

CDP-209ES/790

SERVICE MANUAL

US Model
CDP-209ES

Canadian Model
AEP Model
UK Model
E Model
CDP-790



Photo: CDP-209ES

Model Name Using Similar Mechanism	NEW
CD Mechanism Name	CDM14-5BD1
Base Unit Name	BU-5BD1

SPECIFICATIONS

Compact disc player

Frequency response	2Hz – 20 kHz \pm 0.3 dB
Signal to noise ratio	More than 110 dB
Dynamic range	More than 97 dB
Harmonic distortion	Less than 0.003%
Channel separation	More than 100 dB

Outputs

LINE OUT (FIXED) (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
LINE OUT (VARIABLE) (phono jacks)	Output level max. 2V (at 50 kilohms) Load impedance over 50 kilohms
DIGITAL OUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level – 18 dBm
PHONES (stereo phone jack)	Output level max. 15 mW Load impedance 32 ohms

General

Power requirements	US, Canadian model: 120V AC, 60Hz AEP model: 220V AC, 50/60Hz UK, Australian model: 240V AC, 50/60Hz E model: 110, 120V/220, 240V AC adjustable 50/60Hz
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Power consumption	US model: 17W EXCEPT US model: 14W
Dimensions (approx., including projections)	430×110×280 mm (w/h/d) (17×4 ³ / ₈ ×11 ¹ / ₈ inches)
Weight (approx.)	4.5 kg (9 lbs 15oz)

Supplied accessories

Audio cord	1 (2 phono plugs – 2 phono plugs)
Remote commander	1
R6 (size AA) batteries	2

Remote commander

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions	Approx. 67×18×175 mm (w/h/d) (2 ⁷ / ₈ × ²³ / ₃₂ ×7 inches)
Weight	Approx. 150 g (5.3 oz) Including batteries

Design and specifications subject to change without notice.

Optional accessory
Optical cable POC-15

COMPACT DISC PLAYER
SONY[®]

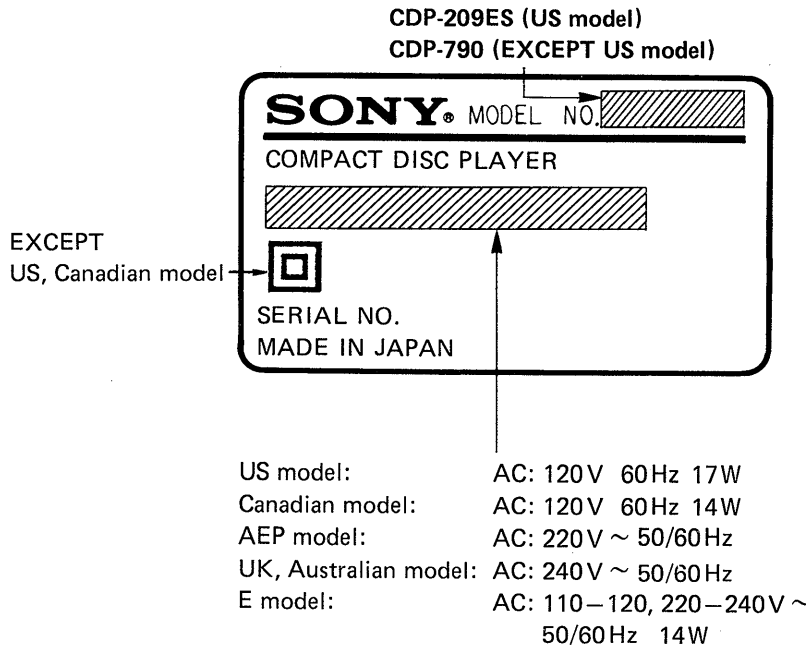


TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
Specifications		1	Tips on Editing Tapes		11
Model Identification		2	Maintenance		11
Safety Check-out		3	·Description of IC401 (UPD75212A)		12
Servicing Note		4	SECTION 2. DISASSEMBLY		14
SECTION 1. GENERAL			SECTION 3. ADJUSTMENTS		16
Location of Controls		5	SECTION 4. DIAGRAMS		
Installing the CD Player		5	4-1. Block Diagram		19
Preparing the Remote Commander		5	4-2. Semiconductor Lead Layouts		21
Connecting the CD Player		6	4-3. Circuit Boards Location		21
Playing a Disc		6	4-4. Printed Wiring Boards		22
Playing Disc		7	4-5. Schematic Diagram		25
Playing in Random Order		7	4-6. IC Block Diagram		28
Playing in a Desired Order and Time ...		8	SECTION 5. EXPLODED VIEWS		29
Playing Discs in a Desired Order		9	SECTION 6. ELECTRICAL PARTS LIST		32
Designating the Total Playing Time		10			
Playing Repeatedly		10			

MODEL IDENTIFICATION
 — Specification Label —

SEE ADDITIONAL INFORMATION



SAFETY-RELATED COMPONENT WARNING!!
 COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK 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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!
 LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

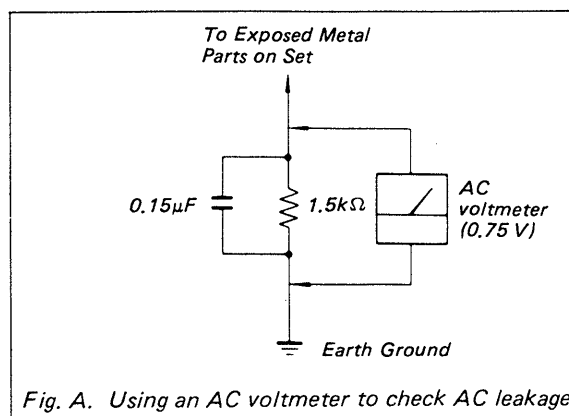


Fig. A. Using an AC voltmeter to check AC leakage.

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

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown 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.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

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

CAUTION

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

1. Laser Diode Properties

- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output: max. 44.6 μ W*

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

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iverigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

1. Laser-dioe data

- Materiale: GaAlAs
- Bølgelængde: 780 nm
- Udstråling: Kontinuerlig
- Laseroutput: Max. 0,4 mW*

* Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.

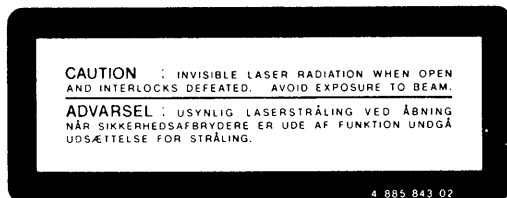
- Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning

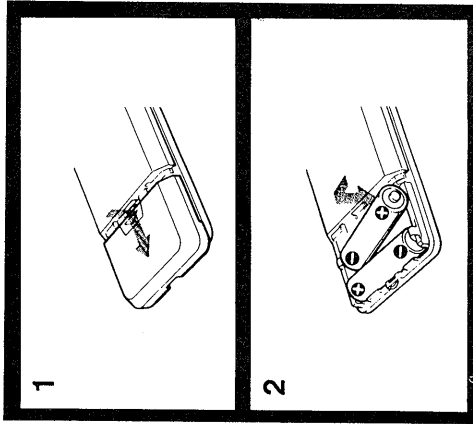


VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkyvätöntä) silmille vaarallista lasersäteilyä.

SECTION 1 GENERAL

Preparing the Remote Commander

Installing Batteries



On battery life

- About half a year of normal operation can be expected when using the R6 (size AA) batteries.
- When the batteries are run down, the remote commander will not operate the unit. In this case, replace both batteries with new ones.

Notes on the remote commander and remote control operation

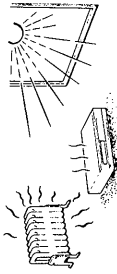
- Keep the commander away from extremely hot or humid places.
- Avoid dropping any foreign objects into the commander casing, particularly when replacing the batteries.
- Avoid exposing the remote sensor to direct sunlight or lighting apparatus. Such exposure can cause a malfunction.
- To avoid damage caused by battery leakage and corrosion, remove the batteries when the commander will not be used for a long time.

Installing the CD Player

Notes the Installation

- Place the unit in a location with adequate air circulation to prevent internal heat build up in the unit.
- Do not place the unit on a soft surface, such as a rug that would block the ventilation holes on the bottom.
- Do not install the unit:
 - near heat sources such as radiators or air ducts.
 - in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

Not this way.

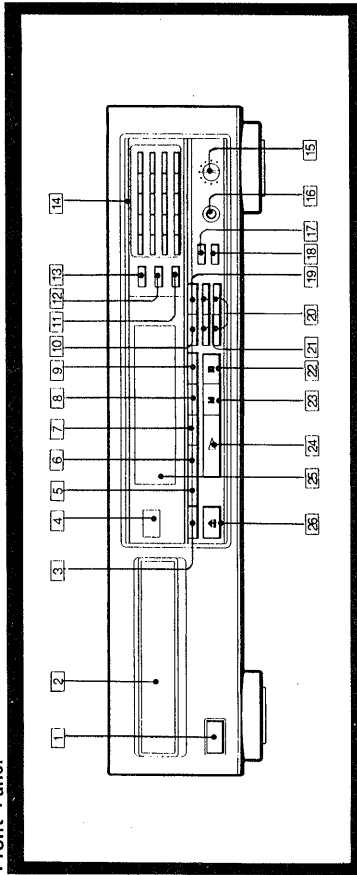


On moisture condensation

If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens inside the unit. Should this occur, the player will not operate. In this case, remove the disc and leave the player turned on for about an hour until the moisture evaporates.

Location of Controls

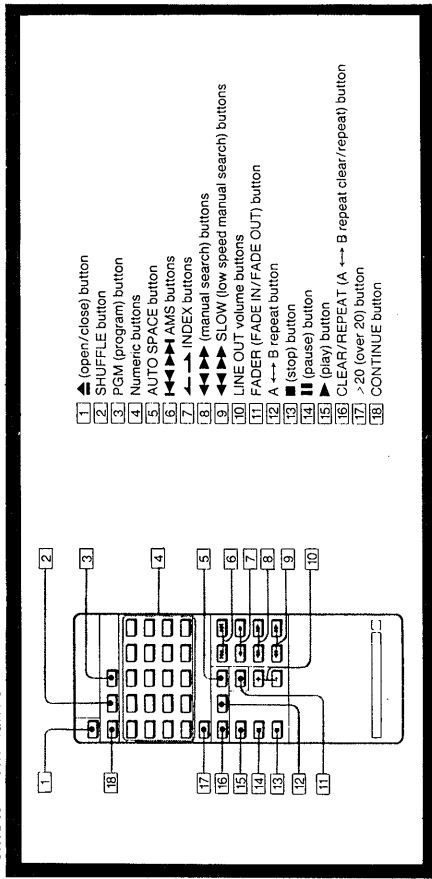
Front Panel



- 1 POWER switch
- 2 Disc tray
- 3 TIME button
- 4 Remote sensor
- 5 PEAK SEARCH button
- 6 REPEAT button
- 7 FADER (FADE IN/FADE OUT) button
- 8 CHECK (program check) button
- 9 CLEAR (program clear) button
- 10 MULTI PGM (multi-disc program) button
- 11 PROGRAM button
- 12 SHUFFLE button
- 13 CONTINUE button

- 14 Numeric buttons
 - 15 LINE OUT/PHONE LEVEL control
 - 16 PHONES jack
 - 17 EDIT/TIME FADE button
 - 18 TIME SET button
 - 19 >20 (over 20) button
 - 20 <<<<< (AMMS*) buttons
 - 21 >>>>> (manual search) buttons
 - 22 <<<<< (stop) button
 - 23 >>>>> (pause) button
 - 24 >>>>> (play) button
 - 25 Display window
 - 26 <<<<< (open/close) button
- * AMS is an abbreviation of Automatic Music Sensor.

Remote Commander



- 1 <<<<< (open/close) button
- 2 SHUFFLE button
- 3 PGM (program) button
- 4 Numeric buttons
- 5 AUTO SPACE button
- 6 <<<<< AMS buttons
- 7 >>>>> INDEX buttons
- 8 >>>>> (manual search) buttons
- 9 <<<<< SLOW (low speed manual search) buttons
- 10 LINE OUT volume buttons
- 11 FADER (FADE IN/FADE OUT) button
- 12 A ↔ B repeat button
- 13 <<<<< (stop) button
- 14 >>>>> (pause) button
- 15 >>>>> (play) button
- 16 CLEAR/REPEAT (A ↔ B repeat clear/repeat) button
- 17 >>>>> >20 (over 20) button
- 18 CONTINUE button

Playing Disc

Locating a Particular Selection

You can locate the beginning of a desired selection.

To locate sequentially

To locate the beginning of the current or preceding selection

- Press **◀** as many times as required.
 - Keep **◀** pressed to skip selections.
- To locate the beginning of a succeeding selection
- Press **▶** as many times as required.
 - Keep **▶** pressed to skip selections.

To locate directly

Press one of the numeric buttons (1 to 20) to enter the desired selection number.
 If a selection number is greater than 20, use the **>20** and **1** to **10** buttons. **10** functions as the figure 0.
 e.g. To play from selection No.22 Press **>20** **2** **2**
 To play from selection No.30 Press **>20** **3** **0**

Locating a Particular Point in a Selection

You can locate a particular point in the disc during play.

To search quickly while monitoring the sound

To go ahead at high speed
 Keep **▶▶** pressed during play and release at the desired point.

To go back at high speed
 Keep **◀◀** pressed during play and release at the desired point.

To search quickly by observing the display

Press **II**, then keep **◀◀** or **▶▶** pressed. The search speed will increase, but there will be no sound. Find the desired point by observing the display.
 Press **II** again at the desired point.

To search slowly while monitoring the sound

Press **◀◀** or **▶▶** SLOW during play and release at the desired point.

When you press **II** during play

The player locates the beginning of the selection.

When **II** is displayed

If you continuously press **▶▶** at the end of the disc, "II" appears in the window. Press **◀◀** or **II** to return to normal indication.
 If you continuously press **◀◀** at the beginning of the disc, play begins automatically from the first selection.

Locating an Index

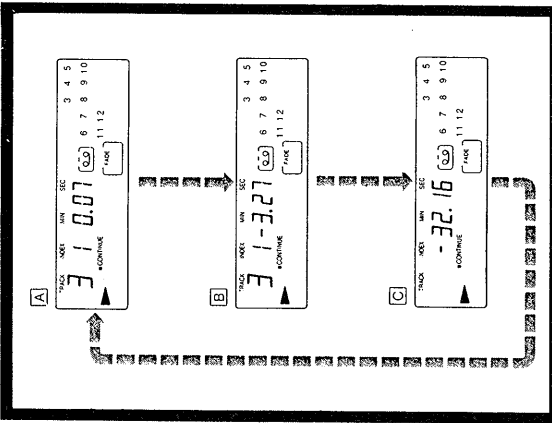
This function is only possible with a disc on which index numbers are recorded.

Press **◀** or **▶** to locate the desired index number.
 The selected index number appears in the display window.

What is index?

This is a number assigned to a section of a selection (for example, to a movement in a symphony) to allow that section to be located easily.

Information Display



Each time you press TIME during play, the display changes to give you the following information.

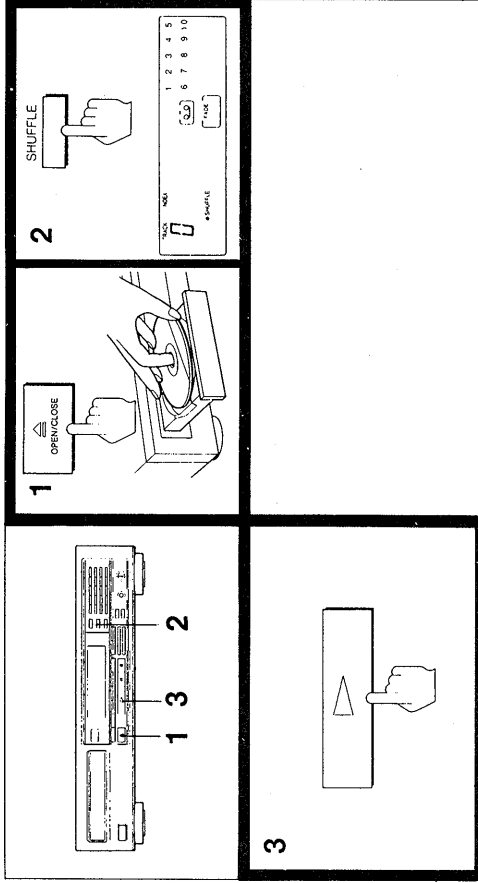
- A Elapsed playing time
 - B Remaining time in a selection
 - C If the current selection number is over 20, "...." is displayed.
- (not displayed during shuffle play)

If you press TIME during stop

The total time and total number of selections will be displayed. If a program is stored, nothing will change.

Playing in Random Order —Shuffle Play

You can have the selections played in a random order. The unit will play all the selections, or just the selections you desire.



To stop playing

Press **■**

To cancel shuffle play

Press CONTINUE and enter the unit into the normal playing mode. "SHUFFLE" disappears from the window.

To play only the desired selections in a random order — Delete Shuffle Play
 Delete the undesired selections before or during play.

To delete a selection, press the numeric button for that selection. "OFF" will be displayed in the window. You cannot delete a selection which is being played. To choose a selection number over 20, see page 8.

To put back a selection which you have deleted, press the numeric button for that selection. "On" will be displayed in the window.

To put back all the selections you have deleted, press **■** during the stop mode.

When delete shuffle play ends

The unit returns to the shuffle play mode for the remaining selections.

What is this indication?



This indication appears while the player is "shuffling" the selections.

If you press SHUFFLE during play

Shuffle play begins after the current selection is over.

Playing in a Desired Order and Time -Program Play

You can make a program, which can be divided into programs A and B, by designating up to 24 selections in the order you want them to be played. At the same time, you can adjust the total playing time of the program. The unit will play the disc according to your program. This function is convenient for editing tapes.

Designating the Playing Order-Program Edit

1 Press the **PROGRAM** button.

2, 4 Designate the order of the selections to be played.

3 Choose selection and check the time. If the time is not satisfactory, choose another selection.

5 Repeat steps 3 and 4.

To play the program

Press the **OPEN/CLOSE** button.

Programming Selections Directly

1 Press the **PROGRAM** button.

2, 3 Designate the order of the selections to be played.

5 Repeat steps 2 and 3.

To play the program

Press the **OPEN/CLOSE** button.

To stop playing

Press **■**. You can play the same program repeatedly as long as you do not cancel program play or erase the program.

To cancel the program play

Press **CONTINUE** and enter the unit into the normal playing mode. The program will be erased.

To erase the entire program

Press **■** once during stop; twice during play. The program is also erased when you press **▶** or turn off the unit.

To make a program for editing a tape

You can divide your program into programs A and B by inserting a pause between them. Use this function to make a program for both sides of the tape at one time.

- 1 Program the selections for program A.
 - 2 Press **■** in the tape indicator and "P" will be displayed in the window and the total playing time will be reset to 0.
 - 3 Program the selections for program B.
- When you start playing the selections, program A will be played and then the unit will pause with the chosen selections for program B lighted in the window. Set the tape to the beginning of side B, then press **▶** or **■**. The selections for program B will be played.

What is the tape indicator (A-B)?

During program play, the tape indicator shows you which side of the tape is being played.

- : Side A is being played.
- : Side A has been played and the unit is in the pause mode, or side B is being played.

To check your program

Press **CHECK**. The first selection in the program will be displayed. Each time you press **CHECK**, the next selection in the program will be displayed. After the last selection, "End" will be indicated and the display will soon return to the initial status.

To change your program

You can make the following changes before starting play.

To erase the last selection, press **CLEAR**. The last selection in the program will be erased.

To add a selection to the end of the program, just press the numeric button for that selection. You can add a selection also during play or pause.

To delete a selection, press **CHECK**, repeatedly until the undesired selection is displayed. Then press **CLEAR**.

To change the order, press **■** during stop to erase the program. Then repeat the programming procedure from the beginning.

To adjust the blank spaces between selections

You can make all the blank spaces 3 seconds long. See page 16 for details.

If "....." is displayed instead of the actual time

- you have programmed a selection number over 20.
- the total time has exceeded 100 minutes.

To check the remaining time

Press **TIME** once to see the remaining time of the selection being played; twice to see the total remaining time; once more to return to the initial display.

If you have divided the program into A and B by inserting a pause between them, the display shows the remaining time until the pause. If you have programmed a selection number over 20, "....." is displayed instead of the actual time.

* To choose a selection number over 20, see page 8.

Playing Discs in a Desired Order —Multi-disc Program

A maximum of 24 selections can be programmed from up to 6 discs in the order you want them to be played. At the same time, you can adjust the total playing time of the program.

Multi-disc Programming

1 OPEN/CLOSE

2,3 **3** **1,4** **3**

3 Choose selections.

AMS

4 Load another disc.

5 Repeat steps 3 and 4 until up to 6 discs are programmed.

Current selection

MIN	SEC	1	2	3	4	5
10	4	11	16	1	3	10

Order

Total playing time

MIN	SEC	1	2	3
8	24	88	28	6

Total number of programmed selections

You can program the same disc as many times as you want until the total number of programmed selections reaches 24.

To play the program
See the succeeding page.

If "...." is displayed instead of the actual time
- Repeat play, time edit, and time fade do not function during multi-disc program play.
- The total time has exceeded 100 minutes.

If you insert the seventh disc
"DISC FULL" appears in the window.

Notes
- A pause can not be programmed in the multi-disc program.

Playing the Multi-disc Program

1 OPEN/CLOSE

2,4 **1,3**

2

When play is over, "disc 2" blinks.

3 Load the second disc.

4

5

Load discs in the programmed order, repeating steps 2 and 3.

After the last disc play is over, "disc End" will appear.

To stop playing
Press CONTINUE and enter the unit into the normal playing mode.
The program will be erased.

To erase the entire program
Press **■** once during stop, twice during play.
The program is also erased when you turn off the unit.

When the program has been played
The unit will be ready to repeat the same program again.

If you insert a disc in wrong order
The disc will be played even in wrong order, unless it has been played yet.

To check the disc number inserted
Press TIME during the stop mode. The disc number appears in the window.

To check the remaining time
Press TIME once to see the remaining time of the selection being played; twice to see the total remaining time; once more to return to the initial display.
If you have programmed a selection number over 20, "...." is displayed instead of the actual time.

Designating the Total Playing Time —Time Edit

You can designate a time and the unit will make 2 different programs of selections each fitting within that period. Use this function, by designating the length of your tape, for editing both sides of a tape. This function, however, can not be used with the multi-disc program. (See page 12.)

1 Press **EDIT/TIME FADE** once more, to make a program for the other side of your tape. "B" in the tape indicator stops blinking to light, and "EDIT" disappears from the window.

2 Press **EDIT/TIME FADE** once more, to make a program for the other side of your tape. "B" in the tape indicator stops blinking to light, and "EDIT" disappears from the window.

3 Designate the length of one side of your tape. Press **EDIT/TIME FADE** once more, to make a program for the other side of your tape. "B" in the tape indicator stops blinking to light, and "EDIT" disappears from the window.

4 Press **EDIT/TIME FADE** once more, to make a program for the other side of your tape. "B" in the tape indicator stops blinking to light, and "EDIT" disappears from the window.

5 Press **EDIT/TIME FADE** once more, to make a program for the other side of your tape. "B" in the tape indicator stops blinking to light, and "EDIT" disappears from the window.

* Press **00** for "0".
You need not press keys for seconds, unless required.

To play the program

Press **▶**. The selections for side A will be played and then the unit will pause. Set the tape to the beginning of side B, then press **▶** or **II**. The selections for side B will be played.

To check or erase the program and to stop or cancel the play

See pages 12 and 13.

To designate a different time for each side

Execute steps 1 to 4, then press **II**. "EDIT" disappears from the window. Execute steps 2 to 4 for the other side.

If your disc has more than 20 selections

Selections over number 20 cannot be programmed with the time edit function; use the programming procedure on page 10.

Playing Repeatedly —Repeat Play

You can choose between two different repeat play modes. One repeats one or all selections, the other repeats any particular portion you like. Repeat play, however, does not function during multi-disc program play.

Repeating Selections

To repeat all selections

Press **REPEAT** once. (The unit will repeat in the current play mode after completing the first play.)

Play mode	Selections to be repeated
Continuous play (page 7)	All the selections
Program play (page 10)	All the programmed selections in the same order
Shuffle play (page 9)	All the selections that the unit reshuffles
Delete shuffle play (page 9)	All the remaining selections that the unit reshuffles

To repeat the current playing selection

Press **REPEAT** twice. (Not operable during shuffle or program play.)

To cancel repeat play

Press **REPEAT** for the third time.

Repeating a Particular Portion—A ↔ B Repeat

You can repeat a portion on the disc by designating the starting point A and the ending point B.

1 Press **EDIT/TIME FADE** once more, to make a program for the other side of your tape. "B" in the tape indicator stops blinking to light, and "EDIT" disappears from the window.

2 At point A, press **A ↔ B**.

3 At point B, press **A ↔ B**. Play starts from point A.

To cancel A ↔ B repeat

Press **CLEAR/REPEAT** (or **REPEAT** on the main unit).

Going back to point A from any point on the disc
Simply press **▶**. When point A is stored, you can go back there in any play mode other than multi-disc program play. You need not designate point B.

When you designate A ↔ B repeat during shuffle or program play
You cannot designate point A and B in two different selections.

Tips on Editing Tapes

The following functions are convenient for editing your own tapes.

Time Fade and Fade in/Fade out cannot be operated when the DIGITAL (optical) OUT is used for connections.

Fading in/Fading out

You can have the play fade in or fade out from 2 to 10 seconds.

To designate the fading duration

1. Press FADER during the stop mode.
2. Designate the fading duration within the range of 2 to 10 seconds by pressing ◀◀ or ▶▶.

No designation makes the fading duration 5 seconds long.

To end the play fading out

Press FADER when you want to start fading out.

"||||" flashes in the window, and play fades out for the designated duration and enters the pause mode.

To restart the play fading in

Press FADER.

"-||||" flashes in the window, and play fades in for the designated duration.

Inserting a Blank Space between Selections

-Auto Space

You can insert a 3-second blank space between each selection. The blank space enables you to locate selections when using a tape deck with the automatic selection search function.

Before starting play, press AUTO SPACE so that "AUTO SPACE" is displayed in the window.

A blank space of approximately 3 seconds will be inserted between each selection.

To cancel the auto space function

Press AUTO SPACE so that "AUTO SPACE" disappears from the window.

Maintenance

Fading Out at the Desired Time-Time Fade

-Peak Search

You can have the play fade out at the end by designating the play duration. Once the time fade is set, it functions twice for editing both sides of a tape. You can change discs without cancelling this function and enjoy it in any play mode other than multi-disc program play.

- 1 Press EDIT/TIME FADE twice during the stop mode. "TIME FADE" and "A" in the tape indicator are displayed in the window.

- 2 Set the desired play duration, using either the TIME SET button or numeric buttons.

- a) TIME SET button - Useful when using commercial tapes (46-, 54-, 60- and 90-minute tapes).
Each time you press TIME SET, the play duration for one side of the tape is displayed as follows.
→ 23.00 → 27.00 → 30.00 → 45.00 → Cancelled

At the same time, the length of a proper commercial tape is indicated above the tape indicator.

- b) Numeric buttons (1 - 10) - Useful when setting the time for one side of the tape as you want.
You need not press buttons for seconds, unless required.

- 3 To start play, press ▶.

Before the unit enters the pause mode at the set time with "B" in the tape indicator lighted in the window, play starts to fade out from 2 to 10 seconds according to the fading duration you have designated.

If you want to start the play fading in

- 1 Press ■.
- The unit enters the pause mode.
Press EDIT/TIME FADE once.
- "TIME FADE" is displayed.
- 3 Set the desired play duration, following the step 2 above.
- 4 To start play, press FADER.
Play will start fading in and end at the set time fading out.

To start play for the other side of the tape

Press ▶, ■, or FADER. (Pressing FADER starts the play fading in.)
When this play ends, time fade is cancelled.

To cancel time fade

Press EDIT/TIME FADE again.
Time fade is also cancelled when ◀◀▶▶ or ▶▶◀◀ or FADER is pressed during play.

To display the time remaining until the time set

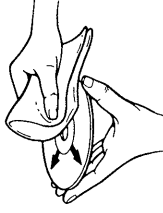
Press TIME twice. In the shuffle play mode, however, the time remaining until the fade-out time is not displayed.

Cleaning Your Unit

Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

Cleaning Discs

When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.



Do not use solvents such as benzene, thinner, commercially available cleaners or anti-static spray intended for analog discs.

Locating the Portion with the Largest Volume

-Peak Search

You can locate the portion with the highest input level to adjust the recording level.

Before starting play, press PEAK SEARCH.

"PEAK" appears in the window and starts blinking as the peak search begins functioning. It takes time for the unit to carry out the peak search. On completing the search, the unit starts repeating the portion with the peak volume.

While the unit is repeating the peak portion

- Press ▶ to start play from the first selection.
- Press ■ to enter the unit into the pause mode at the beginning of the first selection.

To cancel the peak search

Press ■. "PEAK" disappears from the window.

On the peak search

The unit scans input levels of the whole CD and determines the peak (maximum input level) among them. The peak determined with this function is sometimes slightly different from the real one. In addition, portions determined as a peak may vary each time this function is carried out even on the same CD. The difference between the determined and the real peak is, however, negligible enough for you to adjust the recording level.

If you press PEAK SEARCH before delete shuffle or program play

The unit scans the input levels of the chosen selections only.

● Description of IC401 (UPD75212A)

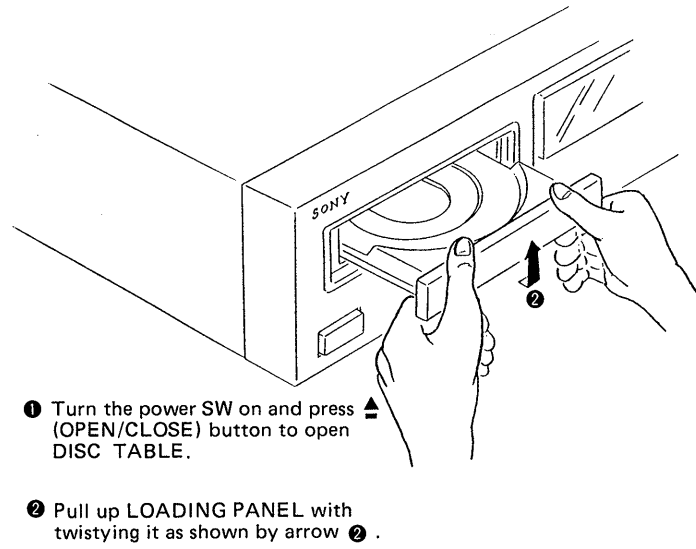
Pin Function

Pin No.	Pin name	I/O	Description
1	d	0	Display segment d
2	c	0	Display segment c
3	b	0	Display segment b
4	a	0	Display segment a
5	SCOR	I	SUB-Q sync input
6	CLK	0	SSP, DSP data clock D/F serial data clock
7	DATA	0	SSP, DSP data D/F (digital filter) attenuate data
8	TIMER	I	0V (Timer start switch)
9	SIRCS	I	Remote commander input
10	—	—	0V
11	ADJ	I	ADJ mode terminal
12	SENSE	I	SSP, DSP sense terminal
13	AFADJ	I	AFADJ mode terminal
14	FOK	I	FOK input
15	GFS	I	GFS input
16	SUBQ	I	SUB-Q serial data
17	SQCLK	0	SUB-Q read clock
18	XLT	0	SSP, DSP data latch pulse
19	PRGL	0	D/F data latch pulse
20	LDON	0	Laser on/off (Laser on "H")
21	KEY0	I	Key scan 0
22	KEY1	I	Key scan 1
23	KEY2	I	Key scan 2
24	KEY3	I	Key scan 3
25	VLUP	0	Line out volume level up output
26	VLDOWN	0	Line out volume level down output
27	LED	0	Line volume LED control terminal
28	AMUTE	0	Audio mute out(mute on "H")
29	DFCTSW	0	DEFECT circuit control terminal
30	X1	—	Main system clock connection
31	X2	—	Main system clock connection
32	Vss	—	GND
33	XT1	—	0V (Sub system clock connection)
34	XT2	—	0V (Sub system clock connection)
35	LODOUT	0	Loading out output
36	LODIN	0	Loading in output
37	OUTSW	I	Loading out switch
38	INSW	I	Loading in switch
39	RESET	I	RESET input
40	8G	0	Display grid 8

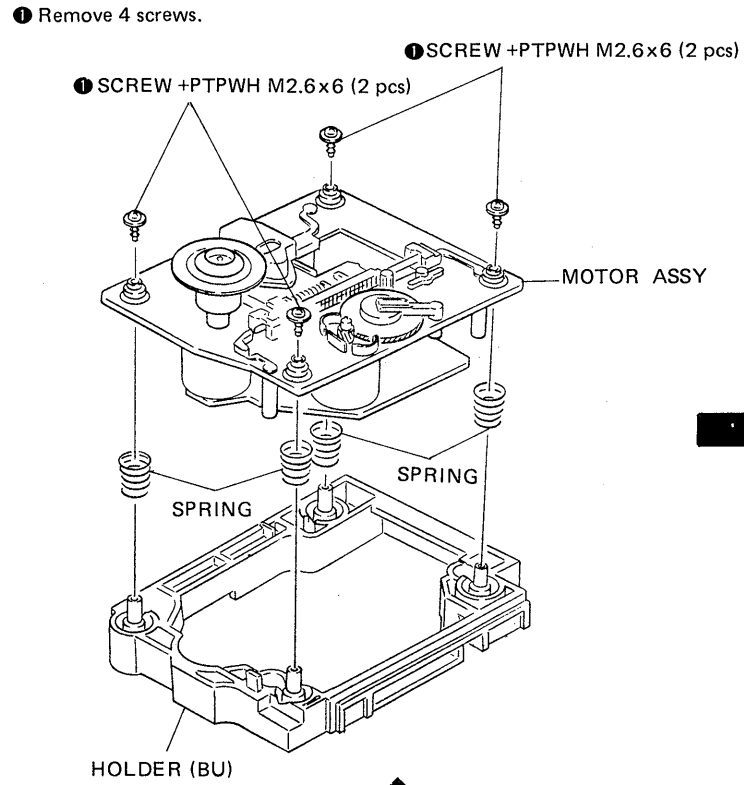
Pin No.	Pin name	I/O	Description
41	7G	0	Display grid 7
42	6G	0	Display grid 6
43	5G	0	Display grid 5
44	4G	0	Display grid 4
45	3G	0	Display grid 3
46	2G	0	Display grid 2
47	1G	0	Display grid 1
48	—	—	No connection
49	—	—	No connection
50	p	0	Display segment p
51	o	0	Display segment o
52	n	0	Display segment n
53	m	0	Display segment m
54	l	0	Display segment l
55	k	0	Display segment k
56	VL0D	I	Display grid, segment low Voltage input
57	VPRE	I	Display grid, segment Voltage supply
58	j	0	Display segment j
59	i	0	Display segment i
60	h	0	Display segment h
61	g	0	Display segment g
62	f	0	Display segment f
63	e	0	Display segment e
64	VDD	I	+5V

SECTION 2 DISASSEMBLY

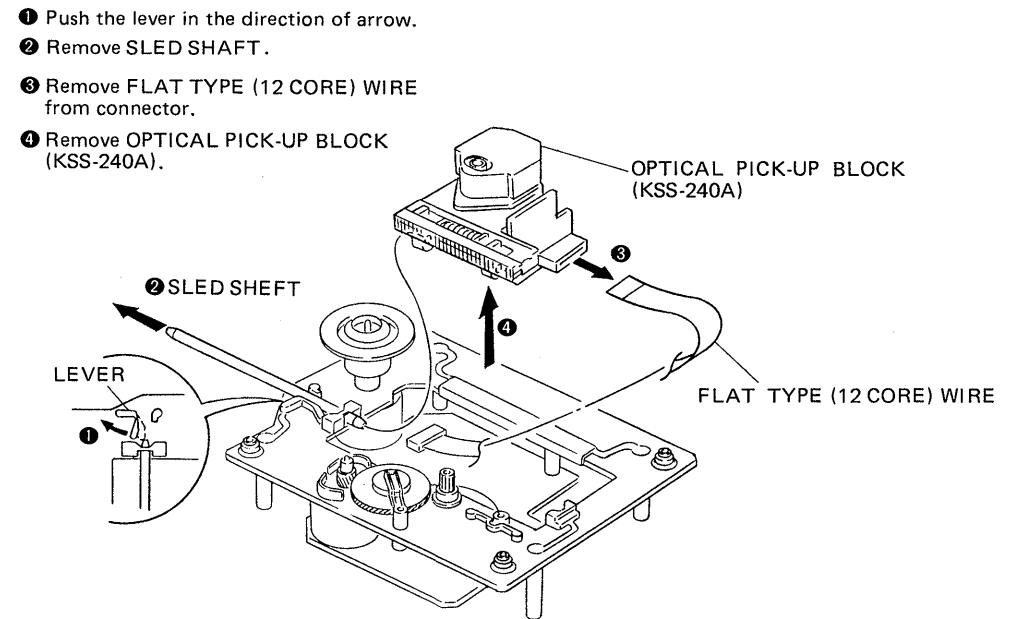
Removal of LOADING PANEL



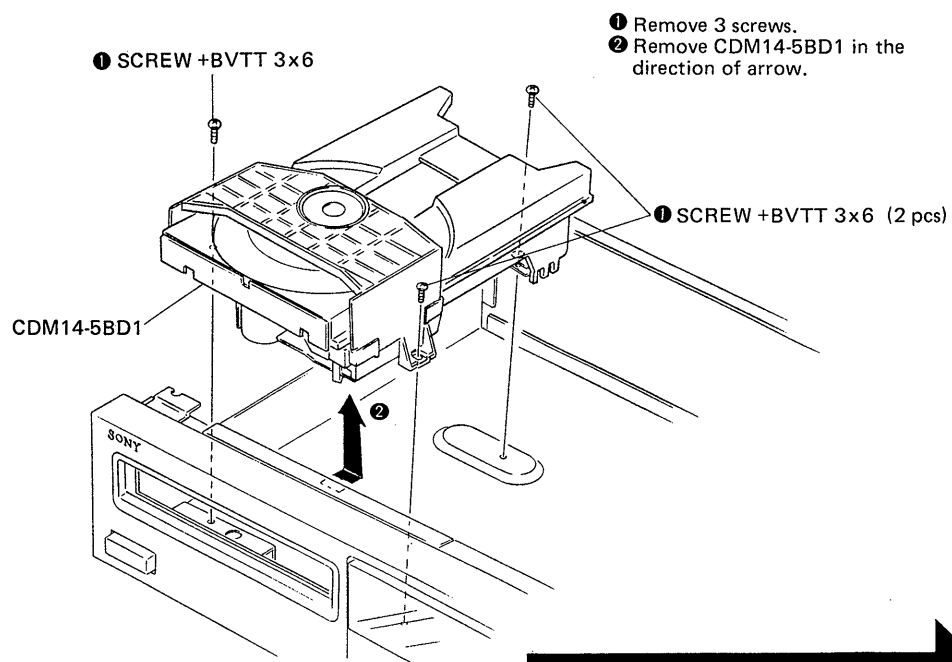
Removal of MOTOR ASSY



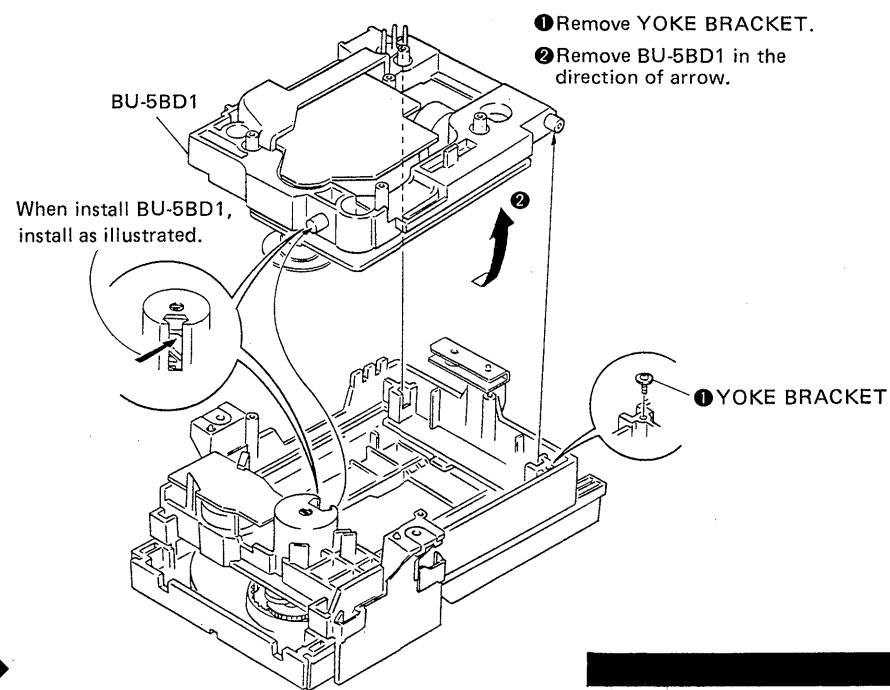
Removal of OPTICAL PICK-UP BLOCK (KSS-240A)



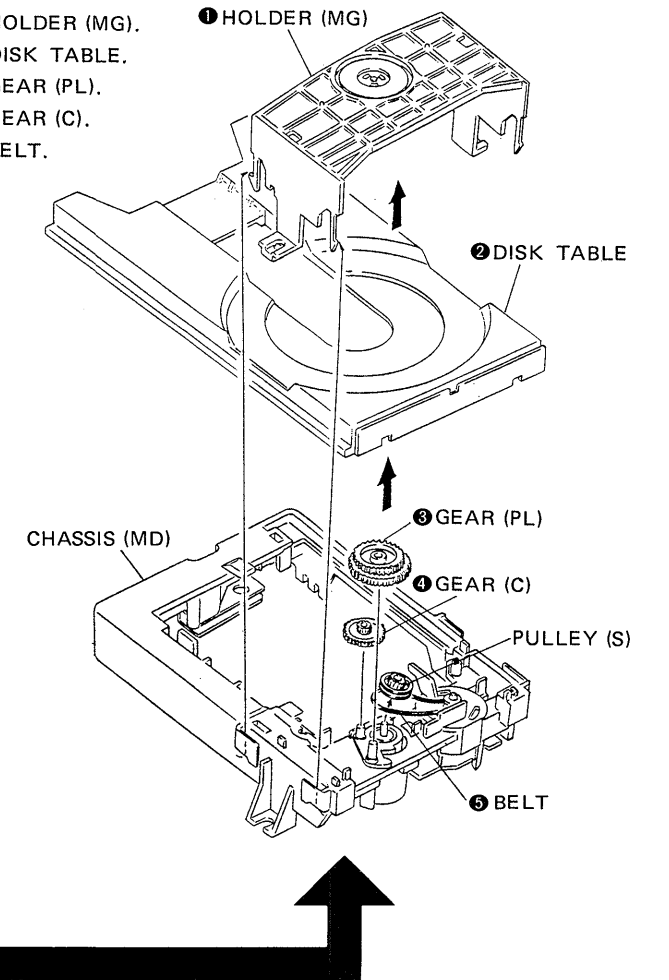
Removal of CD MECHANISM BLOCK (CDM14-5BD1)



Removal of BASE UNIT (BU-5BD1)



Removal of BELT



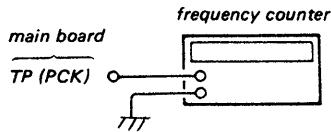
SECTION 3 ADJUSTMENTS

ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No. 3-702-101-01) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.

RF PLL Frequency Check

Procedure:

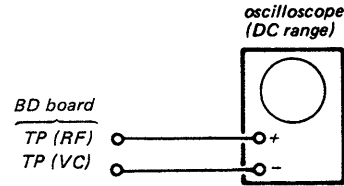


1. Ground test point TP (ASY).
2. Connect the frequency counter to the test points TP (PCK) and GND.
3. Turn POWER switch on.
4. Check of TP (PCK) on the frequency counter is 4.3218MHz ±30kHz.

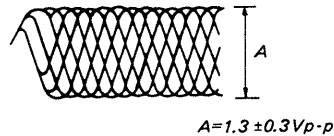
Focus Bias Adjustment

This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



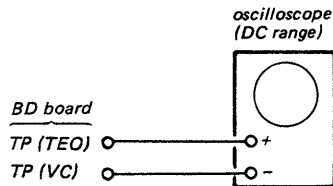
1. Connect oscilloscope to the test points TP (RF) and TP (RF VCG).
2. Turn POWER switch on.
3. Put the disc (YEDS-18) in and press ▷ button.
4. Check for an optimum waveform eye pattern. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.



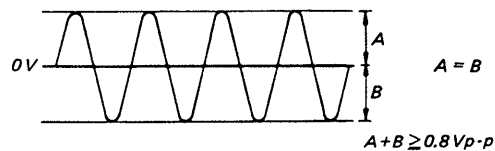
E-F Balance Adjustment

This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



1. TP (ADJ) and TP (TES) connect to the GND.
2. Connect the oscilloscope to the test points TP (TEO).
3. Turn POWER switch on.
4. Put the disc (YEDS-18) in and press ▷ button.
5. Check the traverse waveform is symmetrical above and below the 0V line.
6. After adjustment, cancel the adjustment mode.



Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, this adjustment is not recommended generally to be performed.

Focus/tracking gains determine the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

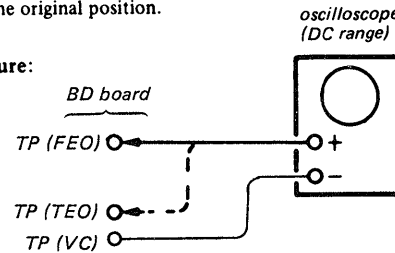
Symptoms	Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▶PLAY or automatic selection (◀▶▶▶ buttons pressed. (Normally takes about 2 seconds.)		low	low or high
• Music does not start and disc continues to rotate for STOP →▶PLAY or automatic selection (◀▶▶▶ buttons pressed.)		-	low
• Disc table opens shortly after STOP →▶PLAY.		low or high	-
• Sound is interrupted during PLAY. Or time counter display stops progressing.		-	low
• More poise during 2-axis device operation.		high	high

The following is a simple adjustment method.

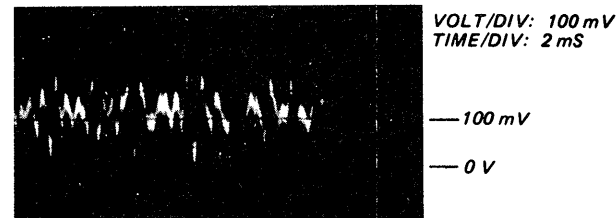
- Simple Adjustment -

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

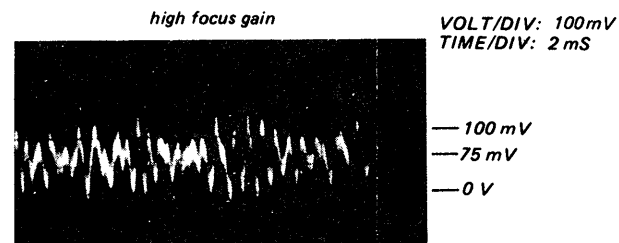
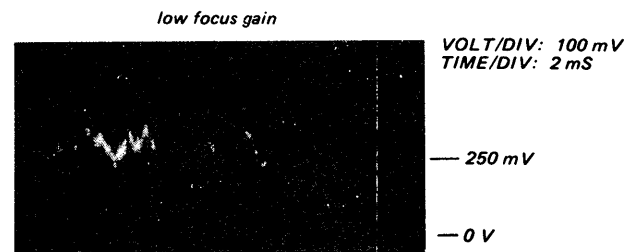
Procedure:



1. Keep the set flat.
If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
2. Insert the disc (YEDS-18) and press ▶ PLAY button.
3. Connect the oscilloscope to TP (FEO) and TP (FEO).
4. Adjustment RV101 so that the waveform is as shown in the picture below. (focus gain adjustment)

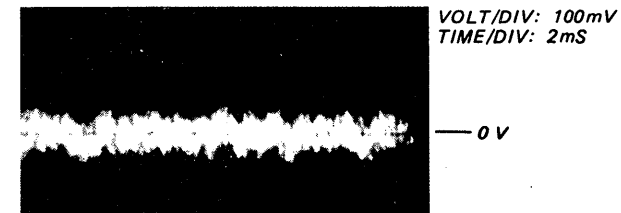


- Incorrect Examples (DC level is quite different from the adjusted waveform) (below)

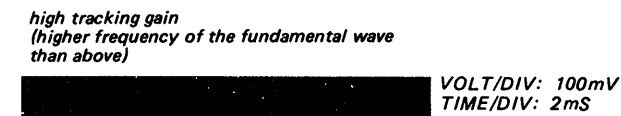
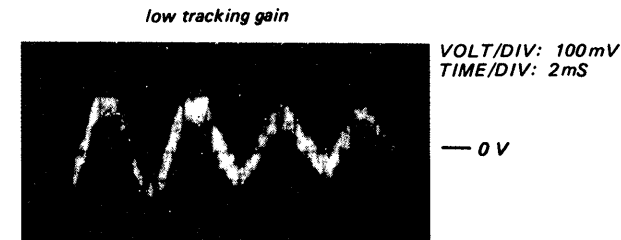


5. Connect the oscilloscope to TP (TEO).

6. Adjust RV102 so that the waveform is as shown in the picture below. (tracking gain adjustment)

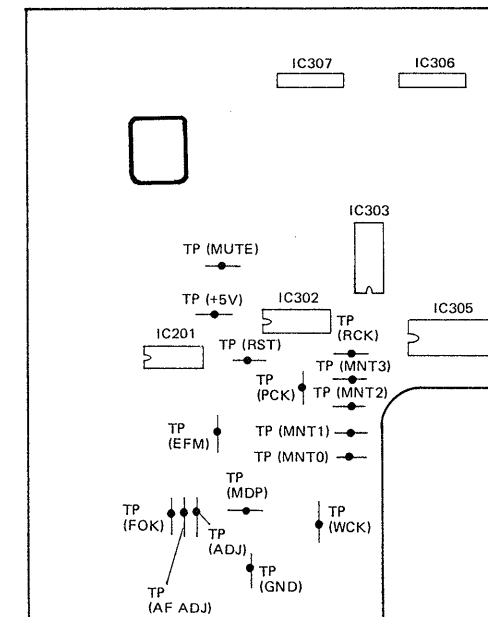


- Incorrect Examples (fundamental wave appears)



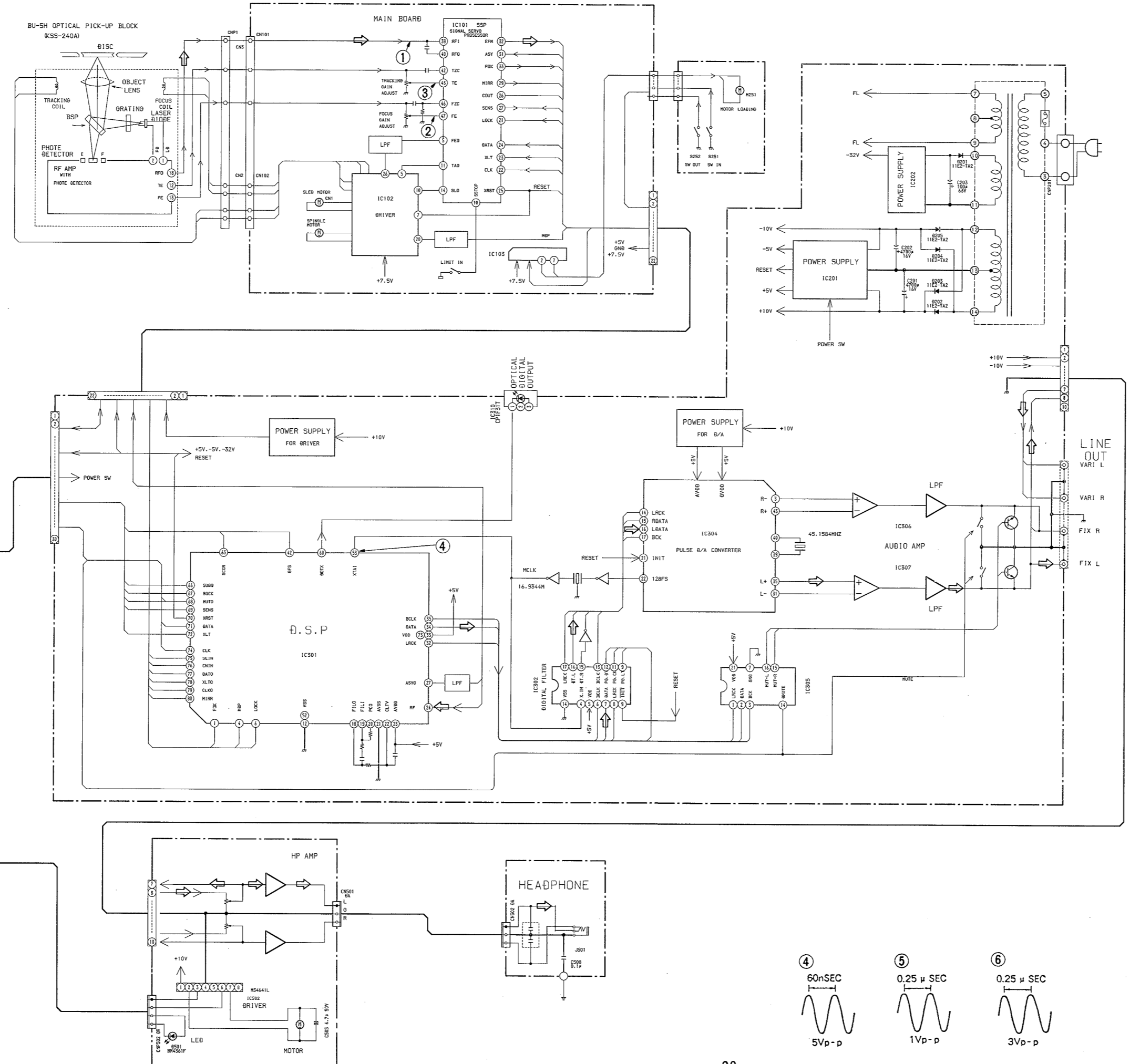
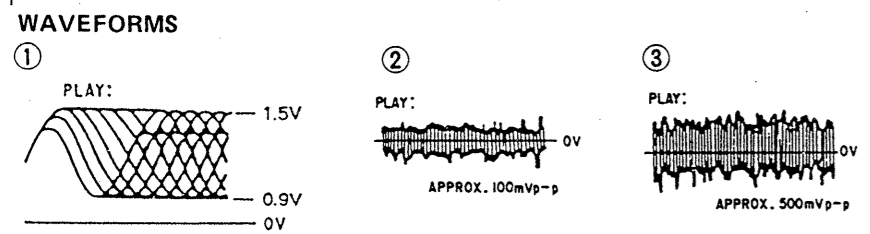
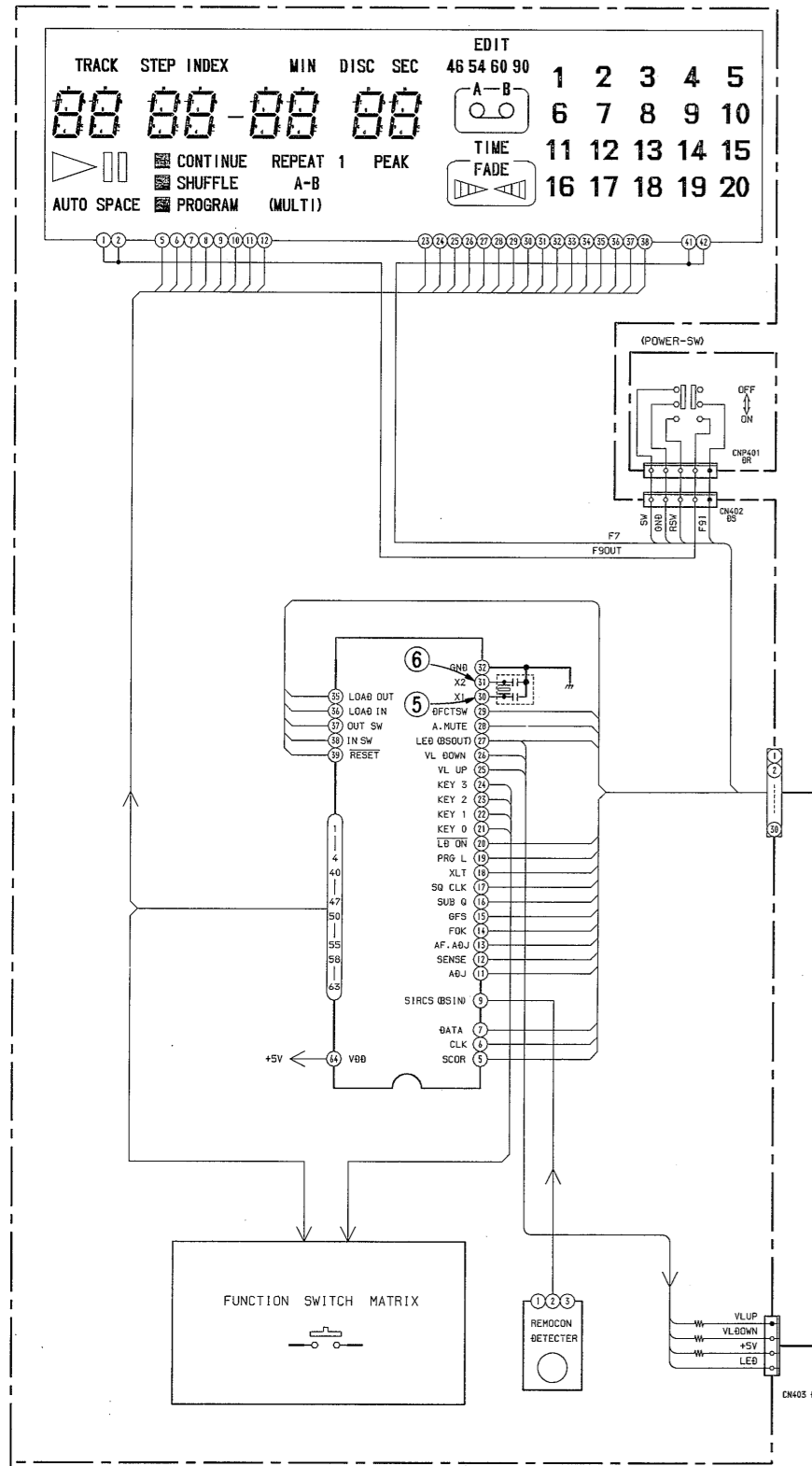
Adjustment Location:

MAIN BOARD - Component Side -

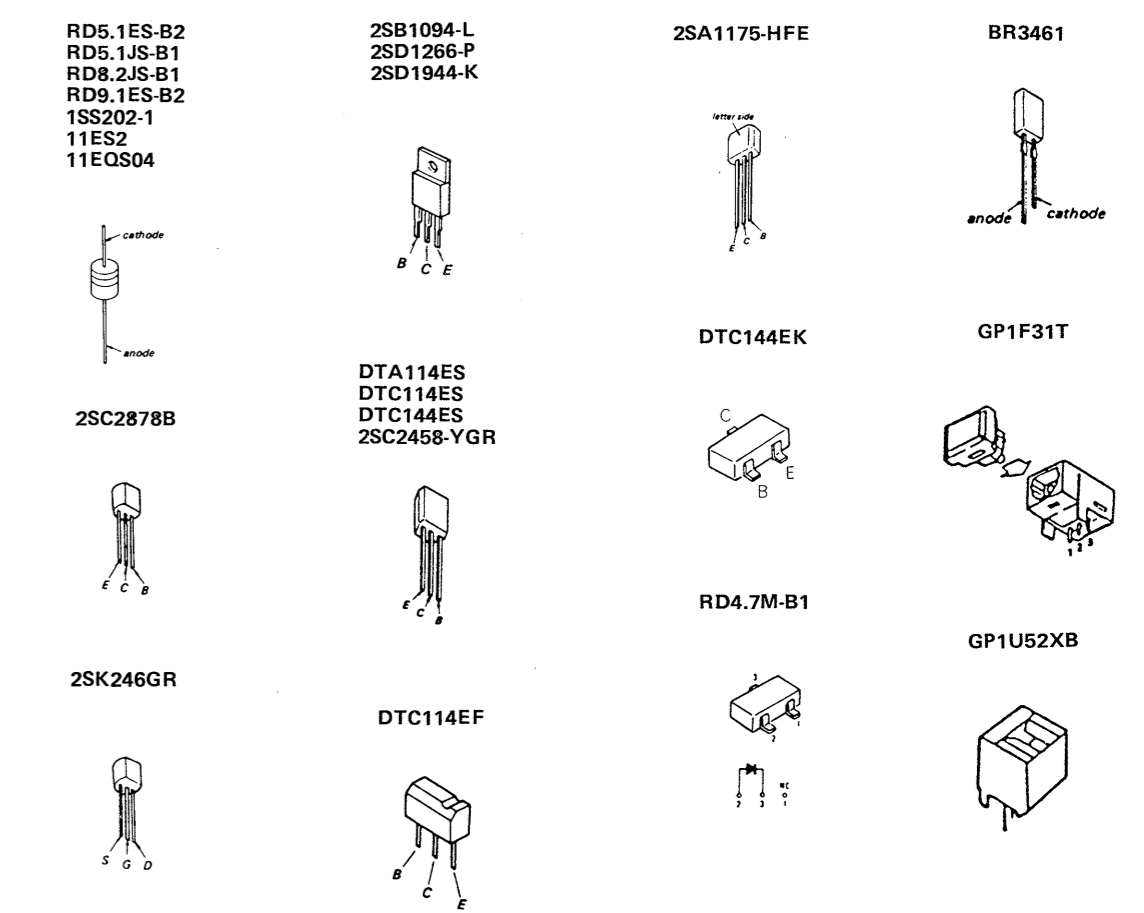


**SECTION 4
DIAGRAMS**

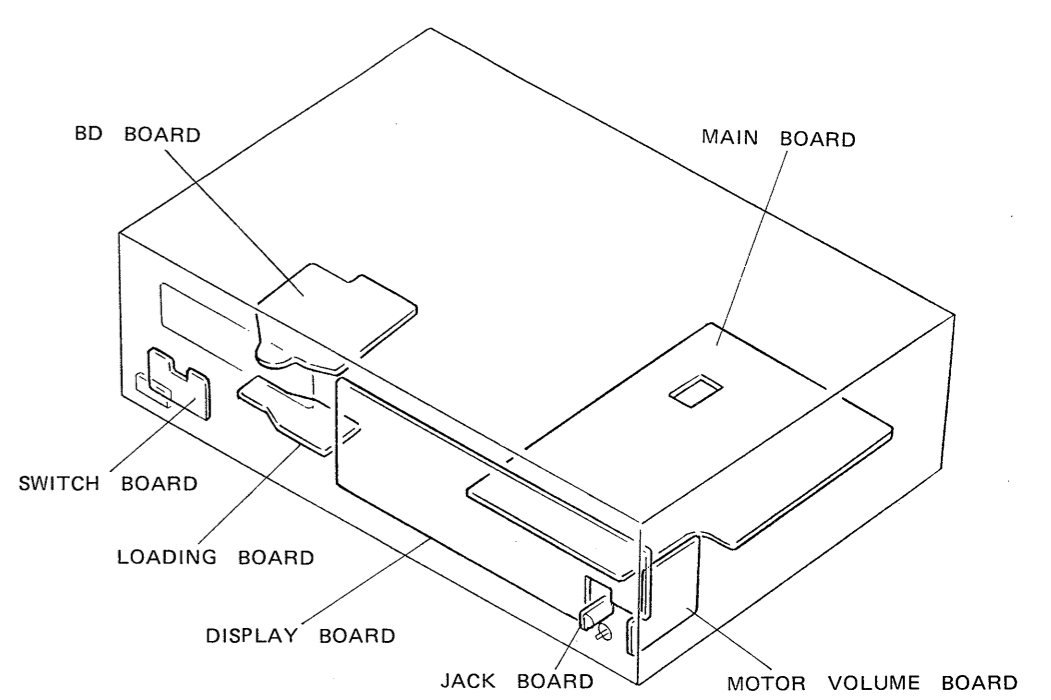
4-1. BLOCK DIAGRAM



4-2. SEMICONDUCTOR LEAD LAYOUTS



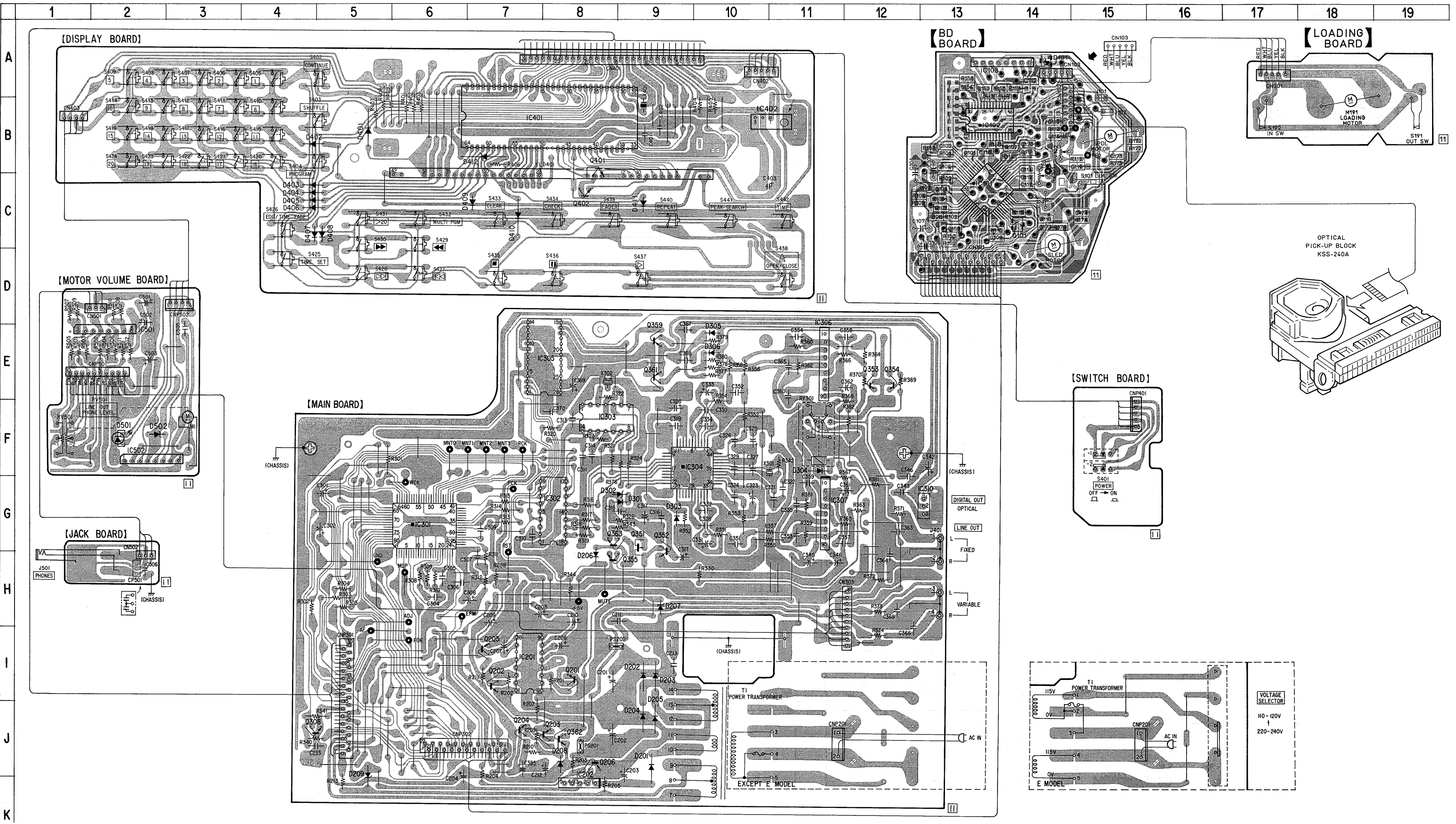
4-3. CIRCUIT BOARDS LOCATION



4-4. PRINTED WIRING BOARDS
 ● See page 19 for semiconductor lead layouts.

● Semiconductor Location

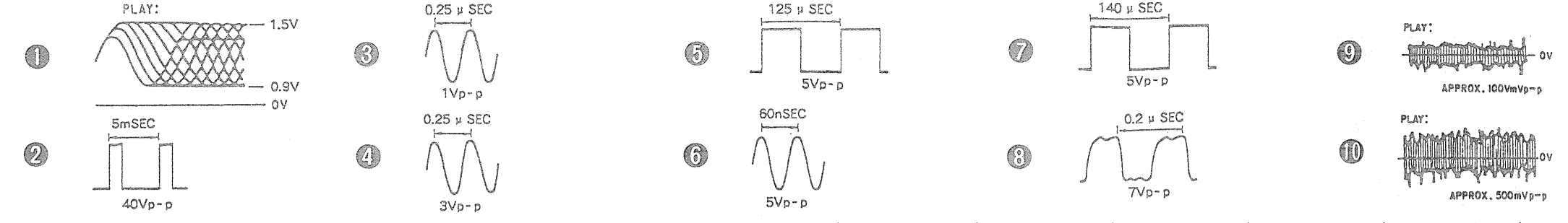
Ref. No.	Location	Ref. No.	Location
D101	A-14	IC201	I-7
D201	J-9	IC202	J-8
D202	I-9	IC301	G-6
D203	I-9	IC302	G-8
D204	J-9	IC303	F-8
D205	I-9	IC304	F-9
D206	H-8	IC305	E-8
D207	H-9	IC306	E-11
D208	J-8	IC307	G-11
D209	J-5	IC310	G-13
D301	G-9	IC401	B-7
D302	G-8	IC402	B-10
D303	G-9	IC501	E-2
D304	F-11	IC502	F-2
D305	E-10		
D306	E-10	Q101	C-14
D401	B-5	Q201	I-8
D402	B-4	Q202	I-7
D403	C-4	Q203	J-8
D404	C-4	Q204	J-7
D405	C-4	Q205	I-7
D406	C-4	Q206	J-8
D407	C-4	Q308	J-4
D408	C-5	Q351	G-9
D409	C-7	Q352	G-9
D410	C-7	Q353	E-12
D411	C-9	Q354	E-12
D412	B-7	Q355	H-9
D501	F-2	Q359	E-9
D502	F-2	Q361	E-9
		Q362	J-8
IC101	C-13	Q363	G-8
IC102	B-13	Q401	B-8
IC103	A-13	Q402	C-8



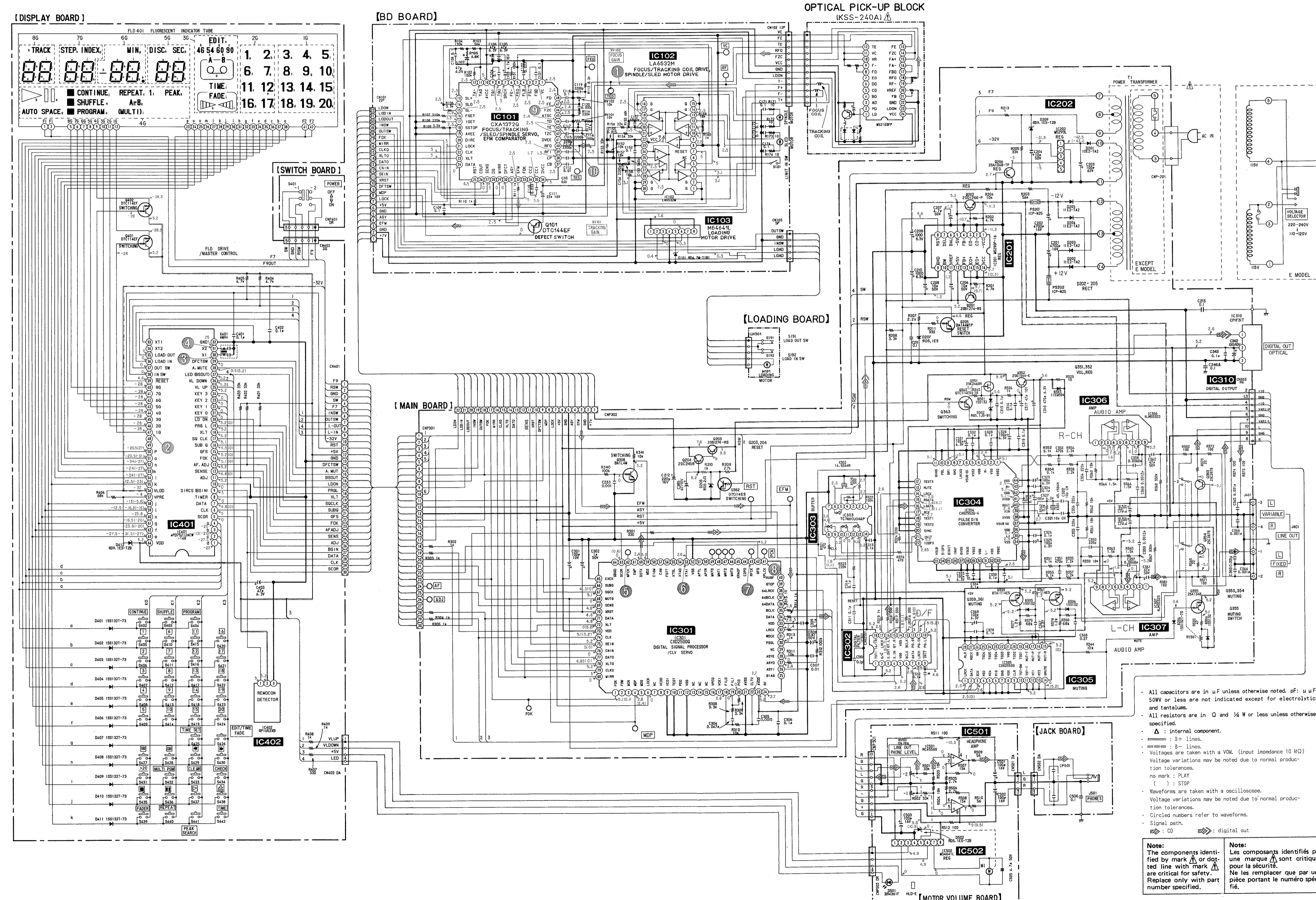
○ : parts extracted from the component side.
 ● : parts mounted on the conductor side.
 ◐ : Through hole.
 [Pattern] : Pattern on the side which is seen.
 [Pattern] : Pattern of the rear side.

4-5. SCHEMATIC DIAGRAM
 See page 26 for IC block diagram.

WAVEFORMS



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21



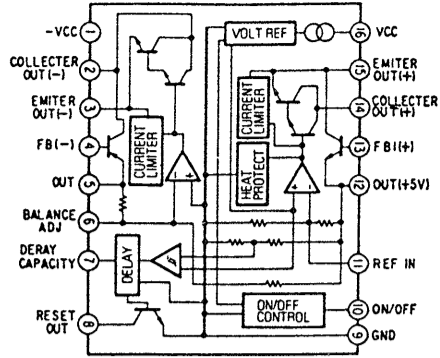
- All capacitors are in μF unless otherwise noted. pF : μF 50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}$ W or less unless otherwise specified.
- Δ : internal component.
- --- : 8+ lines.
- --- : 8- lines.
- Voltages are taken with a VOM. (input impedance 10 $\text{M}\Omega$) Voltage variations may be noted due to normal production tolerances.
- no mark: PLAY
- () : STOP
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- --- : CD
- --- : digital out

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

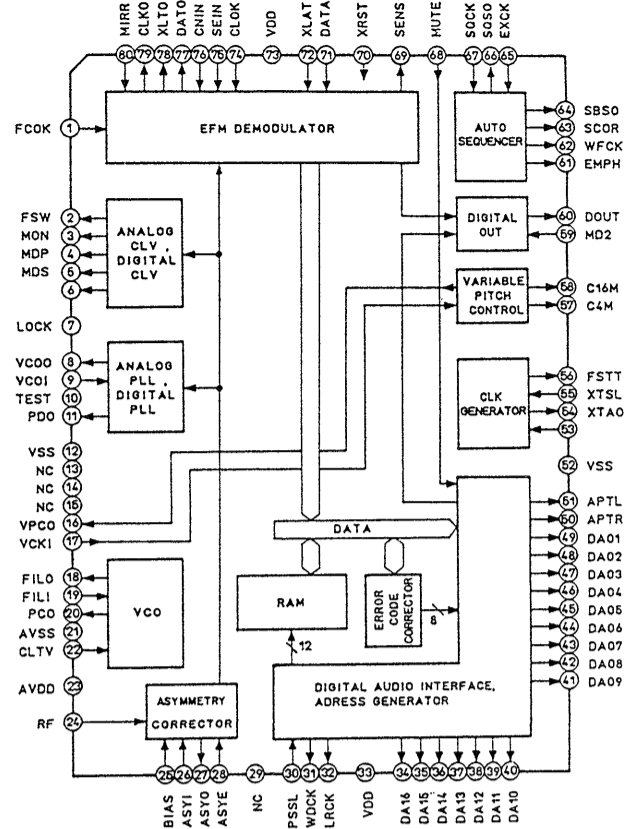
Note: Les composants identifiés par une marque Δ ou une ligne pointillée avec une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

4-6. IC BLOCK DIAGRAM

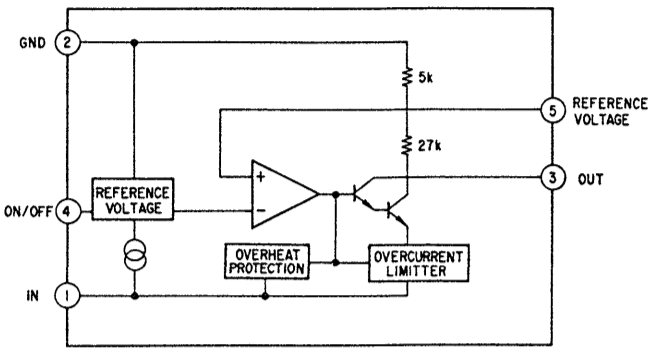
IC201 M5290P-16



IC301 CXD2500Q

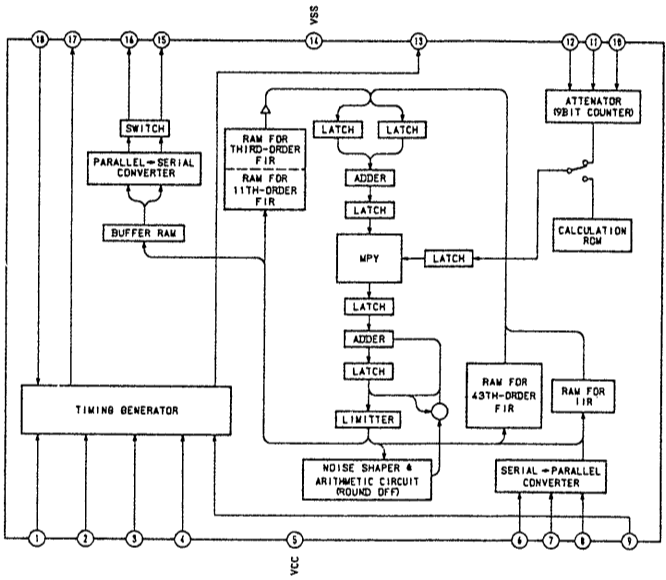


IC202 M5293L

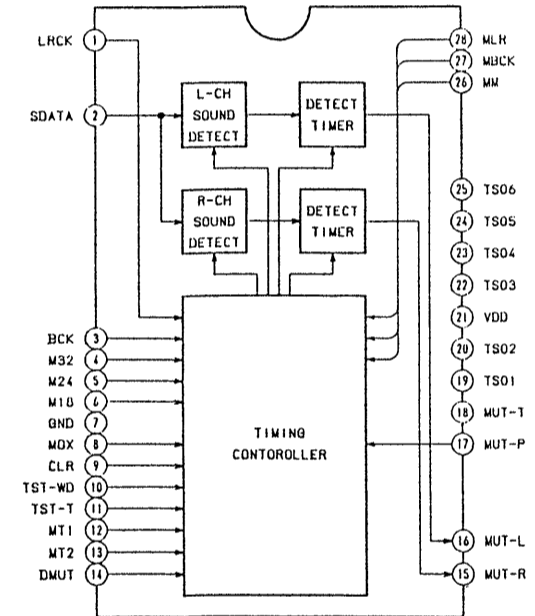


CDP-209ES/790

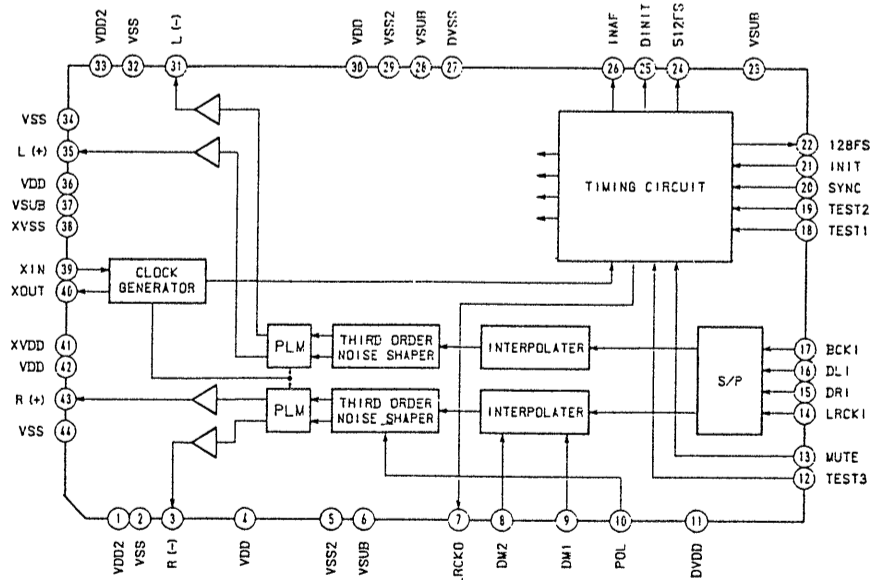
IC302 CXD2551P



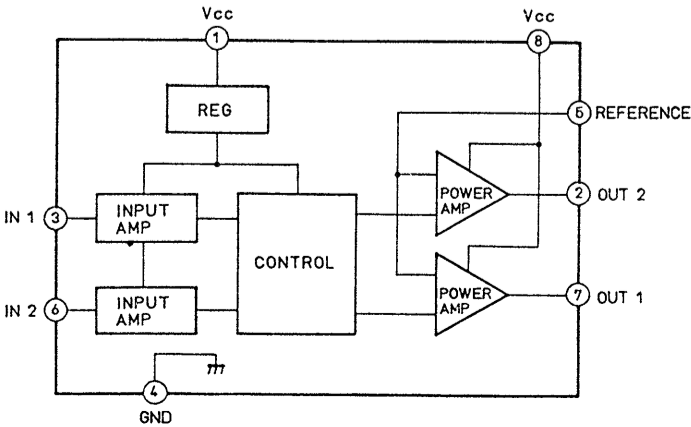
IC305 CXD2553S



IC304 CXD2552Q



IC502 M54641L



SECTION 5 EXPLODED VIEWS

**SEE ADDITIONAL
SEE INFORMATION**

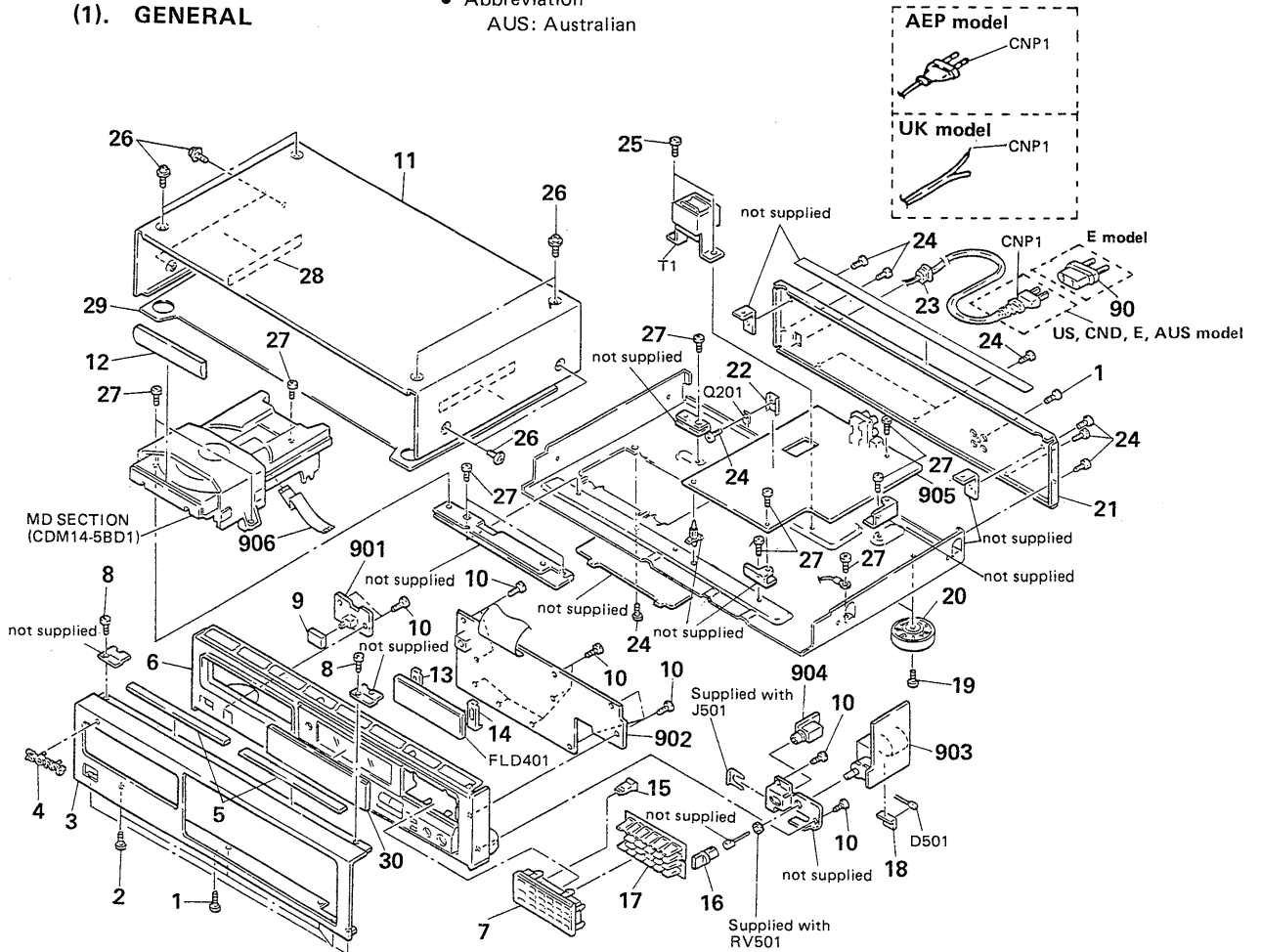
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
(RED) ... KNOB, BALANCE (WHITE)
↑ Cabinet's Color ↑ Parts' Color
- Abbreviation
AUS: Australian

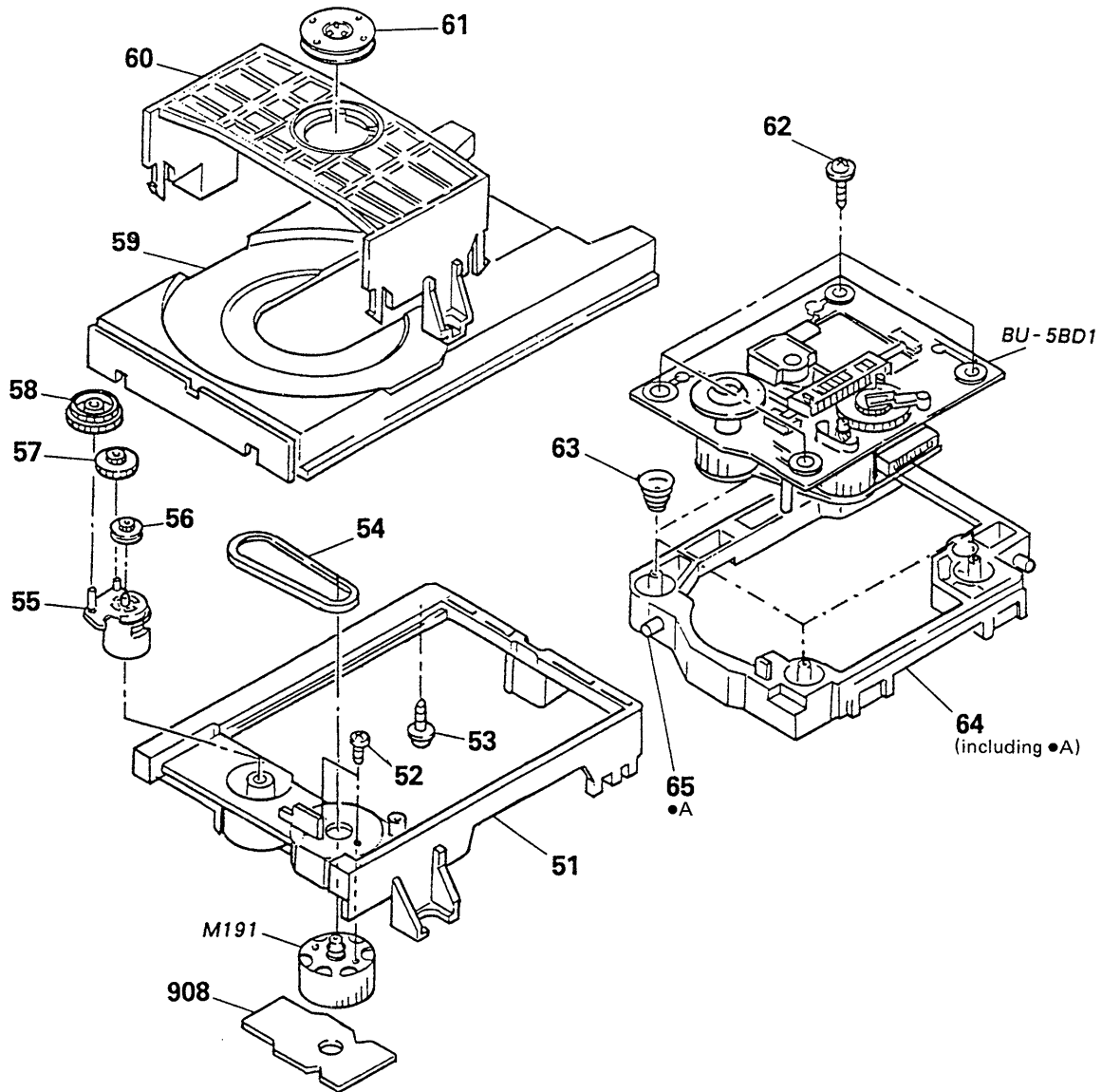
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



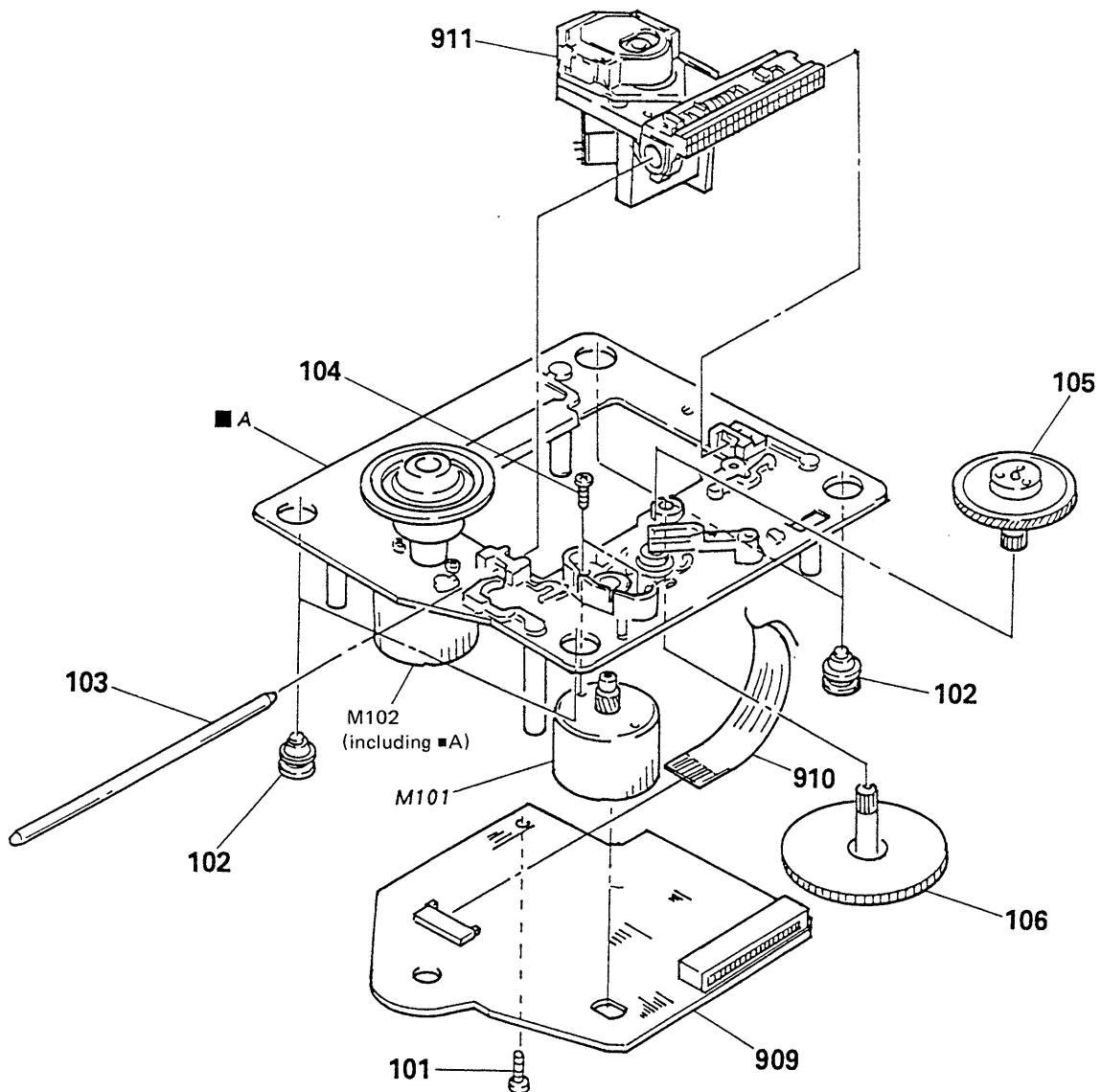
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		22	*4-886-555-00	HEAT SINK	
2	3-703-685-21	SCREW +BV 3X8		23	*3-703-244-00	(EXCEPT E)...BUSHING (2104), CORD	
3	4-929-515-12	(Canadian).....PANEL (FRONT)			*3-703-571-11	(E).....BUSHING (S) (4516), CORD	
	4-929-515-22	(US).....PANEL (FRONT)		24	7-682-547-09	SCREW +BVTT 3X6 (S)	
	4-929-515-31	(AEP,UK,E,AUS)...PANEL (FRONT)		25	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6	
4	4-908-848-01	EMBLEM, SONY		26	3-704-366-31	SCREW (CASE) (M3X6)	
5	*4-929-557-01	CUSHION (PANEL)		27	7-682-547-04	SCREW +BVTT 3X6 (S)	
6	X-4922-923-1	(EXCEPT Canadian)...PANEL (SUB) ASSY		28	4-929-561-01	CUSHION (CASE)	
	X-4922-928-1	(Canadian).....PANEL (SUB) ASSY		29	*4-929-571-01	(US)...REINFORCEMENT (CASE)	
7	4-929-528-01	ESCUTCHEON (23)		30	4-929-522-01	PLATE, INDICATION	
8	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S		901	*1-632-491-11	PC BOARD, SWITCH	
9	4-922-921-01	BUTTON (POWER)		902	*A-4617-184-A	(US,Canadian,E,AUS)...MOUNTED PCB, DISP	
10	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S			*A-4617-312-A	(AEP,UK).....MOUNTED PCB, DISP	
11	4-929-529-01	CASE		903	*A-4617-186-A	MOUNTED PCB, MVR	
12	4-929-521-01	(EXCEPT Canadian)...PANEL, LOADING		904	*1-632-490-11	PC BOARD, JACK	
	4-929-521-21	(Canadian).....PANEL, LOADING		905	*A-4617-396-A	MOUNTED PCB, MAIN	
13	*4-922-524-01	HOLDER (LEFT)		906	1-575-002-11	WIRE, FLAT TYPE (22 CORE)	
14	*4-922-523-01	HOLDER (RIGHT)		907	.1-526-565-00	(E)...AC PLUG ADAPTOR	
15	4-929-531-01	BUTTON (C)		CNP1	.1-575-104-11	(E).....CORD, POWER	
16	A-4675-298-A	KNOB (HP) ASSY		CNP1	.1-575-105-11	(US,Canadian)...CORD, POWER	
17	4-929-527-01	BUTTON (M/C)		CNP1	.1-575-452-11	(UK).....CORD, POWER	
18	*4-922-980-01	HOLDER (LED)		CNP1	.1-575-453-11	(AEP).....CORD, POWER	
19	7-682-548-09	SCREW +BVTT 3X8 (S)		CNP1	.1-575-677-11	(AUS).....CORD, POWER	
20	X-3304-938-2	(EXCEPT Canadian)...FOOT ASSY		T1	.1-449-921-11	(US,Canadian)...TRANSFORMER, POWER	
	X-4885-950-1	(Canadian).....FOOT ASSY		T1	.1-449-922-11	(AEP,UK,AUS)....TRANSFORMER, POWER	
21	*4-929-513-31	(US).....PANEL, BACK		T1	.1-449-923-11	(E).....TRANSFORMER, POWER	
	*4-929-513-41	(Canadian)...PANEL, BACK					
	*4-929-513-51	(AEP).....PANEL, BACK					
	*4-929-513-61	(UK,AUS).....PANEL, BACK					
	*4-929-513-71	(E).....PANEL, BACK					

(2). MECHANISM
(CDM14-5BD1)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	4-933-111-01	CHASSIS (MD)		60	4-933-110-01	HOLDER (MG)	
52	7-621-775-10	SCREW +B 2.6X4		61	A-4675-347-A	MG ASSY	
53	*4-917-583-21	BRACKET, YOKE		62	4-933-134-01	SCREW (+PTPHW M2.6X6)	
54	4-927-649-01	BELT		63	4-917-541-01	SPRING (B)	
55	4-933-109-01	CAM		64	4-933-129-01	HOLDER (BU)	
56	4-927-651-01	PULLEY (S)		65	4-933-108-01	SHAFT (CAM)	
57	4-927-628-01	GEAR (C)		908	*1-632-202-11	PC BOARD, LOADING	
58	4-933-107-01	GEAR (PL)		M191	A-4604-363-A	MOTOR (L) ASSY	
59	4-933-112-01	TABLE, DISK					

(3). PICK UP BLOCK
(BU-5BD1)



<p>Note: The components identified by mark \triangle or dotted line with mark \triangle are critical for safety. Replace only with part number specified.</p>	<p>Note: Les composants identifiés par une marque \triangle sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
101	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S		909	*A-4617-161-A	MOUNTED PCB, BD	
102	4-933-126-01	INSULATOR (A)		910	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
103	4-917-565-01	SHAFT, SLED		911	\triangle .8-848-144-11	DEVICE, OPTICAL KSS-240A	
104	7-621-255-15	SCREW +P 2X3		M101	X-4917-504-1	MOTOR ASSY (SLED)	
105	4-917-567-01	GEAR (M)		M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	
106	4-917-564-01	GEAR (P), FLATNESS					

SECTION 6 ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF: μ F, PF: μ F.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:

UA....: μ A..., UPA....: μ PA...,

UPC....: μ PC, UPD....: μ PD...

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

Les composants identifiés par une marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
C206	1-126-059-11	ELECT	10MF	20%	50V	901	*1-632-491-11	PC BOARD, SWITCH			
C207	1-124-045-00	ELECT	4.7MF	20%	50V	902	*A-4617-184-A	(US,Canadian,E,AUS)..MOUNTED PCB, DISP			
C208	1-126-059-11	ELECT	10MF	20%	50V		*A-4617-312-A	(AEP,UK).....MOUNTED PCB, DISP			
C209	1-124-471-00	ELECT	1000MF	20%	6.3V	903	*A-4617-186-A	MOUNTED PCB, MVR			
C210	1-124-471-00	ELECT	1000MF	20%	6.3V	904	*1-632-490-11	PC BOARD, JACK			
C211	1-164-159-11	CERAMIC	0.1MF		50V	905	*A-4617-396-A	MOUNTED PCB, MAIN			
C212	1-126-024-11	ELECT	220MF	20%	16V	906	1-575-002-11	WIRE, FLAT TYPE (22 CORE)			
C213	1-164-159-11	CERAMIC	0.1MF		50V	907	1-526-565-00	(E)...AC PLUG ADAPTOR			
C233	1-162-294-31	CERAMIC	0.001MF	10%	50V	908	*1-632-202-11	PC BOARD, LOADING			
C301	1-124-994-11	ELECT	100MF	20%	10V	909	*A-4617-161-A	MOUNTED PCB, BD			
C302	1-126-301-11	ELECT	1MF	20%	50V	910	1-575-001-11	WIRE, FLAT TYPE (12 CORE)			
C304	1-136-161-00	FILM	0.047MF	5%	50V	911	8-848-144-11	DEVICE, OPTICAL KSS-240A			
C305	1-161-374-11	CERAMIC	0.0015MF	30%	16V	C101	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C306	1-164-159-11	CERAMIC	0.1MF		50V	C102	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V	
C307	1-162-306-11	CERAMIC	0.01MF	20%	16V	C103	1-126-094-11	ELECT 4.7MF	20%	16V	
C308	1-126-300-11	ELECT	0.47MF	20%	50V	C104	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C309	1-164-159-11	CERAMIC	0.1MF		50V	C105	1-126-154-11	ELECT 47MF	20%	6.3V	
C310	1-164-159-11	CERAMIC	0.1MF		50V	C106	1-126-154-11	ELECT 47MF	20%	6.3V	
C311	1-164-159-11	CERAMIC	0.1MF		50V	C107	1-126-154-11	ELECT 47MF	20%	6.3V	
C312	1-164-159-11	CERAMIC	0.1MF		50V	C108	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C313	1-136-742-11	FILM	0.1MF	5%	50V	C109	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C314	1-136-742-11	FILM	0.1MF	5%	50V	C110	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V	
C315	1-136-742-11	FILM	0.1MF	5%	50V	C111	1-131-367-00	TANTALUM 22MF	20%	16V	
C316	1-136-742-11	FILM	0.1MF	5%	50V	C112	1-164-232-11	GERAMIC CHIP 0.01MF	10%	50V	
C317	1-126-022-11	ELECT	47MF	20%	10V	C113	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C318	1-124-472-11	ELECT	470MF	20%	6.3V	C114	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	
C319	1-136-742-11	FILM	0.1MF	5%	50V	C115	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	
C320	1-124-443-00	ELECT	100MF	20%	6.3V	C116	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	
C321	1-162-199-31	CERAMIC	10PF	5%	50V	C117	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C322	1-162-199-31	CERAMIC	10PF	5%	50V	C118	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C323	1-124-443-00	ELECT	100MF	20%	6.3V	C119	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	
C324	1-136-742-11	FILM	0.1MF	5%	50V	C120	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V	
C325	1-124-443-00	ELECT	100MF	20%	6.3V	C151	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V	
C326	1-136-742-11	FILM	0.1MF	5%	50V	C152	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C327	1-124-443-00	ELECT	100MF	20%	6.3V	C153	1-163-135-00	CERAMIC CHIP 560PF	10%	50V	
C328	1-136-742-11	FILM	0.1MF	5%	50V	C154	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V	
C329	1-136-742-11	FILM	0.1MF	5%	50V	C155	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V	
C330	1-136-742-11	FILM	0.1MF	5%	50V	C171	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C331	1-124-443-00	ELECT	100MF	20%	6.3V	C172	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C332	1-136-742-11	FILM	0.1MF	5%	50V	C173	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C333	1-124-443-00	ELECT	100MF	20%	6.3V	C174	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C334	1-136-742-11	FILM	0.1MF	5%	50V	C201	1-126-842-11	ELECT 4700MF	20%	16V	
C342	1-124-994-11	ELECT	100MF	20%	10V	C202	1-126-842-11	ELECT 4700MF	20%	16V	
C343	1-164-159-11	CERAMIC	0.1MF		50V	C203	1-126-880-11	ELECT 100MF	20%	63V	
C345	1-124-472-11	ELECT	470MF	20%	6.3V	C204	1-126-059-11	ELECT 10MF	20%	50V	

Ref.No.	Part No.	Description			
C346	1-124-472-11	ELECT	470MF	20%	6.3V
C346A	1-164-159-11	CERAMIC	0.1MF		50V
C351	1-136-478-11	FILM	470PF	5%	630V
C352	1-136-478-11	FILM	470PF	5%	630V
C353	1-136-437-11	FILM	220PF	5%	630V
C354	1-136-437-11	FILM	220PF	5%	630V
C355	1-136-437-11	FILM	220PF	5%	630V
C356	1-136-437-11	FILM	220PF	5%	630V
C357	1-130-856-00	FILM	0.0068MF	5%	100V
C358	1-130-856-00	FILM	0.0068MF	5%	100V
C359	1-136-228-11	FILM	0.0012MF	5%	100V
C360	1-136-228-11	FILM	0.0012MF	5%	100V
C361	1-126-051-11	ELECT	47MF	20%	50V
C362	1-126-051-11	ELECT	47MF	20%	50V
C363	1-136-250-11	FILM	0.001MF	5%	100V
C364	1-136-250-11	FILM	0.001MF	5%	100V
C365	1-136-250-11	FILM	0.001MF	5%	100V
C366	1-136-250-11	FILM	0.001MF	5%	100V
C367	1-136-170-00	FILM	0.27MF	5%	50V
C368	1-136-170-00	FILM	0.27MF	5%	50V
C369	1-124-443-00	ELECT	100MF	20%	6.3V
C370	1-164-159-11	CERAMIC	0.1MF		50V
C385	1-126-022-11	ELECT	47MF	20%	10V
C401	1-164-159-11	CERAMIC	0.1MF		50V
C402	1-164-159-11	CERAMIC	0.1MF		50V
C403	1-126-154-11	ELECT	47MF	20%	6.3V
C501	1-126-023-11	ELECT	100MF	20%	16V
C502	1-126-023-11	ELECT	100MF	20%	16V
C503	1-126-023-11	ELECT	100MF	20%	16V
C505	1-124-768-11	ELECT	4.7MF	20%	50V
C506	1-164-159-11	CERAMIC	0.1MF		50V
CN101	1-568-796-11	SOCKET, CONNECTOR 22P			
CN102	1-568-795-11	SOCKET, CONNECTOR 12P			
CN103	*1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CN301	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CN401	1-535-799-11	JUMPER, FILM (WITH TERMINAL)			
CN501	*1-564-712-11	PIN, CONNECTOR (SMALL TYPE) 10P			
CNP1	△.1-575-104-11	(E).....CORD, POWER			
CNP1	△.1-575-105-11	(US,Canadian)...CORD, POWER			
CNP1	△.1-575-452-11	(UK).....CORD, POWER			
CNP1	△.1-575-453-11	(AEP).....CORD, POWER			
CNP1	△.1-575-677-11	(AUS).....CORD, POWER			
CNP201	*1-564-321-00	PIN, CONNECTOR 2P			
CNP301	*1-568-933-11	SOCKET, CONNECTOR 30P			
CNP302	*1-568-822-11	SOCKET, CONNECTOR 22P			
CNP303	*1-564-712-11	PIN, CONNECTOR (SMALL TYPE) 10P			
CNP401	*1-564-339-00	PIN, CONNECTOR 5P			
CNP502	*1-564-338-00	PIN, CONNECTOR 4P			
CP501	1-233-202-11	COMPOSITION CIRCUIT BLOCK			
D101	8-719-105-72	DIODE RD4.7M-B1			
D201	8-719-200-82	DIODE 11ES2			
D202	8-719-200-82	DIODE 11ES2			
D203	8-719-200-82	DIODE 11ES2			
D204	8-719-200-82	DIODE 11ES2			
D205	8-719-200-82	DIODE 11ES2			
D206	8-719-107-94	DIODE 1SS202-1			
D207	8-719-109-85	DIODE RD5.1ES-B2			
D208	8-719-114-52	DIODE RD8.2JS-B1			

Ref.No.	Part No.	Description			
D209	8-719-110-13	DIODE RD9.1ES-B2			
D301	8-719-107-94	DIODE 1SS202-1			
D302	8-719-114-29	DIODE RD5.1JS-B1			
D303	8-719-210-21	DIODE 11EQS04			
D304	8-719-107-94	DIODE 1SS202-1			
D305	8-719-107-94	DIODE 1SS202-1			
D306	8-719-107-94	DIODE 1SS202-1			
D401	8-719-107-94	DIODE 1SS202-1			
D402	8-719-107-94	DIODE 1SS202-1			
D403	8-719-107-94	DIODE 1SS202-1			
D404	8-719-107-94	DIODE 1SS202-1			
D405	8-719-107-94	DIODE 1SS202-1			
D406	8-719-107-94	DIODE 1SS202-1			
D407	8-719-107-94	DIODE 1SS202-1			
D408	8-719-107-94	DIODE 1SS202-1			
D409	8-719-107-94	DIODE 1SS202-1			
D410	8-719-107-94	DIODE 1SS202-1			
D411	8-719-107-94	DIODE 1SS202-1			
D412	8-719-110-13	DIODE RD9.1ES-B2			
D501	8-719-970-49	DIODE BR4361F			
D502	8-719-109-85	DIODE RD5.1ES-B2			
FLD401	1-519-555-11	INDICATOR TUBE, FLUORESCENT			
IC101	8-752-037-33	IC CXA1372Q			
IC102	8-759-821-94	IC LA6532M			
IC103	8-759-633-65	IC M54641L			
IC201	8-759-630-21	IC M5290P-16			
IC202	8-759-633-42	IC M5293L			
IC301	8-752-333-31	IC CXD2500Q			
IC302	8-752-334-06	IC CXD2551P			
IC303	8-759-233-63	IC TC74HCU04AP			
IC304	8-752-334-87	IC CXD2552Q			
IC305	8-752-334-77	IC CXD2553S			
IC306	8-759-710-32	IC NJM5532S			
IC307	8-759-710-32	IC NJM5532S			
IC310	8-759-977-71	IC GP1F31T			
IC401	8-759-150-28	IC UPD75212ACW-206			
IC402	8-749-920-83	IC GP1U52XB			
IC501	8-759-981-89	IC RC4556S			
IC502	8-759-633-65	IC M54641L			
J101	1-216-295-00	METAL GLAZE 0 5% 1/10W			
J102	1-216-295-00	METAL GLAZE 0 5% 1/10W			
J401	1-568-761-11	JACK, PIN 4P (LINE OUT)			
J501	1-568-519-21	(EXCEPT US)...JACK, LARGE TYPE(PHONES)			
J501	1-568-519-41	(US).....JACK, LARGE TYPE(PHONES)			
M101	X-4917-504-1	MOTOR ASSY (SLED)			
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)			
M191	A-4604-363-A	MOTOR (L) ASSY			
PS201	1-532-685-91	LINK, IC (0.8A)			
PS202	1-532-637-91	LINK, IC (1A)			
Q101	8-729-901-01	TRANSISTOR DTC144EK			
Q201	8-729-111-67	TRANSISTOR 2SB1094-L			
Q202	8-729-400-82	TRANSISTOR 2SD1266-P			
Q203	8-729-111-67	TRANSISTOR 2SB1094-L			
Q204	8-729-230-45	TRANSISTOR 2SC2458TP-YGR			
Q205	8-729-900-80	TRANSISTOR DTC114ES			

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

Note:
Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description				
Q206	8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q308	8-729-900-89	TRANSISTOR DTC144ES				
Q351	8-729-224-62	TRANSISTOR 2SK246GR				
Q352	8-729-905-67	TRANSISTOR 2SD1944-K				
Q353	8-729-201-05	TRANSISTOR 2SC2878B				
Q354	8-729-201-05	TRANSISTOR 2SC2878B				
Q355	8-729-900-61	TRANSISTOR DTA114ES				
Q359	8-729-900-61	TRANSISTOR DTA114ES				
Q361	8-729-900-61	TRANSISTOR DTA114ES				
Q362	8-729-900-80	TRANSISTOR DTC114ES				
Q363	8-729-900-80	TRANSISTOR DTC114ES				
Q401	8-729-900-45	TRANSISTOR DTC114EF				
Q402	8-729-900-45	TRANSISTOR DTC114EF				
R101	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R102	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R103	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R104	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R105	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R106	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W	
R108	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R109	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R110	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R111	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R112	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R113	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R114	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R152	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R153	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R154	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R155	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R156	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R157	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R158	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R159	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R160	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R171	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R172	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R173	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R174	1-216-001-00	METAL GLAZE	10	5%	1/10W	
R201	1-249-425-11	CARBON	4.7K	5%	1/4W	
R202	1-249-425-11	CARBON	4.7K	5%	1/4W	
R203	1-249-438-11	CARBON	56K	5%	1/4W	
R204	1-249-429-11	CARBON	10K	5%	1/4W	
R205	1-249-435-11	CARBON	33K	5%	1/4W	
R207	1-249-421-11	CARBON	2.2K	5%	1/4W	
R208	1-249-423-11	CARBON	3.3K	5%	1/4W	
R209	1-249-422-11	CARBON	2.7K	5%	1/4W	
R210	1-249-417-11	CARBON	1K	5%	1/4W	
R211	1-249-411-11	CARBON	330	5%	1/4W	
R213	1-249-381-11	CARBON	1	5%	1/4W	
R301	1-249-411-11	CARBON	330	5%	1/4W	
R302	1-249-417-11	CARBON	1K	5%	1/4W	
R303	1-249-417-11	CARBON	1K	5%	1/4W	
R304	1-249-417-11	CARBON	1K	5%	1/4W	
R305	1-249-417-11	CARBON	1K	5%	1/4W	
R308	1-249-423-11	CARBON	3.3K	5%	1/4W	
R309	1-249-423-11	CARBON	3.3K	5%	1/4W	

Ref.No.	Part No.	Description				
R310	1-249-429-11	CARBON	10K	5%	1/4W	
R311	1-249-429-11	CARBON	10K	5%	1/4W	
R312	1-249-441-11	CARBON	100K	5%	1/4W	
R313	1-249-417-11	CARBON	1K	5%	1/4W	
R314	1-249-417-11	CARBON	1K	5%	1/4W	
R315	1-249-417-11	CARBON	1K	5%	1/4W	
R316	1-249-411-11	CARBON	330	5%	1/4W	
R317	1-249-411-11	CARBON	330	5%	1/4W	
R318	1-249-411-11	CARBON	330	5%	1/4W	
R319	1-249-417-11	CARBON	1K	5%	1/4W	
R320	1-249-411-11	CARBON	330	5%	1/4W	
R321	1-249-413-11	CARBON	470	5%	1/4W	
R322	1-249-441-11	CARBON	100K	5%	1/4W	
R323	1-247-887-00	CARBON	220K	5%	1/4W	
R324	1-249-411-11	CARBON	330	5%	1/4W	
R325	1-249-393-11	CARBON	10	5%	1/4W	
R326	1-249-417-11	CARBON	1K	5%	1/4W	
R330	1-249-401-11	CARBON	47	5%	1/4W	
R340	1-249-441-11	CARBON	100K	5%	1/4W	
R341	1-249-429-11	CARBON	10K	5%	1/4W	
R342	1-247-848-11	CARBON	5.1K	5%	1/4W	
R343	1-249-393-11	CARBON	10	5%	1/4W	
R344	1-249-429-11	CARBON	10K	5%	1/4W	
R351	1-247-854-11	CARBON	9.1K	5%	1/4W	
R352	1-247-854-11	CARBON	9.1K	5%	1/4W	
R353	1-247-854-11	CARBON	9.1K	5%	1/4W	
R354	1-247-854-11	CARBON	9.1K	5%	1/4W	
R355	1-249-421-11	CARBON	2.2K	5%	1/4W	
R356	1-249-421-11	CARBON	2.2K	5%	1/4W	
R357	1-249-421-11	CARBON	2.2K	5%	1/4W	
R358	1-249-421-11	CARBON	2.2K	5%	1/4W	
R359	1-249-432-11	CARBON	18K	5%	1/4W	
R360	1-249-432-11	CARBON	18K	5%	1/4W	
R361	1-249-432-11	CARBON	18K	5%	1/4W	
R362	1-249-432-11	CARBON	18K	5%	1/4W	
R363	1-249-419-11	CARBON	1.5K	5%	1/4W	
R364	1-249-419-11	CARBON	1.5K	5%	1/4W	
R365	1-249-419-11	CARBON	1.5K	5%	1/4W	
R366	1-249-419-11	CARBON	1.5K	5%	1/4W	
R367	1-247-891-00	CARBON	330K	5%	1/4W	
R368	1-247-891-00	CARBON	330K	5%	1/4W	
R369	1-249-397-11	CARBON	22	5%	1/4W	
R370	1-249-397-11	CARBON	22	5%	1/4W	
R371	1-249-405-11	CARBON	100	5%	1/4W	
R372	1-249-405-11	CARBON	100	5%	1/4W	
R373	1-249-405-11	CARBON	100	5%	1/4W	
R374	1-249-405-11	CARBON	100	5%	1/4W	
R376	1-249-413-11	CARBON	470	5%	1/4W	
R377	1-249-418-11	CARBON	1.2K	5%	1/4W	
R378	1-249-418-11	CARBON	1.2K	5%	1/4W	
R379	1-249-439-11	CARBON	68K	5%	1/4W	
R380	1-249-439-11	CARBON	68K	5%	1/4W	
R381	1-249-405-11	CARBON	100	5%	1/4W	
R382	1-249-405-11	CARBON	100	5%	1/4W	
R401	1-249-435-11	CARBON	33K	5%	1/4W	
R402	1-249-435-11	CARBON	33K	5%	1/4W	
R403	1-249-435-11	CARBON	33K	5%	1/4W	




SEE ADDITIONAL INFORMATION

Ref.No.	Part No.	Description
R404	1-249-425-11	CARBON 4.7K 5% 1/4W
R405	1-249-425-11	CARBON 4.7K 5% 1/4W
R406	1-249-439-11	CARBON 68K 5% 1/4W
R407	1-249-411-11	CARBON 330 5% 1/4W
R408	1-249-417-11	CARBON 1K 5% 1/4W
R409	1-249-417-11	CARBON 1K 5% 1/4W
R501	1-249-435-11	CARBON 33K 5% 1/4W
R502	1-249-435-11	CARBON 33K 5% 1/4W
R503	1-249-432-11	CARBON 18K 5% 1/4W
R504	1-249-432-11	CARBON 18K 5% 1/4W
R505	1-249-422-11	CARBON 2.7K 5% 1/4W
R506	1-249-422-11	CARBON 2.7K 5% 1/4W
R507	1-249-431-11	CARBON 15K 5% 1/4W
R508	1-249-431-11	CARBON 15K 5% 1/4W
R509	1-249-402-11	CARBON 56 5% 1/4W
R510	1-249-402-11	CARBON 56 5% 1/4W
R511	1-249-405-11	CARBON 100 5% 1/4W
R512	1-249-405-11	CARBON 100 5% 1/4W
RV101	1-238-016-11	RES, ADJ, CARBON 10K (TRACKING GAIN)
RV102	1-238-016-11	RES, ADJ, CARBON 10K (FOCUS GAIN)
RV501	1-238-750-11	RES, VAR, CARBON 10K/10K (LINE OUT/PHONE LEVEL)
RY301	1-515-787-11	RELAY
S101	1-572-085-11	SWITCH, LEAF (LIMIT)
S191	1-572-086-11	SWITCH, LEAF (LOAD OUT)
S192	1-572-086-11	SWITCH, LEAF (LOAD IN)
S401	1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)
S402	1-554-303-21	SWITCH, KEY BOARD (CONTINUE)
S403	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)
S404	1-554-303-21	SWITCH, KEY BOARD (PROGRAM)
S405	1-554-303-21	SWITCH, KEY BOARD (1)
S406	1-554-303-21	SWITCH, KEY BOARD (2)
S407	1-554-303-21	SWITCH, KEY BOARD (3)
S408	1-554-303-21	SWITCH, KEY BOARD (4)
S409	1-554-303-21	SWITCH, KEY BOARD (5)
S410	1-554-303-21	SWITCH, KEY BOARD (6)
S411	1-554-303-21	SWITCH, KEY BOARD (7)
S412	1-554-303-21	SWITCH, KEY BOARD (8)
S413	1-554-303-21	SWITCH, KEY BOARD (9)
S414	1-554-303-21	SWITCH, KEY BOARD (10)
S415	1-554-303-21	SWITCH, KEY BOARD (11)
S416	1-554-303-21	SWITCH, KEY BOARD (12)
S417	1-554-303-21	SWITCH, KEY BOARD (13)
S418	1-554-303-21	SWITCH, KEY BOARD (14)

Ref.No.	Part No.	Description
S419	1-554-303-21	SWITCH, KEY BOARD (15)
S420	1-554-303-21	SWITCH, KEY BOARD (16)
S421	1-554-303-21	SWITCH, KEY BOARD (17)
S422	1-554-303-21	SWITCH, KEY BOARD (18)
S423	1-554-303-21	SWITCH, KEY BOARD (19)
S424	1-554-303-21	SWITCH, KEY BOARD (20)
S425	1-554-303-21	SWITCH, KEY BOARD (TIME SET)
S426	1-554-303-21	SWITCH, KEY BOARD (EDIT/TIME FADE)
S427	1-554-303-21	SWITCH, KEY BOARD (◀◀)
S428	1-554-303-21	SWITCH, KEY BOARD (▶▶)
S429	1-554-303-21	SWITCH, KEY BOARD (◀◀)
S430	1-554-303-21	SWITCH, KEY BOARD (▶▶)
S431	1-554-303-21	SWITCH, KEY BOARD (>20)
S432	1-554-303-21	SWITCH, KEY BOARD (MULTI PGM)
S433	1-554-303-21	SWITCH, KEY BOARD (CLEAR)
S434	1-554-303-21	SWITCH, KEY BOARD (CHECK)
S435	1-554-303-21	SWITCH, KEY BOARD (■)
S436	1-554-303-21	SWITCH, KEY BOARD (■)
S437	1-554-303-21	SWITCH, KEY BOARD (▶)
S438	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)
S439	1-554-303-21	SWITCH, KEY BOARD (FADER)
S440	1-554-303-21	SWITCH, KEY BOARD (REPEAT)
S441	1-554-303-21	SWITCH, KEY BOARD (PEAK SEARCH)
S442	1-554-303-21	SWITCH, KEY BOARD (TIME)
T1	△.1-449-921-11	(US,Canadian)...TRANSFORMER, POWER
T1	△.1-449-922-11	(AEP,UK,AUS)....TRANSFORMER, POWER
T1	△.1-449-923-11	(E).....TRANSFORMER, POWER
VS1	△.1-571-722-11	(E)...SWITCH, VOLTAGE SELECTION
X301	1-577-686-11	VIBRATOR, CRYSTAL (45.1584MHz)
X302	1-577-685-11	FILTER, CRYSTAL (16.9344MHz)
X401	1-577-082-11	VIBRATOR, CERAMIC (4MHz)

ACCESSORY & PACKING MATERIAL

- 1-465-278-11 REMOTE COMMANDER
- 1-559-533-11 CORD, CONNECTION
- 3-750-846-11 (AUS).....MANUAL, INSTRUCTION
- 3-750-846-41 (AEP).....MANUAL, INSTRUCTION
- 3-750-846-51 (US).....MANUAL, INSTRUCTION
- 3-750-846-61 (Canadian,AEP,UK,E).....
-MANUAL, INSTRUCTION
- 4-923-540-01 CUSHION
- 4-925-788-01 COVER, BATTERY
- *4-929-558-11 INDIVIDUAL CARTON

<p>Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.</p>	<p>Note: Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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CDP-209ES/790

SONY[®] SERVICE MANUAL

*US Model
Canadian Model
CDP-209ES*

*Canadian Model
AEP Model
UK Model
E Model
CDP-790*

SUPPLEMENT-1

File this supplement with the service manual.

CDP-209ES has been added for Canada.

As only difference from US model of CDP-209ES is described in this manual, please refer CDP-209ES/790 service manual for the other sections.

[MODEL IDENTIFICATION]

SONY[®]	MODEL NO. CDP-209ES
COMPACT DISC PLAYER	
AC: 120V 60Hz 17W	
SERIAL NO.	
MADE IN JAPAN	

EXPLODED VIEWS

Page	No.	Part No.	Description
29	12	4-929-521-31	PANEL, LOADING
29	21	*4-929-513-81	PANEL, BACK

ACCESSORY & PACKING MATERIAL

Additional part

Page	No.	Part No.	Description
35	—	3-750-846-31	(French) . . . MANUAL, INSTRUCTION

CDP-209ES/790

SONY SERVICE MANUAL







US Model
CDP-209ES

Canadian Model
AEP Model
UK Model
E Model
CDP-790

CORRECTION-1

Correct your service manual as shown below.

 : indicates corrected portion.

Page	INCORRECT	CORRECT
16	Focus Bias Adjustment 1. Connect oscilloscope to the test points TP (RF) and TP (RF VCG).	RF Level Check  1. Connect oscilloscope to the test point TP (RF) and <u>TP (VC)</u> . 
16	E-F Balance Adjustment Procedure : 1. TP (ADJ) and TP (TES) connect to the GND.	E-F Balance Check Procedure : 1. Connect test point <u>TP (ADJ)</u> to ground and <u>TP (TES)</u> to TP (VC) with lead wire.  
17 18	Focus/Tracking Gain Adjustment 4. Adjustment RV101 so that the waveform is as shown in the picture below. (focus gain adjustment) 6. Adjust RV102 so that the waveform is as shown in the picture below. (tracking gain adjustment)	REFERNCE Focus/Tracking Gain Adjustment 4. <u>Adjust RV102</u> so that the waveform is as shown in the picture below. (focus gain adjustment)  6. Adjust <u>RV101</u> so that the waveform is as shown in the picture below. (tracking gain adjustment) 

 : indicates corrected portion.

Page	INCORRECT	CORRECT
18		<p>Adjustment Location : 【BD board】</p> 