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Two Speed Cassette Deck | Model T-2

Owner's Manual

IMPORTANT: Read this manual completely before attempting to operate.



IMPORTANT INFORMATION

Your B·I·C Two Speed Cassette Deck is a high performance component. To insure the best possible performance use ONLY high quality tape cassettes.



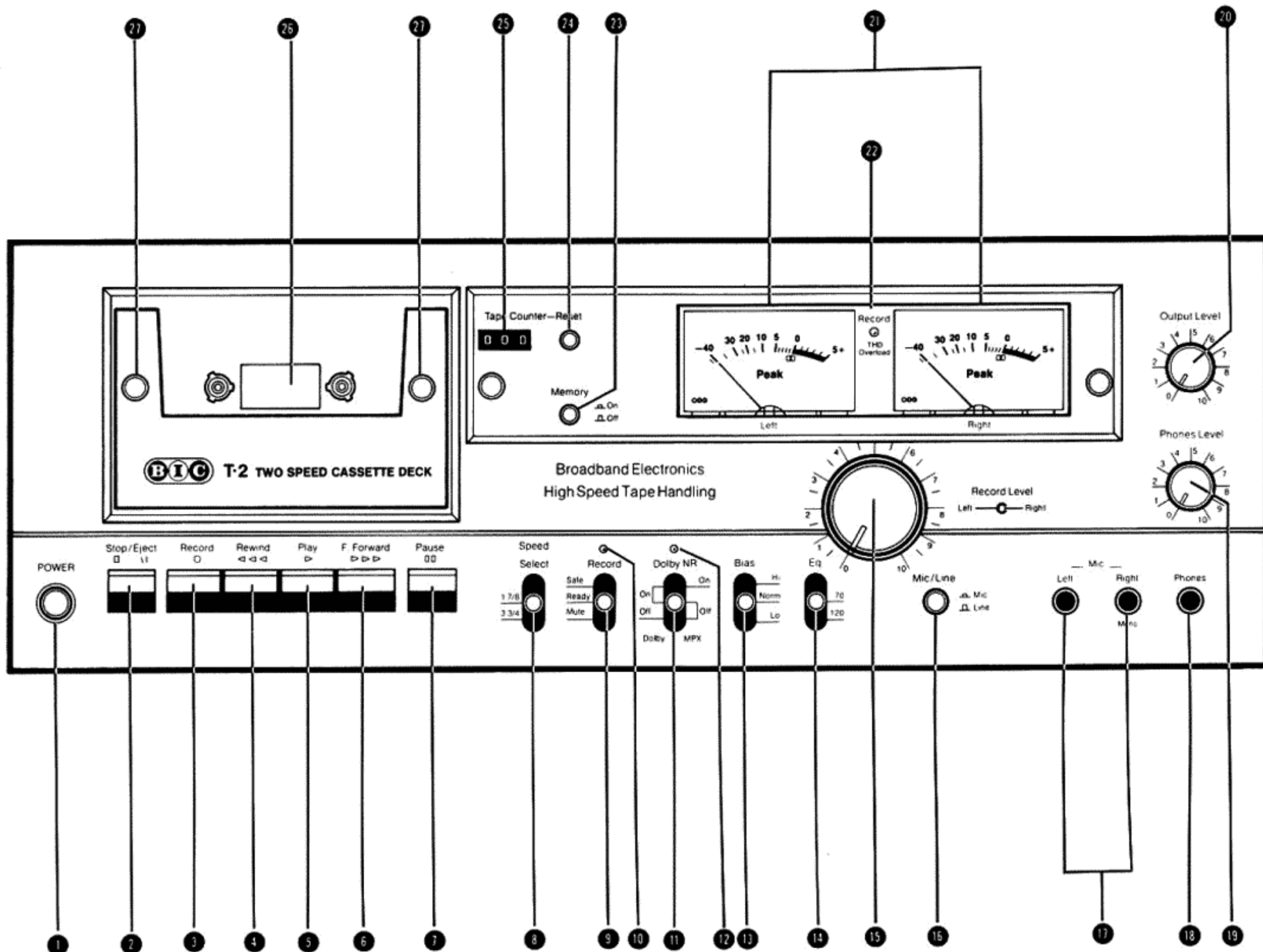
C-120 Cassettes

In order to offer the extended playing time of C-120 tape manufacturers must use a thinner tape, and a thinner coating of magnetic oxide. Because of this, and in light of the B·I·C decks' high speed wind/rewind, there is a possibility of damage to the cassette tape. Furthermore, the fidelity of recordings made on C-120 cassettes will be poorer in terms of frequency response, noise and distortion. We strongly recommend that you do not use C-120 cassettes.

Recording


This manual gives suggested recording levels. They are meant as a guide only. An optimum recording is one which yields the best possible frequency response and signal-to-noise characteristics without exceeding an acceptable level of distortion. This optimum point can only be judged by you, the listener, because there is no hard and fast rule. Listen, trust your ears and in a short time you will be turning out high quality recordings with very very little effort.

WARNING: To prevent fire or shock hazard, do not expose this appliance to rain or moisture.



Features of the B·I·C Two Speed Cassette Deck | T-2

This is a quick reference guide only. Refer to text for detailed explanation of features listed.

1. Power Button
Depress to turn unit On/Off.
 2. Stop/Eject Key (□ II)
 1. Depress, tape motion stops.
 2. Depress again, cassette door opens, install or remove cassette.
 3. Record Key (○)
To record, depress with PLAY KEY.
 4. Rewind Key (◀◀◀)
Depress to activate rewind.
 5. Play Key (▶)
Depress to activate playback.
 6. Fast Forward Key (▶▶▶)
Depress to activate fast forward.
 7. Pause Key (⏸)
Depress to stop tape motion. Press again to continue. The unit remains in play or record mode. (Pause will not function in FF or REW.)
 8. Tape Speed
Provides selection of 1 7/8 ips (4.75cm) or 3 3/4 ips (9.5cm).
 9. Safe/Ready/Mute Switch
Three position switch eliminates possibility of accidental erasure.
 10. Record Switch Indicator
LED glows RED when switch is in ready or mute position.
 11. Dolby NR*
Three position switch; Dolby on – MPX on, Dolby on – MPX off, Dolby off – MPX off.
 12. Dolby Indicator
LED glows green when Dolby circuit is on.
 13. Bias
The bias switch provides record optimization for various tape formulations.
 14. Equalization (Eq)
Eq allows record and playback equalization to be optimized.
 15. Record Level
Clutched to allow simultaneous adjustment of both (L & R) channels.
 16. Mic/Line (Input Selection)
To record FM Stereo, Phono, Aux., etc., button is out (Line position). To record using microphone(s) push button in (Mic position).
 17. Mic – Jacks
For mono use *Right* only, for stereo use both.
 18. Phones
Plug in stereo headphones for private listening.
 19. Phones Level
Separate volume level control for headphones.
 20. Output Level
Enables user to match the decks' output level to the systems' other signal sources (Does not affect record level).
 21. Record Level Meters
Two peak indicating meters allow accurate adjustment of record levels.
 22. Record/THD Overload Indicator
LED glows green when deck is in record mode; LED changes to red as recording levels approach 3% total harmonic distortion.
 23. Memory
Allows return to pre-set point on tape.
 24. Tape Counter – RESET
Restores counter to "000" position.
 25. Tape Counter
Provides convenient method of indexing and locating tape sections.
 26. Cassette Door
Press Stop/Eject key to open door. Cassette may then be inserted or removed.
 27. Cassette Door Cover Screws
Allows removal of cover for routine cleaning and demagnetization.
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- ## REAR PANEL
1. AC line cord – 120 volts, 50/60 Hz.
 2. LINE OUT Jacks (Playback)
 3. LINE IN Jacks (Record)
- *(Under license from Dolby Laboratories, Inc., the word Dolby and the  symbol are Trademarks of Dolby Laboratories, Inc.)

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Setting Up the Unit

Installation/Connection

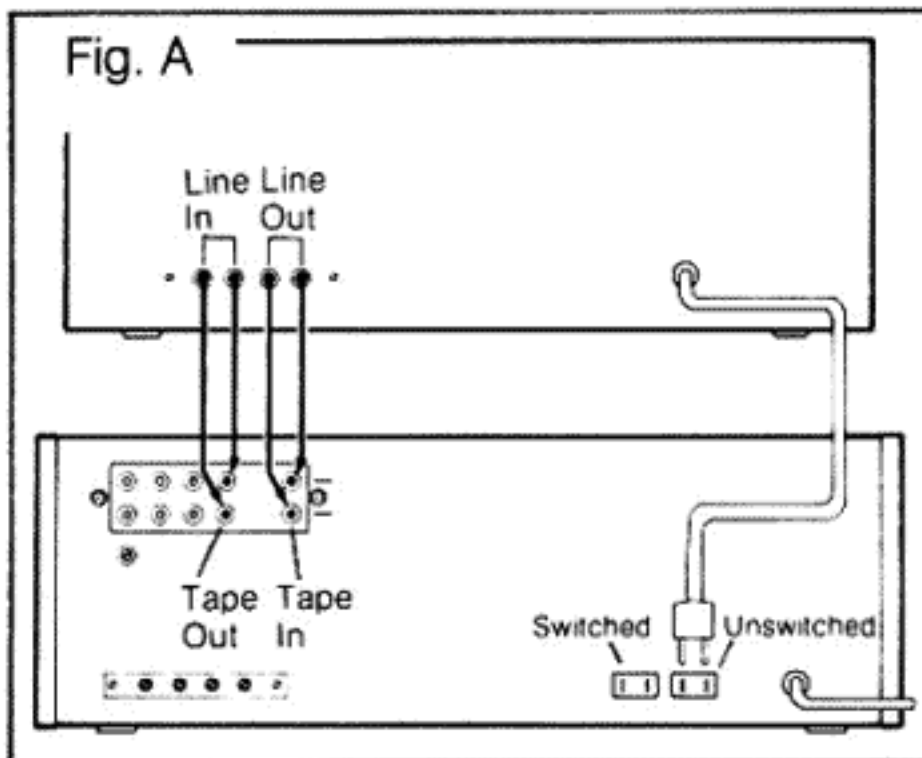
AC LINE

We recommend that you connect the AC cord to an UNSWITCHED outlet only.

CAUTION: Never leave the cassette deck in the record or play mode with the AC power off. To do so leaves the pinch roller engaged which will lead to a gradual degradation of wow and flutter.

AUDIO CABLES

Two stereo audio cables are supplied with your cassette deck. The cable ends are color coded RCA type connectors to facilitate proper left and right channel connections (Fig. A).



PLAYBACK CONNECTIONS

Connect one set of cables from the cassette deck LINE OUT jacks to your receiver TAPE IN, TAPE MONITOR or PLAYBACK jacks. If these jacks are not available, the AUXILIARY INPUTS should be used. Connect left to left, right to right.

RECORD CONNECTIONS

Connect the second set of cables from the cassette deck LINE INPUT jacks to the TAPE OUT or REC OUT jacks on your amplifier.

Before Operating

ERASURE

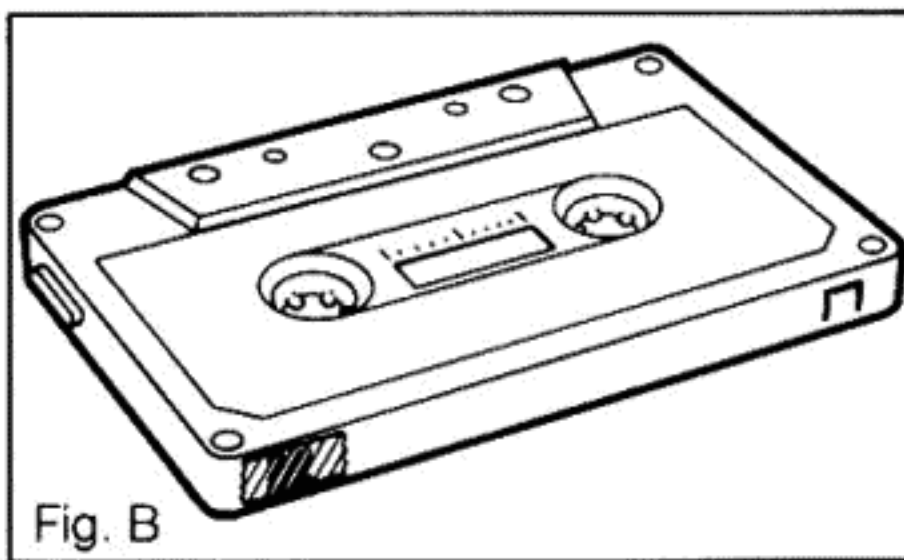
When you are making a recording, material previously recorded is automatically erased. Only the new recording will remain.

To erase an existing recording, record in a normal manner and turn the line REC LEVEL controls fully counterclockwise. This erases previous material, leaving a blank tape.

A faster erasure alternative to the above is to use a high quality bulk tape eraser.

SAFEGUARD AGAINST ACCIDENTAL ERASING

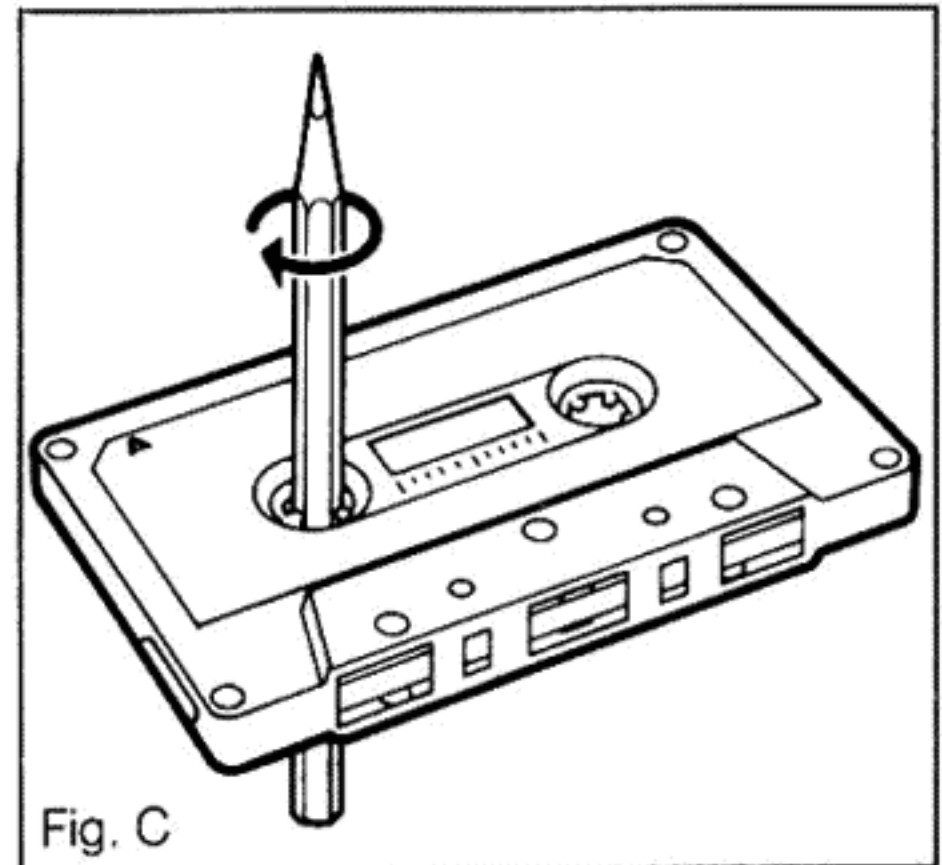
To ensure that a recording is not accidentally erased, break out the small tab(s) in the rear of the cassette with a screwdriver or similar tool. When the cassette is inserted in the deck, the record mode will not engage (Fig. B).



To record on a cassette that has had the tab(s) removed, cover the slot with a quality masking tape, then record in the usual manner. To avoid fouling the cassette and deck parts with adhesive, remove the masking tape immediately after recording.

PREVENTION OF TAPE TANGLE

Before playing or recording, be certain the tape is not loose (looped) in the cassette housing. If it is, use a pencil or similar object to tighten as shown (Fig. C).



Operation

Playback/Record

The steps below are common to both playback and record. Additional instructions are given under the appropriate section.

- Press the Power On button (Ref. ①).
- Press Stop/Eject key to open door (Ref. ②).
- Insert cassette with the tape facing down so that the tape will come in contact with the heads (Fig. D, pg. 3).
- Close the door.

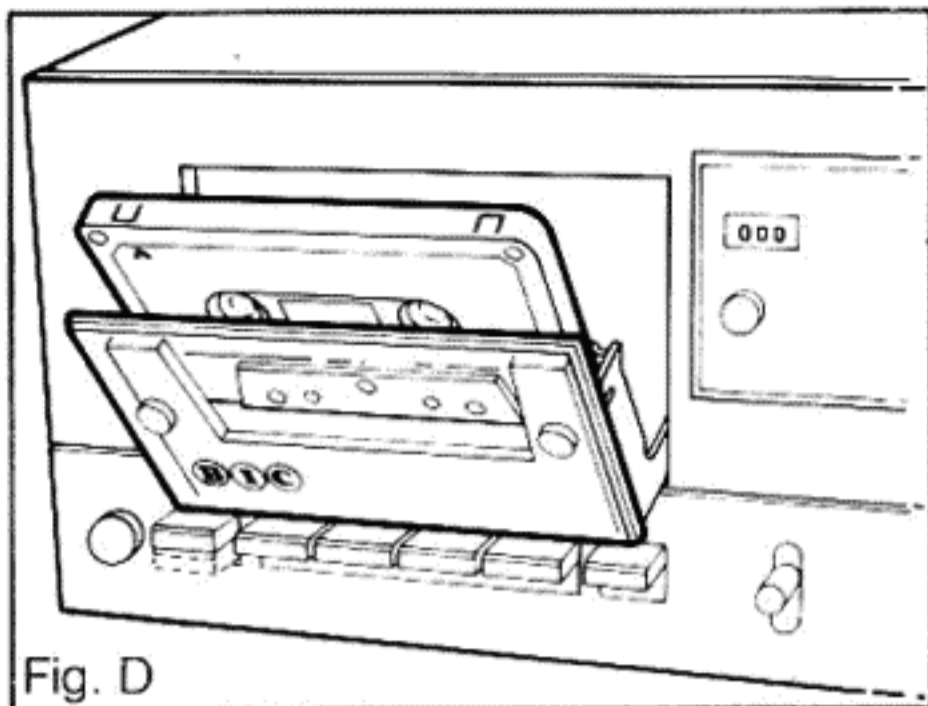



Fig. D

NOTE: When a cassette has been stored for a period of time, it is a good practice to run it through FAST FORWARD and then REWIND. This will eliminate any static charge or sticking of the tape. Your B·I·C will perform this operation considerably faster than most other cassette decks.

e. Press the TAPE COUNTER RESET button (Ref. 24) to restore counter to "000" position.

f. Set the Bias (Ref. 13) and Eq (Ref. 14) switches for the tape formulation of the cassette.

g. Select the tape speed (Ref. 8). As of this writing, all commercially prerecorded cassettes are recorded and should be played at 1 7/8 ips. You may record at either 1 7/8 or 3 3/4 ips.

h. To record or play a tape with the "Dolby" process, move the "Dolby" switch (Ref. 11) to the appropriate ON position. (Commercially prerecorded tapes will be marked  DOLBY SYSTEM).

i. Pause (Ref. 7) – may be used to temporarily stop play or record.

j. Auto Shut Off – at the tape end, drive will automatically stop and all keys will disengage.

k. Memory – allows user to automatically return to a pre-set point on the tape and works in conjunction with the "000" setting of the tape counter. Select the point on the tape you wish to return to. Re-set the counter to "000" and set the memory switch to on. You may either record or play the tape. To return to the pre-selected point, press rewind. When the tape is rewound, the deck will stop and disengage at the pre-determined point. The counter will read "999".

Playback

1. Set the record/ready switch to Safe. With the switch in the Safe position, the record key can be engaged but no recording can be made.

2. If the recording was made with the Dolby NR process, set the Dolby Switch to Dolby ON-MPX OFF, (center position).

3. Depress the PLAY KEY (Ref. 5) and adjust the volume and tone controls on your receiver.

4. You may, at any time rewind or fast forward to any portion of the cassette by pressing Stop/Eject (Ref. 2) and then Fast Forward (Ref. 6) or Rewind (Ref. 4). When the desired portion is reached, press Stop/Eject. To remove the tape cassette, press the Stop/Eject Key again.

To Record

1. To record from your receiver/amplifier, set the Mic/Line button (Ref. 15) to the LINE position. Set to the Mic position for microphone use.

2. To employ the Dolby NR process, set the Dolby switch to ON. The multiplex filter circuitry is incorporated into the Dolby switch and is defeatable. The Dolby circuit may be used with or without the MPX filter. If your FM tuner effectively suppresses high-frequency leakage, it is preferable to

operate the deck with the MPX filter off. When the Dolby circuit is on, the LED above the switch glows green.

3. Set the Record/Ready switch to ready. The LED above the switch will glow red. To avoid recording unwanted signals without stopping tape motion, hold the switch in the Mute position. This will erase prior information and record a quiet passage. The switch will return to the ready position as soon as you release pressure and recording continues.

4. Depress the PAUSE KEY (Ref. 7).

5. Depress the RECORD (Ref. 3) and PLAY (Ref. 5) keys. The record indicator (Ref. 22) will illuminate.

6. Select the source you wish to record (FM, Phono, Etc.,) on your receiver/amplifier.

7. Record levels must now be set with the Record Level control (Ref. 15).

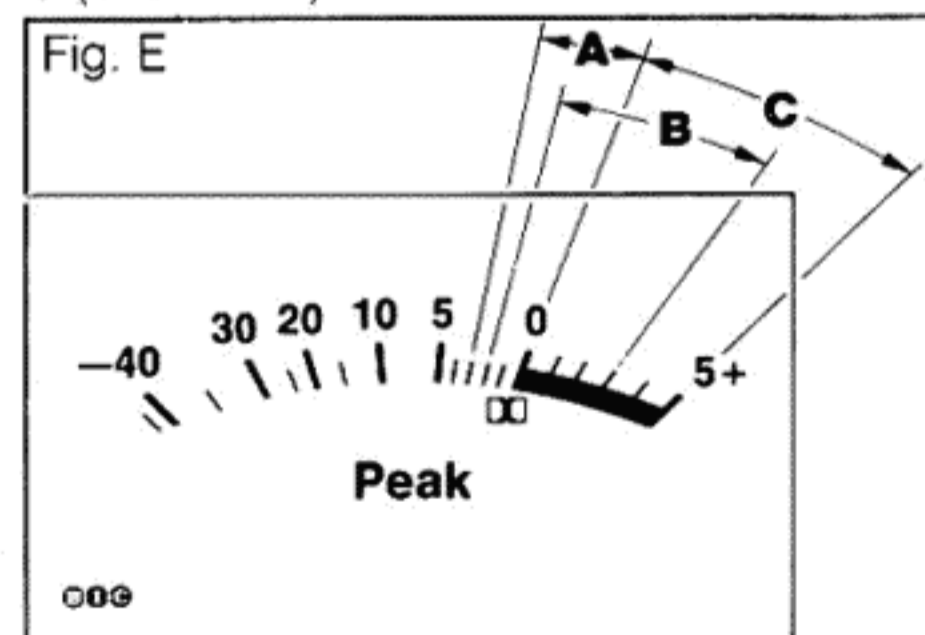
NOTE: Recording at 3 3/4 ips allows a higher signal level to be placed on the tape. The levels suggested are meant as a guide only and we advise experimenting when recording at either speed (Fig. E).

Suggested Record Levels (Fig. E)

A (-3 to 0db) = Synthesizer, Electronic

B (-2 to +3db) = Pop

C (0 to +5db) = Classical



8. Press the PAUSE key (Ref. ①) again to begin recording.
9. To temporarily interrupt recording, depress the PAUSE key (Ref. ①). The deck remains in RECORD with tape motion stopped.
10. When finished recording, press the Stop/Eject key (Ref. ②). All keys will disengage.

Bias and Equalization

Bias is a necessary high frequency signal applied to the magnetic tape during recording. This signal reduces and controls distortion.

Equalization is the boost or cut of certain frequencies during record and playback.

These parameters are adjustable on your B-I-C Cassette Deck, providing maximum performance from a large variety of tapes. Because Eq is used in both Record and Playback, it is important to check the position of the Eq Switch whenever the cassette deck is used to insure optimum performance during playback.

Tape Speeds

Your B-I-C Cassette Deck provides two tape speeds, 1 $\frac{7}{8}$ ips and 3 $\frac{3}{4}$ ips. The speed of 1 $\frac{7}{8}$ inches per second is standard but you may record at either speed. While performance will be excellent at 1 $\frac{7}{8}$ ips, the higher speed of 3 $\frac{3}{4}$ ips provides even better results. Use 3 $\frac{3}{4}$ speed whenever the very highest fidelity is required.

Dolby NR System

During recording, the Dolby System automatically increases the record level of quiet passages just prior to laying the signal on the tape. When this "Dolby encoded" recording is *played back* the increased signal levels are correspondingly decreased, bringing these passages back to their original level. What makes Dolby work is that the tape noise is reduced at the same time. Thus, during quiet passages, tape noise is reduced significantly.

Routine Maintenance

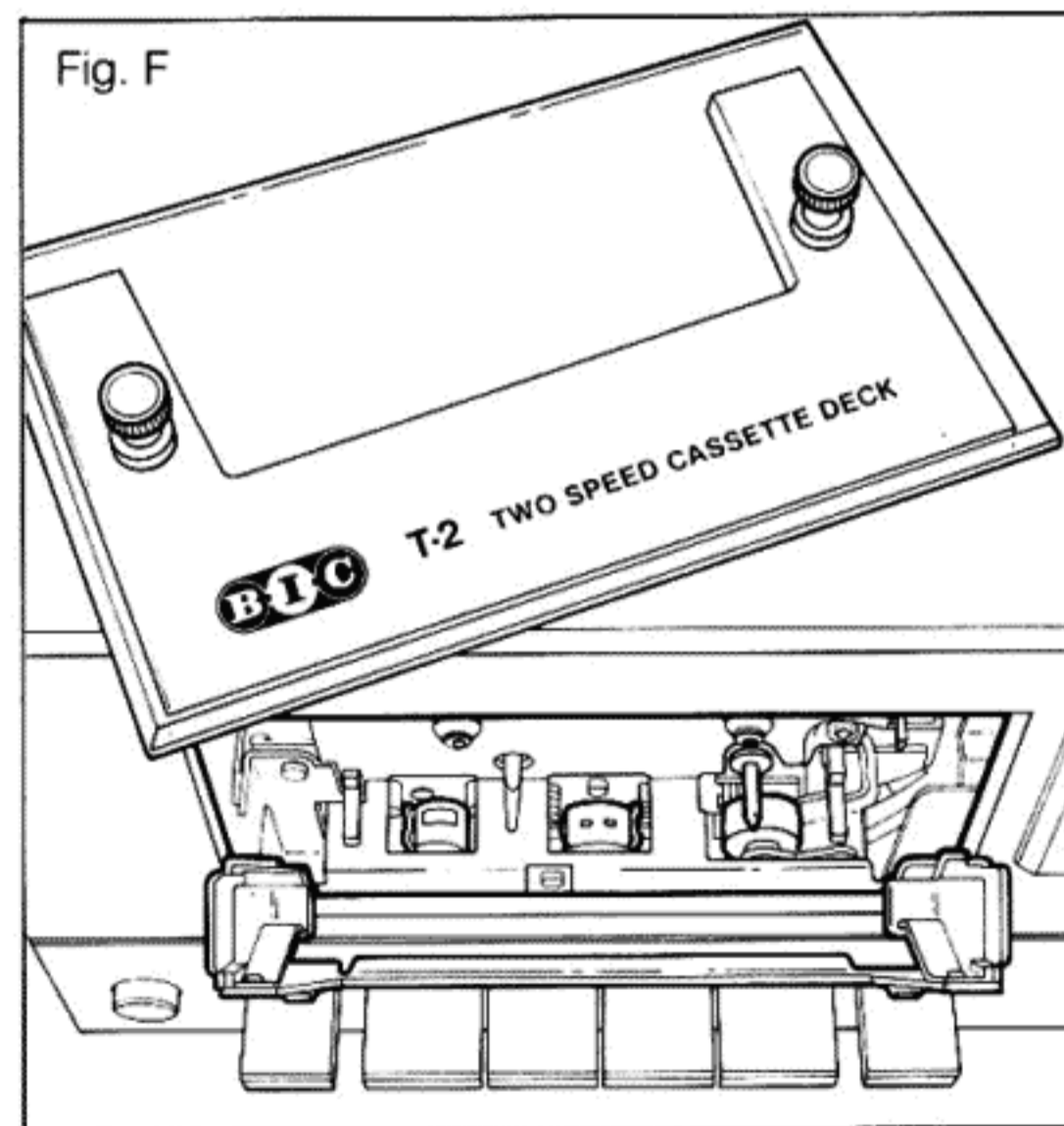
To maintain the high performance of your B-I-C Cassette Deck, periodic cleaning and demagnetizing of the head is necessary. Many problems such as wow and flutter and high frequency loss are traceable to residue build-up and head magnetization. We strongly urge a routine maintenance schedule including frequent cleaning of heads and tape path and periodic demagnetizing every 20 hours of use.

Cleaning and Demagnetizing (Fig. F)
A. Close the cassette door (Ref. ⑫) and remove the two thumb screws (Ref. ⑰) which hold the cover in place. The cover

will come off, allowing access to the tape heads, pinch roller and capstan.

B. CLEANING — Use a cotton swab moistened with methyl alcohol (Do Not Saturate) and clean all elements that touch the tape. Clean the pinch roller, capstan and heads thoroughly, using a gentle scrubbing action. **DO NOT USE ANY METAL OBJECT** to clean the tape heads as they are fragile. Use methyl alcohol *only*. Other solvents may cause damage.

C. DEMAGNETIZING — Magnetic build-up deteriorates the signal to noise ratio and high frequency response. Therefore, it is necessary to demagnetize all metallic parts close to the tape, including the heads. Any good demagnetizer may be used and the manufacturers' instructions should be followed.



Trouble Shooting

SYMPTOM	POSSIBLE CAUSE
No Power	AC cord unplugged. Plugged in switched outlet and receiver / amplifier not on.
No Record or Play	Heads require cleaning. Audio cables incorrectly installed. (See Page 2)
No Record	Record/Ready switch in "safe" position.
Cannot Depress Record Key	Cassette has safety tabs removed.
No Erase	Heads require cleaning.
One Channel Out	Defective or unplugged cables. Cables incorrectly installed.
Does Not Remain In Record or Play Mode.	Cassette binding. (Try another tape cassette. Tape looped within cassette. End of tape has activated auto-stop. (Rewind or turn over.)
Tape Does Not Move	Tape cassette defective. (Try another.) Tape cassette incorrectly loaded.
Distorted Sound	Record/Play heads require cleaning. Record/Play heads require demagnetizing. Record levels adjusted too high. Defective tape cassette.
Noisy (poor signal to noise ratio)	Record levels adjusted too low. Heads require cleaning. Defective or poor quality tape cassette.
Excessive Wow/Flutter	Capstan and pinch roller require cleaning Defective tape cassette (replace).

NOTE: Many problems are caused by the attempted use of low cost promotional tape cassettes. *USE ONLY* high quality name brand cassettes.

SPECIFICATIONS

Speeds

1 $\frac{7}{8}$ ips (4.75cm/s)

3 $\frac{3}{4}$ ips (9.5cm/s)

Frequency Response ± 3 dB (70 μ sec)

1 $\frac{7}{8}$ 30-18,000Hz

3 $\frac{3}{4}$ 30-21,000Hz

Record/Play Signal-To-Noise (dB)

("A" weighted, Reference 3% THD, 70 μ sec)

Dolby NR 1 $\frac{7}{8}$ 62

1 $\frac{7}{8}$ 54

Dolby NR 3 $\frac{3}{4}$ 66

3 $\frac{3}{4}$ 57

Wow and Flutter (%)

WRMS 1 $\frac{7}{8}$.06 DIN 45507 1 $\frac{7}{8}$.12

3 $\frac{3}{4}$.04 3 $\frac{3}{4}$.10

Total Harmonic Distortion (0 VU, 70 μ sec)

1 $\frac{7}{8}$ 1.9%

3 $\frac{3}{4}$ 1.6%

Fast Forward and Rewind Time (C-60)

Approximately 48 seconds

Meter Type

Peak Indicating

Meter Range

-40 to +5dB

Drive System

Two-Speed Tachometer Feedback DC

Servo Motor

Output - Line

2.0 Volt RMS into 10K Ω

Input

Line: 200mV for 0 VU Indication

Mic: 8-600 Ω

Power Requirements

105-135 Volts AC, 50/60 Hz

Power Consumption

Less than 35 watts.

Dimensions (W x H x D)

16 $\frac{3}{4}$ " x 6" x 9 $\frac{1}{4}$ "

Weight

12.8 lbs.

B·I·C | AVNET Westbury, New York 11590 U.S.A.