

Stereo Cassette Deck

Operating Instructions

TO: DX705C
1-800-800-8000

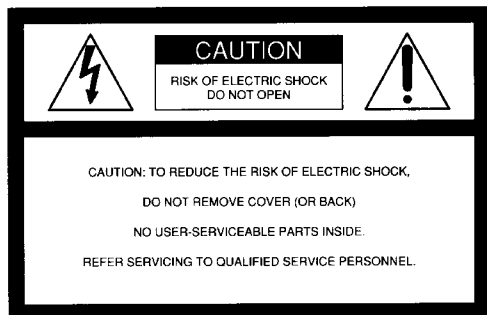
WARNING

Owner's Record

The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. TC-RX79ES Serial No. _____

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



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



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

*The graphical symbols are on the rear enclosure.

INFORMATION

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

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

For the customers in Canada

CAUTION:

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

INFORMATION

This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

Table of Contents

Features

Chapter 1 Getting Started

Features	3
Precautions	4
Unpacking	4
Checking the supplied accessories	4
Notes on installation	4
Checking the operating voltage	4
Hooking up the system	5
Before you begin	5
Hook-up example	5
Hook-up for tape dubbing	5
Identifying the parts	6
Front panel	6

Chapter 2 Playback

Playing back	7
Locating a selection	
— Multi-AMS (Automatic Music Sensor)	8
Starting playing back after rewinding — Auto Play	9
Locating a desired playback position — Memory Play	10
How to memorize and locate a desired playback position	10
The accuracy of the linear counter	10

Chapter 3 Recording

Recording	11
How to record to a cassette	11
Starting a recording with Fade-in	13
Ending a recording with Fade-out	13
Recording with the Just Fade-out System	14
Adjusting the recording level manually	15
Recording FM broadcasts with the Dolby NR system ...	15
Adjusting the bias according to the tape type	15
To protect a Recording	16
What is the Dolby HX PRO system?	16
Inserting a blank space during recording	
— Record Muting	17

Chapter 4 Other Operation

Timer-activated playback and recording	18
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Chapter 5 Additional Information

Maintenance	19
Cleaning the heads and tape path	19
Demagnetizing the heads	19
Cleaning the Cabinet	19
Specifications	20
Troubleshooting guide	21

For higher quality recording/playback


- **The Dolby HX PRO* system** which improves the linearity of the tape's high-range response during recording.
- **B and C type Dolby NR* systems** which reduce tape noise.
- **Bias calibration** to achieve the optimum bias current setting for any tape.
- **Ceramic cassette holder** for improved stability of tape running during playback and recording.

For your convenience

- **Quick reversing** at the end of a tape to minimize interruptions during playback and recording.
- **The Multi-AMS and Memory Play functions** which provide easy access to a desired selection.
- **Timer-activated playback and recording** through the use of an optional timer.
- **Automatic switching between line and microphone input** when recording with a microphone.

For easier operation

- **Fade-in and Fade-out functions** to start and end recordings with a professional touch.
- **The Just Fade Out System** which provides an automatic fade-out ending to any recording.
- **Easy-to-read linear counter** which shows the elapsed recording or playing time.

* Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.
 "DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Precautions

On safety

- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it will not be used for a long time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.
- 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.

On operation

- When the unit is not used, turn the power off to conserve energy and to extend the useful life of your unit.
- Because of a safety mechanism, the function buttons will not operate if the cassette holder is not completely closed, if there is no cassette in the cassette holder, or if a cassette has been incorrectly inserted into the cassette holder.

On head cleaning

The head and tape path should be cleaned after every ten hours of operation. Dirty heads and a dirty tape path may cause:

- loss of high-frequency response
- loss of sound volume
- sound drop-out

If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

For the customers in the U.S.A.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

Unpacking

Checking the Supplied Accessories

Make sure that the following accessories are included with your unit.

- Audio connecting codes (2)

Notes on Installation

- Place the unit with the front panel facing you in a location with adequate air circulation to prevent overheating of the unit.
- Do not place the unit:
 - near heat sources such as radiators or air ducts.
 - in places subject to direct sunlight, excessive dust, mechanical vibration or shock.
 - in an inclined position.
 - on a rug or other soft surfaces that would block the ventilation holes on the bottom of the unit.

Do not throw away the carton and the packing material

They will come in handy when transporting the unit or shipping it for servicing.

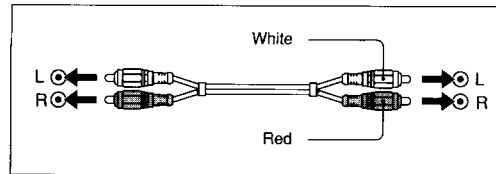
Checking the Operating Voltage

- Operate the unit only on 120 V AC, 60Hz.
- Before operating the unit, be sure that the operating voltage of your unit is identical with that of your local power supply.

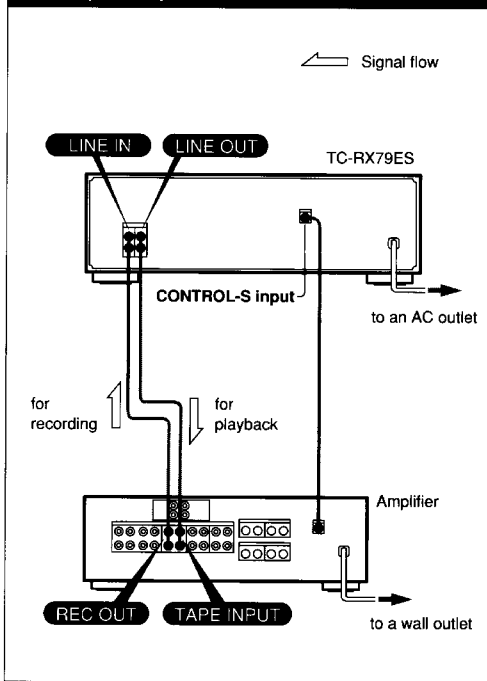
Hooking Up the System

Before You Begin

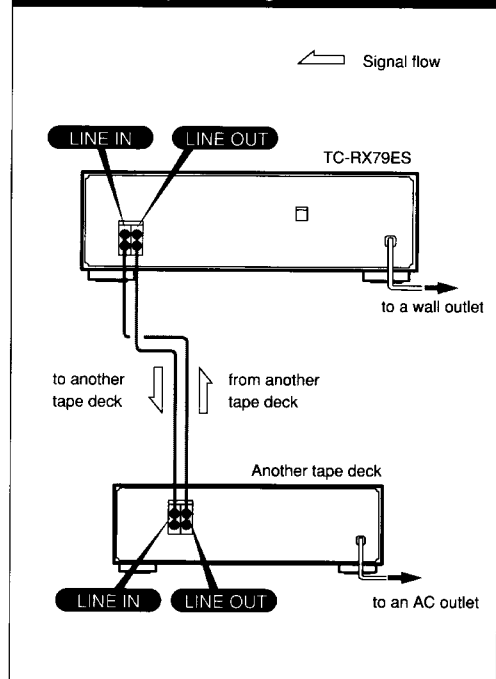
- Turn off the power to all equipment to be connected before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel (R) connection and the white plug for left-channel (L) connection.
- The connecting cords should be fully inserted into the jacks. A loose connection may cause hum pickup.



Hook-up Example



Hook-up for Tape Dubbing

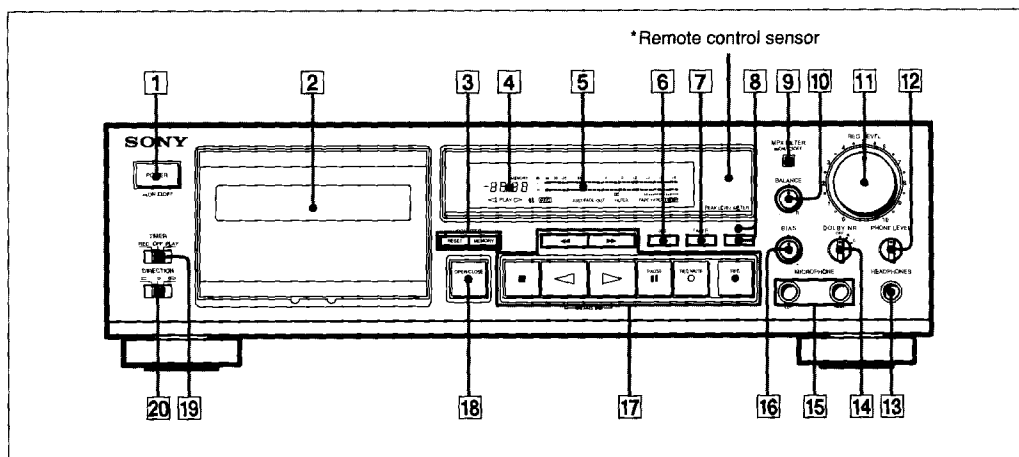


Note on the CONTROL-S input

To remotely control this unit through a receiver or amplifier, connect the input on this unit to the CONTROL-S output on a Sony receiver or amplifier, with a CONTROL-S cable. When this connection is used, only remote commands sent through the receiver or amplifier will be executed. The remote sensor on this unit will not function.

Identifying the Parts

Front Panel





For details, refer to the page number indicated in parenthesis.

- 1** POWER switch
- 2** Cassette holder
- 3** Counter buttons
 - RESET button (page 10)
 - MEMORY button (pages 9 and 10)
- 4** LINEAR COUNTER (page 10)
- 5** PEAK LEVEL METER (page 15)
- 6** JFS (Just Fade-out) button (page 14)
- 7** FADER button (page 13)
- 8** ARL (automatic recording level) control and indicator (page 11)
- 9** MPX FILTER button (page 15)
- 10** BALANCE control (page 11)
- 11** REC (recording) LEVEL control (pages 11 and 15)
- 12** PHONE (headphones) LEVEL control (page 7)
- 13** HEADPHONES jack (stereo phone jack) (page 7)
- 14** DOLBY NR (noise reduction) switch (pages 7 and 11)
- 15** MICROPHONE jacks (phone jacks)
- 16** BIAS control (page 15)

- 17** Tape operation buttons
 - ◀ (leftward fast winding) button
 - ▶ (rightward fast winding) button
 - (stop) button
 - ◀ (reverse play) button
 - ▶ (forward play) button
 - || PAUSE button
 - REC MUTE (record muting) button (page 17)
 - REC (recording) button
- 18** OPEN/CLOSE button
- 19** TIMER switch (page 18)
- 20** DIRECTION mode switch (pages 7 and 11)

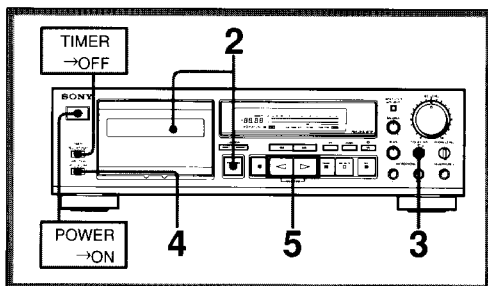
*Remote control sensor

You can remotely control this cassette deck with:

- A remote commander that came with a Sony amplifier or receiver if it has the  mark and cassette deck control capability.
- An optional Sony remote commander with the  mark and cassette deck control capability.

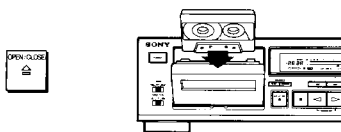
Playing Back

Follow the procedure below to play back a cassette.



1 Turn on the amplifier and select the tape function.

2 Insert a cassette.



3 Set DOLBY NR to the same position that was used when the cassette was recorded.



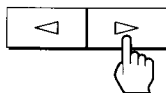
4 Set DIRECTION.

To playback one side	
To playback both sides	
To playback both sides continuously*	

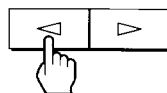
* After playing back five times, the deck automatically stops.

5 Press ◀ or ▶ to start playback.

From the front side:



From the reverse side:



To stop playback, press the ■ button.

To stop playback momentarily, press the || button.

To restart playback, press the ||, ◀ or ▶ button.

To fastwind a tape rightward, press the ▶▶ button in stop mode.

To fastwind the tape leftward, press the ◀◀ button in stop mode.

Set the TIMER switch to OFF

Otherwise, playback will start automatically when the power is turned on.

Is it necessary to set the tape type being used?

No. The deck has an automatic tape type detection system.

To start operations while the cassette holder is open

Operations may be started while the cassette holder is open. For example, when the ◀ or ▶ button is pressed while the cassette holder is open, the cassette holder will close and playback will start. Similarly, pressing the ◀◀, ▶▶, or || buttons while the cassette holder is open will close the cassette holder and start the respective operation.

To change to recording mode during playback

Keeping the ◀ or ▶ button pressed, press the ● button. The unit immediately switches from playback to recording without stopping the tape. This is useful when editing previously recorded material.

For headphone listening

Connect the headphone plug to the HEAD PHONES jack. The listening level can be controlled with the PHONE LEVEL control.

What is the Dolby NR system?

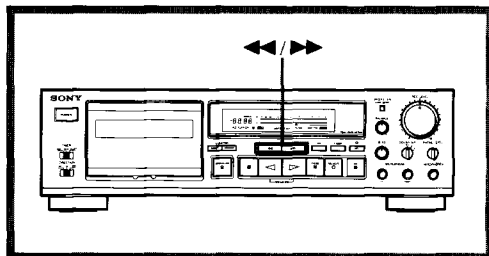
The Dolby NR (noise reduction) system reduces tape hiss noise in low-level, high-frequency signals by boosting the signals during recording and lowering them during playback.

Note

The Dolby HX PRO system is effective only during recording, not during playback.

Locating a Selection — Multi-AMS (Automatic Music Sensor)

By detecting the blank space between selections, the Multi-AMS function allows you to skip up to 30 selections during fast forwarding or reversing to locate the beginning of selection.



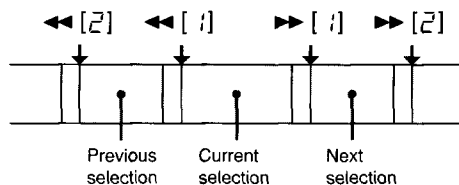
During playback, press ◀◀ or ▶▶ as many times as the number of selections to be skipped.

Playback direction indicator	To locate a selection after the current one	To locate a selection before the current one*
▶	▶▶	◀◀
◀	◀◀	▶▶

* Pressing ◀◀ or ▶▶ once locates the beginning of the current selection.

Tape direction indicator: ▶

↓ : Beginning of selection



- The number of selections to be skipped, which replaces the counter indication, decreases by one each time a blank space is detected.
- The PLAY indicator flashes during Multi-AMS operation.
- When the beginning of desired selection is reached, the counter indication returns and playback automatically restarts.



Modifying the indicated number of selections to be skipped

The number of selections to be skipped may be modified by pressing the ◀◀ or ▶▶ button at any time, even during Multi-AMS operation.

Regarding changes in the indicated number

The indicated number of selections to be skipped may change even as it is being set due to the detection of blank spaces during fastwinding of the unit.

The Multi-AMS may skip a selection in the following cases:

- If the ▶▶ (or ◀◀) button is pressed immediately before the following selection.
- If there is noise in the space between selections.
- If the space is less than four seconds long.

The Multi-AMS will treat the following as blanks:

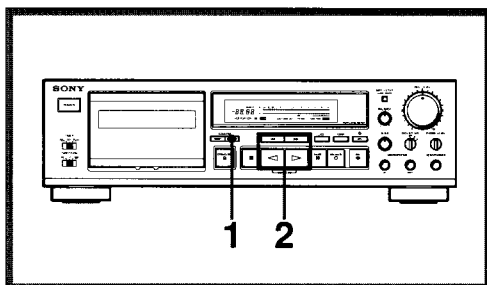
- a long pause in the music
- a passage of low frequencies or very low volume
- a gradual increase or decrease in volume

Note:

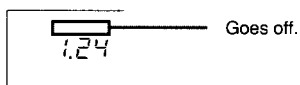
Even if the DIRECTION switch is set to ↔, the Multi-AMS function does not extend to the other side, but stops when that side comes to an end.

Starting Playing Back After Rewinding — Auto Play

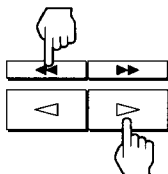
The Auto Play function automatically starts playing back a cassette after fast winding it to the beginning.



- 1** Make sure the **MEMORY** indicator is off.
If it is not, press **MEMORY**.



- 2** While pressing **◀** or **▶**, press **◀◀** or **▶▶**.

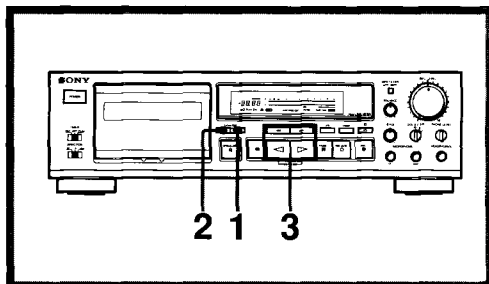


From the beginning of	While pressing...
front side	▶▶, press ◀◀.
reverse side	◀◀, press ▶▶.

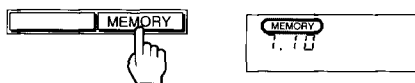
Locating a Desired Playback Position — Memory Play

How to memorize and locate a desired playback position

The Memory Play function allows you to use the counter to record a desired position on a cassette for fast relocation and automatic playback later.



- 1** Press **MEMORY** to activate the Memory Play function.



- 2** Press **RESET** to reset the counter at the desired position.



The desired position is memorized.

- 3** To return to the desired position
Check the direction indicator and press the respective buttons shown below.

Direction Indicator	While pressing...
PLAY ▷	▷, press ◀◀.
◁ PLAY	◀◀, press ▶▶.

Returning to the memorized position in stop mode — Memory Stop

If you press only the ◀◀ or ▶▶ button when the MEMORY indicator is on in the stop mode, the tape rewinds and the unit stops when the counter reaches 0.00.

Be sure to first stop playback before activating the Memory Stop function, otherwise the AMS function will activate.

To deactivate the Memory Play function

Press the MEMORY button, turning off the MEMORY indicator.

Note on Memory Play/Stop

In actuality, the tape is rewound to slightly short of 0.00.

Do not turn off the power while using the counter

Turning the power off, then on again resets the counter to 0.00.

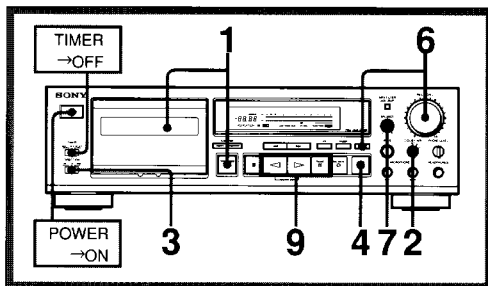
The Accuracy of the Linear Counter

Since the counter is not a digital clock, the number will differ from the actual elapsed playback or recording time by a few minutes, depending on such factors as tape length and hub size.

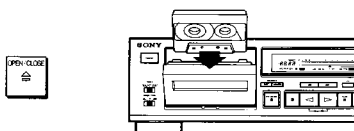
Recording

How to record to a cassette

Follow this procedure to record a source on a cassette.



1 Insert a cassette.



2 Set Dolby NR.



3 Set DIRECTION.

To record on one side	
To record on both sides	

4 Press ● to enter the recording pause mode.

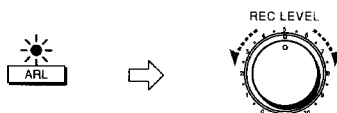


Note

A flashing ◁ or ▷ indicator indicates that recording is possible on that side.
If the cassette tab has been removed to prevent accidental erasure, the indicator will flash only for the side that can be recorded. If both tabs have been removed, there will be no response even when ● is pressed.

5 Play the program source to be recorded.

6 Press ARL to activate the Automatic Recording Level function. For manual adjustment, see page 15.



- The REC LEVEL control automatically rotates to the proper recording level.
- The ARL indicator stops flashing when the level is set.

7 Turn BALANCE to adjust the balance.



8 Restart the program source, if required.

(Continued on next page.)

Recording

(Continued from previous page.)

9 Press II, ◀ or ▶ to start recording.

To record on the front side of the cassette

When ▷ is on	Press ▶ once or II.
When ◀ is on	Press ▶ twice.

To record on the reverse side of the cassette

When ◀ is on	Press ◀ once or II.
When ▷ is on	Press ◀ twice.

To stop recording

Press the ■ button.

To deactivate the Automatic Recording Level function

Press the ARL button (or turn the REC LEVEL control manually).

Set the TIMER switch to OFF

Otherwise, recording will start automatically when the power is turned on.

To start recording while the cassette holder is open

If you press the ● button while the cassette holder is open, the holder will close automatically and the unit will switch to recording pause mode. This function allows you to start recording at a moment's notice.

Checking the recording time on a tape

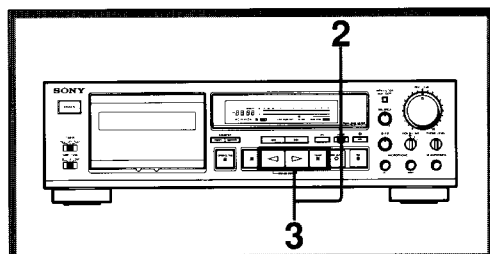
To check the remaining recording time on a tape:

- 1 Press the RESET button to reset the counter to 0.00.
- 2 Press ◀◀ or ▶▶ to advance the tape to its end. The number on the counter shows the approximate recording time.

To check the total recording time of a tape, first rewind the tape to its beginning, then follow the same steps as above. (See "The Accuracy of the Linear Counter".)

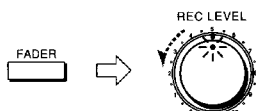
Starting a Recording with Fade-in

The Fade-in function starts a recording with a gradual increase in the recorded signal.



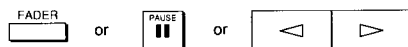
1 Perform steps 1 through 7 on page 11 to prepare for recording.

2 Press FADER.



The REC LEVEL control rotates downward.

3 Start recording.



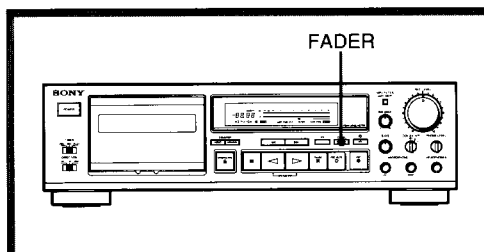
The REC LEVEL control rotates upward to produce a fade-in effect on the tape.

If the REC LEVEL control is preset to zero

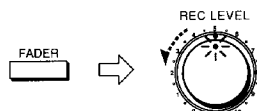
There will be no fade-in or fade-out effect recorded on the tape.

Ending a Recording with Fade-out

The Fade-out function ends a recording with a gradual decrease in the recorded signal.



At the end of a recording, press FADER.



The REC LEVEL control rotates to zero to create a fade-out effect on the tape. After the REC LEVEL control reaches zero, the REC LEVEL control returns to its original position, and a four-second blank is created on the tape.

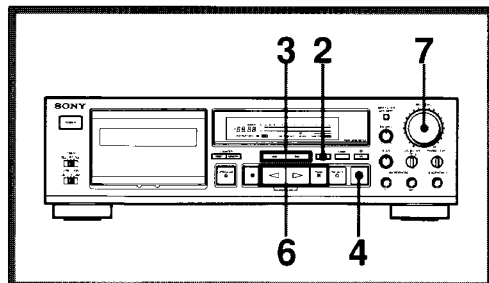
If the REC LEVEL control is preset to ten

The REC LEVEL control may not return exactly to its original position after fade-in or fade-out recording is completed. However, the recording level will be equivalent to the original setting of ten.

Recording with the Just Fade-out System

The Just Fade-out System (JFS) provides a smooth and automatic fade-out at the end of a recording.

Activating the JFS from the start of a tape



1 Perform steps 1 through 3 on page 11 to prepare for recording.

2 Press JFS.  JUST FADE OUT

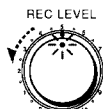
3 Press ◀ or ▶ to rewind the tape to its beginning.
This step must be performed even if the tape is already at its beginning.

4 Press ●.
Press the record button during rewinding of the tape or within 10 seconds after rewinding is completed. The Recording Mute function activates, partially advancing the tape, and the unit enters recording pause mode. (See page 17.)

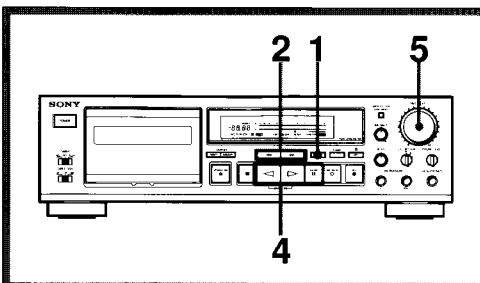
5 Perform steps 5 through 7 on page 11 to adjust the recording level.

6 Press II, ◀ or ▶ to start recording.


7 The JFS activates the fade-out function (the REC LEVEL control rotates to zero) just before the end of the tape.



Activating the JFS from any tape position



1 With the unit in stop mode at the desired position, press JFS.

 JUST FADE OUT

Caution:
Before starting Just Fade-out recording, advance the tape four seconds or more after the end of the previous selection. (If this is not done, Just Fade-out recording may erase the ending portion of the previous selection.)

2 Press ◀ or ▶ to fast wind the tape to its end.

The unit winds the tape to its end, then returns it to its original position. The tape counter indicates the remaining recording time.

- 1:05

3 Perform steps 2 through 7 on page 11.

4 Press II, ◀ or ▶ to start recording.

5 The JFS activates the fade-out function (the REC LEVEL control rotates to zero) just before the end of the tape.



Variations in starting position of fade-out

The position at which the Just Fade-out System activates varies according to the following factors:

- Differences in tape hub diameter
- Looseness in tape winding
- Variations in cassette shape

DIRECTION switch	Direction Indicator	
⏏	▷ ▷	Recording stop at the end of the tape.
⏏	▷	Recording of the opposite side starts with fade-in and automatically ends with fade-out.
⏏	◁	Recording stops at the end of the tape.

Recording

Adjusting the Recording Level Manually

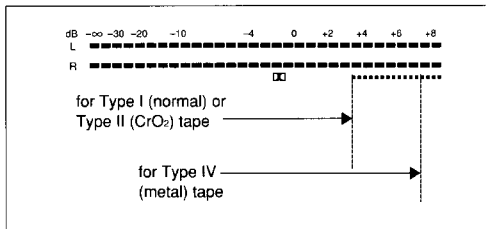
The Automatic Recording Level function may not be able to set the proper recording level in the following cases:

- When the source input contains noise, such as that caused by dust on a record, a record needle, or noise from a radio reception.
- During passages of low-volume sound, such as pianissimos in classical music. If later passages contain high-volume sound, the Automatic Recording Level function should be used to set the recording level for those passages.
- When proper adjustment is not possible due to the high-volume sound produced through the graphic equalizer.

In these cases, manual recording level adjustment is recommended.

To adjust the recording level manually

Adjust the REC LEVEL control as high as possible making sure that the PEAK LEVEL METER reading does not exceed the recommended range for the tape type being used. (See diagram.)



Tips on recording level adjustment

- If the recording level setting is too high, the recording will be distorted; if it is too low, the tape will produce a hissing sound. Therefore, the recording level should be set as high as possible without causing distortion.
- If the program source to be recorded has many high frequency signals, set the level to a relatively low position.

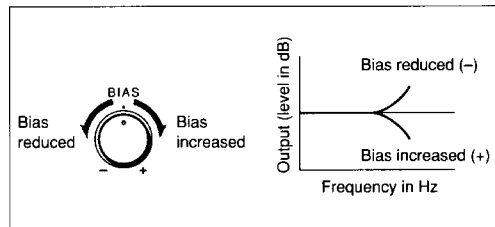
Recording FM Broadcasts with the Dolby NR System

When recording FM broadcasts with the DOLBY NR system, set the MPX FILTER button to ON (the "FILTER" indicator appears).

The MPX filter eliminates remnants of the 19-kHz stereo carrier and 38-kHz subcarrier signals which may impair the operation of the DOLBY NR system. Be sure that the Dolby NR switch is turned on since the MPX filter will not function otherwise. During recording with the Dolby NR system, use this switch only if the tuner is not equipped with its own MPX filter or the equipped filter does not function effectively.

Adjusting the Bias According to the Tape Type

To obtain the optimum frequency response, use the BIAS control to adjust the bias current according to the tape type being used. Reducing the bias boosts high frequencies but increases distortion. Increasing the bias decreases distortion but suppresses high frequencies. Balance the bias according to your listening preference.



Note

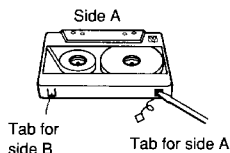
In the case of Type IV cassette tapes, the frequency change for any given bias setting will be minimal.

Recording

To Protect a Recording

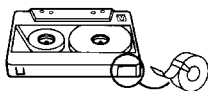
To protect a recording on side A or B

Break out the respective tab.



To recover a cassette for recording

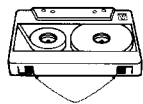
Cover the respective slot with tape.



When using Type II (CrO₂) or Type IV (metal) cassettes

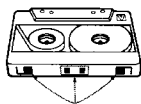
Be careful not to cover the detector slots which are necessary for automatic tape detection.

Type II (CrO₂) cassette



detector slots

Type IV (metal) cassette



detector slots

Cassette care

- Avoid touching the tape surface of a cassette to prevent contamination of the heads by dirt, dust, or oil on the skin.
- Keep cassettes away from equipment with magnets, such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.

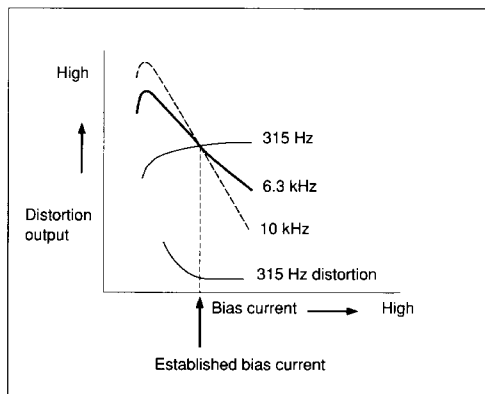
Note on cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous playback.

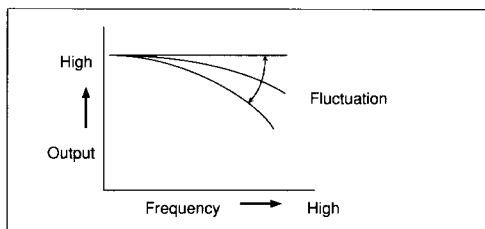
What is the Dolby HX PRO System?

The Dolby HX PRO system provides improved linearity in high-range frequency response during recording. Tapes recorded with this system retain the same high quality even when played back on other tape decks.

As shown below, characteristics such as output level and distortion differ widely according to the bias (high-frequency) current.



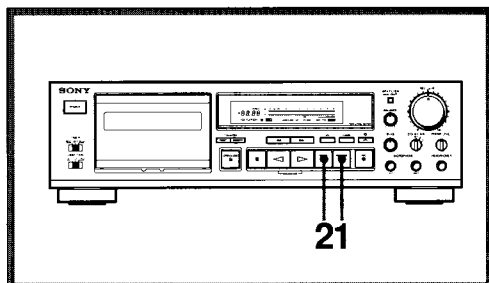
In conventional systems (see diagram below), the bias current is susceptible to variations in certain recording signals which may cause fluctuations in frequency response, distortion, or other unwanted characteristics.




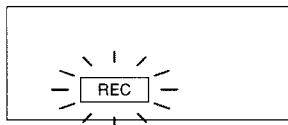
With the Dolby HX PRO system, the effective bias amount added to the bias current is controlled in millisecond units to greatly reduce distortion, improving linearity in high-range response and ensuring high-intensity recording with minimal distortion and noise.

Inserting a Blank Space during Recording — Record Muting


The Record Muting function allows you to insert a four-second blank to enable proper Multi-AMS operation (see page 8), and to replace unwanted input with a blank of any desired length.



- 1 While recording, press  and release it immediately.**




The REC indicator starts to flash. During this time, no incoming signals are recorded on the tape.



After four seconds, the  indicator lights up and the unit enters recording pause mode.


- 2 Press  to resume recording.**



To create a blank longer than four seconds

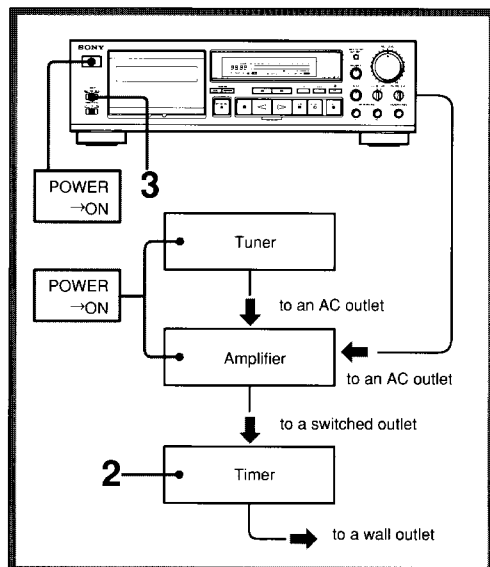
Press the  button for the desired length of time. After four seconds, the REC indicator flashes with greater rapidity.

When you release the  button, the  indicator lights up and the unit goes into recording pause mode.

Press the  button to resume recording.

Timer-Activated Playback and Recording

By connecting an optional timer, recording or playback can be performed automatically at a preset time.



1 Prepare the unit for playback or recording.

For playback	Follow steps 1 through 4 on page 7.
For recording	Follow steps 1 through 7 on page 11.

After completing the preparations, press ■ to change the unit to stop mode.
Make sure to close the holder completely.

2 Set the timer to the desired time.

Power to the tape deck will be cut off.

3 Set TIMER to PLAY or REC.

Playback or recording will start at the preset time.

Keep the POWER switch on the unit on

When the timer is set, the power to the unit will be cut off. However, the POWER switch must be on to start timer-activated operation.

When the timer-activated operation is completed

Set the TIMER switch on the unit to OFF. If the TIMER switch is left at REC, the unit will automatically start recording the next time the power is turned on, and the previously recorded material may be erased.

Automatic recording level adjustment and fade-in during time-activate recording

When the REC LEVEL control is set to zero, the Automatic Recording Level function is automatically activated at the start of time-activated recording. If the optimum recording level is set, then fade-in will automatically be activated when time-activated recording begins.

Maintenance

Cleaning the Heads and Tape Path

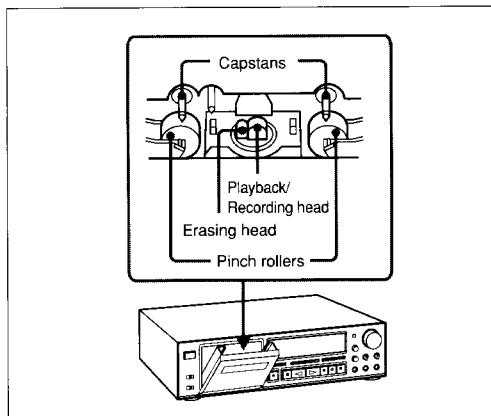
Clean all surfaces over which the tape travels after every ten hours of operation to guard against:

- low-quality sound
- a decrease in sound level
- excessive wow, flutter or drop-out
- incomplete erasure
- impairment of recording function

To obtain high-quality recorded sound, cleaning before every recording is recommended.

- 1** With the unit turned off, hold down **⏻** and press the **POWER** switch. This causes the holder to open, the heads to rise and the pinch rollers to rotate.
- 2** Wipe the heads, the pinch rollers and the capstans with a cotton swab slightly moistened with alcohol or a commercially available cleaning fluid for tape decks.

Clean the entire surface of the pinch rollers and capstans while they are rotating, making sure that the cotton swab does not get caught in the mechanism. Press the **◀** or **▶** button to switch pinch rollers.



- 3** When completed, press **⏻** again.

Do not insert a cassette until the cleaned areas are completely dry.

Demagnetizing the Heads

After 20 to 30 hours of use, or when you notice hiss and/or loss of high frequencies, the residual magnetism built up on the heads should be removed.

- 1** With the unit turned off, hold down **⏻** and press the **POWER** button to open the holder. Confirm that the heads have risen, then press the **POWER** button again.
- 2** Demagnetize the heads with any commercially available demagnetizer.

Note:

A cassette holder that is opened during normal deck operations will close when the power is turned off.

Refer to the instruction manual of the demagnetizer for detailed instructions.

Cleaning the Cabinet

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

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

Specifications

Recording system	4-track 2-channel stereo
Fast winding time	Approx. 90 sec. (with Sony C-60 cassette)
Bias	AC bias
Heads	Erasing head × 1 (ferrite head) Playback/Recording head × 1 (LA head)
Motors	Capstan motor × 1 (DC servo motor) Reel motor × 1 (DC motor) ASIST (mechanical drive) motor × 1 (DC motor)

Signal-to-noise ratio (at peak level)

Cassette (Dolby NR OFF)	Type IV (Sony Metal- Select)	Type II (Sony UX-S)	Type I (Sony HF-S)
	59 dB	58 dB	56 dB

Measured at peak level weighted without NR. The S/N is improved by about 15 dB at 500 Hz and by about 20 dB about 1 kHz with Dolby-C NR on, and by 5 dB at 1 kHz and by 10 dB about 5 kHz with Dolby-B NR on.

Harmonic distortion

0.4% (with Sony Type I, 160 nWb/m, 315 Hz, 3rd H.D.)
1.8% (with Sony Type IV, 250 nWb/m, 315 Hz, 3rd H.D.)

Frequency response (Dolby NR OFF)

Type IV cassette (Sony Metal-Select)	20 - 20,000 Hz (±3 dB, IEC) 30 - 15,000 Hz [±3 dB (-4dB) recording]
Type II cassette (Sony UX-S)	25 - 18,000 Hz (±3 dB, IEC)
Type I cassette (Sony HF-S)	25 - 16,000 Hz (±3 dB, IEC)

Wow and flutter	±0.09% W.Peak (IEC) 0.06% W.RMS (NAB) ±0.16% W.Peak (DIN)
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Inputs

Line inputs (phono jacks)	Sensitivity	0.16 V
	Input impedance	47 kilohms
Microphone inputs (phono jacks)	Sensitivity (For a low-impedance microphone)	0.4 mV

Outputs

Line outputs (phono jacks)	Rated output level	0.5 V at a load impedance of 47 kilohms
	Load impedance	Over 10 kilohms
Headphones (stereo phone jack)	Output level	0 — 3 mW at a load impedance of 32 ohms

General

Power requirements	120 V AC, 60 Hz
Power consumption	20 W
Dimensions	Approx. 430 × 123 × 300 mm (w/h/d) (17 × 4 ⁷ / ₈ × 11 ⁷ / ₈ inches) including projecting parts and controls
Weight	Approx. 4.7 kg (10 lbs 6 oz)

Supplied accessories

Audio connecting cords (2)

Design and specifications are subject to change without notice.

Troubleshooting Guide

The following trouble checks will help you correct the most common problems encountered with your tape deck. Should any problems persist after you have made these checks, consult your nearest Sony dealer.

Before proceeding with these trouble checks, verify that:

- The power cord is firmly connected.
- Amplifier connections are firmly made.
- Heads, capstans and pinch rollers are clean.
- The amplifier controls and switches are set correctly.

Function buttons and tape transport problems

Symptom	Cause	Remedy
The function buttons do not activate.	The cassette holder is not fully closed.	Close the holder completely.
	The cassette is not properly inserted.	Insert cassette correctly.
	Button was pressed immediately after the power was turned on.	Wait until the ■ indicator stops flashing.
Playback or recording begins when the power is turned on.	The TIMER switch is not set to OFF.	Set the TIMER switch to OFF.
The ● button does not activate.	There is no cassette in the holder.	Insert a cassette.
	A tab has been removed from the cassette.	Cover the slot with tape (page 16).
Automatic shut-off mechanism activates before the tape comes to its end.	The tape is slack.	Take up the tape slack.
	The cassette shell is deformed.	Use another cassette.
	The Memory Play function is activated.	Press the MEMORY button to deactivate the function.
Excessively loud tape transport noise during fast winding.	This noise is caused by the cassette and does not signify a mechanical problem.	—
The cassette holder will not close.	There has been a power failure or the power cord has been disconnected while the cassette holder is open.	Reconnect the power.
The ▲ button does not function.	There has been a power failure or the power cord has been disconnected.	Reconnect the power.

(Continued on next page.)

Troubleshooting Guide

(Continued from previous page.)

Recording and playback problems

Symptom	Cause	Remedy
Recording or playback cannot be made or there is a decrease in sound level.	The heads are either dirty or magnetized.	Clean or demagnetize the heads.
	Improper connection.	Make connections properly (page 5).
	Improper setting of the amplifier controls.	Set the amplifier controls to the appropriate positions.
Excessive wow, flutter or drop-out.	The head, capstan or pinch roller is dirty.	Clean in accordance with instructions (page 19).
Incomplete erasure.	The erasing head is dirty.	Clean the erasing head.
Increased noise or poor reproduction in high frequencies.	The head is magnetized.	Demagnetize the head.
Unbalanced tone in high frequencies.	Improper setting of the DOLBY NR switch.	During playing back, set the switch to the same position used in recording.
	The unit is placed near a television set.	Move the unit away from the television set.
The desired selection cannot be located even though you activate the Multi-AMS.	There is noise in the space between selections. The space is less than four seconds long.	Rerecord the tape if you can, and insert a blank space of four seconds using the Q button.
	The ▶▶ (or ◀◀) button was pressed immediately before the beginning of the following selection.	—
Playback begins in the middle of the selection when the Multi-AMS is activated.	The selection contains one of the following: — a long pause in the music — a passage of low frequencies or very low volume — a gradual increase or decrease in volume.	While the tape is playing, press the ▶▶ or ◀◀ button again.

Noise

Symptom	Cause	Remedy
Hum noise.	The unit is stacked on or under the amplifier.	Separate the unit.
Noise is recorded.	The recording was made near equipment such as a television set or a color monitor, and interference has affected the recording on the tape and the Dolby NR system.	Move the unit away from the television set or color monitor.