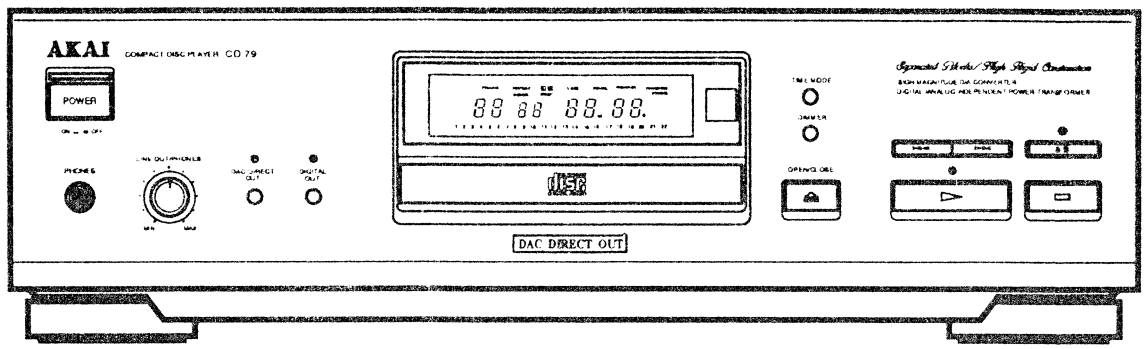
AKAI SERVICE MANUAL



MODEL CD-79

COMPACT DISC DIGITAL AUDIO

COMPACT DISC PLAYER

MODEL **CD-69**

MODEL **CD-79**

SPECIFICATIONS

Pick-up	3 beam Laser pick up
Pick-up system	Linear tracking
Sampling frequency	44.1 kHz
Digital filter	20 bit, 8 times over sampling
D/A converter	Sign magnitude L, R independent
Error correction system	Cross Interleave Reed Solomon
Number of channels	2 channels stereo
Frequency response	2 Hz to 20 kHz ±0.5 dB
Dynamic range	
CD-69	100 dB
CD-79	101 dB
S/N	
CD-69	114 dB
CD-79	116 dB
Total harmonic distortion	
CD-69	0.0022 % or less
CD-79	0.0018 % or less
Wow & flutter	Less than measurable limits

Output level/Impedance	
Analog (Fixed)	2.0 V/47 ohms
Analog (Variable)	2.0 V/47 ohms
Digital (Coaxial)	0.5 Vp-p/75 ohms
Digital (Optical)	-22 dBs,wave length 660 nm
Headphone	25 mW/32 ohms
Power requirements	220 V-230 V, 50 Hz for Europe except UK 240 V, 50 Hz for UK
Dimensions	425 (W) x 120 (H)× 348 (D)mm
Weight	
CD-69	5.7 kg
CD-79	9.3 kg

Standard accessories

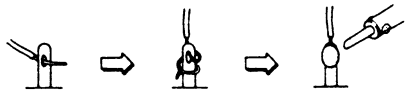
Connection cord	1
Remote control unit	1
Batteries for remote control unit	2
Operator's manual	1

* For improvement purposes, specifications and design are subject to change without notice.

★SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts indentified by the ⚠ (*) symbol are critical for safety. Replace them only with the parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with the specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely about the terminals before soldering.



6. Make sure that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

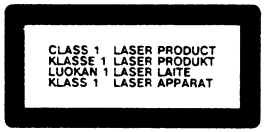
After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input / output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 µF capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metalparts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

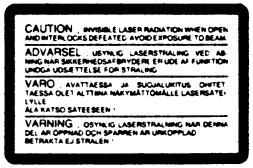
MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.
Please leave them at an appropriate depot. All other household batteries can be thrown out with the household waste.

CLASS 1 LASER PRODUCT

This product contains a low power laser device.
To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.
Refer any servicing to qualified personnel.
Use actual size stickers



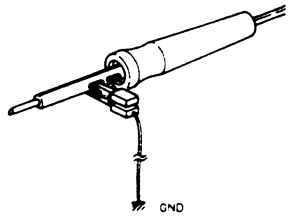


★INFORMATION

PRECAUTIONS IN REPAIRING

When repairing or adjusing the unit, please note the following points.

1. Do not put excessive pressure on the mechanical part (operation part), including the pick-up block, as extremely high mechanical precision is required in these parts.
2. When the base is removed for repair or adjustment, make sure that there are no metal obiects in the narrow gap between the P.C.board or the mecha parts and the base.
3. The Micro-Computer and the CD signal processing ICs can be damaged by static electricity or leakage from a soldering iron during repairing.
   While soldering, please take the precautions against leakage as in the illustration.



4. Do not loosen any screws in the pick-up block.
   When handing the pick-up block, please refer to the points to NOTE when replacing the pick-up block.
5. Keep safety for hazardous invisible Laser Radiation, DO NOT watch the Laser Beam (Objective lens) directly.
6. Models for the some countries, laser warning labels are affixed on the unit and inside of the unit, as shown below.
   Read it carefully for your safety, when repairing or adjusting the unit.

SYMBOLS FOR PRIMARY DESTINATION

Primary destination of units are indicated with the following alphabet.

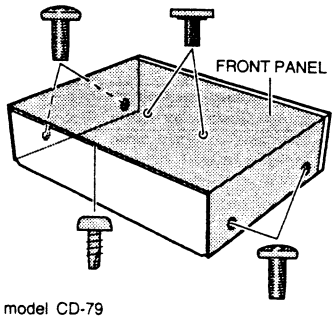
Symbols	Principal Destinations
B	UK
E	Europe (except UK)
S	Australia
V	Germany
U	Universal Area
Y*	Custom version

I. DISASSEMBLY

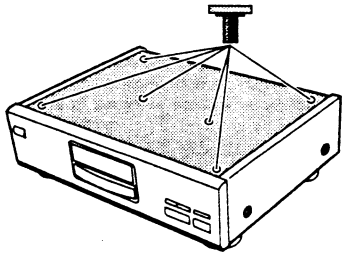
In case of trouble, etc, necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in the reverse order.

1. Removal of the UPPER COVER

For model CD-69



For model CD-79

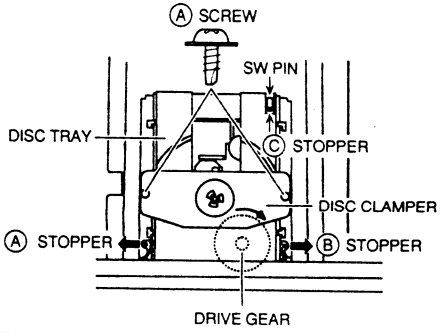


2. Removal of the DISC TRAY

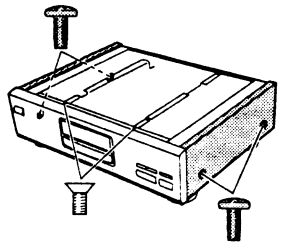
- Remove the two Ⓐ screws on the DISC CLAMPER.
- Release the Ⓒ stopper, then remove the SW PIN.

(This part is not available as a service part. Remove it from the old tray and replace it in the new one when changing the tray.)

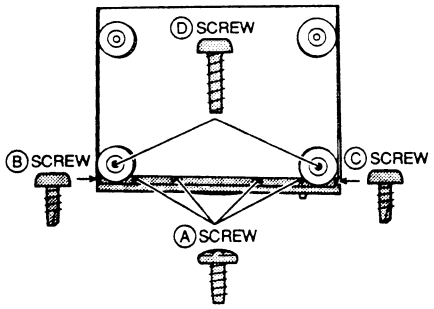
- Turn the DRIVE GEAR in the direction of the arrow until the tray reaches fully open position.
- While pulling both the Ⓐ and Ⓑ stoppers in the direction of the arrows individually, remove the DISC TRAY by pulling it forward.



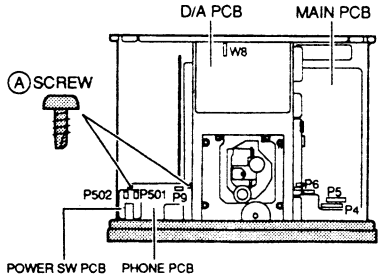
3. Removal of the FRONT PANEL BLOCK



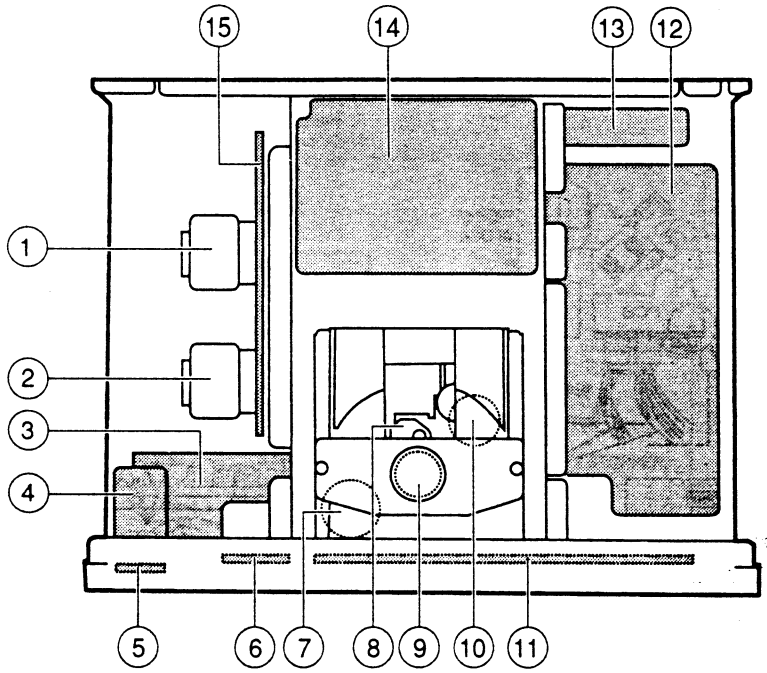
- Remove the four Ⓐ screws and loosen the Ⓓ screws on the bottom.
- Remove the Ⓑ, Ⓒ screws on the both side.



- Remove the two Ⓐ screws on the PHONE PCB.
- Disconnect the connector P4, P5 and P6 on the MAIN PCB, and W8 on the D/A PCB.
- Disconnect the connector P9 on the PHONE PCB and P501, P502 on the POWER SW PCB.



II. PRINCIPAL PARTS LOCATION



1. POWER TRANSFORMER (CD-79 only)
2. POWER TRANSFORMER
3. PHONE PCB
4. POWER SW PCB
5. LED PCB
6. DAC SW PCB
7. LOADING MOTOR
8. PICK UP BLOCK
9. SPINDLE MOTOR
10. SLED MOTOR
11. OPERATION PCB
12. MAIN PCB
13. DIGITAL OUT PCB
14. D/A PCB
15. POWER SUPPLY PCB

III. REPLACEMENT OF THE PRINCIPAL COMPONENTS

3-1. PRECAUTION, WHEN REPLACING THE PICK UP BLOCK

When connecting or disconnecting the connectors P101 and P102, make sure that the P.C. Board (on the PICK-UP Block) has to be shorted circuit as shown in Fig. 3-1. Do not turn the electricity "ON" while it remain shorted circuit.

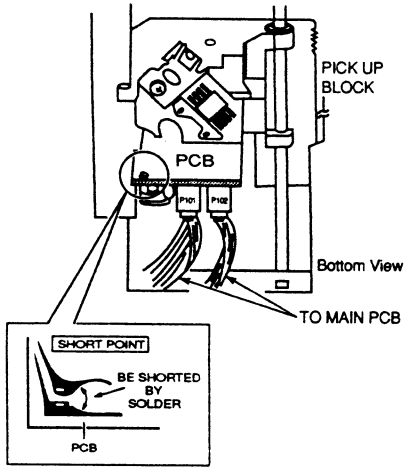


Fig. 3-1

3-2. REMOVAL OF THE MECHANISM BLOCK

1) Remove the DISC TRAY and DISC CLAMPER. (Refer to 1-2, Removal of the DISC TRAY)
2) Disconnect the P101, P102, P103 and P104 connectors on the MAIN PCB.
3) Remove the four Ⓐ screws on the MECHANISM BLOCK.
4) Remove the MECHANISM BLOCK from the main chassis.

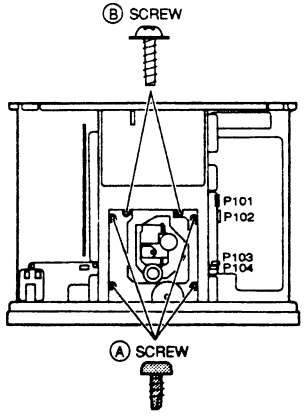


Fig. 3-2

3-3. REPLACEMENT OF TRAVERSE MECHA

1) Remove the two Ⓑ screws on the MECHANISM BLOCK. (Refer to Fig. 3-2)
2) Remove the four Ⓐ screws on the TRAVERSE MECHA as shown in Fig. 3-3.

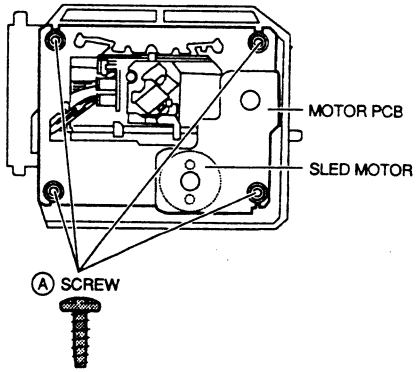


Fig. 3-3

3-4. REPLACEMENT OF THE PICK UP BLOCK

1) Release the stoppers of Ⓐ gear as shown in Fig. 3-4, then remove it.
2) Push the Ⓐ stopper in the right direction and pull the SLIDE SHAFT in the forward direction to remove the PICK UP BLOCK, then replace the PICK UP BLOCK.
3) Reassemble in the reverse order.

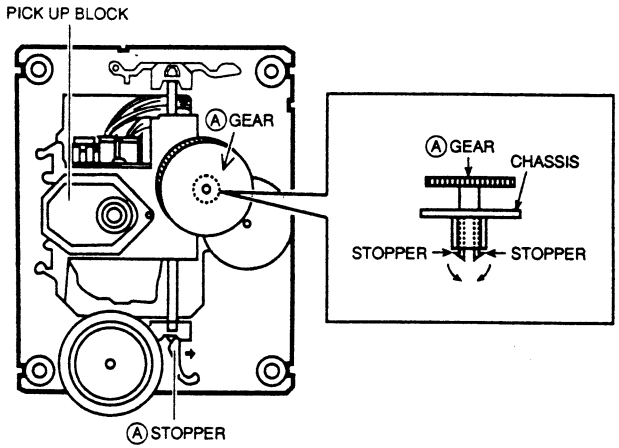


Fig. 3-4

3-5. REPLACEMENT OF THE SPINDLE MOTOR

Replacement of the SPINDLE MOTOR itself is not recommended, because the adjustment of the TURN TABLE height is quite critical and necessitating the use of a special jig.

3-6. REPLACEMENT OF THE SLED MOTOR

1) Remove the TRAVERSE MECHA.
2) Remove the MOTOR PCB.
3) Remove the SLED MOTOR retaining Ⓑ screws, then replace the SLED MOTOR.
4) Reassemble in the reverse order.

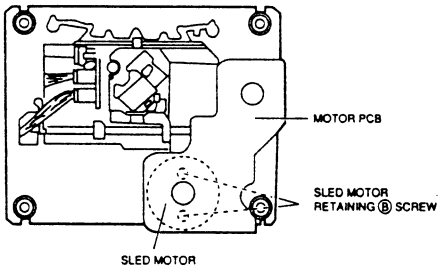


Fig. 3-5

3-7. REPLACEMENT OF THE LOADING MOTOR

1) Remove the LOADING BELT and LOADING MOTOR retaining screws.
2) Release the Ⓐ and Ⓑ stoppers as shown in Fig. 3-6. Then remove the LOADING MOTOR PCB.
3) Reassemble in the reverse order.

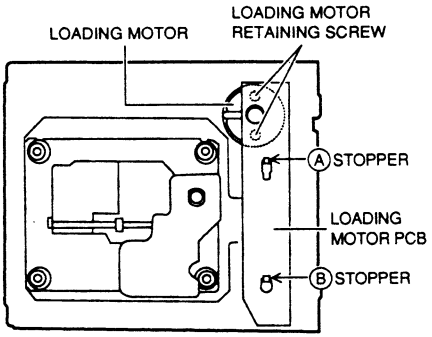


Fig. 3-6

IV. ELECTRICAL ADJUSTMENT

[ABOUT THE TEST MODE]

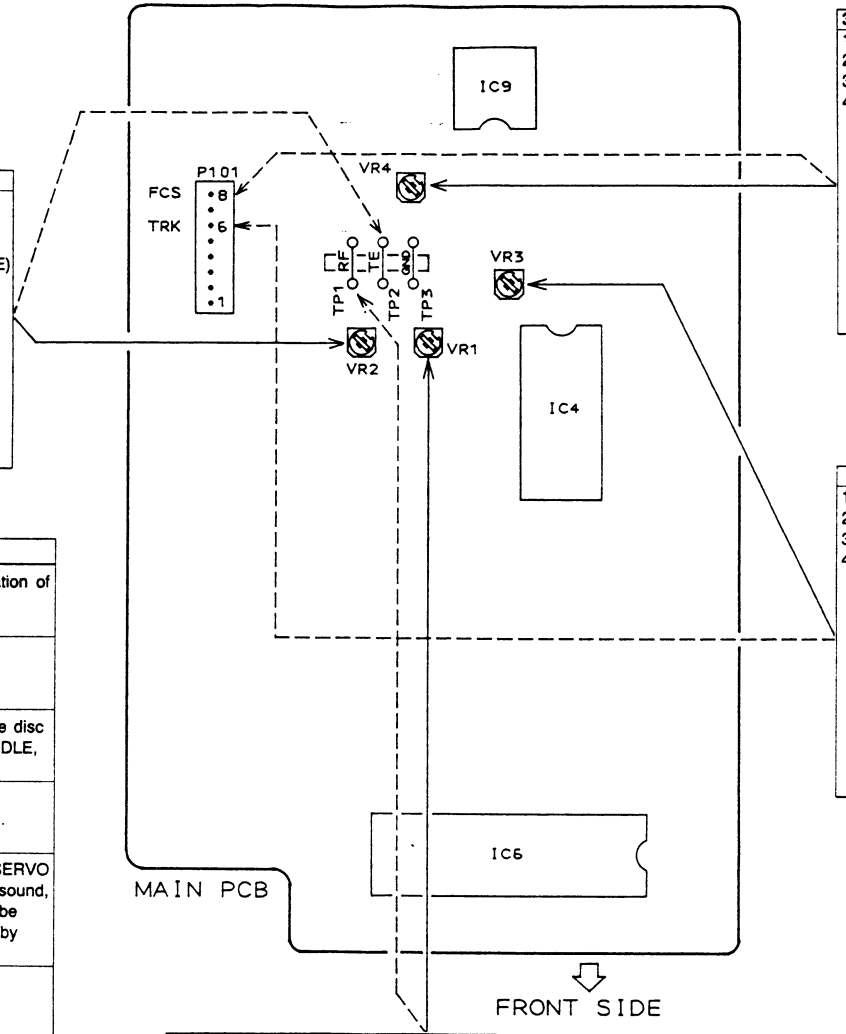
- This TEST mode is used for the adjustment or check.
- How to set into the TEST mode.
  Turn the power on, while pressing the DIMMER and ⏮ buttons on the front panel.
- How to change the TEST mode number.
  The TEST mode number will be advanced one by one, each time pressing the ▶ button and returned to initial number by pressing the ■ button.

STEP	ADJUSTMENT
1.	TEST DISC
2.	MODE or TEST mode
3.	TEST POINT and ADJUSTMENT parts.
4.	(•) REMARK, (✻) RESULT

Test point — ADJ. part

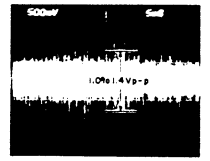
1 E-F BALANCE

1. Test disc SONY TYPE 3 (AT-711811)
2. Test mode 3
3. TP 2 (TE) / VR 2
4. • Connect an oscilloscope to TP 2 (TE)
   ✻ A=B



3 FOCUS SERVO GAIN

1. Test disc SONY TYPE 3 (AT-711811)
2. PLAY
3. Pin ⑧ (FCS) of connector P101 / VR 4
4. • Connect an oscilloscope to pin ⑧ (FCS) of connector P101.
   ✻ 1.0 to 1.4 Vp-p



2 TRACKING SERVO GAIN

1. Test disc SONY TYPE 3 (AT-711811)
2. PLAY
3. Pin ⑥ (TRK) of connector P101 / VR 3
4. • Connect an oscilloscope to pin ⑥ (TRK) of connector P101.
   ✻ 0.6 to 1.0 Vp-p.

4 FOCUS OFF-SET

1. Test disc SONY TYPE 3 (AT-711811)
2. PLAY
3. TP 1 (RF) / VR 1
4. • Connect an AC Milli - voltmeter between TP1 (RE) and TP3 (GND).
   ✻ Maximum level

✻TEST mode condition and DISPLAY

TEST mode	DISPLAY	
1	00 00 00 00	• Indicates the TEST mode after initialization of the memory for back up.
2	00 00 00 00	• Indicates the end of FOCUS SEARCH.
3	00 00 00 00	• Test mode goes to CLV-S mode and the disc is revolved. If you do not hold the SPINDLE, the disc may go out of control.
4	00 00 00 00	• Indicates that TRACKING SERVO is on.
5	00 00 00 00	• Test mode goes to CLV-A, and SLED SERVO is turned on. In this mode there will be sound, and TRACK NO. and TOTAL TIME will be indicated. The PICK-UP can be moved by using the F.S. Key and B.S.Key.
6	00 00 00 00	• Indicates regular movement.
7	00 00 00 00	• When the OPEN key was pressed to start loading during the 6th stage, the tray will be open during this 7th stage.
8	00 00 00 00	• When the OPEN key was pressed to open the tray during the 7th stage, it will close during this 8th stage .

V. PARTS LIST

ATTENTION

1. **When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref No.	Part No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R,P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

—— SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

Ref No.	Part No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC XTAL NC-18C

Symbols for primary destination —
[A] :AAL (U.S.A) [S] :SAA (Australia)
[B] :BEAB (England) [U] :U/T (Universal Area)
[C] :CSA (Canada)
[E] :CEE (Europe) [V] :VDE (Germany)
[J] :JPN (Japan) [Y] :Custom Version

—— SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No.listed at right of Part No.

WARNING

⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉDE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.

1. RECOMMENDED SPARE PARTS

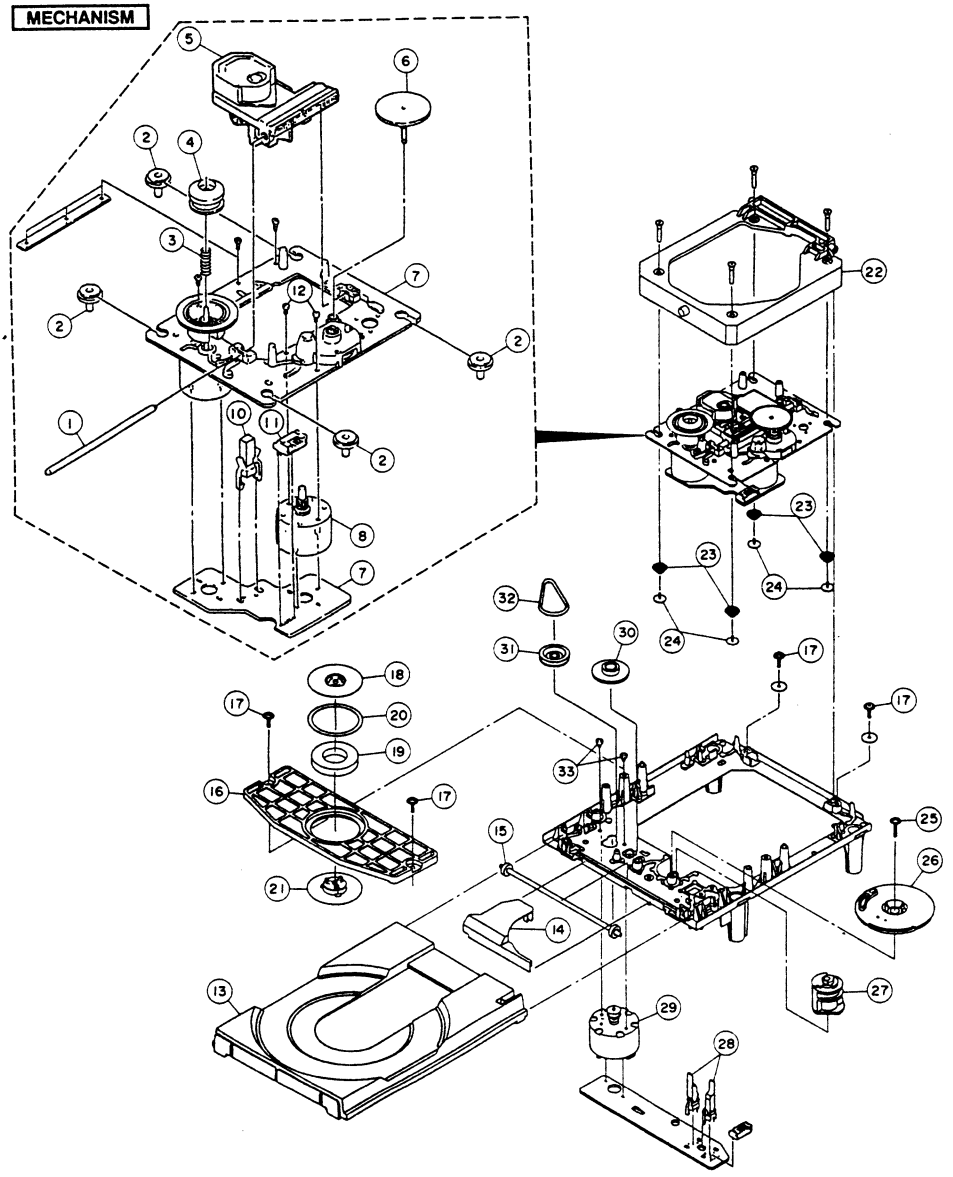
We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description
1	AX-410550M	REMOCON RC-C69 [CD-69]
2	AX-410549M	REMOCON RC-C79 [CD-79]
3	BB-408481M4	MACHA LOADING KSL-2101ABM
4	*BT-410544M	TRANS POW P2067 BS AUDIO [CD-79]
5	*BT-410546M	TRANS POW P2067 BS DIGITAL [CD-79]
6	*BT-410543M	TRANS POW P2067 EV AUDIO [CD-79]
7	*BT-410545M	TRANS POW P2067 EV DIGITAL [CD-79]
8	*BT-410548M	TRANS POW P2068 BS [CD-69]
9	*BT-410547M	TRANS POW P2068 EV [CD-69]
10	BT-368261	TRANS PULSE TC-1027-04
11	*EC-403337J	C CE V DE7100 F472M 400AC [CD-69]
12	*EC-371127	C EC V CUT AS1 222M 16.0DC
13	*EC-316231	C EC V CUT AS1 222M 35.0DC
14	*EC-201645	C EC V CUT AS1 222M 6.3DC
15	*EC-412182J	C EC V CUT AVF 102M 80.0DC
16	EC-397410J	C EC V CUT AVF 222M 35.0DC
17	*EC-414556J	C EC V CUT FA 222M 16.0DC
18	*EC-410594J	C MMY V CFKC22E 103M 250AC
19	ED-410590J	D LED SEL2415E C,D GREEN
20	ED-410557J	D LED SEL2415ETP2CD GREEN T05
21	ED-405359J	D LED SEL2915A C,D ORANGE
22	ED-403987J	D LED SLR33MC3F GREEN
23	ED-307572	D SILICON H 1SS131
24	ED-624903	D SILICON H 1S2473
25	*ED-511907	D SILICON 1N4002 100/1.0A
26	*ED-39265*J	D SILICON 1N5401 F15 100/3.0A
27	ED-396626J	D SILICON 30DF1 F20 100/3.0A
28	ED-393759J	D ZENER H HZS6B1L
29	ED-396059J	D ZENER H HZS6B2
30	ED-346547	D ZENER H HZ11A1L
31	ED-346593	D ZENER H HZ3 B1
32	ED-343854	D ZENER H HZ30-2L
33	ED-305655	D ZENER H HZ4 B3
34	ED-346528	D ZENER H HZ6C1L
35	ED-346529	D ZENER H HZ6C2L
36	ED-346530	D ZENER H HZ6C3L
37	ED-346538	D ZENER H HZ9A2L
38	ED-346540	D ZENER H HZ9B1L
39	*EF-344106	FUSE ICP-N10 50V 0.4A
40	EH-408654J	COMP R RGLE10T 223J
41	EH-412085J	COMP R RGLE3X 223J
42	EH-410573J	COMP R RGLE5T 223J
43	EI-378893J	IC AN79M05F
44	EI-410563J	IC CD0002AD [CD-69]
45	EI-413083J	IC CXA1372AS
46	EI-410569J	IC CXA1571S
47	EI-410565J	IC CXD2500BQ
48	EI-410562J	IC LA6520
49	EI-413074J	IC LA6523
50	EI-413214J	IC M38112M4-150SP CD79SY1
51	EI-377860	IC M5F7805L
52	EI-393323J	IC M5218AL-771
53	EI-393325J	IC M5218AP
54	EI-360225	IC NJM5532D
55	EI-410561J	IC OP-37GP
56	EI-410559J	IC PCM63P-J
57	EI-410560J	IC PCM63P-K
58	EI-410564J	IC SM5813AP [CD-79]
59	EI-408393J	IC ST24C01R1
60	EI-360040J1	IC TC74HCU04AP [CD-79]
61	EI-374176	OSC XTAL AT-51 16.9344MHZ [CD-79]
62	EI-381139N	OSC XTAL HC-49/U 16934.400KHZ [CD-69]
63	EJ-410554J	PHONE J 3P LGR1212-0102 6.3
64	EJ-403485J	PIN J YKC21-3049 4P
65	EJ-403486J	PIN J YKC21-3067 1P [B] [CD-69]
66	EJ-414550J	PIN J YKC21-3108 GP 4P
67	EJ-403487J	PIN J YKC21-3117 1P [E] [CD-69]
68	EJ-414553J	PIN J YKC21-3146 GP 1P [B] [CD-79]
69	EJ-414552J	PIN J YKC21-3250 GP 1P [E] [CD-79]
70	EJ-394490J	SOCKET OPTICAL GP1F32T
71	EM-408468J	IND FL FIP9CAM8 CHARACTER
72	EO-338409	COIL LF FKOB160MH02 250UH
73	EQ-410558J	RELAY SIG RY9W-OH-K 2TR 9V
74	*ER-414554J	R CB V T05 FLR 25FJ 1/4W 1R0J
75	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
76	*ER-344161	R FUSE H S10 ERD2FC 1/4W 82R0G
77	*ER-400605J	R FUSE V T05 ERD2FCV 1/4W15R0G
78	*ER-412063J	R FUSE V T05 ERD2FCV 1/4W1500G
79	*ER-410572J	R FUSE V T05 ERD2FCV 1/4W27R0G
80	*ES-410570J	SW PUSH SDDLD1 BD3.2 01-1
81	ES-410552J	SW TACT SKHVBE T05
82	ET-403432J	DETECTOR SPS-420-1
83	ET-356336	TR DTA114ES
84	ET-363953	TR DTA114TS
85	ET-353897	TR DTC114ES
86	ET-373485	TR DTC123JS
87	ET-375986	TR DTC124TS
88	ET-354364	TR DTC143TS
89	ET-371688	TR FET 2SK381 D F05
90	ET-345460	TR 2SA1208 R,S,T
91	ET-353899	TR 2SA1317 S,T,U [CD-69]
92	ET-352726	TR 2SA1392 T,U
93	ET-318237	TR 2SB764 E,F [CD-79]
94	ET-336997	TR 2SB808-V G,H
95	ET-370038	TR 2SC2910 S,T
96	ET-397160J	TR 2SC3330 R,S,T,U,V
97	ET-378524J	TR 2SC3383 S,T,U
98	EV-412201J	VR SPL RK16Y12MC A203X2 L=20

2. MECHANISM

Ref.No.	Part No.	Description
1	MS-733198M	SLIDE SHAFT
2	MB-733396M	INSULATOR
3	ZG-733199M	SP COMPRESSION
4	MZ-733200M	CENTER RING (LO)
5	BO-394728J1	PICK UP KSS-210A
6	MZ-733201M	GEAR (A)
7	MA-733202M	TURNTABLE CHASSIS ASSY (MB)
8	BM-733203M	MOTOR GEAR ASSY (MB)
9	EA-733204M	MOTOR P.C BOARD (6P)
10	ES-733205M	SW LEAF
11	EJ-733206M	CONNECTOR 6P
12	ZS-477876	PAN20X03STL CMT
13	SC-733379M	TRAY
14	SC-733380M	COVER GEAR
15	MZ-733381M	GEAR TRAY
16	MZ-733382M	CHUCKING PLATE
17	ZS-733383M	SCREW PTPWH 2.6X8
18	MZ-733384M	CHUCKING YOKE
19	MZ-733385M	MAGNET
20	MZ-733386M	DAMPER
21	MZ-733387M	CHUCKING PULLEY
22	MA-733388M	CHASSIS SUB ASSY
23	ZG-733389M	SPRING
24	ZS-733390M	WASHER BASED SCREW
25	ZS-733391M	SCREW PTPWH 2.6X16
26	MZ-733392M	GEARDRIVE
27	MZ-733393M	CAM CONTROL
28	ES-733394M	SW LEAF
29	BM-733395M	MOTOR LOADING ASSY
30	MZ-733401M	GEAR MIDWAY
31	MR-733402M	PULLEY LOADING
32	MB-733399M	BELT LM
33	ZS-733400M	SCREW B2.6X2.5

MECHANISM



NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

3. P.C BOARD BLK

Ref.No.	Part No.	Description
1A	BA-P2067T030C	ML PC (#) DIGITAL BLK CD-69 (E) /ML
1B	BA-P2067T030D	ML PC (#) DIGITAL BLK CD-69 (B) /ML
1C	BA-P2067T030A	ML PC (#) DIGITAL BLK CD-79 (E) /ML
1D	BA-P2067T030B	ML PC (#) DIGITAL BLK CD-79 (B) /ML
2A	BA-P2067T040C	ML PC (#) DAC BLK CD-69 (E) /ML
2B	BA-P2067T040D	ML PC (#) DAC BLK CD-69 (B) /ML
2C	BA-P2067T040A	ML PC (#) DAC BLK CD-79 (E) /ML
2D	BA-P2067T040B	ML PC (#) DAC BLK CD-79 (B) /ML

PC (#) DIGITAL BLK CONSISTS OF FOLLOWING P.C BOARDS.
- MAIN P.C BOARD
- OPERATION P.C BOARD
- DIGITAL OUT P.C BOARD

PC (#) DAC BLK CONSISTS OF FOLLOWING P.C BOARDS.
- DAC P.C BOARD
- POWER SUPPLY P.C BOARD
- PHONE P.C BOARD
- POWER SW P.C BOARD
- DAC SW P.C BOARD
- LED P.C BOARD

4. MAIN P.C BOARD

Ref.No.	Part No.	Description
D1	ED-396059J	D ZENER H HZS6B2
D2	ED-624903	D SILICON H 1S2473
D3	ED-346530	D ZENER H HZ6C3L
D4	ED-346530	D ZENER H HZ6C3L
D5	ED-396059J	D ZENER H HZS6B2
D6	ED-624903	D SILICON H 1S2473
D7	ED-307572	D SILICON H 1SS131
D8	ED-307572	D SILICON H 1SS131
D9	ED-307572	D SILICON H 1SS131
D10	ED-307572	D SILICON H 1SS131
D11	ED-307572	D SILICON H 1SS131
D12	ED-346528	D ZENER H HZ6C1L
D13	ED-307572	D SILICON H 1SS131
F1	*EF-344106	FUSE ICP-N10 50V 0.4A
F3	*EF-344106	FUSE ICP-N10 50V 0.4A
F4	*EF-344106	FUSE ICP-N10 50V 0.4A
FR1	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
IB1	EH-410573J	COMP R RGLE5T 223J
IB2	EH-408654J	COMP R RGLE10T 223J
IB3	EH-412085J	COMP R RGLE3X 223J
IC1	EI-377860	IC M5F7805L
IC2	EI-378893J	IC AN79M05F
IC3	EI-410569J	IC CXA1571S
IC4	EI-413083J	IC CXA1372AS
IC5	EI-410565J	IC CXD2500BQ
IC6	EI-413214J	IC M38112M4-150SP CD79SY1
IC7	EI-413074J	IC LA6523
IC8	EI-410562J	IC LA6520
IC9A	EI-410563J	IC CD0002AD [CD-69]
IC9B	EI-410564J	IC SM5813AP [CD-79]
IC10	EI-408393J	IC ST24C01B1
IC11	EI-360040J1	IC TC74HCU04AP [CD-79]
L1	EO-345913	COIL FIX 1 LAL03KH 100K
TR1	ET-370038	TR 2SC2910 S,T
TR2	ET-345460	TR 2SA1208 R,S,T
TR3A	ET-353899	TR 2SA1317 S,T,U [CD-69]
TR3B	ET-318237	TR 2SB764 E,F [CD-79]
TR4	ET-373485	TR DTC123JS
TR5	ET-373485	TR DTC123JS
TR6	ET-354364	TR DTC143TS
TR7	ET-336997	TR 2SB808-V G,H
TR8	ET-336997	TR 2SB808-V G,H
TR9	ET-373485	TR DTC123JS
TR10	ET-373485	TR DTC123JS [CD-79]
TR11	ET-375986	TR DTC124TS
VR1	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
VR2	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223
VR3	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223
VR4	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223
X1	EI-374176	OSC X'TAL AT-51 16.9344MHZ [CD-79]
X2	EI-381139N	OSC X'TAL HC-49/U 16934.400KHZ [CD-69]

5. OPERATION P.C BOARD

Ref.No.	Part No.	Description
D100	ED-410590J	D LED SEL2415E C,D GREEN
D101	ED-405359J	D LED SEL2915A C,D ORANGE
IN100	EM-408468J	IND FL FIP9CAM8 CHARACTER
RM100	ET-403432J	DETECTOR SPS-420-1
SW100	ES-410552J	SW TACT SKHVBE T05
SW101	ES-410552J	SW TACT SKHVBE T05
SW102	ES-410552J	SW TACT SKHVBE T05
SW104	ES-410552J	SW TACT SKHVBE T05
SW105	ES-410552J	SW TACT SKHVBE T05
SW106	ES-410552J	SW TACT SKHVBE T05
SW107	ES-410552J	SW TACT SKHVBE T05
SW108	ES-410552J	SW TACT SKHVBE T05
TR100	ET-373485	TR DTC123JS
TR101	ET-373485	TR DTC123JS

6. DIGITAL OUT P.C BOARD

Ref.No.	Part No.	Description
IC200	EI-360040J1	IC TC74HCU04AP
CJ201	EJ-394490J	SOCKET OPTICAL GP1F32T
CJ202A	EJ-403487J	PIN J YKC21-3117 1P [E] [CD-69]
CJ202B	EJ-403486J	PIN J YKC21-3067 1P [B] [CD-69]
CJ202C	EJ-414552J	PIN J YKC21-3250 GP 1P [E] [CD-79]
CJ202D	EJ-414553J	PIN J YKC21-3146 GP 1P [B] [CD-79]
T200	BT-368261	TRANS PULSE TC-1027-04

7. DAC P.C BOARD (CD-69)

Ref.No.	Part No.	Description
D303	ED-346547	D ZENER H HZ11A1L
D304	ED-346547	D ZENER H HZ11A1L
D305	ED-305655	D ZENER H HZ4 B3
D307	ED-346593	D ZENER H HZ3 B1
IC101	EI-410559J	IC PCM63P-J
IC102	EI-410561J	IC OP-37GP
IC130	EI-393325J	IC M5218AP
IC201	EI-410559J	IC PCM63P-J
IC202	EI-410561J	IC OP-37GP
IC301	EI-377860	IC M5F7805L
IC302	EI-378893J	IC AN79M05F
J301	EJ-403485J	PIN J YKC21-3049 4P
TR130	ET-378524J	TR 2SC3383 S,T,U
TR230	ET-378524J	TR 2SC3383 S,T,U
TR303	ET-370038	TR 2SC2910 S,T
TR304	ET-345460	TR 2SA1208 R,S,T
TR321	ET-378524J	TR 2SC3383 S,T,U

8. DAC P.C BOARD (CD-79)

Ref.No.	Part No.	Description
D301	ED-410557J	D LED SEL2415ETP2CD GREEN T05
D302	ED-410557J	D LED SEL2415ETP2CD GREEN T05
D303	ED-346529	D ZENER H HZ6C2L
D304	ED-346529	D ZENER H HZ6C2L
D305	ED-305655	D ZENER H HZ4 B3
D306	ED-346538	D ZENER H HZ9A2L
D310	ED-624903	D SILICON H 1S2473
D311	ED-624903	D SILICON H 1S2473
D312	ED-624903	D SILICON H 1S2473
D313	ED-624903	D SILICON H 1S2473
D314	ED-346540	D ZENER H HZ9B1L
D315	ED-624903	D SILICON H 1S2473
D316	ED-624903	D SILICON H 1S2473
D317	ED-346540	D ZENER H HZ9B1L
D321	ED-346529	D ZENER H HZ6C2L
D322	ED-346529	D ZENER H HZ6C2L
D323	ED-346529	D ZENER H HZ6C2L
D324	ED-346529	D ZENER H HZ6C2L
FR303	*ER-344161	R FUSE H S10 ERD2FC 1/4W 82R0G
IC101	EI-410560J	IC PCM63P-K
IC102	EI-410561J	IC OP-37GP
IC130	EI-360225	IC NJM5532D
IC201	EI-410560J	IC PCM63P-K
IC202	EI-410561J	IC OP-37GP
IC301	EI-377860	IC M5F7805L
IC302	EI-378893J	IC AN79M05F
J301	EJ-414550J	PIN J YKC21-3108 GP 4P
RL310	EQ-410558J	RELAY SIG RY9W-OH-K 2TR 9V
RL311	EQ-410558J	RELAY SIG RY9W-OH-K 2TR 9V
TR130	ET-378524J	TR 2SC3383 S,T,U
TR230	ET-378524J	TR 2SC3383 S,T,U
TR301	ET-352726	TR 2SA1392 T,U
TR302	ET-378524J	TR 2SC3383 S,T,U
TR303	ET-370038	TR 2SC2910 S,T
TR304	ET-345460	TR 2SA1208 R,S,T
TR305	ET-353899	TR 2SA1317 S,T,U
TR310	ET-373485	TR DTC123JS
TR311	ET-353899	TR 2SA1317 S,T,U
TR312	ET-353897	TR DTC114ES
TR313	ET-356336	TR DTA114ES
TR314	ET-373485	TR DTC123JS
TR321	ET-378524J	TR 2SC3383 S,T,U
TR322	ET-378524J	TR 2SC3383 S,T,U

9. POWER SUPPLY P.C BOARD (CD-79)

Ref.No.	Part No.	Description
C502	*EC-410594J	C MMY V CFKC22E 103M 250AC
C503	*EC-410594J	C MMY V CFKC22E 103M 250AC
C506	*EC-316231	C EC V CUT AS1 222M 35.0DC
C508	*EC-371127	C EC V CUT AS1 222M 16.0DC
C509	*EC-371127	C EC V CUT AS1 222M 16.0DC
C512	*EC-201645	C EC V CUT AS1 222M 6.3DC
C513	*EC-371127	C EC V CUT AS1 222M 16.0DC
D505	*ED-392651J	D SILICON 1N5401 F15 100/3.0A
D509	*ED-511907	D SILICON 1N4002 100/1.0A
D510	*ED-511907	D SILICON 1N4002 100/1.0A
D511	*ED-511907	D SILICON 1N4002 100/1.0A
D512	*ED-511907	D SILICON 1N4002 100/1.0A
D513	*ED-511907	D SILICON 1N4002 100/1.0A
D514	*ED-511907	D SILICON 1N4002 100/1.0A
D515	ED-393759J	D ZENER H HZS6B1L
D516	ED-624903	D SILICON H 1S2473
D517	ED-624903	D SILICON H 1S2473
D518	ED-624903	D SILICON H 1S2473
D519	ED-624903	D SILICON H 1S2473
D520	ED-511907	D SILICON 1N4002 100/1.0A
D521	ED-511907	D SILICON 1N4002 100/1.0A
D522	ED-511907	D SILICON 1N4002 100/1.0A
D523	ED-511907	D SILICON 1N4002 100/1.0A
D524	ED-511907	D SILICON 1N4002 100/1.0A
D525	ED-511907	D SILICON 1N4002 100/1.0A
D526	ED-511907	D SILICON 1N4002 100/1.0A
D527	ED-511907	D SILICON 1N4002 100/1.0A
D528	ED-511907	D SILICON 1N4002 100/1.0A
D529	ED-343854	D ZENER H HZ30-2L
FL501	EO-338409	COIL LF FKOB160MH02 250UH
FR301	*ER-410572J	R FUSE V T05 ERD2FCV 1/4W27R0G
FR302	*ER-410572J	R FUSE V T05 ERD2FCV 1/4W27R0G
FR304	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
FR305	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
R522	*ER-414554J	R CB V T05 FLR 25FJ 1/4W 1R0J
R523	*ER-414554J	R CB V T05 FLR 25FJ 1/4W 1R0J
R524	*ER-414554J	R CB V T05 FLR 25FJ 1/4W 1R0J
R525	*ER-414554J	R CB V T05 FLR 25FJ 1/4W 1R0J
TR501	ET-397160J	TR 2SC3330 R,S,T,U,V
TR502	ET-363953	TR DTA114TS
TR503	ET-363953	TR DTA114TS
TR504	ET-353899	TR 2SA1317 S,T,U
TR505	ET-371688	TR FET 2SK381 D F05

10. POWER SUPPLY P.C BOARD (CD-79)

Ref.No.	Part No.	Description
C502	*EC-410594J	C MMY V CFKC22E 103M 250AC
C503	*EC-410594J	C MMY V CFKC22E 103M 250AC
C504	EC-397410J	C EC V CUT AVF 222M 35.0DC
C506	*EC-412182J	C EC V CUT AVF 102M 80.0DC
C508	*EC-371127	C EC V CUT AS1 222M 16.0DC
C509	*EC-371127	C EC V CUT AS1 222M 16.0DC
C512	*EC-201645	C EC V CUT AS1 222M 6.3DC
C513	*EC-414556J	C EC V CUT FA 222M 16.0DC
D501	ED-396626J	D SILICON 30DF1 F20 100/3.0A
D505	*ED-396626J	D SILICON 30DF1 F20 100/3.0A
D509	*ED-511907	D SILICON 1N4002 100/1.0A
D510	*ED-511907	D SILICON 1N4002 100/1.0A
D511	*ED-511907	D SILICON 1N4002 100/1.0A
D512	*ED-511907	D SILICON 1N4002 100/1.0A
D513	*ED-511907	D SILICON 1N4002 100/1.0A
D514	*ED-511907	D SILICON 1N4002 100/1.0A
D515	ED-393759J	D ZENER H HZS6B1L
D516	ED-624903	D SILICON H 1S2473
D517	ED-624903	D SILICON H 1S2473
D518	ED-624903	D SILICON H 1S2473
D519	ED-624903	D SILICON H 1S2473
D520	ED-511907	D SILICON 1N4002 100/1.0A
D521	ED-511907	D SILICON 1N4002 100/1.0A
D522	ED-511907	D SILICON 1N4002 100/1.0A
D523	ED-511907	D SILICON 1N4002 100/1.0A
D524	ED-511907	D SILICON 1N4002 100/1.0A
D525	ED-511907	D SILICON 1N4002 100/1.0A
D526	ED-511907	D SILICON 1N4002 100/1.0A
D527	ED-511907	D SILICON 1N4002 100/1.0A
D528	ED-511907	D SILICON 1N4002 100/1.0A
D529	ED-343854	D ZENER H HZ30-2L
FL501	EO-338409	COIL LF FKOB160MH02 250UH
FR301	*ER-410572J	R FUSE V T05 ERD2FCV 1/4W27R0G
FR302	*ER-410572J	R FUSE V T05 ERD2FCV 1/4W27R0G
FR304	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
FR305	*ER-328278	R FUSE H ERD2FC 1/4W 10R0G
R520	*ER-414554J	R CB V T05 FLR 25FJ 1/4W 1R0J
R521	*ER-414554J	R CB V T05 FLR 25FJ 1/4W 1R0J
R522	*ER-414554J	R CB V T05 FLR 25FJ 1/4W 1R0J
R523	*ER-414554J	R CB V T05 FLR 25FJ 1/4W 1R0J
TR501	ET-397160J	TR 2SC3330 R,S,T,U,V
TR502	ET-363953	TR DTA114TS
TR503	ET-363953	TR DTA114TS
TR504	ET-353899	TR 2SA1317 S,T,U
TR505	ET-371688	TR FET 2SK381 D F05

11. PHONE P.C BOARD

Ref.No.	Part No.	Description
D401	ED-346547	D ZENER H HZ11A1L
D402	ED-346547	D ZENER H HZ11A1L
FR401	*ER-400605J	R FUSE V T05 ERD2FCV 1/4W15R0G
FR402	*ER-400605J	R FUSE V T05 ERD2FCV 1/4W15R0G
IC401	EI-393323J	IC M5218AL-771
IC402	EI-393323J	IC M5218AL-771
J401	EJ-410554J	PHONE J 3P LGR1212-0102 6.3
TR401	ET-378524J	TR 2SC3383 S,T,U
TR402	ET-352726	TR 2SA1392 T,U
VR401	EV-412201J	VR SPL RK16Y12MC A203X2 L=20

12. POWER SW P.C BOARD

Ref.No.	Part No.	Description
C501A	*EC-403337J	C CE V DE7100 F472M 400AC [CD-69]
C501B	*EC-410594J	C MMY V CFKC22E 103M 250AC [CD-79]
SW501	*ES-410570J	SW PUSH SDDLD1 BD3.2 01-1

13. DAC SW P.C BOARD

Ref.No.	Part No.	Description
D430	ED-405359J	D LED SEL2915A C,D ORANGE
D431	ED-405359J	D LED SEL2915A C,D ORANGE [CD-79]
SW430	ES-410552J	SW TACT SKHVBE T05
SW431	ES-410552J	SW TACT SKHVBE T05 [CD-79]

14. LED P.C BOARD

Ref.No.	Part No.	Description
D432	ED-403987J	D LED SLR33MC3F GREEN
D433	ED-403987J	D LED SLR33MC3F GREEN

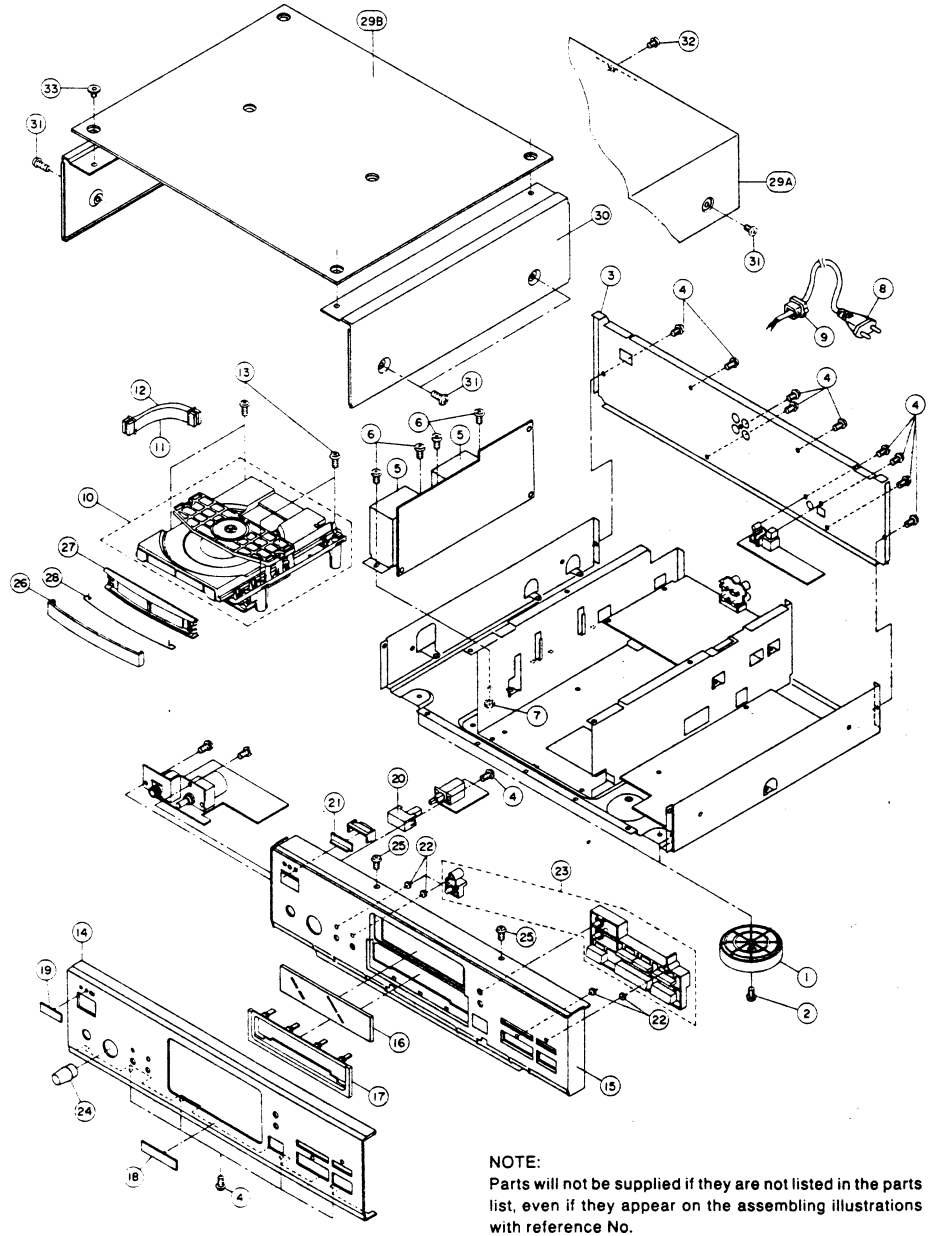
15. FINAL ASSEMBLY

Ref.No.	Part No.	Description
1A	SA-379375	FOOT (N) [CD-69]
1B	SA-384105J	FOOT ROUND SHAPED (N) [CD-79]
2A	ZS-393515M	BT BID30X10STL BZN (SG) [CD-69]
2B	ZS-411115M	BT BID30X14STL BZN (SG) [CD-79]
3A	SP-411040M	PANEL REAR CD-69 (E) (SG)
3B	SP-411042M	PANEL REAR CD-69 (B) (SG)
3C	SP-410966M	PANEL REAR CD-79 (E) (SG)
3D	SP-410967M	PANEL REAR CD-79 (B) (SG)
4	ZS-394414J	BT BID30X08STL BZN
5A	*BT-410547M	TRANS POW P2068 EV [CD-69]
5B	*BT-410548M	TRANS POW P2068 BS [CD-69]
5C	*BT-410543M	TRANS POW P2067 EV AUDIO [CD-79]
5D	*BT-410544M	TRANS POW P2067 BS AUDIO [CD-79]
5E	*BT-410545M	TRANS POW P2067 EV DIGITAL [CD-79]
5F	*BT-410546M	TRANS POW P2067 BS DIGITAL [CD-79]
6	ZS-301398	ST BID40X08STL CMT
7	ZW-311744	N40STL CMT 3
8A	*EW-404002M	AC CORD 200 SE-1 WITH TUBE E
8B	*EW-404001M	AC CORD 200 VCTFK WITH TUBE B
9	*EZ-371605	BUSH CORD 2271
10	BB-408481M4	MACHA LOADING KSL-2101ABM
11	EW-408749M	WIRE ASSY YMC-02 PU1 8P
12	EW-408750M	WIRE ASSY YMC-02 PU2 8P
13	ZS-411116M	BT BID30X05STL BZN (SG)
14A	SP-410977J	PANEL FRONT CD-69-B
14B	SP-410976J	PANEL FRONT CD-79-B
15	SE-410979M	ESCUTCHEON FRONT (SG)
16	SE-410960J	WINDOW FLD
17	SZ-410975M	ACOUSTIC SEAL (SG)
18	SM-411035J	NAME PLATE DAC DIRECT OUT [CD-79]
19	SM-365756C	NAME PLATE AKAI (2)
20	SK-404769J	BUTTON POWER-B
21	SE-373237J1	LENS POW
22	SE-410963M	LENS LED (SG)
23	SK-410901J	BUTON PLAY
24	SK-411126J	KNOB VR (2)-GR
25	ZS-341989	ST CTS30X06STL CMT
26	SP-410961J	PANEL TRAY
27	SE-411422M	HOLDER PANEL TRAY (SG)
28	SZ-411109J	RING PANEL TRAY
29A	SP-411397M	COVER UPPER-B (1) (SG) [CD-69]
29B	SP-410970M	UPPER BOARD (SG) [CD-79]
30	SP-410971M	SIDE BOARD (SG) [CD-79]
31	ZS-322580	ST BID40X08STL BNI
32	ZS-394412M	BT BID30X08STL BZN PROJECTION [CD-69]
33A	ZS-381482J	SCREW TOP COVER (3) B OM [CD-69]
33B	ZS-377746	SCREW TOP COVER PROJECTON B [CD-79]

16. ACCESSARY

Ref.No.	Part No.	Description
1	EW-389765J	CORD 6276 P-P 2P
2A	AX-410550M	REMOCON RC-C69 [CD-69]
2B	AX-410549M	REMOCON RC-C79 [CD-79]

FINAL ASSEMBLY



NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

INDEX

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AX410549M	16-2B	ED396059J	4-D5	EI378893J	4-IC2	ES733205M	2-10
AX410550M	16-2A	ED396626J	10-D501	EI378893J	7-IC302	ES733394M	2-28
BAP2067T030A	3-1C	ED396626J	10-D505	EI378893J	8-IC302	ET318237	4-TR3B
BAP2067T030B	3-1D	ED403987J	14-D432	EI381139N	4-X2	ET336997	4-TR7
BAP2067T030C	3-1A	ED403987J	14-D433	EI393323J	11-IC401	ET336997	4-TR8
BAP2067T030D	3-1B	ED405359J	5-D101	EI393323J	11-IC402	ET345460	4-TR2
BAP2067T040A	3-2C	ED405359J	13-D430	EI393325J	7-IC130	ET345460	7-TR304
BAP2067T040B	3-2D	ED405359J	13-D431	EI408393J	4-IC10	ET345460	8-TR304
BAP2067T040C	3-2A	ED410557J	8-D301	EI410559J	7-IC101	ET352726	8-TR301
BAP2067T040D	3-2B	ED410557J	8-D302	EI410559J	7-IC201	ET352726	11-TR402
BB408481M4	15-10	ED410590J	5-D100	EI410560J	8-IC101	ET353897	8-TR312
BM733203M	2-8	ED511907	9-D509	EI410560J	8-IC201	ET353899	4-TR3A
BM733395M	2-29	ED511907	9-D510	EI410561J	7-IC102	ET353899	8-TR305
BO394728J1	2-5	ED511907	9-D511	EI410561J	7-IC202	ET353899	8-TR311
BT368261	6-T200	ED511907	9-D512	EI410561J	8-IC102	ET353899	9-TR504
BT410543M	15-5C	ED511907	9-D513	EI410561J	8-IC202	ET353899	10-TR504
BT410544M	15-5D	ED511907	9-D514	EI410562J	4-IC8	ET354364	4-TR6
BT410545M	15-5E	ED511907	9-D520	EI410563J	4-IC9A	ET356336	8-TR313
BT410546M	15-5F	ED511907	9-D521	EI410564J	4-IC9B	ET363953	9-TR502
BT410547M	15-5A	ED511907	9-D522	EI410565J	4-IC5	ET363953	9-TR503
BT410548M	15-5B	ED511907	9-D523	EI410569J	4-IC3	ET363953	10-TR502
EA733204M	2-9	ED511907	9-D524	EI413074J	4-IC7	ET363953	10-TR503
EC201645	9-C512	ED511907	9-D525	EI413083J	4-IC4	ET370038	4-TR1
EC201645	10-C512	ED511907	9-D526	EI413214J	4-IC6	ET370038	7-TR303
EC316231	9-C506	ED511907	9-D527	EJ394490J	6-CJ201	ET370038	8-TR303
EC371127	9-C508	ED511907	9-D528	EJ403485J	7-J301	ET371688	9-TR505
EC371127	9-C509	ED511907	10-D509	EJ403486J	6-CJ202B	ET371688	10-TR505
EC371127	9-C513	ED511907	10-D510	EJ403487J	6-CJ202A	ET373485	4-TR4
EC371127	10-C508	ED511907	10-D511	EJ410554J	11-J401	ET373485	4-TR5
EC371127	10-C509	ED511907	10-D512	EJ414550J	8-J301	ET373485	4-TR9
EC397410J	10-C504	ED511907	10-D513	EJ414552J	6-CJ202C	ET373485	4-TR10
EC403337J	12-C501A	ED511907	10-D514	EJ414553J	6-CJ202D	ET373485	5-TR100
EC410594J	9-C502	ED511907	10-D520	EJ733206M	2-11	ET373485	5-TR101
EC410594J	9-C503	ED511907	10-D521	EM408468J	5-IN100	ET373485	8-TR310
EC410594J	10-C502	ED511907	10-D522	EO338409	9-FL501	ET373485	8-TR314
EC410594J	10-C503	ED511907	10-D523	EO338409	10-FL501	ET375986	4-TR11
EC410594J	12-C501B	ED511907	10-D524	EO345913	4-L1	ET378524J	7-TR130
EC412182J	10-C506	ED511907	10-D525	EQ410558J	8-RL310	ET378524J	7-TR230
EC414556J	10-C513	ED511907	10-D526	EQ410558J	8-RL311	ET378524J	7-TR321
ED305655	7-D305	ED511907	10-D527	ER328278	4-FR1	ET378524J	8-TR130
ED305655	8-D305	ED511907	10-D528	ER328278	9-FR304	ET378524J	8-TR230
ED307572	4-D7	ED624903	4-D2	ER328278	9-FR305	ET378524J	8-TR302
ED307572	4-D8	ED624903	4-D6	ER328278	10-FR304	ET378524J	8-TR321
ED307572	4-D9	ED624903	8-D310	ER328278	10-FR305	ET378524J	8-TR322
ED307572	4-D10	ED624903	8-D311	ER344161	8-FR303	ET378524J	11-TR401
ED307572	4-D11	ED624903	8-D312	ER400605J	11-FR401	ET397160J	9-TR501
ED307572	4-D13	ED624903	8-D313	ER400605J	11-FR402	ET397160J	10-TR501
ED343854	9-D529	ED624903	8-D315	ER410572J	9-FR301	ET403432J	5-RM100
ED343854	10-D529	ED624903	8-D316	ER410572J	9-FR302	EV389479J	4-VR2
ED346528	4-D12	ED624903	9-D516	ER412063J	10-FR301	EV389479J	4-VR3
ED346529	8-D303	ED624903	9-D517	ER412063J	10-FR302	EV389479J	4-VR4
ED346529	8-D304	ED624903	9-D518	ER414554J	9-R522	EV389489J	4-VR1
ED346529	8-D321	ED624903	9-D519	ER414554J	9-R523	EV412201J	11-VR401
ED346529	8-D322	ED624903	10-D516	ER414554J	9-R524	EW389765J	16-1
ED346529	8-D323	ED624903	10-D517	ER414554J	9-R525	EW404001M	15-8B
ED346529	8-D324	ED624903	10-D518	ER414554J	10-R520	EW404002M	15-8A
ED346530	4-D3	ED624903	10-D519	ER414554J	10-R521	EW408749M	15-11
ED346530	4-D4	EF344106	4-F1	ER414554J	10-R522	EW408750M	15-12
ED346538	8-D306	EF344106	4-F3	ER414554J	10-R523	EZ371605	15-9
ED346540	8-D314	EF344106	4-F4	ES410552J	5-SW100	MA733202M	2-7
ED346540	8-D317	EH408654J	4-IB2	ES410552J	5-SW101	MA733388M	2-22
ED346547	7-D303	EH410573J	4-IB1	ES410552J	5-SW102	MB733396M	2-2
ED346547	7-D304	EH412085J	4-IB3	ES410552J	5-SW104	MB733399M	2-32
ED346547	11-D401	EI360040J1	4-IC11	ES410552J	5-SW105	MR733402M	2-31
ED346547	11-D402	EI360040J1	6-IC200	ES410552J	5-SW106	MS733198M	2-1
ED346593	7-D307	EI360225	8-IC130	ES410552J	5-SW107	MZ733200M	2-4
ED392651J	9-D505	EI374176	4-X1	ES410552J	5-SW108	MZ733201M	2-6
ED393759J	9-D515	EI377860	4-IC1	ES410552J	13-SW430	MZ733381M	2-15
ED393759J	10-D515	EI377860	7-IC301	ES410552J	13-SW431	MZ733382M	2-16
ED396059J	4-D1	EI377860	8-IC301	ES410570J	12-SW501	MZ733384M	2-18

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
MZ733385M	2-19						
MZ733386M	2-20						
MZ733387M	2-21						
MZ733392M	2-26						
MZ733393M	2-27						
MZ733401M	2-30						
SA379375	15-1A						
SA384105J	15-1B						
SC733379M	2-13						
SC733380M	2-14						
SE373237J1	15-21						
SE410960J	15-16						
SE410963M	15-22						
SE410979M	15-15						
SE411422M	15-27						
SK404769J	15-20						
SK410901J	15-23						
SK411126J	15-24						
SM365756C	15-19						
SM411035J	15-18						
SP410961J	15-26						
SP410966M	15-3C						
SP410967M	15-3D						
SP410970M	15-29B						
SP410971M	15-30						
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SP411042M	15-3B						
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ZS411116M	15-13						
ZS477876	2-12						
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ZS733390M	2-24						
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ZW311744	15-7						

NOTE

ABBREVIATIONS (COMPACT DISC)

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
A-D	Analog to Digital (Convertor)	Mb	Mega Bits
ADC	Analog to Digital (Convertor)	MDA	Mortor Drive Amplifier
BCD	Binary Code Decimal	MFM	Modified Frequency Modulation
BPI	Bits per Inch	MM	Mono-stable Multivibrator
CD	Compact Disc	M²FM	Modified Modified Frequency Modulation
CIRC	Cross Interleaving & Reed Solomon Coding	MOD2	Modulo 2 (Addition)
CLV	Constant Linear Velocity	MP	Microprocessor
CP	Clock Pulses	MSB	Most Significant Bit
CRCC	Cyclic Redundancy Check Codes	NA	Numerical Aperture
D Level	Decision Level	NRZ	Non Return to Zero
D-A	Digital to Analog (Convertor)	NRZ-1	Non Return to Zero Inverted
DAC	Digital to Analog (Convertor)	P	Parity Data
DAD	Digital Audio Disc	PAM	Pulse Amplitude Modulation
DEM	Dynamic Element Matching	PCM	Pulse Code Modulation
DPD	Differential Phase Detection	PD	Phase Detector
DSV	Digital Sum Value	PE	Phase Encode
EFM	Eight to fourteen Modulation	PLL	Phase Locked Loop
EX-OR	EXclusive OR	PNM	Pulse Number Modulation
FCI	Flux Changes per Inch	PPM	Pulse Phase Modulation
FIR	Finite Impulse Response	PWM	Pulse Width Modulation
FP	Front Pulse	Q	Parity Data
FPG	Front Pulse Gate	R, R_1, R_2, etc.	Data for Right Channel
f	Frequency of Sampling	RAM	Random Access Memory
GF	Galois Field	RPG	Rear Pulse Gate
H & V (Parity)	Horizonal & Vertical	SCOOP	Self Coupled Optical Pick-up
IIR	Infinite Impulse Response	S & H	Sample & Hold
kb	Kilo Bits	S/N	Signal to Noise Ratio
L, L_1, L_2, etc.	Data for Left Channel	SSG	Standard Signal Generator
LPF	Low Pass Filter	SYSCON	SYStem CONtrol
LSB	Least Significant Bit		

AKAI

MODEL CD-69
MODEL CD-79

SCHEMATIC DIAGRAMS AND PC BOARDS

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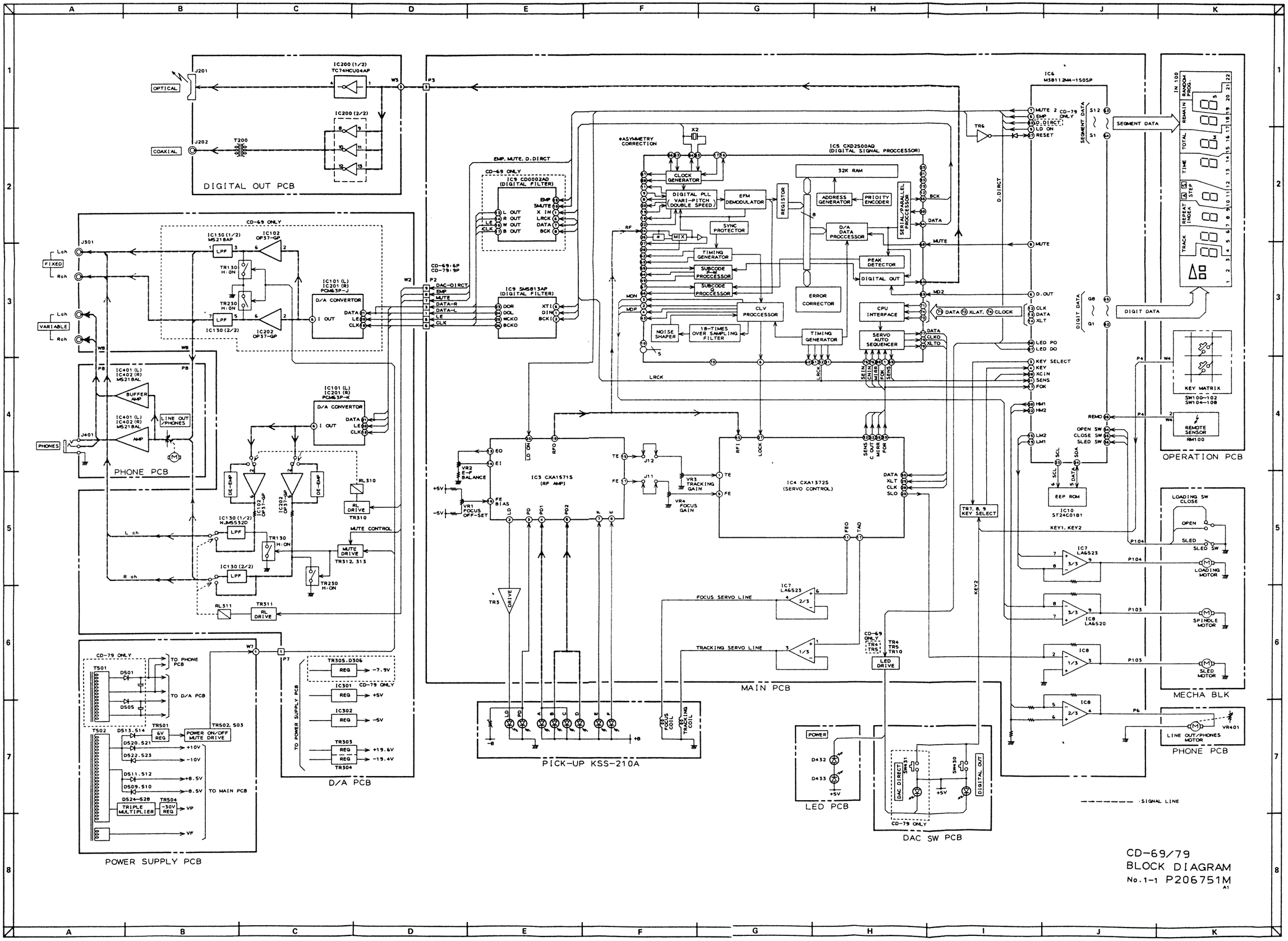
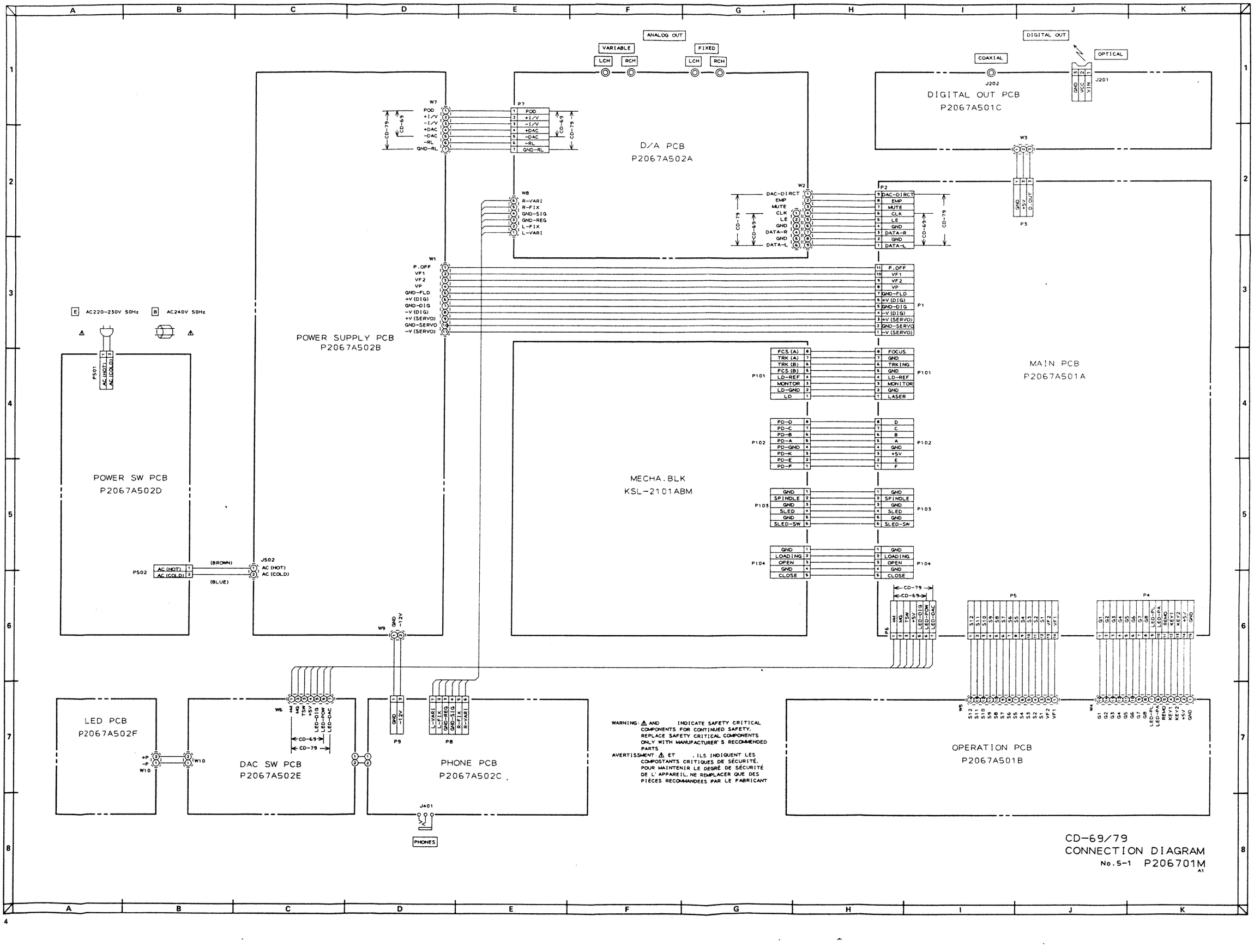
Use these schematic diagrams and PC boards together with the provided service manual.


DIGITAL OUT PCB
OPTICAL
COAXIAL
J201
J202
T200
IC200 (1/2) TC74HCU04AP
IC200 (2/2)
W3
P3
CD-69 ONLY
IC130 (1/2) MS218AP
IC102 OP37-GP
IC130 (2/2)
IC202 OP37-GP
J301
Lch
Rch
FIXED
VARIABLE
TR130 H:ON
TR230 H:ON
LPF
IC101 (L) IC201 (R) PCM63P-J
D/A CONVERTOR
I OUT
DATA
LE
CLK
W2
P2
CD-69/6P
CD-79/9P
DAC-DIRCT
EMP
MUTE
DATA-R
DATA-L
LE
CLK
IC9 SM5813AP (DIGITAL FILTER)
DOR
DOL
MCKO
BCKO
XTI
DIN
BCKI
EMP, MUTE, D.DIRCT
CD-69 ONLY
IC9 CD8002AQ (DIGITAL FILTER)
L OUT
R OUT
W OUT
B OUT
X IN
LRCK
DATA
BCK
LE
CLK
*ASYMMETRY CORRECTION
X2
IC5 CXD2500AQ (DIGITAL SIGNAL PROCCESSOR)
CLOCK GENERATOR
DIGITAL PLL VARI-PITCH (DOUBLE SPEED)
EFM DEMODULATOR
REGISTOR
32K RAM
ADDRESS GENERATOR
PRIOITY ENCODER
SERIAL/PARALLEL PROCESSOR
BCK
DATA
SYNC PROTECTOR
D/A DATA PROCCESSOR
MUTE
RF
MIX
TIMING GENERATOR
SUBCODE Q-W PROCCESSOR
SUBCODE Q PROCESSOR
PEAK DETECTOR
DIGITAL OUT
MON
MDP
CLV PROCCESSOR
ERROR CORRECTOR
MD2
CPU INTERFACE
D.OUT
CLK
DATA
XLT
NOISE SHAPER
18-TIMES OVER SAMPLING FILTER
TIMING GENERATOR
SERVO AUTO SEQUENCER
LED PO
LED DO
KEY SELECT
KEY
XCIN
SENS
FOK
HM1
HM2
LM2
LM1
SCL
SDA
EEP ROM
IC10 ST24C01B1
REMO
OPEN SW
CLOSE SW
SLED SW
LRCK
SEIN
CMIN
HALL
FOK
SENS
D.DIRCT
TR6
MUTE 2
EMP
D.DIRCT
LD ON
RESET
CD-79 ONLY
IC6 M58112M4-150SP
SEGMENT DATA
S12
S1
DIGIT DATA
G8
G1
IN 100 RANDOM PROG.
REMAIN
TOTAL
TIME
REPEAT A B INDEX STEP
TRACK
KEY MATRIX
SW100~102
SW104~108
REMOTE SENSOR RM100
OPERATION PCB
LOADING SW CLOSE
OPEN
SLED
SLED SW
LOADING MOTOR
SPINDLE MOTOR
SLED MOTOR
LINE OUT/PHONES MOTOR
VR401
MECHA BLK
PHONE PCB
IC7 LA6523
IC8 LA6520
IC8
P104
P103
P6
P4
W4
P8
W8
IC401 (L) IC402 (R) MS218AL
BUFFER AMP
AMP
LINE OUT /PHONES
J401
PHONES
PHONE PCB
DE-EMP
IC102 OP37-GP
IC202 OP37-GP
RL310
RL DRIVE
TR310
MUTE CONTROL
MUTE DRIVE
TR312, 313
TR250 H:ON
IC130 (1/2) NJM5532D
IC130 (2/2)
L ch
R ch
RL311
TR311
W7
P7
CD-79 ONLY
TO PHONE PCB
TO D/A PCB
TO MAIN PCB
T501
T502
D501
D505
D513.514
D520.521
D522.523
D511.512
D509.510
D524~528
TR501
6V REG
POWER ON/OFF MUTE DRIVE
TR502, 503
+10V
-10V
+8.5V
-8.5V
TRIPLE MULTIPLIER
TR504
-30V REG
VP
VF
POWER SUPPLY PCB
TR305.0306
REG
-7.9V
IC301 CD-79 ONLY
+5V
IC302
-5V
TR303
+19.6V
TR304
-19.4V
TO POWER SUPPLY PCB
D/A PCB
EO
EI
VR2 E-F BALANCE
FE BIAS
VR1 FOCUS OFF-SET
IC3 CXA1571S (RF AMP)
LD ON
RFO
TE
FE
J12
J11
VR3 TRACKING GAIN
VR4 FOCUS GAIN
RFI
LOCK
SENS
C OUT
MIRR
FOK
IC4 CXA1372S (SERVO CONTROL)
DATA
XLT
CLK
SLO
FEO
TAO
TR7, 8, 9 KEY SELECT
KEY2
LD
PD
PD1
PD2
F
E
TR3 DRIVE
FOCUS SERVO LINE
TRACKING SERVO LINE
IC7 LA6523
2/3
1/3
CD-69 ONLY
TR4
TR5
TR10
LED DRIVE
PICK-UP KSS-210A
A
B
C
D
E
F
FOCUS COIL
TRACKING COIL
+8
-8
MAIN PCB
POWER
D432
D433
+5V
LED PCB
DAC DIRECT
SW431
SW430
DIGITAL OUT
CD-79 ONLY
DAC SW PCB
SIGNAL LINE
CD-69/79
BLOCK DIAGRAM
No.1-1 P206751M
A1

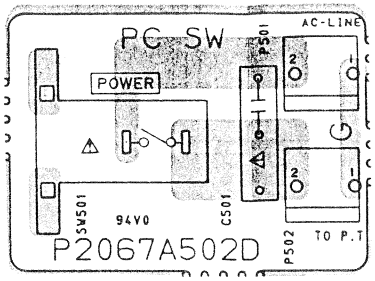


WARNING: ⚠ AND INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

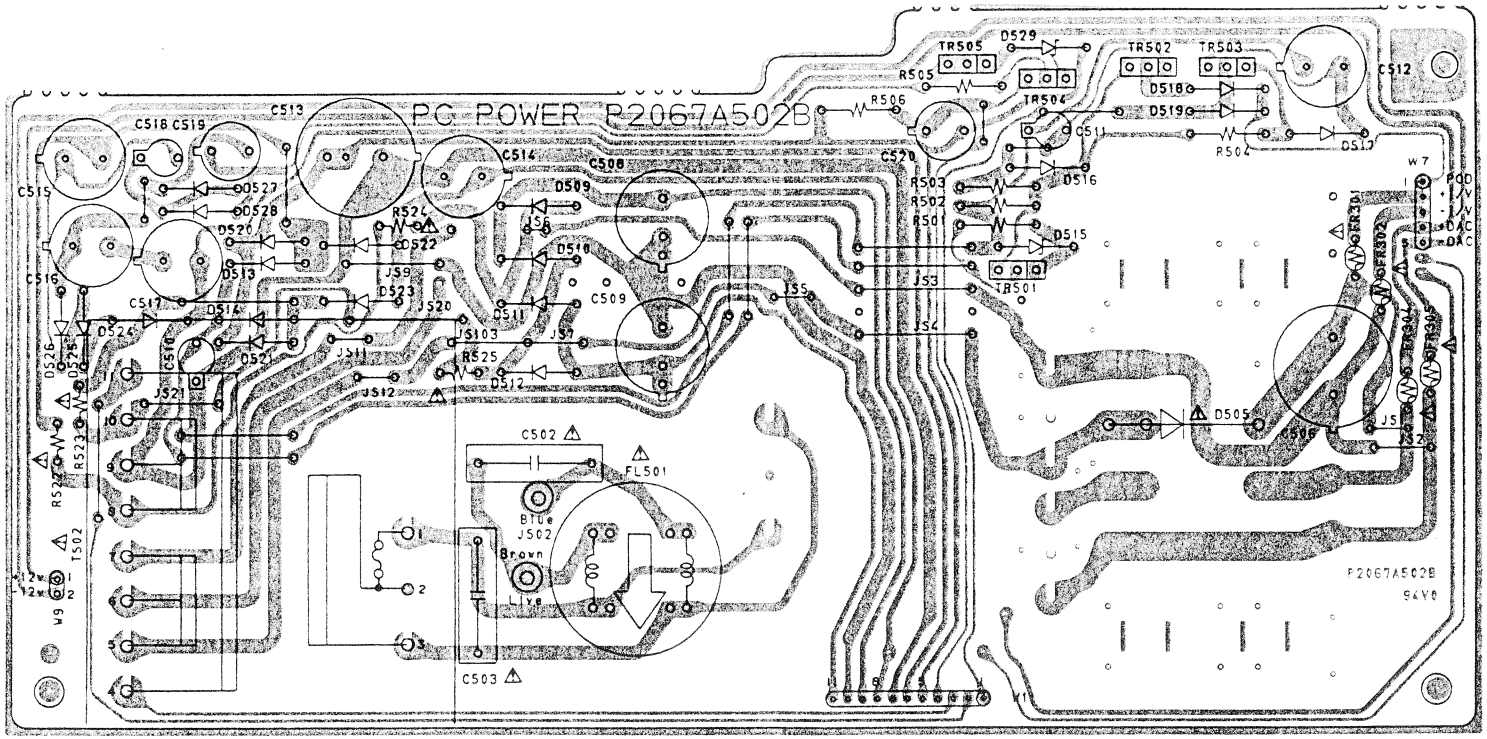
AVERTISSMENT: ⚠ ET . ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

CD-69/79 CONNECTION DIAGRAM

No.5-1 P206701M A1



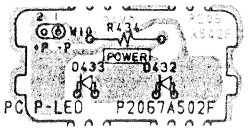
POWER SW PCB P2067A502D



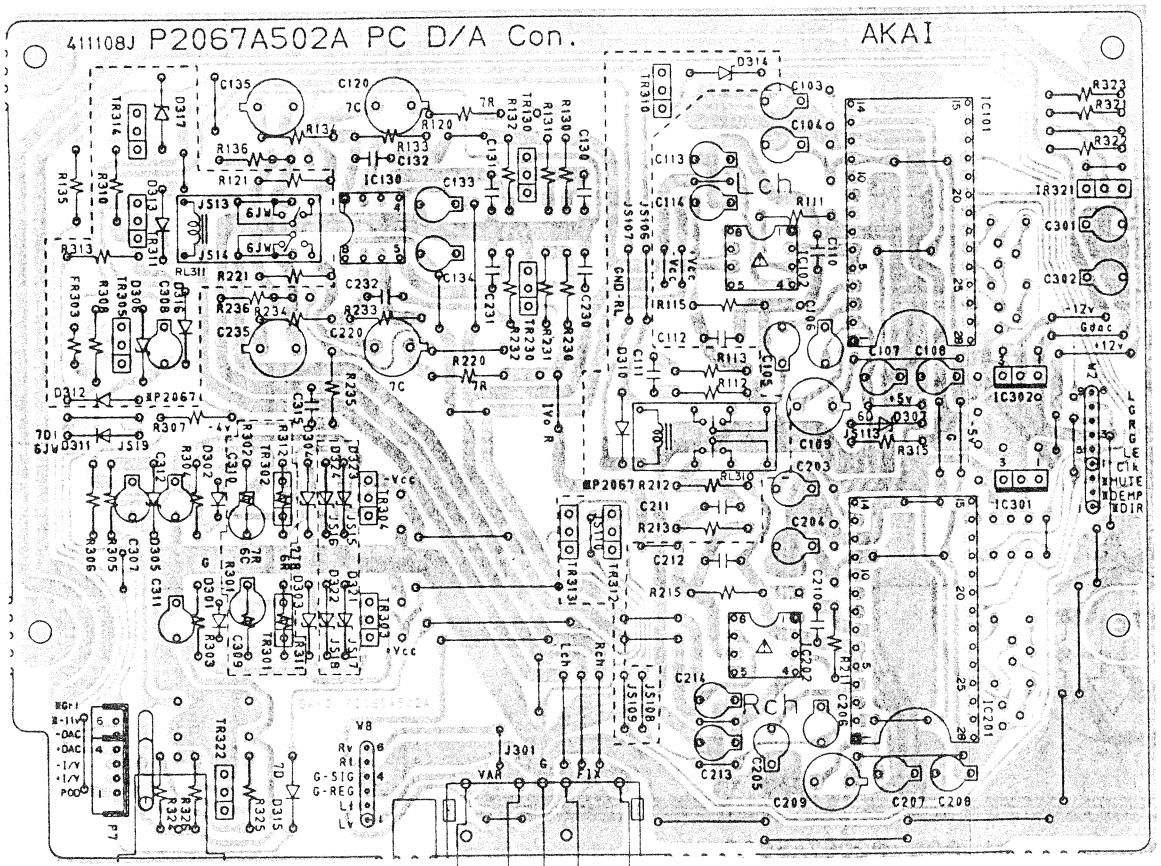
POWER SUPPLY PCB P2067A502B

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT



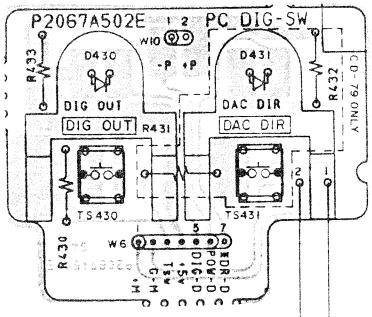
LED PCB
P2067A502F

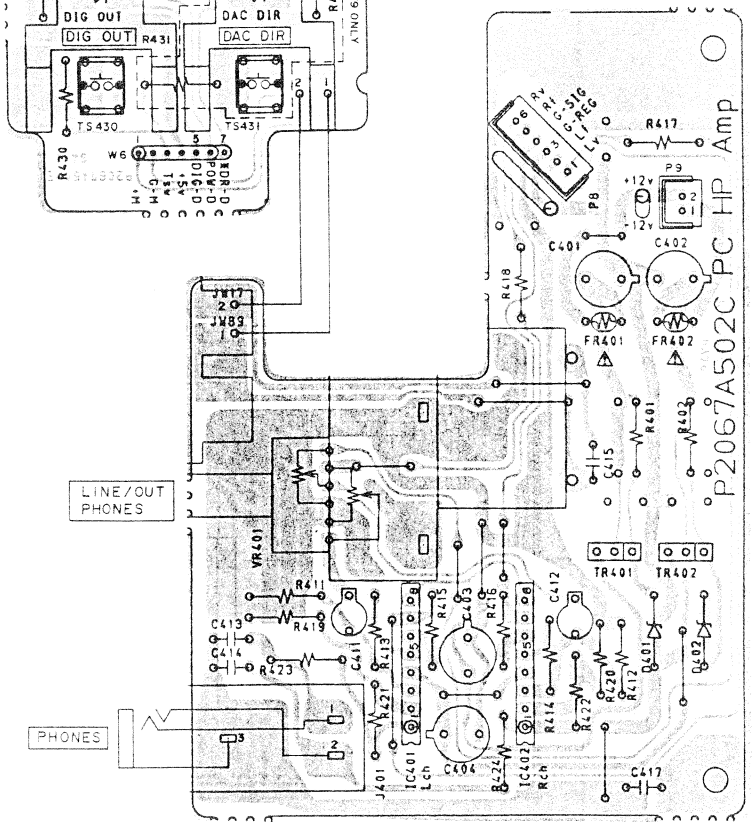


D/A PCB P2067A502A

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

DAC SW PCB P2067A502E





PHONE PCB P2067A502C

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 50WV(M)

WARNING: ⚠ AND ▩ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
AVERTISSMENT: ⚠ ET ▩, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L' APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

POWER SUPPLY PCB
P2067A502B

POWER SW PCB
P2067A502D

D/A PCB P2067A502A

LED PCB
P2067A502F

DAC SW PCB
P2067A502E

PHONE PCB P2067A502C

:B (POWER SUPPLY) LINE
:SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED DURING PLAY MODE.

CD-69
POWER SUPPLY & D/A
SCHEMATIC DIAGRAM
No.5-2 P206702M
A1

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 50W(M)
ALL DIODES ARE 1S2473T-77

WARNING: ⚠ AND [▨] INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS
AVERTISSMENT: ⚠ ET [▨], ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

POWER SUPPLY PCB
P2067A502B

POWER SW. PCB
P2067A502D

D/A PCB P2067A502A

LED PCB
P2067A502F

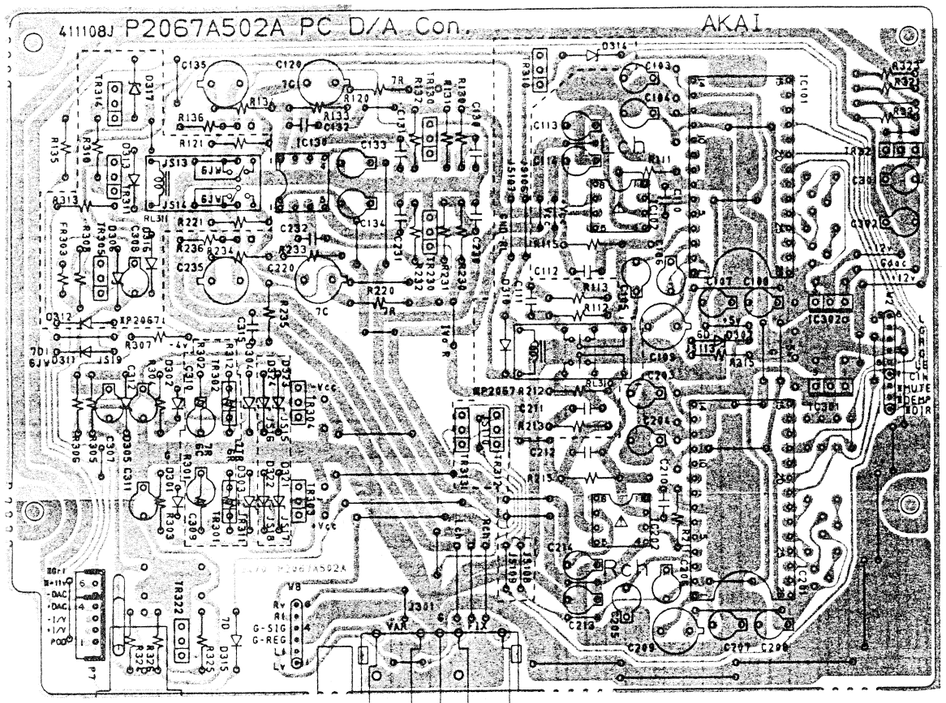
DAC SW PCB
P2067A502E

PHONE PCB P2067A502C

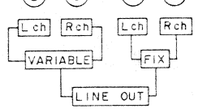
INDICATED VOLTAGES WERE MEASURED DURING PLAY MODE

B (POWER SUPPLY) LINE
SIGNAL LINE

CD-79
POWER SUPPLY & D/A
SCHEMATIC DIAGRAM
No.5-3 P206703M
A1

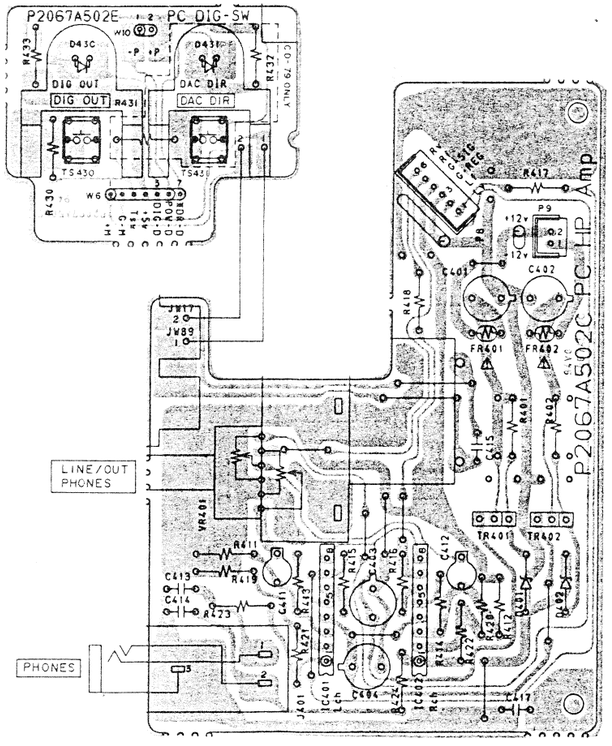


D/A PCB P2067A502A



NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT
PARTS INFORMATION.

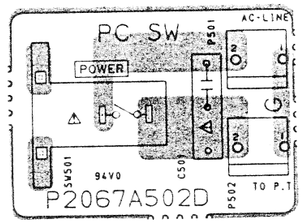
DAC SW PCB P2067A502E



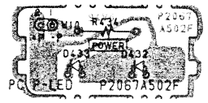
PHONE PCB P2067A502C

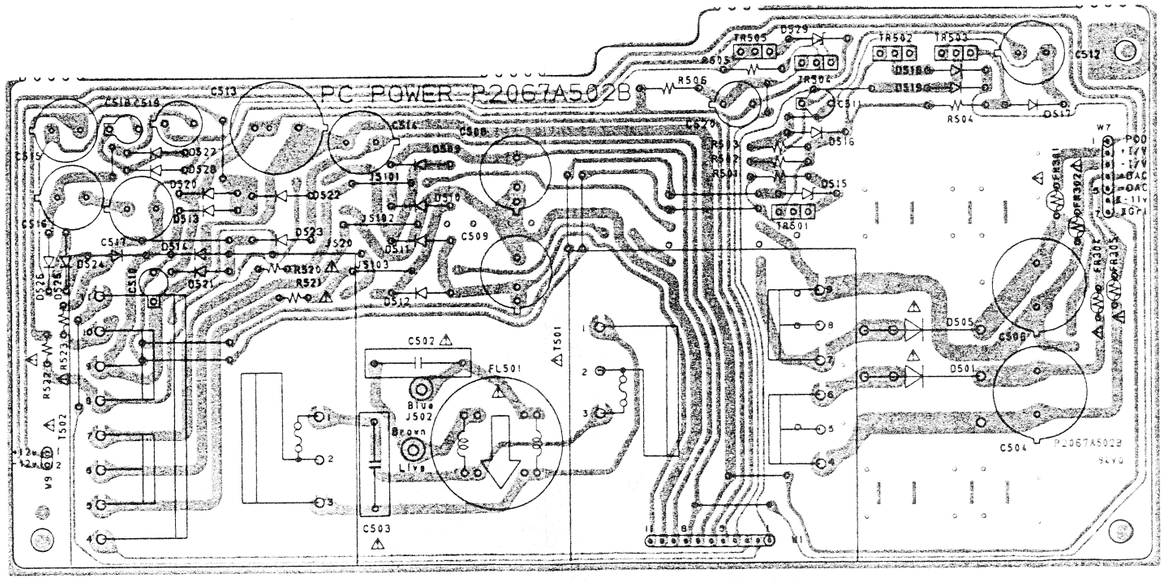
WARNING : ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS.

AVERTISSEMENT : ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

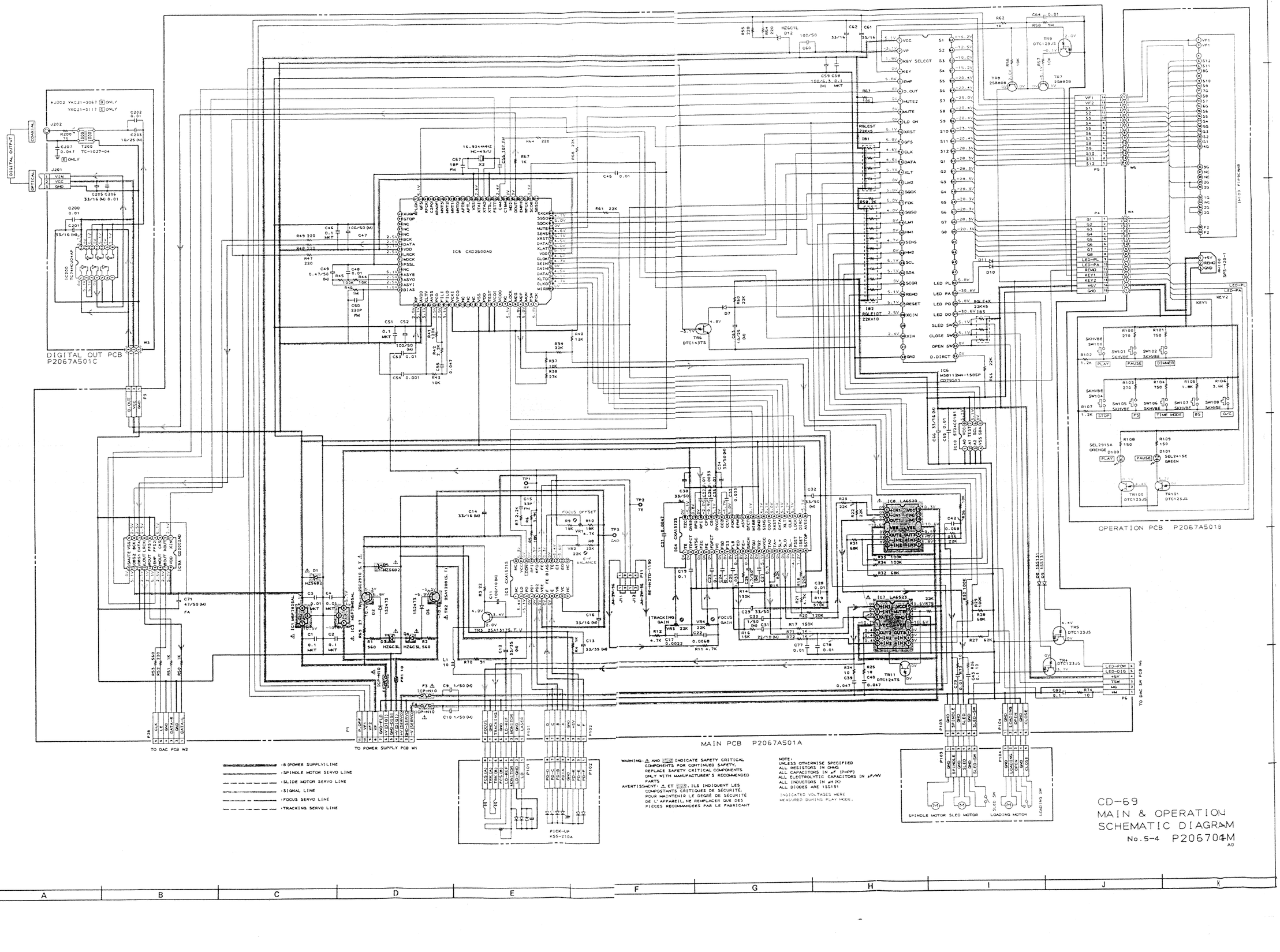


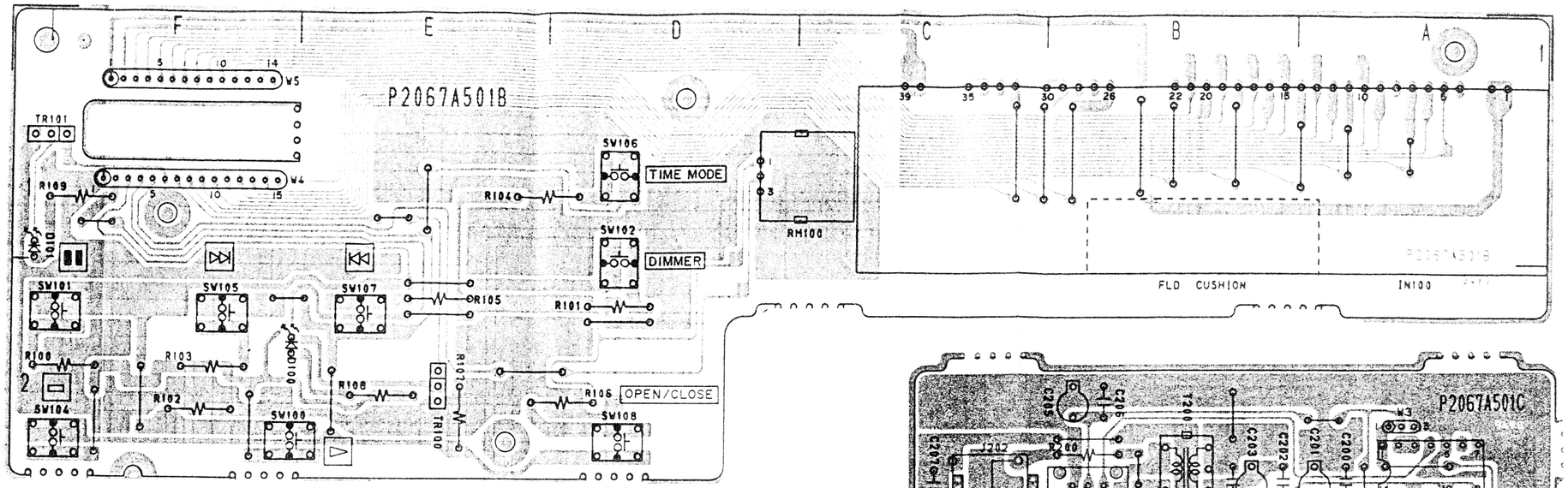
POWER SW PCB P2067A502D



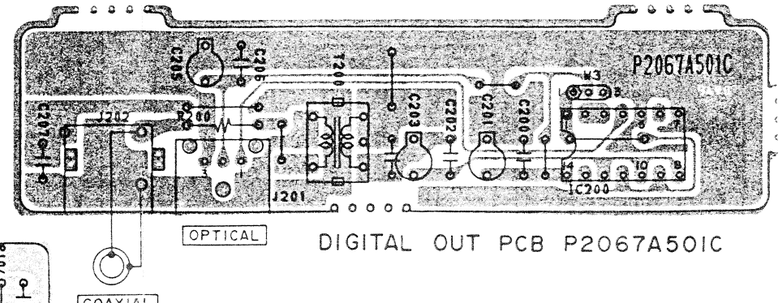


POWER SUPPLY PCB P2067A502B

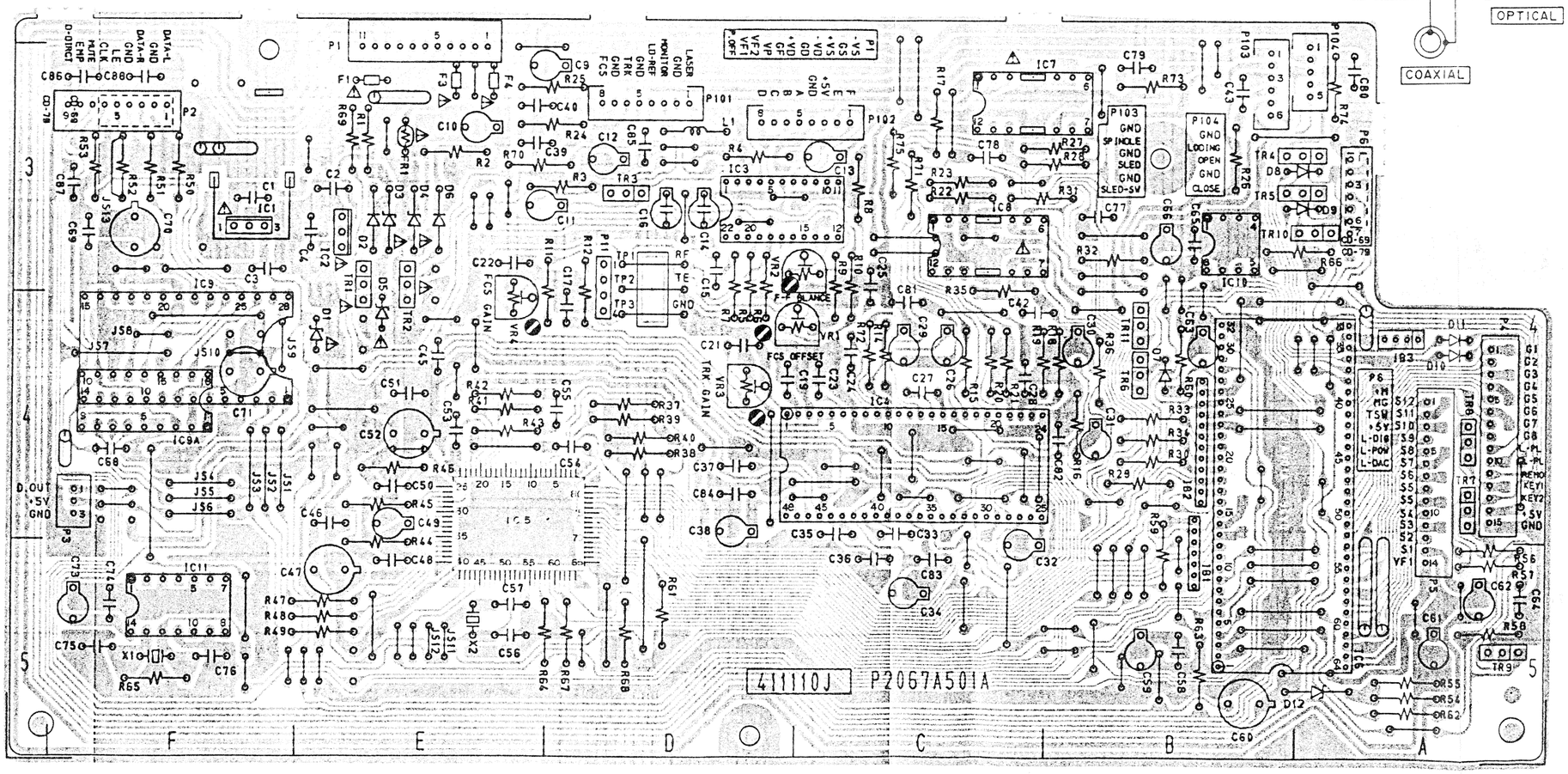

DIGITAL OUT PCB P2067A501C
OPERATION PCB P2067A501B
MAIN PCB P2067A501A
IC5 CXD2500AQ
TO DAC PCB W2
TO POWER SUPPLY PCB W1
TO DAC SW PCB W6
PICK-UP KSS-210A
SPINDLE MOTOR
SLED MOTOR
LOADING MOTOR
+B (POWER SUPPLY) LINE
+SPINDLE MOTOR SERVO LINE
+SLIDE MOTOR SERVO LINE
+SIGNAL LINE
+FOCUS SERVO LINE
+TRACKING SERVO LINE
WARNING: ⚠ AND ▨ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
AVERTISSEMENT: ⚠ ET ▨ ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL INDUCTORS IN μH(K)
ALL DIODES ARE 1SS133
INDICATED VOLTAGES WERE MEASURED DURING PLAY MODE.
CD-69
MAIN & OPERATION
SCHEMATIC DIAGRAM
No.5-4 P2067041M
A0



OPERATION PCB P2067A501B



DIGITAL OUT PCB P2067A501C



MAIN PCB P2067A501A

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

PRINCIPAL PARTS LOCATION

ICs

IC1	F3
IC2	E3
IC3	C,D3
IC4	C4
IC5	E4,5
IC6	A,B4
IC7	B,C4
IC8	C3
IC9	F4
IC9A	B3
IC10	B3
IC11	F5

TRANSISTORS

TR1	E3,4
TR2	E3,4
TR3	D3
TR4	A,B3
TR5	A,B3
TR6	B4
TR7	A4
TR8	A4
TR9	A5
TR10	A,B3
TR11	B4

CONNECTORS

P1	E3
P2	F3
P3	F4
P4	A4
P5	A4
P6	A3
P101	D3
P102	C,D3
P103	B3
P104	A3

DIGITAL OUT PCB
P2067A501C

ICS CXD2500BQ

OPERATION PCB P2067A501B

MAIN PCB P2067A501A

TO DAC PCB W2

TO POWER SUPPLY PCB W1

PICK-UP
KSS-210A

SPINDLE MOTOR SLED MOTOR LOADING MOTOR

B (POWER SUPPLY) LINE
SPINDLE MOTOR SERVO LINE
SLIDE MOTOR SERVO LINE
SIGNAL LINE
FOCUS SERVO LINE
TRACKING SERVO LINE

WARNING: ⚠ AND ⚠ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSMENT: ⚠ ET ⚠ ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W
ALL CAPACITORS IN μF (P=PF) (J)
ALL ELECTROLYTIC CAPACITORS IN μF/WV (M)
ALL INDUCTORS IN μH (K)

INDICATED VOLTAGES WERE MEASURED DURING PLAY MODE.

CD-79
MAIN & OPERATION SCHEMATIC DIAGRAM

No.5-5 P206705M
A0

PRINCIPAL PARTS LOCATION

ICs

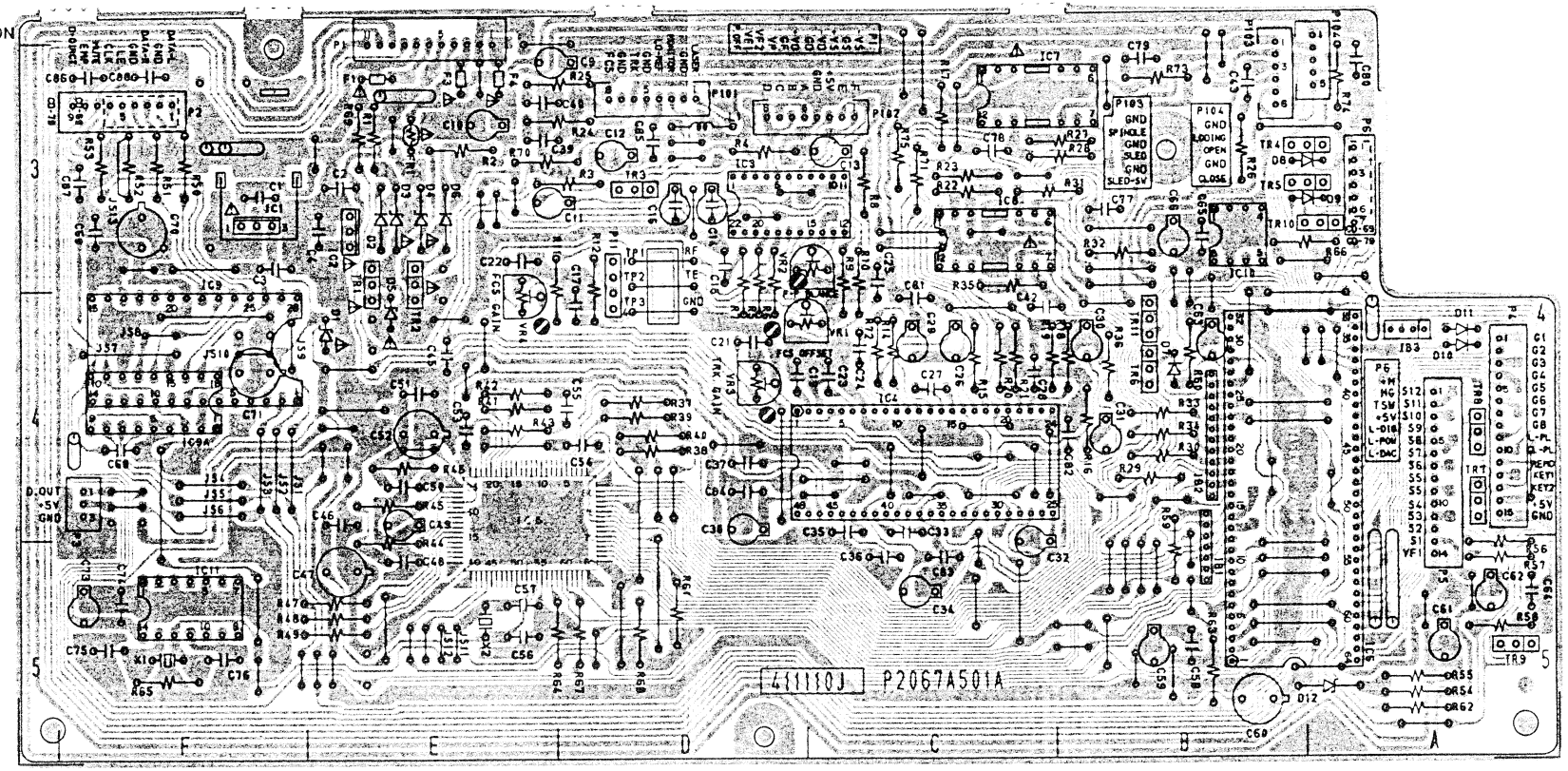
IC1 ..... F3
IC2 ..... E3
IC3 ..... C,D3
IC4 ..... C4
IC5 ..... E4,5
IC6 ..... A,B4
IC7 ..... B,C4
IC8 ..... C3
IC9 ..... F4
IC9A B3
IC10 ..... B3
IC11 ..... F5

TRANSISTORS

TR1 ..... E3,4
TR2 ..... E3,4
TR3 ..... D3
TR4 ..... A,B3
TR5 ..... A,B3
TR6 ..... B4
TR7 ..... A4
TR8 ..... A4
TR9 ..... A5
TR10 ..... A,B3
TR11 ..... B4

CONNECTORS

P1 ..... E3
P2 ..... F3
P3 ..... F4
P4 ..... A4
P5 ..... A4
P6 ..... A3
P101 ..... D3
P102 ..... C,D3
P103 ..... B3
P104 ..... A3

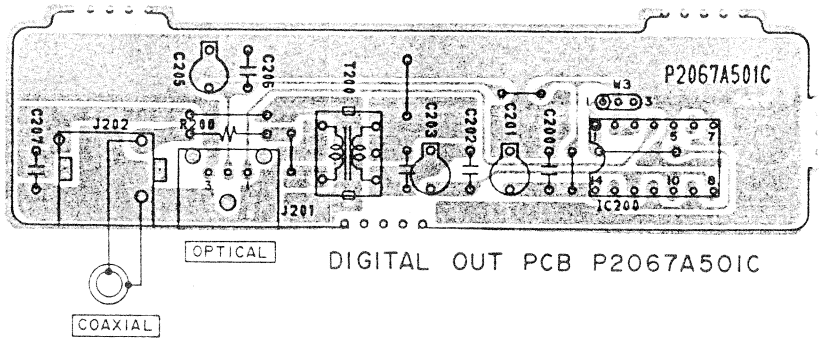


MAIN PCB P2067A501A

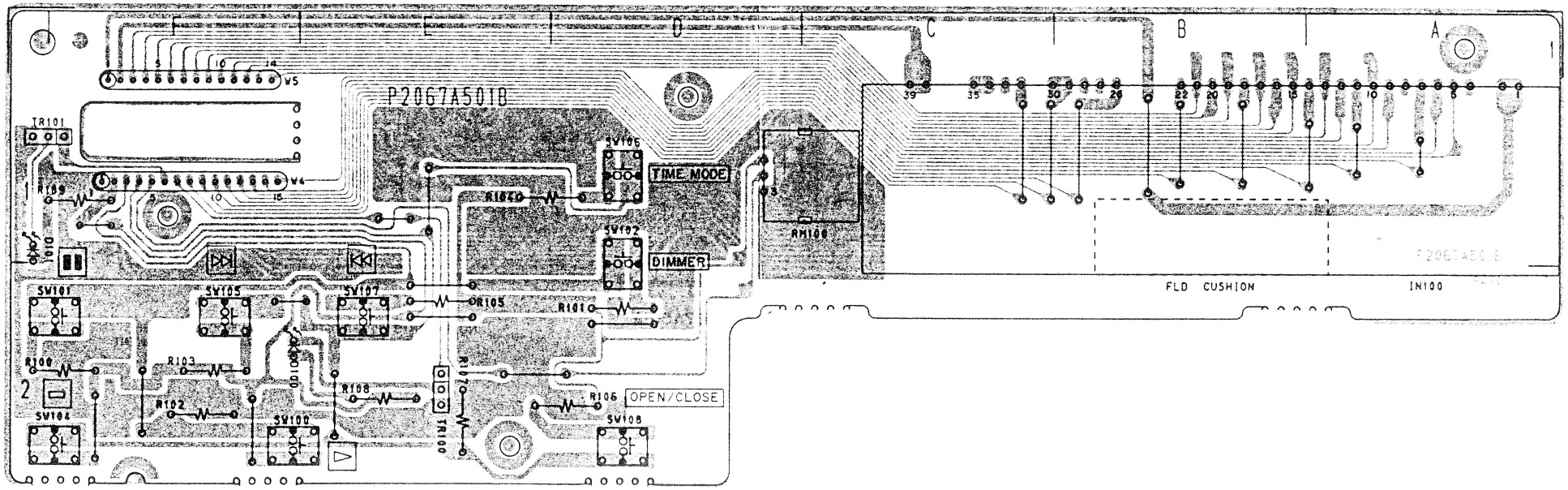
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.



DIGITAL OUT PCB P2067A501C



OPERATION PCB P2067A501B

CXA1372AS (SERVO CONTROL)

Pin No.	Symbol	I/O	Description
1	TE	I	Tracking error input terminal.
2	TDFCT	I	Time constant capacitor conneting terminal at time of defect.
3	ATSC	I	Window comparator input terminal for ATSC detection.
4	FZC	I	Terminal for focus zero comparator input.
5	FE	I	Focus error input terminal.
6	FDFCT	I	Time constant capacitor conneting terminal at time of defect.
7	VC	I	Center voltage input terminal
8	FGD	I	In case, reducing high range gain of focus servo amp, connect a capacitor between the FS3 terminal and this terminal.
9	FS3	I	Switches high range gain of focus servo amp according to whether FS3 is on or off.
10	FLB	I	External terminal for controlling time costant for boosting focus servo low range gain.
11	FEO	O	Focus drive output.
12	FE –	I	Inverted input terminal of focus amp.
13	SRCH	I	External terminal for controlling time constant for producing focus search wave form.
14	TGU	I	External terminal for controlling time constant for switching of tracking amp high range gain.
15	TG 2	I	External terminal for controlling time constant for switching of tracking amp high range gain.
16	AVCC		+5 V
17	TAO	O	Tracking drive output.
18	TA –	I	Inverted input terminal of tracking amp.
19	SL +	I	Input terminal for sled amp.
20	SLO	O	Sled drive output.
21	SL –	I	Inverted input terminal for sled amp.
22	FSET	I	Terminal for peak setting for focus tracking phase compensation.
23	ISET	I	Terminal of source current which decides level of focus search, track jump and sled kick.
24	SSTOP	I	Terminal of limit switch ON/OFF detection for disk innermost track detection.
25	AVEE	–	–5 V
26	DIRC	I	Used at time of 1 track jump. (47 k ohms pull up resistor is inserted.)
27	LOCK	I	Sled run prevention circuit operates at "L". (47k ohms pull up resistor is inserted.)
28	CLK	I	Serial data transmission clock input from CPU. (No pull up resistor)
29	XLT	I	Latch input from CPU. (No pull up resistor)
30	DATA	I	Serial data input from CPU. (No pull up resistor)
31	XRST	I	Reset input terminal. (Reset at "L".)
32	SENS	O	Outputs FZC, AS, TZC, SSTOP etc., according to command from CPU.
33	C OUT	O	Output for track number count signal.
34	D GND	–	GND
35	MIRR	O	MIRR comparator output terminal.
36	DFCT	O	DEFECT comparator output terminal.
37	ASY	I	Auto asymmetry control input terminal.
38	EFM	O	EFM comparator output terminal.
39	FOK	O	Focus OK comparator output terminal.
40	CC1	I	DEFECT bottom hold output terminal.
41	CC2	O	Input terminal of DEFECT bottom hold output which is supplied through a capacitor.
42	DVCC	–	+5 V

CXA1372AS (SERVO CONTROL)

Pin No.	Symbol	I/O	Description
43	CB	I	DEFECT bottom hold capacitor connecting terminal.
44	CP	I	Terminal for connection of MIRR hold capacitor. (Non inverted input terminal of MIRR comparator.)
45	RFI	I	Input terminal of RF summing amp output which is supplied through a capacitor.
46	RFO	O	RF summing amp output terminal. (Check point for eye pattern.)
47	DVEE	–	–5 V
48	TZC	I	Input terminal of tracking zero cross comparator.

CXA1571S (RF AMP)

Pin No.	Symbol	I/O	Description
1	NC	–	No connection
2	LD	O	APC amp output terminal.
3	PD	I	APC amp input terminal.
4	PD1	I	RF I-V amp inverted input terminal (for photo diode A+C of pick up)
5	PD2	I	RF I-V amp inverted input terminal (for photo diode B+D of pick up)
6	VEE	–	–5 V
7	F-IN	I	RF I-V amp inverted input terminal (for photo diode F of pick up)
8	E-IN	I	RF I-V amp inverted input terminal (for photo diode E of pick up)
9	VR	O	(VCC + VEE)/2 DC voltage output terminal.
10	VC	I	Center voltage input terminal of VC. (Connect to GND when ±5V power supply is used, connect to VR when +5V power supply is used.)
11	NC	–	No connection
12	NC	–	No connection
13	EO	O	Output terminal for I-V amp E monitor.
14	EI	–	Terminal for gain control of I-V amp E.
15	TE	O	Tracking error amp output terminal. (E-F signal is output.)
16	FE-BLAS	I	Terminal for bias adjustment of focus error amp inverted side.
17	FE	O	Focus error amp output terminal.
18	RFO	O	RF amp output terminal.
19	RFI	I	Inverted side input terminal of RF amp. (The gain of RF amp is decided by the value of the resistor connected between this terminal and the RFO terminal.)
20	LD-ON	I	Terminal for ON/OFF switching of APC amp. (GND : ON, Vcc : OFF)
21	VCC	–	+5 V
22	NC	–	No connection

CXD2500BQ (DIGITAL SIGNAL PROCCESSOR)

Pin No.	Symbol	I/O	Description
1	FOK	I	Focus OK input terminal. For SENS output and servo automatic sequencer.
2	FSW	O	Switching output for spindle motor output filter.
3	MON	O	ON-OFF control output for spindle motor.
4	MDP	O	Servo control for spindle motor.
5	MDS	O	Servo control for spindle motor.
6	LOCK	O	GFS is sampled at 460 Hz and H is output when GFS reaches H. L is output when L is repeated 8 times.
7	NC	–	No connection
8	VCOO	O	Ocillation circuit output for analog EFM PLL.
9	VCOI	I	Ocillation circuit input for analog EFM PLL. f LOCK = 8.6436 MHz.
10	TEST	I	Regular GND for TEST terminal.
11	PDO	O	Charge pump output for analog EFM PLL.
12	Vss	–	GND
13	NC	–	No connection
14	NC	–	No connection
15	NC	–	No connection
16	VPCO	O	PLL charge pump output for vari pitch.
17	VCKI	I	Clock input (f center = 16.9344 MHz) from external VCO for vari pitch.
18	FILO	O	Filter ouput for master PLL (slave = digital PLL.)
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output for master PLL.
21	A Vss	–	Analog GND
22	CLTV	I	VCO control voltage input for master.
23	AVdd	–	Analog voltage (+5 V)
24	RF	I	EFM signal input
25	BIAS	I	Asymmetry circuit constant current input.
26	ASYI	I	Asymmetry compilation voltage input.
27	ASYO	O	EFM full swing output (L = Vss, H = VDD)
28	ASYE	I	L: Asymmetry circuit OFF H: Asymmetry circuit ON
29	NC	–	No connection
30	PSSL	I	Audio data output mode switching input. Serial output at L, Parallel output at H.
31	WDCK	O	D/A interface for 48 bit slot. Word clock f = 2Fs
32	LRCK	O	D/A interface for 48 bit slot. LR clock f = Fs
33	Vdd		Voltage (+5V)
34	DA16	O	DA16 (MSB) output when PSSL = 1. 48 bit slot serial data when PSSL = 0. (2s'COMP, MSB first)
35	DA15	O	DA15 output when PSSL = 1. (48 bit slot bit clock when PSSL = 0.)
36	DA14	O	DA14 output when PSSL = 1. (64 bit slot serial data when PSSL = 0.) (2s'COMP, LSB first)
37	DA13	O	DA13 output when PSSL = 1. (64 bit slot bit clock when PSSL = 0.)
38	DA12	O	DA12 output when PSSL = 1. (64 bit slot LR clock when PSSL = 0.)
39	DA11	O	DA11 output when PSSL = 1. (GTOP output when PSSL = 0.)
40	DA10	O	DA10 output when PSSL = 1. (XUGF output when PSSL = 0.)
41	DA09	O	DA09 output when PSSL = 1. (XPLCK output when PSSL = 0.)
42	DA08	O	DA08 output when PSSL = 1. (GFS output when PSSL = 0.)
43	DA07	O	DA07 output when PSSL = 1. (RFCK output when PSSL = 0.)
44	DA06	O	DA06 output when PSSL = 1. (C2P0 output when PSSL = 0.)
45	DA05	O	DA05 output when PSSL = 1. (XRAOF output when PSSL = 0.)
46	DA04	O	DA04 output when PSSL = 1. (MNT3 output when PSSL = 0.)
47	DA03	O	DA03 output when PSSL = 1. (MNT2 output when PSSL = 0.)
48	DA02	O	DA02 output when PSSL = 1. (MNT1 output when PSSL = 0.)
49	DA01	O	DA01 output when PSSL = 1. (MNT0 output when PSSL = 0.)

CXD2500BQ (DIGITAL SIGNAL PROCCESSOR)

Pin No.	Symbol	I/O	Description
50	APTR	O	Control output for aperture compensation. H at Rch.
51	APTL	O	Control output for aperture compensation. H at Lch.
52	Vss	–	GND
53	XTAI	I	16.9344 MHz X'tal ocillation circuit input. Also 33.8688 MHz input.
54	XTAO	O	16.9344 MHz X'tal ocillation circuit output.
55	XTSL	I	X'tal selection input terminal. L when X'tal is 16.9344 MHz. H when 33.8688 MHz.
56	FSTT	O	2/3 countdown output of 53, 54 terminals. No change by vari pitch.
57	C4M	O	4.2336MHz output. Changed simultaneously during vari pitching.
58	C16M	O	16.9344MHz output. Changed simultaneously during vari pitching.
59	MD2	I	Digital-Out ON/OFF control, ON at H, OFF at L.
60	DOUT	O	Digital Out output terminal.
61	EMPH	O	H output when playback disc is emphasised. L output when no emphasis.
62	WFCK	O	WFCK (Write Frame Clock) output.
63	SCOR	O	H output when either sub code S0 or S1 is detected.
64	SBSO	O	Serial output of Sub P to W.
65	EXCK	I	Clock input for SBSO read out.
66	SQSO	O	Sub Q 80 bit and PCM peak, level data 16 bit output.
67	SQCK	I	Clock input for SQSO read out.
68	MUTE	I	Muting control (H: MUTE, L: CANCEL)
69	SENS	–	SENS output. Output to CPU.
70	XRST	I	System reset. Reset at L.
71	DATA	I	Serial data input from CPU.
72	XLAT	I	Latch input from CPU. (Latching of serial data at falling edge of the pulse.)
73	Vdd	–	Voltage (+5 V)
74	CLOK	I	Serial data transmission clock input from CPU.
75	SEIN	I	Sense input from SSP.
76	CNIN	I	Track jump number count signal input.
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. (Latching at falling edge of the pulse.)
79	CLKO	O	Serial data transmission clock output to SSP.
80	MIRR	I	Mirror signal input. Used for jump of over 16 tracks with auto sequencer.

CXD2500BQ (DIGITAL SIGNAL PROCCESSOR)

Pin No.	Symbol	I/O	Description
50	APTR	O	Control output for aperture compensation. H at Rch.
51	APTL	O	Control output for aperture compensation. H at Lch.
52	Vss	–	GND
53	XTAI	I	16.9344 MHz X'tal ocillation circuit input. Also 33.8688 MHz input.
54	XTAO	O	16.9344 MHz X'tal ocillation circuit output.
55	XTSL	I	X'tal selection input terminal. L when X'tal is 16.9344 MHz. H when 33.8688 MHz.
56	FSTT	O	2/3 countdown output of 53, 54 terminals. No change by vari pitch.
57	C4M	O	4.2336MHz output. Changed simultaneously during vari pitching.
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60	DOUT	O	Digital Out output terminal.
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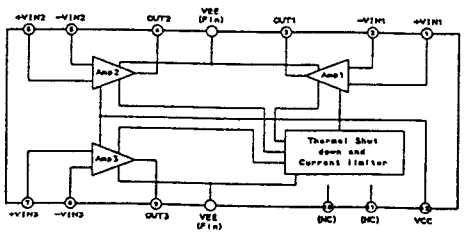
63	SCOR	O	H output when either sub code S0 or S1 is detected.
64	SBSO	O	Serial output of Sub P to W.
65	EXCK	I	Clock input for SBSO read out.
66	SQSO	O	Sub Q 80 bit and PCM peak, level data 16 bit output.
67	SQCK	I	Clock input for SQSO read out.
68	MUTE	I	Muting control (H: MUTE, L: CANCEL)
69	SENS	–	SENS output. Output to CPU.
70	XRST	I	System reset. Reset at L.
71	DATA	I	Serial data input from CPU.
72	XLAT	I	Latch input from CPU. (Latching of serial data at falling edge of the pulse.)
73	Vdd	–	Voltage (+5 V)
74	CLOK	I	Serial data transmission clock input from CPU.
75	SEIN	I	Sense input from SSP.
76	CNIN	I	Track jump number count signal input.
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. (Latching at falling edge of the pulse.)
79	CLKO	O	Serial data transmission clock output to SSP.
80	MIRR	I	Mirror signal input. Used for jump of over 16 tracks with auto sequencer.

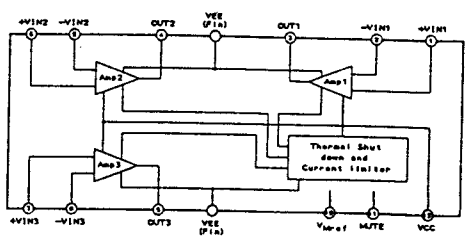
CD0002AD (DIGITAL FILTER)

Pin No.	Symbol	I/O	Description
1	XIN	I	Crystal OSC input or external clock input
2	XOUT	O	Crystal OSC output
3	CKS	I	Clock in H = 384 fs, L = 256 fs
4 5	FSS2 FSS1	I I	Selected sampling frequency FSS2 / FSS1 / fs L / L / 44.1 kHz H / L / 48 kHz H / H / 32 kHz L / H / OSC STOP
6	LRCK	I	L/R clock input
7	DATA	I	Serial data input
8	BCK	I	Bit clock for input data
9	VSS		GND
10	SMUTE	I	Soft mute control H = ON, L = OFF
11 12	OBS2 OBS1	I I	Output data word length select OBS2 / OBS1 / WORD LENGTH L / H / 16 H / H / 18 H / L / 20 L / L / –
13	LDOUT	O	L ch serial data output
14	RDOUT	O	R ch serial data output
15	DEMPH	I	De-emphasis control
16	WOUT	O	Word clock output
17	BOUT	O	Bit clock output for LDOUT and RDOUT
18	VDD		+5 V

LA6520 (3CH POWER OPERATIONAL AMP)



LA6523 (3CH POWER OPERATIONAL AMP)



M38112M4-150SP (SYSTEM MI-COM)

Pin No.	Symbol	I/O	Description
1	Vcc	I	+5 V power supply
2	VP	I	–32 V
3	KEY SEL	O	Key select output
4	KEY	I	Key returm input
5	EMP	O	De-emphasis control output (H: ON)
6	D. OUT	O	Digital out control (H: ON)
7	MUTE 2	O	Mute control output during peak level search (H: MUTE)
8	MUTE	O	Muting control output
9	LD ON	O	Laser diode ON/OFF control output
10	XRST	O	System reset output
11	GFS	I	PLL (Frame sync) condition detect signal input
12	CLK	O	Clock signal output
13	DATA	O	Command data output
14	XLT	O	Latch signal output
15 19	LM 2 LM 1	O O	Loading motor control output STOP: LM 1 L, LM 2 L OPEN: LM 1 H, LM 2 L CLOSE: LM 1 L, LM 2 H
16	SQCK	O	Reading clock output of subcode Q data
17	FOK	I	Focus lock detection input
18	SQSO	I	Subcode Q and PCM peak level data input
20 22	HM 1 HM 2	O I	HEAD PHONE/VARIABLE OUT VR motor control terminal STOP: HM 1 L, HM 2 L UP: HM 1 L, HM 2 H DOWN: HM 1 H, HM 2 L
21	SENS	I	Auto sequence end detection input
23	SCL	O	EEP ROM serial clock
24	SDA	I/O	EEP ROM serial data iN/OUT
25	SCOR	I	Subcode Q sync signal input
26	REMO	I	Remote control receive serial data input
27	RESET	I	Reset signal input
28	XC IN	I	Clock input (44.1 kHz)
29	XC OUT	O	Not used
30	X IN	I	Clock input (4.32 MHz)
31	X OUT	O	Not used
32	Vss		GND
33	D. DIRCT	O	Control for DAC direct indicator (H: LED, relay ON)
34	OPEN SW	I	Input of disc tray open detect signal
35	CLOSE SW	I	Input of disc tray close detect signal
36	SLED SW	I	Innermost position ON/OFF detection input of SLED MOTOR
37	LED DO	O	Control for DIGITAL OUT indicator (H: LED ON)
38	LED PA	O	Control for PAUSE indicator (H: LED ON)
39	LED PL	O	Control for PLAY indicator (H: LED ON)
40 41 42 43 44			Not used

M38112M4-150SP (SYSTEM MI-COM)

Pin No.	Symbol	I/O	Description
45	G8	O	Digit output for FL display
46	G7	O	
47	G6	O	
48	G5	O	
49	G4	O	
50	G3	O	
51	G2	O	
52	G1	O	
53	S12	O	Segment data output for FL display
54	S11	O	
55	S10	O	
56	S9	O	
57	S8	O	
58	S7	O	
59	S6	O	
60	S5	O	
61	S4	O	
62	S3	O	
63	S2	O	
64	S1	O	

PCM63P (D/A CONVERTOR)

Pin No.	Symbol	Description
1	SERVO DC	Servo filter
2	+Vcc	+B for analog (+5 V)
3	REF DC	Refrence filter
4	BPO DC	BPO filter
5	BPO	Bi polar off-set
6	I-OUT	Current output
7	A.GND	Analog GND
8	N.C	No connection
9	RF	Feedback resistor
10	RF	Feedback resistor
11	–Vdd	–B for logic (–5 V)
12	D.GND	Digital GND
13	+Vdd	+B for logic (+5 V)
14	N.C	No connection
15	N.C	No connection
16	N.C	No connection
17	N.C	No connection
18	CLOCK	Clock in
19	N.C	No connection
20	L.E.C	LEC input
21	DATA	Data input
22	N.C	No connection
23	Bit 2B ADJ	ADJ terminal
24	Bit 2A ADJ	ADJ terminal
25	Vpot	Potential meter
26	N.C	No connection
27	N.C	No connection
28	–Vcc	–B for analog (–5 V)

SM5813AP (DIGITAL FILTER)

Pin No.	Symbol	I/O	Description
1	DIN	I	Data input
2	BCKI	I	Bit clock for input data
3	CKSL	I	Master clock XTI select *
4	CKDV	I	Master clock XTI select *
5	N.C	–	No connection
6	XTI	I	Crystal OSC input *
7	XTO	O	Crystal OSC output
8	VSS1	–	GND
9	CKO	O	Clock out *
10	SYN	I	Jitter free mode or forced synchronization mode select H = Jitter free, L = Forced synchronization
11	N.C	–	No connection
12	N.C	–	No connection
13	N.C	–	No connection
14	RST	I	System reset H = normal, L = System reset
15	COB	I	Selection of replenishing number 2 or COB H = Replenishing number 2, L = COB
16 17	OW20 OW18	I I	Bit select BIT 16 18 20 OW18 H L H OW20 H H L
18	N.C	–	No connection
19	N.C	–	No connection
20	DG	O	Deglitch control clock
21	VSS2	–	GND
22	VDD	–	+5 V
23	DOR	O	Over sampling for output data (Rch)
24	DOL	O	Over sampling for output data (Lch)
25	WCKO	O	Word clock for output data
26	BCKO	O	Bit clock for output data
27	FSCO	O	fs timing clock
28	LRCI	I	Sample rate (fs) clock for input data H = Lch, L = R ch

* Master clock frequency can be selected by CKSL, CKDV and CKO condition as shown below.

192 fs: CKSL = H, CKDV = H
384 fs: CKSL = H, CKDV = L
256 fs: CKSL = L, CKDV = L
512 fs: CKSL = L, CKDV = L