

**SONY.**

E-754-645-21 (2)

CD Radio Cassette-Corder

# CFD-703

PROPERTY OF THE  
NATIONAL TECHNICAL DEPT.

FILE COPY

## Operating Instructions

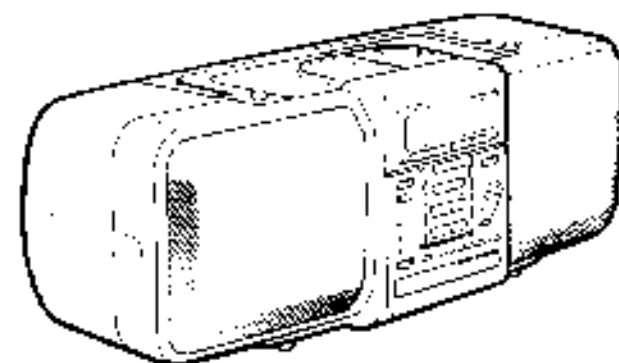
Before operating the unit, please read this manual thoroughly and retain it for future reference.

## Owner's Record

The model number is located on the bottom, and the serial number is located in the battery compartment. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. CFD-703 Serial No. \_\_\_\_\_

**COMPACT**  
**disc**  
**DIGITAL AUDIO**



**MEGA BASS**

The Sony MEGA BASS system for heavy and powerful bass sound.

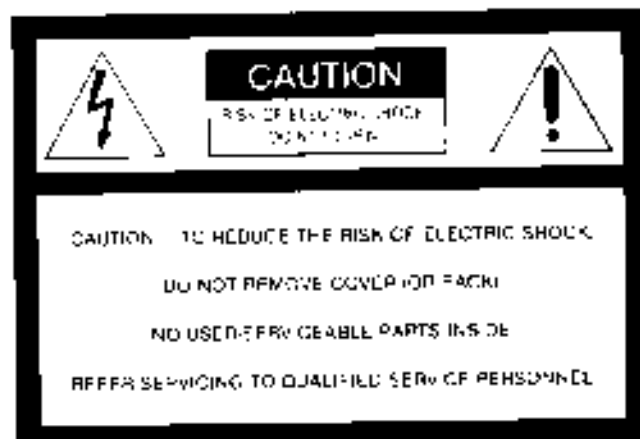
© 1992 by Sony Corporation

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# WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## Caution

The use of optical instruments with this product will increase eye hazard.

## INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.

- Relocate the equipment with respect to the receiver.

- Move the equipment away from the receiver.

- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

## For the customers in Canada

### CAUTION:

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED AC PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

# Features

## High Quality Sound

- A powerful bass sound is produced with the Sony MEGA BASS system.
- You can enjoy the desired sound by simply pressing the SOUND MODE button.

## CD Player

- A high fidelity CD player with 1 bit D/A converter.
- Program play for playing selections in the desired order.
- Shuffle play for playing selections repeatedly in random order.
- Repeat function for playing either the entire disc or a single selection and also for program play or shuffle play.
- The beginning of the selections can be scanned for 10 seconds respectively with the supplied remote commander (INTRO SCAN).
- The selections can be programmed automatically to fit into a desired duration (AUTO EDIT).
- High or normal speed tape dubbing with easy operation.

## Cassette Decks

- Deck A: Auto-reverse playback.
- Deck B: Auto-reverse recording and playback.
- Metal tapes can be used for playback.
- AMS function to scan the beginning of selections.

## Tuner

- A total of 24 stations, 12 stations for each FM and AM band, can be preset.
- The unit automatically tunes in the receivable stations (Auto tuning).

## Digital Clock Timer

- You can listen to a CD or tape, or the radio at a preset time.
- You can record a radio program at a preset time.

## Others

- A display window with back-lighting enables you to see the operation.
- The unit is supplied with a remote commander.
- Pressing the BAND button starts radio programs; the play button on the CD player starts playing a disc and the play button on the radio cassette-corder starts playing a tape (Direct function).

# Precautions

## On power source

- Operate the unit only on 120V AC or 12V DC.  
For AC operation, use the supplied AC power cord; do not use any other type.  
For battery operation, use eight size D (R20) batteries.
- Unplug the unit from a wall outlet when it is not to be used for an extended period of time.
- When the internal batteries are not to be used, remove them to avoid damage caused by battery leakage or corrosion.

## On safety

- As the laser beam used in the CD player section is harmful to the eyes, do not attempt to disassemble the casing. Refer servicing to qualified personnel only.
- Should any solid object or liquid fall into the unit, unplug the unit, and have it checked by qualified personnel before operating it any further.

## On placement

- Do not leave the unit in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- Do not place anything within 10 mm of the side of the cabinet. The ventilation holes must be unobstructed for the proper operation of the unit and to prolong the life of its components.
- If the unit is left in a car parked in the sun, be sure to choose a location in the car where the unit will not be subjected to the direct rays of the sun.
- Since a strong magnet is used for the speakers, keep personal credit cards using magnetic coding or spring-wound watches away from the unit to prevent possible damage from the magnet.

## On operation

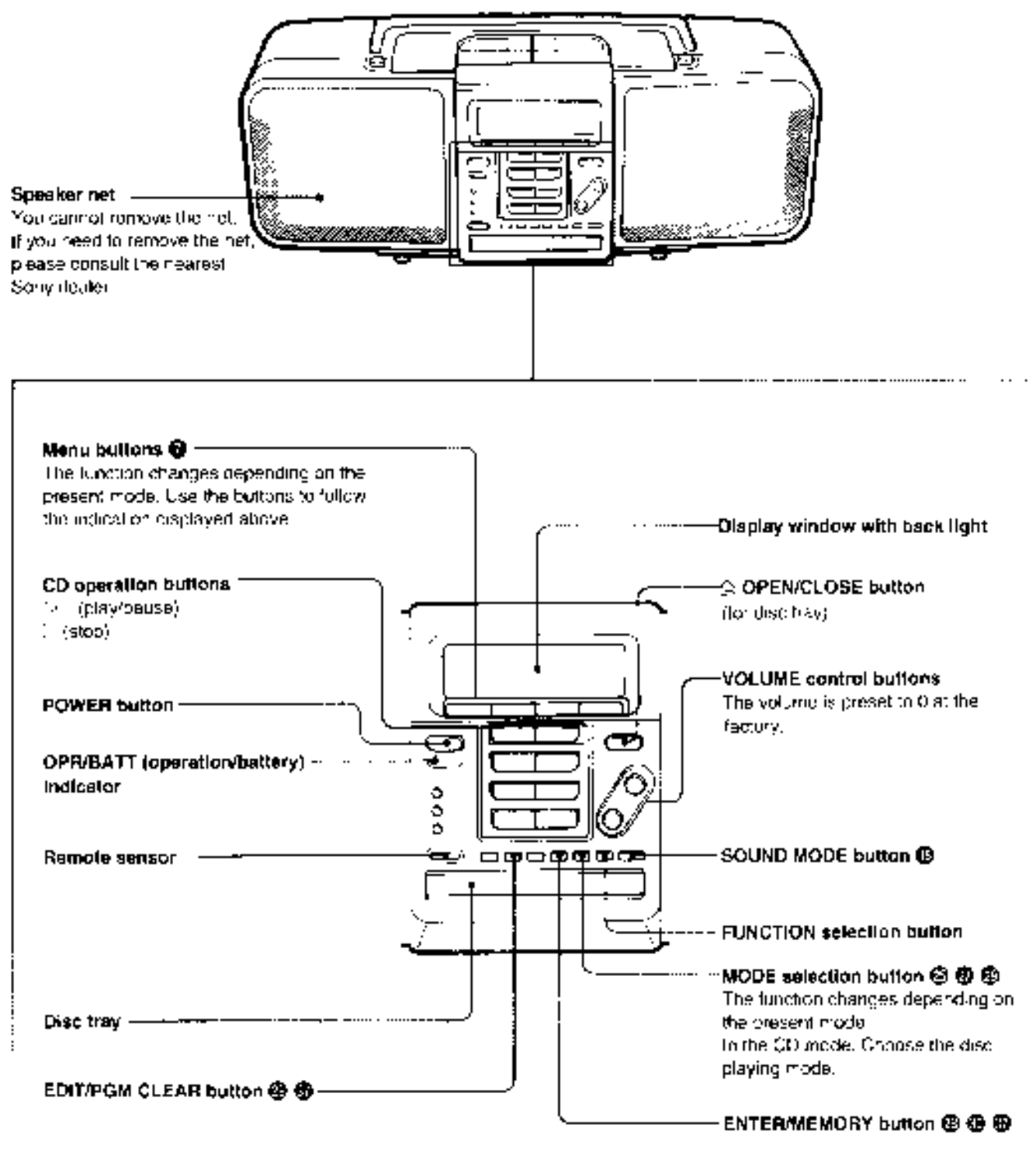
- If the unit is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the CD player section. Should this occur, the player will not operate properly. In this case, remove the disc and wait about an hour for the moisture to evaporate.
- If the unit has not been used for a long time, set it in the playback mode to warm it up for a few minutes before inserting a cassette.

## Note on using a cassette with more than 90 minutes of playtime

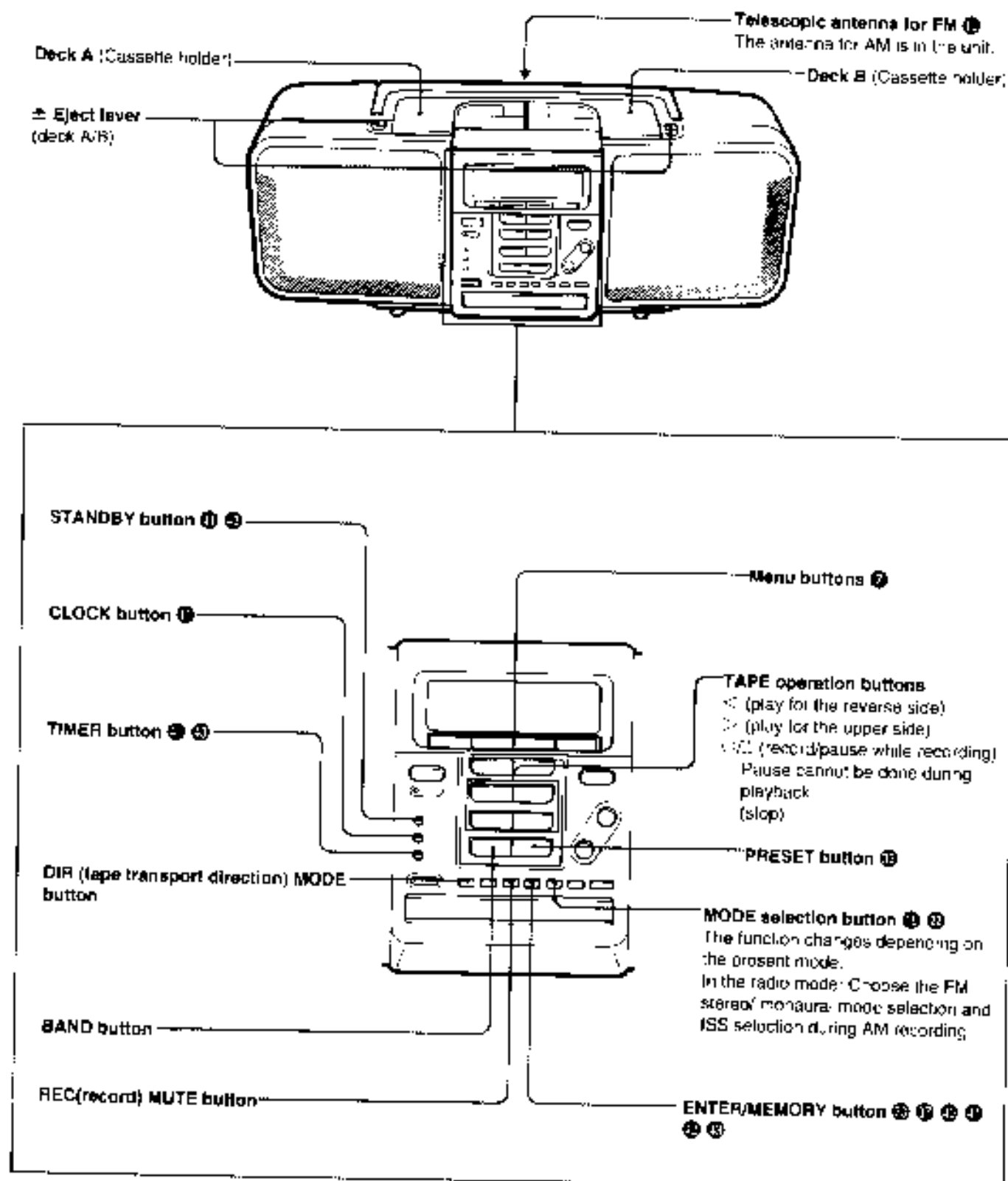
The use of a cassette with more than 90 minutes of playtime is not recommended except for long, continuous recording or playback.

If you have any question or problem concerning your unit, please consult your nearest Sony dealer.

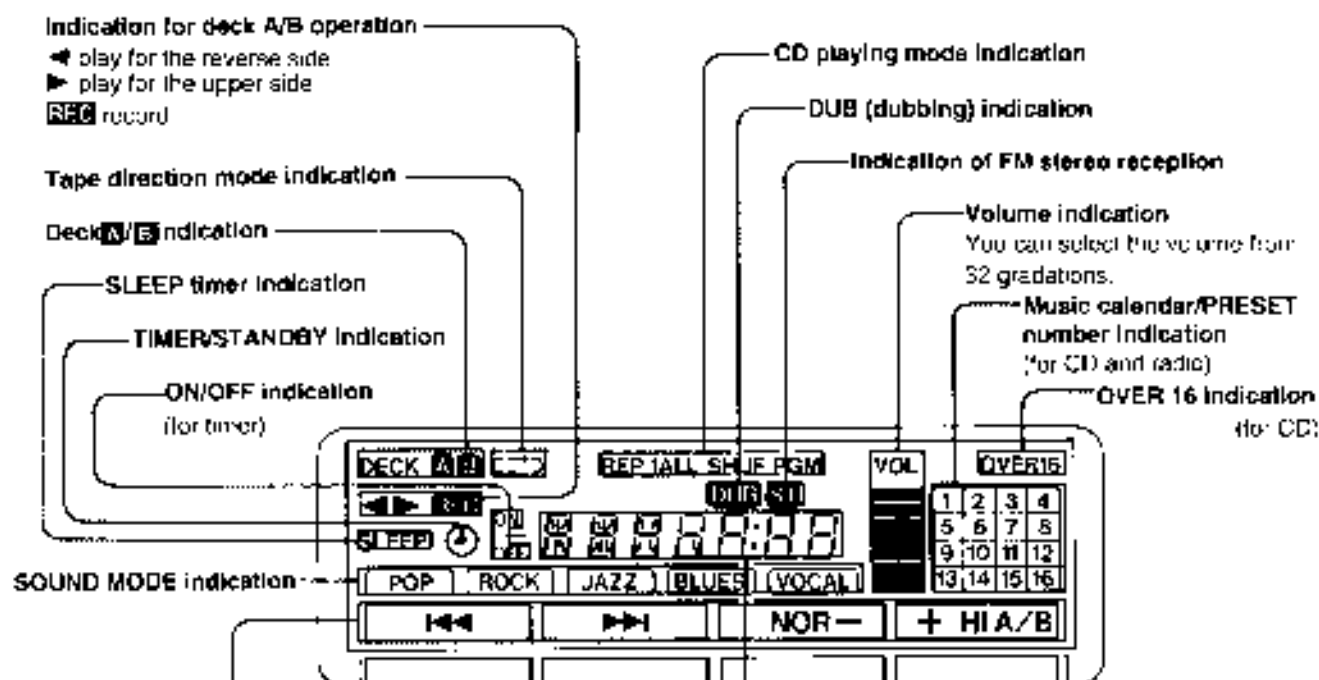
## CD Player Section



## Radio Cassette-Corder and Clock Section



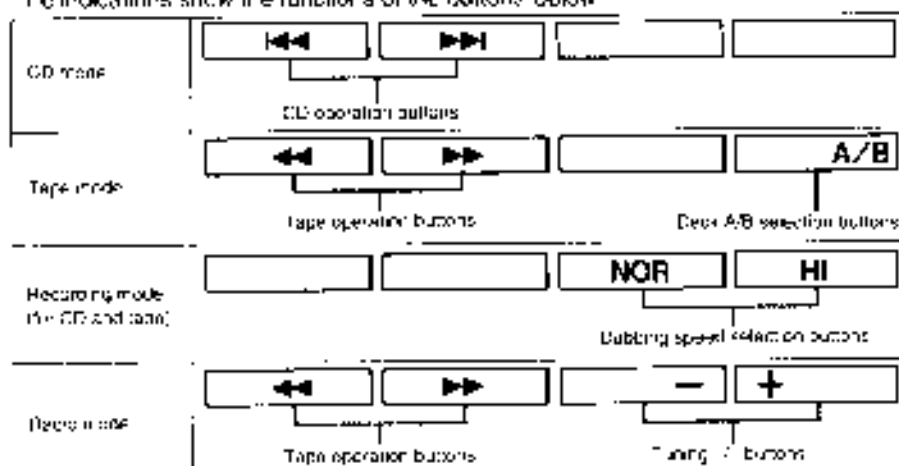
## Display Section



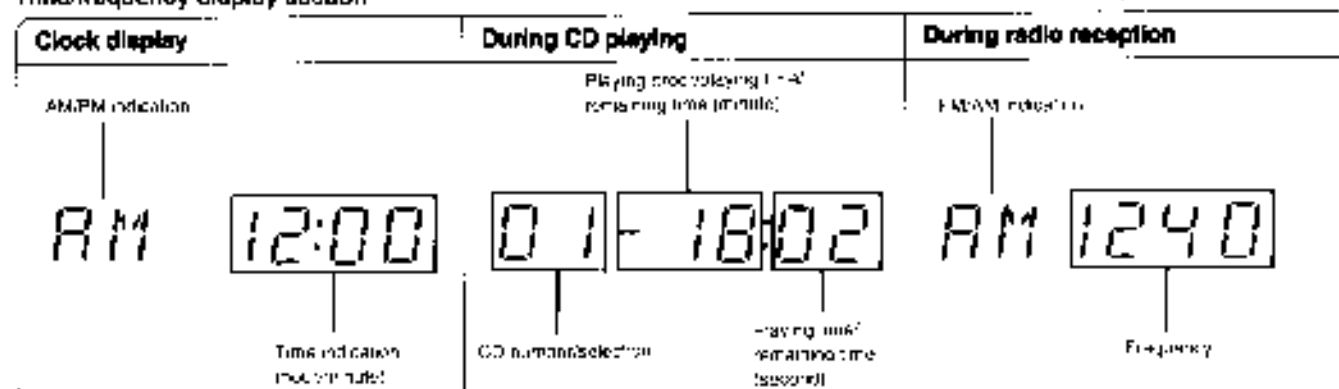
### Indication of the menu buttons

The function changes depending on the mode.

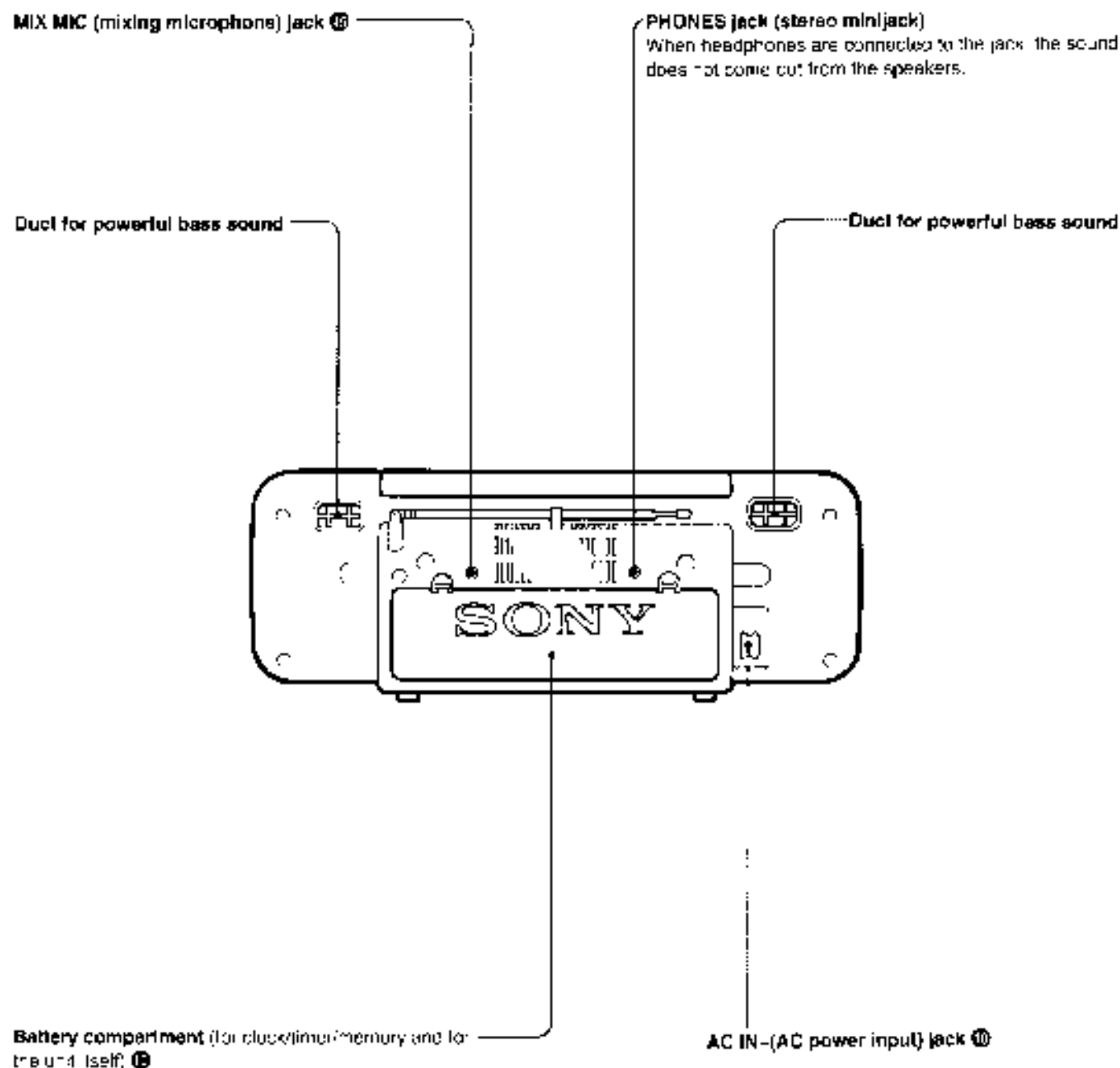
The indications show the functions of the buttons below



### Time/frequency display section



## Rear Panel





## Remote Commander

### CD operation buttons

- ▶ (play)
- ⏸ (pause)
- (stop)
- ⏮ (use action search)
- ⏮ INTRO SCAN (reverse speed play and scan play)
- ▶▶ PGM CHECK (forward speed play and program check)
- CLIP button
- DISPLAY button
- ▲ (disc tray OPEN/CLOSE) button

### Number buttons

Use them for CD or radio operation

### DECK operation buttons

The buttons function the same as the TAPE operation buttons on the unit.

- ◀ (play for the reverse side)
- ▶ (play for the upper side)
- ⏮ (leftward fast winding/rightward fast winding)/AMS (selection)
- (stop)
- ⏸/II (record/pause while recording)
- A/B (deck selector)

### MODE selection button

### FUNCTION selection button

### Command emitter

Point toward the remote sensor

### POWER button

When you operate the unit on batteries, you cannot turn on the power with the remote commander.

### SLEEP button

### BAND selection button

### VOL (volume) control buttons

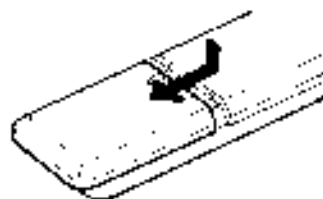
### SOUND MODE button

### MUTE button

Use it when you want to extinguish the sound instantly. While muting, the volume indication in the display window flashes.

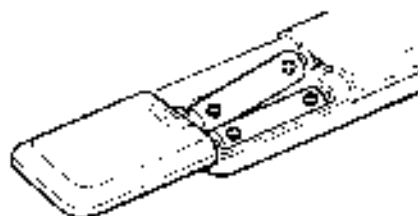
## How to install batteries

1



2

Insert two size AA (R6) batteries (not supplied) with correct polarity



### When to replace batteries

Battery life under normal use is about 6 months. When you cannot operate the unit with the commander from the distance where you used to operate, replace both batteries with new ones.

### Notes on the remote commander

- Keep the commander away from extremely hot or humid places.
- To avoid a malfunction, do not simultaneously depress two or more buttons.

# Power Sources

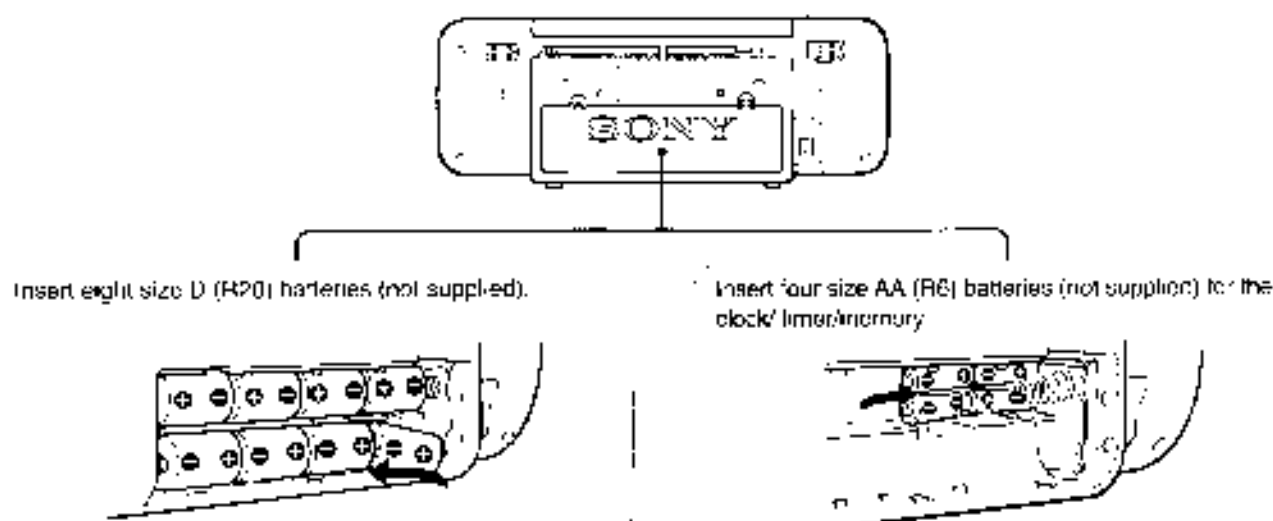
## Preparation: Insert batteries for clock/timer/memory.

You can use the unit either on house current, or on batteries. In either case, be sure to insert four size AA (R6) batteries (not supplied) for the clock/timer/memory.

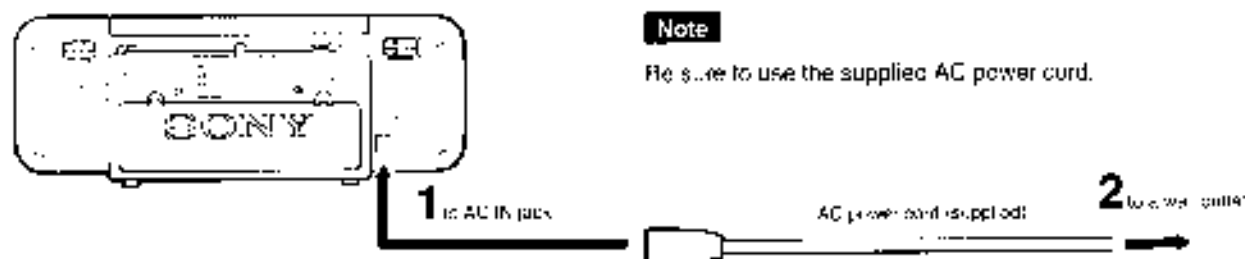
## Notes

- When you insert or replace batteries, remove the disc from the unit. The disc may fall out and be damaged.
- When you operate the unit on batteries, be sure to disconnect the AC power cord from the unit. The unit cannot be operated on the internal batteries when the AC power cord is connected to the unit.

## Batteries



## House Current



## Note

Be sure to use the supplied AC power cord.

## When to replace batteries

When the batteries become weak, the following symptoms appear. Replace all the batteries with new ones. Be sure to connect the AC power cord to the unit and to the wall outlet and turn the power on before you remove the batteries so that the memory for the CD and radio will not be erased.

- Batteries for CD/tape/radio operation: The OPR/BATT indicator becomes faint or the power may turn off automatically.
- Batteries for clock/timer/memory operation: The indications in the display become faint or the unit may not operate.

## When you operate the unit on batteries

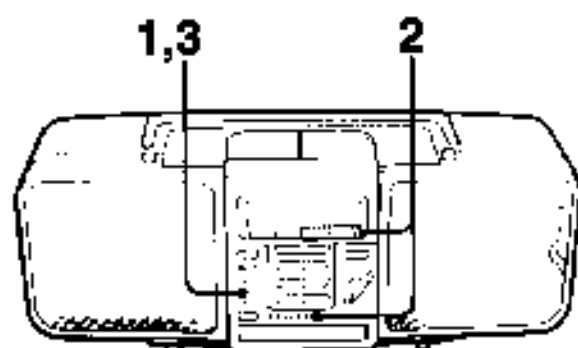
The back light does not go on.

## For critical recordings or disc playing

Operating the unit on house current is recommended.

# Setting the Clock

Before you set the clock, prepare power sources.  
(See the previous page.)



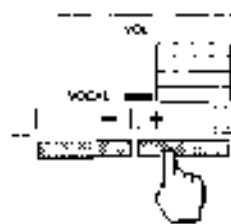
- 1 Keep pressing **CLOCK** for about 4 seconds until "AM" or "PM" and the hour digits flash.



AM 12:00

- 2 Set the hour and minute by pressing "-" or "+" of the menu buttons and **ENTER/MEMORY**.

Example: To set to 8:45 p.m.



PM 8:00 → PM 8:00 → PM 8:45

- 3 Press **CLOCK** again.



The clock starts from  
00 seconds

PM 8:45

The clock employs the 12-hour system.

AM 12:00 = midnight

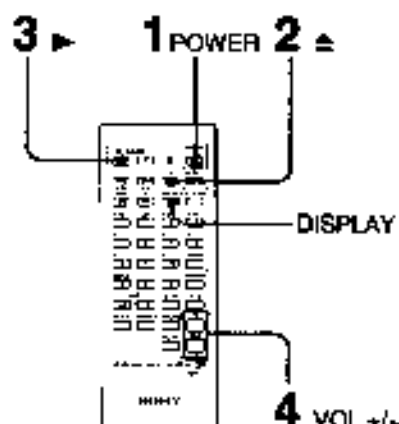
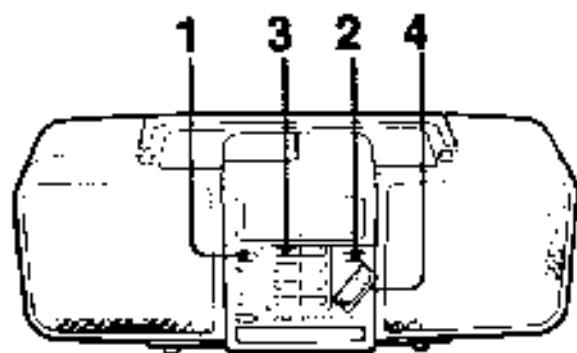
PM 12:00 = noon

To check the time during CD or radio operation

Press the **CLOCK** button. The current time is displayed for about 4 seconds.

# Playing Discs

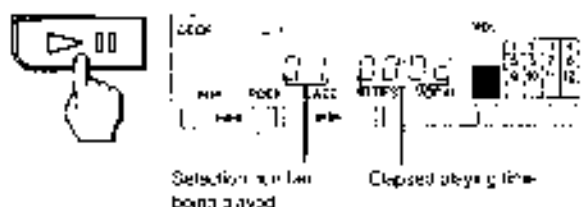
You can play an 8 cm (3-inch) CD without an adaptor.



## 1 Press POWER.



## 3 Press < (or > on the remote commander).



The unit enters CD play mode (the 'Cd' indication appears briefly), and play starts from the beginning of the disc (Direct Function).

### To Display the Remaining Time

You can do this with the supplied remote commander only.

Press the DISPLAY button once during play and the remaining time of the selection is displayed.

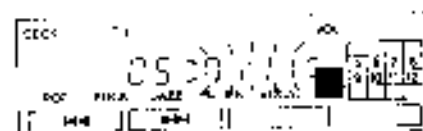


### Information Display

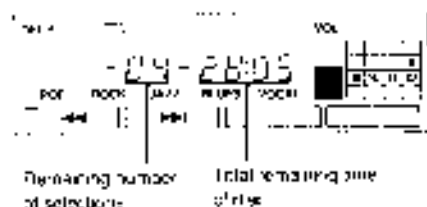
The numbers, which appear during pause or between selections, indicate the following:

#### While in pause

The elapsed playing time flashes.

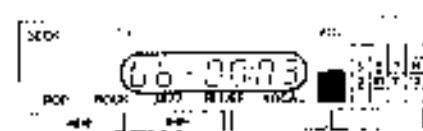


Press the DISPLAY button once more, and the remaining time of the disc and the remaining selection numbers are displayed.



#### Between selections

The remaining time before the next section is displayed.



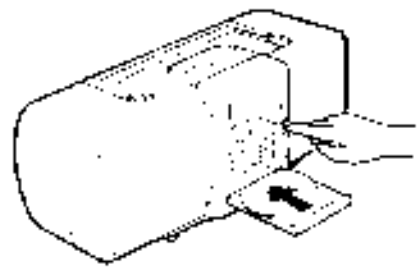
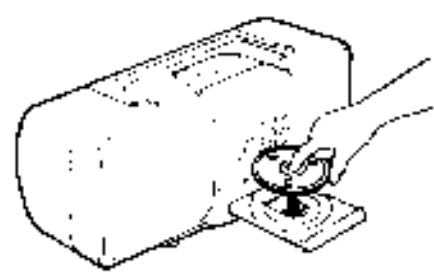
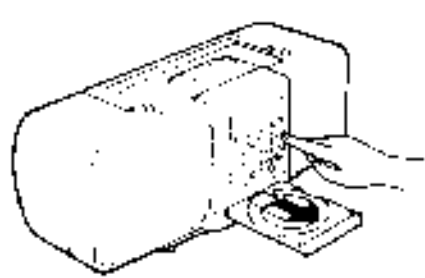
To return to normal display, press the DISPLAY button again.

2

1. Press **OPEN/CLOSE**.

2. Place a disc with label surface up.

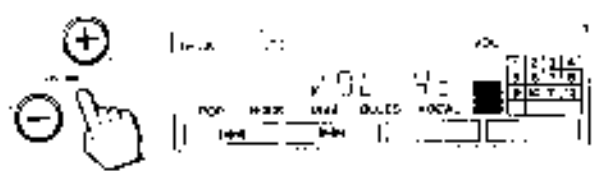
3. Press **OPEN/CLOSE**.



**Note** Be careful that your fingers do not get caught when the disc tray closes.

4

Adjust the volume.



To stop playing the CD

	The button to be pressed	
	Local	Remote controller
Pause a moment	[P]	[II]
Resume play after pause	[C]	[II]
Stop play	[S]	[■]
Remove the disc	First [S], then [OPEN/CLOSE]	First [■], then [▲]

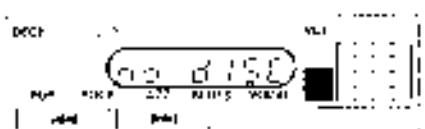
To turn off the power, press the POWER button.

**Note**

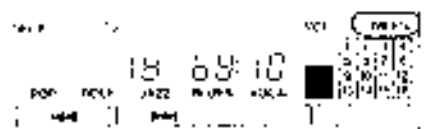
Since the CD system offers a wide dynamic range, high level peak inputs are recorded with high fidelity, and the noise level is very low. Do not turn up the volume while listening to a portion with very low inputs or no audio signals. If you do, the speakers may be damaged when a peak level portion is played.

**Notes on information display**

- To display the total number of the selections and the total playing time, press DISPLAY in the stop mode.
- If there is no disc in the disc tray, the following indication appears in the display window after several seconds.



- Up to 15 selections can be displayed in the music calendar. If there is more than 17 selections, "OVER 10" appears in the display window.



- The remaining time of the selection from the 18th selection appears as 99:59.

**Notes on Compact Discs**

Handle the disc by its edge, and to keep the disc clean, do not touch the surface.



This way



Not this way

Do not stick labels or tapes or write anything on the surface.




Not this way

Before playing, clean the disc with a CD cleaner (not supplied). Wipe the disc from the center out.







For maintenance of discs in detail, see page 46.

## To Listen to the Desired Selections

Be sure the "PGM" or the "SH-UP" indication is not displayed in the display window. If either indication is displayed, press the  button to clear the indication.

### To locate the beginning of a selection (AMS\*)

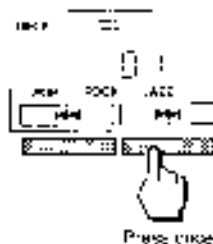
Press  or  of the menu buttons for the  or  button on the remote commander during play or in pause.

In 1

To locate the beginning of the selection being played



To locate the beginning of the next selection



Remote commander

To locate the beginning of the selection being played





To locate the beginning of the next selection







\*AMS: Automatic Music Sensor

### • During play

When you press the  button once during play, the beginning of the current selection is located. When you press the  button once during play, the beginning of the next selection is located.

### • In pause


When you press the  button once in pause, the beginning of the selection in pause is located and the disc pauses. When you press the  button once in pause, the beginning of the next selection is located and the disc pauses.

• When you keep pressing the  or  button for more than one second during play or pause, you can review or advance disc playing rapidly.

### To select the desired selection directly

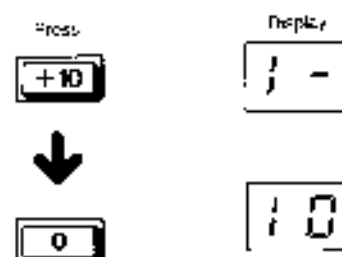
Press the number of the desired selection on the remote commander, and the play starts immediately.



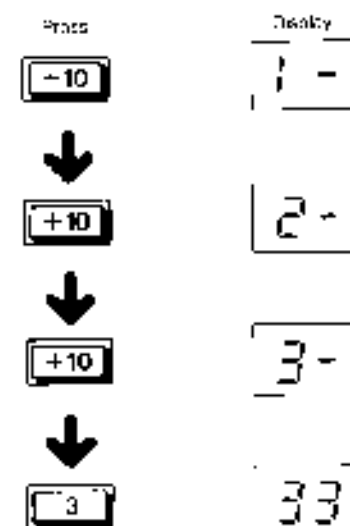
When a selection number is higher than 10, press the  button first, then the number buttons "1" to "0".

Example:

To play from the 10th selection



To play from the 33rd selection.



# Adjusting Sound

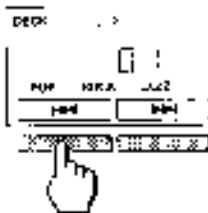
## To Search for a Particular Point In a Selection (Search)

### To review or to advance rapidly

Keep pressing "◀◀" or "▶▶" of the menu buttons (or the ◀◀/▶▶ button on the remote commander) to review or to advance disc playing rapidly.

#### Unit

##### To review disc playing rapidly



Keep pressing

##### To advance disc playing rapidly



Keep pressing

#### Remote commander

##### To review disc playing rapidly



Keep pressing

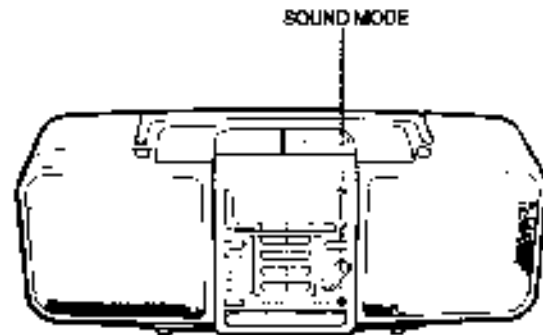
##### To advance disc playing rapidly



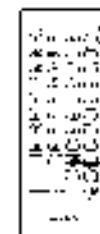
Keep pressing

- Release the button at the desired point, located by monitoring the high-speed sound.
- In the pause mode, you can search rapidly by pressing "◀◀" or "▶▶" of the menu buttons (or the ◀◀/▶▶ button on the remote commander). However, since you cannot hear the sound, observe the time counter instead to locate the desired point.

Five kinds of sound styles are stored in the unit. Press the SOUND MODE button, and you can enjoy the desired sound. Each time you press the button, the indication in the display window changes as follows: POP → ROCK → JAZZ → BLUES → VOCAL → normal mode (no indication) → POP → ... Select your desired sound, observing the display window.

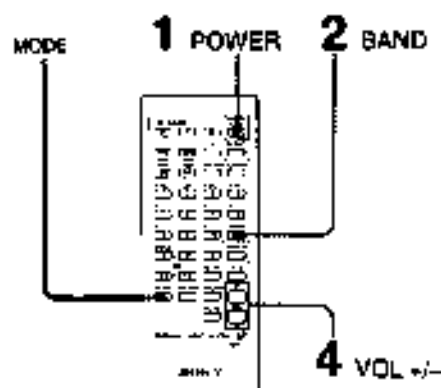
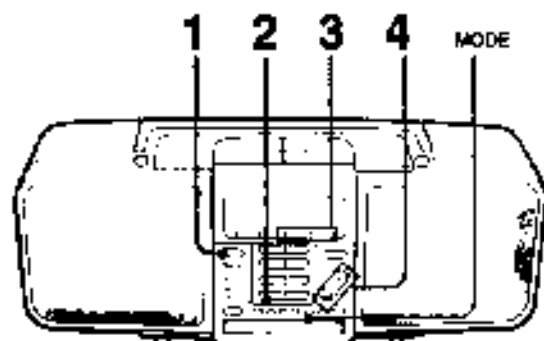


#### SOUND MODE



- POP** Gives a light and bright sound, emphasizing high and middle range sounds.
- ROCK** Gives a powerful and clear sound, emphasizing low and high sounds.
- JAZZ** Gives a heavy sound, emphasizing a bass sound.
- BLUES** Gives a powerful and rich sound, emphasizing a bass sound a little higher than "JAZZ," and a middle range sound.
- VOCAL** Provides more presence of vocals, emphasizing a middle range sound.

# Listening to the Radio



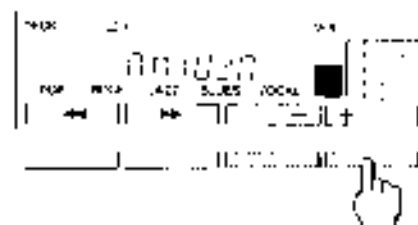
## When the unit receives FM stereo programs

The "ST" (stereo) indication appears. When there is much noise while receiving FM stereo programs, display the "Mono" (monaural) indication by pressing the MODE button. Though this eliminates the stereo effect, the noise will be reduced. When you press the MODE button once, the present mode is displayed. To change the mode, press the MODE button again while the present mode is displayed.

## 1 Press POWER.

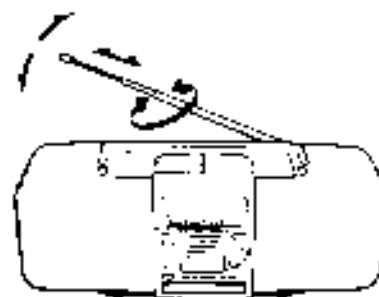


## 3 Tune in the desired station.



## To improve the receiving condition

FM



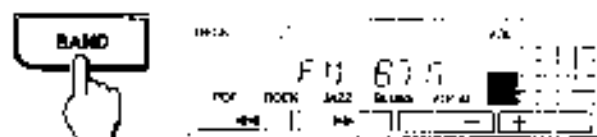
AM

The antenna for AM is in the unit. Rotate the unit horizontally for optimum reception.





## 2 Select the desired band, FM or AM.



Desired band	Band Indication
FM	FM
AM	AM

This unit enters radio mode (the "RADIO" indication appears briefly), and the band changes with each press of the button (Direct function).

### Auto tuning

Keep pressing "+" or "-" of the menu buttons and release when the digits in the display window begin to change. The unit automatically stops when it tunes in a station in good receiving condition.

When the stations are preset, press the PRESET button. (See page 32.)

## 4 Adjust the volume.



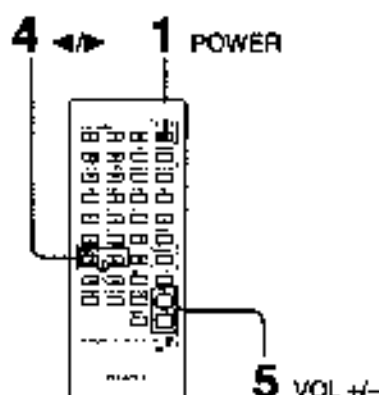
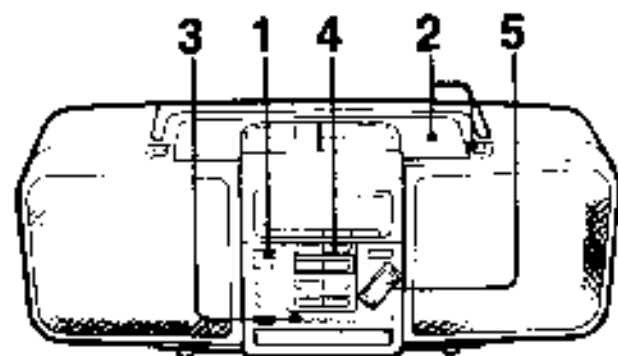
To turn off the radio  
Press the POWER button.

### Notes

- When you listen to an AM program near a TV, noise may be heard in the AM program. When you listen to an FM program near a TV with an indoor antenna, the picture of the TV may become unstable. In such cases, move the unit away from the TV.
- When you operate the supplied remote commander while listening to an AM program, noise may be heard.
- If a very weak station or a frequency without a station is tuned in during FM reception, the "ST" (stereo) indication may appear. This is not a malfunction. To listen to the sound, press the MODE button and display the "Mono" (monaural) indication.
- If the sound may be interrupted momentarily when you switch the stereo/monaural mode during FM reception, however, this is not a malfunction.

# Playing Back Tapes

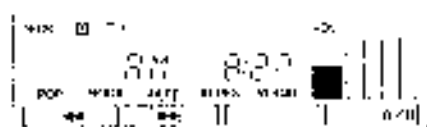
Either deck can be used. The procedure below shows deck B.



To wind a cassette rapidly in the forward or reverse direction, press the following buttons:

	Wind rapidly in forward direction	Wind rapidly in reverse direction
Upper side	▶▶	◀◀
Reverse side	◀◀	▶▶

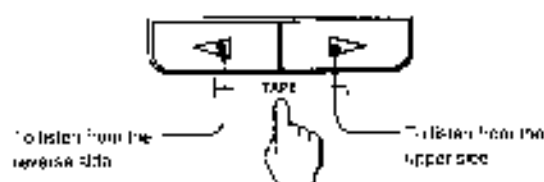
During the rapid playback or rewinding, the ◀◀ or ▶▶ indication flashes in the display window.



1 Press POWER.



4 Press ▶ or ◀ (or ◀▶ on the remote commander)



The unit enters tape play mode (the "TAPE" indication appears briefly), and the tape starts playing (Direct Function).

## Operating the two decks A and B

Both decks A and B can be operated with the same tape operation buttons. To play a tape in deck A, insert a cassette and follow the steps above. The deck to be operated is selected automatically when a cassette is inserted.

	Displayed indication and operable deck
Neither deck has a cassette.	No indication. Neither deck is operable.
Only one deck has a cassette.	The deck with a cassette in it.
Both decks have cassettes.	The deck with a cassette inserted later.

When both decks have cassettes, select the desired deck with "A/B" of the menu buttons. (When the deck A/B indication is not displayed, press the FUNCTION button then press "A/B" of the menu buttons.)

When both decks A and B are in the playback mode. Both decks operate, but only the cassette in deck B is audible.

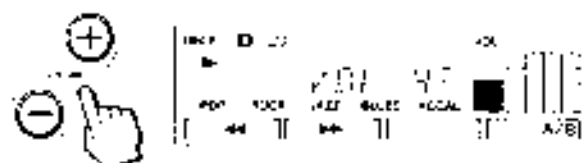
## 2 Insert a recorded tape.



## 3 Press DIR MODE to select the direction mode. (See below.)



## 5 Adjust the volume.



### To stop playing back

Press the button. (A pause cannot be made during playback.)

### To remove a cassette

Press the (eject) button.

### To turn off the power

Press the POWER button.

### To select the tape direction mode

Select the mode by pressing the DIR MODE button.

#### Direction mode indication

To play back one side of a cassette



To play back both sides of a cassette from the upper side in the reverse side \*



To play back both sides of a cassette continuously



\* When both decks have cassettes, both cassettes can be played back in succession (Pilot play).  
For relay play, see page 34.

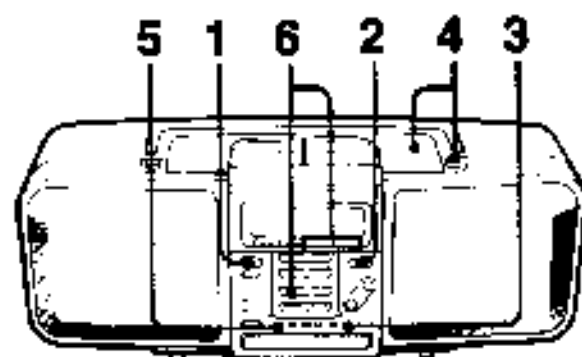
### Usable tape type

When a cassette is inserted into the cassette holder, the unit automatically identifies and adjusts the tape type with the ATS<sup>\*</sup> system by selecting the blank space in cassettes.

Tape type	Playback	Recording
TYPE I (normal)	Can be used	Can be used
TYPE II (CrO <sub>2</sub> )	Can be used	Can be used
TYPE IV (metal)	Can be used	Cannot be used

\* ATS: Automatic Tape Selector

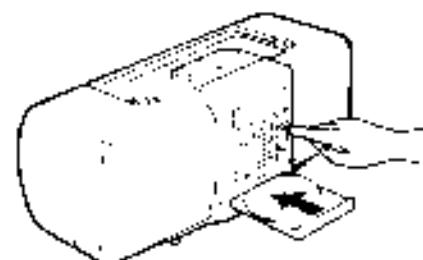
# Recording CD Sound With deck B



**1** Press **POWER**.



**2** Place a disc on the disc tray.  
(See page 13.)



**5** Press **DIR MODE** to select the tape direction mode.

**DIR MODE**



To record on the upper  
side of a cassette

To record on both  
sides of a cassette

**Direction mode**



## Checking the remaining time of the disc

Press the **DISPLAY** button on the remote commander.

When you press <b>DISPLAY</b> ...	You see ...
Once	The remaining time of the selection being played
Twice	The remaining time of the disc and the numbers of the remaining selections

To return to normal display, press the **DISPLAY** button again.

## To wind a cassette rapidly in the forward or reverse direction (on deck B)

Press the **◀◀/▶▶** button on the remote commander.

## Notes on recording

- While recording, only the following buttons can be operated: the CD player's **STOP** button, the cassette deck's **STOP** button and the **DISPLAY** button on the remote commander.
- Use high-speed recording only for normal play.
- While recording, you cannot change the recording speed ("NOR" or "HI"). Set the recording speed before starting to record.
- When you record CD sound, operating the unit on house current with the supplied power cord is recommended.

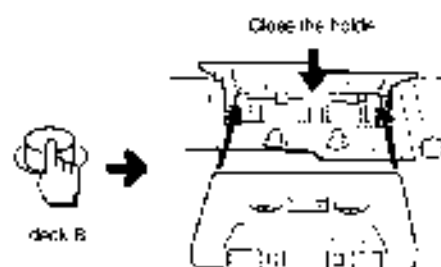
## To erase the recorded sounds

- Press the **FUNCTION** button to display the "TAPE" indication.
- Disconnect the microphone if connected to the **MIX MIC** jack.
- Keep pressing the **STOP** button and press the **REW** button on the cassette deck immediately.

**3** Press **FUNCTION** to display the "Cd" indication.



**4** Insert a cassette in deck B with the side to be recorded up.



Use a TYPE I (normal) or TYPE II (C-C) tape

**6** Press **Off**, then press "POP" or "HI" of the menu buttons immediately.



The "DUR" indication appears and recording starts from the beginning of the disc (CD synchronized start function).

#### To stop recording

Press the **STOP** button on the CD player or the cassette deck.

#### To turn off the power

Press the **POWER** button.

#### The recording level is adjusted automatically.

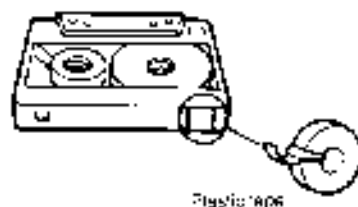
The setting of the **VOLUME** buttons or the **SOUND MODE** button does not affect the recording level. While recording you can listen to the sound, adjust the volume of the speakers or headphones, or change the sound mode.

#### To prevent accidental erasure

Break off the cassette tab of side A or B as illustrated:



To reuse a cassette for recording, cover the broken tab with

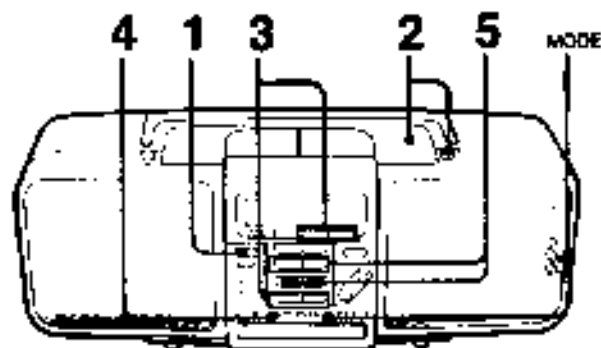


#### Note

\*Take care not to cover the detector slots of the TYPE II (C-C) cassettes. If the slots are covered, the automatic tape selector system will not operate correctly.



# Recording Radio Sound With deck B



**1** Press **POWER**.



**2** Insert a cassette in deck B with the side to be recorded up.

**4** Select the tape direction mode by pressing **DIR MODE**.

DIR MODE



To record on one side of a cassette

To record on both sides of a cassette

Direction mode

1

2

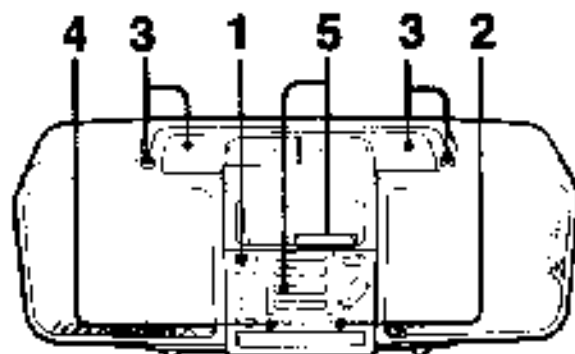
## To reduce noise while recording AM

If a whistling noise is heard, press the **MODE** button and select the **ISS\*** setting that best reduces noise. Press the **MODE** button once to display the present **ISS\*** setting for 2

seconds. To change the **ISS\*** mode press the button successively. The indication changes as follows: **"ISS-1," "ISS-2," "ISS-3," "ISS-1"** . . . Normally set it to **"ISS-2."**

\* **ISS**: Interference Suppress Switch

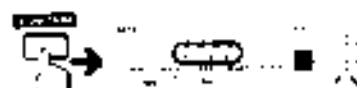
# Tape Dubbing From deck A to deck B



**1** Press **POWER**.



**2** Press **FUNCTION** to display the **"TAPE"** indication.



**4** Select the tape direction mode by pressing **DIR MODE**.

DIR MODE



To record on the upper side of a cassette

To record on both sides of a cassette

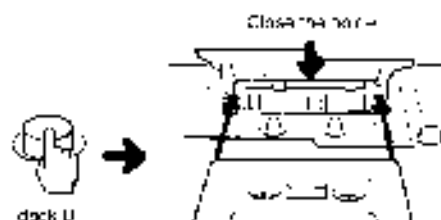
Direction mode

1

2

## Notes

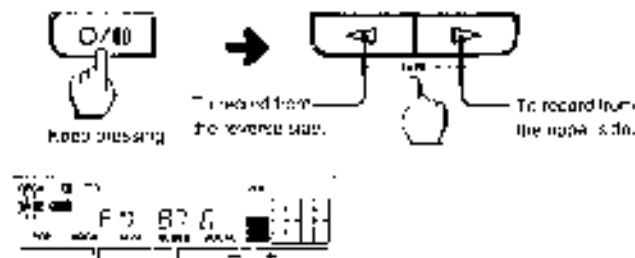
- While dubbing, the face operation buttons except the **POWER** button do not function.
- For dubbing, operating the unit on house current with the supplied power cord is recommended.



Use a TYPE I (normal) or TYPE II (CrO<sub>2</sub>) tape

- 3** Tune in the desired station.  
(See page 16,32.)

- 5** Press and hold **1/2** and press **<** or **>** immediately.



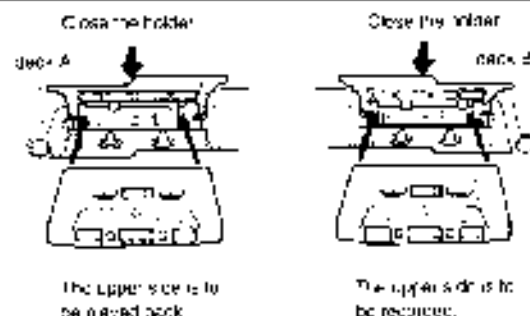
#### Notes

- If you use the supplied remote commander near the unit while listening to an AM program, noise might be heard.
- When you record radio sound, operating the unit on fused current with the supplied power cord is recommended.

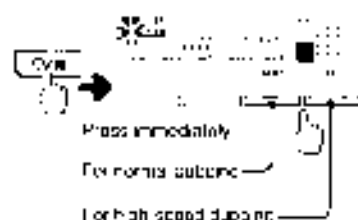
- During the radio mode only deck B is operable.
- When you change the "ISS" indication, the sound becomes silent for a moment. However it is not a malfunction.

- 3** Insert a recorded cassette into deck A.  
Insert a blank cassette into deck B.

Use a TYPE I (normal) or TYPE II (CrO<sub>2</sub>) tape.



- 5** Press **1/2**, then press "NOR" or "HI" of the menu buttons immediately.



The "ISS" indication appears and playback of deck A and recording of deck B start.

#### To stop dubbing

Press the **1/2** button.  
Deck A and deck B stop simultaneously.

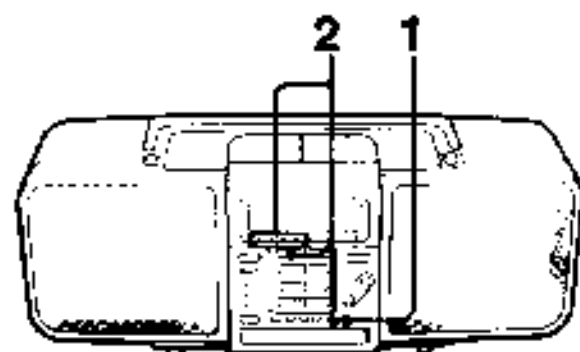
**The recording level is adjusted automatically.**  
The sound to be recorded is not affected by the setting of the VOLUME buttons or the SOUND MODE button.

# Various Disc Playing Modes

Each time you press the **MODE** button, the playing mode changes in sequence as indicated in the display window: **REP** (repeat) 1 → **REP** (repeat) ALL → **REP SHUF** (shuffle repeat);

→ **SHUF** (shuffle play) → **PGM** (program Play) → **REP PGM** (program repeat) → normal play. Select the desired mode by observing the display window.

## To Repeat Selections – Repeat Play



**2** **MODE**  
Number buttons

**1** **FUNCTION**



**1** Press **FUNCTION** to display the "Cd" indication.

**FUNCTION**



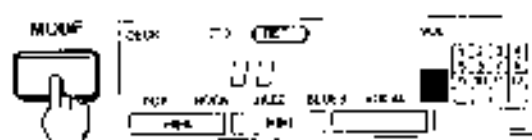
### Note

During repeat play, the remaining time of the disc cannot be displayed.



## 2 To repeat one selection (Repeat 1)

- 1 Press MODE until the "REP 1" indication appears.



- 2 Choose the desired selection with "◀◀" or "▶▶" of the menu buttons (or the number buttons on the remote commander). When you use the number buttons, play starts immediately.



- 3 Press "▶" (or "▶" on the remote commander).



## To repeat all the selections (Repeat All)

- 1 Press MODE until the "REP ALL" indication appears.



- 2 Press "▶" (or "▶" on the remote commander).

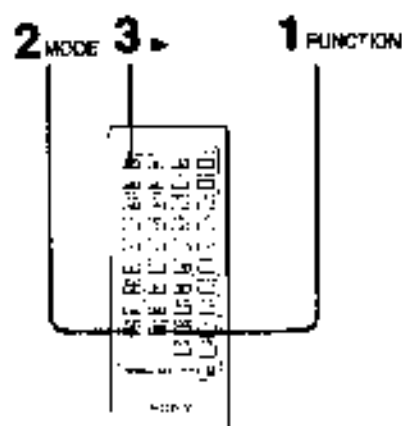
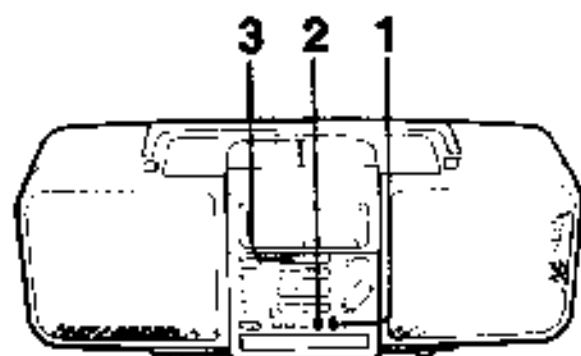


To stop the repeat play  
Press the button.

To release repeat play  
and return to normal  
play

Press the MODE button  
until no indicat or appears  
or press the button while  
the CD player is stopped.

## To Play Selections in a Random Order – Shuffle Play



### What does ( ) mean?

This indication means the unit is shuffling the selections.

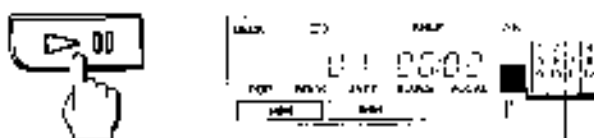
### Note

You cannot display the remaining time of the disc during shuffle play.

- 1 Press FUNCTION to display the "Cd" indication.



- 3 Press F.M. (or ► on the remote commander).

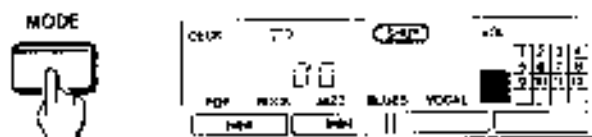


When a selection finishes playing, its number disappears from the music calendar.

### To repeat selections in a random order – Shuffle Repeat

- 1 Press the FUNCTION button to display the "Cd" indication.
- 2 Press the MODE button until the "REPEAT SHUFF" indication appears.
- 3 Press the F.M. button (or the ► button on the remote commander).


**2** Press MODE until the "SHUF" indication appears.



**To stop shuffle play**

Press the  button

**To release shuffle play and to return to normal play**

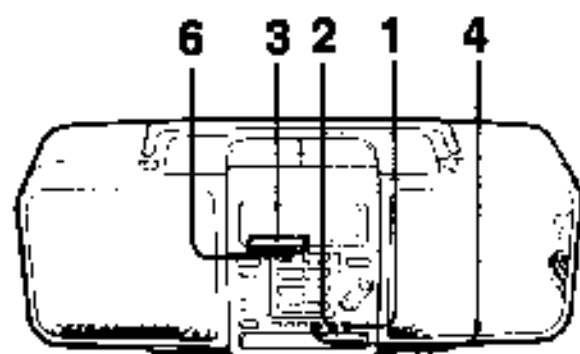
Press the MODE button until no indication appears, or press the  button while the CD player is stopped.

**When you press the MODE button and choose shuffle play during normal play**

Shuffle play begins from the selection being played.

## To Play Selections In the Desired Order – Program Play

Unit



- 1 Press **FUNCTION** to display the "Cd" indication.



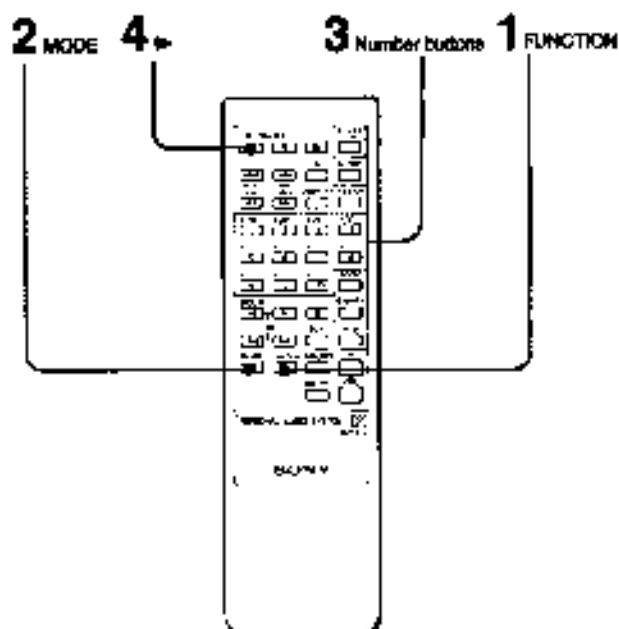
- 4 Press **ENTER/MEMORY**.



The selection is programmed.

Programmed selection

Remote commander



- 1 Press **FUNCTION** to display the "Cd" indication.



- 2 Press **MODE** until the "PGM" indication appears.



To stop program play  
Press the **STOP** button.

To reprogram the selections from the beginning

- 1 Before play starts, press the **STOP** button once.  
During play, press the **STOP** button twice.
- 2 Repeat the steps from the beginning.

## 2 Press MODE until the "PGM" indication appears.



## 3 Select the desired selection by pressing "1-4" or "1-4" of the menu buttons.



## 5 Repeat steps 3 and 4.

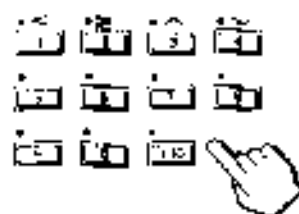
Select selections in the order you want to play them.  
Up to 17 selections can be programmed.

## 6 Press OK.



The selection programmed first begins to play. The numbers of the finished selections disappear from the music calendar.

## 3 Press the number buttons in the desired order.



The selections are programmed in the order the numbers are pressed. Up to 17 selections can be programmed.

## 4 Press ▶.



The selection programmed first begins to play. The numbers of the finished selections disappear from the music calendar.

### To reprogram the selections while programming (only before play starts)

Press the EDIT/PGM CLEAR button (or the CLEAR button on the remote commander), and the selection programmed last disappears from the music calendar. With each press, the programmed selections disappear one by one. Continue until you have canceled unwanted selections and then reprogram.

### To release program play and return to normal play

Press the MODE button until no indication appears on the button while the CD player is stopped.

## Various Disc Playing Modes (continued)

### When the programmed selections have finished

The selection numbers in the music calendar disappear one by one, but when the last selection has finished, the programmed selections are displayed again.

By pressing the [OK] button, you can repeat the same program play as many times as you wish.

### To program a pause (only one pause per program)

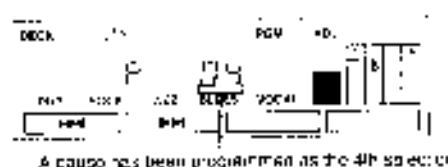
#### Unit

- 1 Press [F1] or [F2] of the menu buttons to display the "P" indication.
- 2 Press the ENTER/MEMORY button.

#### Remote commander

Press the [PAUSE] button where you want to program a pause.

A pause counts as one selection.



The player pauses when it comes to the position where a pause is programmed. To resume playing, press the [OK] button (or the [OK] button on the remote commander).

### To check the total playing time of the selections programmed (only before play starts)

While programming, press the DISPLAY button on the remote commander. The total playing time appears instead of the playing order.



When you program a pause in the programmed selections, the playing time after the pause appears.  
To return to the normal display, press the DISPLAY button on the remote commander again.

### To check programmed selections (only before play starts)

While programming, press the PGM CHECK ([F3]) button on the remote commander. With each press, the selections appear in the programmed order.

### To erase programmed selections

- Press the [F3] button twice during program play.
- Press the [F3] button while the CD player is in stop mode.
- Open the disc tray.

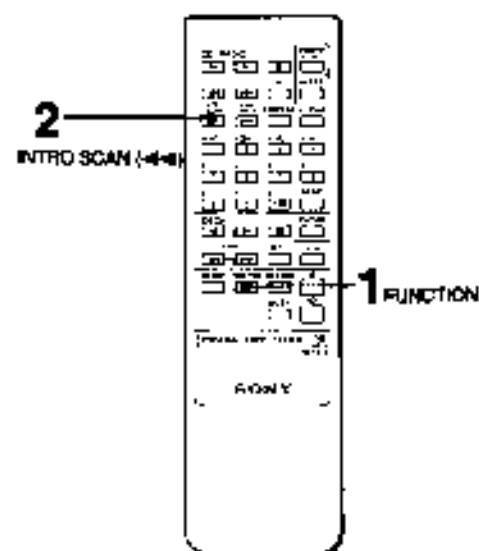
### To repeat the desired selections in the desired order—Program Repeat

- 1 Press the FUNCTION button to display the "Cd" indication.
- 2 Press the MODE button until the "REP PGM" indication appears.
- 3 Program the desired selections. (See page 28.)
- 4 Press the [OK] button (or the [OK] button on the remote commander).

The same program is played repeatedly.

## To Scan the Beginning of the Selections – Intro Scan

You can scan the beginning of the selections during the normal play mode, the repeat play mode, the shuffle play mode and the program play mode.



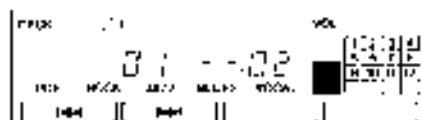
**1** Press FUNCTION to display the "Cd" indication.



**2** Press INTRO SCAN (◀◀) while the CD player is stopped.



Intro scan starts immediately. You can scan the first 10 seconds of all the selections.



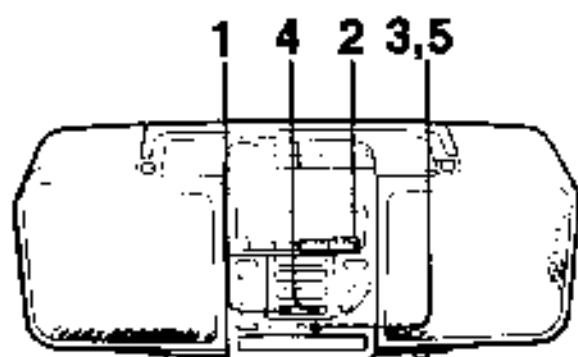
To release intro scan  
press any button for disc play

### Notes

- When scanning a program, intro scan skips any pause programmed.
- You cannot use intro scan during the repeat 1 play mode.

# Presetting Radio Stations

Once you preset the stations, you can listen to the desired station just by pressing the **PHI-SET** button on the unit or the number buttons on the remote commander.

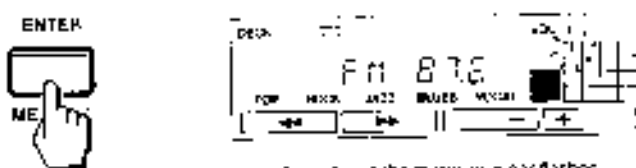


## 1 Select the desired band, FM or AM.

The unit enters radio mode and the "RADIO" indication is displayed briefly (Direct function).



## 3 Press ENTER/MEMORY for about 2 seconds.



A number in the music calendar flashes.

### To tune in the preset station

#### Unit

Select the band, then select the desired number by pressing the **PHI-SET** button. The preset number indicated in the music calendar increases with each press of the button.

#### Remote commander

Select the band, then press the number button of the desired preset number.  
When you want to tune in the station

With the preset number	Press
1 to 9	<b>1</b> to <b>9</b>
10	<b>+10</b> → <b>0</b>
11	<b>+10</b> → <b>1</b>
12	<b>+10</b> → <b>2</b>



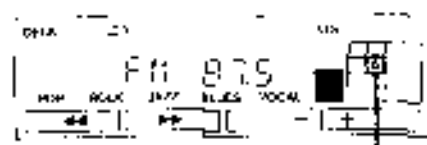
- 2** Tune in the desired station with "-" or "+" of the menu buttons.



- 4** Select the desired preset number by pressing PRESET.



- 5** Press ENTER/MEMORY.



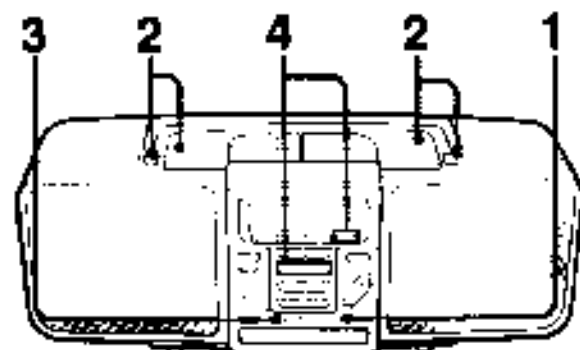
The station is stored in preset number 16.

**Notes on storing stations**

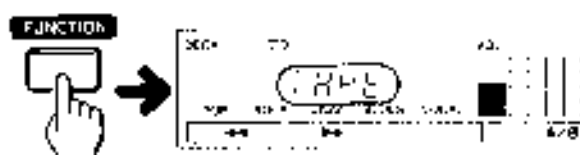
- You can preset up to 24 stations, 12 for each AM and FM band.
- When you enter a new station or a preset number, the previous station will be erased automatically.  
The only way to erase a station from the memory is to store a new one in its place.
- The stored stations may be erased if you unplug the AC power cord or remove the batteries. We recommend inserting four size AA (R6) batteries (not supplied) for the continuous memory.

# Various Tape Operations

## To Play Back Both Decks in Succession – Relay Play (From deck A to deck



- 1 Press **FUNCTION** to display the "TAPE" indication.



- 3 Press **DIR MODE** to display the "=>" indication.



## To Locate the Beginning of a Particular Selection – AMS\*

During playback, press the appropriate button

	During playback of upper side	During playback of reverse side
To locate a selection ahead	▶▶	◀◀
To repeat the selection being played	◀◀	▶▶

The cassette is wound rapidly in the forward or reverse direction, and playback will start automatically when the beginning of the selection is reached.

### Notes on AMS\*

- When you make a tape, so that the AMS will function correctly, we recommend recording a blank space for more than 4 seconds between selections by pressing the **REC MUTE** button.
- If very low sounds, such as "pianissimo" last for several seconds, the unit may treat it as a blank.
- If you start AMS from a silent part, the beginning of the selection might not be located.
- If you press the **FUNCTION** button while the AMS is functioning, the deck stops.

\*AMS, the abbreviation of Automatic Music Sensor. This function locates the beginning of selections during fast winding by detecting the blank space between selections.

B only.)

**2** Insert cassettes in both decks.

**4** Select deck A with "A/B" of the menu buttons, and press **▶** or **◀**.

Button to be pressed	Order of playback			
<b>▶</b>	Deck A upper side	reverse side	Deck B upper side	reverse side
<b>◀</b>	Deck A reverse side		Deck B upper side	reverse side

When the reverse side of deck B has been played back, playback stops.

#### To stop relay play

Select the deck you are listening to with "A/B" of the menu buttons, and press the **▶** button.

## To Record a Blank Space on the Tape

To locate the beginning of a particular selection, recording a blank space for more than 4 seconds is required between the selections.

While recording, press the REC MUTE button on the unit where you want to have a blank space.

REC MUTE



A 4-second blank space is automatically recorded on the tape. The **REC** indication flashes (during record muting).  
About 4 seconds later, the **REC** indication lights up.  
The tape operation is in the recording pause mode.

\*During record muting, sound comes out from the speakers or through the headphones, but it is not recorded.

#### To resume recording

Press the **▶** button to release the recording pause mode.

#### To make blank space more than 4 seconds long

While recording, keep the REC MUTE button pressed.  
4 seconds later, the **REC** indication flashes rapidly.

#### Notes

- When you begin a recording with "NC/R" or "HI" of the menu buttons (when the **DUP** indication appears), the REC MUTE button can not be operated.
- When you record CD sound, opening the unit or house current with the supplied power cord is recommended.

# Automatic Editing of the CD for Recording by Specifying the Tape Length – Auto Edit

The unit automatically edits the selections on a disc according to the tape length (Auto Edit).

There are three ways of automatic editing. Each time you press the EDIT/PGM CLEAR button, the editing mode changes in sequence as indicated in the display window.

EDIT 1 → EDIT 2 → EDIT 3 → normal recording. You can also record manually programmed selections (Manual Program Edit – Edit 4 – see page 38).

**Example:** to record the disc below on a 46 minute tape (23 minutes for each side)

Selection no: 1 2 3 4 5 6 7 8 9

Length (min): 1 20 5 2 4 5 2

**EDIT 1:** In the example above, the playing time of the first 4 selections add up to 20 minutes leaving only 3 minutes. As the 5th selection is 5 minutes long, the 5th and succeeding selections are recorded on the reverse side of the tape.

Upper side: the total playing time is 20 minutes.  
Reverse side: the total playing time is 21 minutes.

The unit edits selections without changing the original order. When the total playing time for one side exceeds the specified tape length, the remaining selections are recorded on the reverse side of the tape.

**EDIT 2:** In the example above, the unit adds up the first 4 selections. Then, with 3 minutes left, it looks for a selection that fits into the remaining time and so selects the 6th.

Upper side: the total playing time is 22 minutes.  
Reverse side: the total playing time is 19 minutes.

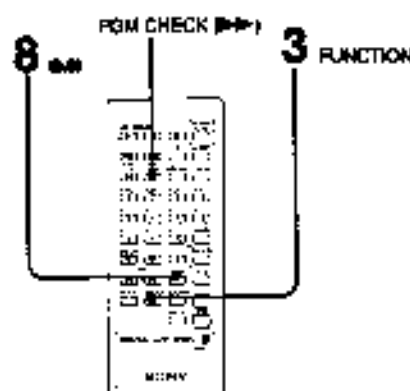
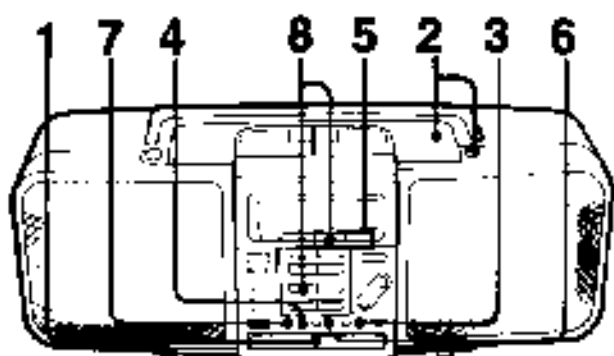
The unit edits selections to best fit the tape length. As a result, the selection order may be changed.

The recording length is up to 99 minutes and up to 16 selections can be edited (EDIT 1 and EDIT 2).

**EDIT 3:** The unit records all the selection to the tape. When one side of the tape ends with the last selection unfinished, the selection is recorded from the beginning on the reverse side.

## Notes

- When you press the EDIT/PGM CLEAR button, the selection order stored for program play (see page 28) is erased.
- To record the selections which cannot be recorded on the specified tape after the selection has been programmed for automatic editing, press the MODE button until the "PGM" indication is displayed, then record.
- When you open the disc tray, the selection order programmed for automatic editing is erased.
- When you record CD sound, operating the unit on house current with the supplied power cord is recommended.



**5** Enter the total tape length by pressing "+" or "-" of the menu buttons.

**7** Press DIR MODE to display the "DIR" indication.

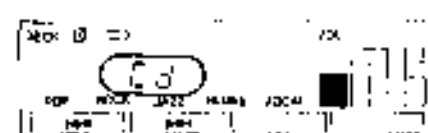
DIR MODE



- 1** Place a disc on the disc tray.

- 2** Insert a blank cassette into deck B.  
Use a TYPE I (normal) or TYPE II (CrO<sub>2</sub>) tape.

- 3** Press **FUNCTION** to display the "Cd" indication.



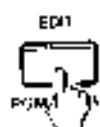
- Make sure the disc is not moving. During play, the edit function does not work.
- When the "PGM" indication is displayed in the display window, press the **ENTER** button to clear the indication.

- 4** Select **EDIT 1**, **EDIT 2** or **EDIT 3** by pressing **EDIT/PGM CLEAR**.

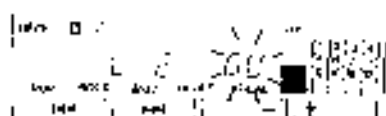
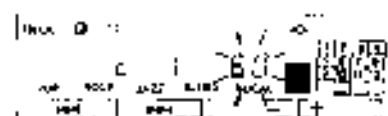
**EDIT 1:**



**EDIT 2:**



**EDIT 3:**



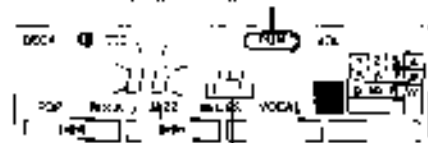
Skip to step 7

- 6** Press **ENTER/MF**.

When the total playing time is shorter than the tape length.



PGM is displayed to indicate that programming has been completed.



This indicates that 10 selections at 30 seconds each have been programmed (additional selections can be programmed from the "All" step).

When the total playing time is longer than the specified tape length.



The tape length and "P" indication appears in the display window. Replace the tape with a longer one, and repeat from step 5.

- 8** Press **PAUSE** (or **PAUSE** on the remote commander), then press **"NOR"** of the menu buttons immediately.



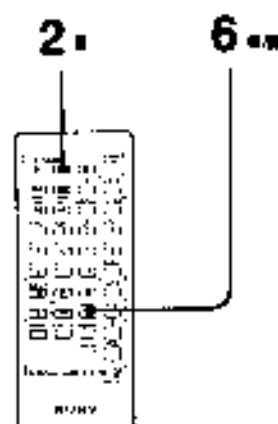
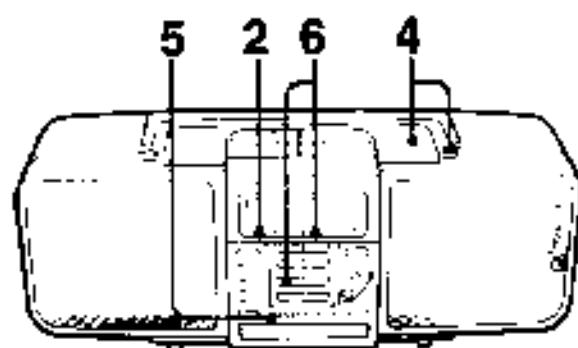
The **"DUB"** indication appears and recording starts.

To check the programmed selections (EDIT 1 and EDIT 2)

While the CD player is stopped, press the **PGM CHECK** (▶▶) button on the remote commander. You can check the selections from the beginning one by one. After pressing the **DISPLAY** button, press the **PGM CHECK** (▶▶) button, and the time added up on each side will be displayed.

When all the selections have been recorded  
Both the CD player and the cassette deck stop.

# Recording Programmed Selections – Manual Program Edit (Edit 4)



To program selections with the total playing time displayed  
While programming, press the DISPLAY button to display the  
"..." indication. The total playing time of programmed  
selections is displayed.

## Note

When you record CD sound, operating the unit on household current with  
the supplied power cord is recommended.

- 1 Program selections for the upper side of the tape.  
(See pages 28-29.)

After programming selections:

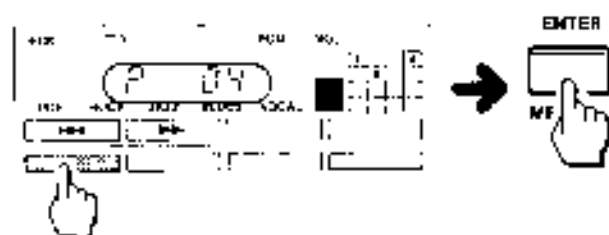
- When you want to record on both sides of the tape, go to step 2.
- When you want to record only on the upper side, skip to step 4.

- 4 Insert a cassette into deck B with the side to be recorded up.



Use a TYPE I (normal) or TYPE II (CrO<sub>2</sub>) tape.

- 2 Program a pause.**  
Press "P" of the menu buttons to display the "P" indication, then press ENTER/MEMORY (or **M** on the remote commander).



- 3 Program selections for the reverse side of the tape.**  
(See pages 28-29.)

- 5 Select the tape direction mode by pressing DIR MODE.**

DIR MODE



To record on the upper side of a cassette

To record on both sides of a cassette

Direction mode



- 6 Press **CM**, then press "NOR" of the menu buttons immediately.**



The "**DUB**" indication appears in the display window and recording starts. When you program selections for both sides of the tape, recording of the reverse side begins automatically after recording on the upper side finishes.

# Using the Built-in Timer

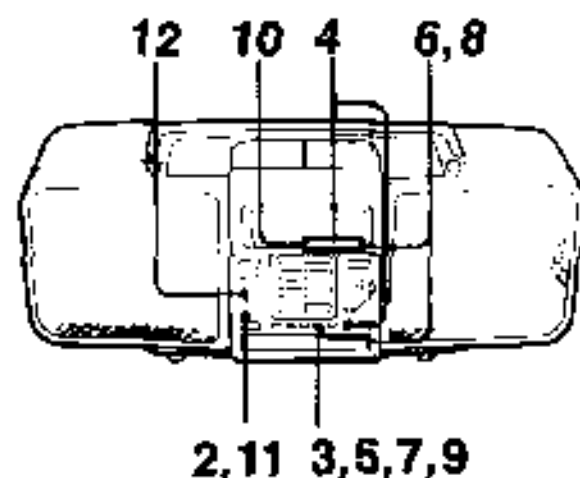
Four size AA (R6) batteries (not supplied) should be inserted.

## To Listen to the Desired Sound at the Desired Time

You can wake up to the desired sound at the desired time when you set the timer-on time.

Make sure the current time of the unit is correct. If it is not correct it referring to page 11.

Make sure the "Ⓢ" indication is not displayed in the display window. Even when the power is turned on the timer-on time, the back light does not light.



### 1 Prepare the desired sound source.

#### To listen to a disc

Place a disc on the disc tray. You can listen to a disc in a play mode other than the normal play mode.

#### To listen to the radio

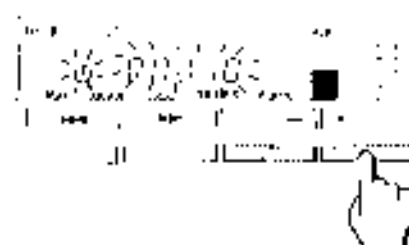
- 1 Select the desired band.
- 2 Tune in the desired station.

#### To listen to a tape

Insert a cassette into the desired cassette holder.

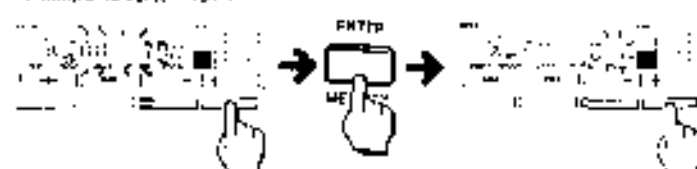
### 4 Select the sound source by pressing "-" or "+" of the menu buttons or FUNCTION.

With each press of these buttons the function changes in sequence "Cd" → "RADIO" → "TAPE."

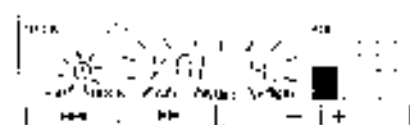


### 8 Set the timer-on time.

Example: to set to 1:30 AM



### 9 Press ENTER/MEMORY.



The volume indicator is displayed.

#### At the preset time

At the timer-on time, the power is turned on and the sound comes on automatically.

When tapes are inserted in both decks A and B, deck A will be played back.

At the timer-off time, the power is turned off automatically.

#### To confirm the timer-on, -off time, and the function and the volume

After pressing the TIMER button, press the ENTER/MEMORY button. Each time you press the ENTER/MEMORY button, what you stored appears one by one. After you have confirmed it, press the TIMER button again. The display which appeared before you pressed the button reappears.

#### To stop the play in the middle

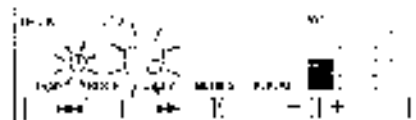
Press the POWER button.



- 2 Press TIMER.**  
The "O" and "Pb" or "RHC" indications flash.  
If "REC" flashes, press "-" or "+" of the menu buttons to select "Pb".



- 3 Press ENTER/MEMORY.**



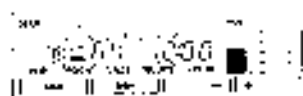
- 5 Press ENTER/MEMORY.**

- 6 Set the timer-on time by pressing "-" or "+" of the menu buttons and ENTER/MEMORY.**  
First set the timer-on hour. Then press ENTER/MEMORY and set the timer-on minute.

EXAMPLE TO SET 6:15 AM



- 7 Press ENTER/MEMORY.**

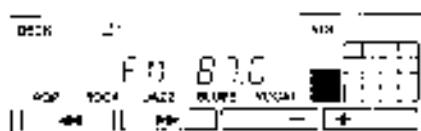


- 10 Adjust the volume by pressing "-" or "+" of the menu buttons.**



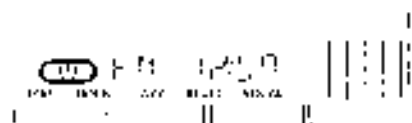
You can choose the volume from 10 gradations.

- 11 Press TIMER.**



What you program has been stored.

- 12 Press STANDBY.**



The "O" indication appears and the power is turned off automatically.

**To release the timer-on or -off time**  
Press the STANDBY button to make the "O" indication disappear from the display window.

**To listen to the desired sound at the same time on the next day**  
You need not set the timer and the function again, because the preset time and the function are stored until you reset them. When the "O" indication is not displayed in the display window, press the STANDBY button again.

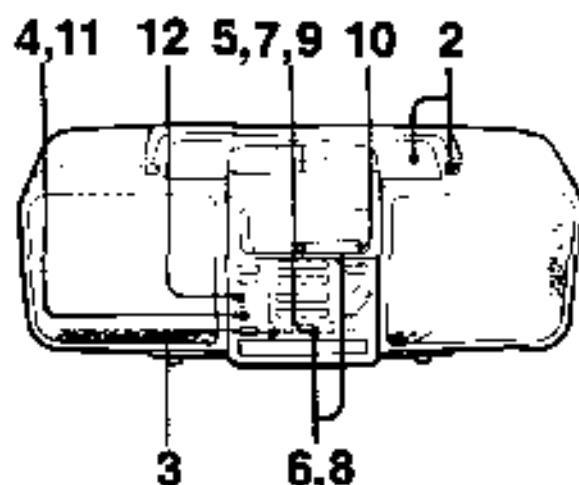
**To change the preset time and function**  
After pressing the TIMER button, press the ENTER/MEMORY button to display the preset time and the function, then reset from what you want to change. When you have finished resetting, press the TIMER button again.

## To Record Radio Programs at the Desired Time (With deck B)

Make sure the current time of the unit is correct. If it is not, correct it referring to page 11.

Make sure the "00" indication is not displayed in the display window.

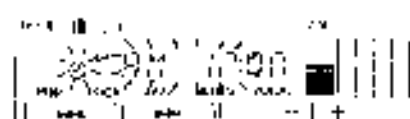
Even when the power is turned on at the timer-on time, the back light does not light.



**1** Tune in the desired station. (See page 16, 32.)

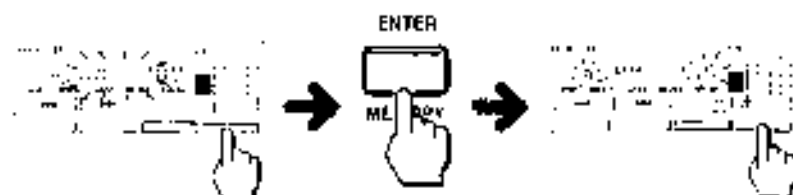
**2** Insert a blank cassette into deck B.  
Use a TYPE I (normal) or TYPE II (CrO<sub>2</sub>) tape.

**5** Press **ENTER/MEMORY**.  
The "RADIO" indication is displayed for 2 seconds and then changes to the timer indication.

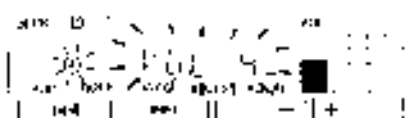


**8** Set the timer-off time.

Example to set to 7:15 a.m.



**9** Press **ENTER/MEMORY**.



The volume indication is displayed.

### At the preset time

At the timer-on time, the power is turned on and the sound comes on automatically.

At the timer-off time, the power is turned off automatically.

### To confirm the timer-on, -off time, and the function and the volume

After pressing the **TIMER** button, press the **ENTER/MEMORY** button. Each time you press the **ENTER/MEMORY** button,

what you stored appears one by one. After you have confirmed it, press the **TIMER** button again. The display which appeared before you pressed the button reappears.

**To stop recording in the middle**  
Press the **POWER** button.

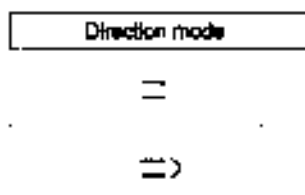
**To release the timer-on or -off time**  
Press the **STANDBY** button to make the "00" indication disappear from the display window.

### 3 Select the tape direction mode by pressing DIR MODE.

To record on one side of a cassette



To record on both sides of a cassette



### 4 Press TIMER.

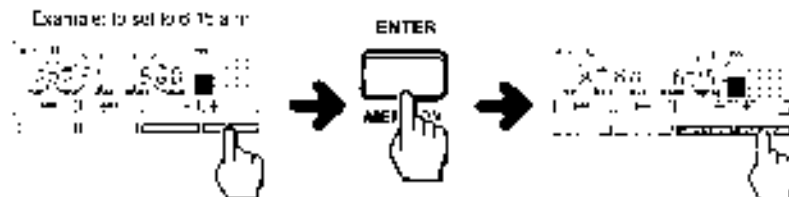
The "0" and "Pb" or "REC" indications flash. If "Pb" flashes, press "-" or "+" of the menu buttons to select "REC."



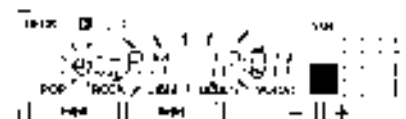
### 6 Set the timer-on time by pressing "-" or "+" of the menu buttons and ENTER/MEMORY.

First set the timer-on hour. Then press ENTER/MEMORY and set the timer-on minute.

Example: to set for 15 min



### 7 Press ENTER/MEMORY.



### 10 Adjust the volume by pressing "-" or "+" of the menu buttons.



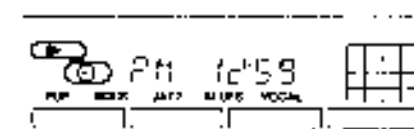
You can choose the volume from 10 gradations.

### 11 Press TIMER.



What you program has been stored.

### 12 Press STANDBY.



The "0" indication and the indication of the tape side to be recorded appears and the power is turned off automatically.

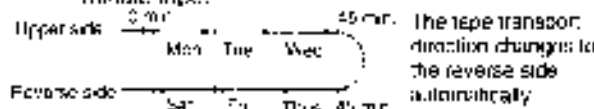
To change the side to be recorded from "◀ [reverse]" to "▶ [upper]"

Press the STANDBY button to erase the "0" indication, then press the STANDBY button again.

To record the same program on the next day

You need not repeat the above steps. As long as the "0" indication remains in the display window, the same program is recorded at the same time on the next day. When the tape direction mode is "◀▶", a program can be recorded from the upper side to the reverse side of a tape continuously every day.

Example: to record a 15 minute program for a week on a 90-minute tape.



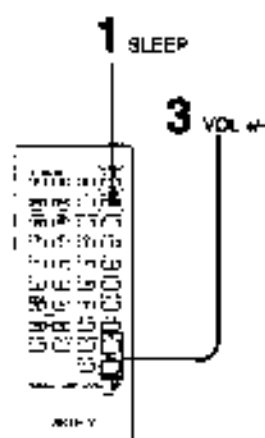
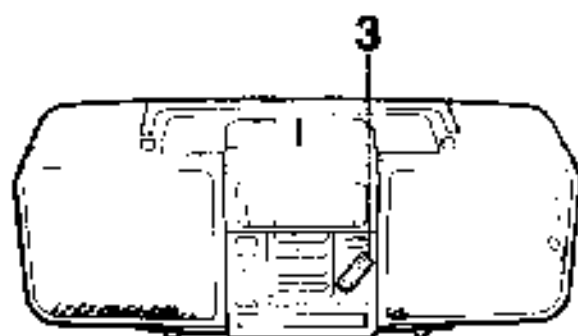
When the reverse side is finished, the recording set by the timer stops.

**Note** For recording, using this unit on I class current with the supplied AC power cord is recommended.

## To Fall Asleep with the Desired Sound – Sleep Function

120 minutes after the timer-on time, the power is turned off automatically. You can fall asleep listening to the desired program.

While the sleep function is operating, the back light does not light even when the power is on.



To stop the sleep function in the middle of the setting, Press the SLEEP button again or the POWER button.

**1** Press SLEEP on the remote commander.



If the power is off, it will be turned on automatically.  
The "SLEEP" indication appears in the display window.

**2** Play the desired sound source.  
The sleep function starts.

**3** Adjust the volume by pressing VOLUME.

To fall asleep with the desired program and to be awakened with another program

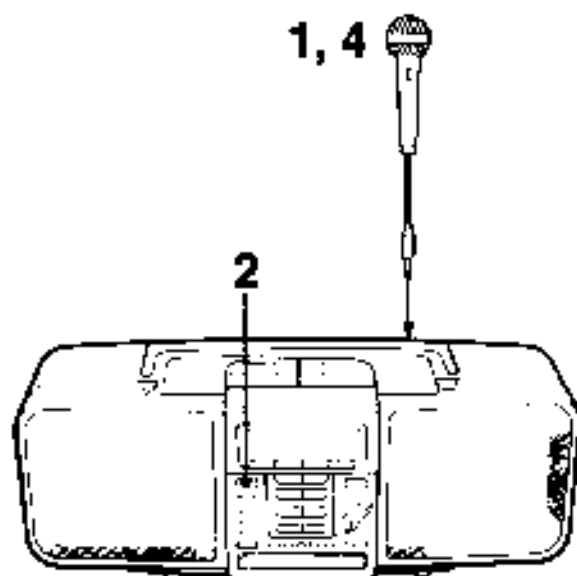
1 Press the desired program to wake up to.  
Follow the procedures on pages 40-41.

2 Activate the sleep function.  
Follow the procedures above.

The volume setting of the sleep and the timer functions are different. You can fall asleep with the desired program at low volume and be awakened with another program at a higher volume.

# Microphone Mixing

You can sing with "Karaoke" or add narration.



- 1** Connect a microphone to the MIX MIC jack (on the rear panel).  
Use a monoaural microphone with mini-plug (not supplied).  
If the microphone has a power switch, set it to ON.

- 2** Press POWER.

- 3** Play the desired sound source.

- 4** Speak or sing in to the microphone.

## To record mixed sound with a disc

Insert a cassette into deck B and after pressing the **REC** button, press "MOR" of the menu buttons immediately.

## To record mixed sound with a tape

**1** Insert a recorded cassette into deck A and a blank cassette into deck B.

**2** Press the FUNCTION button to display the "TAPE" indication.

**3** After pressing the **REC** button, press "MOR" of the menu button immediately.

## To record mixed sound with the radio

Insert a cassette into deck B and while pressing the **REC** button press the **FM/AM** button.

## Public address system

**1** Connect a microphone to the MIX MIC jack.  
When the microphone has a power switch, set it to ON.

**2** Press the POWER button.

**3** Press the FUNCTION button to display the "TAPE" indication.

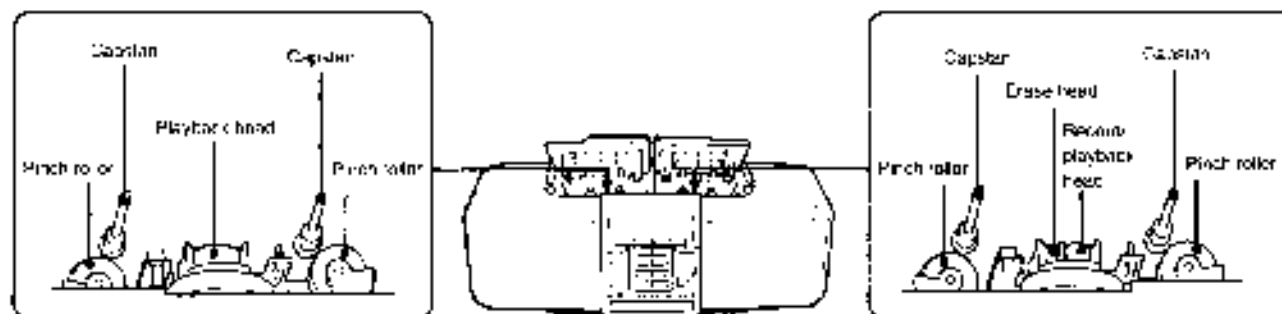
**4** Adjust the volume.

When the unit is set in recording mode, only the sound from the microphone is recorded.

## Notes

- When howling (acoustic feedback) occurs, move the microphone away from the speakers.
- Microphone sounds cannot be mixed in high speed dubbing mode.
- It is not recommended to use a microphone equipped with an echo function.

# Maintenance



## Cleaning the heads and tape path

Contaminated heads cause insufficient recording or sound drop-out in playback.

We recommend cleaning after every 10 hours of operation. To make the best possible recording, however, you should clean all surface over which tape travels before making each recording.

Wipe the heads, the pinch rollers and the capstans with a cleaning tip slightly moistened with cleaning fluid or alcohol.

After cleaning the heads, rollers and the tape path, insert a cassette when the areas cleaned are completely dry.

## Demagnetizing head

After 20 to 30 hours of use, enough residual magnetism will have built up on the heads to begin to cause loss of high frequencies and hiss. At this time, you should demagnetize the heads and all metal parts in the tape path with a commercially available head demagnetizer.

## Cleaning the cabinet

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

## Notes on Compact Discs

- Before playing, clean the disc with a cleaning cloth. Wipe the disc from the center out.
- Do not use solvents such as benzene, thinner, commercially available cleaners or ant-static spray intended for analog discs.
- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, nor leave it in a car parked in direct sunlight as there can be a considerable rise in the temperature inside the car.
- After playing, store the disc in its case.

If there is a scratch, dirt or fingerprints on the disc, it may cause tracking error.

# Specifications

## AUDIO POWER SPECIFICATIONS

### POWER OUTPUT AND TOTAL HARMONIC DISTORTION

With 8-ohm loads, both channels driven from 60 – 15,000 Hz: rated 7.0 W per channel—minimum RMS power, with no more than 10% total harmonic distortion in AC operation.

## Other Specifications

### CD player section

System	Compact disc digital audio system
Interface properties	Matrix: GAF/DA
	Wave length 780 nm
	Emission duration: Continuous
	Laser output: Less than 41.6 μW*
	*This output is the value measured at a distance of about 200 mm from the objective lens surface on the optical pick-up block.
Spindle speed	200 rpm (average) to 550 rpm (top) (CLV)
Error correction	Sony Refine! Super Strategy Cross Interleave Head Solomon Code
Number of channels	2
Frequency response	20-22,000 Hz ±1 dB
Wow and flutter	Below measurable limit

### Radio section

Frequency range	FM: 87.6-108 MHz AM: 530-1,710 kHz
Antennas	FM: Telescopic antenna AM: Built-in ferrite bar antenna

### Tape recorder section and general

Recording system	4-track / channel stereo
Fast winding time	Approx. 120 s (sec.) w/ Sony cassette HF60
Speakers	Full-range, 8cm dia., cone type
Frequency response	TYPE: normal 50-15,000 Hz cassette TYPE: L (HQ) 50-16,000 Hz cassette

Inputs	Mixing microphone input jack (minijack) Sensitivity 2.5 mV
--------	---

Outputs	For low impedance microphone Headphones jack (stereo minijack) For 15-64 ohms impedance headphones
---------	---

Power output	For Cassette model: 7.5W + 7.5W (at 8 ohms, 10% harmonic distortion)
--------------	--

Power requirements	For CD radio cassette recorder: AC 120V, 60 Hz DC 1.5V, R size C (R20) batteries For clock/memory: DC 6V, 4 size AA (R6) batteries For remote commander: DC 3V, 2 size AA (R6) batteries
--------------------	--

Power consumption	AC 0.6W
-------------------	---------

### Battery life

Batteries for CD radio cassette recorder

	FM Recording	FM playback	CD playing
Sony SUM-1 (N5)	approx. 4h	approx. 2h	approx. 1h
Sony Alkaline AM-1	approx. 12h	approx. 1.5h	approx. 3h

For clock/memory: approx. 1 year

Dimensions	Approx. 500 x 201 x 203.4 mm (width) (Approx. 19.64 x 7.91 x 8.00 inches) incl. projecting parts and controls
Mass	Approx. 8.7 kg (Approx. 14lb. 12oz) incl. batteries, excl. supplied accessories
Supplied accessories	AC power cord (1) Remote commander (1)

Design and specifications subject to change without notice.

Optional Accessories	Dynamic microphone Sony "DYNAMIC MICROPHONE" cords Stereo headphones Sony "MOR" headphones series
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# Troubleshooting Guide

	Symptom	Remedy
General	<ul style="list-style-type: none"> <li>No sound.</li> </ul>	<ul style="list-style-type: none"> <li>Press the POWER button to turn on the power.</li> <li>Connect the AC power cord to the AC IN jack and to a wall outlet firmly.</li> <li>Insert batteries with correct polarity. (See page 10.)</li> <li>Replace the batteries with new ones if the batteries are weak. (See page 10.)</li> <li>Press the FUNCTION button to display the desired indication.</li> <li>Adjust the volume.</li> <li>When you listen to the sounds from speakers, unplug the headphones from the PHONES jack.</li> <li>Replace all the batteries with new ones. (See page 10.)</li> </ul>
	<ul style="list-style-type: none"> <li>Much noise.</li> <li>Sound is too low and not good.</li> <li>Abnormal sound is heard.</li> </ul>	<ul style="list-style-type: none"> <li>Replace all the batteries with new ones. (See page 10.)</li> </ul>
CD player section	<ul style="list-style-type: none"> <li>Play does not start.</li> <li>The "no DISC" indication is displayed even though a disc is packed.</li> </ul>	<ul style="list-style-type: none"> <li>Make sure the disc tray is closed.</li> <li>Place the disc with the labeled surface up.</li> <li>Clean the disc. (See page 46.)</li> <li>Take out the disc and leave the disc tray open for about one hour, if moisture has condensed on the lens. (See page 4.)</li> <li>Press the FUNCTION button to display the desired indication.</li> <li>Turn down the volume.</li> <li>Clean the disc. (See page 46.)</li> <li>Change the disc if it is badly damaged.</li> <li>Place the unit in a location free from vibration.</li> </ul>
	<ul style="list-style-type: none"> <li>Sound drops.</li> </ul>	
Cassette deck section	<ul style="list-style-type: none"> <li>A tape does not move even though the operation button is pressed.</li> <li>The REC button does not function.</li> <li>The tape cannot be played back.</li> <li>Unsatisfactory erasing.</li> </ul>	<ul style="list-style-type: none"> <li>Close the cassette holder.</li> <li>Cover the broken tab slot of the tape in deck B. (See page 21.)</li> <li>Press the FUNCTION button to display the desired indication.</li> <li>Clean the erase head. (See page 46.)</li> <li>Replace all the batteries with new ones if they are weak. (See page 10.)</li> <li>Insert a cassette properly. (See page 29.)</li> <li>Cover the broken tab slot of the tape in deck B. (See page 21.)</li> <li>Clean the head, pinch roller and capstan. (See page 46.)</li> <li>Demagnetize the head using the demagnetizer. (See page 46.)</li> </ul>
	<ul style="list-style-type: none"> <li>Distorting cannot be done.</li> <li>Noise is heard.</li> <li>Sound is not good.</li> </ul>	
Clock section	<ul style="list-style-type: none"> <li>Timer does not operate.</li> </ul>	<ul style="list-style-type: none"> <li>Set the current time correctly. (See page 11.)</li> <li>Replace the alkaline batteries with new ones if they are weak. (See page 10.)</li> <li>Check if the cassette in deck B has been rewound to the end.</li> <li>Check if the power has been cut off. (In case you were using the AC power cord.)</li> <li>Make sure the "C" indication is displayed.</li> </ul>
Remote commander section	<ul style="list-style-type: none"> <li>The unit cannot be remotely controlled.</li> </ul>	<ul style="list-style-type: none"> <li>Replace all the batteries in the remote commander with new ones if they are weak. (See page 11.)</li> <li>Be sure to point the remote commander at the sensor of the unit.</li> <li>Remove any obstacles between the unit and the remote commander.</li> <li>Place the unit where the infrared ray sensor will not be exposed to a strong light, such as direct sunlight or a fluorescent lamp.</li> </ul>

If the unit still does not function even after carrying out above remedies, unplug the AC power cord and remove the batteries for the clock/timer/memory, then keep pressing the POWER button. After all the indications in the display window disappear, insert the batteries for the clock/timer/memory again.