994-11	ELECT 100uF 20% 10V	
C207	1-126-024-11	ELECT 220uF 20% 16V		C575	1-106-359-00	MYLAR 4700PF 5% 200V	
C208	1-126-059-11	ELECT 10uF 20% 50V		C581	1-124-994-11	ELECT 100uF 20% 10V	
C209	1-124-572-11	ELECT 100uF 20% 63V		C582	1-130-467-00	MYLAR 470PF 5% 50V	
C210	1-161-494-00	CERAMIC 0.022uF 25V				< CONNECTOR >	
C401	1-126-022-11	ELECT 47uF 20% 16V		* CN201	1-573-047-11	PIN, CONNECTOR (PC BOARD) 2P	
C402	1-161-494-00	CERAMIC 0.022uF 25V		CN301	1-750-236-11	CONNECTOR, FFC(LIGHT ANGLE)24P	
C403	1-161-494-00	CERAMIC 0.022uF 25V		CN401	1-750-237-11	CONNECTOR, FFC(LIGHT ANGLE)33P	
C404	1-162-306-11	CERAMIC 0.01uF 20% 16V		CN402	1-750-228-11	CONNECTOR, FFC(LIGHT ANGLE)10P	
C405	1-162-306-11	CERAMIC 0.01uF 20% 16V		* CN403	1-695-006-11	PIN, CONNECTOR (PC BOARD) 6P	
C451	1-126-012-11	ELECT 470uF 20% 16V		CN404	1-750-223-11	CONNECTOR, FFC(STRAIGHT TYPE)6P	
C501	1-126-012-11	ELECT 470uF 20% 16V		* CN551	1-568-941-11	PIN, CONNECTOR 3P (C335)	
C502	1-126-012-11	ELECT 470uF 20% 16V				< DIODE >	
				D201	8-719-200-82	DIODE 11ES2	
				D202	8-719-200-82	DIODE 11ES2	
				D203	8-719-200-82	DIODE 11ES2	
				D204	8-719-200-82	DIODE 11ES2	
				D205	8-719-200-82	DIODE 11ES2	
				D206	8-719-110-13	DIODE RD9. 1ES-B2	
				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 M5F78M07		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					

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C111	1-163-251-11	CERAMIC CHIP 100PF 5%	50V			< RESISTOR >	
C112	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C113	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R101	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C123	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R102	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C124	1-164-005-11	CERAMIC CHIP 0.47uF	25V	R103	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C131	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R104	1-216-085-00	METAL CHIP 33K 5% 1/10W	
				R105	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
C132	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C133	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R107	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C153	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R108	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C159	1-163-019-00	CERAMIC CHIP 0.0068uF 10%	50V	R109	1-216-121-00	METAL CHIP 1M 5% 1/10W	
C161	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R110	1-216-025-00	METAL CHIP 100 5% 1/10W	
C181	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R112	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C182	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R122	1-216-295-00	METAL CHIP 0 5% 1/10W	
C183	1-135-156-21	TANTALUM CHIP 6.8uF 10%	10V	R123	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C184	1-135-156-21	TANTALUM CHIP 6.8uF 10%	10V	R124	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C185	1-135-156-21	TANTALUM CHIP 6.8uF 10%	10V	R125	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C186	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R126	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C187	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R127	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C188	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R131	1-216-037-00	METAL CHIP 330 5% 1/10W	
C191	1-163-091-00	CERAMIC CHIP 8PF	50V	R158	1-216-111-00	METAL CHIP 390K 5% 1/10W	
C192	1-163-091-00	CERAMIC CHIP 8PF	50V	R159	1-216-101-00	METAL CHIP 150K 5% 1/10W	
C193	1-163-125-00	CERAMIC CHIP 220PF 5%	50V	R181	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
C194	1-163-125-00	CERAMIC CHIP 220PF 5%	50V	R182	1-216-080-00	METAL CHIP 20K 5% 1/10W	
C195	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R183	1-216-080-00	METAL CHIP 20K 5% 1/10W	
C196	1-163-005-11	CERAMIC CHIP 470PF 10%	50V	R184	1-216-080-00	METAL CHIP 20K 5% 1/10W	
C197	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R185	1-216-080-00	METAL CHIP 20K 5% 1/10W	
		< CONNECTOR >		R187	1-216-035-00	METAL CHIP 270 5% 1/10W	
* CN101	1-580-875-11	SOCKET, CONNECTOR (SMT) 26P		R188	1-216-121-00	METAL CHIP 1M 5% 1/10W	
CN102	1-580-866-11	SOCKET, CONNECTOR (SMT) 12P		R189	1-414-234-21	INDUCTOR, FERRITE BEAD	
		< IC >				< SWITCH >	
IC101	8-752-351-94	IC CXD2515Q (for KSS-240A)		S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
IC101	8-752-360-75	IC CXD2599Q (for KSS-390A)				< VIBRATOR >	
IC102	8-759-164-29	IC BA6392FP-T1		X101	1-579-904-21	VIBRATOR, CRYSTAL (33.8MHz)	
IC103	8-752-355-45	IC CXD2565M-T6				*****	
		< COIL >				* 1-647-542-11 POWER SW BOARD	
L101	1-414-234-21	INDUCTOR, FERRITE BEAD				*****	
L102	1-414-234-21	INDUCTOR, FERRITE BEAD				< CAPACITOR >	
L103	1-414-234-21	INDUCTOR, FERRITE BEAD		C731	1-161-494-00	CERAMIC 0.022uF 25V	
L104	1-216-001-00	METAL CHIP 10 5% 1/10W				< IC >	
L105	1-216-295-00	METAL CHIP 0 5% 1/10W		IC731	8-741-100-48	IC SBX1610-59	
L106	1-414-234-21	INDUCTOR, FERRITE BEAD				< RESISTOR >	
L107	1-414-234-21	INDUCTOR, FERRITE BEAD		R731	1-249-418-11	CARBON 1.2K 5% 1/4W F	
L108	1-414-234-21	INDUCTOR, FERRITE BEAD					

POWER SW

SENSOR

Ref. No.	Part No.	Description	Remark
R732	1-247-836-11	CARBON 1.6K 5% 1/4W	
R733	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R734	1-249-423-11	CARBON 3.3K 5% 1/4W F	
R735	1-249-426-11	CARBON 5.6K 5% 1/4W	
R736	1-247-856-00	CARBON 11K 5% 1/4W	
R737	1-249-421-11	CARBON 2.2K 5% 1/4W F	
< SWITCH >			
S730	1-572-714-11	SWITCH, PUSH (POWER)	
S731	1-554-303-21	SWITCH, TACTILE (DISC 1)	
S732	1-554-303-21	SWITCH, TACTILE (DISC 2)	
S733	1-554-303-21	SWITCH, TACTILE (DISC 3)	
S734	1-554-303-21	SWITCH, TACTILE (DISC 4)	
S735	1-554-303-21	SWITCH, TACTILE (DISC 5)	
S736	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S737	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S738	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S739	1-554-303-21	SWITCH, TACTILE (CONTINUE)	

*	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	

Ref. No.	Part No.	Description	Remark
△151	8-848-144-11	DEVICE, OPTICAL KSS-240A	
△151	8-848-281-11	DEVICE, OPTICAL KSS-390A	
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE) (for KSS-240A)	
152	1-647-341-11	PC BOARD, FLEXIBLE (for KSS-390A)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	
M801	A-4660-322-A	MOTOR ASSY, ROTARY (TABLE)	
M802	A-4604-834-A	MOTOR ASSY, LOADING	
△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)	

ACCESSORIES & PACKING MATERIALS

1-467-123-11 REMOTE COMMANDER (RM-D335) (C335)
1-558-271-11 CORD, CONNECTION

3-756-520-11 MANUAL, INSTRUCTION
(ENGLISH, FRENCH, SPANISH, PORTUGUESE) (AEP, UK, E)
3-756-520-21 MANUAL, INSTRUCTION (ENGLISH)
(US, CND, AUS)
3-756-520-31 MANUAL, INSTRUCTION (FRENCH) (CND)
3-756-520-41 MANUAL, INSTRUCTION
(GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)
3-756-520-61 MANUAL, INSTRUCTION
(DANISH, FINNISH, SWEDISH, ENGLISH) (AEP)

* 4-944-110-01 CUSHION (FRONT)
* 4-944-111-01 CUSHION (REAR)
* 4-958-473-01 INDIVIDUAL CARTON (C235)
* 4-958-474-01 INDIVIDUAL CARTON (C335)
4-959-044-01 COVER, BATTERY (for RM-D335) (C335)

HARDWARE LIST

#1 7-685-647-79 SCREW, TAPPING
#2 7-682-548-04 SCREW +BVTT 3X8 (S)
#3 7-685-646-79 SCREW +BVTP 3X8 TYPE2 N-S
#4 7-685-134-19 SCREW +PTPW 2.6X8 (TYPE2)
#5 7-685-648-79 SCREW (M3X12), TAPPING
#6 7-621-772-00 SCREW +B 2X3
#7 7-621-255-15 SCREW +P 2X3

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.
---	---

