

CDP-M203/M303

SERVICE MANUAL

AEP Model
UK Model

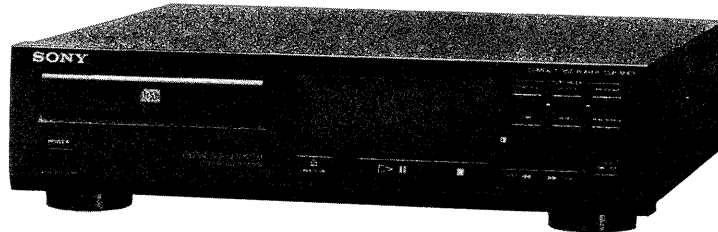


Photo : CDP-M303

Model Name Using Similer Mechanism	CDP-M201/M301
CD Mechanism Type	CDM14-5BD10
Base Unit Type	BU-5BD10B
Optical Pick-up Type	KSS-240A

SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser
Wavelength	780 – 790 nm
Frequency response	2 Hz to 20 kHz \pm 0.5 dB
Signal-to-noise ratio	More than 97 dB
Dynamic range	CDP-M303: More than 94 dB CDP-M203: More than 90 dB
Harmonic distortion	CDP-M303: Less than 0.007% CDP-M203: Less than 0.015%
Channel separation	More than 90 dB
Outputs	LINE OUT (phono jacks) Maximum output level 2 V (at 50 K ohms) Load impedance over 10 k ohms

General

Power requirements	220 V – 230 V AC, 50/60 Hz
Power consumption	10 W
Dimensions (approx.) (w/h/d)	355 x 95 x 310 mm (14 x 3 3/4 x 12 1/4 in.) incl. projecting parts
Mass (approx.)	2.7 kg (6 lds)

Supplied accessories

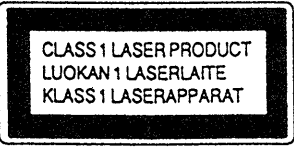
- Audio cord (2 phono plugs - 2 phono plugs) (1)
- Remote commander (remote) (CDP-M303) (1)
- Sony SUM-3 (NS) batteries (CDP-M303) (2)

Design and specifications are subject to change without notice.



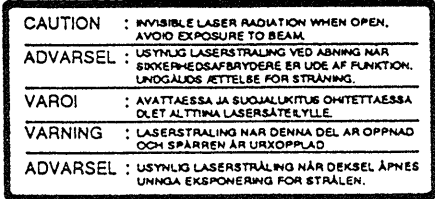
COMPACT DISC PLAYER
SONY[®]

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.



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

The following caution label is located inside of the unit.



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

- Notes on chip component replacement
- Never reuse a disconnected chip component.
 - Notice that the minus side of a tantalum capacitor may be damaged by heat.

- Flexible Circuit Board Repairing
- Keep the temperature of the soldering iron around 270 °C during repairing.
 - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
 - Be careful not to apply force on the conductor when soldering or unsoldering.

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

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SECTION 1

SERVICING NOTE

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

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

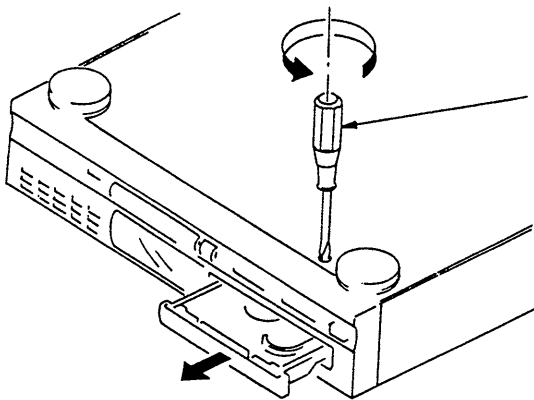
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

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

NOTES ON LASER DIODE EMISSION CHECK

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

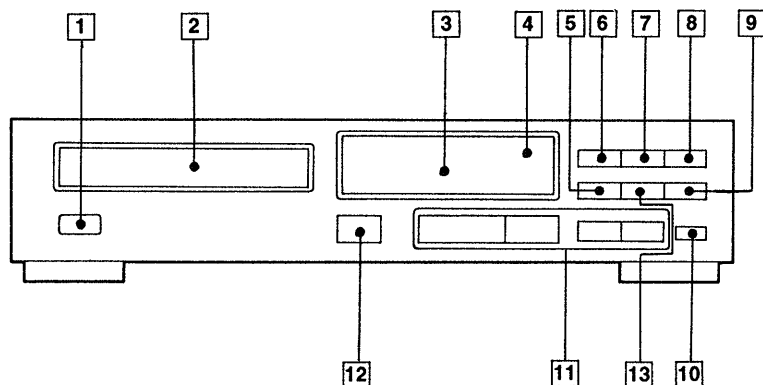
HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



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).

SECTION 2 GENERAL



Front Panel

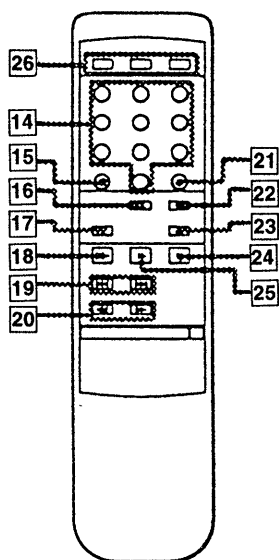
- 1 POWER switch
- 2 Disc tray
- 3 Display
- 4 Remote sensor (only for CDP-M303)
- 5 TIME button
- 6 CONTINUE button
- 7 SHUFFLE button
- 8 PROGRAM button
- 9 PEAK SEARCH button
- 10 EDIT/TIME FADE button
- 11 CD operation buttons
▶||/■/◀◀ ◀◀/▶▶ ▶▶▶▶
- 12 △ OPEN/CLOSE button
- 13 REPEAT button

Remote Commander

- 14 Numeric buttons
- 15 >10 (over 10) button
- 16 TIME button
- 17 REPEAT button
- 18 ▷ (play) button
- 19 ◀◀/▶▶ (AMS*) buttons
(Only on the remote commander)
- 20 ◀◀/▶▶ (manual search)
(Only on the remote commander)
- 21 CLEAR (program clear) button
- 22 CHECK (program check) button
- 23 FADER button
- 24 ■ (stop) button
- 25 || (pause) button
- 26 Play Mode buttons
CONTINUE button
SHUFFLE button
PROGRAM button

* AMS is the abbreviation for Automatic Music Sensor.

RM-D320



(only for CDP-M303)

SECTION 3

ELECTRICAL BLOCK CHECKING

Note :

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

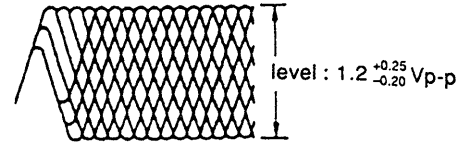
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check if RF signal level is correct or not.

Note :

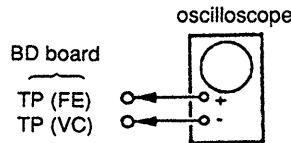
A clear RF signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.

RF signal waveform

VOLT/DIV : 200mV
TIME/DIV : 500nS

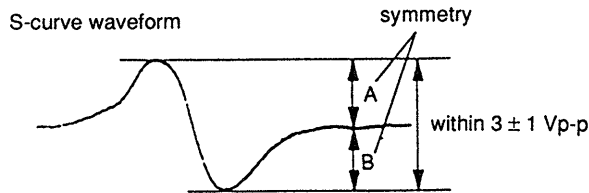


S Curve Check



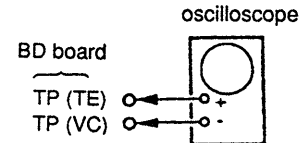
Procedure :

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. Turn Power switch on.
4. Put disc (YEDS-18) in and turn Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check if the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3 ± 1 Vp-p.



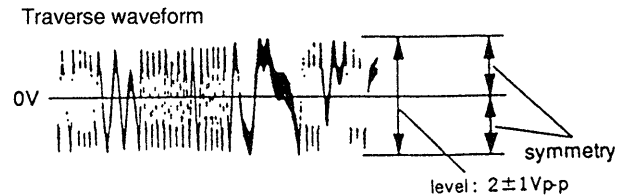
6. After check, remove the lead wire connected in step 2.
- Note :**
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
 - Set sweep time as long as possible and set the brightness to obtain best waveform.

E-F Balance Check



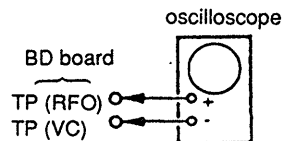
Procedure :

1. Connect test point TP (ADJ) on MAIN board to ground and TP (TEI) to TP (VC) with a 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 Level Check



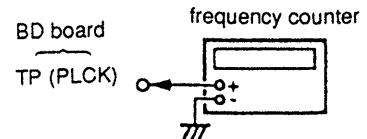
Procedure :

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

RF PLL Free-run Frequency Check

Procedure :

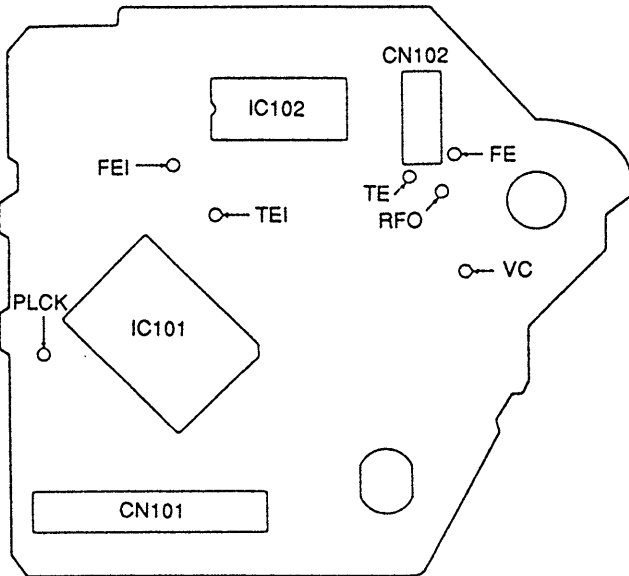
1. Connect frequency counter to test point (PLCK) with lead wire.



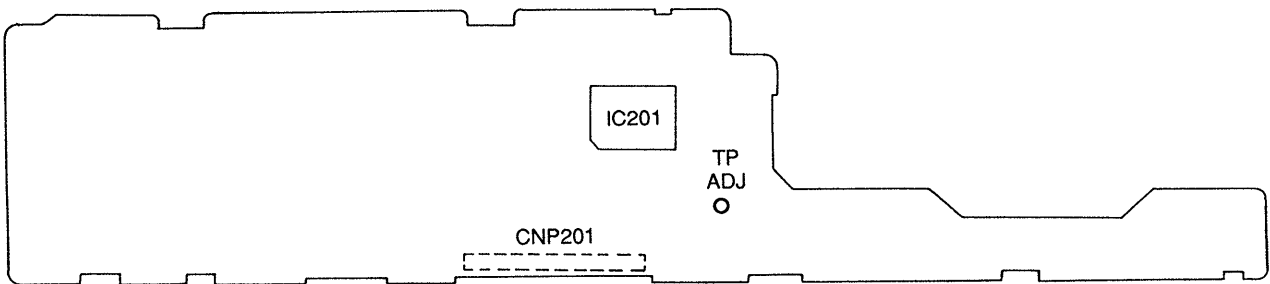
2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location :

[BD BOARD] — Conductor Side —

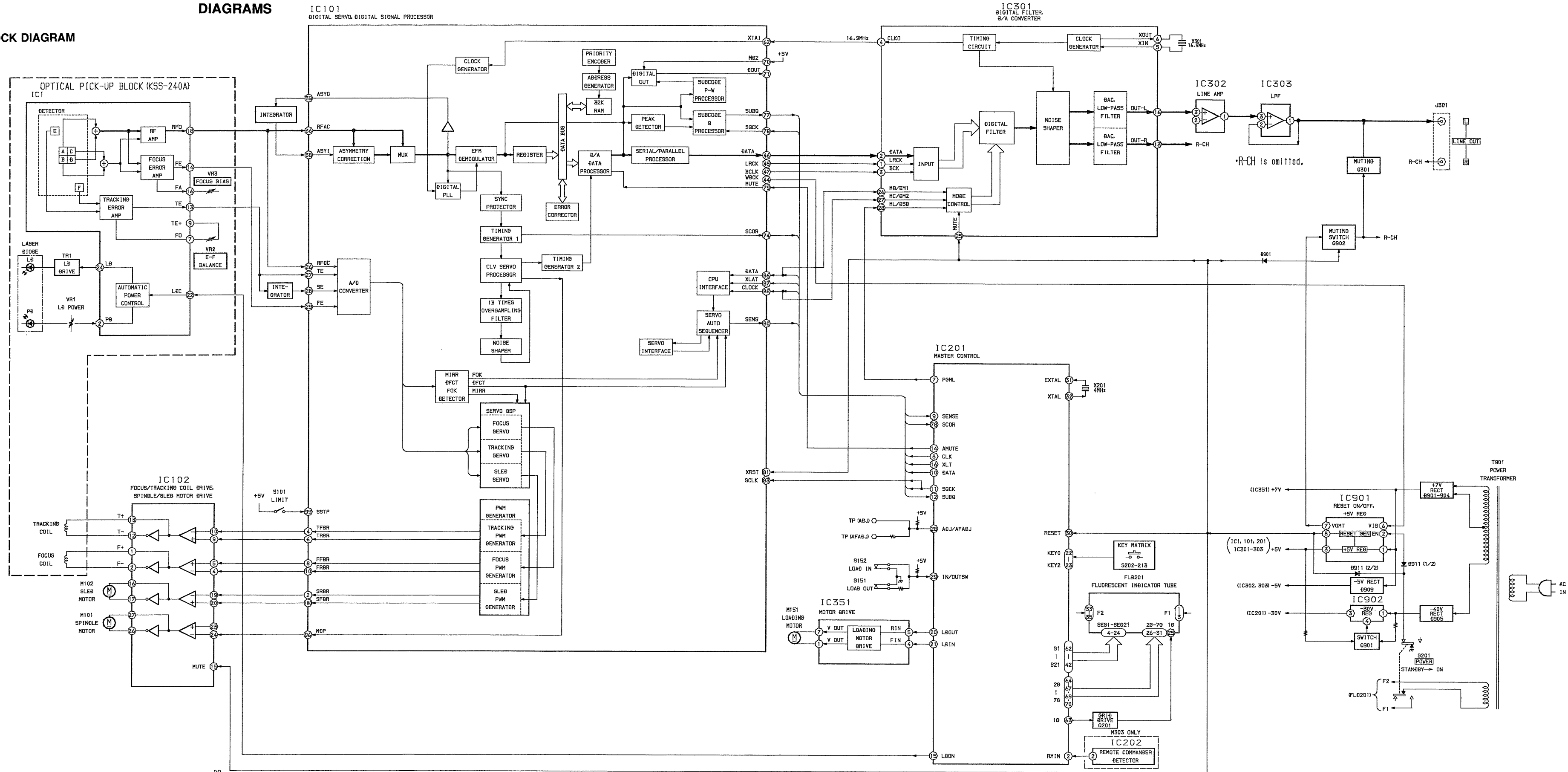


[DISPLAY BOARD] — Conductor Side —



SECTION 4
DIAGRAMS

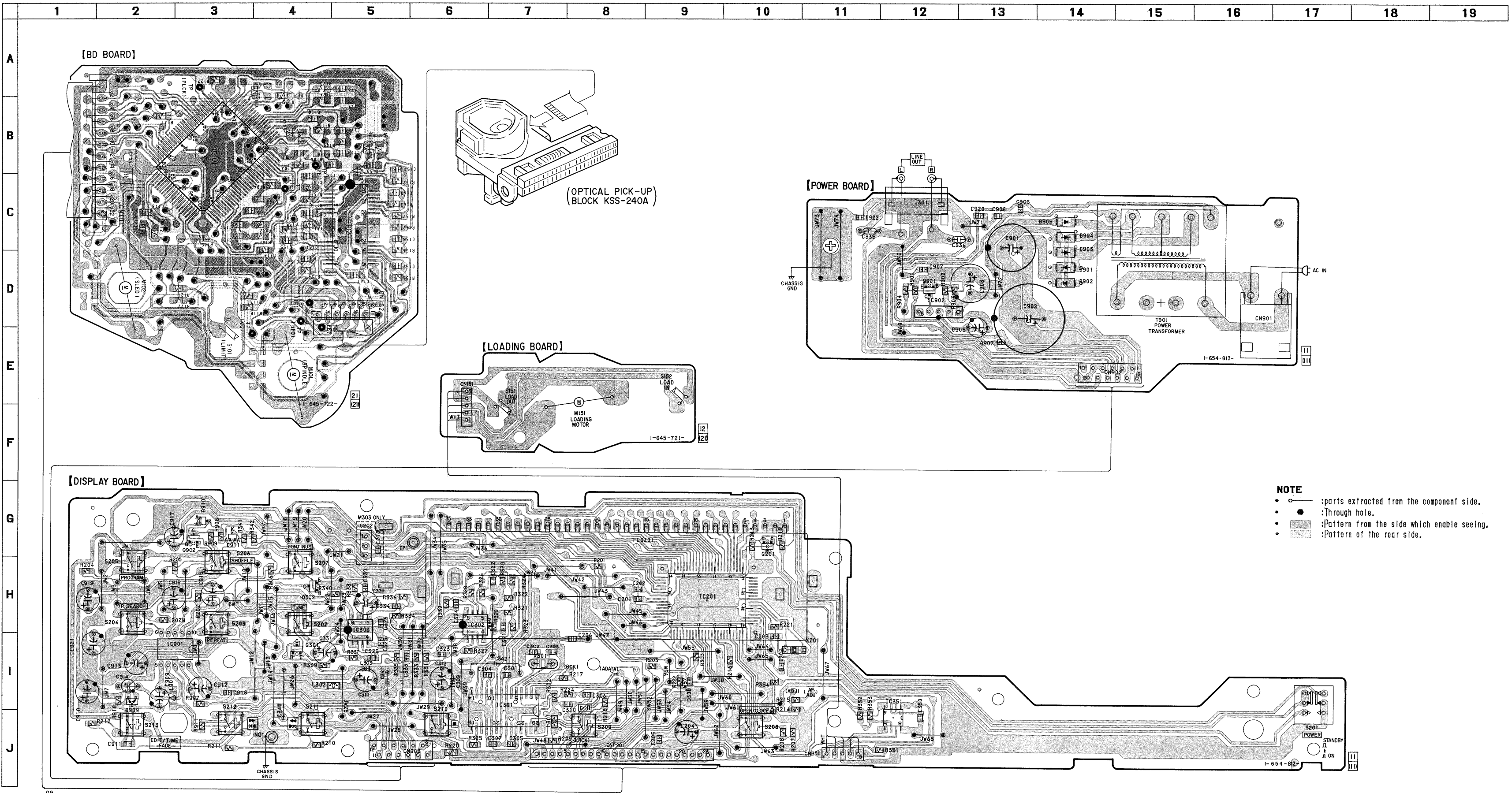
4-1. BLOCK DIAGRAM



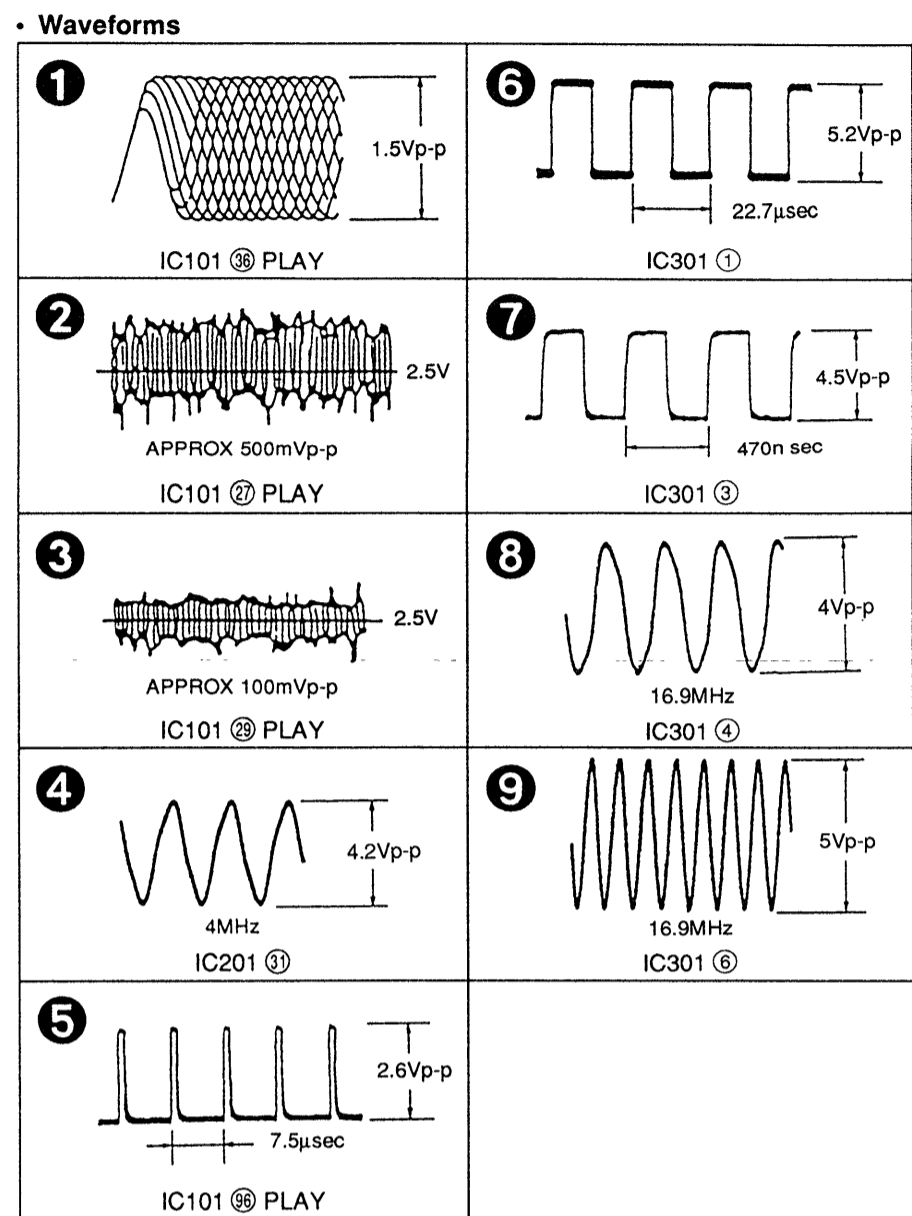
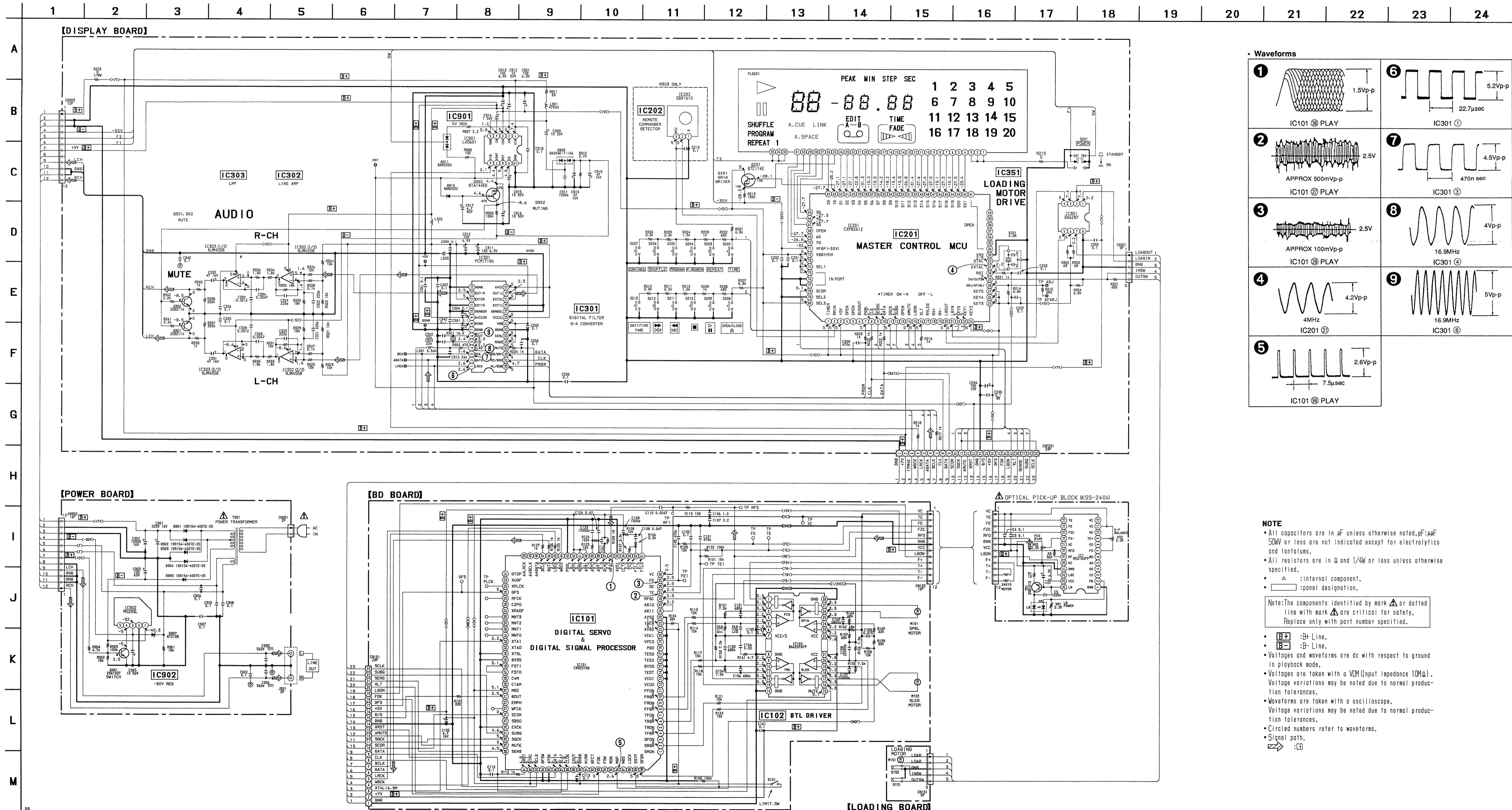
4-2. PRINTED WIRING BOARDS
 • See page 18 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location
D901	D-14
D902	D-14
D903	C-14
D904	C-14
D905	C-14
D907	E-13
D909	I-2
D910	G-3
D911	G-3
IC101	B-3
IC102	C-5
IC201	H-9
IC202	G-5
IC301	I-7
IC302	H-6
IC303	H-5
IC351	I-12
IC901	I-2
IC902	D-12
Q201	G-10
Q301	I-4
Q302	H-4
Q901	D-12
Q902	G-3



4-3. SCHEMATIC DIAGRAM
 • See page 17 for IC Block Diagrams.
 • See page 19 for IC Pin Functions. (IC101, IC201)



NOTE

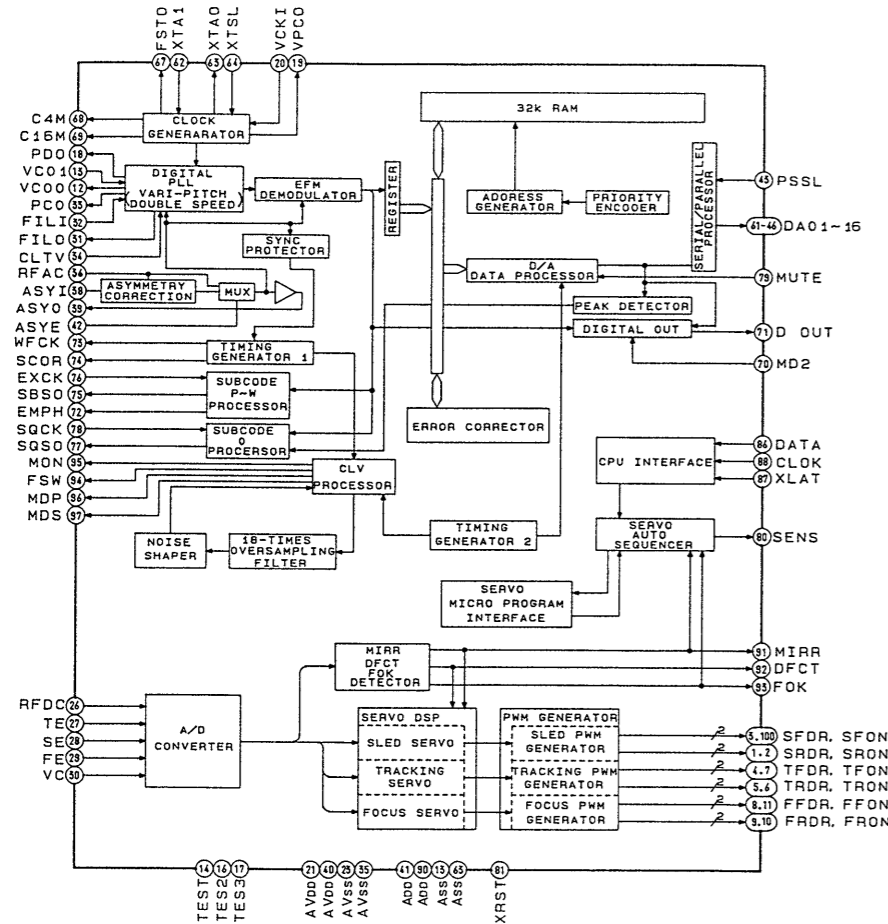
- All capacitors are in μF unless otherwise noted, pF : μF 50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- Δ : internal component.
- \square : panel designation.

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

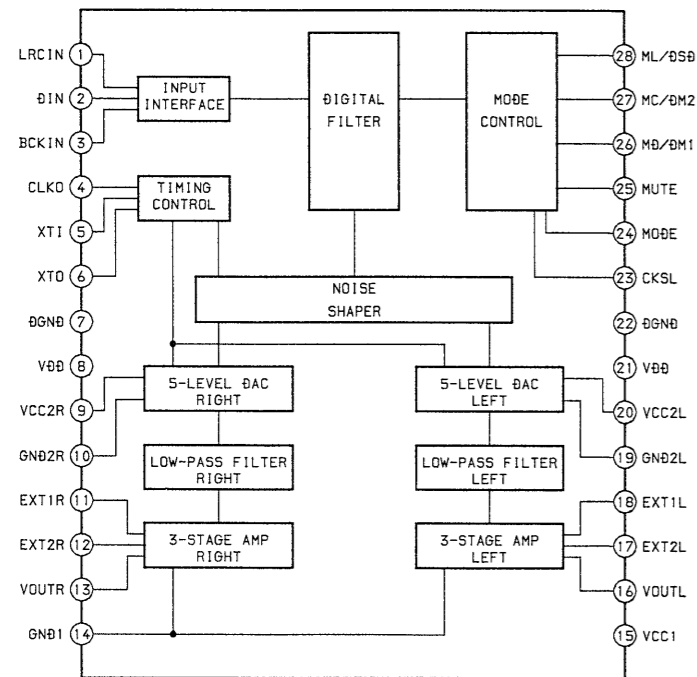
- $\text{B}+$: B+ Line.
- $\text{B}-$: B- Line.
- Voltages and waveforms are dc with respect to ground in playback mode.
- Voltages are taken with a VOM (input impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- \rightarrow : CB

4-4. IC BLOCK DIAGRAMS

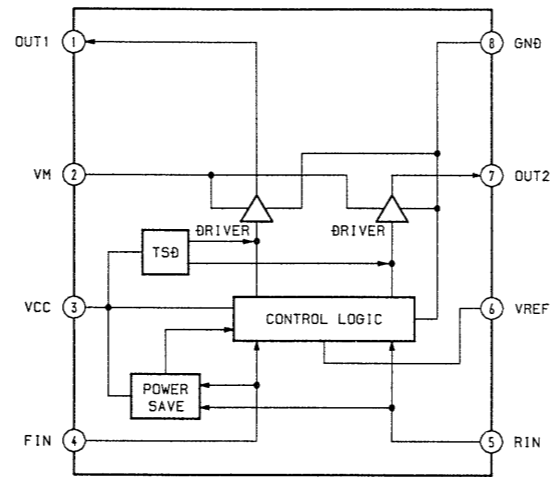
IC101 CXD2515Q



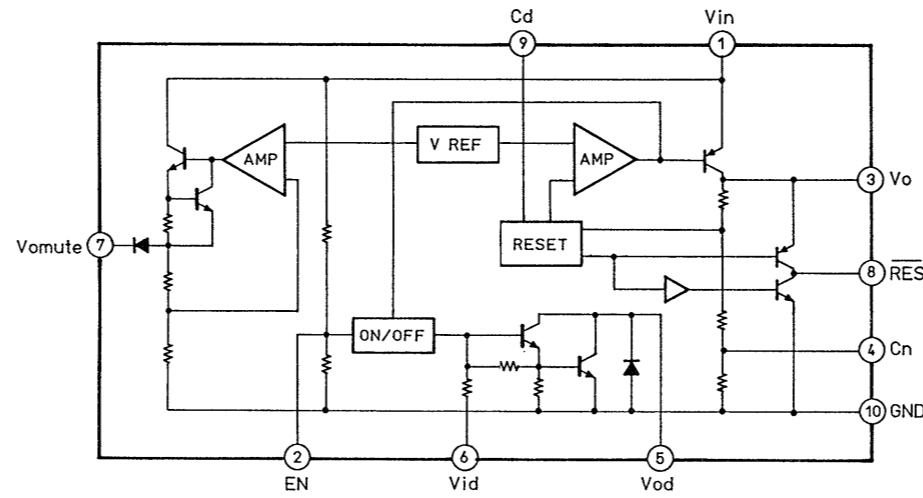
IC301 PCM1710U



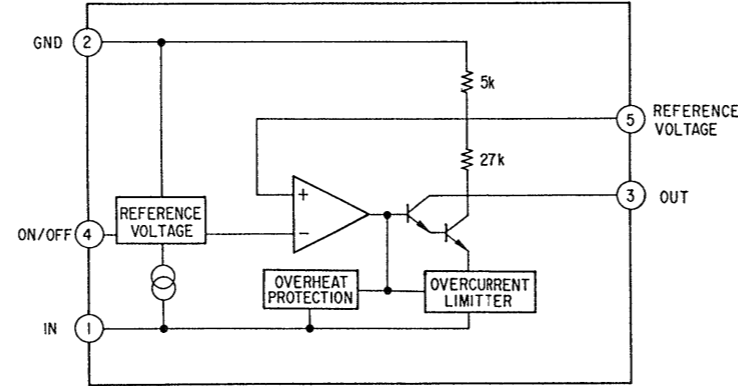
IC351 BA6287



IC901 LA5601

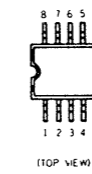


IC902 M5293L

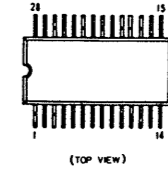


4-5. SEMICONDUCTOR LEAD LAYOUTS

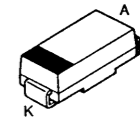
BA6287F
RC4558PS



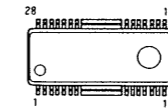
PCM1710U-A
PCM1710U-BT1



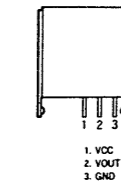
1SR154-400TE-25



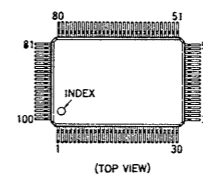
BA6297AFP



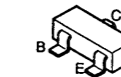
SBX1610-59



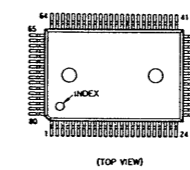
CXD2515Q



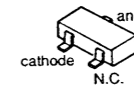
DTA144EKA-T146
DTC114EKA-T146
2SA1162-G
2SD2114KT146



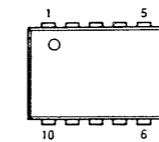
CXP82612-007Q



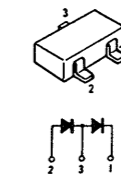
DAN202U



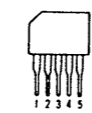
LA5601



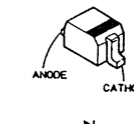
DA204K-T-146



M5293L



DTZ10B



4-6. IC PIN FUNCTIONS

• IC101 Digital Servo & DSP (CXD2515Q)

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 (Connected to GND)
14	TEST	I	TEST pin connected normally to GND
15	DVss	—	Digital GND
16	TES2	I	TEST pin connected normally to GND
17	TES3	I	TEST pin connected normally to GND
18	PDO	O	Charge-pump output for analog 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 (Connected to GND)
21	AVD2	—	Analog power supply
22	IGEN	I	Power supply pin for operational amplifiers
23	AVS2	—	Analog GND
24	ADII	I	Input pin for A/D converter
25	ADIO	O	Operational amplifier output pin
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 (Connected to +5V)
43	PSSL	I	Audio data output mode selection input (Connected to GND)
44	WDCK	O	48-bit slot D/A interface. Word clock
45	LRCK	O	48-bit slot D/A interface. LR clock
46	DATA	O	DA 16 output when PSSL=1. 48-bit slot serial data when PSSL=0
47	BCLK	O	DA 15 output when PSSL=1. 48-bit slot data when PSSL=0
48	64DATA	O	DA 14 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
49	64BCLK	O	DA 13 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
50	64LRCK	O	DA 12 output when PSSL=1. 64-bit slot data when PSSL=0 (Not used)
51	GTOP	O	DA 11 output when PSSL=1. GTOP output when PSSL=0 (Not used)
52	XUGF	O	DA 10 output when PSSL=1. XUGF output when PSSL=0 (Not used)
53	XPLCK	O	DA 09 output when PSSL=1. XPLCK output when PSSL=0
54	GFS	O	DA 08 output when PSSL=1. GFS output when PSSL=0
55	PFCK	O	DA 07 output when PSSL=1. RFCK output when PSSL=0
56	C2PO	O	DA 06 output when PSSL=1. C2PO output when PSSL=0 (Not used)
57	XRA0F	O	DA 05 output when PSSL=1. XRA0F output when PSSL=0 (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 (Connected to 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	C4M	O	4.2336 MHz output (Not used)
69	C16M	O	16.9344 MHz output (Not used)
70	MD2	I	Digital-out ON/OFF control pin (Connected to +5V)
71	DOUT	O	Digital-out output pin (Not used)
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 (Connected to GND)
77	SUBQ	O	Sub-Q 80-bit output
78	SQCK	I	Clock input for SQS0 read-out
79	MUTE	I	Muting selection pin
80	SENS	O	SENS output
81	XRST	I	System reset
82	DIRC	I	Used in 1-track jump mode (Connected to +5V)
83	SCLK	I	SENS serial data read-out clock
84	DFSW	I	DFCT selection pin (Connected to GND)
85	ATSK	I	Input pin for anti-shock (Connected to GND)

Pin No.	Pin Name	I/O	Function
86	DATA	I	Serial data input, supplied from IC201 (master control)
87	XLAT	I	Latch input, supplied from IC201 (master control)
88	CLOK	I	Serial data transfer clock input, supplied from IC201 (master control)
89	COUT	O	Numbers of track counted signal output (Not used)
90	DVDD	–	Digital power supply
91	MIRR	O	Mirror signal output (Not used)
92	DFCT	O	Defect signal output (Not used)
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

• IC201 Master Control (CXP82612-007Q)

Pin No.	Pin Name	I/O	Function
1	TIMER	—	Connected to +5V.
2	RMIN	I	Remote commander signal input.
3	+5V	—	Connected to +5V.
4	OPEN	—	} Not used. (open).
5	OPEN	—	
6	OPEN	—	
7	PGML	O	Latch signal output to digital filter (IC301).
8	CLK	O	Serial clock output.
9	SENSE	I	SENSE signal input.
10	DATA	O	Serial data output.
11	SQCK	O	Read out clock output for subcode Q data.
12	SUBQ	I	Subcode Q data input.
13	OPEN	—	Not used. (open)
14	AMUTE	O	Analog muting control signal output.
15	LDON	O	Optical pickup laser diode control output.
16	XLT	O	Serial data latch signal output.
17	RV LED	—	} Not used. (open)
18	RV+	—	
19	RV-	—	
20	LDOUT	O	} Loading motor control signal output.
21	LDIN	O	
22, 23	KEY0, KEY1	I	Key input. (S202 to S213)
24 to 27	KEY2 to KEY5	—	Connected to +5V.
28	ADJ/AFADJ	I	ADJ, AFADJ test pin.
29	IN/OUTSW	I	Loading IN/OUT switch input.
30	RST	I	Reset signal input.
31	EXTAL	I	Clock input. (4 MHz)
32	XTAL	O	Clock output. (4 MHz)
33	V _{ss}	—	GND
34 to 41	OPEN	—	Not used. (open)
42 to 62	S1 to S21	O	FL segment output.
63 to 67	1G to 5G	O	FL grid output.
68	OPEN	—	Not used. (open).
69	6G	O	} FL grid output.
70	7G	O	
71	VFDP (-30V)	—	-30V pin for FL display tube.
72	V _{DD} (+5V)	—	} Connected +5V.
73	—	—	
74	SEL1	—	
75	IN PORT	—	
76	IN PORT	—	} Connected to GND.
77	IN PORT	—	
78	SCOR	I	
79	SEL2	—	Connected to GND.
80	SEL3	—	Connected to +5V.

SECTION 5 EXPLODED VIEWS

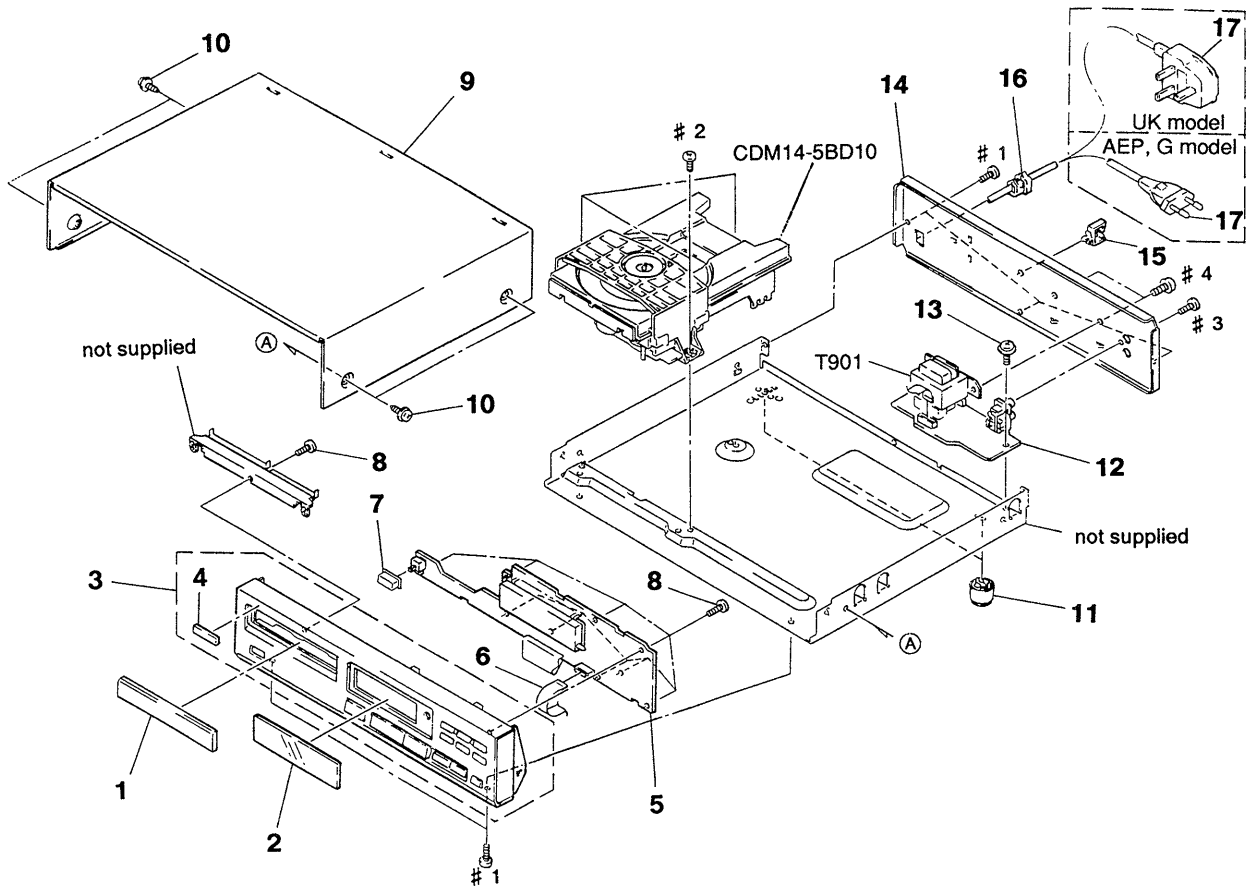
NOTE:

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

- -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.

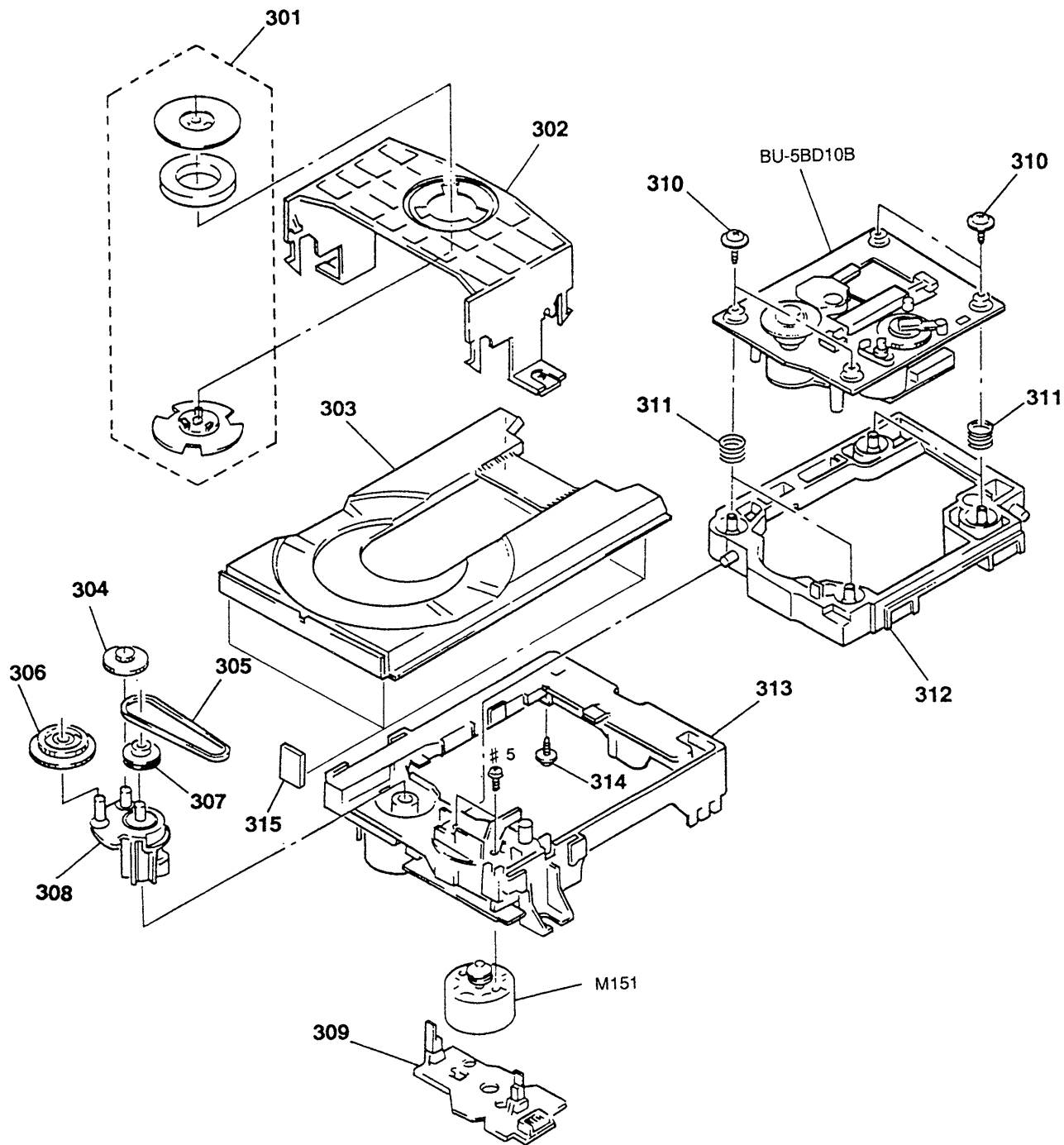
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

5-1. CABINET SECTION



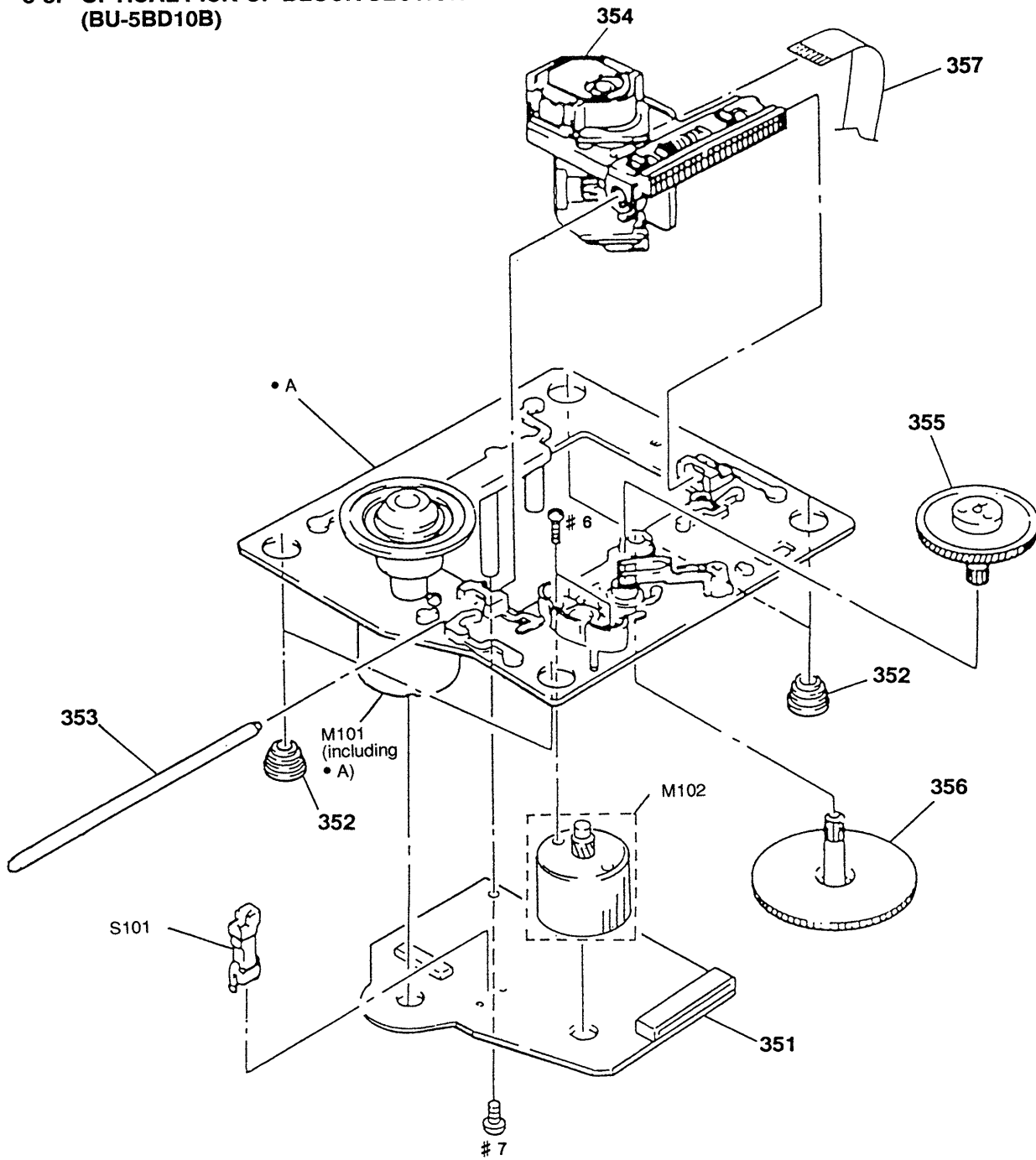
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-969-744-01	PANEL, LOADING (M303)		* 12	1-654-813-11	POWER BOARD	
1	4-969-744-11	PANEL, LOADING (M203)		13	4-886-821-11	SCREW, S TIGHT, +PTWH 3X6	
2	4-970-125-01	PLATE, INDICATION		* 14	4-970-243-01	PANEL, BACK (M303:AEP)	
3	X-4945-367-3	PANEL ASSY, FRONT (M303)		* 14	4-970-243-11	PANEL, BACK (M303:UK)	
3	X-4945-368-3	PANEL ASSY, FRONT (M203)		* 14	4-970-243-21	PANEL, BACK (M203:AEP, G)	
				* 14	4-970-243-31	PANEL, BACK (M203:UK)	
4	4-963-404-21	EMBLEM (5-A), SONY		* 14	4-970-243-41	PANEL, BACK (M303:G)	
* 5	A-4673-270-A	DISPLAY BOARD, COMPLETE (M203)		* 15	3-681-263-11	SADDLE, WIRE	
* 5	A-4673-374-A	DISPLAY BOARD, COMPLETE (M303)		16	3-703-244-00	BUSHING, CORD	
6	1-769-254-11	WIRE (FLAT TYPE) (12 CORE)		\triangle 17	1-575-651-21	CORD, POWER (AEP, G)	
7	4-963-098-01	BUTTON (POWER)		\triangle 17	1-696-907-11	CORD, POWER (UK)	
8	4-951-620-01	SCREW (2. 6X8), +BVTP		\triangle T901	1-450-213-11	TRANSFORMER, POWER	
* 9	4-919-376-31	CASE					
10	3-363-099-01	SCREW (CASE 3 TP2)					
11	4-931-169-01	FOOT					

5-2. CD MECHANISM SECTION
(CDM14-5BD10)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 301	1-452-538-11	MAGNET		310	4-933-134-01	SCREW +PTPWH M2. 6X6	
302	4-933-110-01	HOLDER (MG)		311	4-959-996-01	SPRING (932), COMPRESSION	
303	4-933-112-11	TABLE, DISK		312	4-933-129-01	HOLDER (BU)	
304	4-967-268-01	GEAR (C)		313	4-933-111-11	CHASSIS (MD)	
305	4-927-649-01	BELT		* 314	4-917-583-21	BRACKET, YOKE	
306	4-933-107-01	GEAR (PL)		315	4-925-315-31	DAMPER	
307	4-927-651-01	PULLEY (S)		M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
308	4-933-109-01	CAM					
* 309	1-645-721-11	LOADING BOARD					

**5-3. OPTICAL PICK-UP BLOCK SECTION
(BU-5BD10B)**



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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 351	A-4649-430-A	BD BOARD, COMPLETE		356	4-917-564-01	GEAR (P), FLATNESS	
352	4-951-940-01	INSULATOR (BU)		357	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
353	4-917-565-01	SHAFT, SLED		M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
▲ 354	8-848-144-11	OPTICAL PICK-UP BLOCK (KSS-240A)		M102	X-4917-504-1	MOTOR ASSY (SLED)	
355	4-917-567-21	GEAR (M)		S101	1-572-085-11	SWITCH, LEAF	

SECTION 6 ELECTRICAL PARTS LIST

NOTE:

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

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

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked “* ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) . . . (RED)

\uparrow \uparrow
 Parts color Cabinet's color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A..., uPA...: μ PA..., uPB...: μ PB...,
uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
uF : μ F
- COILS
uH : μ H
- Abbreviation
G : German model

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-4649-430-A	BD BOARD, COMPLETE *****		R104	1-216-085-00	METAL CHIP	33K 5% 1/10W
		< CAPACITOR >		R105	1-216-097-00	METAL CHIP	100K 5% 1/10W
C101	1-163-005-11	CERAMIC CHIP	470PF 10% 50V	R106	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
C102	1-163-038-91	CERAMIC CHIP	0.1uF 25V	R107	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
C103	1-163-005-11	CERAMIC CHIP	470PF 10% 50V	R108	1-216-073-00	METAL CHIP	10K 5% 1/10W
C105	1-135-155-21	TANTALUM CHIP	4.7uF 10% 16V	R109	1-216-121-00	METAL CHIP	1M 5% 1/10W
C106	1-164-346-11	CERAMIC CHIP	1uF 16V	R110	1-216-025-00	METAL CHIP	100 5% 1/10W
C107	1-164-505-11	CERAMIC CHIP	2.2uF 16V	R112	1-216-049-00	METAL CHIP	1K 5% 1/10W
C108	1-163-035-00	CERAMIC CHIP	0.047uF 50V	R113	1-216-077-00	METAL CHIP	15K 5% 1/10W
C109	1-163-011-11	CERAMIC CHIP	0.0015uF 10% 50V	R114	1-216-077-00	METAL CHIP	15K 5% 1/10W
C110	1-163-017-00	CERAMIC CHIP	0.0047uF 5% 50V	R117	1-216-077-00	METAL CHIP	15K 5% 1/10W
C111	1-163-251-11	CERAMIC CHIP	100PF 5% 50V	R118	1-216-077-00	METAL CHIP	15K 5% 1/10W
C112	1-163-038-91	CERAMIC CHIP	0.1uF 25V	R121	1-216-077-00	METAL CHIP	15K 5% 1/10W
C113	1-163-038-91	CERAMIC CHIP	0.1uF 25V	R122	1-216-077-00	METAL CHIP	15K 5% 1/10W
C123	1-164-232-11	CERAMIC CHIP	0.01uF 50V	R123	1-216-073-00	METAL CHIP	10K 5% 1/10W
C124	1-164-005-11	CERAMIC CHIP	0.47uF 25V	R124	1-216-097-00	METAL CHIP	100K 5% 1/10W
C151	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	R125	1-216-049-00	METAL CHIP	1K 5% 1/10W
C152	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	R126	1-216-049-00	METAL CHIP	1K 5% 1/10W
C153	1-163-038-91	CERAMIC CHIP	0.1uF 25V	R127	1-216-049-00	METAL CHIP	1K 5% 1/10W
C154	1-164-336-11	CERAMIC CHIP	0.33uF 25V	R131	1-216-037-00	METAL CHIP	330 5% 1/10W
C155	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	R151	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C156	1-163-007-11	CERAMIC CHIP	680PF 10% 50V	R152	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C157	1-163-033-91	CERAMIC CHIP	0.022uF 50V	R153	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C158	1-163-033-91	CERAMIC CHIP	0.022uF 50V	R154	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C159	1-163-023-00	CERAMIC CHIP	0.015uF 5% 50V	R155	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C160	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	R156	1-216-070-00	METAL CHIP	7.5K 5% 1/10W
C161	1-163-038-91	CERAMIC CHIP	0.1uF 25V	R157	1-216-093-00	METAL CHIP	68K 5% 1/10W
		< CONNECTOR >		R158	1-216-076-00	METAL CHIP	13K 5% 1/10W
* CN101	1-568-865-11	SOCKET, CONNECTOR 23P		R159	1-216-085-00	METAL CHIP	33K 5% 1/10W
CN102	1-568-795-11	SOCKET, CONNECTOR 12P		R160	1-216-081-00	METAL CHIP	22K 5% 1/10W
		< IC >		R161	1-216-308-00	METAL CHIP	4.7 5% 1/10W
IC101	8-752-351-94	IC CXD2515Q		R162	1-216-093-00	METAL CHIP	68K 5% 1/10W
IC102	8-759-071-79	IC BA6297AFP		R163	1-216-093-00	METAL CHIP	68K 5% 1/10W
		< RESISTOR >				< SWITCH >	
R101	1-216-077-00	METAL CHIP	15K 5% 1/10W	S101	1-572-085-11	SWITCH, LEAF (LIMIT)	
R102	1-216-097-00	METAL CHIP	100K 5% 1/10W				
R103	1-216-077-00	METAL CHIP	15K 5% 1/10W				

DISPLAY

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	A-4673-270-A	DISPLAY BOARD, COMPLETE (M203) *****		C917	1-126-163-11	ELECT 4.7uF 20% 50V	
*	A-4673-374-A	DISPLAY BOARD, COMPLETE (M303) *****		C918	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
		< CAPACITOR >		C919	1-124-589-11	ELECT 47uF 20% 16V	
C201	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		C921	1-124-584-00	ELECT 100uF 20% 10V	
C202	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V				< CONNECTOR >	
C203	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		CN903	1-750-417-11	CONNECTOR, FFC/FPC 12P	
C204	1-124-584-00	ELECT 100uF 20% 10V		CNP201	1-537-472-21	JUMPER, FILM (WITH TERMINAL) 23P	
C205	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V				< DIODE >	
C206	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D909	8-719-914-42	DIODE DA204K	
C207	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D910	8-719-941-86	DIODE DAN202U	
C210	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V (M303)		D911	8-719-941-86	DIODE DAN202U	
C301	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V				< FLUORESCENT INDICATOR >	
C302	1-163-101-00	CERAMIC CHIP 22PF 5% 50V		FLD201	1-517-323-11	INDICATOR TUBE, FLUORESCENT	
C303	1-163-101-00	CERAMIC CHIP 22PF 5% 50V				< IC >	
C304	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		IC201	8-752-858-69	IC CXP82612-007Q	
C305	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		IC202	8-741-810-59	IC SBX1810-59 (M303)	
C306	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		IC301	8-759-185-27	IC PC1710U-A (M303)	
C307	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		IC301	8-759-185-29	IC PC1710U-BT1 (M203)	
C308	1-163-133-00	CERAMIC CHIP 470PF 5% 50V		IC302	8-759-996-43	IC RC4558PS	
C309	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		IC303	8-759-996-43	IC RC4558PS	
C310	1-163-102-00	CERAMIC CHIP 24PF 5% 50V		IC351	8-759-040-83	IC BA6287F	
C311	1-124-584-00	ELECT 100uF 20% 10V		IC901	8-759-821-93	IC LA5601	
C312	1-124-584-00	ELECT 100uF 20% 10V				< COIL >	
C321	1-163-125-00	CERAMIC CHIP 220PF 5% 50V		L301	1-410-375-11	INDUCTOR CHIP 3.3uH	
C322	1-163-125-00	CERAMIC CHIP 220PF 5% 50V		L302	1-410-369-11	INDUCTOR CHIP 1uH	
C323	1-163-125-00	CERAMIC CHIP 220PF 5% 50V		L303	1-414-234-11	INDUCTOR, FERRITE BEAD	
C324	1-163-125-00	CERAMIC CHIP 220PF 5% 50V		L901	1-412-282-41	INDUCTOR 470uH	
C325	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V				< TRANSISTOR >	
C326	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		Q201	8-729-027-43	TRANSISTOR DTC114EKA	
C329	1-163-143-00	CERAMIC CHIP 0.0012uF 5% 50V		Q301	8-729-023-22	TRANSISTOR 2SD2114K	
C330	1-163-143-00	CERAMIC CHIP 0.0012uF 5% 50V		Q302	8-729-023-22	TRANSISTOR 2SD2114K	
C331	1-124-589-11	ELECT 47uF 20% 16V		Q902	8-729-027-38	TRANSISTOR DTA144EKA	
C332	1-124-589-11	ELECT 47uF 20% 16V				< RESISTOR >	
C333	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V		R201	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
C334	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V		R202	1-216-045-00	METAL CHIP 680 5% 1/10W	
C340	1-164-159-11	CERAMIC 0.1uF 50V		R203	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C341	1-164-159-11	CERAMIC 0.1uF 50V		R204	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
C342	1-164-159-11	CERAMIC 0.1uF 50V		R205	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
C350	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		R206	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C909	1-126-096-11	ELECT 10uF 20% 35V		R207	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
C910	1-124-589-11	ELECT 47uF 20% 16V		R208	1-216-045-00	METAL CHIP 680 5% 1/10W	
C911	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V		R209	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C912	1-124-261-00	ELECT 10uF 20% 50V		R210	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
C913	1-124-584-00	ELECT 100uF 20% 10V					
C914	1-126-160-11	ELECT 1uF 20% 50V					
C915	1-124-261-00	ELECT 10uF 20% 50V					
C916	1-124-261-00	ELECT 10uF 20% 50V					

DISPLAY	LOADING	POWER
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Ref. No.	Part No.	Description	Remark
R211	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R212	1-216-061-00	METAL CHIP	3.3K 5% 1/10W
R213	1-216-097-00	METAL CHIP	100K 5% 1/10W
R214	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R215	1-216-045-00	METAL CHIP	680 5% 1/10W
R216	1-216-049-00	METAL CHIP	1K 5% 1/10W
R217	1-216-049-00	METAL CHIP	1K 5% 1/10W
R218	1-216-049-00	METAL CHIP	1K 5% 1/10W
R219	1-216-295-91	CONDUCTOR, CHIP	(2012)
R220	1-216-296-00	METAL CHIP	0 5% 1/8W
R221	1-216-049-00	METAL CHIP	1K 5% 1/10W
R222	1-216-049-00	METAL CHIP	1K 5% 1/10W
R223	1-216-049-00	METAL CHIP	1K 5% 1/10W
R224	1-216-049-00	METAL CHIP	1K 5% 1/10W
R302	1-216-041-00	METAL CHIP	470 5% 1/10W
R303	1-216-049-00	METAL CHIP	1K 5% 1/10W
R321	1-216-073-00	METAL CHIP	10K 5% 1/10W
R322	1-216-073-00	METAL CHIP	10K 5% 1/10W
R323	1-216-073-00	METAL CHIP	10K 5% 1/10W
R324	1-216-073-00	METAL CHIP	10K 5% 1/10W
R325	1-216-073-00	METAL CHIP	10K 5% 1/10W
R326	1-216-073-00	METAL CHIP	10K 5% 1/10W
R327	1-216-066-00	METAL CHIP	5.1K 5% 1/10W
R328	1-216-066-00	METAL CHIP	5.1K 5% 1/10W
R329	1-216-079-00	METAL CHIP	18K 5% 1/10W
R330	1-216-079-00	METAL CHIP	18K 5% 1/10W
R331	1-216-079-00	METAL CHIP	18K 5% 1/10W
R332	1-216-079-00	METAL CHIP	18K 5% 1/10W
R333	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R334	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R335	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R336	1-216-055-00	METAL CHIP	1.8K 5% 1/10W
R337	1-216-109-00	METAL CHIP	330K 5% 1/10W
R338	1-216-109-00	METAL CHIP	330K 5% 1/10W
R339	1-216-049-00	METAL CHIP	1K 5% 1/10W
R340	1-216-049-00	METAL CHIP	1K 5% 1/10W
R341	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R342	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R351	1-216-045-00	METAL CHIP	680 5% 1/10W
R352	1-216-021-00	METAL CHIP	68 5% 1/10W
R353	1-216-021-00	METAL CHIP	68 5% 1/10W
R354	1-216-069-00	METAL CHIP	6.8K 5% 1/10W
R907	1-216-298-00	METAL CHIP	2.2 5% 1/10W
R908	1-216-025-00	METAL CHIP	100 5% 1/10W
R909	1-216-097-00	METAL CHIP	100K 5% 1/10W
R910	1-216-059-00	METAL CHIP	2.7K 5% 1/10W
R911	1-216-013-00	METAL CHIP	33 5% 1/10W
< SWITCH >			
S201	1-554-118-00	SWITCH, PUSH (1 KEY)(POWER)	

Ref. No.	Part No.	Description	Remark
S202	1-554-303-21	SWITCH, TACTILE (TIME)	
S203	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S204	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)	
S205	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S206	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S207	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S208	1-554-303-21	SWITCH, TACTILE (OPEN/CLOSE △)	
S209	1-554-303-21	SWITCH, TACTILE (>)	
S210	1-554-303-21	SWITCH, TACTILE (■)	
S211	1-554-303-21	SWITCH, TACTILE (<<< <<<)	
S212	1-554-303-21	SWITCH, TACTILE (>>> >>>)	
S213	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)	
< VIBRATOR >			
X201	1-577-082-11	VIBRATOR, CERAMIC (4.0MHz)	
X301	1-567-908-11	VIBRATOR, CRYSTAL	

*	1-645-721-11	LOADING BOARD	

< CONNECTOR >			
* CN151	1-568-943-11	PIN, CONNECTOR 5P	
< MOTOR >			
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
< SWITCH >			
S151	1-572-086-11	SWITCH, LEAF (LOAD OUT)	
S152	1-572-086-11	SWITCH, LEAF (LOAD IN)	

*	1-654-813-11	POWER BOARD	

< CAPACITOR >			
C335	1-130-468-00	MYLAR	560PF 5% 50V
C336	1-130-468-00	MYLAR	560PF 5% 50V
C901	1-126-768-11	ELECT	2200uF 20% 16V
C902	1-126-939-11	ELECT	10000uF 20% 16V
C903	1-128-576-11	ELECT	100uF 20% 63V
C905	1-126-964-11	ELECT	10uF 20% 50V
C906	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C907	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C908	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C920	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
C922	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CN901	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P	
CN902	1-750-417-11	CONNECTOR, FFC/EPC 12P	
		< DIODE >	
D901	8-719-053-18	DIODE 1SR154-400TE-25	
D902	8-719-053-18	DIODE 1SR154-400TE-25	
D903	8-719-053-18	DIODE 1SR154-400TE-25	
D904	8-719-053-18	DIODE 1SR154-400TE-25	
D905	8-719-053-18	DIODE 1SR154-400TE-25	
D907	8-719-977-28	DIODE DTZ10B	
		< IC >	
IC902	8-759-633-42	IC M5293L	
		< JACK >	
J301	1-750-679-21	JACK, PIN 2P (LINE OUT L/R)	
		< TRANSISTOR >	
Q901	8-729-216-22	TRANSISTOR 2SA1162-G	
		< RESISTOR >	
R901	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R902	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R903	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R904	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
		< TRANSFORMER >	
△T901	1-450-213-11	TRANSFORMER, POWER	

		MISCELLANEOUS	

6	1-769-254-11	WIRE (FLAT TYPE) (12 CORE)	
△17	1-575-651-21	CORD, POWER (AEP, G)	
△17	1-696-907-11	CORD, POWER (UK)	
* 301	1-452-538-11	MAGNET	
△354	8-848-144-11	OPTICAL PICK-UP BLOCK (KSS-240A)	
357	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M151	A-4604-363-A	MOTOR (L) ASSY (LOADING)	
S101	1-572-085-11	SWITCH, LEAF	
△T901	1-450-213-11	TRANSFORMER, POWER	

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	

	1-467-316-11	REMOTE COMMANDER (RM-D320) (M303)	
	1-558-271-11	CORD, CONNECTION (AUDIO, 108cm)	
	3-759-484-51	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH) (AEP, UK)	
	3-759-484-61	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN, PORTUGUESE) (AEP)	
	3-759-484-71	MANUAL, INSTRUCTION (GERMAN) (G)	
*	4-927-355-01	CUSHION	
*	4-955-663-61	INDIVIDUAL CARTON (M303)	
*	4-955-663-71	INDIVIDUAL CARTON (M203)	
	4-962-615-01	COVER, BATTERY (for RM-D320) (M303)	

		HARDWARE LIST	

#1	7-682-548-04	SCREW +BVTT 3X8 (S)	
#2	7-685-871-01	SCREW +BVTT 3X6 (S)	
#3	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#4	7-682-562-04	SCREW +BVTT 4X10 (S)	
#5	7-621-775-10	SCREW +B 2.6X4	
#6	7-621-255-15	SCREW +P 2X3	
#7	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	

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

CDP-M203/M303

SONY
SERVICE MANUAL

AEP Model
UK Model

SUPPLEMENT-1

File this supplement with the service manual.

Subject : 1. PARTS CHANGED
2. BD BOARD CHANGED

(ECN-CD500187)

- The two of base unit BU-5BD10 and BU-5BD20 in the CD section are used for this model.
Refer to this service manual supplement-1 for the BD board of a set used BU-5BD20, and to the service manual is issued previously for the BD board of a set used BU-5BD10.
- As for the following items, refer to "CDP-213/313 SUPPLEMENT-1 (9-960-070-81)", but French production only.
 1. Electrical Block Checking (for BU-5BD20)
 2. Schematic Diagram — BD Section —
 3. Printed Wiring Boards — BD Section —
 4. IC Pin Function (IC101 CXD2545Q)
 5. ELECTRICAL PARTS LIST