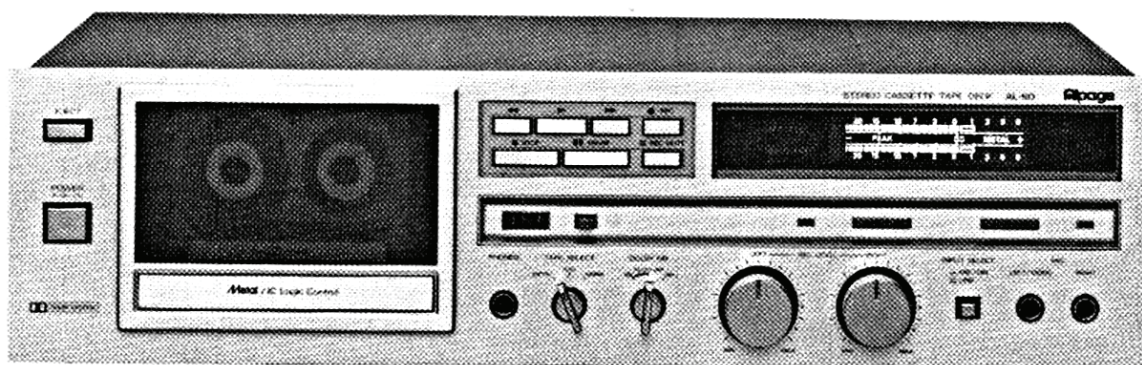


# INSTRUCTION MANUAL **Alpage**

# STEREO CASSETTE DECK **AL50**

INSTRUCTION MANUAL (ENGLISH)



**ALPINE ELECTRONICS INC.**


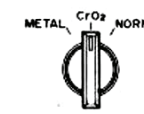

BRAND MARQUE FABRIKMARKE MARCA MARCA	MODEL MODELE MODELL MODELLO MODELO	TAPE SELECT SELECTEUR DE BANDE BANDSORTEN SELEZIONATORE DEI NASTRO SELECTOR DE CINTA	
<b>TDK</b>	MA, MA-R SA, SA-X OD, AD, ED, D	METAL CrO <sub>2</sub> NORM	
<b>MAXELL</b>	MX, MAXELL XL II, XL II-S XL I, UD, UL, LN	METAL CrO <sub>2</sub> NORM	
<b>SCOTCH</b>	METAFINE MASTER II, MASTER 70µs, Chrome MASTER I, MASTER 120µs, CRYSTAL, TARTAN DYNARANGE, HIGH LANDER, HIGH ENERGY	METAL CrO <sub>2</sub> NORM NORM	
<b>SONY</b>	METALLIC EHF, JHF, CR, Chrome AHF, BHF, CHF, SHF, HFX, HF, LNX, C	METAL CrO <sub>2</sub> NORM	
<b>BASF</b>	METAL IV Professional II, Studio II, Chromdioxid, Chromdioxid Super, SCR Studio I, Professional I, Performance, LH (I), SLH (I), LN	METAL CrO <sub>2</sub> CrO <sub>2</sub> NORM NORM	
<b>AMPEX</b>	GRAND MASTER II, 20 : 20 + High BIAS GRAND MASTER (I), 20 : 20 +, PLUS, LO-NOISE	CrO <sub>2</sub> NORM	
<b>AUDIO MAGNETICS</b>	HIGH PERFORMANCE II XHE, HIGH PERFORMANCE, TRACS, SUPER	CrO <sub>2</sub> NORM	
<b>Agfa</b>	Stereo Chrom Ferro Color, Super Ferro Dynamic (I)	CrO <sub>2</sub> NORM	
<b>MEMOREX</b>	High Bias MRX <sub>3</sub>	CrO <sub>2</sub> NORM	
<b>PHILIPS</b>	CHROMIUM SUPER FERRO, FERRO	CrO <sub>2</sub> NORM	
<b>FUJI</b>	METAL, SUPER RANGE, SR UR, FX-II, Range 4X FL, DR, ER, FX-I, RANGE (2) (4) (6)	METAL CrO <sub>2</sub> NORM	
<b>DENON</b>	DXM DX-7 DX-3, DX-1	METAL CrO <sub>2</sub> NORM	
Recorded music tape available in the market (unless otherwise specified). Bande musicale enregistrée disponible sur la marché (à moins qu'il ne soit autrement spécifié). Aufgenommene Musikkassetten, die auf dem Markt verkauft werden, es die denn, dass etwas anderes vorgeschrieben ist. Un nastro registrato delle musiche si può ottenere sul mercato (se non è stato specificato); Cinta musical grabada disponible en el mercado (de no especificarse de otra manera).		NORM	
120µs EQ, NORMAL BIAS		NORM	
Position of Tape select knob. Positions du bouton selecteur de bande. Bandsortenwähler Tonbänder. Le posizioni della manopola selettore del nastro. Posición de la perilla de selección de cinta.	METAL	CrO <sub>2</sub>	NORM
			
<ul style="list-style-type: none"> <li>* Set the tape select knob according to the kind of the tape so that the general performance of recording and playback can function to the full. Although the equalizer constant when playback is 70 µs for both the METAL and CrO<sub>2</sub> tapes, the recording characteristics between those two tapes are slightly different, the recording equalizer characteristics are also different between them.</li> <li>* Régler le bouton sélecteur de bande en fonction du type de bande utilisée de façon à obtenir les performances optimales à l'enregistrement et à la lecture. Bien que la constante d'égaliseur à la lecture soit de 70 µs pour les bandes METAL et CrO<sub>2</sub>, les caractéristiques d'enregistrement ainsi que celles d'égaliseur d'enregistrement sont quelque peu différentes entre ces deux bandes.</li> <li>* Den Bandsortenwähler gemäß der verwendeten Tonbandsorte einstellen, um richtige Entzerrung und Vormagnetisierung bei Aufnahme und Wiedergabe zu erhalten. Die Wiedergabe-Entzerrung beträgt sowohl bei Reineisen- als auch bei CrO<sub>2</sub>-Band 70 µs, wogegen aber die Aufnahme-Entzerrung und die Vormagnetisierung unterschiedliche Werte für diese beiden Tonbandsorten aufweisen.</li> <li>* Selezionare la manopola selettore del nastro al nastro della cassetta di uso in modo che la prestazione generale di registrazione e di riproduzione sarà ottima. Seppure l'equalizzatore costante, quando la riproduzione è 70 µs per i nastri METAL e CrO<sub>2</sub>, le caratteristiche sulla registrazione sono un po' diversi fra di loro. Anche le caratteristiche di equalizzatore sono diversi per la registrazione fra di loro.</li> <li>* Regule la perilla del selector de cinta según el tipo de cinta para obtener excelente rendimiento en la grabación y reproducción. Aunque el constante del igualador en la reproducción es 70 µs para las cintas de METAL y CrO<sub>2</sub>, son ligeramente diferentes las características de grabación entre dichas dos cintas. Y las características del igualador de grabación son también diferentes.</li> </ul>			

Table 1/Tableau 1/Tabelle 1/Tavola 1/Tabla 1



• FRONT VIEW • FACE AVANT • VORDERANSICHT  
 • VEDUTA FRONTALE • VISTA DELANTERA

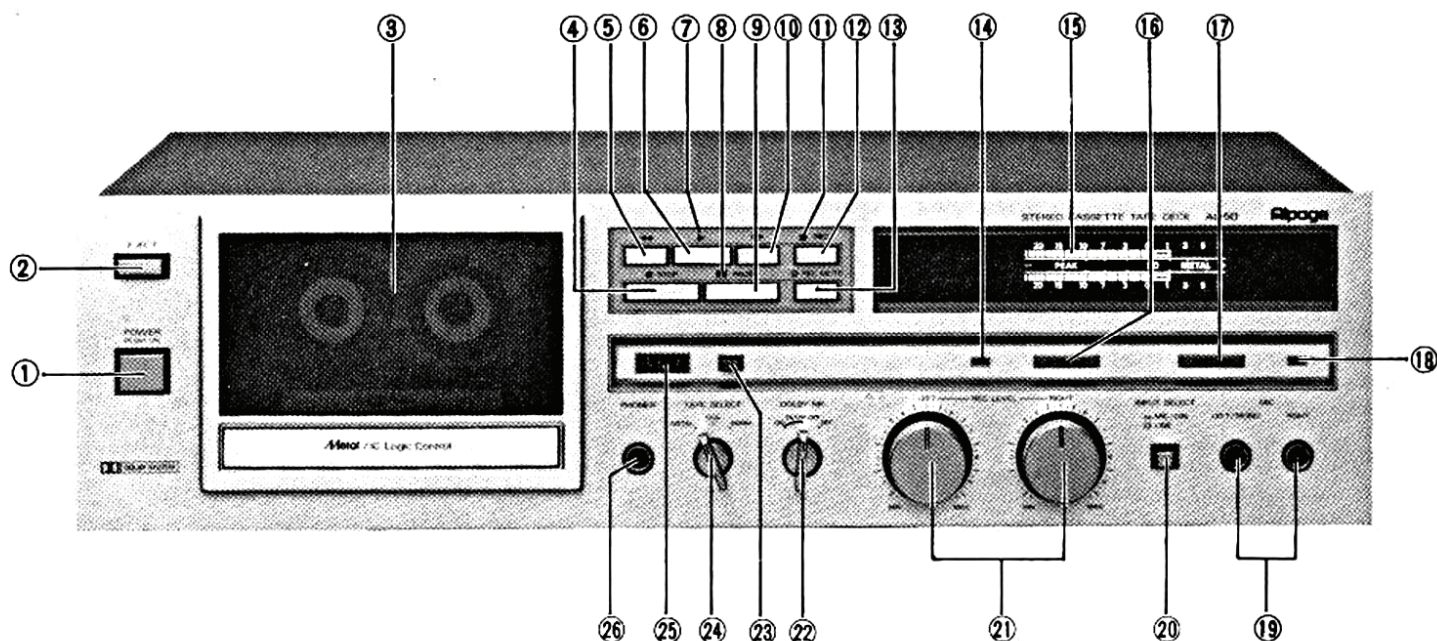


Fig. 1/Abb. 1

• BACK VIEW • FACE ARRIERE • RÜCKANSICHT  
 • VEDUTA POSTERIORE • VISTA TRASERA

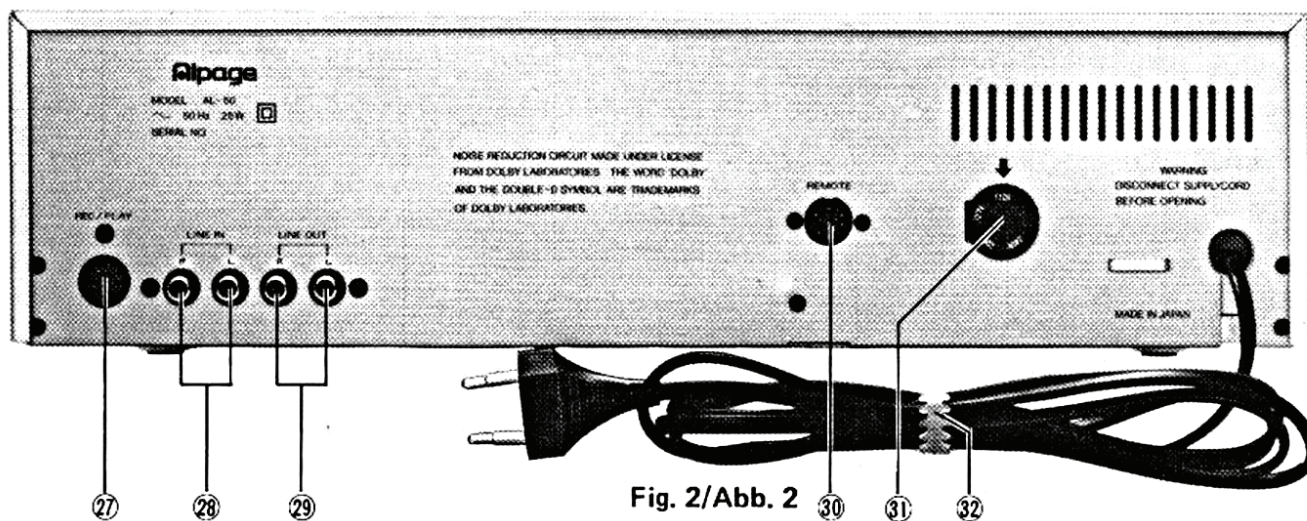


Fig. 2/Abb. 2

Recording/Playback Frequency Response of Metal Tape and CrO<sub>2</sub> Tape  
 Réponse de fréquence d'enregistrement/reproduction d'une bande au métal et d'une bande CrO<sub>2</sub>  
 Aufnahme/Wiedergabe-Frequenzgang von Metallband und CrO<sub>2</sub>-band  
 Frequenza rispondente nella registrazione/riproduzione del nastro-metallo e i nastro CrO<sub>2</sub>  
 Respuesta de frecuencia de grabación/reproducción de la cinta metálica y cinta CrO<sub>2</sub>

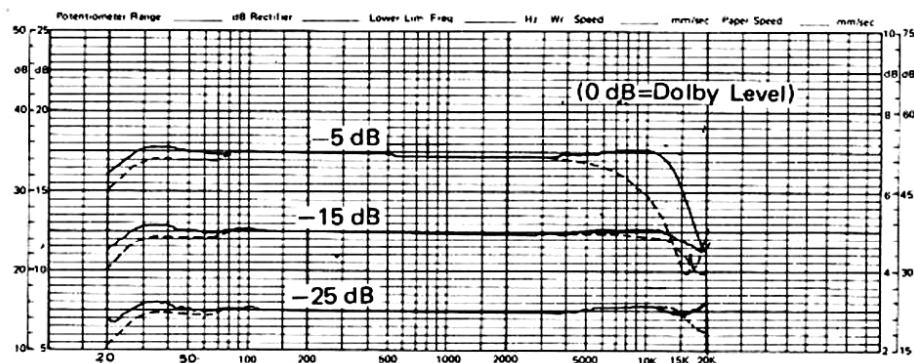


Fig. 8/Abb. 8

— Metal tape  
 Bande au métal  
 Metallband  
 Nastro-metallo  
 Cinta metálica  
 - - - Conventional tape  
 (CrO<sub>2</sub> tape)  
 Bande conventionnelle (CrO<sub>2</sub>)  
 Bisherige Tonbänder (CrO<sub>2</sub>)  
 Nastro convenzionale (CrO<sub>2</sub>)  
 Cinta convencional (CrO<sub>2</sub>)



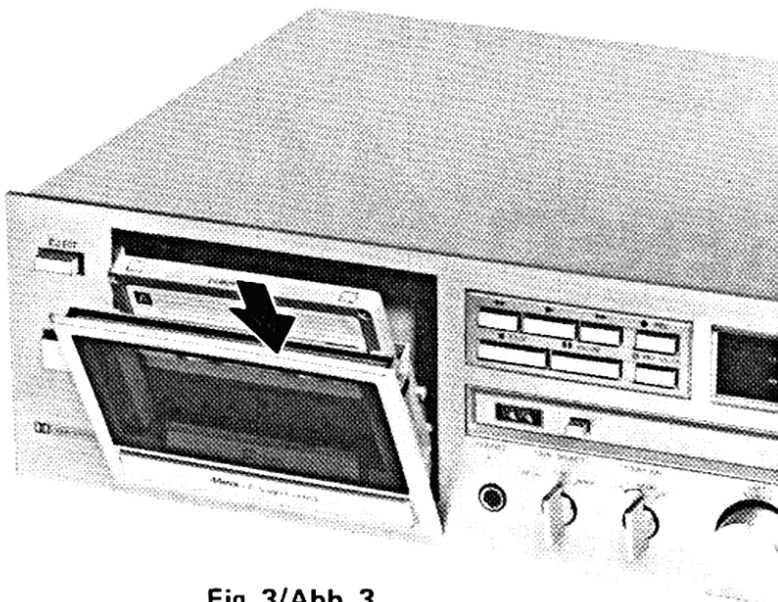
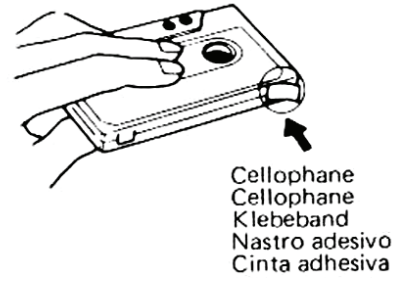
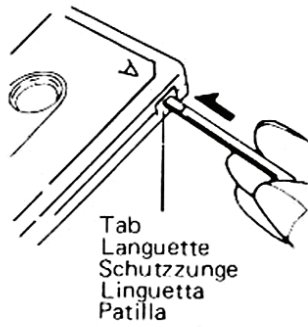


Fig. 3/Abb. 3



Cellophane  
Cellophane  
Klebeband  
Nastro adesivo  
Cinta adhesiva

Fig. 5/Abb. 5



Tab  
Languette  
Schutzzunge  
Linguetta  
Patilla

Fig. 4/Abb. 4

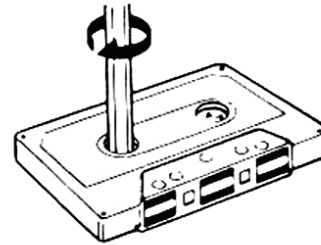
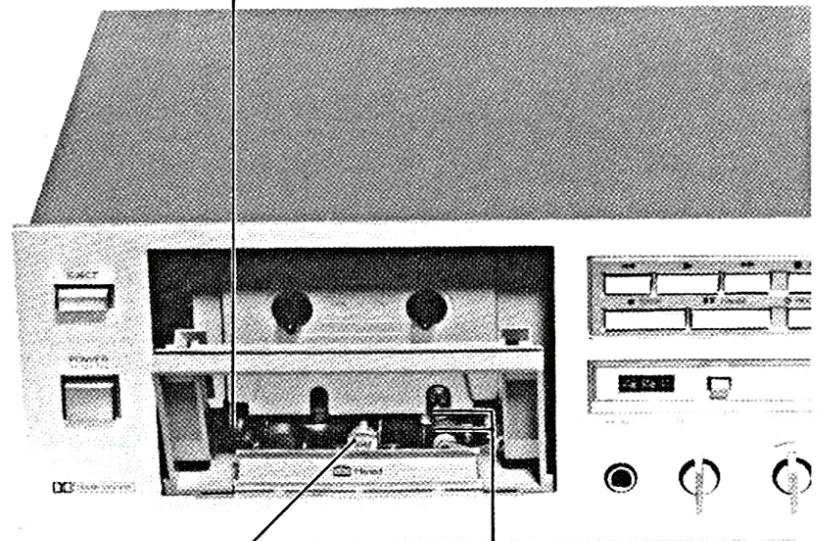
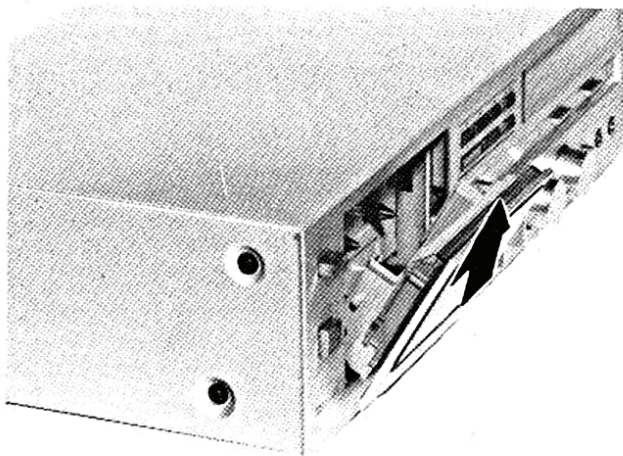


Fig. 6/Abb. 6

Erase Head  
Tête d'effacement  
Löschkopf  
Testina di cancellamento  
Cabeza de borrado



Record/Playback Head  
Tête d'enregistrement/Reproduction  
Aufnahme/Wiedergabekopf  
Testina di registrazione/ascolto  
Cabeza de grabación/reproducción

Pinch Roller and Capstan Shaft  
Galet presseur et axe de cabestan  
Andruckrolle und Tonwelle  
Rullino compressore e albero del rullo di trazione  
Rodillo sujetador y eje de cabrestante

Fig. 7/Abb. 7



## Prior to operation

*Check the power supply voltage of AC outlet used. Set the voltage selector switch provided on the rear panel to the position corresponding to the regulated voltage. Then, connect the cord and cable. (For European Model only).*

## FEATURES

Your new AL-50 is a precision-engineered, reliable high-fidelity tape recorder deck adaptable to every variety of component stereo systems. It provides superb performance on all operation modes.

A number of excellent features included:

### Feather-light IC logic controls

The lightest touch operates the solenoid IC logic control panel. It allows switching directly from mode to mode too —from rewind to playback, for example, without having to press STOP first.

LED illumination indicates the current mode. Safety circuits protect both tape and internal mechanism. You can operate the ALPAGE AL-50 with complete confidence.

### Simpler deck mechanism gives greater reliability, longer life.

The deck mechanism of the new AL-50 cassette tape deck has been simplified and improved in a number of ways.

### Three plungers

There are three solenoid plungers. This simplifies the job of each plunger, reduces the number of operations per plunger and allows more direct, simpler mechanics. . .all of which improve deck reliability as well as extending plunger life.

### Straight-forward operation

A reliable DC servo motor supplies the power to operate the deck mechanism. Most similar operations run capstan and other movements with a single belt, resulting in vibration transfer and thus an increase in wow and flutter.

With the AL-50, one belt runs the capstan while another runs the take-up and supply reels. There is no vibration transfer, thus less wow and flutter. Furthermore, when the deck is put into PLAY mode, the head moves smoothly into position, coming into contact with the tape gently so as not to damage it in any way.

### Fail-safe system

A fail-safe system protects the head from damage. When the deck is in PLAY mode, for instance, it prevents the cassette from ejecting. If there is no tape in the deck, mechanics and the logic circuit combine to prevent it from going into PLAY mode even if PLAY is pressed. With the hood open, the deck is automatically kept in STOP mode so that the head remains recessed, making it impossible for it to be damaged by contact with the cassette.

### New ULTRA-DENSITY CORE (UC) Head

The larger dynamic range of metal tapes is often wasted if a deck's head has not been designed to meet the high-performance characteristics of these metal tape. The ALPAGE-developed UC head recreates every nuance of every recording in your collection, getting the best from the metal tapes.

### Hyperbolic shape

Less tape area actually touches the head with a hyperbolic configuration. This keeps the contour effect to the lowest possible point. Further, a tempered steel guard keeps the head from undue wear.

### ULTRA-DENSITY Core

An ultra-dense metal alloy is used in this high-performance head. The sensitive core is well protected by a tempered steel alloy guard as well. And super-tough titanium bridges the gap.

### Hi-performance erase head

This dual gap, ferrite head is improved to handle the large current necessary to erase metal tapes. Erasures are instant and complete because of the high flux density. Plus, the head runs cool even when using large amounts of erase bias current.

### Superior Response

The hyperbolic head of the AL-50 keeps initial distortion low. Response is flat across the dynamic range, farther and flatter than most competitive decks. Furthermore, improvements in the recording and playback amps have increased the dynamic range — it is now more than 15 dB above the Dolby level more than sufficient to get the best from all metal tapes.

### Dolby NR\*/Multiplex filter OFF Switch

Each AL-50 has a Dolby NR system built in to remove hiss from the playback.

When recording, from an FM stereo broadcast for instance, Dolby NR improves the signal-to-noise ratio with a filter position that prevents incorrect tracking.

MPX filter OFF broadens the frequency range, securing a very flat response in the ranges above 15 kHz. This is especially advantageous when recording from monaural FM broadcasts, from albums, or from nature.

### Sensitive fluorescent level meters

The fluorescent level meters of the AL-50 provide the accuracy that is crucial to good recordings. The special circuitry and fluorescent display give better accuracy than conventional mechanical meters. Furthermore, right and left channel meters are arranged in parallel for instant comparison.

You can tell at a glance that your AL-50 deck is in the METAL tape mode because the word METAL and the figures + 8 dB light up on the level meter's face.

### Convenient auto play, auto rewind

A mere press of a button activates the IC that controls auto play, or auto rewind. At the end of a tape, with auto play, the deck goes immediately into the PLAY mode from REWIND, in auto rewind, it automatically goes into REWIND from PLAY. Activating both simultaneously means that you can hear the same tape over and over again without ever having to touch the deck again.

### Convenient REMOTE CONTROL option

Virtually every function of the AL-50 cassette deck can be controlled from the comfort of your favorite armchair. With the convenient 7-mode remote control unit RU-10 that is available as an extra-cost option. A 5-meter cord lets the unit be operated from virtually any point in the room. The receptacle for the remote control jack is in the back panel of the AL-50.

\* Noise reduction circuit is made under licence from Dolby Laboratories. The word "DOLBY" and the Double-D symbol are trademarks of Dolby Laboratories.

### Full auto stop

The deck shuts off automatically at the end of the tape regardless of the mode it is in —unless it is in auto play/-auto rewind mode. The/automatic/shutoff feature protects your tapes from undue stress.

### Tape type selector

Three positions of the tape type selector let you set the AL-50 for the precise tape you want to play back or record. The settings are METAL, CrO<sub>2</sub> and NORMAL.

## SPECIFICATIONS

Recording System . . . . .	4 track, 2 channel stereo
Tape Speed . . . . .	4.76 cm/sec (1-7/8 ips)
Wow & Flutter . . . . .	0.04%(WRMS)
Signal to Noise Ratio . . . . .	65 dB (Dolby NR ON, A Curve WTD)
Total Distortion . . . . .	1.0%(1 kHz Ref. Level)
Frequency Response (R/P) . . . . .	
Metal . . . . .	20 Hz to 19 kHz
CrO <sub>2</sub> . . . . .	20 Hz to 18 kHz
Normal . . . . .	20 Hz to 17 kHz
Bias Frequency . . . . .	105 kHz
Input Sensitivity/Impedance . . . . .	
Mic: 0.2mV/200 ohm to 2K ohm	
Line: 75mV/50K ohm	
Channel Separation . . . . .	57 dB (1 kHz)
Output Level/Impedance . . . . .	
Line: 550mV/50K ohm	
Headphone: 1mW/8 ohm	
Fast Forward/Rewind Time . . . . .	90 sec. (C-60)
Power Consumption . . . . .	25W
Power Source . . . . .	120V/60Hz (For U.S.A./Canadian model) 110/127/220/240 V, 50/60 Hz (For European model)
Semiconductors . . . . .	62 Transistors, 2 FETs, 5 ICs, 36 Diodes, 3 Zener Diodes, 5 LEDs
Dimensions . . . . .	435(W) x 116(H) x 254(D)mm
Weight . . . . .	5.1 kg

\* Specifications and characteristics are subject to change without prior notice.

## NAMES AND FUNCTIONS OF PARTS ON FRONT PANEL (See Figure 1)

- ① **POWER button**
- ② **EJECT button**
- ③ **Cassette door**
- ④ **STOP switch ( ■ )** -- When this switch is touched during tape running, the operation mode is changed over to stop the tape running.
- ⑤ **Rewind switch ( ◀ )** — Touch this switch to rewind the tape rapidly. The tape runs from the right to the left side.
- ⑥ **Play switch ( ▶ )** — Touch this switch, then the tape runs from the left to the right side.
- ⑦ **Play indicator (Green)**
- ⑧ **Pause Indicator (Yellow)**
- ⑨ **PAUSE switch** — When this switch is touched during recording or playback, the tape motion stops momentarily. When PLAY switch is touched, the tape resumes running. Pause function does not operate at fast forward and rewind modes.
- ⑩ **Fast forward switch ( ▶▶ )** — Touch this switch for fast forwarding the tape.
- ⑪ **Record Indicator (Red)**
- ⑫ **REC switch** — Touch this switch together with the PLAY switch or PAUSE switch for recording.
- ⑬ **REC MUTE switch** — Remain touching this switch to cut off a commercial message or to make an introductory blank. Unlike the PAUSE switch, the tape runs unrecorded by touching this switch.
- ⑭ **AUTO PLAY indicator**
- ⑮ **Fluorescent PEAK meter**
- ⑯ **AUTO PLAY switch** — When this switch is pushed to lock and rewind switch ( ◀ ) is touched, the tape rewinds and comes back to beginning of the tape, then the playing automatically begins.
- ⑰ **AUTO REW switch** — When this switch is pushed to lock and the play switch ( ▶ ) is touched, the tape is automatically rewound from the tape end. This function is not effected when the fast forward switch ( ▶▶ ) is touched,  
\* When both AUTO PLAY, AUTO REW switches are pushed, the tape plays back repeatedly by touching the play ( ▶ ) or rewind ( ◀ ) switch. When the tape comes to an end, it automatically rewinds and plays back again.
- ⑱ **AUTO REW indicator**
- ⑲ **MIC jacks**
- ⑳ **INPUT SELECT Switch** — This switch selects recording from LINE INPUTS or MIC (or MIC/DIN) jacks.
- ㉑ **REC LEVEL (L/R) controls**
- ㉒ **DOLBY NR knob** — For recording or playback with Dolby NR system, set this knob to the "ON" position.
  - **DOLBY NR ON/MPX FILTER ON (Left position):** This position is selected for recording FM stereo broadcast with Dolby NR system. With FILTER ON, 19 kHz pilot signal and 38 kHz subcarrier are eliminated from the FM stereo signal.
  - **DOLBY NR ON/MPX FILTER OFF (Middle position):** This position is selected for recording or reproducing any other source than FM stereo broadcast with Dolby NR process.
- ㉓ **Counter Reset button**
- ㉔ **TAPE SELECT knob**



- ⑳ Digital TAPE COUNTER
- ㉑ PHONES jack — Connect stereo headphones to this jack for private listening.

## NAMES AND FUNCTIONS OF PARTS ON REAR PANEL (See Figure 2).

- ㉒ REC/PLAY (DIN) jack (For European model only)
- ㉓ LINE INPUT jack
- ㉔ LINE OUTPUT jack
- ㉕ REMOTE jack — When the ALPAGE Model RU-10 available in the market is connected to this jack, AL-50 can be remotely controlled without operating the front panel.
- ㉖ Voltage selector switch (For European Model only) — Select the desired voltage 110, 127, 220, or 240 volts to be used. Turn the switch clockwise or counter-clockwise by a screwdriver according to your AC outlets voltage.
- ㉗ AC supply cord — Connect to the AC outlet, (Check labeling on the rear panel for the correct voltage).

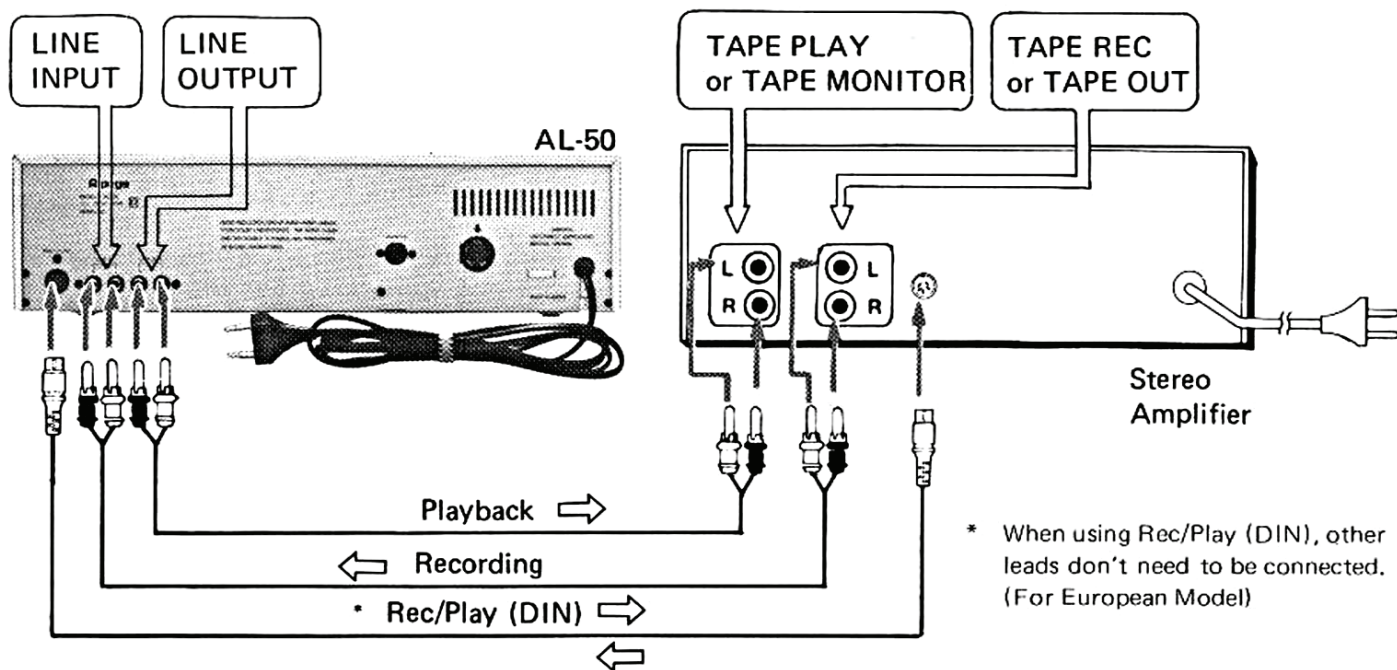
## CONNECTIONS

The AL-50 is provided with LINE INPUT, LINE OUTPUT jacks, and DIN jack is equipped for European model only. **Using for LINE OUTPUT jacks (RCA type pin cord)** Connect the cord between the LINE OUTPUT jacks of this unit and the "Tape Play" jacks or "Tape Monitor" jacks of your stereo amplifier. Connect right to right and left to left.

**Using for LINE INPUT jacks (RCA type pin plug cord)** Connect a pin plug cord between the LINE INPUT jacks of this unit and the "Tape Out" jacks or "Tape Rec" jacks of your stereo amplifier. Connect right to right and left to left.

**Using for DIN jack (For European model only)** Connect the DIN cord between the REC/PLAY jacks of this unit and the REC/PLAY jacks of your amplifier/Receiver. When using the DIN jack, set the INPUT SELECT switch to MIC/DIN position.

**Using for microphones** Any high quality low impedance microphone equipped with a phone plug may be used.



## OPERATIONS

### TO LOAD CASSETTE (See Figure 3)

1. Push the EJECT button to open the cassette door.
2. Insert the desired cassette tape with its tape exposed side facing down and the appropriate label facing toward you into the cassette compartment located on the rear of the cassette door.
3. Push the door to close it. Now, the cassette is placed in position.

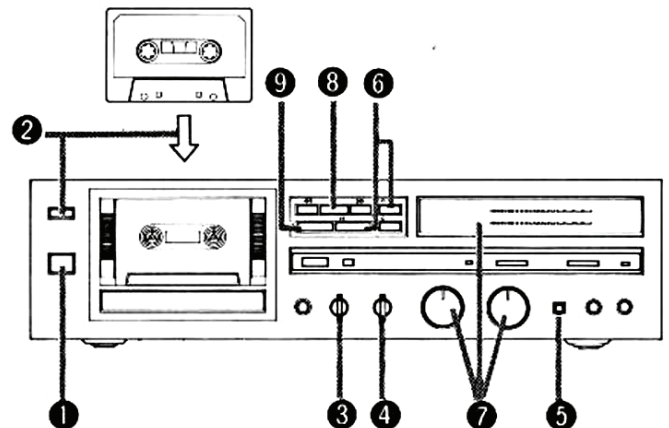
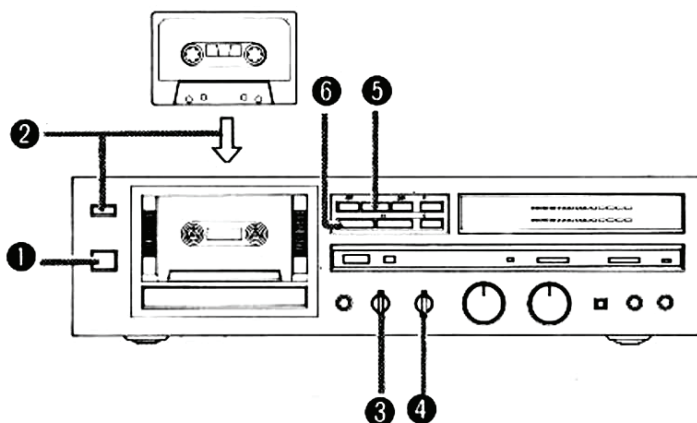
### PLAYBACK

1. Make all the connections as instructed above and then turn on the AL-50.
2. Load the desired cassette tape in the manner instructed above.
3. Set the TAPE SELECT knob according to the type of tape to be used. For suitable position, refer to table 1.
4. Set the DOLBY NR knob to the ON position for playing the tape recorded with Dolby NR system or to OFF position for playing the tape recorded without Dolby NR system.
5. Touch the play switch (▶) to start playing.
  - Adjust the volume, balance and tone controls on your Amplifier/Receiver for the desired sound level and quality.
  - When you wish to locate the particular portion of the tape, use the fast forward (▶▶) and/or the rewind (◀◀) switches.
6. To stop playing, merely touch the STOP switch.
  - To take out the cassette tape, depress the EJECT button.
  - If you desire to play the programs on the reverse side, reload the cassette tape with its opposite program label facing toward you and touch the play switch again.

## RECORDING

### Recording from stereo amplifier/receiver

1. Make all the connections as instructed above and then turn on the AL-50.
2. Load a non-recorded cassette tape in the manner instructed above.
3. Set the TAPE SELECT knob according to the type of tape to be used. For suitable position, refer to the table 1.
4. Set the Dolby NR knob to the "ON" position for recording with Dolby NR system or to the "OFF" position for recording without Dolby NR system. When recording an FM stereo broadcast with Dolby NR system using an FM tuner with MPX pilot signal leakage, set the knob to the left position (FILTER ON). But when recording a program source with Dolby NR system other than an FM stereo broadcast, or when using an FM tuner with no MPX pilot signal leakage, set the knob to the middle position (FILTER OFF) for wider frequency range.
5. Set the INPUT SELECT switch to the LINE position.
6. Touch the PAUSE and REC switches simultaneously. The REC and PAUSE indicators light up.
7. Adjust the REC LEVEL controls for proper recording level.
8. Touch the PLAY switch to release the PAUSE mode. Recording will begin.
  - Touch the PAUSE switch to stop tape motion for a moment without using the STOP switch.
  - Keep on touching the REC MUTE switch to advance the tape unrecorded for a while.
9. To stop the recording, touch the STOP switch. When the tape ends, the automatic stop mechanism will release the REC and PLAY switches simultaneously.



### Recording from microphones

1. Plug the microphones into L and R MIC jacks on the front panel of the unit.
  2. Set the INPUT SELECT switch to the MIC (or MIC/DIN) position.
  3. Follow all the instructions given above under "Recording from Amplifier/Receiver".
- Note:** Only use of the L/MONO jack permits recording in both L and R with one microphone.



### Recording level setting

A recording level has a great influence over the quality of playback sound. If a tape is recorded with the level meter indicated over full scale, a playback sound may be distorted, while the S/N ratio may be degraded and the sound may be disturbed by a noise if the illumination deflection is too small.

It is generally advisable for successful recording to set the meter maximum level to +5 dB for a metal tape, +1 dB for Cobalt Hi-Fi tape (CrO<sub>2</sub> position), and 0 dB for Ordinary tape or Pure CrO<sub>2</sub> tape. Turn the REC LEVEL control fully counterclockwise. Then, turn REC LEVEL control gradually clockwise while monitoring the meter illuminator deflection so that the maximum recording level and optimum sound volume balance of L and R are obtained. Once this adjustment has been completed, thereafter the recording level adjustment is not required.

### PEAK meter

An ordinary level meter works in the similar way as the human hearing sense, and indicates the mean value of an input signal. The maximum value of an actual input signal to be recorded is higher than the mean value, and the input signal sometimes includes pulse signals with the wide amplitude. Such a signal cannot be covered by an ordinary level meter. When the maximum value (peak value) of the pulse signal exceeds the maximum saturation level of a tape, the signal is recorded with distortion. Since the AL-50 employs the peak level meter that susceptibly reacts to the momentary pulse input signal, it is easy to adjust the recording level without generating a distortion.

### Erasure of recordings

When a new recording is made, any program material previously recorded on that portion of the tape is automatically erased, and only the new recording remains. To erase recorded sound without making a new recording, operate the recorder in a normal manner for recording without any input connected to MIC (or MIC/DIN) or LINE INPUT jacks, or turn the REC LEVEL controls fully counterclockwise. This will erase all previous recording and leave you with a blank tape for brandnew recordings.

### Safeguard against accidental erasing (See Figure 4 and 5)

Every time a recording is made, the sound previously recorded is erased. To safeguard valuable recordings from being erased accidentally, the cassette and the recorder are equipped with special devices.

On the back of the cassette are two little tabs. If you want to be sure that a recording can never be erased again, break out these tabs with a screwdriver or similar tool. The resulting opening interlocks the REC switch of the recorder. The REC switch cannot be operated while this cassette is inserted.

If only one track is to be protected, break out only the tab at the left when the tape is in position for using that track. If you wish to record on a cassette whose tab has been removed, simply cover the slot with cellophane or vinyl tapes, then record in the usual way.

### Prevention of tape tangle (See Figure 6)

Before playing or recording the tape, make sure the tape is not loosened in the cassette housing. If it is loosened, use a pencil or similar object to tighten it as shown in the illustration.

## FOR METAL TAPE

A number of technics have been developed for improvement of the performance of a cassette deck. Among these technics, an improvement in the performance of the magnetic material of a tape is particularly noticeable. The material has been improved from the first iron oxide (gamma Fe<sub>2</sub>O<sub>3</sub>) to chromium dioxide (CrO<sub>2</sub>). In spite of such improvement of the tape material, the performance of the tape itself made of the improved material has reached the limit and failed to fill a gap existing between a reproduced sound and an original sound. A metal tape made of a new material has been developed to satisfy the demand to improve the performance of a tape itself.

In the metal tape, a polyester base of a tape is coated with a magnetic material composed primarily of pure iron (Fe). Appearance and touch of the metal tape are almost the same as those of a conventional tape. However, since the metal tape can record twice or more times larger information content with high density, the maximum output level can be improved over all frequency bands. Particularly, the frequency response and dynamic range can be considerably improved. Therefore, if this new material is applied to a cassette tape, the high frequency response will be improved to the level comparable to that of a reel-to-reel tape deck of 4-track/19 cm.

### ● A tape deck applicable to a metal tape is superior to a conventional tape deck in the following performance items: (See Figure 8)

1. The frequency response in recording and reproduction of a high level input signal is higher.
2. The maximum output level is higher over all frequency bands.
3. Wide dynamic range in the high frequency range.
4. Improved recording/playback distortion factor.
5. Improved S/N ratio in the high frequency range.

## MAINTENANCE

### Lubrication

This should be performed by a qualified technician equipped with the proper tools. Please contact your nearest ALPINE store for lubrication of the deck.

### Cleaning (See Figure 7)

When cleaning the head of the equipment, remove the cassette door. If a loss of brilliance in frequency response is noticed, the tape head probably require cleaning. Wipe the surface of head, capstan, pinch roller, etc., using a cotton swab moistened with isopropyl alcohol or special cleaning fluid.

### To clean the cabinet

Wipe the cabinet with a soft cloth. Avoid use of chemical fluids such as benzine and thinner because it may result in damage to the finish.

## TROUBLESHOOTING HINTS

When the tape deck fails to function properly, check following conditions first, then examine it according to the check list below. If the abnormality does not fall under any items in the check list, the tape deck itself may have developed certain trouble. Contact the nearest ALPINE dealer in this instance.

1. Are all connections correct ?
2. Is this unit properly used as instructed in this manual ?
3. Is there no trouble on speakers and amplifiers ?

Symptom	Causes	Remedy
<ul style="list-style-type: none"> <li>● The power does not turn on.</li> </ul>	<ul style="list-style-type: none"> <li>● The power supply cord is loosened or disconnected.</li> </ul>	<ul style="list-style-type: none"> <li>● Check if the power supply cord is surely connected to AC receptacle.</li> </ul>
<ul style="list-style-type: none"> <li>● The REC switch does not operate.</li> </ul>	<ul style="list-style-type: none"> <li>● No cassette tape is loaded.</li> <li>● The tab of the cassette tape is bent.</li> </ul>	<ul style="list-style-type: none"> <li>● Load a cassette tape.</li> <li>● Paste an adhesive tape on the tab.</li> </ul>
<ul style="list-style-type: none"> <li>● High frequencies are weak.</li> </ul>	<ul style="list-style-type: none"> <li>● Heads are dirty.</li> <li>● A non-Dolby recorded tape is being played back with DOLBY NR knob set to ON.</li> </ul>	<ul style="list-style-type: none"> <li>● Clean heads.</li> <li>● Set DOLBY NR knob to OFF.</li> </ul>
<ul style="list-style-type: none"> <li>● The tape does not run.</li> </ul>	<ul style="list-style-type: none"> <li>● The PAUSE switch has been touched.</li> <li>● The cassette tape used requires large winding torque.</li> </ul>	<ul style="list-style-type: none"> <li>● Touch the PLAY switch to release it.</li> <li>● Replace the cassette tape.</li> </ul>
<ul style="list-style-type: none"> <li>● No playback sound.</li> </ul>	<ul style="list-style-type: none"> <li>● Poor connection (LINE OUT).</li> </ul>	<ul style="list-style-type: none"> <li>● Check the connections.</li> </ul>
<ul style="list-style-type: none"> <li>● Intermittent sound (Rec/Play).</li> </ul>	<ul style="list-style-type: none"> <li>● The tape is extended abnormally.</li> <li>● Dirty head surface.</li> </ul>	<ul style="list-style-type: none"> <li>● Replace the tape.</li> <li>● Clean the head.</li> </ul>
<ul style="list-style-type: none"> <li>● Distorted playback sound.</li> </ul>	<ul style="list-style-type: none"> <li>● The recorded tape is distorted.</li> <li>● The playback level is too high.</li> </ul>	<ul style="list-style-type: none"> <li>● Replace the tape.</li> <li>● Lower the amplifier volume.</li> </ul>
<ul style="list-style-type: none"> <li>● Distorted record sound.</li> </ul>	<ul style="list-style-type: none"> <li>● The recording level is too high.</li> <li>● The tape is recorded with distortion.</li> </ul>	<ul style="list-style-type: none"> <li>● Adjust the recording level to be lower than regulated levels.</li> <li>● Replace the tape.</li> </ul>
<ul style="list-style-type: none"> <li>● Excessive wow.</li> </ul>	<ul style="list-style-type: none"> <li>● The capstan and pinch roller are fouled.</li> <li>● The tape is wound too tight with steps.</li> </ul>	<ul style="list-style-type: none"> <li>● Clean the capstan and pinch roller.</li> <li>● Rewind the tape in the fast forward mode.</li> </ul>
<ul style="list-style-type: none"> <li>● Excessive noise.</li> </ul>	<ul style="list-style-type: none"> <li>● The head is magnetized.</li> <li>● Improper tape is used.</li> </ul>	<ul style="list-style-type: none"> <li>● Demagnetize the head.</li> <li>● Replace the tape.</li> </ul>
<ul style="list-style-type: none"> <li>● A hum noise is generated.</li> </ul>	<ul style="list-style-type: none"> <li>● Poor connection of the signal lead.</li> <li>● External leakage flux (inductive noise of the amplifier or power transformer).</li> </ul>	<ul style="list-style-type: none"> <li>● Check the connection of the signal lead.</li> <li>● Separate the tape recorder from the other equipment.</li> </ul>



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