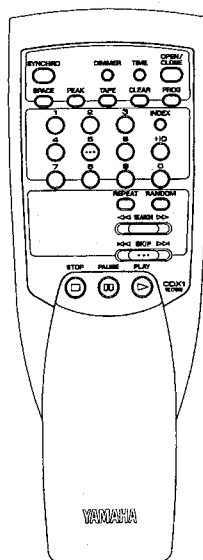
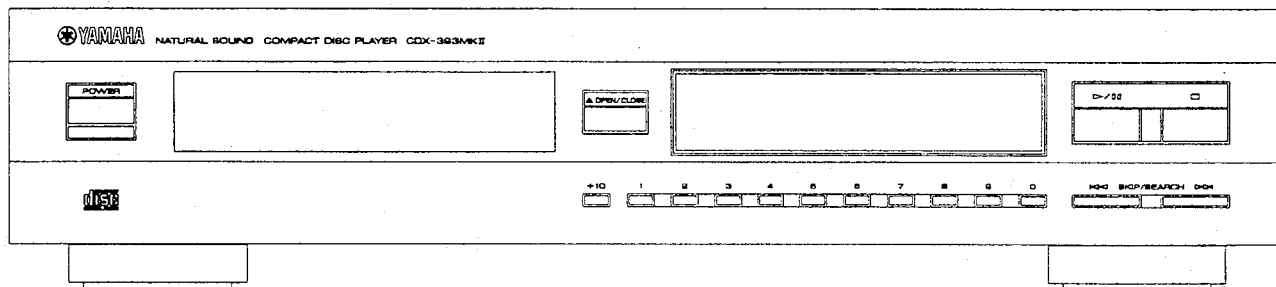


# COMPACT DISC PLAYER CDX-393MKII

## SERVICE MANUAL



### 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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This Service Manual uses recycled paper.

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**YAMAHA**

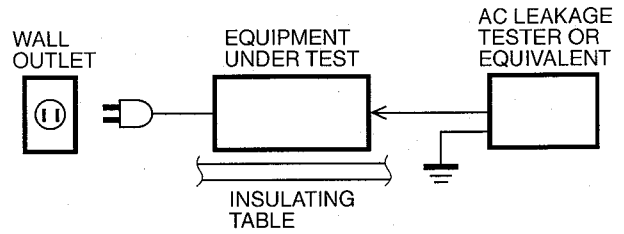
YAMAHA CORPORATION  
P.O. Box 1, Hamamatsu, Japan

2.8K-261 Printed in Japan '99.2

CDX-393MKII

## ■ TO SERVICE PERSONNEL

1. Critical Components Information.  
Components having special characteristics are marked  $\Delta$  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\*
2. When checking the laser diode emission, keep your eyes more than 30 cm away from the objective lens.

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

## WARNING: CHEMICAL CONTENT NOTICE!

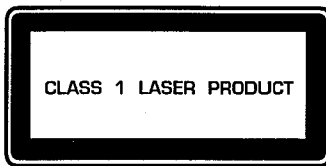
The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects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

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

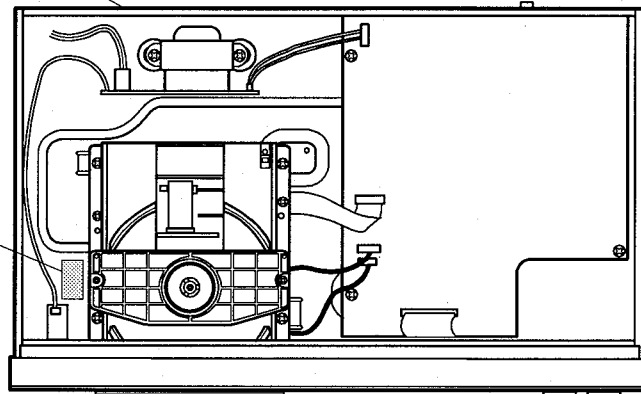
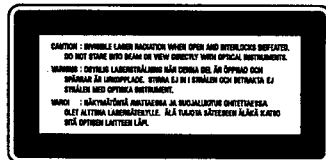
Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

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

## ① G, B models



## ② G model

**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 : INDGREG BOR KUN FORETAGES AF EN FAGMAND DA DER ER RISIKO FOR RADIOAKTIV STRÅLING.

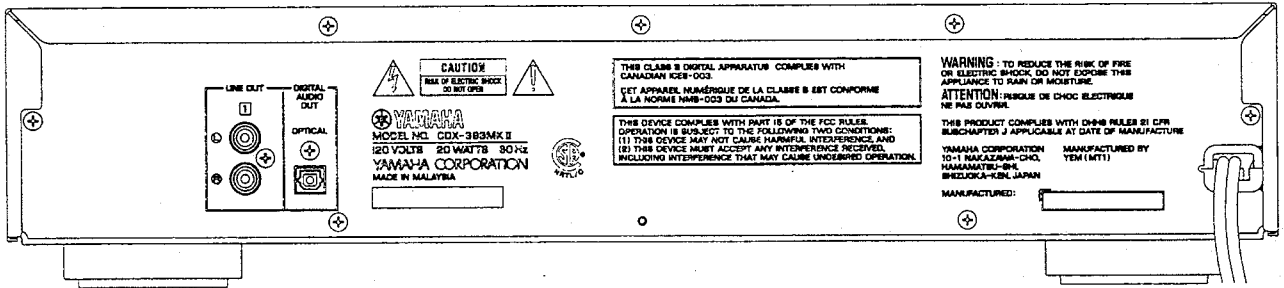
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING.  
UNDGÅ UDSAETTELSE FOR STRÅLING.

**Finnish**

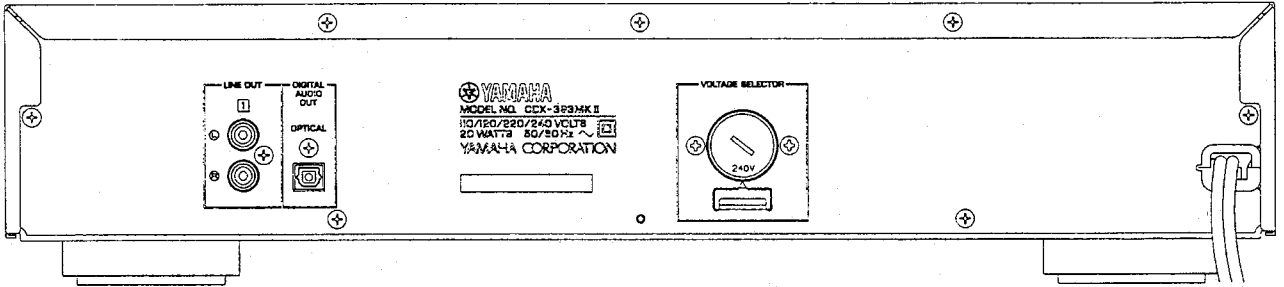
VARO! : AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

## REAR PANELS

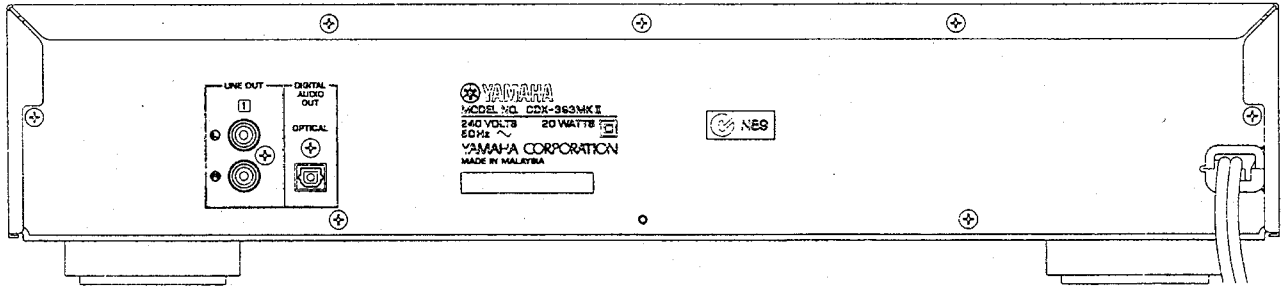
### U, C models



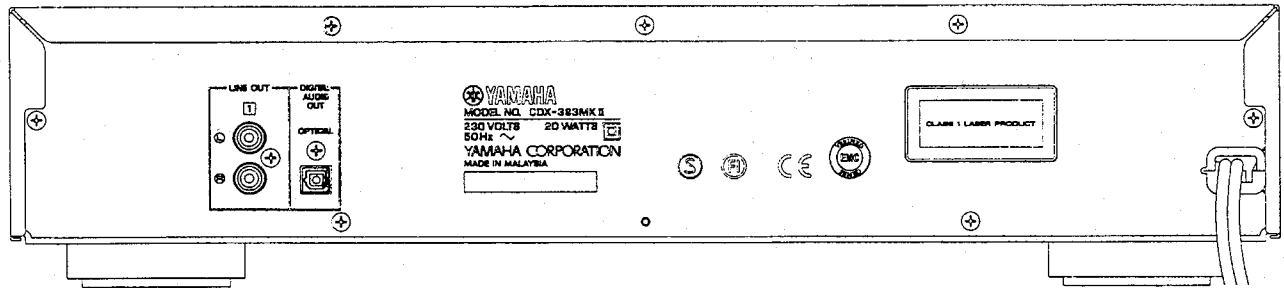
### R model



### A model



### G, B models



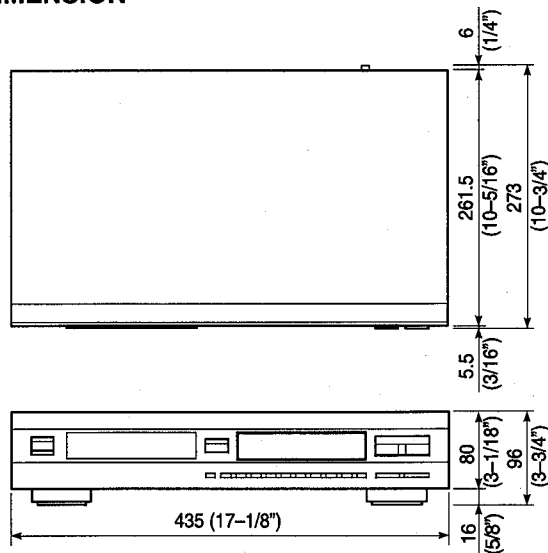
## ■ SPECIFICATIONS

<b>Output Level</b> 1kHz, 0dB	2.0 ± 0.5Vrms
<b>Signal to Noise Ratio (EIAJ)</b>	105dB
<b>Dynamic Range</b>	95dB
<b>Harmonic Distortion+Noise (1kHz)</b>	0.003%
<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>	20W
<b>Dimensions (W x H x D)</b>	435 x 96 x 273mm (17-1/8" x 3-3/4" x 10-3/4")
<b>Weight</b>	3.5kg (7 lbs 11 oz)
<b>Accessories</b>	Pin plug cord Remote control transmitter (Dry-cell : x 2: Size "AA", R06)

\*Specifications are subject to change without notice.

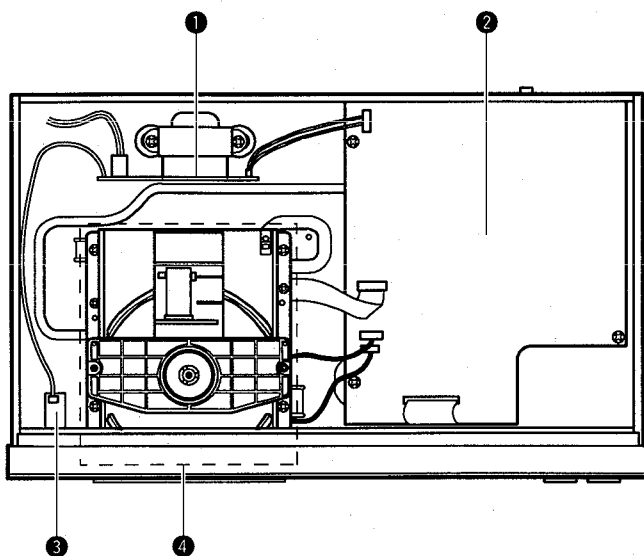
U ..... U. S. A. model    B ..... British model  
 C ..... Canadian model    G ..... European model  
 A ..... Australian model    R ..... General model

## ● DIMENSION



Unit : mm (inch)

## ■ INTERNAL VIEW



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

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

**1. Removal of Top Cover**

- a. Remove 4 screws ( ① ) and 3 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. Press the OPEN/CLOSE key and open the tray. Then remove the Lid attached to the front edge of the tray in Fig. 2. Press the OPEN/CLOSE key and close the tray, then unplug the power cord.
- b. Remove 2 connectors (CB6, CB413) in Fig. 2.
- c. Remove 6 ( ③ ) screws in Fig. 1.
- d. Remove 2 hooks and then pull the Front Panel forward.

**3. Removal of CD Mechanism Unit**

- a. Remove 3 connectors (CB3, CB4, CB5) in Fig. 2.
- b. Remove 4 screws ( ④ ) in Fig. 1.

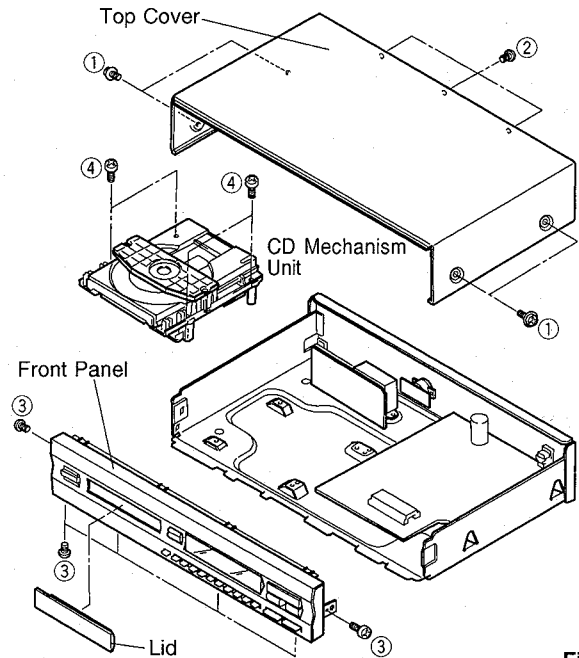


Fig. 1

**4. Removal of Tray Unit**

- a. Remove 2 screws ( ⑤ ) 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.

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

- a. Remove 2 screws ( ⑥ ) in Fig. 4.
- b. Remove 4 screws ( ⑦ ) and then remove the Drive Unit in Fig. 4.
- c. Remove the gear A in Fig. 5.
- d. Pull out the Sled Shaft in Fig. 5.
- e. Remove the Pick-up Head.

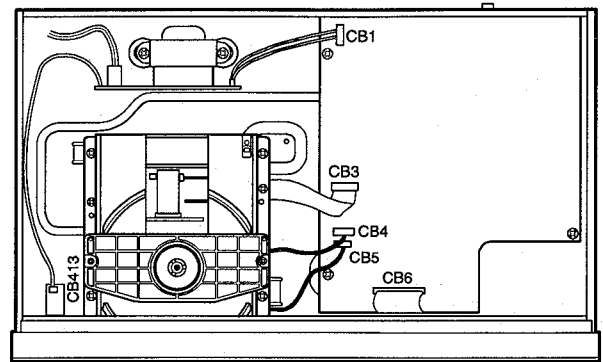


Fig. 2

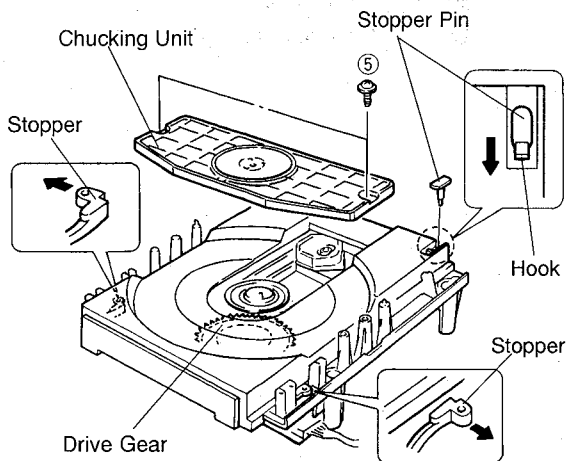


Fig. 3

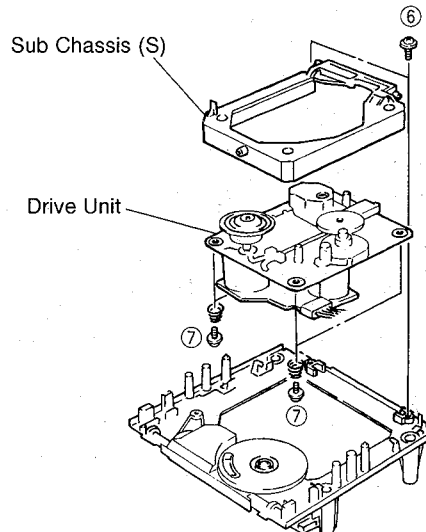
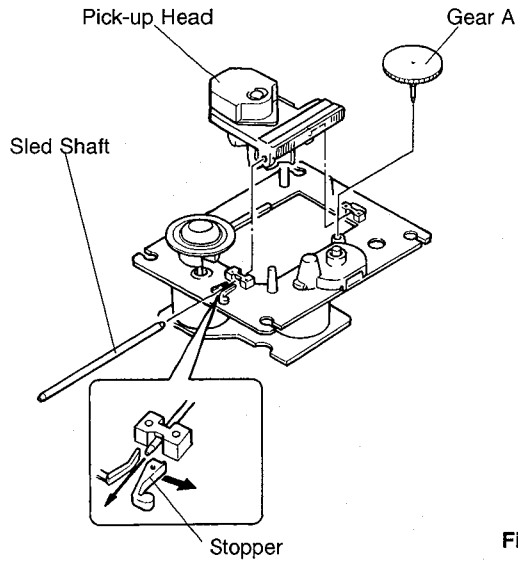


Fig. 4



Check that the disc table height is as specified below.

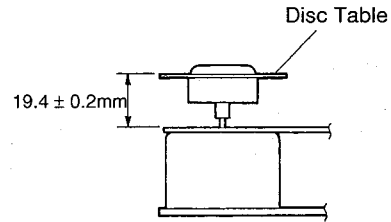
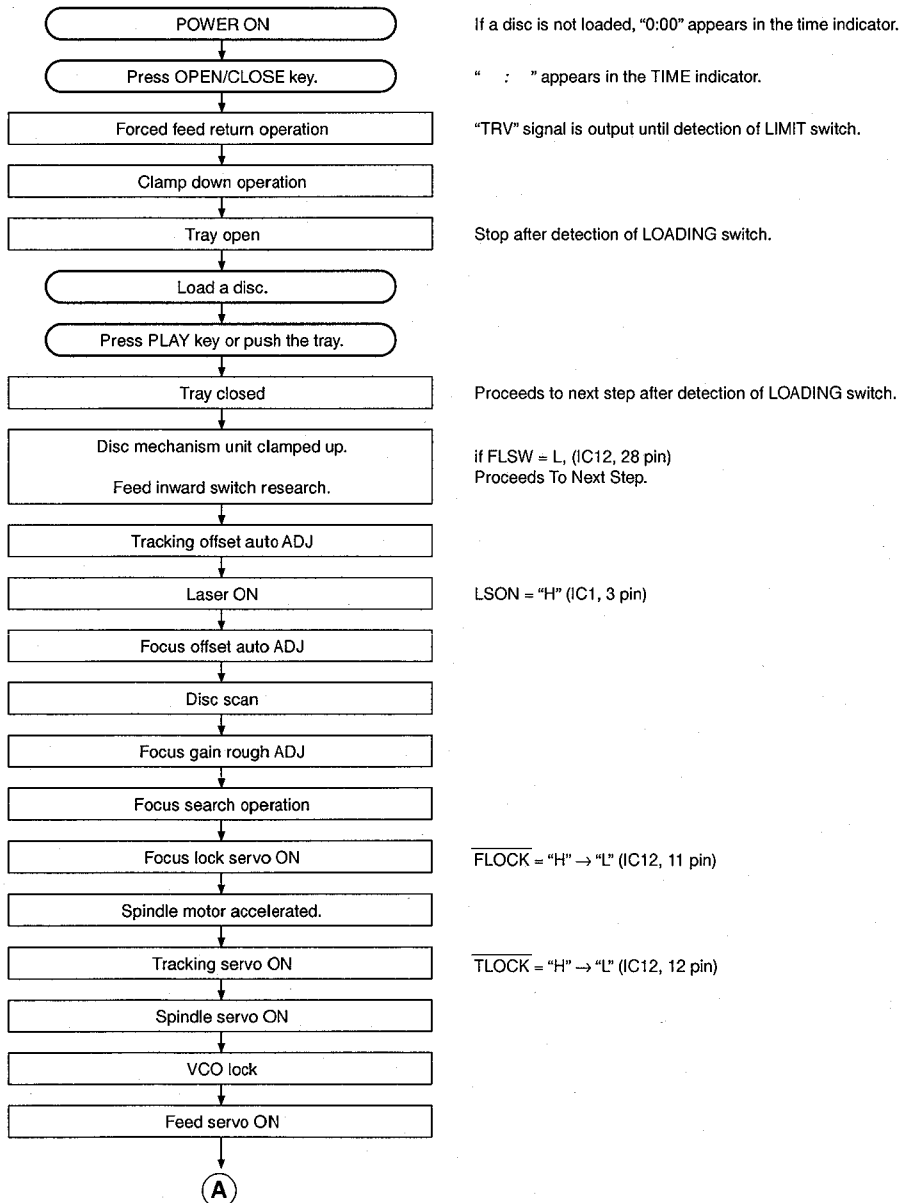
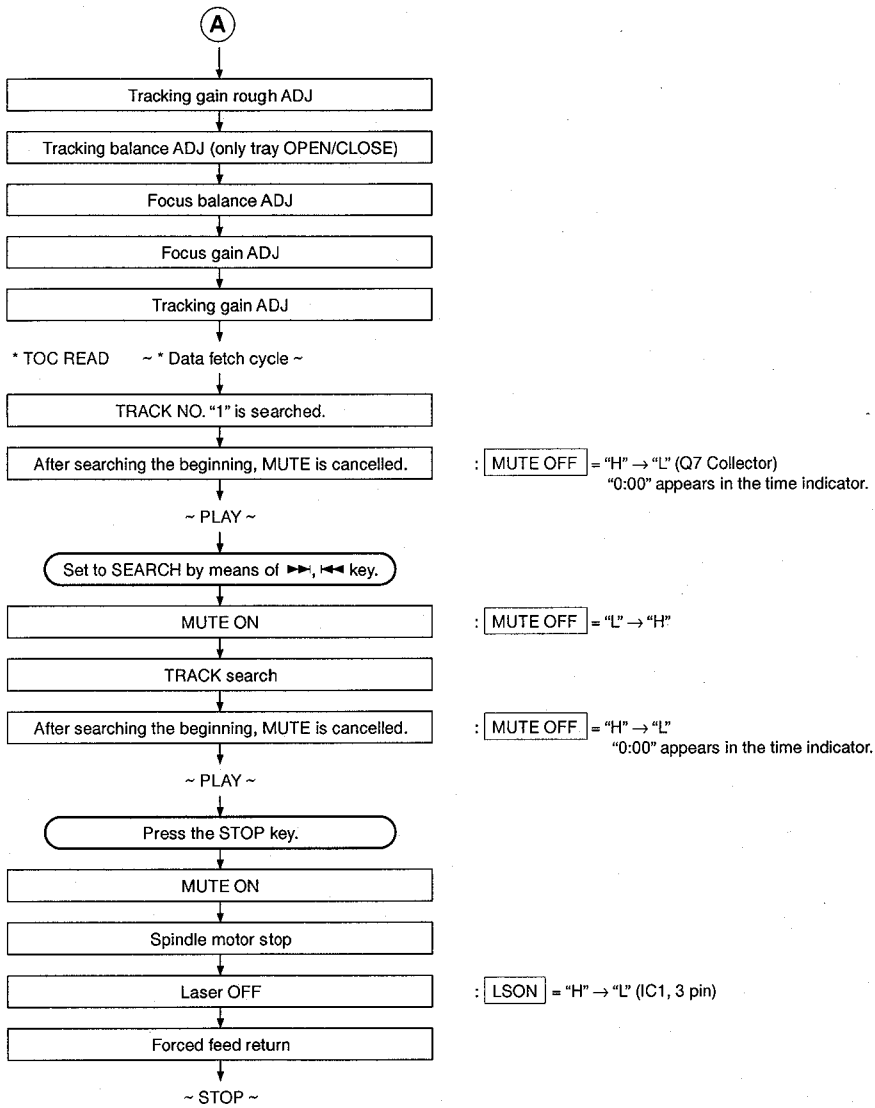


Fig. 5

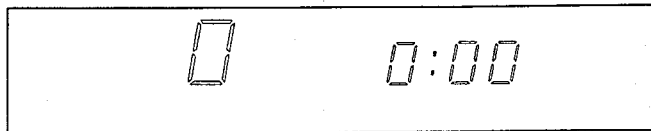
## ■ STANDARD OPERATION CHART





## ■ TEST MODE

(1) Turning ON the POWER while pressing the keys "4" and "7" will set to the TEST mode. (When the TEST mode is set, all indicators light for 1 second.)





(2) Shown below are the panel keys and remote control transmitter in the TEST mode.

● **Function List of Panel keys**

**Note)** "traverse servo" means the same as "feed servo".

PANEL KEY	FUNCTION
OPEN/CLOSE	Tray open/close.
PLAY/PAUSE	FOON, TRON, SPON, TVON(FEON).
STOP	All stop. (Focus, spindle, feed, laser, tray, etc.) Initializes FL display
◀◀ (SKIP/SEARCH)	Inner circumference traverse servo.
▶▶ (SKIP/SEARCH)	Outer circumference traverse servo.
+10	Rotating the mode of coefficients. (Coefficient mode → Coefficient setting → product mode) Pressing twice will set to the product mode.
1	Returns to product mode.
2	Auto adjustment mode 1 (TR-off set, FO-off set, FO-rough gain adjustment)
3	Auto adjustment mode 2 (TR-balance, TR-rough gain adjustment)
4	Auto adjustment mode 3 (FO-fine gain, TR-fine gain, FO-balance adjustment)
5	1 TRACK KICK - continuously (Coefficient set up mode : address down)
6	1 TRACK KICK + continuously (Coefficient set up mode : address up)
7	30 TRACK KICK - continuously (Coefficient set up mode : upper digit down)
8	30 TRACK KICK + continuously (Coefficient set up mode : upper digit up)
9	150 TRACK KICK - continuously (Coefficient set up mode : lower digit down)
0	150 TRACK KICK + continuously (Coefficient set up mode : lower digit up)

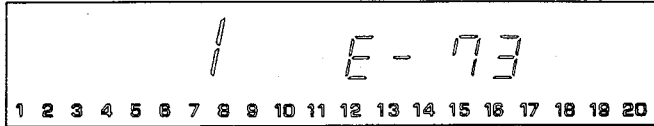
● **Function List of Remote Control Transmitter**

CUSTOM CODE = (79)x

CODE	KEY	FUNCTION
01	OPEN/CLOSE	Tray open/close.
02	PLAY	PLAY (FOON, TRON, TVON(FEON), SPON)
04	◀◀ SKIP	Inner circumference traverse servo.
05	◀◀ SEARCH	Inner 10 tracks kick continuously.
06	▶▶ SEARCH	Outer 10 tracks kick continuously.
07	▶▶ SKIP	Outer circumference traverse servo.
08	REPEAT S/F	FOON, TROF (Enter focus search if focus servo is off.)
0A	TIME	Checks FL display. (88 8888 → goes out → All lamps.)
0B	INDEX	FOON, TROF, TVOF(FEOF) (Enter focus search if focus servo is off.)
0C	PROG	Rotates or accelerates spindle.
0D	CLEAR	Decelerates spindle. (checking EFM pattern and reflected STAT)
0F	SPACE	FOOF, TROF, TVOF(EFOF)
10	0	150 TRACK KICK + continuously (Coefficient set up mode : lower digit up)
11	1	Returns to product mode. (tray inoperative.)
12	2	Auto adjustment mode 1 (TR-off set, FO-off set, FO-rough gain adjustment)
13	3	Auto adjustment mode 2 (TR-balance, TR-rough gain adjustment)
14	4	Auto adjustment mode 3 (FO-fine gain, TR-fine gain, FO-balance adjustment)
15	5	1 TRACK KICK - continuously (Coefficient set up mode : address down)
16	6	1 TRACK KICK + continuously (Coefficient set up mode : address up)
17	7	30 TRACK KICK - continuously (Coefficient set up mode : upper digit down)
18	8	30 TRACK KICK + continuously (Coefficient set up mode : upper digit up)
19	9	150 TRACK KICK - continuously (Coefficient set up mode : lower digit down)
1A	+10	Rotating the mode of coefficients.
1B	RANDOM	SPON (Spindle servo on.)
1E	DIMMER	Checks FL display. (All lamps → 88 8888 → goes out.)
55	PAUSE	FOON, TROF, TVOF(EFOF) (Enter focus search if focus servo is off.)
56	STOP	All stop. (Focus, spindle, traverse, laser, tray, etc.)
57	TAPE	Spindle free (off)
58	SYNCHRO	TV(Feed) REV
5D	PEAK	—

## ■ ERROR MESSAGE

- (1) When operation is terminated in an abnormal condition (stop or open), pressing STOP on the remote control while pressing STOP on the panel will set to the error message display enable mode.
- (2) Shown below is an example of display. ("E-73" as an example)



- (3) This function stays effective till the power is turned OFF. (It is cleared at OFF.)
- (4) Listed in the table below are error messages.

### ● Error Messages List

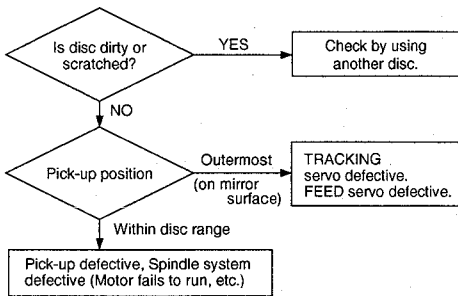
ERROR MESSAGES	DESCRIPTION
E - X 0	Data cannot be read after finishing search.
E - X 1	Data cannot be read during PLAY(X=0), PAUSE(X=3), or SCAN(X=2).
E - 7 1	At the start, tracking servo is not effective.
E - 7 2	At the start, spindle servo PLL is not effective.
E - 7 3	At the start, data can not read.
E - 9 4	Close switch does not work with tray closed.
E - - 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.
E r r	MN66271 does not give response of SENSE, with resetting by the unit's microcomputer.

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

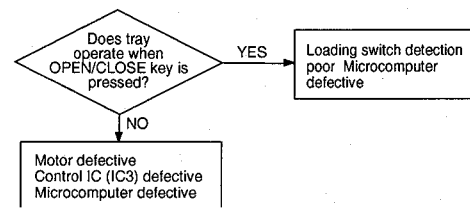
PLAY	X="0"
SCAN	X="2"
PAUSE	X="3"
PEAK SEARCH	X="4"
SEARCH	X="5"
START	X="7"
STOP	X="8"
LOADING	X="9"
OPEN	X="-"
NO DISC	X="C"

### 1) Error Code Troubleshooting

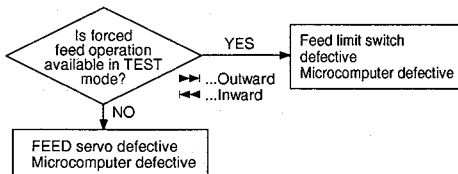
Error code **X0**, **X1**, **73** ..... Data cannot be read.



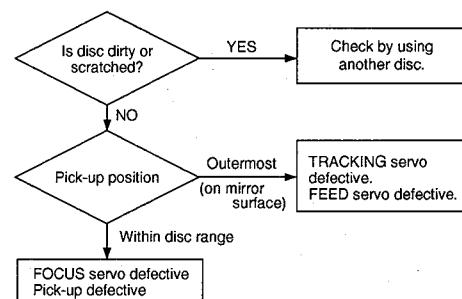
Error codes **94**, **-5** ..... Poor tray loading operation.



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

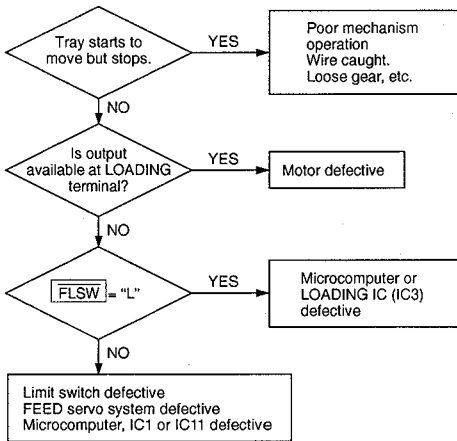


Error code **X8** ..... Focus drops.



2) Troubleshooting from System Malfunctions

a) Tray fails to come out/go in.

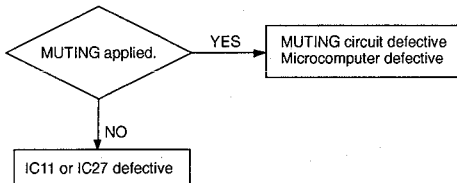


**When tray fails to close completely (when it stops midway)**

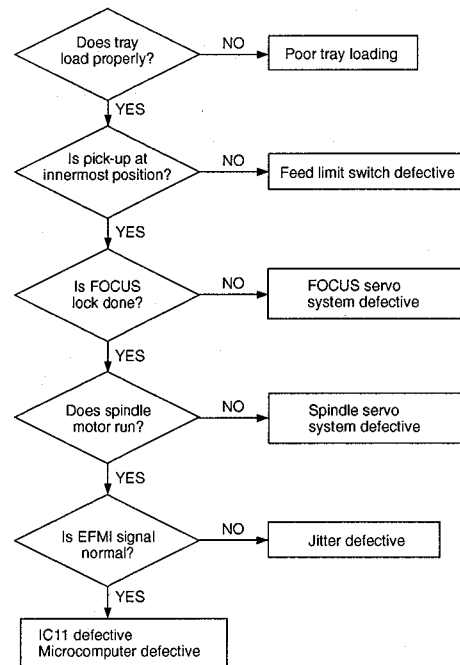
**[Corrective measure]**

- 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.

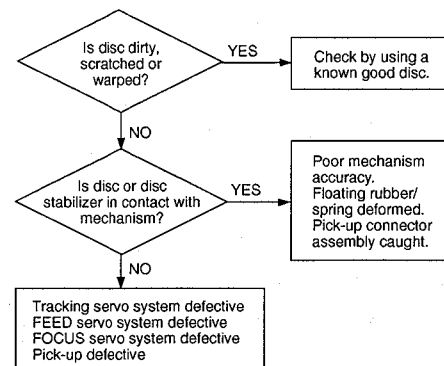
b) No sound generated, Sound cut during play. (but time display advances properly)



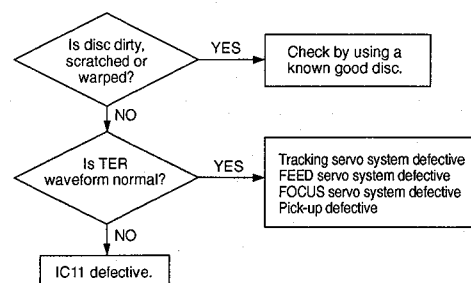
c) Operates as if no disc loaded. (although loaded)



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



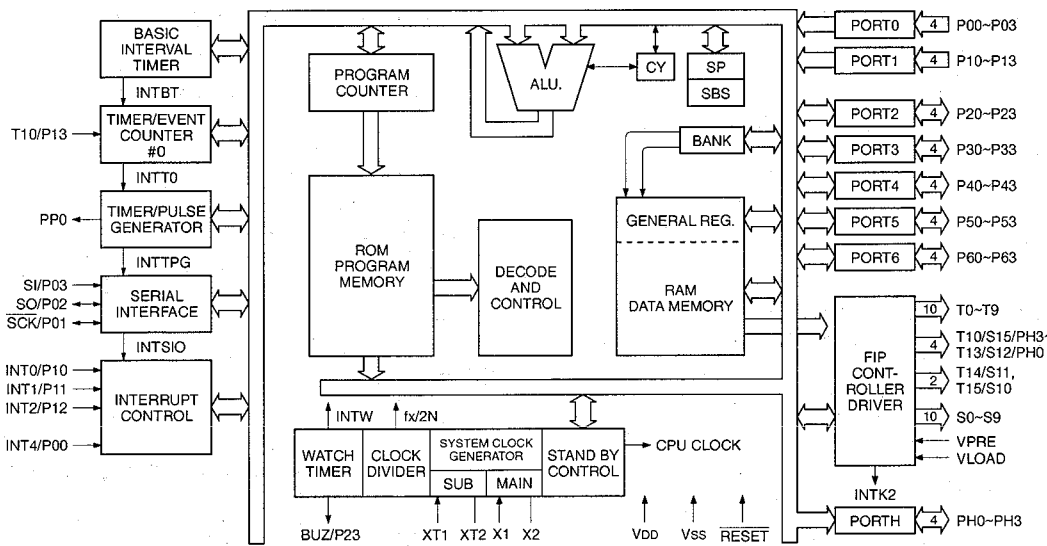
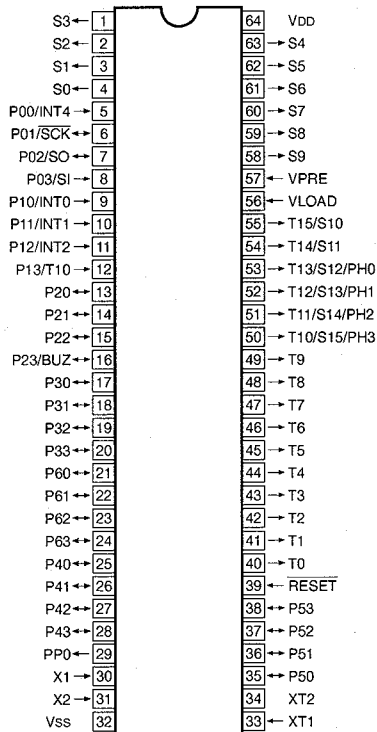
e) No search provided. (Sound skipped after search)



CDX-393mkII

IC DATA

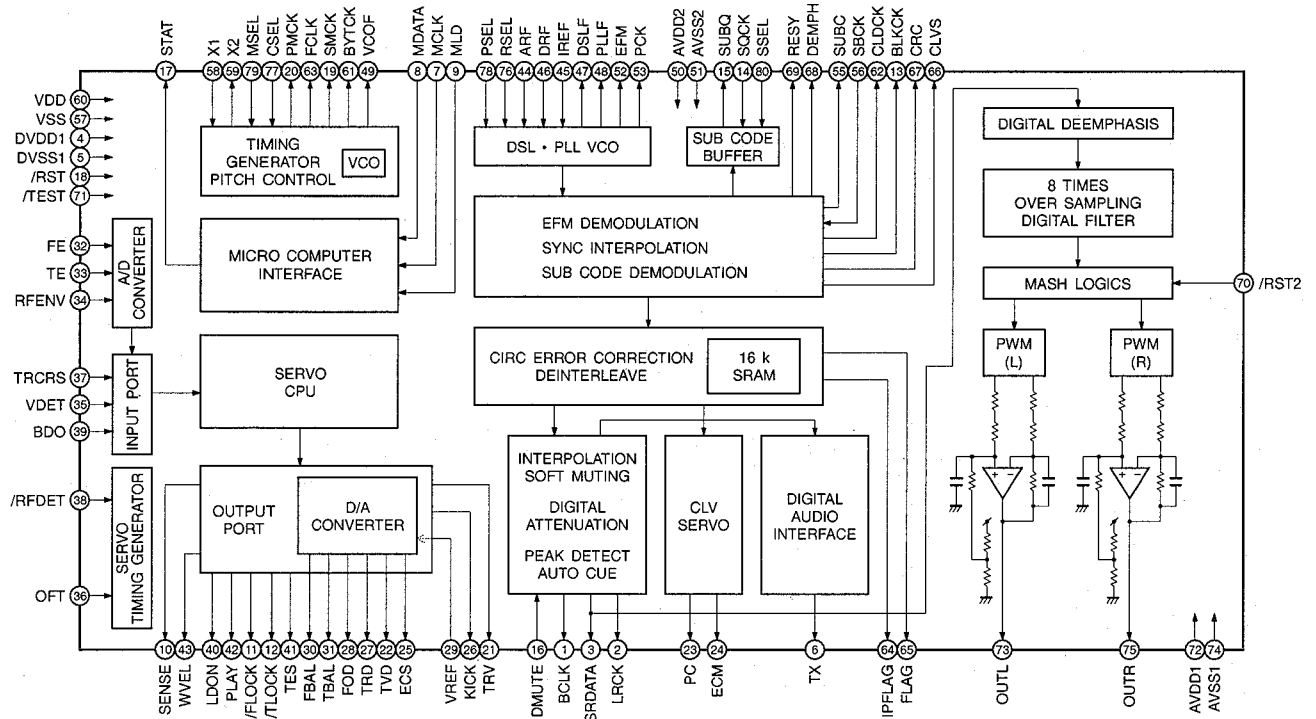
IC12 :  $\mu$ PD75217CW  
System Controller (4bit  $\mu$ -COM)



Pin No.	Pin Name	Description	Function
1	S3	S3	Fluorescent character display tube anode drive signal
2	S2	S2	
3	S1	S1	
4	S0	S0	
5	PO0	D/A	N.C
6	PO1	SCK	Serial clock output to MN66271
7	PO2	SO	Serial data output to MN66271
8	PO3	SI	Serial data input from MN66271
9	P10	REM	Input from remote control beam receiving unit
10	P11	BLKICK	Synchronous clock input for Q-code RCV from MN66271 (Fine pulse at RCV, normally LO)
11	P12	FLOCK	FOCUS lock signal input from MN66271 (LO at LOCK)

Pin No.	Pin Name	Description	Function
12	P13	TLOCK	Tracking lock signal input from MN66271 (HI at LOCK)
13	P20	MLD	Read signal output for transmitting command from MN66271 (After command transmission, LO pulse at LOAD TIMING)
14	P21	COMMAND	Serial I/F switching signal output (switching at 74HC125) Q CODE received at HI
15	P22	QCODE	Serial I/F switching signal output (switching at 74HC125) CMD transmit/receive selection
16	P23	DMUTE	Digital mute signal output (HI at MUTE)
17	P30	STAT	STAT signal input
18	P31	MNRESET	RESET signal output (LO at RESET)
19	P32	SCL	Serial clock signal with X24C00 (Open)
20	P33	SDA	Serial data signal with X24C00 (+5V)
21	P60	MUTE	Analog mute signal output (LO at MUTE)
22	P61	EF BAL	Feed servo off signal output
23	P62	—	Open
24	P63		MODEL selection ("L")
25	P40		MODEL selection ("H")
26	P41	OPSW	Open state of tray sensing switch input Open state at "L"
27	P42	CLSW	Closed state of tray sensing switch input Closed state at "L"
28	P43	FELTSW	Feed origin switch input Feed origin at "L"
29	PP0	LED	LED ON/OFF signal (Open)
30	X1	X1	] Crystal oscillator Oscillation terminal (4.19MHz)
31	X2	X0	
32	VSS	VSS	GND
33	XT1	—	Open
34	XT2	—	Open
35	P50	K3	] Key matrix input
36	P51	K2	
37	P52	K1	
38	P53	K0	
39	RESET	RESET	Reset input
40	T0	T0/9G	] Fluorescent character display tube grid drive signal
41	T1	T1/8G	
42	T2	T2/7G	
43	T3	T3/6G	
44	T4	T4/5G	
45	T5	T5/4G	
46	T6	T6/3G	
47	T7	T7/2G	
48	T8	T8/1G	
49	T9	—	Open
50	T10	OPEN	Opening of tray at OP "H" and CL "L"
51	T11	CLOSE	Closing of tray at CL "H" and OP "L"
52	T12	VLUP	Volume motor drive signal (UP) (Open)
53	T13	VLDN	Volume motor drive signal (DOWN) (Open)
54	T14	S11	] Fluorescent character display tube anode drive signal
55	T15	S10	
56	V LOAD	-VP	-20V
57	V PRE	GND	GND
58	S9	S9	] Fluorescent character display tube anode drive signal
59	S8	S8	
60	S7	S7	
61	S6	S6	
62	S5	S5	
63	S4	S4	
64	VDD	+5	

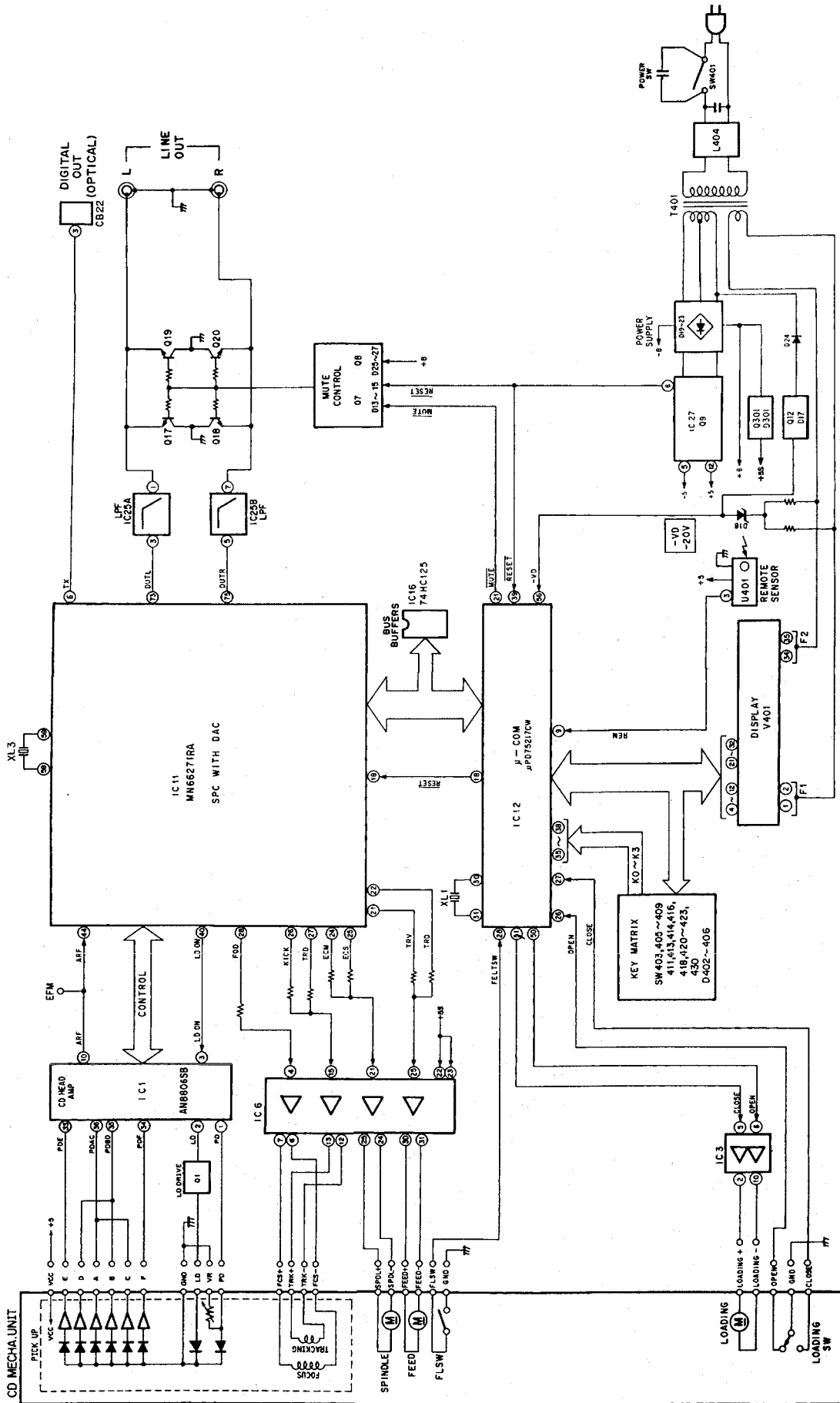
IC11 : MN66271RA  
Signal Processor & Controller (SPC)



Pin No.	Name	I/O	Function
1	BCLK	O	Bit clock output for SR DATA (NC)
2	LRCK	O	L/R identification signal output (NC)
3	SRDATA	O	Serial data output (NC)
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
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
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
18	RST	I	Reset input L : RESET
19	SMCK	O	8.4672MHz clock signal output when MSEL = H 4.2336MHz clock signal output when MSEL = L (NC)
20	PMCK	O	88.2KHz clock signal output (NC)
21	TRV	O	Traverse (Feed) forced feed output
22	TVD	O	Traverse (Feed) drive output
23	PC	O	Spindle motor ON signal L : ON (NC)
24	ECM	O	Spindle motor drive signal (forced mode output) 3-State
25	ECS	O	Spindle motor drive signal (servo error signal output)

Pin No.	Name	I/O	Function
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	I	Reference voltage for DA output block
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
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	TES	O	Tracking error shunt signal output (H : SHUNT)
42	PLAY	O	Play signal output (H : PLAY) (NC)
43	WVCL	O	Double speed status signal output (NC)
44	ARF	I	RF signal input
45	IREF	I	Reference current input terminal
46	DRF	I	Bias terminal for DSL (NC)
47	DSLFL	I/O	Loop filter terminal for DSL
48	PLLFL	I/O	Loop filter terminal for PLL
49	VCOFL	I/O	Loop filter terminal for VCO (NC)
50	AVDD2	I	Power supply for analog circuit (for DSL, PLL, OA output blocks) (+5)
51	AVSS2	I	GND for analog circuit (for DSL, PLL, DA output blocks) (GND)
52	EFM	O	EFM signal output (NC)
53	PCK	O	PLL extract clock output (f PCK = 4.321MHz) (NC)
54	PDO	O	EFM signal to PCK signal phase comparison signal output (NC)
55	SUBC	O	Sub-code serial output data output (NC)
56	SBCK	I	Clock input for sub-code serial output (GND)
57	VSS	I	GND for oscillation circuit
58	X1	I	Crystal oscillation circuit input terminal (f = 16.9344MHz)
59	X2	O	Crystal oscillation circuit output terminal (f = 16.9344MHz)
60	VDD	I	Power supply for oscillation circuit (+5)
61	BYTCK	O	Byte clock output (NC)
62	CLDCK	O	Sub-code frame clock signal output (f CLDCK = 7.35kHz) (NC)
63	FCLK	O	Crystal frame clock output (f FCLK = 7.35kHz) (NC)
64	IPFLAG	O	Interpolation flag output H : INTERPOLATION (NC)
65	FLAG	O	Flag output (NC)
66	CLVS	O	Spindle servo phase synchronous status signal output H : CLV L : ROUGH SERVO (NC)
67	CRC	O	Sub-code CRC check result output H : OK, L : NG (NC)
68	DEMPH	O	Deemphasis detect signal output H : ON (NC)
69	RESY	O	Re-synchronous signal output of frame synchronization H : SYNCHRONOUS L : ASYNCHRONOUS (NC)
70	RST2	I	Reset terminal for stop after MASH circuit (L : RESET) (+5)
71	TEST	I	Test terminal (Normal : H) (+5)
72	AVDD1	I	Power supply for analog circuit (for audio output section (used for both L and R channels))
73	OUTL	O	L channel output
74	AVSS1	I	GND for analog circuit (for audio output section (used for both L and R channels))
75	OUTR	O	R channel output
76	RSEL	I	RF signal polarity specifying terminal RSEL = H when Bright level is at "H" RSEL = L when Bright level is at "L" (+5)
77	CSEL	I	Crystal oscillation frequency specifying terminal (Normal : L) (GND)
78	PSEL	I	Test terminal (Normal : L) (GND)
79	MSEL	I	SMCK terminal Output frequency switch terminal H : SMCK = 8.4672MHz, L : SMCK = 4.2336MHz (GND)
80	SSEL	I	SUBQ terminal Output mode switch terminal H : Q code buffer use mode (+5)

# ■ BLOCK DIAGRAM

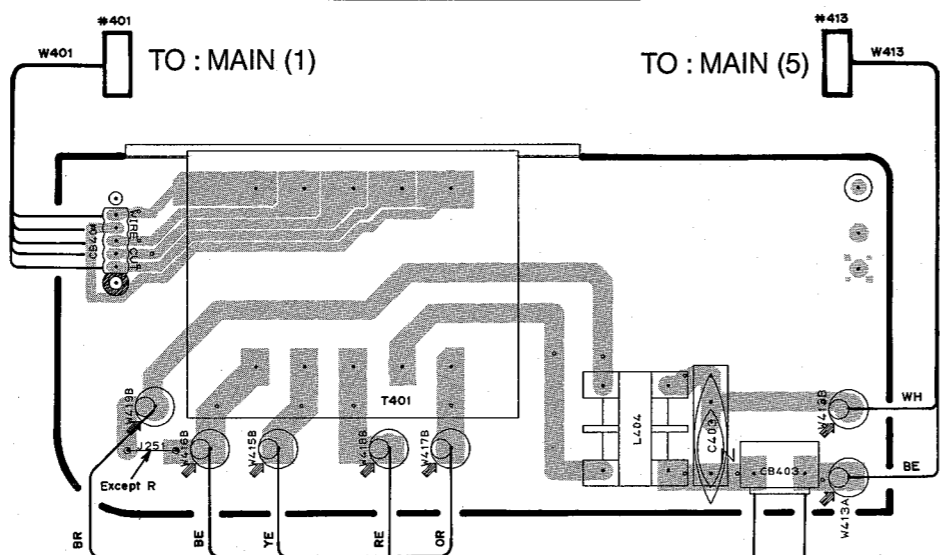


CDX-393MKII



PRINTED CIRCUIT BOARD (Foil side)

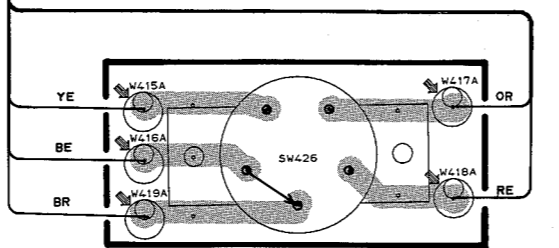
P. C. B. MAIN ( 4 )



FROM :  
POWER CODE

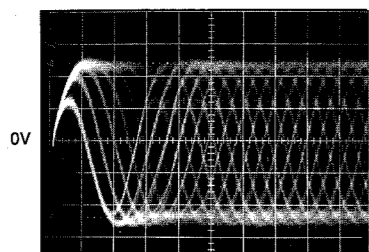
R only

P. C. B. MAIN ( 3 )

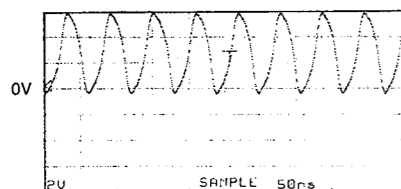


VOLTAGE  
SELECTOR

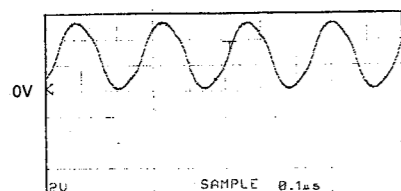
Point ① (EFM : Pin10 of IC1)  
V : 0.2V/div H : 0.5  $\mu$ sec/div  
AC range 1 : 1 probe



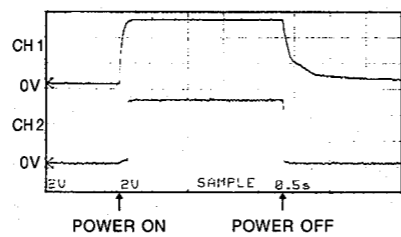
Point ② (Pin59 of IC11)  
V : 2V/div H : 50 nsec/div  
DC range 1 : 1 probe



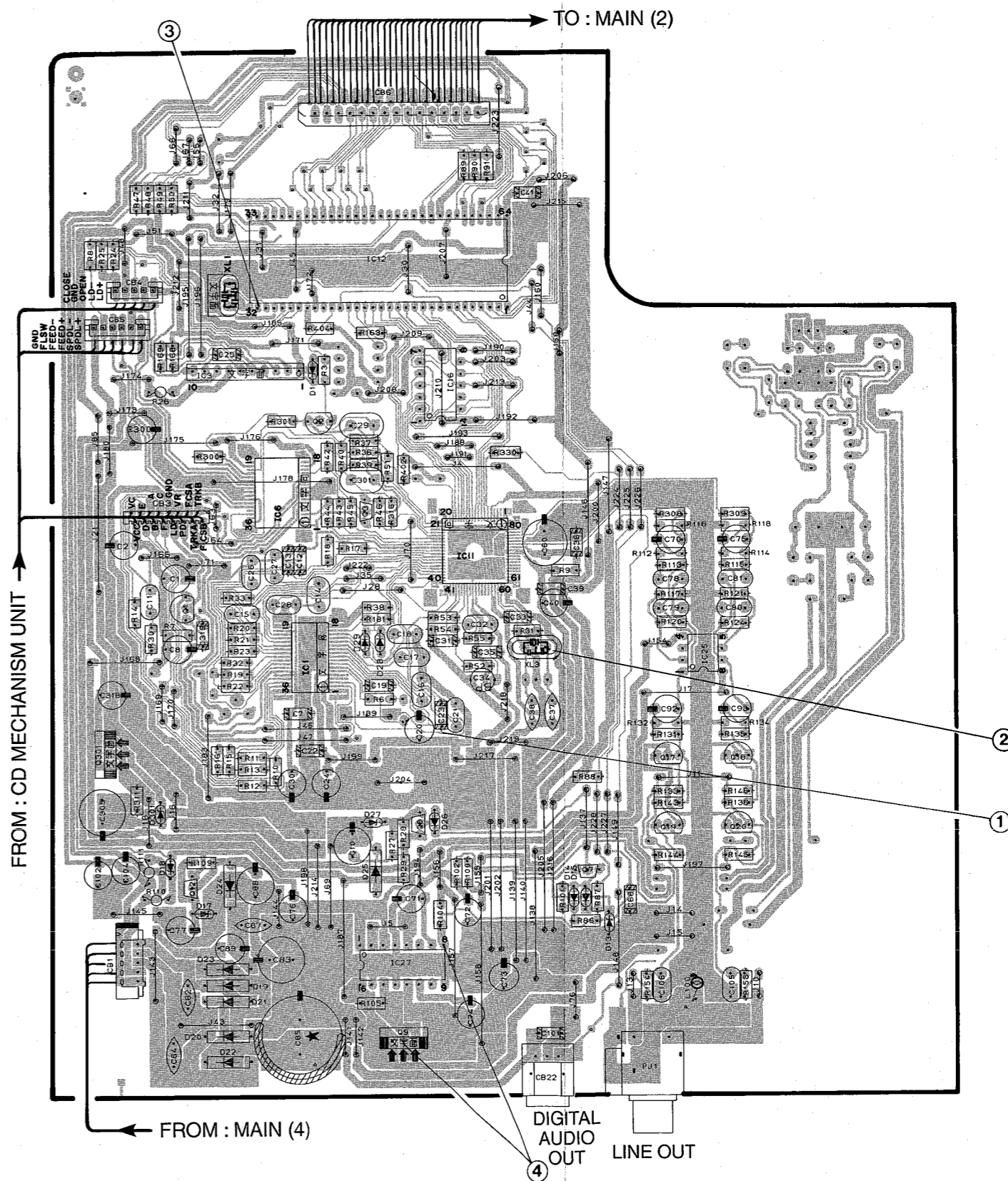
Point ③ (Pin31 of IC12)  
V : 2V/div H : 0.1  $\mu$ sec/div  
DC range 1 : 1 probe



Point ④ (CH1 : Collector of Q9, CH2 : Pin8 of IC27)  
V : 2V/div (CH1)  
V : 2V/div (CH2)  
H : 0.5 sec/div DC range 1 : 1 probe



P. C. B. MAIN ( 1 )



TO : MAIN ( 2 )

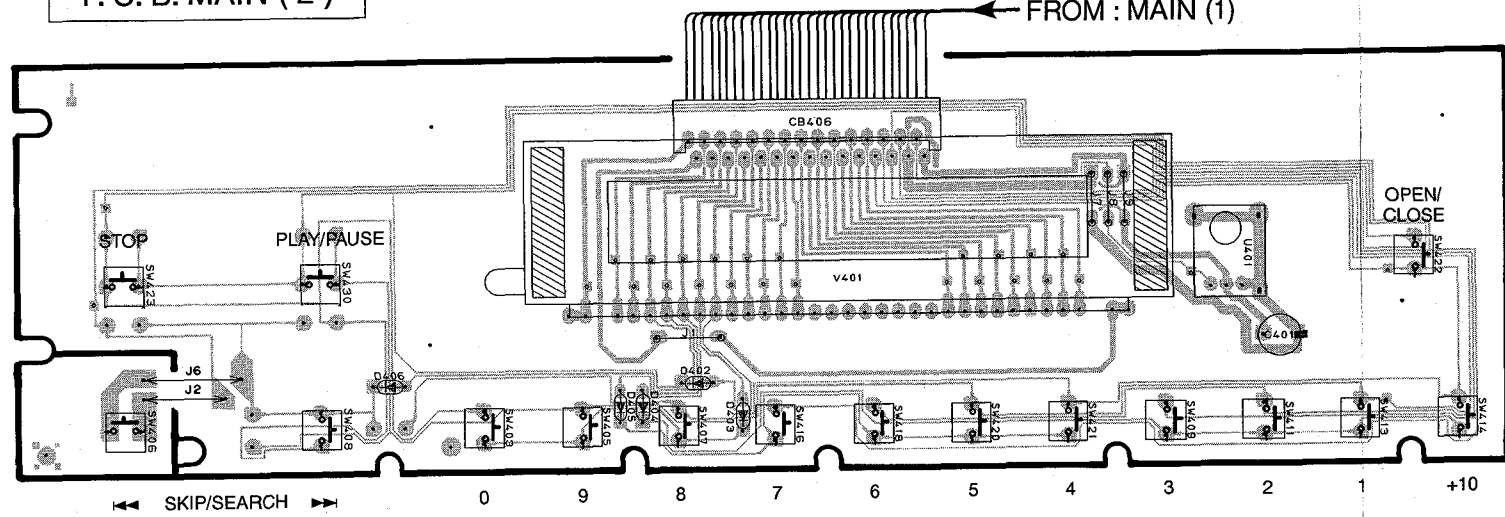
FROM : CD MECHANISM UNIT

FROM : MAIN ( 4 )

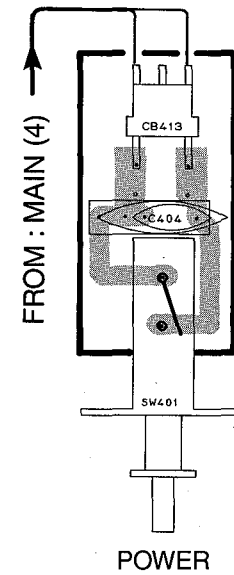
DIGITAL  
AUDIO  
OUT  
LINE OUT

PRINTED CIRCUIT BOARD (Foil side)

P. C. B. MAIN (2)

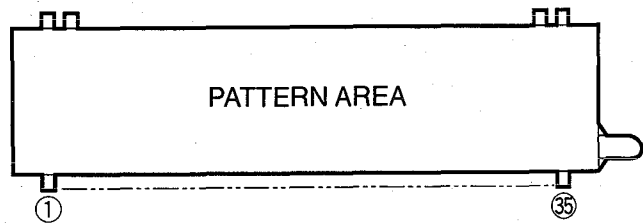


P. C. B. MAIN (5)



1SS133 1T2 MTZJ4.7C MTZJ5.1B MTZJ5.6B 	MTZJ5.6C MTZJ24C 	HD74HC125P 	M5290P 
2SA933S(Q,R) 2SD1915(S,T) 	μPD75217CW 		
2SB544(E,F,G) 2SC2878(A,B) 2SD400(E,F) 	AN8806SB M56748FP 		
2SB1565(E,F) 2SD2394(E,F) 	MN66271RB 		
NJM2068D 	LB1641 		

V401 : 9-MT-133GK

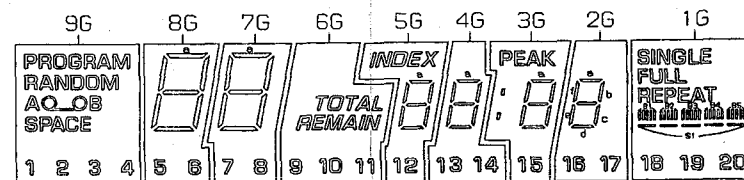


PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CONNECTION	F1	F1	NP	9G	8G	7G	6G	5G	4G	3G	2G	1G	NC	NC	NC	NC	NC	NC
PIN NO.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
CONNECTION	NC	NC	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	F2	F2	

NOTE 1) F1, F2 ..... Filament  
 2) NP ..... No pin  
 3) NC ..... No connection  
 4) P1-P10 ..... Datum Line  
 5) 1G-9G ..... Grid

GRID ASSIGNMENT

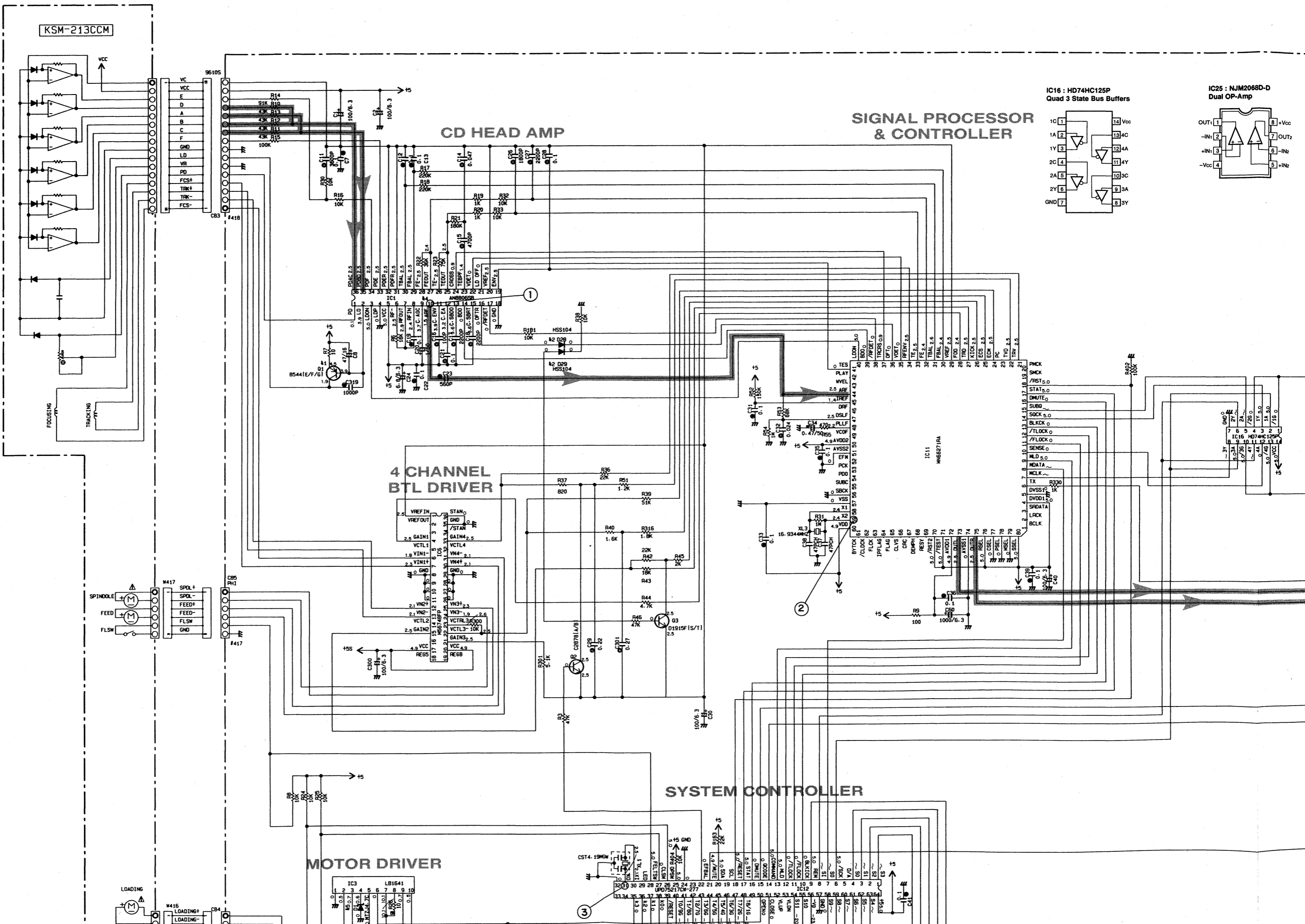


ANODE CONNECTION

	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	PROGRAM	a	a	TOTAL	a	a	a	a	SINGLE
P2	RANDOM	b	b	REMAIN	b	b	b	b	FULL
P3	A	c	c	—	c	c	c	c	REPEAT
P4	○ ○	d	d	—	d	d	d	d	B1
P5	B	e	e	—	e	e	e	e	B2
P6	SPACE	f	f	—	f	f	f	f	B3
P7	—	g	g	—	g	g	g	g	B4
P8	—	—	—	—	—	—	:	—	B5
P9	1	5	7	9	12	13	15	16	S1
P10	2	6	8	10	INDEX	14	PEAK	17	18
P11	3	—	—	11	—	—	—	—	19
P12	4	—	—	—	—	—	—	—	20

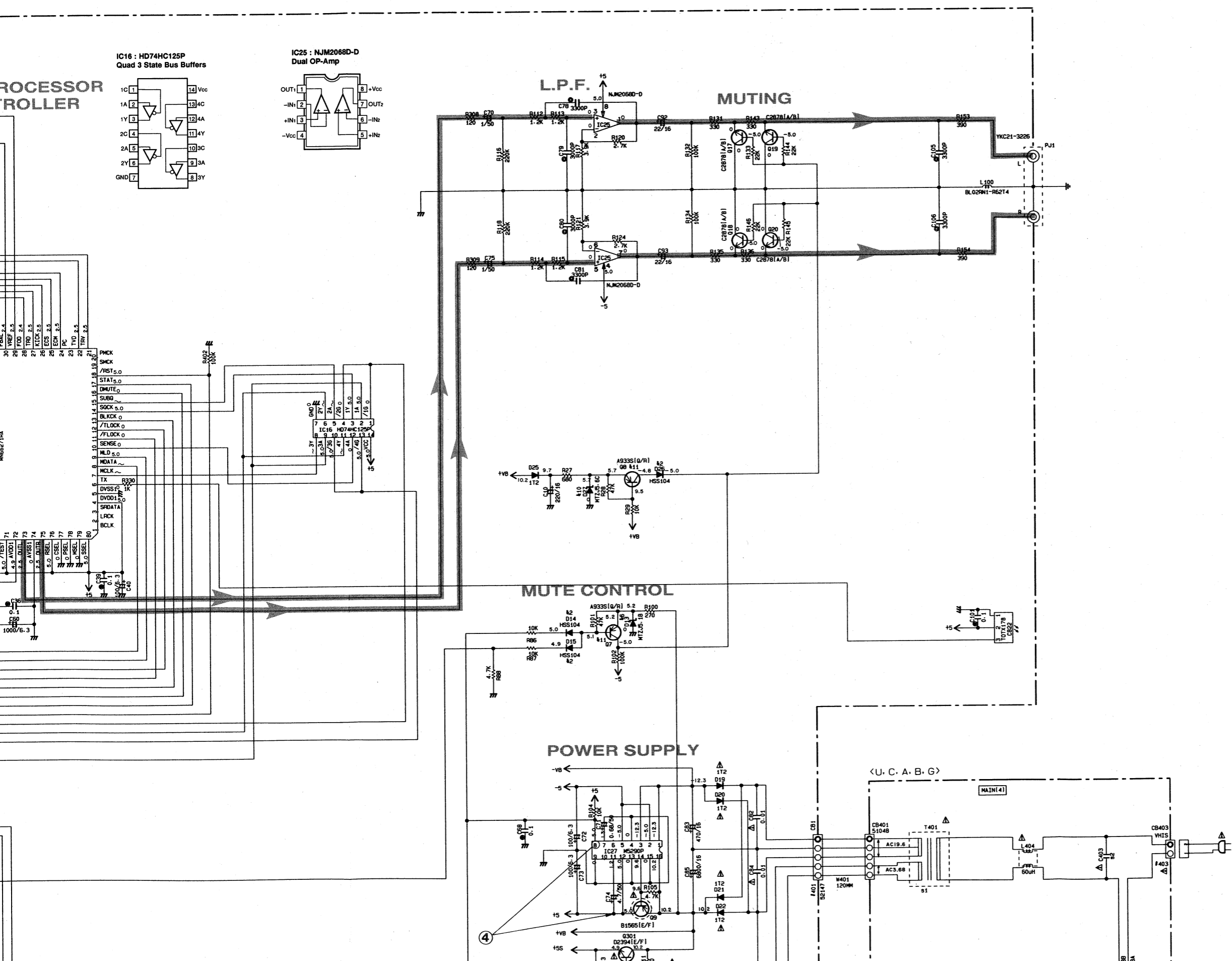
# SCHEMATIC DIAGRAM

1  
2  
3  
4  
5  
6

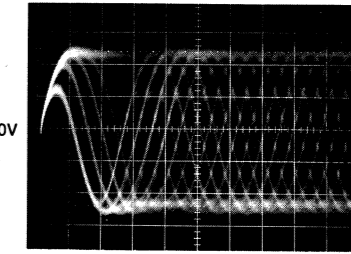


IC16 : HD74HC125P  
Quad 3 State Bus Buffers

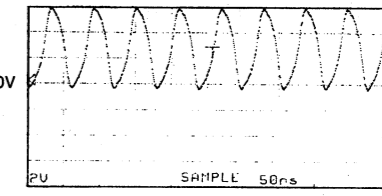
IC25 : NJM2068D-D  
Dual OP-Amp



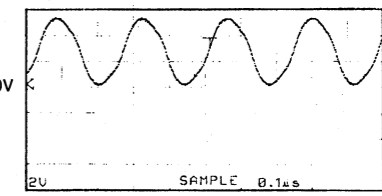
Point ① (EFM : Pin10 of IC1)  
 V : 0.2V/div H : 0.5 μsec/div  
 AC range 1 : 1 probe



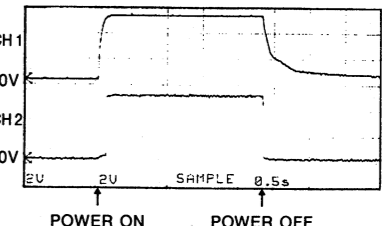
Point ② (Pin59 of IC11)  
 V : 2V/div H : 50 nsec/div  
 DC range 1 : 1 probe



Point ③ (Pin31 of IC12)  
 V : 2V/div H : 0.1 μsec/div  
 DC range 1 : 1 probe



Point ④ (CH1 : Collector of Q9, CH2 : Pin8 of IC27)  
 V : 2V/div (CH1)  
 V : 2V/div (CH2)  
 H : 0.5 sec/div DC range 1 : 1 probe



5

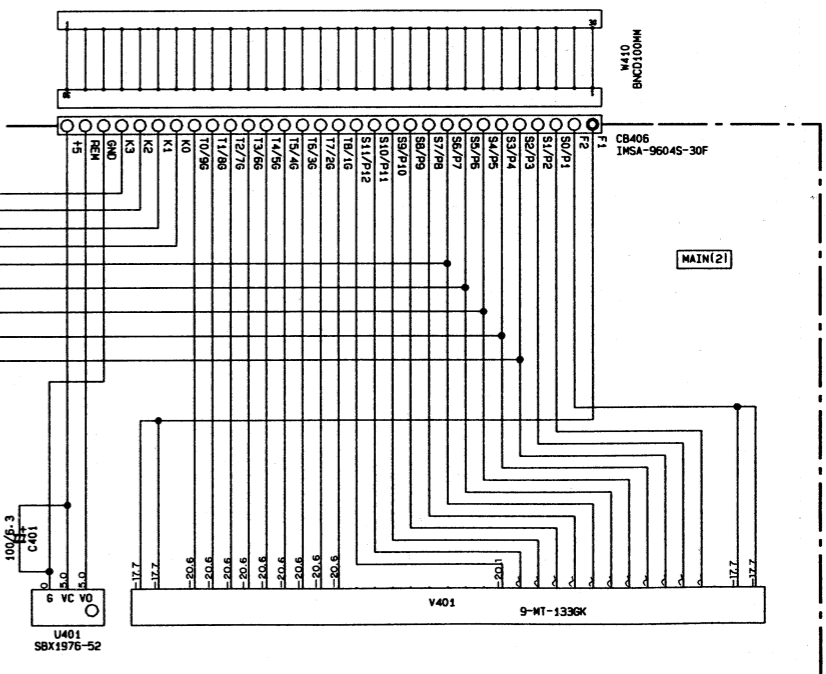
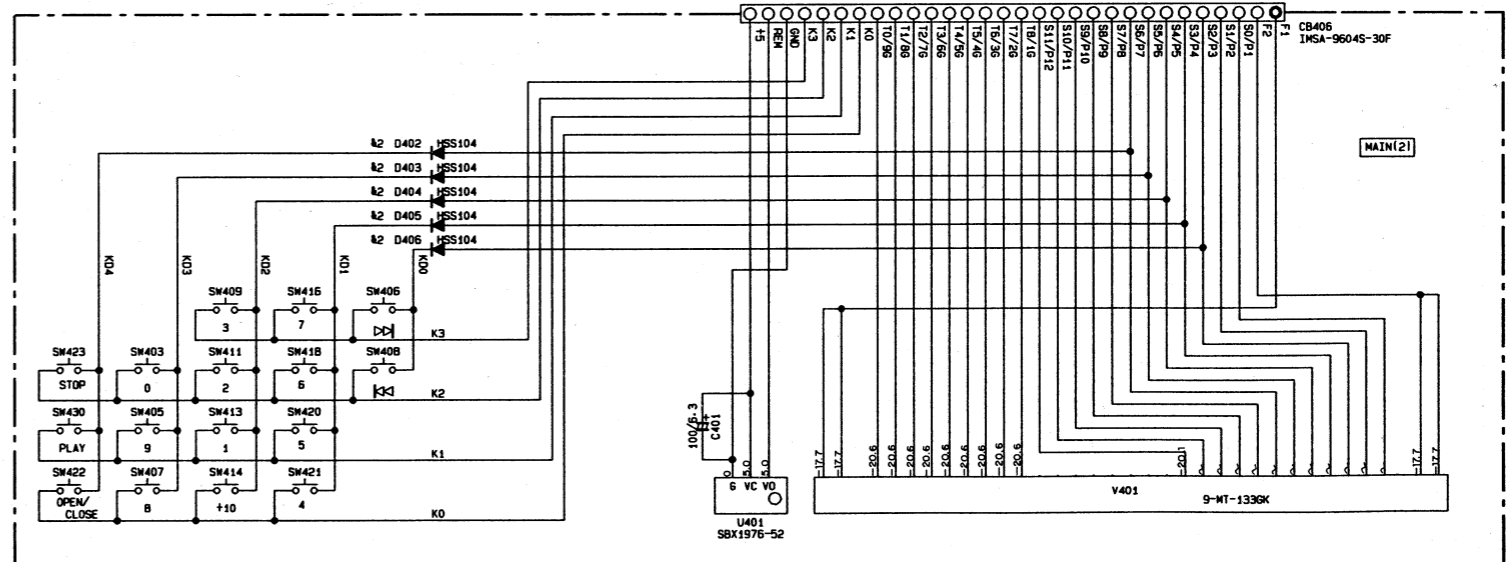
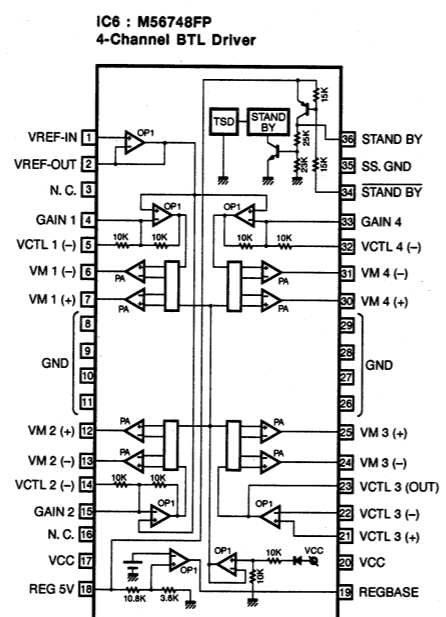
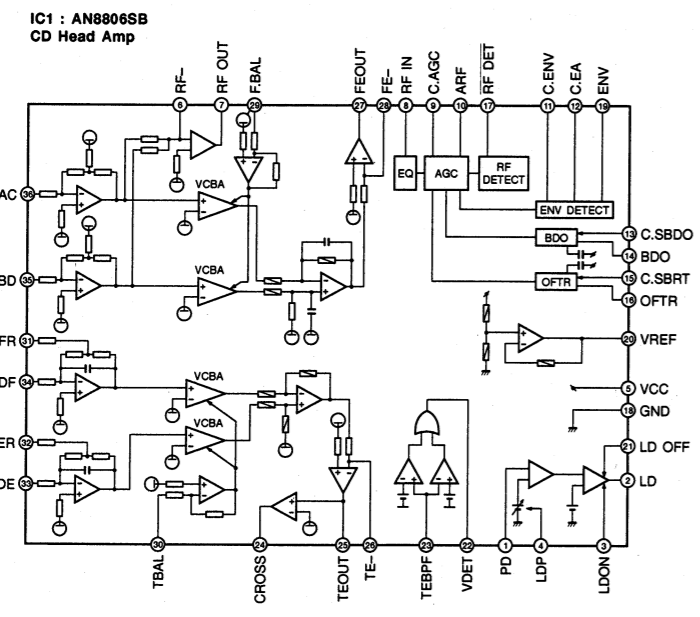
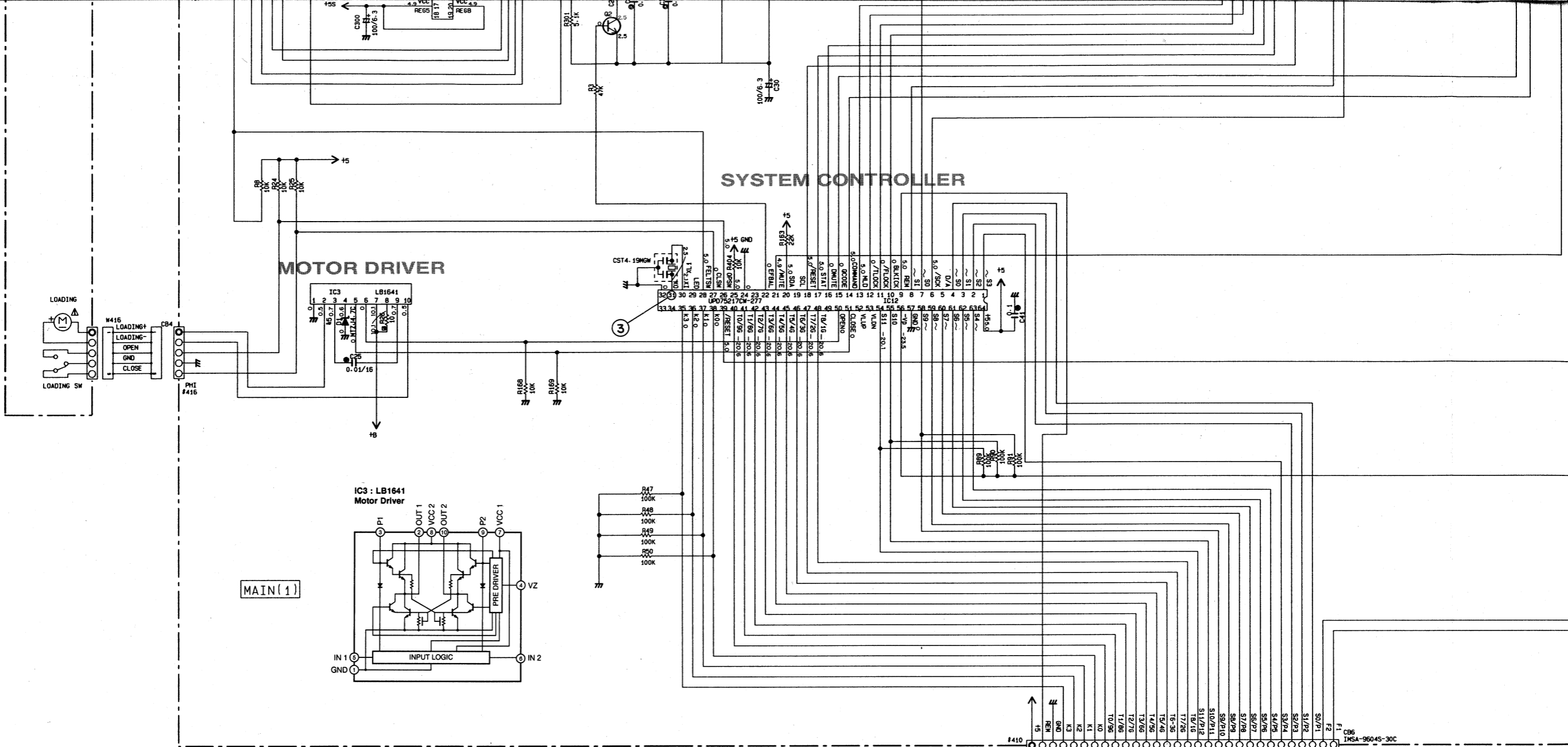
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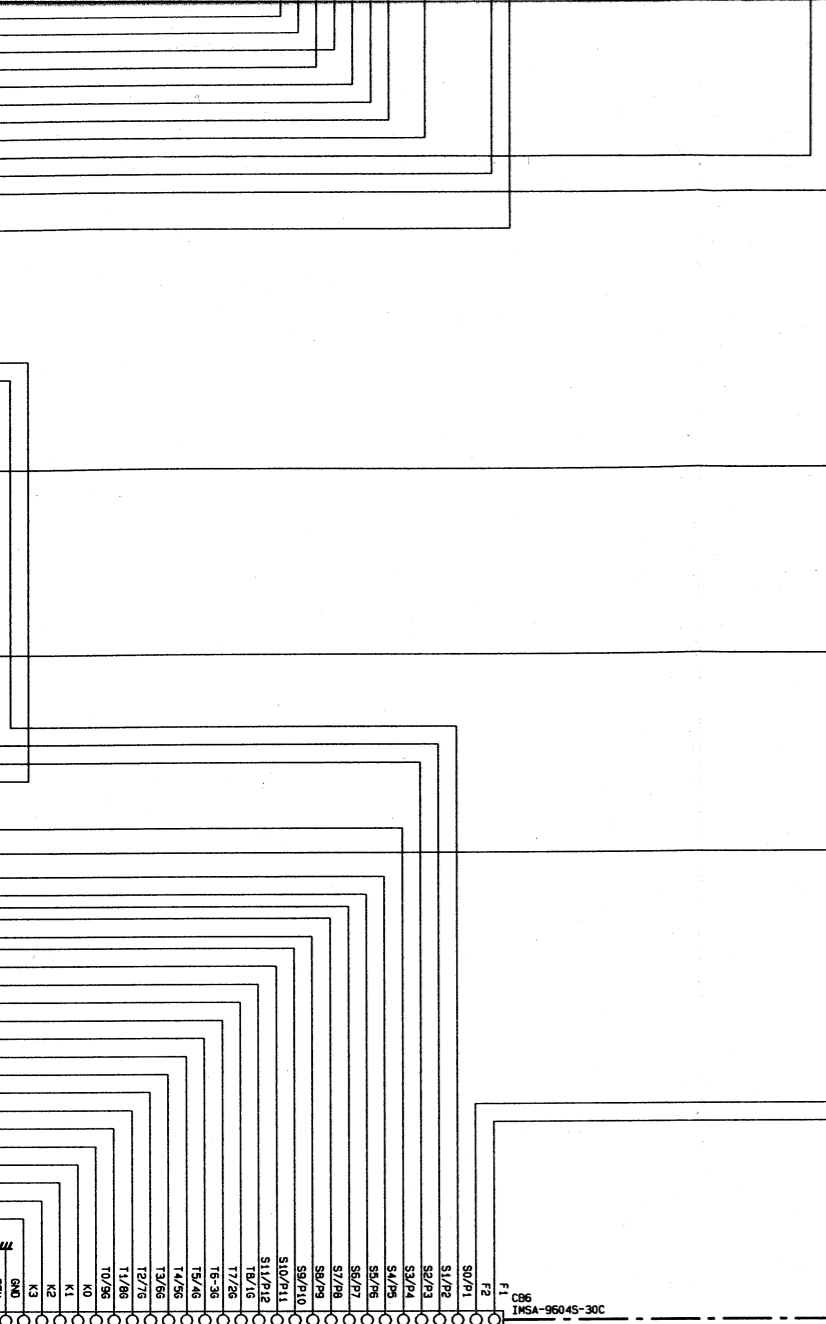
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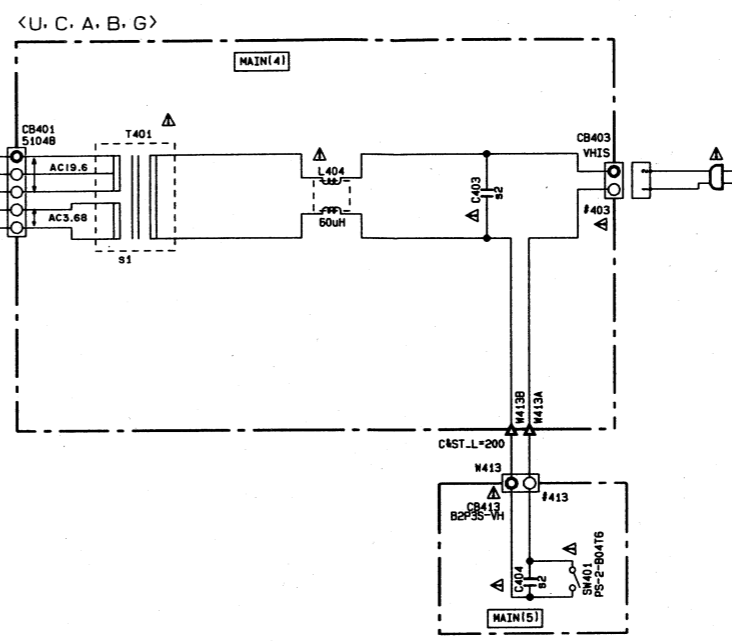
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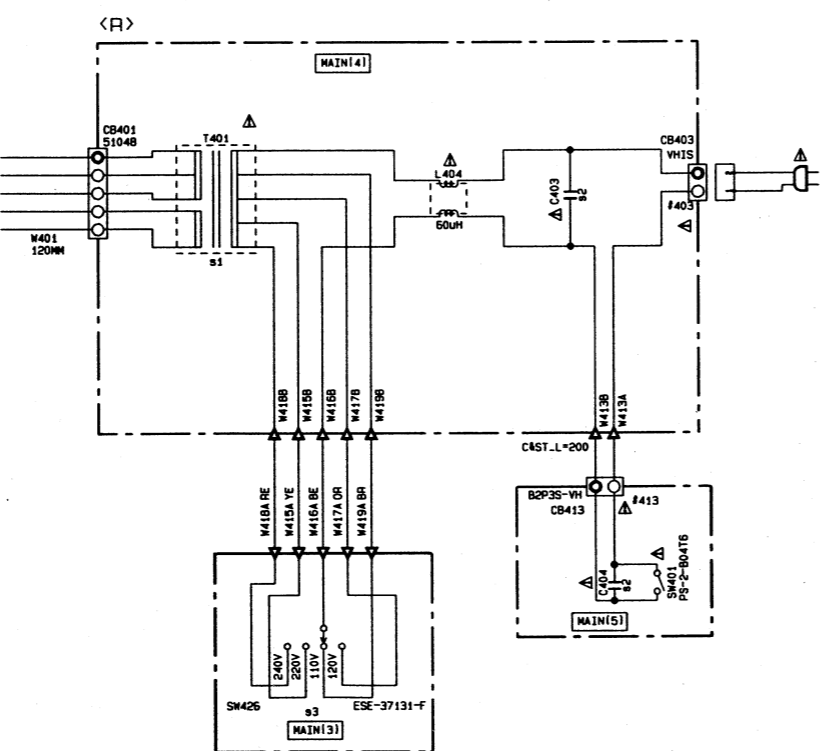
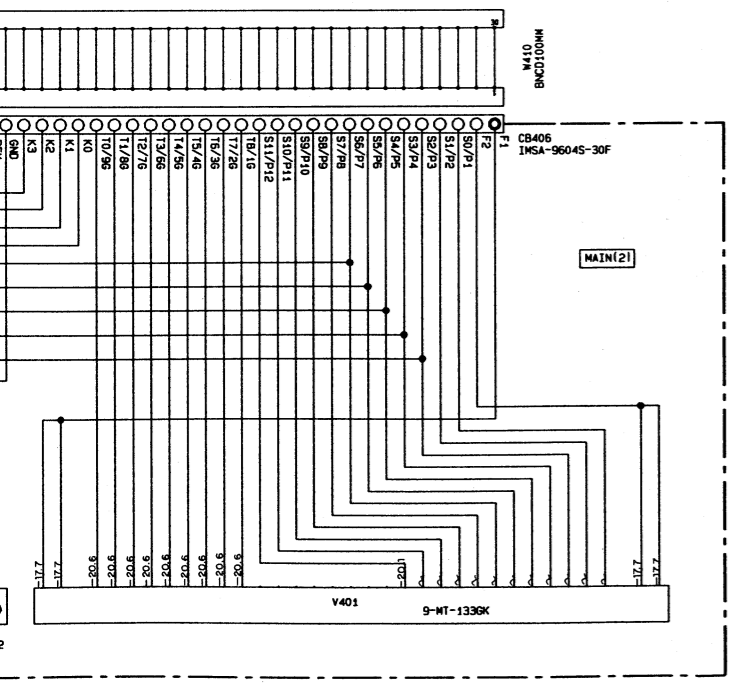




**POWER SUPPLY**



**IC27 : M5290P  
Constant-Voltage Tracking Supply with Reset**



**Interchangeable Parts at Manufacture-Stage**

Mark	Reference Parts Number	Parts Name
k1	01	2S8544(E/F/G) 2S4934(P/Q/R)
k2	D14 15 26 28 29 402-406	HSS104 1SS133 1SS176
k4	IC1	AN88055B AN88035B
k5	D1	MT2J4-7C HZ5562
k6	D13	MT2J5-1B HZ55C1
k7	D18-301	MT2J5-68 HZ56A3
k8	D17	MT2J24C HZ524-1
k10	D27	MT2J5-6C HZ56B2
k11	Q7-B-12	2SA933S(Q/R) 2SA1115(E/F) 2SA1309A(Q/R/S)

REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	⌘
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
⊙	CERAMIC TUBULAR CAPACITOR	
○	POLYESTER FILM CAPACITOR	
⊖	POLYSTYRENE FILM CAPACITOR	
Ⓜ	MICA CAPACITOR	
⊕	POLYPROPYLENE FILM CAPACITOR	
●	SEMICONDUCTIVE CERAMIC CAPACITOR	

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⊠	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
⊠	FIRE PROOF CARBON FILM RESISTOR
⊠	CEMENT MOLDED RESISTOR
⊠	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

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

	U-C	R	A	B-G
1	T401	XN392	XN394	XN395
2	C403-C404	F13B410	V574170	V574170
3	SW426	X	VL90800	X
4				

\* All voltages are measured with a 10MΩ/DC electric volt meter.  
 \* Components having special characteristics are marked Δ 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.

Schm Ref.	PART NO.	Description
*	V3411300	P. C. B. MAIN(UC)
*	V3411400	P. C. B. MAIN(R)
*	V3411500	P. C. B. MAIN(A)
*	V3411600	P. C. B. MAIN(BG)
CB1	VK024900	CN. BS. PIN 5P
CB3	VU160200	CN. BS. PIN 16P
CB4	VB390100	CN. BS. PIN 5P
CB5	VB390200	CN. BS. PIN 6P
CB6	VU273000	CN. BS. PIN 30P
CB22	VT707200	L. EMIT TOTX178
CB401	Vi878300	CN. BS. PIN 5P
CB403	VG879900	CN. BS. PIN 2P
CB406	VU283000	CN. BS. PIN 30P
CB413	VP245600	CN 2P
C1	UR818100	C. EL 100uF 6.3V
C2	UR818100	C. EL 100uF 6.3V
C7	VJ599100	C. CE. TUBLR 0.1uF 50V
C8	UR837470	C. EL 47uF 16V
C10	UR838220	C. EL 220uF 16V
C11	UA653360	C. MYLAR 3600pF 50V
C12	VJ599100	C. CE. TUBLR 0.1uF 50V
C13	VJ599100	C. CE. TUBLR 0.1uF 50V
C14	UA954470	C. MYLAR 0.047uF 50V
C15	UA953470	C. MYLAR 4700pF 50V
C16	UA952100	C. MYLAR 100pF 50V
C17	UA953220	C. MYLAR 2200pF 50V
C18	UA953220	C. MYLAR 2200pF 50V
C19	VJ599100	C. CE. TUBLR 0.1uF 50V
C20	UR866100	C. EL 1uF 50V
C21	UA655100	C. MYLAR 0.1uF 50V
C22	VJ599100	C. CE. TUBLR 0.1uF 50V
C23	VG278800	C. CE. TUBLR 560pF 50V
C24	VR498100	C. EL 6.8uF 6.3V
C25	VF467300	C. CE. TUBLR 0.01uF 16V
C26	UA953180	C. MYLAR 1800pF 50V
C27	UA953220	C. MYLAR 2200pF 50V
C28	UA655100	C. MYLAR 0.1uF 50V
C29	UA655220	C. MYLAR 0.22uF 50V
C30	UR818100	C. EL 100uF 6.3V
C31	VJ599100	C. CE. TUBLR 0.1uF 50V
C32	UA654240	C. MYLAR 0.024uF 50V
C33	VJ599100	C. CE. TUBLR 0.1uF 50V
C34	UN865470	C. EL 0.47uF 50V
C35	VJ599100	C. CE. TUBLR 0.1uF 50V
C36	VJ599100	C. CE. TUBLR 0.1uF 50V
C37	VA761400	C. CE 47pF 50V
C38	VA761400	C. CE 47pF 50V
C39	VJ599100	C. CE. TUBLR 0.1uF 50V
C40	UR818100	C. EL 100uF 6.3V
C41	VJ599100	C. CE. TUBLR 0.1uF 50V
C60	UR819100	C. EL 1000uF 6.3V
C68	VJ599100	C. CE. TUBLR 0.1uF 50V
C70	UR866100	C. EL 1uF 50V

\* New Parts

Schm Ref.	PART NO.	Description
C71	UR865680	C. EL 0.68uF 50V
C72	UR818100	C. EL 100uF 6.3V
C73	UR818100	C. EL 100uF 6.3V
C74	UR866470	C. EL 4.7uF 50V
C75	UR866100	C. EL 1uF 50V
C76	UR866470	C. EL 4.7uF 50V
C77	UR866470	C. EL 4.7uF 50V
C78	UA953330	C. MYLAR 3300pF 50V
C79	UA653300	C. MYLAR 3000pF 50V
C80	UA653300	C. MYLAR 3000pF 50V
C81	UA953330	C. MYLAR 3300pF 50V
C82	FG644100	C. CE 0.01uF 50V
C83	VG287900	C. EL 470uF 16V
C84	FG644100	C. CE 0.01uF 50V
C85	Vi578400	C. EL 6800uF 16V
C87	FG644100	C. CE 0.01uF 50V
C88	UR868100	C. EL 100uF 50V
C89	UR867470	C. EL 47uF 50V
C92	VG287300	C. EL 22uF 50V
C93	VG287300	C. EL 22uF 50V
C101	VJ599100	C. CE. TUBLR 0.1uF 50V
C102	UR866470	C. EL 4.7uF 50V
C104	UR866470	C. EL 4.7uF 50V
C105	UA953330	C. MYLAR 3300pF 50V
C106	UA953330	C. MYLAR 3300pF 50V
C300	UR818100	C. EL 100uF 6.3V
C301	UA655270	C. MYLAR 0.27uF 50V
C305	UR838470	C. EL 470uF 16V
C318	UR818100	C. EL 100uF 6.3V
C319	VF467000	C. CE. TUBLR 1000pF 50V
C401	UM388100	C. EL 100uF 10V
C403	Fi384100	C. CE. SAFTY 0.01uF 400V(UC)
C403	VS741700	C. CE. SAFTY 0.01uF 275V(RAB)
C404	Fi384100	C. CE. SAFTY 0.01uF 400V(UC)
C404	VS741700	C. CE. SAFTY 0.01uF 275V(RAB)
D1	VG437200	DIODE. ZENR MTZJ4.7C 4.7V
D13	VG437400	DIODE. ZENR MTZJ5.1B 5.1V
D14	VD631600	DIODE 1SS133, 176, HSS104
D15	VD631600	DIODE 1SS133, 176, HSS104
D17	VG442600	DIODE. ZENR MTZJ24C 24V
D18	VG437700	DIODE. ZENR MTZJ5.6B 5.6V
D19	VS997800	DIODE 1T2
D20	VS997800	DIODE 1T2
D21	VS997800	DIODE 1T2
D22	VS997800	DIODE 1T2
D23	VS997800	DIODE 1T2
D24	VS997800	DIODE 1T2
D25	VS997800	DIODE 1T2
D26	VD631600	DIODE 1SS133, 176, HSS104
D27	VG437800	DIODE. ZENR MTZJ5.6C 5.6V
D28	VD631600	DIODE 1SS133, 176, HSS104
D29	VD631600	DIODE 1SS133, 176, HSS104
D301	VG437700	DIODE. ZENR MTZJ5.6B 5.6V

\* New Parts



Schm Ref.	PART NO.	Description	
D402	VD631600	DIODE	1SS133, 176, HSS104
D403	VD631600	DIODE	1SS133, 176, HSS104
D404	VD631600	DIODE	1SS133, 176, HSS104
D405	VD631600	DIODE	1SS133, 176, HSS104
D406	VD631600	DIODE	1SS133, 176, HSS104
IC1	XQ315A00	IC	AN8806SB
IC3	XF494A00	IC	LB1641
IC6	XU103A00	IC	M56748FP CD-DRIVER
IC11	XM572A00	IC	MN66271
IC12	XU102A00	IC	uPD75217CW-277 CPU
IC16	iR012510	IC	HD74HC125P
IC25	XA987A00	IC	NJM2068D-D
IC27	XD201A00	IC	M5290P
L100	GE300610	FER. BEAD	BL02RN1-R62T4
△ L404	VU984000	FLTR	IE-UU10.5-009
PJ1	VV411100	JACK.PIN	2P
Q1	iB054430	TR	2SB544 D, E, F, G
Q2	iC287820	TR	2SC2878 A, B
Q3	VK432900	TR	2SD1915F S, T
Q7	iA093320	TR	2SA933S Q, R
Q8	iA093320	TR	2SA933S Q, R
△ Q9	VS883300	TR	2SB1565 E, F
Q12	iA093320	TR	2SA933S Q, R
Q17	iC287820	TR	2SC2878 A, B
Q18	iC287820	TR	2SC2878 A, B
Q19	iC287820	TR	2SC2878 A, B
Q20	iC287820	TR	2SC2878 A, B
△ Q301	VS883400	TR	2SD2394 E, F
R26	HV754100	R. CAR. FP	10 Ω 1/4W
△ R110	HV755100	R. CAR. FP	100 Ω 1/4W
△ R111	HV755100	R. CAR. FP	100 Ω 1/4W
△ SW401	VV057600	SW. PUSH	PS-2B04T6
SW403	VG392900	SW. TACT	SKHVAA
SW405	VG392900	SW. TACT	SKHVAA
SW406	VG392900	SW. TACT	SKHVAA
SW407	VG392900	SW. TACT	SKHVAA
SW408	VG392900	SW. TACT	SKHVAA
SW409	VG392900	SW. TACT	SKHVAA
SW411	VG392900	SW. TACT	SKHVAA
SW413	VG392900	SW. TACT	SKHVAA
SW414	VG392900	SW. TACT	SKHVAA
SW416	VG392900	SW. TACT	SKHVAA
SW418	VG392900	SW. TACT	SKHVAA
SW420	VG392900	SW. TACT	SKHVAA
SW421	VG392900	SW. TACT	SKHVAA
SW422	VG392900	SW. TACT	SKHVAA
SW423	VG392900	SW. TACT	SKHVAA
△ SW426	VL908000	VOLT. SELCT	ESE-370(R)
SW430	VG392900	SW. TACT	SKHVAA
△ T401	XN392A00	TRANS. PWR	(UC)
△ T401	XN393A00	TRANS. PWR	(BG)
△ T401	XN394A00	TRANS. PWR	(R)
△ T401	XN395A00	TRANS. PWR	(A)

\* New Parts

Schm Ref.	PART NO.	Description	
U401	VY848700	L. DTCT	SBX1976-52
V401	VR061600	FL. DSPLY	9-MT-133GK
XL1	VJ677200	RSNR. CE	4.19MHz
XL3	VJ719800	RSNR. CRYST	16.9344MHz
	VQ948800	SHEET	FL
	Vi835500	HEAT. SINK	PH-0124S-B
	VA119100	HEAT. SINK	
	VZ156000	SPACER. FL	t4x5x23

\* New Parts

CDX-393<sup>mkII</sup>

A

B

C

D

E

CDX-393mkII

**EXPLODED VIEW**

1

2

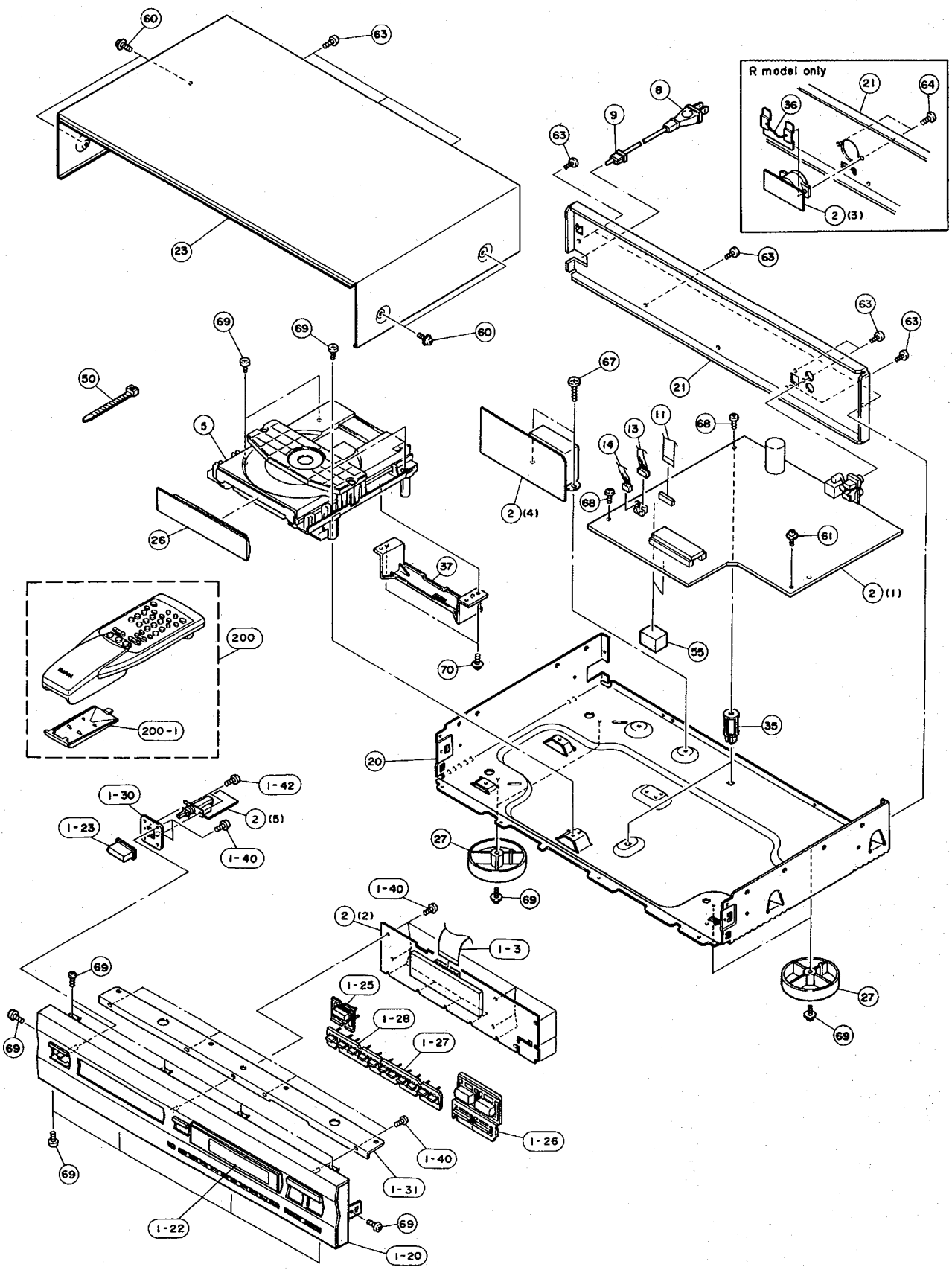
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7



MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
1- 3	MF130100	FLEXIBLE FLAT CABLE	30P 100mm	
* 1-20	V3421900	FRONT PANEL		BL
* 1-20	V3422000	FRONT PANEL		TI
1-22	VZ155700	WINDOW PANEL, LID		
1-23	VU875100	BUTTON	9.5x22	BL
1-23	VU875200	BUTTON	9.5x22	TI
1-25	VZ155100	BUTTON, 1 KEY		BL
1-25	VZ155200	BUTTON, 1 KEY		TI
1-26	VZ155300	BUTTON, 4 KEY		BL
1-26	VZ155400	BUTTON, 4 KEY		TI
1-27	VZ155500	BUTTON, 6 KEY		BL
1-27	VZ155600	BUTTON, 6 KEY		TI
1-28	VZ309600	BUTTON, 5 KEY		BL
1-28	VZ309700	BUTTON, 5 KEY		TI
1-30	VZ152500	SUPPORT, SWITCH		
1-31	VZ152600	SUPPORT, PANEL		
1-40	EP630220	BIND HEAD P-TITE SCREW	3x8 ZMC2-BL	
1-42	EP600820	BIND HEAD B-TITE SCREW	3x6 FCRM3-BL	
* 2	V3411300	P. C. B. ASS'Y	MAIN	(UC)
* 2	V3411400	P. C. B. ASS'Y	MAIN	(R)
* 2	V3411500	P. C. B. ASS'Y	MAIN	(A)
* 2	V3411600	P. C. B. ASS'Y	MAIN	(BG)
5	VZ573200	CD MECHANISM UNIT	KSL-2130CCM	
△ 8	V2296800	POWER CORD ASS'Y		(A)
△ 8	V2363800	POWER CORD ASS'Y		(UC)
△ 8	VN363200	POWER CORD ASS'Y		(R)
△ 8	VN363700	POWER CORD ASS'Y		(G)
△ 8	VV437300	POWER CORD ASS'Y		(B)
9	V2438700	CORD STOPPER	#10P1	
11	V2017700	CONNECTOR, FLAT CABLE	16P 280mm	
13	MF706100	CONNECTOR ASS'Y	6P 100mm	
14	MF705100	CONNECTOR ASS'Y	5P 100mm	
20	VZ151800	CHASSIS, MAIN	ALL	
* 21	V3421500	REAR PANEL		(UC)
* 21	V3421600	REAR PANEL		(R)
* 21	V3421700	REAR PANEL		(A)
* 21	V3421800	REAR PANEL		(BG)
23	VZ151900	TOP COVER		BL
23	VZ152000	TOP COVER		TI
26	VZ154300	LID		BL
26	VZ154400	LID		TI
27	VQ780300	LEG	D60xH16	
35	VU981200	SUPPORT, P. C. B.	No. 3596	
36	VS257300	PLATE, R		(R)
37	VZ262200	SUPPORT	PU	
50	VU590000	BINDING TIE	CBTD001B	
55	V2113100	SPACER		
60	21991500	PW HEAD S-TITE SCREW	4x8-10 FCRM3-BL	BL
60	VH313200	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	TI
61	EL300650	PW HEAD B-TITE SCREW	3x8-8 FCRM3-BL	
63	VN413300	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2-BL	
64	EP600140	BIND HEAD B-TITE SCREW	3x10 MFZN2-BL	(R)
67	V2728500	BIND HEAD S-TITE SCREW	4x7 MFZN2-BL	

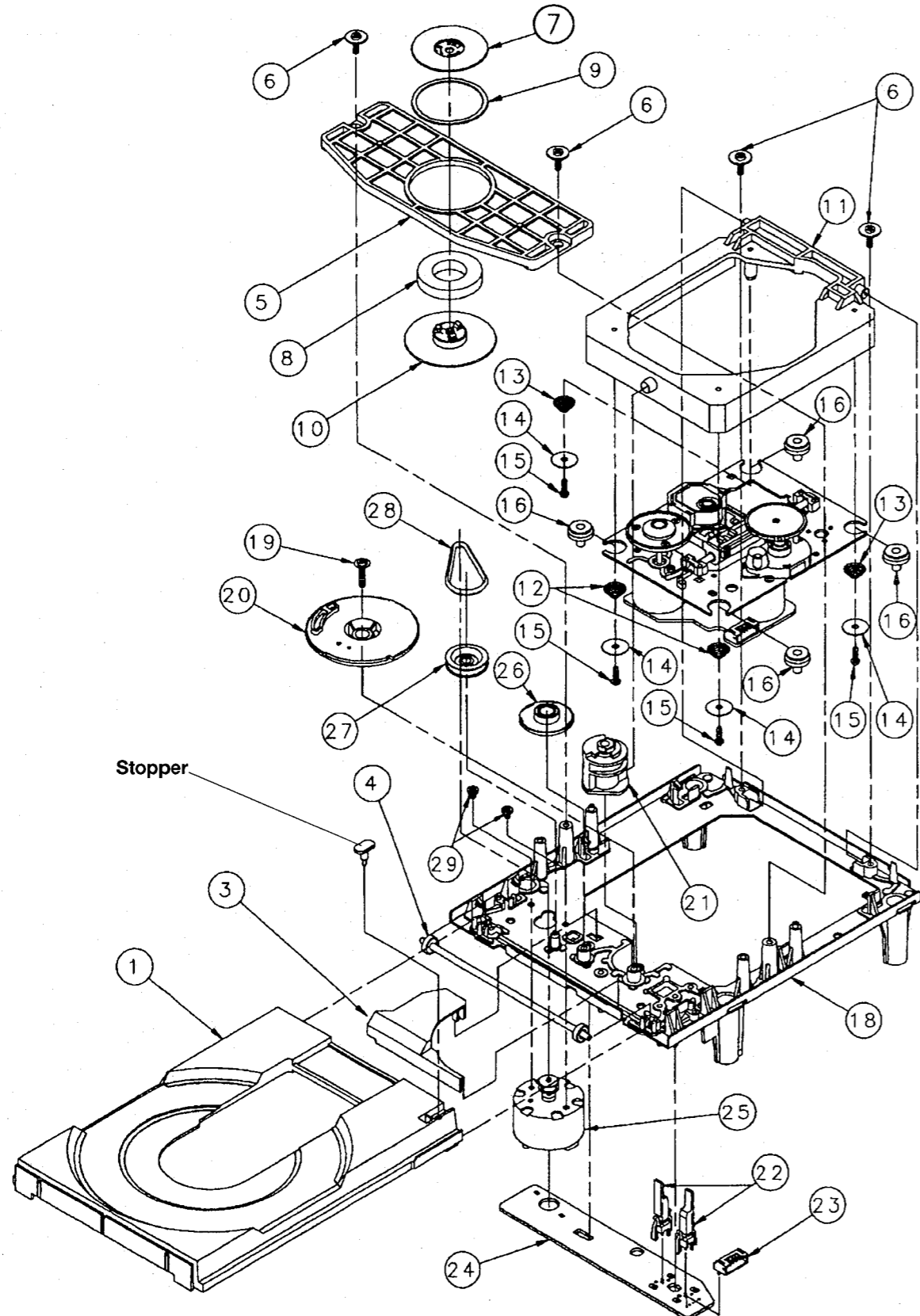
\* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
68	EP630640	BIND HEAD P-TITE SCREW	3x20 FCRM3-BL	
69	EP600830	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
70	V2128100	PW HEAD S-TITE SCREW	3x12-8 MFZN2-Y	
200	VZ170300	ACCESSORIES REMOTE CONTROL TRANSMITTER	SBGH20025A CDX1	
200-1	CX679050	LID	74x34BLALPS	
	VY952200	PIN-PLUG CORD BATTERY, MANGANESE	2P 1.0m SUM-3, AA, R06	

\* New Parts

CDX-393<sub>mkII</sub>

1 ■ EXPLODED VIEW (CD Mechanism Unit)



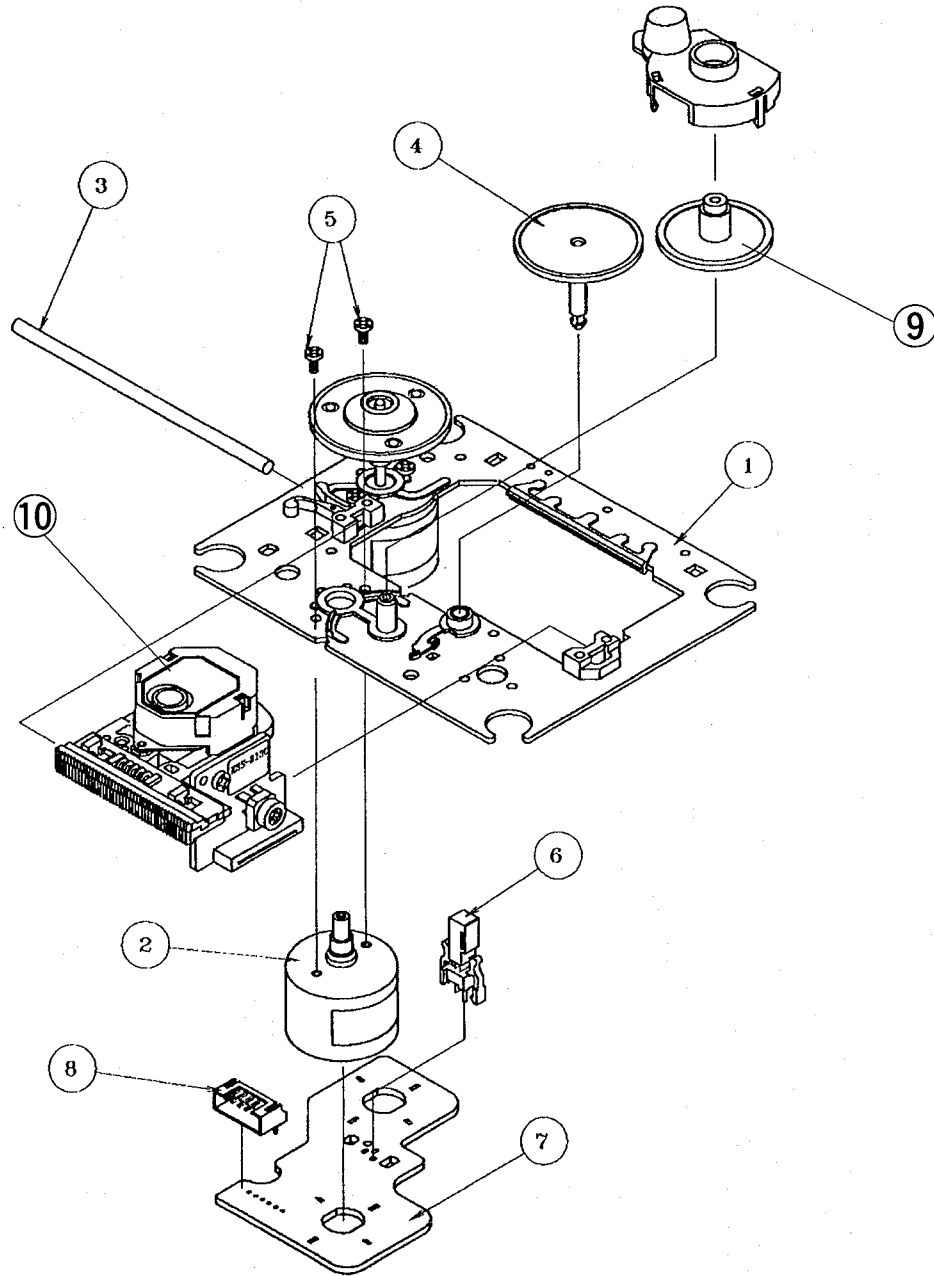
\* The stopper is not supplied with the tray as a spare part.  
 When replacing the tray, keep the removed stopper and reuse it.  
 Should it be lost and a new one be necessary, order service part ⑱ Main Chassis (S) and remove the stopper only from it and use it as a spare part.

■ 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

# 1 ■ EXPLODED VIEW (Drive Unit)

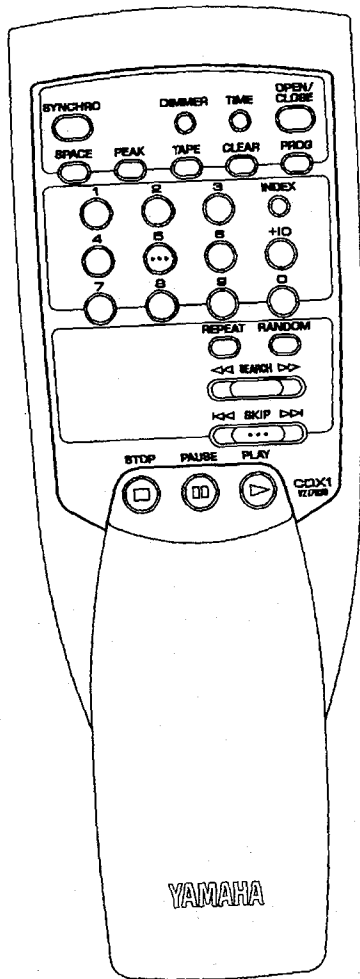
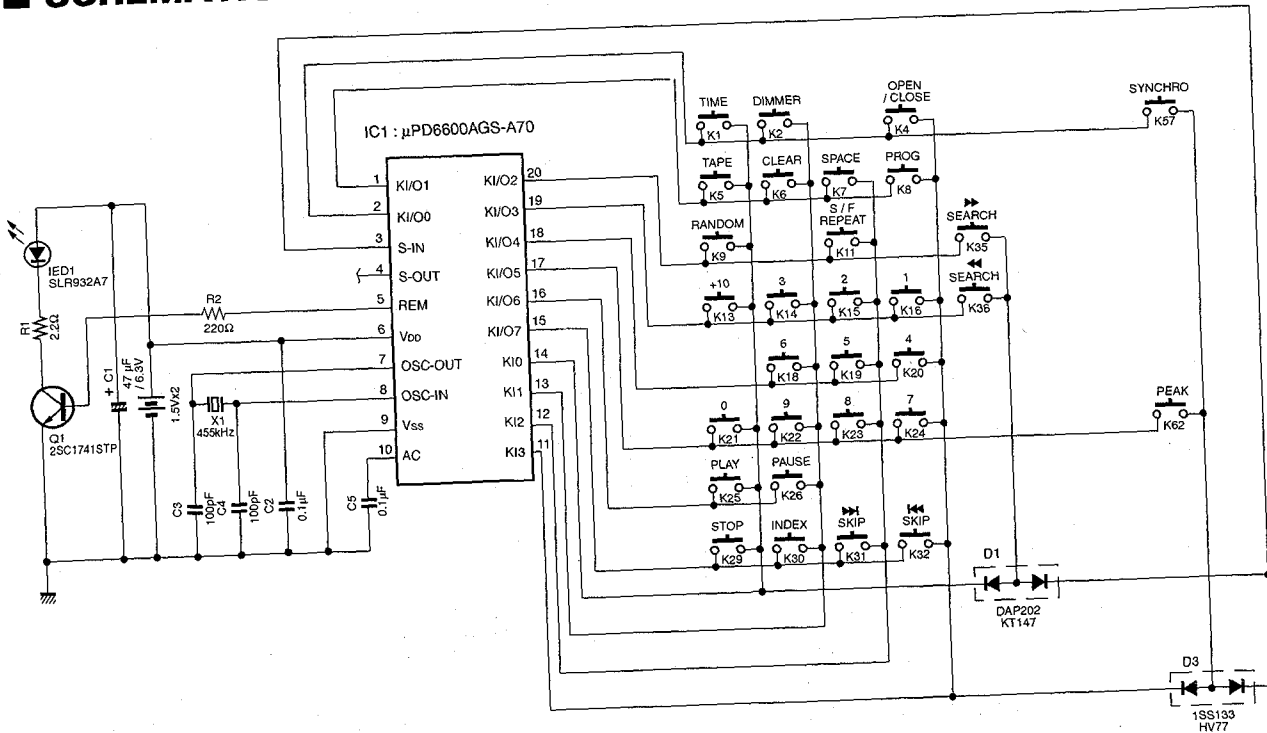


Ref. No.	PART NO.	Description	Remarks	Markets
△*	1	MOTOR CHASSIS ASS'Y	(MB)	X26258771
*	2	MOTOR GEAR ASS'Y		X26257691
*	3	SLED SHAFT		262690801
*	4	GEAR, A	(S)	262690701
*	5	PAN HEAD SCREW	2x3 ZMC2-Y	762125515
*	6	LEAF SWITCH		157208511
*	7	PWB, MOTOR	MOTOR 6P	163967812
*	8	CONNECTOR PIN	6P	156472211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

\* New Parts

# REMOTE CONTROL TRANSMITTER

## ■ SCHEMATIC DIAGRAM



KEY No.	FUNCTION	CUSTOM CODE (HEX)	REVERSE CUSTOM CODE (HEX)	DATA CODE (HEX)	REMARKS D0 D7
K1	TIME	79	86	0A	01010000
K2	DIMMER	79	86	1E	01111000
K4	OPEN/CLOSE	79	86	01	10000000
K5	TAPE	79	86	57	11101010
K6	CLEAR	79	86	0D	10110000
K7	SPACE	79	86	0F	11110000
K8	PROG	79	86	0C	00110000
K9	RANDOM	79	86	1B	11011000
K11	S/F REPEAT	79	86	08	00010000
K13	+10	79	86	1A	01011000
K14	3	79	86	13	11001000
K15	2	79	86	12	01001000
K16	1	79	86	11	10001000
K18	6	79	86	16	01101000
K19	5	79	86	15	10101000
K20	4	79	86	14	00101000
K21	0	79	86	10	00001000
K22	9	79	86	19	10011000
K23	8	79	86	18	00011000
K24	7	79	86	17	11101000
K25	PLAY	79	86	02	01000000
K26	PAUSE	79	86	55	10101010
K29	STOP	79	86	56	01101010
K30	INDEX	79	86	0B	11010000
K31	SKIP	79	86	07	11100000
K32	SKIP	79	86	04	00100000
K35	SEARCH	79	86	06	01100000
K36	SEARCH	79	86	05	10100000
K57	SYNCHRO	79	86	58	00011010
K62	PEAK	79	86	5D	10111010

# 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