

Thank you for purchasing the 5K50

The 5K50 is a totally professional cassette deck comparable to reel-to-reel machines. Unrivalled sonic quality is achieved thanks to our acclaimed "Realtime Processed" DC configuration employed in both recording and playback amps, discrete 3-head system with 3-motor dual capstan operation, full IC logic control, etc.

The outstanding feature is an adoption of DC-amp configuration at recording and playback amplifiers. A tape deck is a complex of mechanism and electronics, but rather poor electronic circuitry has been used in the conventional decks. We, at LUX, considered it quite indispensable to upgrade the amplifier section utilizing our accumulated amplifier technique. Especially at the recording amp, our exclusive system (Pat. Pend.) named BRBS (Bridge Recording by Bias current and Signal current) is employed to remove transient distortion and phase shift for ultimate fidelity reproduction.

Additionally provided are feather touch key-board operation by reliable logic circuit, precision 4-digit 7-segment LED tape counter, which permits realtime reading with LUX's exclusive cassette tape, plasma peak indicator which indicates the maximum peak and instantaneous peak level at the same time, the timer recording/playback function, etc. To cope with an advent of metal particle tape, this deck is provided with the special head mount structure for easy replacement of the total head assembly suitable for metal particle tape which is optionally available.

We recommend that you choose with care other Hi-Fi components to be used in combination, and go through the contents of this owner's manual to make the most of the potential of the 5K50.

BASF CHROM Super II	⊗	⊗
TDK SA-X mittel-hoch aussteuern	⊗	⊗
SONY CHROM (UTE) niedrig aussteuern	⊗	⊗
	Bias	AZINVTM
BASF FeCr hoch aussteuern	⊗	⊗



CONTENTS

Before operating the 5K50	2 - 3
Before using this cassette deck	
Cassette Tape	
Loading of Cassette Tape	
To Cope with Metal Particle Tape	
LUX's Exclusive Cassette Tape	
Switches & Controls	4 - 8
Block Diagram	9
Connection Procedure	10 - 11
Recording/Playback/Erasure	12 - 15
Stereophonic Playback	
Erasure	
Before Proceeding to Recording	
Stereophonic Recording	
To Set Recording Level	
Correlation of BIAS/EQ Position and Cassette Tapes	
Direct Change from "Playback" to "Recording"	
To make the most of the 5K50	16 - 20
Recording Mute Function	
Tape Counter	
Search Function	
Mixing of Line Input and Mic Input	
Remote Control Operation	
Timer Recording · Timer Playback	
Tape Transport Mechanism	
Dolby NR System	
Maintenance	21
Before Consulting a Service Shop	22
Specifications	23

WARNING: TO PREVENT FIRE OR SHOCK HAZARD
DO NOT EXPOSE THIS APPLIANCE TO
RAIN OR MOISTURE.

Before operating the 5K50

Before Using this Cassette Deck

* Power Supply Source

Check that the AC voltage of this deck is adjusted to correspond to that of your listening room. You need not worry about the cycle (50Hz or 60Hz) as DC motors are employed in this unit.

* Location

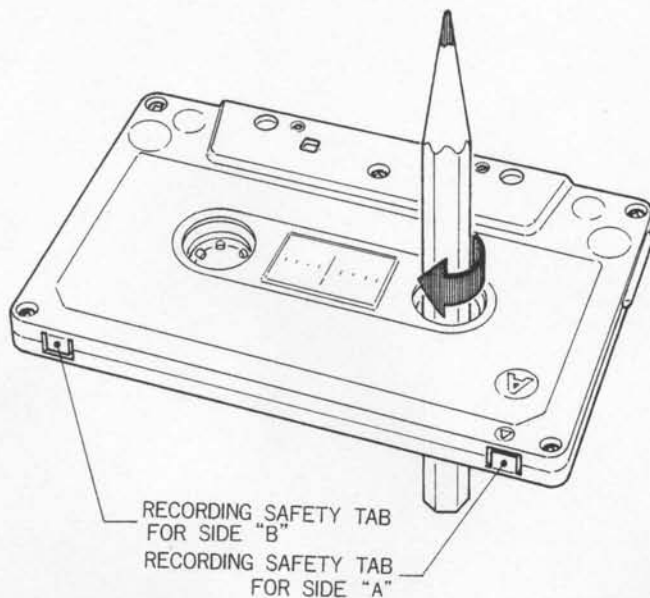
When placing the unit, avoid such locations having high temperature caused by direct sunbeams or heaters, and high humidity as well as excessive dust. Do not cover the ventilation holes with furnitures, books etc. Also keep this unit away from noise-generating apparatus such as cleaner, hair-dryer, buzzer, etc.

* Timer Switch

Set the timer switch to the "off" position except when playback or recording is made by an external timer, as especially at the "rec" position your precious recording may be erased when the power is turned on.

* Input Levels

Set all the input level controls to the endmost counter-clockwise (min.) position. Especially while recording, S/N is deteriorated if the Mic Input Control is turned clockwise even without connection of microphones.



CASSETTE TAPES

Various types of cassette tapes available in the marketplace (such as normal tape, CrO₂ tape, FeCr tape and Metal Particle tape etc.) offer different characteristics from type to type. This deck is so designed as to deal with all these tapes (metal particle tape with replacement of the head housing and bias block), but care is needed to derive the optimum performance.

- * Set correctly the bias and equalization of the deck to match the characteristics of the tape to be used. Mismatch may cause deterioration of performance. For details refer to the section "Correlation between BIAS/EQ Positions and Cassette Tapes"
- * Avoid to use the C-120 type tape, as a slight misuse may cause this tape tangled or rolled up in the tape transport mechanism.
- * For safety in recording and playback of important program, follow the instruction of the cassette tape you use. Especially a slack of tape in the cassette case may impair your precious tape, and wind up the tape by a pencil or the like before use as per the drawing.
- * The cassette tape is provided with 2 recording safety tabs for the "A" and "B" sides as depicted in the drawing. To protect your valuable recording from an accidental erasure, break the tab from the cassette tape by a screwdriver and the anti-erasure function of the deck is put into operation. If recording is desired into such tape with the tabs already broken, cover the hole by a piece of masking tape or fill it with erasure rubber etc.

Loading of Cassette Tape

Press the Cassette Lid (19) to open the Cassette Compartment and insert a cassette tape with the tape-exposed side facing downward and the side to be played or recorded facing front. Now, depress the Cassette Lid (19) until it is locked.

When a cassette tape is loaded, the discriminator between usual tape (for numeric counter display) and LUX's exclusive tape (for real time counter display) functions automatically for approximately 1 second. During this period, the Tape Counter (7) does not function, and operation of tape transport buttons activates the tape run without counting. Thus the counting will be incorrect especially at the time of fast-forwarding and rewinding. Therefore, the Key Board operation should be made at least 1 second after loading the cassette.

LUX's Exclusive Cassette Tape

The development of magnetic tape has been marking remarkable progress of late, and nowadays high quality tape is made available for Hi-Fi use. Various problems have been brought to light as the quality of deck is improved, in the mechanism of tape especially in correlation between deck and cassette tape. To solve such problems, LUX prepared an exclusive cassette tape having many unique features.

LUX's Exclusive Cassette Tape has the following features:
 (1) SKEW adjustment facility to

obtain the optimum azimuth and tilt position.

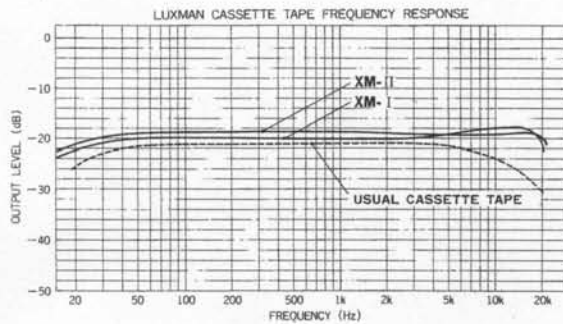
- (2) Wide pad and new holding mechanism to provide constant pressure for stable frequency response.
- (3) 4-guideroller system to prevent torque loss, offering constant back-tension.
- (4) High precision roller with reflection plate to enable to read real-time with our decks Model 5K50 and K-12.

For complete information, ask your nearest LUX dealer.

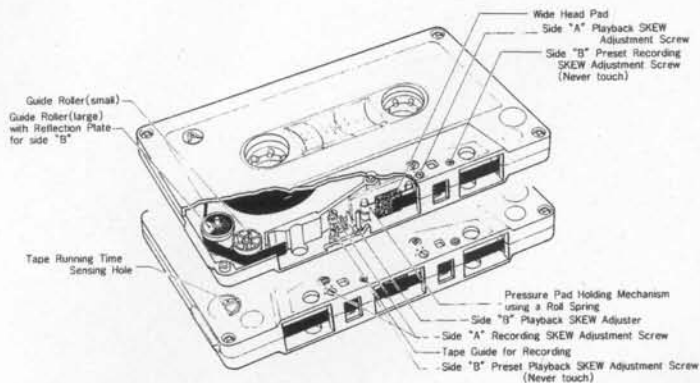
To Cope with Metal Particle Tape

To handle the latest metal particle tape offering superb sonic quality, the special replacement head housing and bias block are optionally available on request. For details, consult your local dealer.

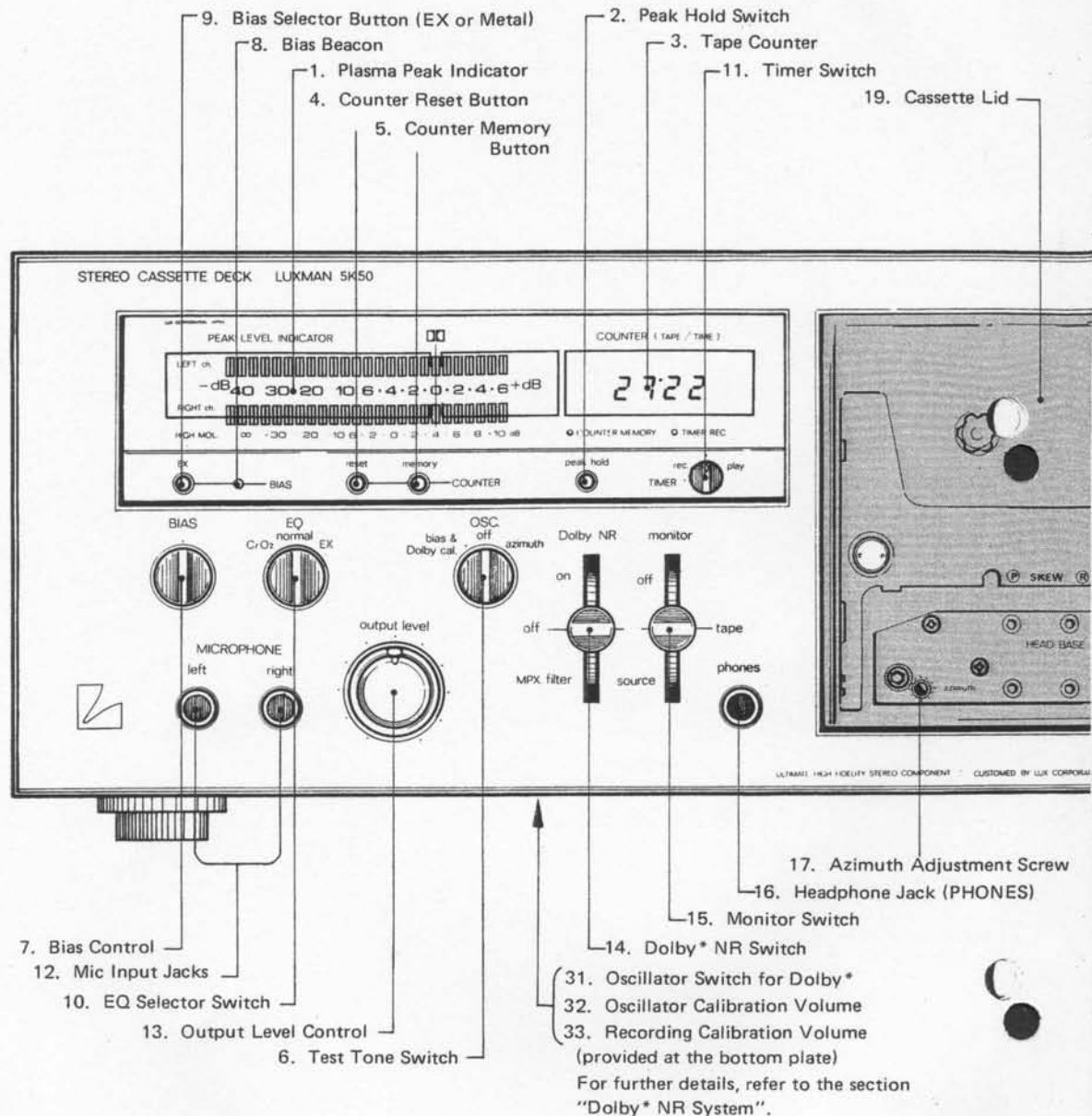
Incidentally, this deck is provided with various functions (bias selector, meter range for metal tape, etc.) to cope with metal particle tape, but note that they do not operate unless the corresponding modification is rendered.



XM-I: LUXMAN normal position tape
 XM-II: LUXMAN CrO₂ position tape



Switches & Controls



1. Plasma Peak Indicator

The fluorescent blue tubes display the instantaneous peak level with 24 dots per channel. The quick response to the recording signals makes it easy to set up an appropriate recording level.

0dB corresponds to 200nWb/m that is the Dolby NR standard level. The rise time is 10m sec. and the decay time is below 700m sec.

You can retain the peak level with the upper 12 dots from -5dB to +6dB in 1dB increments by means of the peak hold switch.

2. Peak Hold Switch

Press this button, and the peak level is held in the Plasma Peak Indicator (1). The next press releases the peak-hold function.

3. Tape Counter

A 4-digit 7-segment LED ensures electronic digital readout. 2 different indications are possible depending on the cassette tapes you use. With the LUX's exclusive cassette tape, you can read the real time in terms of minutes and seconds.

As to further details, refer to the

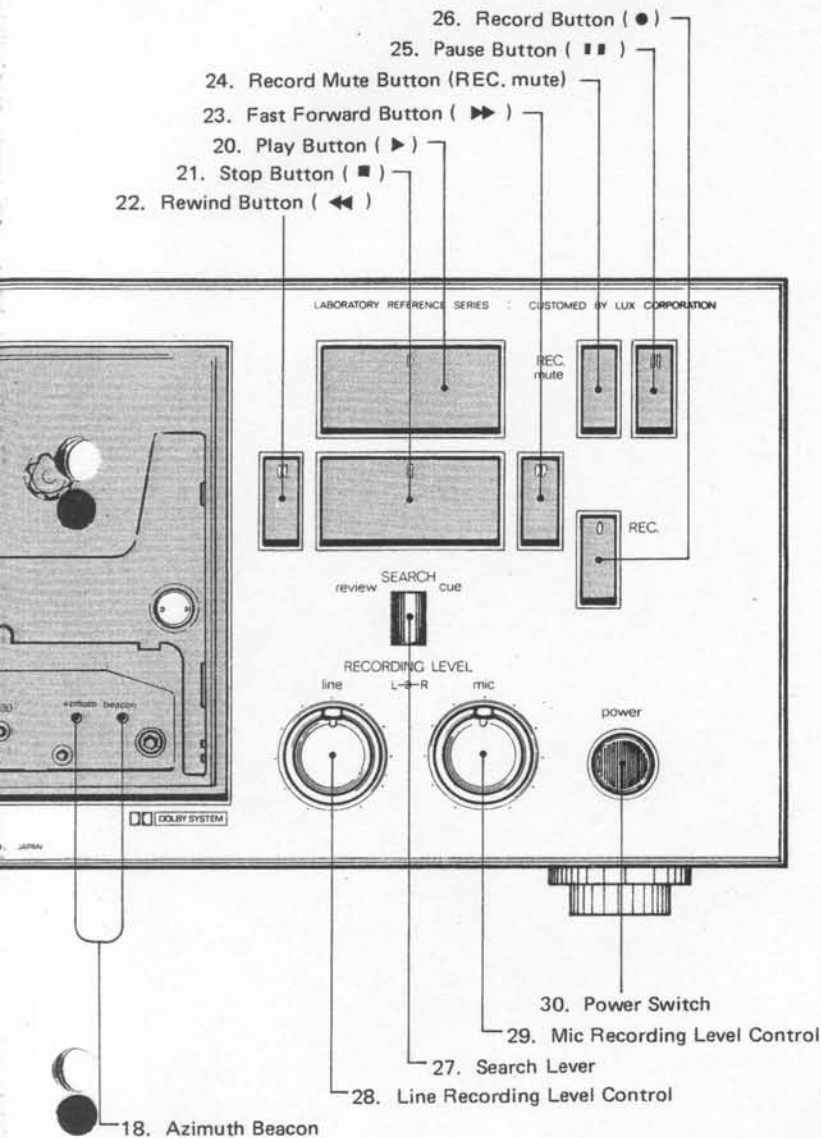
section of "Indication by Tape Counter"

4. Counter Reset Button

When this button is depressed, the indication of the tape counter shows [0000]. This device is useful at the time of starting the recording or using the counter memory function. When the Cassette Lid (19) is opened, the counter is automatically reset to [0000] indication.

5. Counter Memory Button

Press the "Memory" button and the



Memory LED lights up. The tape rewinding will automatically stop in the vicinity of the [0000] indication of the counter.

The next press releases the counter memory function.

6. Test Tone Switch

This activates the built-in oscillator used for adjustment of bias, Dolby* recording level, and azimuth. 3 positions are provided.

[off]; Set the switch in this position except when above-mentioned adjustment is needed.

[bias & Dolby* cal.];

This position is used for adjustment of recording bias and Dolby recording level. 400Hz built-in oscillator operates. [Note that, for the level adjustment of Dolby recording, the Dolby OSC. Switch(31) should be in the "on" position].

[azimuth];

This position is used for adjustment of the azimuth of the recording head. 6kHz built-in oscillator operates.

7. Bias Control

The optimum bias corresponding to each characteristic of recording tape or any diversified bias condition can be obtained by adjusting this control.

Make this adjustment before proceeding to recording the program source. Set the Test Tone Switch (16) to the "bias & Dolby cal." position, then put the operation keys into the recording mode. Now, turn gradually the control knob to the clockwise position, and the Bias Beacon (8) lights up. When further turned on, the Bias Beacon goes out. The first light-up point is equivalent to -0.25 dB under-bias point, and the next distinguishing point means -0.25 dB over-bias point.

Between these two points, one-third turn from the first light-up point fixes the bias to the peak point of the recording tape. But you can adjust it according to your own taste of playback sound.

8. Bias Beacon

This beacon is an LED indicator used for selection of bias point of recording tape. The indicator lights up in the range between -0.25 dB under bias point and -0.25 dB over bias point.

9. Bias Selector Button (EX or Metal)

This feature is provided for recording on metal particle tape. With simple replacement of the head housing and bias block, you can enjoy true high fidelity recording by fine metal tape in future. When the corresponding head assembly and bias block are provided, depress this button to obtain the optimum bias for metal particle tape.

Do not depress this button without providing the replacement heads and bias circuit, as in such case the deck is put into "REC. MUTE" mode.

10. EQ Selector Switch

You can select the proper recording and playback equalization for various types of tape.

- [normal] ; For playback and recording on the normal tape, e.g., LUX's XM-I etc. (Equalizer time-constant is 120 μ sec.)
- [CrO₂] ; For playback and recording on the CrO₂ type tape, e.g., LUX's XM-II etc. (Equalizer time-constant is 70 μ sec.)
- [EX] (metal) ; For playback of metal particle tape. (Equalizer time-constant 70 μ sec. Replace the head assembly and bias block for recording on metal particle tape.)

Note that this switch should be set properly both for recording and playback according to the type of the tape.

11. Timer Switch

Playback or recording is possible by an external timer.

- [off] ; Usual operation without timer.
- [play] ; Select this position when playback by timer is needed. It is automatically put into the playback mode when power is turned on.
- [rec.] ; Select this position when recording by timer is needed. It is automatically put into the recording mode when power is turned on. Note that in case the recording safety tabs are removed from the cassette tape, the deck is put into the playback mode.

12. Mic Input Jacks

Plug in the microphone for recording in the right and left channels. Mixing with the Line Input is feasible. The input sensitivity is 0.25mV. It is recommended to use the microphone whose impedance is in the range from 600 ohms to 10k ohms.

13. Output Level Control

This potentiometer controls the output volume level at the Output Jacks (35) and Headphone Jack (16). Usually set it at the max. for playback.

14. Dolby* NR Switch

3 positions are provided, namely, "on", "off" and "MPX filter". In the "on" position, the Dolby Noise Reduction circuit is activated to reduce tape hiss at the time of recording and playback. The "MPX filter" position is useful to remove 19kHz carrier leakage when recorded from FM broadcasting. When Dolby NR is not needed, use the center "off" position.

* Dolby is the trade mark of Dolby Laboratories, Inc.

15. Monitor Switch

This switch selects reproduction of recorded sound and the program source before recording. Instantaneous off-the-tape monitoring is possible and you can enjoy instant comparison between original sound and recorded one. 3 positions are provided.

- [tape] ; To playback a recorded tape.
- [source] ; To monitor program source before recording.
- [off] ; To cut off output signals.

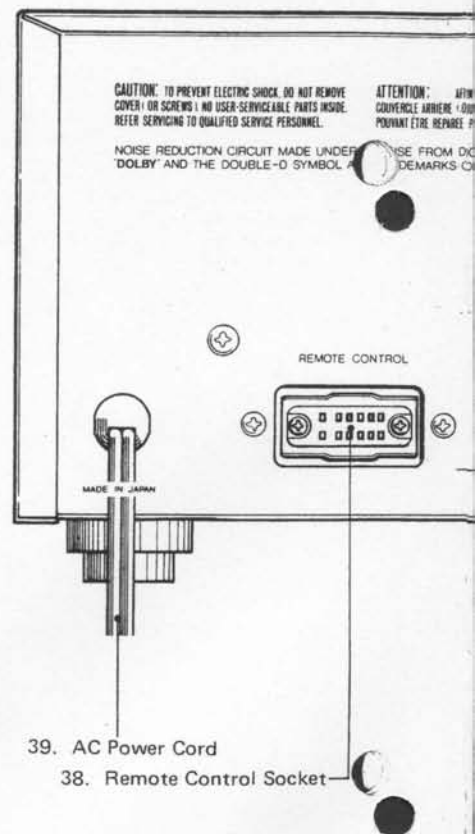
16. Headphone Jack (PHONES)

Connect the headphone for private listening or monitoring of program source. The headphone output can be controlled by the Output Level Control (13).

17. Azimuth Adjustment Screw

With the 5K50, it is possible to obtain the optimum azimuth condition corresponding to recording tapes, as the deck employs 3 discrete heads.

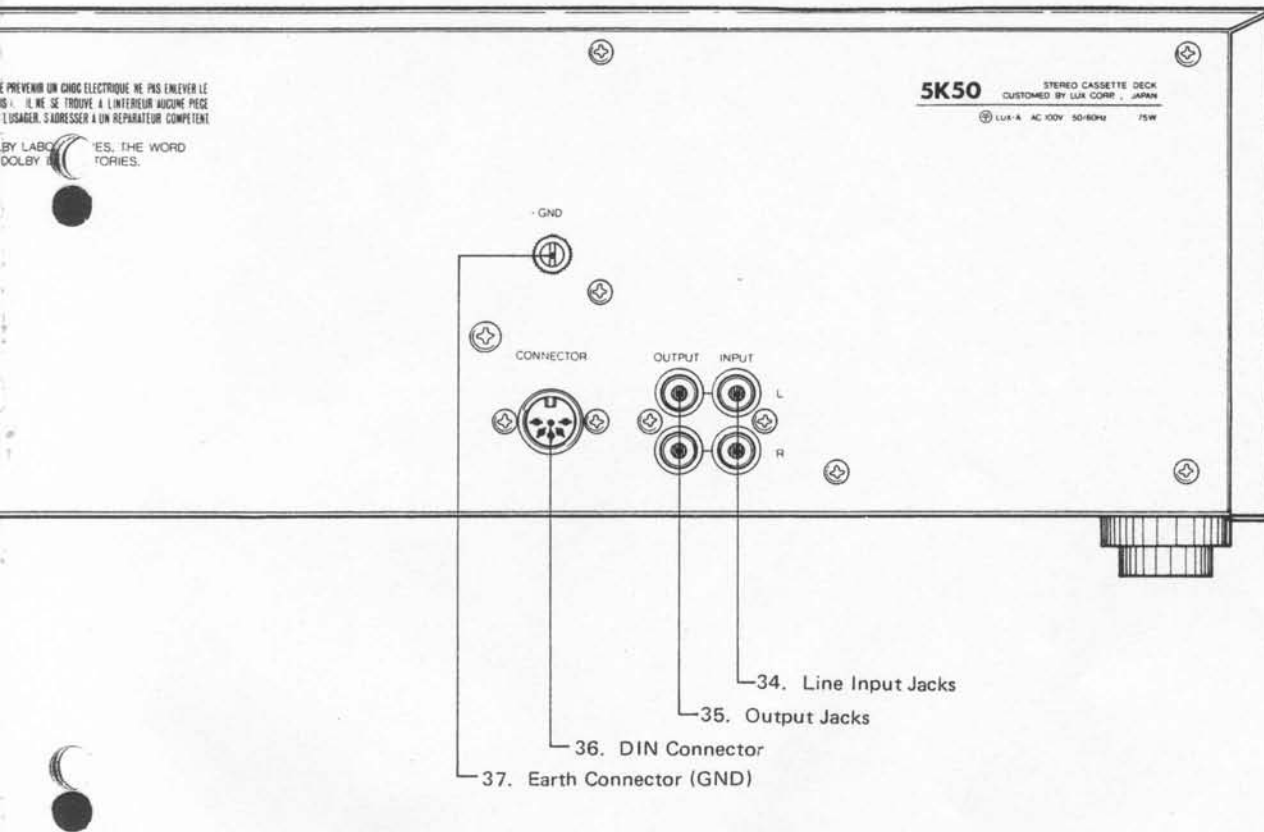
Set the Test Tone Switch (6) to the "azimuth" position, then put the 5K50 into the recording mode, and the 6kHz sine-wave signal is recorded on the tape. When both of the Azimuth Beacons (18) light up, the azimuth of the recording head is in the optimum position.



In case either of the two lights up or blinks, turn the adjustment screw to make both of them light up. Also in this adjustment procedure the Plasma Peak Level Meter (1) should be on the maximum level. Of course, this azimuth adjustment should be done after taking off the Cassette Lid (19).

18. Azimuth Beacon

When both of the two LED beacons light up, the azimuth of the recording head is in the optimum position to match the recording tape.



19. Cassette Lid

This lid also plays a role of the cassette ejector. When the glass lid is slightly depressed, the cassette compartment opens to accept a cassette tape. The next press makes the deck ready for operation.

The lid can be taken off when the compartment is opened and pulled upwards. Although the lid is made of hard glass, careful handling is recommended.

20. Play Button (▶)

Touch this button, and the deck is

put into the "PLAY" mode and play-back of recorded tape is possible.

21. Stop Button (■)

When touched, the total movement ceases.

22. Rewind Button (◀◀)

This button is to rewind the tape quickly from the right to the left. Auto-stop mechanism functions at the end of the tape.

23. Fast Forward Button (▶▶)

This allows to forward the tape

quickly from the left reel to the right. At the end of the tape, the movement stops automatically.

24. Record Mute Button (REC. mute)

This button is convenient to prevent recording of such unwanted program sources as the noise at the time of the stylus contact to a disc, the commercials in FM broadcasting, etc.

25. Pause Button (■■)

When the button is depressed, the

movement of the tape transport mechanism is temporarily halted during playback or recording. The playback or recording can be resumed at the next touch.

26. Record Button (•)

Recording starts once both of the "REC" and "PLAY" buttons are kept pressed in the order of "REC" + "PLAY" or "PLAY" + "REC".

27. Search Lever

This function is effective only at the time of the "play" mode. When the lever is slid to the right-hand "cue" position, cueing (playback with fast-forwarding mode) is feasible, while at the left-hand "review" position, reviewing (playback with rewinding mode) is possible. The lever is self-reset type, and release of hand from the lever puts the mechanism into the "play" mode. This function is useful to quickly locate the outset of the desired position of recorded programs.

28. Line Recording Level Control

The recording level from the line input (34) or from the DIN Connector (36) can be controlled. The inner knob is for the left channel and the outer one for the right. Normally, these two knobs rotate simultaneously.

29. Mic Recording Level Control

The recording level from the microphone can be controlled. The right and left channels can be separately controlled. When microphone is not used it is advisable to set this control to the extreme counter-clockwise position.

30. Power Switch

Depress the button to turn on or off the power. When the power is turned on, the Plasma Peak Indicator, Tape Counter, and the lamp in the cassette compartment will light up, putting the deck into the "STOP" mode.

Note that the warm-up time of approx. 5 seconds is needed until the entire circuitry becomes ready to function after the Power Switch is turned on. When one of the key board buttons is depressed during this warm-up time, the built-in logic circuitry remembers the input to operate the deck in the corresponding mode after the warm-up time.

31. Oscillator Switch for Dolby*

This volume controls the oscillator level for Dolby, which is correctly pre-adjusted at the factory to show 0dB indication on the Plasma Peak Level Meter (1). If the level is shifted, however, make subtle adjustment to obtain the correct 0dB indication on the Plasma Peak Indicator by turning the volume (L, R) by a (-) driver with the Monitor Switch (15) at the "source" position.

32. Oscillator Calibration Volume

This volume controls the oscillator level for Dolby, which is correctly pre-adjusted at the factory to show 0dB indication on the Plasma Peak Indicator (1). If the level is shifted, however, make subtle adjustment to obtain the correct 0dB indication on the Plasma Peak Indicator by turning the volume (L, R) by a (-) driver with the Monitor Switch (15) at the "source" position. Level Controls (28) (29) should be in the "min." position.

33. Recording Calibration Volume

For proper performance of Dolby NR system, this volume permits fine-tape adjustment according to the sensitivity of tape. Adjust the volume corresponding to the tape you use for recording. Note that the "EX" (Metal) volume functions only when the heads and bias block are replaced to cope with metal particle tape. For fine-tune adjustment, obtain the 0dB reading on the Plasma Peak Indicator with the Monitor Switch (15) at the "tape" position.

34. Line Input Jacks

These jacks are to be connected to

the output of tuner or amp used as a recording source. The input sensitivity is 100mV. Mixing with the Mic Input is feasible.

35. Output Jacks

Connect these jacks to the input terminals such as the monitor terminals of the amplifier for playback. The output voltage is 580mV. The output voltage can be controlled by the Output Level Control (13).

36. DIN Connector

Connection for recording and playback is possible with a single patch cable if the same DIN connector is provided at the amp to be used together.

37. Earth Connector (GND)

Connect the ground of the amplifiers etc. to be used together. Especially when the switching boxes are used, common grounding is effective to reduce thump noises at the time of switching.

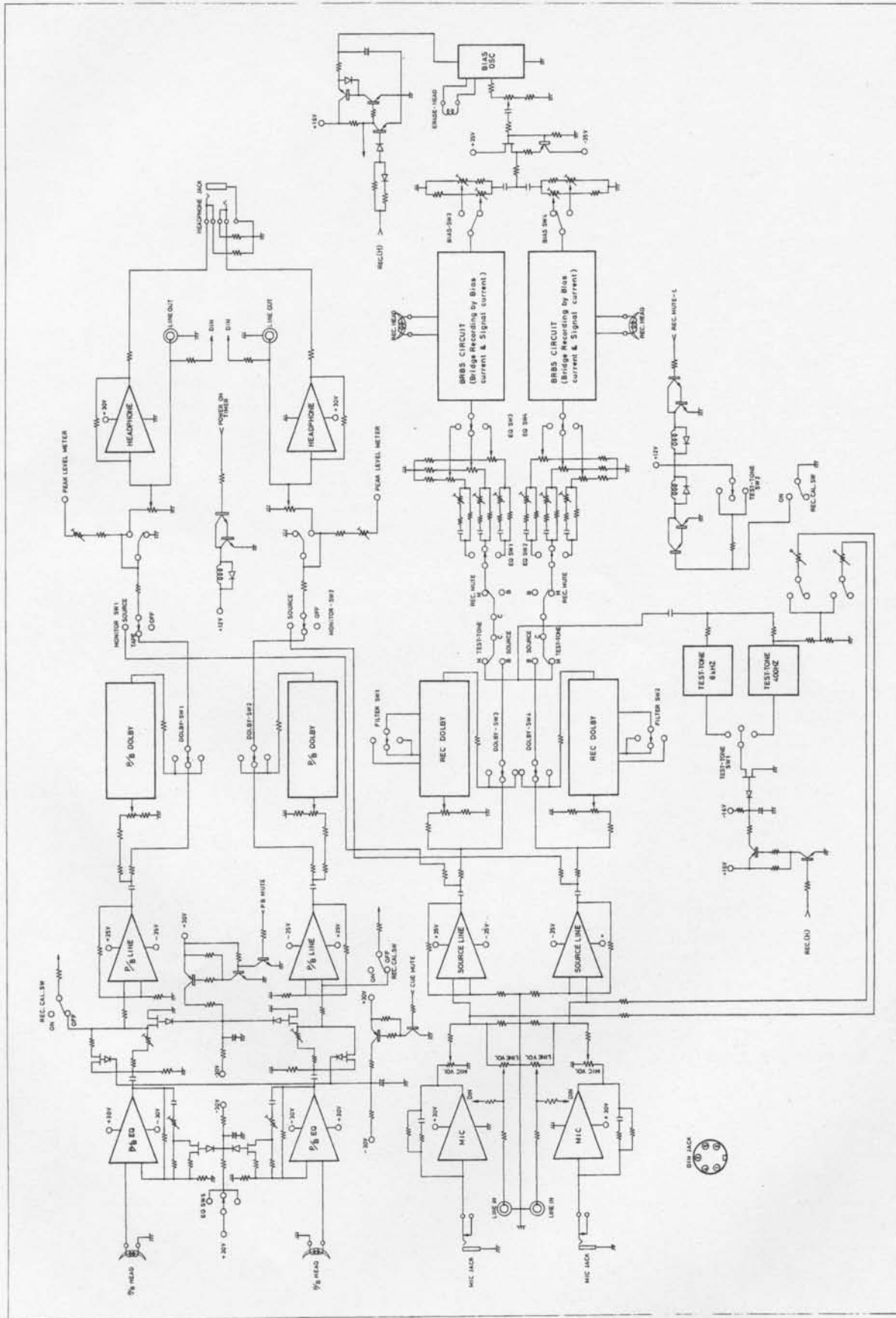
38. Remote Control Socket

The Remote Control Box can be connected which is optionally available. Refer for the details to the section "Remote Control".

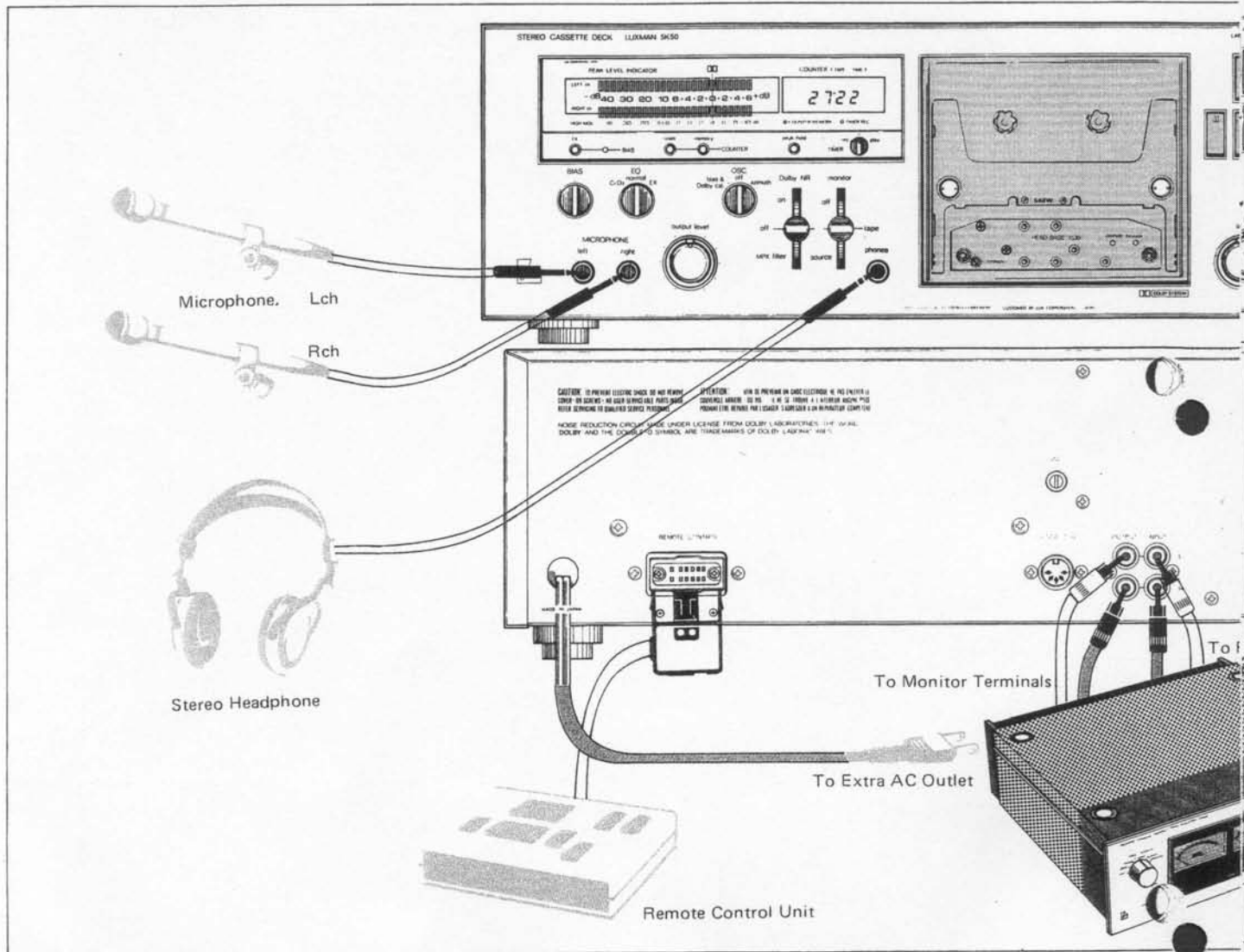
39. AC Power Cord

Connect this cord to the power supply source.

Block Diagram



Connection Procedure



Connection to Audio Amplifier

Connect the Line Input Jacks (34) to the REC. OUT terminals and the Output Jack (35) to the Monitor terminals of an audio amplifier using the pin plug cord provided. During this procedure, be sure to keep the power switch turned off.

A DIN connector is provided, and a single patch cord ensures connection of the input side and output at the same time, if the DIN connector is provided to the amplifier used together. In this case, recording level adjustment is made by the Line Recording Control (28).

NOTE:

- Do not connect both of the pin-plug cord and DIN connector to the audio amplifier at the same time. The performance by means of the pin-plug cord is superior.
- The output of a tuner can be connected to the Line Input Jacks (34) directly, but that of the record player cannot be connected directly. Be sure to connect it through an audio amplifier.

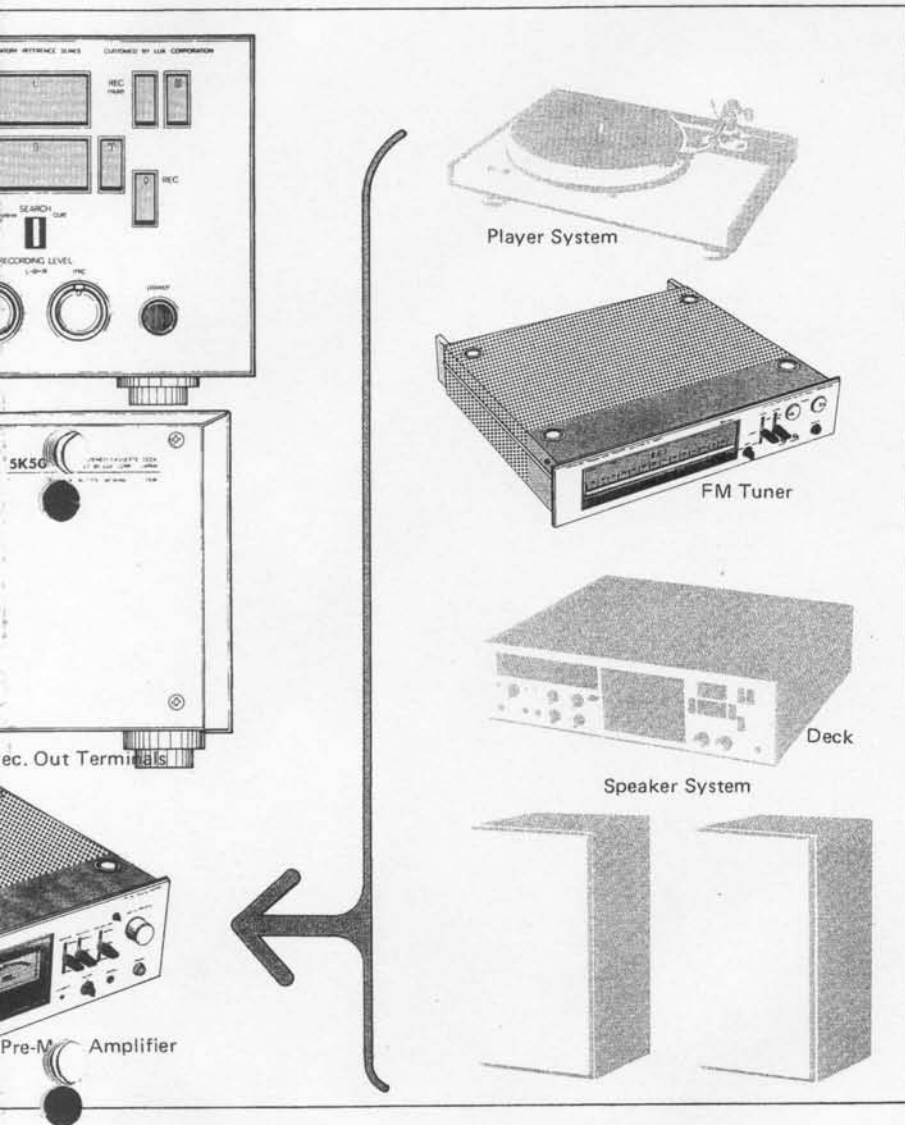
Connection of Microphones

Connect the plugs of microphone

to the Mic Input Jacks (12). The indication "left" is for the left channel and the "right" is for the right channel. Use the microphone whose impedance ranges from 600 ohms to 10k ohms.

Connection to Power Supply

Connect the plug at the end of the Power Cord (39) to the power supply source in your listening room. When an extra AC outlet (SWITCHED) is available with your audio amplifier, it is recommended to use this outlet since the ON/OFF operation of the power switch of the amplifier is common to that of the SK50.



Connection Cable
 (Pin-plug Cord)

For connection of record players, tuners and tape recorders, shielded wires are used to avoid possible influence from external noise or inductance noise. Usually, the shielded wire has capacitance of approximately 200pF per meter (3.3 feet) or has 35 ~ 100pF capacitance per meter at low level.

Adoption of a connection cord gives the same effect as that of insertion of a capacitor in parallel with input sources or output load equipment, which composes a kind of high cut filter circuit and causes an unnecessary attenuation of high frequency range. Of late output impedance for tuner/tape recorder has been so designed as to be sufficiently low, and there is almost no problem as in this case parallel composite impedance becomes lower and cut-off frequency will be shifted out of audible range. In any case, select connection cable of good quality and use them as short as possible.

Connection of Remote Control Unit

Connect the Remote Control Box, which is available optionally, to the Remote Control Socket (38) provided at the rear panel.

Connection for Tape Dubbing Operation

Most of the current audio amplifiers are provided with the tape dubbing circuitry, which enables tape reprinting among two or three tape decks. Tape reprinting can be done easily without changing the connection when this function is utilized.

However, in case you want to make tape reprinting directly between the 5K50 and another deck, connect the Line Input Jacks (34) to the Output terminals of another one, and another one is reprinted on the 5K50. When the Output Jacks (35) is connected to the Line Input terminals of another deck, reprinting from the 5K50 is possible to another deck.

Recording/Playback/Erasure

STEREOPHONIC PLAYBACK

1. Press the Cassette Lid (19), and load a pre-recorded tape into the cassette compartment, and set each switch and knob in such an order as illustrated.
2. Set the tape switch of an audio amp to the "monitor" position.
3. Press the "Play" Button (20), and the deck is put into the "PLAY" mode.
4. As the Output Level Control (13) is turned clockwise, the output of this deck gradually increases. Normally the output level control has to be set at the endmost clockwise (max.) position. Incidentally,

the swing of the Plasma Peak Indicator (1) has nothing to do with the position of the output level control.

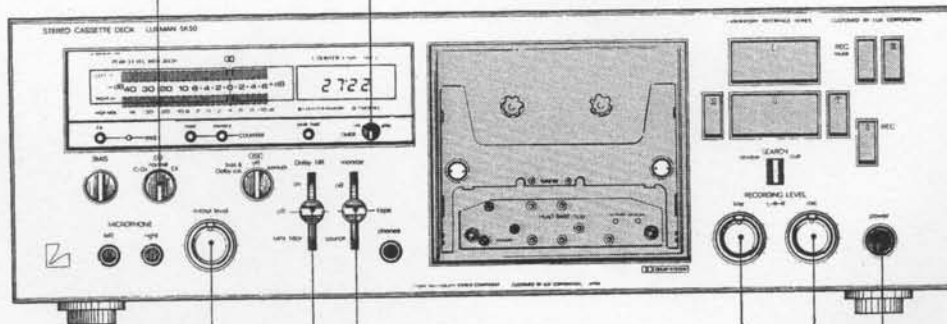
5. Set the volume of the audio amp at an appropriate level, and enjoy superb reproduction sound of this deck.
6. When tape playback finishes, press the "Stop" Button (21) to halt the tape transport. At the end of the tape, the "auto-stop" function is put into operation, providing no load to the tape and tape transport mechanism.

ERASURE

When recording is made the erase head functions, and it is not necessary to erase the pre-recorded contents beforehand. If only erasure is needed, press both the "REC" and "PLAY" buttons while setting both Line Recording Level Control (28) and Mic Recording Level Control (29) at the minimum level. The bulk eraser is useful to erase the pre-recorded contents in a short time, which is optionally available in the marketplace.

4. Position corresponding to the instruction of the cassette (EQ. Selector)

1. In the "off" position (Timer Switch)



7. In the "min" position (Output Level Control)

5. In the "tape" position (Monitor Switch)

6. Position corresponding to "DOLBY ON" or "DOLBY OFF" (DOLBY NR Switch)

(AC Power Switch)
2. In the "on" position

3. In the "min" position (Input Level Set)

Bei ungleichem in beiden, mache auf:

- Die Art der Cassette
- Frequenz, Bias

Before Proceeding to Recording

Azimuth Adjustment of Recording Head

As the 5K50 employs a discrete 3-head system, it is possible to adjust the azimuth of the recording head. The dimensions of plastic case have subtle deviation from one cassette to another (even between the "A" and "B" sides of same tape), which affects tape transport condition, causing the azimuth (verticalness) error between the recording and playback heads, and the treble response may be deteriorated. Therefore, before starting recording, make adjustment to obtain the optimum azimuth point according to the tape you use.

1. Put a cassette tape for recording into the cassette compartment.
2. Set the Test Tone Switch (6) to the "azimuth" position.
3. Put the deck into the recording mode, and turn the Azimuth Adjustment Screw (17) by a (-) driver so that both of the Azimuth Beacon (18) may light up. If one fails or blinks, turn the screw to get it lit.
4. When the azimuth adjustment is finished, reset to the Test Tone Switch (6) to the "off" position.

[CAUTION]

- * There is a time lag of about 0.3 sec. between recording of the playback, and turn the adjustment screw slowly.
- * No need to readjust the azimuth of the playback head, as it is perfectly aligned prior to the delivery from our factory.

Adjustment of Bias

Before recording, obtain the optimum bias amount to match the recording tape you use.

- 1) Put a cassette tape into the cassette compartment.
- 2) Set the Test Tone Switch (6) to

the "bias & Dolby cal." position.
 3) Put the deck into the recording mode, and turn the Bias Control (7) slowly in the clockwise direction from the endmost counter-clockwise (min.) position. In this process the Bias Beacon (8) lights up and then goes out.

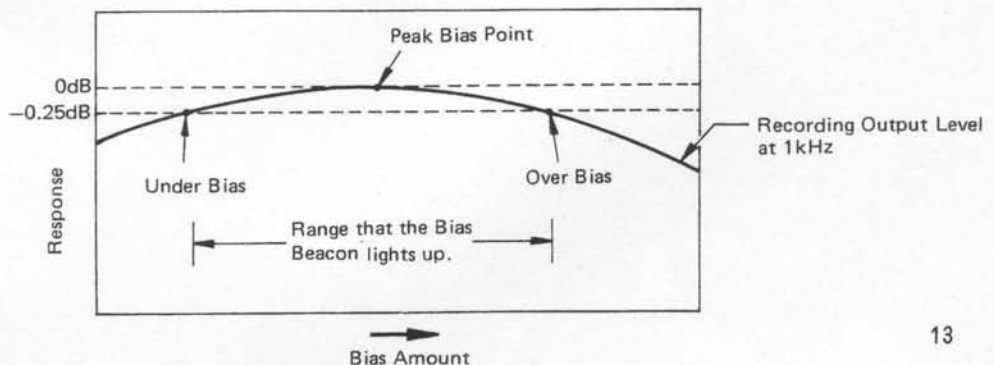
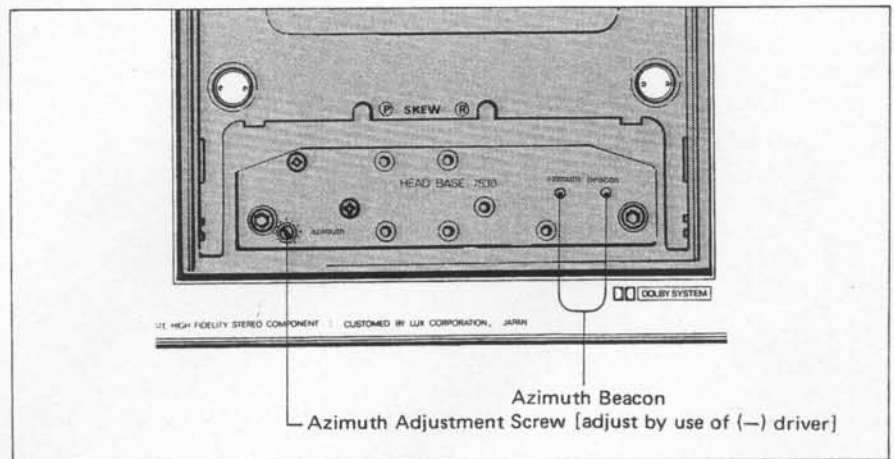
The very point where the beacon first lights up means -0.25dB under-bias position, while when it goes out you can obtain -0.25dB over-bias position. The peak bias point is located in the vicinity of one-third turn point from the first light-up point in the variable range thus obtained.

Usually, the optimum bias point is obtained around the center between these two points.

- 4) When the bias adjustment is completed, reset the Test Tone Switch (6) to the "off" position.

[Remarks]

The 5K50 employs the variable bias system to make the most of 3-head system. You can enjoy difference of playback sound by varying the bias amount. For example, under-bias recording tends to extend the treble frequency response, while over-bias recording helps reduce the bass distortion. In this way, the variable bias system is an interesting facility to audiophiles. Various characteristics become deteriorated if excessively out of the optimum bias point, and enjoy this facility within the range where the bias beacon keeps lit (-0.25dB under-bias $\sim -0.25\text{dB}$ over-bias).



STEREOPHONIC RECORDING

To Set Recording Level

1. Press the Cassette Lid (19) and load a cassette tape into the cassette compartment. Then set each switch and knob as depicted.
2. In case you are to record such programs as discs of FM broadcastings, set the input selector of an audio amplifier to the corresponding input which you are going to record, then set the tape monitor switch to the "monitor" position. For recording by microphone, connect the microphone plugs to the Mic Input Jacks (12).
3. First, press the Pause Button (25) (the indicator will light up), then press the Record Button (26) and the Play Button (20) simultaneously, and the machine is put into recording mode. Now, as the Line Recording Level Control (28) [for recording from line input], or the Mic Recording Level Control (29) [for recording from microphone], is turned clockwise, the Plasma Peak Indicator (1) begins to move. Set the recording level as high as possible within the range

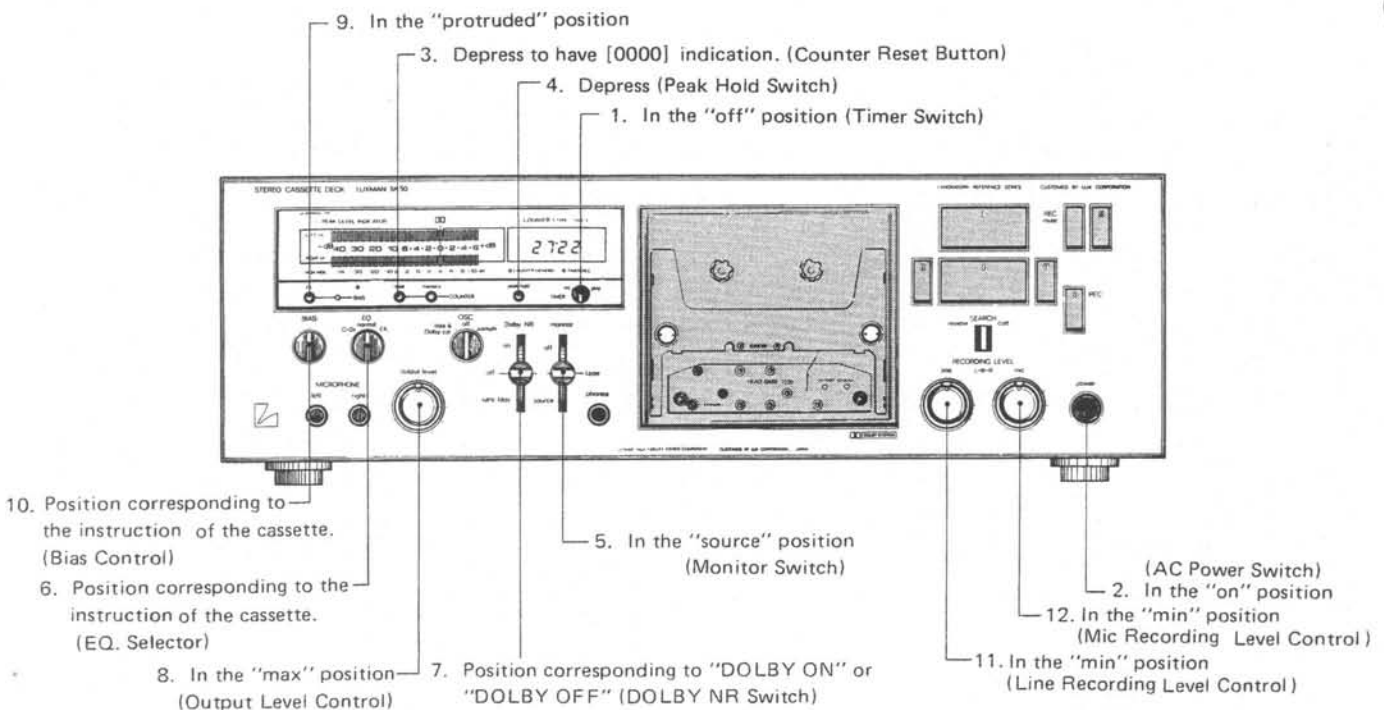
not exceeding +3dB.

After the adjustment of the recording level, reset the Monitor Switch (15) to the "tape" position. This deck is of discrete 3-head system, and instant off-the-tape monitoring is possible to check if perfect recording is made.

4. Depress the Pause Button (25) again, and the tape begins to run to record the input signals.
5. When the recording ends, press the Stop Button (21) to cease the tape movement. In case you want to stop the recording temporarily, press the Pause Button (25), and the next press resumes the recording. When you want to cut announcements or commercials from the recording of FM broadcasting, utilize the REC. Mute Button (24). For further details, refer to the section "Rec. Mute"

To obtain the optimum condition for recording the input level of the program source has to be adjusted. When the level is set too low, the playback sound becomes jarring, while on the contrary if too high, the playback sound will be distorted. Therefore, this setting is important to realize the least distortion and the excellent signal-to-noise characteristic.

With the 5K50, setting of the recording level is done by watching the Plasma Peak Indicator (1) after the deck is put into the "REC" mode with the Monitor Switch (15) at the "source" position (refer to the section "Stereo Recording"). Note that when the level is set, like conventional VU meter, at the point where the maximum peak level does not exceed 0dB point, the average level will be set too low. It is basically advisable to set the maximum peak level to the +3dB point of the Plasma Peak Indicator (1), since the +6dB point is equivalent to the maximum saturation level of cassette tapes. Experi-



Correlation between BIAS/EQ Positions and Cassette Tapes

ence is the best guide to your favorite sound.

Discs, FM broadcastings, pre-recorded tapes, and live sound from microphones are mainly available as program source of recording. The peak levels in these program sources except the microphones are generally suppressed by the limiter in the course of production process, therefore, satisfactory recording is possible if the basic setting procedure is observed. In the case of live recording by microphones, however, the peak level is usually very high, and further it is not audibly equivalent to the actual sound level. Thus, when you are too sensitive about clipping at the peak, the average level is apt to be set rather low, thus inducing deterioration of the signal-to-noise ratio. Therefore, to realize good live recording using microphone, it is important to attend to such opportunity as much as possible, and get your own auditory feeling to what extent such clipping is allowed.

Direct Change from "Playback" to "Recording"

The logic circuit makes it possible to switch the "PLAY" mode direct into the "REC" mode if the cassette tape under playback operation is not removed at the recording safety tabs. In this case, just retouch the "PLAY" button while depressing the "REC" button.

At the time of playback of cassette tape, set the EQ Selector Switch (10) to an appropriate position according to the list specifying the kinds of tapes. The Bias Control (7) has nothing to do with playback.

While when recording, the "EQ" selector has to be set to the corresponding positions specified in the list, then obtain optimum bias amount by adjusting the Bias Control (7).

Incidentally note that various facilities (Bias Control etc.) provided for use of metal-particle tape are put into operation when the head housing and bias block available on option are replaced to cope with metal tape.

EQ. POSITION	BRANDS	MODELS
normal (120 μ s.)	LUXMAN	XM - I
		XR - I
	TDK	AD
		ED
	MAXELL	UD-XL I
		UD
	SCOTCH	MASTER 120 μ s.
		CRYSTAL
		* CLASSIC
	SONY	AHF
		HF
		* DUAD
	DENON	DX3
FUJI	RANGE-4(FX - I)	
	* RANGE-6	
BASF	SLH- I	
	* FCR	
C, O ₂ (70 μ s)	LUXMAN	XM - II
		XR - II
	TDK	SA
	MAXELL	UD-XL II
	SCOTCH	MASTER 70 μ s.
	SONY	JHF
	DENON	* DX-5
	FUJI	RANGE-4X(FX - II)
BASE	SCR	

- The "EX" position of the EQ Selector Switch provided for use of metal particle tape is activated when the head housing available on option is replaced.
- FeCr tapes. If you feel treble range is too strong, adjust it by the tone control of your audio amplifier.

To make the most of the 5K50

REC Mute Function

With the recording mute function of this deck, you can easily make FM aircheck and cut off unwanted announcements or commercials from recording. Keep simply touching the Rec. Mute Button (24) and you can provide your desired muting space from one music to another.

1. In the course of recording when a music ends, press the Rec. Mute Button to start the recording muting, i.e., recording without signals.
2. After depressing the Rec. Mute Button for your desired length of time, e.g., 3 seconds, depress the Pause Button (25), and the deck is put into the Pause mode from the recording muting.
3. A retouch to the Pause Button (25) just before commencement

of the next music resumes the recording. Repetition of this procedure makes it possible to perform recording without announcements or commercials.

[CAUTION]

- * You can monitor the input signal even during the recording muting operation. Also the plasma peak indicator keeps swinging.
- * In the operation step (2), release from the Rec. Mute Button (24) without pressing the Pause Button (25) causes to resume recording immediately. In other words, the recording mode is restored from the recording muting without halting the tape transport mechanism.

Tape Counter

There are 2 kinds of indication depending on the type of the cassette tape you use.

A) LUX's Exclusive Cassette Tape

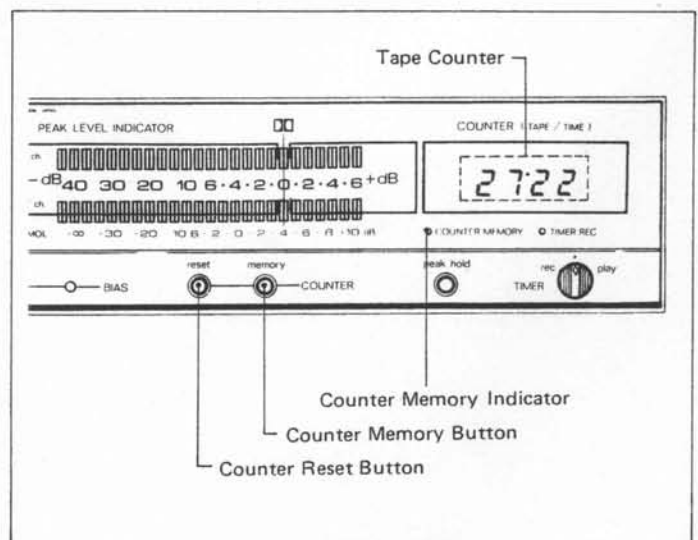
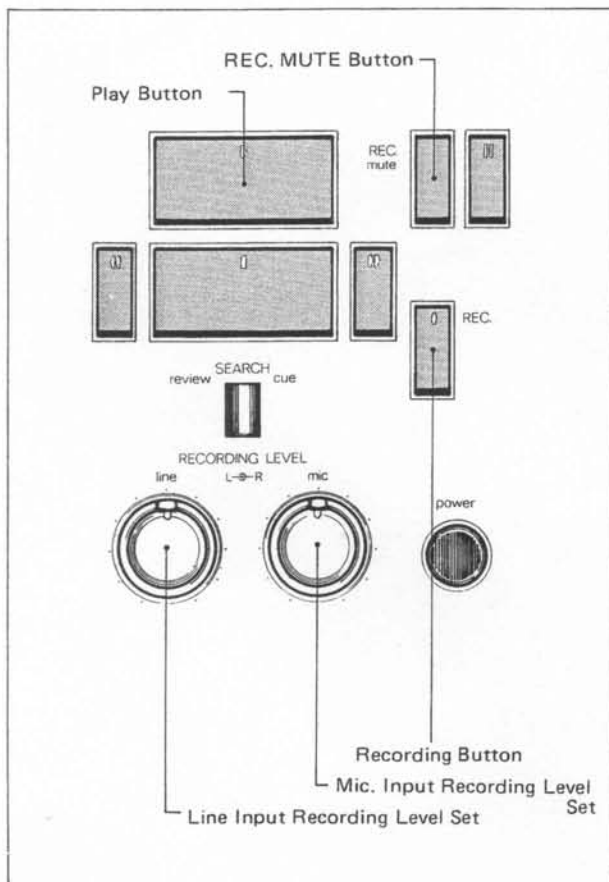
When our exclusive cassette is loaded, the real time is displayed. The diameter of the tape guide roller inside our cassette is so designed as to mark the standard speed (4,75 cm) by 2 turns, which is optically sensed to give a pulse of 0.5 sec. interval. The digital circuit counts this pulse and LED indicates 4 digits in terms of minutes and seconds. (e.g., 19'59=19 min. 59 sec.) Now you can know the exact time used as well as the balance left for recording or playback. Because of optical sensing no tension is given to tape.

B) Ordinary Cassette Tape

In this case, the digital circuit counts 4 pulses per rotation sensed at the take-up reel, and the LED shows the following figures.

Type	C60	C90
Number	about 3100	4650

Selection is made automatically between LUX's exclusive cassette and ordinary cassette for the corresponding display.



Search Function

In case you wish to reproduce the recorded programs from at the middle way, or wish to re-record a certain portion of the recorded tape, it is useful to quickly locate the outset of the desired position. The search function quickly realizes this. A simple lever operation facilitates both "cue" and "review" action.

When the deck is in the "play" mode, if the lever is slid to the right-hand "cue" position, cueing (playback with fast-forwarding mode) is feasible, while at the left-hand "review" position, reviewing (playback with rewinding mode) is possible. The lever is self-reset type, and release of hand from the lever puts the mechanism into the "play" mode.

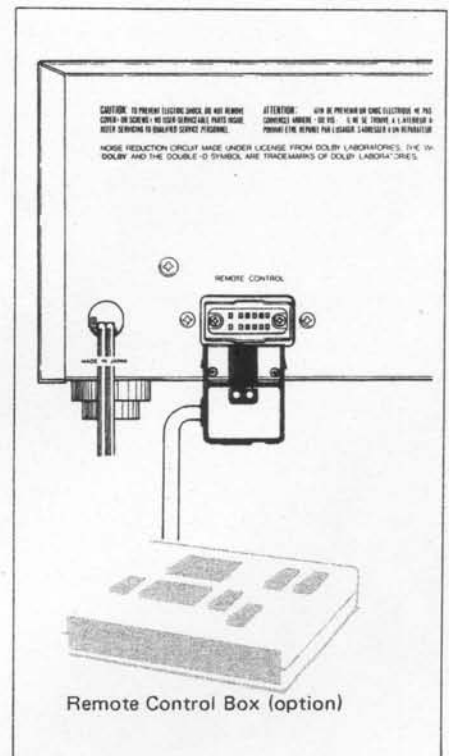
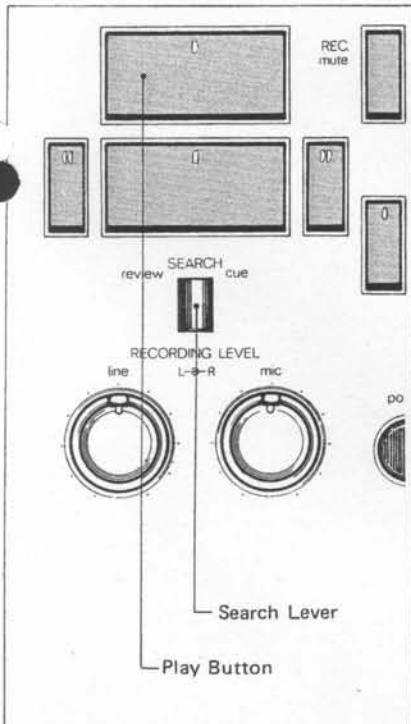
Operation of this search lever makes the head assembly lift from the tape a little, therefore quick deterioration of the heads is avoided.

Mixing of Line Input and Mic Input

Connect microphone to the Mic Input Jacks and output signal of the audio amplifier to the Line Input Jacks of the 5K50, and set each level to realize suitable balance. Then set the 5K50 in the "record" mode. Now, mixing recording is feasible between microphone input and line input. At this time, if the Monitor Switch is set to the "source" position, the deck acts as a mixer of microphone and line input. It is advisable that the recording input level set which is not used, should be in the endmost counter-clockwise position (min.) unless you do not make mixing operation.

Remote Control Operation

The Remote Control Box which is on optional sale can be connected to the Remote Control Socket at the back panel. In this case, you can enjoy Repeat or Reverse at various positions of the tape thanks to the "AUTO PLAY" and "AUTO REW". functions featured at the Control Box in addition to all the operations possible with the key board of this cassette deck.



To make the most of the 5K50

Timer Recording

An external timer makes unattended recording possible. Even in the midnight or while you are absent, you can record such program source as FM broadcasting etc. automatically at your desired time. Intermittent recording of 2 different programs is also possible if the timer has such function.

1. Connect an external timer to the deck and audio components as per the drawing.
2. Confirm that the Timer Switch (11) is set to the "off" position.
3. Turn on the power switches of the deck and other audio components, and load a cassette tape for record-

ing. Be sure that the recording safety tab is kept intact.

4. Tune in to the desired station.
5. Set all the switches and buttons referring to the section "STEREO-PHONIC RECORDING".
6. Set the timer at the time when you want to start recording. Then power supply ceases.
7. Set the Timer Switch (11) to the "rec." position.

Now all the preparation is completed.

[CAUTION]

- * The warm-up time of about 5 sec. is needed with this deck until the entire circuitry is put into the operational condition. Therefore

Timer Recording · Timer Playback

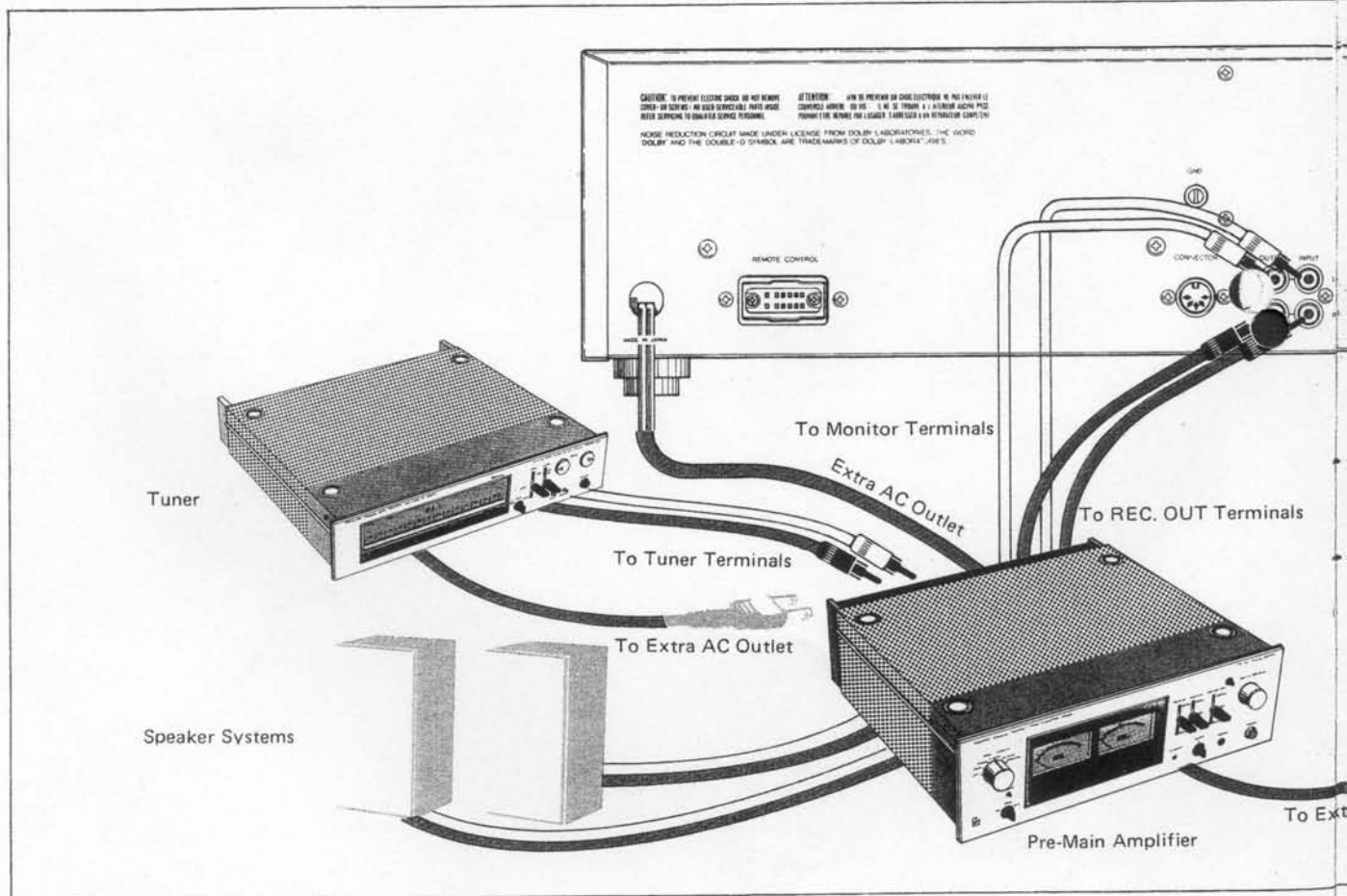
the timer recording commences in about 5 sec. after the power is supplied.

- * Be sure that the recording safety tab is not removed from the cassette tape for recording, as the deck is put into the "PLAY" mode if the tab is removed, and no recording is possible.

Timer Playback

This deck can be used as a substitute of an alarm clock if the timer playback function is utilized. You can have a pleasant morning call. Intermittent calls are possible if the timer has such function.

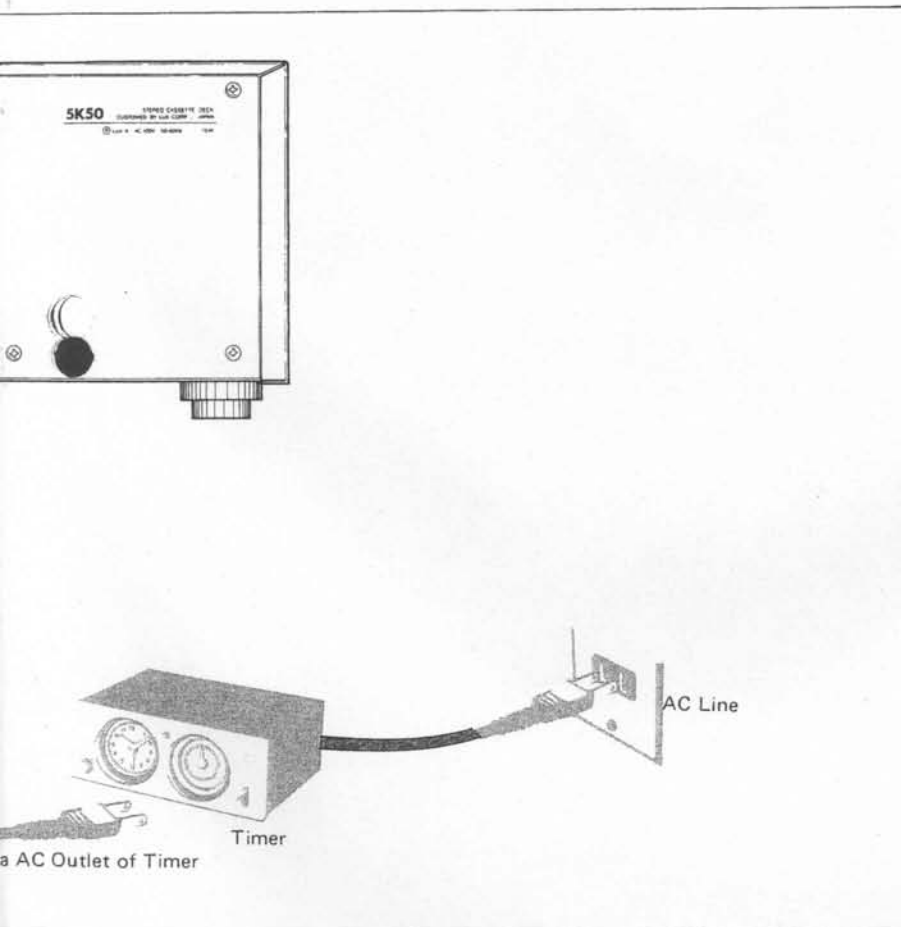
1. Connect an external timer to the



Tape Transport Mechanism

The tape transport mechanism is totally controlled by the electronic circuitry composed by logic IC of high reliability. Whatever kind of change is made in the operation modes, unnecessary slack or tension is never given to the tape. Further, tape-slack prevention mechanism is incorporated to give optimum tension to tape at the time of loading the cassette tape. The "auto-stop" function is activated at the end of tape in all operation modes. Meticulous care is paid in all respects such as elimination of click-noise especially at the outset or end of recording, protection of heads from magnetization, etc.

- deck and audio amp as depicted.
2. Check that the Timer Switch (11) is set to the "off" position.
 3. Turn on the power switches of the deck and amp, and insert a pre-recorded cassette tape.
 4. Set all the switches and buttons referring to the section "STEREO-PHONIC PLAYBACK", and adjust the volume control of the amp at an appropriate level.
 5. Set the timer at your desired time so that power can be fed at that instant.
 6. Set the Timer Switch (11) to the "play" position.



To make the most of the 5K50

- 1) cassette bridge
- 2) pause - rec.
- 3) Erumense A
- 4) amplitude due pause
- 5) Erumense B

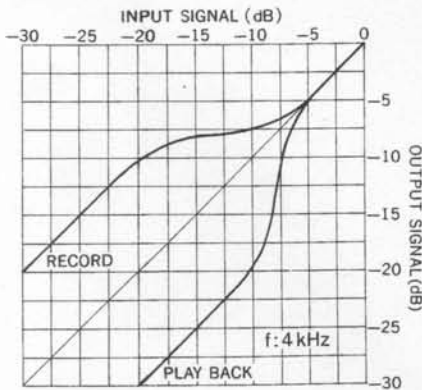
DOLBY* NR SYSTEM

The Dolby Noise Reduction System provides an extra pre-emphasis (compression) of high frequencies at the low level in recording and a corresponding de-emphasis (expansion) of the signals in playback, thus reducing annoying tape hiss noise to improve the S/N ratio.

When recording is made from FM stereo program, it may be recommended to use the "Dolby MPX filter" position of the Dolby Switch depending on the tuner you use.

Dolby Recording Level Calibration

To make the most of Dolby NR system, it is recommended to make this recording level adjustment before commencement of recording. Put the deck upright as per the drawing, and adjust the recording level in the following manner.



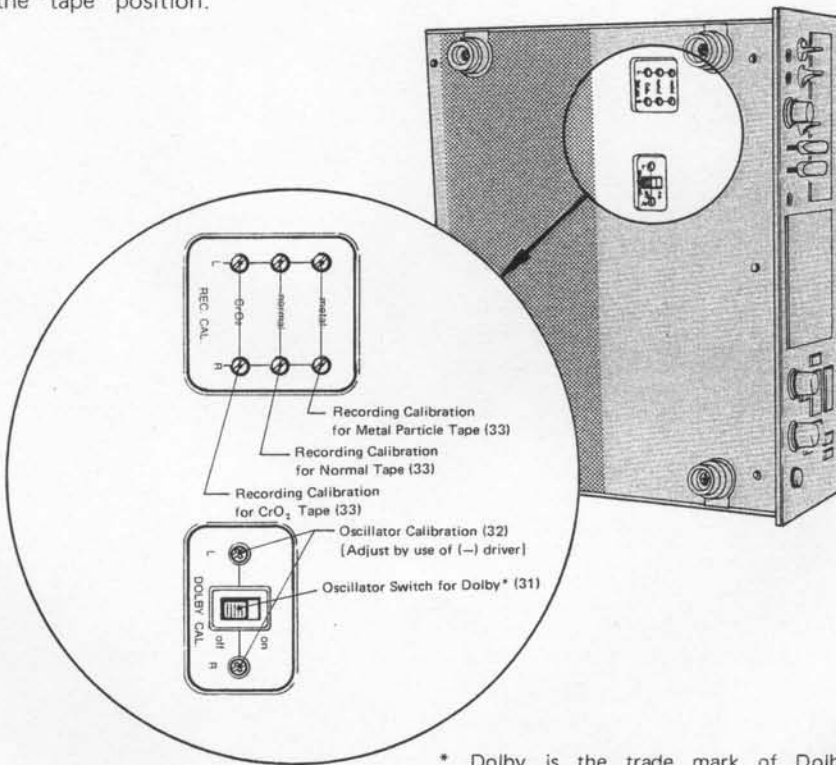
A) [Level Adjustment of Dolby Oscillator]

1. Set the Test Tone Switch (6) to the "bias & Dolby cal." position.
2. Turn on the "Dolby Oscillator Switch" (31).
3. Set the Monitor Switch (15) to the "source" position, and fine-tune the Oscillator Calibration Screw (32) by a (-) driver to obtain the 0dB reading at the Plasma Peak Indicator (1) in both channels.

B) [Level Adjustment of Dolby Recording]

4. Put into the cassette compartment the tape for recording, and the EQ Selector Switch (10) to the position corresponding to the kind of tape you use.
5. Reset the Monitor Switch (15) to the "tape" position.

6. Put the deck into the recording mode, and confirm if the Plasma Peak Indicator (1) swings up to the "0dB" position. If the 0dB reading cannot be obtained, make fine-tune adjustment by turning the slit of the Recording Calibration Screw (33) corresponding to the kind of tape (for both L and R channels). Incidentally the potentiometer of the screw for the Metal Tape functions only after replacement of the head assembly and bias block suitable for metal-particle tape.
7. When the Dolby recording level is adjusted, reset the Test Tone Switch (6) and Dolby Oscillator Switch to the "off" position.



* Dolby is the trade mark of Dolby Laboratories, Inc.

Maintenance

Head Cleaning

Residue built up from the constant contact of tape to capstan and head is unavoidable. The tape heads and capstan should be cleaned about once a month or after every 50 hours of operation. If a loss of brilliance in high frequency response is noticed, the tape heads probably require cleaning. An attached cotton swab moistened with head-cleaning fluid should be inserted into the cassette slot, and rubbed across the surface of the heads and capstan. Care should be taken not to scratch the head surface. To clean the heads, remove the glass lid by pulling it upwards as per the drawing. As an alternative, a special head-cleaning cassette is available at most dealers.

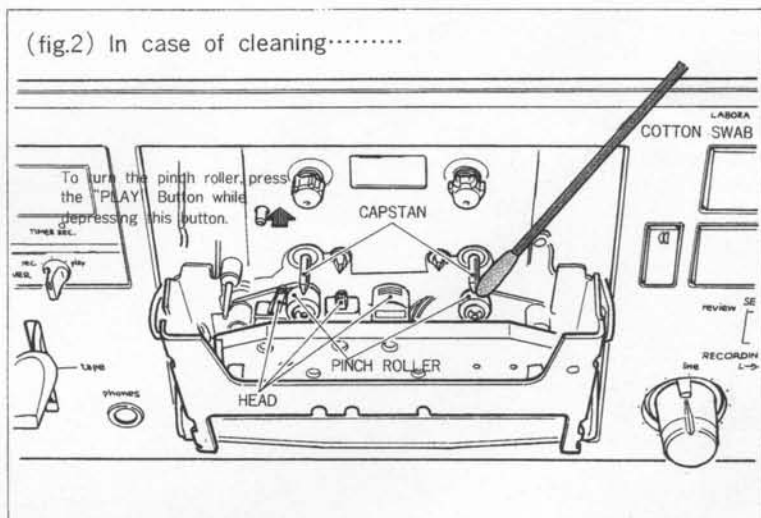
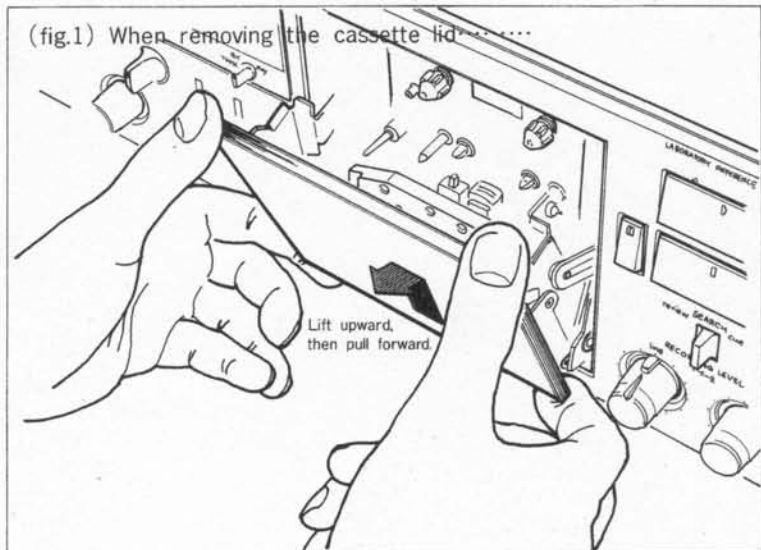
In case the cassette tape is not loaded into the cassette compartment, the deck does not function even if the operation buttons are pressed. To operate it without tape for cleaning of the pinch roller etc., press the operation buttons while depressing the cassette switch as per the drawing. In this case, when the switch is released the deck is put into the "STOP" mode.

Demagnetization

If lack of high frequency remains even after cleaning the heads, the heads may require degaussing. Though with LUX's cassette decks degaussing is less frequently needed than most other decks, it is recommended to demagnetize heads and capstan once every 50 hours' use. Demagnetizer is available in the marketplace. Select a good one and perform degaussing carefully following the instruction of the demagnetizer.

Lubrication

Usually it is not necessary for a user to make lubrication, as the tape transport mechanism employs oil-less bearings.



Before Consulting a Service Shop

BEFORE CONSULTING A SERVICE SHOP

It may be possible that some knobs or switches are accidentally operated, and that some connections are imperfect. In some cases, they are mistaken for defects. Therefore, it is advisable to make fundamental check by use of the "Trouble Shooting" listed below. When you find the trouble incurable by this procedure, contact your nearest service shop.

	SYMPTOM	CAUSE	MEASURES
TAPE TRANSPORT	Plasma Peak Indicator does not light up when AC Power Switch is depressed.	AC plug is not connected to the AC socket, or may be loose at the socket.	Connect AC cord firmly to the AC power supply point.
	No function of tape transport mechanism.	Tape is in the "Tape End Stop" condition with the Timer Switch being in the "rec." or "play" position.	Set the Timer Switch to the "off" position.
		The Pause Button is depressed.	Retouch the Pause Button.
PLAYBACK OF TAPE	No sound playback.	Connection is wrong.	Check the connection and correct it.
		The Output Level Control is in the extreme counter-clockwise position (min.).	Turn the Output Level Control clockwise to an appropriate position.
		Operation of the amp to which the deck is connected is wrong. (Volume Control, Monitor SW.)	Increase volume control of the amp, or correct the position of Monitor Switch etc.
	Tonal quality is not good.	Heads are dirty.	Clean the heads.
		Pre-recorded tape is bad.	Change the tape.
		Heads are magnetized.	Use a head-eraser to demagnetize.
	Hum noise at recording or playback.	Deck is placed near hum-generating source.	Keep away from transformer, amp, fluorescent lamp etc.
		Ground-side of output cable is broken.	Use a new one.
	Unsteady sound, or drop-outs are frequent.	Pinch-roller is dirty, and its contact to capstan is insufficient.	Clean the pinch-roller and capstan.
		Heads are dirty.	Clean the heads.
		Tape is deteriorated.	Change the tape.
	RECORDING ON TAPE	Recording is not possible.	Misconnection of input equipment.
Recording safety tab is removed.			Use adhesive tape etc. to cover the hole.
Recording Input Level Control is in the extreme counter-clockwise position (min.).			Turn the control clockwise to an appropriate position.
Playback sound is small, or its quality is bad.		Heads are dirty.	Clean the heads.
		Tape is deteriorated.	Change the tape.
		Recording input level is low.	Turn the Recording Input Level Control clockwise.
		Heads are magnetized.	Use head-eraser to demagnetize.
		Position of the Bias control or EQ selector is wrong.	Set it to the correct position.

Specifications

Heads:	Discrete 3 heads Record; ferrite x 1 Playback; sendust x 1 Erase; ferrite x 1
Drive Motor:	3 motors
Capstan Drive	Quartz P.L.L. DD motor x 1
Reel Drive	Coreless motor x 2
Tape Drive:	Dual Capstan System
Recording System:	Bridge Recording by Bias Current & Signal Current (BRBS, Pat. Pend.)
Wow & Flutter:	no more than 0.03% (W.R.M.S.)
Amplifier:	DC Amp Configuration
Signal-to-Noise Ratio:	better than 58dB (Dolby* off) ... CrO ₂ tape better than 67dB (Dolby* on) ... CrO ₂ tape better than 55dB (Dolby* off) ... LH tape better than 65dB (Dolby* on) ... LH tape
Frequency Response:	30Hz - 18,000Hz ±3dB (CrO ₂ tape) 30Hz - 16,000Hz ±dB (LH tape)
Overall Distortion:	no more than 1.2% (LH tape, 1kHz, 0dB)
Real Analyzed Distortion:	no more than 0.3% (LH tape, 1kHz, 0dB)
Input Sensitivity:	line in; 100mV mic.; 0.25mV (recommended microphone impedance; 600 - 10k ohms)
Output Level:	line in; 580mV headphone; 1mW (8 ohms load)
Additional Features:	24-dot Plasma Peak Indicator with Peak Hold function, L.E.D. Tape Counter, Variable Bias Control, 3-position Bias/Equalizer Selector (normal, CrO ₂ , EX), Search Function (cue & review), Azimuth Adjustment function, REC. MUTE function, Dolby* NR System (with Dolby Recording Level Calibration), Built-in Oscillator (400Hz, 6kHz), Tape Monitor Circuit, Timer Recording/Playback function, Remote Control (available with optional remote control box.)
Power Consumption:	75W
Dimensions:	442(W) x 389(D) x 146(H) mm (17-13/32" x 15-5/16" x 5-3/4") (including Legs, Rear Protrusions & Knobs)
Weight:	Net 12.5kgs (27.5 lbs.) Gross 15.0kgs (33.0 lbs.)

Specifications and appearance design subject to change without notice.

* NOISE REDUCTION CIRCUIT MADE UNDER LICENCE FROM DOLBY LABORATORIES. THE WORD "DOLBY" AND THE DOUBLE-D SYMBOL ARE THE TRADE MARKS OF DOLBY LABORATORIES.

LABORATORY REFERENCE SERIES

5K50

STEREO CASSETTE DECK

5K50 is a totally professional cassette deck
comparable to reel-to-reel machines
for ultimate fidelity sound reproduction!

LUX CORPORATION, JAPAN

CONTENTS

Before operating the 5K50	2 - 3
Before using this cassette deck	
Cassette Tape	
Loading of Cassette Tape	
To Cope with Metal Particle Tape	
LUX's Exclusive Cassette Tape	
Switches & Controls	4 - 8
Block Diagram	9
Connection Procedure	10 - 11
Recording/Playback/Erase	12 - 15
Stereophonic Playback	
Erase	
Before Proceeding to Recording	
Stereophonic Recording	
To Set Recording Level	
Correlation of BIAS/EQ Position and Cassette Tapes	
Direct Change from "Playback" to "Recording"	
To make the most of the 5K50	16 - 20
Recording Mute Function	
Tape Counter	
Search Function	
Mixing of Line Input and Mic Input	
Remote Control Operation	
Timer Recording · Timer Playback	
Tape Transport Mechanism	
Dolby NR System	
Maintenance	21
Before Consulting a Service Shop	22
Specifications	23

WARNING: TO PREVENT FIRE OR SHOCK HAZARD
DO NOT EXPOSE THIS APPLIANCE TO
RAIN OR MOISTURE.

Thank you for purchasing the 5K50

The 5K50 is a totally professional cassette deck comparable to reel-to-reel machines. Unrivalled sonic quality is achieved thanks to our acclaimed "Realtime Processed" DC configuration employed in both recording and playback amps, discrete 3-head system with 3-motor dual capstan operation, full IC logic control, etc.

The outstanding feature is an adoption of DC-amp configuration at recording and playback amplifiers. A tape deck is a complex of mechanism and electronics, but rather poor electronic circuitry has been used in the conventional decks. We, at LUX, considered it quite indispensable to upgrade the amplifier section utilizing our accumulated amplifier technique. Especially at the recording amp, our exclusive system (Pat. Pend.) named BRBS (Bridge Recording by Bias current and Signal current) is employed to remove transient distortion and phase shift for ultimate fidelity reproduction.

Additionally provided are feather touch key-board operation by reliable logic circuit, precision 4-digit 7-segment LED tape counter, which permits realtime reading with LUX's exclusive cassette tape, plasma peak indicator which indicates the maximum peak and instantaneous peak level at the same time, the timer recording/playback function, etc. To cope with an advent of metal particle tape, this deck is provided with the special head mount structure for easy replacement of the total head assembly suitable for metal particle tape which is optionally available.

We recommend that you choose with care other Hi-Fi components to be used in combination, and go through the contents of this owner's manual to make the most of the potential of the 5K50.



Before operating the 5K50

Before Using this Cassette Deck

* Power Supply Source

Check that the AC voltage of this deck is adjusted to correspond to that of your listening room. You need not worry about the cycle (50Hz or 60Hz) as DC motors are employed in this unit.

* Location

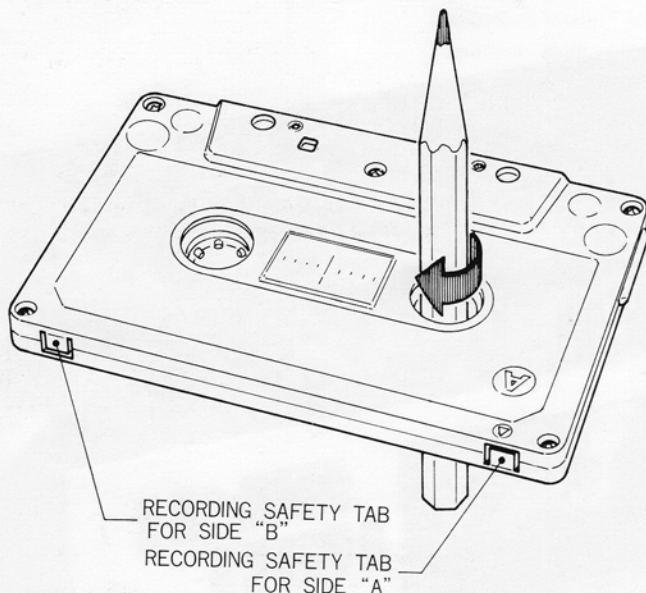
When placing the unit, avoid such locations having high temperature caused by direct sunbeams or heaters, and high humidity as well as excessive dust. Do not cover the ventilation holes with furnitures, books etc. Also keep this unit away from noise-generating apparatus such as cleaner, hair-dryer, buzzer, etc.

* Timer Switch

Set the timer switch to the "off" position except when playback or recording is made by an external timer, as especially at the "rec" position your precious recording may be erased when the power is turned on.

* Input Levels

Set all the input level controls to the endmost counter-clockwise (min.) position. Especially while recording, S/N is deteriorated if the Mic Input Control is turned clockwise even without connection of microphones.



CASSETTE TAPES

Various types of cassette tapes available in the marketplace (such as normal tape, CrO₂ tape, FeCr tape and Metal Particle tape etc.) offer different characteristics from type to type. This deck is so designed as to deal with all these tapes (metal particle tape with replacement of the head housing and bias block), but care is needed to derive the optimum performance.

- * Set correctly the bias and equalization of the deck to match the characteristics of the tape to be used. Mismatch may cause deterioration of performance. For details refer to the section "Correlation between BIAS/EQ Positions and Cassette Tapes"
- * Avoid to use the C-120 type tape, as a slight misuse may cause this tape tangled or rolled up in the tape transport mechanism.
- * For safety in recording and playback of important program, follow the instruction of the cassette tape you use. Especially a slack of tape in the cassette case may impair your precious tape, and wind up the tape by a pencil or the like before use as per the drawing.
- * The cassette tape is provided with 2 recording safety tabs for the "A" and "B" sides as depicted in the drawing. To protect your valuable recording from an accidental erasure, break the tab from the cassette tape by a screwdriver and the anti-erasure function of the deck is put into operation. If recording is desired into such tape with the tabs already broken, cover the hole by a piece of masking tape or fill it with erasure rubber etc.

Loading of Cassette Tape

Press the Cassette Lid (19) to open the Cassette Compartment and insert a cassette tape with the tape-exposed side facing downward and the side to be played or recorded facing front. Now, depress the Cassette Lid (19) until it is locked.

When a cassette tape is loaded, the discriminator between usual tape (for numeric counter display) and LUX's exclusive tape (for real time counter display) functions automatically for approximately 1 second. During this period, the Tape Counter (7) does not function, and operation of tape transport buttons activates the tape run without counting. Thus the counting will be incorrect especially at the time of fast-forwarding and rewinding. Therefore, the Key Board operation should be made at least 1 second after loading the cassette.

To Cope with Metal Particle Tape

To handle the latest metal particle tape offering superb sonic quality, the special replacement head housing and bias block are optionally available on request. For details, consult your local dealer.

Incidentally, this deck is provided with various functions (bias selector, meter range for metal tape, etc.) to cope with metal particle tape, but note that they do not operate unless the corresponding modification is rendered.

LUX's Exclusive Cassette Tape

The development of magnetic tape has been marking remarkable progress of late, and nowadays high quality tape is made available for Hi-Fi use. Various problems have been brought to light as the quality of deck is improved, in the mechanism of tape especially in correlation between deck and cassette tape. To solve such problems, LUX prepared an exclusive cassette tape having many unique features.

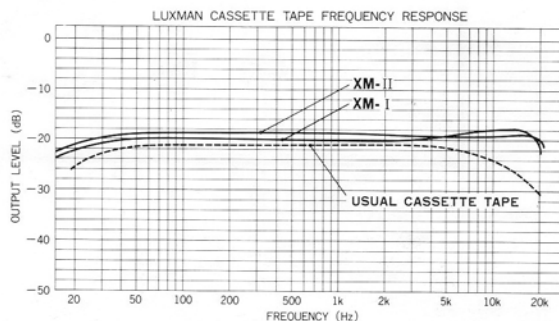
LUX's Exclusive Cassette Tape has the following features:

(1) SKEW adjustment facility to

obtain the optimum azimuth and tilt position.

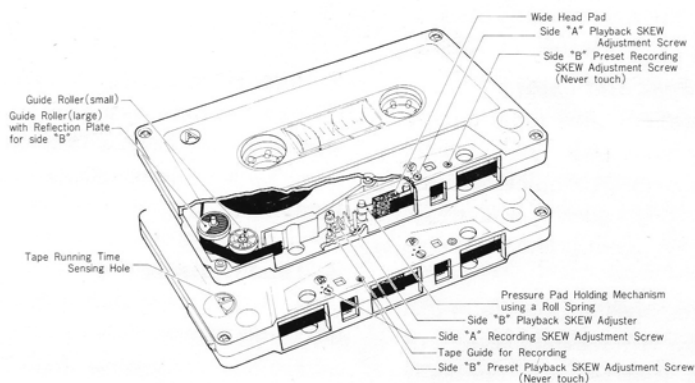
- (2) Wide pad and new holding mechanism to provide constant pressure for stable frequency response.
- (3) 4-guideroller system to prevent torque loss, offering constant back-tension.
- (4) High precision roller with reflection plate to enable to read real-time with our decks Model 5K50 and K-12.

For complete information, ask your nearest LUX dealer.

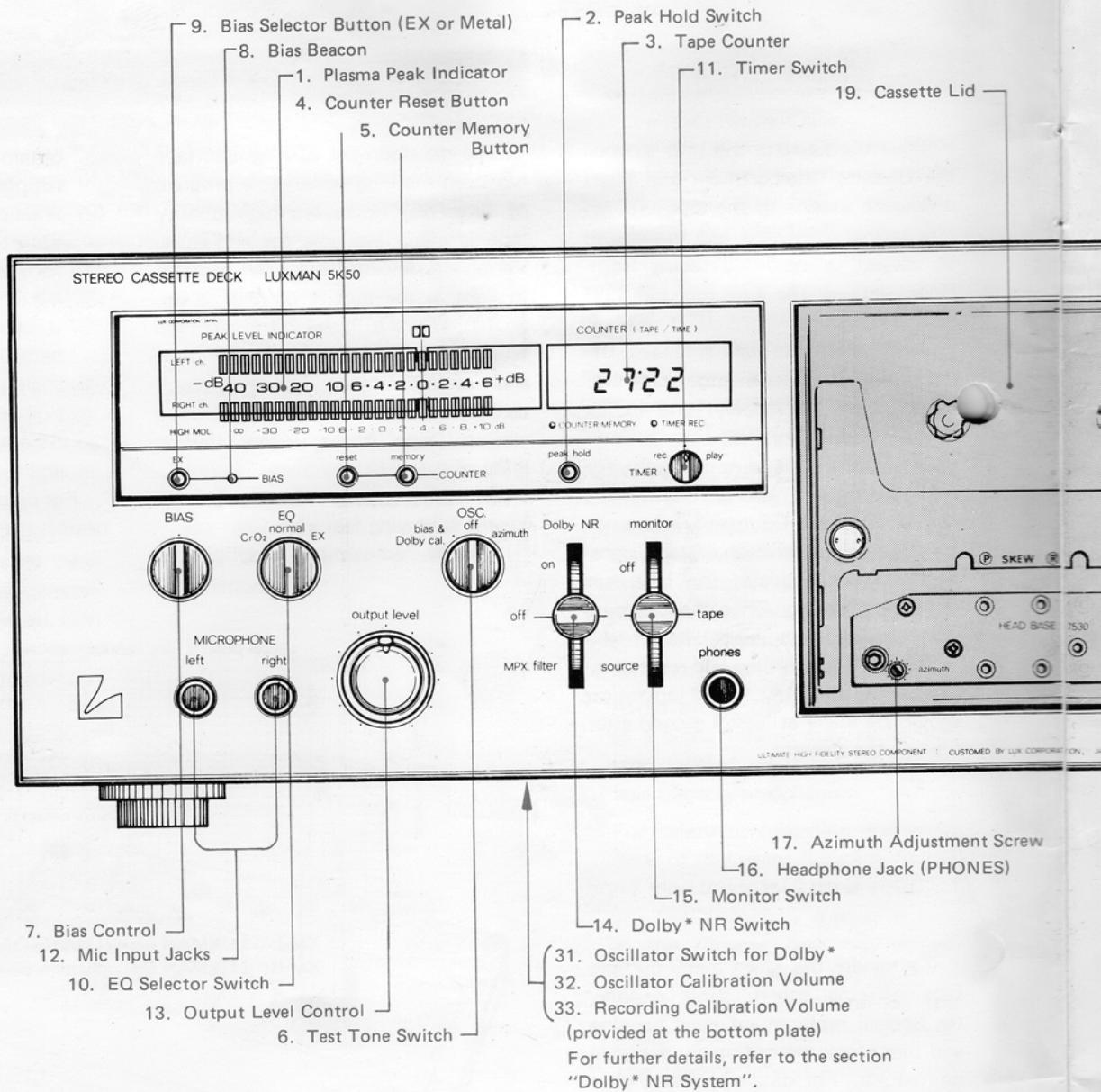


XM-I: LUXMAN normal position tape

XM-II: LUXMAN CrO₂ position tape



Switches & Controls



1. Plasma Peak Indicator

The fluorescent blue tubes display the instantaneous peak level with 24 dots per channel. The quick response to the recording signals makes it easy to set up an appropriate recording level.

0dB corresponds to 200nWb/m that is the Dolby NR standard level. The rise time is 10m sec. and the decay time is below 700m sec.

You can retain the peak level with the upper 12 dots from -5dB to +6dB in 1dB increments by means of the peak hold switch.

2. Peak Hold Switch

Press this button, and the peak level is held in the Plasma Peak Indicator (1). The next press releases the peak-hold function.

3. Tape Counter

A 4-digit 7-segment LED ensures electronic digital readout. 2 different indications are possible depending on the cassette tapes you use. With the LUX's exclusive cassette tape, you can read the real time in terms of minutes and seconds.

As to further details, refer to the

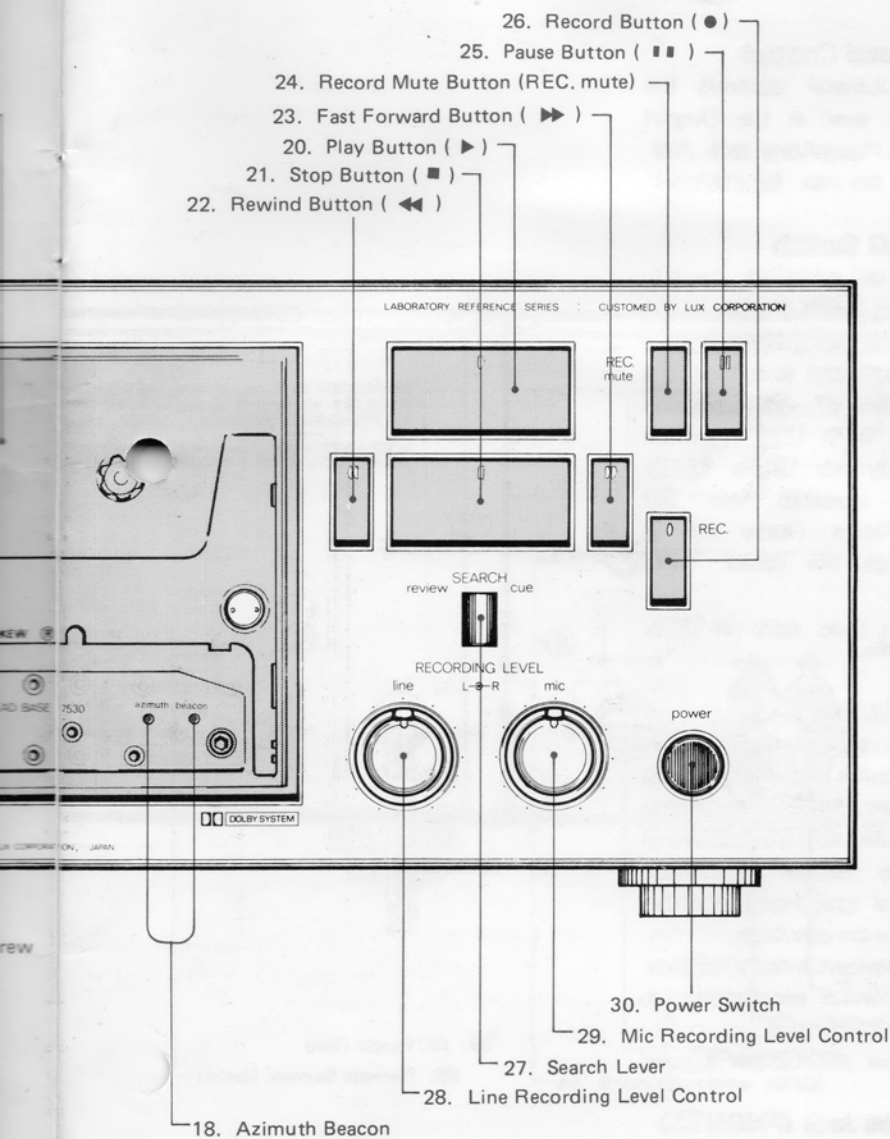
section of "Indication by Tape Counter"

4. Counter Reset Button

When this button is depressed, the indication of the tape counter shows [0000]. This device is useful at the time of starting the recording or using the counter memory function. When the Cassette Lid (19) is opened, the counter is automatically reset to [0000] indication.

5. Counter Memory Button

Press the "Memory" button and the



Memory LED lights up. The tape rewinding will automatically stop in the vicinity of the [0000] indication of the counter.

The next press releases the counter memory function.

6. Test Tone Switch

This activates the built-in oscillator used for adjustment of bias, Dolby* recording level, and azimuth. 3 positions are provided.

[off]; Set the switch in this position except when above-mentioned adjustment is needed.

[bias & Dolby* cal.];

This position is used for adjustment of recording bias and Dolby recording level. 400Hz built-in oscillator operates. [Note that, for the level adjustment of Dolby recording, the Dolby OSC. Switch(31) should be in the "on" position].

[azimuth];

This position is used for adjustment of the azimuth of the recording head. 6kHz built-in oscillator operates.

7. Bias Control

The optimum bias corresponding to each characteristic of recording tape or any diversified bias condition can be obtained by adjusting this control.

Make this adjustment before proceeding to recording the program source. Set the Test Tone Switch (16) to the "bias & Dolby cal." position, then put the operation keys into the recording mode. Now, turn gradually the control knob to the clockwise position, and the Bias Beacon (8) lights up. When further turned on, the Bias Beacon goes out. The first light-up point is equivalent to -0.25 dB under-bias point, and the next distinguishing point means -0.25 dB over-bias point.

Between these two points, one-third turn from the first light-up point fixes the bias to the peak point of the recording tape. But you can adjust it according to your own taste of playback sound.

8. Bias Beacon

This beacon is an LED indicator used for selection of bias point of recording tape. The indicator lights up in the range between -0.25 dB under bias point and -0.25 dB over bias point.

9. Bias Selector Button (EX or Metal)

This feature is provided for recording on metal particle tape. With simple replacement of the head housing and bias block, you can enjoy true high fidelity recording by fine metal tape in future. When the corresponding head assembly and bias block are provided, depress this button to obtain the optimum bias for metal particle tape.

Do not depress this button without providing the replacement heads and bias circuit, as in such case the deck is put into "REC. MUTE" mode.

10. EQ Selector Switch

You can select the proper recording and playback equalization for various types of tape.

- [normal] ; For playback and recording on the normal tape, e.g., LUX's XM-I etc. (Equalizer time-constant is 120 μ sec.)
- [CrO₂] ; For playback and recording on the CrO₂ type tape, e.g., LUX's XM-II etc. (Equalizer time-constant is 70 μ sec.)
- [EX] (metal) ; For playback of metal particle tape. (Equalizer time-constant 70 μ sec. Replace the head assembly and bias block for recording on metal particle tape.)

Note that this switch should be set properly both for recording and playback according to the type of the tape.

11. Timer Switch

Playback or recording is possible by an external timer.

- [off] ; Usual operation without timer.
- [play] ; Select this position when playback by timer is needed. It is automatically put into the playback mode when power is turned on.
- [rec.] ; Select this position when recording by timer is needed. It is automatically put into the recording mode when power is turned on. Note that in case the recording safety tabs are removed from the cassette tape, the deck is put into the playback mode.

12. Mic Input Jacks

Plug in the microphone for recording in the right and left channels. Mixing with the Line Input is feasible. The input sensitivity is 0.25mV. It is recommended to use the microphone whose impedance is in the range from 600 ohms to 10k ohms.

13. Output Level Control

This potentiometer controls the output volume level at the Output Jacks (35) and Headphone Jack (16). Usually set it at the max. for playback.

14. Dolby* NR Switch

3 positions are provided, namely, "on", "off" and "MPX filter". In the "on" position, the Dolby Noise Reduction circuit is activated to reduce tape hiss at the time of recording and playback. The "MPX filter" position is useful to remove 19kHz carrier leakage when recorded from FM broadcasting. When Dolby NR is not needed, use the center "off" position.

* Dolby is the trade mark of Dolby Laboratories, Inc.

15. Monitor Switch

This switch selects reproduction of recorded sound and the program source before recording. Instantaneous off-the-tape monitoring is possible and you can enjoy instant comparison between original sound and recorded one. 3 positions are provided.

- [tape] ; To playback a recorded tape.
- [source] ; To monitor program source before recording.
- [off] ; To cut off output signals.

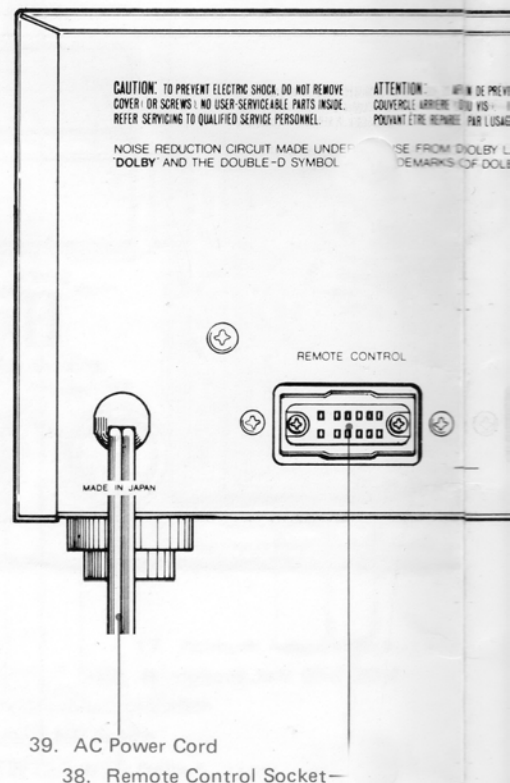
16. Headphone Jack (PHONES)

Connect the headphone for private listening or monitoring of program source. The headphone output can be controlled by the Output Level Control (13).

17. Azimuth Adjustment Screw

With the 5K50, it is possible to obtain the optimum azimuth condition corresponding to recording tapes, as the deck employs 3 discrete heads.

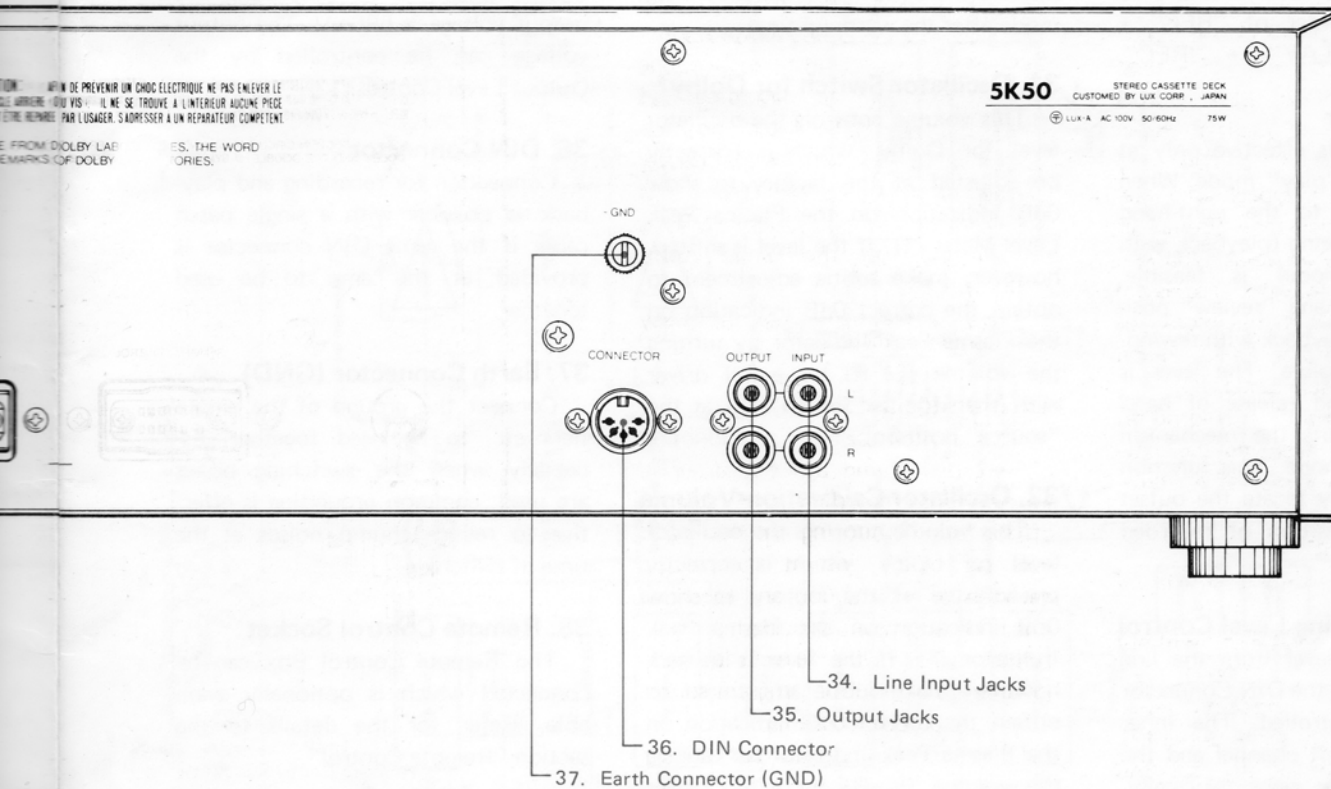
Set the Test Tone Switch (6) to the "azimuth" position, then put the 5K50 into the recording mode, and the 6kHz sine-wave signal is recorded on the tape. When both of the Azimuth Beacons (18) light up, the azimuth of the recording head is in the optimum position.



In case either of the two lights up or blinks, turn the adjustment screw to make both of them light up. Also in this adjustment procedure the Plasma Peak Level Meter (1) should be on the maximum level. Of course, this azimuth adjustment should be done after taking off the Cassette Lid (19).

18. Azimuth Beacon

When both of the two LED beacons light up, the azimuth of the recording head is in the optimum position to match the recording tape.



19. Cassette Lid

This lid also plays a role of the cassette ejector. When the glass lid is slightly depressed, the cassette compartment opens to accept a cassette tape. The next press makes the deck ready for operation.

The lid can be taken off when the compartment is opened and pulled upwards. Although the lid is made of hard glass, careful handling is recommended.

20. Play Button (▶)

Touch this button, and the deck is

put into the "PLAY" mode and playback of recorded tape is possible.

21. Stop Button (■)

When touched, the total movement ceases.

22. Rewind Button (◀◀)

This button is to rewind the tape quickly from the right to the left. Auto-stop mechanism functions at the end of the tape.

23. Fast Forward Button (▶▶)

This allows to forward the tape

quickly from the left reel to the right. At the end of the tape, the movement stops automatically.

24. Record Mute Button (REC. mute)

This button is convenient to prevent recording of such unwanted program sources as the noise at the time of the stylus contact to a disc, the commercials in FM broadcasting, etc.

25. Pause Button (■ ■)

When the button is depressed, the

movement of the tape transport mechanism is temporarily halted during playback or recording. The playback or recording can be resumed at the next touch.

26. Record Button (●)

Recording starts once both of the "REC" and "PLAY" buttons are kept pressed in the order of "REC" + "PLAY" or "PLAY" + "REC".

27. Search Lever

This function is effective only at the time of the "play" mode. When the lever is slid to the right-hand "cue" position, cueing (playback with fast-forwarding mode) is feasible, while at the left-hand "review" position, reviewing (playback with rewinding mode) is possible. The lever is self-reset type, and release of hand from the lever puts the mechanism into the "play" mode. This function is useful to quickly locate the outset of the desired position of recorded programs.

28. Line Recording Level Control

The recording level from the line input (34) or from the DIN Connector (36) can be controlled. The inner knob is for the left channel and the outer one for the right. Normally, these two knobs rotate simultaneously.

29. Mic Recording Level Control

The recording level from the microphone can be controlled. The right and left channels can be separately controlled. When microphone is not used it is advisable to set this control to the extreme counter-clockwise position.

30. Power Switch

Depress the button to turn on or off the power. When the power is turned on, the Plasma Peak Indicator, Tape Counter, and the lamp in the cassette compartment will light up, putting the deck into the "STOP" mode.

Note that the warm-up time of approx. 5 seconds is needed until the entire circuitry becomes ready to function after the Power Switch is turned on. When one of the key board buttons is depressed during this warm-up time, the built-in logic circuitry remembers the input to operate the deck in the corresponding mode after the warm-up time.

31. Oscillator Switch for Dolby*

This volume controls the oscillator level for Dolby, which is correctly pre-adjusted at the factory to show 0dB indication on the Plasma Peak Level Meter (1). If the level is shifted, however, make subtle adjustment to obtain the correct 0dB indication on the Plasma Peak Indicator by turning the volume (L, R) by a (-) driver with the Monitor Switch (15) at the "source" position.

32. Oscillator Calibration Volume

This volume controls the oscillator level for Dolby, which is correctly pre-adjusted at the factory to show 0dB indication on the Plasma Peak Indicator (1). If the level is shifted, however, make subtle adjustment to obtain the correct 0dB indication on the Plasma Peak Indicator by turning the volume (L, R) by a (-) driver with the Monitor Switch (15) at the "source" position. Level Controls (28) (29) should be in the "min." position.

33. Recording Calibration Volume

For proper performance of Dolby NR system, this volume permits fine-tape adjustment according to the sensitivity of tape. Adjust the volume corresponding to the tape you use for recording. Note that the "EX" (Metal) volume functions only when the heads and bias block are replaced to cope with metal particle tape. For fine-tune adjustment, obtain the 0dB reading on the Plasma Peak Indicator with the Monitor Switch (15) at the "tape" position.

34. Line Input Jacks

These jacks are to be connected to

the output of tuner or amp used as a recording source. The input sensitivity is 100mV. Mixing with the Mic Input is feasible.

35. Output Jacks

Connect these jacks to the input terminals such as the monitor terminals of the amplifier for playback. The output voltage is 580mV. The output voltage can be controlled by the Output Level Control (13).

36. DIN Connector

Connection for recording and playback is possible with a single patch cable if the same DIN connector is provided at the amp to be used together.

37. Earth Connector (GND)

Connect the ground of the amplifiers etc. to be used together. Especially when the switching boxes are used, common grounding is effective to reduce thump noises at the time of switching.

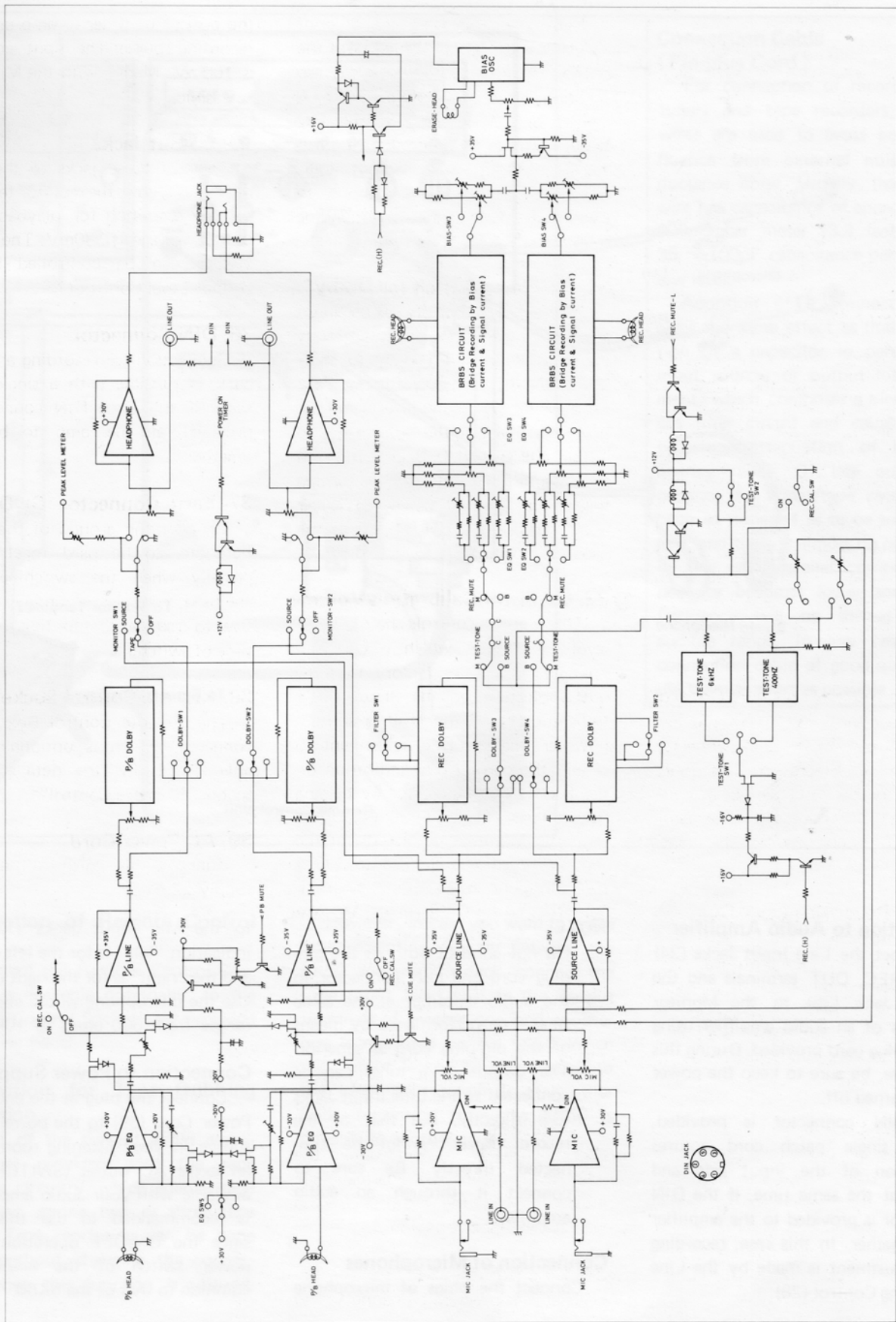
38. Remote Control Socket

The Remote Control Box can be connected which is optionally available. Refer for the details to the section "Remote Control".

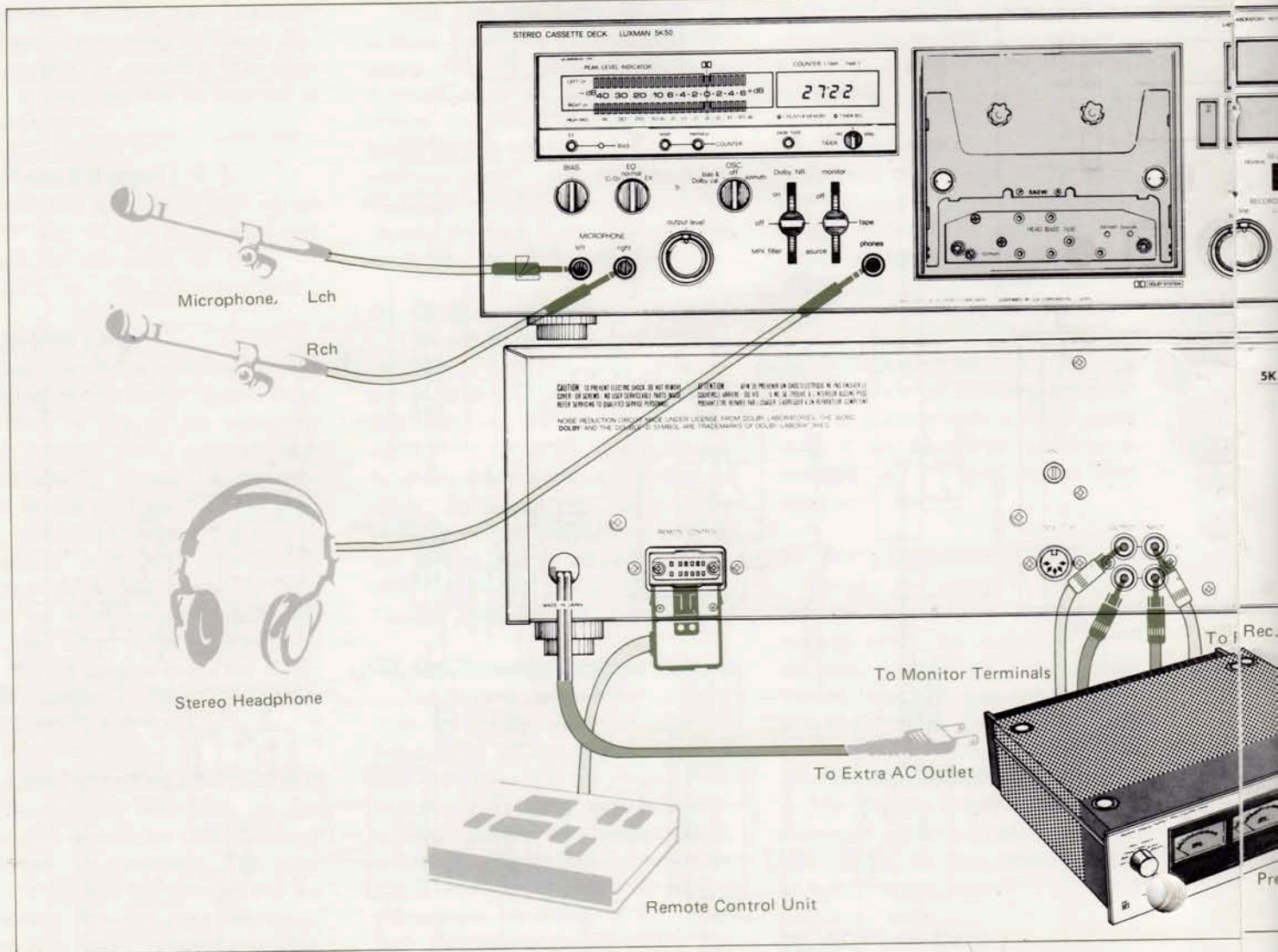
39. AC Power Cord

Connect this cord to the power supply source.

Block Diagram



Connection Procedure



Connection to Audio Amplifier

Connect the Line Input Jacks (34) to the REC. OUT terminals and the Output Jack (35) to the Monitor terminals of an audio amplifier using the pin plug cord provided. During this procedure, be sure to keep the power switch turned off.

A DIN connector is provided, and a single patch cord ensures connection of the input side and output at the same time, if the DIN connector is provided to the amplifier used together. In this case, recording level adjustment is made by the Line Recording Control (28).

NOTE:

- Do not connect both of the pin-plug cord and DIN connector to the audio amplifier at the same time. The performance by means of the pin-plug cord is superior.
- The output of a tuner can be connected to the Line Input Jacks (34) directly, but that of the record player cannot be connected directly. Be sure to connect it through an audio amplifier.

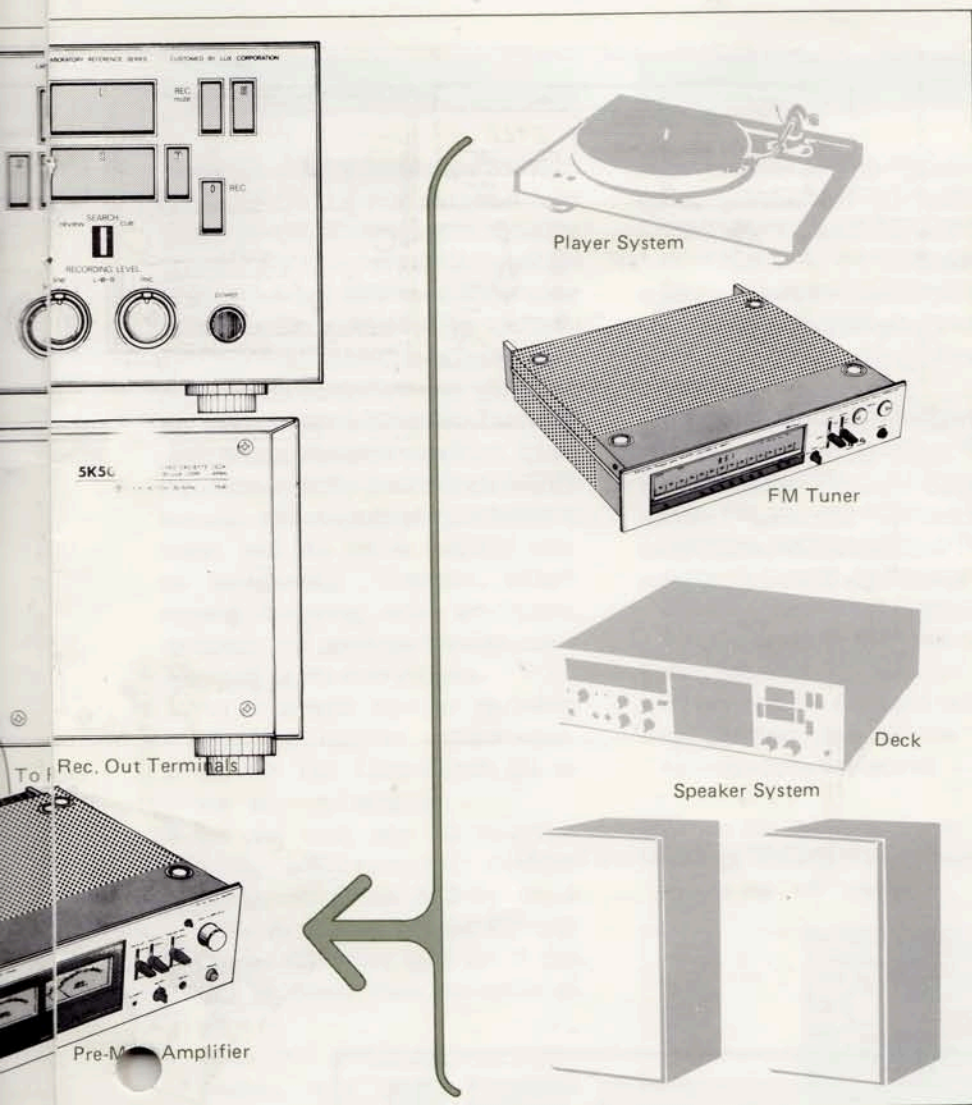
Connection of Microphones

Connect the plugs of microphone

to the Mic Input Jacks (12). The indication "left" is for the left channel and the "right" is for the right channel. Use the microphone whose impedance ranges from 600 ohms to 10k ohms.

Connection to Power Supply

Connect the plug at the end of the Power Cord (39) to the power supply source in your listening room. When an extra AC outlet (SWITCHED) is available with your audio amplifier, it is recommended to use this outlet since the ON/OFF operation of the power switch of the amplifier is common to that of the 5K50.



Connection Cable (Pin-plug Cord)

For connection of record players, tuners and tape recorders, shielded wires are used to avoid possible influence from external noise or inductance noise. Usually, the shielded wire has capacitance of approximately 200pF per meter (3.3 feet) or has 35 ~ 100pF capacitance per meter at low level.

Adoption of a connection cord gives the same effect as that of insertion of a capacitor in parallel with input sources or output load equipment, which composes a kind of high cut filter circuit and causes an unnecessary attenuation of high frequency range. Of late output impedance for tuner/tape recorder has been so designed as to be sufficiently low, and there is almost no problem as in this case parallel composite impedance becomes lower and cut-off frequency will be shifted out of audible range. In any case, select connection cable of good quality and use them as short as possible.

Connection of Remote Control Unit

Connect the Remote Control Box, which is available optionally, to the Remote Control Socket (38) provided at the rear panel.

Connection for Tape Dubbing Operation

Most of the current audio amplifiers are provided with the tape dubbing circuitry, which enables tape reprinting among two or three tape decks. Tape reprinting can be done easily without changing the connection when this function is utilized.

However, in case you want to make tape reprinting directly between the 5K50 and another deck, connect the Line Input Jacks (34) to the Output terminals of another one, and another one is reprinted on the 5K50. When the Output Jacks (35) is connected to the Line Input terminals of another deck, reprinting from the 5K50 is possible to another deck.

STEREOPHONIC PLAYBACK

1. Press the Cassette Lid (19), and load a pre-recorded tape into the cassette compartment, and set each switch and knob in such an order as illustrated.
2. Set the tape switch of an audio amp to the "monitor" position.
3. Press the "Play" Button (20), and the deck is put into the "PLAY" mode.
4. As the Output Level Control (13) is turned clockwise, the output of this deck gradually increases. Normally the output level control has to be set at the endmost clockwise (max.) position. Incidentally,

the swing of the Plasma Peak Indicator (1) has nothing to do with the position of the output level control.

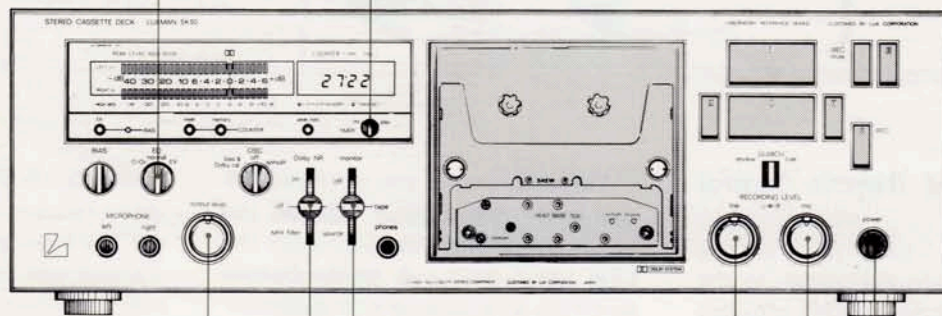
5. Set the volume of the audio amp at an appropriate level, and enjoy superb reproduction sound of this deck.
6. When tape playback finishes, press the "Stop" Button (21) to halt the tape transport. At the end of the tape, the "auto-stop" function is put into operation, providing no load to the tape and tape transport mechanism.

ERASURE

When recording is made the erase head functions, and it is not necessary to erase the pre-recorded contents beforehand. If only erasure is needed, press both the "REC" and "PLAY" buttons while setting both Line Recording Level Control (28) and Mic Recording Level Control (29) at the minimum level. The bulk eraser is useful to erase the pre-recorded contents in a short time, which is optionally available in the marketplace.

4. Position corresponding to the instruction of the cassette (EQ. Selector)

1. In the "off" position (Timer Switch)



7. In the "min" position (Output Level Control)

5. In the "tape" position (Monitor Switch)

6. Position corresponding to "DOLBY ON" or "DOLBY OFF" (DOLBY NR Switch)

(AC Power Switch)
2. In the "on" position

3. In the "min" position (Input Level Set)

Before Proceeding to Recording

Azimuth Adjustment of Recording Head

As the 5K50 employs a discrete 3-head system, it is possible to adjust the azimuth of the recording head. The dimensions of plastic case have subtle deviation from one cassette to another (even between the "A" and "B" sides of same tape), which affects tape transport condition, causing the azimuth (verticalness) error between the recording and playback heads, and the treble response may be deteriorated. Therefore, before starting recording, make adjustment to obtain the optimum azimuth point according to the tape you use.

1. Put a cassette tape for recording into the cassette compartment.
2. Set the Test Tone Switch (6) to the "azimuth" position.
3. Put the deck into the recording mode, and turn the Azimuth Adjustment Screw (17) by a (-) driver so that both of the Azimuth Beacon (18) may light up. If one fails or blinks, turn the screw to get it lit.
4. When the azimuth adjustment is finished, reset to the Test Tone Switch (6) to the "off" position.

[CAUTION]

- * There is a time lag of about 0.3 sec. between recording of the playback, and turn the adjustment screw slowly.
- * No need to readjust the azimuth of the playback head, as it is perfectly aligned prior to the delivery from our factory.

Adjustment of Bias

Before recording, obtain the optimum bias amount to match the recording tape you use.

- 1) Put a cassette tape into the cassette compartment.
- 2) Set the Test Tone Switch (6) to

the "bias & Dolby cal." position.
3) Put the deck into the recording mode, and turn the Bias Control (7) slowly in the clockwise direction from the endmost counter-clockwise (min.) position. In this process the Bias Beacon (8) lights up and then goes out.

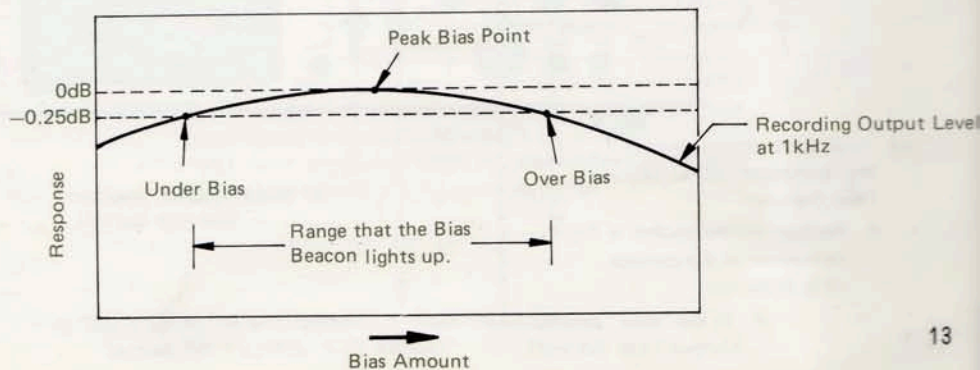
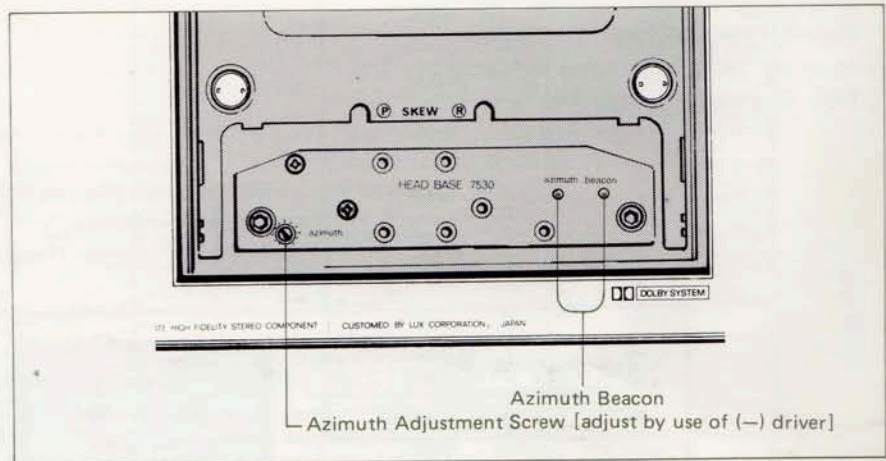
The very point where the beacon first lights up means -0.25dB under-bias position, while when it goes out you can obtain -0.25dB over-bias position. The peak bias point is located in the vicinity of one-third turn point from the first light-up point in the variable range thus obtained.

Usually, the optimum bias point is obtained around the center between these two points.

- 4) When the bias adjustment is completed, reset the Test Tone Switch (6) to the "off" position.

[Remarks]

The 5K50 employs the variable bias system to make the most of 3-head system. You can enjoy difference of playback sound by varying the bias amount. For example, under-bias recording tends to extend the treble frequency response, while over-bias recording helps reduce the bass distortion. In this way, the variable bias system is an interesting facility to audiophiles. Various characteristics become deteriorated if excessively out of the optimum bias point, and enjoy this facility within the range where the bias beacon keeps lit (-0.25dB under-bias $\sim -0.25\text{dB}$ over-bias).



STEREOPHONIC RECORDING

1. Press the Cassette Lid (19) and load a cassette tape into the cassette compartment. Then set each switch and knob as depicted.
2. In case you are to record such programs as discs of FM broadcastings, set the input selector of an audio amplifier to the corresponding input which you are going to record, then set the tape monitor switch to the "monitor" position. For recording by microphone, connect the microphone plugs to the Mic Input Jacks (12).
3. First, press the Pause Button (25) (the indicator will light up), then press the Record Button (26) and the Play Button (20) simultaneously, and the machine is put into recording mode. Now, as the Line Recording Level Control (28) [for recording from line input], or the Mic Recording Level Control (29) [for recording from microphone], is turned clockwise, the Plasma Peak Indicator (1) begins to move. Set the recording level as high as possible within the range

not exceeding +3dB.

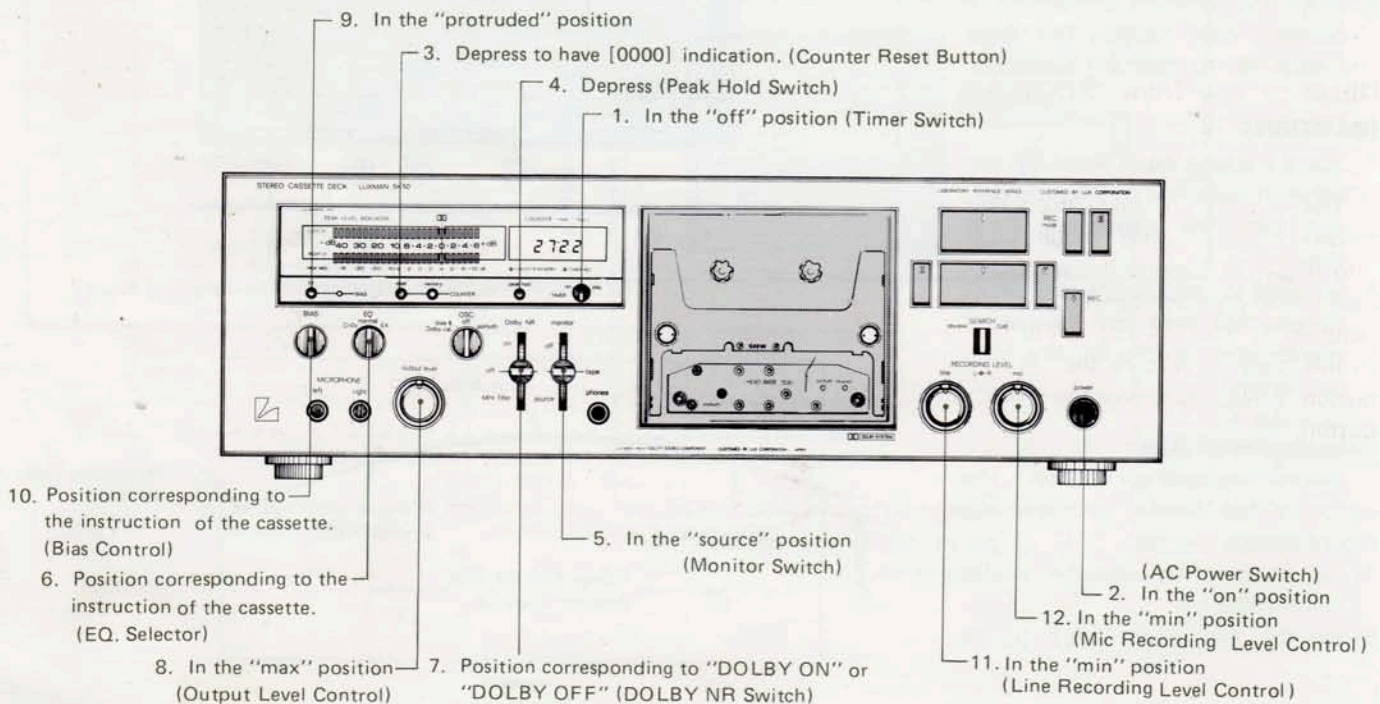
After the adjustment of the recording level, reset the Monitor Switch (15) to the "tape" position. This deck is of discrete 3-head system, and instant off-the-tape monitoring is possible to check if perfect recording is made.

4. Depress the Pause Button (25) again, and the tape begins to run to record the input signals.
5. When the recording ends, press the Stop Button (21) to cease the tape movement. In case you want to stop the recording temporarily, press the Pause Button (25), and the next press resumes the recording. When you want to cut announcements or commercials from the recording of FM broadcasting, utilize the REC. Mute Button (24). For further details, refer to the section "Rec. Mute"

To Set Recording Level

To obtain the optimum condition for recording the input level of the program source has to be adjusted. When the level is set too low, the playback sound becomes jarring, while on the contrary if too high, the playback sound will be distorted. Therefore, this setting is important to realize the least distortion and the excellent signal-to-noise characteristic.

With the 5K50, setting of the recording level is done by watching the Plasma Peak Indicator (1) after the deck is put into the "REC" mode with the Monitor Switch (15) at the "source" position (refer to the section "Stereo Recording"). Note that when the level is set, like conventional VU meter, at the point where the maximum peak level does not exceed 0dB point, the average level will be set too low. It is basically advisable to set the maximum peak level to the +3dB point of the Plasma Peak Indicator (1), since the +6dB point is equivalent to the maximum saturation level of cassette tapes. Experi-



Correlation between BIAS/EQ Positions and Cassette Tapes

ence is the best guide to your favorite sound.

Discs, FM broadcastings, pre-recorded tapes, and live sound from microphones are mainly available as program source of recording. The peak levels in these program sources except the microphones are generally suppressed by the limiter in the course of production process, therefore, satisfactory recording is possible if the basic setting procedure is observed. In the case of live recording by microphones, however, the peak level is usually very high, and further it is not audibly equivalent to the actual sound level. Thus, when you are too sensitive about clipping at the peak, the average level is apt to be set rather low, thus inducing deterioration of the signal-to-noise ratio. Therefore, to realize good live recording using microphone, it is important to attend to such opportunity as much as possible, and get your own auditory feeling to what extent such clipping is allowed.

Direct Change from "Playback" to "Recording"

The logic circuit makes it possible to switch the "PLAY" mode direct into the "REC" mode if the cassette tape under playback operation is not removed at the recording safety tabs. In this case, just retouch the "PLAY" button while depressing the "REC" button.

At the time of playback of cassette tape, set the EQ Selector Switch (10) to an appropriate position according to the list specifying the kinds of tapes. The Bias Control (7) has nothing to do with playback.

While when recording, the "EQ" selector has to be set to the corresponding positions specified in the list, then obtain optimum bias amount by adjusting the Bias Control (7).

Incidentally note that various facilities (Bias Control etc.) provided for use of metal-particle tape are put into operation when the head housing and bias block available on option are replaced to cope with metal tape.

EQ. POSITION	BRANDS	MODELS
normal (120 μ s.)	LUXMAN	XM - I
		XR - I
	TDK	AD
		ED
	MAXELL	UD-XL I
		UD
	SCOTCH	MASTER 120 μ s.
		CRYSTAL
		* CLASSIC
	SONY	AHF
		HF
		* DUAD
	DENON	DX3
FUJI	RANGE-4(FX- I)	
	* RANGE-6	
BASF	SLH- I	
	* FCR	
C.,O ₂ (70 μ s.)	LUXMAN	XM - II
		XR - II
	TDK	SA
	MAXELL	UD-XL II
	SCOTCH	MASTER 70 μ s.
	SONY	JHF
	DENON	* DX-5
	FUJI	RANGE-4X(FX-II)
BASE	SCR	

- The "EX" position of the EQ Selector Switch provided for use of metal particle tape is activated when the head housing available on option is replaced.
- FeCr tapes. If you feel treble range is too strong, adjust it by the tone control of your audio amplifier.

To make the most of the 5K50

REC Mute Function

With the recording mute function of this deck, you can easily make FM aircheck and cut off unwanted announcements or commercials from recording. Keep simply touching the Rec. Mute Button (24) and you can provide your desired muting space from one music to another.

1. In the course of recording when a music ends, press the Rec. Mute Button to start the recording muting, i.e., recording without signals.
2. After depressing the Rec. Mute Button for your desired length of time, e.g., 3 seconds, depress the Pause Button (25), and the deck is put into the Pause mode from the recording muting.
3. A retouch to the Pause Button (25) just before commencement

of the next music resumes the recording. Repetition of this procedure makes it possible to perform recording without announcements or commercials.

[CAUTION]

- * You can monitor the input signal even during the recording muting operation. Also the plasma peak indicator keeps swinging.
- * In the operation step (2), release from the Rec. Mute Button (24) without pressing the Pause Button (25) causes to resume recording immediately. In other words, the recording mode is restored from the recording muting without halting the tape transport mechanism.

Tape Counter

There are 2 kinds of indication depending on the type of the cassette tape you use.

A) LUX's Exclusive Cassette Tape

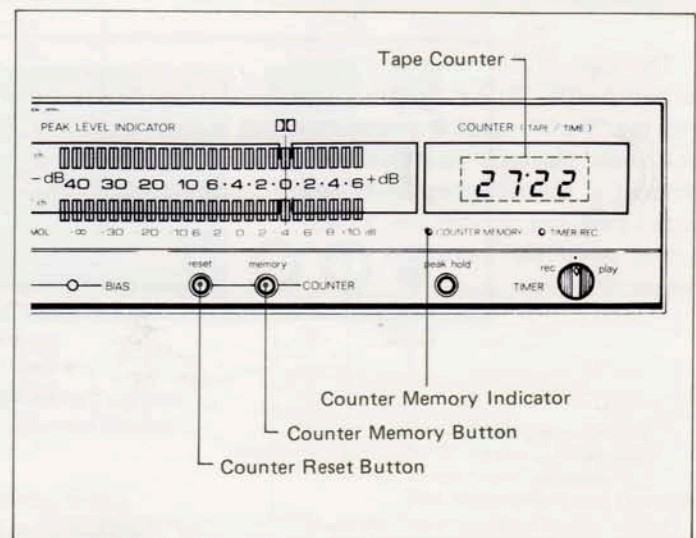
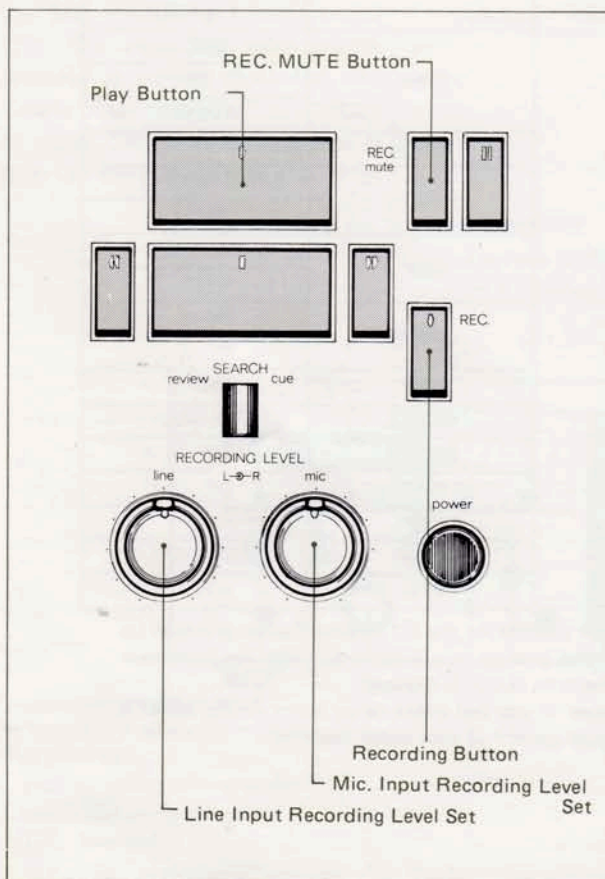
When our exclusive cassette is loaded, the real time is displayed. The diameter of the tape guide roller inside our cassette is so designed as to mark the standard speed (4,75 cm) by 2 turns, which is optically sensed to give a pulse of 0.5 sec. interval. The digital circuit counts this pulse and LED indicates 4 digits in terms of minutes and seconds. (e.g., 19*59=19 min. 59 sec.) Now you can know the exact time used as well as the balance left for recording or playback. Because of optical sensing no tension is given to tape.

B) Ordinary Cassette Tape

In this case, the digital circuit counts 4 pulses per rotation sensed at the take-up reel, and the LED shows the following figures.

Type	C60	C90
Number	about 3100	4650

Selection is made automatically between LUX's exclusive cassette and ordinary cassette for the corresponding display.

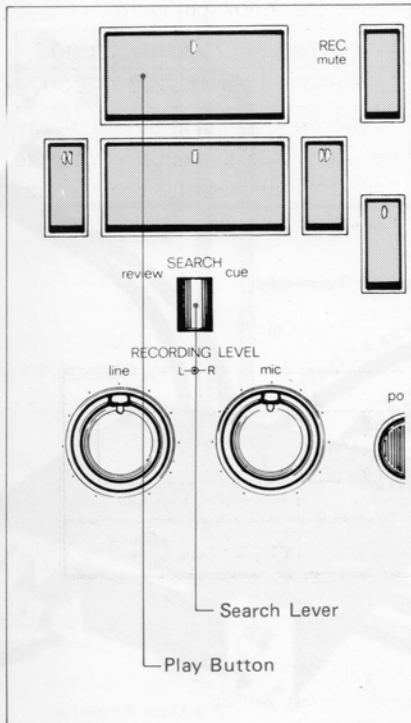


Search Function

In case you wish to reproduce the recorded programs from at the middle way, or wish to re-record a certain portion of the recorded tape, it is useful to quickly locate the outset of the desired position. The search function quickly realizes this. A simple lever operation facilitates both "cue" and "review" action.

When the deck is in the "play" mode, if the lever is slid to the right-hand "cue" position, cueing (playback with fast-forwarding mode) is feasible, while at the left-hand "review" position, reviewing (playback with rewinding mode) is possible. The lever is self-reset type, and release of hand from the lever puts the mechanism into the "play" mode.

Operation of this search lever makes the head assembly lift from the tape a little, therefore quick deterioration of the heads is avoided.

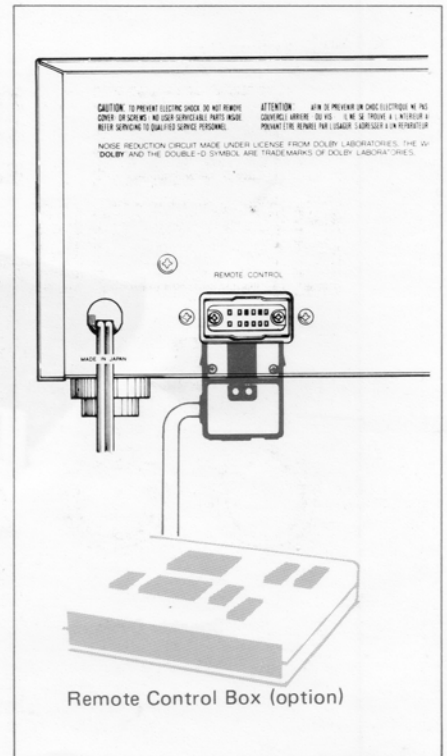


Mixing of Line Input and Mic Input

Connect microphone to the Mic Input Jacks and output signal of the audio amplifier to the Line Input Jacks of the 5K50, and set each level to realize suitable balance. Then set the 5K50 in the "record" mode. Now, mixing recording is feasible between microphone input and line input. At this time, if the Monitor Switch is set to the "source" position, the deck acts as a mixer of microphone and line input. It is advisable that the recording input level set which is not used, should be in the endmost counter-clockwise position (min.) unless you do not make mixing operation.

Remote Control Operation

The Remote Control Box which is on optional sale can be connected to the Remote Control Socket at the back panel. In this case, you can enjoy Repeat or Reverse at various positions of the tape thanks to the "AUTO PLAY" and "AUTO REW", functions featured at the Control Box in addition to all the operations possible with the key board of this cassette deck.



Timer Recording • Timer Playback

Timer Recording

An external timer makes unattended recording possible. Even in the midnight or while you are absent, you can record such program source as FM broadcasting etc. automatically at your desired time. Intermittent recording of 2 different programs is also possible if the timer has such function.

1. Connect an external timer to the deck and audio components as per the drawing.
2. Confirm that the Timer Switch (11) is set to the "off" position.
3. Turn on the power switches of the deck and other audio components, and load a cassette tape for record-

ing. Be sure that the recording safety tab is kept intact.

4. Tune in to the desired station.
5. Set all the switches and buttons referring to the section "STEREO-PHONIC RECORDING".
6. Set the timer at the time when you want to start recording. Then power supply ceases.
7. Set the Timer Switch (11) to the "rec." position.

Now all the preparation is completed.

[CAUTION]

- * The warm-up time of about 5 sec. is needed with this deck until the entire circuitry is put into the operational condition. Therefore

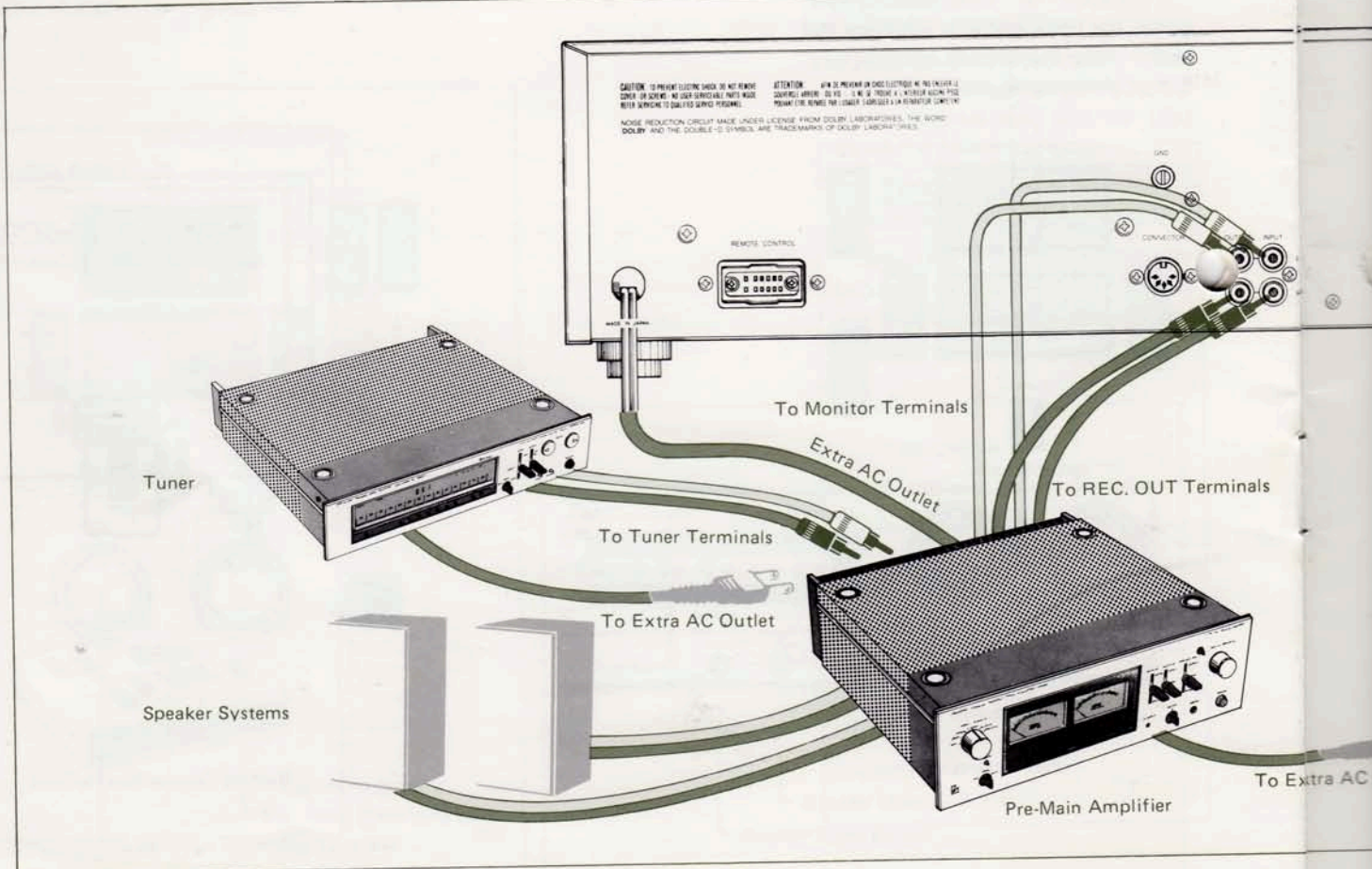
the timer recording commences in about 5 sec. after the power is supplied.

- * Be sure that the recording safety tab is not removed from the cassette tape for recording, as the deck is put into the "PLAY" mode if the tab is removed, and no recording is possible.

Timer Playback

This deck can be used as a substitute of an alarm clock if the timer playback function is utilized. You can have a pleasant morning call. Intermittent calls are possible if the timer has such function.

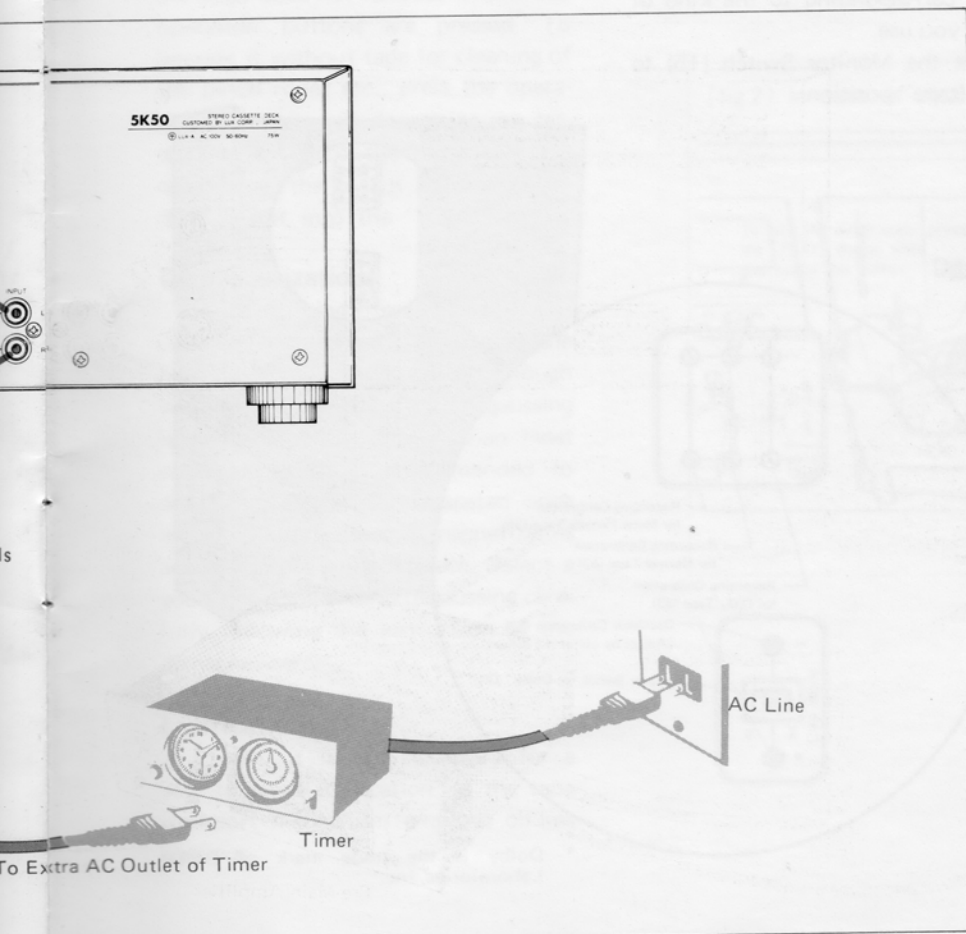
1. Connect an external timer to the



Tape Transport Mechanism

The tape transport mechanism is totally controlled by the electronic circuitry composed by logic IC of high reliability. Whatever kind of change is made in the operation modes, unnecessary slack or tension is never given to the tape. Further, tape-slack prevention mechanism is incorporated to give optimum tension to tape at the time of loading the cassette tape. The "auto-stop" function is activated at the end of tape in all operation modes. Meticulous care is paid in all respects such as elimination of click-noise especially at the outset or end of recording, protection of heads from magnetization, etc.

- deck and audio amp as depicted.
- Check that the Timer Switch (11) is set to the "off" position.
- Turn on the power switches of the deck and amp, and insert a pre-recorded cassette tape.
- Set all the switches and buttons referring to the section "STEREO-PHONIC PLAYBACK", and adjust the volume control of the amp at an appropriate level.
- Set the timer at your desired time so that power can be fed at that instant.
- Set the Timer Switch (11) to the "play" position.



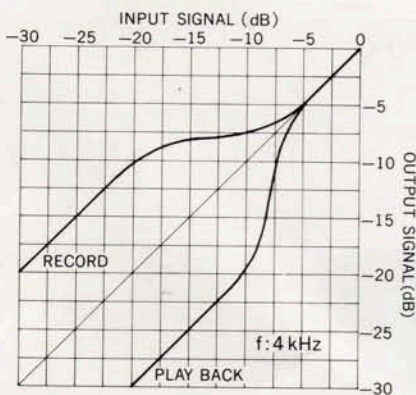
DOLBY* NR SYSTEM

The Dolby Noise Reduction System provides an extra pre-emphasis (compression) of high frequencies at the low level in recording and a corresponding de-emphasis (expansion) of the signals in playback, thus reducing annoying tape hiss noise to improve the S/N ratio.

When recording is made from FM stereo program, it may be recommended to use the "Dolby MPX filter" position of the Dolby Switch depending on the tuner you use.

Dolby Recording Level Calibration

To make the most of Dolby NR system, it is recommended to make this recording level adjustment before commencement of recording. Put the deck upright as per the drawing, and adjust the recording level in the following manner.



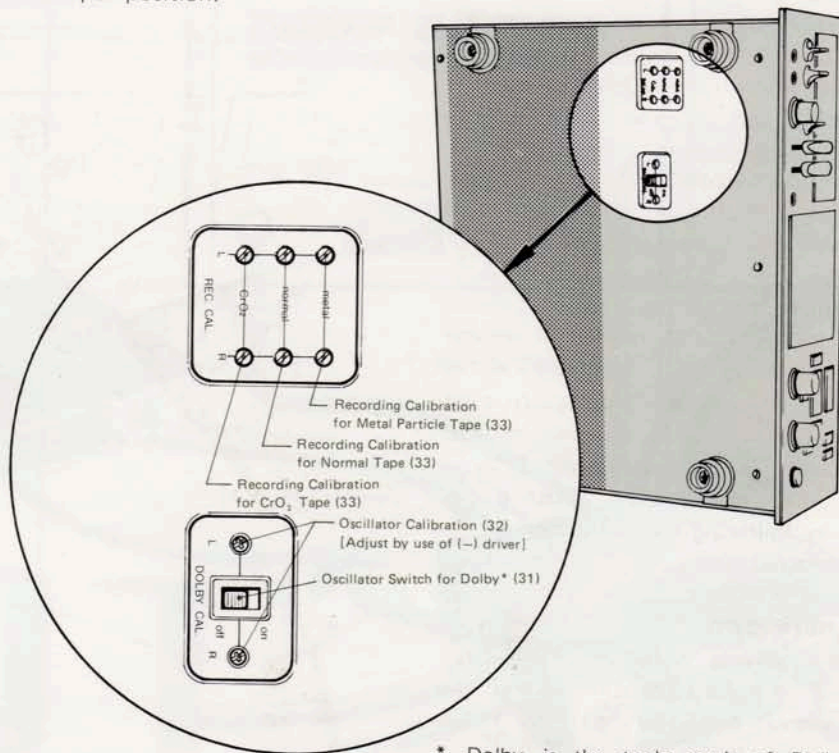
A) [Level Adjustment of Dolby Oscillator]

1. Set the Test Tone Switch (6) to the "bias & Dolby cal." position.
2. Turn on the "Dolby Oscillator Switch" (31).
3. Set the Monitor Switch (15) to the "source" position, and fine-tune the Oscillator Calibration Screw (32) by a (-) driver to obtain the 0dB reading at the Plasma Peak Indicator (1) in both channels.

B) [Level Adjustment of Dolby Recording]

4. Put into the cassette compartment the tape for recording, and the EQ Selector Switch (10) to the position corresponding to the kind of tape you use.
5. Reset the Monitor Switch (15) to the "tape" position.

6. Put the deck into the recording mode, and confirm if the Plasma Peak Indicator (1) swings up to the "0dB" position. If the 0dB reading cannot be obtained, make fine-tune adjustment by turning the slit of the Recording Calibration Screw (33) corresponding to the kind of tape (for both L and R channels). Incidentally the potentiometer of the screw for the Metal Tape functions only after replacement of the head assembly and bias block suitable for metal-particle tape.
7. When the Dolby recording level is adjusted, reset the Test Tone Switch (6) and Dolby Oscillator Switch to the "off" position.



* Dolby is the trade mark of Dolby Laboratories, Inc.

Head Cleaning

Residue built up from the constant contact of tape to capstan and head is unavoidable. The tape heads and capstan should be cleaned about once a month or after every 50 hours of operation. If a loss of brilliance in high frequency response is noticed, the tape heads probably require cleaning. An attached cotton swab moistened with head-cleaning fluid should be inserted into the cassette slot, and rubbed across the surface of the heads and capstan. Care should be taken not to scratch the head surface. To clean the heads, remove the glass lid by pulling it upwards as per the drawing. As an alternative, a special head-cleaning cassette is available at most dealers.

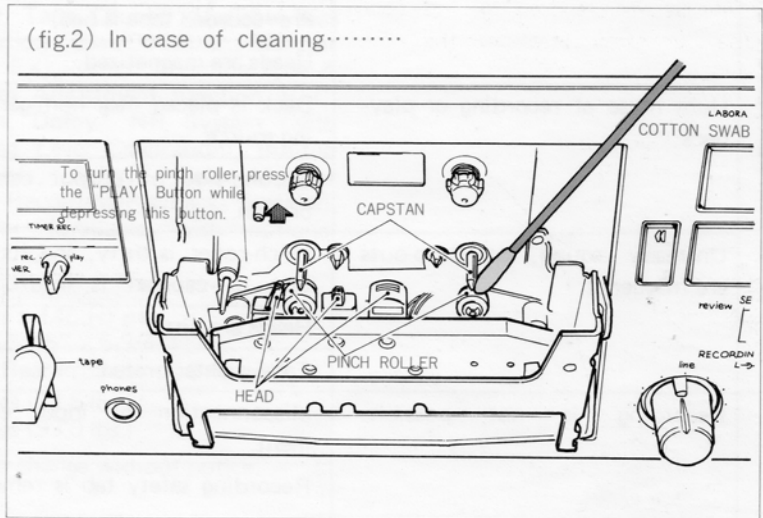
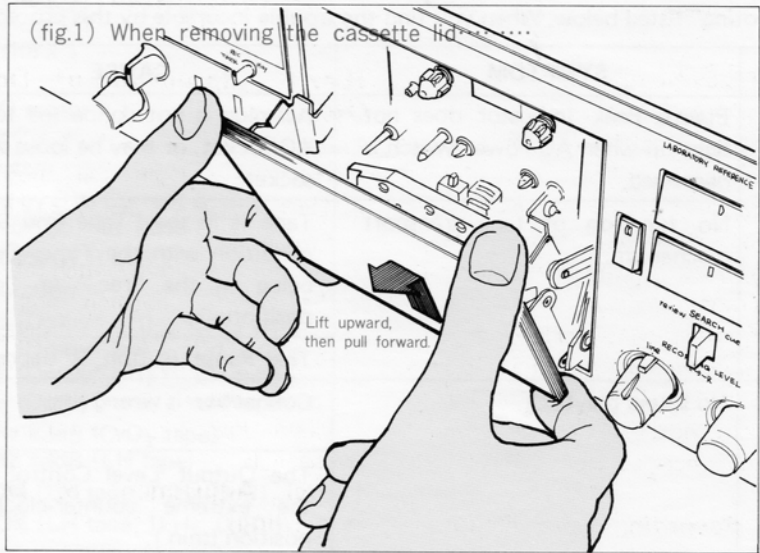
In case the cassette tape is not loaded into the cassette compartment, the deck does not function even if the operation buttons are pressed. To operate it without tape for cleaning of the pinch roller etc., press the operation buttons while depressing the cassette switch as per the drawing. In this case, when the switch is released the deck is put into the "STOP" mode.

Demagnetization

If lack of high frequency remains even after cleaning the heads, the heads may require degaussing. Though with LUX's cassette decks degaussing is less frequently needed than most other decks, it is recommended to demagnetize heads and capstan once every 50 hours' use. Demagnetizer is available in the marketplace. Select a good one and perform degaussing carefully following the instruction of the demagnetizer.

Lubrication

Usually it is not necessary for a user to make lubrication, as the tape transport mechanism employs oil-less bearings.



Before Consulting a Service Shop

BEFORE CONSULTING A SERVICE SHOP

It may be possible that some knobs or switches are accidentally operated, and that some connections are imperfect. In some cases, they are mistaken for defects. Therefore, it is advisable to make fundamental check by use of the "Trouble Shooting" listed below. When you find the trouble incurable by this procedure, contact your nearest service shop.

	SYMPTOM	CAUSE	MEASURES
TAPE TRANSPORT	Plasma Peak Indicator does not light up when AC Power Switch is depressed.	AC plug is not connected to the AC socket, or may be loose at the socket.	Connect AC cord firmly to the AC power supply point.
	No function of tape transport mechanism.	Tape is in the "Tape End Stop" condition with the Timer Switch being in the "rec." or "play" position.	Set the Timer Switch to the "off" position.
		The Pause Button is depressed.	Retouch the Pause Button.
PLAYBACK OF TAPE	No sound playback.	Connection is wrong.	Check the connection and correct it.
		The Output Level Control is in the extreme counter-clockwise position (min.).	Turn the Output Level Control clockwise to an appropriate position.
		Operation of the amp to which the deck is connected is wrong. (Volume Control, Monitor SW.)	Increase volume control of the amp, or correct the position of Monitor Switch etc.
	Tonal quality is not good.	Heads are dirty.	Clean the heads.
		Pre-recorded tape is bad.	Change the tape.
		Heads are magnetized.	Use a head-eraser to demagnetize.
	Hum noise at recording or playback.	Deck is placed near hum-generating source.	Keep away from transformer, amp, fluorescent lamp etc.
		Ground-side of output cable is broken.	Use a new one.
	Unsteady sound, or drop-outs are frequent.	Pinch-roller is dirty, and its contact to capstan is insufficient.	Clean the pinch-roller and capstan.
		Heads are dirty.	Clean the heads.
		Tape is deteriorated.	Change the tape.
	RECORDING ON TAPE	Recording is not possible.	Misconnection of input equipment.
Recording safety tab is removed.			Use adhesive tape etc. to cover the hole.
Recording Input Level Control is in the extreme counter-clockwise position (min.).			Turn the control clockwise to an appropriate position.
Playback sound is small, or its quality is bad.		Heads are dirty.	Clean the heads.
		Tape is deteriorated.	Change the tape.
		Recording input level is low.	Turn the Recording Input Level Control clockwise.
		Heads are magnetized.	Use head-eraser to demagnetize.
		Position of the Bias control or EQ selector is wrong.	Set it to the correct position.

Specifications

Heads:	Discrete 3 heads Record; ferrite x 1 Playback; sendust x 1 Erase; ferrite x 1
Drive Motor:	3 motors
Capstan Drive	Quartz P.L.L. DD motor x 1
Reel Drive	Coreless motor x 2
Tape Drive:	Dual Capstan System
Recording System:	Bridge Recording by Bias Current & Signal Current (BRBS, Pat. Pend.)
Wow & Flutter:	no more than 0.03% (W.R.M.S.)
Amplifier:	DC Amp Configuration
Signal-to-Noise Ratio:	better than 58dB (Dolby* off) ... CrO ₂ tape better than 67dB (Dolby* on) ... CrO ₂ tape better than 55dB (Dolby* off) ... LH tape better than 65dB (Dolby* on) ... LH tape
Frequency Response:	30Hz – 18,000Hz ±3dB (CrO ₂ tape) 30Hz – 16,000Hz ±ddB (LH tape)
Overall Distortion:	no more than 1.2% (LH tape, 1kHz, 0dB)
Real Analyzed Distortion:	no more than 0.3% (LH tape, 1kHz, 0dB)
Input Sensitivity:	line in; 100mV mic.; 0.25mV (recommended micro- phone impedance; 600 – 10k ohms)
Output Level:	line in; 580mV headphone; 1mW (8 ohms load)
Additional Features:	24-dot Plasma Peak Indicator with Peak Hold function, L.E.D. Tape Counter, Variable Bias Control, 3-position Bias/Equalizer Selector (normal, CrO ₂ , EX), Search Function (cue & review), Azimuth Adjustment function, REC. MUTE function, Dolby* NR System (with Dolby Recording Level Calibration), Built-in Oscillator (400Hz, 6kHz), Tape Monitor Circuit, Timer Recording/Playback function, Remote Control (available with optional remote control box.)
Power Consumption:	75W
Dimensions:	442(W) x 389(D) x 146(H) mm (17-13/32" x 15-5/16" x 5-3/4") (including Legs, Rear Protrusions & Knobs)
Weight:	Net 12.5kgs (27.5 lbs.) Gross 15.0kgs (33.0 lbs.)

Specifications and appearance design subject to change without notice.

* NOISE REDUCTION CIRCUIT MADE UNDER LICENCE FROM DOLBY LABORATORIES. THE WORD "DOLBY" AND THE DOUBLE-D SYMBOL ARE THE TRADE MARKS OF DOLBY LABORATORIES.