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# MODEL X-100D

## OPERATOR'S MANUAL



CROSS-FIELD  
*"Custom Deck"*

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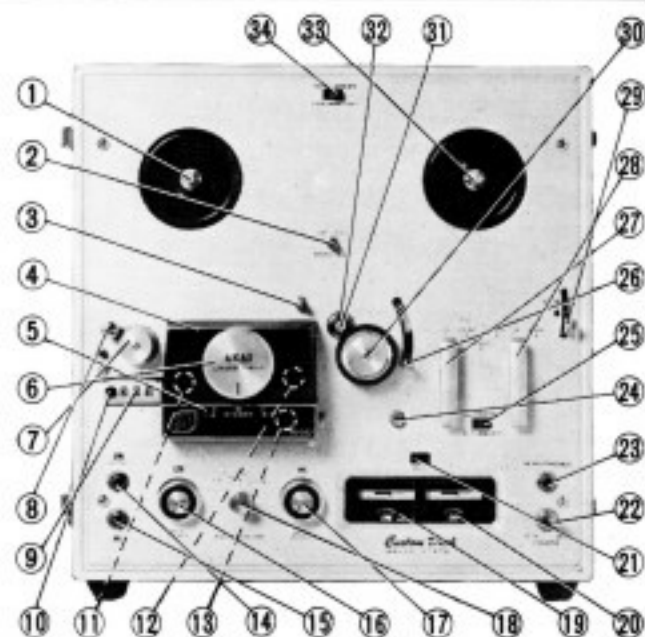
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## 1. SPECIFICATIONS

## I GENERAL INFORMATIONS

<b>Tape Speed</b>	: 4 speeds ..... 1-7/8, 3-3/4, 7-1/2 and 15 ips optional
<b>Wow and Flutter</b> (Playback Only)	: Less than 0.15% RMS at 7-1/2 ips Less than 0.25% RMS at 3-3/4 ips Less than 0.35% RMS at 1-7/8 ips
<b>Frequency Response</b>	: 30 to 23,000 cps $\pm 3$ db at 7-1/2 ips 30 to 18,000 cps $\pm 3$ db at 3-3/4 ips 30 to 9,000 cps $\pm 3$ db at 1-7/8 ips
<b>Distortion</b>	: Within 3% 1,000 cps 0 VU
<b>Signal to Noise Ratio</b>	: Better than 45 db
<b>Input Level</b>	: Mic ..... 0.5 mV $\sim$ 20 mV Line ..... 50 mV $\sim$ 2.5 V
<b>Output Level</b>	: 0 VU (1.23 V RMS)
<b>Equalization</b>	: Correct equalization for playback of tapes recorded to the NAB curve.
<b>Recording Bias Frequency</b>	: 60 kc
<b>Recording Level Indicator</b>	: VU meter $\times 2$
<b>Recording System</b>	: CROSS-FIELD bias system, 4-track stereo/monaural system
<b>Fast Forward and Rewind Time</b>	: 90 seconds using 1,200 feet tape at 50 cycles. 75 seconds at 60 cycles.
<b>Maximum Recording Capacity</b>	: 8 hours monaural recording at 1-7/8 ips (1,200 feet recording tape). 4 hours stereo recording at 1-7/8 ips
<b>Head</b>	: Recording/playback head ..... 4-track stereo/monaural, low impedance 1,000 ohms at 1,000 cps. Bias head ..... 4-track stereo, low impedance 500 ohms at 60 kc. Erase head ..... 4-track stereo, low impedance 300 ohms at 60 kc.
<b>Motor</b>	: Hysteresis synchronous 2-speed motor
<b>Transistor</b>	: Transistor $\times 11$ Diode $\times 2$ Rectifier $\times 2$
<b>Power Supply</b>	: AC 100 to 240V, 50/60 cycles
<b>Power Consumption</b>	: 55 VA
<b>Dimensions</b>	: 13-1/2" H $\times$ 13-1/2" W $\times$ 9" D (340 H $\times$ 340 W $\times$ 230 D mm)
<b>Weight</b>	: 30 lbs 13.5 kg)

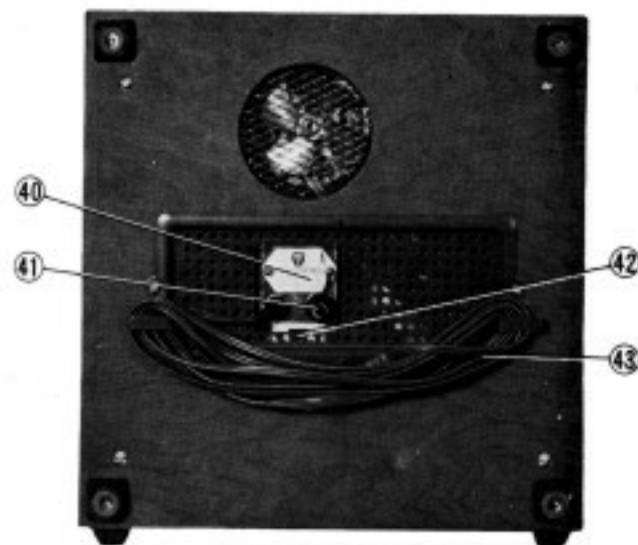
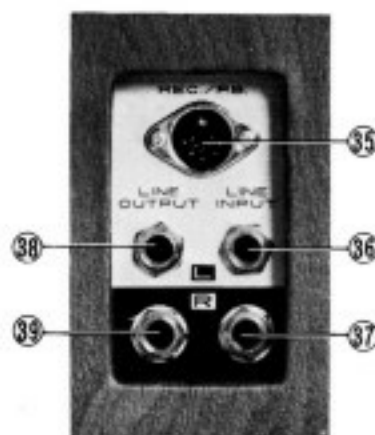
## GENERAL INFORMATION



- ① Supply Reel Shaft
- ② Cycle Conversion Switch (A)
- ③ Capstan Storage Post
- ④ Head Cover (A)
- ⑤ Head Cover (B)
- ⑥ Track Selector Knob
- ⑦ Tape Guide
- ⑧ Tape Cleaner
- ⑨ Index Counter
- ⑩ Reset Button
- ⑪ Erase Head
- ⑫ Recording/Playback Head
- ⑬ Bias Head
- ⑭ Microphone Jack (Left)
- ⑮ Microphone Jack (Right)

- ⑯ Recording Level Control Knob (Left)
- ⑰ Recording Level Control Knob (Right)
- ⑱ Equalizer Knob
- ⑲ VU Meter (Left)
- ⑳ VU Meter (Right)
- ㉑ Recording Lamp
- ㉒ Power Switch
- ㉓ Stereo Headphone Jack
- ㉔ Recording Safety Button
- ㉕ AS Switch
- ㉖ AS Lever
- ㉗ Record/Playback Knob
- ㉘ Fast-Forward/Rewind Knob
- ㉙ Instant Stop Lever
- ㉚ Pinch Wheel

## 2. CONTROL LOCATION



- ④① Capstan Shaft
- ④② Capstan
- ④③ Take-Up Reel Shaft
- ④④ Speed Change Switch
- ④⑤ Din Jack
- ④⑥ Line Input Jack (Left)
- ④⑦ Line Input Jack (Right)
- ④⑧ Line Output Jack (Left)
- ④⑨ Line Output Jack (Right)
- ④⑩ Voltage Conversion Switch
- ④⑪ Fuse Post
- ④⑫ Cycle Conversion Switch (B)
- ④⑬ AC Cord

### 3. CROSS-FIELD HEAD

## GENERAL INFORMATION

Cross-field head creates a sensation in the tape recorder world by making a wide range of recording which is never heard before any tape recorder.

Using this cross-field head, Model X-100D provides a surprising recording performance (30 to 23,000 cps at 7-1/2 ips, 30 to 18,000 cps at 3-3/4 ips and 30 to 9,000 at 1-7/8 ips).

What is superior about cross-field recording? How does it differ from typical recording methods as far as construction is concerned? On these, explanation is given below in sequences;

In the typical recording system, the signal current and bias current are combined together and applied to the recording head. (Refer to Diagram 1.)

It is well known that the purpose of bias current is recording at high sensitivity with a signal applied on the tape, with no distortion and minimizing noise generation.

However, the bias current providing such an advantage also has an undesirable character. That is, the wide magnetic field of the bias current affects the recorded signal, resulting in weakening or even erasing the signal. This phenomenon is particularly noticeable at high frequencies.

In the cross-field system, the signal current is applied to the recording head while the bias current is applied to the bias head. These two heads are located in different positions, as determined inter-relatively, so that the magnetic field of the bias will not affect the signal recorded on the tape, even a sufficient bias is applied. This allows the recorded signal to remain on the tape with high fidelity.

Diagram 1. Ordinary recording system

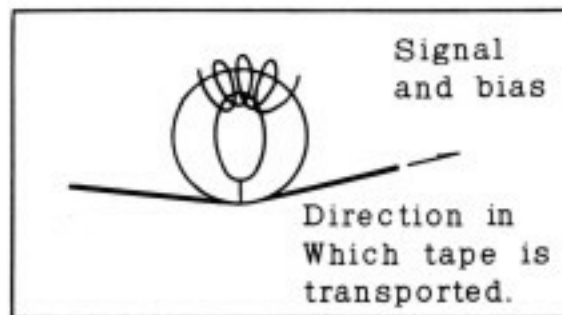
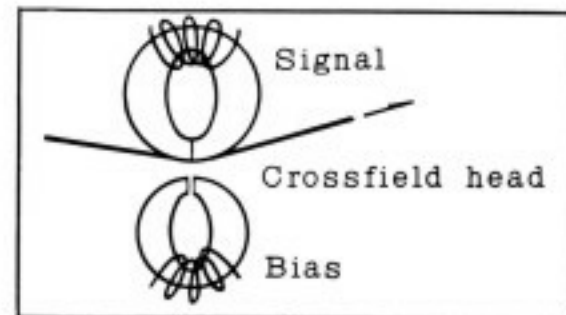


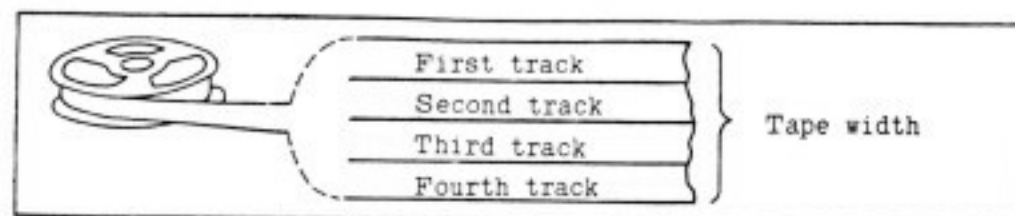
Diagram 2. Cross-field recording system



## GENERAL INFORMATION

## 4. RECORDING/PLAYBACK FOR 4-TRACK

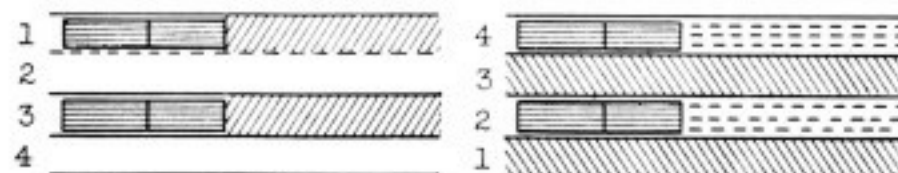
The Model X-100D employs a most advanced 4-track system, either stereo or monaural.



The required track can be selected by the TRACK SELECTOR KNOB ⑥.

### (A) Recording/Playback for 4-Track Stereo

Stereophonic recording/playback uses two tracks at a time. Set the TRACK SELECTOR KNOB ⑥ to "STEREO". The first stereophonic recording/playback is made in the POSITIVE TRACK (Tracks No. 1 and 3) and the second stereophonic recording/playback is made in the NEGATIVE TRACK (Tracks No. 2 and 4) after the tape reels have been turned over.



### (B) Recording/Playback for 4-Track Monaural

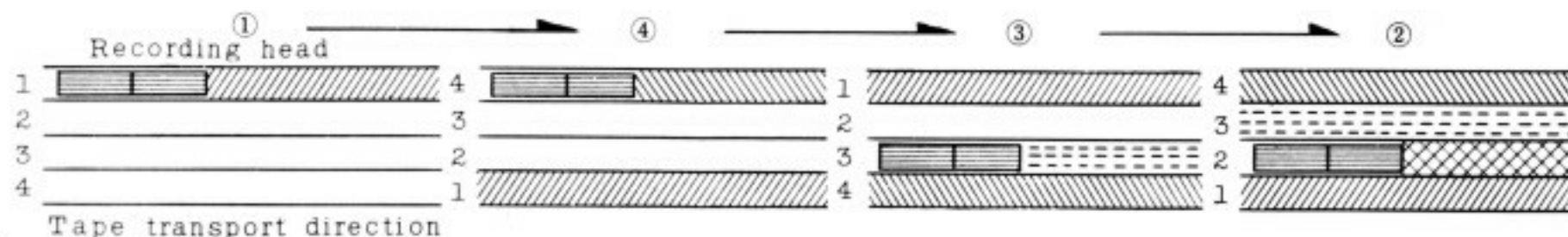
Recording/playback of monaural should be done in the sequence of 1-4-3-2 (tracks).

- (1) Monaural recording/playback on tracks No. 1-4

Set the TRACK SELECTOR KNOB ⑥ to "1-4". The first recording/playback is on POSITIVE TRACK No. 1 and when the tape is reversed, on NEGATIVE TRACK No. 4.

- (2) Monaural recording/playback on tracks No. 3-2

Set the TRACK SELECTOR KNOB ⑥ to "3-2". So, recording/playback is on POSITIVE TRACK No. 3 and when the tape is reversed, on NEGATIVE TRACK No. 2.





## 5. PRECAUTIONS

## GENERAL INFORMATION

IMPORTANT: READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE OPERATING YOUR MACHINE:

- ① THE USE OF NEW TAPE WILL RESULT IN THE BEST RECORDINGS.
- ② THE SYMPTOMS LISTED BELOW DO NOT NECESSARILLY INDICATE MECHANICAL FAILURE OF YOUR TAPE DECK. IF YOUR MACHINE EXHIBITS ANY OF THESE SYMPTOMS, CHECK FOR THE TROUBLE AS INDICATED.
  - (1) Loss of sensitivity and tone quality may be due to:
    - A. Dirty recording head. This will prevent prerecorded material from being completely erased.
    - B. Dust on the recording head. Clean the head gently with a soft cotton swab soaked in rubbing alcohol or carbon tetrachloride.
    - C. A.C. power voltage less than the standard voltages to which your machine is adjusted.
  - (2) Irregularity in the tape transport may be due to:
    - A. Grime adhering to the heads.
    - B. Oil on the capstan.
    - C. Sticky or dirty tape surface.
    - D. A bent take-up reel.
  - (3) If your machine will not record, check to see that the following are in correct position.
    - A. Record/Playback knob.
    - B. Input plugs.

NOTE:

- (1) Before operating your machine, be sure to clean the surface of the head.
  - (2) Unused tape may become soft and sticky. Therefore, it is advisable to run the tape once from the supply reel to the take-up reel before threading it for use.
- ③ THE FOLLOWING NOTES ARE PROVIDED FOR YOUR CONVENIENCE.
- (A) If any trouble develops, please take your machine to the nearest authorized agent in your area or inquire at the Service Dept. of the Akai Company in Tokyo, Japan.
  - (B) Your Akai Tape Deck Model X-100D requires constant voltage for optimum performance.
  - (C) The standard 1,200 feet length of tape on a 7" reel plays up to 32 minutes at 7.5"/sec., speed in one direction.
  - (D) If the sound sources are so far from the microphones that the volume control must be turned up to maximum, some hum or noise will inevitably be recorded. In such case, it is recommended that a test recording be made before a final recording is attempted.



## GENERAL INFORMATION

## 6. VOLTAGE AND CYCLE CONVERSION

### POWER VOLTAGE ADJUSTMENT

The Model X-100D is operatable anywhere in the world. With the built-in stepdown power transformer, the user can easily re-adjust the recorder to any one of the six stages of power voltage from 100 to 240 volts A.C. Generally, the recorder's input voltage is preset for the forwarding territory. The user is requested to check the previously set voltage before operation. This can be seen at the rear of the record.

If another voltage is required, readjusting of the voltage can be accomplished in accordance with the following instruction:

- (1) Take off the cover panel by removing two mounting screws as shown in picture "A". Then pull out the VOLTAGE CONVERSION SWITCH (A) gently and reset the knob so that the desired voltage will appear on the panel. (See picture "B")
- (2) The voltage conversion switch is a plug-in system and is divided into six steps, 100/110/120/200/220/240/. For example, if the power voltage distributed in your area is 220 volts A.C., reset to the FIGURE of 220, matching the MARKING.

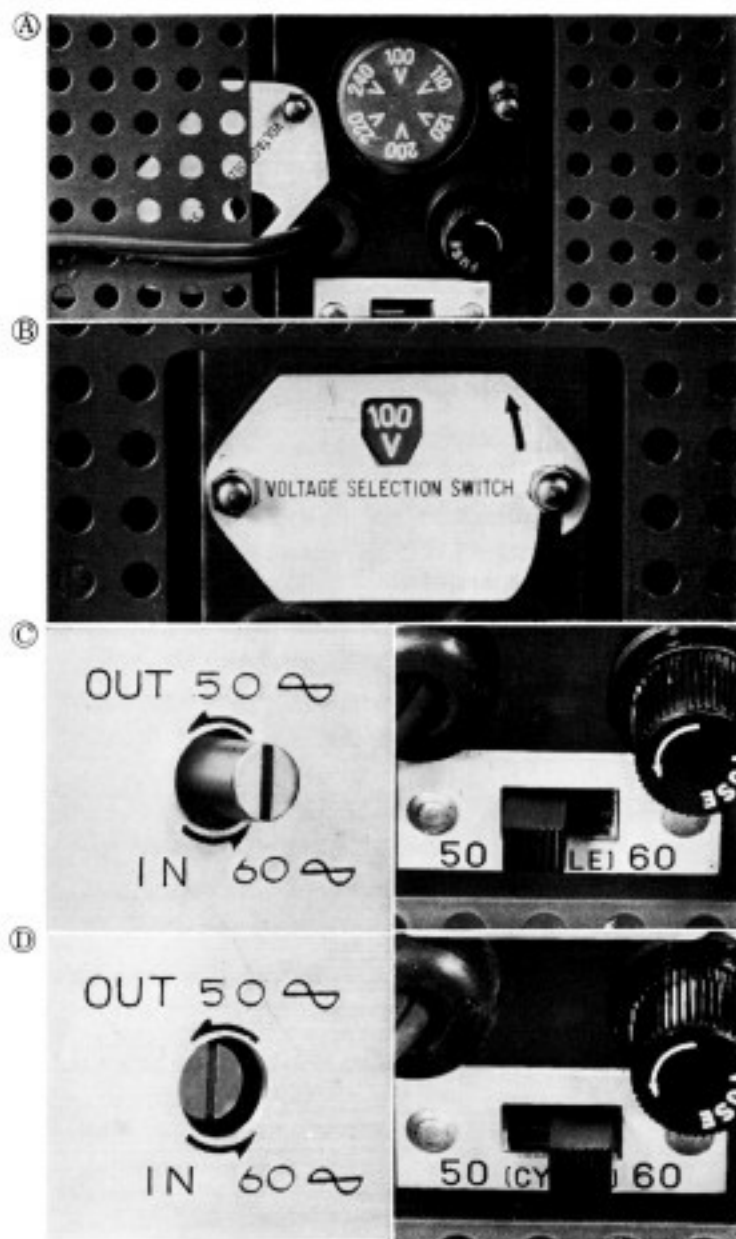
**CAUTION:** Disconnect power plug from AC outlet before readjusting power voltage. To maintain optimum performance and to prolong the life of your machine, it is important that the line voltage be kept within 10 percent deviation from the standard voltage.

### POWER CYCLE CHANGE

A correct tape speed is not obtainable if the recorder's CYCLE CONVERSION SWITCHES are not properly adjusted. The CYCLE CONVERSION SWITCH (A) (2) is located at the center of the deck top panel and the CYCLE CONVERSION SWITCH (B) (2) is located at the rear of the deck.

Using a screw driver, rotate the CYCLE CONVERSION SWITCH (A) (2) counter clockwise approximately one-eighth of a turn. The switch can then be moved either OUT or IN. 50 cycle operation is obtained by moving the switch OUT (Fig. (C)), and 60 cycle operation, moving the switch IN (Fig. (D)). The switch (2) should be rotated back to its original position after it has been moved either OUT or IN. It is also necessary to reset the CYCLE CONVERSION SWITCH (B) (2) to the desired position.

**CAUTION:** Do not attempt to rotate the CYCLE CONVERSION SWITCHES when the motor is not running.



## 7. SELECTION OF TAPE SPEED

TAPE SPEED INCHES PER SECOND	POSITION OF SPEED CHANGE SWITCH		CAPSTAN BUSHING		U S E
	LOW	HIGH	YES	NO	
1-7/8	○			○	Long time recording of Jazz, Speech, Lecture, etc.
3-3/4	○		○		High fidelity recording of Popu- lar or Classical music, etc.
7-1/2		○	○		Recording music with max. clarity, Playback of pre-recorded tape.

The X-100D operates usually on 3 tape speeds, 7-1/2, 3-3/4 and 1-7/8 ips. Refer to the chart above for selecting an adequate tape speed. Tape speed is determined by the motor speed and by use of a capstan bushing on the tape drive capstan shaft.

- 1-7/8 ips. The 1-7/8 ips tape speed is obtained by setting the SPEED CHANGE SWITCH ⑧ to the position marked "LOW". The capstan bushing is not used and is mounted on the storage post.
- 3-3/4 ips. The 3-3/4 ips tape speed is obtained by setting the SPEED CHANGE SWITCH ⑧ to the position marked "LOW". The capstan bushing is mounted on the capstan shaft and is locked automatically in position by the notches provided.
- 7-1/2 ips. The 7-1/2 ips tape speed is obtained by setting the SPEED CHANGE SWITCH ⑧ to the position marked "HIGH". The capstan bushing is used. In addition, a 15 ips tape speed can be obtained by using an extra capstan and pinch wheel that will be obtained by optional accessories.

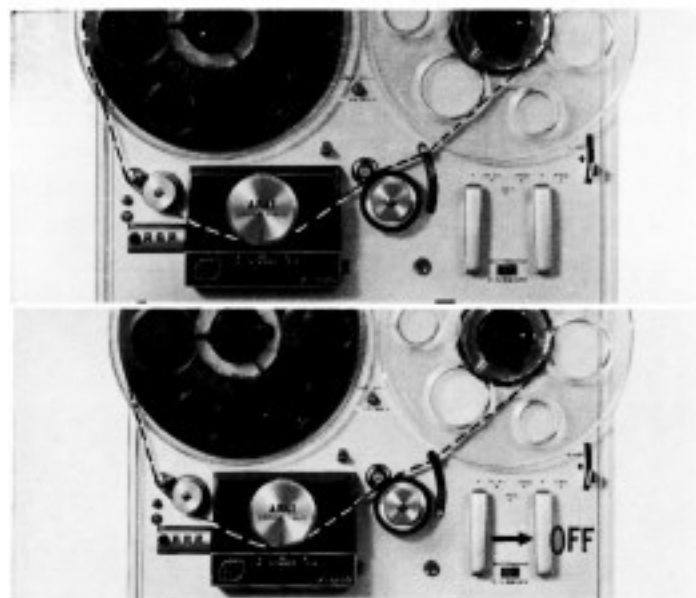


## GENERAL INFORMATION

### RECORDING TIME

4-TRACK STEREO			
TAPE LENGTH	TAPE SPEED		
	1-7/8	3-3/4	7-1/2
1200ft	4hrs	2	1
1800	6	3	1.5
2400	8	4	2
4-TRACK MONO			
1200	8	4	2
1800	12	6	3
2400	16	8	4

## II OPERATING INSTRUCTIONS



### 1. TAPE LOADING PROCEDURE

Place a recording tape on the SUPPLY REEL SHAFT ① and a empty reel on the TAKE-UP REEL SHAFT ②.

Thread the tape as illustrated by the dotted line.

To keep reels from falling down when using the machine in the vertical position, place the rubber reel caps on the SHAFTS.

IMPORTANT:

When use of the automatic shut off is required, thread the tape through the AS LEVER ③. If the automatic shut off is not required, thread the tape directly to the take-up reel. In this case, set the AS SWITCH ④ to "OFF".

### 2. STEREO PLAYBACK

Connect to AC power source using the attached AC CORD.

(A) Set the POWER SWITCH ⑤ to "ON".

(B) Set the TRACK SELECTOR KNOB ⑥ to "STEREO".

(C) Select the tape speed as desired.

(D) Set the EQUALIZER KNOB ⑧ to 7-1/2, 3-3/4 or 1-7/8 (same as the tape speed).

After the above operation, set a pre-recorded tape to the recorder.

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The Model X-100D does not include power amplifier nor loud speakers. It, therefore, is necessary to provide an external stereo amplifier and speakers for stereophonic sound reproduction.

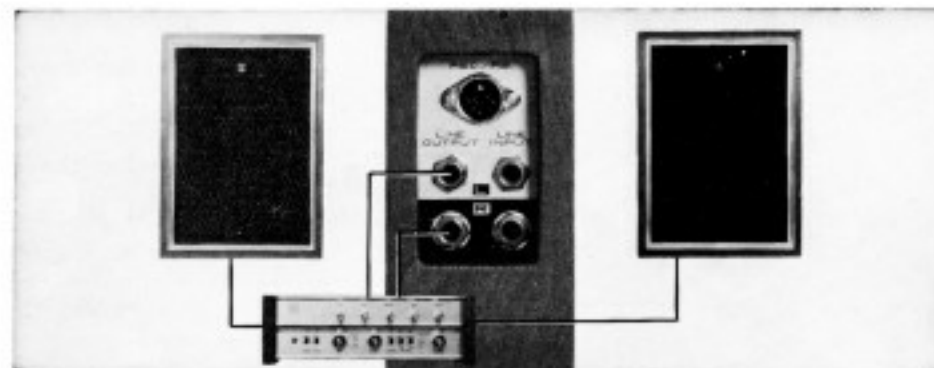
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- (E) Connect both LINE OUTPUT JACKS (⑳ and ㉑) to TAPE INPUT JACKS or AUX INPUT JACKS of the external amplifier. Also, connect two loud speakers to the power amplifier accordingly.

## IMPORTANT:

The output level at the X-100D's output jack is 1.23 volt at maximum. Check your existing amplifier before operation to determine with input terminals should be used.

- (F) After the above operation, set the RECORD-PLAYBACK KNOB ㉒ to "PLAY".  
(G) Adjust the volume of reproducing sound with the volume control knobs of external amplifier.



## 3. AUTOMATIC SHUT OFF

One of the exclusive features of the X-100D is the automatic shut off function of the unit. Whenever the tape comes to the end, or broken by accident, the AS LEVER ㉓ drops down and the function of both deck and amplifier is automatically cut off. In this case, set the AS SWITCH ㉔ to "ON". So this switch is operated in connection with the AS LEVER ㉓.

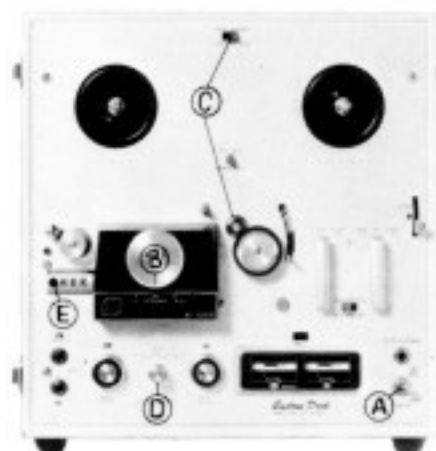
## 4. INSTANT STOP CONTROL

To stop tape momentarily while making recording or play, push the INSTANT STOP LEVER ㉕ as shown in the Picture. The lever will be locked at the stop position and it can be released by lifting the curved tip upward. The INSTANT STOP LEVER ㉕ is not used when the recorder is set to either Fast Forward or Rewind operation.

An optimum recording level can be decided before start recording by using the INSTANT STOP LEVER ㉕ after the recorder is set to the normal recording mode. Adjust the corresponding volume control to set while watching the VU METERS (⑱ and ㉑).



## OPERATING INSTRUCTIONS



## 5. STEREO RECORDING

- (A) Set the POWER SWITCH (22) to "ON".
- (B) Set the TRACK SELECTOR KNOB (6) to "STEREO".
- (C) Select the tape speed as desired.
- (D) Set the EQUALIZER KNOB (18) to 7-1/2, 3-3/4 or 1-7/8 (same as the tape speed).
- (E) Push the RE-SET BUTTON (10) and set the INDEX COUNTER (9) to "000".

This INDEX COUNTER (9) provides reference numbers for locating a position on a given tape.

Place the recording tape to the recorder.

Insert the MICROPHONE PLUGS into the MICROPHONE INPUT JACKS (14) and (15).

Maintain a distance at least more than 7 feet between the two microphones.

Thread the tape in the normal manner and push the INSTANT STOP LEVER (21) upward until it locks. And then turn the RECORD/PLAYBACK KNOB (27) to the "RECORD" while depressing the RECORDING SAFETY BUTTON (24).

The loudness of sound passing through both microphones can be balanced by the RECORDING LEVEL CONTROL KNOBS (16 and 17). Also a check of the loudness of both microphones can be made by observing the VU METERS (19 and 20). Normal operation should not exceed "0" VU of the indicated VU METERS (19 and 20). After an optimum recording level is determined, release the INSTANT STOP LEVER (21) to start stereo recording.

## 6. RECORDING FROM STEREO BROADCAST

Recording from Stereophonic Broadcast can be obtained by connecting the LINE INPUT JACK (LEFT) ③⑥ of Model X-100D to the left speaker voice coil terminals and the LINE INPUT JACK (RIGHT) ③⑦ to the right speaker terminals of the radio sets.

Also, the volume of recording sound is adjusted by the RECORDING LEVEL CONTROL KNOBS ③⑩ and ③⑪.

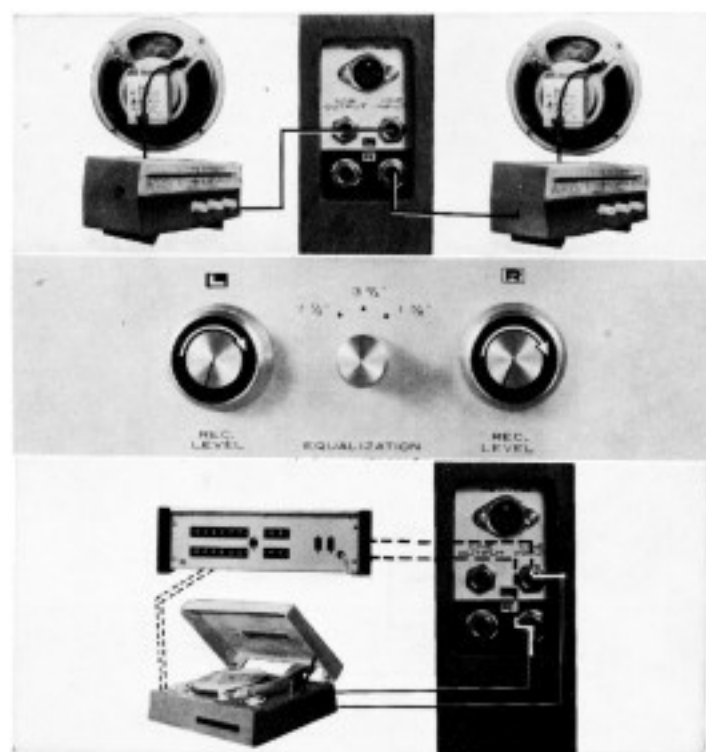
## 7. RECORDING FROM STEREO DISCS

To record from a Stereo Disc, a "CRYSTAL PICK UP" or a "CERAMIC PICK UP" can be directly connected to the LINE INPUT JACKS ③⑥ and ③⑦. A "MAGNETIC CARTRIDGE" output should be connected to a separate Pre-amplifier and should not be connected directly to the LINE INPUT JACKS ③⑥ and ③⑦.

## 8. MONAURAL RECORDING ON TRACKS NO. 1-4

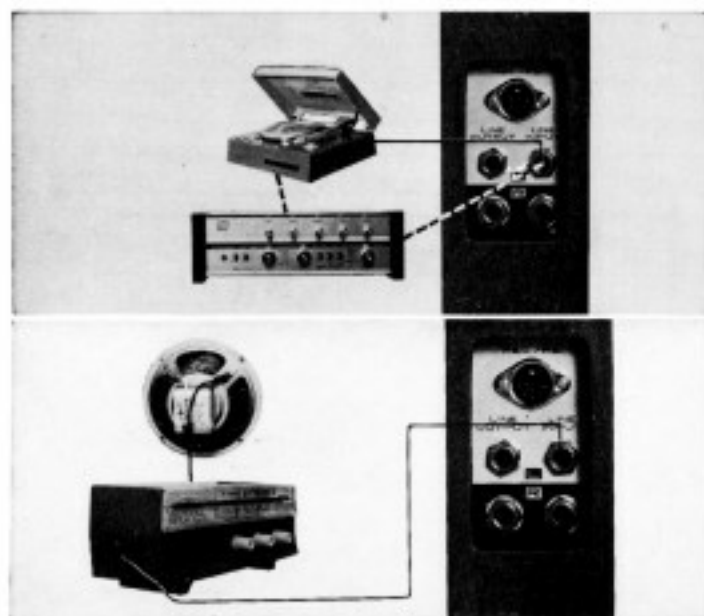
- Ⓐ Set the POWER SWITCH ②② to "ON".
- Ⓑ Set the TRACK SELECTOR KNOB ⑥ to "1-4".
- Ⓒ Select the tape speed as desired.
- Ⓓ Set the EQUALIZER KNOB ③⑧ to 7-1/2, 3-3/4 or 1-7/8 same as the tape speed.
- Ⓔ Push the RE-SET BUTTON ⑩ and set the INDEX COUNTER ⑨ to "000".

## OPERATING INSTRUCTIONS





## OPERATING INSTRUCTIONS



In monaural recording, only the LEFT AMPLIFIER is used. The RIGHT AMPLIFIER is not required for this operation.

So a microphone plug should be inserted into the MICROPHONE INPUT JACK (LEFT) ⑭.

Place the recording tape to the recorder.

Push the INSTANT STOP LEVER ⑳ upward until it locks and then turn the RECORD/PLAYBACK KNOB ㉑ to the position marked "REC" while depressing the RECORDING SAFETY BUTTON ㉒.

Adjust the RECORDING LEVEL CONTROL KNOB (LEFT) ⑮ to normal recording level, while watching the VU METER INDICATOR of the LEFT AMPLIFIER. VU METER indication should not exceed over "0" VU.

After a correct recording level is determined, release the INSTANT STOP LEVER ㉑ to start recording on track No. 1.

At the end of recording on track No. 1, reverse both tape reels for the next recording on track No. 4.

### 9. MONAURAL RECORDING ON TRACKS NO. 3-2

Set the TRACK SELECTOR KNOB ⑥ to "3-2". To make same procedure as of recording on Track No. 1-4.

First recording is made Track No. 3 then Track No. 2.

To record from a DISC PLAYER or an external AMPLIFIER monaurally, use the LINE INPUT JACK (LEFT) ㉔. A CRYSTAL PICK UP can be directly connected to the LINE INPUT JACK (LEFT) ㉔. In case of recording from an external AMPLIFIER, connect to the LINE INPUT JACK (LEFT) ㉔ from the TAPE OUTPUT of external amplifier. To record from a RADIO, connect RADIO CABLE to the radio speaker or to the earphone jack. The cable plug should be inserted into LINE INPUT JACK (LEFT) ㉔.



## 10. MONAURAL PLAYBACK

- Ⓐ Set the POWER SWITCH ② to "ON".
- Ⓑ Set the TRACK SELECTOR KNOB ⑥ to "1.4".
- Ⓒ Select the tape speed as desired.
- Ⓓ Set the EQUALIZER KNOB ⑮ to 7-1/2, 3-3/4 or 1-7/8 (same as the tape speed).

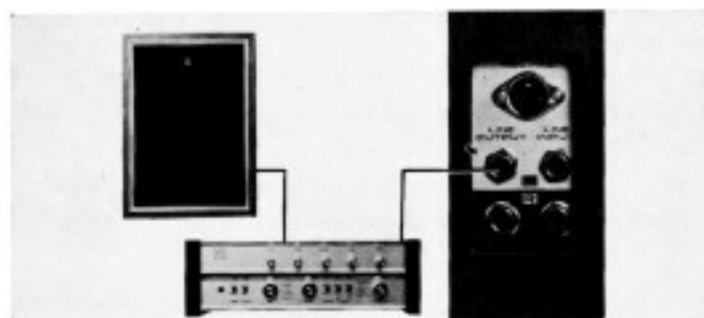
Place the pre-recorded tape to the tape deck.

In monaural reproduction, only the LEFT AMPLIFIER is used.

- Ⓔ Connect LINE OUTPUT JACK (LEFT) ⑧ to TAPE INPUT or AUX INPUT JACK of the external amplifier. Also, connect loud speaker to the power amplifier accordingly.
- Ⓕ Set the RECORD/PLAYBACK KNOB ⑭ to "PLAY".

After completing a monaural reproducing on Track No. 1 and No. 4, set the TRACK SELECTOR KNOB ⑥ to "3.2".

Start to reproducing on No. 3. Then on Track No. 2.

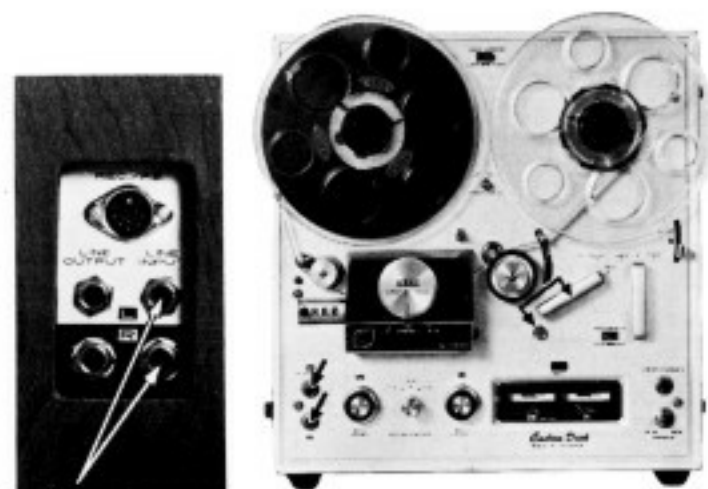


## 11. TAPE ERASING

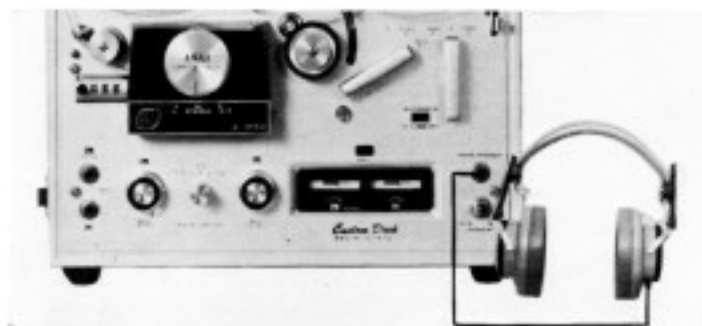
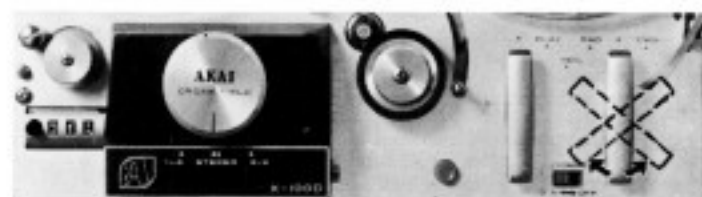
Any materials previously recorded on tape will be erased automatically as a new recording is made on the same tape. Thread the tape and then run it with the recorder set to normal recording condition. There should be no plug connected to the recorder's input jack and, RECORDING LEVEL CONTROL KNOBS (⑮ and ⑯) should be kept to "0".

It is recommendable to use a BULK TAPE ERASER for quick and complete erasing.

## OPERATING INSTRUCTIONS



## OPERATING INSTRUCTIONS



## 12. FAST-FORWARD AND REWIND

Fast forward or rewind operation is made by turning the FAST FORWARD/REWIND KNOB ② to the proper position.

Use the fast forward or rewind operation for a rapid selection of record materials on a given tape.

## 13. MONITORING

Monitoring is made by connecting STEREO HEADPHONE to the STEREO HEADPHONE JACK. ③

On monaural as well as stereo recording, please use the stereo headphone. Caution:

It is important that a stereo headphone should be used low impedance type (8 ohms).

## 14. TAPE SPLICING AND EDITING

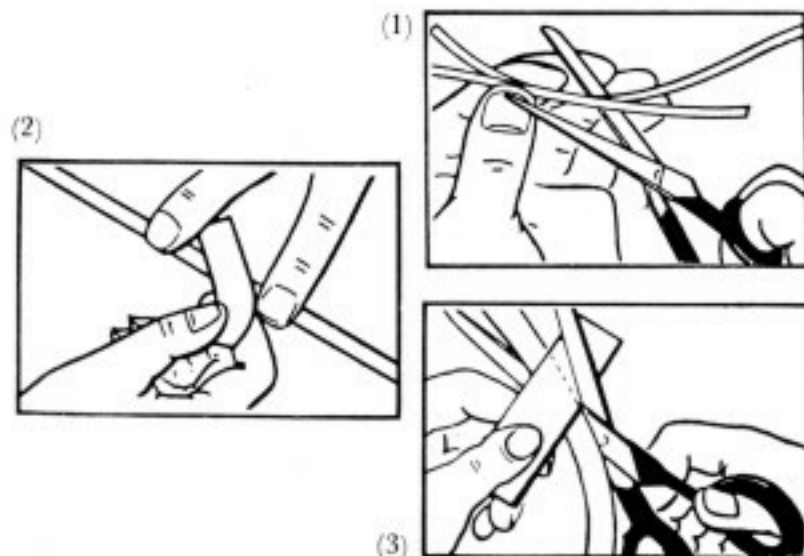
Cut the tape diagonally with an overlap so that the ends will be line up. (Cutting tape on a diagonal eliminates the detection of the splice in recording.)

Cover the aligned ends with SPLICING TAPE.

Press firmly, exerting pressure to secure the ends evenly.

Trim off the excess SPLICING TAPE.

(Cut into the recording tape very slightly as illustrated by the dotted lines. This eliminates a possibility of a sticky splice.)



Splicing of tape using scissors requires skillful work. However, our specially designed Portable Splicer can be done smoothly.

In time, the recording and erase heads will accumulate small quantities of the brownish-red oxide with which the recording tape is coated. The oxide build-up may become severe enough to hold the tape away from the micro recording head gap or may magnetically short-circuit the gap. The effect is certainly reduced high frequency response and, in severe cases, reduced volume across the entire range of frequencies. The heads must be cleaned periodically with a soft cotton swab soaked in rubbing alcohol or tetrachloride.

### **DUST DEPOSIT IS 90% CAUSE OF YOUR TAPE RECORDER FAILURES** **UNCLEAN HEAD IS A DEADLY FOE TO YOUR TAPE RECORDER!!!**

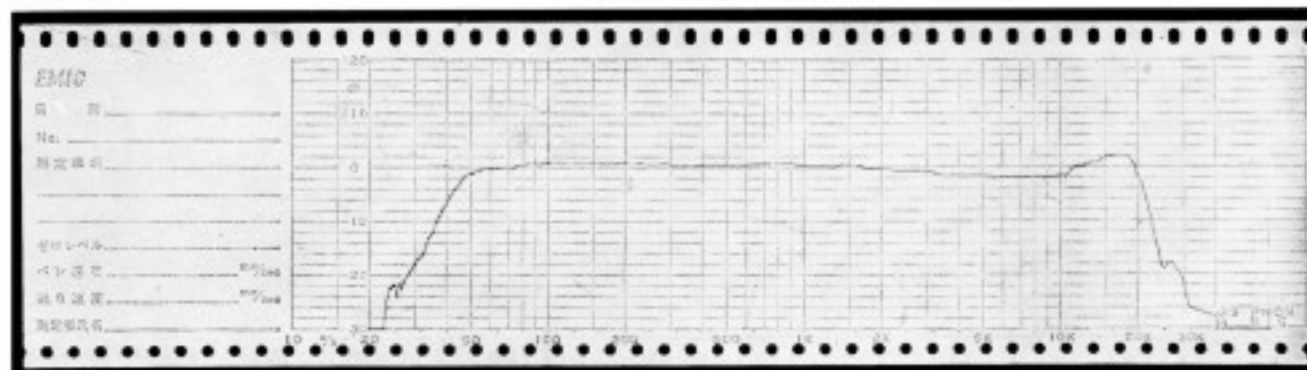
It is imperative for quality performance of a tape recorder to keep the heads neat and clean at all times. Dust and magnetic particles from the tape tend to deposit on the heads after prolonged use of the tape recorder. This would result in poor head-to-tape contact, deteriorating the sound quality and sensitivity. What is worse, such dust would cause a fatal drop in recording, playback and erase quality levels.

### EXAMPLE



**CLEAN HEAD**

**Frequency response curve**





## 16. HEAD DEMAGNETIZATION

Normally the steel pole pieces which form a part of the recording and playback heads become slightly magnetized. The effect of the slight head magnetization is to partially erase the tape.

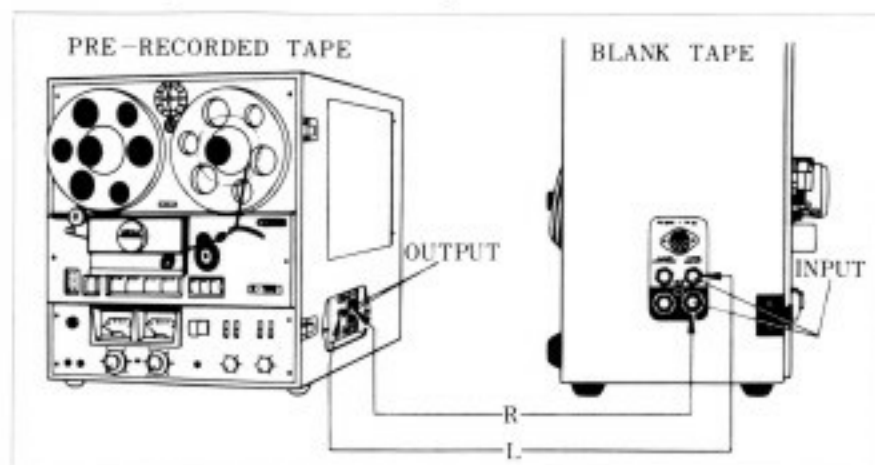
Mostly high frequencies suffer. Generally, slight magnetized heads can be detected by noticing loss of normal high frequency response which cannot be corrected through heat alignment. Severe magnetization which may result if magnetized tools are used in the vicinity of the heads, will result in noise or considerable distortion in addition to the loss of high frequency response. Although the X-100D already has a built-in Head Demagnetizing circuit, it is recommended that head demagnetization should be done periodically. After removing the head cover, head demagnetization can be accomplished by touching the head lightly with the demagnetizer and making several small circular motions overall head surface areas as well as the head housing.



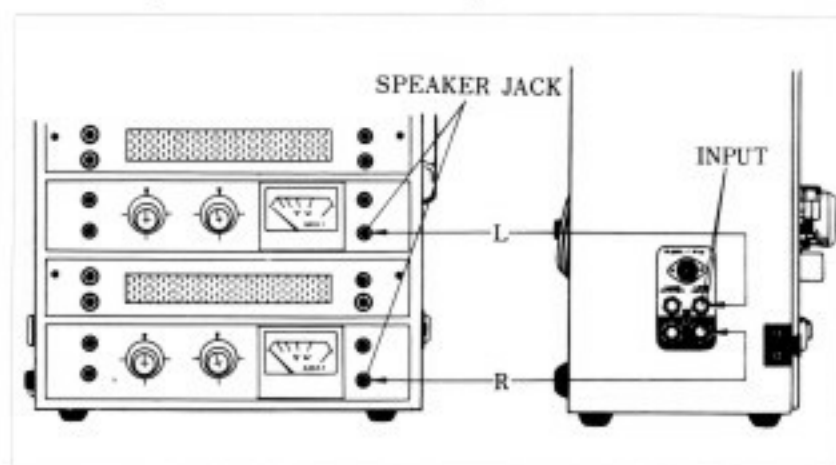
## OPERATING INSTRUCTIONS

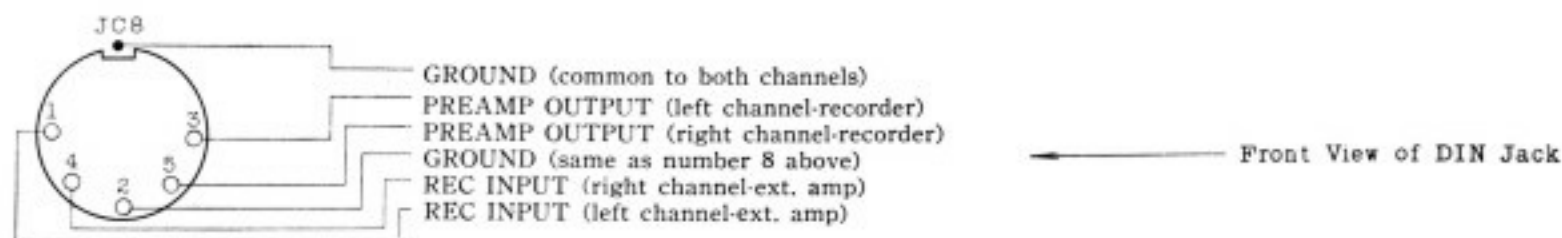
## 17. TAPE DUPLICATION

Connecting an AKAI X-355 tape recorder with a X-100D.



Connecting an AKAI M-Series Tape recorder with a X-100D.





The DIN JACK being located on the right side of the X-100D is provided for interconnecting the X-100D with an external stereo amplifier that has the same connection jack. This system will make easy record and playback of stereophonic programs possible through an external stereo amplifier as the complexity of connecting or disconnecting more than 4 separate plugs from the X-100D's panel side is not needed.

If your amplifier is not equipped with the DIN jack and use of this one connection system is required, consult a radio expert for necessary modification of your amplifier.

## 19. VENTILATION

The Model X-100D has a unique ventilation system. It is so designed that air circulation inside of the unit is properly maintained at all times and no excessive heat which would shorten the life of the component parts is developed. Although the X-100D is perfectly tropicalized in construction, it is recommended that the unit always be spaced a little apart from a wall, screen, or any other obstacle which might be prevented good air circulation around the unit.

## 1. ACCESSORIES OPTIONAL

### Condenser Microphones, No. CM-15

Akai's very latest high fidelity microphone is designed for the professional and Hi-Fi enthusiast. This unit consists of a microphone and pre-amplifier, and permits simultaneous use of two microphones for stereo purpose.

Frequency response ; 50 to 15,000



CM-15

### Dynamic Microphones, No. DM-13

Although compact, extremely high quality dynamic microphones. They are guaranteed to give complete satisfaction to the most critical audio enthusiast and professional users.

Frequency response ; 50 to 12,000



DM-13

### Tape Splicer No. AS-3

This Tape Splicer is a small pocketable device and not only provides easy splicing but also preserves the original quality of recording.



AS-3

### Head Demagnetizer No. AH-6

Normally the steel pole pieces which form a part of the tape heads become slightly magnetized. The effect of the slight magnetization is to partially erase the tape (with high frequencies suffering most). A periodical application of the Head Demagnetizer is the best way to keep the original quality of the tapes. The AH-6 has a built-in on-off switch and a neon bulb.



AH-6

## III ACCESSORIES



## ACCESSORIES



AP - 2



ATE-7



ASE - 9



HC-500

## ACCESSORIES OPTIONAL

### Telephone Pick-up No. AP-2

This is designed to record telephone conversations with maximum clarity and sensitivity. Adjust press on to the back of the telephone, rubber suction cup holds the Pick-Up in positions.

### Tape Eraser No. ATE-7

This unit erases any previously recorded materials completely in a few seconds and accomodates tape reels from 3" to 7" in diameter. It is designed to provide maximum erasing efficiency. Has a pop-up shaft to hold the tape reel in position and also serves as a power switch and on-off bulb indicator of the unit.

### Stereo Headphone No. ASE-9

In order to enjoy true stereophonic effects with the Akai tape recorder, the Stereo Headphones ASE-9 is recommendable. If it has two sets of headphones, one for ASE-9 and the other for with HA-200, can be listen by two persons.

### Head Cleaning Kit, No. HC-500

HEAD CLEANER proves its value when used to wipe off the brownish-red oxide powders that accumulate on both the head assembly and pinch wheel. Since these powders prevent high frequency response, we are recommendable to use adequate head cleaner.

## ACCESSORIES OPTIONAL

## ACCESSORIES

### Tape Cleaning Kit, No. TC-300

This kit has been designed for the discriminating home enthusiast who wants to insure the longevity, and frequency response of his tapes. It enables you to clean off dust and other foreign particles that accumulate on tape, thus eliminating the main cause of tape squeaking.



TC-300

### AKAI Magnetic Tape & Tape Reel

#### AKAI Magnetic Tape

AT-5S ( 600 feet)  
AT-7S (1,200 feet)  
AT-10S (2,400 feet)  
AT-5L ( 900 feet)  
AT-7L (1,800 feet)  
AT-10L (3,600 feet)

#### AKAI Tape Reel

ATR-5 (for 5")  
ATR-7 (for 7")



MAGNETIC TAPE



TAPE REEL

## 2. ACCESSORIES STANDARD

1 P Plug .....	4
Rubber Cap .....	2

Operator's Manual .....	1
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### 3. A WONDERFUL COMBINATION



#### STEREOPHONIC SPEAKER SYSTEM **SW-130**

SPEAKER : 12" Woofer & 3.1/2" Tweeter  
 IMPEDANCE : 8 ohms  
 MAX. POWER  
     INPUT : 25 W  
 FREQUENCY  
     RESPONSE : 50~18,000 cps.  
 DIMENSIONS : 16-1/2"W × 22-1/2"H ×  
                   12-1/8"D  
                   (420W × 570H × 310Dmm)  
 WEIGHT : 28.9 lbs (13.1 kg) (piece)

#### ALL TRANSISTOR PRE-MAIN AMPLIFIER **AA-5000**

OUTPUT : Load 8 ohms...110W (55W × 2)  
 (MUSIC POWER) : Distortion 1% at 1 kc.  
 (RATED POWER) : Load 8 ohms... 70W (35W × 2)  
                           Distortion 1% at 1 kc.  
 FREQUENCY  
     RESPONSE : 20~35,000 cps. ±1 db, with 8  
                           ohms load from AUX terminal.  
 DIMENSIONS : 17"W × 5-3/8"H × 10-5/8"D.  
                   (430W × 135H × 270D mm)  
 WEIGHT : 17.6 lbs (8 kg)