

# MINI COMPONENT SYSTEM CRX-E100 CDX-E100

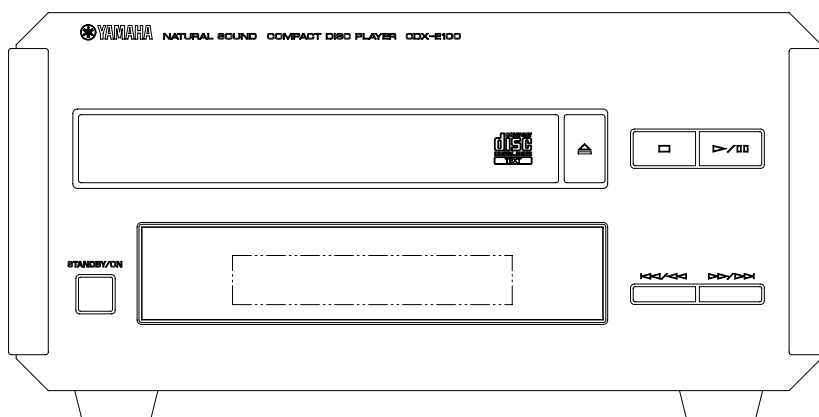
## SERVICE MANUAL

CRX-E100 is composed of RX-E100 and CDX-E100. This is a service manual for the CDX-E100.

For service manuals of RX-E100, please refer to the service manuals with the following publication numbers :

RX-E100    100684

For the system operation, please refer to Service Manual for the RX-E100.



### IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

**WARNING:** Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that all service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

**IMPORTANT:** The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

**WARNING:** Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

**IMPORTANT:** Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

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このサービスマニュアルは、エコマーク認定の再生紙を使用しています。  
This Service Manual uses recycled paper.



## ■ TO SERVICE PERSONNEL

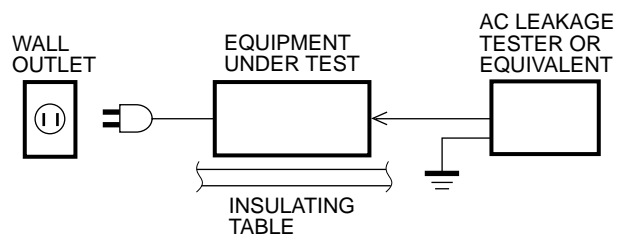
### 1. Critical Components Information.

Components having special characteristics are marked  $\triangle$  and must be replaced with parts having specifications equal to those originally installed.

### 2. Leakage Current Measurement (For 120V Models Only).

When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.

- Meter impedance should be equivalent to 1500 ohm shunted by 0.15 $\mu$ F.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



**CAUTION:** USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

## PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to carefully follow the instructions below when servicing .

### 1. Laser Diode Properties

- Material : GaAlAs
- Wavelength : 780 nm
- Emission Duration : Continuous
- Laser Output : max. 44.6  $\mu$ W\*

\* This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

2. When checking the laser diode emission, keep your eyes more than 30 cm away from the objective lens.

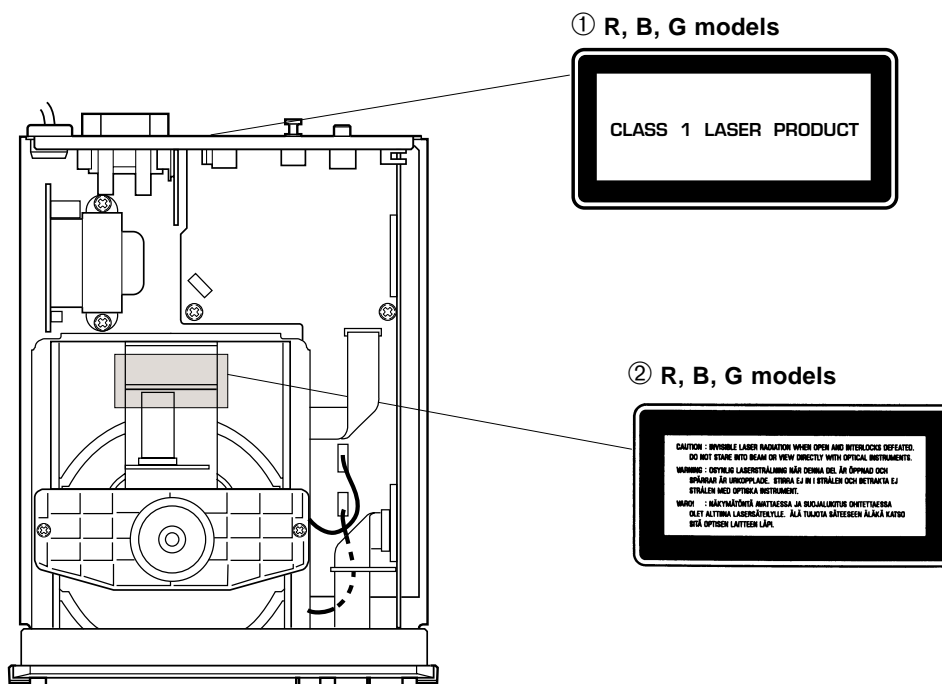
## WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

**DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!**

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.



## English

- ① THIS PRINTING (SEE POSITION SHOWN IN THE ILLUSTRATION) INFORMS THE USER THAT THE APPARATUS CONTAINS A LASER COMPONENT.
- ② THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) WARNS THAT ANY FURTHER PROCEDURE WILL BRING THE USER INTO EXPOSURE WITH THE LASER BEAM.

CAUTION : USE OF CONTROLS, ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN, MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

## Swedish

- ① DENNA MÄRKNING (SE FIGUR) UPPLYSER OM ATT DET I APPARATEN INGÅR EN LASERKOMPONENT AV TYP KLASS 1.
- ② VARNINGSMÄRKNING (SE FIGUR) FÖR STRÅLNING. INGREPP I APPARATEN BÖR ENDAST FÖRETAGAS AV FACKMAN MED KÄNNEDOM OM LASER. APPARATEN INNEHÅLLER EN LASERKOMPONENT SOM AVGER STRÅLNING ÖVERSTIGANDE GRÄNSEN FÖR LASERKLASS 1.

VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD: BETRakta EJ STRÅLEN.

## Danish

- ① DETTE MÆRKAT ER ANBRAGT SOM VIST I ILLUSTRATIONEN FOR AT ADVARE BRUGEREN OM AT APPARATET INDEHOLDER EN LASERKOMPONENT.
- ② DETTE MÆRKAT OM LASEREN ER ANBRAGT PÅ APPARATET SOM EN OPLYSNING OM AT APPARATET INDEHOLDER ET LASERKOMPONENT.

ADVARSEL : INDGREB BOR KUN FORETAGES AF EN FAGMAND DA DER ER RISIKO FOR RADIOAKTIV STRÅLING.

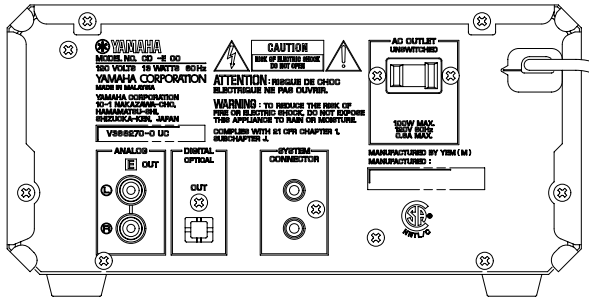
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING.  
UNDGÅ UDSAETTELSE FOR STRÅLING.

## Finnish

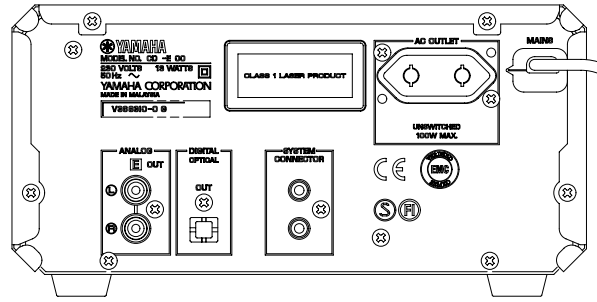
VARO! :  
AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

## REAR PANELS

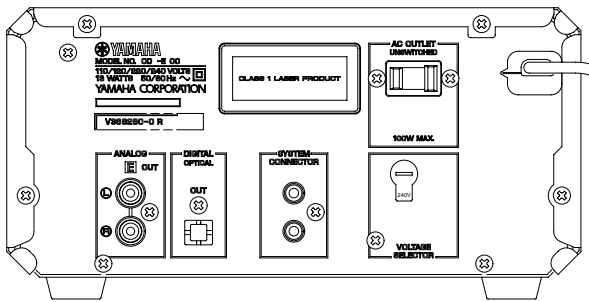
### U, C models



### G model



### R model



## SPECIFICATIONS

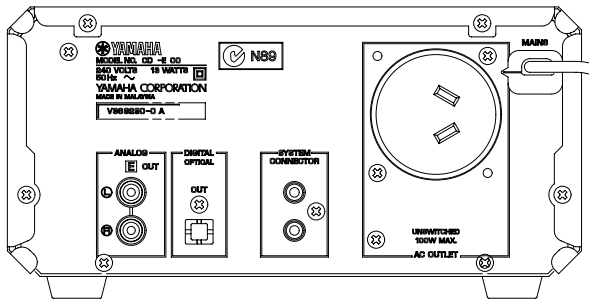
<b>Output Level</b> 1kHz, 0dB	2.0 ± 0.5Vrms
<b>Signal to Noise Ratio (EIA-J)</b>	102dB
<b>Dynamic Range</b>	95dB
<b>Harmonic Distortion+Noise (1kHz)</b>	0.004%
<b>Frequency Response</b> 2Hz — 20kHz	±0.5dB
<b>Power Requirements</b>	
U, C models	120V AC 60Hz
B, G models	230V AC 50Hz
A model	240V AC 50Hz
R model	110/120/220/240V AC 50/60Hz

<b>Power Consumption</b>	13W
<b>Dimensions (W x H x D)</b>	217 x 108 x 290mm (8-9/16" x 4-1/4" x 11-7/16")
<b>Weight</b>	3.0kg (6 lbs 9 oz)

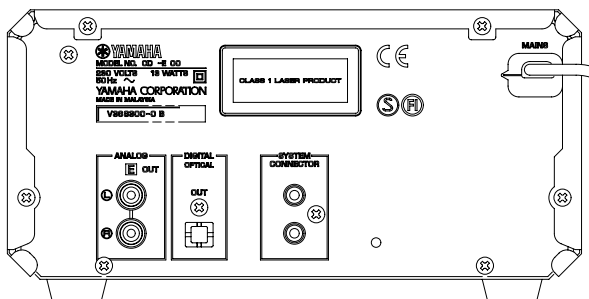
\*Specifications are subject to change without notice.

U ..... U. S. A. model    B ..... British model  
 C ..... Canadian model    G ..... European model  
 A ..... Australian model    R ..... General model

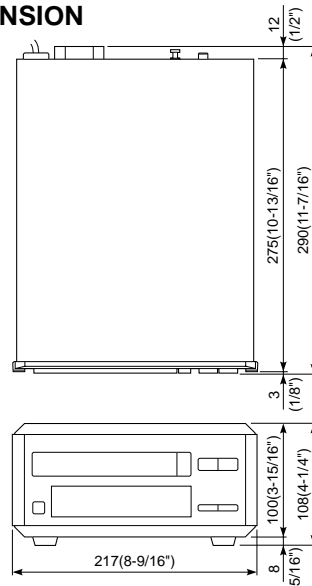
### A model



### B model

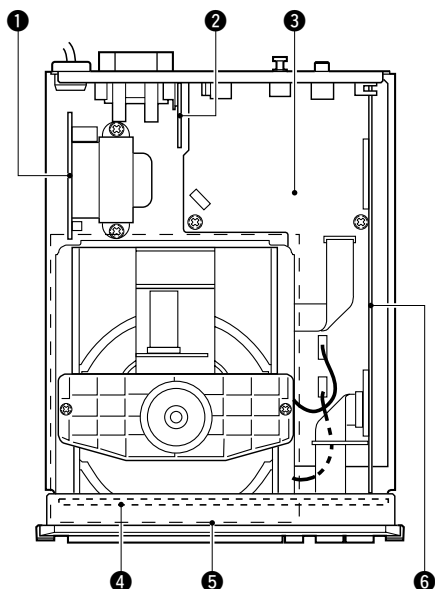


### DIMENSION



Unit : mm (inch)

## INTERNAL VIEW



- ① P.C.B. MAIN (3)
- ② P.C.B. MAIN (4)
- ③ P.C.B. MAIN (2)
- ④ P.C.B. MAIN (5)
- ⑤ CD MECHANISM UNIT
- ⑥ P.C.B. MAIN (1)

## DISASSEMBLY PROCEDURES (Remove parts in disassembly order as numbered.)

### 1. Removal of Top Cover

- a. Remove 4 screws ( ① ) and 4 screws ( ② ) in Fig. 1.
- b. Lift the Top Cover at the rear and move it rear-ward slantingly.

### 2. Removal of Front Panel

- a. Remove a connector (CB6) in Fig. 2.
- b. Remove 2 ( ③ ) screws and 2 screws ( ④ ) in Fig. 1.
- c. Remove 2 hooks and then pull the Front Panel forward.

### 3. Removal of CD Mechanism Unit

- a. Remove 3 connectors (CB1, CB2, CB3) in Fig. 2.
- b. Remove 4 screws ( ⑤ ) in Fig. 1.

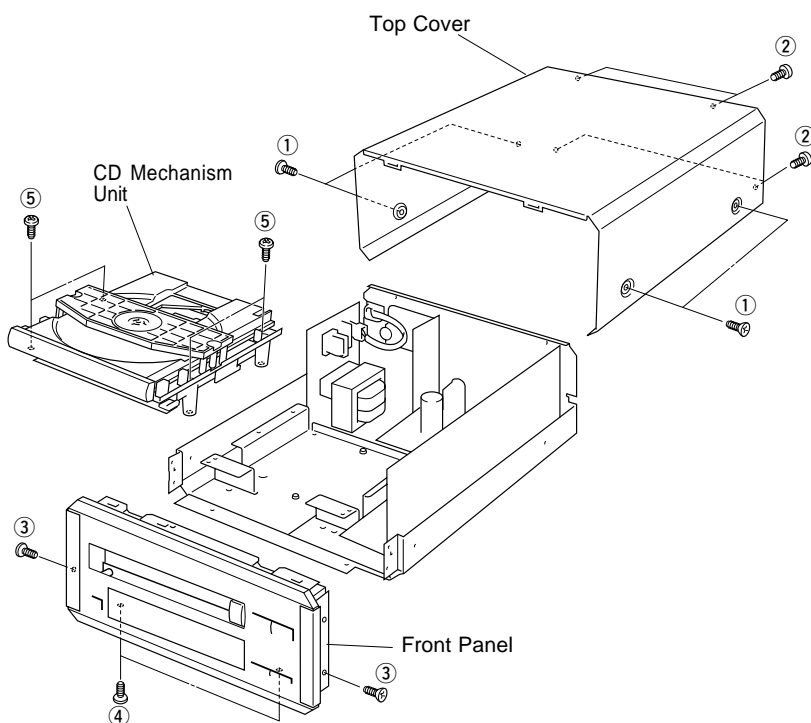


Fig. 1

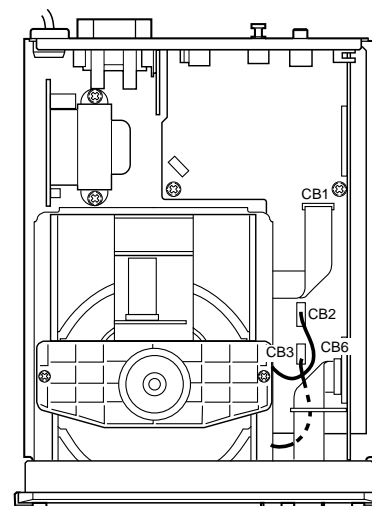


Fig. 2

**4. Removal of Tray Unit**

- a. Remove 2 screws ( ⑥ ) and then remove the Chucking Unit in Fig. 3.
- b. Remove 1 hook and then remove the Stopper Pin in Fig. 3.
- c. Rotate the Drive Gear and then open the Tray Unit in Fig. 3.
- d. Detach the Stoppers on both sides and then pull out the Tray in Fig. 3.

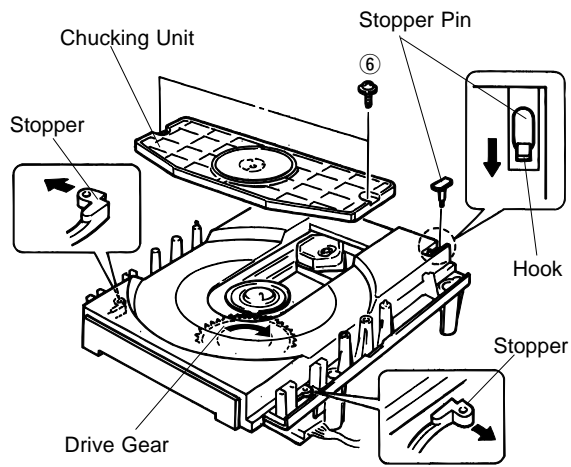


Fig. 3

**5. Removal of Pick-up Head**

- a. Remove 2 screws ( ⑦ ) in Fig. 4.
- b. Remove a pick-up cable in Fig. 4.
- c. Remove 4 screws ( ⑧ ) and then remove the Drive Unit in Fig. 4.
- d. Remove the gear A in Fig. 5.
- e. Pull out the Sled Shaft in Fig. 5.
- f. Remove the Pick-up Head.

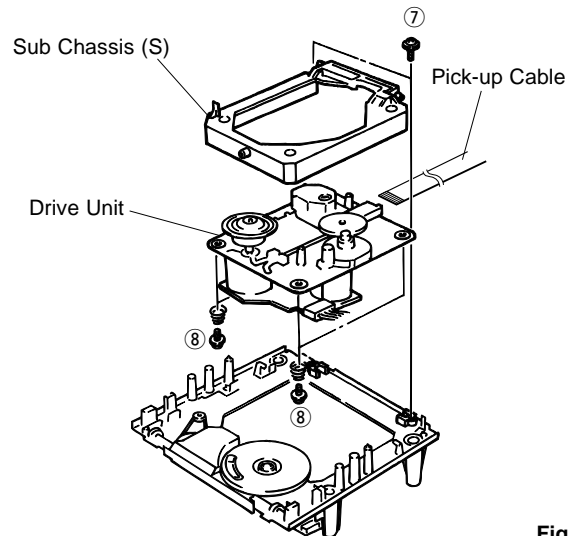


Fig. 4

Check that the disc table height is as specified below.

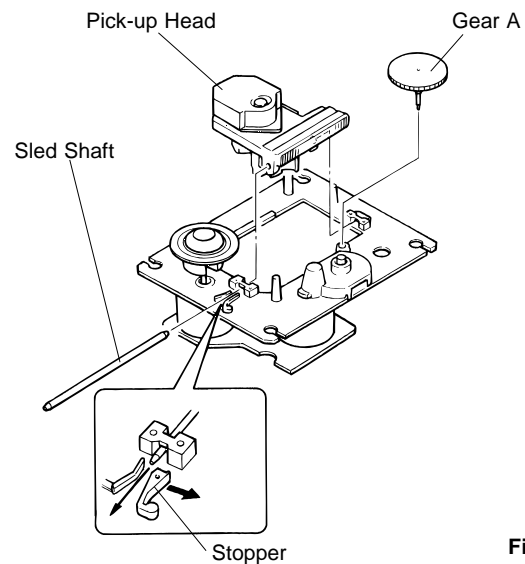
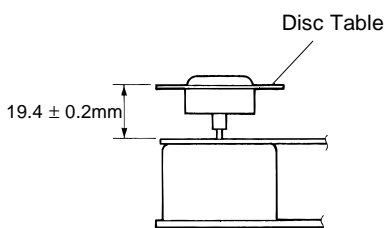
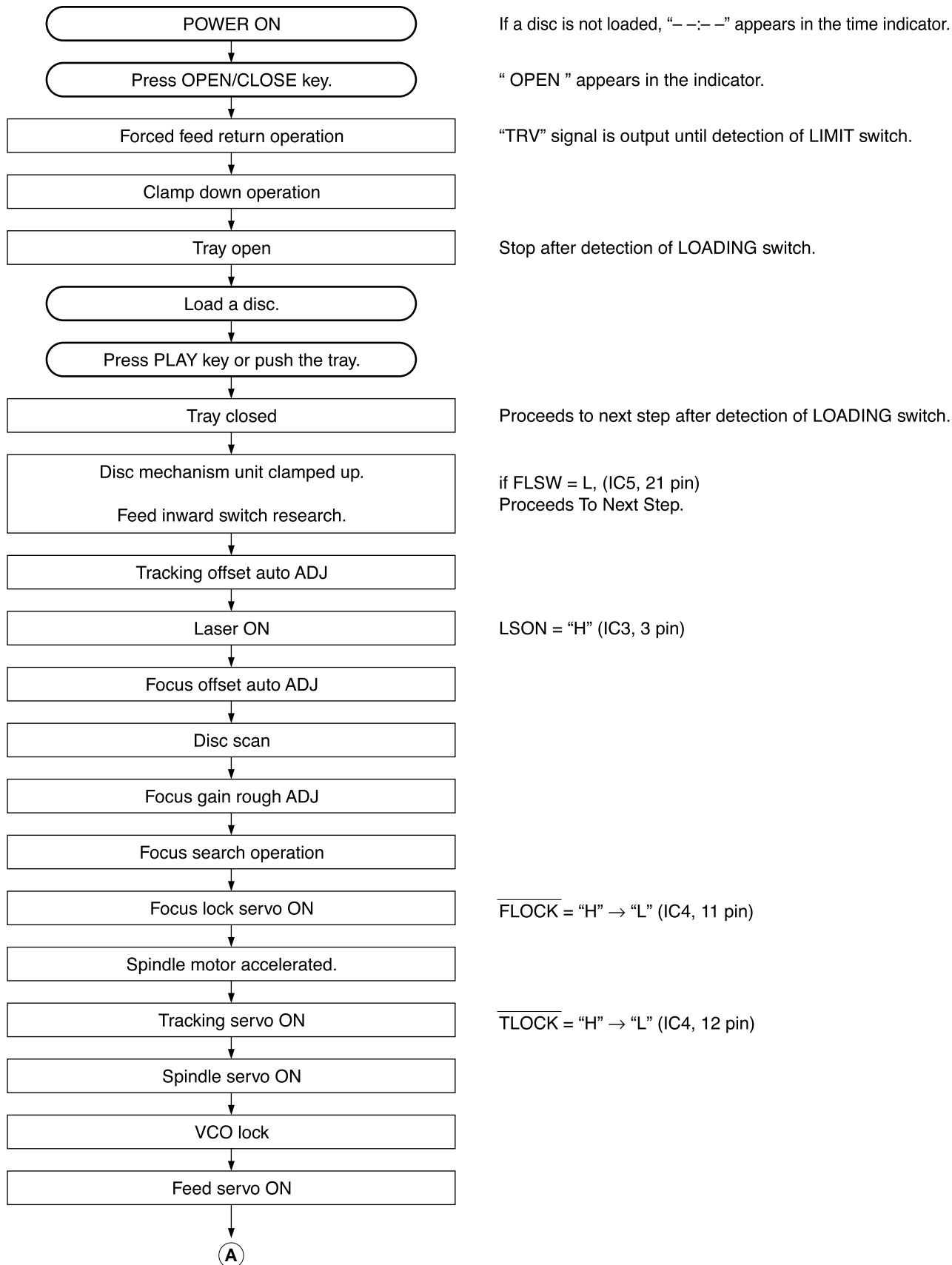
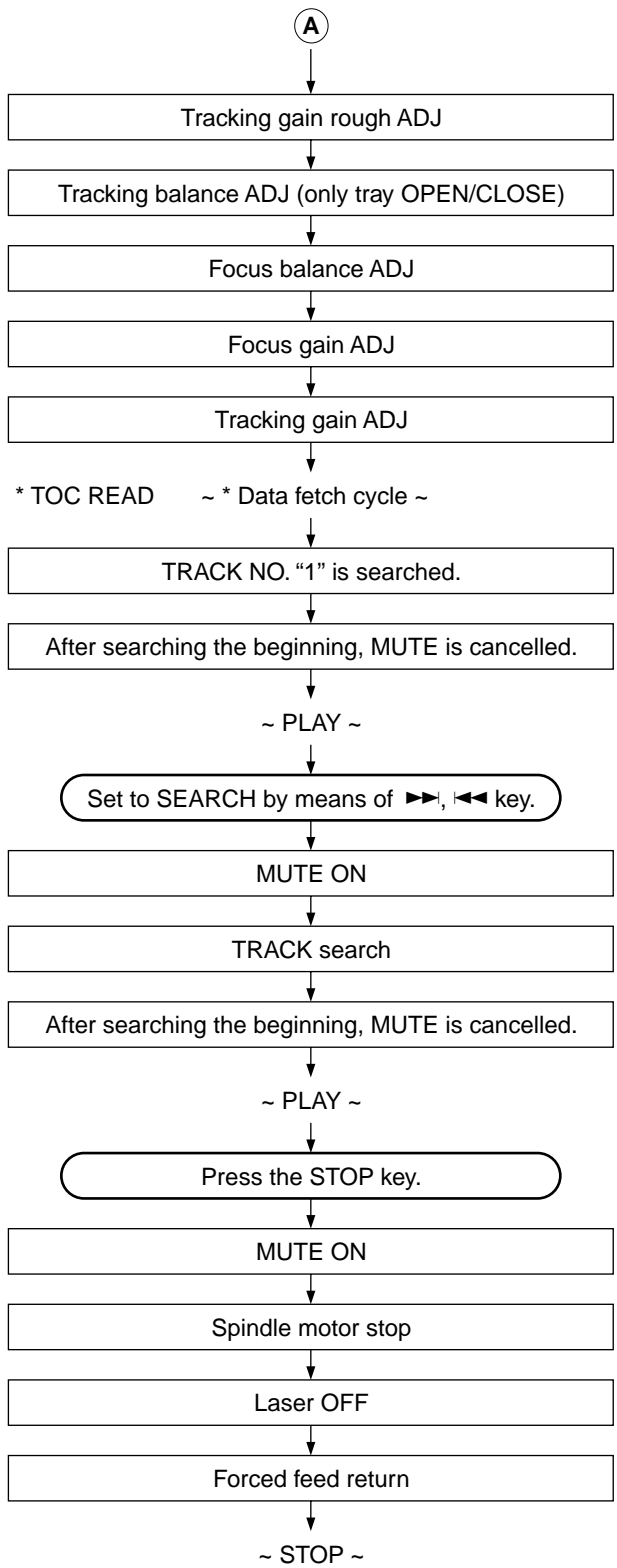


Fig. 5

## ■ STANDARD OPERATION CHART



CDX-E100



: MUTE OFF = "H" → "L" (Q4 Collector)  
 "0:00" appears in the time indicator.

: MUTE OFF = "L" → "H"

: MUTE OFF = "H" → "L"  
 "0:00" appears in the time indicator.

: LSON = "H" → "L" (IC3, 3 pin)



## ■ TEST MODE

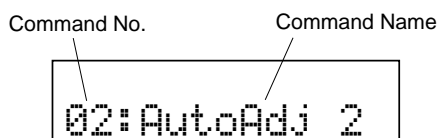
Turning ON the POWER while pressing the keys “STOP” and “PLAY/PAUSE” will set to the TEST mode. (When the TEST mode is set, all indicators light for 1 second.)

Note: When the power off, “STOP” key must be pressed before “PLAY/PAUSE” key pressed. Otherwise “PLAY/PAUSE” key operation causes the product mode.

### ● Test Mode Function List of Panel keys

PANEL KEY	FUNCTION
OPEN/CLOSE	Execute the test command selected with the SKIP/SEARCH keys
PLAY/PAUSE	Plays if focus servo is effective. TRON, MUTE OFF.
STOP	All stop. (Focus, spindle, feed, laser, tray, etc.) Initializes FL display
◀◀/◀◀ (SKIP/SEARCH)	Increment the test command number.
▶▶/▶▶ (SKIP/SEARCH)	Decrement the test command number.

### Sample of display of test command



The functions corresponded to the test command numbers are as follows.

Command No.	Command Name	FUNCTION
00	Op/Cl	Tray open/close.
01	AutoAdj 1	Auto adjustment mode 1 (TR-off set, FO-off set, FO-rough gain adjustment)
02	AutoAdj 2	Auto adjustment mode 2 (TR-balance, TR-rough gain adjustment)
03	AutoAdj 3	Auto adjustment mode 3 (FO-fine gain, TR-fine gain, FO-balance adjustment)
04	TV Rev	Move traverse reverse till the inner SW turn on.
05	TV Fwd	Move traverse forward.
06	TV Stop	Stop traverse.
07	SP Accel	Accelerate spindle.
08	SP Brake	Decelerate spindle.
09	SP SV.On	Spindle servo on.
10	SP SV.Off	Spindle free (servo off)
11	SP Stop	Stop spindle.
12	FO Search	FOON, TROF (Enter focus search if focus servo is off.)
13	TR,TV Off	FOON, TROF, TVOF(FEOF) (Enter focus search if focus servo is off.)
14	1Kick Rev	Reverse 1 track kick continuously.
15	1Kick Fwd	Forward 1 track kick continuously.
16	10 K. Rev	Reverse 10 tracks kick continuously.
17	10 K. Fwd	Forward 10 tracks kick continuously.
18	30 K. Rev	Reverse 30 tracks kick continuously.
19	30 K. Fwd	Forward 30 tracks kick continuously.
20	150K. Rev	Reverse 150 tracks kick continuously.
21	150K. Fwd	Forward 150 tracks kick continuously.
22	PrdctMode	Returns to product mode.
23	Error Msg	Display the latest error message. (see page 10)
24	Test Eep	Check EEPROM. (Mute on if test OK. Mute off if test NG)
25	Check FL	Check FL display. (see page 9)

Test mode function List of Remote Controller keys

System Control Code	KEY	FUNCTION
80	STOP	All stop. (Focus, spindle, traverse, laser, tray, etc.)
81	PLAY/PAUSE	PLAY (FOON, TRON, TVON(FEON), SPON)
83	▶▶ SKIP	Move traverse forward.
84	◀◀ SKIP	Move traverse reverse till the inner SW turn on.
85	▶▶ SEARCH	Forward 10 track kick continuously.
86	◀◀ SEARCH	Reverse 10 track kick continuously.
87	SEARCH END	-
88	RANDOM	SPON (Spindle servo on.)
89	TEXT/TIME	Check FL display.
8A	PROG	Accelerate spindle.
8B	REPEAT	FOON, TROF (Enter focus search if focus servo is off.)
8C	TAPE	Spindle free (servo off)
8D	PEAK	-
90	0	Forward 150 tracks kick continuously. (Coefficient set up mode : lower digit up)
91	1	Returns to product mode.
92	2	Auto adjustment mode 1 (TR-off set, FO-off set, FO-rough gain adjustment)
93	3	Auto adjustment mode 2 (TR-balance, TR-rough gain adjustment)
94	4	Auto adjustment mode 3 (FO-fine gain, TR-fine gain, FO-balance adjustment)
95	5	Reverse 1 track kick continuously. (Coefficient set up mode : address down)
96	6	Forward 1 track kick continuously. (Coefficient set up mode : address up)
97	7	Reverse 30 tracks kick continuously. (Coefficient set up mode : upper digit down)
98	8	Forward 30 tracks kick continuously. (Coefficient set up mode : upper digit up)
99	9	Reverse 150 tracks kick continuously.(Coefficient set up mode : lower digit down)
9A	+10	Change the coefficient mode. (→Coefficient set up mode→Return to product mode with set up coefficient)

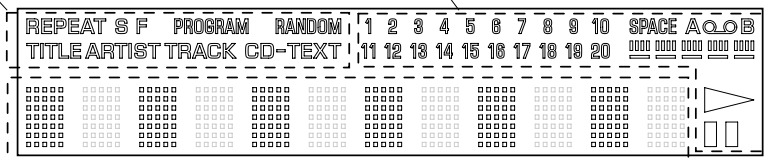
CDX-E100

Note : Check FL display

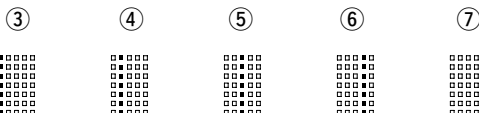
Each time the key pressed, the display changes as follows (①→②→.....→⑨)

① Illuminate all indicators in this part.

② Illuminate all indicators in this part.



③ ~ ⑦ Each dot matrix changes as follows.



⑧ Dot matrix illuminates like this.

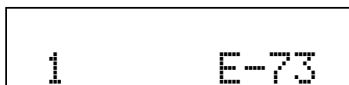
⑨ All indicators go out.

## ■ ERROR MESSAGE

(1) If stopped by any cause, error message can be displayed by pressing the remote STOP key while pressing and holding the panel STOP key, or by test mode command number 23.

The player holds the latest error message in EEPROM. So even if stopped with no error, the latest error message can be displayed with same operation.

(2) Shown below is an example of display. ("E-73" as an example)



(3) Listed in the table below are error messages.

### ● Error Messages List

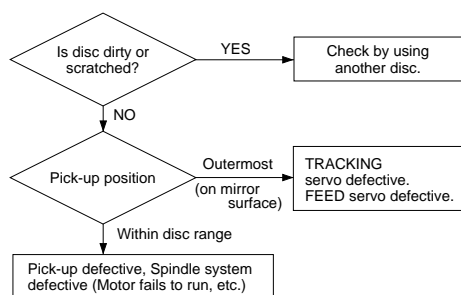
ERROR MESSAGES	DESCRIPTION
E - X 0	Data cannot be read after finishing search.
E - X 1	Data cannot be read during PLAY(X=0), PAUSE(X=3), or SCAN(X=2).
E - 7 1	At the start, tracking servo is not effective.
E - 7 2	At the start, spindle servo PLL is not effective.
E - 7 3	At the start, data can not read.
E - 7 5	Tracking servo off in FO balance, or FO fine, or TR fine gain adjustment and recovery action failure.
E - 9 4	Close switch does not work with tray closed.
E - 9 5	Open switch does not work with tray open.
E - X 7	Traverse(Feed) inner switch does not work.
E - X 8	Recovery action fails after focus drop.
ERROR	MN35511 does not give response of SENSE, with resetting by the unit's microcomputer.

\*No. for each state  
(meaning of "X")

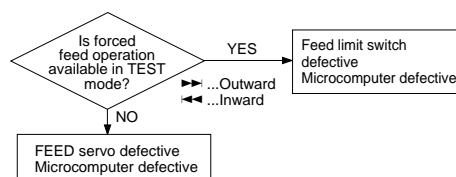
PLAY	X="0"
SCAN	X="2"
PAUSE	X="3"
PEAK SEARCH	X="4"
SEARCH	X="5"
START	X="7"
STOP	X="8"
LOADING	X="9"
OPEN	X="-"
NO DISC	X="C"

### 1) Error Code Troubleshooting

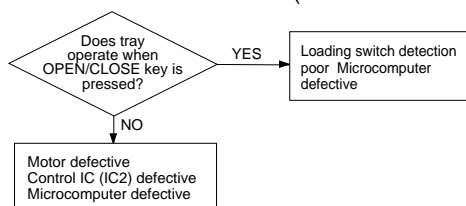
Error code **X0** , **X1** , **73** ..... Data cannot be read.



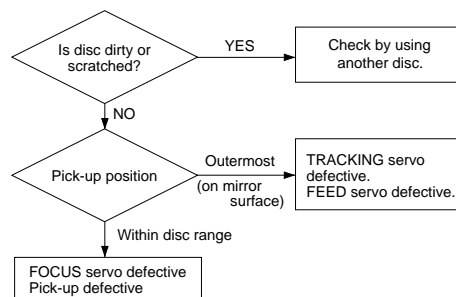
Error codes **94** , **- 5** ..... Poor tray loading operation.



Error code **X7** ..... FEED operation defective. (Limit switch fails)

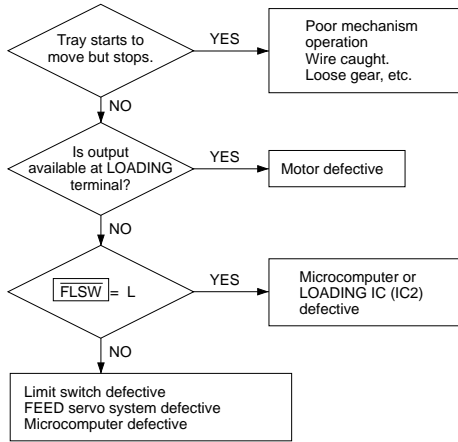


Error code **X8** ..... Focus drops.



2) Troubleshooting from System Malfunctions

a) Tray fails to come out/go in.

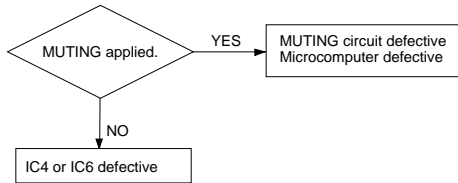


**When tray fails to close completely (when it stops midway)**

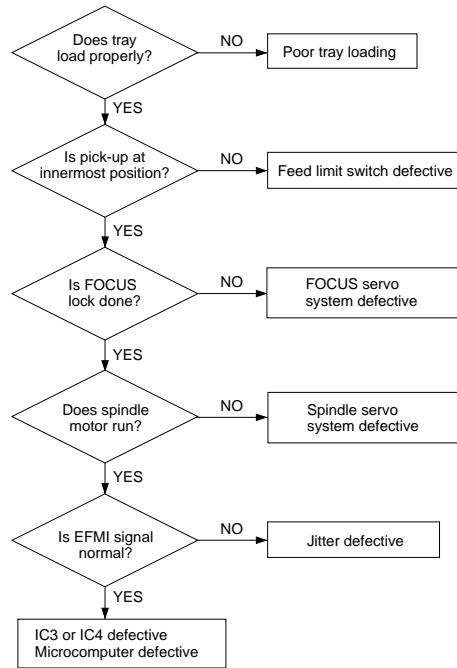
**[Corrective measure]**

- 1) Turn ON the power and open the tray.  
\* If it failed to open (head and tray contacting each other), open it after removing the chucking unit.
- 2) Turn OFF the power and force the tray to go in fully and close.
- 3) With the power turned ON, open and close the tray to check if the tray close completely.

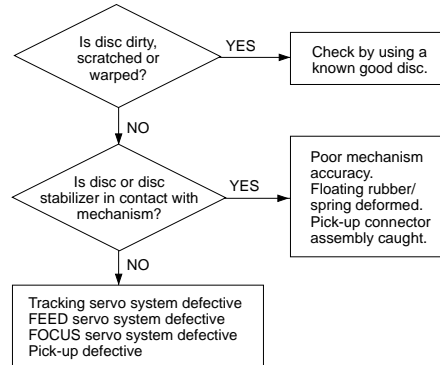
b) No sound generated, Sound cut during play. (but time display advances properly)



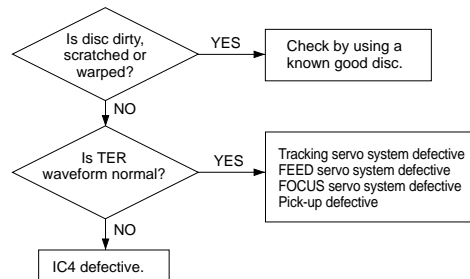
c) Operates as if no disc loaded. (although loaded)



d) Sound skips. (Time display fails to advance properly)



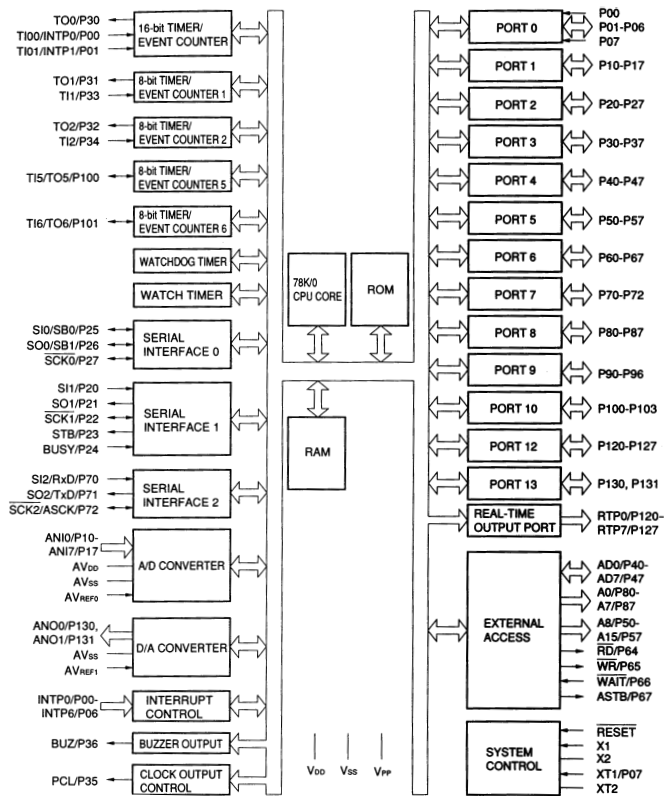
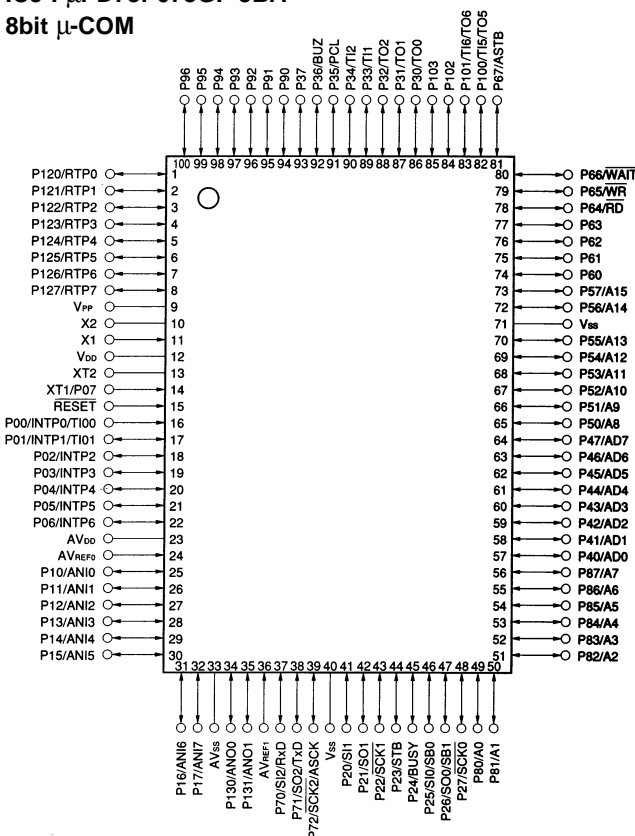
e) No search provided. (Sound skipped after search)



CDX-E100

IC DATA

IC5 :  $\mu$ PD78P078GF-3BA  
8bit  $\mu$ -COM



No.	Port	Name	I/O	Function
1	P120/RTP0	OPSW	I	Opened state of tray sensing switch input. Opened state at "L".
2	P121/RTP1	CLSW	I	Closed state of tray sensing switch input. Closed state at "L".
3	P122/RTP2			N.C.
4	P123/RTP3	MUTE	O	Sound output at "H" and sound output muted at "L".
5	P124/RTP4	RST	O	Hardware reset output of MN35511. Reset at "L".
6	P125/RTP5	DMUTE	O	Mute output to MN35511. Muted at "H".
7	P126/RTP6	TLOCK	I	Tracking servo drawing signal input from MN35511. Drawn at "L".
8	P127/RTP7	FLOCK	I	Focus servo drawing signal input from MN35511. Drawn at "L".
9	IC	IC		GND
10	X2	X2		Ceramic oscillator. (5MHz)
11	X1	X1		
12	VDD	VDD		
13	XT2	XT2		N.C.
14	XT1/P07	XT1		GND
15	RESET	RESET	I	Reset input.
16	P00/INTP0/TI00			N.C.
17	P01/INTP1/TI01	BLKCK	I	Sub code, block clock input from MN35511.
18	P02/INTP2			N.C.
19	P03/INTP3	SYSCON IN	I	System control input.
20	P04/INTP4	SYSCON OUT	O	System control output.
21	P05/INTP5	FLSW	I	Feed origin switch input. Feed origin at "L".
22	P06/INTP6	CLDCK	I	MN35511 subcode frame clock
23	AVDD	AVDD		+5V
24	AVREF0	AVREF0		+5V
25	P10/ANI0	PON	I	Power ON/OFF detect
26	P11/ANI1			N.C.
27	P12/ANI2			N.C.

CDX-E100

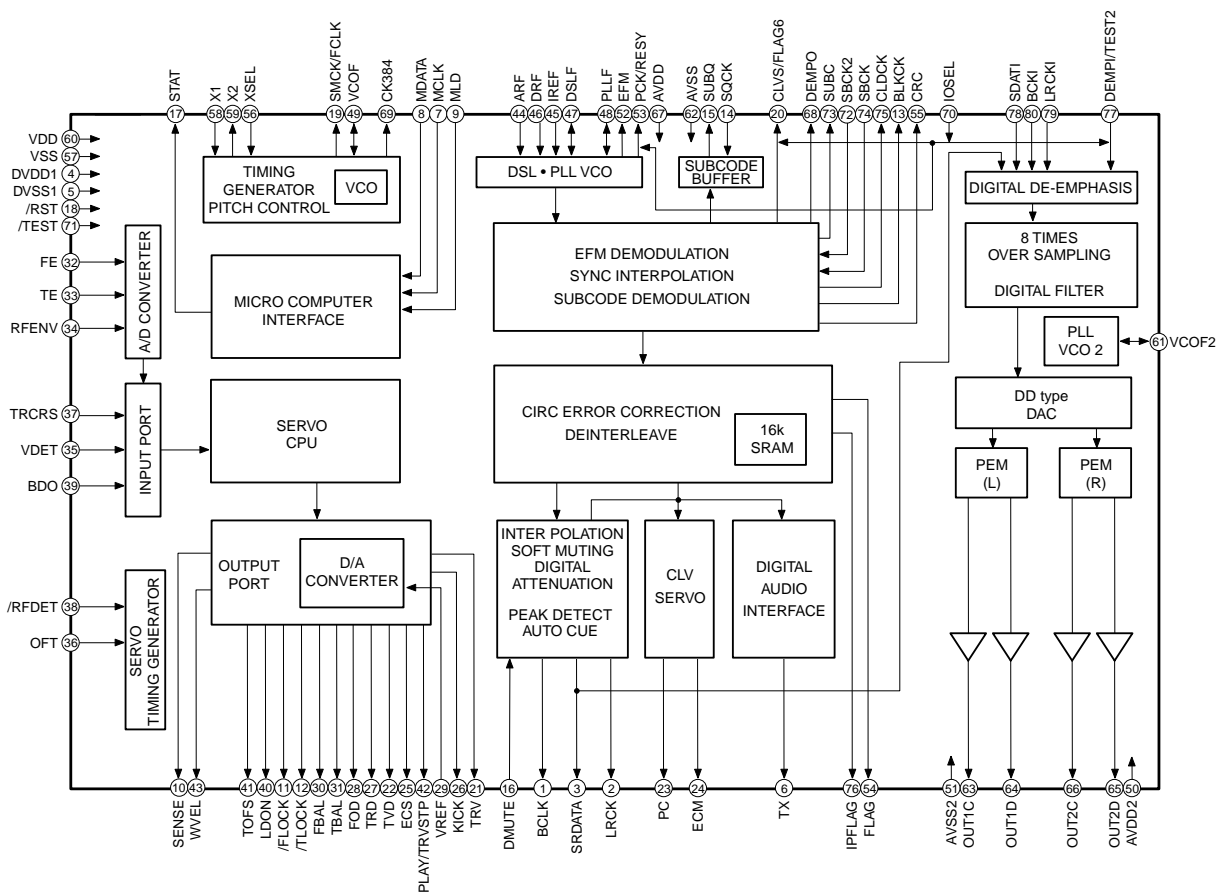
**IC5 :  $\mu$ PD78P078GF-3BA**  
**8bit  $\mu$ -COM**

No.	Port	Name	I/O	Function
28	P13/ANI3			N.C.
29	P14/ANI4	SDA	I/O	DATA port for EEPROM.
30	P15/ANI5	SCL	I/O	DATA CLOCK for EEPROM.
31	P16/ANI6			] N.C.
32	P17/ANI7			
33	AVSS	AVSS		GND
34	P130/ANO0			N.C.
35	P131/ANO1			N.C.
36	AVREF1			
37	P70/S12/RXD	SUBQ	I	Serial I/F input (SUBQ)
38	P71/SO2/TXD	STAT	I	Status signal input from MN35511.
39	P72/SCK2/ASCK	SQCK	O	Serial I/F clock (SQCK)
40	VSS	VSS		GND
41	P20/SI1	SUBC	I	Serial I/F input (CD TEXT)
42	P21/SO1			N.C.
43	P22/SCK1	SBCK2	O	Serial I/F clock (CD TEXT)
44	P23/STB	MLD	O	MN35511 chip select
45	P24/BUSY	SENSE	I	MN35511 sense input
46	P25/SI0/SB0			N.C.
47	P26/SO0/SB1	MDATA	O	Serial I/F output (MDATA/FL driver/EEPROM)
48	P27/SCK0	MCLK	O	Serial I/F clock (MCLK/FL driver/EEPROM)
49	P80/A0			N.C.
50	P81/A1	FLCE	O	FL driver chip select
51	P82/A2	FLRST	O	FL driver reset
52	P83/A3			N.C.
53	P84/A4			N.C.
54	P85/A5	FEED OFF	O	Feed servo off signal output.
55	P86/A6			] N.C.
56	P87/A7			
57	P40/AD0			
58	P41/AD1			
59	P42/AD2			
60	P43/AD3			
61	P44/AD4			
62	P45/AD5			
63	P46/AD6			
64	P47/AD7			
65	P50/A8			
66	P51/A9			
67	P52/A10			
68	P53/A11	KD1	O	] Key scan
69	P54/A12	KD0	O	
70	P55/A13			N.C.
71	VSS	VSS		GND
72	P56/A14			] N.C.
73	P57/A15			
74	P60			
75	P61			
76	P62			
77	P63	K1	I	] Key detect
78	P64/RD	K0	I	
79	P65/WR			N.C.
80	P66/WAIT			N.C.

**IC5 :  $\mu$ PD78P078GF-3BA**  
8bit  $\mu$ -COM

No.	Port	Name	I/O	Function
81	P67/ASTB			] N.C.
82	P100/TI5/TO5			
83	P101/TI6/TO6			
84	P102			
85	P103			
86	P30/TO0	CLOSE	O	Tray close signal output.
87	P31/TO1	OPEN	O	Tray open signal output.
88	P32/TO2			] N.C.
89	P33/TI1			
90	P34/TI2			
91	P35/PCL			
92	P36/BUZ			
93	P37	STAN	O	M56748 standby control
94	P90		I	Pull down
95	P91		I	Pull down
96	P92		O	Monitor 1
97	P93		O	Monitor 2
98	P94		O	Monitor 3
99	P95		O	Monitor 4
100	P96		O	Monitor (error)

**IC4 : MN35511**  
Signal Processor & Controller



CDX-E100

## IC4 : MN35511

## Signal Processor &amp; Controller

Pin No.	Name	I/O	Function
1	BCLK	O	Bit clock output for SR DATA
2	LRCK	O	L/R identification signal output
3	SRDATA	O	Serial data output
4	DVDD1	I	Power supply for digital circuit (+5)
5	DVSS1	I	GND for digital circuit
6	TX	O	Digital, audio, interface output signal
7	MCLK	I	Microprocessor command clock signal input (data latched at leading edge)
8	MDATA	I	Microprocessor command data input
9	MLD	I	Microprocessor command load signal input (L : LOAD)
10	SENSE	O	Sense signal output (OFT, FESL, NACEND, NAJEND, SFG, NWTEND)
11	FLOCK	O	Focus servo drawing signal (L : when drawn)
12	TLOCK	O	Tracking servo drawing signal (L : when drawn)
13	BLKCK	O	Sub code block clock signal (BLKCK=75Hz)
14	SQCK	I	Clock input for sub-code Q register
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input (H : MUTE)
17	STAT	O	Status signal (CRC, STCNT, CLVS, TTSTOP, SQOK, RESY, FCLV, FLAG6, SENSE, /FLOCK, /RFDET, /TLOCK)
18	RST	I	Reset input (L : RESET)
19	SMCK/ FCLK	O	4.2336MHz clock signal output SMCK when command is defaulted. (Note 1) (NC) SMCK (8.4672MHz), FCLK (7.35kHz) or "L" fixed is selected when command is switched.
20	CLVS/ FLAG6	O	With command defaulted : CLVS when IOSEL=H, FLAG6 when IOSEL=L (NC) These settings can be reversed by command (FLAG6 when IOSEL=H).
21	TRV	O	Traverse (Feed) forced feed output 3-State
22	TVD	O	Traverse (Feed) drive output
23	PC	O	Spindle motor ON signal L : ON (default) (NC)
24	ECM	O	Spindle motor drive signal (forced mode output) 3-State
25	ECS	O	Spindle motor drive signal (servo error signal output)
26	KICK	O	Kick pulse output 3-State
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	I	Reference voltage for DA output block (TVD, ECS, TRD, FOD, FBAL, TBAL)
30	FBAL	O	Focus balance adjustment output
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input (analog input)
35	VDET	I	Oscillation detect signal input (H : DETECT)
36	OFT	I	Off track signal input (H : OFF TRACK)
37	TRCRS	I	Track cross signal input (analog input)
38	RFDET	I	RF detect signal input (L : DETECT)
39	BDO	I	Drop out signal input (H : DROP OUT)
40	LDON	O	Laser ON signal output (H : ON)
41	TOFS	O	Tracking offset adjustment output (NC)
42	PLAY/TRVSTOP	O	Switched by command. PLAY (Play signal output) when command is defaulted. (NC)
43	WVEL	O	Double speed status signal output (H : double speed) (NC)
44	ARF	I	RF signal input
45	IREF	I	Reference current input terminal
46	DRF	I	Bias terminal for DSL

(Note 1) At the SMCK/FCLK pin, output does not stop while /RST=L.

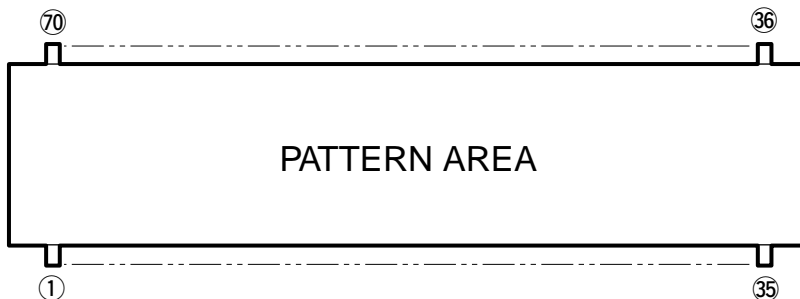


**IC4 : MN35511**  
**Signal Processor & Controller**

Pin No.	Name	I/O	Function	
47	DSLIF	I/O	Loop filter terminal for DSL	
48	PLLF	I/O	Loop filter terminal for PLL	
49	VCOF	I/O	Loop filter terminal for VCO	(+5)
50	AVDD2	I	Power supply for analog circuit (for AD of DSL, PLL, DA output blocks)	(+5)
51	AVSS2	I	GND for analog circuit (for AD of DSL, PLL, DA output blocks)	(GND)
52	EFM	O	EFM signal output	(NC)
53	PCK/ RESY	O	With command defaulted : PLL extract clock output PCK when IOSEL=H, frame re-synchronous signal RESY when IOSEL=L These settings can be reversed by command (RESY when IOSEL=H).	(NC)
54	FLAG	O	Flag signal output	(NC)
55	CRC	O	Sub-code CRC check result output (H : OK, L : NG)	(NC)
56	XSEL	I	L : Normal mode H : • For internal master clock, VCO2 output clock for jitter adsorbing PLL is used instead of Xtal oscillation output (X2). • VCO2 is always fixed to oscillation mode regardless of VCO2 oscillation stop command or resetting (/RST=L) and Xtal oscillation is stopped.	(GND)
57	VSS	I	GND for oscillation circuit	
58	X1	I	Crystal oscillation circuit input terminal	
59	X2	O	Crystal oscillation circuit output terminal	
60	VDD	I	Power supply for oscillation circuit	(+5)
61	VCOF2	O	PLL loop filter terminal for jitter adsorption	(GND)
62	AVSS1	O	GND for audio DAC	
63	OUT1C	O	PEM output terminal 1C	
64	OUT1D	O	PEM output terminal 1D	
65	OUT2D	O	PEM output terminal 2D	
66	OUT2C	O	PEM output terminal 2C	
67	AVDD1	I	Power supply terminal for audio DAC	
68	DEMPO	O	Deemphasis detect signal output	(NC)
69	CK384	O	384fs clock output (At the CK384 pin, output does not stop while /RST=L.) Xtal system when command is defaulted. Signal processing system when command is switched	(NC)
70	IOSEL	I	Mode selecting terminal	(+5)
71	TEST	I	Test mode setting terminal (Normal : H)	(+5)
72	SBCK2	I	Sub-code data read clock input	
73	SUBC	O	Sub-code serial output (SBCK effective) when command is defaulted. PACK data usable (SBCK2 effective) when command is switched	
74	SBCK	I	Clock input for sub-code serial output (with pull-up resistor)	(NC)
75	CLDCK	O	Sub-code frame clock signal output when command is defaulted (fCLDCK=7.35kHz) PACK synchronous signal when command is switched	
76	IPFLAG	O	Interpolation flag signal output (H : INTERPOLATION)	(NC)
77	DEMPI /TEST2	I	When IOSEL=H, L : NORMAL H : TEST2 Emphasis control in accordance with DEMPO When IOSEL=L, external DEMP1 input terminal For emphasis control, DEMPO, OR of DEMP1, DEMP1, forced OFF or forced ON is selected by command. When command is defaulted, DEMPO and OR of DEMP1	(GND)
78	SDATI	I	SRDATA input (effective only when IOSEL=L)	(NC)
79	LRCKI	I	LRCK input (effective only when IOSEL=L) H : Lch data, L : Rch data	(NC)
80	BCKI	I	BCK input (effective only when IOSEL=L)	(NC)

# ■ DISPLAY DATA (V3618100)

V1 : 14-BT-56GN



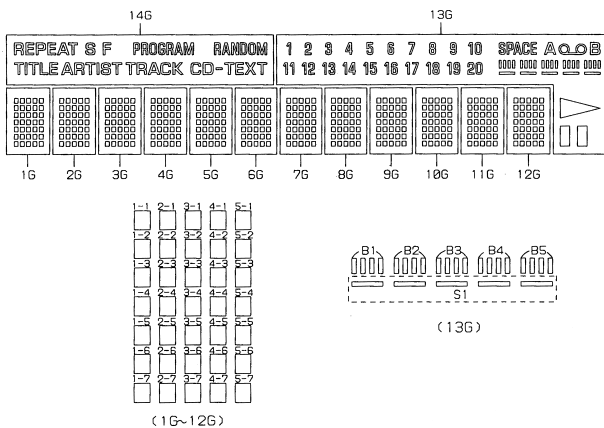
## ● PIN CONNECTION

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Connection	F1	F1	NP	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	NX	NX	NX	NX	1G	IC	P35	P34	P33	P32	P31	P30	P29	P28
Pin No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Connection	P27	P26	NP	F2	F2	F2	F2	NP	P25	P24	P23	P22	P21	P20	P19	P18	P17	P16	P15	P14	P13	NX	NX	NX	NX	P12	P11	P10	P9	P8
Pin No.	61	62	63	64	65	66	67	68	69	70																				
Connection	P7	P6	P5	P4	P3	P2	P1	NP	F1	F1																				

- Note** 1) F1, F2 ..... Filament      3) NX ..... No Extend pin      5) 1G~14G ..... Grid  
 2) NP ..... No Pin                  4) P1~P35 ..... Datum Line      6) IC ..... Internal Connection

CDX-E100

## ● GRID ASSIGNMENT

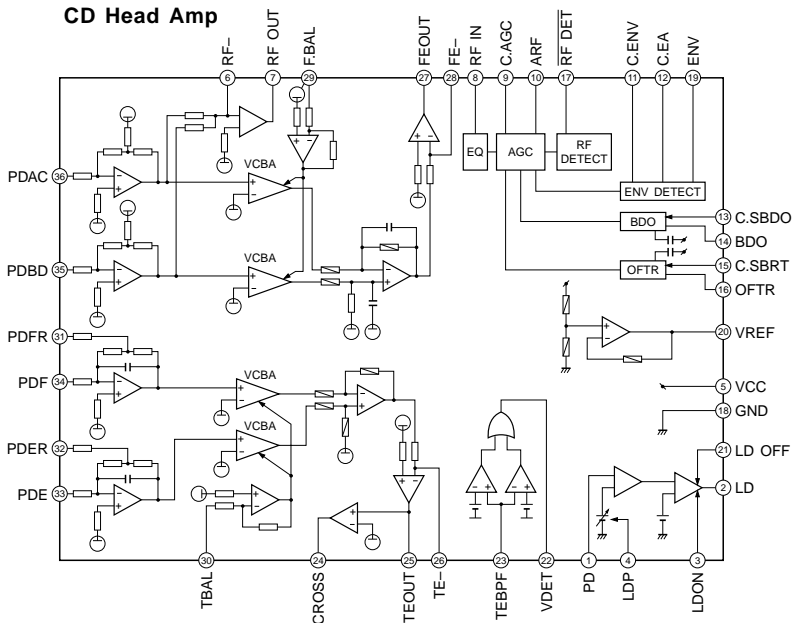


## ● ANODE CONNECTION

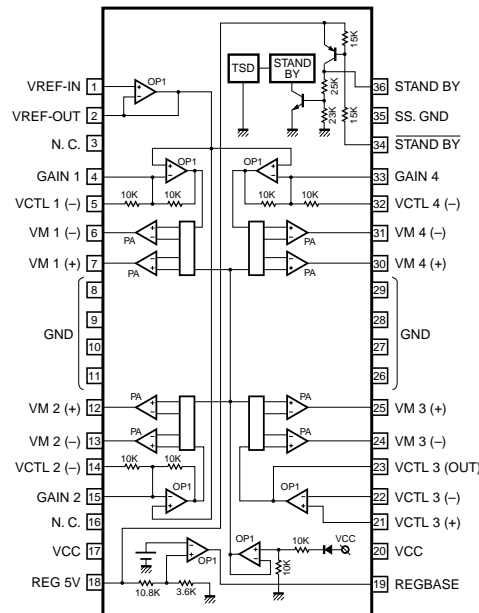
	14G	13G	12G~1G
P1	REPEAT	▶	1-1
P2	S	▯▯	2-1
P3	F	SPACE	3-1
P4	PROGRAM	A	4-1
P5	RANDOM	O O	5-1
P6	TITLE	B	1-2
P7	ARTIST	B1	2-2
P8	TRACK	B2	3-2
P9	CD-TEXT	B3	4-2
P10	-	B4	5-2
P11	-	B5	1-3
P12	-	S1	2-3
P13	-	1	3-3
P14	-	2	4-3
P15	-	3	5-3
P16	-	4	1-4
P17	-	5	2-4
P18	-	6	3-4
P19	-	7	4-4
P20	-	8	5-4
P21	-	9	1-5
P22	-	10	2-5
P23	-	11	3-5
P24	-	12	4-5
P25	-	13	5-5
P26	-	14	1-6
P27	-	15	2-6
P28	-	16	3-6
P29	-	17	4-6
P30	-	18	5-6
P31	-	19	1-7
P32	-	20	2-7
P33	-	-	3-7
P34	-	-	4-7
P35	-	-	5-7

IC BLOCK

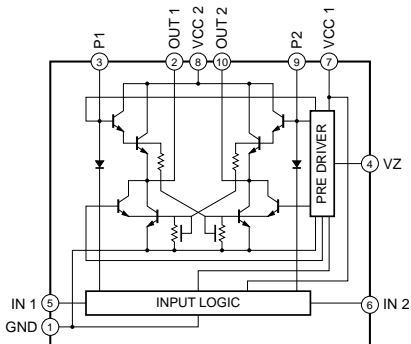
IC3 : AN8806SB  
CD Head Amp



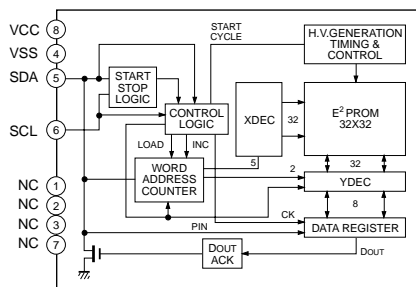
IC1 : M56748FP  
4-Channel BTL Driver



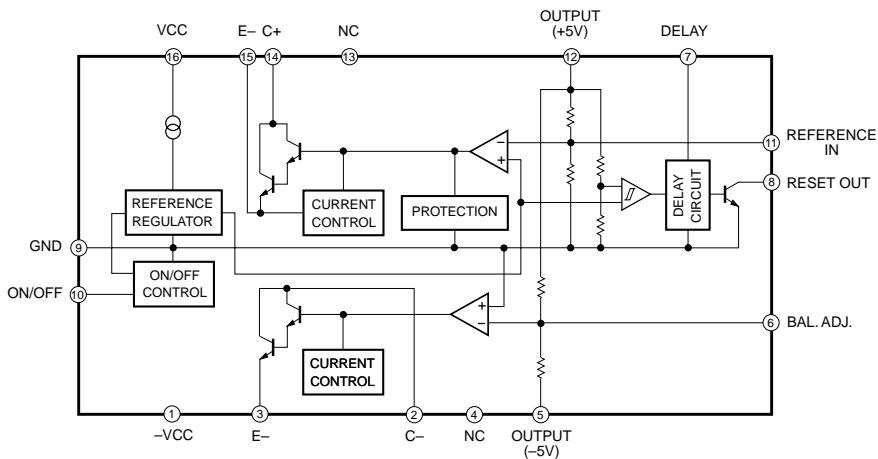
IC2 : LB1641  
Motor Driver



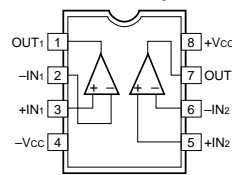
IC9 : S-24C01ADP  
Electrically Erasable PROM



IC6 : M5290FP  
Constant-Voltage Tracking Supply with Reset

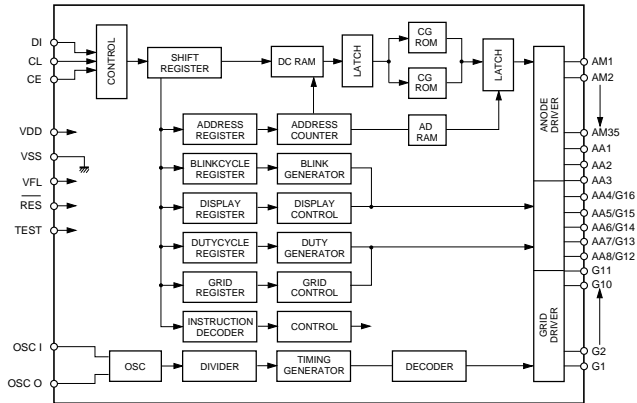
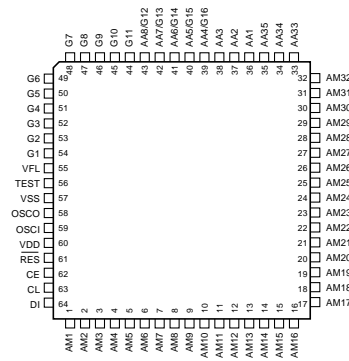


IC7, 8 : NJM2068MD-D  
Dual OP-Amp



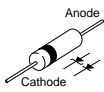
CDX-E100

IC10 : LC75710NE  
FL Driver

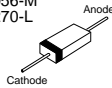


**PIN CONNECTION DIAGRAM**

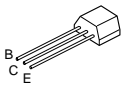
1SR139-400



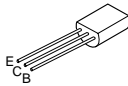
1SS355  
MA8043-H  
MA8051-M  
MA8056-M  
MA8270-L



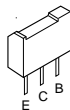
2SA933S(Q,R)



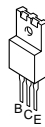
2SB544(E,F,G)  
2SC2878(A,B)



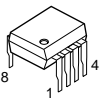
2SA1708(S,T)



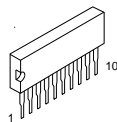
2SB1565(E,F)  
2SD2396(J,K)



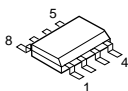
S-24C01ADP



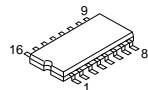
LB1641



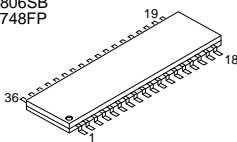
NJM2068MD-T1



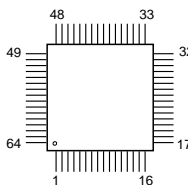
M5290FP



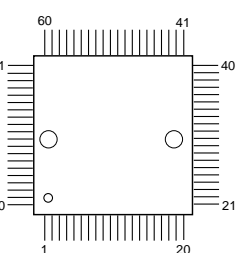
AN8806SB  
M56748FP



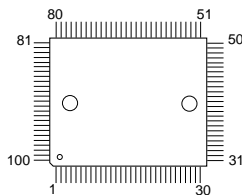
LC75710NE



MN35511

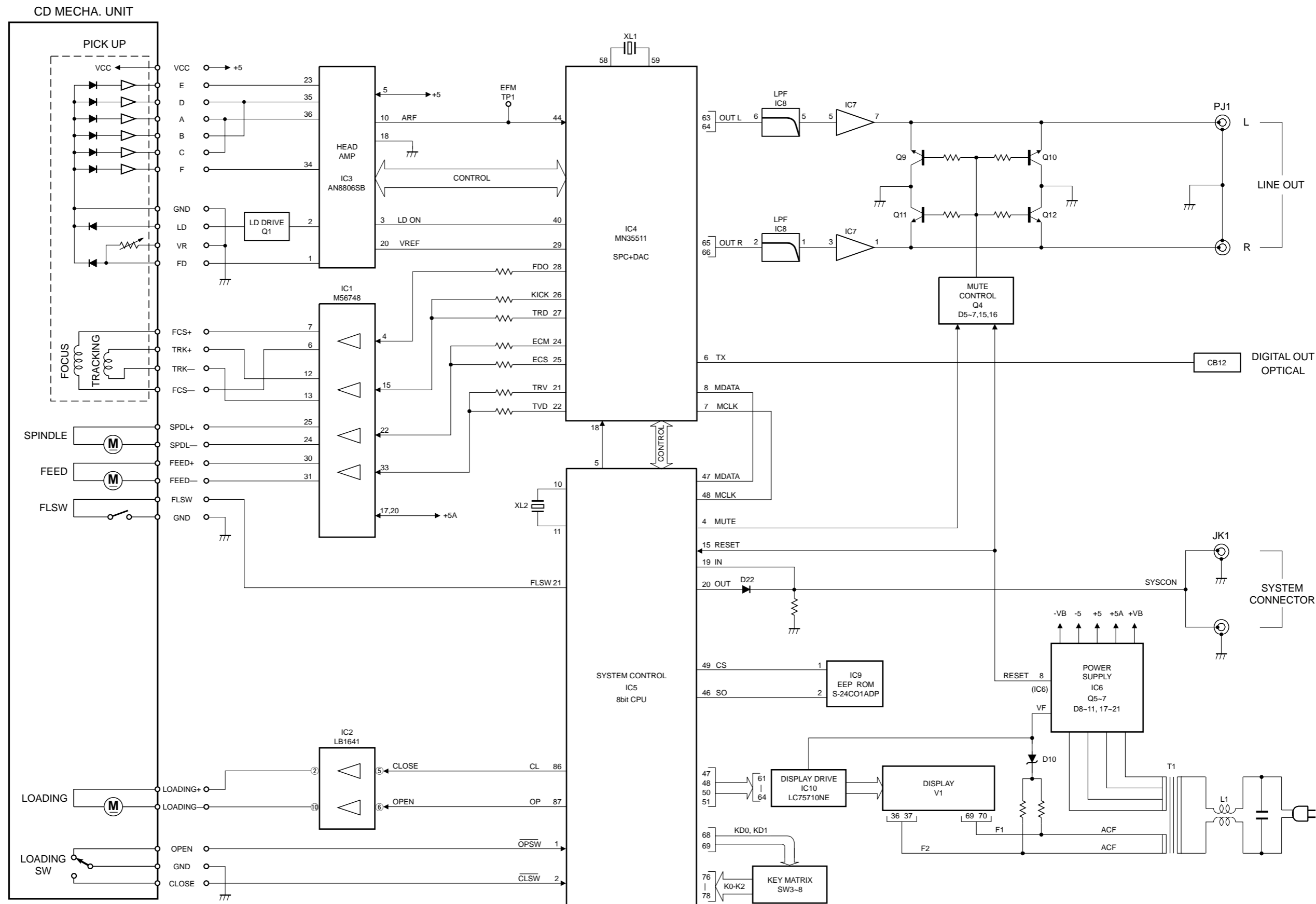


μPD78P078GF-3BA



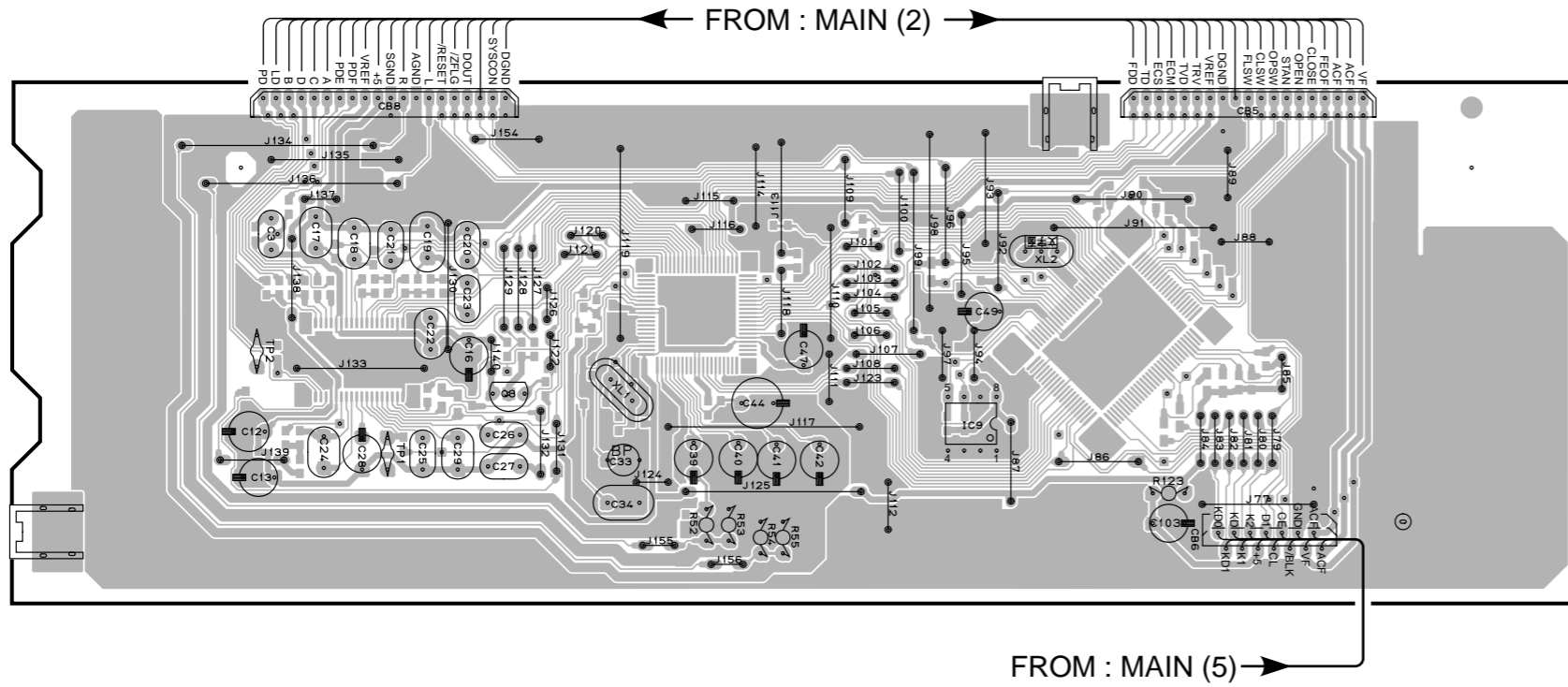
# BLOCK DIAGRAM

1  
2  
3  
4  
5  
6

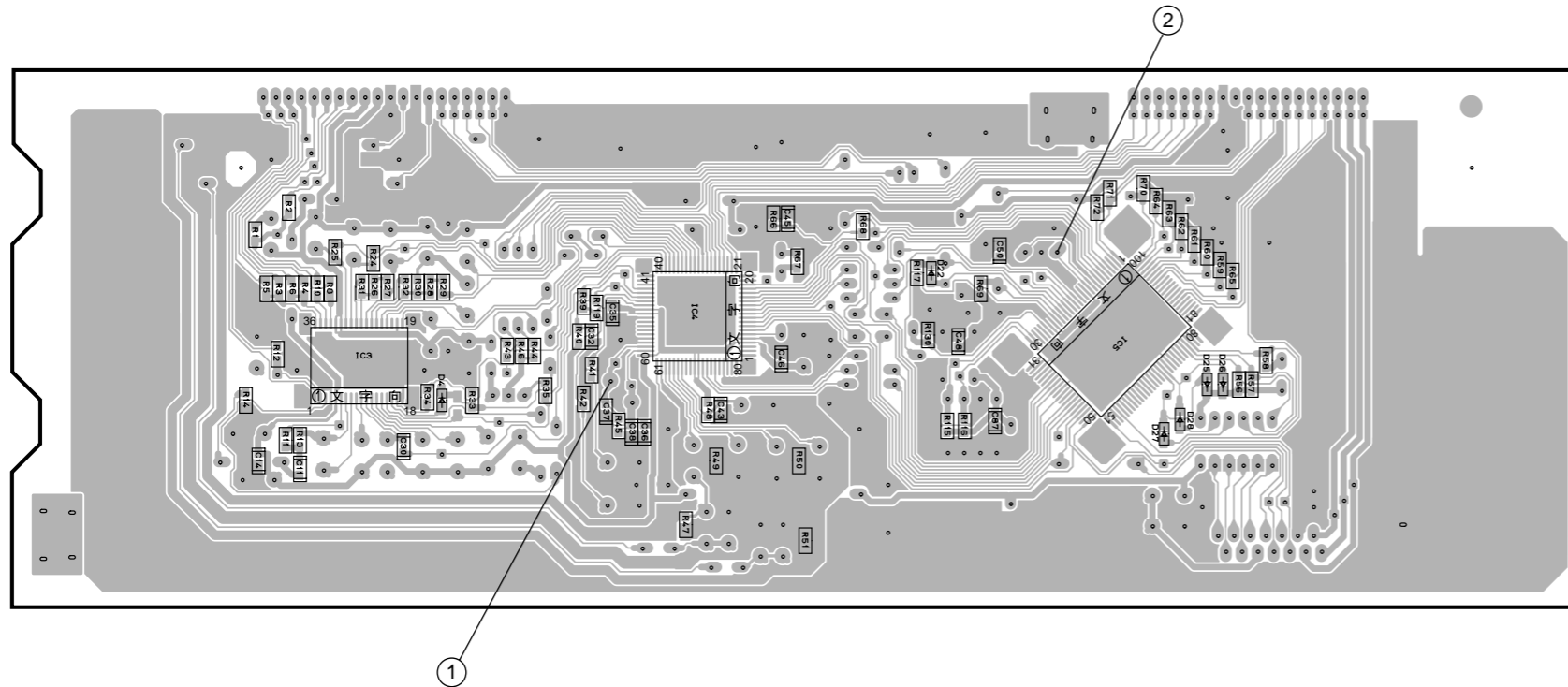


PRINTED CIRCUIT BOARD (Foil side)

P. C. B. MAIN ( 1 ) (Lead Type Device)

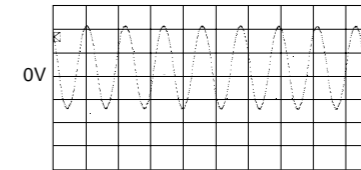


P. C. B. MAIN ( 1 ) (Surface Mount Device)



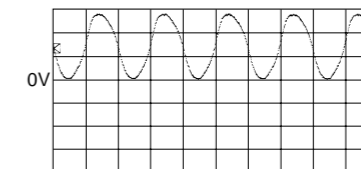
Point ① (Pin 59 of IC4)

V : 2V/div, H : 50nsec/div  
DC, 1 : 1 probe



Point ② (Pin 10 of IC5)

V : 2V/div, H : 0.1μsec/div  
DC, 1 : 1 probe

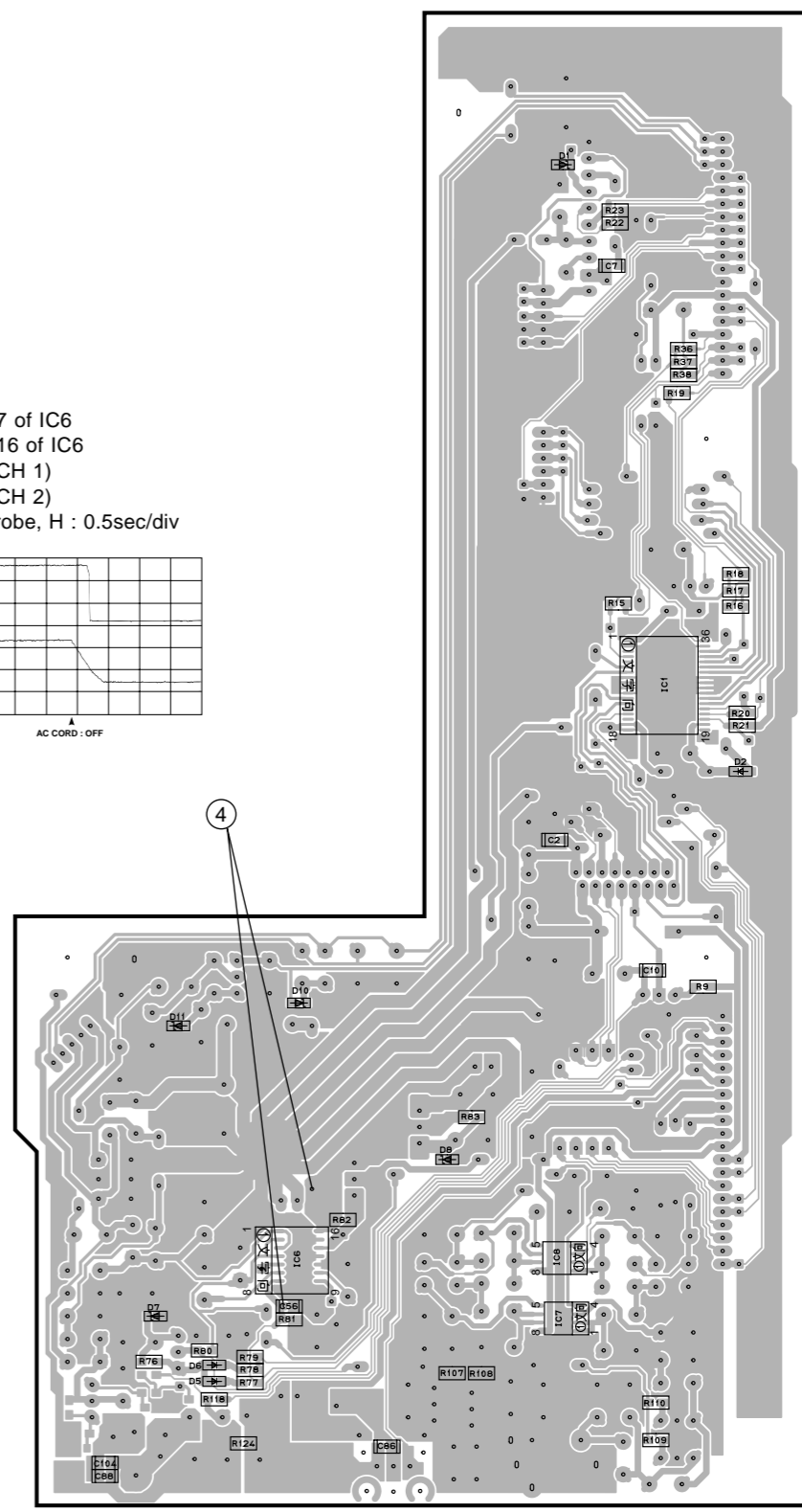
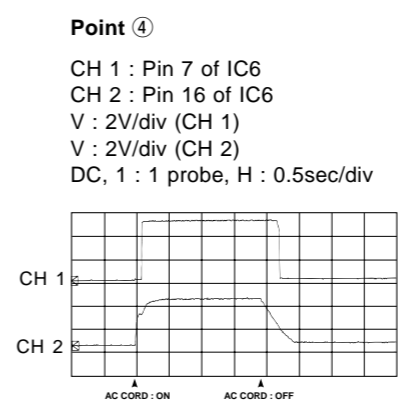
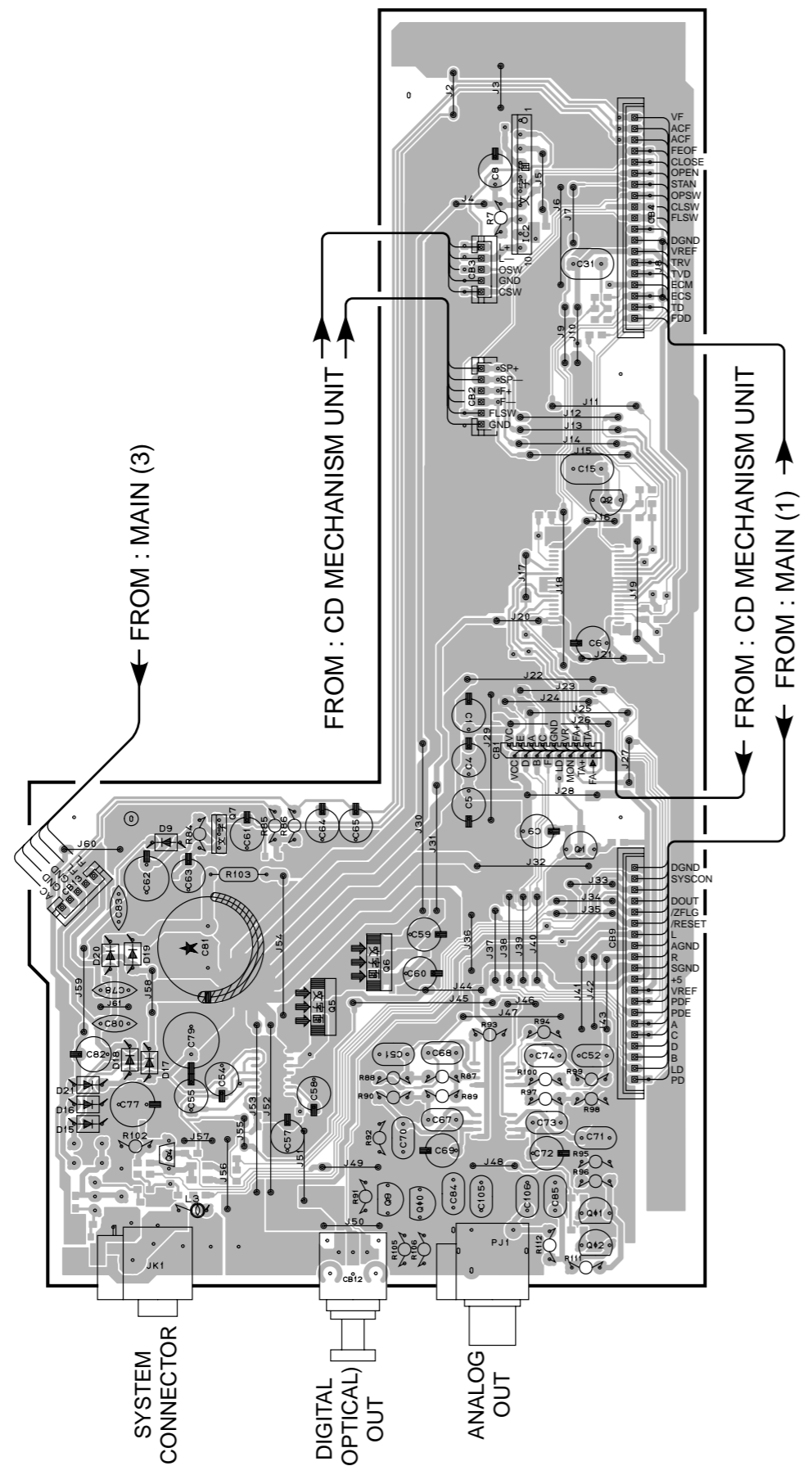


PRINTED CIRCUIT BOARD (Foil side)

P. C. B. MAIN ( 2 ) (Lead Type Device)

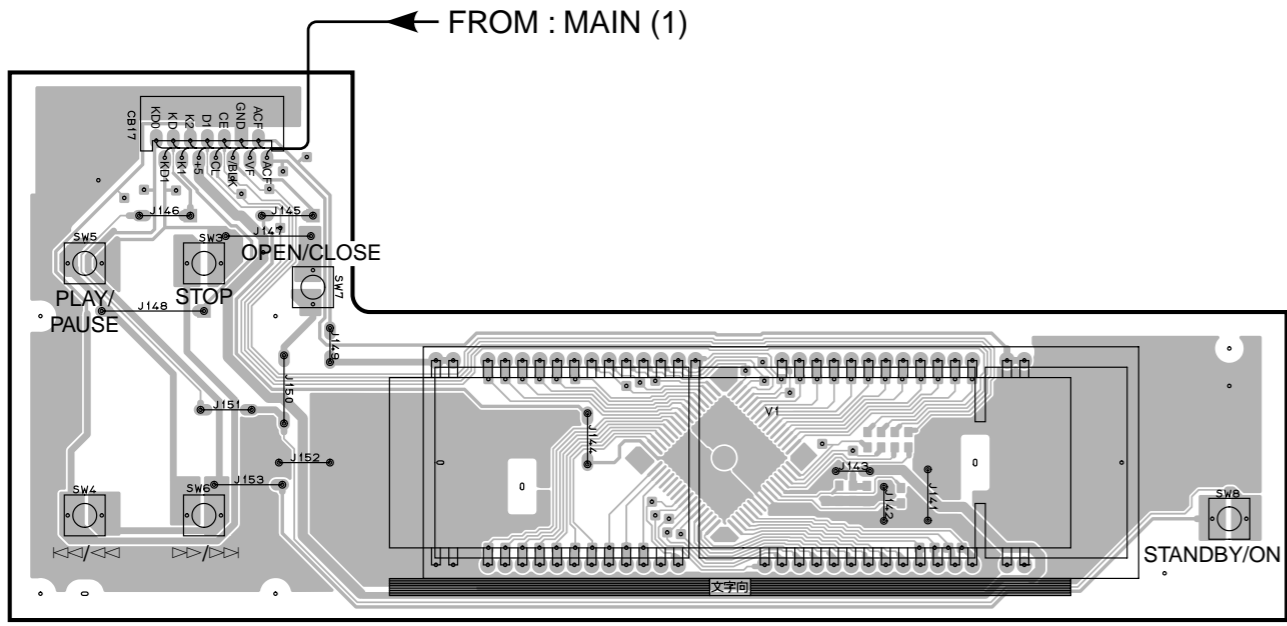
P. C. B. MAIN ( 2 ) (Surface Mount Device)

1  
2  
3  
4  
5  
6

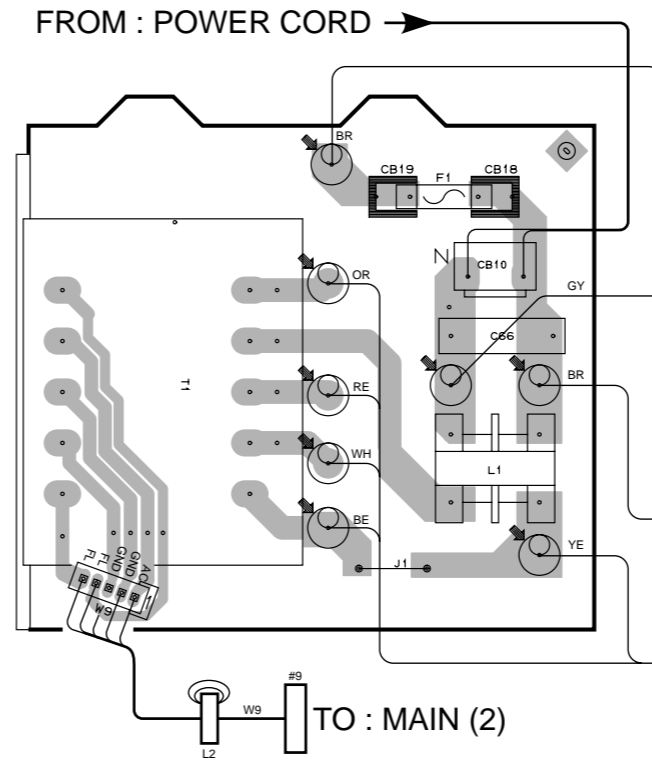


PRINTED CIRCUIT BOARD (Foil side)

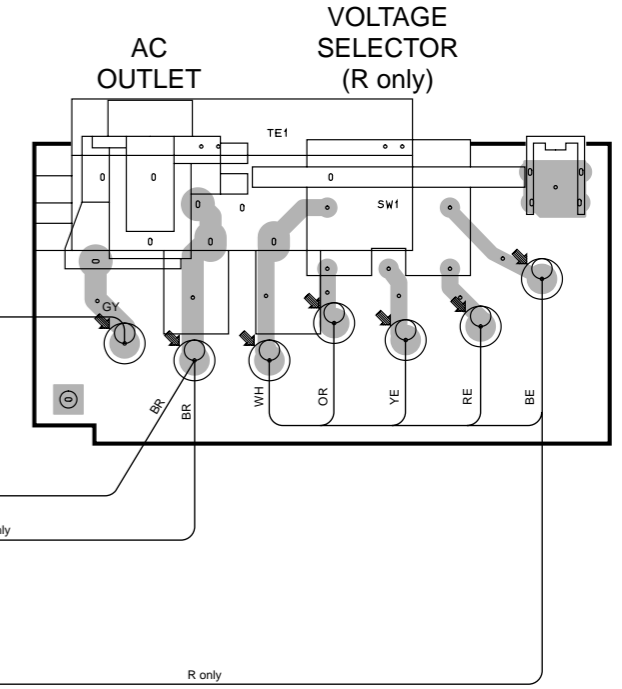
P. C. B. MAIN ( 5 ) (Lead Type Device)



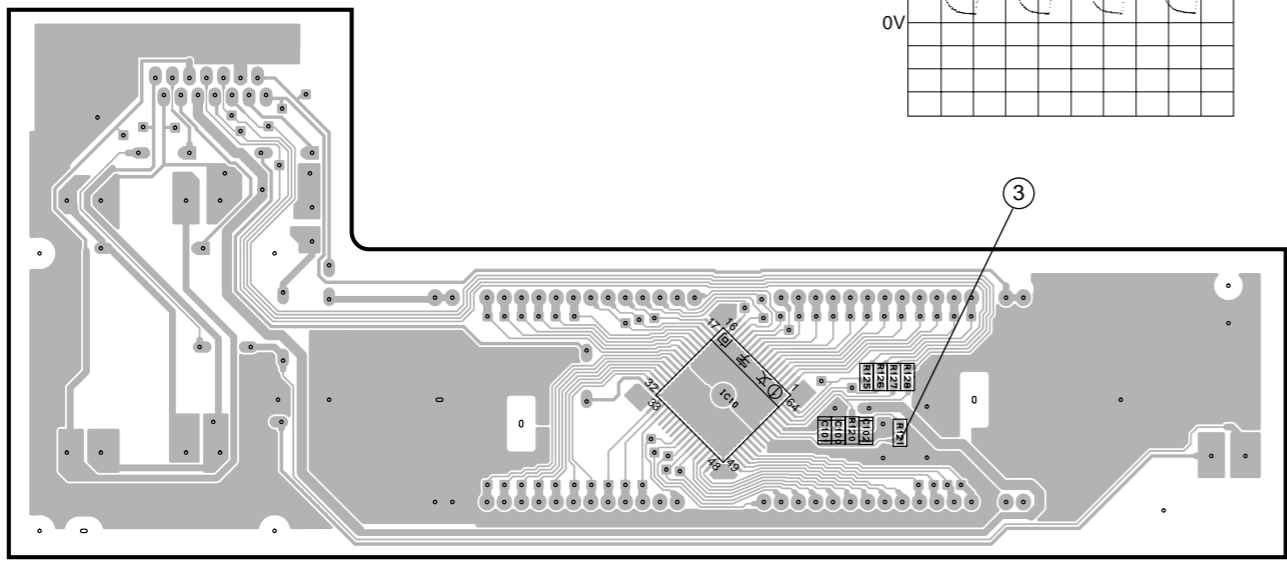
P. C. B. MAIN ( 3 )



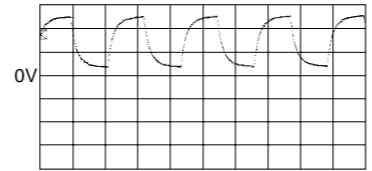
P. C. B. MAIN ( 4 )



P. C. B. MAIN ( 5 ) (Surface Mount Device)



Point ③ (Pin 58 of IC10)  
 V : 2V/div, H : 0.2μsec/div  
 DC, 1 : 1 probe



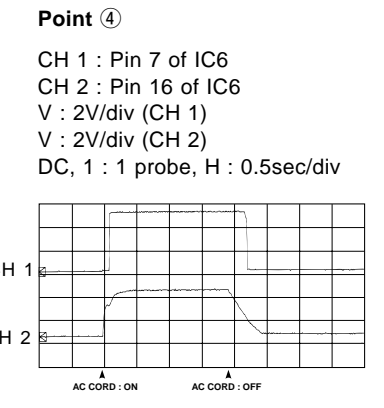
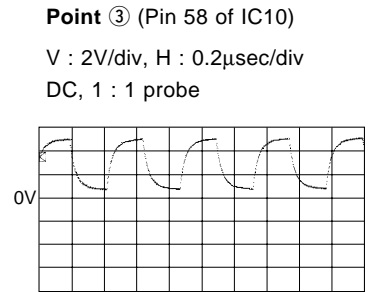
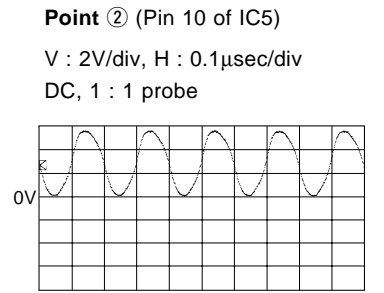
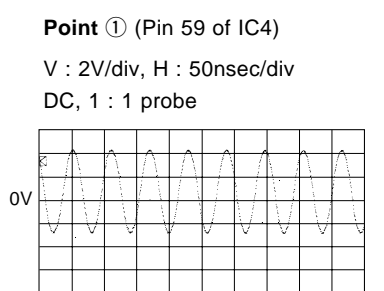
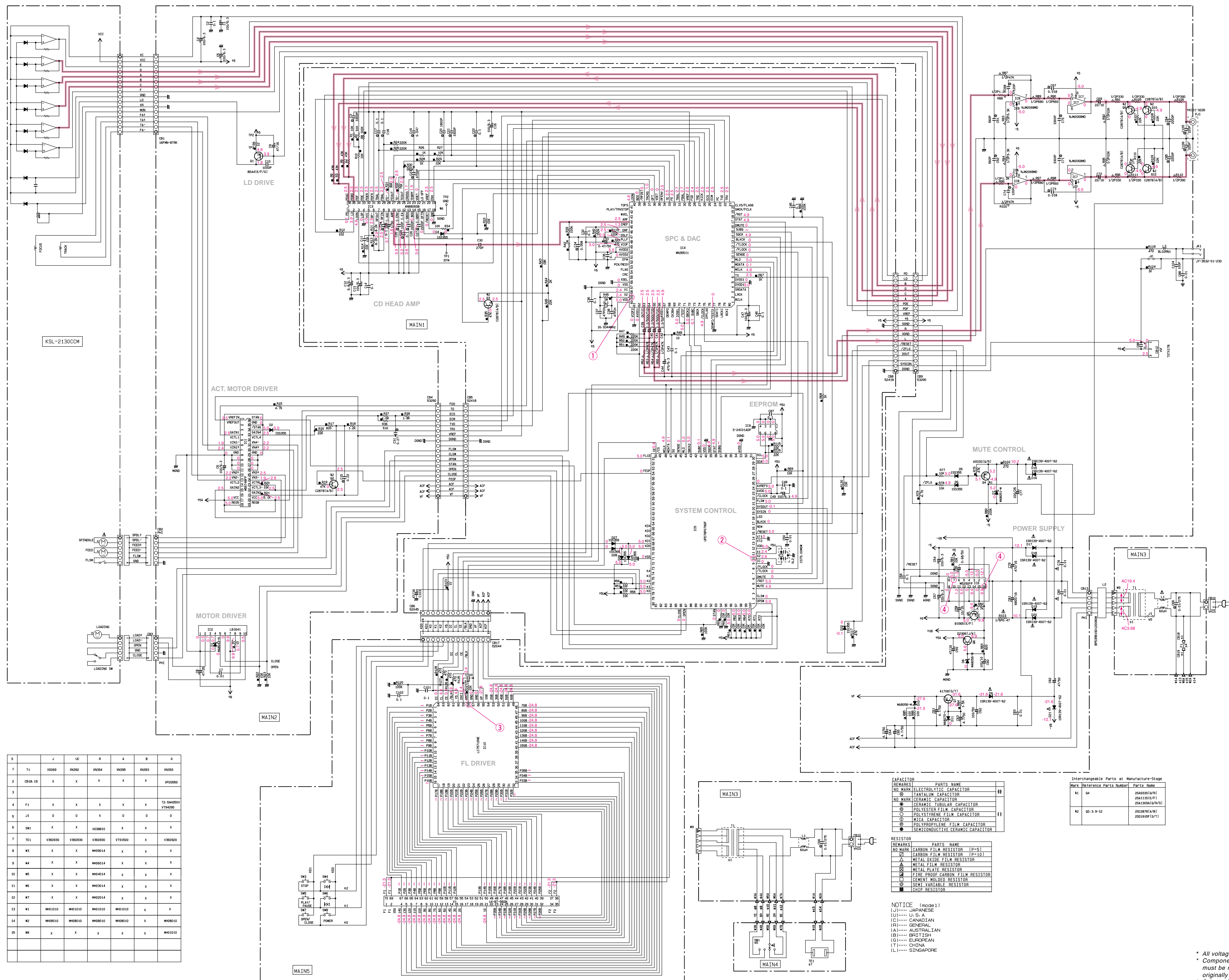
CIRCUIT CHANGES BY MARKET.

	U, C	R	A	B	G	J
CB18, 19	X	X	X	X	O	X
F1	X	X	X	X	O	X
J1	O	X	O	O	O	O
SW1	X	O	X	X	X	X
TE1	O	O	O	X	O	O

O : USED  
 X : NOT USED



SCHEMATIC DIAGRAM



S	J	UC	R	A	B	G
1	T1	X5069	XN392	XN394	XN395	XN393
2	CR18-19	X	X	X	X	VP0560
3						
4	F1	X	X	X	X	TD-54N20V Y784292
5	J1	0	0	X	0	0
6	DM1	X	X	V33810	X	X
7	TEL	V36090	V36090	V36090	V36090	X
8	W3	X	X	M30314	X	X
9	W4	X	X	M30314	X	X
10	W5	X	X	M30314	X	X
11	W6	X	X	M30314	X	X
12	W7	X	X	M30314	X	X
13	W1	M30100	M30100	M30100	M30100	X
14	W2	M30100	M30100	M30100	M30100	X
15	W8	X	X	X	X	X

CAPACITOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
○	CERAMIC DISK CAPACITOR
○	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
○	MICA CAPACITOR
○	POLYPROPYLENE FILM CAPACITOR
○	SEMICONDUCTIVE CERAMIC CAPACITOR

RESISTOR

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=6)
○	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
△	METAL FILM RESISTOR
△	METAL PLATE RESISTOR
△	FILM PROOF CARBON FILM RESISTOR
△	THICK FILM RESISTOR
△	SEMI VARIABLE RESISTOR
△	ICHP RESISTOR

Interchangeable Parts at Manufacture-Stage

Mark	Reference Parts Number	Parts Name
81	04	25493310/R1 25410510/R1 254103010/R1
82	02-3-9-12	2528781A/R1 25289291/R1

NOTICE (mode1)  
 (J)..... JAPANESE  
 (U)..... U.S.A.  
 (C)..... CANADIAN  
 (R)..... GENERAL  
 (A)..... AUSTRALIAN  
 (B)..... BRITISH  
 (G)..... EUROPEAN  
 (T)..... CHINA  
 (L)..... SINGAPORE

\* All voltage are measured with a 10MΩ/V DC electric volt meter.  
 \* Components having special characteristics are marked with a triangle and must be replaced with parts having specifications equal to those originally installed.  
 \* Schematic diagram is subject to change without notice.

# PARTS LIST

## ■ ELECTRICAL PARTS

### ■ WARNING

Components having special characteristics are marked  $\triangle$  and must be replaced with parts having specifications equal to those originally installed.

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the part Nos. of the carbon resistors, refer to the last page.

### ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS :

C.A.EL.CHP	: CHIP ALUMI. ELECTROLYTIC CAP	L.EMIT	: LIGHT EMITTING MODULE
C.CE	: CERAMIC CAP	LED.DSPLY	: LED DISPLAY
C.CE.ARRAY	: CERAMIC CAP ARRAY	LED.INFRD	: LED, INFRARED
C.CE.CHP	: CHIP CERAMIC CAP	MODUL.RF	: MODULATOR, RF
C.CE.ML	: MULTILAYER CERAMIC CAP	PHOT.CPL	: PHOTO COUPLER
C.CE.M.CHP	: CHIP MULTILAYER CERAMIC CAP	PHOT.INTR	: PHOTO INTERRUPTER
C.CE.SAFTY	: RECOGNIZED CERAMIC CAP	PHOT.RFLCT	: PHOTO REFLECTOR
C.CE.TUBLR	: CERAMIC TUBULAR CAP	PIN.TEST	: PIN, TEST POINT
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP	PLST.RIVET	: PLASTIC RIVET
C.EL	: ELECTROLYTIC CAP	R.ARRAY	: RESISTOR ARRAY
C.MICA	: MICA CAP	R.CAR	: CARBON RESISTOR
C.ML.FLM	: MULTILAYER FILM CAP	R.CAR.CHP	: CHIP RESISTOR
C.MP	: METALLIZED PAPER CAP	R.CAR.FP	: FLAME PROOF CARBON RESISTOR
C.MYLAR	: MYLAR FILM CAP	R.FUS	: FUSABLE RESISTOR
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP	R.MTL.CHP	: CHIP METAL FILM RESISTOR
C.PAPER	: PAPER CAPACITOR	R.MTL.FLM	: METAL FILM RESISTOR
C.PLS	: POLYSTYRENE FILM CAP	R.MTL.OXD	: METAL OXIDE FILM RESISTOR
C.POL	: POLYESTER FILM CAP	R.MTL.PLAT	: METAL PLATE RESISTOR
C.POLY	: POLYETHYLENE FILM CAP	RSNR.CE	: CERAMIC RESONATOR
C.PP	: POLYPROPYLENE FILM CAP	RSNR.CRYS	: CRYSTAL RESONATOR
C.TNTL	: TANTALUM CAP	R.TW.CEM	: TWIN CEMENT FIXED RESISTOR
C.TNTL.CHP	: CHIP TANTALUM CAP	R.WW	: WIRE WOUND RESISTOR
C.TRIM	: TRIMMER CAP	SCR.BND.HD	: BIND HEAD B-TITE SCREW
CN	: CONNECTOR	SCR.BW.HD	: BW HEAD TAPPING SCREW
CN.BS.PIN	: CONNECTOR, BASE PIN	SCR.CUP	: CUP TITE SCREW
CN.CANNON	: CONNECTOR, CANNON	SCR.TERM	: SCREW TERMINAL
CN.DIN	: CONNECTOR, DIN	SCR.TR	: SCREW, TRANSISTOR
CN.FLAT	: CONNECTOR, FLAT CABLE	SUPRT.PCB	: SUPPORT, P.C.B.
CN.POST	: CONNECTOR, BASE POST	SURG.PRTCT	: SURGE PROTECTOR
COIL.MX.AM	: COIL, AM MIX	SW.TACT	: TACT SWITCH
COIL.AT.FM	: COIL, FM ANTENNA	SW.LEAF	: LEAF SWITCH
COIL.DT.FM	: COIL, FM DETECT	SW.LEVER	: LEVER SWITCH
COIL.MX.FM	: COIL, FM MIX	SW.MICRO	: MICRO SWITCH
COIL.OUTPT	: OUTPUT COIL	SW.PUSH	: PUSH SWITCH
DIOD.ARRAY	: DIODE ARRAY	SW.RT.ENC	: ROTARY ENCODER
DIODE.BRG	: DIODE BRIDGE	SW.RT.MTR	: ROTARY SWITCH WITH MOTOR
DIODE.CHP	: CHIP DIODE	SW.RT	: ROTARY SWITCH
DIODE.VAR	: VARACTOR DIODE	SW.SLIDE	: SLIDE SWITCH
DIOD.Z.CHP	: CHIP ZENER DIODE	TERM.SP	: SPEAKER TERMINAL
DIODE.ZENR	: ZENER DIODE	TERM.WRAP	: WRAPPING TERMINAL
DSCR.CE	: CERAMIC DISCRIMINATOR	THRMST.CHP	: CHIP THERMISTOR
FER.BEAD	: FERRITE BEADS	TR.CHP	: CHIP TRANSISTOR
FER.CORE	: FERRITE CORE	TR.DGT	: DIGITAL TRANSISTOR
FET.CHP	: CHIP FET	TR.DGT.CHP	: CHIP DIGITAL TRANSISTOR
FL.DSPLY	: FLUORESCENT DISPLAY	TRANS	: TRANSFORMER
FLTR.CE	: CERAMIC FILTER	TRANS.PULS	: PULSE TRANSFORMER
FLTR.COMB	: COMB FILTER MODULE	TRANS.PWR	: POWER TRANSFORMER ASS'y
FLTR.LC.RF	: LC FILTER ,EMI	TUNER.AM	: TUNER PACK, AM
GND.MTL	: GROUND PLATE	TUNER.FM	: TUNER PACK, FM
GND.TERM	: GROUND TERMINAL	TUNER.PK	: FRONT-END TUNER PACK
HOLDER.FUS	: FUSE HOLDER	VR	: ROTARY POTENTIOMETER
IC.PRTCT	: IC PROTECTOR	VR.MTR	: POTENTIOMETER WITH MOTOR
JUMPER.CN	: JUMPER CONNECTOR	VR.SW	: POTENTIOMETER WITH ROTARY SW
JUMPER.TST	: JUMPER, TEST POINT	VR.SLIDE	: SLIDE POTENTIOMETER
L.DTCT	: LIGHT DETECTING MODULE	VR.TRIM	: TRIMMER POTENTIOMETER

**Note)** Those parts marked with “#” are not included in the P.C.B. ass'y.

% : Note on the Main PCB

Of the main PCB part Nos., only the silver (SI) type part Nos. are included in the table.

The only different part between the gold (GD) and silver (SI) type parts is the sheet/FL that is attached to the fluorescent character display tube. When a GD type main PCB becomes necessary, order a SI type main PCB and a GD type sheet/FL (VQ948800) and replace the sheet/FL of the SI type main PCB with the GD type sheet/FL.

Schm Ref.	PART NO.	Description
%	V4220700	P.C.B. SI:MAIN(UC)
%	V4220800	P.C.B. SI:MAIN(R)
%	V4220900	P.C.B. SI:MAIN(A)
%	V4221000	P.C.B. SI:MAIN(B)
%	V4221100	P.C.B. SI:MAIN(G)
CB1	V2731000	CN.FMN 16P
CB2	VB390200	CN.BS.PIN 6P
CB3	VB390100	CN.BS.PIN 5P
* CB4	VQ964000	CN.BS.PIN 19P
* CB5	VQ962200	CN.BS.PIN 19P
* CB6	VN394900	CN.BS.PIN 14P
CB8	VQ962300	CN.BS.PIN 20P
CB9	VQ964100	CN.BS.PIN 20P
CB10	VG879900	CN.BS.PIN 2P
CB12	VT707200	L.EMIT TOTX178
CB13	VB390100	CN.BS.PIN 5P
CB17	VF982200	CN.BS.PIN 14P
CB18	VP206500	HOLDER.FUS EYF-52BC(G)
CB19	VP206500	HOLDER.FUS EYF-52BC(G)
C1	UR818100	C.EL 100uF 6.3V
C2	UB045100	C.CE.M.CHP 0.1uF 50V
C3	UA953330	C.MYLAR 3300pF 50V
C4	UR818100	C.EL 100uF 6.3V
C5	UR818100	C.EL 100uF 6.3V
C6	UR818100	C.EL 100uF 6.3V
C7	UB044100	C.CE.M.CHP 0.01uF 50V
C8	UR847470	C.EL 47uF 25V
C9	UR837470	C.EL 47uF 16V
C10	UB013100	C.CE.M.CHP 1000pF 50V
C11	UB051100	C.CE.M.CHP 10pF 50V
C12	VR498100	C.EL 6.8uF 6.3V
C13	UR818100	C.EL 100uF 6.3V
C14	UB045100	C.CE.M.CHP 0.1uF 50V
C15	UA655220	C.MYLAR 0.22uF 50V
C16	UR818100	C.EL 100uF 6.3V
C17	UA655100	C.MYLAR 0.1uF 50V
C18	UA655100	C.MYLAR 0.1uF 50V
C19	UA954470	C.MYLAR 0.047uF 50V
C20	UA953180	C.MYLAR 1800pF 50V
C21	UA953120	C.MYLAR 1200pF 50V
C22	UA655100	C.MYLAR 0.1uF 50V
C23	UA953470	C.MYLAR 4700pF 50V
C24	UA655100	C.MYLAR 0.1uF 50V
C25	UA952100	C.MYLAR 100pF 50V
C26	UA953220	C.MYLAR 2200pF 50V
C27	UA953220	C.MYLAR 2200pF 50V
C28	UR866100	C.EL 1uF 50V
C29	UA655100	C.MYLAR 0.1uF 50V
C30	UB012270	C.CE.M.CHP 270pF 50V
C31	UA655270	C.MYLAR 0.27uF 50V
C32	UB045100	C.CE.M.CHP 0.1uF 50V
C33	UN865470	C.EL 0.47uF 50V
C34	UA954680	C.MYLAR 0.068uF 50V
C35	UB045100	C.CE.M.CHP 0.1uF 50V
C36	UB045100	C.CE.M.CHP 0.1uF 50V
* C37	VJ901100	C.CE.M.CHP 47pF 50V
* C38	VJ901100	C.CE.M.CHP 47pF 50V
* C39	VG290600	C.EL 2.2uF 50V
* C40	VG290600	C.EL 2.2uF 50V
* C41	VG290600	C.EL 2.2uF 50V
* C42	VG290600	C.EL 2.2uF 50V
* C43	UB045100	C.CE.M.CHP 0.1uF 50V

\* New Parts

Schm Ref.	PART NO.	Description
C44	VG286500	C.EL 470uF 10V
C45	UB045100	C.CE.M.CHP 0.1uF 50V
C46	UB045100	C.CE.M.CHP 0.1uF 50V
C47	UR818100	C.EL 100uF 6.3V
C48	UB045100	C.CE.M.CHP 0.1uF 50V
C49	UJ818100	C.EL 100uF 10V
C50	UB044100	C.CE.M.CHP 0.01uF 50V
C51	UA952560	C.MYLAR 560pF 50V
C52	UA952560	C.MYLAR 560pF 50V
C54	UR818100	C.EL 100uF 6.3V
C55	UR865680	C.EL 0.68uF 50V
C56	UB045100	C.CE.M.CHP 0.1uF 50V
C57	UR818100	C.EL 100uF 6.3V
C58	UR837100	C.EL 10uF 16V
C59	UR837470	C.EL 47uF 16V
C60	UR828100	C.EL 100uF 10V
C61	UR866470	C.EL 4.7uF 50V
C62	UR868100	C.EL 100uF 50V
C63	UR866470	C.EL 4.7uF 50V
C64	UR866470	C.EL 4.7uF 50V
C65	UR866470	C.EL 4.7uF 50V
C66	VS741700	C.CE.SAFTY 0.01uF 275V
C67	UA954180	C.MYLAR 0.018uF 50V
C68	UA952120	C.MYLAR 120pF 50V
C69	VG287300	C.EL 22uF 50V
C70	UA953330	C.MYLAR 3300pF 50V
C71	UA953330	C.MYLAR 3300pF 50V
C72	VG287300	C.EL 22uF 50V
C73	UA954180	C.MYLAR 0.018uF 50V
C74	UA952120	C.MYLAR 120pF 50V
C77	UR848220	C.EL 220uF 25V
△ C78	FG644100	C.CE 0.01uF 50V
C79	VG287900	C.EL 470uF 16V
△ C80	FG644100	C.CE 0.01uF 50V
C81	Vi578400	C.EL 6800uF 16V
C82	UR867470	C.EL 47uF 50V
C83	FG644100	C.CE 0.01uF 50V
C84	UA953220	C.MYLAR 2200pF 50V
C85	UA953220	C.MYLAR 2200pF 50V
C86	UB045100	C.CE.M.CHP 0.1uF 50V
C87	UB045100	C.CE.M.CHP 0.1uF 50V
C88	UB044100	C.CE.M.CHP 0.01uF 50V
C100	UB051240	C.CE.M.CHP 24pF 50V
C101	UB045100	C.CE.M.CHP 0.1uF 50V
C102	UB045100	C.CE.M.CHP 0.1uF 50V
C103	UR837470	C.EL 47uF 16V
C104	UB052100	C.CE.M.CHP 100pF 50V
C105	UA952220	C.MYLAR 220pF 50V
C106	UA952220	C.MYLAR 220pF 50V
* D1	VU991900	DIODE.ZENR MA8043-H 4.4V
D2	VT332900	DIODE 1SS355
D4	VT332900	DIODE 1SS355
D5	VT332900	DIODE 1SS355
D6	VT332900	DIODE 1SS355
* D7	VU992600	DIODE.ZENR MA8051-M 5.1V
D8	VU993000	DIODE.ZENR MA8056-M 5.6V
△ D9	VU264200	DIODE 1SR139-400
D10	VU993000	DIODE.ZENR MA8056-M 5.6V
* D11	VU999400	DIODE.ZENR MA8270-L 26V
△ D15	VU264200	DIODE 1SR139-400
△ D16	VU264200	DIODE 1SR139-400
△ D17	VU264200	DIODE 1SR139-400

\* New Parts

CDX-E100

Schm Ref.	PART NO.	Description
△ D18	VU264200	DIODE 1SR139-400
△ D19	VU264200	DIODE 1SR139-400
△ D20	VU264200	DIODE 1SR139-400
△ D21	VU264200	DIODE 1SR139-400
D22	VT332900	DIODE 1SS355
D25	VT332900	DIODE 1SS355
D26	VT332900	DIODE 1SS355
D27	VT332900	DIODE 1SS355
D28	VT332900	DIODE 1SS355
△ F1	VT942900	FUSE TH2.5A 250V(G)
HS1	Vi835500	HEAT.SINK PH-0124S-B
HS2	VA119100	HEAT.SINK
IC1	XT526A00	IC M56748FP CD-DRIVER
IC2	XF494A00	IC LB1641
IC3	XS741A00	IC AN8806SB
IC4	XV628A00	IC MN35511
IC5	XW463A00	IC uPD78P078GF CPU
* IC6	XU056A00	IC M5290FP 5V REGUL
IC7	XJ553A00	IC NJM2068MD
IC8	XJ553A00	IC NJM2068MD
IC9	XS070A00	IC S-24C01ADP EEPROM
IC10	XR188A00	IC LC75710NE FLD
* JK1	V3576300	JACK 2P
△ L1	VU984000	FLTR IE-UU10.5-009
L2	Vi491100	FER.CORE BP53RB19012080M
L3	VP133800	FER.BEAD BL02RN1-R62T4
PJ1	VV411100	JACK.PIN 2P
Q1	iB054430	TR 2SB544 D,E,F,G
Q2	iC287820	TR 2SC2878 A,B
Q3	iC287820	TR 2SC2878 A,B
Q4	iA093320	TR 2SA933S Q,R
Q5	VS883300	TR 2SB1565 E,F
Q6	VR510800	TR 2SD2396 J,K
Q7	VP872600	TR 2SA1708 S,T
Q9	iC287820	TR 2SC2878 A,B
Q10	iC287820	TR 2SC2878 A,B
Q11	iC287820	TR 2SC2878 A,B
Q12	iC287820	TR 2SC2878 A,B
R7	HV754100	R.CAR.FP 10Ω 1/4W
R52	HL117470	R.MTL.OXD 47KΩ 1/2W
R53	HL117470	R.MTL.OXD 47KΩ 1/2W
R54	HL117470	R.MTL.OXD 47KΩ 1/2W
R55	HL117470	R.MTL.OXD 47KΩ 1/2W
* R84	HV756150	R.CAR.FP 1.5KΩ 1/4W
R85	HV755100	R.CAR.FP 100Ω 1/4W
R86	HV755100	R.CAR.FP 100Ω 1/4W
R87	HL117470	R.MTL.OXD 47KΩ 1/2W
* R88	HL116120	R.MTL.OXD 1.2KΩ 1/2W
* R89	HL115680	R.MTL.OXD 680Ω 1/2W
* R90	HL115560	R.MTL.OXD 560Ω 1/2W
* R91	HL115330	R.MTL.OXD 330Ω 1/2W
* R92	HL117220	R.MTL.OXD 22KΩ 1/2W
* R93	HL116330	R.MTL.OXD 3.3KΩ 1/2W
* R94	HL116330	R.MTL.OXD 3.3KΩ 1/2W
* R95	HL117220	R.MTL.OXD 22KΩ 1/2W
* R96	HL115330	R.MTL.OXD 330Ω 1/2W
* R97	HL115680	R.MTL.OXD 680Ω 1/2W
* R98	HL115560	R.MTL.OXD 560Ω 1/2W
* R99	HL116120	R.MTL.OXD 1.2KΩ 1/2W
R100	HL117470	R.MTL.OXD 47KΩ 1/2W
R102	HV755270	R.CAR.FP 270Ω 1/4W
△ R103	V2370600	R.FUS 0.47Ω 1/6W

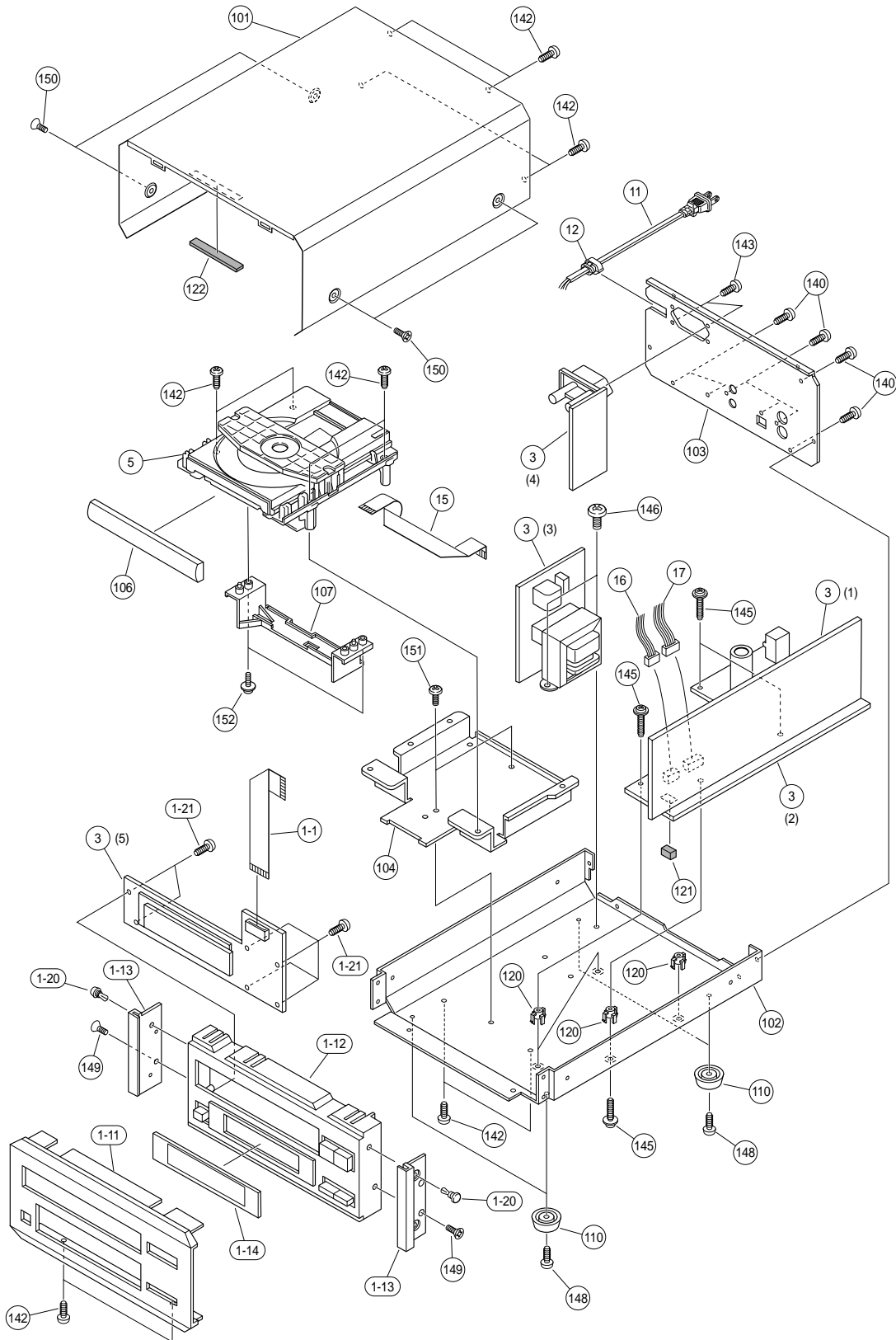
\* New Parts

Schm Ref.	PART NO.	Description
* R105	HL115330	R.MTL.OXD 330Ω 1/2W
* R106	HL115390	R.MTL.OXD 390Ω 1/2W
* R111	HL115330	R.MTL.OXD 330Ω 1/2W
* R112	HL115390	R.MTL.OXD 390Ω 1/2W
* SW1	VG388100	VOLT.SELECT HXW0244-01-080(R)
SW2	VG392900	SW.TACT SKHVAA
SW3	VG392900	SW.TACT SKHVAA
SW4	VG392900	SW.TACT SKHVAA
SW5	VG392900	SW.TACT SKHVAA
SW6	VG392900	SW.TACT SKHVAA
SW7	VG392900	SW.TACT SKHVAA
SW8	VG392900	SW.TACT SKHVAA
△ T1	XN392A00	TRANS.PWR (UC)
△ T1	XN393A00	TRANS.PWR (BG)
△ T1	XN394A00	TRANS.PWR (R)
△ T1	XN395A00	TRANS.PWR (A)
△ * TE1	V3609200	OUTLET.AC 1P(G)
△ * TE1	V3609300	OUTLET.AC 1P(UCR)
△ TE1	VT915000	OUTLET.AC 2P(A)
TP1	VL448600	JUMPER.TST
TP2	VL448600	JUMPER.TST
* V1	V3618100	FL.DSPLY 14-BT-56GN
XL1	VJ719800	RSNR.CRYS 16.9344MHz
XL2	VU763600	RSNR.CE 5MHz
* V3750200		PIN L=70(UCRAG)
V3750100		PIN L=50(B)
* V3688400		SHEET.FL SI
% VQ948800		SHEET.FL GD
V3747500		SUPRT
V3747400		SPACER.FL T4x6x18
BB071360		SCR.TERM 8.3x13
RD254100	R.CAR.CHP	10Ω 1/10W
RD254470	R.CAR.CHP	47Ω 1/10W
RD255100	R.CAR.CHP	100Ω 1/10W
RD255470	R.CAR.CHP	470Ω 1/10W
RD255820	R.CAR.CHP	820Ω 1/10W
RD256100	R.CAR.CHP	1KΩ 1/10W
RD256120	R.CAR.CHP	1.2KΩ 1/10W
* RD256160	R.CAR.CHP	1.6KΩ 1/10W
RD256180	R.CAR.CHP	1.8KΩ 1/10W
RD256200	R.CAR.CHP	2KΩ 1/10W
RD256470	R.CAR.CHP	4.7KΩ 1/10W
RD256510	R.CAR.CHP	5.1KΩ 1/10W
RD256820	R.CAR.CHP	8.2KΩ 1/10W
RD257100	R.CAR.CHP	10KΩ 1/10W
RD257180	R.CAR.CHP	18KΩ 1/10W
RD257220	R.CAR.CHP	22KΩ 1/10W
RD257360	R.CAR.CHP	36KΩ 1/10W
RD257430	R.CAR.CHP	43KΩ 1/10W
RD257470	R.CAR.CHP	47KΩ 1/10W
RD257510	R.CAR.CHP	51KΩ 1/10W
RD257750	R.CAR.CHP	75KΩ 1/10W
RD257910	R.CAR.CHP	91KΩ 1/10W
RD258100	R.CAR.CHP	100KΩ 1/10W
RD258150	R.CAR.CHP	150KΩ 1/10W
RD258180	R.CAR.CHP	180KΩ 1/10W
RD258220	R.CAR.CHP	220KΩ 1/10W
RD259100	R.CAR.CHP	1MΩ 1/10W

\* New Parts

CDX-E100

# EXPLODED VIEW



### % : Note on the Main PCB

Of the main PCB part Nos., only the silver (SI) type part Nos. are included in the table.

The only different part between the gold (GD) and silver (SI) type parts is the sheet/FL that is attached to the fluorescent character display tube. When a GD type main PCB becomes necessary, order a SI type main PCB and a GD type sheet/FL (VQ948800) and replace the sheet/FL of the SI type main PCB with the GD type sheet/FL.

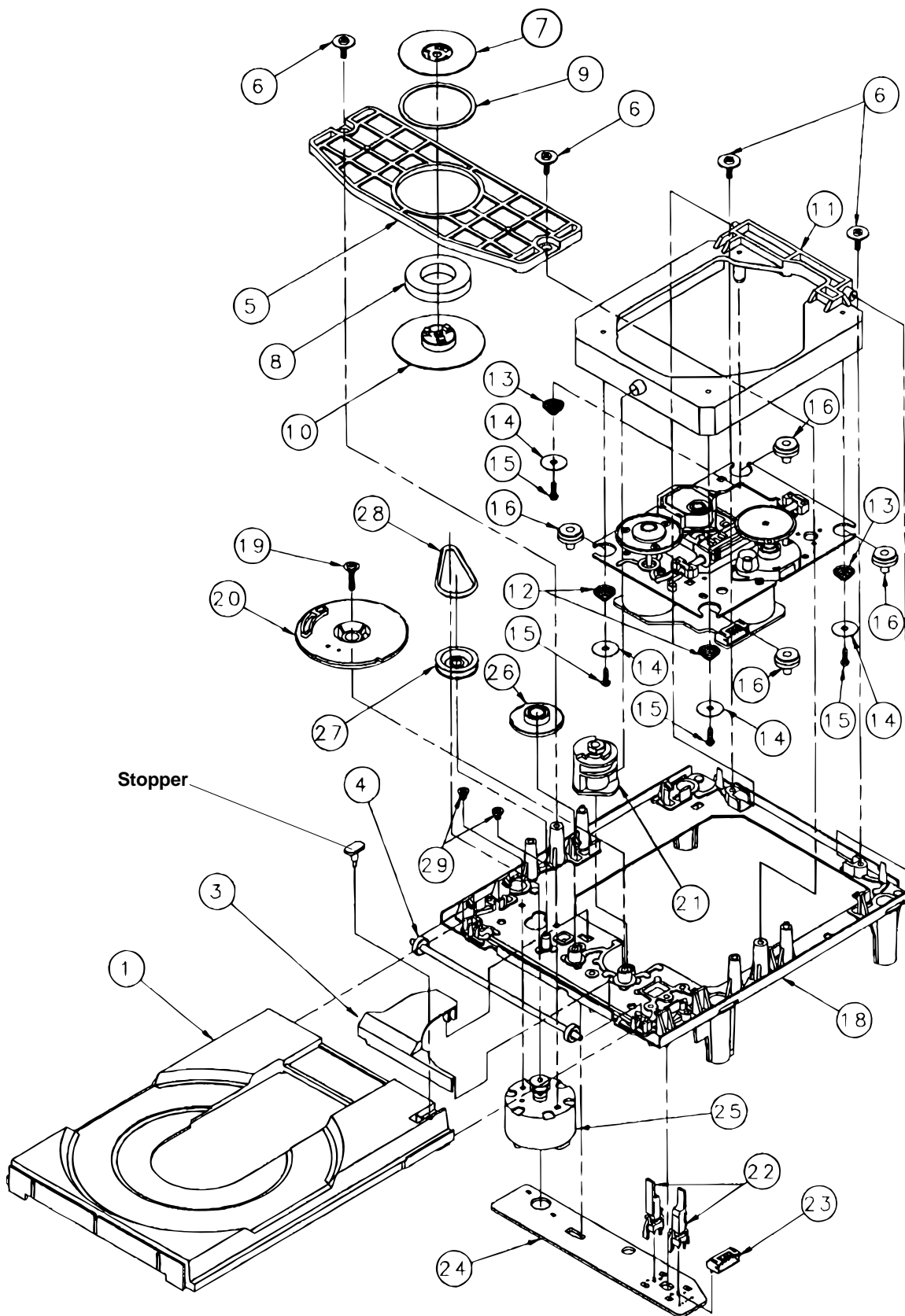
## MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
* 1- 1	MF114120	FLEXIBLE FLAT CABLE	14P 120mm	
* 1-11	V3685800	FRONT PANEL		SI
* 1-11	V3809800	FRONT PANEL		GD
* 1-12	V3686900	SUB PANEL-CDX		SI
* 1-12	V3810500	SUB PANEL-CDX		GD
* 1-13	V3687400	PANEL, SIDE-H81		
* 1-14	V3688000	SHEET, WINDOW-CDX		
1-20	VQ368600	PUSH RIVET	P3555-B	
1-21	VF617600	PAN HEAD P-TITE SCREW	2.6x8 FCRM3-BL	
%* 3	V4220700	P.C.B. ASS'Y	SI:MAIN	SI (UC)
%* 3	V4220800	P.C.B. ASS'Y	SI:MAIN	SI (R)
%* 3	V4220900	P.C.B. ASS'Y	SI:MAIN	SI (A)
%* 3	V4221000	P.C.B. ASS'Y	SI:MAIN	SI (B)
%* 3	V4221100	P.C.B. ASS'Y	SI:MAIN	SI (G)
* 5	VZ573200	CD MECHANISM UNIT	KSL-2130CCM	
△ 11	V2296800	POWER CORD ASS'Y		(A)
△ 11	V2363800	POWER CORD ASS'Y		(UC)
△ 11	VN363700	POWER CORD ASS'Y		(G)
△ 11	VV437300	POWER CORD ASS'Y		(B)
△ 11	VZ542500	POWER CORD ASS'Y		(R)
12	V2438700	CORD STOPPER	'10P1	
15	V3340500	CONNECTOR, FLAT CABLE	16P 230mm	
16	MF705100	CONNECTOR ASS'Y	5P 100mm	
17	MF706100	CONNECTOR ASS'Y	6P 100mm	
* 101	V3681700	TOP COVER		SI
* 101	V3809200	TOP COVER		GD
* 102	V3684500	CHASSIS		
* 103	V3682700	REAR PANEL		(UC)
* 103	V3682800	REAR PANEL		(R)
* 103	V3682900	REAR PANEL		(A)
* 103	V3683000	REAR PANEL		(B)
* 103	V3683100	REAR PANEL		(G)
* 104	V3684600	FRAME, MECH-CDX		
* 106	V3687200	LID, CDX		SI
* 106	V3810900	LID, CDX		GD
107	VZ262200	SUPPORT	PU	
* 110	V3688500	LEG	M0080-M0	
120	VR264400	SPACER	H8	
121	VQ390100	DAMPER	8x8x15	
122	VP857700	DAMPER	4x6x5	
140	VN413300	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2-BL	
142	EP600830	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
143	EP600250	BIND HEAD B-TITE SCREW	3x8 ZMC2-Y	(UCRAG)
145	VT669400	PW HEAD B-TITE SCREW	3x15-8 MFC2	
146	V2728500	BIND HEAD S-TITE SCREW	4x7 MFZN2-BL	
148	EL300650	PW HEAD B-TITE SCREW	3x8-8 FCRM3-BL	
149	EP600790	FLAT HEAD B-TITE SCREW	3x8 MFZN2-BL	
* 150	VY712800	PW HEAD B-TITE SCREW	3x8-8 MFNI33	
151	EP630210	BIND HEAD S-TITE SCREW	3x6 ZMC2-BL	
152	V2128100	PW HEAD S-TITE SCREW	3x12-8 MFZN2-Y	
%	VQ948800	SHEET, FL	GD	GD

\* New Parts

CDX-E100

# EXPLODED VIEW (CD Mechanism Unit)



\* The stopper is not supplied with the tray as a spare part.

When replacing the tray, keep the removed stopper and reuse it.

Should it be lost and a new one be necessary, order service part ⑱ Main Chassis (S) and remove the stopper only from it and use it as a spare part.

## MECHANICAL PARTS (CD Mechanism Unit)

Ref. No.	PART NO.	Description	Remarks	Markets
*	VZ573200	CD MECHANISM UNIT	KSL-2130CCM	
* 1	CX680620	TRAY (C)	2130	264629001
* 3	CX675250	GEAR COVER (S)		262554401
* 4	CX675210	TRAY GEAR (S)		262553501
* 5	AX619150	CHUCKING PLATE (S)		262554601
* 6	EX602890	BW HEAD P-TITE SCREW	2.6x7	262629401
* 7	BX602660	CHUCKING YOKE (S)		262553701
* 8	NX610570	MAGNET ASS'Y		145249321
* 9	CX675240	DAMPER (S)		262554102
* 10	NX636010	CHUCKING PULLEY		264629101
* 11	AX624650	SUB CHASSIS ASS'Y (S)		264628801
* 12	AX624640	COIL, SPRING (F)		264723601
* 13	AX624630	COIL, SPRING (R)		262723501
* 14	AX624660	WASHER	2130	264628901
* 15	EX604270	P-TITE SCREW	2.6x10	768513511
* 16	AX624620	INSULATOR		262723401
* 18	AX619160	MAIN CHASSIS (S), OUTSERT		262555206
* 19	VH554700	BW HEAD P-TITE SCREW	2.6x16	331950151
* 20	CX675270	DRIVE GEAR (S)		262554701
* 21	CX675260	CONTROL CAM (S)		262554504
* 22	KX604780	LEAF SWITCH		169266711
* 23	LX608390	CONNECTOR PIN	5P	156472111
* 24	NX613050	PWB, LOADIND (S)		164052311
* 25	JX601470	LOADING MOTOR ASS'Y		X26251171
* 26	CX675200	CENTER GEAR (S)		262527402
* 27	CX675220	LOADING PULLEY (S)		262553602
* 28	CX610840	BELT, LOADING MOTOR		365338700
* 29	EX602880	SCREW	2.6x2.5	262527901

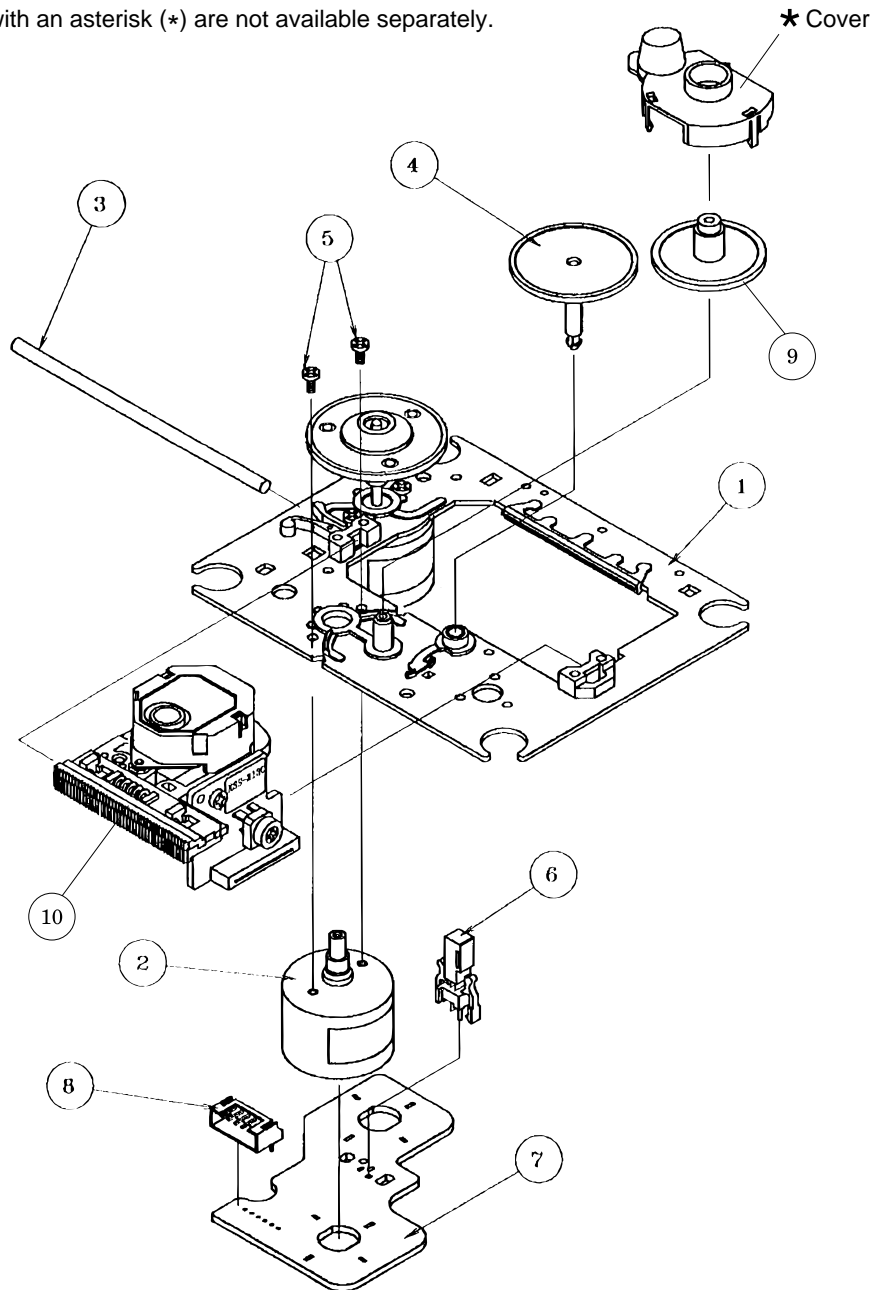
\* New Parts



## CDX-E100

# EXPLODED VIEW (Drive Unit)

Note : The parts marked with an asterisk (\*) are not available separately.



Ref. No.	PART NO.	Description	Remarks	Markets
△ *	1	NX635420 MOTOR CHASSIS ASS'Y	(MB)	X26258771
*	2	CX679710 MOTOR GEAR ASS'Y		X26257691
*	3	AX623980 SLED SHAFT		262690801
*	4	CX679720 GEAR, A	(S)	262690701
*	5	EA020036 PAN HEAD SCREW	2x3 ZMC2-Y	762125515
*	6	KX604660 LEAF SWITCH		157208511
*	7	NX613040 PWB, MOTOR	MOTOR 6P	163967812
*	8	LX610120 CONNECTOR PIN	6P	156472211
*	9	CX680030 GEAR		262700301
*	10	NX636020 OPTICAL HEAD		KSM213C

\* New Parts

# Parts List for Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	10 kΩ	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	*	11 kΩ	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 kΩ	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 kΩ	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 kΩ	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 kΩ	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 kΩ	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 kΩ	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 kΩ	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 kΩ	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 kΩ	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 kΩ	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 kΩ	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 kΩ	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 kΩ	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 kΩ	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 kΩ	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 kΩ	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 kΩ	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 kΩ	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 kΩ	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 kΩ	HF45 8110	HF45 8110
160 Ω	HJ35 5160	*	120 kΩ	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 kΩ	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 kΩ	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 kΩ	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 kΩ	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 kΩ	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 kΩ	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 kΩ	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 kΩ	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 kΩ	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 kΩ	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 kΩ	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 MΩ	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 MΩ	HJ35 9120	*
1.0 kΩ	HF45 6100	HF45 6100	1.5 MΩ	HJ35 9150	HF85 9150
1.2 kΩ	HF45 6120	HF45 6120	1.8 MΩ	HJ35 9180	HF85 9180
1.5 kΩ	HF45 6150	HF45 6150	2.2 MΩ	HJ35 9220	HF85 9220
1.8 kΩ	HF45 6180	HF45 6180	3.3 MΩ	HJ35 9330	HF85 9330
2.0 kΩ	HJ35 6200	HF85 6200	3.9 MΩ	HJ35 9390	*
2.2 kΩ	HF45 6220	HF45 6220	4.7 MΩ	HJ35 9470	HF85 9470
2.4 kΩ	HJ35 6240	HF85 6240			
2.7 kΩ	HF45 6270	HF45 6270			
3.0 kΩ	HF45 6300	HF45 6300			
3.3 kΩ	HF45 6330	HF45 6330			
3.6 kΩ	HJ35 6360	HF85 6360			
3.9 kΩ	HF45 6390	HF45 6390			
4.7 kΩ	HF45 6470	HF45 6470			
5.1 kΩ	HF45 6510	HF45 6510			
5.6 kΩ	HF45 6560	HF45 6560			
6.8 kΩ	HF45 6680	HF45 6680			
8.2 kΩ	HF45 6820	HF45 6820			
9.1 kΩ	HF45 6910	HF45 6910			

**1/4W Type**

HJ35 ○○○○

10mm

**1/4W Type**

HF45 ○○○○

**1/6W Type**

HF85 ○○○○

5mm

# **CDX-E100**

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# **YAMAHA**

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