OWNER'S MANUAL

TEAC®

A-100

Stereo Cassette Deck with Dolby* System

51014330

* Noise reduction circuit made under license from Dolby Laboratories Inc. The word "Dolby" and the Double-D symbol are trademarks of Dolby Laboratories Inc.

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

Thanks for Buying a TEAC

Your deck is a fine quality product that reflects all of the TEAC precision engineering experience and design excellence. Yet we've made every effort to give you all of this at a most economical price level. You'll find no expensive floss or frills in your deck; only solid construction, rugged dependability, and all the necessary features and controls for quality recording and superb playback. We wish you years of enjoyment and pleasure from your deck.

Table of Contents

Environmental Precautions

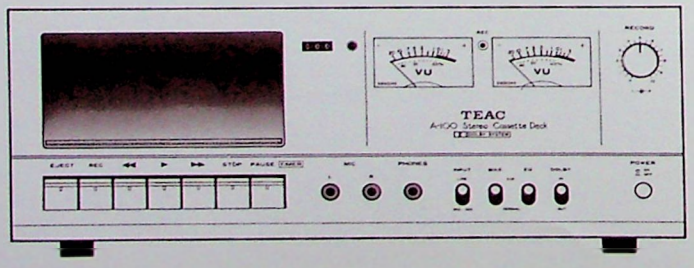
Your TEAC Deck is well constructed, and adaptable to a wide range of environmental conditions. However, it is still an electro-mechanical device with limits to be considered. To prolong the life of your new deck, pay attention to the following factors when you install and operate the deck.

High Humidity Locations

Will shorten equipment life from corrosion and possible fungus growth on printed circuit boards.

Dusty Environments

Your TEAC deck is a precision machine and as such should be protected from dust. Operation in a dusty atmosphere will result in excessive tape head wear. Your tapes should also be kept dust-free.



Fluctuation of the Supply Voltage

Should you be in an area where line voltage fluctuation is severe, the use of a voltage regulator may be advisable.

Constant High Temperature Locations

Do not operate this unit near heating appliances, on top of an amplifier, or in direct sunlight. Temperature extremes will ultimately not only cause degradation of sound quality, but will also shorten the useful operating life of the unit. Avoid temperatures higher than 38°C (100°F).

Extreme Low Temperature: In such locations, lubricants will harden and satisfactory operation cannot be expected. Operation will be sluggish and an overload may be placed on the drive motor. Avoid temperatures lower than 5°C (40°F).

Cassette Tape

Recording Time

Cassette recording tapes are wound on reels in a special convenient case that is easily inserted into the cassette deck. The tape width, cassette container shape and size and the tape speed are standardized for compatibility. The standard C-60 cassette tape contains enough tape for 60 minutes of recording. The C-30, C-90 and C-120 cassettes contain enough tape for 30, 90 and 120 minutes respectively. (All times are total times when using both sides of the tape.)

Use Both sides of the Cassette

Both sides of the cassette tape can be recorded (or played). See fig. A. The cassettes are usually marked Side A (or 1) and Side B (or 2) for reference. To change sides of the cassette to be recorded or played, simply remove the cassette from the deck (using the EJECT Key) and turn it over. The cassette tape can be recorded in either a monophonic or stereo format. The various record and playback procedures as well as the head configurations have been standardized for compatibility. See the Stereo/ monophonic head fig. B.

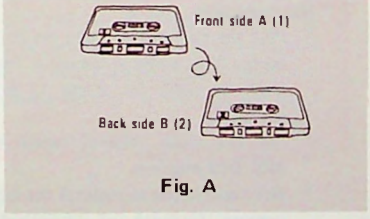


Fig. A

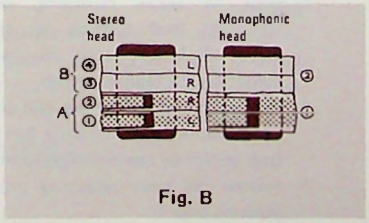


Fig. B

Choice of Tapes

TEAC tape decks are designed to work well with a wide variety of cassette tapes. Chromium dioxide (CrO_2), Ferri chrome (FeCr) and HiFi tapes can be used with excellent results. CrO_2 and FeCr tapes generally require higher bias and give improved high frequency response. The longer tape lengths such as C-120 and C-180 are very thin and are easily damaged. We do not recommend them for high fidelity recording.

For good stereo recording we recommend that you use only good quality, name brand tapes. Also the pinch roller and capstan must be kept very clean to insure proper operation.

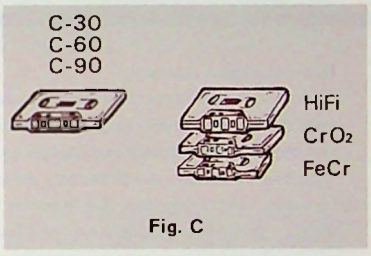


Fig. C

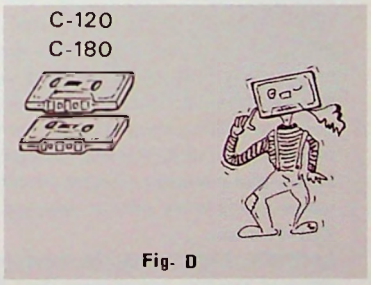


Fig. D

Before Recording or Playing Back a Cassette Tape

A tape that is loose or slack inside the cassette case may become wound around the capstan or pinch roller. To avoid this problem, check and tighten (if necessary) the tape by using a pencil or other suitable implement as shown in fig. E.

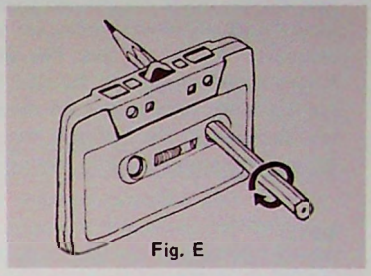


Fig. E

Protection of Recorded Tapes

Pre-recorded cassettes can be protected against accidental erasure or re-recording by removing the "punch out" record tab as shown in figure F. Each cassette contains two record tabs, one for each side of the tape. With Side A (or 1) of the cassette facing up as shown, the record tab for Side A is on the right end of the cassette case and the record tab for Side B is on the left end. When this tab is removed and the cassette inserted into a tape deck the deck cannot go into a record mode because the deck has a special sensing arm which checks for the presence of this tab. If the tab is removed, the record and erase functions are inhibited and the tape cannot be re-recorded. If the tab is removed, (using a screwdriver as shown) and later the recordist decides to re-record the cassette, a piece of tape can be placed over the tab hole to allow recording (Fig. F, G).

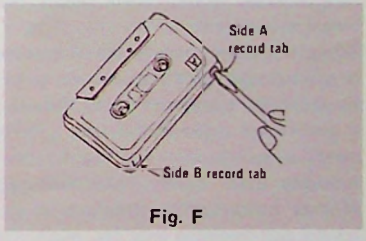


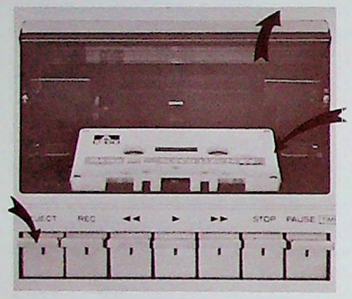
Fig. F

Fig. G

Connections and Procedures

Playback Procedure

1. Open the Cassette Holder Protective Door.
2. Depress the EJECT key to raise the Cassette Holder Tray. Slide the pre-recorded tape into the Cassette Holder Tray as shown until it drops into place. Keep the side of the tape you wish to play facing up.



3. Depress the ◄◄ Key to rewind the tape to the beginning.
4. Depress the Counter Reset Button to reset the Counter to 000.
5. Set the EQ Switch to match the type of tape you are using according to the chart on page 6. (The BIAS Switch has no affect on the tape during playback.
6. Set the DOLBY NR Switch to IN position if the tape was Dolby encoded (recorded using Dolby noise reduction circuitry). Set the Switch to OUT position if the tape was recorded without Dolby circuitry.
7. Connect the headphones to the PHONES Jack for private listening.
8. Depress the Play Key ► to begin playback.
9. Set the control on the stereo amplifier or receiver (if used) to obtain the sound loudness you desire.

Fig. B

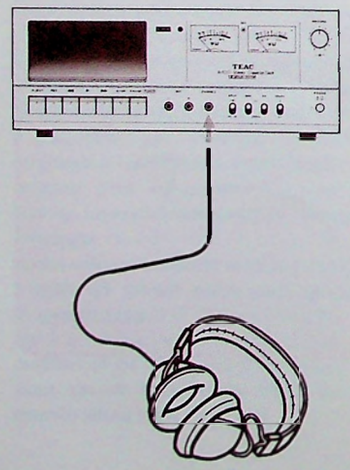
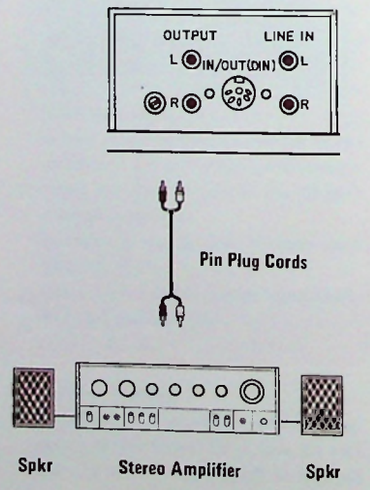


Fig. C



System Connections and Preparation

The TEAC A-100 can be used as the heart of a complete stereo system as shown below in Figure A or it can be used as a system in itself requiring only 1 or 2 mics and a pair of headphones as shown in Figures B and D.

Figure C shows the A-100 connected to a stereo amplifier and speaker system using a pin plug cord.

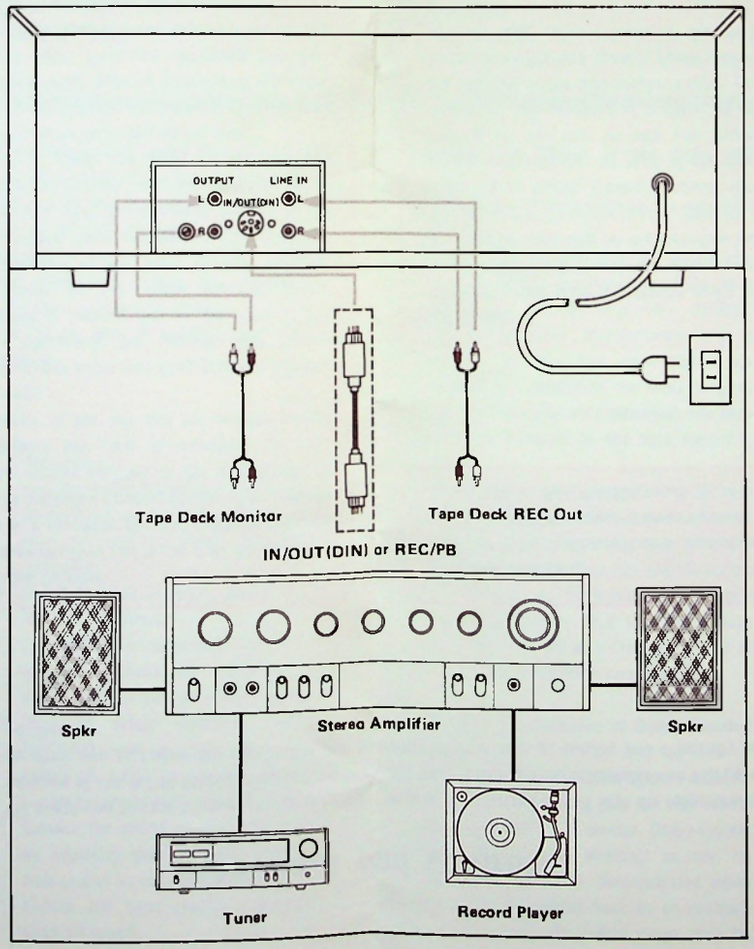
Figure E shows how the A-100 may be used in conjunction with another tape deck for direct copying of a tape. This is called "dubbing".

Select the system you want to use and make the appropriate connections according to figure.

Then refer to the recording or playback procedures below for a step by step guide to record or playback your cassette.

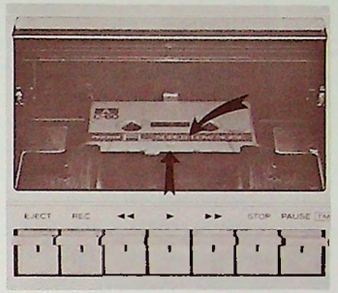
If this TEAC A-100 is your first stereo cassette deck you may want to turn to the center page of this manual for a brief explanation of each of the controls and functions before you begin recording or playing back a tape.

Fig. A



Recording Procedure

1. Insert the cassette tape as shown, with the side you wish to record facing up. Close the cover.



2. Set the BIAS and EQ switches to match the type of tape you are using according to the chart on page 6.
3. Set the Dolby NR switch to the IN position to Dolby encode your tape to reduce noise during playback. For recording without Dolby, set the Dolby NR switch to OUT.
4. Set the INPUT selector to LINE position if you wish to record music via the LINE IN Jacks at the rear of the deck. Set this switch to MIC/DIN if you wish to record using either microphones at the front panel MIC jacks or the DIN IN/OUT connector at the rear panel of the deck.
5. Depress the pause key and lock it in the down position. Then depress the REC key and while holding it down, depress the Play key.
6. Begin the source music, i.e., tune in the FM station, begin playing the record or sing into the microphones to obtain a source for initial setting of the RECORD Level Controls.
7. Increase the RECORD level controls until the VU meters read 0 VU for the loudest portions of the song.
8. Depress the Pause key again and release it. This begins the actual recording.
9. Depress the Stop key when the recording is finished. If you wish to record another selection depress the Pause key instead of the Stop key. To begin the next recording depress and release the Pause key.

Fig. D

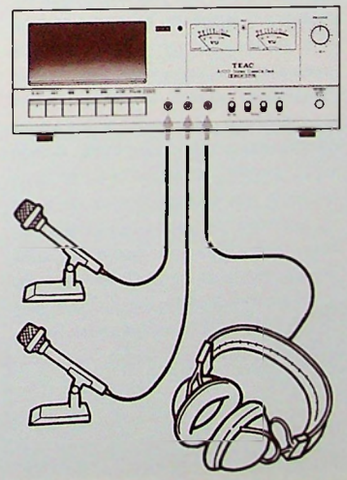
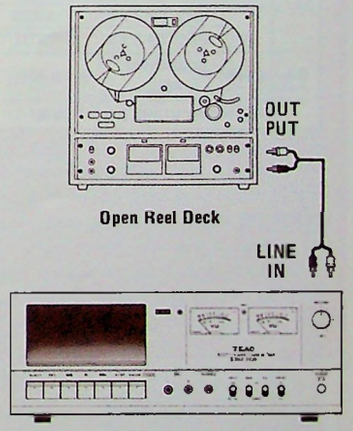


Fig. E



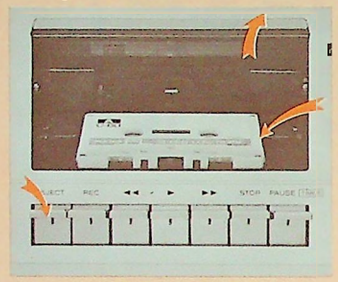
Features and Controls

We invite you to read through this large fold-out page to familiarize yourself with the features and controls of the A-100 Stereo Cassette Tape Deck. We have condensed the information on this page to allow you to review the capabilities and potential of your deck as quickly and efficiently as possible.

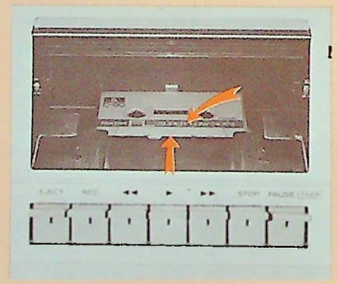
Cassette Holder
Open the Cassette Holder Protective Door and note these points about the cassette Holder:
a. A miniature "spotlight" is provided which lights when power is applied to illuminate the Cassette Holder Tray and head area. The convenient "spotlight" allows you to see the loaded cassette tape through the closed transparent protective door. It also makes it easy to see the heads and tape path when the door is open and the cassette tape removed during cleaning and inspection.
b. The unique, guide ramp which allows you to slide the cassette tape into place at the summit of the transport mechanism. The EJECT Key must be depressed to raise the cassette tray for insertion or removal of the cassette tape. Do not force the tape against the closed cassette tray. Prior to transport or shipping the cassette tray should be depressed by hand to protect the transport mechanism from unnecessary shock or vibration. But, be sure to depress the EJECT Key prior to loading a cassette tape.

Cassette Holder Protective Door
The smoothly rotating door can be opened by gently pulling out on the bottom edge of the door. Open the door for insertion or removal of the cassette tape or for cleaning and demagnetizing of the heads and tape path. Keep the door closed to protect the heads and tape transport from dust and foreign matter.

To Load the Cassette Tape
1. Open the Cassette Holder Protective Door by hand.
   Depress the EJECT Key to raise the Cassette Holder Tray.
2. Insert the Cassette Tape in the Guide Ramp with the side you wish to record or play facing up and the exposed tape facing the front of the deck.



3. Slide the Cassette Tape up the Guide Ramp until the tape drops into place at the top of the ramp and gently press down on the tape to insure proper positioning of the tape.



You may now proceed with the recording or playback procedures explained on pages 3 and 4.

Index Counter
When the Play key ▶ or Fast Forward key ▶▶ is depressed the tape moves to the right and the Index Counter counts up to indicate the relative position of the tape. When the Rewind key ◀◀ is depressed the tape moves to the left and the counter counts down.
When you begin recording, reset the counter by depressing the counter reset button which is located just to the right of the counter. As you record, log the counter indication at the start of each song or recording. Then, any time you play this tape you can reset the counter at the start of the tape and quickly locate the beginning of the special songs you want to hear without listening to each song on the tape.
You can also log the location of songs on a pre-recorded tape by listening to the entire tape once. Then you can select Fast Forward or Rewind mode to locate the section of the tape you want to hear.

REC Indicator Lamp
The red REC Indicator Lamp located between the VU Meters lights when the deck is in the REC or REC/PAUSE mode.

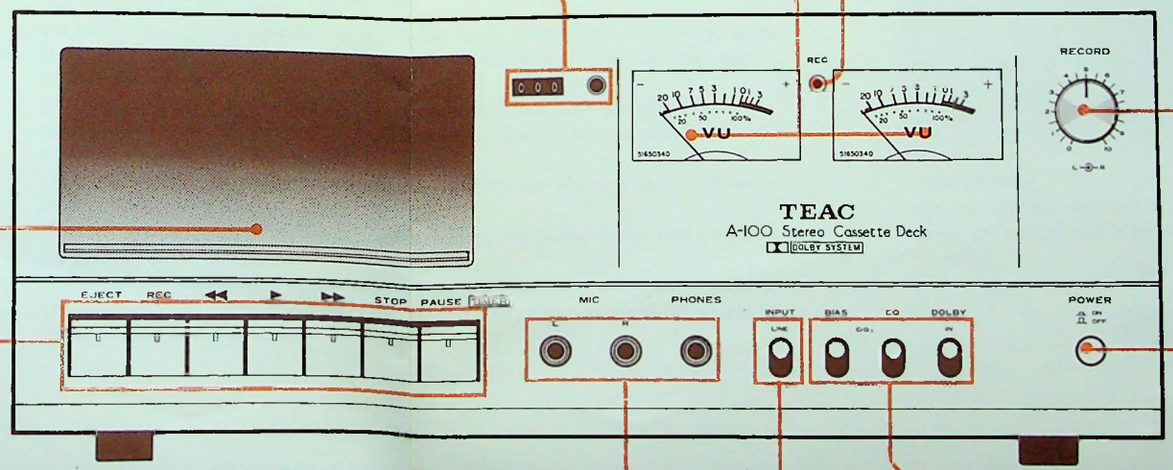
VU Meters
Wide expanded scale VU Meters make setting the RECORD Levels easy and accurate. For normal recording set the recording level for about 0 VU for the loudest passages of the song or music. During playback these meters will indicate the level of the signal coming off the tape to help you visually determine the presence of a signal. If you are listening to the tape playback using your stereo amplifier and speaker system, adjust the listening volume level at the stereo amplifier.

EQ (Equalization)
Tape decks do not record and reproduce all audio frequencies at the same level. Various tapes also produce different output levels for different frequencies. To compensate for these factors manufacturers have added circuitry to try to restore the "flatness" of the original music. This circuitry is called equalization and is standardized throughout the audio industry to provide compatibility between tape decks made by various manufacturers. The A-100 incorporates a 2-position EQ switch that allows you to select the equalization that best matches the tape you will be using.
Select CrO_2 position for 70 microsecond equalization for the tapes listed in the upper and middle sections of the chart below as well as most other CrO_2 and FeCr type tape.
Select NORMAL position for 120 microsecond equalization to match the tapes listed in the lower section of the chart below and for most other Hi Fi or Low noise types of tape.

BIAS
During recording the amount of bias included with the recorded signal affects the sensitivity, distortion, signal-to-noise ratio and frequency response of the tape. To get the maximum performance out of any tape it is very important to match the amount of bias supplied by the tape deck to the tape. CrO_2 position of the Bias switch provides the higher level of bias that is required by CrO_2 tapes. NORMAL position of the Bias switch provides a lower level of bias that is suitable for most other types of tapes.

BIAS and EQ Switch Setting Chart

Tape Brand	Tape Designation	BIAS	EQ
TDK	SA C-60, C-90	CrO_2	CrO_2
SONY	CR C-60, C-90		
MAXELL	CR C-60, C-90		
MEMOREX	Chromium dioxide C-60, C-90		
BASF	Chromdioxid C-60, C-90		
AGFA-GEVAERT	Chromdioxid		
SONY	DUAD	NORMAL	CrO_2
SCOTCH	CLASSIC		
TDK	SA, D, SD, AUDUA, M C-60, C-90	NORMAL	NORMAL
MAXELL	UDXL, UD, LN		
SONY	C-60, C-90, HF		
FUJI FILM	FX, FX Jr.		
BASF	C-60, C-90, LH		
SCOTCH	LH, MASTER CASSETTE		



RECORD Input Level Controls
Use the RECORD Input Level Controls to adjust the recording level of the signals connected to the MIC, DIN or LINE Inputs as selected by the INPUT Selector Switch.

POWER Switch
Depress POWER Switch to apply power to the deck. Lamps in VU Meters and "spotlight" in Cassette Holder will light to indicate power is ON. Depress and release switch to turn OFF power.

EJECT Key

Rewind Key ◀◀

STOP Key
The second purpose of the key is to set the

INPUT Selector Switch

Holder Tray to insert or remove the cassette tape. Never depress the EJECT Key during a Fast Forward or Rewind operation as this may damage your tape. Also never try to depress the EJECT Key when the Play Key is depressed as this may damage your deck.

REC Key
When depressed the red REC indicator will light and the record circuitry will be activated. To actually begin recording and tape movement, depress the Play Key while holding the REC Key down. The REC Key will lock in the down position and the tape will be recorded. The REC Key must be depressed before depressing the Play Key.

NOTE:
You cannot depress the REC Key if a cassette is not inserted in the cassette holder. You cannot depress the REC Key if the cassette that is inserted has had the Record protection tabs removed. See page 2 for further information about protection of recorded tapes.

ly onto the left reel of the cassette. This will move the tape to the beginning of the tape. When the tape is completely wound onto the left reel, the unique end-stop feature of the A-100 will automatically release the Rewind Key and stop the tape movement. Note that if the Rewind Key is depressed while the tape is already rewound onto the left reel, the Rewind Key will again be automatically released after a short delay of 3–6 seconds.

Play Key ▶
This key causes the tape to move from the left to the right side for both normal Record and Playback operation. When the tape reaches the end, the special end-stop feature will release the key or keys that were depressed.

Fast Forward Key ▶▶
This key causes the tape to move quickly from the left reel to the right reel of the cassette to allow you to by-pass or skip over portions of the tape that you don't wish to record or play. The end-stop feature also releases this key when the end of tape is reached.

keys and de-activate any function that was selected except PAUSE.

PAUSE TIMER Key
This key serves two functions as its name suggests. First, if depressed during Record or Play mode, the tape movement will be halted due to the pinch roller being retracted from the capstan but the capstan motor will continue turning. The electronics will remain in the previously selected state. When you want to resume tape movement just depress the PAUSE Key and release it. PAUSE mode can also be used to set the RECORD Level Controls prior to starting actual recording. To do this depress PAUSE Key, depress and hold down REC Key and then depress Play Key. REC and Play Keys will both lock in down position and the deck will be in REC PAUSE mode. You can then see the input level displayed on the VU Meters and set the RECORD Level Controls. To begin the recording again depress and release the PAUSE Key. The PAUSE Key can also be used to momentarily stop tape whenever you want to stop the tape without releasing the selected mode.

ing or playback. When the clock timer reaches the pre-set time, power will be applied to the deck and the PAUSE Key will be released automatically to begin the desired operation.

you wish to record. Set switch to LINE if you want to use the LINE IN Jacks on the rear panel of the deck. Set the switch to MIC/DIN if you want to use the IN/OUT(DIN) Connector on the rear panel or the MIC Input Jacks on the front panel. The recording level of all of these inputs is controlled by the RECORD Level Controls.

DOLBY NR Switch
Place the switch to IN position to record with the internal Dolby Noise Reduction circuitry of the deck or when playing back a tape that was previously recorded using Dolby Noise Reduction circuitry. Place switch to OUT for non-Dolby recording or playback. See below for a brief explanation of the Dolby circuit operation.

MIC and Headphones Connections
Use microphones with impedance of 600 to 10,000 ohms and connect them to the MIC Jacks. Two microphones must be used for stereo recording. Low impedance mics with impedances of 150 to 600 ohms will also work satisfactorily.
Connect 8 ohm stereo headphones to the PHONES Jack to listen without letting others hear.

BIAS and EQ Selector Switches
Separate 2 position BIAS and EQ (equalization) Switches allow you to set these two parameters independently to obtain the best match between the deck and the tape you are using. See the chart above to guide you to the proper setting for the tapes listed. The user may wish to experiment with other tapes than those listed.

Setting the recording level
Due to the thinness of the base material and the oxide coating on cassette tapes, the setting of the proper recording level for good quality recording is very critical. Cassette tapes are easily "saturated". That is, a large signal can "over-magnetize" the tape. This results in a poor sounding tape with the high frequencies suppressed or a lack of sufficient dynamic range on your recording. The recording will sound bad.
Music that is recorded at too low a level may be buried in tape hiss or produce too low an output level.
Normally a cassette tape should be recorded at approximately 0 VU on the VU meters for the louder passages of a song. However, if you record music at this level and the recording sounds poor, you may find that recording at a slightly lower level will produce better fidelity recordings. If you reduce the recording level too much, the signal-to-noise ratio may suffer. With a little practice you will be able to select that critical recording level that gives you the best high fidelity recordings. The type and condition of the tape as well as the kind of music you are recording also affects the optimim setting of the record level.

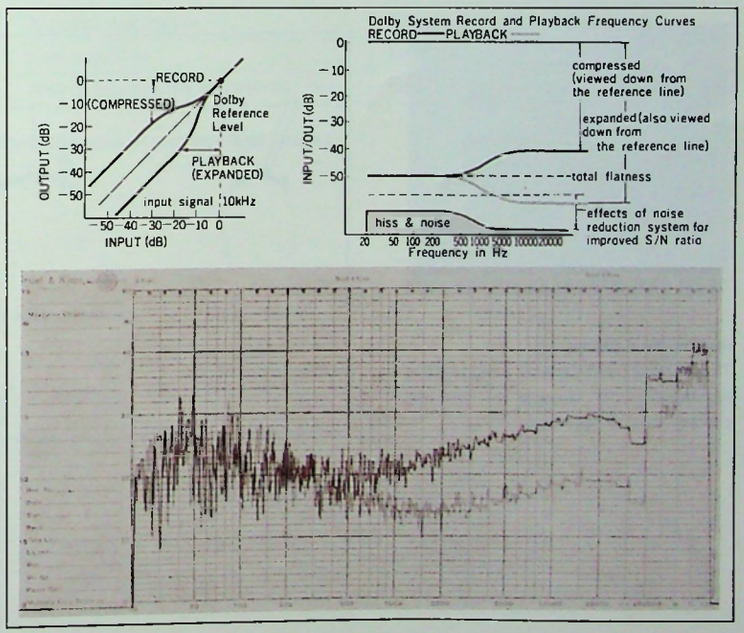
Direct Function Operation
This deck incorporates direct function operation which allows you to go directly from one mode to another without depressing the Stop key to release the previously selected function keys. You can, for instance, go directly from Fast Forward ▶▶ or Rewind ◀◀ to Play or Record mode, from Rewind to Fast Forward or almost any sequence of these operations you wish.
However, you cannot go from Play mode directly to Record mode because there is a record interlock which requires that the Record key be depressed prior to depressing the Play key. This safety feature prevents the user from accidentally depressing the Record key during a play mode and thereby erasing a good tape. You must depress the Stop key or another key (except Record) to release the Play key prior to selecting the Record mode.
CAUTION: Never depress the Play key and either of the fast motion keys (Fast Forward or Rewind) at the same time. This will result in improper tape movement and possible damage to your cassette tape.

End-Stop Function
During any tape movement, when the cassette tape reaches the end of tape, the deck will stop and the selected key or keys will be automatically released after a short delay of 3–6 seconds. If the tape is already at the end of tape and any tape movement operation is selected that would move the tape toward the end-stop, the end stop function will continually release the selected key after the 3 to 6 second delay.
The Pause key, if selected, will not be released.

Mic Recording
* Plug the microphones into the MIC jacks on the front panel of the deck. Two mics must be used for stereo (2 channel) recording.
* Set the Input selector switch to the MIC/DIN position.
* Use headphones to monitor the inputs to prevent feedback of "howling" that might occur if you were using speakers.
* Prior to actual recording, set the RECORD level controls for approximately 0 Level or less on the Level meters for the loudest sounds.
* Balance the sound on the two channels by adjusting the RECORD Level controls and/or by repositioning the mics.
* Follow the basic recording procedure given on page 4.

Principle and Effects of the Dolby NR System
The principle of the system can be described as follows:
On recording, low level mid-high frequencies are increased in amplitude resulting in a compression on the program's dynamic range. On playback, this dynamic range is expanded so that the same signals are decreased in amplitude to their original level. This process also decreases the tape hiss noise inherent in the tape recording process.
Through this unique manipulation, the tape noise and hiss are reduced below normal audibility. In the frequency range of 1 kHz or higher where the tape hiss and noises are more conspicuous, the B-type Dolby system incorporated in the deck thus can reduce such noise by 5 dB at 1 kHz, and 10 dB at about 5 kHz or higher in terms of S/N.

Inter-deck Compatibility of Dolby-Encoded Tapes
Tapes recorded by a Dolby-system recorder (Dolby-encoded tapes) give the best results when replayed by a similar Dolby-system recorder or player. Needless to say, no Dolby effects will be demonstrated when such tapes are played back by an ordinary tape deck, but the treble range may be heard somewhat emphasized when very soft signals are reproduced. Tapes recorded with Dolby may also be de-coded by a separate Dolby Noise Reduction system using the standard Dolby calibration. For playback of Dolby-encoded tapes with an ordinary tape deck, it is advisable to somewhat de-emphasize the treble range by reducing the tone control on your amplifier.
The Dolby System mentioned in this manual refers to B-Type Dolby System unless otherwise indicated.



Owner's Care-Cleaning and Maintenance

Cleaning

Heads

After the deck is used for a long time, tape oxide and other foreign matter tend to build up on the heads. Dirty heads will drastically reduce the overall efficiency of the deck and are a prime cause of both record and play problems, such as reduced high frequency response and "drop-outs". Extremely dirty heads may cause the heads to cease record and play altogether. To prevent such problems and to insure longer life for the heads, regular cleaning should be done; at least clean after every 8 hours of playing time. A good cleaning kit such as the TEAC TZ-261 Kit should be used. Fluid "A" in the kit is ideal for cleaning the heads. Isopropyl alcohol may also be used.

Pinch Roller

The pinch roller should also be cleaned regularly to prevent erratic tape movement and the increased wow and flutter that it causes. The TEAC TZ-261 Kit also contains a special cleaning liquid (fluid "B" in the kit) that is especially effective in cleaning the Pinch Roller.

TZ-261 TAPE RECORDER CLEANER KIT

Stainless Panel and Case

The TEAC TZ-270 Stainless Polisher Kit is recommended for cleaning the case and stainless panel of your deck.

TZ-270 STAINLESS POLISHER KIT

How to Clean

1. Open the Cassette Holder Protective Door.
2. Push the Cassette Holder Tray down. Keep the door open.
3. Select the Play mode. The erase and record/play heads as well as the Pinch Roller will extend for easier cleaning.

Demagnetizing

The heads and tape path tend to become magnetized after extended use. When this occurs the record and playback efficiency decreases and the overall sound quality deteriorates. The magnetized heads and tape path can cause degradation of your pre-recorded tapes also. To prevent such problems, TEAC recommends that the heads and tape path be demagnetized after approximately every 50 hours of deck use.

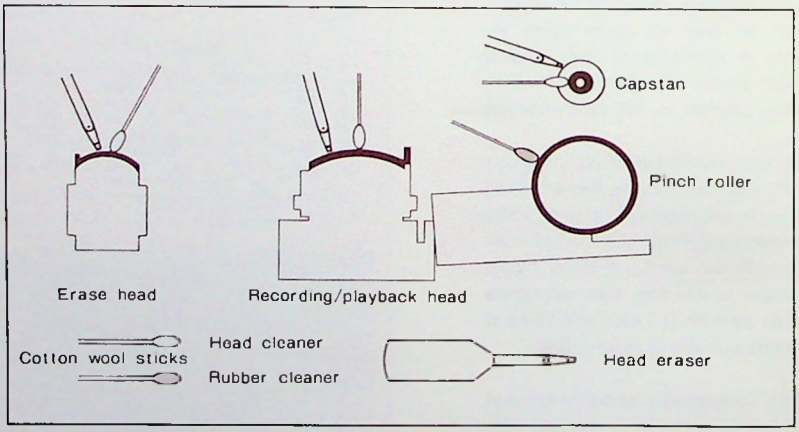
A good head demagnetizer or eraser such as the TEAC E-3 is recommended for this important preventive maintenance job.

The erase head and record/play head as well as all metal parts that contact the tape should be demagnetized.

Demagnetizing Procedure

1. Turn the deck power OFF.
2. Extend the heads as explained in steps 1 – 3 in the cleaning procedure.
3. Turn on the head eraser (demagnetizer) and bring the tip of it close to the heads. Move the tip up and down across all the heads and other parts in the tape path.
4. Slowly withdraw the eraser about 12 inches (30 cm) away from the head area.
5. Turn OFF the eraser.

Be sure to keep all recorded tapes away from the eraser during demagnetizing of the heads.



Trouble-shooting Chart

SYMPTOM	CAUSE	CURE
TAPE TRANSPORT		
No power	Power cord loose or not connected	Connect power cord
Cannot load cassette tape	Cassette Holder tray depressed	Depress EJECT key
No tape movement	PAUSE key depressed	Release PAUSE key
	Poorly wound cassette tape	Try high speed rewind or fast forward
PLAYBACK		
No sound (from Amplifier system)	Bad connection	Check all connections
	Input level too low	Increase input level
	Input and output too low, or not properly selected on amplifier controls	Increase amplifier output and recheck switch settings
Poor sound quality	Head dirty	Clean head
	Head magnetized	Demagnetize head
Unsteady sound level	Pinch roller dirty	Clean pinch roller with TZ-261 kit
RECORDING		
Unable to depress REC key	No cassette installed	Install cassette
	Accidental erasure protection removed from cassette	Place piece of tape over tab hole
No level indication on meters, unable to hear input signal	Input cord loose or not connected	Recheck connections
	Recording level too low	Increase RECORD level controls
No record, sound weak or sound quality poor	Head dirty	Clean head
	Bad tape	Replace tape
	Recording level too low	Increase RECORD level controls
	Head magnetized	Demagnetize head
	BIAS or EQ switch not set correctly	Set switches according to chart on page 6.

Lubrication Note: Under normal operating conditions lubrication of your deck is not required.

A-100 Stereo Cassette Deck with Dolby* System

TEAC®

The leader. Always has been.

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PRINTED IN JAPAN 0776. SHO5. D-02427B

Specifications

Track System	4 track, 2 channel stereo
Type of tape	Cassette tape C-60 and C-90 (Philips type)
Tape speed	1-7/8 inches per second (ips)
Motor	DC servo motor (FG type)
Wow and flutter (NAB Weighted)	0.09%
Frequency response	30–16,000 Hz (Chromium dioxide tape)
(overall)	30–13,000 Hz
Signal-to-noise ratio	50 dB: with Dolby noise reduction used for recording and playback
(overall)	S/N ratio is improved by 5 dB at 1 kHz and 10 dB at frequencies over 5 kHz
Inputs	LINE: 60 mV/50 k ohms
	MIC: 0.25 mV/–72 dB (600 ohms or more)
Outputs	LINE: 0.3 V for load impedance of 50 k ohms or more.
	Headphones: 8 ohms
Power requirements	100/117/220/240 V AC 50/60 Hz (General Export Models)
	117 V AC 60 Hz (USA/Canada Models)
	220 V AC 50 Hz (Europe Model)
Power Consumption	13 W
Dimensions	410 (W) x 160 (H) x 300 (D) mm [16-1/16" (W) x 6-1/8" (H) x 11-5/16" (D)]
Weight	7.8 kg [17.2 lbs] net
Included accessories	Input/output connection cord,

Specifications were determined using Hi-Fi tape except as noted.

Improvements may result in specification changes or features changes without notice.

Note: Make sure the power line voltage specified on the Inspection Card or seal attached to your deck matches the power in your area. If it does not, refer to the voltage conversion procedure sheet included with this manual.

* The power requirements for tape decks distributed in certain countries of Europe, Canada and the United States are not adjustable.