

## PERFORMANCE SPECIFICATIONS

FREQUENCY RESPONSE	30 - 20,000 CPS., at 7.5"/sec. Tested with SCOTCH TAPE.
HEAD FREQUENCY RESPONSE	40 - 14,000 CPS., at 3.75"/sec. No. 190A and No. 200.
TAPE SPEED	20 - 20,000 CPS., at 7.5"/sec.
RECORDING SYSTEM	30 - 15,000 CPS., at 3.75"/sec.
HEADS	3.75", 7.5" and 15"/sec. (Dubbing only)
RECORDING TIME	In line 4-track stereo records and 4-track monaural records. (JAC bias system Patent No. 233093)
HEADS	In line 4-track stereo record/playback head; 4-track monaural record-playback head; 2-track stereo playback head; separate 4-track erase head.

### RECORDING TIME

	4-Track Stereo		4-Track Monaural	
	3.75"/sec.	7.5"/sec.	3.75"/sec.	7.5"/sec.
3,200 ft. tape	2 hrs	1 hr	4 hrs	2 hrs
1,800 ft. tape	3 hrs	1.5 hrs	6 hrs	3 hrs
2,400 ft. tape	4 hrs	2 hrs	8 hrs	4 hrs

### POWER SOURCES

### POWER CONSUMPTION

### MOTOR

### OUTPUT POWER

### WOW & FLUTTER

### CROSS TALK

### S/N RATIO

### FAST FORWARD & REWIND TIME

### TUBES USED

### WEIGHT

### DIMENSIONS

AC 100 and 117 Volts, 50 and 60 Cycles.
100 Volts Ampere.
HYSTERESIS SYNCHRONOUS MOTOR.
6 Watts X 2 (Maximum)
Under 0.07 % R. M. S. at 7.5"/sec.
80 db at 1,000 Cycle (—3 V. U.)
More than 40 db.
2.5 minutes for each operation.
6Z67 (EF86) X 2, 12AD7 (12AX7) X 2, 6BQ5 X 2, 6AR5, 6X4 X 2.
Tererecorder Model M-5 46.5 lbs.
Stereo Hi-Fi Speaker System Model SS-50 23 lbs.
Accessories 2.5 lbs.
Tererecorder Model M-5 14" X 20 1/2" X 8 1/4"
Stereo Hi-Fi Speaker System Model SS-50 8 1/2" X 14" X 20 1/2"
Accessories case 4 1/2" X 9" X 4 1/2"

## GENERAL INFORMATION

This Akai Terecorder Model M-5 is a new complete 4-track stereophonic tape recorder, and is an improved and more developed model of the M-4 which is very popular among many audiophiles due to its versatility and quality.

This unit is improved in many ways, for example; adding 15"/sec., speed to the regular standard speeds of 3.75"/sec., and 7.5"/sec., especially for tape dubbing at minimum time and effort, addition of the speed change lever which makes easier speed selection, addition of an EQUALIZER SWITCH for both recording and playback for more professional recording and playback results, more POWERFUL AMPLIFIERS, etc.

Furthermore, you will have almost endless pleasure exploring the M-5's outstanding features, possible only with the most efficient design, engineering, and quality controlled production that AKAI has.

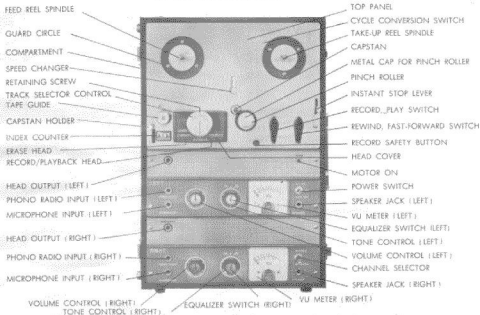
The following exclusive features are your most important check points to the finest and latest 4-Track Stereophonic Tape Recorder.

### CHECK THESE EXCLUSIVE FEATURES-

1. Records and plays either 4-track stereophonically or 4-track monophonically and also plays 2-track stereo pre-recorded tapes.
2. Has three speeds - 3.75"/sec., 7.5"/sec., and 15"/sec., which enables you to dub tape, actually decreasing the dubbing time in half.
3. Equipped with a powerful Hysteresis Synchronous Motor (with a fan) which always insures accurate speed.
4. Has an Equalizer in each amplifier for both record and playback.
5. Two larger accurate VU Meters read both recording and playback levels to insure good recordings.
6. Designed to operate either vertically or horizontally.
7. Single internal speaker (5" x 7") can be used for monaural playback when use of the dual 8" external speakers is not desired.
8. Automatic built-in head de-magnetization system.
9. Three digit Index Counter enables accurate return to a pre-numbered selection, without playing all the preceding material.
10. Record Safety Button to prevent accidental erasure.
11. Instant Stop Lever to halt tape transporting.

## INTRODUCING

## THE AKAI TEREORDER MODEL M - 5



# STEREOPHONIC SPEAKER SYSTEM MODEL 55-50

## HOW TO DISMOUNT



2-1

Unlock the two BINDING CLAMPS located on each side of the speaker boxes.

Release the top speaker box very slowly, lifting by the handle.

The TREBLE SOUND from the speaker has SOUND DIRECTION. Then, place the speakers in locations that will give full advantage to the high notes.

## FRONT VIEW



2-2  
HORIZONTAL  
POSITION



2-3  
VERTICAL  
POSITION

To connect to the Terecorder Model M-5, use the accessory Speaker Cable and insert the plug into the Jack of the speaker box, as illustrated.

The speaker may be used in vertical position, however, there will be a noticeable loss of high notes.

## REAR VIEW



2-4

## ACCESSORIES: SPEAKER CABLES.



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**Note:** There is an eight inch "WIDE RANGE PERMANENT DYNAMIC SPEAKER" embodied in each speaker box.

## DESCRIPTION OF AND INSTRUCTIONS FOR 4 TRACK HEAD

This multi purpose use head has varied functions as illustrated and described below :

Fig. 1

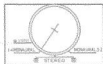


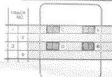
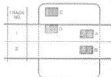
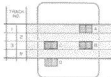
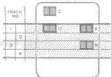
Fig. 2



Fig. 3



Fig. 4



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## REMARKS

-  — ERASE HEAD POSITIVE TRACK - TRACKS NO. 1 & 3.  
 — RECORD/PLAY HEAD NEGATIVE TRACK - TRACKS NO. 2 & 4.

## I. RECORDING

Set the POINTER of the Track Selector Control on the track you want to use and turn the RECORD, PLAYBACK SWITCH to "REC" position after depressing the RECORD SAFETY BUTTON.

- For "Monaural recording on Tracks No. 1 - 4", set the POINTER of the track selector control to "1 - 4" as shown in Fig. 1 then the ERASE HEAD "D" and the RECORDING HEAD "A" are operative. In this position, you may record on POSITIVE TRACK No. 1 and when the tape is reversed again, record on NEGATIVE TRACK No. 4.

- b. For "Monaural recording on Track No. 3-2", set the POINTER of the track selector control to "3-2" as shown in Fig. 2 then the ERASE HEAD "C" and the RECORDING HEAD "B" are operative. In this position you may record on POSITIVE TRACK No. 3 and when the tape is reversed again, record on NEGATIVE TRACK No. 2.
- c. No recording can be made in this position by using a pre-recorded tape, but it is possible to make a 2-track stereo recording with new unused tapes.
- d. For "4-track stereo recording", set the POINTER of the track selector control to "STEREO" as shown in Fig. 4 then the ERASE HEAD "C" & "D" and the RECORD HEAD "A" & "B" are all operative. The first stereophonic recording is made on the POSITIVE TRACK (Tracks No. 1 and 3) and the second stereophonic recording is made on the NEGATIVE TRACK (Tracks No. 2 and 4) after you have turned the tape reels over.

## 2. PLAYBACK

Set the POINTER of the track selector control on the track you want to use and turn the RECORD, PLAYBACK SWITCH to "PLAY" position.

- a. For "Monaural playback on Tracks No. 1-4", set the POINTER of the track selector control to "1-4" as shown in Fig. 1; then only the PLAYBACK HEAD "A" is operative. In this position, you may reproduce POSITIVE TRACK No. 1 and when the tape is reversed again, reproduce NEGATIVE TRACK No. 4.
- b. For "Monaural Playback on Tracks No. 3-2", set the POINTER of the track selector control to "3-2" as shown in Fig. 2; then only the PLAYBACK HEAD "B" is operative. In this position, you may reproduce POSITIVE TRACK No. 3, and when the tape is reversed again, reproduce NEGATIVE TRACK No. 2.

### c. PLAYBACK FOR OLD TYPE TWIN STEREO TAPES

Old type TWIN STEREO TAPES can be reproduced by setting the POINTER of the track selector control to "STEREO" as shown in Fig. 3. In this position the PLAYBACK HEAD "A" and "B" run through the middle portions of both Tracks No. 1 and 2.

### d. PLAYBACK FOR 4 TRACK STEREO

For two track stereo tape made on a 4 track machine, reproduction is achieved by setting the POINTER of the track selector control to "STEREO" as illustrated. In this position the PLAYBACK HEADS "A" and "B" run through Tracks No. 1 and 3 and when the reel is turned over, run through Tracks No. 4 and 2.

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

1. THE SYMPTOMS LISTED BELOW DO NOT NECESSARILY INDICATE MECHANICAL FAILURE OF YOUR TEREORDER 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 erased completely.
  - B. Dust on the recording head. Clean the head gently with a soft cotton swab soaked in rubbing alcohol or carbon tetrachloride.
  - C. Reversed tape. Check to see that the dull side of the tape lies closest to the heads.
  - D. A.C. power voltage of less than 100 volts or 117 volts.
- (2) Irregularity in the tape advance may be due to :
- A. Heavy dust adhering to heads.
  - B. Oil on the capstan.
  - C. Loose capstan mounting screw.
  - D. Sticky or dusty tape surface.
- (3) If your machine will not record, check to see that the following are in correct position :
- A. Record-play switch.
  - B. Microphone plugs.

**NOTE :**

- (1) Before operating your recorder, be sure to clean the surface of the head as illustrated in figure at right.
- (2) Unused tape may become soft and sticky, therefore it is advisable to run the tape once from the feed reel to the take-up reel before threading it for use.
- (3) Lubricate the Tereorder after every 600 hours of use. An oil hole is located at the base of the CAPSTAN SHAFT. Refer to LUBRICATION CHART for other lubrication points.



## 2. THE FOLLOWING NOTES ARE PROVIDED FOR CONVENIENCE OF THE OWNERS.

- (1) If any trouble develops, please take your machine to our nearest authorized agent.
- (2) Your Akai Terecorder Model M-5 requires constant voltage (100V or 117V) for optimum performance.
- (3) The standard 1,200 foot length of tape on 7" reel plays 32 minutes at 7.5"/sec. speed.
- (4) Operating panel will become warm after continued use, however, it can be operated continuously unless the ambient temperature rises above 40°C.
- (5) Do not twist the power cable or mike cord when coiling them, otherwise the wires may become disconnected from terminals.  
Every cord should be coiled from its base to prevent twisting.
- (6) If the sound sources are so far from the microphones that the volume control must be turned up to the maximum, some hum will inevitably be recorded. In such a case, it is recommended that a test recording be made before a final recording is attempted. To avoid recording a hum, attach a ground wire from the CAPSTAN HOLDER.
- (7) It is advisable to turn down the VOLUME CONTROLS to "0" before moving the Track Selector control from its original position on either recording or playback.

### WARRANTY

The "Akai Terecorder Model M-5" is fully warranted against defects in material or workmanship for a period of 180 days from date of purchase.

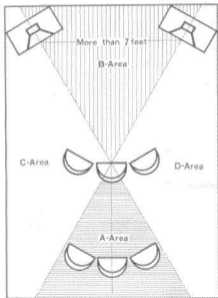
This warranty does not become effective until you have filled in the serial number, date of purchase, name of dealer from whom you purchased the "Akai Terecorder Model M-5", your name and address and mailed the card to us.

Under this warranty, Akai Trading Company agrees to replace any parts which, when examined at the Service Department of our company or our authorized agents, shall prove to have been defective. The warranty does not cover recording tape or reels; and it does not cover any recorder which has been subject to misuse, negligence or accident; or on which the serial number has been altered or removed.



## HOW TO PLACE TWO SPEAKERS

For best playback results, set up your Stereo Hi-Fi Speaker System Model 55 - 50 as follows -

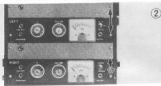


1. Place the two speakers so that each speaker is facing towards CENTER OF ROOM as illustrated in figure at left and connect them to "SPEAKER JACKS" on the Terecorder Model M - 5 by using speaker cable.  
The Terecorder Model M - 5 can be placed anywhere you like.
2. It is most desirable to place the two speakers more than 7 feet apart.
3. For the best stereophonic effect, it is suggested that the listener be within the A - Area.
4. The C and D Areas are not good for Stereo listening.
5. While the B Area has a stereophonic effect, the location is too close to the speakers, and the sound will have little appeal.

# 1. **STEREO** (FOUR TRACK STEREO) PLAYBACK INSTRUCTION



1. Uncoil the Power Cord in the compartment. Connect Power plug to AC OUTLET.



2. "ALL ON" ..... Both the Motor and Amplifiers will operate.  
 "OFF" ..... Entire operation of this Terecorder Model M-5 will stop in this position.

"AMP OFF" ..... Motor will operate but the Amplifiers will not function. This may be used when the HEAD OUTPUT is connected to an external HI-FI System. The CHANNEL SELECTOR enables you to choose either Stereophonic or Monophonic playback.

**NOTE:** Set the Pointer of Equalizer Switch to 7½ or 3¾ (as required) both on recording or playing.



## 3. TRACK SELECTOR CONTROL

To get Four Track Stereo reproduction, set the Pointer of the Selector to **STEREO** as illustrated.

### NOTE:

It is advisable to turn down the VOLUME CONTROLS to "0" before moving the Track Selector Control from it's original position on either recording or playback.



4. Place a 4-track pre-recorded tape reel on the left Spindle.  
 Thread the tape as illustrated by dotted line after placing an empty take up reel on the right Spindle.  
 To keep reels from falling off when using the Terecorder in vertical position, use the rubber reel caps on the spindles.



5. Insert plug from the left speaker into the **SPEAKER JACK** on the left amplifier and the plug from the right speaker into the **SPEAKER JACK** on the right amplifier. Turn the **RECORD, PLAYBACK SWITCH** to **PLAY** position to get excellent reproduction through the external speakers. Both speakers should always be separated by at

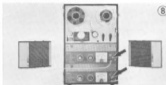


- least 7 feet.
6. After all the tape has passed over to the right hand reel, remove reel from right spindle, turn over and place on left spindle. Follow step 4 above, for threading. Tracks No. 4 or 2 will playback in this manner.

## 1. **STEREO** (FOUR TRACK STEREO) PLAYBACK INSTRUCTION



7. The **REWIND** operation is used by turning the **REWIND SWITCH** to the right. The **FASTFORWARD** operation is used by turning the **SWITCH** to the left.



8. To exactly balance both speakers, adjust both **VOLUMES** on the left and right amplifiers while watching the **VU meter's** indicators. Care must be taken that the indicators do not exceed "0" **VU** except in very rare cases. When playing, turning the **TONE CONTROL** clockwise from position 5 will increase **TREBLE RESPONSE**. Turning the **CONTROL** counter-clockwise increases **BASS** response.



9. In case you desire to reproduce through your external Stereo Amplifier, use both **HEAD OUTPUT JACKS** to feed the audio signal to the amplifier. The **POWER SWITCH** should be turned on "**AMP OFF**" position whenever the Terecorder Model M-5 is used as a Tape Deck.

## 2. **STEREO** (FOUR TRACK STEREO) RECORDING INSTRUCTION



1. To make a four Track Stereo recording, turn the **POWER SWITCH** "**ALL ON**" and set the **POINTER** of track selector control to "**STEREO**". Before starting to record, set the **INDEX COUNTER** to "0". This **INDEX COUNTER** is used to provide reference numbers for locating a selection on a given tape.

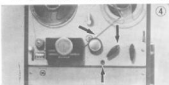


2. Insert the **MICROPHONE PLUGS** into both **MICROPHONE IN-PUT JACKS** maintaining a distance of more than 7 feet between both microphones.

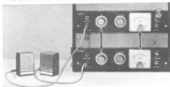


3. Care must be taken not to leave the plugs from the external amplifier connected to the **HEAD OUTPUT JACKS** on the Terecorder Model M-5 when recording, because this will damage the speakers which are connected to the external amplifier.

## 2. STEREO (FOUR TRACK STEREO) RECORDING INSTRUCTION



4. Thread the tape as illustrated above. After depressing the RECORD SAFETY BUTTON, turn the RECORD, PLAYBACK SWITCH to "REC" position.



5. The LOUDNESS of sound passing through both microphones can be balanced by the VOLUME CONTROLS on the left and right amplifiers by watching both VU METERS. Place two microphones as illustrated and the INSTANT STOP LEVER to "STOP" so that it will disengage the tape movement and watch the VU meter's INDICATORS.

Care must be taken that the indicators of both VU meters do not exceed "0" VU in except very rare cases.

Note that the TONE CONTROL has no effect during recording, however, set the Pointer of Equalizer Switch to 7½ or 3½ as required both on recording or playing.

- CAUTION:** Before recording with a microphone, be certain that no external speaker is connected to the Recorder Model M-5 because it will cause feedback.
6. For tape reel CHANGE-OVER, REWIND, or FAST-FORWARD, refer to Step 6 on page \$10 and step 7 on page \$11.

## 3. RECORDING FROM STEREO BROADCASTS :



1. Recording from Stereophonic Broadcast can be done by connecting the LEFT PHONO RADIO Jack to the left speaker TERMINAL and the RIGHT PHONO RADIO Jack to the right speaker TERMINAL as show.  
The "RADIO CABLE" may be used for this purpose.

## 4. RECORDING FROM A STEREO DISC :

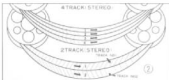


1. To record from a Stereo Disc, a "CRYSTAL PICK UP" 10, 5 - 1 volt or a "CERAMIC PICK UP" can be directly connected to the PHONO RADIO Jack. A "MAGNETIC CARTRIDGE" should be connected to a separate Pre-Amplifier and never directly to the PHONO RADIO Jack.  
**NOTE:** Turn the Power Switch "OFF" before turning the RECORD, PLAYBACK KNOB to "STOP" position. This will prevent Head Magnetization.

## 5. =STEREO= (TWO TRACK STEREO) PLAYBACK INSTRUCTION



1. To play old type 2-track stereo pre-recorded tapes, set the **POINTER** of the track selector control to **=STEREO=**. The **CHANNEL SELECTOR** must also be set to **"STEREO"**.
2. Then follow instructions for **"STEREO"** (FOUR TRACK STEREO) PLAYBACK.
3. **TWO TRACK STEREO TAPE** has compatible material recorded on both **"UPPER & LOWER**



**TRACKS"** and this tape can only be used in one direction.

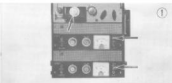
**FOUR TRACK STEREO TAPE** has compatible material recorded on Tracks No. 1 and 3 and unrelated material recorded on Tracks No. 4 and 2. This tape can be played in both directions by turning the reels over. Therefore tracks 1 and 3 are reproduced

together in Stereo playback, and when you turn the tape over, tracks 4 and 2 are reproduced together. Thus you twice as much recording on a tape and you thereby get twice the playing time.

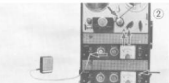
### NOTE:

The 2-track stereo tapes created by the older 2-track stereo recorder can be reproduced by setting the Pointer of Track Selector Control in this position (STEREO) but older 2-track stereo recording is, as a general rule, not possible with the M-5. Reason is that the older 2-track stereo recording is not necessary, as the M-5 has a special feature to record 4-track stereo. Therefore, the Erase Head does not operate in this position. But the fact that recording BIAS is superimposed on a signal, makes it possible to record older 2-track stereo, only on a new, unrecorded tape.

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



1. Turn the Power Switch **"ALL ON"** and set the **CHANNEL SELECTOR** to **"MONAURAL"**. Set the **POINTER** of the Track Selector control to **1-4**.
2. In Monaural Recording, only the **LEFT AMPLIFIER** is used. The **RIGHT AMPLIFIER**

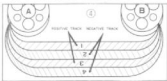


is not required for this operation. A microphone plug should be inserted into the **MICROPHONE JACK** on the **LEFT AMPLIFIER** as illustrated. After threading the tape as shown by dotted line, depress the **RECORD SAFETY BUTTON** and then turn the **RECORD PLAY** caplets switch to **"REC"** position.



3. Adjust **VOLUME CONTROL** to normal recording level, while watching the **VU Meter's INDICATOR** on the left amplifier. Care must not be taken that the indicator of the **VU meter** exceed **"0"** VU except in very rare case. The **Tone Control** has no effect when recording.

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



4. The Monaural Recording can be made on four individual tracks as illustrated in both Positive and Negative directions.

**POSITIVE TRACK**

The **POSITIVE TRACK** means that Tracks No. 1 and 3 will be used.

**NEGATIVE TRACK**

The **NEGATIVE TRACK** means that the Tracks No. 4 and 2 will be used.



5. After completing a monaural recording on Track No. 1, decrease the Volume on left amplifier to "0" and return the Record/Play Switch to "0". Reverse the right reel and place it on the left reel spindle, then start recording on Track No. 4.



6. To **REWIND**, set volume control to "0" and turn the **REWIND SWITCH** to the right.

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



1. Set the **POINTER** of the Track Selector control to Tracks No. 3-2. Then follow the same procedure shown above for recording on Tracks No. 1-4.
2. To record from a **DISC** or an External Amplifier monaurally, use only the **LEFT**

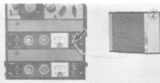


**AMPLIFIER** and its **PHONO RADIO JACK**. A **CRYSTAL PICK UP** or a **CERAMIC PICK UP** can be directly connected to the Jack. A **MAGNETIC CARTRIDGE** should be connected to a separate Pre-Amplifier. To record from an External Amplifier, use the **TAPE OUTPUT** of the amplifier and connect to **PHONO RADIO Jack** of the



- Model M-5.
3. To record from a **RADIO**, use the accessory **RADIO CABLE** and connect the **CLIP** to the radio speaker or to the earphone jack. The cable plug will go into the **PHONO RADIO Jack** of the Terecorder Model M-5.

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



1. TURN the CHANNEL SELECTOR to "MONAURAL" and Set the POINTER of the track selector control for Tracks No. 1-4. Turn the RECORD, PLAYBACK SWITCH to "PLAY". The internal speaker embodied in the Model M-5 will always operate if there is no external speaker connected to the Speaker Jack of the Terecorder.

2. For superb reproduction, connect a larger external speaker to the SPEAKER JACK on the LEFT AMPLIFIER. If the Plug from an external speaker is inserted into the SPEAKER JACK all the way, the internal speaker connection will automatically be disconnected. By leaving the plug from an external speaker in half way, both internal and external speaker are operative.

3. If reproduction through an external Hi-Fi System is desired, the Head Output Jack may be used to feed an audio signal to the Tape Head Input or Magnetic Pick-Up (low) or the external Hi-Fi System. In this manner you may enjoy excellent reproduction of sound through your Hi-Fi Amplifier.

## 9. TAPE ERASING

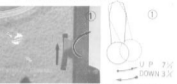


1. To erase pre-recorded material, first determine that there is no connection to any PHONO, RADIO Jacks and MICROPHONE Jacks and turn down the Volume Control to "0".

2. Place the tape to be erased on the LEFT SPINDLE and thread in normal manner. Then set the POINTER of the Track Selector Control to [STEREO] and the RECORD, PLAY SWITCH to "REC" after depressing the RECORD SAFETY BUTTON. Thus all material on Tracks No. 1-3 will be erased. To clear Tracks No. 2-4, turn reel over and repeat.

3. It is suggested that you use a BULK TAPE ERASER for quick and complete erasing. This Eraser is available on the local market for about ¥ 7,000.

### 10. INSTANT STOP LEVER



1. To stop the tape momentarily while either recording or playing back, push the INSTANT STOP LEVER until it locks. To release it, lift up and let it return to its original position. Use of this lever allows you to obtain precise recording or playback levels while the RECORD, PLAYBACK SWITCH is in the RECORD or PLAY position.

### 11. TAPE SPEED CHANGE



3.75"/sec., SPEED

7.5"/sec., SPEED

15"/sec., SPEED

To change tape speed from 7.5" to 3.75" or from 3.75" to 7.5"/sec., slowly move the Speed Change Lever up (7.5"/sec.) or down (3.75"/sec.) while pushing the Lever to the right as indicated by the arrow mark. The Lever must be returned to its original position after moving up or down, as required.

**CAUTION:** Do not operate the Lever when the motor is not "ON".

The tape speed of 15"/sec. is available by using the Capstan "A" (15"/sec.) and a capstan shaft as illustrated in Figure 4. In this case, the Speed Change Knob should be adjusted for 7.5"/sec. This speed (15"/sec.) may be used for tape dubbing purpose, decreasing the dubbing time to half.

**NOTE:** Be sure to use the CAPSTAN "B" (50 cycle adapter) always for both speed (3.75"/sec., and 7.5"/sec.) in 50 CYCLE AREA.

### 12. POWER SOURCES SELECTOR SWITCH



The selection of 100 or 117 volts input depending on the Power Source available in your area can be done by using the POWER SELECTOR SWITCH.

1. Remove four Panel Mounting Screws, as illustrated.
2. The Power Selector Switch will be found above the amplifier section on both left

and right amplifiers in the RIGHTHAND CORNER of each.

3. Turn the Power Selector Switch to the left for 117 volts and to the right for 100 volts.

1. To make a precise monaural recording it is

### 13. MONITORING



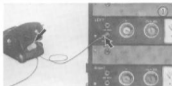
suggested that you use a MONITORING EARPHONE inserted into the SPEAKER JACK on left amplifier.

Use another EARPHONE connecting to the SPEAKER'S JACK on the right amplifier for stereo.

**NOTE:** The Akai's Monitor Earphone is available at only ¥ 400.



## 14. RECORDING THE TELEPHONE CONVERSATION



1. Whenever you receive a long distance Telephone call, or important business call, they may be recorded by using Aka's Telephone Pick up which is very simple to operate, as illustrated.

**NOTE:** Aka's Telephone Pick Up, is available at only ¥ 1,000.

## 15. RECORDING OR PLAYING WITH THE ENDLESS TAPE



1. To record unexpected events, commercial propoganda, educational exercises, etc. use the ENDLESS TAPE.

To place the tape on the Terecorder, pull the tape from the left "OUTLET" so that the loop is large enough to be threaded

around the head and capstan as illustrated. After using, the tape may be wound in the tape magazine by pulling the tape out slowly from the left "OUTLET" and allowing the tape to automatically wind on the magazine from the right "INLET".

**NOTE:** Aka's Endless Tape is available at only ¥ 1,800.

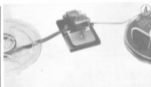
## 16. TAPE SPLICING AND EDITING :



1. Cut tape diagonally with an overlap so ends will line up. (Cutting tape on a diagonal will eliminate detection of splice on recording.)

2. Cover aligned ends with **SPLICING TAPE**. Press firmly, exerting pressure to secure ends evenly and securely.

3. Trim off excess **SPLICING TAPE**. (Cut into the recording tape backing very slightly as illustrated by dotted lines. This eliminates possibility of a sticky splice.)



4. The splicing of tape requires special skill, however, our specially designed Portable Splicer will do exactly what you want with maximum speed and minimum effort.

**NOTE:** Aka's Tape splicer is available at only ¥ 500.

## ACCESSORIES FOR TERCORDER MODEL M - 5



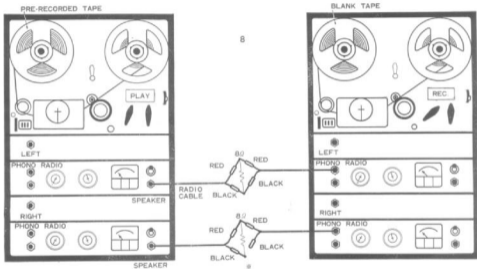
- (A) 5" reel with tape.
- (B) 5" reel.
- (C) Splicing tape.
- (D) Synchrod  
(movie synchronizer)
- (E) Speaker cables.  
(Supplied w/speaker)
- (F) High Fidelity Dynamic  
Microphones.
- ⊗ (G) Capstan "A" for dubbing  
use (15"/sec.)
- ⊗ (H) Capstan "B" (50 cycles  
adapter.)
- (I) Rubber caps for reels.
- (J) Case for all accessories.
- (K) Radio cables.

**Note:** ⊗ The Capstan "A" can be used to obtain 15"/sec., speed for tape dubbing.

⊗⊗ To operate this unit in 50 CYCLE AREA the Capstan "B" should always be used on the capstan shaft.

### DUBBING (TAPE TO TAPE)

#### 1. 4-TRACK MONAURAL AND 4-TRACK STEREO



Set the POINTER of the Track Selector Control for **STEREO** on both Terecorders M-5. In this position, it will reproduce and record Tracks No. 1 and 3 and Tracks No. 4 and 2 when the reel is turned over. It is advisable to adjust the tape speed for 15"/sec. on both machines, by using capstan "A".

**NOTE:** If hum develops, disconnect **BLACK CLIP** on the **RIGHT AMPLIFIER** as illustrated. But the 8 Ω resistor should always be retained.

## 2. 2-TRACK STEREO TO 4-TRACK STEREO

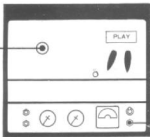
### TERECORDER MAIN UNIT

PRE-RECORDED TAPE



OUT PUT

### SIDE UNIT

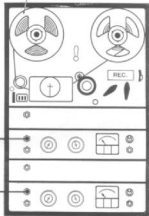


OUT PUT



### TERECORDER MODEL M-5

BLANK TAPE



Old type TWIN STEREO TAPES can be dubbed by connecting two machines (Terecorder Model M-5 and Terecorder Akai Stereo Model) as illustrated.

**NOTE:** If hum develops, disconnect BLACK CLIP on the Side Unit as illustrated. But the  $8\ \Omega$  resistor should always be retained.

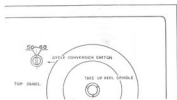
## CYCLE CONVERSION SWITCH

As you may know, the power frequency is different in some countries i. e. 50 cycles or 60 cycles.

Therefore, if this unit is pre-set for 60 cycle operation, to be used in 50 cycles area, the motor may cause vibration noise due to deficiency of the motor condenser's capacity.

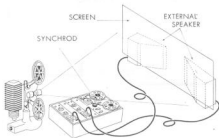
It is always requires to switch the Screwdriver slot on the cycle Conversion Switch to the proper cycle as illustrated in the Figure below.

**Note:** To operate this unit in 50 cycles area, be sure to use CAPSTAN "B" which is the 50 cycle adapter after adjusting the Cycle Conversion Switch to the proper frequency.



## SYNCHRONOUS SOUND WITH MOVING PICTURES

To synchronize sound with 8 $\frac{3}{4}$  motion pictures, remove CAPSTAN MOUNTING SCREW and screw in the "SYNCHROD" provided with your Akai Terecorder Model M - 5.



Place the projector so that the bottom edge of the light beam strikes the upper stripes on the "synchrod" for 16 frames p/sec. projection.

LUBRICATION CHART

LUBRICATION POINT	AMOUNT OF LUBRICANT	LUBRICANT	NOTES
Rewind Idler Bearing. Wind Take-up Idler Bearing.	2 drops on each idler bearing	§ 1	Remove top panel, remove idler retaining rings and composition washers; lift idlers slightly. Oil. Allow oil to soak into bearings and to flow down shaft before reassembly. Wipe off excess immediately.
Pinch Roller Bearing.	See note	§ 2	Remove metal cap and retaining screw. Remove roller. Apply liberal coating of lubricant to bearing bore, replace roller on shaft. When lubricating pinch roller, do not replace roller until capstan bearing has been oiled.
Motor.	See next page	§ 1	
Drive Capstan Shaft.	Saturate felt washer in chrome Retaining cup.	§ 1	Remove speed change capstan, flow oil between shaft and retaining cap through the aperture, clean shaft with alcohol-soaked cloth.
Roller on all levers and cams.	As noted.	§ 2	Apply a liberal film of lubricant to each roller surface as needed.

**LUBRICANTS:** § 1 - Light machine oil.  
§ 2 - Light machine grease.

Lubricate Terecorder every 3 months in heavy duty service, every 6 months in moderate service, or annually in light service.

**CAUTION:** Do not over-lubricate.

## a. MOTOR

For maximum service life and optimum performance, it is recommended that the drive motor of your Terecorder be removed and lubricated every 600 hrs. as illustrated below.



Motor Board

Motor Bushing  
Mounting Screw

Stepped Bushing



Motor Bushing



Washer



Oil Cap



Drive Motor

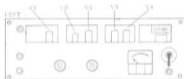
12  
R move Oil Cap as shown, saturate two felts in cup with the specified oil

## b. TUBE REPLACEMENT:

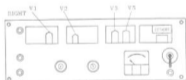
Tubes are accessible by removing the two screws which mount the gridded panel of the tube section on both left and right amplifiers and lifting the panel clear.

For malfunctions listed in the trouble shooting chart, replace the tube indicated in TUBE LOCATION CHART. Care must be taken when replacing tubes to avoid bending tube pins. Tubes and sockets have blank positions which must be aligned when tubes are re-inserted.

## TUBE LOCATION CHART



13-1



13-2

- V1 6267 (EF86) Low noise pentode.  
(Audio frequency use)
- V2 12AD7 High  $\mu$  dual triode.
- V3 6BQ5 Power output stage.
- V4 6AR5 Bias erase oscillator.
- V5 6X4 Rectifier tube.

### c. CLEANING HEADS:

In time, the record and erase heads will accumulate small quantities of the brownish-red oxide with which recording tape is coated. The oxide build-up may become severe enough to hold the tape away from the minute recording head gap or may magnetically short-circuit the gap. The effect is reduced high frequency response and, in several cases, reduced volume across the entire range of frequencies.

The heads must be cleaned periodically with a soft cotton swab soaked in rubbing alcohol. **IMPORTANT** make wider space for dash Heads should be cleaned whenever any sign of oxide deposit appears on the bright pole pieces.

### d. HEAD DE-MAGNETIZATION:

In the course of normal use, the steel pole pieces which form a part of the recording and play back heads become slightly magnetized.

The effect of the slight head magnetization is to partially erase the tape with high frequencies suffering most.

As a general rule, slightly magnetized heads can be detected by noticing loss of normal high frequency response which cannot be corrected through head alignment.

Severe magnetization, which may result if magnetized tools are used in the vicinity of the heads, will result in noise or considerable distortion of the sound of tapes being played, in addition to loss of high frequency response.

### e. HOW TO DE-MAGNETIZE:

Head de-magnetization can be accomplished by touching the head softly with the de-magnetizer and making several small circular motions over all head surface areas as well as the head housing, after removing the head cover.

### NOTE:

1. Never connect or disconnect the power supply to the head de-magnetizer in the vicinity of the head assembly.
2. Fast motion of the de-magnetizer in the vicinity of the head assembly must be avoided.
3. Be sure not to make any scratches on the head with the de-magnetizer.



## f. FUSE REPLACEMENT :

As a general rule, a blown fuse is an indication of incorrect power supply voltage and/or frequency or, an internal malfunction. Only in rare instances will a fuse fail when trouble is not present. If after replacement, the fuse is blown a second time, no further attempt at fuse replacement should be made; the unit should be referred to a competent service man for repair. The fuse is mounted in the FUSE HOLDER located on the front of the rear flange on the BASE PLATE of the M-5.

## CAUTION

REPLACE FUSE ONLY WITH A 1 AMPERE, 3 AG TYPE UNIT: Serious damage can result from incorrect fusing. Disconnect power and turn power switch off before replacing fuse.

## g. BRAKE ADJUSTMENTS AND REPAIRS :

In the event that tape spillage occurs when REWIND, FAST-FORWARD SWITCH is moved from either operational position to stop, adjustment or replacement of the BRAKE SHOE for the function in question, is indicated.

## NOTE :

Tape spillage occurring when reels of different diameters are used is not abnormal. The use of identical reels is necessary for best tape handling.

The BRAKE SHOES are mounted at the ends of the WIND and REWIND BRAKING BARS by means of screws and nuts. When the SWITCH is in stop position, the BRAKE SHOE, which halts tape travel after winding tape, is in contact with the serrated SPINDLE CLUTCH PLATE, below the FEED REEL SPINDLE and the other SHOE, contacts the braking idler between the TAKE-UP REEL SPINDLE and its CLUTCH PLATE. When the SHOES are mis-shaped and worn, they may be rotated a few degrees (Loosen mounting screws) to provide a new braking surface.

Only when the SHOES are completely worn will replacement be required. Be certain that the mounting screw is fully tightened after replacement or adjustment, as the SHOES must not be permitted to rotate.

### TROUBLE SHOOTING CHART

## SYMPTOM

## CAUSE

## CURE

A. Motor does not run, pilot lamp in VU meters (LEFT & RIGHT) do not light.	1. A. C. cord on Terecorder not properly connected. 2. Fuse blown. 3. Power cable disconnected.	Connect AC cord.  Replace fuse. Reconnect power cable.
B. Lamp in VU meters light up but no speaker hum exists even at full volume.	1. Speaker cable disconnected.  Defective tube.	Reconnect speaker cable.  Replace the defective tube.
C. No record or play but speaker hums at full volume.	1. Head cable disconnected.	Reconnect head cable
D. Hum recorded on the tape.	1. Mike cable disconnected	Reconnect mike cable.
E. Unit plays okay, recording distorted and poorly erased.	1. Defective bias oscillator tube.  2. Deposit of sediment on head.	Replace.  Clean the head gently with soft cotton swab.
F. Wow or flutter at 7 $\frac{1}{2}$ " / sec. or 3 $\frac{1}{4}$ " / sec.  Insufficient drive.	1. Defective drive idler.  2. Oil on drive capstan.  3. Defective main belt.  4. Defective motor or capacitor.	Replace.  Clean capstan.  Refer to serviceman.  Refer to serviceman.

SYMPTOM	CAUSE	CURE
G. Poor high frequency response or noisy playback.	1. Heads misaligned. Heads magnetized.	Align heads. Demagnetize heads.
H. Tape spills off when winding or rewinding.	1. Different reel size. 2. Brake rollers worn or out of adjustment.	Use reels of same diameter Replace or adjust brake shoes
I. Rewind not operating.	1. Broken or worn rewind idler wheel.	Replace rewind idler wheel

MEMO RANDUM

## HOW TO REMOVE THE TOP PANEL

When removal of the top panel is desired for repair or maintenance purpose, it can be done in accordance with following instruction.



14

1. Remove all screws, pinch roller, speed change knob and track selector control knob as illustrated in figure at left.
2. The metal cap on the pinch roller can be easily removed with an edged instrument, such as a knife.
3. All other screws should be removed with a CROSS SCREW DRIVER except A, D, F, K and L.
4. The Track Selector Control Knob can be removed by loosening the screw "D". Before removing the Knob, remember the position of the indicator, as the control must be replaced in the same position.
5. The Speed Change Knob can be removed by loosening the screw "F".

## "CAUTION"

No maintenance requiring the removal of any protective cover should be performed until power cord has been disconnected from the power line. High voltages are present within the units when connected to lines.

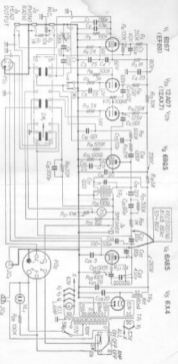
### 3. TAPE EDITING :

If only one track is recorded, the tape may be edited by cutting out unwanted portions or by joining selections from another sequence. Announcements may be inserted between selections, etc. Unused sections of tape can be spliced together for re-use. For very precise editing, turn REC-PLAY SWITCH to the "PLAY" position and push INSTANT STOP LEVER. Turn reel by hand to locate the word or sound. The tape is then cut or marked at this sound.

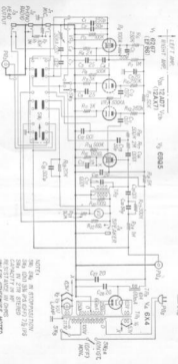
### NOTE

Only such corrective maintenance measures as are listed above should be attempted by the user. Any other service which may be required should only be performed by service personnel intimate with the mechanical and electrical requirements of magnetic recorders.

the TROUBLE - SHOOTING CHART, serves as a guide to procedures which are felt to be within the limits of the "user-performed" service. When any difficulty is encountered in the operation of the recorder, consult the chart, locate the symptom and proceed as directed. If the symptom persists after corrective action has been taken, consult your nearest dealer for service recommendation.



V1 6B6GT V2 6X4  
 (EF80) (12AX7) V3 6A8S V4 6B6GT V5 6A8S V6 6X4  
 (EF80) (12AX7) (6A8S) (6A8S) (6A8S) (6A8S) (6A8S) (6A8S)



V1 6B6GT V2 6X4  
 (EF80) (12AX7) V3 6A8S V4 6B6GT V5 6A8S V6 6X4  
 (EF80) (12AX7) (6A8S) (6A8S) (6A8S) (6A8S) (6A8S) (6A8S) (6A8S)

