

CDP-LSA1

SERVICE MANUAL

AEP Model
UK Model



Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM55B-21BD53A
Base Unit Type	BU-21BD53A
Optical Assy	A-MAX.2

SPECIFICATIONS

Compact disc player

Laser Semiconductor laser ($\lambda = 800 \text{ nm}$)
Emission duration: continuous

Inputs/Outputs (i.LINK S200)

i.LINK connector 4 pins - 4 pins (S200)

General

Power requirements 230 V AC, 50/60 Hz

Power consumption 22 W

Dimensions (approx.) (w/h/d)
430 × 70 × 315 mm
incl. projecting parts

Mass (approx.) 4.6 kg

Supplied accessories

i.LINK connecting cable (4 pins - 4 pins) (1)
Remote commander (remote) (1)

Design and specifications are subject to change without notice.

COMPACT DISC PLAYER

SONY®

TABLE OF CONTENTS

1. SERVICING NOTES	3
2. GENERAL	5
3. DISASSEMBLY	
3-1. Case (Top)	9
3-2. CD Mechanism Deck	10
3-3. Base (Front) Assy, Panel	10
3-4. Sub Main Board and Main Board	11
3-5. Trans Board	11
3-6. Tray, Gear and Cam	12
3-7. Base Unit-1	12
3-8. Base Unit-2 (BU-21BD53A)	13
3-9. Optical pick-up Section (CD)	13
3-10. BD Board	14
4. TEST MODE	15
5. ELECTRICAL ADJUSTMENTS	21
6. DIAGRAMS	
6-1. Circuit Boards Location	23
6-2. Block Diagrams	
• BD Section	24
• Main Section	25
6-3. Printed Wiring Board – BD Section –	26
6-4. Schematic Diagram – BD Section –	27
6-5. Printed Wiring Board – Main (Side A) Section –	28
6-6. Printed Wiring Board – Main (Side B) Section –	29
6-7. Schematic Diagram – Main (1/3) Section –	30
6-8. Schematic Diagram – Main (2/3) Section –	31
6-9. Schematic Diagram – Main (3/3) Section –	32
6-10. Printed Wiring Board – Panel Section –	34
6-11. Schematic Diagram – Panel Section –	35
6-12. Printed Wiring Board – Power Section –	36
6-13. Schematic Diagram – Power Section –	37
6-14. Printed Wiring Board – Flexible Section –	38
6-15. Printed Wiring Board – Loading Section –	39
6-16. Schematic Diagram – Loading Section –	39
7. EXPLODED VIEW	
7-1. Panel Section	50
7-2. Chassis Section	51
7-3. CD Mechanism Deck (CDM55B-21BD53A)	52
7-4. Base Unit (BU-21BD53A)	53
8. ELECTRICAL PARTS LIST	54

SECTION 1

SERVICE NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

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

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

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

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED, AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT : UNSICHTBARE LASERSTRÄHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHERHEITVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE, ÄLÄ KATSO SÄTEESEEN.
WARNING : OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÅR ÖPPNAD OCH SPÅRREN ÅR URKOPPLAD, BETRÄKTA EJ STRÅLEN.
ADVERSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES, UNNGÅ EKSPONERING FOR STRÅLEN.
VIGYAZAT! : A BURKOLAT NYITÁSAKOR LÁTHATATLAN LÉZERSUGÁRVESZÉLY! KERÜLJE A BESUGÁRZÁST!

This caution label is located inside the unit.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.




Notes on chip component replacement

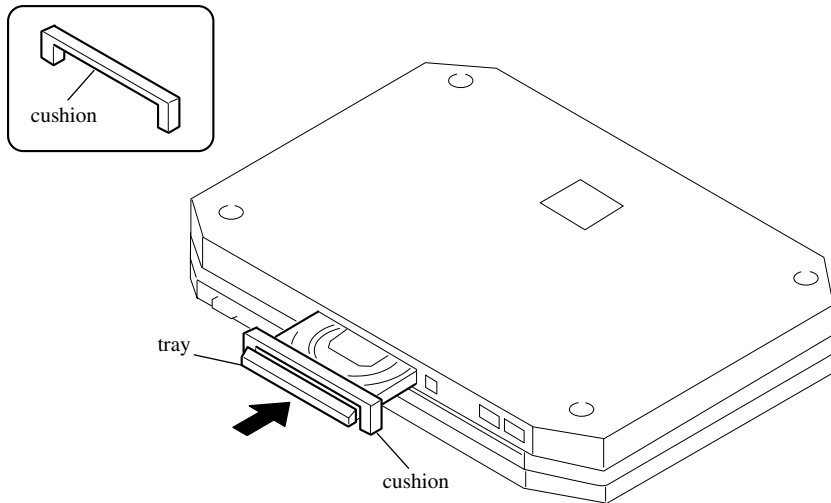
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

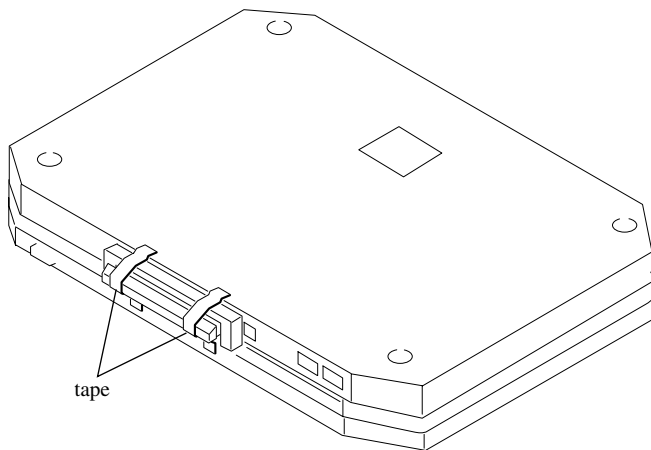
- Keep the temperature of soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

• **AFTER REPAIRING THE UNIT, PERFORM THE FOLLOWING STEPS BEFORE RETURNING TO CUSTOMER.**

1. Open tray.
2. While pressing the **DISPLAY** button, press the  button, the  button, and the  button in that order.
3. Check to make sure that the **STANDBY** indicator lights up and remove the AC cord from its socket.
4. Insert cushion in tray and close tray manually. (See figure below.)



5. Fix tray into place with tape in two places. (See figure below.)



SECTION 2 GENERAL

This section is extracted from
instruction manual.



- 1 Remote sensor
- 2 STANDBY indicator
- 3 DISPLAY button and indicator
- 4 Eject button
- 5 PLAY/PAUSE indicator
- 6 Play/Pause button
- 7 Stop button
- 8 Fast Forward button and indicator
- 9 Reverse button and indicator
- 10 H.A.T.S. indicator
- 11 Power button

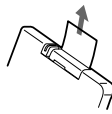
Unpacking

Check that you have received the following items:

- i.LINK connecting cable (1)
- Remote commander (remote) (1)

Before using the supplied remote

The supplied remote already contains a battery. Before using the remote, pull out the insulating sheet to allow the power to flow from the battery.



To avoid battery leakage

If you don't use the remote for an extended period of time, remove the battery to avoid possible damage from battery leakage and corrosion.



When to replace the battery

Under normal conditions, the battery should last for about six months. When the remote no longer operates the player, replace the battery with a new one.

Notes on lithium battery

- Keep the lithium battery out of the reach of the children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when inserting the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.

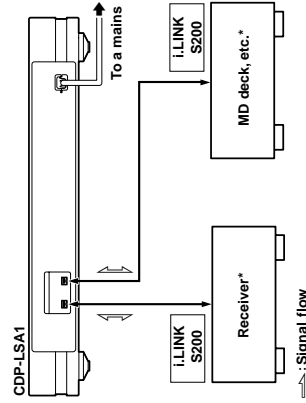
WARNING

Battery may explode if mistreated.
Do not recharge, disassemble, or dispose of in fire.

Hooking Up the System

Overview

This section describes how to hook up the CD player to a receiver or other components such as an MD deck. Be sure to turn off the power to all components before you start connecting them.



Signal flow

* You can connect components to either i.LINK S200 connector.

What cords will I need?

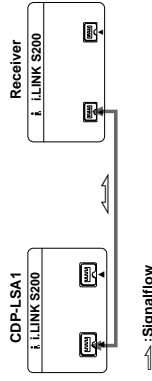
i.LINK connecting cable (supplied) (1)



Hookups

Connecting the player to a receiver

Connect the receiver to the i.LINK S200 connector with the i.LINK connecting cable (supplied). Make sure all connections are firm. If not, there will be no sound from the speakers.



Notes

- Do not connect the mains lead of any component until all the connections have been completed.
- Do not allow any metal object to enter the i.LINK S200 connector as this may short-circuit the connector and damage the components.

The other i.LINK S200 connector can be used to connect other components

The following i.LINK components can be used with the player:

- STR-LSA1 receiver
 - MDS-LSA1 MD deck
- Be sure to use the Sony i.LINK S200 connecting cable (4 pins - 4 pins).



For general information about i.LINK

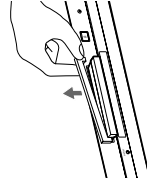
See "About i.LINK" on page 16.

Connecting the mains lead

Connect the mains lead to a mains.

Removing the protective bar

Remove the attached protective bar and retain it for use when transporting the player at a later time.



When you connect the mains lead to a mains, the disc tray will close automatically after a while.

Where do I go next?

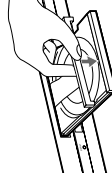
Now you're ready to use your player.
If you aren't familiar with how to play CDs, go to the section "Playing a CD" on page 6.

Then, go to the following sections for other operations.

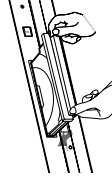
Attaching the protective bar

When transporting the player, be sure to attach the protective bar (which you removed at the time you unpacked the player) onto the disc tray, and use adhesive tape to secure the bar. If you fail to attach the protective bar, the player may be damaged during transport.

- 1 With the disc tray opened, disconnect the mains lead.
- 2 Place the protective bar on the disc tray as shown below.

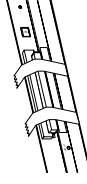


- 3 Push the disc tray with your fingers to close it.



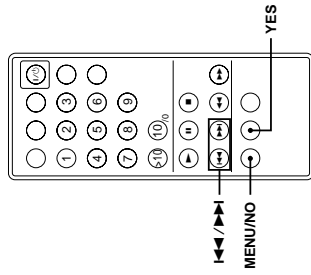
- 4 Slowly push both sides of the disc tray as shown above.

- 5 Secure the protective bar with adhesive tape.



Setting the Player to Turn Off Automatically (Power Save Function)

When the Power Save function is on, the player will automatically turn off (change to STANDBY) after several minutes of inactivity.



- 1 Before playing a disc, press MENU/NO repeatedly until "Setup Menu" appears in the display.
- 2 Press **Left Arrow** until "Power Save" appears, then press YES.
- 3 Press **Left Arrow** to select the setting, then press YES.

To	Select
Turn on the Power Save function	Power Save On (default setting)
Turn off the Power Save function	Power Save Off

- 4 Press MENU/NO.

About i.LINK

This section explains the general specifications and major features of i.LINK. Read this section before doing any i.LINK-related operation. Note that i.LINK connections and operations may vary, depending on the component. For details regarding the connection of i.LINK components to this player, see "Hooking Up the System" on page 4.

i.LINK functions

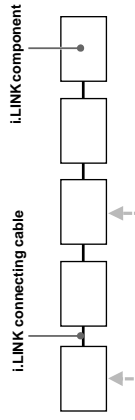
i.LINK is a serial digital interface that supports the bi-directional transmission of audio and video signals, commands, and even component status information. All that is needed to hook up i.LINK components are i.LINK connecting cables. Audio and video components connected within an i.LINK configuration can be used to perform a wide range of operations and data exchanges that is sure to expand as the number and variety of i.LINK components grow. Since i.LINK allows data to be transmitted from one component to other components to which it is not directly connected, there is no need to pay attention to connection order. However, due to differences in characteristics or specifications, operation of or data exchange with certain i.LINK components may not be possible, even when they are connected.

What is i.LINK?

i.LINK is a trademark proposed by Sony Corporation and accepted by companies throughout the world as an easy-to-remember name for the IEEE 1394 world standard of the Institute of Electrical and Electronics Engineers.

i.LINK connections

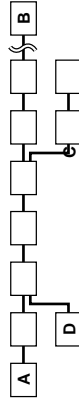
The use of i.LINK cables to connect i.LINK components as shown below is called a "daisy chain" configuration.



Data can be transmitted between any two components even if they are indirectly connected.

Branch connections

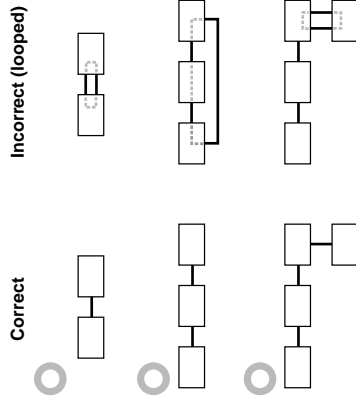
- Any i.LINK component with three or more i.LINK connectors can serve as a branch point.
- Up to 63 i.LINK components can be connected in a single configuration. However, the maximum number of components that can be daisy-chained in a single route is 17 (i.e., a maximum of 16 i.LINK connecting cables in a row). Each i.LINK cable used in a single route is called a "hop." For example, there are 6 hops in the route between A and C in the illustration below, and 3 hops in the route between A and D.



Each route between A and B; A and C; A and D; B and C; B and D; and C and D in the illustration above can have 16 hops (i.e., 17 components).

Loop-connection

A signal output from one component is transmitted to all other components. A loop connection should thus be avoided to prevent the return of a signal to its source.



Notes

- Some i.LINK components (such as personal computers) do not transfer signals when they are turned off. Refer to the operation manual of each component to be connected before you hook them up.
- The maximum transmission rate of an i.LINK component is printed near its i.LINK connector. The indications S100, S200, and S400 refer to maximum transmission rates of 100, 200, or 400 Mbps*, respectively. The actual transmission rate may be faster or slower, depending on the differences in transmission rates and specifications among the connected components.

What is Mbps?

*Mbps is an abbreviation for megabits per second. It indicates the amount of data transmitted per second. For example, a rate of 200 Mbps means 200 megabits of data are transmitted in one second.

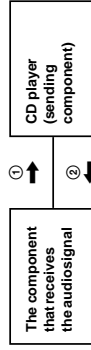
Establishing a LINC

Before an audio signal can be transmitted between i.LINK components, a "LINC" must first be established between the receiving component (of the audio signal) and the sending component. Establishing a "LINC" means establishing a logical path for the transmission of digital audio signals between the two components. Each logical path has an ID number. Since the component that sends an audio signal must output the signal to a path, and the component that receives the signal must input it from the same path, the path must be mutually known by both components. During the establishment of a LINC, the following communication occurs between the two i.LINK components.

Example

A component establishing a LINC with a CD player in order to receive an audio signal from the CD player

- ① The component that will receive an audio signal from the CD player sends a request and path information to the CD player to establish a transmission path for the audio signal.



- ② The CD player responds to the component, agreeing to the establishment of a LINC.

The digital audio signal transmission becomes possible only after the communication described above has occurred and a LINC has been established.

Specifications

Compact disc player

Laser Semiconductor laser ($\lambda = 800 \text{ nm}$)
Emission duration: continuous

Inputs/Outputs (i.LINK S200)

i.LINK connector 4 pins -4 pins (S200)

General

Power requirements 230 V AC, 50/60 Hz

Power consumption 22 W

Dimensions (approx.) (w/h/d) 430 × 70 × 31.5 mm
incl. projecting parts

Mass (approx.) 4.6 kg

Supplied accessories

i.LINK connecting cable (4 pins -4 pins) (1)
Remote commander (remote) (1)

Design and specifications are subject to change without notice.

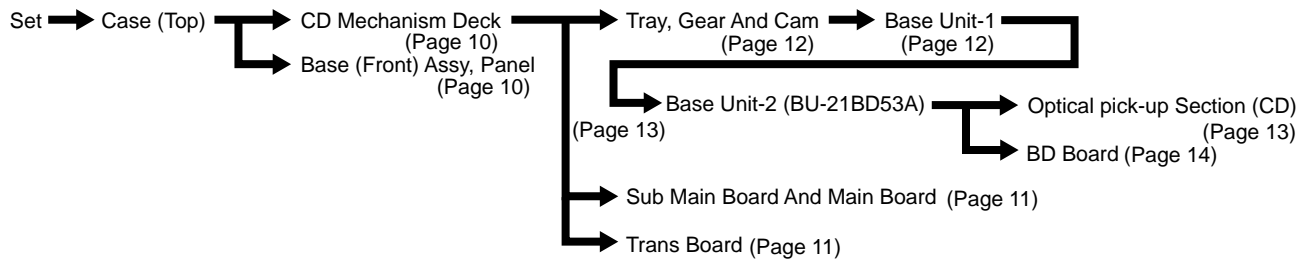
Display Messages

The following table explains the various messages that appear in the display.

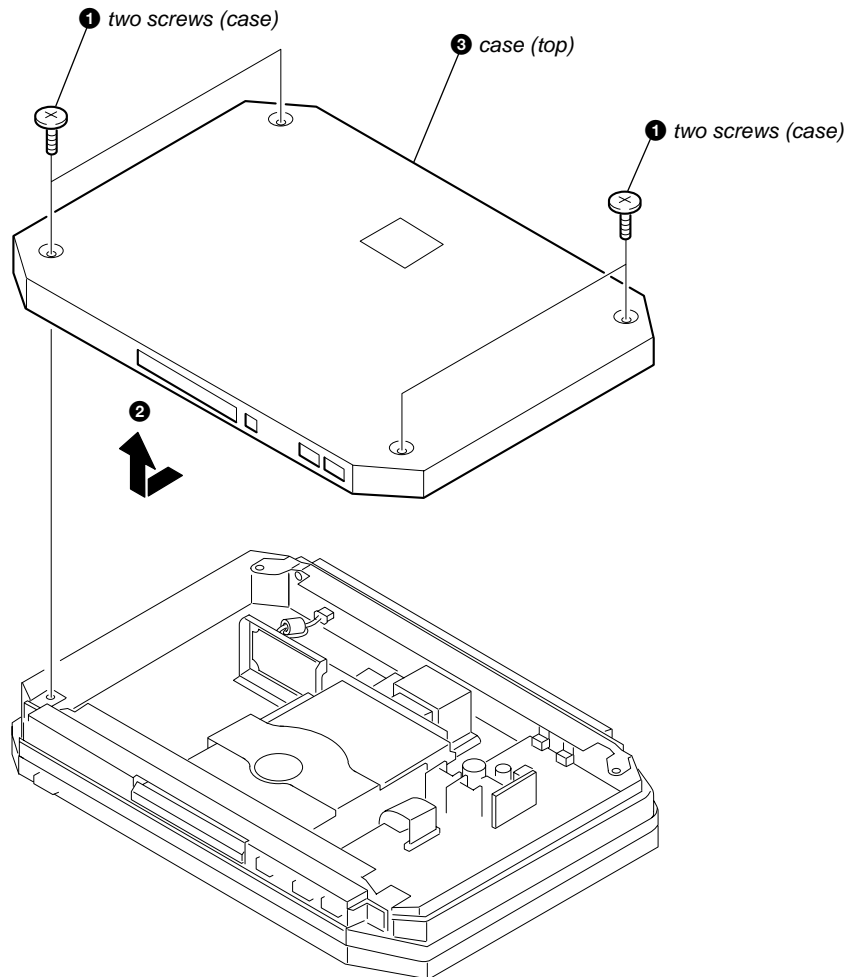
Message	Error code(s)	Cause and/or remedy
CANNOT LINC	C78:11C78:12	The player cannot establish a LINC with a component because of an existing LINC between the player and another component. Cancel the LINC between the player and the other component.
BUS FULL	C78:15	The signal bus within the i.LINK configuration is full and no more signals can be output from the player. Cancel the LINC between the component and the player.
LOOP CONNECT	C78:03	The i.LINK connection is looped. Check the connection (see page 17).
NEW CONNECT	—	An i.LINK component has been connected to or disconnected from the i.LINK configuration. Wait several seconds for the indication to turn off.

SECTION 3 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

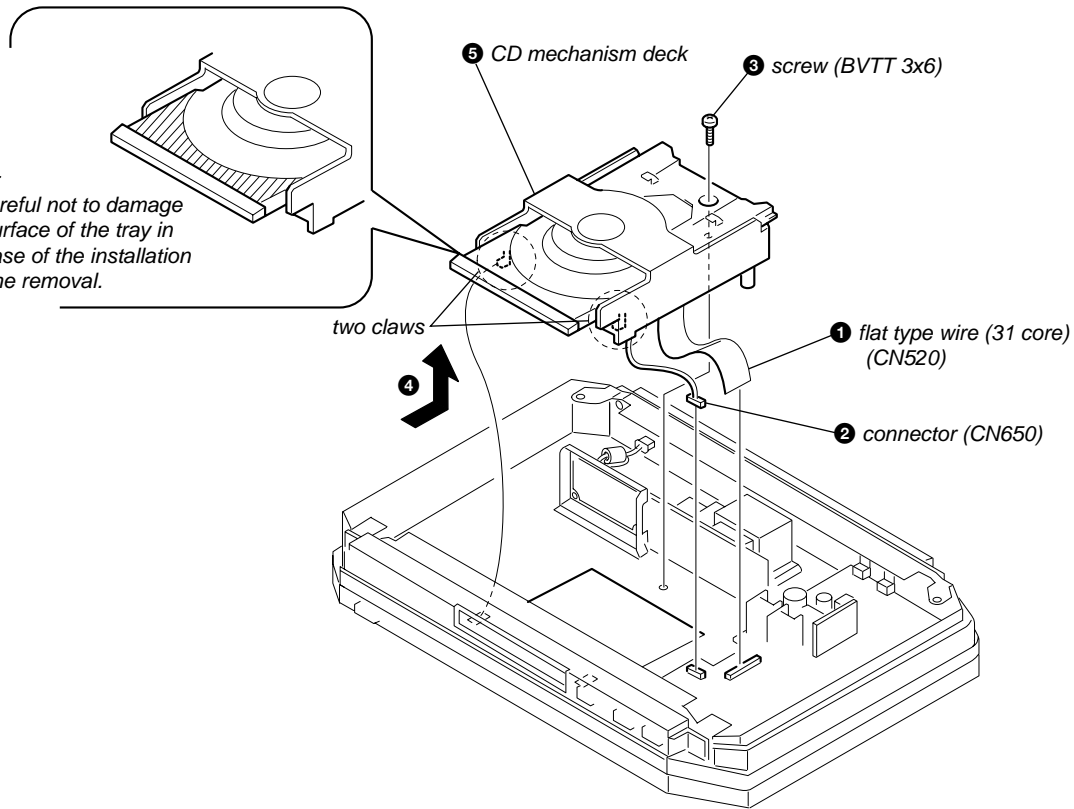


3-1. CASE (TOP)

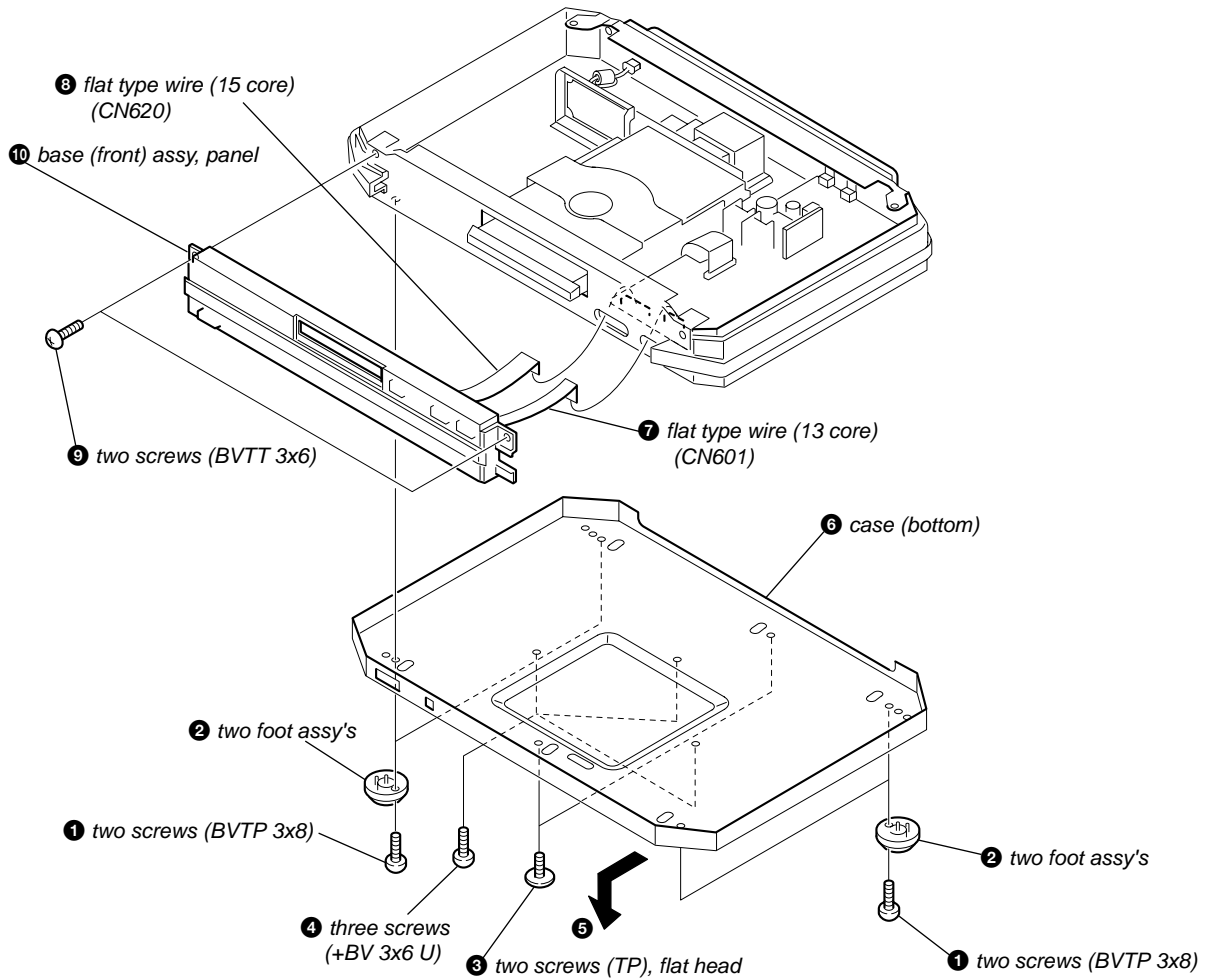


3-2. CD MECHANISM DECK

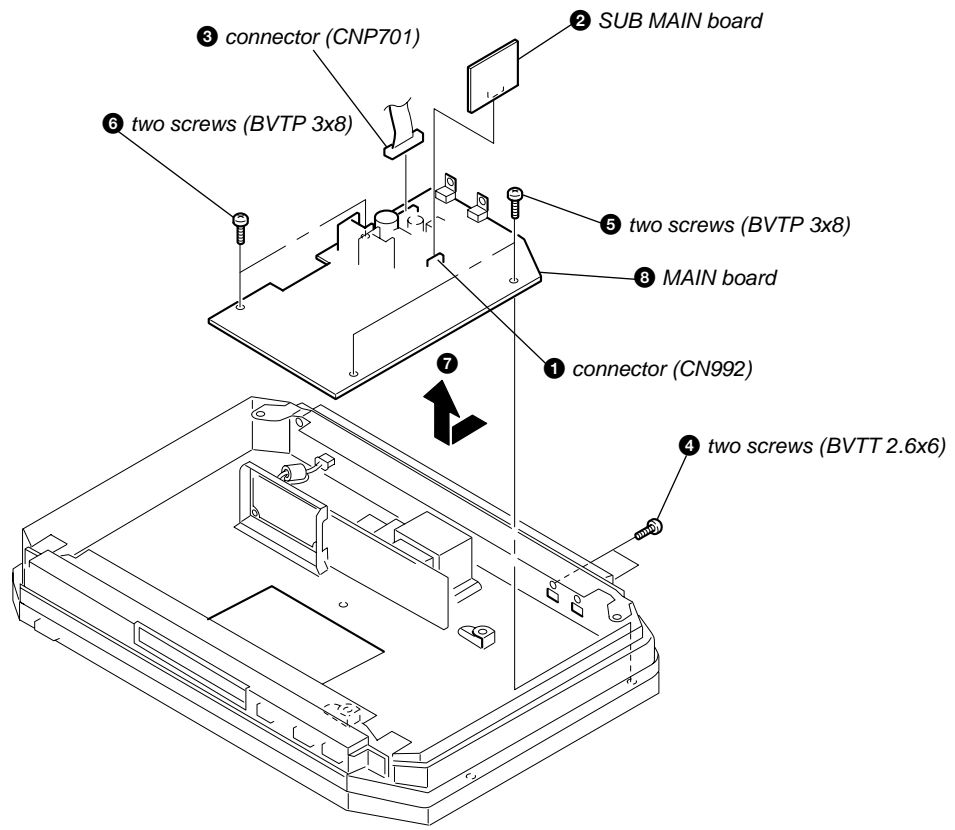
Note :
Be careful not to damage
the surface of the tray in
the case of the installation
and the removal.



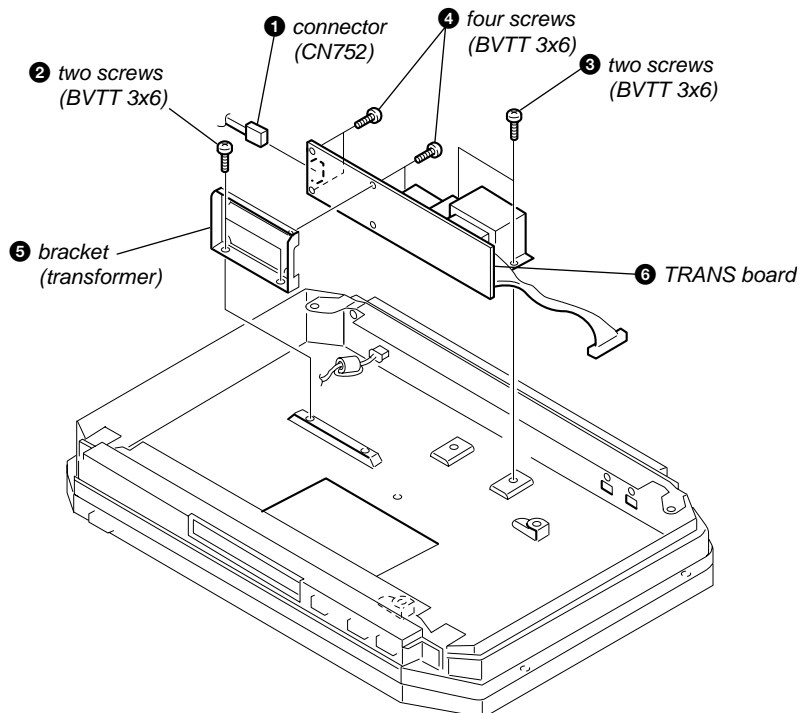
3-3. BASE (FRONT) ASSY, PANEL



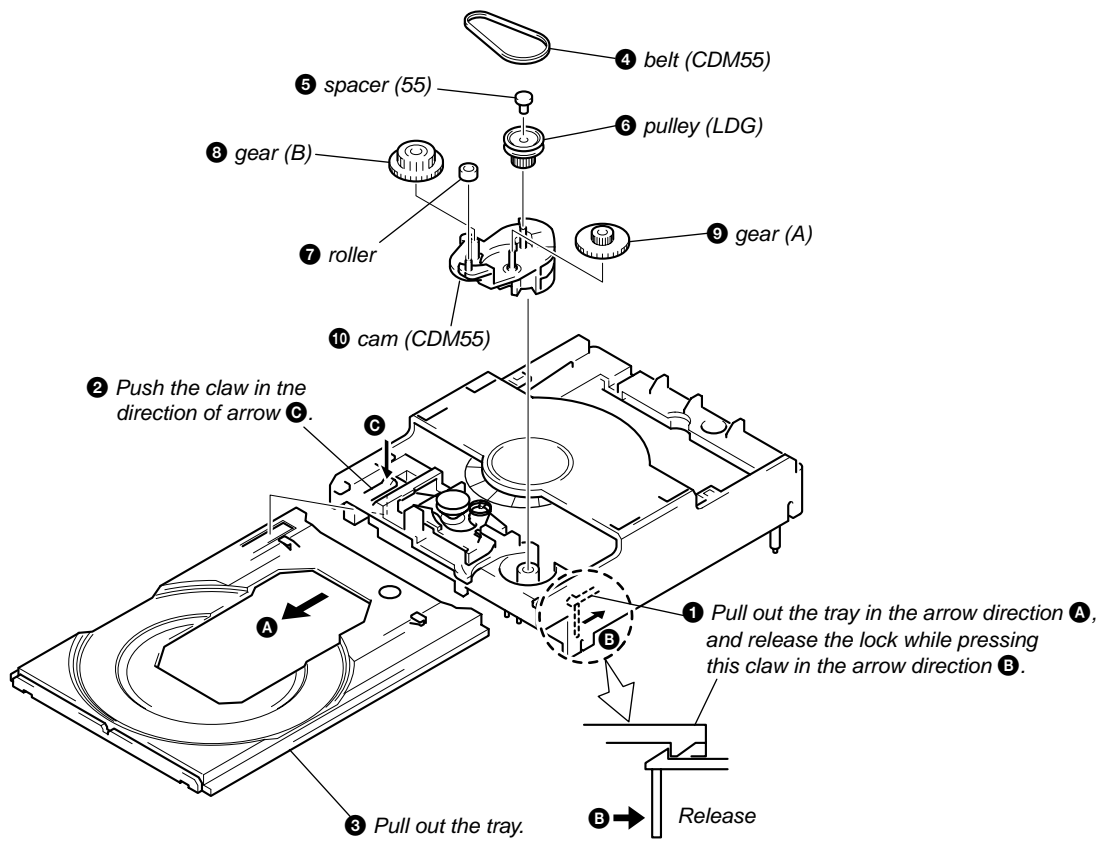
3-4. SUB MAIN BOARD AND MAIN BOARD



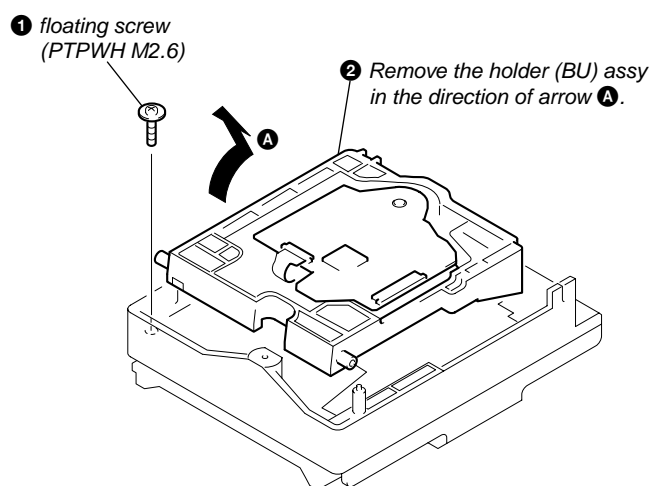
3-5. TRANS BOARD



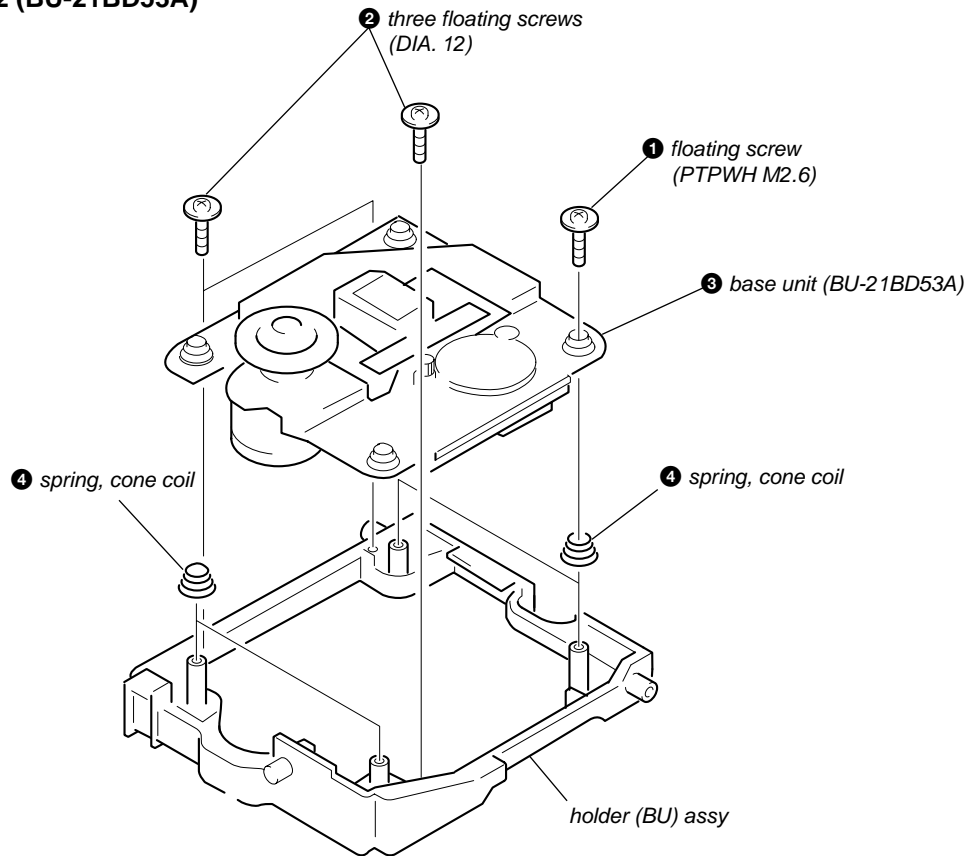
3-6. TRAY, GEAR AND CAM



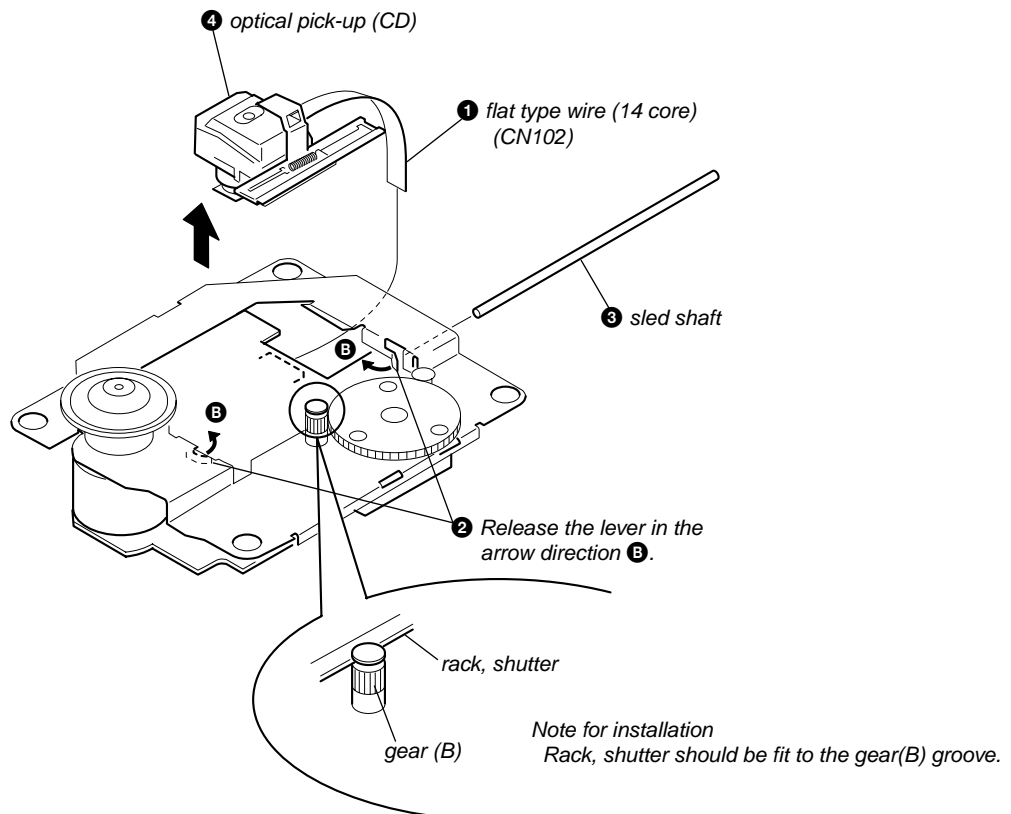
3-7. BASE UNIT-1



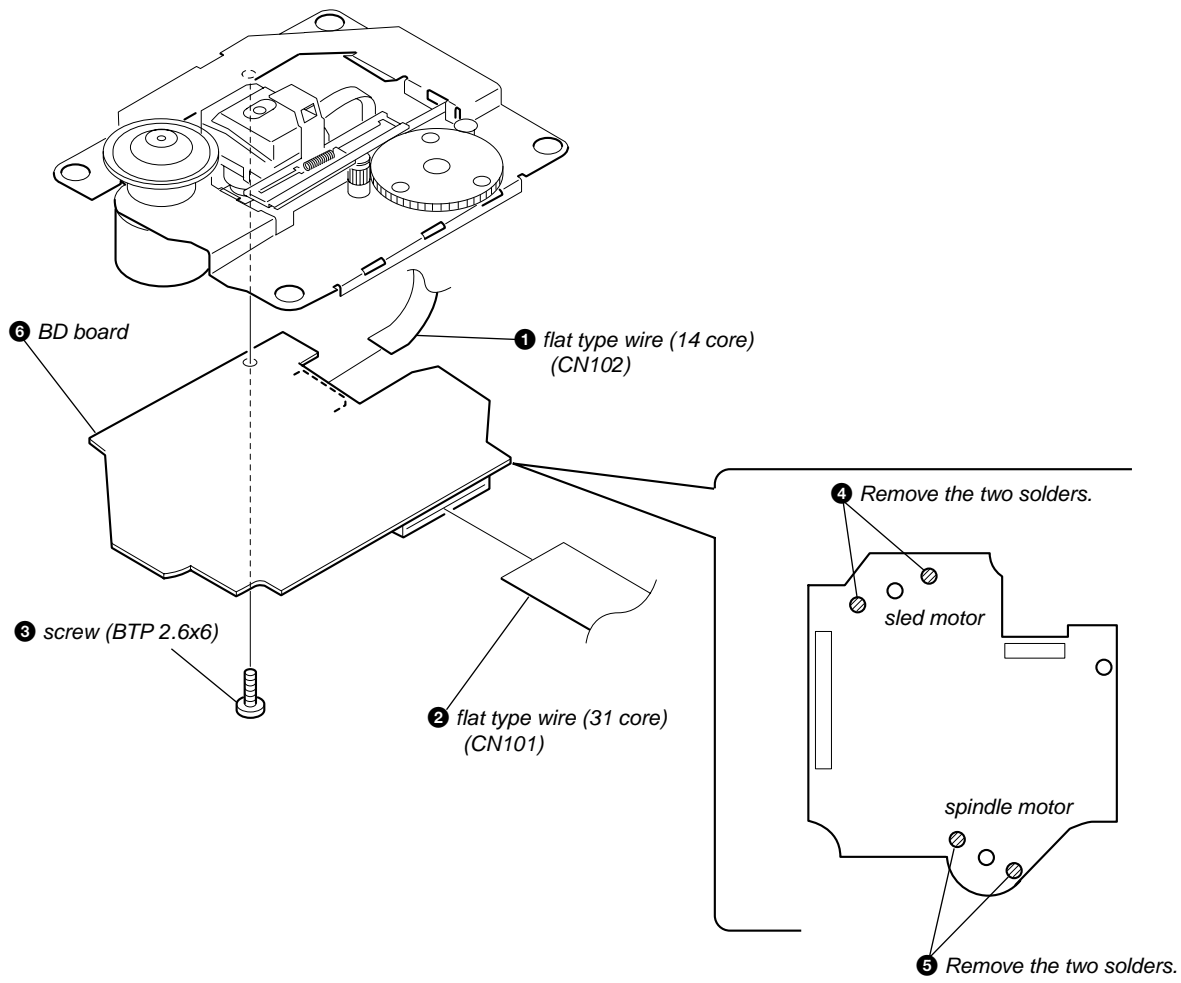
3-8. BASE UNIT-2 (BU-21BD53A)



3-9. OPTICAL PICK-UP SECTION (CD)





3-10. BD BOARD



SECTION 4 TEST MODE

Note that in order to enter test mode, it is first necessary to turn off test mode disabling.

4-1. How to release from test mode prohibition

1. While pressing the **DISPLAY** button, press the  button.
2. First release the  button, press and then release the **DISPLAY** button.

Note : Note that entering STANDBY mode or turning off the power causes test mode to be disabled once again.



4-2. FL display & key switch test mode

Either of the following two methods may be used to enter FL DISPLAY or KEY SWITCH test mode.


Method 1:

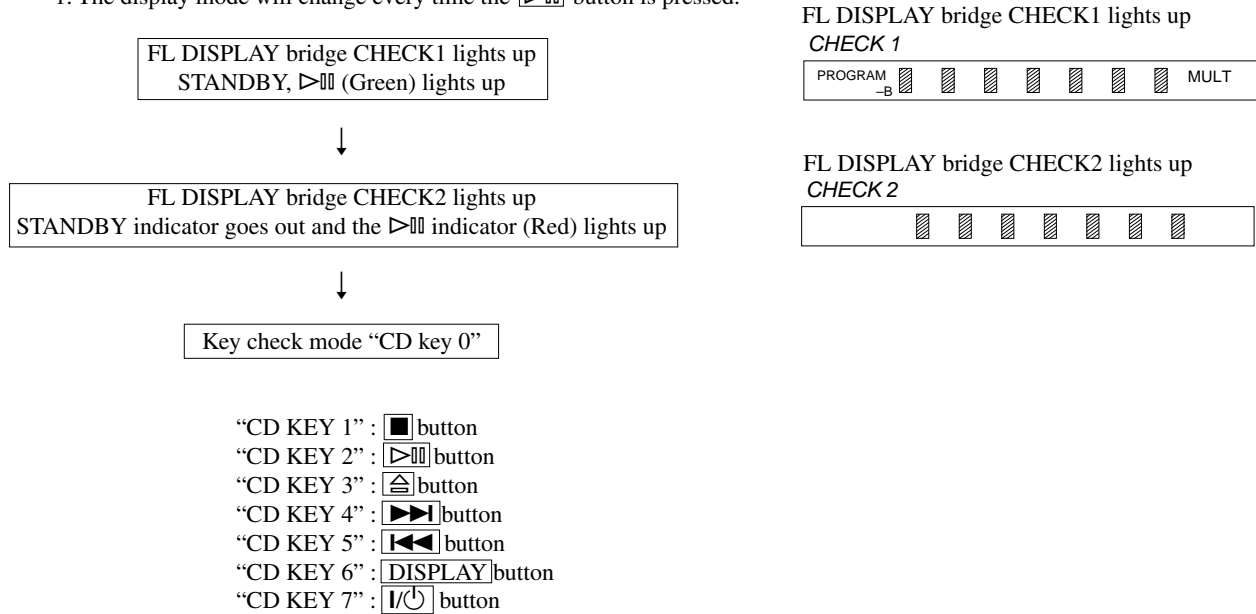
Connect the TP753 node of the main board to a GND and turn on the power. All FL DISPLAY indicators will then light up. Note that there is no need to turn off test mode disabling at this time.



Method 2:

1. While pressing the **DISPLAY** button, press the  button.
2. First release the  button, press and then release the **DISPLAY** button.
3. All FL DISPLAY indicators will then light up.

Procedure :

1. The display mode will change every time the  button is pressed.



2. While pressing the **DISPLAY** button, press the  button.
3. First release the  button and then release the **DISPLAY** button to exit the test mode.

4-3. CD TEST MODE

1. While pressing the **DISPLAY** button, press the **■** button.
2. First release the **■** button press and then release the **DISPLAY** button.

The following menu is displayed in CD TEST MODE. The **◀◀** and **▶▶** buttons may be used to make selections from this menu. The **DISPLAY** button is used to confirm menu selections and to enter test mode.

MODE	DISPLAY	DESCRIPTION	Display after execution	Note																				
0	05004#####	Display ROM version and date created	Press DISPLAY button to display Global Unique ID																					
1	1>COMMAND	COMMAND transmission menu	Press ◀◀ or ▶▶ buttons to select command Press DISPLAY button to send	Not used service																				
2	2>ERROR	C1, C2 error display	C1: Display 4 characters at left C2: Display 4 characters at right Reference value used when playback in test disc mode (YEDS-18) C1: less than 25 C2: 00																					
3	3>SPEED ×1	Select disc rotation speed	Switches each time DISPLAY button is pressed. →X1→X2→X4																					
4	4>ISRC	ISRC display	◀◀ button : Display 5 characters at ISRC USB ▶▶ button : Display 7 characters at ISRC USB	Not used service																				
5	5>CHECK 8	Value used to determine size of disc (i.e., 8/12 cm)	**	Not used service																				
6	6>AUTO G	AUTO GAIN display	Display description at left. Display gain value at right. (Example) RF AA TRK AG 30 FOC AG 30 SLC AG 30																					
7	7>RETRY	Number of retries to be performed during synchronized dubbing	Pressing the DISPLAY button resets the counter to zero.	Not used service																				
8	8>PORT	Change between three modes of output for four signal processor IC101 ports	Switches each time DISPLAY button is pressed. GFS, ERROR RATE, RFCK <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Pin No.</th> <th>GFS</th> <th>ERROR RATE</th> <th>RF CK</th> </tr> </thead> <tbody> <tr> <td>11</td> <td>XUGF</td> <td>MNT0</td> <td>RFCK</td> </tr> <tr> <td>12</td> <td>XPCK</td> <td>MNT1</td> <td>XPCK</td> </tr> <tr> <td>13</td> <td>GFS</td> <td>MNT2</td> <td>XROF</td> </tr> <tr> <td>14</td> <td>C2P0</td> <td>MNT3</td> <td>GTOP</td> </tr> </tbody> </table>	Pin No.	GFS	ERROR RATE	RF CK	11	XUGF	MNT0	RFCK	12	XPCK	MNT1	XPCK	13	GFS	MNT2	XROF	14	C2P0	MNT3	GTOP	
Pin No.	GFS	ERROR RATE	RF CK																					
11	XUGF	MNT0	RFCK																					
12	XPCK	MNT1	XPCK																					
13	GFS	MNT2	XROF																					
14	C2P0	MNT3	GTOP																					
9	9>AMS	High-speed access AMS for use in test mode		Not used service																				

MODE	DISPLAY	DESCRIPTION	Display after execution	Note
A	A>TRK ON	Tracking servo on/off for E-F balance	Switches each time DISPLAY button is pressed. TRK ON ↔ TRK OFF	
B	B>SJI	Used for E-F balance and S-character checking.	Press DISPLAY button to begin. Press DISPLAY button again to end.	
C	C>AGING	Aging mode 1 cycle <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> ↓ tray open ↓ tray close ↓ DISC TOC read ↓ Playback track 1 ↓ Playback last track </div>	Press the DISPLAY button to enter aging mode. The number of cycles will then be displayed. Cycle mode then continues without limit.	
D	D>i.LINK	i. Link test mode	Pressing the DISPLAY button causes the unit to enter i.Link test mode. (See page 18 for a description of i.Link test mode.)	
E	E>VARI OFF	Display variable pitch rate	Pressing the DISPLAY button <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> ↓ 100% ↓ 101% ↓ 99% </div>	
F	F>INITIALIZE	EEP ROM initialization	Causes the EEP ROM settings to be reinitialized, the Base Unit to be set to default settings, and the unit to enter POWER STANDBY mode.	When transporting the set, perform the setting this mode.

4-4. i.LINK TEST MODE

DISPLAY “0”, “1”, and “2” will be displayed each time the **DISPLAY** button is pressed and the command will then be executed.

NO.	DISPLAY 0	DISPLAY 1	DISPLAY 2	Description	Note
0	<[BACK]>	D>i.LINK check		The display mode will change every time the DISPLAY button is pressed.	
1	Ver. xxxxxx		FUNCTION	Firmware version Display firmware update number	
2	Node unique ID			Display Node unique ID	
3	Root Yes (No)		FUNCTION	Display root	Not used service
4	Forceroot		FUNCTION	Bus reset Pressing the REC MODE button will be executed	Not used service
5	B. Rst [xxx]		FUNCTION	Bus reset counter Display total number of times bus has been reset Pressing the DISPLAY button resets the counter to zero.	A bus reset is generation if signals cannot be transmitted as a result of failed connector or cable connections.
6	G.C [xx]		FUNCTION	Gap count Display current gap count	Not used service
7	Async [xxx]		FUNCTION	ASYNC packet reception counter Display the total number of ASYNC packets (excluding ACK) received so far. Pressing the DISPLAY button resets this counter to zero.	The counter is incremented whenever a command is received from another unit. A ping signal should be transmitted from another unit to check to make sure that the counter has been incremented and that commands may be received properly.
8	State BR	0000 zzzzzzzz	FUNCTION	State Bits Resister Display register values Pressing the DISPLAY button causes the following items to be displayed in succession each time the button is pressed: A: Register name B: Offset address register value	Not used service
9	Note IDR	0008 zzzzzzzz	FUNCTION	Node ID Register	
10	Split THR	0018 zzzzzzzz	FUNCTION	Split Timeout High Register	
11	Split TLR	001C zzzzzzzz	FUNCTION	Split Timeout Low Register	
12	Bus TR	0204 zzzzzzzz	FUNCTION	Bus Time Register	
13	Busy TR	0210 zzzzzzzz	FUNCTION	Busy Timeout Register	
14	Babndwidth AR	0220 zzzzzzzz	FUNCTION	Bandwidth Available Register	
15	Channel AHR	0224 zzzzzzzz	FUNCTION	Channel Available Hi Register	
16	Channel ALR	0228 zzzzzzzz	FUNCTION	Channel Available Low Register	
17	Output MPR	0900 zzzzzzzz	FUNCTION	Output Master Plug Register	
18	Output PCR	0904 zzzzzzzz	FUNCTION	Output Plug Control Register	
19	Input MPR	0980 zzzzzzzz	FUNCTION	Input Master Plug Register	
20	Input PCR	0984 zzzzzzzz	FUNCTION	Input Plug Control Register	
21	Config ROM			Config ROM	
22	LINK IC [00]	0000 zzzzzzzz	FUNCTION	LINK IC Register [00]	
23	LINK IC [04]	0004 zzzzzzzz	FUNCTION	LINK IC Register [04]	
24	LINK IC [08]	0008 zzzzzzzz	FUNCTION	LINK IC Register [08]	
25	LINK IC [0C]	000C zzzzzzzz	FUNCTION	LINK IC Register [0C]	
26	LINK IC [10]	0010 zzzzzzzz	FUNCTION	LINK IC Register [10]	
27	LINK IC [14]	0014 zzzzzzzz	FUNCTION	LINK IC Register [14]	
28	LINK IC [18]	0018 zzzzzzzz	FUNCTION	LINK IC Register [18]	
29	LINK IC [1C]	001C zzzzzzzz	FUNCTION	LINK IC Register [1C]	
30	LINK IC [20]	0020 zzzzzzzz	FUNCTION	LINK IC Register [20]	
31	LINK IC [24]	0024 zzzzzzzz	FUNCTION	LINK IC Register [24]	
32	LINK IC [28]	0028 zzzzzzzz	FUNCTION	LINK IC Register [28]	
33	LINK IC [2C]	002C zzzzzzzz	FUNCTION	LINK IC Register [2C]	
34	LINK IC [30]	0030 zzzzzzzz	FUNCTION	LINK IC Register [30]	
35	LINK IC [34]	0034 zzzzzzzz	FUNCTION	LINK IC Register [34]	
36	LINK IC [38]	0038 zzzzzzzz	FUNCTION	LINK IC Register [38]	
37	LINK IC [3C]	003C zzzzzzzz	FUNCTION	LINK IC Register [3C]	
38	LINK IC [40]	0040 zzzzzzzz	FUNCTION	LINK IC Register [40]	

NO.	DISPLAY 0	DISPLAY 1	DISPLAY 2	Description	Note
39	LINK IC [44]	0044 zzzzzzzz	FUNCTION	LINK IC Register [44]	
40	LINK IC [48]	0048 zzzzzzzz	FUNCTION	LINK IC Register [48]	
41	LINK IC [4C]	004C zzzzzzzz	FUNCTION	LINK IC Register [4C]	
42	LINK IC [50]	0050 zzzzzzzz	FUNCTION	LINK IC Register [50]	
43	LINK IC [54]	0054 zzzzzzzz	FUNCTION	LINK IC Register [54]	
44	LINK IC [58]	0058 zzzzzzzz	FUNCTION	LINK IC Register [58]	
45	LINK IC [5C]	005C zzzzzzzz	FUNCTION	LINK IC Register [5C]	
46	LINK IC [60]	0060 zzzzzzzz	FUNCTION	LINK IC Register [60]	
47	LINK IC [64]	0064 zzzzzzzz	FUNCTION	LINK IC Register [64]	
48	LINK IC [68]	0068 zzzzzzzz	FUNCTION	LINK IC Register [68]	
49	LINK IC [6C]	006C zzzzzzzz	FUNCTION	LINK IC Register [6C]	
50	LINK IC [70]	0070 zzzzzzzz	FUNCTION	LINK IC Register [70]	
51	LINK IC [74]	0074 zzzzzzzz	FUNCTION	LINK IC Register [74]	
52	LINK IC [78]	0078 zzzzzzzz	FUNCTION	LINK IC Register [78]	
53	LINK IC [7C]	007C zzzzzzzz	FUNCTION	LINK IC Register [7C]	
54	LINK IC [80]	0080 zzzzzzzz	FUNCTION	LINK IC Register [80]	
55	LINK IC [84]	0084 zzzzzzzz	FUNCTION	LINK IC Register [84]	
56	LINK IC [88]	0088 zzzzzzzz	FUNCTION	LINK IC Register [88]	
57	LINK IC [90]	0090 zzzzzzzz	FUNCTION	LINK IC Register [90]	
58	LINK IC [94]	0094 zzzzzzzz	FUNCTION	LINK IC Register [94]	
59	LINK IC [98]	0098 zzzzzzzz	FUNCTION	LINK IC Register [98]	
60	LINK IC [A0]	00A0 zzzzzzzz	FUNCTION	LINK IC Register [A0]	
61	LINK IC [A4]	00A4 zzzzzzzz	FUNCTION	LINK IC Register [A4]	
62	LINK IC [A8]	00A8 zzzzzzzz	FUNCTION	LINK IC Register [A8]	
63	LINK IC [AC]	00AC zzzzzzzz	FUNCTION	LINK IC Register [AC]	
64	LINK IC [B0]	00B0 zzzzzzzz	FUNCTION	LINK IC Register [B0]	
65	LINK IC [B4]	00B4 zzzzzzzz	FUNCTION	LINK IC Register [B4]	
66	LINK IC [B8]	00B8 zzzzzzzz	FUNCTION	LINK IC Register [B8]	
67	LINK IC [BC]	00BC zzzzzzzz	FUNCTION	LINK IC Register [BC]	
68	LINK IC [C0]	00C0 zzzzzzzz	FUNCTION	LINK IC Register [C0]	
69	LINK IC [C4]	00C4 zzzzzzzz	FUNCTION	LINK IC Register [C4]	
70	LINK IC [C8]	00C8 zzzzzzzz	FUNCTION	LINK IC Register [C8]	
71	LINK IC [CC]	00CC zzzzzzzz	FUNCTION	LINK IC Register [CC]	
72	LINK IC [D0]	00D0 zzzzzzzz	FUNCTION	LINK IC Register [D0]	
73	LINK IC [D4]	00D4 zzzzzzzz	FUNCTION	LINK IC Register [D4]	
74	LINK IC [D8]	00D8 zzzzzzzz	FUNCTION	LINK IC Register [D8]	
75	LINK IC [DC]	00DC zzzzzzzz	FUNCTION	LINK IC Register [DC]	
76	LINK IC [E0]	00E0 zzzzzzzz	FUNCTION	LINK IC Register [E0]	
77	LINK IC [E4]	00E4 zzzzzzzz	FUNCTION	LINK IC Register [E4]	
78	LINK IC [F0]	00F0 zzzzzzzz	FUNCTION	LINK IC Register [F0]	
79	LINK IC [F4]	00F4 zzzzzzzz	FUNCTION	LINK IC Register [F4]	
80	LINK IC [FC]	00FC zzzzzzzz	FUNCTION	LINK IC Register [FC]	

LIST OF i.LINK COMMANDS

No.	Description	Examples of causes of errors	Display on next model	Messages displayed in i.LINK test mode	Display mode	Description of C code
1	LINK error (Note that there are two types of errors corresponding to each side.)	Selected devices have 63 links and no more links can be established. STR-LSA1 have 63 links and no more links can be established.	Unit establishing link: Cannot link Unit being linked to: Cannot link • When an attempt is made to establish a link from device A (i.e., a PC) to device B, and a link cannot be established between device A and device B because device B is already linked to another device C, "Remote" will be displayed on device B and a "Cannot link" message will be displayed on device A. • When an attempt is made to establish a link from device B (i.e., an MD) to device C (i.e., a CD) and the CD is already linked to another device D (e.g., an MD), a "Cannot link" message will be displayed on device B and a "Remote" message displayed on device C.	12 P-to-P error 31 P-to-P error	C78: 11 (When i.LINK device has been selected) C78: 12 (TUNER, ANALOG)	• Remote device Link. • Home device Link. Device to which an attempt was made to establish a link is already linked (i.e., connected) to another device.
2	Reserve error (Note that there are two types of errors corresponding to each side.)	Unable to reserve (Specified device is already reserved and cannot be controlled.)	Unit establishing link: Cannot link Unit being linked to: Cannot link • When an attempt is made to establish a link from device A (i.e., a PC) to device B, and a link cannot be established between device A and device B because device B is already linked to another device C (e.g., device C), "Remote" will be displayed on device B and a "Cannot link" message will be displayed on device A. • When an attempt is made to establish a link from device B (i.e., an MD) to device C (i.e., a CD) and the CD is already linked to another device D (e.g., an MD), a "Cannot link" message will be displayed on device B and a "Remote" message displayed on device C.		C78: 16 C78: 17	• Remote device reserved • Home device reserved Device to which an attempt was made to reserve the device has already been reserved by another device.
3	EMPTY	When an empty packet has been received after establishing a link. (This problem occurs when the opposing playing is not in operation, when an MD is used to select input for a CD which is not being replayed, and when a CD is not being replayed when recording from a CD to an MD.)	NO SIGNAL		C78: 21	• Waiting for input State in which link has been properly established (i.e., signals may be transmitted over bus) but no signal has yet been sent.
4	Invalid format	This problem occurs when a signal in a separate format (i.e., a signal which cannot be replayed) is detected (i.e., when recording to an MD when the channel is being used for DV signals).	NO SIGNAL	22 Not IEC958 conf. 23 Invalid value in bit n 25 Invalid frequency 26 Not linear PCM 24 Unlocked	C78: 22	• An attempt has been made to transmit a signal over a broadcast channel. Sony DVs are designed to allow the use of 63 channels. MDs also have the same design, and it is impossible to use the same channel after it has already been used (i.e., the same channel cannot be used again without the ability to obtain channel authorization).
5	UNLOCK	Invalid signal clock detected at a time when i.LINK IC PLL is not locked. (This error occurs when connected to a unit with improperly designed output signal circuits.)	NO SIGNAL		C78: 31	• Unable to perform clock synchronization The remote device has been poorly designed and communications have reached the limit of stable PLL (where the PLL is a chip used to stabilize the clock). Home device okay; fault lies with remote device.
6	NO SIGNAL	No input signals detected at a time when i.LINK device has been selected. (This error occurs when no input signals are detected after switching from optical input to i.LINK input.)	NO SIGNAL	21 No signal	C78: 04	• No input signal (Used for units able to perform i.LINK switching without linking.)
7	NO SIGNAL	No input signals detected in i.LINK mode. (This problem occurs when the power of the opposing unit is turned off after linking.)	NO SIGNAL		C78: 23	• No input signal because remote device not powered on (Used for units requiring linking for iLINK input switching.)
8	Unable to output signal (No ISO resource found)	Unable to interrupt output because bus is being used to capacity. (This error occurs when multiple DV signals are being output and the bus is too busy to generate an interrupt.)	BUS FULL	13 Insufficient input bandwidth 14 Channel full at input time 32 Insufficient output bandwidth 33 Channel full at output time	C78: 15	• Bus full Number of signals being transmitted over the bus exceeds the maximum amount of signals which may be transmitted.
9	LOOP	A group has been created as a result of i.LINK cable connections.	LOOP CONNECT		C78: 03	• i.LINK failure Displayed on all units connected.
10	Bus reset generation	Bus reset has been generation. (This occurs when a new device has been connected or a device has been disconnected.)	NEW CONNECT (Display flashes twice)			• Bus reset Not displayed in C code because too complicated.
11	Bus reset generation during recording	Bus reset has been generation during recording. (This occurs when a new device has been connected or a device has been disconnected.)	NEW CONNECT		C78:32	• Bus reset Displayed only for recording unit. (C code displayed only on MD when recording from a CD to an MD.)

Note 1 : i.LINK messages displayed only in upper-case characters.

Note 2 : Distinctions between "No signal" and "Cannot link" messages made by C code.

Note 3 : Note that No. 9 may not always be properly detected.

Comment 1 : As before, a "Can't copy" message is displayed when it is impossible to record because of SCMS restrictions.

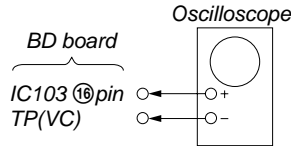
Comment 2 : C code C78 represents an improper connection (i.LINK connection).

SECTION 5 ELECTRICAL ADJUSTMENTS

Note :

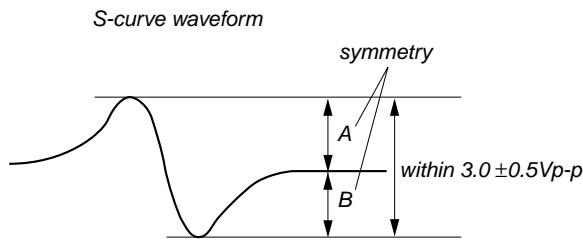
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal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

S-Curve Check



Procedure :

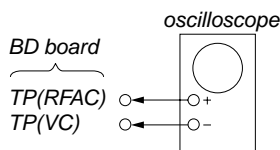
1. Connect oscilloscope to IC103 (16) pin.
2. Connect between TP (FE) and TP (VC) by lead wire.
3. Press the button to turn ON the power.
4. Load a disc (YEDS-18) and actuate the focus search. (In consequence of open and close the disc tray, actuate the focus search)
5. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within $3.0 \pm 0.5 V_{p-p}$.



7. After check, remove the lead wire connected in step 2.

Note : • Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 8.8.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

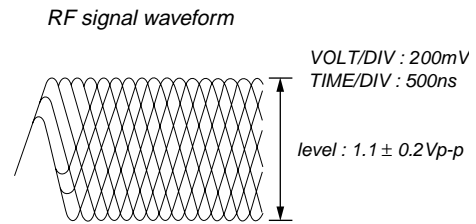
RF Level Check



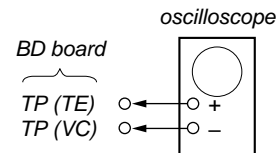
Procedure :

1. Connect oscilloscope to TP (RFAC).
2. Press the button to turn ON the power.
3. Load a disc (YEDS-18) and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

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

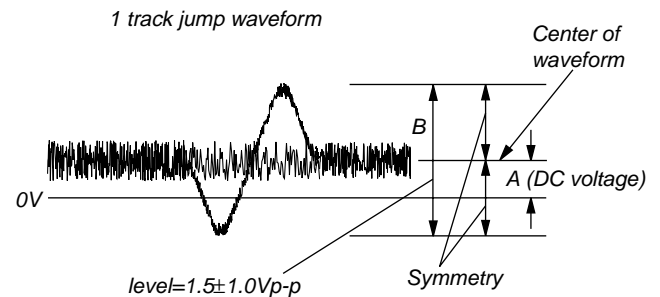


E-F Balance (1 Track jump) Check



Procedure:

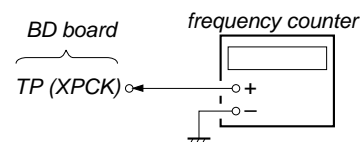
1. Connect oscilloscope to TP (TE) and TP (VC) board.
2. Press the button to turn ON the power.
3. Load a disc (YEDS-18) and playback the number five track.
4. Press the button. (Becomes the 1 track jump mode.)
5. Confirm that the level B and A (DC voltage) on the oscilloscope waveform.



Specification level: $\frac{A}{B} \times 100 = \text{less than } \pm 50\%$

6. After check, remove the lead wire connected in step 1.

RF PLL Free-run Frequency

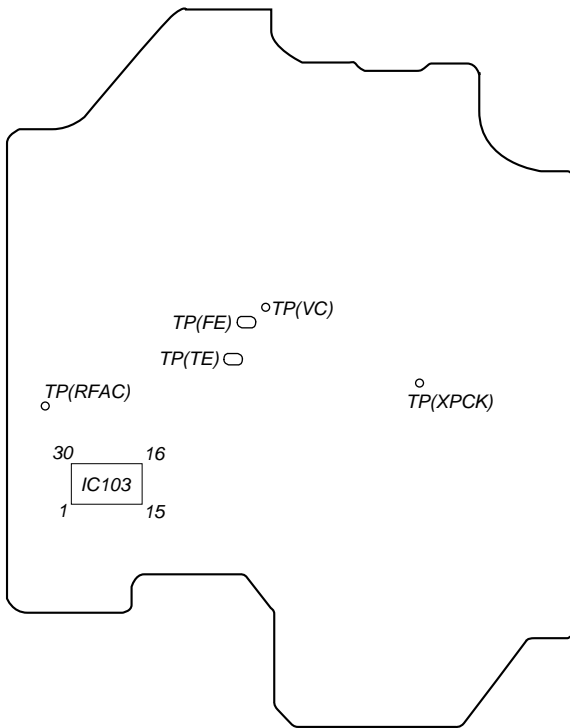


Procedure :

1. Connect frequency counter to test point TP (XPCK) with lead wire.
2. Press the button to turn ON the power.
3. Put the disc (YEDS-18) in to play the number five track. Confirm that reading on frequency counter is 4.3218MHz.

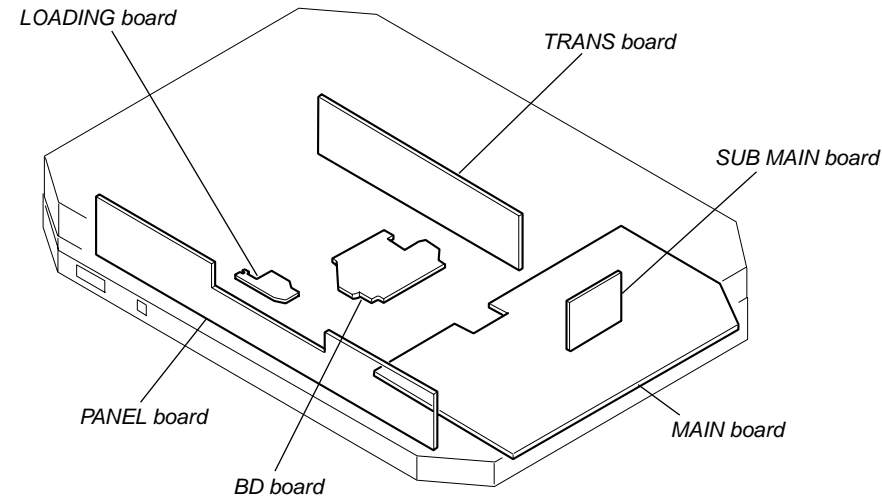
Adjustment Location :

[BD BOARD] — SIDE B —



**SECTION 6
DIAGRAMS**




6-1. CIRCUIT BOARDS LOCATION



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)






For schematic diagrams.

Note:

- All capacitors are in μF unless otherwise noted. pF: μpF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4\text{W}$ or less unless otherwise specified.
- Δ : internal component.
-  : nonflammable resistor.
-  : fusible resistor.
-  : panel designation.





Note:

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

-  : B+ Line.
-  : B- Line.
-  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
-  : CD (ANLOG)
-  : CD (DIGITAL)

For printed wiring boards.

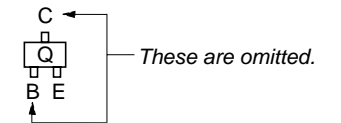
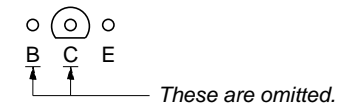
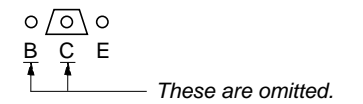
Note:

-  : parts extracted from the component side.
-  : parts extracted from the conductor side.
-  : Through hole.
-  : Pattern from the side which enables seeing.
(The other layers' patterns are not indicated.)

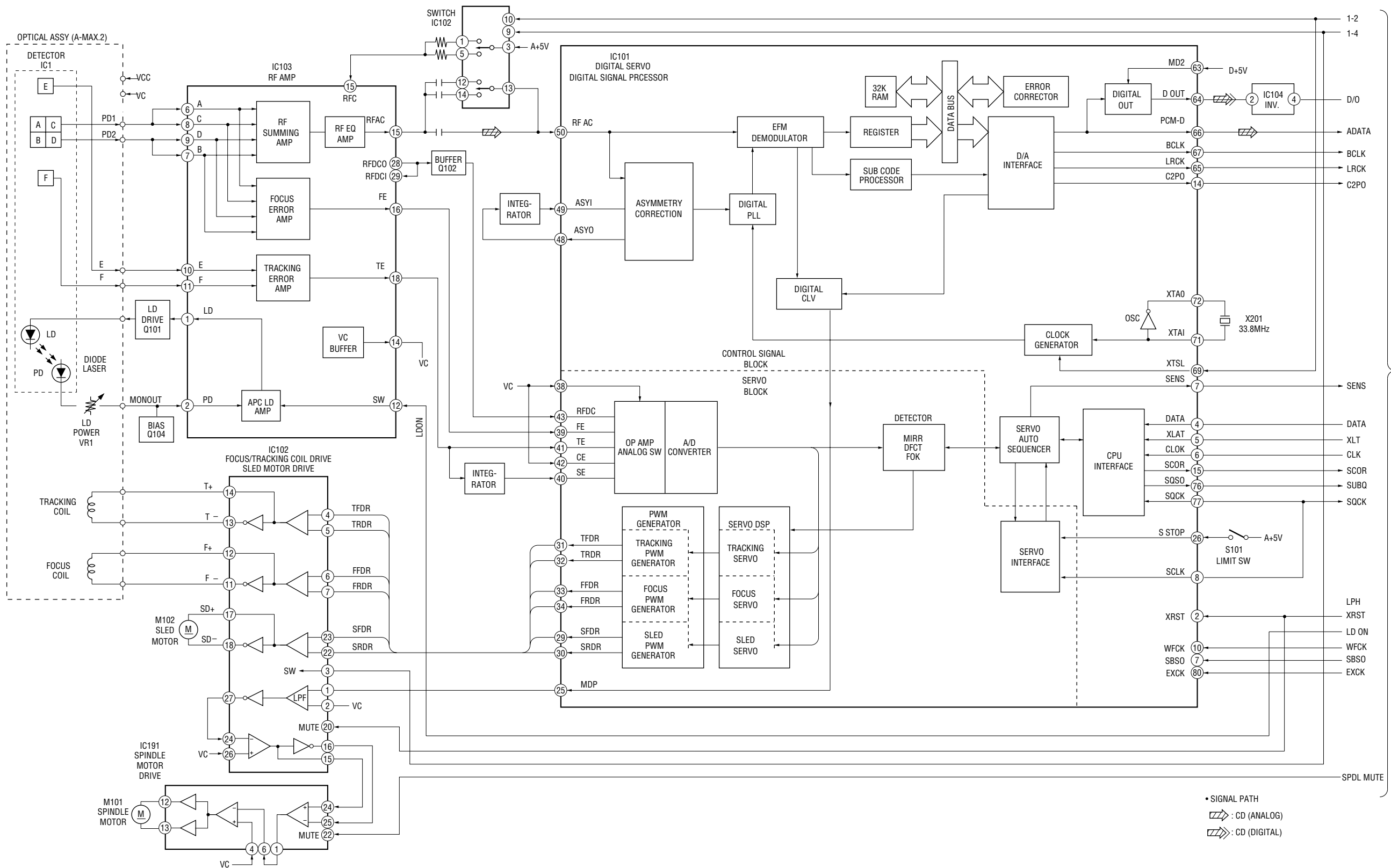
Caution:

Pattern face side: Parts on the pattern face side seen from the (Side B) pattern face are indicated.
Parts face side: Parts on the parts face side seen from the (Side A) parts face are indicated.

• Indication of transistor

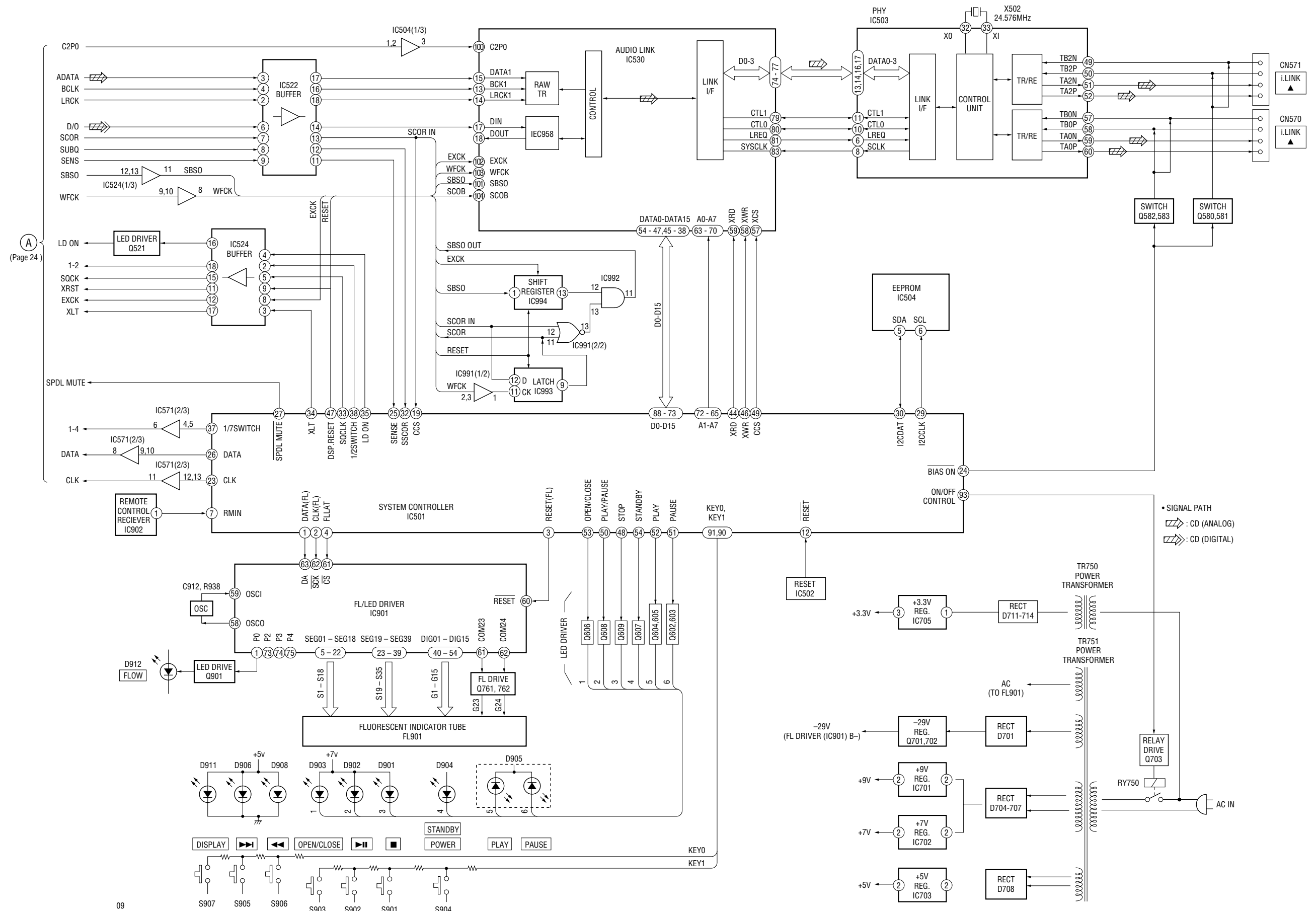


6-2. BLOCK DIAGRAMS - BD SECTION -



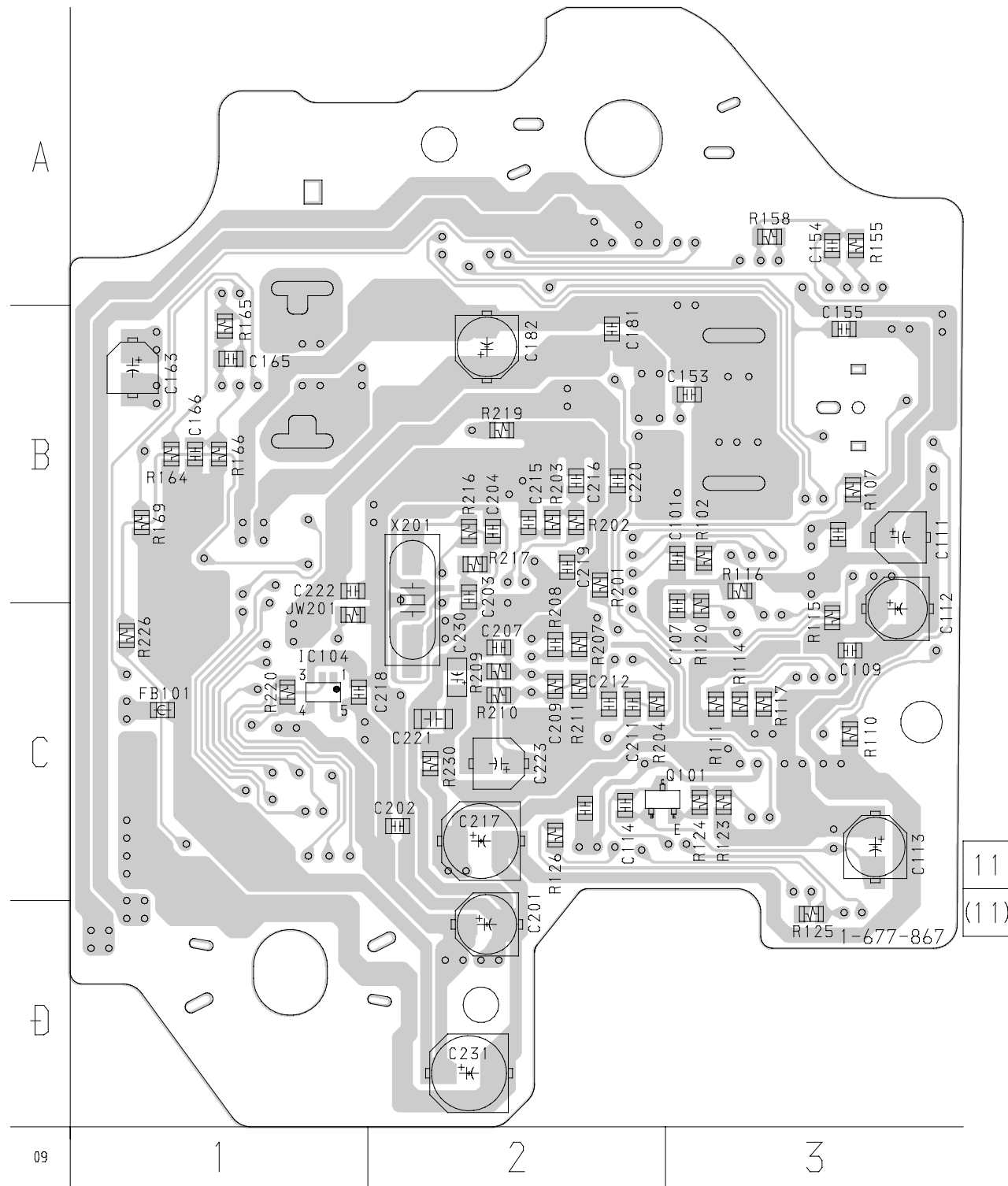
A
 MAIN SECTION
 (Page 25)

- MAIN SECTION -



(Page 24)

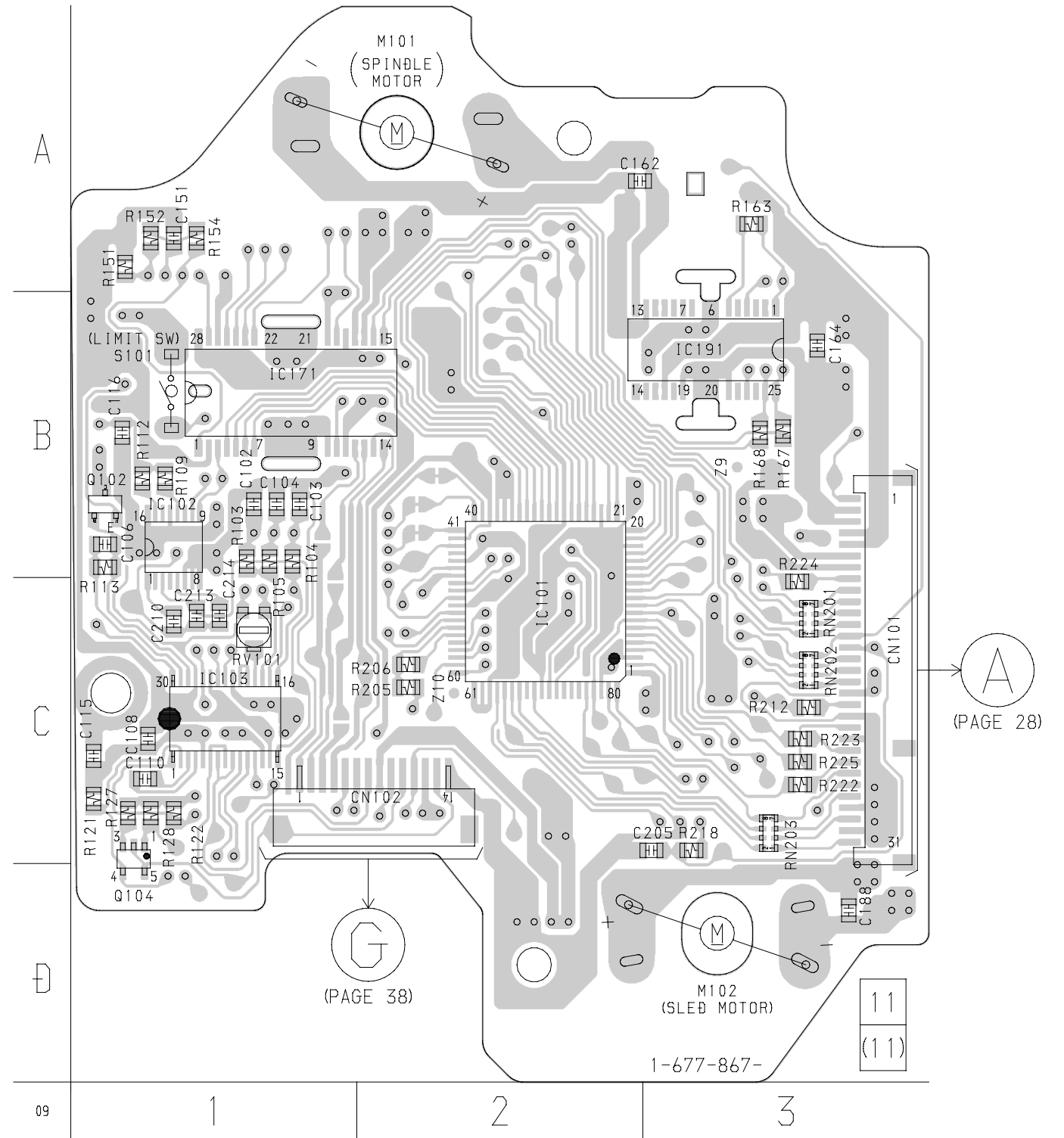
【BD BOARD】(SIDE A)



• Semiconductor Location

Ref. No.	Location
IC104	C-1
Q101	C-3

【BD BOARD】(SIDE B)

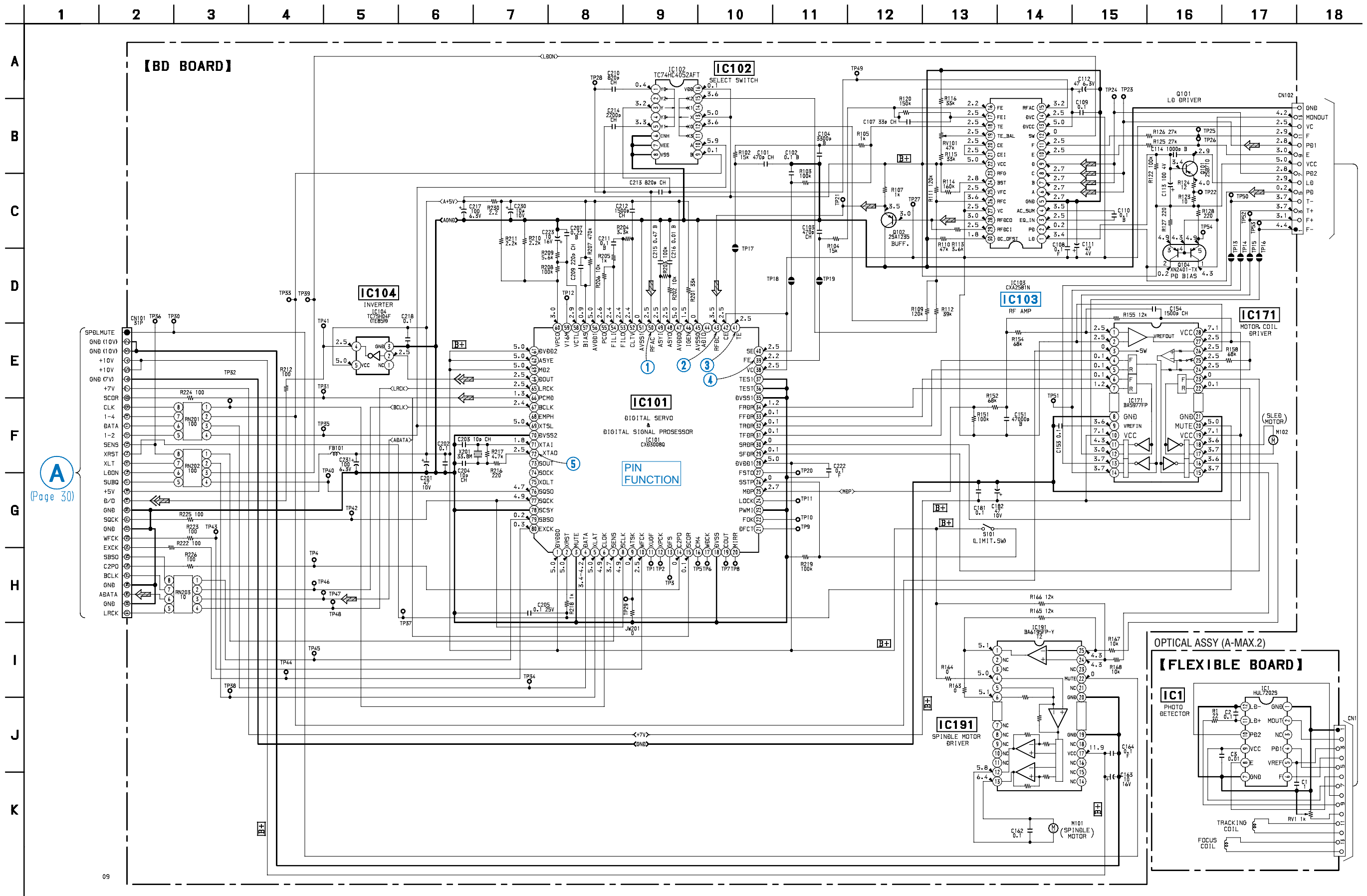


• Semiconductor Location

Ref. No.	Location
IC101	C-2
IC102	B-1
IC103	C-1
IC171	B-1
IC191	B-3
Q102	B-1
Q104	C-1

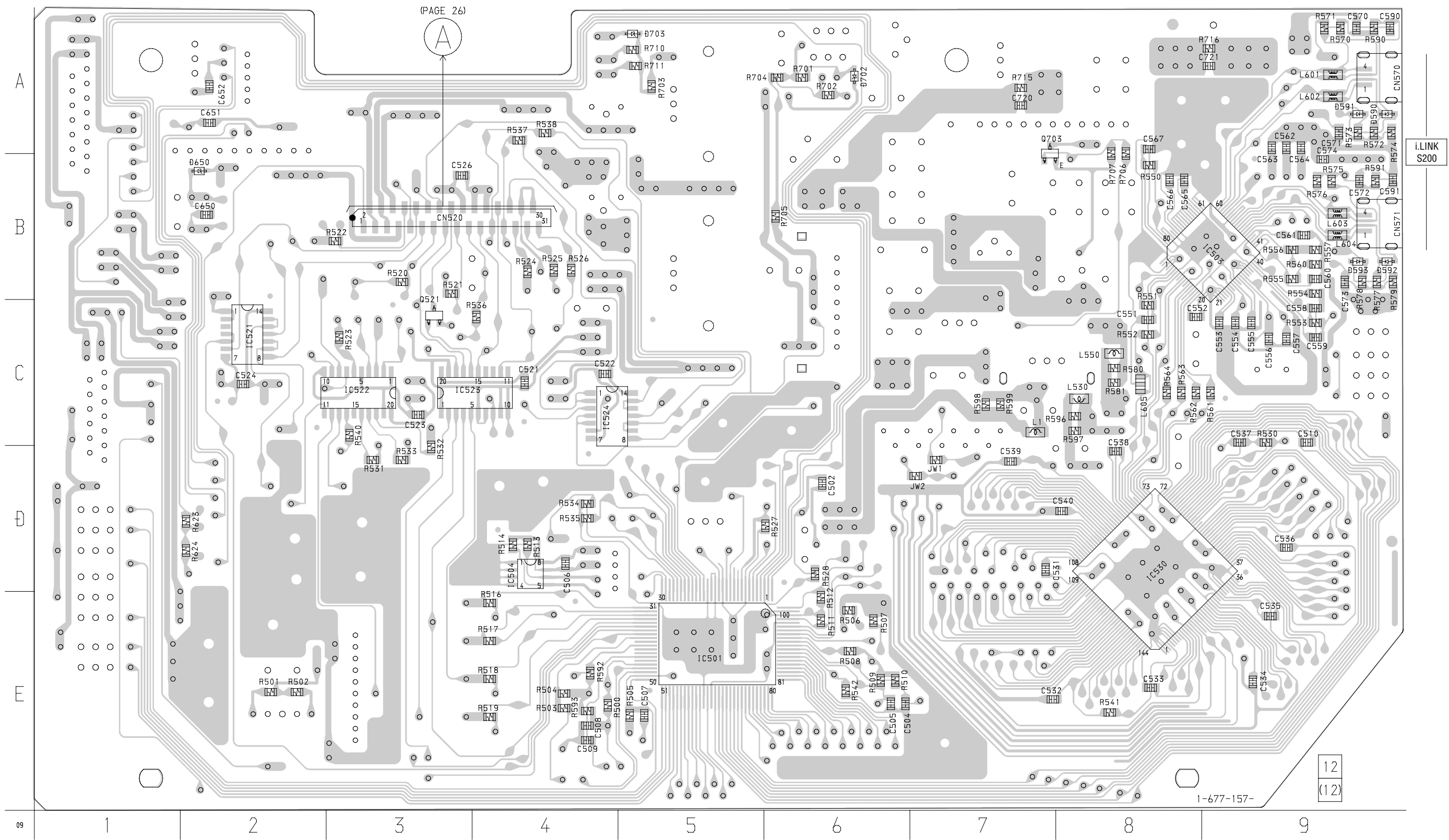
There are a few cases that the part isn't mounted in model is printed on diagram.

6-4. SCHEMATIC DIAGRAM – BD SECTION – • See page 33 for Waveforms. • See page 40 for IC Block Diagrams. • See page 41 for IC Pin Functions.



6-5. PRINTED WIRING BOARD – MAIN (SIDE A) SECTION – • See page 23 for Circuit Board Location.

【MAIN BOARD】(SIDE A)



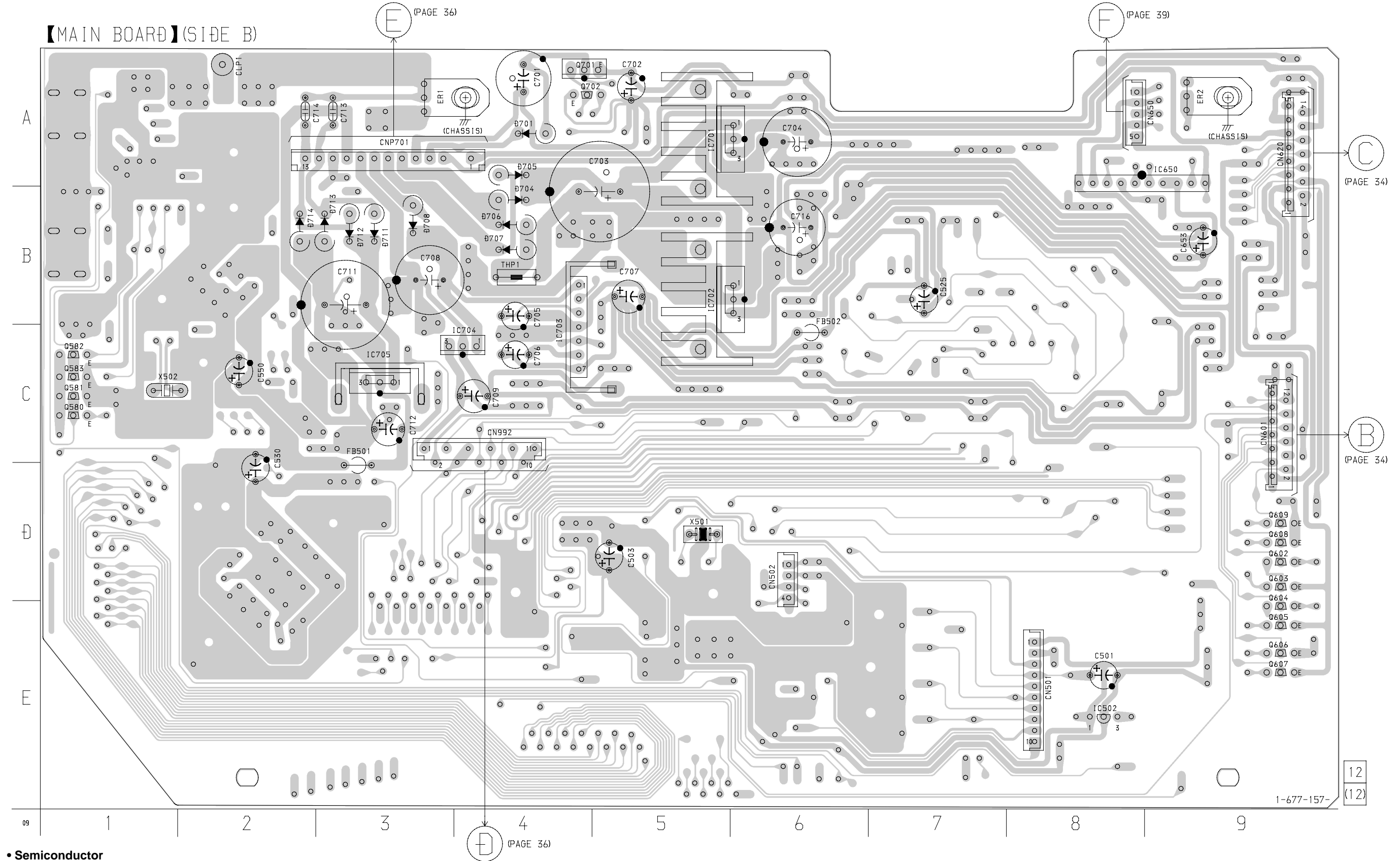
i.LINK
S200

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D590	A-9	IC501	E-5	IC530	D-8
D591	A-9	IC503	B-9	Q521	C-3
D592	B-9	IC504	D-4	Q701	A-5
D593	B-9	IC521	C-2	Q702	A-5
D650	B-2	IC522	C-3	Q703	A-7
D702	A-6	IC523	C-3		
D703	A-5	IC524	C-4		

There are a few cases that the part isn't mounted in model is printed on diagram.

6-6. PRINTED WIRING BOARD – MAIN (SIDE B) SECTION – • See page 23 for Circuit Board Location.

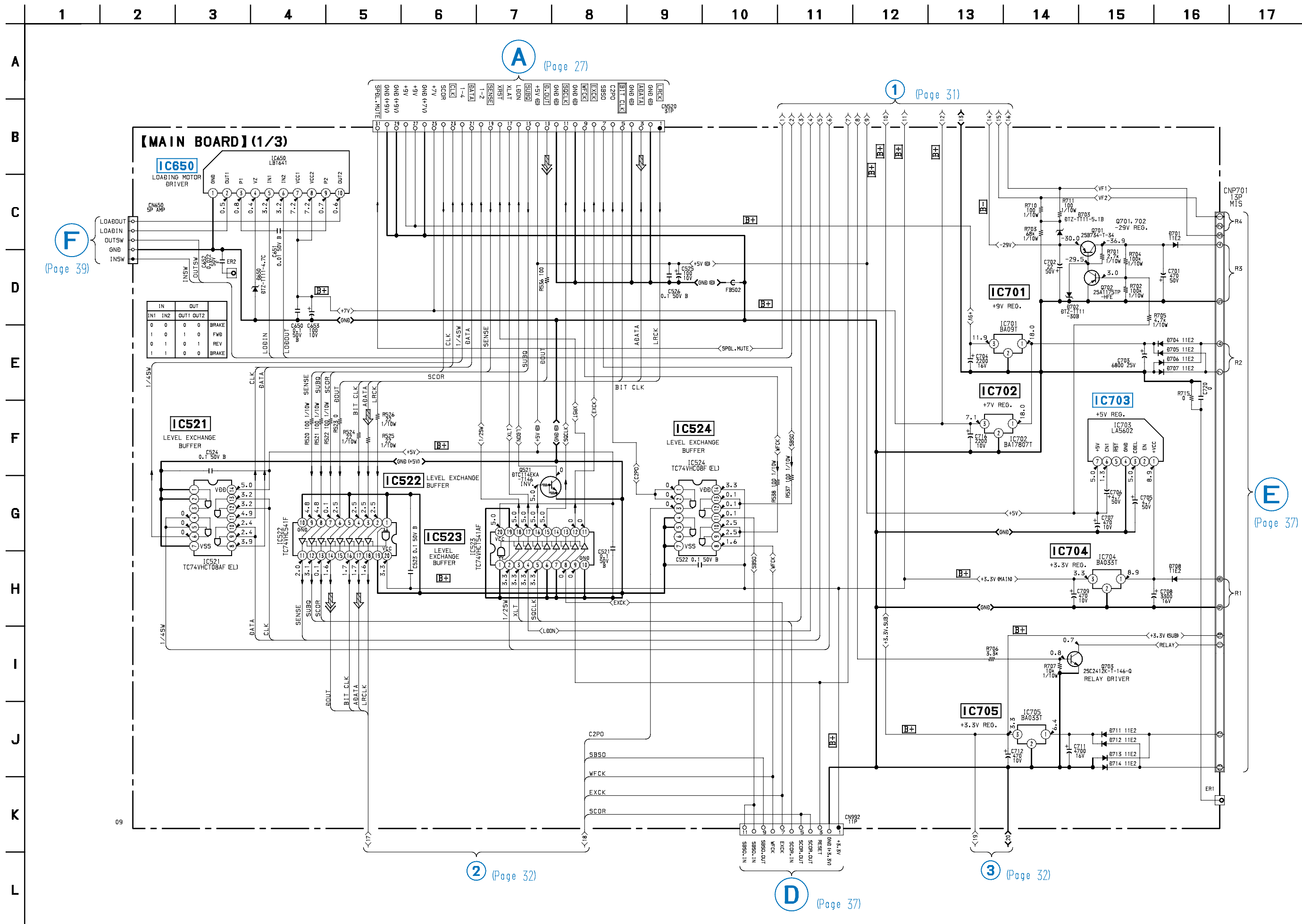


• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D701	A-4	IC502	E-5	Q582	C-1
D704	B-4	IC650	A-9	Q583	C-1
D705	A-4	IC701	A-5	Q602	D-9
D706	B-4	IC702	B-5	Q603	D-9
D707	B-4	IC703	C-4	Q604	D-9
D708	B-3	IC704	C-4	Q605	E-9
D711	B-3	IC705	C-3	Q606	E-9
D712	B-3			Q607	E-9
D713	B-3	Q580	C-1	Q608	D-9
D714	B-2	Q581	C-1	Q609	D-9

There are a few cases that the part isn't mounted in model is printed on diagram.

6-7. SCHEMATIC DIAGRAM – MAIN (1/3) SECTION – • See page 28 for Printed Wiring Board.



A (Page 27)

1 (Page 31)

F (Page 39)

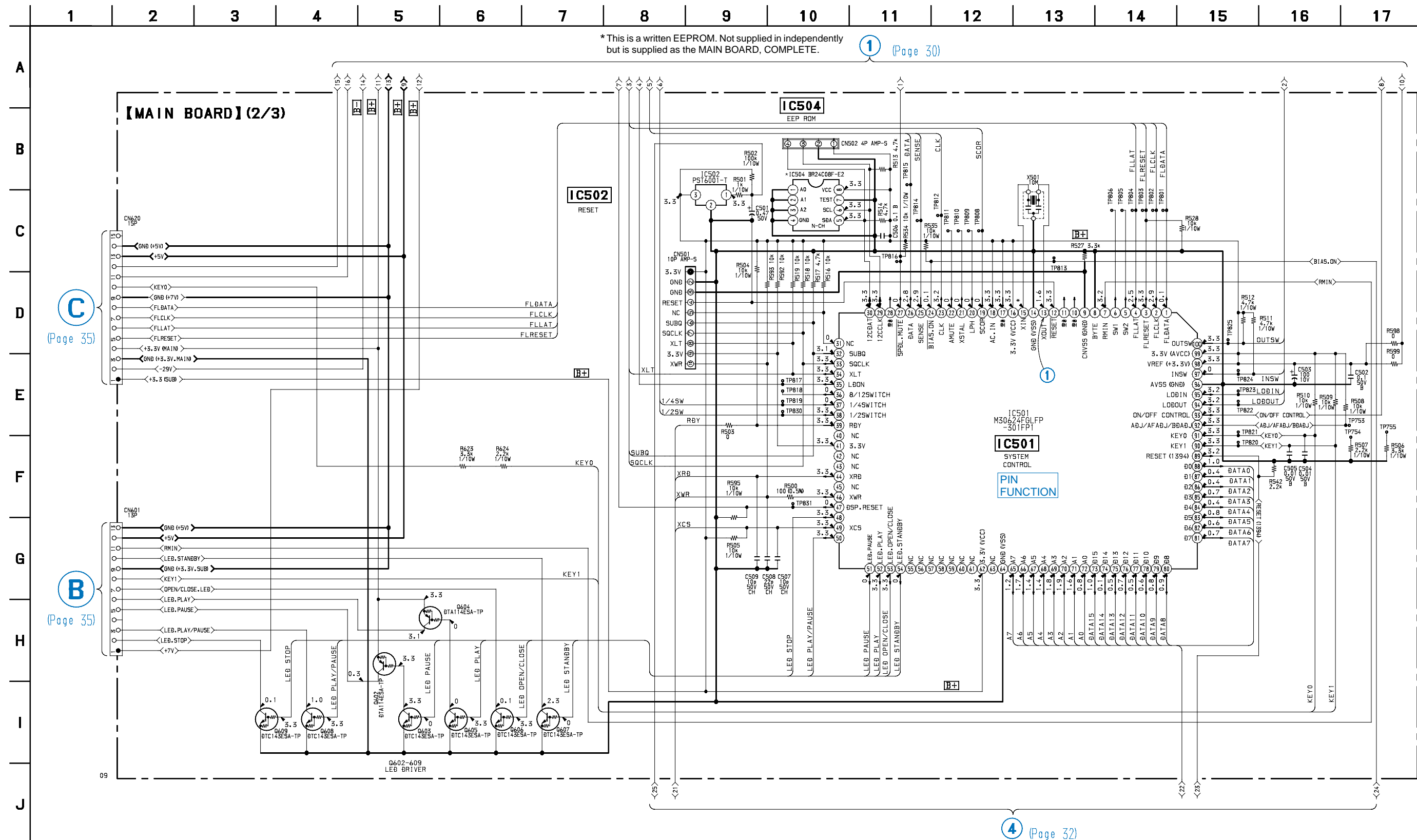
E (Page 37)

2 (Page 32)

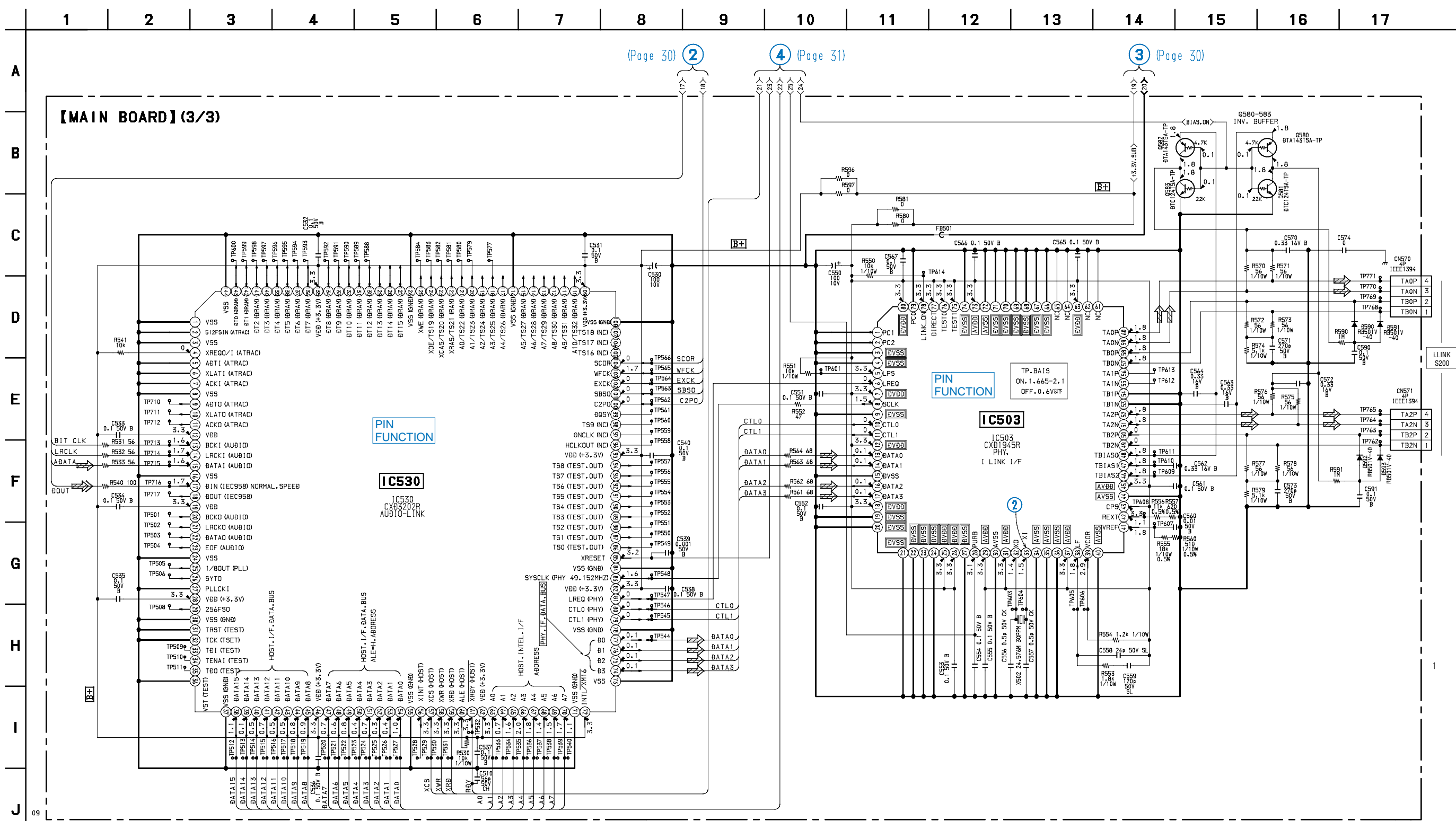
D (Page 37)

3 (Page 32)

6-8. SCHEMATIC DIAGRAM – MAIN (2/3) SECTION – • See page 28 for Printed Wiring Board.

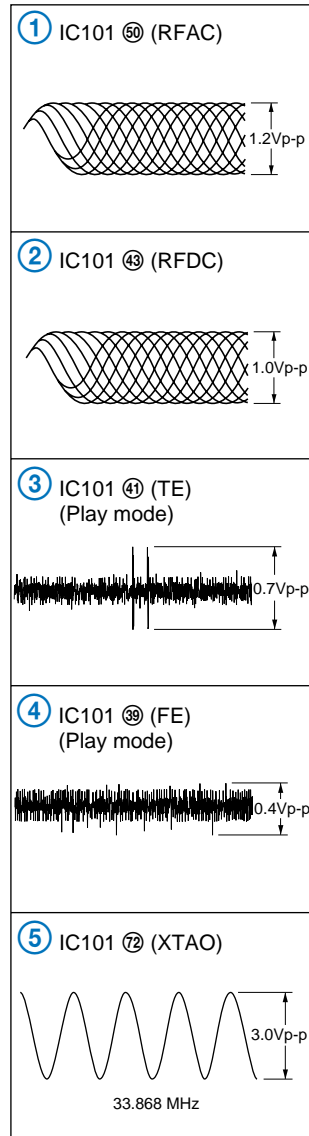


6-9. SCHEMATIC DIAGRAM – MAIN (3/3) SECTION – • See page 28 for Printed Wiring Board.

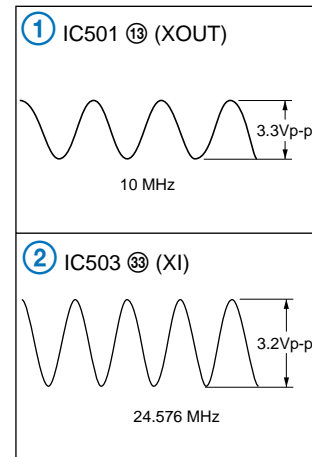


• WAVEFORMS

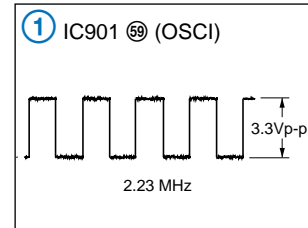
– BD Board –



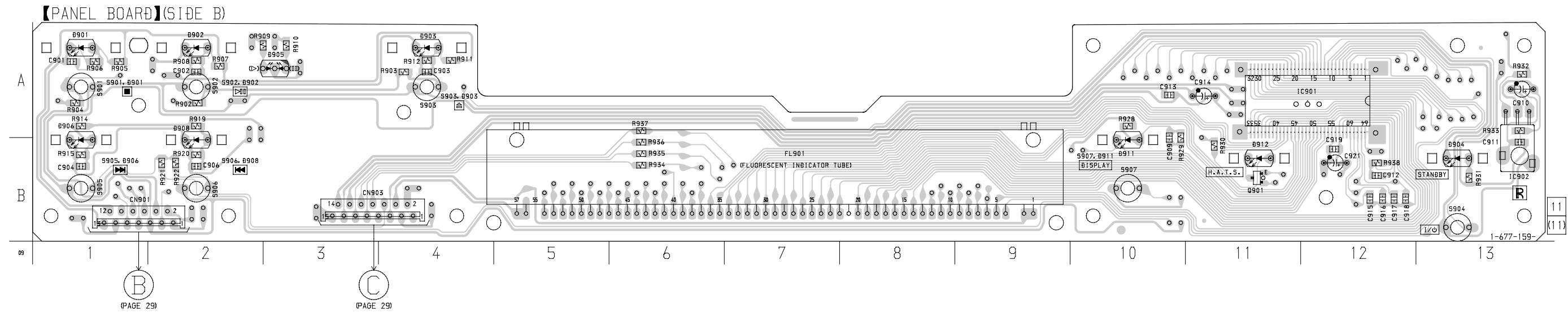
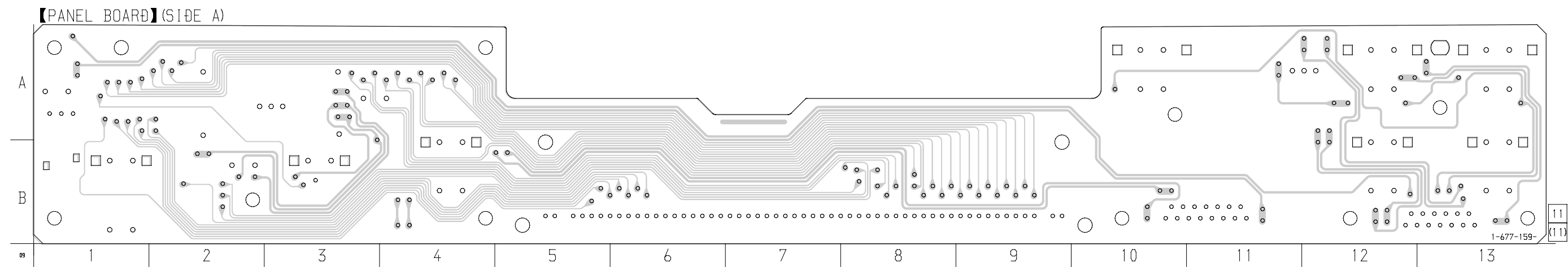
– MAIN Board –



– PANEL Board –



6-10. PRINTED WIRING BOARD – PANEL SECTION – • See page 23 for Circuit Board Location.

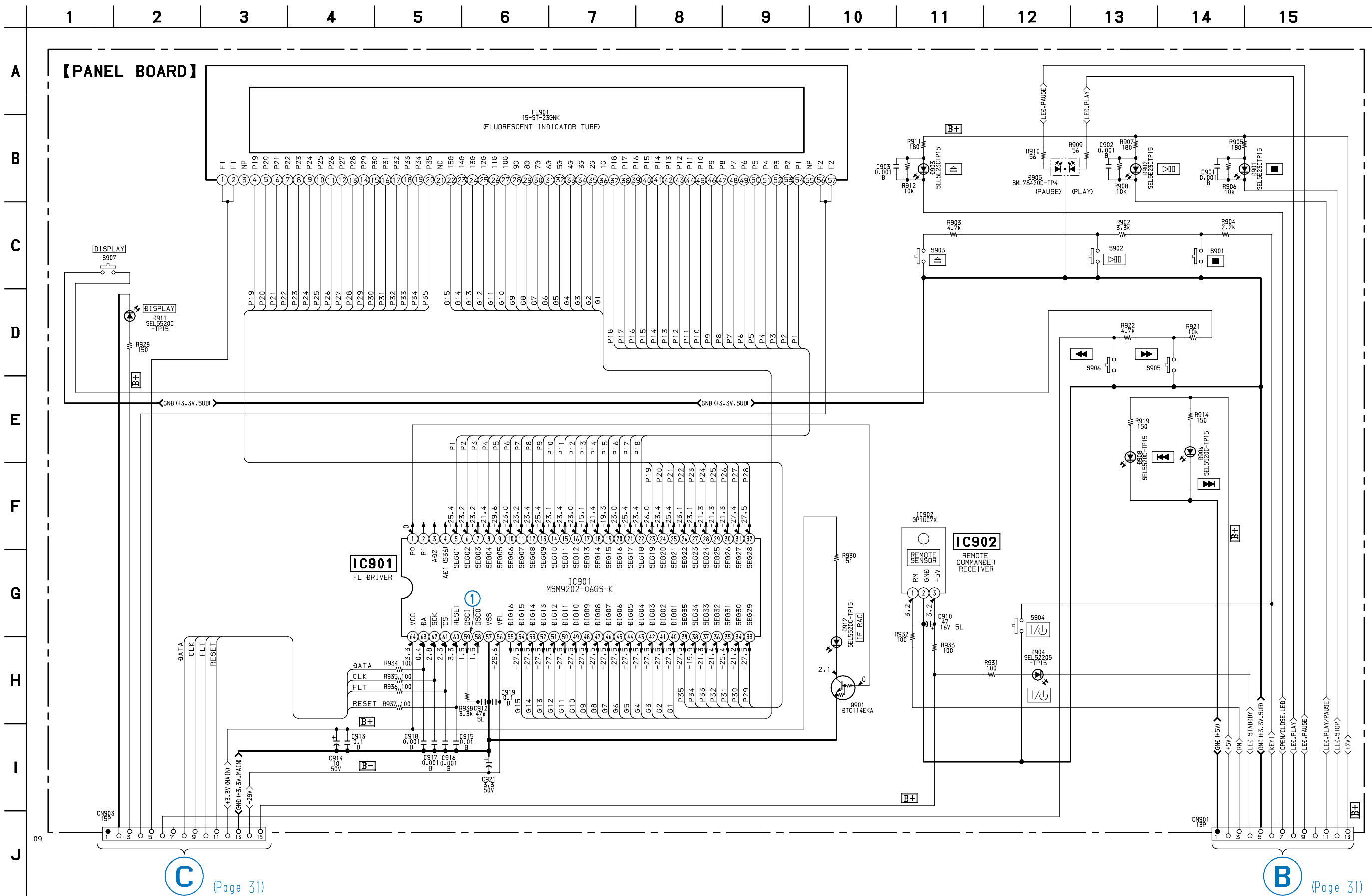


• Semiconductor Location

Ref. No.	Location
D901	A-1
D902	A-2
D903	A-4
D904	B-13
D905	A-3
D906	B-1
D908	B-2
D911	B-10
D912	B-11
IC901	A-12
IC902	B-13
Q901	B-11

There are a few cases that the part isn't mounted in model is printed on diagram.

6-11. SCHEMATIC DIAGRAM – PANEL SECTION – • See page 33 for Waveforms.

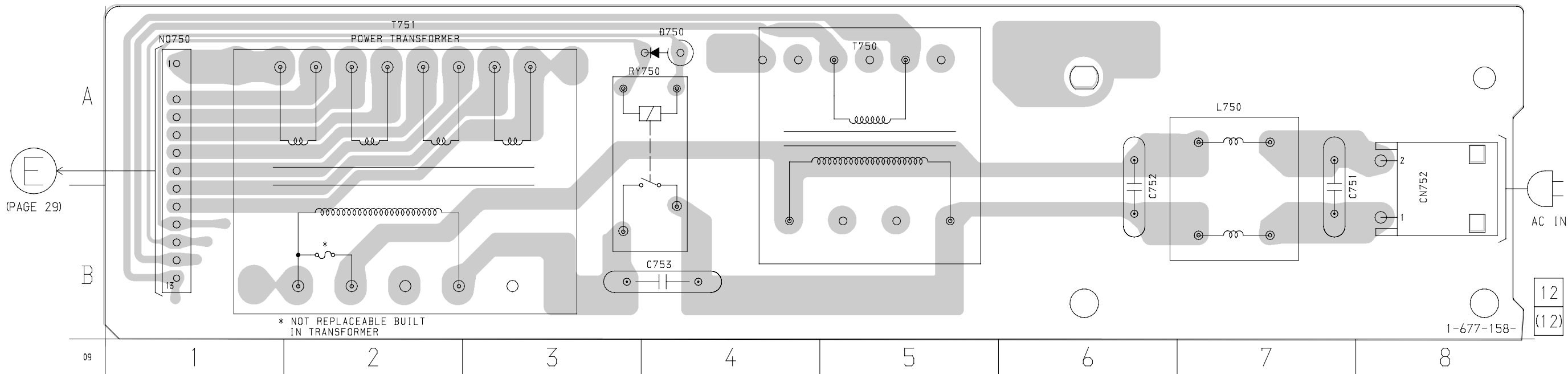


C (Page 31)

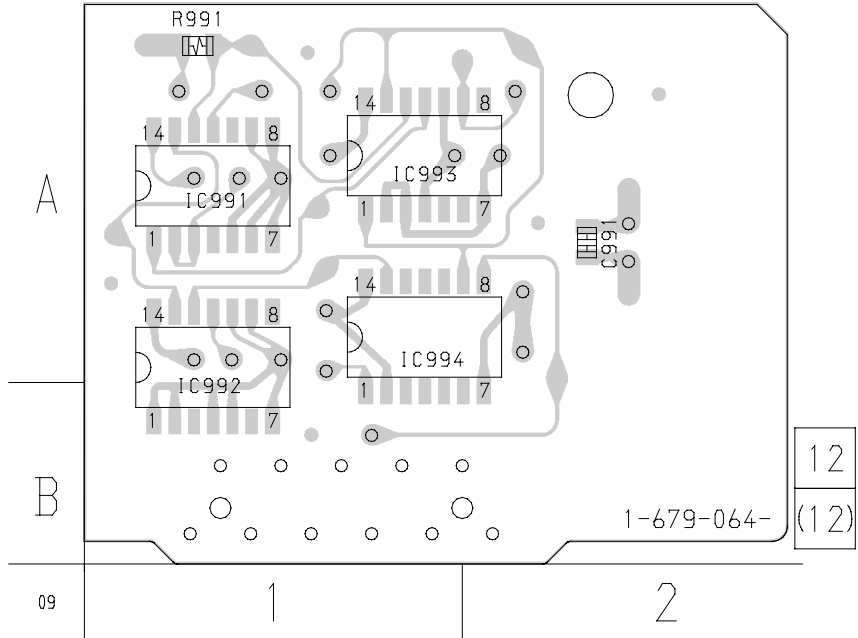
B (Page 31)

6-12. PRINTED WIRING BOARD – POWER SECTION – • See page 23 for Circuit Board Location.

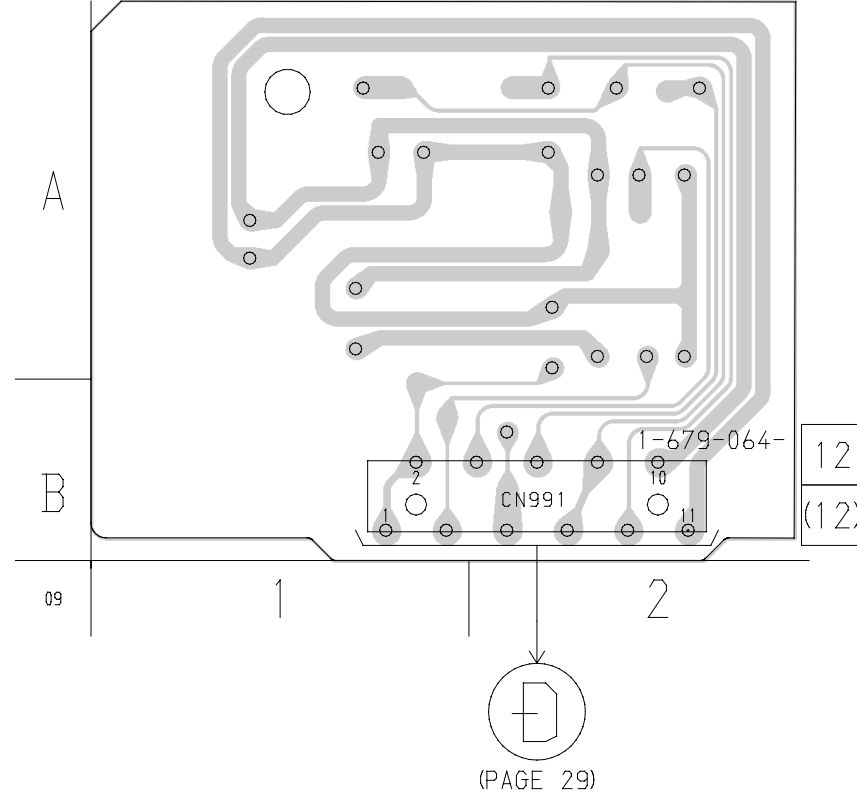
【TRANS BOARD】



【SUB MAIN BOARD】(SIDE A)

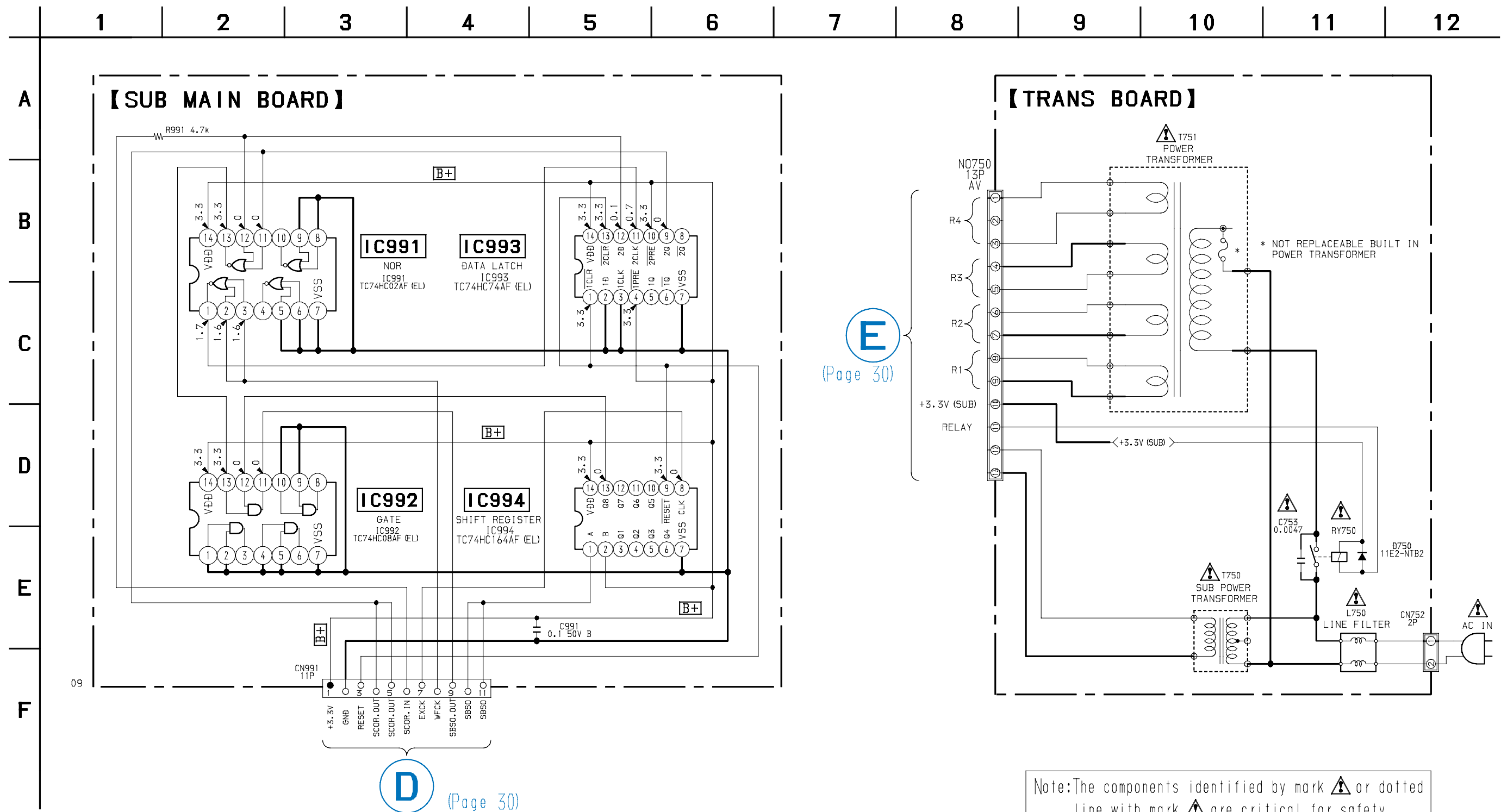


【SUB MAIN BOARD】(SIDE B)



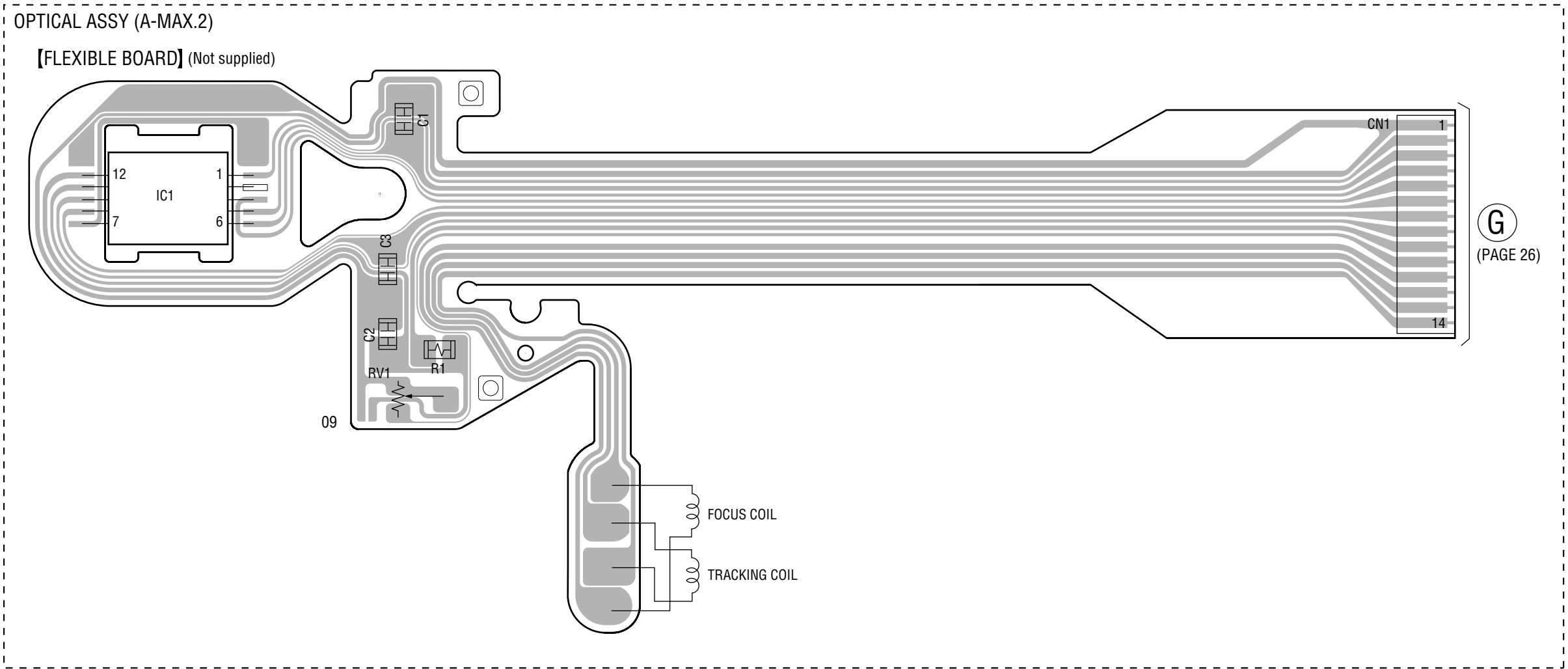
There are a few cases that the part isn't mounted in model is printed on diagram.

6-13. SCHEMATIC DIAGRAM – POWER SECTION –



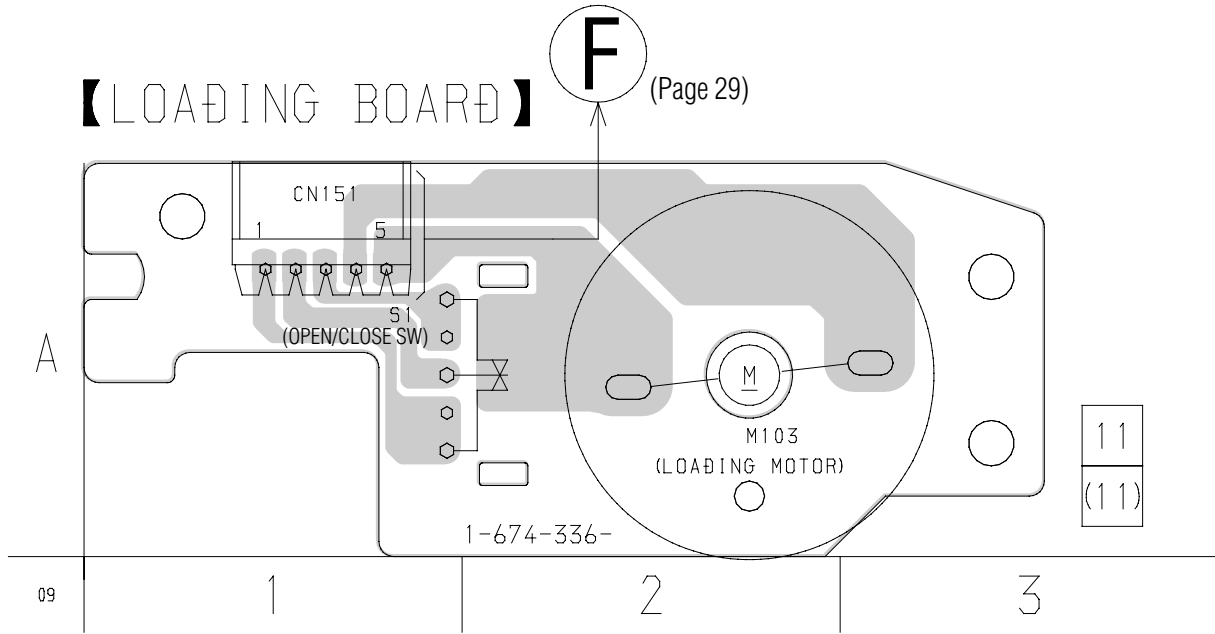
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

6-14. PRINTED WIRING BOARD – FLEXIBLE SECTION – • See page 23 for Circuit Board Location.



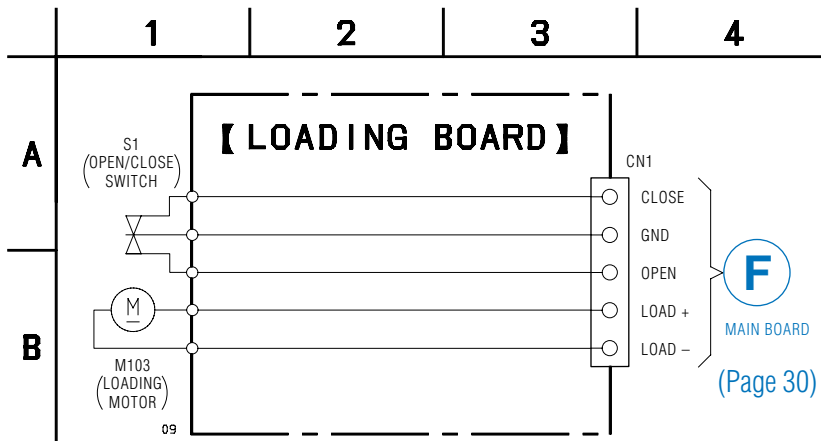
There are a few cases that the part isn't mounted in model is printed on diagram.

6-15. PRINTED WIRING BOARD – LOADING SECTION – • See page 23 for Circuit Board Location.



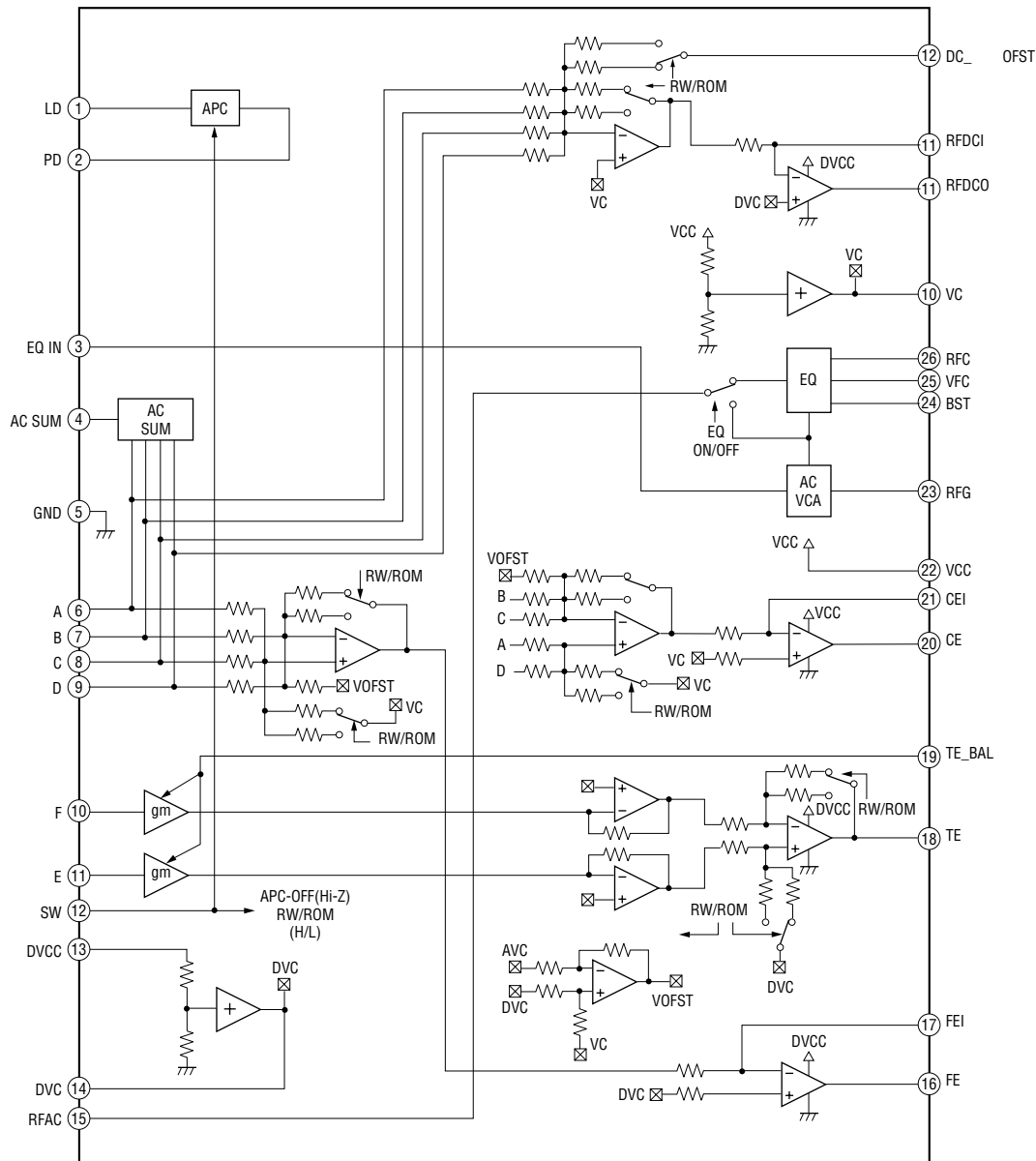
There are a few cases that the part isn't mounted in model is printed on diagram.

6-16. SCHEMATIC DIAGRAM – LOADING SECTION –



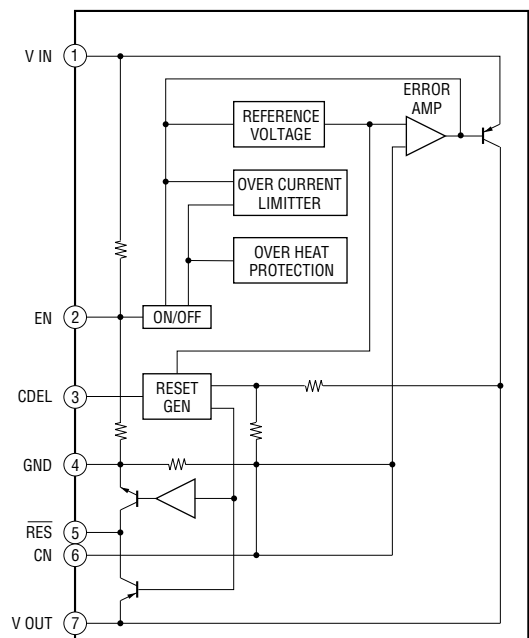
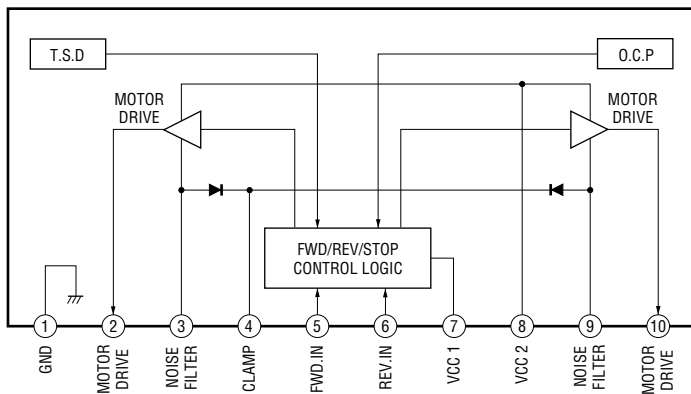
6-17. IC PIN FUNCTIONS

IC103 CXA2581N (BD BOARD)



IC703 LA5602 (MAIN BOARD)

IC650 LB1641 (MAIN BOARD)



6-18. IC PIN FUNCTIONS

• IC101 CXD3008Q DIGITAL SIGNAL PROCESSOR (BD BOARD)

Pin No.	Pin Name	I/O	Function
1	DVDD0	—	Digital power supply
2	XRST	I	System reset
3	MUTE	I	Muting selection pin
4	DATA	I	Serial data input, supplied from CPU
5	XLAT	I	Latch input, supplied from CPU
6	CLOCK	I	Serial data transfer clock input, supplied from CPU
7	SENS	O	SENS output
8	SCLK	I	SENS serial data read-out clock
9	ATSK	I/O	Input pin for anti-shock (Ground)
10	WFCK	O	WFCK (Write Frame Clock) output (Not used)
11	XUGF	O	XUGF output (Not used)
12	XPCCK	O	XPCCK output (Not used)
13	GFS	O	GFS output (Not used)
14	C2P0	O	C2PO output
15	SCOR	O	Sub-code sync output
16	CM4	O	4.2336MHz output (Not used)
17	WDCK	O	48-bit slot D/A interface word clock (Not used)
18	DVSS	—	Digital ground
19	COUT	O	Numbers of track counted signal output (Not used)
20	MIRR	O	Mirror signal output (Not used)
21	DFCT	O	Defect signal output (Not used)
22	FOK	O	Focus OK output (Not used)
23	PWM1	I	(Not used)
24	LOCK	I/O	GFS in sampled by 460Hz (Not used)
25	MDP	O	Output to control spindle motor servo
26	SSTP	I	Input signal to detect disc inner most trak
27	FST0	O	2/3 divider output (Not used)
28	DVDD1	—	Digital power supply
29	SFDR	O	Sled drive output
30	SRDR	O	
31	TFDR	O	Tracking drive output
32	TRDR	O	
33	FFDR	O	Focus drive output
34	FRDR	O	
35	DVSS1	—	Digital ground
36	TEST	I	TEST pin connected normally ground
37	TES1	I	
38	VC	I	Center voltage input
39	FE	I	FOCUS error signal input
40	SE	I	Sled error signal input

Pin No.	Pin Name	I/O	Function
41	TE	I	Tracking error signal input
42	CE	I	Center servo analog input
43	RFDC	I	RF signal input
44	ADI0	O	Test pin (Not used)
45	AVSS0	—	Analog ground
46	IGEN	I	Power supply pin operational amplifiers
47	AVDD	—	Analog power supply
48	ASYO	O	EFM full swing output
49	ASYI	I	Asymmetry compare voltage input
50	RFAC	I	EFM signal input
51	AVSS1	—	Analog ground
52	CLTV	I	Control voltage input for master VCO
53	FIL0	O	Filter output for master PLL
54	FILI	I	Filter input for master PLL
55	PCO	O	Charge-pump output for master PLL
56	AVDD1	—	Analog power supply
57	BIAS	I	Asymmetry circuit constant current input
58	VCTL	I	Control voltage input for variable pitch PLL
59	V16M	I/O	16.9344MHz output (Not used)
60	VPCO	O	Charge-pump output for variable pitch PLL (Not used)
61	DVDD2	—	Digital power supply
62	ASYE	I	Asymmetry circuit ON/OFF (Connected to +5V.)
63	MD2	I	Digital-out ON/OFF control (Connected to +5V.)
64	DOUT	O	Digital-out output
65	LRCK	O	48-bit slot D/A interface, LR clock output
66	PCMD	O	48-bit slot D/A interface, Serial data output
67	BCLK	O	48-bit slot D/A interface, bit clock output
68	EMPH	O	Playback disc output in emphasis mode (Not used)
69	XTSL	I	X'tal selection input pin
70	DVSS2	—	Digital ground
71	XTAI	I	X'tal oscillator circuit input
72	XTAO	O	X'tal oscillator circuit output (Not used)
73	SOUT	O	(Not used)
74	SOCK	O	
75	XOCT	O	
76	SQSO	O	Sub-Q serial output
77	SQCK	I	Clock input for SQSO read-out
78	SCSY	I	Sub-code input
79	SBSO	O	Sub-P through Sub-W serial output (Not used)
80	EXCR	I	Clock input for SBSO read-out

• IC501 M30624FGLFP-301FP1 SYSTEM CONTROL (MAIN BOARD)

Pin. No.	Pin Name	I/O	Function
1	FLDATA	O	Serial data signal output to the display driver.
2	FLCLK	O	Serial clock signal output to the display driver.
3	FLRESET	O	Reset signal output to the display driver.
4	FLLAT	O	Serial latch signal output to the display driver.
5	SW2	O	Not used.
6	SW1	O	Not used.
7	RMIN	I	Remote control signal input.
8	BYTE	—	Data bus changed input.
9	CNVSS	—	Ground.
10,11	NC	—	Not used.
12	RESET	I	System reset signal input.
13	XOUT	O	Main clock output. (10MHz)
14	VSS	—	Ground.
15	XIN	I	Main clock input. (10MHz)
16	VCC	—	+3.3V power supply.
17	NC	—	Not used.
18	AC IN	I	Standby detect signal input.
19	SCOR	I	Sub code sync input.
20	LPH	O	Not used.
21	XSTAL	O	Not used.
22	AMUTE	O	Not used.
23	CLK	O	Serial clock signal output to CXD3008Q.
24	BIASON	O	Bias on signal output.
25	SENSE	I	Internal status (SENSE) input from CXD3008Q.
26	DATA	O	Serial data signal output to CXD3008Q.
27	SPDL MUTE	O	Spindle motor mute signal output.
28	NC	—	Not used.
29	I2CCLK	I/O	I2C serial clock input/output.
30	I2CDAT	I/O	I2C serial data input/output.
31	NC	—	Not used.
32	SUBQ	I	Sub codeQ data input from CXD3008Q.
33	SQCLK	O	Sub codeQ clock output to CXD3008Q.
34	XLT	O	Serial data latch signal output to CXD3008Q.
35	LDON	I	Lazer ON/OFF control output.
36	8/12 SWITCH	O	Not used.
37	1_4SWITCH	O	Normal speed, four tiems speed select signal output.
38	1_2SWITCH	O	Normal speed, twice speed select signal output.
39	RDY	I	Ready signal input for IIEEE1394.
40	NC	—	Not used.
41	3.3V	—	+3.3V power supply.
42,43	NC	—	Not used.
44	XRD	O	Read signal output for IIEEE1394.
45	NC	O	Not used.
46	XWR	O	Write signal output for IIEEE1394.
47	DSP.RESET	O	Reset to the DSP.
48	LED STOP	O	STOP LED driver output.
49	LED PLAY/PAUSE	O	PLAY/PAUSE LED driver output.
50	LED PAUSE	O	PAUSE LED driver output.
51	LED PLAY	O	PLAY LED driver output.
52	LED OPEN/CLOSE	O	OPEN/CLOSE LED driver output.
53	LED STANDBY	O	STANDBY LED driver output.
54 to 61	NC	—	Not used.
62	VCC	—	+3.3V power supply.
63	NC	—	Not used.

Pin. No.	Pin Name	I/O	Function
64	VSS	—	Ground.
65 to 72	A7 to A0	O	Address bus signal output for IEEE1394.
73 to 88	D15 to D0	I/O	Data bus signal output for IEEE1394.
89	RESET(1394)	O	Reset signal output for IEEE1394.
90	KEY1	I	Key input.
91	KEY0	I	Key input.
92	ADJ/AFADJ/BDADJ	I	Test mode signal input.
93	ON/OFF CONTROL	O	Power supply ON/OFF control signal output.
94	LODOUT	O	Loading out signal output.
95	LODIN	O	Loading in signal output.
96	AVSS	—	Ground.(analog)
97	INSW	I	Loading in detect signal input.
98	VREF	—	Reference voltage.
99	AVCC	—	+3.3V power supply.
100	OUTSW	I	Loading out detect signal input.

• IC530 CXD3202AR AUDIO LINK (MAIN BOARD)

Pin. No.	Pin Name	I/O	Function
1	VSS	—	Ground.
2	512FSI	I	512 fs input (used for flow control and ATRAC reception) (Conected to ground.)
3	VSS	—	Ground.
4	XREQO/I	I/O	ATRAC data request (Output for transmission, input for reception) (Pull up R)
5	ADTI	I	ATRAC transmission data input (Conected to ground.)
6	XLATI	I	ATRAC transmission data latch signal (Conected to ground.)
7	ACKI	I	ATRAC transmission clock (Conected to ground.)
8	VSS	—	Ground.
9	ADTO	O	ATRAC reception data (Not used.)
10	XLATO	O	ATRAC reception data latch signal (Not used.)
11	ACKO	O	ATRAC reception clock (Not used.)
12	VDD	—	Power supply.
13	BCKI	I	Raw audio transmission bit clock
14	LRCKI	I	Raw audio transmission L/R clock (fs)
15	DATAI	I	Raw audio transmission data
16	VSS	—	Ground.
17	DIN	I	IEC958 bi-phase data input
18	DOU	O	IEC958 bi-phase data output (Not used.)
19	VDD	—	Power supply.
20	BCKO	O	Raw audio reception bit clock (Not used.)
21	LRCKO	O	Raw audio reception L/R clock (fs) (Not used.)
22	DATAO	O	Raw audio reception data output (Not used.)
23	EOF	O	Raw audio reception data error flag (Not used.)
24	VSS	—	Ground.
25	1/8OUT	O	Split PLL clock (256 fs) and output 1/8 fs (used for PLL Ref) (Not used.)
26	SYTO	O	Clock information transmitted from transmitting side (1/8 fs) (Not used.)
27	PLLCKI	—	256 fs clock created from transmitted SYT (Conected to ground.)
28	VDD	—	Power supply.
29	256FSO	—	Same as PLLCKI clock (Not used.)
30	VSS	—	Ground.
31	TRST	—	Fix test pin at left on board. (Conected to ground.)
32	TCK	—	Fix test pin at left on board. (Conected to ground.)
33	TDI	—	Test pin on board open (Not used.)
34	TENAI	—	Test pin on board open (Not used.)
35	TD0	—	Test pin on board open (Not used.)
36	VST	—	Conected to ground.
37	VSS	—	Ground.
38	DATA15	I/O	Host interface data bus (Bit 15)
39	DATA14	I/O	Host interface data bus (Bit 14)
40	DATA13	I/O	Host interface data bus (Bit 13)
41	DATA12	I/O	Host interface data bus (Bit 12)
42	DATA11	I/O	Host interface data bus (Bit 11)
43	DATA10	I/O	Host interface data bus (Bit 10)
44	DATA9	I/O	Host interface data bus (Bit 9)
45	DATA8	I/O	Host interface data bus (Bit 8)
46	VDD	—	Power supply.
47	DATA7	I/O	Host interface data bus (Bit 7)
48	DATA6	I/O	Host interface data bus (Bit 6)
49	DATA5	I/O	Host interface data bus (Bit 5)
50	DATA4	I/O	Host interface data bus (Bit 4)
51	DATA3	I/O	Host interface data bus (Bit 3)
52	DATA2	I/O	Host interface data bus (Bit 2)
53	DATA1	I/O	Host interface data bus (Bit 1)
54	DATA0	I/O	Host interface data bus (Bit 0)

Pin. No.	Pin Name	I/O	Function
55	VSS	—	Ground.
56	XINT	O	Interrupt signal transmitted to host. (Not used.)
57	XCS	I	Chip select signal from host
58	XWR	I	Write signal from host
59	XRD	I	Read signal from host
60	ALE	I	Address latch signal from host (enabled for M16); Fixed at "H" for Intel
61	XRDY	O	Ready signal transmitted to host (L = Ready)
62	VDD	—	Power supply.
63 to 70	A0 to 7	I	Address bit 0 (when Intel host interface is used)
71	VSS	—	Ground.
72	INTL/XM16	I	Type of host to which connection is to be established. (L = M16; H = Intel)
73	VSS	—	Ground.
74	D3	I/O	PHY interface data bus bit 3.
75	D2	I/O	PHY interface data bus bit 2.
76	D1	I/O	PHY interface data bus bit 1.
77	D0	I/O	PHY interface data bus bit 0.
78	VSS	—	Ground.
79	CTL1	I/O	PHY interface control bus bit 1
80	CTL0	I/O	PHY interface control bus bit 0
81	LREQ	O	PHY interface request signal
82	VDD	—	Power supply.
83	SYSCLK	I	PHY interface system clock (49.152 MHz)
84	VSS	—	Ground.
85	XRESET	I	System reset
86 to 94	TS0 to 8	O	Test output. (Not used.)
95	VDD	—	Power supply.
96	HCLKOUT	O	Clock obtained by splitting SYSCLK (24.576 MHz) (Not used.)
97	GNCLK	O	Clock obtained by dividing NCLK in two (6.144 MHz) (Not used.)
98	TS9	O	Test output. (Not used.)
99	DQSY	O	Ubit reception frame pulse (Not used.)
100	C2PO	I	CD C2 error input.
101	SBSO	I	CD SubCode data.
102	EXCK	O	CD SubCode read clock.
103	WFCK	I	SubCode frame signal.
104	SCOR	I	CD SubCode frame lead signal.
105	TS16	O	"8-bit clock synchronized to 512 fsin (Output at address 30, bit 4 = 1) (Not used.)"
106	TS17	O	"L/R clock synchronized to 512 fsin(Output at address 30, bit 4 = 1) (Not used.)"
107	TS18	O	DRAM address bit 11. (Not used.)
108	VSS	—	Ground.
109	VDD	—	Power supply.
110	A10/TS32	O	DRAM address bit 10. (Not used.)
111	A9/TS31	O	DRAM address bit 9. (Not used.)
112	A8/TS30	O	DRAM address bit 8. (Not used.)
113	A7/TS29	O	DRAM address bit 7. (Not used.)
114	A6/TS28	O	DRAM address bit 6. (Not used.)
115	A5/TS27	O	DRAM address bit 5. (Not used.)
116	VSS	—	Ground.
117	A4/TS26	O	DRAM address bit 4. (Not used.)
118	A3/TS25	O	DRAM address bit 3. (Not used.)
119	A2/TS24	O	DRAM address bit 2. (Not used.)
120	A1/TS23	O	DRAM address bit 1. (Not used.)
121	A0/TS22	O	DRAM address bit 0. (Not used.)
122	XRAS/TS21	O	DRAM XRAS. (Not used.)

Pin. No.	Pin Name	I/O	Function
123	XCAS/TS20	O	DRAM XCAS. (Not used.)
124	XOE/TS19	O	DRAM XOE. (Not used.)
125	XWE	O	DRAM XWE. (Not used.)
126	VSS	—	Ground.
127 to 134	DT15 to 8	I/O	DRAM data bit 15 to 8. (Not used.)
135	VDD	—	Power supply.
136 to 143	DT7 to 0	I/O	DRAM data bit 7 to 0. (Not used.)
144	VSS	—	Ground.

• IC503 CXD1945R PHY, I LINK I/F (MAIN BOARD)

Pin. No.	Pin Name	I/O	Function
1	PC1	I	Connected to ground.
2	PC2	I	Connected to ground.
3	DVSS	—	Ground.
4	DVSS	—	Ground.
5	LPS	I	Link power status. Indicates whether link power is off or on. L: OFF H: ON
6	LREQ	I	Link request. Link issues a PHY register read, write, or bus request through LREQ pin.
7	DVDD	—	Power supply.
8	SCLK	O	49.152 MHz link system clock.PHY-Link interface and cable interface synchronized with SCLK.
9	DVSS	—	Ground.
10	CTL0	I/O	PHY-Link interface control signals.
11	CTL1	I/O	PHY-Link interface control signals.
12	DVDD	—	Power supply.
13	DATA0	I/O	PHY-Link interface data signals.
14	DATA1	I/O	PHY-Link interface data signals.
15	DVSS	—	Ground.
16	DATA2	I/O	PHY-Link interface data signals.
17	DATA3	I/O	PHY-Link interface data signals.
18	DVDD	—	Power supply.
19	DVSS	—	Ground.
20	DVSS	—	Ground.
21	DVSS	—	Ground.
22	DVSS	—	Ground.
23	DVSS	—	Ground.
24	DVSS	—	Ground.
25	DVDD	—	Power supply.
26	DVDD	—	Power supply.
27	DVSS	—	Ground.
28	PURB	I	Power-up reset external condensor pin.
29	AVDD	—	Analog power supply.
30	AVSS	—	Analog ground.
31	AVDD	—	Analog power supply.
32	XO	O	Crystal connection. Crystal oscillator connecting pins.
33	XI	I	Crystal connection. Crystal oscillator connecting pins.
34	AVSS	—	Analog ground.
35	AVSS	—	Analog ground.
36	AVSS	—	Analog ground.
37	AVDD	—	Analog power supply.
38	LF	O	External loop filter connection pin.
39	VCOR	I	External loop filter connection pin.
40	AVSS	—	Analog ground.
41	VREF	I	External base resistance connection pin.
42	REXT	I	External base resistance connection pin.
43	CPS	I	Cable power status detection pin.
44	AVSS	—	Analog ground.
45	AVDD	—	Analog power supply.
46 to 48	TBIAS2 to 0	O	Cable bias output pins.
49	TB2N	I/O	Arbitration / speed signal / data output; arbitration / strobe input. Reverse-phase I/O pins.
50	TB2P	I/O	Arbitration / speed signal / data output; arbitration / strobe input. Reverse-phase I/O pins.
51	TA2N	I/O	Arbitration / speed signal / data output; arbitration / strobe input. Standard-phase I/O pins.
52	TA2P	I/O	Arbitration / strobe output; arbitration / speed signal / data input. Reverse-phase I/O pins.
53	TB1N	I/O	Arbitration / speed signal / data output; arbitration / strobe input. Reverse-phase I/O pins. (Connected to ground.)
54	TB1P	I/O	Arbitration / speed signal / data output; arbitration / strobe input. Reverse-phase I/O pins. (Connected to ground.)
55	TA1N	I/O	Arbitration / speed signal / data output; arbitration / strobe input. Standard-phase I/O pins.(Not used)

Pin. No.	Pin Name	I/O	Function
56	TA1P	I/O	Arbitration / strobe output; arbitration / speed signal / data input. Reverse-phase I/O pins.(Not used)
57	TBON	I/O	Arbitration / speed signal / data output; arbitration / strobe input. Reverse-phase I/O pins.
58	TB0P	I/O	Arbitration / speed signal / data output; arbitration / strobe input. Reverse-phase I/O pins.
59	TA0N	I/O	Arbitration / speed signal / data output; arbitration / strobe input. Standard-phase I/O pins.
60	TAOP	I/O	Arbitration / strobe output; arbitration / speed signal / data input. Reverse-phase I/O pins.
61	NC	—	Connected to ground.
62	NC	—	Connected to ground.
63	DVDD	—	Power supply.
64	NC	—	Connected to ground.
65	NC	—	Connected to ground.
66	DVSS	—	Ground.
67	DVSS	—	Ground.
68	DVSS	—	Ground.
69	DVSS	—	Ground.
70	DVSS	—	Ground.
71	DVSS	—	Ground.
72	AVSS	—	Analog ground.
73	AVDD	—	Analog power supply.
74	DVSS	—	Ground.
75	TEST1	I	Test mode control pins. Connect to DvDD.
76	TEST0	I	Test mode control pins. Connect to DvDD.
77	DIRECT	I	PHY-Link interface operating mode setting pin. Connect to DvDD.
78	LINK_ON	I/O	Configuration Manager Capable setting pin / Link-On signal output.
79	PC0	I	Connected to ground.
80	DVDD	—	Power supply.

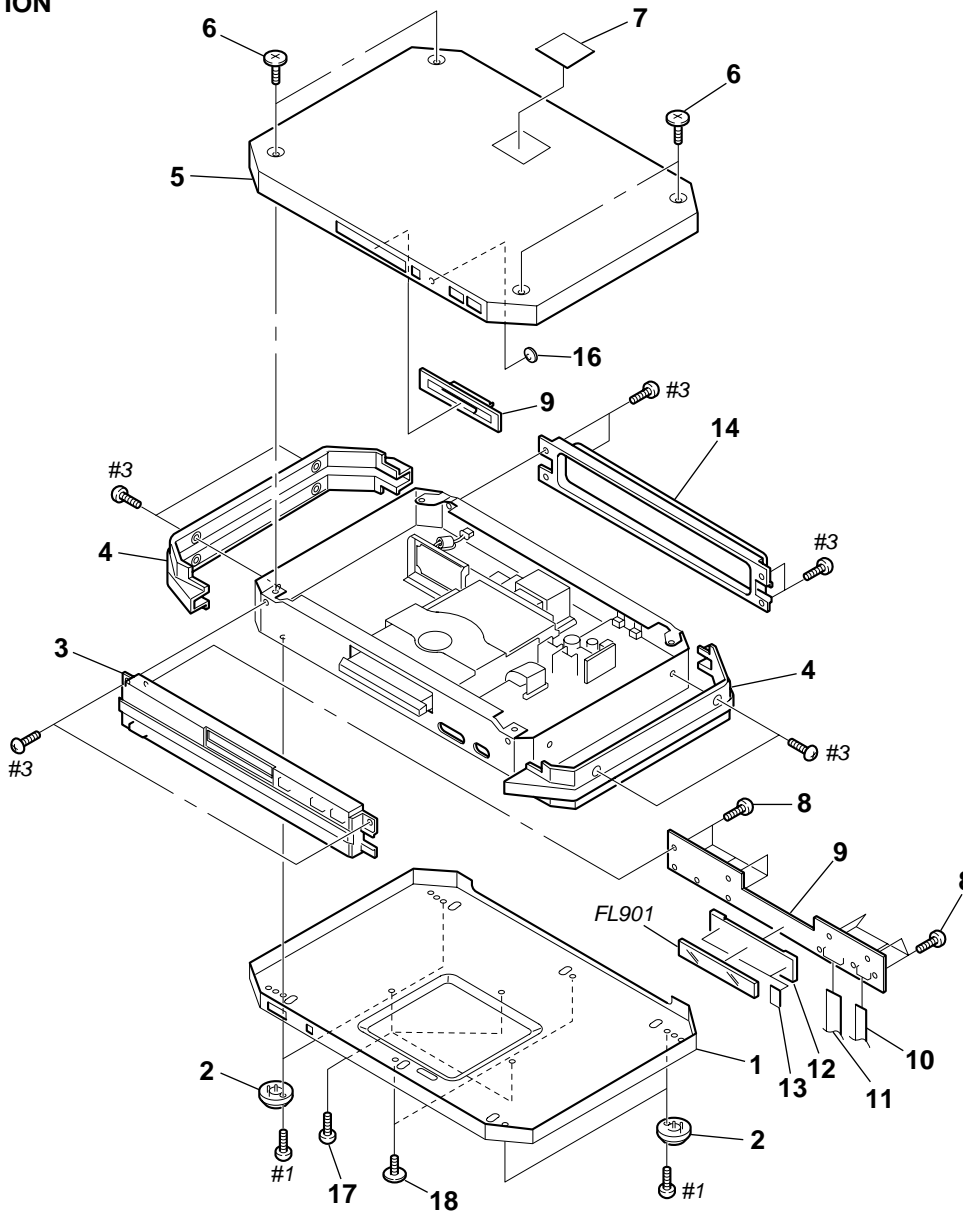
SECTION 7 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

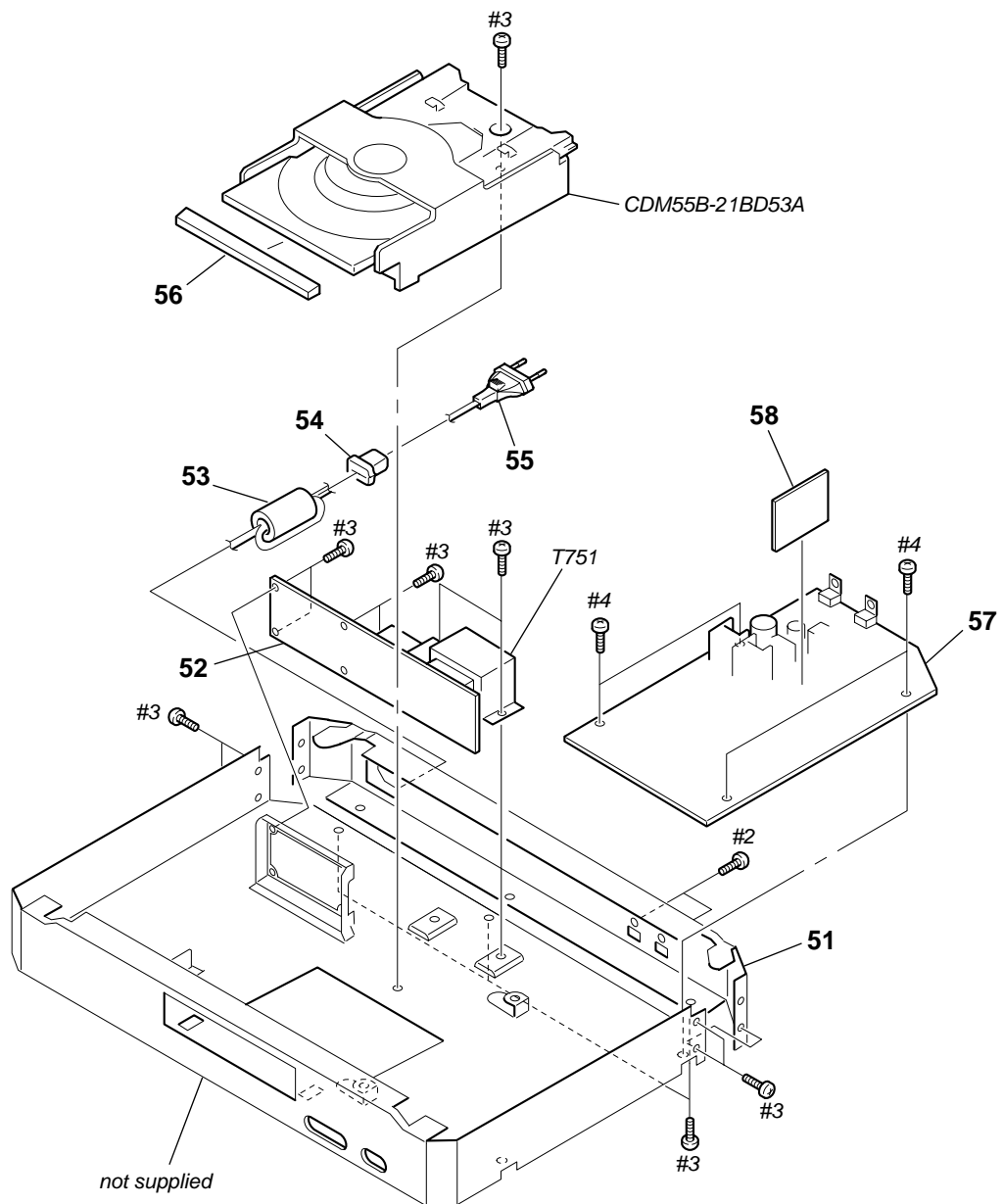
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.

7-1. PANEL SECTION



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	4-225-899-01	CASE (BOTTOM)		11	1-792-398-11	WIRE (FLAT TYPE) (15 CORE)	
2	X-4952-510-1	FOOT ASSY		12	4-225-908-01	HOLDER (FL)	
3	X-4953-080-1	BASE (FRONT) ASSY, PANEL		13	4-225-921-01	CUSHION (FL)	
4	4-225-904-01	BASE (SIDE), PANEL		14	4-225-905-01	BASE (BACK), PANEL	
5	4-225-898-01	CASE (TOP)		15	4-225-914-01	ESCUTCHEON (CD)	
6	4-225-926-01	SCREW (CASE)		16	4-225-917-01	INDICATOR	
7	4-225-919-01	EMBLEM (LISSA)		17	4-974-510-01	SCREW (+BV 3X8 CU)	
8	4-951-620-01	SCREW (2.6X8), +BVTP		18	4-227-843-01	SCREW (TP), FLAT HEAD	
9	A-4725-071-A	PANEL BOARD, COMPLETE		FL901	1-517-900-11	INDICATOR TUBE, FLUORESCENT	
10	1-792-397-11	WIRE (FLAT TYPE) (13 CORE)					

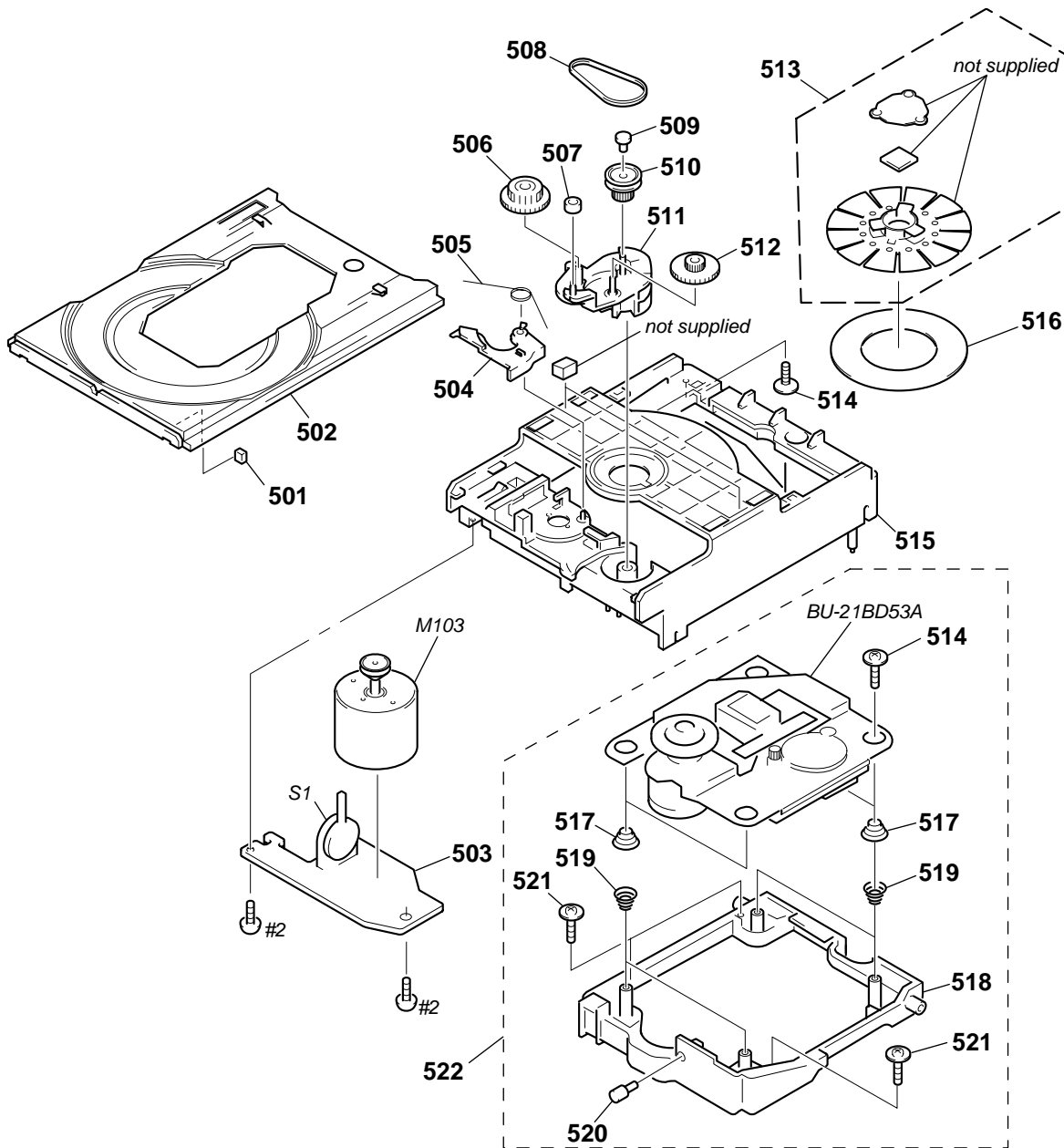
7-2. CHASSIS SECTION



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

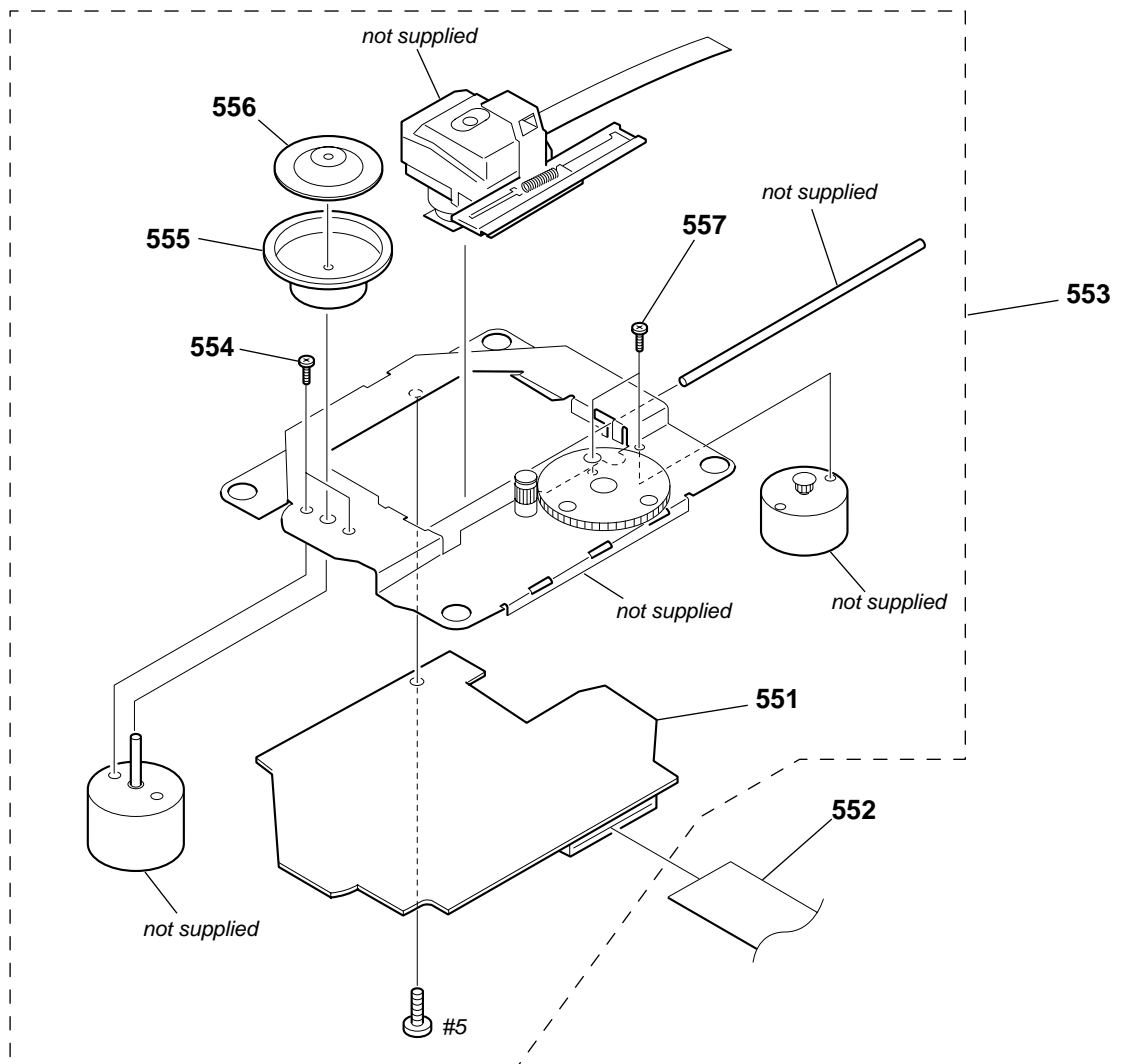
Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
51	4-225-902-01	PANEL, BACK		56	4-225-913-01	PANEL, LOADING	
52	1-677-158-11	TRANS BOARD		57	A-4725-069-A	MAIN BOARD, COMPLETE	
* 53	1-543-830-11	CLAMP, SLEEVE FERRITE		58	1-679-064-12	SUB MAIN BOARD	
54	3-703-244-11	BUSHING (2104), CORD		Δ T751	1-433-960-11	TRANSFORMER, POWER	
Δ 55	1-782-603-11	CORD, POWER					

**7-3. MECHANISM SECTION-1
(CDM55B-21BD53A)**



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
501	4-925-315-31	DAMPER		514	4-985-672-01	SCREW (+PTPWHM 2.6), FLOATING	
502	4-226-180-01	TRAY (55-L)		515	4-220-230-01	CHASSIS	
503	1-674-336-12	LOADING BOARD		516	4-220-951-02	SHEET (KH)	
504	4-220-229-01	LEVER (SW)		517	4-230-386-01	INSULATOR (BU21)	
505	4-220-239-01	SPRING, TORSION		518	4-228-353-01	HOLDER (55-BU21)	
506	4-220-237-01	GEAR (A)		519	4-230-389-01	SPRING, CONE COIL	
507	4-221-815-01	ROLLER		520	4-229-358-01	SHAFT (BU21)	
508	4-221-816-01	BELT (CDM55)		521	4-227-899-21	SCREW (DIA. 12), FROATING	
509	4-227-598-01	SPACER (55)		522	A-4672-905-A	HOLDER (BU) ASSY	
510	4-220-234-01	PULLEY (LDG)		M103	A-4672-771-A	MOTOR (LD) ASSY (LOADING)	
511	4-220-233-01	CAM (CDM55)		S1	1-771-799-11	SWITCH, LEVER (SLIDE)	
512	4-220-238-01	GEAR (B)					
513	X-4952-522-2	PULLEY (AT) ASSY					

**7-4. MECHANISM SECTION-2
(BU-21BD53A)**



Ref. No.	Part No.	Description	Remarks
551	A-4725-106-A	BD BOARD, COMPLETE	
552	1-792-396-11	WIRE, (FLAT TYPE) (31 CORE)	
553	A-4677-299-A	BASE UNIT (BU-21BD53A)	
554	3-317-552-71	SCREW (M1.7)	
555	A-4735-001-A	PULLEY ASSY, DISC	
556	A-4735-000-A	CAP ASSY, CENTERING	
557	3-713-786-51	SCREW +P 2X3	

Ref. No.	Part No.	Description	Remarks
R127	1-216-033-00	METAL CHIP 220 5%	1/10W
R128	1-216-033-00	METAL CHIP 220 5%	1/10W
R151	1-216-097-11	RES-CHIP 100K 5%	1/10W
R152	1-216-093-91	RES-CHIP 68K 5%	1/10W
R154	1-216-093-91	RES-CHIP 68K 5%	1/10W
R155	1-216-075-00	METAL CHIP 12K 5%	1/10W
R158	1-216-093-91	RES-CHIP 68K 5%	1/10W
R163	1-216-295-11	SHORT 0	
R164	1-216-295-11	SHORT 0	
R165	1-216-075-00	METAL CHIP 12K 5%	1/10W
R166	1-216-075-00	METAL CHIP 12K 5%	1/10W
R167	1-216-073-00	METAL CHIP 10K 5%	1/10W
R168	1-216-073-00	METAL CHIP 10K 5%	1/10W
R201	1-216-085-00	METAL CHIP 33K 5%	1/10W
R202	1-216-073-00	METAL CHIP 10K 5%	1/10W
R203	1-216-097-11	RES-CHIP 100K 5%	1/10W
R204	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R205	1-216-049-11	RES-CHIP 1K 5%	1/10W
R206	1-216-073-00	METAL CHIP 10K 5%	1/10W
R207	1-216-113-00	METAL CHIP 470K 5%	1/10W
R208	1-216-097-11	RES-CHIP 100K 5%	1/10W
R209	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R210	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R211	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R212	1-216-025-11	RES-CHIP 100 5%	1/10W
R216	1-216-033-00	METAL CHIP 220 5%	1/10W
R217	1-216-065-91	RES-CHIP 4.7K 5%	1/10W
R218	1-216-049-11	RES-CHIP 1K 5%	1/10W
R219	1-216-097-11	RES-CHIP 100K 5%	1/10W
R222	1-216-025-11	RES-CHIP 100 5%	1/10W
R223	1-216-025-11	RES-CHIP 100 5%	1/10W
R224	1-216-025-11	RES-CHIP 100 5%	1/10W
R225	1-216-025-11	RES-CHIP 100 5%	1/10W
R226	1-216-025-11	RES-CHIP 100 5%	1/10W
R230	1-216-298-00	METAL CHIP 2.2 5%	1/10W
< RESISTOR NETWORK >			
RN201	1-233-576-11	RES, CHIP NETWORK 100	
RN202	1-233-576-11	RES, CHIP NETWORK 100	
RN203	1-233-574-11	RES, CHIP NETWORK 10	
< VARIABLE RESISTOR >			
RV101	1-223-997-21	RES, CARBON ADJ VAR 47K	
< SWITCH >			
S101	1-762-149-11	SWITCH, PUSH (1 KEY) (LIMIT SW)	
< VIBRATOR >			
X201	1-767-518-11	VIBRATOR, CRYSTAL (33.8MHZ)	

FLEXIBLE BOARD			

	3-318-203-71	SCREW (B1.7X5), TAPPING	
< CAPACITOR >			
C1	1-164-346-11	CERAMIC CHIP 1uF	16V

Ref. No.	Part No.	Description	Remarks
C2	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C3	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
< JUMPER RESISTOR >			
JW1	1-216-295-11	SHORT 0	
< RESISTOR >			
R3	1-216-611-11	METAL CHIP 22 0.5%	1/10W
< VARIABLE RESISTOR >			
RV1	1-223-991-21	RES, CARBON ADJ VAR 1K	

	1-674-336-12	LOADING BOARD	

< CONNECTOR >			
* CN151	1-568-943-11	PIN, CONNECTOR 5P	
< SWITCH >			
S1	1-771-799-11	SWITCH, LEVER (SLIDE) (OPEN/CLOSE SW)	

	A-4725-069-A	MAIN BOARD, COMPLETE	

*	3-309-144-21	HEAT SINK	
	7-685-871-01	SCREW +BVTT 3X6 (S)	
< CAPACITOR >			
C501	1-126-959-11	ELECT 0.47uF 20%	50V
C502	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C503	1-104-665-11	ELECT 100uF 20%	10V
C504	1-163-021-91	CERAMIC CHIP 0.01uF 10%	50V
C505	1-163-021-91	CERAMIC CHIP 0.01uF 10%	50V
C506	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C507	1-163-227-11	CERAMIC CHIP 10PF 0.50PF	50V
C508	1-163-235-11	CERAMIC CHIP 22PF 5%	50V
C509	1-163-227-11	CERAMIC CHIP 10PF 0.50PF	50V
C510	1-163-245-11	CERAMIC CHIP 56PF 5%	50V
C521	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C522	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C523	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C524	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C525	1-104-665-11	ELECT 100uF 20%	10V
C526	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C530	1-104-665-11	ELECT 100uF 20%	10V
C531	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C532	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C533	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C534	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C535	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C536	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C537	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C538	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C539	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
C540	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
C550	1-104-665-11	ELECT 100uF 20%	10V

MAIN

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C551	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V			< DIODE >	
C552	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V				
C553	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	D590	8-719-058-24	DIODE RB501V-40TE-17	
C554	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	D591	8-719-058-24	DIODE RB501V-40TE-17	
C555	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	D592	8-719-058-24	DIODE RB501V-40TE-17	
C556	1-163-082-00	CERAMIC CHIP	0.5PF 0.25PF 50V	D593	8-719-058-24	DIODE RB501V-40TE-17	
C557	1-163-082-00	CERAMIC CHIP	0.5PF 0.25PF 50V	D650	8-719-976-96	DIODE DTZ-TT11-4.7C	
C558	1-163-102-00	CERAMIC CHIP	24PF 5% 50V	D701	8-719-200-02	DIODE 11E2-NTB2	
C559	1-163-119-00	CERAMIC CHIP	120PF 5% 50V	D702	8-719-056-98	DIODE DTZ-TT11-30B	
C560	1-163-021-91	CERAMIC CHIP	0.01uF 10% 50V	D703	8-719-976-99	DIODE DTZ-TT11-5.1B	
C561	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	D704	8-719-200-02	DIODE 11E2-NTB2	
C562	1-110-501-11	CERAMIC CHIP	0.33uF 10% 16V	D705	8-719-200-02	DIODE 11E2-NTB2	
C563	1-110-501-11	CERAMIC CHIP	0.33uF 10% 16V	D706	8-719-200-02	DIODE 11E2-NTB2	
C564	1-110-501-11	CERAMIC CHIP	0.33uF 10% 16V	D707	8-719-200-02	DIODE 11E2-NTB2	
C565	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	D708	8-719-200-02	DIODE 11E2-NTB2	
C566	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	D711	8-719-200-02	DIODE 11E2-NTB2	
C567	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	D712	8-719-200-02	DIODE 11E2-NTB2	
C570	1-110-501-11	CERAMIC CHIP	0.33uF 10% 16V	D713	8-719-200-02	DIODE 11E2-NTB2	
C571	1-163-002-11	CERAMIC CHIP	270PF 10% 50V	D714	8-719-200-02	DIODE 11E2-NTB2	
C572	1-110-501-11	CERAMIC CHIP	0.33uF 10% 16V			< TERMINAL >	
C573	1-163-002-11	CERAMIC CHIP	270PF 10% 50V	* ER1	1-537-770-11	TERMINAL BOARD, GROUND	
C574	1-216-295-11	SHORT	0	* ER2	1-537-770-11	TERMINAL BOARD, GROUND	
C590	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V			< FERRITE BEAD >	
C591	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	FB501	1-410-397-21	FERRITE BEAD INDUCTOR	
C650	1-115-339-11	CERAMIC CHIP	0.1uF 10% 50V	FB502	1-410-397-21	FERRITE BEAD INDUCTOR	
C651	1-163-021-91	CERAMIC CHIP	0.01uF 10% 50V			< IC >	
C652	1-163-033-91	CERAMIC CHIP	0.022uF 50V	IC501	8-759-684-30	IC M30624FGLFP-301FP1	
C653	1-104-665-11	ELECT	100uF 20% 10V	IC502	8-759-165-86	IC PST600I-T	
C701	1-126-971-11	ELECT	470uF 20% 50V	IC503	8-752-396-41	IC CXD1945R	
C702	1-126-965-11	ELECT	22uF 20% 50V	* IC504	— — —	IC BR24C08F-E2	
C703	1-126-946-11	ELECT	6800uF 20% 25V	IC521	8-759-491-33	IC TC74VHCT08AF(EL)	
C704	1-126-768-11	ELECT	2200uF 20% 16V	IC522	8-759-186-77	IC TC74VHC541F(EL)	
C705	1-126-963-11	ELECT	4.7uF 20% 50V	IC523	8-759-491-41	IC TC74VHCT541AF(EL)	
C706	1-126-963-11	ELECT	4.7uF 20% 50V	IC524	8-759-081-48	IC TC74VHC08F(EL)	
C707	1-126-925-11	ELECT	470uF 20% 10V	IC530	8-752-403-47	IC CXD3202AR	
C708	1-126-936-11	ELECT	3300uF 20% 16V	IC650	8-759-822-09	IC LB1641	
C709	1-126-925-11	ELECT	470uF 20% 10V	IC701	8-759-394-36	IC BA09T	
C711	1-126-937-11	ELECT	4700uF 20% 16V	IC702	8-749-011-78	IC BA17807T	
C712	1-126-925-11	ELECT	470uF 20% 10V	IC703	8-759-061-65	IC LA5602	
C716	1-126-927-11	ELECT	2200uF 20% 10V	IC704	8-759-445-59	IC BA033T	
C720	1-216-295-11	SHORT	0	IC705	8-759-445-59	IC BA033T	
		< CONNECTOR >				< TRANSISTOR >	
* CN501	1-568-937-11	PIN, CONNECTOR 10P		Q521	8-729-900-53	TRANSISTOR DTC114EKA-T146	
CN502	1-506-469-11	PIN, CONNECTOR 4P		Q580	8-729-029-49	TRANSISTOR DTA143TSA-TP	
CN520	1-784-387-11	CONNECTOR, FFC/FPC 31P		Q581	8-729-029-88	TRANSISTOR DTA143TSA-TP	
CN570	1-785-759-12	CONNECTOR (I-LINK), SQUARE 4P (i.LINK S200)		Q582	8-729-029-49	TRANSISTOR DTA143TSA-TP	
CN571	1-785-759-12	CONNECTOR (I-LINK), SQUARE 4P (i.LINK S200)		Q583	8-729-029-88	TRANSISTOR DTC124TSA-TP	
* CN601	1-568-832-11	SOCKET, CONNECTOR 13P		Q602	8-729-029-21	TRANSISTOR DTA114ESA-TP	
CN620	1-568-834-11	SOCKET, CONNECTOR 15P		Q603	8-729-029-92	TRANSISTOR DTC143ESA-TP	
* CN650	1-568-954-11	PIN, CONNECTOR 5P		Q604	8-729-029-21	TRANSISTOR DTA114ESA-TP	
CN992	1-695-089-11	PIN, CONNECTOR (PC BOARD) 11P		Q605	8-729-029-92	TRANSISTOR DTC143ESA-TP	
		< CONNECTOR >		Q606	8-729-029-92	TRANSISTOR DTC143ESA-TP	
* CNP701	1-691-774-11	PLUG (MICRO CONNECTOR) 12P		Q607	8-729-029-92	TRANSISTOR DTC143ESA-TP	
				Q608	8-729-029-92	TRANSISTOR DTC143ESA-TP	
				Q609	8-729-029-92	TRANSISTOR DTC143ESA-TP	
				Q701	8-729-140-97	TRANSISTOR 2SB734-T-34	

* This is a written EEPROM. Not supplied in independently but is supplied as the MAIN BOARD, COMPLETE.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
Q702	8-729-119-76	TRANSISTOR 2SA1175TP-HFE		R572	1-216-019-00	METAL CHIP 56 5%	1/10W
Q703	8-729-120-28	TRANSISTOR 2SC2412K-T-146-QR		R573	1-216-019-00	METAL CHIP 56 5%	1/10W
		< RESISTOR >		R574	1-216-066-00	METAL CHIP 5.1K 5%	1/10W
R500	1-216-627-11	RES-CHIP 100 0.5%	1/10W	R575	1-216-019-00	METAL CHIP 56 5%	1/10W
R501	1-216-049-11	RES-CHIP 1K 5%	1/10W	R576	1-216-019-00	METAL CHIP 56 5%	1/10W
R502	1-216-097-11	RES-CHIP 100K 5%	1/10W	R577	1-216-019-00	METAL CHIP 56 5%	1/10W
R503	1-216-295-11	SHORT 0		R578	1-216-019-00	METAL CHIP 56 5%	1/10W
R504	1-216-073-00	METAL CHIP 10K 5%	1/10W	R579	1-216-066-00	METAL CHIP 5.1K 5%	1/10W
R505	1-216-073-00	METAL CHIP 10K 5%	1/10W	R580	1-216-295-11	SHORT 0	
R506	1-216-061-00	METAL CHIP 3.3K 5%	1/10W	R581	1-216-295-11	SHORT 0	
R507	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	R590	1-216-121-11	RES-CHIP 1M 5%	1/10W
R508	1-216-073-00	METAL CHIP 10K 5%	1/10W	R591	1-216-121-11	RES-CHIP 1M 5%	1/10W
R509	1-216-073-00	METAL CHIP 10K 5%	1/10W	R592	1-216-073-00	METAL CHIP 10K 5%	1/10W
R510	1-216-073-00	METAL CHIP 10K 5%	1/10W	R593	1-216-073-00	METAL CHIP 10K 5%	1/10W
R511	1-216-065-91	RES-CHIP 4.7K 5%	1/10W	R595	1-216-073-00	METAL CHIP 10K 5%	1/10W
R512	1-216-065-91	RES-CHIP 4.7K 5%	1/10W	R596	1-216-295-11	SHORT 0	
R513	1-216-065-91	RES-CHIP 4.7K 5%	1/10W	R597	1-216-295-11	SHORT 0	
R514	1-216-065-91	RES-CHIP 4.7K 5%	1/10W	R598	1-216-295-11	SHORT 0	
R516	1-216-073-00	METAL CHIP 10K 5%	1/10W	R599	1-216-295-11	SHORT 0	
R517	1-216-065-91	RES-CHIP 4.7K 5%	1/10W	R623	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R518	1-216-073-00	METAL CHIP 10K 5%	1/10W	R624	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R519	1-216-073-00	METAL CHIP 10K 5%	1/10W	R701	1-216-059-00	METAL CHIP 2.7K 5%	1/10W
R520	1-216-025-11	RES-CHIP 100 5%	1/10W	R702	1-216-097-11	RES-CHIP 100K 5%	1/10W
R521	1-216-025-11	RES-CHIP 100 5%	1/10W	R703	1-216-093-91	RES-CHIP 68K 5%	1/10W
R522	1-216-025-11	RES-CHIP 100 5%	1/10W	R704	1-216-097-11	RES-CHIP 100K 5%	1/10W
R523	1-216-295-11	SHORT 0		R705	1-216-065-91	RES-CHIP 4.7K 5%	1/10W
R524	1-216-009-00	RES-CHIP 22 5%	1/10W	R706	1-216-061-00	METAL CHIP 3.3K 5%	1/10W
R525	1-216-009-00	RES-CHIP 22 5%	1/10W	R707	1-216-073-00	METAL CHIP 10K 5%	1/10W
R526	1-216-009-00	RES-CHIP 22 5%	1/10W	R710	1-216-025-11	RES-CHIP 100 5%	1/10W
R527	1-216-061-00	METAL CHIP 3.3K 5%	1/10W	R711	1-216-025-11	RES-CHIP 100 5%	1/10W
R528	1-216-073-00	METAL CHIP 10K 5%	1/10W	R715	1-216-295-11	SHORT 0	
R530	1-216-073-00	METAL CHIP 10K 5%	1/10W			< VIBRATOR >	
R531	1-216-019-11	RES-CHIP 56 5%	1/10W	X501	1-577-377-11	VIBRATOR, CERAMIC (10MHz)	
R532	1-216-019-11	RES-CHIP 56 5%	1/10W	X502	1-767-639-21	VIBRATOR, CRYSTAL (24.576MHz)	
R533	1-216-019-11	RES-CHIP 56 5%	1/10W	*****			
R534	1-216-073-00	METAL CHIP 10K 5%	1/10W	A-4725-071-A	PANEL BOARD, COMPLETE		
R535	1-216-073-00	METAL CHIP 10K 5%	1/10W	*****			
R536	1-216-025-11	RES-CHIP 100 5%	1/10W	4-225-908-01	HOLDER (FL)		
R537	1-216-025-11	RES-CHIP 100 5%	1/10W	4-225-910-01	HOLDER (FUNCTION)		
R538	1-216-025-11	RES-CHIP 100 5%	1/10W	4-225-911-01	HOLDER (DISPLAY)		
R540	1-216-025-11	RES-CHIP 100 5%	1/10W	4-225-921-01	CUSHION (FL)		
R541	1-216-073-00	METAL CHIP 10K 5%	1/10W			< CAPACITOR >	
R542	1-216-057-00	METAL CHIP 2.2K 5%	1/10W	C901	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
R550	1-216-073-00	METAL CHIP 10K 5%	1/10W	C902	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
R551	1-216-073-00	METAL CHIP 10K 5%	1/10W	C903	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
R552	1-216-017-00	METAL CHIP 47 5%	1/10W	C910	1-124-589-11	ELECT 47uF 20%	16V
R553	1-216-055-00	METAL CHIP 1.8K 5%	1/10W	C912	1-163-109-00	CERAMIC CHIP 47PF 5%	50V
R554	1-216-051-00	METAL CHIP 1.2K 5%	1/10W	C913	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
R555	1-216-681-11	METAL CHIP 18K 0.5%	1/10W	C914	1-124-261-00	ELECT 10uF 20%	50V
R556	1-216-676-11	METAL CHIP 11K 0.5%	1/10W	C915	1-163-021-91	CERAMIC CHIP 0.01uF 10%	50V
R557	1-216-646-11	METAL CHIP 620 0.5%	1/10W	C916	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
R560	1-216-644-11	METAL CHIP 510 0.5%	1/10W	C917	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
R561	1-216-021-11	RES-CHIP 68 5%	1/10W	C918	1-163-009-11	CERAMIC CHIP 0.001uF 10%	50V
R562	1-216-021-11	RES-CHIP 68 5%	1/10W	C919	1-115-339-11	CERAMIC CHIP 0.1uF 10%	50V
R563	1-216-021-11	RES-CHIP 68 5%	1/10W	C921	1-126-162-11	ELECT 3.3uF 20%	50V
R564	1-216-021-11	RES-CHIP 68 5%	1/10W				
R570	1-216-019-00	METAL CHIP 56 5%	1/10W				
R571	1-216-019-00	METAL CHIP 56 5%	1/10W				

PANEL	SUB MAIN	TRANS
--------------	-----------------	--------------

Ref. No.	Part No.	Description	Remarks
< CONNECTOR >			
* CN901	1-568-832-11	SOCKET, CONNECTOR 13P	
CN903	1-568-834-11	SOCKET, CONNECTOR 15P	
< DIODE >			
D901	8-719-072-76	DIODE SEL5E23C-TP15 (■)	
D902	8-719-072-76	DIODE SEL5E23C-TP15 (▷⏏)	
D903	8-719-072-76	DIODE SEL5E23C-TP15 (≡)	
D904	8-719-812-44	DIODE SEL5220S-TP15 (STANDBY)	
D905	8-719-057-28	DIODE SML78420-TP4 (PLAY/PAUSE)	
D906	8-719-038-54	DIODE SEL5520C-TP15 (▶▶)	
D908	8-719-038-54	DIODE SEL5520C-TP15 (◀◀)	
D911	8-719-038-54	DIODE SEL5520C-TP15 (DISPLAY)	
D912	8-719-038-54	DIODE SEL5520C-TP15 (IFRAC)	
< FLUORESCENT INDICATOR TUBE >			
FL901	1-517-900-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC901	8-759-657-46	IC MSM9202-06GS-K	
IC902	8-749-013-92	IC GP1UC7X (REMOTE SENSOR)	
< TRANSISTOR >			
Q901	8-729-900-53	TRANSISTOR DTC114EKA-T146	
< RESISTOR >			
R902	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R903	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R904	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R905	1-216-031-00	METAL CHIP 180 5% 1/10W	
R906	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R907	1-216-031-00	METAL CHIP 180 5% 1/10W	
R908	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R909	1-216-019-00	METAL CHIP 56 5% 1/10W	
R910	1-216-019-00	METAL CHIP 56 5% 1/10W	
R911	1-216-031-00	METAL CHIP 180 5% 1/10W	
R912	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R914	1-216-029-00	METAL CHIP 150 5% 1/10W	
R919	1-216-029-00	METAL CHIP 150 5% 1/10W	
R921	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R922	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R928	1-216-029-00	METAL CHIP 150 5% 1/10W	
R930	1-216-018-00	METAL CHIP 51 5% 1/10W	
R931	1-216-025-11	RES-CHIP 100 5% 1/10W	
R932	1-216-025-11	RES-CHIP 100 5% 1/10W	
R933	1-216-025-11	RES-CHIP 100 5% 1/10W	
R934	1-216-025-11	RES-CHIP 100 5% 1/10W	
R935	1-216-025-11	RES-CHIP 100 5% 1/10W	
R936	1-216-025-11	RES-CHIP 100 5% 1/10W	
R937	1-216-025-11	RES-CHIP 100 5% 1/10W	
R938	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
< SWITCH >			
S901	1-762-875-21	SWITCH, KEYBOARD (■)	
S902	1-762-875-21	SWITCH, KEYBOARD (▷⏏)	
S903	1-762-875-21	SWITCH, KEYBOARD (≡)	
S904	1-762-875-21	SWITCH, KEYBOARD (I/⏏)	
S905	1-762-875-21	SWITCH, KEYBOARD (▶▶)	

Ref. No.	Part No.	Description	Remarks
S906	1-762-875-21	SWITCH, KEYBOARD (◀◀)	
S907	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)	

	1-679-064-12	SUB MAIN BOARD	

< CAPACITOR >			
C991	1-115-339-11	CERAMIC CHIP 0.1uF 10% 50V	
< CONNECTOR >			
CN991	1-695-094-11	SOCKET, CONNECTOR 11P	
< IC >			
IC991	8-759-925-72	IC TC74HC02AF(EL)	
IC992	8-759-235-19	IC TC74HC08AF(EL)	
IC993	8-759-032-23	IC TC74HC74AF(EL)	
IC994	8-759-236-47	IC TC74HC164AF(EL)	
< RESISTOR >			
R991	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	

	1-677-158-11	TRANS BOARD	

< CAPACITOR >			
△C753	1-117-703-11	CERAMIC 0.0047uF 99% 250V	
< CONNECTOR >			
* CN752	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P	
< DIODE >			
D750	8-719-200-02	DIODE 11E2-NTB2	
< COIL >			
△L750	1-424-485-11	FILTER, LINE	
< RELAY >			
△RY750	1-755-324-11	RELAY	
< TRANSFORMER >			
△T750	1-433-961-11	TRANSFORMER, POWER	
△T751	1-433-960-11	TRANSFORMER, POWER	

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

Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS *****	
10	1-792-397-11	WIRE (FLAT TYPE) (13 CORE)	
11	1-792-398-11	WIRE (FLAT TYPE) (15 CORE)	
* 53	1-543-830-11	CLAMP, SLEEVE FERRITE	
△ 55	1-782-603-11	CORD, POWER	
552	1-792-396-11	WIRE, (FLAT TYPE) (31 CORE)	
FL901	1-517-900-11	INDICATOR TUBE, FLUORESCENT	
M103	A-4672-771-A	MOTOR (LD) ASSY (LOADING)	
△ T751	1-433-960-11	TRANSFORMER, POWER	
S1	1-771-799-11	SWITCH, LEVER (SLIDE)	

ACCESSORIES & PACKING MATERIALS

1-476-031-11	REMOTE COMMANDER (RM-LSA1C)
1-792-129-11	CORD, CONNECTION (i.LINK)
4-227-583-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH,GERMAN,SPANISH)
4-227-583-21	MANUAL, INSTRUCTION (DUTCH,SWEDISH,ITALIAN,PORTUGUESE)
4-982-828-21	COVER, BATTERY (FOR RM-LSA1C)

HARDWARE LIST

#1	7-685-872-09	SCREW +BVTT 3X8 (S)
#2	7-685-862-09	SCREW +BVTT 2.6X6 (S)
#3	7-685-871-01	SCREW +BVTT 3X6 (S)
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 TT (B)
#5	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S

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

