

CDP-911/911E

SERVICE MANUAL

AEP Model
CDP-911

UK Model
CDP-911E

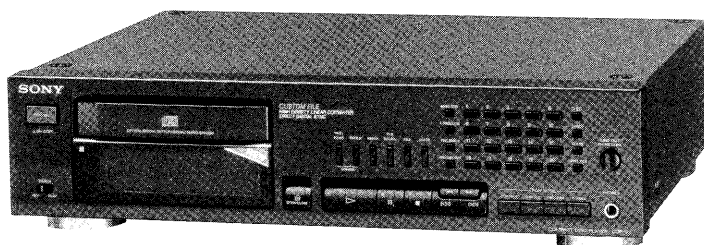


Photo : CDP-911

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM25-5BD10
Optical Pick-up Block Type	BU-5BD10B

SPECIFICATIONS

Compact disc player

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

Outputs

LINE OUT (FIXED) (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
LINE OUT (VARIABLE) (phono jacks)	Output level max. 2 V (at 50 kilohms) Load impedance over 50 kilohms
DIGITAL OUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level -18 dBm
PHONES (stereo phone jack)	Output level max. 28 mW Load impedance 32 ohms

General

Power requirements	CDP-911 (AEP, Germany model): 220 V - 230 V AC, 50/60 Hz CDP-911E (UK model): 240 V AC, 50 Hz CDP-911 (Australian model): 240 V AC, 50 Hz CDP-911 (E, Saudi Arabia model): 110 - 120, 220 - 240 V AC, 50/60 Hz
Power consumption	16 W
Dimensions (approx., including projections)	430 x 110 x 355 mm (w/h/d) (17 x 4 ⁵ / ₁₆ x 14 inches)
Mass (approx.)	CDP-911: 4.8 kg (10 lbs 10 oz) CDP-911E: 5.3 kg (11 lbs 11 oz)

— Continued on next page —

COMPACT DISC PLAYER
SONY[®]

Remote commander

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions (approx., including projections)	62 x 18 x 175 mm (w/h/d) (2 1/2 x 23/32 x 7 inches)
Mass (approx.)	130g (4.6 oz)

Supplied accessories

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

Design and specifications are subject to change without notice.

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

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

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	: INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL	: USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSÅFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	: AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTIINA LASERSÄTEILYLLE.
VARNING	: LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URÖPPNAD.
ADVARSEL	: USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

TABLE OF CONTENTS

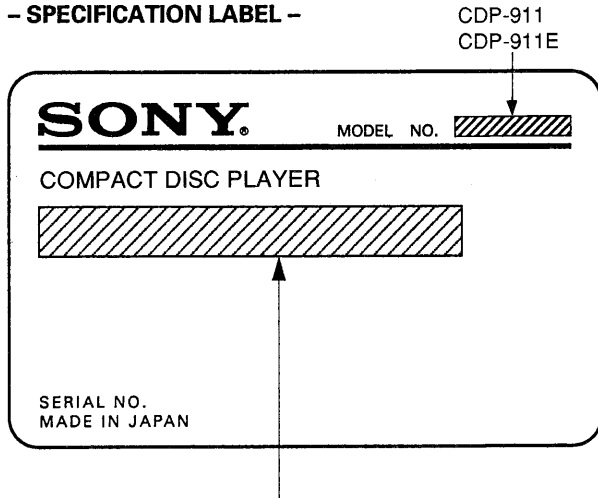
Section	Title	Page
SECTION 1.	SERVICING NOTE	3
SECTION 2.	GENERAL	
2-1.	Parts Identification	4
2-2.	Hooking Up the System	5
SECTION 3.	DISASSEMBLY	6
SECTION 4.	ELECTRICAL CHECKING	7
SECTION 5.	DIAGRAMS	
5-1.	IC Pin Functions	9
5-2.	Semiconductor Lead Layouts	15
5-3.	Waveforms	16
5-4.	Block Diagram	17
5-5.	Circuit Boards Location	20
5-6.	Printed Wiring Board	21
5-7.	Schematic Diagram	25
5-8.	IC Block Diagrams	29
5-9.	Terminal Connection of Fluorescent Indicator Tube (FLD401)	30
SECTION 6.	EXPLODED VIEWS	
6-1.	Cabinet Section	32
6-2.	Front Panel Section	33
6-3.	CD Mechanism Section (CDM25-5BD10)	34
6-4.	Optical Pick-up Block Section (BU-5BD10B)	35
SECTION 7.	ELECTRICAL PARTS LIST	36

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.

MODEL IDENTIFICATION

— SPECIFICATION LABEL —



AEP, Germany MODEL : AC220 — 230V, 50/60Hz, 16W
Australian, UK MODEL : AC240V, 50Hz, 16W
E, Saudi Arabia Model : AC110 — 120, 220 — 240V,
50/60Hz, 16W

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.

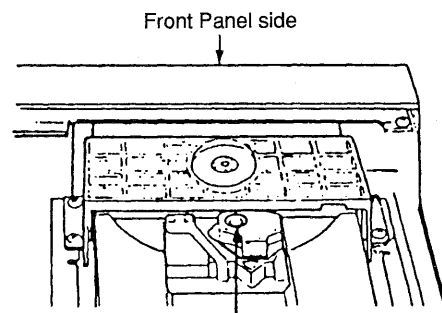
The flexible board is easily damaged and should be handled with care.

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.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



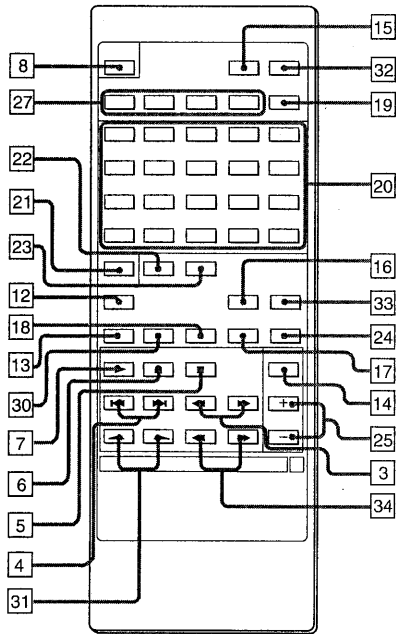
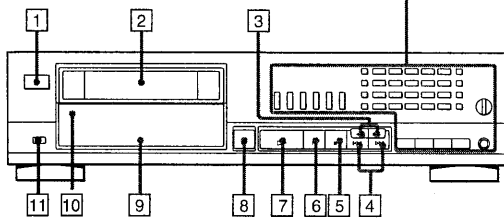
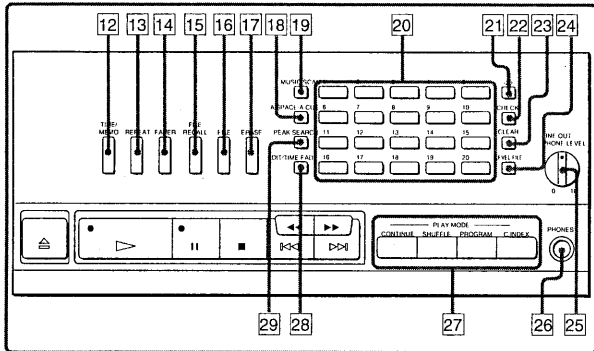
- ① Confirm that laser beam is spread.
- ② Up and down motion of the objective lens. (3 times)

How to open the DISC TRAY when POWER SWICH turns off
See page 6 for SECTION 3 DISASSEMBLY.

SECTION 2 GENERAL

This section is extracted from instruction manual.

2-1. PARTS IDENTIFICATION

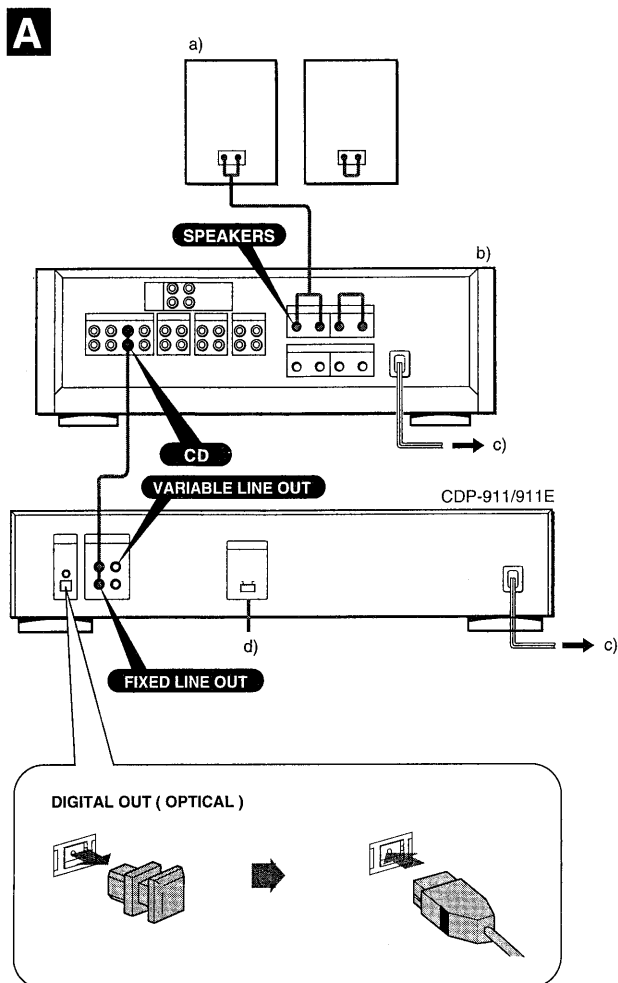


Front Panel/Remote Commander

- 1 POWER switch
- 2 Disc tray
- 3 ◀▶ (manual search) buttons
- 4 ◀▶▶▶ (AMS*) buttons
- 5 ■ (stop) button
- 6 || (pause) button and indicator
- 7 ▶ (play) button and indicator
- 8 ▲ OPEN/CLOSE button
- 9 Display
- 10 Remote sensor
- 11 TIMER switch
- 12 TIME/MEMO button
(TIME on the remote commander)
- 13 REPEAT button
- 14 FADER button
- 15 FILE RECALL button
- 16 FILE button
- 17 ERASE button
- 18 A.SPACE/A.CUE button
- 19 MUSIC SCAN button
(M.SCAN button on the remote commander)
- 20 Numeric buttons
- 21 >20 (over 20) button
- 22 CHECK (program check) button
- 23 CLEAR (program clear) button
- 24 LEVEL FILE button
- 25 LINE OUT PHONE LEVEL control
(LINE OUT LEVEL +/- buttons on the remote commander)
- 26 PHONES jack
- 27 Play mode buttons
CONTINUE button
SHUFFLE button
PROGRAM button
C.INDEX
- 28 EDIT/TIME FADE button
- 29 PEAK SEARCH button
- 30 A ↔ B button
(only on the remote commander)
- 31 ← / → INDEX buttons
(only on the remote commander)
- 32 DISPLAY MODE button
(only on the remote commander)
- 33 MEMO INPUT button
(only on the remote commander)
- 34 ◀▶▶▶ SLOW button (only on the remote commander)

* AMS is the abbreviation of Automatic Music Sensor.

2-2. HOOKING UP THE SYSTEM



You can connect the unit with an analog or digital signal depending on your amplifier or D/A converter.

Notes on Connection

- Turn off the power of each unit before making connections. Connect the AC power cord last.
- Be sure to insert the plugs firmly into the jacks. Loose connections may cause hum and noise.
- Leave a little slack in the connecting cord to allow for inadvertent impact or vibration.
- The supplied audio cord plugs and jacks are color coded. Red plugs and jacks are for the right channel (R) and white ones are for the left channel (L).

Connecting to an Equipment **A**

- a) Speaker system
- b) Amplifier
- c) to an AC outlet
- d) Voltage selector (except for European and Australian models)

When using the LINE OUT

FIXED: The output level is fixed.

VARIABLE: The output level can be adjusted with the LINE OUT PHONE LEVEL control (or the LINE OUT LEVEL +/- on the remote commander).

Notes on LINE OUT

- Connect your system to the VARIABLE output when using level file.
- If the LINE OUT PHONE LEVEL control (or the LINE OUT LEVEL +/-) is adjusted while recording, the recording level will change even when it is preset on the tape deck.

When using the DIGITAL OUT (OPTICAL)

When connecting to an amplifier or a D/A converter with an optical cord, use DIGITAL OUT (OPTICAL) instead of LINE OUT.

Take off the cap, and plug in firmly.

Notes on DIGITAL OUT (OPTICAL)

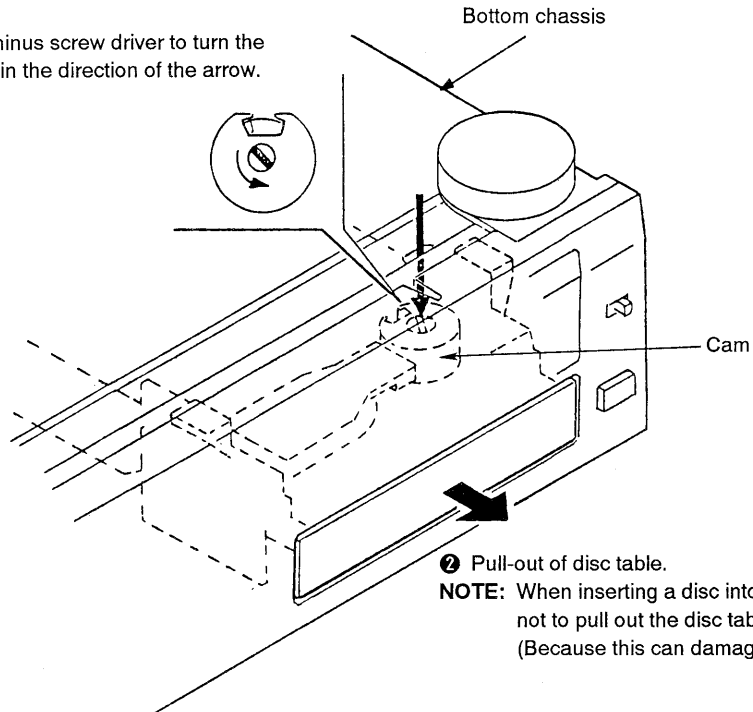
- When connecting with DIGITAL OUT (OPTICAL), use the POC-15 audio optical connecting cord (not supplied).
- Note that when the DIGITAL OUT is connected, fade out, fade in, time fade and level file functions cannot be used.
- Note that there may be some noise when you play a CD software other than music (such as a CD-ROM).

SECTION 3 DISASSEMBLY

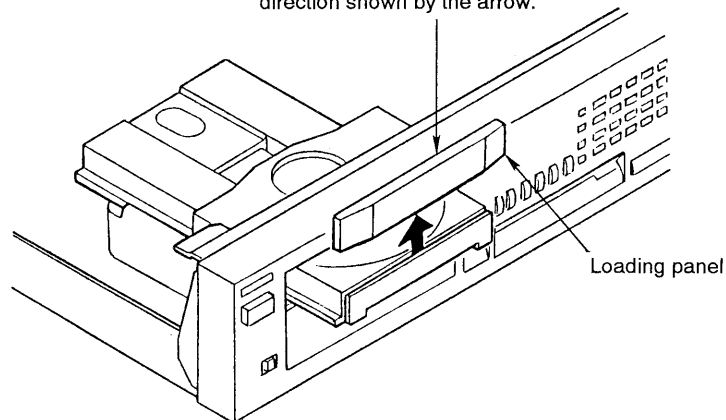
- Remove the following devices shown by ❶, etc.
In the order of the numbers.

REMOVAL OF LOADING PANEL

- ❶ Use a minus screw driver to turn the cam by in the direction of the arrow.



- ❸ Remove the loading panel in the direction shown by the arrow.

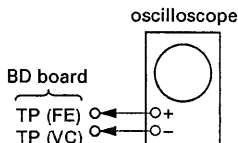


SECTION 4 ELECTRICAL CHECKING

Note :

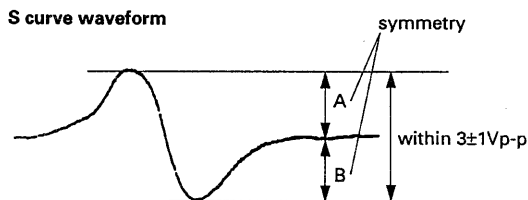
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal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

S Curve Check



Procedure :

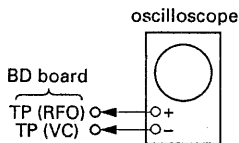
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3 \pm 1 V_{p-p}$.



5. After check, remove the lead wire TP (FEI) connected in step 2.

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

RF Level Check



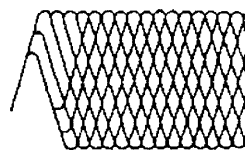
Procedure :

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

Note :

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

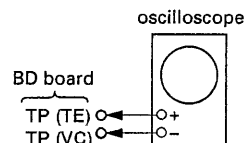
RF signal waveform



VOLT/DIV: 20mV
(Used probe=10:1)
TIME/DIV: 500nS

level :
 $1.2^{+0.25}_{-0.2} V_{p-p}$

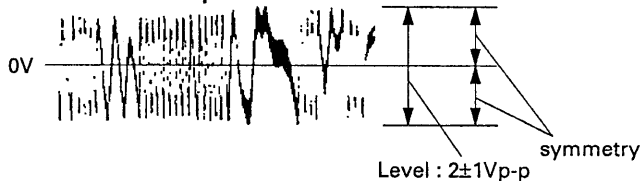
E-F Balance Check



Procedure :

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

Traverse oscilloscope

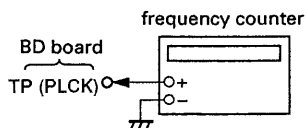


6. Remove the lead wire (TP [ADJ] and TP [TEI]) connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

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

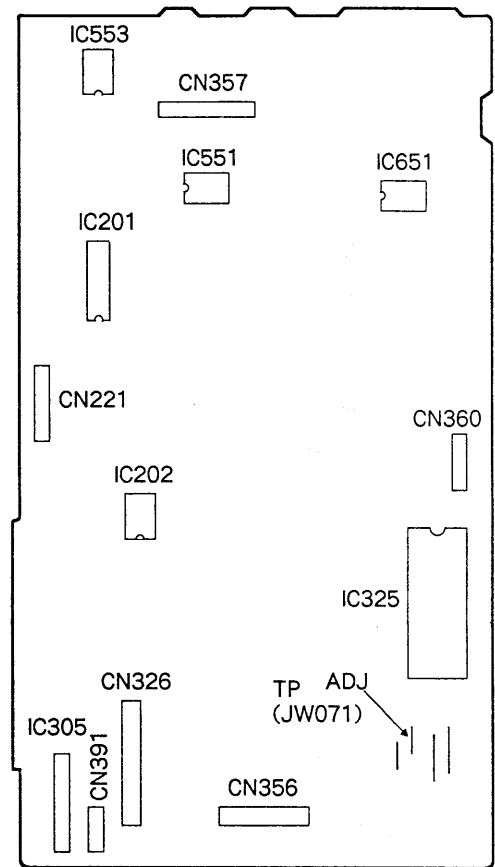
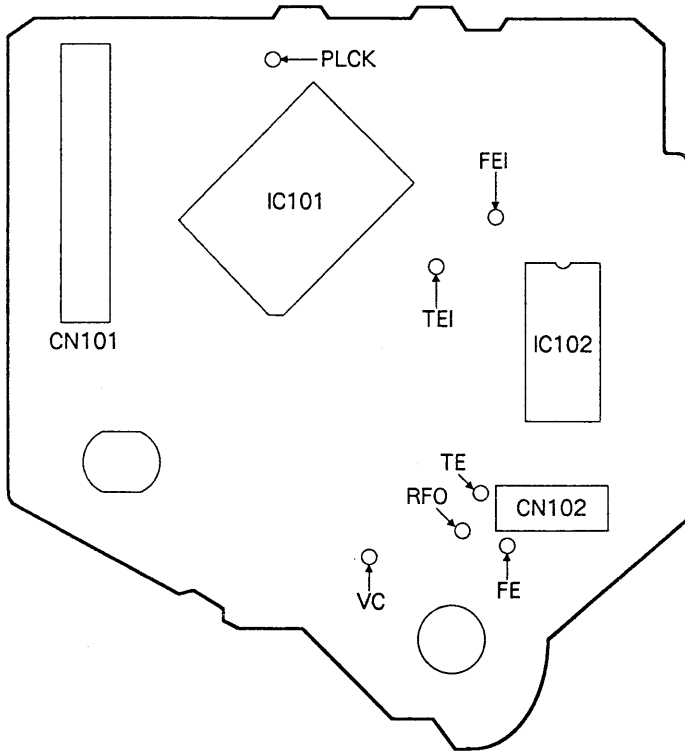


2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that reading on frequency counter is 4.3218MHz.

Adjustment Location:

[BD BOARD] — Conductor side —

[MAIN BOARD] — Component side —



SECTION 5 DIAGRAMS

5-1. IC PIN FUNCTIONS

- **IC101 DSP Controller (CXD2515Q)**

Functions effected by the captioned controller include focus (tracking/sled servo) EFM comparator, digital signal processor and CLV servo in the CD unit.

Pin No.	Pin Name	I/O	Description
1	SRON	O	Sled drive signal output. (Not in use with the model.)
2	SRDR	O	Sled drive signal output.
3	SFON	O	Sled drive signal output. (Not in use with the model.)
4	TFDR	O	Tracking drive signal output.
5	TRON	O	Tracking drive signal output. (Not in use with the model.)
6	TRDR	O	Tracking drive signal output.
7	TFON	O	Tracking drive signal output. (Not in use with the model.)
8	FFDR	O	Focus drive signal output.
9	FRON	O	Focus drive signal output. (Not in use with the model.)
10	FRDR	O	Focus drive signal output.
11	FFON	O	Focus drive signal output. (Not in use with the model.)
12	VCOO	O	Output of oscillation circuit for analog EFM PLL. (Not in use with the model.)
13	VCOI	I	Input of oscillation circuit for analog EFM PLL. (Not in use with the model.) The equipment is fixed at "L".
14	TEST	I	Test terminal. Normally: ground.
15	DVss	—	Digital ground terminal.
16	TEST2	I	Test terminal. Normally: ground.
17	TEST3	I	Test terminal. Normally: ground.
18	PDO	O	Output of charge-pump for analog EFM PLL. (Not in use with the model.)
19	VPCO	O	Output of charge-pump for variable pitch PLL. (Not in use with the model.)
20	VCKI	I	Clock signal input from VCO for variable pitch. (Not in use with the model.) The equipment is fixed at "L".
21	AVD2	—	Analog power supply terminal.
22	IGEN	I	Power supply terminal for operational amplifier.
23	AVS2	—	Analog ground terminal.
24	ADII	I	A/D converter input.
25	ADIO	O	Operational amplifier output.
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 No.	Pin Name	I/O	Description
31	FILO	O	Output of filter for master PLL.
32	FILI	I	Input of filter for master PLL.
33	PCO	O	Output of charge-pump for master PLL.
34	CLTV	I	Input of control voltage for master VCO.
35	AVS1	—	Analog ground terminal.
36	RFAC	I	EFM signal input.
37	BIAS	I	Input of constant current for auto-assymmetry circuit.
38	ASYI	I	Auto-assymmetry comparator voltage input.
39	ASYO	O	EFM full-swing output.
40	AVD1	—	Analog power supply terminal.
41	DVD1	—	Digital power supply terminal.
42	ASYE	I	ON/OFF control of auto-assymmetry circuit. The equipment is fixed at "H".
43	PSSL	I	Input of output mode select for audio data. The equipment is fixed at "L".
44	WDCK	O	48 bit slot D/A interface word-clock output. (Not in use with the model.)
45	LRCK	O	48 bit slot D/A interface LR-clock output.
46	DATA	O	PSSL=1: DA16 output, PSSL=0: Serial data of 48 bit slot.
47	BCLK	O	PSSL=1: DA15 output, PSSL=0: Bit clock of 48 bit slot.
48	64DATA	O	PSSL=1: DA14 output, PSSL=0: Serial data of 64 bit slot. (Not in use with the model.)
49	64BCLK	O	PSSL=1: DA13 output, PSSL=0: Bit clock of 64 bit slot. (Not in use with the model.)
50	64LRCK	O	PSSL=1: DA12 output, PSSL=0: LR clock of 64 bit slot. (Not in use with the model.)
51	GTOP	O	PSSL=1: DA11 output, PSSL=0: GTOP output. (Not in use with the model.)
52	XUGF	O	PSSL=1: DA10 output, PSSL=0: XUGF output. (Not in use with the model.)
53	XPLCK	O	PSSL=1: DA09 output, PSSL=0: XPLCK output.
54	GFS	O	PSSL=1: DA08 output, PSSL=0: GFS output.
55	PFCK	O	PSSL=1: DA07 output, PSSL=0: PFCK output.
56	C2PO	O	PSSL=1: DA06 output, PSSL=0: C2PO output. (Not in use with the model.)
57	XRAOF	O	PSSL=1: DA05 output, PSSL=0: XRAOF output. (Not in use with the model.)
58	MNT3	O	PSSL=1: DA04 output, PSSL=0: MNT3 output.
59	MNT2	O	PSSL=1: DA03 output, PSSL=0: MNT2 output.
60	MNT1	O	PSSL=1: DA02 output, PSSL=0: MNT1 output.
61	MNT0	O	PSSL=1: DA01 output, PSSL=0: MNT0 output.
62	XTAI	I	X'tal oscillation circuit input. (16.9MHz)
63	XTAO	O	X'tal oscillation circuit output. (Not in use with the model.)
64	XTSL	I	X'tal select input. The equipment is fixed at "H".
65	DVss	—	Digital ground terminal.

Pin No.	Pin Name	I/O	Description
66	FSTI	I	2/3 divide input of ②, ③ pin.
67	FSTO	O	2/3 divide output of ②, ③ pin.
68	C4M	O	4.2336MHz output. (Not in use with the model.)
69	C16M	O	16.9344MHz output. (Not in use with the model.)
70	MD2	I	Digital out ON/OFF control terminal. The equipment is fixed at "H".
71	DOUT	O	Output of digital out signal.
72	EMPH	O	Emphasis mode select output of playback disc.
73	WFCK	O	WFCK output.
74	SCOR	O	Sub-code sync output.
75	SBSO	O	Serial output of sub P-W. (Not in use with the model.)
76	EXCK	I	Input of clock signal for SBSO read out.
77	SUBQ	O	Sub-Q 80-bit output.
78	SQCK	I	Clock input for SQSO read-out.
79	MUTE	I	Muting select pin.
80	SENS	O	Sense signal output.
81	XRST	I	System reset signal input.
82	DIRC	I	Used for 1 track jump.
83	SCLK	I	Input of clock signal for read the sens serial data.
84	DFSW	I	DFCT select terminal. The equipment is fixed at "L".
85	ATSK	I	Antch-shock terminal. The equipment is fixed at "L".
86	DATA	I	Serial data input from IC327 (system control).
87	XLAT	I	Latch signal input from IC327 (system control).
88	CLOK	I	Serial data transfer clock input from IC327 (system control).
89	COUT	O	Track count signal output.
90	DVDD	—	Digital power supply terminal.
91	MIRR	O	MIRR signal output. (Not in use with the model.)
92	DFCT	O	Deffect signal output.
93	FOK	O	Focus OK output.
94	FSW	O	Output of filter select for spindle motor (M101).
95	MON	O	Output of ON/OFF control for spindle motor (M101).
96	MDP	O	Output of servo control for spindle motor (M101).
97	MDS	O	Output of servo control for spindle motor (M101). (Not in use with the model.)
98	LOCK	O	Sled run-away prevention circuit operates when this signal is "L". (Not in use with the model.)
99	SSTP	I	The limit switch (S101) is connected to this pin.
100	SFDR	O	Sled drive signal output.

• **IC327 Main System Controller (M37451M8-331FP)**

Functions effected by the captioned controller include IC101 (Digital signal processing, servo) and loading motor control, data exchange with IC401 (sub system controller).

Pin No.	Pin Name	I/O	Description
1	NC	—	No connection.
2	NC	—	No connection.
3	CNIN (SENSE)	I	Input of SENSE signal for COUT count from IC101 (CXD2515Q).
4	QINT	O	Command pulse output to sub system controller (IC401).
5	M/F	I/O	Master/File command select input and output with sub system controller (IC401).
6	SACK	O	Command acknowledge output to sub system controller (IC401).
7	MREQ	I	Command request input from sub system controller (IC401).
8 to 11	CMD3 to CMD0	I/O	Input and output of data exchange with sub system controller (IC401).
12	CLK	O	Data clock signal output to IC101 (CXD2515Q).
13	XLT	O	Data latch pulse signal output to IC101 (CXD2515Q).
14	DATA	O	Data signal output to IC101 (CXD2515Q).
15	ATT (DATA)	O	Attenuator data output to IC301 (CXD2567M).
16	SHIFT (CLK)	O	Attenuator data clock output to IC301 (CXD2567M).
17	LATCH (XLT)	O	Attenuator data latch pulse output to IC301 (CXD2567M).
18	LDON	O	Laser ON/OFF control output to optical pick-up block.
19	SCOR	I	Sub-code sync (S0+S1) detection input from IC101 (CXD2515Q).
20	NC	—	No connection.
21	NC	—	No connection.
22	NC	—	No connection.
23	NC	—	No connection.
24	NC	—	No connection.
25	CNVSS	—	Ground terminal. (GND)
26	$\overline{\text{RESET}}$	I	Reset signal input. "L": RESET
27	NC	—	No connection.
28	XIN	I	Clock signal input. (10MHz)
29	XOUT	O	Clock signal output.
30	NC	—	No connection.
31	—	—	No connection.
32	GND	—	Ground terminal. (GND)
33	NC	—	No connection.
34	MUTE	O	Muting signal output.
35	WE	O	Write enable output to IC325 (RAM).
36 to 40	A12 to A8	O	Address signal output to IC325 (RAM).

Pin No.	Pin Name	I/O	Description
41	NC	—	No connection.
42 to 49	A7 to A0	O	Address signal output to IC325 (RAM).
50 to 57	D7 to D0	I/O	Input and output of data signal with IC325 (RAM).
58	SENS	I	Input of SENSE signal for COUT count from IC101 (CXD2515Q).
59	GFS	I	GFS signal input from IC101 (CXD2515Q). "L": NG, "H": OK
60	FOK	I	FOK signal input from IC101 (CXD2515Q). "L": NG, "H": OK
61	ADJ	I	Test mode terminal. GFS is no longer monitored during PLAY, PAUSE or SEARCH, while not stopping even with GFS remaining still at "L" (NG).
62	AFADJ	I	Test mode terminal. It is possible to check the interface between the sub system controller (IC401) and this controller (IC327).
63	INSW	I	Input of S151 (Loading in switch).
64	OUTSW	I	Input of S152 (Loading out switch).
65	VLEVEL	I	Level input of remote control volume (RV901).
66	VOLUP	O	Output of volume up control to remote control volume (RV901).
67	VOLDOWN	O	Output of volume down control to remote control volume (RV901).
68	DAVREF	—	Input terminal of reference voltage to D/A input port.
69	ADVREF	—	Input terminal of reference voltage to A/D input port.
70	AVSS	—	Ground terminal. (GND)
71	AVCC	—	Power supply terminal. (+5V)
72	VCC	—	Power supply terminal. (+5V)
73	VSS	—	Ground terminal. (GND)
74	SCLK	O	Calculation readout clock output to IC101 (CXD2515Q).
75	SQCLK	O	Subcode Q data readout clock output to IC101 (CXD2515Q).
76	VOLLED	O	Control output to remote control volume LED (D901).
77	SUB Q	I	Subcode Q data input from IC101 (CXD2515Q).
78	LODIN	O	Output to rotate M201 (loading motor) in the loading in direction. *1
79	LODOUT	O	Output to rotate M201 (loading motor) in the loading out direction. *1
80	NC	—	No connection.

*1 Loading motor control

	IN	OUT	BRAKE
LODIN ⑦⑧	"H"	"L"	"H"
LODOUT ⑦⑨	"L"	"H"	"H"

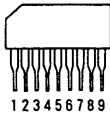
• **IC401 Sub System Controller (MSC62408-100GS-V1K)**

Functions effected by the captioned controller include fluorescent indicator tube (FLD401) drive control, key IN/OUT control and data exchange with IC327 (main system controller).

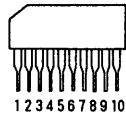
Pin No.	Pin Name	I/O	Description
1	SCAN6	O	Key scan control signal output.
2	TIMER	I	Timer switch (S402) control input.
3 to 9	KEY0 to KEY6	I	Key signal input.
10 to 13	CMD0 to CMD3	I/O	Input and output of data exchange with main system controller (IC327).
14	M.REQ	O	Command request output to main system controller (IC327).
15	S.ACK	I	Command acknowledge input from main system controller (IC327).
16	M/F	I/O	Input and output of master/file command select signal for main system controller (IC327).
17	RMIN	I	Sircs signal input from remote control receiver (IC402).
18	997X/ES	I	Model selection port. The equipment is fixed at "H".
19	Q.INT	I	Command pulse input from main system controller (IC327).
20	RESET	I	Reset signal input. "L": RESET.
21	TEST	I	Not in use with the model. The equipment is fixed at "L".
22	-	-	No connection.
28	PAUSE	O	LED drive output of PAUSE indicator.
29	PLAY	O	LED drive output of PLAY indicator.
30	OSC1	I	Clock signal input. (4.19MHz)
31	OSC0	O	Clock signal output.
32	Vss	-	Ground terminal. (GND)
33 to 44	T0 to T11	O	Grid drive signal output to fluorescent indicator tube (FLD401).
45 to 48	S28 to S25	O	Segment drive signal output to fluorescent indicator tube (FLD401).
49	VFLT	I	Input terminal of voltage (+35V) for fluorescent indicator tube (FLD401).
50 to 73	S24 to S1	I	Segment drive signal output to fluorescent indicator tube (FLD401).
74	VDD	-	Power supply terminal. (+5V)
75 to 80	SCAN0 to SCAN5	O	Key scan control signal output.

5-2. SEMICONDUCTOR LEAD LAYOUTS

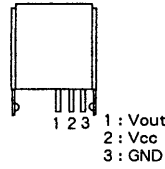
BA6208



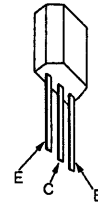
LB1641



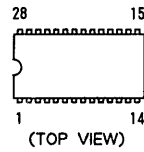
SBX1610-59



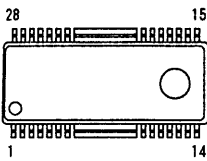
2SC2878-B



LH5164-H1



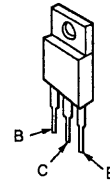
BA6297AFP



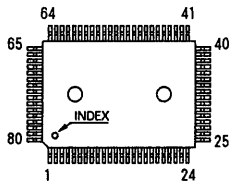
**DTA114ES
DTA144ES
DTC114ES
DTC143TS**



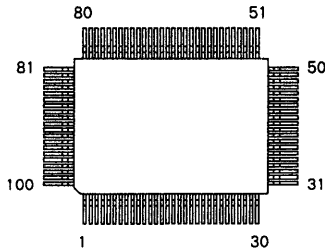
2SD1944-K



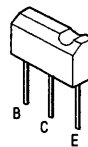
**M37451M8-331FP
MSC62408-100GS-V1K**



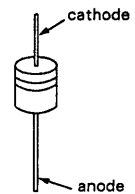
CXD2515Q



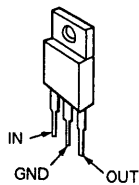
DTC114EF



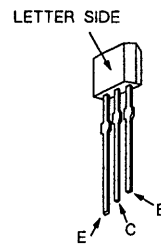
**HZS36-3L
RD4.3ES-B2
RD5.1ES-B1
RD8.2ES-B2
11EQS04**



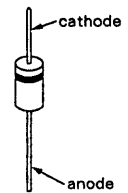
M5F78M07L



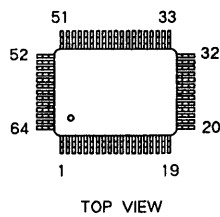
DTC144ES



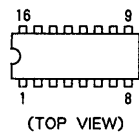
**1N4148M
10E2**



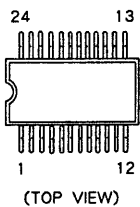
CXD2562Q



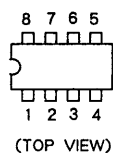
M5290P-16



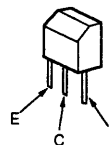
CXD2567M



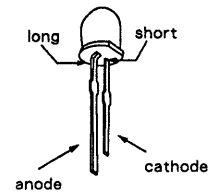
**NE5532P
RC4556D
 μ PC4558C**



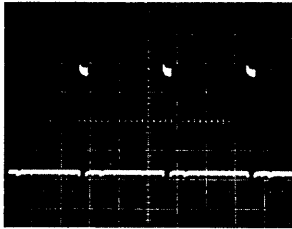
**2SB734-34
2SD774-34**



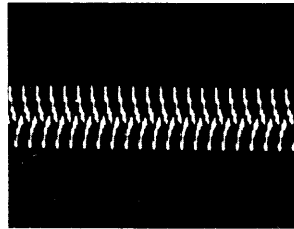
**SEL2510C-D
SEL2810A**



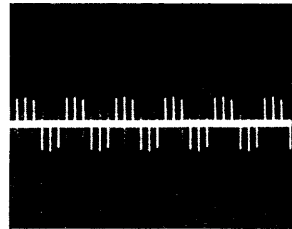
5-3. WAVEFORMS



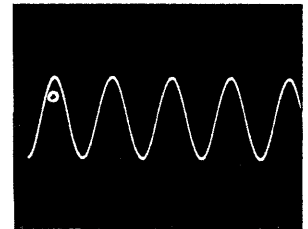
① IC401 ⑦③-⑤①pin,
④⑥-④⑤pin (S1-S28)
③③-④④pin (T0-T11)
37Vp-p, 6msec



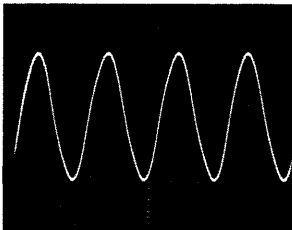
⑥ IC101 ④⑥pin (DATA)
0.1Vp-p, 0.5μsec



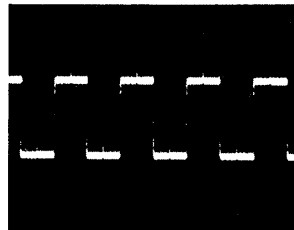
⑪ IC101 ③①pin (FILO)
1.8Vp-p, 85nsec



⑯ IC327 ②⑨pin (XIN)
5Vp-p, 0.1μsec



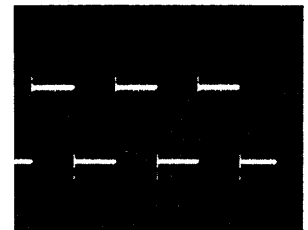
② IC401 ③①pin (OSC 0)
4.4Vp-p, 0.24μsec



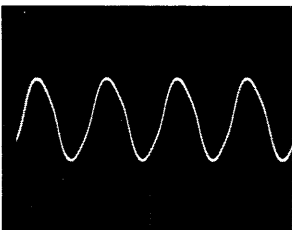
⑦ IC101 ④⑤pin (LRCK)
4.8Vp-p, 23μsec



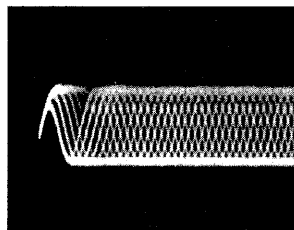
⑫ IC101 ②⑨pin (FE)
Approx. 40mVp-p
(Play mode)



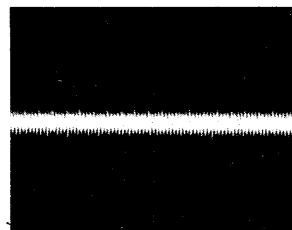
⑰ IC301 ②⑨pin (LRCKO)
5Vp-p, 1.4μsec



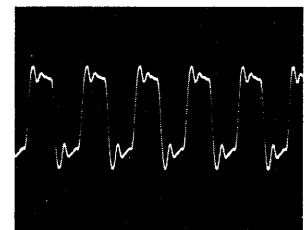
③ IC401 ③①pin (OSC 1)
6Vp-p, 0.24μsec



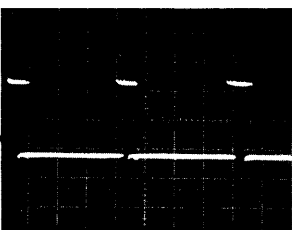
⑧ IC101 ③⑨pin (RFAC)
Approx. 130mVp-p
(Play mode)



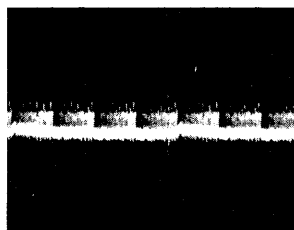
⑬ IC101 ②⑨pin (TE)
Approx. 50mVp-p
(Play mode)



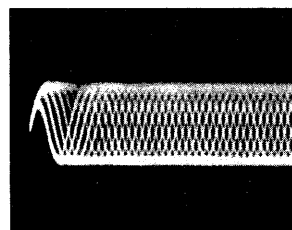
⑱ IC301 ①⑨pin (BCKO)
7Vp-p, 0.8μsec



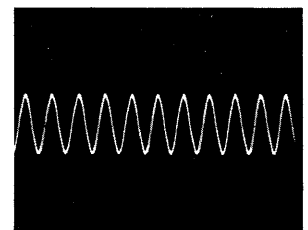
④ IC401 ⑦⑤-⑧①, ①pin
(SCAN 0-SCAN 6)
4.6Vp-p, 7.8msec



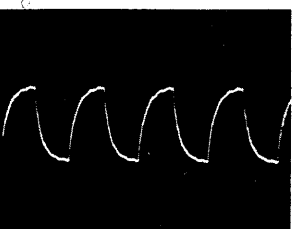
⑨ IC101 ③⑨pin (PCO)
Approx. 20mVp-p



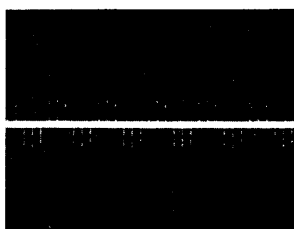
⑭ IC101 ②⑨pin (RFDC)
Approx. 175mVp-p
(Play mode)



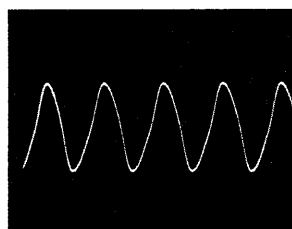
⑲ IC301 ①⑦pin (MCLK)
4Vp-p, 45nsec



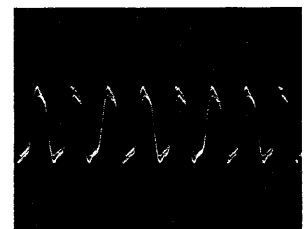
⑤ IC101 ④⑦pin (BCLK)
4.8Vp-p, 0.48μsec



⑩ IC101 ③②pin (FIL1)
80mVp-p, 18μsec

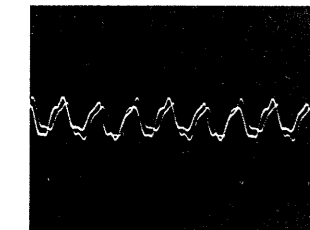
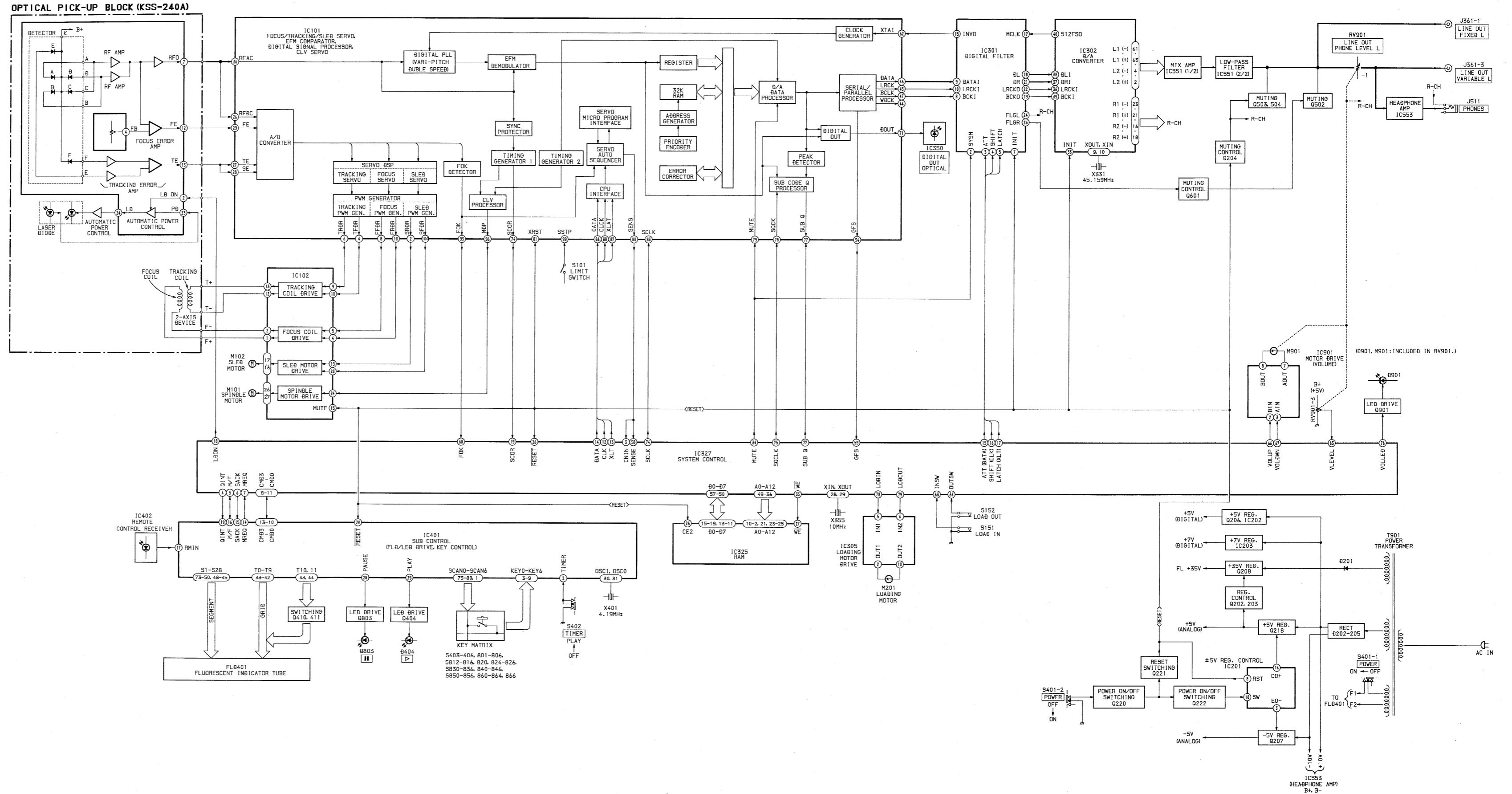


⑮ IC327 ②⑨pin (XOUT)
6Vp-p, 0.1μsec

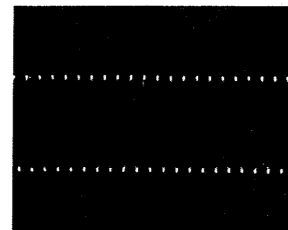


⑳ IC301 ①⑤pin (INVO)
4.8Vp-p, 60nsec

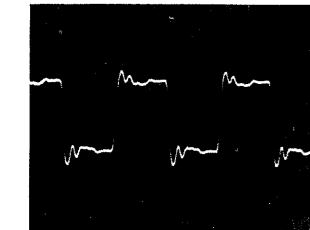
5-4. BLOCK DIAGRAM



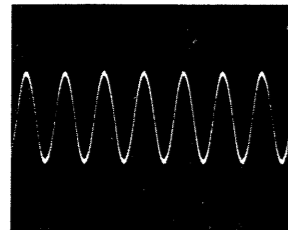
21 IC301 14 pin (INVI)
1.4Vp-p, 0.8μsec



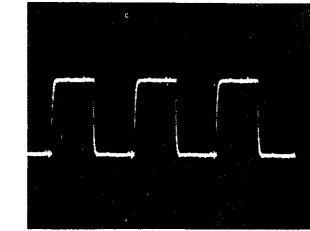
26 IC302 10 pin (XIN)
6.5Vp-p, 22nsec



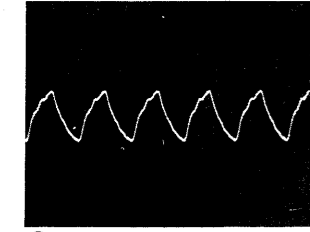
22 IC301 13 pin (128FS)
6.2Vp-p, 0.16μsec



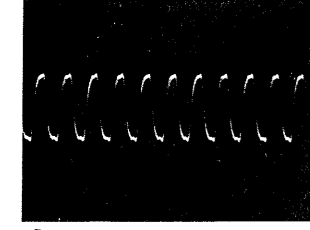
27 IC302 9 pin (XOUT)
6Vp-p, 68nsec



23 IC302 9 pin (LRCKI)
5Vp-p, 2.9μsec

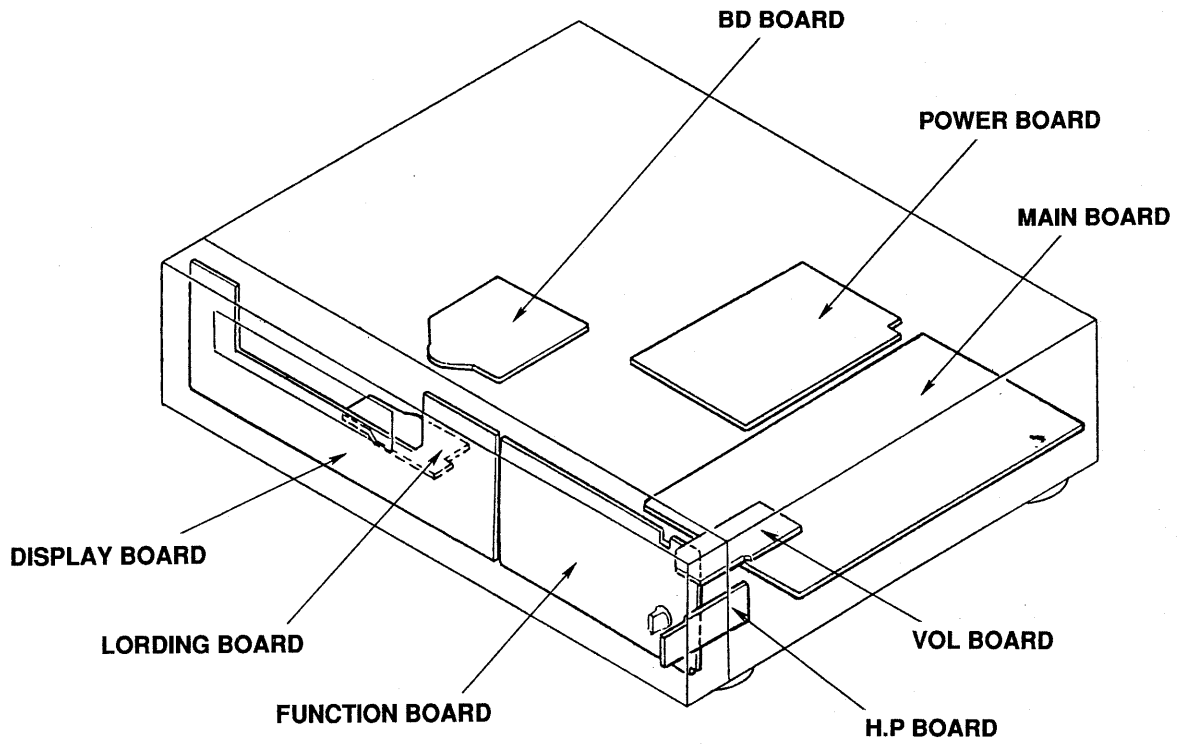


24 IC302 9 pin (BCKI)
3.8Vp-p, 90nsec



25 IC302 40 pin (512FSO)
4.2Vp-p, 45nsec

5-5. CIRCUIT BOARDS LOCATION

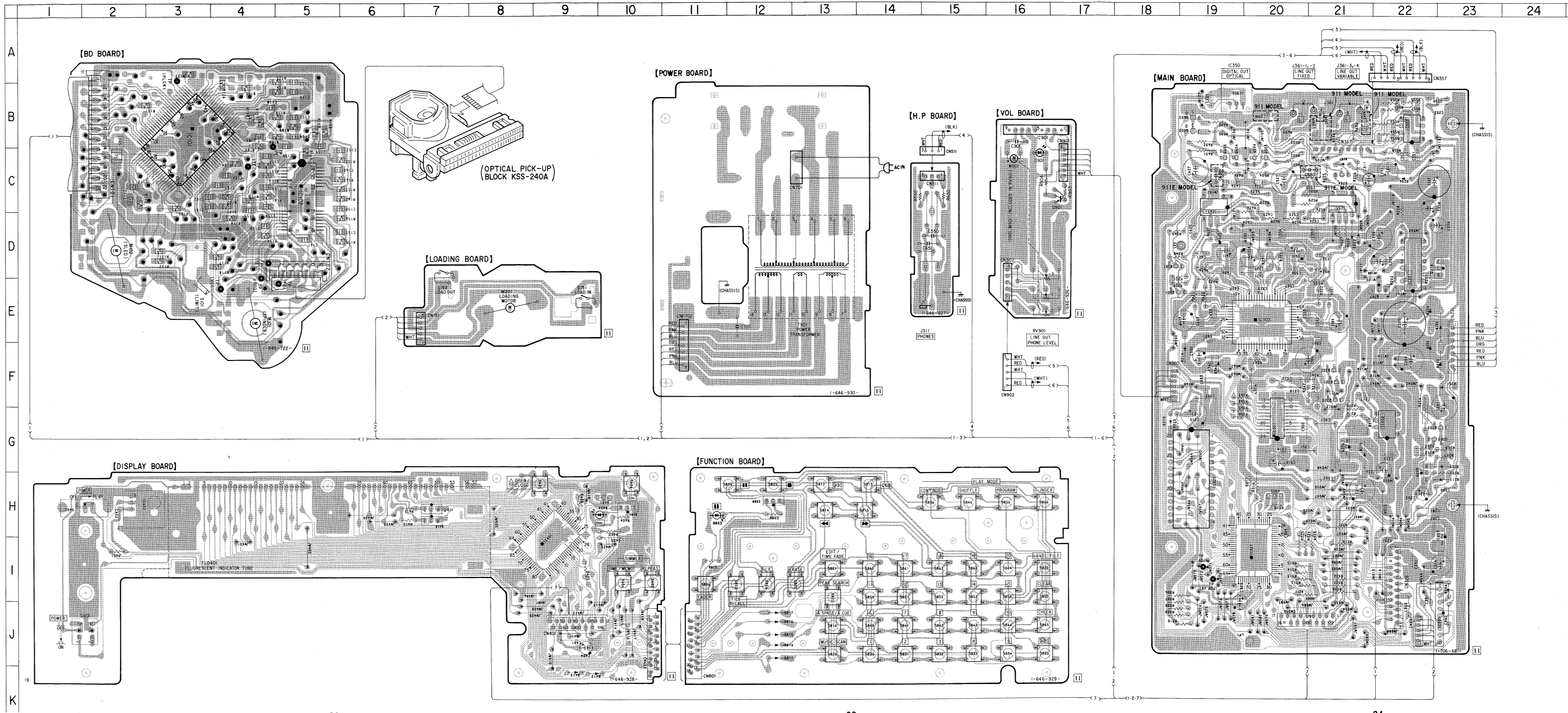


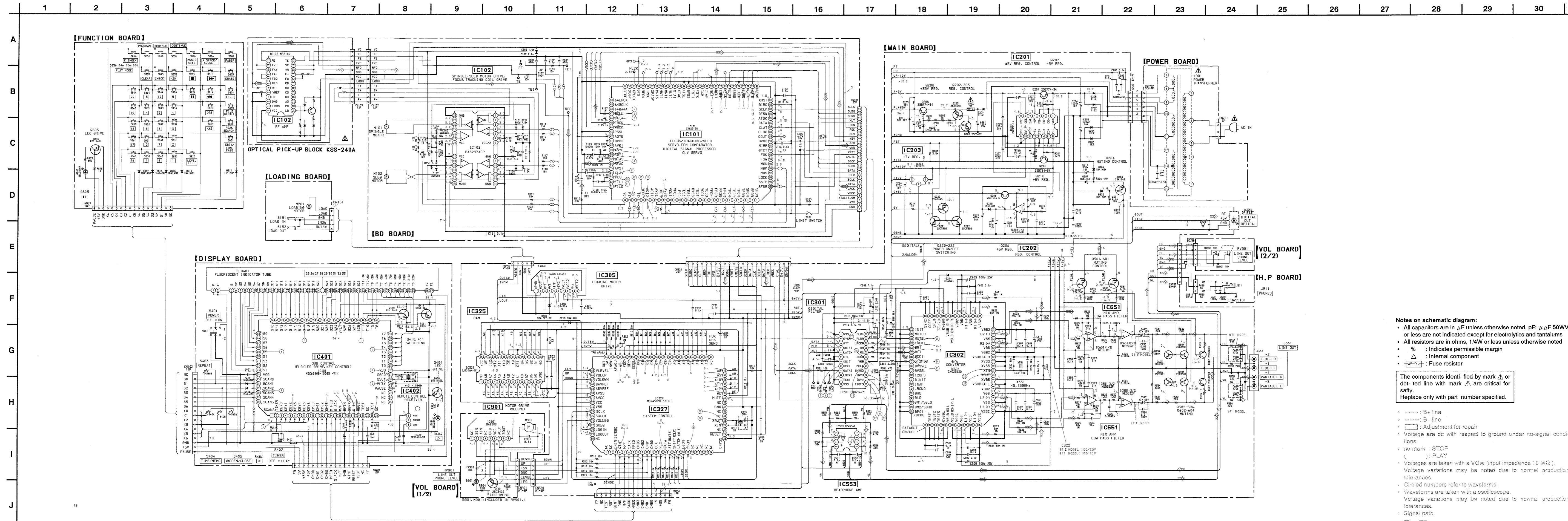
5-6. PRINTED WIRING BOARDS
 -See page 15 for Semiconductor Lead Layouts and 20 for Circuit Boards Location.

• SEMICONDUCTOR LOCATION

Ref.No.	Location	Ref.No.	Location
D201	F-23	IC325	H-19
D202	F-23	IC327	I-20
D203	E-23	IC350	B-19
D204	E-22	IC401	I-9
D205	F-22	IC402	H-2
D206	C-22	IC551	C-21
D207	C-21	IC553	B-22
D210	G-18	IC651	D-19
D211	H-23	IC901	B-16
D214	F-19		
D215	G-21	Q202	G-23
D225	G-23	Q203	G-22
D304	I-23	Q204	C-21
D322	D-21	Q206	G-21
D340	F-19	Q207	E-22
D404	H-10	Q208	H-22
D412	K-9	Q218	D-23
D413	K-9	Q220	F-21
D803	H-11	Q221	F-21
D811	J-12	Q222	F-21
D814	J-12	Q404	H-10
D815	J-12	Q410	H-7
D816	J-12	Q411	H-7
D817	J-12	Q501	D-18
D901	C-16	Q502	B-19
IC101	B-3	Q503	C-20
IC102	C-5	Q504	C-20
IC201	D-22	Q601	E-18
IC202	G-22	Q602	B-19
IC203	I-22	Q603	C-19
IC301	G-20	Q604	C-19
IC302	E-20	Q803	H-12
IC305	J-22	Q901	C-17

Notes on printed wiring boards:
 • ○ : Indicated a lead wire mounted on the component side
 • ● : Parts mounted on the conductor side
 • ◐ : Through hole
 • ◑ : Pattern from the side which enables seeing
 • ◒ : Pattern of the rear side





Notes on schematic diagram:

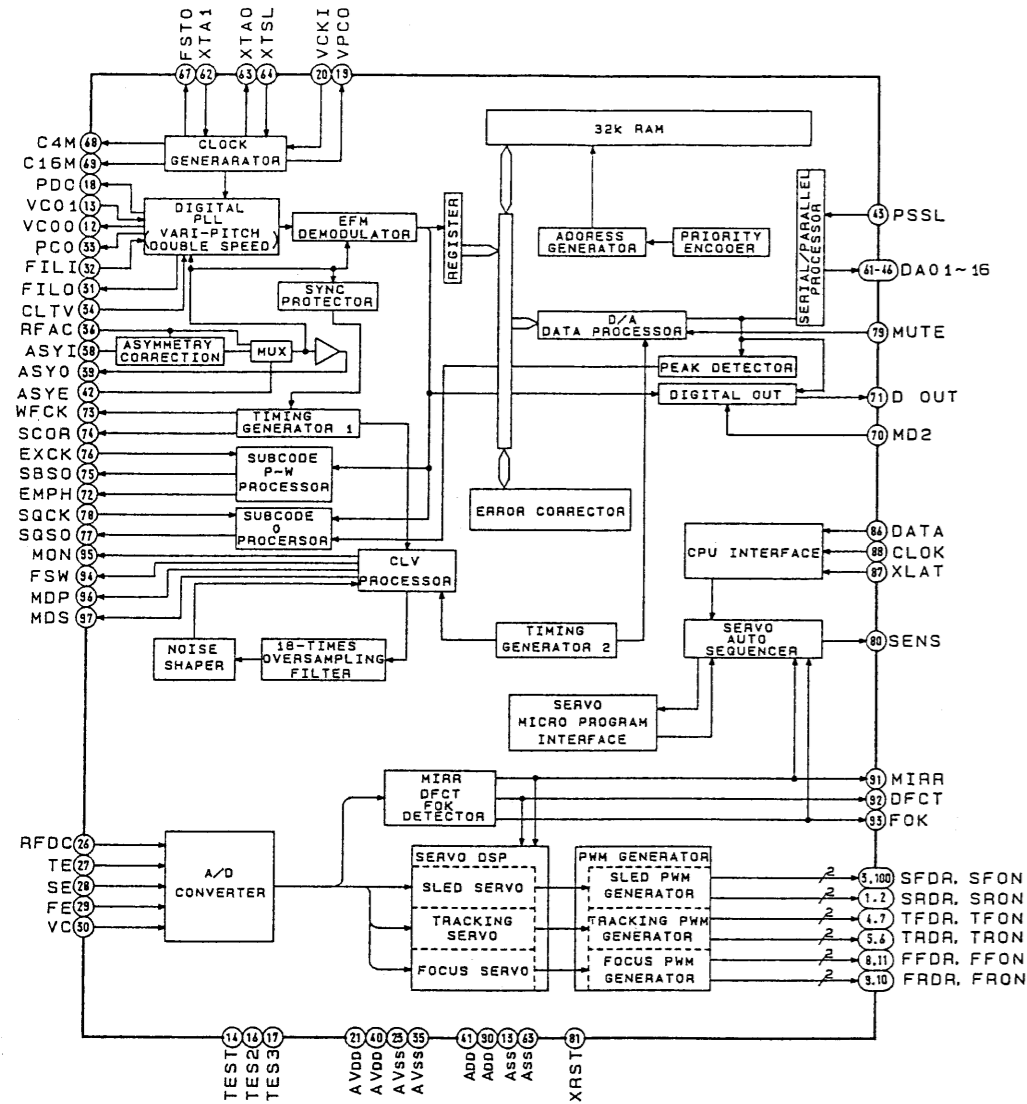
- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums
- All resistors are in ohms, 1/4W or less unless otherwise noted
- % : Indicates permissible margin
- Δ : Internal component
- \sim : Fuse resistor

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

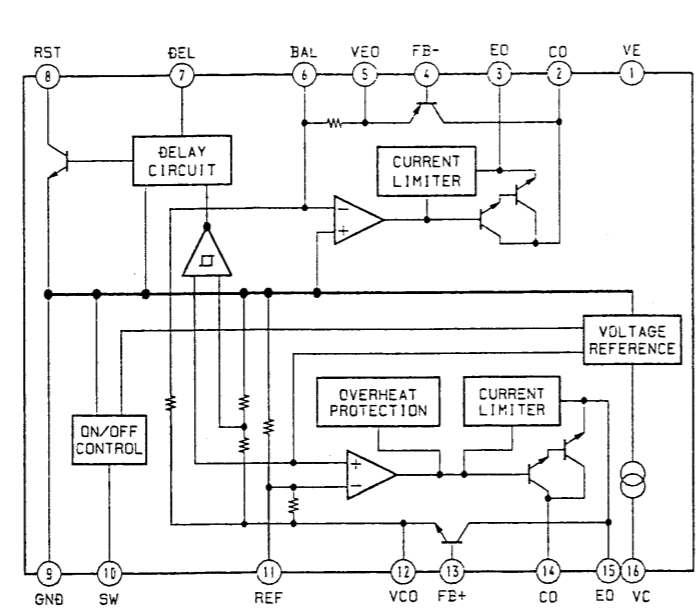
- : B+ line
- : B- line
- : Adjustment for repair
- : Voltage are dc with respect to ground under no-signal conditions.
- no mark : STOP
- () : PLAY
- Voltages are taken with a VOM (input impedance 10 $\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : CD

5-8. IC BLOCK DIAGRAM

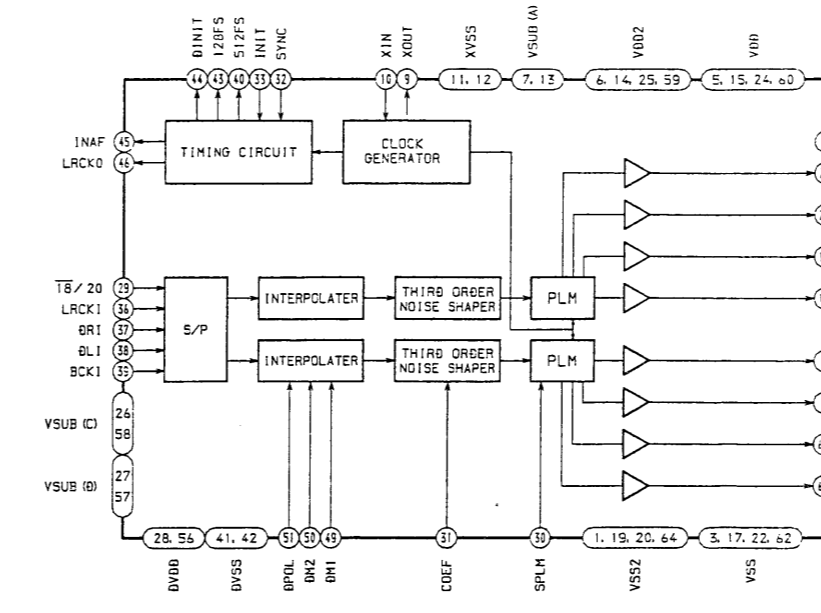
IC101 CXD2515Q



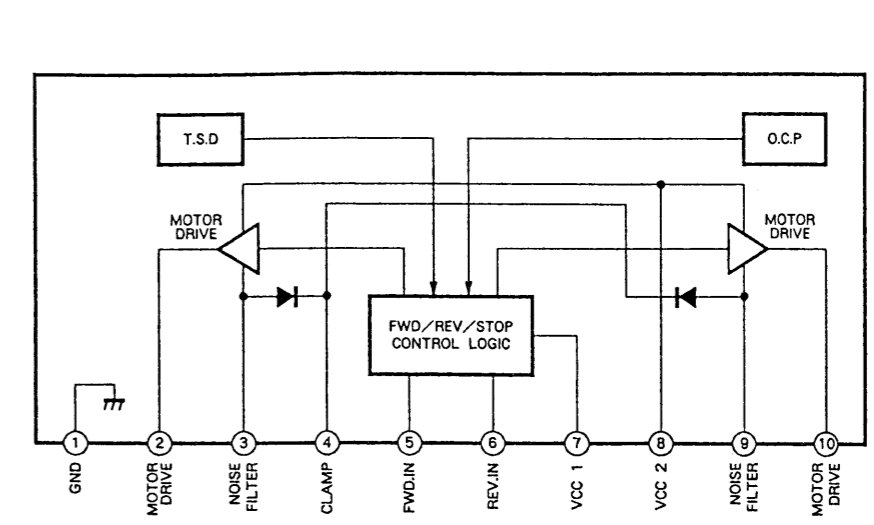
IC201 M5290P-16



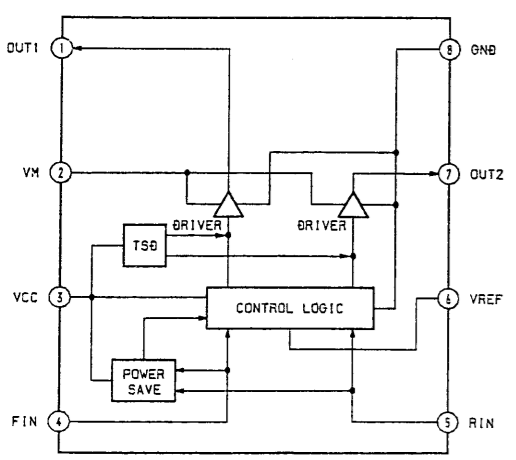
IC302 CXD2562Q



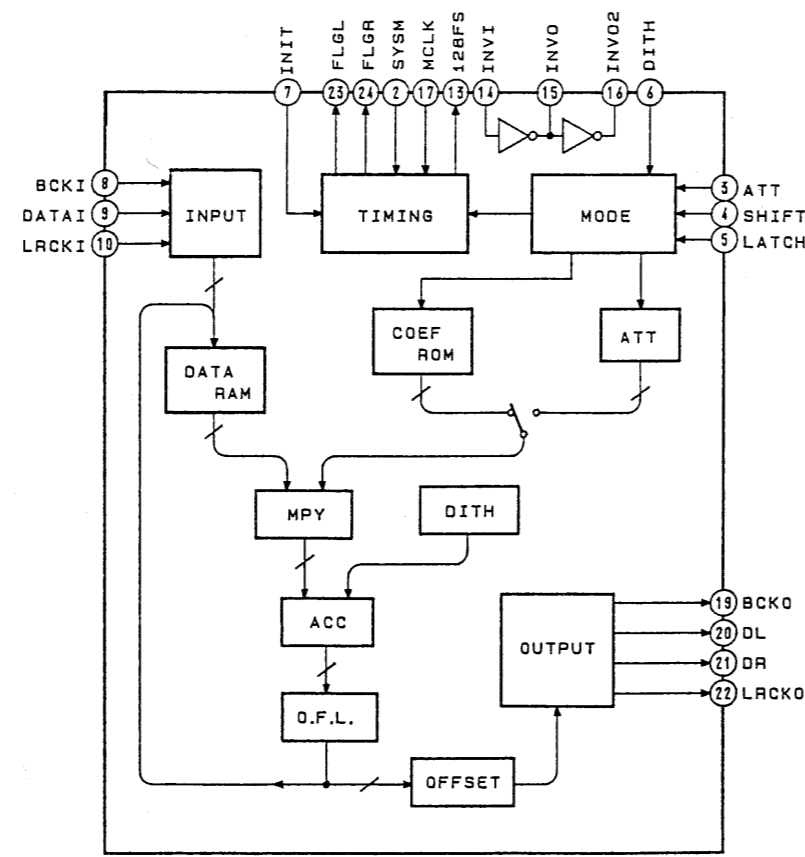
IC305 LB1641



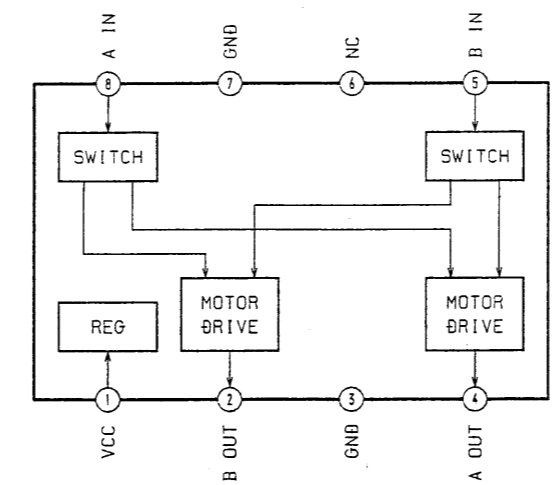
IC102 BA6297AFP



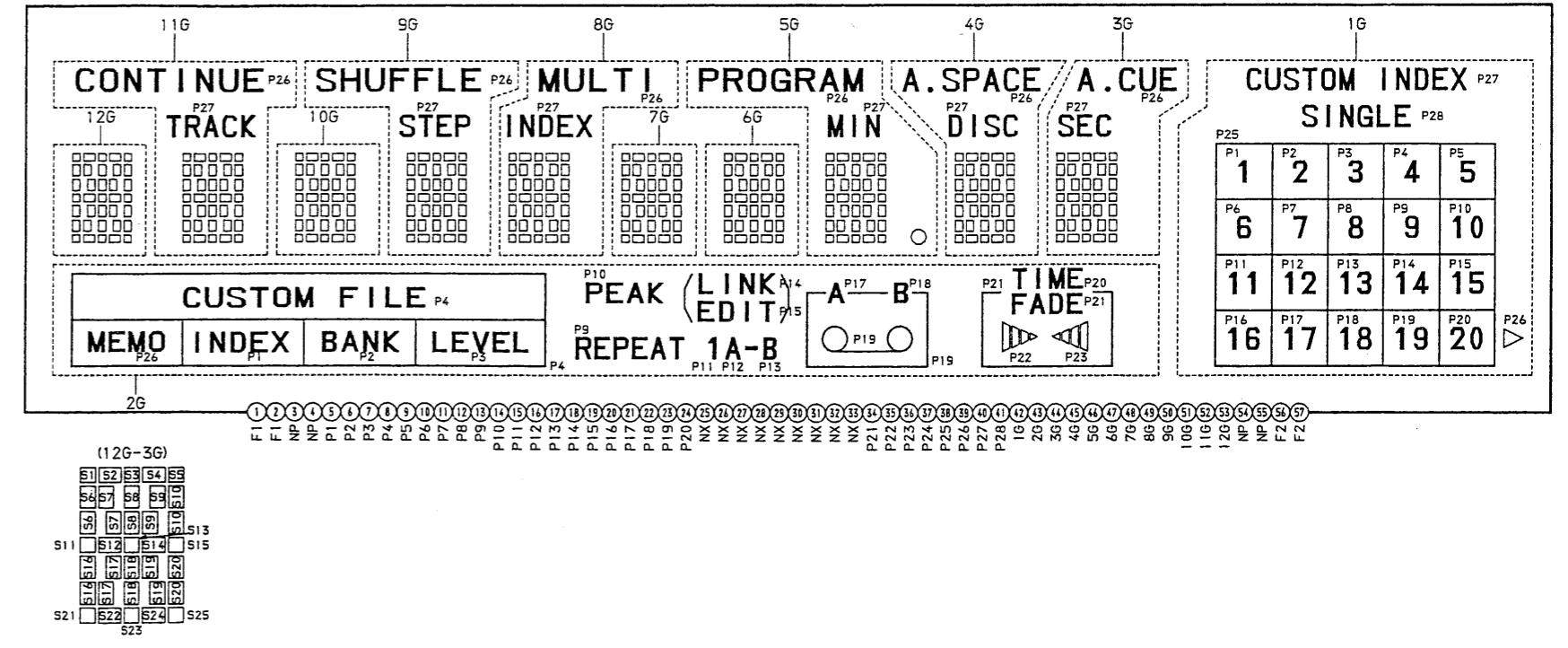
IC301 CXD2567M



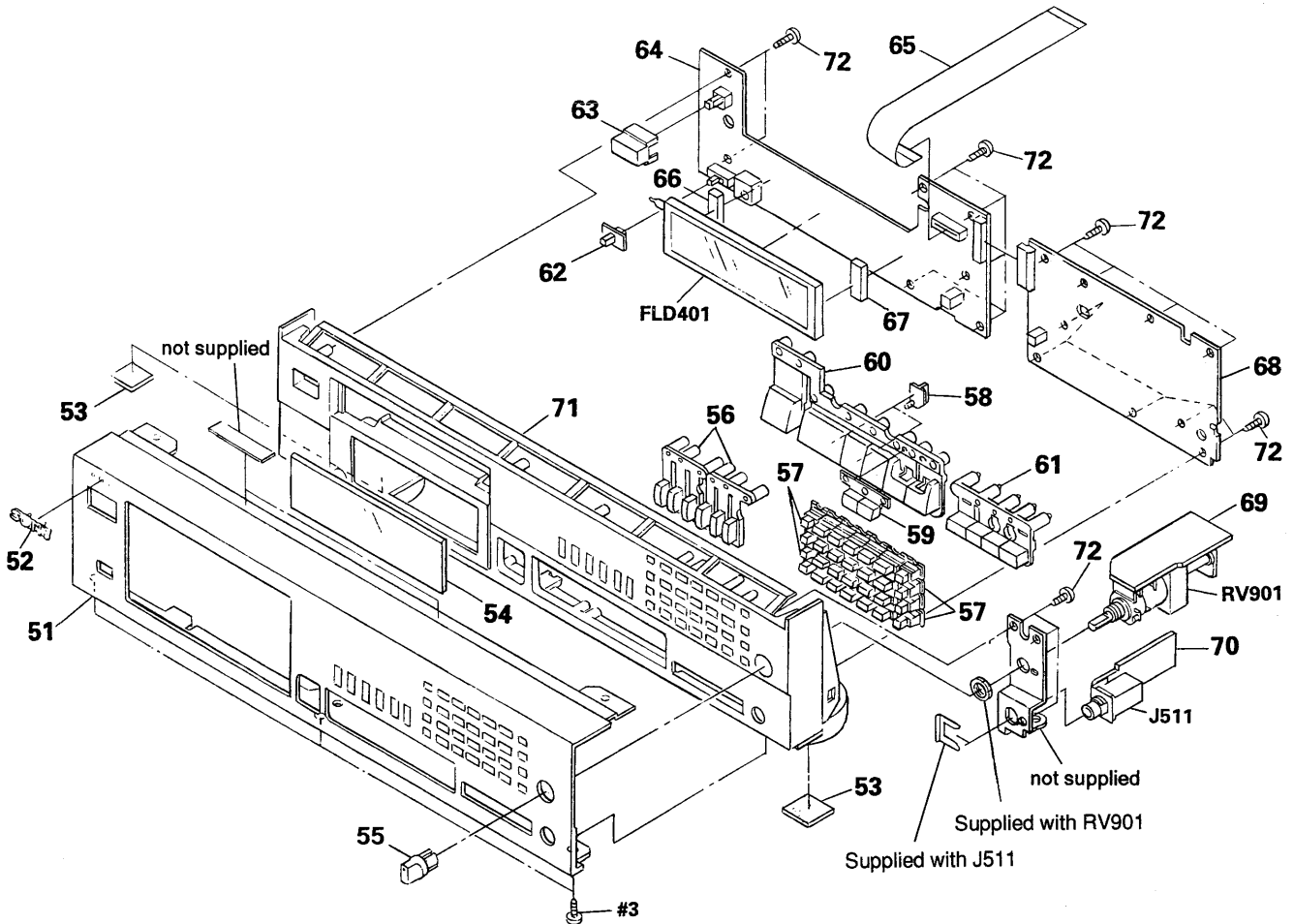
IC901 BA6208



5-9. TERMINAL CONNECTION OF FLUORESCENT INDICATOR TUBE (FLD401)

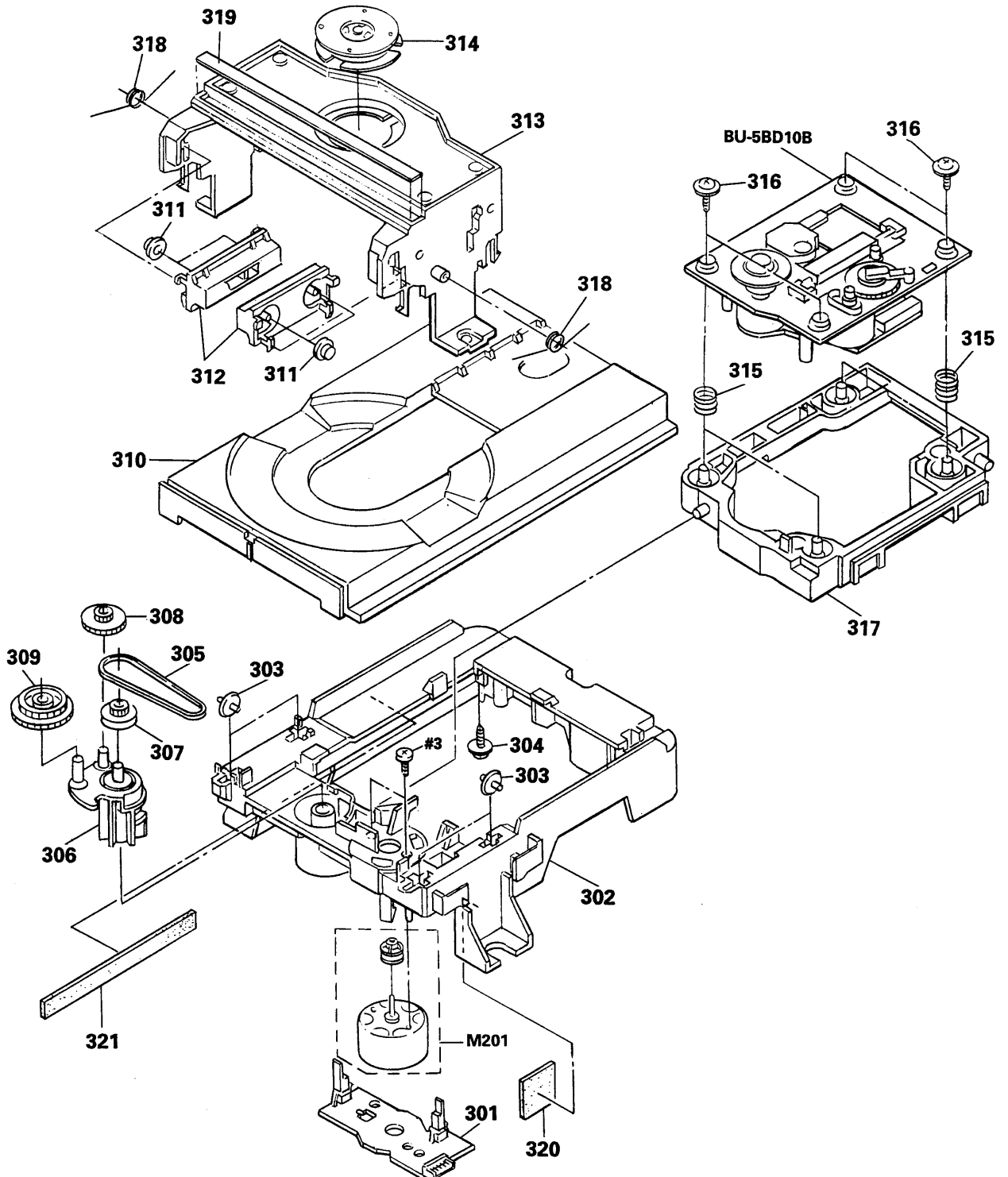


6-2. FRONT PANEL SECTION



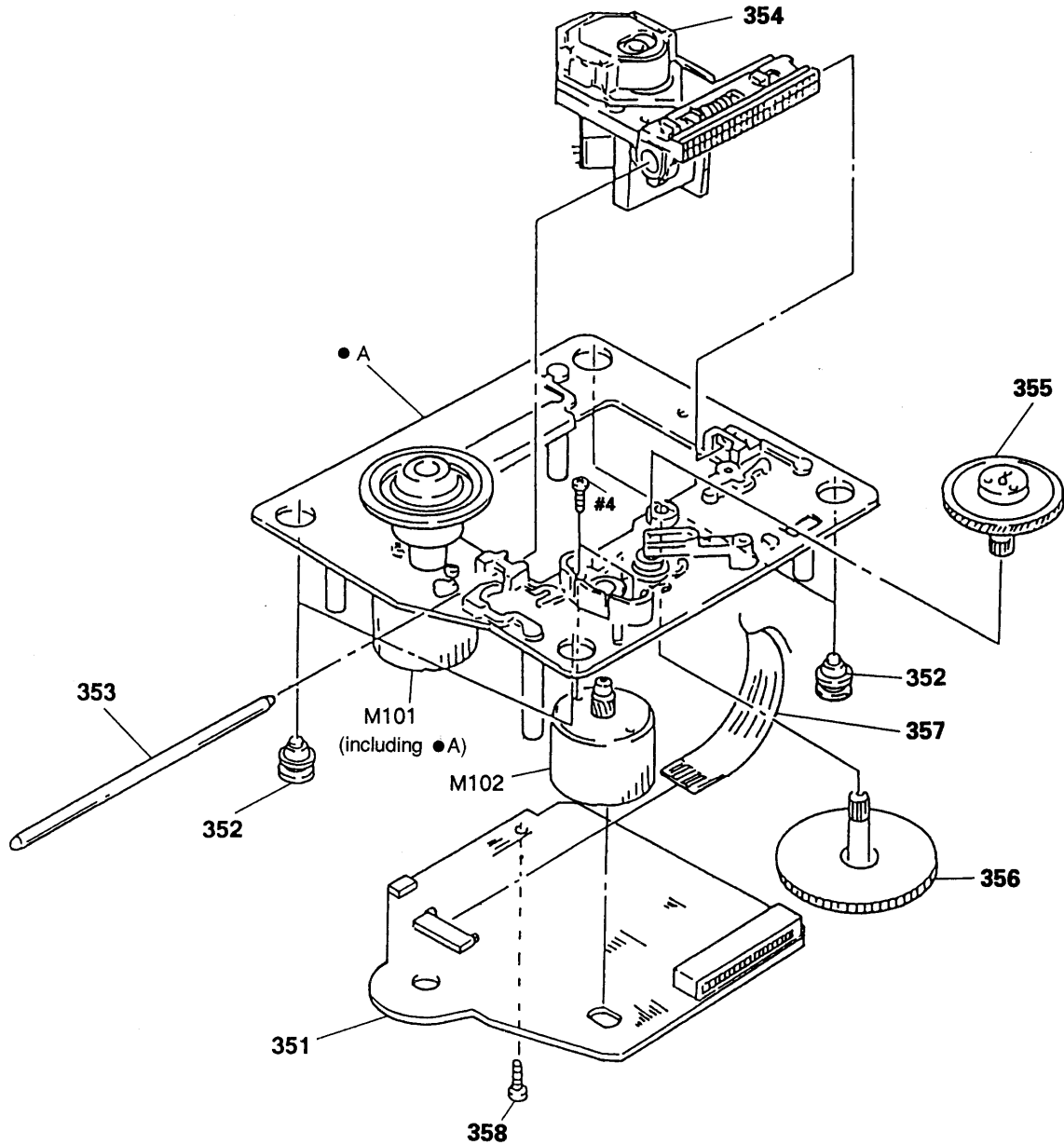
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	4-955-930-32	PANEL, FRONT (911)		* 64	A-4649-569-A	DISPLAY BOARD, COMPLETE	
	4-955-930-62	PANEL, FRONT (911E)		65	1-696-967-11	WIRE (FLAT TYPE) (17 CORE)	
52	4-908-848-01	EMBLEM, SONY		66	4-956-836-01	HOLDER (L)	
53	4-956-890-11	CUSHION		67	4-956-837-01	HOLDER (R)	
54	4-955-929-31	PLATE, INDICATION		* 68	1-646-929-11	FUNCTION BOARD	
55	A-4660-389-A	KNOB (HP) ASSY		* 69	1-646-926-11	VOL BOARD	
56	4-955-934-11	BUTTON (FILE)		* 70	1-646-927-11	HP BOARD	
57	4-955-935-11	BUTTON (20 KEY)		71	X-4943-372-1	BASE ASSY, PANEL (911)	
58	4-956-834-01	INDICATOR (DIA. 2)			X-4943-514-1	BASE ASSY, PANEL (911E)	
59	4-955-932-11	BUTTON (MMS)		72	4-951-620-01	SCREW (2. 6X8), +BVTP	
60	4-956-835-01	BUTTON (PLAY-IND)		FLD401	1-517-128-11	INDICATOR TUBE, FLUORESCENT	
61	4-956-833-01	BUTTON (MODE 4)		J511	1-568-519-41	JACK, LARGE TYPE (PHONES)	
62	4-922-518-11	KNOB (TIMER)		RV901	1-238-776-11	RES, VAR, CARBON 10KX3	
63	4-947-034-01	BUTTON (POWER)				(LINE OUT PHONE LEVEL)	

6-3. CD MECHANISM SECTION (CDM25-5BD10)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* 301	1-646-970-11	LOADING BOARD		312	4-954-199-01	PLATE, SLIDE	
* 302	4-954-190-01	BASE (MD)		* 313	4-954-192-01	HOLDER (M)	
303	4-954-193-01	ROLLER (A)		* 314	1-452-538-11	MAGNET	
* 304	4-917-583-21	BRACKET, YOKE		315	4-948-503-01	SPRING (BU), COMPRESSION	
305	4-927-649-01	BELT		316	4-933-134-01	SCREW (+PTPWH M2. 6X6)	
306	4-933-109-01	CAM		317	4-933-129-01	HOLDER (BU)	
307	4-927-651-01	PULLEY (S)		318	4-954-195-02	SPRING, TORSION	
308	4-927-628-01	GEAR (C)		319	4-959-061-01	DAMPER	
309	4-933-107-01	GEAR (PL)		320	4-959-121-01	DAMPER	
310	4-954-191-11	TABLE, DISK		321	4-959-077-01	DAMPER	
311	4-954-194-01	ROLLER (B)		M201	A-4604-363-A	MOTOR (L) ASSY (LOADING)	

6-4. OPTICAL PICK-UP BLOCK SECTION (BU-5BD10B)



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

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* 351	A-4649-432-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		358	4-951-620-01	SCREW (2.6X8), +BVTP	
\triangle 354	8-848-144-11	OPTICAL PICK-UP BLOCK (KSS-240A)		M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
355	4-917-567-01	GEAR (M)		M102	X-4917-504-1	MOTOR ASSY (SLED)	

SECTION 7 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.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F : nonflammable
- Germany model is abbreviated as G.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- 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
- Hardware (# mark) list is given in the last of this parts list.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks	
*	A-4649-432-A	BD BOARD, COMPLETE *****				< RESISTOR >		
		< CAPACITOR >		R101	1-216-077-00	METAL CHIP 15K 5%	1/10W	
C101	1-163-005-11	CERAMIC CHIP 470PF	10%	50V	R102	1-216-097-00	METAL CHIP 100K 5%	1/10W
C102	1-163-038-00	CERAMIC CHIP 0.1uF		25V	R103	1-216-077-00	METAL CHIP 15K 5%	1/10W
C103	1-163-005-11	CERAMIC CHIP 470PF	10%	50V	R104	1-216-085-00	METAL CHIP 33K 5%	1/10W
C105	1-135-155-21	TANTALUM CHIP 4.7uF	10%	16V	R105	1-216-097-00	METAL CHIP 100K 5%	1/10W
C106	1-164-346-11	CERAMIC CHIP 1uF		16V	R106	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
C107	1-164-505-11	CERAMIC CHIP 2.2uF		16V	R107	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
C108	1-163-035-00	CERAMIC CHIP 0.047uF		50V	R108	1-216-073-00	METAL CHIP 10K 5%	1/10W
C109	1-163-011-11	CERAMIC CHIP 0.0015uF	10%	50V	R109	1-216-121-00	METAL CHIP 1M 5%	1/10W
C110	1-163-017-00	CERAMIC CHIP 0.0047uF	5%	50V	R110	1-216-025-00	METAL CHIP 100 5%	1/10W
C111	1-163-251-11	CERAMIC CHIP 100PF	5%	50V	R112	1-216-049-00	METAL CHIP 1K 5%	1/10W
C112	1-163-038-00	CERAMIC CHIP 0.1uF		25V	R113	1-216-077-00	METAL CHIP 15K 5%	1/10W
C113	1-163-038-00	CERAMIC CHIP 0.1uF		25V	R114	1-216-077-00	METAL CHIP 15K 5%	1/10W
C123	1-164-232-11	CERAMIC CHIP 0.01uF		50V	R117	1-216-077-00	METAL CHIP 15K 5%	1/10W
C124	1-164-005-11	CERAMIC CHIP 0.47uF		25V	R118	1-216-077-00	METAL CHIP 15K 5%	1/10W
C151	1-163-007-11	CERAMIC CHIP 680PF	10%	50V	R121	1-216-077-00	METAL CHIP 15K 5%	1/10W
C152	1-163-007-11	CERAMIC CHIP 680PF	10%	50V	R122	1-216-077-00	METAL CHIP 15K 5%	1/10W
C153	1-163-038-00	CERAMIC CHIP 0.1uF		25V	R123	1-216-073-00	METAL CHIP 10K 5%	1/10W
C154	1-164-336-11	CERAMIC CHIP 0.33uF		25V	R124	1-216-097-00	METAL CHIP 100K 5%	1/10W
C155	1-163-007-11	CERAMIC CHIP 680PF	10%	50V	R125	1-216-049-00	METAL CHIP 1K 5%	1/10W
C156	1-163-007-11	CERAMIC CHIP 680PF	10%	50V	R126	1-216-049-00	METAL CHIP 1K 5%	1/10W
C157	1-163-033-00	CERAMIC CHIP 0.022uF		50V	R127	1-216-049-00	METAL CHIP 1K 5%	1/10W
C158	1-163-033-00	CERAMIC CHIP 0.022uF		50V	R131	1-216-037-00	METAL CHIP 330 5%	1/10W
C159	1-163-023-00	CERAMIC CHIP 0.015uF	5%	50V	R151	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
C160	1-163-019-00	CERAMIC CHIP 0.0068uF	10%	50V	R152	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
C161	1-163-038-00	CERAMIC CHIP 0.1uF		25V	R153	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
		< CONNECTOR >		R154	1-216-070-00	METAL CHIP 7.5K 5%	1/10W	
* CN101	1-568-865-11	SOCKET, CONNECTOR 23P		R155	1-216-070-00	METAL CHIP 7.5K 5%	1/10W	
CN102	1-568-795-11	SOCKET, CONNECTOR 12P		R156	1-216-070-00	METAL CHIP 7.5K 5%	1/10W	
		< IC >		R157	1-216-093-00	METAL CHIP 68K 5%	1/10W	
IC101	8-752-351-94	IC CXD2515Q		R158	1-216-076-00	METAL CHIP 13K 5%	1/10W	
IC102	8-759-071-79	IC BA6297AFP		R159	1-216-085-00	METAL CHIP 33K 5%	1/10W	
				R160	1-216-081-00	METAL CHIP 22K 5%	1/10W	
				R161	1-216-308-00	METAL CHIP 4.7 5%	1/10W	
				R162	1-216-093-00	METAL CHIP 68K 5%	1/10W	
				R163	1-216-093-00	METAL CHIP 68K 5%	1/10W	

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
< SWITCH >							
S101	1-572-085-11	SWITCH, LEAF (LIMIT)		C350	1-162-294-31	CERAMIC	0.001uF 10% 50V
*****				C351	1-162-294-31	CERAMIC	0.001uF 10% 50V
*	A-4649-571-A	MAIN BOARD, COMPLETE (911)		C357	1-162-294-31	CERAMIC	0.001uF 10% 50V
*	A-4649-687-A	MAIN BOARD, COMPLETE (911E)		C391	1-161-494-00	CERAMIC	0.022uF 25V
*****				C392	1-162-306-11	CERAMIC	0.01uF 20% 16V
*	4-941-237-01	HEAT SINK		C501	1-136-165-00	FILM	0.1uF 5% 50V(911)
	7-682-547-09	SCREW +B 3X6		C501	1-130-495-00	MYLAR	0.1uF 5% 50V(911E)
< CAPACITOR >				C502	1-126-806-11	CERAMIC	0.1uF 10% 50V
C200	1-164-159-11	CERAMIC	0.1uF 50V	C503	1-130-495-00	MYLAR	0.1uF 5% 50V
C201	1-124-572-11	ELECT	100uF 20% 63V	C504	1-126-052-11	ELECT	100uF 20% 50V
C202	1-162-294-31	CERAMIC	0.001uF 10% 50V	C506	1-162-806-11	CERAMIC	0.1uF 10% 50V
C203	1-126-059-11	ELECT	10uF 20% 50V	C507	1-130-495-00	MYLAR	0.1uF 5% 50V
C204	1-126-013-11	ELECT	1000uF 20% 16V	C509	1-126-052-11	ELECT	100uF 20% 25V
C205	1-126-016-11	ELECT	4700uF 20% 16V	C511	1-126-052-11	ELECT	100uF 20% 25V
C206	1-126-059-11	ELECT	10uF 20% 50V	C521	1-110-335-11	MYLAR	100PF 5% 50V
C207	1-126-163-11	ELECT	4.7uF 20% 50V	C523	1-162-216-31	CERAMIC	51PF 5% 50V
C208	1-126-059-11	ELECT	10uF 20% 50V	C524	1-162-216-31	CERAMIC	51PF 5% 50V
C209	1-126-052-11	ELECT	100uF 20% 50V	C525	1-106-359-00	MYLAR	4700PF 5% 200V
C210	1-126-012-11	ELECT	470uF 20% 16V	C526	1-106-343-00	MYLAR	1000PF 5% 200V
C211	1-126-011-11	ELECT	330uF 20% 16V	C527	1-126-051-11	ELECT	47uF 20% 63V
C214	1-126-024-11	ELECT	220uF 20% 16V	C528	1-102-114-00	CERAMIC	470PF 10% 50V(911)
C215	1-125-622-11	CAP, DOUBLE LAYERS 0.1F	5.5V	C529	1-102-114-00	CERAMIC	470PF 10% 50V(911)
C217	1-136-165-00	FILM	0.1uF 5% 50V	C530	1-130-297-91	FILM	0.01uF 5% 100V(911E)
C220	1-136-165-00	FILM	0.1uF 5% 50V	C551	1-136-165-00	FILM	0.1uF 5% 50V
C225	1-136-165-00	FILM	0.1uF 5% 50V	C552	1-136-165-00	FILM	0.1uF 5% 50V
C226	1-124-994-11	ELECT	100uF 20% 10V	C555	1-130-495-00	MYLAR	0.1uF 5% 50V
C227	1-126-064-11	ELECT	220uF 20% 63V	C556	1-130-495-00	MYLAR	0.1uF 5% 50V
C231	1-164-159-11	CERAMIC	0.1uF 50V	C601	1-136-165-00	FILM	0.1uF 5% 50V(911)
C232	1-164-159-11	CERAMIC	0.1uF 50V	C601	1-130-495-00	MYLAR	0.1uF 5% 50V(911E)
C280	1-164-159-11	CERAMIC	0.1uF 50V	C602	1-162-806-11	CERAMIC	0.1uF 10% 50V
C281	1-164-159-11	CERAMIC	0.1uF 50V	C603	1-130-495-00	MYLAR	0.1uF 5% 50V
C282	1-164-159-11	CERAMIC	0.1uF 50V	C606	1-162-806-11	CERAMIC	0.1uF 10% 50V
C283	1-164-159-11	CERAMIC	0.1uF 50V	C607	1-130-495-00	MYLAR	0.1uF 5% 50V
C302	1-164-159-11	CERAMIC	0.1uF 50V	C609	1-126-052-11	ELECT	100uF 20% 25V
C303	1-124-994-11	ELECT	100uF 20% 10V	C611	1-126-052-11	ELECT	100uF 20% 25V
C305	1-164-159-11	CERAMIC	0.1uF 50V	C621	1-110-335-11	MYLAR	100PF 5% 50V
C311	1-126-163-11	ELECT	4.7uF 20% 50V	C623	1-162-216-31	CERAMIC	51PF 5% 50V
C313	1-124-994-11	ELECT	100uF 20% 10V	C624	1-162-216-31	CERAMIC	51PF 5% 50V
C314	1-164-159-11	CERAMIC	0.1uF 50V	C625	1-106-359-00	MYLAR	4700PF 5% 200V
C319	1-162-208-31	CERAMIC	24PF 5% 50V	C626	1-106-343-00	MYLAR	1000PF 5% 200V
C320	1-162-199-31	CERAMIC	10PF 5% 50V	C627	1-126-051-11	ELECT	47uF 20% 63V
C321	1-162-199-31	CERAMIC	10PF 5% 50V	C628	1-102-114-00	CERAMIC	470PF 10% 50V(911)
C322	1-124-994-11	ELECT	100uF 20% 10V(911)	C629	1-102-114-00	CERAMIC	470PF 10% 50V(911)
C322	1-126-052-11	ELECT	100uF 20% 25V(911E)	C630	1-130-297-91	FILM	0.01uF 5% 100V(911E)
C323	1-162-806-11	CERAMIC	0.1uF 10% 50V	< CONNECTOR >			
C330	1-126-044-11	ELECT	1uF 20% 50V	* CN221	1-564-510-11	PLUG, CONNECTOR 7P	
				* CN326	1-568-839-11	SOCKET, CONNECTOR 23P	
				* CN356	1-568-836-11	SOCKET, CONNECTOR 17P	
				* CN357	1-564-512-11	PLUG, CONNECTOR 9P	

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* CN360	1-568-955-11	PIN, CONNECTOR 6P		Q207	8-729-140-96	TRANSISTOR 2SD774-34	
* CN391	1-568-954-11	PIN, CONNECTOR 5P		Q208	8-729-140-96	TRANSISTOR 2SD774-34	
		< DIODE >		Q218	8-729-140-97	TRANSISTOR 2SB734-34	
D201	8-719-200-02	DIODE 10E2		Q220	8-729-900-65	TRANSISTOR DTA144ES	
D202	8-719-200-02	DIODE 10E2		Q221	8-729-900-89	TRANSISTOR DTC144ES	
D203	8-719-200-02	DIODE 10E2		Q222	8-729-900-89	TRANSISTOR DTC144ES	
D204	8-719-200-02	DIODE 10E2		Q501	8-729-900-65	TRANSISTOR DTA144ES	
D205	8-719-200-02	DIODE 10E2		Q502	8-729-201-05	TRANSISTOR 2SC2878-B	
D206	8-719-987-63	DIODE 1N4148M		Q503	8-729-900-74	TRANSISTOR DTC143TS	
D207	8-719-109-84	DIODE RD5. 1ES-B1		Q504	8-729-900-74	TRANSISTOR DTC143TS	
D210	8-719-987-63	DIODE 1N4148M		Q601	8-729-900-65	TRANSISTOR DTA144ES	
D211	8-719-110-08	DIODE RD8. 2ES-B2		Q602	8-729-201-05	TRANSISTOR 2SC2878-B	
D214	8-719-210-21	DIODE 11EQS04		Q603	8-729-900-74	TRANSISTOR DTC143TS	
D215	8-719-987-63	DIODE 1N4148M		Q604	8-729-900-74	TRANSISTOR DTC143TS	
D225	8-719-934-31	DIODE HZS36-3L				< RESISTOR >	
D304	8-719-109-75	DIODE RD4. 3ES-B2		R201	1-249-425-11	CARBON 4.7K 5% 1/4W	
D322	8-719-987-63	DIODE 1N4148M		R202	1-249-425-11	CARBON 4.7K 5% 1/4W	
D340	8-719-987-63	DIODE 1N4148M		R203	1-249-417-11	CARBON 1K 5% 1/4W	
		< IC >		△R204	1-212-869-00	FUSIBLE 33 5% 1/4W F	
IC201	8-759-630-21	IC M5290P-16		R205	1-249-435-11	CARBON 33K 5% 1/4W	
IC202	8-759-145-58	IC uPC4558C		R206	1-249-413-11	CARBON 470 5% 1/4W	
IC203	8-759-605-00	IC M5F78M07L		R207	1-249-417-11	CARBON 1K 5% 1/4W	
IC301	8-752-356-03	IC CXD2567M		R208	1-249-423-11	CARBON 3.3K 5% 1/4W	
IC302	8-759-044-10	IC CXD2562Q		R209	1-249-417-11	CARBON 1K 5% 1/4W	
IC305	8-759-822-09	IC LB1641		R210	1-249-417-11	CARBON 1K 5% 1/4W	
IC325	8-759-991-00	IC LH5164-H1		R214	1-249-417-11	CARBON 1K 5% 1/4W	
IC327	8-759-176-97	IC M37451M8-334FP		R216	1-249-405-11	CARBON 100 5% 1/4W	
IC350	8-749-921-12	IC GP1F32T		R217	1-249-429-11	CARBON 10K 5% 1/4W	
IC551	8-759-900-72	IC NE5532P		R218	1-249-417-11	CARBON 1K 5% 1/4W	
IC553	8-759-981-85	IC RC4556D		R225	1-249-441-11	CARBON 100K 5% 1/4W	
IC651	8-759-900-72	IC NE5532P		R300	1-249-399-11	CARBON 33 5% 1/4W	
		< JACK >		R306	1-249-429-11	CARBON 10K 5% 1/4W	
* J361	1-569-443-11	JACK, PIN 4P (LINE OUT) (911)		R307	1-249-429-11	CARBON 10K 5% 1/4W	
J361	1-569-443-21	JACK, PIN 4P (LINE OUT) (911E)		R308	1-249-429-11	CARBON 10K 5% 1/4W	
		< COIL >		R309	1-249-429-11	CARBON 10K 5% 1/4W	
L302	1-410-513-11	INDUCTOR 22uH		R310	1-249-429-11	CARBON 10K 5% 1/4W	
L304	1-408-403-00	INDUCTOR 3.3uH		R311	1-249-429-11	CARBON 10K 5% 1/4W	
L305	1-408-403-00	INDUCTOR 3.3uH		R312	1-249-429-11	CARBON 10K 5% 1/4W	
L320	1-408-403-00	INDUCTOR 3.3uH		R313	1-249-429-11	CARBON 10K 5% 1/4W	
L321	1-408-403-00	INDUCTOR 3.3uH		R314	1-249-429-11	CARBON 10K 5% 1/4W	
		< TRANSISTOR >		R315	1-249-429-11	CARBON 10K 5% 1/4W	
Q202	8-729-900-80	TRANSISTOR DTC114ES		R316	1-249-429-11	CARBON 10K 5% 1/4W	
Q203	8-729-900-61	TRANSISTOR DTA114ES		R317	1-249-429-11	CARBON 10K 5% 1/4W	
Q204	8-729-900-61	TRANSISTOR DTA114ES		R319	1-247-903-00	CARBON 1M 5% 1/4W	
Q206	8-729-905-67	TRANSISTOR 2SD1944-K		R320	1-249-417-11	CARBON 1K 5% 1/4W	
				R321	1-249-417-11	CARBON 1K 5% 1/4W	
				R322	1-249-417-11	CARBON 1K 5% 1/4W	
				R323	1-249-417-11	CARBON 1K 5% 1/4W	
				R324	1-249-417-11	CARBON 1K 5% 1/4W	

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	Remarks	Ref. No.	Part No.	Description	Remarks
R325	1-249-417-11	CARBON	1K 5% 1/4W	R632	1-247-704-11	CARBON	220 5% 1/4W
R331	1-249-405-11	CARBON	100 5% 1/4W	R633	1-247-704-11	CARBON	220 5% 1/4W
R340	1-249-441-11	CARBON	100K 5% 1/4W	R634	1-259-488-11	CARBON	330K 5% 1/4W
R341	1-249-413-11	CARBON	470 5% 1/4W	R635	1-249-393-11	CARBON	10 5% 1/4W
R342	1-249-417-11	CARBON	1K 5% 1/4W	R636	1-249-409-11	CARBON	220 5% 1/4W
R343	1-249-417-11	CARBON	1K 5% 1/4W	< VIBRATOR >			
R344	1-249-417-11	CARBON	1K 5% 1/4W	X331	1-579-161-11	VIBRATOR, CRYSTAL (45.159MHz)	
R345	1-249-417-11	CARBON	1K 5% 1/4W	X355	1-577-377-11	VIBRATOR, CERAMIC (10MHz)	
R346	1-249-417-11	CARBON	1K 5% 1/4W	*****			
R347	1-249-411-11	CARBON	330 5% 1/4W	* A-4649-569-A	DISPLAY BOARD, COMPLETE		
R348	1-249-441-11	CARBON	100K 5% 1/4W	*****			
R349	1-249-425-11	CARBON	4.7K 5% 1/4W	4-956-836-01	HOLDER (L)		
R350	1-249-441-11	CARBON	100K 5% 1/4W	4-956-837-01	HOLDER (R)		
R351	1-249-425-11	CARBON	4.7K 5% 1/4W	< CAPACITOR >			
R352	1-249-429-11	CARBON	10K 5% 1/4W	C401	1-164-159-11	CERAMIC	0.1uF 50V
R521	1-215-459-00	METAL	39K 1% 1/6W	C402	1-164-159-11	CERAMIC	0.1uF 50V
R522	1-215-459-00	METAL	39K 1% 1/6W	C403	1-164-159-11	CERAMIC	0.1uF 50V
R523	1-215-459-00	METAL	39K 1% 1/6W	C404	1-126-154-11	ELECT	47uF 20% 6.3V
R524	1-215-459-00	METAL	39K 1% 1/6W	< CONNECTOR >			
R525	1-215-452-00	METAL	20K 1% 1/6W	* CN401	1-568-836-11	SOCKET, CONNECTOR 17P	
R526	1-215-461-00	METAL	47K 1% 1/6W	CN402	1-750-199-11	CONNECTOR, BOARD TO BOARD 18P	
R527	1-215-452-00	METAL	20K 1% 1/6W	< DIODE >			
R528	1-215-461-00	METAL	47K 1% 1/6W	D404	8-719-303-02	LED SEL2510C-D (>)	
R529	1-249-556-11	CARBON	1.5K 5% 1/4W	D412	8-719-987-63	DIODE 1N4148M	
R530	1-249-556-11	CARBON	1.5K 5% 1/4W	D413	8-719-987-63	DIODE 1N4148M	
R531	1-247-704-11	CARBON	220 5% 1/4W	< FLUORESCENT INDICATOR >			
R532	1-247-704-11	CARBON	220 5% 1/4W	FLD401	1-517-128-11	INDICATOR TUBE, FLUORESCENT	
R533	1-247-704-11	CARBON	220 5% 1/4W	< IC >			
R534	1-259-488-11	CARBON	330K 5% 1/4W	IC401	8-759-167-73	IC MSC62408-100GS-V1K	
R535	1-249-393-11	CARBON	10 5% 1/4W	IC402	8-741-100-48	IC SBX1610-59	
R536	1-249-409-11	CARBON	220 5% 1/4W	< TRANSISTOR >			
R551	1-249-435-11	CARBON	33K 5% 1/4W	Q404	8-729-900-45	TRANSISTOR DTC114EF	
R552	1-249-435-11	CARBON	33K 5% 1/4W	Q410	8-729-900-45	TRANSISTOR DTC114EF	
R553	1-249-435-11	CARBON	33K 5% 1/4W	Q411	8-729-900-45	TRANSISTOR DTC114EF	
R554	1-249-435-11	CARBON	33K 5% 1/4W	< RESISTOR >			
R555	1-249-425-11	CARBON	4.7K 5% 1/4W	R401	1-249-429-11	CARBON	10K 5% 1/4W
R556	1-249-425-11	CARBON	4.7K 5% 1/4W	R402	1-249-429-11	CARBON	10K 5% 1/4W
R557	1-249-435-11	CARBON	33K 5% 1/4W	R404	1-249-408-11	CARBON	180 5% 1/4W
R558	1-249-435-11	CARBON	33K 5% 1/4W	R405	1-249-417-11	CARBON	1K 5% 1/4W
R621	1-215-459-00	METAL	39K 1% 1/6W	R409	1-247-903-00	CARBON	1M 5% 1/4W
R622	1-215-459-00	METAL	39K 1% 1/6W	R410	1-249-441-11	CARBON	100K 5% 1/4W
R623	1-215-459-00	METAL	39K 1% 1/6W				
R624	1-215-459-00	METAL	39K 1% 1/6W				
R625	1-215-452-00	METAL	20K 1% 1/6W				
R626	1-215-461-00	METAL	47K 1% 1/6W				
R627	1-215-452-00	METAL	20K 1% 1/6W				
R628	1-215-461-00	METAL	47K 1% 1/6W				
R629	1-249-556-11	CARBON	1.5K 5% 1/4W				
R630	1-249-556-11	CARBON	1.5K 5% 1/4W				
R631	1-247-704-11	CARBON	220 5% 1/4W				

DISPLAY	VOL	HP	FUNCTION
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Ref.No.	Part No.	Description	Remarks		Ref.No.	Part No.	Description	Remarks
R411	1-249-441-11	CARBON	100K 5% 1/4W				< JACK >	
		< SWITCH >			J511	1-568-519-41	JACK, LARGE TYPE (PHONES)	
S401	1-571-305-11	SWITCH, PUSH (1 KEY) (POWER)					< RESISTOR >	
S402	1-570-157-51	SWITCH, SLIDE (TIMER)			R550	1-249-402-11	CARBON	56 5% 1/4W
S403	1-554-303-21	SWITCH, TACTILE (REPEAT)			R650	1-249-402-11	CARBON	56 5% 1/4W
S404	1-554-303-21	SWITCH, TACTILE (TIME/MEMO)			*****			
S405	1-554-303-21	SWITCH, TACTILE (≡ OPEN/CLOSE)			*	1-646-929-11	FUNCTION BOARD	*****
S406	1-554-303-21	SWITCH, TACTILE (▷)					< CONNECTOR >	
		< VIBRATOR >			CN801	1-750-190-11	CONNECTOR, BOARD TO BOARD 18P	
X401	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)					< DIODE >	
*****					D803	8-719-301-49	LED SEL2810A (■)	
*	1-646-926-11	VOL BOARD			D811	8-719-987-63	DIODE 1N4148M	
		*****			D814	8-719-987-63	DIODE 1N4148M	
		< CAPACITOR >			D815	8-719-987-63	DIODE 1N4148M	
C901	1-164-159-11	CERAMIC	0.1uF 50V		D816	8-719-987-63	DIODE 1N4148M	
		< CONNECTOR >			D817	8-719-987-63	DIODE 1N4148M	
* CN901	1-568-955-11	PIN, CONNECTOR 6P					< TRANSISTOR >	
* CN902	1-564-508-11	PLUG, CONNECTOR 5P			Q803	8-729-900-45	TRANSISTOR DTC114EF	
		< IC >					< RESISTOR >	
IC901	8-759-962-08	IC BA6208			R803	1-249-412-11	CARBON	390 5% 1/4W
		< TRANSISTOR >			R813	1-249-417-11	CARBON	1K 5% 1/4W
Q901	8-729-900-80	TRANSISTOR DTC114ES					< SWITCH >	
		< RESISTOR >			S801	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)	
R903	1-249-417-11	CARBON	1K 5% 1/4W		S802	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)	
R904	1-249-413-11	CARBON	470 5% 1/4W		S803	1-554-303-21	SWITCH, TACTILE (FILE RECALL)	
		< VARIABLE RESISTOR >			S804	1-554-303-21	SWITCH, TACTILE (FILE)	
RV901	1-238-776-11	RES, VAR, CARBON 10KX3			S805	1-554-303-21	SWITCH, TACTILE (ERASE)	
		(LINE OUT PHONE LEVEL)			S806	1-554-303-21	SWITCH, TACTILE (FADER)	
*****					S812	1-554-303-21	SWITCH, TACTILE (◀◀◀)	
*	1-646-927-11	HP BOARD			S813	1-554-303-21	SWITCH, TACTILE (▶▶▶)	
		*****			S814	1-554-303-21	SWITCH, TACTILE (◀◀)	
		< CAPACITOR >			S815	1-554-303-21	SWITCH, TACTILE (▶▶)	
C550	1-162-294-31	CERAMIC	0.001uF 10% 50V		S816	1-554-303-21	SWITCH, TACTILE (A. SPACE/A. CUE)	
C651	1-162-294-31	CERAMIC	0.001uF 10% 50V		S820	1-554-303-21	SWITCH, TACTILE (LEVEL FILE)	
		< CONNECTOR >			S824	1-554-303-21	SWITCH, TACTILE (■)	
* CN511	1-564-506-11	PLUG, CONNECTOR 3P			S825	1-554-303-21	SWITCH, TACTILE (■)	
					S826	1-554-303-21	SWITCH, TACTILE (MUSIC SCAN)	
					S830	1-554-303-21	SWITCH, TACTILE (1)	
					S831	1-554-303-21	SWITCH, TACTILE (2)	
					S832	1-554-303-21	SWITCH, TACTILE (3)	

FUNCTION

POWER

LOADING

Ref. No.	Part No.	Description	Remarks
S833	1-554-303-21	SWITCH, TACTILE (4)	
S834	1-554-303-21	SWITCH, TACTILE (5)	
S835	1-554-303-21	SWITCH, TACTILE (>20)	
S836	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S840	1-554-303-21	SWITCH, TACTILE (6)	
S841	1-554-303-21	SWITCH, TACTILE (7)	
S842	1-554-303-21	SWITCH, TACTILE (8)	
S843	1-554-303-21	SWITCH, TACTILE (9)	
S844	1-554-303-21	SWITCH, TACTILE (10)	
S845	1-554-303-21	SWITCH, TACTILE (CHECK)	
S846	1-554-303-21	SWITCH, TACTILE (SHUFFLE)	
S850	1-554-303-21	SWITCH, TACTILE (11)	
S851	1-554-303-21	SWITCH, TACTILE (12)	
S852	1-554-303-21	SWITCH, TACTILE (13)	
S853	1-554-303-21	SWITCH, TACTILE (14)	
S854	1-554-303-21	SWITCH, TACTILE (15)	
S855	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S856	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S860	1-554-303-21	SWITCH, TACTILE (16)	
S861	1-554-303-21	SWITCH, TACTILE (17)	
S862	1-554-303-21	SWITCH, TACTILE (18)	
S863	1-554-303-21	SWITCH, TACTILE (19)	
S864	1-554-303-21	SWITCH, TACTILE (20)	
S866	1-554-303-21	SWITCH, TACTILE (C. INDEX)	

*	1-646-930-11	POWER BOARD	

		< CAPACITOR >	
C701	1-164-159-11	CERAMIC 0.1uF	50V
		< CONNECTOR >	
* CN701	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	

*	1-646-970-11	LOADING BOARD	

		< CONNECTOR >	
* CN151	1-568-943-11	PIN, CONNECTOR 5P	
		< SWITCH >	
S151	1-572-086-11	SWITCH, LEAF (LOAD IN)	
S152	1-572-086-11	SWITCH, LEAF (LOAD OUT)	

Ref. No.	Part No.	Description	Remarks
MISCELLANEOUS			

3	1-696-760-11	WIRE (FLAT TYPE) (23 CORE)	
△9	1-575-651-21	CORD, POWER (911:AEP, G, EA)	
△	1-696-027-11	CORD, POWER (911:E)	
△	1-696-571-11	CORD, POWER (911E)	
△	1-696-845-11	CORD, POWER (911:AUS)	
△21	1-569-007-11	ADAPTOR, CONVERSION 2P (911:E)	
△	1-569-008-11	ADAPTOR, CONVERSION 2P (911:EA)	
65	1-696-967-11	WIRE (FLAT TYPE) (17 CORE)	
* 314	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)	
M201	X-4604-363-A	MOTOR (L) ASSY (LOADING)	
△T901	1-423-493-11	TRANSFORMER, POWER (911:AEP, G, AUS)	
△	1-423-494-11	TRANSFORMER, POWER (911:E, EA)	
△	1-423-715-11	TRANSFORMER, POWER (911E)	

ACCESSORIES & PACKING MATERIALS			

	1-465-593-11	REMOTE COMMANDER (RM-D991)	
	1-558-271-11	CORD, CONNECTION	
	1-590-925-31	CORD, CONNECTION (911E)	
	1-696-170-11	CORD, CONNECTION (911)	
	3-707-584-01	COVER, BATTERY (for RM-D991)	
	3-756-335-11	MANUAL, INSTRUCTION	
		(ENGLISH, FRENCH, SPANISH, CHINESE)	
	3-756-335-41	MANUAL, INSTRUCTION	
		(GERMAN, DUTCH, ITALIAN, POLISH)	
*	4-944-761-02	CUSHION	
*	4-956-951-01	INDIVIDUAL CARTON (911)	
*	4-956-951-31	INDIVIDUAL CARTON (911E)	

HARDWARE LIST

#1	7-682-548-09	SCREW +BVT	3X8	(S)
#2	7-685-871-01	SCREW +BVT	3X6	(S)
#3	7-685-646-79	SCREW +BTP	3X8	TYPE2 N-S
#4	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.

