

Digital Audio Tape Deck

Operating Instructions

EN

Mode d'emploi

F

Bedienungsanleitung

D

DAT
Digital Audio Tape

SBMTM
Super Bit Mapping

PCM-R500
PCM-R700

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.

For the customers in the United States



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.

Owner's Record

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

Model No. PCM-R500/PCM-R700
Serial No. _____

INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

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

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

CAUTION

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.

Voor de klanten in Nederland

Bij dit produkt zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

VARNING



Explosionsfara vid felaktigt batteritype. Använd samma batterityp eller en ekvivalent typ som rekommenderas av

apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri. Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten. Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

Welcome!

Thank you for purchasing the Sony Digital Audio Tape Deck. Before operating the unit, please read this manual thoroughly and retain it for future reference.

The PCM-R500 and PCM-R700 have the following common and distinguishing features.

Common features

- 4DD (Direct Drive) motor mechanism.
- SBM (Super Bit Mapping) function (during analog recording).
- Support for three sampling frequencies (48 kHz, 44.1 kHz, 32 kHz).
- Installable in a 19-inch rack.
- Analog balanced XLR in/out jacks.
- Professional-use AES/EBU digital interface.
- Connectors for parallel and serial remote control.
- Easy menu operations using the SHUTTLE and DATA dials.
- Mark & Locate function.
- Independent REC LEVEL controls for left and right channels for analog signals.

PCM-R700

- Four heads to allow monitoring of the recorded sound during recording.
- Fade-in/out recording and playback function.
- Key Protect function.

Additional functions (with the optional remote only)

RMS play, Music Scan, and writing and erasing of an end ID are available. For details, see pages 26 and 27.

About This Manual

The instructions in this manual are for models PCM-R500 and PCM-R700. All illustrations in this manual show the PCM-R500 unless the illustration is indicated as that of PCM-R700.

Conventions

- Controls in the instructions are those on the deck; these may, however, be substituted by controls on the remote that are similarly named or, when different, appear in the instructions within brackets.
- The following icon is used in this manual:



Indicates useful information or tips that make a task easier.

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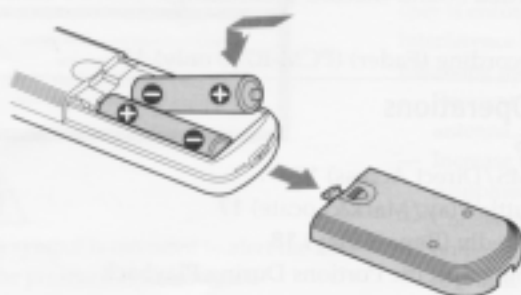
Unpacking

Check that you have received the following supplied items:

- AC power cord (1)
- Remote commander (remote) RM-D757 (1)
- Size-AA (R6) batteries (2)
- Screws (M5×12) (4)
- Decorative washers (4)
- Operating instructions (1)

Inserting batteries into the remote

Insert two size-AA(R6) batteries, matching the + and - on the batteries with the markings inside the battery compartment.



Before using the remote

Set REMOTE on the front panel to WIRELESS.



When to replace the batteries

With normal use, batteries should last for about 6 months. When the remote no longer operates the deck, replace both batteries.

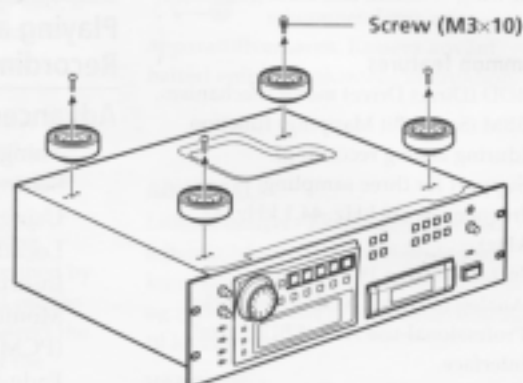
Notes

- Do not leave the remote near an extremely hot or humid place.
- Do not drop any foreign matter into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct sunlight or illumination as doing so may cause malfunction.
- When not using the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

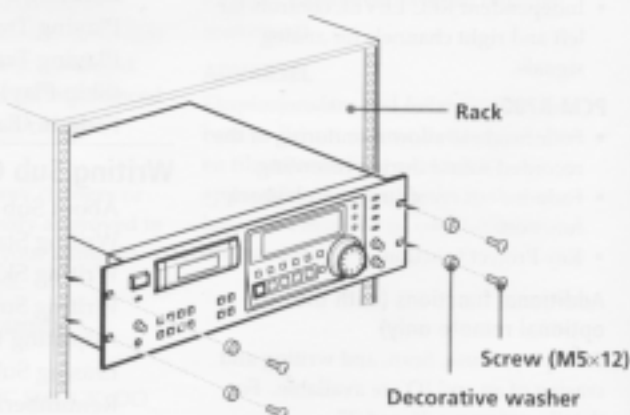
Rack Mounting

You can install your deck in a 19-inch 3U-size rack. Be sure to disconnect the deck from the wall outlet before you install it.

- 1 Remove the four feet from the deck.



- 2 Insert the deck into the rack and secure it with the supplied decorative washers and screws (M5×12).

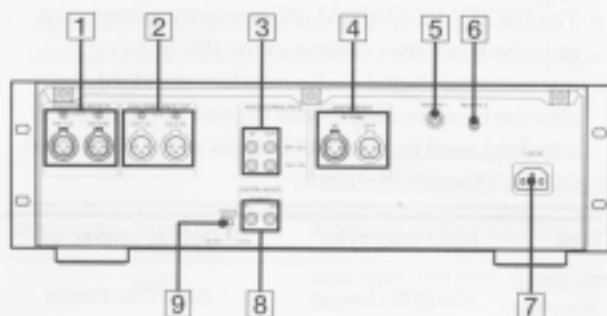


Note

Do not reattach the screws directly after removing the four feet. Put the screws and the feet in a safe place for reattachment in the future. Using longer or shorter screws may damage the internal circuit board.

Hooking Up the System

This section describes how to hook up your deck to an amplifier, stereo mixer, or other digital audio components. Be sure to turn off the power to each component before making the connections.



- 1 ANALOG(BALANCE) IN connectors/
ANALOG(BALANCE) IN LEVEL controls
- 2 ANALOG(BALANCE) OUT connectors/
ANALOG(BALANCE) OUT LEVEL controls
- 3 ANALOG(UNBALANCE) IN/OUT connectors
- 4 DIGITAL AES/EBU IN/OUT connectors
- 5 REMOTE 1 connector (For parallel remote)
- 6 REMOTE 2 connector (For serial remote)
- 7 AC IN socket
- 8 DIGITAL COAXIAL IN/OUT connectors
- 9 DIGITAL IN/OUT switch

Analog connections

For connections through the ANALOG(BALANCE) IN/OUT connectors

Use XLR balanced cables.

ANALOG(BALANCE) IN/OUT pin polarity



The analog input/output reference level adjustment

The analog input/output reference level during recording or playback is factory set to +4 dBs within a range of -20 dB to the full bit level for both input and output.

To lower the reference level, use a screwdriver to adjust the ANALOG(BALANCE) IN/OUT LEVEL controls on the rear panel for both CH-1 (L) and CH-2 (R). You can adjust the reference level in a range of +4 dBs to -12 dBs. Make sure to set the REC LEVEL CH-1(L)/2(R) controls on the front panel to the center point before making this adjustment.

For connections through the ANALOG(UNBALANCE) IN/OUT connectors

Use phono-plug audio connecting cords.

Digital connections

Use the DIGITAL IN/OUT switch on the rear panel to select the input/output connectors for digital signals. Set the switch to AES/EBU to select the DIGITAL AES/EBU IN/OUT connectors; set it to COAXIAL to select the DIGITAL COAXIAL IN/OUT connectors.

For connections through the DIGITAL AES/EBU IN/OUT connectors

Use XLR balanced cables for digital connections.

AES/EBU IN/OUT pin polarity



For connections through the DIGITAL COAXIAL IN/OUT connectors

Use coaxial digital connecting cords.

Other connections

To connect a switch box through the REMOTE 1 connector

Refer to "Remote Control Function Using a Parallel Remote Connector" on page 28.

To connect the optional remote through the REMOTE 2 connector

Refer to "The Optional Remote RM-D750" on page 26.

Connecting AC power cord

Connect the AC power cord (supplied) to the AC IN socket on the rear panel and connect the plug on the other end to a wall outlet.

Where do I go next?

Now you're ready to use your deck.

For basic operations, go to pages 9 to 11; for advanced operations, go to pages after 12.

Digital Interface

Digital input and output connectors

- The following table shows signal formats that correspond to the input and output connectors on the deck.
- The DIGITAL COAXIAL IN connector accepts not only the consumer version of the IEC-958 international digital audio interface standard, but also the broadcasting studio version of the IEC-958 standard used by such DAT decks as the PCM-2300, PCM-2700 or PCM-2700A.

Type	Input connector	Output connector
DIGITAL AES/EBU	AES/EBU format	AES/EBU format
DIGITAL COAXIAL	IEC-958 for consumer use IEC-958 for broadcasting studio use	IEC-958 for consumer use

Copy information during recording

- Copy information that is recorded on tape during recording varies according to the input connector used and the signal format, as shown in the table below.
- In the case of AES/EBU and the IEC-958 for broadcasting studio use, the digital signal carries no copy information.
- As for the IEC-958 for consumer use, three types of copy information exists: copying possible, first-generation copy permitted, and copying prohibited (Serial Copy Management System).

Input connector	Signal format	Copy information carried by digital signal	Recording capability on this deck	Copy information recorded on tape
DIGITAL AES/EBU	AES/EBU	None	Possible	Determined by menu setting (pages 24 and 25)
	IEC-958 for broadcasting studio use	None	Possible	Determined by menu setting (pages 24 and 25)
DIGITAL COAXIAL		Permitted	Possible	Permitted (ID 6:00)
	IEC-958 for consumer use	First-generation copy only	Possible	Prohibited (ID 6:10)
		Prohibited	Possible	Prohibited (ID 6:10)
ANALOG (BALANCE/UNBALANCE)	—	—	Possible	Determined by menu setting (page 24)

Writing start IDs automatically during recording

- When "AUTO" appears in the display during recording, the automatic writing of start IDs takes place according to the input connector used and the signal format, as shown in the table below.
- The condition for the automatic writing of start IDs differs according to the category code in the digital signal, such as an audio input level signal, a DAT start ID code, or a Q-code from a CD track (see pages 24 and 25).

○: automatic writing possible
×: automatic writing prohibited

Input signal	Signal format (Category code)	Automatic writing according to		
		audio input level ^{a)}	DAT start ID ^{b)}	Q-code from a CD track
DIGITAL AES/EBU	AES/EBU	○	○ ^{c)}	×
	IEC-958 for broadcasting studio use	○	○ ^{d)}	×
DIGITAL COAXIAL	IEC-958 for consumer use	(DAT)	○	×
		(CD)	○	×
		(Other)	○	×
ANALOG	—	○	×	×

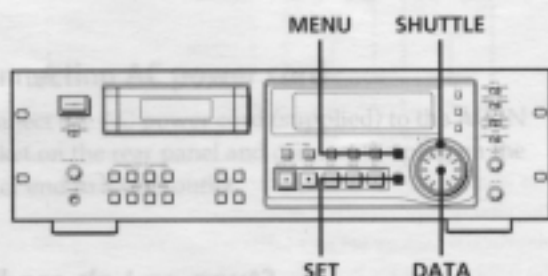
- a) If the input level remains under the level set in the "L-SY TH" menu longer than the time set in the "L-SY BK" menu (see page 24), the deck writes a start ID when the input level rises above that level.
- b) DAT skip IDs are automatically written in the same way.
- c) Only when connected to the PCM-2600, PCM-2800, PCM-R500 or PCM-R700. When the connected decks consist of a PCM-R500 or PCM-R700, select "on" in the "AES S-ID" menu of the playback deck.
- d) Only when connected to the PCM-2300, PCM-2700, or PCM-2700A.
- e) Some CD players do not output track information (Q-code) in the digital signal.

Digital signal lock range

- The lock range of a digital signal (signal reception range) is about $\pm 0.1\%$ for a sampling frequency of 48 kHz, 44.1 kHz, or 32 kHz. Variable pitch signals are not receivable.
- When the digital input sampling frequency information does not match the actual sampling frequency, it is possible to record that signal if you change the REC MODE switch on the front panel to the actual sampling frequency of the signal.

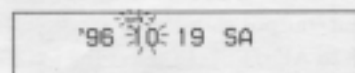
Setting the Clock

Your deck has a built-in clock to keep track of the current date and time. Once you set the date and time by the menu settings, this information will be recorded on the tape along with the audio signal during recording, allowing you to check the recording date time of the tape during playback at a later time.



Where do I go next?

- 1 With the deck stopped, press MENU. The menu appears in the display.
- 2 Turn SHUTTLE to display the "CLK-SET" menu.
- 3 Turn DATA to display "on" and press SET. The year indication flashes.
- 4 Turn DATA to decrease or increase the displayed year, then press SET. The year indication stops flashing and the month indication begins to flash.



- 5 Repeat step 4 until all items have been set. After setting the seconds, press SET to start the clock.

The day of the week is set automatically and is displayed as follows:

Sunday: "SU", Monday: "MO", Tuesday: "TU",
Wednesday: "WE", Thursday: "TH", Friday: "FR",
Saturday: "SA".

To display the date or time

See "About the Display" on page 16.

You can specify the format (12-hour or 24-hour) for the time display, and display order for the date display.

For details, see "ODER" or "DATEHOUR" on page 25.

For more accurate time recordings
Adjust the clock once a week.

Notes

- When you first set the clock after unpacking the deck, "----" will appear when you press the SET button in step 3. This is normal. Set the clock according to the procedures above.
- Your deck uses a back-up battery to keep the clock running when the power is turned off. The life of the battery under normal use is approximately seven years. When the battery starts to run down, the clock will stop operating normally. When this occurs, have the battery replaced (for a fee) at your dealer or nearest Sony Service Center.

Copy information during recording

- Copy information that is recorded on the tape during recording varies according to the input connector used and the signal format, as shown in the table below.
- In the case of AES/EBU and the PCM-24 bit format, the copy information is not recorded.
- As for the PCM-24 bit format, the copy information is not recorded.

Input connector	Signal format	Copy information
DIGITAL	AES/EBU	No
COAXIAL	PCM-24 bit	No
COAXIAL	PCM-16 bit	Yes
COAXIAL	PCM-12 bit	Yes

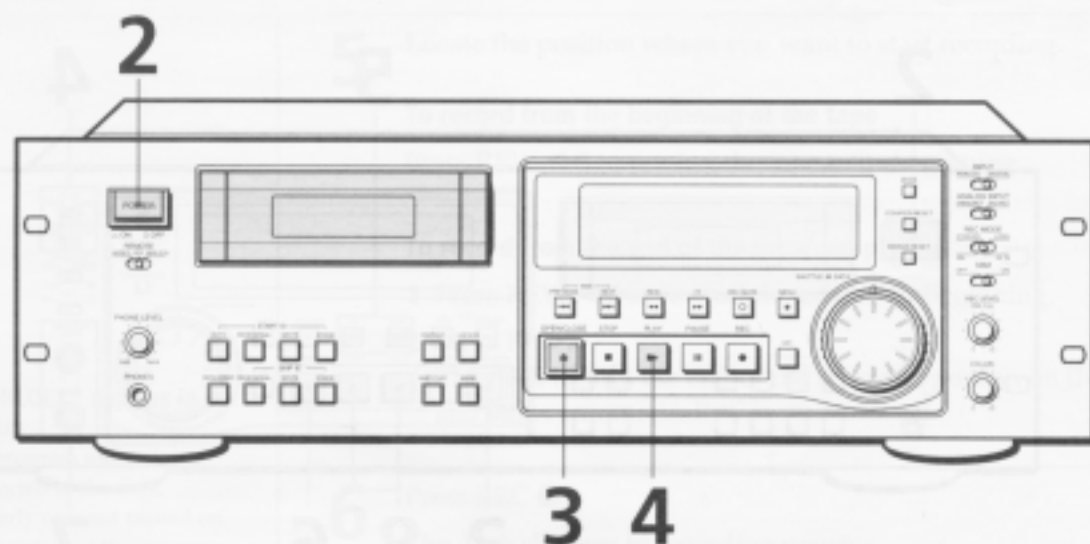
Digital signal lock range

The lock range of a digital signal (signal waveform) is about 10 Hz for a sampling frequency of 48 kHz, 24 kHz or 12 kHz. Variable pitch signals are not lockable.

When the digital input sampling frequency is not lockable, the actual sampling frequency does not match the actual sampling frequency. It is possible to record the signal if you change the RSC MODE switch on the front panel to the "RSC" position.

ANALOG	Signal format	Lockable	Decoded
DIGITAL	AES/EBU	No	Yes
DIGITAL	PCM-24 bit	No	Yes
DIGITAL	PCM-16 bit	Yes	Yes
DIGITAL	PCM-12 bit	Yes	Yes

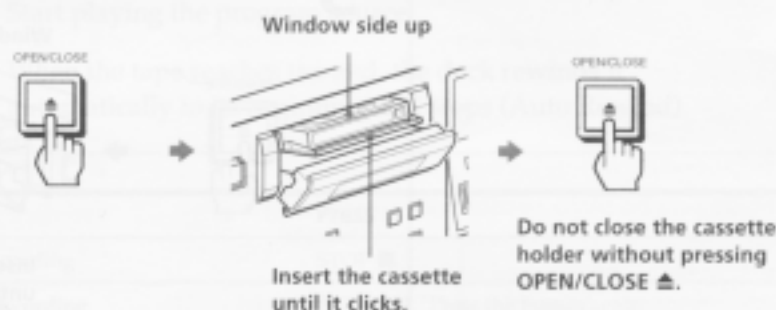
Playing a Tape



See pages 5 and 6 for hookup information.

- 1** Turn on the amplifier and set the source selector to the position for DAT.
- 2** Press POWER. Make sure that the KEY PROTECT switch is set to OFF (PCM-R700 only) (see page 28).

- 3** Press OPEN/CLOSE ▲ and insert a cassette.



- 4** Press PLAY ►. The deck starts playing. Adjust the volume on the amplifier.

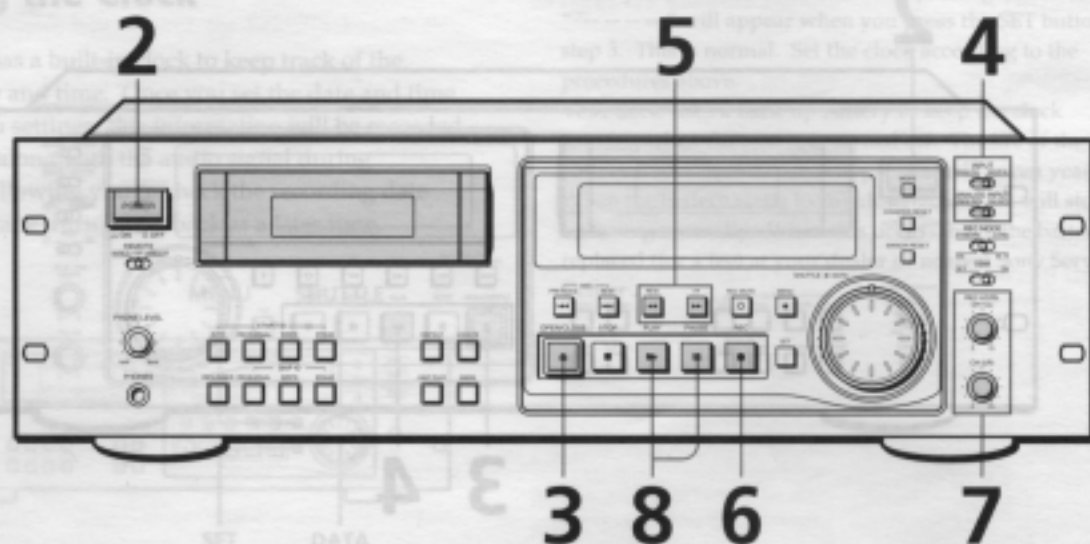
To use headphones
Connect them to the PHONES connector. Use PHONE LEVEL to adjust the volume.

To	Press
Stop playing	STOP ■
Pause playing	PAUSE II. Press the button again or press PLAY ► to resume play.
Go to the next track or the preceding track	NEXT ►► or PREVIOUS ◄◄
Fast-forward or rewind	FF ►► or REW ◄◄ when the deck is stopped
Fast-forward or rewind while monitoring the sound	FF ►► or REW ◄◄ during playback. Release the button to resume normal playback.
Take out the cassette	OPEN/CLOSE ▲ after stopping playing

Recording on a Tape

Setting the Clock

Your deck has a built-in clock to keep track of the current date and time. You can set the date and time by the menu system. The date and time will be recorded on the tape as you record. The time of day is also recorded.

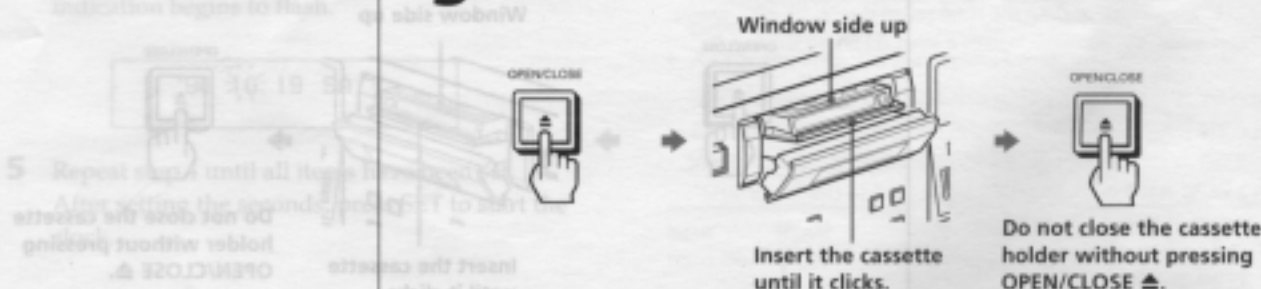


See pages 5 and 6 for hookup information.

1 Turn on the amplifier and play the program source you want to record.

2 Press POWER. Make sure that the KEY PROTECT switch is set to OFF (PCM-R700 only) (see page 28).

3 Press OPEN/CLOSE ▲ and insert a cassette.



4 Use INPUT, ANALOG INPUT, and DIGITAL IN/OUT to select the corresponding input connectors.

To record through	Positions of the switches		
	INPUT	ANALOG INPUT	DIGITAL IN/OUT*
ANALOG (BALANCE) IN	ANALOG	BALANCE	—
ANALOG (UNBALANCE) IN	ANALOG	UNBALANCE	—
DIGITAL AES/EBU IN	DIGITAL	—	AES/EBU
DIGITAL COAXIAL IN	DIGITAL	—	COAXIAL

* The DIGITAL IN/OUT switch is located on the rear panel (see page 5).

5 Locate the position where you want to start recording.

To record from the beginning of the tape

Press REW ◀◀ to rewind the tape to its beginning.

To record from the end of the recorded portion

1 Press REW ◀◀ to rewind the tape to its beginning.

2 Press FF ▶▶.

The deck locates the end of the recorded portion on the tape and stops automatically.

6 Press REC ●.

The deck changes to recording pause.
Recording does not start yet.

7 When recording an analog input signal, adjust the recording level with REC LEVEL CH-1(L)/2(R).

The recommended recording level is the center point.

8 Press PAUSE || or PLAY ▶.

Recording starts.

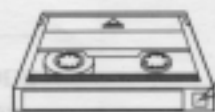
9 Start playing the program source.

When the tape reaches the end, the deck rewinds it automatically to its beginning and stops (Auto Rewind).

To	Press
Stop recording	STOP ■
Pause recording	PAUSE . Press the button again or press PLAY ▶ to resume recording.
Take out the cassette	OPEN/CLOSE ▲ after stopping recording

To prevent accidental erasure

Slide the record-protect tab to the left as shown in the illustration below.



Recording is impossible (the hole is open).

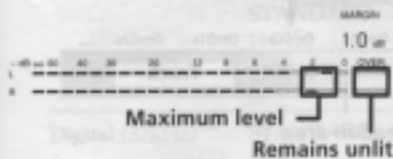
Recording is possible (the hole is closed).

If "UNLOCK" appears in the display

The program source is not connected to the deck properly or is not turned on. Make sure that the program source is properly connected or turned on.

To adjust the recording level more accurately

While monitoring the sound, turn REC LEVEL CH-1 (L)/2 (R) so that the recording level on the peak level meters is at maximum level without entering the OVER range.



The segments of the peak level meters corresponding to the maximum signal strength remain lit longer than normal. The MARGIN indication shows the margin between maximum signal strength and 0dB, changing each time a stronger signal.

If the level exceeds 0dB

The segments under "OVER" light up, and "0.0dB" flashes in the display. If these segments light steadily, sound distortion may occur. To avoid this, keep the recording level between -12dB and 0dB.

To reset the margin indication

Press MARGIN RESET. The margin indication changes to "- dB".

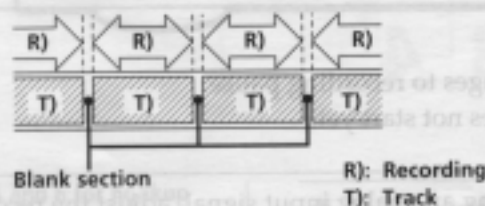
Things You Should Know Before Recording

The difference between a blank section and a sound-muted section

The deck distinguishes between two kinds of silent sections, which are respectively called a "blank section" or "sound-muted section".

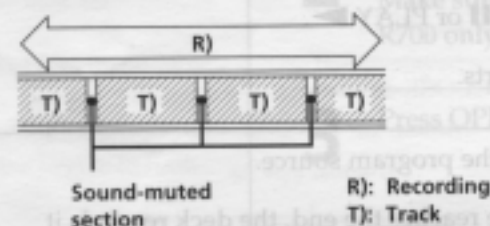
Blank section

This is a section on which no signal has ever been recorded.



Sound-muted section

This is a section on which a signal has been recorded but at a level that is not audible.



Important

Make sure no blank sections are created while you are recording. The existence of blank sections within recorded material will make search operations using the PREVIOUS ◀◀/NEXT ▶▶ buttons impossible or destroy the continuity of the absolute time codes.

Absolute time codes

The absolute time indicates the elapsed time from the beginning of the tape. Once recorded, the absolute time codes cannot be re-written.

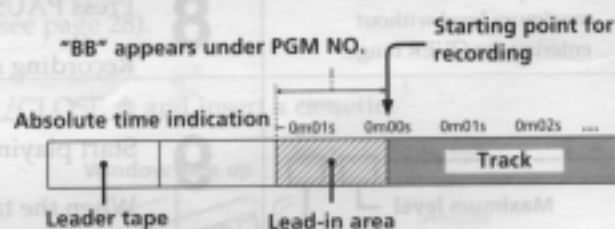
For accurate recording of absolute time codes

- If the tape is blank, make sure to start recording from the beginning of the tape.
- Use the Record Muting function (see page 14) to insert spaces between tracks. Do not advance the tape with the PLAY ▶ or FF ▶▶ button.
- To start recording from the middle of a tape, use the End Search function (see page 14) to locate the end of the recorded portion. This will prevent the creation of blank sections.

Lead-in area

When the deck is loaded with a new cassette tape and it detects the leader tape, the deck can create a lead-in area depending on the menu setting as shown in the figure below. "BB" appears in the display for about 1 second at this time. The lead-in area can be inadvertently erased on another DAT deck if you press the REC ● button to start recording from the beginning of the tape without closing the cassette holder first. To prevent this, press the OPEN/CLOSE ▲ button to close the cassette holder before you start recording.

For details on selecting the automatic creation of the lead-in area and the frequency of the signals to be recorded, see "BB-WRT" and "BB-FS" on page 25.



If "EMPHASIS" appears in the display

The deck is recording a digital signal with emphasis (in the higher frequencies). The recording will also contain the same emphasis.

If the deck is left in recording pause for more than 10 minutes

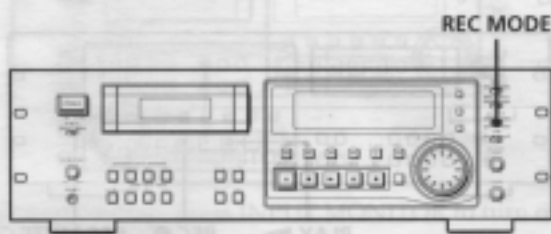
Recording pause will be released automatically and the deck will stop for the sake of tape protection. "SOURCE" will appear in the display of the PCM-R500.

To resume recording, press the REC ● button. The deck will change to recording pause.

Setting the Recording Mode

You can select between two recording modes, standard or long, in the following cases.

- When recording an analog input signal with the INPUT switch set to ANALOG
- When recording a digital input signal with a sampling frequency of 32 kHz with the INPUT switch set to DIGITAL



Set REC MODE to select the recording mode.

The following table shows the selectable recording modes and corresponding REC MODE position and sampling frequency for various input signals.

Input signal	REC MODE position	Recording mode
Analog	STANDARD (48k)	Standard play (48kHz)
	STANDARD (44.1k)	Standard play (44.1kHz)
	LONG	Long play (32kHz)
Digital (32kHz)	STANDARD (48k)	Standard play (32kHz)
	STANDARD (44.1k)	Standard play (32kHz)
	LONG	Long play (32kHz)
Digital (44.1kHz)	STANDARD (48k)	Standard play (44.1kHz)
	STANDARD (44.1k)	Standard play (44.1kHz)
	LONG	Standard play (44.1kHz)
Digital (48kHz)	STANDARD (48k)	Standard play (48kHz)
	STANDARD (44.1k)	Standard play (48kHz)
	LONG	Standard play (48kHz)

The recording time in long-play mode (the REC MODE switch set to LONG) is twice as long as standard-play mode.



The counter in long-play mode

The displayed tape running time, absolute time and remaining time on the tape are for standard-play mode. Double the time to obtain the corresponding times for long-play mode.

Note

Do not change the INPUT or REC MODE setting while recording. This may cause an error in the "PGM TIME" display.

Using the SBM (Super Bit Mapping) Function

The SBM function uses the principles of human hearing and noise-shaping technology to reduce quantizing noise within the frequency band.

You can use the SBM function to record on analog input signal only when the INPUT switch is set to ANALOG and the REC MODE switch to STANDARD (either 48kHz or 44.1kHz).



Set SBM to ON.

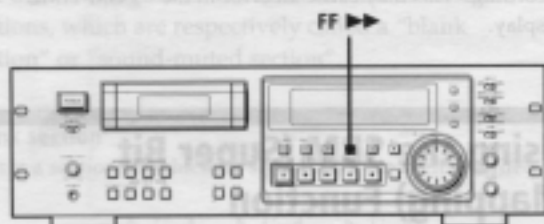
"SBM" appears in the display during recording using the SBM function.

Note

The SBM function operates only during recording. The improved sound produced by the SBM function, however, can be enjoyed during playback, regardless of the SBM switch position or the DAT deck being used.

Locating the End of the Recorded Portion (End Search)

When recording from the middle of a tape, use End Search to locate the end of the recorded portion. This will prevent the creation of a blank section on the tape.



Press FF ►► with the deck stopped. The deck locates the end of the recorded portion (the beginning of the blank portion or the position of the end ID), then stops. The deck stops at the beginning of any blank section that is 9 seconds or longer, or fast-forwards to the end of the tape if the tape is blank.

When you press the REC ● button while in a blank section
The deck rewinds the tape to the beginning of the blank section and changes to recording pause. "BLANK" and "WAIT" appear in the display while the deck is searching for the beginning of the blank section.

Note
End Search does not operate if you press the FF ►► button while in a blank section.

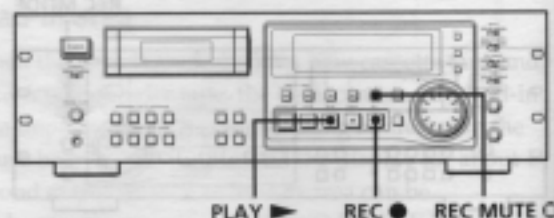
Important
Make sure no blank sections are created while you are recording. The existence of blank sections within a recorded portion may cause the deck to malfunction. The deck will not be able to locate the beginning of a blank section. This may cause the deck to malfunction. The deck will not be able to locate the beginning of a blank section. This may cause the deck to malfunction.

Absolute time codes

The absolute time indicates the elapsed time from the beginning of the tape. Once recorded, the absolute time codes cannot be re-written.

Inserting a Sound-Muted Section While Recording (Record Muting)

Use Record Muting to insert a space of about 0.5 to 9.5 seconds between tracks. For details on setting the duration of the blank space, see "REC MUTE" on page 24.



Press REC MUTE ○ where you want to insert a space while the deck is recording or in recording pause. "REC" in the display starts flashing and tape transport continues, but no signal is recorded. After inserting a space, || in the display stays on and the deck changes to recording pause.

To insert a blank space (of a duration different from that preset by menu setting)
Hold down the REC MUTE ○ button as long as you want. When you release the REC MUTE ○ button, || stays on and the deck changes to recording pause. When the preset duration has passed, "REC" begins to flash faster and the MARGIN indication shows how long the REC MUTE ○ button has been pressed.

To insert a blank space of a duration shorter than the preset value
Press REC ● while "REC" is flashing. The deck starts recording again.

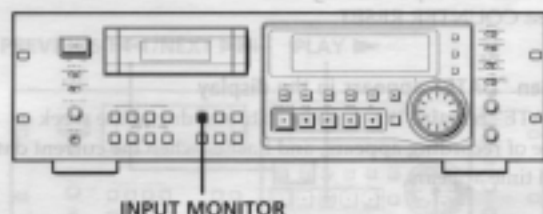
Note
If you do not create a sound-muted section at the beginning of a tape, you may not be able to move or erase a start ID (see page 19) that is recorded within 2 seconds from the beginning of the tape.

The deck will not be able to locate the beginning of a blank section. This may cause the deck to malfunction. The deck will not be able to locate the beginning of a blank section. This may cause the deck to malfunction.

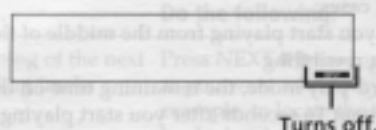
The recording time in long-play mode (the REC MODE indicator shows "LONG") is twice as long as standard-play mode.

Monitoring the Recorded Sound (Record Monitoring) (PCM-R700 Only)

You can compare the recorded sound with the sound of the program source while recording.



While recording, press INPUT MONITOR to turn off "INPUT" in the display. The recorded sound is output.



To listen to the program source

Press INPUT MONITOR to turn on "INPUT" in the display.

Note You can listen to the program source even when not recording.

Press INPUT MONITOR to turn on "INPUT" in the display.

The program source is output when:

- the deck is stopped.
- the cassette is ejected.

The program source is not output when "INPUT" is turned off.

Note

If you do any of the following operations while listening to the program source, "INPUT" turns off and output of the program source stops, and "INPUT" will not go on even you press the INPUT MONITOR button:

- Start playback by pressing the PLAY ► button.
- Pause playback by pressing the PAUSE || button.
- Press the REW ◀◀ button.
- Press the FF ▶▶ button.

If the deck detects a blank section of 9 seconds or more, end ID, or the end of the tape

The deck rewinds the tape automatically to its beginning and stops (Auto Rewind).

Note You can make the deck start playing automatically from the beginning of the tape after rewinding (Auto Play).

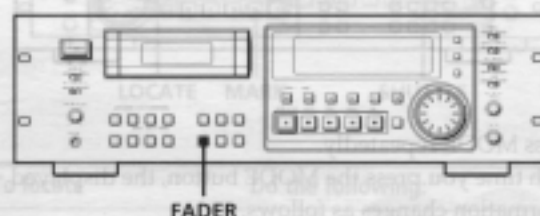
Press DISPLAY ► button while holding down the REW ◀◀ button.

Fade-in/Fade-out Recording (Fader) (PCM-R700 Only)

You can use the fader to fade-in the beginning of a recording or fade-out the end of a recording. It's useful when you want to start or end a recording in the middle of a song.

You can specify the fade-in and fade-out durations of 0.5 to 9.5 seconds through the menu settings.

For details, see "FADE IN" and "FADE OUT" on page 25.



Fading in

Press FADER while the deck is in record pause mode. "FADE IN" appears in the display and the time display counts backward to "0.0s" as the fade-in takes place.

Fading out

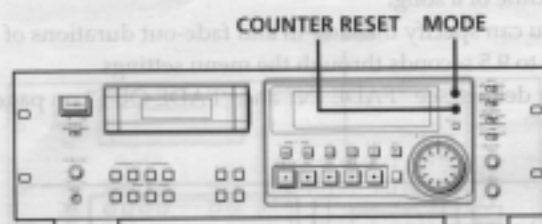
Press FADER while the deck is recording. "FADE OUT" appears in the display and the time display counts backward to "0.0s" as the fade-out takes place. After fading out, the deck automatically enters record pause mode.

Note

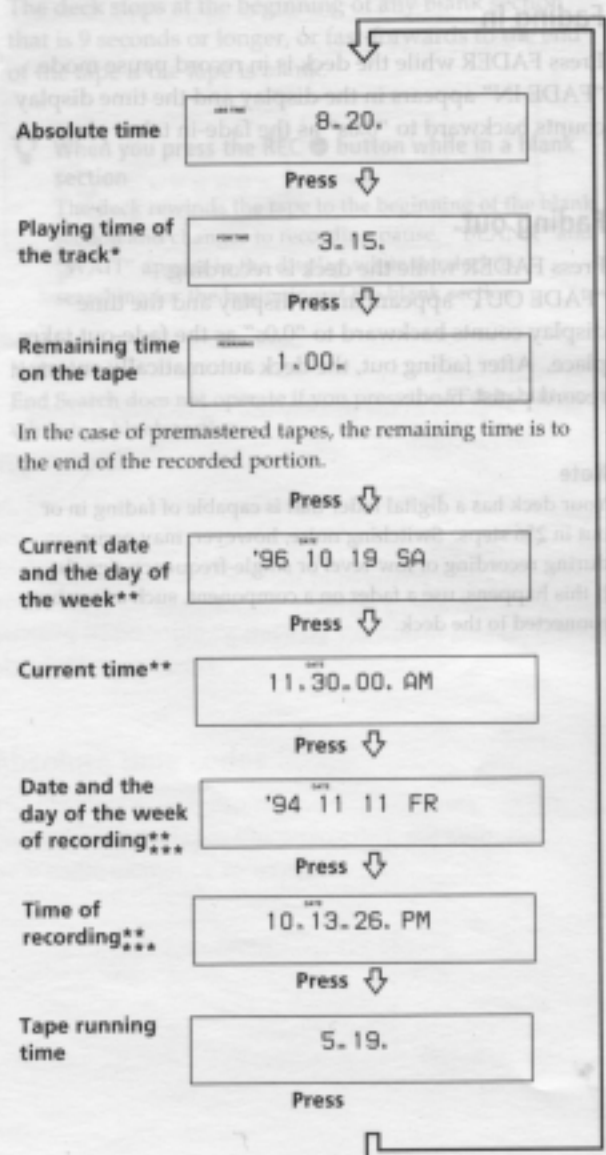
Your deck has a digital fader that is capable of fading in or out in 256 steps. Switching noise, however, may occur during recording of low-level or single-frequency signals. If this happens, use a fader on a component, such as a mixer, connected to the deck.

About the Display

You can use the display to show the tape running time, absolute time, playing time of the track, remaining time on the tape, date and time of recording, and current date and time.



Press MODE repeatedly. Each time you press the MODE button, the displayed information changes as follows.



- * The playing time of the track will not be displayed when the "P-TMDISP" menu is set to "--" (see page 25).
- ** The date and time of recording and the current date and time will not be displayed when the "DATEDISP" menu is set to "--" (see page 25).
- *** If this information is not recorded on the tape, nothing will appear.

To reset the tape running time

Press COUNTER RESET.

When "DATE" appears in the display

"DATE" remains lit when the date and day of the week or time of recording appears, and flashes when the current date and time appears.

Notes

- When playing certain types of premastered tapes, "BB" may appear momentarily in the display at the beginning of the tape.
- The playing time of the track does not appear in the following cases:
 - When you start playing from the middle of the track
 - During rewinding
- In standard-play mode, the remaining time on the tape appears about 16 seconds after you start playing.
- The displayed remaining time may vary somewhat from the actual remaining time, depending on the tape.

If "EMPHASIS" appears in the display

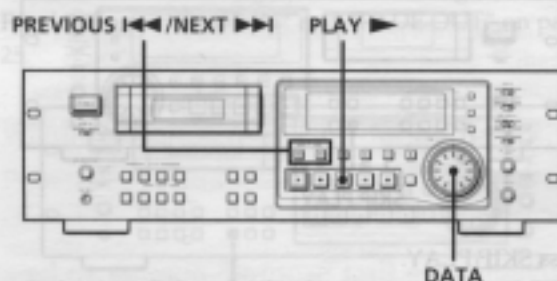
The deck is playing an audio signal recorded with emphasis (in the higher frequencies). The deck, however, plays the signal while automatically deemphasizing it (with attenuation proportional to the degree of emphasis).

"ERR" appears in the display for 5 seconds or more

- The head is dirty. Clean the head with the DAT cleaning cassette (see page 29).
- The cassette is defective or damaged.

Locating a Track (AMS*/Direct Access)

You can locate the tracks in a number of ways, but only after you have recorded start IDs on the tape (see pages 19 to 23). To use Direct Access, program numbers must be recorded on the tape (see pages 19 and 23).



To locate	Do the following:
The beginning of the next or succeeding tracks (AMS)	Press NEXT ►► as many times as you want while playing. For example, to locate the second track ahead, press twice.
The beginning of the current track (AMS)	Press PREVIOUS ◄◄ once while playing.
The beginning of preceding tracks (AMS)	Press PREVIOUS ◄◄ as many times as you want while playing. For example, to locate the second track behind, press three times.
By specifying the program number of a track (Direct Access)	<ol style="list-style-type: none"> 1 While the deck is playing or stopped, turn DATA on the front panel until the program number you want appears in the display (or enter the program number with the number buttons on the remote). 2 Press PLAY ►.

* AMS = Automatic Music Sensor

💡 If you enter the wrong program number during Direct Access

If you haven't pressed the PLAY ► button, turn the DATA dial on the deck (or press the CLEAR button, then enter the correct number on the remote).

💡 If the deck detects a blank section of 9 seconds or more, end ID, or the end of the tape

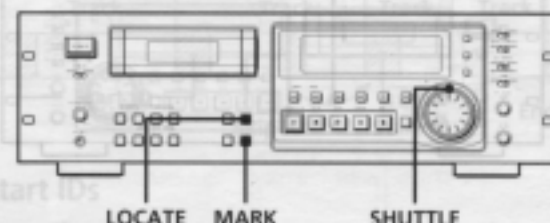
The deck rewinds the tape automatically to its beginning and stops (Auto Rewind).

💡 You can make the deck start playing automatically from the beginning of the tape after rewinding (Auto Play)

Press the PLAY ► button while holding down the REW ◄◄ button.

Locating a Point (Shuttle Play/Mark & Locate)

You can locate a specific point by playing back at a different speed or recording the absolute time code at the point to be located later.



To locate	Do the following:
A track using variable speed play (Shuttle Play)	<p>While the deck is playing, stopped, or paused, turn SHUTTLE.</p> <ul style="list-style-type: none"> • If the deck was playing or stopped, the deck starts to play when you release the SHUTTLE dial. • If the deck was paused, the deck pauses when you release the SHUTTLE dial.
A particular point on a tape (Mark & Locate)	<ol style="list-style-type: none"> 1 While the deck is playing or stopped, press MARK. The absolute time of the point where you pressed the button appears and flashes three times. 2 Press LOCATE. The deck locates the point and stops.

💡 Playback speed during Shuttle Play

During Shuttle Play, you can vary the playback speed from ± 0.5 to ± 8 times the normal playback speed (or ± 1 to ± 8 times the normal playback for material recorded in long-play mode), depending on the angle and direction of the SHUTTLE dial. Turn the dial clockwise for forward playback or counterclockwise for reverse playback. The playback speed will be ± 8 times normal speed playback when you turn the dial to the left or right fully.

Note

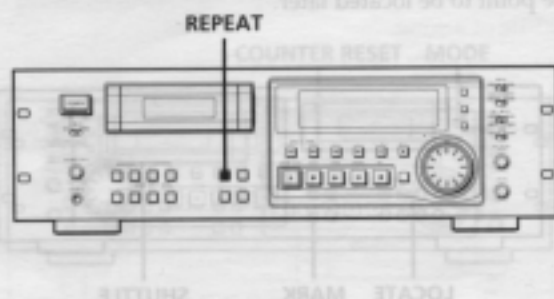
Shuttle Play should be used only when necessary since prolonged use may damage the tape and drum.

💡 The point memorized using the Mark & Locate function will be erased when:

- you take out the cassette.
- you turn off the deck.

Playing Tracks Repeatedly (Repeat Play)

You can play a specific track or all the tracks on the tape repeatedly.



Playing all tracks repeatedly

Press REPEAT repeatedly while playing a track until "REPEAT" appears in the display.

The deck will play all tracks 5 times, then stops. If the deck detects either of the following during Repeat Play, it will rewind the tape to its beginning and start playing again.

- A blank section of 9 seconds or more
- The end of the tape or the end ID

To stop playing all tracks repeatedly

Press REPEAT repeatedly until "REPEAT" disappears.

Note

Repeat Play of all tracks is canceled when you take out the cassette.

Playing a track repeatedly

Press REPEAT repeatedly while playing the track you want to repeat until "REPEAT 1" appears in the display.

The deck plays the current track 5 times and then stops.

If the deck detects any of the following during Repeat Play, it will rewind the tape to the start ID of the current track and starts playing again from that position.

- The next start ID
- A blank section of 9 seconds or more
- The end of the tape or end ID
- A skip ID with Skip Play activated

To stop playing a track repeatedly

Press REPEAT repeatedly until "REPEAT 1" disappears.

Note

Repeat Play of a single track is canceled when you take out the cassette.

Playing Tracks Skipping Specific Portions During Playback (Skip Play)

Please note that skip IDs (see page 19) must be written on the tape before you can use Skip Play.



Press SKIP PLAY.

"SKIP PLAY" appears in the display. When the deck detects a skip ID, it fast-forwards the tape to next start ID, then resumes playing.

To cancel Skip Play

Press SKIP PLAY.

"SKIP PLAY" disappears.

Note

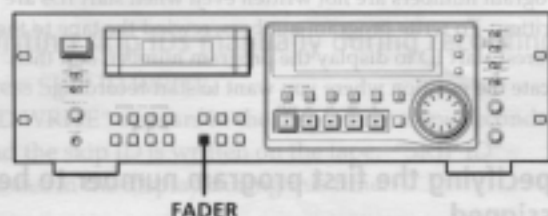
Skip Play is canceled when you take out the cassette.

Fade-in/Fade-out Playback (Fader) (PCM-R700 only)

You can use the fader to fade-in the beginning of playback or fade-out the end of Playback. It's useful when you want to record from DAT.

You can specify the fade-in and fade-out durations of 0.5 to 9.5 seconds through the menu settings.

For details, see "FADE IN" and "FADE OUT" on page 25.



Fading in

Press FADER while the deck is in play pause mode. "FADE IN" appears in the display and the time display counts backward to "0.0s" as the fade-in takes place.

Fading out

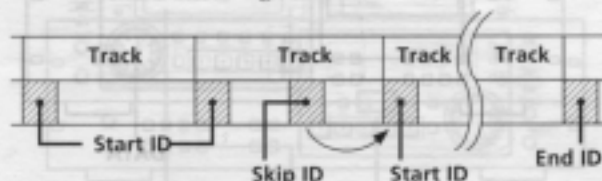
Press FADER during playback. "FADE OUT" appears in the display and the time display counts backward to "0.0s" as the fade-out takes place. After fading out, the deck automatically enters play pause mode.

Note

Your deck has a digital fader that is capable of fading in or out in 256 steps. Switching noise, however, may occur during playback of low-level or single-frequency signals. If this happens, use a fader on a component, such as a mixer, connected to the deck.

About Sub Codes

In the DAT format, control codes, or sub codes, such as start IDs, skip IDs, and end ID can be recorded on the tape with the audio signal. Since sub codes are written on the tape separately from the audio signal, they have no effect on the audio signal.



Start IDs

Start IDs indicate the start of a track, and therefore allow you to locate the position of a track precisely. The start IDs are 9 seconds in length (18 seconds in long-play mode) to enable easy detection during fast-forwarding or rewinding.

Program numbers

Program numbers serve as track numbers. Occupying the same position as start IDs, a program numbers allow you to locate specific tracks or play tracks in a specific order.

Skip IDs




Skip IDs indicate tracks or recorded portions that are to be skipped while playing. Skip IDs are 1 second in length (2 seconds in long-play mode).

End ID (when the optional remote is used)

An end ID indicates the end of a recording. An end ID is 9 seconds in length (18 seconds in long-play mode). When an end ID is detected during playback, playback stops and the deck rewinds the tape to its beginning. If an end ID is detected during fast-forwarding, the tape stops at that point and deck becomes ready for recording from that point.

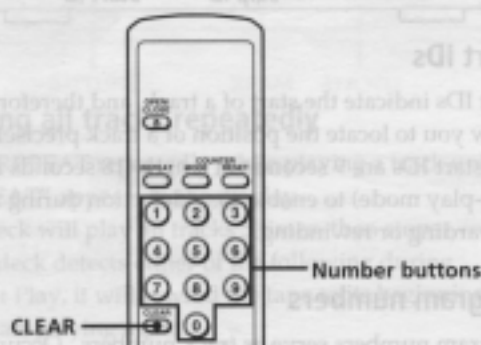
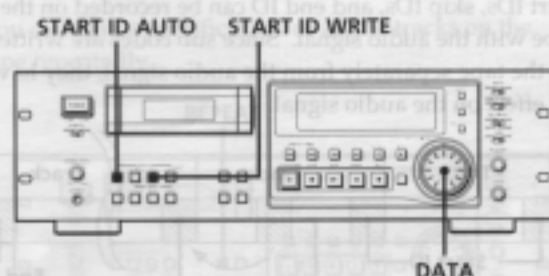
You can write and erase an end ID only with the optional remote RM-D750. For details, see "Writing and Erasing an End ID" on page 27.

Notes

- The OPEN/CLOSE , STOP , and PAUSE  buttons do not work during the writing or erasing of sub codes.
- Writing and erasing of sub codes and renumbering of program numbers are impossible if the record-protect hole on the DAT cassette is open (see page 11).

(Continued)

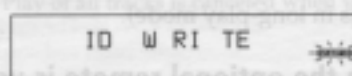
Writing Start IDs During Recording



Writing start IDs manually during recording

Press START ID WRITE.

"ID WRITE" appears in the display for a few seconds and the start ID is written on the tape. "START ID" flashes in the display during this time.



Note

The interval between start IDs must be more than 18 seconds (36 seconds in long-play mode). If the interval is less than 18 seconds (or 36 seconds), the deck may fail to detect the second start ID while playing a tape.

Writing start IDs automatically during recording

Press START ID AUTO repeatedly until "AUTO" appears in the display.

For details on the condition for the automatic writing of start IDs, see "Writing start IDs automatically during recording" on page 7, and "Menu Operations" on pages 24 and 25.

Writing program numbers during recording

Program numbers occupy the same positions as the start IDs and are determined by depending on the following conditions:

When a program number is displayed

The next program number rises by one above when the next start ID is written.

When no program number is displayed ("--" appears instead)

Program numbers are not written even when start IDs are written. To write program numbers, rewind the tape to the nearest start ID to display the program number, and then locate the position where you want to start recording.

Specifying the first program number to be assigned

- 1 Pause recording.
- 2 Press the number button(s) on the supplied remote, or turn DATA to input the first program number.
The number appears in the display.
To cancel the number, press the CLEAR button on the supplied remote.
- 3 Start recording.
A start ID and the assigned program number are written simultaneously.

Note

During automatic start ID writing the positioning of some start IDs may be inaccurately or inappropriately positioned away from the beginning of the track. If this happens, you can reposition or erase the start IDs later (see "Accurate positioning of sub codes" on pages 21 and 22, and "Erasing Sub Codes" on page 23).

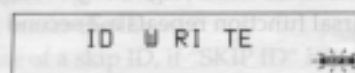
Writing Skip IDs During Recording



Writing skip IDs manually during recording

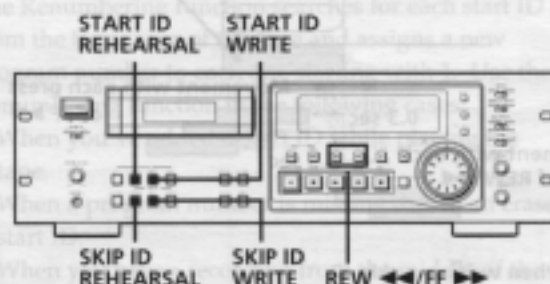
Press SKIP ID WRITE.

"ID WRITE" appears in the display for a few seconds and the skip ID is written on the tape. "SKIP ID" flashes in the display during this time.



Writing Sub Codes During Playback

You can write start IDs or skip IDs during playback.

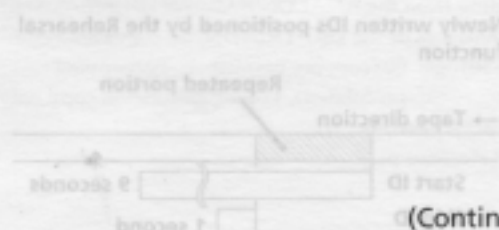


Press START ID WRITE or SKIP ID WRITE.

"ID WRITE" appears in the display for a few seconds and the specified ID is written on the tape at the point you pressed the button.

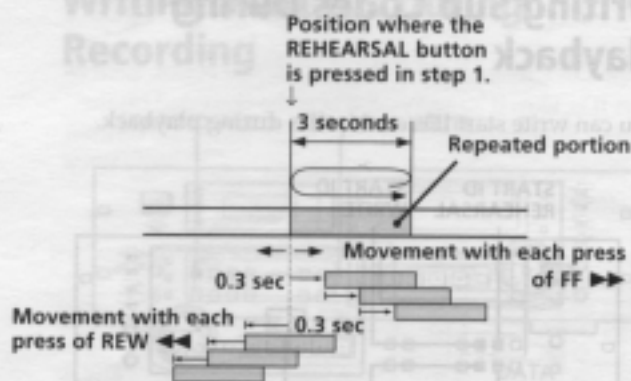
Accurate positioning of sub codes (Rehearsal function)

- 1 During playback, press REHEARSAL corresponding to the ID you want when you arrive at the proper position.
 "REHRSL" appears, the corresponding ID indication flashes in the display and the Rehearsal function repeats a 3-second portion containing the selected position. The repeated portion plays back 8 times, with the remaining number of times appearing to the right of the "REHRSL". After 8 times, the deck stops.
 In the case of a start ID, the 3-second repeated portion starts from the point where you pressed the REHEARSAL button.
 In the case of a skip ID, the 3-second repeated portion ends at the point where you pressed the REHEARSAL button.
- 2 Press REW << or FF >> to move the beginning of the repeated portion.
 Each time you press the REW << or FF >> button, the beginning of the repeated portion shifts backwards or forwards in 0.3-second increments, up to a maximum extent of about 2 seconds (4 seconds in long-play mode) in either direction.

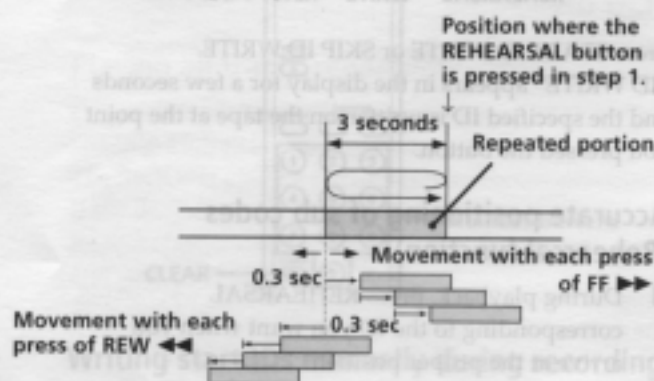


(Continued)

When writing a start ID



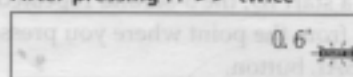
When writing a skip ID



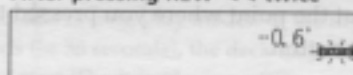
The time in the display shows the shift in position from the time the REHEARSAL button was pressed.

Positioning Start ID

After pressing FF ►► twice



After pressing REW ◄◄ twice

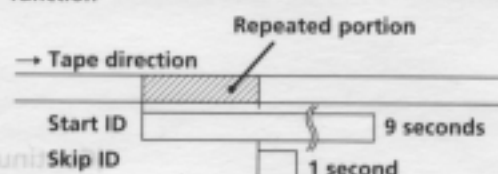


3 Press WRITE of the corresponding ID to write the ID.

"ID WRITE" appears for a few seconds and the ID is written on the tape at the selected position.

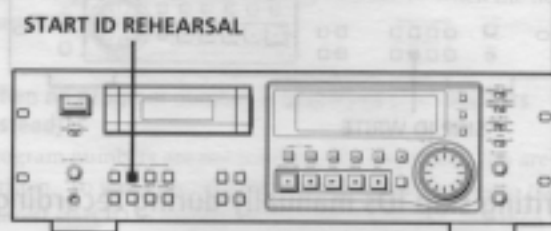
- Start IDs are 9 seconds long starting from the beginning of the repeated portion.
- Skip IDs are 1 second long starting from the end of the repeated portion.

Newly written IDs positioned by the Rehearsal function



Adjusting the Position of an Existing Start ID

You can adjust the position of previously recorded start IDs.



- 1 During playback, press START ID REHEARSAL when you arrive at the existing start ID you want to reposition. The deck rewinds to the beginning of start ID and the Rehearsal function repeats a 3-second portion.
- 2 Do the steps 2 and 3 of "Accurate positioning of sub codes" on pages 21 and 22. You can move the start ID to a maximum extent of about 2 seconds (4 seconds in long-play mode) in either direction from its original position.

Notes

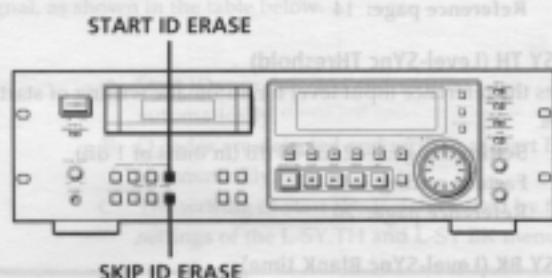
- Start IDs written within 10 seconds from the end of the tape may be difficult or impossible to move.
- Existing skip IDs cannot be moved.

Note

During automatic start ID positioning, the positioning of some start IDs may be inaccurately positioned. This is because the tape may be slightly stretched or the tape may be slightly misaligned. This is not a problem with the tape itself, but it may affect the positioning of start IDs. This is not a problem with the tape itself, but it may affect the positioning of start IDs.

Erasing Sub Codes

You can erase any start ID or skip ID.



Press either START ID ERASE or SKIP ID ERASE when the ID you want to erase appears in the display.

"(ERASE)" appears in the display as the deck rewinds to the beginning of the ID, then "ID ERASE" appears as the deck erases the ID.

In the case of a skip ID, if "SKIP ID" has disappeared by the time you press SKIP ID ERASE, the deck will still erase the skip ID.

- It takes 9 seconds to erase a start ID.
- It takes 1 second to erase a skip ID.
- Program numbers are erased together with start IDs.

💡 You can erase an ID even when it is not displayed
Just press the respective ERASE button. The tape is rewound, and the first ID detected is erased.

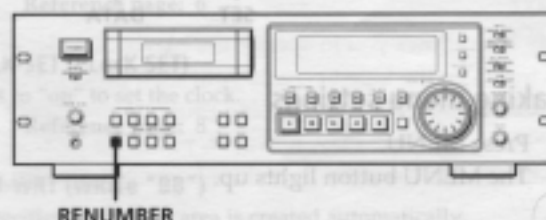
Note

A skip ID written at the same position of a start ID is erased when the start ID is erased.

Renumbering the Program Numbers Automatically (Renumbering Function)

The Renumbering function searches for each start ID from the beginning of the tape and assigns a new program number to each one starting with 1. Use the Renumbering function in the following cases:

- When you've added a start ID while playing the tape.
- When a program number is missing due to an erased start ID.
- When you began recording from the middle of the tape and wrote a program number that already exists, or when one of the start IDs has no program number.



Press RENUMBER while the deck is stopped or playing.

"RENUMBER" flashes in the display and the tape is automatically rewound to its beginning. The deck then starts searching for each successive start ID writing a new program number for each one starting with 1. "RENUMBER" stops flashing and "ID WRITE" appears in the display for a few seconds as the deck begins rewriting the program numbers. After renumbering is finished, the deck rewinds the tape automatically to its beginning, then stops.

💡 You can specify any number as the starting number for the renumbering of programs.
For details, see "FIRST (PGM No.)" on page 25.

Note

The Renumbering function may not function correctly when:

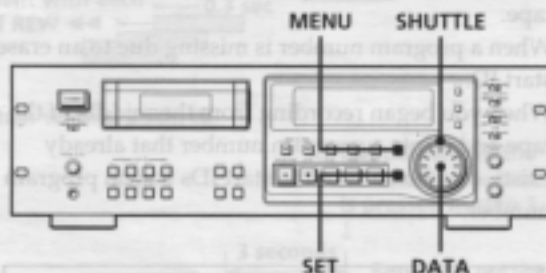
- A blank section exists on the tape.
- The interval between two start IDs is less than 18 seconds (36 seconds in long-play mode).
- A start ID exists within 10 seconds from the end of the tape.

Menu Operations

You can make various settings through menu operations. Settings made through menu are memorized even when the deck is turned off.

Note

You can do menu operations only when the deck is empty, stopped or paused.



Making menu settings

- 1 Press MENU.
The MENU button lights up.
- 2 Turn SHUTTLE to select the menu.
- 3 Turn DATA to select the parameter.
The selected parameter flashes.

When the parameter settings are "on" and "--" (off)
Turn the DATA dial clockwise to select "on" or
counterclockwise to select "--" (off).
- 4 Press SET.
The selected setting lights up.
- 5 Press MENU again.
The lit button goes off and the deck becomes
ready for operation.

Menu descriptions

A brief explanation is given below for each menu, including their settings or setting range, factory setting, and reference pages.

SET ID6

Selects the copy information to be written on the tape when recording from the ANALOG(BALANCE/UNBALANCE) IN connectors or the DIGITAL AES/EBU IN connector.

Settings: 00 (copying permitted), 10 (copying prohibited), 11 (one generation copy only)

Factory setting: 00

Reference page: 6

REC MUTE (RECORD MUTE duration)

Sets the duration if the blank space created between tracks by the Record Muting function.

Setting range: 0.5 to 9.5 seconds (in units of 0.5 second)

Factory setting: 4 seconds

Reference page: 14

L-SY TH (Level-Sync Threshold)

Sets the reference input level for automatic writing of start IDs.

Setting range: -12 to -60 dB (in units of 1 dB)

Factory setting: -45 dB

Reference page: 20

L-SY BK (Level-Sync Blank time)

Sets the length of time that the input signal must remain below the reference level before automatic writing of start IDs begin.

Setting range: 1 to 10 seconds (in units of 1 second)

Factory setting: 3 seconds

Reference page: 20

IEC S-ID (IEC Start-ID)

Specifies if start IDs (or skip IDs) are automatically detected and written on the tape when recording from a DAT deck connected to the DIGITAL COAXIAL IN connector.

Settings: on (start IDs (or skip IDs) are automatically detected and written),
-- (writing of the start IDs (or skip IDs) is determined by the settings of the L-SY TH and L-SY BK menus)

Factory setting: on

Reference page: 7

IEC CD-Q (IEC CD-Q code)

Specifies if start IDs are written automatically whenever a Q code defined by the user's bits on the CD is detected while recording from a CD player connected to the DIGITAL COAXIAL IN connector.

Settings: on (a Q code is detected and written as a start ID automatically),
-- (writing of the start IDs is determined by the settings of the L-SY TH and L-SY BK menus)

Factory setting: on

Reference page: 7

AES S-ID (AES Start-ID)

Specifies if start IDs (or skip IDs) are automatically detected and written on the tape when recording from a DAT deck (for broadcast use) connected to the DIGITAL AES/EBU IN connector, and if start IDs (or skip IDs) are output through the DIGITAL AES/EBU OUT connector.

Settings: on (start IDs (or skip IDs) are detected and written automatically/start IDs (or skip IDs) are output),
-- (writing of start IDs (or skip IDs) is determined by the settings of the L-SY TH and L-SY BK menus/start IDs (or skip IDs) are not output)

Factory setting: --

Reference page: 7

Automatic writing of start IDs and menu settings during digital recording

The automatic detection and writing of start IDs are carried out according to the connector to which the program source is connected, the signal format, and the category code of the signal, as shown in the table below.

- A: Start IDs are detected and written automatically.
- B: Q codes are detected and written as start IDs automatically.
- C: The writing of start IDs is determined by the settings of the L-SY TH and L-SY BK menus.

Menu settings

Connector	AES/EBU	COAXIAL			
Signal format	—	Broadcast studio use	Consumer use		
Category	—	—	DAT	CD	Others
IEC S-ID on	—	A*	A	—	C
IEC S-ID --	—	C	C	—	C
IEC CD-Q on	—	—	—	B	C
IEC CD-Q --	—	—	—	C	C
AES S-ID on	A**	—	—	—	C
AES S-ID --	C	—	—	—	C

* Only when connected to the PCM-2300, PCM-2700, or PCM-2700A

** Only when connected to the PCM-2600, PCM-2800, PCM-R500 or PCM-R700.
When the connected decks consist of a PCM-R500 or PCM-R700, select "on" in the "AES S-ID" menu of the playback deck.

DATEDISP (DATE DISPLAY)

Specifies if the recording date and time and current date and time are displayed when the MODE button is pressed.

Settings: on (the recording date and time and current date and time are displayed), -- (the recording date and time and current date and time are not displayed)

Factory setting: --

Reference page: 16

ORDER (Date Order)

Specifies the display order of the year, month, and day indications.

Settings: YMD (year/month/day), DMY (day/month/year), MDY (month/day/year)

Factory setting: YMD

Reference page: 8

DATEHOUR (DATE HOUR)

Specifies either a 12-hour or 24-hour format for the time display.

Settings: 12 (12-hour format), 24 (24-hour format)

Factory setting: 12

Reference page: 8

P-TMDISP (Program Time Display)

Specifies if the track playing time is displayed when the MODE button is pressed.

Settings: on (the track playing time is displayed), -- (the track playing time is not displayed)

Factory setting: on

Reference page: 16

FIRST(PGM No.) (FIRST ProGraM No.)

Specifies the first program number to be assigned to the first track when recording from the beginning of the tape or using the Renumbering function.

Setting range: 1 to 99

Factory setting: 1

Reference page: 23

TAPEID6 (ID6 on TAPE)

Displays the copy information of the tape currently inserted.

Indications: 00 (copying permitted), 10 (copying prohibited), 11 (one generation copy only)

Reference page: 6

CLK-SET (CLOCK SET)

Set to "on" to set the clock.

Reference page: 8

BB-WRT (WRITe "BB")

Specifies if a lead-in area is created automatically.

Settings: on (a lead-in area is automatically created), -- (a lead-in area is not automatically created)

Factory setting: --

Reference page: 12

BB-FS (FS in lead-in area)

Sets the lead-in area with the frequency of the signals to be recorded.

Settings: 48kHz, 44kHz, 32kHz

Factory setting: 48kHz

Reference page: 12

HOURL (HOURS meter)

Displays the total drum operating time.

Display range: 0 to 9999 hours (in units of 1 hour)

FADE IN (FADE IN time) (PCM-R700 only)

Specifies the fade-in time for fade-in recording and playback.

Setting range: 0.5 to 9.5 seconds (in units of 0.5 second)

Factory setting: 5.0 seconds

Reference pages: 15 and 19

FADE OUT (FADE OUT time) (PCM-R700 only)

Specifies the fade-out time for fade-out recording and playback.

Setting range: 0.5 to 9.5 seconds (in units of 0.5 second)

Factory setting: 5.0 seconds

Reference pages: 15 and 19

The Optional Remote RM-D750

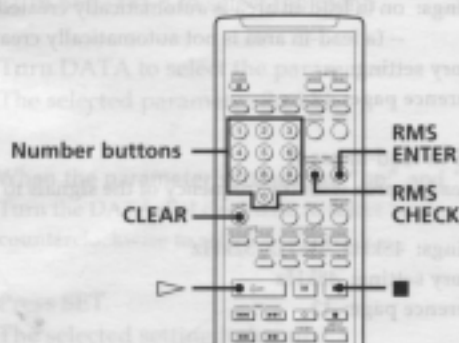
You can do the following operations using serial remote control with an optional remote RM-D750 which may be either connected to the REMOTE 2 connector on the rear panel or not. For more information on other remote operations that are possible, refer to the Operating Instructions of the remote.

Note

Set REMOTE on the front panel to WIRED when the remote is connected to the deck. When using it remotely, set REMOTE to WIRELESS.

Playing tracks in the order you want (RMS* Play)

RMS Play allows you to specify the playback order of the tracks on the tape to create your own programs containing up to 60 tracks (using program numbers 1 to 99). To use RMS Play, however, you must first record start IDs and program numbers on the tape.

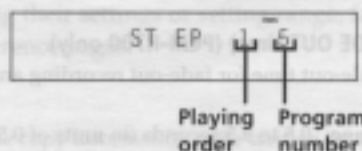


- 1 Enter the program number (1 to 99) of the track you want to play.

If you've entered the wrong number

Press CLEAR, then enter the correct number.

- 2 Press RMS ENTER.



- 3 Repeat steps 1 and 2.
- 4 Press ▷. The deck starts playing the programmed tracks in sequence.

Checking the track order

You can check the order of tracks in your program by pressing the RMS CHECK button. Each time you press the RMS CHECK button, the track numbers appear in the order they were programmed.

Note

You cannot use the CLEAR button to cancel a programmed track while checking the track order.

To add a track to a program

Repeat steps 1 and 2 while the deck is stopped.

Note

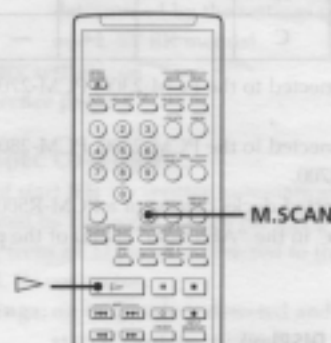
You cannot add a track to a program after RMS Play has started.

To cancel an entire program

Press ■ repeatedly until "RMS" disappears.

Locating a track by scanning each track (Music Scan)

You can locate a track by scanning the first 8 seconds of each track.



- 1 Press M.SCAN while the deck is stopped.

- 2 Press ▷.

The deck plays the first 8 seconds of each track in succession.

- 3 When you find the track you want, press M.SCAN.

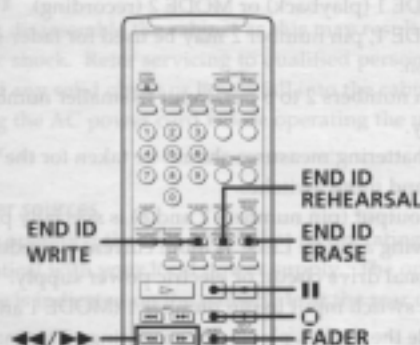
The track continues playing.



You can use Music Scan while playing a track

If you press the M.SCAN button while playing a track, the deck will rewind the tape to its beginning, then play the first 8 seconds of each track on the tape in succession.

Writing and Erasing an End ID



Writing an end ID during recording

- 1 When the recording of the program source comes to an end, press **II**, **O**, or **FADER**. Recording is paused.
- 2 Press **END ID WRITE**. "ID WRITE" or "EE" appears in the display while the end ID is being written. When writing has finished, the record pause mode is canceled and the deck rewinds the tape to the beginning of the end ID.

To write an end ID during playback

Press **END ID WRITE**.

More accurate positioning of the end ID

- 1 During playback, press **END ID REHEARSAL**. "REHRSL" appears in the display, and the Rehearsal function repeatedly plays back a 3-second portion that ends at the point where you pressed the button. The repeated portion plays back 8 times, and the deck stops.
- 2 Press **◀** or **▶** to shift the position of the beginning of the repeated portion. Each time you press **◀** or **▶**, the beginning of the repeated portion shifts backwards or forwards by 0.3-second, up to a maximum extent of about 2 seconds (4 seconds in long-play mode) in either direction. The display shows the amount the starting position has shifted from the time the **END ID REHEARSAL** button was pressed.

- 3 After repositioning the beginning of the end ID, press **END ID WRITE**.

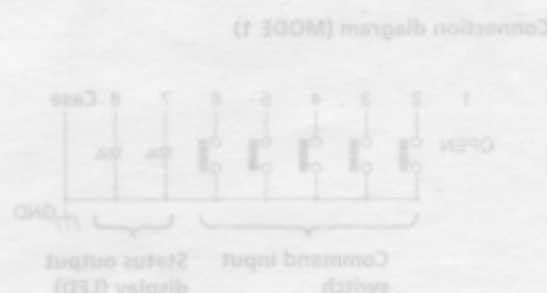
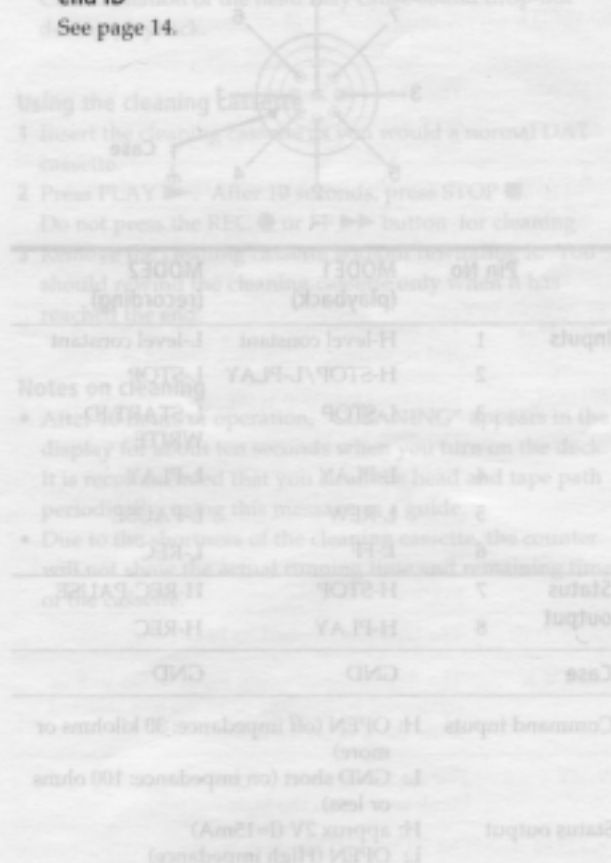
"ID WRITE" appears for a few seconds and the end ID is written on the tape after a duration of about 9 seconds after the end of the the repeated portion.

Erasing the end ID

Press **END ID ERASE**.

"(ERASE)" appears in the display while the deck fast-forwards to the beginning of the end ID, then "ID ERASE" appears while the deck erases the end ID. It takes about 9 seconds (18 seconds in long-play mode) to erase an end ID.

- You can use the End Search function to locate the end ID. See page 14.



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

Remote Control Function Using a Parallel Remote Connector

You can operate the deck with a parallel remote control that uses a switch box connected to the REMOTE 1 connector on the rear panel.

Using the REMOTE 1 connector

When operating the deck with a parallel remote control, set the REMOTE switch on the front panel to WIRED.

The pin numbers and pin assignments for the REMOTE 1 connector on the rear panel are as follows:

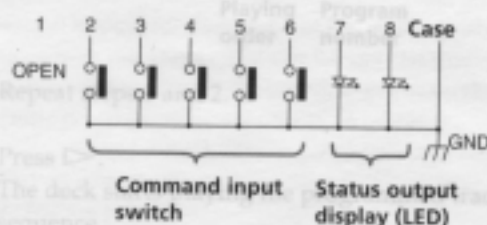
DIN connector (8 pin)



	Pin No	MODE1 (playback)	MODE2 (recording)
Inputs	1	H-level constant	L-level constant
	2	H-STOP/L-PLAY	L-STOP
	3	L-STOP	L-START ID WRITE
	4	L-PLAY	L-PLAY
	5	L-REW	L-PAUSE
	6	L-FF	L-REC
Status output	7	H-STOP	H-REC-PAUSE
	8	H-PLAY	H-REC
Case		GND	GND

Command inputs	H: OPEN (off impedance: 30 kilohms or more)
	L: GND short (on impedance: 100 ohms or less)
Status output	H: approx 2V (I=15mA)
	L: OPEN (High impedance)

Connection diagram (MODE 1)



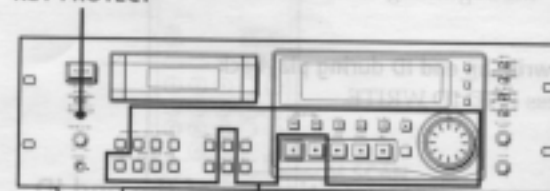
Notes

- When using MODE 2, use pin number 1 for GND.
- By keeping the input to pin number 1 constant at either H-level or L-level determines whether pin numbers 2 to 8 are in MODE 1 (playback) or MODE 2 (recording).
- In MODE 1, pin number 2 may be used for fader-start function.
- For pin numbers 2 to 6 pin, input to smaller numbers take priority.
- Anti-chattering measures should be taken for the command input switches.
- Status output (pin numbers 7 and 8) is specially provided for driving a single LED. If more current is needed, use an additional drive circuit or electric power supply.
- Do not switch input to pin number 1 (MODE 1 and MODE 2) while the deck is playing or recording. This may result in mis-operation of the deck.

Disabling Button Operations (Key Protect Function) (PCM-R700 Only)

You can disable certain button operations so that the buttons do not work during, for instance, recording.

KEY PROTECT



All of these buttons and dials are disabled.

Set KEY PROTECT to ON.

Precautions

On safety

- Do not disassemble the cabinet as this may result in an electric shock. Refer servicing to qualified personnel only.
- Should any solid object or liquid fall into the cabinet, unplug the AC power cord before operating the unit any further.

On power sources

- Before operating the unit, check that its operating voltage is identical with your local power supply. The operating voltage is indicated on the nameplate at the rear of the unit.
- If you are not going to use the unit for a long time, be sure to disconnect the AC power cord (mains lead) from the wall outlet. To disconnect the cord, grasp the plug itself; never pull the cord.

On operation

If the unit is brought directly from a cold place to a warm place, or is placed in a very damp room, moisture may condense on the lenses inside the unit, "CAUTION" may appear in the display, and the unit may not operate. If this happens, remove the cassette and leave the unit turned on for about an hour until the moisture evaporates.

On placement

- Place the unit in a location with adequate ventilation to prevent heat build-up.
- Do not place the unit:
 - on a soft surface such as a rug that might block the ventilation holes on the bottom.
 - near heat sources.
 - in direct sunlight.
 - in an inclined position.
 - in a place subject to excessive dust or mechanical shock.

On the DAT tapes

- After using a DAT tape, put it into its case and keep it where it will not be subject to sunlight, high temperature, moisture or dust.
- The DAT cassette shell is designed to keep out dust. Do not open the case to expose the tape.
- The hole at the back of the cassette is the detector slot. Do not cover this slot.

Regarding tapes of over 120 minutes

Do not use thin-tape cassettes (with a playing time of over 120 minutes) to record important materials since such cassettes are subject to the following problems:

- Improper threading of the tape after repeated AMS, rewinding, fast-forwarding, or cueing operations.
- Incorrect writing and erasing of start IDs.
- Sound distortion.

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

Cleaning

Cleaning the cabinet, panel and controls

Use a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzene.

Cleaning the head and tape path

- Prolonged operation will cause contamination of the head. To obtain the best possible recording and playback sound, we recommend that you use the Sony DT-10CL cleaning cassette (not supplied) to clean the head after every ten hours or so of operation.
- Clean the head with the cleaning cassette when the deck has not been used for a long period of time. Contamination of the head may cause sound drop-out during playback.

Using the cleaning cassette

- 1 Insert the cleaning cassette as you would a normal DAT cassette.
- 2 Press PLAY ►. After 10 seconds, press STOP ■. Do not press the REC ● or FF ►► button for cleaning.
- 3 Remove the cleaning cassette without rewinding it. You should rewind the cleaning cassette only when it has reached the end.

Notes on cleaning

- After 10 hours of operation, "CLEANING" appears in the display for about ten seconds when you turn on the deck. It is recommended that you clean the head and tape path periodically, using this message as a guide.
- Due to the shortness of the cleaning cassette, the counter will not show the actual running time and remaining time of the cassette.

Display Messages

The following table explains the various messages that appear in the display.

Message	Meaning
BLANK	The deck is searching for the beginning of the blank section on the tape.
CAUTION	A safety mechanism is operating because of condensation or other reasons.
CLEANING	Cleaning the head and tape path is recommended. After about 10 hours of deck use, this message appears for about 10 seconds whenever you turn on the deck.
(ERASE)	The ID ERASE function is on.
ID ERASE	A start ID or skip ID is being erased.
ID WRITE	A start ID, skip ID, or program number is being written.
M.SCAN	The M.SCAN button on the remote has just been pressed or Music Scan playback of the beginning of a track is about to start.
NO TAPE	A cassette is not inserted into the deck.
PROHIBIT	The program source you are about to record cannot be recorded through the digital input jacks or connectors.
PROTECT	The record-protect hole on the cassette is open and recording on the tape cannot be done.
REHSL	Rehearsal function is on.
SOURCE	The deck has been in recording pause for about 10 minutes, or you've pressed the REC button while no cassette is in the deck or the cassette is record-protected.
TAPE END	The tape has come to the end of the recorded portion.
TAPE TOP	The tape has reached its beginning.
UNLOCK	The digital signal being input to the jack or connector is different from the one selected with the INPUT switch.
WAIT	The deck is searching for the beginning of the blank section on the tape.
(WRITE)	The ID WRITE function is on.

Connection diagram (MODE 1)



Troubleshooting

If you've experienced any of the following difficulties while using the deck, use this section as a guide to remedy the problem. Should any problem persist, consult your nearest Sony dealer.

The cassette holder does not close.

- ➔ Check that the cassette is inserted correctly (see pages 9 and 10).

The function buttons do not work.

- ➔ The deck has just been turned on and will not operate for about 4 seconds. Wait 4 seconds (10 seconds when "CLEANING" appears) before attempting any operation.
- ➔ The PAUSE button is activated. Press PAUSE to cancel pause.
- ➔ The tape has reached its end. Press REW to rewind the tape.

No sound.

- ➔ The deck is not properly connected. Make the proper connections (see pages 5 and 6).
- ➔ The connected amplifier is not being operated properly. Operate the amplifier as required for the respective deck operation. (Refer to the operating instructions of the amplifier.)

The deck does not record.

- ➔ The record-protect hole on the cassette is open. Slide the record-protect tab to close the hole (see page 11).
- ➔ The INPUT switch is incorrectly set. Set INPUT, ANALOG INPUT or DIGITAL IN/OUT to the correct position.
- ➔ The REC LEVEL CH-1(L)/2(R) controls are set at 0. Turn them clockwise to raise the recording level (only during analog recording).

The OPEN/CLOSE button does not work.

- ➔ The OPEN/CLOSE button does not function during recording. Press STOP or PAUSE to stop recording first, then press OPEN/CLOSE.

"CAUTION" appears and the deck cannot be operated.

- ➔ A safety mechanism is operating because of condensation. Remove the cassette and leave the deck turned on for about an hour. Then turn the deck off, then on again (see page 29).

Writing or erasing of sub codes is not possible.

- ➔ The record-protect hole on the cassette is open. Slide the record-protect tab to close the hole (see page 11).

Start ID writing is not possible during recording.

- The start ID cannot be written within 18 seconds (36 seconds in long-play mode) after the end of the previous start ID. Make sure at least 18 seconds (36 seconds in the long-play mode) has passed after the last start ID and before writing a new one.

The search function does not stop at the specified track.

- ➔ The specified program number does not exist on the tape. Press RENUMBER to renumber the program numbers (see page 23).
- ➔ The program numbers are out of order. Press RENUMBER to renumber the program numbers (see page 23).

The search function operates suddenly during playback.

- ➔ Skip Play is on.
Press SKIP PLAY to turn off "SKIP PLAY" in the display and cancel Skip Play.
- ➔ Repeat Play is on.
Press REPEAT repeatedly to turn off "REPEAT" or "REPEAT 1" in the display and cancel Repeat Play.

The tape operation buttons do not function while writing or erasing a start ID, a skip ID or an end ID.

- ➔ All buttons do not work during the 9 seconds the start ID or end ID is being written or erased (18 seconds in long-play mode) or during the 1 second the skip ID is being written or erased (2 seconds in long-play mode). Wait until the writing or erasing the start, skip or end ID finishes before operation.


Absolute time codes writing is not possible.

- ➔ Recording began within a blank section.
Rewind the tape to its beginning, or locate the end of the recorded portion with End Search before starting recording.

Tape transport is excessively loud during fast-forwarding or rewinding.

- ➔ The noise is caused by the cassette and is not a mechanical problem.

The tape stops suddenly.

- ➔ The cassette is defective or damaged. Press OPEN/CLOSE  and replace the cassette with a new one.

The built-in clock does not keep proper time once the power is turned off.

- ➔ The battery in the deck is weak.
Have the battery replaced by Sony service personnel (entails a service fee).

After pressing **REW** or **PREVIOUS** , the tape stops momentarily before starting to move.

- ➔ This is normal and is not a mechanical problem.

The deck cannot be operated with the remote (supplied).

- ➔ The battery is weak. Change both batteries.
- ➔ Set the REMOTE switch to WIRELESS.

The deck cannot be operated with the optional remote RM-D750.

- ➔ Set the REMOTE switch according to the connection between the deck and the remote (see page 26).

"SBM" does not appear in the display even though SBM is set to ON.

- "SBM" appears only during the recording of analog input signals with a sampling frequency of 48 kHz or 44.1 kHz, not during the recording of a digital input signal, or an analog input signal with a sampling frequency of 32 kHz, or during playback.

A particular operation cannot be done as you want.

- ➔ Set the appropriate menu to its default setting.

Specifications

Recording section

Tape	Digital audio tape
Recording head	Rotary head
Recording time	Standard: 120 minutes Long-play: 240 minutes (DT-120)
Tape speed	Standard: 8.15 mm/s Long-play: 4.075 mm/s
Drum rotation	Standard: 2,000 rpm Long-play: 1,000 rpm
Error correction	Double-encoded Reed Solomon code

Tape section

Track pitch	13.6 μ m (20.4 μ m)
Sampling frequency	48 kHz, 44.1 kHz, 32 kHz
Modulation system	8-10 modulation
Transfer rate	2.46 Mbit/sec
Number of channels	2 channels, stereo
D / A conversion (quantization)	Standard: 16-bit linear Long-play: 12-bit non-linear

General section

Power requirements

Where purchased	Power requirements
U.S.A./Canada	120 V AC, 60 Hz
Europe/U.K.	230 V AC, 50/60 Hz

Power consumption	PCM-R500: 34W PCM-R700: 34W
--------------------------	--------------------------------

Dimensions	Approx 482 x 145 x 355 mm (w/h/d) (19 x 5 3/4 x 14 inches) (not including rack mount adaptor)
-------------------	---

Weight	PCM-R500: Approx 7.2kg (15 lb 14 oz) PCM-R700: Approx 7.3kg (16 lb 2 oz)
---------------	---

Remote commander RM-D757 (supplied)

Remote control system	Infrared control
Power requirements	3V DC, with two size-AA (R6) batteries
Dimensions	Approx 45 x 210 x 26 mm (w/h/d) (1 3/8 x 8 1/4 x 1 1/8 inches)
Weight	Approx 100g (3.5 oz) incl. batteries

Input connectors

Analog Input

Connector	Type	Input impedance	Rated input level ^a
ANALOG (UNBALANCE)	Phono-plug jack	47 kilohms	-12 dBs
ANALOG (BALANCE)	XLR-3 (FEMALE)	10 kilohms or more (balanced)	+4 dBs (factory setting)

Digital Input

Connector	Type	Input impedance	Rated input level
AES/EBU	XLR-3 (FEMALE)	110 ohms (balanced)	—
COAXIAL	Phono-plug jack	75 ohms	0.5 Vp-p

Output connectors

Analog Output

Connector	Type	Output impedance	Rated output level ^a	Load impedance
ANALOG (UNBALANCE)	Phono-plug jack	1 kilohm	-12 dBs	47 kilohms
ANALOG (BALANCE)	XLR-3 (MALE)	100 ohms (balanced)	+4 dBs (factory setting)	10 kilohms or more
PHONES	Stereo phone-plug jack	100 ohms	0.36 mW	32 ohms

Digital Output

Connector	Type	Output impedance	Rated output level	Load impedance
AES/EBU	XLR-3 (MALE)	35 ohms (balanced)	—	110 ohms
COAXIAL	Phono-plug jack	75 ohms	0.5 Vp-p	75 ohms

Variable range of analog (BALANCE) input/output reference level^a
+4 dBs to -12 dBs

Maximum analog (BALANCE) output level
+24 dBs

Remote switch connectors
DIN connector (8-pin, parallel)
Monaural minijack (serial)

Audio characteristics

Frequency response^a
Standard: 20-20,000 Hz (± 0.5 dB)
Long-play: 20-14,500 Hz (± 0.5 dB)

Signal-to-noise ratio^a
90 dB or more (20 kHz LPF, A-Weight filter ON)

Total harmonic distortion^a
Standard: 0.05% or less
Long-play: 0.3% or less
(1 kHz, Reference level ^a 20 kHz LPF ON)

Wow and flutter
Below measurable limit ($\pm 0.001\%$ W.PEAK)

a) The reference level corresponds to -20 dB on the peak level meters.

b) During analog input with the SBM function off

Supplied accessories See page 4.

Design and specifications are subject to change without notice.

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