

Portable MiniDisc Player

Operating instructions
Mode d'emploi (au dos)



Sony Corporation © 1999 Printed in Japan

WARNING

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

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Caution

The use of optical instruments with this product will increase eye hazard. Listening for many hours at maximum volume may damage your hearings.

Information

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, OR LOSSES OR EXPENSES RESULTING FROM ANY DEFECTIVE PRODUCT OR THE USE OF ANY PRODUCT.

Только для модели MZ-E90



AR46

This mark is valid for Russia only.

Certain countries may regulate disposal of the battery used to power this product. Please consult with your local authority. "MD WALKMAN" is a trademark of Sony Corporation.

For customers in the United States
Owner's Record

The model number is located at the bottom and near the display and the serial number is located on the floor of the disc compartment. Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. MZ-E90
Serial No. _____

Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful 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 or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

For customers in the United States and Canada

DISPOSAL OF NICKEL METAL HYDRIDE BATTERY.

NICKEL METAL HYDRIDE BATTERY. DISPOSE OF PROPERLY. You can return your unwanted nickel metal hydride batteries to your nearest Sony Service Center or Factory Service Center.

Note: In some areas the disposal of nickel metal hydride batteries in household or business trash may be prohibited.

For the Sony Service Center nearest you call 1-800-222-SONY (United States only) For the Sony Factory Service Center nearest you call 416-499-SONY (Canada only)

Caution: Do not handle damaged or leaking nickel metal hydride battery.

For customers in Australia

If the supply cord of the AC power adaptor is damaged, the AC power adaptor must be returned to the manufacturer or his agent for the cord to be replaced.

Welcome!

Welcome to the world of the MiniDisc! Here are some of the capabilities and features you'll discover with the new MiniDisc Player.

- Small body almost the size of a MiniDisc Jacket
- Ideal weight and size; fits in your shirt pocket.
- Upper and lower body made of new developed high-rigidity magnesium
- Low power-consumption design enables extended battery life.
- Simple "One-Touch Eject" function for easy MiniDisc handling
- A single slide of a switch on the side of the player causes the player lid to open and the MiniDisc to eject.
- Easy-to-operate headphones remote control with backlit LCD
- Keep the main unit in your pocket and operate the MiniDisc player through the "slim stick" remote control. The LCD displays disc and track information, playback mode as well as battery condition.
- Shock-resistant memory offsets up to 40 seconds of optical read errors.

Playing an MD right away!

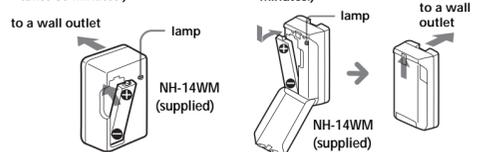
Charge the supplied rechargeable battery, before using it for the first time. Other choices are a dry battery and house current. For details, see "Power Sources".

Stereo or monaural playback is automatically selected, depending on the sound source.

1 Charge the rechargeable battery.

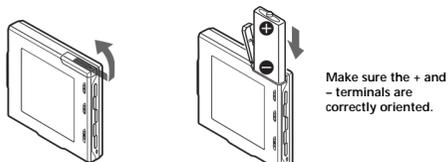
After about 1.5 hours, charging ends and the lamp on the charger turns off. (To get maximum performance from battery, continue charging it for another hour after the lamp turns off.)

- Model for USA, Canada and continental Europe (Full charging takes 80 minutes.)
- World model and model for other countries (Full charging takes 120 minutes.)



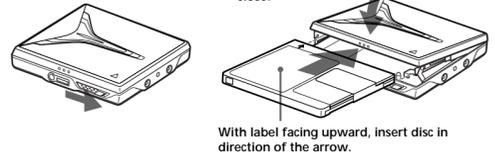
2 Insert the rechargeable battery.

- Slide open the battery compartment as shown in the illustration.
- Insert the battery.

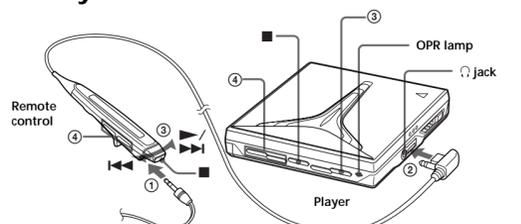


3 Insert an MD.

- Slide OPEN.
- Insert an MD and press the lid down to close.



4 Play an MD.



- Connect the headphones to the remote control. Plug it in firmly all the way.
- Connect the headphones with the remote control to the jack.
- Press ►►► (or press the control towards ►►► or ◀◀◀ on the remote control). The OPR lamp on the player lights up and the player starts to play the first track. When using the remote control, a short beep sounds in the headphones.
- Press VOLUME +/- (or press VOL +/- on the remote control) to adjust the volume. The volume indicator appears on the remote control to allow you to check the volume.

To stop play, press ■.

The OPR lamp on the player goes off. The display on the remote control disappears after a while. When using the remote control, a long beep sounds in the headphones.

To	Do this (Beeps in the headphones)
Pause	Press ■ on the remote control. (Continuous short beeps) Press ■ on the remote control again to resume play.*1
Find the beginning of the current track	Press ◀◀◀ once. Press the control towards ◀◀◀ on the remote control. (Three short beeps)
Find the beginning of the previous tracks	Press ◀◀◀ repeatedly. Press the control towards ◀◀◀ on the remote control repeatedly. (Continuous three short beeps)
Go backwards while playing*1	Hold down ◀◀◀. Press and hold the control towards ◀◀◀ on the remote control.
Go forward while playing*1	Hold down ►►►. Press and hold the control towards ►►► on the remote control.
Remove the MD	Press ■, and then slide OPEN.*2

Press PLAYMODE while the player is playing an MD. Each time you press PLAYMODE, the play mode indication changes as follows.

(none) (normal play)
All the tracks are played once.

◀" (all repeat)
All the tracks are played repeatedly.

1" (single repeat)
A single track is played repeatedly.

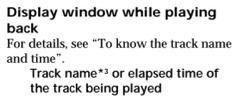
SHUF" (shuffle repeat)
All the tracks are played repeatedly in random order.

For playback does not start
Make sure the player is not locked. For details, see "To lock the controls (HOLD)".

For models supplied with the AC plug adaptor
If the battery charger does not fit the wall outlet, use the AC plug adaptor.

Display window while playing back
For details, see "To know the track name and time".

Track name*3 or elapsed time of the track being played



Track number

Tips

- The OPR lamp on the player lights up on the player during playback. When you press ■, the lamp goes off.
- The display on the remote control disappears after a while after you have pressed ■.

Note
Do not slide OPEN during playback. If you do, the lid opens and playback stops.

When using optional headphones
Use headphones with a stereo-miniplug. You cannot use headphones with a microplug.

*1 When you press ◀◀◀ or ►►► on the player during pause (■), the player resumes playback.

If you hold down ◀◀◀ or ►►► on the player (or press and hold the control towards ◀◀◀ or ►►► on the remote control) during pause (■), you can fast forward/rewind without listening to the playback sound.

*2 Once you open the lid, the point to start playback will change to the beginning of the first track.

*3 Appears only with MDs that have been electronically labeled.

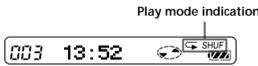
► Various ways of playback

Playing tracks repeatedly

You can play tracks repeatedly in three ways — all repeat, single repeat, and shuffle repeat.



Press PLAYMODE while the player is playing an MD. Each time you press PLAYMODE, the play mode indication changes as follows.



(none) (normal play)
All the tracks are played once.

◀" (all repeat)
All the tracks are played repeatedly.

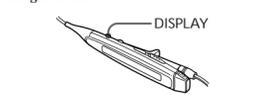
1" (single repeat)
A single track is played repeatedly.

SHUF" (shuffle repeat)
All the tracks are played repeatedly in random order.

Tips on playback

To know the track name and time

Press DISPLAY on the remote control while the player is playing an MD. Each time you press DISPLAY, the display changes as follows.



Elapsed time

Track number

Track name

Track number

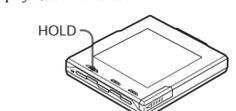
Disc name

Number of tracks recorded on the MD

Note
Disc and track names appear only with MDs that have been electronically labeled.

► To lock the controls (HOLD)

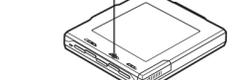
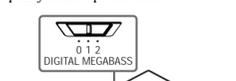
To prevent the buttons from being accidentally operated when you carry the player, use this function.



Slide HOLD on the player in the direction of the → to lock the controls of the unit. Slide HOLD on the remote control in the direction of the → to lock the controls of the remote control.

To emphasize bass (DIGITAL MEGABASS)

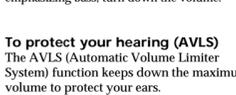
The DIGITAL MEGABASS function intensifies low frequency sound for richer quality audio reproduction.



Set DIGITAL MEGABASS to 1 (weak) or 2 (strong).

To cancel the effect, set DIGITAL MEGABASS to 0.

Note
If the sound becomes distorted when emphasizing bass, turn down the volume.



Set AVLS to LIMIT. The volume is kept at a moderate level, even if you try to turn the volume above the limited level.

Note
The battery life may be shorter depending on operating conditions and the temperature of the location.

** With a fully charged battery

► Power sources

You can use the player on a dry battery, house current, or a Ni-MH rechargeable battery.

Using on a dry battery

- Insert one LR6 (size AA) alkaline battery (not supplied) into the supplied battery case, and close the lid.



Make sure the + and - terminals are correctly oriented.

- Attach the battery case to the player.



Turn towards LOCK. To release the battery case, turn towards RELEASE.

When to replace or charge the batteries
You can check the battery condition with the battery indication which is displayed while using the player.

- Battery power decreasing
- Weak batteries.
- The batteries have gone out. "LOW BATT" flashes in the display on the remote control, and the power goes off.

To protect your hearing (AVLS)
The AVLS (Automatic Volume Limiter System) function keeps down the maximum volume to protect your ears.

Battery life*

Batteries Playback

Ni-MH rechargeable battery (NH-14WM) Approx. 21 hours**

One LR6 (size AA) alkaline battery and a Ni-MH rechargeable battery (NH-14WM) Approx. 31 hours

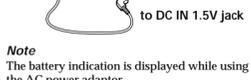
One LR6 (size AA) alkaline battery and a Ni-MH rechargeable battery (NH-14WM) Approx. 56 hours**

* The battery life may be shorter depending on operating conditions and the temperature of the location.

** With a fully charged battery

Using on house current

- Attach the supplied battery case to the player.
- Connect the AC-E15L AC power adaptor (not supplied) to the DC IN 1.5V jack of the battery case.
- Connect the AC power adaptor to a wall outlet.



Note
The battery indication is displayed while using the AC power adaptor.

► Additional information

Precautions

On safety

Do not put any foreign objects in the DC IN 1.5V jack.

On power sources

For use in your house: Use the AC power adaptor AC-E15L (not supplied). Do not use any other AC power adaptor since it may cause the player to malfunction.



- If you are not going to use this player for a long time, be sure to disconnect the power supply (AC power adaptor, dry battery, or rechargeable battery). To remove the AC power adaptor from the wall outlet, grasp the adaptor plug itself; never pull the cord.

On charging

- Be sure to use the supplied battery charger.
- Charging time may vary depending on the battery condition.
- When you use the battery for the first time or after a long period of disuse, the battery life may be shorter. In this case, charge and discharge the battery several times. The battery life will be restored.
- If the rechargeable battery capacity becomes half the normal life, replace it with a new one.
- Remove the rechargeable battery when the unit is not to be used for a long time. Do not carry the rechargeable battery in your pocket or a bag, etc., with metallic objects such as key rings.

On the battery case attachment terminals on the main unit

- Do not short-circuit the battery case attachment terminals on the main unit with metallic objects, etc., when the rechargeable battery is inserted, as this may cause heat and can be dangerous.
- When carrying the player in a bag, be sure to put it in the supplied carrying pouch.

On heat build-up

Heat may build up in the player if it is used for an extended period of time. In this case, leave the player to cool down.

On installation

- Never use the player where it will be subjected to extremes of light, temperature, moisture or vibration.
- Never wrap the player in anything when it is being used with the AC power adaptor. Heat build-up in the player may cause malfunction or injury.

On the headphones

Road safety
Do not use headphones while driving, cycling, or operating any motorized vehicle. It may create a traffic hazard and is illegal in many areas. It can also be potentially dangerous to play your player at high volume while walking, especially at pedestrian crossings. You should exercise extreme caution or discontinue use in potentially hazardous situations.

Preventing hearing damage
Avoid using headphones at high volume. Hearing experts advise against continuous, loud and extended play. If you experience a ringing in your ears, reduce the volume or discontinue use.

Caring for others
Keep the volume at a moderate level. This will allow you to hear outside sounds and to be considerate of the people around you.

On the MiniDisc cartridge

- Do not touch the internal disc directly. Forcing the shutter open may damage the internal disc.
- Do not place the cartridge where it will be subjected to light, temperature, moisture or dust.

On cleaning

- Clean the player casing with a soft cloth slightly moistened with water or a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene as it may mar the finish of the casing.
- Wipe the disc cartridge with a dry cloth to remove dirt.
- Do not on the lens may prevent the unit from operating properly. Be sure to close the disc compartment lid after inserting or ejecting an MD.

On dry batteries and the battery carrying case

Incorrect battery usage may lead to leakage of battery fluid or bursting batteries. To prevent such accidents, observe the following precautions:

- Install batteries with the + and - poles aligned correctly.
- Do not try to recharge dry batteries.
- When the player is not to be used for a long time, be sure to remove the batteries.
- If a battery leak should develop, carefully and thoroughly wipe away battery fluid from the battery compartment before inserting new ones.
- Do not carry the dry battery in your pocket or a bag, etc., with metallic objects such as key rings. The terminals of the battery or the battery carrying case may heat up from a short-circuit and can be dangerous.

On mechanical noise

The player gives out mechanical noise while operating, which is caused by the power-saving system of the player. This is not a malfunction.

If you have any questions or problems concerning your player, please consult your nearest Sony dealer.

Troubleshooting

Should any problem persist after you have made these checks, consult your nearest Sony dealer.

The player does not work or works poorly.

- You tried to play with no disc in the player ("NO DISC" flashes on the remote control).
 - Insert an MD.
 - The hold function is activated and the controls are locked. (If you press any of the operation buttons on the player, "HOLD" flashes on the remote control.)
 - Slide HOLD against the direction of the arrow to release the hold function.
- Moisture has condensed inside the player.
 - Take the MD out and leave the player's lid open for several hours until the moisture evaporates.
- The rechargeable battery or dry battery is weak ("LOW BATT" flashes on the remote control).
 - Replace the dry battery or recharge the battery.
- The rechargeable battery or dry battery has been installed incorrectly.
 - Install the battery with correct polarity.
- An MD with no recording on it is inserted ("BLANKDISC" flashes on the remote control).
 - Reinsert or replace the disc.
- While operating, the player received a mechanical shock, too much static, abnormal power voltage caused by lightning etc.
 - Restart as follows.
 - Disconnect all the power sources.
 - Leave the player for about 30 seconds.
 - Connect the power source.

An MD is not played from the first track.

- Disc playing stopped before it came to the last track.
 - Press ◀◀◀ repeatedly or eject and reinsert the MD once to go back to the beginning of the disc, and restart playing after checking the track number in the display.

The MD is not played normally.

- The player is set to the remote mode ("◀" is displayed on the remote control).
 - Press PLAYMODE repeatedly until "◀" disappears, then start playing.

An MD is not played from the first track.

- Disc playing stopped before it came to the last track.
 - Press ◀◀◀ repeatedly or eject and reinsert the MD once to go back to the beginning of the disc, and restart playing after checking the track number in the display.

Playback sound skips.

- The player is placed where it receives continuous vibration.
 - Put the player on a stable place.
- A very short track may cause sound to skip.

Sound has a lot of static.

- Strong magnetism from a television or such device is interfering with operation.
 - Move the player away from the source of strong magnetism.

The rechargeable battery does not start charging (in case of a charger with a lid).

- The lid of the battery charger is not closed properly.
 - Close the lid and slide the lock.

No sound comes through the headphones.

- The headphones plug is not firmly connected.
 - Connect the headphones plug firmly to the remote control.
 - Connect the headphones plug firmly to the jack.
- Volume is too low.
 - Adjust the volume by pressing VOLUME +/- (VOL +/- on the remote control).
- AVLS is on.
 - Slide AVLS to NORM.

Specifications

System

Audio playing system
MiniDisc digital audio system
Laser diode properties
Material: GaAlAs
Wavelength: λ = 790 nm
Emission duration: continuous
Laser output: less than 44.6 μW*

* This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.

Revolutions
600 rpm to 2250 rpm

Error correction
Advanced Cross Interleave Reed Solomon Code (ACIRC)

Sampling frequency
44.1 kHz

Coding
Adaptive Transform Acoustic Coding (ATRAC)

Modulation system
EFM (Eight to Fourteen Modulation)

Number of channels
2 stereo channels

Frequency response
1 monaural channel
20 to 20,000 Hz

