SONY

3-769-507-12 (1)

DAT
Digital Audio Tape

Digital Audio Tape Recorder

TCD-D10

Operating Instructions page 2

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



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English

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.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Precautions

On safety

- Operate the unit on 6V DC.
- For DC or AC operation, use the accessories recommended in this manual.
- 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 has been turned off.
- Unplug the AC pack from the wall outlet if it will not be used for an extended period of time. To disconnect the AC pack, pull its cord out by the plug. Never pull the cord itself.
- Should any solid object or liquid fall into the component, unplug the tape recorder and have the unit checked by qualified personnel before operating it any further.
- When the unit is operated extensively with the AC pack, heat may build up internally. But this is not a malfunction.

On installation

Do not place the unit:
—near heat sources such as radiators or airducts
—in a place subject to direct sunlight, excessive dust, mechanical vibration or shock
—near an AM radio or tuner

On moisture condensation

If the unit is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside the unit. In this case, the tape may adhere to the head drum and be damaged, or the unit may not operate correctly. Although the unit is furnished with moisture sensors to prevent possible damage under these circumstances, always remove the cassette when the unit will not be used.

If moisture is present...

The moisture indicator "[]" blinks in the display window. Remove the cassette and leave the unit turned on for about an hour until the moisture evaporates.

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

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What is DAT?

The DAT (Digital Audio Tape) is a newly developed recording system, with which audio signals are digitally processed and recorded on the tape as digital data. The system consists of a recorder with a digital processor and a cassette tape exclusively designed for the DAT format.

Excellent sound quality
The DAT recorder employs the same method as that of the CD player to both digitize the audio signal with the PCM system and record it as a digital data. While the recorded data is being played back, accurate processing of the signal makes it possible to reproduce the original audio sound. Thus, a digital recording/playback is made with lower wow and flutter, wider dynamic range, lower distortion rate, and superb signal-to-noise ratio.

Smaller cassette
Developed exclusively for DAT, the cassette is half the size of conventional analog cassettes. Two hours of continous recording and playback are possible.

High-speed search
"Sub code" is a digital signal which you can write on the DAT tape independently of the audio (PCM*) signal. There are several kinds of "sub codes", for example, the code to indicate a particular point in the recorded portion such as the beginning of a selection.

* PCM (Pulse Code Modulation) system is one of the systems with which an analog signal is converted to a digital signal.

Overview of the TCD-D10

The TCD-D10 is a compact, portable tape recorder employing the DAT format.
With the DAT format, not only recording and playback with high quality sound can be obtained, but also convenient functions such as high-speed search can be operated easily.

High-speed search
When indexes* are written on the tape, you can find a particular index quickly as the tape runs a hundred times faster than the playback speed. With the scan search function, it is also possible to check the contents of the tape by listening to the introduction of each selection in sequence.
* Equivalent of start ID

Built-in clock
The current date and time, once adjusted, are written on the tape automatically. Thus, you can check the recorded date and time in the display during playback. This is covenient when the tape recorder is used for recording interviews, making reports, keeping a diary, etc.

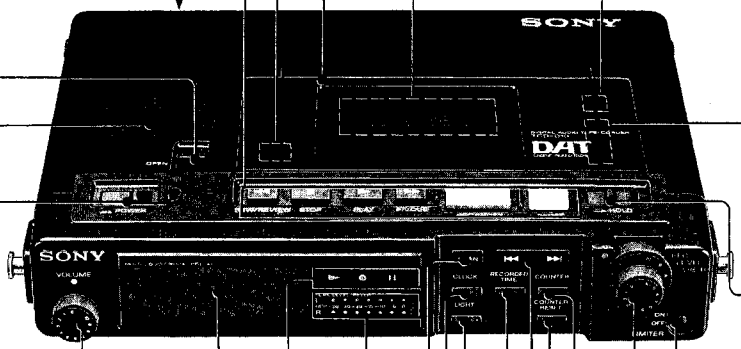
Portable use
With the battery pack installed, you can use this compact tape recorder outdoors. A carrying case and shoulder strap are supplied. Also, a hold function is provided for keeping the current operation mode even if another button is accidentally pressed.

Four DD (direct-drive) motors for higher reliability
A direct-drive motor is provided for capstan, head drum and supply/take-up reels respectively. These motors enhance the reliability and provide higher stability over extended periods of use.

A variety of supplied accessories
- Wired remote controller for operating apart from the unit
- Stereo microphone for picking up the sound with high quality
- Power sources for both indoor and outdoor use: AC pack, battery pack, battery charge adaptor
- Carrying case and shoulder strap

Location of Parts and Controls

Refer to the pages indicated in ●.



Tape transport operation buttons
◀◀ REW (rewind)/REVIEW
■ STOP
▶ PLAY (playback)
▶▶ FF (fast-forward)/CUE
● REC (record)/INDEX
❚❚ PAUSE

EJECT button

Cassette compartment door ⑫

Cassette holder

Compartment for clock battery ⑩

Battery compartment ⑧

OPEN (Cassette compartment window open) button

Built-in speaker

Date/time setting button ⑩

POWER switch and indicator

HOLD switch ⑭

VOLUME control

LIMITER (microphone limiting) **switch** ⑰

Display window

REC LEVEL (recording level) **controls** ⑮

Tape transport mode indicators (▶/●/❚❚)

Peak level meters ⑮

COUNTER button ⑲

SCAN buttons ⑲

COUNTER RESET button

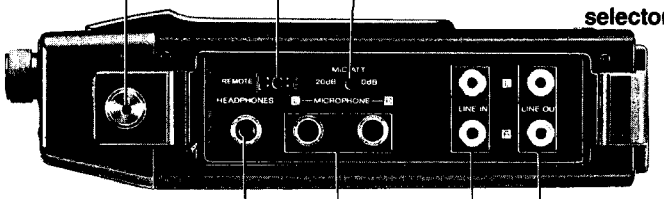
CLOCK (date/time select) button ⑩

|◀◀/▶▶| (selection search) **buttons** ⑲

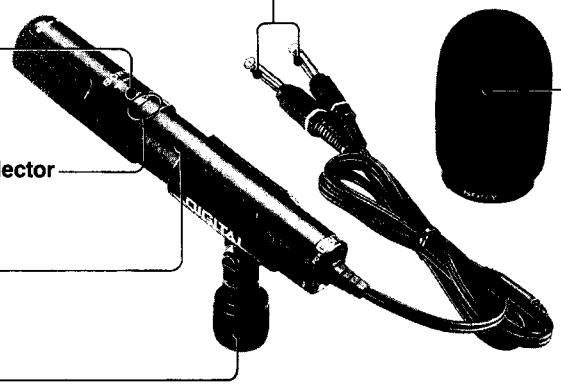
LIGHT button
When you use the unit in the dark, press this button and the display window is illuminated for about ten seconds.

RECORDED TIME (recorded date and time indication) **button**

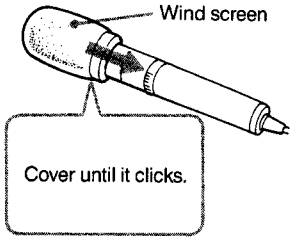
Right side



Microphone (supplied)



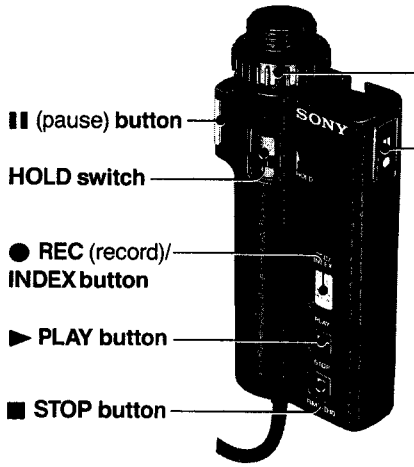
Attaching the wind screen
The wind screen reduces wind or breath noise.



Notes on using the supplied microphone

- The microphone should never be dropped or otherwise subjected to extreme shock.
- Keep the microphone away from extremely high temperatures (above 60°C or 140°F).
- If the microphone is placed near loudspeakers, a howling effect (acoustic feedback) may occur. If this happens, change the direction of the microphone until the howling stops, or decrease the sound volume of the loudspeakers.

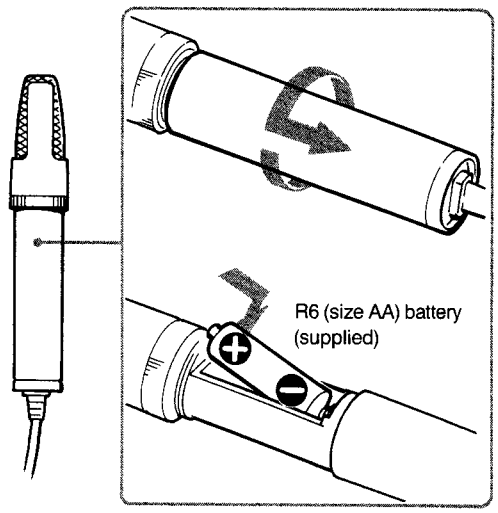
Remote controller



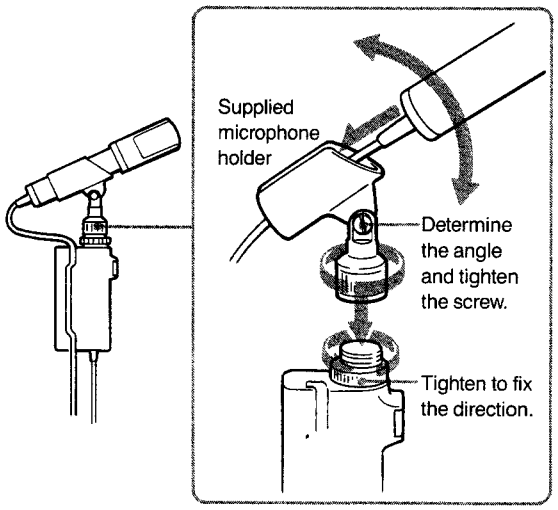
Remote control operation

By connecting the connector plug of the remote controller to the REMOTE jack on the right side of the recorder, you can remotely set the recorder in the playback or record (including index write) mode. (Cable length is approximately 1 meter.)

Battery installation



Attaching the microphone to the remote controller



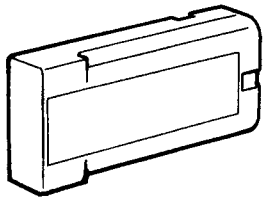
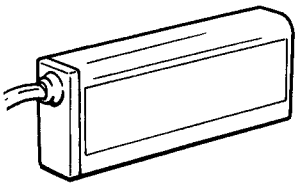
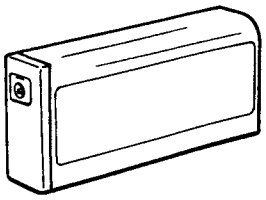
To check the battery condition of the microphone

When the power switch is moved from OFF to ON (90°), the battery check indicator will light momentarily. When the battery becomes weak, the indicator will light dimly or will not light at all. In this case, replace the battery with new one. For battery life, see Specifications on page 22.

Notes on the remote controller

- Before connecting or disconnecting the connector plug of the remote controller, be sure to turn off the power of the recorder.
- If anything metallic touches the REMOTE connector on the right side of the recorder, it may be treated as a remote control signal and so the operating mode may change unexpectedly.

Power sources

Outdoors	Indoors (on house current)	In Cars
NP-22H battery pack (supplied)	ACP-88 AC pack (supplied)	DCP-80 DC pack (optional)
		
For a continuous operation Use NP-4000 battery pack (optional) with the DCP-80 DC pack.		Used with the DCC-16A car battery cord.

For Outdoor Use

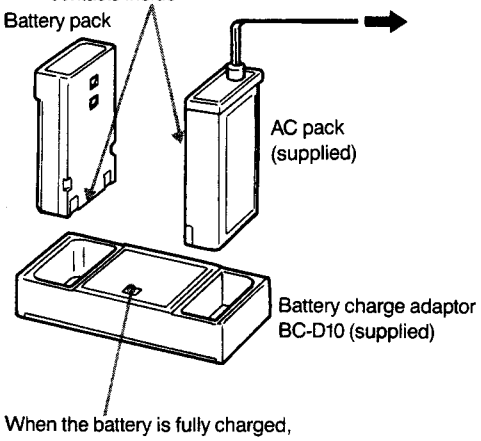
To charge

The charging time of the battery pack is about 1.5 hours.

1 with the metal contacts inside

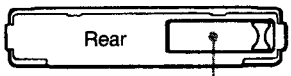
Battery pack

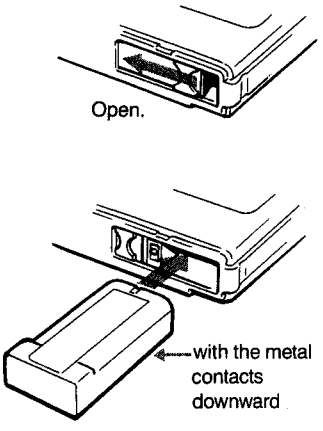
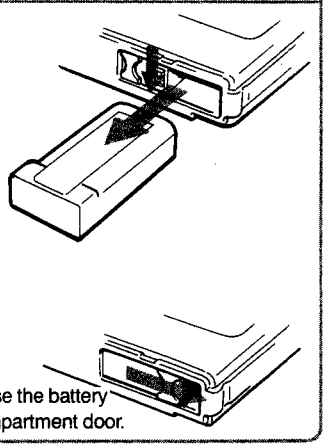
2 to a power source



When the battery is fully charged, the CHARGE lamp goes out.

Tape recorder



To insert the battery pack	To remove the battery pack
	

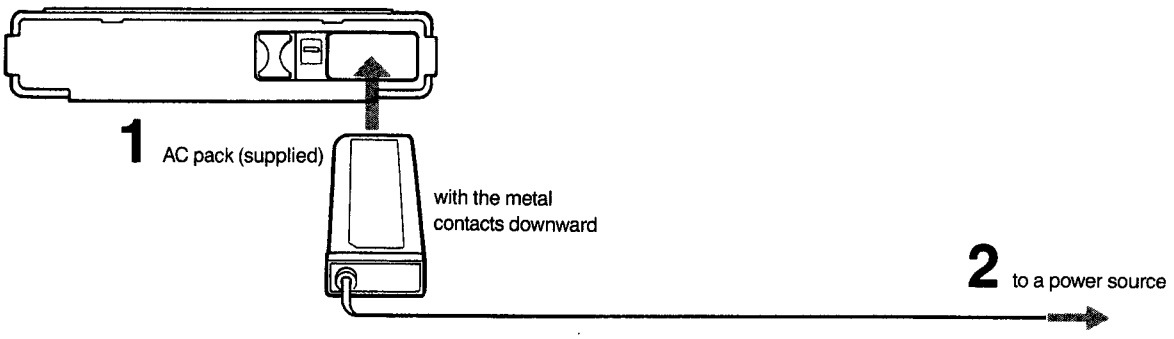
To check the battery condition

When the battery is exhausted, the ⌦ indicator starts blinking, and the tape will stop automatically in about three minutes. In this case, turn off the power of the recorder, and replace the battery pack with a charged one.

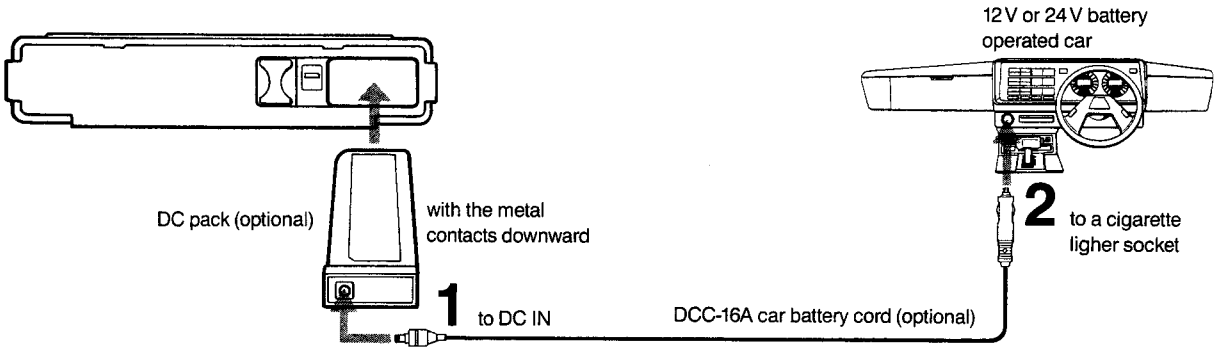
Battery life

A fully-charged battery (supplied) provides approximately two hours of continuous operation. We recommend that you have ready one or more extra batteries to cover double or triple the planned recording time, as the recorder consumes power even in the recording pause mode. If the battery is used in a cold place, its operating time is reduced.

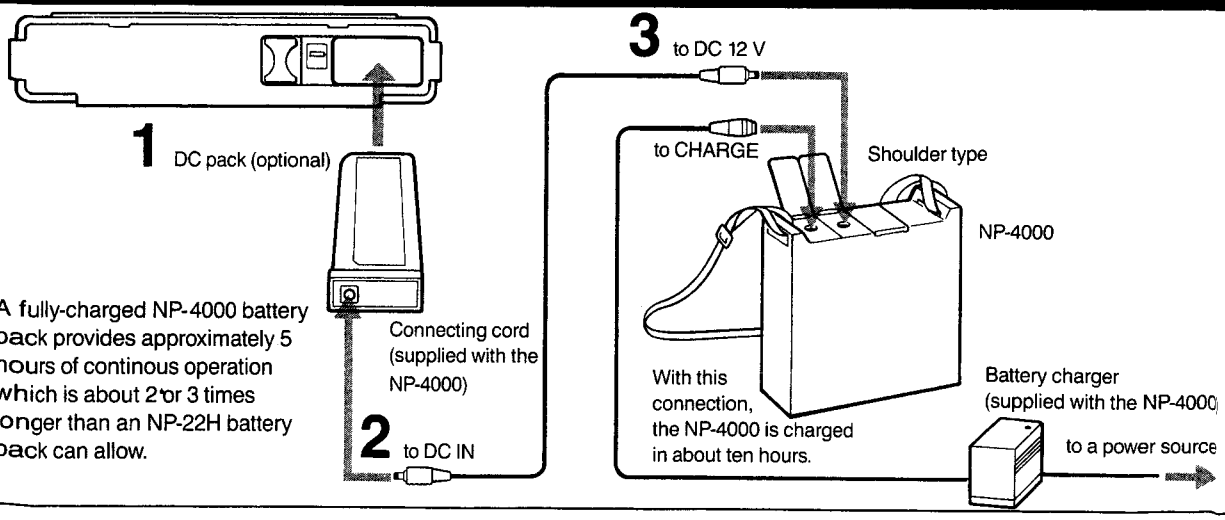
For Indoor Use



For Use in Cars

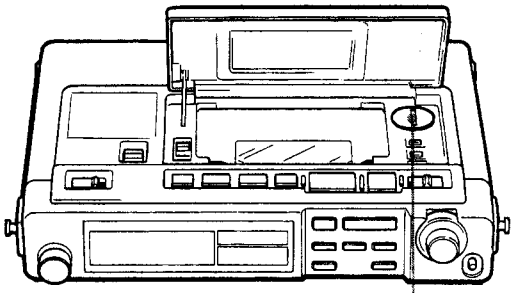


For Continuous Outdoor use — using the NP-4000 battery pack (optional)

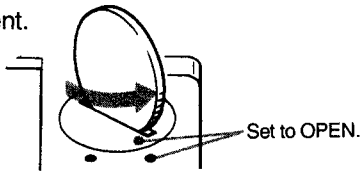


Clock Adjustment

Inserting the Lithium Battery



1 Open the cover of the lithium battery compartment.

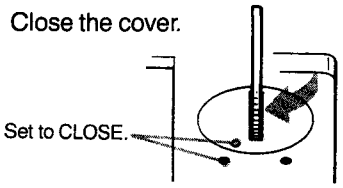


2 Install the supplied CR2025 lithium battery.



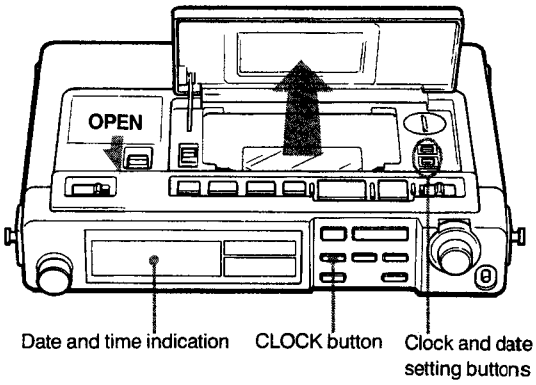
with the + side facing out.

3 Close the cover.



Setting the Date and Time

Once the date and the current time are adjusted, the date or time can be recorded together with the audio signal. During playback, you can check the recorded date and time in the display window.



Lithium battery life

Approximately three years in normal operation. When the battery becomes weak, the clock indication becomes incorrect. In this case, replace the battery with another Sony CR2025 or Duracell DL-2025 lithium battery. Use of another battery may present a risk of fire explosion.

The internal clock is powered by ....

When the recorder is turned on, the clock will be operated with the power source of the recorder. When the recorder is turned off and the battery pack is removed, it is operated with the installed lithium battery.

Notes on lithium battery

- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

WARNING

Battery may explode if mistreated.
Do not recharge, disassemble or dispose of in fire.

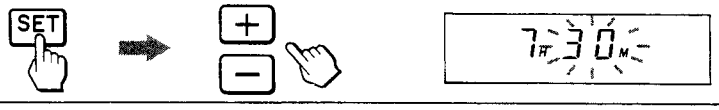
Example: to set for Wednesday 7:30 a.m. 15th June 1988

Setting the time

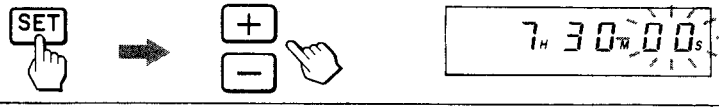
1 **Set the hour.**



2 **Set the minute.**



3 **Press and the second indication will be reset to 0 (zero).**

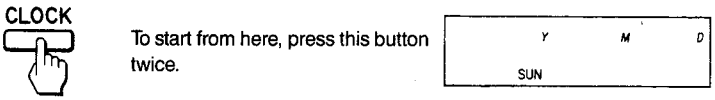


4 **Start the clock.**



Setting the date

5 **Select the date setting mode.**



6 **Set the year.**



7 **Set the month.**



8 **Set the day.**



9 **Set the day of the week.**



10 **Complete the setting.**



To return to the time indication after the date is set
Press CLOCK.

Two ways of pressing the +/- buttons
- When you keep the button pressed, the digits will change continuously.
- When you press and immediately release the button, the digits will change by one.

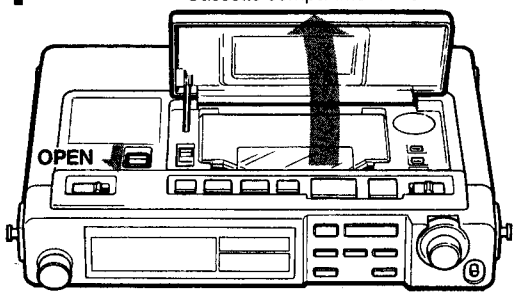
To check the preset date and time
Each time the CLOCK button is pressed, the indication alternates between date and time indication. To return to the counter display, press the COUNTER button.

To reset an incorrect date or time
Select either the date or time setting mode using the CLOCK button. Press the SET button repeatedly until the incorrect digit blinks. Correct it with the +/- button and press the SET button. After the correction is completed, be sure to press the SET button repeatedly until no digits blinks in the display.

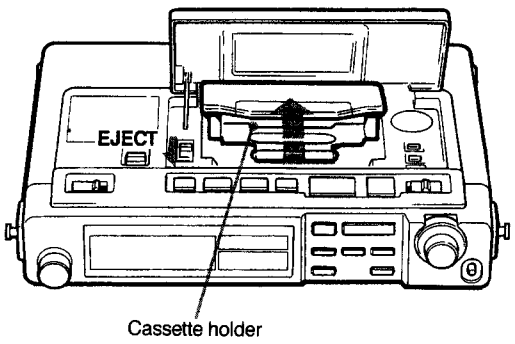
On time indication
This clock employs the 24 hours indication.
Midnight: 0:00
Noon: 12:00

Cassette Insertion

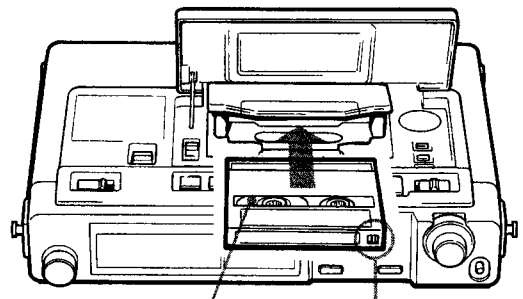
1



2



3



4 Close the door by pressing it.

When the power of the recorder is turned on, the tape will be automatically loaded *.

---

* When the cassette is inserted, the tape is loaded into the internal mechanism, and when the tape is ejected, the tape is unloaded. During loading or unloading, a mechanical sound is heard and the tape will not move immediately even if the EJECT or tape transport mode button is pressed. In this case, do not forcibly press the buttons.

Loading indicator

While the tape is loaded, the ⊡ indicator blinks in the display. Blinking stops when loading ends.

Removing the Cassette

Make sure that the power is turned on.

1 Slide the OPEN button toward the arrow (▼).
The tape will be unloaded.
2 When unloading stops, slide the EJECT button toward the arrow (▼).
3 Remove the cassette and close the cassette compartment door.

Safety tab on the cassette

When a recording is made, any previously recorded material will be automatically erased. To prevent accidental erasure, set the saftey tab to the position as shown in the figure below. To record on a cassette, make sure that the tab is set to the record-possible position.





Recording is impossible (the tab is open).

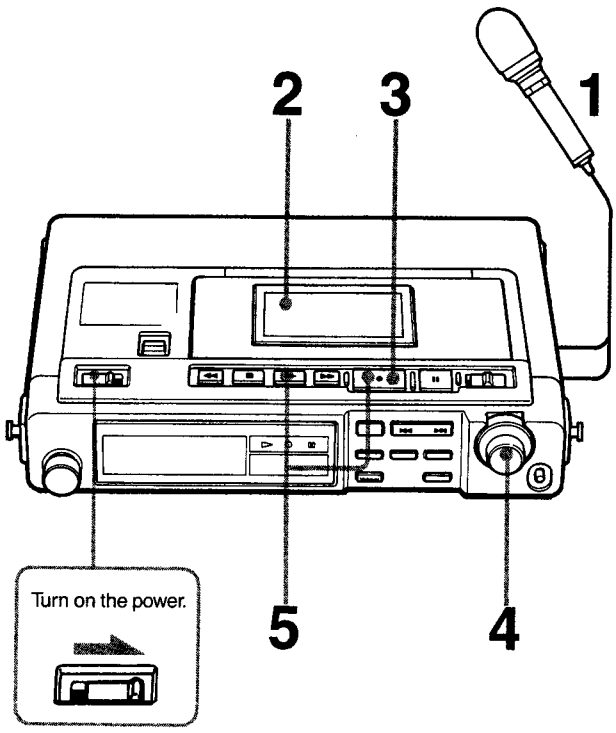


Recording is possible (the hole is covered).

Cassette care

- Unlike analog audio tape, the digital audio tape can be played back and recorded on only one side of the cassette.
- If the cassette holder is not closed completely, remove the cassette, insert it properly, and then close the holder once again.
- Do not attempt to disassemble the dust-resistant cassette casing.
- Never insert anything in the small holes on the rear of the cassette.
- A tape recorded with the long play mode cannot be played back with the this tape recorder, as the TCD-D10 is not designed for the long play mode operation.

Recording



1 **Connect the supplied microphone.**
(Turn on the microphone.)

2 **Insert the cassette.** (See page 12.)

3 **Press ● (REC/INDEX).**
The ● indicator in the display illuminates in red.

4 **Adjust the recording level.**
While observing the peak level meters, adjust the level for both channels.

5 **While pressing ●, press ▶ (PLAY).**
Recording starts.

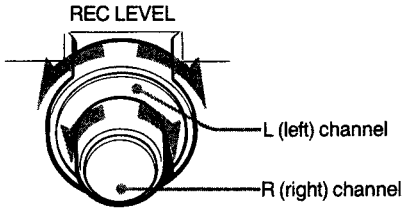
To stop recording	Press ■ (STOP).
To stop the recording momentarily	Press ❚❚ (PAUSE).
To release pause	
To prevent accidental pressing of the incorrect buttons during recording	Slide the HOLD switch toward the arrow (➡). The orange mark appears.

Using the HOLD switch (convenient for carrying)
During recording, to prevent accidental pressing of a button, slide the HOLD switch toward the arrow. As the power switch and tape transport operation buttons (including |◀◀, ▶▶|) will not function, the recording and playing mode will be held until the switch is reset.
Note: Even though the operation mode is held for the recorder, operation from the remote controller is possible.

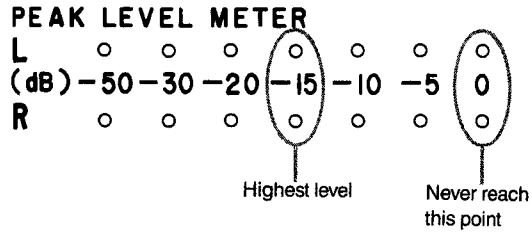
When the following occur during recording
If recording does not start when ● and ▶ are pressed ....
Check the following items:
- The safety tab of the cassette is set to the record-inhibit position.
- No cassette is inserted.
- The buttons are pressed incorrectly. Press ▶ while pressing ●.
- The HOLD switch is slid toward the arrow.

Recording Level Adjustment

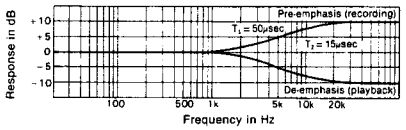
Adjust the recording level with the REC LEVEL control by observing the peak level meters. Normally, set it so that when the audio signal is at its highest levels, the −15dB or −10dB points illuminates.
To avoid distortion of the recorded sound, make sure that the meters do not reach 0dB.
A little practice and experience will allow you to set the optimum recording levels.



Display window



All the input signals are pre-emphasized automatically and then recorded. The peak level meters show the pre-emphasized signal levels.* (See the diagram below.)



Writing Indexes on the Tape

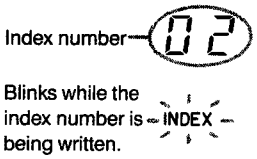
On this unit, "index**" is a sub code which can be written on the tape together with the audio signal. If it is written on the beginning of each selection or other particular point, you can find those points quickly during playback.

To record the indexes
An index is written each time ● REC/INDEX is pressed. You can write them in the following ways.

To write automatically
When you start recording in the following procedure, it is written automatically:
- from the stop mode by pressing ► PLAY while keeping ● REC/INDEX pressed.
- from the recording pause mode by pressing ❚❚ PAUSE.

To write manually
During recording, press ● REC/INDEX at the desired portion.

While the index is being written (for 9 seconds), the INDEX indicator blinks in the display. Within a recording, each time an index is written, the index number increases by one.



Notes on indexes
- Indexes can be written only during the recording mode.
- After an index has been written, do not write another index within ten seconds. Otherwise, they will be treated as a single index.

*** What is emphasis?**
The emphasis function reduces the amount of noise and improves the signal-to-noise ratio by automatically boosting the high-frequency response during recording (pre-emphasis) and detecting the boosted amount and lowering the response during playback (de-emphasis).

** An "index" of this TCD-D10 corresponds to the "start ID" of other DAT tape deck. Therefore, when a tape recorded on this unit is played back on another DAT tape deck, its indexes will be treated as start IDs even if the tape deck has an index function.

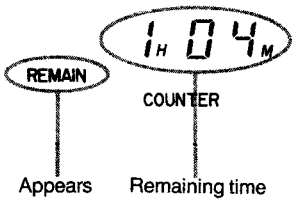
Note
If an index is written at the very beginning of the tape, locating the beginning of the selection using the |◄◄ or ►►| button cannot be correctly done. When you want to record from the beginning of the tape, be sure to start the recording after winding the tape for approximately five seconds in the playback mode.

Writing the Recording Time on the Tape

Once the internal clock has been adjusted (10 page), the date and time when a recording is made are written on the tape simultaneously with the audio signal. This time information is displayed during playback (19 page). To check the date and time to be recorded, press the CLOCK button. The date and time will not be displayed, if the RECORDED TIME button is pressed during recording,

Checking the Remaining Time on the Tape

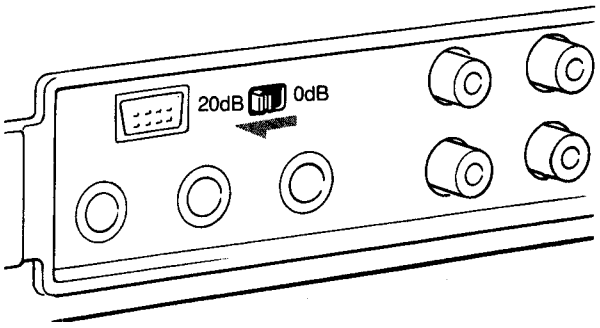
Press COUNTER during recording.
(When COUNTER indicator is not indicated in the diplay, press COUNTER twice.)



To indicate the tape running time again
Press COUNTER again. (The REMAIN indicator disappears.)

Attenuating the Sound to be Recorded

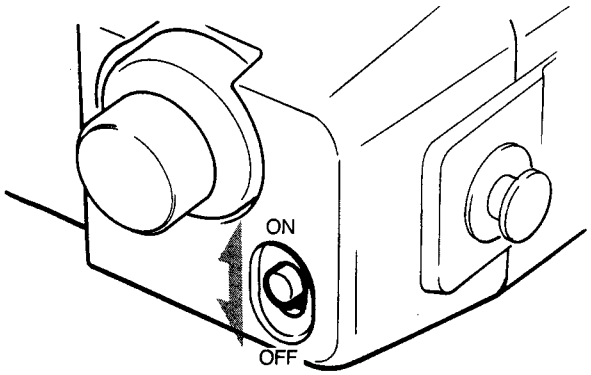
Setting the MIC ATT selector
When recording from a very high input level source, the sound may be distorted even though the recording level is lowered. To prevent overloading the recording amplifier, set the MIC ATT selector to the "20 dB" position. The sensitivity of the microphone amplifier is attenuated, resulting a recording without a distortion.



When noise occurs during FM recording
With the tuner connected to a ribbon antenna, noise may occur when you try to record an FM broadcast. In this case, use a coaxial cable antenna as it is not affected by the interference from the internal micro-computer, or place the tuner away from the unit to reduce the noise.

Limiting the Peak Level Sound

Setting the LIMITER switch (only for the microphone)
When recording programs that have sudden bursts of very high sound levels, set this switch to ON after setting the recording level. This will effectively damp very high transient input peaks, protecting your recording from distortion caused by a saturated tape.

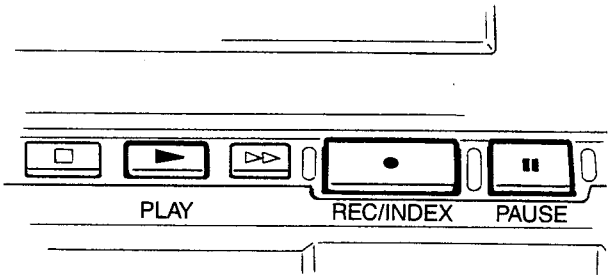


Monitoring the Sound to be Recorded

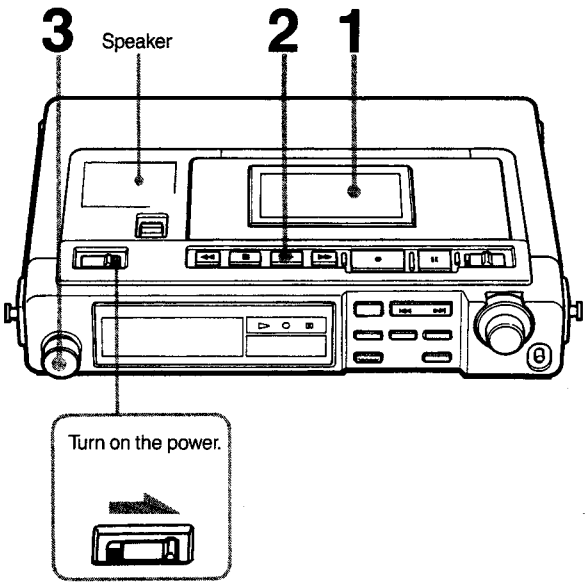
Headphones monitoring when recording
To monitor the input signals to be recorded, connect stereo headphones to the HEADPHONES jack. It is also possible to check the balance of the left and right channel.

Accurate Recording Starts

1 Set the unit in the recording pause mode by pressing ❚❚, and then the ▶ while pressing the ●.
2 Press ❚❚ to start recording.
This operation is also useful for eliminating unwanted input.



Playback



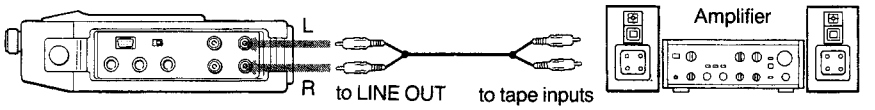
1 **Insert a cassette.** (See page 12.)

2 Press ▶ **PLAY.**
Playback starts.

3 **Adjust the volume of the built-in speaker with the VOLUME control.**

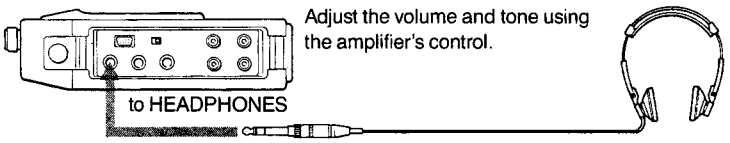
To stop playback	Press ■
To stop playback momentarily	Press ❚❚
To release pause and restart play	
To advance the tape rapidly	Press ▶▶ in stop mode
To rewind the tape rapidly	Press ◀◀ in stop mode
To cue	Press ▶▶ in playback mode*
To review	Press ◀◀ in playback mode*

Monitoring through the connected amplifier



Adjust the volume and tone using the amplifier's controls.

Listening through the headphones



Adjust the volume and tone using the amplifier's control.

If connected, no sound comes out from the built-in speaker.

* Holding the button pressed for 5 seconds or more increases the tape running speed and the sound becomes inaudible. To restart playback, release the button at the desired point by observing the counter indication in the display.

Locating a Particular Selection

While playing back a tape containing indexes, you can locate the desired selection quickly by searching for the indexes.

To select the index
When each selection has an index, you can locate the beginning of the desired selection as follows.

Which selection to locate	Operation
Next selection	Press ▶▶| once.
Following selection after next	Press ▶▶| twice.
X selections ahead	Press ▶▶| × times.
Selection being played back	Press |◀◀ once.
Previous selection	Press |◀◀ twice.
X selections (including the selection being played) back	Press |◀◀ × times.

Listening to the Beginning of Each Selection Successively — Intro scan

By searching for the indexes, the beginning of each selection in order is played back automatically for approx. ten seconds.

Proceed with the following operation in the playback or stop mode.
1 Press SCAN. (SCAN indicator appears).
2 Press ▶▶| or |◀◀.
Press ▶▶| to search for the indexes ahead and press |◀◀ for previous indexes back.

To continue playback at the desired selection
Press ▶.
The normal playback resumes.

Note
If, however, an index is written at the beginning of the tape, the index portion will be played back repeatedly, i.e. the intro scan function does not activate.
In this case, press ■ STOP button to release the intro scan mode.

Checking the Recorded Date and Time

During playback, if the date and time are written on the tape, they are indicated in the display precisely to the seconds.

To select the date/time indication
For a time indication: press RECORDED TIME once.
For a date indication: press RECORDED TIME once again.

This appears whenever date or time is indicated.



Using the Counter

Besides the date/time indication, the tape running time, remaining time of the tape and recorded date/time are indicated on the display.

The indication to be displayed	Button to be pressed	Indicator
Tape running time	COUNTER	COUNTER
Remaining time of the tape	COUNTER	REMAIN
Recorded date/time	RECORDED TIME (Once for date, and twice for time indication)	RECORDED TIME
Current time and date	CLOCK	CLOCK

When playing back a pre-recorded cassette (software)
Instead of the COUNTER indication, the elapsed time of each selection designated by an index is indicated (PROGRAM TIME indicator appears.) When the REMAIN indicator is indicated, the time remaining to the end of the recorded portion is shown. The recorded date/time will not be indicated.

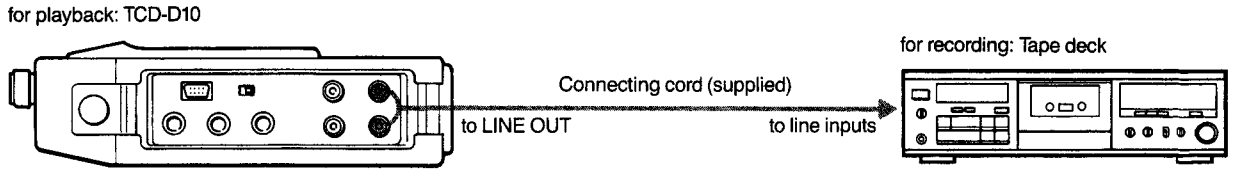
Accuracy of the electronic linear counter
The linear counter provided with this unit is not a clock. The time indicated by the counter may slightly differ from the actual recording/playback time. This allowance differs for the length of the tape, the running position, etc.

Connecting with Other Equipment

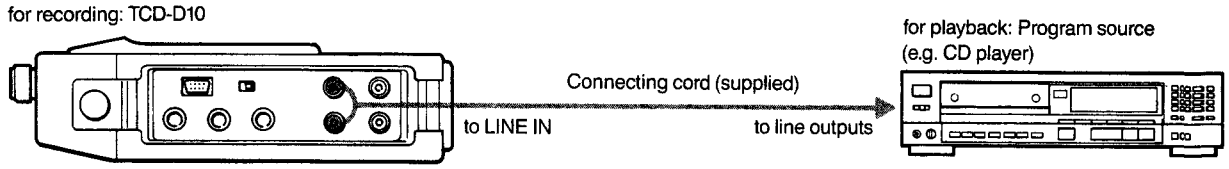
The following connections make it possible to record the playback sound of the TCD-D10.

Note: As the unit is not provided with digital inputs/outputs, digital dubbing cannot be made.

Recording the Sound of TCD-D10 with Another Tape Deck



Recording from a CD Player

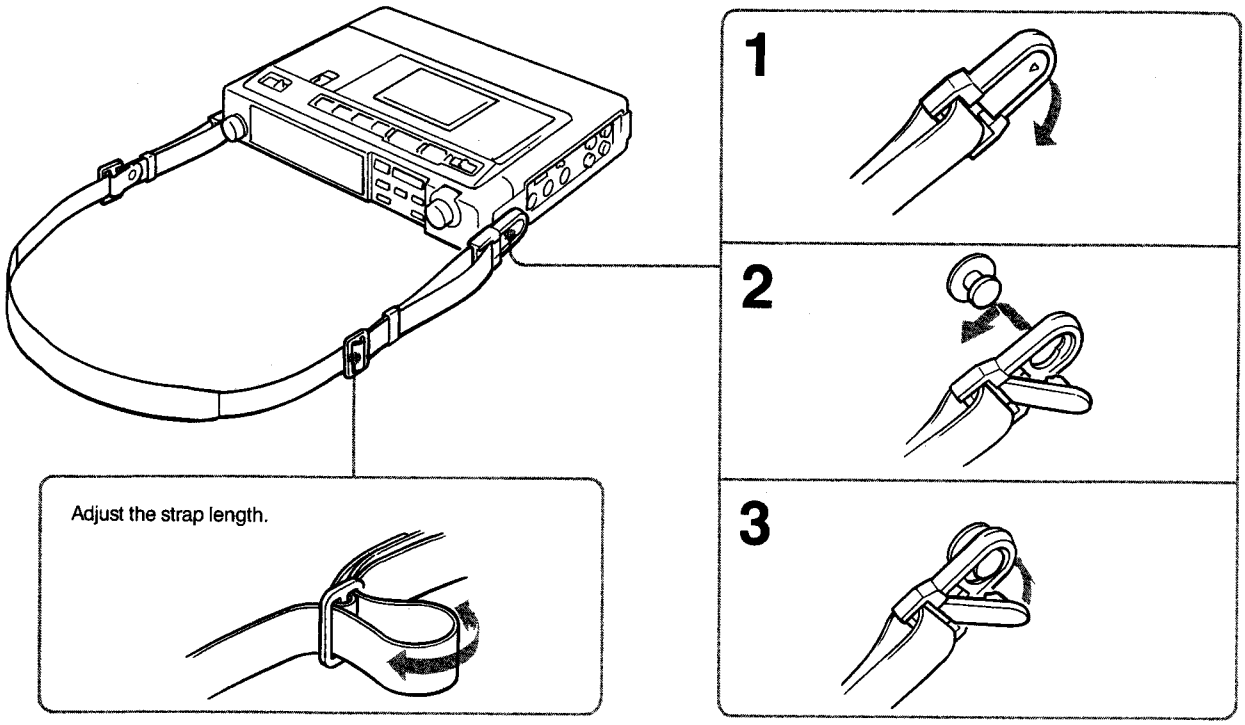


Maintenance

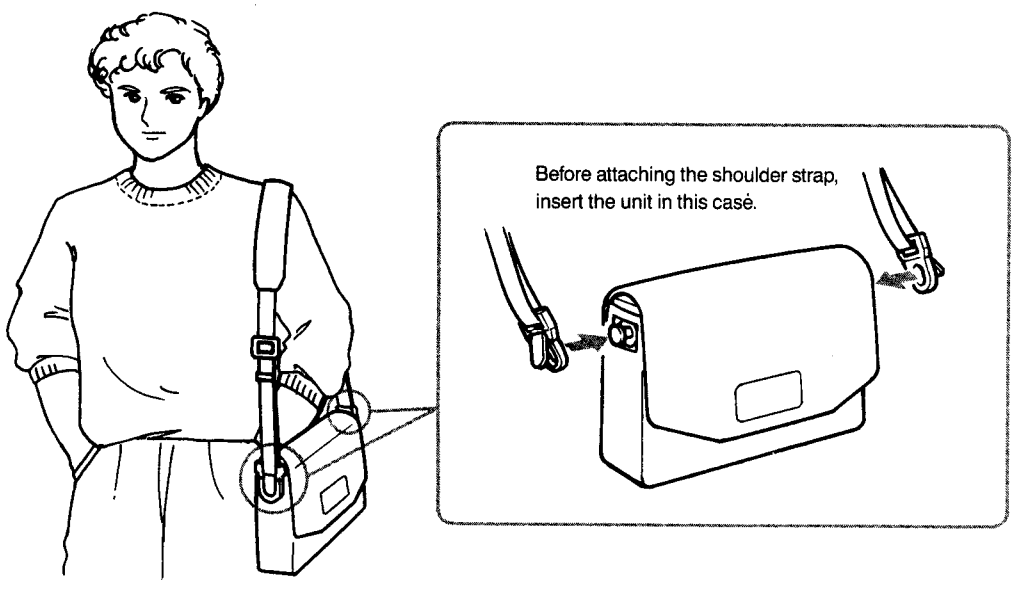
On unit maintenance

- If the unit will not be used for a long period of time, periodically turn on the power and set it in the playback mode for about three minutes.
- Clean the cabinet, panel and contols with a soft cloth slightly moistened with a mild detergent solution. Do no use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

Attaching Shoulder Strap



Using the Carrying Case



Specifications

Tape	Digital audio tape
Recording system	Rotary head
Recording time	120 minutes (with DT-120)
Tape speed	8.15 mm/s
Drum rotation	Approx. 2.000 rpm
Error correction	Double Reed Solomon code
Number of channel	2 channels, stereo
D/A conversion	16-bit linear
Fequency response	20-22.000 Hz (±1 dB)
Signal-to-noise ratio	More than 85 dB
Dynamic range	More than 90 dB (at 1 kHz)
Total harmonic distortion	Less than 0.008% (at 1 kHz)
Wow and flutter	Below measurable limit

Input

Input jacks	Jack type	Impedance	Minimum input level
LINE IN	Phono × 2	50 kohms	35 mV
MICROPHONE	Phone × 2	for low impedance microphone	0.3 mV

Output

Output jacks	Jack type	Impedance	Rated Output	Load impedance
LINE OUT	Phono × 2	470 ohms	0.25 V	more than 10 kohms
HEADPHONES	Stereo phone	150 ohms	0 to 18 mV	32 ohms

Tape

Track pitch	13.6 μm (20.4 μm)
Sampling frequency	for playback: 48 kHz, 44.1 kHz, 32 kHz for recording: 48 kHz
Modulation system	8—10 Modulation
Transfer rate	2.46 Mbit/sec. (before modulation)

General

Power requirements	6 V in DC operation 100-240 V AC, 50/60Hz using the AC pack (supplied)
Battery life	Approx. 2 hours of continous recording with the supplied NP-22H battery pack fully-charged
Power consumption	6.5 W using NP-22H
Speaker	Full range: 50 mm dia., cone type
Power output	200 mW in DC operation
Dimensions	Approx. 253 × 55 × 191 mm (10 × 2 1/4 × 7 5/8 inches) (w/h/d) excluding projecting parts and controls
Weight	Approx. 1.8 kg (4 lbs) including batteries Approx. 1.5 kg (3 lbs 5 oz) excluding batteries

Microphone (supplied)

Type	Electret condenser microphone (with back-electret condenser capsules)
Microphone output connector	Phone plugs (2)
Dimensions	Approx. 30 × 175 mm (1 3/16 × 7 inches) (outside diameter × length)
Weight	Approx. 216 g (7.7 oz) including batteries
Frequency response	50 Hz—18,000 Hz
Directivity	Directive angle: Selectable between 90° and 120°
Output impedance	550 ohms ± 20%, unbalanced
Output level (at directive angle 120°)	Open circuit output voltage: 68 dB, ±3 dB 0 dB = 1 V/1 μ bar, 1000 Hz Recommended load impedance more than 3 kohms
Power requirements	R6 (size AA) battery Normal operating voltage: 1.5 V Minimum operating voltage: Approx. 1.1 V
Battery life	Approx. 2500 hours of continous operation with Sony SUM-3 (NS)battery
Noise level (at directive angle 120°)	Signal-to-noise ratio: More than 49 dB (1000 Hz, 1 μ bar) Inherent noise**: Less than 25 dB SPL (0 dB SPL = 2 × 10^{-4} μ bar) Wind noise* (with wind screen): Less than 45 dB SPL Induction noise from external magnetic field**: Less than 10 dB SPL * Wind noise is the value measured by applying a wind velocity of 2 m/sec. (6.6 ft/sec.) from all directions to the microphone. The mean value is taken and converted to the equivalent input sound level. ** The external magnetic field induction noise is measured with the microphone placed in an alternating magnetic field of 50 Hz, 1 milligauss. The maximum noise value is taken and then coverted to the equivalent input sound level.
Maximum sound pressure level	More than 117 dB SPL
Dynamic range	More than 92 dB

Accessories supplied

Remote controller (1)
Microphone (with wind screen and microphone holder) (1)
Carrying case (1)
Shoulder strap (1)
AC pack ACP-88 (1)
Battery charge adaptor BC-D10 (1)
Battery pack NP-22H (1)
Lithium battery CR2025 (1)
Sony battery SUM-3 (NS) for microphone (1)
DAT cassette tape
Connecting cord (two phono plugs ⟷ two phono plugs) (2)

Design and specifications subject to change without notice.

Optional accessories

Battery pack NP-4000
DC pack DCP-80
Stereo headphones MDR-E282
DAT cleaning cassette DT-10CL

Your dealer may not handle some of the above listed optional accessories. Please ask the dealer for detailed information about the optional accessories available in your country.

Note

This appliance conforms with EEC Directives 76/889 and 82/499 regarding interference suppression.

Troubleshooting Guide

The following checks will assist in the correction of most problems which you may encounter with your unit. Before going through the check list below, first refer back to the connections and operating procedures.
Should any problem persist after you have made these checks, consult your nearest Sony service facility.

Symptom	Causes	Remedy
The unit will not operate.	The battery pack is discharged.	Recharge the battery pack.
	Incorrect connection of the power sources	Connect referring to page 8.
The cassette cannot be removed.	The unit is turned off after the tape is loaded.	Turn on the unit to unload the tape, and slide the EJECT button toward you.
The ● indicator will not illuminate even if the ● REC button is pressed.	No cassette is inserted.	Insert a cassette.
	The tab of the cassette is open.	Slide the tab of the cassette to close the hole (see page 13).
The sound through the microphone is distorted.	The volume of the sound source is too loud.	Set the MIC ATT selector to 20 dB.
The recorded sound is weak.	The recording was made with the MIC ATT selector set to 20 dB.	Set the MIC ATT selector to 0 dB.
No sound from the headphones.	The VOLUME control is turned down completely.	Turn it up.
Howling occurs when recording with an external microphone.	Microphone is too near the headphones or a separate speakers when monitoring the recorded sound.	Move the microphone from away from the headphones or the speaker, or turn the monitor sound level down.
An incorrect indication appears in the display window.	—	Remove the power source (AC pack or battery pack) and the lithium battery for the clock from the unit, and then put them back.