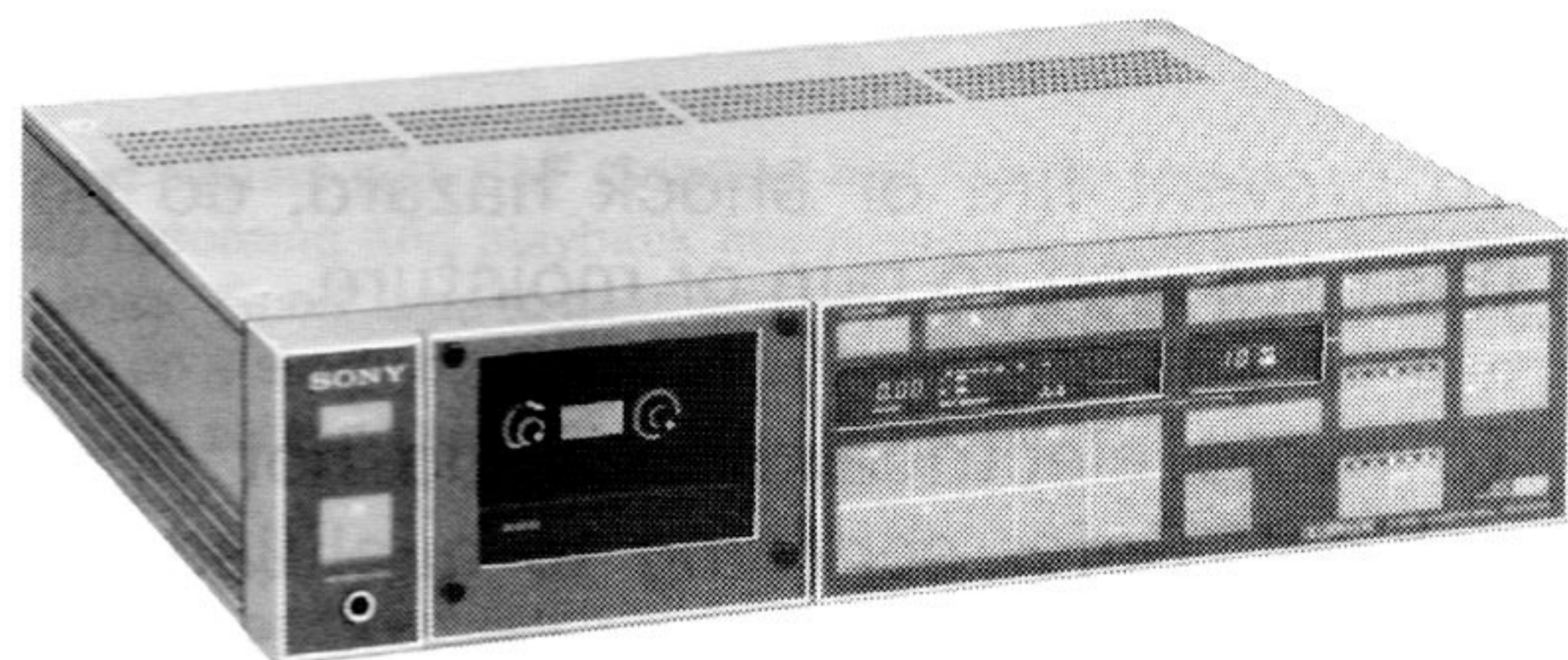# SONY®

STEREO CASSETTE DECK

TC-FX1010

OPERATING INSTRUCTIONS

Before operating the unit, please read this manual thoroughly.
This manual should be retained for future reference.

OWNER'S RECORD

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

Model No. TC-FX1010   Serial No. _____

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.

TABLE OF CONTENTS

FEATURES

ASP IC
A newly-developed ASP (Audio Signal Processor) IC and the TC-FX1010's built-in microcomputer have made it possible to replace all mechanical switches with electronic keys and to shorten and simplify the signal path.

Status memory function
The optimum recording and playback settings for particular program sources and particular tapes can be memorized and instantly retrieved.

Three-head system with S&F (Sendust and Ferrite) heads
Separate recording and playback heads provide extended frequency response. Good tape-to-head contact is assured by mounting the heads on a single block and adjusting each head separately for more precise azimuth alignment.

Dual-capstan tape drive
Two capstans and two pinch rollers ensure uniform tape tension and stable tape-to-head contact. As a result, wow and flutter and modulation noise are greatly reduced.

Automatic calibration
An automatic calibration system adjusts the bias current and the recording sensitivity for each particular cassette.

Self monitor function
The recording being made is monitored and the indicators warn if the recorded signal level is lower than the source signal level.

Dolby C-type noise reduction system
In addition to the conventional B-type Dolby NR system, the TC-FX1010 incorporates the newly-developed C-type Dolby NR system which is twice as effective in reducing noise as the B-type system. In the C-type system, an anti-saturation network extends the dynamic range in the high frequencies.

Automatic recording level attenuation
Any input level higher than the MOL (Maximum Output Level) is automatically attenuated during recording so that the recorded sound will not be distorted.

Adjustable MOL balance
You can adjust the bias current to suit the program source to be recorded.

Digital linear counter
This counter can indicate the elapsed recording or playback time so that the tape can be accurately indexed. It can also indicate the remaining time left to record before the tape runs out.

Automatic tape type detection
When a cassette is inserted, the type of tape is automatically detected and the optimum bias current for recording and the optimum equalization setting for both recording and playback for the type of tape used is automatically set.

Quick-access operation
The TC-FX1010 can be instantly powered by pressing the ▲ key or function keys which initiate the function directly without pressing the POWER key.

PRECAUTIONS

On safety
● Operate the unit only on 120 V ac.
● Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
● Unplug the unit from the wall outlet if it is not to be used for an extended period of time. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

On installation
● Good air circulation is essential to prevent internal heat build-up in the unit. Place the unit in a location with sufficient air circulation.
● Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust or mechanical vibration.
● Install the unit with the front panel facing toward you. Do not install the unit in an inclined position.

On head cleaning
The performance of your unit is dependent on the periodic cleaning of the heads and all surfaces over which the tape travels.
Dirty heads and a dirty tape path cause :
    Loss of high frequency response
    Loss of sound volume
    Sound drop-outs
The heads and tape path should be cleaned after 10 hours of operation. For details, see "Maintenance" on page 17.

Playback waveform at 10 kHz

With a clean head

With a dirty head (The output level fluctuates.)

Frequency response

With a clean head

With a dirty head
Even a hardly visible dust layer of 1.5 μ deteriorates frequency response.
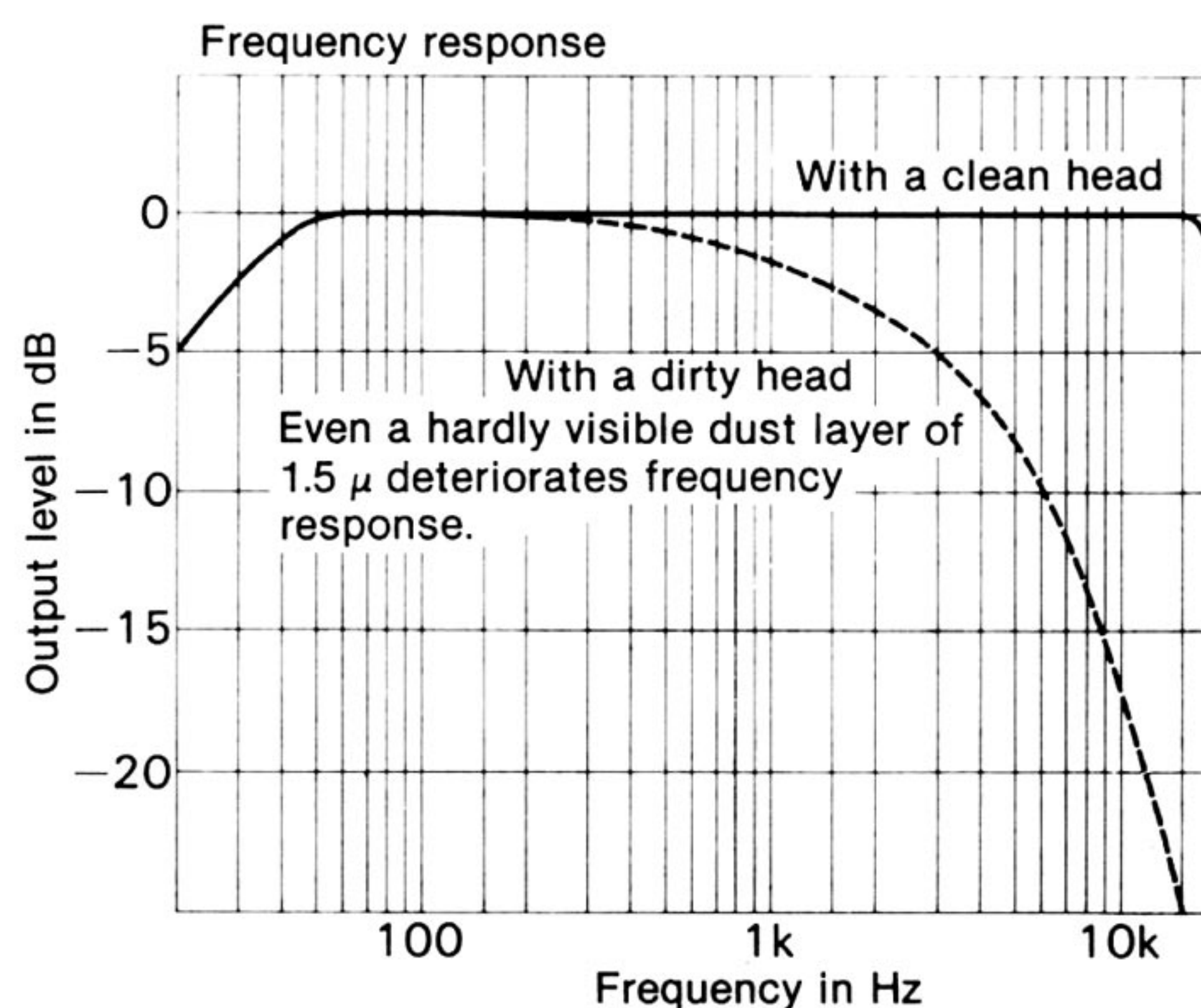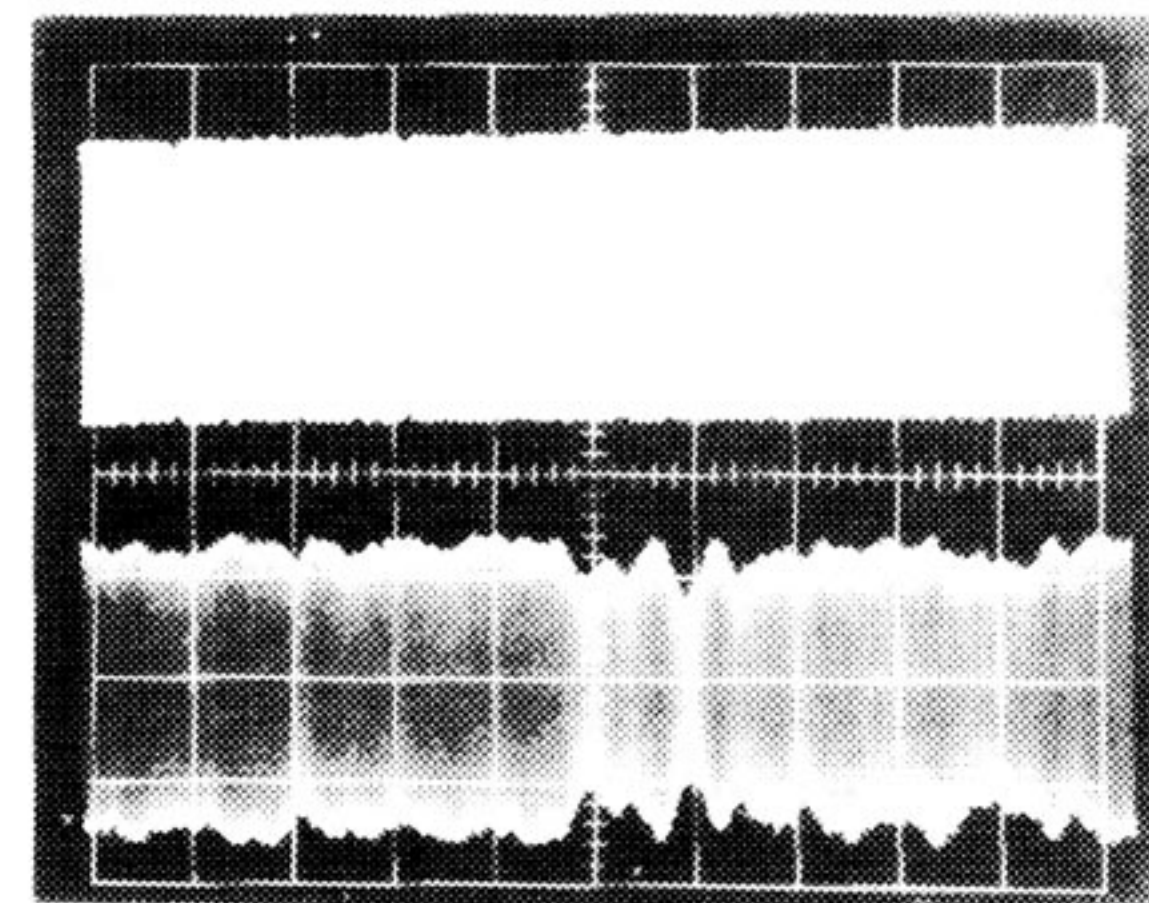
For the customers in the USA
For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

FUNCTION OF CONTROLS

The numbers in the photo are keyed to the following explanations.
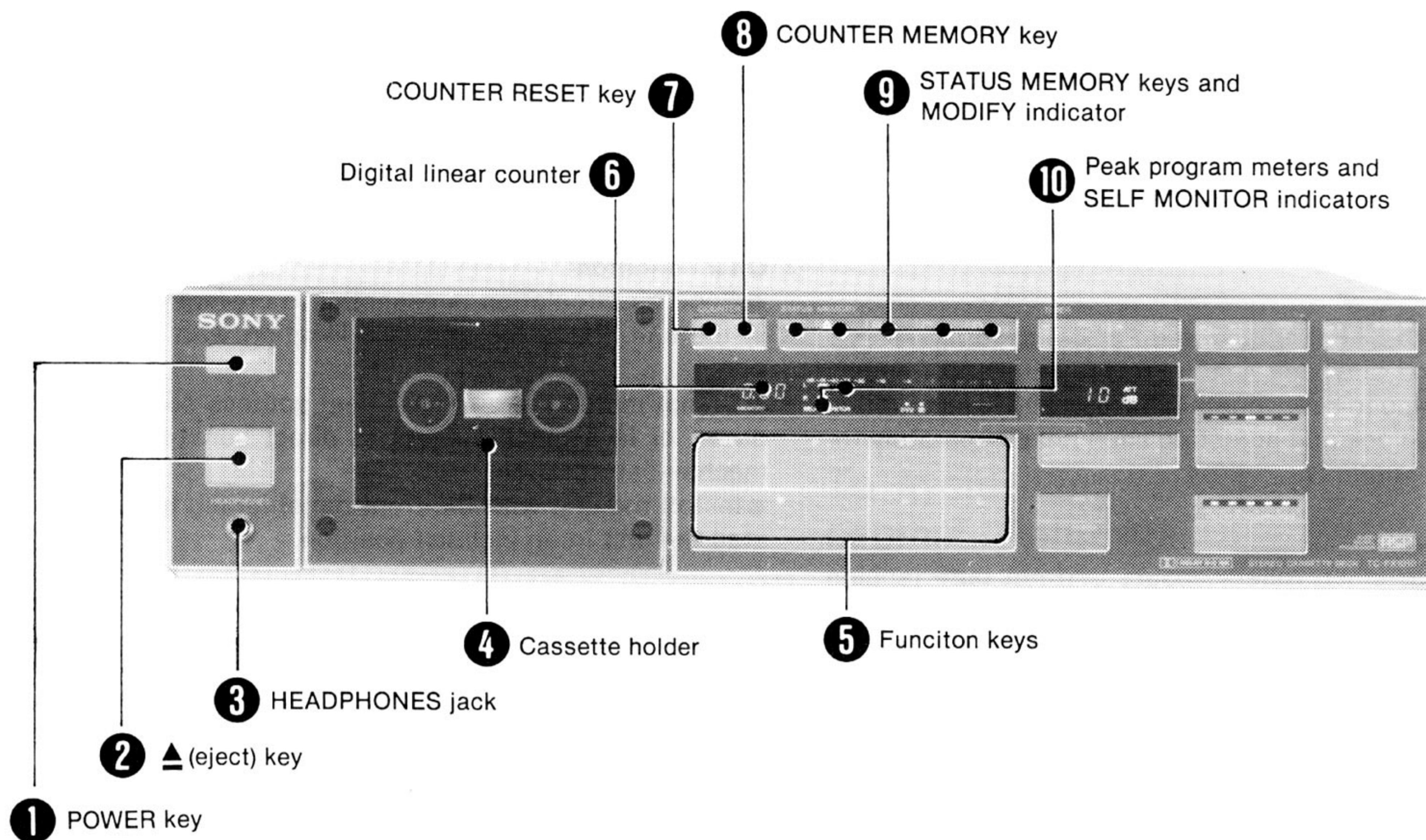

❶ POWER key
This turns the power on or off.

❷ ⏏ (eject) key
Press this key to open the cassette holder.

❸ HEADPHONES jack
Headphones may be inserted either to monitor the input signals to be recorded or to listen to a recording in the playback mode.
Headphone volume is adjustable with the LINE OUT/HEADPHONES level control key.

❹ Cassette holder

❺ Function keys
It is possible to switch directly from one mode to another. The indicator lamp of other than ■ (stop) or ○ (REC MUTE) key will light up when it is pressed.

◀◀ (rewind) key : Press this key to rewind the tape.
▶ (forward) key : Press this key to play the tape back. To record, press this key and the ● key simultaneously.
▶▶ (fast-forward) key : Press this key to advance the tape rapidly.
● (record) key : Press this key together with the ▶ key to start recording. Also press this key before adjusting the recording level.
■ (stop) key : To stop the tape, press this key. The tape will stop automatically when it is completely wound in either direction.
▮▮ (pause) key : To pause for a moment during recording or playback, press this key. This key is also used to control more precisely the start of recording and to release the record muting mode.
○ (record muting) key : Press this key to eliminate unwanted material and to insert a blank space during recording. See "Record muting" on page 15.

❻ Digital linear counter
This counter indicates the tape running time.
(Refer to "Using the digital linear counter" on page 14.)

❼ COUNTER RESET key
Press this key to set the counter to zero.

❽ COUNTER MEMORY key
Use the COUNTER MEMORY key to locate a particular point on the tape easily and quickly. Press the key to display the MEMORY indicator. The tape deck can be set to stop when the cassette is rewound to "−0.01" on the counter, and, if the ▶ and ◀◀ keys have also been pressed, set to begin playback automatically from that point. Press the key again to cancel it. See "Memory stop/play" on page 15.
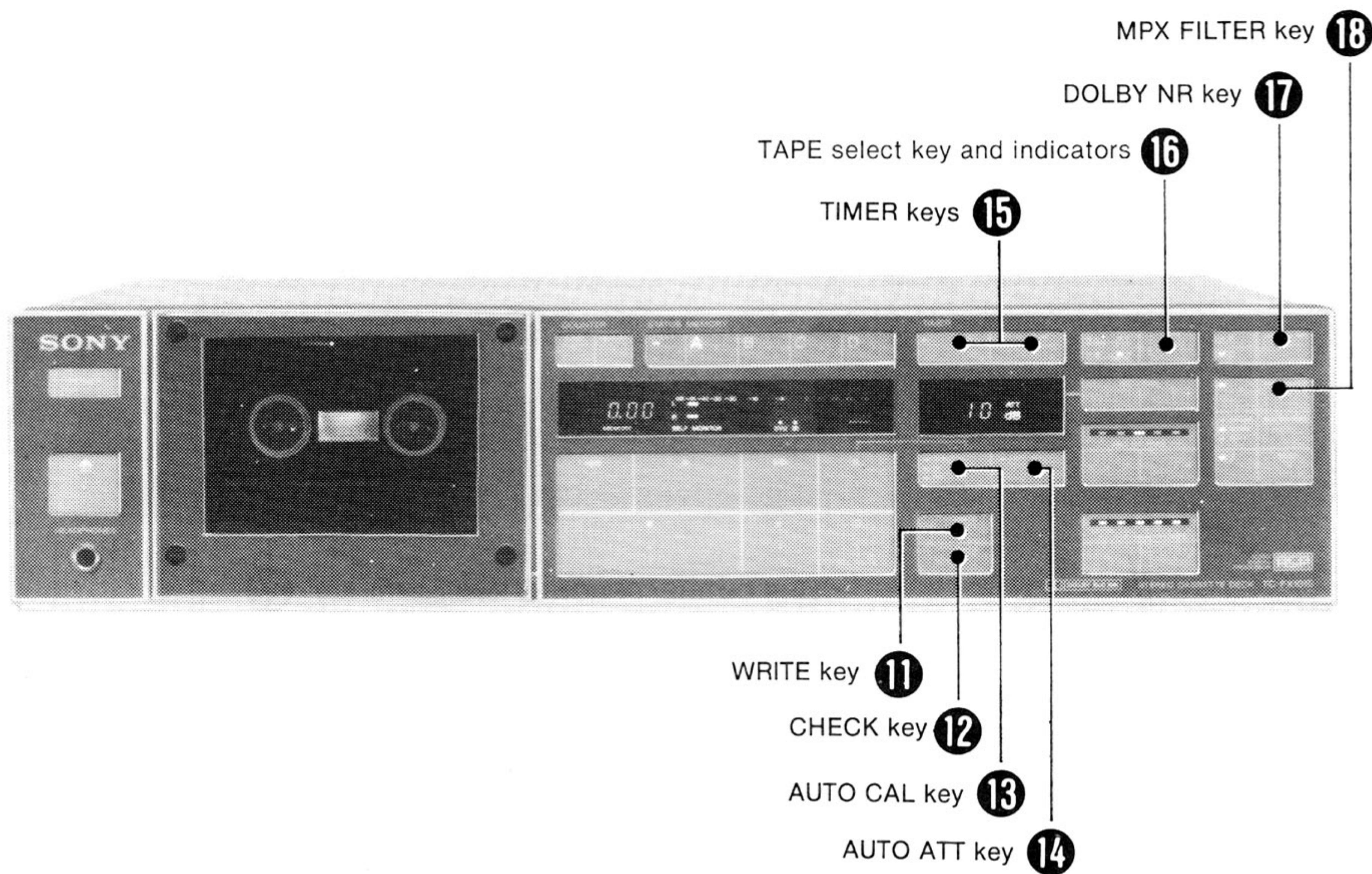
❾ STATUS MEMORY keys and MODIFY indicator
The recording and playback settings as set by **the TAPE select key, the DOLBY NR key, the MPX FILTER key, the AUTO CAL key, the AUTO ATT key, the REC LEVEL control key, the REC BALANCE control key, the LINE OUT/HEADPHONES level control key, the BEEP key and the MOL BALANCE key** can be stored on the four STATUS MEMORY keys. Simply press the appropriate key to retrieve the desired setting. The pressed key will light.
When you have retrieved a particular setting with a STATUS MEMORY key, you can modify the recording and playback setting as necessary. When you do, the MODIFY indicator will light. To restore the setting on the STATUS MEMORY key, simply press the lightened STATUS MEMORY key. The MODIFY indicator will go out.

❿ Peak program meters and SELF MONITOR indicators
These meters show the peak input level of each channel during recording, and recorded levels in the playback mode. They follow the transient peaks of high-level inputs that are too brief to be followed by conventional VU meters so that the optimum recording level can be accurately set. For easy reading the highest input of each channel is held for about 4 seconds on the scale, except when a higher peak occurs before 4 seconds have passed, in which case that peak is immediately indicated.
The SELF MONITOR indicators will blink when the recording is distorted.

4

MPX FILTER key ⑱
DOLBY NR key ⑰
TAPE select key and indicators ⑯
TIMER keys ⑮
WRITE key ⑪
CHECK key ⑫
AUTO CAL key ⑬
AUTO ATT key ⑭

⑪ WRITE key

To store the optimum recording and playback settings in the STATUS MEMORY keys, first press this key and then one of the STATUS MEMORY keys.

⑫ CHECK key

To check the settings stored in the STATUS MEMORY keys, press this key. The settings will be displayed in sequence so that you can check them during the playback mode. This key doesn't operate during the recording mode.

⑬ AUTO CAL (automatic calibration) key

Press this key to automatically calibrate the bias and recording sensitivity for the tape being used to record. See page 20.

⑭ AUTO ATT (automatic attenuator) key

Press this key to automatically attenuate the preset recording level when the input level is too high, so that the recording will not be distorted. Press the key again to cancel the automatic attenuation. See page 21.

⑮ TIMER keys

You can set the unit to record or play back at a predetermined time by connecting any commercially available timer. To record, press the REC key. To play back, press the PLAY key. Each indicator illuminates. See "Timer-activated recording and playback" on page 16.

⑯ TAPE select key and indicators

When a cassette is inserted, the appropriate tape indicator lights up and the optimum recording and playback settings for the tape are automatically set by the automatic tape select system. Press this key if the indicator and the type of tape inserted are not the same. This key does not operate if a cassette has not been inserted. See page 9.
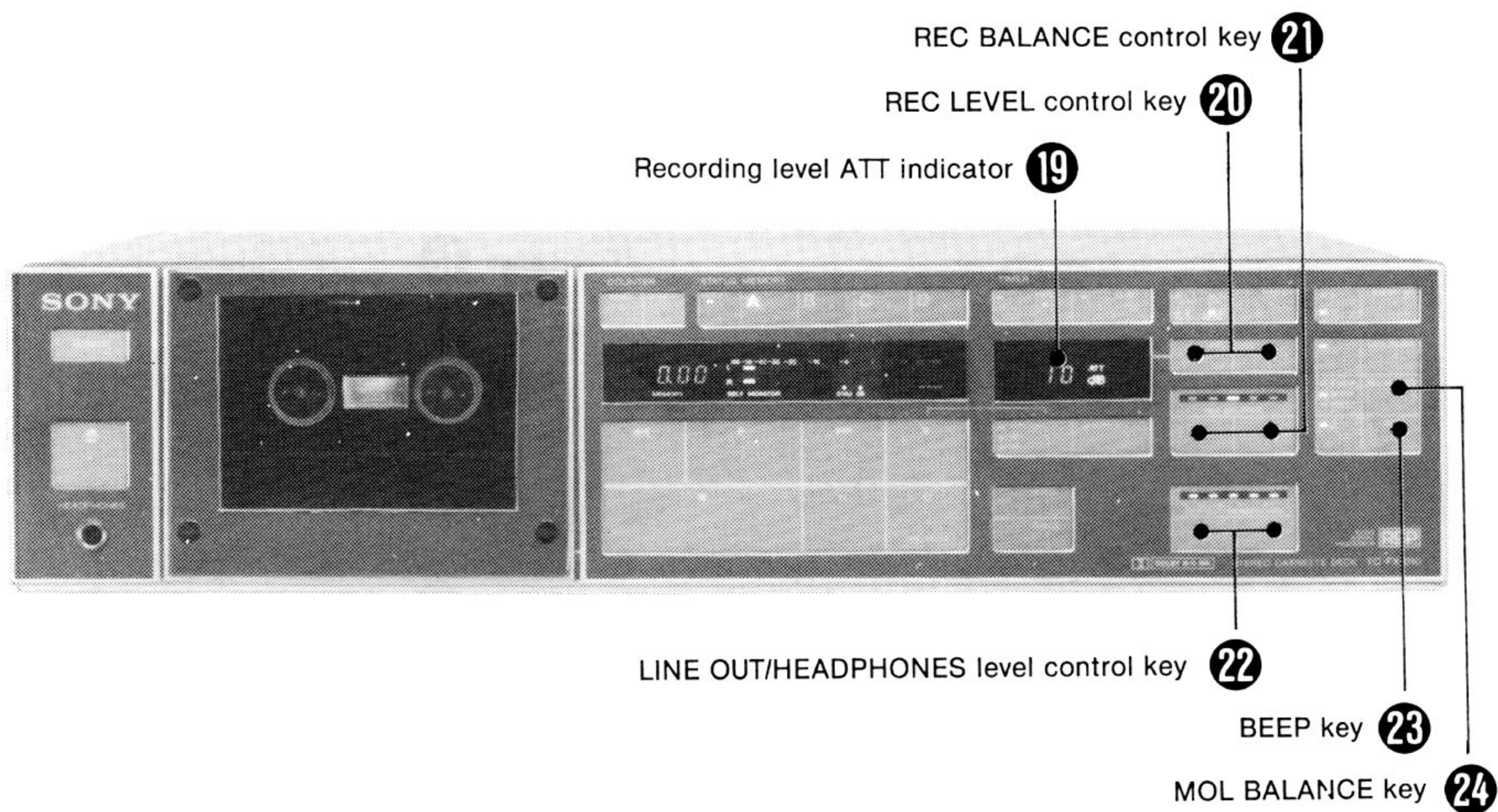
⑰ DOLBY NR key

Press this key to select the Dolby* NR system when recording or playing back. The type of Dolby NR system applied will change in the following sequence when the key is pressed : Dolby NR B type (B indicator illuminates), Dolby NR C type (C indicator illuminates), Dolby NR off (indicator off).
For details about the Dolby NR system, see page 20.

* "Dolby" and the double-D symbol are trade marks of the Dolby Laboratories Licensing corporation . Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation .

⑱ MPX FILTER key

When recording FM stereo broadcasts with the Dolby NR system, press this key to ON (the indicator lights up) if the 19 kHz pilot signal and the 38 kHz subcarrier have not been adequately supressed by the FM tuner or receiver. If the tuner or the receiver supresses such signals adequately (most high-quality tuners and receivers will), you do not have to press this key to ON. Normally set the key so that the indicator is off.

REC BALANCE control key **21**
REC LEVEL control key **20**
Recording level ATT indicator **19**

LINE OUT/HEADPHONES level control key **22**
BEEP key **23**
MOL BALANCE key **24**

19 Recording level ATT (attenuation) indicator

The recording level set by the REC LEVEL key is indicated in dB. Note that the level is higher when the indicated number is smaller. For example: If the + side of the REC LEVEL key is kept depressed, the indicator will count down to 00 dB, at which point the recording level will be at the maximum. If the − side is pressed, the indicator will count up to ⊏⊐dB, at which point the recording level will be at the minimum.

20 REC LEVEL (recording level) control key

Adjust the recording level by watching the peak program meters and the recording level ATT indicator. Press the + side to increase the level and the − side to decrease it.
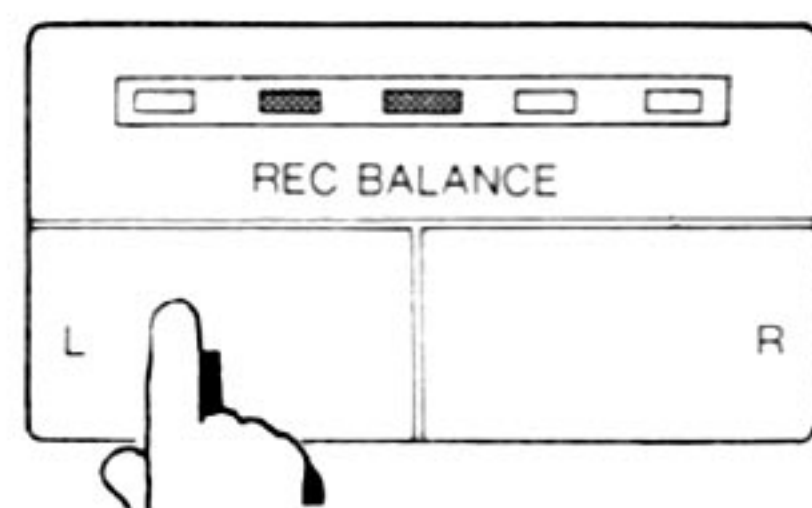
21 REC BALANCE (recording level balance) control key

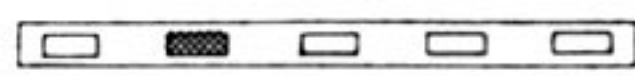This controls the balance of the left and right channel recording levels.

Normal position of the indicator ▭ ▭ ▭ ▬ ▭ ▭

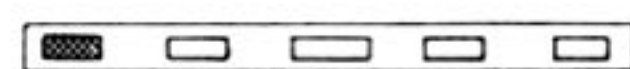If the right(R) channel level is too high, press the L side once.
The right channel level will lower.

REC BALANCE
L   R

If the right channel level is still too high, press the L side again.

The right channel level cannot be lowered further than this.

22 LINE OUT/HEADPHONES level control key

This key adjusts the output level of the LINE OUT jacks as well as the headphone level. At the "0" position, the rated output is obtained. Press the − side to reduce the output level by 2 dB. The level will change continuously if the key is kept pressed.

23 BEEP key

When this key is pressed, the indicator will light up and an alarm will sound when any key other than the function keys, the POWER key or the ▲ key is pressed. Press this key again to cancel this function.

24 MOL BALANCE key

This key is used to select one of the three MOL (Maximum Output Level) settings most appropriate for the type of program to be recorded. The indicator will change in the following sequence when the key is pressed: NORM—SHARP—NORM—SOFT—NORM.

SHARP : Recommended for recording programs with the high frequency range predominating as in jazz or synthesizer music.
NORM : For normal recording.
SOFT : Recommended for recording the program with the low frequency range predominating as in classical music.

When the tape type is changed, the indicator will automatically return to NORM.
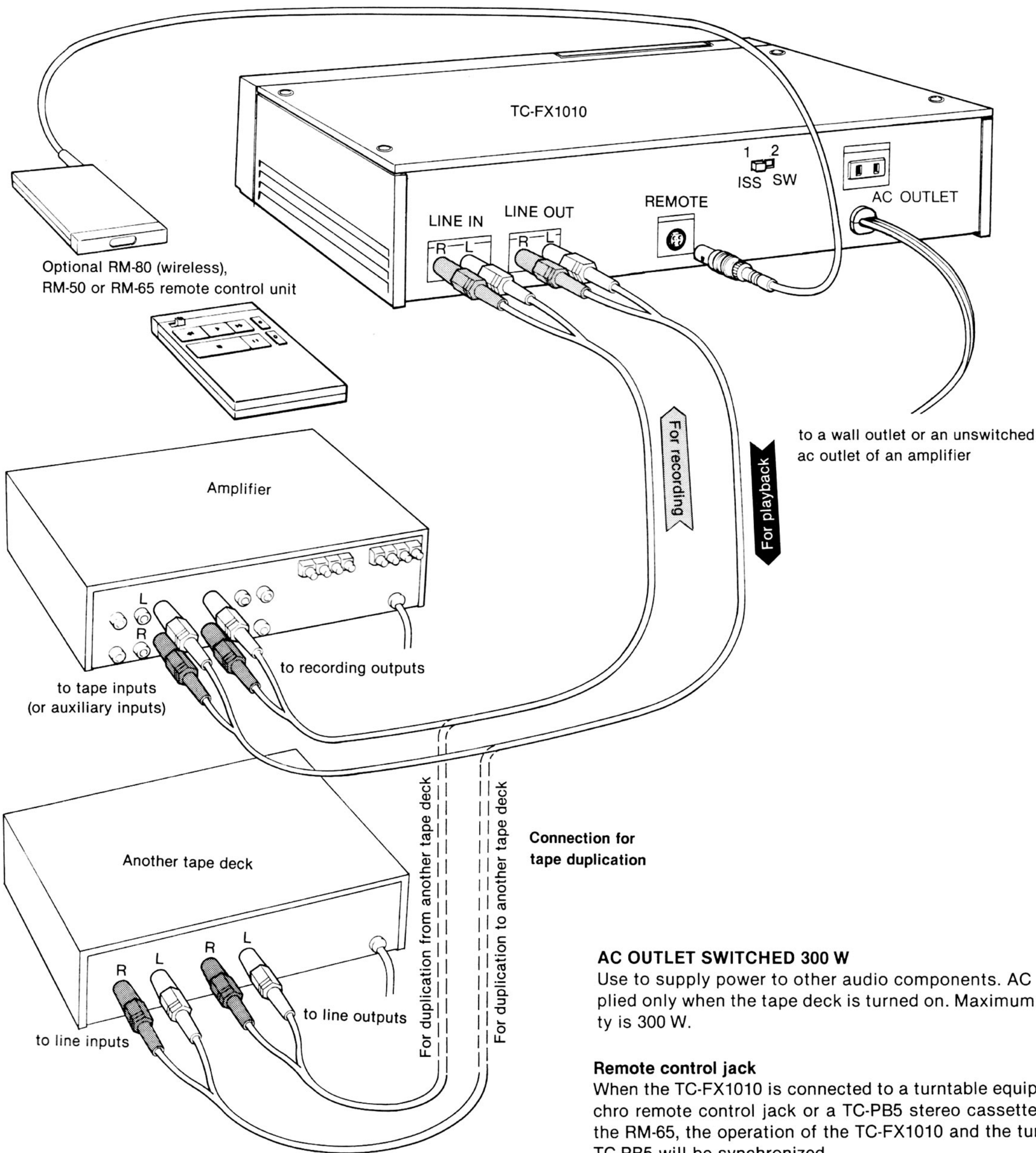
ISS (Interference suppress switch) (on the rear)

If interference is encountered while recording MW or LW program, use the ISS switch to suppress the interference. Slide the switch to 1 or 2 position, depending on which best reduces the noise.

CONNECTIONS

Notes
- Turn the amplifier off before making any connection.
- Be sure to insert the plugs firmly into the jacks. Loose connections may cause hum and noise.
- The red plug of the supplied connecting cord should be connected to the red jack (R : right channel) and the other plug to the white jack (L : left channel).

TC-FX1010

Optional RM-80 (wireless),
RM-50 or RM-65 remote control unit

LINE IN   LINE OUT   REMOTE   AC OUTLET

ISS SW

1 2

For recording

For playback

to a wall outlet or an unswitched
ac outlet of an amplifier

Amplifier

to recording outputs

to tape inputs
(or auxiliary inputs)

For duplication from another tape deck

For duplication to another tape deck

Connection for
tape duplication

Another tape deck

to line outputs

to line inputs

AC OUTLET SWITCHED 300 W
Use to supply power to other audio components. AC power is supplied only when the tape deck is turned on. Maximum rated capacity is 300 W.
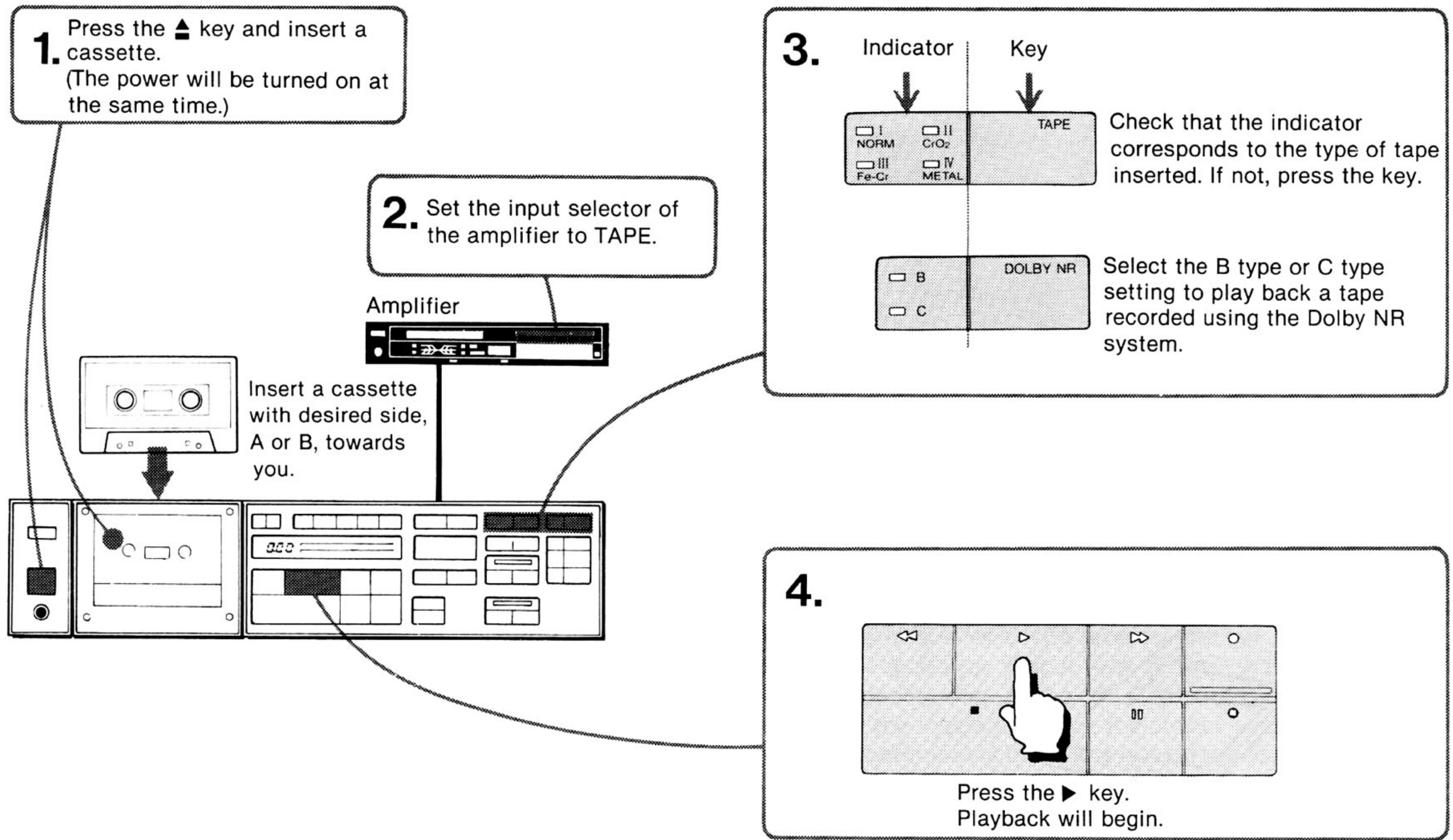
Remote control jack
When the TC-FX1010 is connected to a turntable equipped with synchro remote control jack or a TC-PB5 stereo cassette player using the RM-65, the operation of the TC-FX1010 and the turntable or the TC-PB5 will be synchronized.
For details refer to the instruction manual of the turntable or TC-PB5.

PLAYBACK

The numbers in this diagram indicate the sequence to be followed.

1. Press the ▲ key and insert a cassette.
(The power will be turned on at the same time.)

2. Set the input selector of the amplifier to TAPE.

Amplifier

Insert a cassette with desired side, A or B, towards you.

3. Indicator Key

| I NORM | II CrO₂ | TAPE |
| III Fe-Cr | IV METAL | |

Check that the indicator corresponds to the type of tape inserted. If not, press the key.

| B | DOLBY NR |
| C | |

Select the B type or C type setting to play back a tape recorded using the Dolby NR system.

4.

Press the ▶ key.
Playback will begin.

Tape list

Tapes (C-60 and C-90)		TAPE
SONY : SHF, HFX MAXELL : UD, UD-XL I SCOTCH : MASTER I	AMPEX : GRAND MASTER I FUJI : FX-I MEMOREX : MRX₂ TDK : AD	TYPE I (NORMAL)
SONY : UCX-S, EHF MAXELL : UD-XL II SCOTCH : MASTER II	AMPEX : GRAND MASTER II FUJI : FX-II MEMOREX : CrO₂ TDK : SA	TYPE II (CrO₂)
SONY : FeCr SCOTCH : MASTER III	BASF : PROFESSIONAL III PHILIPS : FERRO CHROMIUM	TYPE III (Fe-Cr)
SONY : METALLIC	Other metal tapes	TYPE IV (METAL)

When turning on the power—
To turn the power on, you can press the POWER key, the ▲ key, the function keys, the COUNTER RESET key, the COUNTER MEMORY key or the STATUS MEMORY keys.
When the power is turned on, all indicators illuminate, the ▮▮ key blinks, and the recording level ATT indicator and the tape counter count down from 77 to 00 to indicate that the unit is in the standby mode.
The keys listed below will operate as soon as the unit leaves the standby mode.

Function keys (▶, ▶▶, ◀◀, ●), STATUS MEMORY keys, COUNTER RESET key

Note : Do not press the ● key and ▶ key during the standby mode to avoid starting the recording mode.
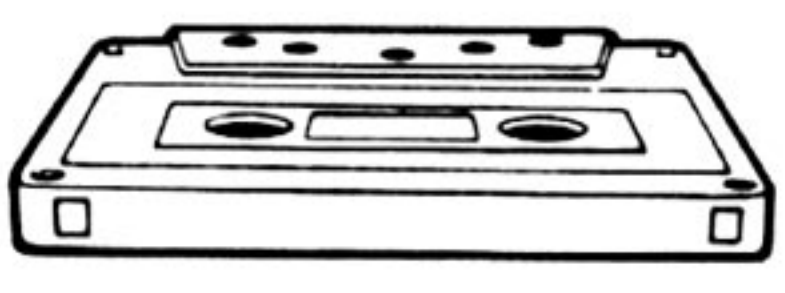
When turning the power off—
Press the POWER key to turn the power off.
The power will also be turned off automatically if the unit is left for about 60 minutes in the stop mode.
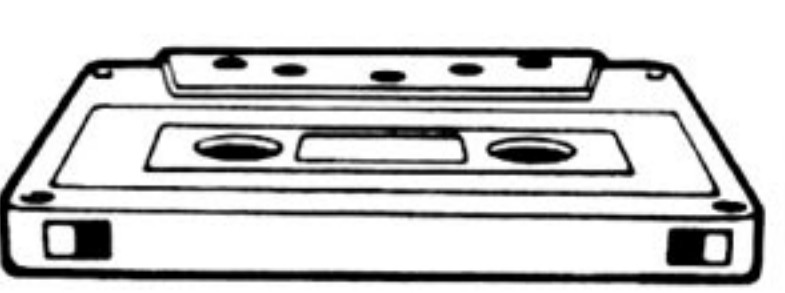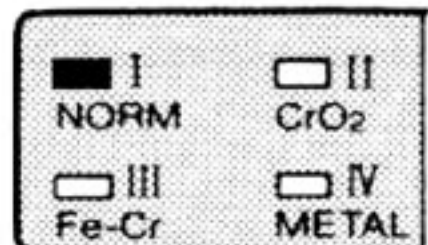
www.hifiengine.com

AUTOMATIC TAPE SELECT SYSTEM

When a cassette is inserted, this automatic tape select system is actuated by the cassette's arrangement of detector slots and automatically sets the optimum recording and playback settings.
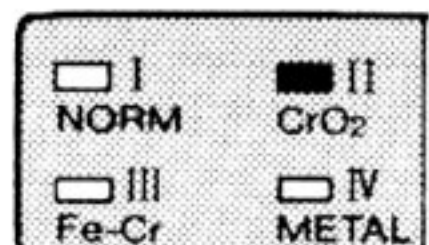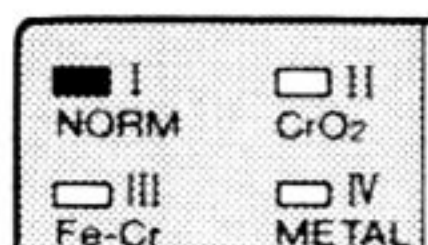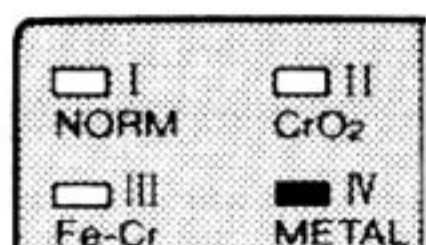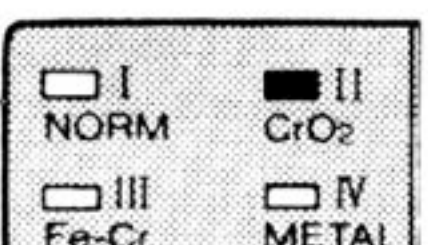
	TYPE I (NORMAL) cassette	TYPE II (CrO2) cassette	TYPE III (Fe-Cr) cassette	TYPE IV (METAL) cassette	
Tape detector slots	the tab	CrO2 tape detector slots	same as the TYPE I cassette	METAL tape detector slots	METAL tape which has no METAL tape detector slots
TAPE indicator	■ I NORM □ II CrO2 □ III Fe-Cr □ IV METAL	□ I NORM ■ II CrO2 □ III Fe-Cr □ IV METAL	■ I NORM □ II CrO2 □ III Fe-Cr □ IV METAL	□ I NORM □ II CrO2 □ III Fe-Cr ■ IV METAL	□ I NORM ■ II CrO2 □ III Fe-Cr □ IV METAL

As shown in the above illustration, TYPE I, II and IV cassette tapes will be detected automatically.

Exception to the automatic tape select system

● When inserting TYPE III or TYPE IV cassettes which have no METAL tape detector slots, the correct TAPE indicator does not light up and the automatic tape select system cannot work properly. In this case, press the TAPE key so that the correct TAPE indicator lights up.

● If the TAPE indicator is TYPE III or TYPE IV and the TYPE I or II cassette is inserted, press the TAPE key so that the indicator will be correct.

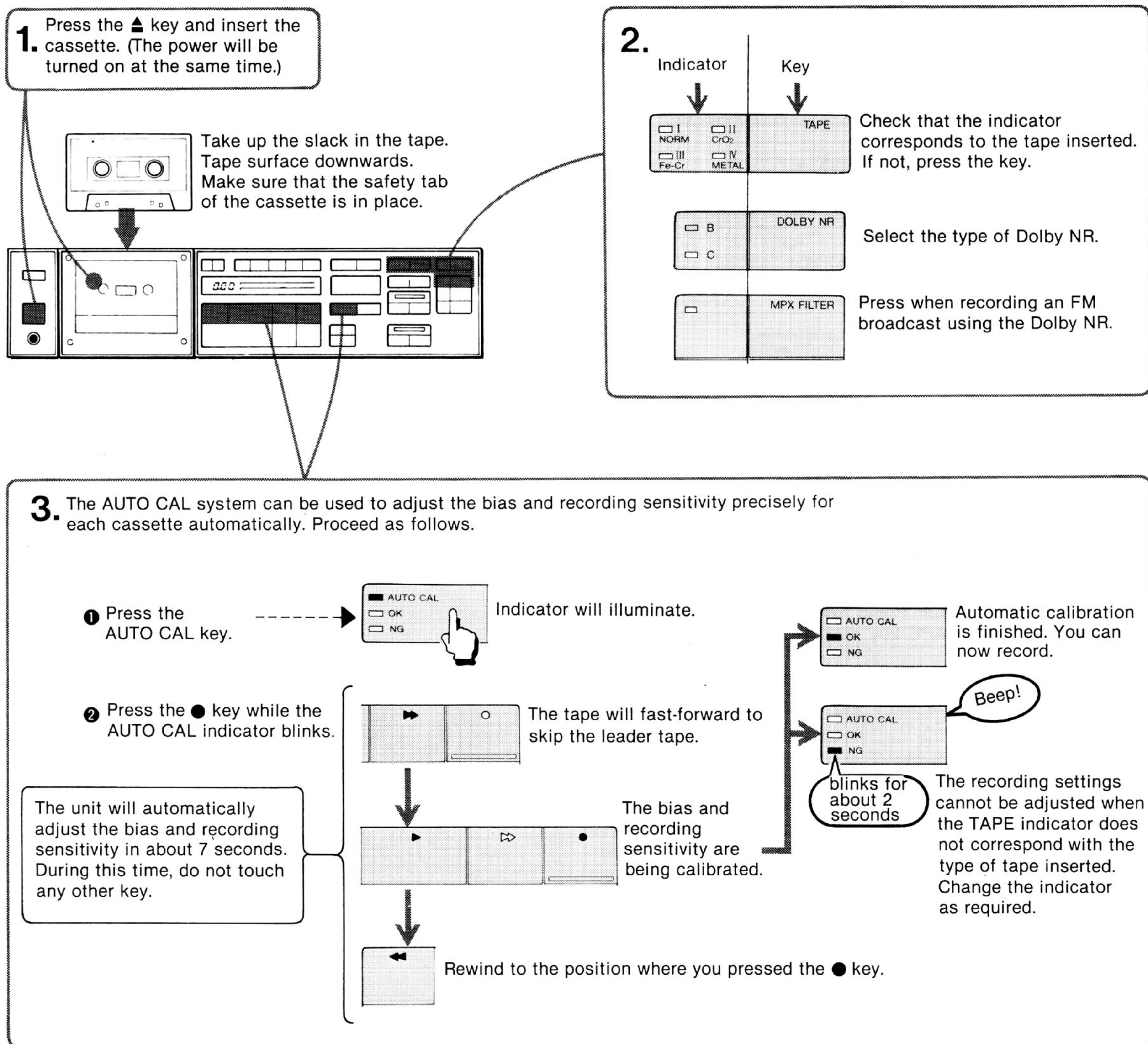### Note

We do not recommend using TYPE IV cassettes without METAL and CrO2 tape detector slots.
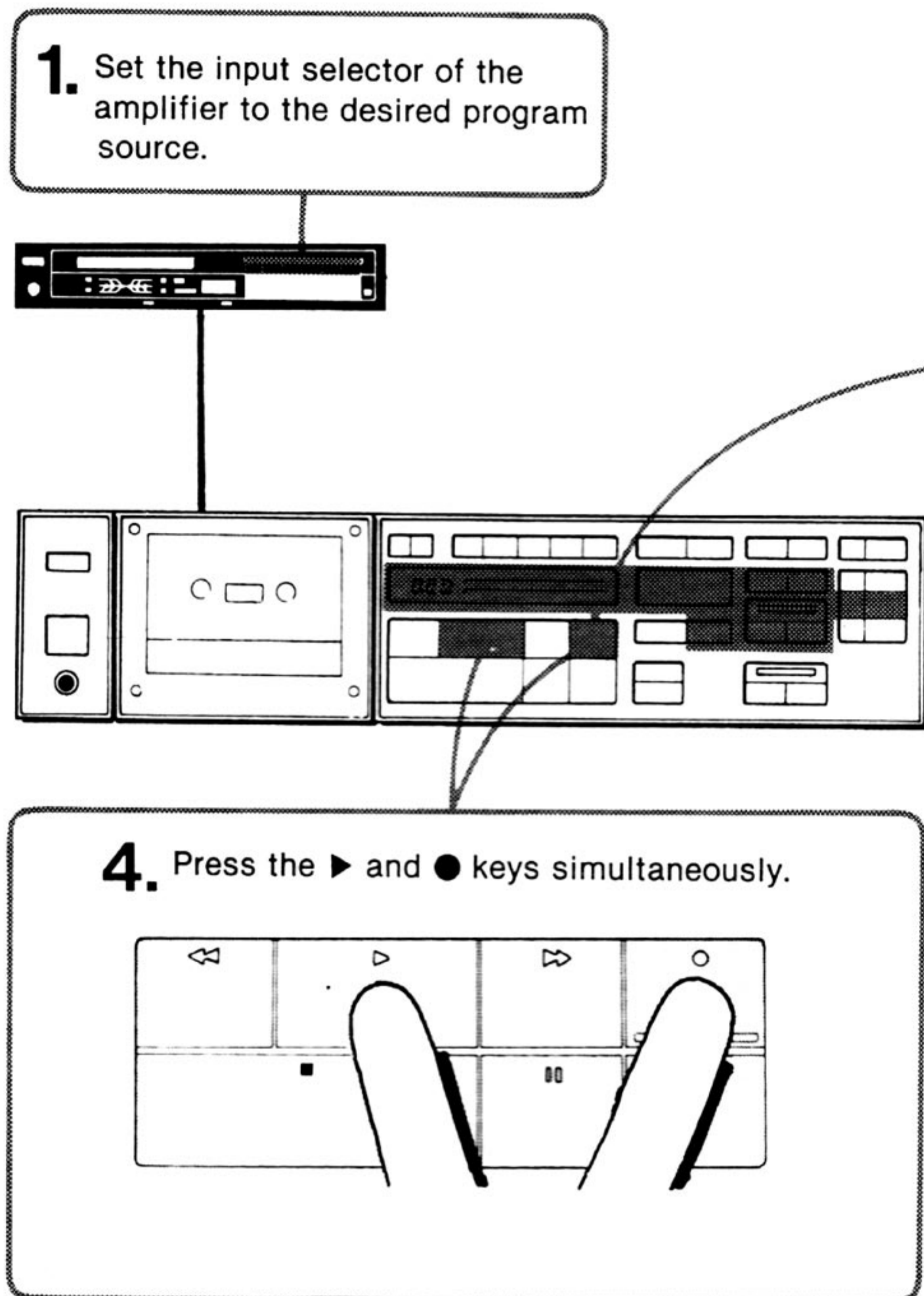
RECORDING

BEFORE RECORDING
The numbers in this diagram indicate the sequence to be followed.

1. Press the ▲ key and insert the cassette. (The power will be turned on at the same time.)

Take up the slack in the tape. Tape surface downwards. Make sure that the safety tab of the cassette is in place.

2.

Indicator   Key

| ☐ I NORM | ☐ II CrO₂ | TAPE |

Check that the indicator corresponds to the tape inserted. If not, press the key.

| ☐ III Fe-Cr | ☐ IV METAL | |

| ☐ B | DOLBY NR |
| ☐ C | |

Select the type of Dolby NR.

| ☐ | MPX FILTER |

Press when recording an FM broadcast using the Dolby NR.

3. The AUTO CAL system can be used to adjust the bias and recording sensitivity precisely for each cassette automatically. Proceed as follows.

❶ Press the AUTO CAL key. - - - - - ➤

■ AUTO CAL
☐ OK
☐ NG

Indicator will illuminate.

❷ Press the ● key while the AUTO CAL indicator blinks.

The unit will automatically adjust the bias and recording sensitivity in about 7 seconds. During this time, do not touch any other key.

The tape will fast-forward to skip the leader tape.

The bias and recording sensitivity are being calibrated.

Rewind to the position where you pressed the ● key.

☐ AUTO CAL
■ OK
☐ NG

Automatic calibration is finished. You can now record.

Beep!

☐ AUTO CAL
☐ OK
■ NG

blinks for about 2 seconds

The recording settings cannot be adjusted when the TAPE indicator does not correspond with the type of tape inserted. Change the indicator as required.

Notes on the AUTO CAL operation
● The calibration signal will be recorded during the auto calibration process. Be sure to use a tape you want to record when executing the auto calibration to avoid erasing your valuable tape.
● The OK indicator and the adjusted settings will be cancelled if the tape type is changed after the AUTO CAL operation.
● Even if the NG indicator does blink, you can record with the inserted tape, because the approximate settings are adjusted by the automatic tape select system. Note that 120-minute tapes and certain metal tapes are apt to be NG. Always use tape of good quality.

TO START RECORDING

1. Set the input selector of the amplifier to the desired program source.

2. Press the ● key.

Play the program source.

3. Adjust the recording level referring to "Recording level adjustment" on page 13.

Adjust the REC LEVEL control key so that the meters deflect only left end of the red line at the highest signal level. For details, see "Recording level adjustment" on page 13.

Adjust the left and right channel balance with the REC BALANCE key.

4. Press the ▶ and ● keys simultaneously.

USEFUL KEYS FOR BETTER RECORDING

AUTO ATT key

Set this key to on after adjusting the recording level to attenuate the excessive input to the proper level so that the recording will not be distorted. See page 21.

MOL BALANCE key
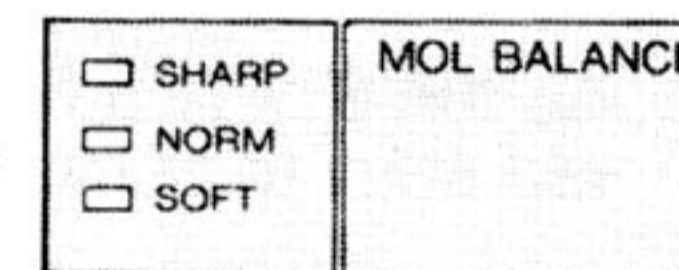
MOL characteristics can be selected according to the source sound.

For normal recording—NORM
For recording high-frequency range programs
(ex. jazz or synthesizer music)—SHARP
For recording low-frequency range programs
(ex. classical music)—SOFT

Change the MOL BALANCE settings after the tape type is set and the AUTO CAL operation is finished.

MORE ACCURATE RECORDING STARTS

You can use the ❚❚ (pause) key to start recording more accurately than is possible when recording is started by pressing both the ● (record) key and the ▶ (forward) key. Before adjusting the recording level, press the ❚❚ key, then put the tape deck in the record mode by pressing the ● and ▶ keys simultaneously, instead of pressing only the ● key as in step 2. In this way, you can start recording exactly where you want by pressing only the ❚❚ key.
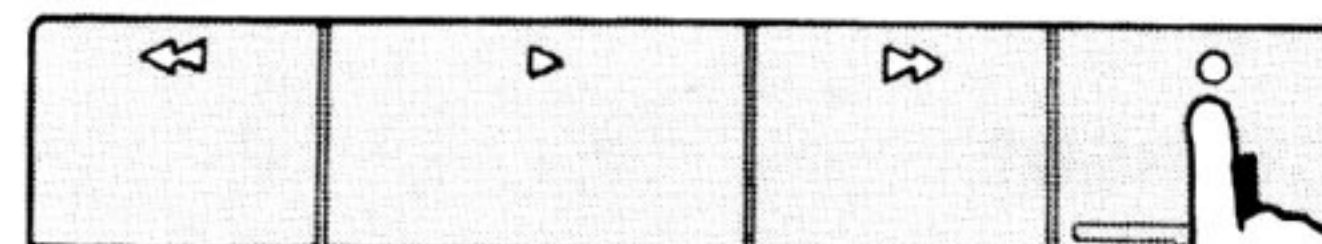
TO RECORD MATERIAL ONTO A SPECIFIC PORTION OF TAPE

When you want to re-record a specific portion of tape or to insert new material between two points on a tape you will find it handy to be able to change directly from the playback to the record mode by pressing the ● key and the ▶ key simultaneously.
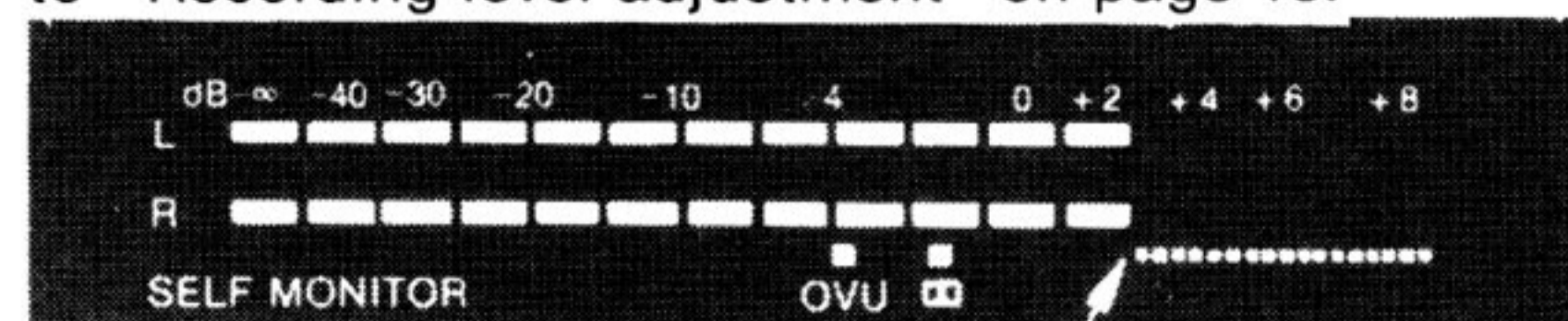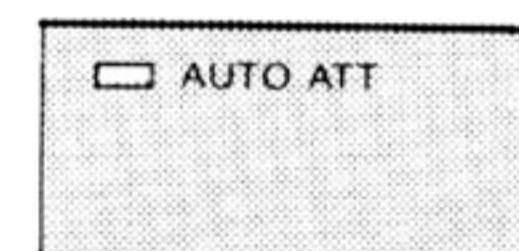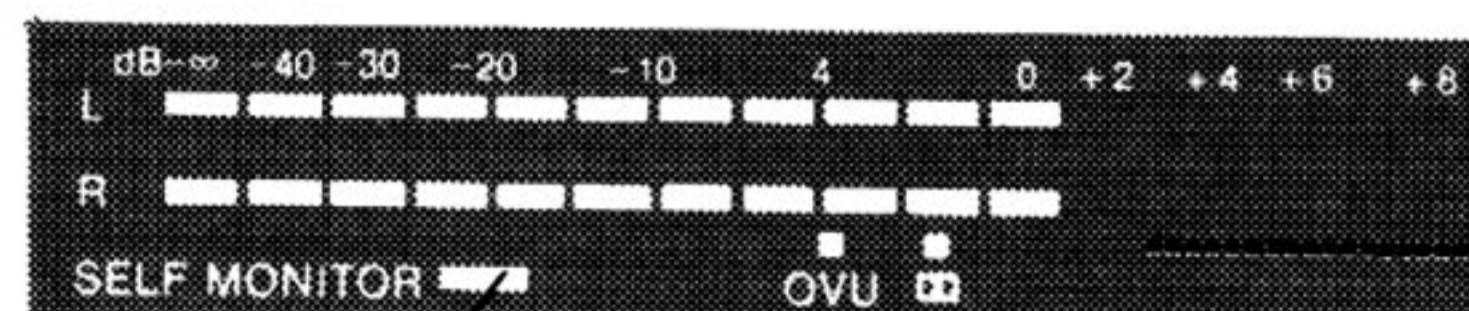
SELF MONITOR

As this tape deck has separate record and playback heads, the unit will automatically compare the source with the recorded sounds in the recording mode. If there is a difference in the sound levels, the SELF MONITOR indicators will blink to indicate that the heads are contaminated and should be cleaned or the recording level setting is too high.

● Only the source sound can be monitored during recording.

● Note that the red and white indicators will always blink on the leader tape.

The recording is good when only the white indicator blinks occasionally.

Beep!

The recording is not good when both the white and red indicators blink. An alarm will sound when the red indicator blinks. Check that the head is not contaminated or that the recording level setting is not too high.