

# DENON

## STEREO CASSETTE TAPE DECK

# DR-M11

### OPERATING INSTRUCTIONS



**NIPPON COLUMBIA CO., LTD.**



## IMPORTANT TO SAFETY

### WARNING :

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

### CAUTION :

**1. Handle the power supply cord carefully**

Do not damage or deform the power supply cord. If it is damaged or deformed, it may cause electric shock or malfunction when used. When removing from wall outlet, be sure to remove by holding the plug attachment and not by pulling the cord.

**2. Do not open back plate**

In order to prevent electric shock, do not open the back plate. If problems occur, contact your DENON dealer.

**3. Do not place anything inside**

Do not place metal objects or spill liquid inside the cassette deck. Electric shock or malfunction may result.

Model DR. \_\_\_\_\_

Serial No. \_\_\_\_\_

Please, record and retain the Model name and serial number of your set shown on the rating label.

(UNDERWRITERS LABORATORIES INC. (UL) LISTED MODEL FOR USA ONLY.)



### CAUTION

RISK OF ELECTRIC SHOCK  
DO NOT OPEN



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of 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.



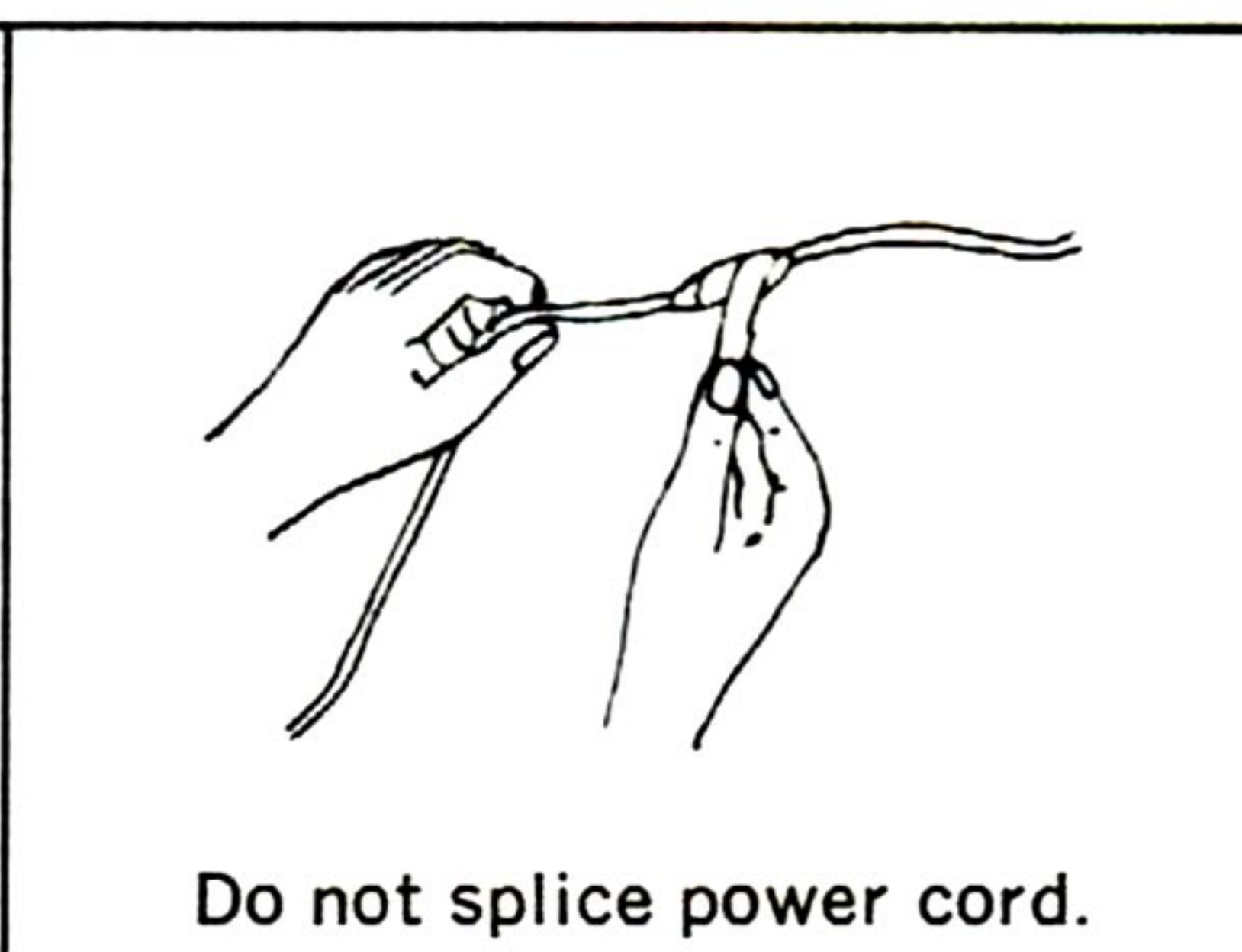
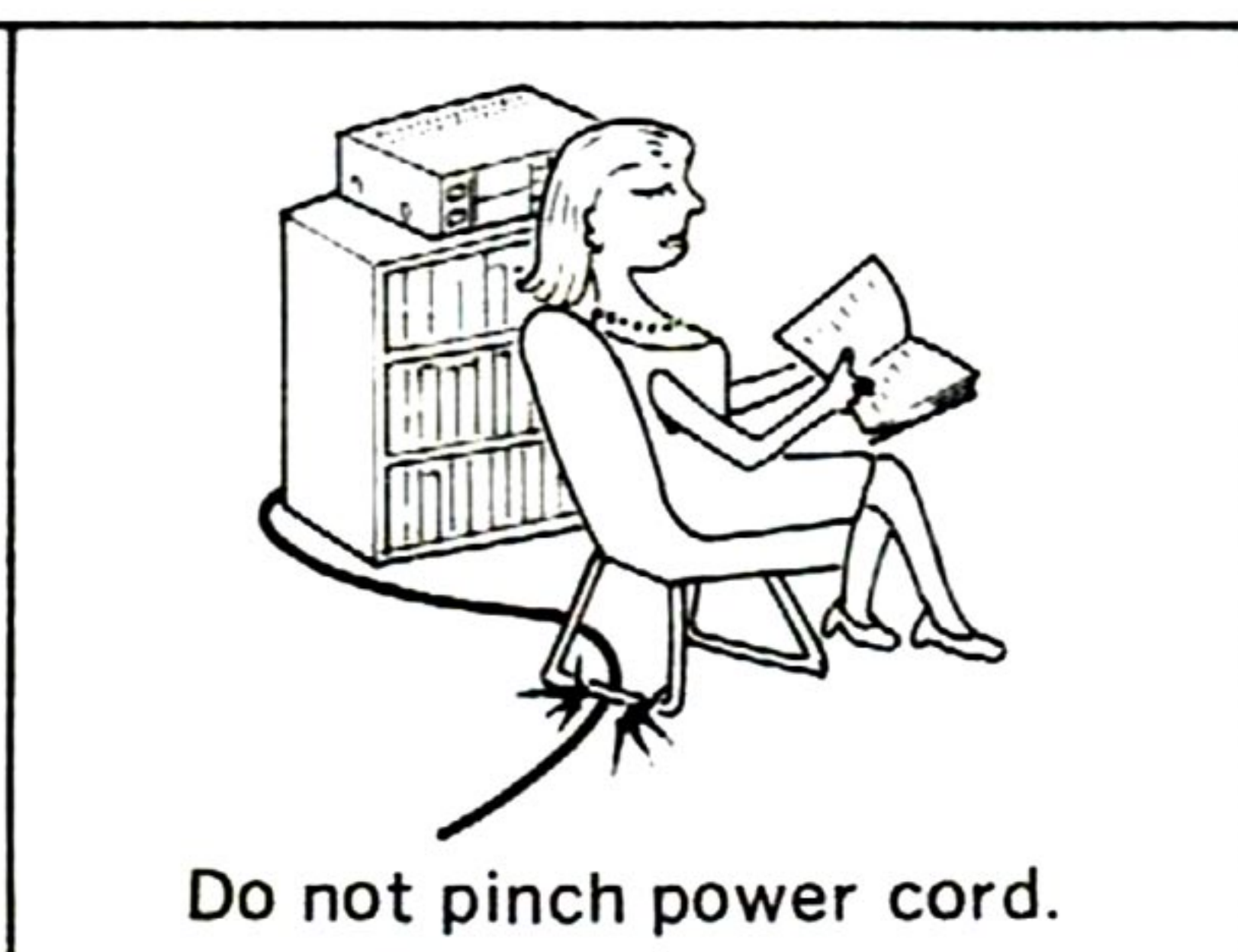
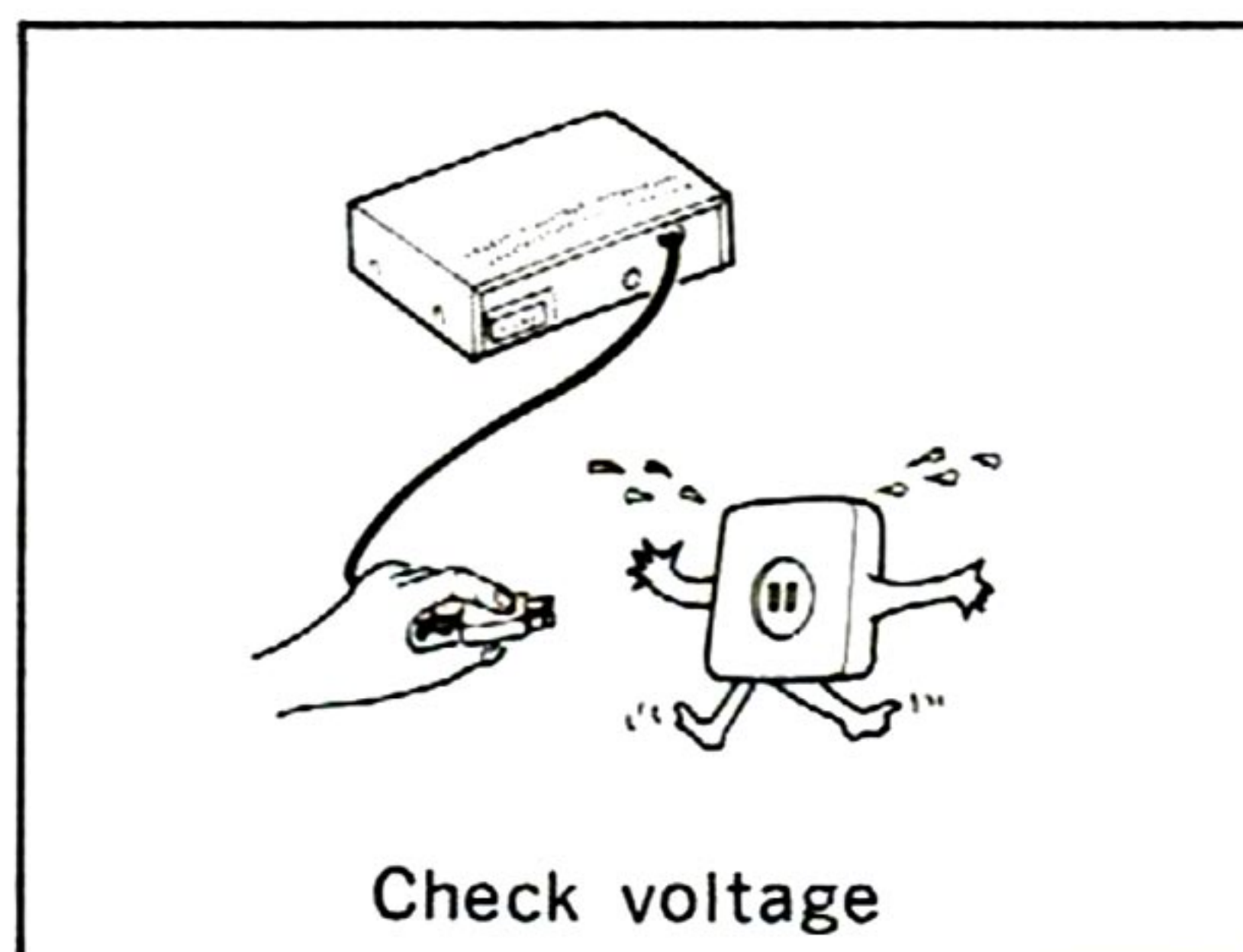
The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



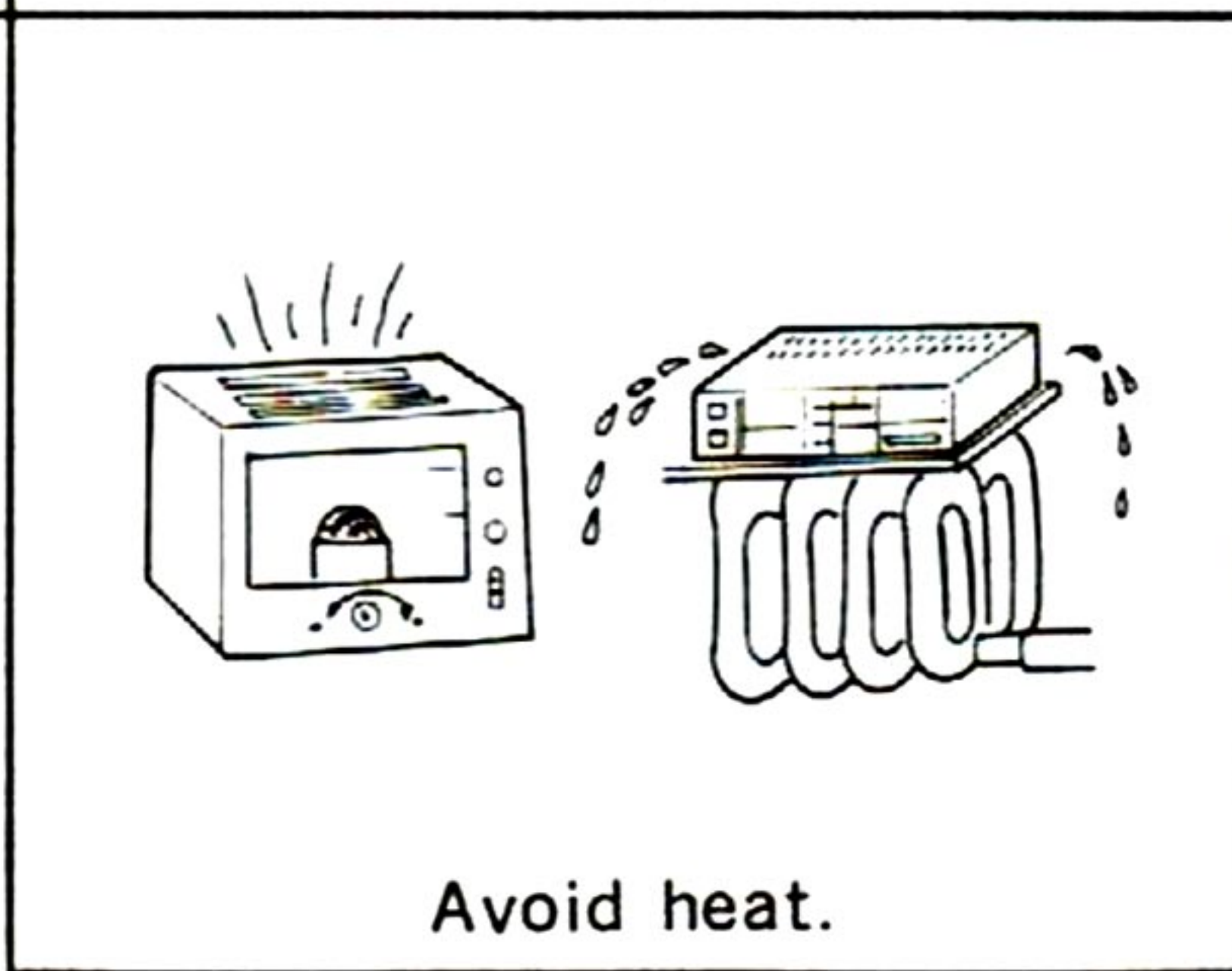
# SAFETY INSTRUCTIONS FOR AUDIO SET

## ■ INSTALLATION

1. Operate the set only from a power source which is indicated on the rating label (indication) at the back of the set.
2. Frayed cords and broken plugs may cause a fire or shock hazard. Do not damage the power cord.
  - Do not cut and splice the power cord.
  - When removing the power cord from wall outlet, be sure to unplug by holding the plug attachment and not by pulling the cord. Do not hold the plug by wet hand.
  - Call your service technician for replacement of damaged cords and plugs.



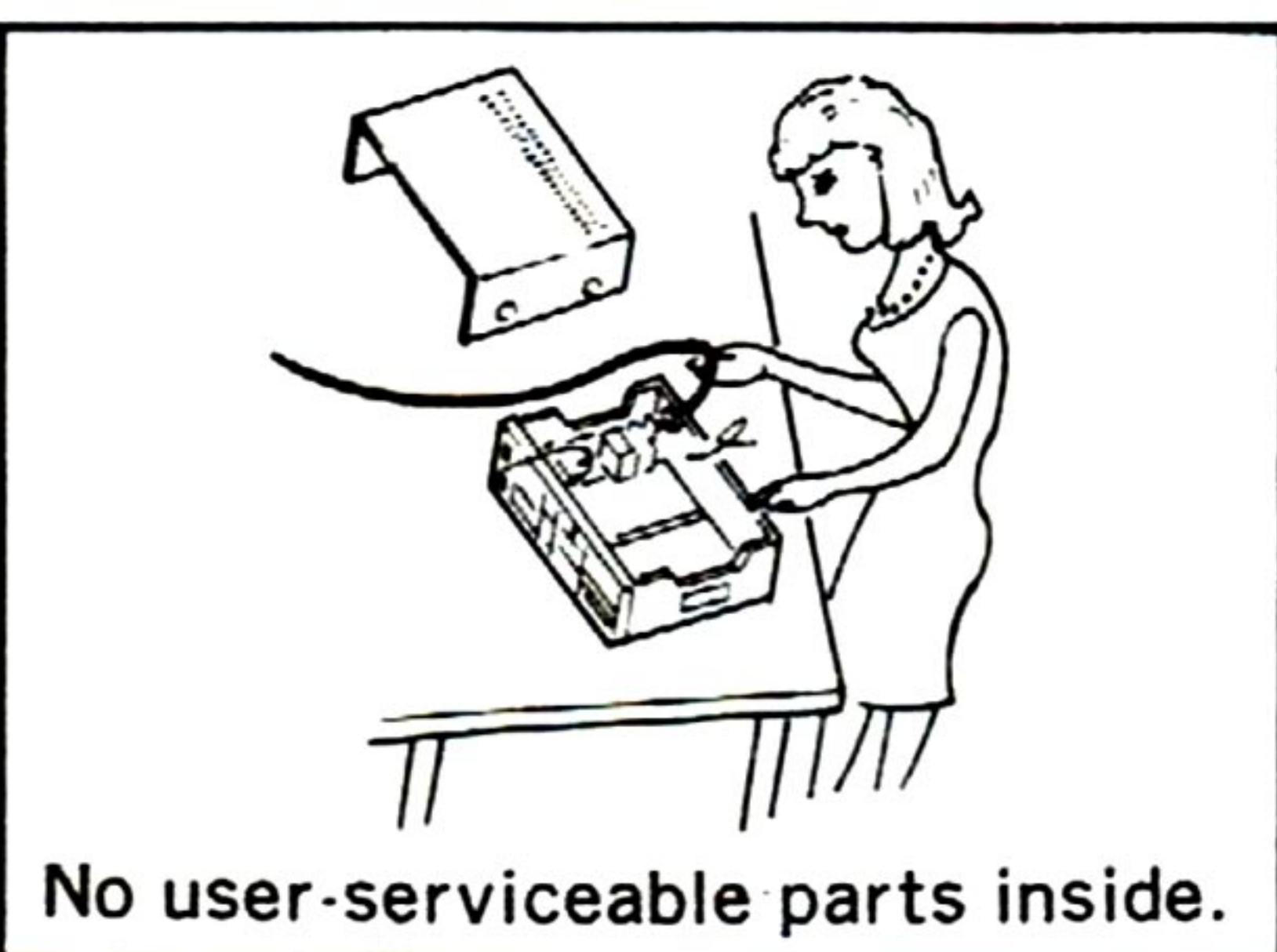
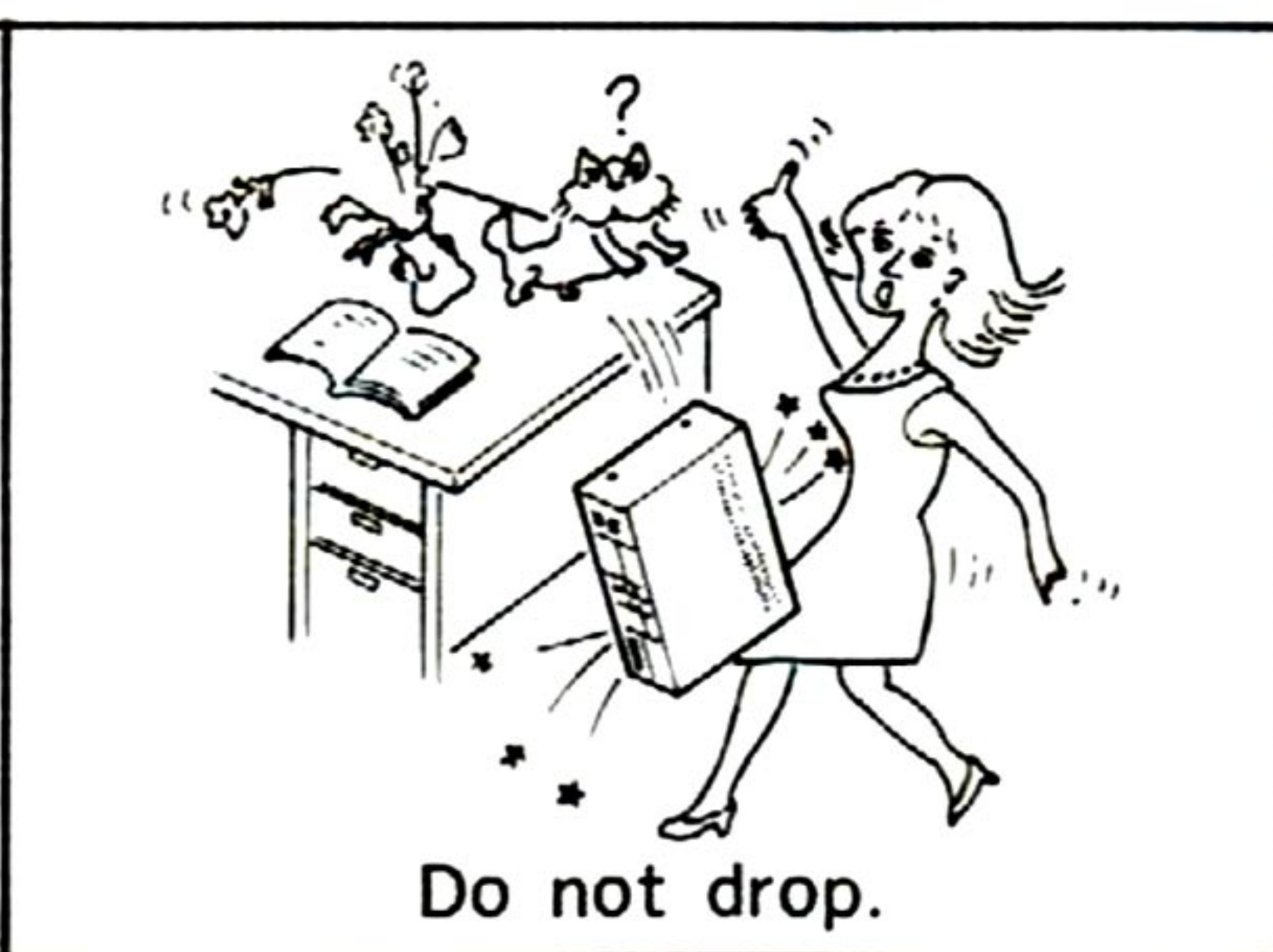
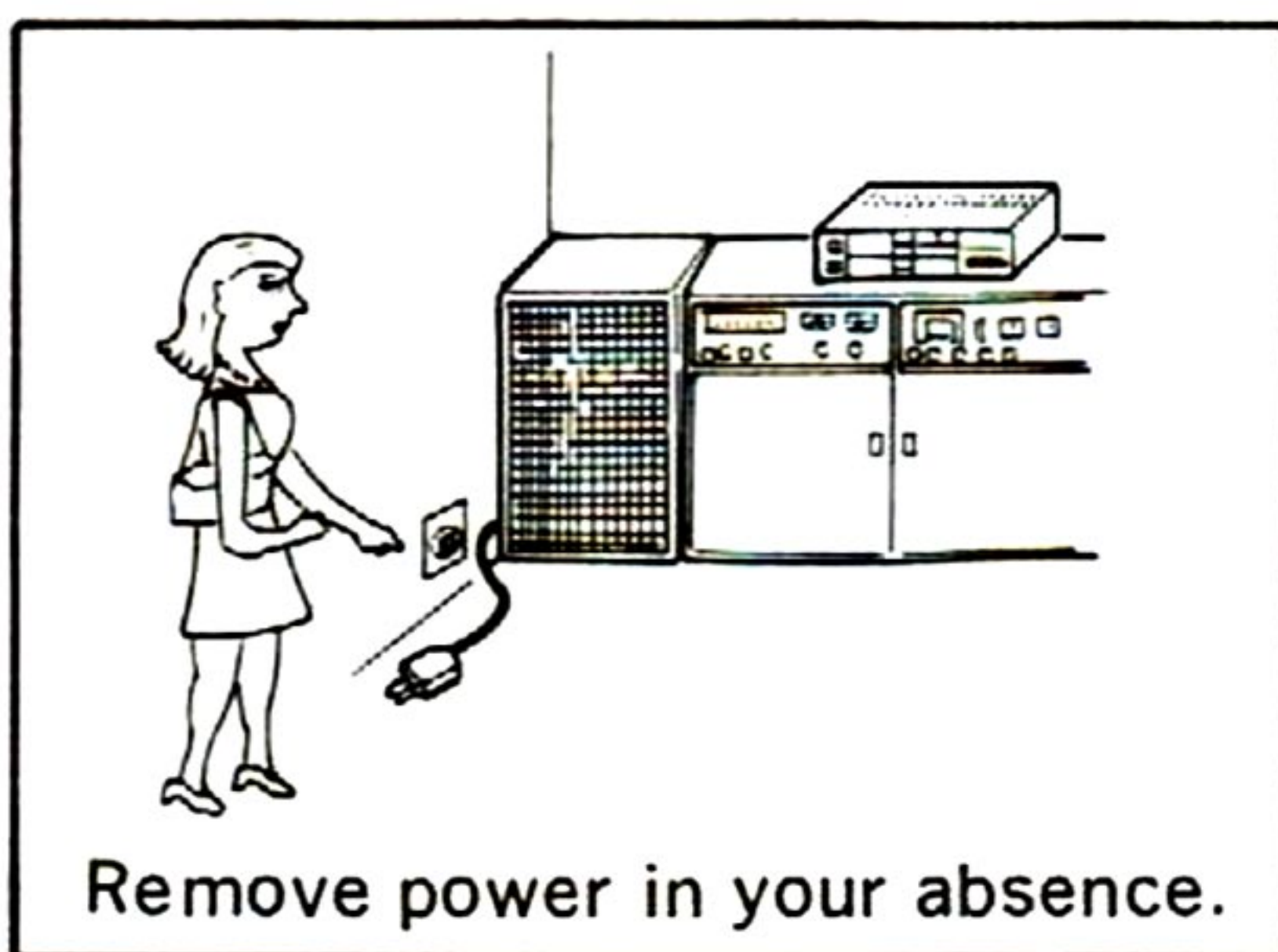
3. Select a place so that the location or position does not interfere with the proper ventilation of the set for releasing heat generated during operation.
  - Select a flat and level surface allowing enough space for setting up and operation.
  - Never block the bottom ventilation holes placing the set



- on a bed, sofa, rug, etc.
- Never place the set in a "built-in" enclosure unless proper ventilation is provided.
- Never place the set near or over a radiator, heat register or stove.
- Avoid locations where the set is exposed directly to the sun light.

## ■ USE

1. Do not expose the set to rain or water (liquid). Do not spill liquid or insert metal objects inside the set. Rain, water or liquid such as cosmetics as well as metal may cause electric shorts which can result in fire or shock hazard. If anything gets inside, unplug the power cord and have a **DENON** service technician check your set before further use.
2. Never leave your set switched on when leaving the house. For added protection of your audio system during lightning storm or when the set is to be left unused for a long period of time, be sure to unplug the power cord from the wall outlet.
3. Take care so that the set is not dropped to avoid damaging the cabinet which defeats safeguards or injuring yourself. If the set has been dropped or the cabinet has been damaged, unplug the set and have it checked by a **DENON** service technician to restore the safeguards.



## ■ SERVICING

1. The servicing of set must not be attempted by yourself beyond that described in the operating instructions. In case of problems that cannot be settled by referring to your operating instructions, unplug the power cord and contact your **DENON** dealer. No user-serviceable parts are inside the set. Only qualified service technician can service inside your set.
2. Refer to the operating instructions for maintenance and cleaning.



Thank you very much for purchasing the DENON component DR-M11.

The DENON DR-M11 is a top-line stereo cassette tape deck, capable of outstanding performance in combination with high grade hi-fi systems.

DENON proudly presents this advanced tape deck to audiophiles and music lovers as further proof of DENON's non-compromising pursuit of the ultimate in sound quality. The high quality performance and easy operation are certain to provide you with many hours of outstanding listening pleasure.

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### **FEATURES**


- Computer-controlled servo technology
  - Silent, soft-touch controls provide maximum ease-of-use.
  - Computer-controlled, full-logic tape controls enable fool-proof operation.
- Program music search system.
- Computing tape counter with 4-digit readout and memory stop.
- Dolby-C noise reduction systems.
- Extended range, dual-color fluorescent peak meters.
- Auto tape selector.
- Bias fine adjustment.



## SPECIFICATIONS

- Type ..... Vertical tape loading 4-track 2-channel stereo cassette tape deck
- Heads ..... SF Record/Playback head × 1  
Erase head (Ferrite) × 1
- Motors ..... Electronic servo DC motor (for capstan) × 1  
DC motor (for reel winding) × 1
- Tape Speed ..... 4.8 cm/sec.
- Fast forward, rewind time. Approx. 90 sec. with a C-60 cassette
- Recording bias ..... Approx. 105 KHz
- Overall S/N ratio..... Dolby C NR on ... more than 70 dB (CCIR/ARM)  
(at 3% THD level)
- Overall frequency response. 30~18,000 Hz ±3dB (at -20 dB METAL tape)
- Channel separation..... More than 40 dB (at 1 KHz)
- Crosstalk..... More than 65 dB (at 1 KHz)
- Wow & flutter ..... 0.045% wrms
- Inputs
  - line ..... 77.5 mV (-20 dB) input level at maximum  
Input impedance: 50 Kohm unbalanced
- Outputs
  - line ..... 775 mV (0 dB) output level at maximum (with 10 Kohm load,  
recorded level of 200 pwb/mm)
  - headphone ..... 1.2 mW output level at maximum (optimum load impedance 8 ohm  
~2 Kohm)
- Accessories ..... Parallel pin cord × 2
- Power supply ..... 50 Hz/60 Hz compatible, voltage is shown on rating label
- Power consumption ..... 18W
- Dimensions ..... 434 (W) × 115 (H) × 286 (D) mm
- Weight ..... 5.6 kg

■ Above specifications and design styling are subject to change for improvement.

■ "Dolby" and the symbol  are the registered trademarks of Dolby Laboratories Licensing Corporation. The Dolby Noise reduction system is licensed by Dolby Laboratories Licensing Corporation.

**Best results will be obtained with use of DENON DX  
Series cassette tapes.**



## FRONT PANEL SWITCHES AND CONTROLS

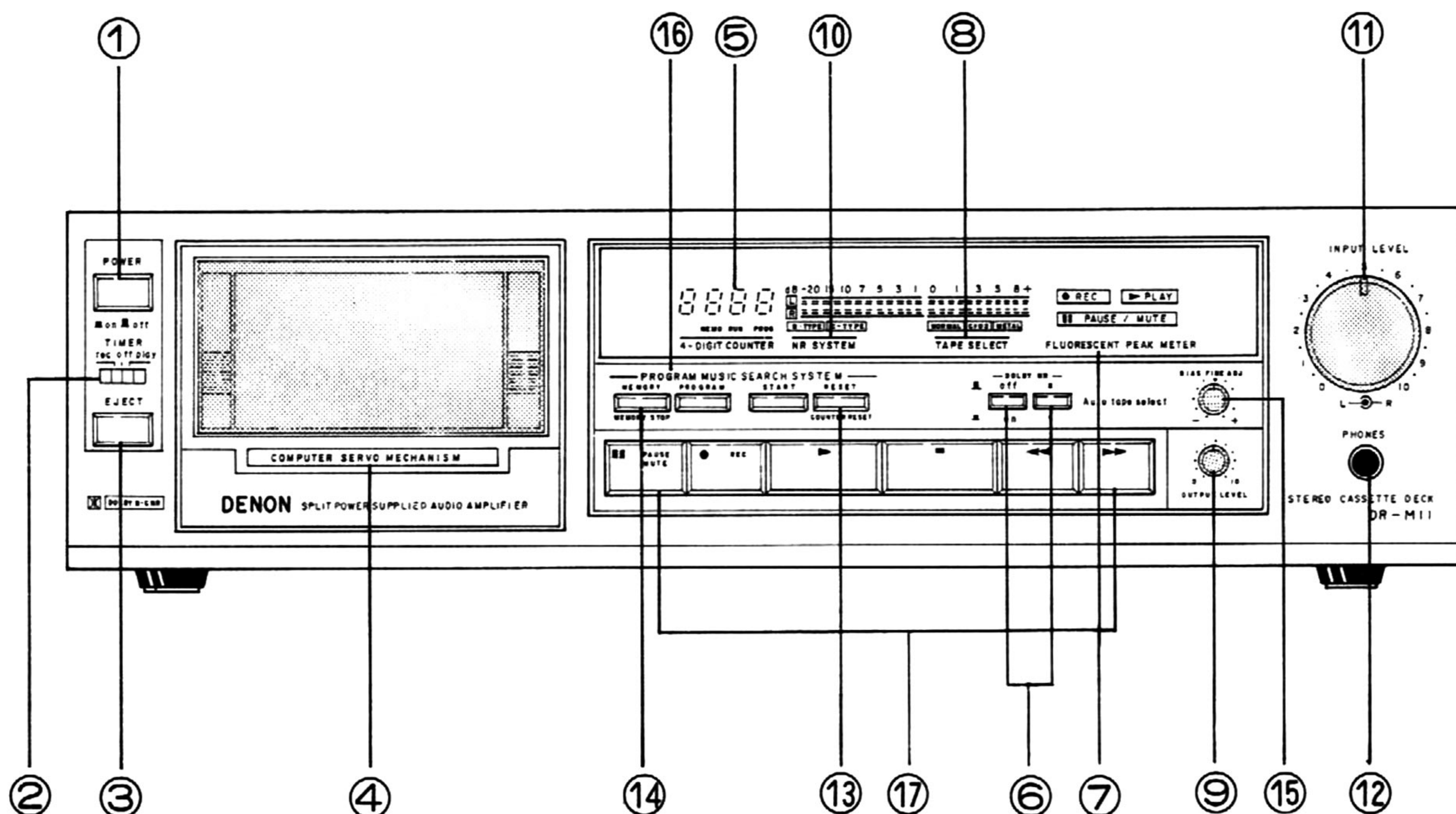


Fig. 1

### 1. POWER switch

Controls the supply of AC power to the deck. One push turns the deck on, a second push turns it off. The deck remains in a stand-by (non-operative) mode for approximately 4 seconds after it is switched on.

### 2. TIMER switch

This switch is provided for use with an optional audio timer for unattended recording or morning-alarm playback. For non-timer operation, this switch should be set in the "off" position (see page 16).

### 3. EJECT button

Press this button to eject the cassette. When the deck is operating (tape is running), press the stop (■) key first to stop the tape transport; then press the EJECT button.

### 4. Cassette compartment cover

If this compartment cover is not closed completely, the deck's transport controls will remain inoperative.

### 5. TAPE COUNTER

A four-digit readout indicates the present tape count position.

### 6. DOLBY NR switches

The left Dolby NR switch activates (in) or

deactivates (out) the deck's Dolby noise reduction circuitry. The right switch selects between Dolby B-Type (out) or C-Type NR (in). (see page 17).

### 7. FLUORESCENT PEAK METERS

These meters indicate recording or playback peak levels for each channel.

### 8. TAPE SELECT indicator

This indicator light is interlocked with the Auto Tape Select feature which automatically adjusts the deck to the type of tape in use. (NORMAL, CrO<sub>2</sub>, or METAL).

### 9. OUTPUT LEVEL control

This control adjusts playback, recording monitor, and headphones output levels for the both channels simultaneously.

### 10. NR SYSTEM indicator

This indicator light is interlocked with the Dolby NR switch and informs the user that Dolby NR is in use as well as which (B or C) Type.

### 11. INPUT LEVEL controls

These controls are used to adjust recording levels for each channel. The front control is for the left channel; the rear control for the right channel (see page 15).



## 12. PHONES jack

For private music enjoyment without disturbing others, or for monitoring a recording, a set of headphones may be plugged in. Impedance is from 8 to 2000 ohms.

## 13. RESET button

Operation of the button resets the counter to all zero.

## 14. MEMORY STOP button

During rewinding operations, the tape will stop at the "0000" counter point automatically when this button is pressed in.

## 15. BIAS FINE ADJ control













(for NORMAL and CrO<sub>2</sub> tape)

Adjust the bias according to the tape characteristics. Standard biasing is obtained at the center click-stop position. (see page 15).

## 16. PROGRAM MUSIC SEARCH SYSTEM

It is possible to playback any selection chosen from a maximum of 15 selections recorded on either side of a cassette tape. (see page 12).

## 17. Tape transport controls

	 PLAY KEY	Press to playback tape.
	 STOP KEY	Press to stop tape in any mode.
	 REW KEY	Press for fast rewind.
	 FF KEY	Press for fast forward tape winding.
 REC	 RECORD KEY	To begin recording, press the RECORD and PLAY keys simultaneously. If only the RECORD key is pressed, the deck is placed in the REC PAUSE (record standby) mode.
 PAUSE MUTE	 PAUSE/MUTE KEY	The PAUSE key causes the tape to stop momentarily during recording or to mute the recording input to create blank (non-recorded) portions on the tape (see page 17).



## CONNECTION

- Leave your entire system (including this cassette deck) turned off until all connections between the deck and other components have been made.

### ■ Connecting the deck to an amplifier

- Before connecting the deck to your amplifier, it is a good practice to review your amplifier's instruction manual.
- Use the white plugs for the left channel, and the red plugs for the right channel.

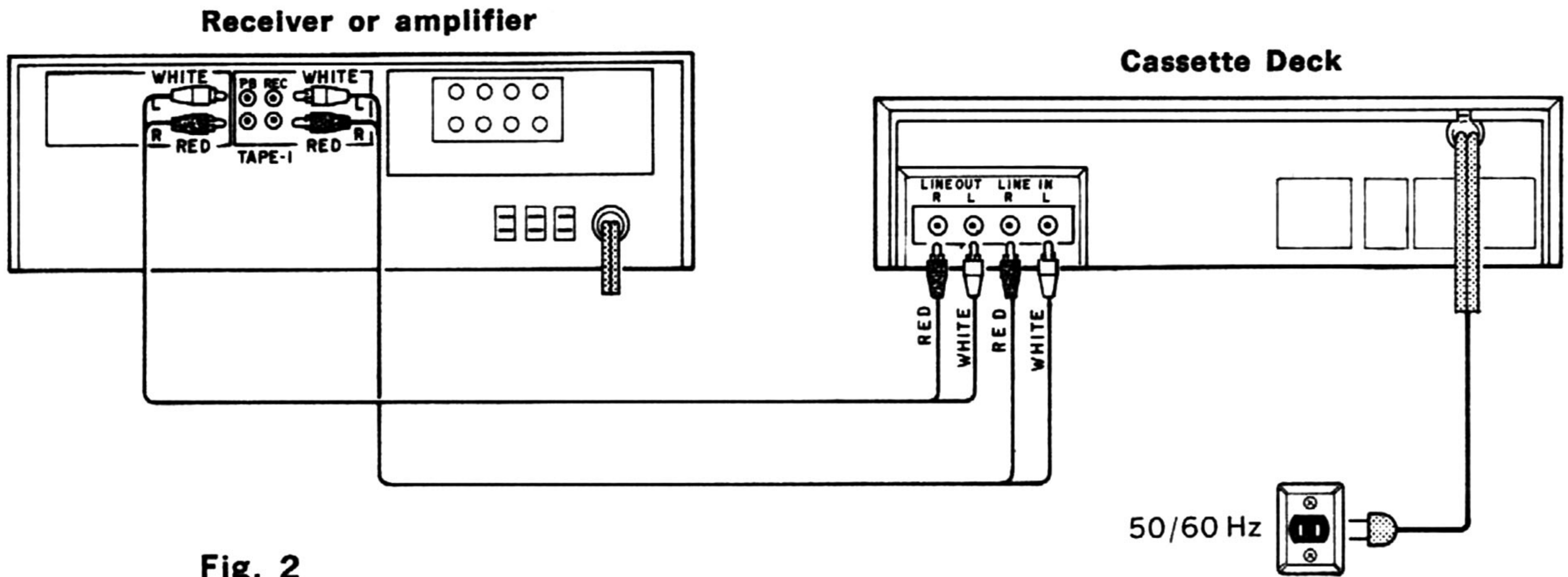


Fig. 2

### ■ Connecting Headphones

To listen through headphones, plug your headphones into the PHONES jack.

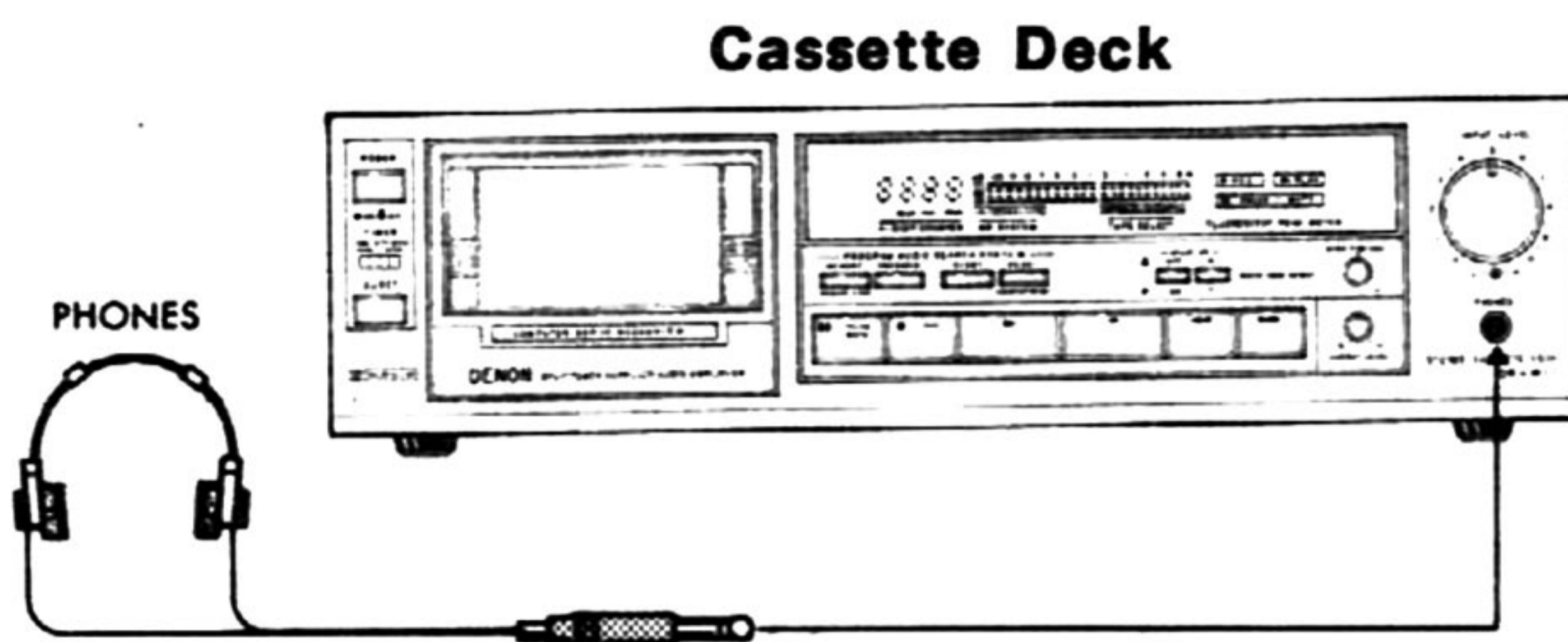


Fig. 3

### ■ Connection to Other Tape Deck

When dubbing to or from another tape deck, connect this cassette deck as illustrated below:

Many stereo amplifiers and receivers have tape dubbing circuitry so that tape duplication can be performed between two or more tape decks. Review your amplifier's instruction manual for a full explanation of this mode of operation.

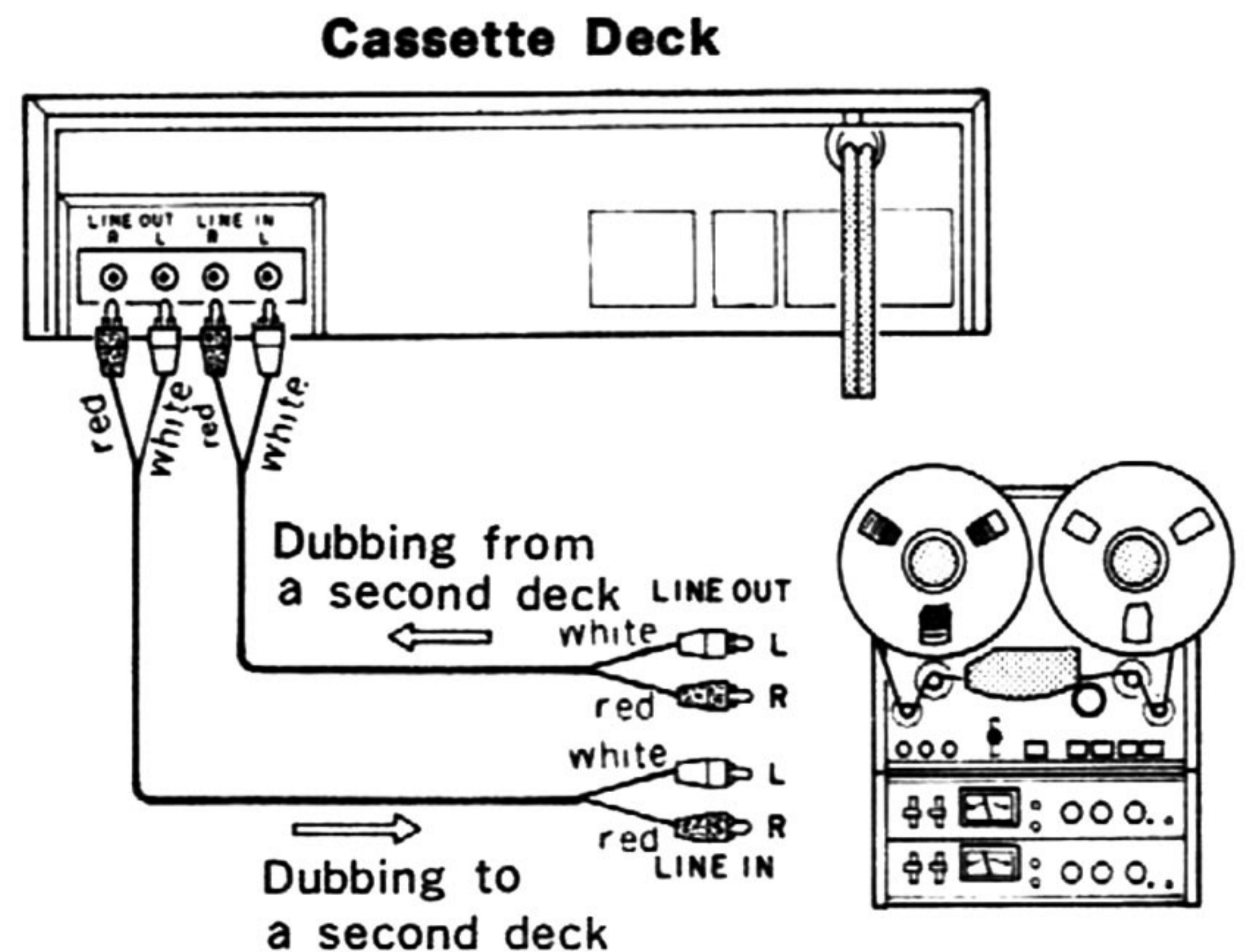


Fig. 4

### ■ Installation Precautions

If the deck is placed on or too near an amplifier or tuner, noise (induced hum) or beat interference may result (especially during AM reception). If this occurs, separate the deck from other components or reorient its position.



## CASSETTE TAPE

### ■ Handling Precautions

- C120 cassettes  
C120 cassettes are not recommended as they use a very thin tape base which may become tangled around the capstan or pinch roller.
- Tape slack  
Before putting a tape into the deck, take up any slack with a pencil or your finger tip. This precaution is also to prevent the tape from becoming entangled around the capstan or pinchroller.

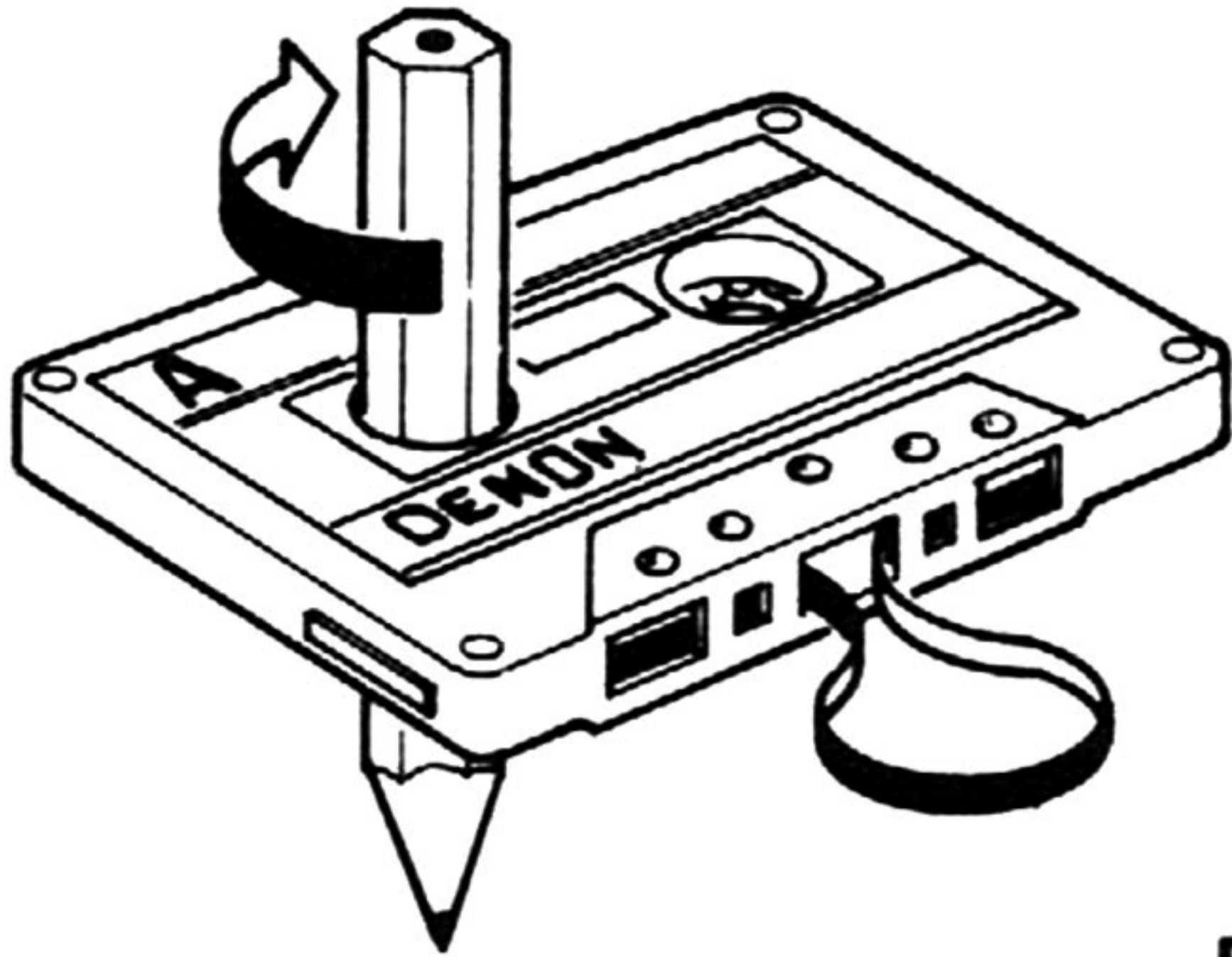


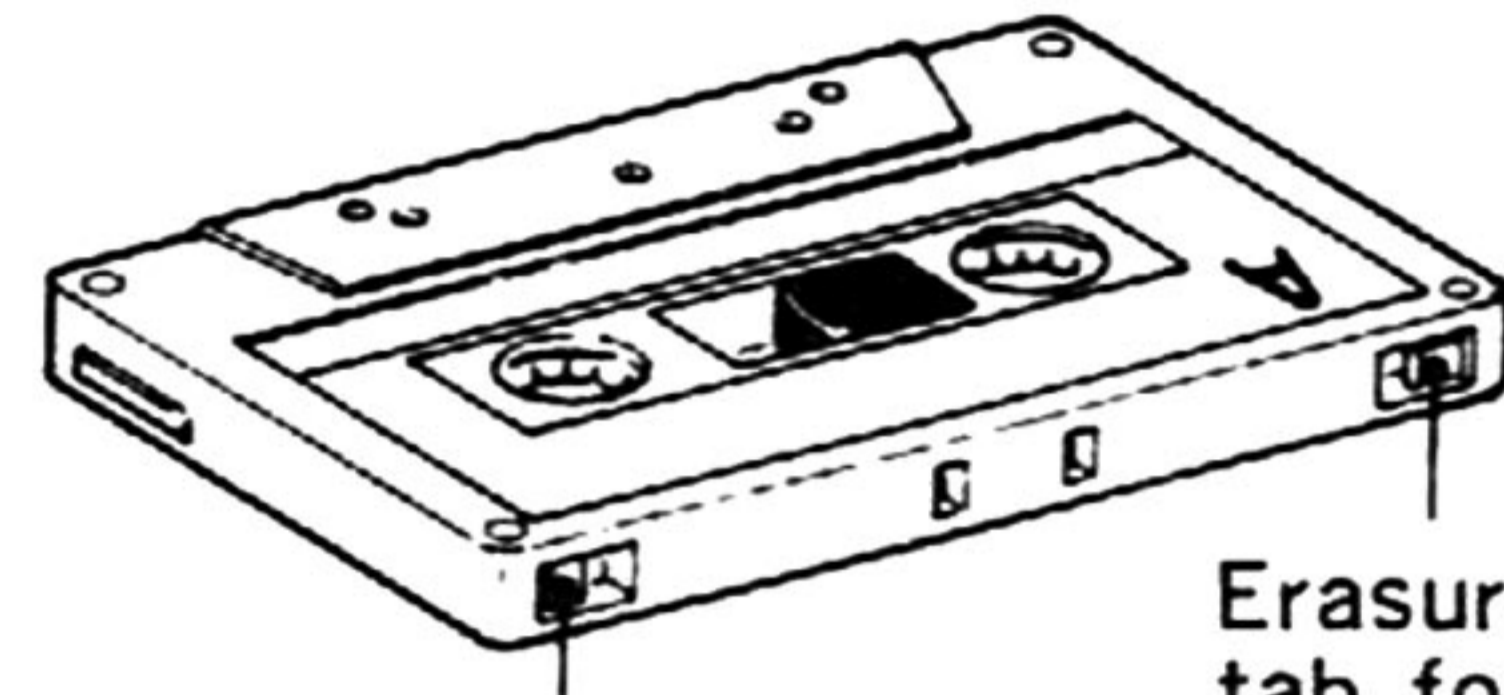
Fig. 5

### ■ Storage Precautions

- Do not store cassette tapes in a place where they will be subject to:
  - Extremely high temperature or excessive moisture
  - Excessive dust
  - Direct sunlight
  - Magnetic fields (near TV set or speakers)
- To eliminate tape slack, store your cassettes in cassette cases with hub stops.

### ■ Accidental Erasure Prevention

- Every cassette has erasure prevention tabs for each side. To protect your valuable recorded tapes from accidental or inadvertent erasure, remove the tab for the appropriate side with a screwdriver or other tool.
- To record on a tape with the erasure prevention tabs removed, cover the tab holes with plastic tape.



Erasure prevention tab for side B

Erasure prevention tab for side A

Fig. 6

## AUTO TAPE SELECT FEATURE

This Stereo Cassette Deck contains an Auto Tape Select feature which automatically selects the optimum bias and equalization for the tape in use. This is accomplished by detection of tape type detection holes in the cassette housing. The Tape type (NORMAL, CrO<sub>2</sub>, or METAL) is indicated by the TAPE SELECT indicator.

- if a tape without tape type detection holes is used, the TAPE SELECT indicator will not indicate the correct tape type and the deck will automatically adjust itself for normal tape.

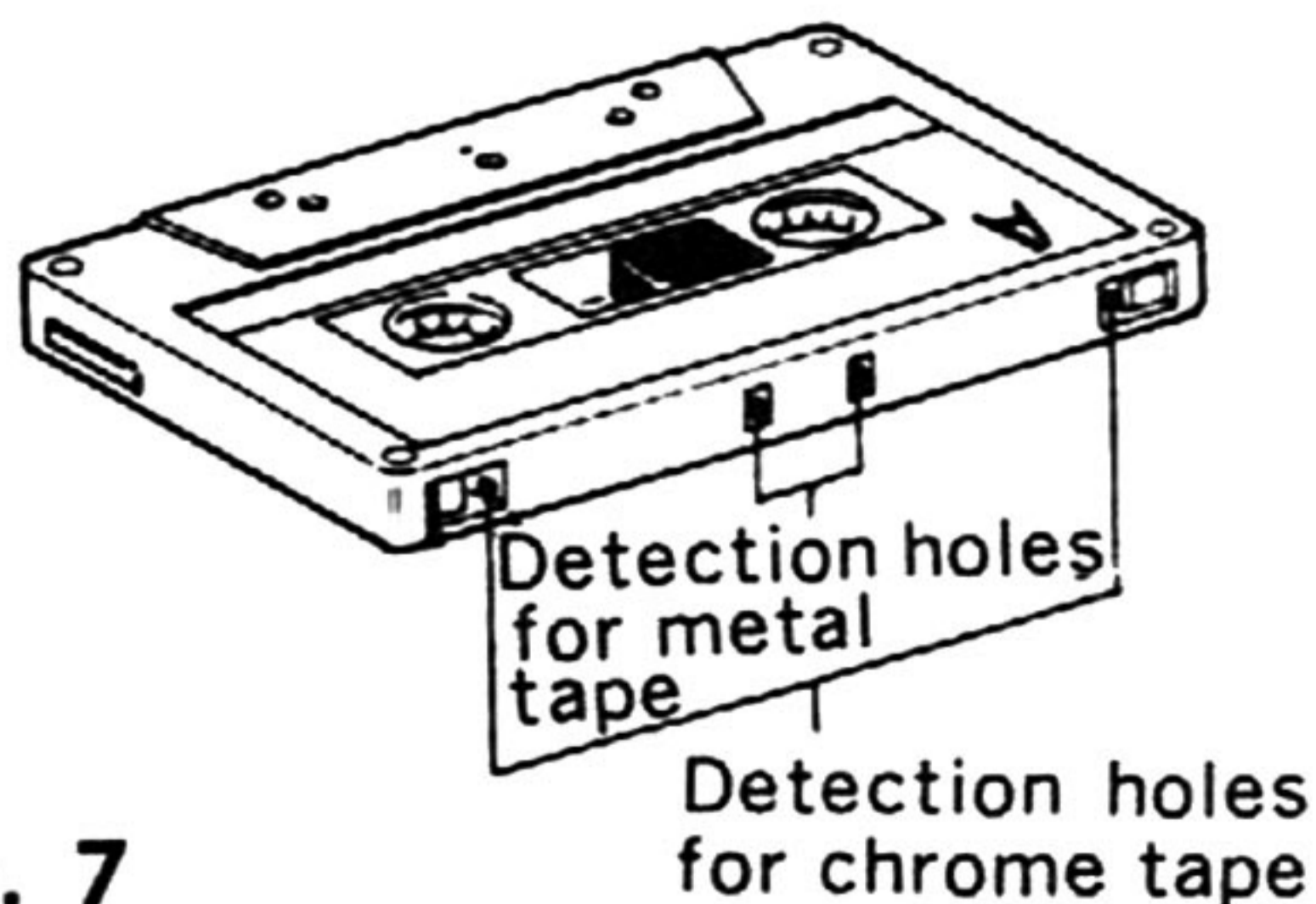


Fig. 7

- If the deck is switched on with no cassette loaded, the TAPE SELECT indicator will show "METAL".

### ■ FeCr tape

Since the Auto tape Select feature does not have a separate position for FeCr tape. FeCr tape is not recommended to use on this deck.

Brand	NORMAL	CrO <sub>2</sub>	METAL
DENON	DX1 ※NEW DX3 DX4	※NEW DX7 NEW DX8	※DXM
MAXELL	UL UD I XL I XL I S	XL II XL II S	MX
TDK	AD OD	SA SA-X	MA MA-R
FUJI	DR ER	FR-II	FR METAL
SCOTCH	BX CX	XS-II	
SONY	AHF HF	UCX UCX-S	METALLIC

- Typical tape brands for each type are listed in the above table. There may be a difference in sensitivity of a few decibels between tape brands.
- This Cassette Deck is optimally aligned for tapes marked with "※".



## PLAYBACK

- Switch on your amplifier or receiver.
- Set the TAPE MONITOR switch on your amplifier or receiver to the TAPE position.
- Operate the deck in numerical order as illustrated below:

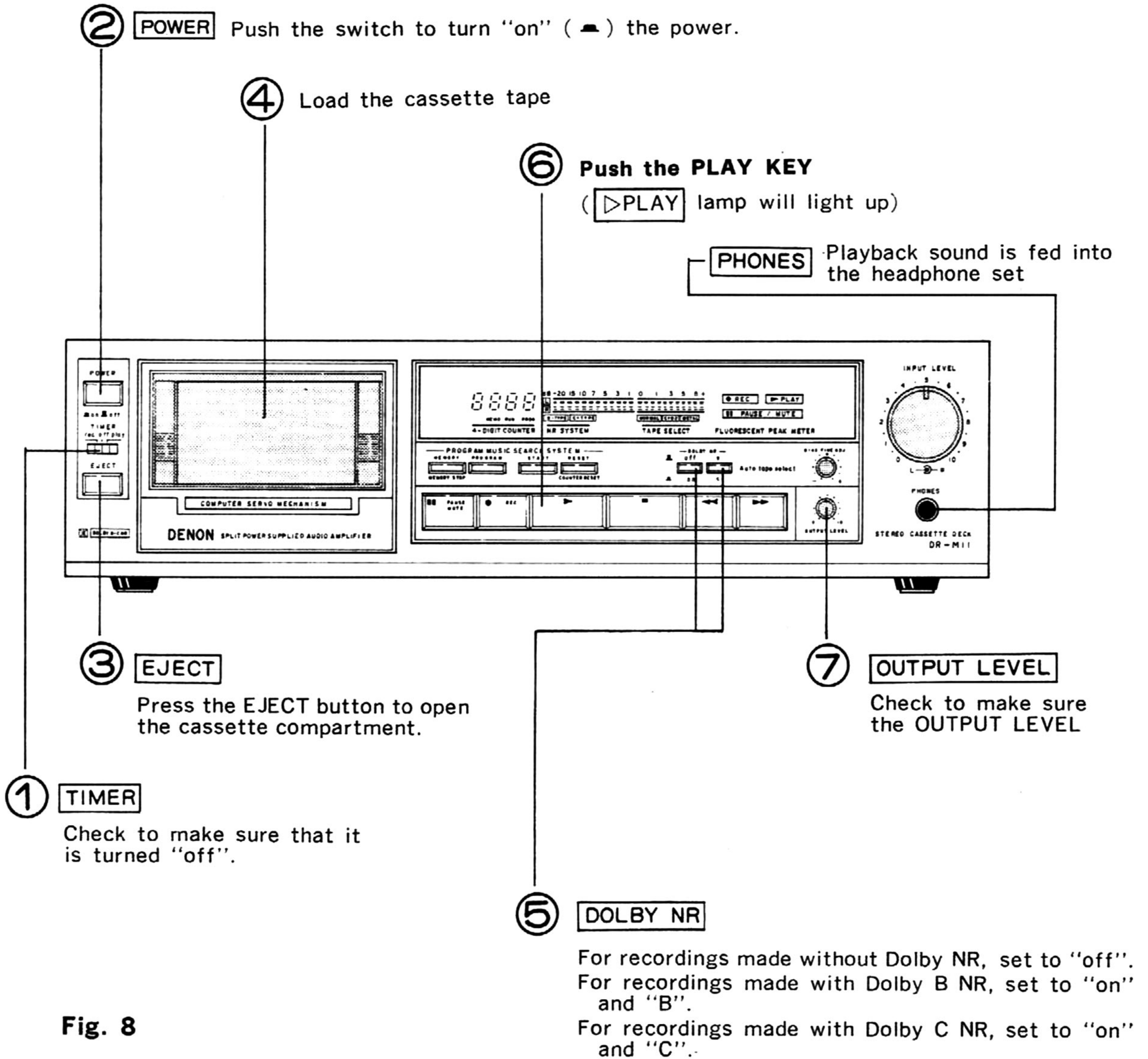


Fig. 8

When playback is finished, press the stop (■) key. To pause during playback, press the PAUSE/MUTE (▬) key. To restart the tape, press the PLAY (▶) key.

If different types of Dolby Noise Reduction are used for record and playback, playback response will be adversely effected.

### Note :

If the power switch is turned OFF in either the recording or playback mode, the cassette cannot be removed, even if the EJECT button is pressed. Please turn the power switch ON again, and then in stop mode, press the EJECT button to remove the cassette tape.



## RECORDING

- Switch on the source component (tuner, amplifier, etc.)
- Set the TAPE MONITOR switch on your amplifier or receiver to the SOURCE position.

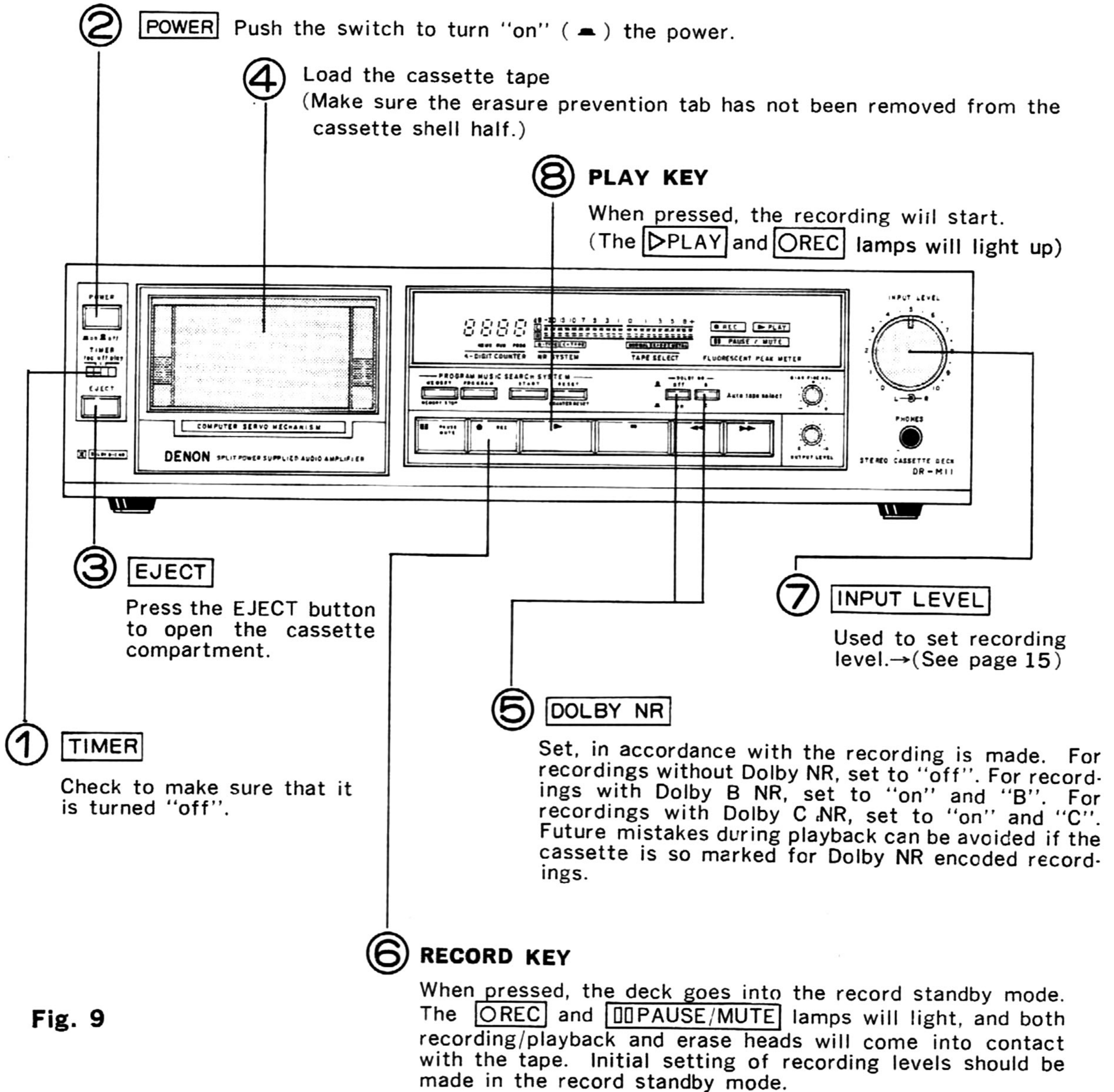


Fig. 9

When recording is finished, press the STOP (■) key.

### Caution :

Be careful not to erase important recordings by mistake. Mis-erasing can be avoided by following the two steps below :

1. If the PLAY (▶) key is pressed while the **○REC** lamp is on, the tape will be recorded.
2. If the PLAY (▶) and RECORD (●REC) keys are pressed at the same time, the tape will be recorded.



# PROGRAM MUSIC SEARCH SYSTEM

This is an automatic music selection system which function the full faculties of micro-computer efficiency.

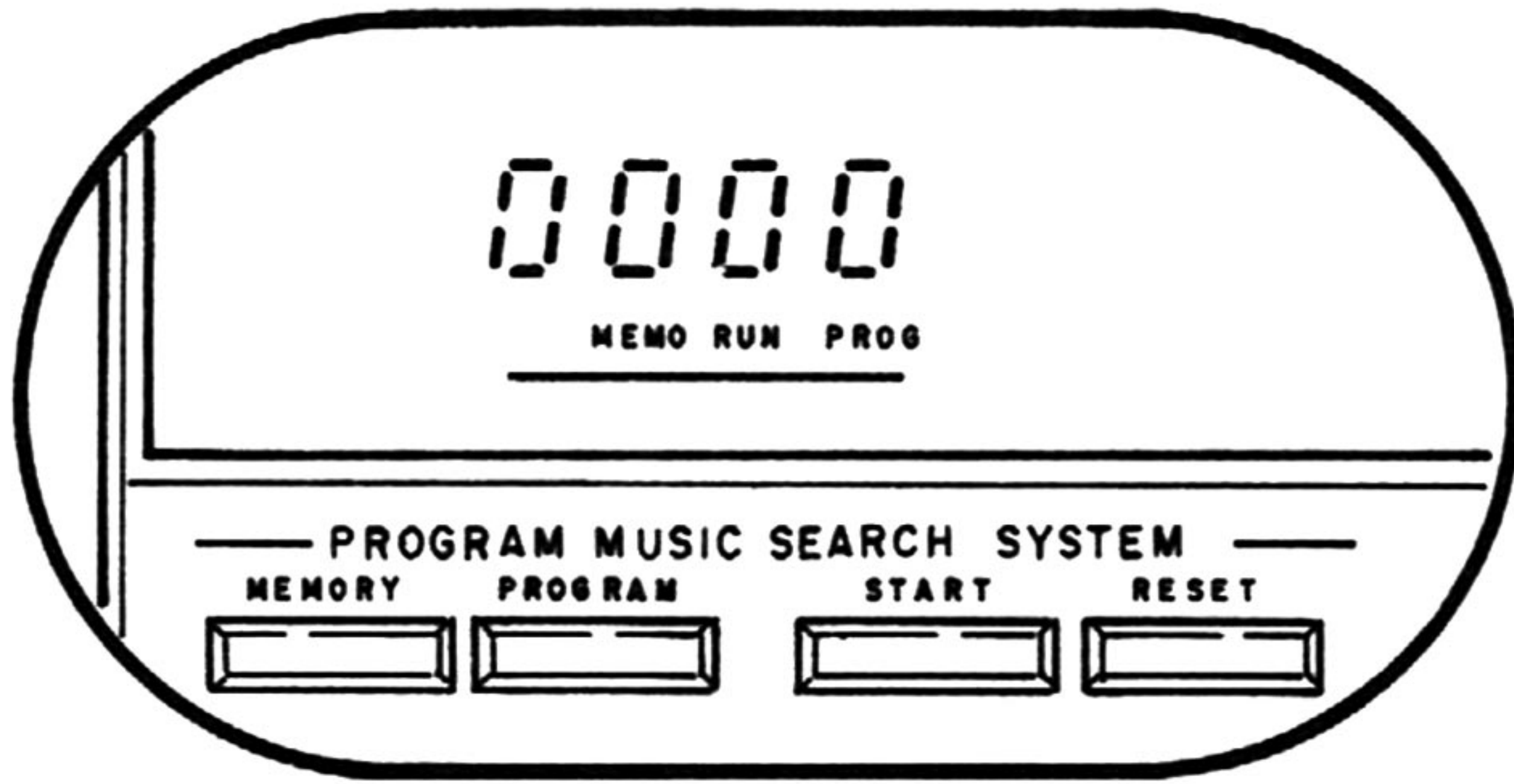
Through this system, it is possible to playback any selection chosen from a maximum of 15 selections recorded on either side of a cassette tape.

The following example shows how this handy mechanism functions:

## EXAMPLE

From Side A ③ ① ② ⑤ . . . etc.  
 From Side B ① ③ ⑤ ⑩ . . .

The Program Music Search System makes it possible to choose any such playback sequence desired.



**MEMORY KEY :** program memory  
**PROGRAM KEY :** program set  
**START KEY :** program start  
**RESET KEY :** program cancel

Fig. 10

## ■ How to program the Music Search System

- (1) Press the PROGRAM key:  
 The PROGRAM display will light up under the program number. Once the program number reaches 0100, the program preparation will be set. (Fig. 11)
- (2) With each subsequent pressing of the PROGRAM key, the two lowest numbers of the program will increase by one, from 0—15. (After reaching 15, the program number returns to zero.) (Fig. 12)

The upper two digits on the tape counter indicate order of program play, while the lower two digits indicate recorded sequence.

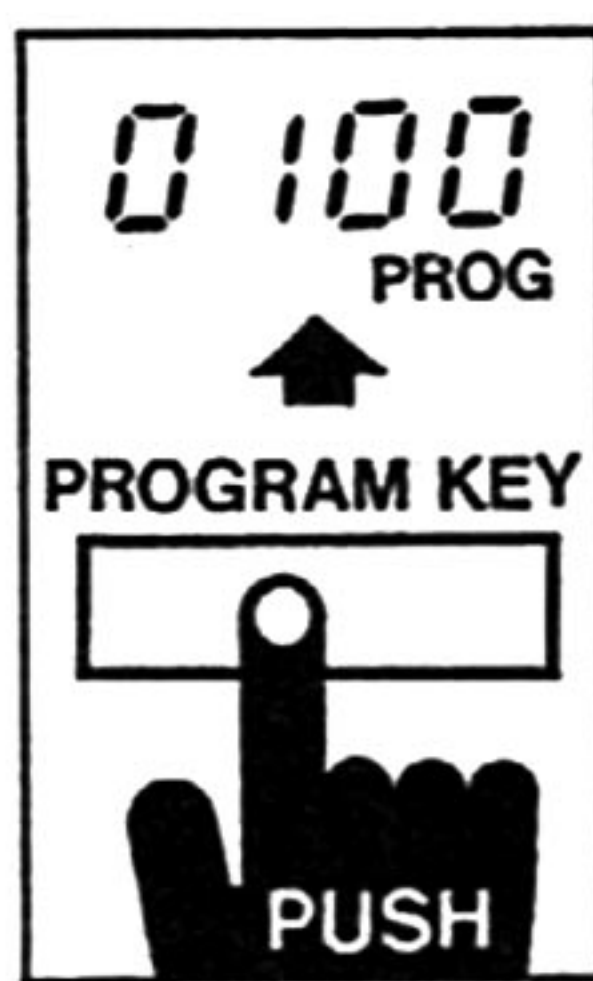


Fig. 11

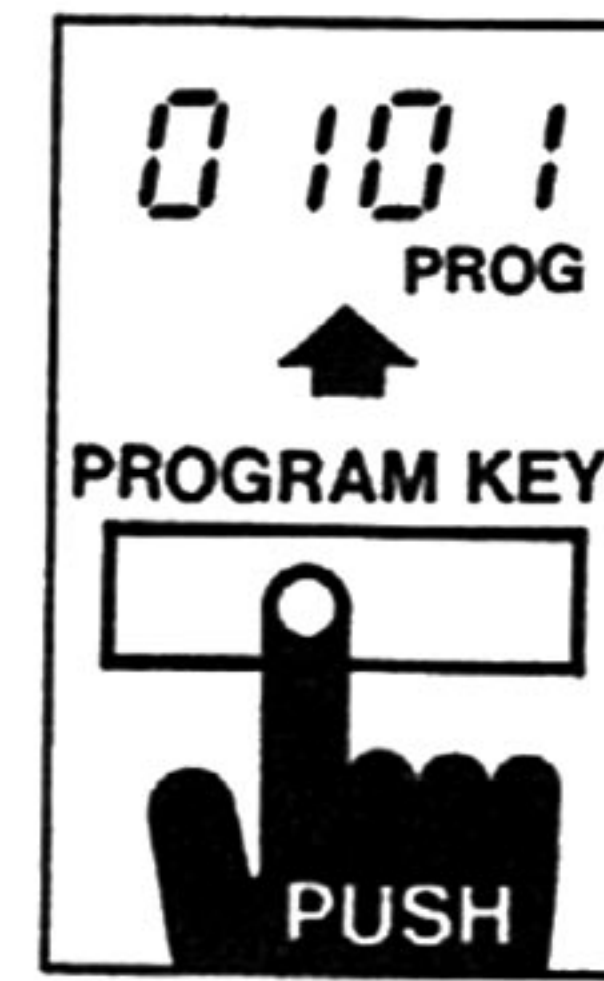


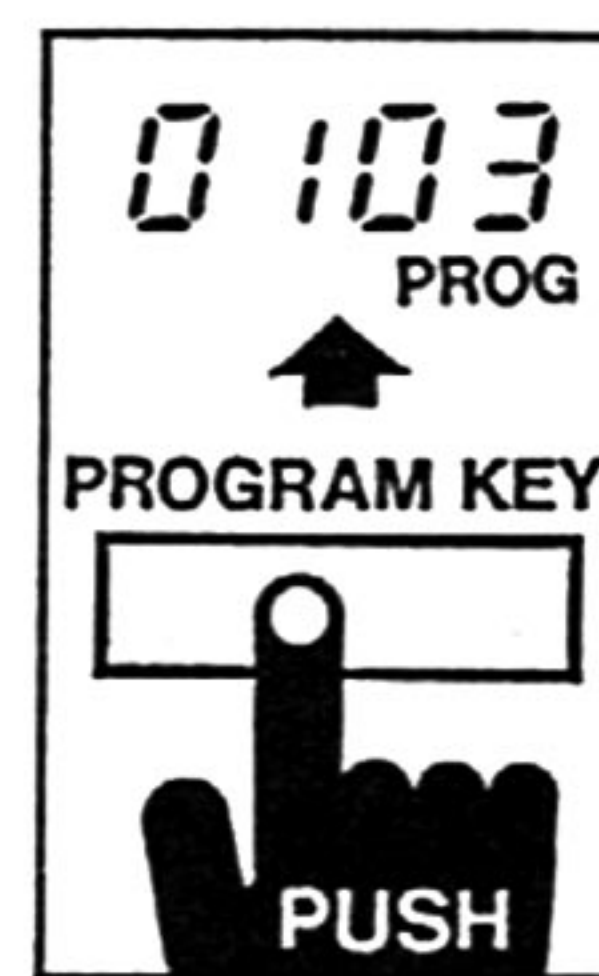
Fig. 12



- (3) Once the first playback program has been completed, press the MEMORY Key.

Using the example, the 4 digits will change from 0103 to 0200, when the second program is set.

As before, press the PROGRAM Key and the next selection is ready for setting.



PROGRAM SET

MEMORY KEY

PUSH



Fig. 13

## EXAMPLE

If the program is set to read 0103, the first play will be the third selection recorded on the tape.



## EXAMPLE PROGRAM

Program selection	1st	2nd''	3rd	4th	... 15th
Recorded Selection	3rd Selection Playback	1st''	2nd''	5th''	
Program Number	0103	0201	0302	0405	

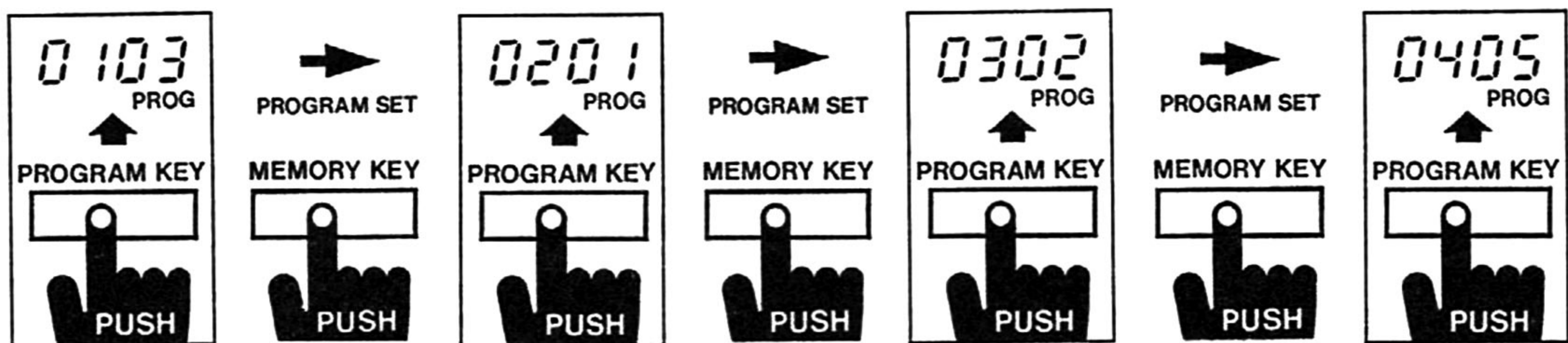


Fig. 14

- (4) Once the program has been completed, press the START Key. The RUN display will then light up under the program number, and the program music search system will start. To cancel all programs, just press the RESET Key.



Fig. 15

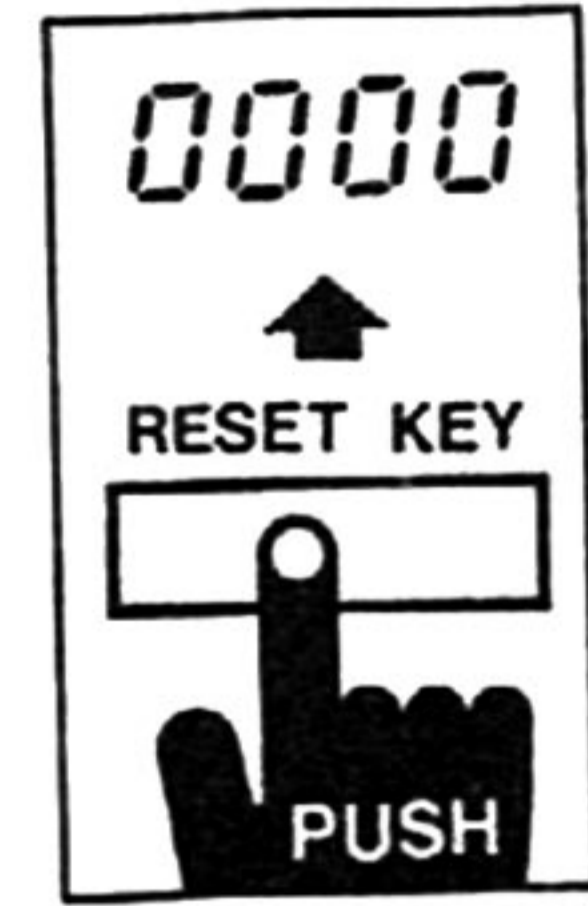


Fig. 16

### ■ Starting the First Selection

- (1) If the PLAY Key and REWIND Key are pressed simultaneously, the playing selection will return to its beginning. There is the 4 second non-recorded interval (blank space) for finding cue signal followed by automatic resumption of the selection. This function is very convenient in the event of wanting to start a selection over again from its beginning once it is already in play.

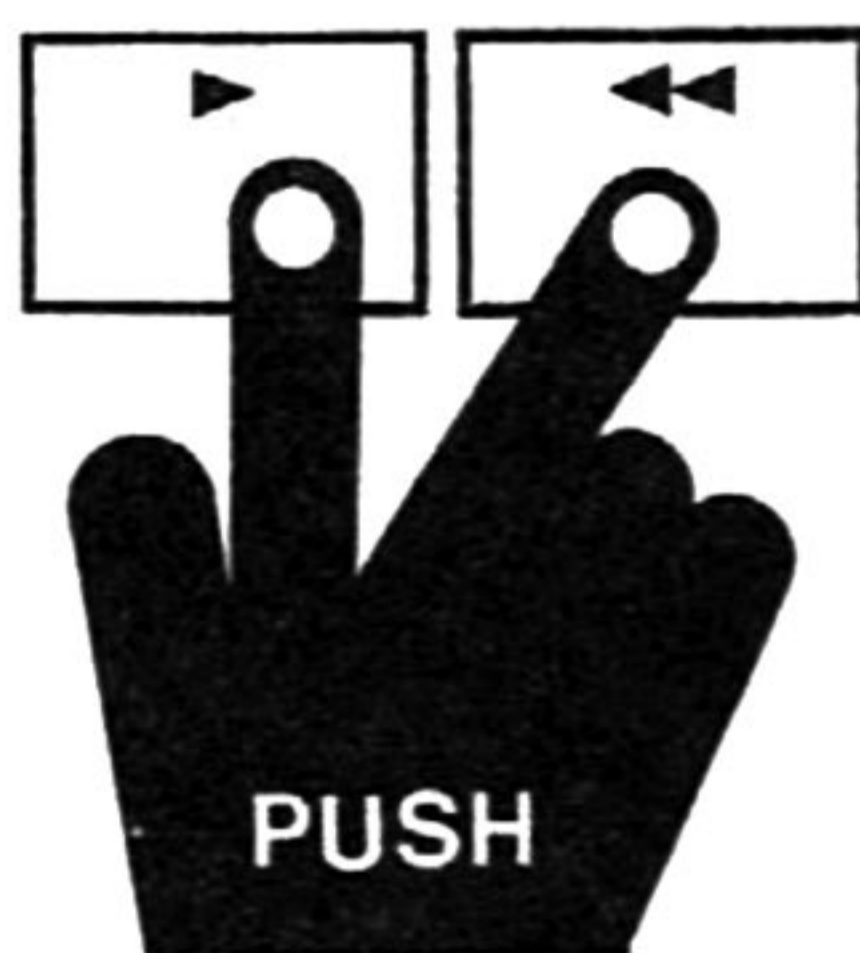


Fig. 17

- (2) If the PLAY Key and FF Key are pressed simultaneously, the fast forward mechanism will function automatically to advance the tape to the end of the playing selection. After the 4 second tone detection interval, the tape will begin to play once again from the beginning of the next selection.

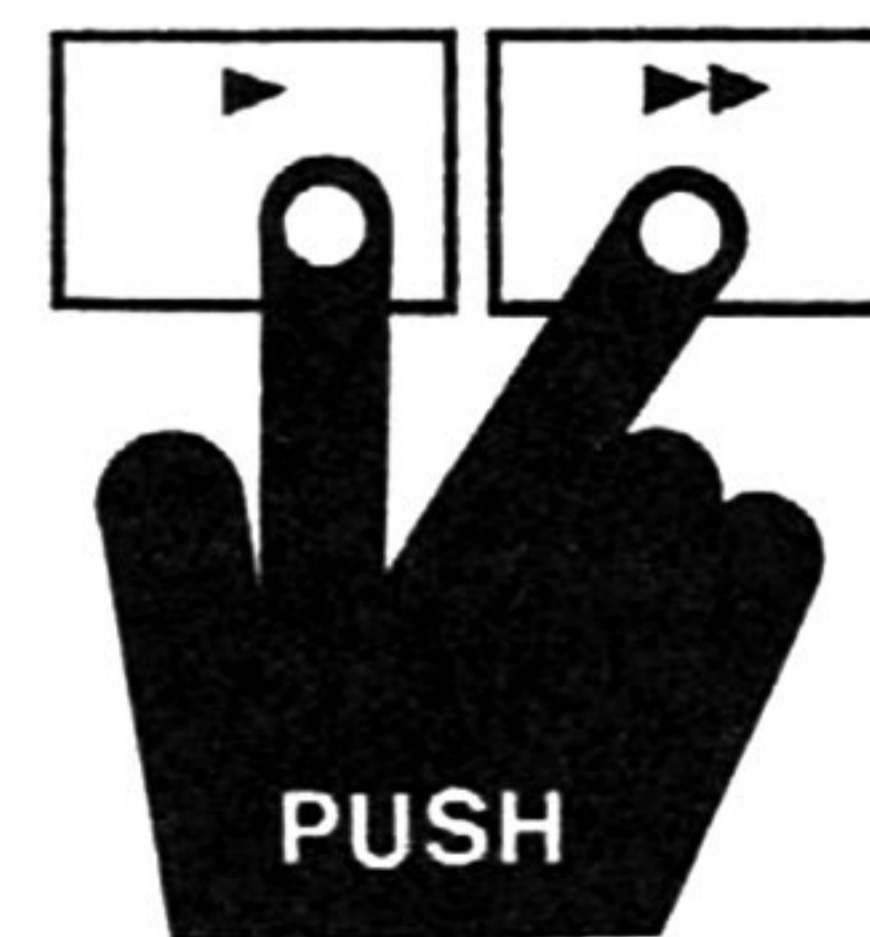


Fig. 18

### Note :

- When the Program Music Search is operating, the 4-digit tape count indicator displays not tape footage, but the selection's sequence numbers; both recorded and play-program.
- Programming should be in the STOP position (from PLAY, FF, and REW). After approximately 2 seconds, when operation is completed, the mechanism movement is stabilized. Meanwhile, the PROGRAM indicator will light up momentarily, and then will automatically shut off.
- During play, one digit may be dropped from the tapecount function's normal 4-digit format.
- When operating the Program Music Search or a selection program search, the tape count number may run over at times due to tape movement at the beginning or end of a selection.
- When operating Program Search, caution is urged. Pressing of the STOP button while the tape is winding may result in interruption or cancellation of the tape program. If the button is pressed again, the tape will stop.



## ■ Correct function choice for selection play.

Selection choice function refers to playback through detection of the relatively long non-recorded interval (approx. 4—5 seconds each) on the tape. In the following cases, the selection choice function is likely to malfunction: Caution is urged.

- Sound on the tape is interrupted by speech or conversation.
- Long periods of pianissimo (softly played music) or non-recorded intervals occur on the tape.
- The tape has picked up noise in a non-recorded interval.
- Non-recorded intervals on the tape are less than 4 seconds in length.
- Noise-emitting electrical appliances are in operation nearby. i.e.; Electric razors, drills, refrigerators, etc.

## CENTRALIZED DISPLAY

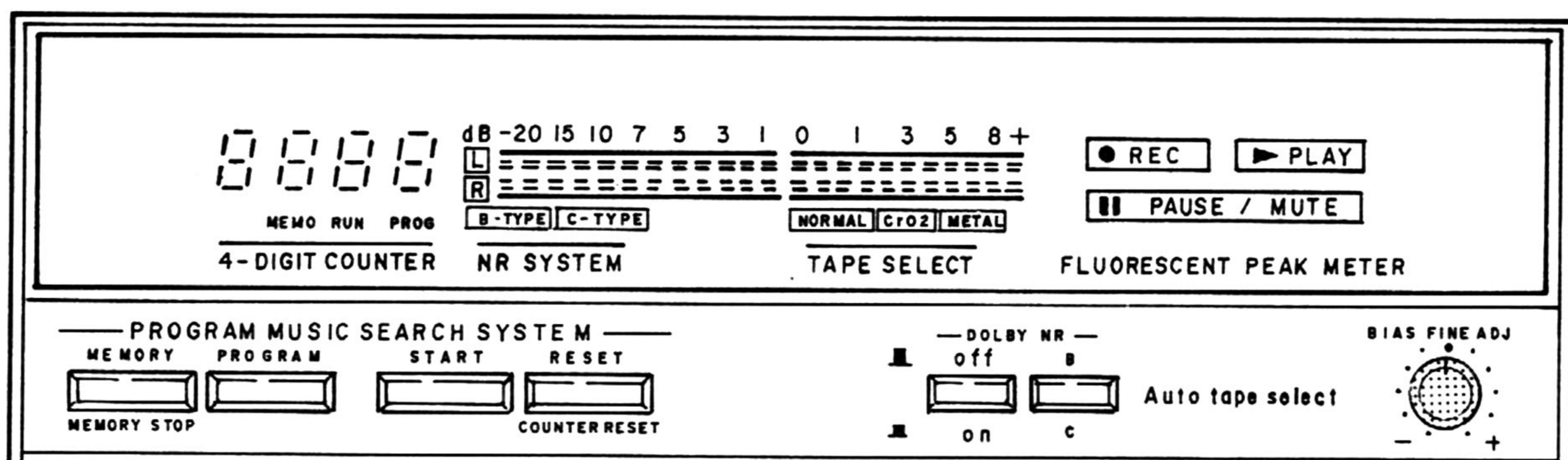


Fig. 19

### 1) Operation of the Tape Counter

- (1) Press the RESET button to reset the counter to "0000".
- (2) By using the PLAY, FF, or REW functions, the reading of the counter will change to indicate index position.
  - During recording and playback operations, the counter is useful for noting the location of existing programs or positions where recording is to be started.
  - When the power switch is turned "off", the counter display turns off. When the deck is turned back "on", the counter is automatically reset to "0000".
  - The reading of this counter does not correspond with that of any other deck.

### 2) Operation of MEMORY STOP

- (1) During recording or playback operations, MEMORY STOP can be used to locate a particular point on the tape. At the desired point, reset the counter to "0000". With the MEMORY STOP button in the "on" position, the deck will stop at the "0000" point (actually between "9995" and "0000") during REWIND operations.
- (2) The MEMORY STOP indication will light when this function is activated.
- (3) Notes:
  - When the power is turned "off", this function is automatically deactivated.
  - The MEMORY STOP is accurate to -5 on the counter, and will stop between "9995" and "0000".

### 3) Display Functions

- (1) The position of the tape in use is displayed automatically. NORMAL, CrO<sub>2</sub>, or METAL indicators light in the display.
- (2) If a blank space is to be made during recording, hold the PAUSE/MUTE key in. At this time, the PAUSE/MUTE indicator in the display will flash in one-second intervals.
- (3) The display features two-color lettering and indications for easy identification.



## PROPER RECORDING LEVEL

A too high recording level can saturate the tape and cause distortion. On the other hand, if recording levels are set too low, soft passages will be marked by residual noise. Proper recording level is the single most important factor for making well balanced recordings.

- The tape select indicators—NORMAL, CrO<sub>2</sub>, and METAL—provide guidelines for the maximum allowable recording levels for each tape type. Adjust the INPUT LEVEL controls while checking the FL PEAK METER.

### Guideline for maximum recording level

Normal tape	+1 dB levels on peaks
CrO <sub>2</sub> tape	+3 dB levels on peaks
Metal tape	+5 dB levels on peaks

**Note :** Optimum recording levels can differ depending on program sources or the type of tape used. We recommend to made the trial recordings.

### ■ Meter reading difference between L and R channels

The left and right channel readings of the FL PEAK METER can differ due to variations in input signal levels. In such cases, adjust the individual channels of the INPUT LEVEL controls until identical meter readings are obtained for both channels.

## RECORDING BIAS ADJUSTMENT

For best recording results, monitoring during the recording process and comparing various recordings using your own judgement are essential.

The DR-M11 is equipped with a bias fine adjustment control to assist you in setting the proper bias for different types and brands of recording tape. At the center-stop position, the deck is set for a reference bias level for CrO<sub>2</sub> and NORMAL tapes. If the resulting recording in this position has too much or too little high frequency content, varying the bias fine adjustment control can be useful to achieve better results.

If the high frequencies (treble sounds) are to be boosted, turn the bias control counterclockwise to decrease bias current. If distortion is of more concern than high frequency response, turn the control clockwise to increase bias current. By the use of this control, you can record tapes with response that matches your personal listening tastes.

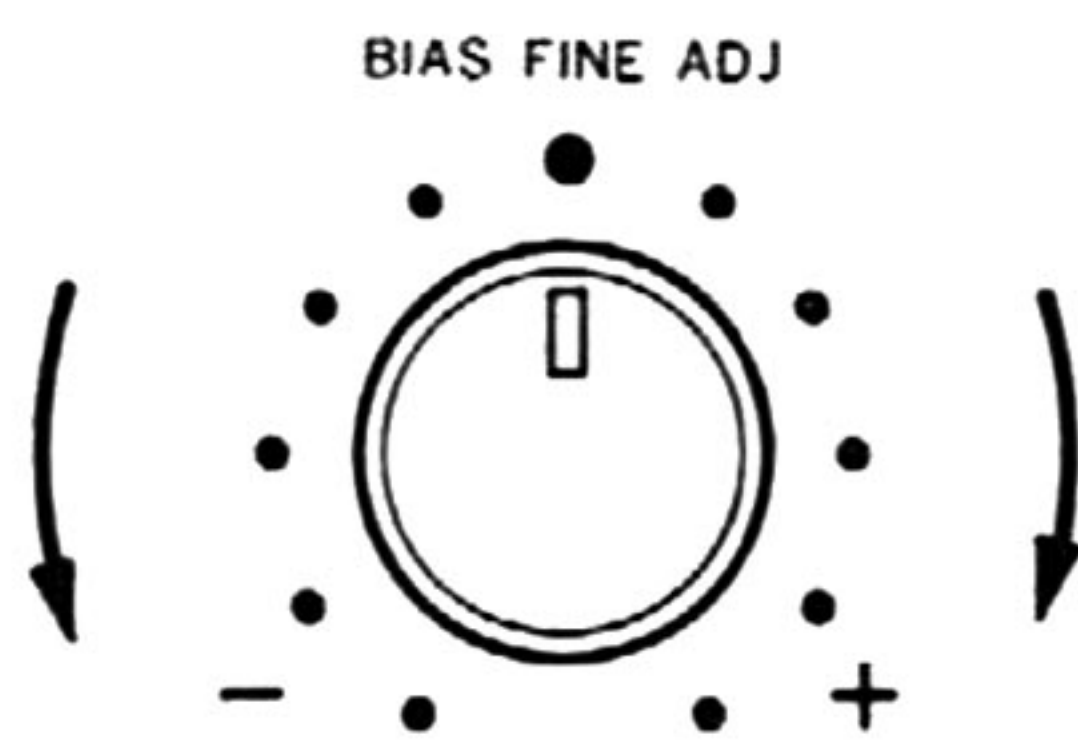


Fig. 20

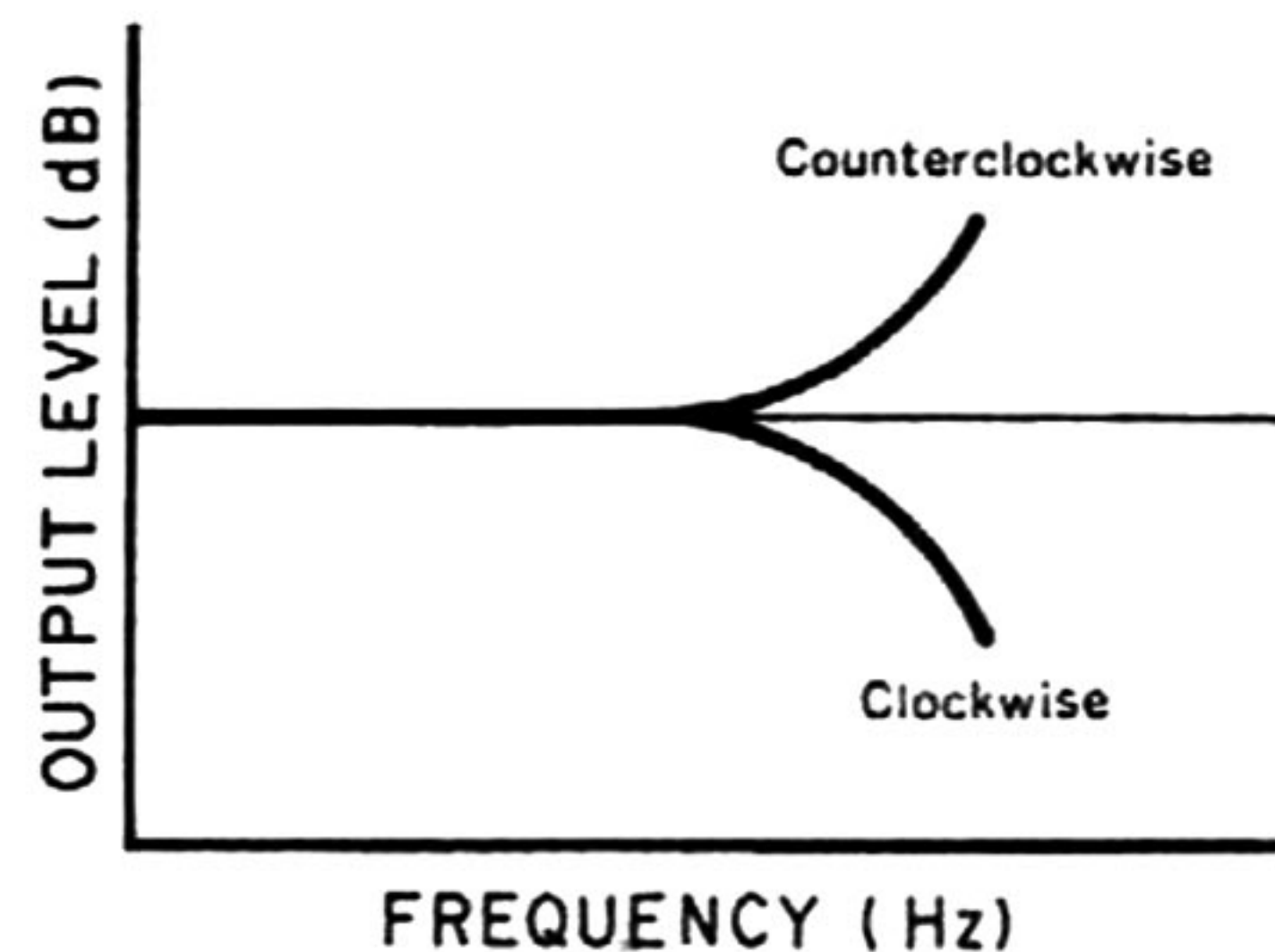


Fig. 21



## TIMER RECORDING/PLAYBACK

Timer recording/playback can be made using any audio timer available on the market.

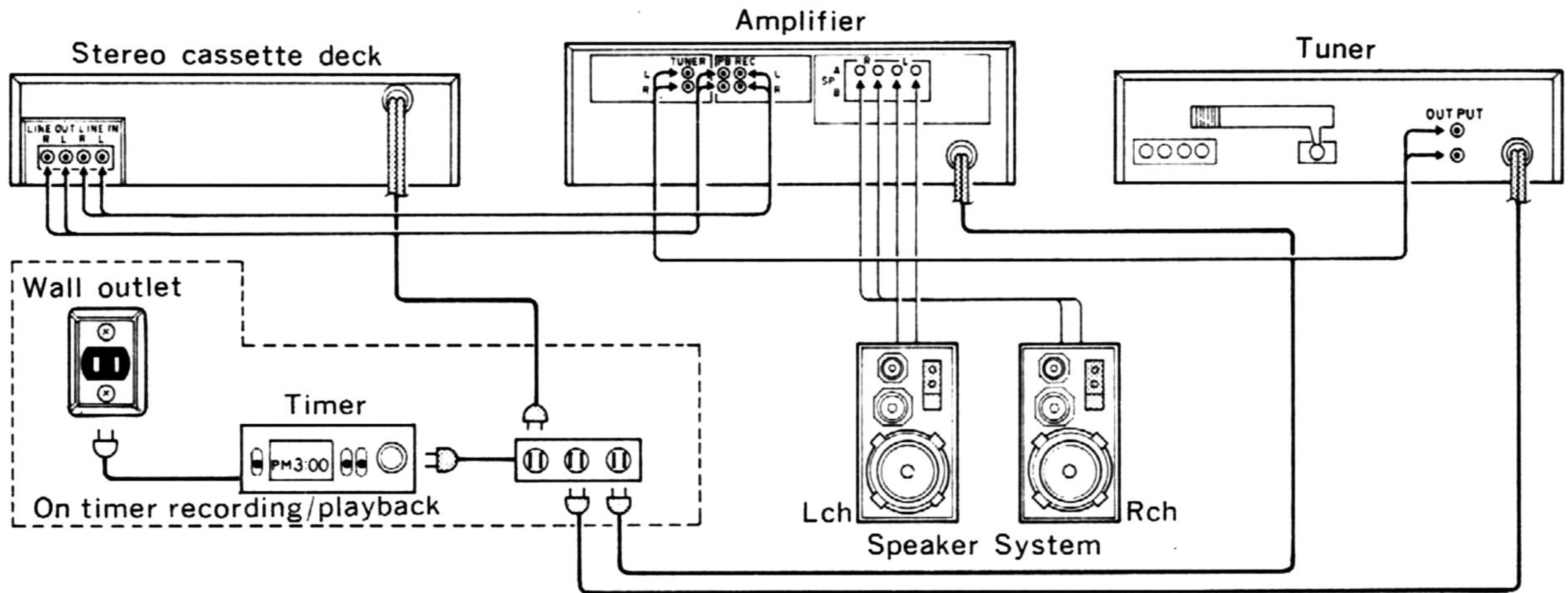


Fig. 22

### ■ Timer recording procedure

1. Make sure the connections are correct, especially the power supply connections.
2. Turn "on" the power switch of each appliance.
3. Tune the desired station on the tuner.
4. Load the tape for recording. (Make sure the erase prevention tab is not broken off; if it is, cover the hole with plastic tape).
5. Set the Dolby NR switch to the appropriate position.
6. Adjust the recording input level.
7. Set the starting position of the tape.
8. Set the timer switch (TIMER) to the "rec" side.
9. Set the audio timer to the desired time. The audio timer will turn the power supply on at the desired time.

\*With the above procedures, timer controlled recording can be made. When the preset time comes, the power is supplied and the FM broadcast can be recorded.

### ■ Timer playback procedure

1. Make sure the connections are correct, especially the power supply connections.
2. Turn "on" the power switch of each appliance.
3. Load the pre-recorded tape to be played back.
4. Set the Dolby NR switches to the appropriate positions.
5. Press the PLAY (▶) key and playback the tape; adjust the playback level.
6. Set the timer switch (TIMER) to the "play" side.
7. Set the audio timer to the desired time. The audio timer will turn the power supply on at the desired time.

\*With the above procedures, timer playback can be accomplished. When the preset time comes, the power is supplied and playback will start.

### Note :

- Please read the operating instructions for the timer before use.
- If the timer recording or playback is not desired, be sure to switch the timer switch (TIMER) to "off".
- When using timers that allow several "on/off" operations, timer start functioning can continue an unlimited number of times until the tape in the machine is finished.

**If the timer recording or playback is finished and power switch is turned off, there may be cases when the cassette cannot be removed, even if the EJECT button is pressed.**

**Please turn the power switch ON again, and then in the stop mode, press the EJECT button to remove the cassette tape.**



## PAUSE/MUTE KEY

This is an original feature developed by DENON. It enables both pause functioning during playback as well as pause and mute functioning during recording operations. It is especially convenient for adding non-recorded intervals (blank spaces) between selections being recorded.

1. By continuously pressing the PAUSE/MUTE key during recording, non-recorded interval (blank space) will be recorded on the tape.
2. When the PAUSE/MUTE key is released during recording, the deck reverts to the recording standby mode.
3. To restart recording (or playback), push the PLAY key.

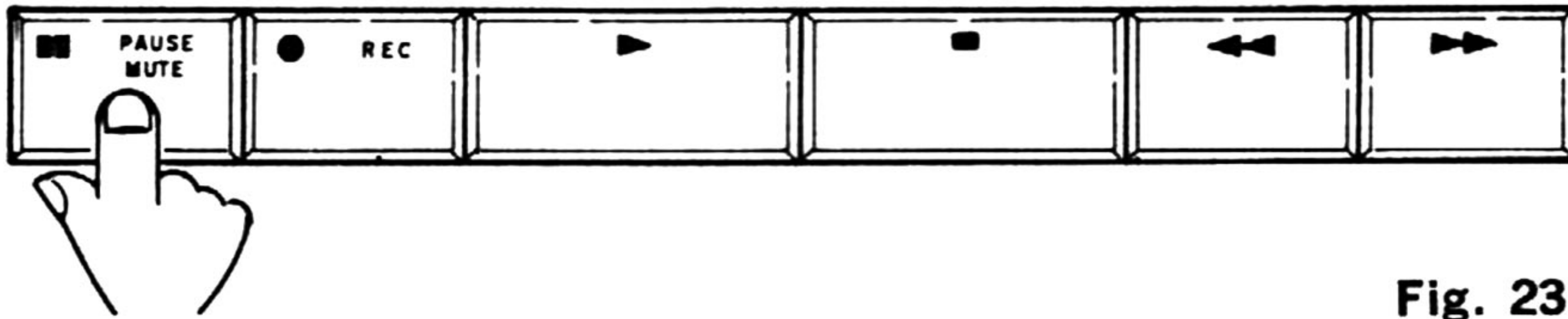


Fig. 23

**Note:** When using this function during playback, refer to page 10.

When using this function during recording, refer to page 11.

## DOLBY C NOISE REDUCTION SYSTEM

- The Dolby noise reduction system substantially reduces the tape background noise (hiss) inherent in the cassette medium. Dolby B NR is most widely in use. However, Dolby C NR is a much more recent development and represents a significantly improvement over Dolby B NR.
- Tape background noise consists primarily of high frequency information which is particularly annoying during soft passages. The Dolby NR system increases the level of low volume mid and high frequency signals during recording and reduces the level of these signals by an identical amount during playback. As a result, the playback signal is identical to the original source signal, but the level of background noise generated by the tape is greatly reduced.
- The operating principle of Dolby C NR is similar to that of B except for the encoding/decoding response curves. The noise reduction effect obtained by Dolby C NR is up to 20dB, compared to 10dB with Dolby B NR. In addition, Dolby C NR uses an antisaturation network and spectral skewing circuitry, and significantly improves the dynamic range in the mid to high frequencies.

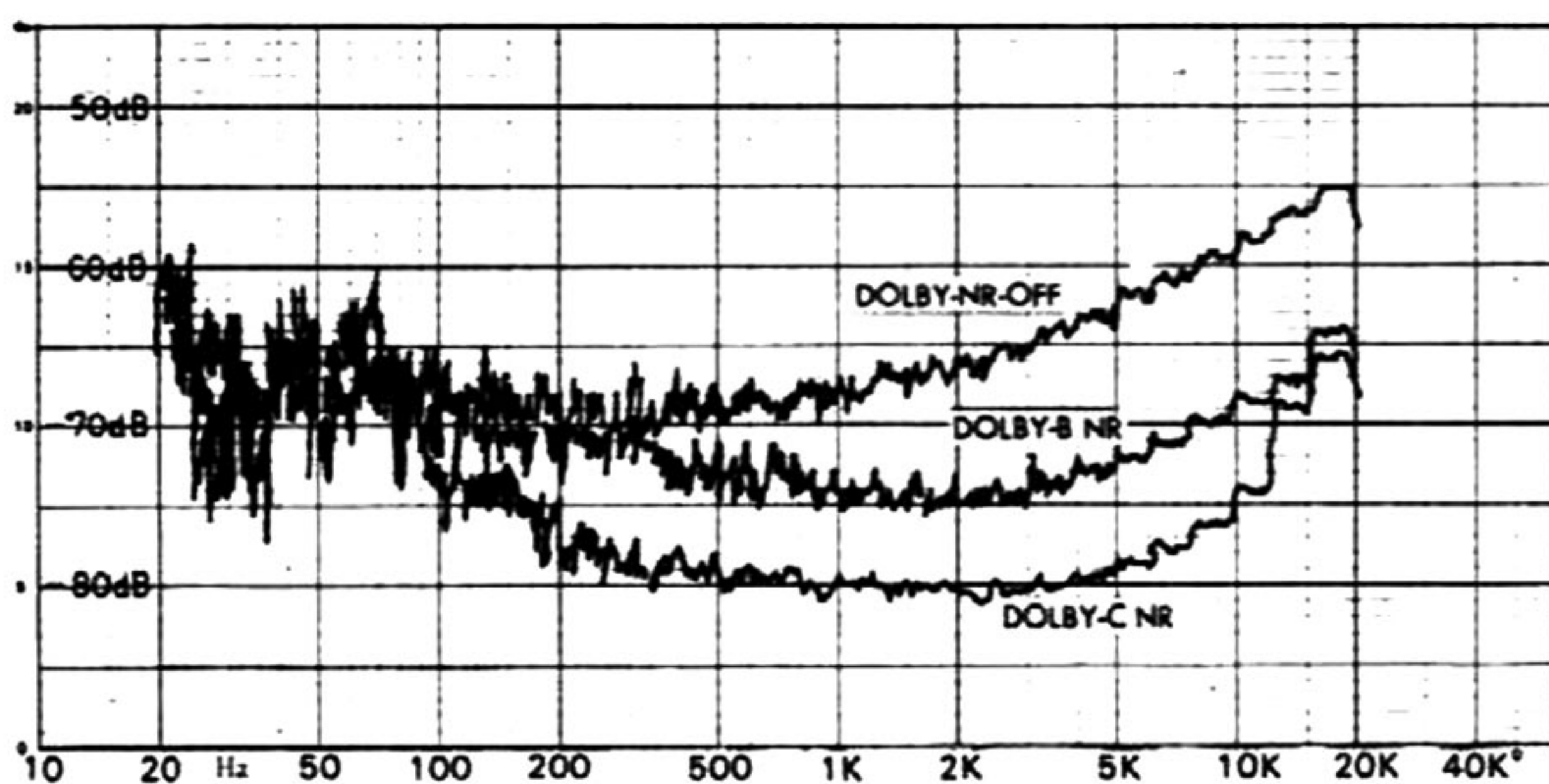


Fig. 24

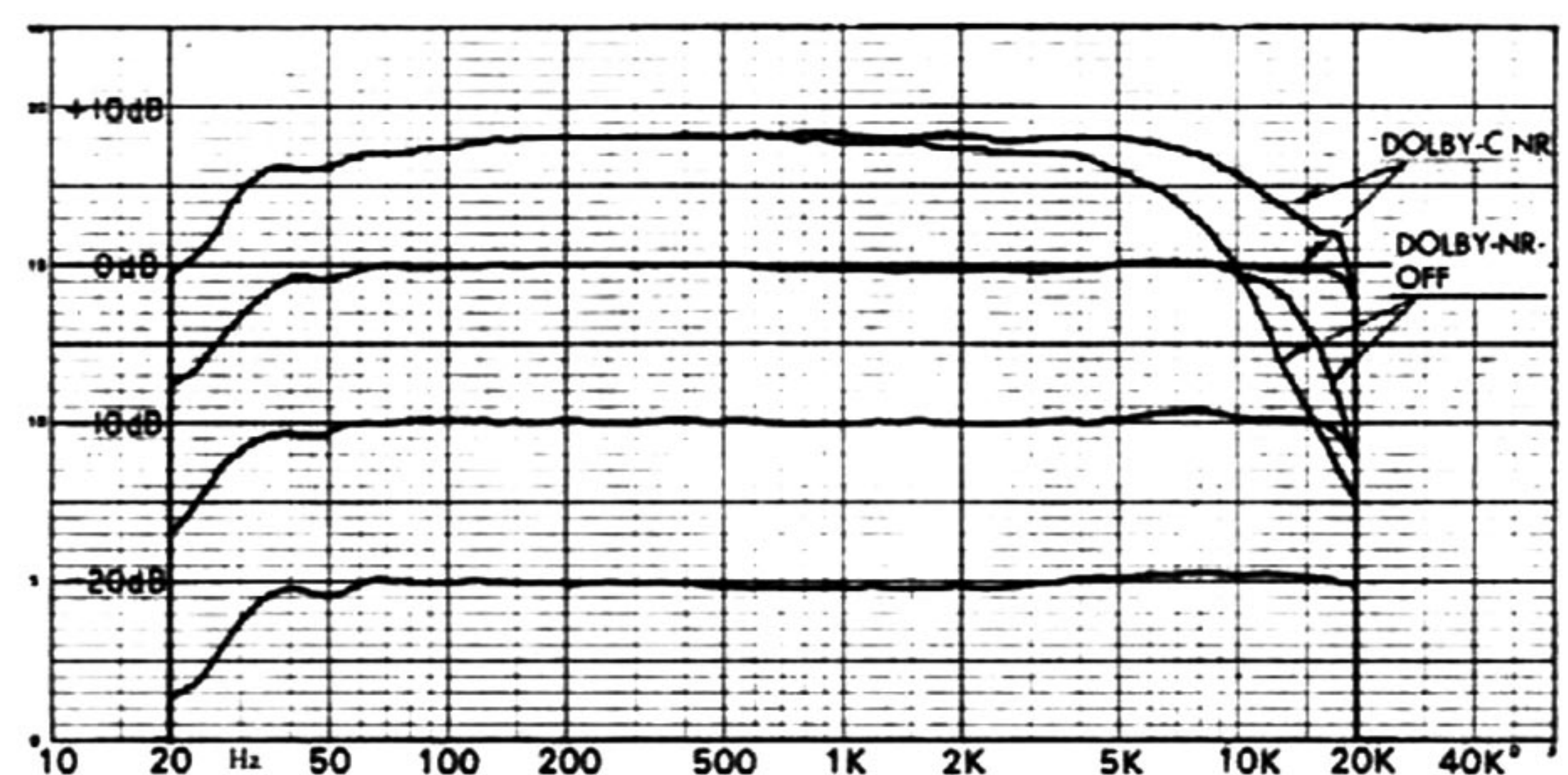


Fig. 25



## MAINTENANCE

### ■ Removing the cassette compartment cover

It will be more convenient if the cassette compartment cover is removed during the cleaning of the pinchroller and heads, or during demagnetizing of heads.

Follow these procedures:

1. Press the EJECT button to open the cassette compartment.
2. Hold only the cover of the cassette compartment and pull it up. The compartment cover is removed from the front. (Fig. 26)
3. Replace and lock the cassette compartment. The heads and the pinchroller will be easily accessible.

When attaching the cassette compartment cover, reverse the above procedure.

### ■ Head Cleaning

After long usage, tape coating or dust may adhere to the heads causing deterioration of sound. Clean them regularly. Use a cotton swab moistened with cleaning solution (such as alcohol). (Fig. 27)

#### Note :

1. Some cleaning cassettes on the market have a strong abrasive effect and scratch the heads. Use cotton swabs instead of cleaning cassettes.
2. Since the use of metal tapes is apt to collect more dust on the heads, clean the heads more often to enjoy optimum sound.

### ■ Cleaning the pinchroller and the capstan

If the pinchroller or the capstan accumulate dust, tape transport may become unstable resulting from slippage during recording or playback. The tape can also be damaged by being rolled up around the capstan.

Clean them with a cotton swab or a soft cloth moistened with cleaning solution (such as alcohol). (Fig. 28)

### ■ Demagnetizing the heads

The heads may become magnetized after long usage or by having a strongly magnetized object brought near them. The result is a generation of noise, loss of the high frequency range, or erasing the treble components of pre-recorded tapes and adding noise.

Demagnetize the heads on a regular basis.

### ■ Procedure

1. Be sure to turn "off" the power supply.
2. Turn the demagnetizer "on" while it is more than 30cm away from the heads. Bring the demagnetizer near the heads and slowly move it in a small circle four or five times.
3. Slowly move the demagnetizer away from the heads and turn "off" the power of the demagnetizer when it is about 30cm away from the heads.

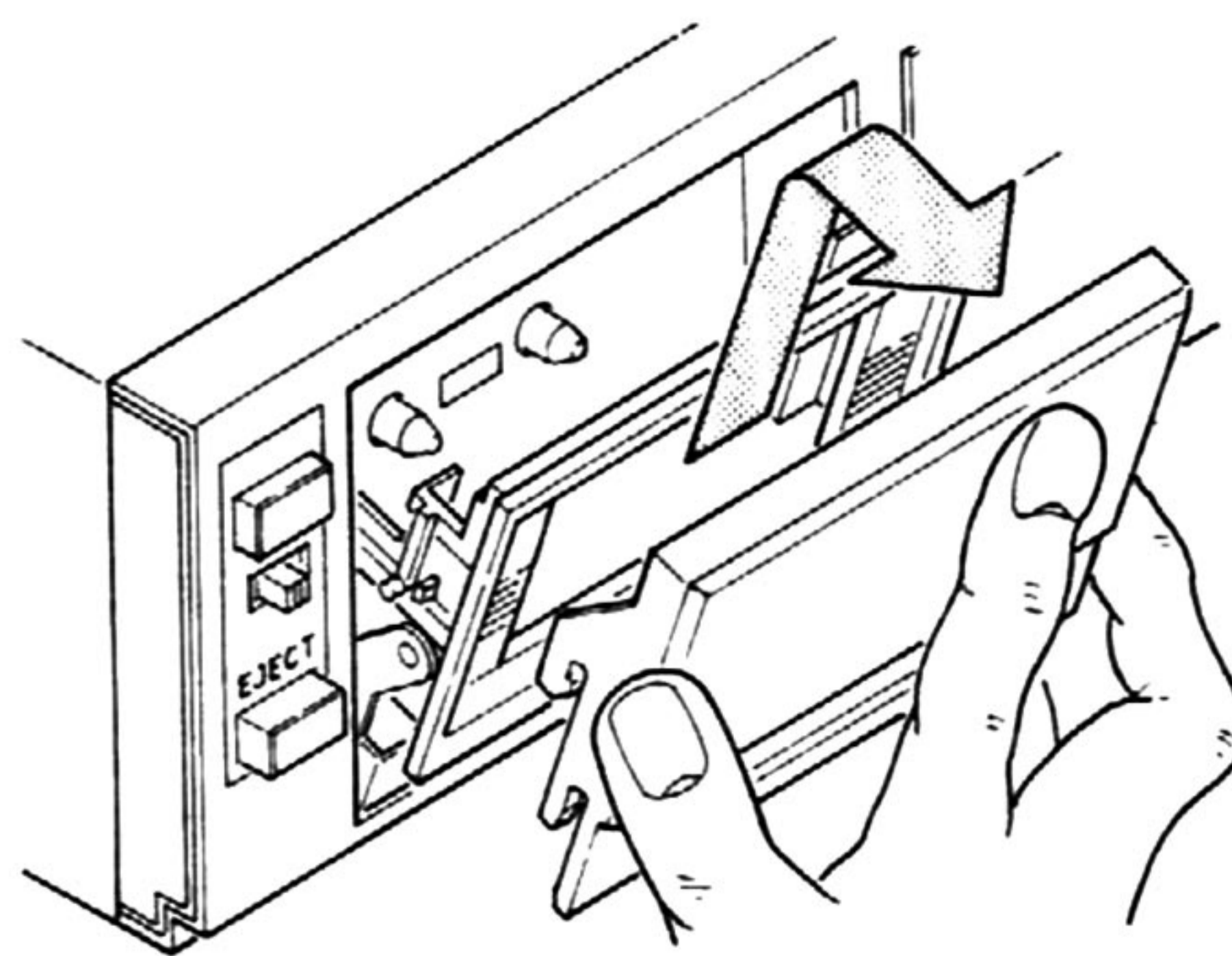


Fig. 26

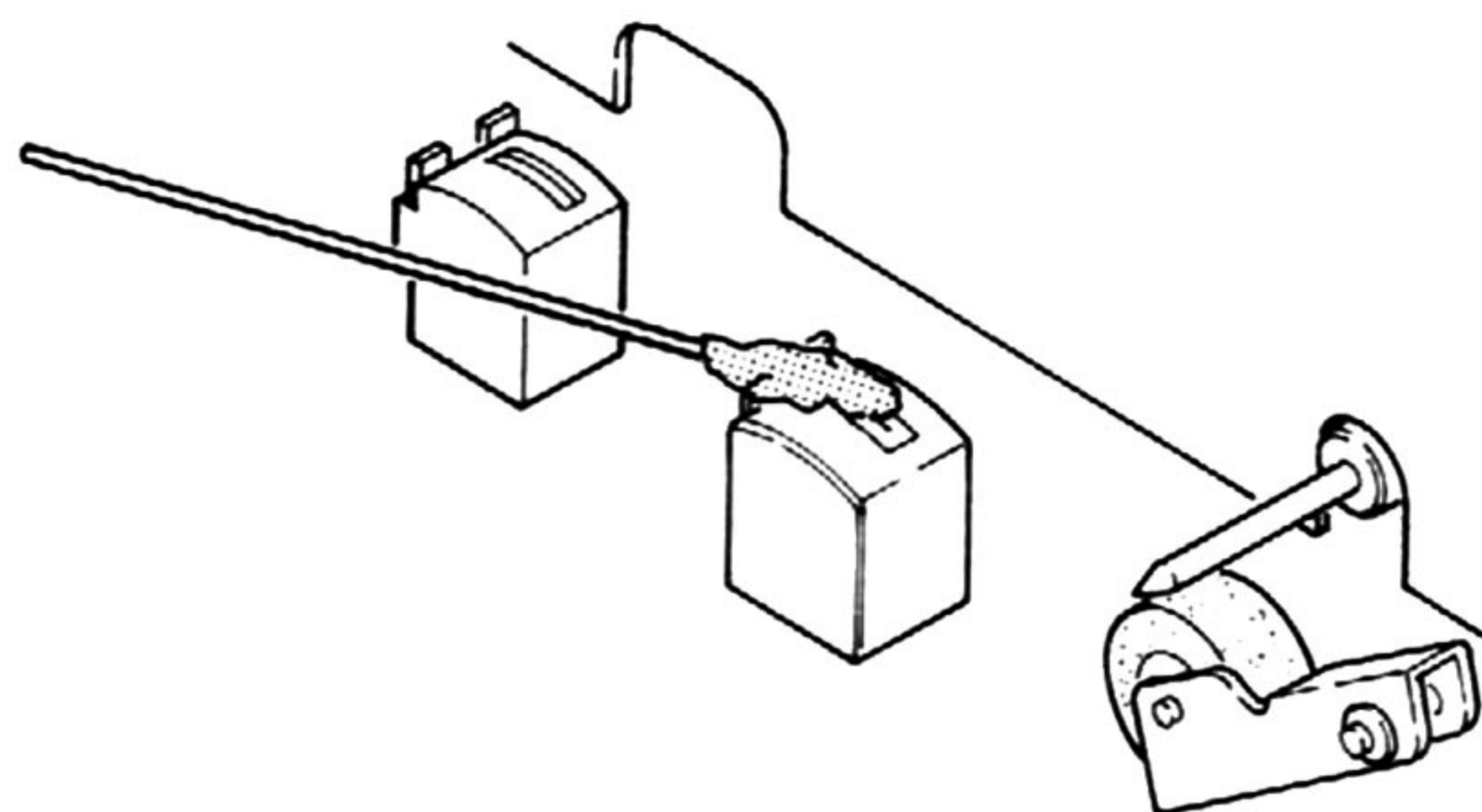


Fig. 27

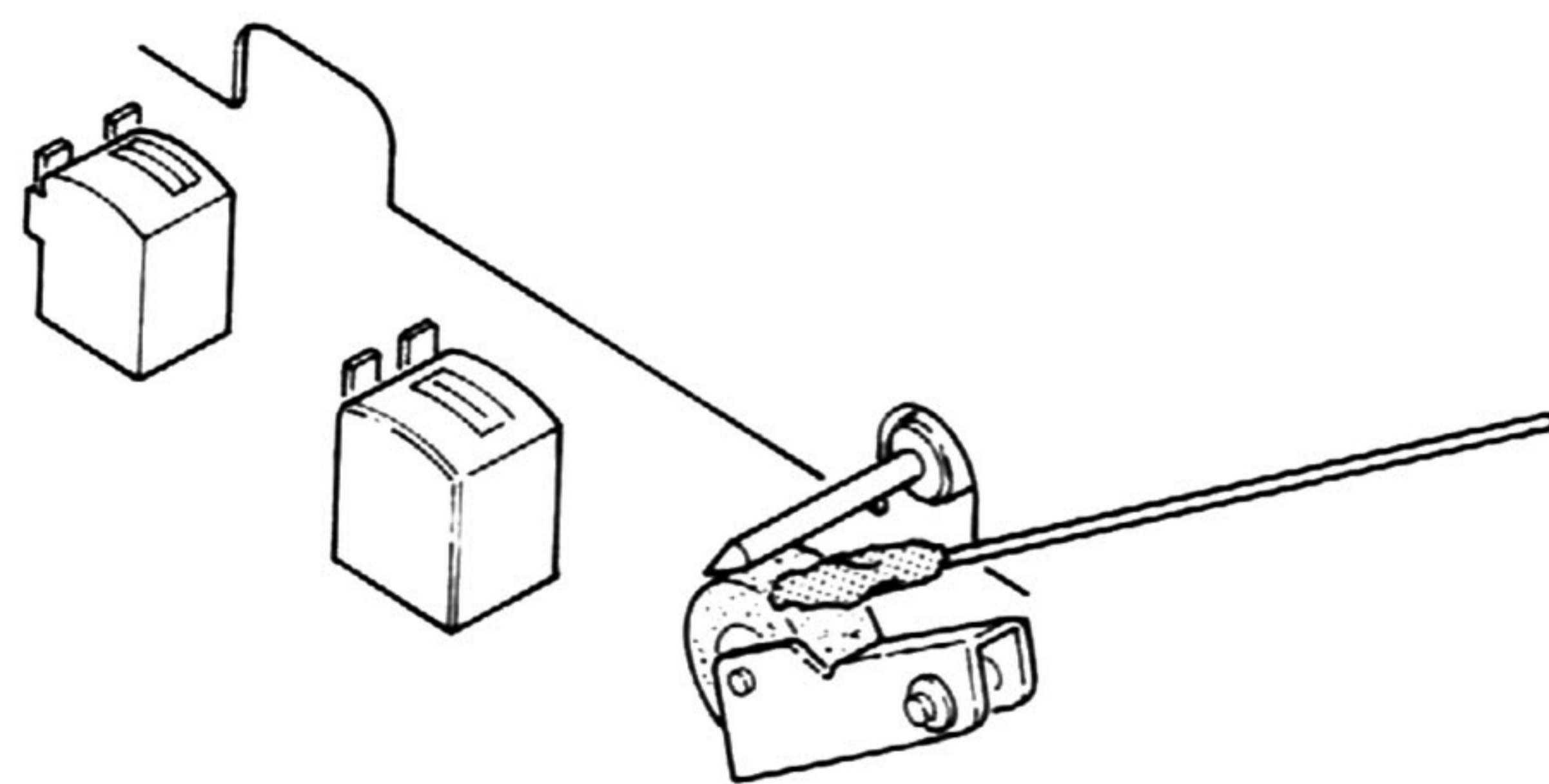


Fig. 28



## SYMPTOMS OFTEN MISTAKEN AS BREAKDOWNS

**Make sure of the followings before you consider any malfunctions :**

- 1. Are all the connections correct?**
- 2. Is the set being operated correctly in accordance with the operating instructions?**
- 3. Are the speakers and amplifiers functioning correctly?**

If the tape deck still does not function properly, check it again, using the check list below. If the symptom does not correspond to the check list, please contact your **DENON** dealer.

Symptom	Cause	Remedy
Tape does not run	Power cord is off. Tape is completely wound up. Tape is loose. Cassette is not loaded properly. Defective cassette.	Check power cord. Rewind tape. Tighten tape with pencil, etc. Load cassette properly. Replace cassette.
Tape is not recorded when recording button is pressed.	No cassette is loaded. Erase prevention tab is broken off.	Load cassette. Cover hole with plastic tape.
Sound is warbled or distorted.	Heads, capstan or pinchroller are contaminated. Tape is wound too tight.  Recording input level is too high. Tape is worn out and has "drop-outs".	Clean them.  Fast forward or rewind to loosen tape winding. Adjust recording input level. Replace tape.
Excessive noise.	Tape is worn. Heads, capstan or pinchroller are contaminated. Heads are magnetized. Recording input level is too low.	Replace tape. Clean them.  Demagnetize heads. Adjust recording input level.
High frequency (treble) is emphasized.	Dolby NR switch is set improperly.	Set Dolby NR switch properly.
High frequency (treble) is lost.	Heads are contaminated. Tape is worn.	Clean them. Replace tape.
When a CrO <sub>2</sub> or metal tape is placed in the deck, a different tape indicator comes on.	The cassette housing is of an older design without tape type detection holes.	Use the latest cassettes with tape type detection holes.
The cassette tape cannot be removed.	If the power switch is turned off in either the recording or playback mode, and the unit is stopped, there may be cases when the cassette cannot be removed, even if the EJECT button is pressed.	Turn the power switch ON again, and then press the stop (■) key. Then, in the stop mode, press the EJECT button to remove the cassette tape.



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