

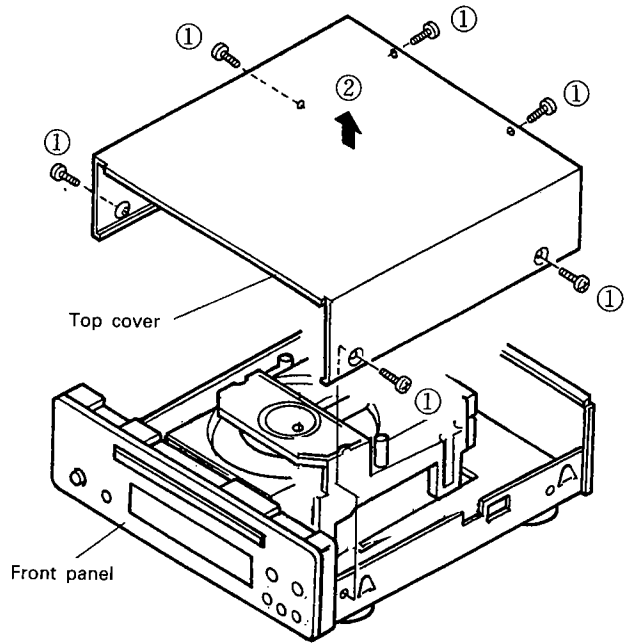
**CD PLAYER SECTION**

**DISASSEMBLY PROCEDURES**

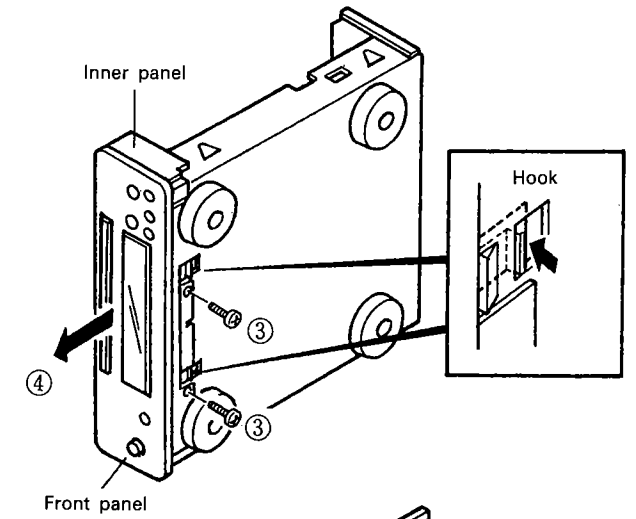
(Assembly is performed in the reverse order.)

**1. Removing the Top Cover and the Front Panel**

- ① Remove the six screws which fasten the top cover.
- ② Remove the top cover (upward) in the direction of the arrow.



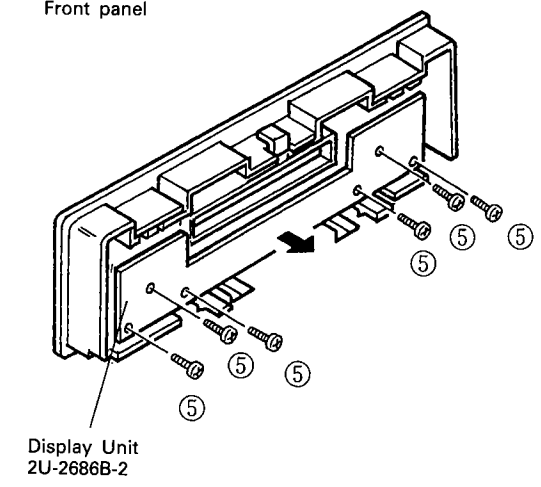
- ③ Remove the two screws which fasten front panel.
- ④ Release the inner panel hooks from the chassis while pulling the panels in the direction of the arrow to remove the inner panel and the front panel as one unit.



**2. Removing the Units**

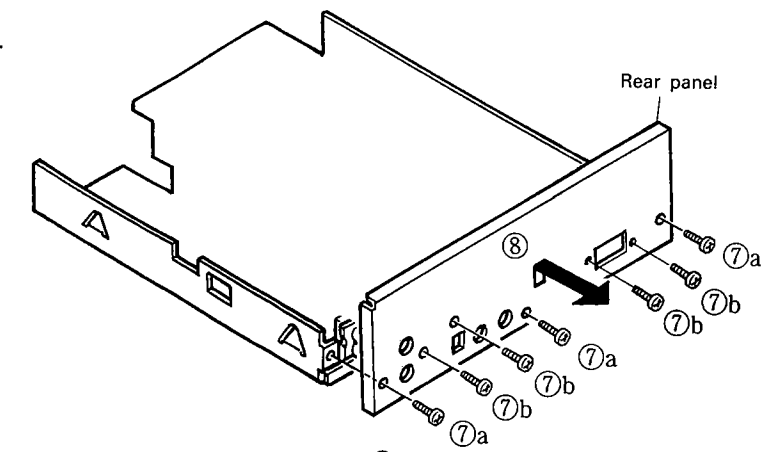
**Display Unit (2U-2686B-2)**

- ⑤ Remove the six screws which fasten the display units.



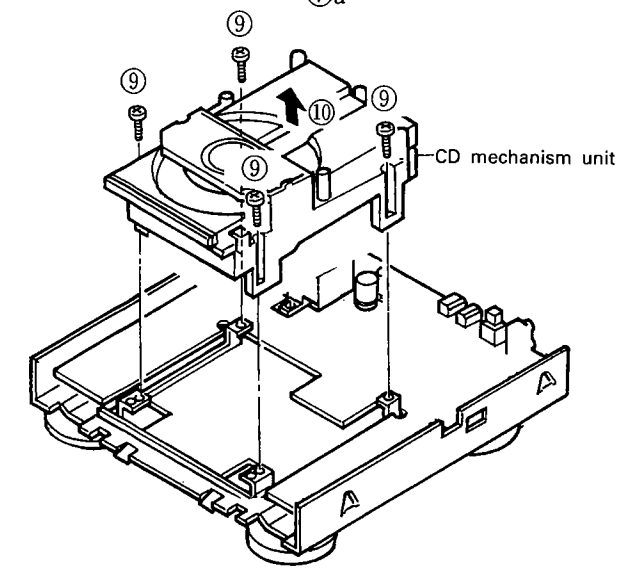
**3. Removing the Rear Panel**

- ⑦ Remove the three "a" screws and four "b" screws which fasten the rear panel.
- ⑧ Remove the rear panel in the direction of the arrow.



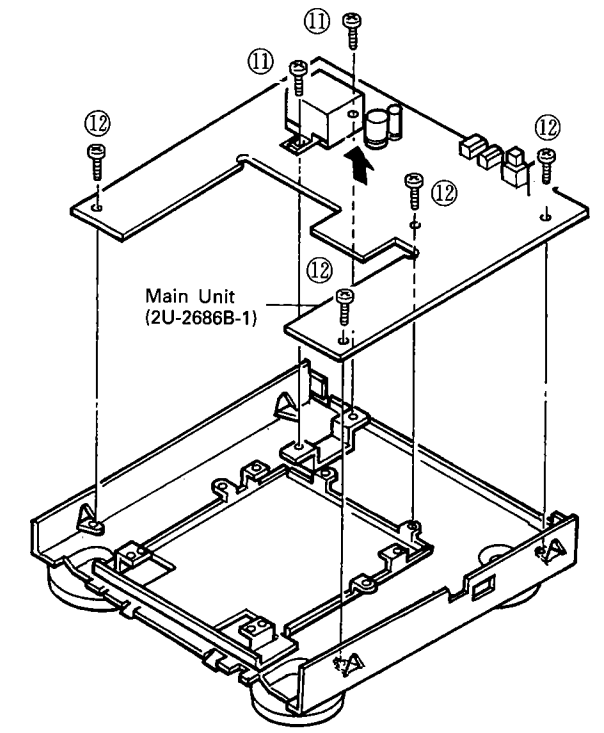
**4. Removing the CD Mechanism Unit**

- ⑨ Remove the four screws which fasten the CD mechanism unit.
- ⑩ Remove the CD mechanism unit in the direction of the arrow.



**Main Unit (2U-2686B-1)**

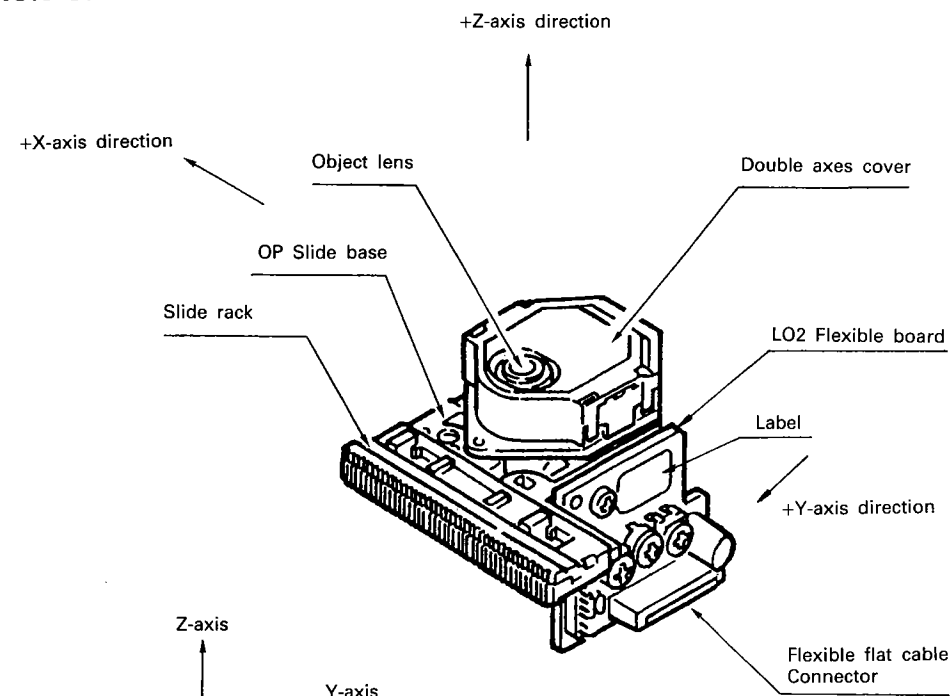
- ⑪ Remove the two screws which fasten the transformer.
- ⑫ Remove the four screws which fasten the main unit.



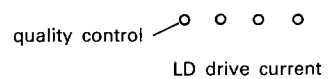
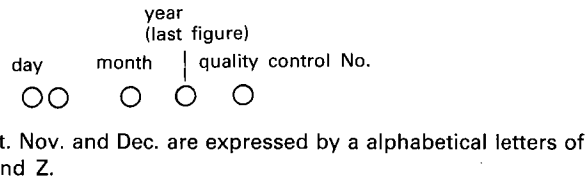
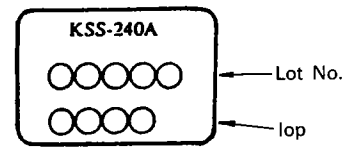
**CD PLAYER SECTION**

**DESCRIPTION OF THE COMPONENTS**

**LASER PICKUP**

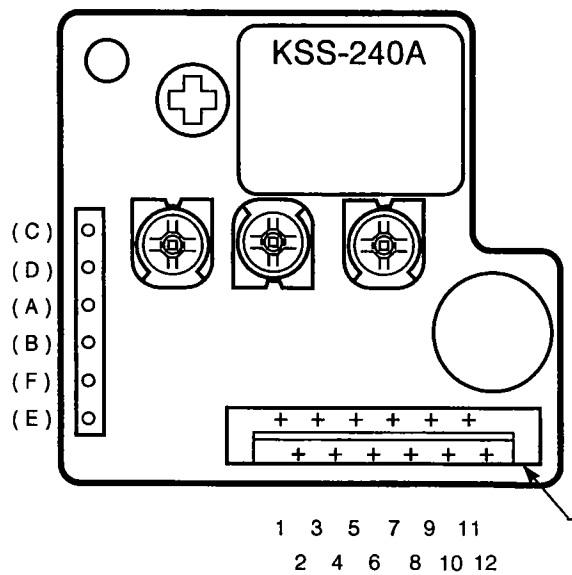


**Label**



The expressed unit is by mA, with omission of the decimal points as for example, 56.5 mA will be expressed as 565, but the head of English letter means the control in the manufacturing plant.

**PIN CONNECTOR**



Pin No.	Description	Input/Output	Pin No.	Description	Input/Output
1	VC (+2.5V)	OUT	7	Vcc (+5V)	IN
2	TE (TRK ER signal)	OUT	8	LDC (LD Control)	IN
3	FE (FCS ER signal)	OUT	9	FCS+ (Double axes)	IN
4	FZC (FZS signal)	OUT	10	TRK+ (Double axes)	IN
5	RF (RF signal)	OUT	11	TRK- (Double axes)	IN
6	GND	OUT	12	FCS- (Double axes)	IN

**Caution for Handling the Laser Pick-up**

The laser pick-up KSS-240A is assembled and precisely adjusted using a sophisticated manufacturing process in our plant. Do not disassemble or attempt to readjust it. Please keep the following instructions carefully in handling pick-up.

**1. Handle with Care**

- (1) Storage**  
Do not store the pick-up in dusty, high-temperated or high-humidity environments.
- (2) Please take care for preventing from shock by falling down or careless handling.**

**2. Laser Diode (LD)**

- (1) Protect your eyes**  
The laser beam may damage the human eye, since the intensity of the focused spot may reach  $7 \times 10^3 \text{ W/cm}^2$  even if the intensity at the objective lens is  $400 \mu\text{W}$  maximum. As the light beam spreads after focused through the objective lens, it does not effect you in the place as far as more than 30 cms. However, do not look at the laser light beam either through the objective lens directly nor another lens or a mirror.

- (2) Poison of As**  
Since the LD chip contains As (Arsenic), as GaAs + GaAlAs, as known as the poison, although the poison is relatively weak, in comparing with others, e.g.  $\text{As}_2\text{O}_3$ ,  $\text{AsCl}_3$  etc., and the amount is small, avoid putting the chip in acid or an alkali solution, heating it over  $200^\circ\text{C}$  or putting it into your mouth.
- (3) Avoid surge current or electrostatic discharge**  
The LD may be damaged or deteriorated by its own strong light if a large current is supplied to it, even if only a short pulse.

Make sure that there is no surge current in the LD driving circuit by switches or else. Be careful to handle pick-up as it may be damaged in a moment by human electrostatic discharge. The pins of the LD are short-circuited by solder for protection during shipment.

For safety handling of an LD, grounding the human body, measuring equipments and jig is strongly recommended. And still it is further desirable to make use of mat on the platform and floor for handling the LD.

To open the short-circuit, remove the soldering quickly with a soldering iron whose metal part is grounded.

The temperature of the soldering iron should be less than  $320^\circ\text{C}$  (30 W).

**3. Actuator**

- (1) The performance of the actuator may be effected if magnetic material is located nearby, since the actuator has a strong magnetic circuit. Do not permit dust to enter through the clearance of the cover.**

- (2) Cleaning the lens**  
It may change the specifications by attaching dust or ash on the objective lens. Clean the lens with a cleaning paper dampened with a little water, not pressing lens with so much strength by the cleaning paper.

**4. Metal Bearing**

As the metal bearing of Cu-compound sintered alloy is impregnated with FROIL946P (\*Part No. 529 0054 007), never fail to supply the bushing with the same lubricant at the time of replacing the pick-up.

**5. Handling**

Please handle the laser pick-up with holding the side base (rosin molded prt).

When either a part of human body or some other things may happen to touch directly with the circuit part of P.W. Board, it may cause deterioration, take careful attention in handling this base.

**6. Deterioration**

As KSS-240A comprises built-in RF Amp and APC circuit, it resists stronger against external electrostatic damages than the former typed pickup. However, there is possibility of pickup deterioration in the following cases.

- (1) Low HF level, or with great numbers of jitters.**
- (2) Tracking offset (EF Balance) is out of order (Refer to "Confirmation Method of Adjustment" for confirmation on (1) and (2)).**

## ADJUSTMENTS

Microcomputer built in the unit, comprises service program to facilitate servo adjustment by pushing operation button.

### 1. Start service program

Set the UCD-F10 (CD player section) to standby. Then, while short-circuiting TP102 ③ SWCL and ④ SWOP, switch on the power switch. Two to three seconds later, "01" will appear on the display of the UCD-F10 to indicate the service mode setting.

**(Caution)**

- When service program started normal operation of buttons will be defeated.

### 2. Service program function

Button	Function	Description
▲ OPEN/CLOSE	Opens or close the disc holder.	<ul style="list-style-type: none"> <li>• Opens or closes only when disc is stopped.</li> <li>• Operate other keys after open or close.</li> </ul>
■ STOP	Stops system function.	<ul style="list-style-type: none"> <li>• Displays track number 01.</li> <li>• Push when adjustment completed, or do it again.</li> </ul>
▶ PLAY	Starts focus servo and disc turns.	<ul style="list-style-type: none"> <li>• Push when adjust tracking offset.</li> <li>• When completed, displays track number 02.</li> </ul>
⏸ PAUSE	Starts focus servo, tracking servo, slide servo, spindle servo.	<ul style="list-style-type: none"> <li>• When PLAY button is pushed, starts tracking servo and slide servo.</li> <li>• When completed, track number 03.</li> </ul>
Other buttons	No normal operation.	<ul style="list-style-type: none"> <li>• Do not operate buttons other than the above.</li> <li>• If misoperated, immediately turn power switch OFF.</li> </ul>

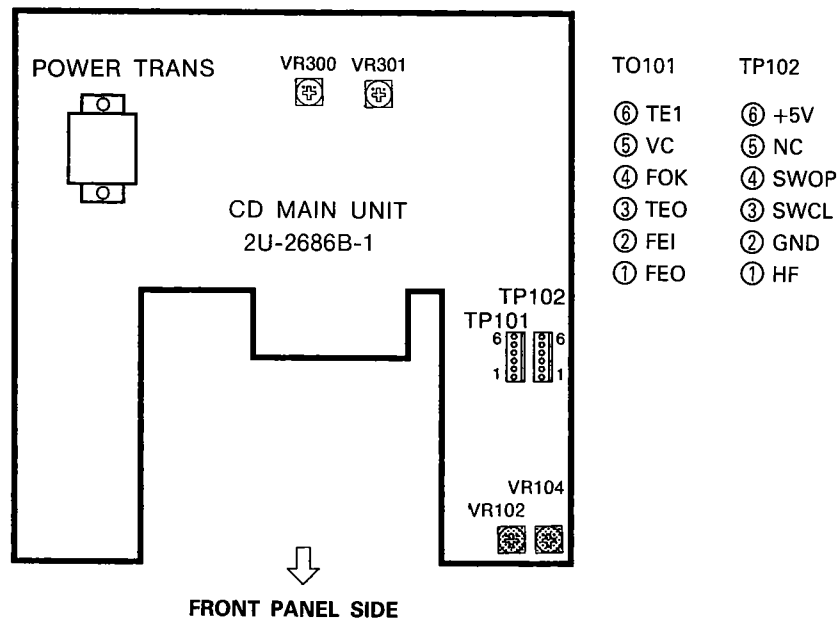
**(Caution)**

- Do not use remote control during service program mode.

### 3. Adjustment method

(1) Location

#### 2U-2686B CD MAIN UNIT (Component Side)

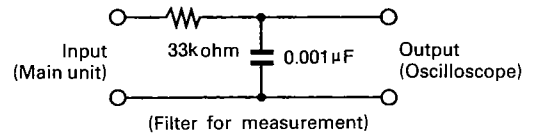


**NOTE:** VR301 and VR302 have been adjusted before shipping and do not require adjustment.

**CD PLAYER SECTION**

(2) Necessary equipment for adjustment

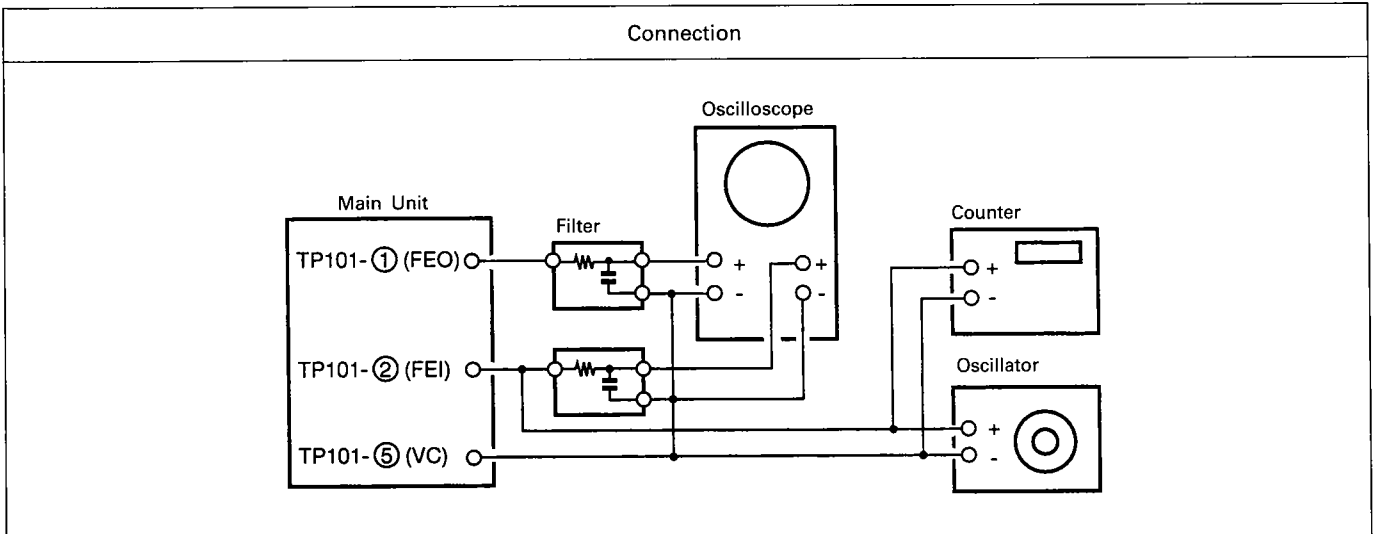
1. Dual trace oscilloscope
2. Reference disc TOMITA YASUKO (CA-1094) or W.A. MOZART (CO-74176)
3. Oscillator (10 Hz ~ 10 kHz, 0 ~ 3 Vp-p)
4. Frequency counter (readable no less than 5 kHz)
5. Filter for measurement



(3) Preset

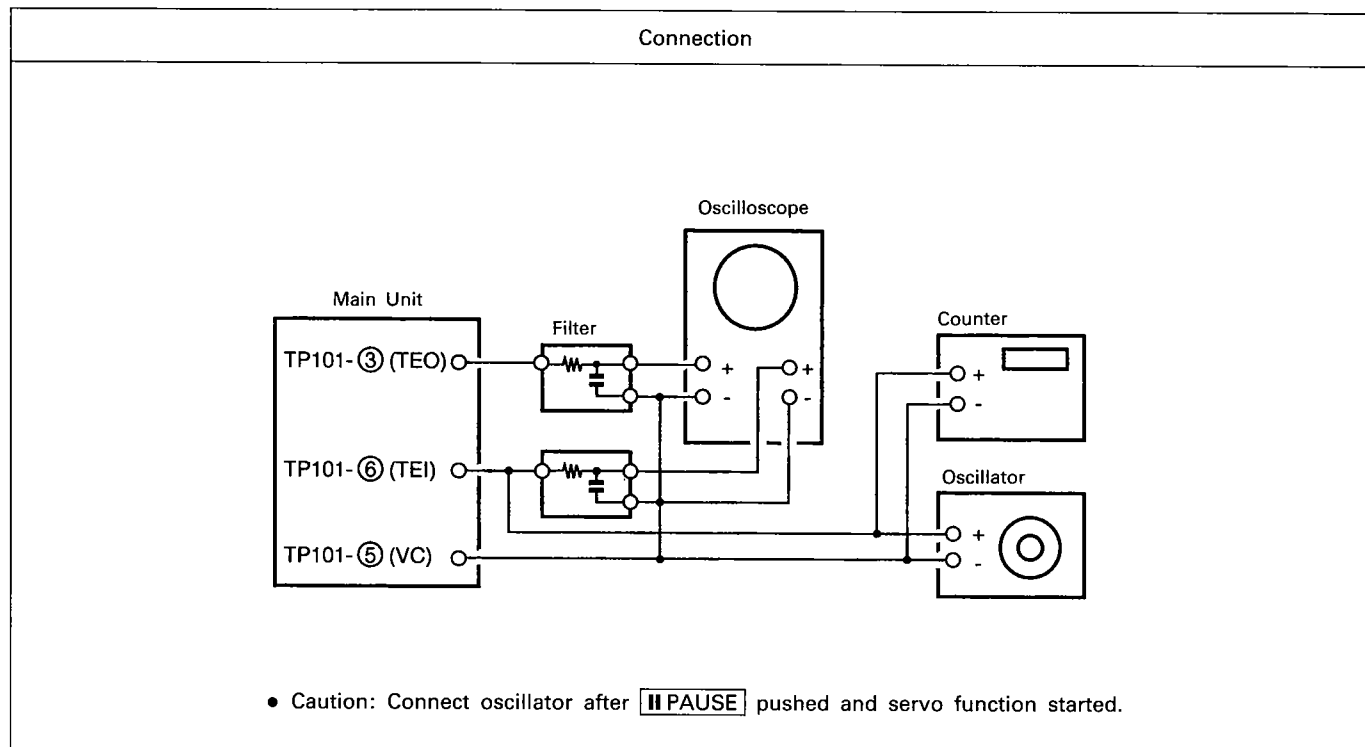
1.	Start service program.								
2.	Preset VR102, 104 as per right figure.		<table style="width: 100%; border: none;"> <tr> <td style="border: none;">VR102 (F-GAIN)</td> <td style="border: none; text-align: center;"></td> <td style="border: none; text-align: right;">12 O'clock</td> </tr> <tr> <td style="border: none;">VR104 (T-GAIN)</td> <td style="border: none; text-align: center;"></td> <td style="border: none; text-align: right;">12 O'clock</td> </tr> </table>	VR102 (F-GAIN)		12 O'clock	VR104 (T-GAIN)		12 O'clock
VR102 (F-GAIN)		12 O'clock							
VR104 (T-GAIN)		12 O'clock							
3.	Step.	<ol style="list-style-type: none"> <li>1. Focus gain (VR102)</li> <li>2. Tracking gain (VR104)</li> <li>3. Tracking Offset (Confirm)</li> <li>4. AF Level (Confirm)</li> </ol>							

**4. Focus gain**



Oscillator	Counter	Oscilloscope		Adjust (Volume)	Check (Oscilloscope)	Step
		V	H			
(CA-1094) • 930 Hz • 2 Vp-p  (CO-74176) • 1.1 kHz • 2 Vp-p	930 Hz	• DC range • X-Y mode		VR102	Y axis  Phase 90° Waveform not right Y axis 	<ol style="list-style-type: none"> <li>1. Press the <b>▲ OPEN/CLOSE</b> button and place a disc for adjustment purposes onto the disc holder.</li> <li>2. Press the <b>▲ OPEN/CLOSE</b> button again and close the disc holder.</li> <li>3. Push <b>   PAUSE</b> (Displays track number <b>03</b>)</li> <li>4. Set oscillator to 930 Hz/2 Vp-p or 1.1 kHz/2 Vp-p.</li> <li>5. Switch oscilloscope input to X-Y mode.</li> <li>6. Adjust VR104 [T-GAIN] to symmetrize Lissajous figures to X-Y axes.</li> </ol>
	1.1 kHz					

## 5. Tracking gain



Oscillator	Counter	Oscilloscope		Adjust (Volume)	Check (Oscilloscope)	Step
		V	H			
(CA-1094) • 2.7 kHz • 0.8 Vp-p	2.7 kHz	• DC range • X-Y mode		VR104	Y axis  X axis  Phase 90° Waveform not right Y axis  X axis 	1. Push <b>II PAUSE</b> (Displays track number <b>03</b> ) 2. Connect Oscillator 3. Set oscillator to 2.7 kHz/0.8 Vp-p or 3.3 kHz/0.8 Vp-p. 4. Switch oscilloscope input to X-Y mode. 5. Adjust VR104 [T-GAIN] to symmetrize Lissajous figures to X-Y axes.
(CO-74176) • 3.3 kHz • 0.8 Vp-p	3.3 kHz					

**CD PLAYER SECTION**

**6. Tracking offset (E/F Balance) confirm**

Connection			
Oscilloscope		Check	Step
V	H	(Oscilloscope)	
0.1V/div	1~2ms/div	$\frac{A - B}{A + B} \times 100 < 20\%$	<ol style="list-style-type: none"> <li>1. Push <b>▶ PLAY</b> to turn disc. (Displays track number <b>02</b>)</li> <li>2. Short ( + ) ( - ) of oscilloscope and check the base line.</li> <li>3. Confirm that upper and lower amplitude of the waveform is symmetric against 0 V.</li> </ol>

**7. HF level confirm**

Connection			
Oscilloscope		Check	Step
V	H	(Oscilloscope)	
50mV/div or 20mV/div	0.2 μV/div or 0.5 μV/div	$A = 1.36 \pm 0.2V_{p-p}$	<ol style="list-style-type: none"> <li>1. Push <b>   PAUSE</b>. (Displays track number <b>03</b>)</li> <li>2. Check HF level of oscilloscope.</li> <li>3. Confirm that the waveform is in good shape. (◇ Pattern in center must be able to discriminate clearly.)</li> </ol>
<ul style="list-style-type: none"> <li>• Set input mode to ALTERMATE or CHOPPER.</li> </ul>			

## HEAT RUN MODE FUNCTION

### Heat Run Mode

#### 1) To activate

While hold pushing ►►, ◄◄, ►► and ◄◄ keys simultaneously, turn the unit power on. The remote control sensor indicator will light to show that the unit is shifted in Heat Run mode.

Be sure to load the disc previously.

Press the disc holder open/close button ( ▲ OPEN/CLOSE ) to cancel Heat Run mode.

★ **This mode functions only for a disc with 21 pieces of music or more. For a disc with 20 pieces of music or lesser, please do not use.**

#### 2) Operation

During the Heat Run mode to shift the unit in Play mode makes the unit replays from the first music after opens the loader once and re-closes it when finish playing the last track (comes into lead out).

Hereafter, operates open/close of loader, servo on, reading of TOC, and playing repeatedly, and repeats playing the two tracks; the first and the last ones.

#### 3) Error Message

When the system error occurs while in Heat Run mode, the following error message will display on the Track No. indicator and stops operation.

##### 1. E1

At the time of Focus Servo does not activate.

##### 2. E2

When unable to detect synchronous pattern however the disc is in rotating. (GFS does not drive.)

##### 3. E3

No synchronous pattern can be detected while in Play mode. (No GFS drives.)

##### 4. E4

When TOC is unreadable in despite of servo is activated.

##### 5. E5

In case of loader malfunctions. (Unable to turn on the switch.)

##### 6. E6

The inner circle switch of Pick-up does not turn off.

##### 7. E7

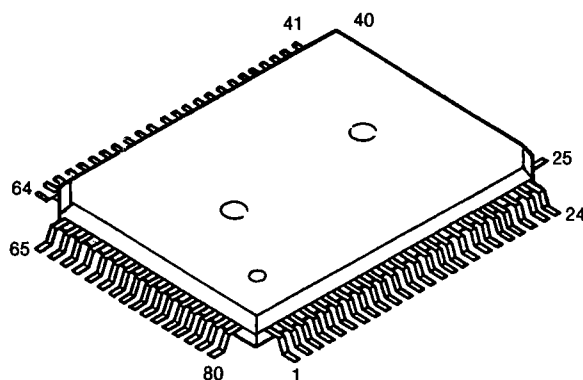
The inner circle switch of Pick-up does not turn on.

★ The number of operation up to the stop will be displayed on the minute and second portion of the indicator.

## CD PLAYER SECTION

## SEMICONDUCTORS

## ● IC's



CXD 2500BQ (IC202)

## ● Pin Function Table

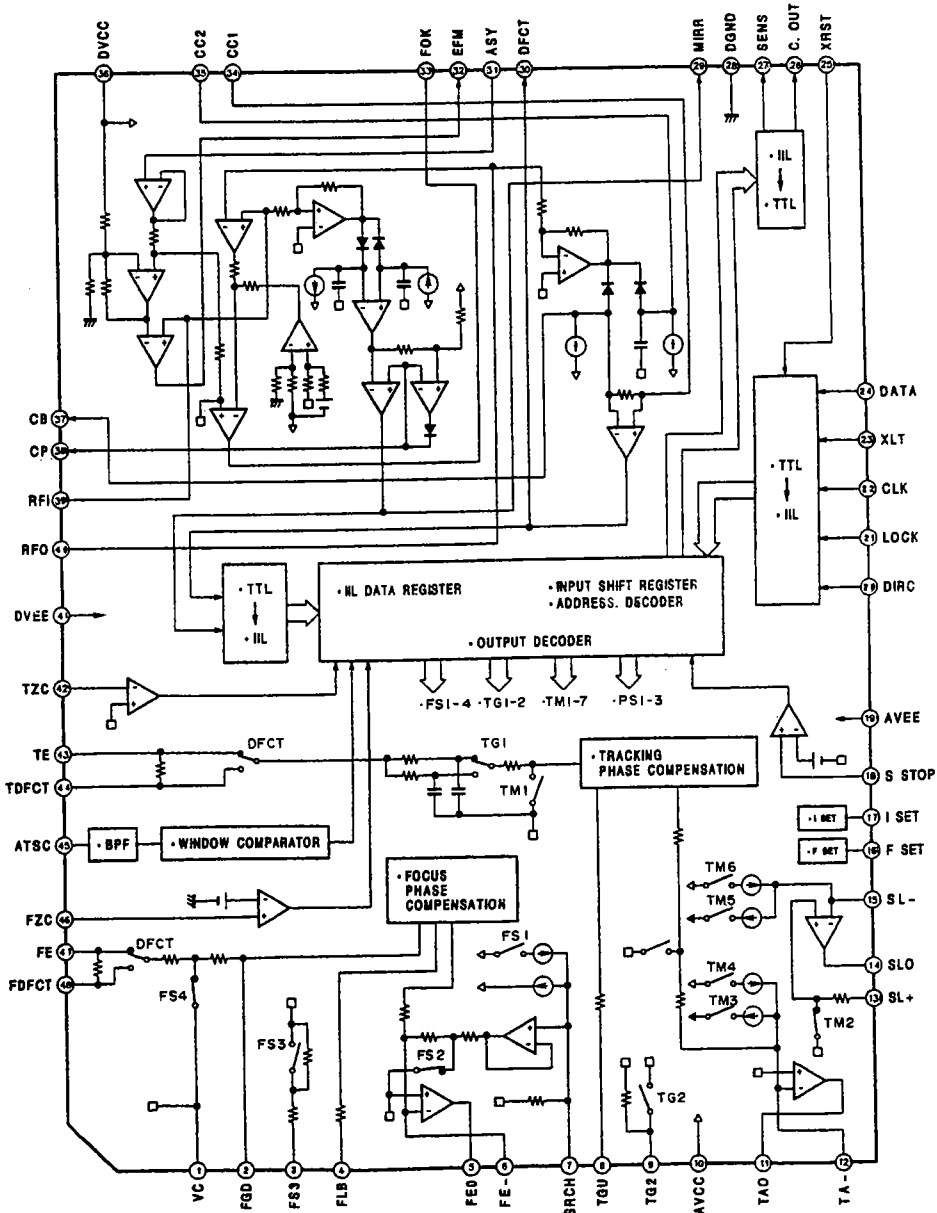
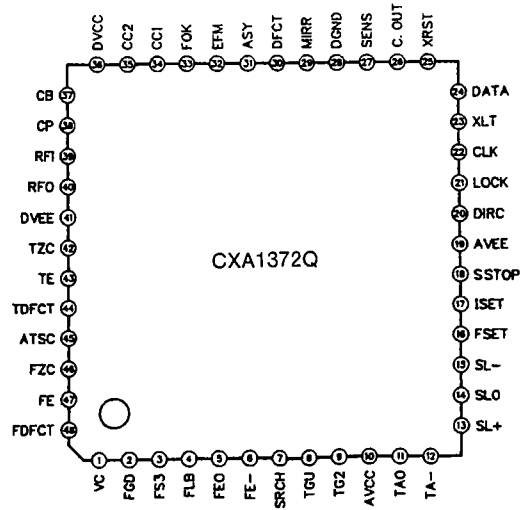
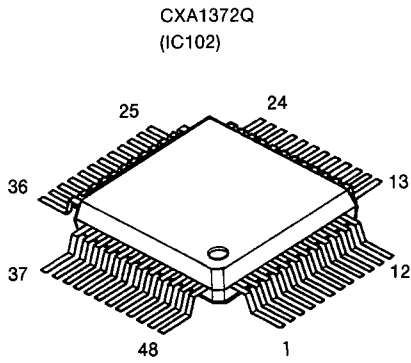
Pin No.	Pin Symbol	I/O		Pin-Description
1	FOK	I		Focus OK input pin. Used with SENS output and the servo auto sequencer.
2	FSW	O	Z,0	Output filter switching output of the spindle motor.
3	MON	O	1,0	On-off control output of the spindle motor.
4	MDP	O	1,Z,0	Servo control of the spindle motor.
5	MDS	O	1,Z,0	Servo control of the spindle motor.
6	LOCK	O	1,0	Samples the GFS at 460 Hz and outputs a high level when GFS is high. Outputs a low level when GFS is continuously low 8 times.
7	NC	-		
8	VCOO	O	1,0	Oscillator circuit output for analog EFM PLL use.
9	VCOI	O		Oscillator circuit output for analog EFM PLL use. fLOCK = 8.6436 MHz
10	TEST	I		Pin for test purposes, usually grounded.
11	PDO	O	1,Z,0	Used for the charge pump for analog EFM PLL.
12	V <sub>SS</sub>			Ground
13	NC	-		
14	NC	-		
15	NC	-		
16	VPCO	O	1,Z,0	PLL charge pump output for variable pitch.
17	VCKI	O		Clock input center frequency (fcenter) from the external VCO used for variable pitch is 16.9344 MHz.
18	FILO	O	Analog.	Slave (i.e., digital PLL) digital output for the master PLL.
19	FILI	I		Filter input for the master PLL.
20	PCO	O	1,Z,0	Charge pump output for the master PLL.
21	AV <sub>SS</sub>			Analog ground
22	CLTV	I		Master VCO control voltage input.
23	AV <sub>DD</sub>			Analog power supply (+5 V).
24	RF	I		EFM signal input.
25	TEST2	I		Grounded.
26	TEST3	I		Grounded.
27	ASYO	O	1,0	EFM full-swing output. (V <sub>SS</sub> at low, V <sub>DD</sub> at high.)
28	TEST4	I		Grounded.
29	NC	-		
30	PSSI	I		Audio data output mode switching input. Serial output at low level, parallel output at high level.
31	WDCK	O	1,0	D/A interface for a 48-bit slot. Word clock frequency is 2Fs.
32	LRCK	O	1,0	D/A interface for a 48-bit slot. LR clock frequency is Fs.
33	V <sub>DD</sub>			Power supply (+5 V).



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Pin No.	Pin Symbol	I/O		Pin Description
34	DA16	O	1,0	When PSSL equals 1, DA16 (MSB) is output. When PSSL equals 0, the serial data of the 48-bit slot is output. (Two's complement, MSB first.)
35	DA15	O	1,0	When PSSL equals 1, DA15 is output. When PSSL equals 0, the bit clock of the 48-bit slot is output.
36	DA14	O	1,0	When PSSL equals 1, DA14 is output. When PSSL equals 0, the serial data of the 48-bit slot is output. (Two's complement, LSB first.)
37	DA13	O	1,0	When PSSL equals 1, DA13 is output. When PSSL equals 0, the bit clock of the 48-bit slot is output.
38	DA12	O	1,0	When PSSL equals 1, DA12 is output. When PSSL equals 0, the LR clock of the 48-bit slot is output.
39	DA11	O	1,0	When PSSL equals 1, DA11 is output. When PSSL equals 0, GTOP is output.
40	DA10	O	1,0	When PSSL equals 1, DA10 is output. When PSSL equals 0, XUGF is output.
41	DA09	O	1,0	When PSSL equals 1, DA09 is output. When PSSL equals 0, XPLCK is output.
42	DA08	O	1,0	When PSSL equals 1, DA08 is output. When PSSL equals 0, GFS is output.
43	DA07	O	1,0	When PSSL equals 1, DA07 is output. When PSSL equals 0, RFCK is output.
44	DA06	O	1,0	When PSSL equals 1, DA06 is output. When PSSL equals 0, C2P0 is output.
45	DA05	O	1,0	When PSSL equals 1, DA05 is output. When PSSL equals 0, XRAOF is output.
46	DA04	O	1,0	When PSSL equals 1, DA04 is output. When PSSL equals 0, MNT3 is output.
47	DA03	O	1,0	When PSSL equals 1, DA03 is output. When PSSL equals 0, MNT2 is output.
48	DA02	O	1,0	When PSSL equals 1, DA02 is output. When PSSL equals 0, MNT1 is output.
49	DA01	O	1,0	When PSSL equals 1, DA01 is output. When PSSL equals 0, MNT0 is output.
50	APTR	O	1,0	Aperture correction control output. High level at time of the right channel.
51	APTL	O	1,0	Aperture correction control output. High level at time of the left channel.
52	V <sub>SS</sub>			Ground.
53	XTAI	I		16.9344 MHz crystal oscillator circuit input. Or, 33.8688 MHz input.
54	XTAO	O	1,0	16.9344 MHz crystal oscillator circuit input.
55	XTSL	I		Crystal selection input pin. Set to low level when the crystal is 16.9344 MHz. Set to high level when 33.8688 MHz.
56	FSTT	O	1,0	Output of 2/3 division of pins 53 and 54. Does not change with variable pitch.
57	C4M	O	1,0	4.2336 MHz output. Changes simultaneously with variable pitch effects.
58	C16M	O	1,0	16.9344 MHz output. Changes simultaneously with variable pitch effects.
59	MD2	I		Digital-Out on/off control. On at high level and off at low level.
60	DOUT	O	1,0	Digital-Out output pin.
61	EMPH	O	1,0	High level output when played disc has emphasis. Low level output when there is no emphasis.
62	WFCK	O	1,0	WFCK (Write Frame Clock) output.
63	SCOR	O	1,0	High level is output when either sub code sync S0 or S1 is detected.
64	SBSO	O	1,0	Serial output of SubP through W.
65	EXCK	I		Clock input for SBSO readout.
66	SQSO	O	1,0	SubQ 80bit and PCM peak level data 16-bit output.
67	SQCK	I		Clock input for SQSO readout.
68	MUTE	I		Muting at high level, cancellation at low level.
69	SENS	-	1,Z,0	SENS output. Output to CPU.
70	XRST	I		System set. Reset at low level.
71	DATA	I		Serial data input from the CPU.
72	XLAT	I		Latch input data input from the CPU. Serial data are latched with the trailing edge.
73	V <sub>DD</sub>			Power supply (+5 V).
74	CLOK	I		Serial data transfer clock input from the CPU.
75	SEIN	I		Sense input from SSP.
76	CNIN	O	1,0	Number of track jumps counting signal input.
77	DATO	O	1,0	Serial data output to SSP.
78	XLTO	O	1,0	Serial data latch output to SSP. Latched with the trailing edge.
79	CLKP	O	1,0	Serial data transfer clock output to SSP.
80	MIRR	I		Mirror signal input. Used for jumps of 128 tracks or greater with an auto sequencer.

**CD PLAYER SECTION**



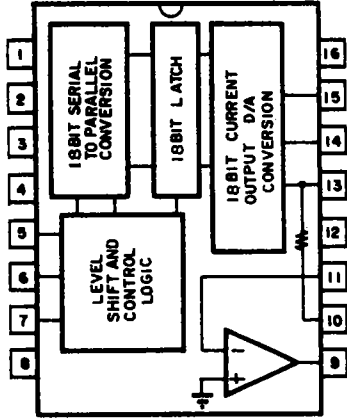
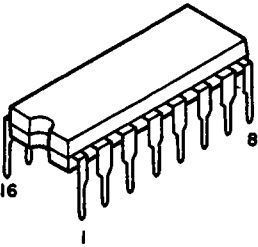
## CD PLAYER SECTION

## ● Pin Description Table

Pin No.	Pin Symbol	I/O	Pin Description
1	VC	I	Mid-point voltage input pin. GND with two power supplies. (VCC + GND)/2 with a single power supply.
2	FGD	I	When dropping the high-region gain of the focus servo, insert a capacitor between this pin and pin 3.
3	FS3	I	The on/off state of FS3 switches the high-region gain of the focus servo.
4	FLB	I	This is the time constant external connection pin for the low-region boost of the focus servo.
5	FEO	O	This is the focus drive output.
6	FE-	I	Inverting input pin of the focus amplifier.
7	SRCH	I	Time constant external connection pin for creating the focus search waveform.
8	TGU	I	Time constant external connection pin for switching of the tracking high-region gain.
9	TG2	I	Time constant external connection pin for switching of the tracking high-region gain.
10	—	—	—
11	TAO	O	Tracking drive output.
12	TA-	I	Inverting input pin of the tracking amplifier.
13	SL+	I	Non-inverting input pin of the sled amplifier.
14	SLO	O	Sled drive output.
15	SL-	I	Inverting input pin of the sled amplifier.
16	FSET	I	Pin used for the peak setting of the focus tracking phase correction.
17	ISET	I	Supplies the current which determines the focus search, tracking jump, and sled kick height.
18	SSTOP	I	Pin used for the on/off detection signal of the limit switch which is used for detecting the innermost track of the disc.
19	—	—	—
20	DIRC	I	Used at the time of one tracking jump. Includes a 47 kohm pull-up resistor.
21	LOCK	I	The sled runaway prevention circuit is activated at low level. Includes a 47 kohm pull-up resistor.
22	CLK	I	Serial data transfer clock input from the CPU. (No pull-up resistor.)
23	XLT	I	Latch input from the CPU. (No pull-up resistor.)
24	DATA	I	Serial data input from the CPU. (No pull-up resistor.)
25	XRST	I	Resets with a low level at the reset input pin. (No pull-up resistor.)
26	C.OUT	I	Signal output for the count of the number of tracks.
27	SENS	O	Outputs FZC, AS, TZC, SSTOP and other signals by command from the CPU.
28	—	—	—
29	MIRR	O	Output pin of the MIRR comparator. (DC voltage: 10 kohm load resistor connection)
30	DFCT	O	Output pin of the DEFECT comparator. (DC voltage: 10 kohm load resistor connection)
31	ASY	I	Input pin of the auto symmetry control.
32	EFM	O	Output pin of the EFM comparator. (DC voltage: 10 kohm load resistor connection)
33	FOK	O	Output pin of the focus OK comparator. (DC voltage: 10 kohm load resistor connection)
34	CC1	I	DEFECT bottom hold output pin.
35	CC2	O	Input pin for which the DEFECT bottom hold output is input with capacitive coupling.
36	—	—	—
37	CB	I	Connection pin of the DEFECT bottom hold capacitor.
38	CP	I	Connection pin of the MIRR hold capacitor. This is the non-inverting input pin of the MIRR comparator.
39	RF1	I	Input pin for which the output of the RF summing amplifier is input with capacitive coupling.
40	RFO	O	Output pin of the RF summing amplifier. This is the eye pattern check point.
41	—	—	—
42	TZC	I	Input pin of the tracking zero-cross comparator.
43	TE	I	Tracking error input pin.
44	TDFCT	I	Time-constant capacitor connection pin at time of defects.
45	ATSC		Window comparator input pin for ATSC detection.
46	FZC	I	Focus zero-cross comparator input pin.
47	FE	I	Focus error input pin.
48	DFDCT	I	Time-constant capacitor connection pin at time of defects.

**CD PLAYER SECTION**

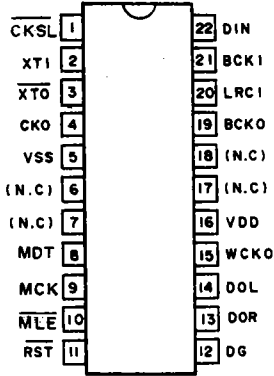
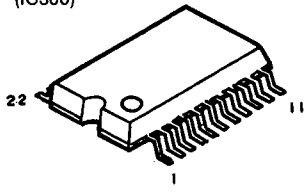
PCM61P-L (IC302, 303)



**Pin Arrangement**

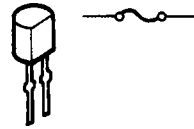
1	-V <sub>CC</sub>	Analog negative power supply
2	DIG. GND	Digital ground
3	+V <sub>L</sub>	Logic positive power supply
4	NC	No connection
5	CLK	Clock input
6	LEC	Latch enable input
7	DATA	Serial data input
8	-V <sub>L</sub>	Logic negative power supply
9	V <sub>OUTTA</sub>	Voltage output
10	RF	Feedback resistor
11	S. J	Summing junction
12	ANA. GND	Analog ground
13	I <sub>OUTJ</sub>	Current output
14	MSB ADJ	MSB adjustment pin
15	V <sub>POTJ</sub>	MSB trimmer potentiometer pin
16	-V <sub>CC</sub>	Analog positive power supply

SM5841BS (IC300)

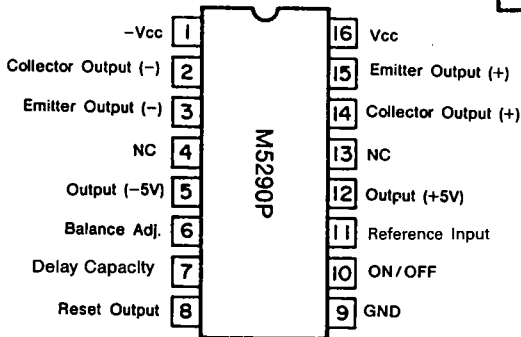
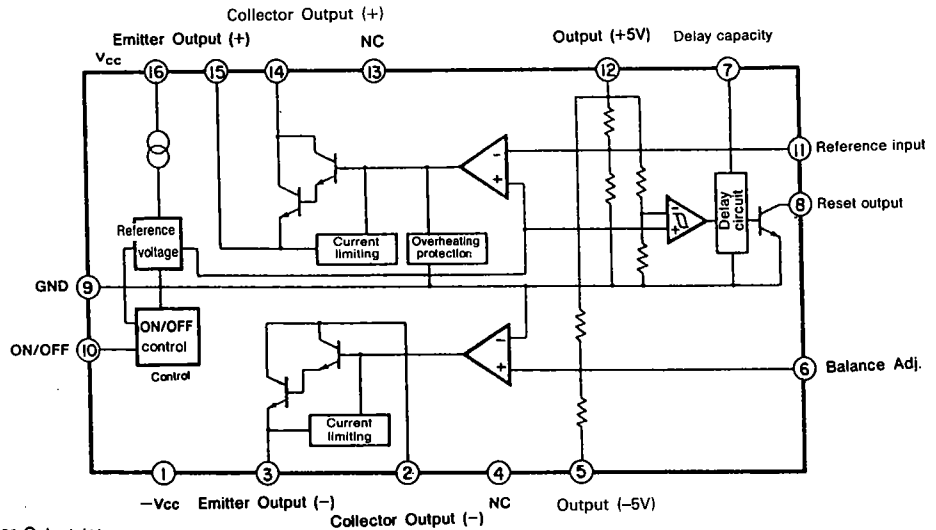
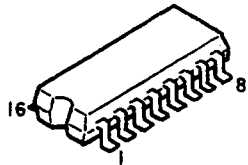


**● IC Protector**

ICP-N15 (IC502, 503)

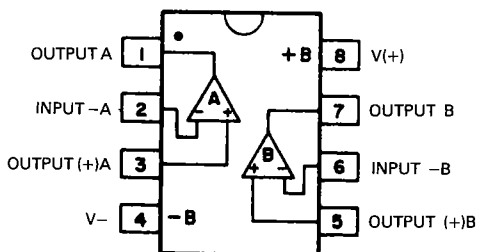
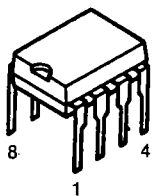


M5290FP (IC501)

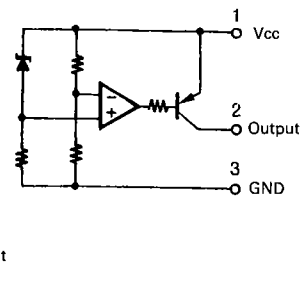


**CD PLAYER SECTION**

BA15218 (IC103, 105, 106)



PST529C (IC200)



**• Transistors**

2SA934 (Q)  
2SC2060 (Q)

2SB1185 (E/F)  
2SD1762 (E/F)

2SA933S (S)  
2SC1740S (S)  
2SD2144S



B (Base)  
C (Collector)  
E (Emitter)



B (Base)  
C (Collector)  
E (Emitter)



B (Base)  
C (Collector)  
E (Emitter)

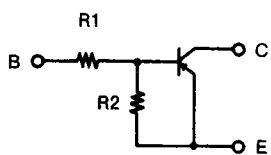
DTA114ES PNP type  
DTC114ES NPN type

PNP type

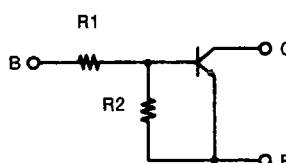
NPN type



B (Base)  
C (Collector)  
E (Emitter)



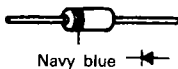
	R1	R2
DTA114ES	10 kohm	10 kom



	R1	R2
DTC114ES	10 kohm	10 kom

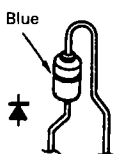
**• Diodes**

1SS270A



Navy blue

1SR35-200A



Blue

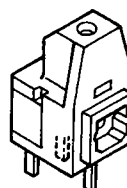
HZS6A-1  
HZS6C-1  
HZS22-1



Navy blue

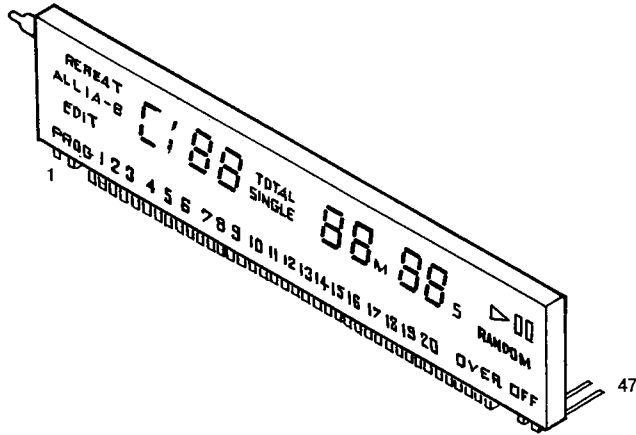
**• Optical out**

GP1F32T (JK280)



**CD PLAYER SECTION**

- **Fluorescent Display Tube 8BT159GK**  
(Part No.: 393 8013 001)

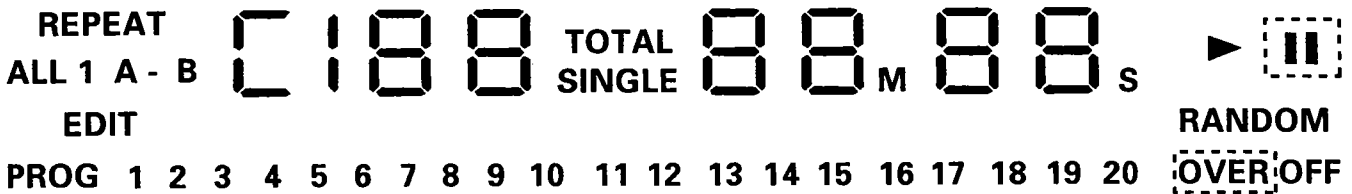


**Pin Connections**

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
Connection	F1	F1	NP	NP	1G	2G	3G	4G	5G	6G	7G	8G	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Pin No.	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	
Connection	NC	NC	NC	NC	NC	NC	NC	NC	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	NP	F2	F2	

- NOTE**
- 1) F1 and F2: ..... Filaments
  - 2) NP: ..... No pin
  - 3) NC: ..... No connection
  - 4) 1 G through 11 G: ..... Grid

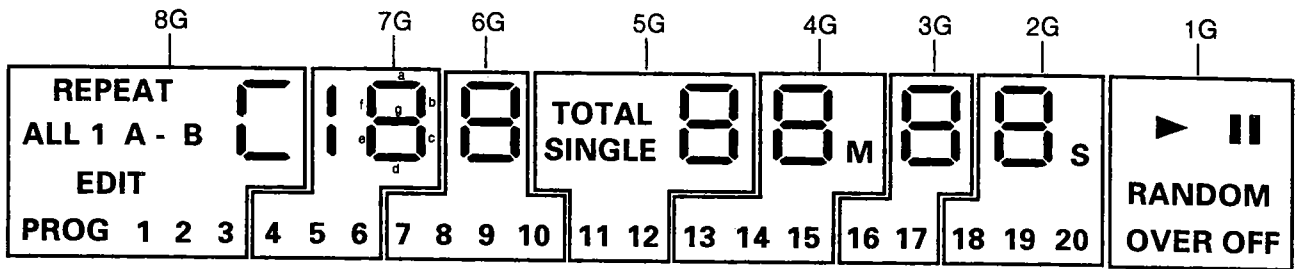
**Pattern Details**



- Illumination colors**
- Reddish orange ..... [ ] portion of above pattern
  - Green ..... Other portions

## CD PLAYER SECTION

## GRID ASSIGNMENT

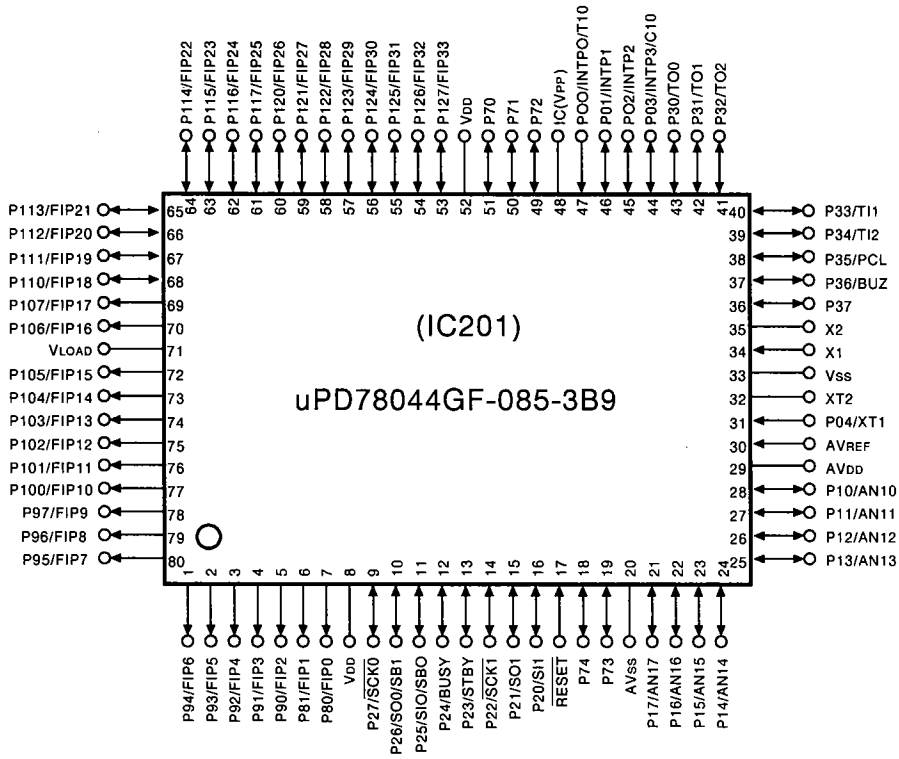
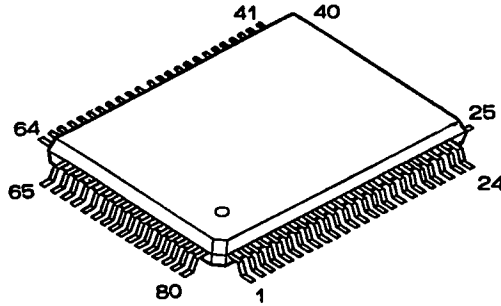


## ANODE CONNECTION

	8G	7G	6G	5G	4G	3G	2G	1G
P1	REPEAT	a	a	a	a	a	a	▶
P2	[	b	b	b	b	b	b	
P3	ALL	c	c	c	c	c	c	RANDOM
P4	1	d	d	d	d	d	d	OVER
P5	A -	e	e	e	e	e	e	OFF
P6	B	f	f	f	f	f	f	—
P7	EDIT	g	g	g	g	g	g	—
P8	PROG		7	TOTAL	M	16	S	—
P9	1	4	8	SINGLE	13	17	18	—
P10	2	5	9	11	14	—	19	—
P11	3	6	10	12	15	—	20	—

MICROPROCESSOR DOCUMENTATION

μPD78044GF-085-3B9 : 262 1936 108  
(IC201)





## CD PLAYER SECTION

● Pin Description Table

Pin	Port Name	Function Name	I/O	Det	Res	Ext	Ini	Function	Notes
1	P94/FIP6	G7	O	-	-	-	L	Fluorescent tube display grid 7 signal.	O P-open
2	P93/FIP5	G6	O	-	-	-	L	Fluorescent tube display grid 6 signal.	O P-open
3	P92/FIP4	G5	O	-	-	-	L	Fluorescent tube display grid 5 signal.	O P-open
4	P91/FIP3	G4	O	-	-	-	L	Fluorescent tube display grid 4 signal.	O P-open
5	P90/FIP2	G3	O	-	-	-	L	Fluorescent tube display grid 3 signal.	O P-open
6	P81/FIP1	G2	O	-	-	-	L	Fluorescent tube display grid 2 signal.	O P-open
7	P80/FIP0	G1	O	-	-	-	L	Fluorescent tube display grid 1 signal.	O P-open
8	VDD	VDD	-	-	-	-	-	Power supply (Connected to +5 V)	-
9	P27/SCK0	SQCK	O	-	Z	-	H	Subcode input clock signal	IO
10	P26/SO0/SB1	Not used.	O	-	Z	-	H	Not connected.	IO
11	P25/SI0/SB0	SUBQ	I	-	Z	-	-	Subcode input data signal	IO
12	P24/BUSY	Not used.	I	-	Z	-	-	Connected to ground.	IO
13	P23/STB	Not used.	I	-	Z	-	-	Connected to ground.	IO
14	P22/SCK1	FUNCCLK	O	-	Z	-	H	Clock signal for auto functions.	IO
15	P21/SO1	FUNCCLK	O	-	Z	-	H	Data output signal for auto functions.	IO
16	P20/SI1	FUNCIN	I	-	Z	-	-	Data input signal for auto functions.	IO
17	RESET	RESET	I	Lv	-	-	-	Reset signal input	I.
18	P74	Not used.	I	-	-	-	-	Connected to ground.	IO N-open
19	P73	Not used.	I	-	-	-	-	Connected to ground.	IO N-open
20	AVSS	AVSS	-	-	-	-	-	Ground of A/D converter. (Connected to ground.)	-
21	P17/AN17	XRST	O	-	Z	-	L	Reset signal for DSP.	IO
22	P16/AN16	STANBY	O	-	Z	Pd	L	Power on/off control signal.	IO
23	P15/AN15	Not used.	I	-	Z	-	-	Connected to ground.	IO
24	P14/AN14	Not used.	I	-	Z	-	-	Connected to ground.	IO
25	P13/AN13	Not used.	I	-	Z	-	-	Connected to ground.	IO
26	P12/AN12	Not used.	I	-	Z	-	-	Connected to ground.	IO
27	P11/AN11	K2	I	-	Z	-	-	Key input signal 2. (Analog input)	IO
28	P10/AN10	K1	I	-	Z	-	-	Key input signal 1. (Analog input)	IO
29	AVDD	AVDD	-	-	-	-	-	Analog power supply of the A/D converter. (Connected to +5 V)	-
30	AVREF	AVREF	I	-	-	-	-	Reference voltage input signal of the A/D converter. (Connected to +5 V)	I
31	P04/XT1	Not used.	I	-	-	-	-	Subsystem clock. (Connected to ground.)	I
32	XT2	Not used.	-	-	-	-	-	Subsystem clock. (Not connected.)	-
33	VSS	GND	-	-	-	-	-	Connected to ground.	-
34	X1	X1	I	-	-	-	-	Main system clock.	I
35	X1	X1	I	-	-	-	-	Main system clock.	-
36	P37	CLK	O	-	Z	-	H	Clock	IO
37	P36/BUZ	DATA	O	-	Z	-	H	Data	IO
38	P35/PCL	XLT	O	-	Z	-	H	Latch	IO
39	P34/TI2	LASER	O	-	Z	Pd	L	Laser diode on/off control signal	IO
40	P33/TI1	SENSE	I	L/E	Z	-	-	Servo condition detection signal	IO
41	P32/TO2	FDATA	O	-	Z	-	H	Data for digital filter control.	IO
42	P31/TO1	FCLK	O	-	Z	-	H	Clock for digital filter control.	IO
43	P30/TO0	MLE	O	-	Z	-	H	Latch for digital filter control.	IO
44	P03/INTP3/CI0	Not used.	O	Ed	Z	-	-	Connected to ground.	IO
45	P02/INTP1	RESET2	O	Ed	Z	Pu	-	RESET signal input (from M5290).	IO

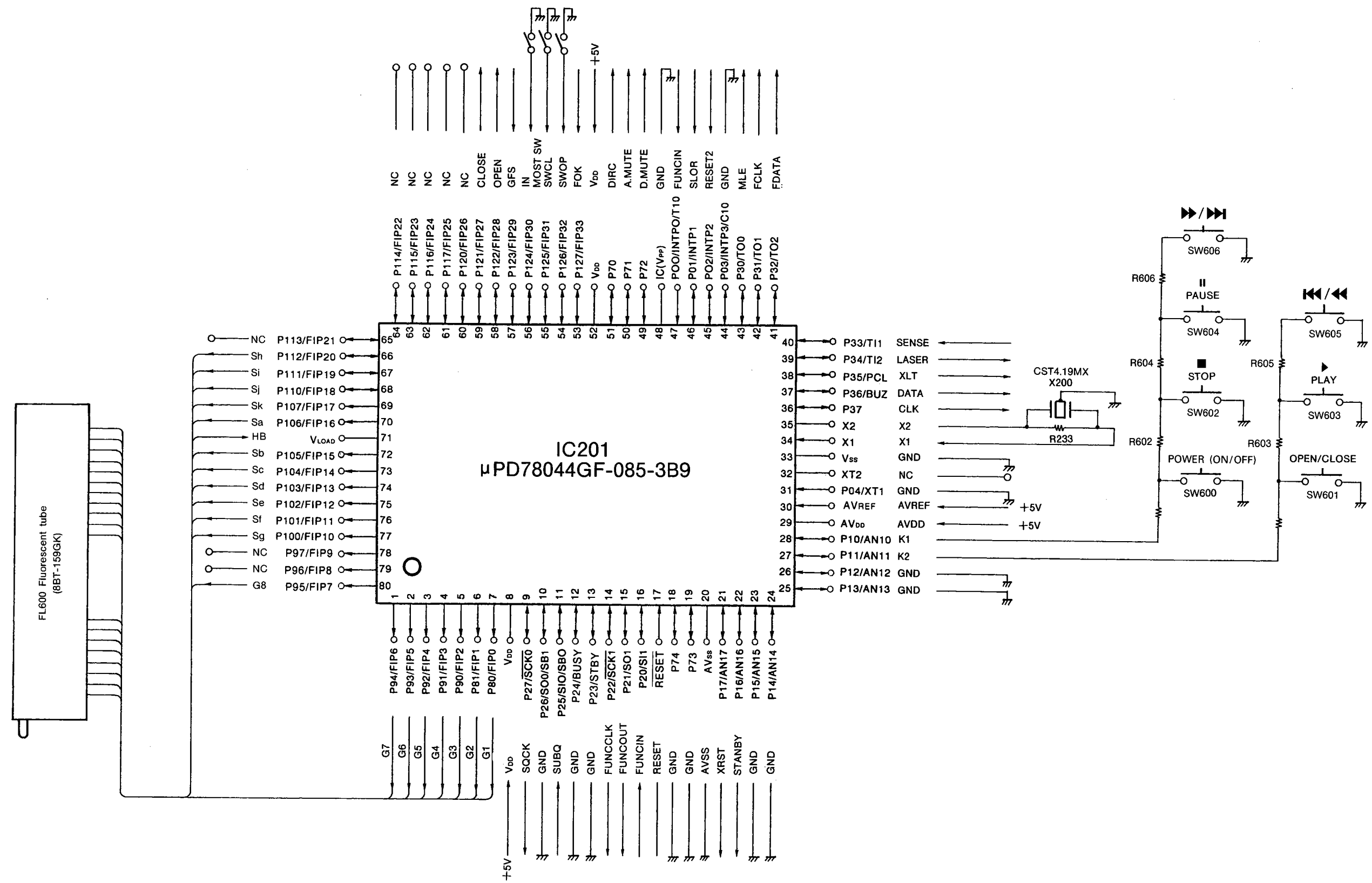
## CD PLAYER SECTION

Pin	Port Name	Function Name	I/O	Det	Res	Ext	Ini	Function	Notes
46	P01/INTP1	SCOR	I	Ed	Z	-	-	Subcode sync signal	IO
47	P00/INTP0/TI0	FUNCIN	I	Ed	Z	-	-	Auto function interrupt signal	I
48	IC (VPP)	IC	-	-	-	-	-	Connected to ground.	-
49	P72	DMUTE	O	-	Z	Pu*	H	Digital muting signal	IO N-open
50	P71	AMUTE	O	-	Z	Pu*	H	Analog muting signal	IO N-open
51	P70	DIRC	O	-	Z	Pu*	L	Servo control signal	IO N-open
52	VDD	VDD	-	-	-	-	-	Power supply. (Connected to +5 V)	-
53	P127/FIP33	FOK	I	Lv	Z	-	-	Focus OK signal	IO P-open
54	P126/FIP32	SWOP	I	Lv	Z	Pu	-	Loader open position detection switch	IO P-open
55	P125/FIP31	SWCL	I	Lv	Z	Pu	-	Loader close position detection switch	IO P-open
56	P124/FIP30	INSW	I	Lv	Z	Pu	-	Pickup inner track position detection switch	IO P-open
57	P123/FIP29	GFS	I	Lv	Z	-	-	Rotation sync signal from DSP	IO P-open
58	P122/FIP28	OPEN	O	-	Z	Pd	H	Loader open drive signal	IO P-open
59	P121/FIP27	CLOSE	O	-	Z	Pd	H	Loader close drive signal	IO P-open
60	P120/FIP26	Not used.	O	-	Z	-	L	Not connected.	IO P-open
61	P117/FIP25	Not used.	O	-	Z	-	L	Not connected.	IO P-open
62	P116/FIP24	Not used.	O	-	Z	-	L	Not connected.	IO P-open
63	P115/FIP23	Not used.	O	-	Z	-	L	Not connected.	IO P-open
64	P114/FIP22	Not used.	O	-	Z	-	L	Not connected.	IO P-open
65	P113/FIP21	Not used.	O	-	Z	-	L	Not connected.	IO P-open
66	P112/FIP20	Sh	O	-	Z	Pd	L	Fluorescent tube display segment h signal	IO P-open
67	P111/FIP19	Si	O	-	Z	Pd	L	Fluorescent tube display segment i signal	IO P-open
68	P110/FIP18	Sj	O	-	Z	Pd	L	Fluorescent tube display segment j signal	IO P-open
69	P107/FIP17	Sk	O	-	-	Pd	L	Fluorescent tube display segment k signal	IO P-open
70	P106/FIP16	Sa	O	-	-	Pd	L	Fluorescent tube display segment a signal	IO P-open
71	VLOAD	-HB	-	-	-	-	-	Power supply for the display.	-
72	P105/FIP15	Sb	O	-	-	Pd	L	Fluorescent tube display segment b signal	IO P-open
73	P104/FIP14	Sc	O	-	-	Pd	L	Fluorescent tube display segment c signal	IO P-open
74	P103/FIP13	Sd	O	-	-	Pd	L	Fluorescent tube display segment d signal	IO P-open
75	P102/FIP12	Se	O	-	-	Pd	L	Fluorescent tube display segment e signal	IO P-open
76	P101/FIP11	Sf	O	-	-	Pd	L	Fluorescent tube display segment f signal	IO P-open
77	P100/FIP10	Sg	O	-	-	Pd	L	Fluorescent tube display segment g signal	IO P-open
78	P97/FIP9	Not used.	O	-	-	Pd	L	Not connected.	IO P-open
79	P96/FIP8	Not used.	O	-	-	Pd	L	Not connected.	IO P-open
80	P95/FIP7	G8	O	-	-	Pd	L	Fluorescent tube display grid 8 signal	IO P-open

CD PLAYER SECTION

MICROPROCESSOR PERIPHERAL WIRING DIAGRAM

1 2 3 4 5 6 7 8



A  
B  
C  
D  
E

CD PLAYER SECTION

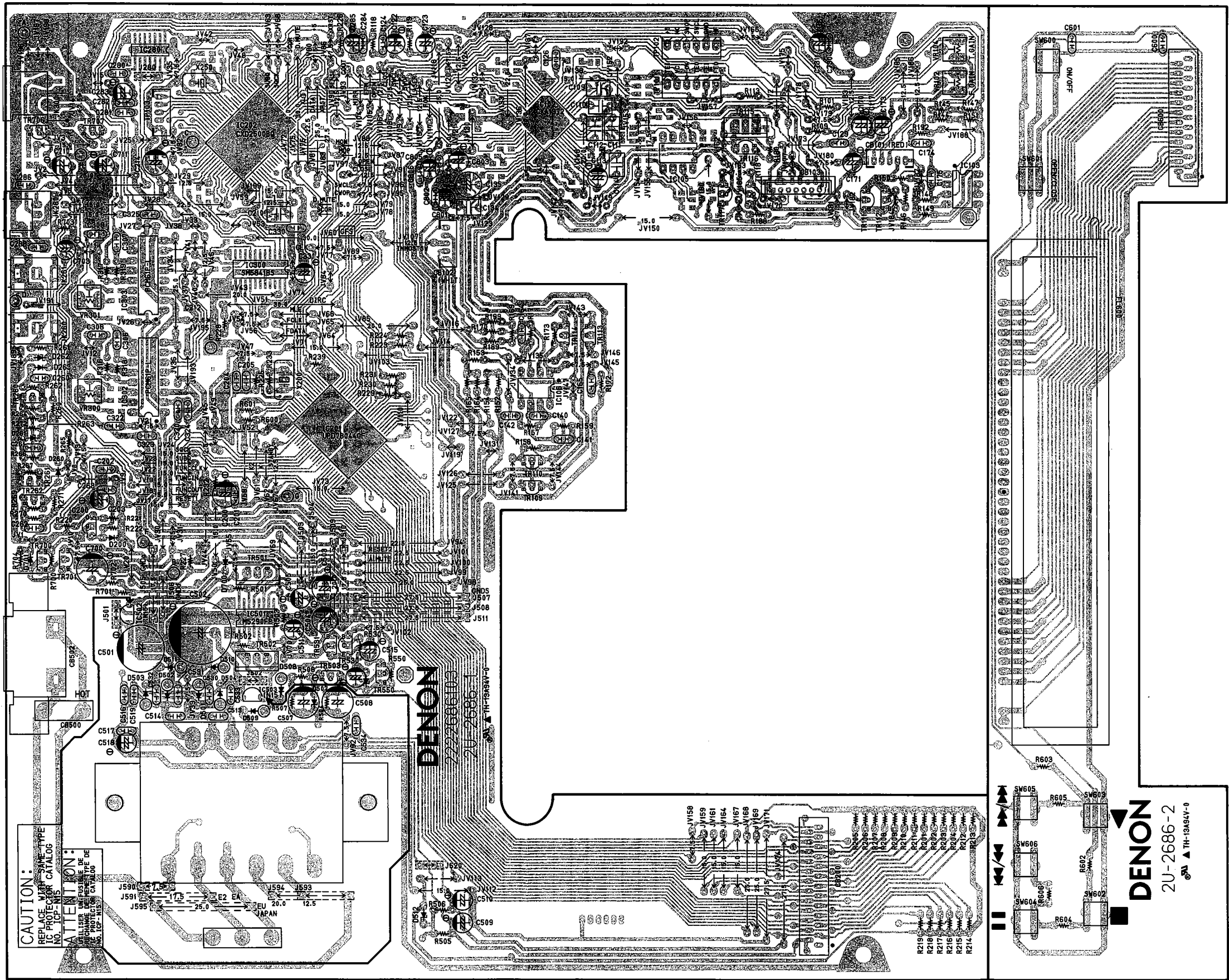
PRINTED WIRING BOARD

1 2 3 4 5 6 7 8

UCD-F10 2U-2686B CD UNIT ASS'Y

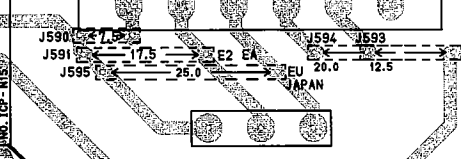
Component Side

2U-2686B	
-1	Main Unit
-2	Display Unit



**CAUTION:**  
REPLACE WITH SAME TYPE  
AC POWER CORD CATALOG  
NO. 10P-118

**ATTENTION:**  
ALL WELDS MUST BE MADE BY DE  
QUILIBRIUM WELDING TO PREVENT  
NO. 10P-118



**DENON**  
2U-2686-1

**DENON**  
2U-2686-2  
TH-18AGV-0

A

B

C

D

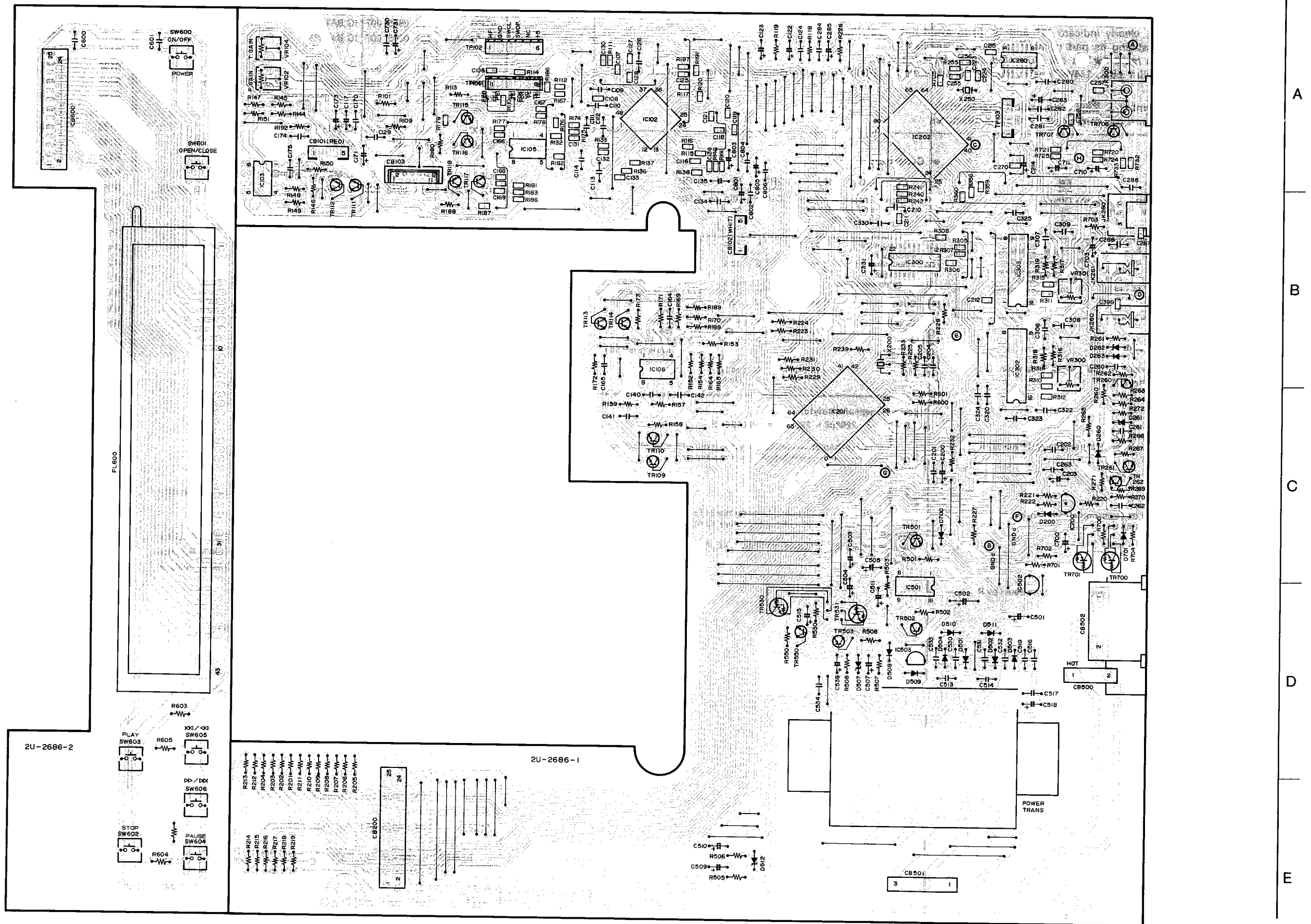
E

CD PLAYER SECTION

1                      2                      3                      4                      5                      6                      7                      8

Pattern Side

9



A

B

C

D

E

**CD PLAYER SECTION**

**NOTE ON PARTS LIST**

- Part indicated with the mark "●" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W. Board parts list. (Refer to the Schematic Diagram for those parts.)

**WARNING:**

Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

**Resistors**

Ex.: **RN** **14K** **2E** **182** **G** **FR**  
 Type Shape and performance Power Resistance Allowable error Others

RD : Carbon Film	2B : 1/8W	F : ±1%	P : Pulse-resistant type
RC : Composition	2E : 1/4W	G : ±2%	NL : Low noise type
RS : Metallic oxide Film	2H : 1/2W	J : ±5%	NB : Non-burning type
RW : Winding	3A : 1W	K : ±10%	FR : Fuse-resistor
RN : Metal film	3D : 2W	M : ±20%	F : Lead wire forming
RK : Metal mixture	3F : 3W		
RM : Carbon chip	3H : 5W		

**\* Resistance**

- 1 8 2** ⇒ 1800 ohm = 1.8 kohm  
 (1: 1-digit effective number, 8: 2-digit effective number, 2: Indicates number of zeros after effective number)
- Units: ohm
- 1 R 2** ⇒ 1.2 ohm  
 (1: 1-digit effective number, R: 2-digit effective number, decimal point indicated by R, 2: Indicates number of zeros after effective number)
- Units: ohm
- \* Capacity (electrolyte only)**
- 2 2 2** ⇒ 2200 μF  
 (2: 1-digit effective number, 2: 2-digit effective number, 2: Indicates number of zeros after effective number)
- Units: μF
- 2 R 2** ⇒ 2.2 μF  
 (2: 1-digit effective number, R: 2-digit effective number, decimal point indicated by R, 2: Indicates number of zeros after effective number)
- Units: μF

**Capacitors**

Ex.: **CE** **04W** **1H** **2R2** **M** **BP**  
 Type Shape and performance Dielectric strength Capacity Allowable error Others

CE : Aluminum foil electrolyte	0J : 6.3V	F : ±1%	HS : High stability type
CA : Aluminum solid electrolyte	1A : 10V	G : ±2%	BP : Non-polar type
CS : Tantalum electrolyte	1C : 16V	J : ±5%	HR : Ripple-resistant type
CQ : Film	1E : 25V	K : ±10%	DL : For charge and discharge
CK : Ceramic	1V : 35V	M : ±20%	HF : For assuring high frequency
CC : Ceramic	1H : 50V	Z : +80%	U : UL part
CP : Oil	2A : 100V	-20%	C : CSA part
CM : Mica	2B : 125V	P : +100%	W : UL-CSA type
CF : Metallized	2C : 160V	-0%	F : Lead wire forming
CH : Metallized	2D : 200V	C : ±0.25pF	
	2E : 250V	D : ±0.5pF	
	2H : 500V	= : Others	
	2J : 630V		

**\* Capacity (except electrolyte)**

- 2 2 2** ⇒ 2200pF = 2200 μμF = 0.0022 μF  
 (2: 1-digit effective number, 2: 2-digit effective number, 2: Indicates number of zeros after effective number)
- Units: μF
- 2 2 1** ⇒ 220pF  
 (2: 1-digit effective number, 2: 2-digit effective number, 1: Indicates number of zeros after effective number)
- Units: pF
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

**2U-2686B CD UNIT ASS'Y PARTS LIST**

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
<b>SEMICONDUCTORS GROUP</b>				<b>CAPACITORS GROUP</b>			
IC102	262 1342 006	IC CXA1372Q		R114	247 0009 956	Chip Carbon 7.5k ohm 1/10W	RM73B--752J
IC103	263 0565 007	IC BA15218		R115	247 0014 925	Chip Carbon 680k ohm 1/10W	RM73B--684J
IC105,106	263 0565 007	IC BA15218		R116	247 0013 913	Chip Carbon 240k ohm 1/10W	RM73B--244J
IC200	263 0652 907	IC PST529C		R117	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
IC201	262 1936 108	IC μPD78044GF-085-3B9	μ-com	R120	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
IC202	262 1819 005	IC :CXD2500BQ		R132	247 0013 968	Chip Carbon 390k ohm 1/10W	RM73B--394J
IC300	262 1765 900	IC SM5841BS		R133	247 0012 969	Chip Carbon 150k ohm 1/10W	RM73B--154J
IC302,303	262 1409 004	IC :PCM61P-L		R136	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
IC501	263 0916 902	IC M5290FP-600C		R137	247 0012 914	Chip Carbon 91k ohm 1/10W	RM73B--913J
IC502,503	268 0073 905	IC ICP-N15	IC Protector 15V	R138	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
TR109	273 0195 005	Transistor 2SC2060 (Q)		R140	247 0011 986	Chip Carbon 68k ohm 1/10W	RM73B--683J
TR110	271 0271 907	Transistor 2SA934 (Q)		R141	247 0009 972	Chip Carbon 9.1k ohm 1/10W	RM73B--912J
TR111	273 0195 005	Transistor 2SC2060 (Q)		R166	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
TR112	271 0271 907	Transistor 2SA934 (Q)		R167	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
TR113	273 0195 005	Transistor 2SC2060 (Q)		R174,175	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
TR114	271 0271 907	Transistor 2SA934 (Q)		R176,177	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
TR115	274 0120 002	Transistor 2SD1762 (E/F)		R179	247 0005 989	Chip Carbon 220 ohm 1/10W	RM73B--221J
TR116	271 0271 907	Transistor 2SA934 (Q)		R181,182	247 0011 944	Chip Carbon 47k ohm 1/10W	RM73B--473J
TR117	273 0195 005	Transistor 2SC2060 (Q)		R183	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
TR118	271 0271 907	Transistor 2SA934 (Q)		R185	247 0012 927	Chip Carbon 100k ohm 1/10W	RM73B--104J
TR260	271 0192 002	Transistor 2SA933S (S)		R187	247 0005 989	Chip Carbon 220 ohm 1/10W	RM73B--221J
TR261	273 0303 910	Transistor 2SC1740S (S)		R191	247 0012 969	Chip Carbon 150k ohm 1/10W	RM73B--154J
TR262	271 0192 002	Transistor 2SA933S (S)		R197	247 0012 930	Chip Carbon 110k ohm 1/10W	RM73B--114J
TR501	274 0120 002	Transistor 2SD1762 (E/F)		R240	247 0008 960	Chip Carbon 3.3k ohm 1/10W	RM73B--332J
TR502	272 0083 004	Transistor 2SB1185 (E/F)		R241	247 0009 943	Chip Carbon 6.8k ohm 1/10W	RM73B--682J
TR503	271 0192 002	Transistor 2SA933S (S)		R242	247 0009 985	Chip Carbon 10k ohm 1/10W	RM73B--103J
TR530,531	269 0020 906	Transistor DTC114ES	Built in Resistor	R255	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
TR550	273 0195 908	Transistor 2SC2060 (Q)		R305~308	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
TR700	269 0020 906	Transistor DTC114ES	Built in Resistor	R310,311	247 0013 984	Chip Carbon 470k ohm 1/10W	RM73B--474J
TR701	269 0046 906	Transistor DTA114ES	Built in Resistor	R312,313	247 0012 998	Chip Carbon 200k ohm 1/10W	RM73B--204J
TR706,707	274 0160 907	Transistor 2SD2144STPU	Built in Resistor	R314,315	247 0014 967	Chip Carbon 1M ohm 1/10W	RM73B--105J
D200	276 0432 903	Diode 1SS270A		R358~360	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
D260	276 0432 903	Diode 1SS270A		R705	247 0007 945	Chip Carbon 1k ohm 1/10W	RM73B--102J
D261,262	276 0463 901	Zener Diode HZS6C-1	6V	R720,721	247 0007 903	Chip Carbon 680 ohm 1/10W	RM73B--681J
D263	276 0432 903	Diode 1SS270A		R724,725	247 0010 990	Chip Carbon 30k ohm 1/10W	RM73B--303J
D501~504	276 0553 905	Diode 1SR35-200A		R732,733	247 0008 944	Chip Carbon 2.7k ohm 1/10W	RM73B--272J
D507	276 0480 900	Zener Diode HZS22-1	22V	VR102	211 6093 954	Semi Fixed Resistor 22k ohm	V06PB223
D508 509	276 0553 905	Diode 1SR35-200A		VR104	211 6093 954	Semi Fixed Resistor 22k ohm	V06PB223
D512	276 0461 903	Zener Diode HZS6A-1	6V	VR300,301	211 6093 970	Semi Fixed Resistor 100k ohm	V06PB104
D550	276 0463 901	Zener Diode HZS6C-1	6V	<b>RESISTORS GROUP (Not included Carbon Film ±5%, 1/4W Type. Refer to the Schematic Diagram for those Parts.)</b>			
D700	276 0432 903	Diode 1SS270A		R110	247 0012 998	Chip Carbon 200k ohm 1/10W	RM73B--204J
JK280	269 0098 006	Optical Out GP1F32T	OPT. OUT	R111	247 0011 928	Chip Carbon 39k ohm 1/10W	RM73B--393J
FL600	393 8013 001	F.L. Tube 8BT159GK		R112	247 0011 960	Chip Carbon 56k ohm 1/10W	RM73B--563J
C106	257 0009 940	Chip Ceramic 3300pF/50V		C122,123	254 4260 919	Electrolytic 0.22μF/50V	CE04W1HR22M
C107	257 0011 954	Chip Ceramic 0.027μF/25V		C124	253 1198 913	Ceramic Cap. 0.01μF/16V	CK14Y1C103M
C108	257 0009 924	Chip Ceramic 2200pF/50V		C125	257 0011 967	Chip Ceramic 0.033μF/25V	CK73B1E333K
C109~112	256 1034 979	Metalized 0.1μF/50V		C126	253 1198 913	Ceramic Cap. 0.01μF/16V	CK14Y1C103M
C113	254 4337 910	Electrolytic 6.8μF/50V					
C114	256 1035 910	Metalized 0.22μF/50V					
C116	257 0011 909	Chip Ceramic 0.01μF/25V					
C117	253 1197 914	Ceramic Cap. 0.1μF/50V					
C118,119	257 0007 900	Chip Ceramic 1000pF/50V					
C120	257 0014 935	Ceramic Cap. 0.1μF/25V					
C121	257 0012 966	Chip Ceramic 0.01μF/50V					

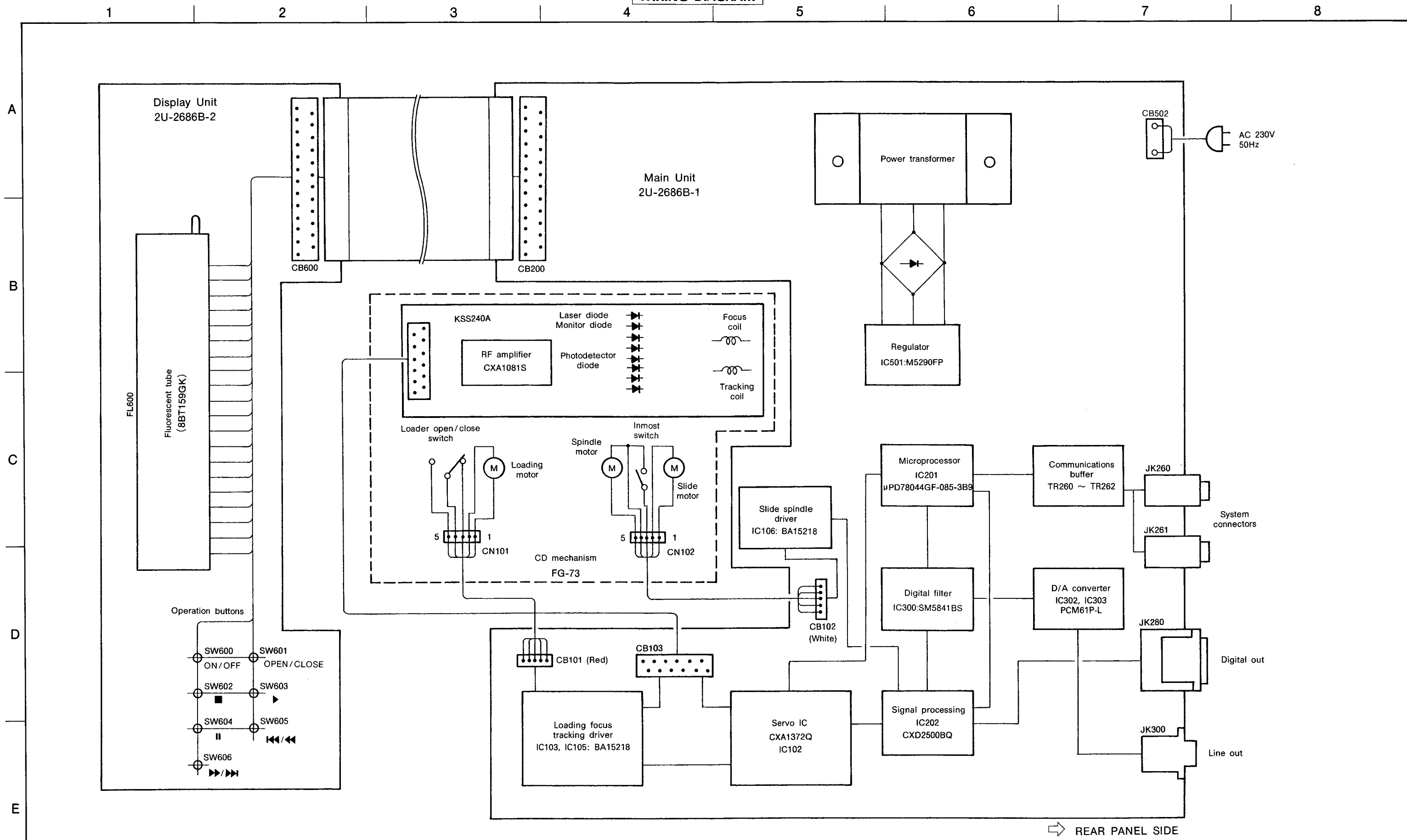


CD PLAYER SECTION

Ref. No.	Part No.	Part Name	Remarks	Ref. No.	Part No.	Part Name	Remarks
C127	257 0009 940	Chip Ceramic 3300pF/50V	CK73B1H332K	C519	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z
C128	257 0009 937	Chip Ceramic 2700pF/50V	CK73B1H272K	C550	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C129	253 1197 914	Ceramic Cap. 0.1μF/50V	CK14F1H104Z	C600,601	253 1194 959	Ceramic Cap. 1000pF/50V	CK14B1H102K
C130	257 0006 943	Chip Ceramic 560pF/50V	CC73SL1H561J	C700	254 4254 954	Electrolytic 220μF/16V	CE04W1C221M
C131	257 0009 979	Chip Ceramic 5600pF/50V	CK73B1H562K	C703	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M
C132	257 0004 932	Chip Ceramic 75pF/50V	CC73SL1H750J	C710,711	254 4260 980	Electrolytic 10μF/50V	CE04W1H100M
C133	257 0002 921	Chip Ceramic 10pF/50V	CC73SL1H100D	C730	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z
C134	256 1034 979	Metalized 0.1μF/50V	CF93A1H104J	<b>OTHER GROUP</b>			
C135	254 3055 918	Electrolytic 10μF/35V (Bipole)	CE04D1V100MBP			(P.W. Board)	Qty
C136	257 0004 961	Chip Ceramic 100pF/50V	CC73SL1H101J				(1)
C140	253 1193 905	Chip Ceramic 75pF/50V	CK14SL1H750J	JV027	235 0049 900	Beads Inductor	1
C141	253 1195 945	Chip Ceramic 3300pF/16V	CK14X1C332M		212 5604 910	Tact Switch	7
C142	253 1197 914	Ceramic Cap. 0.1μF/50V	CK14F1H104Z		204 8421 005	Mini Jack	2
C164	253 1190 940	Chip Ceramic 15pF/50V	CK14SL1H150J	JK300	205 0274 004	2P Conn. Base	1
C166	257 0002 963	Chip Ceramic 15pF/50V	CC73SL1H150J				
C168	257 0004 932	Chip Ceramic 75pF/50V	CC73SL1H750J				
C170,171	254 4250 916	Electrolytic 47μF/6.3V	CE04W0J470M				
C173	254 4250 916	Electrolytic 47μF/6.3V	CE04W0J470M				
C174	253 1197 914	Ceramic Cap. 0.1μF/50V	CK14F1H104Z				
C200	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M				
C201,202	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z	X200	399 0196 908	Ceramic Resonator	EF0EC4194T4
C203	254 4254 909	Electrolytic 10μF/16V	CE04W1C100M	X250	399 0112 005	Crystal Resonator	16.9344MHz
C204,205	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z				
C210	253 9031 904	BC Ceramic 0.047μF/25V	CK45-1E473K	CB101	205 0321 054	5P Conn. Base (Red)	1
C211	257 0007 942	Ceramic Cap. 1500pF/50V	CC73SL1H152J	CB102	205 0343 058	5P Conn. Base (KR-PH)	1
C212	257 0012 966	Chip Ceramic 0.01μF/50V	CK73B1H103Z	CB103	205 0683 006	12P FFC Conn. Base	1
C214	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M	CB200,600	205 0736 089	25P FFC Conn. Base	2
C215	257 0008 983	Chip Ceramic 1000pF/50V	CK73B1H102K				
C223,224	257 0002 921	Chip Ceramic 10pF/50V	CC73SL1H100D	TP101,102	205 0190 065	6P NH Conn. Base	2
C225	257 0014 935	Chip Ceramic 0.1μF/25V	CK73F1E104Z				
C255	257 0003 988	Chip Ceramic 47pF/50V	CC73SL1H470J				
C256	257 0007 900	Ceramic Cap. 1000pF/50V	CC73SL1H102J				
C257,258	257 0008 983	Chip Ceramic 1000pF/50V	CK73B1H102K				
C260,261	253 1194 959	Ceramic Cap. 1000pF/50V	CK14B1H102K				
C263	253 1194 959	Ceramic Cap. 1000pF/50V	CK14B1H102K				
C270	257 0008 983	Chip Ceramic 1000pF/50V	CK73B1H102K				
C280~282	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z				
C288	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z				
C306,307	253 1194 933	Ceramic Cap. 680pF/50V	CK14B1H681K				
C308,309	253 1195 974	Ceramic Cap. 5600pF/16V	CK45X1C562M				
C320	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z				
C322~325	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z				
C326,327	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M				
C330	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z				
C331	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M				
C399	257 0005 986	Ceramic Cap. 330pF/50V	CC73SL1H331J				
C501	254 4254 792	Electrolytic 2200μF/16V	CE04W1C222MC				
C502	254 4255 717	Electrolytic 4700μF/16V	CE04W1C472MC				
C503,504	254 4250 932	Electrolytic 220μF/6.3V	CE04W0J221M				
C505	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M				
C507	254 4261 918	Electrolytic 47μF/50V	CE04W1H470M				
C508	254 4258 950	Electrolytic 100μF/35V	CE04W1V101M				
C509,510	254 4258 934	Electrolytic 33μF/35V	CE04W1V330M				
C511	254 4260 964	Electrolytic 3.3μF/50V	CE04W1H3R3M				
C513,514	253 1195 987	Ceramic Cap. 6800pF/16V	CK14X1C682M				
C515	254 4252 930	Electrolytic 100μF/10V	CE04W1A101M				
C516,517	253 1196 902	Ceramic Cap. 0.01μF/25V	CK14F1E103Z				
C518	254 4260 948	Electrolytic 1μF/50V	CE04W1H010M				

CD PLAYER SECTION

WIRING DIAGRAM

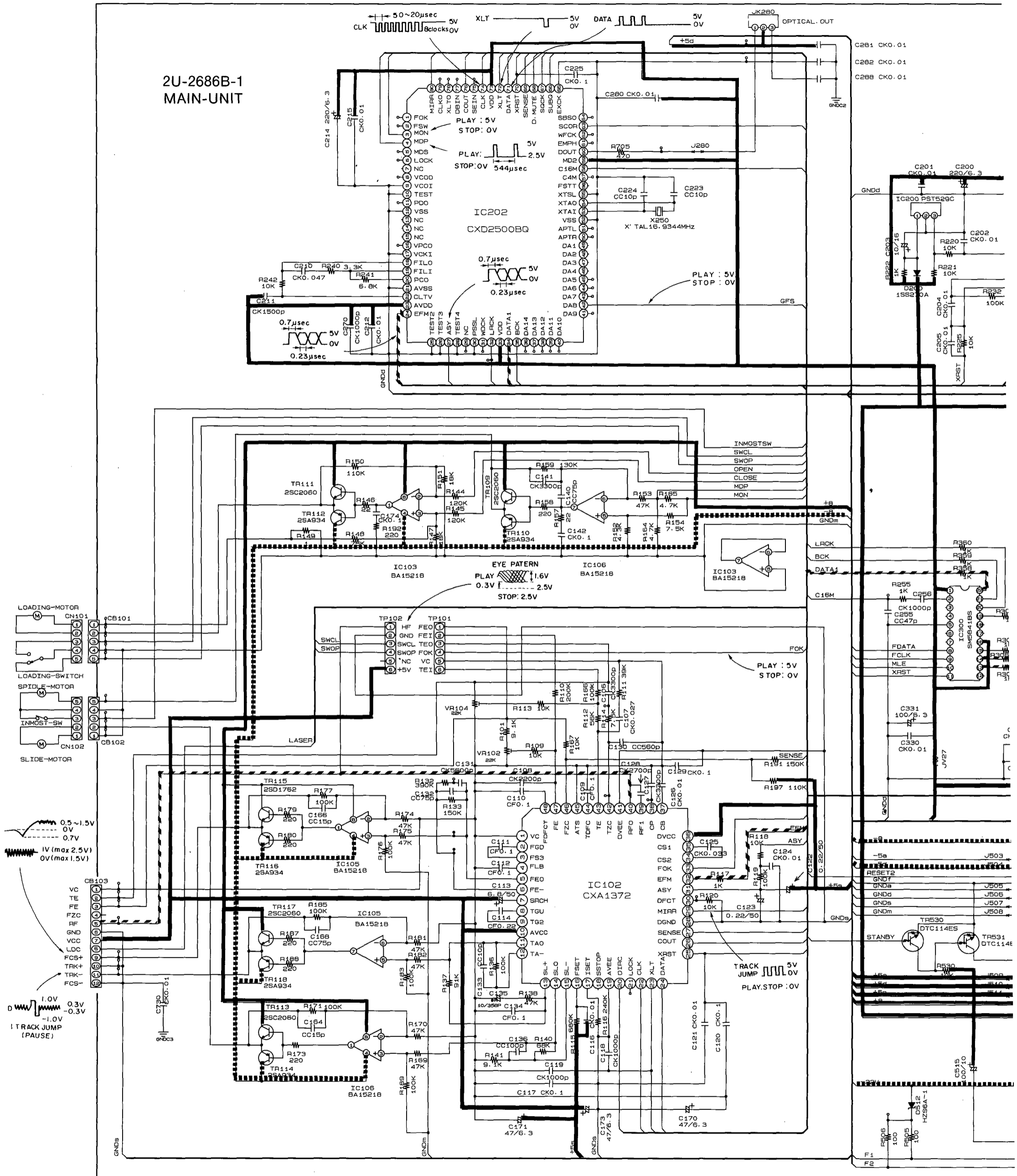




SCHEMATIC DIAGRAM

2 3 4 5 6

2U-2686B-1  
MAIN-UNIT



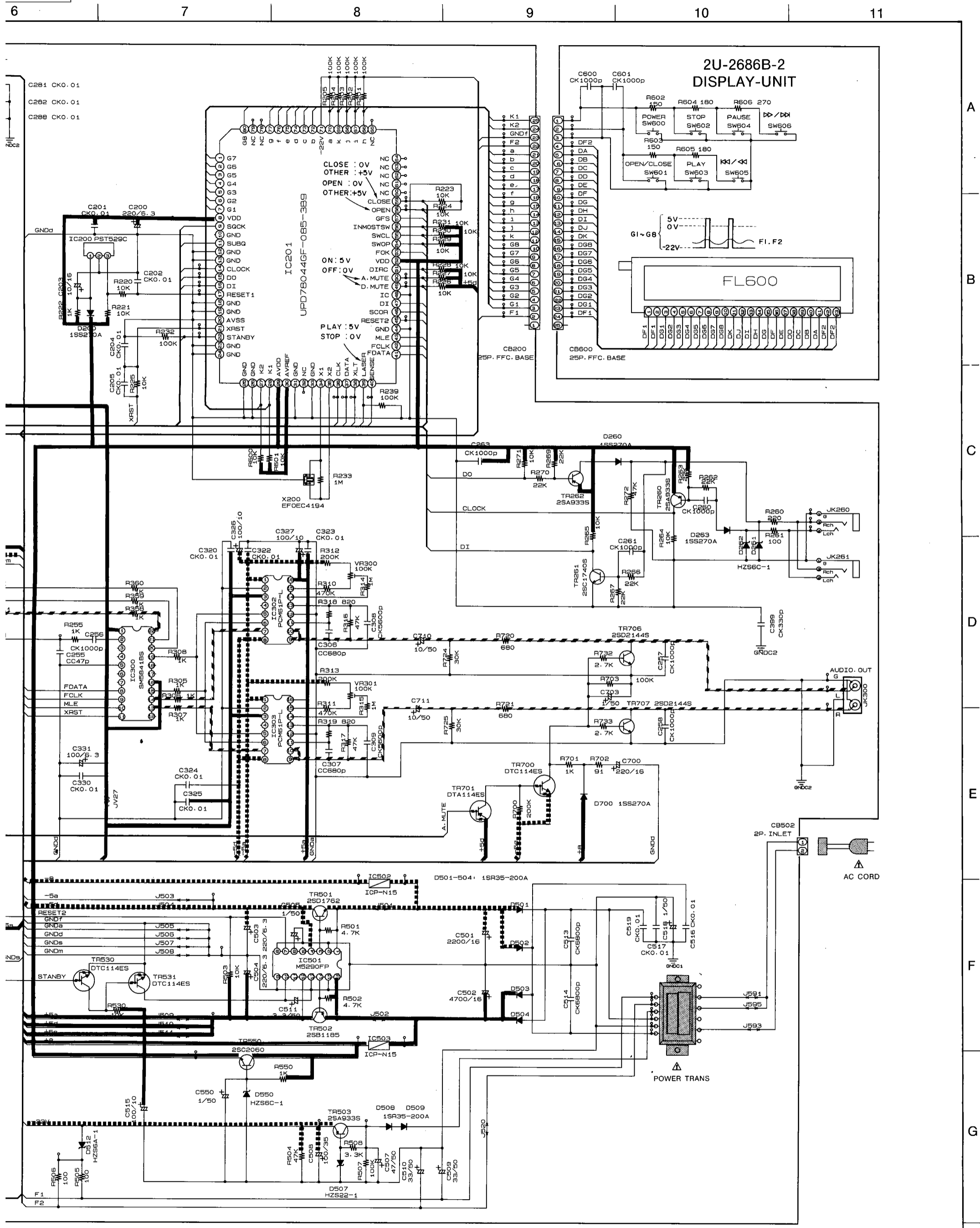
- SIGNAL LINE
- +B LINE
- -B LINE


**CAUTION:**  
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance leakage current exceeds 0.5 milliamperes, or if the resistance from chassis to either side of the power cord is less than 240 Kohms, it is defective.

**WARNING:**  
DO NOT return the unit to the customer until the problem is located and corrected.

CD PLAYER SECTION

DIAGRAM



**WARNING:**  
 Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

**NOTES**  
 ALL RESISTANCE VALUES IN OHM K=1,000 OHM M=1,000,000 OHM  
 ALL CAPACITANCE VALUES IN MICRO FARAD P=MICRO-MICRO FARAD  
 EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.  
 CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

current check or (2) a line to chassis resistance check. If the de of the power cord is less than 240 Kohms, the unit is

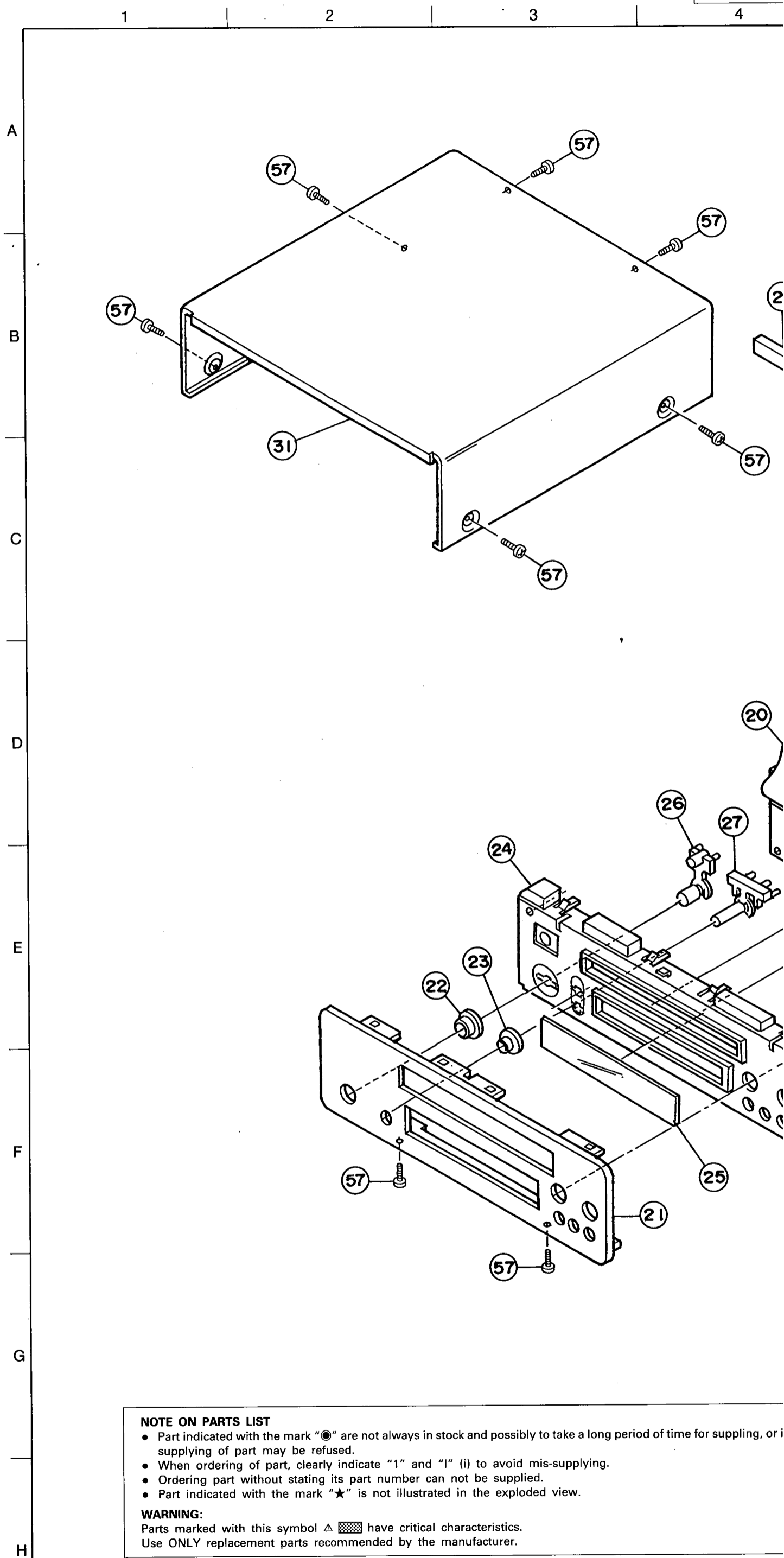
A  
B  
C  
D  
E  
F  
G  
H

**CD PLAYER SECTION**

**EXPLODED**

**PARTS LIST OF UCD-F10 EXPLODED VIEW**

Ref. No.	Part No.	Part Name	Remarks	Qty
1	2U- 2686 B	CD Unit Ass'y		1 <sup>S</sup>
1-1	—	Main Unit		(1)
1-2	—	Display Unit		(1)
2	254 4254 792	Chemicon 2200μF/16V	C501	1
3	254 4255 018	Chemicon 4700μF/16V	C502	1
4	205 0736 089	25P FFC Conn. Base	CB200,600	2
5	269 0098 006	Optical Out GP1F32T	JK280	1
6	205 0274 004	2P Conn. Base	JK300	1
7	204 8421 005	Mini Jack	JK260,261	2
8	233 6097 002	Power Trans.		1
9	393 8013 001	F.L. Tube 8BT159GK	FL600	1
10	411 9115 248	Main Chassis		1
11	449 9034 007	Mech. Holder		1
12	412 3783 200	Trans Bracket		1
13	GEN 2798	Foot Ass'y		4
14	105 9237 234	Rear Panel (CD)		1
15	—	—		—
16	—	—		—
17	412 2814 028	Card Spacer (L=10)		2
18	337 0032 006	CD Mech. Ass'y	FG-73	1
19	499 0191 009	Laser Pickup	KSS-240A	1
20	009 0108 006	25P FF Cable Cord		1
21	144 2363 016	Front Panel (CD)		1
22	146 9294 113	Knob Ring (A)		1
23	146 9295 112	Knob Ring (B)		1
24	146 9287 337	Inner Panel (CD)		1
25	143 0872 001	Window		1
26	113 1654 104	Power Button Ass'y		1
27	113 1656 018	Tact Button (1 Key)	OP/CLOSE	1
28	113 9276 115	Button (5 Key)	4 Gang	1
29	146 9289 102	Loader Panel (CD)		1
30	—	—		—
31	102 0545 117	Top Cover		1
32	461 0866 009	Rubber Sheet	Put on F.L. Holder	2
33	513 2242 100	Rating Sheet		1
34	—	—		—
35	203 2349 003	2P Inlet		1
36	513 2066 001	Laser Caution		1
37	513 0985 003	Inst. Label		1
38	461 0859 003	Spacer	for AC 1	1
39	—	—		—
40	—	—		—
<b>SCREWS</b>				
51	473 7015 005	Tapping Screw (S) 3×6	Black	3
52	473 7004 003	Tapping Screw (S) 4×8		4
53	473 7002 018	Tapping Screw (S) 3×8		8
54	477 0064 107	Fixing Screw		4
55	473 7505 007	Tapping Screw (P) 2.6×8		6
56	473 8007 025	Cup Screw 3×8		4
57	473 7015 018	Tapping Screw (S) 3×8	Black	11
58	473 7500 015	Tapping Screw (P) 3×8		2
59	—	—		—
60	—	—		—
<b>PACKING &amp; ACCESSORIES (Not included EXPLODED VIEW)</b>				
101	505 0241 005	Cabinet Cover		1
102	503 1091 106	Cushion		1
103	GEN 2742	Envelope Sub. Ass'y		1 <sup>S</sup>
103-1	505 9125 009	:Poly Cover		(1)
103-2	203 2310 009	:2P Pin Cord	L=1000	(1)
103-3	203 2315 004	Stero Miniplug Cord	L=500	(1)
103-4	206 2108 003	AC Conn. with Plug		(1)
103-5	511 2654 006	Inst. Sheet		(1)
104	503 1061 000	:Top Cushion		1
105	501 1781 012	Carton Case		1



**NOTE ON PARTS LIST**

- Part indicated with the mark "●" are not always in stock and possibly to take a long period of time for supplying, or if supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.

**WARNING:**

Parts marked with this symbol have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.

EXPLODED VIEW

4

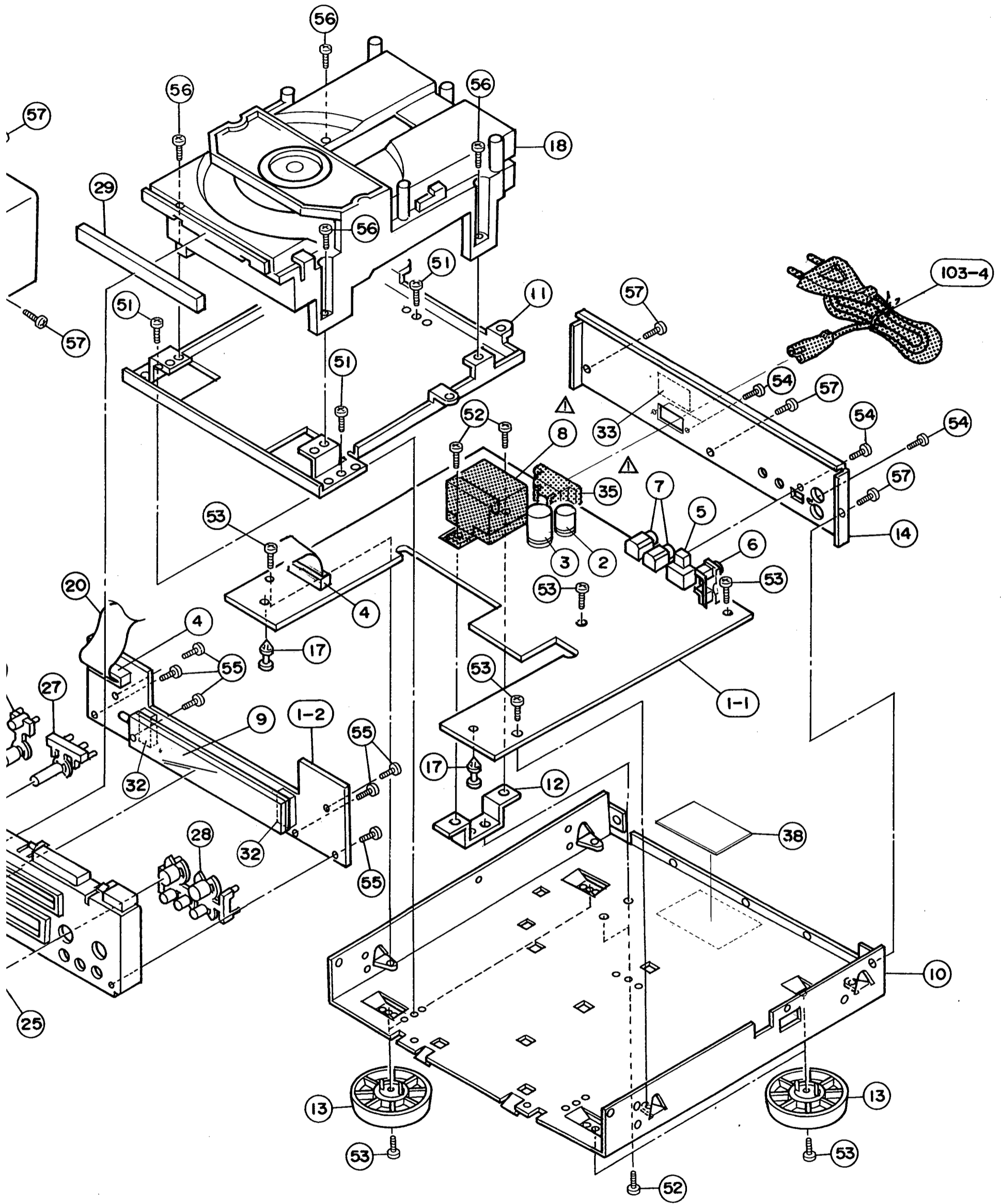
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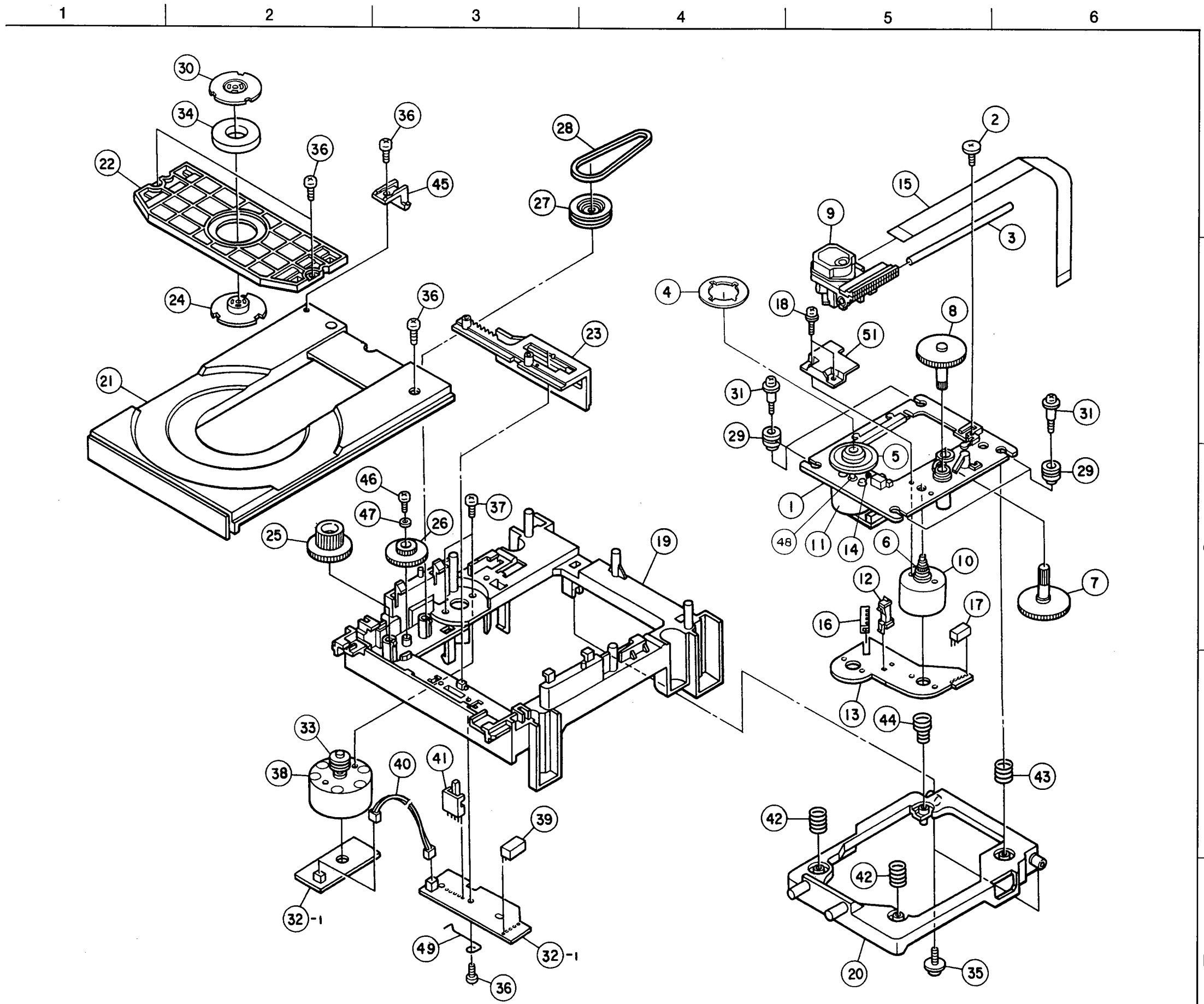


for supplying, or in some case

**CD PLAYER SECTION**

**DISASSEMBLY OF CD MECHANISM (FG-73) Part No. : 337 0032 006**

**CD MECHANISM (FG-73) PARTS LIST**



Ref. No.	Part No.	Part Name	Remarks	Q'ty
● 1	9KA 85A0 01	FG-40 Base Ass'y		1 <sup>S</sup>
1-1	9KA 85P0 03	FG-40 Base		(1)
● 2	9KA 90H0 06	FS Hold Screw		1
● 3	9KA 90H0 05	Feed Shaft		1
● 4	9KA 90P0 70	T.T Plate M3A		1
● 5	9KA 90G1 04	Turn Table M3A		1
● 6	9KA 85G0 28	Gear Motor FG-40		1
● 7	9KA 85G0 17	Forward Gear A		1
● 8	9KA 85G0 18	Forward Gear B		1
● 9	499 0191 009	Pick Up	KSS240A	1
● 10	9KM 01T1 36	Motor (Feed)	RF-310T11400-30	1
● 11	9KM 01T1 31	Motor (Spindle)	RF-310T11400-38	1
● 12	9KS 01W1 47	Switch	LSA-1121EAU	1
● 13	9KA 85P0 09	Motor P.W.B. Unit		1
● 14	9KM 20S0 03	Tams Screw M2×3		2
● 15	009 0051 001	Flexible P.W.B. Unit	FFC-260-B	1
● 16	443 1093 006	FFC Bush		1
● 17	9KA 82G2 53	5P Conn. Base	S5B-PH	1
● 18	9KM 20S0 04	Tams Screw M2×4		2
● 19	9KA 85G0 19	Mech. Plate	FL12SA	1
● 20	9KA 85G0 20	Mech. Frame		1
● 21	9KA 85G0 25	CD Tray	FL12SA	1
● 22	9KA 85G0 04	Clamoer Frame		1
● 23	9KA 85G0 22	UD Plate Gear		1
● 24	9KA 85G0 06	Clamper -F		1
● 25	9KA 85G0 07	Relay Gear A		1
● 26	9KA 85G0 08	Relay Gear B		1
● 27	9KA 85G0 09	Relay Gear C		1
● 28	9KA 85G0 10	Gear Belt F		1
● 29	9KA 85G0 30	Dumper		4
● 30	9KA 85P0 01	Clamper Plate F		1
● 31	9KA 85H0 01	Screw F		4
● 32	9KA 85P0 05	Motor Unit Ass'y		1
32-1	FG7 0000 622	Switch Unit		1
● 33	9KA 82G0 49	Motor Pulley		1
● 34	9KA 82G0 57	Magnet 17×27×5		1
● 35	9KA 91H0 02	Tight Screw M3×8	P tight	2
● 36	9KB 30B0 08	Bind Screw M3×8	B tight Black	5
● 37	9KM 26B0 04	Bind Screw M2.6×4		2
● 38	9KM 01T1 32	Motor (Loading)	RF500TB14415	1
● 39	9KA 82G3 08	5P Conn. Base	S5B-PH	1
● 40	9KA 85G0 27	Connector Cord	CNW2	1
● 41	9KS 01W1 48	Open/Close Switch		1
● 42	9KA 85S0 04	Spring D		2
● 43	9KA 85S0 02	Spring B		1
● 44	9KA 85S0 03	Spring C		1
● 45	9KA 85G0 36	Try Stopper		1
● 46	9KM 20B0 05	Bind Screw M2×5		1
● 47	9KS 21W6 04	Washer 2.1×6×0.4		1
● 48	9KB 22G0 29	Oil Seal Washer		1
● 49	9KA 85S0 05	Hold Spring		1
50	-	-		
51	9KA 85G0 33	Gear Guide		1
60	9KA 85A0 07	Spindle Motor Ass'y	Included 1,4,5, 11,14,48	1 <sup>S</sup>
61	9KA 85A0 08	Feed Motor Ass'y	Included 6,10	1 <sup>S</sup>
62	9KA 85A0 06	Loading Motor Ass'y	Included 33,38	1 <sup>S</sup>