

Stereo Cassette Deck

Operating Instructions

*TC-WR8ES
TC-WR10ES*

Owner's Record

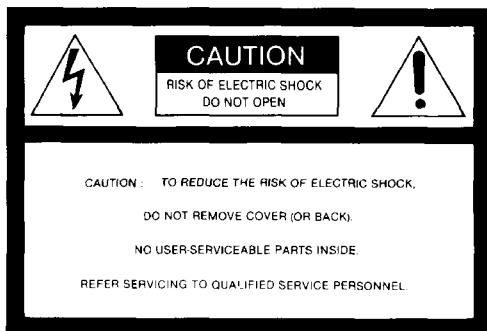
The model and serial numbers are located at the rear.
Record these numbers in the spaces provided below.
Refer to these numbers whenever you call upon your
Sony dealer regarding this product.

Model No. _____

Serial No. _____

WARNING

**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 generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause 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 the receiving antenna

Relocate the equipment with respect to the receiver

Move the equipment away from the receiver

Plug the equipment into a different outlet so that

equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S.

Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

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Features

- **The Dolby HX PRO* system** which improves the linearity of the tape's high-range response during recording.
- **An Easy-to-read digital linear counter** which shows the elapsed recording or playback time for both decks A and B.
- **A relay function** for long recording and playback.
- **Quick reversing** to allow almost continuous playback and recording when switching tape sides.
- **AMS and blank skip functions** which provide easy access to a desired selection.

*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  are trademarks of Dolby Laboratories Licensing Corporation.

Differences between the TC-WR10ES and TC-WR8ES

This instruction manual covers the TC-WR10ES and the TC-WR8ES. The differences between them are:

- The TC-WR8ES has a remote control switch on the rear panel and the TC-WR10ES does not.
 - The TC-WR10ES records on both deck A and deck B while the TC-WR8ES records on deck B only.
 - The TC-WR10ES has an A+B REC button and the TC-WR8ES does not.
 - The TC-WR8ES has an AUTO PAUSE button and the TC-WR10ES does not.
- The illustrations used in the manual are of the TC-WR10ES.

Precautions

On safety

- Operate the unit on 120 V AC, 60 Hz only.
- Should anything 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.

On operation

- When the unit is not being 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, or if a cassette has been incorrectly inserted into the cassette holder.

On head cleaning

The heads and tape path should be cleaned after every 10 hours of operation. Dirty heads and a dirty tape path may cause:

- Loss of high frequency response
- Loss of sound volume
- Sound drop-out

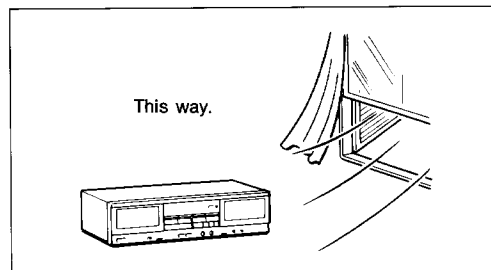
If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

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

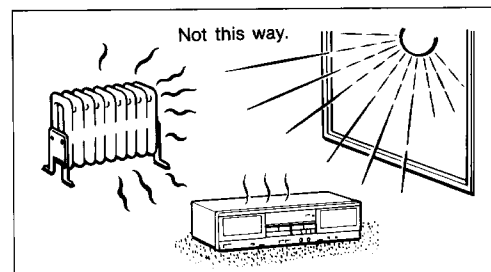
Installation

Notes on Installation

Place the unit in a location with adequate air circulation to prevent internal heat build-up in the unit.



Do not place the unit on a soft surface, such as a rug that would block the ventilation holes on the bottom.



Install the unit with the front panel facing toward you.

Do not install the unit:

- near heat sources such as radiators or air ducts.
- in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- in an inclined position.

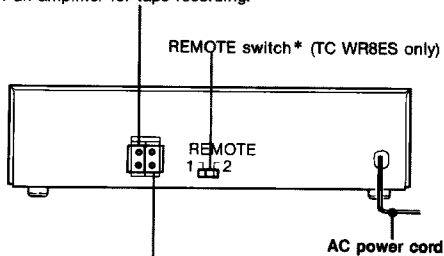
Do not throw away the carton and the packing material!

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

Connections

Identification of Rear Panel Parts

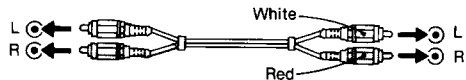
LINE IN (line input) jacks (phono jacks)
Connect to the tape outputs (recording outputs) of an amplifier for tape recording.



LINE OUT (line output) jacks (phono jacks)
Connect to the tape inputs of an amplifier for playback.

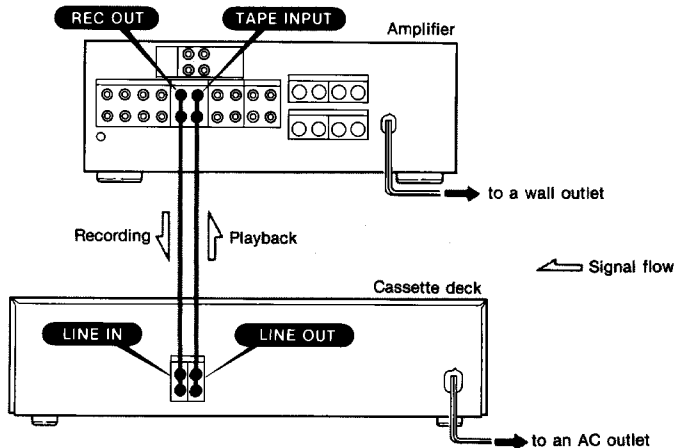
Notes on Connections

- Turn off the power to all equipment 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 pick-up.

Basic Connection



*REMOTE switch (TC-WR8ES only)

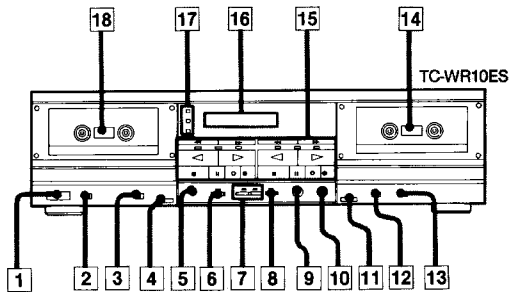
If you have a remote commander supplied with a Sony receiver or amplifier, you can control both decks by using the A/B deck selector.

However, if your commander is not equipped with an A/B deck selector and controls only deck A, setting this switch will allow you to control both decks.

To do this, first **turn the power off**, then set the switch to REMOTE 2. Under this setting, the commander controls the deck in which a cassette is loaded. If both decks are loaded, it controls only deck B.

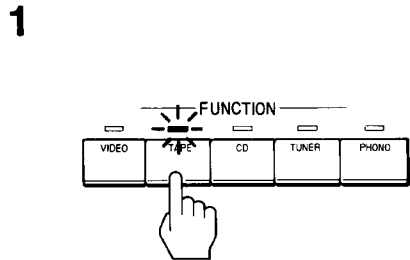
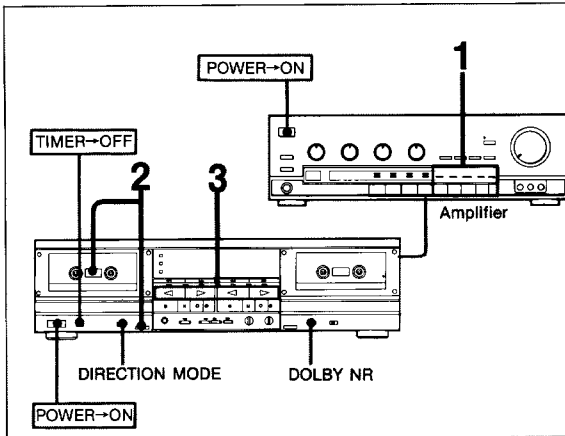
Identification of Front Panel Parts

Refer to the pages indicated in ● for details.



- 1 **POWER switch**
- 2 **TIMER switch** (used with deck A or B on TC-WR10ES, or with deck B on the TC-WR8ES) 20
- 3 **DIRECTION MODE selector** 6, 12, 16
- 4 **▲ (eject) button** (deck A)
- 5 **HEADPHONES jack** (stereo phone jack)
- 6 **AMS (Automatic music sensor)/BLANK SKIP button and indicator** 1
- 7 **SYNCHRO DUBBING buttons and indicators** 16
HIGH SPEED/NORMAL SPEED
- 8 **AUTO PAUSE button and indicator** 16 (TC-WR8ES only)
A + B REC (simultaneous recording) button and indicator 16 (TC-WR10ES only)

Playback (On Either Deck A or B)



How to select the DIRECTION MODE

To play back one side, select ◀ ▶.

To play back both sides continuously*, select ◀ ▶.

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

The tape type is automatically detected by the automatic tape type detection system during playback or recording.

When both decks A and B are in the playback mode

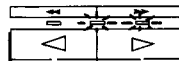
Only playback from deck A will be audible.

Cassette side being played back

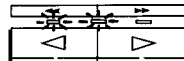
A direction mode indicator (above the ◀ or ▶ button)

illuminates to indicate the side of the cassette being played back or recorded.

Front side



Reverse side



9 BALANCE control ⑩

Adjusts the balance of right and left channel during recording

10 REC LEVEL (recording level) control ⑪

11 ▲ (eject) button (deck B)

12 DOLBY NR switch ⑫, ⑬, ⑭

13 MPX FILTER (Multiplex Filter) switch ⑮

14 Cassette holder (deck B)

15 Tape operation buttons and direction mode indicators

- ◀◀ (leftward fast winding) button
- ▶▶ (rightward fast winding) button
- ▶ (forward play) button
- ◀ (reverse play) button
- (stop) button

⏸ (pause) button and indicator
(deck B only on TC-WR8ES)

○ REC MUTE (record muting) button
(deck B only on TC-WR8ES)



● REC (record) button and indicator
(deck B only on TC-WR8ES)

16 PEAK LEVEL METER and LINEAR counter ⑯

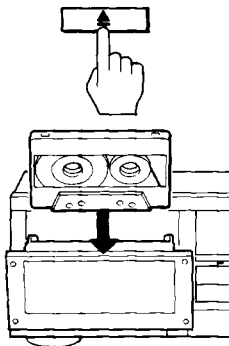
17 COUNTER buttons ⑰
RESET/MEMORY/A/B

18 Cassette holder (deck A)

You can control this cassette deck remotely with:

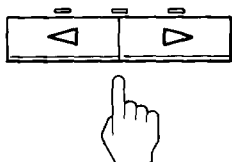
- Any remote commander (supplied with a Sony amplifier or receiver) which is marked with the  logo and has cassette deck control capability.
- An optional Sony remote commander with the  logo.

2



3

From the front side: ▶▶
From the reverse side: ◀◀



To stop playback, press ■.

To stop for a moment during play (deck B only on TC-WR8ES), press ⏸.

To restart play, press ⏸ again.

The TIMER switch must be set to OFF because:




The TIMER switch prepares the system for the timer recording and playback using an optional timer. If it is not set to OFF, recording or playback will start automatically when the power is turned on.

How to use the DOLBY NR switch

Set the DOLBY NR switch to the same system that was used when the cassette was recorded.

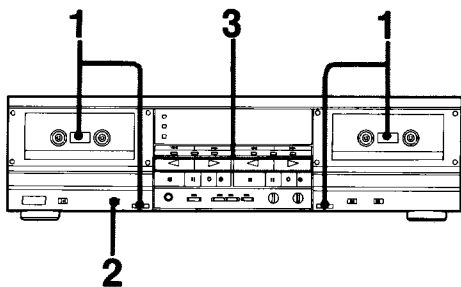
What is the Dolby NR system?

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

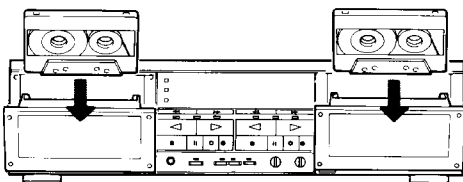
Dolby NR system	Switch setting
B type	
C type	
OFF	

Playback (On Either Deck A or B)

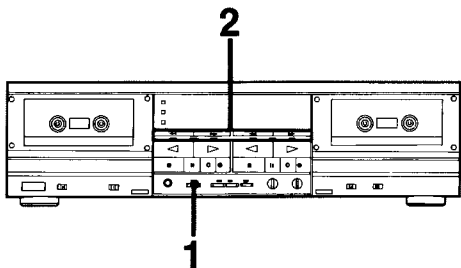
Playing Back Both Decks in Succession (from Deck A to B or Vice Versa)—Relay play



1



Locating the beginning of a selection during playback—Automatic music sensor (AMS)



1



To play back more than two cassettes in succession

Replacing cassettes that have finished playing with new ones allows you to play back two or more cassettes alternately on each deck.

What is the AMS?

It detects the blank space between selections and locates the beginning of a selection during playback. To assure correct operation of the AMS, there must be a blank of 4 seconds or longer between selections.

If the ►► or ◀◀ button is pressed immediately before the following selection

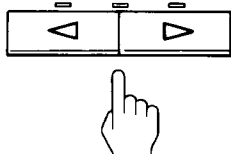
The AMS may skip the next selection and locate the beginning of the one which follows it.

2



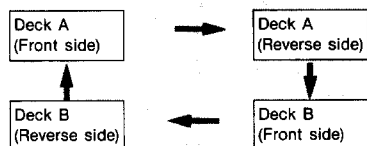
3

From the front side: ►
From the reverse side: ◄



Playback sequence of relay play

Relay play follows the sequence below regardless of where playback starts.

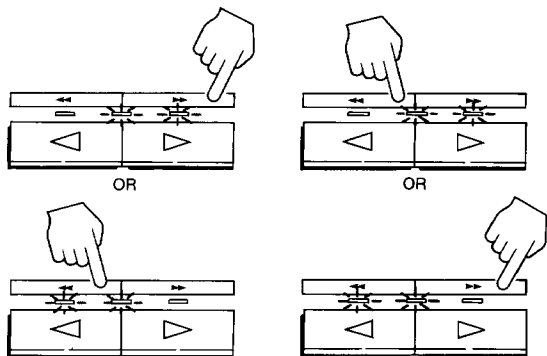


To stop relay play, press ■ of the deck playing.

2

Next selection

Selection being played



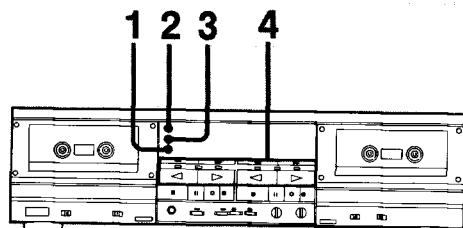
The AMS does not function on both decks simultaneously

- The AMS is activated for the deck whose ►► or ◄◄ button is pressed first. Pressing the ►► or ◄◄ button on the other deck afterwards merely activates fast winding on that deck.
 - If the AMS is activated for deck B during playback on deck A, deck B fast winds to the beginning of the selection and stops.
- If the AMS is activated for deck A during playback on deck B, deck A fast winds to the beginning of the selection and begins playback. The sound from deck B will be cut off when playback begins on deck A.

The 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
- Should the above exist, press AMS/BLANK SKIP to deactivate the AMS.

Locating a Desired Position using the Counter—Memory Play



1

Select deck.

COUNTER

☐ RESET

☐ MEMORY

☐ A/B



A

OR

B

2

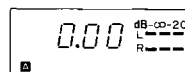
At the desired position:

COUNTER

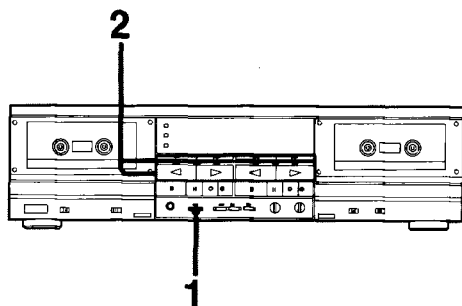
☐ RESET

☐ MEMORY

☐ A/B



Starting Playback Automatically after Fast Winding—Auto Play



1

Check that the AMS/BLANK SKIP function is deactivated.

If the AMS/BLANK SKIP indicator is on, press the button to deactivate the function.

2

You can automatically start playback from the beginning following fast winding.

From the beginning of the front side, press ► while keeping ◀◀ pressed.

From the beginning of the reverse side, press ◀ while keeping ►► pressed.

Do not turn the power off while using the counter

Turning the power off and then on again resets the counter to 0.00 and changes the counter display to that of deck A (deck B on the TC-WR8ES).

When you press only the ◀◀ or ►► button to locate a desired position

The tape will be rewound and the unit will stop at around 0000 (Memory stop).

The numbers of the counter do not move at a constant speed

They move faster as the amount of tape on the left reel decreases.

The counter may become inaccurate

—If the tape has any slack
—due to frequent fast winding mode repeatedly.

Select the tape counter display for the deck to be used

Memory play or memory stop functions only for the deck whose reading is displayed on the counter.

3

COUNTER

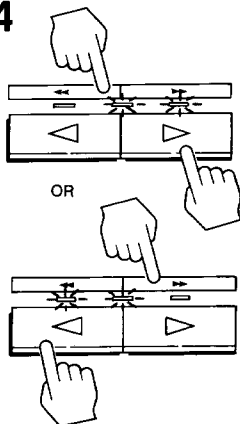
☐ RESET

☐ MEMORY

☐ A/B

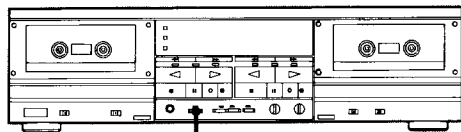


4



The tape will be rewound to around 0.00 and playback will start.

Skipping a Blank—Blank Skip



AMS/BLANK SKIP

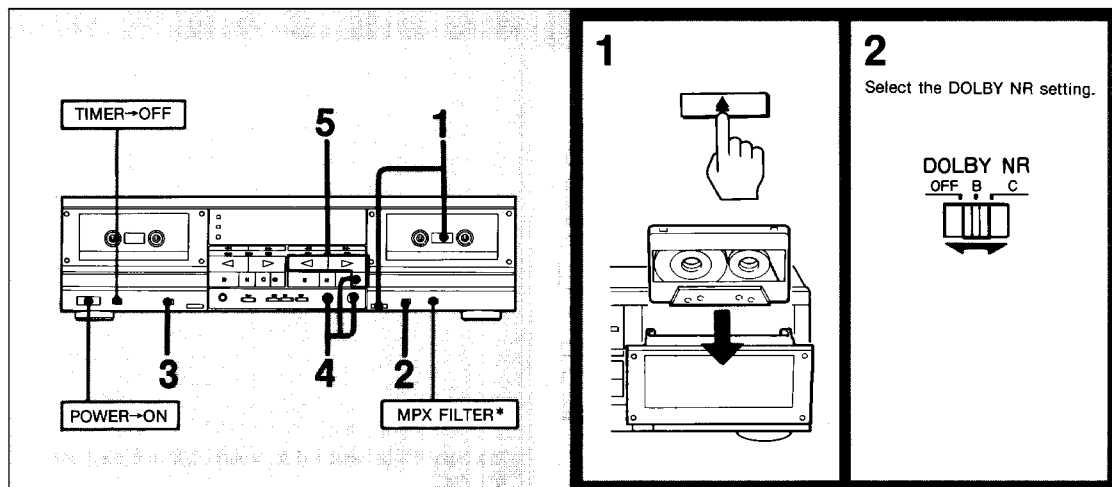
Press AMS/BLANK SKIP to illuminate its indicator.

The unit automatically starts fast winding when it encounters a blank of approx. 10 seconds or more. Playback begins when a new selection is detected.

If playback starts in the middle of a tape when you try to do auto play

The AMS or Memory function is activated (the AMS/BLANK SKIP or MEMORY indicator is on). Press AMS/BLANK SKIP or MEMORY to deactivate the function.


Recording (On Deck B Only for TC-WR8ES / On Either Deck A or B





How to use the DOLBY NR switch (Step 2)

See page 7.

How to select DIRECTION MODE (Step 3)



To record on one side, select .

To record on one side and then the other, select .






Even at the  position, recording automatically stops when the tape reaches the end of the reverse side.

To start recording (Step 5)


To start recording from the front side, press  while keeping  pressed.

To start recording from the reverse side, press  while keeping  pressed.

How to start recording more precisely

- 1 Press .
- 2 Press  or , keeping  pressed.
- 3 Press  again at the desired point.

Recording is possible only on the side(s) indicated by a blinking indicator

If a cassette tab has been removed to prevent accidental erasure, the indicator for that side will not blink when  is pressed. Instead, the deck will start playing back.

Note

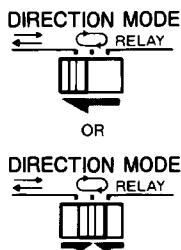
Playback from deck A is not output while deck B is in the recording mode.

*Using the MPX filter to record FM broadcasts

When recording FM broadcasts with the Dolby NR system, set the MPX FILTER switch to ON. This turns on the MPX filter which 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. Note that the MPX FILTER switch must be turned on only when the tuner is not equipped with its own MPX filter or the equipped filter still results in sound degradation during recording with the Dolby NR system.

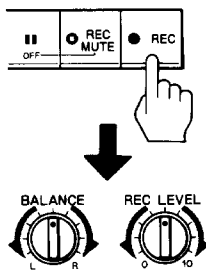
3

Select the side(s) to be recorded.



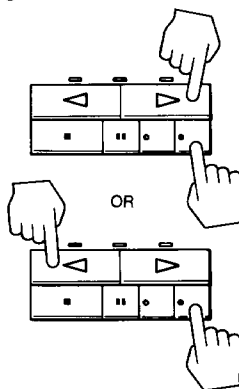
4

Press the REC button on deck B (or deck A on the TC-WR10ES)



See "Recording Level Adjustment".

5

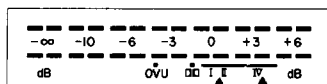


To stop recording, press ■.

Recording Level Adjustment

Adjust the recording level according to the tape type by observing the PEAK LEVEL METER and referring to the diagram below.

Recommended maximum PEAK LEVEL METER reading



For TYPE I (normal) or TYPE II (CrO₂) tape
For TYPE IV (metal) tape

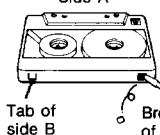
Tips on recording level adjustment

- Adjust the recording level as high as possible without causing distortion in the recorded sound. 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.
- If the program source to be recorded has many high frequency signals, set the level to a relatively low position.

Notes on Cassettes

To protect side A recording

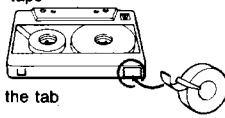
Side A



Break out the tab of side A.

To reuse a cassette

Cover each slot with plastic 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 type detection on both decks.

TYPE II (CrO₂)



Detector slots

TYPE IV (metal)



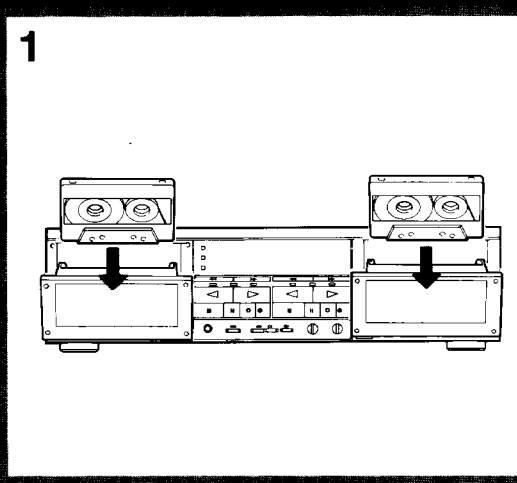
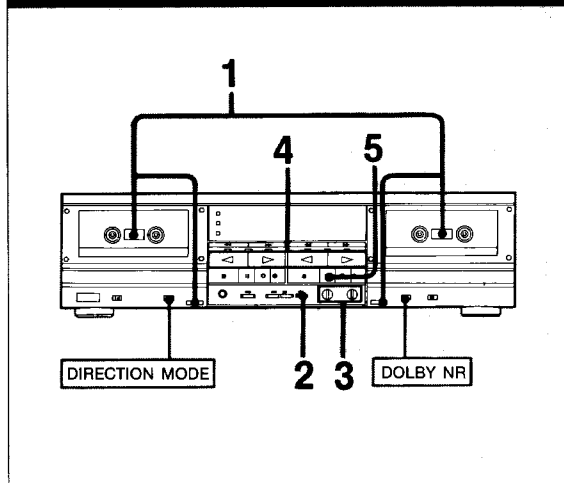
Detector slots

Cassettes exceeding 90 minutes are not recommended except when necessary for long continuous recording and playback. Cassettes exceeding 90 minutes use extremely thin tape which tangles easily when the tape transport is stopped and started frequently.

Cassette care

- Avoid touching the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- 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.

Recording the Same Source on Both Decks A and B—Simultaneous Recording (For TC-WR10ES only)



If the A + B REC indicator blinks three times

A tab is missing for one of the sides to be recorded on a cassette in one of the decks.

Verify which tab is missing and cover the slot with tape.


Is it necessary to set the tape type being used?

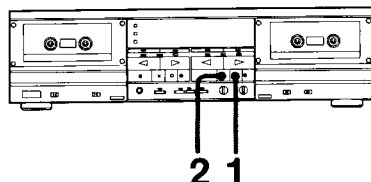
No. Because the deck has an automatic tape type detection system. Of the four major types of tapes, your unit can use TYPE I (normal), TYPE II (CrO₂) and IV (metal). The tape detection system automatically adjusts the equalization and bias current to the optimum level for the type of cassette detected.

The characteristics of cassettes may differ slightly depending on the make or grade. The following table shows the classification of Sony cassette tape:

Tape type	Tapes (C30—C90)
TYPE I (Normal)	SONY: EF, HF, HF-S, HF-ES Others TYPE I equivalent tapes (For 120 μ s EQ, NORMAL BIAS)
TYPE II (CrO ₂)	SONY: UX, UX-S, UX-ES, UX-PRO Other TYPE II equivalent tapes (For 70 μ s EQ, HIGH BIAS)
TYPE IV (Metal)	SONY: METAL-ES Other TYPE IV equivalent tapes (For 70 μ s EQ, METAL BIAS)


Inserting Blank Space during Recording—Record Muting

Using the  button during recording, you can insert a blank space on the tape to help you locate a selection (AMS function, see page 8). In addition, this function enables you to eliminate unwanted input by replacing it with a blank space.





1 While recording, press .

If you want the blank to be four seconds long, press and release the button immediately.

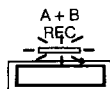
The  indicator flickers and no incoming signals will be recorded on the tape.

The tape then stops automatically and the indicator will light up.

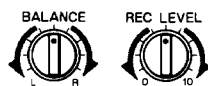
If you want the blank to be longer, keep pressing for as long as you want. After four seconds, the  indicator will flicker more rapidly. When you release , the unit will change to the pause mode.

2 Press to resume recording.

2



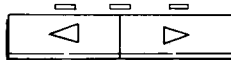
3



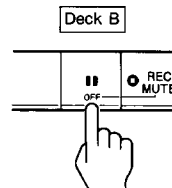
See "Recording Level Adjustment" on page 13.

4

From the front side: ►
From the reverse side: ◄



5

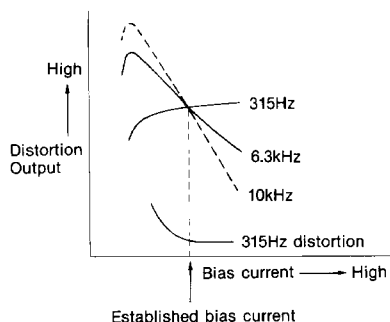


Recording begins.

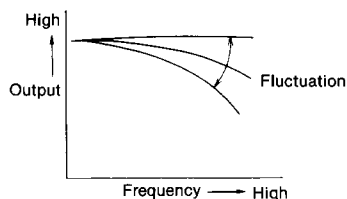
To stop simultaneous recording,
press ■ on both decks.

What is the Dolby HX PRO System?

This 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.

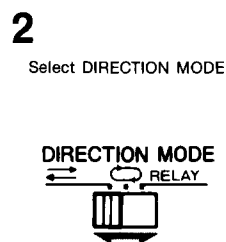
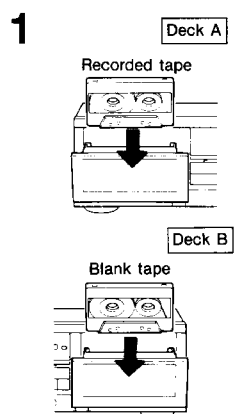
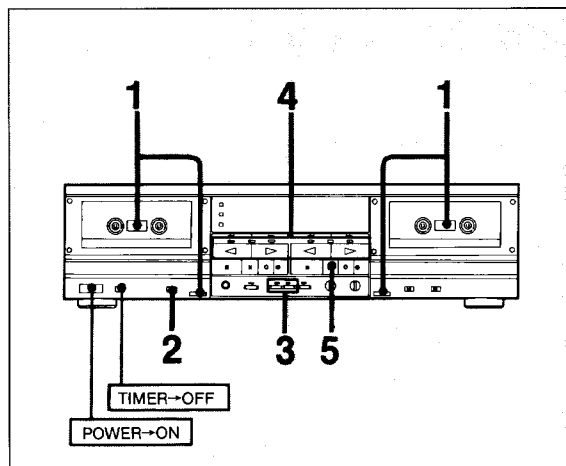


As shown above, characteristics such as output level and distortion differ widely according to the bias (high-frequency) current. In conventional systems, the bias current is susceptible to variations in certain recording signals (see diagram below) which may cause fluctuations in frequency response, distortion, or other unwanted characteristics.



With the Dolby HX PRO System, the effective bias 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.

Tape Dubbing (from Deck A to Deck B)



How to select DIRECTION MODE (Step 2)

To dub on one side of the cassette:

To dub on both sides of a cassette:

Dubbing of the reverse side starts independently of deck A:



Dubbing of the reverse side starts simultaneously with deck A:

RELAY

Is it necessary to adjust the recording level and select the Dolby NR system?

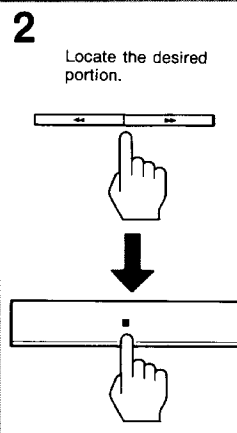
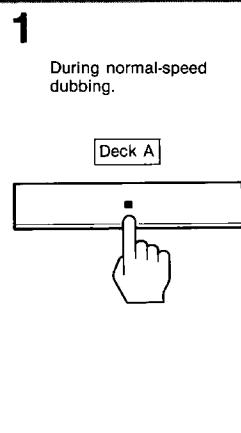
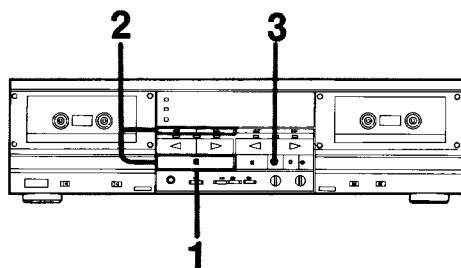
No. Because, the tape in deck B is recorded with the same recording level and Dolby noise reduction system as the original tape in deck A.

During high-speed dubbing

Only the button is operative.

Dubbing only Desired Portions

Possible only during normal-speed dubbing.



To insert a 4-second blank space between selections

Press during recording on deck B.

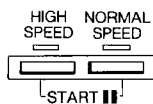
To dub using the blank skip function

Press the AMS/BLANK SKIP button during normal-speed dubbing. When the deck A detects a blank of more than 10 seconds long, it skips to the beginning of the next selection and then resumes playback. During this time, deck B rewinds to make a blank of 5 seconds and resumes recording when playback on deck A resumes.

3

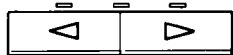
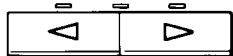
Select dubbing speed.

SYNCHRO DUBBING

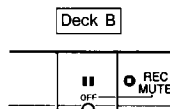


4

Select the side to be dubbed. (Both decks)



5



Dubbing starts.

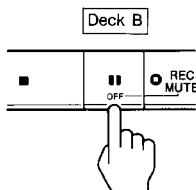
To stop dubbing
During normal-speed dubbing, press ■ on deck B.

During high-speed dubbing, press ■ on either deck A or B.

If the indicator on either the NORMAL or HIGH SPEED button blinks three times

Either one or both tabs of the cassette inserted into deck B have been removed, making dubbing impossible for that side. Cover the slot(s) with plastic tape (see page 13).

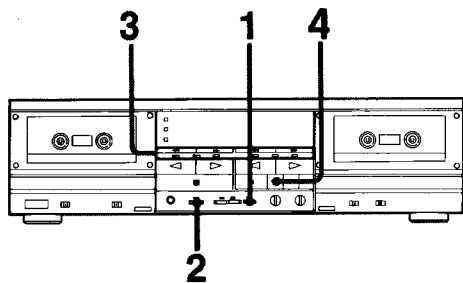
3



Dubbing begins again.

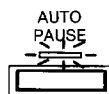
Dubbing only Desired Selections (For TC-WR8ES only)

This is possible only during normal-speed dubbing.



1

During normal speed dubbing



Each time one playback selection on deck A ends, deck A stops and deck B enters the recording pause mode.

2



The auto pause function may not operate

- If there is noise in the space between the selections.
- If the space is less than four seconds long.

To release the auto pause mode

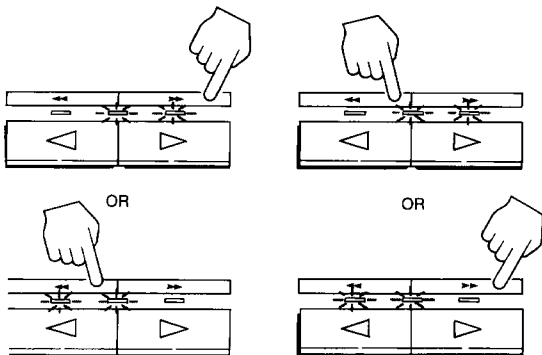
Press AUTO PAUSE again.

3

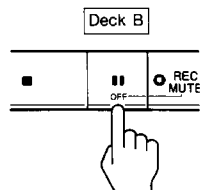
Locate the desired portion.

Next Selection

Selection being played

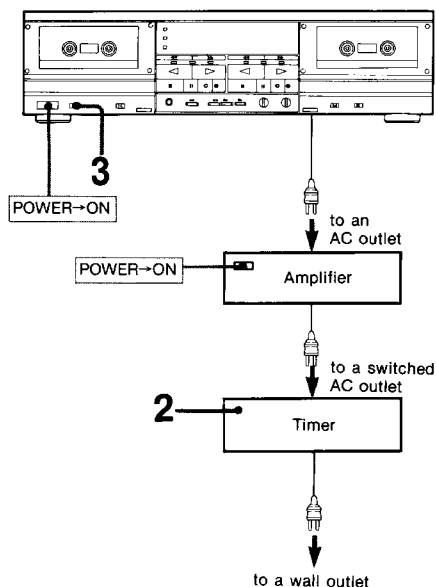


4



Dubbing begins again.

Timer-Activated Playback and Recording



By connecting a commercially available timer, automatic recording or playback can be performed at a preset time.

1 Prepare the equipment for playback or recording

To play back	Set the amplifier's input selector to tape monitor. For single deck playback, insert a cassette in deck B. For relay play, insert cassettes in both decks and set DIRECTION MODE selector to RELAY.
To record	Perform steps 1 through 4 on page 12.

2 Set the timer to the desired time.

The power of the deck will be cut off.

3 Set the deck's TIMER switch to PLAY or REC.

	Direction	TC-WR8ES	TC-WR10ES
TIMER REC	→	One side is recorded on deck B only.	One side A is recorded on both decks A and B.
	↻	Two sides are recorded on deck B only	Two sides are recorded on both decks A and B.
	RELAY		Relay recording is performed of two sides on deck A, followed by two sides on deck B.
TIMER PLAY	→	One side is played back on deck B only.	One side is played back on deck A only.
	↻	Two sides are played back on deck B only.	Two sides are played back on deck A only.
	RELAY	Relay playback is performed of two sides on deck B, followed by two sides on deck A.	Relay playback is performed of two sides on deck A, followed by two sides on deck B.

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 enter the recording mode the next time the power is turned on and the previously recorded material may be erased.

Keep the POWER switch depressed on the tape deck

When the timer is set, the power of the deck will be cut off. However, you must leave the POWER switch depressed on to enable the timer-activated operation.

Check the direction mode indicators

Timer-activated operations start from the side of the cassette being used when the power was turned off.

For single deck playback, use deck B.

Deck A alone cannot be used for timer-activated playback.

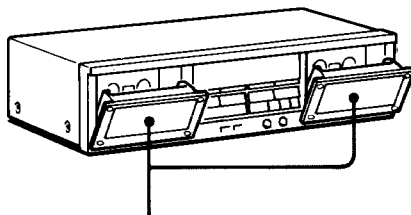
Maintenance

Cleaning the Heads and Tape Path (both decks)

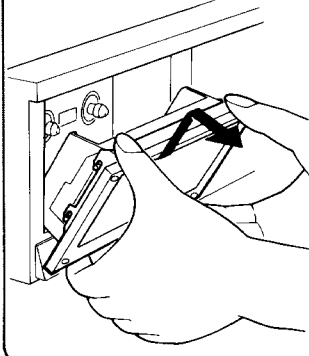
Clean all surfaces over which the tape travels after every 10 hours of operation. Otherwise, the following symptoms might appear.

- low quality sound
- a decrease in sound level
- excessive wow, flutter or dropout
- incomplete erasure
- recording cannot be made

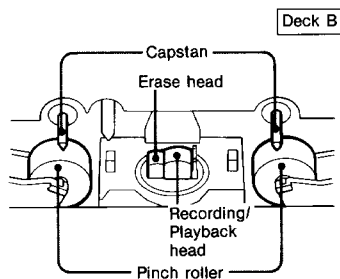
To obtain high quality recording sound, cleaning before every recording is recommended.



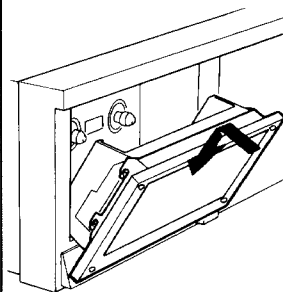
1 Press Δ to open the cassette holder and remove it.



2 Wipe the heads, the pinch rollers and the capstans with a cleaning tip slightly moistened with tape cleaning fluid or alcohol.



3 Replace the cassette holder.



Demagnetizing the Heads (both decks)

After 20 or 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 Turn off POWER.

2 Demagnetize the heads with any commercially available demagnetizer.
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.

Important

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

Specifications

Recording system

4-track 2-channel stereo

Fast winding time

Approx. 90 sec. (with C-60 cassette)

Bias AC Bias

Signal-to-noise ratio (NAB, at peak level)

Cassette	Dolby NR switch		
	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UX-S)	57 dB	64 dB	70 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion

1.0 % (with Sony METAL-ES cassettes)

Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	20–20,000 Hz (±3 dB) 30–15,000 Hz (OVU recording)
TYPE II cassette (Sony UX-S)	30–17,000 Hz (±3 dB)
TYPE I cassette (Sony HF-S)	30–15,000 Hz (±3 dB)

Wow and flutter 0.09% WRMS (NAB)

Inputs

Line inputs (phono jacks)	Sensitivity	77.5 mV (–20 dB)
	Input impedance	50k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0.44 V (–5 dB) at a load impedance 47k ohms
	Load impedance	Over 10k ohms
Headphone output (stereo phone jack)	Output level	–28 dB at 8 ohms

General

Power requirements

120 V AC, 60 Hz

Power consumption

28 W (TC-WR8ES), 30W (TC-WR10ES)

Dimensions

Approx. 430 × 118 × 275 mm (w/h/d)
(17 × 4³/₄ × 10⁷/₈ inches)

Weight

including projecting parts and controls
Approx. 4.6 kg (10 lbs 3 oz)

Supplied accessory

Audio connecting cord (2)

Design and specifications 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, first check these basic points:

- 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
Function buttons do not activate.	Cassette holder is not fully closed.	Close the holder completely.
● button does not activate.	No cassette in the holder.	Insert a cassette.
	Tab has been removed from the cassette.	Cover the hole with plastic tape. (page 13)
Automatic shut-off mechanism activates before the tape comes to its end.	Tape is slack.	Take up the tape slack.
	Cassette shell is deformed.	Use another cassette.
	The inside of the cassette holder is illuminated by strong light.	Remove the light source.
Excessively loud tape transport noise during fast winding	This depends on the cassette used and is not a problem.	—

Recording and playback problems

Symptom	Cause	Remedy
Auto reverse function does not operate.	DIRECTION MODE selector is set to  .	Set DIRECTION MODE to  .
Recording or playback cannot be made or there is a decrease in sound level.	Record/playback and erase 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 dropout	Head, capstan or pinch roller is dirty.	Clean in accordance with instructions shown on page 21.
Incomplete erasure	Erase head is dirty.	Clean the erase head.
Increased noise or poor reproduction in high frequencies	Head is magnetized.	Demagnetize the head.
Unbalanced tone in high frequencies	Improper setting of the DOLBY NR switch.	When 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 if you activate the AMS.	There is noise in the space between selections.	—
	The space is less than 4 seconds long.	Press  to insert a longer blank space.
	The  or  button is pressed immediately before or after the beginning of the following selection.	—
Playback or fast winding may begin in the middle of the selection when AMS or blank skip is activated.	The following will be treated as blanks: —a long pause in the music —a passage of low frequencies or very low volume —gradual increase or decrease in volume	—

Noise

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