

WARNING

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

For the customer in the U.S.A.

INFORMATION

Digital Audio Recorder

Operating Instructions page 2^{EN}

Mode d'emploi page 2^F

EN

F

IN ALL COUNTRIES, THE USER MUST READ THE INSTRUCTIONS CAREFULLY BEFORE USING THE PRODUCT. THE USER MUST READ THE INSTRUCTIONS CAREFULLY BEFORE USING THE PRODUCT. THE USER MUST READ THE INSTRUCTIONS CAREFULLY BEFORE USING THE PRODUCT.

OWNER'S RECORD

DAT
Digital Audio Tape

PCM-M1

WARNING

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

For the customers in the U.S.A. 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 or television reception. 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.

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.

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)

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

Notes on recording

- This recorder is not designed for business or commercial use. Never attempt to modify or tamper the recorder so that it can be connected to other business or commercial audio equipment. Do not use this recorder for data storage.
- Check and make sure that the recording operation is not malfunctioning prior to recording important materials.
- Observe the relevant regulations on copyright relating to your collection of recordings. Unauthorized public performance, broadcasting and duplication of a recorded material for commercial purposes are a violation of applicable laws.

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.

OWNER'S RECORD

The model and serial numbers are located on the bottom of the unit.

Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.

Model No. PCM-M1 Serial No. _____

Welcome!

Welcome to the world of the DAT recorder!
Your DAT tape-corder has the following features. They will be helpful for you to enjoy it to the full.

- **Superb DAT sound quality**
with excellent frequency response, low noise, and lack of distortion.
- **Copy code adjustable**
— You can adjust the copy code (ID6) when, for example, you record your own live performance.
- **Supports input in IEC958 format**
(copy code adjustable).
- **Enhanced features for studio recording**
 - Start ID blank detection threshold adjustable
 - Semi-auto feature; write the first Start ID automatically during Manual mode
 - PEAK HOLD enables easy recognition of maximum input level
- **Long-time recording**
using two Nickel metal hydride rechargeable batteries. Approximately 3.5 hours of continuous recording.
- **High fidelity recording**
with a high quality mic amplifier also used in the Super Bit Mapping adaptor (SBM-1).
- **Adjustable (automatic/manual) recording level**
to suit every recording condition.
- **MIC LIMITER**
that automatically holds down sudden large input signals to a certain level.
- **Three sampling frequencies**
Recording from digital sources such as CDs, MDs, BS/CS is possible since the recorder supports three sampling frequencies (SP mode: 48kHz, 44.1 kHz and 32 kHz / LP mode: 32 kHz). When recording with a microphone or from analog input, choose from SP (48 kHz or 44.1 kHz) or LP (32 kHz).
- **After Recording function**
that lets you write and erase Start IDs and Program Numbers after recording.
- **LCD with EL (electroluminescent) illumination backlight**
that indicates the current operating mode and the battery power status in the dark.
- **Remote control equipped with LCD**
that indicates current operating mode.

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EN

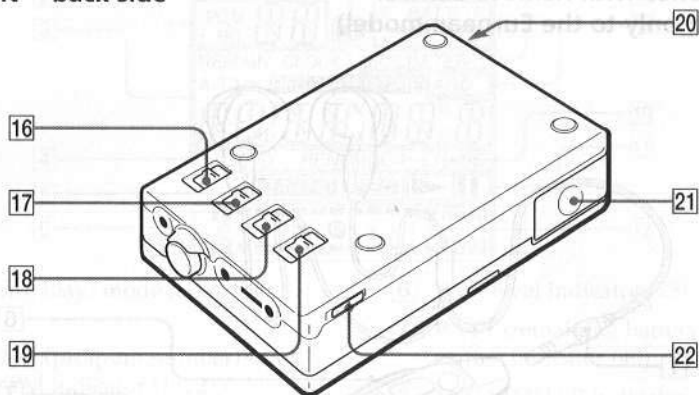
Refer to the pages in () for details.

A detailed line drawing of the back of the device, showing various ports and controls. Numbered callouts 1 through 15 point to the following components:

- 1: Top-left corner
- 2: Top edge
- 3: Top edge
- 4: Top edge
- 5: Top edge
- 6: Top edge
- 7: Top edge
- 8: Bottom-left corner
- 9: Bottom-left corner
- 10: Top-right corner
- 11: Top-right corner
- 12: Top-right corner
- 13: Bottom-right corner
- 14: Bottom-right corner
- 15: Bottom-right corner

- 6
- ^{EN}

Main unit —back side



16 MIC ATT (microphone sensitivity) switch (17)

17 MIC/LINE IN (microphone/line input) switch (17, 23)

18 MANUAL • MIC LIMITER • AUTO (AGC) selector (17, 23, 25)

19 SP • LP (standard play/long play mode select) switch (17, 24, 27)

20 REMOTE • DIGITAL I/O (input/output) jack (24, 36)

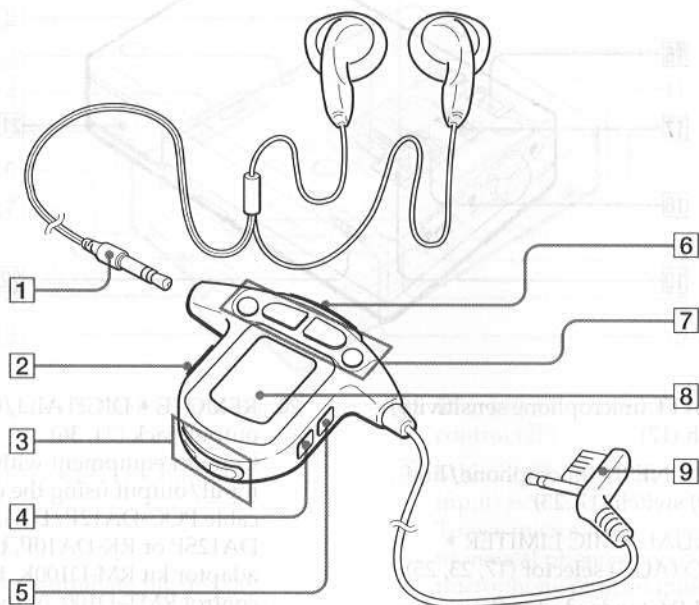
Connect equipment with digital input/output using the connecting cable POC-DA12P/DA12MP/DA12SP or RK-DA10P, the adaptor kit RM-D100K, the remote control RMT-D100, or the super bit mapping adaptor SBM-1, etc (not supplied).

21 Battery compartment lid (12)

22 AVLS (automatic volume limiter system) switch (37)

Location of Controls (continued)

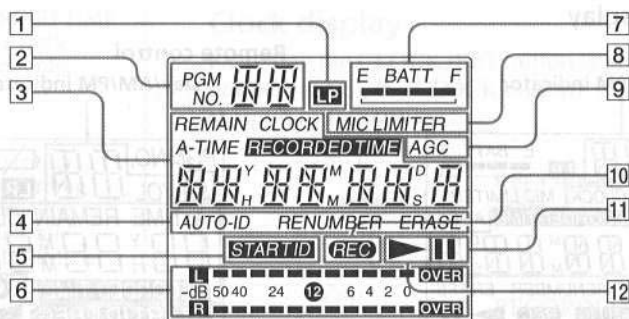
Headphones with Remote Control (supplied only to the European model)



- 1 Stereo mini plug
- 2 COUNTER MODE button (10)
- 3 VOL +, - (volume) button (20, 37)
- 4 CLOCK button (11)
- 5 AVLS button (37)
- 6 HOLD switch (15, 41)
When you slide it to the direction of the arrow, the buttons on the remote control will be locked. But the COUNTER MODE, CLOCK and the AVLS buttons will operate.

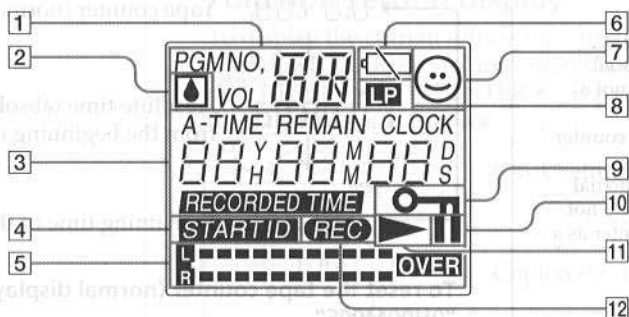
- 7 TAPE operating buttons (20)
 - ▶▶ (Fast forward/cue • AMS) button
 - ▶ (play) button
 - (stop) button
 - ◀◀ (Rewind/review • AMS) button
- 8 Display
- 9 Remote plug

Display Main unit



- | | |
|---|--|
| 1 LP (Long Play) mode indicator (27) | 6 Peak level indicator (25) |
| 2 PGM.NO (program number)•day•AM/PM indicator (13, 21) | 7 BATT (remaining battery power status) indicator (40) |
| 3 Tape counter/clock/volume/message indicator (10, 11, 37, 45) | 8 MIC LIMITER indicator |
| 4 START ID (automatic Start ID•renumber•erase signal) indicator (30 - 35) | 9 AGC indicator |
| 5 START ID indicator (30 - 35) | 10 REC (recording) indicator |
| | 11 (pause) indicator |
| | 12 ► (playback) indicator |

Remote control (supplied only to the European model)



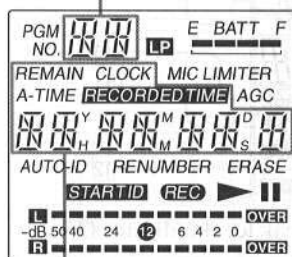
- | | |
|---|---|
| 1 PGM.NO (program number)•day•AM/PM•volume indicator (13, 21) | 6 ⚡ (battery power status) indicator (40) |
| 2 Moisture condensation indicator (49) | 7 AVLS indicator (37) |
| 3 Tape counter/clock indicator (10, 11) | 8 LP (Long Play) mode indicator (27) |
| 4 START ID indicator (30 - 35) | 9 HOLD indicator (15) |
| 5 Peak level indicator (25) | 10 (pause) indicator |
| | 11 ► (playback) indicator |
| | 12 REC (recording) indicator |

Location of Controls (continued)

Using the display

Main unit

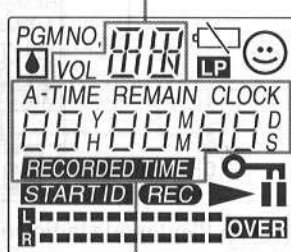
Day/AM/PM indicator



Tape counter/clock indicator, function setting display

Remote control

Day/AM/PM indicator



Tape counter/clock indicator

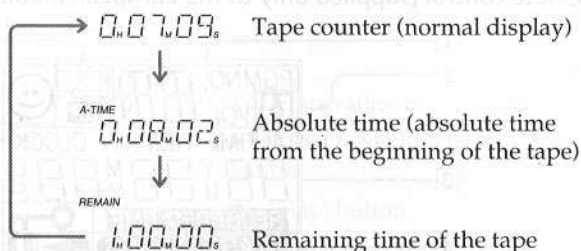
Note

The tape counter is provided as a visual guideline and is not a clock. The value displayed in the counter is not an accurate depiction of the actual time. Therefore, do not use the tape counter as a clock.

Tape counter display

Each time the COUNTER button is pressed (on the remote control, the COUNTER MODE button), the display changes as follows:

Example: indication on the main unit



To reset the tape counter (normal display) to "0H00M00S"

Press the RESET button on the main unit when the tape counter is displayed.

Remaining time of the tape

The remaining time of the tape appears normally after about 16 seconds of commencing playback in the SP mode. However, there may be a deviation in the amount of time displayed depending on the tape.

- * The RECORDED TIME is displayed while playing back only.

Tips

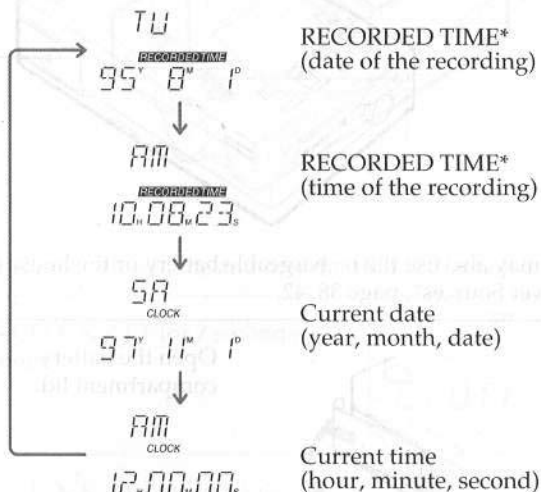
- When the recorder enters the recording, recording monitor, or pause mode while RECORDED TIME is indicated, the recorder displays the current time.
- To switch between 12-hour or 24-hour clock display, hold down RESET • + for 2 seconds or longer.

Message display

Refer to page 45, 46 for "Message Display".

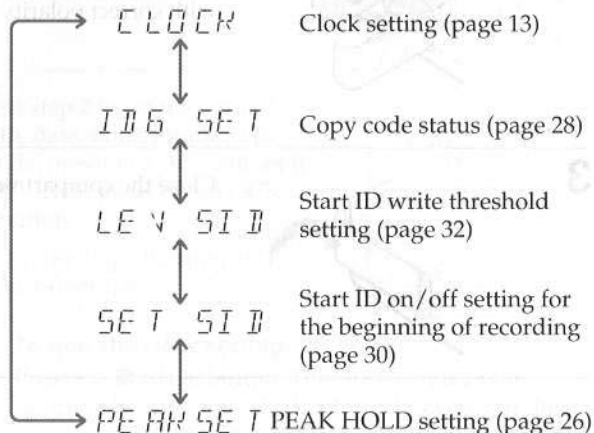
Clock display

Each time the CLOCK/SET button is pressed (on the remote control, the CLOCK button), the display changes as follows:



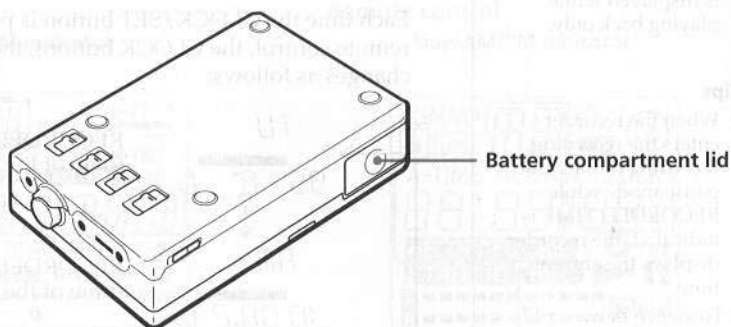
Function setting display

To display the current setting for various functions, hold down CLOCK/SET for 2 seconds or longer. Each time RESET • + or COUNTER • - is pressed, the display changes as follows:



Inserting the Alkaline Batteries

Use two LR6 (size AA) alkaline batteries.



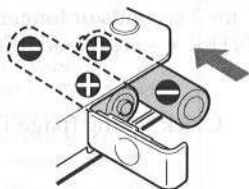
You may also use the rechargeable battery or the house current. For more details see "Power Sources", page 38, 42.

1



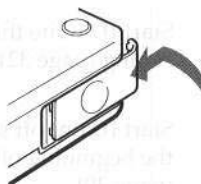
Open the battery compartment lid.

2



Insert two new alkaline batteries (not supplied) into the battery holder. Make sure to insert them with correct polarity.

3

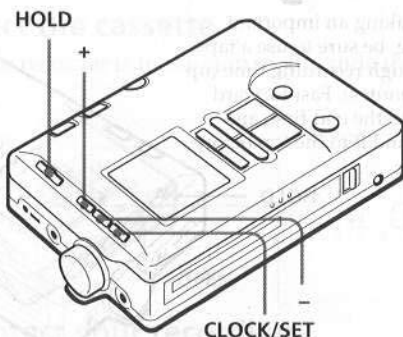


Close the compartment lid.

Setting the Clock

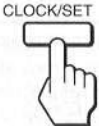
Set the clock before starting any recording operations to stamp the date and time. Otherwise, you cannot get the correct date and time.

The clock will return to its default setting (SA/97Y11M 1D/AM12H00M00S) if the batteries are removed from the unit for a long time. In this case, set the clock again.



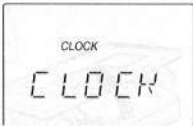
Make sure that the tape-corder is in the stop mode and that the HOLD function is off.


- 1**



CLOCK/SET


Press CLOCK/SET for 2 seconds or longer.

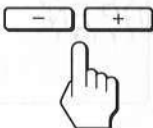

- 2**




CLOCK/SET

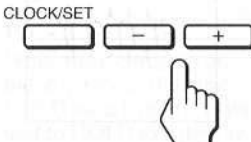
Press CLOCK/SET again while "CLOCK" is present in the display.


- 3**



Press + or - button to set the current year, then press the CLOCK/SET button.



- 4**



CLOCK/SET

Repeat step 2 to set the current month, date, hour, minute. For seconds, pressing + or - will set it to "00". Then press the CLOCK/SET button.

The display stops flashing and the clock operates.



Tip

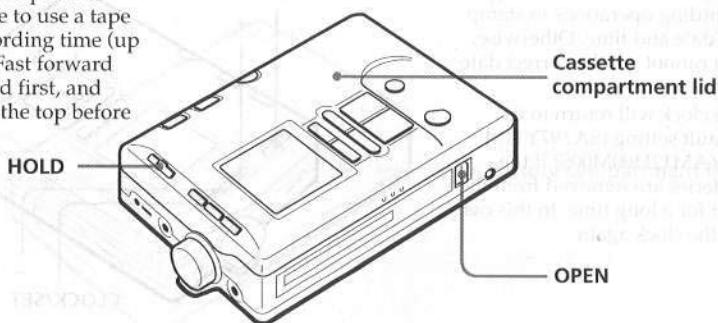
To set the clock accurately, press CLOCK/SET at the time of the tone in step 4.

To quit the clock setting

Press the ■ STOP button. The clock display will return to the previous clock setting. However, if the date is set, the year, month and date will be set and will not be applicable for further cancellation.

Inserting the Cassette

When making an important recording, be sure to use a tape with enough recording time (up to 120 minutes). Fast forward the tape to the end first, and then rewind it to the top before recording.



Make sure that the HOLD function is off.

1



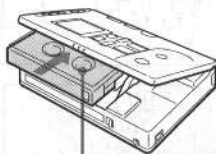
Open the cassette compartment lid.

① Slide the OPEN switch.

② Open the cassette compartment lid when it opens slightly.



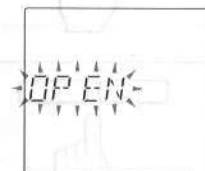
2



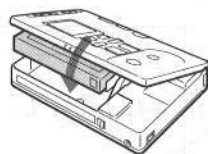
Window facing up.

Insert the cassette.

Insert the cassette with the window facing up. If the cassette is inserted upside down, it may not be removed from the unit.



3



Close the lid.

The cassette is loaded automatically.



Notes

- The cassette holder will not open if HOLD is locked. Release HOLD to insert a cassette.
- When inserting or taking out a cassette, do not hold the cassette as shown below. This may lead to a malfunction.



- Make sure that the cassette compartment lid is closed and "UNLOAD" or "LOAD" is not displayed before disconnecting the power source. Otherwise, the cassette compartment lid may not close. In this case, connect the power source again.

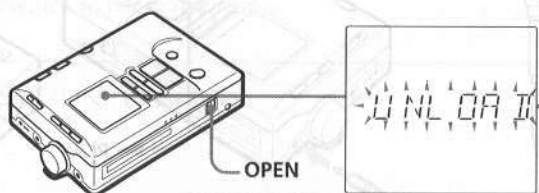
Tip

While the recorder is in the stop mode, slide the HOLD switch on the main unit to HOLD to enter the low-power consumption mode manually when using the unit on batteries. (See page 41.)

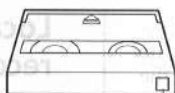
* You can set the display, clock or AVLS.

To eject the cassette

While the recorder is in the stop mode, slide the OPEN switch.

**To protect your recording**

Slide open the record-protect shutter to record-protect your tape.



If the shutter is open, you cannot record on the tape.



If the shutter is closed, you can record on the tape.

Notes on DAT cassettes

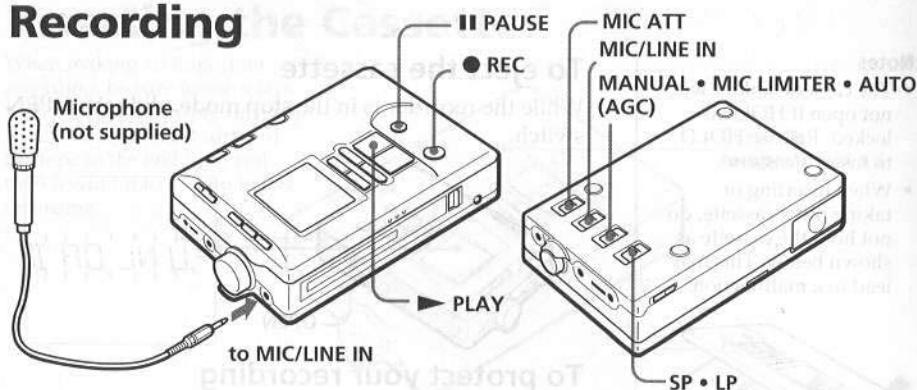
- Unlike conventional analog cassettes, playback and recording are applicable on one side of the cassette only.
- Under normal usage, the construction of the DAT cassette prevents undesirable entry of dust and foreign particles. Do not open the DAT cassette unnecessarily.
- Do not insert items into the holes on the reverse side of the DAT cassette.

To prevent accidental operations — HOLD function

Main unit: Slide the HOLD switch until the yellow hold mark shows. When a button is pressed in the HOLD mode, "HOLD" will flash for 3 seconds in the display and the buttons will be locked*.

Remote control: Slide HOLD switch in the direction of the arrow. "HOLD" will light up in the display and the buttons will be locked.

Recording



Refer to page 23 for "Connecting with Other Equipment for Recording".

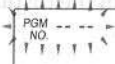
Note

The absolute time may not be written correctly in the following cases.

- When recording on a partially recorded tape containing an unrecorded segment (i.e., a portion of the tape that has never been recorded).
- When recording on a partially recorded tape for which the absolute time has not been written originally.

Notes

- Do not press the ■ STOP button when "bLANK" is displayed. If it is pressed, the absolute time will become "--H-M-S" and will not be written thereafter.
- "--" indicates an unrecorded segment. Press the ◀◀ button to rewind the tape until "--" stops flashing. Then, press the ▶▶▶ button to locate the end of the previous recording.



Locating the point at which to begin recording

The absolute time is automatically written simultaneously while recording.

The absolute time is indicated as the length of time from the beginning of the tape, and is useful in determining the elapsed time from the beginning of the tape. When recording on a partially recorded tape, locate the end of the previous recording and start recording from that point (this is to avoid creating an unrecorded segment). Once the absolute time is written, it cannot be erased.

If you wish to insert a four-second blank segment automatically, refer to page 27 for "Recording blank segment—REC MUTING".

To record from the beginning of the tape

Press the ◀◀◀ button to rewind the tape. "TOP" flashes when the tape is rewound to the beginning.



To record on a partially recorded tape

Press the ▶▶▶ button to locate the end of the previous recording. "bLANK" appears when the end of the previous recording is located, and the tape stops at the point.

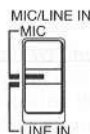


Recording from a microphone

1

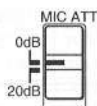
Insert a cassette and locate the point at which to begin recording.

2



Set the MIC/LINE IN switch to MIC.

3

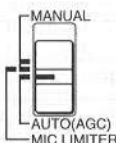


Set the MIC ATT switch.

0 dB: Normal

20 dB: For loud sound

4



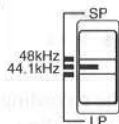
Set the MANUAL • MIC LIMITER • AUTO (AGC) selector to AUTO (AGC).

The recorder adjusts the recording level automatically.

To adjust the recording level manually, set the selector to MANUAL or MIC LIMITER. (See page 25.)

You can adjust the copy code. See "Adjusting the copy code" (page 28).

5

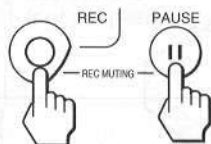


Select the sampling frequency.

Set the SP • LP switch to SP (Standard Play mode 48 kHz or 44.1 kHz).

To record in the Long Play mode, set the switch to LP. (See page 27.)

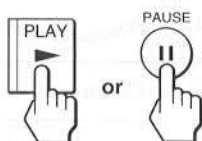
6



Press the ● REC and || PAUSE buttons.

The recorder enters the pause mode. If only the ● REC button is pressed, the recorder enters the recording monitor mode and does not begin recording.

7



Press either the ► PLAY or || PAUSE button.

The recording begins.

Tips

- To begin recording immediately, press the ► PLAY button while pressing the ● REC button in the stop or playback mode.
- The sampling frequency is displayed when it is changed during recording. When it is changed during recording pause, it will be displayed at the start of the next recording.
- If the recorder remains in the pause mode for five minutes or longer, the recorder will enter the stop mode automatically in order to protect the head and tape.
- If the recorder remains in the stop mode for three minutes or longer while using the unit on batteries, the recorder will enter the low-power consumption mode automatically (see page 41) to protect the tape and to conserve the battery.

Other operations

To	Press
Stop recording	■ STOP
Pause recording	PAUSE
Release pause	PAUSE or ► PLAY

Check the sound source
(The Start ID blank
detection threshold
flashes automatically.
see page 32)

● REC during recording,
recording monitor, or
recording pause until the
display appears.



Check the sampling
frequency

► PLAY in the recording
mode until the sampling
frequency is displayed.



Tip

When the recorder records to the end of the tape, it rewinds the tape automatically to the beginning and stops. (Auto-rewind function).

Notes

- The unit will not enter the low-power consumption mode during the recording monitor mode, even when using the unit on batteries.
- Changing the sampling frequency while recording may cause temporary sound dropout to be recorded.
- Noise may be recorded if you set the MIC/LINE IN switch during recording.
- Noise may be recorded when the display light is turned on while recording. In this case, turn it off.
- If **OVER** appears when the recording mode is set to AUTO (AGC), set the MIC ATT to 20dB or move the microphone away from the sound source.

To monitor sound during recording

Plug the headphones in the REMOTE/⌂ jack or stereo unit to the LINE OUT jack on the recorder.

To record relatively low sounds

Lower the recording level (in the manual recording mode) and move the microphone as close as possible to the sound source and then adjust the recording level. Clear and optimum recording with minimal noise interferences will be achieved.

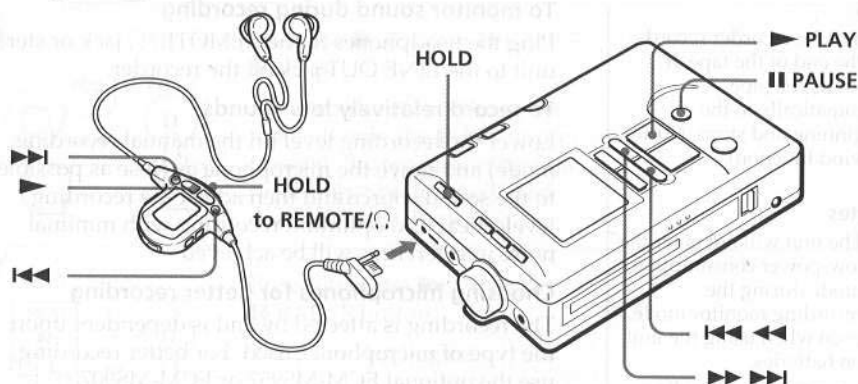
Choosing microphones for better recording

The recording is affected by and is dependent upon the type of microphones used. For better recording, use the optional ECM-MS957 or ECM-MS907 microphone.

Compatible microphones

- Optional plug-in power type microphones are compatible for this recorder.
- Optional auto power supply type microphones are not compatible for this recorder.

Playing Back



Refer to page 36 for "Connecting with Other Equipment for Playback".

1

Insert a cassette and connect the headphones with remote control.
Release the Hold function.

2



Press the ► PLAY button.
The playback begins.



Tips

- The SP (Standard Play) mode and LP (Long Play) mode will be detected automatically for playback.
- When the recorder plays back to the end of the tape, it rewinds the tape automatically to the beginning and stops (Auto-rewind function).
- The pause playback cannot be operated with the remote control.

Other operations

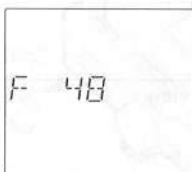
To	Press
Adjust the volume	VOL +, - (VOL +, -)
Stop playback	■ STOP (■)
Pause playback	PAUSE
Release pause	PAUSE or ► PLAY (►)
Fast forward	►►►► (►►) in the stop mode
Rewind	◄◄◄◄ (◄◄) in the stop mode

() is indicated for the remote control.

To check the sampling frequency

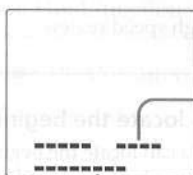
You can check the sampling frequency of the recorded sound.

Press ► PLAY in the playback mode until the sampling frequency is displayed.



Display during fast-forward/rewind (AMS function)

Peak level indicator (L) shows the tape transport direction. Peak level indicator (R) shows the remaining amount of tape.



Tape transport direction
to the right: fast-forward
to the left: rewind

Remaining amount
of tape

To play back the tape from the beginning automatically—Auto-play function

This function can be operated only from the main unit. Press the ► PLAY button while pressing the ◀◀ ◀◀ button. Playback begins automatically when the tape is rewound to the beginning.

Likewise, playback begins automatically when the tape is rewound to the beginning of the previous program (track) in the AMS function.

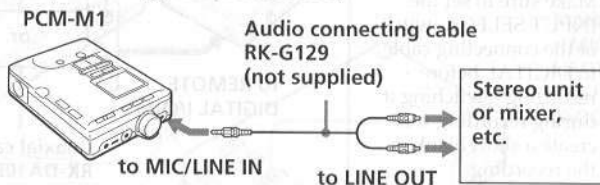
Connecting with Other Equipment for Recording

You can connect the recorder to other analog audio equipment or audio equipment with digital output. Refer to page 16 for "Recording".

Tip

When recording with analog connection, you can adjust the digital copy code (ID 6) (see page 28).

Recording from analog audio equipment with a LINE OUT jack (Analog connection)



- 1 Set the MIC/LINE IN switch to LINE IN.
- 2 Select the recording mode using the MANUAL • MIC LIMITER • AUTO (AGC) selector.
MANUAL: adjust recording level manually (see page 25)
AUTO (AGC): recording level will be adjusted automatically
- 3 Select sampling frequency using the SP • LP switch.
SP (48kHz, 44.1kHz): normal recording mode.
LP: long continuous recording mode. Sampling will be done by 32kHz. (see page 27)
- 4 Press the ● REC and || PAUSE buttons.
- 5 Press either the ► PLAY or || PAUSE button to begin recording. Then, begin playback of the connected source.

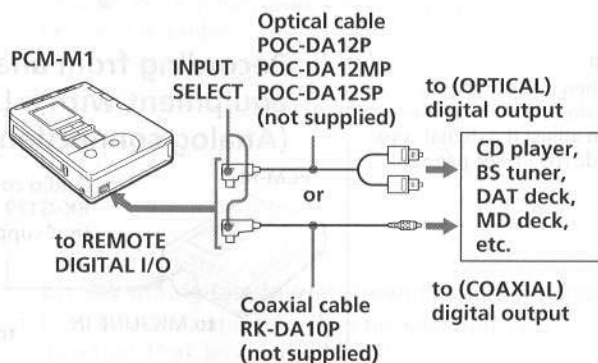
Notes

- Use only the recommended digital cable (not supplied). (see page 53)
You cannot use the POC-DA12/DA12M/DA12S or RK-DA10 digital connecting cables with this unit.
- Make sure to set the INPUT SELECT switch of the connecting cable to DIGITAL before recording. Switching it during recording will create a short blank in the recording.

Tips

- In digital connection, note the following:
 - Setting the recording mode is not required.
 - The recording level is set automatically to the level of the source. Manual adjustment is not available in this case.
- The recorder supports input in IEC958 format. Adjustment of the copy code (ID 6) is possible when recording input in this format (page 28). The recorder does not support AES/EBU format.
- Setting of the SP•LP switch is applicable when recording a 32 kHz source only. (When set to SP, the source is recorded in the 32 kHz SP mode. When set to LP, the source is recorded in the 32 kHz LP mode.)
Other sources will be automatically recorded in its own sampling frequency regardless of the SP•LP switch.

Recording from audio equipment with digital output (Digital connection)



- 1 Use and connect the optical cable or coaxial cable according to the digital output jack of the connected equipment.
- 2 Set the INPUT SELECT switch of the connecting cable to DIGITAL.
- 3 Press the ● REC and || PAUSE buttons.
- 4 Press either the ► PLAY or || PAUSE button to begin recording. Then, begin playback of the connected source.

Source and sampling frequency for recording

When recording with digital connection, the sources will be automatically recorded in its own sampling frequency shown below.

Source	Sampling frequency
Broadcasting satellite B mode audio, DAT SP mode	48 kHz
CD, MD, DAT SP mode	44.1 kHz
Broadcasting satellite A mode audio, DAT LP mode	32 kHz

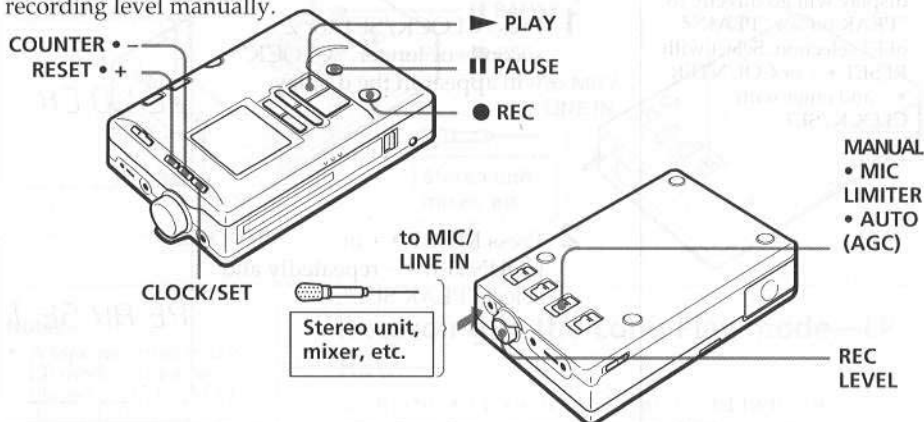
To make a digital backup copy

When you want to make backup copies of recordings of your live performance etc., record with digital connection on this recorder. Copying is possible regardless of the copy code on the source. The copy code on the backup is in accordance with SCMS (pages 28, 44).

Adjusting the recording level manually

— Manual recording

For optimum recording with microphones or from analog audio equipment, adjust the recording level manually.



What's the MIC LIMITER?

The MIC LIMITER automatically holds down sudden large input signals. Setting the recording mode to MIC LIMITER and setting the recording level slightly higher than the usual level will give good results when recording at parties or conferences.

Note

Recording level is set excessively high when **OVER** appears in the right side of the peak level indicator. Turn down the recording level.



If distortion still occurs when **OVER** is not displayed, set the MIC ATT switch to 20dB or move the microphone away from the sound source.

- 1 Set the MANUAL • MIC LIMITER • AUTO (AGC) switch to MANUAL or MIC LIMITER.
MANUAL: to record via analog connection or microphones.
MIC LIMITER: to record via microphones.

- 2 Press the ● REC button to enter the recording monitor mode.
- 3 Begin playback of the source and turn the REC LEVEL control to adjust the recording level while monitoring the sound.

Turn the REC LEVEL control so that the peak level indicators are maintained around level 12. Make sure that **OVER** does not appear when there is a loud sound input.



Peak level indicator

- 4 Press the ► PLAY button while pressing the ● REC button to begin recording.

Tip

You can also set PEAK HOLD during recording. Press CLOCK/SET for 2 seconds or longer, and the display will go directly to "PEAK on" or "PEAK off" selection. Select with RESET • + or COUNTER • - and enter with CLOCK/SET.

Displaying maximum input level — PEAK HOLD

PEAK HOLD holds the maximum input level on the peak level indicator for easy recognition.

- 1 Press CLOCK/SET for 2 seconds or longer. "CLOCK" will appear in the display.

CLOCK

- 2 Press RESET • + or COUNTER • - repeatedly and select "PEAK SET".

PEAK SET

- 3 Press CLOCK/SET.

PEAK OFF

- 4 Press RESET • + or COUNTER • - repeatedly and select "PEAK on".

- 5 Press CLOCK/SET.

The display returns to the clock.



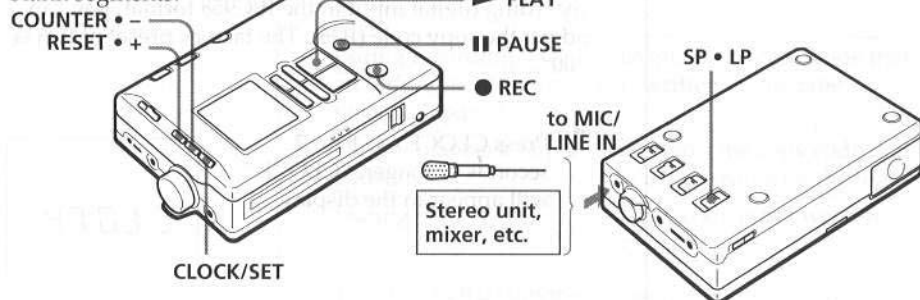
The peak value display is replaced with a new one whenever there is a larger input.

To reset the peak value

Press RESET when the tape counter is not displayed. It is also reset when the tape is removed.

Useful Recording Functions

Record in the LP (Long Play) mode to make long recordings. Use REC MUTING to record blank segments.



Notes

- A tape recorded in the LP mode cannot be played back on a DAT deck which is not equipped with the LP mode function.
- A loud noise may be heard during the transition from the SP mode to the LP mode when a tape containing a recording that has been switched from the SP mode to the LP mode halfway is played back on a DAT deck which is not equipped with the LP mode function. In this case, turn down the volume or stop playback.

Tip

To insert a blank segment of 4 seconds or more, press the **II PAUSE** button while pressing the **● REC** button, and then hold down only the **II PAUSE** button for 4 seconds or longer. When the blank segment exceeds four seconds, "II" indicator will flash quickly. The recorder re-enters the pause mode when the **II PAUSE** button is released.

Recording in the Long Play mode—LP REC

Set the SP • LP switch to LP to record twice the recording time of conventional DAT cassettes. Accordingly, a 60-minute DAT cassette recorded in the LP mode enables recording of 120 minutes.

Tape counter display during LP mode

The absolute time and the remaining time of the tape are based on the SP mode. Therefore, the actual time is twice the amount of the value shown on the display.



The actual time during LP mode is 4 and half minutes.

Recording blank segments—REC MUTING

A blank segment can be inserted at the beginning of the track and between tracks. In this case, the Start ID is not written.

- 1 Press the **● REC** button and the **II PAUSE** button to enter the recording pause mode.
- 2 Press the **II PAUSE** button while pressing the **● REC** button.

A four-second blank segment is inserted and the unit returns to the recording pause mode automatically.

Note

You cannot adjust ID6 while recording. Adjust it before recording.

Adjusting the copy code (ID6)

When recording with analog connection (with a microphone or from the LINE IN jack), or when recording digital input in the IEC958 format, you can adjust the copy code (ID6). The factory preset of ID6 is "00".

- 1 Press CLOCK/SET for 2 seconds or longer. "CLOCK" will appear in the display.

CLOCK

- 2 Press RESET • + repeatedly and select "ID6 SET".

ID6 SET

- 3 Press CLOCK/SET while "ID 6 SET" is displayed.

ID6 00

- 4 Press RESET • + or COUNTER • - repeatedly and select the copy code you want to give to this recording.

ID6 00 : Digital duplication permitted an unlimited number of times

ID6 10 : Cannot be copied digitally

ID6 11 : Can be copied digitally only once

- 5 Press CLOCK/SET.

The display returns to the clock.

To display current ID6 setting

Hold down RESET • + and press COUNTER • - for 2 seconds or longer when the tape counter is not displayed.

During recording, recording monitor, or recording pause	Displays the copy code that is written on the tape
During playback or play pause	Displays the copy code that is to be written on the tape
During stop	Copy code is not written yet

ID6 00: Digital copying is possible an unlimited number of times.

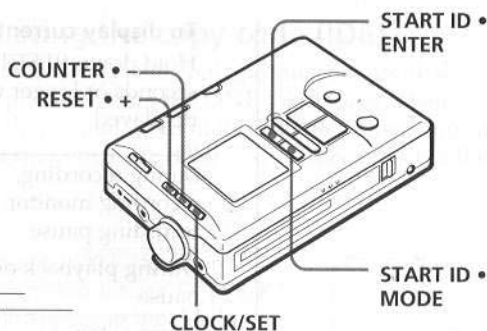
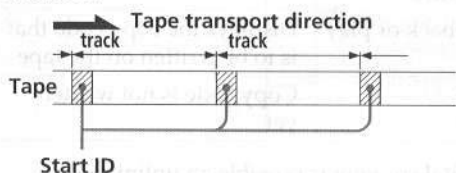
ID6 10: Digital copying is not possible.

ID6 11: Digital copying is possible only once.

ID6 --: Copy code is not written yet (only during stop).

Writing Start IDs

A Start ID is a signal which indicates the beginning of a program (track). The tape-corder searches the Start IDs to locate the beginning of a program (track) with the AMS (Automatic Music Sensor) function.



Notes

- The existing program (track) information of the CD may not be written properly as the Start ID depending on the CD player in use.
- The existing program (track) information of an MD is not written as the Start ID.

Tips

- To write the Start ID manually during recording, press the START ID • ENTER button. The Start ID is written at the point where the START ID • ENTER button is pressed.
- The recorder switches between manual and automatic modes only when START ID • MODE is pressed during recording, recording monitor, or recording pause.

Writing Start IDs during recording — Manual mode

A Start ID will be written

- when you started recording or released recording pause (adjustable).
- when you pressed START ID • ENTER during recording.
- at the same places as the source when recording a DAT digitally.
- at the same places as the Q-cord (track information) when recording a CD digitally.

- 1 If "AUTO-ID" is present in the display, press START ID • MODE so that the display disappears.
- 2 Start recording.

When a Start ID is written, "WRITE" will light up momentarily and **START-ID** will flash for about 9 seconds (18 seconds during the LP mode).



To adjust not to write the Start ID at the beginning of recording

You can select whether or not to write the Start ID written when you start recording or release recording pause.

- 1 If "AUTO-ID" is present in the display, press START ID • MODE repeatedly until it disappears.

Notes

- The buttons except the **STOP** button do not work while **START-ID** is flashing.
- When writing Start IDs continuously, make sure that there is an interval of 9 seconds or longer (18 seconds or longer in the LP mode) between the start IDs. Otherwise, the tape-corder may not locate the beginning of a track correctly.

- 2** Press **CLOCK/SET** for 2 seconds or longer. "CLOCK" will appear in the display.



- 3** Press **RESET • +** or **COUNTER • -** repeatedly and select "SET SID".



- 4** Press **CLOCK/SET**.



- 5** Press **RESET • +** or **COUNTER • -** repeatedly and select "SID on" or "SID off".

SID on: The recorder will write a Start ID when you start recording or release pause.

SID off: The recorder will not write a Start ID when you start recording or release pause.

- 6** Press **CLOCK/SET**.

The display returns to the clock.

Writing the first Start ID automatically — Semi-auto mode

The Semi-auto mode is a further option in the Manual mode. The Semi-auto mode will write a Start ID automatically at the first sound input during Manual mode. Use this feature to write a Start ID for each take.

- 1** If "AUTO-ID" is present in the display, press **START ID • MODE** repeatedly until it disappears.
- 2** Hold down **START ID • MODE** until "AUTO-ID" flashes in the display.



When you start recording, a Start ID will be written automatically at the first sound input.

continued

To disable the Semi-auto mode

Hold down START ID • MODE until "AUTO-ID" disappears from the display.

Note

In the Auto mode, Start IDs may not be written properly if there is noise in the sound source.

Tips

- To write the Start ID manually during recording, press the START ID • ENTER button. The Start ID is written at the point where the START ID • ENTER button is pressed.
- The recorder switches between manual and automatic modes only when START ID • MODE is pressed during recording, recording monitor, or recording pause.

Tip

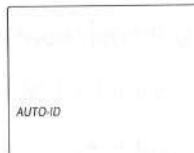
To display the detection threshold, hold down ●REC during recording, recording monitor, or recording pause. The recording level meter will flash at the threshold level.

Writing Start IDs automatically during recording — Auto mode

The Start IDs will be written automatically according to input level. A Start ID is written when

- you started recording or released recording pause (when there is no sound input, the moment there is sound input).
- there is sound input after a soundless segment or a segment with very low recording level (factory preset: -50 dB) for 3 seconds or longer.
- you pressed START ID • ENTER during recording.

- 1 Press the START ID • MODE button repeatedly until "AUTO-ID" appears.



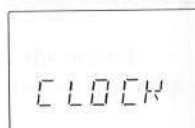
- 2 Begin the recording. When the Start ID is written, "WRITE" appears for a moment, and then **START-ID** flashes for about 9 seconds (about 18 seconds in the LP mode).

Adjusting Start ID blank detection threshold

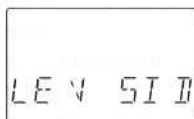
In the Auto mode, the recorder writes a Start ID at the first sound input after every blank. The blank detection threshold is the input level below which the recorder recognizes as a blank (factory preset is -50 dB).

By adjusting the threshold, you can write Start IDs automatically even when recording a live performance, where there is constant low level input.

- 1 Press CLOCK/SET for 2 seconds or longer. "CLOCK" will appear in the display.



- 2 Press RESET • + or COUNTER • - repeatedly and select "LEV SID".

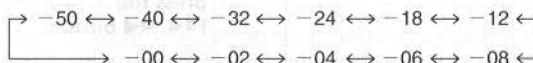


- 3 Press CLOCK/SET.

The current threshold value and the peak indication meter will flash.



- 4 Press RESET • + or COUNTER • - repeatedly and select the threshold value of your choice. With each press, the display will change as follows.



- 5 Press CLOCK/SET.
The display returns to the clock.

Note

Start IDs cannot be written while **START-ID** is flashing rapidly during the Rehearsal function.

Writing Start IDs during playback

You can write a Start ID anywhere you want without erasing the contents of the existing recording.

- 1 Press the START ID • MODE button on the main unit repeatedly until "AUTO ID" appears (to go into the auto mode) or disappears (to go into the manual mode).
- 2 Press the START ID • ENTER button during playback where you want to rewrite.

"REHR SAL" flashes when you select the point for Start ID. The recorder plays back a 3 second segment repeatedly, up to 16 times (Rehearsal function).



- 3 Press the START ID • ENTER button during Rehearsal function.
"WRITE" will appear for a moment. "START-ID" will flash and the Start ID will be written. During this step the sound will be muted.

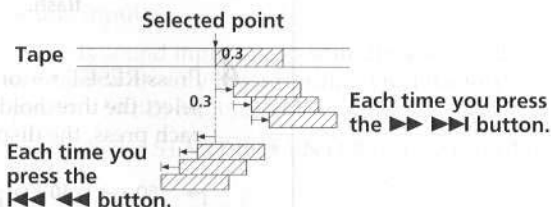
Note

Start IDs which were written during recording or written after the selected point cannot be moved.

To move the Start IDs, rewrite it after erasing.

To adjust the selected point

Each time you press the **◀◀ ◀◀** or **▶▶ ▶▶** button, the selected point shifts backwards or forwards in 0.3-second steps, up to a maximum extent of about 10 seconds in either direction.



Note

If a Start ID is erased, the program number which is written on the same point will be erased also.

Erasing Start IDs

You can erase the Start IDs without erasing the contents of the existing recording.

Erasing the Start ID is possible only when the recorder is in the stop or playback mode.

- 1 Press **▶▶ ▶▶** or **◀◀ ◀◀** so that you are in the track after the Start ID you want to erase.
- 2 Press the START ID • MODE button repeatedly until "ERASE" appears in the display of the main unit.
- 3 Press the START ID • ENTER button.

The tape will automatically rewind to find the Start ID of that program (track) and then "START-ID" will flash in the display and start to erase the Start ID. During this step the sound will be muted. Playback will start when this mode is done.



Note

Writing and renumbering of the program number may not be completed successfully to a tape that has been recorded on other DAT decks and has a Start ID at the beginning.

Assigning Program Numbers

A program number is a signal which indicates the number of the program (track). The program number is written at the same time as the Start ID.

When recording from the beginning of the tape

The program number is written automatically from number 1 in sequential order at the same time as the Start ID.

When recording from the halfway of the tape

Press the ►►►► or ◀◀◀◀ button to display the program number before you begin recording. The program number is written in sequential order from the following program at the same time the Start ID is written.

Renumbering the program number

Renumbering is necessary for the following tapes:

- On which the Start ID was written during playback.
- Which has missing program numbers or duplicated program numbers because the tape is recorded from the halfway of it.
- Which has a missing program number because the program number was erased at the same time a Start ID was erased on the tape.

- 1 Press the START ID • MODE button repeatedly until "RENUMBER" appears in the display of the main unit.
- 2 Press the START ID • ENTER button when the recorder is in the stop or playback mode. The tape will automatically rewind to the beginning of the program number that was written with the Start ID and then starts to renumber the program (tracks).

" **START-ID** " flashes while the program number is renumbered and "RENUM" and the tape counter appears while the tape is fast forwarding to the next Start ID program (track).

When the renumbering operation is completed, the recorder rewinds the tape to the beginning and stops.



Connecting with Other Equipment for Playback

You can connect the tape-corder to other analog audio equipment and audio equipment with digital output. Refer to page 20 for "Playing Back".

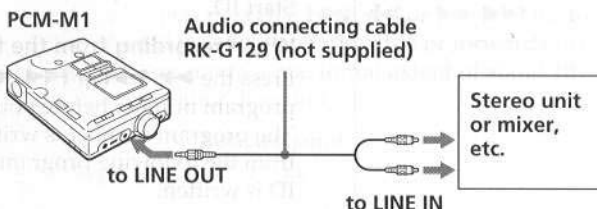
Tip

The output level of the LINE OUT jack and the REMOTE • DIGITAL I/O jack is fixed. The volume cannot be adjusted with the VOL buttons of this recorder.

Note

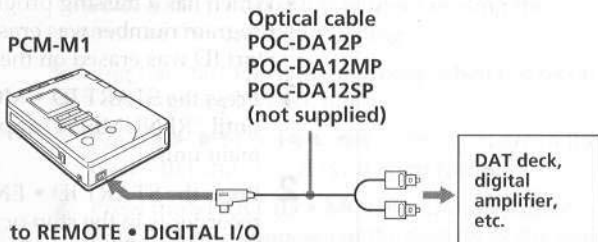
Use only the recommended optical cable (not supplied) (page 53). You cannot use the POC-DA12/DA12M/DA12S digital connecting cables with this unit.

Playback with an analog audio equipment (Analog connection)



Begin playback and adjust the volume of the connected equipment.

Playback with an audio equipment with digital input (Digital connection)

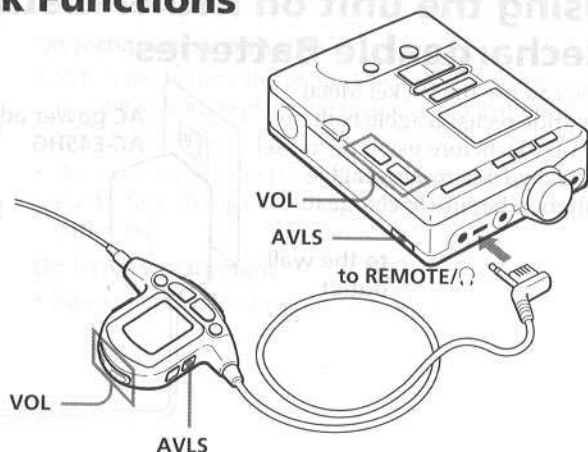


Connect the digital audio equipment to this recorder as shown. Begin playback and adjust the volume of the connected equipment.

Useful Playback Functions

The AVLS* function is operational when using the headphones during playback or in the recording monitor mode.

The AVLS function keeps down the maximum volume to protect your ears.



* Auto Volume Limiter System

Note

You may operate the AVLS function on both the main unit or the remote control. You can cancel AVLS by pressing AVLS on the remote control even if the AVLS switch on the main unit is set to LIMIT. "☺" will disappear from the remote display and AVLS will be cancelled.

Using the AVLS function

Operational either from the main unit or the remote control.

Main unit: Set the AVLS switch to LIMIT.

Remote control: Press AVLS on the remote control.

"☺" will be displayed in the window of the remote control.

AVLS switch	Volume and display
LIMIT (☺)	The maximum volume is restricted to a designated level. "AVLS" appears followed by "VOL" when the VOL button is pressed.

AVLS

When the volume is turned to the maximum level, "AVLS" flashes.

NORM (none)	The volume control is set to normal. Each time you press the VOL buttons, the volume level changes accordingly and "VOL" appears.
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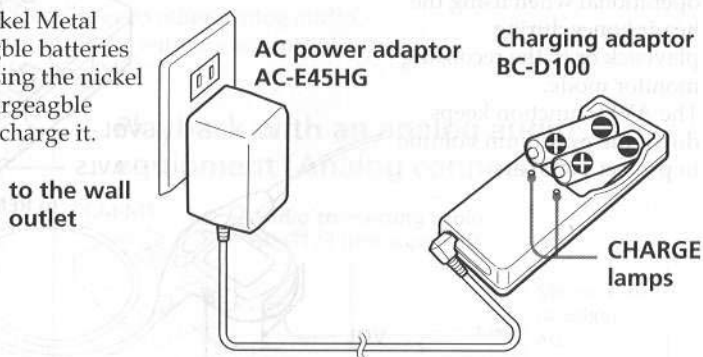
VOL 15

When the volume is turned to the maximum level, "MAX" appears.

() is indicated for the remote control.

Using the unit on Nickel Metal Hydride Rechargeable Batteries

You can use the Nickel Metal Hydride rechargeable batteries NH-D100. Before using the nickel metal hydride rechargeable batteries, be sure to charge it.



If the CHARGE lamp does not light up

Remove the rechargeable batteries, then insert them again.

Notes

- Use only the recommended rechargeable battery, charging adaptor and AC power adaptor for charging. If you use other types of charging equipment, this may lead to a malfunction.
- When the CHARGE lamp flashes a red light, remove the rechargeable battery and check the polarity and the condition of the batteries. If there is no problem with the battery, try to charge them again. You cannot charge a dry battery or a fully-charged rechargeable battery.

- 1 Connect the charging adaptor BC-D100 to the AC power adaptor AC-E45HG and then connect the AC power adaptor to a wall outlet.
- 2 Insert the nickel metal hydride rechargeable batteries NH-D100 into the charging compartment. The CHARGE lamp will light red during charging. After the charging has been completed, the CHARGE lamp will light green. Charging will take about 2.5 hours. (The charging time may vary depending on the temperature.)
- 3 Insert the charged batteries into the battery compartment of the main unit.

Notes on charging

- The charging adaptor can charge either one battery or two batteries at a time.
- Charge the battery just before using it.
- Charge the batteries that are completely exhausted (when "bATTERY" starts to flash in the display of the main unit).
- During the charging, the rechargeable batteries and the AC power adaptor may emit some heat, but this is not a malfunction.
- Charging may take longer than the average charging time if you are charging it for the first time or if you have not used the battery for a long time. The charging time will become average after you have charged it a few times.

Notes

- Remove the rechargeable batteries as soon as possible from the charging adaptor when charging is finished. If you leave the rechargeable batteries in the charging adaptor for a long period of time it may decrease the battery capacity.
- When carrying the rechargeable batteries, use the supplied battery case. Carrying them without the case with metallic objects such as key chains in your pocket may cause short-circuiting and is dangerous.

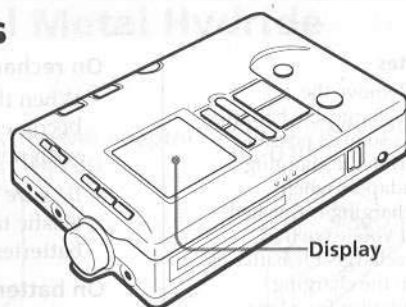
On rechargeable batteries

- When the battery life of a fully charged battery becomes short, replace the rechargeable batteries with new ones.
- Be sure to cover the poles of the used batteries with elastic tape to insulate it and then dispose the used batteries.

On battery placement

- Store the batteries in a cool, dry place.

Replacing the batteries



Display

Tips

- This tape-corder is not equipped with a power switch. As a result, the LCD display will always be turned on as long as the batteries are inserted. However, power consumption is minimal and negligible.
- The clock will return to its default setting (97Y11M1D/AM12H00M00S) if the batteries are removed from the tape-corder for a long time. In this case, set the clock again.

Notes

- If "bATTERY" is still displayed after replacing the batteries press any button to clear this display.
- When using the unit on batteries, do not use a dry battery and a rechargeable battery together.
- The battery life may shorten depending on the temperature and the type of the battery. "bATTERY" or "CA" may not be displayed depending on the type of battery. Use the recommended NH-D100 battery.
- When no plug is connected to the LINE OUT, REMOTE/ or the REMOTE • DIGITAL I/O jacks and the display backlight turned off.

When to replace the batteries

Check the display of the main unit and the remote control.

Display on the main unit



Battery full.

Replace both batteries with new ones. "bATTERY" flashes and the tape-corder stops when used beyond this point.

Display on the remote control



The batteries are weak. Replace both batteries with new ones.



The batteries are completely exhausted.

Battery life

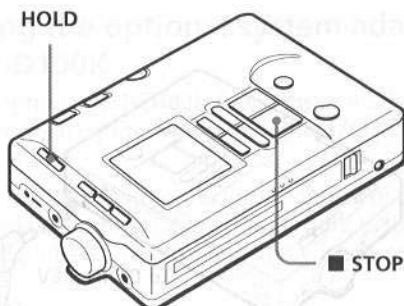
(Approx. hours and minutes)

Battery	Playback	Recording
Sony nickel metal hydride rechargeable (NH-D100)	3:45	3 (3:30*)
Sony alkaline LR6 (size AA)	2:30	1:30 (2:30*)

Values for battery life at 20°C and for long continuous playback or recording.
Battery capacity decreases and battery life becomes shorter in low temperatures.

Low-power Consumption Mode

If the recorder remains in the stop mode for 3 minutes* or longer, it will enter the low-power consumption mode automatically to conserve the battery.



* The unit will enter the low-power consumption mode when the cassette holder is open for about 30 seconds. When the CLOCK button, etc., is pressed during a low-power consumption mode, the unit will re-enter the low-power consumption mode in about 30 seconds.

Note

A digital cable connected to the REMOTE • DIGITAL I/O jack will increase battery consumption. Unplug it when it is not used.

When the unit automatically switches to the low-power consumption mode

The tape unloads automatically to protect the tape and the recorder enters the low-power consumption mode to conserve the battery when the tape-corder is in the stop mode for 3 minutes* or longer. In the low-power consumption mode, the display changes to the clock and the backlight turns off. On the remote control the display is turned off.

To enter the low-power consumption mode manually

1 Make sure that the recorder is in the stop mode.

Press the ■ STOP button if the tape-corder is in the pause mode.

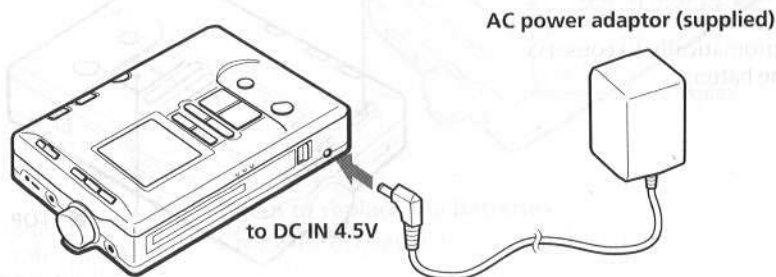
2 Slide the HOLD switch on the main unit to show the yellow hold mark.

The recorder enters the low-power consumption mode.

When you press a button "HOLD" will flash for a few seconds in the display.



Operating with the AC Power Adaptor or Car Battery



Tips

- When the AC power adaptor or the car battery cord is connected to the DC IN 4.5V jack of the tape-corder, the internal batteries are automatically disconnected. Power is automatically supplied from the external power source.
- When the AC power plug or the car battery cord is used for an extended period of time, the internal temperature of the recorder may rise. This is not a malfunction.
- If the unit is in the stop mode for more than 10 minutes while using the house current or a car battery. The set functions will be canceled and the tape will be unloaded for tape protection.

Using the AC power adaptor

Connect the supplied AC power adaptor to the DC IN 4.5V jack.

Notes on the AC power adaptor

- Use only the supplied AC power adaptor or the optional AC-E45HG. Do not use any other AC power adaptor.



Polarity of the plug

- Make sure that the cassette compartment lid is closed before disconnecting the AC power adaptor or removing the batteries. The cassette compartment lid may not close if the power source is disconnected or removed while the cassette compartment lid is open. In this case, connect the power adaptor or insert the batteries again.

Using the car battery

To operate the tape-corder with the car battery, connect the car battery cord Sony DCC-E245 (not supplied) to the DC IN 4.5V jack of the tape-corder. For more details, refer to its Operating Instructions manual.

Connecting with Other Equipment

Connect other equipment to this tape-corder to enable flexible use of the tape-corder.

Notes on using the optional RM-D100K

- Operate this tape-corder with the AC power adaptor. Wireless remote control functions and digital input/output connections may not operate properly when the unit is operating on batteries.
- Do not leave the RM-D100K in a place subject to direct sunlight, as this may lead to a malfunction.

Note on using the SBM-1

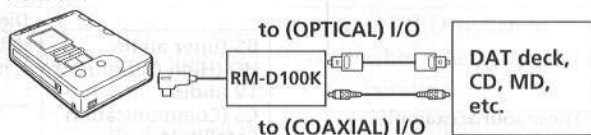
When operating the optional SBM-1 with AC power adaptor, the power is supplied from this tape-corder if the power of the SBM-1 is turned off. When this tape-corder is operated with batteries, disconnect the AC power adaptor from the SBM-1 to conserve the battery.

Using the optional system adaptor kit RM-D100K

The optional RM-D100K functions as a relay unit between an equipment with digital I/O jack and this tape-corder.

The RM-D100K supports input/output of both optical and coaxial cables. Connect according to the jack of the digital audio equipment you wish to connect.

PCM-M1



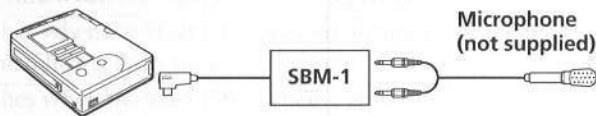
When the RM-D100K is connected

Combining the unit with a audio timer for timer recording or playback, and using the Music Scan function or Direct Search function on the supplied remote commander are many of the noteworthy features of the RM-D100K.

Using the optional Super Bit Mapping adaptor SBM-1

The optional SBM-1 enables recording of higher quality when connected to this tape-corder.

PCM-M1



The optional RMT-D100 can be connected to the SBM-1 to enable remote control.

However, when operating the SBM-1 with the batteries, the RMT-D100 is not operational if the power of the SBM-1 is turned off. When operating the SBM-1 with the AC power adaptor, the RMT-D100 is operational regardless of whether the power of the SBM-1 is turned on or off.

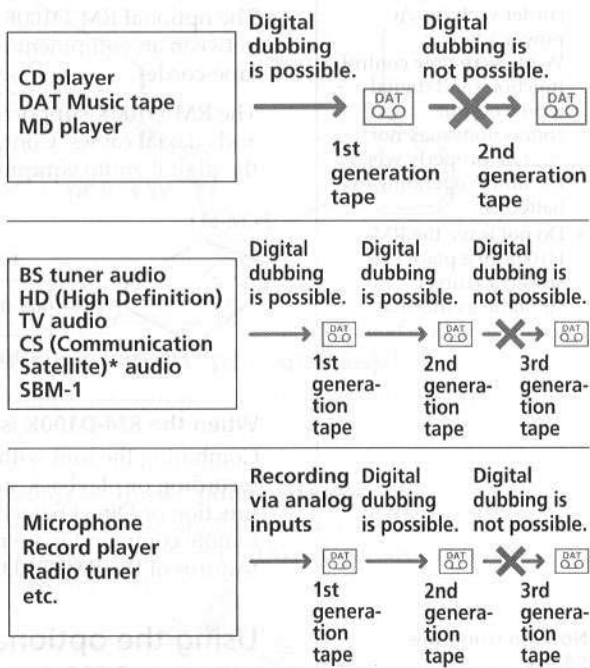
Serial Copy Management System (SCMS)

The Serial Copy Management System (SCMS) which is incorporated in the domestic DAT equipments prevents repeated digital dubbing from one equipment to another. However, this system lets you record at least one generation of digital prerecorded software via digital connections.

Notes

- If the equipment used for recording is not protected with the SCMS, these rules may not apply.

* These source examples may not apply to some countries.



Message Display

The following messages will be displayed on the main unit while operating this unit.

Message	Description
<i>NO TAPE</i>	Appears when there is no tape inside the unit.
<i>OPEN</i>	Flashes when the cassette compartment lid is open.
<i>LOAD</i>	Flashes while loading a tape.
<i>UNLOAD</i>	Flashes when unloading a tape.
<i>NO INPUT</i>	Appears when the digital input signal is not received.
<i>TAPE PROTECT</i>	<i>TAPE</i> , and <i>PROTECT</i> appears alternately when the ● REC button is pressed or when writing/erasing a Start ID in the playback mode using a tape whose record-protect shutter is open.
<i>HOLD</i>	Flashes for a moment when you set the HOLD switch to HOLD on the main unit. Appears or flashes when you press a button while the HOLD function is operating.
<i>TOP</i>	Flashes when the beginning of a tape*1 is reached.
<i>END</i>	Flashes when the end of the tape is reached.
<i>EE END</i>	Appears when the End ID*2 is detected.
<i>BLANK</i>	Flashes when the unrecorded segment of a tape is detected during playback or fast-forwarding.
<i>MIC in</i>	Appears when the ● REC button is held down during MIC recording, recording pause, recording monitor modes.
<i>LINE in</i>	Appears when the ● REC button is held down during recording pause or recording monitor modes while another equipment is connected via the analog connection.
<i>DIGITAL</i>	Appears when the ● REC button is held down in the recording pause or recording monitor modes while another equipment is connected via the digital connection.
<i>WRITE</i>	Appears when the Start IDs are being written.
<i>REHEARSAL</i>	Flashes when the Start ID is pressed during playback mode in the rehearsal function.
<i>ERASE</i>	Flashes when the Start IDs are being erased.
<i>RENUM</i>	Flashes when the program numbers are being renumbered.
<i>AVLS</i>	Appears when the AVLS is set to LIMIT, or when the AVLS is operating and the VOL button is pressed.
<i>MAX</i>	Appears when volume is set to the maximum level.
<i>MIN</i>	Appears when volume is set to the minimum level.
<i>BATTERY</i>	Flashes when the batteries are weak.

III	During playback or play pause: Copy code written in the tape During recording or recording pause: Copy code to be written in the tape 00 : Digital copying is possible as many times as you want. 10 : Digital copying is not possible. 11 : Digital copying is possible only once. --: Appears during stop
EW	Appears when moisture condensation occurs inside the unit.

*1 Flashes when a new (virgin) tape is used for the first time.

*2 The End ID is a signal which indicates the position of a tape where the recording has ended. You cannot register the End IDs with this unit, however the unit can play back the tapes which are registered with the End IDs and detect them. When the unit detects an End ID during fast forward, it stops there. You can only forward the tape by recording from that point. When the unit detects an End ID during playback, it enters the auto-rewind mode.

Troubleshooting

Problem	Cause	Solution
The cassette compartment lid cannot be closed.	Power source is disconnected from the unit while "LOAD" or "UNLOAD" is flashing in the display.	Connect the power source and close the lid.
Operation buttons do not function.	The Hold function is on.	Cancel the Hold function.
The unit does not operate.	The batteries are exhausted and "bATTERY" appears.	Replace both batteries with new ones or charge the rechargeable batteries.
	The AC power adaptor is connected incorrectly.	Connect the AC power adaptor correctly.
	The safety system is activated due to moisture condensation ("DEW" appears).	Leave the unit for a while and restart the unit by turning on the power.
	Other causes.	Disconnect the power source from the unit, then connect it again.
The tape does not move.	II PAUSE button is activated (the II indicator appears).	Press II PAUSE or ► PLAY button to release pause mode. (See pages 18 and 20.)
	The tape is wound completely to the end.	<ul style="list-style-type: none"> Press the ◀◀ button to rewind the tape. Replace the cassette.
Cannot record.	The Hold function is on.	Cancel the Hold function.
	The record-protect shutter on the cassette is open.	Close the shutter on the cassette. (See page 15.)
	Incorrect operation of the connected equipment.	See "Connecting with Other Equipment for Recording" on page 23 or refer to the Operating Instructions manual of the connected equipment.
The sound picked up is distorted.	The sound source is too loud when using the microphone.	<ul style="list-style-type: none"> Set MIC ATT switch to 20dB. Move the microphone away from the sound source.
	The MIC/LINE IN switch is not set.	Set the sound source and the connections.
	The recording level is too loud.	Adjust the recording level (manual recording) (page 25).
Noise occurs during recording.	When monitoring the recording sound with headphones or external speakers, they are placed too close to the microphone.	Keep the microphone away from them.
Sound is not recorded on the tape.	Recording level control was set to the minimum level when recording via the analog input.	Adjust the recording level correctly. (See page 25.)

Problem	Cause	Solution
Increase of noise or deterioration of sound.	The head may be dirty.	Clean the head with the cleaning cassette.
	Recording was not done properly.	<ul style="list-style-type: none"> • Clean the head with the cleaning cassette and try again. • Fast forward the tape to the end first, and then rewind it to the top before recording.
There is no sound.	The volume is turned down completely.	Press the + button of VOL to adjust the volume.
	Incorrect operation of the connected equipment.	Operate the connected equipment as instructed in the Operating Instructions manual.
	The head may be dirty.	Clean the head with the cleaning cassette.
The sound is distorted through the headphones.	The volume is too loud.	<ul style="list-style-type: none"> • Turn down the volume. • Set AVLS to LIMIT (page 37).
The volume cannot be adjusted.	The Hold function is on.	Cancel the Hold function.
Cannot rewind (AMS) the tape.	The Start ID is not written.	Write the Start IDs (page 30).
The tape stops suddenly during playback.	There is an unrecorded segment on the tape.	—
The clock displays 97Y11M1D/AM12H00M00S.	The batteries were removed from the unit for a long time.	Set the clock again. (See page 13.)
Neither Start ID nor PGM number can be written.	The record-protect shutter on the cassette is open.	Close the shutter on the cassette. (See page 15.)
The Start ID is written, but the PGM number is not written.	When recording on a partially recorded tape, the most recent PGM number is not displayed before recording.	When recording on a partially recorded tape, display the PGM number before commencing recording.
Operation buttons do not work while the Start ID is being written.	While the Start ID is being written, none of the buttons except p STOP can be used.	Press the buttons after the START-ID indicator has stopped flashing.
Absolute time cannot be written.	Recording has been started from an unrecorded segment of the tape.	Rewind the tape to the beginning, locate the end of the previous recording and start recording from that point. (See page 16.)
The battery life has become shorter	The battery life may shorten excessively depending on the temperature or the type of battery.	Use the recommended NH-D100 battery.
Charging does not start (the CHARGE lamp does not light up).	You inserted the rechargeable batteries in the battery charger before plugging in the charger to the wall outlet.	Remove the rechargeable batteries, then insert them again.

Precautions

On safety

- Should any solid object of liquid fall into the unit, unplug the unit and have it checked by qualified personnel before operating it any further.
- To unplug the AC power adaptor, pull it out by grasping the plug. Never pull the cord itself.
- Do not put any foreign object into the DC IN 4.5 V (external power input) jack.

On power sources

- For AC operation: Use only the recommended AC power adaptor. Do not use any other AC power adaptor as it may damage the unit. For the car battery operation: Use the car battery cord DCC-E245 (not supplied).
- When the unit is not to be used for an extended period of time, be sure to disconnect the power source (batteries, AC power adaptor, car battery cord etc.) from the unit.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself is turned off.

On batteries

- Do not charge the dry batteries.
- Do not carry the dry batteries with coins or other metallic objects. It can generate heat if the positive and negative terminals of the batteries are accidentally contacted by a metallic object.
- When you are not going to use the unit for a long time, remove the batteries to avoid damage from battery leakage and corrosion.

On tapes longer than 120 minutes


Do not use cassette tapes with playing time of over 120 minutes to record important material since such tapes are subject to the following problems:

- Sound distortion.
- Unstable tape speed after repeated AMS, rewinding, fast-forwarding, cueing or reviewing operations.
- Incorrect writing and erasing of Start IDs.

On unevenly or tightly wound tapes

When making important recordings, fast forward the tape to the end first, and then rewind it to the top before recording. Recording on an unevenly wound tape or a tape wound excessively tight may result in poor recording.

On moisture condensation

If the unit is brought directly from a cold to a warm location, moisture may condense inside the unit. In such a condition, the tape may adhere to the head drum and can be damaged, or the unit may not operate properly. Although this unit has a safety device to prevent damage from moisture condensation, remove the DAT cassette from the unit when "DEW" flashes on the display of the main unit or the  indicator flashes on the display of the remote control. When this indicator comes on, this unit enters the low-power consumption mode and "DEW" will appear in the display. Leave the unit alone for a while and then operate the unit as described below:

On battery operation

Press an operation button to exit the low-power consumption mode. When the unit recovers from the moisture condensation, "DEW" will disappear from the display.

On house current

When the unit recovers from the moisture condensation, "DEW" will disappear from the display automatically.

If the unit does not operate properly within a few hours, please consult your nearest Sony service center.

Always remove the DAT cassette from the unit when the unit is not to be used for an extended period of time.

On installation

- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not place anything on top of the cabinet.
- If the unit causes interference to the radio or television reception, turn off the unit or move it away from the radio or television.

On 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 some areas. It can also be potentially dangerous to play your headphones at high volume while walking, especially at pedestrian crossings. You should exercise extreme caution or discontinue use in potentially hazardous situation.

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 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 to the people around you.

Maintenance

Cleaning the cabinet

Clean the cabinet and controls with a soft cloth slightly moistened with a mild detergent solution.

Do not use any type of abrasive pads, scouring powders or solvents such as alcohol or benzene.

Cleaning the head

Prolonged operation may cause the head to become dirty. If the head is dirty, it may cause sound dropouts during playback. To make the best possible recording and playback, we recommend you to clean the head after every ten hours of recording/playback, using the supplied cleaning cassette.

Likewise, when the unit has not been used for a long period of time, clean the head with the cleaning cassette before use.

Using the supplied cleaning cassette

- 1 Insert the cleaning cassette as you would a normal DAT cassette.
- 2 Press the ► PLAY button, then press the ■ STOP button after about 10 seconds.
- 3 Remove the cleaning cassette without rewinding it.
- 4 Proceed with recording and playback with a normal DAT cassette and check the sound quality.

Notes on the cleaning cassette

- The cleaning cassette cannot be used for recording or playback.
- Do not clean the head with the cleaning cassette more than five times in succession. Cleaning the head continuously for a long period of time may cause wear to the head.
- Do not rewind the cleaning cassette each time you use it. When the cleaning cassette reaches the end of the tape, rewind it to the beginning and reuse it. The cleaning cassette can be used approximately 200 times, with 10 seconds of cleaning each time.


Specifications

Tape	Digital audio tape
Recording time	Standard: 120 minutes Long-play mode: 240 minutes (with DT-120)
Sampling frequency	48 kHz, 44.1 kHz, 32 kHz
Quantization	Standard: 16-bit linear Long-play mode: 12-bit non linear
Frequency response (during playback)	Standard: Fs 48 kHz 20-22,000 Hz (± 1.0 dB) (LINE IN) Fs 44.1 kHz 20-20,000 Hz (± 1.0 dB) (LINE IN) Fs 32 kHz 20-14,500 Hz (± 1.0 dB) (LINE IN) Long-play mode: Fs 32 kHz 20-14,500 Hz (± 1.0 dB) (LINE IN)
Signal to noise ratio	Standard: more than 87 dB Long-play mode: more than 87 dB
Dynamic range	(1 kHz IHF-A, LINE IN) Standard: more than 87 dB (1 kHz IHF-A, LINE IN)
Total harmonic distortion	Standard: less than 0.008% (1 kHz, 22 kHz LPF, LINE IN) Long-play mode: less than 0.09% (1 kHz, 22 kHz LPF, LINE IN)
Wow and flutter	Below measurable limit (less than $\pm 0.001\%$ W.PEAK)

Input

	Jack type	Impedance	Rated input level	Minimum input level
MIC/LINE IN	stereo minijack	MIC	MIC	MIC
		4.7 kilohms	1.4 mV	0.3 mV
		LINE IN	LINE IN	LINE IN
		47 kilohms	500 mV	120 mV

Output

	Jack type	Impedance	Rated output	Maximum output level	Load impedance
LINE OUT	stereo minijack	220 ohms	500 mV	—	10 kilohms
REMOTE/ 	stereo minijack	16 ohms	87mV	15 mW + 15 mW	16 ohms

Input/Output

REMOTE•DIGITAL I/O jack (special jack)

Digital input/output, remote control operation and timer-activated operation is possible by connection with an adaptor kit to this jack.

Power requirements

- Two R6 (size AA) alkaline batteries (not supplied)
 - Two nickel metal hydride rechargeable battery (supplied)
- DC IN 4.5 V jack accepts:
the Sony AC power adaptor AC-E45HG (supplied)
the car battery cord DCC-E245 (not supplied) for use with 12V/24V car battery.

Battery life

See "Replacing the batteries" (page 40).

Power consumption

0.9 W

Dimension

Approx. 80 x 117.3 x 29.2 mm ($3\frac{1}{4}$ x $4\frac{5}{8}$ x $1\frac{3}{16}$ in) (w/h/d) not incl. projecting parts and controls

Mass

Main unit: Approx. 290 g (10.3 oz.)
When using the main unit: Approx. 395 g (14 oz.) incl. headphones with remote control, rechargeable batteries and a cassette

Supplied accessories

- AC power adaptor (1)
- Charger adaptor (1)
- Nickel Metal Hydride Rechargeable battery NH-D100 (2)
- Headphones with a remote control (1)*
- DAT cleaning cassette (1)
- Microphone plug adaptor (monaural phono jack x 2 → stereo miniplug) (1)*
- Optical cable (special jack ↔ rectangular-shaped optical input/output) (1)*
- Battery carrying case (1)
- Carrying case (1)

* Supplied only to the European model.

Design and specifications are subject to change without notice.

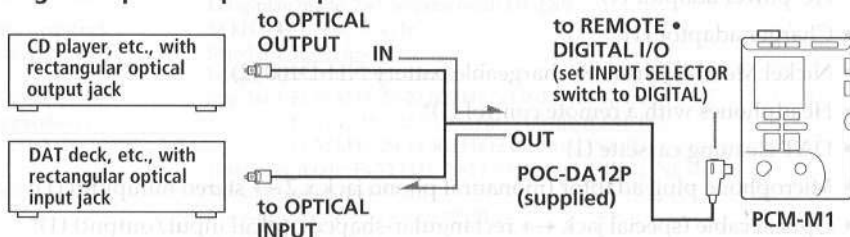
Optional accessories

- AC Adaptor AC-E45HG
- Nickel Metal Hydride Rechargeable battery NH-D100
- Battery adaptor kit NPA-D100K
- Car battery cord DCC-E245
- Car connecting pack CPA-9
- Wired remote commander RMT-D100
- System adaptor kit RM-D100K
- Digital cable POC-DA12P (rectangular-shaped optical plug), POC-DA12MP (optical miniplug input), POC-DA12SP (optical miniplug output), RK-DA10P (coaxial)
- Audio connecting cord RK-G129
- Stereo microphone ECM-MS957, ECM-MS907, ECM-717 (plug-in power system)
- Stereo earphones MDR-E868, MDR-E888
- Stereo headphones MDR-D77, MDR-D55
- Active speaker system SRS-88
- Super Bit Mapping adaptor SBM-1
- DAT cleaning cassette

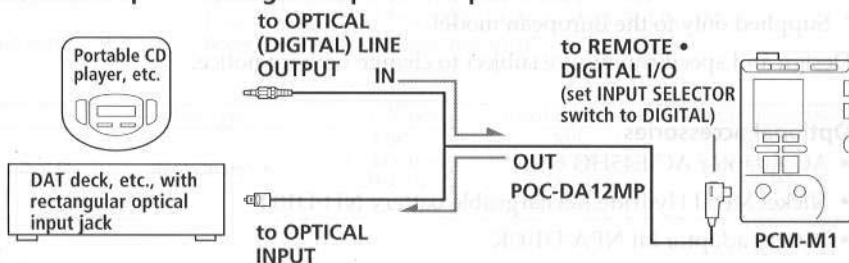
Your dealer may not handle some of the above listed accessories. Please consult your dealer for more information.

Examples of digital connection using optional accessories

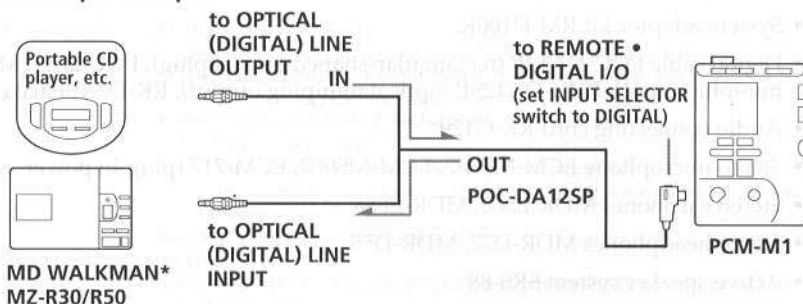
Rectangular optical input/output



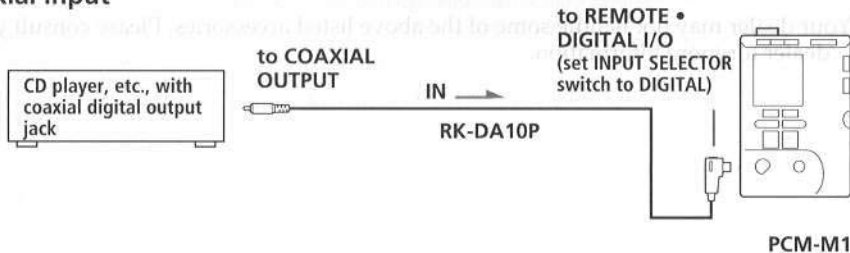
Optical mini input/rectangular optical output



Optical mini input/output

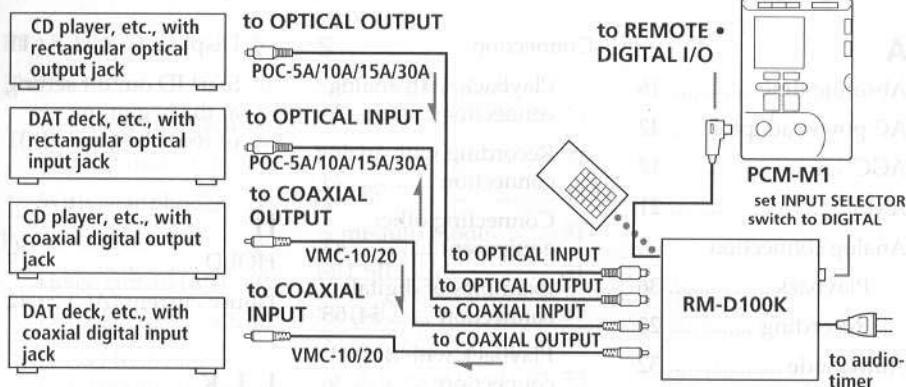


Coaxial input



PCM-M1

Optical•coaxial input/output + remote controller



*"MD WALKMAN" is a trademark of Sony Corporation.

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