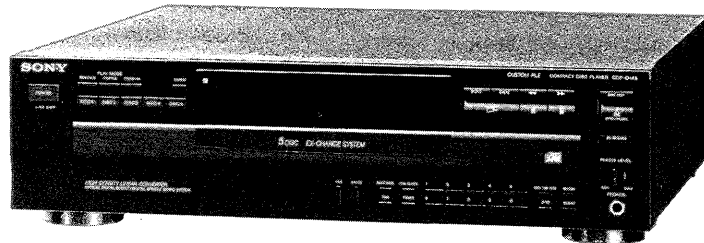


CDP-C445

SERVICE MANUAL

*US Model
Canadian Model*



Model Name Using Similer Mechanism	CDP-C435
CD Mechanism Type	CDM16G1-5BD3
Base Unit Type	BU-5BD10B
Optical Pick-up Type	KSS-240A

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 107 dB
Dynamic range	More than 98 dB
Harmonic distortion	Less than 0.0035%
Channel separation	More than 100 dB

Outputs

LINE OUT (phono jacks)	Output level 2 V Load impedance over 10 kilohms
DIGITAL OUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level –18 dBm
PHONES (stereo phone jack)	Output level max. 10 mW Load impedance 32 ohms

General

Power requirements	120 V AC, 60 Hz
Power consumption	14 W
Dimensions (approx.)	430 × 125 × 385 mm (w/h/d) (17 × 5 × 15 ¹ / ₄ inches) Including projecting parts and controls
Mass (approx.)	5.7 kg , net (12 lbs 10oz)

Remote Commander

Remote control system	RM-D335 Infrared control
Power requirements	3 V DC with two size AA batteries (IEC designation R6)
Dimensions	45 × 20 × 185 mm (w/h/d) (1 ¹³ / ₁₆ × 1 ³ / ₁₆ × 7 ³ / ₈ inches)
Mass	100 g (3.5 oz) including batteries

Design and specifications are subject to change without notice.



COMPACT DISC PLAYER
SONY®

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.

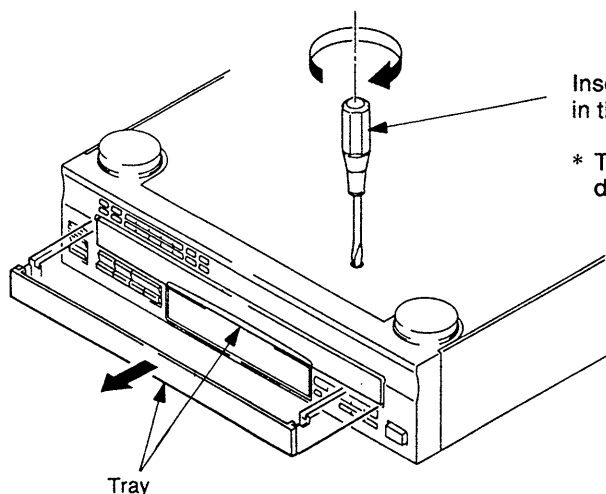
For the Customers in Canada

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.

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



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

* To close the disc tray, turn the driver in the reverse direction (to IN direction).

SAFETY-RELATED COMPONENT WARNING !!

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

TABLE OF CONTENTS

Section	Title	Page
1.	GENERAL	
	Identifying the Parts	4
2.	DISASSEMBLY	
2-1.	Case, Bottom Plate and Front Panel	5
2-2.	Back Panel and Disc Table	5
2-3.	Optical Pick-up Block Assembly	6
2-4.	Bracket (Gear) Assembly	6
2-5.	Positioning the Encoder when Attaching the Gear (Main)	7
3.	ELECTRICAL BLOCK CHECKING	6
4.	DIAGRAMS	
4-1.	IC Pin Functions	
	• CXP82220-018Q (IC501) Pin Functions	10
4-2.	Circuit Boards Location	12
4-3.	Block Diagram	13
4-4.	Printed Wiring Board — BD Section —	16
4-5.	Schematic Diagram — BD Section —	19
4-6.	Printed Wiring Boards — Main Section —	23
4-7.	Schematic Diagram — Main Section —	27
4-8.	Semiconductor Lead Layouts	31
4-9.	IC Block Diagrams	32
5.	EXPLODED VIEWS	
5-1.	Front Panel and Case Assemblies	34
5-2.	Back Panel and Disc Table Assemblies	35
5-3.	Chassis Assembly	36
5-4.	Optical Pick-up Block Assembly (BU-5BD10B)	37
6.	ELECTRICAL PARTS LIST	38

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE Δ 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.

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.

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)

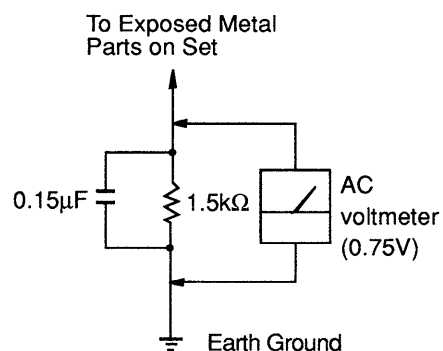
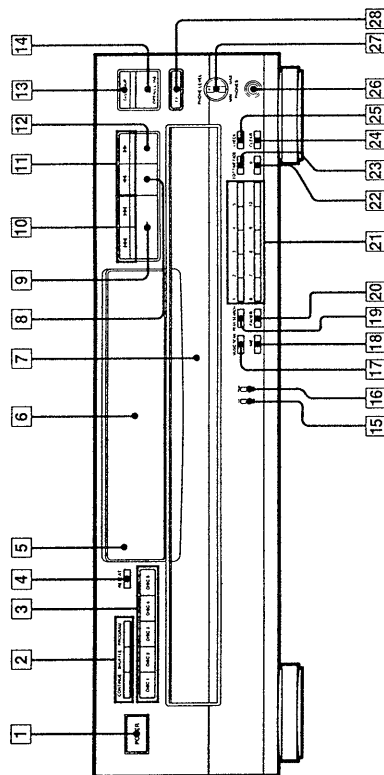


Fig. A. Using an AC voltmeter to check AC leakage.

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 Display window (8)
- 6 Disc tray (8)
- 7 (play) button (8)
- 8 (pause) button (8)
- 9 (stop) button (8)
- 10 (manual search) buttons (10)
- 11 (stop) button (8)
- 12 DISC SKIP button (8)
- 13 OPEN/CLOSE button (8)
- 14 FILE button (23)
- 15 ERASE button (24)
- 16 MUSIC SCAN button (17)
- 17 TIME button (9)
- 18 PEAK SEARCH button (19)
- 19 FADER button (12)
- 20 Numeric buttons (10)
- 21 >10 (over 10) button (10)
- 22 EDIT/TIME FADE button (20)
- 23 CLEAR button (14)
- 24 CHECK button (16)
- 25 PHONES jack (9)
- 26 PHONE LEVEL control (9)
- 27 EX-CHANGE button (11)
- 28

* AMS is the abbreviation for Automatic Music Sensor.

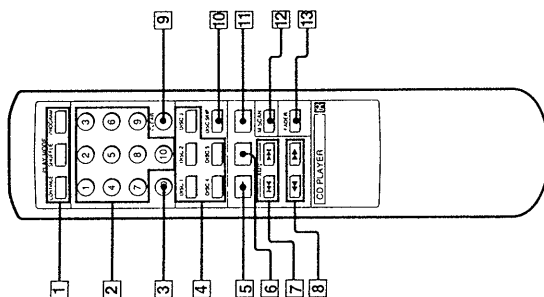
SECTION 1 GENERAL

This section is extracted from
instruction manual.

See the pages indicated in () for details.

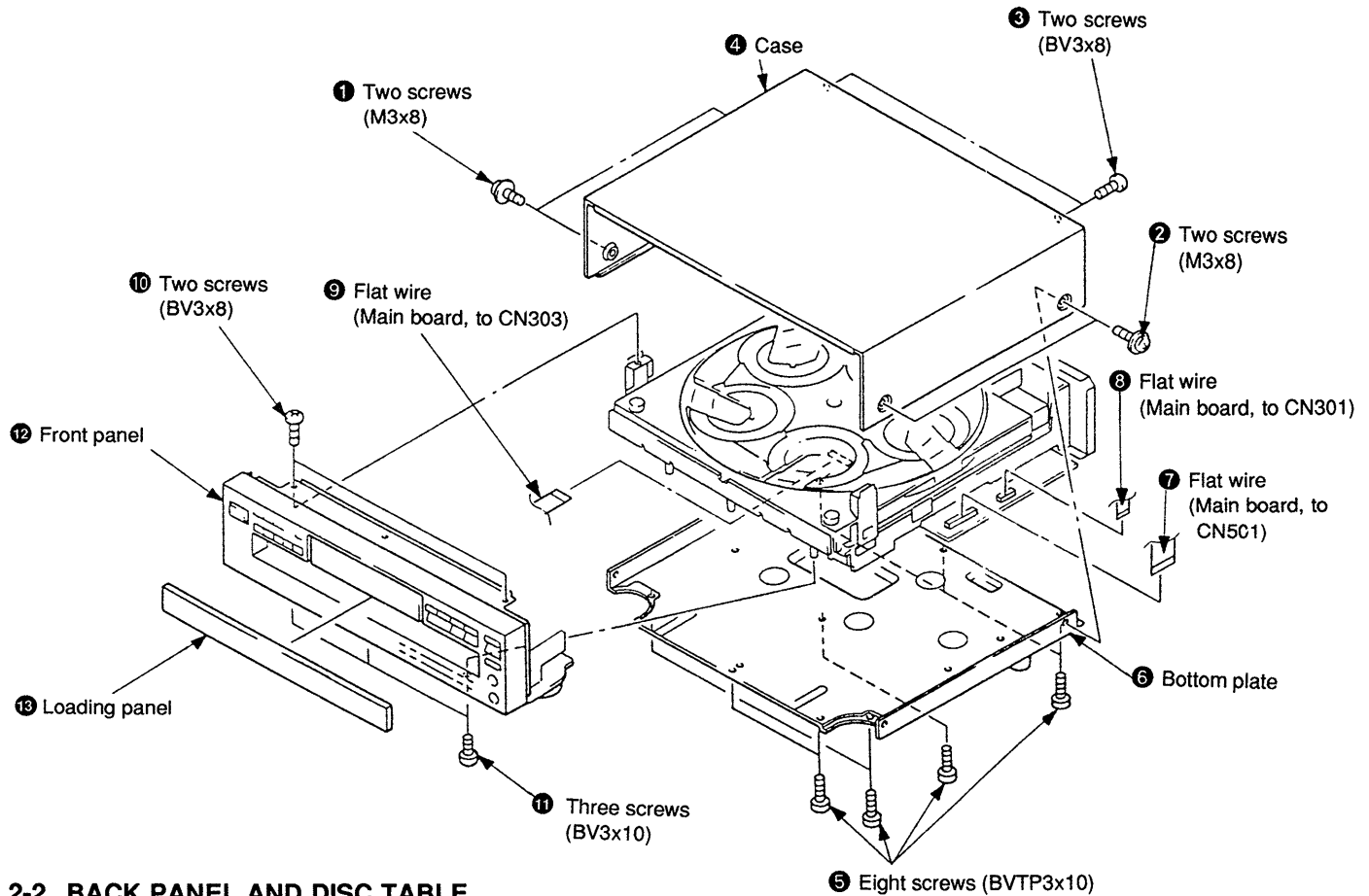
- 1 PLAY MODE buttons
 - CONTINUE button (8)
 - SHUFFLE button (13)
 - PROGRAM button (14)
- 2 Numeric buttons (10)
- 3 >10 (over 10) button (10)
- 4 DISC 1-5 buttons (8)
- 5 (play) button (8)
- 6 (pause) button (8)
- 7 (stop) button (8)
- 8 (manual search) buttons (10)
- 9 CLEAR button (14)
- 10 DISC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

Remote Commander

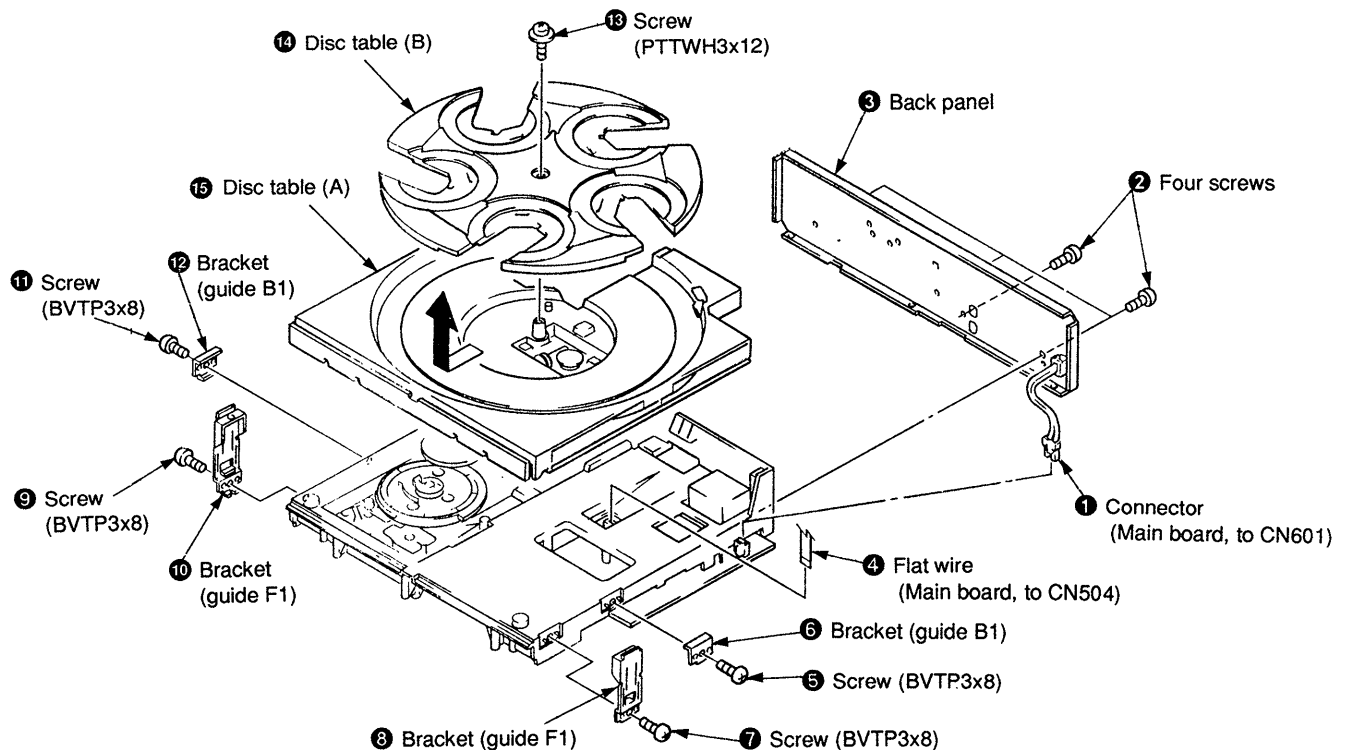


SECTION 2 DISASSEMBLY

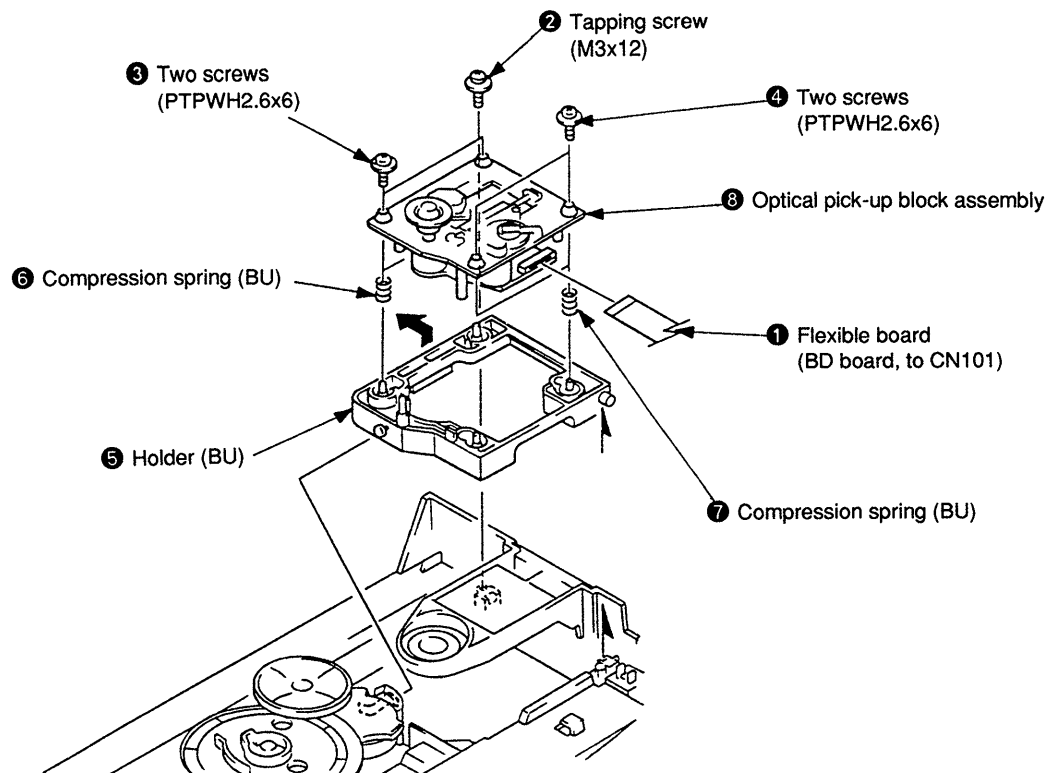
2-1. CASE, BOTTOM PLATE AND FRONT PANEL



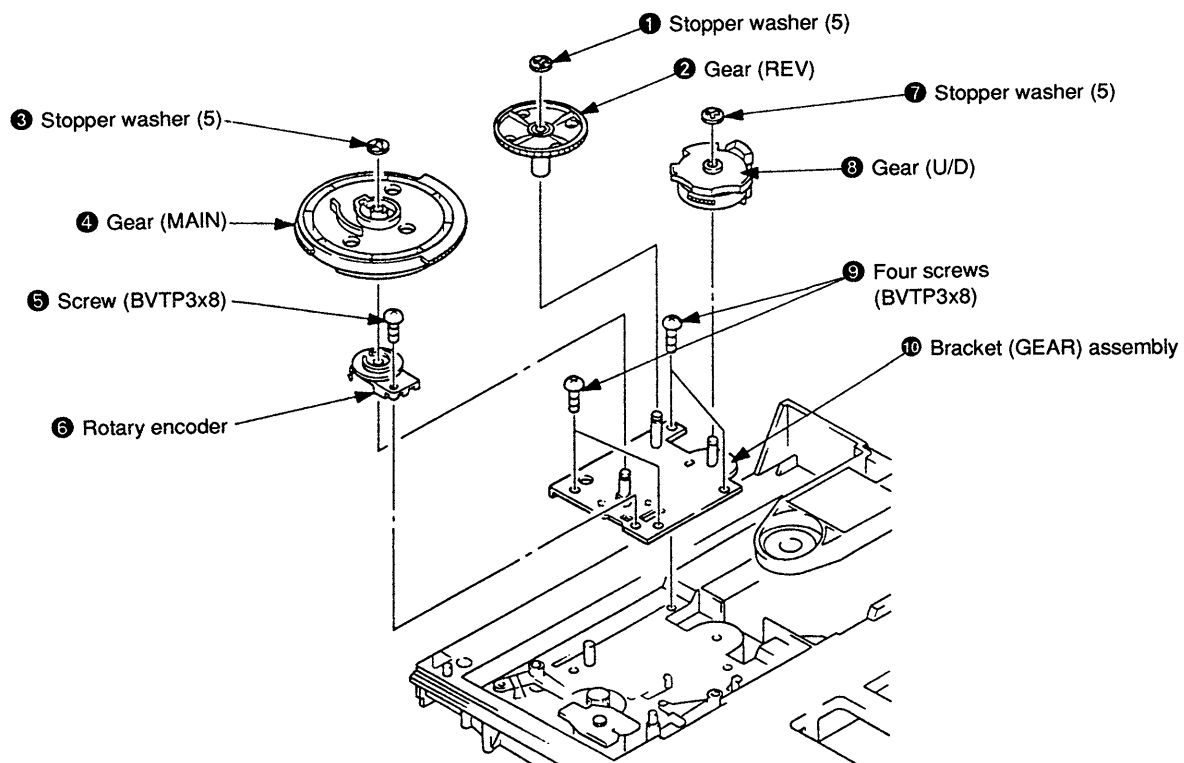
2-2. BACK PANEL AND DISC TABLE



2-3. OPTICAL PICK-UP BLOCK ASSEMBLY

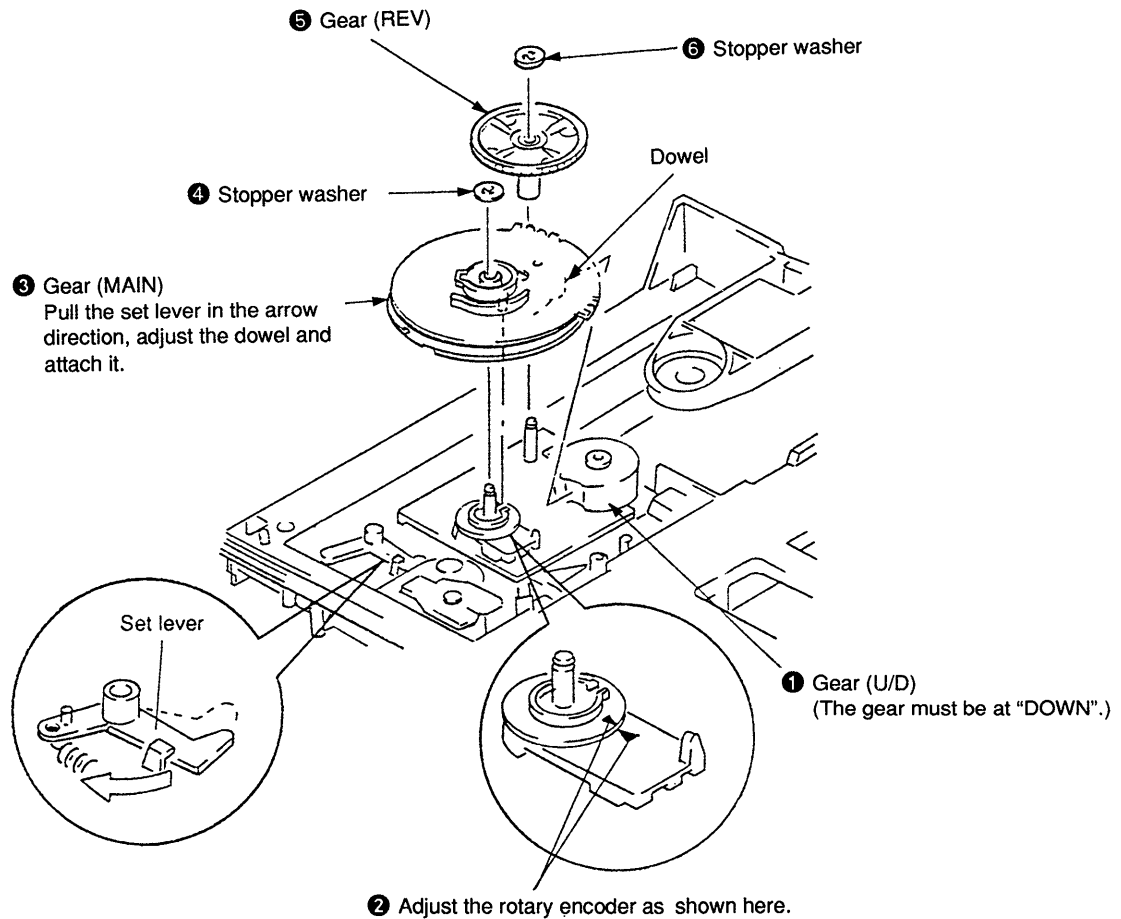


2-4. BRACKET (GEAR) ASSEMBLY



2-5. POSITIONING THE ENCODER WHEN ATTACHING THE GEAR (MAIN)

The position of the rotary encoder must be adjusted when attaching the gear (MAIN). If its position is not adjusted properly, problem may occur afterwards during operation.



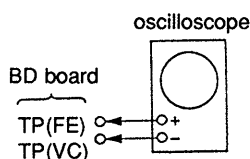
SECTION 3

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 Ω 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.

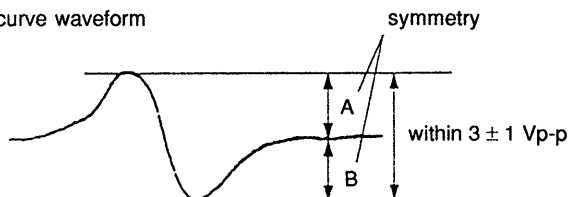
S Curve Check



Procedure :

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

S-curve waveform

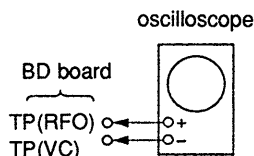


6. After check, remove the lead wire connected in step 2.

Note :

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

RF Level Check



Procedure :

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

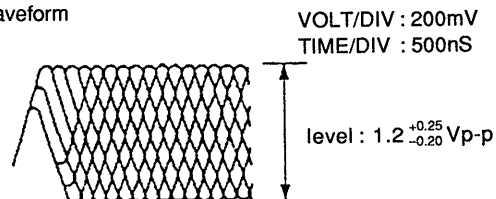
3. Put disc (YEDS-18) in and playback.

4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

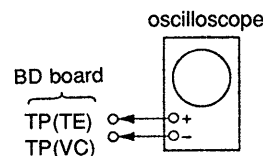
Note :

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

RF signal waveform



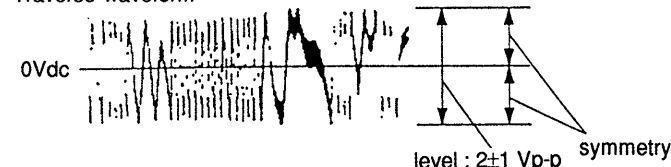
E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) on MAIN board to ground and TP(TEI) to TP (VC) 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 and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.

Traverse waveform

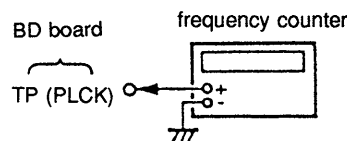


6. Remove the lead wire connected in step 1.

RF Free-run Frequency Check

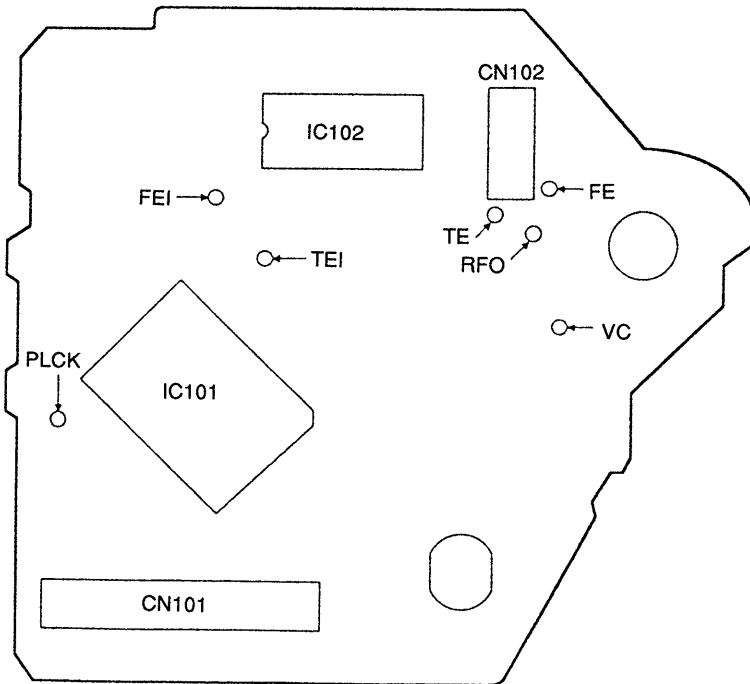
Procedure :

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

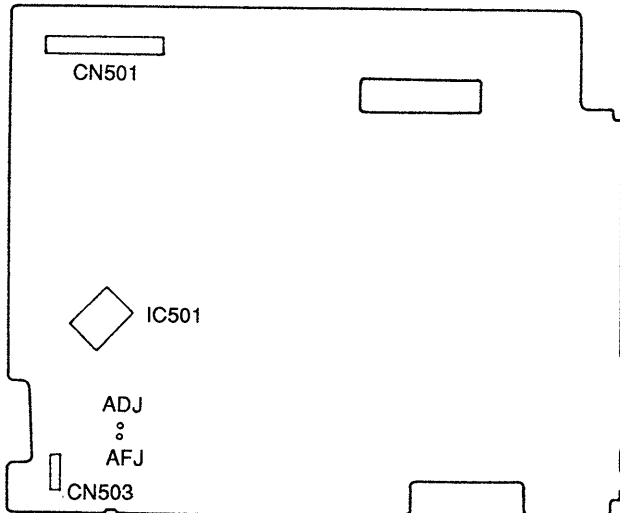


2. Turned Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location :
[BD BOARD] — Conductor Side —



[MAIN BOARD] — Conductor Side —



SECTION 4

DIAGRAMS

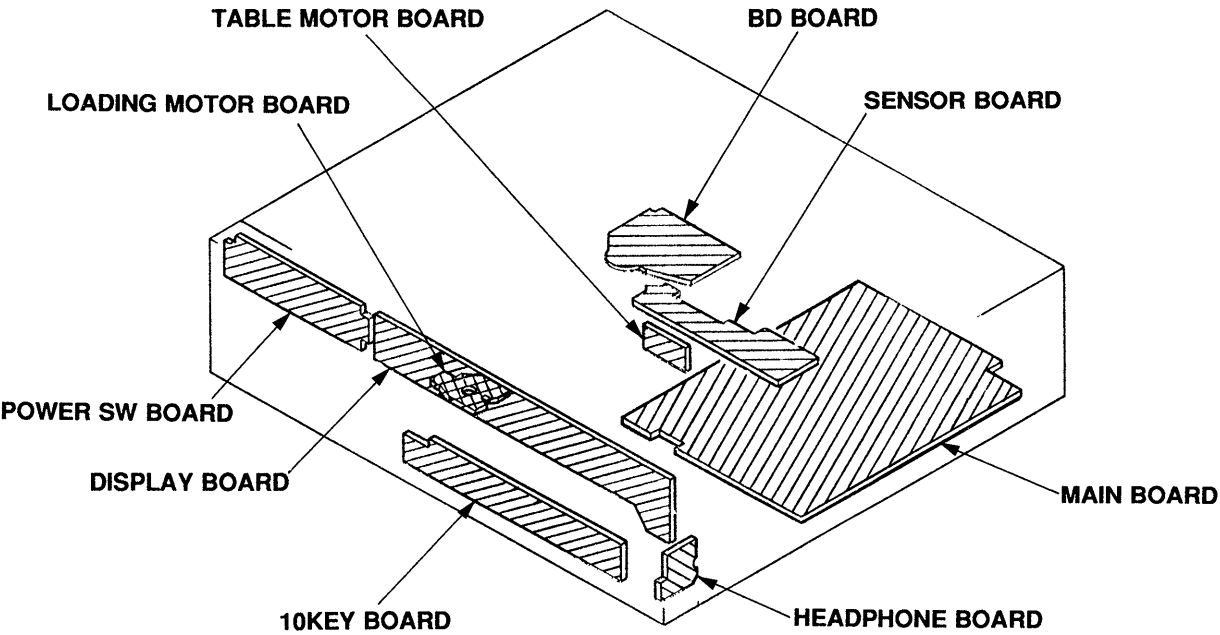
4-1. IC PIN FUNCTIONS

CXP82220-018Q (IC501) PIN FUNCTIONS

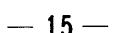
PIN No.	PIN NAME	I/O	FUNCTION
1	SENSE	I	SENSE signal input pin.
2	SCOR	I	Subcode Q data readout timing signal input pin.
3	AF ADJ	I	Test mode pin. Normally: "H"
4	RM IN	I	Remote control signal input pin.
5	ADJ	I	Test mode pin. Normally: "H"
6	A MUTE	O	Analog muting control signal output pin.
7	LDON	O	Optical pick-up laser diode control pin. ON: "H"
8	T.SENS	I	Slit sensor of disc table input pin.
9	—	—	Not used.
10	CLK	O	Serial clock output pin to BD.
11	XLT	O	Serial data latch signal output pin.
12	DATA	O	Serial data output pin.
13	SQCK	O	Subcode Q data readout clock output pin.
14	SUBQ	I	Subcode Q data input pin.
15	PRGL	O	Latch signal output pin to digital filter IC.
16	LED/	O	} Not used.
17	LED1	O	
18	LED2	O	
19	LED3	O	
20	ENC (S3)	I	Loading encoder input pin. (S3)
21	WE	O	Read/write timing output pin.
22	A12	O	S-RAM address control output pin.
23	—	—	} Not used.
24	—	—	
25	—	—	
26	—	—	
27	—	—	
28	TBLL	O	} Table motor control pin.
29	TBLR	O	
30	LDOUT	O	} Loading motor control pin.
31	LDIN	O	
32 to 36	KEY1 to KEY5	I	Key input pin. (A/D)
37	S1/2	I	Loading encoder input pin. (S1/S2)
38	RST	I	Reset signal input pin.
39	EXTAL	I	10MHz clock input pin.
40	XTAL	O	10MHz clock output pin.
41	Vss	—	GND
42	TX	—	} Not used.
43	TEX	—	
44	V-LEVEL	I	Volume level input pin. (Not used.)
45	KEY0	I	Key input pin. (A/D)

PIN No.	PIN NAME	I/O	FUNCTION
46	AVREF	I	Reference voltage input pin of A/D conversion.
47	AVss	—	GND
48 to 59	A0 to A11	O	S-RAM address control output pin.
60 to 79	S1 to S20	O	FL segment output pin.
80 to 87	G1 to G8	O	FL timing output pin.
88	VFDP	I	FL drive voltage input pin.
89	VDD	—	Power supply pin.
90	NC	—	Connected to VDD.
91	Vss	—	GND
92 to 99	D0 to D7	I/O	S-RAM data bus.
100	DSSENS	I	Disc sensor input pin.

4-2. CIRCUIT BOARDS LOCATION



— 13 —



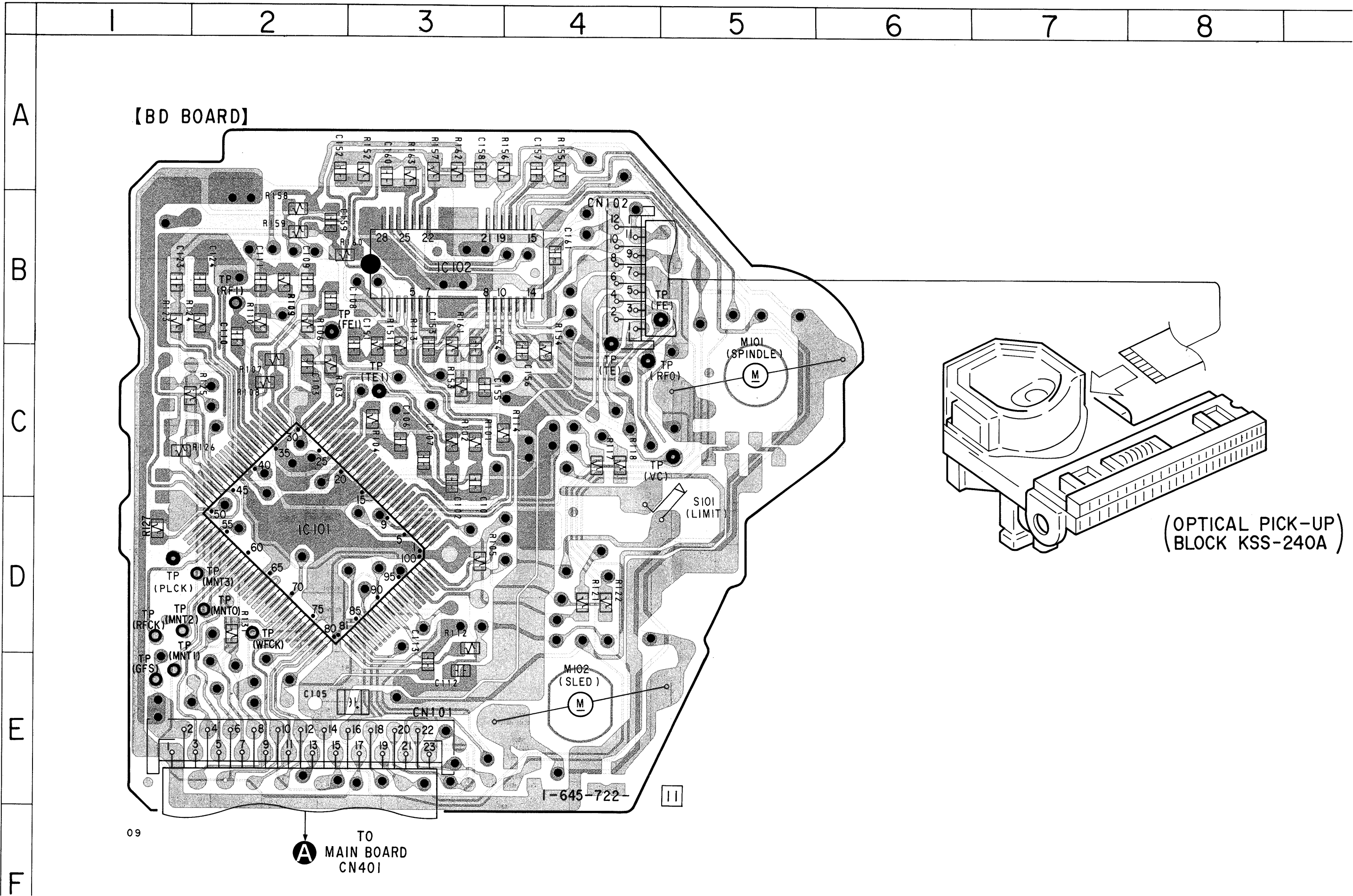
4-4. PRINTED WIRING BOARD
— BD SECTION —
• See page 12 for Circuit Boards Location.
• See page 31 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location
IC101	D-2
IC102	B-3

Note:

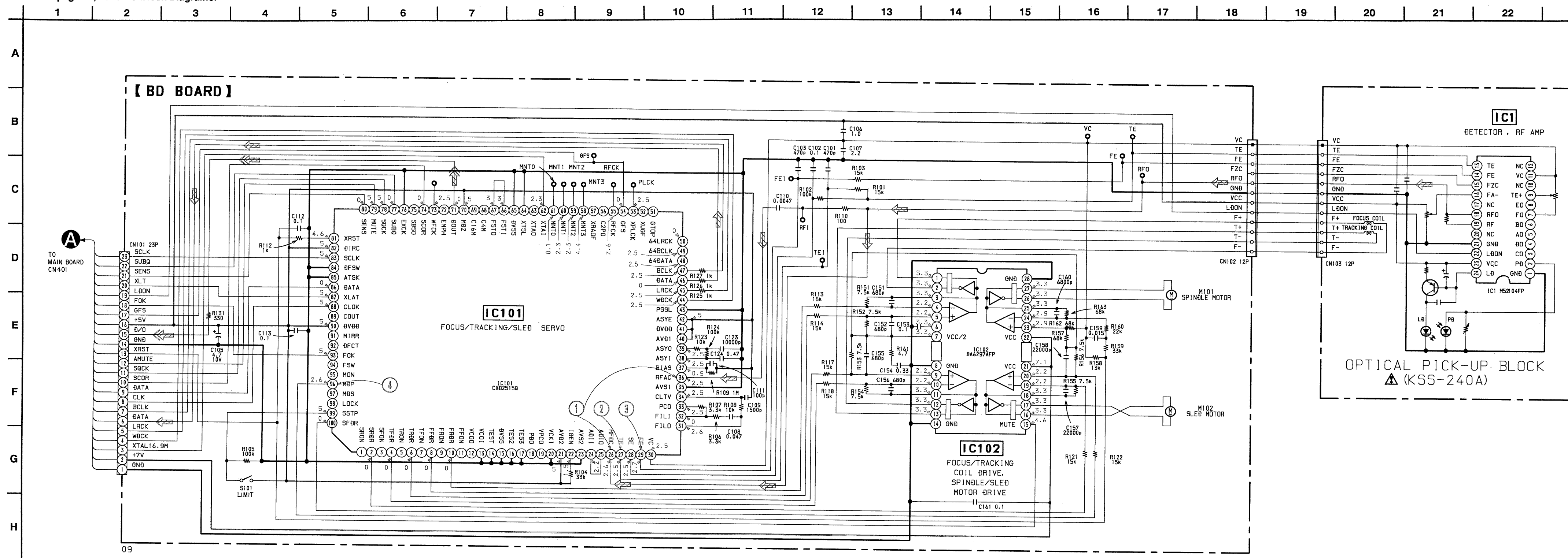
- : parts extracted from the component side.
- : Through hole.
- ▨ : Pattern from the side which enable seeing.
- ▤ : Pattern of the rear side.



4-5. SCHEMATIC DIAGRAM

— BD SECTION —

- See page 32, 33 for IC Block Diagrams.



Note:

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

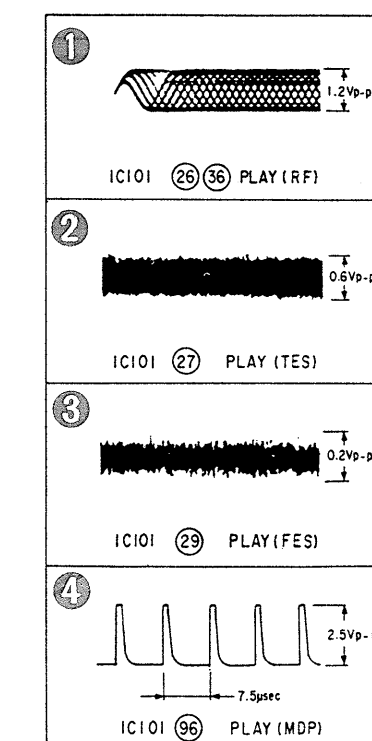
Note:

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

Note:

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

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

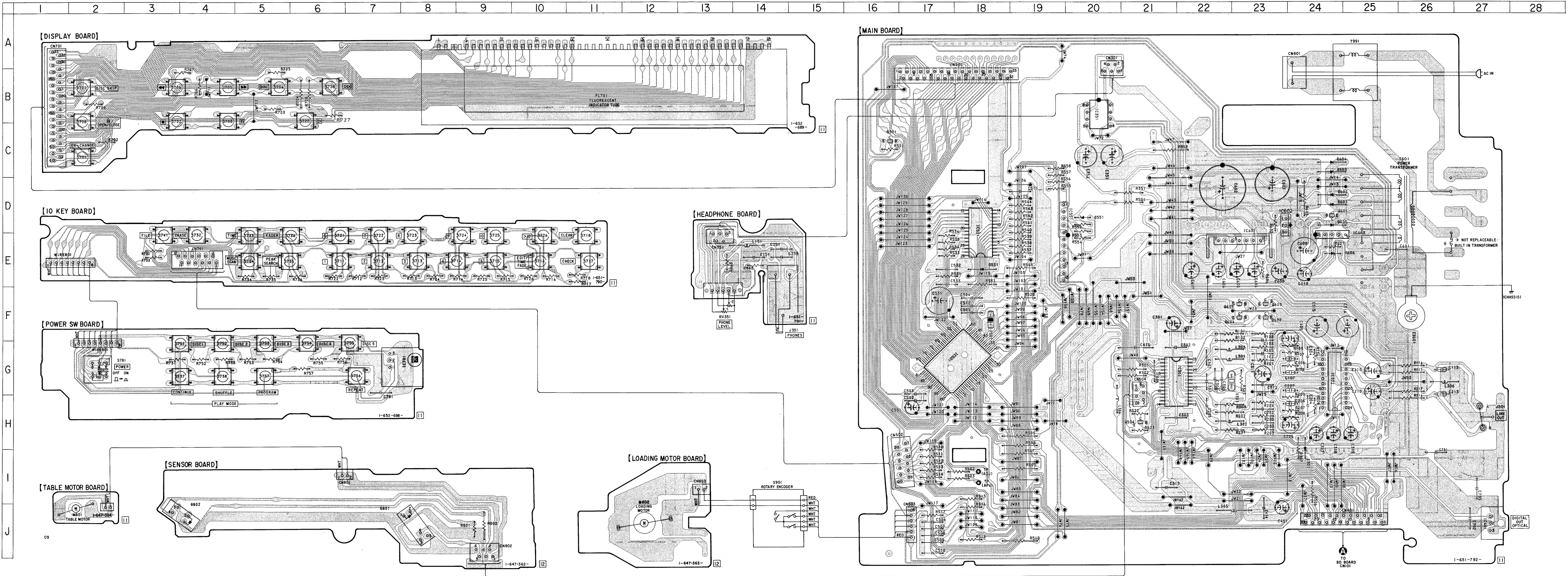


4-6. PRINTED WIRING BOARDS
— MAIN SECTION —
• See page 12 for Circuit Boards Location.
• See page 31 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location
D301	I-24
D531	E-18
D551	D-20
D601	D-24
D602	D-24
D603	D-24
D604	D-24
D605	D-24
D606	E-24
D801	J-8
D802	J-4
IC301	G-22
IC302	G-24
IC351	C-20
IC401	J-27
IC501	G-18
IC531	E-18
IC551	E-20
IC601	E-23
IC602	D-24
IC603	E-24
IC781	G-8
Q501	C-16
Q504	H-21
Q601	D-24
Q602	F-23
Q603	F-23
Q604	F-23
Q605	F-23

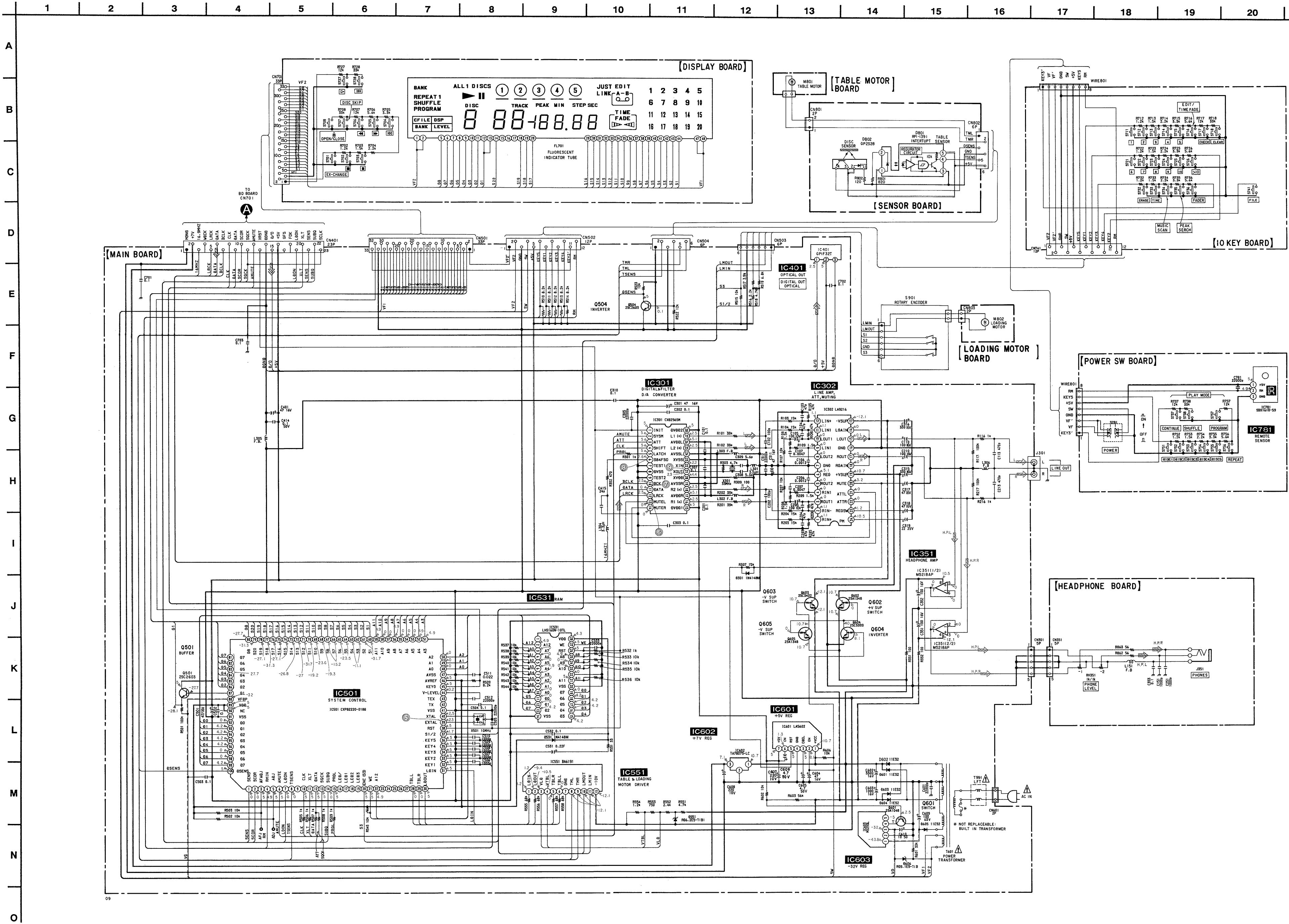
Note:
• — : parts extracted from the component side.
• — : Pattern from the side which enable seeing.



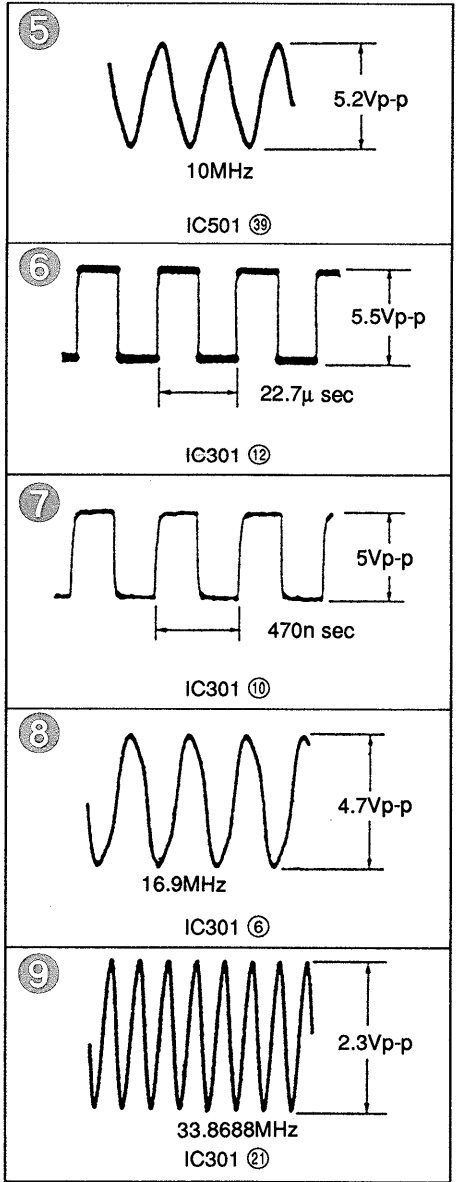
4-7. SCHEMATIC DIAGRAM

— MAIN SECTION —

- See page 10, 11 for IC Pin Functions. (IC501)
- See page 32, 33 for IC Block Diagrams.



• WAVEFORMS



Note:

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

Note:

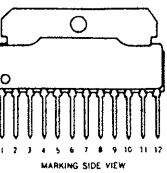
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Note:

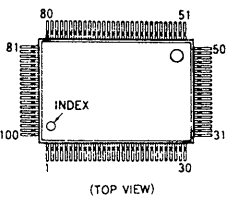
- Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
- $\square$: B+ Line
- $\square$: B- Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input impedance 10M 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
- $\Rightarrow$: digital out

4-8. SEMICONDUCTOR LEAD LAYOUTS

BA6191



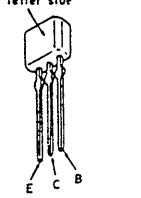
CXP82220-018Q



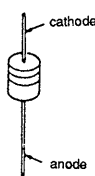
M5293L



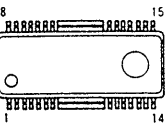
2SA1175-HFE



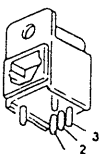
RD6.2ES-B1
RD9.1ES-L
UZ-6.2BSA-TA
11ES2



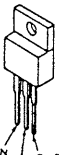
BA6297AFP



GP1F32T



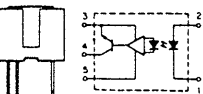
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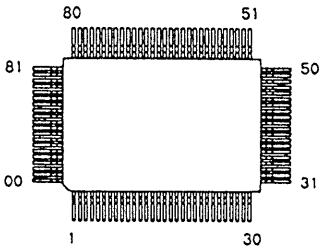
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DTC114ES
DTC144ES
2SC2603-EF



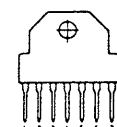
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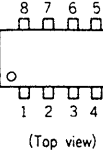
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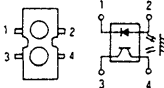
LA5602



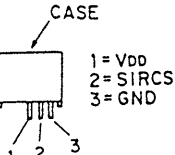
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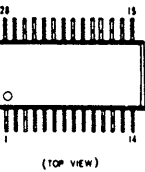
GP2S28



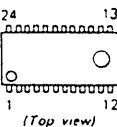
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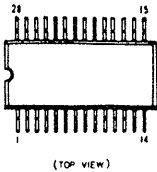
CXD2565M-1



LA9216

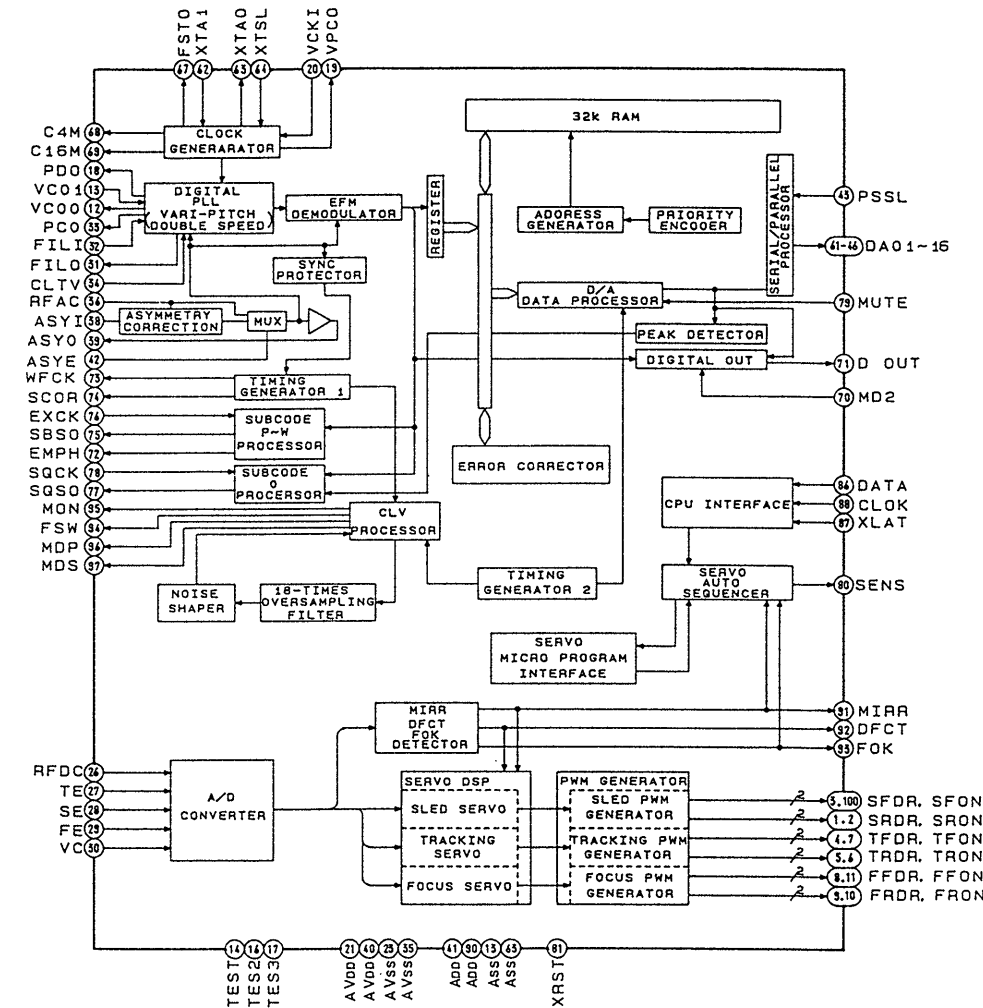


LH5160N-10L

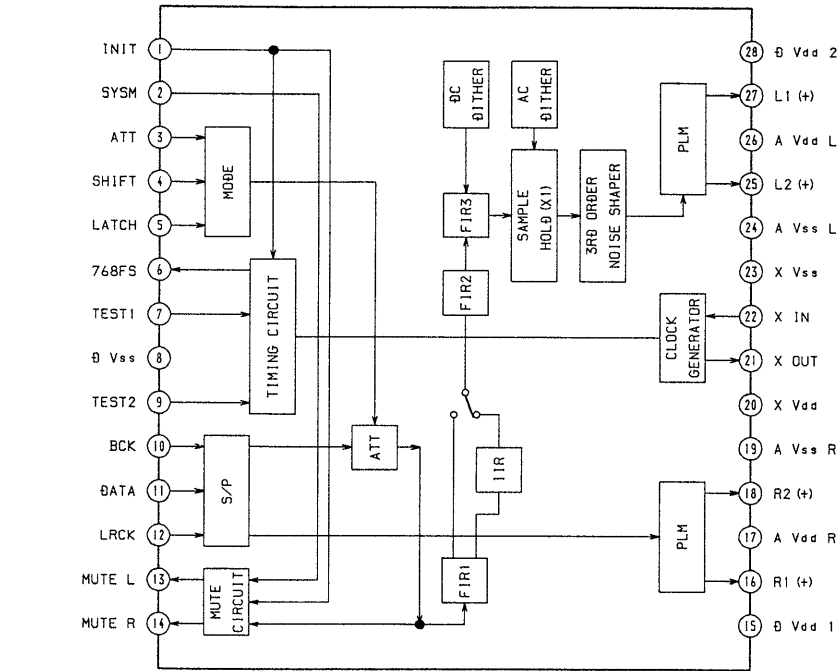


4-9. IC BLOCK DIAGRAMS

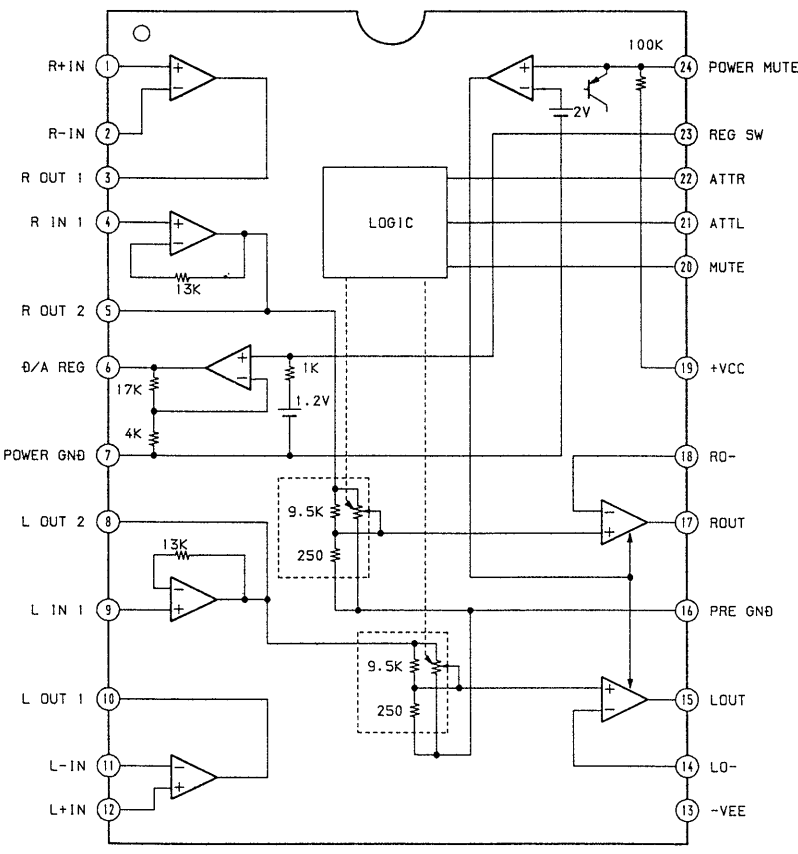
IC101 CXD2515Q



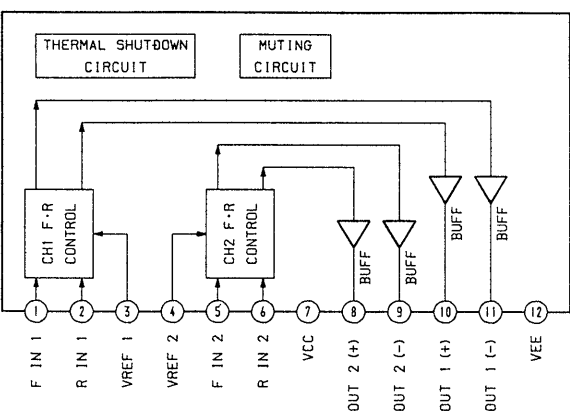
IC301 CXD2565M-1



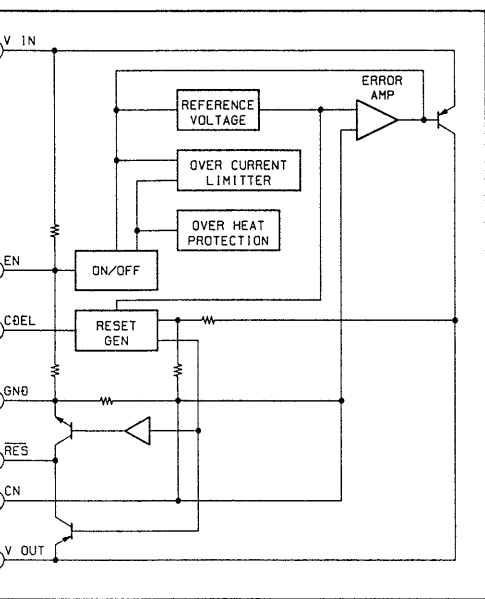
IC302 LA9216



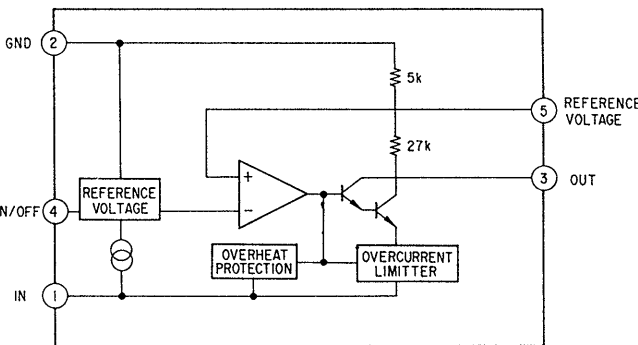
IC551 BA6191



IC601 LA5602



IC603 M5293L



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.

- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) . . . (RED)

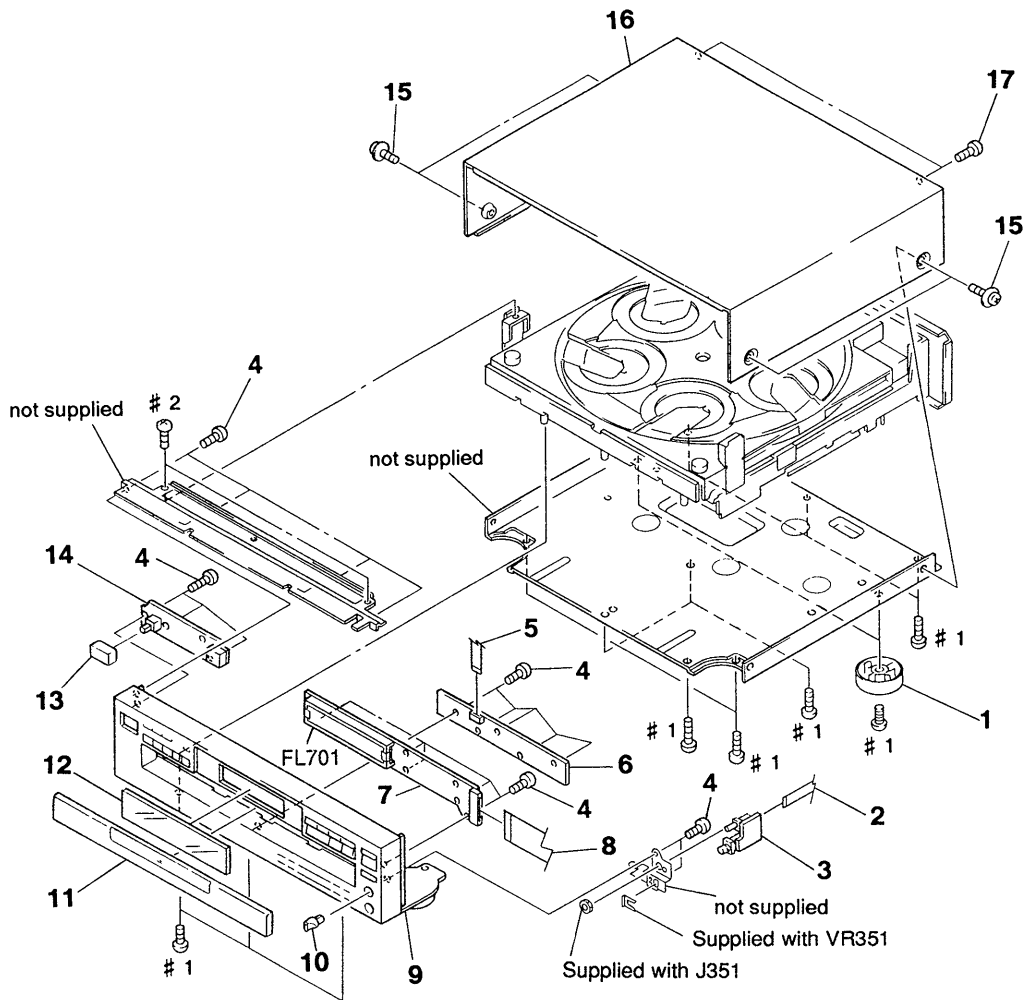
↑ ↑
Parts color Cabinet's color

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

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

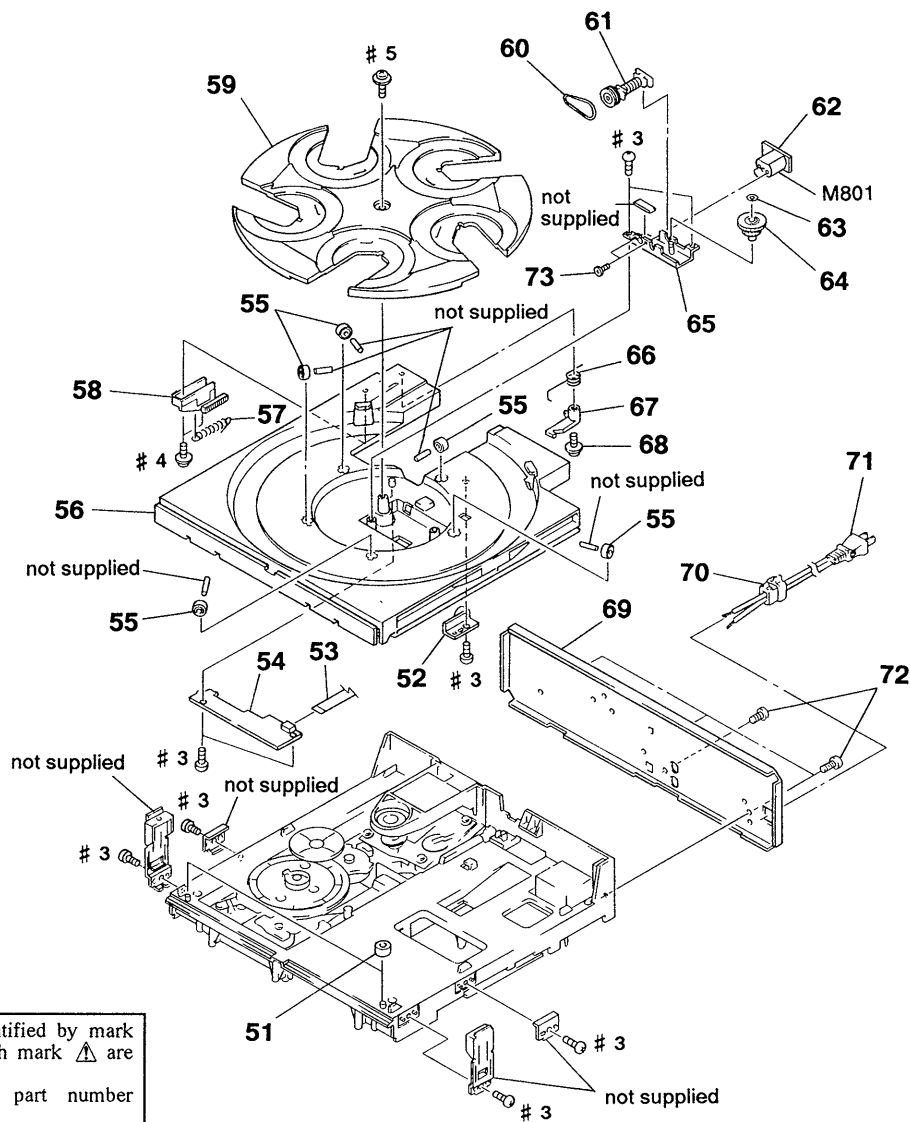
Les composants identifiés par une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-1. FRONT PANEL AND CASE ASSEMBLIES



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
1	X-4942-197-1	FOOT ASSY		11	4-964-694-01	PANEL, LOADING	
2	1-765-078-11	WIRE (FLAT TYPE) (5 CORE)		12	4-957-548-01	PLATE (FL), INDICATION	
* 3	1-651-791-11	HEADPHONE BOARD		13	4-922-921-01	BUTTON (POWER)	
4	4-951-620-01	SCREW (2.6X8), +BVTP		14	1-652-688-11	POWER SW BOARD	
5	1-751-121-11	WIRE (FLAT TYPE) (12 CORE)		15	3-704-366-01	SCREW (CASE) (M3X8)	
* 6	A-4673-071-A	10 KEY BOARD, COMPLETE		16	4-944-153-51	CASE	
* 7	A-4673-074-A	DISPLAY BOARD, COMPLETE		17	3-703-685-21	SCREW (+BV 3X8)	
8	1-751-119-11	WIRE (FLAT TYPE) (33 CORE)		FL701	1-517-164-11	INDICATOR TUBE, FLUORESCENT	
9	X-4944-687-1	PANEL ASSY, FRONT					
10	4-950-189-01	KNOB (A) (VOL)					

5-2. BACK PANEL AND DISC TABLE ASSEMBLIES



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
----------	----------	-------------

* 51	4-951-619-01	CUSHION (A)
52	X-4943-480-1	BRACKET (ROLLER D) ASSY
53	1-751-052-11	WIRE (FLAT TYPE) (6 CORE)
* 54	1-647-362-11	SENSOR BOARD
55	X-4924-457-1	ROLLER ASSY
* 56	4-957-298-01	TABLE (A), DISK
57	4-957-294-01	SPRING (D.T), TENSION
58	4-957-292-01	SLIDER (RACK)
59	4-957-299-01	TABLE (B), DISK
60	4-957-304-01	BELT (RM)
61	X-4943-479-1	GEAR (ROTARY A) ASSY
* 62	1-647-364-11	TABLE MOTOR BOARD

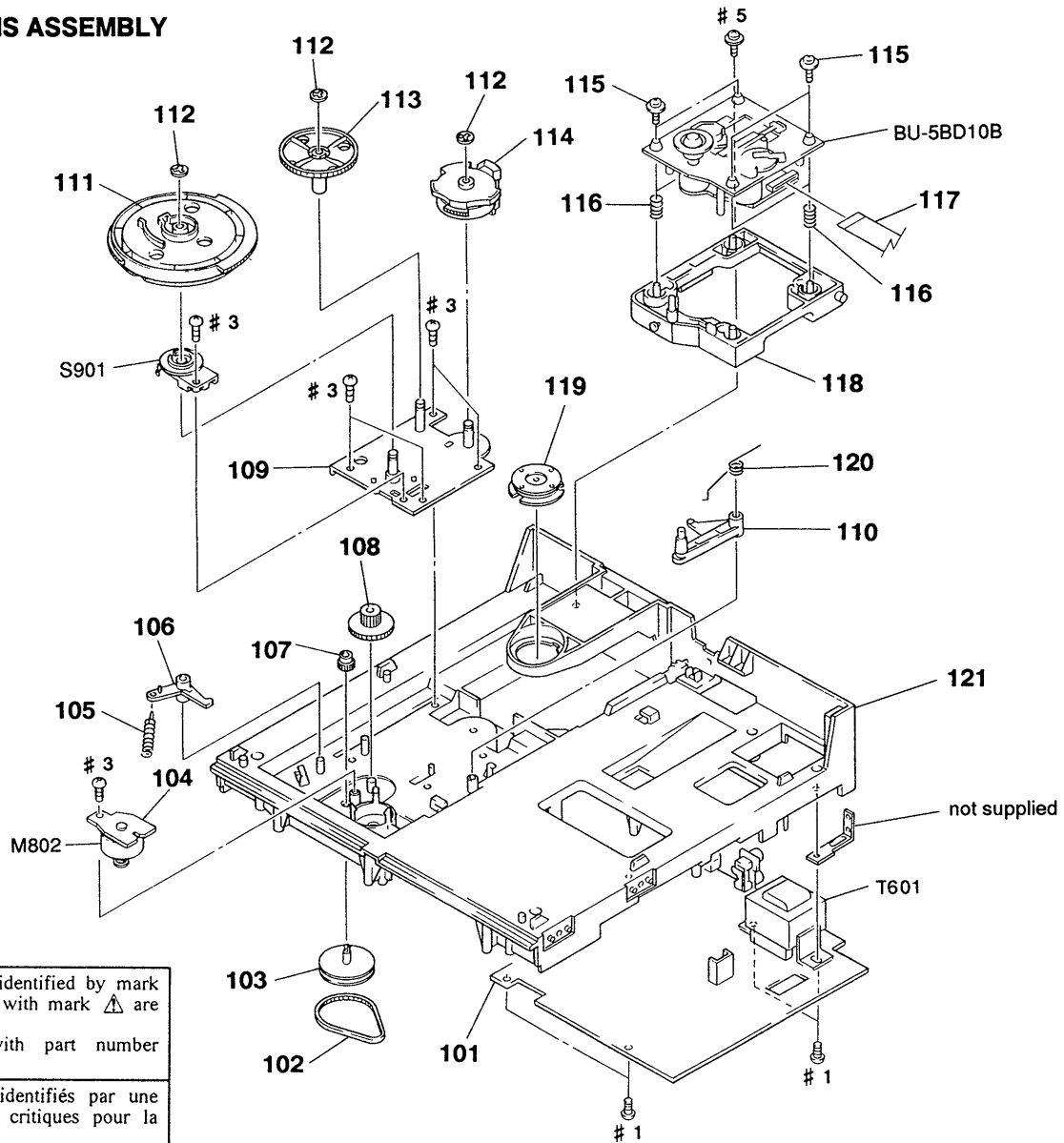
Remark

Ref. No.	Part No.	Description
----------	----------	-------------

63	3-325-697-01	WASHER
64	4-957-284-01	GEAR (LOTARY B)
65	X-4943-477-1	BRACKET (RM) ASSY
66	4-957-293-01	SPRING (RACK RELEASE)
67	4-957-291-01	LEVER (RACK RELEASE)
68	4-957-868-01	SCREW (+PTPH 2. 6X20)
* 69	4-964-324-81	PANEL, BACK
* 70	3-703-244-00	BUSHING (2104), CORD
 71	1-590-836-11	CORD, POWER
72	3-704-515-21	SCREW (BV/RING)
73	4-965-659-01	SCREW (+B 2X2. 2)
M801	A-4660-322-A	MOTOR ASSY, ROTARY (TABLE)

Remark

5-3. CHASSIS ASSEMBLY



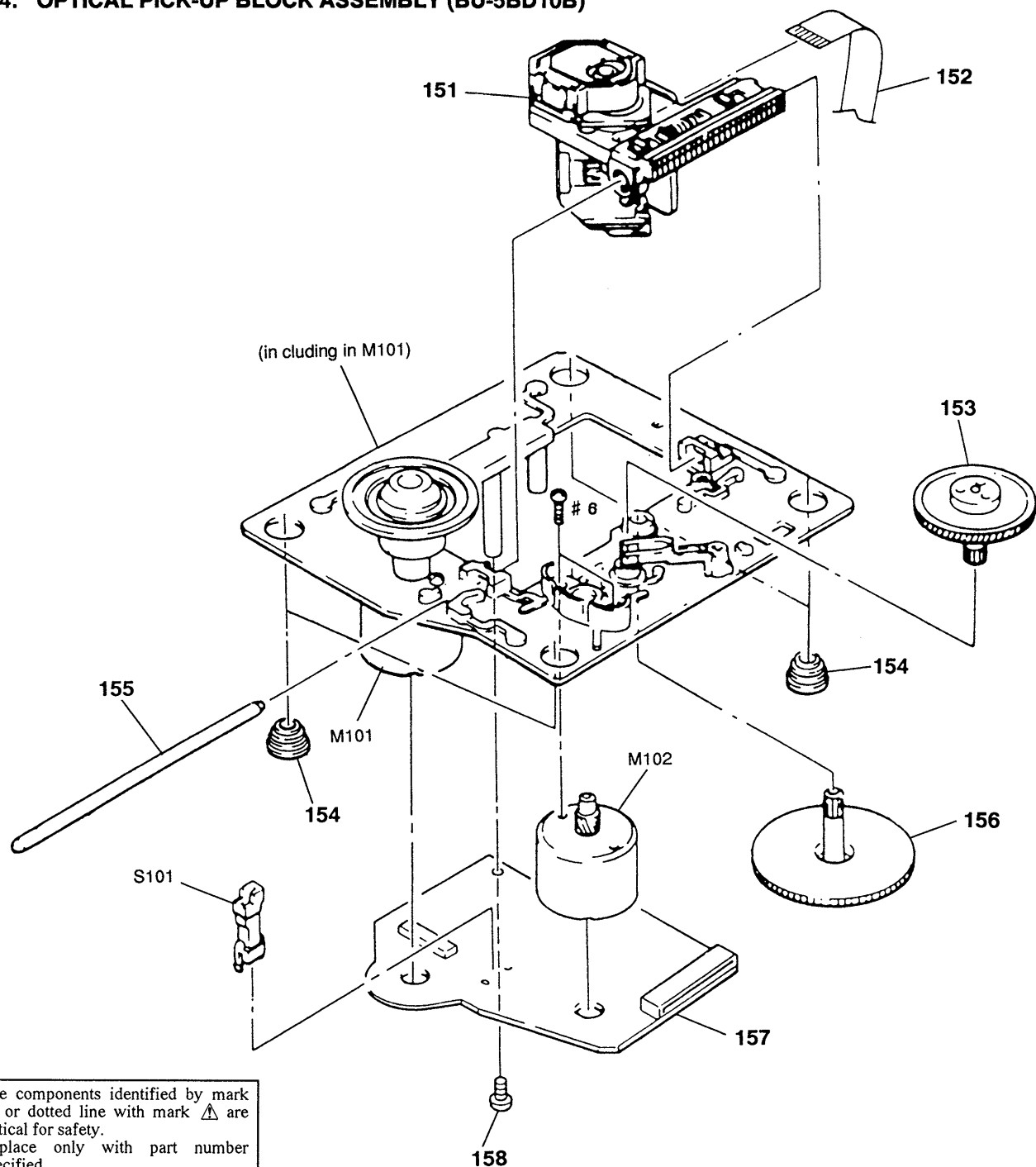
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

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
* 101	A-4673-075-A	MAIN BOARD, COMPLETE
102	4-944-490-01	BELT (TIMING)
103	X-4941-529-1	PULLEY ASSY
104	1-647-363-11	LOADING MOTOR BOARD
105	4-962-087-01	SPRING (S), TENSION
106	4-957-285-01	LEVER, SET
107	4-934-375-01	GEAR (LOADING B)
108	4-957-303-01	GEAR (LOADING C)
109	X-4943-478-1	BRACKET (GEAR) ASSY
110	4-957-279-01	LEVER, LOCK
111	4-957-288-01	GEAR (MAIN)
112	4-957-283-01	WASHER (5), STOPPER

Remark	Ref. No.	Part No.	Description	Remark
	113	4-957-287-01	GEAR (REV)	
	114	4-957-286-01	GEAR (U/D)	
	115	4-933-134-01	SCREW (+PTWH M2. 6X6)	
	116	4-948-503-01	SPRING (BU), COMPRESSION	
	117	1-765-443-11	WIRE (FLAT TYPE) (23 CORE)	
	* 118	4-957-289-01	HOLDER (BU)	
	* 119	1-452-538-11	MAGNET	
	120	4-957-281-01	SPRING (LOCK LEVER)	
	* 121	4-957-300-03	CHASSIS	
	M802	A-4604-834-A	MOTOR ASSY, LOADING	
	S901	1-466-996-11	ENCODER, ROTARY	
	 T601	1-423-553-11	TRANSFORMER, POWER	

5-4. OPTICAL PICK-UP BLOCK ASSEMBLY (BU-5BD10B)



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

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

Ref. No.	Part No.	Description
$\triangle$ 151	8-848-144-11	OPTICAL PICK-UP BLOCK (KSS-240A)
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE)
153	4-917-567-01	GEAR (M)
154	4-951-940-01	INSULATOR (BU)
155	4-917-565-01	SHAFT, SLED
156	4-917-564-01	GEAR (P), FLATNESS

Ref. No.	Part No.	Description
* 157	A-4649-432-A	BD BOARD, COMPLETE
158	4-951-620-01	SCREW (2. 6X8), +BVTP
M101	X-4917-523-3	BASE (OUTSERT) ASSY (SPINDLE)
M102	X-4917-504-1	MOTOR ASSY (SLED)
S101	1-572-085-11	SWITCH, LEAF (LIMIT)

BD

BD**DISPLAY****HEADPHONE**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
		< MOTOR >		*	A-4673-074-A	DISPLAY BOARD, COMPLETE *****	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)				< CONNECTOR >	
M102	X-4917-504-1	MOTOR ASSY (SLED)					
		< RESISTOR >		CN701	1-750-237-11	CONNECTOR, FFC/FPC 33P	
R101	1-216-077-00	METAL CHIP 15K 5% 1/10W				< FLUORESCENT INDICATOR >	
R102	1-216-097-00	METAL CHIP 100K 5% 1/10W					
R103	1-216-077-00	METAL CHIP 15K 5% 1/10W		FL701	1-517-164-11	INDICATOR TUBE, FLUORESCENT	
R104	1-216-085-00	METAL CHIP 33K 5% 1/10W				< RESISTOR >	
R105	1-216-097-00	METAL CHIP 100K 5% 1/10W					
R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W		R702	1-249-418-11	CARBON 1.2K 5% 1/4W F	
R107	1-216-061-00	METAL CHIP 3.3K 5% 1/10W		R703	1-249-419-11	CARBON 1.5K 5% 1/4W F	
R108	1-216-073-00	METAL CHIP 10K 5% 1/10W		R704	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R109	1-216-121-00	METAL CHIP 1M 5% 1/10W		R705	1-249-423-11	CARBON 3.3K 5% 1/4W F	
R110	1-216-025-00	METAL CHIP 100 5% 1/10W		R706	1-249-426-11	CARBON 5.6K 5% 1/4W	
R112	1-216-049-00	METAL CHIP 1K 5% 1/10W		R707	1-249-430-11	CARBON 12K 5% 1/4W	
R113	1-216-077-00	METAL CHIP 15K 5% 1/10W		R708	1-249-435-11	CARBON 33K 5% 1/4W	
R114	1-216-077-00	METAL CHIP 15K 5% 1/10W		R727	1-249-430-11	CARBON 12K 5% 1/4W	
R117	1-216-077-00	METAL CHIP 15K 5% 1/10W		R728	1-249-435-11	CARBON 33K 5% 1/4W	
R118	1-216-077-00	METAL CHIP 15K 5% 1/10W				< SWITCH >	
R121	1-216-077-00	METAL CHIP 15K 5% 1/10W		S701	1-554-303-21	SWITCH, TACTILE (EX-CHANGE)	
R122	1-216-077-00	METAL CHIP 15K 5% 1/10W		S702	1-554-303-21	SWITCH, TACTILE (■)	
R123	1-216-073-00	METAL CHIP 10K 5% 1/10W		S703	1-554-303-21	SWITCH, TACTILE (■)	
R124	1-216-097-00	METAL CHIP 100K 5% 1/10W		S704	1-554-303-21	SWITCH, TACTILE (◀◀)	
R125	1-216-049-00	METAL CHIP 1K 5% 1/10W		S705	1-554-303-21	SWITCH, TACTILE (▶▶)	
R126	1-216-049-00	METAL CHIP 1K 5% 1/10W		S706	1-554-303-21	SWITCH, TACTILE (◀◀)	
R127	1-216-049-00	METAL CHIP 1K 5% 1/10W		S707	1-554-303-21	SWITCH, TACTILE (DISC SKIP)	
R131	1-216-037-00	METAL CHIP 330 5% 1/10W		S708	1-554-303-21	SWITCH, TACTILE (△ OPEN/CLOSE)	
R151	1-216-070-00	METAL CHIP 7.5K 5% 1/10W		S727	1-554-303-21	SWITCH, TACTILE (▷)	
R152	1-216-070-00	METAL CHIP 7.5K 5% 1/10W		S728	1-554-303-21	SWITCH, TACTILE (▷▷)	
R153	1-216-070-00	METAL CHIP 7.5K 5% 1/10W				*****	
R154	1-216-070-00	METAL CHIP 7.5K 5% 1/10W		*	1-651-791-11	HEADPHONE BOARD *****	
R155	1-216-070-00	METAL CHIP 7.5K 5% 1/10W				< CAPACITOR >	
R156	1-216-070-00	METAL CHIP 7.5K 5% 1/10W					
R157	1-216-093-00	METAL CHIP 68K 5% 1/10W		C151	1-162-294-31	CERAMIC 0.001uF 10% 50V	
R158	1-216-076-00	METAL CHIP 13K 5% 1/10W		C251	1-162-294-31	CERAMIC 0.001uF 10% 50V	
R159	1-216-085-00	METAL CHIP 33K 5% 1/10W		C353	1-164-159-11	CERAMIC 0.1uF 50V	
R160	1-216-081-00	METAL CHIP 22K 5% 1/10W				< CONNECTOR >	
R161	1-216-308-00	METAL CHIP 4.7 5% 1/10W					
R162	1-216-093-00	METAL CHIP 68K 5% 1/10W		CN351	1-750-737-11	CONNECTOR, FFC/FPC 5P	
R163	1-216-093-00	METAL CHIP 68K 5% 1/10W				< JACK >	
		< SWITCH >					
S101	1-572-085-11	SWITCH, LEAF (LIMIT)		J351	1-750-162-41	JACK (LARGE TYPE) (PHONES)	
		*****				< COIL >	
				L151	1-412-473-21	INDUCTOR 0uH	

HEADPHONE

LOADING MOTOR

MAIN

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
< RESISTOR >				C315	1-126-025-11	ELECT	330uF 20% 16V
R862	1-249-402-11	CARBON	56 5% 1/4W F	C316	1-126-025-11	ELECT	330uF 20% 16V
R863	1-249-402-11	CARBON	56 5% 1/4W F	C317	1-126-022-11	ELECT	47uF 20% 16V
< VARIABLE RESISTOR >				C318	1-126-022-11	ELECT	47uF 20% 16V
RV351	1-223-359-11	RES, VAR, CARBON 1K/1K (PHONE VOLUME)		C319	1-126-049-11	ELECT	22uF 20% 25V
*****				C351	1-126-023-11	ELECT	100uF 20% 16V
*	1-647-363-11	LOADING MOTOR BOARD	*****	C352	1-126-023-11	ELECT	100uF 20% 16V
< MOTOR >				C401	1-126-022-11	ELECT	47uF 20% 16V
M802	A-4604-834-A	MOTOR ASSY, LOADING		C414	1-164-159-11	CERAMIC	0.1uF 50V
*****				C415	1-162-208-31	CERAMIC	24PF 5% 50V
*	A-4673-075-A	MAIN BOARD, COMPLETE	*****	C501	1-126-022-11	ELECT	47uF 20% 16V
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		C502	1-164-159-11	CERAMIC	0.1uF 50V
< CAPACITOR >				C503	1-164-159-11	CERAMIC	0.1uF 50V
C101	1-164-159-11	CERAMIC	0.1uF 50V	C504	1-164-159-11	CERAMIC	0.1uF 50V
C102	1-162-282-31	CERAMIC	100PF 10% 50V	C505	1-161-494-00	CERAMIC	0.022uF 25V
C103	1-162-215-31	CERAMIC	47PF 5% 50V	C506	1-162-294-31	CERAMIC	0.001uF 10% 50V
C104	1-162-215-31	CERAMIC	47PF 5% 50V	C507	1-162-294-31	CERAMIC	0.001uF 10% 50V
C105	1-124-994-11	ELECT	100uF 20% 10V	C508	1-162-294-31	CERAMIC	0.001uF 10% 50V
C106	1-130-472-00	MYLAR	0.0012uF 5% 50V	C509	1-162-294-31	CERAMIC	0.001uF 10% 50V
C107	1-106-359-00	MYLAR	4700PF 5% 200V	C510	1-162-294-31	CERAMIC	0.001uF 10% 50V
C110	1-124-994-11	ELECT	100uF 20% 10V	C511	1-161-494-00	CERAMIC	0.022uF 25V
C113	1-130-467-00	MYLAR	470PF 5% 50V	C512	1-161-494-00	CERAMIC	0.022uF 25V
C201	1-164-159-11	CERAMIC	0.1uF 50V	C531	1-104-905-11	CAP, DOUBLE LAYERS	0.22F
C202	1-162-282-31	CERAMIC	100PF 10% 50V	C532	1-164-159-11	CERAMIC	0.1uF 50V
C203	1-162-215-31	CERAMIC	47PF 5% 50V	C533	1-161-494-00	CERAMIC	0.022uF 25V
C204	1-162-215-31	CERAMIC	47PF 5% 50V	C601	1-161-494-00	CERAMIC	0.022uF 25V
C205	1-124-994-11	ELECT	100uF 20% 10V	C602	1-124-887-00	ELECT	3300uF 20% 16V
C206	1-130-472-00	MYLAR	0.0012uF 5% 50V	C603	1-124-360-00	ELECT	1000uF 20% 16V
C207	1-106-359-00	MYLAR	4700PF 5% 200V	C604	1-126-022-11	ELECT	47uF 20% 16V
C210	1-124-994-11	ELECT	100uF 20% 10V	C605	1-126-163-11	ELECT	4.7uF 20% 50V
C213	1-130-467-00	MYLAR	470PF 5% 50V	C606	1-126-163-11	ELECT	4.7uF 20% 50V
C301	1-126-022-11	ELECT	47uF 20% 16V	C607	1-126-101-11	ELECT	100uF 20% 16V
C302	1-164-159-11	CERAMIC	0.1uF 50V	C608	1-126-101-11	ELECT	100uF 20% 16V
C303	1-164-159-11	CERAMIC	0.1uF 50V	C609	1-124-572-11	ELECT	100uF 20% 63V
C305	1-161-494-00	CERAMIC	0.022uF 25V	C610	1-126-059-11	ELECT	10uF 20% 50V
C307	1-164-159-11	CERAMIC	0.1uF 50V	C701	1-164-159-11	CERAMIC	0.1uF 50V
C308	1-162-196-31	CERAMIC	5.6PF 10% 50V	C702	1-164-159-11	CERAMIC	0.1uF 50V
C309	1-162-196-31	CERAMIC	5.6PF 10% 50V	C703	1-164-159-11	CERAMIC	0.1uF 50V
C310	1-164-159-11	CERAMIC	0.1uF 50V	< CONNECTOR >			
C311	1-126-022-11	ELECT	47uF 20% 16V	CN301	1-750-997-11	CONNECTOR, FFC/FPC 5P	
C312	1-161-494-00	CERAMIC	0.022uF 25V	CN401	1-750-640-11	CONNECTOR, FFC/FPC 23P	
< DIODE >				CN501	1-695-218-11	SOCKET, CONNECTOR 33P	
D301	8-719-987-63	DIODE	1N4148M	CN502	1-568-855-11	SOCKET, CONNECTOR 12P	
				CN504	1-750-223-11	CONNECTOR, FFC/FPC 6P	
				CN601	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
D531	8-719-987-63	DIODE 1N4148M		R106	1-249-437-11	CARBON 47K 5% 1/4W	
D551	8-719-109-92	DIODE RD6. 2ES-B1		R107	1-249-429-11	CARBON 10K 5% 1/4W	
D601	8-719-200-82	DIODE 11ES2		R108	1-249-419-11	CARBON 1.5K 5% 1/4W	F
D602	8-719-200-82	DIODE 11ES2		R109	1-249-419-11	CARBON 1.5K 5% 1/4W	F
D603	8-719-200-82	DIODE 11ES2		R116	1-249-417-11	CARBON 1K 5% 1/4W	F
D604	8-719-200-82	DIODE 11ES2		R117	1-249-441-11	CARBON 100K 5% 1/4W	
D605	8-719-200-82	DIODE 11ES2		R201	1-249-436-11	CARBON 39K 5% 1/4W	
D606	8-719-121-24	DIODE RD9. 1ES-L		R202	1-249-436-11	CARBON 39K 5% 1/4W	
< GROUND PLATE >				R203	1-249-431-11	CARBON 15K 5% 1/4W	
* EB601	4-870-539-00	PLATE, GROUND		R204	1-249-431-11	CARBON 15K 5% 1/4W	
< IC >				R205	1-249-437-11	CARBON 47K 5% 1/4W	
IC301	8-752-360-60	IC CXD2565M-1		R206	1-249-437-11	CARBON 47K 5% 1/4W	
IC302	8-759-160-55	IC LA9216		R207	1-249-429-11	CARBON 10K 5% 1/4W	
IC351	8-759-634-51	IC M5218AP		R208	1-249-419-11	CARBON 1.5K 5% 1/4W	F
IC401	8-749-921-12	IC GP1F32T		R209	1-249-419-11	CARBON 1.5K 5% 1/4W	F
IC501	8-752-854-46	IC CXP82220-018Q		R216	1-249-417-11	CARBON 1K 5% 1/4W	F
IC531	8-759-512-81	IC LH5160N-10L		R217	1-249-441-11	CARBON 100K 5% 1/4W	
IC551	8-759-172-31	IC BA6191		R301	1-249-417-11	CARBON 1K 5% 1/4W	F
IC601	8-759-061-65	IC LA5602		R302	1-249-413-11	CARBON 470 5% 1/4W	F
IC602	8-759-605-00	IC M5F78M07L		R303	1-249-425-11	CARBON 4.7K 5% 1/4W	F
IC603	8-759-633-42	IC M5293L		R307	1-249-429-11	CARBON 10K 5% 1/4W	
< JACK >				R309	1-247-807-31	CARBON 100 5% 1/4W	
J301	1-750-679-11	JACK, PIN 2P (LINE OUT)		R351	1-247-807-31	CARBON 100 5% 1/4W	
< COIL >				R352	1-247-807-31	CARBON 100 5% 1/4W	
L301	1-412-297-11	INDUCTOR 3.3uH		R501	1-249-441-11	CARBON 100K 5% 1/4W	
L302	1-412-473-21	INDUCTOR 0uH		R502	1-249-429-11	CARBON 10K 5% 1/4W	
L303	1-412-473-21	INDUCTOR 0uH		R503	1-249-429-11	CARBON 10K 5% 1/4W	
L304	1-412-297-11	INDUCTOR 3.3uH		R505	1-249-417-11	CARBON 1K 5% 1/4W	F
L305	1-412-473-21	INDUCTOR 0uH		R506	1-249-417-11	CARBON 1K 5% 1/4W	F
L306	1-412-473-21	INDUCTOR 0uH		R507	1-249-417-11	CARBON 1K 5% 1/4W	F
< TRANSISTOR >				R508	1-249-417-11	CARBON 1K 5% 1/4W	F
Q501	8-729-620-05	TRANSISTOR 2SC2603-EF		R509	1-249-417-11	CARBON 1K 5% 1/4W	F
Q504	8-729-620-05	TRANSISTOR 2SC2603-EF		R510	1-249-428-11	CARBON 8.2K 5% 1/4W	F
Q601	8-729-119-76	TRANSISTOR 2SA1175-HFE		R511	1-249-428-11	CARBON 8.2K 5% 1/4W	F
Q602	8-729-900-61	TRANSISTOR DTA114ES		R512	1-249-428-11	CARBON 8.2K 5% 1/4W	F
Q603	8-729-900-80	TRANSISTOR DTC114ES		R513	1-249-428-11	CARBON 8.2K 5% 1/4W	F
Q604	8-729-900-89	TRANSISTOR DTC144ES		R514	1-249-428-11	CARBON 8.2K 5% 1/4W	F
Q605	8-729-900-61	TRANSISTOR DTA114ES		R515	1-249-429-11	CARBON 10K 5% 1/4W	
< RESISTOR >				R516	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R101	1-249-436-11	CARBON 39K 5% 1/4W		R517	1-249-424-11	CARBON 3.9K 5% 1/4W	F
R102	1-249-436-11	CARBON 39K 5% 1/4W		R518	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R103	1-249-431-11	CARBON 15K 5% 1/4W		R519	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R104	1-249-431-11	CARBON 15K 5% 1/4W		R520	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R105	1-249-437-11	CARBON 47K 5% 1/4W		R522	1-249-430-11	CARBON 12K 5% 1/4W	
				R523	1-249-429-11	CARBON 10K 5% 1/4W	
				R531	1-249-399-11	CARBON 33 5% 1/4W	F
				R532	1-249-417-11	CARBON 1K 5% 1/4W	F
				R533	1-249-429-11	CARBON 10K 5% 1/4W	
				R534	1-249-429-11	CARBON 10K 5% 1/4W	
				R535	1-249-429-11	CARBON 10K 5% 1/4W	

MAIN

POWER SW

SENSOR

TABLE MOTOR

Ref.No.	Part No.	Description	Remark
R536	1-249-429-11	CARBON	10K 5% 1/4W
R537	1-249-429-11	CARBON	10K 5% 1/4W
R538	1-249-429-11	CARBON	10K 5% 1/4W
R539	1-249-429-11	CARBON	10K 5% 1/4W
R540	1-249-429-11	CARBON	10K 5% 1/4W
R541	1-249-429-11	CARBON	10K 5% 1/4W
R542	1-249-429-11	CARBON	10K 5% 1/4W
R543	1-249-429-11	CARBON	10K 5% 1/4W
R544	1-249-429-11	CARBON	10K 5% 1/4W
R545	1-249-429-11	CARBON	10K 5% 1/4W
R551	1-249-425-11	CARBON	4.7K 5% 1/4W F
R552	1-247-840-00	CARBON	2.4K 5% 1/4W
R553	1-247-828-11	CARBON	750 5% 1/4W
R554	1-249-418-11	CARBON	1.2K 5% 1/4W F
R555	1-249-439-11	CARBON	68K 5% 1/4W
R556	1-249-439-11	CARBON	68K 5% 1/4W
R557	1-249-439-11	CARBON	68K 5% 1/4W
R558	1-249-439-11	CARBON	68K 5% 1/4W
R601	1-249-435-11	CARBON	33K 5% 1/4W
R602	1-249-429-11	CARBON	10K 5% 1/4W
R603	1-249-438-11	CARBON	56K 5% 1/4W
R606	1-249-429-11	CARBON	10K 5% 1/4W
< TRANSFORMER >			
△T601	1-423-553-11	TRANSFORMER, POWER	
△T991	1-421-915-11	COIL, LINE FILTER	
< VIBRATOR >			
X301	1-579-834-11	VIBRATOR, CRYSTAL (33MHz)	
X501	1-579-175-11	VIBRATOR, CERAMIC (10MHz)	

*	1-652-688-11	POWER SW BOARD	

< CAPACITOR >			
C781	1-161-494-00	CERAMIC	0.022uF 25V
< IC >			
IC781	8-741-100-48	IC	SBX1610-59
< RESISTOR >			
R737	1-249-430-11	CARBON	12K 5% 1/4W
R738	1-249-435-11	CARBON	33K 5% 1/4W
R752	1-249-418-11	CARBON	1.2K 5% 1/4W F
R753	1-249-419-11	CARBON	1.5K 5% 1/4W F
R754	1-249-421-11	CARBON	2.2K 5% 1/4W F
R755	1-249-423-11	CARBON	3.3K 5% 1/4W F
R756	1-249-426-11	CARBON	5.6K 5% 1/4W

Ref.No.	Part No.	Description	Remark
R757	1-249-430-11	CARBON	12K 5% 1/4W
< SWITCH >			
S737	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S738	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S751	1-554-303-21	SWITCH, TACTILE (DISC 1)	
S752	1-554-303-21	SWITCH, TACTILE (DISC 2)	
S753	1-554-303-21	SWITCH, TACTILE (DISC 3)	
S754	1-554-303-21	SWITCH, TACTILE (DISC 4)	
S755	1-554-303-21	SWITCH, TACTILE (DISC 5)	
S756	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S757	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S781	1-572-714-11	SWITCH, PUSH (POWER)	

*	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 RPI-1391	
D802	8-749-924-30	DIODE 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-4660-322-A	MOTOR ASSY, ROTARY (TABLE)	

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
		MISCELLANEOUS *****	
2	1-765-078-11	WIRE (FLAT TYPE) (5 CORE)	
5	1-751-121-11	WIRE (FLAT TYPE) (12 CORE)	
8	1-751-119-11	WIRE (FLAT TYPE) (33 CORE)	
53	1-751-052-11	WIRE (FLAT TYPE) (6 CORE)	
△71	1-590-836-11	CORD, POWER	
117	1-765-443-11	WIRE (FLAT TYPE) (23 CORE)	
* 119	1-452-538-11	MAGNET	
△151	8-848-144-11	OPTICAL PICK-UP BLOCK (KSS-240A)	
152	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
FL701	1-517-164-11	INDICATOR TUBE, FLUORESCENT	
M101	X-4917-523-3	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	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
S901	1-466-996-11	ENCODER, ROTARY	
△T601	1-423-553-11	TRANSFORMER, POWER	

		ACCESSORIES & PACKING MATERIALS *****	
	1-467-123-11	REMOTE COMMANDER (RM-D335)	
	1-558-271-11	CORD, CONNECTION (AUDIO 108CM)	
	3-758-300-21	MANUAL, INSTRUCTION (ENGLISH)	
	3-758-300-31	MANUAL, INSTRUCTION (FRENCH) (CND)	
*	4-949-235-01	HOOK	
	4-959-044-01	COVER, BATTERY (for RM-D335)	
*	4-965-248-01	INDIVIDUAL CARTON	
*	4-965-971-01	CUSHION (FRONT)	
*	4-965-972-01	CUSHION (REAR)	

		***** HARDWARE LIST *****	
#1	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#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 +PTPWH 2.6X8 (TYPE2)	
#5	7-685-648-79	SCREW (M3X12), TAPPING	
#6	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.

CDP-C445

SONY[®] SERVICE MANUAL

*US Model
Canadian Model*

SUPPLEMENT-1

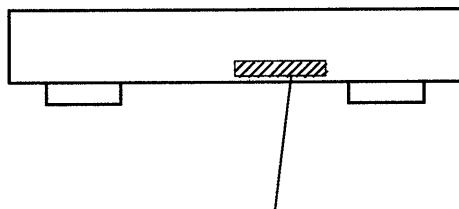
File this supplement with the service manual.

**Subject : 1. Service parts changed (For Japan production)
2. Malaysia production model
3. Addition of the BU-5BD20
(Malaysia production model only)**

(ENG-95015)

- **How to identify production which made in Malaysia.**

— BACK PANEL —



Made in Malaysia : 4-975-544-0□

Made in Japan : 4-964-324-8□

- Canadian model is produced at Japan only.
Therefore, these informations are not related
for Canadian model.

NOTE:

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.

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
F : nonflammable

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

1. SERVICE PARTS CHANGED (For Japan production)

Change of parts for Japan production. (Exploded view)

Page	FORMER			NEW		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
35	72	3-704-515-21	SCREW (BV/RING)			

Change of parts for Japan production. (Complete board)

Page	FORMER			NEW		
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
40		** MAIN BOARD **			** MAIN BOARD **	
	C602	1-124-887-00	ELECT 3300uF 20% 16V	C602	1-128-489-11	ELECT 3300uF 20% 16V
	J301	1-750-679-21	JACK, PIN 2P (LINE OUT)	J301	1-750-679-11	JACK, PIN 2P (LINE OUT)
41	IC531	8-759-512-81	IC LH5160N-10L	IC531	8-759-336-84	IC LC3564SM-10
	L301	1-412-297-11	INDUCTOR 3.3uH	L301	1-410-503-11	INDUCTOR 3.3uH
	L304	1-412-297-11	INDUCTOR 3.3uH	L304	1-410-503-11	INDUCTOR 3.3uH
42		** POWER BOARD **			** POWER BOARD **	
	IC781	8-741-100-48	IC SBX1610-59	IC781	8-741-810-59	IC SBX1810-59

2. Malaysia production model

- There is no changeability between the following boards which made in Japan and Malaysia.
Referring to “How to identify production ...” (page 1), use the appropriate boards.
Therefore, see the service manual (9-959-388-11) for the other informations which is not contained in this service manual.

Difference between productions made in Japan and Malaysia

BOARD	Made in Japan		Made in Malaysia	
10 KEY	*	A-4673-071-A	*	A-4673-606-A
BD	*	A-4649-432-A	*	A-4673-510-A
DISPLAY	*	A-4673-074-A	*	A-4673-609-A
MAIN	*	A-4673-075-A	*	A-4673-611-A

- The followings parts shows differences between made in Japan and Malaysia. Referring to “How to identify production ...” (Page 1), use the appropriate parts.

EXPLODED VIEWS

Page	Made in Japan			Made in Malaysia		
	Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
34	1	X-4942-197-1	FOOT ASSY	1	X-4942-199-1	FOOT ASSY
	* 6	A-4673-071-A	10 KEY BOARD, COMPLETE	* 6	A-4673-606-A	10 KEY BOARD, COMPLETE
	* 7	A-4673-074-A	DISPLAY BOARD, COMPLETE	* 7	A-4673-609-A	DISPLAY BOARD, COMPLETE
	9	X-4944-687-1	PANEL ASSY, FRONT	9	X-4946-260-1	PANEL ASSY, FRONT
	11	4-964-694-01	PANEL, LOADING	11	4-964-694-11	PANEL, LOADING
	13	4-922-921-01	BUTTON (POWER)	13	4-922-921-31	BUTTON (POWER)
35	52	X-4943-480-1	BRACKET (ROLLER D) ASSY	52	X-4944-129-1	BRACKET (ROLLER D) ASSY
	57	4-957-294-01	SPRING (D.T), TENSION	57	4-957-294-11	SPRING (D.T), TENSION
	58	4-957-292-01	SLIDER (RACK)	58	4-957-292-11	SLIDER (RACK)
	59	4-957-299-01	TABLE (B), DISK	* 59	4-957-299-11	TABLE (B), DISK
	65	X-4943-477-1	BRACKET (RM) ASSY	65	X-4944-128-1	BRACKET (RM) ASSY
	66	4-957-293-01	SPRING (RACK RELEASE)	66	4-957-293-11	SPRING (RACK RELEASE)
	67	4-957-291-01	LEVER (RACK RELEASE)	67	4-957-291-11	LEVER (RACK RELEASE)
	68	4-957-868-01	SCREW (+PTPWH 2.6X20)	68	4-957-868-11	SCREW (+PTPWH 2.6X20)
	* 69	4-964-324-81	PANEL, BACK	* 69	4-975-544-01	PANEL, BACK
	△71	1-590-836-11	CORD, POWER	△71	1-575-042-21	CORD, POWER
	M801	A-4660-322-A	MOTOR ASSY, ROTARY	M801	A-4660-525-A	MOTOR ASSY, ROTARY
36	* 101	A-4673-075-A	MAIN BOARD, COMPLETE	* 101	A-4673-611-A	MAIN BOARD, COMPLETE
	106	4-957-285-01	LEVER, SET	106	4-957-285-11	LEVER, SET
	109	X-4943-478-1	BRACKET (GEAR) ASSY	109	X-4944-127-1	BRACKET (GEAR) ASSY
	110	4-957-279-01	LEVER, LOCK	110	4-957-279-11	LEVER, LOCK
	112	4-957-283-01	WASHER (5), STOPPER	112	4-957-283-11	WASHER (5), STOPPER
	* 118	4-957-289-01	HOLDER (BU)	* 118	4-957-289-12	HOLDER (BU)
	120	4-957-281-01	SPRING (LOCK LEVER)	120	4-957-281-11	SPRING (LOCK LEVER)
	M802	A-4604-834-A	MOTOR ASSY, LOADING	M802	A-4604-847-A	MOTOR ASSY, LOADING
	△T601	1-423-553-11	TRANSFORMER, POWER	△T601	1-423-872-11	TRANSFORMER, POWER

ELECTRICAL PARTS LIST

Page	Made in Japan							Made in Malaysia						
	Ref. No.	Part No.	Description					Ref. No.	Part No.	Description				
38	*	A-4673-071-A	10 KEY BOARD, COMPLETE					*	A-4673-606-A	10 KEY BOARD, COMPLETE				
			*****							*****				
	R712	1-249-418-11	CARBON	1.2K	5%	1/4W	F	R712	1-249-415-11	CARBON	680	5%	1/4W	F
	R713	1-249-419-11	CARBON	1.5K	5%	1/4W	F	R713	1-249-417-11	CARBON	1K	5%	1/4W	F
	R714	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R714	1-249-419-11	CARBON	1.5K	5%	1/4W	F
	R715	1-249-423-11	CARBON	3.3K	5%	1/4W	F	R715	1-249-421-11	CARBON	2.2K	5%	1/4W	F
	R716	1-249-426-11	CARBON	5.6K	5%	1/4W		R716	1-249-423-11	CARBON	3.3K	5%	1/4W	F
	R717	1-249-430-11	CARBON	12K	5%	1/4W		R717	1-249-427-11	CARBON	6.8K	5%	1/4W	F
	R718	1-249-435-11	CARBON	33K	5%	1/4W		R718	1-249-431-11	CARBON	15K	5%	1/4W	F
	R722	1-249-418-11	CARBON	1.2K	5%	1/4W	F	R722	1-249-415-11	CARBON	680	5%	1/4W	F
	R723	1-249-419-11	CARBON	1.5K	5%	1/4W	F	R723	1-249-417-11	CARBON	1K	5%	1/4W	F
	R724	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R724	1-249-419-11	CARBON	1.5K	5%	1/4W	F
	R725	1-249-423-11	CARBON	3.3K	5%	1/4W	F	R725	1-249-421-11	CARBON	2.2K	5%	1/4W	F
	R726	1-249-426-11	CARBON	5.6K	5%	1/4W		R726	1-249-423-11	CARBON	3.3K	5%	1/4W	F
	R732	1-249-418-11	CARBON	1.2K	5%	1/4W	F	R732	1-249-415-11	CARBON	680	5%	1/4W	F
	R733	1-249-419-11	CARBON	1.5K	5%	1/4W	F	R733	1-249-417-11	CARBON	1K	5%	1/4W	F
	R734	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R734	1-249-419-11	CARBON	1.5K	5%	1/4W	F
	R735	1-249-423-11	CARBON	3.3K	5%	1/4W	F	R735	1-249-421-11	CARBON	2.2K	5%	1/4W	F
	R736	1-249-426-11	CARBON	5.6K	5%	1/4W		R736	1-249-423-11	CARBON	3.3K	5%	1/4W	F
39	*	A-4673-074-A	DISPLAY BOARD, COMPLETE					*	A-4673-609-A	DISPLAY BOARD, COMPLETE				
			*****							*****				
	R702	1-249-418-11	CARBON	1.2K	5%	1/4W	F	R702	1-249-415-11	CARBON	680	5%	1/4W	F
	R703	1-249-419-11	CARBON	1.5K	5%	1/4W	F	R703	1-249-417-11	CARBON	1K	5%	1/4W	F
	R704	1-249-421-11	CARBON	2.2K	5%	1/4W	F	R704	1-249-419-11	CARBON	1.5K	5%	1/4W	F
	R705	1-249-423-11	CARBON	3.3K	5%	1/4W	F	R705	1-249-421-11	CARBON	2.2K	5%	1/4W	F
	R706	1-249-426-11	CARBON	5.6K	5%	1/4W		R706	1-249-423-11	CARBON	3.3K	5%	1/4W	F
	R707	1-249-430-11	CARBON	12K	5%	1/4W		R707	1-249-427-11	CARBON	6.8K	5%	1/4W	F
	R708	1-249-435-11	CARBON	33K	5%	1/4W		R708	1-249-431-11	CARBON	15K	5%	1/4W	F
	R727	1-249-430-11	CARBON	12K	5%	1/4W		R727	1-249-427-11	CARBON	6.8K	5%	1/4W	F
	R728	1-249-435-11	CARBON	33K	5%	1/4W		R728	1-249-431-11	CARBON	15K	5%	1/4W	F
			** HEADPHONE BOARD **							** HEADPHONE BOARD **				
	C353	1-164-159-21	CERAMIC	0.1uF			50V	C353	1-164-159-11	CERAMIC	0.1uF			50V
	L151	1-412-473-41	INDUCTOR	0uH				L151	1-412-473-21	INDUCTOR	0uH			
40	*	A-4673-075-A	MAIN BOARD, COMPLETE					*	A-4673-611-A	MAIN BOARD, COMPLETE				
			*****							*****				
	CN504	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S					CN504	7-685-871-01	SCREW +BVTT 3X6 (S)				
		1-750-223-11	CONNECTOR, FFC/FPC 6P						1-568-825-11	SOCKET, CONNECTOR 6P				

Page	Made in Japan							Made in Malaysia							
41	Ref.No.	Part No.	Description					Ref.No.	Part No.	Description					
	D601	8-719-200-82	DIODE	11ES2				D601	8-719-024-99	DIODE	11ES2-NTA2B				
	D602	8-719-200-82	DIODE	11ES2				D602	8-719-024-99	DIODE	11ES2-NTA2B				
	D603	8-719-200-82	DIODE	11ES2				D603	8-719-024-99	DIODE	11ES2-NTA2B				
	D604	8-719-200-82	DIODE	11ES2				D604	8-719-024-99	DIODE	11ES2-NTA2B				
	D605	8-719-200-82	DIODE	11ES2				D605	8-719-024-99	DIODE	11ES2-NTA2B				
	D606	8-719-121-24	DIODE	RD9.1ES-L				D606	8-719-110-13	DIODE	RD9.1ESB2				
	IC501	8-752-854-46	IC	CXP82220-018Q				IC501	8-752-867-55	IC	CXP82220-036Q				
	R510	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R510	1-249-427-11	CARBON	6.8K	5%	1/4W	F	
	R511	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R511	1-249-427-11	CARBON	6.8K	5%	1/4W	F	
	R512	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R512	1-249-427-11	CARBON	6.8K	5%	1/4W	F	
	R513	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R513	1-249-427-11	CARBON	6.8K	5%	1/4W	F	
	R514	1-249-428-11	CARBON	8.2K	5%	1/4W	F	R514	1-249-427-11	CARBON	6.8K	5%	1/4W	F	
	42	** POWER SW BOARD **							** POWER SW BOARD **						
R737		1-249-430-11	CARBON	12K	5%	1/4W		R737	1-249-427-11	CARBON	6.8K	5%	1/4W	F	
R738		1-249-435-11	CARBON	33K	5%	1/4W		R738	1-249-431-11	CARBON	15K	5%	1/4W		
R752		1-249-418-11	CARBON	1.2K	5%	1/4W	F	R752	1-249-415-11	CARBON	680	5%	1/4W	F	
R753		1-249-419-11	CARBON	1.5K	5%	1/4W	F	R753	1-249-417-11	CARBON	1K	5%	1/4W	F	
R754		1-249-421-11	CARBON	2.2K	5%	1/4W	F	R754	1-249-419-11	CARBON	1.5K	5%	1/4W	F	
R755		1-249-423-11	CARBON	3.3K	5%	1/4W	F	R755	1-249-421-11	CARBON	2.2K	5%	1/4W	F	
R756		1-249-426-11	CARBON	5.6K	5%	1/4W		R756	1-249-423-11	CARBON	3.3K	5%	1/4W	F	
R757		1-249-430-11	CARBON	12K	5%	1/4W		R757	1-249-427-11	CARBON	6.8K	5%	1/4W	F	
*		1-647-314-11	TABLE MOTOR BOARD		*****				*	1-650-082-11	TABLE MOTOR BOARD		*****		
43		MISCELLANEOUS *****							MISCELLANEOUS *****						
		△71	1-575-042-21	CORD, POWER					△71	1-590-836-11	CORD, POWER				
		△T601	1-423-553-11	TRANSFORMER, POWER					△T601	1-423-872-11	TRANSFORMER, POWER				
		ACCESSORIES & PACKING MATERIALS *****							ACCESSORIES & PACKING MATERIALS *****						
		1-558-271-11	CORD, CONNECTION						1-551-734-11	CORD, CONNECTION					
		3-758-300-21	MANUAL, INSTRUCTION (ENGLISH)						3-758-300-61	MANUAL, INSTRUCTION (FRENCH)					
	*	4-965-248-01	INDIVIDUAL CARTON					*	4-975-945-01	INDIVIDUAL CARTON					
	*	4-965-971-01	CUSHION (FRONT)					*	4-965-249-01	CUSHION (FRONT)					
	*	4-965-972-01	CUSHION (REAR)					*	4-965-250-01	CUSHION (REAR)					

3. Addition of the BU-5BD20 (Malaysia production model only)

- **Difference of the CD Base unit**

As for productions which made in Malaysia, BU-5BD20 is used for CD base unit.

The boards, circuits and adjustments are different from BU-5BD10B which made in Japan.

Therefore, the productions which made in Malaysia are mentioned in this Service Manual Supplement-1.

Refer to the circuit, boardts, adjustments and parts list.

BU-5BD20 DIFFERENCE TABLE

Page	BU-5BD10B			BU-5BD20		
	<u>Ref.No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref.No.</u>	<u>Part No.</u>	<u>Description</u>
37	△151	8-848-144-11	OPTICAL PICK-UP BLOCK (KSS-240A)	△151	8-848-376-01	OPTICAL PICK-UP BLOCK (KSS-213B/S-N)
	152	1-575-001-11	WIRE FLAT TYPE (12 CORE)	152	1-769-069-11	WIRE FLAT TYPE (16 CORE)
	* 157	A-4649-432-A	BD BOARD, COMPLETE	* 157	A-4673-510-A	BD BOARD, COMPLETE

- **Base Unit Change**

As the base unit BU-5BD10B has changed to BU-5BD20, IC501 of the MAIN BOARD has changed.

The interchangeability between IC501 and BD BOARD is as below:

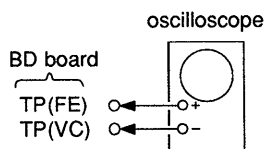
		MAIN BOARD IC501	
		FORMER	NEW
		8-752-854-46 CXP82220-018Q	8-752-867-55 CXP82220-036Q
Base Unit Type	BU-5BD10B	○	○
	BU-5BD20	×	○

ELECTRICAL BLOCK CHECKING (for BU-5BD20)

Note :

1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

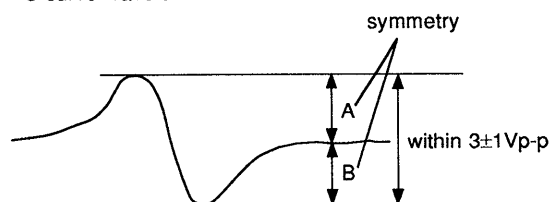
S Curve Check



Procedure :

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

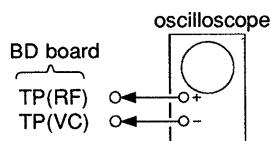
S-curve waveform



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

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

RF Level Check



Procedure :

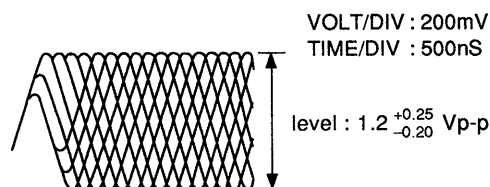
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.

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

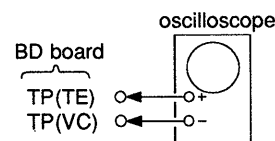
Note :

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

RF signal waveform



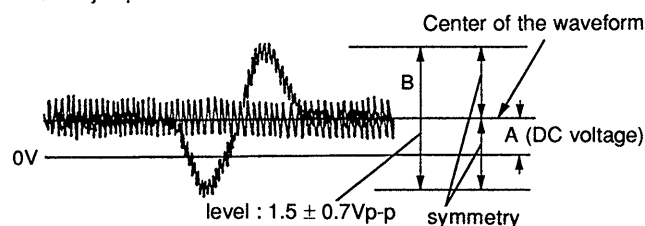
E-F Balance (1 Track Jump) Check



Procedure :

1. Connect oscilloscope to test point TP (TE) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the “II (pause)” button. (Becomes the 1 track jump mode)
5. Check the level B of the oscilloscope's waveform and the A (DC voltage) of the center of the Traverse waveform. Confirm the following :
 $A/B \times 100 = \text{less than } \pm 20\%$.

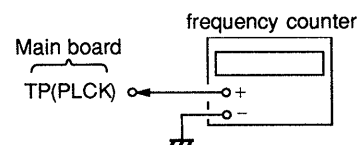
1 track jump waveform



RF PLL Free-run Frequency Check

Procedure :

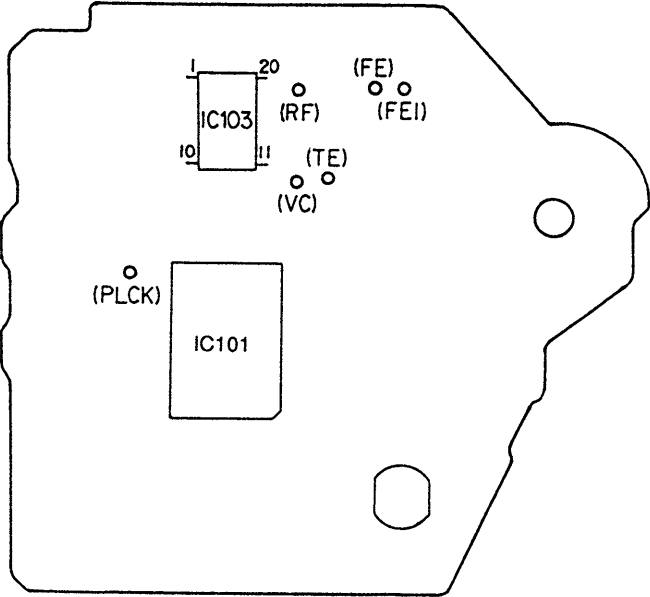
1. Connect frequency counter to test point (PLCK) with lead wire.



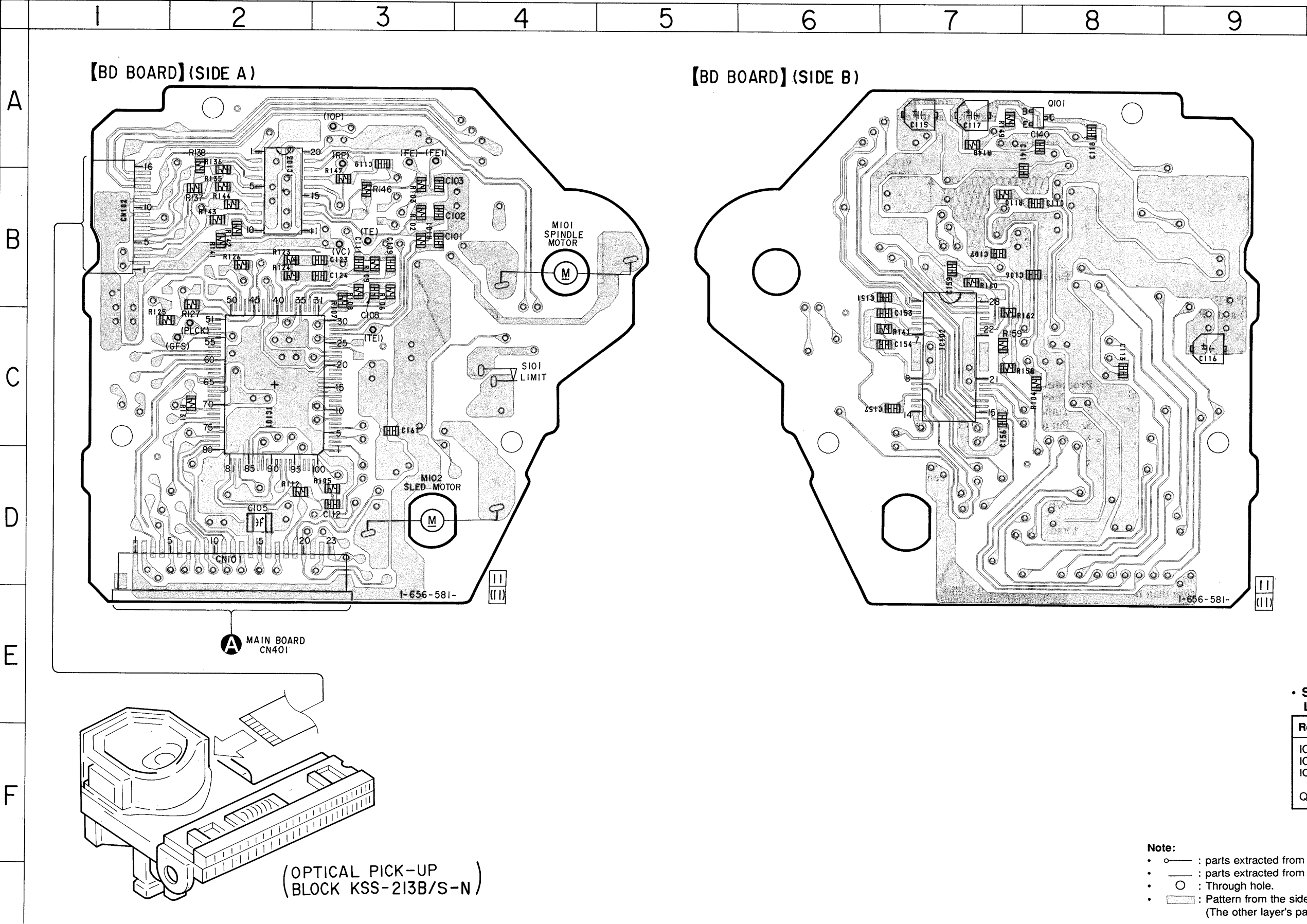
2. Turned Power switch on.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218MHz.

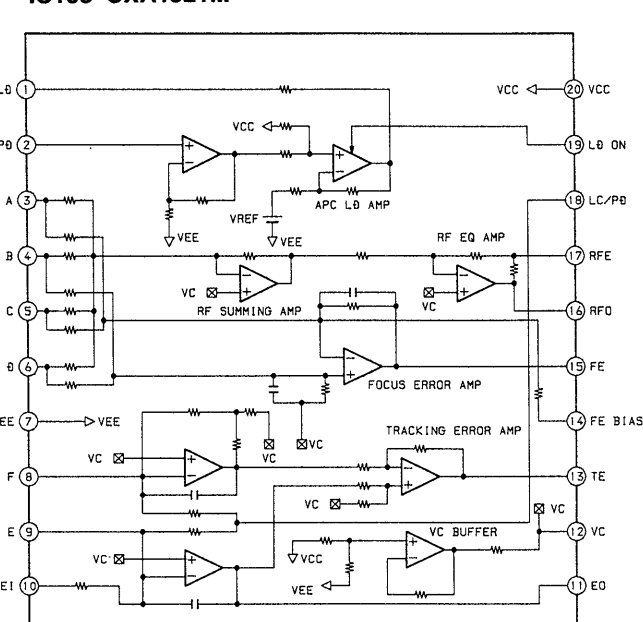
Adjustment Location :

[BD BOARD] — SIDE A —



PRINTED WIRING BOARD — BD SECTION —





- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
 - ⇒ : CD
 - ⇒⇒ : digital out

IC PIN FUNCTION

• IC101 (CXD2545Q)

Pin No.	Pin Name	I/O	Function
1	SRON	O	Sled drive output (Not used)
2	SRDR	O	Sled drive output
3	SFON	O	Sled drive output (Not used)
4	TFDR	O	Tracking drive output
5	TRON	O	Tracking drive output (Not used)
6	TRDR	O	Tracking drive output
7	TFON	O	Tracking drive output (Not used)
8	FFDR	O	Focus drive output
9	FRON	O	Focus drive output (Not used)
10	FRDR	O	Focus drive output
11	FFON	O	Focus drive output (Not used)
12	VCOO	O	VCO output for analog EFM PLL (Not used)
13	VCOI	I	VCO output for analog EFM PLL (GND)
14	TEST	I	TEST pin connected normally to GND
15	DVss	—	Digital GND
16	TES2	I	TEST pin connected normally to GND
17	TES3	I	TEST pin connected normally to GND
18	PDO	O	Charge-pump output for analog EFM PLL (Not used)
19	VPCO	O	Charge-pump output for variable pitch PLL (Not used)
20	VCKI	I	Clock input from variable pitch external VCO (GND)
21	AVD2	—	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers
23	AVS2	—	Analog GND
24	ADIO	I	(Not used)
25	RFC	O	(Not used)
26	RFDC	I	RF signal input
27	TE	I	Tracking error signal input
28	SE	I	Sled error signal input
29	FE	I	Focus error signal input
30	VC	I	Center voltage input pin
31	FILO	O	Filter output for master PLL
32	FILI	I	Filter input for master PLL
33	PCO	O	Charge-pump output for master PLL
34	CLTV	I	Control voltage input for master VCO
35	AVS1	—	Analog GND
36	RFAC	I	EFM signal input
37	BIAS	I	Asymmetry circuit constant current input
38	ASYI	I	Asymmetry compare voltage input
39	ASYO	O	EFM full swing output
40	AVD1	—	Analog power supply

Pin No.	Pin Name	I/O	Function
41	DVDD	—	Digital power supply
42	ASYE	I	Asymmetry circuit ON/OFF
43	PSSL	I	Audio data output mode selection input (GND)
44	WDCK	O	48-bit slot D/A interface. Word clock (Not used)
45	LRCK	O	48-bit slot D/A interface. LR clock
46	DATA	O	DA 16 output when PSSL=1. 48-bit slot serial data when PSSL=0
47	BCLK	O	DA 15 output when PSSL=1. 48-bit slot data when PSSL=0
48	64DATA	O	DA 14 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
49	64BCLK	O	DA 13 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
50	64LRCK	O	DA 12 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
51	GTOP	O	DA 11 output when PSSL=1. GTOP output when PSSL=0 (Not used)
52	XUGF	O	DA 10 output when PSSL=1. XUGF output when PSSL=0 (Not used)
53	XPLCK	O	DA 09 output when PSSL=1. XPLCK output when PSSL=0
54	GFS	O	DA 08 output when PSSL=1. GFS output when PSSL=0
55	RFCK	O	DA 07 output when PSSL=1. RFCK output when PSSL=0
56	C2PO	O	DA 06 output when PSSL=1. C2PO output when PSSL=0 (Not used)
57	XRA0F	O	DA 05 output when PSSL=1. XRA0F output when PSSL=0 (Not used)
58	MNT3	O	DA 04 output when PSSL=1. MNT3 output when PSSL=0
59	MNT2	O	DA 03 output when PSSL=1. MNT2 output when PSSL=0
60	MNT1	O	DA 02 output when PSSL=1. MNT1 output when PSSL=0
61	MNT0	O	DA 01 output when PSSL=1. MNT0 output when PSSL=0
62	XTAI	I	X'tal oscillator circuit input
63	XTAO	O	X'tal oscillator circuit output (Not used)
64	XTSL	I	X'tal selection input pin (GND)
65	DVss	—	Digital GND
66	FSTI	I	2/3 divider output of pins 62, 63
67	FSTO	O	2/3 divider output of pins 62, 63
68	FSOF	O	(Not used)
69	C16M	O	16.9344 MHz output (Not used)
70	MD2	I	Digital-out ON/OFF control pin (+5V)
71	DOUT	O	Digital-out output pin
72	EMPH	O	Playback disc output in emphasis mode (Not used)
73	WFCK	O	WFCK output
74	SCOR	O	Sub-code sync output
75	SBSO	O	Sub-P through Sub-W serial output (Not used)
76	EXCK	I	Clock input for SBS0 read-out (+5V)
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)
95	MON	O	Output to control ON/OFF of spindle motor (Not used)
96	MDP	O	Output to control spindle motor servo
97	MDS	O	Output to control spindle motor servo (Not used)
98	LOCK	O	GFS is sampled by 460 Hz. H when GFS is H (Not used)
99	SSTP	I	Input signal to detect disc inner most track
100	SFDR	O	Sled drive output

ELECTRICAL PARTS LIST

NOTE:

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable

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

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	A-4673-510-A	BD BOARD, COMPLETE *****				< MOTOR >	
		< CAPACITOR >		M101	X-4917-504-1	MOTOR ASSY (SLED)	
				M102	X-4917-523-4	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	
						< TRANSISTOR >	
C101	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		Q101	8-729-010-08	TRANSISTOR MSB710-R	
C102	1-163-038-91	CERAMIC CHIP 0.1uF 25V				< RESISTOR >	
C103	1-163-005-11	CERAMIC CHIP 470PF 10% 50V		R101	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C105	1-135-155-21	TANTALUM CHIP 4.7uF 10% 16V		R102	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
C106	1-164-346-11	CERAMIC CHIP 1uF 16V		R103	1-216-077-00	METAL CHIP 15K 5% 1/10W	
C107	1-164-346-11	CERAMIC CHIP 1uF 16V		R104	1-216-085-00	METAL CHIP 33K 5% 1/10W	
C108	1-163-035-00	CERAMIC CHIP 0.047uF 50V		R105	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
C109	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V		R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C110	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V		R107	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C111	1-163-251-11	CERAMIC CHIP 100PF 5% 50V		R108	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C112	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R109	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
C113	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R110	1-216-025-91	METAL GLAZE 100 5% 1/10W	
C115	1-126-607-11	ELECT CHIP 47uF 20% 4V		R112	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
C116	1-126-607-11	ELECT CHIP 47uF 20% 4V		R123	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C117	1-126-209-11	ELECT 100uF 20% 4V		R124	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
C118	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V		R125	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
C119	1-163-097-00	CERAMIC CHIP 15PF 5% 50V		R126	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
C123	1-164-232-11	CERAMIC CHIP 0.01uF 50V		R127	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
C124	1-164-005-11	CERAMIC CHIP 0.47uF 25V		R131	1-216-037-00	METAL CHIP 330 5% 1/10W	
C140	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R135	1-216-295-91	CONDUCTOR, CHIP (2012)	
C141	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R136	1-216-295-91	CONDUCTOR, CHIP (2012)	
C151	1-163-237-11	CERAMIC CHIP 27PF 5% 50V		R137	1-216-295-91	CONDUCTOR, CHIP (2012)	
C153	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R138	1-216-295-91	CONDUCTOR, CHIP (2012)	
C154	1-164-336-11	CERAMIC CHIP 0.33uF 25V		R141	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
C156	1-163-237-11	CERAMIC CHIP 27PF 5% 50V		R142	1-216-081-00	METAL CHIP 22K 5% 1/10W	
C157	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V		R143	1-216-101-00	METAL CHIP 150K 5% 1/10W	
C159	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V		R144	1-216-101-00	METAL CHIP 150K 5% 1/10W	
C161	1-163-038-91	CERAMIC CHIP 0.1uF 25V		R146	1-216-073-00	METAL CHIP 10K 5% 1/10W	
		< CONNECTOR >		R147	1-216-081-00	METAL CHIP 22K 5% 1/10W	
CN101	1-770-072-11	CONNECTOR (FFC) 23P		R148	1-216-001-00	METAL CHIP 10 5% 1/10W	
CN102	1-770-014-11	CONNECTOR, FFC/FPC 16P		R149	1-216-003-11	METAL GLAZE 12 5% 1/10W	
		< IC >		R158	1-216-111-91	METAL GLAZE 390K 5% 1/10W	
IC101	8-752-369-78	IC CXD2545Q		R159	1-216-101-00	METAL CHIP 150K 5% 1/10W	
IC102	8-759-176-09	IC BA6392FP		R160	1-216-295-91	CONDUCTOR, CHIP (2012)	
IC103	8-752-072-45	IC CXA1821M-T6		R161	1-216-308-00	METAL CHIP 4.7 5% 1/10W	

BD

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
R162	1-216-101-00	METAL CHIP	150K 5% 1/10W
		< SWITCH >	
S101	1-572-085-11	SWITCH, LEAF (LIMIT)	