

aiwa

MINIDISC RECORDER

AM-F5

OPERATING INSTRUCTIONS Page 4



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FEATURES

High quality digital recording and playback

Extended recording function up to 148 minutes (monaural recording)

Audible fast playback function at double the normal speed

Naming functions for tracks and discs

Editing functions

- Combine function for joining two tracks
- Divide function for dividing a track into two
- Renumber function for changing the order of tracks
- Erase function for erasing unwanted recordings

Three index coding functions

- Auto marker function
- Time marker function
- Manual marker function

Large LCD display

Check your accessories

- ① Remote control
- ② Stereo headphones
- ③ AC adaptor
- ④ Rechargeable battery
- ⑤ Battery case
- ⑥ One-point stereo microphone (plug-in-power type)
- ⑦ Carrying case

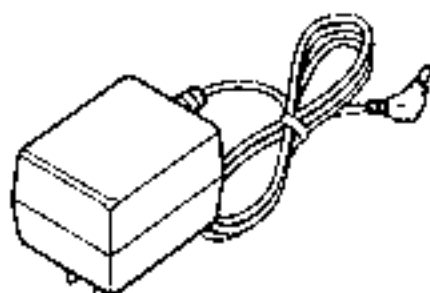
①



②



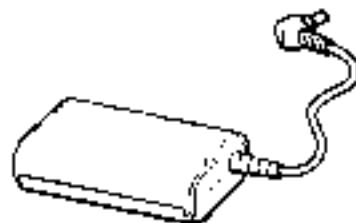
③



④



⑤



⑥



⑦



Power Sources

This unit operates on the following power sources:

- Supplied rechargeable battery
- Three LR6 (size AA) alkaline batteries
- Household current with the supplied AC adaptor

On Placement

Avoid placing the unit in the following places.

- Under direct sunlight or near a source of heat such as a heater. Never leave the unit in a closed automobile, or on the dashboard or parcel shelf. Excess heat may deform the cabinet or cause malfunctioning.
- Where it is very dusty or sandy.
- In wet or humid areas, such as a bathroom.
- Near sources of strong magnetism, such as televisions, speakers or magnets.
- Where there is a lot of movement or vibration, such as on a car dashboard or an unstable shelf.

For safety

- Do not attempt to disassemble this unit. Laser rays from the optical pickup are dangerous to the eyes.
- Make sure that pins or other foreign objects do not get inside the unit; they may cause malfunctioning, or a safety hazard such as electrical shock or exposure laser rays.
- Take care not to drop the unit or subject it to strong shocks, which may cause malfunctioning.
- A small amount of electric current flows even if you are not operating the unit as long as the AC adaptor is plugged into a wall outlet. Disconnect the AC adaptor if you are not going to use it for a long time.

When listening through headphones

- Keep volume levels low to protect your ears.
- When using in a public place, keep volume levels low to avoid disturbing others nearby.

Precautions

- Do not wear the headphones while driving or cycling. It may create a traffic hazard.
- You should use with extreme caution or temporarily discontinue use in potentially hazardous situations, such as walking, jogging, etc.

Cleaning

Wipe the exterior with a dry soft cloth. If it is very dirty, wipe it with a cloth slightly moistened with mild detergent solution. Do not use thinner, benzine or alcohol, as doing so may mar the finish.

Note on condensation

If the unit is suddenly moved from a cold place to a warm one, the rapid temperature change may cause moisture to condense on the pickup lens, resulting in malfunction or playback difficulties. Should this occur, remove the disc from inside the unit and leave the unit with its disc holder open for a few hours. The unit will become operable again.

Note on batteries

Dry cell batteries or the rechargeable battery can short-circuit or explode if mishandled. Observe the following and handle the batteries with care.

Rechargeable battery

- **Do not carry the battery in a pocket or handbag together with metal objects such as pendants or key holders.**
- Do not short-circuit the terminals.
- Use only the supplied AC adaptor to recharge the battery.
- Do not disassemble the battery, heat it or put it in water.

Dry cell batteries

- Insert the batteries with the + and – marks correctly aligned.
- Do not use an old battery with new one or mix different types of batteries together.
- Do not disassemble the battery, heat it or put it in water.
- Do not attempt to charge the battery.
- If the unit is not to be used for a long period of time, remove the batteries. If battery leakage occurs, remove the fluid from the battery case by wiping well with a dry soft cloth.

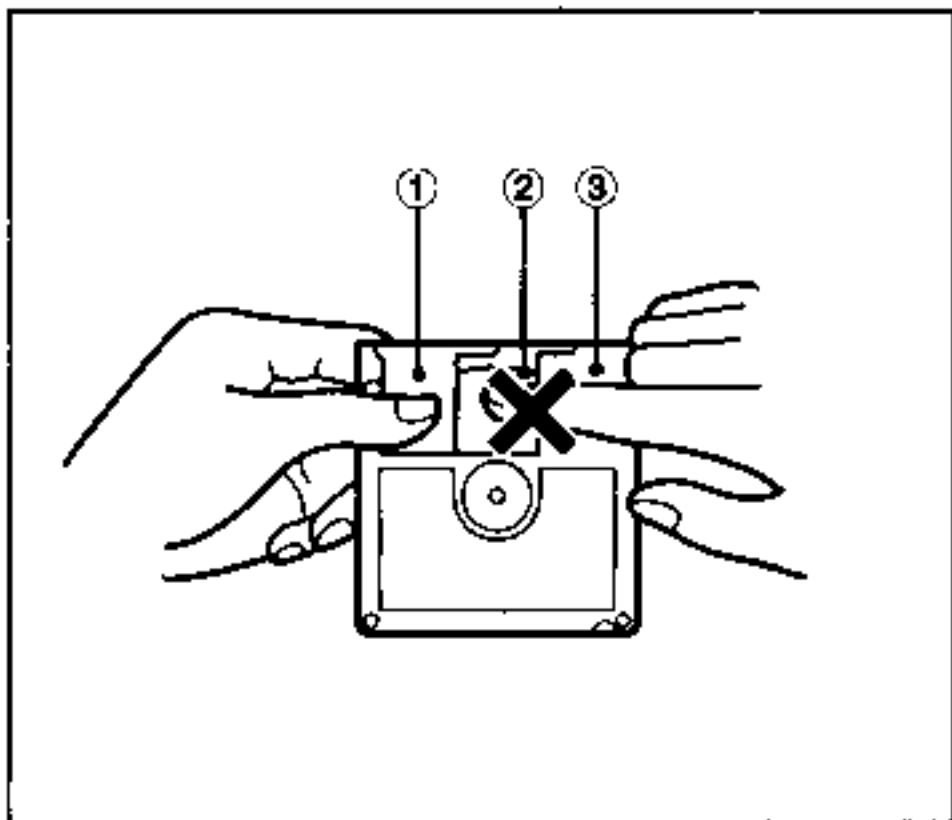
PRECAUTIONS***Note on handling a MiniDisc***

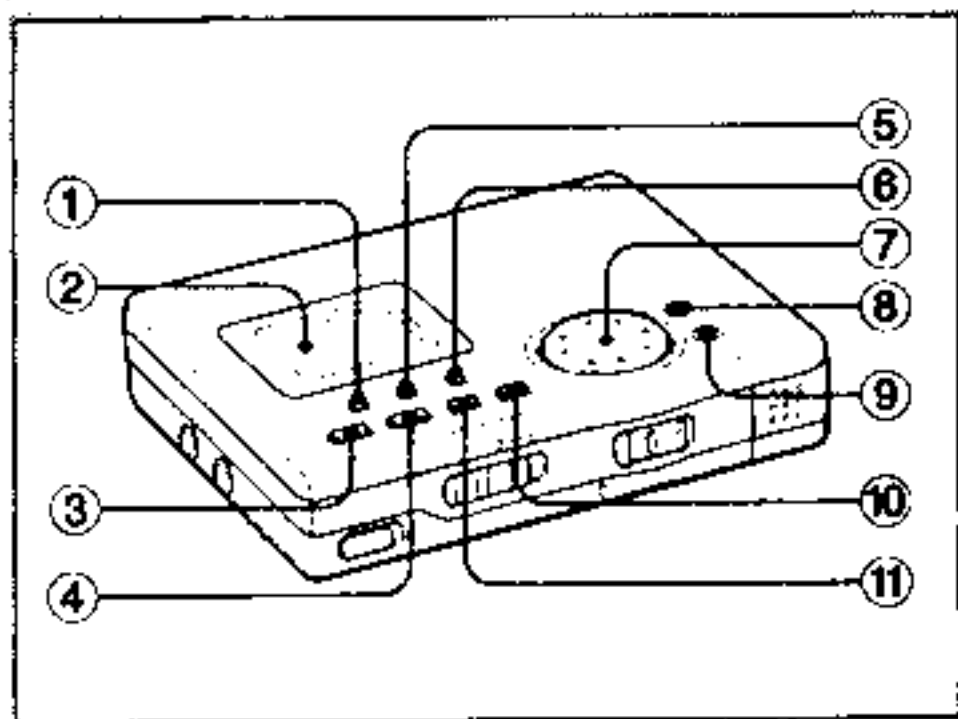
Since MDs come in a cartridge which protects the discs inside from fingerprints and dust, you do not have to be overly careful when handling them. However, soiled or damaged cartridges can lead to malfunctions in the unit. Observe the following tips when handling MDs.

Do not touch the disc inside the cartridge.

Although the disc itself is protected by the cartridge, do not open its shutter to touch the disc directly. If the disc inside becomes soiled, it is very difficult to clean. The cartridge can also be damaged.

- ① Shutter
- ② Disc
- ③ Cartridge

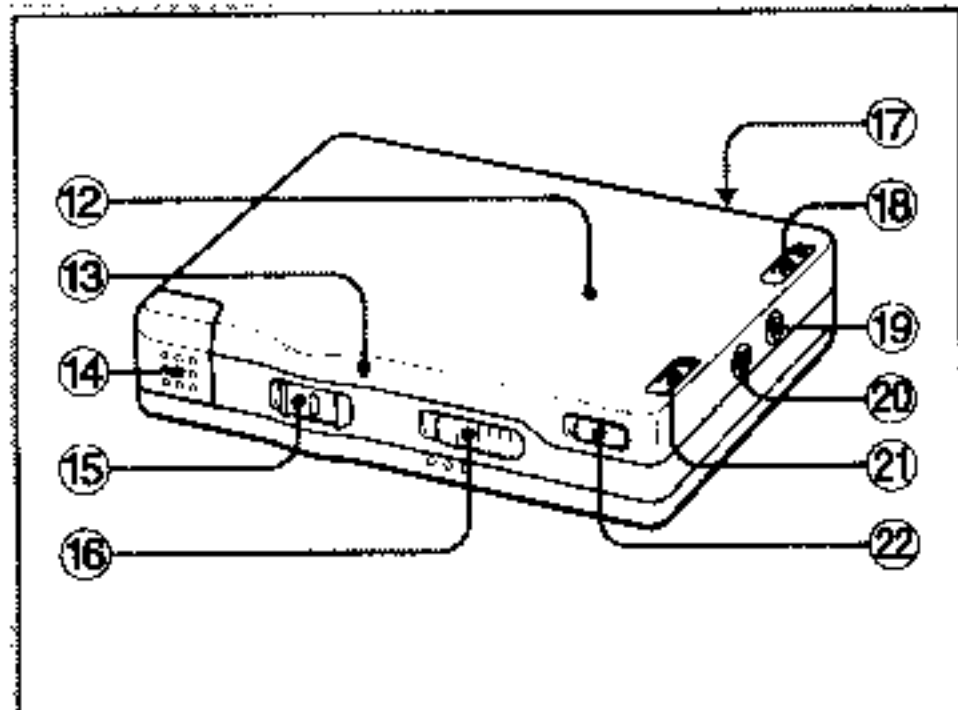




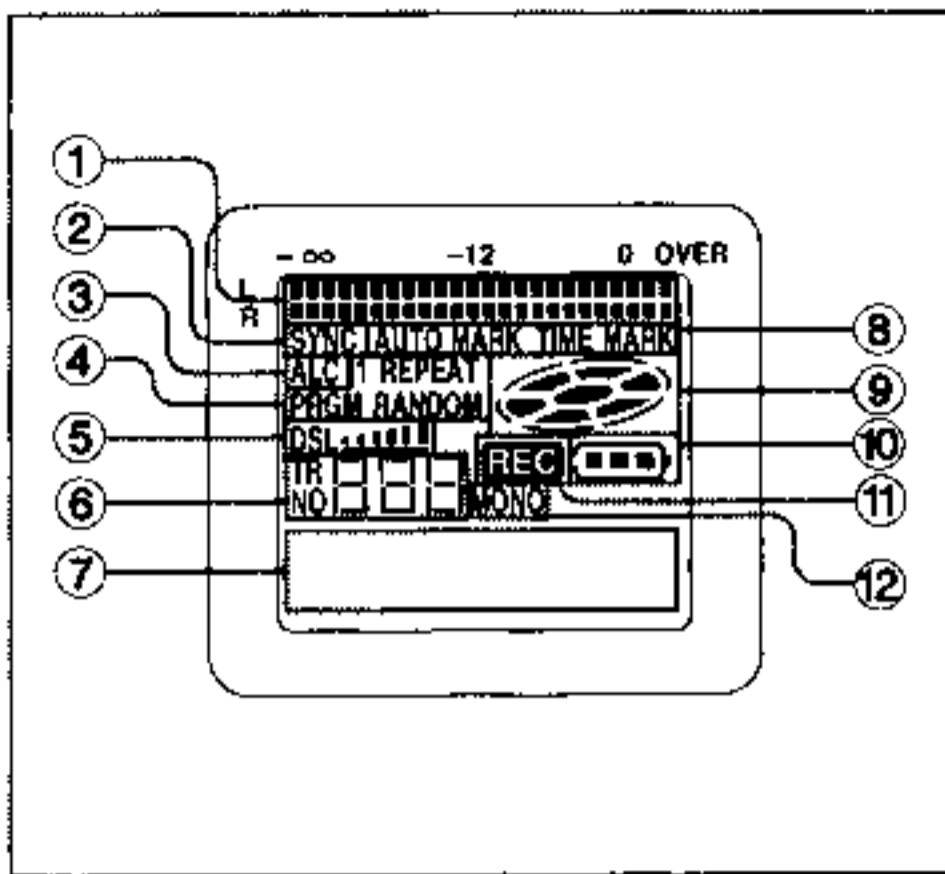
Main unit (front)

- ① **DISP/ANS button:** Press to change the indications in the display window. Also use to insert or delete letters/characters in editing mode.
- ② **Display window**
- ③ **■ button:** Press to stop playback, recording or editing. If the unit is left untouched for more than 4 seconds after pressing this button, the power shuts off automatically.
- ④ **▶|| button:** Press to start or pause playback/recording.
- ⑤ **MODE button:** Press to select playback, recording or editing modes.
- ⑥ **DSL button:** Press repeatedly to emphasize bass. Select one of three levels or the off position to suit your preference.
- ⑦ **MULTI JOG dial:** Turn to skip tracks, adjust recording level or select letters/characters.
- ⑧ **ENTER/VOLUME + button:** Press to increase the volume during playback. Also use to register letters/characters or to select recording modes.
- ⑨ **SHIFT/VOLUME - button:** Press to decrease the volume during playback. Also use to select the desired letters.
- ⑩ **▶▶/MARK button:** Press to skip to the next track or hold down to search forward. This button is also used when registering index codes manually at desired points in recording.
- ⑪ **◀◀ button:** Press to restart the track in play or skip back to the previous tracks. Hold it down to search backward.

PARTS AND CONTROLS

**Main unit (rear and sides)**





















- ⑫ **◀RESET switch:** Clears all stored memories of data (date, disc data, etc.). Press with a pointed object.
- ⑬ **Recording indicator:** Turns red during recording.
- ⑭ **Rechargeable battery compartment lid:** Open this lid after opening the disc holder, and take the supplied rechargeable battery in and out.
- ⑮ **▶REC/EDIT button:** Slide in the direction of the arrow with its center red tip lightly pressed. This button works as the REC button in stop mode and as the EDIT button in playback mode.
- ⑯ **▶EJECT button:** Slide in the direction of the arrow to open the disc holder.
- ⑰ **DC 4.5V jack:** Connect the supplied AC adaptor or battery box.
- ⑱ **INPUT SELECT (MIC HIGH/LOW/LINE) switch:** Change the position according to the equipment connected to the INPUT OPT/LINE/MIC jack. Set to MIC HIGH/LOW when connecting the supplied microphone and to LINE when connecting external audio equipment.
- ⑲ **INPUT OPT/LINE/MIC jack:** Connect to the output jack of digital/analog audio equipment or the supplied microphone.
- ⑳ **OUTPUT/PHONES jack:** Connect to the input jack of analog equipment or the supplied remote control.
- ㉑ **SYNCHRO ON/OFF switch:** The unit can pause automatically during recording while the source sound is low or stops and will resume recording when the sound begins again. Set this switch to ON to activate this function.
- ㉒ **HOLD▶ switch:** Set in the direction of the arrow to prevent misoperation when carrying in a bag. The controls on the unit except the EJECT button are deactivated so that accidental contact will have no effect on them.



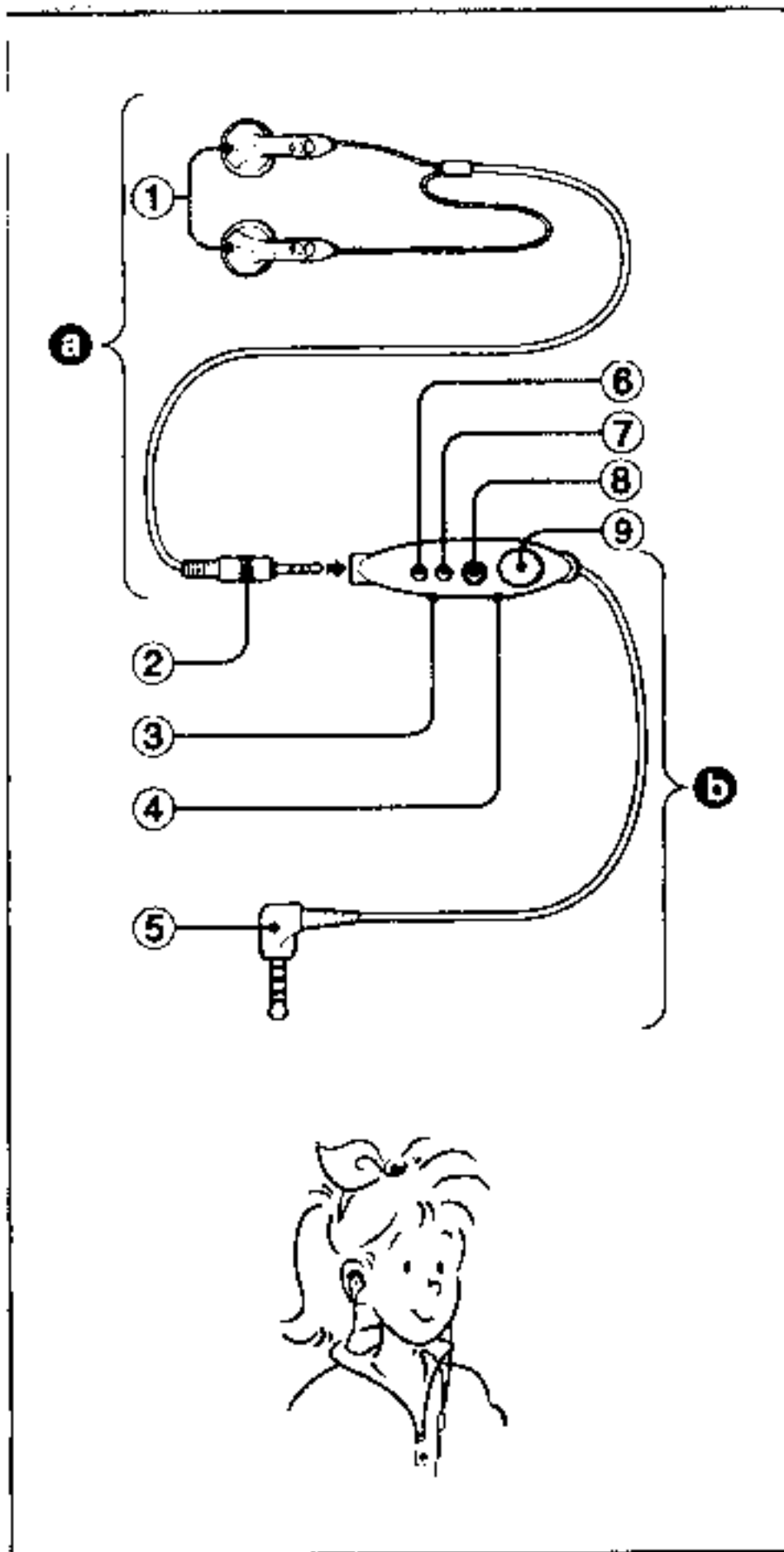
Display window

- ① **Level indicator:** Displays the recording level while recording and playback level during playback.
- ② **SYNC indicator:** Lights during recording while the SYNCHRO switch is set to ON.
- ③ **ALC Indicator:** Lights during recording while the ALC (Automatic Level Control) function is activated.
- ④ **Playback mode indicators:** The indicator of the selected playback mode lights.
 - REPEAT:** All tracks repeat play
 - 1 REPEAT:** One track repeats play
 - RANDOM:** Random play
 - PRGM:** Programmed play
- ⑤ **DSL indicator:** Displays the level of DSL (Dynamic Super Linear Bass).
- ⑥ **TR NO indicator:** Displays the track number being played during playback and total number of tracks in stop mode.
- ⑦ **Time/date, letter/character information:** Displays many types of data as follows:
 - Elapsed playing time of a track
 - Total playing or remaining time of a disc
 - Recording date or current time and date
 - Title of a track or disc
 - Selected editing mode and recording mode
 - MD messages and error messages
- ⑧ **Index coding mode indicators:** The indicator of the selected index coding mode lights.
 - AUTO MARK:** Automatic marker function for automatically registering index codes according to the recording source.
 - TIME MARK:** Time marker function for registering index codes every five minutes.
- ⑨ **Eye catcher:** Turns or flashes to indicate the playing and recording status of the unit.
- ⑩ **Battery indicator:** Displays the remaining power of a rechargeable battery or dry cell batteries during playback or recording, and also indicates recharging status.
- ⑪ **REC indicator:** Lights while recording.
- ⑫ **MONO indicator:** Lights while recording in monaural or playing back sources recorded in monaural.

Headphones and remote control

- ① **Stereo headphones:** Use the headphones by putting the longer cord at the back of your neck.
- ② **Connecting plug (headphones):** Connect to the input jack of the remote control.
- ③ **VOL  control:** Turn to adjust the volume. Also use to select the letters/characters for titling a disc or tracks.
- ④ ** HOLD switch:** Set in the direction of the arrow to prevent misoperation. The controls on the remote control are deactivated so that accidental contact will have no effect on them.
- ⑤ **Connecting plug (remote control):** Connect to the OUTPUT/PHONES jack of the main unit.
- ⑥ **REC/EDIT button:** While holding down this button, press   to start recording or editing.
In stop mode, the unit is set to recording pause mode. Press   to start recording.
In playback mode, the unit is set to editing mode. To select editing modes, keep   pressed while holding down REC/EDIT. The editing mode changes in turn. Release them when the desired mode appears on the display.
- ⑦ **ENTER button:** Press to register letters/characters. Also use to register index codes manually with remote control.
- ⑧ **DSL button:** Press repeatedly to emphasize bass. Also use to select the desired kind of letters with remote control.
- ⑨ **Operation button ( , , , )**
: Press to stop playback, recording or editing.
 : Press to start or pause playback/recording.
 : Press to skip to the next track or hold down to search forward.
 : Press to restart the track in play or skip back to the previous tracks. Hold it down to search backward.

- Ⓐ Headphones
 Ⓑ Remote control







This unit may be powered by the supplied rechargeable battery, three LR6 (size AA) alkaline batteries (not supplied), or AC house current using the supplied AC adaptor. The battery life when used with the rechargeable or alkaline batteries is as follows.

Battery type	Continuous playback	Continuous recording
Rechargeable battery	Approx. 7 hours	Approx. 4 hours
Alkaline batteries	Approx. 19 hours	Approx. 10 hours
Using rechargeable battery together with alkaline batteries	Approx. 26 hours	Approx. 15.5 hours


- * The battery times above are for a **fully charged rechargeable battery and new alkaline batteries**.
- * Battery life may vary depending on the conditions and the environment in which the unit is operated.

To check the status of the rechargeable battery or the alkaline batteries

The battery indicator shows the amount of remaining power in the batteries.

Remaining battery power	Low	←	High	
Battery indicator				

When the batteries become weak while operating

The  indicator lights up. If you continue to operate the unit, the "LOW BATT" indicator lights on the display window and the power will turn off. In this case, charge the rechargeable battery or replace all the alkaline batteries with new ones.

To prevent recording failure due to low battery power

To prevent the recording from being terminated in the middle due to the lack of battery power, run the unit from the AC adaptor or fully charged rechargeable battery together with new alkaline batteries. This is important during long recording sessions.

POWER SOURCES

Using the rechargeable battery

When the rechargeable battery is used for the first time or starting use after a long period of time, charge the battery fully.

Insert the rechargeable battery correctly.

- The battery cannot be inserted if the \oplus and \ominus marks on the battery are not correctly aligned.
- The unit cannot be turned on if the battery is inserted upside down.

1 Open the disc holder.

- ① Slide EJECT in the direction of the arrow.
- ② Pull the disc holder up.

2 Open the battery compartment lid.

Slide the lid in the direction of the OPEN \blacktriangleright arrow and pull it as illustrated.

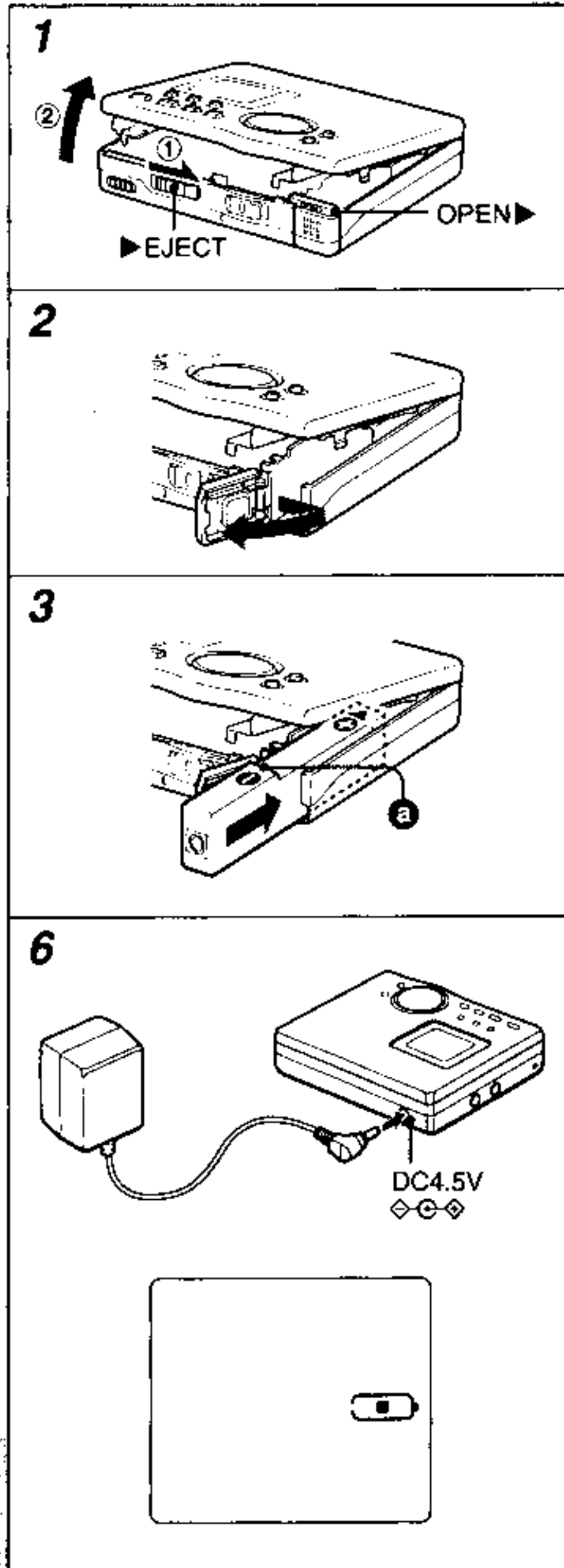
3 Insert the rechargeable battery.

Special care should be taken on the following points:

- Insert the battery in the direction of the arrow marked on it with the \oplus and \ominus marks correctly aligned.
- Insert the battery with its step **a** toward the disc holder.

4 Close the battery compartment lid.**5 Close the disc holder.****6 Connect the supplied AC adaptor to the DC4.5V jack of the unit and to a wall outlet.**
After a few seconds, the battery indicator lights on the display window and charging starts.

The indicator disappears when charging is complete. Disconnect the AC adaptor from both the unit and wall outlet.



POWER SOURCES

"TMP OVER" appears in the display window

When you attempt to charge in an ambient temperature over (or under) 0 to 45°C (32 to 113°F), "TMP OVER" will appear.

The rechargeable battery can be charged at any time

- You can recharge the rechargeable battery without concern of its remaining power.
- It will take about 2 hours to charge the fully-discharged battery completely.

Rechargeable battery life

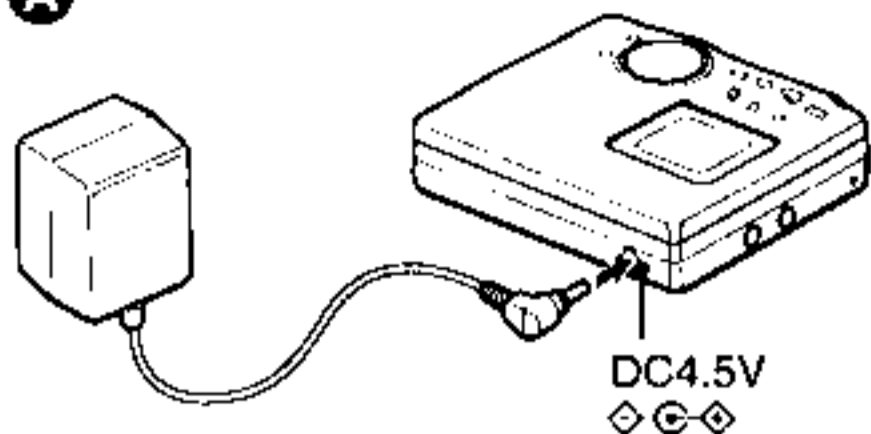
- The supplied rechargeable battery can be charged approximately 300 times.
- When the operating time of a fully charged battery decreases to about half, replace it with a new one.
- To prolong the performance of the rechargeable battery, charge it in an ambient temperature of approximately 10 to 30°C (50 to 86°F) and keep it in a cool location when it is not used.

Notes

- Use only the supplied AC adaptor to charge the rechargeable battery.
- When the rechargeable battery is used for the first time or starting use after a long period of time, the battery power may become less than normal. In this case, discharge and charge the rechargeable battery alternately several times.
- To maintain the performance of the rechargeable battery, charge it at least once a year even when it will not be used for a long period of time.

POWER SOURCES

A

**Using AC power → A**

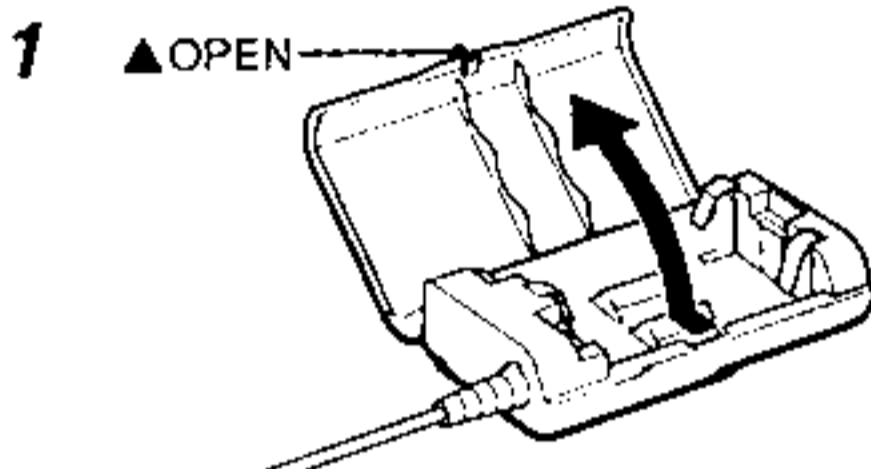
Plug the AC adaptor into a wall outlet and connect the cord to the DC 4.5V jack of the unit.

Notes

Observe the following safety precautions when you handle the AC adaptor.

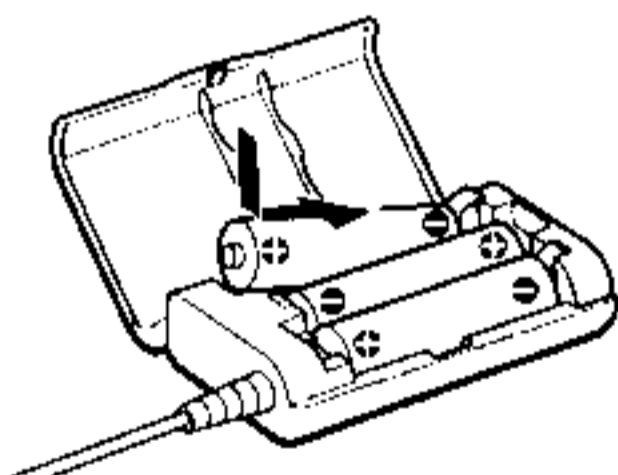
- Use the supplied AC adaptor only.
- Disconnect the AC adaptor from the unit as well as the wall outlet after use.

B

**Using on dry cell batteries → B**

Use three LR6 (size AA) alkaline batteries (not supplied). The unit may not operate on manganese batteries.

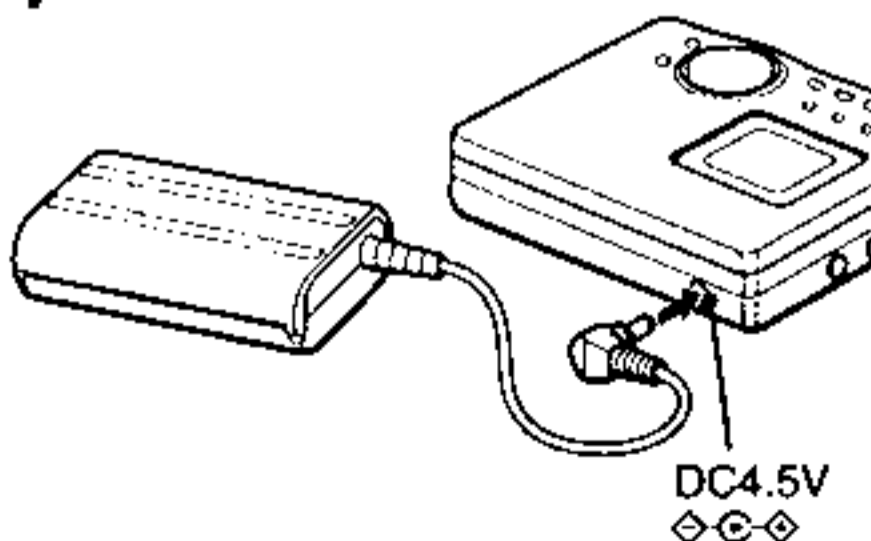
2

**1 Open the battery case cover.**

Pull up the battery case cover with its ▲OPEN mark pressed.

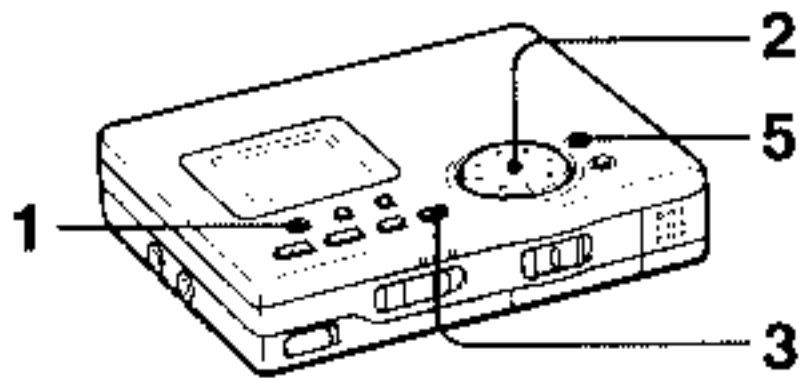
2 Insert three dry cell batteries with the ⊕ and ⊖ ends correctly aligned.**3 Close the battery case cover.****4 Connect the battery case to the DC 4.5V jack of the unit.**

4



SETTING THE TIME AND DATE

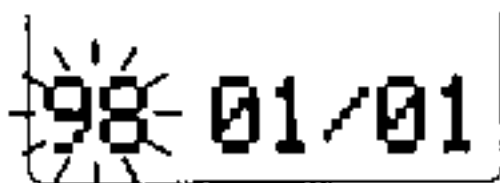
English



1



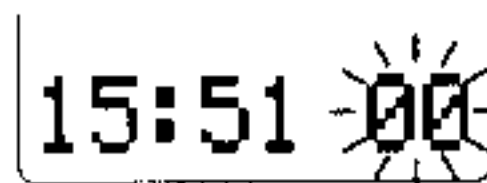
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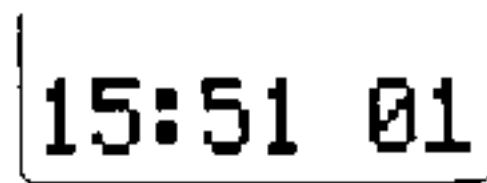
3



4



5



- If the built-in clock is set in advance, the date will be recorded automatically every time a recording is made.
- The clock has a 24-hour digital readout.
- Set the clock while sufficient battery power remains, or while operating the unit on the AC house current.

1 In stop mode, press DISP for more than 3 seconds until "CLOCKSET" appears on the display.

The display will change to "year, month and day" digits after a second and "year" digits flash.

2 Turn MULTI JOG to set the "year".

3 Press ►►.

The "month" digits start flashing.

Pressing ►► determines the contents for the setting item, and the next item starts flashing.

4 Repeat steps 2 and 3, and set the "month, date, hour and minute".

- After setting the "date", the display changes to "hour, minute and second" digits.

- After setting the "minute", the "second" digits start flashing.

5 Press ENTER.

The clock starts from "00" seconds.

After a second, the clock indication disappears.

To correct a setting error

Press ►► repeatedly until the digits to be corrected start flashing, then turn MULTI JOG to reset those digits.

To display the time or date

The time or date is not normally displayed in the display window. Press DISP repeatedly to display the time/date while there is nothing displayed in the display window (when the unit is not in any particular operational mode). The time or date will be displayed for approximately four seconds.

If the unit has not been used for a long time

Press DISP once to check the clock. If the digits are flashing or nothing is displayed, the clock has stopped. In this case, reset the clock. When the clock stops, the recording dates are not recorded correctly.

To reset the clock from "00" seconds

The clock is on even while you are resetting the time. Pressing ENTER resets the clock in the following ways:

- If the flashing second digits are between "00" to "29", the digits go back to "00".
- If the flashing second digits are between "30" to "59", the minute digit advances by one, and the second digits go forward to "00".

When you remove the rechargeable battery from the unit

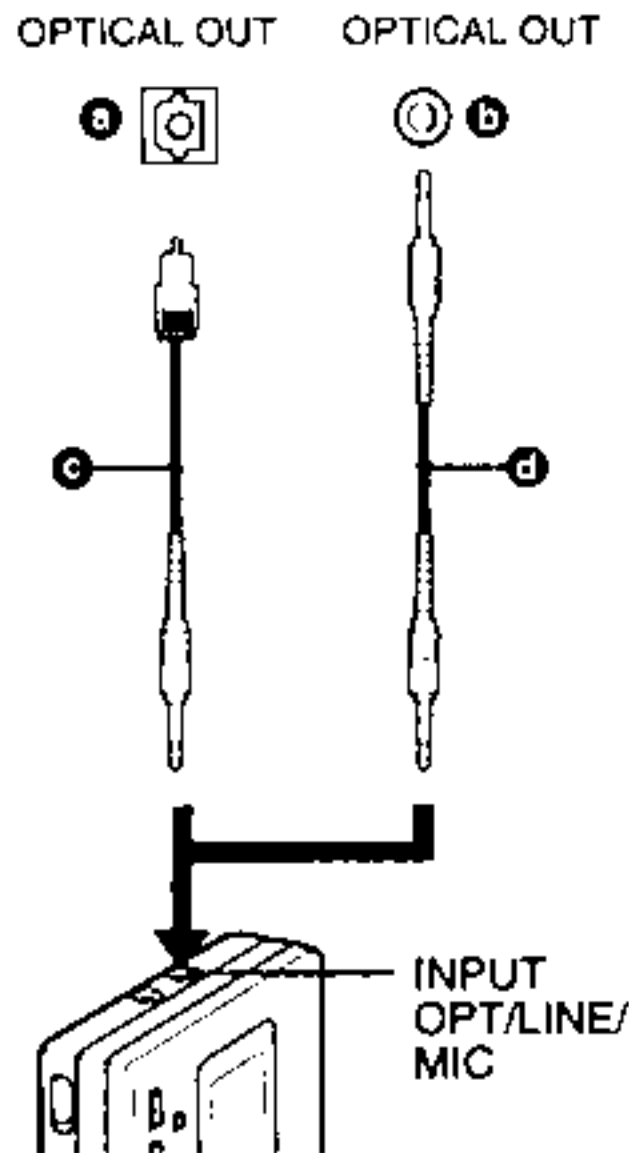
When removing the rechargeable battery from the unit, the built-in back-up battery works for about 24 hours. It is recommended that the supplied AC adaptor or the dry cell battery case be connected to the unit to be sure the clock and other data are backed up.

When the power of the built-in back-up battery becomes extremely weak

Consult the nearest Aiwa service personnel to change the built-in battery.

Note

To prevent the clock from stopping, it is recommended that the unit be connected to AC power or the battery case with new batteries.



Recording methods and connection

The INPUT OPT/LINE/MIC jack of this unit can accept digital line signals and analog (line and mic) signals. According to the source signal and the type of the output connector, make connections properly as explained below.

Recording via the digital (optical) signal connection

High quality recording is possible via the digital signal connection because the source signals from a CD, etc. are not converted into analog signals when reaching the unit. At the same time, the playing time, and index search signals, etc. of the TOC (Table of contents) on the source CD are automatically recorded. This is particularly useful when you are dubbing a whole CD.

This unit has a built-in sampling frequency rate converter. This enables recordings via digital signals from DAT, digital BS or CS broadcastings whose sampling frequency* is different from that of MDs or CDs.

* Sampling frequency: the split frequency to convert an analog signal into a digital signal. 44.1 kHz is used for prerecorded sources such as a CD.

Connecting with the optical output jack

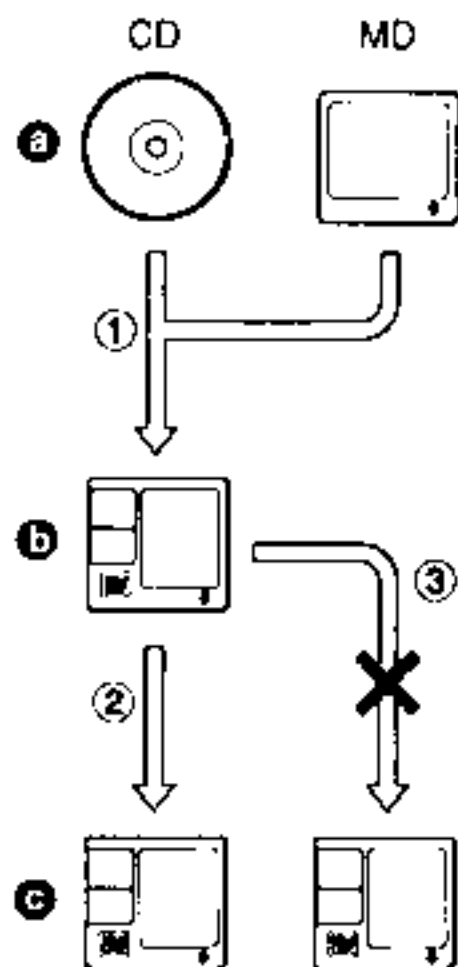
- a** Optical square shaped jack
- b** Optical mini-jack
- c** Digital connecting cord (square shaped plug – optical mini-plug)
- d** Digital connecting cord (optical mini-plug – optical mini-plug)

- To connect with a square shaped jack of a CD player, MD player, Digital amplifier, DAT player etc., follow the connection **c**.
- To connect with an optical mini jack of a portable CD player etc., follow the connection **d**.
- Connect the optical mini plug of the connecting cord to the INPUT OPT/LINE/MIC jack of this unit.
- Insert the plugs of the cord securely.
- Be sure to connect the OPTICAL digital output. This unit cannot accept other types of digital signals.

RECORDING

There may be cases where a digital input cannot be recorded

When digital recording is attempted from another digitally recorded MD: To protect the copyrights of recorded material, digital dubbing cannot be done on a recordable MD from another digitally recorded MD because of the built-in record restriction function which complies with the SCMS (Serial Copy Management System) standard.



- (a)** Source material
Such as CD or MD (pre-recorded source)
- (b)** First generation
Digital dubbing is possible.
- (c)** Second generation
 - Digital dubbing is not possible.*
 - Recording via analog input jack is possible.

* In the second generation, digital dubbing will be possible only from the first generation recorded via digital inputs from some BS or CS receivers.

- ① Digital dubbing
- ② Recording via analog inputs
- ③ Digital dubbing

RECORDING

Recording via analog signal connection

You can make a recording from external equipment or through the supplied microphone.

Setting the INPUT SELECT switch → A

Before recording, set INPUT SELECT to the position as follows.

MIC HIGH/LOW: When connecting the supplied microphone

HIGH: Recording with high sensitivity

LOW: Recording with low sensitivity

LINE: When connecting external equipment with an analog connecting cord (not supplied).

Connecting a microphone → B

- Set INPUT SELECT to MIC HIGH or LOW.
- Set the supplied stereo microphone toward sound sources with its L (Light) and R (Right) marks correctly.
- Connect the plug to INPUT OPT/LINE/MIC firmly.

A commercially available microphone can be used as well. It is recommended that the stereo microphone should be used.

Connecting to external equipment → C

- Set INPUT SELECT to LINE.
- Connect the plugs of the connecting cord firmly to the jacks.

a Phono plug x 2

b Stereo mini-plug

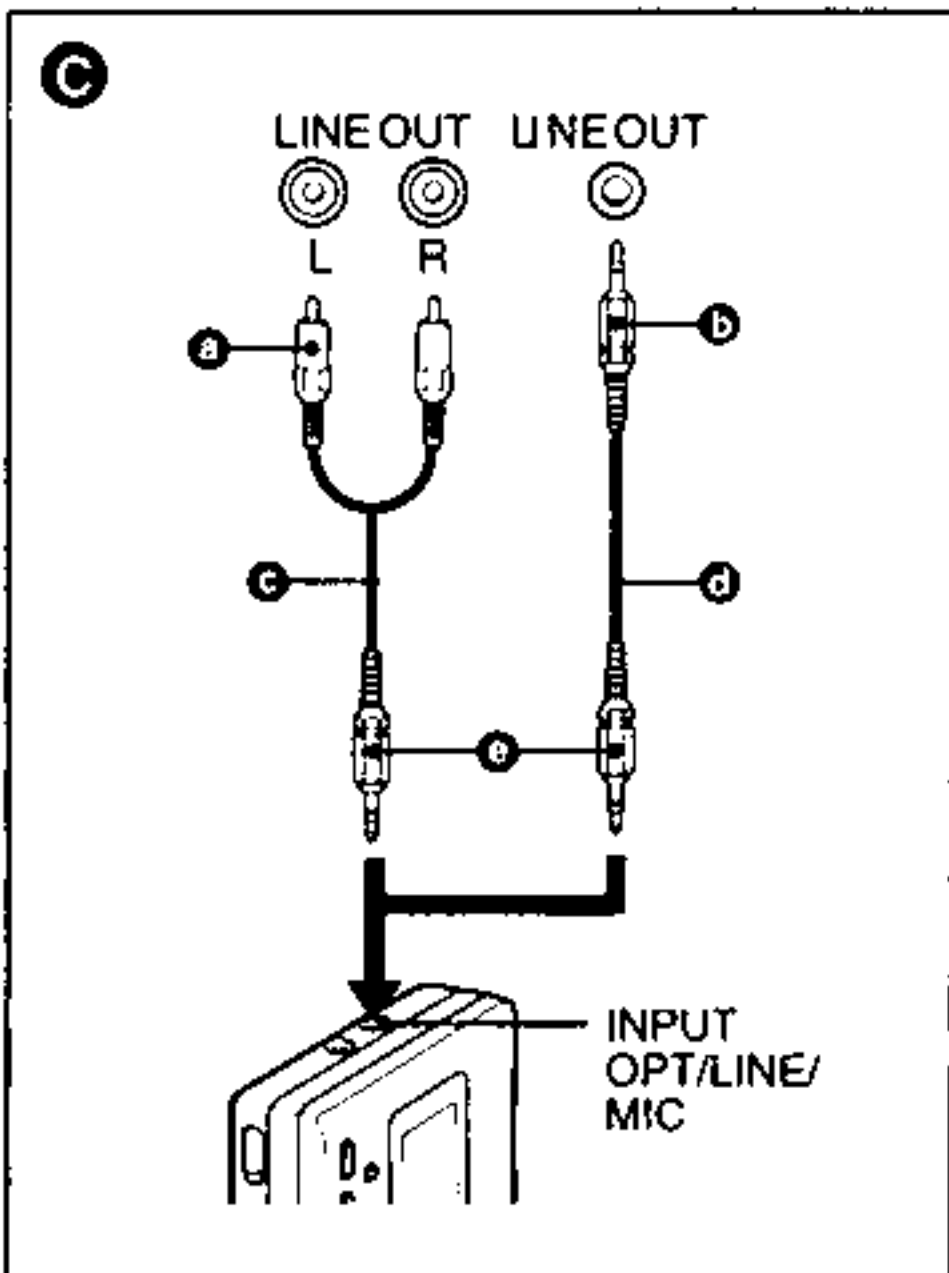
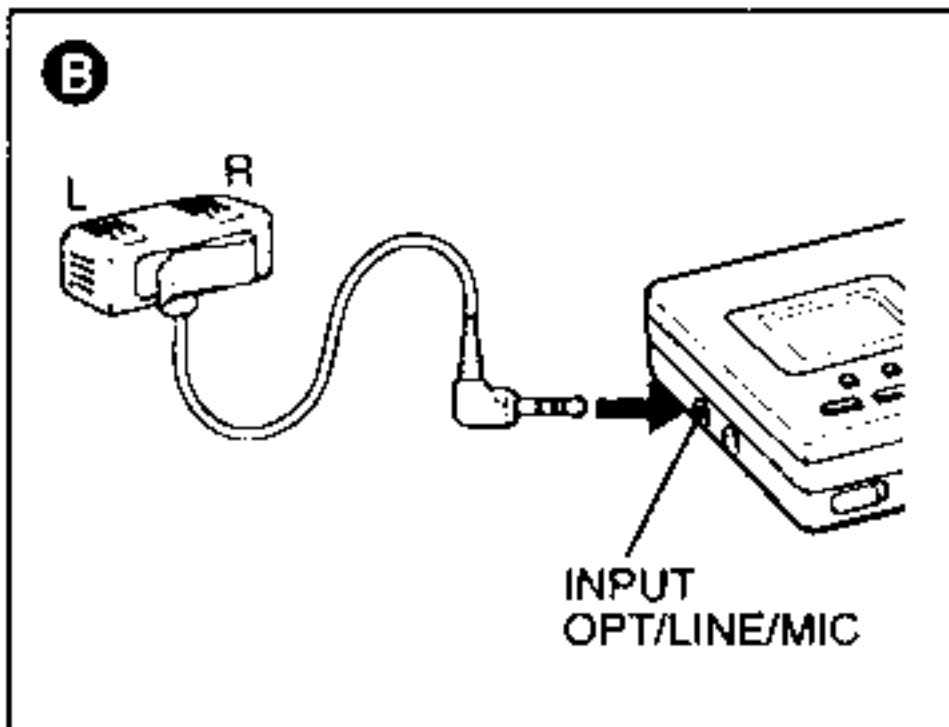
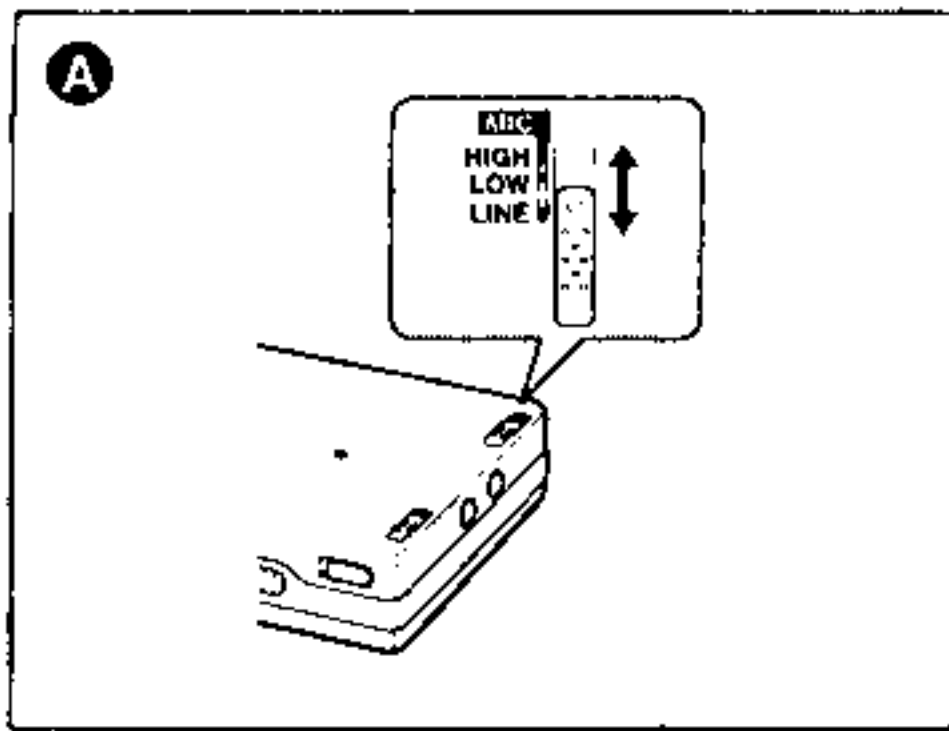
c Analog connecting cord (phono plugs - stereo mini-plug, not supplied)

d Analog connecting cord (stereo mini-plug - stereo mini-plug, Aiwa SSW-8, etc. not supplied)

e Stereo mini-plug

- To connect with phone jacks of a stereo system, radio cassette etc., follow the connection **c**.

- To connect with a stereo mini jack of a portable CD player etc., follow the connection **d**.



RECORDING

Basic operation for recording**Before recording**

- Make sure that the HOLD switch is released. (See page 82.)
- The sound is recorded at the same level as the input source in digital recording.
- The recording level is automatically adjusted in analog recording and can be adjusted manually as well (see page 44).

1 Insert a recordable MD.

- ① Slide EJECT in the direction of the arrow.
- ② Pull the disc holder up.
- ③ Insert the MD with the label side up and in the direction of the arrow.
Be sure to insert the MD fully.
 - Ⓐ The arrow mark for inserting the disc
 - Ⓑ Label side up
- ④ Close the disc holder.

2 In stop mode, slide REC/EDIT in the direction of the arrow with its center red tip lightly pressed.

Recording starts. The recording indicator ① below REC/EDIT turns red and "REC" lights on the display.

When recording from external equipment, start playback of the source.

- Ⓐ Track number
- Ⓑ Eye catcher turns clockwise
- Ⓒ REC indication lights
- Ⓓ Remaining recordable time of the MD

To set the unit to recording pause mode

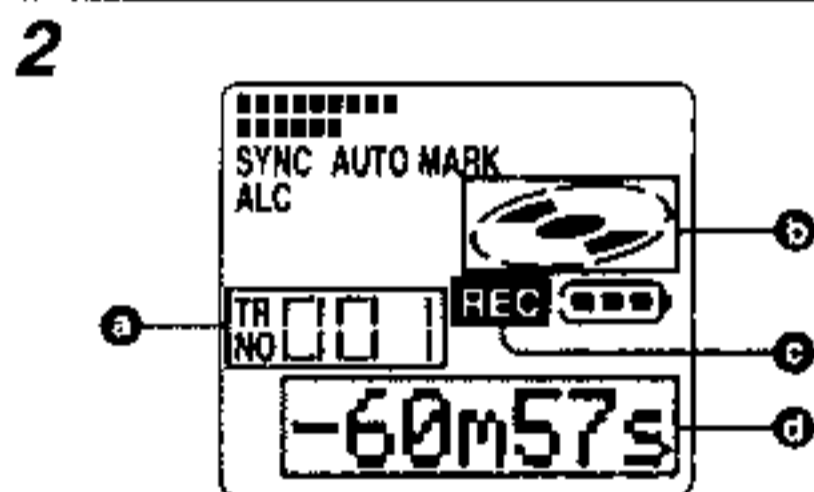
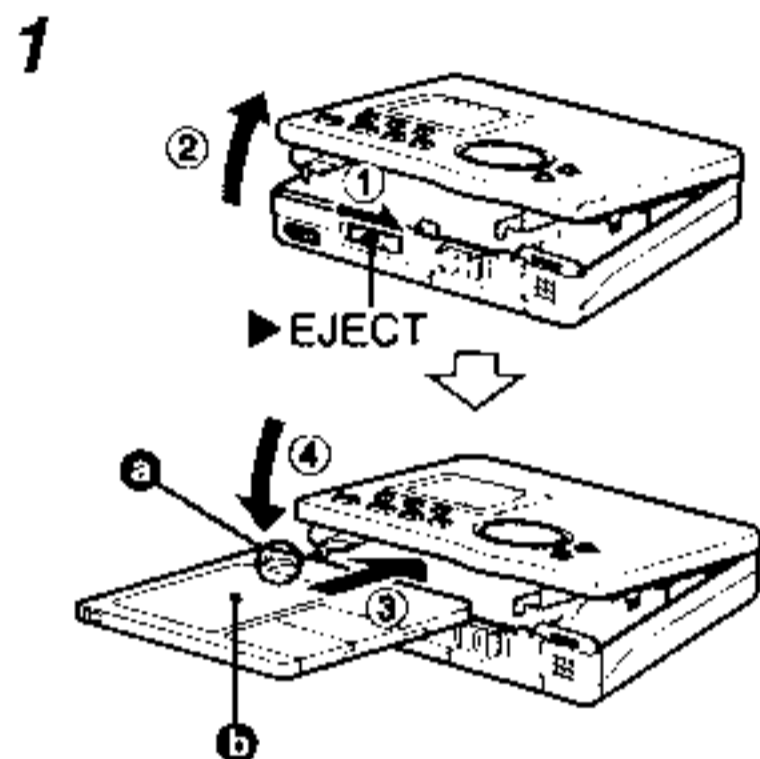
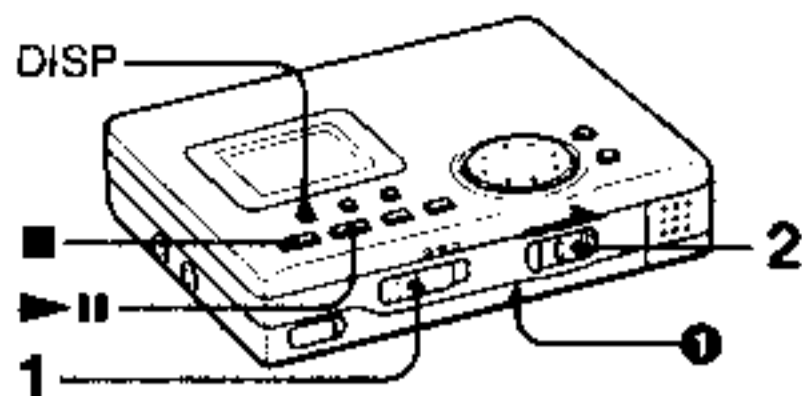
- Slide REC/EDIT in the direction of the arrow and hold it for more than 2 seconds. The unit enters recording pause mode. Press ►|| to start recording.
- To operate with the remote control, press ►|| while keeping REC/EDIT pressed. The unit always enters recording pause mode when operating with the remote control.

Information on the display after closing the disc holder

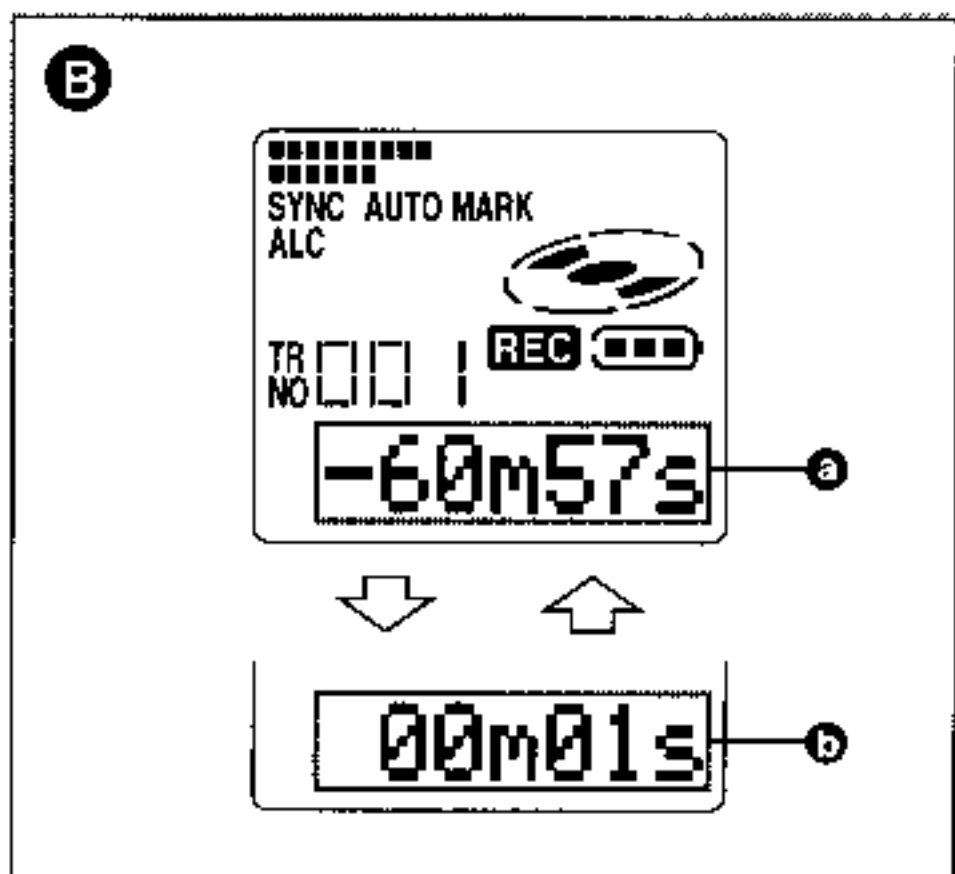
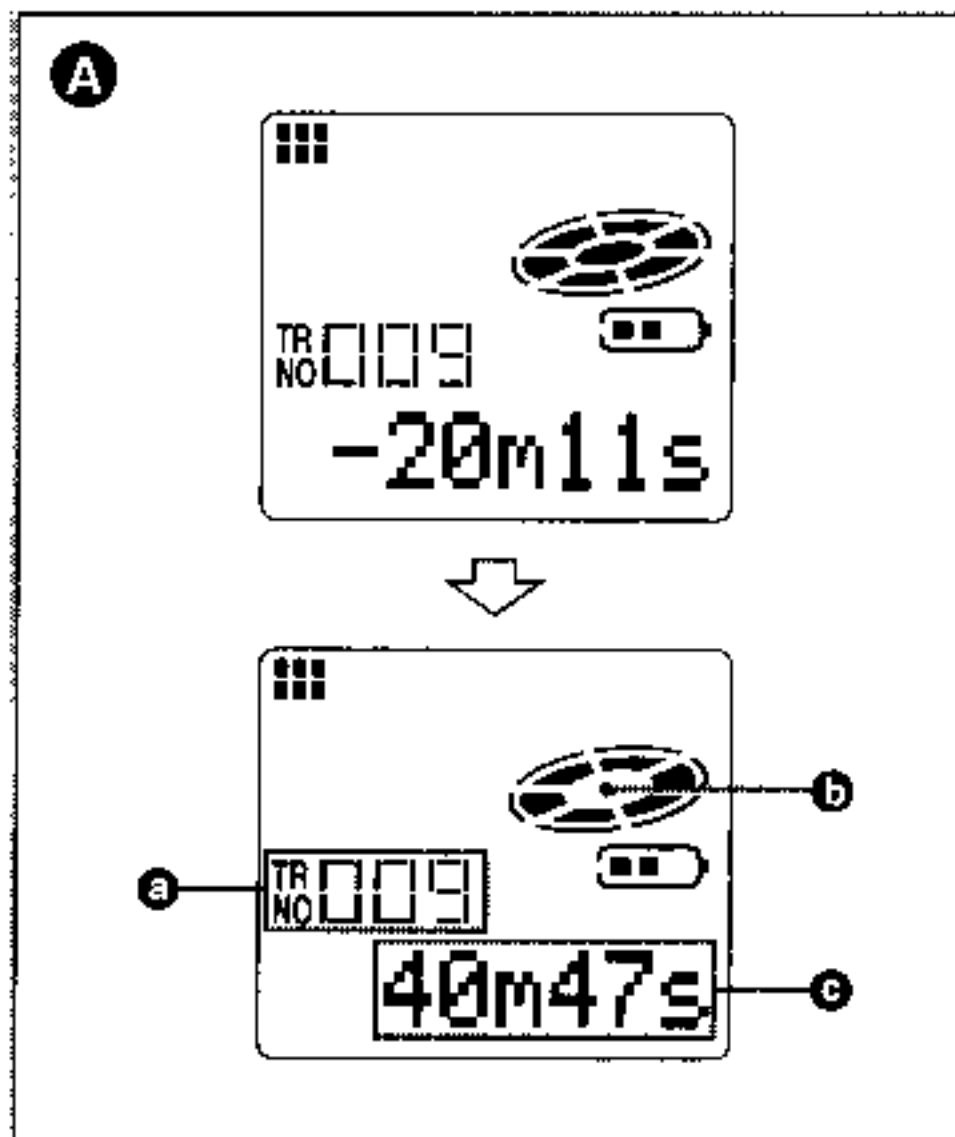
TOC READ: The unit is reading the information contained in the disc. The total number of tracks and total playing time will be displayed after a second.

BLANK: Inserted MD has not been recorded on at all.


If no operation is made for four seconds after the information of the disc is displayed, the unit turns off automatically.



RECORDING

**To stop recording → A**

Press ■. The unit stops after registering the information concerning the contents of a recording (TOC*).

- a Number of all tracks on the MD
- b  disappears after registering the TOC
- c Total recorded time of the MD

* TOC: An abbreviation of Table of Contents
The TOC information functions as a coded index of the recorded material. The unit records the TOC data such as a playing time and recorded address on an MD.

Power turns off automatically

If the unit is left untouched after pressing ■ to stop recording or recording is completed, it turns off automatically after about four seconds. The unit turns on when you press any buttons for operation.

To stop recording temporarily

Press ►|| during recording. The eye catcher flashes and the unit enters recording pause mode. To resume recording, press it again.

To monitor the sound being recorded

Connect the headphones to the OUTPUT/PHONES jack of the unit. Adjust the volume with VOLUME +/– on the unit or the VOL control on the remote control.


The recorded sound is not affected even if the volume is changed.

Indications on the display during recording → B

The remaining recordable time of the MD is displayed during recording. It can be changed to the elapsed recording time of the current track. Press DISP. Each time it is pressed, the contents change cyclically.

- a Remaining recordable time
- b Elapsed recording time of the current track

To eject the disc

Press ■ to stop recording. After "  " indication in the center of the eye catcher disappears, slide EJECT in the direction of the arrow to open the disc holder.

While recording or registering the TOC information, EJECT does not function.

RECORDING

Adjusting the recording level

This unit controls the recording level automatically in normal operation. If you want to adjust the recording level manually for an analog recording, follow the steps below.

1 Set the unit to recording pause mode and start playing the source.
(see page 40)

2 Press MODE repeatedly to display "A.L.C."*

3 Press ENTER to display "LINE 10" or "MIC 10".

"ALC" disappears.

4 Turn MULTI JOG to adjust the recording level while checking the level indicator.

Adjust the level as high as possible, but within the level which does not reach the "OVER" indication.

The recording level can be adjusted between 00 and 20.

a Level indicator

5 Press ►|| to start recording.

* A.L.C.: An abbreviation of Automatic Level Control

To adjust recording level during recording

Turn MULTI JOG during recording while the A.L.C. function is not activated. When turning MULTI JOG, the display automatically changes to the level adjusting mode and returns to the normal recording mode after adjusting the level.

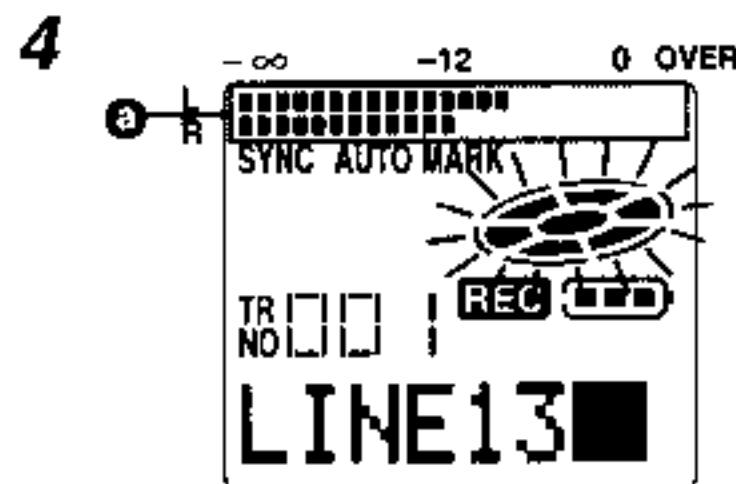
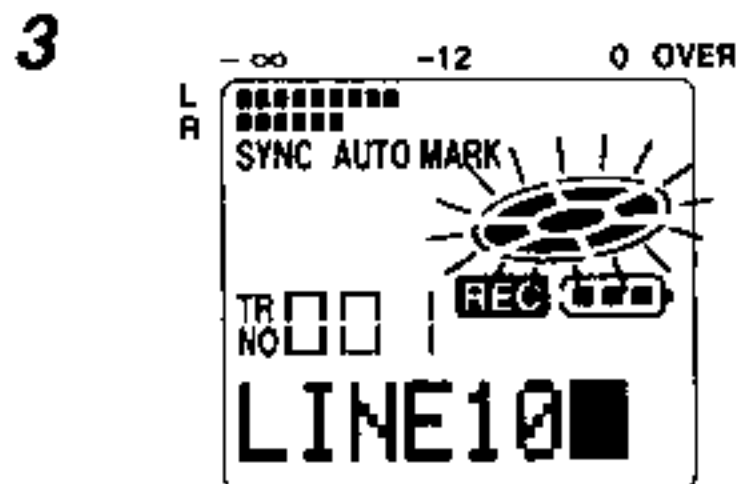
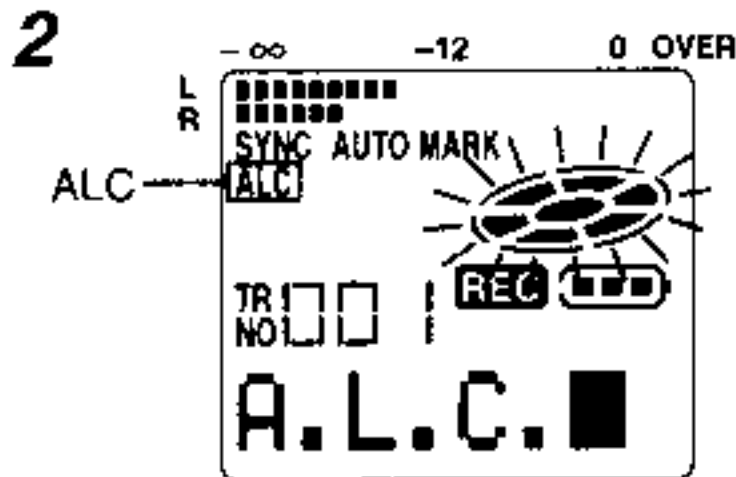
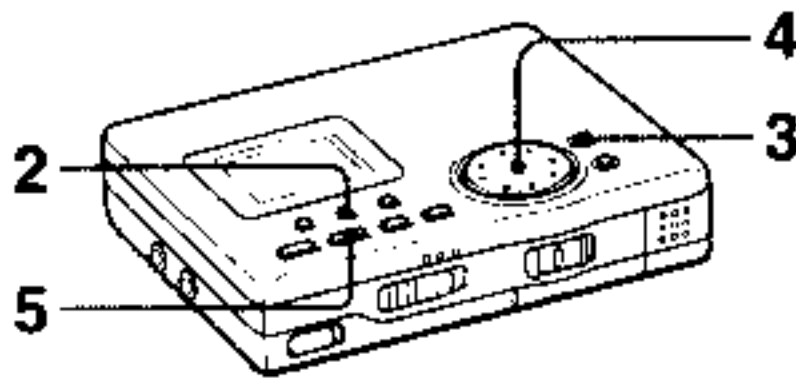
To resume automatic level control

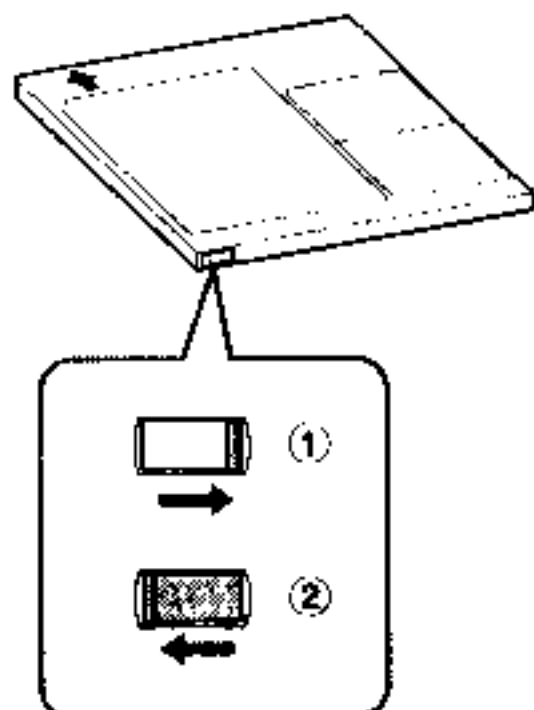
In recording pause mode, press MODE repeatedly to display "LINE" or "MIC". Then press ENTER to display "A.L.C.".

To record with a good level

Play back the loudest part of the source, and adjust the recording level as high as possible, but within the level which does not reach the "OVER" indication.

When the recording level is set too low, the recorded sound will be low. When it is set too high, recorded sound will be distorted.



RECORDING***To record on a previously recorded MD***

If there is an unrecorded section left on the MD, the new recording automatically starts just after the end of the previous recording. You do not have to locate the unrecorded part or worry about recording over the previous recording as in cassette tapes.

If you want to record after erasing the previous recording completely, follow the procedure described on page 80 to erase the recorded material, then start the new recording afresh.

To prevent accidental erasure of recorded material

A recordable MD is equipped with a record-protect tab which prevents accidental erasure of recorded material. Slide the tab as illustrated to protect your MD from accidental recording.

- ① To protect the recorded contents
- ② To record

To record on the MD again, move the tab to the original position.

Notes

- You cannot record on prerecorded MDs.
- Do not subject the unit to strong shocks or disconnect the power while the unit is recording the TOC information. Otherwise the TOC information will not be recorded properly and the disc may not be played back.

When "NO DISC" indication flashes

There is no disc in the unit. The unit turns off after about four seconds when you leave the unit as it is.

When "PROTECT" indication is displayed

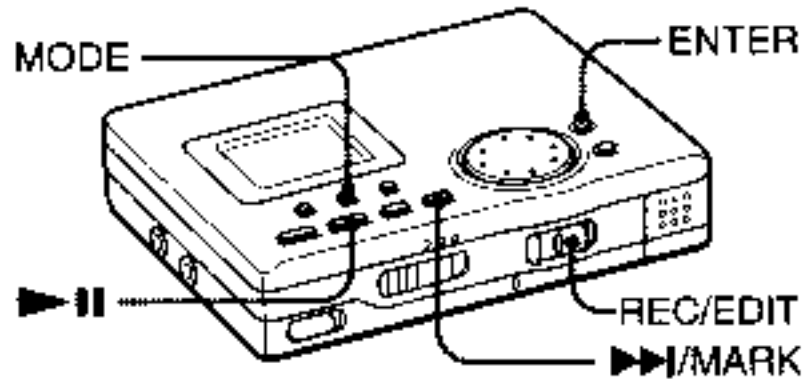
The record-protect tab of the disc is set to the position for protection. The unit turns off after about four seconds when you leave the unit as it is.

When "PB DISC" indication is displayed

You have attempted to record on an unrecordable disc. Use a recordable one.

USABLE FUNCTIONS FOR RECORDING

English



- Registering the index codes (up to 254) to access the desired track quickly during playback
- Extended recording (Monaural recording)
- Synchronized analog and digital recording

Registering index codes

There are three ways to register the index codes.

Auto marker function

Usually, the index codes and track numbers are recorded automatically during recording.

When you are recording digitally from a CD or prerecorded MD → A

The information of index codes recorded on the CD or prerecorded MD is copied as it is.

- ① CD or MD
- ② Recording (MD)
- ③ ▲: Index code

When you are recording from an analog source or through a microphone → B

If there is an unrecorded section lasting more than three seconds, an index code will be registered automatically when a signal is input next time.

- ① Input sound
- ② Recording (MD)
- ③ ▲: Index code
- ④ While there is no sound

Time marker function

The index codes and track numbers are recorded every five minutes. Use this function while recording broadcasts or an interview.

Manual marker function

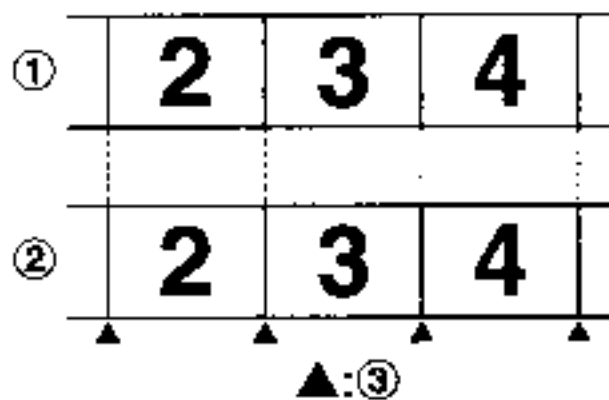
The index code is recorded and the track number advances by one each time you press ►►/ MARK on the unit or ENTER on the remote control.

This function can be used as well even if the auto marker or time marker function is activated.

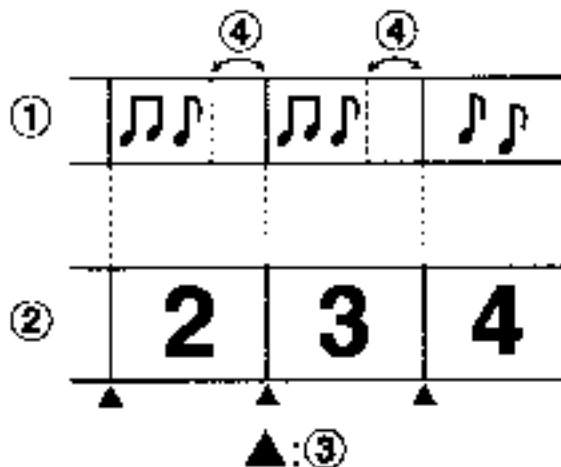
Notes

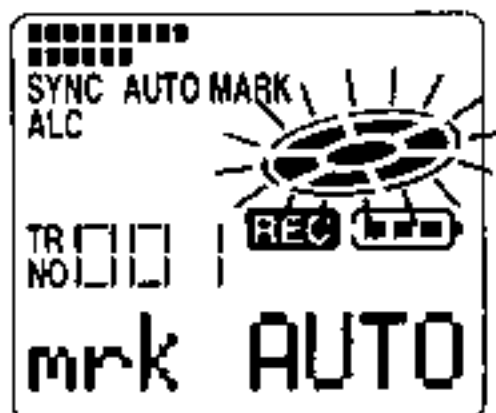
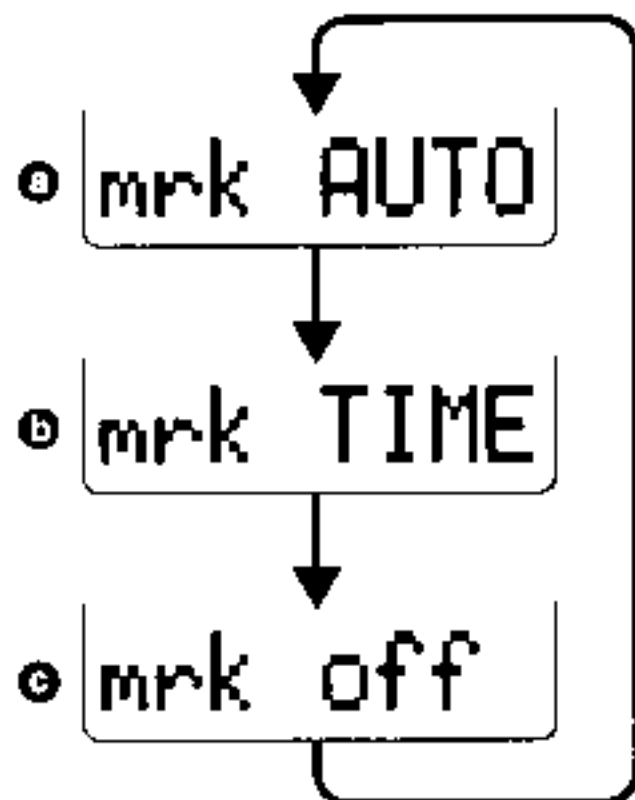
- There may be cases where the index codes are not registered accurately even if the automatic marker function is activated.
- You cannot register index codes without registering the track numbers.

A



B



2**3**

Selecting the marker function

- 1** Set the unit to recording pause mode.
(see page 40)
- 2** Press **MODE** repeatedly to display "mrk AUTO".
- 3** Press **ENTER** repeatedly.
Each time it is pressed, the marker function name changes cyclically. Select the desired mode.
 - a** Auto marker mode
 - b** Time marker mode
 - c** Off marker mode
 When you do not want to register index codes automatically, select "mrk off". In this mode, you can add index codes manually by using the manual marker function.
- 4** Press **▶||** to start recording.

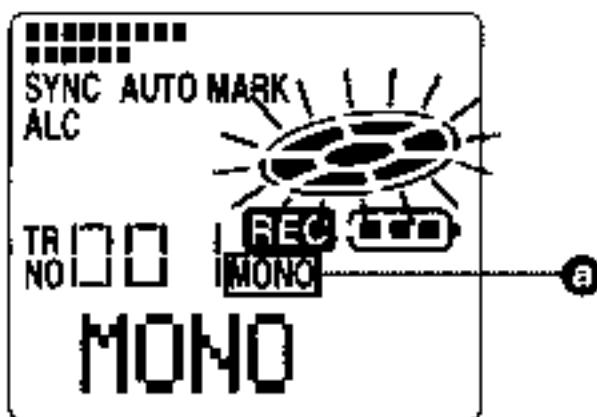
Notes

- "mrk TIME" or "mrk off" may be displayed in step 2.
- The unit is factory-set to the "mrk AUTO" mode (Auto marker mode).
- The selected marker mode is stored even if the unit is turned off.

2



3



USABLE FUNCTIONS FOR RECORDING

Extended recording in monaural

Use monaural recording to obtain a recording time twice as long as the time printed on the MD. The recorded sound will be monaural, but this mode is useful for recording long interviews, etc.

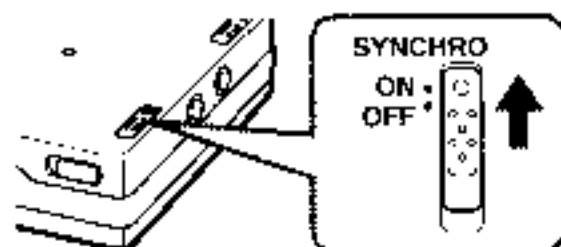
- 1 **Set the unit to recording pause mode.**
(see page 40)
- 2 **Press MODE repeatedly to display "STEREO".**
- 3 **Press ENTER to display "MONO".**
Each time it is pressed, the recording mode name changes cyclically.
 - a "MONO" lights while recording in monaural or playing back tracks recorded in monaural. To resume stereo recording, press it to display "STEREO"
- 4 **Press ►|| to start recording.**

Notes

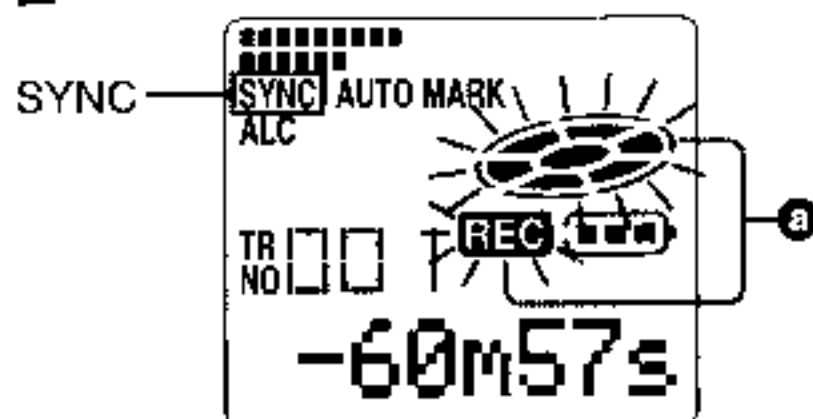
- The unit is factory-set to the "STEREO" recording mode.
- The selected recording mode is stored even if the unit is turned off. It is recommended to resume stereo recording after recording in monaural.
- The sound from the connected headphones is stereo while recording stereo programs in monaural mode.
- Every time you switch between monaural mode and stereo mode, the track number advances by one.
- The MD recorded in monaural with this unit cannot be played on another MD player which is not compatible with monaural playback.

USABLE FUNCTIONS FOR RECORDING

1



2

***Synchronized analog recording***

In synchronized analog recording, the unit can pause automatically during recording:

- While the sound source is below a certain level.
- When the connected equipment stops playing.

Use this function while recording a meeting or a speech. It will save the recordable part of an MD by recording only the speaking parts.

The unit will enter recording pause mode when there is no sound for four seconds, and resumes recording automatically at the same time when the sound begins again.

- 1 Slide **SYNCHRO** to **ON**.
- 2 In stop mode, slide **REC/EDIT** in the direction of the arrow with its center red tip lightly pressed.

Recording starts and "SYNC" lights on the display.

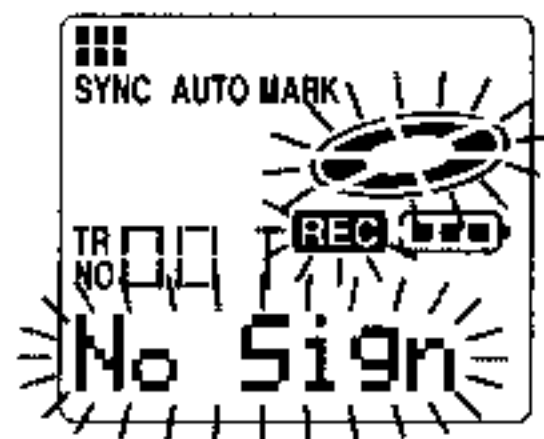
- a The eye catcher and "REC" flash while the unit automatically enters the recording pause mode by this function.

- 3 Press **■** after you finish recording.

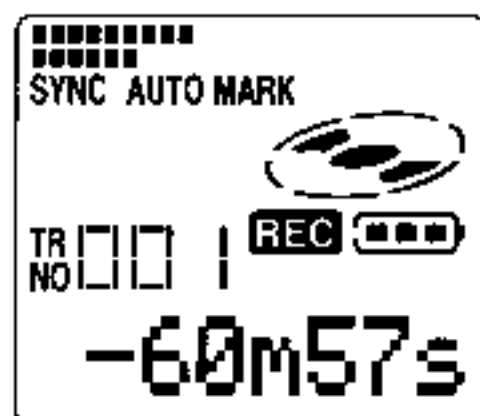
The unit stops after registering the TOC information.

- To resume normal recording mode, slide **SYNCHRO** to **OFF**.
- You can also restart recording manually by pressing **▶||** while the unit automatically enters the recording pause mode by this function.

1



2



Synchronized digital recording

When recording from an Aiwa mini component system via digital (optical) signal connection, the recording is always synchronized with the MD or CD operation regardless of the ON/OFF position of the SYNCHRO switch.

Preparation

Connect the unit to an Aiwa mini component system with a commercially available optical connecting cord.

- 1 In stop mode, slide REC/EDIT in the direction of the arrow with its center red tip lightly pressed.**

The unit enters recording pause mode and the eye catcher and "No Sign" flash on the display.

- 2 Start playback of the CD or MD.**

The unit starts recording automatically.

The unit enters recording pause mode automatically at the same time:

- When the playback of the CD or MD finishes.
- When the playback of the CD or MD is stopped.

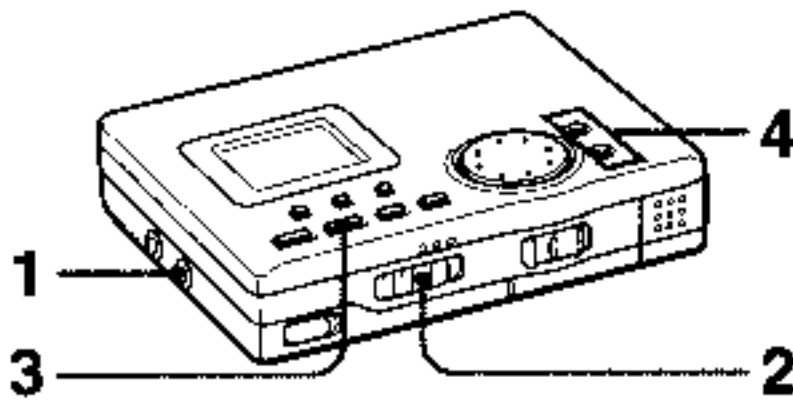
The unit resumes recording automatically when playback begins again.

- 3 Press ■ on this unit after finishing playback of the MD or CD.**

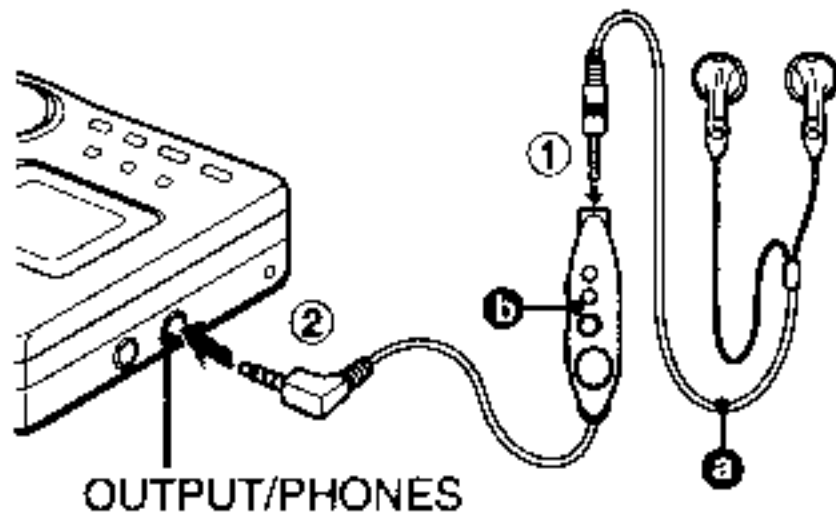
The unit stops after registering the TOC information.

Notes

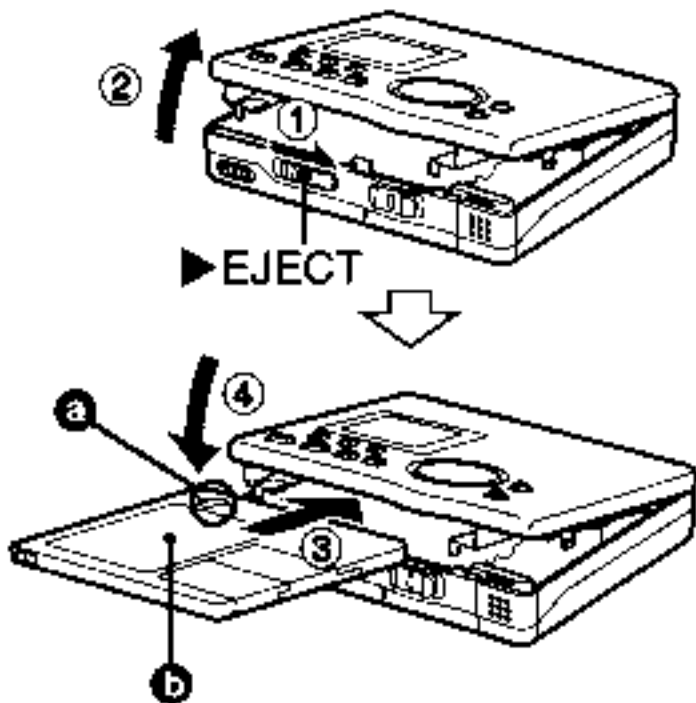
- The digital synchronized recording may not function in some models. Refer to the instructions of the mini component system.
- The digital synchronized recording functions only when recording via a digital (optical) signal connection. If your system is not equipped with the optical digital out jack, this function cannot be used.



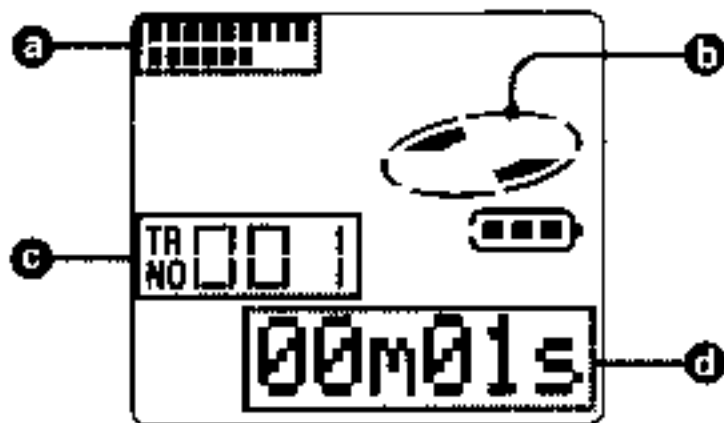
1



2



3



4



Basic operation of playback

1 Connect the supplied headphones to the main unit.

- ① Connect the supplied headphones plug to the supplied remote control jack.
- ② Connect the supplied remote control plug to the OUTPUT/PHONES jack on the main unit.

* Commercially available headphones with a stereo mini-plug can be connected to the remote control as well.

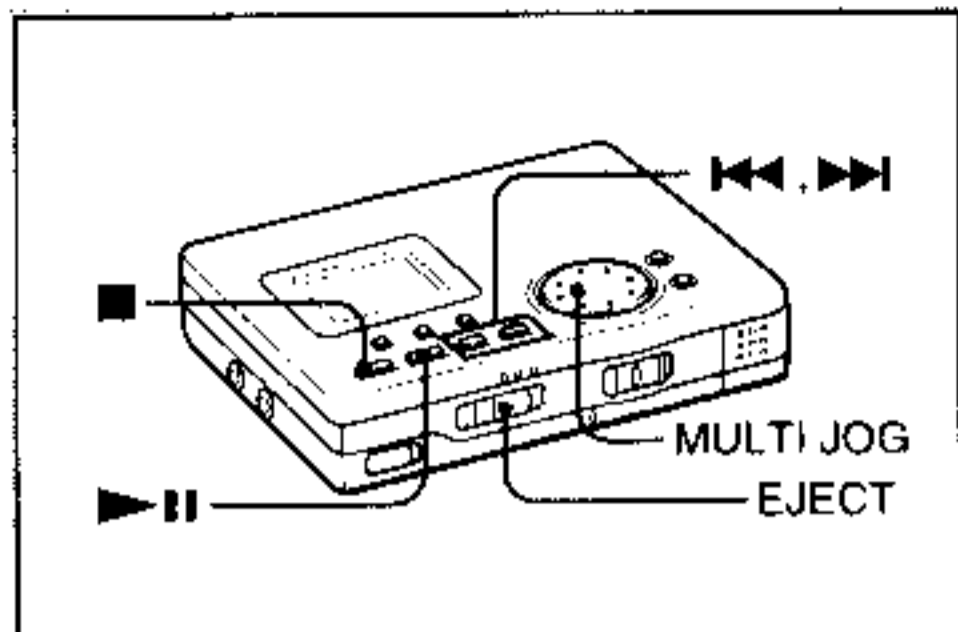
2 Insert an MD.

- ① Slide EJECT in the direction of the arrow.
- ② Pull the disc holder up.
- ③ Insert the MD with the label side up and in the direction of the arrow.
Be sure to insert the MD fully.
- ④ Close the disc holder.

3 Press ► II.

- Playback starts.
- ① Volume level of the playback sound
- ② Eye catcher turns clockwise
- ③ Current track number
- ④ Elapsed playing time of the current track

4 Press VOLUME +/- to adjust the volume.
The volume can be adjusted between 00 and 20. Turn VOL when adjusting the volume with remote control.

PLAYBACK**Other basic operations**

To stop, press ■.

To pause, press ►||.

To release pause, press ►||.

To search for a particular point, keep ◀◀ or ▶▶ pressed and release the button at the desired point.

To repeat the current track, press ◀◀ once during playback.

To skip a track, press ▶▶ once during playback.

To skip to the beginning of a track, press either ◀◀ or ▶▶ repeatedly during playback.

Turning **MULTI JOG** clockwise or counterclockwise is also available to skip to the beginning of the track quickly with checking the track name.

To eject an MD, press ■ then slide EJECT in the direction of the arrow.

To play back at double speed (Rapid-playback function)

Press ►|| until "X2 PLAY" is displayed.

To resume normal speed playback, press ►|| during rapid-playback.

Resume function

This unit memorizes the point when playback is stopped by pressing ■. The next time when playing the MD, playback will start from the previously memorized point.

The resume function is canceled:

- When opening the disc holder before starting the playback
- When recording a new track before starting the playback

Power turns off automatically

If the unit is left untouched after pressing ■ to stop playback or playing is completed, it turns off automatically after about four seconds.

The unit turns on when you press any buttons for operation.

When "NO DISC" indication flashes

There is no disc in the unit. If you leave the unit as it is, the power turns off automatically after four seconds.

PLAYBACK

Indications on the display**Stop mode** → **A**

- a** Total number of the tracks on the disc
- b** Total playing time of the disc

Playback mode → **B**

Each time DISP is pressed during playback, the indications on the display change as illustrated.

- a** Current track number
- b** Elapsed time of the current track
- c** Current track name
- d** Total number of remaining tracks on the disc
- e** Total remaining time of the disc
- f** Disc name
- g** Total number of the tracks on the disc
- h** Recording date of the current track

Notes

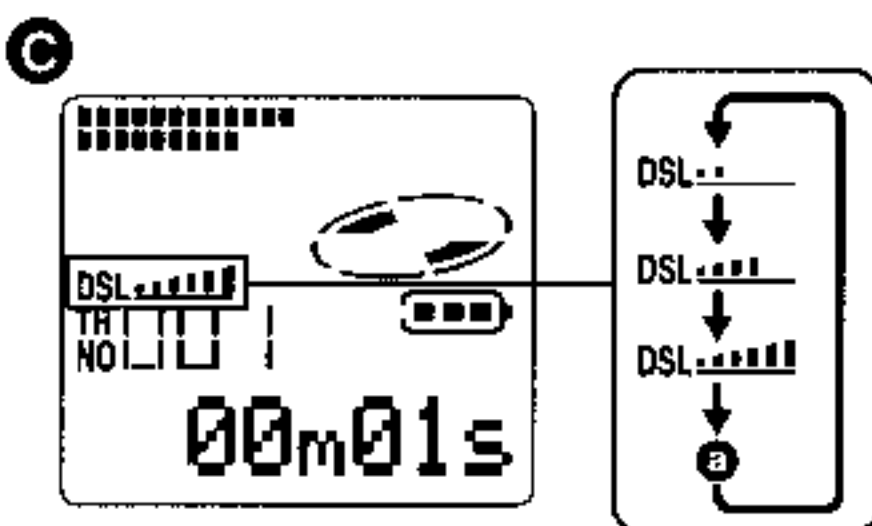
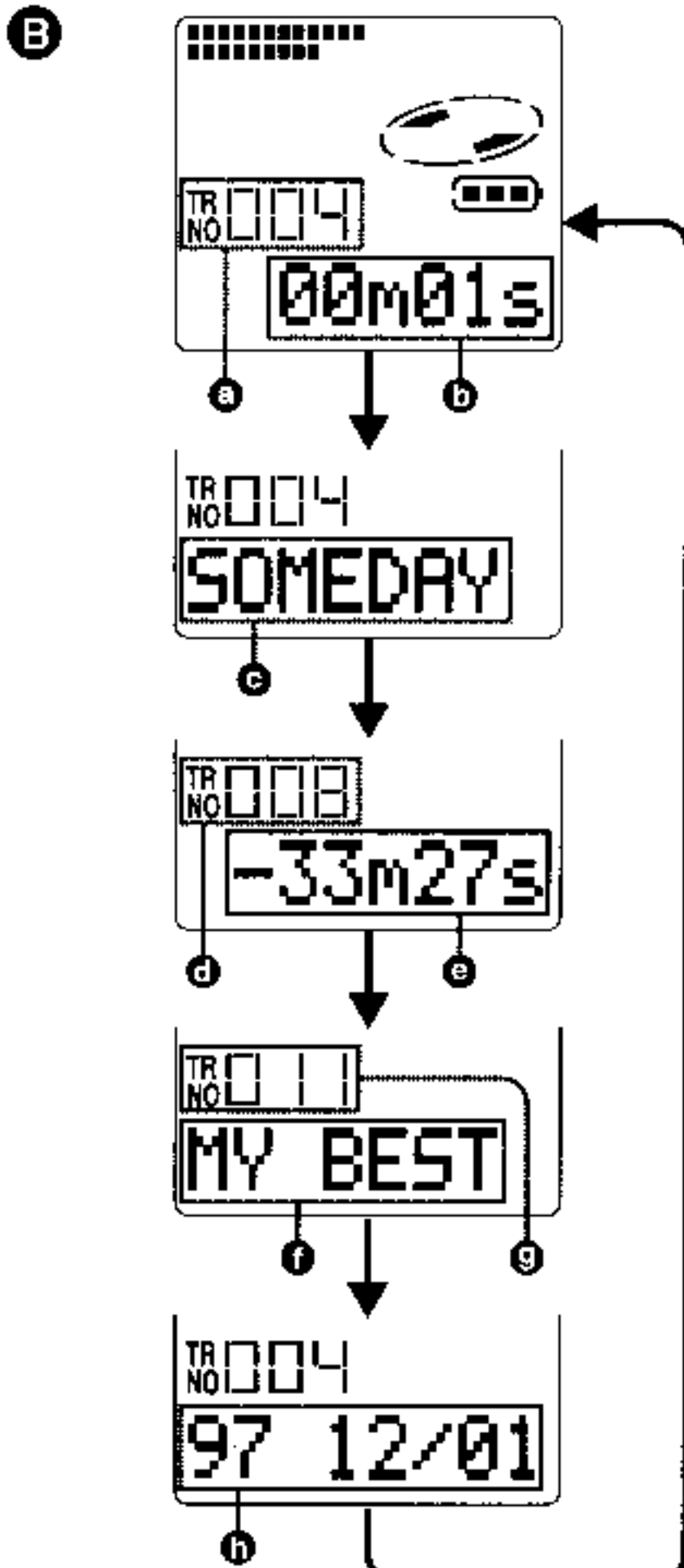
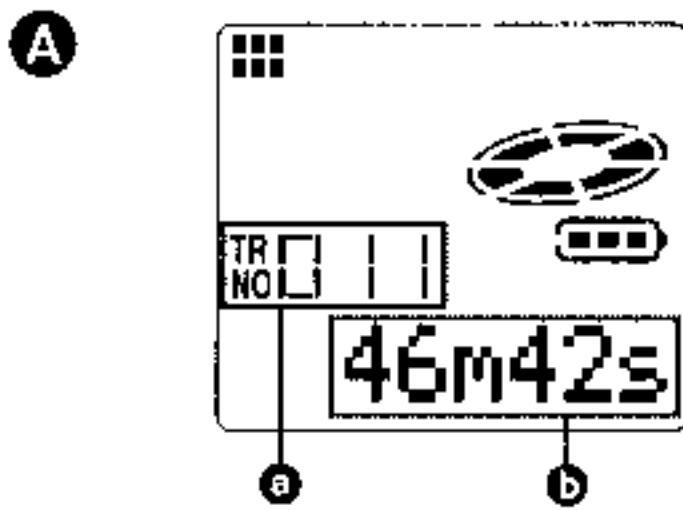
- When playing back a prerecorded disc or a recordable disc in which no date is recorded, "--/--" will be displayed.
- Once playback is stopped, the display is reset to the initial mode.
- Disc name and track name are not displayed when playing discs are not registered.

Adjusting the sound → **C**

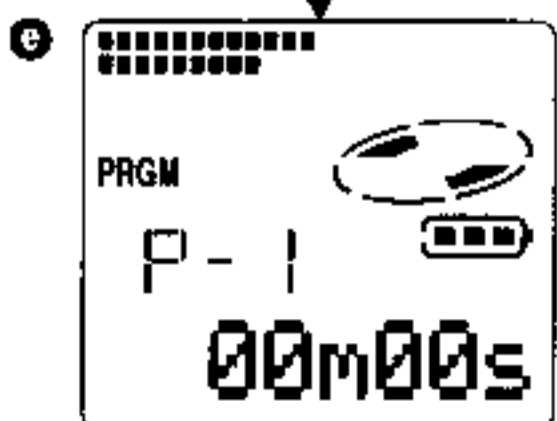
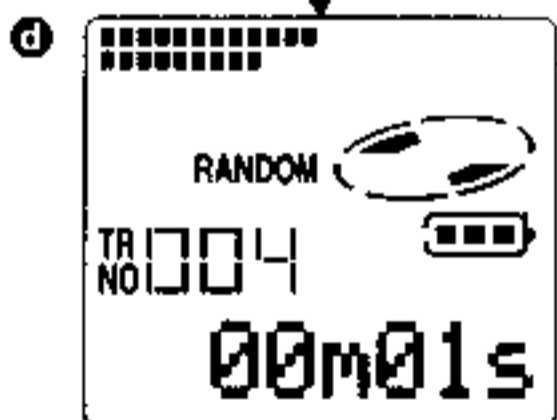
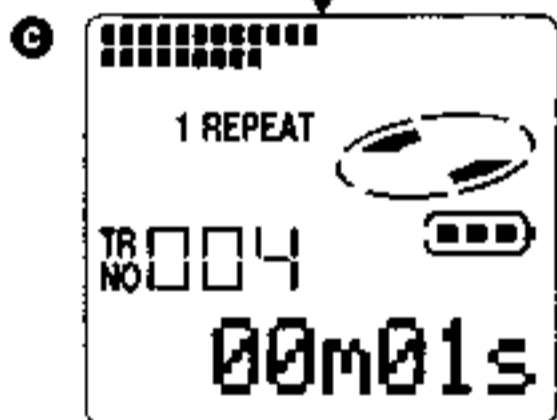
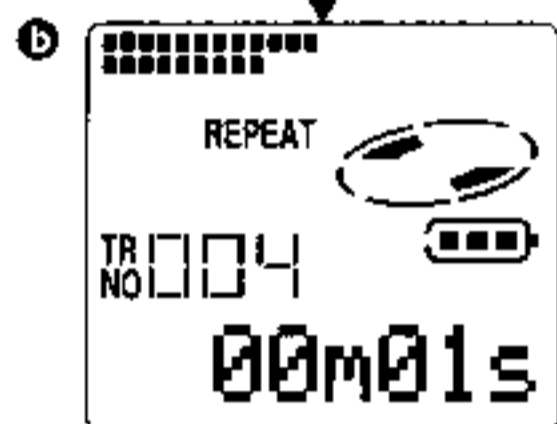
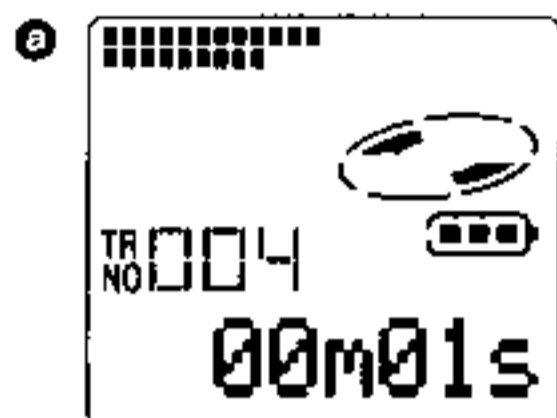
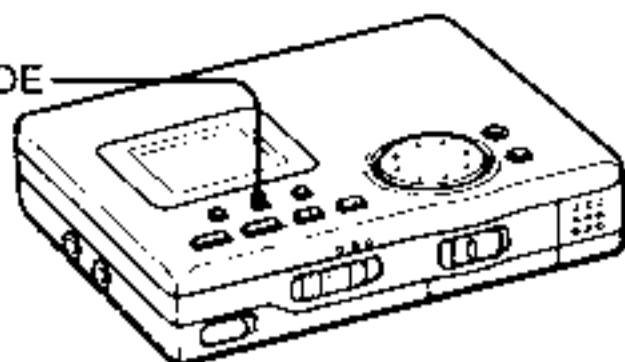
Press DSL repeatedly for more powerful sound and deeper base during playback.

Each time it is pressed the level changes cyclically. Select the desired mode.

- a** No indication (off)



MODE



Various modes of playback

There are five playback modes. Press MODE repeatedly during playback to select the mode. Each time it is pressed the mode changes cyclically.

- a Normal mode (No indication)**
Normal playing back
- b All repeat mode (REPEAT)**
Playing back all tracks repeatedly
- c 1 repeat mode (1 REPEAT)**
Playing back the current track repeatedly
- d Random mode (RANDOM)**
Playing back all tracks randomly and in a different order each time the disc is played.
- e Program mode (PRGM)**
Playing back tracks in the desired order (see page 66 for detail)

Notes

- The selected playback mode is stored even if the unit is turned off.
- The unit resumes the normal playback mode:
 - When opening the disc holder
 - When editing or recording the disc

PLAYBACK

***Playing back tracks in a desired order
(Programmed play)***

The unit can store and play back up to 25 tracks in the desired order.

1 Press MODE repeatedly during playback to display "PRGM".

a Program number

2 Turn MULTI JOG or press either ◀◀ or ▶▶ to select the track number.

The track can be selected by turning VOL on the remote control as well.

a Selected track number

b Total playing time of the selected tracks

3 Press ENTER to program the track.

The unit stores the track and shows the new display to select the next track to be programmed.

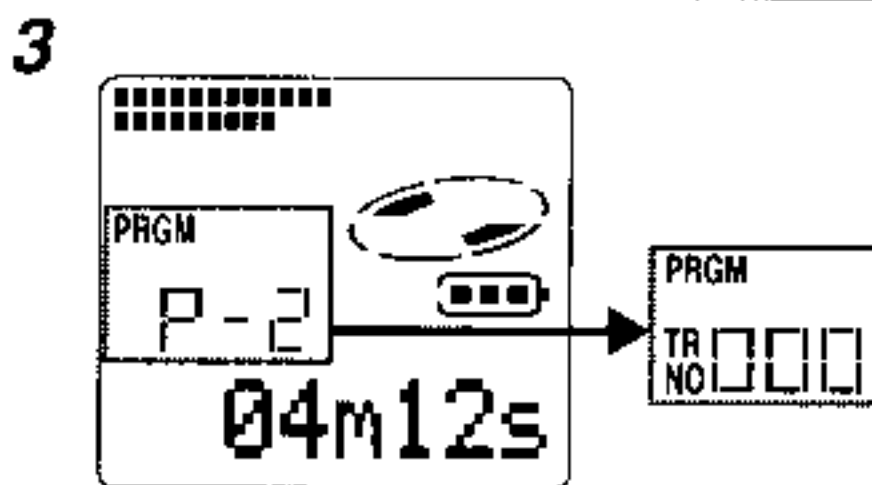
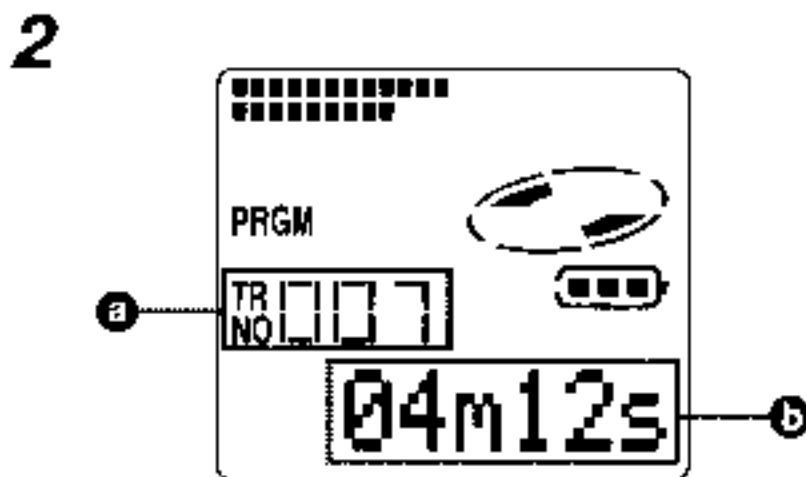
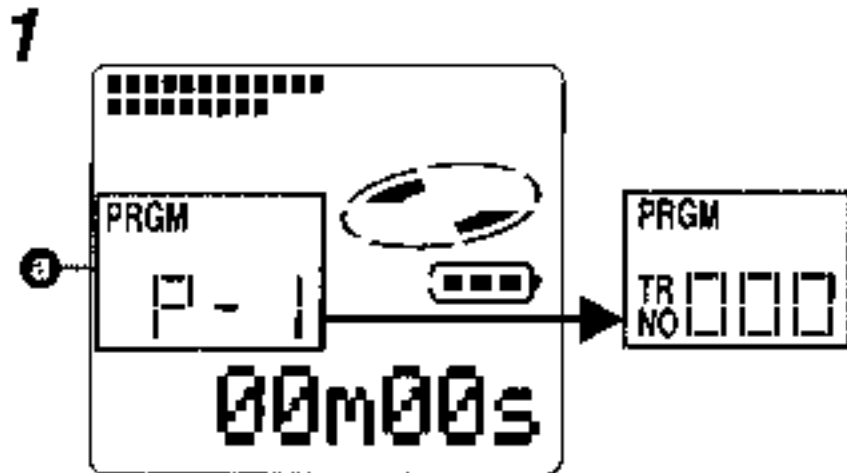
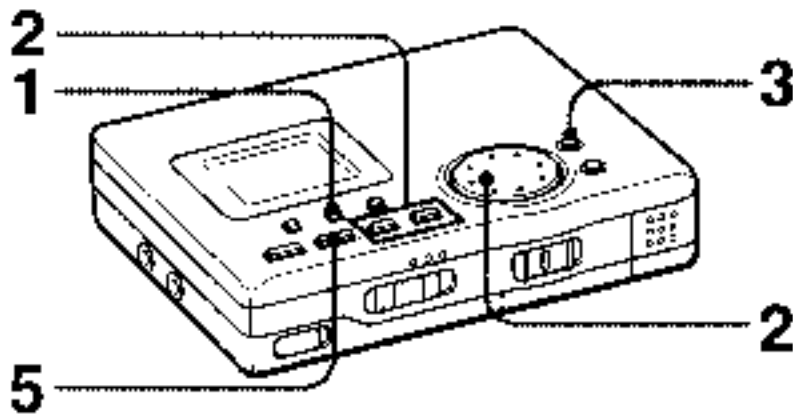
4 Repeat steps 2 and 3 and complete the program.

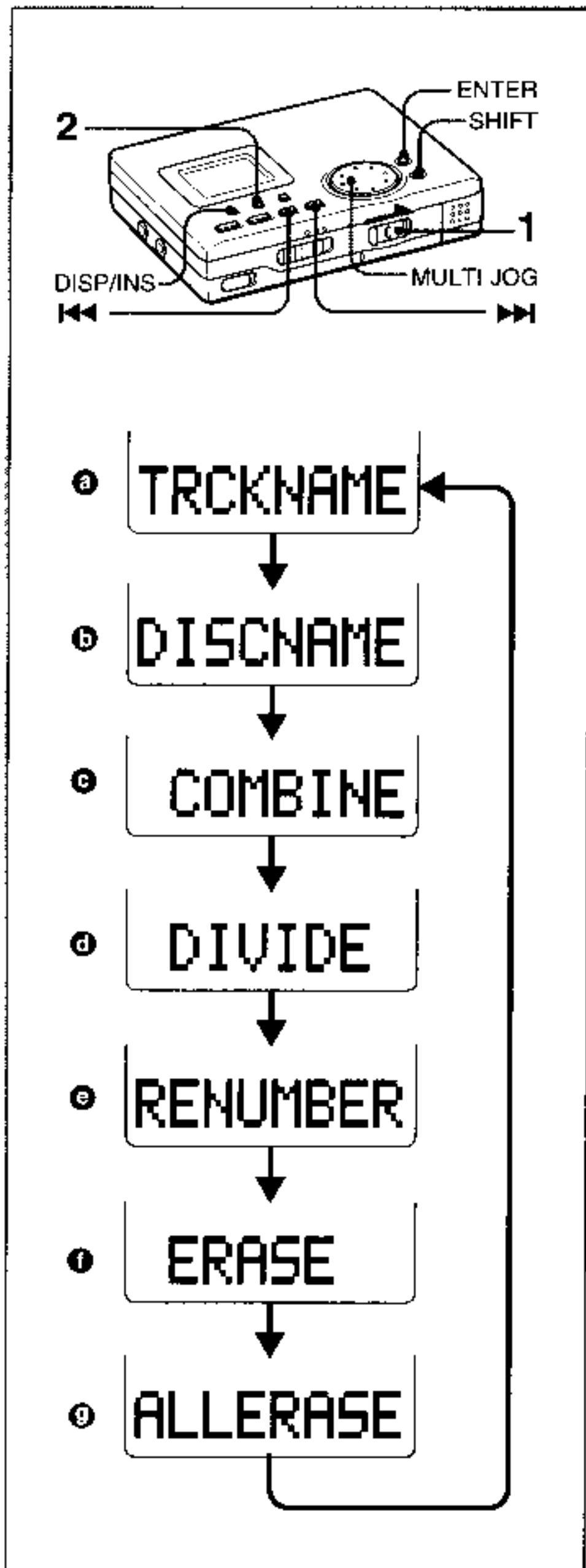
5 Press ▶|| to start programmed play.

The track will be played in the programmed order from the first track.

Notes

- If you attempt to store more than 25 tracks, the last track (the 25th one) is overwritten by a new one.
- The program is stored until the disc holder is opened even if the unit is turned off. To cancel the programmed play, press MODE once to resume normal playback.
- To change the program, repeat the steps above. Before opening the disc holder, the previous programmed track will be displayed. Select the new tracks for the new program.





You can edit a recorded disc to make an original one by using the seven editing functions described below.

Selecting an editing function

1 In playback or playing pause mode, slide REC/EDIT in the direction of the arrow with its center red tip lightly pressed.

The unit enters editing mode and one of the editing function names is displayed.

2 Press MODE repeatedly to select the desired function.

Each time it is pressed, the editing function changes cyclically.

- a) TRCKNAME: Registering track title
- b) DISCNAME: Registering disc title
- c) COMBINE: Joining up two tracks
- d) DIVIDE: Dividing up a track
- e) RENUMBER: Changing the order of the tracks
- f) ERASE: Erasing one track
- g) ALLERASE: Erasing all tracks

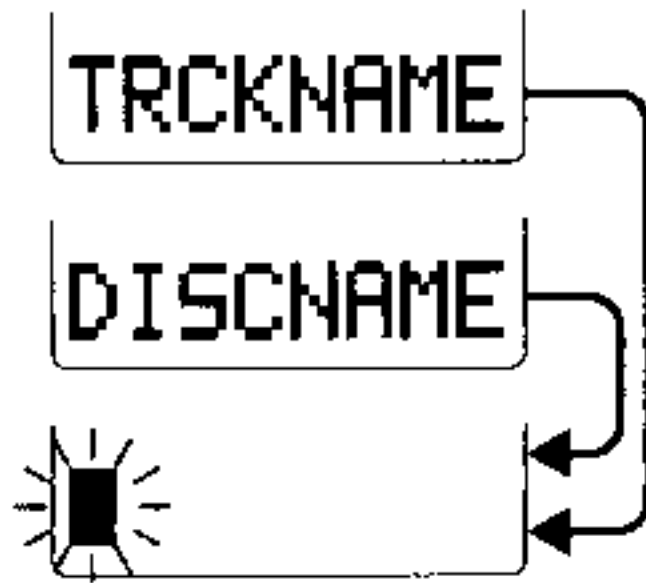
To select the editing function with the remote control

In playback or playing pause mode, press ►|| and hold it down while keeping REC/EDIT pressed. The editing function name changes one after another. Release the buttons when the desired function name is displayed.

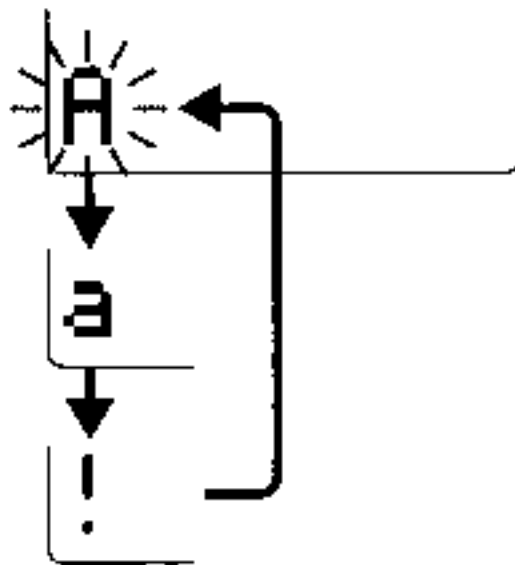
Notes

- "●" indication lights in the center of the eye catcher after editing the disc. When pressing ■, the unit registers the edited contents on the disc and stops.
Be sure not to slide EJECT while "●" indication lights on the display, or the edited contents will be erased.
- Do not subject the unit to strong shocks or disconnect the power while the "●" indication lights on the display. Otherwise the edited contents will not be registered properly and the disc may not be played back.
- A prerecorded disc and record-protected disc (the protect-tab on a recordable disc is set to the protected position) cannot be edited. When attempting to edit these discs, "PB DISC" or "PROTECT" will be displayed.

2



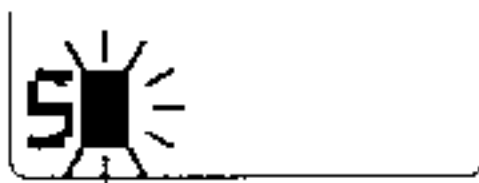
3



4



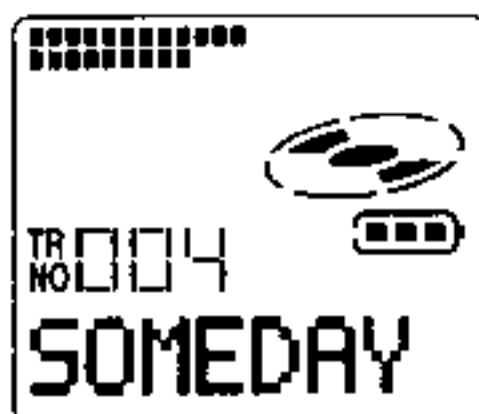
5



6



7



Registering track and disc titles (Track name/disc name function)

You can register a title for each track and disc. Use this function to write your own message on the track or disc.

- You can use up to 50 letters per title and up to about 1,700 letters per disc (capital letters, small letters and symbols only).

1 Start playing the track to be assigned a title.
When registering a disc title (disc name), start playing any track on the disc.

2 Slide REC/EDIT in the direction of the arrow with its center red tip lightly pressed and press MODE repeatedly to select the mode.

- When registering a track name, select "TRCKNAME".
- When registering a disc name, select "DISCNAME".

The flashing cursor will appear on the display after a second.

3 Press SHIFT repeatedly to select the desired kind of letters.

A: Capital letters can be entered.

a: Small letters can be entered.

!: Symbols can be entered

Press DSL to select the desired kind of letters with the remote control.

4 Turn MULTI JOG to select a letter to be entered.

Turn VOL to select a letter with the remote control.

5 Press ►►.

The letter selected in step 4 is determined and the flashing cursor moves to the right.

6 Repeat step 3, 4 and 5 to enter all the letters.
When not changing the kind of letters, repeat step 4 and 5.

7 Press ENTER.

The entered letters are all determined and "●" lights in the center of the eye catcher.

When pressing ■, the unit registers the entered letters on the disc and stops.

To interrupt registering titles

Press ■ or ►||.

To enter spaces

Turn MULTIJOG to display " " (space) and press ►|| to choose it. The space is located at the top of each kind of letters.

To correct characters previously entered

Press ◀◀ or ►► to locate the flashing cursor on the character to be corrected. Then enter again.

To delete characters previously entered

Press ◀◀ or ►► to locate the flashing cursor on the character to be deleted. Then press ◀◀ after pressing DISP/INS.

To insert a space or character between characters previously entered

To insert a space, press ◀◀ or ►► to locate the flashing cursor on the right character where the space is to be added. Then press ►► after pressing DISP/INS.

To insert a character, change the space to the character after inserting the space.

The letters and symbols that can be used

You can use the following letters and symbols.

Capital letters

ABCDEFGHIJKLMNOPQRSTUVWXYZ

Small letters

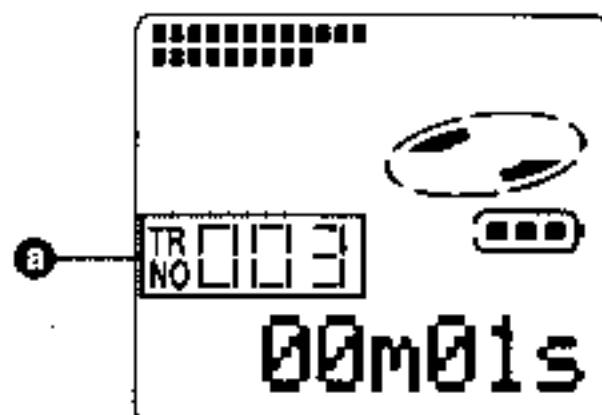
abcdefghijklmnopqrstuvwxyz

Marks

!"#\$%&'(>)*+,-./0123456789:;<=>?

EDITING

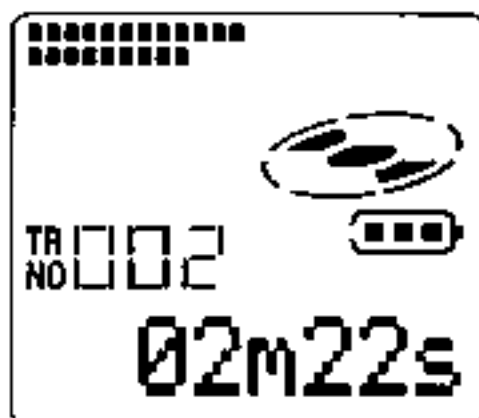
1



2



3



***Joining two tracks (Combine function)***

You can join two tracks by erasing the index code.

- 1 Start playing or pause during play of the latter track of the two tracks to be joined.
 a To combine tracks 2 and 3, play or pause track 3.
- 2 Slide REC/EDIT in the direction of the arrow with its center red tip lightly pressed and press MODE repeatedly to select "COMBINE".
- 3 Press ENTER.

The index code of the track in play or pause mode is deleted, and the track is joined to the previous track.

The track number decreases by one. At the same time, all the following track numbers also decrease by one.

" lights in the center of the eye catcher. When pressing , the unit registers the edited contents on the disc and stops.

If both of the tracks are titled

The title of the first track will remain.

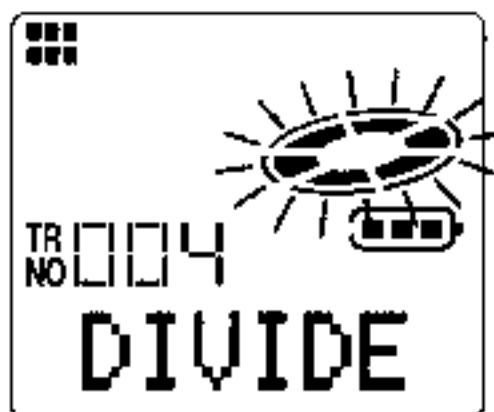
To interrupt combining function

Press  or .

Note

You cannot join a track recorded in monaural with a track recorded in stereo.

2



3



4



EDITING



Dividing a track (Divide function)

You can divide a track into two by registering an index code for a new track. Use this function to make a track you want to repeat several times.



- 1 **Pause while playing the point where you want to divide.**
- 2 **Slide REC/EDIT in the direction of the arrow with its center red tip lightly pressed and press MODE repeatedly to select "DIVIDE".**
- 3 **Press ENTER.**
- 4 **Press ENTER again.**

"DIV OK?" lights on the display and the unit repeatedly plays the three seconds beginning part of the new track.

The index code is added and the track is divided in two. The track number increases by one. At the same time, all the following track numbers also increase by one.

" lights in the center of the eye catcher. When pressing , the unit registers the edited contents on the disc and stops.

To adjust the point where the track is divided

In step 3, turn MULTI JOG or press  / . The dividing point selected in step 1 moves forward or backward in the track. You can check the dividing point by the sound repeatedly played back.

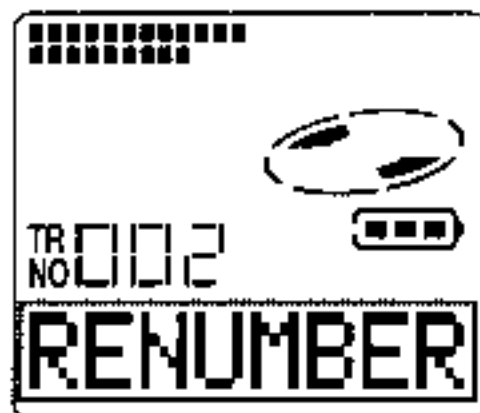
To interrupt dividing function

Press  or .

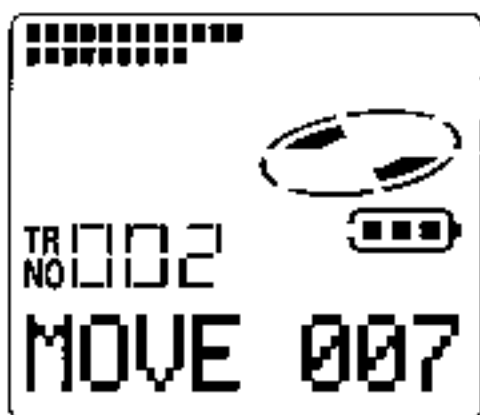
Notes

- A track cannot be divided in the following case:
- When the elapsed time is displayed as "00m00s"
 - When a disc in the unit already contains 254 tracks

2



3



4



Changing the order of tracks (Renumber function)

You can change the order of the tracks. Once the order is changed, the order will not return to the original order even when the power is off.

- 1 Start playing or pause during play of the track to be moved.
- 2 Slide REC/EDIT in the direction of the arrow with its center red tip lightly pressed and press **MODE** repeatedly to select "RENUMBER".

"RENUMBER" changes to "MOVE 000" on the display after a second.

- 3 Turn **MULTI JOG** or press **◀◀ / ▶▶** to select the new position (track number) where the track is to be moved.

VOL on the remote control can be used as well.

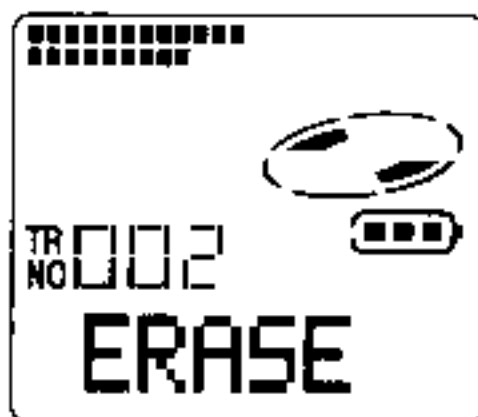
- 4 Press **ENTER**.

The track number changes to the selected one.

"●" lights in the center of the eye catcher. When pressing **■**, the unit registers the edited contents on the disc and stops.

To interrupt renumbering function

Press **■** or **▶||**.



Erasing tracks (Erase/all erase function)

- 1 **Start playing the track to be erased.**
When erasing all the tracks on the disc, start playing any track.
- 2 **Slide REC/EDIT in the direction of the arrow with its center red tip lightly pressed and press MODE repeatedly to select the mode.**
 - When erasing one track, select "ERASE".
 - When erasing all the tracks, select "ALLERASE".
- 3 **Press ENTER.**
"ERS OK" lights on the display.
Check whether the track (all the tracks) can be erased or not.
Once the track is erased, it cannot be restored.
- 4 **Press ENTER again.**
The playing track or all the tracks on the disc will be erased.
 - When one track is erased, all the following track numbers decrease by one.
"●" lights in the center of the eye catcher.
When pressing ■, the unit registers the edited contents on the disc and stops.
 - When all the tracks are erased, the unit is turned off automatically after four seconds.

To interrupt erasing function

Press ■ or ►||.

By using the following functions, you can make the recording, playback and editing operations more easily and more comfortably.

Preventing accidental operation (Hold function) → **A**

This function prevents unintended operation caused by accidentally touching the operational buttons and saves the battery power. Both the main unit and remote control are equipped with the HOLD switches.

To prevent accidental operation of the main unit

Set HOLD on the main unit in the direction of the arrow. All the buttons except EJECT on the main unit do not function. "HOLD" flashes on the display when pressing the buttons. The unit can be operated with the buttons on the remote control. Use this function while carrying the unit in the bag and operating it with the remote control.

To prevent accidental operation of the remote control

Set HOLD on the remote control in the direction of the arrow. All the buttons on the remote control do not function. The unit can be operated with the buttons on the main unit.

Limiting the maximum sound volume (Ear guard function) → **B**

To protect your ear from too high volume playback, the maximum sound volume can be set in two levels.

1 In stop mode, press DISP for more than 3 seconds until "CLOCKSET" appears on the display.

2 Press MODE twice.

"EarG OFF" is displayed.

3 Press ENTER.


"EarG OFF" changes to "EarG ON" and the ear guard function is activated.

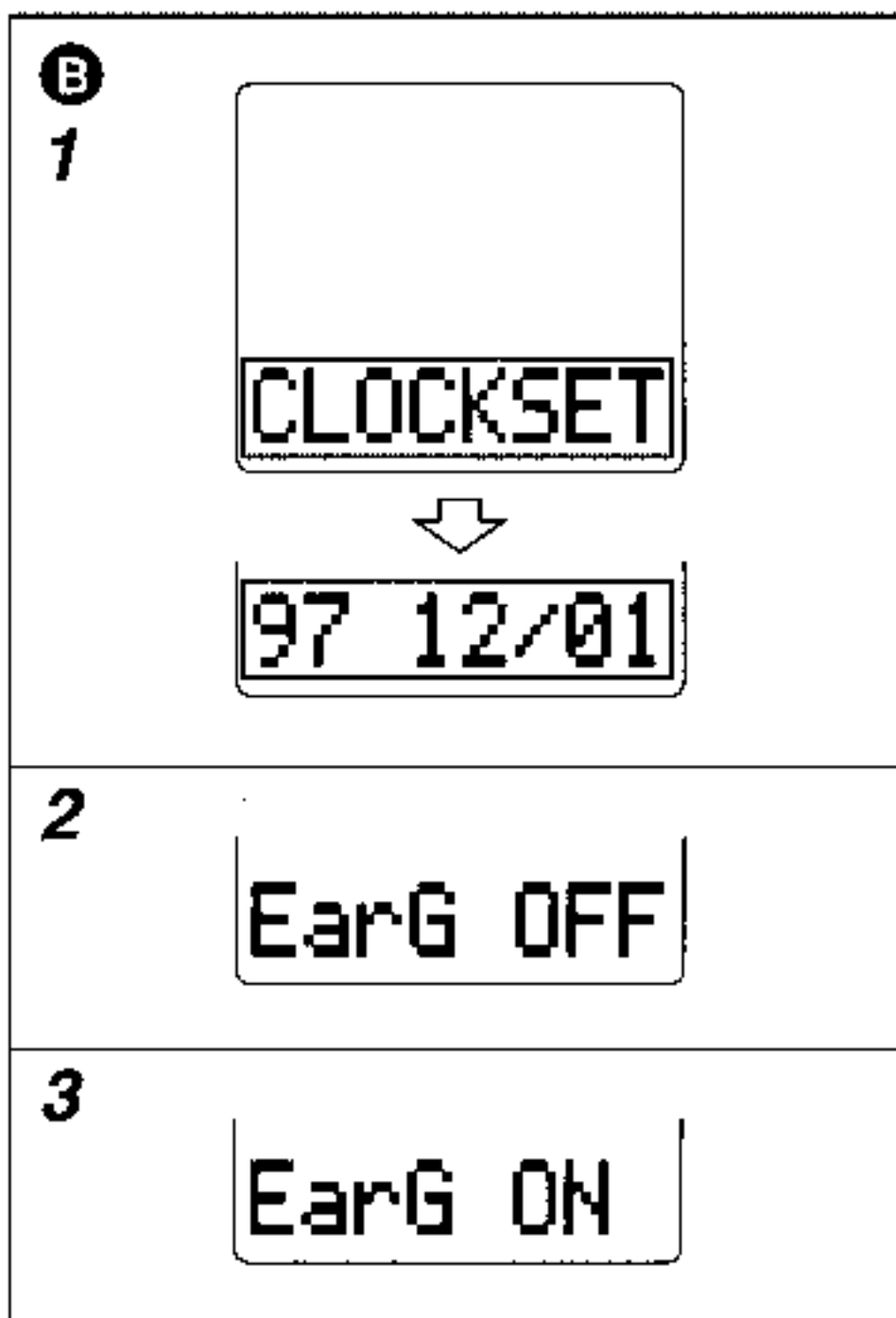
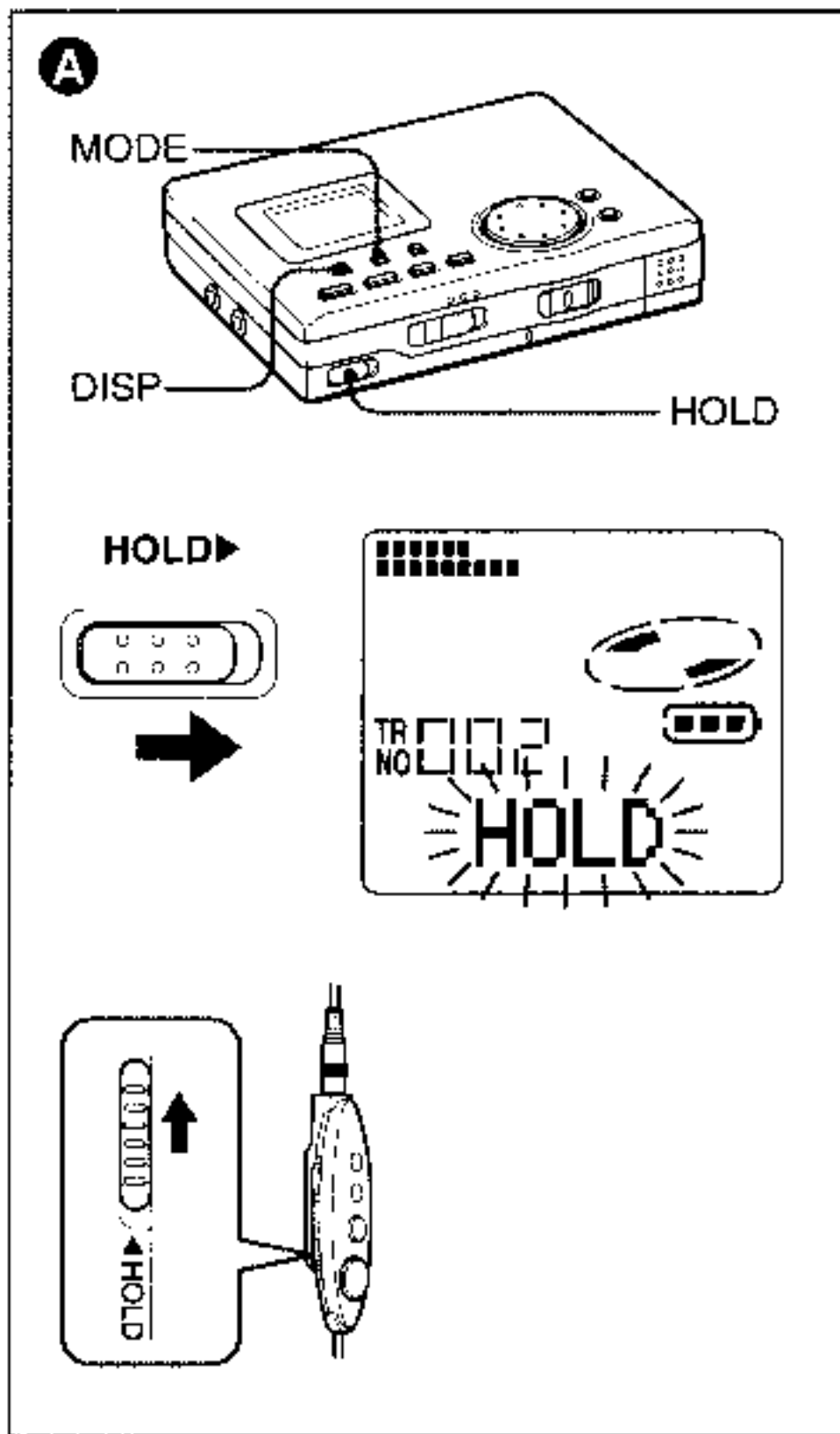
Each press of ENTER switches the ear guard function on and off.

The maximum volume is set as follows:

- EarG OFF: Level 20
- EarG ON: Level 13

"Ear GRD!" is displayed when setting the volume over the level 13.

4 Press  to turn off the unit.



USEFUL OPERATIONS

1

CLOCKSET



97 12/01

2

BEEP ON

3

BEEP OFF

Confirming operation by sound signals (Beep sound function)

The unit is equipped with the beep sound function. You can hear beeps when operating the unit to play, stop or skip forward/backward.

This function can be canceled for playback when connecting the unit to external equipment.

- 1** In stop mode, press **DISP** for more than 3 seconds until "CLOCKSET" appears on the display.
- 2** Press **MODE** once.
"BEEP ON" is displayed.
- 3** Press **ENTER**.
"BEEP ON" changes to "BEEP OFF" and the beep sound function is deactivated.
Each press of **ENTER** switches the beep sound function on and off.
- 4** Press **■** to turn off the unit.

About the beeps

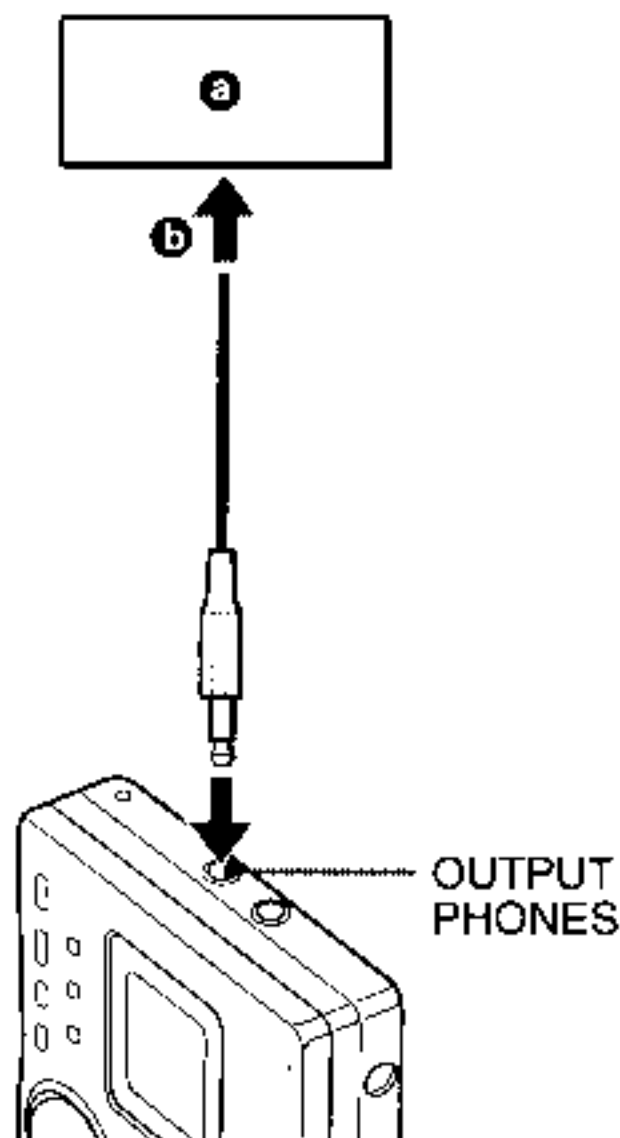
You can hear the beeps when pressing the buttons as follows:

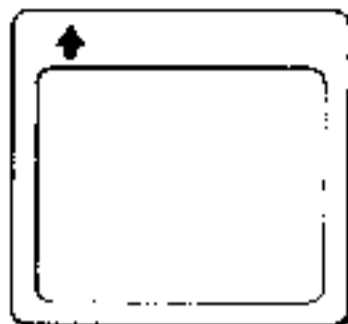
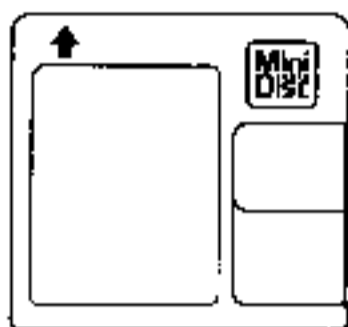
- ▶||**: Short beep sounds once. It sounds repeatedly during pause mode.
- : Long beep sounds once.
- ▶▶**: Short beep sounds twice (only for skipping)
- ◀◀**: Short beep sounds three times (only for skipping)

USEFUL OPERATIONS

Listening with other equipment

- Connect the OUTPUT/PHONES jack of this unit to the line input jack of other equipment such as a stereo set, etc. When the line input jack of other equipment is a phono jack, use the commercially available connecting cord. If it is a stereo mini-jack, use the Aiwa SSW-8 (not supplied).
- Make sure that the connecting cord is firmly plugged into both pieces of equipment.
 - Ⓐ Stereo set, etc.
 - Ⓑ To line input jack
- When listening with other equipment, adjust the volume level of the unit as high as possible, but within the level at which the sound is not distorted.



A**B**

WHAT IS A MINIDISC? English

A Mini Disc is only 64 mm (2 5/8 inches) in diameter, about half the size of a conventional CD. But Mini Discs can be used to store and play back a full 74 minutes of information, as much as a CD. Unlike a CD, a Mini Disc comes in a plastic cartridge, so that it can be handled with ease. The cartridge also protects the disc inside from shocks, dust and scratches. Unlike cassette tapes, which can become stretched or tangled, a MiniDisc is an excellent durable media.

Two types of discs

There are two types of MiniDiscs: "Optical discs" and "Magneto-optical discs". Both types use laser beams and optical pick-up technology to read recorded information during playback.

Optical discs → **A**

These are playback only discs. Like CDs, they are used as prerecorded music discs. You cannot record or edit them. The shutter covers the opening only on the non-labeled side of the MD.

Recordable MO* discs → **B**

These are recordable discs which can be recorded on again and again, like cassette tapes. The recording method called magneto-optical technology employs a laser and magnetism to record signals. Therefore, the quality of recorded sound does not deteriorate even after many playbacks and recordings. The shutter covers the opening on the both sides of the MD.

* Magneto-optical

Ultra compact size made possible by ATRAC* technology

A newly developed digital audio compression technology called the ATRAC system automatically extracts only the frequencies that are actually audible to the human ear and cuts the frequencies which are inaudible. This compresses the amount of information to be recorded to 1/5 of the normal amount. The ATRAC system is based upon studies carried out in the field of auditory psychology and does not impair the quality of the audible sound.

* Adaptive Transform Acoustic Coding

Quick random access

One of the great features of the MiniDisc is that you can search for desired tracks quickly. There are also quick and easy functions for random playback, in which the order of the tracks can be rearranged randomly, and for renumbering tracks to play them in any order.

WHAT IS A MINIDISC?

The limitations of MD

Recording on the MD is performed differently from that of a cassette tape or a DAT. Therefore, the MD system is subject to the following restrictions.

“DISCFULL” is displayed even if the recording time does not reach the maximum recordable time of the disc (60-minute or 74-minute).

“DISCFULL” is displayed when 254 tracks are already recorded on a disc, without respect to the recording time.

“DISCFULL” is displayed even if a disc is not fully recorded on.

If there are lots of emphasis data in a particular track, the unit handles the data as index codes, and tracks are counted, in addition, without respect to the time and number of tracks.

The remaining time on a disc is not increased even after some short tracks have been erased.

When the remaining time on a disc is displayed, it may not be increased even after erasing short tracks because the sections less than 12 seconds are not counted.

Tracks cannot be joined (the COMBINE function does not function).

Tracks created by editing may not be joined.

The total of the recorded time and the remaining time on a disc does not match with the maximum recordable time of the disc (60-minute or 74-minute).

Recording is performed by the minimum unit of one cluster (two seconds). Even if the recorded section is shorter than two seconds, a two-second space is needed in recording. Therefore, the available time becomes shorter. If there are scratches on a disc, the available time becomes shorter as well, because the sections which are scratched are automatically erased.

Track numbers may not be registered properly.

When recording from a CD through digital inputs, small tracks may be created depending on the contents of a CD.

When using the auto marker function, track numbers may not be registered properly depending on the contents of the CD.

SPECIFICATIONS

English

Main unit

Playback system	MiniDisc digital audio system
Laser pickup	Semiconductor laser
Recording system	Magnetic polarity modulation overwrite system
Revolutions	Approx. 400 to 900 rpm (CLV)
Sampling Frequency	44.1 kHz, with built-in sampling frequency rate converter
Number of channels	Stereo: 2 channels Monaural: 1 channel
Modulation system	Eight to Fifteen Modulation (EFM)
A/D, D/A converter	1-bit
Frequency response	20 to 20,000 Hz \pm 1dB
Wow and Flutter	Below measurable limit (\pm 0.001% W.PEAK)

Input

	MIC	LINE	OPT (digital)
Jack type	Stereo mini-jack	Stereo mini-jack	OPTICAL mini-jack
Rated input level	1.0 mV	250 mV	—
Minimum input level	0.35 mV	88 mV	—

Output

	OUTPUT/PHONES
Jack type	Stereo mini-jack
Rated output level	—
Maximum output level	10 mW+10 mW
Load impedance	32 Ω

Power requirements

- Rechargeable battery: Lithium-ion battery (supplied), DC 3.6 V
- Dry cell battery: LR6 (size AA) alkaline battery × 3, DC 4.5 V
- AC adaptor AC-D401 (supplied) connected to the DC 4.5V jack

Battery life

	Continuous playback time	Continuous recording time
With rechargeable battery*	Approx. 7 hours	Approx. 4 hours
With alkaline batteries*	Approx. 19 hours	Approx. 10 hours
Using rechargeable battery together with alkaline batteries*	Approx. 26 hours	Approx. 15.5 hours

* The battery times above are for a **fully charged rechargeable battery** and **new alkaline batteries**.

* Battery life may vary depending on the conditions and the environment in which the unit is operated.

Dimensions	Approx. 97 (W) × 21.6 (H) × 77.6 (D) mm (3 ⁷ / ₈ × ⁷ / ₈ × 3 ¹ / ₈ inches)
Weight	Approx. 219 g (8 oz) incl. rechargeable battery.


AC adaptor (AC-D401)

Output	DC 4.5V
Input	U model: AC 120V 60Hz K, E model: AC 230V 50Hz

- The specifications and external appearance of this unit are subject to change without notice.
- US AND FOREIGN PATENTS LICENSED FROM DOLBY LABORATORIES LICENSING CORPORATION.

TROUBLESHOOTING GUIDE

If the unit does not perform as expected, check the following table.

Problem	Cause	Solution
The power does not come on.	The AC adaptor is unplugged or loose.	Plug it in properly. (See page 28.)
	The dry cell batteries are not installed properly.	Install them again, checking the alignment of the + and - marks. (See page 28.)
	The dry cell batteries or the rechargeable battery are worn out. ("LOW BATT" is lit, or "  " indicator is lit)	Charge the rechargeable battery or replace all the dry cell batteries with new ones. (See page 22.)
The unit does not operate.	The disc compartment door is not closed properly.	Close the disc compartment door properly.
	There is no disc inside the unit. (The "NO DISC" indicator flashes.)	Insert the disc.
	The hold function is activated.	Release either or both HOLD switches on the unit and/or remote control. (See page 82.)
	There is condensation on the lens.	Remove the disc from the unit and leave the unit for a few hours with the disc holder open before operating it again.
	The unit has received an abnormal electrical shock from a sudden voltage surge through the DC 4.5V jack caused by static electricity or a nearby lightning strike.	Disconnect all the power supplies from the unit and press the ◀RESET switch. (See page 97.)
Recording or editing cannot be performed.	The remote control is unplugged or loose.	Plug it in properly.
	The hold function is activated.	Release either or both HOLD switches on the unit and/or remote control. (See page 82.)
	The unit is not connected to the sound source properly.	Check the connection and reconnect the unit to the source. (See pages 34 and 38.)
	The disc inside the unit is a pre-mastered (prerecorded) type.	Replace the disc with a recordable one.
	The power is disconnected from the unit or the power was cut off during recording or editing.	The recording made up to that point is lost. Repeat the recording or editing again from the beginning.
	The record-protect tab has been moved.	Move the record-protect tab to the recordable position. (See page 46.)
Sound is noisy.	The unit is placed close to an object with a strong magnetic field such as a television.	Move the unit away from the magnetic field.
Sound is intermittent.	The unit is placed on an unstable surface with a lot of vibration.	Place it on a stable surface with no vibration.
There is no sound from the headphones.	The headphones are not connected firmly.	Connect them firmly.
The date of recording is inaccurate or is not registered.	The rechargeable battery is discharged.	Connect the AC adaptor and charge the rechargeable battery.
	The clock is not set. (The clock display is flashing.)	Set the clock. (See page 30.)

message	Cause	Solution
BLANK	Nothing is recorded on the disc.	Replace the disc with a recorded disc.
Prohibit	Dubbing is prohibited by the SCMS standard.	(See page 36.)
Can't ED	Tracks are too short to be joined up.	(See page 90.)
	The combine function was used while playing back the first track.	(See page 74.)
	The divide function is used at the beginning of the track.	(See page 76.)
	The combine function was used to join a track recorded in monaural with a track recorded in stereo.	(See page 74.)
DISC ERR	The disc is damaged by scratches. The TOC information is not recorded properly.	Replace the disc.
DISCFULL	There are less than 12 seconds of recording time remaining on the disc.	Replace the disc with another recordable disc.
HOLD	The hold function was activated by the unit.	Release the HOLD switch. (See page 82.)
NO DISC	There is no disc inside the unit.	Insert a disc.
No Sign	The digital connecting cord (optical) is not plugged in properly.	Plug it in properly.
	The sound source is not played back.	Start playing the source.
TMP OVER	The temperature of the unit is too high.	Leave the unit in a cool place for a while before operating it again.
	The surrounding temperature is too high or too low.	Operate the unit at moderate room temperature.
CAUTION	The unit operates abnormally.	Press the ◀RESET switch.
LOW BATT	The battery discharged.	Charge the rechargeable battery, or replace the dry cell batteries with new ones. (See pages 24 and 28.)
PB DISC	The disc inside the unit is a pre-mastered (prerecorded) type.	Replace the disc with a recordable one.
PROTECT	The disc is record-protected.	Slide the record-protect tab on the disc. (See page 46.)
TOC FULL	There are too many tracks or letters and marks to be recorded or edited, or there is no room on the disc.	(See page 90.)

How to use the RESET switch

If the unit does not operate properly reset the registered data on the unit by pressing the ◀RESET switch with a pointed object. The factory preset data is restored.

