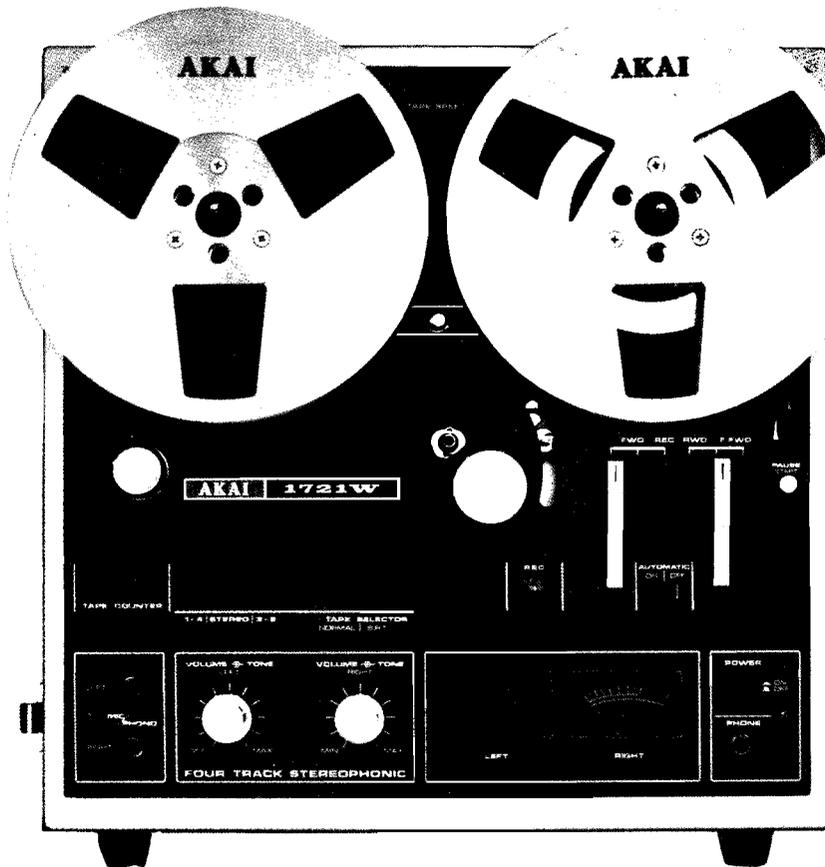


1721W

STEREO TAPE RECORDER

OPERATOR'S MANUAL



THIS MANUAL IS ALSO APPLICABLE TO MODEL 1721L STEREO TAPE RECORDER.

1721W Wooden case

1721L Leather case

AKAI[®]

MANUFACTURED & DISTRIBUTED BY AKAI ELECTRIC CO., LTD./AKAI TRADING CO., LTD./AKAI AMERICA LTD.

CEE, CSA and UL Standard models are not equipped with a Voltage Selector or Cycle Conversion Switches. Therefore, voltage and cycle conversion is not necessary. If your machine corresponds to any of these standards, please disregard all references to voltage and cycle adjustment throughout this manual.

CEE Models : 220 V, 50 Hz

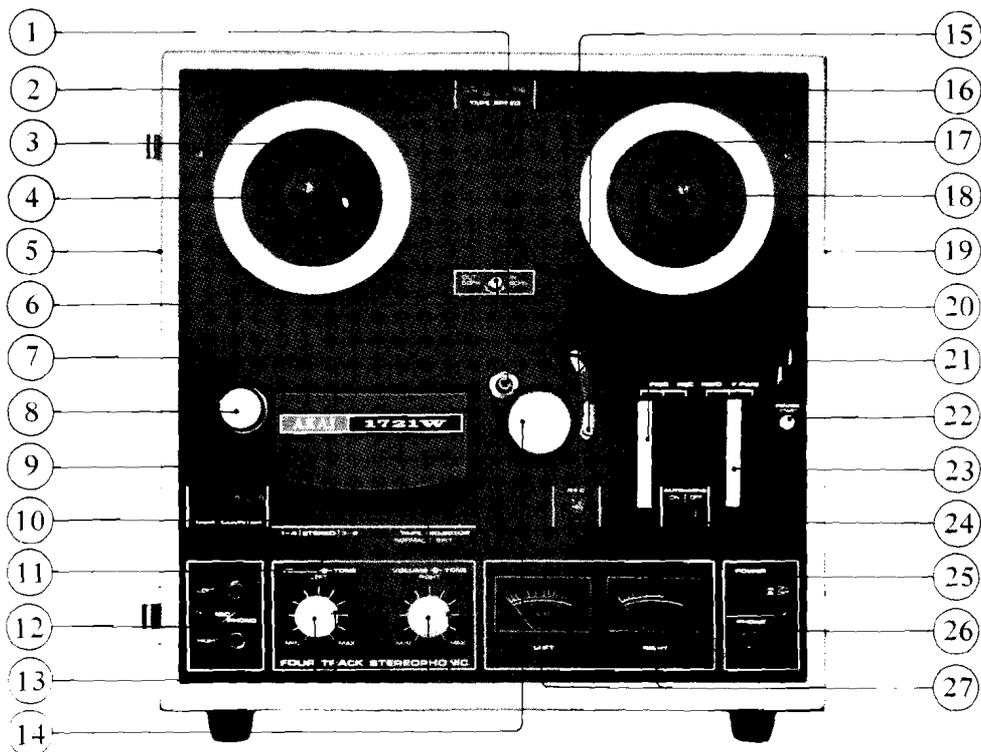
CSA Models : 120 V, 60 Hz

UL Models : 120 V, 60 Hz

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CONTROLS



1. **CAPSTAN**
Transports tape.
2. **TAPE SPEED SELECTOR**
3. **SUPPLY REEL TABLE**
4. **BUILT-IN REEL RETAINER**
Locks reel firmly into place.
5. **BUILT-IN SPEAKER**
6. **CYCLE CONVERSION SWITCH (A)**
Out position 50 Hz ; In position 60 Hz.
7. **HEAD COVER**
Houses Recording/Playback Head and Erase Head.
8. **TAPE GUIDE**
9. **INDEX COUNTER & RESET BUTTON**
10. **TAPE SELECTOR SWITCH**
Normal position for regular tape ; S.R.T. position for Akai's Super Range Tape or other make low noise tapes.
11. **TRACK SELECTOR**
12. **MICROPHONE/PHONO JACKS (left & right)**
Microphone : When recording from microphones, use these jacks and set Mic Phono Switch on rear panel to MIC position ; Phono : Employ these jacks when recording from magnetic cartridge only and set Mic/Phono Switch on rear panel to PHONO position (in this case use standard accessory magnetic cartridge adapter for connection). For crystal or ceramic pick-up use the Input Jacks on rear panel.
13. **VOLUME & TONE CONTROLS (left & right)**
Front knobs : volume controls ; Rear knobs : tone controls.
14. **PINCH WHEEL**
Presses against capstan to transport tape.
15. **RECORDING SAFETY BUTTON**
16. **AUTOMATIC SHUT-OFF LEVER**
See Automatic Shut-Off procedure.
17. **TAKE-UP REEL TABLE**
18. **BUILT-IN REEL RETAINER**
Locks reel firmly into place.
19. **BUILT-IN SPEAKER**
20. **RECORD/PLAYBACK LEVER**
Playback : Set to FWD position ; Recording : While holding Recording Safety Button at depressed position, set to REC position.



21. PAUSE LEVER

See Pause Control procedure.

22. START BUTTON

Releases Pause Lever.

23. FAST FORWARD/REWIND LEVER

See Fast Forward & Rewind procedure.

24. AUTOMATIC SHUT-OFF SWITCH

See Automatic Shut-Off procedure.

25. POWER SWITCH

26. HEADPHONE JACK

Use stereo headphones of low impedance type (8 Ω).

27. VU METERS (left & right)

Indicates recording and playback levels.

28. LINE OUTPUT JACKS (left & right)

29. SPEAKER SWITCH

Left : (Mute/Rec Moni.) Set to this position to cut speaker output for private headphone listening or monitoring during recording ; Center : (Normal) Set to this position for speaker output ; Right : (PA) Set to this position for public address system.

30. CYCLE CONVERSION SWITCH (B)

This switch and Cycle Conversion Switch(A) must be set to correspond with area power source.

31. UNIVERSAL VOLTAGE SELECTOR & FUSE POST

See Voltage & Cycle Conversion procedure.

32. A.C. CORD

33. MIC PHONO SWITCH

See item 12.

34. DIN JACK HIGH LOW INPUT SWITCH

When using the Din Jack connection, if the output level of your amplifier is low, set this switch to LOW, and if the output level is high, set to HIGH position.

35. LINE INPUT JACKS (left & right)

36. PHONO GROUND TERMINAL

Use to ground arm of recorder player. If this connection causes excessive noise, do not use.

37. DIN JACK

Enables inter-connection with an external amplifier by means of a single Din Cord. Use instead of P.B. Jacks.

38. SPEAKER JACKS (left & right)

VOLTAGE & CYCLE CONVERSION

VOLTAGE

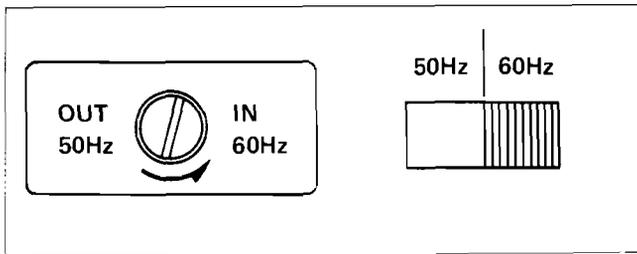
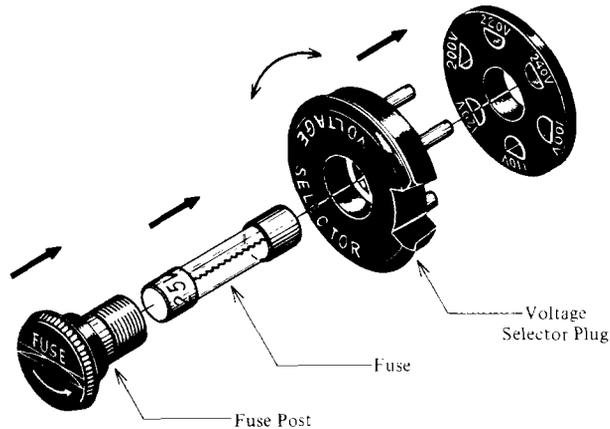
Your machine is equipped with a universal voltage selector offering six selections of voltage from 100 V to 240 V A.C., for world-wide operability. Voltage is preset at the factory according to destination. However, the operator is requested to check setting prior to operation, and if necessary readjust as follows: (1) Disconnect power cord and remove the Fuse Post by screwing in direction of arrow. (2) Remove the Voltage Selector Plug and reinsert so that proper area voltage shows through the Plug cut-out. (3) Change fuse to correspond with voltage and tighten the Fuse Post. 100 V to 100 V: 1 A, 125 V fuse; 200 V to 240 V: 0.5 A, 250 V fuse.

* To maintain optimum performance and prolong the life of your machine, it is imperative that the line voltage be held within a 10% deviation of standard area voltage.

CYCLE

Correct tape speed cannot be obtained if the Cycle Conversion Switches are not properly positioned. With a screw driver, turn Cycle Conversion Switch (A) on face panel counter-clockwise about 1/8 of a turn and move to IN or OUT for 60 Hz or 50 Hz operation according to area power source. The switch must be rotated back to its original position after being reset. Cycle Conversion Switch (B) at rear of recorder must be set accordingly.

* Do not attempt to rotate the Cycle Conversion Switches when the motor is not running.



TAPE SPEED SELECTION

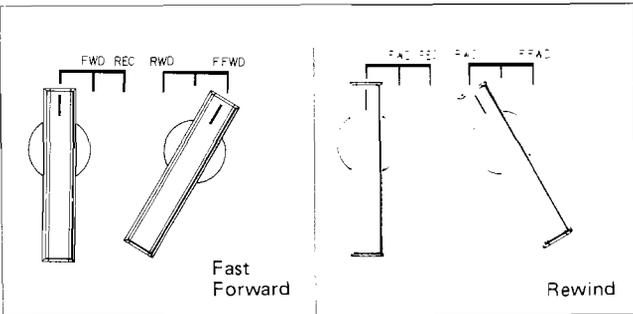
This model operates on two tape speeds; i.e., 3-3/4 and 7-1/2 ips. To select speed, operate the Tape Speed Selector. The recording time using a 1800 ft. tape is as follows: STEREO 3 hrs., 3-3/4 ips.; 1.5 hrs., 7-1/2 ips. MONAURAL 3 hrs., 3-3/4 ips.; 3 hrs., 7-1/2 ips.

FAST FORWARD & REWIND

For fast forward or rewind, operate Fast Forward/Rewind Lever. This feature permits rapid selections of recordings on the tape. This lever locks into position and cannot be operated while the Record Playback Lever is in operation and vice-versa.

PAUSE CONTROL

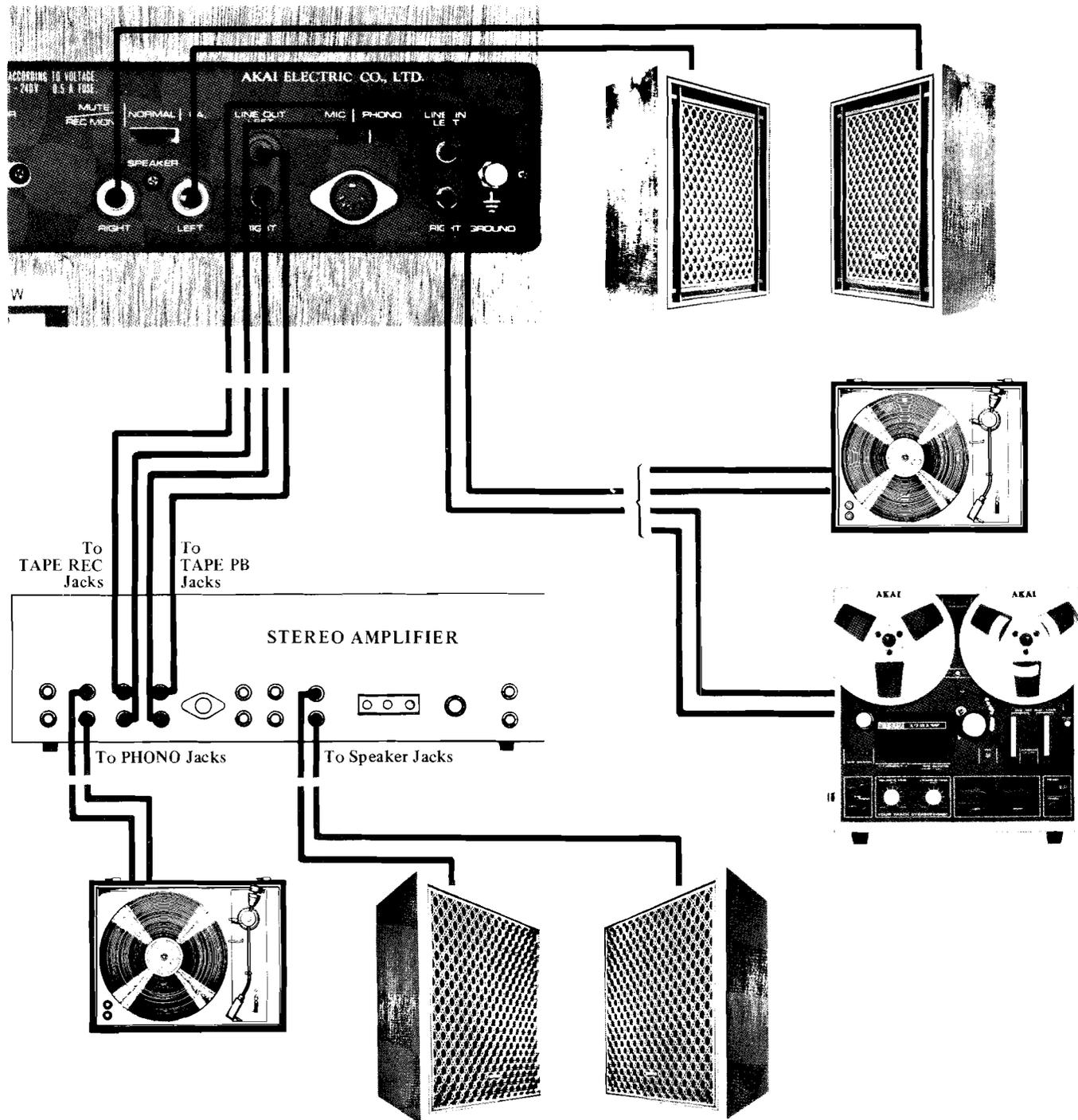
To momentarily stop the tape during recording or playback, set Pause Lever by lifting upward. Pause control is especially convenient for editing tape during recording (lift to stop recording moment when a certain portion of the program is not desired). Pause control also permits adjustment and change of the recording level. Depress Start Button to release.



AUTOMATIC SHUT-OFF

One of the exclusive features of this model is the automatic shut-off function of the unit. For automatic shut-off, thread tape through Automatic Shut-Off Lever and set Automatic Shut-Off Switch to ON position. When the tape comes to the end, the Shut-Off Lever will drop and the power of the entire unit will be cut off.

CONNECTIONS



OPERATING PRECAUTIONS

The conditions listed below do not indicate mechanical failure of your unit. If your machine exhibits any of the following, please check for trouble as indicated.

Loss of sensitivity or tone quality.

- * Wrong side of tape facing heads.
- * AC power lower than the voltage to which your machine is adjusted.
- * Dirty heads. See Head Cleaning procedure.
- * Magnetized heads. See Head Demagnetizing procedure.
- * Defective or worn tape.
- * Low recording level.

Irregularity of tape transport

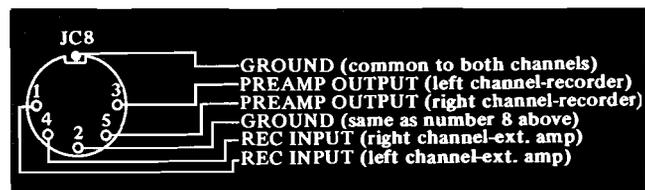
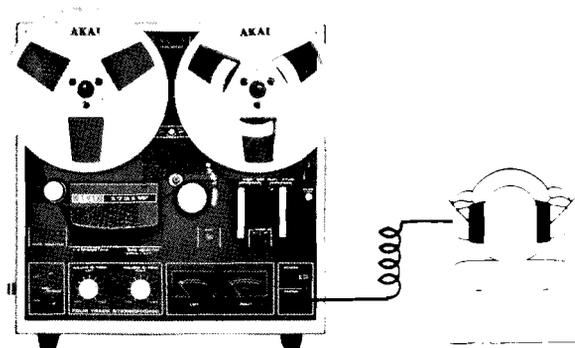
- * Dirty tape surface or oil adhering to capstan.
- * Bent take-up reel.
- * Tape loaded improperly.
- * Old or sticky tape.

Machine does not turn on even when Power Switch is depressed

- * AC plug disconnected.
- * Automatic Shut-Off Switch at ON position.

If your machine will not record or playback, check to confirm that connections are correct and controls are properly positioned. When using Din cord for connections with an external amplifier, if recording is satisfactory but playback cannot be accomplished, check the input of your amplifier. In some cases, the input and output levels may not match. Please use an amplifier of which the Din Jack connection levels match.

- * Your machine requires constant voltage for optimum performance.
- * If the sound sources are so far away from the microphones that the recording level controls must be turned up to maximum, some hum or noise will inevitably be recorded. A test recording is recommended before attempting a final recording.
- * Should there be a problem with your machine, write down the model and serial number and all pertinent data regarding warranty coverage as well as a clear description of the existing problem and contact your nearest authorized Akai Service Station or the Service Dept. of Akai Electric Company, Tokyo, Japan.



TAPE SELECTION

This model is equipped with a Tape Selector Switch. Set to S.R.T. position when using Akai's Super Range Tape or other make low noise tapes. This feature brings out the maximum response of high performance low noise tape. In other words even though this model displays a high frequency response covering 18,000 Hz with regular tape, this is extended to 22,000 Hz with low noise tape. When using regular tape, leave this switch at NORMAL position.

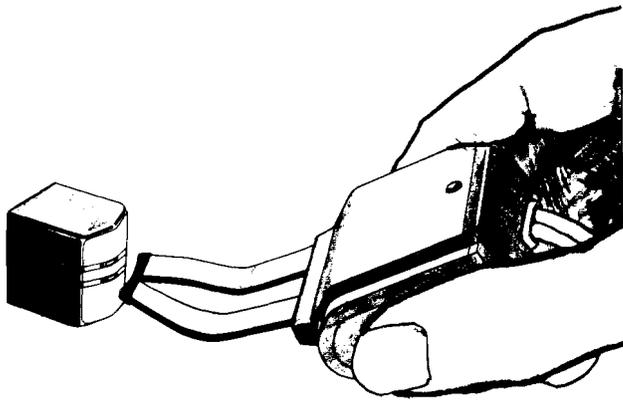
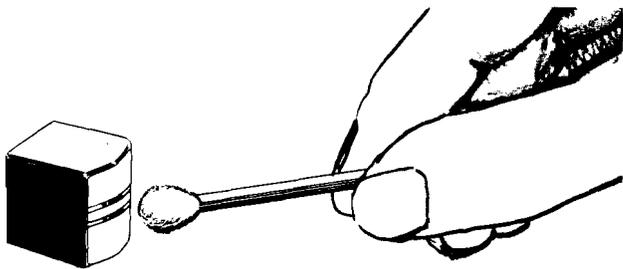
SOUND MONITORING

For monitoring or private headphone listening, set Speaker Switch on rear panel to MUTE/REC MONI position and connect stereo headphones to Headphone Jack. Use stereo headphones of low impedance type (8 Ω).

HOW TO USE THE DIN JACK

The Din Jack can be used instead of the Rec. and P.B. Jacks if your amplifier has a corresponding connection. This one-cord connection system eliminates the necessity of four separate connections and disconnections.

- * When using the Din Jack connection, if the output level of your amplifier is low, set the Din Jack HIGH/LOW Switch to LOW and if the output level is high, set to HIGH position.
- * Do not use Din Jack connection for operation with another recorder.



HEAD CLEANING

Accumulation of dust and magnetic particles on the heads results in poor head-to-tape contact and deteriorates sound quality and sensitivity. It is, therefore, recommended that the heads be kept clean at all times. With a stiff cotton swab dipped in cleaning fluid (Akai Head Cleaning Kit HC-500 is highly recommended) rub the entire head surface (do not scratch) until all tape oxide and dust are removed. The capstan shaft, pinch wheel, tape lifter and other parts over which the tape travels should also be cleaned.

HEAD DEMAGNETIZING

Normally, the steel pole pieces which form part of the recording and playback head become slightly magnetized. The effect of magnetization is that it will cause considerable drop out or introduce noise into your recordings. It is recommended that head demagnetization be performed periodically. This can be accomplished with a bulk demagnetizer by bringing it close to the heads and making several small circular motions over all head surface areas as well as the head housing.

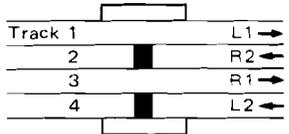
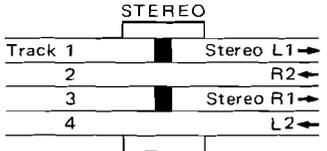
- * Be sure to cut off the power of the unit prior to demagnetizing the heads.
- * Both prongs of the demagnetizer should be covered with masking tape to prevent the heads from being scratched.
- * Do not use magnetized tools in the vicinity of the heads.
- * Read the demagnetizer instructions carefully before operation.

TAPE LOADING

Place a full reel of tape on the Supply Reel Table and an empty reel on the Take-Up Reel Table. Thread the tape as illustrated by the dotted lines in the figure on page 8. If automatic shut-off is desired, thread the tape through the Automatic Shut-Off Lever and set Automatic Shut-Off Switch to ON position.

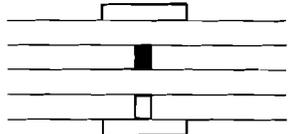
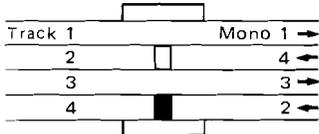
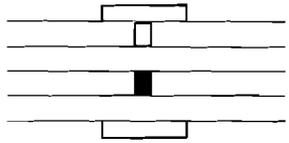
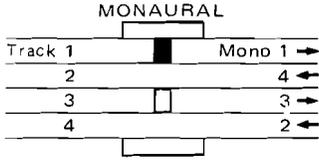
4-TRACK STEREO RECORDING/PLAYBACK SYSTEM

This model employs a 4-track stereo recording/playback system which divides the magnetic tape into four tracks, two of which are used simultaneously. The first stereo recording/playback takes place on tracks 1 and 3, and the second on tracks 2 and 4 after the reels have been inverted.

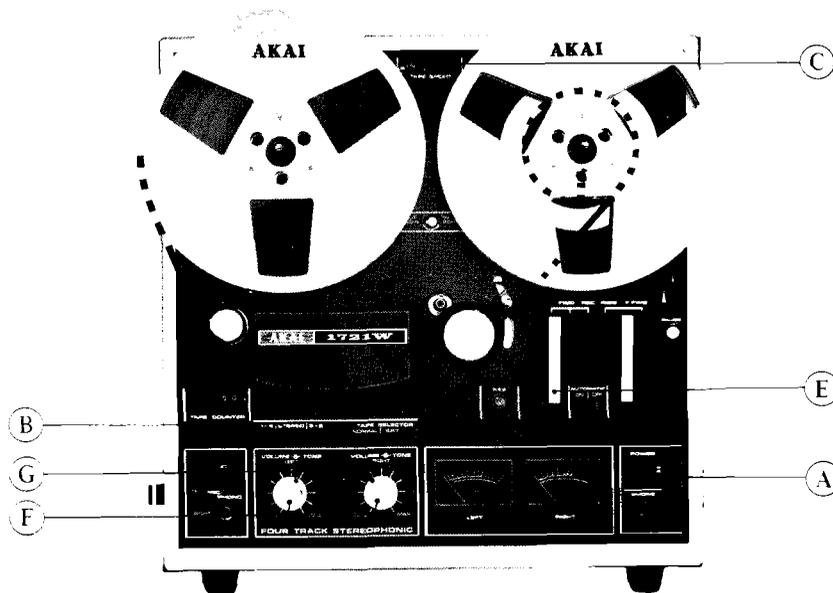


4-TRACK MONAURAL RECORDING/PLAYBACK SYSTEM

Monaural recording/playback sequence is 1-4-3-2. The first monaural recording/playback takes place on track 1 and the second on track 4 after the reels have been inverted. The third monaural recording/playback takes place on track 3, and the fourth on track 2 after the reels have been inverted.



PLAYBACK OF PRE-RECORDED TAPE



Please read the operating precautions carefully before attempting operation.

STEREO PLAYBACK

Connect power cord and load a pre-recorded tape.

- A. Turn on Power Switch.
- B. Set Track Selector to STEREO position.
- C. Select tape speed with Tape Speed Selector.
- D. Set Speaker Switch on rear panel to NORMAL position.
- E. Set Record/Playback Lever to FWD position to begin playback.
- F. Adjust left and right Volume Controls.
- G. Adjust left and right Tone Controls.
- H. To stop playback, return Record Playback Lever to vertical position.

* Although this model is equipped with two built-in speakers, a pair of external speakers can be connected to the Speaker Jacks to further enhance the performance of this model. Note that in this case the built-in speakers become inoperative.

* If a more powerful output is desired, the Line Output Jacks can be used for connecting to an external amplifier.

MONAURAL PLAYBACK

For monaural playback, substitute the following steps for steps B, F, and G of stereo procedure, and add step I.

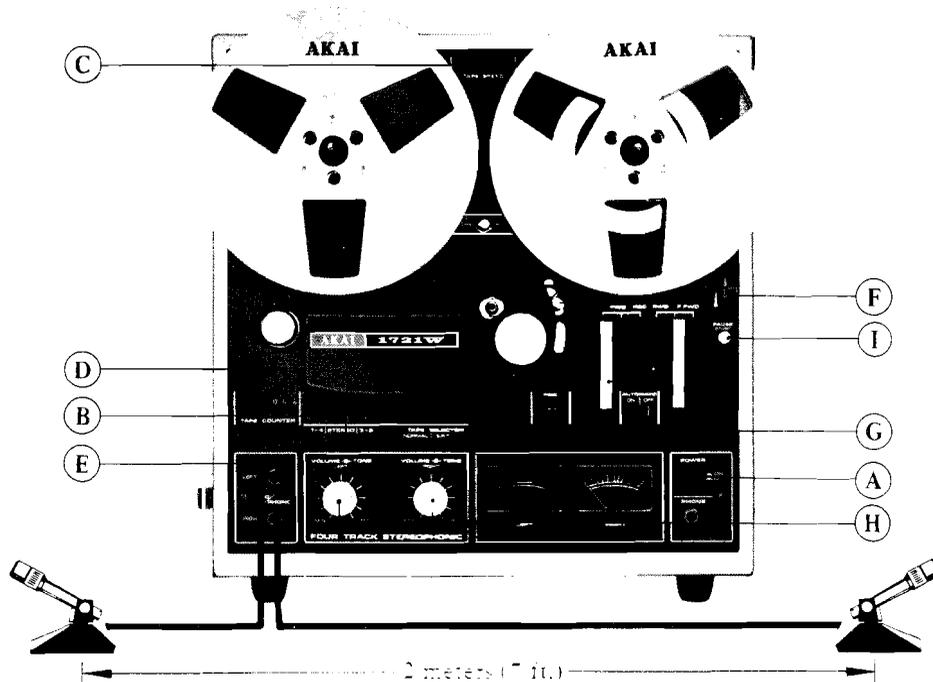
Tracks 1 & 4

- B. Set Track Selector to 1-4 position.
- F. Adjust left Volume Control.
- G. Adjust left Tone Control.
- I. Invert reels for playback on track 4.

Tracks 3 & 2

- B. Set Track Selector to 3-2 position.
- F. Adjust right Volume Control.
- G. Adjust right Tone Control.
- I. Invert reels for playback on track 2.

RECORDING USING MICROPHONES



Please read the operating precautions carefully before attempting operation.

STEREO RECORDING

Connect power cord and load a tape.

- A. Turn on Power Switch.
- B. Set Track Selector to STEREO position.
- C. Select tape speed with Tape Speed Selector.
- D. With Reset Button, set Index Counter to 000. This provides an easy reference for locating positions on the tape.
- E. Insert microphones into left and right Microphone Jacks, and set Mic/Phono Switch at rear of recorder to MIC position. Maintain a distance of at least 2 meters (7 ft.) between microphones.
- F. Set Pause Lever by lifting upward.
- G. While depressing Recording Safety Button, set Record Playback Lever to REC position.
- H. Adjust and balance recording input level with left and right Volume Controls while observing left and right VU Meters. Normal recording should not exceed 0 VU on either meter.
- I. When an optimum recording level has been determined, depress Start Button to release Pause Lever and begin recording.

- J. To stop recording, return Recording/Playback Lever to vertical position.

* Tone Controls have no effect during recording mode.

* If microphones are used near the recorder, to prevent acoustic feedback, set Speaker Switch to MUTE/REC MONI position.

MONAURAL RECORDING

For monaural recording, substitute the following steps for steps B, E and H of stereo recording procedure and add step K.

Tracks 1 & 4

- B. Set Track Selector to 1-4 position.
- E. Insert microphones into left Microphone Jack, and set Mic/Phono Switch at rear of recorder to MIC position.
- H. Adjust and balance recording input level with left Volume Control while observing left VU Meter.
- K. Invert reels for recording on track 4.

Track 3 & 2

- B. Set Track Selector to 3-2 position.
- E. Insert microphones into right Microphone Jack, and set Mic/Phono Switch at rear of recorder to MIC position.
- H. Adjust and balance recording input level with right Volume Control while observing right VU Meter.
- K. Invert reels for recording on track 2.

RECORDING FROM AN EXTERNAL AMPLIFIER

If an external amplifier or tuner amplifier is used, connect the Line Input Jacks to the line outputs of the external amplifier instead of step E of stereo recording procedure.

RECORDING FROM A TURNTABLE

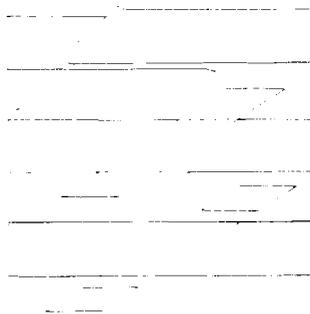
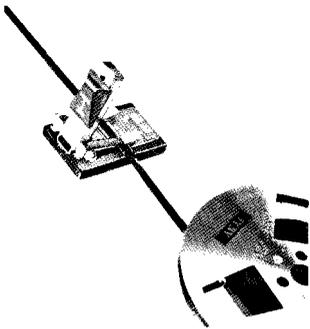
This machine is equipped with an equalizer circuit and front panel Phono Jacks for direct recording from a magnetic cartridge. Use standard accessory Magnetic Cartridge Adapter and connect the outputs from turntable cartridge to Mic/Phono Jacks instead of step E of stereo recording procedure, and set Mic/Phono Switch at rear of recorder to PHONO position.

To record from a crystal pick-up (0.5 V to 1 V) or a ceramic pick-up, connect the pick-up outputs directly to the Line Input Jacks of this model instead of step E of stereo recording procedure.

* Ground arm of turntable to Ground Terminal at rear of recorder. If this connection causes excessive noise, do not use.

TAPE DUBBING

Connect the line output jacks of the playback machine to the Line Input Jacks of this model instead of step E of stereo recording procedure.



TAPE ERASING

Any signal information previously recorded on a tape will be erased automatically as a new recording is made on the same tape. For erasing only, load tape and set machine to recording mode. No plugs should be connected to the recorder input jacks and volume controls should be kept at minimum. Akai bulk Tape Eraser ATE-7 (standard accessory) is highly recommended for quick and complete erasure.

TAPE SPLICING & EDITING

Cut tape diagonally with an overlap so that the ends are lined up. Cutting tape on diagonal eliminates detection of the splice in recording. Cover aligned ends with splicing tape. Press firmly exerting pressure to secure ends evenly. Trim off excess splicing tape, cutting into tape very slightly. This eliminates the possibility of a sticky splice. Splicing tape using scissors requires skillful work. With Akai's specially designed portable Tape Splicer AS-3, splicing can be done very smoothly.

PUBLIC ADDRESS SYSTEM

One of the main features of this model is the ability to convert it into a public address system. For operation, please proceed as follows :

- A. Connect power cord and turn on Power Switch.
- B. Set Speaker Switch to P.A. position.
- C. Turn Volume Controls to minimum and insert microphone(s) into Microphone Jack(s).
- D. Set Mic/Phono Switch to MIC position.
- E. While depressing the Recording Safety Button set Record/Playback Lever to REC position.
- F. Adjust output level with Volume Controls.

TECHNICAL DATA

Track System	4-track 2-channel stereo/ monaural system	Motor (1) : 2-speed induction motor
Reel Capacity	Up to 7" reel	Fast Forward & Rewind Time 80/100 sec. using a 1200 ft. tape at 60/50 Hz
Tape Speed	7-1/2 and 3-3/4 ips ($\pm 2\%$)	Recording Capacity . . . 3 hours stereo recording using a 1800 ft tape at 3-3/4 ips.
Wow & Flutter	Less than 0.14% RMS at 7-1/2 ips Less than 0.18% RMS at 3-3/4 ips	Output Jacks Line (2) : 1.23 V ("0" VU)/30 Ω Required load impedance : more than 10 k Ω Phone (1) : 100 mV/8 Ω Speaker (2) : 5 W/8 Ω each
Equalization	Correct equalization for playback of tapes recorded to NAB curve.	Input Jack Microphone (2) : 0.5 mV/100 k Ω Line (2) : 150 mV/330 k Ω
Frequency Response	30 Hz to 21,000 Hz (± 3 dB) at 7-1/2 ips (Akai SRT Tape) 40 Hz to 15,000 Hz (± 3 dB) at 3-3/4 ips (Akai SRT Tape) 30 Hz to 18,000 Hz (± 3 dB) at 7-1/2 ips (regular tape) 40 Hz to 13,000 Hz (± 3 dB) at 3-3/4 ips (regular tape)	Din Jack 1 V/15 mV Speaker 2 built-in 5 x 7" speakers
Distortion	Less than 2% (1000 Hz "0" VU)	Semi-Conductors Transistors : 16 Diodes : 4
Output Power	10 W total music power (5 W/5 W) at 8 Ω 6 W continuous power (3 W/3 W) at 8 Ω	Power Requirements . . 100 V to 240 V A.C., 50/60 Hz Power Consumption . . 50 W
Signal to Noise Ratio .	Better than 50 dB	Dimensions (1721W) 358(W)x360(H)x248(D)mm (14 x 14.1 x 9.8") (1721L) 359(W)x366(H)x249(D)mm (14.1 x 14.4 x 9.8")
Erase Ratio	Better than 70 dB	Weight (1721W) 13.2 kg (29 lbs) (1721L) 14 kg (30.8 lbs)
Cross-Talk	Better than 60 dB (monaural) Better than 45 dB (stereo)	
Bias Frequency	63 kHz	
Heads (2) : One recording/playback head & one erase head		

* For improvement purposes, specifications and design are subject to change without notice.