

Welcome !

Welcome to the world of the MiniDisc ! The Sony MiniDisc Player is the result of Sony's on-going commitment to leadership in audio-video technology. Here are some of the capabilities and features you'll discover with the new MiniDisc Player.

Quick Random Access

You can access any music track or phrase without waiting for reeling time.

Digital Sound

MiniDiscs play with nearly the same noiseless, high-fidelity sound as CDs.

Title Function

Displays the disc and track names when you play premastered discs.

Shock-Resistant Memory

The MiniDisc Player protects discs against shocks and vibrations during playback. This means no jitters or skipping while you are jogging or driving.

Hold Function

This feature locks the controls so that none of the buttons are accidentally operated while you're walking or jogging.

What is the MiniDisc?

How MiniDiscs work

MiniDiscs (MD) come in two types: premastered (prerecorded) and recordable (blank). Premastered MDs, recorded at music studios, can be played back almost endlessly. However, they can't be recorded on or over like cassette tapes. To record, you use a "recordable MD".

Premastered MDs

Premastered MDs are recorded and played like regular CDs. A laser beam focuses on the pits in the surface of the MD and reflects the information back to the lens in the player. The player then decodes the signals and plays them back as music.

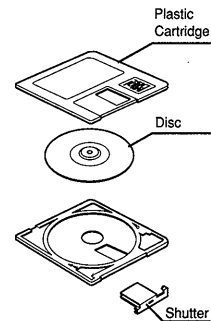
Recordable MDs

Recordable MDs, which use magneto-optical (MO) technology, can be recorded again and again. The laser inside the player applies heat to the MD, demagnetizing the magnetic layer of the MD. A new magnetic field corresponding to the audio input signal is applied to the magnetic layer of the disc. The result is a recorded MD.

How the MiniDisc got so small

The 2.5-inch MiniDisc, encased in a cartridge that looks like a 3.5-inch diskette (*see illustration below*), uses a new digital audio compression technology called ATRAC (Adaptive Transform Acoustic Coding). To store more sound in less space, ATRAC extracts and encodes only those frequency components actually audible to the human ear.

Parts Making Up a MiniDisc



How Quick Random Access and the TOC systems work

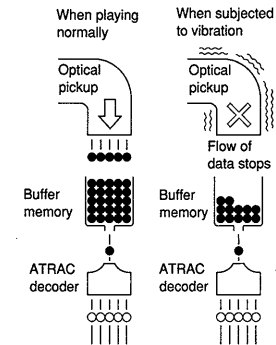
Like CDs, MDs offer instantaneous random access to the beginning of any music track. Premastered MDs are recorded with location addresses corresponding to each music selection. Recordable MDs are manufactured with a "User TOC* Area" to contain the order of the music. The TOC system is similar to the "directory management system" of floppy disks. In other words, starting and ending addresses for all music tracks recorded on the disc are stored in this area. This lets you randomly access the beginning of any track (AMS), as well as label the location with a track name as you would a file on a diskette.

* TOC is the acronym for Table of Contents.

How the Shock-Resistant Memory works

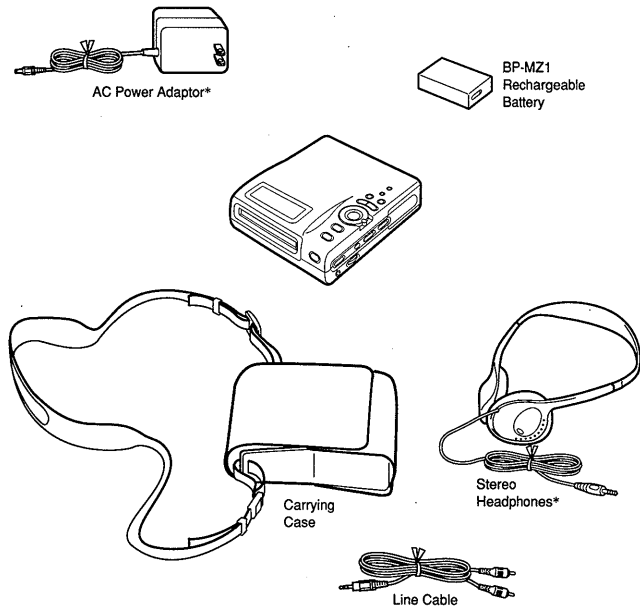
One major drawback of optical read systems is that they can skip or mute when subjected to vibration. The MD system resolves this problem by using a buffer memory that stores up to 3 seconds of audio data. This is possible because of a 1 second lag between the time audio data is picked up and when it is decoded (*see illustration below*). Should the optical pickup be jarred out of position, the correct audio data plays from the buffer memory. Using a concept called "sector repositioning," the optical pickup has the ability to within 13 milliseconds identify the disruption and resume reading from the correct point. As long as the optical pickup returns to the correct position within 3 seconds, you never experience mistracking or muting.

Shock-Resistant Memory System



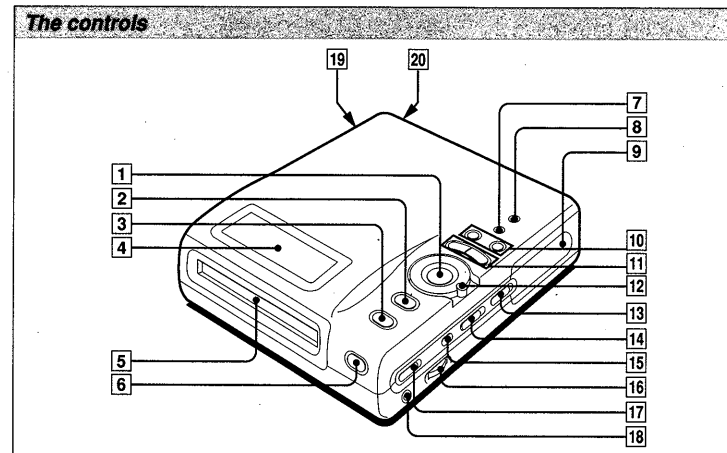
Unpacking

Take the player out of the box and check that you have all the supplied accessories. You should have:



* Illustration conforms to US model.

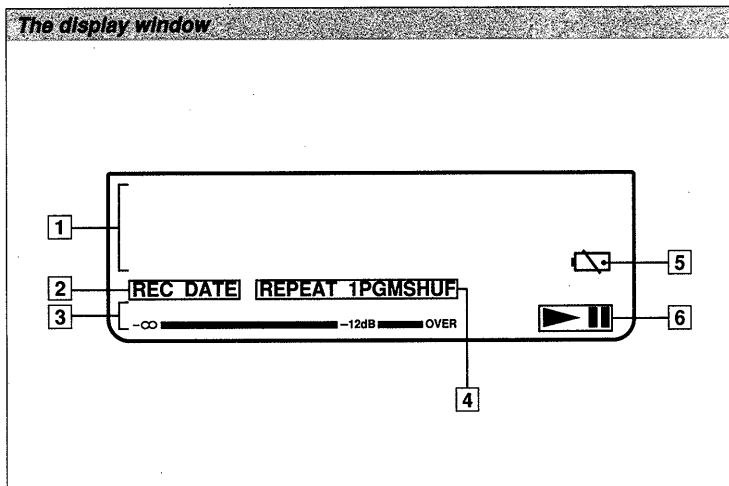
Looking at the controls



- | | |
|--|---|
| <p>1 ▶ Play button
Press to start playing an MD.</p> <p>2 Pause button
Press to momentarily interrupt play.</p> <p>3 ■ STOP/CHARGE
Press to stop the MD or to charge the battery.</p> <p>4 Display window</p> <p>5 Disc compartment
Insert the MD here. The power goes on automatically.</p> <p>6 ⏏ Eject button
Press to remove an MD. The power goes off automatically.</p> <p>7 ENTER/REPEAT
Press to enter programmed selections or repeat tracks.</p> <p>8 DISPLAY MODE
Press to display the recorded date, MD or track name.</p> <p>9 Rechargeable battery compartment</p> <p>10 -10/+10 Skip buttons
Press to jump ten tracks back or ahead.</p> <p>11 ⏮⏪⏩⏭ AMS (Automatic Music Sensor) buttons
Press to find the beginning of a track.</p> <p>12 ⏮⏪⏩⏭ Search ring
Move up or down to find a particular point in a track.</p> | <p>13 RESUME
Slide to play from the point the MD stopped.</p> <p>14 BASS BOOST
Select to emphasize low frequency (bass) sounds.</p> <p>15 PLAY MODE
Press once to play a single track, twice tracks in random order, or three times to set up a play list of up to 21 selections.</p> <p>16 VOLUME
Rotate to adjust the volume through the headphones.</p> <p>17 HOLD
Slide to lock the controls.</p> <p>18 Ⓜ Headphones jack</p> <p>19 OPTICAL (DIGITAL)/LINE OUT
To play or record with analog or digital equipment (see pages 12 and 13 for connections).</p> <p>20 DC IN 10.5 V
Connect the supplied AC power adaptor here.</p> |
|--|---|

Looking at the controls

The display window



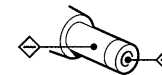
- 1** Character information display
Displays the recorded date, disc and track names.
- 2** REC DATE
Lights up along with the date to show when the MD was recorded.
- 3** Level meter
Shows the volume on the MD being played.
- 4** Play mode indicators
1: lights to indicate one track will play.
PGM: lights to indicate a programmed play list will play.
SHUF: lights to indicate tracks will play in random order.
REPEAT: lights to indicate tracks will be repeated according to the play mode chosen.
- 5** Battery indicator
Flashes when the battery is weak or dead.
- 6** Play and pause indicators
▶ indicates the MD is playing; || indicates the MD has paused.

Choosing power sources

Using the player on AC power

The MiniDisc Player is operable on AC and rechargeable battery power. To operate the player on AC power, just insert the narrow end of the supplied AC power adaptor to the terminal on the player marked DC IN 10.5 V and the other end to the wall outlet. To operate the player on battery power, read the following section.

Note on the AC power adaptor
Use the supplied AC power adaptor only. Do not use any other AC power adaptor.

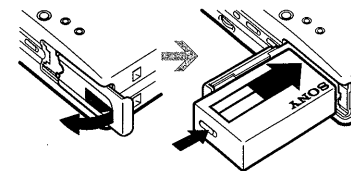


Polarity of the plug

Installing the rechargeable battery

Before using the rechargeable battery for the first time, you must charge it.

- 1** Slide open the battery compartment lid (as shown) and insert the battery.



- 2** Close the compartment lid.
(See the next section for how to charge the battery.)

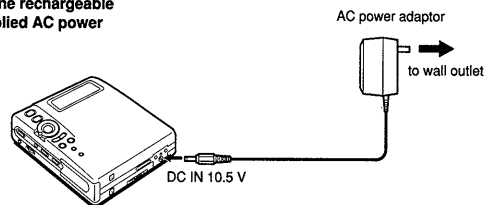
Choosing power sources

Charging the battery

Ideally, the player should be operated until no charge remains (the battery indicator flashes). You should avoid recharging a half-charged battery. If any charge is left when the battery starts charging,

the player will discharge the residual amount ("refreshing") to avoid weakening the capacity of the battery.

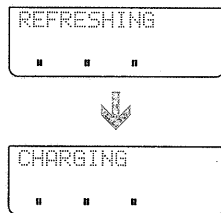
- 1 After you have installed the rechargeable battery, connect the supplied AC power adaptor.



- 2 Press ■ STOP/CHARGE to start charging the battery.

"REFRESHING" lights in the display as residual battery charge is discharged. Refreshing may take up to one hour depending on how much charge is left.


The display changes to "CHARGING" when refreshing ends. When the battery is ready to use, "CHARGING" goes out. Charging takes from 60 to 90 minutes.



- 3 Disconnect the AC power adaptor.

The battery should operate the player for about 75 minutes before you need to charge it again.

When to charge the battery

When the battery is weak, the  low battery indication will flash continuously. Recharge the battery then.

When to replace the rechargeable battery

When the operating time of the fully charged battery decreases to about half, replace it with a new one (BP-MZ1).

Recharging and battery cautions

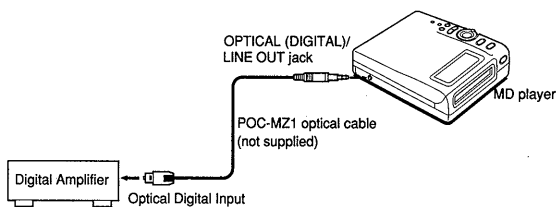
- Be sure to use the supplied AC power adaptor.
- Use the battery where the temperature is between 41° and 95° F (5° and 35°C) for the best results.
- Do not discard the battery in fire.
- Do not short-circuit the battery.
- Do not disassemble the battery. If the electrolyte inside the battery should come into contact with clothes or skin, immediately wash the contaminated objects with water.

Connecting to a stereo system

The MiniDisc Player is connectable to a digital or analog stereo system. Once hooked up, the player automatically recognizes the device as digital or analog. Note, however, that you can't hook up

a digital device unless it has the same sampling frequency as the MD player (44.1 kHz). If it isn't the same, use the analog connection described in the following section.

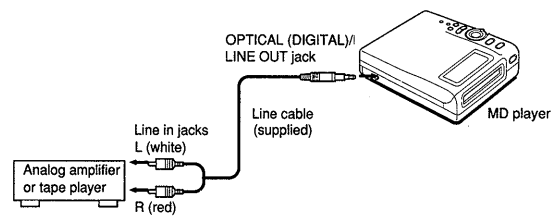
Hooking up a digital amplifier



Note

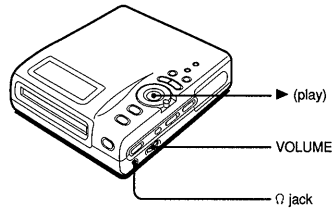
To ensure good signal transmission, keep the plug ends of the optical cable free from tarnish.

Hooking up an analog amplifier (or tape player)

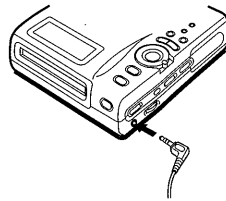


Playing an MD (normal play)

Listening to an MD is easy — just plug in the headphones, insert the MD and turn up the volume.

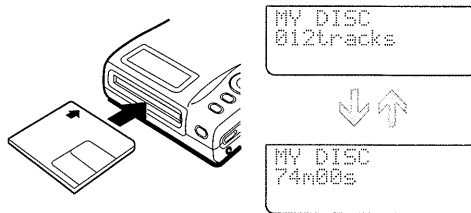


1 Connect the headphones at the jack marked Ω .



2 With the label side up, and the arrow pointing toward the opening (as shown), slide the MD into the disc compartment until the player grips it.

The power will go on automatically. The name of the MD will light on the first line. The second line will alternate between the total number of tracks and the total playing time.



3 Press \blacktriangleright (play).

The track number, playing time and name light up in the display window, and the MD starts playing. If "REPEAT" is lit in the display window, all the tracks will play again. (See *Playing tracks repeatedly*.)



4 Adjust the volume.

(See the section, *Emphasizing the bass*.)

To	Press
stop play	\blacksquare STOP/CHARGE*
interrupt play momentarily	\parallel (pause)
resume play after pause	\blacktriangleright (play) or \parallel (pause)
eject the MD	\triangle (eject)

* When you stop the player, the power goes off.

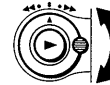
Playing specific tracks

You can quickly find any track while playing an MD using the -10/+10 Skip and AMS (Automatic Music Sensor) buttons. You can also find tracks while in pause mode.

To Skip	Press
to the beginning of the current or preceding tracks	\ll
to the beginning of the next or succeeding tracks	\gg
back ten tracks	-10
forward ten tracks	+10

Playing from a particular point in a track

While listening to an MD you may want to hear a particular section of a track. To find that section, rotate the \ll / \gg Search ring until you hear the part you want. Release it to return to normal play.



To	Turn the ring to
search backward	\ll
search forward	\gg

Emphasizing the bass

The BASS BOOST feature intensifies low frequency sound for richer quality audio reproduction.



To emphasize	Set to
heavy bass slightly	MID
heavy bass greatly	MAX
no emphasis	NORM

Note

If the volume is too high, the sound may crack or distort. If this happens, turn down the volume.

Displaying disc and track names

If you are playing a premastered or recorded MD that's been electronically labeled, you can display information on the MD while it's playing or paused.*

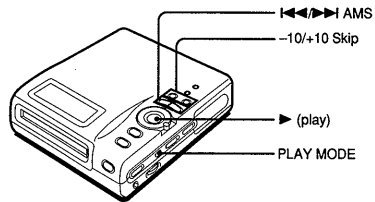
To display	Press DISPLAY MODE
date recorded (if not a premastered MD)	once
name of MD playing	twice
name of track playing (normal display)	three times

* Some premastered MDs may not have been electronically labeled.

Playing a single track

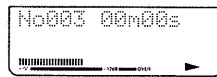
Because of the durable nature of MDs, you can play a favorite track once or over and over without wear to the disc.

To play a track once just follow the procedure below. To play the same track repeatedly, see *Playing tracks repeatedly*.



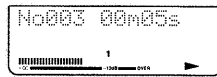
1 Press ► (play).

2 Display the track number you want to play using the ◀◀/▶▶ AMS or one of the -10/+10 Skip buttons.



3 Press PLAY MODE until "1" lights in the display window.

The player will stop after the current selection has played. If "REPEAT" is lit in the display window, the same track will play continuously.



To stop single track play

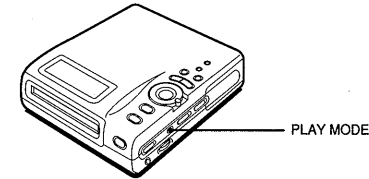
Press ■ STOP/CHARGE.

To cancel single track play

Press PLAY MODE until "1" disappears from the display window.

Playing tracks in random order (shuffle play)

In shuffle play tracks will play in random order. For example, instead of tracks 5, 6, 7 playing in order, they will be play in any order such as 6, 5, 7.



While the MD is playing, press PLAY MODE until "SHUF" lights in the display window.

"Access" lights up in the display while the player is looking for the first track to play.

The player will stop after all the tracks on the MD have played randomly. If "REPEAT" is lit in the display window, the MD will play in a continuously random order. (See *Playing tracks repeatedly*.)



To stop shuffle play

Press ■ STOP/CHARGE.

To cancel shuffle play

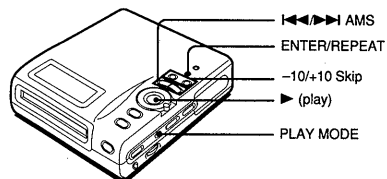
Press PLAY MODE until "SHUF" disappears from the display window.

Note

When you press ◀◀ AMS or rotate the Search ring to ◀◀, the MD returns to the beginning of the current track only. To go back beyond the current track, you must cancel shuffle play.

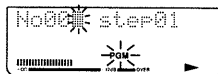
Playing tracks in specific order (program play)

You can program up to 21 tracks to play in any order you like. Just enter the track numbers you want played in the order you want them played.



- 1** While the MD is playing, press **PLAY MODE** until "PGM" lights in the display window.

"PGM" will flash signaling you to enter a track number.

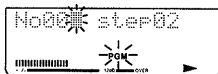


- 2** Press one of the **AMS** or **-10/+10 Skip** buttons until the track you want to program lights in the display.

The player continues to play the current selection and the track you selected appears in the display.



- 3** When you've found the track you want to program, press **ENTER/REPEAT** to enter your choice.



- 4** Repeat steps 2 and 3 until you have entered all the tracks you want played.

You can program up to 21 tracks.

Note

If you try to program more than 21 tracks, the step number display will return to "1". If that happens, every track you program beyond the 21st will erase a programmed track number starting from the first.

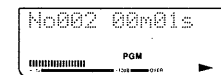
- 5** Decide whether or not the order you want the tracks to play is correct (if not, see the options below), then press **ENTER/REPEAT**.

If tracks are left from a previous play list, enter "0" to erase the succeeding tracks. "PGM" lights and the first track of the new play list is displayed.



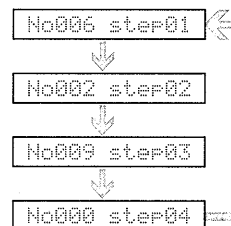
- 6** Press **(play)**.

The player will stop after playing all the tracks in the play list. If "REPEAT" is lit, the play list will play continuously. (See *Playing tracks repeatedly*.) The programmed play list will stay in memory until you program over it, erase it, take out the disc or turn off the player.



To check the order of the tracks you've entered
Before pressing **(play)**, press **ENTER/REPEAT**. Each time you press **ENTER/REPEAT**, the next track number lights in the display.

Tracks 6, 2 and 9 have been entered.



(Nothing has been programmed from the fourth step on.)

To change a track in the program

Before pressing **(play)**, press **ENTER/REPEAT** to display the track you want to change. Press an **AMS** or **-10/+10 Skip** button until the track number changes to the one you want. Press **ENTER/REPEAT** to save the new number.

To change the order of a play list

After you have pressed **(play)**, you can only change the order of the tracks by re-programming new tracks over the old ones. Do this by following steps 1 through 5. Those tracks you do not program over will remain in the play list. For example, the old play list contains tracks 2, 3 and 4 and you program tracks 1 and 2 over 2 and 3. The new program will play tracks 1, 2 and 4. You can also erase the whole program, then re-enter a completely new program.

To erase a program

Display "PGM" and enter "0" at the beginning of the programmed tracks you want to erase. The succeeding programmed tracks will be cleared. For example, if you want to erase all the tracks in a play list, enter "0" at the first track. If you want to erase the 5th through last programmed track, enter "0" at the 5th track.

To stop a program while playing

Press **STOP/CHARGE**.

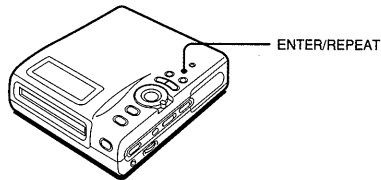
To cancel program play

Press **PLAY MODE** until "PGM" disappears. The programmed play list will not be erased.

Playing tracks repeatedly

You can play tracks repeatedly in normal, single, shuffle or program play modes. In shuffle mode, the tracks will be repeated in a different order each time they are played. For how to normal play, see

Playing an MD; for single play, see *Playing a single track*; for shuffle play, see *Playing tracks in random order*; for program play, see *Playing tracks in specific order*.



While the MD is playing, press ENTER/REPEAT until "REPEAT" appears in the display window.

Make sure you press ENTER/REPEAT sometime before play ends. For example, when playing a single track, press ENTER/REPEAT before the track finishes. When playing programmed tracks, press ENTER/REPEAT before the play list ends.

The MD player will play all the desired tracks beginning from the designated first track, then go back and play them again.



For your information

Useful tips

Playing from where the MD stopped

Instead of pressing II (pause), use the Resume function, to resume playback (in the same mode) from where the disk stopped playing. This is useful when you don't want the player to expend energy (as it would in pause mode), or start playing from the first track (as it would if you pressed ■ STOP/CHARGE only). The Resume function stores the stop point in memory and allows the player to play from where you stopped the player.

- 1 Switch RESUME to the ON position.



- 2 Press ■ STOP/CHARGE to stop the MD.

- 3 Press ► (play) to start play again.

Note

If you take the MD out or disconnect the power source (AC or battery power), the resume point will be lost.

Playing while walking or jogging

Use the Hold function to prevent the buttons from being accidentally operated while you are jogging, walking or charging the battery (see *Battery charging tips*).

Slide the HOLD switch in the direction of the arrow to activate the Hold function.



Battery charging tips

Use the HOLD function while charging

If a button is accidentally pressed while the battery is charging, charging will stop and "refreshing" will start again. To prevent this, slide the HOLD switch after the battery starts charging.

If you're in a hurry

If you don't want to wait for the battery to discharge completely ("refreshing"), you can interrupt the refreshing process and start charging immediately by pressing the ■ STOP/CHARGE button.

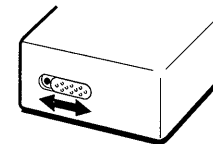
However, we don't recommend you do this often with the same battery, since recharging a partially discharged battery weakens its capacity (i.e. it will operate for increasingly shorter periods).

To restore a weakened battery

If the battery capacity has been diminished considerably because of repeated partial rechargings, discharge and charge it a few times. This will restore the battery to full capacity. This also applies to when you use the battery for the first time or after a long period of disuse.

To remind yourself of the battery's charging state

Set the switch on the battery to the position where no mark is visible when the battery has finished charging. Set the switch to the red mark position when the battery has been discharged.



To best operate the battery

Keep the electrical contacts to the rechargeable battery compartment clean. If they are tarnished or dirty, battery operating time will decrease.