

AKAI STEREO

just like being there !



INSTRUCTION BOOK

PERFORMANCE SPECIFICATIONS

FREQUENCY RESPONSE	:	30 to 13,000 CPS at 7.5"/sec. \pm 6 db.
S/N RATIO	:	More than 45 db.
TAPE SPEED	:	7.5 and 3.75 inches per second.
HEAD SET-UP	:	stereo (in-line) and monaural double track systems
EQUALIZATION	:	Correct equalization for playback of tapes recorded to the NARTB curve.
CHANNEL INSULATION	:	80 db at 1,000 cycles (-3 V. U.)
PLAYING TIME	:	30 minutes at 7.5"/sec for full track with 7" reel (1,200 ft.), 1 hour at 7.5"/sec for double track with 7" reel (1,200 ft.)
FAST FORWARD TIME	:	2.5 minutes.
REWIND TIME	:	2.5 minutes.
DISTORTION	:	Under 1.5%. (total harmonic.)
WOW & FLUTTER	:	Under 0.08%.
OUTPUT POWER	:	6 watts \times 2.
POWER REQUIREMENTS	:	AC 100 or 117 volts, 50 - 60 $\frac{c}{s}$
TUBE USED	:	6AU6T \times 2, 6AU6 \times 2, 6BQ5 \times 2, 6AR5 \times 2, 6X4 \times 2.
WEIGHT	:	34 pounds for main unit. 22 pounds for side unit.
DIMENSIONS	:	17" \times 14 $\frac{1}{2}$ " \times 10 $\frac{1}{2}$ " for main unit. 14 $\frac{1}{2}$ " \times 13" \times 10 $\frac{1}{2}$ " for side unit.

ACCESSORIES :

Two dynamic microphones, two 5" reels (one w/prerecorded demonstration tape), two reel holders, two service cables, motor bushing for 60 $\frac{c}{s}$ use, splicing tape, synchrod (movie synchronizer), and an instruction booklet.

FOREWORD

These operating and Service Instructions contain information to assist in the understanding, proper operating procedures, care and adjustments necessary for best operation of the Akai Stereo Tape Recorder.

1. GENERAL INSTRUCTION

Your Akai Stereo Recorder is a magnetic tape recorder which consists of two separated units; Terecorder (main unit) and half side playback & recorder (side unit) and it has complete stereo and monaural record/playback system.

The Terecorder has a tape transport mechanism equipped with dual track, stacked, record/playback head, and also embodied an amplifier which is well matched with the amplifier in half side playback & recorder.

The record/playback head consists of two independent stacked heads which connect to the two jacks on the left front grille marked "UPPER" and "LOWER". The top head is "UPPER" and the bottom head is "LOWER". The jacks are of the closed circuit type. By means of the closed circuit jacks the top head is normally connected to the amplifier in the Terecorder and the bottom head is normally connected to ground when the jacks are not in use. Under this condition, the Terecorder performs as a monaural recorder in both record and playback and since it uses only the top half of the tape the stereo head and single amplifier arrangement provides economy and at the same time, versatility.

If stereo record or playback is desired, it can be made by associating the side unit to the main unit.

By inserting a plug into the jack marked "LOWER", the head is lifted from ground and connected to the side unit.

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

1. The symptoms listed below do not necessarily indicate mechanical failure of your tape recorder. 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. Stained recording head. This will prevent prerecorded material from being erased completely.

B. Dust on the recoding 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 ~~lustrous~~^{dully} side of the tape lies closest to the heads.

D. A. C. power voltage of less than 100V or 117V

(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.

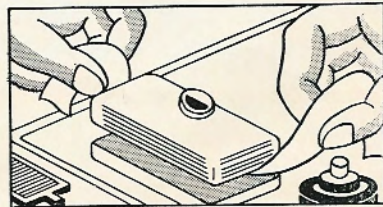
B. MICROPHONE PLUGS.

NOTE :

(1) Before operating your recorder, be sure to clean the surface of the head as illustrated in right figure.

(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) Lubricate the Terecorder after every 600 hours of use, an oil aperture is located at the base of the CAPSTAN SHAFT. And in regard to other lubrication points, refer to LUBRICATION CHART.



2. The following notes are provided for convenience of the owner.
- a. If any trouble develops, please take your machine to the authorized agent.
 - b. Your Akai Stereo Tape Recorder requires constant voltage for optimum performance.
 - c. The standard 1,200 feet length of tape on 7" reel plays 32 minutes at 7.5"/sec. speed.
 - d. Operating panel will become warm after continued use, however, it can be operated continuously unless the ambient temperature rises above 40°C.
 - e. 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.
 - f. 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.

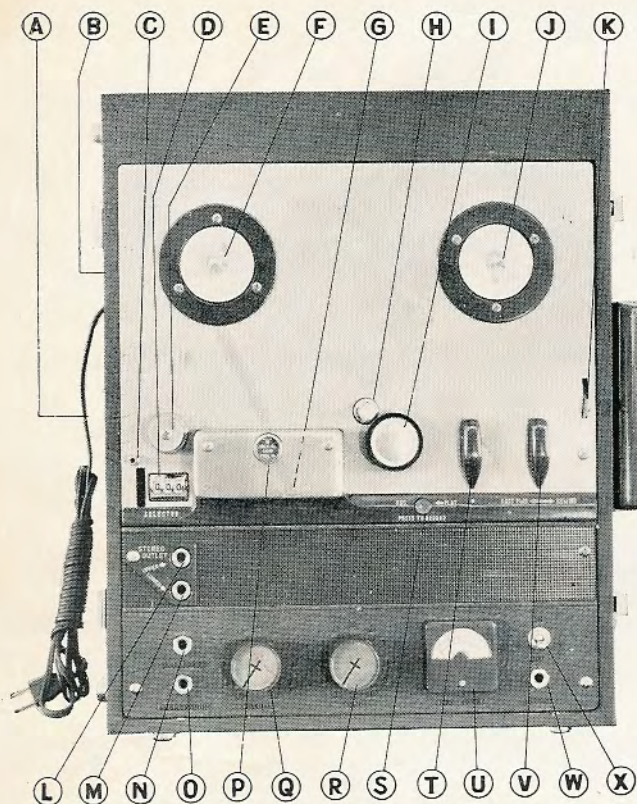
WARRANTY

The "Akai Stereo Recorder" 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 Stereo Recorder", and your name and address and mail the card to us.

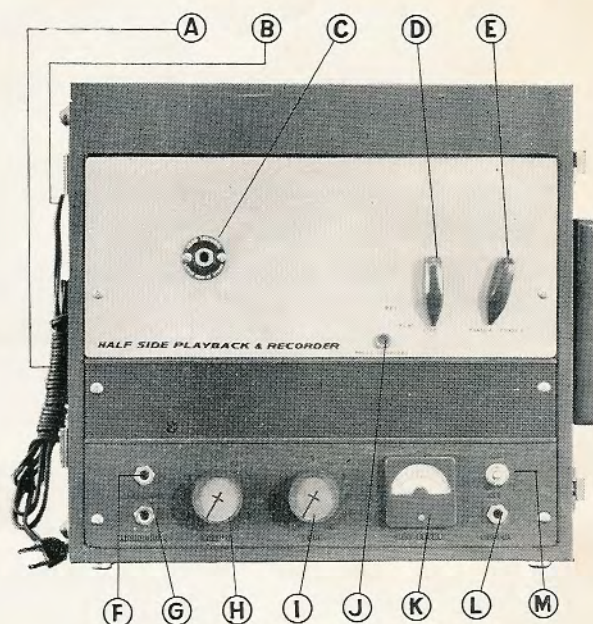
Under this warranty, Akai Trading Company agrees to replace any parts which, when examined at the Service Department of our company or our authorized agents, shall prove to have been defective. The warranty does not cover recording tape or reels; and it does not cover any recorder which has been subject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

INTRODUCING THE AKAI STEREO TAPE RECORDER



TERECORDER
(main unit)

- A** - POWER CABLE
- B** - COMPARTMENT
- C** - CAPSTAN HOLDER
- D** - SELECTOR (Index counter)
- E** - TAPE GUIDE
- F** - SUPPLY REEL TABLE
- G** - STEREO HEADASSEMBLY
- H** - CAPSTAN
- I** - PINCH ROLLER
- J** - TAKE-UP REEL TABLE
- K** - INSTANT STOP LEVER
- L** - STEREO OUTLET (upper)
- M** - STEREO OUTLET (lower)
- N** - LINE INPUT
- O** - MICROPHONE INPUT
- P** - SHIFT KNOB
- Q** - VOLUME CONTROL (record & Play)
- R** - TONE CONTROL (play only)
- S** - RECORD SAFETY BUTTON
- T** - RECORD-PLAY SWITCH
- U** - VU METER
- V** - REWIND, FAST-FORWARD SWITCH
- W** - OUTPUT CONNECTOR
- X** - POWER SWITCH



**HALF SIDE PLAYBACK &
RECORDER** (side unit)

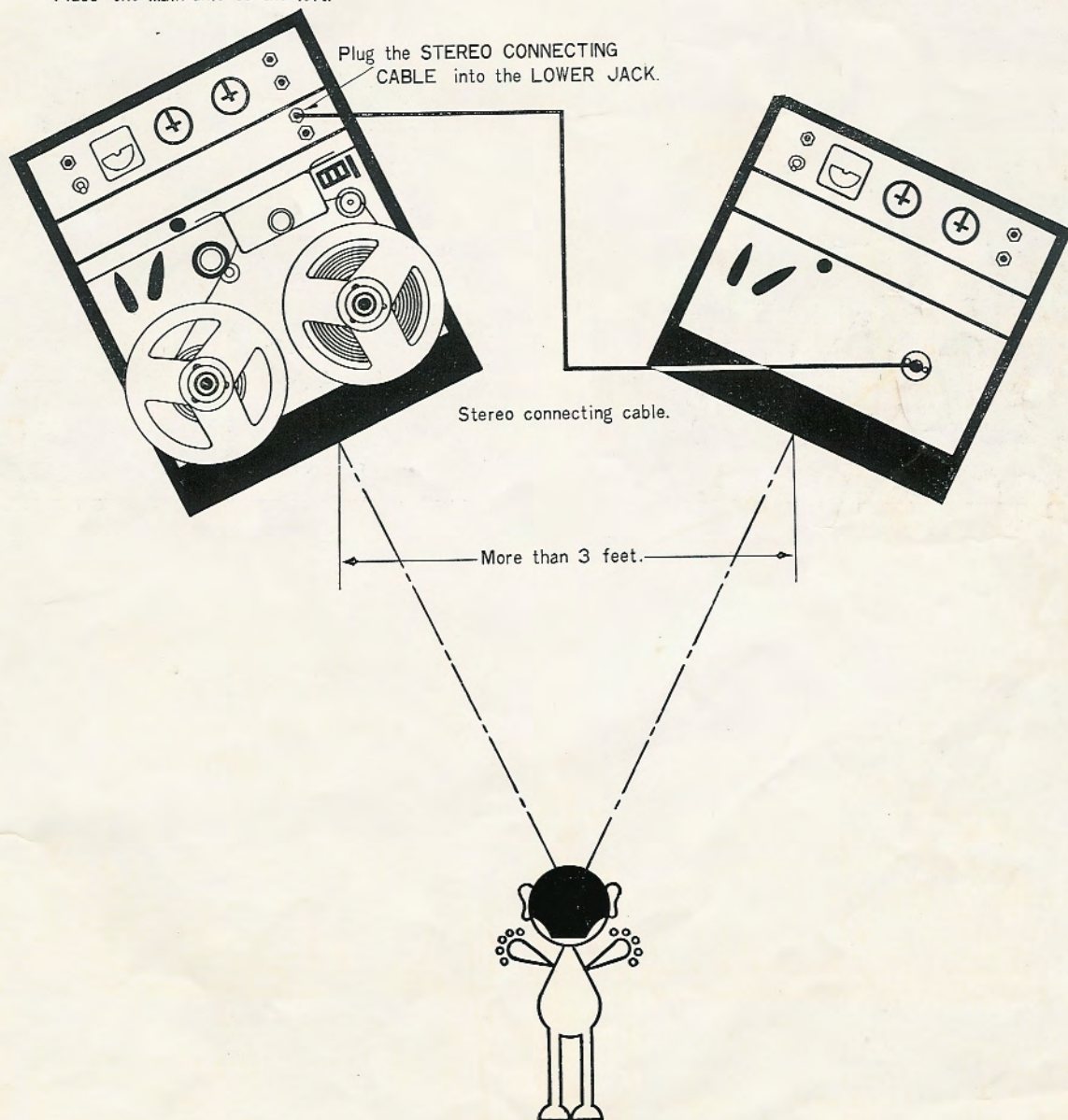
- A** - POWER CABLE
- B** - COMPARTMENT
- C** - HEAD TERMINAL
- D** - RECORD-PLAY SWITCH
- E** - PHASING SWITCH
- F** - LINE INPUT
- G** - MICROPHONE INPUT
- H** - VOLUME CONTROL
- I** - TONE CONTROL
- J** - RECORD SAFETY BUTTON
- K** - VU METER
- L** - OUTPUT CONNECTOR
- M** - POWER SWITCH

OPERATING INSTRUCTIONS FOR STEREOPHONIC PLAY-BACK

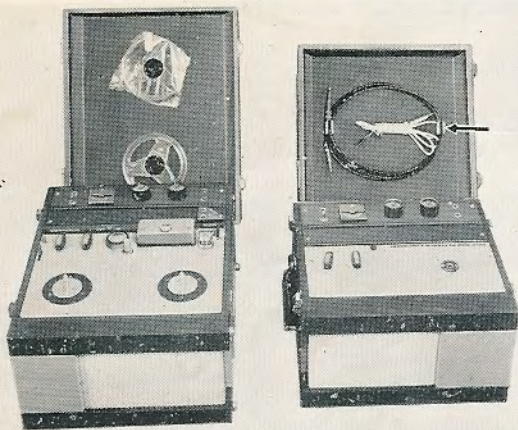
FOR BEST PLAY-BACK RESULTS, SET UP YOUR AKAI STEREO TAPE RECORDER AS FOLLOWS :

Place the main unit to the left.

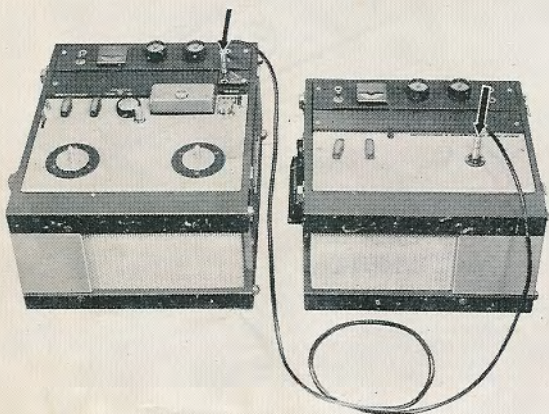
Place the side unit to the right.



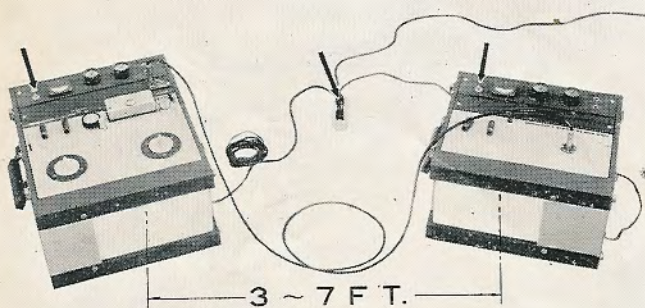
OPERATING INSTRUCTIONS FOR STEREOPHONIC PLAY-BACK



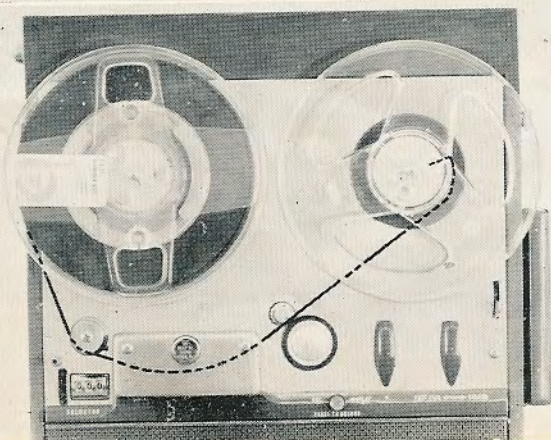
Remove the STEREO CONNECTING CABLE from the cover of the side unit.



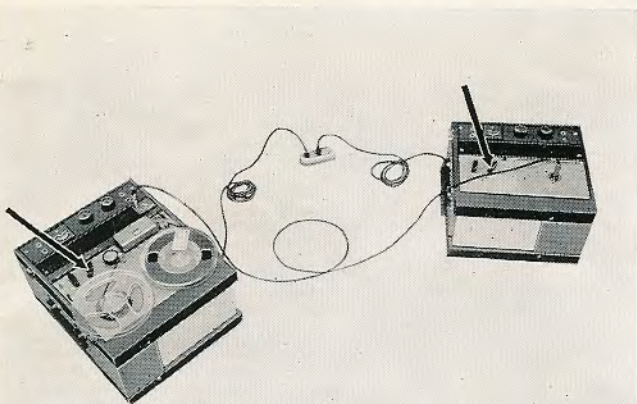
Plug in one end of the stereo connecting cable to the HEAD TERMINAL of the side unit, and the other end to the LOWER JACK on the main unit.



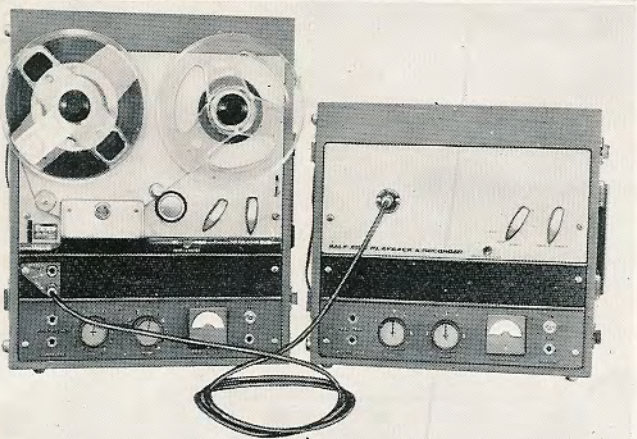
Turn the switch "ON" after plugging the power cord into an A. C. outlet. The two units should be placed from 3 TO 7 FEET APART and at an angle, as illustrated.



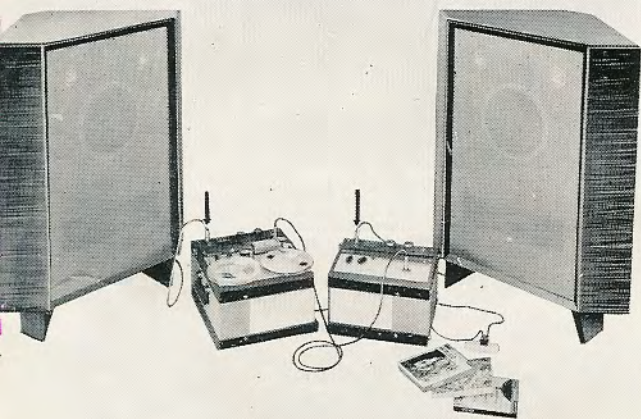
Thread the tape as illustrated.



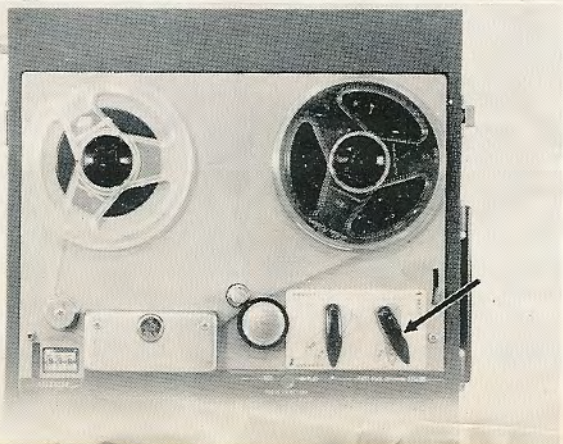
Turn the RECORD-PLAYBACK SWITCH of the side unit to the "PLAY" position and set both VOLUME AND TONE CONTROLS in midway. Follow the same procedure with the main unit.



The Akai Stereo Tape Recorder may be operated in either a HORIZONTAL or VERTICAL position with reel holders. Whichever way the machine is used, remember to space the two units from 3 TO 7 FEET from each other.



Superb reproduction can be obtained by operating two large Hi-Fi speakers directly from the OUT PUT JACKS which are provided on both main and side units. The attachment cords supplied may be used for this purpose. Nominal output impedance of both main and side units is 8 ohms. Speakers with impedance of 4, 8 or 16 ohms may be used with only slight loss in power. Frequency response is unaffected.

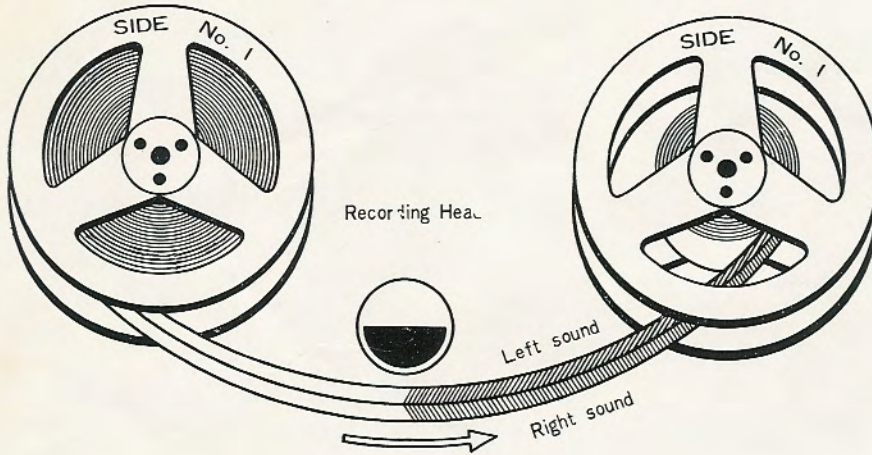


To rewind, set both volume control knob to "0," then turn the "REWIND, FAST-FORWARD SWITCH" to the left.

OPERATING INSTRUCTIONS FOR STEREOPHONIC RECORDING

Supply reel with recording tape.

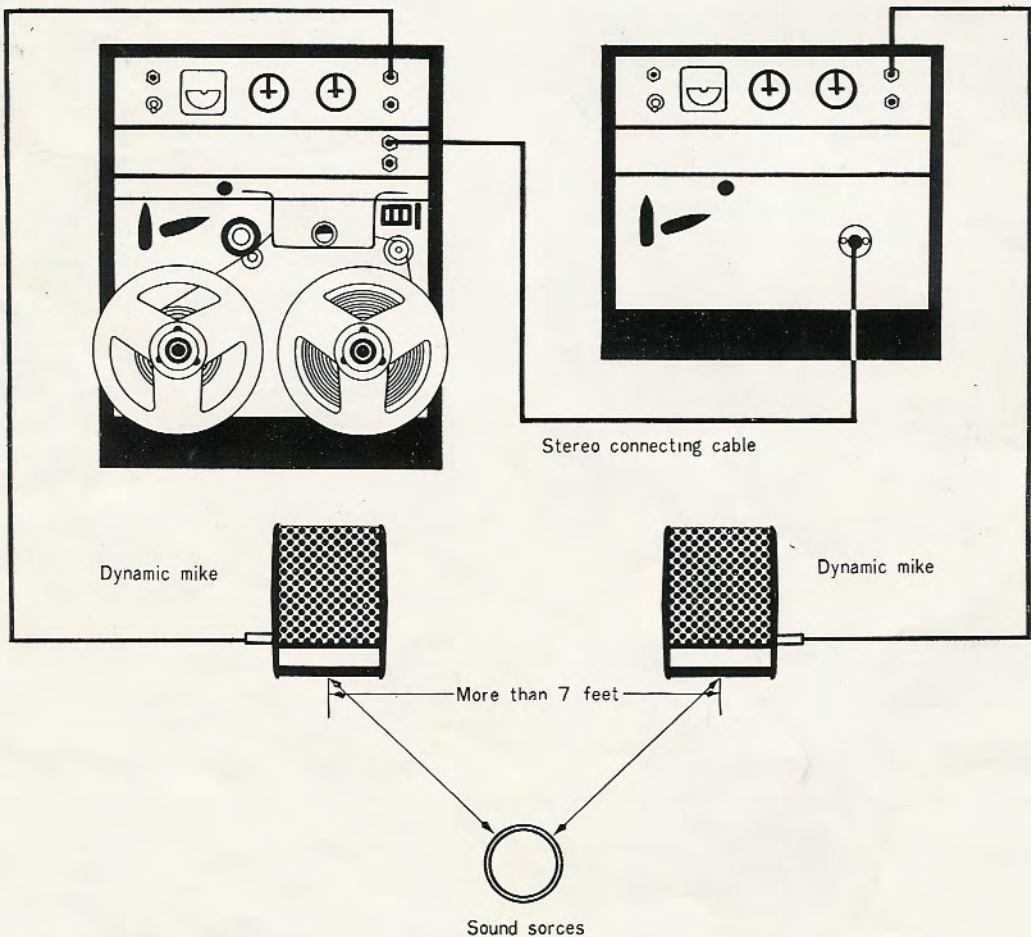
Empty take-up reel



It is standard to record the left sound on the "UPPER HALF TRACK" and right sound on the "LOWER HALF TRACK" in the case of stereophonic recording.

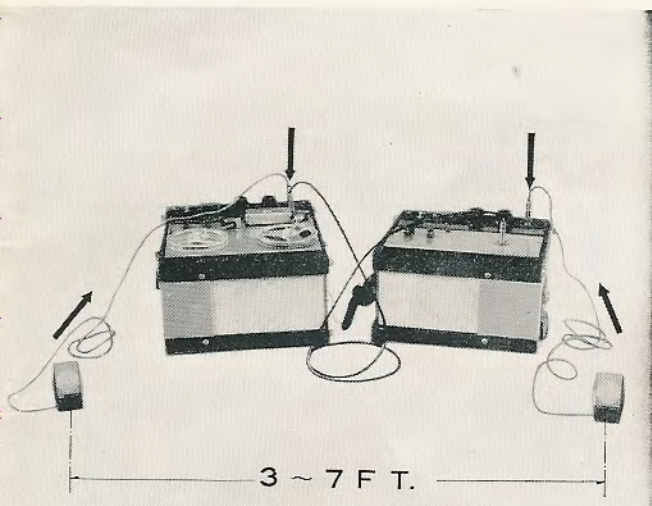
Terecorder (main unit)

Side unit



Note: Connect the LEFT SIDE MIKE with the MAIN UNIT (microphone jack) and the RIGHT SIDE MIKE with the SIDE UNIT (microphone jack).

OPERATING INSTRUCTIONS FOR STEREOPHONIC RECORDING

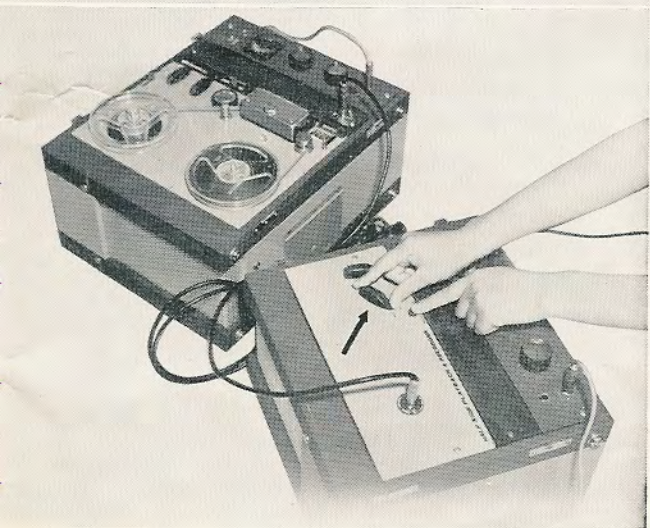


Connect the microphone on the left to the main unit; the righthand mike to the side unit. Remember that "ROOM ACOUSTIC VARY" in general, however, best results are obtained when the two mikes are spaced from 3 to 7 feet apart.

Thread the tape and plug in the Stereo Connecting Cable as indicated under "OPERATING INSTRUCTIONS FOR PLAY-BACK."



Before recording, turn the SHIFT KNOB on the top of the head assembly counter-clockwise, to the "DOWN" (Full track) position.

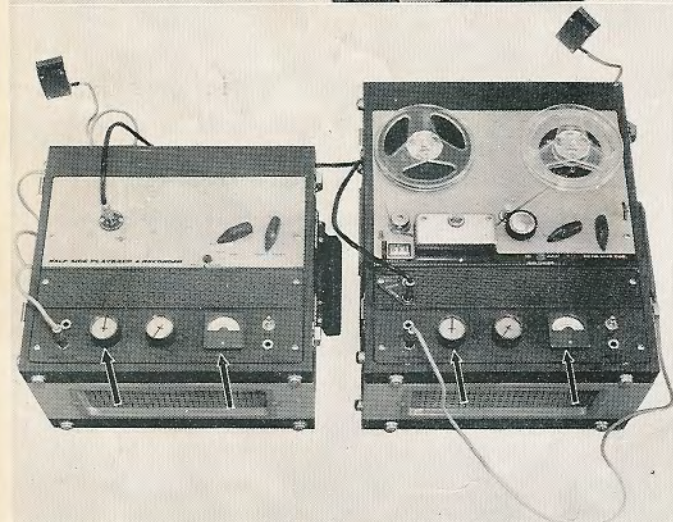


Depress the RECORD SAFETY BUTTON on the side unit, then turn the RECORD-PLAY SWITCH to "REC" position, passing through the "PLAY" position.

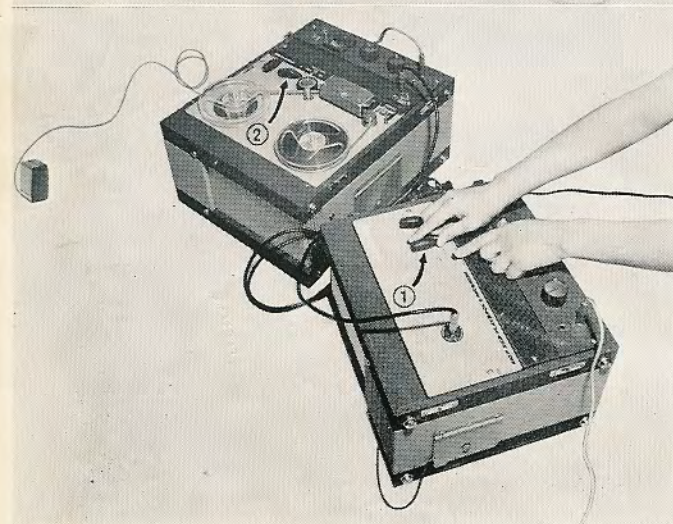
OPERATING INSTRUCTIONS FOR STEREOPHONIC RECORDING



Depress the RECORD SAFETY BUTTON of the main unit, then turn the RECORD-PLAY SWITCH to "REC" position, passing through the "PLAY" position.



Adjust both VOLUME CONTROL KNOBS to normal recording level, while watching the VU METERS.



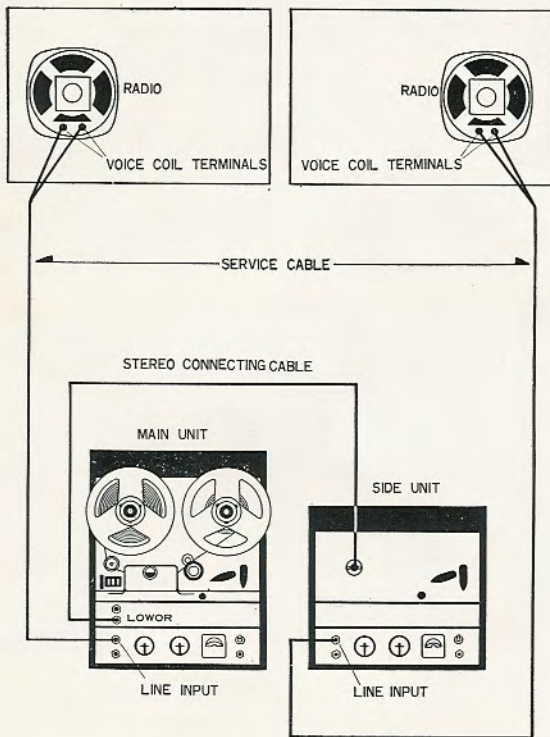
After recording, turn the "RECORD - PLAY" switches back to the stop position first on the side unit, then on the main unit.

Note :

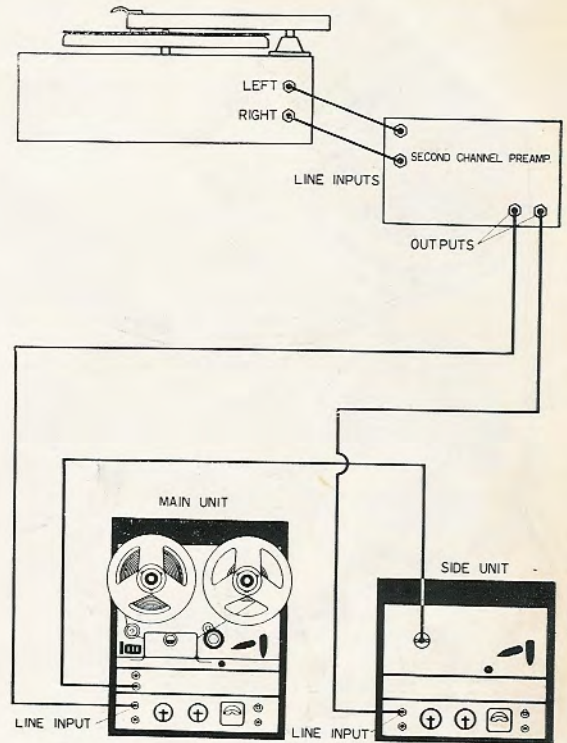
After being finished the all recording, depress the "RECORD SAFETY BUTTON" and then turn the RECORD-PLAY SWITCH back to the position of STOP thus the noises due to residual flux to be recorded will be prevented.

OTHER USES FOR THE AKAI STEREO TAPE RECORDER

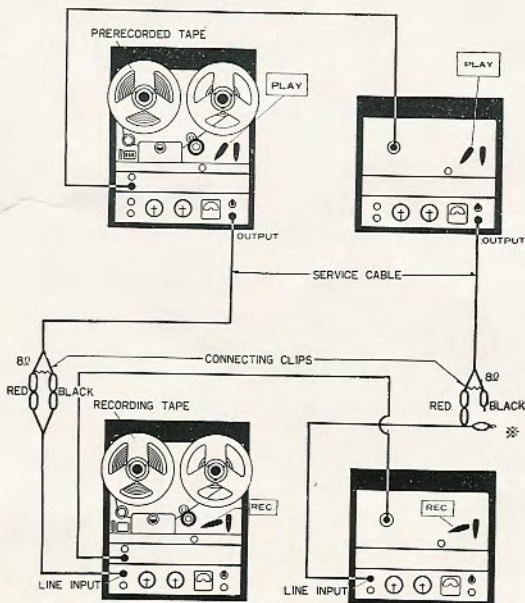
1. RECORDING BROADCASTS



2. RECORDING FROM STEREO DISCS



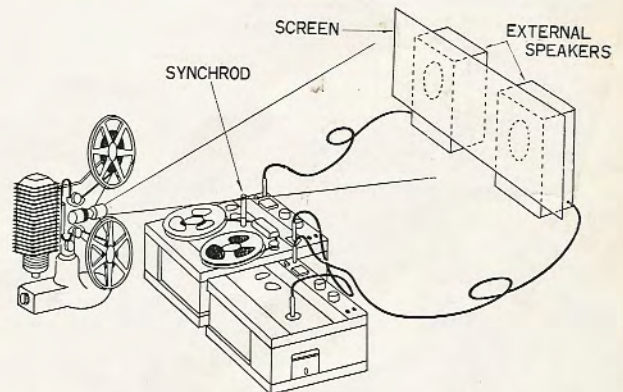
3. DUBBING (tape to tape)



Note: * If hum develops, disconnect black clip on side unit.

4. SYNCHRONOUS SOUND WITH MOVING PICTURES

To synchronize sound with $8\frac{m}{m}$ or $16\frac{m}{m}$ motion pictures, remove CAPSTAN MOUNTING SCREW and screw in the "SYNCHROD" provided with your Akai stereo Recorder.

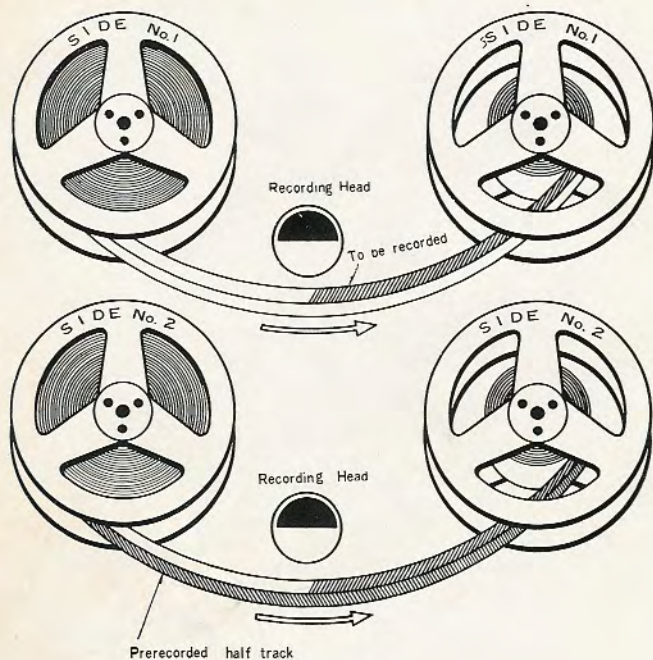


Place the projector so that the lower edge of the light beam strikes the upper stripes on the "synchrod" for $8\frac{m}{m}$ projection and the lower stripes for $16\frac{m}{m}$ projection.

OPERATING INSTRUCTIONS FOR MONAURAL RECORDING

Supply reel
w/recording tape

Take-up reel



To change from FULL TRACK to HALF TRACK recording, turn the SHIFT KNOB on the top of the head to "UP" Position
DO NOT USE THE SIDE UNIT.

Thread the tape as illustrated.

When one track has been fully recorded, reverse the supply and take-up reels, without rewinding, in order to record on the remaining track.



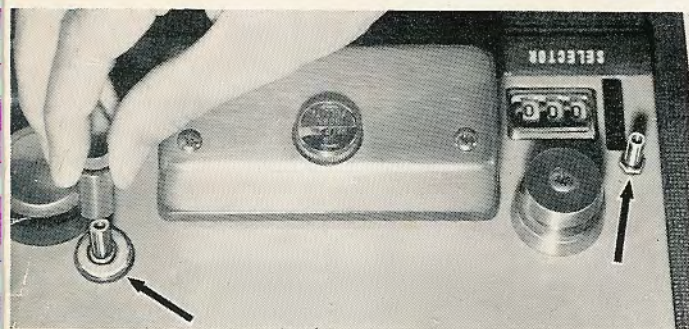
1. Set the SHIFT KNOB in "UP" position by turning the knob clockwise.



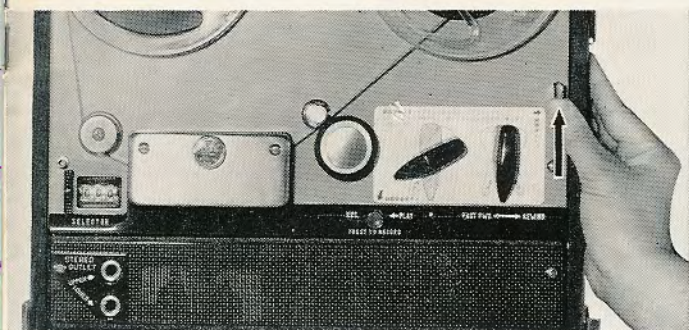
3. Adjust VOLUME CONTROL KNOB to keep normal level, while watching VU METER.



2. Depress RECORD SAFETY BUTTON of the main unit then turn RECORD-PLAY SWITCH to "REC" position.

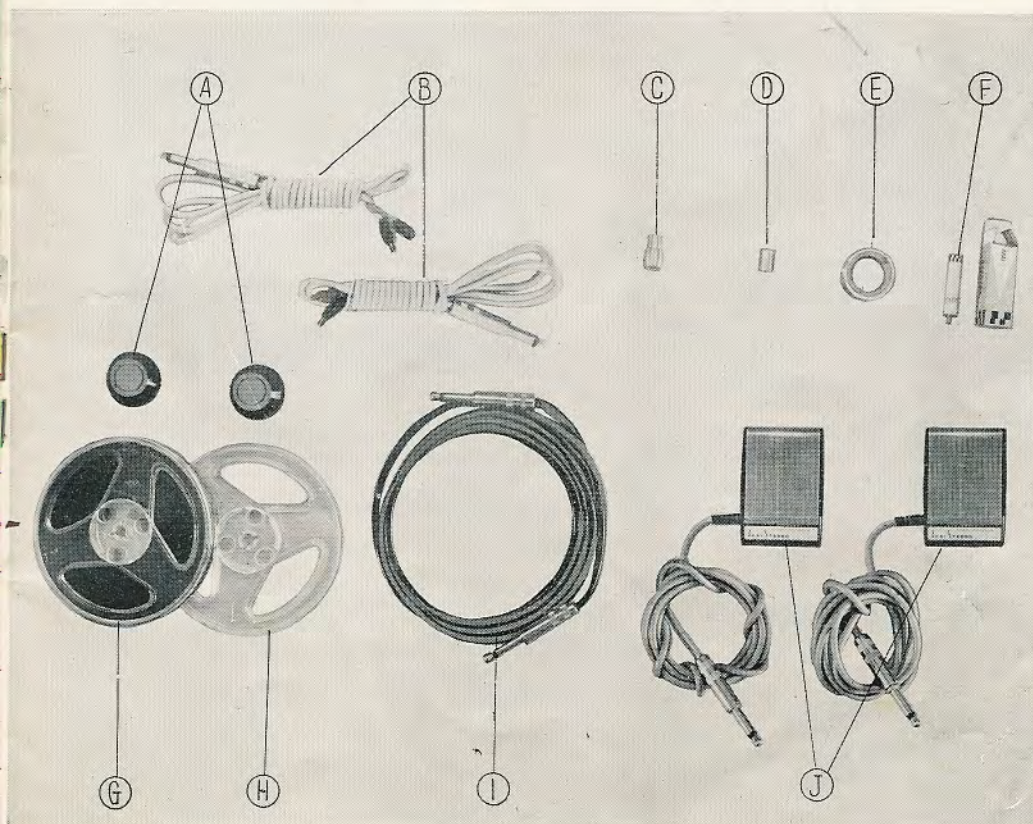


To record at 3.75"/sec., remove the CAPSTAN. A CAPSTAN HOLDER is located next to the tape guide.



To stop the tape momentarily while either recording or playing back, push the INSTANT STOP LEVER, use of this lever permits you to eliminate recording unwanted portion of radio programs and to obtain precise recording levels while the "RECORD - PLAY SWITCH" is in the record position.

ACCESSORIES

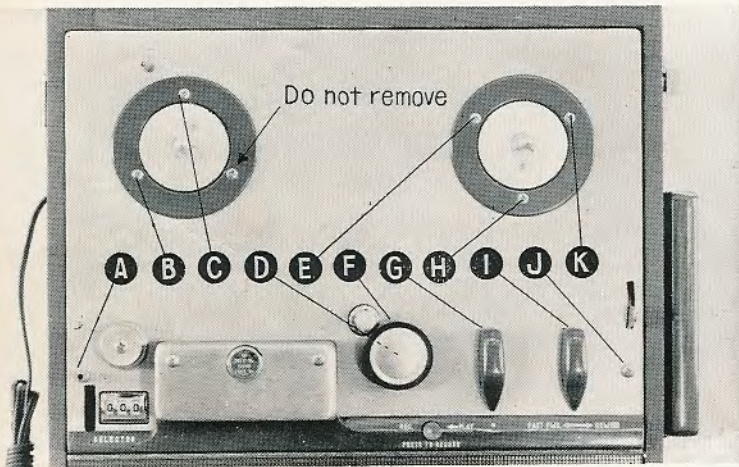


- A. Reel holder (2)
- B. Service cable (2)
- C. Motor bushing for 60 cycle use
- *D. Capstan for 60 cycle
- E. Splicing tape
- F. "Synchrod" for motion picture
- G. 5" reel (w/demonstration tape)
- H. 5" take-up reel
- I. Stereo Connecting cable
- J. Dynamic microphone (2)

Note: * This capstan is used at 7.5"/sec speed only (with 60 cycle), without changing the motor bushing for 60 cycle.

INSTRUCTIONS FOR 60 CYCLE CONVERSION

The AKAI STEREO TAPE RECORDER is adjusted for 50 cycle, however, a complete 60 cycle conversion kit is provided with each unit. If the Terecorder is to be used at an operating speed of 7.5"/sec. only, the SMALL CAPSTAN is used. Should 3.75"/sec. speed be desired, the MOTER BUSHING originally installed at the factory should be replaced with the smaller diameter MOTOR BUSHING supplied in one of the accessories envelopes.

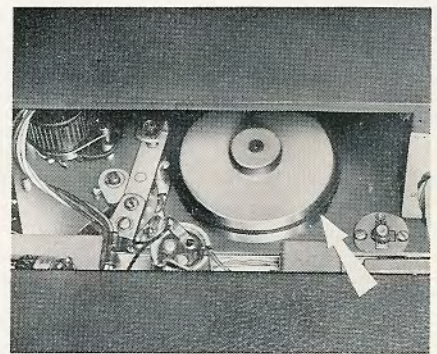
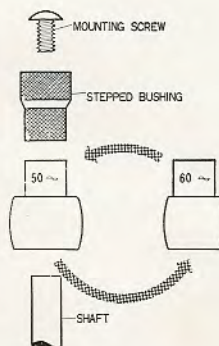


1. Take off the steel panel of the Terecorder by removing all screws as shown in the left figure from letters A to K.

Note :

The metal cap on the pinch roller can be easily removed with an edged instrument, such as a knife.

All other screws should be removed with a cross screw driver except A, G and I.



2. Take off the factory installed BUSHING by removing the mounting screw at center of the BUSHING HOLDER, while holding the stepped bushing.
3. Pull off the stepped bushing then the BUSHING and replace with the 60 cycle conversion BUSHING (which has a smaller diameter than the 50 cycle BUSHING) and then replace the stepped BUSHING.
4. Turn the Terecorder upside down, remove the ventilator panel, and check to see that the drive belt has not slipped off during the conversion operation.

OPERATIONAL INFORMATION

1. STEREO OUTLET (UPPER)

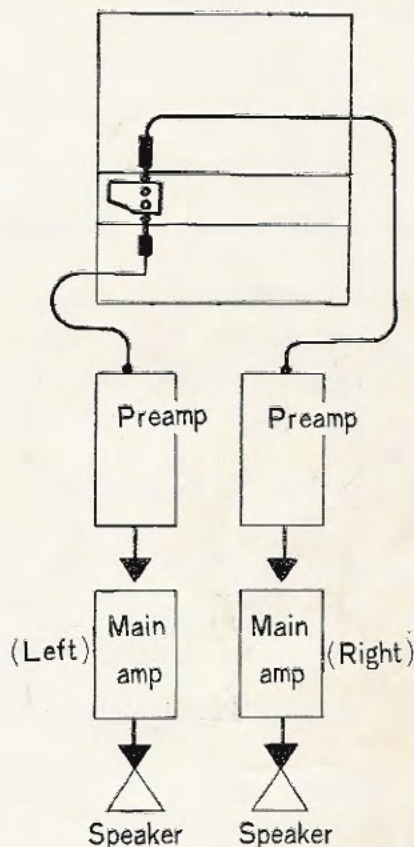
The STEREO OUTLET JACK is directly connected with the UPPER RECORD/PLAY BACK HEAD and with the main unit amplifier. When a plug is inserted firmly into the jack up to its neck, the main unit amplifier will automatically be disconnected. This can be used with an external PREAMPLIFIER as illustrated in the right figure.

Note: The output power of this jack is 1mv.

2. STEREO OUTLET (LOWER)

The STEREO OUTLET (LOWER) is directly connected with the lower RECORD/PLAYBACK HEAD and is used to connect the HEAD TERMINAL on the side unit for STEREPHONIC recording and playback. And jack is also used with an external PREAMPLIFIER as illustrated in the right figure.

Note: The output power of this jack is 1mv.



3. LINE INPUT (input power voltage, 0.5 - 1.5 V r. m. s.)

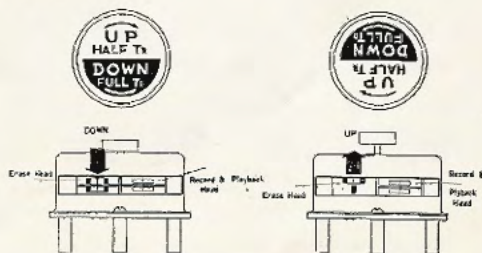
The LINE INPUT JACK is used when recording from sources, such as RADIO, TV and PHONO. To record from a radio, connect the Recorders directly to the SECONDARY WINDINGS OF OUTPUT TRANSFORMER (voice coil) or to the CENTER TAP OF VOLUME. To record from PHONOGRAPH, make a direct connection with the phonograph PICK-UP in the case of CRYSTAL PICK-UP is used.

4. MICROPHONE INPUT

The jack is used when microphone is used for recording.

5. SHIFT KNOB

This SHIFT KNOB is used to select either the "DOWN" (full track record/playback) or "UP" (half track record/playback) as illustrated in the right figure. Selection should be made prior to operation of the Recorder.



OPERATIONAL INFORMATIONS

6. VOLUME CONTROL

The VOLUME CONTROL both on the MAIN & SIDE UNITS control the recording sound level when recording and the playback sound level from the speakers when playing tapes.

Turning the control clockwise increases volume for either record or playback.

7. TONE CONTROL

The TONE CONTROL both on the MAIN & SIDE UNITS, function in the "PLAY" position only and have no effect when recording. When playing, turning the control clockwise from position 5 will increase TREBLE RESPONSE. Turning the control counterclockwise from position 5 will increase the BASS RESPONSE.

8. RECORD SAFETY BUTTON

The RECORD SAFETY BUTTON on both main and side units is located at the lower left side of the record-playback switch prior to recording, depress the BUTTON then turn record-play switch to "REC" position, passing through the "PLAY" position.

9. RECORD-PLAY SWITCH

The lefthand bar knob on the transport mechanism of main unit and on the switch panel of side units is the RECORD - PLAYBACK SWITCH and has three positions: STOP, PLAY and RECORD (rotating clockwise). This switch cannot be placed in the RECORD position until the RECORD SAFETY BUTTON is depressed; accidental erasure of recorded material is thus prevented.

10. VU METER

This METER is provided on both the main and side units for determination of correct volume control setting when recording. Like most professional Recording level meters, it is calibrated in standard "volume unit," or "VU," of one decibel.

11. REWIND, FAST-FORWARD SWITCH

This is a three-position control with a STOP position in the center, FAST-FORWARD to the left and REWIND to the right. The REWIND, FAST-FORWARD and the RECORD-PLAY SWITCHES are interlocked so the one must be in STOP position before the other can be operated.

12. OUTPUT CONNECTOR (8 chms)

External speakers can be plugged on both main and side units, in order to cover a LARGER ROOM AREA or for STILL BETTER TONE. When the plug from the external large speakers

OPERATIONAL INFORMATION

are inserted, the internal speakers of both main and side units are automatically disconnected and only the external speakers are operative. If the main and side units are connected to high fidelity systems, use SHIELDED CORD to connect the OUTPUT JACKS with the TV or TAPE INPUT (high level input) of the external amplifiers. Earphones with an impedance of at least 2,000 ohms may be connected to this jack while recording to monitor the recorded material. A one-volt input power amplifier is also connected.

13. POWER SWITCH

When the POWER CABLE is plugged into an A. C. outlet, turning on the power switch, supplies the power to the amplifier and to the motor.

14. INSTANT STOP LEVER

While recording, pushing the STOP LEVER will instantly stop the tape, thus unwanted breaks in the radio program or from other sound sources can be prevented. The STOP LEVER also permits the recording level to be set precisely while the RECORD-PLAY SWITCH is turned to the "REC" position on both the main and side units.

15. TAKE-UP REEL TABLE

Place an empty take-up reel on this table, in order to take up the tape from the supply reel.

16. PINCH ROLLER

This PINCH ROLLER is provided in order to forward the tape to the take-up reel at a constant speed.

17. CAPSTAN

This CAPSTAN forwards the tape to the take-up reel at a standard speed (7.5"/sec.). When the slower speed (3.75"/sec.) is desired, remove the mounting screw by turning it counterclockwise, then pull off the CAPSTAN and place it on the CAPSTAN HOLDER.

18. STEREO HEAD ASSEMBLY

This is the most exclusive head we have ever produced in our factory. It has a frequency range of 40 - 12,000 $\frac{c}{s}$ \pm 2 db. and far less cross talk (80 db at 1,000 $\frac{c}{s}$ 0 VU). The erase heads can be moved UP or DOWN by turning the SHIFT KNOB, thus allowing you to make FULL or HALF TRACK recordings.

19. SUPPLY REEL TABLE

Recorded or unrecorded tape is placed on this TABLE.

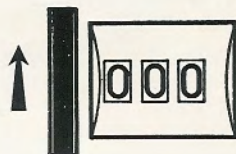
OPERATIONAL INFORMATION

20. TAPE GUIDE

The TAPE GUIDE located just left of the recording head insures that the tape always maintain a constant tension and proper angle while running from the supply reel to the take-up reel through the surface of the recording heads.

21. SELECTOR (INDEX COUNTER)

This INDEX COUNTER indicates each full turn of the supply reel. It is used to provide reference numbers for locating a selecting in a given tape, thus enabling you to select any desired part of the tape. All the numbers on the INDEX COUNTER should be set to ZEROS before operation.



22. CAPSTAN HOLDER

Use the CAPSTAN HOLDER to avoid misplacing the capstan when the slow or long play speed (3.75"/sec.) is used.

23. COMPARTMENT

COMPARTMENT is provided on both main and side units for the accessories such as microphone and power cord, etc.

24. POWER CABLE

Plugging this POWER CABLE into an A. C. outlet will supply the necessary power to the amplifier and to the motor.

25. PHASING SWITCH

This PHASING SWITCH is used in STEREOPHONIC REPRODUCTION only. To determine which switch position provides proper speaking phasing: play a full-track tape of music or voice (or listen to the voice announcements on a full-track test tape) and after flipping the switch several times, leave it in the position which results in the best illusion of a single soundsource located exactly midway between the two speakers.

26. HEAD TERMINAL

This HEAD TERMINAL is located on the SWITCH BLOCK PANEL of the side unit and is used to connect the side unit with the main unit by using the Stereo Connecting Cable. Insert one end of the Stereo Connecting Cable into the HEAD TERMINAL and the other into the LOWER JACK of STEREO OUTLET on the main unit.

1. GENERAL SERVICE INSTRUCTIONS.

Before shipping, each Akai Tape Recorder has been carefully tested and inspected to assure a high degree of performance and satisfaction. However, in order to maintain its standards of performance, it requires a small but important amount of attention.

2. OWNER'S MAINTENANCE.

As with an automobile or any other complex machinery, a certain amount of maintenance must be performed by the user if maximum service life and optimum performance is to be obtained from the unit. The requirements for preventive maintenance described herein are in this category.

a. LUBRICATION:

Each point identified on the LUBRICATION CHART should be lubricated exactly as specified.

LUBRICATION CHART

LUBRICATION POINT	AMOUNT OF LUBRICANT	LUBRICANT	NOTES
Supply and Take-up Reel Spindle Shafts.	2 drops on each shaft.	# 1	Lubricate from bottom of transport mechanism. Depress Springs, flow oil down shaft.
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 Cup. Retaining	# 1	Remove speed change capstan, flow oil between shaft and retaining cap through an aperture, clean shaft with alcoholsoaked cloth.

LUBRICATION POINT	AMOUNT OF LUBRICANT	LUBRICANT	NOTES
Roller on all levers and cams.	Noted.	# 2	Apply a liberal film of lubricant to each roller surface only as needed.

LUBRICANTS: # 1 - Light machine oil.

2 - Light machine grease.

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

CAUTION: Do not lubricate with lubricants other than those specified. Do not over-lubricate.

a-a. MOTOR

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



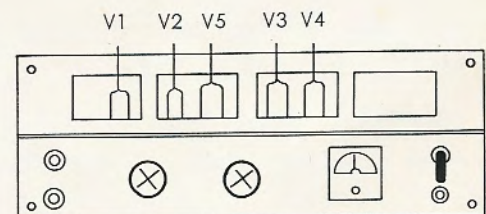
b. TUBE REPLACEMENT:

Tubes are accessible by removing the two screws which mount the gridded panel of the tube section on both the main end side units and lifting 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.

Note: This tube location chart is common in both main and side unit amplifiers.



- V1 6AU6T Preamplifier.
(selected for low noise)
- V2 6AU6 Intermediate amp.
- 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 (.00015") 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—Heads should be cleaned whenever any sign of oxide deposit appears on the bright pole pieces.

d. HEAD DEMAGNETIZATION :

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

The effect of the slight magnetization is to partially erase the tape with high frequencies suffering most. As a general rule, heads which are slightly magnetized can be detected by noticing any 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. HEAD ALIGNMENT :

In normal use, the record and playback heads may become mis-aligned with a resultant loss of high frequency response.

e-a. Alignment with standard alignment tape.

Thread tape on machine. Connect an 0-5 volt AC voltmeter to standard phone plug, insert in the OUTPUT JACK of the Terecorder. Set the TONE CONTROL of the Terecorder at full maximum. Remove the two screws which hold the HEAD COVER in position and insert a screwdriver with a $\frac{1}{8}$ " blade through the aperture in the head shield to the ALIGNMENT SCREW. Start machine in "playback" with full volume, and carefully rotate alignment screw slightly in either direction until the 10,000 cycle signal produces the highest meter reading. The heads are now aligned.

e-b Alignment with commercial music tape.

This method, while by no means as accurate as that in the preceding paragraph, will give acceptable results in emergencies. Simply play the tape at normal listening level and, with the HEAD COVER removed, rotate ALIGNMENT SCREW for maximum clarity of high voiced instruments such as flutes or violins.

NOTE :

The gaps of the two half track heads are aligned with one another so that it is necessary to align only one head.

NOTE :

Recording made with head mis-aligned will play back correctly until heads are re-aligned, such tapes will be reproduced with a decided loss of high frequency respons.

Ideally, the plane, or azimuth, of the gap in the recording head must be at a perfect right angle to the plane of tape travel. An adjustment screw is provided which will tilt the head several degrees to either side of perpendicular. To align the head, it is essential that a tape recorded on a machine with perfectly aligned heads be used as the alignment tape. A special alignment tape, with a 10,000 cycle recorded signal especially for head alignment, can be obtained from most radio parts jobbers or from your dealer. In the absence of such a tape, a reasonable job of head alignment may be done by playing any commercial pre-recorded tape.

CAUTION

Be certain that heads are demagnetized in accordance with paragraph on page 22 before proceeding.

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 no trouble is 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 FUSE HOLDER which is located on the front of the rear flange on the BASE PLATE of both the main and side units.

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. BREAK 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 SUPPLY REEL SPINDLE, and the other SHOE, contacts the braking idler between the TAKE-UP REEL SPINDLE and its CLUTCH PLATE. The SHOES are disshaped and, if worn, may be rotated a few degrees (after the mounting screws are loosened) to provide a new braking surface. Only when the SHOES are completely worn will replacement be required. Be certain that the mounting screws are fully tightened after replacement or adjustment for the SHOES must not be permitted to rotate.

TROUBLE SHOOTING CHART

SYMPTOM	CAUSE	CURE
A. Motor does not run, pilot lamp in VU meters (main & side units) do not light.	1. A. C. cord on main or side not properly connected.	Connect AC cord.
	2. Fuse blown.	Replace fuse.
	3. Power cable disconnected.	Reconnect power cable.
B. Lamp in VU meters light up but no speaker hum even at full volume.	1. Speaker cable disconnected.	Reconnect head cable.
	2. Defective tube.	Replace the defected tube.
C. No record or play but speaker hum at full volume.	1. Head cable disconnected.	Reconnect head cable.
	2. Stereo connecting cable disconnected.	Reconnect or Replace.
D. Both Amps and VU meters operating but no recording on the lower half of the tape.	1. Short in Stereo connecting cable.	Replace.
	2. When rewinding, the RECORD PLAYBACK SWITCH was left in REC. position.	Back the switch to STOP, before rewinding the tape.
E. Hum recorded on the tape:	1. Mike cable disconnected.	Reconnect mike cable.
F. Units Play okay, recording distorted and poorly erased.	1. Defective bias oscillator tube.	Replace.
	2. Deposit of sediment on head.	Clean the head gently with soft cotton swab.

SYMPTOM	CAUSE	CURE
G. Wow of flutter at $7\frac{1}{2}$ " /sec. or $3\frac{3}{4}$ " /sec. Insufficient drive.	1. Defective drive idler.	Replace.
	2. Oil on drive capstan	Clean capstan.
	3. Defective main belt.	Refer to serviceman.
	4. Defective motor or capacitor.	Refer to serviceman.
H. Wow or flutter at $7\frac{1}{2}$ " /sec. only	1. Speed change bushing slipping on shaft.	Tighten capstan mounting screw.
I. Poor high frequency response or noisy playback.	1. Heads mis-aligned.	Align heads.
	2. Heads magnetized.	Demagnetize heads.
J. No stereophonic affect between two speakers at the same volume and tone control levels.	1. Mismatch of phase position.	Adjust phase position with phasing switch.
K. Tape spills off when winding or rewinding.	1. Differ reel sizes.	Use reels of same diameter.
	2. Brake rollers worn or out of adjustment.	Replace or adjust brake shoes.
L. Rewind not operating.	1. Brake or worn rewind idler wheel	Replace rewind idler wheel.

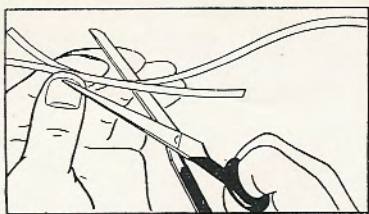
CAUTION

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

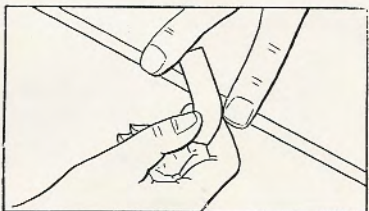
3. TAPE EDITING :

If only one track is recorded, at the monaural recording, the tape may be edited by cutting out unwanted portions or by joining selections in another sequence. Announcement may be inserted between selection, 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.

4. TAPE SPLICING AND EDITING :



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



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



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.)

5. RE-USING TAPE :

In normal operation, tape is erased whenever the RECORD - FLAY SWITCH is in "RECORD" Any material previously recorded on the track of the tape being used will automatically be erased as the new material is recorded. If desired, tape may be erased without recording new material by performing all normal "RECORD" functions with VOLUME CONTROL set at zero (full counter-clockwise).

NOTE

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

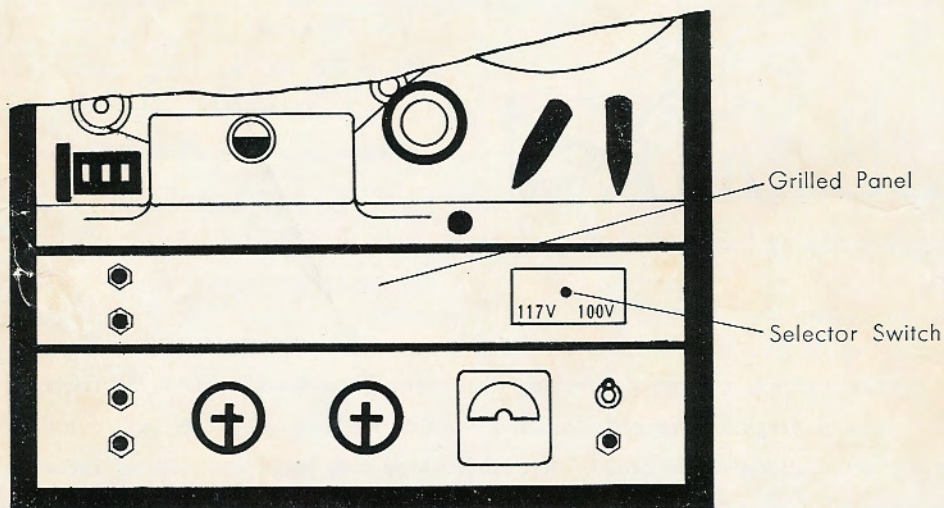
TROUBLE-SHOOTING CHART, serves as a guide to procedures which are felt to be within the limits of user-performed service. When any difficulty is encountered in the operation of the recorder, consult the chart, locate the symptom and proceed as directed. If the symptom persists after corrective action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

ADDITIONAL FEATURE

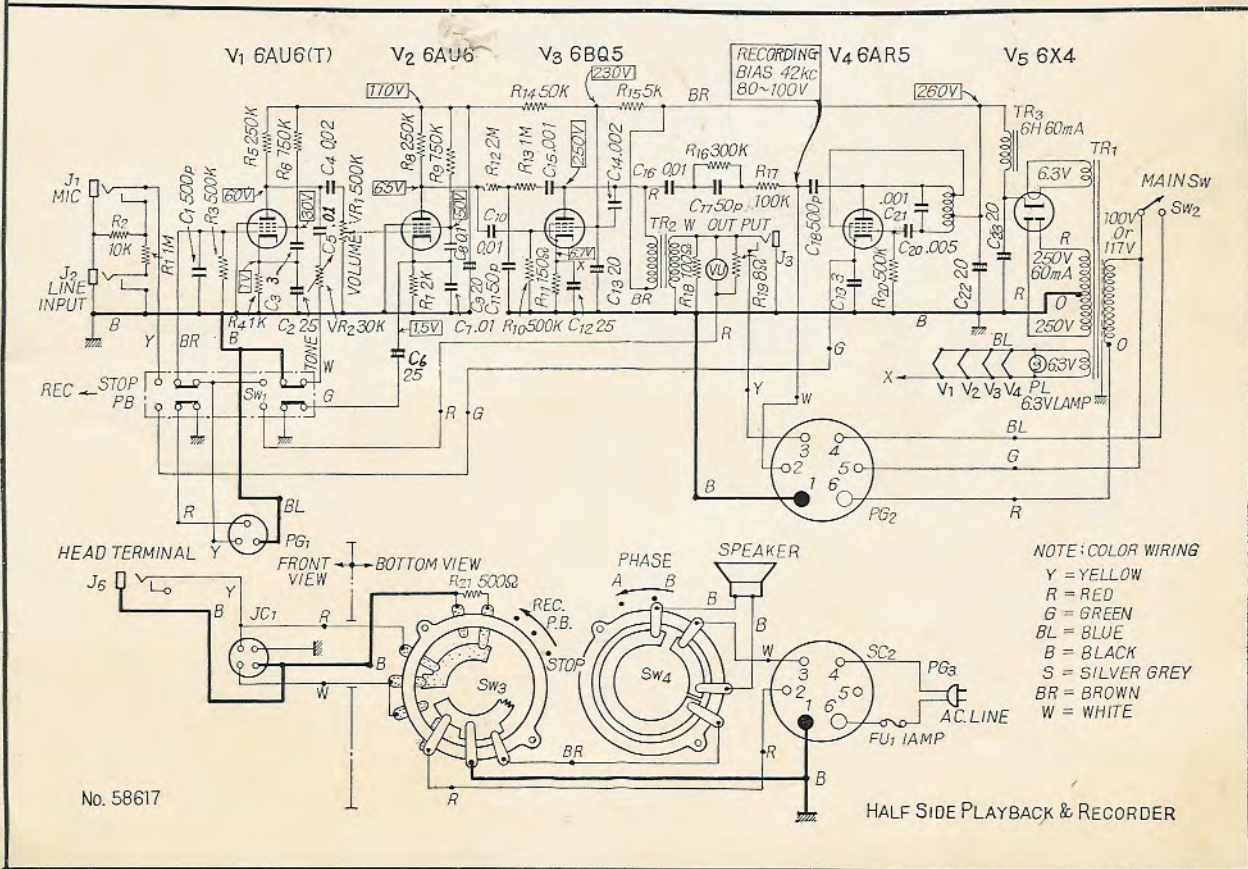
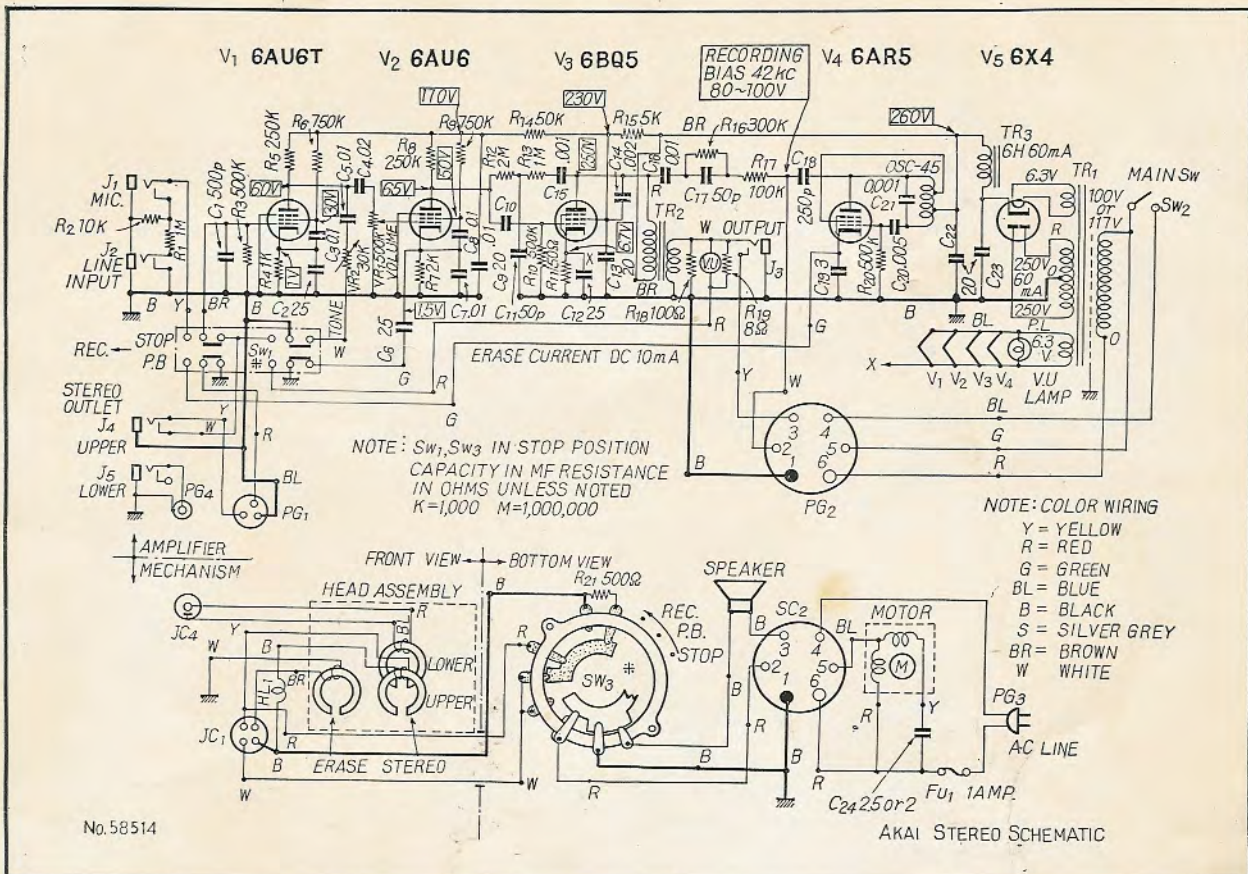
Your Akai Stereo Tape Recorder is equipped with a SELECTOR SWITCH which enables selection of 100 or 117 volt input depending on the power source available in your area. This insures peak performance of your Stereo Recorder at either voltage.

This SELECTOR SWITCH is accessible by removing the two screws which mount the grilled panel on the front above the amplifier section on both main and side units and lifting panel clear.

After removing the grilled panel, flip the SELECTOR SWITCH to the left for 117 volt and to the right for 100 volt operation.

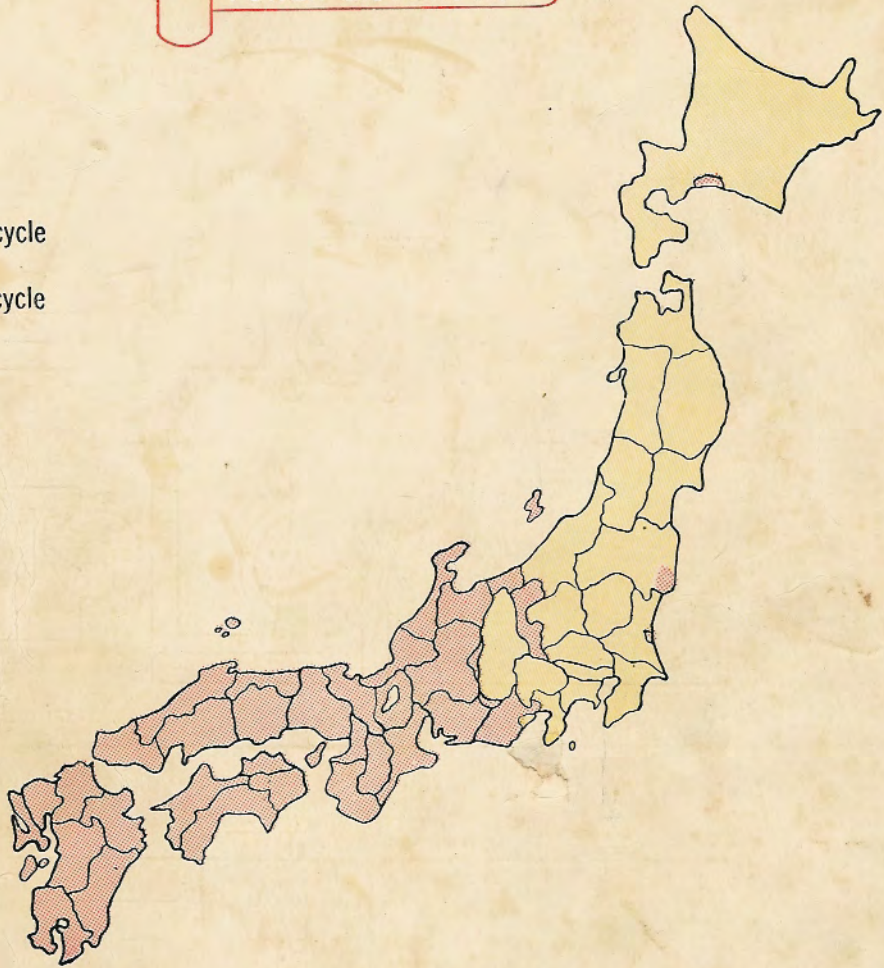


MEMORANDUM



POWER DISTRIBUTION

- 50 cycle
- 60 cycle



AKAI ELECTRIC CO., LTD.

Manufacturer & Exporter
883, 3-Chome Kojiya-Cho
Ohta-ku, Tokyo
Phone : (74) 0212 • 0978

AKAI TRADING CO., LTD.

General Distributor
883, 3-Chome Kojiya-Cho
Ohta-ku, Tokyo
Phone : (74) 1981 • 1982 • 2188